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: Dahlstrom Middle School						**2. Regulated Entity No.:** RN102731916			
3. Customer Name: Hays CISD						**4. Customer No.:** CN601392384			
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):**			26.7 acres
9. Application Fee:	$6,500		**10. Permanent BMP(s):**			VFS and self-treating synthetic turf			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Hays		**14. Watershed:**			Onion Creek - Colorado River			

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 X 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.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___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. Zachery Humphries
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent Date 12/29/2025

Zachery Humphries

Digitally signed by Zachery Humphries
DN: C=US, E=zhumphries@ceieng.com, O=CEI Engineering, CN=Zachery Humphries
Date: 2025.12.29 12:56:09-06'00'

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: Zachery Humphries

Date: 01/06/2026

Signature of Customer/Agent:

Zachery Humphries Digitally signed by Zachery Humphries DN: C=US, E=zhumphries@celeng.com, O=CEI Engineering, CN=Zachery Humphries Date: 2026.01.06 09:37:21-06'00'

Project Information

1. Regulated Entity Name: Dahlstrom Middle School
2. County: Hays
3. Stream Basin: Colorado River Basin
4. Groundwater Conservation District (If applicable): _____
5. Edwards Aquifer Zone:

   ☐ Recharge Zone
   ☒ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

Contact Person: Nathan Wensowitch
Entity: Hays CISD
Mailing Address: 21003 Interstate 35
City, State: Kyle, TX Zip: 78640
Telephone: 512-415-4150 FAX: _____
Email Address: nathan.wensowitch@hayscisd.net

8. Agent/Representative (If any):

Contact Person: Taylor Fitzpatrick
Entity: CEI Engineering Associates, Inc.
Mailing Address: 3030 LBJ Freeway Suite 920
City, State: Dallas, TX Zip: 75234
Telephone: 479-254-1405 FAX: _____
Email Address: tfitzpatrick@ceieng.com

9. Project Location:

[X] The project site is located inside the city limits of City of Buda.
[ ] The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
[ ] The project site is not located within any city's limits or ETJ.

10. [X] 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.

3600 FM 967 Buda, TX 78610

11. [X] **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. [X] **Attachment B - USGS / Edwards Recharge Zone Map**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

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

13. [X] **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.

[X] Survey staking will be completed by this date: 04-01-2026

14. [X] **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:

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. [X] I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

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

- [X] 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. [X] 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
- [X] 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. [X] 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. [X] No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

ATTACHMENT A ROAD MAP
3600 FM 967 Buda, TX 78610
Regulated Entity: Dahlstrom Middle School

Regulated Entity Site

Limits of Proposed Modification



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MOUNTAIN CITY QUADRANGLE
TEXAS–HAYS CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

Edwards Aquifer Contributing Zone

Edwards Aquifer Transition Zone

Project Site

Edwards Aquifer Contributing Zone within the Transition Zone

Edwards Aquifer Contributing Zone

Edwards Aquifer Recharge Zone

Edwards Aquifer Contributing Zone within the Transition Zone

Edwards Aquifer Transition Zone

Edwards Aquifer Contributing Zone within the Transition Zone

Produced by the United States Geological Survey

Control by USGS and NOS/NOAA

Compiled from aerial photographs taken 1967. Revisions shown in purple compiled from aerial photographs taken 1986 and other sources and have been field checked. Map edited 1994 Conflicts may exist between some updated features and previously mapped contours

North American Datum of 1927 (NAD 27). Projection and 10 000-foot ticks : Texas Coordinate System, south central zone (Lambert Conformal Conic)
Blue 1000-meter Universal Transverse Mercator ticks, zone 14

North American Datum of 1983 (NAD 83) is shown by dashed corner ticks. The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are obtainable from National Geodetic Survey NADCON software

Areas covered by dashed light blue pattern are subject to controlled inundation

UTM GRID AND 1994 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

3097-222

ROAD CLASSIFICATION

Primary highway, hard surface — Light-duty road, hard or improved surface
Secondary highway, hard surface — Unimproved road
Interstate Route · U. S. Route · State Route

MOUNTAIN CITY, TEX.
30097-A8-TF-024

1968
REVISED 1994
DMA 6444 III SW-SERIES V882

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program

Regulatory Zones

30 TAC Chapter 213 - Edwards Aquifer
Effective September 2005

This map was produced by the Groundwater Planning and Assessment Team of the Texas Commission on Environmental Quality to detail the boundaries of the regulatory zones of the Edwards Aquifer Protection Program, as described in Texas Administrative Code Title 30, Part 1, §213.3. No other claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information about the Edwards Aquifer Protection Program, please contact the TCEQ Regional Offices in San Antonio or Austin. Printed June 2006.

Civil Engineering, Landscape Architecture,
Survey, Planning & Program Management

3030 LBJ Freeway, Suite 920
Dallas, TX 75234
Office: 972.488.3737
Toll-free: 1.877.488.3737
ceieng.com

ATTACHMENT C – Project Narrative
Dahlstrom Middle School
3600 FM 967, Buda, TX 78610

The project is located at Dahlstrom Middle School in the City of Buda, Hays County, Texas. The total property area is about 26.7 acres, with the current project area consisting of the existing track and grass football field that is bound to the north by Carpenter Hill Dr, to the south and east by school property, and to the west by Buda Sportsplex Drive. No offsite drainage is expected to be routed through the project site. The site falls entirely within the Edwards Aquifer Contributing Zone Within the Transition Zone.

The school was originally built in 1984 and has had four (4) recorded WPAP Modifications approved in 2002, 2007, 2008, and 2021. The 2008 WPAP Modification included updates to the track that routed stormwater falling onto it to a new water quality and detention pond to the south.

The proposed site will consist of turf resurfacing of the existing grass field along with additional concrete walking paths and jump facilities. There will be no major demolition of existing structures or infrastructure. The proposed turf field will act as underground detention and include an underlying section of 9” crushed stone containing 40% void space with perforated underdrain pipes. The synthetic turf field is considered to be impervious, self-treating cover.

A total of 3.21 acres of new impervious cover is being proposed, an increase of 2.33 acres from the existing impervious area. This added impervious cover requires stormwater pollution treatment that will be provided by the permanent BMPs described herein. New engineered vegetative filter strips (VFS) are proposed to treat the new impervious cover outside the track, while the synthetic turf field inside the track is considered self-treating. The implementation of detention within the crushed stone under the turf field will decrease runoff in post-conditions while having no negative impacts on adjacent or downstream properties or watersheds.

Based on the approved 2021 WPAP Modification plans, the total existing site impervious cover is 8.59 acres (32.14%). With this proposed development, the total site impervious area will be 10.92 acres (40.85 %).

The total TSS load of the site is 2617 lb. The 0.19 acres of added impervious cover outside the track is treated with VFS, while the 2.14 acres of added impervious cover inside the track is self-treating. With the combination of the 80% removal efficiency of VFS and the 100% removal of self-treating turf field, the total removal rate of the proposed development exceeds the 80% minimum removal rate of TCEQ. See the table below for a summary of the treatment removal

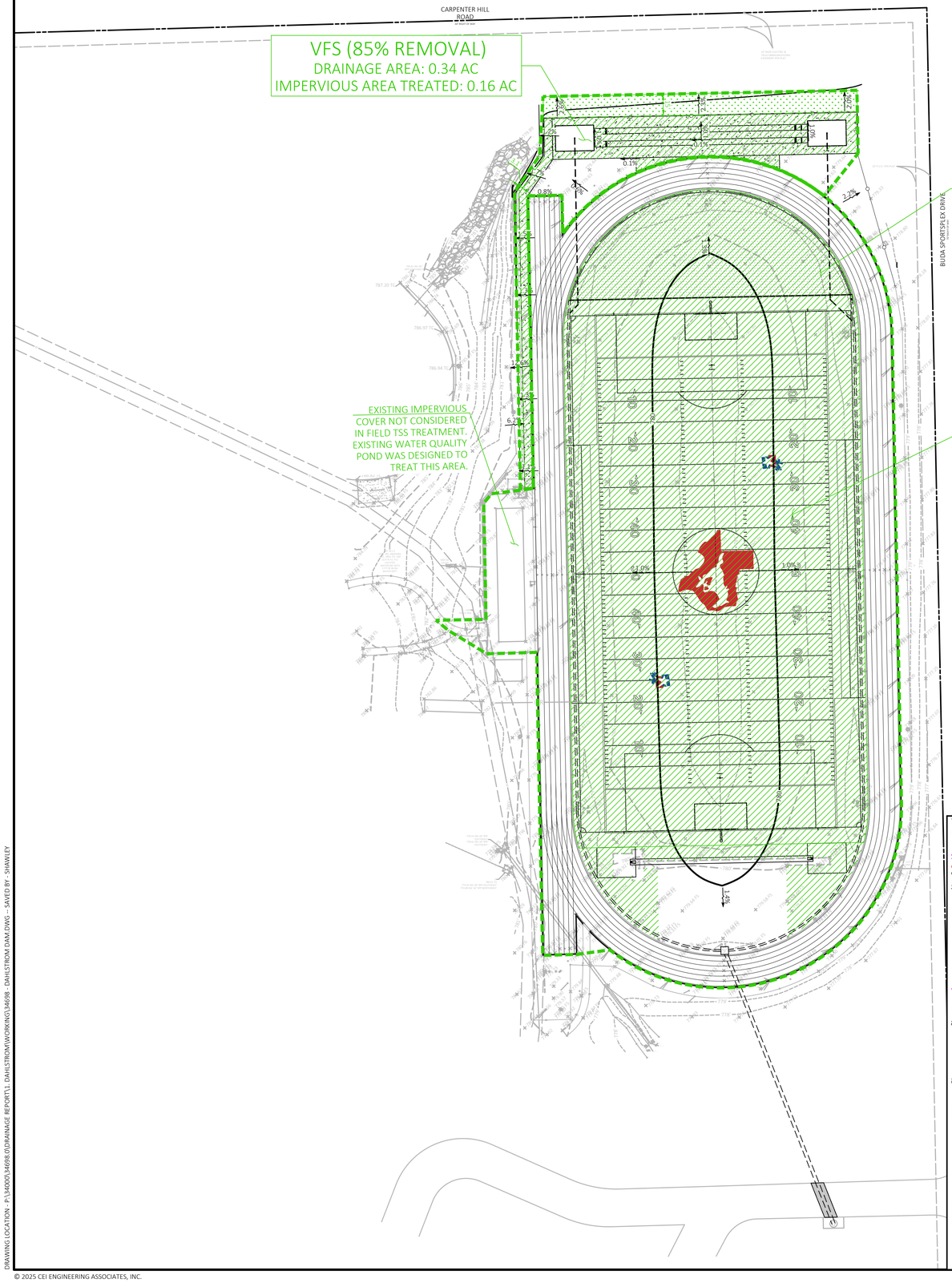
provided by the proposed BMPs. Also see attached water quality map and TCEQ TSS removal spreadsheet calculations.

TCEQ Treatment Summary

	L_m (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**

1 - See TCEQ spreadsheet calcs (80% removal rate for VFS).

2 - New field cover consists of 2.06 ac of self-treating turf (0.24 ac D-zone not included in field treatment). Therefore, a removal rate of approximately 90% was used for the new field IC area.



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

EXISTING LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX — CONTOUR ELEVATIONS
- BMP DRAINAGE AREA LIMITS
- LIMITS OF NEW IMPERVIOUS COVER
- LIMITS OF VEGETATED FILTER STRIP

WATER QUALITY NOTES

A. TSS REMOVAL CALULVATIONS PERFORMED IN ACCORDANCE WITH TCEQ REMOVAL REQUIREMENTS.

B. ALL VEGETATED FILTER STRIPS SHALL BE 15' WIDE UNLESS OTHERWISE SPECIFIED PER THE TABLE BELOW.

C. SYNTHETIC TURF FIELD WITH UNDERLYING CRUSHED STONE CONSIDERED SELF-TREATING FOR WATER QUALITY TSS REMOVAL REQUIREMENTS.

TCEQ SHARED USE POLICY

Shared Path Width (ft) (Direction of Flow)	Engineered VFS Width (ft)
4	2.1
6	3.1
8	4.2
10	5.2
12	6.3
14	7.3

Impervious Cover Summary

	Pre	Post
Project Study Area (ac.)	4.03	4.03
Impervious Cover (ac.)	1.07	3.40
IC %	**27%**	**84%**

TCEQ Treatment Summary

	L_{TR} (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**

1 - See TCEQ spreadsheet calcs
2 - New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = Turf Field

Total drainage basin/outfall area =	3.21	acres
Predevelopment impervious area within drainage basin/outfall area =	1.07	acres
Post-development impervious area within drainage basin/outfall area =	3.21	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1921	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Bioretention
Removal efficiency = 89 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_N x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_M = TSS Load removed from this

A_C =	2.30	acres
A_I =	2.30	acres
A_P =	0.00	acres
L_M =	2327	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 2100 lbs.

F = 0.90

New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
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1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = VFS

Total drainage basin/outfall area =	0.34	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.47	
$L_{M\ THIS\ BASIN}$ =	144	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_N x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_M = TSS Load removed from this

A_C =	0.34	acres
A_I =	0.16	acres
A_P =	0.18	acres
L_M =	158	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 158 lbs.

F = 1.00

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

JEFFERY J. BRUSH — 80277 — REGISTERED PROFESSIONAL ENGINEER — STATE OF TEXAS

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/31/2025
REVISION	REV-0

WATER QUALITY MAP

SHEET TITLE

SHEET NUMBER

3

DRAWING LOCATION - P:\34000\34698.0\0\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG - SAVED BY - SHAWLEY

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Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will r

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan* =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = VFS

Total drainage basin/outfall area =	0.34	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.47	
$L_{M\ THIS\ BASIN}$ =	144	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 3

where:

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

A_C =	**0.34**	acres
A_I =	**0.16**	acres
A_P =	**0.18**	acres
L_R =	**158**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **158** lbs.

F = **1.00**

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will r

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan* =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **2091** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

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

Drainage Basin/Outfall Area No. = **Turf Field**

Total drainage basin/outfall area =	3.21	acres
Predevelopment impervious area within drainage basin/outfall area =	1.07	acres
Post-development impervious area within drainage basin/outfall area =	3.21	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1921	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Bioretention**
Removal efficiency = **89** percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 3

where:

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

A_C =	**2.30**	acres
A_I =	**2.30**	acres
A_P =	**0.00**	acres
L_R =	**2337**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **2100** lbs.

F = **0.90**

New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

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: Katherine Moore Telephone: 970-743-9967

Date: November 14, 2025 Fax: _____

Representing: ECS Southwest, LLP (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Dahlstrom Middle School

Project Information

1. Date(s) Geologic Assessment was performed: November 14, 2025
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)
DeB	D	22 to 60 inches
DoC	D	11 to 20 inches

** 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" = _____'
   Site Geologic Map Scale: 1" = 400 '
   Site Soils Map Scale (if more than 1 soil type): 1" = 400 '

9. Method of collecting positional data:

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

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

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

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

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

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

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

    ☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

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

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: FM 1863 Offices - Geologic Assessment

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)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
			No Features Observed.																	

* DATUM:_____

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

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

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



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

Date December 1, 2025

Sheet _____ of _____

U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
Edwards Aquifer Authority

Scientific Investigations Map 3540
Supersedes USGS Scientific Investigations Map 3418
Pamphlet accompanies map

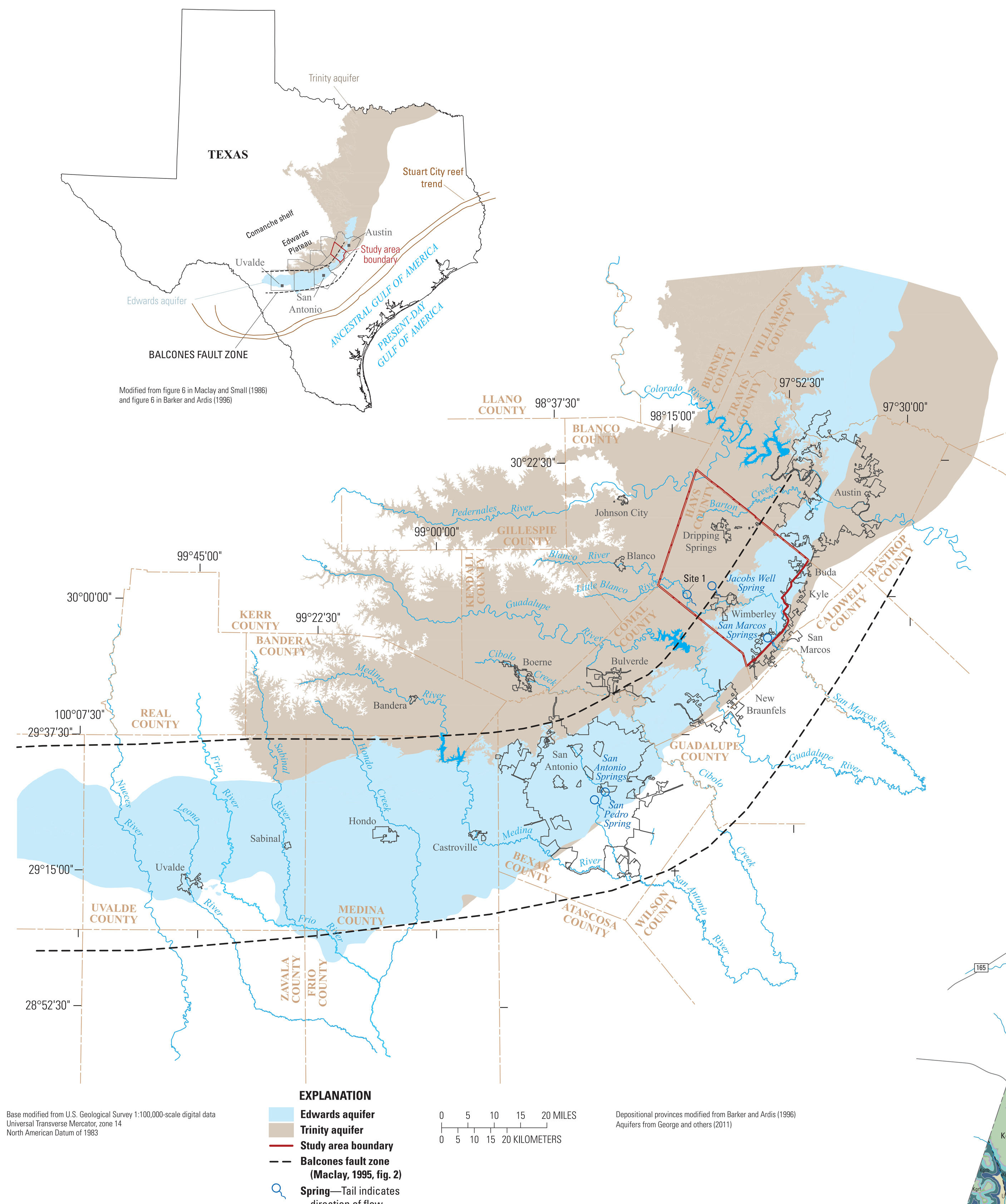


Figure 1. Location of the study area relative to the State of Texas, Hays County, the surficial extent of the rocks that contain the Edwards and Trinity aquifers, and the surficial extent of the Balcones fault zone (modified from fig. 2 in Barker and Ardis [1996]).



Figure 4. Conglomerates within the Sycamore Sand at Hammetts Crossing, Travis County, Texas (lat 30°20′22″ N., long 98°08′22″ W.; photograph by Allan K. Clark, U.S. Geological Survey, February 27, 2018).



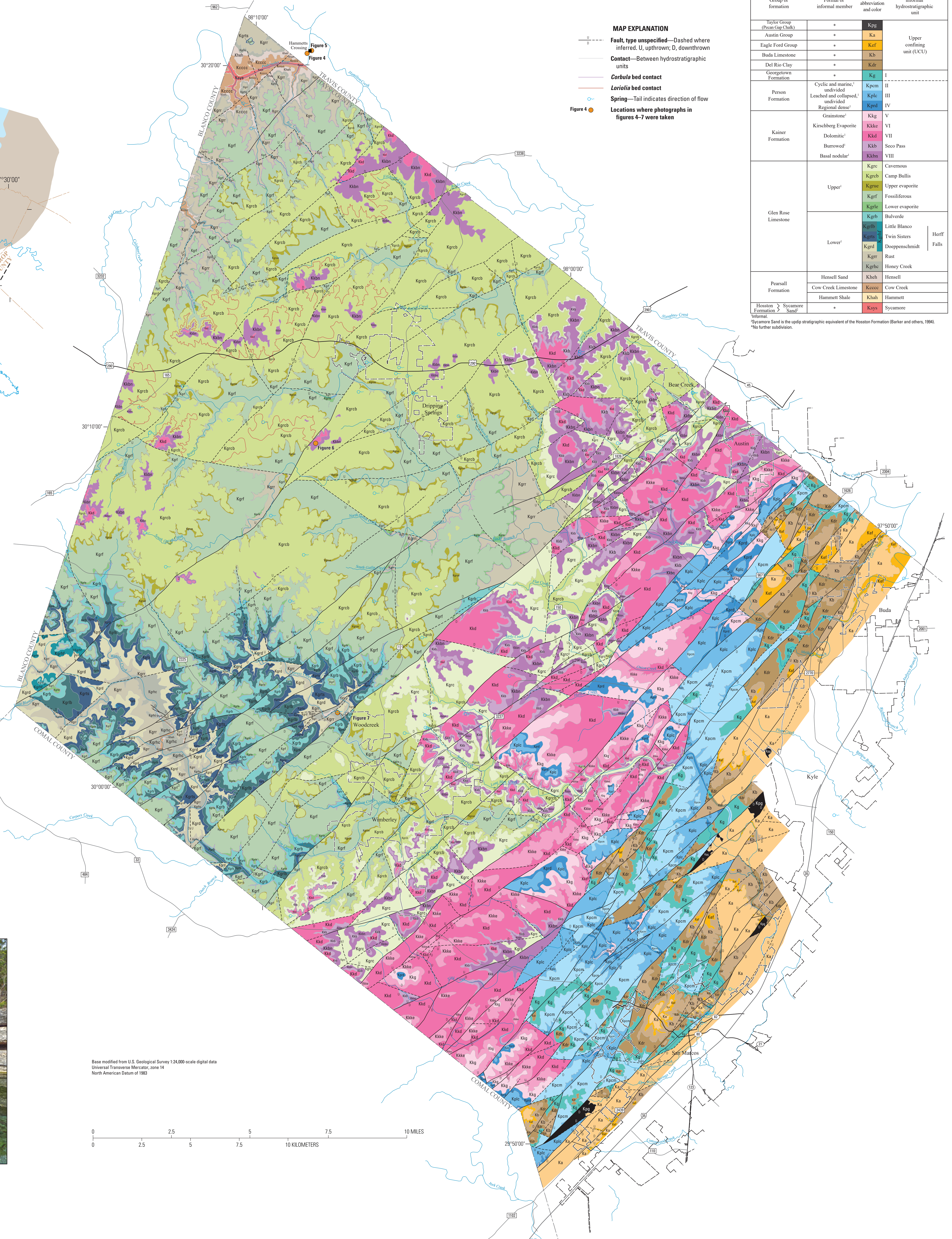
Figure 5. Bedding plane porosity that developed at the junction between the bedding plane and a fracture within the Cow Creek Limestone (Cow Creek hydrostratigraphic unit) at Hammetts Crossing, Travis County, Texas (lat 30°20′26″ N., long 98°08′13″ W.; photograph by Allan K. Clark, U.S. Geological Survey, February 27, 2018).



Figure 6. Marker bed known as the *Loriolia* bed, found 80 feet below the contact of the Glen Rose Limestone and the Kainer Formation, Hays County, Texas. The *Loriolia rosana* (Cooke, 1946) fossils are identified by white arrows, with eyeglasses included for scale (lat 30°09′31″ N., long 98°08′12″ W.; photograph by Allan K. Clark, U.S. Geological Survey, June 15, 2017).



Figure 7. Jacobs Well Spring, which forms the headwaters of Cypress Creek north of Wimberley, Hays County, Texas (lat 30°02′04″ N., long 98°07′34″ W.; photograph by Allan K. Clark, U.S. Geological Survey, February 27, 2018).



EXPLANATION OF HYDRDOSTRATIGRAPHIC UNITS

Group or formation	Formal or informal member	Map abbreviation and color	Hydrologic unit or informal hydrostratigraphic unit
Taylor Group (Pecan Gap Chalk)	*	Kpg	Upper confining unit (UCU)
Austin Group	*	Ka	
Eagle Ford Group	*	Kef	
Buda Limestone	*	Kb	
Del Rio Clay	*	Kdr	
Georgetown Formation	*	Kg	I
Person Formation	Cyclic and marine,[1] undivided	Kpcm	II
	Leached and collapsed,[1] undivided	Kplc	III
	Regional dense[1]	Kprd	IV
Kainer Formation	Grainstone[1]	Kkg	V
	Kirschberg Evaporite	Kkke	VI
	Dolomitic[1]	Kkd	VII
	Burrowed[1]	Kkb	Seco Pass
	Basal nodular[1]	Kkbn	VIII
Glen Rose Limestone	Upper[1]	Kgrc	Cavernous
		Kgrcb	Camp Bullis
		Kgrue	Upper evaporite
		Kgrf	Fossiliferous
		Kgrle	Lower evaporite
	Lower[1]	Kgrb	Bulverde
		Kgrlb (Kgrhf)	Little Blanco (Herff Falls)
		Kgrts (Kgrhf)	Twin Sisters (Herff Falls)
		Kgrd (Kgrhf)	Doeppenschmidt (Herff Falls)
		Kgrr	Rust
		Kgrhc	Honey Creek
Pearsall Formation	Hensell Sand	Kheh	Hensell
	Cow Creek Limestone	Kcccc	Cow Creek
	Hammett Shale	Khah	Hammett
Hosston Formation > Sycamore Sand[2]	*	Ksys	Sycamore

[1]Informal.
[2]Sycamore Sand is the updip stratigraphic equivalent of the Hosston Formation (Barker and others, 1994).
*No further subdivision.

Figure 2. Surficial extent of the rocks that contain the Edwards and Trinity aquifers and the confining units within the study area of Hays County, Texas (Lamberts and others, 2025).

Period	Epoch	Group	Formation	Member (formal or informal)	Lithology	Map abbreviation and color	Hydrologic unit	Hydrostratigraphic unit (HSU)[1]	Thickness (outcrop in the study area, in feet)[2]	Hydrologic function	Porosity type	Field identification
		Geology					Hydrostratigraphy					
Cretaceous	Late Cretaceous	Taylor	Pecan Gap Chalk	*	Argillaceous limestone, calcareous clay, blue in the subsurface weathers greenish yellow; fossils, large *Exogyra ponderosa*	Kpg	Upper confining unit to the Edwards aquifer	Pecan Gap	230–540	Confining	None	Yellow clay, blue clay in freshly dug exposure; large *Exogyra ponderosa*
		Austin	*	*	Massive, chalky, locally argillaceous, mudstone, nodular wackestone, nodular bioturbated wackestone; *Gryphaea aucella*, *Inoceramus* sp.; volcanic and terrigenous clastics, calcite	Ka		Austin	130–250	Aquifer (locally where connected to the Edwards aquifer), confining	IP, MO, FR, BP, CH, CV	White, chalky limestone; *Gryphaea aucella*, *Inoceramus* sp.
		Eagle Ford	*	*	Brown, flaggy, sandy shale and argillaceous limestone; iron nodules; *Inoceramus* sp., shark teeth, fossil fragments; petroliferous odor	Kef		Eagle Ford	20–40	Confining	IP, FR, BP	Brownish-red sand, thin flagstones; petroliferous odor
		Washita	Buda Limestone	*	Buff to light-gray, dense nodular mudstone and wackestone, calcite-filled veins, bluish dendrites, iron nodules, iron staining; shell fragments	Kb		Buda	40–50	Confining	FR, BP, CV	Porcelaneous limestone with calcite-filled veins, bluish dendrites
			Del Rio Clay	*	Fossiliferous blue-green to yellow-brown clay, packstone, iron nodules; *Ilymatogyra arietina*	Kdr		Del Rio	40–50	Confining	None	Clay, holds water, fossiliferous; *Ilymatogyra arietina*
			Georgetown	*	Reddish-brown, gray to light-tan shaley mudstone and wackestone, black dendrites, iron nodules, iron stained; *Plesioturrilites brazoensis*, *Waconella wacoensis*	Kg		I	20–40	Confining	MO	Black dendrites, iron nodules, iron stained, *Plesioturrilites brazoensis*, *Waconella wacoensis*
	Early Cretaceous	Edwards	Person	Cyclic and marine[1] (undivided)	Pelletal limestone, mudstone, miliolid grainstone, packstone, chert (beds and large nodules); caprinid, crossbedded	Kpcm	Edwards aquifer	II	80–90	Aquifer	MO, BU, VUG, BP, FR, CV	Thin graded cycles; massive beds to relatively thin beds; crossbeds, caprinids
				Leached and collapsed[1] (undivided)	Recrystallized limestone, mudstone, wackestone, packstone, grainstone; chert (beds and large nodules); iron stained, stromatolitic, *Toucasia* sp., *Montastrea roemeriana*, oysters	Kplc		III	70–90	Aquifer	BU, VUG, FR, BP, BR, CV	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone, *Montastrea roemeriana*
				Regional dense[1]	Dense, shaley, mudstone, wackestone, oyster-shell mudstone and wackestone, iron stained, chert	Kprd		IV	20	Confining	FR, CV	Wispy iron-oxide stains, thin bedded, often appear white in aerial photographs
			Kainer	Grainstone[1]	Miliolid, skeletal fragmented grainstone, mudstone, wackestone; chert (beds and nodules); crossbedded and ripple marked	Kkg		V	40–50	Aquifer	IP, BU, FR, BP, CV	Crossbedded, ripple marks, miliolid grainstone
				Kirschberg Evaporite	Highly altered crystalline limestone, chalky mudstone, occasional grainstone associated with tidal channels; chert (beds and nodules); coarse-grained spar, breccia and travertine, dissolution has removed all evaporites in the study area	Kkke		VI	40–50	Aquifer	IP, MO, VUG, FR, BR, CV	Boxwork porosity with neospar and travertine frame
				Dolomitic[1]	Chert (absent in lower 20 feet), dolomitic mudstone to grainstone	Kkd		VII	90–120	Aquifer	IP, IC, MO, BU, VUG, FR, BP, CV	Massively bedded light gray, *Toucasia* sp. abundant
				Burrowed[1]	Alternating mudstone and wackestone beds; burrowed, chert nodules	Kkb		Seco Pass	20–70	Aquifer	IP, IG, IC, MO, BU, FR, BP, CH, CV	Slope/cliff forming, alternating burrowed beds with connected porosity and mudstone beds
				Basal nodular[1]	Shaley, nodular limestone, burrowed mudstone, wackestone, packstone, miliolid grainstone, dolomite, contains dark, spherical textural features locally known as BRBs; caprinid, *Ceratostreon texanum* [*Exogyra texana*], miliolid, gastropods; areal transition to basal nodular containing oyster beds and shale	Kkbn		VIII	40–80	Aquifer (confining unit in areas without caves)	IP, MO, BU, BP, FR, CV	Massive, nodular and mottled limestone, BRBs, and orange wisps, *Ceratostreon texanum*, seeps and springs, ferns growing near contact of underlying unit
		Trinity	Glen Rose Limestone	Upper	Evaporites, wackestone, packstone, miliolid grainstone, argillaceous limestone, heavily bioturbated; *Loriolia rosana*, occasional dinosaur tracks	Kgrc	Trinity aquifer; Upper zone of the Trinity aquifer	Cavernous	100–130	Aquifer	MO, BR, BP, FR, CV	Slope forming, heavily bioturbated, evaporite beds, springs common at base, caves
					Alternating beds of burrowed wackestone, packstone, miliolid grainstone, argillaceous limestone	Kgrcb		Camp Bullis	230	Confining	BU, BP, FR, CV (occasional)	Alternating beds of limestone and argillaceous limestone, fossils rare, stairstep topography
					Dissolved evaporites, highly altered crystalline limestone and chalky mudstone, breccia, boxwork voids	Kgrue		Upper evaporite	0–10	Aquifer	IP, MO, BU, BR	Weathers to an orangish red with a pebbly texture, often has less *Juniperus ashei* sp. (cedar) growth and thicker grasses, boxwork porosity, springs and seeps
					Alternating wackestone, packstone, miliolid grainstone, argillaceous limestone, mudstone, silty mudstone at base; *Hemiaster* sp., *Neithea* sp., *Orbitolina minuta* (Douglass, 1960), *Porocystis globularis*, *Protocardia texana*, *Tapes decepta*, *Turritella* sp., gastropods, mollusks (section not subdivided into an upper and lower unit as in Bexar and Comal Counties)	Kgrf		Fossiliferous	90–130	Semiconfining	MO, BU, FR, CV	Limestone and argillaceous limestone, *Orbitolina minuta* (Douglass, 1960)
					Dissolved evaporites, highly altered crystalline limestone and chalky mudstone, breccia, boxwork voids; *Corbula* beds	Kgrle		Lower evaporite	10	Aquifer	IP, MO, BU, BR	Weathers to an orangish red with a pebbly texture, often has less cedar growth and thicker grasses, boxwork porosity, *Corbula* sp., springs and seeps
				Lower	Wackestone, grainstone, argillaceous wackestone, shale, evaporites; monopleurid, *Toucasia* sp., *Macraster* sp., *Nerinea* sp., *Orbitolina texana* (Roemer, 1852), *Porocystis globularis*, *Salenia texana*, gastropods, pecten, and pelecypods	Kgrb	Middle zone of the Trinity aquifer	Bulverde	0–40	Semiconfining	MO, BR, BP, FR	*Salenia texana* bed immediately below *Corbula* bed, abundant fossils including *Porocystis globularis*, *Orbitolina texana* (Roemer, 1852), *Macraster* sp., *Nerinea* sp., pecten, gastropods, pelecypods
					Mudstone, wackestone, argillaceous wackestone, boundstone; caprinid, monopleurid, *Toucasia* sp., *Orbitolina texana* (Roemer, 1852), gastropods, pectens, pelecypods	Kgrlb (Kgrhf)		Little Blanco (Herff Falls)	0–40 (Herff Falls: 0–90)	Aquifer (Herff Falls: Aquifer)	MO, BU, BP, FR (Herff Falls: MO, BU, BP, FR, CH, CV)	Limestone beds thicker and more resistive to erosion than overlying and underlying units, *Orbitolina texana* (Roemer, 1852), patch reefs (Herff Falls: Patch reefs, reef talus dipping off flanks of reefs; *Requienia* sp., *Caprina* sp.)
					Argillaceous wackestone, shale; *Orbitolina texana* (Roemer, 1852), gastropods, pelecypods	Kgrts (Kgrhf)		Twin Sisters (Herff Falls)	0–40	Semiconfining; confining shale beds	IP	Thick argillaceous beds, thin shale beds, *Orbitolina texana* (Roemer, 1852), contains ponds and seeps, often little vegetation, steeper slopes often with "badlands" type weathering, thinner in areas where patch reefs are present in the underlying Doeppenschmidt HSU
					Mudstone, wackestone, packstone, grainstone, boundstone, argillaceous wackestone and packstone, miliolid grainstone; caprinid, *Toucasia* sp.	Kgrd (Kgrhf)		Doeppenschmidt (Herff Falls)	0–80	Aquifer	IP, MO, BU, BP, FR, CV	*Orbitolina texana* (Roemer, 1852), limestone beds thicker and more resistive than overlying and underlying patch reefs formed on rudist, reefal talus
					Alternating beds of argillaceous wackestone, packstone; mudstone, wackestone, packstone, grainstone, miliolid grainstone; monopleurid, *Nerinea* sp., *Orbitolina texana* (Roemer, 1852), *Tylostoma* sp., and oysters, pectens, and pelecypods	Kgrr		Rust	40–90	Semiconfining	IP, FR, CV	Forms stairstep topography with soils, *Orbitolina texana* (Roemer, 1852)
					Wackestone, packstone, grainstone, boundstone, burrows; caprinids, miliolid, *Orbitolina texana* (Roemer, 1852), *Toucasia* sp., *Trigonia* sp., *Turritella* sp., various corals, pectens, shell fragments	Kgrhc		Honey Creek	20–60	Aquifer	IP, MO, BU, BP, FR, CH, CV	Thick beds of wackestone, packstone, grainstone; corals, caprinid, *Trigonia* sp., cliff forming; outcrop often contains large limestone float with large channel and moldic porosity, caves and springs
			Pearsall	Hensell Sand	Dolomitic limestone, claystone, siltstone, terrigenous sand; conglomerate/breccia composed of red sandstone, at base of unit; oysters, quartz geodes	Kheh		Hensell	0–40	Aquifer	IP, MO, SH, CV	Quartz geodes, large oyster shells, reddish sandy soil with good grass growth, red sandstone conglomerate /breccia at base
				Cow Creek Limestone	Upper: very fine grained to fine-grained carbonate sand (grainstone), localized crossbedding; areas of coral and rudist biostromes (boundstone) overlain by rippled, crossbedded grainstone Lower: dolomitic mudstone, wackestone, packstone; oysters	Kcccc		Cow Creek	40–80	Aquifer	IP, MO, BU, VUG, BP, FR, CH, CV	Carbonate sands, crossbedding near top, biostrome composed of corals and rudist, talus slopes
				Hammett Shale	Upper: claystone, with siltstone lenses, overlain by fossiliferous dolomitic limestone Lower: siltstone and dolomite	Khah	Confining unit	Hammett	20–50	Confining	None	Holds surface water; springs at contact with Cow Creek
			Hosston > Sycamore Sand[3]	*	Sand, silt, clay, and conglomerate	Ksys	Lower zone of the Trinity aquifer	Sycamore	50	Aquifer	IP, BP, FR, CV	Sand, silt, and conglomerate

[1]Informal.
[2]Thickness range based on field mapping in the study area (Lamberts and others, 2025).
[3]Sycamore Sand is the updip stratigraphic equivalent of the Hosston Formation (Barker and others, 1994).
*No further subdivision.

Figure 3. Summary of the geologic framework and hydrostratigraphy of the Edwards and Trinity aquifers within the study area of Hays County, Texas (modified from Clark and others, 2016a, b, 2018; Clark and Morris, 2017). Period, Epoch, group, formation, members, and lithology modified from Hill (1891), Imlay (1945), Whitney (1952), Lozo and Stricklin (1956), Stricklin and others (1971), Rose (1972), Stricklin and Smith (1973), Amsbury (1974), Inden (1974), Perkins (1974), Barnes and others (1981), Barker and Ardis (1996), Clark and others (2009), Wierman and others (2010), Clark and others (2013, 2014), Blome and Clark (2014), Hunt and others (2015), Rose (2017), and U.S. Geological Survey (2024); abbreviations modified from Barnes and others (1981) and Clark and others (2016a, b); *Orbitolina minuta* (Douglass, 1960), *Orbitolina texana* (Roemer, 1852); aquifers from Maclay and Small (1976) and Ashworth (1983); thickness from outcrop, Clark and others (2009), Wierman and others (2010), Clark and others (2014); hydrologic function modified from outcrop, Clark and others (2009), Wierman and others (2010), Clark and others (2013, 2014), Clark and Morris (2015); BRBs, black rotund bodies. Porosity types modified from Choquette and Pray (1970): Fabric selective: IP, interparticle porosity; IC, intercrystalline porosity; IG, intergranular porosity; SH, shelter porosity; MO, moldic porosity; BU, burrowed porosity; BP, bedding plane porosity. Non-fabric selective: FR, fracture porosity; CH, channel porosity; BR, breccia porosity; VUG, vug porosity; CV, cave porosity.

Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers Within Hays County, Texas

By
Allan K. Clark, Robert R. Morris, and Alexis P. Lamberts
2025

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government

For sale by U.S. Geological Survey, Information Services, Box 25286, Federal Center, Denver, CO 80225, 1–888–ASK–USGS

Digital files available at https://doi.org/10.3133/sim3540

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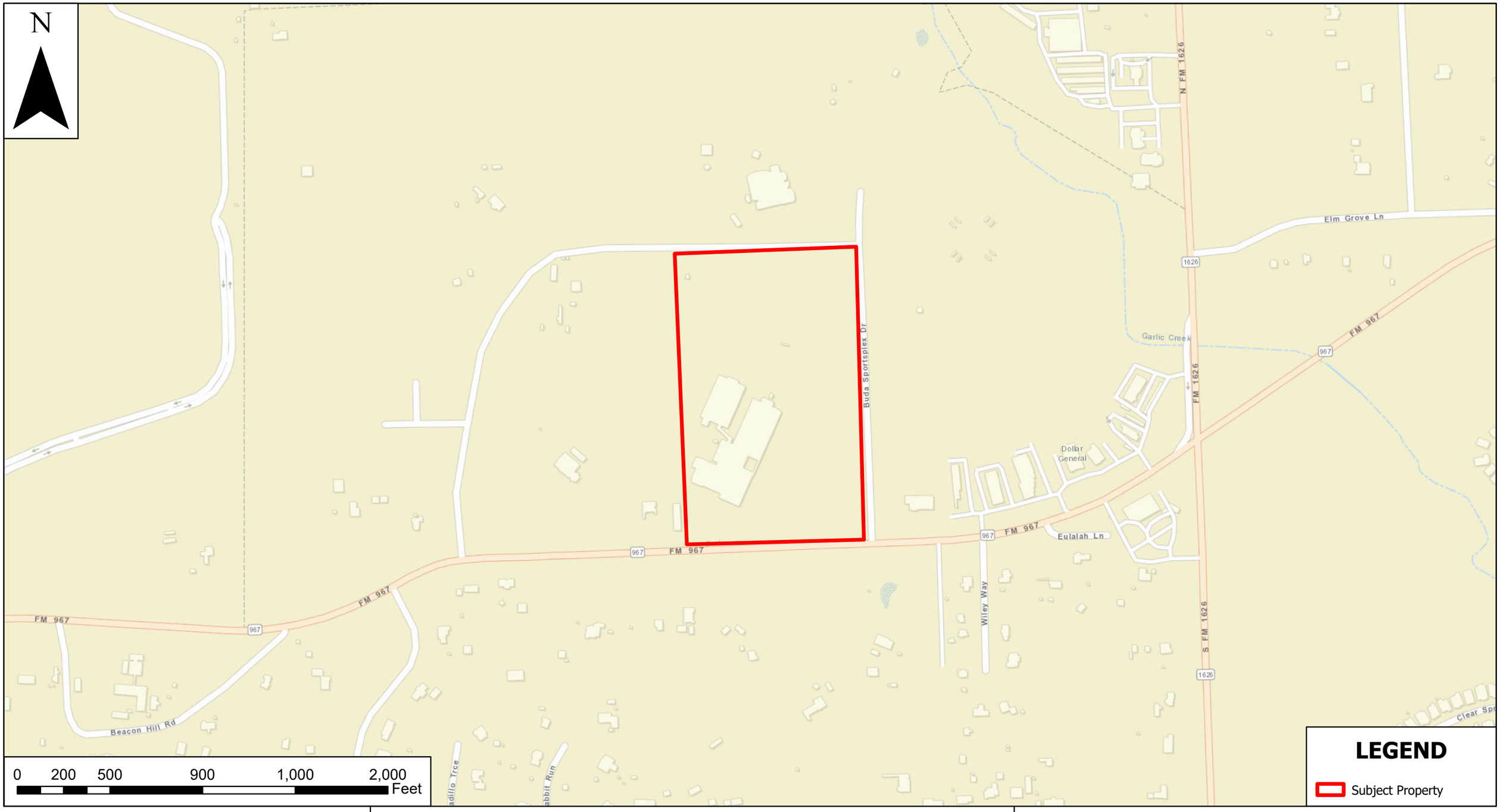
Associated data for this publication: Lamberts, A.P., Clark, A.K., and Morris, R.R., 2025, Geospatial dataset for the geologic framework and hydrostratigraphy of the Edwards and Trinity aquifers within Hays County, Texas, at 1:24,000 scale: U.S. Geological Survey data release, https://doi.org/10.5066/P13BICJ5.

ISSN 2329-132X (online)
https://doi.org/10.3133/sim3540



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Austin, Texas 78728
Phone: (512) 837-8005
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Figure 1 - Site Location Map

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
ECS Project No. 51:5249

Project Acreage: 27.63
USGS Quadrangle: Mountain City, Texas 2022
Watershed: Onion Creek-Colorado River

Service Layer Credits:
World Street Map: Esri, HERE, Garmin, INCREMENT P, NGA, USGS
USGS Topographic Map Mountain City, Texas 2022
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program



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Figure 2 - USGS Topographic Map

Dahlstrom M.S. - TCEQ Geologic Assessment
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USGS Quadrangle: Mountain City, Texas 2022
Watershed: Onion Creek-Colorado River

Service Layer Credits:
World Topographic Map: Austin Community College, City of Austin, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA
USGS Topographic Map Mountain City, Texas 2022
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
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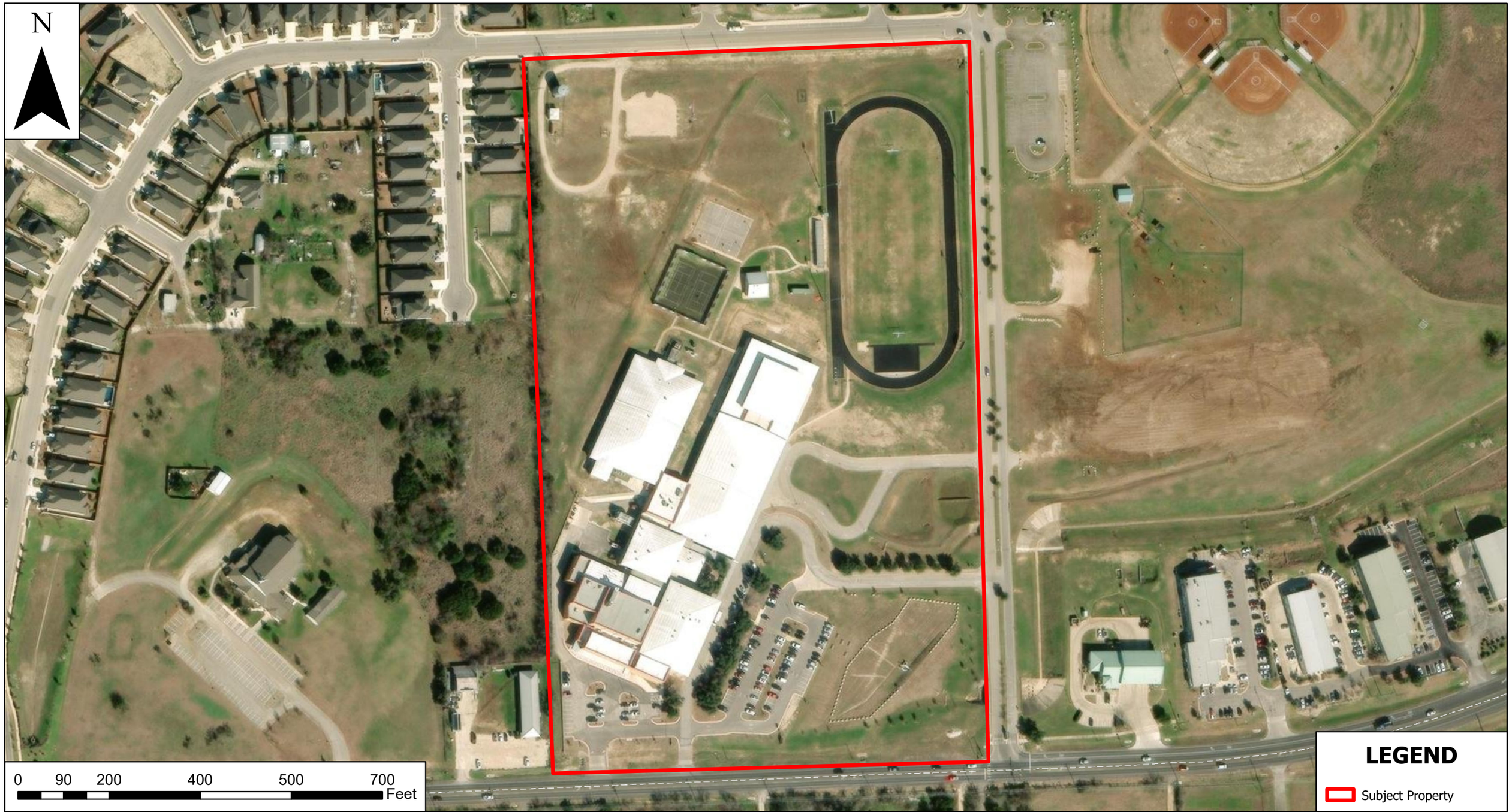

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Figure 3 - Aerial Map

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
ECS Project No. 51:5249

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USGS Quadrangle: Mountain City, Texas 2022
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World Imagery: Vantor
World Boundaries and Places: Esri, HERE, Garmin, iPC
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Figure 4 - NRCS Soils

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
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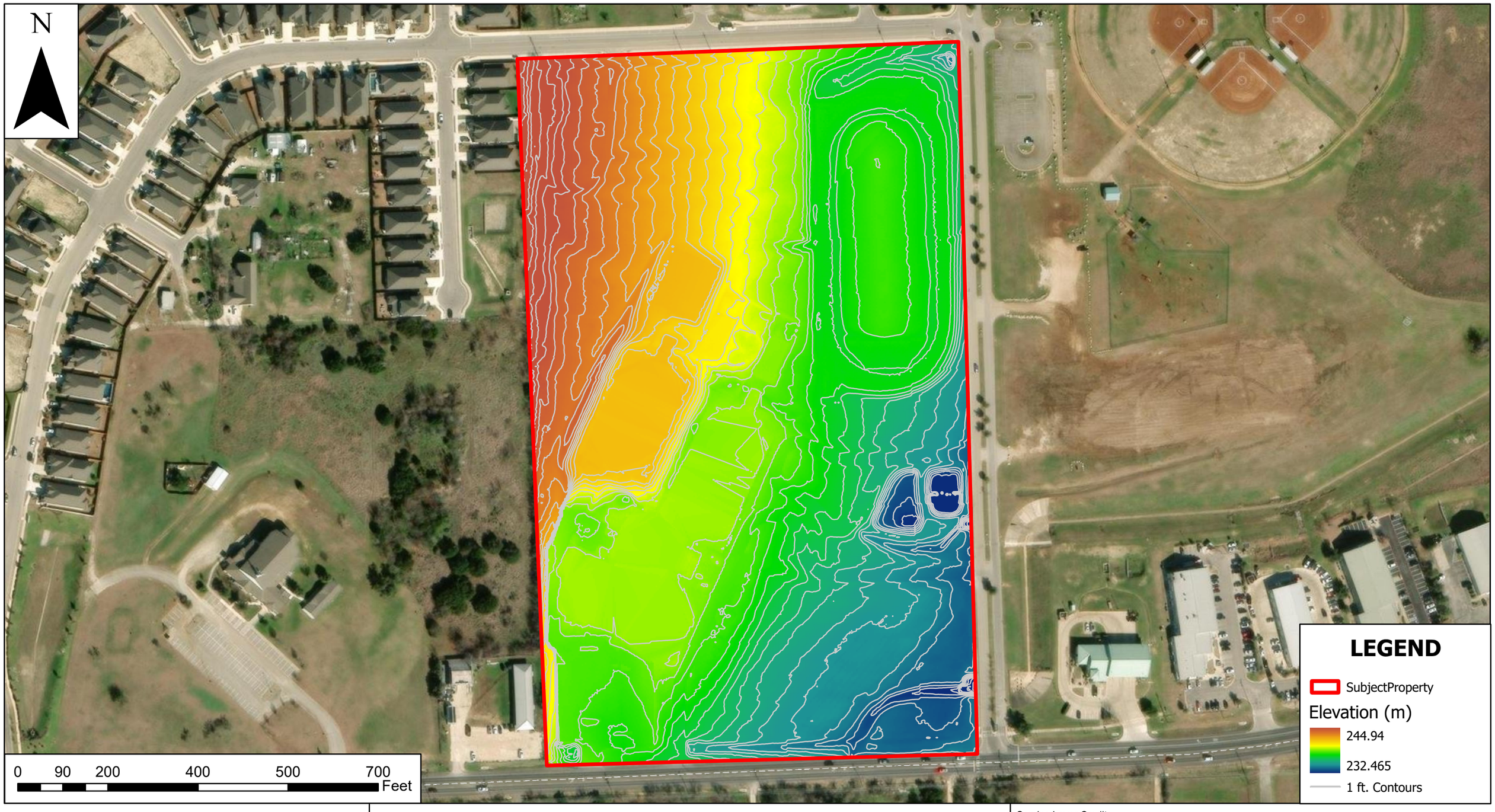

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Figure 5 - LiDAR Map w/ 1-ft. Contours

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
ECS Project No. 51:5249

Project Acreage: 27.63
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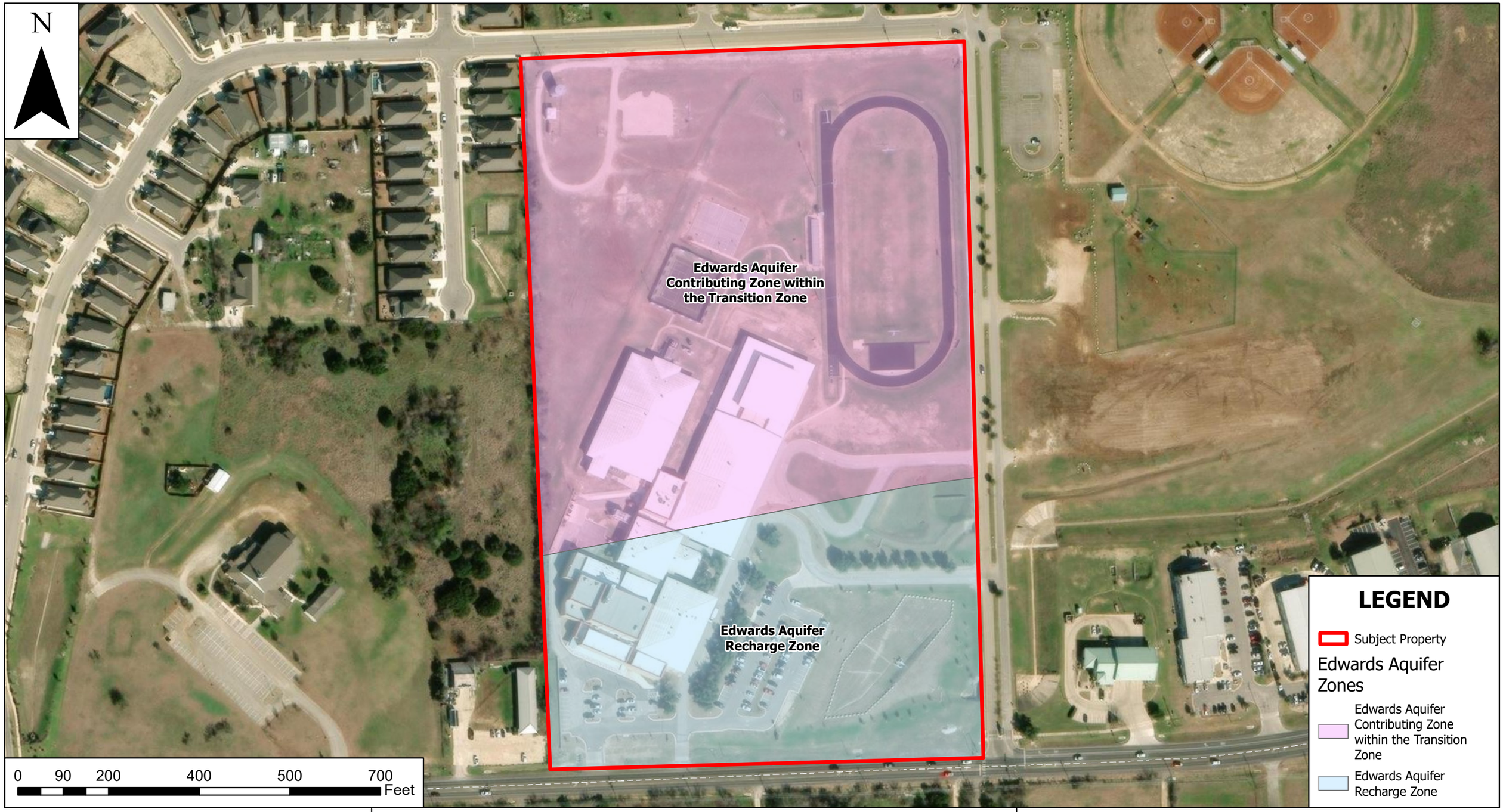

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Figure 6 - Edwards Aquifer Map

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
ECS Project No. 51:5249

Project Acreage: 27.63
USGS Quadrangle: Mountain City, Texas 2022
Watershed: Onion Creek-Colorado River

Service Layer Credits:
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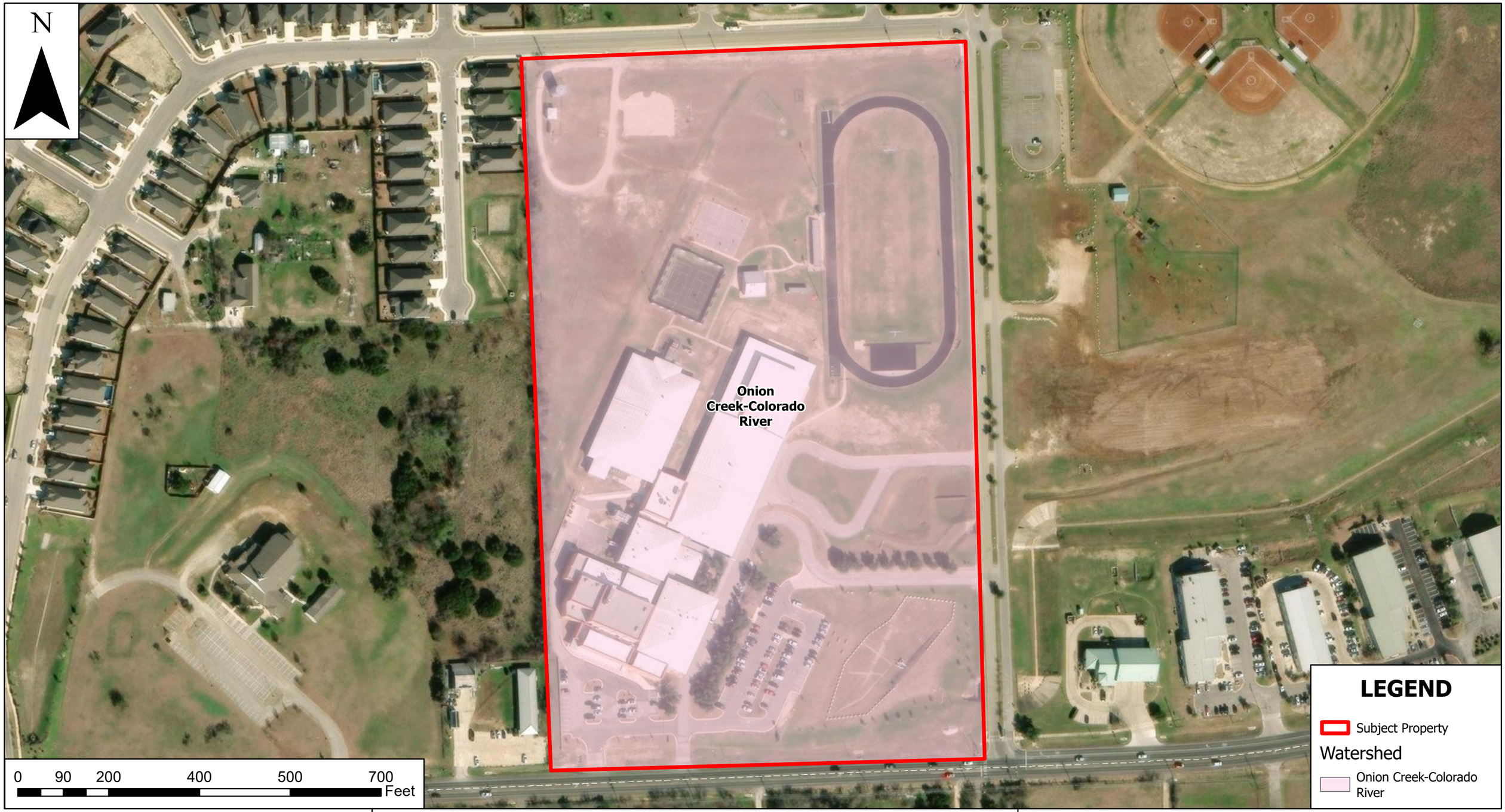

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Figure 7 - Watershed Map

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
ECS Project No. 51:5249

Project Acreage: 27.63
USGS Quadrangle: Mountain City, Texas 2022
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Figure 8 - FEMA Floodplain

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
ECS Project No. 51:5249

Project Acreage: 27.63
USGS Quadrangle: Mountain City, Texas 2022
Watershed: Onion Creek-Colorado River

Service Layer Credits:
World Imagery: Microsoft, Vantor
World Boundaries and Places: Esri, HERE, Garmin, iPC
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Soils Data: USDA NRCS Web Soil Survey
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Figure 9 - USGS Geology Map

Dahlstrom M.S. - TCEQ Geologic Assessment
3600 FM 697
Buda, Hays County, Texas 78724
ECS Project No. 51:5249

Project Acreage: 27.63
USGS Quadrangle: Mountain City, Texas 2022
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Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program

Narrative Description of Site Specific Geology

The principal structural feature in Hays County is the Balcones fault zone, which is the result of late Oligocene and early Miocene age high-angle normal faulting and fracturing. Hydrostratigraphically, the exposed rocks represent a section of the upper confining unit to the Edwards aquifer, the Edwards aquifer, the upper zone of the Trinity aquifer, the middle zone of the Trinity aquifer, and the upper part of the lower zone of the Trinity aquifer. (USDA, 2018)

Groundwater recharge and flow are controlled by faulted Edwards Aquifer and adjacent strata. Water enters the aquifer by means of solution features controlled by faults, fractures and solution conduits. Solution features are created by the dissolution of limestone primarily from rainwater and groundwater. Deformation of the Balcones fault system controls both the large- and small-scale flow barriers and pathways present in the Edwards Aquifer.

Geological information pertaining to the area was obtained from the Geologic map of the Austin, Texas, 30 x 60 Minute quadrangle, published by University of Texas at Austin, Bureau of Economic Geology (BEG), 1974. The subject property is situated on Del Rio Clay and Georgetown Formation (Kdg).

BEG describes Kdg as, " clay, calcareous and gypsiferous becoming less calcareous and more gypsiferous upward, pyrite common, blocky, medium gray, weathers light gray to yellowish gray; some thin lenticular beds of highly calcareous siltstone; marine megafossils include abundant Exogyra arietina and other pelecypods; thickness 60-120 ft, thickens westward."

Obvious signs of faulting were not observed on the subject property. One (1) faults is mapped traversing the northwest corner of the subject property.



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: Zachery Humphries

Date: 01/27/2026

Signature of Customer/Agent:

Zachery Humphries Digitally signed by Zachery Humphries DN: C=US, E=zhumphries@ceieng.com, O=CEI Engineering, CN=Zachery Humphries Date: 2026.01.27 16:15:36-06'00'

Project Information

1. Current Regulated Entity Name: Dahlstrom Middle School
   Original Regulated Entity Name: Dahlstrom Middle School
   Regulated Entity Number(s) (RN): RN102731916, RN1052255148
   Edwards Aquifer Protection Program ID Number(s): _____
   [X] The applicant has not changed and the Customer Number (CN) is: CN601392384
   [ ] The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. [X] **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies 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	SEE ATTACHED
Type of Development		
Number of Residential Lots		
Impervious Cover (acres)		
Impervious Cover (%		
Permanent BMPs		
Other		

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

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

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

5. ☒ **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.

Civil Engineering, Landscape Architecture,
Survey, Planning & Program Management

3030 LBJ Freeway, Suite 920
Dallas, TX 75234
Office: 972.488.3737
Toll-free: 1.877.488.3737
ceieng.com

SUMMARY OF PROPOSED MODIFICATIONS

Item	Approved WPAP Mod (Aug 26, 2002)	Approved WPAP Mod (Jun 14, 2007)	Approved WPAP Mod (Aug 11, 2008)
Acres	30	30	27.7
Type of Development	Building Expansion	Parking Lot Expansion	Drop-off Lane Expansion, Tennis Courts, Track Improvements
Number of Residential Lots	N/A	N/A	N/A
Impervious Cover (acres)	5.64	5.75	7.38
Impervious Cover (%)	18.80%	18.39%	26.57%
Permanent BMPs	N/A	Veg. Filter Strip	Sedimentation/Filtration Basin
Other	Exempt due to under 20% impervious cover	—	—

Item	Approved WPAP Mod (July 23, 2021)	Proposed WPAP Mod
Acres	26.73	26.73
Type of Development	School Expansion, Parking Lot Expansion, Detention Pond	Field Resurfacing with Synthetic Turf and Underground Detention
Number of Residential Lots	N/A	N/A
Impervious Cover (acres)	8.59	10.92
Impervious Cover (%)	32.14%	40.85%
Permanent BMPs	Eng. Veg. Filter Strips / Batch Detention Pond	Eng. Veg. Filter Strips / Self Treating Underground Crushed Stone Detention Pond
Other	—	

SUBEDAQ
8/26/02

COPY

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Kathleen Hartnett White, *Commissioner*
Jeffrey A. Saitas, *Executive Director*

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

August 26, 2002

Mr. Brett Belmarez
Hays Consolidated Independent School District
21003 IH 35
Kyle, Texas 78640

Re: Edwards Aquifer, Hays County
NAME OF PROJECT: Dahlstrom Middle School Addition, 3600 FM 967, Buda, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP)
30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program File No. 02070204

Dear Mr. Balmarez:

The Texas Natural Resource Conservation Commission (TNRCC) has completed its review of the WPAP application for the referenced project submitted to the Austin Regional Office by K.C. Engineering, Inc. on behalf of HCISD on July 7, 2002. Final review of the WPAP submittal was completed after additional material was received on August 19, 2002. As presented to the TNRCC, the Temporary Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed no later than 20 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed school addition project will be constructed on the existing 30.0 acre site. It will include the installation of a temporary building, and the construction of a new 14,275 square-foot building. The impervious cover will be 5.64 acres (18.8 percent). Project wastewater will be disposed of by conveyance to the existing on-site sewage facility.

PERMANENT POLLUTION ABATEMENT MEASURES

The applicant requested a waiver to the requirement for other permanent BMPs for this school, because the site will have less than 20% impervious cover. Based upon our review of the proposed activities, the geologic assessment, and the site conditions, the requested waiver is hereby granted. If the percent impervious cover ever increases above 20% or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the Austin Regional Office of these changes.

GEOLOGY

According to the geologic assessment included with the application, recent stream deposits and the Georgetown Formation underlies the site. No geologic features were identified in the assessment. The Austin Regional Office site investigation of August 16, 2002, revealed that the site was as described in the geologic assessment. It was observed that construction had begun on the project.

SPECIAL CONDITION

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. 4 below.

STANDARD CONDITIONS

1. Pursuant to §26.136 of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TNRCC-0625) that you may use to deed record the approved WPAP is enclosed.

3. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

4. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

5. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and file number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

6. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. The water quality pond shall be used as a sedimentation basin during construction. The TNRCC may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

7. 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.

<u>During Construction:</u>

8. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until

such responsibility is legally transferred to another person or entity.

9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

10. No wells exist on the site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

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

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

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

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

14. 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.

15. 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 Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

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

If you have any questions or require additional information, please contact Ms. Heather L. Beatty of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

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

JAS/hlb

Enclosure: Deed Recordation Affidavit, *TNRCC-0625*

cc: Mr. Steve Jamison, P.E., K.C. Engineering, Inc.
The Honorable Jim Powers, County Judge, Hays County
Mr. Alan Walther, Director of Environmental Health, Hays County Health Department
Mr. Floyd Marsh, Barton Springs/Edwards Aquifer Conservation District
TNRCC Central Records

Bk Vol Ps
70018050 OPR 3191 881

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
H. S. Buddy Garcia, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

RECEIVED
JUL 02 2007

June 14, 2007

Mr. Rod Walls
Hays CISD
21003 IH-35
Kyle, Texas 78640

Re: Edwards Aquifer, Hays County
NAME OF PROJECT: Hays CISD Dahlstrom Middle School; Located North of FM 967 and West of FM 1626; Buda, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 07051001

Dear Mr. Walls:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the Austin Regional Office by Hanrahan-Pritchard Engineering, Inc. on behalf of Hays CISD on May 10, 2007. Final review of the WPAP was completed after additional material was received on June 8, 2007. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 0.62 acres. The proposed project will consist of the construction of seventeen parking spaces along the front side of the building adjacent to the existing bus loop. The impervious cover will be 0.11 acres (17.7%). Wastewater will not be generated as a result of this project.

Bk Vol Pg
70018050 OPR 3191 882

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction a vegetative filter strip with an area of 13,545 square feet (0.31 acre) will be used as the permanent Best Management Practice. This permanent control provides the required removal rate of 80 percent of the increase in total suspended solids to be generated by the proposed project.

GEOLOGY

According to the geologic assessment included with the application, the surface geologic unit at the site is a component of either the Eagle Ford Group and the Buda Limestone undivided; or a component of the Del Rio Clay and Georgetown Formation undivided. No surface outcrops were observed and no evidence of sinkholes, caves, large-scale fractures, nor did the field reconnaissance reveal evidence of any sudden and abrupt changes in topography that could imply the presence of a fault. It was noted that several large northeast-southwest trending faults surround the school. The Austin Regional Office site inspection on June 18, 2007, revealed that the site as is described by the geologic assessment.

SPECIAL CONDITIONS

I. The holder of the approved Edwards Aquifer WPAP must comply with all provisions of 30 TAC Chapter 213 and all Best Management Practices and measures contained in the application.

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

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

2. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin 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.

Bk Vol Pg
70018050 OPR 3191 883

3. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

4. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

5. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

6. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

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

<u>During Construction:</u>

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

9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately.

Bk Vol Pg
70018050 OPR 3191 884

The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

10. No wells exist on the site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

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

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

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

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

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

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

Bk Vol Pg
70018050 OPR 3191 885

16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

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

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

If you have any questions or require additional information, please contact Ben E. Milford, P.G. of the Edwards Aquifer Protection Program of the Austin Regional Office at (512)339-2929.

Sincerely,

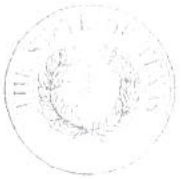
Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/bem

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

cc: Mr. Stephen R. Jamison, P.E., Hanrahan-Pritchard Engineering, Inc., Austin
The Honorable Liz Sumter, County Judge, Hays County
Mr. Tom Forrester, Interim Director, Hays County Environmental Health Dept.
Mr. John Trube, Mayor, City of Buda
Mr. Kirk Holland, P.G., General Manager, Barton Springs/Edwards Aquifer Conservation District
Central Records, TCEQ Information Resources Division, Austin

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



COPY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 11, 2008

Mr. Rod Walls
Hays CISD
21003 IH-35
Kyle, Texas 78640

Re: Edwards Aquifer, Hays County
NAME OF PROJECT: Dahlstrom Middle School; 3600 F.M. 967; Buda, Texas
TYPE OF PLAN: Modification of a Water Pollution Abatement Plan (WPAP);
30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 11-08061202

Dear Mr. Walls:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP modification application for the referenced project submitted to the Austin Regional Office by Hanrahan Pritchard Engineering, Inc. on behalf of Hays CISD on June 12, 2008. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10% of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed project for improvements to the existing development is located in the Edwards Aquifer Recharge Zone. The project will include the addition of a drop-off lane, tennis courts, track improvements, as well as a water quality pond. The existing impervious cover for the development is approximately 5.75 acres (18.39%). The total impervious cover following the improvements will be 7.38 acres (26.57%).

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, stormwater runoff from the project will be conveyed to and treated by a sedimentation/filtration basin. The basin has a capacity of 2,042 cubic feet. The approved measures meet the required 80 percent removal of the increased load in total suspended solids caused by the project.

GEOLOGY

According to the geologic assessment included with the application, the surface geological unit at the site is a component of either the Eagle Ford Group and the Buda Limestone undivided; or a component of the Del Rio Clay and Georgetown Formation undivided. No surface outcrops were observed and no evidence of sinkholes, caves, large scale fractures, nor did the field reconnaissance reveal evidence of any sudden or abrupt changes in topography that could imply the presence of a fault. It was noted that several large northeast-southwest trending faults surround the school. The Austin Regional Office site investigation of July 15, 2008 revealed that the site is generally as described by the geologic assessment.

SPECIAL CONDITIONS

I. The holder of the approved Edwards Aquifer WPAP must comply with all provisions of 30 TAC chapter 213 and all best management practices and measures contained in the application.

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

III. 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. 4 below.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

2. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit to the Austin Regional Office, proof of recordation of

notice in the county deed records. with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

3. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

4. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval. including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

5. The applicant must provide written notification of intent to commence construction. replacement. or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence the name of the approved plan and program ID number for the regulated activity. and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

6. Temporary erosion and sedimentation (E&S) controls. i.e.. silt fences. rock berms. stabilized construction entrances. or other controls described in the approved WPAP. must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

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

<u>During Construction:</u>

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

9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

10. 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.

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

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

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

After Completion of Construction:

14. 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.

15. 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 Austin Regional Office with the

appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

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

If you have any questions or require additional information, please contact Ms. Colleen Garland of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

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

MRV/cmg

Enclosures: Deed Recordation Affidavit, TCEQ-0625
Change in Responsibility for Maintenance on Permanent Best Management Practices and Measures, TCEQ-10263

cc: Mr. Stephen R. Jamison, P.E., Hanrahan-Pritchard Engineering, Inc.
Mr. Bobby Lane, Mayor of Buda, City of Buda
Mr. Kirk Holland, P.G., General Manager, Barton Springs/Edwards Aquifer Conservation District
Mr. Jerry Borcherding, Hays County Environmental Health
Central Records, TCEQ Information Resources Division, Austin

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ who, being duly sworn by me, deposes and says:

(1) That my name is _____and that I own the real property described below.

(2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on _____.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

(4) The said real property is located in _____ County, Texas, and the legal description of the property is as follows:

_____
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this __ day of _____, ____.

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ 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 __ day of _____, _____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 25, 2022

Mr. Max Cleaver
Hays CISD
21003 Interstate 35
Kyle, TX 78640-4745

Re: Edwards Aquifer, Hays County

NAME OF PROJECT: Dahlstrom Middle School; Located at 3600 FM 967; Buda, Texas

TYPE OF PLAN: Request for an Exception to the Requirements of a Water Pollution Abatement Plan (WPAP-EXC); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program ID No. 11002877; Regulated Entity No. RN102731916

Dear Mr. Cleaver:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP-EXC application for the above-referenced project submitted to the Austin Regional Office by Pape-Dawson Engineers, Inc. on behalf of Hays CISD on January 11, 2022. Final review of the WPAP-EXC was completed after additional material was received on March 17, 2022. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected, and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The original application (EAPP ID No. 11-02070204) was approved August 26, 2002. This approval was followed by three modifications (EAPP ID No. 11-07051001, EAPP ID No. 11-08061202, and EAPP ID No. 11002564). EAPP ID No. 11002564 included the approval of vegetative filter strips and a batch detention basin.

PROJECT DESCRIPTION

The proposed school project will have an area of approximately 26.73 acres. It will include construction of a loop road and associated appurtenances. The impervious cover will increase by 0.63 acres, to a total of 9.22 acres (34.5 percent). Project wastewater will be disposed of by conveyance to the existing City of Buda Wastewater Treatment Plant.

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, vegetative filter strips and a batch detention basin (EAPP ID No. 11002564), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be used to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 566 pounds of TSS generated from the increase of 0.63 acres of impervious cover, totaling to 9.22 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment included with the application, the surficial units on site the Georgetown formation (Kgt), Del Rio Clay (Kdr), and Buda Limestone (Kbu). The soils present on site are characterized by Denton silty clay and Doss silty clay. There are no sensitive geologic features described in the Geologic Assessment. The TCEQ site assessment conducted on February 1, 2022, determined the site to be generally as described.

SPECIAL CONDITIONS

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

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

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin 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 Austin 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.

<u>During Construction:</u>

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 Austin 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. 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.

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

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 Austin 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 Austin 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 Austin 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 Savannah Finger of the Edwards Aquifer Protection Program of the Austin Regional Office at 512-339-2929.

Sincerely,

Lillian Butler

Lillian Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

LIB/sjf

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

cc: Mr. Brent Tuley, P.E., Pape-Dawson Engineers, Inc.

Civil Engineering, Landscape Architecture,
Survey, Planning & Program Management

3030 LBJ Freeway, Suite 920
Dallas, TX 75234
Office: 972.488.3737
Toll-free: 1.877.488.3737
ceieng.com

ATTACHMENT B – Narrative of Proposed Modification
Dahlstrom Middle School
3600 FM 967, Buda, TX 78610

The site is located at Dahlstrom Middle School in the City of Buda, Hays County, Texas. The total property area is about 26.7 acres, with the proposed project area consisting of approximately 3.9 acres of disturbed area, including the existing track and grass football field that is bound to the north by Carpenter Hill Dr, to the south and east by school property, and to the west by Buda Sportsplex Drive. The project area falls entirely within the Edwards Aquifer Contributing Zone Within the Transition Zone.

The Dahlstrom Middle School site has undergone multiple approvals with TCEQ. The school was originally built in 1984 with the building and impervious cover being grandfathered to be exempt from water quality. The site has had four (4) recorded WPAP Modifications since then, approved in 2002, 2007, 2008, and 2021, described herein.

The 2002 WPAP Modification (EAPP ID#02070204) was submitted due to an increased building footprint. This modification increased impervious cover to 5.75 acres, which left the project under the 20% impervious cover allowed. This modification did not affect the track area.

The 2007 WPAP Modification (EAPP ID#07051001) was submitted due to the increased impervious cover resulting from construction of additional parking spaces. This modification increased impervious cover by 0.11 acres and did not affect the track area.

The 2008 WPAP Modification (EAPP ID#11-08061202) was submitted due to increased impervious cover from new tennis courts, drive lane, and track updates. The updates to the track included routing stormwater falling onto it to a new water quality and detention pond to the south.

The 2021 WPAP Modification (EAPP ID#11002564) was submitted due to increased building footprints and drive expansions. This modification increased impervious cover to a total of 8.59 acres. This modification did not affect the track area.

The proposed 2026 WPAP Modification of the site will consist of synthetic turf resurfacing of the existing grass field along with additional concrete walking paths and jump

facilities. There will be no major demolition of existing structures or infrastructure. The proposed turf field will act as underground detention and include an underlying section of 9" crushed stone containing 40% void space with perforated underdrain pipes. The synthetic turf field is considered to be impervious, self-treating cover.

A total of 3.21 acres of impervious cover is being proposed, an increase of 2.33 acres from the existing impervious area. This added impervious cover requires stormwater pollution treatment that will be provided by the permanent BMPs described herein. New engineered vegetative filter strips (VFS) are proposed to treat the new impervious cover outside the track, while the synthetic turf field inside the track is considered self-treating. The implementation of detention within the crushed stone under the turf field will decrease runoff in post-conditions while having no negative impacts on adjacent or downstream properties or watersheds.

Based on the approved 2021 WPAP Modification plans, the total existing site impervious cover is 8.59 acres (32.14%). With this proposed development, the total site impervious area will be 10.92 acres (40.85 %).

The existing total TSS load of the site is 2617 lb. The 0.19 acres of added impervious cover outside the track is treated with VFS, while the 2.14 acres of added impervious cover inside the track is self-treating. With the combination of the 80% removal efficiency of VFS and the 100% removal of self-treating turf field, the total removal rate of the proposed development exceeds the 80% minimum removal rate of TCEQ. See the table below for a summary of the treatment removal provided by the proposed BMPs.

TCEQ Treatment Summary

	L_m (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**

1 - See TCEQ spreadsheet calcs (80% removal rate for VFS).

2 - New field cover consists of 2.06 ac of self-treating turf (0.24 ac D-zone not included in field treatment). Therefore, a removal rate of approximately 90% was used for the new field IC area.



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

811 Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
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- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = CONCRETE
- = TRACK
- = RIP-RAP

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
BUDA, TX.

JEFFERY J. BRESEE 89217 LICENSED PROFESSIONAL ENGINEER

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

EXISTING SITE PLAN

SHEET TITLE

SHEET NUMBER

C1

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTROM\WORKING\34698-DAHLSTROM-DEMO.DWG -- SAVED BY - RMENDIA

© 2025 CEI ENGINEERING ASSOCIATES, INC.

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: Zachery Humphries

Date: 12/29/2025

Signature of Customer/Agent:

Zachery Humphries Digitally signed by Zachery Humphries DN: C=US, E=zhumphries@ceieng.com, O=CEI Engineering, CN=Zachery Humphries Date: 2025.12.29 12:58:40-06'00'

Regulated Entity Name: Dahlstrom Middle School

Regulated Entity Information

1. The type of project is:

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

2. Total site acreage (size of property): 26.7 acres

3. Estimated projected population: 1,000

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	121,532	÷ 43,560 =	2.79
Parking	252,648	÷ 43,560 =	5.80
Other paved surfaces	101,495	÷ 43,560 =	2.33
Total Impervious Cover	148,100	÷ 43,560 =	10.92

Total Impervious Cover 10.92 **÷ Total Acreage** 26.73 **X 100 =** 40.85 **% Impervious Cover**

5. [X] **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. [X] Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

For Road Projects Only

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

7. Type of project:

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

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

   [ ] Concrete
   [ ] Asphaltic concrete pavement
   [ ] Other: _____

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

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

10. Length of pavement area: _____ feet.

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

11. [ ] A rest stop will be included in this project.

    [ ] A rest stop will not be included in this project.

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

Stormwater to be generated by the Proposed Project

13. ☒ **Attachment B - Volume and Character of Stormwater**. A 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: NA; no wastewater to be generate by this project

_____% Domestic	_____Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day _____	

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 _____ (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" = 40 '.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA Map #48209C0260G, dated 1/17/2025

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

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

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

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

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

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

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

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

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

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

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

25. [X] Locations where soil stabilization practices are expected to occur.

26. [ ] Surface waters (including wetlands).

    [X] N/A

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

    [X] There will be no discharges to surface water or sensitive features.

28. [X] 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 Surface Water Quality

A. **Potential Pollutants**

a. Potential Construction Site Pollutants: Construction phase pollutant sources anticipated at the site are disturbed (bare) soil, vehicle fuels and lubricants, chemicals and coatings associated with site or building construction and pavement installation, construction-generated litter and debris, and building materials, among several others.

b. Potential Post-Construction Site Pollutants: Post-Construction phase pollutant sources may include vehicle fuels and lubricants, chemicals and coatings associated with the maintenance of the site, building, and pavement, litter and debris generated by site visitors, rubber pellets from the turf field sections, herbicides, pesticides, and fertilizers associated with vegetation maintenance.

B. **Best Management Practices (BMPs)**

a. The surface water quality of receiving water bodies is dependent on the ability of the contractor to effectively implement, maintain, and inspect the BMPs presented in the Storm Water Pollution Prevention Report (SWPPP).

i. Temporary BMPs are provided in accordance with TCEQ requirements that will prevent pollution of the surface waters downstream of the site. The purpose of the SWPPP is to prevent pollution of the ground, water or air from pollutants, including, but not limited to, those mentioned in this paragraph.

ii. Permanent BMPs such as the vegetated filter strips and self-treating crushed stone beneath the turf field have been designed in accordance with the jurisdictionally approved practices as described in the City of Austin Environmental Criteria Manual. The BMPs will adequately treat the site stormwater runoff to mitigate pollutant loadings prior to site runoff exiting the site and entering downstream surface waters.

Attachment B – Volume and Character of Stormwater

Proposed Runoff Conditions - The proposed site will consist of an increase in impervious area of 2.33 acres for a total of 3.40 acres. The post-development peak runoff to the north is reduced in conjunction with the adjacent development. The post-development peak runoff to the south is reduced with the use of a detention pond under the synthetic turf field. Water quality treatment of 80% is achieved in accordance with TCEQ requirements. Refer to the tables below for a summary of pre and post runoff results.

Table 1 – Impervious Cover Summary

	Pre	**Post**
Project Study Area (ac.)	4.03	4.03
Impervious Cover (ac.)	1.07	3.40
IC %	**27%**	**84%**
Curve Number	**85**	**95**

Table 2 – Peak Runoff Summary

Basin	**Q2 (cfs)**	**Q10 (cfs)**	**Q25 (cfs)**	**Q100 (cfs)**
Pre A	11.4	20.0	25.8	35.0
Post A	10.8	19.8	23.3	28.2
Difference	-0.6	-0.2	-2.5	-6.8
Pre B	1.7	3.1	4.1	5.8
Post B	2.8	4.9	6.4	8.7
Difference	1.1	1.8	2.3	2.9

Table 2 – Peak Runoff Summary (combined with adjacent development)

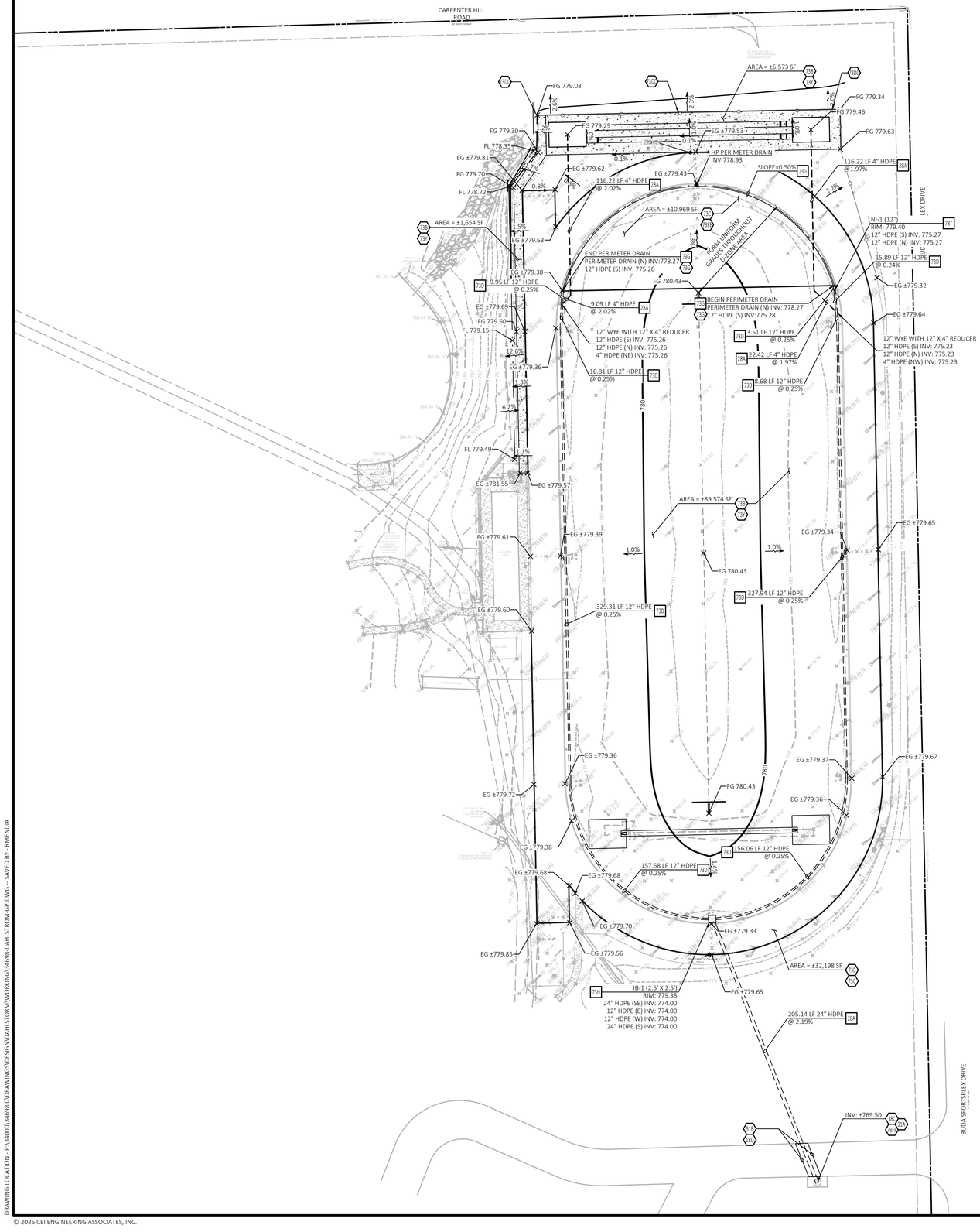
Basin	**Q2 (cfs)**	**Q10 (cfs)**	**Q25 (cfs)**	**Q100 (cfs)**
Pre Analysis Point 5	46.6	81.7	105.0	142.2
Post Analysis Point 5	34.3	62.5	77.8	93.7
CEI net increase	1.1	1.8	2.3	2.9
Total Difference	-11.2	-17.4	-24.9	-45.7

Table 4 – Runoff Volume Summary

Basin	V100 (ac-ft)
Pre A	3.3
Post A	3.3
Difference	0.0
Pre B	0.4
Post B	0.7
Difference	0.3

Table 5 – Water Quality Summary

	L_m (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = CONCRETE
- = TRACK
- = RIP-RAP

PROPOSED LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- GRADE BREAK
- FLOWLINE
- STORM DRAIN
- x XX.XX SPOT ELEVATIONS:
  - EG = EXISTING GRADE
  - FG = FINISH GRADE
  - FL = FLOWLINE

GENERAL GRADING NOTES

A. PRIOR TO INSTALLATION OF STORM OR SANITARY SEWER, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL CROSSINGS AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT THE ENGINEER IS NOT NOTIFIED OF DESIGN CONFLICTS.

B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND 4" OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEEDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS (SEE LANDSCAPE PLAN FOR SEED MIX AND PROPER APPLICATION RATE). ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

C. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

GRADING NOTES

18C CONNECT TO EXISTING STORM DRAIN MANHOLE OR INLET.

18D MATCH EXISTING PAVEMENT ELEVATIONS.

31A LOCATION FOR THIS UTILITY AS SHOWN IS FOR DRAWING PURPOSES ONLY. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN FIELD PRIOR TO THE CONSTRUCTION OF THE PROPOSED UTILITY LINE TO BE CONNECTED. CONTRACTOR SHALL NOTIFY CEI ENGINEERING ASSOCIATES, INC. IF THE DESIGN AS SHOWN IS NOT ACHIEVABLE.

51B LIMITS OF SAWCUT AND PAVEMENT REMOVAL.

73B OVER-EXCAVATE, COMPACTED SUBGRADE AND INSTALL 3 FEET OF SELECT FILL EVERYWHERE THAT SYNTHETIC TURF AND CONCRETE IS TO BE PLACED ALL EARTHWORK TO BE STABILIZED AND COMPACTED PER GEOTECH REPORT.

73C INSTALL AND COMPACT 6"INCH THICK LAYER OF EXISTING PULVERIZED TRACK BASE MIXED WITH 1.5LBS PER SQUARE FOOT, SOIL CEMENT AND 2 INCH OF ASPHALT OVER ENTIRE SURFACE OF 400-METER TRACK AND D-ZONE.

73G INSTALL PERIMETER DRAIN CATCH BASIN.

73Y UNDER ALTERNATE PROPOSAL # 2 CONTRACTOR TO STABILIZE 6 FT. CHEMICAL INJECTION WITH CONCRETE CEMENT CAP INTO TOP 6 INCHES OF SUBGRADE, AFTER COMPLETION OF CHEMICAL INJECTION PROCESS.

73AA CONTRACTOR TO CUT AND REMOVE EXISTING STORM SEWER PIPE AS NEEDED, TO TIE EXISTING STORM SEWER PIPE INTO NEW STORM SEWER JUNCTION BOX.

73DD CONTRACTOR TO GRADE AS SHOWN, IF EXISTING GRADE DOES NOT ALLOW FOR THIS, CONTRACTOR IS TO CONTACT CEI ENGINEERING.

73EE IN D-ZONE IF THERE IS NOT ENOUGH PULVERIZED ASPHALT MATERIAL, CONTRACTOR TO INSTALL SELECT FILL.

73FF CONTRACTOR TO CONNECT NEW PIPE AT FLOWLINE OF EXISTING SPLITTER BOX. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN FIELD PRIOR TO THE CONSTRUCTION OF THE PROPOSED UTILITY LINE TO BE CONNECTED. CONTRACTOR SHALL NOTIFY CEI ENGINEERING ASSOCIATES, INC. IF THE DESIGN AS SHOWN IS NOT ACHIEVABLE.

GRADING DETAILS

28A STORM SEWER TRENCH AND BEDDING.

73D PERFORATED STORM PIPE.

73G PERIMETER DRAIN.

73H OUTLET CONTROL STRUCTURE .

73T NYOPLAST INLET.

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
BUDA, TX.

JEFFERY J. BRESEE 89217 LICENSED PROFESSIONAL ENGINEER

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

GRADING PLAN

SHEET TITLE

SHEET NUMBER

C4

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTORM\WORKING\34698 DAHLSTROM GP DWG -- SAVED BY - RMENDIA

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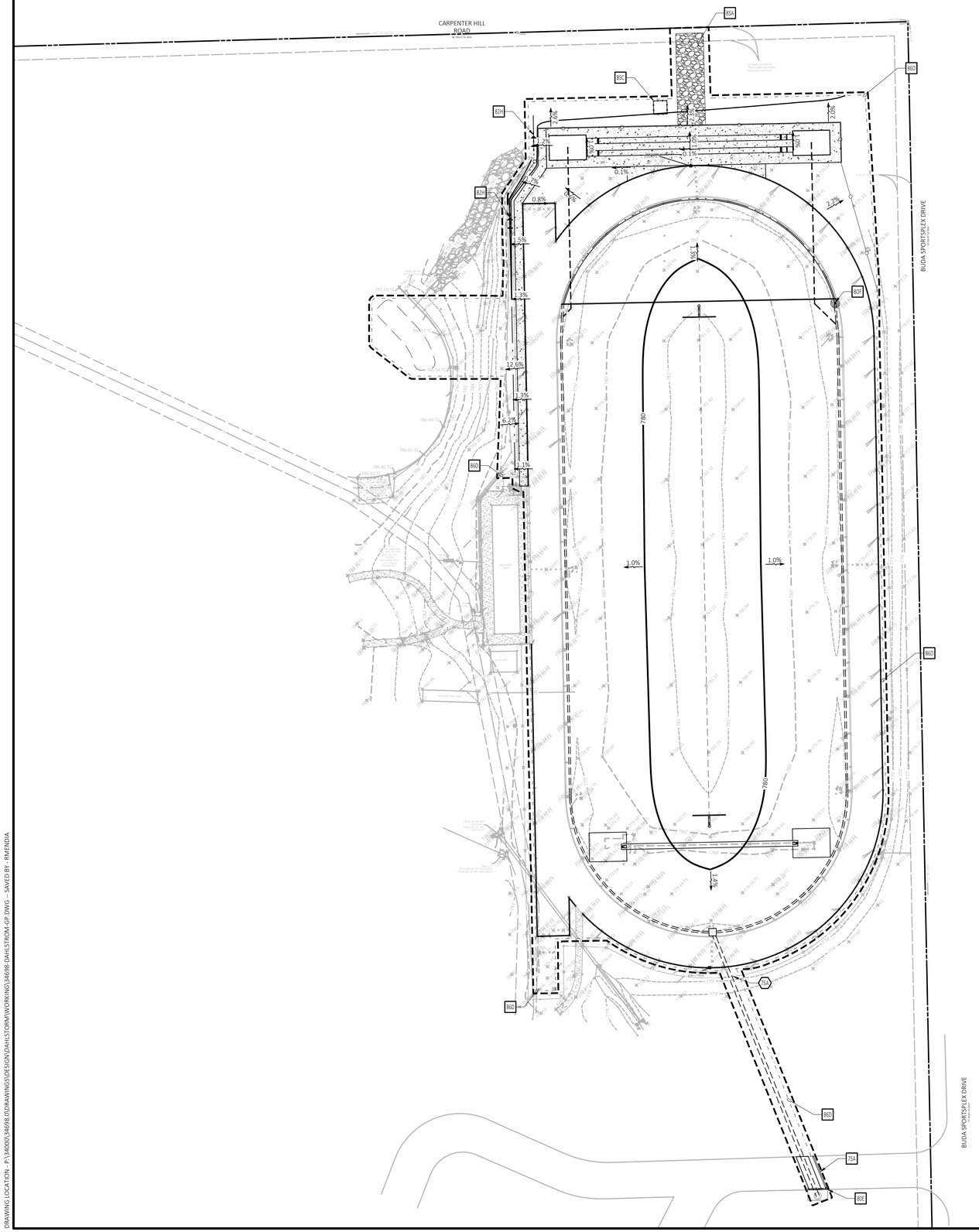
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Temporary Stormwater Section

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: Zachery Humphries

Date: 12/29/2025

Signature of Customer/Agent:

Zachery Humphries Digitally signed by Zachery Humphries DN: C=US, E=zhumphries@ceieng.com, O=CEI Engineering, CN=Zachery Humphries Date: 2025.12.29 13:00:17-06'00'

Regulated Entity Name: Dahlstrom Middle 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: Garlic Creek/Onion 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. [X] Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

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

Administrative Information

20. [ ] 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

Below is the Hazardous Material Management and Spill Reporting Plan from the Storm Water Pollution Prevention Plan (SWPPP). Please refer to the SWPPP for more information.

Any hazardous or potentially hazardous material that is brought onto the construction site will be handled properly in order to reduce the potential for storm water pollution. All materials used on this construction site will be properly stored, handled, dispensed and disposed of following all applicable label directions. Flammable and combustible liquids will be stored and handled according to 29 CFR 1926.152. Only approved containers and portable tanks shall be used for storage and handling flammable and combustible liquids.

Material Safety Data Sheets (MSDS) information will be kept on site for any and all applicable materials.

In the event of an accidental spill, immediate action will be undertaken by the General Contractor to contain and remove the spilled material. All hazardous materials will be disposed of by the General Contractor in the manner specified by federal, state and local regulations and by the manufacturer of such products. As soon as possible, the spill will be reported to the appropriate agencies. As required under the provisions of the Clean Water Act, any spill or discharge entering waters of the United States will be properly reported. The General Contractor will prepare a written record of any spill and associated clean-up activities of petroleum products or hazardous materials in excess of 1 gallon or reportable quantities, whichever is less. A spill report form is located in Appendix L. It is recommended that the General Contractor take photos to document spill clean-up measures and attach the photos to the Spill Report Form. All spill information must be transferred to the next inspection report and resolved as appropriate.

If the spill is greater than the applicable reportable quantity, the General Contractor must follow the information below. TCEQ reportable quantities can be found here: https://www.tceq.texas.gov/response/spills/spill_rq.html.

Any release of hazardous substances in the amount equal to or in excess of the reportable quantity established under 40 CFR 110, 40 CFR 117, and 40 CFR 302 which occurs during a 24 hour period:

a) The permittee is required to notify the Texas Spill Reporting Hotline or SERC (800-832-8224) or the National Response Center (NRC) (800-424-8802) as soon as permittee has knowledge of the discharge;

b) During the initial notification call, the contractor must provide certain information. Here is the reporting information that is needed: https://www.tceq.texas.gov/response/spills/reporting_info.html. Additional reporting requirements may be required by the City of Buda.

c) The SWPPP must be updated within 14 days of knowledge of the release: to provide a description of the release, the circumstances leading to the release, and the date of the release. This can be accomplished by including a copy of the written description of the release as described above in Item "b".

In order to minimize the potential for a spill of petroleum product or hazardous materials to come in contact with storm water, the following steps will be implemented:

a) All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, additives for soil stabilization, concrete, curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.
b) The minimum practical quantity of all such materials will be kept on the job site and scheduled for delivery as close to time of use as practical.
c) A spill control and containment kit (containing for example, absorbent material such as kitty litter or sawdust, acid neutralizing agent, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided on the construction site and location(s) shown on Site Maps.
d) All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed, with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.
e) All products will be stored in and used from the original container with the original product label.
f) All products will be used in strict compliance with instructions on the product label.
g) The disposal of excess or used products will be in strict compliance with instructions on the products label.

Attachment B – Potential Sources of Contamination

A. **Potential Construction Site Pollutants:** Construction phase pollutant sources anticipated at the site are disturbed (bare) soil, vehicle fuels and lubricants, chemicals and coatings associated with site or building construction and pavement installation, construction-generated litter and debris, and building materials, among several others, per Table 1 on the following page. Temporary BMPs are provided in accordance with TCEQ requirements that will prevent pollution of the surface waters downstream of the site. The purpose of the SWPPP is to prevent pollution of the ground, water or air from pollutants, including, but not limited to, those mentioned in this paragraph.

B. **Potential Post-Construction Site Pollutants:** Post-Construction phase pollutant sources may include vehicle fuels and lubricants, chemicals and coatings associated with the maintenance of the site, building, and pavement, litter and debris generated by site visitors, rubber pellets from the turf field sections, herbicides, pesticides, and fertilizers associated with vegetation maintenance, per Table 1 on the following page. The proposed permanent BMPs such as the vegetated filter strips and self-treating crushed stone beneath the turf field have been designed in accordance with the jurisdictionally approved practices as described in the City of Austin Environmental Criteria Manual. The BMPs will adequately treat the site stormwater runoff to mitigate pollutant loadings prior to site runoff exiting the site and entering downstream surface waters.

Table 1. Potential Construction and Post-Construction Site Pollutants

Materia / Chemical	Physical Description	Stormwater Pollutants	Location or related Construction Activity
Sediment	Various colored soil particles, turbid water (dissolved sediments)	Turbidity, suspended sediment, metals and nutrients attached to sediment particles	Clearing and grubbing operations, grading and site excavation operations, vehicle tracking, topsoil stripping and stockpiling, landscaping operations
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or grains	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic	Herbicides used for noxious weed control
Fertilizer	Liquid or solid grains	Nitrogen, phosphorous	Newly seeded areas
Plaster	White granules or powder	Calcium sulphate, calcium carbonate, sulfuric acid	Wall construction
Cleaning solvents	Colorless, blue, or yellow-green liquid	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits
Asphalt	Black solid	Oil, petroleum distillates	Streets and roofing
Concrete	White solid/grey liquid	Limestone, sand, pH, chromium	Curb and gutter, building construction
Glue, adhesives	White or yellow liquid	Polymers, epoxies	General construction
Paints	Various colored liquid	Metal oxides, stoddard solvent, talc, calcium carbonate, arsenic	General construction
Curing compounds	Creamy white liquid	Naphtha	Curb and gutter
Wood preservatives	Clear amber or dark brown liquid	Stoddard solvent, petroleum distillates, arsenic, copper, chromium	General construction
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil	Leaks or broken hoses from equipment
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment/staging area, vehicle leaks
Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes	Secondary containment/staging area, vehicle leaks
Kerosene	Pale yellow liquid petroleum hydrocarbon	Coal oil, petroleum distillates	Secondary containment/staging area

Note: Additional materials maybe present at the construction site that may be a source of pollution, the contractor shall follow all manufacturer specifications for storage and handling.

Attachment C – Sequence of Major Activities

Described below are the major construction activities. They are presented in the order (or sequence) they are expected to begin, but each activity will not necessarily be completed before the next begins. Also, these activities could occur in a different order if necessary to maintain adequate erosion and sedimentation control.

Sequence of Construction:

1. Construct stabilized construction entrance and concrete washout.
2. Construct the straw wattle, big red,
3. Construct the rock check dam as shown on the plans.
4. Prepare temporary parking and storage area.
5. Begin grading the site.
6. Construct concrete washout area.
7. Start construction of turf field.
8. Temporarily seed denuded areas.
9. Install utilities, underdrains, and storm sewers.
10. Complete Grading and install permanent seeding and planting - Sediment barriers shall be maintained down slope from disturbed soil during this operation.
11. Remove all temporary erosion and sediment control devices (only if site is stabilized).

The actual schedule for implementing pollutant control measures will be determined by project construction progress. Down slope protective measures must always be in place before soil is disturbed.

Attachment D – Temporary Best Management Practices and Measures

Owner has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations and to direct the General Contractor to provide immediate permanent or temporary pollution control measures.

During the construction phase, the General Contractor shall implement the following measures:

1. Materials resulting from the clearing and grubbing or excavation operations shall be stockpiled up slope from adequate sedimentation controls. Materials removed to an off-site location shall be protected with appropriate controls and properly permitted.

2. The General Contractor shall designate areas for equipment cleaning, maintenance, and repair. The General Contractor and subcontractors shall utilize such designated areas. Cleaning, maintenance, and repair areas shall be protected by a temporary perimeter berm, shall not occur within 150 feet of any waterway, water body or wetland, and in areas located as far as practical from storm sewer inlets.

3. Use of detergents for large scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.)

4. Chemicals, paints, solvents, fertilizers, and other toxic materials must be stored in weatherproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed at an approved solid waste or chemical disposal facility.

Control of sediments has been described previously. Other aspects of the SWPPP best management practices are listed below:

5. Dust Control:
   Construction traffic must enter and exit the site at the stabilized construction exit. The purpose is to trap dust and mud that would otherwise be carried off-site by construction traffic. Large areas of soil that are denuded of vegetation and have no protection from particles being picked up and carried by wind should be protected with a temporary cover or kept under control with water or other soil adhering products to limit wind transported particles exiting the site perimeter.

   Water trucks or other dust control agents will be used as needed during construction to minimize dust generated on the site. Tackifiers may be used to hold soil in place and prevent dust. Manufacturer recommendations for application locations and rates must be used for dust control applications. Dust control must be provided by the General Contractor to a degree that is in compliance with applicable local and state dust control regulations.

6. Dewatering:
   Verify discharges from dewatering activities are allowed non-storm water discharges under the General Permit. Obtain a dewatering permit according to state and local regulations, if discharges from dewatering activities are not allowed under the General Permit. Discharges from dewatering operations must be directed through an appropriate pollution prevention/treatment measure, such as a pump discharge filter bag, sediment trap or sediment basin prior to being discharged from the site or into a water body of the State. Under no circumstances are discharges from dewatering operations to be discharged directly into streams, rivers, lakes or other areas off-site. Likewise, discharges into storm sewer systems that do not drain to a suitable on-site treatment facility, such as a basin, are also prohibited. Discharges from dewatering operations must also be conducted in a manner sufficient to prevent erosion from the discharge runoff.

   Use best management practices when dewatering. Place intake hose on a flotation or similar device and do not pump directly from the bottom of the basin, trench, etc. Always pump through a sediment control BMP and dewater within the permitted limits of disturbance to ensure discharge criteria are achieved. Do not discharge on a slope greater than three percent or within 20' of a surface water body. Dewatering should not occur during or immediately after precipitation events, but exceptions will be evaluated on case by case basis.

7. Solid Waste Disposal:
   No solid materials, including building materials, are allowed to be discharged from the site with storm water. All solid waste, including disposable materials incidental to the major construction activities, must be collected and placed in containers. The containers will be emptied as necessary by a contract trash disposal service and hauled away from the site. Covers for the containers will be provided as necessary to meet state and local requirements. Construct covers as practicable, or required, to prevent storm water contact and pollutant discharges from solid waste receptacles. The location of solid waste receptacles shall be shown on the Site Maps.

   Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site. As an example, special care must be exercised during equipment fueling and servicing operations. If a spill occurs, it must be contained and disposed of so that it will not flow from the site or enter groundwater, even if this requires removal, treatment, and disposal of soil. In this regard, potentially polluting substances should be handled in a manner consistent with the impact they represent.

8. Sanitary Facilities:
   All personnel involved with construction activities must comply with state and local sanitary or septic system regulations. Temporary sanitary facilities will be provided at the site throughout the construction phase. They must be utilized by all construction personnel and will be serviced by a commercial operator. The location of sanitary facilities shall be shown on the Erosion and Sedimentation Control Plan ("Site Map"). Portable toilets must be securely anchored and are not allowed within 30' of inlets or permitted limit of disturbance or within 50' of a water of the State.

9. Non-Stormwater Discharges:
   Non-storm water components of site discharge must be clean water. Water used for construction which discharges from the site must originate from a public water supply or private well approved by the State Health Department. Water used for construction that does not originate from an approved public supply must not discharge from the site. It can be retained in the ponds until it infiltrates and evaporates. Other non-storm water discharges would include ground water. Only uncontaminated ground water can be discharged from the site, as allowed by and in accordance with applicable local ground water dewatering permits/regulations. When non-storm water is discharged from the site, it must be done in a manner such that it does not cause erosion of the soil during discharge.

   Process water such as power washing and concrete cutting must be collected for treatment and disposal. It is not to be flushed into the site storm drain system.

10. Concrete Waste from Concrete Ready-Mix Trucks:
    Discharge of excess or waste concrete and/or wash water from concrete trucks will be allowed on the construction site, but only in specifically designated diked areas that have been prepared to prevent contact between the concrete and/or wash water and storm water that will be discharged from the site or in locations where waste concrete can be placed into forms to make riprap or other useful concrete products. The cured residue from the concrete washout diked areas shall be disposed in accordance with applicable state and federal regulations. The jobsite superintendent is responsible for assuring that these procedures are followed. The location of concrete washout areas shall be shown on the Erosion and Sedimentation Plan ("Site Map"). Follow all applicable environmental regulations for concrete wash out pits.

11. Masonry Area:
    The General Contractor shall identify masons' area on the site and indicate location on the Site Map. To the extent practical, all masonry tools, material, including sand and sacked cement or mortar materials, and equipment shall be located within the area identified. Runoff control, such as berms or diversion ditches, silt fence, straw wattles, or other means of containment shall be provided to prevent the migration of storm water pollutants in runoff from the masons' area. Receptacles for debris and trash disposal shall also be provided.

12. Fuel Tanks:
    Temporary on-site fuel tanks for construction vehicles shall meet all state and federal regulations. Tanks shall have approved spill containment with the capacity required by the applicable regulations. From NFPA 30: All tanks shall be provided with secondary containment (i.e. containment external to and separate from primary containment). Secondary containment shall be constructed of materials of sufficient thickness, density, and composition so as not to be structurally weakened as a result of contact with the fuel stored and capable of containing discharged fuel for a period of time equal to or longer than the maximum anticipated time sufficient to allow recovery of discharged fuel. It shall be capable of containing 110% of the volume of the primary tank if a single tank is used, or in the case of multiple tanks, 150% of the largest tank or 10% of the aggregate, whichever is larger.

    The tanks shall be in sound condition free of rust or other damage which might compromise containment. Fuel storage areas will meet all TCEQ, EPA, OSHA and other regulatory requirements for signage, fire extinguisher, etc. Hoses, valves, fittings, caps, filler nozzles, and associated hardware shall be maintained in proper working condition at all times. The location of fuel tanks shall be shown on the Site Maps and shall be located to minimize exposure to weather and surface water drainage features.

    A Spill Prevention, Control and Countermeasure (SPCC) Plan must be developed if aboveground oil storage *capacity* at the construction site exceeds 1,320-gallons. Containers with a storage capacity of 55-gallons or less are not included when calculating site storage capacity. The General Contractor shall work with the CEC to develop and implement a SPCC Plan in accordance with the Oil Pollution Prevention regulation at Title 40 of the Code of Federal Regulations, Part 112, (40 CFR 112).

13. Section 404 Permits:
    A Section 404 Permit is not required for this site. Please note, any work within a designed stream may require a Section 404 permit from the Army Corp of Engineers (ACOE). This should be investigated and permitted, if necessary, prior to commencing any work within the top of bank to the stream. If permitting is required, a copy of the submittal and any permit authorizations from ACOE should be included within SWPPP Appendix S. Any requirements noted in the permit authorization must be met during the work within the top of bank to the stream.

14. Long-Term Pollutant Controls:
    Storm water pollutant control measures installed during construction, that will also provide benefits after construction, include storm sewer inlets and pipes and downstream defender. Those sediment barriers that do not interfere with normal operations and appear to provide long-term benefits can be left in place after construction is completed.

To the best knowledge of all parties involved with the implementation of the SWPPP, all measures and considerations specified in this plan meet the requirements of NPDES General Permit and the City of Buda and Hays County.

In addition to the SWPPP, construction activities associated with this project must comply with any guidelines set forth by local regulatory agencies. The General Contractor shall maintain documents evidencing such compliance the SWPPP.

Attachment F – Structural Practices

Structural controls include stabilization measures to be used for controlling erosion from disturbed areas and structural controls to divert runoff and remove sediment. Erosion and sediment controls are implemented during the construction period to prevent and/or control the loss of soil from the construction site into the receiving waters. Refer to the Erosion Control Plan for the locations and details of Erosion Control Measures. The following is a brief description of appropriate erosion control measures:

a) **Erosion and Sedimentation Control Plan** - Structural control locations are illustrated in the Erosion and Sedimentation Control Plan. Structural controls that will be used during construction activities include: straw wattles, concrete washout, stabilized construction entrance, and inlet protection.

b) **Earth stockpiles** - Filter fabric fences or other appropriate sediment barrier around temporary earth stockpiles while they are in use.

c) **Trench excavation** - Trench excavation spoils not immediately hauled off will be backfilled into the trenches in a continuous operation. Excavated material required for backfilling will be placed next to the trenches, but no closer than half the depth of the trench, for safety reasons.

Any dewatering of trenches and excavations are prohibited unless managed by an appropriate control. Appropriate controls include, but are not limited to: weir tank, dewatering tank, gravity bag filter, sand media particulate filter, pressurized bag filter, cartridge filter or other appropriate control.

d) **Construction Exit** – All access points from the public street into the construction site shall include a construction exit composed of course stone to the dimensions shown on the Construction Drawings detail sheet. The rough texture of the stone helps to remove clumps of soil adhering to the construction vehicle tires through the action of vibration and jarring over the rough surface and the friction of the stone matrix against soils attached to vehicle tires.

In addition to the stone at the construction exit, it may be necessary to install devices such as pipes (cattle guard) to increase the vibration and jarring. It may also be necessary to install a wheel wash system. If this is done, a sediment trap control must be installed to treat the wash water before it discharges from the site.

All site access must be confined to the construction exit(s). Barricade to prevent use, any locations other than the construction exit(s) where vehicles or equipment may access the site. Use jersey barriers, construction fencing/drums, etc. near construction exit(s) to prevent traffic by-pass or short circuiting.

e) **Straw Wattles** – Straw wattles are a tubular device of varying size that consist of synthetic permeable net typically placed on the pavement to allow water and sediment retained by the device. The device will need to be staked in order to prevent the device from washing away. The device is designed to retain sediment-laden water to allow settlement of suspended soils before filtering through the mesh fabric and straw for discharge downstream. Install wattles at a fairly level grade (along the contour) to provide sufficient upstream storage volume for the anticipated runoff and overlap adjoining section at a minimum of 12".

f) **Concrete Washout** – A temporary basin for the containment of washout from concrete trucks and pump units shall be constructed, maintained, and disposed of when construction is complete. Temporary location for concrete washout shall be constructed as indicated on Erosion Control Detail Sheet of the construction plan set.

g) **Silt Fence** – Silt fence is a synthetic permeable woven or non-woven geotextile fabric incorporating metal support stakes at intervals sufficient to support the fence (see Construction Drawings for post spacing), water, and sediment retained by the fence. The fence is designed to retain sediment-laden storm water and allow settlement of suspended soils before the storm water flows through the fabric and discharges off-site. Silt fence shall be located on the contour to capture overland, low-velocity sheet flows and is typically installed with a wire fence backing for additional support. Wire fence backing is required unless the silt fence is installed using the slicing method as the slicing method ensures the silt fence fabric is anchored securely in the ground.

Install silt fence at a fairly level grade along the contour with the ends curved uphill to provide sufficient upstream storage volume for the anticipated runoff. Drainage areas shall not exceed ½ acre per 100 feet of wire-reinforced silt fence for slopes less than 2 percent.

h) **Rock Check Dams** – Channels subject to concentrated flows in larger quantities and higher velocities may be protected with rock or other manufactured device (Geo-ridge for example) that can be used as a check dam. The dams impound sediment-laden water and allow for settlement of suspended soil before the storm water flows over and through the device. Dams shall be placed along the water course at linear intervals in which the elevation of the bottom of the upper most check dam is at the same elevation as the top of the check dam immediately below it. This will allow the most ponding capacity and will not increase the velocity of the water flowing along the channel.

Location and spacing of check dams are shown on the Site Maps. Check dams are composed of crushed stone or rip rap or of other manufactured devices. See the detail sheet within the Construction Drawings for the types of dams to be used on this site

i) **Big Reds** – Big Reds are a synthetic permeable mesh fabric typically placed on the pavement to allow water and sediment retained by the device. The device is heavy enough to retain back concentrated flows, like at inlet structures. The device is designed to retain sediment-laden water to allow settlement of suspended soils before filtering through the mesh fabric for discharge downstream. Install Big Reds at a fairly level grade (along the contour) to provide sufficient upstream storage volume for the anticipated runoff and

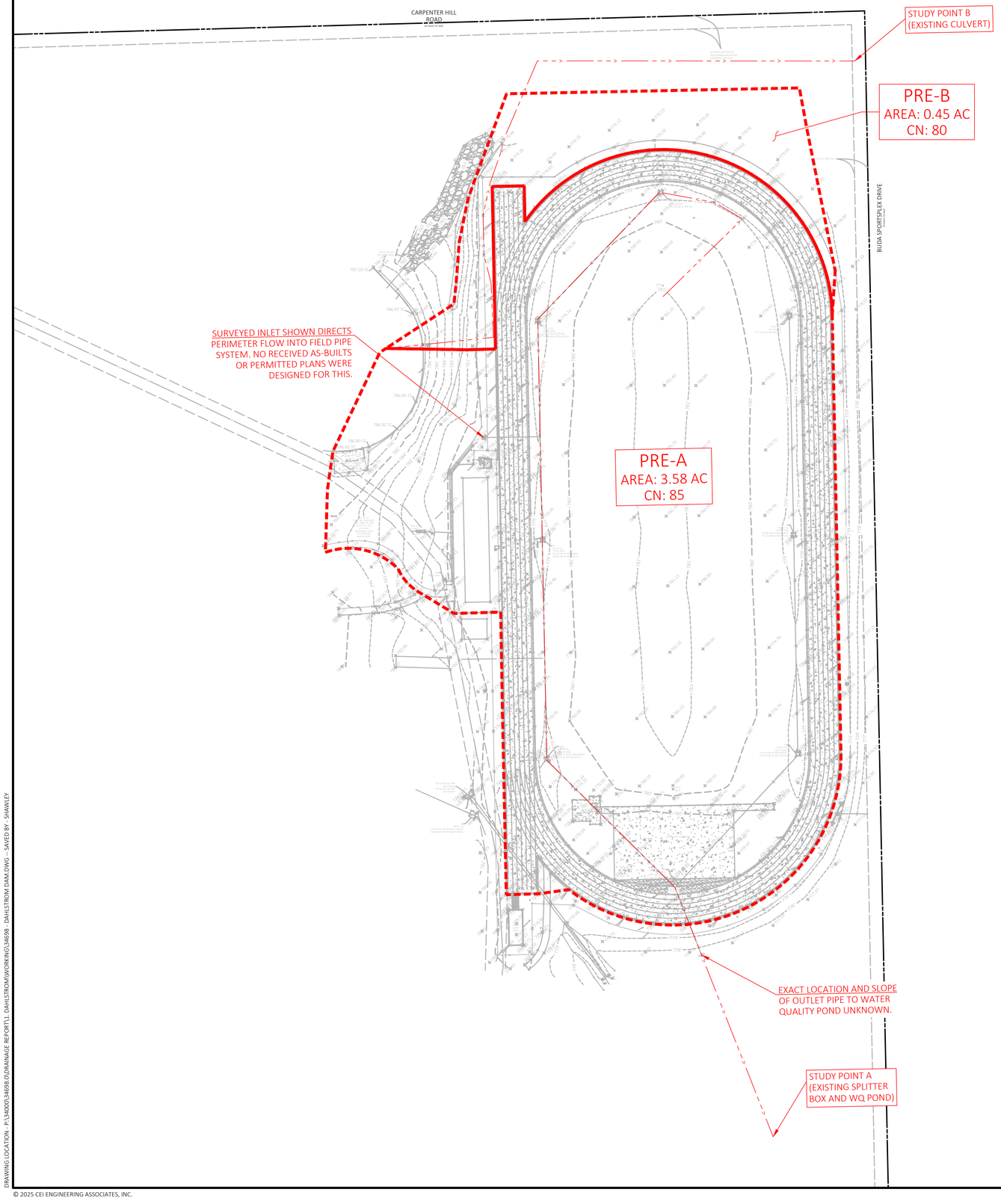
overlap adjoining section at a minimum of 12".

j) **Storm Drain Inlet Protection** - Curb and grated inlets are protected from the intrusion of sediment through a variety of measures as shown on the details included in the Construction drawings. The primary mechanism is to place controls in the path of flow sufficient to slow the sediment-laden water to allow settlement of suspended soils before discharging into the storm sewer. It is possible that as construction progresses from storm sewer installation through to paving that the inlet protection devices will change.

Inlet Protection shall be installed at all existing and proposed storm water inlets in accordance with the Erosion Control Plan, see Erosion and Sedimentation Control Details. These inlet protection devices shall be implemented as soon as the proposed storm water inlets are constructed.

Attachment G – Drainage Area Map

See below for the Pre Development, Post Development, and Water Quality Drainage Area Maps.



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

EXISTING LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- PRE-DEVELOPED DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION

Pre-A				
	Description	**A**	**B**	
SHEET	Flow Length (ft)	100		
	Land Slope (ft/ft)	0.025	0.005	
	Manning's n	0.150	0.011	
	2-yr 24-hr P (in)	4.14	4.14	
	TOC (min)	7.88	0.00	
SHALLOW	Length (ft)	47		
	Watercourse Slope (ft/ft)	0.010	0.005	
	Surface Description	Unpaved	Paved	
	TOC (min)	0.49	0.00	
CHANNEL	Flow Length (ft)	462	189	
	Channel Slope (ft/ft)	0.002	0.002	
	Manning's n	0.012	0.012	
	Cross Sectional Area (sf)	0.35	0.55	
	WP (ft)	2.1	2.6	
	R (ft)	0.17	0.21	
	Velocity (ft/s)	1.68	1.95	
	TOC (min)	4.59	1.62	
TOTAL	**TOC (min)**	**12.95**	**1.62**	**14.57**

	Pre-A	**Pre-B**
Impervious (ac.)	1.07	0.00
Grass, Good Condition (ac.)	2.51	0.45
Total Area (ac)	3.58	0.45
Total Area (sq mi)	0.0056	0.0007
Weighted CN	**85**	**80**
Time of Concentration (min)	**14.6**	**5.0**
Lag Time (min)	**8.7**	**3.0**

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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

JEFFERY J. BRESE 89217 LICENSED PROFESSIONAL ENGINEER

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/1/2025
REVISION	REV-0

PRE DEVELOPMENT DRAINAGE AREA MAP

SHEET TITLE

SHEET NUMBER

1

DRAWING LOCATION - P:\34000\34698.0\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG -- SAVED BY - SHAWLEY

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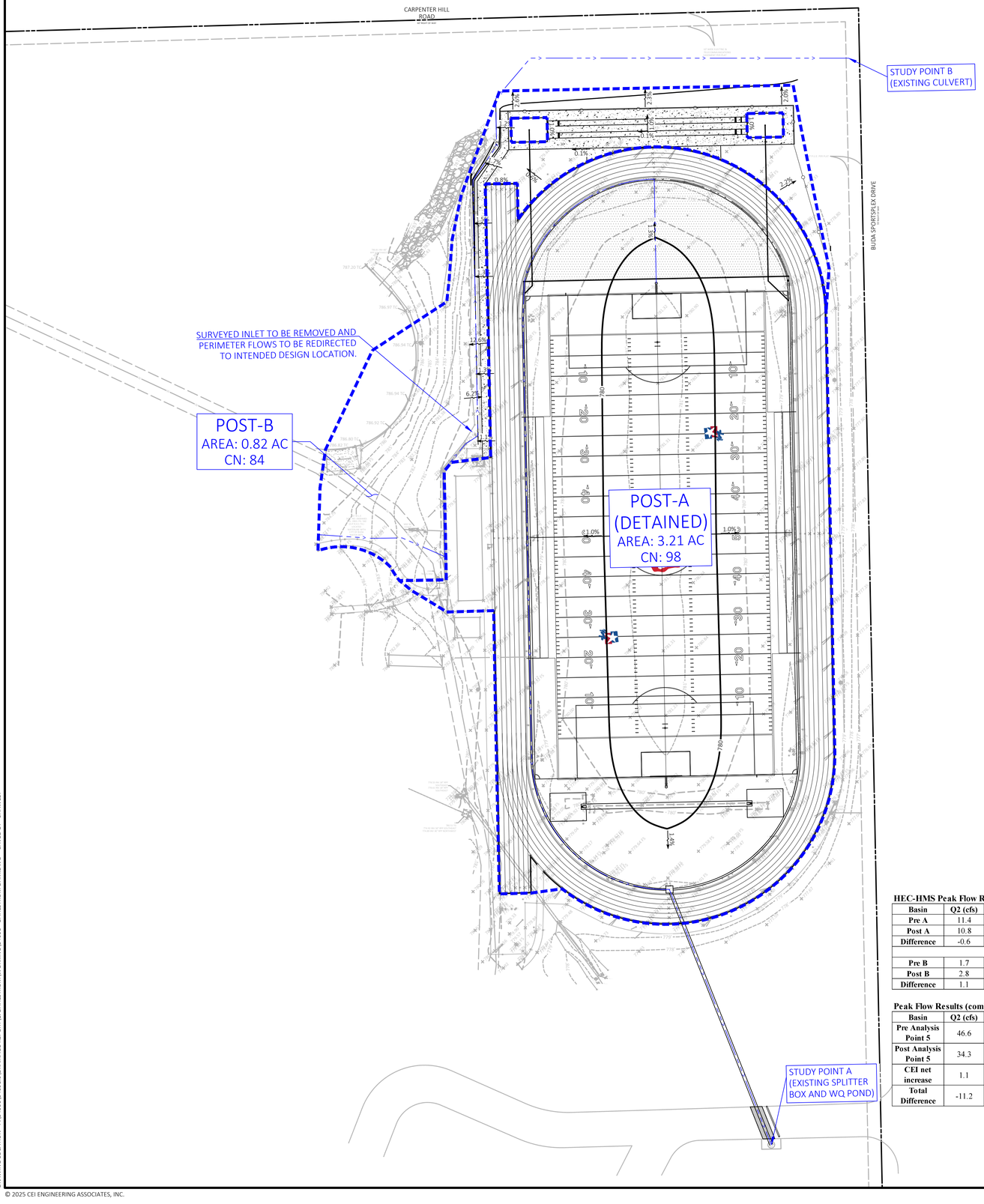

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- = FLOWLINES
- = CHAIN LINK FENCE

- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

PROPOSED LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- POST-DEVELOPED DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION

DRAINAGE NOTES

A. DRAINAGE CALCULATIONS PERFORMED IN ACCORDANCE WITH THE CITY OF AUSTIN DCM.

B. A MINIMUM TIME OF CONCENTRATION OF 5 MIN IS USED WHERE APPLICABLE.

C. THE FOLLOWING DOCUMENTS WERE USED AS REFERENCE IN THIS ANALYSIS:
C.A. DAHLSTROM IMPROVEMENT PLANS, DEVELOPED BY HPE ENGINEERING, DATED 6/5/2008, OBTAINED FROM TCEQ.
C.B. DAHLSTROM IMPROVEMENT PLANS, DEVELOPED BY PAPE-DAWSON, DATED 8/23/2024, OBTAINED FROM THE CITY OF BUDA.

Post-A

	Description	A	B	
SHEET	Flow Length (ft)	78		
	Land Slope (ft/ft)	0.013		
	Manning's n	0.020		
	2-yr 24-hr P (in)	4.14		
	TOC (min)	1.67		
SHALLOW	Length (ft)			
	Watercourse Slope (ft/ft)	0.008		
	Surface Description	Paved		
	TOC (min)	0.00		
CHANNEL	Flow Length (ft)	646		
	Channel Slope (ft/ft)	0.003		
	Manning's n	0.012		
	Cross Sectional Area (sf)	0.79		
	WP (ft)	3.14		
	R (ft)	0.25		
	Velocity (ft/s)	2.46		
	TOC (min)	4.37		
TOTAL	**TOC (min)**	**6.04**	**0.00**	**6.04**

Field Stage-Storage

Elevation	Volume (ac-ft)
775.50	0.000
776.50	0.054
778.58	0.098
779.21	0.313

Post-B

	Description	A	B	
SHEET	Flow Length (ft)	100		
	Land Slope (ft/ft)	0.05		
	Manning's n	0.150		
	2-yr 24-hr P (in)	4.14		
	TOC (min)	5.97		
SHALLOW	Length (ft)	632		
	Watercourse Slope (ft/ft)	0.008		
	Surface Description	Paved		
	TOC (min)	5.79		
CHANNEL	Flow Length (ft)			
	Channel Slope (ft/ft)	0.006		
	Manning's n	0.012		
	Cross Sectional Area (sf)	0.79		
	WP (ft)	3.14		
	R (ft)	0.25		
	Velocity (ft/s)	3.88		
	TOC (min)	0.00		
TOTAL	**TOC (min)**	**11.76**	**0.00**	**11.76**

HEC-HMS Peak Flow Results

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
Pre A	11.4	20.0	25.8	35.0	Track pipes outfall to WQ/detention pond to the south per as-built documents received. Turf field is considered impervious and self-treating for TSS removal.
Post A	10.8	19.8	23.3	28.2	
Difference	-0.6	-0.2	-2.5	-6.8	
Pre B	1.7	3.1	4.1	5.8	Surface runoff drains to existing culvert to the northeast. Peak flows are reduced when post-construction results are combined with adjacent development.
Post B	2.8	4.9	6.4	8.7	
Difference	1.1	1.8	2.3	2.9	

Peak Flow Results (combined with adjacent development)

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
Pre Analysis Point 5	46.6	81.7	105.0	142.2	Adjacent improvement plans by Pape-Dawson Engineers proposes a significant decrease in post-development peak runoff to the northeastern culvert. When combined with CEI flows, the net peak runoff will maintain a significant reduction.
Post Analysis Point 5	34.3	62.5	77.8	93.7	
CEI net increase	1.1	1.8	2.3	2.9	
Total Difference	-11.2	-17.4	-24.9	-45.7	

	Post-A (detained)	Post-B
Impervious (ac.)	3.21	0.19
Grass, Good Condition (ac.)	0.00	0.63
Total Area (ac)	3.21	0.82
Total Area (sq mi)	0.0050	0.0013
Weighted CN	**98**	**84**
Time of Concentration (min)	**6.0**	**11.8**
Lag Time (min)	**3.6**	**7.1**

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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

JEFFERY J. BRUSH 89277 LICENSED PROFESSIONAL ENGINEER
2025-12-29
F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/31/2025
REVISION	REV-0

POST DEVELOPMENT DRAINAGE AREA MAP

SHEET TITLE

SHEET NUMBER

2

DRAWING LOCATION - P:\34000\34698.01\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG - SAVED BY - SHAWLEY

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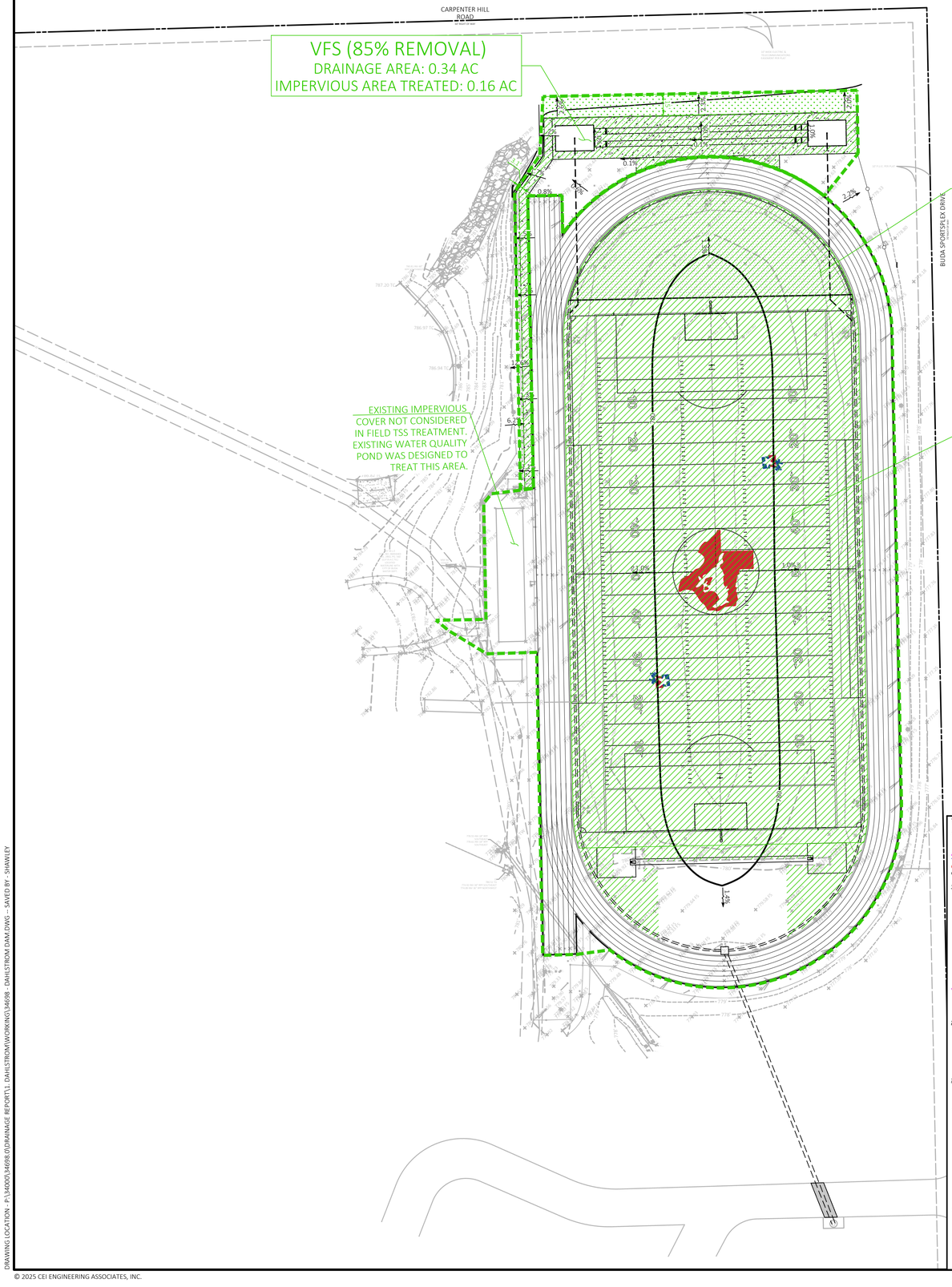

SITE BENCHMARK

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- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

EXISTING LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX — CONTOUR ELEVATIONS
- BMP DRAINAGE AREA LIMITS
- LIMITS OF NEW IMPERVIOUS COVER
- LIMITS OF VEGETATED FILTER STRIP

WATER QUALITY NOTES

A. TSS REMOVAL CALULVATIONS PERFORMED IN ACCORDANCE WITH TCEQ REMOVAL REQUIREMENTS.

B. ALL VEGETATED FILTER STRIPS SHALL BE 15' WIDE UNLESS OTHERWISE SPECIFIED PER THE TABLE BELOW.

C. SYNTHETIC TURF FIELD WITH UNDERLYING CRUSHED STONE CONSIDERED SELF-TREATING FOR WATER QUALITY TSS REMOVAL REQUIREMENTS.

TCEQ SHARED USE POLICY

Shared Path Width (ft) (Direction of Flow)	Engineered VFS Width (ft)
4	2.1
6	3.1
8	4.2
10	5.2
12	6.3
14	7.3

Impervious Cover Summary

	Pre	Post
Project Study Area (ac.)	4.03	4.03
Impervious Cover (ac.)	1.07	3.40
IC %	**27%**	**84%**

TCEQ Treatment Summary

	L_{TR} (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**

1 - See TCEQ spreadsheet calcs
2 - New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = Turf Field

Total drainage basin/outfall area =	3.21	acres
Predevelopment impervious area within drainage basin/outfall area =	1.07	acres
Post-development impervious area within drainage basin/outfall area =	3.21	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1921	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Bioretention
Removal efficiency = 89 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_N x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_M = TSS Load removed from this

A_C =	2.30	acres
A_I =	2.30	acres
A_P =	0.00	acres
L_M =	2327	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 2100 lbs.

F = 0.90

New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

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County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = VFS

Total drainage basin/outfall area =	0.34	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.47	
$L_{M\ THIS\ BASIN}$ =	144	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_N x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_M = TSS Load removed from this

A_C =	0.34	acres
A_I =	0.16	acres
A_P =	0.18	acres
L_M =	158	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 158 lbs.

F = 1.00

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JEFFERY J. BRUSH — 80277 — REGISTERED PROFESSIONAL ENGINEER — STATE OF TEXAS

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/31/2025
REVISION	REV-0

WATER QUALITY MAP

SHEET TITLE

SHEET NUMBER

3

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Attachment I – Inspection and Maintenance for BMPs

Between the time the SWPPP is implemented and final stabilization has been achieved, all disturbed areas and pollutant controls must be inspected at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or more by a Qualified Person. Areas that have been finally stabilized must be inspected at least once per month. A Qualified Person is defined as a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of the General Permit. The purpose of site inspections is to assess performance of pollutant controls. The inspections will be conducted by the General Contractor's Storm Water Coordinator. Based on these inspections, the General Contractor will decide whether it is necessary to modify this SWPPP, add or relocate controls, or revise or implement additional Best Management Practices in order to prevent pollutants from leaving the site via storm water runoff. The General Contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or take additional steps as necessary in order to achieve effective pollutant control.

Examples of specific items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection, the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

A. Construction Exit and Track Out

Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction exit shall be constructed where vehicles enter and exit. Exits shall be maintained or supplemented with additional rock as necessary to prevent the release of sediment from vehicles leaving the site. Any sediment deposited on the roadway shall be swept as necessary throughout the day or at the end of every day and disposed of in an appropriate manner. Sediment shall **NOT** be washed into storm sewer systems.

B. Erosion Control Devices

Rolled erosion control products (nets, blankets, turf reinforcement mats) and marginally vegetated areas (areas not meeting required vegetative densities for final stabilization) must be inspected daily. Rilling, rutting and other signs of erosion indicate the erosion control device is not functioning properly and additional erosion control devices are warranted.

C. Sediment Control Devices

Sediment barriers, traps and basins must be inspected and they must be cleaned out at such time as their original capacity has been reduced by 50 percent. All material excavated from behind sediment barriers or in traps and basins shall be incorporated into on-site soils or spread out on an upland portion of the site and stabilized. To minimize the potential for sediment releases from the project site perimeter control devices shall be inspected with consideration given to changing up-gradient conditions.

D. Material Storage Areas

Material storage areas should be located to minimize exposure to weather. Inspections shall evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system or discharging from the site. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas. All state and local regulations pertaining to material storage areas will be adhered to.

E. Vegetation

Consideration must be given to anticipated climate and seasonal conditions when specifying and planting seed. Seed shall be free of weedy species and appropriate for site soils and regional climate. Seed and mulch immediately after topsoil is applied and final grade is reached. Grassed areas shall be inspected to confirm that a healthy stand of grass is maintained. The site has achieved final stabilization once all areas are covered with building foundation or pavement, or have a stand of grass with a minimum of 70 percent density or greater of natural background cover over the entire vegetated area in accordance with the General Permit requirements. Vegetated areas must be watered, fertilized, and reseeded as needed to achieve this requirement. The vegetative density must be maintained through project completion to be considered stabilized. Areas protected by erosion control blankets are not permanently stabilized until the applicable General Permit requirement for final vegetative density is achieved.

Rip-rap, mulch, gravel, decomposed granite or other equivalent permanent stabilization measures may be employed in lieu of vegetation based on site-specific conditions and governing authority approval.

F. Discharge Points

All discharge points must be inspected to determine whether erosion and sediment control measures are effective in preventing discharge of sediment from the site or impacts to receiving waters.

If sediment escapes the construction site at any time during construction, any sediment accumulations located off-site shall be removed before the next business day to minimize off-site impacts. If sediment has accumulated on private property, the General Contractor must obtain permission from the land owner prior to removing the sediment. Otherwise, the General Contractor could be subject to charges associated with trespassing.

The Inspection Report Form (SWPPP Appendix E) must identify all deficiencies, any corrections, whether they are identified during the current inspection or have occurred since the previous inspection, and any additional comments. For inspections following a measurable storm event, report shall clearly note the rainfall total as measured in the on-site rain gauge. Based on inspection results, any modification necessary to increase effectiveness of this SWPPP to an acceptable level must be made within seven calendar days of the inspection. The inspection reports must be complete and additional remarks should be included if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance. All inspection reports shall be made available to the inspecting authority within 48 hours of a request. In accordance with the Texas General Permit, the Inspection Report must include at a minimum the following:

- Name(s) and qualifications of personnel making the inspection;
- Date(s) of the inspection;
- Major observations relating to the implementation of the storm water pollution prevention plan;
- Actions taken or necessary to correct the observed problem; and
- Listing of areas where land disturbance operations have permanently or temporarily stopped.

Any items found during the inspection must be remedied and resolved within 3 days, before the next inspection or storm event, to maintain continued effectiveness of the BMPs. If periodic inspection indicate that a BMP has been used inappropriately, or incorrectly, the operator must address the necessary replacement or modification required to correct the BMP within 48 hours of identification. Any corrective actions taken because of inspections must be documented in SWPPP Appendix O.

The General Contractor shall maintain a rain gauge on the construction site at all times. Readings shall be recorded in SWPPP Appendix Q daily and retained within the SWPPP at all times during construction.

A project Superintendent must walk the site with the regulatory inspector and document any deficiencies noted during the inspection. Deficiencies of any type, field or documentation-related, identified during the regulatory inspection must be noted on the inspection form as a deficiency and resolved within 24 or 48-hours as appropriate.

A log of all inspections by Federal, State, or local storm water or other environmental agencies shall be kept in the General Contractor SWPPP Binder. The log form can be found in SWPPP Appendix M and must include the date and time of the visit and whether a report was issued or will be issued as a result of the inspection.

A responsible corporate officer must sign a letter delegating the site superintendent as the authorized position for conducting the required inspections. A draft form of this authorization is included in SWPPP Appendix E. Inspector's qualifications must be entered on the Inspection Report Form. Inspection reports must include an original, authorized signature and date of the inspection. Inspection reports must be retained by the General Contractor as an integral part of this SWPPP for at least five years from the date of submission of the Notice of Termination of permit coverage.

Ultimately, it is the responsibility of the General Contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or contractor practices could make it necessary to install more structural controls than are shown on the plans. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers.) Assessing the need for additional controls and implementing them or adjusting existing controls will be a continuing aspect of this SWPPP until the site achieves final stabilization.

Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

The purpose of soil stabilization is to prevent soil from leaving the site. In the natural condition, soil is stabilized by native vegetation. Below are the techniques to be used at this project for stabilizing site soil. The primary method will be to provide a protective cover of turf grass or pavement. Please refer to the SWPPP for more information.

a) Temporary Seeding or Stabilization - Must initiate stabilization measures immediately, but no more than 14 days after construction activity ceases on any particular area, all disturbed ground where there will not be construction for longer than 14 days must be seeded with fast-germinating temporary seed and protected with mulch. Stockpiles and diversion ditches/berms must be stabilized to prevent erosion and dust issues.

   The General Permit defines immediately as the following: As soon as practicable, but no later than the end of the next work day, following the day when earth-disturbing activities have temporarily or permanently ceased.

   Note to General Contractor: Temporary stabilization is not achieved simply through seeding. In order for an area or stockpile to be sufficiently stabilized via temporary vegetation, seed must germinate, grow and provide adequate vegetative density.

b) Permanent Seeding - All areas at final grade must be seeded or sodded immediately where construction activities have permanently ceased. Except for small level spots, seeded areas should generally be protected with mulch. Seed immediately after final grade is achieved and soils are prepared to take advantage of soil moisture and seed germination. At the completion of ground-disturbing activities the entire site must have permanent vegetative cover, meeting vegetative density requirements, or mulch per landscape plan, in all areas not covered by hardscape (pavement, buildings, etc.).

   Except for small (<100 sq.ft.) level spots, seeded areas should be protected with mulch, tackifier or a rolled erosion control product. Mulch must be crimped by disc or other machinery.

   To minimize the potential for erosion and maximize seed germination & growth, the General Contractor must evaluate the short and long-term local forecast prior to applying permanent seed or sod.

   The General Permit defines immediately as the following: As soon as practicable, but no later than the end of the next work day, following the day when earth-disturbing activities have temporarily or permanently ceased.

c) Final site stabilization is achieved when perennial vegetative cover provides permanent stabilization with a density greater than **70 percent** over the entire area to be stabilized by vegetative cover. This area is exclusive of areas that are covered with rock (crushed granite, gravel, etc.) or landscape mulch, paved or have a building or other permanent structure on them.

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: Zachery Humphries

Date: 12/29/2025

Signature of Customer/Agent

Zachery Humphries Digitally signed by Zachery Humphries DN: C=US, E=zhumphries@ceieng.com, O=CEI Engineering, CN=Zachery Humphries Date: 2025.12.29 13:00:48-06'00'

Regulated Entity Name: Dahlstrom Middle 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. [X] **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.

    [X] 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.

    [X] N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    [ ] N/A

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

    [ ] N/A

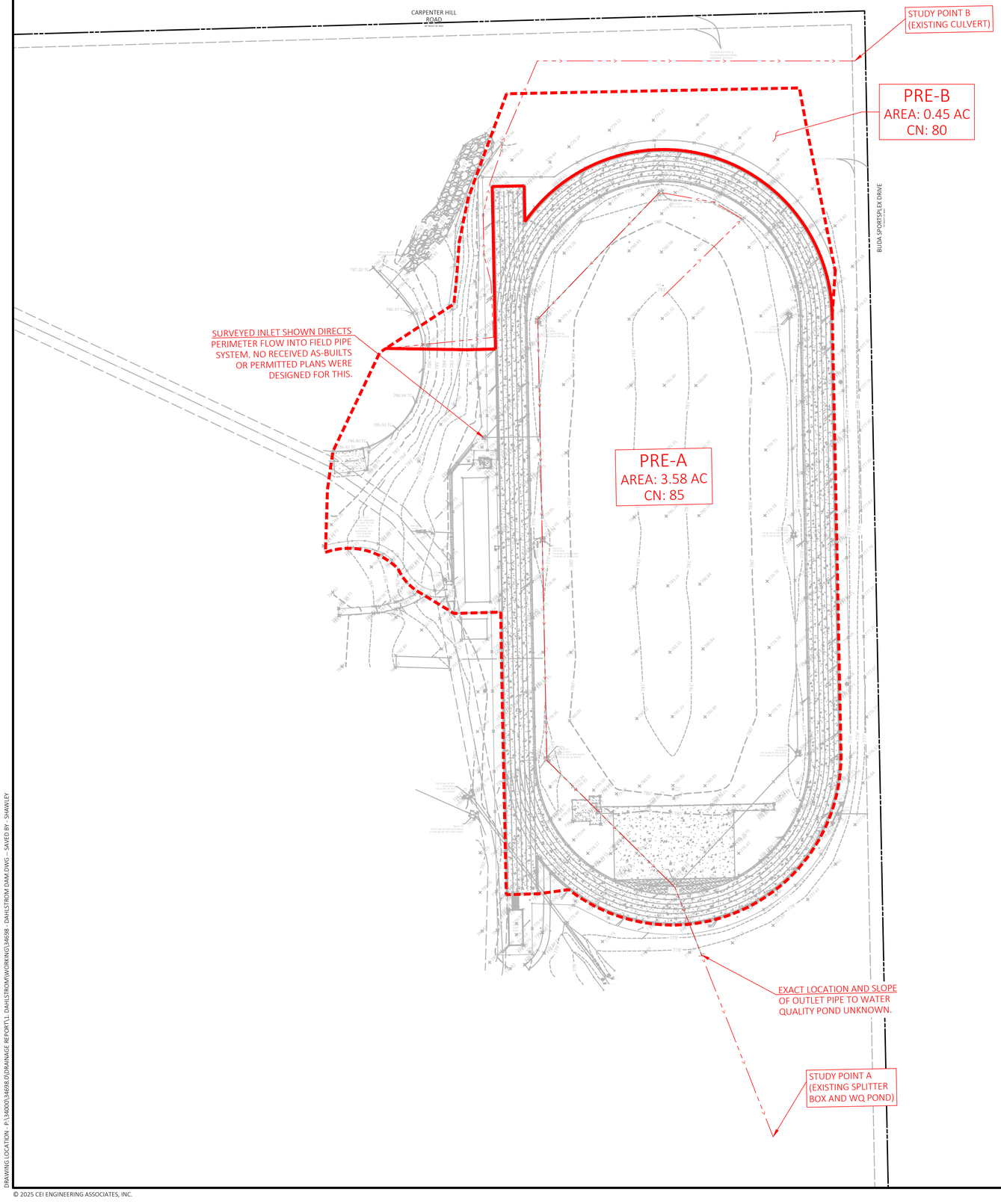
Attachment B – BMP's for Upgradient Stormwater

No upgradient stormwater will require treatment by this project. Permanent BMPs have already been designed and constructed by others to treat and divert stormwater that is upstream of the site.

Attachment C – BMP's for On-site Stormwater

Vegetative Filter Strips (permanent) – Large impervious areas with room for buffer strips can utilize Vegetative Filter Strips (VFS). VFS are grassy strips of land accepting overland flow from impervious areas. Vegetative filter strips, designed according to TCEQ BMP requirements, will effectively treat 85% of stormwater runoff it receives.

Crushed Stone with Perforated Underdrain Pipes (permanent) – The ASTM #57 stone under the synthetic turf field is considered self-treating. With the 40% void space of the stone, in combination with the perforated underdrain pipes, the system allows water to slowly percolate and drain but prevents large, suspended solids from being discharged.



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

EXISTING LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- PRE-DEVELOPED DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION

Pre-A				
	Description	**A**	**B**	
SHEET	Flow Length (ft)	100		
	Land Slope (ft/ft)	0.025	0.005	
	Manning's n	0.150	0.011	
	2-yr 24-hr P (in)	4.14	4.14	
	TOC (min)	7.88	0.00	
SHALLOW	Length (ft)	47		
	Watercourse Slope (ft/ft)	0.010	0.005	
	Surface Description	Unpaved	Paved	
	TOC (min)	0.49	0.00	
CHANNEL	Flow Length (ft)	462	189	
	Channel Slope (ft/ft)	0.002	0.002	
	Manning's n	0.012	0.012	
	Cross Sectional Area (sf)	0.35	0.55	
	WP (ft)	2.1	2.6	
	R (ft)	0.17	0.21	
	Velocity (ft/s)	1.68	1.95	
	TOC (min)	4.59	1.62	
TOTAL	**TOC (min)**	**12.95**	**1.62**	**14.57**

	Pre-A	**Pre-B**
Impervious (ac.)	1.07	0.00
Grass, Good Condition (ac.)	2.51	0.45
Total Area (ac)	3.58	0.45
Total Area (sq mi)	0.0056	0.0007
Weighted CN	**85**	**80**
Time of Concentration (min)	**14.6**	**5.0**
Lag Time (min)	**8.7**	**3.0**

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
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FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

JEFFERY J. BRESE 89217 LICENSED PROFESSIONAL ENGINEER

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/1/2025
REVISION	REV-0

PRE DEVELOPMENT DRAINAGE AREA MAP

SHEET TITLE

SHEET NUMBER

1

DRAWING LOCATION - P:\34000\34698.0\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG -- SAVED BY - SHAWLEY

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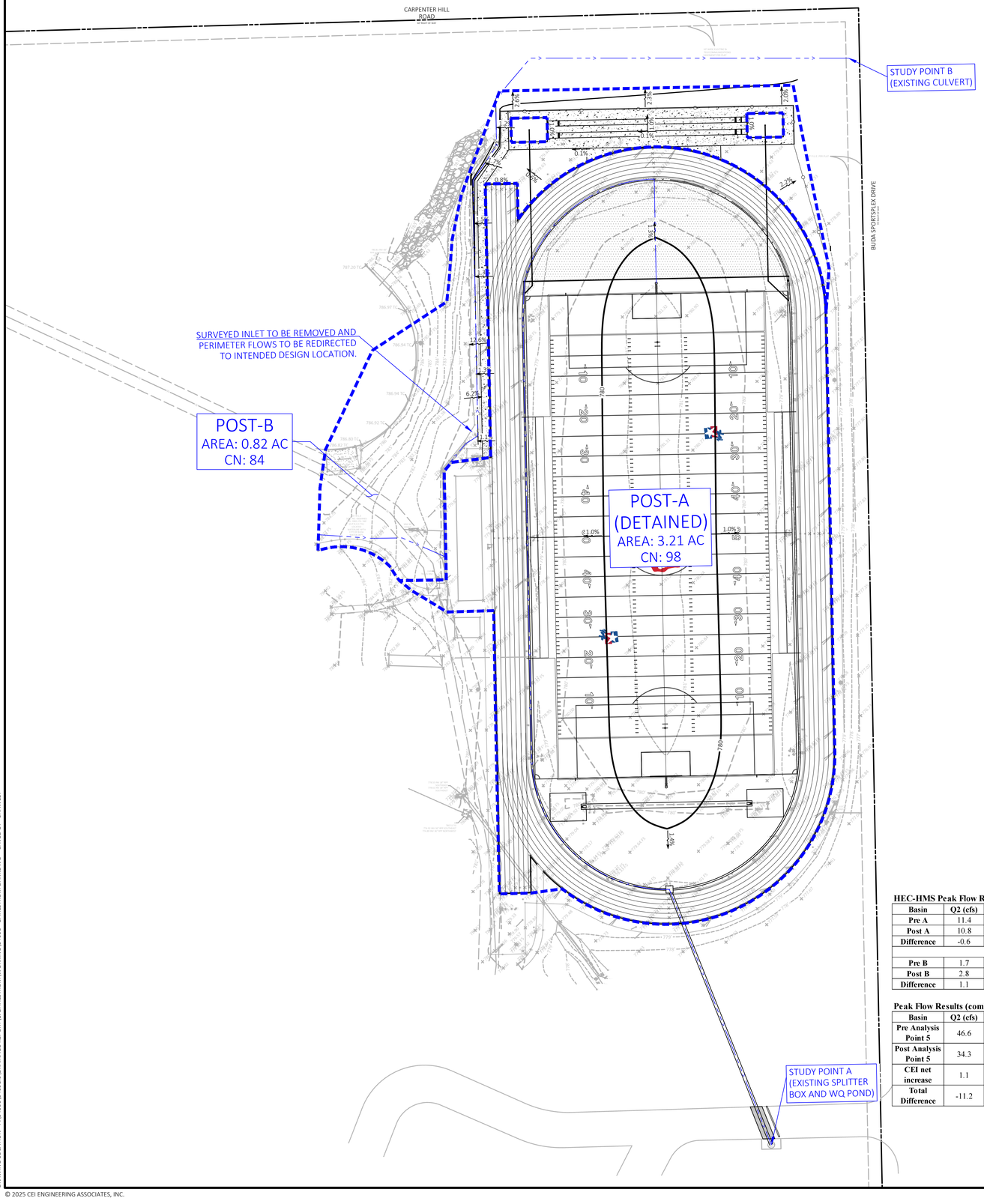

SITE BENCHMARK

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0 40' 60' 80'

SCALE IN FEET

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- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

PROPOSED LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- POST-DEVELOPED DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION

DRAINAGE NOTES

A. DRAINAGE CALCULATIONS PERFORMED IN ACCORDANCE WITH THE CITY OF AUSTIN DCM.

B. A MINIMUM TIME OF CONCENTRATION OF 5 MIN IS USED WHERE APPLICABLE.

C. THE FOLLOWING DOCUMENTS WERE USED AS REFERENCE IN THIS ANALYSIS:
C.A. DAHLSTROM IMPROVEMENT PLANS, DEVELOPED BY HPE ENGINEERING, DATED 6/5/2008, OBTAINED FROM TCEQ.
C.B. DAHLSTROM IMPROVEMENT PLANS, DEVELOPED BY PAPE-DAWSON, DATED 8/23/2024, OBTAINED FROM THE CITY OF BUDA.

Post-A

	Description	A	B	
SHEET	Flow Length (ft)	78		
	Land Slope (ft/ft)	0.013		
	Manning's n	0.020		
	2-yr 24-hr P (in)	4.14		
	TOC (min)	1.67		
SHALLOW	Length (ft)			
	Watercourse Slope (ft/ft)	0.008		
	Surface Description	Paved		
	TOC (min)	0.00		
CHANNEL	Flow Length (ft)	646		
	Channel Slope (ft/ft)	0.003		
	Manning's n	0.012		
	Cross Sectional Area (sf)	0.79		
	WP (ft)	3.14		
	R (ft)	0.25		
	Velocity (ft/s)	2.46		
	TOC (min)	4.37		
TOTAL	**TOC (min)**	**6.04**	**0.00**	**6.04**

Field Stage-Storage

Elevation	Volume (ac-ft)
775.50	0.000
776.50	0.054
778.58	0.098
779.21	0.313

Post-B

	Description	A	B	
SHEET	Flow Length (ft)	100		
	Land Slope (ft/ft)	0.05		
	Manning's n	0.150		
	2-yr 24-hr P (in)	4.14		
	TOC (min)	5.97		
SHALLOW	Length (ft)	632		
	Watercourse Slope (ft/ft)	0.008		
	Surface Description	Paved		
	TOC (min)	5.79		
CHANNEL	Flow Length (ft)			
	Channel Slope (ft/ft)	0.006		
	Manning's n	0.012		
	Cross Sectional Area (sf)	0.79		
	WP (ft)	3.14		
	R (ft)	0.25		
	Velocity (ft/s)	3.88		
	TOC (min)	0.00		
TOTAL	**TOC (min)**	**11.76**	**0.00**	**11.76**

HEC-HMS Peak Flow Results

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
Pre A	11.4	20.0	25.8	35.0	Track pipes outfall to WQ/detention pond to the south per as-built documents received. Turf field is considered impervious and self-treating for TSS removal.
Post A	10.8	19.8	23.3	28.2	
Difference	-0.6	-0.2	-2.5	-6.8	
Pre B	1.7	3.1	4.1	5.8	Surface runoff drains to existing culvert to the northeast. Peak flows are reduced when post-construction results are combined with adjacent development.
Post B	2.8	4.9	6.4	8.7	
Difference	1.1	1.8	2.3	2.9	

Peak Flow Results (combined with adjacent development)

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
Pre Analysis Point 5	46.6	81.7	105.0	142.2	Adjacent improvement plans by Pape-Dawson Engineers proposes a significant decrease in post-development peak runoff to the northeastern culvert. When combined with CEI flows, the net peak runoff will maintain a significant reduction.
Post Analysis Point 5	34.3	62.5	77.8	93.7	
CEI net increase	1.1	1.8	2.3	2.9	
Total Difference	-11.2	-17.4	-24.9	-45.7	

	Post-A (detained)	Post-B
Impervious (ac.)	3.21	0.19
Grass, Good Condition (ac.)	0.00	0.63
Total Area (ac)	3.21	0.82
Total Area (sq mi)	0.0050	0.0013
Weighted CN	**98**	**84**
Time of Concentration (min)	**6.0**	**11.8**
Lag Time (min)	**3.6**	**7.1**

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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

JEFFERY J. BRUSH 89077 LICENSED PROFESSIONAL ENGINEER
2025-12-29
F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/31/2025
REVISION	REV-0

POST DEVELOPMENT DRAINAGE AREA MAP

SHEET TITLE

SHEET NUMBER

2

DRAWING LOCATION - P:\34000\34698.01\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG - SAVED BY - SHAWLEY

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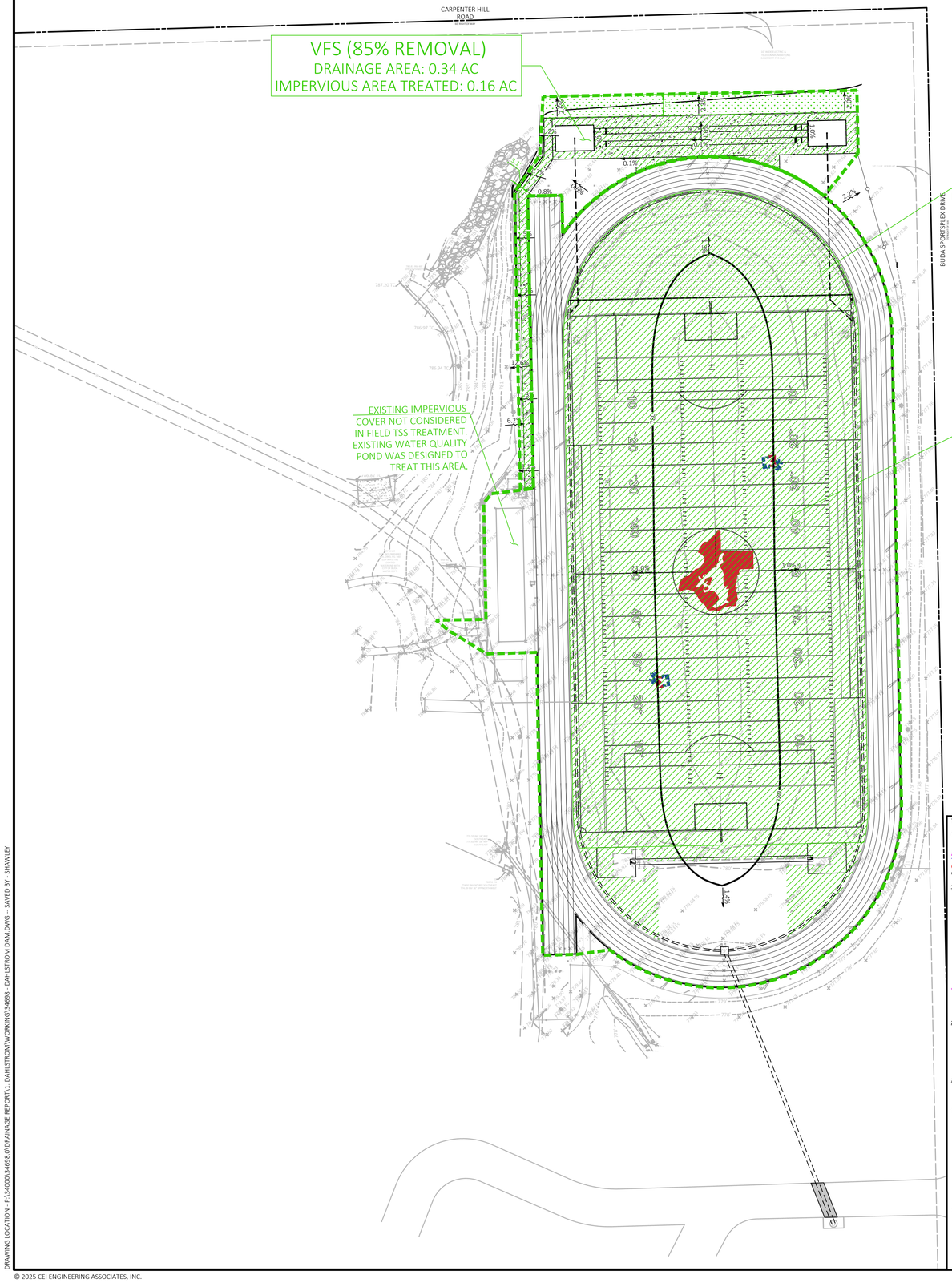

SITE BENCHMARK

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- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

EXISTING LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX — CONTOUR ELEVATIONS
- BMP DRAINAGE AREA LIMITS
- LIMITS OF NEW IMPERVIOUS COVER
- LIMITS OF VEGETATED FILTER STRIP

WATER QUALITY NOTES

A. TSS REMOVAL CALULVATIONS PERFORMED IN ACCORDANCE WITH TCEQ REMOVAL REQUIREMENTS.

B. ALL VEGETATED FILTER STRIPS SHALL BE 15' WIDE UNLESS OTHERWISE SPECIFIED PER THE TABLE BELOW.

C. SYNTHETIC TURF FIELD WITH UNDERLYING CRUSHED STONE CONSIDERED SELF-TREATING FOR WATER QUALITY TSS REMOVAL REQUIREMENTS.

TCEQ SHARED USE POLICY

Shared Path Width (ft) (Direction of Flow)	Engineered VFS Width (ft)
4	2.1
6	3.1
8	4.2
10	5.2
12	6.3
14	7.3

Impervious Cover Summary

	Pre	Post
Project Study Area (ac.)	4.03	4.03
Impervious Cover (ac.)	1.07	3.40
IC %	**27%**	**84%**

TCEQ Treatment Summary

	L_{TR} (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**

1 - See TCEQ spreadsheet calcs
2 - New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = Turf Field

Total drainage basin/outfall area =	3.21	acres
Predevelopment impervious area within drainage basin/outfall area =	1.07	acres
Post-development impervious area within drainage basin/outfall area =	3.21	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1921	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Bioretention
Removal efficiency = 89 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_N x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_M = TSS Load removed from this

A_C =	2.30	acres
A_I =	2.30	acres
A_P =	0.00	acres
L_M =	2327	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 2100 lbs.

F = 0.90

New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
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Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = VFS

Total drainage basin/outfall area =	0.34	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.47	
$L_{M\ THIS\ BASIN}$ =	144	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_N x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_M = TSS Load removed from this

A_C =	0.34	acres
A_I =	0.16	acres
A_P =	0.18	acres
L_M =	158	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 158 lbs.

F = 1.00

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

JEFFERY J. BRUSH — 80277 — REGISTERED PROFESSIONAL ENGINEER — STATE OF TEXAS

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/31/2025
REVISION	REV-0

WATER QUALITY MAP

SHEET TITLE

SHEET NUMBER

3

DRAWING LOCATION - P:\34000\34698.0\0\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG - SAVED BY - SHAWLEY

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SITE DEVELOPMENT PLANS

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967

BUDA, TX.

GENERAL NOTES:

A. TOPOGRAPHIC BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS WAS PROVIDED BY THE FOLLOWING COMPANY, AS A CONTRACTOR TO THE SELLER/OWNER:

TOPOGRAPHY: CSPOT ON SURVEYING, INC.
614 JERRYS LN.,
BUDA, TEXAS 78610

CEI ENGINEERING AND ITS ASSOCIATES WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS OR OMISSIONS RESULTING FROM SURVEY INACCURACIES.

B. ALL PHASES OF SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE OWNER / DEVELOPER SITE WORK SPECIFICATIONS.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF EXISTING STRUCTURES, RELATED UTILITIES, PAVING, UNDERGROUND STORAGE TANKS AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. SEE SITE WORK SPECIFICATIONS.

D. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

E. THE GENERAL CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

F. WARRANTY/DISCLAIMER: THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORANEOUS BASIS AT THE SITE.

G. SAFETY NOTICE TO CONTRACTOR: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

H. ALL CONSTRUCTION IN STATE HIGHWAY DEPARTMENT RIGHT-OF-WAY SHALL BE COORDINATED WITH THE HIGHWAY DEPARTMENT RESIDENT ENGINEER.

I. WETLANDS NOTE: ANY DEVELOPMENT, EXCAVATION, CONSTRUCTION, OR FILLING IN A U.S. CORPS OF ENGINEERS DESIGNATED WETLAND IS SUBJECT TO LOCAL, STATE AND FEDERAL APPROVALS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND/OR RESTRICTIONS AND ANY VIOLATION WILL BE SUBJECT TO FEDERAL PENALTY. THE CONTRACTOR SHALL HOLD THE OWNER/DEVELOPER, THE ENGINEER AND THE LOCAL GOVERNING AGENCIES HARMLESS AGAINST SUCH VIOLATION.

J. RESIDENT ENGINEERING SERVICES: WHEN REQUESTED BY THE OWNER, RESIDENT ENGINEERING SERVICES SHALL BE PROVIDED BY THE ENGINEERS (ON A TIME AND FREQUENCY BASIS) ACCEPTABLE TO THE CITY ENGINEER FOR IMPROVEMENTS TO PUBLIC WATER MAINS, PUBLIC SEWER, AND CITY STREETS. AT THE COMPLETION OF CONSTRUCTION, THE ENGINEER SHALL CERTIFY THE CONSTRUCTION TO BE IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. THIS WORK WILL BE AT THE OWNER/DEVELOPER'S DIRECT EXPENSE AND SHALL BE COORDINATED WITH CEI ENGINEERING ASSOCIATES, INC. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE RESIDENT ENGINEER OF ANY PRECONSTRUCTION / CONSTRUCTION CONFERENCES AND ANY PUBLIC CONSTRUCTION 24 HOURS PRIOR TO SAID ACTION.

FLOOD CERTIFICATION:

BY SCALED MAP LOCATION AND GRAPHICAL PLOTTING ONLY. THIS PROPERTY IS DETERMINED TO BE LOCATED WITHIN ZONE 'X', OR AREAS OUTSIDE THE 0.2% ANNUAL CHANCE 100-YR FLOODPLAIN AS DETERMINED BY THE NATIONAL FLOOD INSURANCE PROGRAM.
FLOOD INSURANCE MAP FOR HAYS COUNTY,TEXAS.
MAP NUMBER: 48209C0260G
MAP REVISED: 01/17/2025

TCEQ GENERAL CONSTRUCTION NOTES:

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

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

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



VICINITY MAP
NOT TO SCALE

TCEQ GENERAL CONSTRUCTION NOTES:

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.

Austin Regional Office 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

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

CEI CONTACT:

NAME: ZACH HUMPHRIES
EMAIL: ZHUMPHRIES@CEIENG.COM
PHONE: (479) 215-6638

CLIENT CONTACT:

NAME: NATHAN WENSOWITCH
EMAIL: NATHAN.WNESOWITCH@HAYSCISD.NET
PHONE: (512)-268-2141

PLAN INDEX:

C0 COVER SHEET
C1 EXISTING SITE PLAN
C2 DEMOLITION PLAN
C3 SURFACE PLAN
C4 GRADING PLAN
C5 EROSION CONTROL PLAN
C6 EROSION CONTROL NOTES
C7 UTILITY PLAN
C8 DETAIL SHEET 1
C9 DETAIL SHEET 2

EXHIBIT:

1 PRE DEVELOPMENT DRAINAGE AREA MAP
2 POST DEVELOPMENT DRAINAGE AREA MAP
3 WATER QUALITY MAP
CSP-6 COLOR RENDER PLAN

RESOURCE LIST:

BRANCH MANAGER
JEFF BRESEE, P.E.
PHONE: (972) 488-3737
EMAIL: JBRESEE@CEIENG.COM

Know what's **below.**
Call before you dig.

CIVIL ENGINEERING ▪ LANDSCAPE ARCHITECTURE ▪ LAND SURVEYING ▪ PLANNING

BENTONVILLE | DALLAS | FRESNO | HOUSTON | JACKSONVILLE | MINNEAPOLIS | PHILADELPHIA | PHOENIX

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL
TRACK AND TURF IMPOVEMENTS
3600 FM 967
BUDA, TX.

JEFFERY J. BRESEE 89217 LICENSED PROFESSIONAL ENGINEER
2025-12-29
F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

C0-COVER SHEET
SHEET TITLE
SHEET NUMBER
C0

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTORM\WORKING\34698-DAHLSTROM-CS.DWG – SAVED BY - RMENDA

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SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

811 Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = CONCRETE
- = TRACK
- = RIP-RAP

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
BUDA, TX.

JEFFERY J. BRESEE 89217 LICENSED PROFESSIONAL ENGINEER

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

EXISTING SITE PLAN

SHEET TITLE

SHEET NUMBER

C1

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTROM\WORKING\34698-DAHLSTROM-DEMO.DWG -- SAVED BY - RMENDIA

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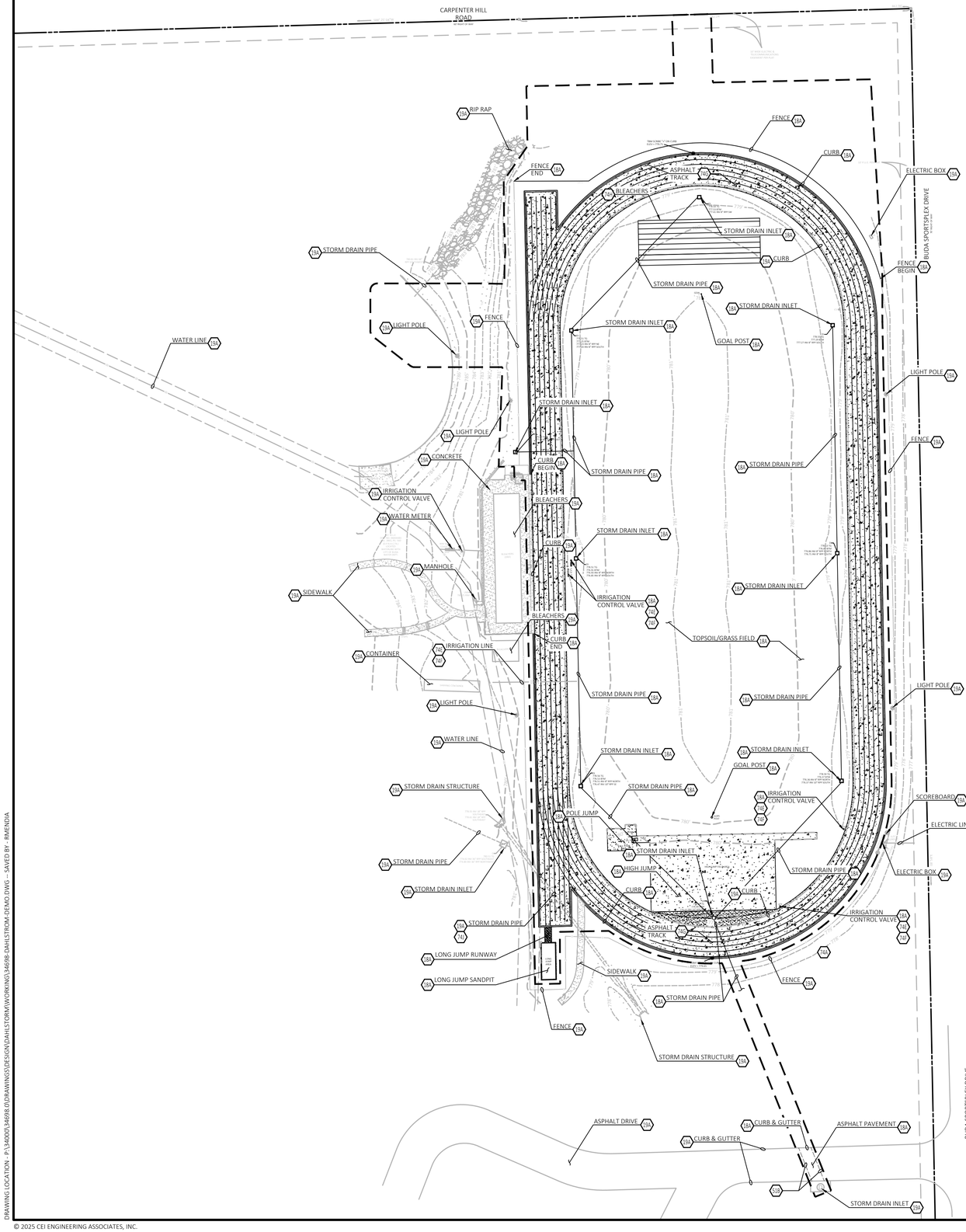

SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = CONCRETE
- = TRACK
- = RIP-RAP

PROPOSED LEGEND

- LIMITS OF DISTURBANCE

GENERAL DEMOLITION NOTES

A. THE SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE "BUDA STANDARD SITE WORK SPECIFICATIONS".

B. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, UNDERGROUND STORAGE TANKS AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. SEE SITE WORK SPECIFICATIONS.

C. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

D. THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

E. ENGINEER'S NOTICE TO CONTRACTOR
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

F. CONTRACTOR TO RESTORE ALL DISTURBED GROUND TO PRE-CONSTRUCTION CONDITION OR BETTER.

G. CONTRACTOR TO PREFORM UTILITY LOCATE OF THE AREA THAT IS TO BE DISTURBER BY THE CONSTRUCTION OF THE NEW FACILITIES.

DEMOLITION NOTES

18A EXISTING TO BE REMOVED.

19A EXISTING TO REMAIN.

51B LIMITS OF SAWCUT AND PAVEMENT REMOVAL

74E EXISTING TO BE RECONFIGURED AS NEEDED.

74F LOCATE, CUT, AND PLUG EXISTING IRRIGATION LINE. ABANDON AND REMOVE ALL EXISTING IRRIGATION SYSTEM COMPONENTS WITHIN AREAS DESIGNATED FOR DEMOLITION. IRRIGATION MAINLINE FEEDING EXISTING GRASS AREAS TO REMAIN IN SERVICE. CONTRACTOR TO VERIFY WHAT PORTIONS OF THE SYSTEM ARE TO REMAIN IN ORDER TO ALLOW FOR CONTINUED SERVICE THROUGH MAINLINE. CONTRACTOR TO PROTECT EXISTING IRRIGATION CONTROL VALVES AND RETURN ALL TO THE DISTRICT.

74G PULVERIZE EXISTING TRACK AND ASPHALT AND USE AS BASE FOR NEW TRACK FACILITY.

74H CONTRACTOR TO DISASSEMBLE AND RELOCATE BLEACHERS PER DIRECTION OF OWNER.

74J PROTECT PIPE DURING BASE COMPACTION. DO NOT COMPACT DIRECTLY OVER PIPE

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
BUDA, TX.

JEFFERY J. BRESEE 89217 LICENSED PROFESSIONAL ENGINEER

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

DEMOLITION PLAN

SHEET TITLE

SHEET NUMBER

C2

DRAWING LOCATION - P:\34000\34698.00\DRAWINGS\DESIGN\DAHLSTROM\WORKING\34698-DAHLSTROM-DEMO.DWG - SAVED BY - RMENDIA

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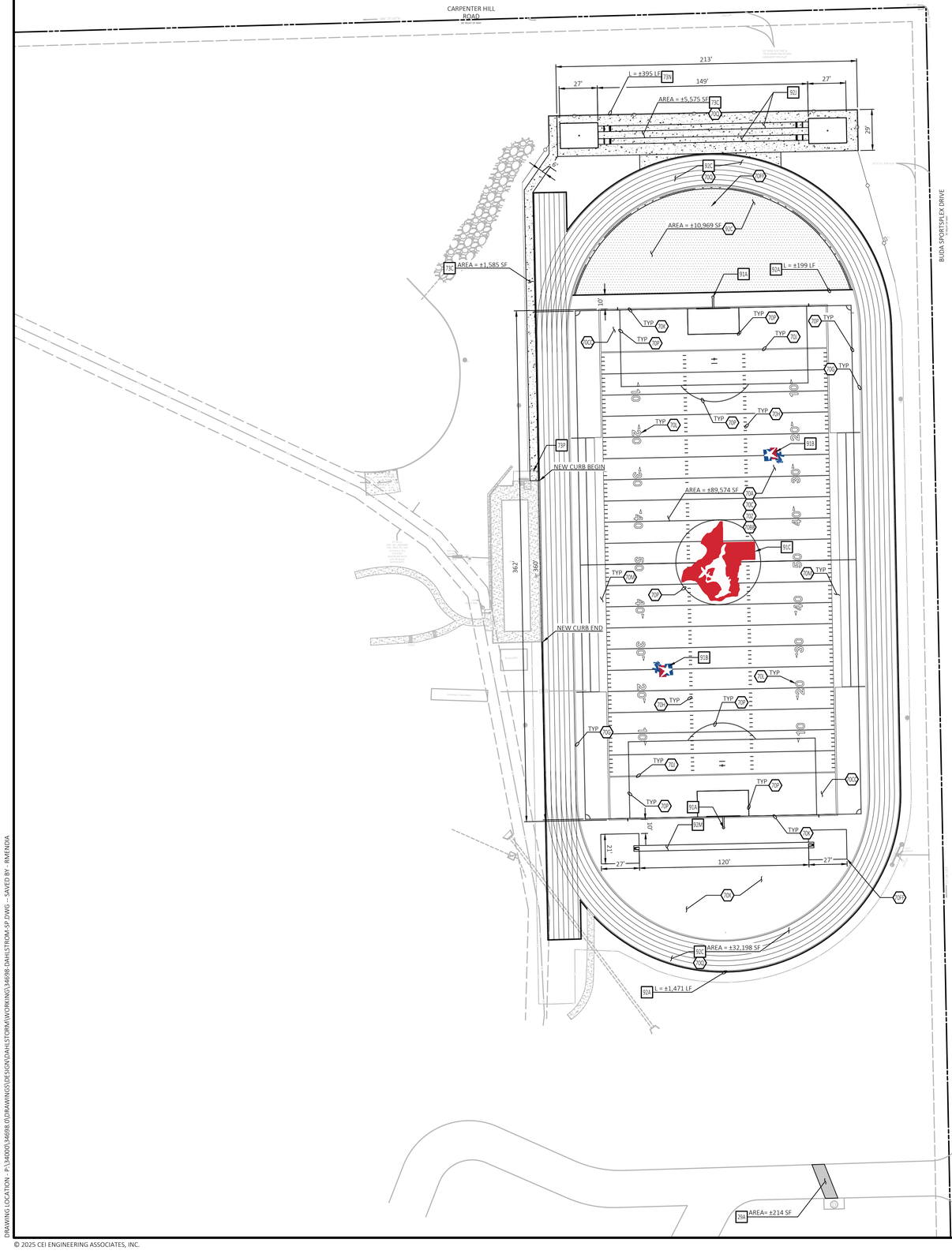

SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: HD62, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

N

0 40' 60' 80'
SCALE IN FEET

811
Know what's below.
Call before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = CONCRETE
- = TRACK
- = RIP-RAP

FIELD AND TURF NOTES

70A PLACE AND COMPACT 9 INCH CRUSHED STONE MATERIAL (8-1/2 INCH TO BASE STONE AND 1/2 INCH OF FINISHED STONE AS SPECIFIED) OVER ENTIRE SURFACE OF FIELD WHERE SYNTHETIC TURF IS TO BE PLACED.

70C INSTALL 30 MIL GEOMEMBRANE LINER OVER ENTIRE SURFACE OF FIELD WHERE SYNTHETIC TURF IS TO BE PLACED. WRAP GEOMEMBRANE BEHIND NAILER BOARD AT ALL TURF EDGES PER SPECIFICATIONS.

70G ANCHOR TURF TO EXISTING CURB WITH 2 INCH X 4 INCH NAILER BOARD.

70H ALL FOOTBALL FIELD LINES SHALL BE 4 INCH WIDE AND WHITE IN COLOR PER COLOR RENDER.

70J END ZONE LINES SHALL BE 8 INCH WIDE AND WHITE IN COLOR PER COLOR RENDER.

70K BACK OF END ZONE SHALL BE 8 INCH WIDE AND WHITE IN COLOR PER COLOR RENDER.

70L FIELD NUMBERING AND ARROWS SHALL BE SOLID WHITE IN COLOR PER COLOR RENDER.

70M REFEREE BOXES SHALL BE 6 FEET WIDE AND WHITE IN COLOR PER COLOR RENDER.

70P ALL SOCCER FIELD LINES SHALL BE 4 INCH WIDE AND GRAY IN COLOR PER COLOR RENDER.

70Q APPLY 1/2 INCH THICK POLYURETHANE BASE MAT AND DUAL COAT STRUCTURAL SPRAY SYSTEM. REFER TO COLOR RENDER FOR COLORS.

70X INSTALL GREEN SYNTHETIC TURF SYSTEM PER COLOR RENDER.

70Z INSTALL ALTERNATING GREEN SYNTHETIC TURF SYSTEM PER COLOR RENDER.

70BB INSTALL SHOCK PAD SYSTEM PER SPECIFICATIONS, EVERYWHERE SYNTHETIC TURF IS TO BE LAID.

70CC UNDER ALTERNATE PROPOSAL # 3 CONTRACTOR TO PROVIDE END ZONE LETTERING ALLOWANCE. ONE ENDZONE TO CONTAIN SCHOOL NAME "DAHLSTROM" AND THE OTHER ENDZONE TO CONTAIN MASCOT NAME "MUSTANGS"

70EE CONTRACTOR TO PROVIDE HIGH JUMP PAD PER SPECIFICATIONS.

70FF CONTRACTOR TO PROVIDE POLE VAULT PAD PER SPECIFICATIONS.

FIELD AND TURF DETAILS

29A ASPHALT PATCH FOR STREET OR DRIVE

73C CONCRETE FLATWORK

73N 6' CHAIN LINK FENCE

73P CHAIN LINK FENCE SINGLE GATE

91A FIELD GOAL POST

91B CUSTOM 25 YD LINE FIELD LOGO

91C CUSTOM CENTER FIELD LOGO

92A CONCRETE CURB WALL

92C TRACK CROSS SECTION

92J LONG JUMP/TRIPLE JUMP FACILITIES

92M POLE VAULT DOUBLE PAD FACILITIES

CEI
Solutions for Land and Life

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
BUDA, TX.

STATE OF TEXAS
JEFFERY J. BRESEE
89217
REGISTERED PROFESSIONAL ENGINEER
2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

SURFACE PLAN

SHEET TITLE

SHEET NUMBER

C3

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTORM\WORKING\34698-DAHLSTROM-SP.DWG -- SAVED BY - RMENDIA

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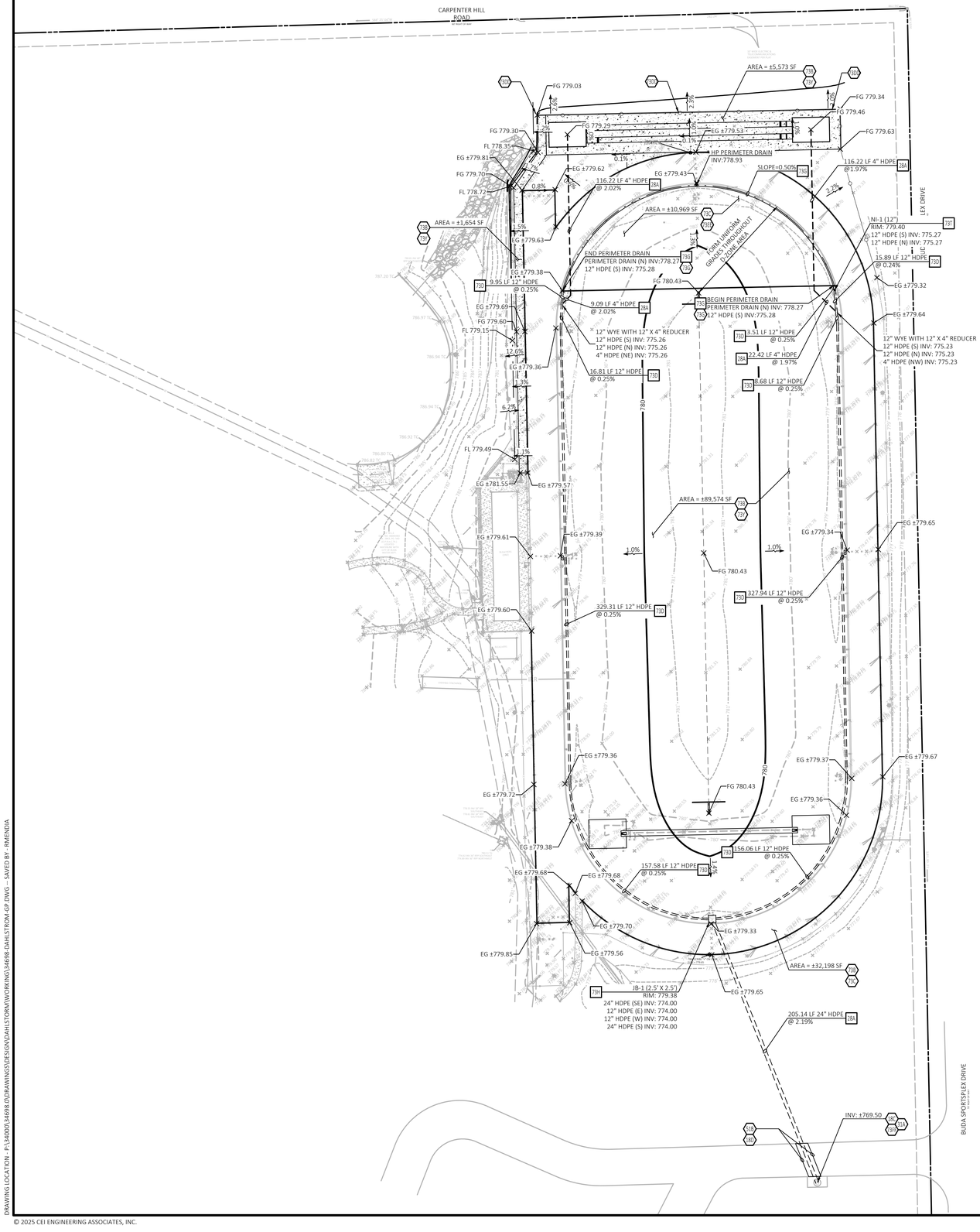

SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = CONCRETE
- = TRACK
- = RIP-RAP

PROPOSED LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- GRADE BREAK
- FLOWLINE
- STORM DRAIN
- x XX.XX SPOT ELEVATIONS:
  - EG = EXISTING GRADE
  - FG = FINISH GRADE
  - FL = FLOWLINE

GENERAL GRADING NOTES

A. PRIOR TO INSTALLATION OF STORM OR SANITARY SEWER, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL CROSSINGS AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT THE ENGINEER IS NOT NOTIFIED OF DESIGN CONFLICTS.

B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND 4" OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEEDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS (SEE LANDSCAPE PLAN FOR SEED MIX AND PROPER APPLICATION RATE). ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

C. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

GRADING NOTES

18C CONNECT TO EXISTING STORM DRAIN MANHOLE OR INLET.

18D MATCH EXISTING PAVEMENT ELEVATIONS.

31A LOCATION FOR THIS UTILITY AS SHOWN IS FOR DRAWING PURPOSES ONLY. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN FIELD PRIOR TO THE CONSTRUCTION OF THE PROPOSED UTILITY LINE TO BE CONNECTED. CONTRACTOR SHALL NOTIFY CEI ENGINEERING ASSOCIATES, INC. IF THE DESIGN AS SHOWN IS NOT ACHIEVABLE.

51B LIMITS OF SAWCUT AND PAVEMENT REMOVAL.

73B OVER-EXCAVATE, COMPACTED SUBGRADE AND INSTALL 3 FEET OF SELECT FILL EVERYWHERE THAT SYNTHETIC TURF AND CONCRETE IS TO BE PLACED ALL EARTHWORK TO BE STABILIZED AND COMPACTED PER GEOTECH REPORT.

73C INSTALL AND COMPACT 6"INCH THICK LAYER OF EXISTING PULVERIZED TRACK BASE MIXED WITH 1.5LBS PER SQUARE FOOT, SOIL CEMENT AND 2 INCH OF ASPHALT OVER ENTIRE SURFACE OF 400-METER TRACK AND D-ZONE.

73G INSTALL PERIMETER DRAIN CATCH BASIN.

73Y UNDER ALTERNATE PROPOSAL # 2 CONTRACTOR TO STABILIZE 6 FT. CHEMICAL INJECTION WITH CONCRETE CEMENT CAP INTO TOP 6 INCHES OF SUBGRADE, AFTER COMPLETION OF CHEMICAL INJECTION PROCESS.

73AA CONTRACTOR TO CUT AND REMOVE EXISTING STORM SEWER PIPE AS NEEDED, TO TIE EXISTING STORM SEWER PIPE INTO NEW STORM SEWER JUNCTION BOX.

73DD CONTRACTOR TO GRADE AS SHOWN, IF EXISTING GRADE DOES NOT ALLOW FOR THIS, CONTRACTOR IS TO CONTACT CEI ENGINEERING.

73EE IN D-ZONE IF THERE IS NOT ENOUGH PULVERIZED ASPHALT MATERIAL, CONTRACTOR TO INSTALL SELECT FILL.

73FF CONTRACTOR TO CONNECT NEW PIPE AT FLOWLINE OF EXISTING SPLITTER BOX. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN FIELD PRIOR TO THE CONSTRUCTION OF THE PROPOSED UTILITY LINE TO BE CONNECTED. CONTRACTOR SHALL NOTIFY CEI ENGINEERING ASSOCIATES, INC. IF THE DESIGN AS SHOWN IS NOT ACHIEVABLE.

GRADING DETAILS

28A STORM SEWER TRENCH AND BEDDING.

73D PERFORATED STORM PIPE.

73G PERIMETER DRAIN.

73H OUTLET CONTROL STRUCTURE .

73T NYOPLAST INLET.

CEI ENGINEERING ASSOCIATES, INC.
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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
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JEFFERY J. BRESEE 89217 LICENSED PROFESSIONAL ENGINEER

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

GRADING PLAN

SHEET TITLE

SHEET NUMBER

C4

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTORM\WORKING\34698 DAHLSTROM GP DWG -- SAVED BY - RMENDIA

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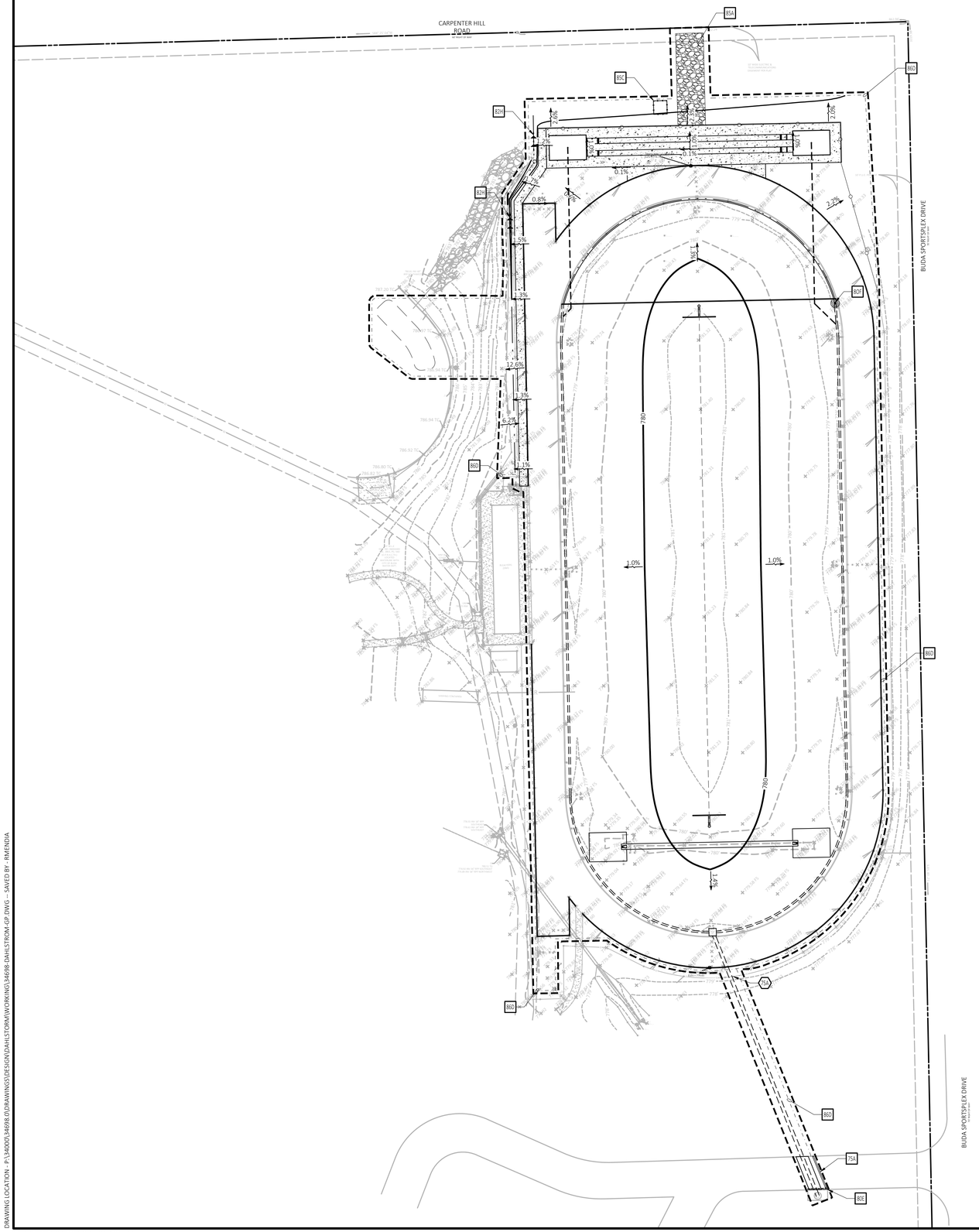
CARPENTER HILL ROAD
BUDA SPORTSPLEX DRIVE
BUDA SPORTSPLEX DRIVE
85A
85C
82H
82H
80F
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80D
80D
80D
80D
80E
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75A
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2.0%
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GENERAL EROSION NOTES

A. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND THE STATE OF TEXAS NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

B. A COPY OF THE SWPPP AND EROSION CONTROL PLANS, INCLUDING APPLICABLE DETAIL SHEETS, MUST REMAIN ONSITE THROUGHOUT CONSTRUCTION AND MADE AVAILABLE TO THE PUBLIC UNTIL THE SITE IS TERMINATED AND/OR PERMANENTLY STABILIZED PER THE NPDES PERMIT.

C. THE CONTRACTOR MUST UPDATE THE SWPPP AND EROSION CONTROL PLANS TO REFLECT THE PROGRESS OF CONSTRUCTION AND GENERAL CHANGES TO THE PROJECT SITE. CHANGES MAY INCLUDE BMP INSTALLATION, MODIFICATION, OR REMOVAL, CONSTRUCTION ACTIVITIES, CLEARING, GRUBBING, OR GRADING, AND TEMPORARY OR PERMANENT STABILIZATION.

D. THE CONTRACTOR MUST ADHERE TO ANY HOURS OF WORK, NOISE LEVEL, OR OTHER CONSTRUCTION RELATED RESTRICTIONS IN ACCORDANCE WITH LOCAL OR STATE REGULATIONS.

E. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ANY OFFSITE BORROW, SPOIL, OR STORAGE AREAS TO BE UTILIZED, BUT NOT PROVIDED WITHIN THE PROJECT'S LIMITS OF DISTURBANCE, ARE TO BE PROPERLY LICENSED AND PERMITTED.

F. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS AND TOILET FACILITIES. THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNER'S CONSTRUCTION MANAGER AND DEPICTED ON THE ONSITE EROSION CONTROL PLAN.

G. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT BETWEEN THESE MATERIALS AND STORM WATER THAT IS DISCHARGED FROM THE SITE.

H. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN UP FUEL OR CHEMICAL SPILLS AND LEAKS.

I. ADEQUATE HOUSEKEEPING MEASURES SHALL BE IMPLEMENTED SO THAT LOOSE TRASH, MATERIALS, TOOLS, AND EQUIPMENT ARE COLLECTED AND PROPERLY STORED AT THE CONSTRUCTION SITE.

J. DUST ON THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

K. NO RUBBISH, TRASH, GARBAGE OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES, DRAINAGE STRUCTURES, OR WATERS OF THE STATE.

L. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE INITIATED AS SOON AS PRACTICABLE.

M. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY WILL STOP FOR AT LEAST 14 DAYS, SHALL BE TEMPORARILY STABILIZED IMMEDIATELY.

N. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY STABILIZED. THESE AREAS SHALL BE STABILIZED IMMEDIATELY, BUT NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE LANDSCAPING PLAN.

O. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE. THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNER'S CONSTRUCTION MANAGER.

P. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

Q. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION POND AFTER THE STABILIZATION OF THE SITE AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS.

R. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.

S. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.

T. SEDIMENT BASINS AND TRAPS ARE ATTRACTIVE TO CHILDREN AND CAN BE VERY DANGEROUS. IN ALL CASES, LOCAL AND/OR STATE ORDINANCES AND REGULATIONS REGARDING HEALTH AND SAFETY MUST BE ADHERED TO.

U. ALL EXISTING AND PROPOSED STORM SEWER PIPES, DRAINAGE STRUCTURES, AND DRAINAGE DITCHES WITHIN THE PROJECT AREA SHALL BE CLEANED OF ANY TRASH AND ACCUMULATED SEDIMENT PRIOR TO FINAL STABILIZATION.

V. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, WATTLES, ETC.) TO HELP PREVENT EROSION AND STORM WATER POLLUTION.

W. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY, THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAINS & UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

X. IN AN EMERGENCY SITUATION, THE CONTRACTOR IS RESPONSIBLE FOR MODIFYING OR ADDING BMPS NECESSARY TO STOP POLLUTANT OR SEDIMENT DISCHARGES FROM THE CONSTRUCTION SITE AND PROTECT THE WATER QUALITY OF THE RECEIVING WATERBODY.

Y. IF AN EXCAVATION NEEDS TO BE DEWATERED DUE TO A RECENT RAINFALL EVENT, THE CONTRACTOR CAN DEWATER THE EXCAVATION VIA A PUMPED FILTER BAG. THE PUMPED FILTER BAG MUST DISCHARGE ONTO A STABILIZED SURFACE AND UPSTREAM OF AN EROSION CONTROL BMP LIKE A SEDIMENT BASIN/TRAP, SILT FENCE, OR OTHER PERIMETER BMP. IT IS STRICTLY PROHIBITED TO DISCHARGE THE PUMPED FILTER BAG INTO A STORM DRAIN OR OTHER CONVEYANCE STRUCTURE WITHOUT THE RUNOFF BEING TREATED VIA AN EROSION CONTROL BMP FIRST.

SEQUENCE OF CONSTRUCTION

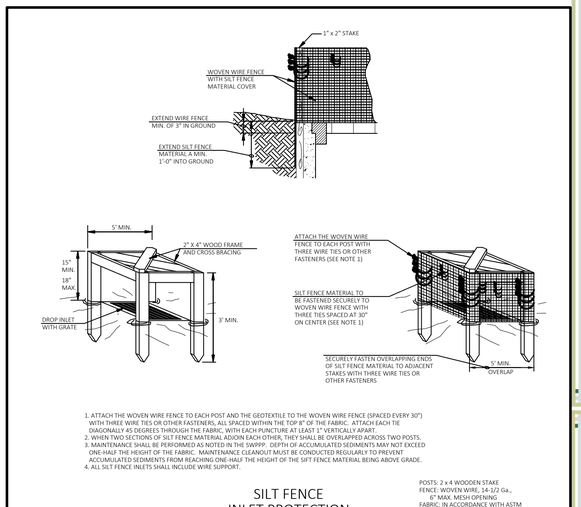
NOTE: DOWNSLOPE PROTECTIVE MEASURES MUST ALWAYS BE IN PLACE BEFORE SOIL IS DISTURBED. CONSTRUCTION STEPS CAN BE IMPLEMENTED CONCURRENTLY ONLY IF ASSOCIATED DOWNSLOPE PROTECTIVE MEASURES HAVE BEEN INSTALLED FOR EACH ACTIVITY.

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES AND CONCRETE WASH OUT.
2. CONSTRUCT THE STRAW WATTLE AND INLET PROTECTION.
3. CONSTRUCT ROCK CHECK DAMS AS SHOWN ON THE PLANS.
4. PREPARE TEMPORARY PARKING AND STORAGE AREA.
5. CLEAR AND GRUB THE SITE.
6. BEGIN GRADING THE SITE.
7. START CONSTRUCTION OF TURF FIELDS.
8. TEMPORARILY SEED DENUDED AREAS.
9. INSTALL UTILITIES, UNDERDRAINS, AND STORM SEWERS.
10. COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
11. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).

GENERAL EROSION NOTES CONT'D

MAINTENANCE
ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT GREATER THAN 0.5 INCHES, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

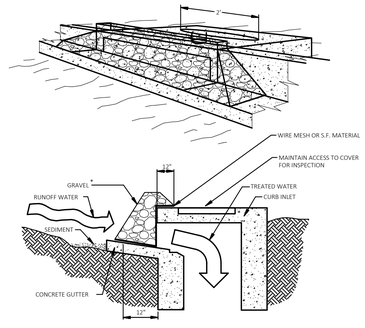
1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.
3. SILT FENCES AND WATTLES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES AND WATTLES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE BMP.
4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
5. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO ENSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
6. CONCRETE WASHOUT AREAS SHALL BE CHECKED REGULARLY FOR LEAKS AND CAPACITY. ALL LEAKS MUST BE REPAIRED IMMEDIATELY. WHEN THE WASHOUT VOLUME HAS BEEN REDUCED BY 85%, THE BMP MUST BE REMOVED AND REPLACED.



1. ATTACH THE WOVEN WIRE FENCE TO EACH POST AND THE GEOTEXTILE TO THE WOVEN WIRE FENCE (SPACED EVERY 30") WITH THREE WIRE TIES OR OTHER FASTENERS, ALL SPACED WITHIN THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1" VERTICALLY APART.
2. WHEN TWO SECTIONS OF SILT FENCE MATERIAL ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED ACROSS TWO POSTS.
3. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE SWPPP. DEPTH OF ACCUMULATED SEDIMENTS MAY NOT EXCEED ONE-HALF THE HEIGHT OF THE FABRIC. MAINTENANCE CLEANOUT MUST BE CONDUCTED REGULARLY TO PREVENT ACCUMULATED SEDIMENTS FROM REACHING ONE-HALF THE HEIGHT OF THE SIFT FENCE MATERIAL BEING ABOVE GRADE.
4. ALL SILT FENCE INLETS SHALL INCLUDE WIRE SUPPORT.

POSTS: 2 x 4 WOODEN STAKE
FENCE: WOVEN WIRE, 14-1/2 Ga., 6" MAX. MESH OPENING
FABRIC: IN ACCORDANCE WITH ASTM D 6461, LATEST EDITION

SILT FENCE INLET PROTECTION — 8SF
N.T.S.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE 2"-3" CLEAN STONE

GRAVEL CURB INLET SEDIMENT FILTER — 8SF
N.T.S.

75A

SWP-CI "Big Red"

Curb Inlet Protector

By ASP Enterprises and Storm Water Products

Temporary and Reusable Solutions for Sediment Control

A.S.P. ENTERPRISES. INC.
Your GeoSource Distributor

- Reusable Curb Inlet Protection
- Environmentally Friendly
- Drops out sediment by dissipating the water energy



"Big Red" Filter Advantages:

- **Easy to Install**
- **Versatile for a variety of curb inlets**
- **Reusable and Extremely easy to clean**
- **Made from 90% inert Recycled Materials**



The SWP-CI "Big Red" Filter is a **REUSABLE** inlet protector that keeps out sediment throughout the entire construction project. There are no pockets to fill, no velcro bags, no assembly etc. Simply place in front of the inlet, make sure it lays in the contour, and you are DONE!

Simple installation also translates into simple removal, cleanup and re -use at the next project or phase. Maintenance is simple as well by lifting the unit from the inlet, shaking the mud off of it, removing the sediment on the concrete, and placing the unit back. If it is severely filled with sediment, wash it out in a vegetated area and it is as good as new.



All of these features and benefits combine to make the SWP-CI "Big Red" curb inlet protector the **perfect choice** for all curb inlet applications. It comes in 54" long for single curb inlets and 104" lengths for double curb inlets.



- High Flow Rate
- Made of Durable High-Strength Geotextile
- Fully Reusable
- Made of Recycled Materials

75A

SWP-CI "Big Red"

Curb Inlet Protector

By ASP Enterprises and Storm Water Products

A.S.P. ENTERPRISES. INC.
Your GeoSource Distributor

Specifications:
1. Infill Material: shredded recycled rubber tires
2. Weight: approx. 10 lbs per linear foot
3. Diameter: approx. 8"

Geotextile fabric made of durable high flow fabric with the following properties:

Property	Test Method	Units		Typical Value
Weight	ASTM D5261	oz/sq. yd		9.3
Grab Tensile Strength	ASTM D4632	lb	warp	250
			fill	290
Tear Strength (Trapezoid)	ASTM D4533	lb	warp	60
			fill	50
Burst	ASTM D3786	psi		440

(Efforts were made to determine flow rate-the fabric exceeded all capacities of the testing equipment)



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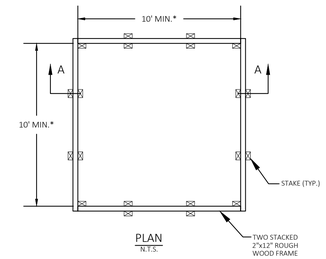

PLAN
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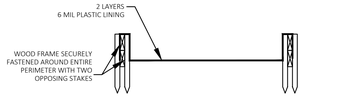

SECTION A-A
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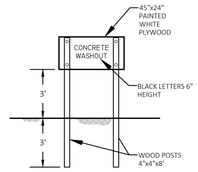
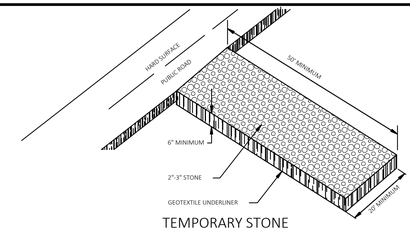


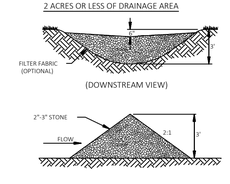
NOTES:
1. *DENOTES THE INTERIOR DIMENSION.
2. CONCRETE WASHOUT SHALL BE AT LEAST 50 FT. FROM ANY STORM SEWER INLET.
3. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

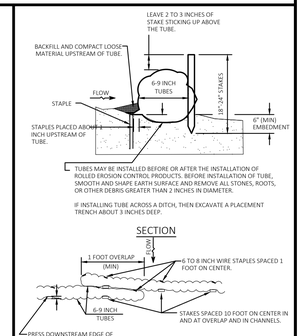
TEMPORARY CONCRETE WASHOUT (ABOVE GRADE) — 8SC
N.T.S.



TEMPORARY STONE CONSTRUCTION ENTRANCE — 8SA
N.T.S.



ROCK CHECK DAM — 8ZH
N.T.S.



GENERAL GUIDELINES FOR SPACING OF TUBE TRENCHES FOR SLOPE INSTALLATIONS	
SLOPE GRADIENT	TUBE INTERVAL
1H:1V	15 FEET
2H:1V	25 FEET
3H:1V	35 FEET
4H:1V	50 FEET

GENERAL GUIDELINES FOR SPACING OF TUBE TRENCHES FOR CHANNEL INSTALLATIONS	
SLOPE	TUBE INTERVAL
2%	25 FEET

STRAW WATTLE — 8SD
N.T.S.

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
BUDA, TX.

JEFFERY J. BRESEE 89217 — 2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

EROSION CONTROL NOTES

SHEET TITLE

SHEET NUMBER

C6

DRAWING LOCATION - P:\34000\34698.00\DRAWINGS\DESIGN\DAHLSTORM\WORKING\34698-DAHLSTROM-GP.DWG -- SAVED BY - RMENDIA

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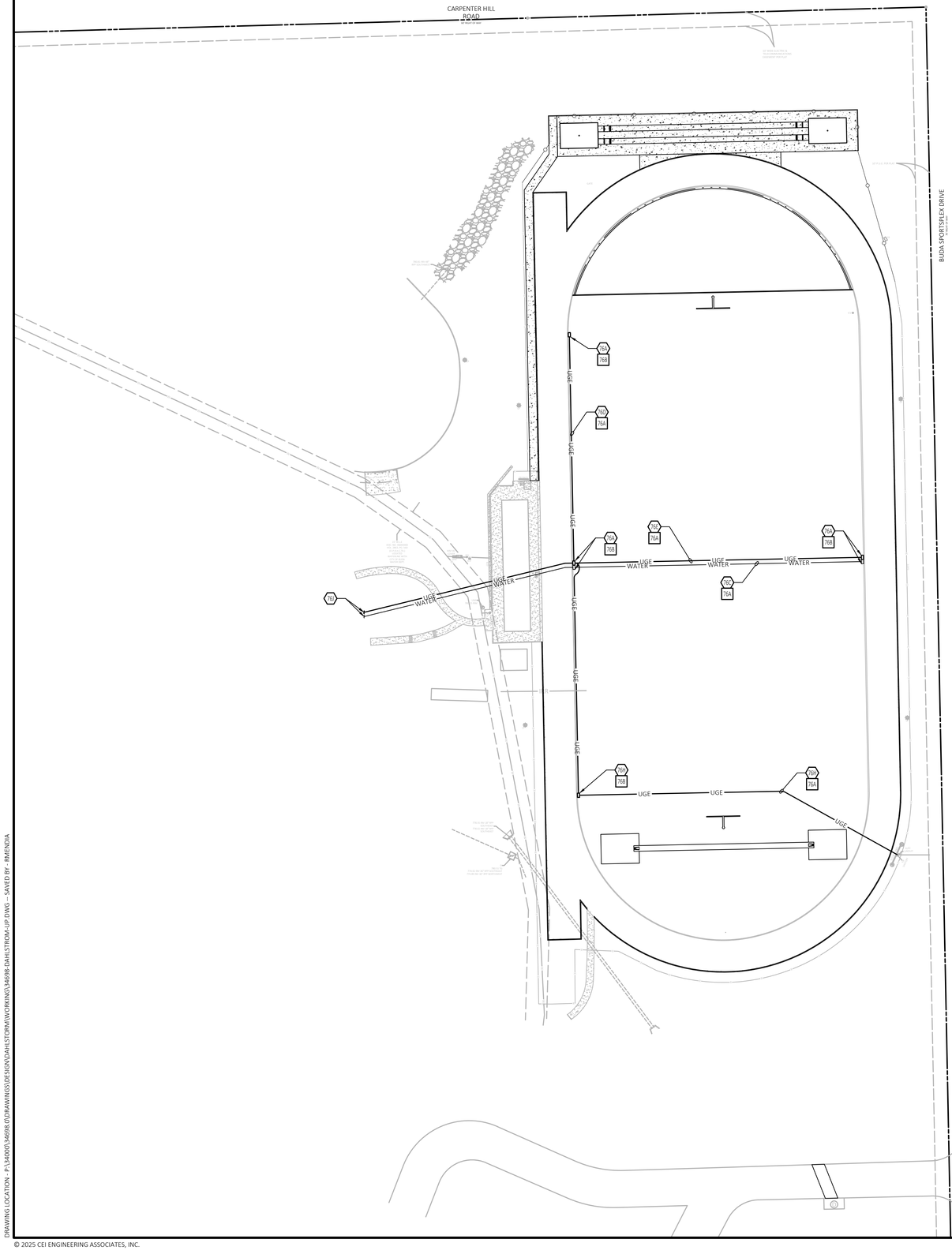

SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: HD62, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

N

0 40' 60' 80'
SCALE IN FEET

811 Know what's below. Call before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = CONCRETE
- = TRACK
- = RIP-RAP

PROPOSED LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- UGE — UNDERGROUND ELECTRIC SERVICE
- X"W — WATER SERVICE

GENERAL UTILITY NOTES

A. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.

B. ALL ELECTRIC, TELEPHONE AND GAS EXTENSIONS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE DESIGNATED UTILITY COMPANIES.

C. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.

D. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CEI ENGINEERING AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CEI ENGINEERING AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.

UTILITY NOTES

76A INSTALL UTILITY BOX. BOXES INSIDE TRACK SHALL HAVE SYNTHETIC TURF COVERS, BOXES OUTSIDE TRACK SHALL HAVE TRACK SURFACE COVERS.

76C INSTALL 3 INCH Ø PVC CONDUIT WITH 1 INCH Ø POLYLINE WATERLINE.

76D INSTALL 1-1/2 INCH Ø PVC CONDUIT W/ELECTRIC LINES AND PULL STRINGS.

76E INSTALL (2) 1-1/2 INCH Ø PVC CONDUIT W/ELECTRIC LINES AND PULL STRINGS.

76H CONTRACTOR TO INSTALL (2) 1-1/2 INCH Ø PVC CONDUIT TO EXISTING SCOREBOARD.

76J UTILITY LINES TO RUN INTO EXISTING BUILDING. CONTRACTOR TO CONFIRM EXACT LOCATION WITHIN BUILDING.

UTILITY DETAILS

76A PVC CONDUIT-CLASS "C" INCH PIPE BEDDING DETAIL.

76B SYNTHETIC TURF UTILITY BOX.

CEI Solutions for Land and Life

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS

3600 FM 967
BUDA, TX.

STATE OF TEXAS
JEFFERY J. BRESEE
89217
REGISTERED PROFESSIONAL ENGINEER
2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

UTILITY PLAN

SHEET TITLE

SHEET NUMBER

C7

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTORM\WORKING\34698-DAHLSTROM-UP.DWG -- SAVED BY - RMENDIA

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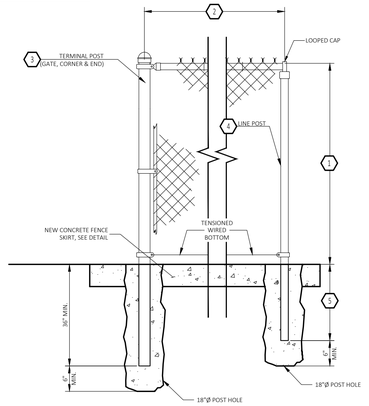
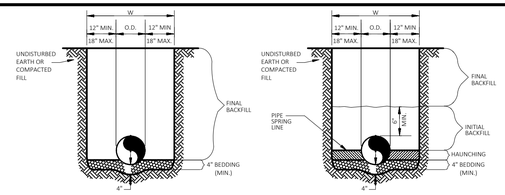
GENERAL NOTES:
A. POST & RAIL SIZES SHOWN ARE MINIMUM. LARGER MAY BE APPROVED BY ENGINEER.
B. PVC SLATS TO BE ADDED WHERE NOTED.
C. WINDSCREEN TO BE ADDED WHEN CALLED FOR.

NOTES INDICATED BY NUMBER IN ⬡
1. FENCE HEIGHT TO BE 4', 6', OR 8' TALL AS CALLED OUT ON PLANS.
2. MAXIMUM LENGTH TO BE EQUAL TO HEIGHT OF FENCE.
3. TERMINAL POSTS:
   4' TALL FENCE = 3" Ø (MIN.)
   6' TALL FENCE = 4" Ø (MIN.)
   8' TALL FENCE = 4" Ø (MIN.)
4. LINE POSTS:
   4' TALL FENCE = 2" Ø (MIN.)
   6' TALL FENCE = 2" Ø (MIN.)
   8' TALL FENCE = 3" Ø (MIN.)
5. POST DEPTH:
   4' TALL FENCE = 30" (MIN.)
   6' TALL FENCE = 36" (MIN.)
   8' TALL FENCE = 36" (MIN.)



CHAIN LINK FENCE
N.T.S. F3N



RIGID PIPE
N.T.S. 28A

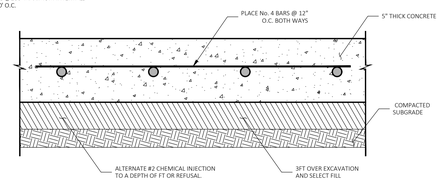
FLEXIBLE PIPE
N.T.S. 28A

GENERAL NOTES

1. BEDDING SHALL BE CLASS I-A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 85% STANDARD PROCTOR. (SEE SPECIFICATIONS FOR GRADATION)
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
3. INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
5. FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-89.
8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

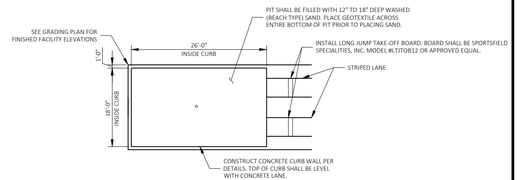
STORM SEWER TRENCH AND BEDDING
N.T.S.

NOTE:
1. DOWEL NEW CONCRETE TO EXISTING W/ No. 4 DOWELS @ 12" O.C. BY 18" LONG ON JOINT WITH EPOXY.
2. FORM EXPANSION JOINTS @100' MAXIMUM INTERVALS & CONTROL JOINTS @ 10' O.C.

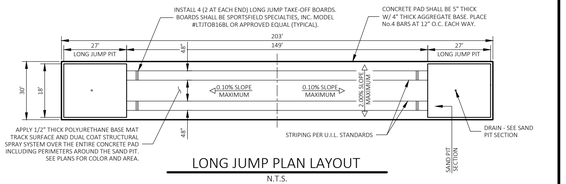


CONCRETE FLATWORK
N.T.S. 23C

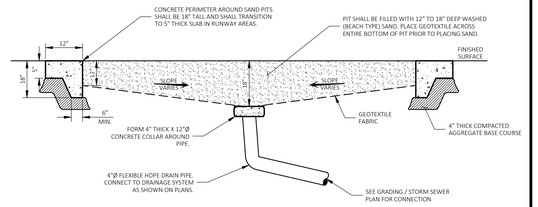
NOTE:
1. CONSTRUCT LONG JUMP IN ACCORDANCE WITH U.I.L. AND N.F.H.S. STANDARDS.



LONG JUMP PIT
N.T.S.



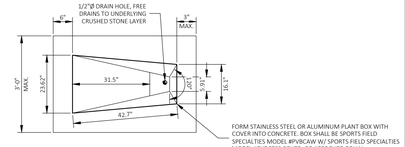
LONG JUMP PLAN LAYOUT
N.T.S.



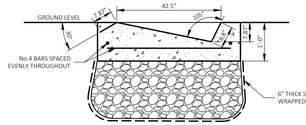
SAND PIT SECTION
N.T.S.

DOUBLE LONG JUMP RUNWAY WITH 4 JUMP PITS
N.T.S. 52J

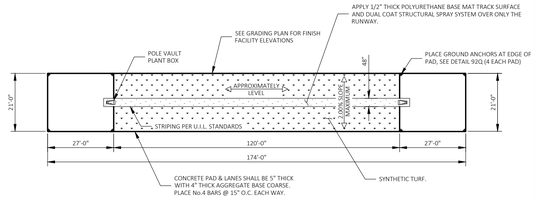
NOTE:
1. CONSTRUCT LONG JUMP IN ACCORDANCE WITH U.I.L. AND N.F.H.S. STANDARDS.



PLANT BOX PLAN VIEW
N.T.S.

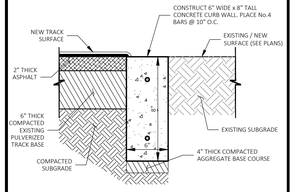


PLANT BOX SECTION VIEW
N.T.S.

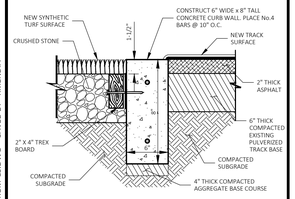


POLE VAULT PLAN LAYOUT
N.T.S.

POLE VAULT WITH DOUBLE PAD
N.T.S. 52M

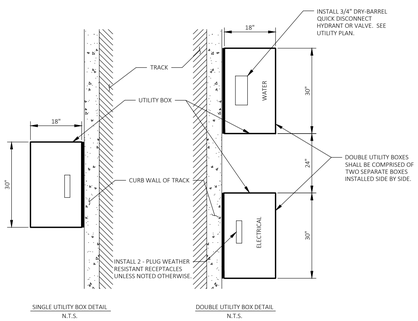


OUTSIDE CURB WALL



INSIDE CURB WALL

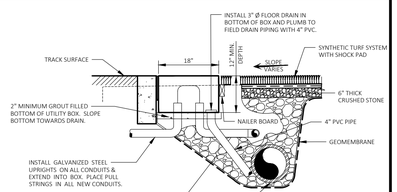
CONCRETE CURB WALL FOR TRACK AND TURF FIELD
N.T.S. 92A



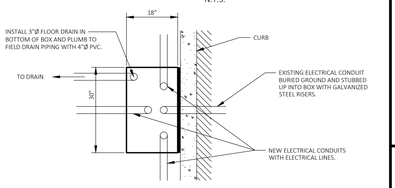
BOX LOCATION PLAN VIEW
N.T.S.

NOTE:
1. UTILITY BOXES - SPORTSFIELD SPECIALITIES 3000 COMBOX OR APPROVED EQUAL WITH COVER COMPATIBLE TO SURFACE AS INDICATED ON PLANS.
2. BOXES IN SYNTHETIC TURF AREA ARE TO HAVE SYNTHETIC TURF LIDS.
3. BOXES NOT IN SYNTHETIC TURF ARE ARE TO HAVE TRACK SURFACE MATERIAL LIDS. MATCH COLOR OF TRACK SURFACE.
4. UTILITY BOX FOR WATER SERVICES SHALL BE THE SAME CONFIGURATION AS SHOWN HEREON, BUT SHALL HAVE A DRY-BARREL WATER HYDRANT INSTALLED OR A VALVE AS SPECIFIED ON THE UTILITY PLAN.
5. UTILITY BOXES FOR ELECTRIC SHALL HAVE WEATHER RESISTANT 110V ELECTRICAL RECEPTACLE WITH PIT TAIL CONFIGURATION.

SYNTHETIC TURF UTILITY BOX
N.T.S. 76B

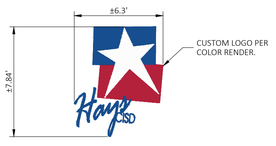


UTILITY BOX SECTION
N.T.S.



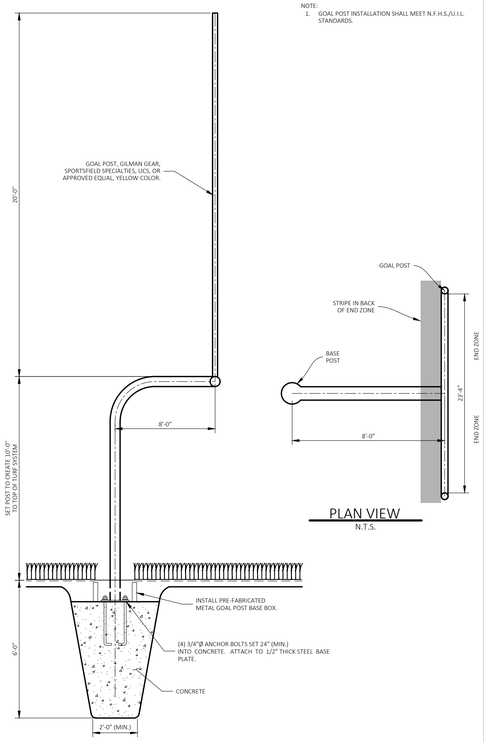
CONDUIT LAYOUT
N.T.S.

CUSTOM CENTER FIELD LOGO
N.T.S. 81C



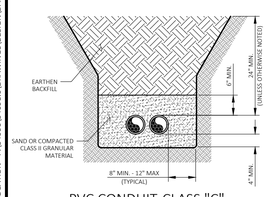
CUSTOM 25 YD FIELD LOGO
N.T.S. 81B

NOTE:
1. GOAL POST INSTALLATION SHALL MEET N.F.H.S./U.I.L. STANDARDS.



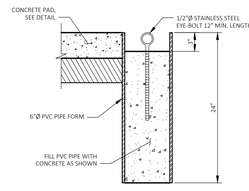
GOAL POST INSTALLATION
N.T.S. 81A

NOTE:
BACK FILL TO BE MECHANICALLY TAMPED IN 6" LIFTS TO 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY UNDER DRIVE LOCATIONS.

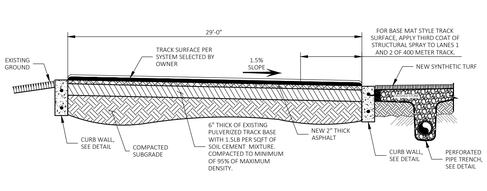


PVC CONDUIT-CLASS "C" PIPE BEDDING DETAIL
N.T.S. 78A

NOTE:
FOR ANCHORS TO BE INSTALLED IN EXISTING CONCRETE PADS, ANCHOR HOLES SHALL BE CORED IN EXISTING CONCRETE. NO PVC PIPE REQUIRED IN THESE LOCATIONS. DEPTH OF ANCHOR SHALL STILL BE 24-INCHES.



GROUND ANCHOR BOLT
N.T.S. 92K



TRACK CROSS SECTION
N.T.S. 92C

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS
3600 FM 967
BUDA, TX.

JEFFERY J. BREDEE 89217 LICENSED PROFESSIONAL ENGINEER
2025-12-29
F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

DETAIL SHEET 1
SHEET TITLE
SHEET NUMBER
C8

DRAWING LOCATION - P:\34000\34698.0\DRAWINGS\DESIGN\DAHLSTROM\WORKING\34698-DAHLSTROM-CS.DWG - SAVED BY - RMENDIA

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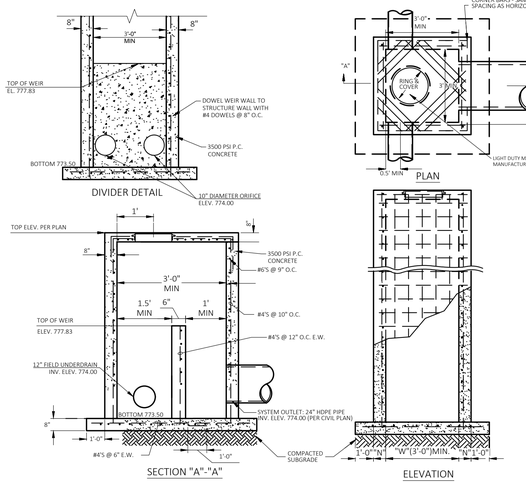


REINFORCEMENT SCHEDULE, BASE	
SECTION	
"A"	#4's @ 6" E.W.
"B"	#6's @ 6" E.W.

TABLE OF 'W' DIMENSIONS			
PIPE SIZE	SKEW OF CROSS DRAIN		
SINGLE	STRAIGHT	30°	45°
24"	4'-0"	4'-0"	4'-10"
30"	4'-0"	4'-7"	5'-8"
36"	4'-0"	5'-3"	6'-5"
42"	5'-3"	5'-11"	7'-3"
48"	5'-10"	6'-7"	8'-0"
60"	7'-0"	7'-10"	9'-8"
DOUBLE	FOR "A" SECTION ONLY		
24"	7'-0"	7'-10"	9'-5"
30"	8'-2"	9'-2"	11'-0"
36"	9'-4"	10'-6"	12'-6"
42"	10'-6"	11'-10"	14'-2"
48"	11'-8"	13'-2"	15'-10"

REINFORCEMENT SCHEDULE, WALLS			
SECTION	WIDTH ("W")	HOR.	VERT.
"A"	4'	#4's @ 9"	#4's @ 10"
	BETWEEN 4' & 7'	#6's @ 9"	#4's @ 10"
	GREATER THAN 7'	#5's @ 4 1/2"	#4's @ 10"

TABLE OF "T" & "N" DIMENSIONS				
SECTION	WIDTH ("W")	"T"	"N"	"D"
"A"	BETWEEN 4' & 7'	6" + PIPE THICKNESS	8"	6"
	GREATER THAN 7'	6" + PIPE THICKNESS	10"	8"

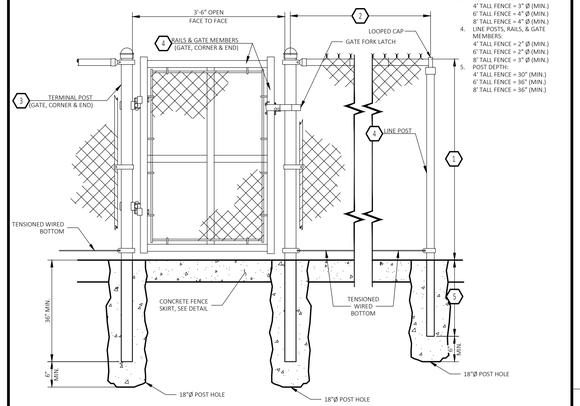
REINFORCEMENT SCHEDULE, TOP		
DIMENSIONS	STEEL	SPECIAL PATTERN
W1 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W1 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = 7' OR GREATER	#4'S @ 6" E.W.	DIAGONAL @ COVER
W1 = 7' OR GREATER	#4's @ 6" E.W.	DIAGONAL @ COVER
W2 = 7' OR GREATER	#4's @ 6" E.W.	DIAGONAL @ COVER

GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. ALL #4 & #5 REINFORCING BARS TO HAVE 1-1/2" COVER, LARGER SIZES TO HAVE 2" COVER.
3. SEE GRADING PLAN FOR PIPE SIZES, LOCATIONS, AND FLOW LINES.
4. PIPES SHALL CONNECT TO THE ENDS OR SIDES OF THE INLET. CONNECTION SHALL NOT BE MADE AT CORNERS OF BOX.
5. ALL REINFORCING BARS TO BE GRADE 60.

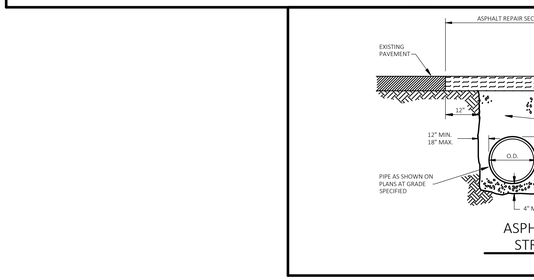
OUTLET CONTROL STRUCTURE 7SH
N.T.S.

GENERAL NOTES:
A. POST & RAIL SIZES SHOWN ARE MINIMUM. LARGER MAY BE APPROVED BY ENGINEER.
B. PVC SLATS TO BE ADDED WHERE NOTED.
C. WINDSCREEN TO BE ADDED WHEN CALLED FOR.

NOTES INDICATED BY NUMBER IN ⬡
1. FENCE HEIGHT TO BE 4', 6', OR 8' TALL AS CALLED OUT ON PLANS.
2. MAXIMUM LENGTH TO BE EQUAL TO HEIGHT OF FENCE.
3. TERMINAL POSTS:
   4' TALL FENCE = 3" Ø (MIN.)
   6' TALL FENCE = 4" Ø (MIN.)
   8' TALL FENCE = 4" Ø (MIN.)
4. LINE POSTS, RAILS, & GATE MEMBERS:
   4' TALL FENCE = 2" Ø (MIN.)
   6' TALL FENCE = 2" Ø (MIN.)
   8' TALL FENCE = 3" Ø (MIN.)
5. POST DEPTH:
   4' TALL FENCE = 30" (MIN.)
   6' TALL FENCE = 36" (MIN.)
   8' TALL FENCE = 36" (MIN.)



CHAIN LINK FENCE SINGLE GATE 7SF
N.T.S.



ASPHALT PATCH FOR STREET OR DRIVE 7SK
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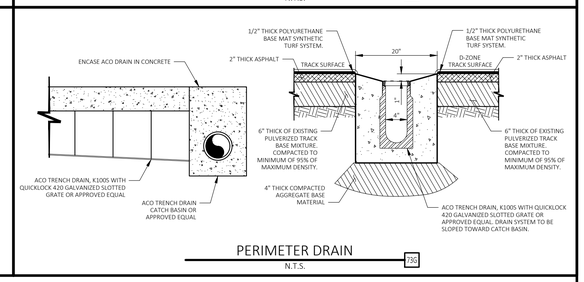

PERIMETER DRAIN 7SG
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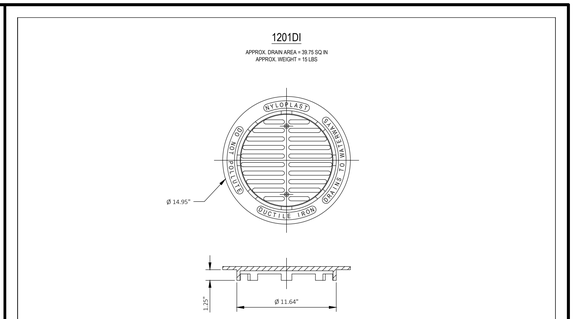

DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE: HS-LIGHT DUTY RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY ACT AS STATED IN FEDERAL REGISTER PART III, DEPARTMENT OF JUSTICE, 28 CFR PART 36.

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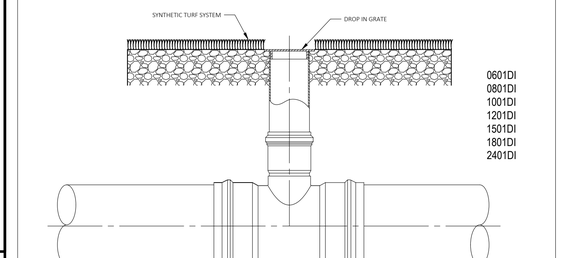
DRAWN BY	AWA	MATERIAL	
DATE	5-4-00		
REVISED BY	EBC	PROJECT NO./NAME	
DATE	2-9-10		
DWG SIZE	A	SCALE 1:8	SHEET 1 OF 1

ADS Nyloplast — 3128 VERONA AVE, BUFORD, GA 30518, PHN (770) 932-2443, FAX (770) 932-2490, www.nyloplast-us.com

TITLE: 12 IN DROP IN

DWG NO. 7001-110-01 REV D



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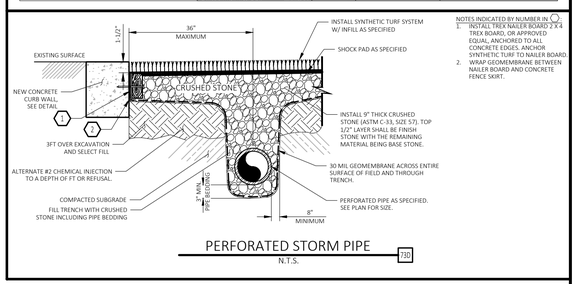
2401DI



NOTES INDICATED BY NUMBER IN ⬡
1. INSTALL TREX NAILER BOARD 2 X 4 TREX BOARD, OR APPROVED EQUAL, ANCHORED TO ALL CONCRETE EDGES, ANCHOR SYNTHETIC TURF TO NAILER BOARD.
2. WRAP GEOMEMBRANE BETWEEN NAILER BOARD AND CONCRETE FENCE SKIRT.

PERFORATED STORM PIPE 7SD
N.T.S.

NYLOPLAST INLET 7ST
N.T.S.

DRAWN BY	AWA	MATERIAL	
DATE	5-4-00		
REVISED BY	EBC	PROJECT NO./NAME	
DATE	2-9-10		
DWG SIZE	A	SCALE 1:8	SHEET 1 OF 1

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TITLE: 6 IN - 24 IN DROP IN GRATE INSTALLATION

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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPOVEMENTS
3600 FM 967
BUDA, TX.

STATE OF TEXAS — JEFFERY J. BRESEE — 89217 — LICENSED PROFESSIONAL ENGINEER — SURVEYOR

2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	12/17/2025
REVISION	REV-0

DETAIL SHEET 2

SHEET TITLE

SHEET NUMBER

C9

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NOTE:
THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. SITE INFORMATION WAS OBTAINED FROM CLIENT'S DOCUMENTS; DESIGN MAY VARY, DEPENDING ON ACTUAL TOPOGRAPHY, DRAINAGE, SOILS, SURVEY, ETC. THIS ADDITIONAL DATA AND SITE CONDITIONS COULD CAUSE CHANGES IN PARKING RATIOS AND SPACE AVAILABLE FOR DEVELOPMENT, AND MAY INCREASE ESTIMATED DEVELOPMENT COSTS.

SITE DATA	
TOTAL TURF SURFACE	±100,959 SF
TOTAL TRACK SURFACE	±43,207 SF
TOTAL CONCRETE SURFACE	±7,589 SF
TOTAL ASPHALT SURFACE	±50,796 SF

0 30' 45' 60'
SCALE IN FEET

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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

JEFFERY J. BRESEE
89217
LICENSED PROFESSIONAL ENGINEER
2025-12-29

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	JWK
CEI PROJECT NUMBER	34698
DATE	10/30/2025
REVISION	REV-0

Dahlstrom Middle School

SHEET TITLE

SHEET NUMBER

CSP

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DRAINAGE REPORT

FOR

Dahlstrom MS Track & Turf Improvements

3600 FM 967
Buda, TX 78610

December 19, 2025

CEI Project No. 34698

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Table of Contents

INTENT OF REPORT 3
PROJECT DESCRIPTION 3
EXISTING CONDITIONS 3
PROPOSED CONDITIONS 4
WATER QUANTITY 4
WATER QUALITY 6
CONCLUSION 8

Exhibits

Exhibit I Vicinity Map
Exhibit II FIRMette Map
Exhibit III Edwards Aquifer GIS Map
Exhibit IV NRCS Web Soil Survey
Exhibit V Pre-Developed Drainage Map
Exhibit VI Post-Developed Drainage Map
Exhibit VII Water Quality Map

Appendices

Appendix A HEC-HMS Report Summary
Appendix B TCEQ Water Quality Calculations
Appendix C 2008 Civil Improvement Plans
Appendix D 2024 Civil Improvement Plans

INTENT OF REPORT

It is the intent of this report to show that the stormwater management facilities designed for the Dahlstrom Middle School Track and Turf Improvements described within executes and meets or exceeds the previously permitted Dahlstrom Middle School drainage design and the requirements of TCEQ and the City of Buda, and, by extension, the City of Austin's Drainage Criteria Manual (COA DCM) for the reduction of peak runoff and safe conveyance of stormwater within and/or from the site without damage to downstream property and life.

PROJECT DESCRIPTION

The project site is located at 3600 FM 967, Buda, TX 78610 (see **Exhibit I** for *Vicinity Map*). The site is bound to the north by Carpenter Hill Dr, to the south and east by school property, and to the west by Buda Sportsplex Drive.

The existing grass football field is located within Zone X per *Flood Insurance Rate Map Panel #48209C0260G, January 17th, 2025* **(**see **Exhibit II** for *FIRMette Map***)**. Zone X is defined as Areas determined to be of minimal flood hazard.

The site is within the Edwards Aquifer Contributing Zone within the Transition Zone (see **Exhibit III** for *Edwards Aquifer GIS Map*).

EXISTING CONDITIONS

Based on the NRCS Web Soil Survey (see **Exhibit IV**) the site consists entirely of Doss silty clays (DoC), hydrologic soil group D. The site currently consists of a grass football field and rubber track at the northeastern edge of the school property. The existing site has a drainage pattern flowing two ways. Study Point A is collected into the existing storm pipe system and conveyed to the detention and water quality pond to the south. Study Point B flows to the open land to the north and is collected by a culvert flowing east (see **Exhibit V** for the *Pre-Developed Drainage Map*).

The overall school campus drainage design has undergone multiple revisions since its initial construction. Relevant sheets from two existing civil plan drawing sets are provided in this report for use in analysis: the 2008 civil improvement plans developed by HPE and provided by TCEQ (**Appendix C**) and the latest 2024 revision of the civil improvement plans developed by Pape-Dawson Engineers and provided by the City of Buda (**Appendix D**). Per the received plans, runoff onto the field was designed to be conveyed to the existing southern stormwater management pond and runoff outside the fields was designed to bypass around it. The peak flows and design intent from these plans are used in this analysis.

The SCS Method and HEC-HMS 4.12 were used for this study to maintain continuity with the original design method for the site. The runoff curve numbers were obtained from the COA DCM and are shown in Table 1, below. An impervious curve number was used for synthetic turf in accordance with City of Buda requirements. The weighted curve numbers and hydrologic basin data for the pre-developed study areas are shown in Table 2.

Table 1: COA Curve Numbers

Surface Cover Description	CN
Impervious	98
Grass, Average, 2-7%	80

Table 2: Pre-Developed Basin Summary

Description	Pre-A	Pre-B
Impervious (ac.)	1.07	0.00
Grass, Good Condition (ac.)	2.51	0.45
Total Area (ac)	3.58	0.45
Total Area (sq mi)	0.0056	0.0007
Weighted CN	85	80
Time of Concentration (min)	14.6	5.0
Lag Time (min)	8.7	3.0

PROPOSED CONDITIONS

The proposed site will consist of turf resurfacing of the existing grass field along with additional concrete walking paths and jump facilities. The proposed turf field will act as underground detention and include an underlying section of 9" crushed stone containing 40% void space with perforated underdrain pipes. Study Point A consists of the captured rainfall onto the field that is captured in the field (Post-A Detained) and that drains to Study Point A. Study Point B consists of surface runoff to the north (Post-B). The post-developed drainage areas are delineated in **Exhibit VI**, *Post-Developed Drainage Map*. The weighted curve numbers and hydrologic basin data for the post-developed study areas are shown in Table 3.

Table 3: Post-Developed Basin Summary

Description	Post-A (detained)	Post-B
Impervious (ac.)	3.21	0.19
Grass, Good Condition (ac.)	0.00	0.63
Total Area (ac)	3.21	0.82
Total Area (sq mi)	0.0050	0.0013
Weighted CN	98	84
Time of Concentration (min)	6.0	11.8
Lag Time (min)	3.6	7.1

WATER QUANTITY

Due to the increase in impervious cover, measures will be taken to reduce the downstream peak flows in conjunction with the adjacent improvement plans by Pape-Dawson Engineering. The pre- and post-developed peak flow rates for the 2, 10, 25, and 100-year storms were calculated

using the SCS Method in HEC-HMS (see **Appendix A**). Rainfall data was obtained from the City of Austin DCM.

The turf field detention will outfall to a control structure, thence to a 24-inch storm pipe, and ultimately to the existing splitter box and water quality pond. The water surface elevation (WSE) within the field detention will reach a maximum elevation of 779.2 during the 100-year storm. See tables below for the turf field stage-storage calculations.

Table 4: Field Storage Volume Calculations

					INCREMENTAL	CUMULATIVE		
	Area (SF)	**Crushed Stone Depth (ft)**		**Voids**	**Volume (CF)**	**Volume (CF)**	**Stage (ft)**	**Field Section Elevation (ft)**
Turf Field*	68,680	0.71		40%	9,730	15,330	5.21	779.21
	Length (ft)	**Width (ft)**	**Depth (ft)**	**Voids**	**Volume (CF)**	**Volume (CF)**	**Stage (ft)**	
Area Above Pipes	1,000	2.33	3.50	40%	3,267	5,600	4.79	778.00
Pipe (avg diameter)	1,000	1.00	1.00	100%	785	2,333	1.00	775.00
Storage Area Beside Pipe	1,000	2.33	1.00	40%	1,548			
						0	0.00	774.00

**Volume (cf) = 0.5*area (sf)*crushed stone depth (ft)*0.40, the volume of the triangular stone water storage*

Table 5: Field Stage-Storage Volume Summary

Elevation	Volume (ac-ft)
775.50	0.000
776.50	0.054
778.58	0.098
779.21	0.313

The post-developed peak flows to Study Point A are reduced for the 2, 10, 25, and 100-year storm events and will not affect the downstream system. While the post-developed flow to Study Point B has increased slightly, the adjacent improvement plans propose a significant decrease in post-development peak runoff to the northeastern culvert. When combined with CEI flows, the net peak runoff will maintain a significant reduction. Additionally, there is no room to provide detention at this location without encroaching into the existing channel and drainage design by the adjacent development. Therefore, it has been determined that it is neither practical nor necessary to provide additional water quantity control measures for this basin. See the tables below for peak flow results.

Table 6: HEC-HMS Peak Flow Results

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
Pre A	11.4	20.0	25.8	35.0	Track pipes outfall to WQ/detention pond to the south per as-built documents received. Turf field is considered impervious and self-treating for TSS removal.
Post A	10.8	19.8	23.3	28.2	
Difference	-0.6	-0.2	-2.5	-6.8	
Pre B	1.7	3.1	4.1	5.8	Surface runoff drains to existing culvert to the northeast. Peak flows are reduced when post-construction results are combined with adjacent development.
Post B	2.8	4.9	6.4	8.7	
Difference	1.1	1.8	2.3	2.9	

Table 7: Peak Flow Results (combined with adjacent development)

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
***Pre 5**	46.6	81.7	105.0	142.2	Adjacent improvement plans by Pape-Dawson Engineers propose a significant decrease in post-development peak runoff to the northeastern culvert. When combined with CEI flows, the net peak runoff will maintain a significant reduction.
***Post 5**	34.3	62.5	77.8	93.7	
CEI net increase	1.1	1.8	2.3	2.9	
Total Difference	-11.2	-17.4	-24.9	-45.7	

**See Analysis Point 5 on Pape-Dawson construction plans, sheets C6.00A to C6.02A (Appendix D).*

WATER QUALITY

The site is located within the Edwards Aquifer Contributing Zone within the Transition Zone. The existing site has previously permitted Water Pollution Abatement Plans (WPAP) which the proposed development will modify. As required by both TCEQ and the Austin Environmental Criteria Manual (ECM), water quality is proposed as part of the development for treatment of the runoff from the addition of new impervious cover. For runoff to the north (Study Point B) vegetative filter strips (VFS) are used for TSS treatment, in accordance with the TCEQ Edwards Aquifer Manual. For runoff to the south (Study Point A) the synthetic turf field with underlying crushed stone and underdrains is considered self-treating, according to TCEQ guidelines. See **Exhibit VII** for the *Water Quality Map* and **Appendix B** for *TCEQ Water Quality Calculations*. See tables below for impervious cover and TSS treatment summaries.

Table 8: Impervious Cover Summary

	Pre	Post
Project Study Area (ac.)	4.03	4.03
Impervious Cover (ac.)	1.07	3.40
IC %	**27%**	**84%**

Table 9: TCEQ TSS Treatment Summary

	L_m (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**

1 - See TCEQ spreadsheet calcs

2 - New field cover consists of 2.06 ac of self-treating turf (0.24 ac D-zone not included in field treatment). Therefore, a removal rate of approximately 90% was used for the new field IC area.

CONCLUSION

The proposed improvements as described above for Track and Turf Improvements at Dahlstrom Middle School meet the general provisions of TCEQ and the City of Buda (Austin DCM) with regard to the management of stormwater runoff. The proposed work will not change the overall drainage patterns that exist today and have been designed to adhere to the original design intent of the site in conjunction with adjacent development. Therefore, impact on the downstream properties has been mitigated.

Improvements as outlined in this report and depicted on the design drawings shall not increase the risk of endangerment to life or have negative impacts on adjacent or downstream property or watersheds.

This drainage report has been prepared in general accordance with the current requirements of the applicable storm water jurisdictions and approving agencies. In addition, storm events/frequencies, runoff calculations, discharge criteria, pipe hydraulics, evaluation methods (including computer software applications), etc., have been based on the guidelines/requirements of these permitting entities and reflect the application of generally accepted standard of engineering practice. This design is based on, and limited by, the weather data, the analysis and their applicability as presented.

Respectfully Submitted,

Samuel Hawley, EIT

Samuel Hawley, EIT
Assistant Project Engineer

Jeffery J. Bresee

Jeff Bresee, P.E.
Client Sector Leader



2025-12-29

Exhibit I
Vicinity Map



CEI
Solutions for Land and Life

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DAHLSTORM MIDDLE SCHOOL
TRACK AND TURF IMPOVEMENTS
3600 FM 967
BUDA, TX.

PRELIMINARY
NOT FOR
CONSTRUCTION

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	RM
CEI PROJECT NUMBER	34698
DATE	9/29/2025
REVISION	REV-0

VICINITY MAP
SHEET TITLE

SHEET NUMBER
1

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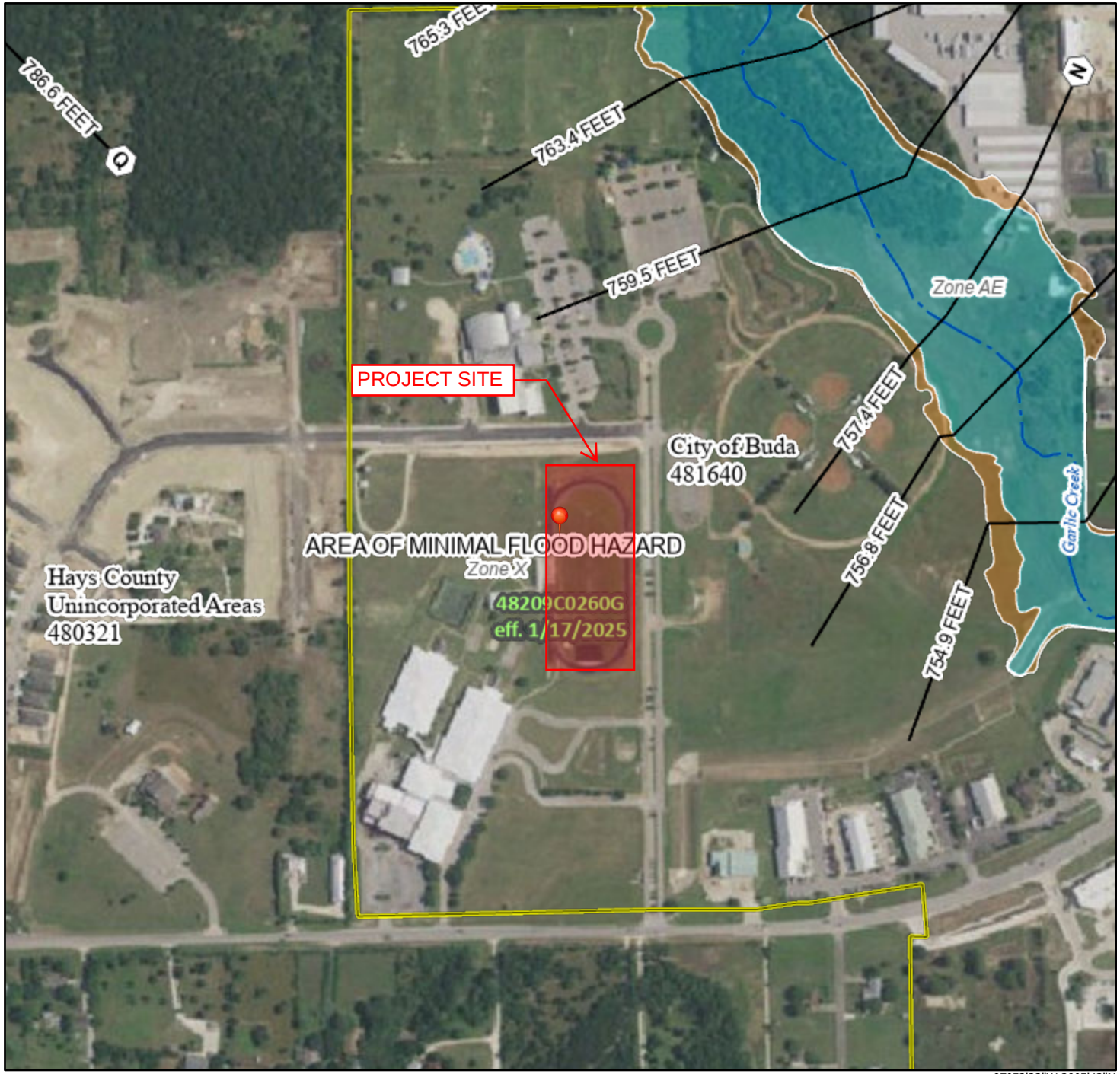
Exhibit II
FIRMette Map

National Flood Hazard Layer FIRMette

FEMA

97°53'10"W 30°6'14"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

97°52'32"W 30°5'43"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/23/2025 at 8:41 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Exhibit III

Edwards Aquifer GIS Map

Edwards Aquifer Viewer Custom Print



9/29/2025, 1:25:09 PM

1:9,831

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

TCEQ_EDWARDS_OFFICIAL_MAPS

7.5 Minute Quad Grid

TX Counties

City/Place

Edwards Aquifer Boundary central line

Edwards Aquifer Label

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

2.4m Resolution Metadata

TCEQ, Maxar

Exhibit IV

NRCS Web Soil Survey

United States Department of Agriculture

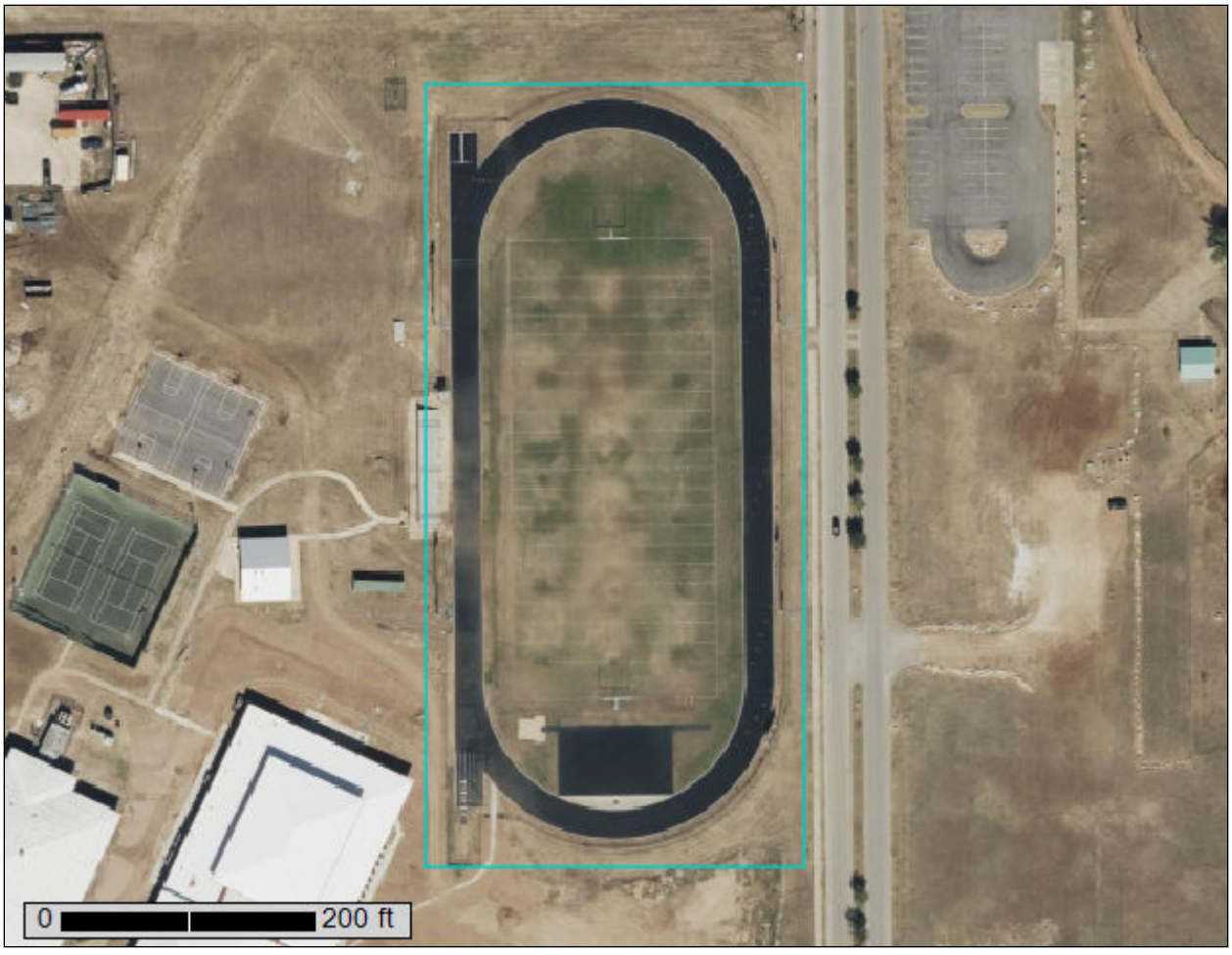
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Comal and Hays Counties, Texas

34698 Dahlstrom



July 14, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Comal and Hays Counties, Texas.....13
DoC—Doss silty clay, moist, 1 to 5 percent slopes.....13
References.....15

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,090 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 21, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DoC	Doss silty clay, moist, 1 to 5 percent slopes	4.2	100.0%
Totals for Area of Interest		**4.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Comal and Hays Counties, Texas

DoC—Doss silty clay, moist, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2s0st
Elevation: 630 to 1,840 feet
Mean annual precipitation: 30 to 36 inches
Mean annual air temperature: 66 to 68 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Doss and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Doss

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 9 inches: silty clay
Bk - 9 to 17 inches: silty clay
Cr - 17 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: 11 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 70 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett

Percent of map unit: 7 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Bolar

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Eckrant

Percent of map unit: 1 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Purves

Percent of map unit: 1 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Denton

Percent of map unit: 1 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

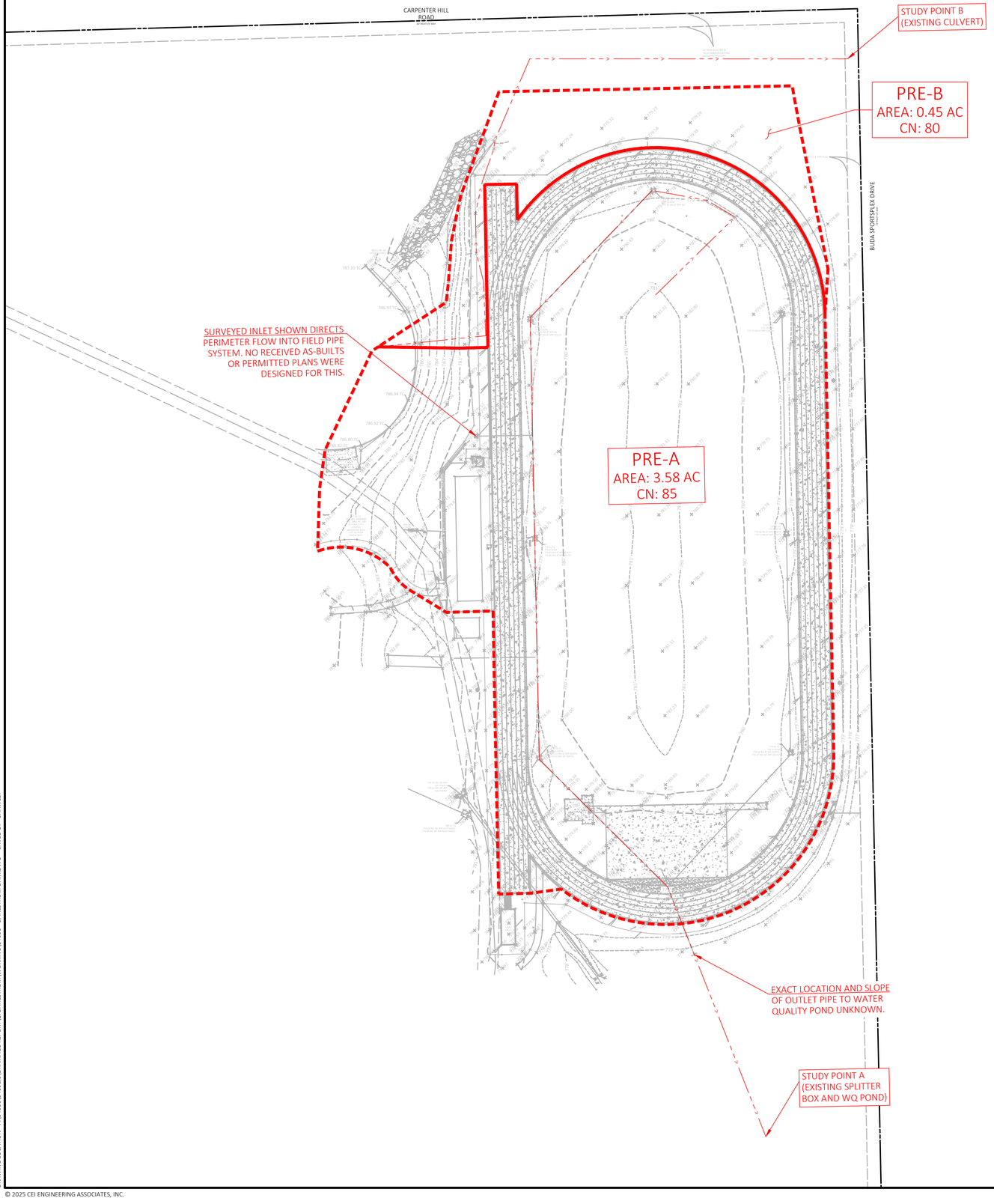
United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Exhibit V
Pre-Developed Drainage Map



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

EXISTING LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- PRE-DEVELOPED DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION

Pre-A				
	Description	**A**	**B**	
SHEET	Flow Length (ft)	100		
	Land Slope (ft/ft)	0.025	0.005	
	Manning's n	0.150	0.011	
	2-yr 24-hr P (in)	4.14	4.14	
	TOC (min)	7.88	0.00	
SHALLOW	Length (ft)	47		
	Watercourse Slope (ft/ft)	0.010	0.005	
	Surface Description	Unpaved	Paved	
	TOC (min)	0.49	0.00	
CHANNEL	Flow Length (ft)	462	189	
	Channel Slope (ft/ft)	0.002	0.002	
	Manning's n	0.012	0.012	
	Cross Sectional Area (sf)	0.35	0.55	
	WP (ft)	2.1	2.6	
	R (ft)	0.17	0.21	
	Velocity (ft/s)	1.68	1.95	
	TOC (min)	4.59	1.62	
TOTAL	**TOC (min)**	**12.95**	**1.62**	**14.57**

	Pre-A	**Pre-B**
Impervious (ac.)	1.07	0.00
Grass, Good Condition (ac.)	2.51	0.45
Total Area (ac)	3.58	0.45
Total Area (sq mi)	0.0056	0.0007
Weighted CN	**85**	**80**
Time of Concentration (min)	**14.6**	**5.0**
Lag Time (min)	**8.7**	**3.0**

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DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

PRELIMINARY
NOT FOR CONSTRUCTION

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/1/2025
REVISION	REV-0

PRE DEVELOPMENT DRAINAGE AREA MAP

SHEET TITLE

SHEET NUMBER

1

DRAWING LOCATION - P:\34000\34698.0\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG -- SAVED BY - SHAWLEY

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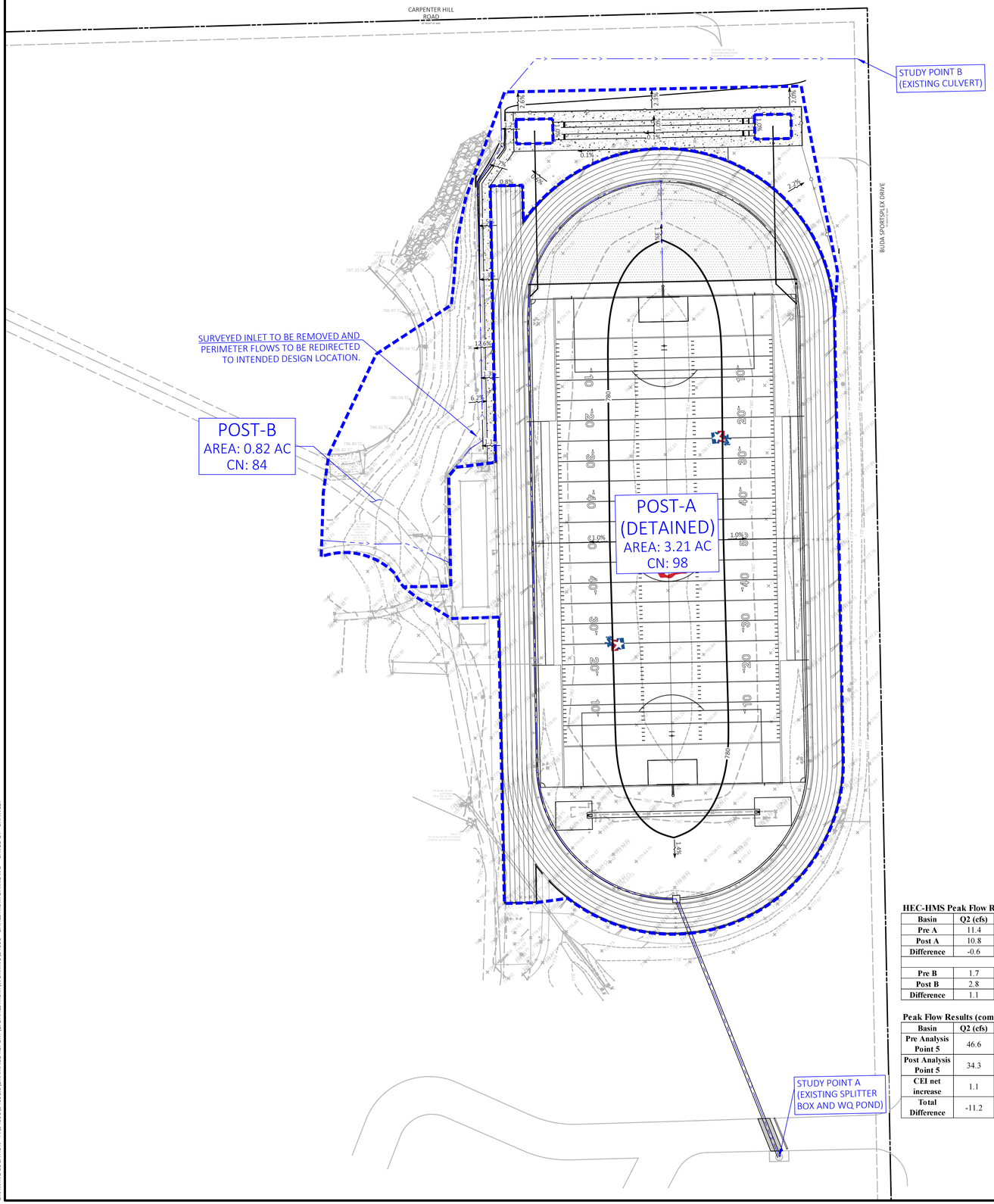
Exhibit VI

Post-Developed Drainage Map



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
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- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

PROPOSED LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- POST-DEVELOPED DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION

DRAINAGE NOTES

A. DRAINAGE CALCULATIONS PERFORMED IN ACCORDANCE WITH THE CITY OF AUSTIN DCM.

B. A MINIMUM TIME OF CONCENTRATION OF 5 MIN IS USED WHERE APPLICABLE.

C. THE FOLLOWING DOCUMENTS WERE USED AS REFERENCE IN THIS ANALYSIS:
C.A. DAHLSTROM IMPROVEMENT PLANS, DEVELOPED BY HPE ENGINEERING, DATED 6/5/2008, OBTAINED FROM TCEQ.
C.B. DAHLSTROM IMPROVEMENT PLANS, DEVELOPED BY PAPE-DAWSON, DATED 8/23/2024, OBTAINED FROM THE CITY OF BUDA.

Post-A

	Description	A	B	
SHEET	Flow Length (ft)	78		
	Land Slope (ft/ft)	0.013		
	Manning's n	0.020		
	2-yr 24-hr P (in)	4.14		
	TOC (min)	1.67		
SHALLOW	Length (ft)			
	Watercourse Slope (ft/ft)	0.008		
	Surface Description	Paved		
	TOC (min)	0.00		
CHANNEL	Flow Length (ft)	646		
	Channel Slope (ft/ft)	0.003		
	Manning's n	0.012		
	Cross Sectional Area (sf)	0.79		
	WP (ft)	3.14		
	R (ft)	0.25		
	Velocity (ft/s)	2.46		
	TOC (min)	4.37		
TOTAL	**TOC (min)**	**6.04**	**0.00**	**6.04**

Field Stage-Storage

Elevation	Volume (ac-ft)
775.50	0.000
776.50	0.054
778.58	0.098
779.21	0.313

Post-B

	Description	A	B	
SHEET	Flow Length (ft)	100		
	Land Slope (ft/ft)	0.05		
	Manning's n	0.150		
	2-yr 24-hr P (in)	4.14		
	TOC (min)	5.97		
SHALLOW	Length (ft)	632		
	Watercourse Slope (ft/ft)	0.008		
	Surface Description	Paved		
	TOC (min)	5.79		
CHANNEL	Flow Length (ft)			
	Channel Slope (ft/ft)	0.006		
	Manning's n	0.012		
	Cross Sectional Area (sf)	0.79		
	WP (ft)	3.14		
	R (ft)	0.25		
	Velocity (ft/s)	3.88		
	TOC (min)	0.00		
TOTAL	**TOC (min)**	**11.76**	**0.00**	**11.76**

HEC-HMS Peak Flow Results

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
Pre A	11.4	20.0	25.8	35.0	Track pipes outfall to WQ/detention pond to the south per as-built documents received. Turf field is considered impervious and self-treating for TSS removal.
Post A	10.8	19.8	23.3	28.2	
Difference	-0.6	-0.2	-2.5	-6.8	
Pre B	1.7	3.1	4.1	5.8	Surface runoff drains to existing culvert to the northeast. Peak flows are reduced when post-construction results are combined with adjacent development.
Post B	2.8	4.9	6.4	8.7	
Difference	1.1	1.8	2.3	2.9	

Peak Flow Results (combined with adjacent development)

Basin	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	Description
Pre Analysis Point 5	46.6	81.7	105.0	142.2	Adjacent improvement plans by Pape-Dawson Engineers proposes a significant decrease in post-development peak runoff to the northeastern culvert. When combined with CEI flows, the net peak runoff will maintain a significant reduction.
Post Analysis Point 5	34.3	62.5	77.8	93.7	
CEI net increase	1.1	1.8	2.3	2.9	
Total Difference	-11.2	-17.4	-24.9	-45.7	

	Post-A (detained)	Post-B
Impervious (ac.)	3.21	0.19
Grass, Good Condition (ac.)	0.00	0.63
Total Area (ac)	3.21	0.82
Total Area (sq mi)	0.0050	0.0013
Weighted CN	**98**	**84**
Time of Concentration (min)	**6.0**	**11.8**
Lag Time (min)	**3.6**	**7.1**

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FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
BUDA, TX

PRELIMINARY
NOT FOR CONSTRUCTION

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/31/2025
REVISION	REV-0

POST DEVELOPMENT DRAINAGE AREA MAP

SHEET TITLE

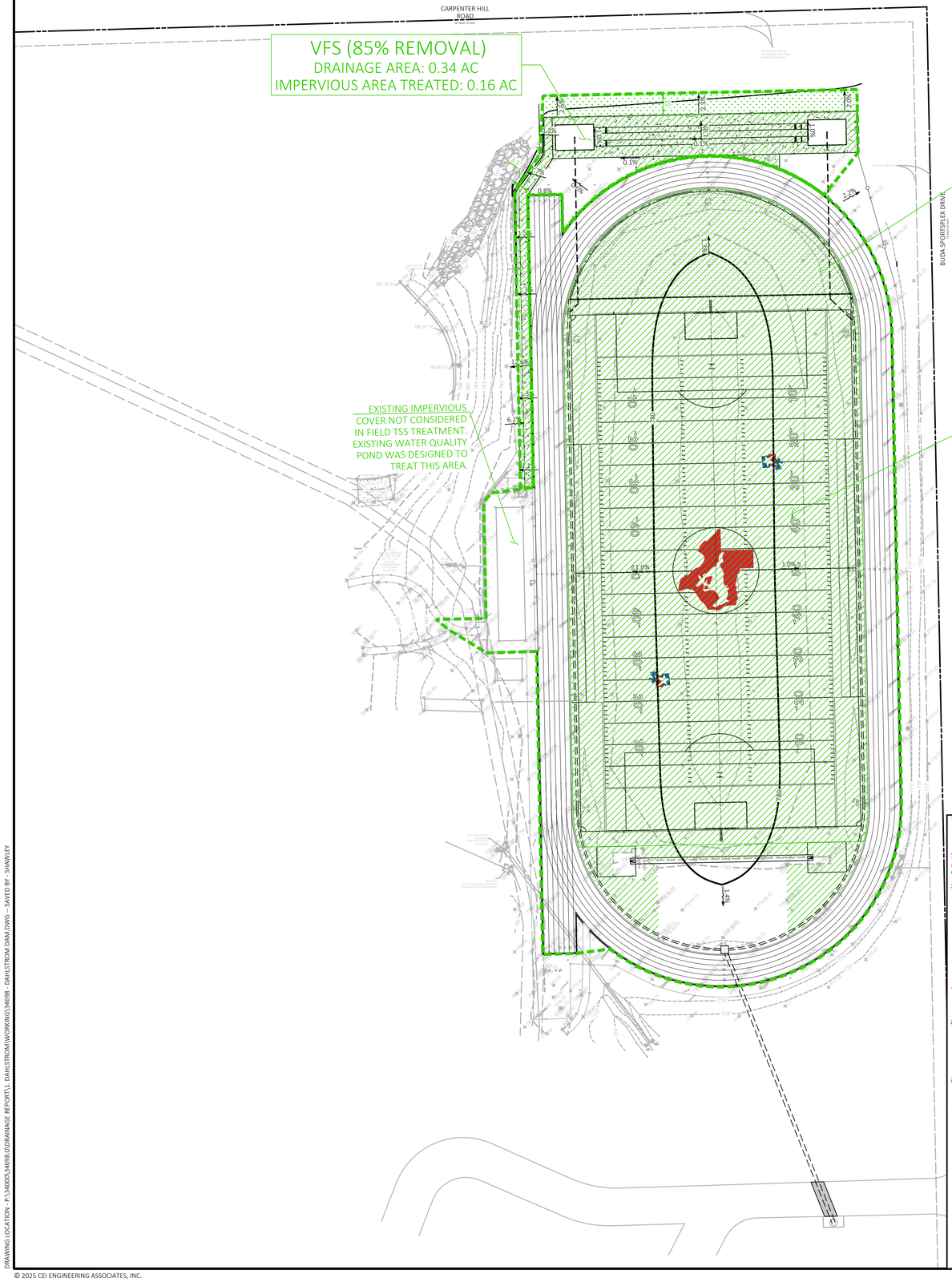
SHEET NUMBER

2

DRAWING LOCATION - P:\34000\34698.0\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG - SAVED BY - SHAWLEY

© 2025 CEI ENGINEERING ASSOCIATES, INC.

Exhibit VII
Water Quality Map



SITE BENCHMARK

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM, BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62".

0 40' 60' 80'

SCALE IN FEET

811 Know what's **below.** **Call** before you dig.

EXISTING LEGEND

- = BOUNDARY
- = RIGHT OF WAY
- = ADJOINING LOT LINES
- = EASEMENTS
- = OVERHANG
- = BURIED WATER
- = BURIED SEWER
- = BURIED STORM DRAIN
- = BURIED ELECTRIC
- = ASPHALT LIMITS
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE
- = FAULT LINES
- = FLOWLINES
- = CHAIN LINK FENCE

EXISTING LEGEND

- PROPERTY LINE/RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- BMP DRAINAGE AREA LIMITS
- LIMITS OF NEW IMPERVIOUS COVER
- LIMITS OF VEGETATED FILTER STRIP

WATER QUALITY NOTES

A. TSS REMOVAL CALULVATIONS PERFORMED IN ACCORDANCE WITH TCEQ REMOVAL REQUIREMENTS.

B. ALL VEGETATED FILTER STRIPS SHALL BE 15' WIDE UNLESS OTHERWISE SPECIFIED PER THE TABLE BELOW.

C. SYNTHETIC TURF FIELD WITH UNDERLYING CRUSHED STONE CONSIDERED SELF-TREATING FOR WATER QUALITY TSS REMOVAL REQUIREMENTS.

TCEQ SHARED USE POLICY

Shared Path Width (ft) (Direction of Flow)	Engineered VFS Width (ft)
4	2.1
6	3.1
8	4.2
10	5.2
12	6.3
14	7.3

Impervious Cover Summary

	Pre	Post
Project Study Area (ac.)	4.03	4.03
Impervious Cover (ac.)	1.07	3.40
IC %	**27%**	**84%**

TCEQ Treatment Summary

	L_{TR} (lb)*
Total TSS Load	2614
Required 80% TSS Removal Load[1]	2091
TSS Load Treated by VFS[1]	158
TSS Load Treated by Field[2]	2100
Total TSS Load Treatment Percentage	**86%**

1 - See TCEQ spreadsheet calcs
2 - New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will r

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = Turf Field

Total drainage basin/outfall area =	3.21	acres
Predevelopment impervious area within drainage basin/outfall area =	1.07	acres
Post-development impervious area within drainage basin/outfall area =	3.21	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1921	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Bioretention
Removal efficiency = 89 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_R = TSS Load removed from this

A_C =	2.30	acres
A_I =	2.30	acres
A_P =	0.00	acres
L_R =	2327	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 2100 lbs.

F = 0.90

New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
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Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan * =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = VFS

Total drainage basin/outfall area =	0.34	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.47	
$L_{M\ THIS\ BASIN}$ =	144	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x

where:
A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in t
L_R = TSS Load removed from this

A_C =	0.34	acres
A_I =	0.16	acres
A_P =	0.18	acres
L_R =	158	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 158 lbs.

F = 1.00

CEI ENGINEERING ASSOCIATES, INC.
3030 LBJ FREEWAY, SUITE 920
DALLAS, TX 75234
PHONE: (972) 488-3737
FAX: (972) 488-6732

DAHLSTROM MIDDLE SCHOOL TRACK AND TURF IMPROVEMENTS

3600 FM 967
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PRELIMINARY
NOT FOR CONSTRUCTION

F-7524

PROFESSIONAL OF RECORD	JJB
PROJECT MANAGER	ZJH
DESIGNER	SDH
CEI PROJECT NUMBER	34698
DATE	10/31/2025
REVISION	REV-0

WATER QUALITY MAP

SHEET TITLE

SHEET NUMBER

3

DRAWING LOCATION - P:\34000\34698.01\DRAINAGE REPORT\1. DAHLSTROM\WORKING\34698 - DAHLSTROM DAM.DWG - SAVED BY - SHAWLEY

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Appendix A
HEC-HMS Report

GLOBAL SUMMARIES

Global Summary Results for Run "2-yr"

Project: 34698 Dahlstrom Simulation Run: 2-yr

Start of Run: 01Jan2025, 00:00
End of Run: 02Jan2025, 00:00
Compute Time: 30Sep2025, 20:15:59

Basin Model: Basin 1
Meteorologic Model: 2-yr
Control Specifications: Control 1

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pre-B	0.0	1.7	1 January 2025, 12:05	2.15
Post-B	0.0	2.8	1 January 2025, 12:08	2.48
Pre-A	0.0	11.4	1 January 2025, 12:10	2.57
Post-A	0.0	18.1	1 January 2025, 12:05	3.89
Field A	0.0	10.8	1 January 2025, 12:10	3.89

Global Summary Results for Run "10-yr"

Project: 34698 Dahlstrom Simulation Run: 10-yr

Start of Run: 01Jan2025, 00:00
End of Run: 02Jan2025, 00:00
Compute Time: 30Sep2025, 20:13:00

Basin Model: Basin 1
Meteorologic Model: 10-yr
Control Specifications: Control 1

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pre-B	0.0	3.1	1 January 2025, 12:04	4.54
Post-B	0.0	4.9	1 January 2025, 12:08	4.98
Pre-A	0.0	20.0	1 January 2025, 12:10	5.09
Post-A	0.0	27.2	1 January 2025, 12:05	6.60
Field A	0.0	19.8	1 January 2025, 12:08	6.59

Global Summary Results for Run "25-yr"

Project: 34698 Dahlstrom Simulation Run: 25-yr

Start of Run: 01Jan2025, 00:00
End of Run: 02Jan2025, 00:00
Compute Time: 30Sep2025, 20:17:49

Basin Model: Basin 1
Meteorologic Model: 25-yr
Control Specifications: Control 1

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pre-B	0.0	4.1	1 January 2025, 12:04	6.47
Post-B	0.0	6.4	1 January 2025, 12:08	6.95
Pre-A	0.0	25.8	1 January 2025, 12:10	7.07
Post-A	0.0	33.3	1 January 2025, 12:05	8.65
Field A	0.0	23.3	1 January 2025, 12:09	8.66

Global Summary Results for Run "100-yr"

Project: 34698 Dahlstrom Simulation Run: 100-yr

Start of Run: 01Jan2025, 00:00
End of Run: 02Jan2025, 00:00
Compute Time: 30Sep2025, 20:14:03

Basin Model: Basin 1
Meteorologic Model: 100-yr
Control Specifications: Control 1

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pre-B	0.0	5.8	1 January 2025, 12:04	10.22
Post-B	0.0	8.7	1 January 2025, 12:08	10.75
Pre-A	0.0	35.0	1 January 2025, 12:10	10.88
Post-A	0.0	43.5	1 January 2025, 12:05	12.55
Field A	0.0	28.2	1 January 2025, 12:09	12.54

FIELD POND RESULTS

Summary Results for Reservoir "Field A"

Project: 34698 Dahlstrom Simulation Run: 2-yr

Reservoir: Field A

Start of Run:	01Jan2025, 00:00	Basin Model:	Basin 1
End of Run:	02Jan2025, 00:00	Meteorologic Model:	2-yr
Compute Time:	30Sep2025, 20:15:59	Control Specifications:	Control 1

Volume Units: (•) IN ( ) ACRE-FT

Computed Results

Peak Inflow:	18.1 (CFS)	Date/Time of Peak Inflow:	01Jan2025, 12:05
Peak Discharge:	10.8 (CFS)	Date/Time of Peak Discharge:	01Jan2025, 12:10
Inflow Volume:	3.89 (IN)	Peak Storage:	0.2 (ACRE-FT)
Discharge Volume:	3.89 (IN)	Peak Elevation:	778.6 (FT)

Summary Results for Reservoir "Field A"

Project: 34698 Dahlstrom Simulation Run: 10-yr

Reservoir: Field A

Start of Run:	01Jan2025, 00:00	Basin Model:	Basin 1
End of Run:	02Jan2025, 00:00	Meteorologic Model:	10-yr
Compute Time:	30Sep2025, 20:13:00	Control Specifications:	Control 1

Volume Units: (•) IN ( ) ACRE-FT

Computed Results

Peak Inflow:	27.2 (CFS)	Date/Time of Peak Inflow:	01Jan2025, 12:05
Peak Discharge:	19.8 (CFS)	Date/Time of Peak Discharge:	01Jan2025, 12:08
Inflow Volume:	6.60 (IN)	Peak Storage:	0.2 (ACRE-FT)
Discharge Volume:	6.59 (IN)	Peak Elevation:	778.7 (FT)

Summary Results for Reservoir "Field A"

Project: 34698 Dahlstrom Simulation Run: 25-yr

Reservoir: Field A

Start of Run:	01Jan2025, 00:00	Basin Model:	Basin 1
End of Run:	02Jan2025, 00:00	Meteorologic Model:	25-yr
Compute Time:	30Sep2025, 20:17:49	Control Specifications:	Control 1

Volume Units: (•) IN ( ) ACRE-FT

Computed Results

Peak Inflow:	33.3 (CFS)	Date/Time of Peak Inflow:	01Jan2025, 12:05
Peak Discharge:	23.3 (CFS)	Date/Time of Peak Discharge:	01Jan2025, 12:09
Inflow Volume:	8.65 (IN)	Peak Storage:	0.3 (ACRE-FT)
Discharge Volume:	8.66 (IN)	Peak Elevation:	778.9 (FT)

Summary Results for Reservoir "Field A"

Project: 34698 Dahlstrom Simulation Run: 100-yr

Reservoir: Field A

Start of Run:	01Jan2025, 00:00	Basin Model:	Basin 1
End of Run:	02Jan2025, 00:00	Meteorologic Model:	100-yr
Compute Time:	30Sep2025, 20:14:03	Control Specifications:	Control 1

Volume Units: (•) IN ( ) ACRE-FT

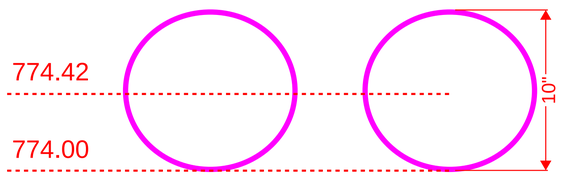
Computed Results

Peak Inflow:	43.5 (CFS)	Date/Time of Peak Inflow:	01Jan2025, 12:05
Peak Discharge:	28.2 (CFS)	Date/Time of Peak Discharge:	01Jan2025, 12:09
Inflow Volume:	12.55 (IN)	Peak Storage:	0.3 (ACRE-FT)
Discharge Volume:	12.54 (IN)	Peak Elevation:	779.2 (FT)

FIELD POND OUTLET STRUCTURE

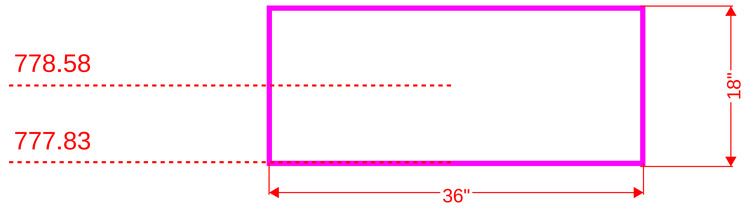
Basin Name: Basin 1
Element Name: Field A

Method:	Orifice Outlet
Direction:	Main
Number Barrels:	2
Center Elevation (FT)	774.42
Area (FT2)	0.55
Coefficient:	0.6



Basin Name: Basin 1
Element Name: Field A

Method:	Orifice Outlet
Direction:	Main
Number Barrels:	1
Center Elevation (FT)	778.58
Area (FT2)	4.5
Coefficient:	0.6



Appendix B
TCEQ Water Quality Calculations

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

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P = Average annual precipitation

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

County =	Hays	
Total project area included in plan * =	4.03	acres
Predevelopment impervious area within the limits of the plan * =	1.07	acres
Total post-development impervious area within the limits of the plan* =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **2091** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

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

Drainage Basin/Outfall Area No. = **Turf Field**

Total drainage basin/outfall area =	3.21	acres
Predevelopment impervious area within drainage basin/outfall area =	1.07	acres
Post-development impervious area within drainage basin/outfall area =	3.21	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1921	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Bioretention**
Removal efficiency = **89** percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 3

where:

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

A_C =	**2.30**	acres
A_I =	**2.30**	acres
A_P =	**0.00**	acres
L_R =	**2337**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **2100** lbs.

F = **0.90**

New field cover consists of 2.06 ac of self treating turf (0.24 ac D-zone not included in field treatment). Therefore a removal rate of approximately 90% was used for the new field IC area.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

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Total post-development impervious area within the limits of the plan* =	3.40	acres
Total post-development impervious cover fraction * =	0.84	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	2091	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = VFS

Total drainage basin/outfall area =	0.34	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.47	
$L_{M\ THIS\ BASIN}$ =	144	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 3

where:

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

A_C =	**0.34**	acres
A_I =	**0.16**	acres
A_P =	**0.18**	acres
L_R =	**158**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **158** lbs.

F = **1.00**

Appendix C
2008 Existing Civil Improvement Plans

SITE DEVELOPMENT PLANS
FOR
DAHLSTROM MIDDLE SCHOOL
SITE IMPROVEMENTS
3600 F M 967, BUDA, TEXAS

ORIGINAL

RECEIVED
JUN 12 2008
TCEQ FIELD OPERATIONS
AUSTIN REGION 11

OWNER: HAYS C.I.S.D.
21003 I.H. 35
KYLE, TEXAS 78640
512.268.2141

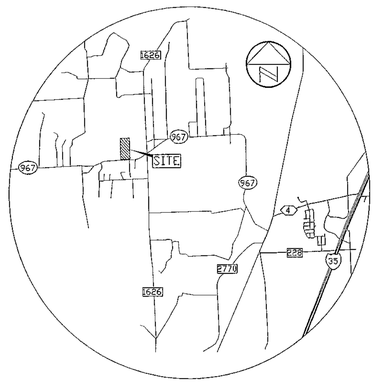
ENGINEER: HANRAHAN • PRITCHARD ENGINEERING, INC.
8333 CROSS PARK DRIVE
AUSTIN, TEXAS 78754
512.459.4734

SURVEYOR: BASELINE LAND SURVEYORS
8333 CROSS PARK DRIVE
AUSTIN, TEXAS 78754
512.374.9722

FLOOD PLAIN NOTE:
NO PORTION OF THIS PROJECT IS LOCATED WITHIN A FEMA 100 YEAR FLOOD PLAIN, A CWQZ, OR A WQTZ. (REFERENCE FEMA MAP PANEL NO. 48209C0260 F, REVISED SEPTEMBER 2, 2005).

EDWARDS AQUIFER NOTES:
THIS PROJECT IS LOCATED IN THE EDWARDS AQUIFER RECHARGE ZONE

CITY LIMITS NOTES:
THIS PROJECT IS LOCATED WITHIN THE BUDA CITY LIMITS.



VICINITY MAP
NOT TO SCALE

INDEX OF SHEETS

1. COVER SHEET
2. GENERAL NOTES AND DETAILS
3. EXISTING CONDITIONS/DEMO PLAN
4. SITE PLAN
5. EROSION/SEDIMENTATION CONTROL
6. EXISTING DRAINAGE CONDITIONS
7. GRADING PLAN
8. PROPOSED DRAINAGE CONDITIONS
9. STORM SEWER PLAN
10. WATER QUALITY AND DETENTION POND DETAILS

REVISIONS

No.	Description	Revise(R)/ Add(A) Sheet No.'s	Total # Sheets in Plan Set	Net Change Imp. Cover	Site Imp. Cover	% Site Imp. Cover	Approved/Date

RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.

The seal appearing on this document was authorized by Stephen Ray Jamison on 6/5, 2008.

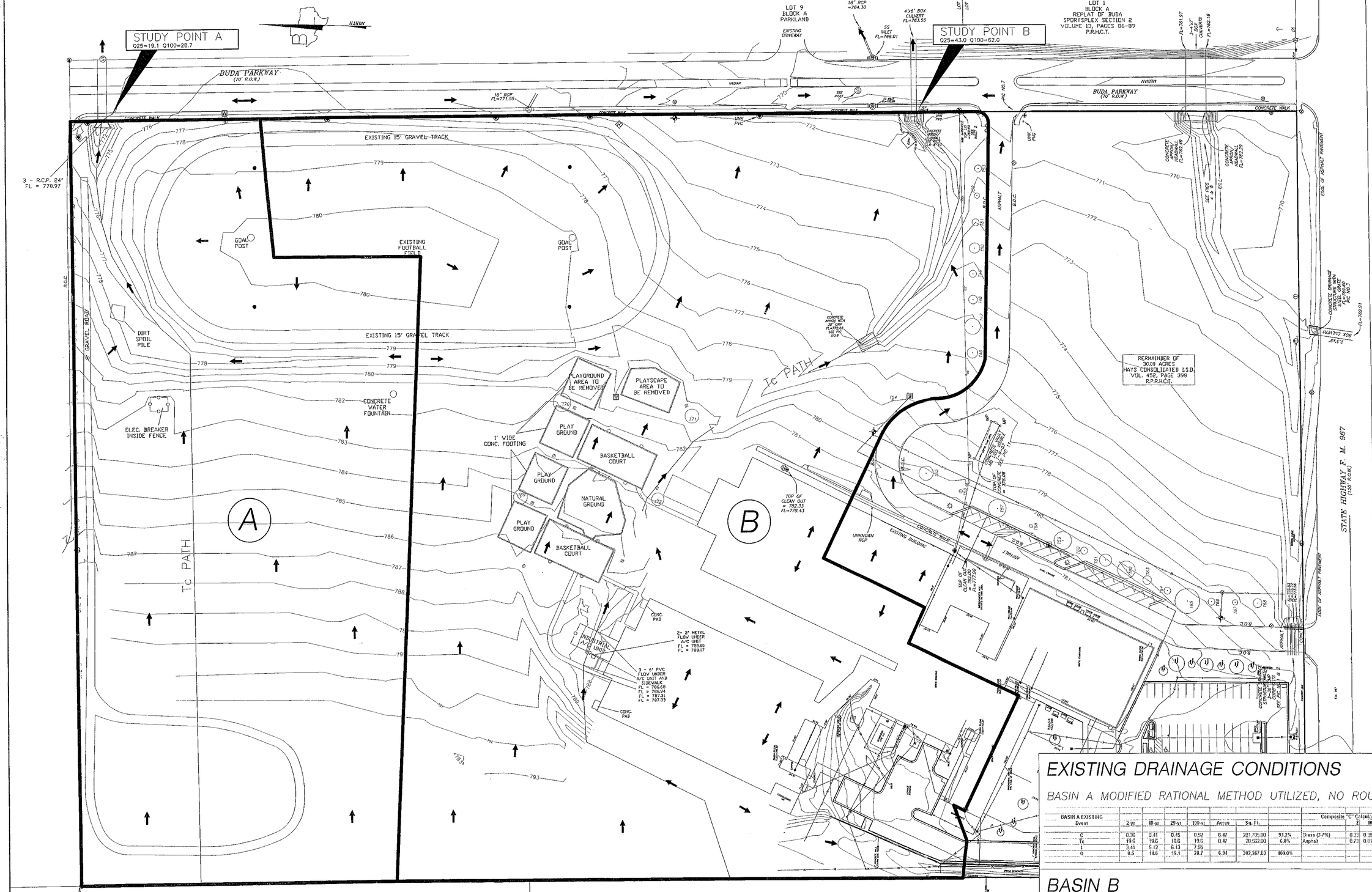
SUBMITTED BY: _____ 6/5/08
STEPHEN RAY JAMISON, P.E. — DATE
HANRAHAN • PRITCHARD ENGINEERING, INC.
8333 CROSS PARK DRIVE
AUSTIN, TEXAS 78754
512.459.4734

STATE OF TEXAS
STEPHEN RAY JAMISON
86951
LICENSED PROFESSIONAL ENGINEER

REVIEWED BY: _____
CITY OF BUDA — DATE

HANRAHAN • PRITCHARD ENGINEERING, INC.
CONSULTING ENGINEERS
8333 CROSS PARK DRIVE
AUSTIN, TEXAS 78754
OFFICE: 512.459.4734 FAX: 512.459.4752
mail@hp-eng.com

HPE



EXISTING DRAINAGE CONDITIONS

BASIN A MODIFIED RATIONAL METHOD UTILIZED, NO ROUTING

BASIN A EXISTING Event	2-yr	10-yr	25-yr	100-yr	Acres	Sq. Ft.			Composite "C" Calculations 2	10	25	100
C	0.35	0.41	0.45	0.52	6.47	281,705.00	93.2%	Grass (2-7%)	0.33	0.39	0.42	0.49
Tc	19.6	19.6	19.6	19.6	0.47	20,552.00	6.8%	Asphalt	0.73	0.81	0.86	0.95
I	3.41	5.12	6.13	7.56								
Q	6.5	14.6	19.1	28.7	6.94	302,257.00	100.0%					

BASIN B

DRAINAGE AREA=0.020 SQ.MI.	Q2=	12 CFS
Cn=79	Q10=	31 CFS
Tlag=0.30 HR.	Q25=	43 CFS
	Q100=	62 CFS

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HPE

DAHLSTROM MIDDLE SCHOOL
SITE IMPROVEMENTS
EXISTING DRAINAGE CONDITIONS

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STATE OF TEXAS
STEPHEN RAY JAMISON
86951
LICENSED PROFESSIONAL ENGINEER

File: Projects/ DAHLSTROM/HPE-BASE2 | Snapshot: EXIST DRAIN
Job No. 139-01 | Scale (Vert): N/A
Scale (Hor): 1"=50' | Drawn By: RP
Date: 06/04/08 | Checked By: SRJ
Revision 1:
Revision 2:
Revision 3:
Revision 4:

SHEET
06 of 10

CAUTION!
CONTRACTOR SHALL LOCATE ALL UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO ANY SITE WORK BEING DONE. THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGE TO ANY UTILITY OR PROJECTS THAT MAY ARISE.

SHEET 07 of 10

File: Projects/ DAHLSTROM/HPE-BASE2			
Job No. 139-01		Snapshot: GRADING	
Scale (Hor.): 1"=50'		Scale (Vert.): N/A	
Date: 06/04/08	Checked By: SRJ		Drawn By: RP
Revision 1:			
Revision 2:			
Revision 3:			
Revision 4:			

STATE OF TEXAS — STEPHEN RAY JARRISON — 89951 — LICENSED PROFESSIONAL ENGINEER

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DAHLSTROM MIDDLE SCHOOL
SITE IMPROVEMENTS
GRADING PLAN

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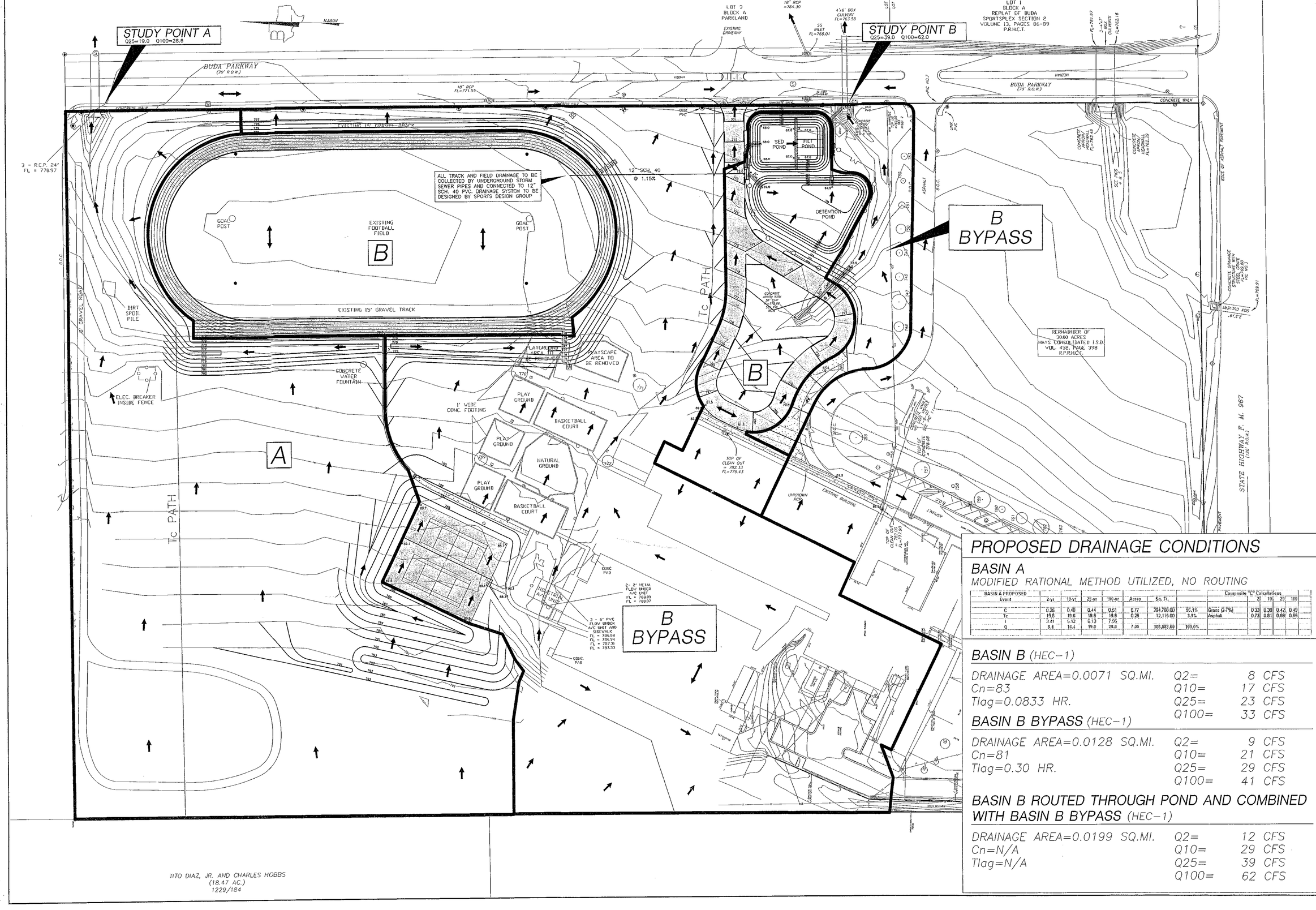

PROPOSED DRAINAGE CONDITIONS

BASIN A

MODIFIED RATIONAL METHOD UTILIZED, NO ROUTING

BASIN A PROPOSED Event	2-yr	10-yr	25-yr	100-yr	Acres	Sq. Ft.			Composite "C" Calculations 2	10	25	100
C	0.36	0.40	0.44	0.51	5.77	294,788.00	96.1%	Grass (2-7%)	0.33	0.39	0.42	0.49
Tc	19.6	19.6	19.6	19.6	0.28	12,116.00	3.9%	Asphalt	0.73	0.81	0.88	0.95
I	3.41	5.12	6.13	7.95								
Q	8.4	14.4	19.0	28.6	7.05	306,883.60	100.0%					

BASIN B *(HEC-1)*

DRAINAGE AREA=0.0071 SQ.MI.	*Q2=*	*8 CFS*
Cn=83	*Q10=*	*17 CFS*
Tlag=0.0833 HR.	*Q25=*	*23 CFS*
	Q100=	*33 CFS*

BASIN B BYPASS *(HEC-1)*

DRAINAGE AREA=0.0128 SQ.MI.	*Q2=*	*9 CFS*
Cn=81	*Q10=*	*21 CFS*
Tlag=0.30 HR.	*Q25=*	*29 CFS*
	Q100=	*41 CFS*

BASIN B ROUTED THROUGH POND AND COMBINED WITH BASIN B BYPASS *(HEC-1)*

DRAINAGE AREA=0.0199 SQ.MI.	*Q2=*	*12 CFS*
Cn=N/A	*Q10=*	*29 CFS*
Tlag=N/A	*Q25=*	*39 CFS*
	Q100=	*62 CFS*

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DAHLSTROM MIDDLE SCHOOL
SITE IMPROVEMENTS
PROPOSED DRAINAGE CONDITIONS

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STATE OF TEXAS
STEPHEN RAY JAMISON
86951
LICENSED PROFESSIONAL ENGINEER

File: Projects/	DAHLSTROM/HPE-BASE2
Job No. 139-01	Snapshot: PRO DRAIN
Scale (Hor.): 1"=50'	Scale (Vert.): N/A
Date: 06/04/08	Checked By: SRJ | Drawn By: RP
Revision 1:	
Revision 2:	
Revision 3:	
Revision 4:	

SHEET
08 of 10

2+16.66 END 12" SCH. 40 PVC
REFER TO TRACK AND FIELD PLANS
FOR CONTINUATION, F.L.=772.00

12" SCH. 40
@ 1.15%

0+00 BEGIN 12" SCH. 40
PVC, TIE TO SPLITTER BOX
F.L.=769.50

0+42.68 END 24" RCP
CONNECT TO SPLITTER
BOX, F.L.=769.50

0+11.09 45° BEND
LT, F.L.=768.39

0+19.45 45° BEND
LT, F.L.=768.68

0+00 BEGIN 24" RCP
CONSTRUCT 3:1 CONCRETE
RIP-RAP, F.L.=768.00

0+22.33 END 24" RCP
CONNECT TO SPLITTER
BOX, F.L.=769.50

0+00 BEGIN 24" RCP
CONSTRUCT 3:1 CONCRETE
RIP-RAP, F.L.=769.00

SED.
POND

FILT.
POND

DETENTION
POND

24" RCP @3.31%

0+18.53 45° BEND
LT, F.L.=764.81

0+00 BEGIN 24" RCP, TIE
TO EXISTING CONCRETE RIP-RAP
INLET STRUCTURE. REMOVE AND
REPLACE CONCRETE, F.L.=764.20

0+99.73 END 24" RCP, INSTALL
DETENTION POND OUTLET STRUCTURE
F.L.=767.50

0+00 BEGIN 30" CMP
CONSTRUCT 5:1 CONCRETE
RIP-RAP, F.L.=772.00

30" CMP
@ 0.74%

0+88.97 END 30" CMP
TIE TO EXISTING 30" CMP
F.L.=772.66

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DAHLSTROM MIDDLE SCHOOL
SITE IMPROVEMENTS
STORM SEWER PLAN

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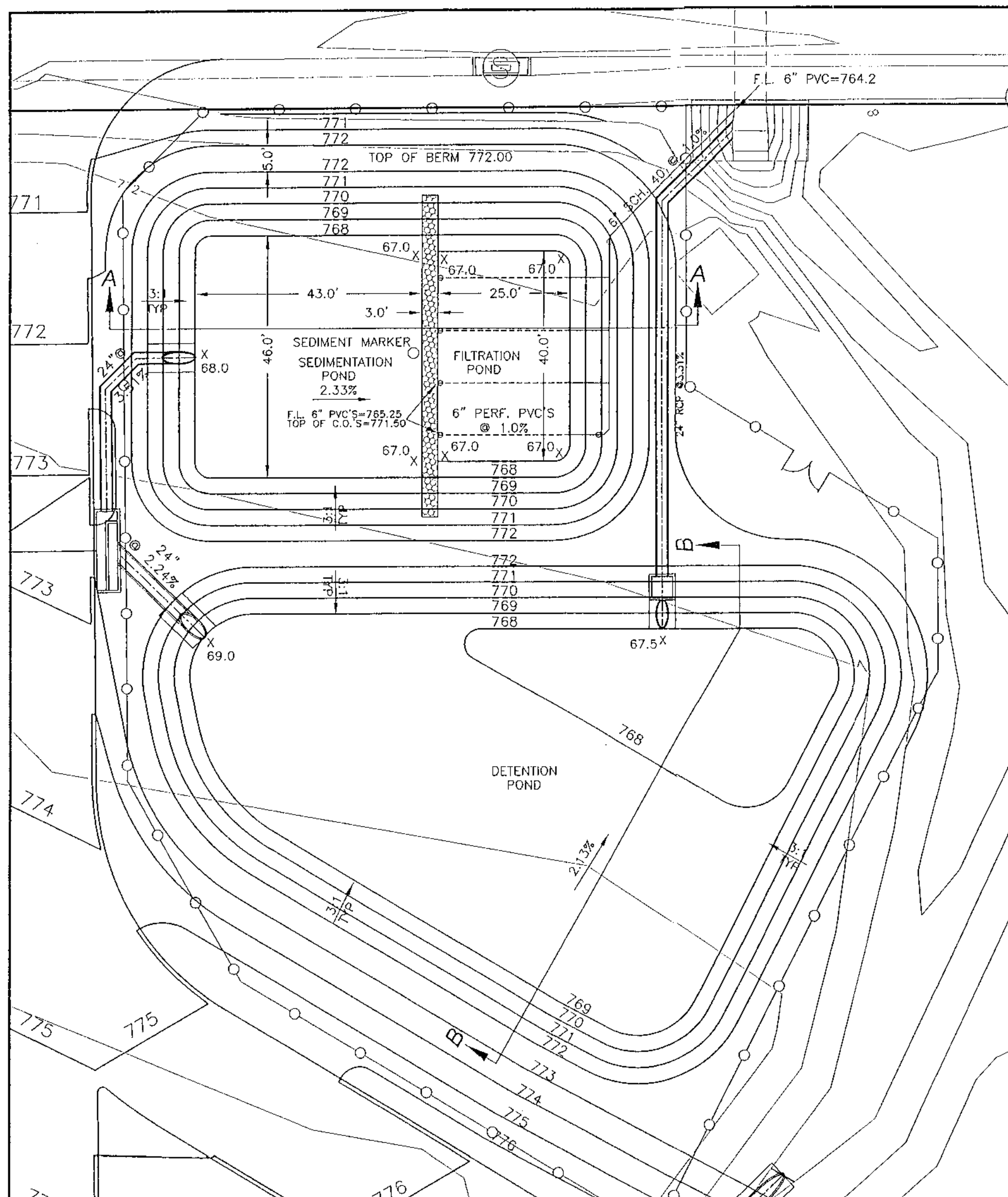
File: Projects/	DAHLSTROM/HPE-BASE2
Job No. 139-01	Snapshot: SS
Scale (Hor.): 1"=50'	Scale (Vert.): N/A
Date: 06/04/08	Checked By: SRJ | Drawn By: RP
Revision 1:	
Revision 2:	
Revision 3:	
Revision 4:	

SHEET
09 of 10

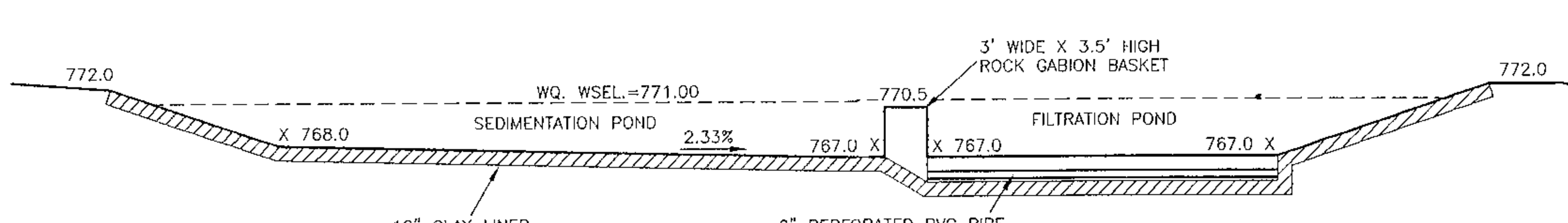


WATER QUALITY AND DETENTION POND

DRAINAGE MATTING SPECIFICATIONS			
PROPERTY	TEST METHOD	UNIT	SPECS.
MATERIAL	NONWOVEN GEOTEXTILE FABRIC		
UNIT WEIGHT		OZ/SQ.YD.	20
FLOW RATE (fabric)		GPM/FT²	180 (MIN.)
PERMEABILITY	ASTM D-2434	Cm/Sec	12.4×10^{-2}
GRAB STRENGTH (fabric)	ASTM D-1682	Lb.	DRY LG. 90 DRY WD. 70 WET LG. 95 WET WD 70
PUNCTURE STRENGTH (fabric)	COE CW-02215	Lb.	42 (MIN.)
MULLEN BURST STRENGTH	ASTM D-1117	Psi.	140 (MIN.)
EQUIV. OPENING SIZE	US STANDARD SIEVE	No.	100 (70-120)
FLOW RATE (drainage core)	DREXEL UNIV. TEST METHOD	Gpm/ft. Width	14

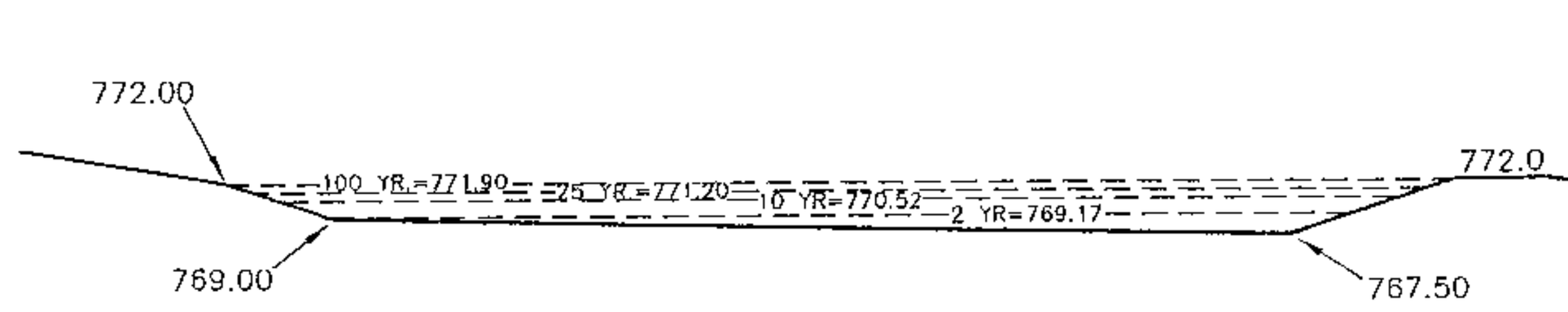
GEOTEXTILE FABRIC SPECIFICATIONS			
PROPERTY	TEST METHOD	UNIT	SPECS.
MATERIAL	NONWOVEN GEOTEXTILE		
UNIT WEIGHT		OZ/SQ.YD.	8 (MIN.)
FILTRATION RATE		IN/SEC	0.08 (MIN.)
PUNCTURE STRENGTH	ASTM D-751(MOD.)	LB.	125 (MIN.)
MULLEN BURST STRENGTH	ASTM D-751	PSI.	400 (MIN.)
TENSILE STRENGTH	ASTM D-1682	LB.	200 (MIN.)
EQUIV. OPENING SIZE	US STANDARD SIEVE	NO.	80 (MIN.)

CLAY LINER SPECIFICATIONS			
Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	Cm/Sec	1 x 10⁻⁸
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density



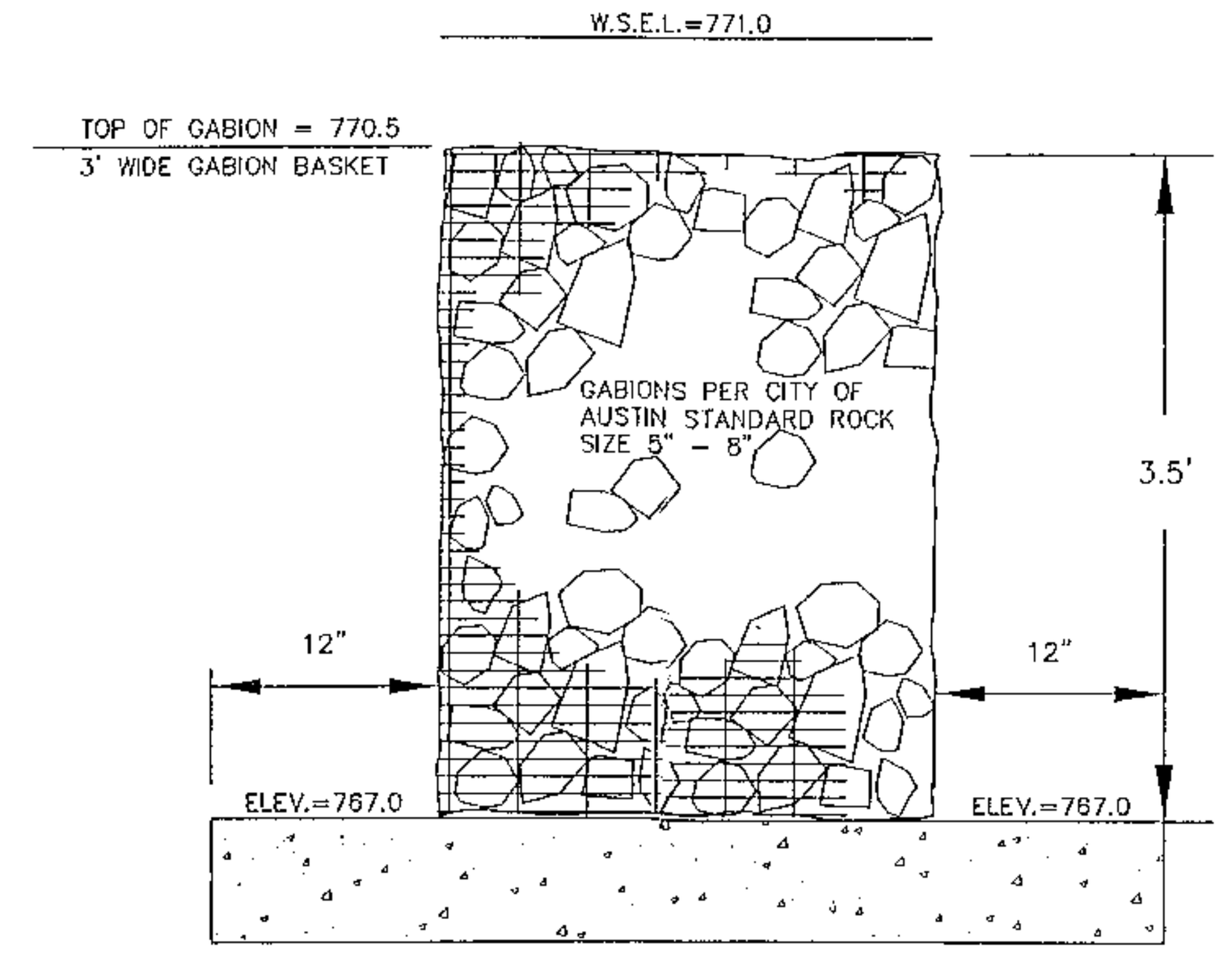
WATER QUALITY POND SECTION A-A

SCALE: 1"=10' HORIZ.
1"=10' VERT.



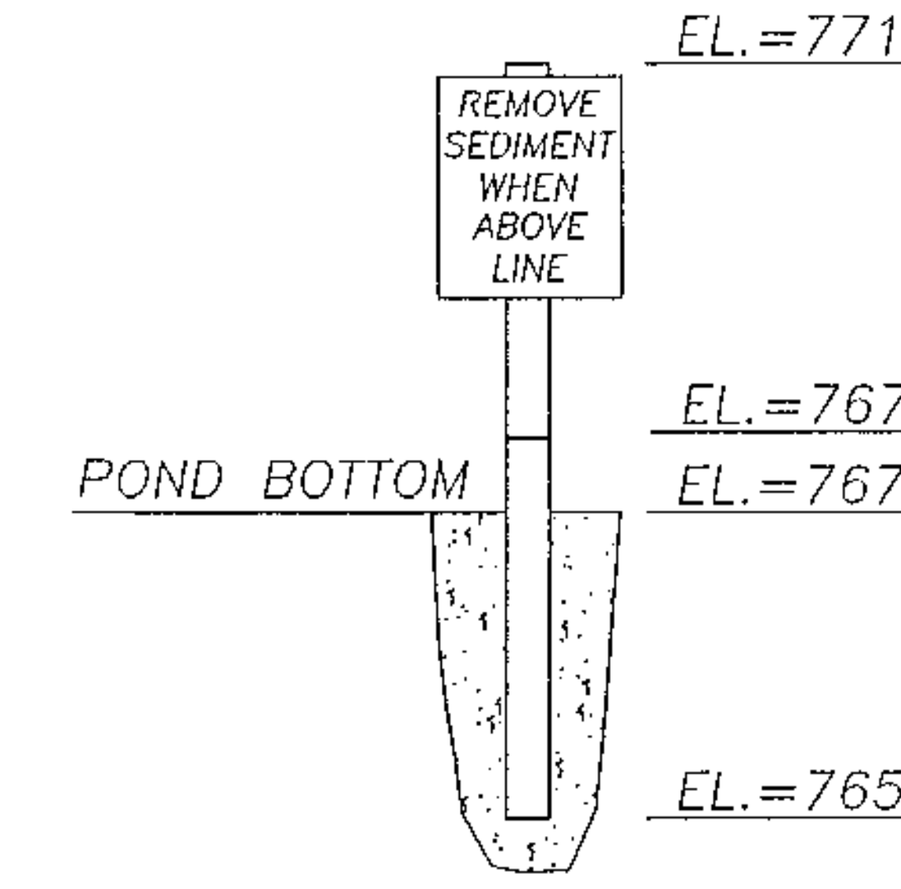
DETENTION POND SECTION B-B

SCALE: 1"=10' HORIZ.
1"=10' VERT.



GABION BASKET WALL DETAIL

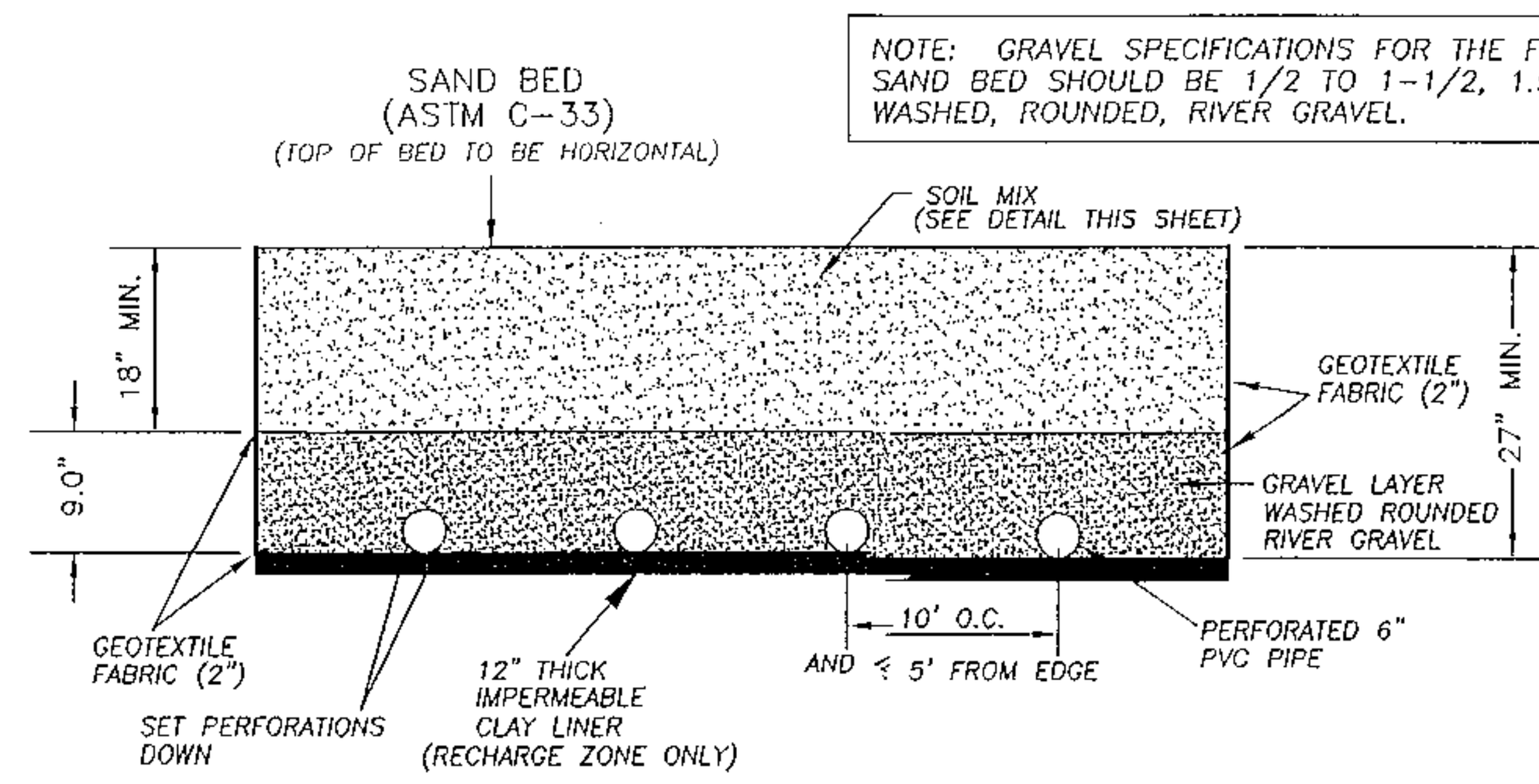
N.T.S.

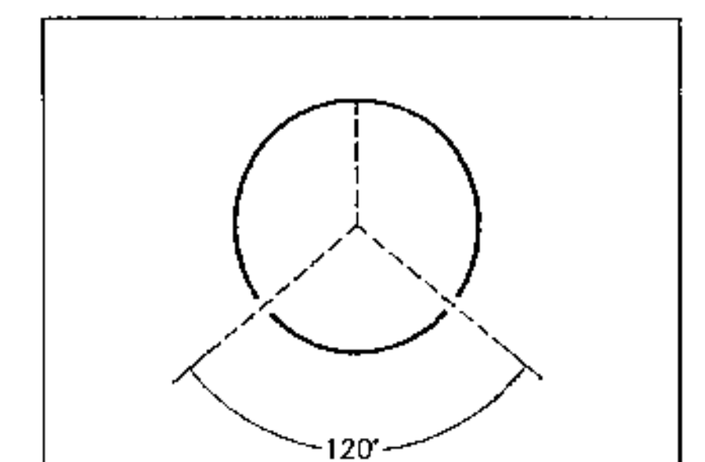


SEDIMENT MARKER

N.T.S.

NOTE: GRAVEL SPECIFICATIONS FOR THE FILTRATION POND SAND BED SHOULD BE 1/2 TO 1-1/2, 1.5" DIAMETER WASHED, ROUNDED, RIVER GRAVEL.





PERFERATION LAYOUT

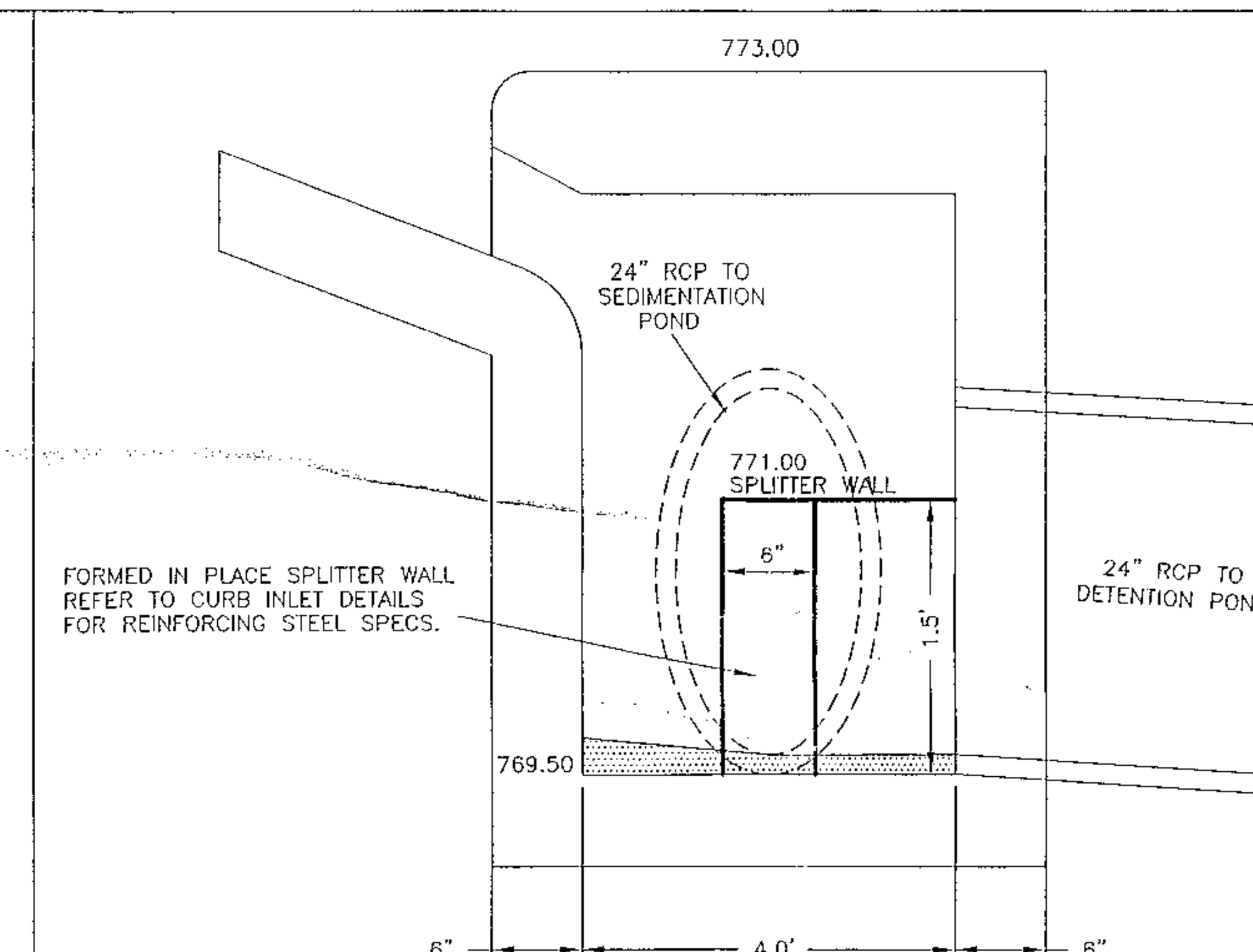
SAND BED AND GEOTEXTILE FABRIC

FIRST (TOP) LAYER- FINE SAND, 0.02-0.04 INCH, AT LEAST 21 INCH TO 27 INCH DEPTH - (ASTM C-33) CONCRETE SAND (SMALLER SAND SIZE IS NOT ACCEPTABLE).

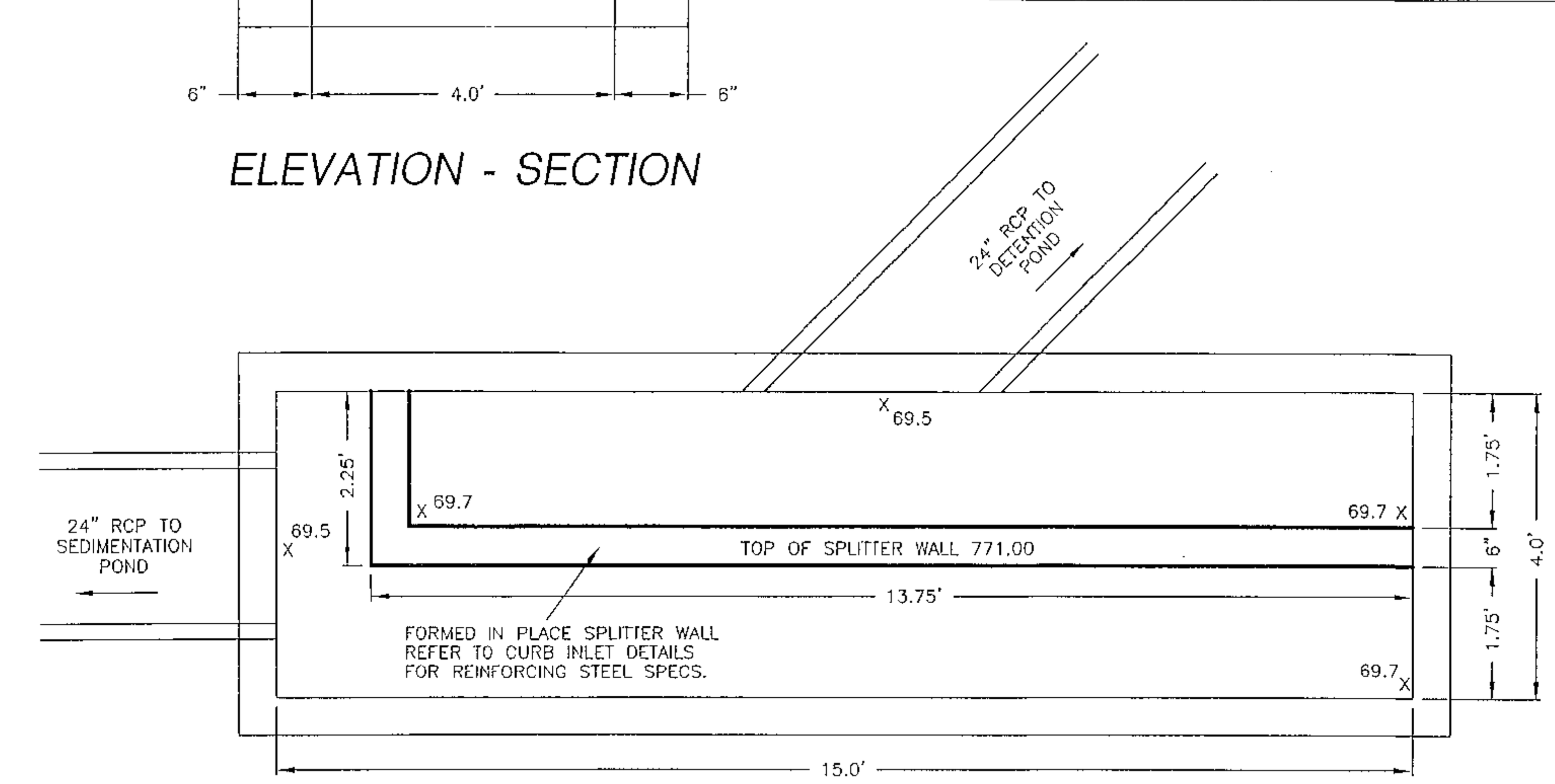
SECOND LAYER- WASHED RIVER GRAVEL, 1/2-1 INCH, AT LEAST 1 INCH DEPTH TO 2 INCH DEPTH SURROUNDING UNDERDRAIN PIPING

THE TWO LAYERS MUST BE SEPERATED FROM EACH OTHER USING SUITABLE GEOTEXTILE FABRIC MEETING THE FOLLOWING SPECIFICATIONS:

FILTRATION POND SAND BED W/ GEOTEXTILE FABRIC



ELEVATION - SECTION



WATER QUALITY SPLITTER STRUCTURE

N.T.S.

NOTE:
SEE CURB INLET DETAIL FOR ALL OTHER DIMENSIONS AND REINFORCING STEEL REQUIREMENTS. THIS SPLITTER BOX IS SIZED BASED ON A 15' INLET WITH 24" PIPES.

BUDA WATER QUALITY CALCULATIONS

Appendix R-3
Partial Sedimentration / Filtration Pond Calculations
For Development Permits

Drainage Area Data

Drainage Area to Control	4.52	ac.
Drainage Area Impervious Cover (IC)	32.5	%
Additional Capture Required (enter 1 for yes)	0	
Capture Depth (CD)(0.5" + ((IC-20)/100))	0.50	in.

Water Quality Control Calculations

Pond # Pond B
The Water Quality Control is to be PARTIAL Sedimentation/Filtration

	Required	Provided	
Site Area Draining to Pond		4.52	ac.
Total Area Draining to the Pond		4.52	ac.
Design Peak Flow Rate (Q100) (Rational Formula)		33.80	cfs.
Water Quality Volume (CD*area)	8204	15533	cf.
Sedimentation Pond Area	1309	1978	sf.
Sedimentation Pond Volume (=> 20% WQV)	1641	8537	cf.
Filtration Pond Area (WQV/18)	820	1000	sf.
Filtration Pond Volume	NA	6544	cf.
Water Quality Elevation		771.00	ft. msl
Elevation of Splitter/Overflow Weir (> WQ elev)		771.00	ft. msl
Elevation of Top of Gabion Wall (WQ elev. -0.5)		770.50	ft. msl
Length of Splitter Weir Required		15.00	ft.
Length of Splitter Weir Provided		15.00	ft.
Required Head to Pass the Design Flow (100 year)		1.00	ft.
Sedimentation Pond Freeboard Provided to Pass Design Flow		1.00	ft.

Sedimentation Pond:

Elevation Ft. msl	Depth Ft.	Area S.F.	Area Ac.	Avg. Area S.F.	Inc. Vol. C.F.	Total Vol. C.F.
767.00	0.00	-	-		-	
768.00	1.00	1,978	0.05	989	659	659
769.00	1.00	2,392	0.05	2,185	2,182	2,841
770.00	1.00	2,842	0.07	2,617	2,614	5,455
771.00	1.00	3,328	0.08	3,085	3,082	8,537
772.00	1.00	3,850	0.09	3,589	3,586	12,123

Filtration Pond:

Elevation Ft. msl	Depth Ft.	Area S.F.	Area Ac.	Avg. Area S.F.	Inc. Vol. C.F.	Total Vol. C.F.		
767.00	-	1,000	-		-	-	767.00	0
768.00	1.00	1,288	0.03	1,144	1,141	1,141	768.00	1800
769.00	1.00	1,612	0.04	1,450	1,447	2,588	769.00	5429
770.00	1.00	1,972	0.05	1,792	1,789	4,377	770.00	9832
771.00	1.00	2,368	0.05	2,170	2,167	6,544	771.00	15081
772.00	1.00	2,800	0.06	2,584	2,581	9,125	772.00	21248

Required Volume = 8204
Elevation = 769.50

Given Elevation = 771.00
Provided Volume = 15533

Weir to Water Quality Pond Calculation Summary

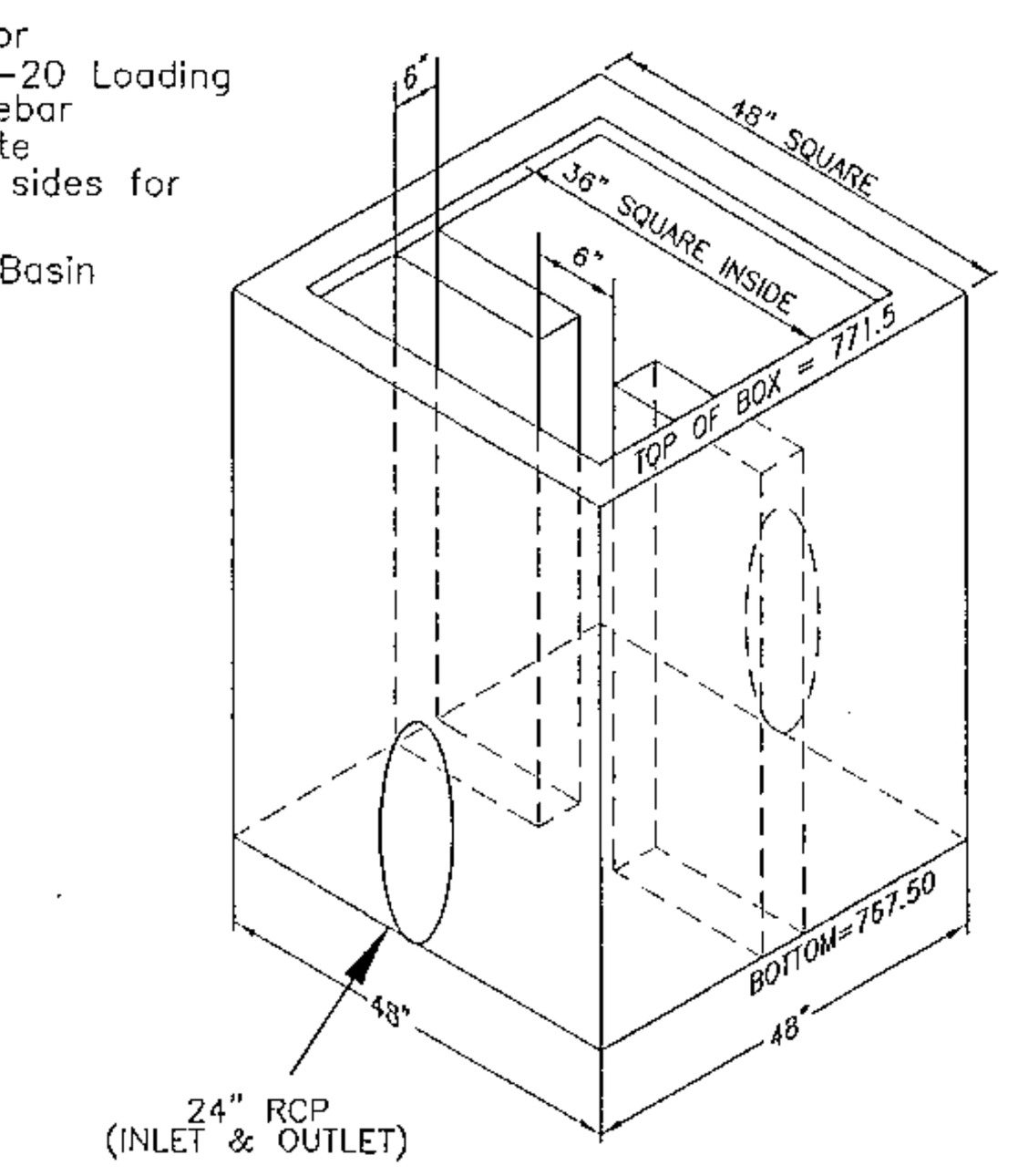
Width of Opening =	15 ft
Height of Opening =	1 ft
Flow @ Height =	45.0 cfs

ORIGINAL DRAWING BY:
HILL COUNTRY CONCRETE PRODUCTS INC.
P.O. BOX 357 KYLE, TX. 78640 (512) 268-9711
AUSTIN PHONE (512) 476-5838

3'X3' GRATE INLET OUTLET STRUCTURE
N.T.S.

STANDARD FEATURES

6" Walls and Floor
Reinforced for H-20 Loading with Grade 80 Rebar
4500 PSI Concrete
* Knockouts in all sides for Up to 27" R.C.P.
2" Lift Holes in Basin
HS-20 Loading



DETENTION POND OUTLET STRUCTURE

TCEQ WATER QUALITY CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 02-20-2008

Project Name: DAHLSTROM MIDDLE SCHOOL
Date Prepared: 5/28/2008

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

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project
County = HAYS
Total project area included in plan * = 19.72 acres
Predevelopment impervious area within the limits of the plan * = 3.38 acres
Total post-development impervious area within the limits of the plan * = 4.38 acres
Total post-development impervious cover fraction * = 0.22
P = 33 inches

$L_{M\ TOTAL\ PROJECT}$ = 898 lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = A
Total drainage basin/outfall area = 7.06 acres
Predevelopment impervious area within drainage basin/outfall area = 0.47 acres
Post-development impervious area within drainage basin/outfall area = 0.28 acres
Post-development impervious fraction within drainage basin/outfall area = 0.04
$L_{M\ THIS\ BASIN}$ = -171 lbs.

Drainage Basin/Outfall Area No. = B
Total drainage basin/outfall area = 4.52 acres
Predevelopment impervious area within drainage basin/outfall area = 0.70 acres
Post-development impervious area within drainage basin/outfall area = 1.47 acres
Post-development impervious fraction within drainage basin/outfall area = 0.04
$L_{M\ THIS\ BASIN}$ = 691 lbs.

Drainage Basin/Outfall Area No. = B-BYPASS
Total drainage basin/outfall area = 8.15 acres
Predevelopment impervious area within drainage basin/outfall area = 2.59 acres
Post-development impervious area within drainage basin/outfall area = 2.63 acres
Post-development impervious fraction within drainage basin/outfall area = 0.04
$L_{M\ THIS\ BASIN}$ = 36 lbs.

$L_{M\ TOTAL}$ = 727 (898 - 171 = 727)

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = SF abbreviation
Removal efficiency = 89 percent

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

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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

A_C = 4.52 acres
A_I = 1.47 acres
A_P = 3.05 acres
L_R = 1642 lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 727 lbs.
F = 0.47

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

Rainfall Depth = 0.38 inches
Post Development Runoff Coefficient = 0.27
On-site Water Quality Volume = 1702 cubic feet

Calculations from RG-348 Pages 3-36 to 3-37
Off-site area draining to BMP = 0.00 acres
Off-site impervious cover draining to BMP = 0.00 acres
Impervious fraction of off-site area = 0
Off-site Runoff Coefficient = 0.00
Off-site Water Quality Volume = 0 cubic feet

Storage for Sediment = 340
Total Capture Volume (required water quality volume(s) x 1.20) = 2042 cubic feet
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C53 will show NA.

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

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:
Soil infiltration/permeability rate = 0.1 in/hr Enter determined permeability rate or assumed value of 0.1
Irrigation area = NA square feet
NA acres

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

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

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin = 2042 cubic feet
Minimum filter basin area = 95 square feet
Maximum sedimentation basin area = 851 square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = 213 square feet For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = 2042 cubic feet
Minimum filter basin area = 170 square feet
Maximum sedimentation basin area = 681 square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = 43 square feet For maximum water depth of 8 feet

CAUTION !
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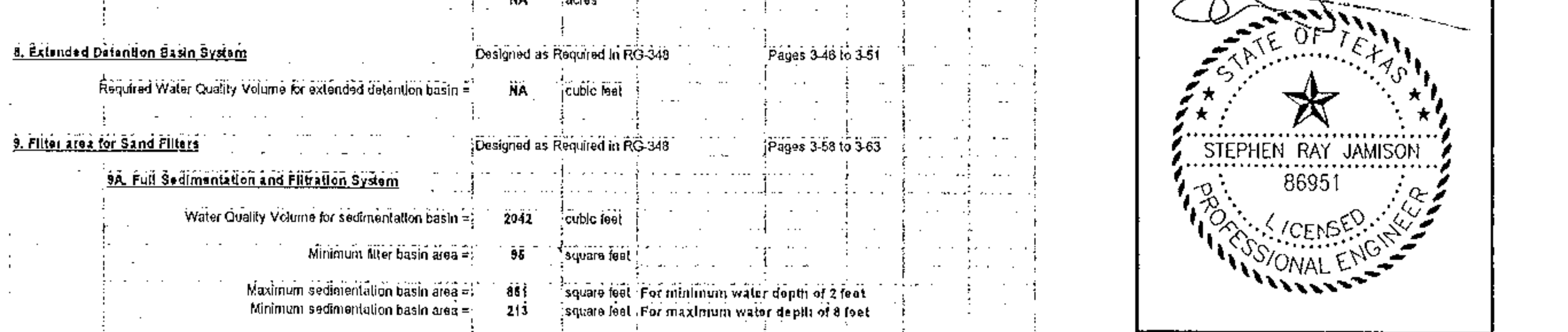
DAHLSTROM MIDDLE SCHOOL
WATER QUALITY AND DETENTION
POND DETAILS

The seal appearing on this document was authorized by Stephen Ray Jamison on 6/11 2008



File: Projects/ DAHLSTROM/HPE-BASE2
Job No. 139-01 | Snapshot: POND
Scale (Hor.): 1"=10' | Scale (Vert.): 1"=10'
Date: 06/03/08 | Checked By: SRJ | Drawn By: RP
Revision 1:
Revision 2:
Revision 3:
Revision 4:

Appendix D
2024 Existing Civil Improvement Plans

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REVISIONS				
No.	Revision Description	Prepared by: (Date)	Reviewed by: (Date)	

C1
014

EXISTING TIME OF CONCENTRATION

	SHEET FLOW				SHALLOW CONCENTRATED FLOW				CHANNEL FLOW			TIME OF CONC	LAG TIME
Area	Length (ft)	n	Slope	Tc (min)	Length (ft)	Paved? (Y or N)	Slope	Tc (min)	V (FT/S)	Length (ft)	Tc (min)		
A + OFEISTE A	100	0.150	2.00%	9.45	2234	N	3.50%	12.34	6	271	0.75	22.54	13.52
D+E+F+G+H+J+K+L	100	0.150	1.00%	12.47	426	N	2.16%	3.01	6	309	0.86	16.34	9.80
I	100	0.016	2.00%	1.58	311	N	3.05%	1.84				5.00	3.00

C1
014

Dahlstrom - Existing Conditions

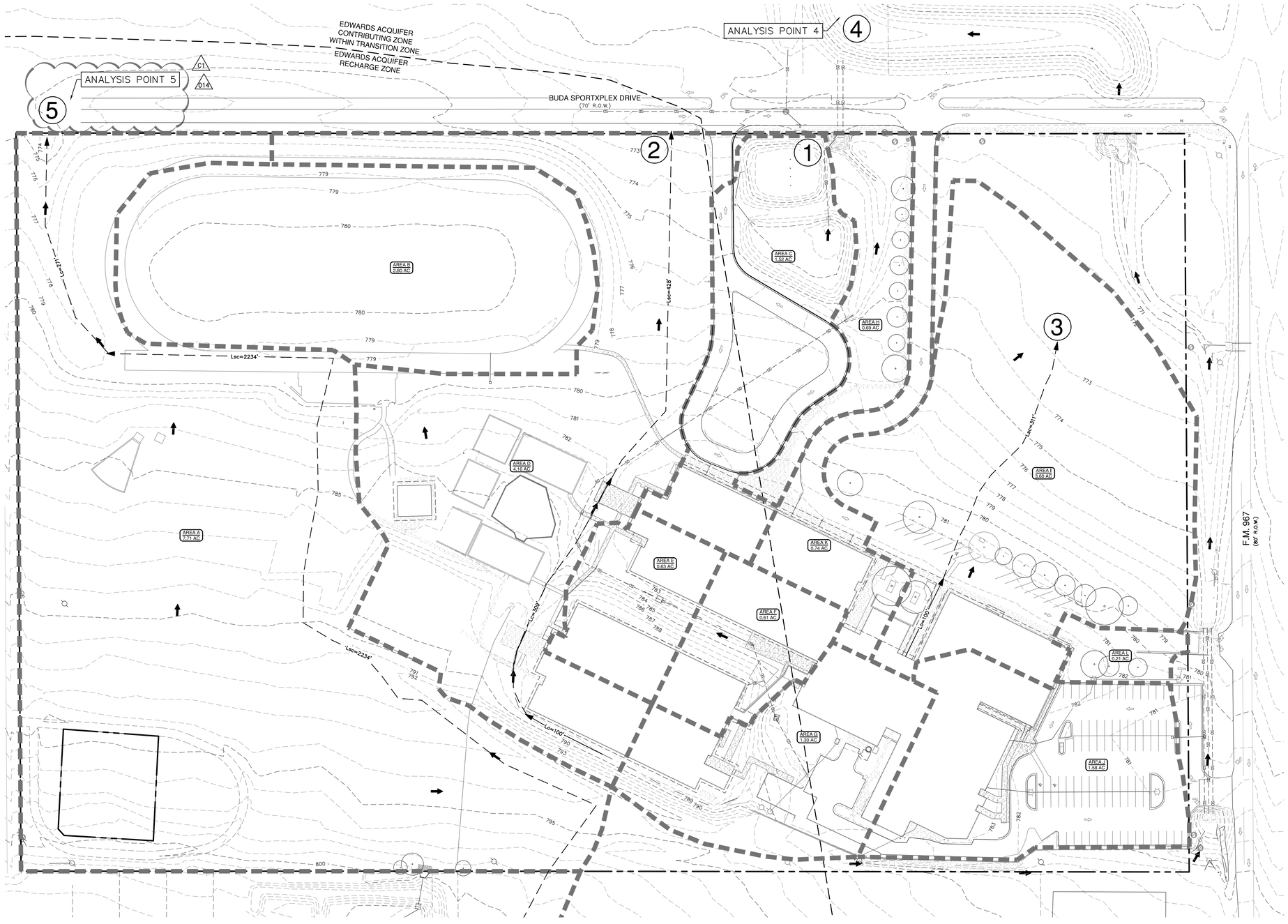
Area #	AREA (ac)	AREA (mi²)	SOIL TYPE	IC (ac)	PC (ac)	%IC	CURVE NUMBER perv CN	Imp CN	Weighted CN
A + OFFSITE A	16.64	0.02600	D	0.00	16.64	0.00%	80	98	80.00
B + C + +	4.32	0.00710	D	-	-	-	80	98	83.00
I	3.60	0.00563	D	0.59	3.01	16.39%	80	98	82.95
D+E+F+G+H+J+K+L	9.92	0.01550	D	4.89	5.03	49.30%	80	98	88.87
TOTAL	34.480	0.05423	-	-	-	-			

**NOTE: IN THE HEC HMS MODEL, THE EXISTING AREA B+C (BASIN B) INPUTS ARE FROM THE 2008 PREVIOUSLY APPROVED PLANS. AREA = .0071 AC. CN = 83. LAG TIME = 5 MIN.

C1
014

Dahlstrom- Existing Conditions

Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Peak Flows Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	
A + OFFSITE A	16.64 ac. to existing swale to north of track. Offsite and Onsite flows.	16.640	0.0%	80.00	13.52	46.57	81.70	104.96	142.24	ANALYSIS POINT 5
B + C + +	2.80 ac. inside track & 1.52 ac inside drive to existing W.Q. detention pond	4.320	-	83.00	5.00	-	-	-	-	
I	3.60 ac. sheet flow to southeast culvert	3.600	16.4%	82.95	3.00	-	-	-	-	
D+E+F+G+H+J+K+L	9.92 ac. Total to bypass existing pond through existing channel and storm drain	9.920	49.3%	88.87	9.80	-	-	-	-	
B+C+D+E+F+G+H+I+J+K+L	Combined flows to existing drain to the east of Buda Sportsplex Drive	17.840	-	-	-	56.82	99.50	127.62	172.73	ANALYSIS POINT 4



SCALE: 1" = 50'
0' 50' 100' 150'

LEGEND

- UNIT BOUNDARY
- —700— EXISTING CONTOUR
- DRAINAGE AREA BOUNDARY
- 100' OVERLAND FLOW
- 600' SHALLOW CONCENTRATED FLOW
- 900' CHANNELIZED FLOW
- DIRECTION OF FLOW
- (1) DRAINAGE CALCULATION POINT
- DA- PR X XX.XX AC DRAINAGE AREA LABEL

NOTES:

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AUG 23, 2024

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BENCHMARK INFORMATION
HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM; BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62"

SITE PLAN APPROVAL SHEET ___OF 41

FILE NUMBER **2021-254** APPLICATION DATE **MAR. 1, 2021**

APPROVED BY COMMISSION ON N/A UNDER THE CITY OF BUDA UNIFIED DEVELOPMENT CODE.

EXPIRATION DATE _____ CASE MANAGER **D. FOWLER**

CITY ENGINEER, CITY OF BUDA

RELEASED FOR GENERAL COMPLIANCE: ZONING **R2**

Rev. 1 _____ Correction 1 _____
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2021-254

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San Antonio 4646 Broadway, Suite 5300, San Antonio, Texas 78209 p: 512.224.6262 f: 512.224.6463

HAYS CISD
DAHLSTROM MS IMPROVEMENTS
3600 FM 967, BUDA, TX 78610

STATE OF TEXAS
MARK A. RAMSEUR
88748
LICENSED
PROFESSIONAL ENGINEER
12/09/21

2 3

Revisions:

NO.	DESCRIPTION	DATE
1	ADDENDUM 1	05/20/21
2	ADDENDUM 2	05/27/21
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9	PR009	09/09/21
C1	CORRECTION 1	12/10/21
14	PR014	12/10/21

04/29/2021
Project No. 1900.02
CONTRACT DOCUMENTS

EXISTING DRAINAGE CONDITIONS - REPLACEMENT CORRECTION 1
CIVIL

C6.00A

PACKAGE 5

Date: Dec 03, 2021, 3:41pm User ID: cpotel
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REVISIONS				
No.	Revision Description	Prepared by:	(Date)	Reviewed by: (Date)

PROPOSED TIME OF CONCENTRATION

Area	SHEET FLOW Length (ft)	n	Slope	Tc (min.)	SHALLOW CONCENTRATED FLOW Length (ft)	Paved?	Slope	Tc (min.)	V (ft/s)	CHANNEL FLOW Length (ft)	Tc (min.)	TIME OF CONC.	LAG Time
A1 + OFFSITE A	100	0.150	2.00%	9.45	1742	N	3.50%	9.62				19.07	11.44
A2									6.00	405.00	1.13	5.00	3.00
E+F+G+H+I+J+K	100	0.150	0.91%	12.95					6.00	945.00	2.63	15.57	9.34
D+E+F+G+H+I+J+K+L+N+O+P	100	0.150	1.00%	12.47	220	N	2.30%	1.50	6.00	655.00	1.82	15.79	9.47
M	100	0.016	2.56%	1.43	311	Y	3.00%	1.47				5.00	3.00

Dahlstrom - Proposed Conditions

Area #	AREA (ac)	AREA (mi²)	SOIL TYPE	IC (ac)	PC (ac)	%IC	CURVE NUMBER perv CN	Imp CN	Weighted CN
A1 + OFFSITE A	13.99	0.02186	D	0.57	13.42	4.07%	80 / 76.74	98 / 3.99	80.73
A2	2.65	0.00414	D	0.17	2.48	6.42%	80 / 74.87	98 / 6.29	81.15
B + C **	4.32	0.00710	D	-	-	-	80 / -	98 / -	83.00
E+F+G+H+I+J+K	3.40	0.00531	D	2.24	1.16	65.88%	80 / 27.29	98 / 64.56	91.86
D+E+F+G+H+I+J+K+L+N+O+P	9.92	0.01550	D	5.36	4.56	53.99%	80 / 36.81	98 / 52.91	89.72
M	3.60	0.00563	D	1.42	2.18	39.44%	80 / 48.44	98 / 38.66	87.10
TOTAL	37.880	0.05954		9.756	23.804	25.75%			

**NOTE: IN THE HEC HMS MODEL, THE PROPOSED AREA B+C (BASIN B) INPUTS ARE FROM THE 2008 PREVIOUSLY APPROVED PLANS. AREA = .0071 AC. CN = 83. LAG TIME = 5 MIN.

THE EXISTING WATER QUALITY AND DETENTION POND DO NOT OVERTOP BY ASSUMING ATLAS-14 FLOWS. THE PROPOSED HEC HMS MODEL HAS CALCULATED WITH WHAT WAS ASSUMED TO BE THE MOST RECENT RAINFALL DATA PER AUSTIN CODE.

Flow Comparison

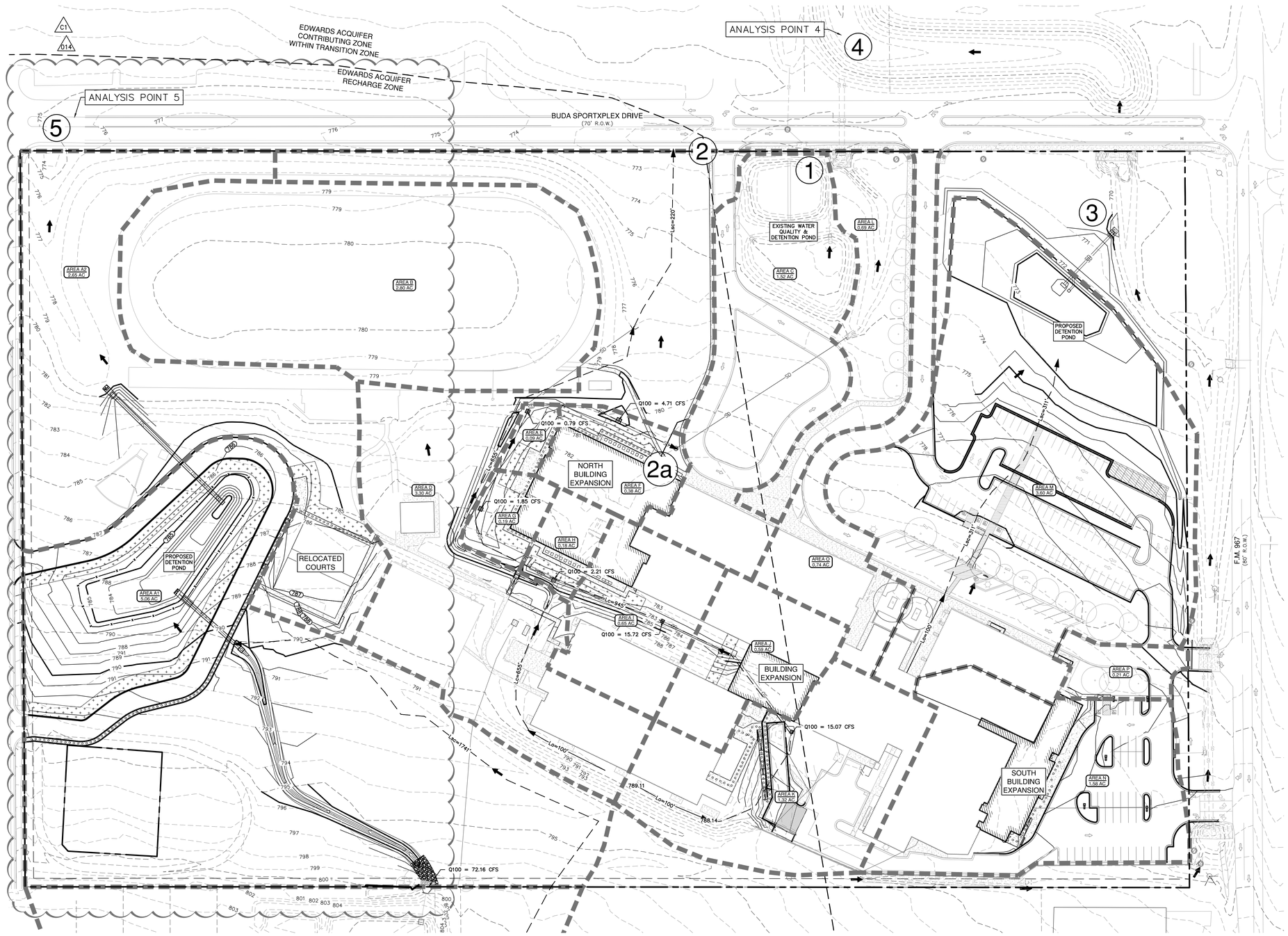
Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Peak Flows Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
Analysis Point 4 Existing	Combined Flows east of Buda Sportsplex Drive in Existing Conditions	17.840	-	-	-	56.82	99.50	127.62	172.73
Analysis Point 4 Proposed	**Combined Flows east of Buda Sportsplex Drive in Proposed Conditions**	**17.840**	-	-	-	**55.62**	**91.77**	**115.02**	**151.95**
Analysis Point 5 Existing	Combined flows to northern discharge point on Buda Sportsplex Drive	16.640	-	-	-	46.97	81.70	104.66	142.24
Analysis Point 5 Proposed	**Combined Flows to northern discharge point on Buda Sportsplex Drive**	**16.640**	-	-	-	**34.27**	**62.46**	**77.76**	**93.68**

Dahlstrom - Proposed Conditions

Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Peak Flows Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)	
A1 + OFFSITE A	13.99 ac. to be routed through Pond B - shown to size inflow pipes	13.990	4.07%	80.73	11.44	-	-	-	-	
A2	2.65 ac to bypass Pond B and combine at Analysis Point 5	2.650	6.42%	81.15	3.00	-	-	-	-	
A1+ OFFSITE A +A2	Combined flows to northern discharge point on Buda Sportsplex Drive	16.640	-	-	-	34.27	62.46	77.76	93.68	ANALYSIS POINT 5
B + C	2.80 ac. inside track & 1.52 ac. inside drive to existing WQ detention pond	4.320	-	83.00	5.00					
E+F+G+H+I+J+K	3.40 ac. to bypass existing pond through storm drains - shown to size pipes	3.400	65.88%	91.86	9.34	12.63	20.37	25.42	33.55	
D+E+F+G+H+I+J+K+L+N+O+P	9.92 ac. Total to bypass existing pond through existing channel and storm drain	9.920	53.99%	89.72	9.47	-	-	-	-	
M	3.60 ac. sheet flow to proposed pond and discharge at southeast culvert	3.600	39.44%	87.10	3.00	-	-	-	-	
B+C+D+E+F+G+H+I+J+K+L+N+O+P+M	Combined flows to existing drain to the east of Buda Sportsplex Drive	17.840	-	-	-	55.62	91.77	115.02	151.95	ANALYSIS POINT 4

*** All proposed peak flows are calculated using Atlas-14 data

**NOTE: ALL PROPOSED PEAK FLOWS ARE CALCULATED USING ATLAS-14 DATA





LEGEND

- UNIT BOUNDARY
- 700 EXISTING CONTOUR
- DRAINAGE AREA BOUNDARY
- 100' OVERLAND FLOW
- 600' SHALLOW CONCENTRATED FLOW
- 900' CHANNELIZED FLOW
- DIRECTION OF FLOW
- (1) DRAINAGE CALCULATION POINT
- DA: PR X XX.XX AC. DRAINAGE AREA LABEL

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BENCHMARK INFORMATION

HAYS COUNTY
BENCHMARK NO.: H062,
WITH THE ELEVATION OF
814.41 FEET, NAVD 88
DATUM; BEING A 2"
DISC MONUMENT
STAMPED "HAYS COUNTY
1995 GPS CONTROL
MONUMENT 62"

SITE PLAN APPROVAL SHEET ___OF 41

FILE NUMBER **2021-254** APPLICATION DATE **MAR. 1, 2021**

APPROVED BY COMMISSION ON N/A UNDER THE CITY OF BUDA

UNIFIED DEVELOPMENT CODE:

EXPIRATION DATE CASE MANAGER **D. FOWLER**

CITY ENGINEER, CITY OF BUDA

RELEASED FOR GENERAL COMPLIANCE: ZONING **R2**

Rev. 1 Correction 1
Rev. 2 Correction 2
Rev. 3 Correction 3

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HAYS CISD
DAHLSTROM MS IMPROVEMENTS
3600 FM 967, BUDA, TX 78610

STATE OF TEXAS
MARK A. RAMSEUR
88748
LICENSED PROFESSIONAL ENGINEER
12/09/21

Revisions:

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9	PR009	09/09/21
C1	CORRECTION 1	12/10/21
14	PR014	12/10/21

04/29/2021
Project No. 1900.02
CONTRACT DOCUMENTS

PROPOSED DRAINAGE CONDITIONS - REPLACEMENT CORRECTION 1
CIVIL

C6.01A

PACKAGE 5

Date: Dec 03, 2021, 3:41pm User ID: cpotet
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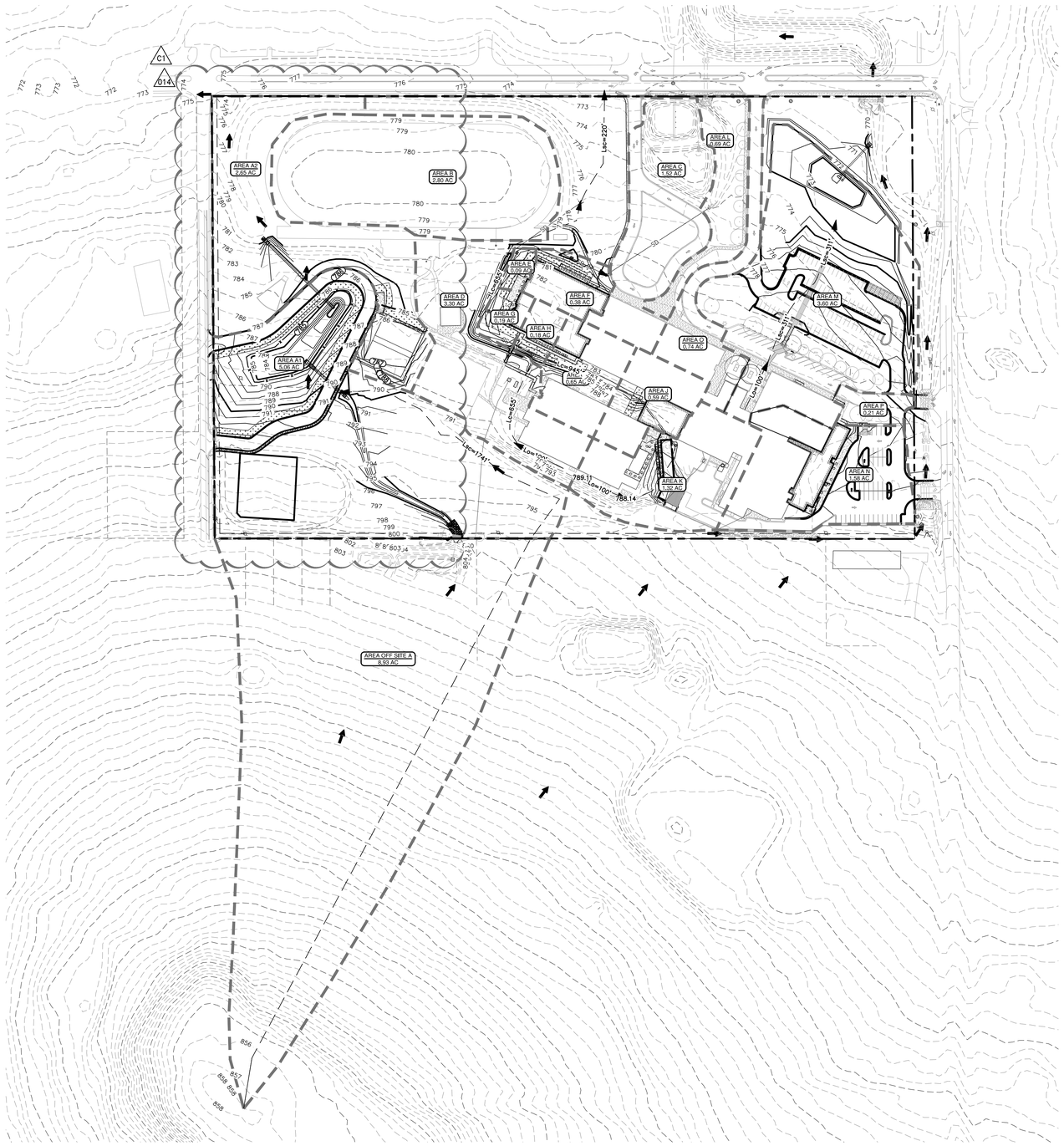

SCALE: 1" = 100'

0' 100' 200' 300'

LEGEND

- UNIT BOUNDARY
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- DRAINAGE AREA BOUNDARY
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2021-254

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C1	CORRECTION 1	12/10/21
14	PR014	12/10/21

04/29/2021
Project No. 1900.02
CONTRACT DOCUMENTS

OFFSITE DRAINAGE AREAS - REPLACMENT CORRECTION 1

CIVIL

C6.02A

Date: Dec 03, 2021, 3:41pm User ID: cpatel
File: V:\2019\900.02 Dahlstrom MS\Project Docs\SD\SD\301 Construction Documents\Civil\PR_09MP.dwg
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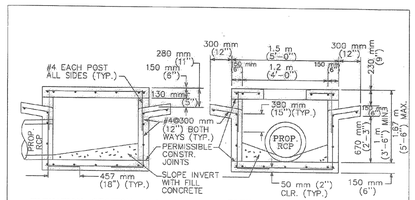
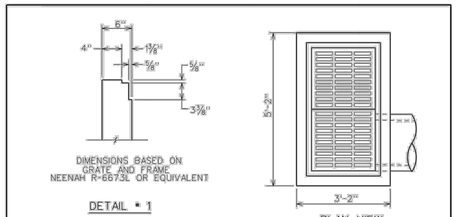
C1 014



NOTES:
1. CHAMFER ALL EXPOSED EDGES 20 mm (3/4").
2. REINFORCING STEEL SHALL BE CUT OR FIELD-BENT AS REQUIRED TO CLEAR PIPE AND MANHOLE OPENING. ALL CUT STEEL SHALL BE REPLACED WITH ADDITIONAL DIAGONAL BARS OF THE SAME DIAMETER.
3. INLET FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S-1.
4. CONCRETE COVERAGE OF STEEL SHALL BE 50 mm (2") MIN. AT ALL SURFACES.
5. ANY MODIFICATION TO THIS STANDARD SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER.

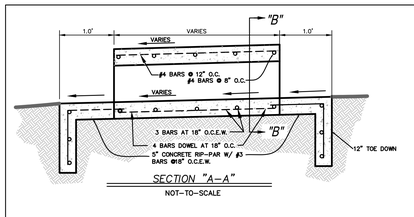
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	4-SIDED AREA INLET	
Keith C. Flowers, P.E. 5/1/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	STANDARD NO. 508S-9

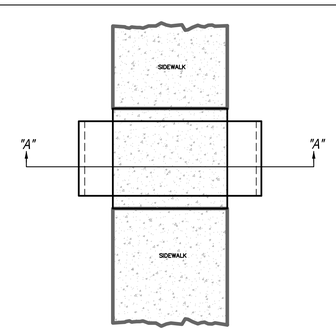
3



REINFORCING STEEL SCHEDULE					
BAR	QTY	SIZE	SPACING	LENGTH	WEIGHT
A	4	4	12"	6'-8"	18
B	16	4	12"	3'-0"	32
C	8	4	12"	2'-10"	15
D	4	4	12"	5'-2"	14
E	4	5	12"	2'-10"	12
				TOTAL WEIGHT---91 LB.	

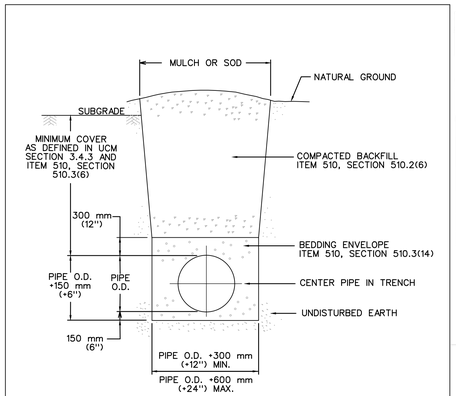
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD DROP INLET	
RECORD COPY SIGNED BY ALLEN BRECHER 5/24/88 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508-11





ELEVATED SIDEWALK BOX DETAIL (OR EQUIVALENT)
NOT-TO-SCALE

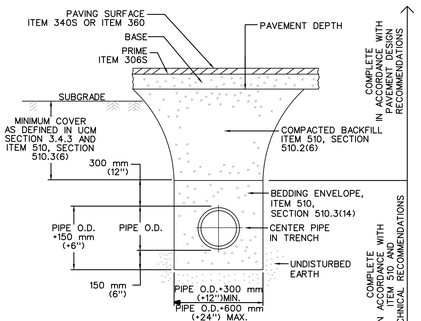
1



REFERENCES:
1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

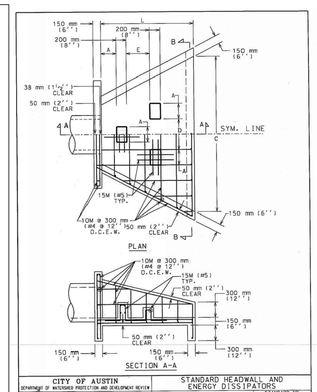
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5

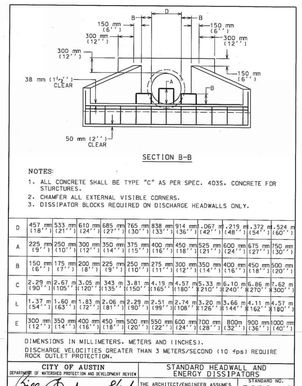
THIS DETAIL FOR USE ONLY ON CITY OF AUSTIN C.I.P. PROJECTS.



REFERENCES:
1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL DETAIL FOR PROPOSED STREET	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-4





NOTES:
1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S. CONCRETE FOR STRUCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

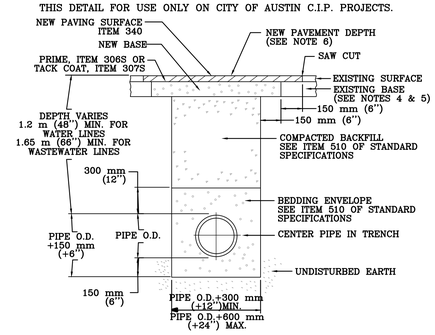
D	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")	914 mm (36")	1.067 m (42")	1.219 m (48")	1.372 m (54")	1.524 m (60")								
A	225 mm (9")	250 mm (10")	300 mm (12")	350 mm (14")	375 mm (15")	400 mm (16")	450 mm (18")	525 mm (21")	600 mm (24")	675 mm (27")	750 mm (30")								
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")								
C	2.29 m (90")	2.67 m (105")	3.05 m (120")	3.43 m (135")	3.81 m (150")	4.19 m (165")	4.57 m (180")	5.33 m (210")	6.10 m (240")	6.86 m (270")	7.62 m (300")								
L	1.37 m (54")	1.60 m (63")	1.83 m (72")	2.06 m (81")	2.29 m (90")	2.51 m (99")	2.74 m (108")	3.20 m (126")	3.66 m (144")	4.11 m (162")	4.57 m (180")								
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	700 mm (28")	800m (32")	900 mm (36")	1000 mm (40")								

DIMENSIONS IN MILLIMETERS. METERS AND (INCHES).
DISCHARGE VELOCITIES GREATER THAN 3 METERS/SECOND (10 fps) REQUIRE ROCK OUTLET PROTECTION.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD HEADWALL AND ENERGY DISSIPATORS	
Bill Gardner 8/19/02 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-13 1 OF 2

1

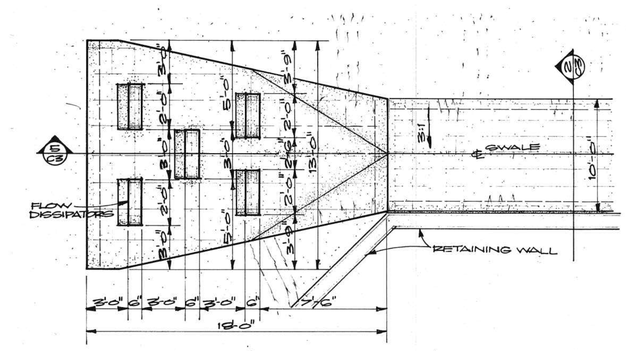
THIS DETAIL FOR USE ONLY ON CITY OF AUSTIN C.I.P. PROJECTS.



NOTES:
1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 300 mm (12") WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. ANY CONCRETE PAVING SHALL BE SAW CUT 150 mm (6") WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
3. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
4. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND OF EQUAL THICKNESS, OR MINIMUM BASE THICKNESS OF 250 mm (10"), WHICHEVER IS GREATER.
5. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 200 mm (8") OF BASE OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
6. SURFACE PAVEMENT SHALL BE OF THE KIND AND THICKNESS AS EXISTING, OR MINIMUM 50 mm (2"), WHICHEVER IS GREATER.

2

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	TYPICAL TRENCH WITH PAVED SURFACE	
RECORD COPY SIGNED BY KATHI L. FLOWERS 8/19/02 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-3



4 RIP RAP AT CONCRETE SWALE

5 SECTION AT RIP RAP W/DISS.

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3600 FM 967, BUDA, TX 78610

STATE OF TEXAS
MARK A. RAMSEUR
88748
LICENSED
PROFESSIONAL ENGINEER
12/09/21

Revisions:

NO.	DESCRIPTION	DATE
1	ADDENDUM 1	05/20/21
2	ADDENDUM 2	05/27/21
3	PR004	07/27/21
9	PR009	09/09/21
C1	CORRECTION 1	12/10/21
14	PR014	12/10/21

RECORD DRAWING
THIS RECORD DRAWING IS A COMPILATION OF A COPY OF THE SEALED ENGINEERING DRAWING FOR THIS PROJECT, MODIFIED BY ADDENDA, CHANGE ORDERS AND INFORMATION FURNISHED BY THE CONTRACTOR.
AUG 23, 2024
THE INFORMATION SHOWN ON THE RECORD DRAWINGS THAT WAS PROVIDED BY THE CONTRACTOR OR OTHERS NOT ASSOCIATED WITH THE DESIGN ENGINEER CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS.

SITE PLAN APPROVAL SHEET ___OF 41
FILE NUMBER **2021-254** APPLICATION DATE **MAR. 1, 2021**
APPROVED BY COMMISSION ON N/A UNDER THE CITY OF BUDA
UNIFIED DEVELOPMENT CODE.
EXPIRATION DATE CASE MANAGER **D. FOWLER**
CITY ENGINEER, CITY OF BUDA
RELEASED FOR GENERAL COMPLIANCE: ZONING **R2**
Rev. 1 Correction 1
Rev. 2 Correction 2
Rev. 3 Correction 3
Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF BUDA MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

04/29/2021
Project No. 1900.02
CONTRACT DOCUMENTS
STORM DRAIN DETAILS - REPLACEMENT CORRECTION 1
CIVIL
2021-254
C7.04A
PACKAGE 5

Date: Dec 03, 2021, 3:41pm User ID: cpotel
File: V:\pape-dawson.com\san-pd\Projects\501S\300\301 Construction Documents\Civil\501-51153-00.dwg
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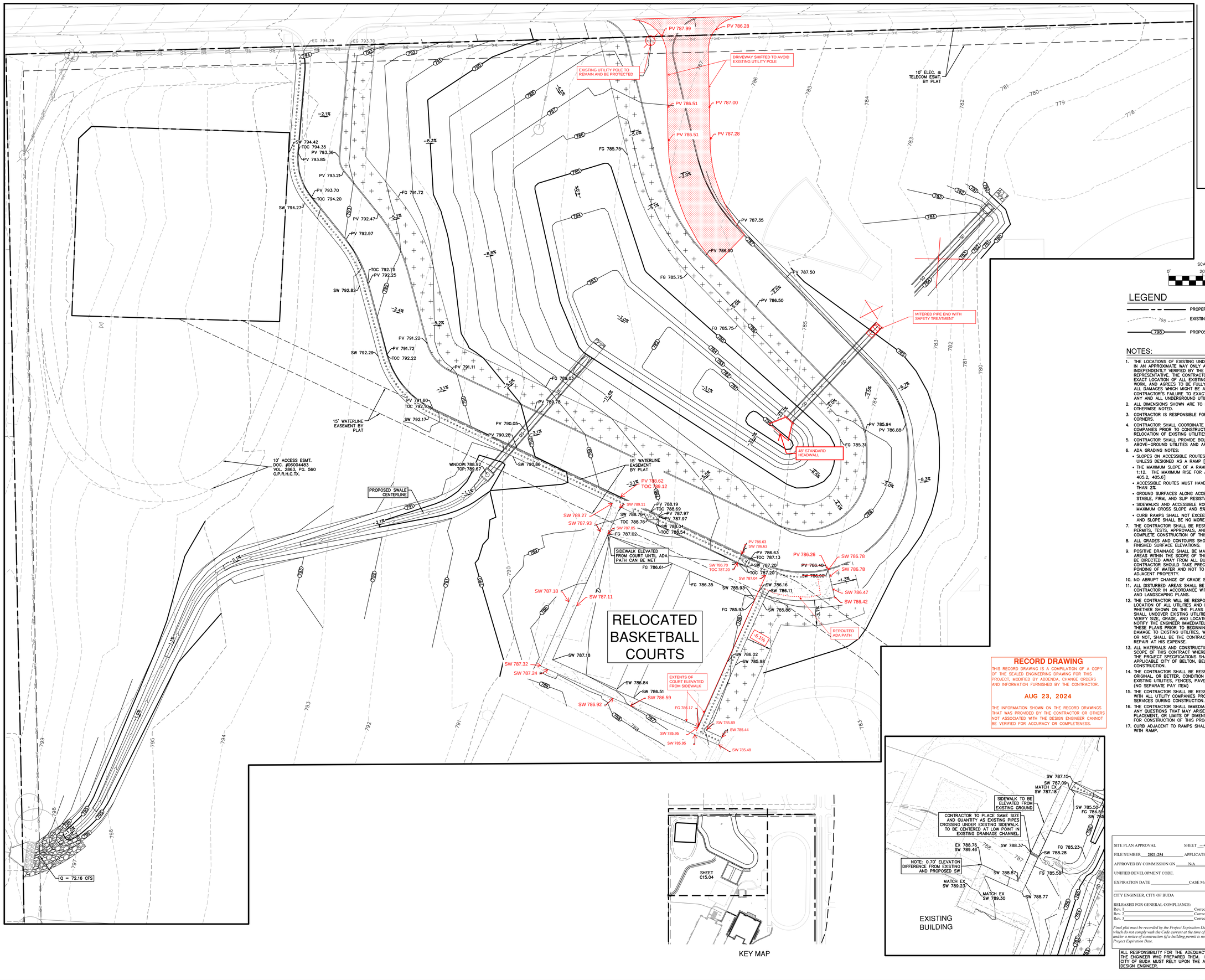

LEGEND

- PROPERTY LINE
- 798 EXISTING CONTOUR LINE
- 798 PROPOSED CONTOUR LINE

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB, UNLESS OTHERWISE NOTED.
3. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL PROPERTY CORNERS.
4. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
5. CONTRACTOR SHALL PROVIDE BOLLARDS FOR PROTECTION OF ALL ABOVE-GROUND UTILITIES AND APPURTENANCES IN DRIVE AREAS.
6. ADA GRADING NOTES:
   - SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [TAS 403.3]
   - THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 IN. [TAS 405.2, 405.6]
   - ACCESSIBLE ROUTES MUST HAVE A CROSS SLOPE NO GREATER THAN 2%.
   - GROUND SURFACES ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM, AND SLIP RESISTANT. [TAS 302.1]
   - SIDEWALKS AND ACCESSIBLE ROUTES ARE TO BE AT 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE
   - CURB RAMPS SHALL NOT EXCEED 6" IN VERTICAL DIFFERENCE, AND SLOPE SHALL BE NO MORE THAN 12:1
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS, AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. ALL GRADES AND CONTOURS SHOWN ARE FINAL, TOP OF FINISHED SURFACE ELEVATIONS.
9. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW PONDING OF WATER AND NOT TO BLOCK DRAINAGE FLOW FOR ADJACENT PROPERTY.
10. NO ABRUPT CHANGE OF GRADE SHALL OCCUR.
11. ALL DISTURBED AREAS SHALL BE REVEGETATED BY THE CONTRACTOR IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND LANDSCAPING PLANS.
12. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM THESE PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AT HIS EXPENSE.
13. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO ALL APPLICABLE CITY OF BELTON, BELL COUNTY SPECIFICATIONS FOR CONSTRUCTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL OR BETTER, CONDITION ANY DAMAGES INCURRED TO EXISTING UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEM)
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES PROVIDING TEMPORARY UTILITY SERVICES DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE REGARDING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
17. CURB ADJACENT TO RAMPS SHALL BE SLOPED TO BE FLUSH WITH RAMP.

RECORD DRAWING

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AUG 23, 2024

THE INFORMATION SHOWN ON THE RECORD DRAWINGS THAT WAS PROVIDED BY THE CONTRACTOR OR OTHERS NOT ASSOCIATED WITH THE DESIGN ENGINEER CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS.

BENCHMARK INFORMATION

HAYS COUNTY BENCHMARK NO.: H062, WITH THE ELEVATION OF 814.41 FEET, NAVD 88 DATUM; BEING A 2" DISC MONUMENT STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62"

SITE PLAN APPROVAL SHEET ___OF 41

FILE NUMBER 2021-254 APPLICATION DATE MAR. 1, 2021

APPROVED BY COMMISSION ON N/A UNDER THE CITY OF BUDA UNIFIED DEVELOPMENT CODE.

EXPIRATION DATE _____ CASE MANAGER D. FOWLER

CITY ENGINEER, CITY OF BUDA

RELEASED FOR GENERAL COMPLIANCE: ZONING R2

Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF BUDA MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

2021-254

PAPE-DAWSON ENGINEERS
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3600 FM 967, BUDA, TX 78610

STATE OF TEXAS
MARK A. RAMSEUR
88748
LICENSED
PROFESSIONAL ENGINEER
12/09/21

Revisions:

NO.	DESCRIPTION	DATE
1	ADDENDUM 1	05/20/21
2	ADDENDUM 2	05/27/21
3	PR004	07/27/21
9	PR009	09/09/21
C1	CORRECTION 1	12/10/21
14	PR014	12/10/21

04/29/2021
Project No. 1900.02
CONTRACT DOCUMENTS

GRADING PLAN
(4 OF 4) - NEW
CORRECTION 1

CIVIL

C15.04

PACKAGE 5

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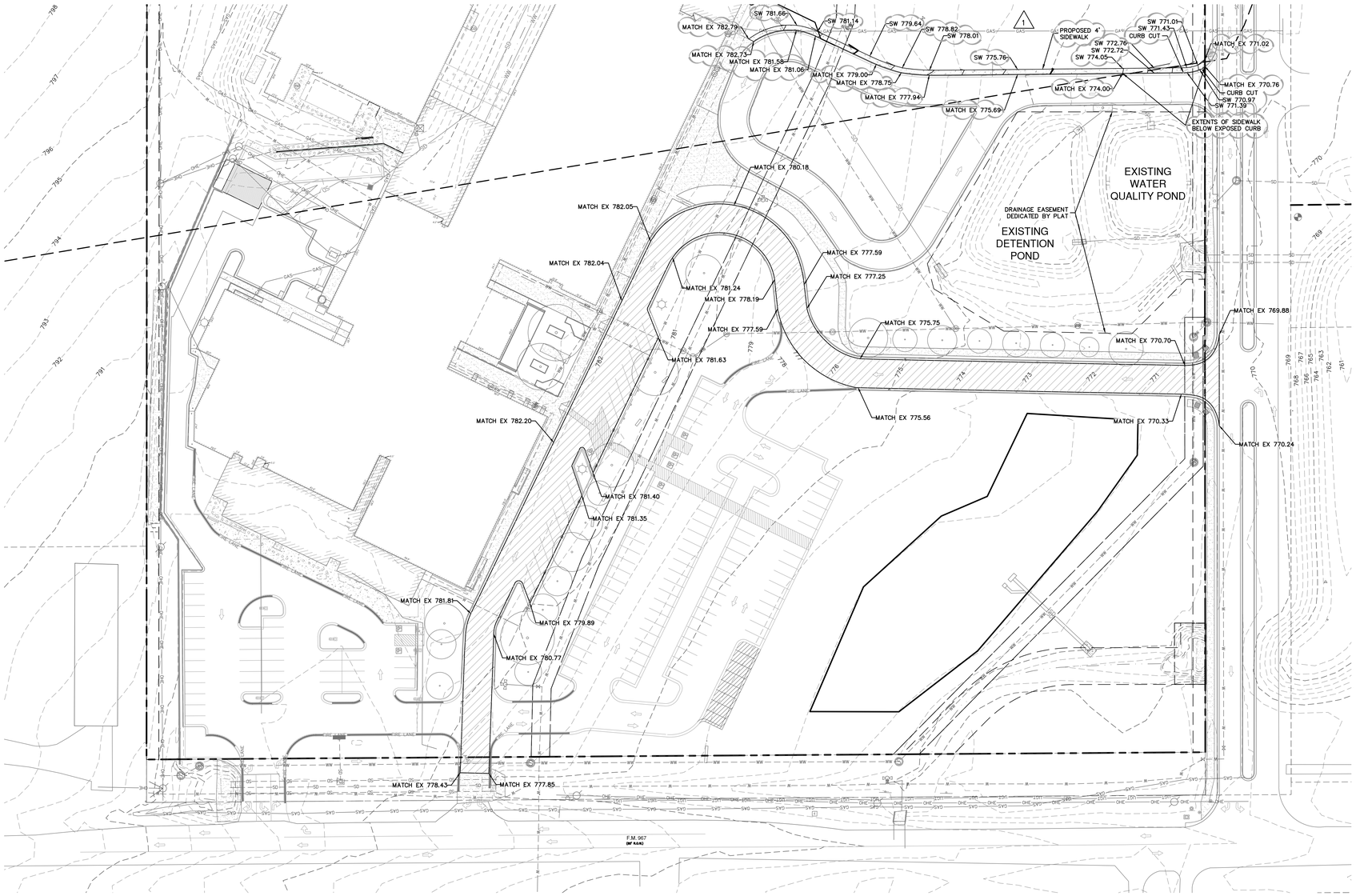

SCALE: 1" = 40'

0' 40' 80' 120'

LEGEND

- PROPERTY LINE
- EASEMENT LINE
- EXISTING OVERHEAD ELECTRICAL
- FIRE LANE
- EXISTING FENCE
- EXISTING UTILITY POLE
- EXISTING WATER METER
- EXISTING TRAFFIC BOX
- EXISTING LIGHT POLE
- EXISTING STORM DRAIN MANHOLE
- EXISTING SIGN
- EXISTING BUILDING
- EXISTING CONCRETE
- 8" MIXED REUSED ASPHALT AND CONCRETE FOR STABILIZED BASE; WITH 2" TYPE D ASPHALTIC CONCRETE PAVING LAYER.

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB, UNLESS OTHERWISE NOTED. ALL COORDINATE POINTS ARE TO BACK OF CURB.
3. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL PROPERTY CORNERS.
4. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
5. CONTRACTOR SHALL PROVIDE BOLLARDS FOR PROTECTION OF ALL ABOVE-GROUND UTILITIES AND APPURTENANCES IN DRIVE AREAS.
6. CONTRACTOR TO RE-STRIPE TO MATCH PRE-CONSTRUCTION CONDITIONS.

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
4. DIMENSIONAL CONTROL POINTS ARE TO BACK OF CURB. DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
5. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL DIMENSION CONTROL INFORMATION.
6. ALL CONCRETE CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
7. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD NAVD88 DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY. (THE SURFACE ADJUSTMENT FACTOR FOR THIS SITE IS 0.99987.)

RECORD DRAWING

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AUG 23, 2024

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BENCHMARK INFORMATION

HAYS COUNTY
BENCHMARK NO.: H062,
WITH THE ELEVATION OF 814.41 FEET, NAVD 88
DATUM; BEING A 2" DISC MONUMENT
STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62"

PAPE-DAWSON ENGINEERS
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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

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3600 RM967, Buda, TX 78610

STATE OF TEXAS
MARK A. RAMSEUR
86748
LICENSED
PROFESSIONAL ENGINEER
01/26/24

Revisions:

NO.	DESCRIPTION	DATE
1	ADDENDUM 1	01/26/24

01/15/24
Project No. 2329.01
CONTRACT DOCUMENTS - GMP 2
SITE & GRADING PLAN

PACKAGE 5 | A-C15.05

Date: Jan 26, 2024, 8:11am User ID: jwolf
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Attachment G – Inspection, Maintenance, Repair, and Retrofit Plan

STRAW WATTLES (TEMPORARY)

- Straw wattles shall be installed, inspected, and maintained per City of Buda specifications
- Inspection shall be made weekly or after each rainfall event and repair or replacement shall be made promptly as needed.
- Sediment Removal: Accumulated silt shall be removed when it reaches a depth of 150mm (6 inches). The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.

Straw wattles shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

STABILIZED CONSTRUCTION ENTRANCE (TEMPORARY)

- Maintenance: the entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto the public roadway. This may require periodic top dressing with additional stone as conditions demand, as well as repair and clean out of any measure devices used to trap sediment.
- All sediment that is spilled, dropped, washed or tracked onto public roadway must be removed immediately.

The stabilized construction entrance will be removed once the proposed site construction is complete.

CONCRETE WASHOUT (TEMPORARY)

- Discharge of excess or waste concrete and/or wash water from concrete trucks will be allowed on the construction site, but only in specifically designated diked areas that have been prepared to prevent contact between the concrete and/or wash water and storm water that will be discharged from the site or in locations where waste concrete can be placed into forms to make riprap or other useful concrete products.
- The cured residue from the concrete washout diked areas shall be disposed in accordance with applicable state and federal regulations.
- The concrete washout shall be at least 50' from any storm sewer inlet.

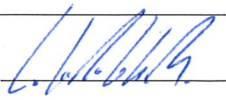
All inspection and testing records shall be kept on site for a period not less than 3 years. An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Responsible Party: Hellas Construction

Mailing Address: 12000 W Parmer Ln

City, State: Cedar Park, Texas Zip: 78613

Telephone: (800) 233-5714 Fax: 512 250 1960

Signature of Responsible Party:  Date: 01/29/2026

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

I Nathan Wensowitch,
Print Name

Executive Director of Facilities, Construction and Bond Programs,
Title - Owner/President/Other

of Hays Consolidated Independent School District,
Corporation/Partnership/Entity Name

have authorized Zachery Humphries
Print Name of Agent/Engineer

of CEI Engineering Associates, Inc.
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

11/05/2025
Date

THE STATE OF Texas §

County of Hays §

BEFORE ME, the undersigned authority, on this day personally appeared Nathan Wensowitch 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 5th day of November, 2025.

BARBARA YVONNE GLORIA
Notary ID #125559411
My Commission Expires
April 29, 2026

Barbara Yvonne Gloria
NOTARY PUBLIC

Barbara Yvonne Gloria
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: April 29, 2026

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Dahlstrom Middle School
Regulated Entity Location: 3600 FM 967 Buda, TX 78610
Name of Customer: Hays CISD
Contact Person: Nathan Wensowitch Phone: 512-415-4150
Customer Reference Number (if issued):CN601392384
Regulated Entity Reference Number (if issued):RN 102731916

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

Signature: Nathan Wensowitch Digitally signed by Nathan Wensowitch DN: C=US, E=nathan.wensowitch@hayscisd.net, O=Hays CISD, OU=Exec. Dir. Construction, CN=Nathan Wensowitch Date: 2025.11.05 09:39:25-06'00' Date: 11/05/2025

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 on completing 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 601392384		RN 102731916

SECTION II: Customer Information

4. General Customer Information	**5. Effective Date for Customer Information Updates** (mm/dd/yyyy)	11/03/2025

☐ 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:*

Hays Consolidated Independent School District

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** (*if applicable*)
No update	No update	No update	

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

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 ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:	21003 Interstate 35						
	City	Kyle	**State**	TX	**ZIP**	78640	**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*)

(512)268-2141		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Dahlstrom Middle School

23. Street Address of the Regulated Entity: *(No PO Boxes)*	3600 FM 967							
	City	Buda	**State**	TX	**ZIP**	78610	**ZIP + 4**	
24. County								

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
No update	No update	No update	No update

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Education

34. Mailing Address:	21003 Interstate 35							
	City	Kyle	**State**	TX	**ZIP**	78640	**ZIP + 4**	
35. E-Mail Address:	Nathan.Wensowitch@hayscisd.net							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512 415 4150		( ) -

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	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Zachery Humphries	41. Title:	Project Manager
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(479)215-6638		( ) -	zhumphries@cejeng.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:	HAYS CONSOLIDATED ISD	**Job Title:**	EXEC. DIR. FACILITY, CONST., BOND.
Name *(In Print)*:	NATHAN KLENSOKITCH	**Phone:**	(512) 268-2141
Signature:		**Date:**	11/05/2025