

**WATER POLLUTION ABATEMENT PLAN**

**FOR**

**BEACON HILL BUS MAINTENANCE FACILITY**

**Buda, Texas**

**Prepared for:**

**Hays Consolidated Independent School District**

**21003 Interstate 35**

**Kyle, TX 78745**

**For Review by:**

**Texas Commission on Environmental Quality**

**Prepared by:**



**TBPE Firm #3937**

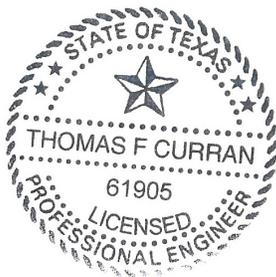
**7401B Highway 71 W., Ste. 160**

**Austin, Texas 78735**

**Engineer's Certification:**

**To the best of my knowledge, this application and all attachments accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer and were prepared in compliance with the rules of TAC Title 30, Part 1, Chapter 213, Subchapter B.**

**Thomas F. Curran, P.E.**



**September 2020**

**D&A Project No. 420-003-02**

## **Water Pollution Abatement Plan**

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**SECTION 0**

**EDWARDS AQUIFER APPLICATION COVER PAGE  
(TCEQ-20705)**

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### Our Review of Your Application

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

### Administrative Review

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

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

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

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

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

### Technical Review

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

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

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or if not withdrawn the application will be denied and 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 to you:

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- 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 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 effected jurisdictions.

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

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

<b>1. Regulated Entity Name:</b> Facility Services					<b>2. Regulated Entity No.:</b> 105193791				
<b>3. Customer Name:</b> Hays C.I.S.D.					<b>4. Customer No.:</b> 601392384				
<b>5. Project Type:</b> (Please circle/check one)	New		Modification			Extension		Exception	
<b>6. Plan Type:</b> (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	Residential		Non-residential			<b>8. Site (acres):</b>		10.6 ac.	
<b>9. Application Fee:</b>	\$6,500		<b>10. Permanent BMP(s):</b>			2 extended detention ponds			
<b>11. SCS (Linear Ft.):</b>	N/A		<b>12. AST/UST (No. Tanks):</b>			N/A			
<b>13. County:</b>	Hays		<b>14. Watershed:</b>			Garlic Creek			

# Application Distribution

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

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

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

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

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

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

Thomas F. Curran, P.E., Doucet & Associates, Inc. (Authorized Agent)

Print Name of Customer/Authorized Agent



9/30/20

Signature of Customer/Authorized Agent

Date

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

**SECTION 1**

**GENERAL INFORMATION FORM  
(TCEQ-0587)**

# General Information Form

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Thomas F. Curran, P.E.

Date: 9/11/2020

Signature of Customer/Agent:



## Project Information

1. Regulated Entity Name: Facility Services
2. County: Hays
3. Stream 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: Max Cleaver

Entity: Hays C.I.S.D

Mailing Address: 21003 Interstate 35

City, State: Kyle, TX

Zip: 78745

Telephone: 512-268-2141

FAX: n/a

Email Address: max.cleaver@hayscisd.net

8. Agent/Representative (If any):

Contact Person: Thomas F. Curran, P.E.

Entity: Doucet & Associates Inc.

Mailing Address: 7401B Hwy. 71 West, Suite 160

City, State: Austin, TX

Zip: 78735

Telephone: 512-583-2623

FAX: 512-583-2601

Email Address: tcurran@doucetengineers.com

9. Project Location:

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

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

One mile west of RM967 & FM1626 intersection, across from Johnson High School.

11.  **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

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

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

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

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

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

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

15. Existing project site conditions are noted below:

- Existing commercial site
- Existing industrial site
- Existing residential site
- Existing paved and/or unpaved roads
- Undeveloped (Cleared)
- Undeveloped (Undisturbed/Uncleared)
- Other: \_\_\_\_\_

### ***Prohibited Activities***

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

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

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

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

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

### ***Administrative Information***

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

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

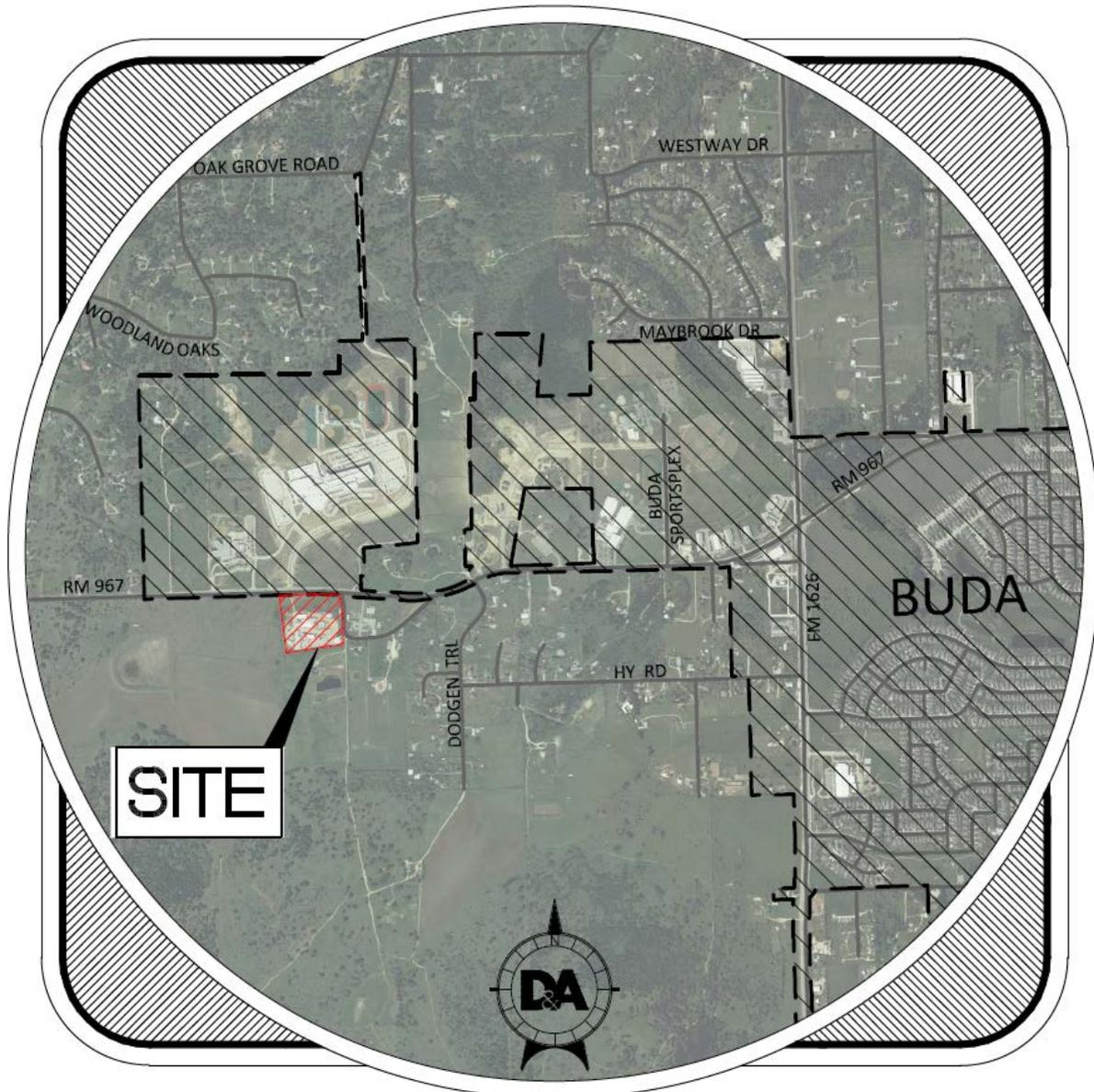
**ATTACHMENT A**

**ROAD MAP**

**GENERAL INFORMATION FORM  
(TCEQ-0587)**

## ATTACHMENT A

### ROAD MAP



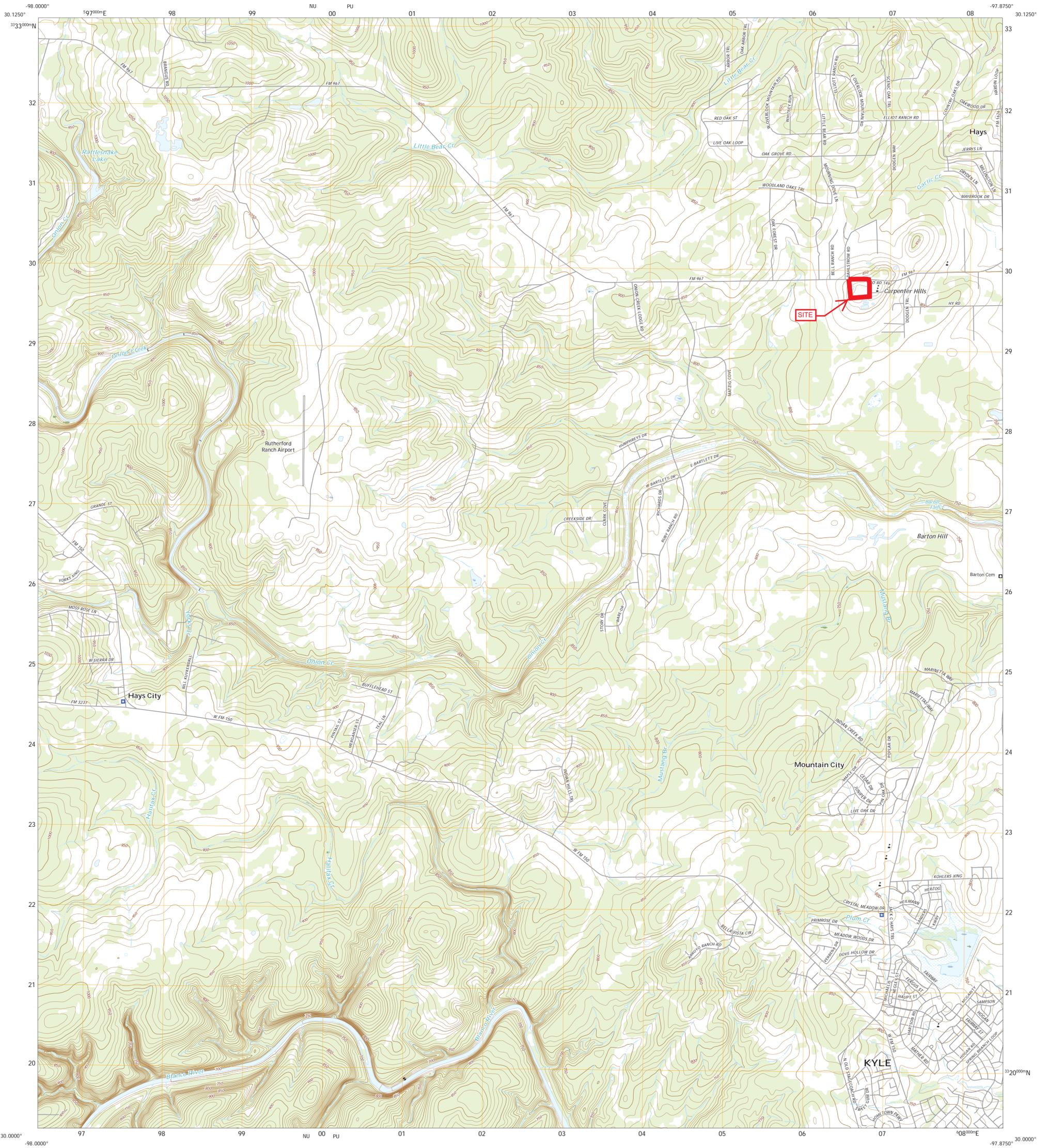
The site is located West of the intersection of RM 967 and FM 1626,  
across from Johnson High School.

**ATTACHMENT B**

**USGS MAP**

**Mountain City Quadrangle**

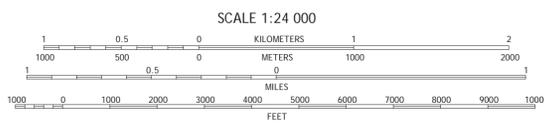
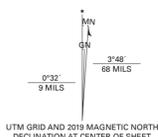
**GENERAL INFORMATION FORM  
(TCEQ-0587)**



**Produced by the United States Geological Survey**

North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84) Projection and  
1 000-meter grid/Universal Transverse Mercator, Zone 14R  
This map is not a legal document. Boundaries may be  
generalized for this map scale. Private lands within government  
reservations may not be shown. Obtain permission before  
entering private lands.

Imagery.....NAIP, October 2016 - November 2016  
Roads.....U.S. Census Bureau, 2015  
Names.....GNIS, 1979 - 2018  
Hydrography.....National Hydrography Dataset, 2002 - 2018  
Contours.....National Elevation Dataset, 2002 - 2004  
Boundaries.....Multiple sources; see metadata file 2016 - 2017  
Wetlands.....FWS National Wetlands Inventory 1982 - 1983



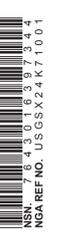
1	2	3
4	5	6
7	8	

ADJOINING QUADRANGLES

**ROAD CLASSIFICATION**

	Expressway		Local Connector
	Secondary Hwy		Local Road
	Ramp		4WD
	Interstate Route		US Route
			State Route

- 1 Drilling Springs
- 2 Signal Hill
- 3 Oak Hill
- 4 Driftwood
- 5 Buda
- 6 Wimberley
- 7 San Marcos North
- 8 Utland



**ATTACHMENT C**

**PROJECT DESCRIPTION**

**GENERAL INFORMATION FORM  
(TCEQ-0587)**

**ATTACHMENT C**

**PROJECT NARRATIVE**

The Beacon Hill Bus Maintenance Facility, an existing HCISD facility that is proposing improvements for 5.4 acres out of the 10.6 acre site. The subject tract is located one mile west of the intersection of RM967 and FM 1626, across from Johnson High School, and is outside the city limits of the City of Buda. The project is in both the Edwards Aquifer Contributing Zone and Recharge Zone. The site will utilize an extended detention pond with additional stacked volume to treat runoff to meet TCEQ water quality requirements and reduce proposed development peak runoff to existing conditions. The proposed improvements to site will include replacing existing asphalt pavement and compacted hard-stand base parking areas to concrete pavement, water quality extended detention ponds, undisturbed open space, resulting in approximately 6.5 acres of impervious cover. The extended detention ponds will be constructed to their final design size for the fully developed condition for the site since portions of disturbed areas will drain to them.

The subject tract is located in the Onion Creek Watershed. No portion of the development is located in the 100-year floodplain as shown on FEMA Flood Insurance Rate Map Panel No. 48209C0206F. The site was initially developed as a maintenance shop for heavy highway construction equipment since 1952. A Phase I Environmental Assessment was performed in 1996 as the property was transferred to the Hays Consolidated ISD.

HCISD currently proposes to expand bus and vehicular parking while also providing an all weather driving surface for portions of existing parking areas. The water quality ponds have been sized for the full development of the site, with WQ calculation shown to meet TCEQ standards given the grandfathered status of impervious cover existing prior to TCEQ Edwards Aquifer regulations.

In existing conditions, the subject tract is developed land with 50% impervious cover with the remainder of the site being undisturbed. The site has been developed and maintained compacted hard-stand base parking facilities comprising 43% of site since prior to June 1, 1999. The developed portion of the tract is relatively flat, while having stable slopes transitioning from developed portions to the undeveloped areas of the tract.

In existing and proposed conditions, the entire 10.8 acre site is divided into four sub-basins. The center of the project area is a high point, so runoff flows away towards the boundaries of the project area. The Beacon Hill site is divided into four separate sub-basins. Sheet 7 of the Construction Plans - Drainage Plan, shows the locations and points of analysis for the sub-basins. In existing conditions, The Beacon Hill site drains to points 1, 2, 3, and 4. In proposed conditions, storm water from all developed areas will be routed via underground storm sewers to one of two ponds for water quality and detention. Ponds 1 and 2 are extended detention ponds providing water quality and conventional detention for increase in runoff volume. Sheet 7 of the Construction Plans – Drainage Plan, shows the locations and points of analysis for the sub-basins.

**SECTION 2**  
**GEOLOGIC ASSESSMENT FORM**  
**(TCEQ-0585)**

# ZARA

**ENVIRONMENTAL LLC**

1707 West FM 1626

Manchaca, Texas 78652

512-291-4555

[www.zaraenvironmental.com](http://www.zaraenvironmental.com)

**GEOLOGIC ASSESSMENT FOR  
HCISD BEACON HILL MAINTENANCE FACILITY,  
HAYS COUNTY, TEXAS**



Entrance to the HCISD Beacon Hill Maintenance Facility.

Prepared for  
Mr. Tom Curran  
Doucet and Associates  
7401B Highway 71 West, Suite 160  
Austin, Texas 78735

16 March 2020

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# 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: Aubri A. Jenson, P.G.

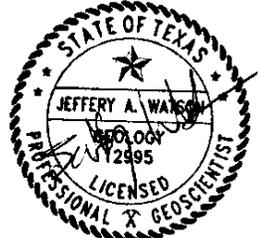
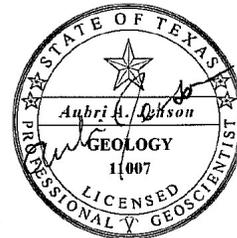
Telephone: 512-291-4555

& Jeffery Watson, P.G.

Fax: 866-908-9137

Date: 16 March 2020

Representing: Zara Environmental LLC/ TBPG No. 50365 (Name of Company and TBPG or TBPE registration number) Signature of Geologist:



Regulated Entity Name: HCISD Beacon Hill Maintenance Facility

## Project Information

1. Date(s) Geologic Assessment was performed: 6 February 2020

2. Type of Project

WPAP

AST

SCS

UST

3. Location of Project:

Recharge Zone

Transition Zone

Contributing Zone within the Transition Zone

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

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

Soil Name	Group*	Thickness (feet)
CrD—Comfort-Rock outcrop complex, 1 to 8 percent slopes	D	1 – 3.3
MED—Medlin, warm-Eckrant association, 8 to 30 percent slopes	D	0.9 – 6.6
MEC—Medlin, warm-Eckrant association, 1 to 8 percent slopes	D	0.8 – 6.6

\* Soil Group Definitions (Abbreviated)

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

6.  **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7.  **Attachment C – Site Geology.** A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
8.  **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

Applicant's Site Plan Scale: 1" = 40'

Geologic Map Scale: 1" = 40'

Site Soils Map Scale (if more than 1 soil type): 1" = 40'

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.
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 0 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
- The wells are not in use and have been properly abandoned.
- The wells are not in use and will be properly abandoned.
- The wells are in use and comply with 16 TAC Chapter 76.
- There are no wells or test holes of any kind known to exist on the project site.

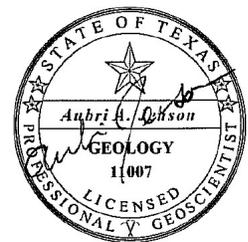
### ***Administrative Information***

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



## ATTACHMENT B: Stratigraphic Table

Stratigraphic Units			Hydrogeologic Units		
<i>Upper Cretaceous</i>	Anacacho Limestone	Pecan Gap Chalk	<i>Upper Confining Units</i>		
	Austin Chalk				
	Eagle Ford Group				
	Buda Limestone				
Del Rio Clay		Outcrop within the Project site	<i>Edwards Aquifer</i>		
Georgetown Formation					
<i>Lower Cretaceous</i>	<i>Edwards Group</i>	Person Formation		Cyclic and Marine member	3-30 m
				Leached and collapsed member	21-30 m
				Regional Dense member	5-7 m
	<i>Kainer Formation</i>			Grainstone member	15-18 m
				Kirshberg Evaporite member	15-18 m
				Dolomitic member	34-43 m
				Basal Nodular member	6-21 m
	<i>Trinity Group</i>	<i>Glen Rose Formation</i>		Cavernous member	> 35 m
				Camp Bullis member	37-46 m
				Upper evaporite member	5-7.6 m
				Fossiliferous member	40-53 m
			Lower evaporite member	1.8-4.7 m	
			Lower member	120 m	
Hensell Formation		20 m			
Cow Creek Formation	20 m				
Hamett Formation	9 m	<i>Upper Trinity Aquifer</i>			
			<i>Middle Trinity Aquifer</i>		



This stratigraphic column shows the regional geologic units and indicates the zones of rocks that outcrop in the project site. Adapted from Lindgren et al. (2004).

# ATTACHMENT C: Site Geology Narrative



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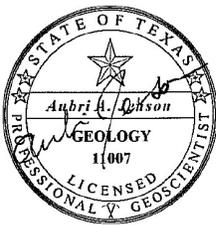
GEOLOGIC ASSESSMENT: NARRATIVE SITE GEOLOGY FOR  
HCISD BEACON HILL MAINTENANCE FACILITY  
4125 FM RD 967  
HAYS COUNTY, TEXAS

Prepared for  
Mr. Tom Curran  
Doucet and Associates  
7401B Highway 71 West, Suite 160  
Austin, Texas 78735

16 March 2020

In accordance with the Texas Board of Professional Geologists rules at 22 Texas Administrative Code, Part 39, Chapter 851, Subchapter C, §851.156, this report is signed and sealed on the title page to assure the user that the work has been performed by or directly supervised by the following professional geologists who takes full responsibility for this work.

The computer-generated seal appearing on this document was authorized by Aubri A. Jenson, P.G. 11007, and Jeffrey Watson, P.G. 12995, on 16 February 2020.



A handwritten signature in black ink that reads "Aubri Jenson".

A handwritten signature in black ink that reads "Jeffrey Watson".

16 March 2020

Aubri A. Jenson, Texas Professional Geoscientist No. 11007  
Jeffrey Watson, Texas Professional Geoscientist No. 12995  
Zara Environmental LLC Geoscience Firm Registration No. 50365

# ATTACHMENT C: Site Geology Narrative

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# ATTACHMENT C: Site Geology Narrative

## Introduction

A geologic assessment (GA) was conducted within the approximately 10.8-acre project site of the HCISD Maintenance Facility in Hays County, Texas (Figure 1). A detailed walking survey of the entire area was conducted during a site visit on February 6, 2020, documenting one manmade feature and no natural bedrock features. The project site is located within the Edwards Aquifer Recharge Zone and the Edwards Aquifer Contributing Zone within the Transition Zone. Prior to purchase by HCISD, the property was the site of the Buda Manufacturing and Engineering Company, a shop facility for heavy highway construction, that was established in 1952 (Excell Environmental 1996). In the subsequent years HCISD has used the site as a maintenance and refueling facility for school buses. The proposed project is an expansion of this bus maintenance facility, including updated facilities and an expansion of the paved area of the facility.

## Methods

### *Background Data Collection*

Surface geologic maps from Blome et al. (2005) and the Geologic Atlas of Texas (GAT 2010) were reviewed. Soil descriptions were compiled from the Web Soil Survey of the U.S. Department of Agriculture (USDA) (2019). Available Texas Water Development Board (TWDB) and Texas Commission on Environmental Quality (TCEQ) water well information was also reviewed for the project site. Available floodplain maps from the Federal Emergency Management Agency (FEMA) were reviewed. Background information was collected from the TCEQ using the central registry database online query (TCEQ 2020). Additionally, a data request was submitted to the Texas Speleological Society (TSS) for any documented caves or karst features within the project site. A Phase I Environmental Site Assessment conducted on the project site in 1996 was also reviewed (Excell Environmental 1996).

### *Field Survey*

Karst survey methods followed protocols outlined in TCEQ Instructions to Geologists for Geologic Assessments (TCEQ 2004). Walking ground surveys, as defined by Veni and Reddell (2002), Barrett (2005), and TCEQ (2004) were conducted throughout the project site and reconnaissance excavations were conducted at all potential karst features. Positions of all features were documented using Global Positioning System (GPS) technology and checked with field maps based on digital orthoimagery. All features identified were inspected by a licensed professional geologist and evaluated for potential impact to Edwards Aquifer recharge. This is completed by ranking the recharge sensitivity of each feature using the point scheme defined by TCEQ (2004). Fieldwork for the karst survey was conducted by Texas licensed professional geoscientists Aubri Jenson (TX PG# 11007) and Jeffery Watson (TX PG# 12995).

# ATTACHMENT C: Site Geology Narrative

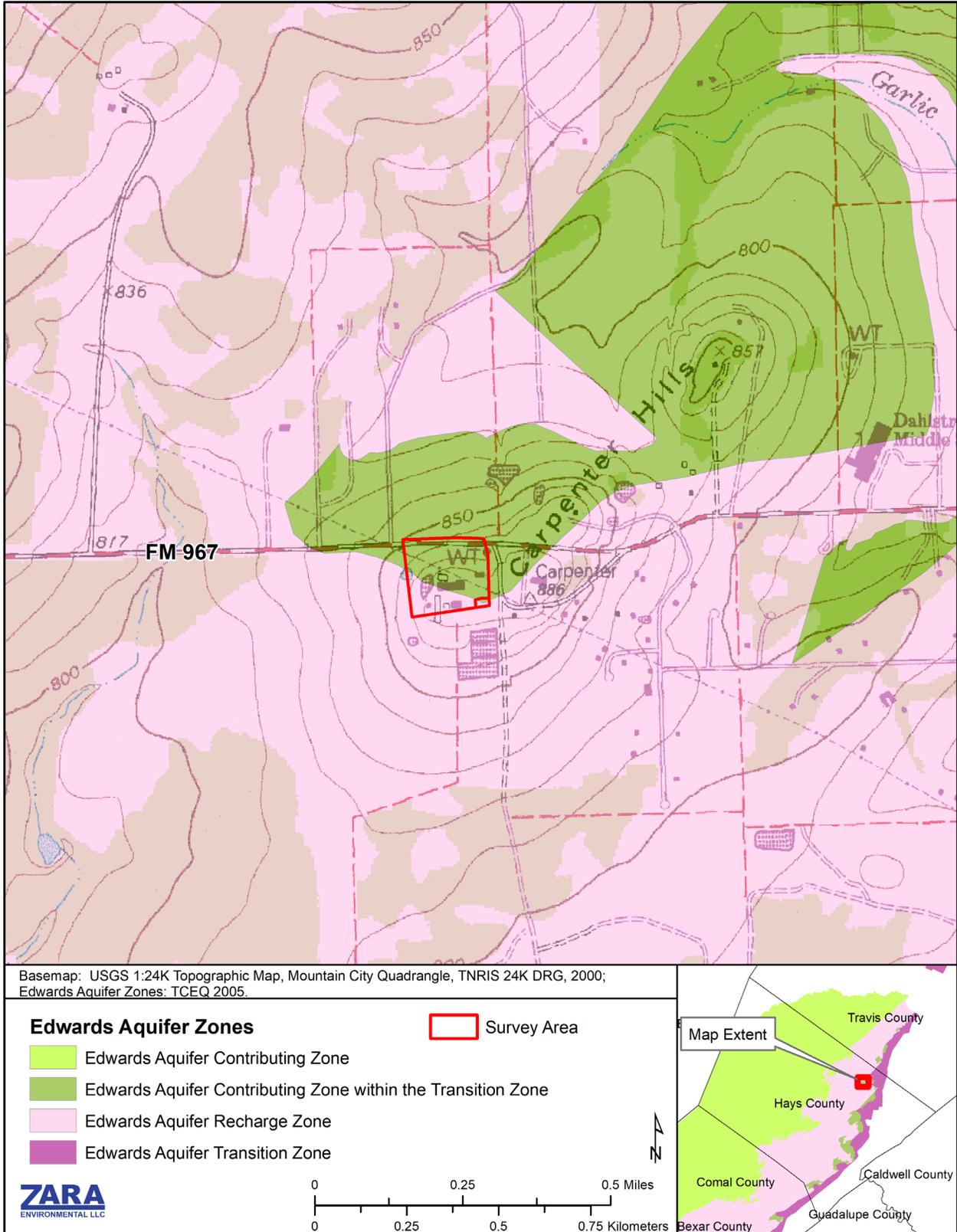


Figure 1. Location map displaying project site in Buda, Hays County, Texas, and the TCEQ Edwards Aquifer Zones (TCEQ 2005).

# ATTACHMENT C: Site Geology Narrative

## Results

### *Background Data*

#### Soils

Three different soil types are mapped in the project site by the USDA (Figure 2). A brief description of each soil type is below.

*Comfort-Rock outcrop complex, 1 to 8 percent slopes (CrD)* - This is a residual soil derived from limestone and is found on hill tops and terraces. A typical soil profile consists of clay horizons between 16 and 80 in deep. This soil has the capacity to transmit water at moderately low to moderately high rates (0.06 to 0.20 in/hr) through its most limiting layer, placing it in Hydrologic Soil Group D (USDA 2019). This soil group comprises 60.1 percent of the project site.

*Medlin warm-Eckrant association, 8 to 30 percent slopes (MED)* - This soil is an association of 50 percent Medlin, 45 percent Eckrant, and 5 percent other minor components. These soils form on side slopes and typically contain clay horizons between 11 and 20 in deep. Both Medlin and Eckrant soils have the capacity to transmit water at moderately low to moderately high rates (0.06 to 0.20 in/hr) through their most limiting layers, placing them in Hydrologic Soil Group D (USDA 2019). This soil association comprises 3.9 percent of the project site.

*Medlin warm-Eckrant association, 1 to 8 percent slopes (MEC)* - This soil is an association of 50 percent Medlin, 30 percent Eckrant, and 20 percent other minor components. These soils form on base slopes and typically contain clay horizons between 9 and 40 in deep. Both Medlin and Eckrant soils have the capacity to transmit water at moderately low to moderately high rates (0.06 to 0.20 in/hr) through their most limiting layers, placing them in Hydrologic Soil Group D (USDA 2019). This soil association comprises 36.0 percent of the project site.

# ATTACHMENT C: Site Geology Narrative

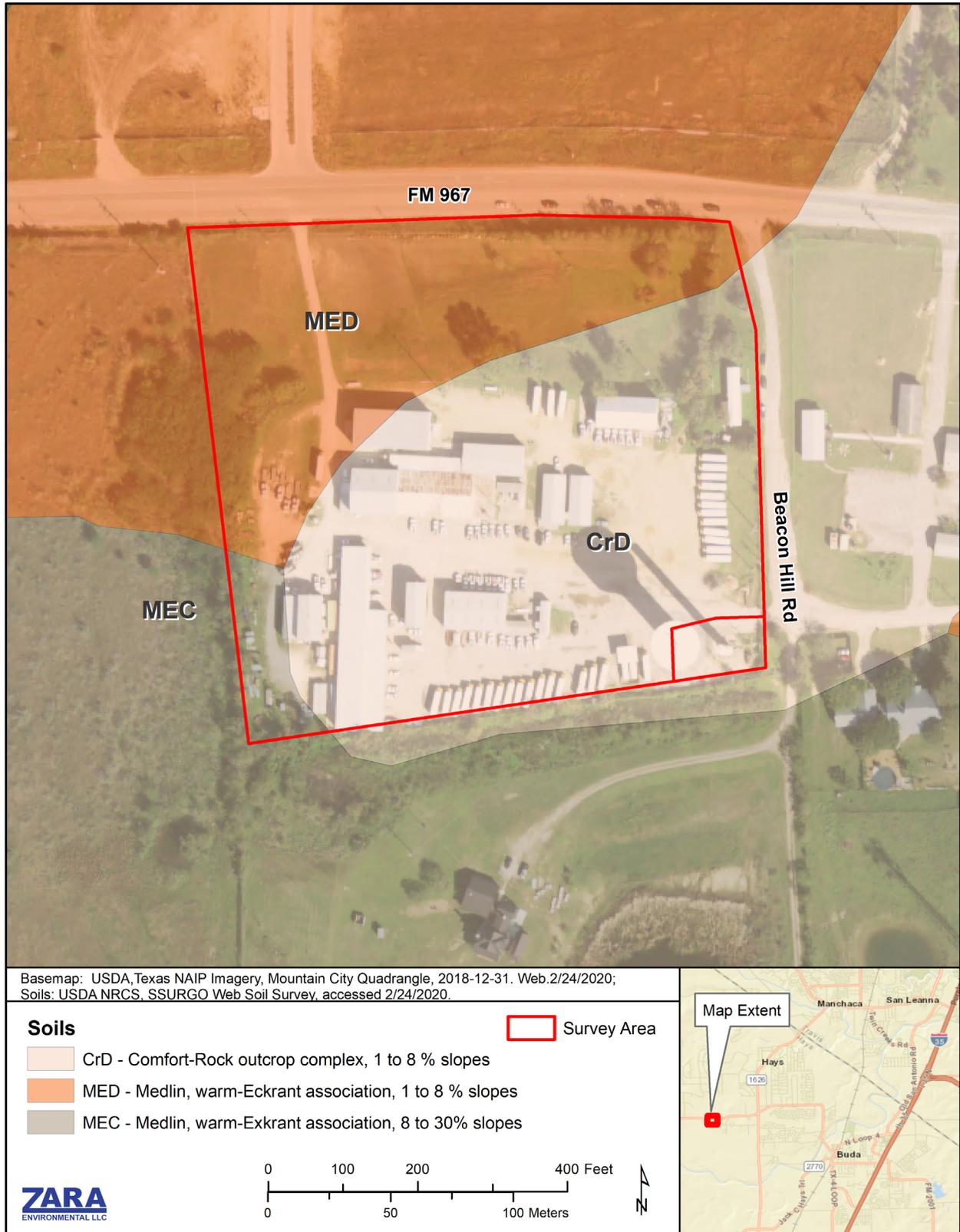


Figure 2. Soil types occurring in the project site.

# ATTACHMENT C: Site Geology Narrative

## Site Geology

Surface outcrop geologic data from Blome et al. (2005) and the Geologic Atlas of Texas (GAT 2010) is shown in Attachment D. Surface geology is mapped as Buda Limestone in the raised southern portion of the project site with Del Rio Clay outcropping in the lower elevation area in the northern portion of the project site and along the western margin of the property (Blome et al. 2005). The northern portion of the property is mapped as undifferentiated Georgetown and Del Rio Clay (GAT 2010). The majority of the property, including the entirety of the raised area with mapped Buda Limestone outcrop, was covered in pavement or imported fill. This prevented observation of surface geology in its natural state. No clearly exposed outcropping bedrock was observed on the ground during the site visit in either the paved or unpaved portions of the property.

Site observations and mapped geology from Blome et al. (2005) and the Geologic Atlas of Texas (GAT 2010) indicate that there are no hydrostratigraphic units of the Edwards Aquifer outcropping on the surface of the project site. However, the project site is located on a local topographic high, and mapped Edwards Aquifer units do outcrop downhill of the project site.

The TSS data search indicated no documented caves or karst features found in the TSS database. A query of TCEQ records showed no previous geologic assessments have been conducted at the project site.

## Regional Geology

The project site is located in the southeastern portion of the Edwards Plateau Physiographic Province of central Texas along the Balcones Fault Zone (BFZ). The southeastern extent of the BFZ forms the Balcones Escarpment, which is a highly eroded region bordering the Edwards Plateau. The region is typified by higher elevations to the north and west, generally sloping in a southeastern direction at about 10 to 15 ft/mi toward the Gulf of Mexico (Maclay 1995). Canyons and drainage basins were formed by surface flow of streams within the Lower Colorado River Basin.

The geologic formations occurring within the region are comprised mostly of carbonate rock with some overlaying Quaternary alluvium along surface drainages. The limestone bedrock developed from the accumulation of thick sequences of marine sediments deposited during the lower Cretaceous (Rose 1972). The soils that have formed on top of these carbonate strata are relatively thin and offer minimal retention of infiltrating surface water.

## ATTACHMENT C: Site Geology Narrative

### Regional Stratigraphy

The geological formations that comprise the Edwards Aquifer are from top to bottom the Georgetown, Person, and Kainer. A stratigraphic column showing the regional geology is included as Attachment B, before this Site Geology Narrative (Attachment C).

The Person and Kainer Formations comprise the Edwards Group (Rose 1972). The Person Formation is about 130 ft thick in northern Hays County. The composition of the Person Formation ranges from crystalline limestone to grainstone to mudstone and is divided into three informal hydrogeologic units: the Cyclic and Marine members, undivided; the Leached and Collapsed members, undivided; and the Regional Dense member. The Cyclic and Marine members are composed of a chert-bearing wackestone and can be somewhat variable in thickness because of the erosional unconformity between the Person and Georgetown Formations (Small et al. 1996).

### Regional Groundwater

This area is in a semi-arid environment with average annual rainfall of about 33 in/yr (NOAA 2014). Many of the rainfall events occur as thermal convection thunderstorms that can produce excessive amounts of precipitation in short periods. Some of this water makes its way into the aquifers usually through concentrated areas along creeks and rivers in outcrop areas of the Recharge Zone.

The project site is within the Barton Springs segment of the Edwards Aquifer, which supplies water to between 50,000 and 60,000 people, provides habitat for two endangered salamander species, feeds Austin's iconic Barton Springs, and is one of the most studied karst aquifers areas in Texas. The Edwards Aquifer is a karst aquifer that is vulnerable to contamination. A recent study documented that most rainfall that falls on the Edwards Aquifer Recharge Zone is lost to evapotranspiration (ET) (Hauwert and Sharp 2014). The amount returned to the atmosphere through ET is a function of precipitation but appears to average about 70 percent. About 5 percent of rainfall becomes surface runoff to creeks and upland recharge features, while only about 25 percent enters the aquifer through diffuse recharge (Slade 2014). Recharge into the Edwards Aquifer occurs primarily in losing streams, where surface water from the contributing zone flows over faults, fractures, and karst features that have been solutionally enlarged in the recharge zone (Sharp and Banner 1997). Periods of recharge are intermittent, as most streams in central Texas are not perennial; however, the recharge capacity of surface water into the aquifer is extremely efficient due to the karstic nature of the system.

## ATTACHMENT C: Site Geology Narrative

### Water Wells

No wells or well plugging records were reported on the survey site according to the TWDB groundwater database (TWDB 2020) and no wells were discovered on the ground during field inspection. A current TWDB groundwater observation well is located just outside of the southwest corner of the survey site at a private residence (TWDB state well number: 5857301). The well is an Edwards Aquifer well with a total depth of 312 ft below ground surface. Groundwater levels in this well have fluctuated between 287 and 216 ft below ground surface between 1937 and 2019. These water levels indicate that the Edwards Aquifer is under unconfined conditions at this location.

In addition to the wells documented in TWDB records, a pump house was observed on site that was reportedly once connected to a private residential well across 967 to the north of the property, but was no longer in use (Michael Baker, personal communication). The well is likely State Well No. 58-57-305 that was drilled in 1973 to a depth of 415 ft and owned by Jack Dahlstrom. According to the plugging report in the TWDB well database, this well was plugged in 2017 and gravel was used to fill cavernous zones. The well was apparently cemented over during the construction of Johnson High School.

### Floodplains

The project site is located within the FEMA Flood Insurance Rate Map number 48209C0260F, effective on 2 September 2005. No portion of the project site was mapped within a flood zone.

### *Description of Features*

Results of the surface karst feature survey are presented in the TCEQ Geologic Assessment Table at the beginning of this document and discussed below. The feature was ranked according to TCEQ standards and reported in TCEQ-0585-Geologic Assessment Table (Attachment A), Attachment D.

## ATTACHMENT C: Site Geology Narrative

### Feature HCISD-01; Manmade Feature in Bedrock (septic tank and septic field)

This feature is a septic tank and associated septic irrigation field with a total area measuring approximately 200 ft long by 100 ft wide (Figure 3). The tanks are aligned in a row along a raised grassy area with access ports visible on the surface. The feature is located on a hillside, and it has a catchment area >1.6 acres. A reconnaissance excavation was not performed. Because the septic tank and associated lines were all located within the low permeability Del Rio Clay, this feature is not likely to transmit water rapidly into the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).



Figure 3. Feature HCISD-01 is a septic tank and septic irrigation field.

## ATTACHMENT C: Site Geology Narrative

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- Barrett, M.E. 2005. Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices: TCEQ, Field Operations Divisions, RG-348 (Revised). July 2005 315pp.
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## ATTACHMENT C: Site Geology Narrative

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- Veni, G., and J. Reddell. 2002. Protocols for Assessing Karst Features for Endangered Invertebrate Species. Report by George Veni and Associates, San Antonio, Texas. 7 p.

# ATTACHMENT D: Site Geologic Maps

## Site Geologic Maps



**Geology**  
**GAT 62.5K, 2010**  
 Kbu - Buda Limestone  
 Kdr - Del Rio Clay

**Blome, 2005**  
 Kb - Buda Limestone  
 Kdr - Del Rio Clay

Boundary between geology sources

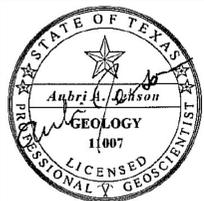
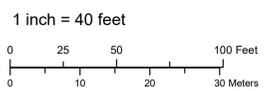
**Edwards Aquifer Zones**

Edwards Aquifer Contributing Zone within the Transition Zone

Edwards Aquifer Recharge Zone

● HCISD-01  
 Survey Area

Attachment D  
 Geologic Assessment for  
 HCISD Beacon Hill Maintenance Facility  
 Hays County, Texas



Basemap: USDA, Texas NAIP Imagery, Mountain City Quadrangle, 2018-12-31, Web 2/24/2020; Geology: Blome 2005 and GAT 62.5K 2010.

**SECTION 3**

**WATER POLLUTION ABATEMENT PLAN APPLICATION FORM**

**(TCEQ-0584)**

# 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: Thomas F. Curran, P.E.

Date: 9/11/2020

Signature of Customer/Agent:



Regulated Entity Name: Facility Services

## Regulated Entity Information

1. The type of project is:

- Residential: Number of Lots: \_\_\_\_\_
- Residential: Number of Living Unit Equivalents: \_\_\_\_\_
- Commercial
- Industrial
- Other: \_\_\_\_\_

2. Total site acreage (size of property): 10.6

3. Estimated projected population: N/A

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

**Table 1 - Impervious Cover Table**

<b>Impervious Cover of Proposed Project</b>	<b>Sq. Ft.</b>	<b>Sq. Ft./Acre</b>	<b>Acres</b>
Structures/Rooftops	52671.6	÷ 43,560 =	1.21
Parking	175159.7	÷ 43,560 =	4.02
Other paved surfaces	54723.1	÷ 43,560 =	1.26
<b>Total Impervious Cover</b>	<b>282554.4</b>	<b>÷ 43,560 =</b>	<b>6.49</b>

**Total Impervious Cover 6.49 ÷ Total Acreage 10.6 X 100 = 61.2% Impervious Cover**

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

***For Road Projects Only***

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

7. Type of project:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

_____ % 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" = \_\_\_\_\_'.

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): \_\_\_\_\_

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

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

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

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

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

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

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

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

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

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

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

**Attachment D - Exception to the Required Geologic Assessment.** A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

### ***Administrative Information***

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

**ATTACHMENT A**

**FACTORS AFFECTING SURFACE WATER QUALITY**

**WATER POLLUTION ABATEMENT PLAN APPLICATION FORM  
(TCEQ-0584)**

**ATTACHMENT A**

**FACTORS AFFECTING WATER QUALITY**

Surface water quality can be affected by disturbance during construction and by development after construction. Soil disturbance from clearing and grubbing, and cut and fill operations can lead to discharge of sediment unless adequate temporary erosion control measures are in place. For this project, the proposed water quality ponds will be rough cut first and along with perimeter silt fence and rock berms will prevent sediment from leaving the site. The proposed water quality ponds will also be utilized to serve as a temporary sedimentation pond during construction. Siltation collected by the control measures will be cleaned from trap, fences, berms, ponds, etc. on a routine schedule as outlined in the SWPPP and contract specifications.

During construction, surface water quality may also be affected by a spill of hydrocarbons or other hazardous substances used in construction. The most likely instances of a spill of hydrocarbons or hazardous substances are:

1. Refueling construction equipment.
2. Performing operator-level maintenance, including adding petroleum, oils, or lubricants.
3. Unscheduled or emergency repairs, such as hydraulic fluid leaks.

Every effort will be taken to be cautious and prevent spills. In the event of a fuel or hazardous substance spill as defined by the Reportable Quantities Table (30 TAC 327 and printed from TCEQ website), the contractor is required to clean up the spill and notify the TCEQ as required in 30 TAC 327. During business hours report spills to the TCEQ's Austin Regional Office at (512) 339-2929, after business hours call 1-800-832-8224, the State Emergency Response Center.

After construction is complete, impervious cover for the 10.8 acres tract of land is the major reason for degradation of water quality. Impervious cover includes the existing asphalt pavement, compacted road base parking areas, concrete pavement, existing building rooftops, and proposed additional concrete pavement. Oil and fuel discharge from vehicles is anticipated. Two extended detention pond are proposed to mitigate these factors.

**ATTACHMENT B**

**VOLUME AND CHARACTER OF STORMWATER**

**WATER POLLUTION ABATEMENT PLAN APPLICATION FORM  
(TCEQ-0584)**

## **ATTACHMENT B**

### **VOLUME AND CHARACTER OF STORMWATER**

The 10.8 acre site of the Beacon Hill Bus Maintenance Facility currently has 50% impervious cover, consisting of rooftops, sidewalks and street pavement. The remaining pervious portion of the site will consist of landscape and natural areas. The site was initially developed as a maintenance shop for heavy highway construction equipment since 1952. Based on historical aerial imagery and a site survey done in 1996, the facility had an impervious cover of approximately 43% in 1996 as the property was transferred to the Hays Consolidated ISD. The site was Storm water from developed areas will travel as sheet flow or shallow concentrated flow across both pervious and impervious areas, captured by underground storm sewer systems and conveyed to one of the two proposed extended detention pond. The site for Beacon Hill Bus Maintenance Facility contains parts of four drainage areas, DA 1, DA 2, DA 3 and DA 4. The ponds to be built for Beacon Hill Bus Maintenance Facility are located at the outfalls of drainage areas DA 1 and DA 2.

- DA 1 (2.34 acres) is 55% impervious cover, a net increase of 21% impervious cover, and has a CN value of 90. With the addition of the proposed improvements, this pond is required to have a water quality volume (WQV) of 1,668 cu-ft and 1,750 cu-ft of volume is provided.
- DA 2 (5.78 acres) is 52% impervious cover, a net increase of 11% impervious cover, and has a CN value of 89. The area will drain to the north to an extended detention pond that discharges north towards RM967. The pond is required to have a WQV of 3,334 cu-ft and provides 3,500 cu-ft.
- DA 3 (0.59 acres) is 55% impervious cover, a net increase of 0% impervious cover, and has a CN value of 90. The area will drain to the southwest along the western and southern property boundaries towards Onion Creek.
- DA 4 (1.93 acres) is 97% impervious cover, a net increase of 0% impervious cover, and has a CN value of 98. The area will drain to the south exiting offsite through the southern property boundary towards Onion Creek.

The first flush of runoff will contain small amounts of typical urban nonpoint source pollutants, which will be captured and treated by the water quality extended detention ponds. After passing through the BMPs, treated runoff will be released from the site and eventually drain into Onion Creek for Pond 1 and Pond 2.

For details of the ponds and all calculations, see the Water Quality Plan and Details in the Construction Plans in Section 9.

**ATTACHMENT C**

**SUITABILITY LETTER FROM AUTHORIZED AGENT**

**WATER POLLUTION ABATEMENT PLAN APPLICATION FORM  
(TCEQ-0584)**

**\*(NOT APPLICABLE)\***

**ATTACHMENT D**

**EXCEPTION TO THE REQUIRED GEOLOGIC ASSESSMENT**

**WATER POLLUTION ABATEMENT PLAN APPLICATION FORM  
(TCEQ-0584)**

**\*(NOT APPLICABLE)\***

**SECTION 4**  
**TEMPORARY STORMWATER SECTION**  
**(TCEQ-0602)**

# Temporary Stormwater Section

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Thomas F. Curran, P.E.

Date: 9/11/2020

Signature of Customer/Agent:



---

Regulated Entity Name: Facility Services

## 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: \_\_\_\_\_

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

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

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

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

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

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

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

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

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

### ***Administrative Information***

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

**ATTACHMENT A**

**SPILL RESPONSE ACTIONS**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**ATTACHMENT A**

**SPILL RESPONSE ACTIONS**

The site was previously permitted for 2 Above Ground Fuel Storage Tanks (AST) with TCEQ in 2007 through permit number 11-07032602 for the use by the facility and buses stored on site. Fuels and hazardous materials for the construction of proposed improvements will not be stored at the site during construction of the water quality ponds; however, the use of these materials is inherent with the operation of heavy machinery and equipment, which will be used during preparation and construction. Equipment refueling and emergency maintenance will be performed over impervious materials such as mats or drip pans. No routine equipment maintenance will be performed at the site.

In the event of a spill of hydrocarbon or hazardous substance, TCEQ will be contacted. The contractor will be responsible for maintaining appropriate spill response equipment such as booms and sorbent material. Immediately upon detection, spills will be contained and impacted soil will be excavated and removed to a TCEQ approved disposal site. The TCEQ will be notified immediately upon detection of a spill.

30 TAC §327.3 – Notification Requirements

30 TAC §327.4 – Reportable Quantities

**Beacon Hill Bus Maintenance Facility  
Water Pollution Abatement Plan**

**420-003-02**

TITLE 30  
ENVIRONMENTAL QUALITY  
PART 1  
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
CHAPTER 327  
SPILL PREVENTION AND CONTROL  
RULE §327.3 Notification Requirements

- (a) Reportable discharge or spill. A reportable discharge or spill is a discharge or spill of oil, petroleum product, used oil, hazardous substances, industrial solid waste, or other substances into the environment in a quantity equal to or greater than the reportable quantity listed in §327.4 of this title (relating to Reportable Quantities) in any 24-hour period.
- (b) Initial notification. Upon the determination that a reportable discharge or spill has occurred, the responsible person shall notify the agency as soon as possible but not later than 24 hours after the discovery of the spill or discharge.
- (c) Method of notification. The responsible person shall notify the agency in any reasonable manner including by telephone, in person, or by any other method approved by the agency. In all cases, the initial notification shall provide, to the extent known, the information listed in subsection (d) of this section. Notice provided under this section satisfies the federal requirement to notify the State Emergency Response Commission in the State of Texas. The responsible person shall notify one of the following:
  - (1) the State Emergency Response Center at 1-800-832-8224;
  - (2) during normal business hours only, the regional office for the agency region in which the discharge or spill occurred; or
  - (3) the agency at the agency 24-hour spill reporting number.
- (d) Information required in initial notification. The initial notification shall provide, to the extent known, the information in the following list. Copies of spill reports prepared for other governmental agencies shall satisfy this requirement if they contain, or are supplemented to contain, all the information required by this subsection. The initial notification shall contain:
  - (1) the name, address and telephone number of the person making the telephone report;
  - (2) the date, time, and location of the spill or discharge;
  - (3) a specific description or identification of the oil, petroleum product, hazardous substances or other substances discharged or spilled;
  - (4) an estimate of the quantity discharged or spilled;
  - (5) the duration of the incident;
  - (6) the name of the surface water or a description of the waters in the state affected or threatened by the discharge or spill;
  - (7) the source of the discharge or spill;
  - (8) a description of the extent of actual or potential water pollution or harmful impacts to the environment and an identification of any environmentally sensitive areas or natural resources at risk;
  - (9) if different from paragraph (1) of this subsection, the names, addresses, and telephone numbers of the responsible person and the contact person at the location of the discharge or spill;
  - (10) a description of any actions that have been taken, are being taken, and will be taken to contain and respond to the discharge or spill;
  - (11) any known or anticipated health risks;
  - (12) the identity of any governmental representatives, including local authorities or third parties, responding to the discharge or spill; and
  - (13) any other information that may be significant to the response action.

**Beacon Hill Bus Maintenance Facility  
Water Pollution Abatement Plan**

**420-003-02**

TITLE 30  
ENVIRONMENTAL QUALITY  
PART 1  
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
CHAPTER 327  
SPILL PREVENTION AND CONTROL  
RULE §327.4 Reportable Quantities

- (a) Hazardous substances. The reportable quantities for hazardous substances shall be:
  - (1) for spills or discharges onto land--the quantity designated as the Final Reportable Quantity (RQ) in Table 302.4 in 40 CFR §302.4; or
  - (2) for spills or discharges into waters in the state--the quantity designated as the Final RQ in Table 302.4 in 40 CFR §302.4, except where the Final RQ is greater than 100 pounds in which case the RQ shall be 100 pounds.
- (b) Oil, petroleum product, and used oil.
  - (1) The RQ for crude oil and oil other than that defined as petroleum product or used oil shall be:
    - (A) for spills or discharges onto land--210 gallons (five barrels); or
    - (B) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.
  - (2) The RQ for petroleum product and used oil shall be:
    - (A) except as noted in subparagraph (B) of this paragraph, for spills or discharges onto land--25 gallons;
    - (B) for spills or discharges to land from PST exempted facilities--210 gallons (five barrels); or
    - (C) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.
- (c) Industrial solid waste or other substances. The RQ for spills or discharges into water in the state shall be 100 pounds.

**ATTACHMENT B**

**POTENTIAL SOURCES OF CONTAMINATION**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**ATTACHMENT B**

**POTENTIAL SOURCES OF CONTAMINATION**

Potential sources of contamination at the site include:

1. Construction vehicles tracking mud onto roadways;
2. Fueling of construction vehicles and equipment;
3. Placement of asphaltic products on the road and parking areas;
4. Possible littering around the construction site.

All activities will be constructed in a manner to protect against potential impacts to the environment.

**ATTACHMENT C**

**SEQUENCE OF MAJOR ACTIVITIES**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**ATTACHMENT C**

**SEQUENCE OF MAJOR ACTIVITIES**

The sequence of major activities for development of the Beacon Hill Bus Maintenance Facility site includes:

1. Install temporary erosion and sediment control and tree protection per approved plans.
2. Hold required environmental pre-construction conference with Engineer, Hays County, HCISD Representative, and TCEQ.
3. Rough excavate and grade the ponds.
4. Install storm drains.
5. Rough grading for parking pavement improvements
6. Complete grading of the ponds.
7. Construction of proposed pavement improvements.
8. Complete permanent erosion control and site restoration.
9. Hold environmental post-construction conference.
10. Remove temporary erosion/sedimentation controls and tree protection. Restore any areas disturbed during removal of temporary controls.

Approximately 5.4 acres of the 10.6 acres will be disturbed during implementation of the above listed activities. Any pavement improvements on existing impervious cover outside of the pond area will occur during the same period.

**ATTACHMENT D**

**TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**ATTACHMENT D**

**TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES**

Temporary Erosion and Sediment Control Best Management Practices (BMPs) shall be designed and placed in accordance with City of Buda and TNRC requirements. The temporary BMPs as shown on Sheets 6 and 7 of the Site Plans, shall be installed prior to any site preparation work (clear, grubbing, or excavation work).

**TEMPORARY SEDIMENT TRAP**

A temporary sediment trap will not be constructed on-site. Measures will be taken, as described below to prevent sediment from leaving the site; however, any sediment that does leave the site will flow to the existing on-site ponds. The extended detention ponds are designed to contain TSS during site development.

**STABILIZED CONSTRUCTIONS ENTRANCES**

A stabilized construction entrance will be constructed of 3" to 5" open graded rock. The location of proposed stabilized construction entrance can be seen on Sheet 6 of the Site Plans and details can be seen on Sheet 7 "ES CONTROL & TREE PROTECTION DETAIL SHEET".

**SILT FENCE**

Silt fence will be installed immediately down-gradient of areas of soil disturbance. A permanent stake will be installed to identify when 50-percent capacity of the silt fence is reached. The proposed locations of silt fence can be seen on Sheet 6 of the Site Plans and details can be seen on Sheet 7 " ES CONTROL & TREE PROTECTION DETAIL SHEET ".

**TREE PROTECTION**

Tree protection will be installed around trees to prevent tree damage and potential damage or disturbance of the tree's root zone. The proposed locations for tree protection can be seen on Sheet 6. Details for tree protection can be seen on Sheet 7 " ES CONTROL & TREE PROTECTION DETAIL SHEET ".

**DUST CONTROL**

Dust control can prevent blowing and movement of dust from exposed soil surfaces, reduces on-site and off-site damage, and improves traffic safety. Dust control will be implemented during all phase of site construction.

The project site slopes north, south and west, with typical slopes under 15-percent, there are no pronounced drainages or stream on the property. Site drainage is away from Beacon Hill Road at the eastern boundary of the site.

Potential pollutants generated on site are unlikely to enter any nearby surface water or sensitive features due to the absence of either of the features near the site. The controls discussed above will prevent pollutants generated on-site from making to waterway or other sensitive features.

**NATURALLY OCCURRING SENSITIVE FEATURES**

No sensitive features (point recharge) features were identified at the surface during the Geologic Assessment;

**Beacon Hill Bus Maintenance Facility  
Water Pollution Abatement Plan**

**420-003-02**

However, should features be encountered during excavation for the pond or storm drains the following procedures will be implemented:

- Notify the TCEQ Regional Office.
- Implement appropriate mitigation, such as filling the feature with clean gravel. This will prevent obstruction of flow to the feature while allowing continued construction of the utilities.

No new wastewater lines are proposed for this project.

**ATTACHMENT E**

**REQUEST TO TEMPORARILY SEAL A FEATURE**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**\*(NOT APPLICABLE)\***

**ATTACHMENT F**

**STRUCTURAL PRACTICES**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

## **ATTACHMENT F**

### **STRUCTURAL PRACTICES**

Structural practices are utilized to limit the pollution potential from exposed areas at the project site. The exposed areas that are to be protected include the following: graded loose topsoil, spoil piles from pond excavation, deep grading, trenching supply lines and drain lines, or miscellaneous accumulations of soils from trenching.

#### **STABILIZED CONSTRUCTION ENTRANCES**

As described in Attachment D, three stabilized construction entrances will be utilized at the site to access the pond level. These controlled access points will include silt guards and runoff diverters.

#### **DIKES AND DIVERSIONS**

Areas that might be disturbed from stormwater runoff will be protected using dikes and diversions intended to intercept runoff and divert it to silt fencing or the wet pond.

#### **SILT FENCES**

Silt fencing and trenching will be used as the primary structure control to divert overland flows away from erodible sites and keep and runoff generated onsite within construction boundaries. During temporary pauses in construction activities or after construction is completed for a specific activity, protective fencing will be installed around each soil accumulation to minimize the risk of erosion.

#### **STABILIZATION**

Stabilization measures shall be initiated soon as practical in parts of the site where construction activities have temporary or permanently ceased. Smaller spoil piles will be protected with plastic sheeting or tarp coverings.

Larger stockpiles will be protected/stabilized with erosion blankets and/or mulching. The cover will be securely fastened to the surrounding ground via stakes, gravel, or other compacted material that will resist erosion and undercutting.

#### **ROCK BERM**

Rock berms are proposed in various location in the existing drainage channels to prevent silts and sediments from discharging offsite.

**ATTACHMENT G**

**DRAINAGE AREA MAP**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**ATTACHMENT G**

**DRAINAGE AREA MAP**

The drainage area map for Beacon Hill Bus Maintenance Facility is provided on Sheet 8 of the Site Plans. Disturbed areas on the project site are less than 10 acres; therefore, a temporary sediment basin is not required. The proposed modified and expanded retention-irrigation ponds proposed will serve this project.

**ATTACHMENT H**

**TEMPORARY SEDIMENT POND PLANS AND CALCULATIONS**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**\*(NOT APPLICABLE)\***

**ATTACHMENT I**

**INSPECTION AND MAINTENANCE FOR BMPs**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**ATTACHMENT I**

**INSPECTION AND MAINTENANCE FOR BMPs**

A weekly assessment of the Temporary BMP and Measures will occur to maintain compliance of control measures with ongoing construction progress. Weekly inspections will be documented on a form such as the one included at the end of this Attachment. Records will be maintained by the contractor.

Any control measure needing updating due to unanticipated activities will be documented by the site project manager and the individual in charge of that specific activity (environmental, utility, roadway, etc.). All activities not restricted and recorded in the BMP and Measures will cease operations until written documentation is recorded and approval by all appropriate involved parties is granted. Any Temporary BMP and Measures change will be submitted to HCISD and all affected contractors prior to activity resumption.

If, under this periodic review, a control measure becomes either obsolete, inappropriate for that activity, unattainable due to unexpected site situations, or any new activities not anticipated in the original BMP and Measures, the control measures will be immediately modified to suit that particular activity.

Completing versions of a table like one attached to this Attachment I will be regularly completed in order to verify inspection and maintenance activities are occurring at the agreed scheduled timetable.



**ATTACHMENT J**

**SCHEDULE OF INTERIM AND PERMANENT SOILS  
STABILIZATION PRACTICES**

**TEMPORARY STORMWATER SECTION  
(TCEQ-0602)**

**ATTACHMENT J**

**SCHEDULE OF INTERIM AND PERMANENT SOILS STABILIZATION PRACTICES**

Soil stabilization practices will be implanted throughout the improvements for Beacon Hill Bus Maintenance Facility. A general schedule of interim and permanent soil stabilization practices is provided below:

**PRIOR TO SITE DISTURBANCE**

Install all temporary erosion and sediment control measures.

**DURING CONSTRUCTION**

Maintain all temporary erosion and sediment control measures, and perform scheduled inspections. Protect vegetation including trees in developed and undeveloped portions of the site, and native grass to the extent practical. Measures will be taken to stabilize soil in areas where construction has temporarily ceased or has been permanently completed. Stabilization measures during construction may include, but are not limited to the following:

- Vegetation -effectively reduces erosion in swales, stockpiles, berms, mild slopes, and along roadways. Matting, mulches, and grading may be required to assist the establishment of vegetation.
- Blankets and/or Matting - good erosion control during establishment period of vegetation. Excellent placement in channels, swales, diversion dikes, steep slopes.
- Mulch - applied to unprotected soil for erosion control and conservation of soil moisture. Can be applied temporarily for new vegetation growth, or be permanent such as wood or rock chips, decorative bark, or other wood products.
- Sod - placement dictated for disturbed areas requiring immediate vegetative covering. Near water-prone areas or near residential areas where aesthetics are factors.

**AFTER COMPLETION OF CONSTRUCTION**

Install all permanent erosion and sediment controls including protection of storm drains and permanent vegetation.

**AFTER COMPLETION OF PERMANENT EROSION AND SEDIMENT CONTROLS**

Remove all temporary erosion and sediment control features and restore areas disturbed by their removal.

**SECTION 5**  
**PERMANENT STORMWATER SECTION**  
**(TCEQ-0600)**

# Permanent Stormwater Section

## Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(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: Thomas F. Curran, P.E.

Date: 9/11/2020

Signature of Customer/Agent



Regulated Entity Name: Facility Services

## Permanent Best Management Practices (BMPs)

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

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

A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: TCEQ RG-348 & City of Austin Environmental Criteria Manual

N/A

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

N/A

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

The site will be used for low density single-family residential development and has 20% or less impervious cover.

The site will be used for low density single-family residential development but has more than 20% impervious cover.

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

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

**Attachment A - 20% or Less Impervious Cover Waiver.** The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.

The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

The site will not be used for multi-family residential developments, schools, or small business sites.

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

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

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

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

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

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

**ATTACHMENT A**

**20% OR LESS IMPERVIOUS COVER WAIVER**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

**\*(NOT APPLICABLE)\***

**ATTACHMENT B**

**BMPs FOR UPGRADIENT STORMWATER**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

## **ATTACHMENT B**

### **BMPs FOR UPGRADIENT STORMWATER**

There is no known surface water, groundwater or storm water that originates upgradient from the site and flows across the Beacon Hill site.

**ATTACHMENT C**

**BMPs FOR ON-SITE STORMWATER**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

## **ATTACHMENT C**

### **BMPs FOR ON-SITE STORMWATER**

On-site stormwater will travel as sheet flow or shallow concentrated flow across pervious and impervious areas before being collected by curb and gutter, and flows into an on-site storm sewer system. This storm sewer connects to either an extended detention pond designed to treat the runoff per TCEQ requirements. Runoff on the northwest and northeast portions of the site (DA 1 and DA 2) will sheet flow away from the site. All runoff will be released from the site and eventually drain into Onion Creek.

**ATTACHMENT D**

**BMPs FOR SURFACE STREAMS**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

## **ATTACHMENT D**

### **BMPs FOR SURFACE STREAMS**

There are no surface streams immediately adjacent to the site. However, portions of the site will drain to Pond 1 which drains to Onion Creek. Onion Creek is located south of Hwy. 967 and is the ultimate point of discharge for Pond 1 and Outlet 1. A description of the BMPs and measures that prevent pollutants from entering surface streams is provided in Attachment K.

**ATTACHMENT E**

**REQUEST TO SEAL FEATURES**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

**\*(NOT APPLICABLE)\***

**ATTACHMENT F**

**CONSTRUCTION PLANS  
& TSS CALCULATIONS**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

**ATTACHMENT F**

**CONSTRUCTION PLANS & TSS CALCULATIONS**

Construction plans of the proposed permanent BMP's for this project are included in Section 9 of this application.

The TCEQ spreadsheet was used to size the WQV required to treat the proposed site improvements. The proposed basins were upsized by 20% per the TCEQ RG 348 to account for anticipated sediment loading after the site is stabilized. Pond volumes are included in Section 6. Ponds 1 and 2 were part of site wide analysis and Pond 1 will adequately treat DA 1, while Pond 2 will treat the required load for DA 2.

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.

Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.

Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Pages 3-27 to 3-30

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

where:

$L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of increased load

$A_N$  = Net increase in impervious area for the project

P = Average annual precipitation, inches

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

County =	<b>Hays</b>	
Total project area included in plan * =	<b>10.65</b>	acres
Predevelopment impervious area within the limits of the plan * =	<b>4.55</b>	acres
Total post-development impervious area within the limits of the plan * =	<b>6.49</b>	acres
Total post-development impervious cover fraction * =	<b>0.61</b>	
P =	<b>33</b>	inches

$L_{M \text{ TOTAL PROJECT}} = 1741$  lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

**Drainage Basin/Outfall Area No. = 1**

Total drainage basin/outfall area =	<b>2.35</b>	acres
Predevelopment impervious area within drainage basin/outfall area =	<b>0.67</b>	acres
Post-development impervious area within drainage basin/outfall area =	<b>1.29</b>	acres
Post-development impervious fraction within drainage basin/outfall area =	<b>0.55</b>	
$L_{M \text{ THIS BASIN}} =$	<b>557</b>	lbs.

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

Proposed BMP = **Extended Detention**  
Removal efficiency = **75** percent

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

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

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

where:

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

$A_C$  = **2.35** acres  
 $A_I$  = **1.29** acres  
 $A_P$  = **1.06** acres  
 $L_R$  = **1119** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **557** lbs.

F = **0.50**

**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 = **0.42** inches  
 Post Development Runoff Coefficient = **0.39**  
 On-site Water Quality Volume = **1390** 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 = **278**  
**Total Capture Volume (required water quality volume(s) x 1.20) = 1668** cubic feet

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.

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**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Pages 3-27 to 3-30

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

where:

$L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of increased load

$A_N$  = Net increase in impervious area for the project

P = Average annual precipitation, inches

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

County =	<b>Hays</b>	
Total project area included in plan * =	<b>10.65</b>	acres
Predevelopment impervious area within the limits of the plan * =	<b>4.55</b>	acres
Total post-development impervious area within the limits of the plan * =	<b>6.49</b>	acres
Total post-development impervious cover fraction * =	<b>0.61</b>	
P =	<b>33</b>	inches

$L_{M \text{ TOTAL PROJECT}} = 1741$  lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

**Drainage Basin/Outfall Area No. = 2**

Total drainage basin/outfall area =	<b>5.80</b>	acres
Predevelopment impervious area within drainage basin/outfall area =	<b>1.67</b>	acres
Post-development impervious area within drainage basin/outfall area =	<b>2.98</b>	acres
Post-development impervious fraction within drainage basin/outfall area =	<b>0.51</b>	
$L_{M \text{ THIS BASIN}} =$	<b>1176</b>	lbs.

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

Proposed BMP = **Extended Detention**  
Removal efficiency = **75** percent

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

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

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

where:

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

$A_C$  = **5.80** acres  
 $A_I$  = **2.98** acres  
 $A_P$  = **2.82** acres  
 $L_R$  = **2590** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **1176** lbs.

F = **0.45**

**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 = **0.36** inches  
 Post Development Runoff Coefficient = **0.37**  
 On-site Water Quality Volume = **2745** 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 = **549**  
**Total Capture Volume (required water quality volume(s) x 1.20) = 3294** cubic feet

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.

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**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Pages 3-27 to 3-30

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

where:

$L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of increased load

$A_N$  = Net increase in impervious area for the project

P = Average annual precipitation, inches

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

County =	<b>Hays</b>	
Total project area included in plan * =	<b>10.65</b>	acres
Predevelopment impervious area within the limits of the plan * =	<b>4.55</b>	acres
Total post-development impervious area within the limits of the plan * =	<b>6.49</b>	acres
Total post-development impervious cover fraction * =	<b>0.61</b>	
P =	<b>33</b>	inches

$L_{M \text{ TOTAL PROJECT}} = 1741$  lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

**Drainage Basin/Outfall Area No. = 3**

Total drainage basin/outfall area =	<b>0.58</b>	acres
Predevelopment impervious area within drainage basin/outfall area =	<b>0.32</b>	acres
Post-development impervious area within drainage basin/outfall area =	<b>0.32</b>	acres
Post-development impervious fraction within drainage basin/outfall area =	<b>0.55</b>	
$L_{M \text{ THIS BASIN}} =$	<b>0</b>	lbs.

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

Proposed BMP = **Extended Detention**  
Removal efficiency = **75** percent

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

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

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

where:

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

$A_C$  = **0.58** acres  
 $A_I$  = **0.32** acres  
 $A_P$  = **0.26** acres  
 $L_R$  = **278** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **0** lbs.

F = **0.00**

**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 = **0.00** inches  
 Post Development Runoff Coefficient = **0.39**  
 On-site Water Quality Volume = **0** 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 = **0**  
**Total Capture Volume (required water quality volume(s) x 1.20) = 0** cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **HCISD Beacon Hill**

Date Prepared: **8/28/2020**

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.

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**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Pages 3-27 to 3-30

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

where:

$L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of increased load

$A_N$  = Net increase in impervious area for the project

P = Average annual precipitation, inches

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

County =	<b>Hays</b>	
Total project area included in plan * =	<b>10.65</b>	acres
Predevelopment impervious area within the limits of the plan * =	<b>4.55</b>	acres
Total post-development impervious area within the limits of the plan * =	<b>6.49</b>	acres
Total post-development impervious cover fraction * =	<b>0.61</b>	
P =	<b>33</b>	inches

$L_{M \text{ TOTAL PROJECT}}$  = **1741** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

Drainage Basin/Outfall Area No. = **4**

Total drainage basin/outfall area =	<b>1.93</b>	acres
Predevelopment impervious area within drainage basin/outfall area =	<b>1.89</b>	acres
Post-development impervious area within drainage basin/outfall area =	<b>1.89</b>	acres
Post-development impervious fraction within drainage basin/outfall area =	<b>0.98</b>	
$L_{M \text{ THIS BASIN}}$ =	<b>0</b>	lbs.

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

Proposed BMP = **Extended Detention**  
Removal efficiency = **75** percent

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

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

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

where:

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

- $A_C$  = **1.93** acres
- $A_i$  = **1.89** acres
- $A_p$  = **0.04** acres
- $L_R$  = **1619** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **0** lbs.

$F$  = **0.00**

**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 = **0.00** inches
- Post Development Runoff Coefficient = **0.80**
- On-site Water Quality Volume = **0** 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 = **0**
- Total Capture Volume (required water quality volume(s) x 1.20) = 0** cubic feet

**ATTACHMENT G**

**INSPECTION, MAINTENANCE, REPAIR & RETROFIT PLAN**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

## ATTACHMENT G

### INSPECTION, MAINTENANCE, REPAIR & RETROFIT PLAN

The following guidelines should be used for the maintenance plan for the permanent BMPs for Beacon Hill Bus Maintenance Facility.

#### Extended Detention Basins:

- **During Construction.** Construction within the area draining to the system shall be complete prior to exposing the pond to stormwater runoff. All exposed areas shall be stabilized to minimize sediment loads. The basins shall become operational prior to proposed pavement improvements. Until all the construction within the basin's drainage area has been completed and exposed earth stabilized, the basin will be inspected weekly and after all rain events.
- **Mowing.** The side-slopes, embankment, and emergency spillway of the basin should be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins must be mowed at least twice annually, or more frequently if vegetation exceeds 18 inches in height. When mowing is performed, a mulching mower should be used or grass clippings should be caught and removed. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.
- **Inspections.** Inspections should take place a minimum of twice a year to evaluate facility operation. One inspection should take place during or immediately following wet weather to determine if the basin is meeting the target detention time. The remaining inspections should occur between storm events. The inlet and outlet structure should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet as described in previous sections. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired/revegetated immediately. Cracks, voids, and undermining should be patched/filled to prevent additional structural damage. The inspections should be carried out with as-built pond plans in hand.
- **Sediment Removal.** A properly designed extended detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with level sensor operation. Sediment shall be removed from the basin at least every 10 years, or when sediment depth exceeds 6 inches (or 12 inches during construction).
- **Debris and Litter Removal.** As part of periodic mowing operations and inspections, debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the inlet and outlet structure. These items should be checked for possible clogging.

**Beacon Hill Bus Maintenance Facility  
Water Pollution Abatement Plan**

**420-003-02**

- **Erosion Control.** The basin side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion. Corrective measures such as regrading and revegetation may be necessary. Similarly, the riprap protecting the channel near the outlet may need to be repaired or replaced.
- **Nuisance Control.** Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.). Biological control of algae and mosquitoes using fish such as fathead minnows is preferable to chemical applications.
- **Maintenance Access.** Maintenance will be performed by maintenance personnel from within the basins. Maintenance equipment and materials to be removed will be hoisted in and out of the basins via buckets using applicable mechanical equipment.

Non-Routine Maintenance

- **Structural Repairs and Replacement.** With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures) should be identified and repaired immediately. An example of this type of repair can include patching of cracked concrete, sealing of voids, removal of vegetation from cracks and joints. The various inlet/outlet structures in a basin will eventually deteriorate and must be replaced.

Record Keeping:

Maintenance and inspection records should be kept on file by the Owner of the permanent BMP's for a period of at least three (3) years. Repair and retrofit records should be kept on file by the Owner of the permanent BMP's for a period of at least five (5) years. The attached Operation and Maintenance Checklist shall be completed for each inspection performed.

Rod Walls

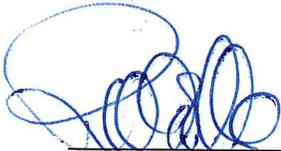
Print Name

Director of Construction & Sustainability

Title

Hays Consolidated Independent School District

Entity Name



Signature

09/30/2020  
Date

# Pond Inspection & Maintenance Plan

## **POND INFORMATION**

Water Quality ponds are designed to settle out sediment and associated pollutants to improve water quality. Detention ponds also provide rate and flood control prior to discharging toward a receiving waterway.

This document serves as guidance to developing an inspection and maintenance plan.

**SITE LOCATION:** \_\_\_\_\_  
Physical address of pond

## **DETENTION POND INSPECTION/MAINTENANCE**

The CURRENT OWNER (Hays Consolidated Independent School District) or their designee is responsible for completing inspections and conducting maintenance.

## **WHEN WILL THE POND BE INSPECTED AND MAINTAINED?**

At a minimum, ponds must be inspected once per year. Additional inspections are recommended during or after significant rain events (greater than 2.0 inches). Personnel should be aware of the maintenance plan. It is recommended to consult with the designer and builder, or on-site faculty staff, to understand the inspection and maintenance needs.

## **MAINTENANCE PLAN INFORMATION**

This Maintenance Plan and records of maintenance performed at the referenced location shall be kept on file for five (5) years and available for review by jurisdictional authorities upon request.

## **INSPECTION & MAINTENANCE CHECKLIST (must be completed once per year):**

	Ensure there is a proper vegetation buffer around the pond perimeter (un-mowed or at least 6" in height for the entire side slope and top 10 feet).
	Visually inspect for sediment and debris accumulation within the pond and pre-treatment (e.g. sumps, forebay) areas annually.
	Clean pond if sediment/debris accumulates taking up 10-20% of the storage capacity or the pond is negatively affecting downstream waterways or properties.
	Detailed inspection of sediment accumulation (sediment survey) every 5 years.
	Inspect drainage area for erosion and possible illicit discharges.
	Repair clogging or erosion at the inlets, outlets, and overflow.
	Perform any mowing or weed control needed.

	Identify pond bank erosion and repair as needed.
	Photos taken.
	Other.

Action Items recommended based on inspection performed

By: \_\_\_\_\_

Date: \_\_\_\_\_

1.

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2.

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3.

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\*\*Please keep a copy of this Plan for your records\*\*

**ATTACHMENT H**

**PILOT-SCALE FIELD TESTING PLAN**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

**\*(NOT APPLICABLE)\***

**ATTACHMENT I**

**MEASURES FOR MINIMIZING SURFACE STREAM  
CONTAMINATION**

**PERMANENT STORMWATER SECTION  
(TCEQ-0600)**

## **ATTACHMENT I**

### **MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION**

During construction, standard erosion measures will be used as shown in the construction plans. The entire construction site will be contained by a silt fence until construction is complete. Entry and exit from the site will be through a stabilized construction entrance. The water quality ponds will be rough cut as soon as possible so this excavation can be used as a sediment trap until the ponds and other construction are completed.

Improved areas of the Beacon Hill Bus Maintenance Facility will drain to either Pond 1 or 2.

Increased velocities at the pond outfall will be reduced to non-erosive velocities by the installation of dissipaters and rock rip rap. After completion of the project, temporary erosion and sedimentation measures (silt fence and rock berm) will remain in place until vegetative cover is established. Details concerning the erosion/sedimentation protection plan can be found on the Erosion & Sedimentation Control Plans of the Construction Plans in Section 7.

**SECTION 6**  
**AGENT AUTHORIZATION FORM**  
**(TCEQ-0599)**



SIGNATURE PAGE:



Applicant's Signature

09/30/2020  
Date

THE STATE OF Texas §

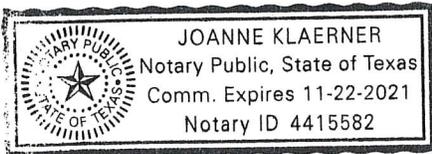
County of Hays §

BEFORE ME, the undersigned authority, on this day personally appeared Rod Waus 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 30 day of September 2020

Joanne Klaerner  
NOTARY PUBLIC

Joanne Klaerner  
Typed or Printed Name of Notary



MY COMMISSION EXPIRES: 11-22-2021

**SECTION 7  
APPLICATION FEE FORM  
(TCEQ-0574)**

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Facility Services

Regulated Entity Location: West of RR967 & FM1626 intersection, across Johnson High School

Name of Customer: Hays C.I.S.D

Contact Person: Thomas F. Curran, PE

Phone: 512-583-2623

Customer Reference Number (if issued): CN 601392384

Regulated Entity Reference Number (if issued): RN 105193791

### Austin Regional Office (3373)

Hays

Travis

Williamson

### San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

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

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(512)239-0357

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

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	10.8 Acres	\$ 6,500
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	\$
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Application Fee Schedule

Texas Commission on Environmental Quality

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

### *Water Pollution Abatement Plans and Modifications*

#### *Contributing Zone Plans and Modifications*

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

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

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

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

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

#### *Exception Requests*

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

***Extension of Time Requests***

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

**SECTION 8  
CORE DATA FORM  
(TCEQ-10400)**



TCEQ Use Only

# TCEQ Core Data Form

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

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
<b>2. Customer Reference Number (if issued)</b>	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number (if issued)</b>
CN 601392384		RN 105193791

## SECTION II: Customer Information

<b>4. General Customer Information</b>	<b>5. Effective Date for Customer Information Updates (mm/dd/yyyy)</b>	10/06/2020	
<input type="checkbox"/> New Customer <input checked="" type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership <input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)			
<b>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).</b>			
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
Hays Consolidated Independent School District			
<b>7. TX SOS/CPA Filing Number</b>	<b>8. TX State Tax ID</b> (11 digits)	<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
	17415875180	74-1587518	100672930
<b>11. Type of Customer:</b>	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input checked="" type="checkbox"/> Other: School District	
<b>12. Number of Employees</b>		<b>13. Independently Owned and Operated?</b>	
<input type="checkbox"/> 0-20 <input checked="" type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following:			
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
<b>15. Mailing Address:</b>	21003 Interstate 35 (Attn: Max Cleaver)		
	City	Kyle	State TX ZIP 78745 ZIP + 4
<b>16. Country Mailing Information</b> (if outside USA)		<b>17. E-Mail Address</b> (if applicable)	
N/A		max.cleaver@hayscisd.net	
<b>18. Telephone Number</b>	<b>19. Extension or Code</b>	<b>20. Fax Number</b> (if applicable)	
( 512 ) 268-2141		( ) -	

## SECTION III: Regulated Entity Information

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

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	155 Beacon Hill Road							
	City	Buda	State	TX	ZIP	78610	ZIP + 4	
24. County	Hays							
Enter Physical Location Description if no street address is provided.								
25. Description to Physical Location:	One mile west of RM 967 & FM 1626 intersection, across from Johnson High School							
26. Nearest City	Buda				State	TX	Nearest ZIP Code	78610
27. Latitude (N) In Decimal:	30.094275			28. Longitude (W) In Decimal:	-97.893275			
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds			
30	5	39.39	97	53	35.79			
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)				
1521		236117						
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>								
School District								
34. Mailing Address:	21003 Interstate 35							
	City	Kyle	State	TX	ZIP	78745	ZIP + 4	
35. E-Mail Address:								
36. Telephone Number		37. Extension or Code		38. Fax Number <i>(if applicable)</i>				
( 512 ) 268-2141				( ) -				

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

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

#### SECTION IV: Preparer Information

40. Name:	Thomas F. Curran, PE	41. Title:	Senior Project Manager
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
( 512 ) 583-2623		( 512 ) 583-2601	tcurran@doucetengineers.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:	Doucet & Associates, Inc.	Job Title:	Senior Project Manager
Name <i>(In Print)</i> :	Thomas F. Curran	Phone:	( 512 ) 583-2623
Signature:		Date:	9/30/20

**SECTION 9  
CONSTRUCTION PLANS  
(FOLDED)**

# HAYS CONSOLIDATED I.S.D. BEACON HILL BUS MAINTENANCE FACILITY MAINTENANCE AND OPERATIONS IMPROVEMENTS WATER POLLUTION ABATEMENT PLANS

PLANS PREPARED AND RECOMMENDED FOR APPROVAL BY:

DOUCET & ASSOCIATES, INC. \_\_\_\_\_ Date

ACCEPTED FOR CONSTRUCTION:

CITY OF BUDA \_\_\_\_\_ DATE

HAYS COUNTY \_\_\_\_\_ DATE

TCEQ PERMIT NUMBER \_\_\_\_\_

**FLOODPLAIN NOTE:**

NO PORTION OF THIS TRACT IS WITHIN THE BOUNDARIES OF THE 100 YEAR FLOODPLAIN OF ANY WATERWAY THAT IS WITHIN THE LIMITS OF STUDY OF THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP NO. 48209C0260F, DATED SEPTEMBER 2, 2005, COMMUNITY PANEL NO. 480321, IN THE CITY OF BUDA, HAYS COUNTY, TEXAS.

THIS TRACT FALLS ENTIRELY WITHIN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN)

**EDWARDS AQUIFER JURISDICTIONAL BOUNDARY NOTE:**

THE SITE IS LOCATED WITHIN BOTH THE EDWARDS AQUIFER RECHARGE AND THE EDWARDS AQUIFER CONTRIBUTING ZONE.

**SURVEY CONTROL:**

THE BASIS OF BEARINGS OF THIS SURVEY SHOWN HEREON, IS THE TEXAS COORDINATE SYSTEM NAD83, SOUTH CENTRAL ZONE, UTILIZING STATIC OBSERVATIONS AND CORRECTIONS PERFORMED BY THE NGS-OPUS WEBSITE.

**BENCHMARK:**

HAYS COUNTY MONUMENT NUMBER H062 BEING AN ALUMINUM DISK IN CONCRETE STAMPED "HAYS COUNTY 1995 GPS CONTROL MONUMENT 62" ALONG THE NORTH RIGHT OF WAY OF F.M. 967, APPROXIMATELY 2,439 FEET WEST OF THE CENTERLINE OF C.R. 146, WITH AN ELEVATION OF 814.41 FEET, NAVD 88 DATUM, HAS BEEN USED FOR THE ELEVATIONS SHOWN ON THIS SURVEY.



**VICINITY MAP**

SCALE: 1" = 500'

SHEET LIST	
SHT.#	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	EXISTING CONDITIONS
4	SITE CONDITIONS PRIOR TO JUNE 1, 1999
5	SITE PLAN
6	ES CONTROL & TREE PROTECTION
7	ES CONTROL & TREE PROTECTION DETAILS
8	DRAINAGE PLAN
9	PAVEMENT PLAN
10	WATER QUALITY POND 1
11	WATER QUALITY POND 2

**NOTE:**

- ALL CONSTRUCTION ACTIVITIES SHALL MEET THE CITY OF BUDA CONSTRUCTION STANDARDS.
- 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 ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.



9/11/2020

ISSUED FOR PERMITTING,  
NOT FOR CONSTRUCTION

Designed: GP/OF  
 Drawn: GP/OF  
 Reviewed: TFC  
 Date: 9/11/2020

SHEET

1

1 OF 11

Project No.:  
420-003-02

**CITY OF BUDA GENERAL CONSTRUCTION NOTES**

- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF BUDA MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
- THESE PLANS, PREPARED BY THE CITY OF BUDA DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REGISTERED ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOR OR HEREAFTER BE INCORPORATED INTO THESE PLANS.
- CONTRACTOR SHALL CONTACT THE CITY OF BUDA'S ENGINEER (512-312-0084) A MINIMUM OF TWO WORKING DAYS IN ADVANCE OF BLOCKING TRAFFIC LANES AND A MINIMUM OF SIX WORKING DAYS IN ADVANCE OF SCHEDULED DETOURING OF TRAFFIC LANES.
- CONTRACTOR TO GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN BE ISSUED TO CONTRACTOR TO BE OBTAINED AT HIS EXPENSE.
- CONTRACTOR TO COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES. ALL WORK TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AGENCY INVOLVED.
- CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS, AND PROJECT ENGINEERING REFERENCE POINT, REESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PUBLIC LAND SURVEYOR IN THE STATE OF TEXAS, AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR TO CONTROL DUST CAUSED BY THE WORK AND COMPLY WITH POLLUTION CONTROL REGULATIONS OF GOVERNING AUTHORITIES. DUST CONTROL SHALL BE ACHIEVED BY THE APPLICATION OF WATER BY AN APPROVED SPRINKLER IN AMOUNTS SUFFICIENT TO CONTROL THE DUST TO THE SATISFACTION OF THE ENGINEER (NO SEPARATE PAY).
- BURNING IS NOT ALLOWED ON THIS PROJECT.
- DEMOLITION PERMITS (IF NEEDED) ARE TO BE OBTAINED BY THE CONTRACTOR.
- ACQUISITION OF RIGHT OF WAY AND/OR EASEMENT IS THE RESPONSIBILITY OF THE CITY OF BUDA.
- THE CONTRACTOR IS TO OBTAIN PERMIT PRIOR TO PERFORMING ANY WORK IN THE PUBLIC RIGHT-OF-WAY.
- CONTRACTOR SHALL REPAIR ALL STREET CROSSINGS, DRIVEWAYS AND DITCHES TO THEIR ORIGINAL CONDITION OR BETTER. STREET CROSSINGS SHALL BE REPAIRED WITHIN 10 WORKING DAYS AFTER CROSSING IS MADE, UNLESS PRIOR APPROVAL IS OBTAINED TO THE CONTRARY.
- ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO THE STREET SURFACE OR SUBSURFACE OUTSIDE OF THE PAVEMENT CUT AREA SHALL BE REGARDED AS PART OF THE STREET CUT REPAIR. THIS INCLUDES ANY SCRAPES, GOUGES, CUTS, CRACKING, DEPRESSIONS AND/OR ANY OTHER DAMAGE CAUSED BY THE CONTRACTOR DURING THE EXECUTION OF THE WORK. THESE AREAS WILL BE INCLUDED IN THE TOTAL AREA OF REPAIR. THE AREAS OF REPAIR SHALL BE SAW CUT IN STRAIGHT, NEAT LINES PARALLEL TO THE UTILITY TRENCH. ALL REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL MEET ALL CITY TESTING REQUIREMENTS AND SPECIFICATIONS.
- ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATION OF THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT'S PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, ASUTIN, TX.)
- ALL SITE WORK MUST ALSO COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
- THROUGHOUT THE CONSTRUCTION, AND AT THE COMPLETION OF THE CONSTRUCTION, THE CONTRACTOR IS TO ENSURE THAT DRAINAGE OF STORM WATER RUNOFF IS NOT BLOCKED.
- ALL EXCESS EXCAVATED MATERIAL AND SOIL IS TO BECOME PROPERTY OF CONTRACTOR AND TO BE REMOVED FROM SITE. (NO SEPARATE PAY.)
- ALL CULVERTS REMOVED FROM CONSTRUCTION SHALL BE REPLACED TO ORIGINAL GRADE; ROAD DITCH SHALL BE GRADED TO PROVIDE FOR AN EVEN GRADE AND SECTION BETWEEN EXISTING CULVERTS. ALL CULVERTS SHALL BE CLEAN AND FREE OF DEBRIS DURING AND AFTER CONSTRUCTION.
- 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 CITY OF BUDA 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 AND TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PRIVATE PROPERTY, WHICH OCCURRED AS A RESULT OF ANY PORTION OF THIS PROJECT. ANY DAMAGE TO PRIVATE PROPERTY SHALL BE REPAIRED TO EQUAL OR BETTER CONDITION. THE CONTRACTOR SHALL COORDINATE ALL REPAIRS TO PRIVATE PROPERTY WITH THE PROPERTY OWNER. CONTRACTOR SHALL PAY AND/OR SETTLE WITH PRIVATE PROPERTY OWNER FOR ALL COSTS RELATED TO ANY DAMAGE. THE CITY OF BUDA WILL NOT PROVIDE SEPARATE PAY FOR REPAIR OF ANY DAMAGES, REIMBURSEMENTS OR SETTLEMENTS.

**CONSTRUCTION SEQUENCE**

- THE CONTRACTOR SHALL CALL THE CITY OF BUDA'S ENGINEERING REPRESENTATIVE 48 HOURS PRIOR TO BEGINNING INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS.
- THE CONTRACTOR SHALL FILE A NOTICE OF INTENT WITH TCEQ FOR A LARGE CONSTRUCTION ASBUILT, PRIOR TO ANY EARTHWORK AND SHALL HAVE A STORM WATER POLLUTION PREVENTION PLAN PREPARED FOR THE SITE IN ACCORDANCE WITH TPDES GENERAL PERMIT REQUIREMENTS.
- THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION/SEDIMENTATION CONTROL AND TREE PROTECTION MEASURES AS SHOWN WITHIN THESE PLANS.
- THE CONTRACTOR SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE, CONTACT THE PUBLIC WORKS PERMIT COORDINATOR FOR SCHEDULING THE PRE-CON MEETING AT (512) 312-5745.
- WITH THE APPROVAL OF ALL AFFECTED PARTIES, THE CONTRACTOR MAY BEGIN CLEARING AND GRUBBING. CONTRACTOR SHALL ROUGH CUT PROPOSED DETENTION POND TO SERVE AS A SEDIMENTATION BASIN DURING CONSTRUCTION.
- DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF KYLE'S ENGINEERING REPRESENTATIVE PRIOR TO CLEARING AND GRUBBING.
- ROUGH GRADE STREETS. NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME, EXCEPT AS REQUIRED FOR UTILITY CONSTRUCTION.
- DELIVER WATER & WASTEWATER CUT SHEETS TO THE CITY OF KYLE'S ENGINEERING REPRESENTATIVE.
- INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
- DELIVER STORM SEWER CUT SHEETS TO THE CITY OF KYLE'S ENGINEERING REPRESENTATIVE. GEOTECHNICAL ENGINEER TO VERIFY SUBGRADE AND REQUIRED BASE THICKNESS.
- BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS. INSTALL INLET PROTECTION.
- DELIVER FINAL GRADE CUT SHEETS TO THE CITY OF KYLE'S ENGINEERING REPRESENTATIVE.
- REGRADE STREETS TO SUBGRADE.
- ENSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL STREETS.
- INSTALL CURB AND GUTTER.
- LAY FINAL BASE COURSE ON ALL STREETS.
- LAY ASPHALT.
- COMPLETE ALL ROUGH GRADING AND UNDERGROUND INSTALLATIONS WITHIN THE R.O.W.
- COMPLETE FINAL GRADING AND INSTALL SIDEWALK IN R.O.W. ALONG AREAS DESIGNATED. RESTORE CONSTRUCTION SPOILS & STAGING AREA TO NATURAL GRADE.
- COMPLETE IMPROVEMENTS TO DETENTION POND.
- COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION. SCHEDULE FINAL WALK THROUGH WITH CITY ENGINEER, PUBLIC WORKS, INSPECTOR, AND ENGINEER.
- PROJECT ENGINEER OBSERVES CONSTRUCTION AND WRITES CONCURRENCE LETTER TO THE CITY OF KYLE. FINAL INSPECTION IS SCHEDULED UPON RECEIPT OF LETTER.
- REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL, INCLUDING CONSTRUCTION SPOILS AREA.
- COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY ITEM 20.

**MINIMUM CRITERIA FOR ACCEPTANCE**

- ALL CONSTRUCTION IS COMPLETE INCLUDING DRY UTILITIES AND RESTORATION TO THE CRITERIA.
- ALL CITY OF BUDA FEES PAID AND MAINTENANCE BOND POSTED.
- ALL RECORDS OF CONSTRUCTION TESTING AND RECORD DRAWINGS SHOWING ANY CHANGES DURING CONSTRUCTION PROVIDED TO THE CITY OF BUDA.
- ALL STREET LIGHTING, SIGNS AND PAVEMENT MARKINGS SHALL BE IN PLACE.

**SPECIAL NOTES**

- THE SUBGRADE MATERIAL WAS TESTED BY FUGRO USA LAND, INC., IN 2020 AND THE STREET DESIGNS ARE IN ACCORDANCE WITH THE CITY OF BUDA CRITERIA. THE STREET SECTIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GEOTECH REPORT & THE APPROVED CONSTRUCTION PLANS. IN THE CASE OF A CONFLICT, THE MORE CONSECUTIVE DESIGN WILL BE INSTALLED AS DETERMINED AT ENTRANCE.
- PROJECTS USING LIME STABILIZATION OF SUBGRADE SHALL BE REQUIRED TO PLACE LIME IN SLURRY FORM. THE LIME STABILIZATION SHALL EXTEND A MINIMUM OF 3' BEHIND BACK OF CURB.
- SIDEWALKS SHALL BE COMPLETED PRIOR TO ACCEPTANCE OF ANY TYPE I OR TYPE II DRIVEWAY APPROACHES AND / OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY. SIDEWALKS ADJACENT TO "COMMON AREAS", PARKWAYS, OR OTHER LOCATIONS ON WHICH NO BUILDING CONSTRUCTION WILL TAKE PLACE, MUST BE CONSTRUCTED PRIOR TO FINAL ACCEPTANCE OF THE SUBDIVISION.
- FOR TRENCHING WITHIN EASEMENTS OR R.O.W., SHOP DRAWINGS AND SUPPORTING CALCULATIONS FOR A TRENCH SAFETY SYSTEM SHALL BE SUBMITTED FOR CITY CONSTRUCTION INSPECTION DIVISION APPROVAL PRIOR TO START OF EXCAVATION. THESE DOCUMENTS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN TEXAS. THE CONTRACTOR'S TRENCH SAFETY ENGINEER SHALL CARRY AND MAINTAIN COVERAGE OF PROFESSIONAL LIABILITY INSURANCE WITH MINIMUM LIMITS OF \$500,000 (FIVE HUNDRED THOUSAND DOLLARS).
- FOR SLOPES OR TRENCHES MORE THAN 5' (FIVE FEET) IN DEPTH ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 509 AND APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

FLEXIBLE PAVEMENT REQUIREMENTS			
SUBGRADE CONDITION	LIME STABILIZED SUBGRADE	CRUSHED LIMESTONE BASE MATERIAL	HMAC THICKNESS
FAT CLAY	8-INCHES	14-INCHES	5-INCHES
FILL	-	12-INCHES	5-INCHES

RIGID PAVEMENT REQUIREMENTS	
CRUSHED LIMESTONE BASE MATERIAL	PORTLAND CEMENT CONCRETE THICKNESS
6-INCHES	9-INCHES

**TRENCH SAFETY NOTES:**

- IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED.
- IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN EMPLOYEES ARE REQUIRED TO BE IN TRENCHES 4 FOOT DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
- IF FOUND DURING CONSTRUCTION THAT TRENCHES ARE IN FACT GREATER THAN 5 FEET IN DEPTH, THE CONTRACTOR SHALL PROVIDE ACCEPTABLE TRENCH SAFETY PLANS DESIGNED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH U.S. OSHA REGULATIONS.

**CITY OF BUDA EROSION AND SEDIMENTATION CONTROL NOTES:**

- THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
- THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN'S ENVIRONMENTAL CRITERIA MANUAL AS ADOPTED BY THE CITY OF BUDA.
- TREES DO NOT EXIST WITHIN THE PROJECT LIMITS, AND TREE PROTECTION WILL NOT BE REQUIRED.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE CITY OF BUDA ENGINEERING DEPARTMENT, 312-0084, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE.
- ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ARBORIST AS APPROPRIATE. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE PLAN MAY BE REQUIRED BY THE INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
- THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR THE MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHED SIX (6) INCHES.

**PERMANENT EROSION CONTROL:**

ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW. A MINIMUM OF FOUR INCHES OF TOPSOIL SHALL BE PLACED IN ALL DRAINAGE CHANNELS (EXCEPT ROCK) AND BETWEEN THE CURB AND RIGHT-OF-WAY LINE.

THE SEEDING FOR PERMANENT EROSION CONTROL SHALL BE AS SPECIFIED IN THE CITY OF AUSTIN STANDARD SPECIFICATION 604S, AS ADOPTED BY THE CITY OF BUDA.

**DUST CONTROL:**

DUST CONTROL METHODS ARE REQUIRED AS PER CITY OF AUSTIN'S ENVIRONMENTAL CRITERIA MANUAL SECTION 1.4.5.D AS ADOPTED BY THE CITY OF BUDA.

**CITY OF BUDA UTILITY CONSTRUCTION NOTES:**

- THE CITY STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE TIME OF BIDDING SHALL COVER MATERIAL AND METHODS USED TO DO THIS WORK.
- CONTRACTOR MUST OBTAIN A STREET CUT PERMIT FROM THE CITY OF BUDA BEFORE BEGINNING CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY.
- AT LEAST 48 HOURS BEFORE BEGINNING ANY WATER AND WASTEWATER CONSTRUCTION IN PUBLIC R.O.W. OR PUBLIC EASEMENT, THE CONTRACTOR SHALL NOTIFY THE CITY OF BUDA PUBLIC WORKS.
- THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF BUDA WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT R.O.W./EASEMENT LINES.
- NO OTHER UTILITY SERVICE/APURTENANCES SHALL BE PLACED NEAR THE PROPERTY LINE, OR OTHER ASSIGNED LOCATION DESIGNATED FOR WATER AND WASTEWATER UTILITY SERVICE THAT WOULD INTERFERE WITH THE WATER AND WASTEWATER SERVICES.
- THE CITY SPECIFICATION ITEM 509S WILL BE REQUIRED AS A MINIMUM TRENCH SAFETY MEASURE.
- ALL MATERIALS TESTS, INCLUDING SOIL DENSITY TESTS AND DETAILED SOIL ANALYSES, SHALL BE CONDUCTED BY AN INDEPENDENT LABORATORY AND FUNDED BY THE OWNER IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 1804S.04.
- PRESSURE TAPS SHALL BE IN ACCORDANCE WITH CITY STANDARD ITEM 510.3(24). THE CONTRACTOR SHALL PERFORM EXCAVATION ETC. AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE, WHEN CONTRACTORS MAKE THE TAP A CITY INSPECTOR MUST BE PRESENT AND 2 WORKING DAYS (MIN.) NOTICE MUST BE GIVEN. "SIZE ON SIZE" TAPS WILL NOT BE PERMITTED, UNLESS, IT HAS BEEN DEMONSTRATED THAT A MOER ACCEPTABLE CONNECTION WOULD INVOLVE CONSIDERABLE HARDSHIP TO THE UTILITY SYSTEM. ALL TAPS SHALL BE MADE BY USE OF AN APPROVED FULL CIRCLE-GASKETED CAST IRON OR DUCTILE IRON TAPPING SLEEVE. CONCRETE BLOCKING SHALL BE PLACED UNDER ALL TAP SLEEVES PRIOR TO MAKING THE PRESSURE TAP AND THE USE OF PRECAST BLOCKS MAY BE USED TO HOLD THE TAP IN ITS CORRECT POSITION PRIOR TO BLOCKING. THE BLOCKING BEHIND AND UNDER THE TAP SHALL HAVE A MINIMUM OF 24 HOURS CURING TIME BEFORE THE VALVE CAN BE RE-OPENED FOR SERVICE FROM THAT TAP.
- THRUST RESTRAINT SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.3(22).
- ALL BRANCH CONNECTIONS SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON THE PLANS BY THE DESIGN ENGINEER.
- A). FIRE HYDRANTS SHALL BE SET IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 511S.4. B). FIRE HYDRANTS SHALL BE PAINTED FLYNT ALUMINUM OR EQUAL.
- WATER LINE TESTING AND STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEMS 510.3(27)-(29). FORCE MAIN PRESSURE TESTING SHALL BE CONDUCTED AND FALL UNDER THE SPECIFICATIONS AS WATER LINES (PRESSURE PIPE) OR AT THE PRESSURE SHOWN ON THE APPROVED PLANS.
- ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. ANY MATERIAL NOT LISTED HAS TO GO THROUGH THE CITY OF BUDA CITY ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF PROJECT. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL WILL BE GIVEN ANY CONSIDERATION.
- WHEN WATER SERVICES ARE DAMAGED, THE SERVICE SHALL BE REPLACED FULL LENGTH WITH PE. NOTE: FULL LENGTH IS FROM BALL VALVE TO METER.
- WHEN AN EXISTING WATERLINE SHUTOUT IS NECESSARY AND POSSIBLE, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR WHO WILL THEN NOTIFY THE CITY OF BUDA PUBLIC WORKS AND THE AFFECTED CUSTOMERS A MINIMUM OF SEVENTY-TWO (72) HOURS IN ADVANCE.
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR SO THAT HE CAN NOTIFY THE CITY OF BUDA PUBLIC WORKS AT A MINIMUM OF 72 HOURS PRIOR TO RELOCATING ANY DOMESTIC OR FIRE DEMAND WATER METERS. THE CONTRACTOR SHALL CAREFULLY REMOVE ALL METERS AND METER BOXES THAT ARE INDICATED TO BE RELOCATED OR SALVAGED. THE CONTRACTOR SHALL INSTALL THE REMOVED METER OR CITY PROVIDED METER AT THE NEW LOCATION INDICATED ON THE CONSTRUCTION PLANS.
- ALL MANHOLES IN UNPAVED AREAS PROVIDING DIRECT ACCESS TO A WASTEWATER LINE SHALL BE WATERTIGHT AND BEAR THE WORDING AND INSIGNIA FOR THE CITY OF BUDA.
- THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL LOCATIONS OF EXISTING UTILITIES PRIOR TO STARTING ONSITE UTILITY WORK.
- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. APPROVAL OF THESE PLANS BY THE CITY OF BUDA DOES NOT REMOVE THESE RESPONSIBILITIES.
- REVIEW BY THE CITY OF BUDA WATER UTILITY APPLIES ONLY TO FACILITIES WITHIN PUBLIC STREETS OR PUBLIC UTILITY EASEMENTS. ALL OTHER WATER AND WASTEWATER FACILITIES INSIDE PRIVATE PROPERTY ARE UNDER THE JURISDICTION OF BUILDING INSPECTION.

**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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
- LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
- 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 CITY 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.
- 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 14<sup>TH</sup> DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21<sup>ST</sup> DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14<sup>TH</sup> DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
- 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.
- 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:
  - 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.
  - 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;
  - ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

<b>AUSTIN REGIONAL OFFICE</b> 12100 PARK 35 CIRCLE, BLDG A AUSTIN, TEXAS 78753-1808 PHONE: (512) 439-2929 FAX: (512) 439-3795	<b>SAN ANTONIO REGIONAL OFFICE</b> 14250 JUDSON ROAD SAN ANTONIO, TEXAS 78233-4480 PHONE: (210) 490-3096 FAX: (210) 545-4329
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www.doucetengineers.com  
TFPE Firm Number: 3937  
TBPLS Firm Number: 10105680

**GENERAL NOTE SHEET**

**BEACON HILL  
BUS MAINTENANCE FACILITY  
HAYS CONSOLIDATED I.S.D.**  
155 BEACON HILL RD, BUDA, TX 78610



9/11/2020

ISSUED FOR PERMITTING,  
NOT FOR CONSTRUCTION

Designed: GP/OF  
Drawn: GP/OF  
Reviewed: TFC  
Date: 9/11/2020

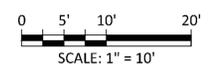
SHEET

2

2 OF 11

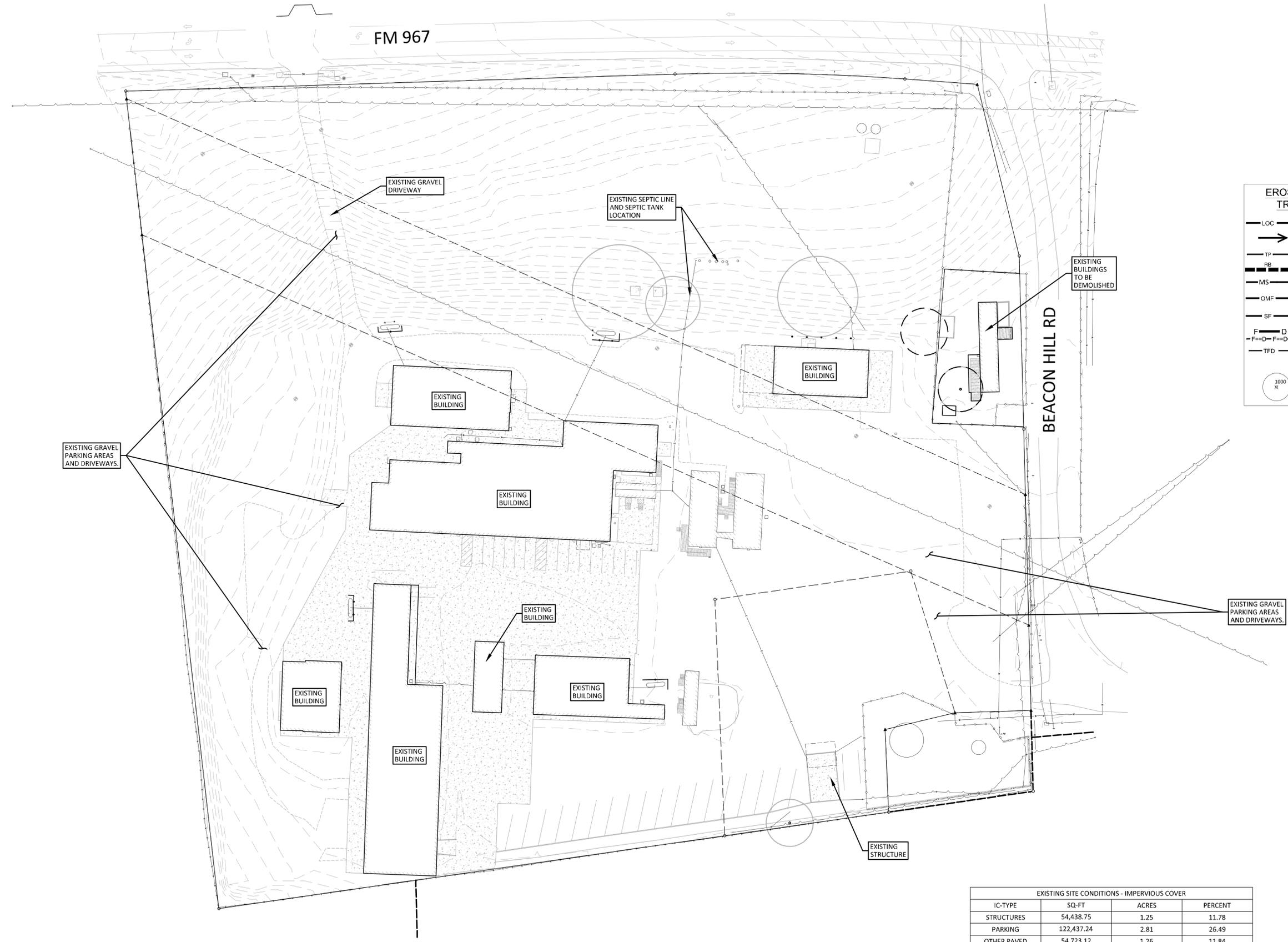
Project No.:  
420-003-02

**CONTRACTOR NOTES:**  
 EXISTING UNDERGROUND & OVERHEAD UTILITIES IN VICINITY. CONTRACTOR TO CONTACT UTILITY COMPANIES PRIOR TO CONSTRUCTION.  
 CONTRACTOR TO CALL 811 FOR UTILITY LOCATES PRIOR TO EXCAVATION. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS & DEPTH PRIOR TO BEGINNING CONSTRUCTION.  
 CONTRACTOR SHALL CONSIDER PROPOSED UTILITY IMPROVEMENTS AND PROVIDE ADEQUATE HORIZONTAL AND VERTICAL CLEARANCE DURING INSTALLATION OF ALL UTILITY INFRASTRUCTURE.



**EROSION / SEDIMENTATION AND TREE PROTECTION LEGEND**

LOC	LIMITS OF CONSTRUCTION	[Symbol]	STABILIZED CONSTRUCTION ENTRANCE (SCE) (C.O.A. DETAIL 6415-1)
[Symbol]	DRAINAGE FLOW DIRECTION	[Symbol]	TEMPORARY SPOILS SITE
TP	TREE PROTECTION FENCE	[Symbol]	CONSTRUCTION STAGING AREA
RB	REINFORCED ROCK BERM	[Symbol]	
MS	MULCH SOCK	[Symbol]	
OMF	ORANGE MESH SAFETY FENCE	[Symbol]	
SF	SILT FENCE	[Symbol]	
F=D	FILTER DIKE CURB	[Symbol]	
F=D	INLET PROTECTION	[Symbol]	
TFD	TRIANGULAR FILTER DIKE	[Symbol]	
	HALF CRITICAL ROOT ZONE	[Symbol]	
[Symbol]	EXISTING TREES (TO REMAIN)		



**EXISTING SITE CONDITIONS - IMPERVIOUS COVER**

IC-TYPE	SQ-FT	ACRES	PERCENT
STRUCTURES	54,438.75	1.25	11.78
PARKING	122,437.24	2.81	26.49
OTHER PAVED	54,723.12	1.26	11.84
<b>TOTAL</b>	<b>231,599.11</b>	<b>5.32</b>	<b>50.10</b>

SITE AREA 462,229.57 10.61

**DOUCET & ASSOCIATES**  
 Civil Engineering - Planning - Geospatial  
 7401 B. Highway 71 W, Suite 160  
 Austin, TX 78735, Tel: (512)-583-2600  
 www.doucetengineers.com  
 TBPE Firm Number: 3737  
 TBPLS Firm Number: 10105600

EXISTING CONDITIONS

**BEACON HILL  
 BUS MAINTENANCE FACILITY  
 HAYS CONSOLIDATED I.S.D**  
 155 BEACON HILL RD, BUDA, TX 78610



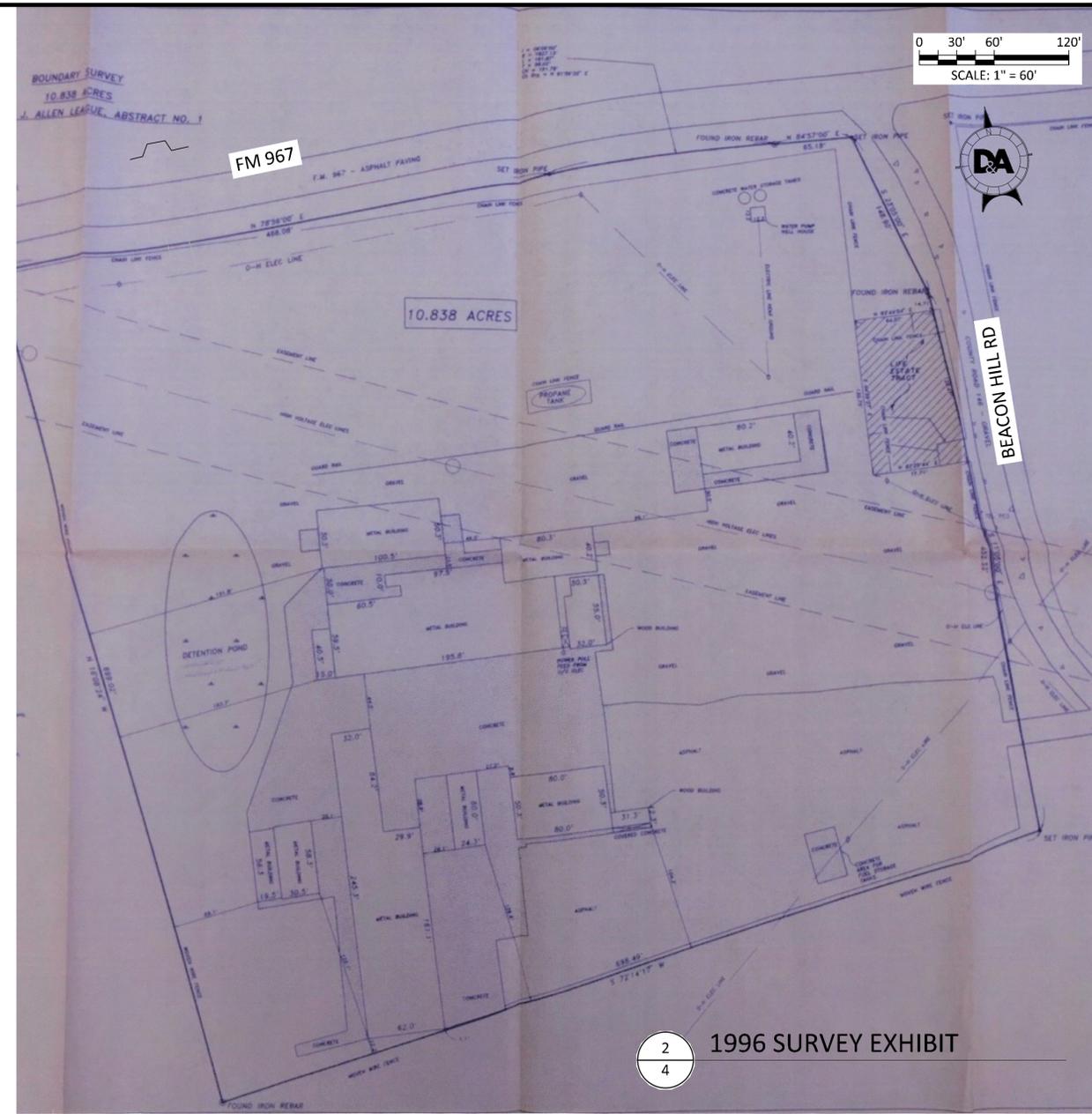
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 Reviewed: TFC  
 Date: 9/11/2020

**SHEET**  
**3**  
**3 OF 11**

Project No.:  
 420-003-02

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PRE-1999 SITE CONDITIONS - IMPERVIOUS COVER			
IC-TYPE	SQ-FT	ACRES	PERCENT
STRUCTURES	48,592.06	1.12	10.51
PARKING	95,136.85	2.18	20.58
OTHER PAVED	54,590.80	1.25	11.81
<b>TOTAL</b>	<b>198,319.71</b>	<b>4.55</b>	<b>42.91</b>

SITE AREA 462,229.57 10.61

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SITE CONDITIONS  
 PRIOR TO JUNE 1, 1999

**BEACON HILL  
 BUS MAINTENANCE FACILITY  
 HAYS CONSOLIDATED I.S.D.**  
 155 BEACON HILL RD, BUDA, TX 78610



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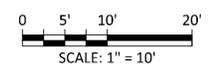
SHEET

4

4 OF 11

Project No.:  
 420-003-02

**CONTRACTOR NOTES:**  
 EXISTING UNDERGROUND & OVERHEAD UTILITIES IN VICINITY. CONTRACTOR TO CONTACT UTILITY COMPANIES PRIOR TO CONSTRUCTION. CONTRACTOR TO CALL 811 FOR UTILITY LOCATES PRIOR TO EXCAVATION. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS & DEPTH PRIOR TO BEGINNING CONSTRUCTION.  
 CONTRACTOR SHALL CONSIDER PROPOSED UTILITY IMPROVEMENTS AND PROVIDE ADEQUATE HORIZONTAL AND VERTICAL CLEARANCE DURING INSTALLATION OF ALL UTILITY INFRASTRUCTURE.



POST-PROJECT SITE CONDITIONS - IMPERVIOUS COVER			
IC-TYPE	SQ-FT	ACRES	PERCENT
STRUCTURES	52,671.59	1.21	11.40
PARKING	175,159.71	4.02	37.89
OTHER PAVED	54,723.12	1.26	11.84
<b>TOTAL</b>	<b>282,554.42</b>	<b>6.49</b>	<b>61.13</b>

SITE AREA 462,229.57 10.61

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 TBPLS Firm Number: 10105600

SITE PLAN

BEACON HILL  
 BUS MAINTENANCE FACILITY  
 HAYS CONSOLIDATED I.S.D  
 155 BEACON HILL RD, BUDA, TX 78610



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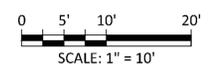
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SHEET  
**5**  
 5 OF 11

Project No.:  
 420-003-02

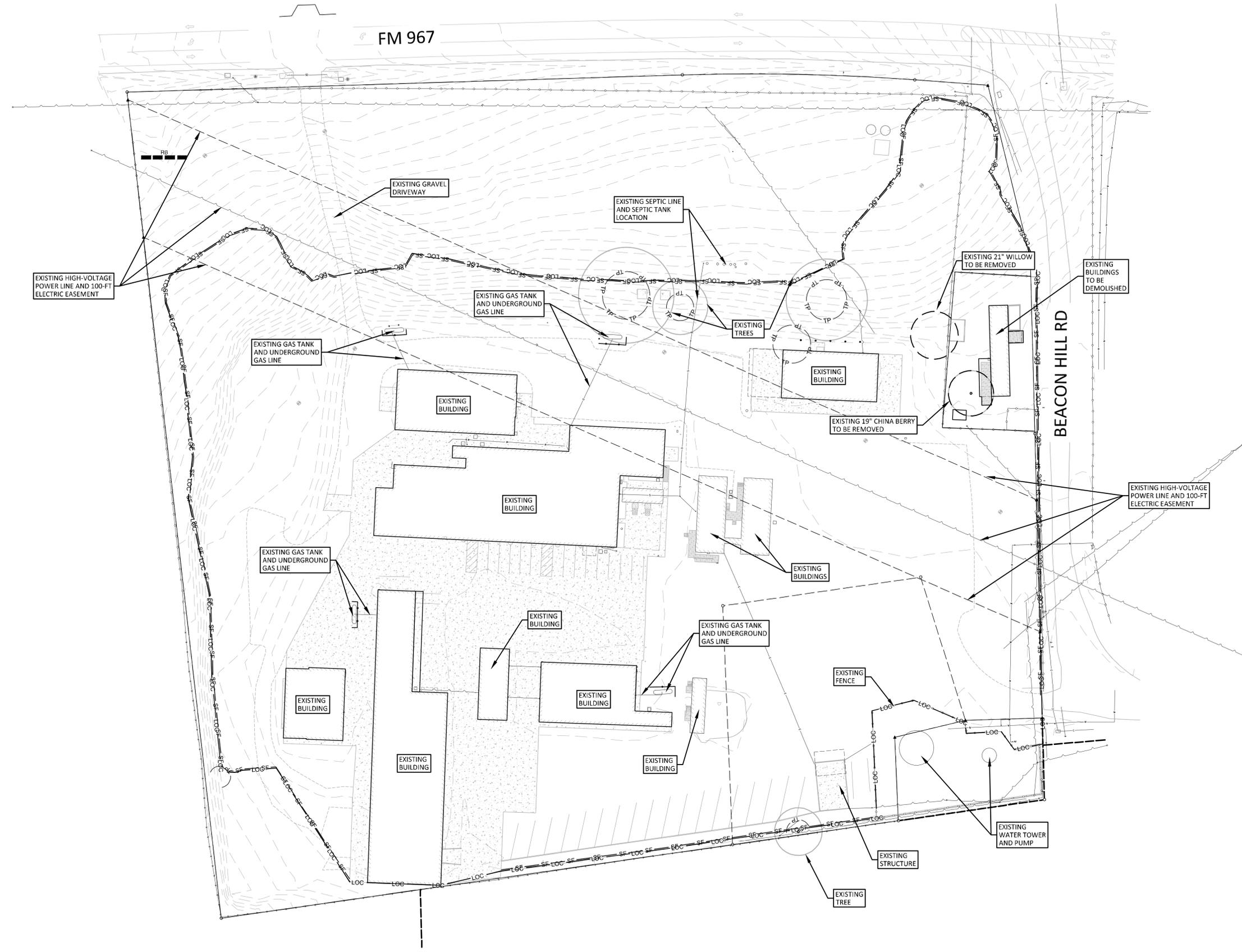
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**CONTRACTOR NOTES:**  
 EXISTING UNDERGROUND & OVERHEAD UTILITIES IN VICINITY. CONTRACTOR TO CONTACT UTILITY COMPANIES PRIOR TO CONSTRUCTION.  
 CONTRACTOR TO CALL 811 FOR UTILITY LOCATES PRIOR TO EXCAVATION. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS & DEPTH PRIOR TO BEGINNING CONSTRUCTION.  
 CONTRACTOR SHALL CONSIDER PROPOSED UTILITY IMPROVEMENTS AND PROVIDE ADEQUATE HORIZONTAL AND VERTICAL CLEARANCE DURING INSTALLATION OF ALL UTILITY INFRASTRUCTURE.



**EROSION / SEDIMENTATION AND TREE PROTECTION LEGEND**

LOC	LIMITS OF CONSTRUCTION	[Symbol]	STABILIZED CONSTRUCTION ENTRANCE (SCE) (C.O.A. DETAIL 6415-1)
[Symbol]	DRAINAGE FLOW DIRECTION	[Symbol]	TEMPORARY SPOILS SITE
TP	TREE PROTECTION FENCE	[Symbol]	CONSTRUCTION STAGING AREA
RB	REINFORCED ROCK BERM	[Symbol]	
MS	MULCH SOCK	[Symbol]	
OMF	ORANGE MESH SAFETY FENCE	[Symbol]	
SF	SILT FENCE	[Symbol]	
F=D	FILTER DIKE CURB	[Symbol]	
F=D	INLET PROTECTION	[Symbol]	
TFD	TRIANGULAR FILTER DIKE	[Symbol]	
[Symbol]	HALF CRITICAL ROOT ZONE	[Symbol]	
[Symbol]	EXISTING TREES (TO REMAIN)	[Symbol]	



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 TBPE Firm Number: 3737  
 TBPLS Firm Number: 10105600

**ES CONTROL & TREE PROTECTION**

**BEACON HILL  
 BUS MAINTENANCE FACILITY  
 HAYS CONSOLIDATED I.S.D**  
 155 BEACON HILL RD, BUDA, TX 78610



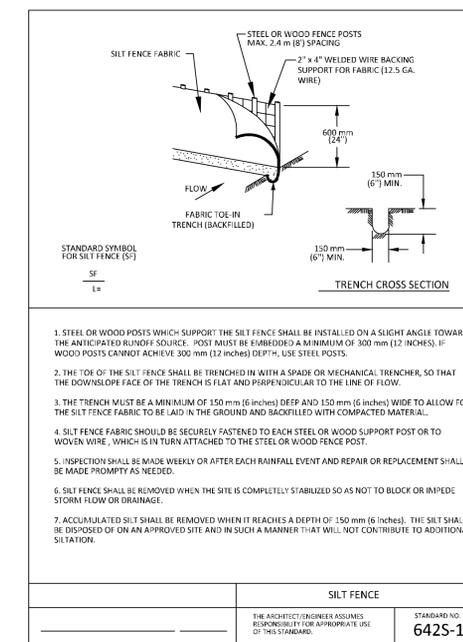
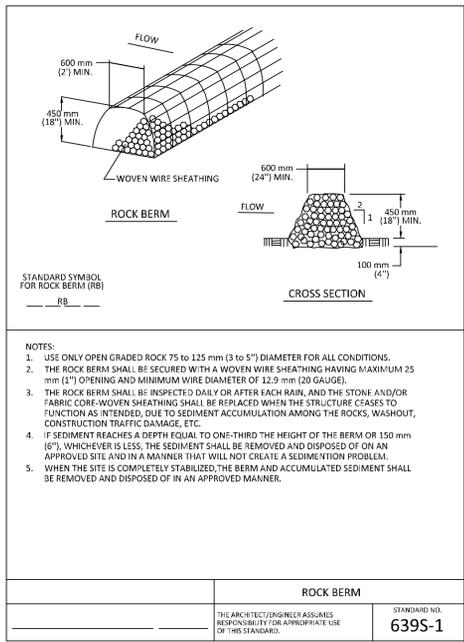
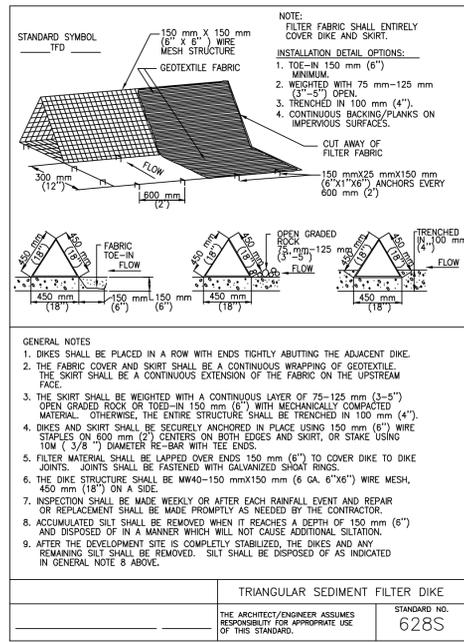
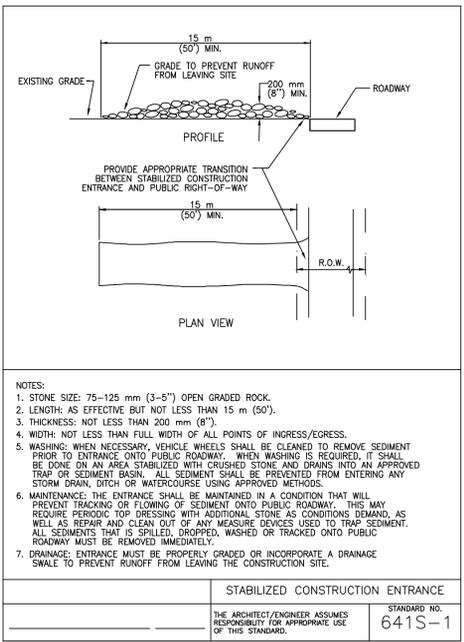
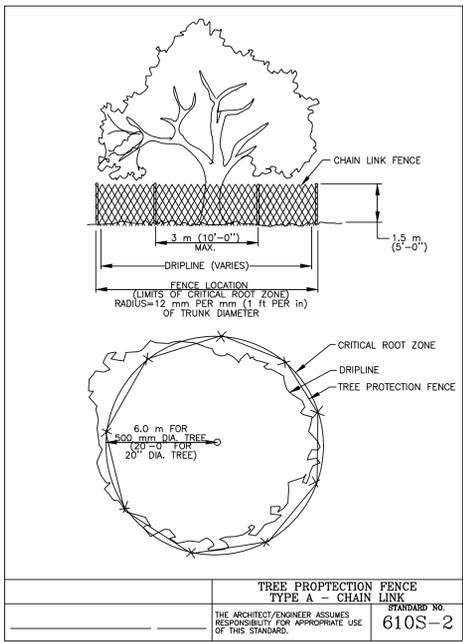
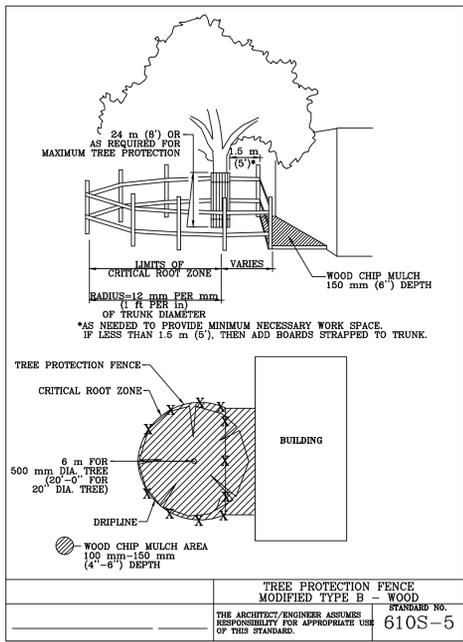
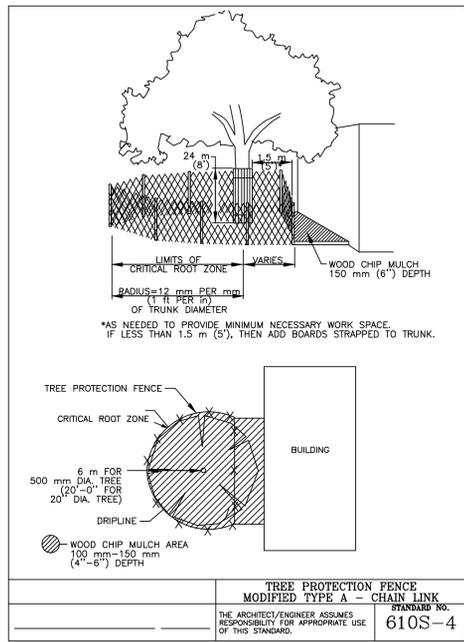
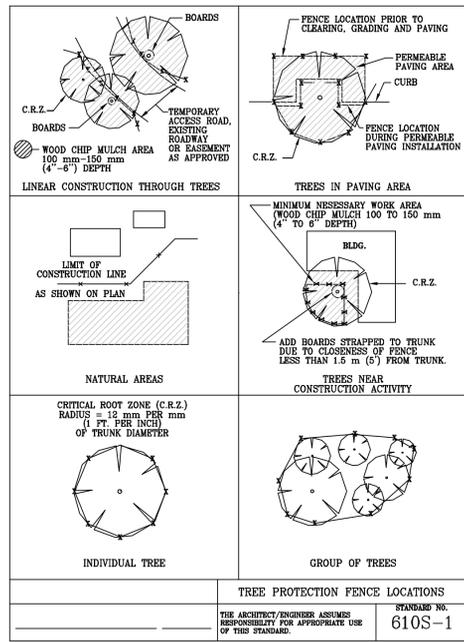
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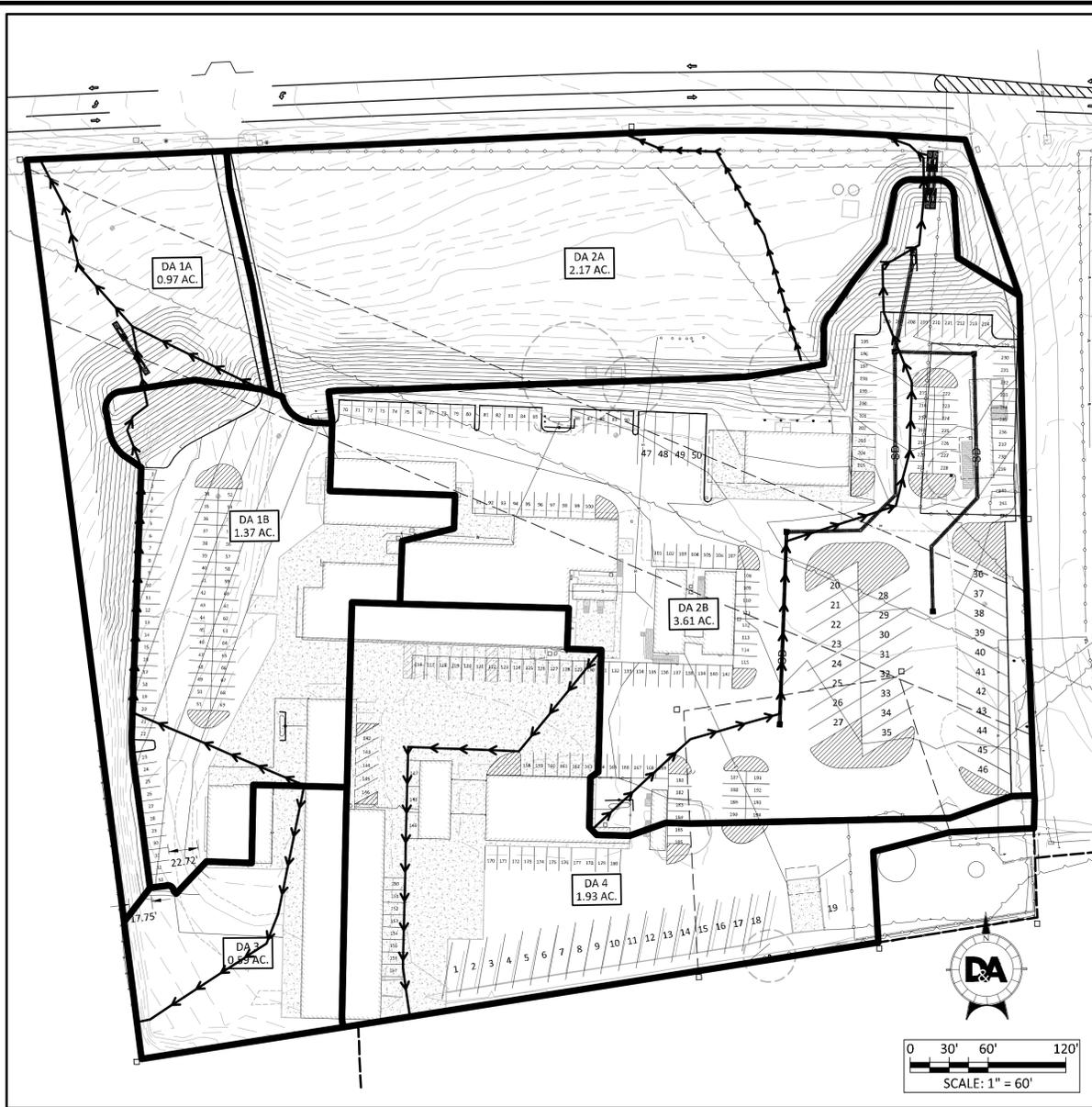
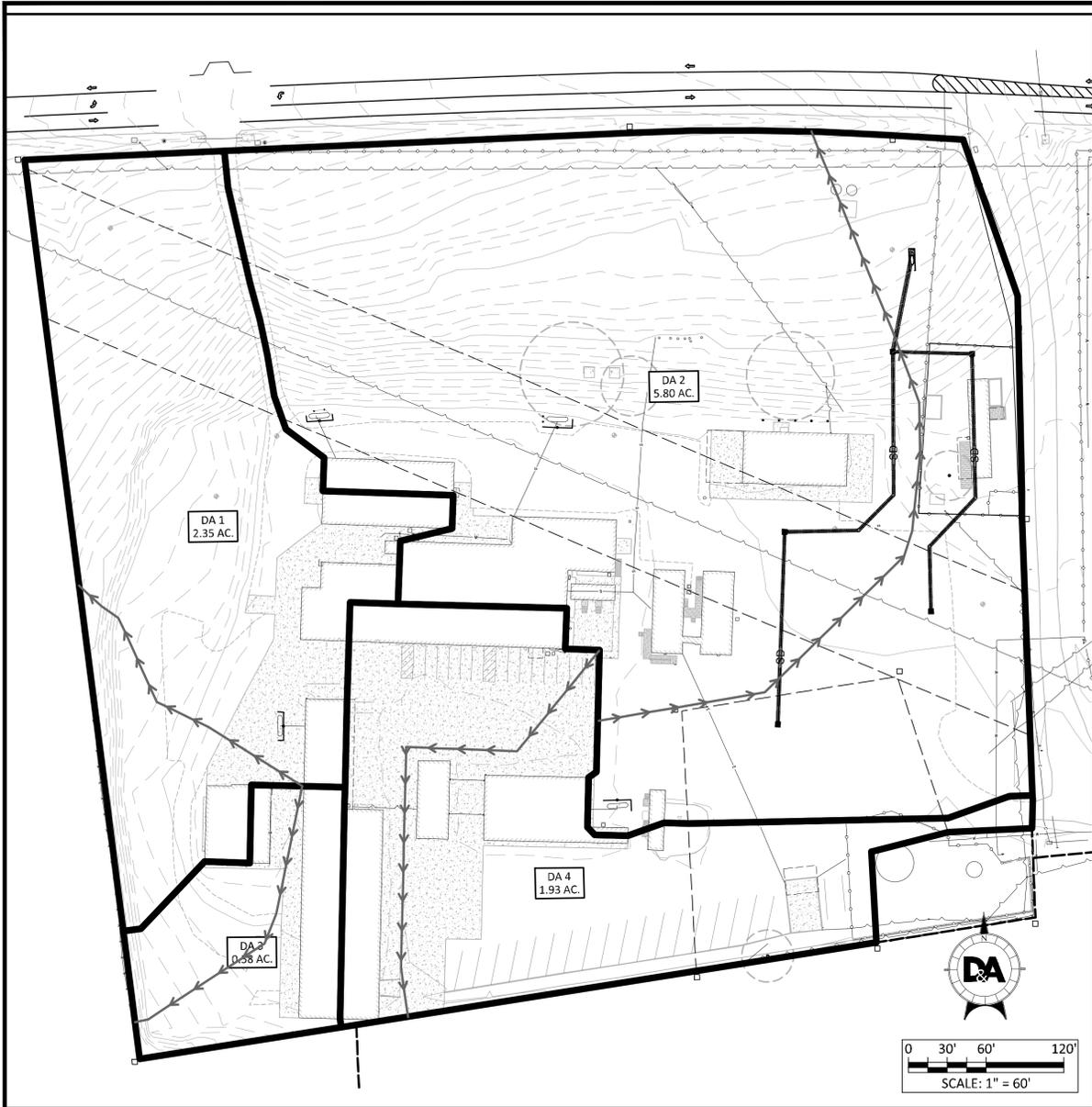
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 Reviewed: TFC  
 Date: 9/11/2020

SHEET  
**6**  
 6 OF 11

Project No.:  
 420-003-02

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 Last Modified: Sep 14, 20 09:04  
 Plot Date/Time: Sep 14, 20 09:09:59





Drainage Area	Overland Sheet Flow						Shallow Concentrated Flow						TC <sub>CARRYOVER</sub>	TC <sub>TOTAL</sub>
	Length	n-Value	E <sub>START</sub>	E <sub>END</sub>	Slope	TC <sub>SHEET</sub>	Length	Paved(P)/Unpaved(U)	E <sub>START</sub>	E <sub>END</sub>	Slope	Velocity		
EX-1	100	0.240	883.96	866.76	17.20%	5.29	160.5	U	866.76	854.41	7.69%	4.48	0.60	5.89
EX-2	100	0.240	875.63	869.6	6.03%	8.04	148.54	U	869.6	862.94	4.48%	3.42	0.72	8.76
EX-3	100	0.015	886.24	885.15	1.09%	1.73	131.4	U	885.15	880	3.92%	3.19	0.69	5.00
EX-4	100	0.015	886.58	885.79	0.79%	1.97	293.2	P	885.79	884.04	0.60%	1.57	3.11	5.08

Drainage Area	Overland Sheet Flow						Shallow Concentrated Flow						TC <sub>CARRYOVER</sub>	TC <sub>TOTAL</sub>
	Length	n-Value	E <sub>START</sub>	E <sub>END</sub>	Slope	TC <sub>SHEET</sub>	Length	Paved(P)/Unpaved(U)	E <sub>START</sub>	E <sub>END</sub>	Slope	Velocity		
PR-1A	100	0.240	883.96	866.76	17.20%	5.29	160.5	U	866.76	854.41	7.69%	4.48	0.60	5.89
PR-1B	100	0.015	886.24	885.39	0.85%	1.92	233.02	P	885.39	881.29	1.76%	2.70	1.44	5.00
PR-2A	100	0.240	875.63	869.6	6.03%	8.04	148.54	U	869.6	862.94	4.48%	3.42	0.72	8.76
PR-2B	100	0.015	886.12	885.67	0.50%	2.37	446.96	P	885.67	880.18	1.23%	2.25	3.31	5.68
PR-3	100	0.015	886.24	885.15	1.09%	1.73	131.4	U	885.15	880	3.92%	3.19	0.69	5.00
PR-4	100	0.015	886.58	885.79	0.79%	1.97	293.2	P	885.79	884.04	0.60%	1.57	3.11	5.08

DA CHARACTERISTICS			INTENSITY (IN/HR)					COMPOSITE C-VALUE					RUNOFF FLOW - Q (CFS)							
Drainage Area ID	Area	Tc	2	5	10	25	50	100	2	5	10	25	50	100	2	5	10	25	50	100
EX-1	2.350	5.89	6.06	7.72	9.15	11.21	12.83	14.57	0.45	0.48	0.51	0.56	0.59	0.63	8.4	8.7	11.0	14.8	17.8	21.6
EX-2	5.800	8.76	5.32	6.78	8.05	9.86	11.32	12.84	0.47	0.51	0.54	0.59	0.62	0.67	14.5	20.1	25.2	33.7	40.7	49.9
EX-3	0.580	5.00	6.29	8.01	9.50	11.63	13.30	15.10	0.53	0.57	0.60	0.64	0.68	0.72	1.9	2.7	3.3	4.3	5.3	6.3
EX-4	1.930	5.08	6.27	7.98	9.47	11.60	13.26	15.05	0.74	0.79	0.82	0.87	0.91	0.96	9.0	12.2	15.0	19.5	23.3	27.9

DA CHARACTERISTICS			INTENSITY (IN/HR)					COMPOSITE C-VALUE					RUNOFF FLOW - Q (CFS)							
Drainage Area ID	Area	Tc	2	5	10	25	50	100	2	5	10	25	50	100	2	5	10	25	50	100
PR-1A	0.970	5.89	6.06	7.72	9.15	11.21	12.83	14.57	0.31	0.34	0.37	0.41	0.44	0.48	1.8	2.6	3.3	4.5	5.5	6.8
PR-1B	1.370	5.00	6.29	8.01	9.50	11.63	13.30	15.10	0.71	0.76	0.79	0.84	0.88	0.93	6.1	8.3	10.3	13.4	16.0	19.2
PR-2A	2.170	8.76	5.32	6.78	8.05	9.86	11.32	12.84	0.30	0.33	0.36	0.40	0.43	0.47	3.5	4.9	6.3	8.6	10.6	13.1
PR-2B	3.610	5.68	6.12	7.79	9.23	11.31	12.94	14.69	0.66	0.71	0.74	0.79	0.83	0.88	14.6	20.0	24.7	32.3	38.8	46.7
PR-3	0.590	5.00	6.29	8.01	9.50	11.63	13.30	15.10	0.54	0.58	0.61	0.66	0.69	0.74	2.0	2.7	3.4	4.5	5.4	6.6
PR-4	1.930	5.08	6.27	7.98	9.47	11.60	13.26	15.05	0.74	0.79	0.82	0.87	0.91	0.96	9.0	12.2	15.0	19.5	23.3	27.9

HEC-HMS MODEL RESULTS - PRE-PROJECT CONDITIONS						
Drainage Area ID	2	5	10	25	50	100
EX-1	7.5	10.5	13.5	18.1	22.2	26.9
EX-2	18.0	25.1	32.1	42.8	52.4	63.5
EX-3	2.0	2.8	3.5	4.6	5.7	6.8
EX-4	7.3	9.8	12.2	15.9	19.3	23.2

HEC-HMS MODEL RESULTS - POST-PROJECT CONDITIONS						
Drainage Area ID	2	5	10	25	50	100
PR-1A	3.1	4.3	5.6	7.5	9.2	11.2
PR-1B	3.9	5.5	7.1	9.6	11.9	14.2
PR-2A	6.7	9.4	12.0	16.0	19.6	23.8
PR-2B	10.8	15.1	19.4	25.8	31.4	37.6
PR-3	2.0	2.8	3.5	4.6	5.7	6.8
PR-4	7.3	9.8	12.2	15.9	19.3	23.2
PR1 (A+B)	8.8	9.5	12.4	16.8	20.8	24.9
PR2 (A+B)	17.3	24.3	31.2	41.5	50.6	60.7

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DRAINAGE PLAN

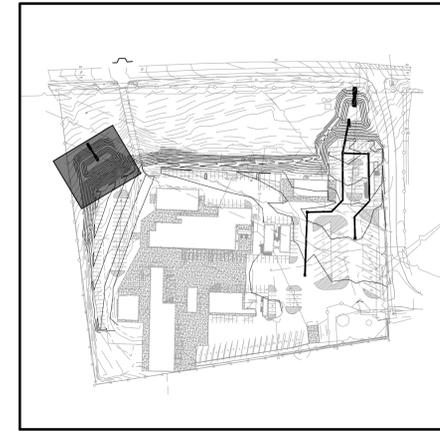
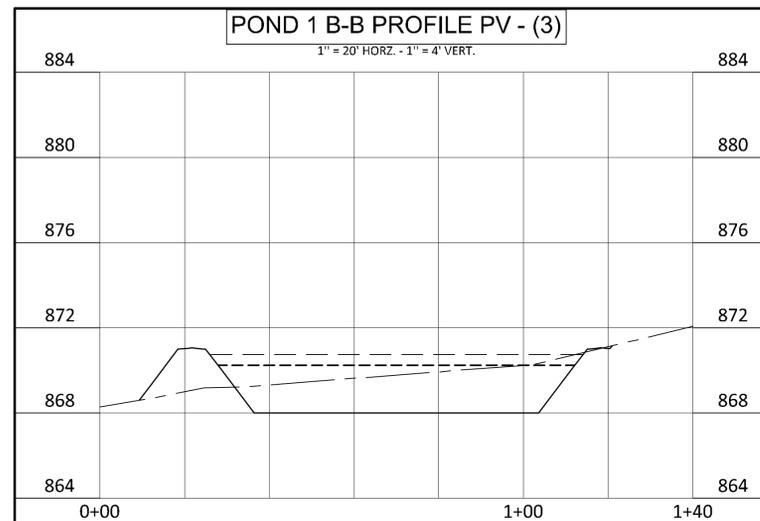
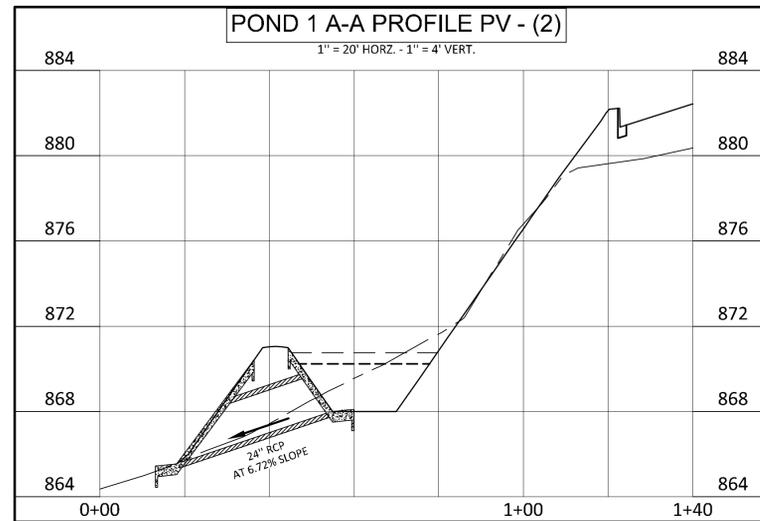
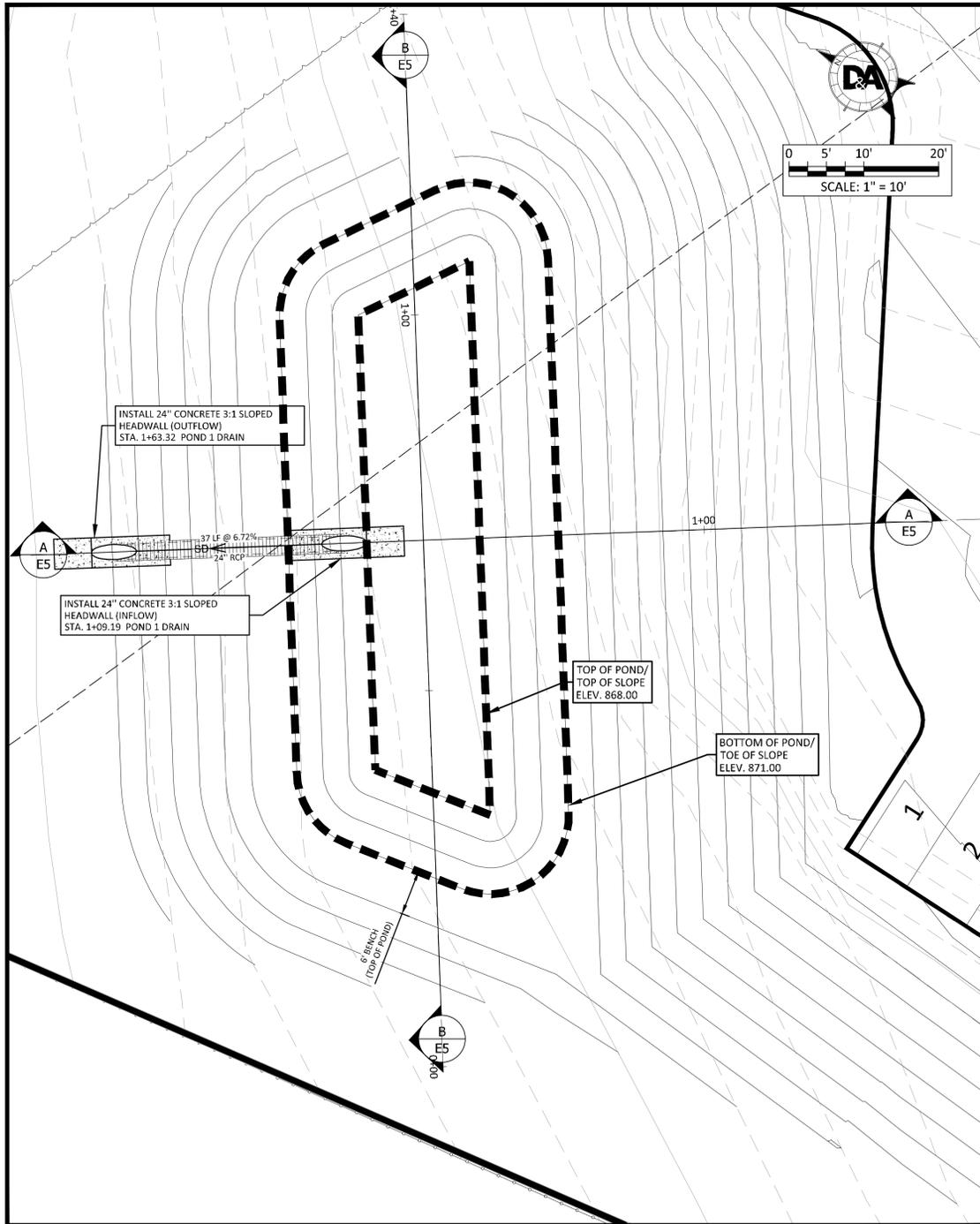
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 BUS MAINTENANCE FACILITY  
**HAYS CONSOLIDATED I.S.D**  
 155 BEACON HILL RD, BUDA, TX 78610



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HAYS CONSOLIDATED INDEPENDENT SCHOOL DISTRICT  
Water Quality Pond 1 Summary - Extended Detention  
Date: 9/10/2020  
Project No: 420-003-02  
Pond: 1 - NW

BASIN DATA		
Parameter	Pre-Project	Post-Project
Basin ID	1	1A+1B
Basin Area (Acres)	2.35	2.34
Impervious (Acres)	0.67	1.29
Permeable (Acres)	1.68	1.06
IC (%)	28.5%	55.2%

BMP DATA	
BMP	Ext. Det
BMP Efficiency <sub>3</sub>	75%

TSS CALC DATA	
Load Removed - LR (lbs) <sub>4</sub>	1,120
F <sub>5</sub>	0.50
Rainfall Depth (in) <sub>6</sub>	0.42
Runoff Coefficient <sub>7</sub>	0.39

WATER QUALITY VOLUME DATA	
WQV (CF) <sub>8</sub>	1,390
Capture Vol. (120% WQV) <sub>8</sub>	1,668

Pre-Project Impervious Cover Calculations			
Pre-Project Area: 2.35 Ac.			
IC Type	Sq. Ft	Acres	Site Percent
Structures	9,912	0.23	9.7%
Parking	7,207	0.17	7.1%
Other Paved	11,953	0.27	11.7%
		0.67	28.5%

Post-Project Impervious Cover Calculations			
Post-Project Area: 2.34 Ac.			
IC Type	Sq. Ft	Acres	Site Percent
Structures	10,028	0.23	9.8%
Parking	34,260	0.79	33.6%
Other Paved	11,979	0.28	11.7%
		1.29	55.1%

STAGE STORAGE DATA			
Elevation	Area (SF)	Volume (CF)	Σ Vol. (CF)
868	1,013	-	0
869	1,636	1,325	1,325
870	2,337	1,986	3,311
871	3,114	2,725	6,036

RG-348 References  
 1 - P - Table 3-3  
 2 - LM - Equation 3.2  
 3 - BMP Eff - Table 3-4  
 4 - LR - Equation 3.8  
 5 - F - Equation 3.9  
 6 - Rainfall Depth - Table 3-5  
 7 - Runoff Coeff. - Eq. 3.11  
 8 - WQV - Eq. 3.10

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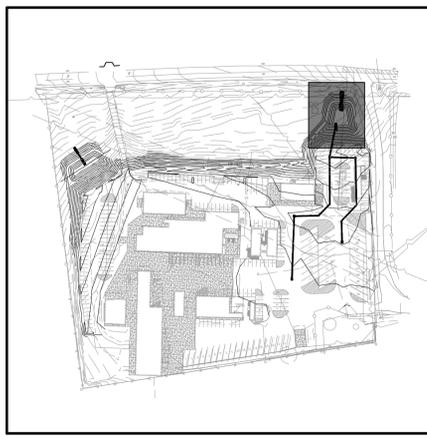
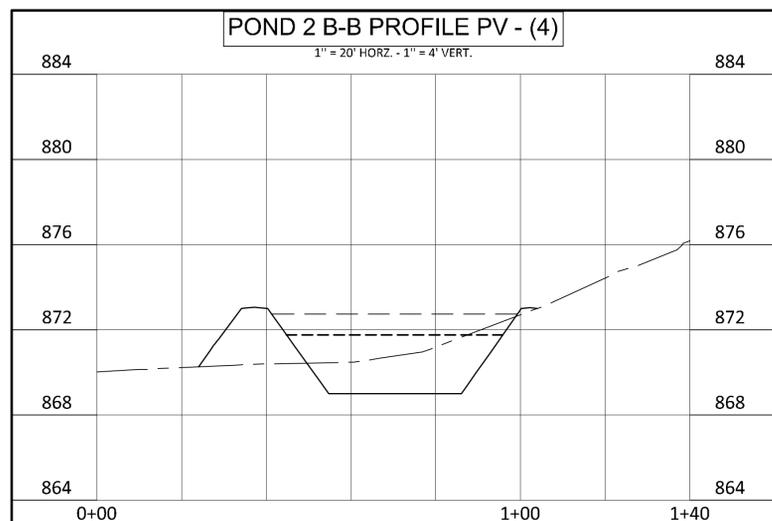
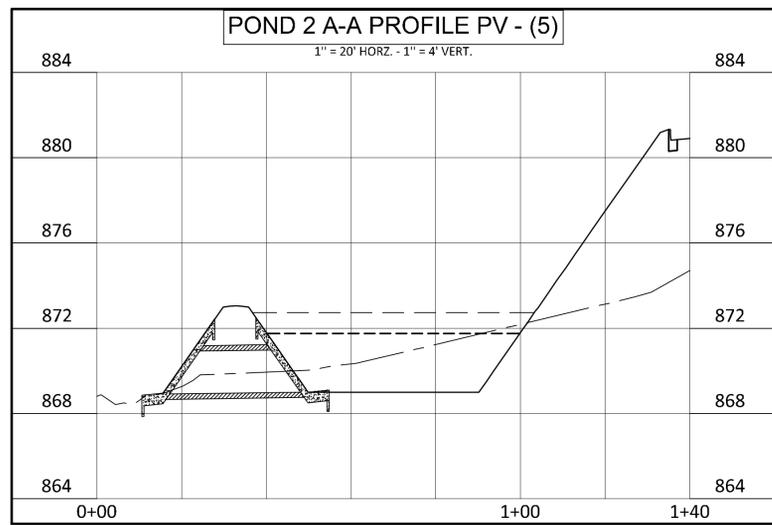
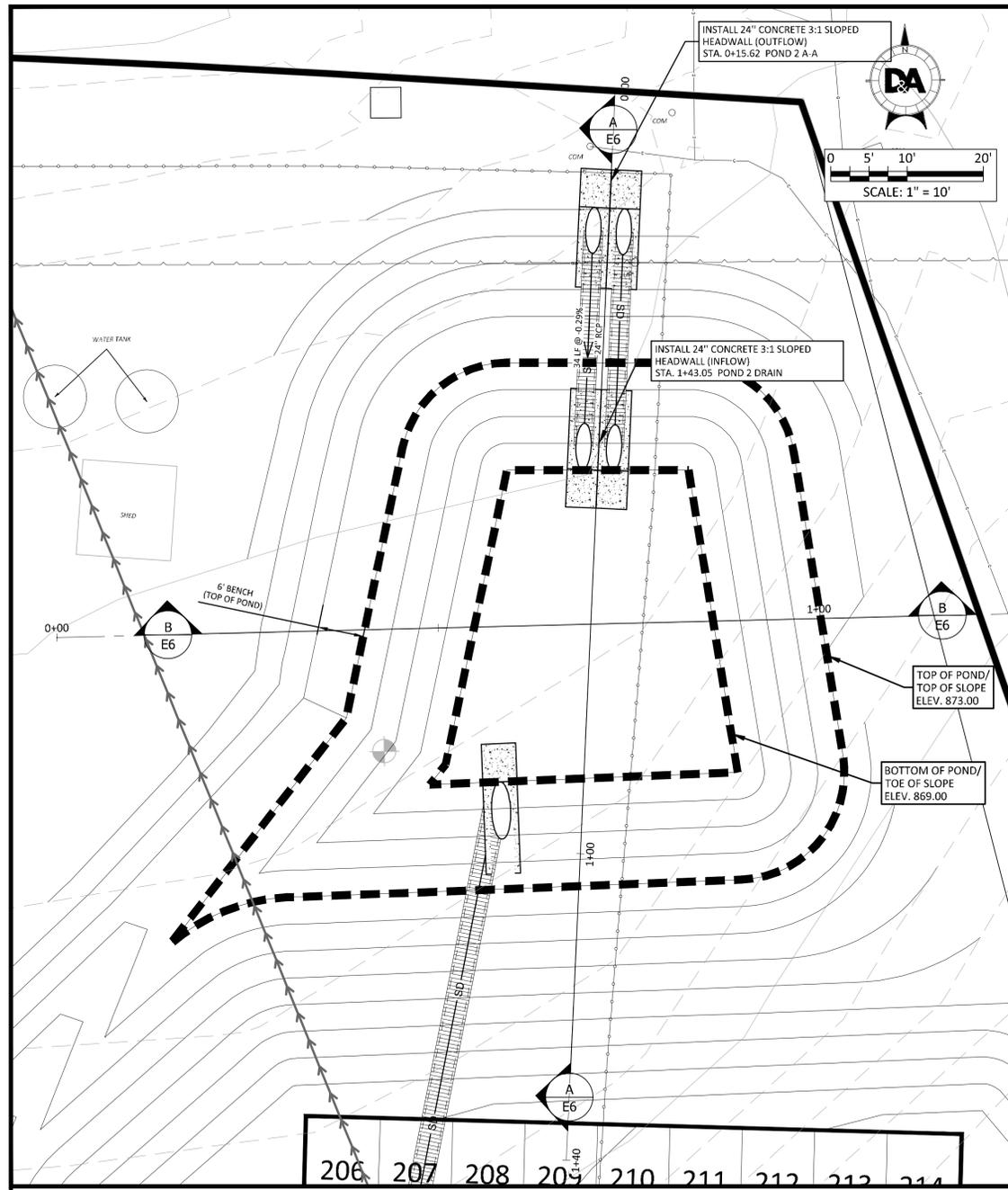
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 Reviewed: TFC  
 Date: 9/11/2020

SHEET

10

10 OF 11

Project No.:  
420-003-02



**HAYS CONSOLIDATED INDEPENDENT SCHOOL DISTRICT**  
Water Quality Pond 2 Summary - Extended Detention  
Date: 9/10/2020  
Project No: 420-003-02  
Pond: 2 - NE

BASIN DATA		
Parameter	Pre-Project	Post-Project
Basin ID	2	2A + 2B
Basin Area (Acres)	5.80	5.78
Impervious (Acres)	1.67	2.98
Permeable (Acres)	4.13	2.82
IC (%)	28.8%	51.6%

BMP DATA	
BMP	Ext. Det
BMP Efficiency <sub>3</sub>	75%

TSS CALC DATA	
Load Removed - LR (lbs) <sub>4</sub>	2,592
F <sub>5</sub>	0.45
Rainfall Depth (in) <sub>6</sub>	0.36
Runoff Coefficient <sub>7</sub>	0.37

Pre-Project Impervious Cover Calculations			
Pre-Project Area: 5.80 Ac.			
IC Type	Sq. Ft	Acres	Site Percent
Structures	16,509	0.38	6.5%
Parking	48,869	1.12	19.4%
Other Paved	7,375	0.17	2.9%
		1.67	28.8%

Post-Project Impervious Cover Calculations			
Post-Project Area: 5.78 Ac.			
IC Type	Sq. Ft	Acres	Site Percent
Structures	19,188	0.44	7.6%
Parking	103,477	2.38	41.1%
Other Paved	7,281	0.17	2.9%
		2.98	51.6%

STAGE STORAGE DATA			
Elevation	Area (SF)	Volume (CF)	Σ Vol. (CF)
869	1,261	-	0
870	1,826	1,544	1,544
871	2,493	2,159	3,703
872	3,261	2,877	6,580
873	4,132	3,697	10,277

RG-348 References  
 1 - P - Table 3-3  
 2 - LM - Equation 3.2  
 3 - BMP Eff - Table 3-4  
 4 - LR - Equation 3.8  
 5 - F - Equation 3.9  
 6 - Rainfall Depth - Table 3-5  
 7 - Runoff Coeff. - Eq. 3.11  
 8 - WQV - Eq. 3.10

**DOUCET & ASSOCIATES**  
 Civil Engineering - Planning - Geospatial  
 7401 B. Highway 71 W, Suite 160  
 Austin, TX 78735, Tel: (512)-583-2600  
 www.doucetengineers.com  
 TBPE Firm Number: 3937  
 TBPLS Firm Number: 10105690

WATER QUALITY POND 2

BEACON HILL  
 BUS MAINTENANCE FACILITY  
 HAYS CONSOLIDATED I.S.D.  
 155 BEACON HILL RD, BUDA, TX 78610



9/11/2020  
 ISSUED FOR PERMITTING,  
 NOT FOR CONSTRUCTION

Designed: GP/OF  
 Drawn: GP/OF  
 Reviewed: TFC  
 Date: 9/11/2020

SHEET  
 11  
 11 OF 11  
 Project No.:  
 420-003-02

Drawing: P:\420-003-02\CAD\Drawings\working\_drawing\submitted\CD\42000302\_SH\_WQV.dwg  
 User: GLORES  
 Last Modified: Sep 11, 2020 08:40  
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