WATER POLLUTION
ABATMENT PLAN MODIFICATION
FOR
CISD DAVENPORT
HIGH SCHOOL

PREPARED FOR:

COMAL ISD

DATE: OCTOBER 2024

PREPARED BY:

MTR • Engineers • Surveyors • Planners

Moy Tarin Ramirez Engineers, LLC

12770 Cimarron Path, Ste 100 San Antonio, TX 78249 TBPE Firm #5297
Phone 210-698-5051 Fax 210-698-5085

CISD DAVENPORT HIGH SCHOOL
WATER POLLUTION ABATEMENT PLAN MODIFICATION

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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:CISD Davenport High School						**2. Regulated Entity No.: 110247541**			
3. Customer Name: Comal ISD						**4. Customer No.: 600249825**			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**			113.7
9. Application Fee:	$10,000		**10. Permanent BMP(s):**			Batch Detention Basins, VFS			
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Comal		**14. Watershed:**			Dry Comal Creek			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	_X_	___	___	___
Region (1 req.)	___	_X_	___	___	___
County(ies)	___	_X_	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	_X_Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park _X_San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.
Sean Smith, P.E. Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent Date 10/7/24

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: Sean Smith, P.E.

Date: 10/7/24

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Comal ISD Davenport High School
2. County: Comal
3. Stream Basin: Dry Comal Creek
4. Groundwater Conservation District (If applicable): Edwards Aquifer/Comal Trinity
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Jeffrey Smith
   Entity: Comal Independent School District
   Mailing Address: 1404 N Interstate 35 Frontage Rd
   City, State: New Braunfels, TX Zip: 78130
   Telephone: 830-221-2101 FAX: _____
   Email Address: jeffrey.smith@comalisd.org

8. Agent/Representative (If any):

   Contact Person: Sean Smith, P.E.
   Entity: Moy Tarin Ramirez Engineers, LLC
   Mailing Address: 12770 Cimarron Path, Suite 100
   City, State: San Antonio, TX Zip: 78249
   Telephone: 210-698-5051 FAX: _____
   Email Address: ssmith@mtrengineers.com

9. Project Location:

   ☐ The project site is located inside the city limits of _____.
   ☒ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of San Antonio.
   ☐ 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.

    23255 FM3009, San Antonio, TX 78266

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: 4/16/2024

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 High 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)

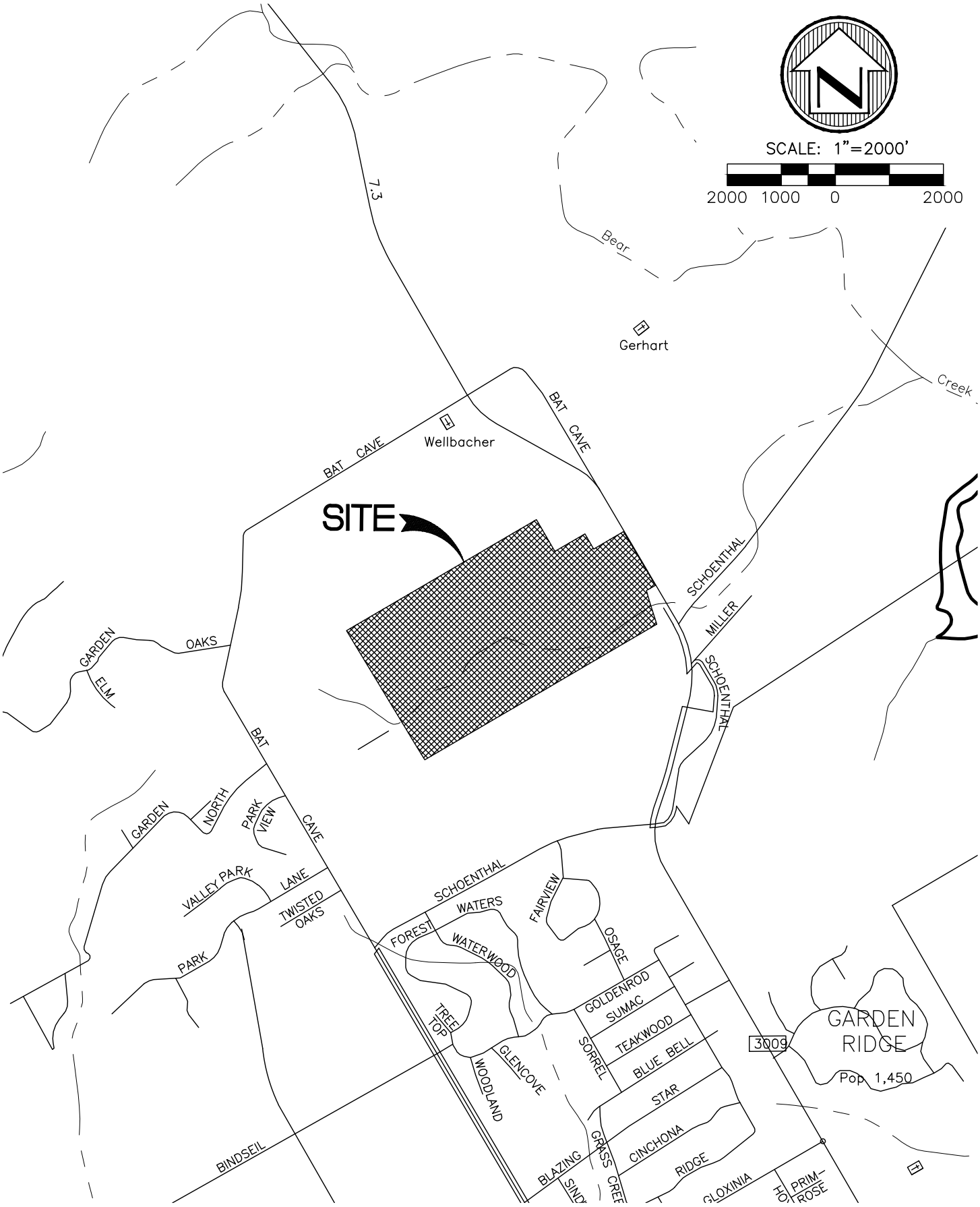
20. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies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

SUMMARY OF PREVIOUS & PROPOSED MODIFICATIONS

WPAP Modification Summary	***Pre-June 1, 1999***	***Original WPAP***	***Previous Project Modification 1***	***Proposed Project Modification 2***
Acres	113.7	113.7	113.7	113.7
Type of Development	Undeveloped	High School	High School	High School
Number of Residential Lots	N/A	N/A	N/A	N/A
Total Impervious Cover (acres)	N/A	31.22	32.53	33.07
Impervious Cover (%)	N/A	27.46%	28.61%	29.09%
Permanent BMPs	N/A	Natural VFS, Batch Detention Basins	Natural VFS, Batch Detention Basins	Engineered VFS, Natural VFS, Batch Detention Basins
Other	N/A	N/A	N/A	N/A
Approval Letter Date	N/A	April 12, 2018	September 19, 2019	TBD

Table from TCEQ-10259
Item 4



MTR
• Engineers
• Surveyors
• Planners
Moy Tarin Ramirez Engineers, LLC
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12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
TEL: (210) 698-5051
FAX: (210) 698-5085

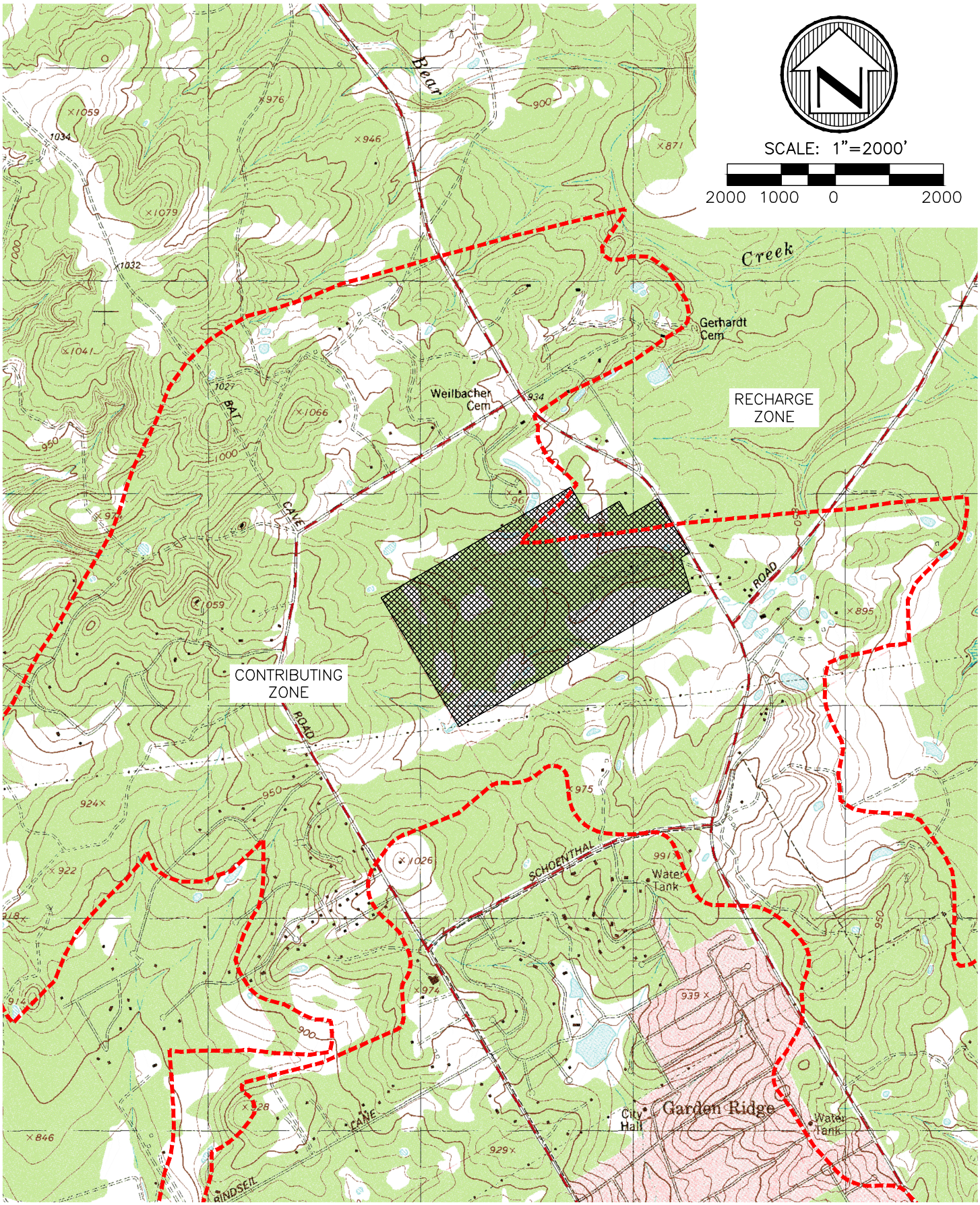
COMAL INDEPENDENT SCHOOL DISTRICT

DAVENPORT HIGH SCHOOL

LOCATION MAP

PROJECT #: 24046 **DATE: OCTOBER 2024**

R:\COMAL ISD\DAVENPORT HS\2024 WPAP MODIFICATION\DRAWINGS\ATTACHMENT A - ROAD MAP.DWG



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COMAL INDEPENDENT SCHOOL DISTRICT

DAVENPORT HIGH SCHOOL

ATTACHMENT B - USGS MAP

USGS QUADRANGLE: BAT CAVE

PROJECT #: 24046 DATE: SEPTEMBER 2024

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ATTACHMENT C

PROJECT DESCRIPTION

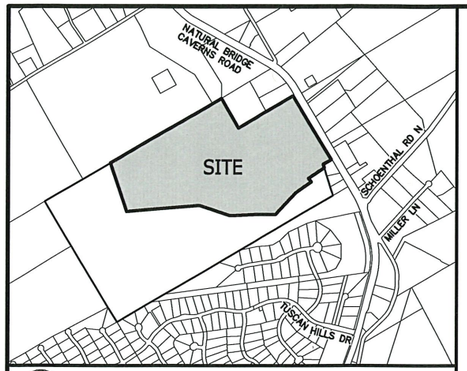
A Water Pollution Abatement Plan (WPAP) was first approved for Davenport High School by the Texas Commission on Environmental Quality on April 12, 2018. The plan was modified on September 19, 2019 to include additional grading, install utilities, and provide drainage improvements. A WPAP Exception Request was submitted to TCEQ on September 17, 2024, for demolition and associated earthwork for a building and tennis courts addition project.

The proposed project will be providing new buildings and tennis courts at Davenport High School.

The existing impervious cover for this site was 32.53 acres (28.61%). This project will result in an increase in impervious cover of 0.54 acres for a total of 33.07 acres of impervious cover (29.09%). The increase in impervious cover will be treated with existing natural VFS, the existing batch detention ponds, and new engineered VFS.

The site is located at 23255 FM3009, San Antonio, TX 78266. A portion of the property is located within the Edwards Aquifer Recharge Zone.

Current development consists of an existing High School The project acreage is 113.7 acres, unchanged from the previously approved WPAP modification. A boundary survey has been included with this application, providing the metes and bounds for the on-site portion of the project. The remaining off-site portion of the 113.7 acre project area is shown, but not surveyed.



VICINITY MAP

NOT TO SCALE

SCALE: 1"=300'

0 300 600

LEGEND:

O.P.R.C.C.T. OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS

WPAP PROJECT AREA LIMITS

KEYNOTES:

(1) COMAL INDEPENDENT SCHOOL DISTRICT
3.29 ACRES
SPECIAL WARRANTY DEED
DOCUMENT NUMBER 201706035941
O.P.R.C.C.T.

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S59°09'07"W	151.17'
L2	S16°13'33"E	61.98'
L3	S38°40'24"E	70.89'

N59°43'29"E 2131.67'

S30°16'00"E 569.56'

S59°43'29"W 1057.48'

535.36'

S30°17'09"E 268.58'

522.12'

268.05'

N59°39'57"E 524.14'

N30°43'08"W 1231.96'

PORTION OF WPAP PROJECT AREA OUTSIDE SURVEYED AREA

NATURAL BRIDGE CAVERNS RD. (VARIABLE WIDTH R.O.W.)

PORTION OF WPAP PROJECT AREA OUTSIDE SURVEYED AREA

THOMAS HAND SURVEY NUMBER 390 ABSTRACT NUMBER 218

107.04 ACRE TRACT

COMAL INDEPENDENT SCHOOL DISTRICT
218.24 ACRES
SPECIAL WARRANTY DEED
DOCUMENT NUMBER 201706035940
O.P.R.C.C.T.

N18°43'28"W 849.10'

S85°10'03"W 1201.64'

N71°56'30"W 544.58'

S87°25'38"W 489.22'

N89°24'56"W 271.35'

S43°39'06"W 505.67'

S54°35'45"W 305.72'

L3

S55°50'24"W 309.86'

L2

L1

STATE OF TEXAS
REGISTERED
STEPHANIE L. JAMES
5950
PROFESSIONAL
LAND SURVEYOR

EXHIBIT OF

A 113.70 ACRE TRACT OF LAND SITUATED IN THE THOMAS HAND SURVEY NUMBER 390, ABSTRACT NUMBER 218, BEING A PORTION OF A 218.24 ACRE TRACT AS CONVEYED TO COMAL INDEPENDENT SCHOOL DISTRICT, BY SPECIAL WARRANTY DEED AS RECORDED IN DOCUMENT NUMBER 201706035940, AND ALL OF A 3.29 ACRE TRACT AS CONVEYED TO COMAL INDEPENDENT SCHOOL DISTRICT, BY SPECIAL WARRANTY DEED AS RECORDED IN DOCUMENT NUMBER 201706035941, BOTH OF THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS, AND BEING A PORTION OF NATURAL BRIDGE CAVERNS ROAD RIGHT OF WAY.

DATE: 2024-10-17
REVISED: 2024-10-21

JOB NO. 24046

GENERAL NOTES:

1) BASIS OF BEARINGS AND COORDINATES CITED WERE ESTABLISHED FROM THE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983, TEXAS SOUTH CENTRAL ZONE.

2) ONLY THOSE COPIES WHICH BEAR AN ORIGINAL INK IMPRESSION SEAL AND AN ORIGINAL SIGNATURE OF THE SURVEYOR WILL BE CONSIDERED A "VALID" COPY. MOY TARIN RAMIREZ ENGINEERS, LLC., WILL NOT BE RESPONSIBLE FOR THE CONTENT OF ANYTHING OTHER THAN A VALID COPY OF THIS SURVEY.

3) THIS EXHIBIT IS NOT INTENDED TO BE USED FOR THE TRANSFER OF REAL PROPERTY. NO MONUMENTATION HAS BEEN SET.

4) THIS EXHIBIT IS TO SHOW THE WPAP LIMITS. ONLY THOSE AREAS THAT ARE A PORTION OF THE REFERENCED TRACTS WERE SURVEYED ON THE GROUND. THE WPAP LIMITS EXTEND OUTSIDE OF THE SURVEYED AREA AND ENCROACH INTO THE RIGHT OF WAY AS SHOWN IN EXHIBIT. THOSE AREAS SHOWN WITHIN THE RIGHT OF WAY WERE NOT SURVEYED.

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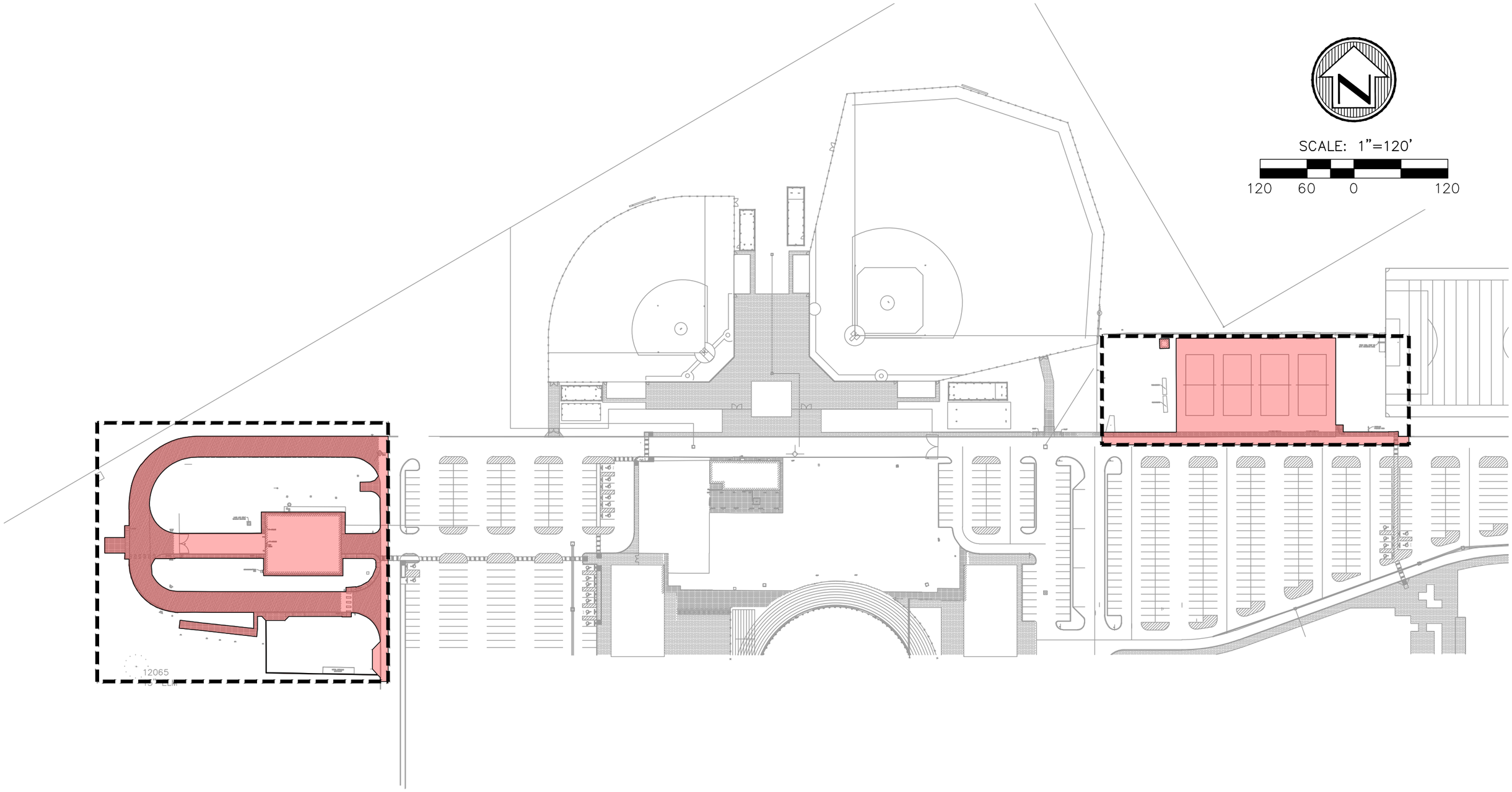

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PROJECT AREA

IMPERVIOUS COVER

TOTAL PROJECT AREA = 177,409 S.F.
EXISTING IMPERVIOUS COVER = 74,211 S.F.

CISD

DAVENPORT HIGH SCHOOL

EXISTING IMPERVIOUS COVER EXHIBIT

PROJ. #: 24046 **OCTOBER 2024**

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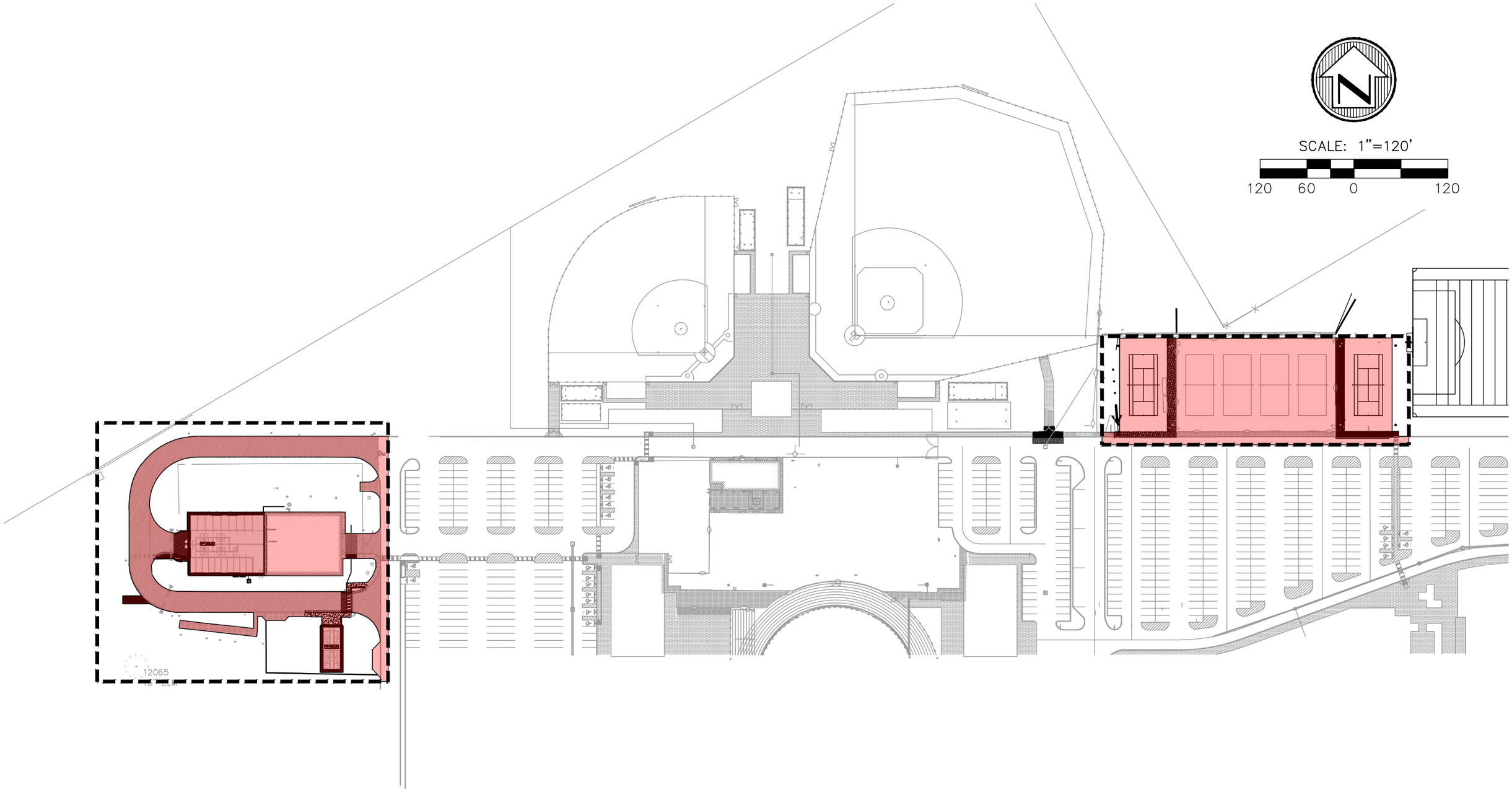

R:\COMAL ISD\DAVENPORT HS\2024 WPAP MODIFICATION\DRAWINGS\PROPOSED IMPERVIOUS COVER.DWG

MTR
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PROJECT AREA

IMPERVIOUS COVER

TOTAL PROJECT AREA = 177,409 S.F.
EXISTING IMPERVIOUS COVER = 74,211 S.F.
PROPOSED IMPERVIOUS COVER = 97,849 S.F.
INCREASE IN IMPERVIOUS COVER = 23,638 S.F.

CISD

DAVENPORT HIGH SCHOOL

PROPOSED IMPERVIOUS COVER EXHIBIT

PROJ. #: 24046 OCTOBER 2024

NOTE: THE PROPOSED MODIFICATION IS WITHIN THE LIMITS OF THE PREVOIUSLY COMPLETED GEOLOGIC ASSESMENT APPROVED WITH THE ORIGINAL WPAP AND ATTACHED BEHIND THIS COVER FOR REFERENCE

GEOLOGIC ASSESSMENT FORM (TCEQ-0585)

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

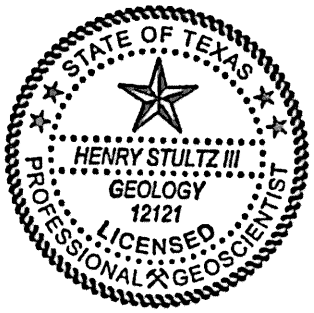
Print Name of Geologist: Henry Stultz III Telephone: 210-375-9000

Date: February 12, 2018 Fax: 210-375-9090

Representing: Pape-Dawson Engineers, Inc.

Texas Board of Professional Geoscientists No. 50351 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: COMAL ISD HS #4 – FM 3009

Project Information

1. Date(s) Geologic Assessment was performed: November 9-10, 2017; January 30, 2018
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)
Krum clay, 1 to 3 percent slopes (KrB)	C	3-7
Krum clay, 3 to 5 percent slopes (KrC)	C	3-7
Medlin-Eckrant association, 1 to 8 percent slopes (MEC)	D	3-7
Real gravelly loam, 1 to 8 percent slopes (RaD)	D	1-3
Rumple-Comfort association, 1 to 8 percent slopes (RUD)	C	2-3

** 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" = 200'

Site Geologic Map Scale: 1" = 200'
Site Soils Map Scale (if more than 1 soil type): 1" = 500'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☐ Other method(s). Please describe method of data collection: _____

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 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    ☒ The wells are not in use and have been properly abandoned.
    ☐ 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.

ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: COMAL ISD HS #4 – FM 3009																	
LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING			
1A	1B **	1C**	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILLING	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	29.66526	-98.31273	CD	5	Kdr	380	100	5	N65W	10			F,C	5	20	20			X	Hillside
S-2	29.65638	-98.31112	CD	5	Kdr/Kbu	170	70	5	N38W				F	5	10	10		X		Hillside
S-3	29.65701	-98.30817	CD	5	Kdr	130	45	2	N11W				F	5	10	10			X	Hillside
S-4	29.65677	-98.30630	CD	5	Kbu	70	70	5					F	5	10	10			X	Hillside
S-5	29.65604	-98.30849	MB	30	Kbu	0.5	0.5						F	5	35	35		X		Hilltop
S-6	29.64725	-98.30869	F	20	Kdr/Kgt Kep	2236			N89E				F	5	25	25			X	Hillside
S-7	29.65633	-98.30989	F	20	Kdr/Kbu	2233			N63E	10			F	5	35	35			X	Hillside
S-8	-29.65456	-98.31266	F	20	Kdr/Kbu	3311			N85E				F	5	25	25			X	Hillside
S-9	29.65432	-98.31031	F	20	Kdr/Kbu	934			N64E	10			F	5	35	35			X	Hillside

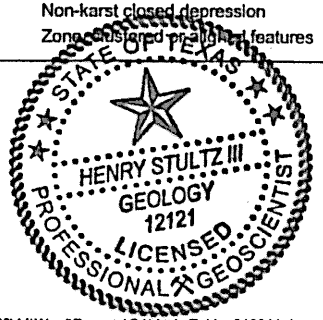
** DATUM: NAD 83

Note: Only those geologic and man-made features within that area of the assessment are included. Therefore, the features may not be numbered sequentially.

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

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

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



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

Date February 12, 2018

ATTACHMENT B

COMAL ISD HS #4 – FM 3009
Stratigraphic Column

Period	Epoch	Group	Formation	Member	Thickness	Lithology	Hydro-logic Unit	Hydrostratigraphic Unit	Hydrologic Function	Porosity	Cavern Development
Cretaceous	Late Cretaceous	Washita	Buda Limestone	--	40–50	Buff to light gray, dense nodular mudstone and wackestone containing calcite-filled veins and bluish dendrites; porcelaneous limestone that weathers from a smooth gray to grayish white; nodular surface has a conchoidal fracture; commonly contains iron nodules, iron staining, and shell frags	Upper confining unit to the Edwards aquifer	--	Confining	FR	Minor surface karst
			Del Rio Clay	--	40–50	Fossiliferous blue-green to yellow-brown clay with thin beds of packstone; contains iron nodules; *Hymatogyra arietina*		--	Confining	None	None
			George-town	--	20–30	Reddish-brown, gray to light tan, shaley mudstone and wackestone; commonly contains black dendrites, iron nodules, and iron staining; often fossiliferous with *Plesioturrilites brazoensis*, *Waconella wacoensis* common	Edwards Aquifer	I	Confining	MO	None
	Early Cretaceous	Edwards	Person	Cyclic and marine, undivided	80–90	Pelletal limestone; ranges from chalk to mudstone and miliolid grainstone; thin to massive beds; some crossbedding evident; a packstone containing large caprinids is present near contact with the overlying Georgetown Formations; chert is common as beds and large nodules		II	Aquifer	MO, BU, VUG, BP, FR, CV	Many subsurface; might be associated with earlier karst development
				Leached and collapsed,undivided	70–90	Hard, dense, recrystallized limestone:mudstone, wackestone, packstone, and grainstone; contains chert as beds and large nodules; heavily bioturbated with iron-stained beds; often stromatolitic; *Toucasia* sp. Often found above contact with the underlying regional dense member; *Montastrea roemeriana* and oysters rare		III	Aquifer	BU, VUG, FR, BP, BR, CV	Extensive lateral development; large rooms
				Regional dense	20–24	Dense, shaly limestone: oyster shell mudstone and iron wackestone; wispy iron staining; chert nodules rarer than in the rest of the chert-bearing Edwards Group		IV	Confining	FR, CV	Very few; only vertical fracture enlargement
			Kainer	Grainstone	40–50	Hard, dense limestone that consists mostly of a tightly cememnted miliolid ir skeletal fragment grainstone; contains interspersed chalky mudstone and wackestone: chert as beds and nodules; crossbedding and ripple marks are common primarily at the contact with the overlying regional dense bed		V	Aquifer	IP, IG, BU, FR, BP, CV	Few
				Kirsch-berg Evaporite	40–50	Highly altered crystalline limestone and chalky mudstone with occasional grainstone associated with tidal channels; chert as beds and nodules, boxwork molds are common, matrix recrystallized to a coarse graine spar; intervals of collapse breccia and travertine deposits		VI	Aquifer	IG, MO, VUG, FR, BR, CV	Probably extensive cave development
				Dolomitic	90–120	Hard, dense to granular, dolomitic limestone; chert as beds and nodules (absent in lower 20 ft); *Toucasia* sp. abundant; lower three-fourths composed of sucrosic dolomites and grainstones with hard, dense limestones interspersed; upper one-fourth composed mostly of hard, dense mudstone, wackestone, packstone, grainstone, and recrystallized dolomites with bioturbated beds		VII	Aquifer	IP, IC, IG, MO, BU, VUG, FR, BP, CV	Caves related to structure or bedding planes
				Basal nodular	40–50	Moderately hard, shaly, nodular, burrowed mudstone to miliolid grainstone that also contains dolomite; contains dark, spherical textural features known as black rotund bodies; *Ceratostreon texana*, *Caprina* sp., miliolids, and gastropods		VIII	Aquifer, confining unit in areas without caves	IP, MO, BU, BP, FR, CV	Large lateral caves at surface

Source: Clark, Golab, and Morris (2016); Cavern development modified from Stein and Ozuna (1995). Porosity types - Fabric selective: IP, interparticle porosity; IG, intergranular porosity; IC, intercrystalline porosity; SH, shelter porosity; MO, moldic porosity; BU, burrowed porosity; FE, fenestral; BP, bedding plane porosity. Not fabric selective: FR, fracture porosity; CH, channel porosity; BR, breccia; VUG, vug porosity; CV, cave porosity.

ATTACHMENT B

ATTACHMENT C

COMAL ISD HS #4 – FM 3009
Site Geology

NARRATIVE SUMMARY:

The overall potential for fluid migration to the Edwards Aquifer for the site is low. One sensitive geologic feature, a well, was identified on site. Four (4) faults were identified on site. The dominant trend for the site is N55^{0}E, based on an average of the trends of faults on site and in the surrounding area.

The site is within the Buda Limestone (Kbu), the Del Rio clay (Kdr), the Georgetown, and the cyclic and marine member (Kepcm) of the Person Formation of the Edwards Group.

- The Buda Limestone (Kbu) is characterized by buff, light gray, dense mudstone. Karst development in the Kbu is generally only minor.
- The Del Rio clay (Kdr) is a blue-green to yellow-brown waxy clay. Karst development within the Kdr does not occur.
- The Georgetown (Kgt) formation is characterized by reddish-brown to light tan marly limestone. Karst development within the Kgt does not occur.
- The Kepcm member is characterized by a mudstone to pack stone miliolid grainstone, and chert. Karst development within the Kepcm is characterized by small sinkholes and caves developed as vertical shafts as well as lateral rooms.

No karst features were observed on site during site reconnaissance.

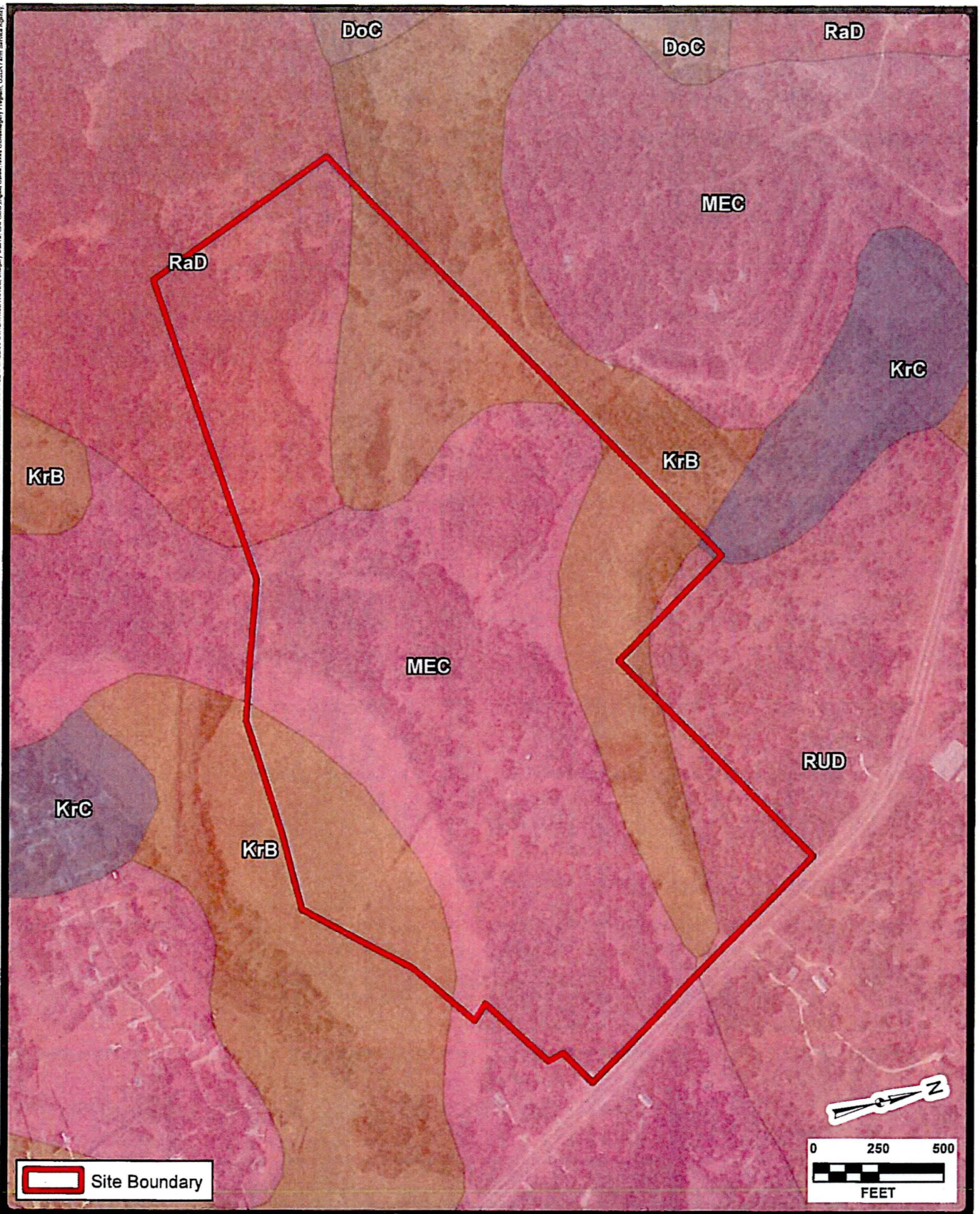
FEATURE DESCRIPTIONS:

Features S-1, S-2, S-3, and S-4
Features S-1, S-2, S-3, and S-4 are non-karst closed depressions that can be identified as ponds of water created by an earthen dam in historical aerial photographs. The features are located within the soil horizon and are of non-karst origin. Water was standing in the depressions at the time of the site visit. Due to the non-karst origin and ponding of water, the probability of rapid infiltration is low.

Feature S-5
Feature S-5 is a water well located on a hilltop near a former residence. The well is constructed with four (4) inch PVC pipe in a six (6) inch steel casing, which extends about eight (8) inches above the soil horizon. Conduit and pipe are disconnected, and the well is plugged and properly abandoned. Since the well is plugged, the probability for rapid infiltration is low.

Features S-6, S-7, S-8, and S-9
Features S-6, S-7, S-8, and S-9 are faults identified by aerial photographs and previous mapping in the vicinity of the subject site. Soil development and fine infilling are present. No areas of enhanced permeability along the fault were observed within the limits of this project. Therefore, the probability for rapid infiltration is low.

ATTACHMENT D



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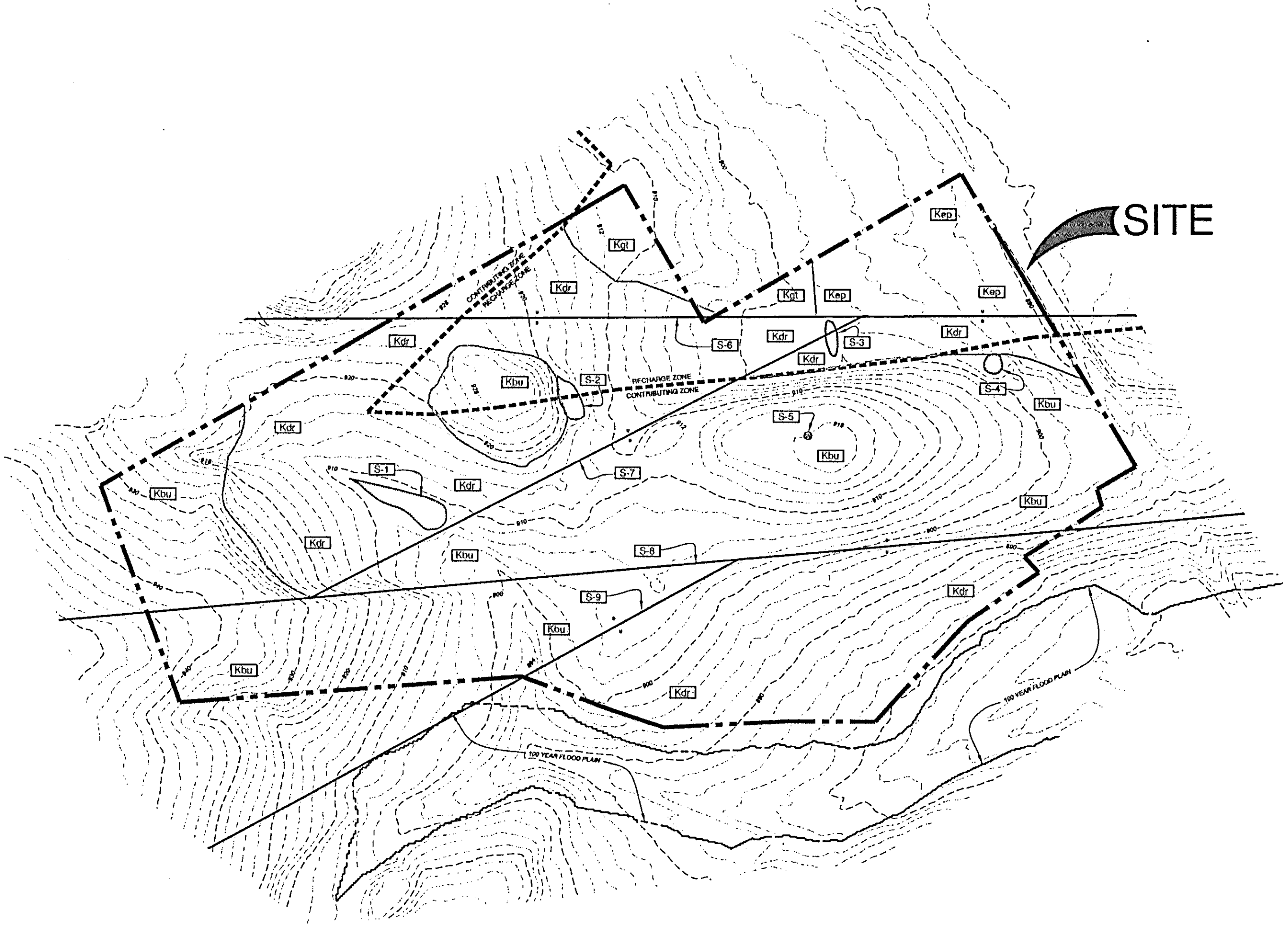
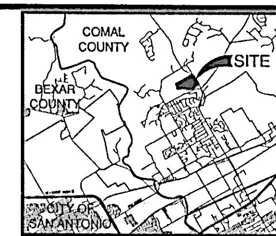
JOB NO.	8100-11
DATE	Feb 2018
DESIGNER	HS
CHECKED	HJ
DRAWN	HS
SHEET	Attachment D

COMAL ISD HS #4 – FM 3009

COMAL COUNTY, TX
SITE SOILS MAP

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800





LOCATION MAP
NOT-TO-SCALE

SCALE: 1" = 200'
0' 200' 400' 600'

LEGEND

GEOLOGIC FORMATION

Qal	ALLUVIUM	Kep	PERSON
Kbu	BUDA	Kek	KAINER
Kdr	DEL RIO	Kwa	WALNUT
Kgt	GEORGETOWN	Kgr	GLEN ROSE

- S-1 POTENTIAL RECHARGE FEATURE
- CONTACT, LOCATED APPROXIMATELY
- CONTACT, INFERRED
- FAULT, LOCATED APPROXIMATELY (D, DOWNTHROWN SIDE; U, UPTHROWN SIDE)
- FAULT, EXTRAPOLATED
- FAULT, INFERRED
- STRIKE AND DIP OF BEDDING
- STRIKE AND DIP OF JOINTS
- STRIKE OF VERTICAL JOINTS
- CAVE
- SOLUTION CAVITY
- SWALLOW HOLE
- SINKHOLE
- NON-KARST CLOSED DEPRESSION
- ZONE
- OTHER NATURAL BEDROCK FEATURES
- MAN-MADE FEATURE IN BEDROCK
- WATER WELL
- SANITARY SEWER LINE

NOTE: THE GEOSCIENTIST SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR PURPOSES OF GEOLOGIC INFORMATION. ALL OTHER INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SIGNED AND SEALED CIVIL ENGINEERING DRAWINGS.

NO.	REVISION	DATE

STATE OF TEXAS — HENRY STULTZ III — GEOLOGY — 12121 — LICENSED — PROFESSIONAL GEOSCIENTIST

February 12, 2018

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPG FIRM REGISTRATION #50351

COMAL ISD HS #4 – FM 3009
COMAL COUNTY, TX

WATER POLLUTION ABATEMENT PLAN
SITE GEOLOGIC MAP

JOB NO. 8100-11
DATE JANUARY 2018
GEOLOGIST H. STULTZ
CHECKED HJ DRAWN HS

ATTACHMENT D

Date: Feb 12, 2018, 2:37pm User ID: HStultz
File: P:\81\00\11\Design\Environmental\GA\GA8100011 - rev180126.dwg

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: Sean Smith, P.E.

Date: 10/7/24

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: CISD Davenport High School
   Original Regulated Entity Name: CISD - Comal High School #4 - FM 3009
   Regulated Entity Number(s) (RN): 110247541
   Edwards Aquifer Protection Program ID Number(s): _____
   ☒ The applicant has not changed and the Customer Number (CN) is: 600249825
   ☒ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
   - ☐ Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   - ☐ Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   - ☒ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☐ Physical modification of the approved organized sewage collection system;
   - ☐ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

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

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	See Attached Summary	113.7
Type of Development	_____	High School
Number of Residential Lots	_____	N/A
Impervious Cover (acres)	_____	33.07
Impervious Cover (%	_____	29.09
Permanent BMPs	_____	VFS/Batch Detention
Other	_____	N/A

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

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

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

5. ☒ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.

6. ☒ **Attachment C: Current Site Plan of the Approved Project**. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ☐ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☒ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☐ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   ☒ Acreage has not been added to or removed from the approved plan.

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

ATTACHMENT A

ORIGINAL AND MODIFICATION APPROVAL LETTERS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 12, 2018

Mr. Michael McCullar
Comal Independent School District
1404 IH-35 North
New Braunfels, Texas 78130

Re: Edwards Aquifer, Comal County

Name of Project: CISD-Comal High School #4 - FM 3009; Located on the west side of FM 3009 approximately 4.3 miles north of its intersection with IH-35 North; ETJ of San Antonio, Texas

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

Regulated Entity No. RN110247541; Additional ID No. 13000626

Dear Mr. McCullar:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of Comal Independent School District on February 27, 2018. Final review of the WPAP was completed after additional material was received on April 02, 2018. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 113.7 acres. It will include clearing, grading, construction of school buildings, athletic fields, a swimming pool, parking lots, driveways, sidewalks, utilities and drainage improvements. The project also proposes to construct a wastewater treatment plant, effluent storage pond and spray field. The impervious cover will be 31.22 acres (27.5 percent). Project wastewater will be disposed of by conveyance to a proposed onsite wastewater treatment plant that will be owned and operated by Comal Independent School District.

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, three batch detention basins and four engineered vegetative filter strips (VFS), 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 28,023 pounds of TSS generated from the 31.22 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

Batch detention basin "A" will have a concrete liner and will have a designed water quality volume of 55,719 cubic feet (52,236 cubic feet required). The logic controller will be programmed to retain stormwater for 12 hours before releasing it. The stormwater release valve shall be equipped with a manual override. The system shall be connected to a 120-volt power supply with a battery backup unit. The basin is designed to remove 7,828 pounds (7,271 required) of TSS from the 8.10 acres of impervious cover being directed to it. This basin has been oversized to account for 0.62 acres of uncaptured impervious cover.

Batch detention basin "B" will have a concrete liner and will have a designed water quality volume of 26,710 cubic feet (21,618 cubic feet required). The logic controller will be programmed to retain stormwater for 12 hours before releasing it. The stormwater release valve shall be equipped with a manual override. The system shall be connected to a 120-volt power supply with a battery backup unit. The basin is designed to remove 4,674 pounds (4,416 required) of TSS from the 4.92 acres of impervious cover being directed to it. This basin has been oversized to account for 0.059 acres of uncaptured impervious cover.

Batch detention basin "C" will have a concrete liner and will have a designed water quality volume of 69,288 cubic feet (68,853 cubic feet required). The logic controller will be programmed to retain stormwater for 12 hours before releasing it. The stormwater release valve shall be equipped with a manual override. The system shall be connected to a 120-volt power supply with a battery backup unit. The basin is designed to remove 14,712 pounds of TSS from the 16.23 acres of impervious cover being directed to it.

The four VFSs will be at least 15 feet wide (in the direction of flow), and will extend along the entire length of the contributing area with no gullies, rills or obstructions that will concentrate flow. The VFS will have a uniform slope of less than 20 percent, and will maintain a vegetated cover of at least 80 percent. The VFSs are designed to remove 1,157 pounds of TSS from the 1.29 acres of impervious cover being directed to them.

The proposed permanent BMPs are designed to remove 28,371 pounds (28,023 required) of TSS from 31.22 acres of impervious cover.

GEOLOGY

The site is located partially over the Edwards Aquifer Recharge Zone and the Contributing Zone within the Transition Zone. The geology of the site consists of the Buda Limestone, Del Rio Clay, Georgetown Formation, and the cyclic and marine members of the Person Formation. The geologic assessment indicated that four non-sensitive geologic features (faults), and five non-sensitive man-made features were identified on-site. A site investigation conducted by a representative of the San Antonio Regional Office on March 26, 2018 revealed the site was generally as described in the geologic assessment.

SPECIAL CONDITIONS

I. Each permanent pollution abatement measure shall be operational prior to occupancy of any facility within its respective drainage area.

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

III. This application discusses the construction of a proposed wastewater treatment plant and effluent storage pond and spray field. Additional and separate approvals, permits, or authorizations from other TCEQ programs (i.e., Wastewater, Stormwater, etc.) may be required prior to commencing regulated activities associated with the wastewater treatment plant.

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. One well exists on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

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

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

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Alex Grant of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4035.

Sincerely,

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

LB/AG/eg

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

cc: Mr. Jason Diamond, P.E., Pape-Dawson Engineers, Inc.
Mr. Tom Hornseth, P.E., Comal County
Mr. H. L. Saur, Comal Trinity Groundwater Conservation District
Mr. Scott Halty, San Antonio Water System
Mr. Roland Ruiz, Edwards Aquifer Authority

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 19, 2019

Mr. Michael McCullar
Comal Independent School District
1404 IH-35 North
New Braunfels, Texas 78130

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: CISD Comal High School #4 FM 3009; Located approximately 4.3 miles northwest of the IH-35 and FM 3009 intersection; ETJ of San Antonio, Texas

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

Regulated Entity No. RN110247541; Additional ID. No. 13000971

Dear Mr. McCullar:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification Application for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of the Comal Independent School District on July 30, 2019. Final review of the WPAP Modification was completed after additional material was received on September 13, 2019. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The CISD Comal High School #4 FM 3009 WPAP was approved by letter dated April 12, 2018 for a commercial project with an area of approximately 113.7 acres. The project included clearing, grading, construction of school buildings, athletic fields, a swimming pool, parking lots, driveways, sidewalks, utilities and drainage improvements. In addition, the project proposed to

construct a wastewater treatment plant, effluent storage pond and spray field. The impervious cover totaled 31.22 acres (27.45 percent). Three batch detention basins and four engineered vegetative filter strips were proposed as permanent BMPs.

PROJECT DESCRIPTION

This project proposes additional grading, installation of utilities, and installation of drainage improvements within the 113.7-acre site in order to construct an agricultural barn and poultry house along with associated parking and drives, and a golf driving range. Impervious cover for this project is 1.31 acres. Total site impervious cover totals 32.53 acres (28.61 percent). Project wastewater will be disposed of by conveyance to the proposed CISD Comal High School #4 Wastewater Treatment Plant to be owned and operated by the Comal Independent School District.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction, the existing batch detention basin "C" and a 50-foot natural vegetative filter strip, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 1,176 pounds of TSS generated from the 1.31 acres of impervious cover. The approved measure meets the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the geologic assessment included with the application, the site lies within the Buda Limestone, Del Rio Clay, Georgetown Formation and the cyclic and marine members of the Person Formation. Four (4) non-karst closed depressions, four (4) non-sensitive geologic features and one (1) non-sensitive manmade feature were noted by the project geologist. The site assessment conducted on August 22, 2019 revealed that the site was generally as described in the application.

SPECIAL CONDITION

I. All sediment and/or media removed from the existing batch detention basin "C" 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. One well exists on the site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

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

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

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

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

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

Sincerely,

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

RCS/dpm

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

cc: Mr. Jason T. Diamond, P.E., Pape-Dawson Engineers, Inc.
Mr. Thomas Hornset, P. E., Comal County
Mr. H. L. Saur, Comal Trinity Groundwater Conservation District
Mr. Scott Halty, San Antonio Water System
Mr. Roland Ruiz, Edwards Aquifer Authority

ATTACHMENT B

NARRATIVE OF PROPOSED MODIFICATION

A Water Pollution Abatement Plan (WPAP) was first approved by the Texas Commission on Environmental Quality on April 12, 2018. The plan was modified on September 19, 2019 to include additional grading, installation of utilities, and the installation of drainage improvements.

A WPAP Exception Request was submitted to TCEQ on 9/17/2024 for demolition and earthwork associated with a building and tennis courts addition at Davenport High School. This modification application is for the proposed construction associated with the addition. The increase in impervious cover associated with these improvements will be treated with a combination of the existing batch detention basins, existing natural vegetative filter strips (VFS), and new engineered VFS. The proposed impervious cover for the site will be 33.07 acres (29.09%), an increase of 0.54 acres from the 32.53 acres of impervious cover recorded in the 2019 modification approval letter.

Davenport High School is located at 23255 FM3009, San Antonio, TX 78266 and is partially located over the Edwards Aquifer Recharge Zone. Current development consists of an existing high school.

ATTACHMENT C

CURRENT SITE PLAN OF THE APPROVED PROJECT

PROJECT LIMITS
(113.7 ACRES)

REMAINING PORTION
50.433 ACRES
OWNER: HERBERT J. CLARK
VOL. 255, PG. 199 D.R.

3.23 ACRES
OWNER: JEROME J. DZIUK, JR. AND SHIRLEY A. DZIUK, TRUSTEES
DOC. NO. 20140604403 O.P.R.

21.133 ACRES
OWNER: JOMARIE RIEDEL CLARK
VOL. 255, PG. 208 D.R.

3.28 ACRES
OWNER: JEROME J. DZIUK JR. AND SHIRLEY A. DZIUK, TRUSTEES
DOC. NO. 20170604250 O.P.R.

7.00 GRID ACRE
OWNER: JEROME J. DZIUK JR. AND SHIRLEY A. DZIUK, TRUSTEES
DOC. NO. 20170604250 O.P.R.

3.29 ACRES
OWNER: COMAL INDEPENDENT SCHOOL DISTRICT
DOC. NO. 20170603554 O.P.R.

306.16 ACRES
OWNER: RIEDEL FAMILY PARTNERS, LTD
VOL. 824, PG. 323 O.P.R.R.
DESCRIBED IN VOL. 81, PG. 431 O.R. AND
DESCRIBED IN VOL. 81, PG. 432 D.R.

CONTRIBUTING ZONE
RECHARGE ZONE

SOFTBALL FIELD
BASEBALL FIELD
CONCESSIONS 1
TENNIS COURTS
WATER QUALITY BASIN A
POULTRY HOUSE
AG BARN
AG BARN
CONCESSIONS 2
GOLF DRIVING RANGE
FOOTBALL STADIUM, TRACK & FIELD
MAIN BUILDING
DETENTION POND
USE DETENTION POND AS SEDIMENT TRAP
CENTRAL PLANT
WATER QUALITY BASIN B
WASTE WATER TREATMENT PLANT
WATER QUALITY BASIN C
EFFLUENT STORAGE POND

218.24 GRID ACRES
OWNER: COMAL INDEPENDENT SCHOOL DISTRICT
DOC. NO. 20170603594 O.P.R.

LIMITS OF EFFLUENT SPRAY AREA

10.264 ACRES
OWNER: PROPERTY OWNERS' ASSOCIATION FOR GEORG RANCH, INC.
DOC. NO. 20060606981 O.P.R.

REMAINING PORTION
3 ACRES
OWNER: BETTE DEASON
VOL. 197, PG. 192 D.R.

0.486 AC
OWNER: CHARLES N. DEASON
DOC. NO. 20130604283 O.P.R.

0.651 ACRE
OWNER: CHARLES N. DEASON
VOL. 269, PG. 856 D.R.

REMAINING PORTION
3 ACRES
OWNER: BETTE DEASON
VOL. 137, PG. 192 D.R.

100 YEAR FEMA FLOOD PLAIN

PROPOSED OFFSITE 16" PUBLIC MAIN EXTENSION (BID PACKAGE 0)

25' WATER EASEMENT

85' UTILITY EASEMENT
INSTRUMENT NO.
20160603468 3

REMAINING PORTION OF 160 ACRES
OWNER: CLARINE L. SYAMKEN AND BENNIE E. SYAMKEN
DOC. NO. 467180 O.P.R.

GEORG RANCH SUBDIVISION - UNIT 9
DOC. NO. 20060604269 M.P.R.
BLOCK 10
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12

DRAINAGE R.O.W.
VOL. 14, PG. 42 M.P.R.

LOT 3
LOT 4
LOT 5

FM 3009
BAT CAVE RD
EVANS RD

RECEIVED
TCEQ-R13 (EAPP)
JUL 30 2019
SAN ANTONIO

LOCATION MAP
NOT-TO-SCALE

COMAL COUNTY
BEXAR COUNTY
CITY OF SAN ANTONIO
SITE

LEGEND

Qal	ALLUVIUM
Kbu	BUDA LIMESTONE
Kdr	DEL RIO CLAY
Kgt	GEORGETOWN FORMATION
Kep	PERSON FORMATION
Kek	KAINER FORMATION
Kgru	GLEN ROSE FORMATION (UPPER)
S-1	POTENTIAL RECHARGE FEATURE
	DRAINAGE PATHWAY
	CONTACT, LOCATED APPROXIMATELY
U D	FAULT, LOCATED APPROXIMATELY (D, downthrown side; U, upthrown side)
	FAULT, EXISTENCE UNCERTAIN
	POSSIBLE FAULT (as located by aerial photographs)
	STRIKE AND DIP OF BEDDING
	STRIKE AND DIP OF JOINTS
	STRIKE OF VERTICAL JOINTS
	CAVE
	NON-KARST CLOSED DEPRESSION
	SINKHOLE
	SOLUTION CAVITY
	OTHER NATURAL BEDROCK FEATURES: VUGGY ROCK, REEF DEPOSITS
	ZONE
MH	MAN-MADE FEATURE IN BEDROCK
W	WATER WELL
SS	SANITARY SEWER LINE
	PROJECT LIMITS
	EDWARDS AQUIFER BOUNDARY LINE

SCALE: 1"= 200'
0' 200' 400' 600'

NO.	REVISION	DATE

STATE OF TEXAS
JASON T. DIAMOND
96532
LICENSED
PROFESSIONAL ENGINEER
Jason T. Diamond
7/29/19

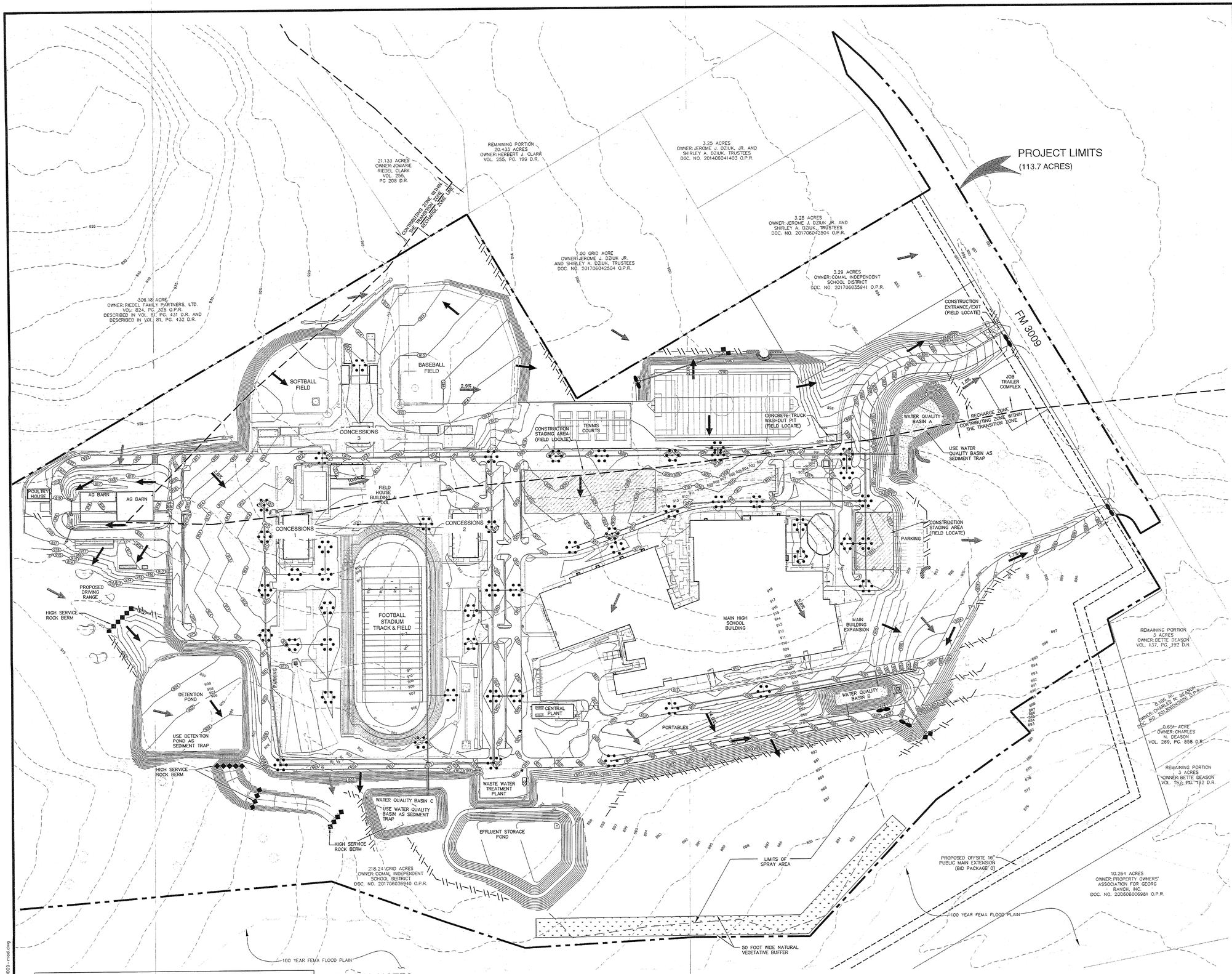
PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2806 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

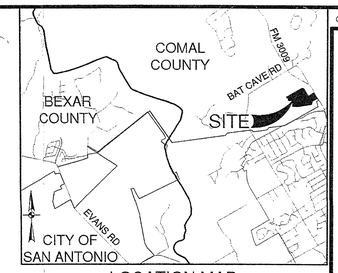
COMAL I.S.D. HIGH SCHOOL #4
COMAL COUNTY, TEXAS

OVERALL SITE PLAN

PLAT NO.
JOB NO. 8100-09
DATE FEB. 2018
DESIGNER JP
CHECKED JD DRAWN RO
SHEET 1 OF 1

Date: Jul 29, 2019, 3:33pm User ID: EPosey
File: P:\81\00\09\Design\Environmental\WP\AP\0\A810009-M00.dwg





LOCATION MAP
NOT-TO-SCALE

LEGEND

- PROJECT LIMITS
- 910 EXISTING GRADE
- 910 PROPOSED GRADE
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SILT FENCE
- ROCK BERM
- GRATE INLET PROTECTION
- GRAVEL FILTER BAGS
- SEDIMENT CONTROL ROLLS
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)
- CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)
- EXISTING TREES TO REMAIN
- 100 YEAR FLOODPLAIN

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

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   – THE NAME OF THE APPROVED PROJECT;
   – THE ACTIVITY START DATE; AND
   – THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

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

3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.

5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.

7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.

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

10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.

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

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;
B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

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

Revision / Date

STATE OF TEXAS
JASON T. DIAMOND
96532
LICENSED
PROFESSIONAL ENGINEER
7/29/19

Project: HIGH SCHOOL 4 FOR COMAL I.S.D. COMAL COUNTY, TEXAS

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TCEQ-R13 (EAPP)
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TEMPORARY BMP MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

GENERAL NOTES

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
2. LOCATIONS OF CONSTRUCTION ENTRANCE/EXITS, CONCRETE WASHOUT PITS, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARDS TO BE DETERMINED IN THE FIELD.
3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
6. CONTRACTOR, TO THE EXTENT PRACTICAL, SHALL MINIMIZE THE AMOUNT OF AREA DISTURBED. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
7. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.
8. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED.
9. ALL TEMPORARY BMPs WILL BE REMOVED ONCE WATERSHED IS STABILIZED.
10. MUD OR DIRT INADVERTENTLY TRACKED OFF-SITE AND ONTO EXISTING STREETS SHALL BE REMOVED IMMEDIATELY BY HAND OR MECHANICAL BROOM SWEEPING.
11. PRIOR TO INITIATION OF SUBSEQUENT PHASES OF CONSTRUCTION, TEMPORARY BMPs INCLUDING SILT FENCING, CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND CONSTRUCTION STAGING AREA SHALL BE FIELD LOCATED AS APPROPRIATE FOR THE AREA OF CONSTRUCTION.
12. TEMPORARY POLLUTION ABATEMENT MEASURES SHOWN ON THE PLAN ARE FOR THE OVERALL DEVELOPMENT. TEMPORARY BMPs MAY REQUIRE ADJUSTMENT BASED ON PHASING OF CONSTRUCTION OF THE DEVELOPMENT. RECORDS OF ADJUSTMENTS AND REVISIONS SHALL BE MAINTAINED AS APPROPRIATE.
13. TEMPORARY BMPs SHOWN ON THIS SHEET ARE FOR GRAPHICAL PURPOSES AND MAY NOT BE TO SCALE. BMPs SHALL BE LOCATED WITHIN THE PROJECT LIMITS.
14. UPON COMPLETION OF THE PROJECT AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION SEQUENCING AND REMOVAL OF TEMPORARY POLLUTION ABATEMENT MEASURES THAT CONFLICT WITH SITE IMPROVEMENTS SUCH AS LANDSCAPING AND FENCES SO AS TO PREVENT SEDIMENT FROM ESCAPING THE PROJECT SITE.

SCALE: 1"= 100'
0' 100' 200' 300'

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

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

EXHIBIT 1

TEMPORARY WATER POLLUTION ABATEMENT PLAN
PACKAGE: BP6

Job No.	Sheet No.
1785-01-01	C2.00
Drawn By: JTD	
Date: 06-30-2019	

Date: Jul 29, 2019, 1:45pm User: rth EPsize
File: J:\JOB\00\03\Design\Environmental\WPAP\TMB10003-misc.dwg

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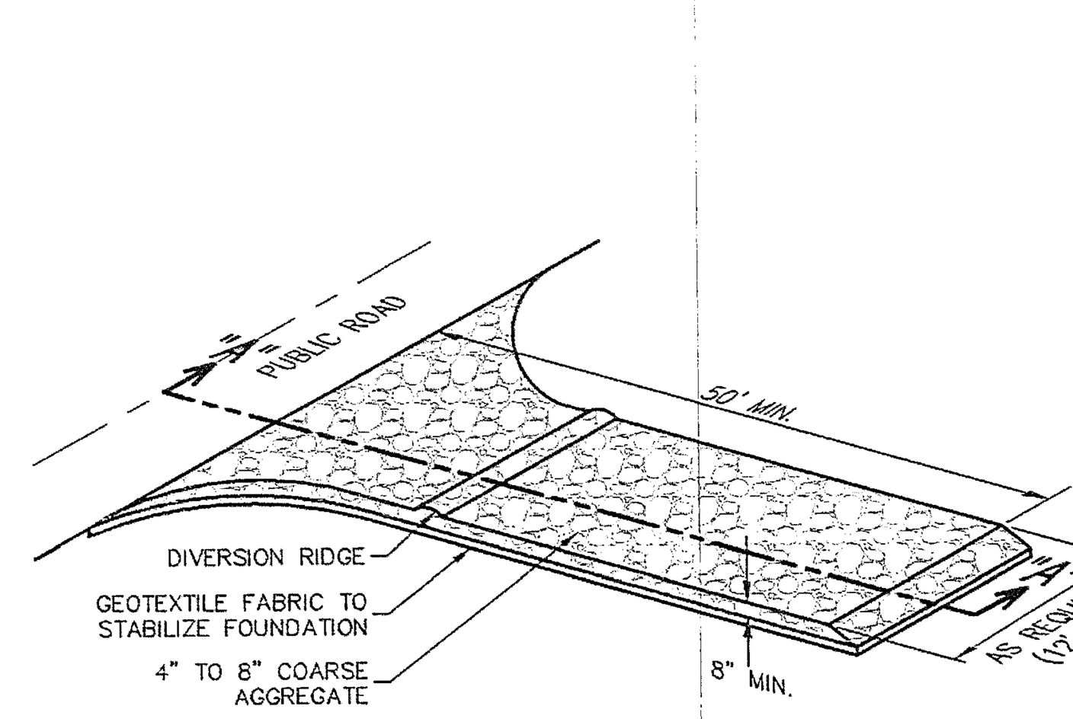
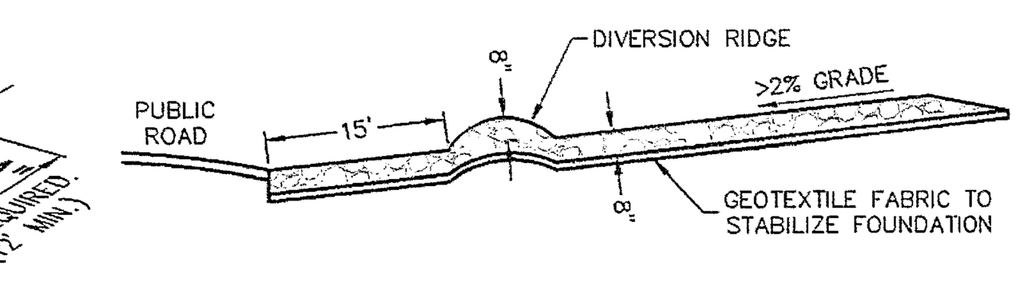


SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT

MATERIALS

1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-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 ROCK 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-INCHES 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.

COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD.

2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.

3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.

4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.

5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING 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.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE

COMMON TROUBLE POINTS

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

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

3. INTERNAL SILT FENCE NOT ANCHORED SECURELY TO GROUND (HIGH FLOWS DISPLACING BERM).

4. WHEN INSTALLED IN STREAMBEDS, THEY OFTEN RESULT IN DIVERSION SCOUR, SO THEIR USE IN THIS SETTING IS NOT RECOMMENDED.

COMMON TROUBLE POINTS

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

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER.

3. REPAIR ANY LOOSE WIRE SHEATHING.

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

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

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

INSTALLATION

LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1-INCH OPENINGS.

INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT, AS WITH A NORMAL SILT FENCE DESCRIBED IN SECTION 2.4.3.

PLACE THE ROCK ALONG THE SHEATHING ON BOTH SIDES OF THE SILT FENCE AS SHOWN IN THE DIAGRAM (FIGURE 1-29), TO A HEIGHT NOT LESS THAN 24 INCHES. CLEAN, OPEN GRADED 3" TO 5" DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5" TO 8" DIAMETER ROCK MAY BE USED.

WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

THE HIGH SERVICE ROCK BERM SHOULD BE REMOVED WHEN THE SITE IS REVEGETATED OR OTHERWISE STABILIZED OR IT MAY REMAIN IN PLACE AS A PERMANENT BMP IF DRAINAGE IS ADEQUATE.

GENERAL NOTES

A HIGH SERVICE ROCK BERM SHOULD BE DESIGNATED IN AREAS OF IMPORTANT ENVIRONMENTAL SIGNIFICANCE SUCH AS IN STEEP CANYONS OR ABOVE PERMANENT SPRINGS, POOLS, RECHARGE FEATURES, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS THAT MAY REQUIRE A HIGHER LEVEL OF PROTECTION. THE DRAINAGE AREA TO THIS DEVICE SHOULD NOT EXCEED 5 ACRES AND THE SLOPE SHOULD BE LESS THAN 30%.

MATERIALS

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.

FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT², AND BRINDELL HARDNESS EXCEEDING 140. REBAR (EITHER #5 OR #6) MAY ALSO BE USED TO ANCHOR THE BERM.

WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

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

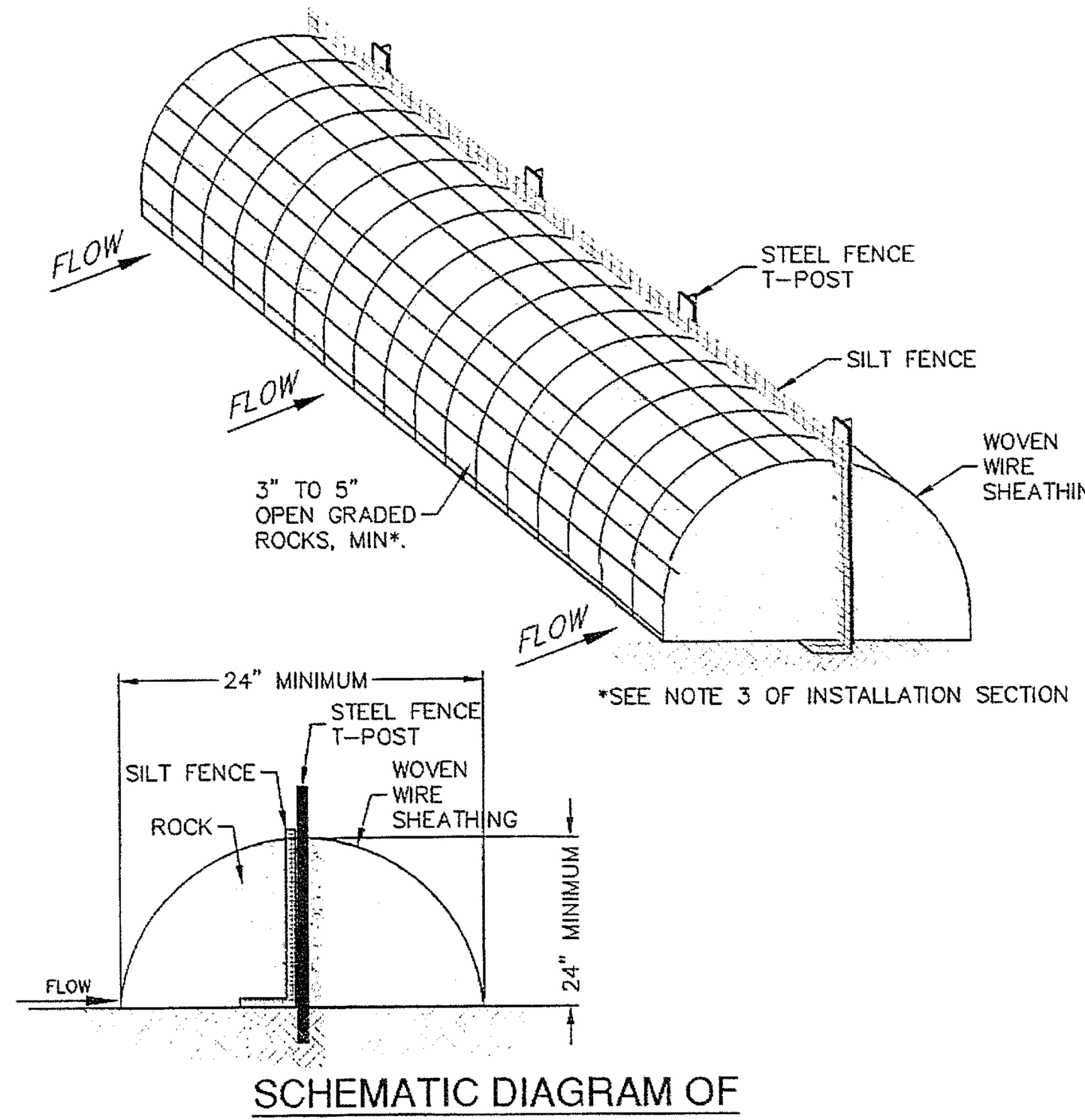
CLEAN, OPEN GRADED 3- TO 5- INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8- INCH DIAMETER ROCKS MAYBE USED.

4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.

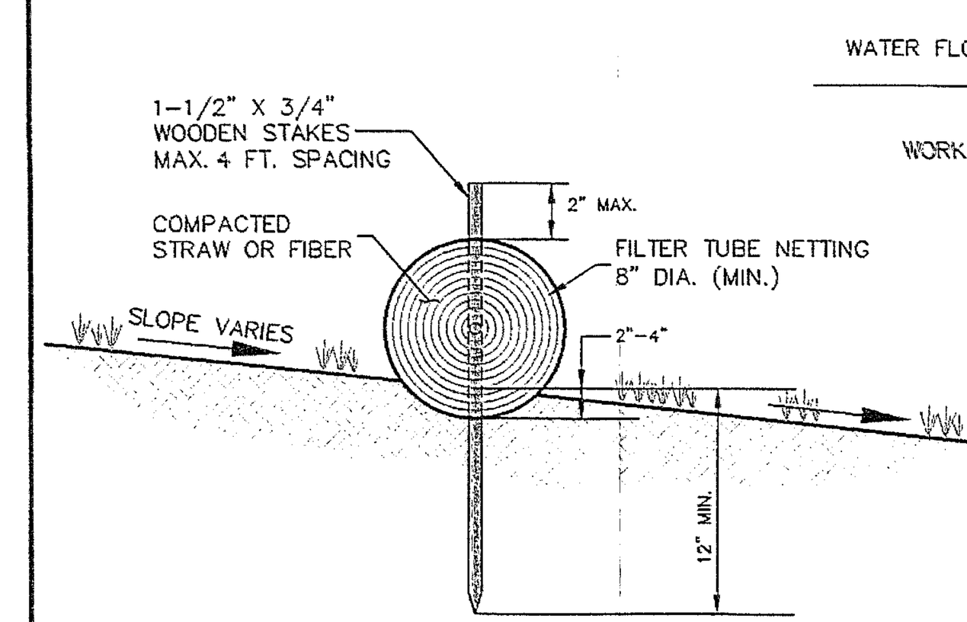
5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

HIGH SERVICE ROCK BERM

NOT-TO-SCALE

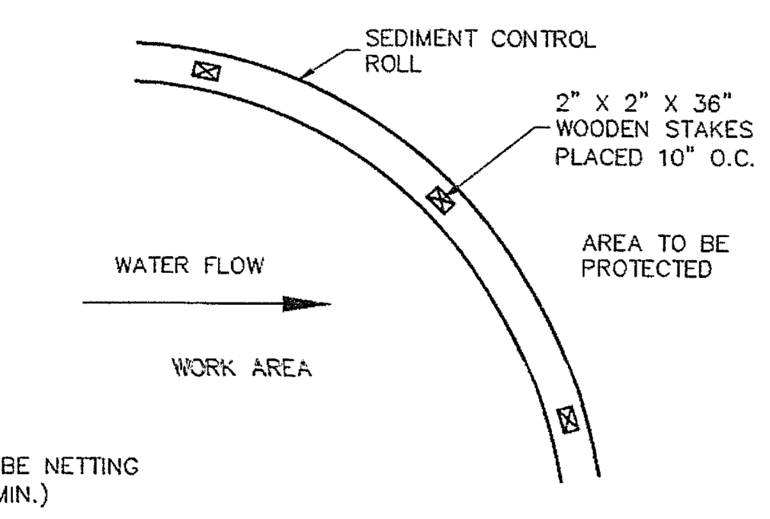


SCHEMATIC DIAGRAM OF HIGH SERVICE ROCK BERM (LCRA, 1998)



CROSS-SECTION

NOT-TO-SCALE



PLAN VIEW

NOT-TO-SCALE

INSTALLATION

1. REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED ROLLS WILL HAVE DIRECT CONTACT WITH THE SOIL.

2. A SMALL TRENCH, 2-4 INCHES IN DEPTH SHOULD BE EXCAVATED ON THE SLOPE CONTOUR AND PERPENDICULAR TO WATER FLOW. SOIL FROM THE EXCAVATION SHOULD BE PLACED UPSLOPE NEXT TO THE TRENCH.

3. INSTALL THE ROLLS IN THE TRENCH, INSURING THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE ROLL. ROLL SHOULD BE LAPPED 6" MINIMUM TO PREVENT SEDIMENT PASSING THROUGH THE FIELD JOINT.

4. WOODEN STAKES SHOULD BE USED TO FASTEN THE ROLLS TO THE SOIL. WHEN CONDITIONS WARRANT, A STRAIGHT METAL BAR CAN BE USED TO DRIVE A "PILOT HOLE" THROUGH THE ROLL AND INTO THE SOIL.

5. WOODEN STAKES SHOULD BE PLACED 6" FROM THE ROLL END ANGLED TOWARDS THE ADJACENT ROLL AND SPACED AT 4 FEET CENTERS LEAVING LESS THAN 1-2 INCHES OF STAKE EXPOSED ABOVE THE ROLL. ALTERNATELY, STAKES MAY BE PLACED ON EACH SIDE OF THE ROLL TYING ACROSS WITH WITH A NATURAL FIBER TWINE OR STAKING IN A CROSSING MANNER ENSURING DIRECT SOIL CONTACT AT ALL TIMES.

6. TERMINAL ENDS OF ROLLS MAY BE "DOG LEGGED" UP SLOPE TO ENSURE CONTAINMENT AND PREVENT CHANNELING OF SEDIMENT.

7. BACKFILL THE UPSLOPE LENGTH OF THE ROLL WITH THE EXCAVATED SOIL AND COMPACT.

8. CARE SHALL BE TAKEN DURING INSTALLATION SO AS TO AVOID DAMAGE OCCURRING TO THE ROLL AS A RESULT OF THE INSTALLATION PROCESS. SHOULD THE ROLL BE DAMAGED DURING INSTALLATION, A WOODEN STAKE SHALL BE PLACED EITHER SIDE OF THE DAMAGED AREA TERMINATING THE LOG SEGMENT.

INSPECTION AND MAINTENANCE

1. THE SEDIMENT CONTROL ROLLS SHALL BE INSPECTED AFTER INSTALLATION TO INSURE THAT THEY ARE TRENCHED-IN AND THAT NO GAPS EXIST UNDER THE ROLLS OR BETWEEN ADJACENT ENDS OF THE ROLLS.

2. ROLLS SHALL BE INSPECTED AFTER SIGNIFICANT RAINFALL EVENTS. RILLS OR GULLIES UPSLOPE OF THE ROLL AND ANY UNDERCUTTING IS TO BE REPAIRED.

SEDIMENT CONTROL ROLLS

SEDIMENT CONTROL ROLLS ARE ELONGATED TUBES OF COMPACTED STRAW AND/OR OTHER FIBERS THAT ARE INSTALLED ALONG CONTOURS OR AT THE BASE OF SLOPES TO HELP REDUCE SOIL EROSION AND RETAIN SEDIMENT. THEY FUNCTION BY SHORTENING SLOPE LENGTH, REDUCING RUNOFF WATER VELOCITY, TRAPPING DISLODGED SOIL PARTICLES AND REDUCING THE EFFECTS OF SLOPE STEEPNESS.

MATERIALS

CORE MATERIAL: CORE MATERIALS SHALL BE BIODEGRADABLE NAD NOXIOUS WEED FREE. MATERIAL MAY BE COMPOST, MULCH, ASPEN EXCELSIOR WOOD FIBERS, CHIPPED SITE VEGETATION, AGRICULTURAL RICE OR WHEAT STRAW, COCONUT FIBER, OR OTHER 100% BIODEGRADABLE FIBERS.
CONTAINMENT MESH: CONTAINMENT MESH SHALL BE 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE SUCH AS BURLAP TWINE, UV PHOTODEGRADABLE PLASTIC OR POLYESTER.
USE BIODEGRADABLE OR PHOTODEGRADABLE MESH WHEN WATTLE WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. USE RECYCLABLE MESH FOR TEMPORARY INSTALLATIONS.
WATTLES SHALL HAVE A MINIMUM DIAMETER OF 8 INCHES AND A MAXIMUM DIAMETER OF 20 INCHES.
NO MORE THAN 5% OF THE FILL MATERIAL SHALL BE PERMITTED TO ESCAPE FROM THE CONTAINING MESH. MESH SHALL BE 0.5" X 0.5" HIGH DENSITY POLYETHYLENE AND ETHYLY VINYL ACETATE AND CONTAIN ULTRA-VIOLET INHIBITORS. WATTLE ENDS SHALL BE TIED CLOSED.

SEDIMENT CONTROL ROLLS IN A TEMPORARY EROSION CONTROL APPLICATION

WHEN NO LONGER REQUIRED FOR THE INTENDED PURPOSE, TEMPORARY ROLLS SHALL BE REMOVED FROM THE SITE. AS AN OPTION, THE STRAW ROLLS MAY BE SLIT DOWN THE LENGTH OF THE NETTING AND THE STRAW MAY BE USED ON SLOPES OR OTHER AREAS.

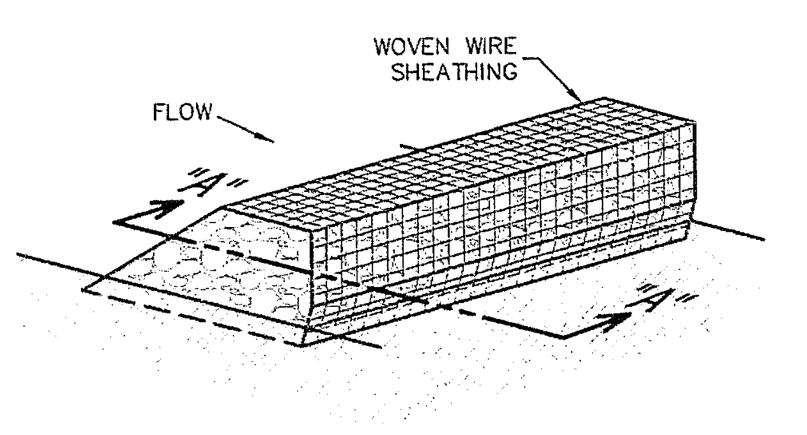
TRENCHES, DEPRESSIONS OR ANY OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY STRAW ROLLS SHALL BE BACKFILLED AND REPAIRED WITH THE EXCESS SEDIMENT CAPTURED BY THE ROLLS, PRIOR TO SPREADING THE STRAW OR OTHER FINAL EROSION CONTROL PROTECTION.

SEDIMENT CONTROL ROLLS IN A PERMANENT EROSION CONTROL APPLICATION

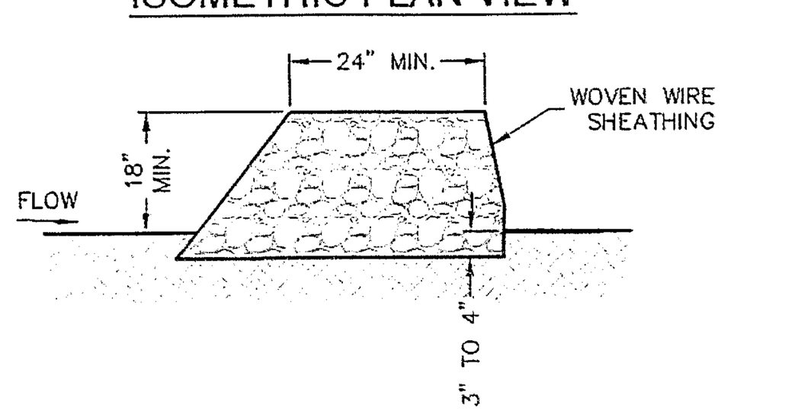
LEAVE ROLLS AS INSTALLED TO PHOTODEGRADE OR BIODEGRADE OVER TIME AS NATIVE AND APPLIED VEGETATION ULTIMATELY STABILIZE THE REPAIRED SITE.

SEDIMENT CONTROL ROLLS

NOT-TO-SCALE



ISOMETRIC PLAN VIEW



SECTION "A-A"

ROCK BERMS

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

INSPECTION AND MAINTENANCE GUIDELINES

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

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

3. REPAIR ANY LOOSE WIRE SHEATHING.

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

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

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

MATERIALS

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

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

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.

2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.

3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".

4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

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

6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

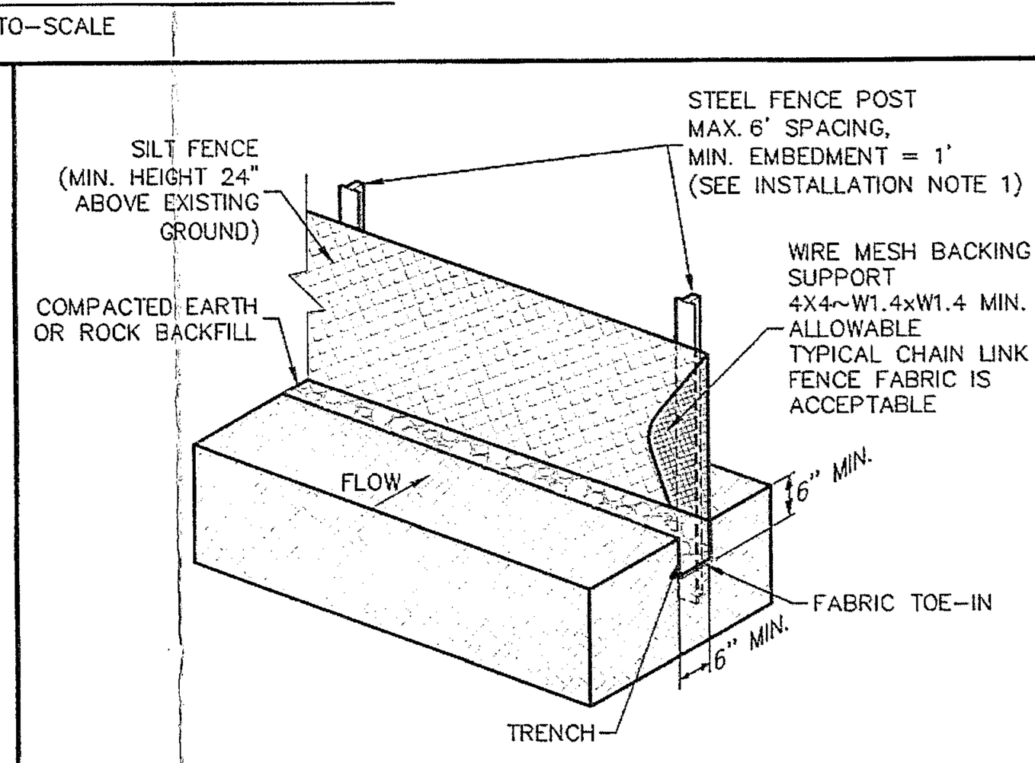
COMMON TROUBLE POINTS

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

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

ROCK BERM DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW

SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC 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 NUMBER 30.

2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.

3. WOVEN WIRE BACKING 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. POSTS 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 AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ 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 OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES).

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECT ALL FENCING WEEKLY, AND AFTER RAINFALL.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.

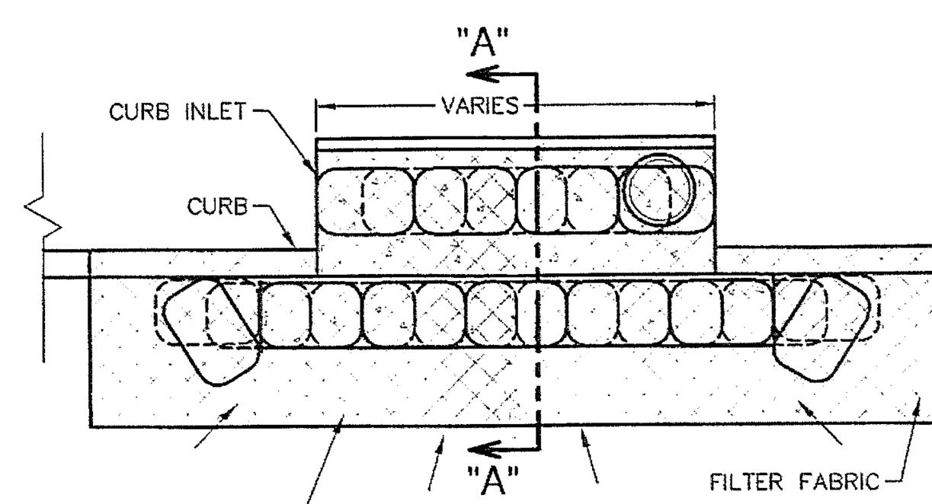
3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR 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.

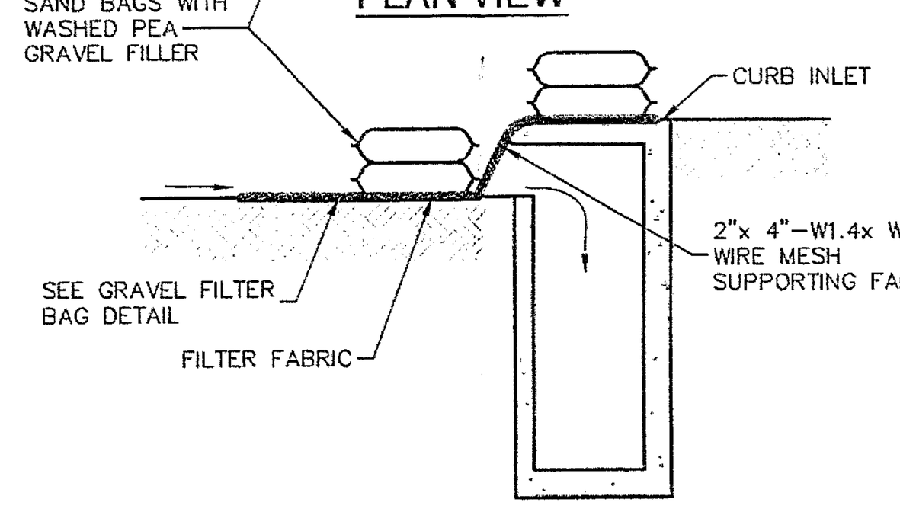
5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

SILT FENCE DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.

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

INSPECTION AND MAINTENANCE GUIDELINES

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

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

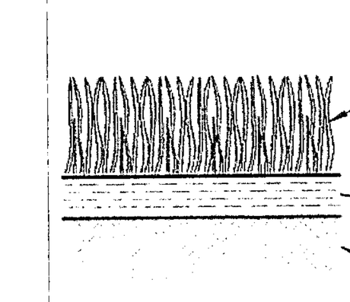
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

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

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

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE

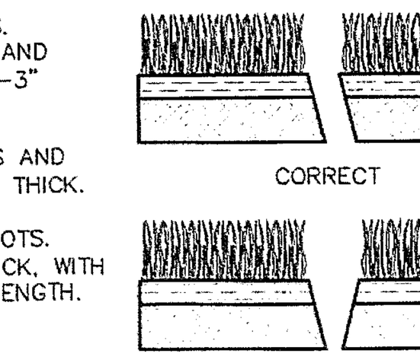


APPEARANCE OF GOOD SOD

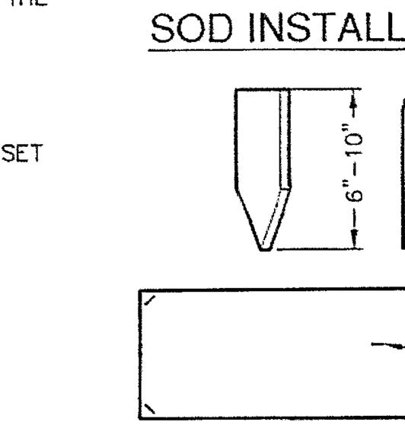
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

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

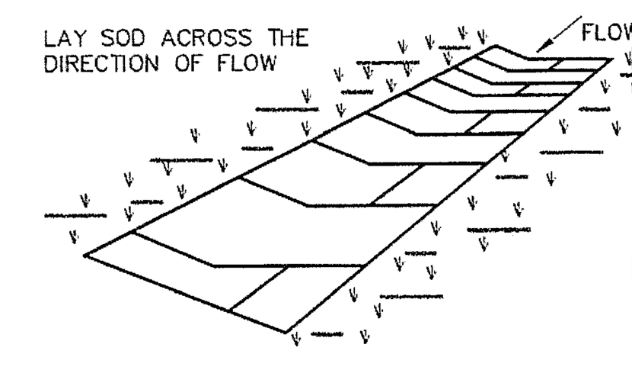
3. MOW WHEN THE SOD IS ESTABLISHED - IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

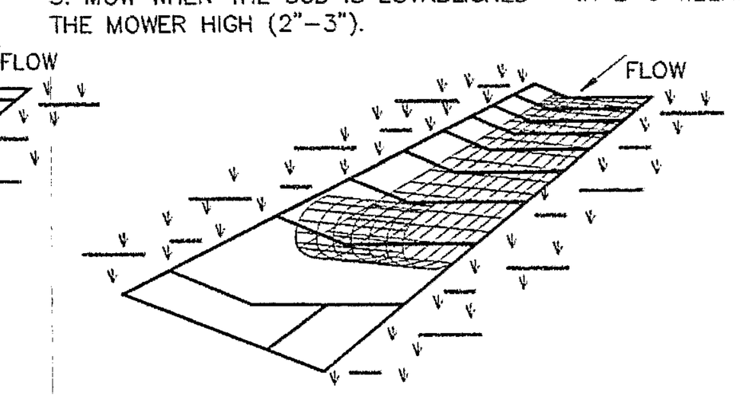


SOD INSTALLATION



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





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

MATERIALS

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

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

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

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

SITE PREPARATION

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

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

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

INSTALLATION IN CHANNELS

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

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

GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)

1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.

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

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

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

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

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

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

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

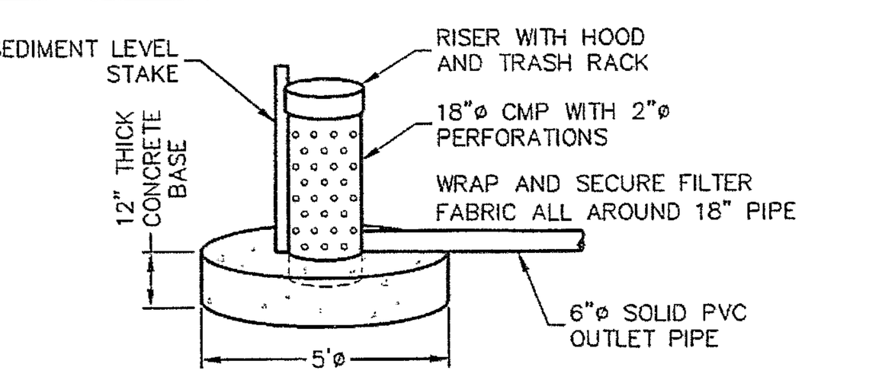
INSPECTION AND MAINTENANCE GUIDELINES

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

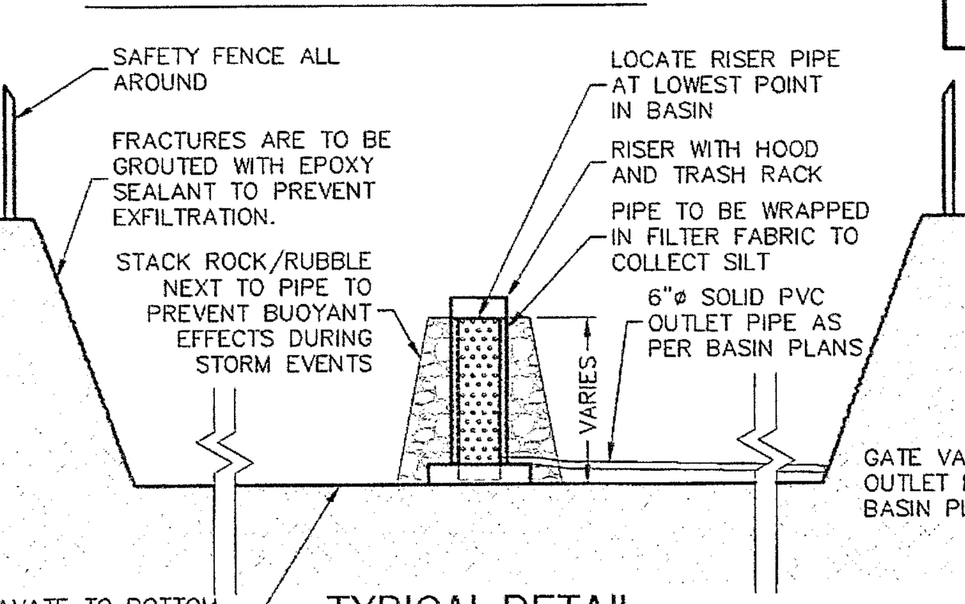
2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT-TO-SCALE



OUTLET STRUCTURE DETAIL



TYPICAL DETAIL

TEMPORARY SEDIMENT POND DETAIL

NOT-TO-SCALE

TEMPORARY SEDIMENTATION BASIN NOTES

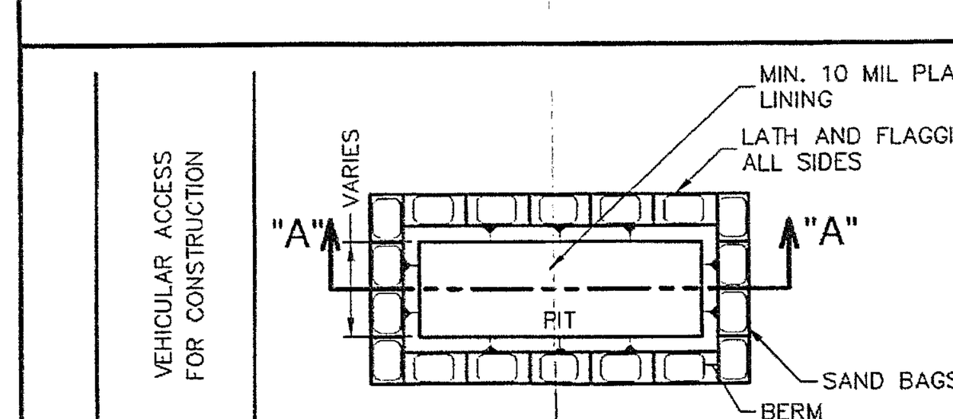
1. CONTRACTOR TO CONSTRUCT BASINS IN ACCORDANCE WITH CONSTRUCTION PLANS FOR PERMANENT SEDIMENTATION/ FILTRATION WITH THE EXCEPTION OF THE GRAVEL DRAIN LAYER AND SAND FILTER LAYERS.

2. INSTALL PERMANENT STAKE TO INDICATE SEDIMENT LEVEL IN THE BASIN. STAKE SHOULD BE MARKED TO INDICATE WHEN SEDIMENT OCCUPIES 50% OF THE VOLUME OF THE BASIN.

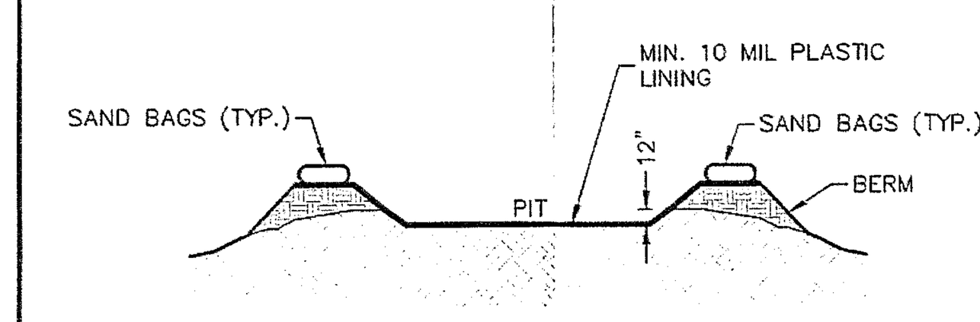
3. SEDIMENT WILL BE REMOVED WHEN MORE THAN 50% OF THE BASIN CAPACITY IS EXCEEDED.

4. CONTRACTOR TO SECURE PIPE TO BOTTOM OF BASIN TO PREVENT BUOYANCY DURING A RAIN EVENT. A CONCRETE ANCHOR MAY BE USED.

5. DISCHARGE PIPE TO BE INSTALLED SO AS TO BE IN PLACE FOR PERMANENT STRUCTURE.



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

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

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

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

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

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

MATERIALS

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

MAINTENANCE

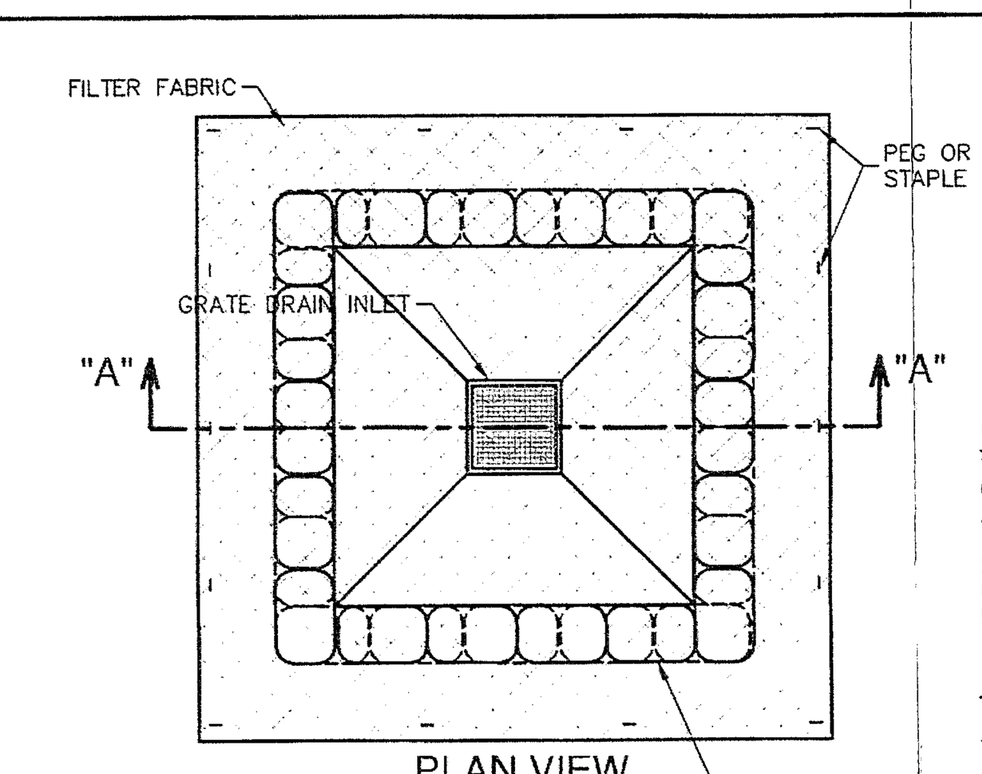
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

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

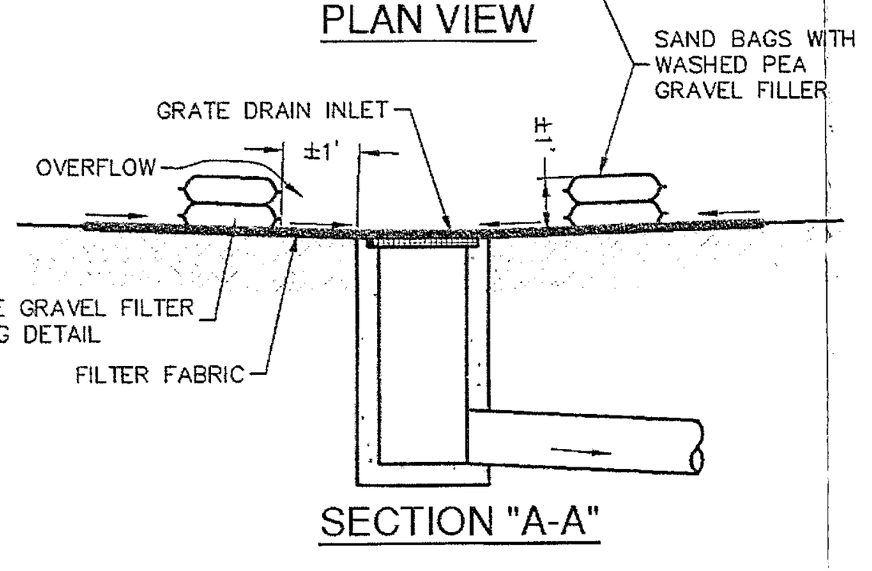
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

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

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

INSPECTION AND MAINTENANCE GUIDELINES

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

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

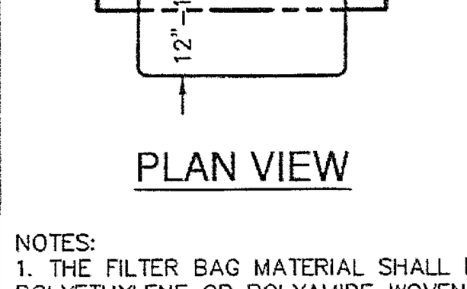
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

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

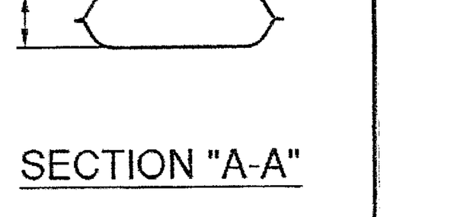
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL GRATE INLET PROTECTION DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

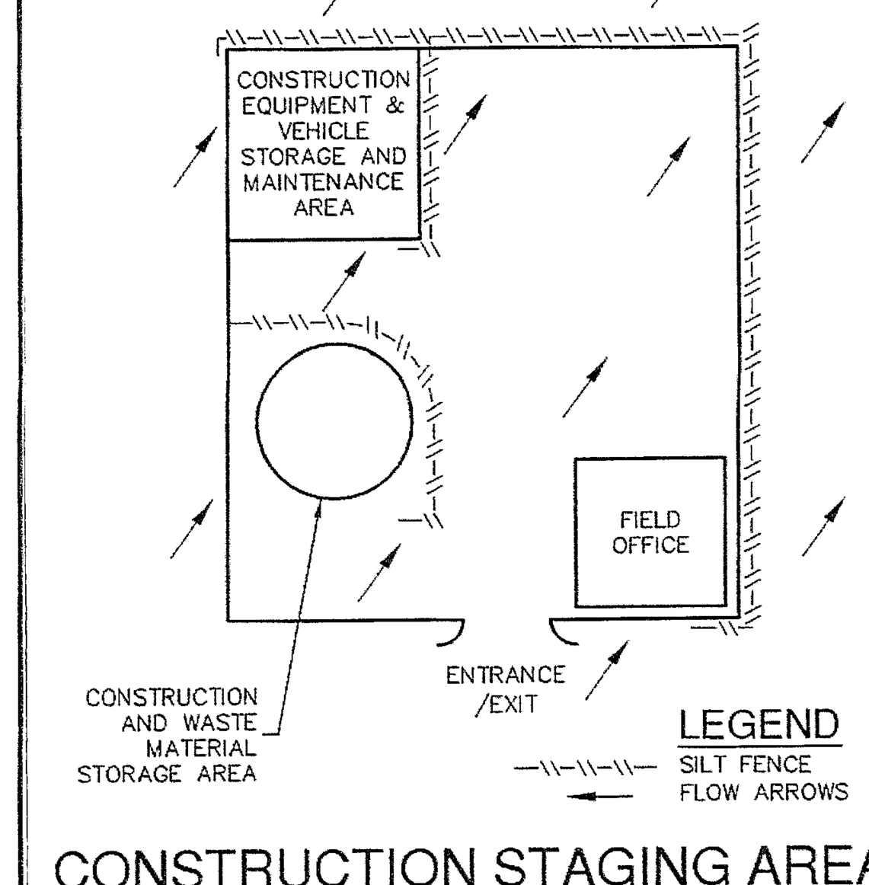
NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

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

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

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



CONSTRUCTION STAGING AREA

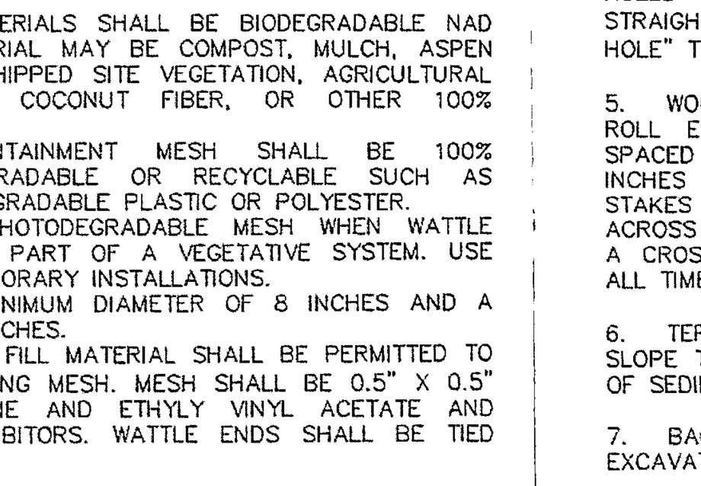
NOT-TO-SCALE

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

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

EXHIBIT 2

Revision / Date



Jason T. Diamond 7/29/19

Project: HIGH SCHOOL 4 FOR COMAL I.S.D. COMAL COUNTY, TEXAS

RECEIVED TCEQ-R13 (EAPP) JUL 30 2019 SAN ANTONIO

ORIGINAL

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TEMPORARY WATER POLLUTION ABATEMENT PLAN DETAILS

PACKAGE: BP6

Job No.	Sheet No.
1785-01-01	
Drawn By: JTD	
Date: 05-30-2019	

Date: Jul 29, 2019, 3:35pm User ID: EPosey
File: P:\81\00\09\Design\Environmental\WPAP\TMDT810009.dwg

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Sean Smith, P.E.

Date: 10/7/24

Signature of Customer/Agent:

Regulated Entity Name: CISD Davenport High School

Regulated Entity Information

1. The type of project is:

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

2. Total site acreage (size of property):113.7

3. Estimated projected population:+/- 1000

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	260,751	÷ 43,560 =	5.99
Parking	181,419	÷ 43,560 =	4.16
Other paved surfaces	998,476	÷ 43,560 =	22.92
Total Impervious Cover	1,440,646	÷ 43,560 =	33.08

Total Impervious Cover 33.07 **÷ Total Acreage** 113.7 **X 100 =** 29.09**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100% Domestic	20,000Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day

TOTAL gallons/day 20,000 gpd sized for TLAP

15. Wastewater will be disposed of by:

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

- ☐ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.
- ☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

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

- ☐ The SCS was previously submitted on_____.
- ☐ The SCS was submitted with this application.
- ☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the CISD HS #4 (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

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

Site Plan Requirements

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

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

Site Plan Scale: 1" = 200'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): 48091C0415F & 48091C0420F, both effective 9/2/2009

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

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

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

☒ There are 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

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

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

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

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

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

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

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

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

26. ☐ Surface waters (including wetlands).

    ☒ N/A

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

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

28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

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

ATTACHMENT A
FACTORS AFFECTING WATER QUALITY

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

ATTACHMENT B
VOLUME AND CHARACTER OF STORMWATER

Volume

The rational method (Q=CIA) was used to calculate the 25-year storm event. The following areas and volumes were calculated:

On-Site Drainage Area 1

Existing Conditions
Area = 27.61 acres
Impervious Cover = 0.86 acres
Runoff Coefficient = 0.53
Percent Impervious = 3.13%
Q_{25} = 132.72 cfs

Proposed Conditions
Area = 27.61 acres
Impervious Cover = 1.01 acres
Runoff Coefficient = 0.54
Percent Impervious = 3.67%
Q_{25} = 133.34 cfs

On-Site Drainage Area 2

Existing Conditions
Area = 10.97 acres
Impervious Cover = 8.10 acres
Runoff Coefficient = 0.85
Percent Impervious = 73.84%
Q_{25} = 81.00 cfs

Proposed Conditions
Area = 10.97 acres
Impervious Cover = 8.50 acres
Runoff Coefficient = 0.87
Percent Impervious = 77.48%
Q_{25} = 82.56 cfs

Character of Storm Water

Stormwater runoff generated from the site during construction will be typical of a high school educational facility with buildings, parking lots, and athletics fields. The runoff should consist of small amounts of suspended solids created by sediments from disturbed soils, construction dust, sawdust and hydrocarbons from construction equipment. Temporary BMP's have been selected from the TCEQ Publication, "Complying with the Edwards Aquifer Rules: Technical Guidance for Best Management Practices," to treat the required volume and character of storm water runoff to remove the increased total suspended solids (TSS) due to the proposed maintenance activities. Permanent stabilization of areas where soil is disturbed by construction activities will be accomplished by solid sodding in those areas.

Stormwater runoff generated after construction is complete will also be typical of a high school educational facility. The runoff will contain sediments from rooftops, driveways, parking lots, sidewalks, landscape areas, and other miscellaneous impervious areas from the site. The runoff may contain small amounts of oil, grease, suspended solids, fertilizers, and pesticides. The post construction runoff will be treated through the existing batch detention basins, natural VFS, and new engineered VFS.

ATTACHMENT C
WPAP SITE PLAN

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

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

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

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

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

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

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

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

8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES (E.G., SCREENING OUTFALLS, PICKED UP DAILY).

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

10. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARY OR PERMANENTLY CEASE IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 21 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE. IN AREAS EXPERIENCING DROUGHTS WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IS PRECLUDED BY SEASONAL ARID CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

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

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

   A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;

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

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

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

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

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

GENERAL NOTES:

1. PROVIDE BAGGED GRAVEL INLET FILTERS AT ALL EXPOSED DRAINAGE STRUCTURES.
2. SOIL DISTURBANCES WILL OCCUR OVER PARTS OF SITE AS INDICATED ON PLAN.
3. LOCATIONS OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS ARE LABELED.
4. THESE ARE THE TEMPORARY AND PERMANENT BEST MANAGEMENT PRACTICES.
5. SOIL STABILIZATION PRACTICES SHALL OCCUR OVER THE ENTIRE SITE WITH THE USE OF PAVEMENT, BUILDINGS, SIDEWALKS, GRASS SOD, GRASS SEEDING AND MULCH.
6. THERE ARE NO LOCATIONS WHERE STORM WATER DISCHARGES TO SURFACE WATER.
7. CONTRACTOR SHALL MODIFY PLAN AS NECESSARY TO PROVIDE FOR PROPER STORM WATER POLLUTION PREVENTION THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
   ALL MODIFICATIONS ARE TO BE NOTED ON CONTRACTOR'S COPY OF THE WPAP SITE PLAN DRAWING AND REPORT ON THE PROJECT SITE.
8. CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROPER POLLUTION CONTROLS OF THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

SITE INFORMATION:

DATA ON INDICATED SUBSURFACE CONDITIONS ARE NOT INTENDED AS REPRESENTATIONS OR WARRANTIES OF ACCURACY OR CONTINUITY BETWEEN SOIL BORINGS. IT IS EXPRESSLY UNDERSTOOD THAT THE OWNER, ARCHITECT, AND/OR STRUCTURAL, CIVIL OR MECHANICAL, PLUMBING OR ELECTRICAL ENGINEER WILL NOT BE RESPONSIBLE FOR INTERPRETATIONS OR CONCLUSIONS DRAWN THEREFROM BY CONTRACTOR. DATA ARE MADE AVAILABLE FOR CONVENIENCE OF CONTRACTOR ONLY AND AS SUCH, THE SOIL BORINGS ARE NOT CONSIDERED TO BE A PART OF THESE CONTRACT DOCUMENTS. THE CONTRACTOR MAY, AT HIS OPTION, OBTAIN A COPY OF THE GEOTECHNICAL REPORT.

PROJECT DATA:

1) SIZE ~ 113.7 ACRES
2) LOTS ~ 1 LOT
3) OWNER ~ COMAL INDEPENDENT SCHOOL DISTRICT

N

SCALE: 1"=20'
0 20 40

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SILT FENCE
- DISTURBED AREA
- SAND/GRAVEL BAG
- GRAVEL INLET FILTER
- NEW CONCRETE SIDEWALK/FLATWORK
- NEW ASPHALT
- NEW SOLID SOD
- FLOW ARROW

NO:	DATE:	REVISIONS DESCRIPTION:	BY:

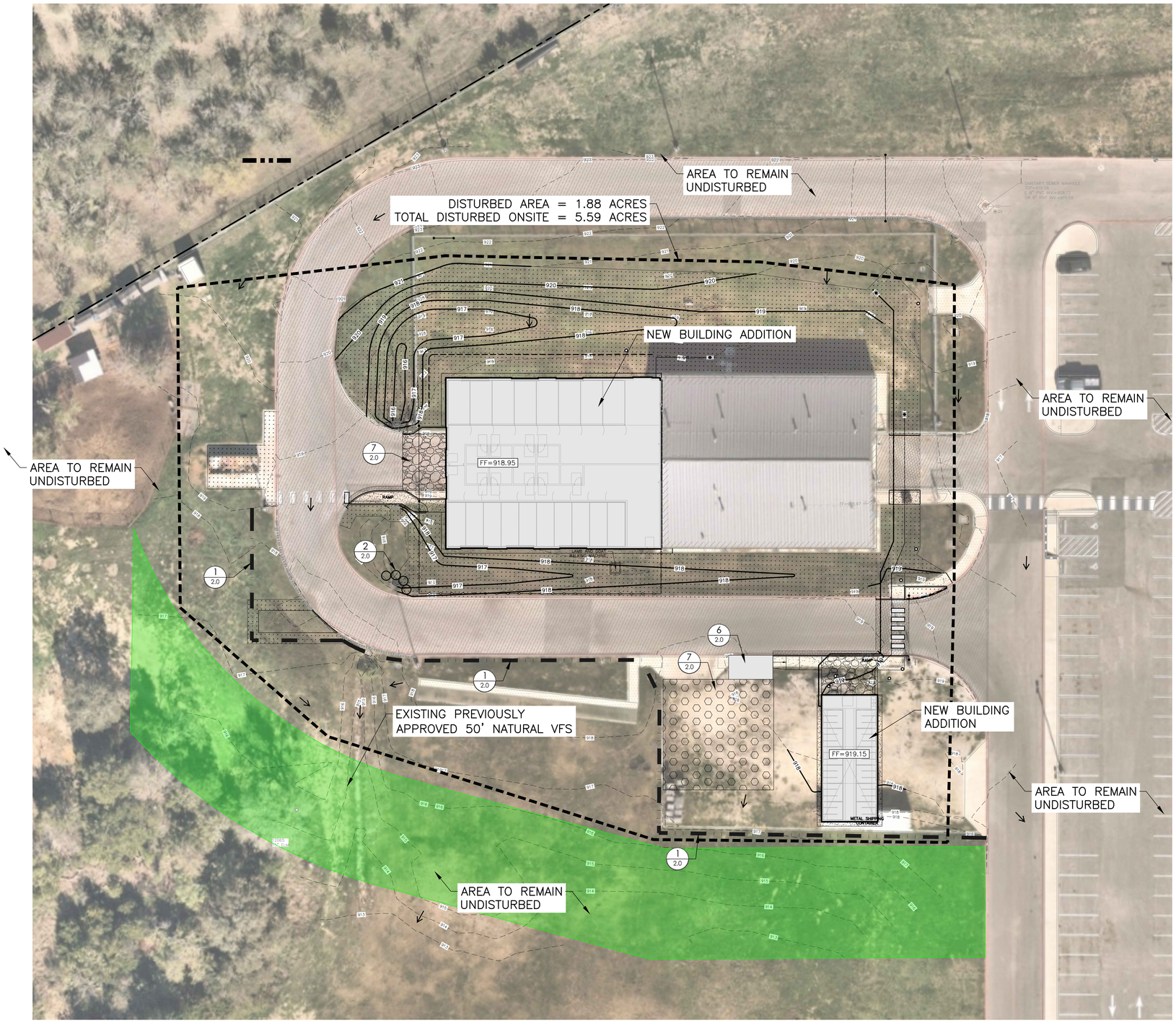
STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/7/24

MIR
• Engineers
• Surveyors
• Planners
Moy Tarin Ramirez Engineers, LLC
FIRM REGISTRATION #F-5289 SWF-10013560
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

COMAL ISD
DAVENPORT HIGH SCHOOL - BUILDING AND TENNIS COURT ADDITION

WATER POLLUTION ABATEMENT PLAN SITE PLAN

SHEET
C1.0



SCALE: 1"=20'

0 20 40

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SILT FENCE
- DISTURBED AREA
- SAND/GRAVEL BAG
- GRAVEL INLET FILTER
- NEW CONCRETE SIDEWALK/FLATWORK
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- NEW SOLID SOD
- FLOW ARROW

REVISIONS			
NO:	DATE:	DESCRIPTION:	BY:

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/7/24

• Engineers
• Surveyors
• Planners

Moy Tarin Ramirez Engineers, LLC
FIRM REGS. ENG F-10131500 SURV F-10131500
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COMAL ISD
DAVENPORT HIGH SCHOOL - BUILDING AND TENNIS COURT ADDITION

WATER POLLUTION ABATEMENT PLAN SITE PLAN

SHEET
C1.1

SCALE: 1"=30'
0 30 60

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SILT FENCE
- DISTURBED AREA
- SAND/GRAVEL BAG
- GRAVEL INLET FILTER
- NEW CONCRETE SIDEWALK/FLATWORK
- NEW ASPHALT
- NEW SOLID SOD
- FLOW ARROW

AREA TO REMAIN UNDISTURBED

AREA TO REMAIN UNDISTURBED

DISTURBED AREA = 2.82 ACRES
TOTAL DISTURBED ONSITE = 5.59 ACRES

AREA TO REMAIN UNDISTURBED

DISTURBED AREA = 0.89 ACRES
TOTAL DISTURBED ONSITE = 5.59 ACRES

AREA TO REMAIN UNDISTURBED

NEW TENNIS COURT

AREA TO REMAIN UNDISTURBED

PROPOSED ENGINEERED VFS

NEW TENNIS COURT

AREA TO REMAIN UNDISTURBED

NEW CONCRETE FLATWORK

NEW CONCRETE FLATWORK

AREA TO REMAIN UNDISTURBED

REVISIONS

NO:	DATE:	DESCRIPTION:	BY:

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/7/24

MTR
Moy Tarin Ramirez Engineers, LLC
• Engineers
• Surveyors
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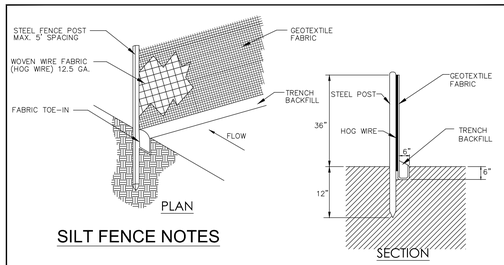
COMAL ISD
DAVENPORT HIGH SCHOOL - BUILDING AND TENNIS COURT ADDITION

WATER POLLUTION ABATEMENT PLAN SITE PLAN

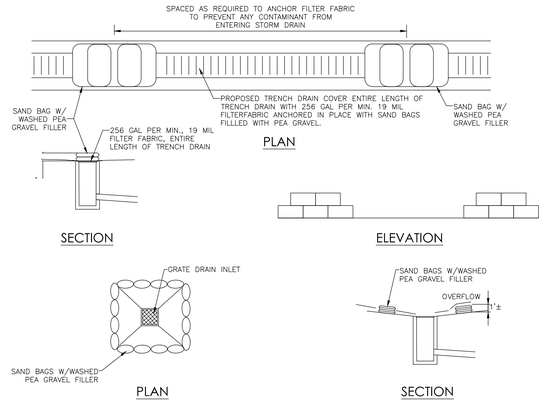
SHEET
C1.2



SILT FENCE NOTES

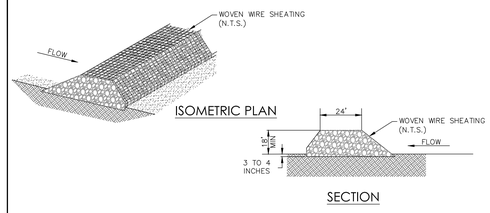
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/SQ IN, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/SQ FT, AND BRINDELL HARDNESS EXCEEDING 140.
3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12.5 GAUGE MINIMUM.
4. 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 5 FEET ON CENTER.
5. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ACRE/100 FEET OF FENCE.
6. 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 OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
7. 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.
8. 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.
9. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
10. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES, OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE OLD FENCE.
11. REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
12. 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.

1 SCALE: NONE — ***SILT FENCE DETAIL***



1. THE GRAVEL BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BULAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD 2, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 INCHES, WIDTH SHOULD BE 18 INCHES AND THICKNESS SHOULD BE 6 INCHES.
3. THE GRAVEL BAGS SHOULD BE FILLED WITH 3/4" GRAVEL.
4. WHEN A GRAVEL BAG IS FILED WITH GRAVEL, THE OPEN END OF THE GRAVEL BAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.
5. THE GRAVEL BAGS SHOULD BE PLACED AS SHOWN ON THE DETAIL. THE GRAVEL BAGS SHALL BE STACKED TO FORM A CONTINUOUS BARRIER AROUND THE INLETS. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
7. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
8. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. STRUCTURE SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

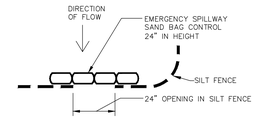
2 SCALE: NONE — ***BAGGED GRAVEL INLET FILTER***



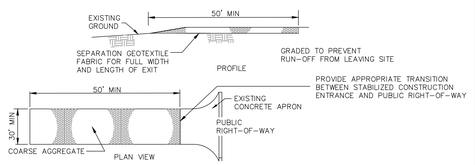
ROCK BERM NOTES

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.
2. CLEAN, OPEN GRADED 3 TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-TO 8-INCH DIAMETER ROCKS MAY BE USED.
3. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE.
4. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
5. PLACE THE ROCK ALONG THE SHEATHING TO A HEIGHT NOT LESS THAN 18".
6. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
7. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
8. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.
9. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
10. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER AND REPAIR ANY LOOSE WIRE SHEATHING.
11. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
12. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

3 SCALE: NONE — ***ROCK BERM***



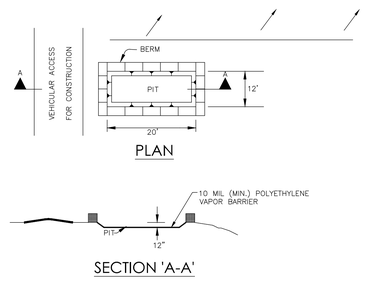
4 SCALE: NONE — ***PLAN - SAND BAG CONTROL DETAIL***



TEMPORARY CONSTRUCTION ENTRANCE/EXIT NOTES

1. THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION.
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/SQ YD, A MULLEN BURST RATING OF 140 LB/SQ IN, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
5. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
6. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
7. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
8. PLACE STONE TO DIMENSIONS AND GRADE SHOWN. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
9. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING 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.
10. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
11. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
12. 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.
13. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE.

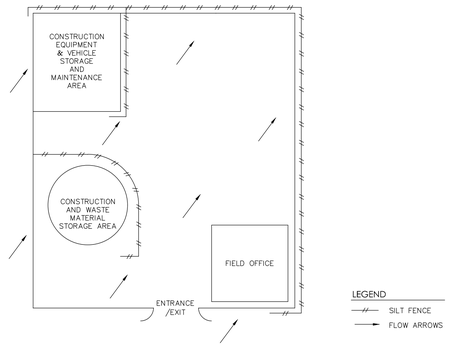
5 SCALE: NONE — ***STABILIZED CONSTRUCTION ENTRANCE/EXIT***



CONCRETE TRUCK WASHOUT PIT NOTES:

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

6 SCALE: NONE — ***CONCRETE TRUCK WASHOUT PIT***



7 SCALE: NONE — ***CONSTRUCTION STAGING AREA***

REVISIONS

NO:	DATE:	DESCRIPTION:	BY:

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/1/24

MTR
Moy Tarin Ramirez Engineers, LLC
• Engineers
• Surveyors
• Planners
TBPE REGISTRATION NO. F-5297 TBPLS REGISTRATION NO. 10013500
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-1051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

DAVENPORT HIGH SCHOOL - BUILDING AND TENNIS COURT ADDITION
COMAL ISD

WATER POLLUTION ABATEMENT PLAN DETAILS

SHEET
2.0

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: Sean Smith, P.E.

Date: 10/7/24

Signature of Customer/Agent:

_____

Regulated Entity Name: CISD Davenport High School

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: Dry Comal Creek

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

ATTACHMENT A
SPILL RESPONSE ACTIONS

1. Housekeeping

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

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

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

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

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

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

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

2. Product Specific Practices

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

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

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

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

3. Spill Control and Response Measures

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

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

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

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

Cleanup

(1) Clean up leaks and spills immediately

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

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

Minor Spills

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

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

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

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

(5) Contain the spread of the spill.

(6) Recover spilled materials.

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

Semi-Significant Spills

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

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

Significant/Hazardous Spills

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

D. Vehicle and Equipment Maintenance
(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills.

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
(5) Place drip pans or absorbent materials under paving equipment when not in use.
(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
(8) Oil filters disposed of in trash cans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can be recycled. Ask the oil supplier or recycler about recycling oil filters.
(9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

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

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

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

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

ATTACHMENT B
POTENTIAL SOURCES OF CONTAMINATION

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

Preventive Measure Vehicle maintenance, when possible, will be performed within a construction staging area specified by the General Contractor.

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

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

Potential Source Construction debris.

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

Potential Source Stormwater contamination from excess application of fertilizers, herbicides and pesticides.

Preventive Measure Fertilizers, herbicides and pesticides will be applied only when necessary and in accordance with manufacturers directions.

Potential Source Soil and mud from construction vehicle tires as they leave the site.

Preventive Measure A stabilized construction exit shall be utilized as vehicles leave the site. Any soil, mud, etc. carried from the project onto public roads shall be cleaned up within 24 hours.

Potential Source Sediment from soil, sand, gravel and excavated materials stockpiled on site.

Preventive Measure Silt fence shall be installed on the downgradient side of all stockpiled materials. Reinforced rock berms shall be installed at all downstream discharge locations.

ATTACHMENT C
SEQUENCE OF MAJOR ACTIVITIES

Construction Sequencing

A. Installation of temporary BMPs as shown on the WPAP Site Plan. Silt fence will be placed along the down gradient boundary.

B. Demolition and grading (5.59 acres disturbed)

C. Construction of building and tennis court addition (5.59 acres disturbed)

D. Seeding and soil stabilization.

ATTACHMENT D
TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Description of Temporary Best Management Practices:

Vegetation will be used as a temporary stabilization technique for all areas disturbed by construction, not covered in pavement, buildings, or other structures.

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

Vegetation as a temporary control will only be utilized in the event a disturbed area has been left denuded for more than 14 days.

Up gradient storm water flowing across the site:

There is minimum upgradient flow entering the construction area. All upgradient flow will be treated along with the stormwater generated onsite.

Onsite storm water flowing across and off the site:

The storm water originating onsite and flowing off the site will be treated through temporary BMPs. Silt fences will be installed at all locations where non-concentrated storm water exits the site.

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

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

Maintaining flow to naturally-occurring sensitive features:

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

ATTACHMENT F
STRUCTURAL PRACTICES

Vegetation will be used as a temporary stabilization technique for all areas disturbed by construction, not covered by pavement, buildings, or other structures. Temporary stabilization shall consist of temporary seeding of disturbed areas that are denuded beyond 14 days without construction restart within 21 days. As a temporary control, the vegetation will be used to stabilize barren areas that are inactive for long periods of time.

SCALE: 1"=200'

200 100 0 200

LEGEND

- SITE BOUNDARY
- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION
- 1390 EXISTING CONTOURS
- 1 CALCULATION POINT
- FLOW ARROWS

EXISTING DRAINAGE CALCULATIONS

EXISTING CONDITIONS Q CALCULATION										
PT. NO.	AREA OF ACCUMULATION	TOTAL ACRES	C-VALUE	Tc (min)	I5 (in/hr)	I25 (in/hr)	I100 (in/hr)	Q5 (cfs)	Q25 (cfs)	Q100 (cfs)
1	1	27.61	0.53	10.00	6.36	9.00	11.43	93.79	132.72	168.54
2	2	10.97	0.85	11.00	6.13	8.66	11.00	57.33	81.00	102.83

PROPOSED DRAINAGE CALCULATIONS

PROPOSED/ULTIMATE CONDITIONS Q CALCULATION										
PT. NO.	AREA OF ACCUMULATION	TOTAL ACRES	C-VALUE	Tc (min)	I5 (in/hr)	I25 (in/hr)	I100 (in/hr)	Q5 (cfs)	Q25 (cfs)	Q100 (cfs)
1	1	27.61	0.54	10.00	6.36	9.00	11.43	94.22	133.33	169.31
2	2	10.97	0.87	11.00	6.13	8.66	11.00	58.43	82.56	104.81

REVISIONS

NO:	DATE:	DESCRIPTION:	BY:

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/7/24

• Engineers
• Surveyors
• Planners

Moy Tarin Ramirez Engineers, LLC
FIRM REGISTRATION #: TBPELS ENGR F-5289 / SVY F-10013500
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

COMAL ISD
DAVENPORT HIGH SCHOOL - BUILDING AND TENNIS COURT ADDITION

DRAINAGE AREA MAP

SHEET

ATTACHMENT I
INSPECTION AND MAINTENANCE FOR BMPS

Silt Fence

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

Bagged Gravel Inlet Filter

1. Inspections should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by contractor.
2. Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
3. Check placement of device to prevent gaps between device and curb.
4. Inspect filter fabric and patch or replace if torn or missing.
5. Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

CISD DAVENPORT HIGH SCHOOL

Responsible Party Form

Pollution Prevention Measure		Inspected	Corrective Action	
			Description	Date Completed
Silt Fence	Inspections			
	Fencing			
	Sediment Removal			
	Torn Fabric			
	Crushed/Collapsed Fencing			
Bagged Gravel Inlet Filters	Inspections			
	Replaced/Reshaped			
	Silt Removed			

Inspector's Name

Inspector's Signature

Name of Owner/Operator

Date

Note: Inspector is to attach a brief statement of his qualifications to this report.

ATTACHMENT J
SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

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

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

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

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

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

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

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

Materials:
The type of temporary vegetation used on a site is a function of the season and the availability of water for irrigation. For areas that are not irrigated, the year can be divided into two temporary planting seasons and one season for planting of permanent warm weather groundcovers. These periods are shown in Figure 1-19 for Bexar, Comal, Kinney, Medina, and Uvalde Counties. Appropriate temporary vegetation for these areas is shown in Table 1-4.

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

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

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

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

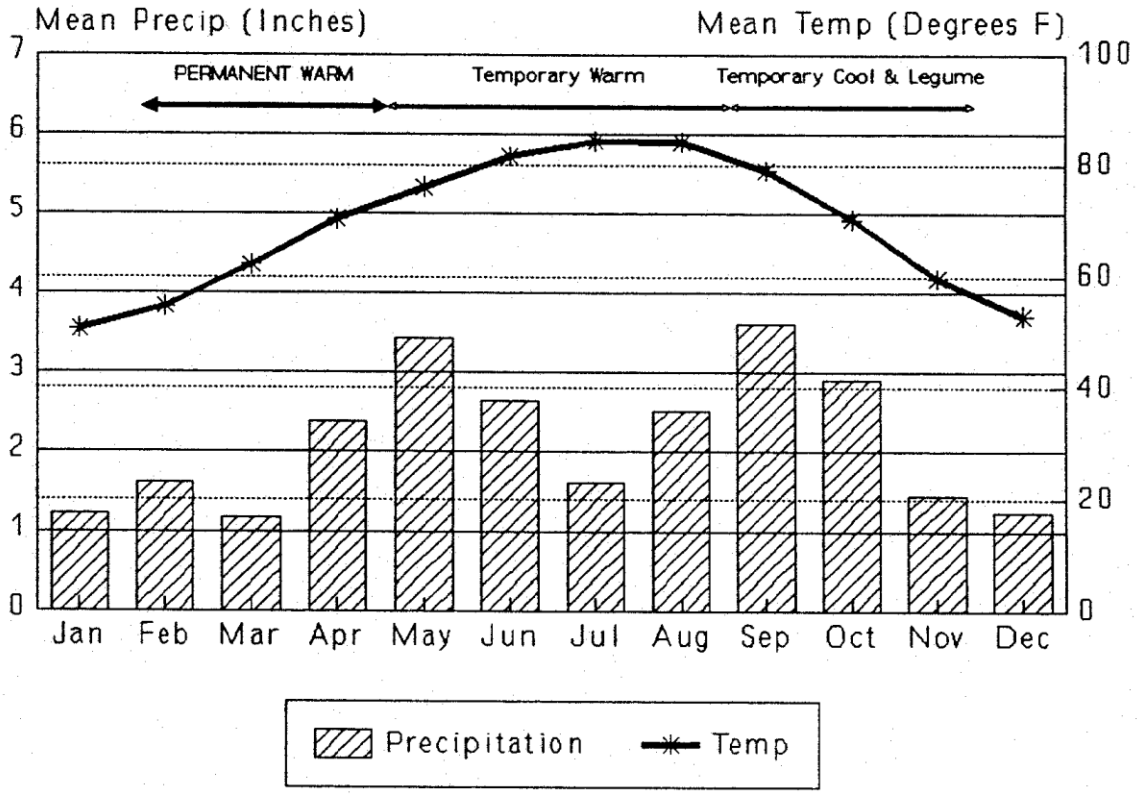


Figure 1-19 Planting Dates for Bexar, Comal, Kinney, Medina, and Uvalde Counties (Northcutt, 1993)

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

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

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

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

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

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

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

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

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

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

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

Permanent Stormwater Section

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: Sean Smith, P.E.

Date: 10/7/24

Signature of Customer/Agent

Regulated Entity Name: CISD Davenport High School

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

2. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

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

☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____

☐ N/A

3. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

   ☐ N/A

4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
   ☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.
   ☒ The site will not be used for low density single-family residential development.

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

   ☐ **Attachment A - 20% or Less Impervious Cover Waiver**. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
   ☒ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
   ☐ The site will not be used for multi-family residential developments, schools, or small business sites.

6. ☒ **Attachment B - BMPs for Upgradient Stormwater**.

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

☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

☐ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. ☒ **Attachment C - BMPs for On-site Stormwater**.

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

☐ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

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

☐ N/A

9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

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

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

☒ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☒ All geologic features

☒ All proposed structural BMP(s) plans and specifications

☐ N/A

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

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

    ☐ N/A

12. ☐ **Attachment H - Pilot-Scale Field Testing Plan**. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

    ☒ N/A

13. ☒ **Attachment I -Measures for Minimizing Surface Stream Contamination**. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

15. ☒ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

    ☐ N/A

ATTACHMENT B
BMP'S FOR UPGRADIENT STORM WATER

According to the previously approved WPAP Modification, upgradient water is intercepted and routed around the site. No changes will be made to the interceptor infrastructure. No upgradient water will cross on-site impervious cover.

ATTACHMENT C
BMPs FOR ON-SITE STORMWATER

There will be an increase of 0.55 acres of impervious cover due to the proposed project. This increase will be treated by utilizing the existing batch detention basins, existing natural VFS, and new engineered VFS. This increase in impervious cover is associated with a TSS removal requirement of 29,684 pounds.

According to the previously approved WPAP and WPAP modification, the existing TSS removal requirement of 29,199 pounds is provided by the existing natural VFS, engineered VFS, and three batch detention basins. The engineered VFS and basins "B" and "C" will remain unchanged with this modification. Basin "A" and the 50' natural VFS will be utilized to treat the increase in impervious cover associated with the proposed improvements. Additionally, new engineered VFS will be provided to treat a portion of the new tennis court addition.

The building addition on the west side of the project site is comprised of a 0.14-acre increase in impervious cover. This increase will be treated by the existing previously approved 50' natural VFS. The new TSS removal total provided by the natural VFS will be 1,149 pounds (1,023 pounds of removal previously provided.

The proposed improvements will result in an increase in impervious cover of 0.40 acres within the drainage area contributing to Basin "A". This increases the total impervious cover within the drainage area to 8.50 acres. As a result, the removal requirement for the basin will be 7,630 pounds. The basin will still provide 557 pounds of overtreatment, which would bring the total desired treatment for this basin to 8,187 pounds. However, 0.19 acres of impervious cover within the drainage area will be treated with new engineered VFS, which will remove 171 pounds of TSS before the runoff reaches the basin. Ultimately, the desired removal in Basin "A" is 8,016 pounds of TSS (8,017 in the spreadsheet to account for a rounding error), which corresponds to a capture volume requirement of 47,965 cubic feet. The capture volume for the basin is 55,719 cubic feet, so no modification to the basin structure will be required.

The following table summarizes the proposed treatment provided by both the existing and proposed permanent BMPs.

BMP Treatment Summary Table		
Permanent BMP	TSS Removal Desired	Notes
Water Quality Basin "A"	8,017	Includes 557 pounds of overtreatment
Water Quality Basin "B"	4,469	Includes 53 pounds of overtreatment
Water Quality Basin "C"	14,721	
Existing Engineered VFS	287	
Existing Engineered VFS	296	
Existing Engineered VFS	287	
Existing Engineered VFS	287	
Existing 50' Natural VFS	1,149	
Proposed Engineered VFS	171	
Total	29,684	

ATTACHMENT D
BMPs FOR SURFACE STREAMS

The existing batch detention ponds and natural VFS remove 80% of the total suspended solids (TSS) before any stormwater is discharged to surface streams.

ATTACHMENT F
CONSTRUCTION PLANS

PAINT SPECFICATION

THE PAVEMENT MARKING PAINT TO BE USED ON THIS PROJECT WILL BE GORILLA HI-PERFORMANCE ACRYLIC ZONE MARKING PAINT FROM AEXCEL OR APPROVED EQUAL. WHITE PAINT 22W-E008 AND LEAD-FREE YELLOW 22Y-E006.

SURFACE PREPARATION: SURFACES WILL BE CLEAN, DAY AND FREE FROM LOOSE OR PEELING SURFACES. DO NOT APPLY WHEN AIR TEMPERATURES ARE BELOW 50DEG. F. OR WHEN THE RELATIVE HUMIDITY EXCEEDS 85%, OR WHEN THE TEMPERATURE FALLS BELOW THE DEW POINT. IT IS RECOMMENDED TO PLACE AN INCONSPICUOUS TEST STRIP TO DETERMINE IF THE NEW ASPHALT SURFACES HAVE CURED SUFFICIENTLY TO PAINT. WAIT 24 HOURS AFTER A RAIN TO PAINT ASPHALT SURFACES.

APPLICATION RATES: APPLY PAINT AT FILM THICKNESS AND SPREADING RATE AS RECOMMENDED BY THE PAINT SUPPLIER. ALL OF THE NEW ASPHALT SURFACES WILL BE PAINTED WITH TWO (2) COATS OF 15.0 MILS WET, 8.0 MILS DRY. THE FIRST COAT MUST BE COMPLETELY DRY BEFORE THE SECOND COAT IS APPLIED. WAIT A MINIMUM OF 10 DAYS BETWEEN THE ASPHALT PLACEMENT AND THE PERMANENT TRAFFIC STRIPING AND MARKINGS.

IF 10 DAYS CANNOT BE ACHIEVED CONTRACTOR TO PROVIDE TWO (2) ADDITIONAL COATS OF 15.0 MILS WET, 8.0 MILS DRY 10 DAYS AFTER ASPHALT PLACEMENT. THE ADDITIONAL COATS ARE TO BE COORDINATED WITH THE OWNER AND WILL NOT DISRUPT OPERATIONS.

DRAINAGE AND STORM SEWER NOTES:

1. CLEAR COVER FOR REINFORCEMENT STEEL IS 2" UNLESS OTHERWISE NOTED.
2. MATERIAL SPECIFICATIONS:

   CONCRETE/CONCRETE RIPRAP: CLASS A 3000 PSI IN 28 DAYS UNLESS OTHERWISE NOTED ON PLANS.

   REINFORCING STEEL: CONFORM TO A.S.T.M. A-615, GRADE 60 (2" CLEAR COVER UNLESS OTHERWISE NOTED ON PLANS)

   PIPE RAILING: CONFORM TO A.S.T.M. A-53, GRADE B, OR A-501
3. STORM SEWER PIPE MATERIAL SPECIFICATIONS: PIPE MATERIAL SHALL BE AS NOTED ON DRAINAGE PLANS. WHEN SPECIFIED:
   A) REINFORCED CONCRETE PIPE (RCP) CLASS III, UNLESS OTHERWISE SPECIFIED ON PLAN.
   B) PRECAST BOX CULVERT OLDCASTLE PRECAST TYPE I OR EQUAL APPROVED BY ENGINEER.
   C) POLYVINYL CHLORIDE (PVC) PIPE SHALL BE SDR 26 (115 psi)
   D) ALUMINIZED STEEL (AS)
      1. CORRUGATIONS: 2"x2"X7-1/2" HELICAL CORRUGATIONS PER ASSHTO M-36, TYPE IR (ASTM A-760)
      2. MATERIAL: ALUMINIZED TYPE 2 STEEL PER AASHTO M-274 (ASTM A-819)
      3. JOINT: HUGGER BANDS WITH TECHNO ANGLES. CONTRACTOR TO PROVIDE 5-C BANDS WITH BAR BOLT AND STRAP CONNECTION.
      4. THICKNESS: 0.064" (16 GAUGE)
   E) HDPE STORM PIPE TO BE ADS DUAL WALL PIPE N-12 OR APPROVED EQUAL.
4. ALL STORM SEWER INLET GRATES SHALL BE GALVANIZED.
5. CONCRETE COLLARS SHALL BE PROVIDED ON ALL STORM DRAIN TO JUNCTION BOX/GRATE INLET CONNECTIONS. REFERENCE DETAILS.
6. GROUT INVERTS OF ALL JUNCTION BOXES AND GRATE INLETS TO DRAIN.
7. ALL JUNCTION BOXES SHALL HAVE MANHOLES FOR ACCESS WITH BOLTED MANHOLE LIDS.
8. ALL DRAINAGE STRUCTURES, LIDS AND GRATES SHALL BE RATED FOR H20 LOADING.
9. ALL PIPE TRENCHES SHALL CONTAIN FILTER FABRIC BETWEEN THE INITIAL AND SECONDARY BACKFILL. REFERENCE DETAILS AND SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.
10. PROVIDE CONCRETE APRONS ON ALL INLETS (NOT IN PAVEMENT AREAS) PER DETAILS.
11. ALL CONCRETE STORM DRAIN STRUCTURES TO HAVE A 32" CLEAR OPENING FOR ACCESS. CONTRACTOR TO PROVIDE CORRESPONDING LID AND FRAME TO PROVIDE 32" CLEAR OPENING.
12. ALL CURB INLETS TO BE INSTALLED WITH STEEL ARMOR AT THE CURB OPENING.
13. PROVIDE ECCENTRIC REDUCERS ON SDR 26 PVC/HDPE STORM PIPE WHERE PIPE DIAMETERS INCREASE IN SIZE.

GENERAL NOTES:

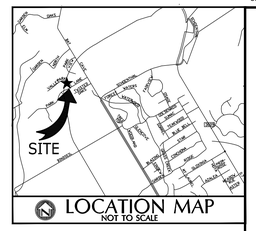
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK.
2. ALL WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE SITE TO A STATE LICENSED LANDFILL. CONTRACTOR WILL BE REQUIRED TO PROVIDE DOCUMENTATION WHERE DISPOSED MATERIAL IS TAKEN TO. THE OWNER WILL NOT BE HELD LIABLE FOR WASTE MATERIAL.
3. CONTRACTOR IS REQUIRED TO SET AND VERIFY ALL PROJECT ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY THE SAME MATERIALS AS WELL AS VERTICAL AND HORIZONTAL ALIGNMENT.
4. GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSION & GRADE CONDITIONS (BOTH NEW AND EXISTING). HE SHALL REPORT ANY DISCREPANCIES TO THE PROJECT ENGINEER BEFORE PROCEEDING WITH ANY PHASE OF THE WORK AS HE WILL BE RESPONSIBLE FOR ALL WORK AS INTENDED BY THE DRAWINGS AND SPECIFICATIONS.
5. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY.
6. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION.
7. ANY EXISTING OFF-SITE IMPROVEMENTS AND/OR UTILITIES REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE PROJECT ARCHITECT AT THE CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CURBS, CONCRETE DRIVEWAYS, SIDEWALK STRUCTURES AND PAVEMENT, THAT ARE NOT INDICATED TO BE REMOVED. AN INVENTORY OF EXISTING CONDITIONS SHALL BE CONDUCTED WITH THE CONTRACTOR AND OWNER PRIOR TO DEMOLITION.
9. CONTRACTOR SHALL MAINTAIN CONTINUAL ALL UTILITY SERVICES (GAS, TELE, CATV, ELEC., WATER, SEWER, STORM SEWER, ETC.) TO EXISTING FACILITIES AND BUILDINGS. WHERE CONSTRUCTION IS IN THE PROXIMITY OF A UTILITY, THE CONTRACTOR WILL TAKE PRECAUTION TO PROTECT AND/OR SUPPORT THE UTILITY.
11. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
12. NOTIFY OWNER 72 HOURS IN ADVANCE OF UTILITY SHUTDOWN.
13. ADJUST ALL EXISTING VALVES & UTILITIES TO REMAIN TO FINISH GRADE. REFERENCE GRADING & UTILITY PLAN.
14. CONTRACTOR SHALL COORDINATE ALL DEMOLITION CONSTRUCTION ACTIVITIES WITH OTHER DISCIPLINES AS REQUIRED.
15. CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION WITH UTILITY PLANS.
16. CONTRACTOR IS RESPONSIBLE FOR CLEARING THE ALIGNMENT FOR ALL NEW FENCING. CLEARING TO INCLUDE ALL VEGETATION, TREE LIMBS, AND SHRUBS WITHIN 5' OF NEW FENCE ALIGNMENT ON EACH SIDE.
17. CONTRACTOR TO REFERENCE LANDSCAPE PLANS FOR THE REMOVAL OF EXISTING TREES.
18. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL SILT FROM THE DRAINAGE SYSTEM AND FLUSH THE DRAINAGE SYSTEM UPON SUBSTANTIAL COMPLETION OF THE PROJECT.

LEGEND

	NEW HEAVY DUTY ASPHALT	TW	TOP OF WALL ELEVATION
	NEW CONCRETE FLATWORK	TOP	TOP OF MANHOLE ELEVATION
	PROPERTY LINE	TOG	TOP OF GRATE ELEVATION
+ 802.97	EXISTING SPOT ELEVATION	TC	TOP OF CURB
802.00 +	PROPOSED ELEVATION	G	GUTTER
1004	EXISTING CONTOUR	SW	TOP OF SIDEWALK
1004	NEW CONTOUR	ESM'T	EASEMENT
	CHAINLINK FENCE	E.G.T.CATV	ELECTRIC, GAS, TELEPHONE & CABLE T.V.
	FLOW LINE	R.O.W.	RIGHT OF WAY
	GRADE BREAK	HP	HIGH POINT
RCP	REINFORCED CONCRETE PIPE		SIDEWALK RAMP
AS	ALUMINIZED STEEL PIPE		DRAINAGE FLOW ARROW
PVC	POLYVINYL CHLORIDE PIPE		PROPOSED FIRE HYDRANT
INV	INVERT ELEVATION OF PIPE		PROPOSED TRAFFIC SIGN

GAS NOTE:

REQUIREMENTS FOR CONSTRUCTION NEAR GAS:
ALL UTILITIES THAT CROSS GAS LINES MUST CROSS AT RIGHT ANGLES TO THE GAS MAIN. SEPARATION DISTANCE BETWEEN UTILITIES AND THE GAS MAIN SHALL BE 4'-0" BETWEEN OUTSIDE DIAMETER TO OUTSIDE DIAMETER. THE CONTRACTOR MUST PROTECT THE GAS LINE AT ALL TIMES DURING CONSTRUCTION.



SCALE: 1"=20'
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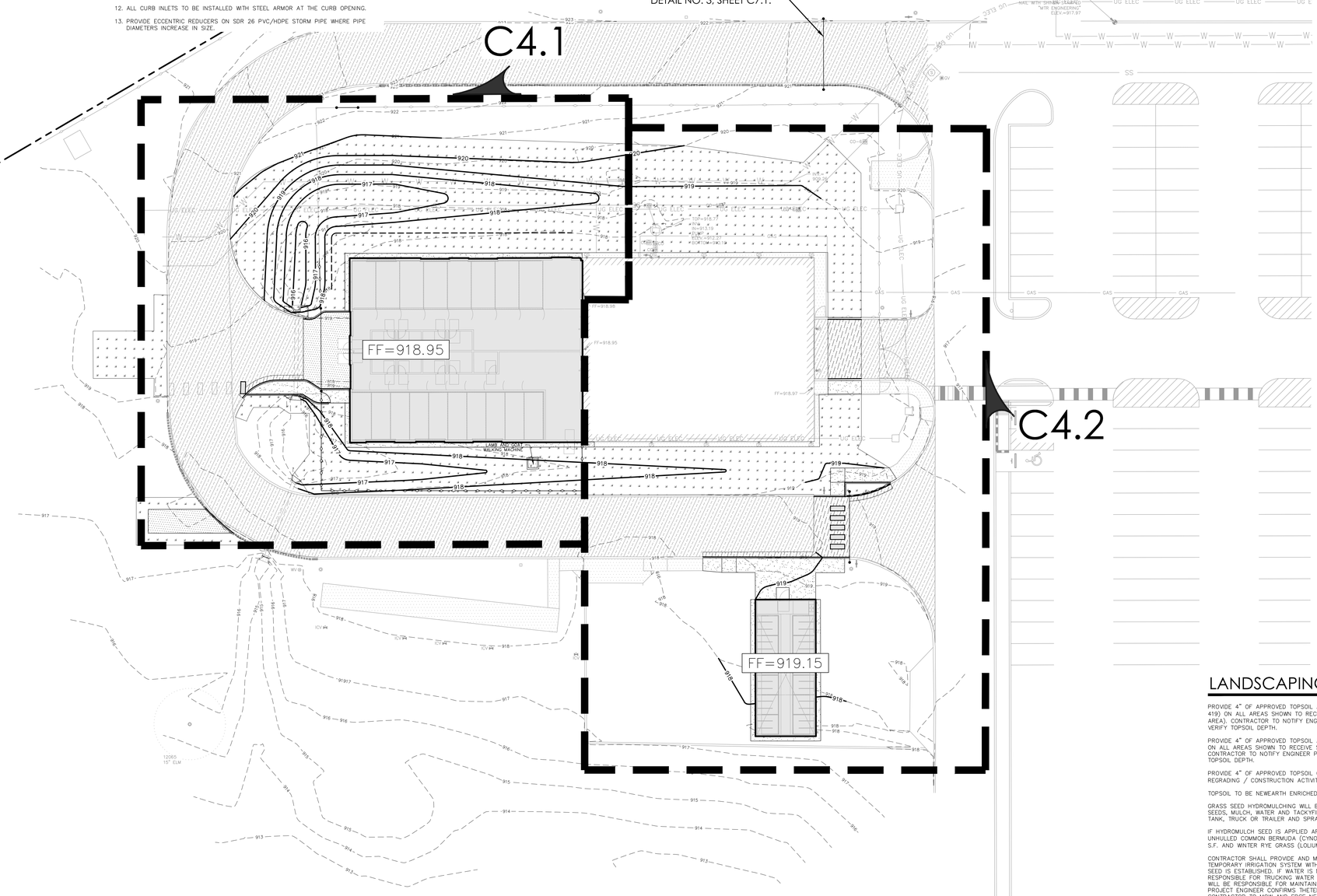
NEW PIPE RAIL GATE. REFERENCE DETAIL NO. 3, SHEET C7.1.



LANDSCAPING:

PROVIDE 4" OF APPROVED TOPSOIL ALONG WITH SOLID SOD (BERMUDA TIF 419) ON ALL AREAS SHOWN TO RECEIVE SOLID SOD (OUTSIDE OF PLAYFIELD AREA). CONTRACTOR TO NOTIFY ENGINEER PRIOR TO SOD PLACEMENT TO VERIFY TOPSOIL DEPTH.

PROVIDE 4" OF APPROVED TOPSOIL ALONG WITH SOLID SOD (BERMUDA TIFTUF) ON ALL AREAS SHOWN TO RECEIVE SOLID SOD INSIDE PLAYFIELD AREA. CONTRACTOR TO NOTIFY ENGINEER PRIOR TO SOD PLACEMENT TO VERIFY TOPSOIL DEPTH.

PROVIDE 4" OF APPROVED TOPSOIL ON ALL OTHER AREAS DISTURBED BY REGRADING / CONSTRUCTION ACTIVITIES ALONG WITH GRASS HYDROMULCH.

TOPSOIL TO BE NEWEARTH ENRICHED TOPSOIL, OR APPROVED EQUAL.

GRASS SEED HYDROMULCHING WILL BE DONE UTILIZING A SLURRY BLEND OF SEEDS, MULCH, WATER AND TACKYFIER AND WILL BE TRANSPORTED IN A TANK, TRUCK OR TRAILER AND SPRAYED OVER PREPARED GROUND.

IF HYDROMULCH SEED IS APPLIED AFTER SEPTEMBER 15, SEED MIX SHALL BE UNHULLED COMMON BERMUDA (CYNODON CACTYLON) – 2 POUNDS PER 1000 S.F. AND WINTER RYE GRASS (LOLIUM PERENNE) – 4 POUNDS PER 1000 S.F.

CONTRACTOR SHALL PROVIDE AND MAINTAIN AN ABOVE GROUND PVC TEMPORARY IRRIGATION SYSTEM WITH TIMER UNTIL THE HYDROMULCH GRASS SEED IS ESTABLISHED. IF WATER IS NOT READILY AVAILABLE, CONTRACTOR IS RESPONSIBLE FOR TRUCKING WATER TO ESTABLISH VEGETATION. CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE REVEGETATED AREAS UNTIL THE PROJECT ENGINEER CONFIRMS THETEMPORARY IRRIGATION CAN BE REMOVED. CONTRACTOR TO MOW AND EDGE NEWLY PLANTED GRASS WEEKLY WHEN GROWTH REACHES 2 ½". MAINTAIN AT THIS HEIGHT WEEKLY.

CONTRACTOR TO VERIFY WATER SOURCES PRIOR TO SUBMITTING BIDS. IF WATER IS NOT READILY AVAILABLE, CONTRACTOR TO ACCOUNT FOR WATER TO BE BROUGHT TO THE SITE AT THEIR EXPENSE. IF WATER IS AVAILABLE, CONTRACTOR TO PROVIDE BACKFLOW PREVENTOR ON PROPOSED TEMPORARY IRRIGATION.

SUBSTANTIAL COMPLETION WILL NOT BE ACCEPTED UNTIL SOLID SOD AND HYDROMULCH SEED HAS BEEN ESTABLISHED

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/8/24

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SPRING BRANCH, TEXAS

MTR
Moy Tarin Ramirez Engineers, LLC
• Engineers • Surveyors • Planners
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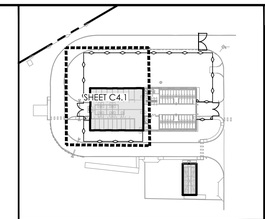
OVERALL GRADING AND DRAINAGE PLAN

Job No. 0000-00-00	Sheet No. C4.0
Drawn By: Author	
Date: 00.00.24	

PROJECT RELEASE TYPE

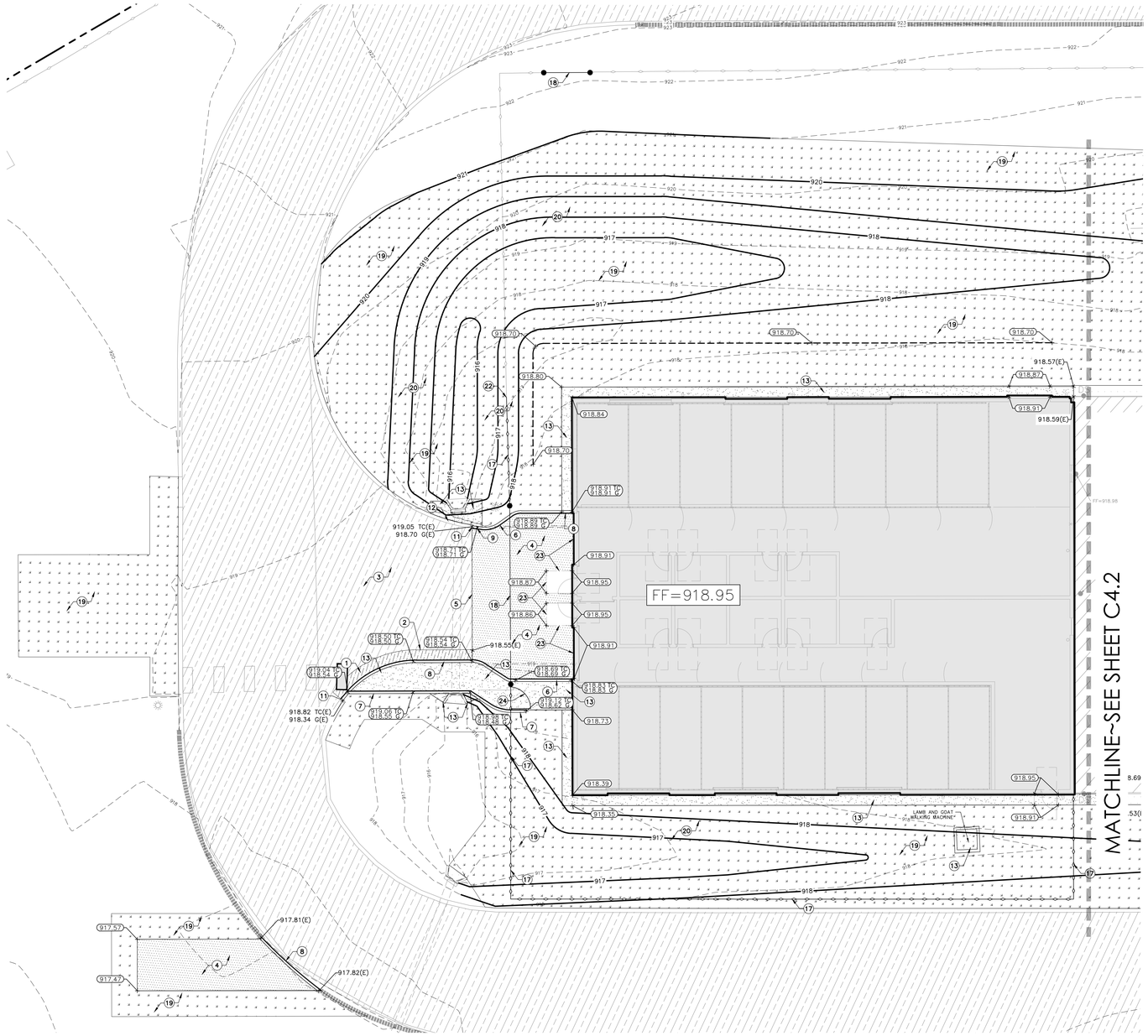
LEGEND

NEW HEAVY DUTY ASPHALT	
NEW CONCRETE FLATWORK	
PROPERTY LINE	
+ 802.97	EXISTING SPOT ELEVATION
802.00 +	PROPOSED ELEVATION
1004	EXISTING CONTOUR
1004	NEW CONTOUR
CHAINLINK FENCE	
FLOW LINE	
GRADE BREAK	
RCP	REINFORCED CONCRETE PIPE
AS	ALUMINIZED STEEL PIPE
PVC	POLYVINYL CHLORIDE PIPE
INV	INVERT ELEVATION OF PIPE
TW	TOP OF WALL ELEVATION
TOP	TOP OF MANHOLE ELEVATION
TOG	TOP OF GRATE ELEVATION
TC	TOP OF CURB
G	GUTTER
SW	TOP OF SIDEWALK
ESM'T	EASEMENT
E.G.T.CATV	ELECTRIC, GAS, TELEPHONE & CABLE T.V.
R.O.W.	RIGHT OF WAY
HP	HIGH POINT
	SIDEWALK RAMP
	DRAINAGE FLOW ARROW
	PROPOSED FIRE HYDRANT
	PROPOSED TRAFFIC SIGN



KEY MAP
NOT TO SCALE

SCALE: 1"=10'
10 5 0 10



GRADING KEYNOTES

1. NEW HEAVY DUTY ASPHALT PAVEMENT. REFERENCE SECTION DETAIL NO. 3B, SHEET C7.0.
2. NEW ASPHALT PAVEMENT TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING PAVEMENT AS NECESSARY TO MATCH NEW CONSTRUCTION. REFERENCE PAVEMENT JUNCTURE DETAIL NO. 4, SHEET C7.0.
3. EXISTING ASPHALT PAVEMENT TO REMAIN IN PLACE.
4. NEW CONCRETE PAVEMENT. REFERENCE SECTION DETAIL NO. 2A, SHEET C7.0.
5. NEW CONCRETE PAVEMENT TO MATCH EXISTING ASPHALT PAVEMENT. CONTRACTOR TO SAWCUT EXISTING PAVEMENT AS NECESSARY TO MATCH NEW CONSTRUCTION. REFERENCE PAVEMENT JUNCTURE DETAIL NO. 2D, SHEET C7.0.
6. PROVIDE 6" MONOLITHIC CONCRETE CURB ADJACENT TO CONCRETE PAVEMENT. REFERENCE DETAIL NO. 7, SHEET C7.0.
7. TYPICAL 6" CONCRETE CURB. REFERENCE DETAIL 5, SHEET C7.0.
8. NEW CONCRETE HEADER (FLUSH) CURB. REFERENCE DETAIL 6, SHEET C7.0.
9. 1' CURB TRANSITION FROM TYPICAL 6" CURB TO HEADER (FLUSH) CURB AS NECESSARY TO ALLOW FOR DRAINAGE AND/OR ACCESS. REFERENCE DETAIL 5, SHEET C7.0.
10. NEW SLOTTED CURB. REFERENCE DETAIL NO. 8, SHEET C7.0.
11. NEW CONCRETE CURB TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING CURB AS NECESSARY TO MATCH NEW CONSTRUCTION. CONTRACTOR TO PROVIDE EXPANSION JOINT W/ 2 EA. 18" DOWELS DRILLED INTO EXISTING CONCRETE AT JUNCTURE.
12. EXISTING CONCRETE CURB TO REMAIN IN PLACE.
13. NEW CONCRETE SIDEWALK/FLATWORK. REFERENCE DETAIL 1A, SHEET C7.0.
14. NEW CONCRETE SIDEWALK/FLATWORK TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING SIDEWALK AS NECESSARY TO MATCH NEW CONSTRUCTION. PROVIDE EXPANSION JOINT W/ DOWELS DRILLED INTO EXISTING SIDEWALK AT JUNCTURE. REFERENCE DETAIL DETAIL 1C, SHEET C7.0.
15. EXISTING CONCRETE SIDEWALK/FLATWORK TO REMAIN IN PLACE.
16. CONTRACTOR TO PROVIDE THICKENED EDGE ON CONCRETE FLATWORK. REFERENCE DETAIL 1E, SHEET C7.0.
17. NEW 6' CHAIN-LINK FENCING. REFERENCE DETAIL 1, SHEET SHEET C7.1.
18. CONTRACTOR TO PROVIDE 6' HIGH FULLY CANTILEVERED SLIDING GATE. REFERENCE DETAIL 2, SHEET C7.1.
19. NEW SOLID SOD. REFERENCE LANDSCAPE NOTES ON SHEET C4.0.
20. CONTRACTOR TO GRADE AT 4:1 SLOPE.
21. CONTRACTOR TO ADJUST TOP TO FINISHED GRADE.
22. NEW CHAIN-LINK FENCING TO MATCH EXISTING.
23. NEW CONCRETE SIDEWALK/FLATWORK TO MATCH STRUCTURAL CONCRETE. CONTRACTOR TO PROVIDE ½" EXPANSION JOINT W/ DOWELS AT JUNCTURE. REFERENCE DETAIL NO. 1F, SHEET C7.0.
24. NEW 4' WIDE BY 6' HIGH SINGLE CHAIN-LINK FENCE GATE. REFERENCE DETAIL 1, SHEET C7.1.
25. NEW CROSSWALK STRIPING. REFERENCE DETAIL NO. 9, SHEET C7.0.
26. NEW PIPE RAIL GATE. REFERENCE DETAIL NO. 3, SHEET C7.1.

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/8/24

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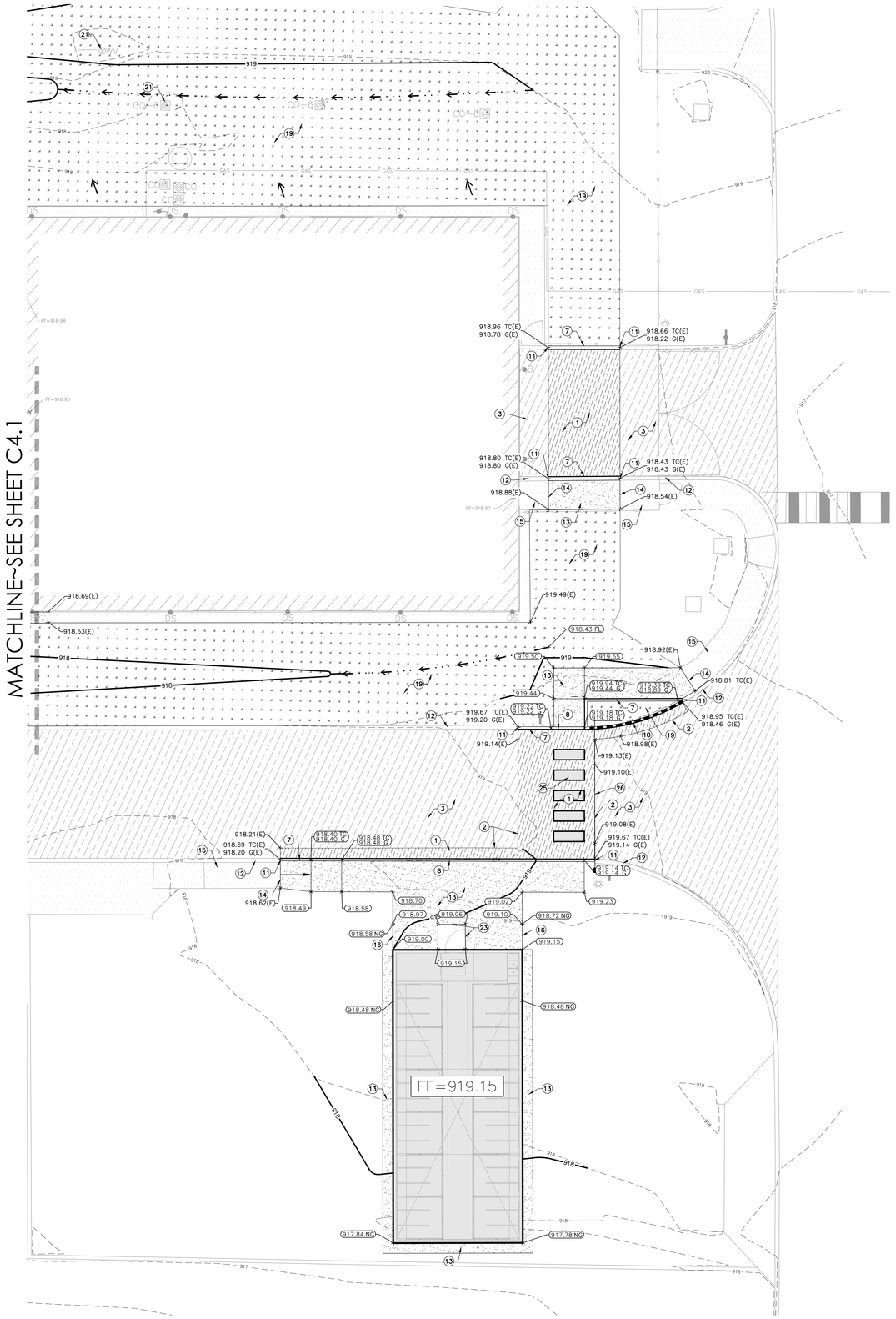
SITE GRADING AND DRAINAGE PLAN

Job No. 0000-00-00	Sheet No. C4.1
Drawn By: Author	
Date: 00.00.24	

PROJECT RELEASE TYPE



LEGEND

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	NEW CONCRETE FLATWORK
	PROPERTY LINE
+ 802.97	EXISTING SPOT ELEVATION
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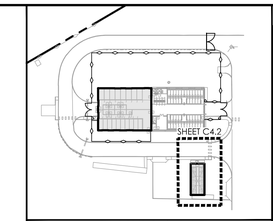

KEY MAP
NOT TO SCALE

SCALE: 1"=10'
10 5 0 10

GRADING KEYNOTES

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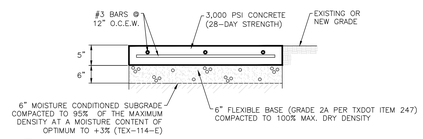
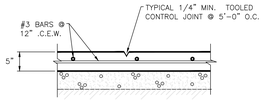
SITE GRADING AND DRAINAGE PLAN

Job No. 0000-00-00	Sheet No. C4.2
Drawn By: Author	
Date: 00.00.24	

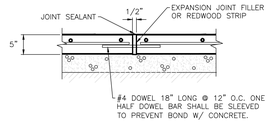
PROJECT RELEASE TYPE



A **TYPICAL CONCRETE SIDEWALK/FLATWORK SECTION**
SCALE: NONE



B **TYPICAL CONTROL JOINT**
SCALE: NONE



C **TYPICAL EXPANSION JOINT**
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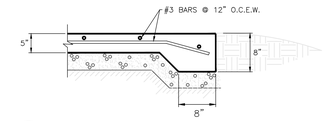
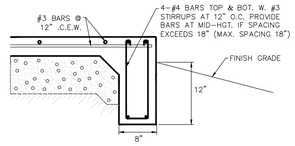
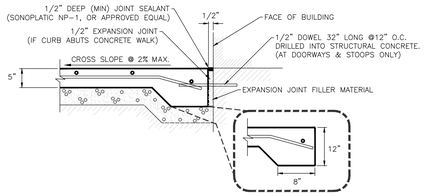


D **EDGE ADJACENT TO NATURAL GRADE**
SCALE: NONE



E **THICKENED EDGE**
SCALE: NONE

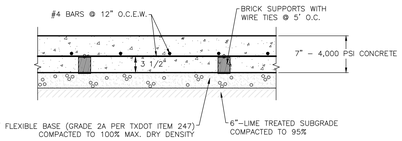


F **TYPICAL EXPANSION JOINT @ CONCRETE WALK/BLDG OR CONCRETE PAVEMENT INTERFACE**
SCALE: NONE

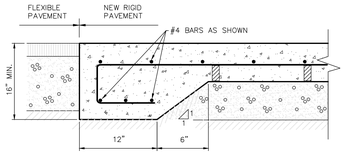
GENERAL NOTES FOR CONCRETE SIDEWALKS:

1. ALL SIDEWALKS SHALL BE A MINIMUM 3000 PSI CONCRETE WITH NO. 3 BARS AT 12" INCHES ON CENTER.
2. SLOPE SIDEWALKS AWAY FROM BUILDING AS INDICATED ON DRAWINGS OR AT 2% MAX.
3. PROVIDE SIDEWALK WITH A HORIZONTAL (CROSS) BRUSH FINISH ON ALL SURFACES.
4. GROOVE CONTRACTION JOINTS SHALL BE SPACED 5 FT. ON CENTERS, WITH 1/2" ELASTOMERIC EXPANSION JOINTS AT EVERY 30 FT. IN LARGER AREAS PROVIDE CONTRACTION JOINTS AT 10' O.C.E.W. WITH 1/2" EXPANSION JOINTS AT 30' O.C.E.W.
5. PROVIDE A 1/2" ELASTOMERIC EXPANSION JOINT ALONG NEW BUILDING BETWEEN ALL NEW SIDEWALK. SEAL WITH NP1 JOINT SEALANT.
6. ALL BASE MATERIAL UNDER SIDEWALKS TO BE MOISTURE CONDITIONED AND COMPACTED.
7. MAINTAIN 2" OF CLEAR COVER BETWEEN REINFORCING STEEL AND EDGE OF CONCRETE, BASE MATERIAL AND/OR SUBGRADE. CONTRACTOR TO PROVIDE BRICK SUPPORTS WITH WIRE TIES FOR REINFORCING STEEL. NO REBAR SHALL EXTEND INTO BASE/SUBGRADE.
8. ALL DOWEL BARS SHALL BE SMOOTH AND ALL REINFORCING BARS SHALL BE DEFORMED "REBAR" BOTH DOWELS AND REBAR SHALL BE AT A MINIMUM GRADE 60.
9. CONTRACTOR SHALL SUBMIT JOINTING PLAN TO ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE.
10. CONCRETE FLATWORK 3,000 PSI. SLUMP = 4.0" ± 1.0".
11. WATER TO CEMENT RATIO (LBS/LBS) CANNOT EXCEED 0.50.
12. CONTRACTOR TO PROVIDE A THICKER EDGE ADJACENT TO ALL NATURAL GRADE AND LANDSCAPE AREAS. REFERENCE SECTION D.

1 SIDEWALK/FLATWORK DETAILS
SCALE: NONE



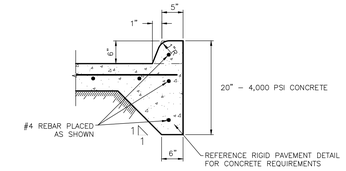
A **RIGID PAVEMENT DETAIL**
SCALE: NONE



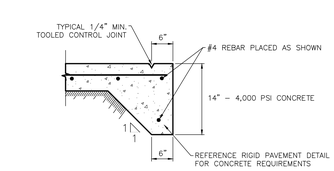
D **EDGE SECTION/JUNCTURE DETAIL**
SCALE: NONE

GENERAL NOTES FOR CONCRETE PAVEMENT:

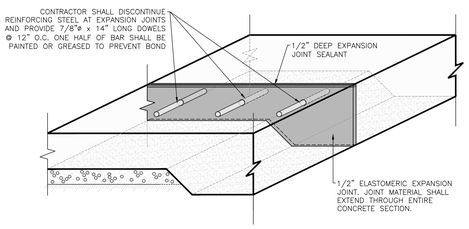
1. PROVIDE CONTROL JOINTS @ 15' O.C.E.W. & EXPANSION JOINTS @ 60' O.C.E.W.
2. SEAL ALL JOINTS WITH JOINT SEALANT (MASTERSEAL NP-1, OR APPROVED EQUAL).
3. CONTRACTOR SHALL SUBMIT JOINTING PLAN TO ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE PAVEMENT.
4. DOWELS SHALL BE PLACED PARALLEL TO EACH OTHER AND PERPENDICULAR TO JOINT FACE.
5. MAINTAIN 2" OF CLEAR COVER BETWEEN REINFORCING STEEL AND EDGE OF CONCRETE, BASE MATERIAL AND/OR SUBGRADE. CONTRACTOR TO PROVIDE BRICK SUPPORTS WITH WIRE TIES FOR REINFORCING STEEL. NO REBAR SHALL EXTEND INTO BASE/SUBGRADE.
6. NO VEHICULAR, CONSTRUCTION, OR PEDESTRIAN TRAFFIC SHALL BE ALLOWED ON CONCRETE PAVEMENT BEFORE SEALANT HAS CURED PER MANUFACTURER SPECIFICATIONS OR 24 HOURS FOLLOWING APPLICATION OF SEALANT, WHICHEVER IS LONGER.
7. CONCRETE PAVEMENT 4,000 PSI. SLUMP = 4.0" ± 1.0".
8. WATER TO CEMENT RATIO (LBS/LBS) CANNOT EXCEED 0.50.
9. LIME TREATMENT SHALL BE PER TXDOT STANDARD SPECIFICATION, ITEM 260. PROVIDE AN ESTIMATED 7% LIME BY WEIGHT AND COORDINATE WITH OWNER'S GEOTECHNICAL ENGINEER FOR DETERMINATION OF OPTIMUM CONTENT. PLACEMENT OF LIME TREATED MATERIAL SHALL BE IN LOOSE LIFTS NOT TO EXCEED 8" THICK AND COMPACTED TO 95% MIN. AT A MOISTURE CONTENT OF OPTIMUM TO +3% (TEX-121-E). ALLOW LIME TREATED MATERIAL 48-72 HOURS FOR ADEQUATE CURING.



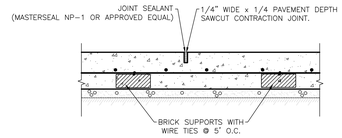
B **MONOLITHIC 6" CONCRETE CURB DETAIL**
SCALE: NONE



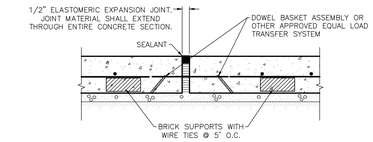
C **MONOLITHIC FLUSH CURB AT EDGE OF CONCRETE PAVEMENT**
SCALE: NONE



ISOLATION/EXPANSION JOINT ISOMETRIC VIEW



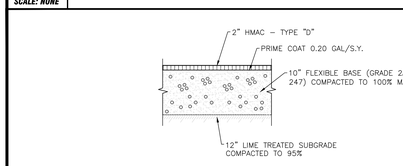
CONTROL JOINT PROFILE VIEW



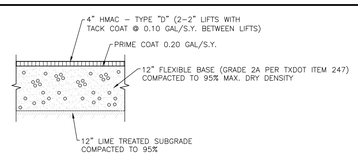
ISOLATION/EXPANSION JOINT PROFILE VIEW

E **CONCRETE PAVEMENT EXPANSION JOINT DETAIL**
SCALE: NONE

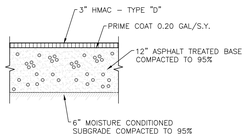
2 CONCRETE RIGID PAVEMENT DETAILS
SCALE: NONE



A. **LIGHT DUTY ASPHALT PAVEMENT SECTION**



B. **HEAVY DUTY ASPHALT PAVEMENT SECTION**

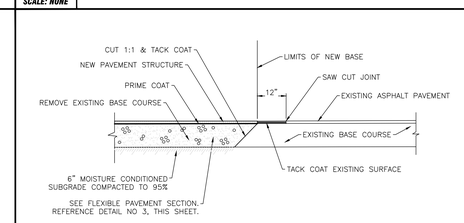


C. **ASPHALT PATCH SECTION IN PUBLIC ROW**

NOTES:

1. ALL SUBGRADE IN PAVEMENT AREAS SHALL PASS A PROOF ROLL OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO FLEXIBLE BASE PLACEMENT.
2. LIME TREATMENT SHALL BE PER TXDOT STANDARD SPECIFICATION, ITEM 260. PROVIDE AN ESTIMATED 7% LIME BY WEIGHT AND COORDINATE WITH OWNER'S GEOTECHNICAL ENGINEER FOR DETERMINATION OF OPTIMUM CONTENT. PLACEMENT OF LIME TREATED MATERIAL SHALL BE IN LOOSE LIFTS NOT TO EXCEED 8" THICK AND COMPACTED TO 95% MIN. AT A MOISTURE CONTENT OF OPTIMUM TO +3% (ASTM D698). ALLOW LIME TREATED MATERIAL 48-72 HOURS FOR ADEQUATE CURING.
3. FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT ITEM 247, TYPE A, GRADE 2. BASE COURSE SHOULD BE PLACED IN LIFTS WITH A MAXIMUM THICKNESS OF 8 IN. AND COMPACTED TO A MINIMUM OF 100% OF THE MAXIMUM DENSITY AT A MOISTURE CONTENT WITHIN THE RANGE OF ±2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY TEX-113-E

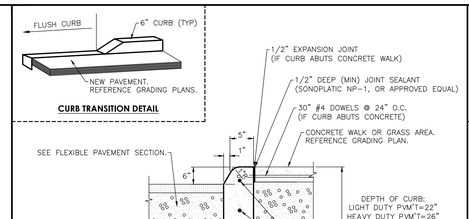
3 FLEXIBLE PAVEMENT DETAIL
SCALE: NONE



NOTES:

1. APPLY PRIMER IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS.
   A. APPLY PRIMER EVENLY AND SMOOTHLY ON BASE OR SUB-BASE OVER SUB-GRADE SURFACE AT UNIFORM RATE NOT TO EXCEED 0.20 GALLONS/SQUARE YARD OF SURFACE OR AS APPROVED BY CIVIL ENGINEER.
   B. USE CLEAN SAND TO BLOT EXCESS PRIMER.
2. APPLY TACK COAT IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS.
   A. APPLY AT A RATE OF 0.11 GALLONS/SQUARE YARD OR SURFACE OR AS APPROVED BY CIVIL ENGINEER.
   B. APPLY TACK COAT TO CONTACT SURFACES OF EXISTING ASPHALT SURFACES WHERE THE NEW ENTRANCE DRIVES TRANSITION TO THE EXISTING STREET.
3. PLACE ASPHALT WITHIN TWENTY-FOUR (24) HOURS OF APPLYING PRIMER OR TACK COAT.

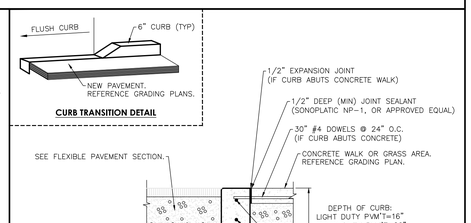
4 ASPHALT PAVEMENT JUNCTURE DETAIL
SCALE: NONE



NOTES:

1. PROVIDE CONTROL JOINTS @ 15' O.C. & EXPANSION JOINTS @ 60' O.C.
2. SEAL ALL JOINTS WITH JOINT SEALANT (MASTERSEAL NP-1, OR APPROVED EQUAL).
3. CONCRETE CURB 4,000 PSI. SLUMP = 3.0" ± 1.0".
4. WATER TO CEMENT RATIO (LBS/LBS) CANNOT EXCEED 0.50.

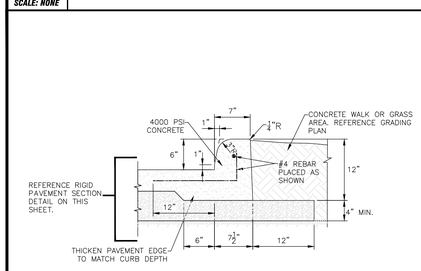
5 CONCRETE CURB DETAIL
SCALE: NONE



NOTES:

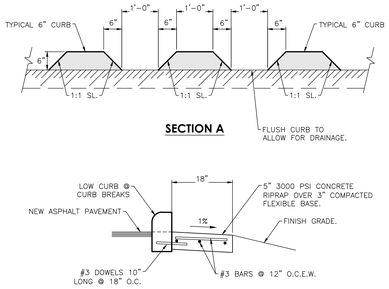
1. PROVIDE CONTROL JOINTS @ 15' O.C. & EXPANSION JOINTS @ 60' O.C.
2. SEAL ALL JOINTS WITH JOINT SEALANT (MASTERSEAL NP-1, OR APPROVED EQUAL).
3. CONCRETE CURB 4,000 PSI. SLUMP = 3.0" ± 1.0".
4. WATER TO CEMENT RATIO (LBS/LBS) CANNOT EXCEED 0.50.

6 HEADER (FLUSH) CURB DETAIL
SCALE: NONE



NOTE:
PROVIDE CONTROL JOINTS @ 20' O.C. & EXPANSION JOINTS @ 60' O.C., ALIGN WITH JOINTS IN RIGID PAVEMENT

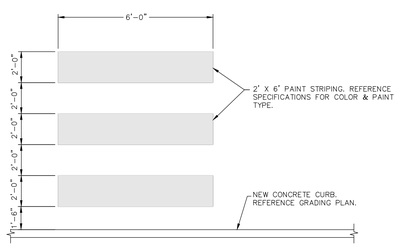
7 MONOLITHIC CURB DETAIL
SCALE: NONE



SECTION A

SECTION B

8 SLOTTED CURB DETAIL
SCALE: NONE



9 STRIPED CROSSWALK DETAIL
SCALE: NONE

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/8/24

Revision / Date

Project:
DAVENPORT HIGH SCHOOL
2023 AG AND POULTRY BARNS
FOR
COMAL I.S.D.
SPRING BRANCH, TEXAS

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· Surveyors
· Planners
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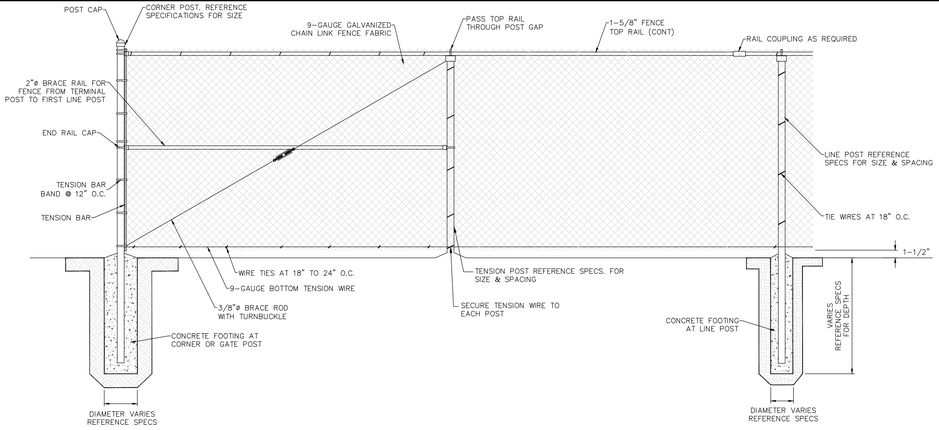
DETAILS

Job No.	Sheet No.
0000-00-00	C7.0
Drawn By: Author	
Date: 00.00.24	

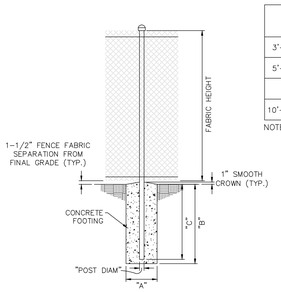
PROJECT RELEASE TYPE



TYPICAL FENCE PROFILE

NOTES:

1. **ALL FENCE MATERIALS & HARDWARE TO BE HOT DIP GALVANIZED UNLESS OTHERWISE NOTED ON FENCING PLAN. (ALUMINUM WIRE TIES ARE ACCEPTABLE)**
2. **ALL FENCE FABRIC SHALL BE INSTALLED WITH THE KNUCKLE SIDE UP AND DOWN.**
3. **ALL CHAIN-LINK FENCE FABRIC IS TO GALVANIZED.**
4. **ALL CONCRETE POST FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI (28-DAY STRENGTH) AND MAXIMUM 3" SLUMP.**



LINE AND TERMINAL POSTS

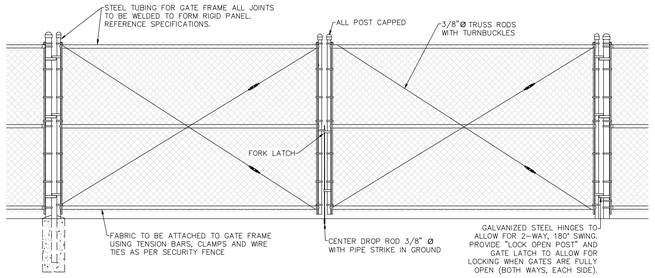
FABRIC HEIGHT	TYPE POST	"POST DIAM"	"A" DIAM	"B" DEPTH	"C" POST EMBED
3'-0" TO 4'-0"	LINE	2"	10"	30"	28"
	TERMINAL	3"	12"	36"	34"
5'-0" TO 6'-0"	LINE	2-3/8"	12"	28"	30"
	TERMINAL	3"	12"	40"	38"
8'-0"	LINE	2-3/8"	12"	36"	34"
	TERMINAL	3"	12"	40"	38"
10'-0" TO 12'-0"	LINE	2-3/8"	16"	48"	46"
	TERMINAL	3"	16"	48"	46"

NOTE: TERMINAL POSTS INCLUDE END, CORNER, AND TENSION POSTS

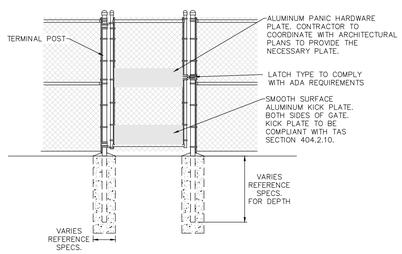
GATE POST

GATE LEAF WIDTH	GATE POST	FABRIC HEIGHT	"A" DIAM	"B" DEPTH	"C" POST EMBED
3' TO 4'	3"	4'	10"	36"	34"
		5' TO 6'	12"	40"	38"
		8'	16"	46"	44"
5' TO 9'	4"	3' TO 4'	18"	48"	46"
		5' TO 6'	18"	48"	46"
		8'	18"	60"	58"
10'	6.625"	8'-0"	18"	60"	58"

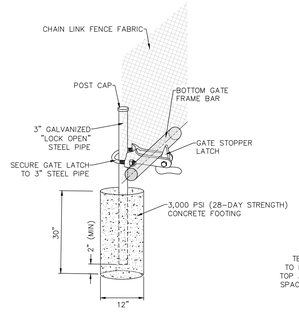
FENCE POST FOOTING SCHEDULE



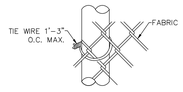
TYPICAL DOUBLE SWING GATE PROFILE



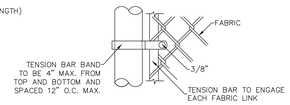
TYPICAL SINGLE SWING (PEDESTRIAN) GATE PROFILE



TYPICAL LOCK OPEN POST & GATE LATCH DETAIL



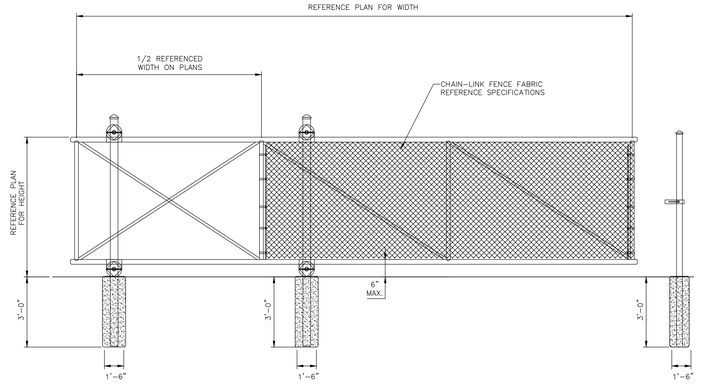
WIRE TIES FOR POST



DETAIL - END OR GATE POST

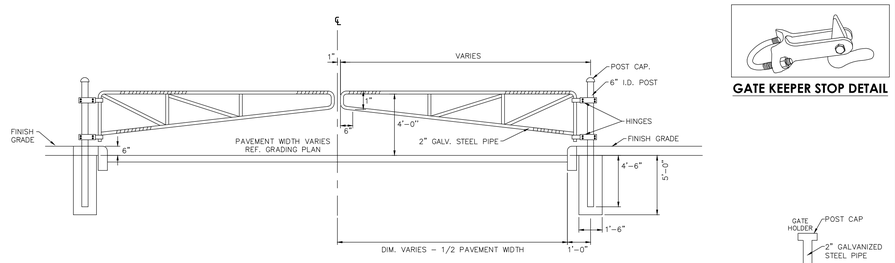
1 CHAINLINK FENCE DETAILS

SCALE: NONE



2 SLIDING GATE DETAIL

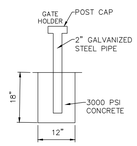
SCALE: NONE



NOTES:

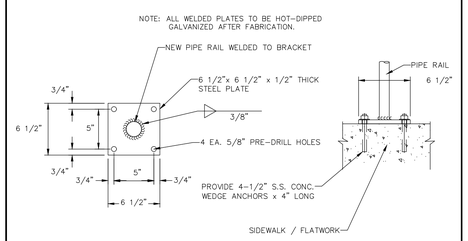
1. ALL PIPING SHALL BE SCHEDULE 40 HOT DIPPED GALVANIZED.
2. ALL PIPE JOINTS ARE TO BE WELDED TO FORM RIGID PANELS.
3. AT EACH PIPE GATE, PROVIDE 2 GALVANIZED GATE HOLDERS MOUNTED ON GALVANIZED STEEL POSTS TO HOLD GATE IN AN OPEN POSITION.
4. PROVIDE RED AND BLACK REFLECTOR TAPE ALONG THE ENTIRE LENGTH OF THE TOP AND BOTTOM GATE RAILS.

GATE KEEPER STOP DETAIL



3 PIPE GATE DETAIL

SCALE: NONE



4 POST ANCHORAGE DETAIL

SCALE: NONE

Date

Revision /

Project:

DAVENPORT HIGH SCHOOL
2023 AG AND POULTRY BARNS
FOR
COMAL I.S.D.
SPRING BRANCH, TEXAS

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/8/24

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DETAILS

Job No. 0000-00-00	Sheet No. C7.1
Drawn By: Author	
Date: 00.00.24	

PROJECT RELEASE TYPE

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK.
2. ALL WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE SITE TO A STATE LICENSED LANDFILL. CONTRACTOR WILL BE REQUIRED TO PROVIDE DOCUMENTATION WHERE DISPOSED MATERIAL IS TAKEN TO. THE OWNER WILL NOT BE HELD LIABLE FOR WASTE MATERIAL.
3. CONTRACTOR IS REQUIRED TO SET AND VERIFY ALL PROJECT ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY THE SAME MATERIALS AS WELL AS VERTICAL AND HORIZONTAL ALIGNMENT.
4. GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSION & GRADE CONDITIONS (BOTH NEW AND EXISTING). HE SHALL REPORT ANY DISCREPANCIES TO THE PROJECT ENGINEER BEFORE PROCEEDING WITH ANY PHASE OF THE WORK AS HE WILL BE RESPONSIBLE FOR ALL WORK AS INTENDED BY THE DRAWINGS AND SPECIFICATIONS.
5. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY.
6. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION.
7. ANY EXISTING OFF-SITE IMPROVEMENTS AND/OR UTILITIES REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE PROJECT ARCHITECT AT THE CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CURBS, CONCRETE DRIVEWAYS, SIDEWALK STRUCTURES AND PAVEMENT, THAT ARE NOT INDICATED TO BE REMOVED. AN INVENTORY OF EXISTING CONDITIONS SHALL BE CONDUCTED WITH THE CONTRACTOR AND OWNER PRIOR TO DEMOLITION.
9. CONTRACTOR SHALL MAINTAIN CONTINUAL ALL UTILITY SERVICES (GAS, TELE, CATV, ELEC., WATER, SEWER, STORM SEWER, ETC.) TO EXISTING FACILITIES AND BUILDINGS. WHERE CONSTRUCTION IS IN THE PROXIMITY OF A UTILITY, THE CONTRACTOR WILL TAKE PRECAUTION TO PROTECT AND/OR SUPPORT THE UTILITY.
11. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
12. NOTIFY OWNER 72 HOURS IN ADVANCE OF UTILITY SHUTDOWN.
13. ADJUST ALL EXISTING VALVES & UTILITIES TO REMAIN TO FINISH GRADE. REFERENCE GRADING & UTILITY PLAN.
14. CONTRACTOR SHALL COORDINATE ALL DEMOLITION CONSTRUCTION ACTIVITIES WITH OTHER DISCIPLINES AS REQUIRED.
15. CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION WITH UTILITY PLANS.
16. CONTRACTOR IS RESPONSIBLE FOR CLEARING THE ALIGNMENT FOR ALL NEW FENCING. CLEARING TO INCLUDE ALL VEGETATION, TREE LIMBS, AND SHRUBS WITHIN 5' OF NEW FENCE ALIGNMENT ON EACH SIDE.
17. CONTRACTOR TO REFERENCE LANDSCAPE PLANS FOR THE REMOVAL OF EXISTING TREES.
18. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL SILT FROM THE DRAINAGE SYSTEM AND FLUSH THE DRAINAGE SYSTEM UPON SUBSTANTIAL COMPLETION OF THE PROJECT.

DRAINAGE AND STORM SEWER NOTES:

1. CLEAR COVER FOR REINFORCEMENT STEEL IS 2" UNLESS OTHERWISE NOTED.
2. MATERIAL SPECIFICATIONS:

   CONCRETE/CONCRETE RIPRAP: CLASS A 3000 PSI IN 28 DAYS UNLESS OTHERWISE NOTED ON PLANS.

   REINFORCING STEEL: CONFORM TO A.S.T.M. A-615, GRADE 60 (2" CLEAR COVER UNLESS OTHERWISE NOTED ON PLANS)

   PIPE RAILING: CONFORM TO A.S.T.M. A-53, GRADE B, OR A-501
3. STORM SEWER PIPE MATERIAL SPECIFICATIONS: PIPE MATERIAL SHALL BE AS NOTED ON DRAINAGE PLANS. WHEN SPECIFIED:
   A) REINFORCED CONCRETE PIPE (RCP) CLASS III, UNLESS OTHERWISE SPECIFIED ON PLAN.
   B) PRECAST BOX CULVERT OLDCASTLE PRECAST TYPE I OR EQUAL APPROVED BY ENGINEER.
   C) POLYVINYL CHLORIDE (PVC) PIPE SHALL BE SDR 26 (115 psi)
   D) ALUMINIZED STEEL (AS)
      1. CORRUGATIONS: 2 2/3"X1/2"X7-1/2" HELICAL CORRUGATIONS PER ASSHTO M-36, TYPE IR (ASTM A-760)
      2. MATERIAL: ALUMINIZED TYPE 2 STEEL PER AASHTO M-274 (ASTM A-819)
      3. JOINT: HUGGER BANDS WITH TECHNO ANGLES. CONTRACTOR TO PROVIDE 5-C BANDS WITH BAR BOLT AND STRAP CONNECTION.
      4. THICKNESS: 0.064" (16 GAUGE)
   E) HDPE STORM PIPE TO BE ADS DUAL WALL PIPE N-12 OR APPROVED EQUAL.
4. ALL STORM SEWER INLET GRATES SHALL BE GALVANIZED.
5. CONCRETE COLLARS SHALL BE PROVIDED ON ALL STORM DRAIN TO JUNCTION BOX/GRATE INLET CONNECTIONS. REFERENCE DETAILS.
6. GROUT INVERTS OF ALL JUNCTION BOXES AND GRATE INLETS TO DRAIN.
7. ALL JUNCTION BOXES SHALL HAVE MANHOLES FOR ACCESS WITH BOLTED MANHOLE LIDS.
8. ALL DRAINAGE STRUCTURES, LIDS AND GRATES SHALL BE RATED FOR H20 LOADING.
9. ALL PIPE TRENCHES SHALL CONTAIN FILTER FABRIC BETWEEN THE INITIAL AND SECONDARY BACKFILL. REFERENCE DETAILS AND SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.
10. PROVIDE CONCRETE APRONS ON ALL INLETS (NOT IN PAVEMENT AREAS) PER DETAILS.
11. ALL CONCRETE STORM DRAIN STRUCTURES TO HAVE A 32" CLEAR OPENING FOR ACCESS. CONTRACTOR TO PROVIDE CORRESPONDING LID AND FRAME TO PROVIDE 32" CLEAR OPENING.
12. ALL CURB INLETS TO BE INSTALLED WITH STEEL ARMOR AT THE CURB OPENING.
13. PROVIDE ECCENTRIC REDUCERS ON SDR 26 PVC/HDPE STORM PIPE WHERE PIPE DIAMETERS INCREASE IN SIZE.

LANDSCAPING:

PROVIDE 4" OF APPROVED TOPSOIL ALONG WITH SOLID SOD (BERMUDA TIF 419) ON ALL AREAS SHOWN TO RECEIVE SOLID SOD (OUTSIDE OF PLAYFIELD AREA). CONTRACTOR TO NOTIFY ENGINEER PRIOR TO SOD PLACEMENT TO VERIFY TOPSOIL DEPTH.

PROVIDE 4" OF APPROVED TOPSOIL ALONG WITH SOLID SOD (BERMUDA TIFTUF) ON ALL AREAS SHOWN TO RECEIVE SOLID SOD INSIDE PLAYFIELD AREA. CONTRACTOR TO NOTIFY ENGINEER PRIOR TO SOD PLACEMENT TO VERIFY TOPSOIL DEPTH.

PROVIDE 4" OF APPROVED TOPSOIL ON ALL OTHER AREAS DISTURBED BY REGRADING / CONSTRUCTION ACTIVITIES ALONG WITH GRASS HYDROMULCH.

TOPSOIL TO BE NEWEARTH ENRICHED TOPSOIL, OR APPROVED EQUAL.

GRASS SEED HYDROMULCHING WILL BE DONE UTILIZING A SLURRY BLEND OF SEEDS, MULCH, WATER AND TACKYFIER AND WILL BE TRANSPORTED IN A TANK, TRUCK OR TRAILER AND SPRAYED OVER PREPARED GROUND.

IF HYDROMULCH SEED IS APPLIED AFTER SEPTEMBER 15, SEED MIX SHALL BE UNHULLED COMMON BERMUDA (CYNODON CACTYLON) – 2 POINDS PER 1000 S.F. AND WINTER RYE GRASS (LOLIUM PERENNE) – 4 POUNDS PER 1000 S.F.

CONTRACTOR SHALL PROVIDE AND MAINTAIN AN ABOVE GROUND PVC TEMPORARY IRRIGATION SYSTEM WITH TIMER UNTIL THE HYDROMULCH GRASS SEED IS ESTABLISHED. IF WATER IS NOT READILY AVAILABLE, CONTRACTOR IS RESPONSIBLE FOR TRUCKING WATER TO ESTABLISH VEGETATION. CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE REVEGETATED AREAS UNTIL THE PROJECT ENGINEER CONFIRMS THETEMPORARY IRRIGATION CAN BE REMOVED. CONTRACTOR TO MOW AND EDGE NEWLY PLANTED GRASS WEEKLY WHEN GROWTH REACHES 2 ½". MAINTAIN AT THIS HEIGHT WEEKLY.

CONTRACTOR TO VERIFY WATER SOURCES PRIOR TO SUBMITTING BIDS. IF WATER IS NOT READILY AVAILABLE, CONTRACTOR TO ACCOUNT FOR WATER TO BE BROUGHT TO THE SITE AT THEIR EXPENSE. IF WATER IS AVAILABLE, CONTRACTOR TO PROVIDE BACKFLOW PREVENTOR ON PROPOSED TEMPORARY IRRIGATION.

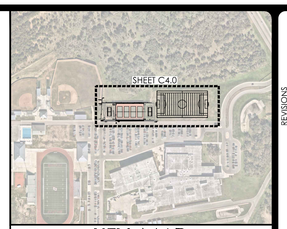
SUBSTANTIAL COMPLETION WILL NOT BE ACCEPTED UNTIL SOLID SOD AND HYDROMULCH SEED HAS BEEN ESTABLISHED

VINYL COATED CHAIN-LINK NOTES:

1. ALL VINYL COATED FENCING TO BE CLASS 2B THERMALLY FUSED AND BONDED. COLOR TO BE BLACK.
2. ALL VINYL COATED FENCING CORE WIRE TO BE PER SPECIFICATION FOR THE HEIGHT OF FENCE SPECIFIED.

LEGEND

	NEW LIGHT DUTY ASPHALT
	NEW CONCRETE FLATWORK
	PROPERTY LINE
+ 802.97	EXISTING SPOT ELEVATION
(802.00)+	PROPOSED ELEVATION
1004	EXISTING CONTOUR
1004	NEW CONTOUR
	CHAINLINK FENCE
	FLOW LINE
	GRADE BREAK
RCP	REINFORCED CONCRETE PIPE
AS	ALUMINIZED STEEL PIPE
PVC	POLYVINYL CHLORIDE PIPE
INV	INVERT ELEVATION OF PIPE
TW	TOP OF WALL ELEVATION
TOP	TOP OF MANHOLE ELEVATION
TOG	TOP OF GRATE ELEVATION
TC	TOP OF CURB
G	GUTTER
SW	TOP OF SIDEWALK
ESM'T	EASEMENT
E.G.T.C.ATV	ELECTRIC, GAS, TELEPHONE & CABLE T.V.
R.O.W.	RIGHT OF WAY
HP	HIGH POINT
	SIDEWALK RAMP
	DRAINAGE FLOW ARROW
	PROPOSED FIRE HYDRANT
	PROPOSED TRAFFIC SIGN



KEY MAP
NOT TO SCALE

SCALE: 1"=40'
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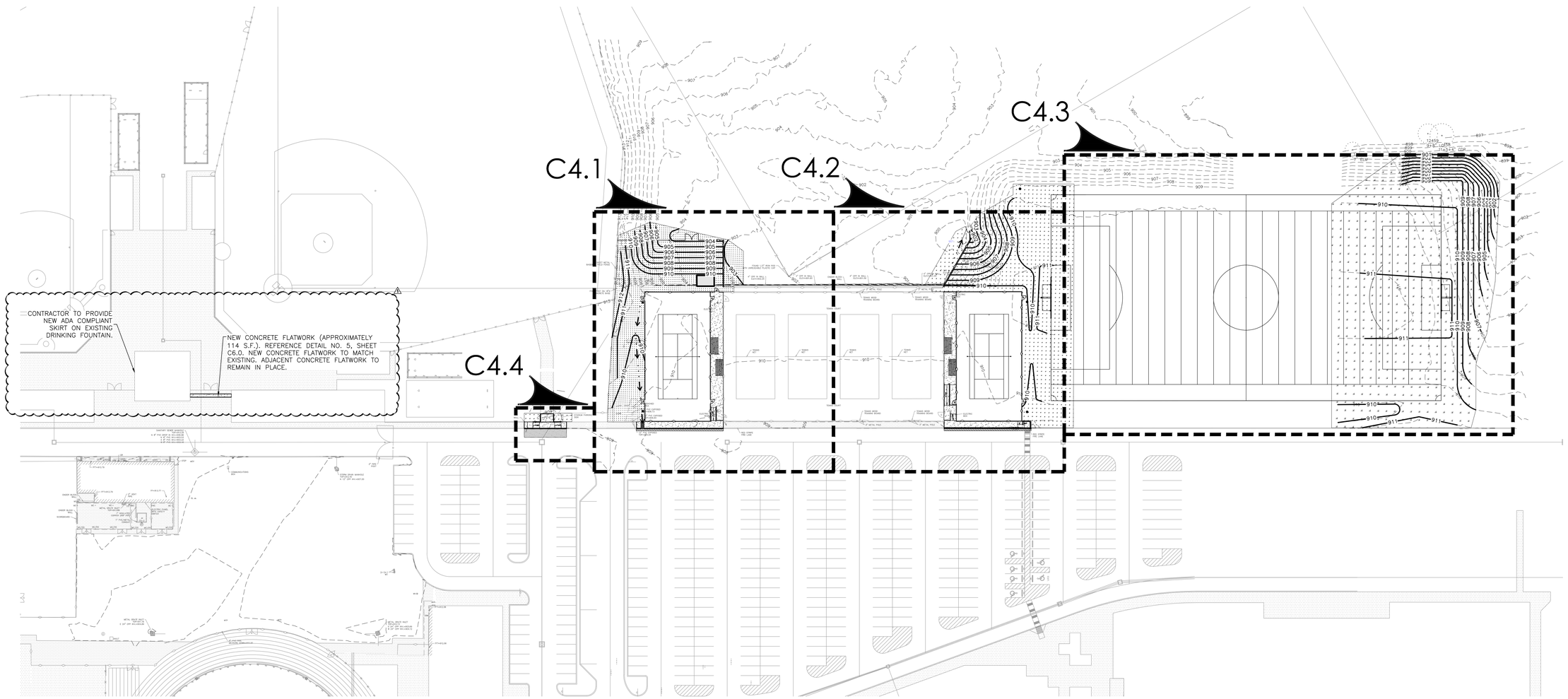

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STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/8/24

MTR
Moy Tarin Ramirez Engineers, LLC
• Engineers
• Surveyors
• Planners
FIRM TBPELS ENG F-5297 SVY F-10013500
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

OVERALL SITE GRADING AND DRAINAGE PLAN

SHEET
C4.0R1

LEGEND

	NEW LIGHT DUTY ASPHALT
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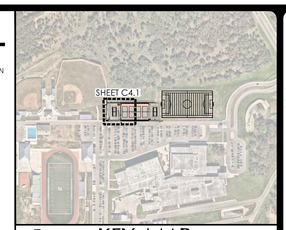

KEY MAP
NOT TO SCALE

SCALE: 1"=10'
10 5 0 10

GRADING KEYNOTES

1. NEW HEAVY DUTY ASPHALT PAVEMENT. REFERENCE SECTION DETAIL NO. 1B, SHEET C6.0.
2. PROVIDE 24" WIDE ASPHALT PATCH. REFERENCE DETAIL NO. 1C, SHEET C6.0.
3. NEW ASPHALT PAVEMENT TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING PAVEMENT AS NECESSARY TO MATCH NEW CONSTRUCTION. REFERENCE PAVEMENT JUNCTURE DETAIL NO. 2, SHEET C6.0.
4. EXISTING ASPHALT PAVEMENT TO REMAIN IN PLACE.
5. NEW CONCRETE SIDEWALK/FLATWORK. REFERENCE DETAIL NO. 5, SHEET C6.0.
6. NEW CONCRETE SIDEWALK/FLATWORK TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING SIDEWALK AS NECESSARY TO MATCH NEW CONSTRUCTION. PROVIDE EXPANSION JOINT W/ DOWELS DRILLED INTO EXISTING SIDEWALK AT JUNCTURE. REFERENCE DETAIL NO. 5C, SHEET C6.0.
7. EXISTING CONCRETE SIDEWALK/FLATWORK TO REMAIN IN PLACE.
8. CONTRACTOR TO PROVIDE THICKENED EDGE ON CONCRETE FLATWORK. REFERENCE DETAIL NO. 10E, SHEET C6.0.
9. NEW STRUCTURAL CONCRETE TENNIS COURT. REFERENCE STRUCTURAL PLANS. REFERENCE SHEETS C5.0 AND C5.1.
10. CONCRETE SIDEWALK/FLATWORK TO MATCH STRUCTURAL CONCRETE. CONTRACTOR TO PROVIDE ½" EXPANSION JOINT W/ DOWELS AT JUNCTURE. REFERENCE DETAIL NO. 5F, SHEET C6.0.
11. RELOCATED GOAL POST. CONTRACTOR TO PROVIDE FOOTING PER MANUFACTURER REQUIREMENTS. CONTRACTOR TO PROVIDE NEW PADS. CONTRACTOR TO CLEAN AND TOUCH UP GOAL POST.
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18. NEW CONCRETE RAMP AT 12:1 MAX. SLOPE. CONTRACTOR TO PROVIDE ADJACENT RAILS ON BOTH SIDES OF RAMP. RAILS TO EXTEND 1'-0" MIN. BEYOND LIMITS OF RAMP. REFERENCE RAMP LENGTH AND SPOT ELEVATIONS SHOWN ON PLAN. REFERENCE HANDRAIL DETAIL NO. 1, SHEET C6.2 AND SECTION DETAIL NO. 7, SHEET C6.0.
19. NEW HANDRAIL. REFERENCE DETAIL NO. 1, SHEET C6.2.
20. NEW 10' TALL VINYL COATED CHAIN-LINK FENCE. REFERENCE DETAIL NO. 2, SHEET C6.1. VINYL COATED.
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28. NEW SOLID SODDING. REFERENCE LANDSCAPING NOTES, SHEET C4.0.
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CONTRACTOR TO FILL VOIDS IN GROUT AT FENCE POST FOOTINGS. CONTRACTOR TO ACCOUNT FOR 64 GROUT REPAIRS.

MATCHLINE~SEE SHEET C4.4

MATCHLINE~SEE SHEET C4.2

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STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
10/8/24

MTR
Moy Tarin Ramirez Engineers, LLC
FIRM REPELS ENGR. F-5297 SVY F-10013500
13770 CIMARRON PARK, SUITE 100 TEL: (210) 696-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085
• Engineers
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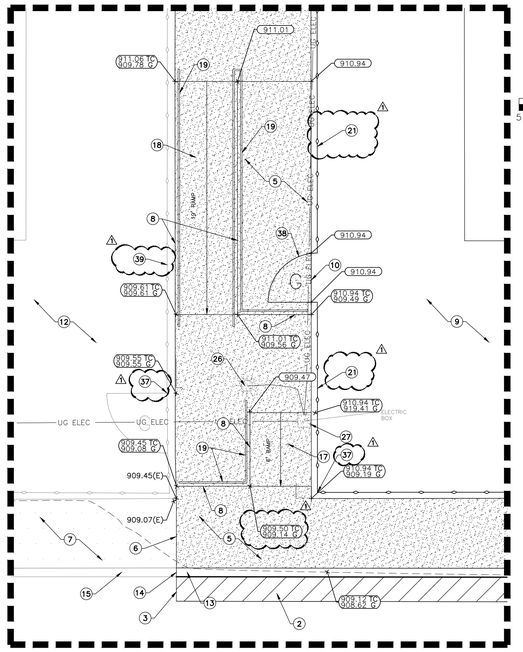
COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

SITE GRADING AND DRAINAGE PLAN

SHEET
C4.1R1



ENLARGED DETAIL "A"

SCALE: 1"=5'

5 2.5 0 5

LEGEND

	NEW LIGHT DUTY ASPHALT
	NEW CONCRETE FLATWORK
	PROPERTY LINE
+ 802.97	EXISTING SPOT ELEVATION
802.00+	PROPOSED ELEVATION
1004	EXISTING CONTOUR
1004	NEW CONTOUR
	CHAINLINK FENCE
	FLOW LINE
	GRADE BREAK
RCP	REINFORCED CONCRETE PIPE
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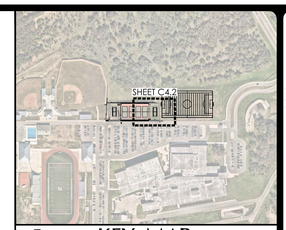

KEY MAP
NOT TO SCALE

SCALE: 1"=10'

10 5 0 10

MATCHLINE~SEE SHEET C4.1

MATCHLINE~SEE SHEET C4.3

SEE DETAIL "A"

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REGISTERED PROFESSIONAL ENGINEER
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COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

SITE GRADING AND DRAINAGE PLAN

SHEET
C4.2R1

LEGEND

	NEW LIGHT DUTY ASPHALT	TW	TOP OF WALL ELEVATION
	NEW CONCRETE FLATWORK	TOP	TOP OF MANHOLE ELEVATION
	PROPERTY LINE	TOG	TOP OF GRATE ELEVATION
+ 802.97	EXISTING SPOT ELEVATION	TC	TOP OF CURB
(802.00)+	PROPOSED ELEVATION	G	GUTTER
1004	EXISTING CONTOUR	SW	TOP OF SIDEWALK
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	GRADE BREAK	HP	HIGH POINT
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AS	ALUMINIZED STEEL PIPE		DRAINAGE FLOW ARROW
PVC	POLYVINYL CHLORIDE PIPE		PROPOSED FIRE HYDRANT
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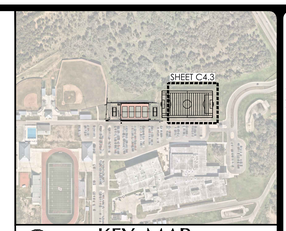

KEY MAP
NOT TO SCALE

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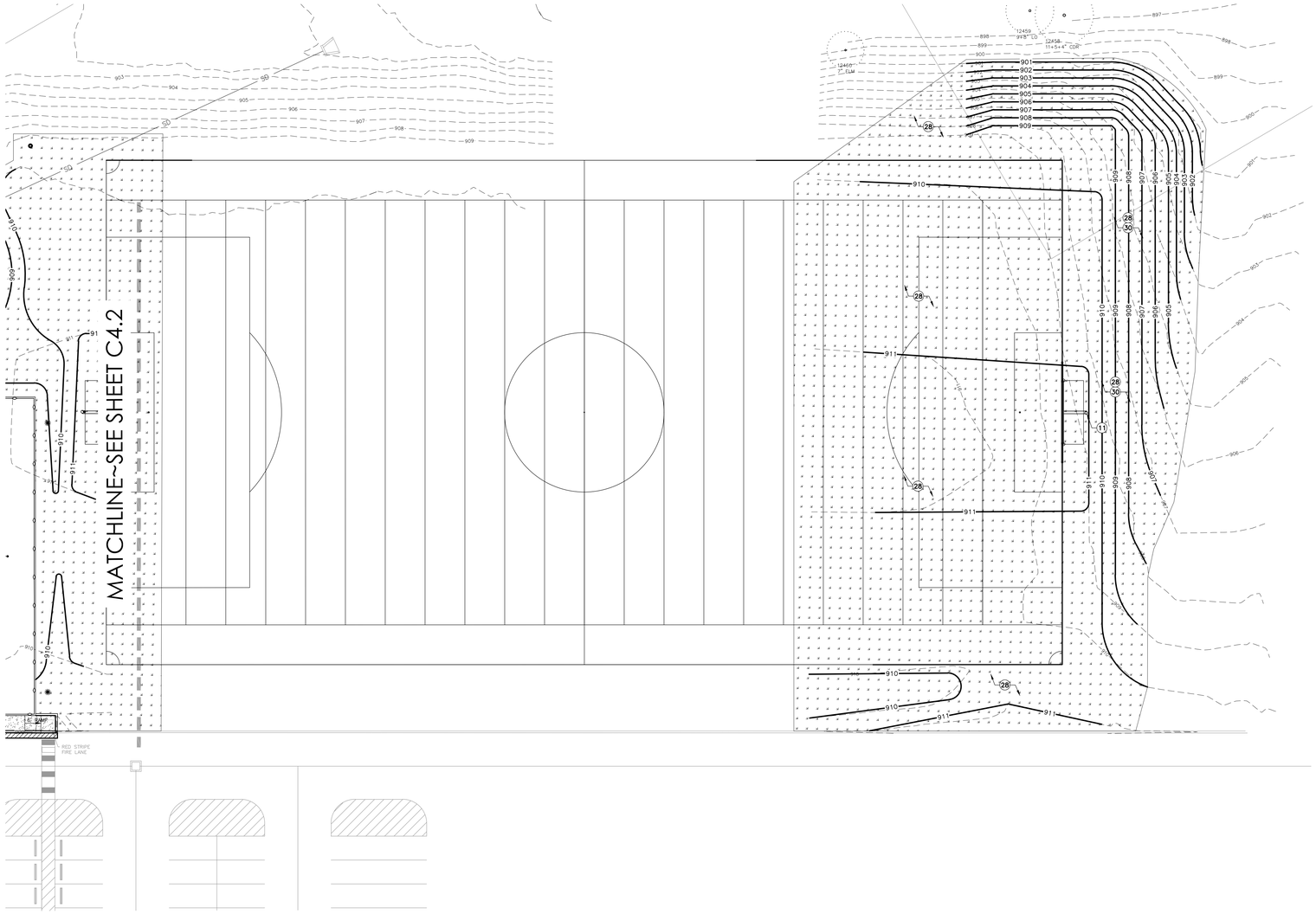

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32. NEW 6' TALL 12' WIDE CHAIN-LINK DOUBLE GATE. REFERENCE DETAIL NO. 2, SHEET C6.1.
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34. NEW MODULAR BLOCK RETAINING WALL TO MATCH EXISTING.
35. EXISTING MODULAR BLOCK RETAINING WALL TO REMAIN.
36. CONTRACTOR TO REPAINT CURB AND FIRE LANE STRIPING.

REVISIONS	DESCRIPTION:	DATE:	BY:
NO:			

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
9/12/24

• Engineers
• Surveyors
• Planners
Moy Tarin Ramirez Engineers, LLC
FIRM REGISTRATION #: F-10313500 TBPELS ENGINEERING FIRM #: F-5289 SVY FIRM #: 10194500
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

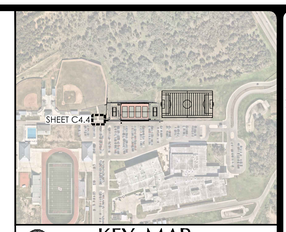
COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

SITE GRADING AND DRAINAGE PLAN

SHEET
C4.3

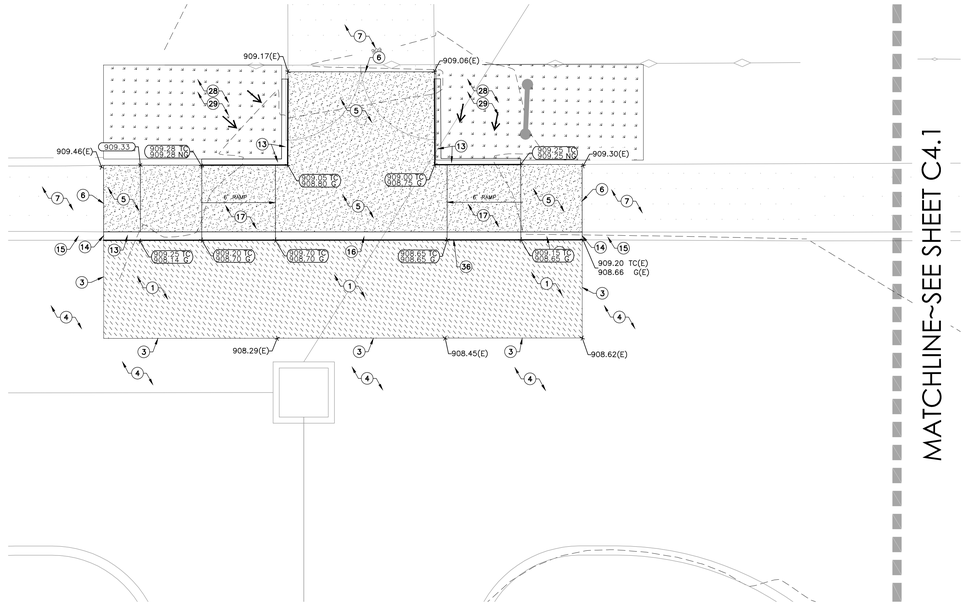
LEGEND

	NEW LIGHT DUTY ASPHALT
	NEW CONCRETE FLATWORK
	PROPERTY LINE
+ 802.97	EXISTING SPOT ELEVATION
(802.00)+	PROPOSED ELEVATION
1004	EXISTING CONTOUR
1004	NEW CONTOUR
	CHAINLINK FENCE
	FLOW LINE
	GRADE BREAK
ROP	REINFORCED CONCRETE PIPE
AS	ALUMINIZED STEEL PIPE
PVC	POLYVINYL CHLORIDE PIPE
INV	INVERT ELEVATION OF PIPE
TW	TOP OF WALL ELEVATION
TOP	TOP OF MANHOLE ELEVATION
TOG	TOP OF GRATE ELEVATION
TC	TOP OF CURB
G	GUTTER
SW	TOP OF SIDEWALK
ESM'T	EASEMENT
E.G.T.CATV	ELECTRIC, GAS, TELEPHONE & CABLE T.V.
R.O.W.	RIGHT OF WAY
HP	HIGH POINT
	SIDEWALK RAMP
	DRAINAGE FLOW ARROW
	PROPOSED FIRE HYDRANT
	PROPOSED TRAFFIC SIGN



KEY MAP
NOT TO SCALE

SCALE: 1"=5'
5 2.5 0 5



MATCHLINE~SEE SHEET C4.1

GRADING KEYNOTES

1. NEW HEAVY DUTY ASPHALT PAVEMENT. REFERENCE SECTION DETAIL NO. 1B, SHEET C6.0.
2. PROVIDE 24" WIDE ASPHALT PATCH. REFERENCE DETAIL NO. 1C, SHEET C6.0.
3. NEW ASPHALT PAVEMENT TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING PAVEMENT AS NECESSARY TO MATCH NEW CONSTRUCTION. REFERENCE PAVEMENT JUNCTURE DETAIL NO. 2, SHEET C6.0.
4. EXISTING ASPHALT PAVEMENT TO REMAIN IN PLACE.
5. NEW CONCRETE SIDEWALK/FLATWORK. REFERENCE DETAIL NO. 5, SHEET C6.0.
6. NEW CONCRETE SIDEWALK/FLATWORK TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING SIDEWALK AS NECESSARY TO MATCH NEW CONSTRUCTION. PROVIDE EXPANSION JOINT W/ DOWELS DRILLED INTO EXISTING SIDEWALK AT JUNCTURE. REFERENCE DETAIL NO. 5C, SHEET C6.0.
7. EXISTING CONCRETE SIDEWALK/FLATWORK TO REMAIN IN PLACE.
8. CONTRACTOR TO PROVIDE THICKENED EDGE ON CONCRETE FLATWORK. REFERENCE DETAIL NO. 10E, SHEET C6.0.
9. NEW STRUCTURAL CONCRETE TENNIS COURT. REFERENCE STRUCTURAL PLANS. REFERENCE SHEETS C5.0 AND C5.1.
10. CONCRETE SIDEWALK/FLATWORK TO MATCH STRUCTURAL CONCRETE. CONTRACTOR TO PROVIDE ½" EXPANSION JOINT W/ DOWELS AT JUNCTURE. REFERENCE DETAIL NO. 5F, SHEET C6.0.
11. RELOCATED GOAL POST. CONTRACTOR TO PROVIDE FOOTING PER MANUFACTURER REQUIREMENTS. CONTRACTOR TO PROVIDE NEW PADS. CONTRACTOR TO CLEAN AND TOUCH UP GOAL POST.
12. EXISTING STRUCTURAL CONCRETE TO REMAIN IN PLACE. CONTRACTOR TO PROTECT DURING CONSTRUCTION.
13. NEW TYPICAL 6" CONCRETE CURB. REFERENCE DETAIL NO. 3, SHEET C6.0.
14. NEW CONCRETE CURB TO MATCH EXISTING. CONTRACTOR TO SAWCUT EXISTING CURB AS NECESSARY TO MATCH NEW CONSTRUCTION. CONTRACTOR TO PROVIDE EXPANSION JOINT W/ 2 EA. 18" DOWELS DRILLED INTO EXISTING CONCRETE AT JUNCTURE.
15. EXISTING CONCRETE CURB TO REMAIN IN PLACE.
16. NEW CONCRETE HEADER (FLUSH) CURB. REFERENCE DETAIL NO. 4, SHEET C6.0.
17. NEW 6' ACCESSIBLE RAMP. SLOPE ADJACENT CURB WITH RAMP TO PROVIDE A LOW CURB AT LANDING. REFERENCE DETAIL NO. 6, SHEET C6.0.
18. NEW CONCRETE RAMP AT 12:1 MAX. SLOPE. CONTRACTOR TO PROVIDE ADJACENT RAILS ON BOTH SIDES OF RAMP. RAILS TO EXTEND 1'-0" MIN. BEYOND LIMITS OF RAMP. REFERENCE RAMP LENGTH AND SPOT ELEVATIONS SHOWN ON PLAN. REFERENCE HANDRAIL DETAIL NO. 1, SHEET C6.2 AND SECTION DETAIL NO. 7, SHEET C6.0.
19. NEW HANDRAIL. REFERENCE DETAIL NO. 1, SHEET C6.2.
20. NEW 10' TALL VINYL COATED CHAIN-LINK FENCE. REFERENCE DETAIL NO. 2, SHEET C6.1. VINYL COATED.
21. NEW 4' TALL VINYL COATED CHAIN-LINK FENCE. REFERENCE DETAIL NO. 2, SHEET C6.1. VINYL COATED.
22. NEW CHAIN-LINK FENCE TO MATCH EXISTING.
23. EXISTING CHAIN-LINK FENCE TO REMAIN IN PLACE.
24. NEW 10' TALL 4' WIDE VINYL COATED CHAIN-LINK GATE. REFERENCE DETAIL NO. 2, SHEET C6.1.
25. NEW SIDEWALK DRAIN. REFERENCE DETAIL NO. 8, SHEET C6.0.
26. LIGHT POLE. REFERENCE MEP PLANS FOR DIRECTION.
27. EXISTING ELECTRICAL BOX TO REMAIN. CONTRACTOR TO ADJUST LID TO FINISHED GRADE.
28. NEW SOLID SODDING. REFERENCE LANDSCAPING NOTES, SHEET C4.0.
29. CONTRACTOR TO GRADE AREA TO DRAIN.
30. CONTRACTOR TO GRADE AREA AT A MAXIMUM 5:1 SLOPE.
31. NEW 6' TALL CHAIN-LINK FENCE. REFERENCE DETAIL NO. 2, SHEET C6.1.
32. NEW 6' TALL 12' WIDE CHAIN-LINK DOUBLE GATE. REFERENCE DETAIL NO. 2, SHEET C6.1.
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STATE OF TEXAS
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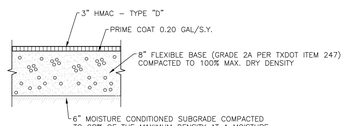
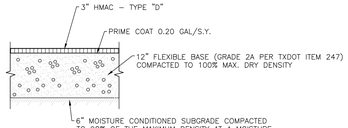
COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

SITE GRADING AND DRAINAGE PLAN

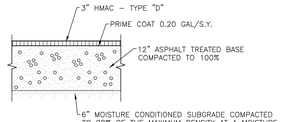
SHEET
C4.4



A. LIGHT DUTY ASPHALT PAVEMENT SECTION



B. HEAVY DUTY ASPHALT PAVEMENT SECTION

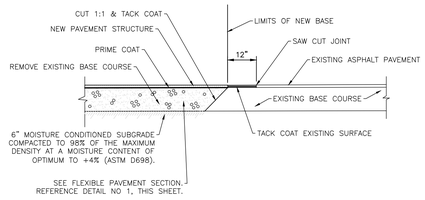


C. ASPHALT PATCH SECTION IN PUBLIC ROW

NOTES:

1. ALL SUBGRADE IN PAVEMENT AREAS SHALL PASS A PROOF ROLL OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO FLEXIBLE BASE PLACEMENT.

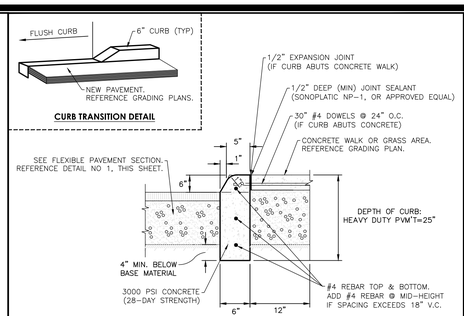
1 FLEXIBLE PAVEMENT DETAIL
SCALE: NONE



NOTES:

1. APPLY PRIMER IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS.
   A. APPLY PRIMER EVENLY AND SMOOTHLY ON BASE OR SUB–BASE OVER SUB–GRADE SURFACE AT UNIFORM RATE NOT TO EXCEED 0.20 GALLONS/SQUARE YARD OF SURFACE OR AS APPROVED BY CIVIL ENGINEER.
   B. USE CLEAN SAND TO BLOT EXCESS PRIMER.
2. APPLY TACK COAT IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS.
   A. APPLY AT A RATE OF 0.11 GALLONS/SQUARE YARD OR SURFACE OR AS APPROVED BY CIVIL ENGINEER.
   B. APPLY TACK COAT TO CONTACT SURFACES OF EXISTING ASPHALT SURFACES WHERE THE NEW ENTRANCE DRIVES TRANSITION TO THE EXISTING STREET.
3. PLACE ASPHALT WITHIN TWENTY–FOUR (24) HOURS OF APPLYING PRIMER OR TACK COAT.

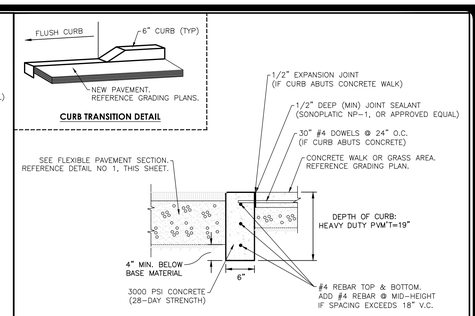
2 ASPHALT PAVEMENT JUNCTURE DETAIL
SCALE: NONE



NOTES:

1. PROVIDE CONTROL JOINTS @ 15' O.C. & EXPANSION JOINTS @ 60' O.C.
2. SEAL ALL JOINTS WITH JOINT SEALANT (MASTERSEAL NP–1, OR APPROVED EQUAL).
3. CONCRETE CURB 4,000 PSI. SLUMP = 3.0" ± 1.0".
4. WATER TO CEMENT RATIO (LBS/LBS) CANNOT EXCEED 0.50.

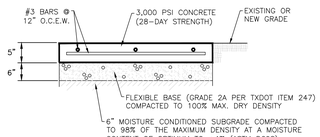
3 CONCRETE CURB DETAIL
SCALE: NONE



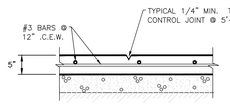
NOTES:

1. PROVIDE CONTROL JOINTS @ 15' O.C. & EXPANSION JOINTS @ 60' O.C.
2. SEAL ALL JOINTS WITH JOINT SEALANT (MASTERSEAL NP–1, OR APPROVED EQUAL).
3. CONCRETE CURB 4,000 PSI. SLUMP = 3.0" ± 1.0".
4. WATER TO CEMENT RATIO (LBS/LBS) CANNOT EXCEED 0.50.

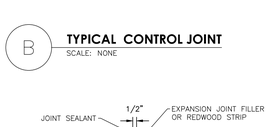
4 HEADER (FLUSH) CURB DETAIL
SCALE: NONE



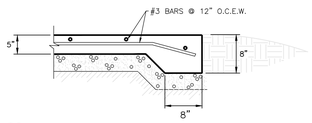
A **TYPICAL CONCRETE SIDEWALK/FLATWORK SECTION**
SCALE: NONE



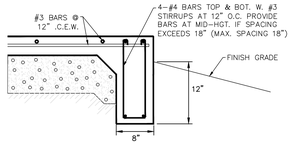
B **TYPICAL CONTROL JOINT**
SCALE: NONE



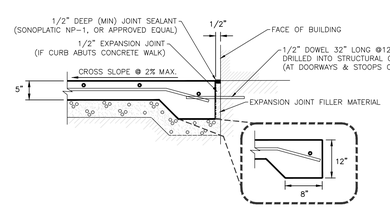
C **TYPICAL EXPANSION JOINT**
SCALE: NONE



D **EDGE ADJACENT TO NATURAL GRADE**
SCALE: NONE



E **THICKENED EDGE**
SCALE: NONE

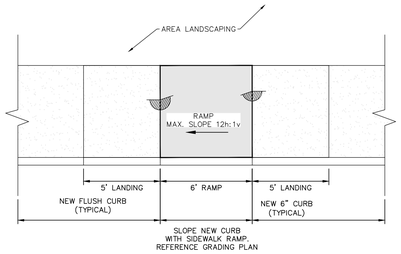


F **TYPICAL EXPANSION JOINT @ CONCRETE WALK/BLDG OR CONCRETE PAVEMENT INTERFACE**
SCALE: NONE

GENERAL NOTES FOR CONCRETE SIDEWALKS:

1. ALL SIDEWALKS SHALL BE A MINIMUM 3000 PSI CONCRETE WITH NO. 3 BARS AT 12" INCHES ON CENTER.
2. SLOPE SIDEWALKS AWAY FROM BUILDING AS INDICATED ON DRAWINGS OR AT 2% MAX.
3. PROVIDE SIDEWALK WITH A HORIZONTAL (CROSS) BRUSH FINISH ON ALL SURFACES.
4. GROOVE CONTRACTION JOINTS SHALL BE SPACED 5 FT. ON CENTERS, WITH 1/2" ELASTOMERIC EXPANSION JOINTS AT EVERY 30 FT. IN LARGER AREAS PROVIDE CONTRACTION JOINTS AT 10' O.C.E.W. WITH 1/2" EXPANSION JOINTS AT 30' O.C.E.W.
5. PROVIDE A 1/2" ELECTROMETRIC EXPANSION JOINT ALONG NEW BUILDING BETWEEN ALL NEW SIDEWALK. SEAL WITH NP1 JOINT SEALANT.
6. ALL BASE MATERIAL UNDER SIDEWALKS TO BE MOISTURE CONDITIONED AND COMPACTED.
7. MAINTAIN 2" OF CLEAR COVER BETWEEN REINFORCING STEEL AND EDGE OF CONCRETE, BASE MATERIAL AND/OR SUBGRADE. CONTRACTOR TO PROVIDE BRICK SUPPORTS WITH WIRE TIES FOR REINFORCING STEEL. NO REBAR SHALL EXTEND INTO BASE/SUBGRADE.
8. ALL DOWEL BARS SHALL BE SMOOTH AND ALL REINFORCING BARS SHALL BE DEFORMED "REBAR" BOTH DOWELS AND REBAR SHALL BE AT A MINIMUM GRADE 60.
9. CONTRACTOR SHALL SUBMIT JOINTING PLAN TO ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE.
10. CONCRETE FLATWORK 3,000 PSI. SLUMP = 4.0" ± 1.0".
11. WATER TO CEMENT RATIO (LBS/LBS) CANNOT EXCEED 0.50.
12. CONTRACTOR TO PROVIDE A THICKER EDGE ADJACENT TO ALL NATURAL GRADE AND LANDSCAPE AREAS. REFERENCE SECTION.

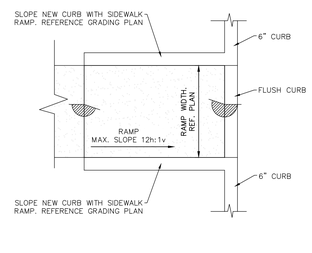
5 SIDEWALK/FLATWORK DETAILS
SCALE: NONE

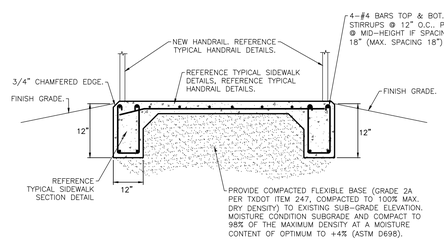


NOTES:

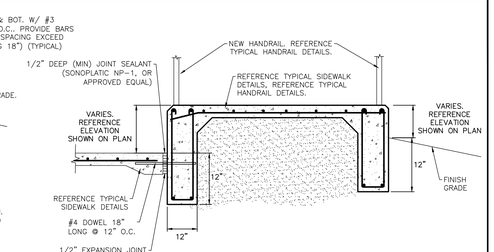
1. RAMP SURFACE SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES. STAIN CONCRETE WITH KEMIKO STONE TONE CONCRETE ACID STAIN, OR APPROVED EQUAL, AND APPLY PER MANUFACTURER RECOMMENDATIONS. COLOR TO BE SPECIFIED BY OWNER. TDLR RAMP SURFACES TEXTURES NOT REQUIRED. PROVIDE BROOM FINISH ON CONCRETE.

6 PLAN - SINGLE PARALLEL CURB RAMP DETAIL - NOT WITHIN PUBLIC R.O.W.
SCALE: NONE





ADJACENT AT GRADE CONDITION

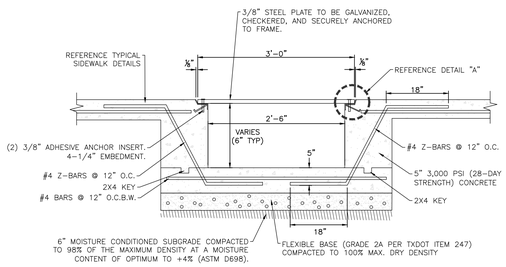


EXPOSED EDGE CONDITION

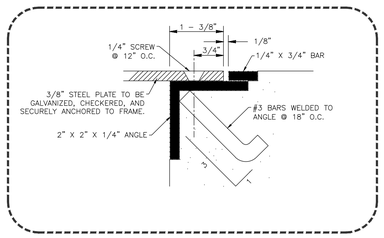
NOTES:

1. FOLLOW GENERAL NOTES FOR SIDEWALKS UNLESS OTHERWISE NOTED ON DETAIL.
2. REFERENCE GRADING PLAN FOR PROPOSED SPOT ELEVATIONS.
3. REFERENCE GRADING PLAN FOR NUMBER AND DEPTH OF RISERS OR RAMP LENGTHS, IF APPLICABLE.
4. PROVIDE ADJACENT RAILING ON BOTH SIDES AT RISER AND/OR RAMP AREAS. REFERENCE RAIL DETAILS AND GRADING PLAN FOR RAIL TYPE AND LOCATION.
5. ALL CONCRETE TO BE 3,000 PSI (28–DAY STRENGTH).

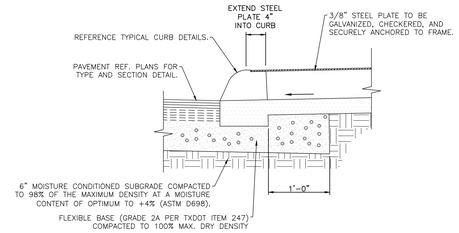
7 TYPICAL RAMP SECTION DETAILS
SCALE: NONE



PROFILE VIEW



DETAIL "A"



SECTION VIEW

NOTES:

1. FOLLOW GENERAL NOTES FOR SIDEWALKS UNLESS OTHERWISE NOTED ON DETAIL.
2. REFERENCE GRADING PLAN FOR PROPOSED SPOT ELEVATIONS.
3. ALL CONCRETE TO BE 3,000 PSI (28–DAY STRENGTH)

8 SIDEWALK DRAIN WITH COVER DETAIL
SCALE: NONE

REVISIONS

NO:	DATE:	DESCRIPTION:	BY:

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113308
REGISTERED PROFESSIONAL ENGINEER
9/12/24

MTR
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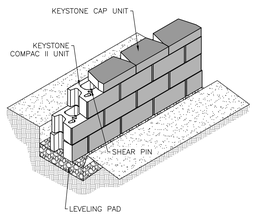
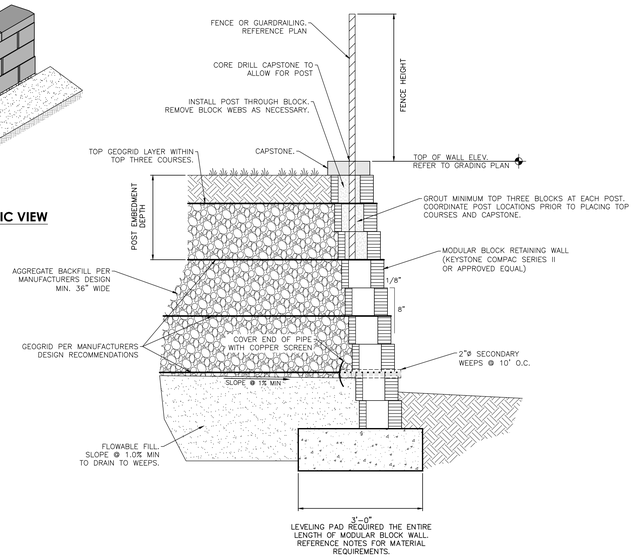
COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

DETAILS

SHEET
C6.0



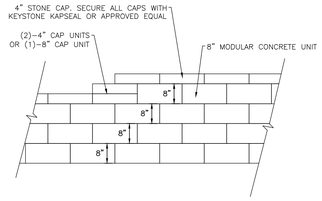
COMPAC II ISOMETRIC VIEW



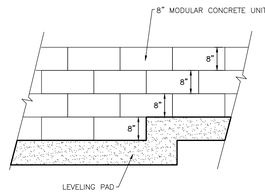
A **TYPICAL MODULAR BLOCK RETAINING WALL SECTION**
SCALE: NONE

NOTES:

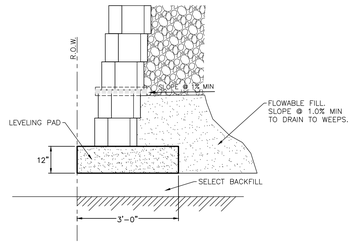
1. MODULAR RETAINING WALL DETAILS SHOWN ON THIS DRAWING ARE FOR REFERENCE PURPOSES ONLY. MODULAR BLOCK MANUFACTURER WILL BE REQUIRED TO SUBMIT SHOP DRAWINGS AND ENGINEERED PLAN. REFERENCE SPECIFICATIONS.
2. CONTRACTOR TO EXACT PLACEMENT OF 4" PERFORATED DRAIN PIPE AT BASE OF WALL AND DISCHARGE LOCATION PER MANUFACTURERS REQUIREMENTS.
3. CONTRACTOR TO ACCOUNT FOR THE CHAIN-LINK FENCE INSTALLATION IN THE MODULAR BLACK WALL DESIGNING MODULAR BLOCK RETAINING WALLS.
4. 4' TO 6' HIGH FENCE POST. SPACING NOT TO EXCEED 8'-0" SPACING.
5. WHERE THE BACKSIDE OF THE NEW MODULAR BLOCK RETAINING WALL IS EXPOSED ABOVE THE NEW FINISH GRADE, FILL ALL HORIZONTAL OPEN CELLS ON THE BLOCK WALL WITH FLOWABLE FILL CONCRETE GROUT. APPLY CONCRETE COLOR DYE TO THE EXPOSED SURFACE FINISH TO MATCH THE NEW MODULAR BLOCK WALL COLOR. MATCH THE GROUT SURFACE FINISH TO THE BLOCK WALL SURFACE.
6. THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 3,000 PSI± UN-REINFORCED CONCRETE (28-DAY STRENGTH).
7. THE BASE FOUNDATION IS TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE LEVELING PAD.

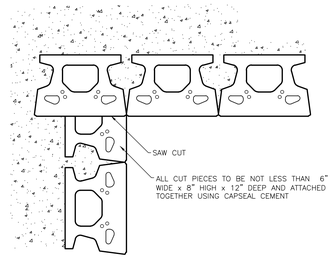


B **TOP OF WALL STEPS**
SCALE: NONE

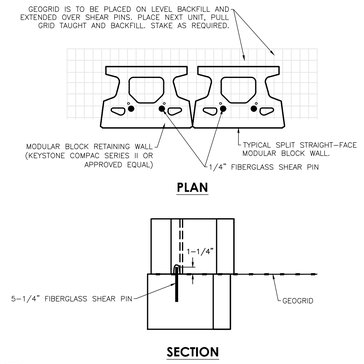


C **BOTTOM OF WALL STEPS AND LEVELING PAD**
SCALE: NONE

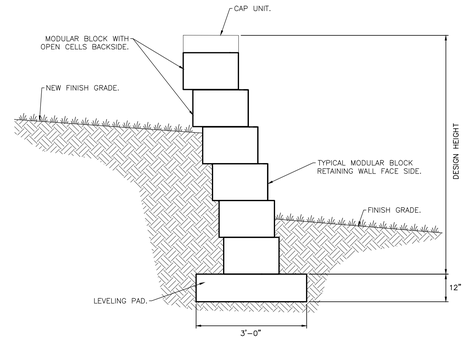




D **TYPICAL CORNER DETAIL**
SCALE: NONE



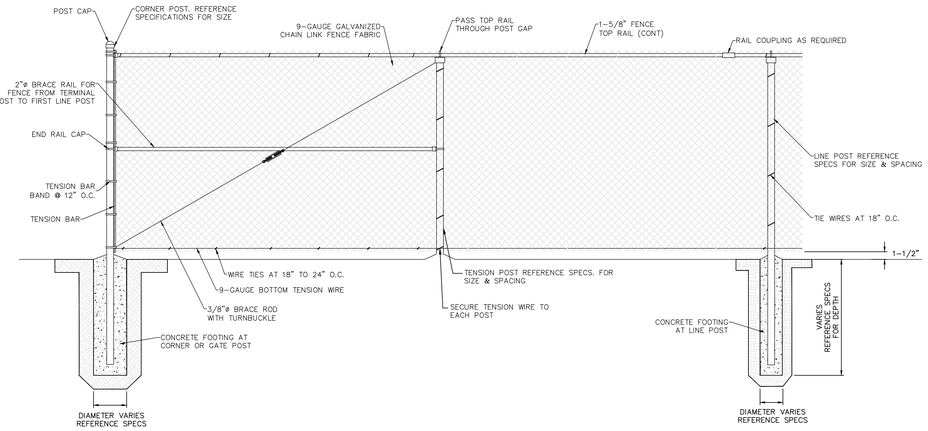
E **MODULAR CONCRETE UNIT GRID/PIN CONNECTION**
SCALE: NONE



F **TYPICAL GRAVITY/EXPOSED WALL SECTION**
SCALE: NONE

1 MODULAR BLOCK RETAINING WALL DETAILS

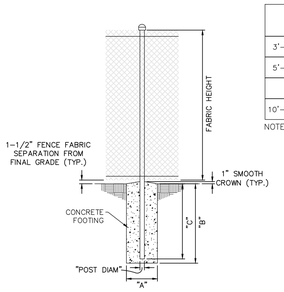
SCALE: NONE



TYPICAL FENCE PROFILE

NOTES:

1. **ALL FENCE MATERIALS & HARDWARE TO BE HOT DIP GALVANIZED UNLESS OTHERWISE NOTED ON FENCING PLAN. (ALUMINUM WIRE TIES ARE ACCEPTABLE)**
2. **ALL FENCE FABRIC SHALL BE INSTALLED WITH THE KNUCKLE SIDE UP AND DOWN.**
3. **ALL CHAIN-LINK FENCE FABRIC IS TO GALVANIZED.**
4. **ALL CONCRETE POST FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI (28-DAY STRENGTH) AND MAXIMUM 3" SLUMP.**



LINE AND TERMINAL POSTS

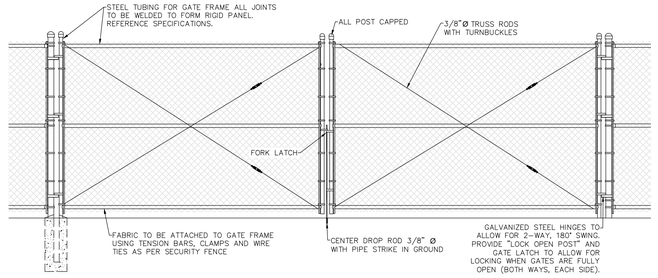
FABRIC HEIGHT	TYPE POST	"POST DIAM"	"A" DIAM	"B" DEPTH	"C" POST EMBED
3'-0" TO 4'-0"	LINE	2"	10"	30"	28"
	TERMINAL	3"	12"	36"	34"
5'-0" TO 6'-0"	LINE	2-3/8"	12"	28"	30"
	TERMINAL	3"	12"	40"	38"
8'-0"	LINE	2-3/8"	12"	36"	34"
	TERMINAL	3"	12"	40"	38"
10'-0" TO 12'-0"	LINE	2-3/8"	16"	48"	46"
	TERMINAL	3"	16"	48"	46"

NOTE: TERMINAL POSTS INCLUDE END, CORNER, AND TENSION POSTS

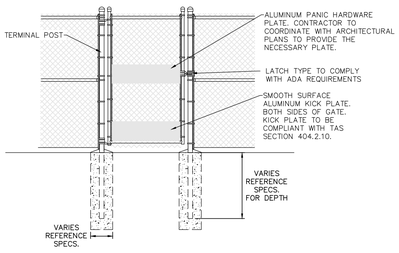
GATE POST

GATE LEAF WIDTH	GATE POST	FABRIC HEIGHT	"A" DIAM	"B" DEPTH	"C" POST EMBED
3' TO 4'	3"	4'	10"	36"	34"
		5' TO 6'	12"	40"	38"
		8'	16"	46"	44"
5' TO 9'	4"	3' TO 4'	18"	48"	46"
		5' TO 6'	18"	48"	46"
		8'	18"	60"	58"
10'	6.625"	8'-0"	18"	60"	58"

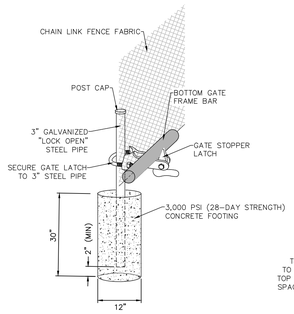
FENCE POST FOOTING SCHEDULE



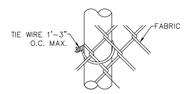
TYPICAL DOUBLE SWING GATE PROFILE



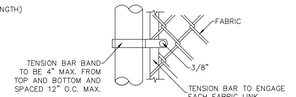
TYPICAL SINGLE SWING (PEDESTRIAN) GATE PROFILE



TYPICAL LOCK OPEN POST & GATE LATCH DETAIL



WIRE TIES FOR POST



DETAIL - END OR GATE POST

2 CHAIN LINK FENCE DETAILS

SCALE: NONE

REVISIONS

NO:	DATE:	DESCRIPTION:	BY:

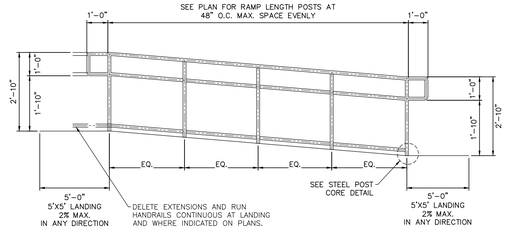
STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED PROFESSIONAL ENGINEER
9/12/24

MTR
Moy Torin Ramirez Engineers, LLC
FIRM TBPELS ENG F-5289 SVY F-10013500
12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
• Engineers
• Surveyors
• Planners
TEL: (210) 698-5051
FAX: (210) 698-5085

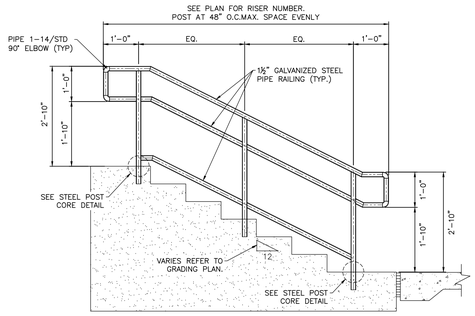
COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

DETAILS

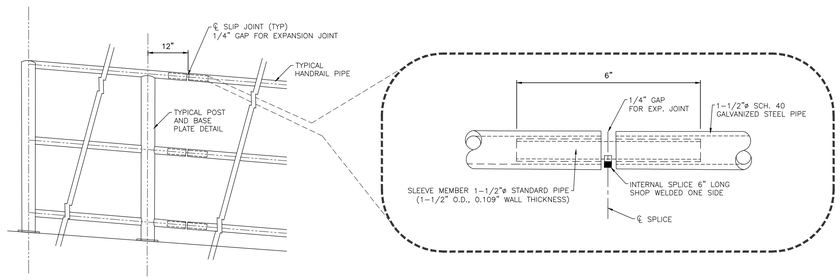
SHEET
C6.1



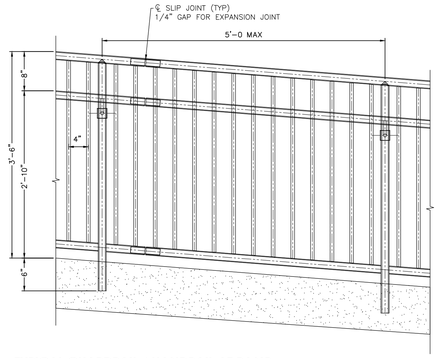
A **TYPICAL HANDRAIL AT RAMP**
SCALE: NONE



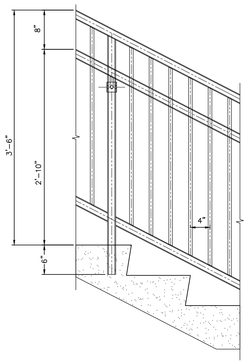
D **TYPICAL HANDRAIL AT STAIRS**
SCALE: NONE



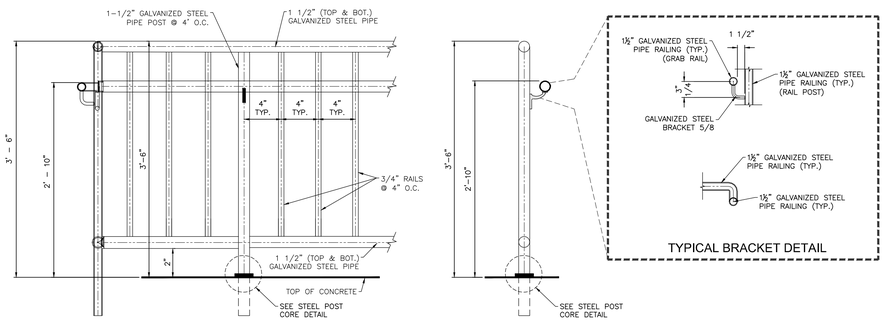
F **TYPICAL SLIP JOINT DETAILS**
SCALE: NONE



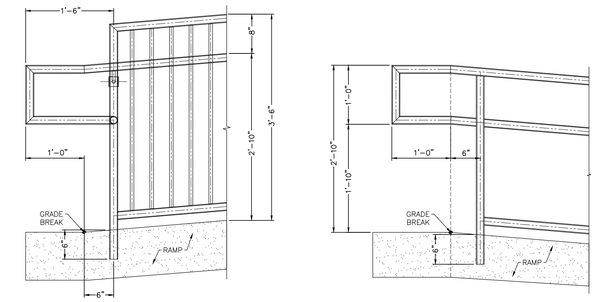
B **TYPICAL GUARDRAIL / HANDRAIL AT RAMP**
SCALE: NONE



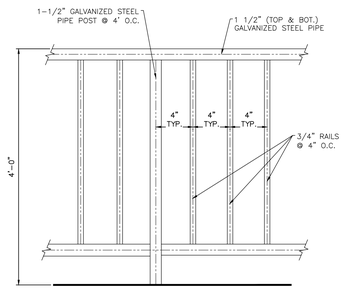
E **TYPICAL GUARDRAIL / HANDRAIL AT STAIRS**
SCALE: NONE



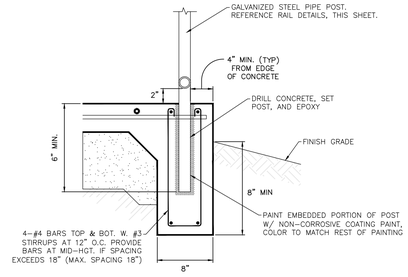
G **TYPICAL GUARDRAIL / HANDRAIL DETAIL**
SCALE: NONE



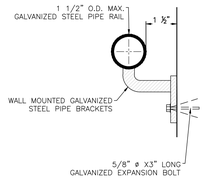
C **TYPICAL GUARDRAIL EXTENSIONS AT RAMP TOP AND BOTTOM**
SCALE: NONE



H **TYPICAL GUARDRAIL DETAIL - 2 PIPE**
SCALE: NONE



I **STEEL POST CORE DETAIL**
SCALE: NONE



J **HANDRAIL ADJACENT TO BUILDING**
SCALE: NONE

GENERAL NOTES:

1. HANDRAIL CONSTRUCTION 1-1/2" GALVANIZED STEEL PIPE (TYP).
2. ALL STEEL PIPE TO BE HOTDIP-GALVANIZED AFTER FABRICATION.
3. NO ON-SITE WELDING WILL BE ALLOWED.
4. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND GALVANIZATION.
5. PROVIDE HANDRAIL/GUARDRAIL PIPE SLIP JOINTS @ 30' MAX. SPACING AND ACROSS CONCRETE EXPANSION JOINTS TO ALLOW FOR APPROPRIATE MOVEMENT. SLIP JOINTS TO BE PER TXDOT STANDARDS.
6. HEAT UP THE RAILING CORNERS, BEAT THE SHARP EDGES, AND GRIND SMOOTH. ALL EXPOSED STEEL EDGES SHALL BE SMOOTH.
7. FOLLOW GENERAL NOTES FOR SIDEWALKS UNLESS OTHERWISE NOTED ON DETAIL.
8. REFERENCE GRADING PLAN FOR PROPOSED SPOT ELEVATIONS AND DEPTH OF RISERS.
9. IF 2 OR MORE RISERS, PROVIDE ADJACENT HANDRAILS. EXTEND HANDRAILS 1' BEYOND LIMITS OF RISERS AS SHOWN ON PLAN. SEE HANDRAIL EXTENSION DETAIL, THIS SHEET.
10. PAINT ALL RAILING COMPONENTS AS PER OWNER/ARCHITECT'S DIRECTION.

1 ***TYPICAL RAIL AT RAMP AND CONCRETE STEPS WITH SLIP JOINT DETAIL***
SCALE: NONE

REVISIONS

NO:	DATE:	DESCRIPTION:	BY:

STATE OF TEXAS
SEAN S. SMITH
113308
REGISTERED
PROFESSIONAL ENGINEER
9/12/24

• Engineers
• Surveyors
• Planners
Moy Tarin Ramirez Engineers, LLC
TBPE: REGISTRATION NO. F-5289 TBPLS: ENGINEERING FIRM NO. F-10131500
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

COMAL ISD
DAVENPORT HIGH SCHOOL - TENNIS COURT ADDITION

DETAILS

SHEET
C6.2

ATTACHMENT G

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

ENGINEERED VEGETATIVE FILTER STRIPS

Once a vegetated area is well established, little additional maintenance is generally necessary. The key to establishing a viable vegetated feature is the care and maintenance it receives in the first few months after it is planted. Once established, all vegetated BMPs require some basic maintenance to ensure the health of the plants including:

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

· Seasonal Mowing and Lawn Care. If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices; however, herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.

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

· Debris and Litter Removal. Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e., level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons.

The need for this practice is determined through periodic inspection but should be performed no less than 4 times per year.

· Sediment Removal. Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.

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

RECORD KEEPING

Maintenance and inspection records should be kept on file by the Owner of the permanent BMPs for a period of at least three (3) years. Repair and retrofit records should be kept on file by the Owner of the permanent BMPs for a period of at least five (5) years.

Malcolm Mulvoney
Print Name

Signature of Applicant/Owner/Agent

6/5/2024
Date

ATTACHMENT I

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

Both permanent and temporary BMP's, as shown on the WPAP Site Plan, shall be used to minimize contamination to surface streams, both during and after construction. During construction, temporary BMPs will consist of silt fence, bagged gravel inlet filters, and rock berms. After construction, the permanent BMPs for the overall site will consist of the existing batch detention basins, natural VFS, and proposed engineered VFS.

The proposed BMPs and other storm drainage systems are designed to avoid or minimize surface stream contamination and changes in the way in which water enters a stream. The runoff from the increase in impervious cover will be treated with the existing partial sedimentation/filtration basin and new vegetative filter strips.

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

I Dr. John E. Chapman III,
Print Name

Superintendent,
Title - Owner/President/Other

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

have authorized Sean Smith, P.E.
Print Name of Agent/Engineer

of Moy Tarin Ramirez Engineers, LLC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

May 23, 2024
Date

THE STATE OF TEXAS §

County of COMAL §

BEFORE ME, the undersigned authority, on this day personally appeared Dr. John Chapman III known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 23rd day of MAY, 2024.

Amanda Dee Comstock
NOTARY PUBLIC

NOTARY PUBLIC STATE OF TEXAS
Amanda Dee Comstock
My Commission Expires
05/27/2024
ID No 132494576

AMANDA DEE COMSTOCK
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: MAY 27, 2024

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: CISD Davenport High School
Regulated Entity Location: 23255 FM3009, San Antonio, TX 78266
Name of Customer: Comal ISD
Contact Person: Jeffrey Smith Phone: 830-221-2000
Customer Reference Number (if issued):CN 600249825
Regulated Entity Reference Number (if issued):RN 110247541

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☒ Comal ☐ Kinney

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

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

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	113.7 Acres	$ 10,000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 10/7/24

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

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

2. 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 600249825		RN 110247541

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name (*If an individual, print last name first: eg: Doe, John*) *If new Customer, enter previous Customer below:*

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

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☐ **Yes** ☐ **No**

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

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

15. Mailing Address:

City		State		ZIP		ZIP + 4	

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)*
( ) -		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

CISD Davenport High School

23. Street Address of the Regulated Entity: *(No PO Boxes)*	23255 FM3009							
	City	SanAntonio	**State**	TX	**ZIP**	78266	**ZIP + 4**	
24. County	Comal							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:					
26. Nearest City			**State**	**Nearest ZIP Code**	
San Antonio			TX	78266	
27. Latitude (N) In Decimal:	29.656998		**28. Longitude (W) In Decimal:**	98.310147	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	39	25.2	98	18	36.5

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? *(Do not repeat the SIC or NAICS description.)*

High School

34. Mailing Address:	**23255 FM3009**							
	City	**San Antonio**	**State**	**TX**	**ZIP**	**78266**	**ZIP + 4**	
35. E-Mail Address:	**jeffrey.smith@comalisd.org**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(830) 221-2101		**( ) -**

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

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

SECTION IV: Preparer Information

40. Name:	Sean Smith, P.E.	**41. Title:**	Senior Vice President

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(210) 698-5051		(210) 698-5085	ssmith@mtrengineers.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:	Moy Tarin Ramirez Engineers, LLC	**Job Title:**	Senior Vice President
Name *(In Print):*	Sean Smith, P.E.	**Phone:**	(210) 698- **5051**
Signature:		**Date:**	10/7/24