WATER POLLUTION ABATEMENT PLAN MODIFICATION

FOR

HEARTLAND DENTAL

SOUTHWEST CORNER OF FM 967 AND FM 1626

PREPARED FOR:

FIRST HARTFORD REALTY CORPORATION

149 COLONIAL RD.
MANCHESTER, CONNECTICUT 06042

PREPARED BY:

FORESITE GROUP, LLC

901 MOPAC EXPY S. BLDG 1, SUITE 300
AUSTIN, TX 78746

TEXAS ENGINEERING FIRM # F-12878
FORESITE PROJECT # 489.057

MAY 2023

Table of Contents

FORESITE group

1. Edwards Aquifer Application Cover Page

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

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

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

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

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

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: GARLIC CREEK COMMONS						**2. Regulated Entity No.:** RN 111704615			
3. Customer Name: FIRST GL BUDA, LLC						**4. Customer No.:** CN 605522234			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**			+/-12.12
9. Application Fee:	$6500		**10. Permanent BMP(s):**			JELLYFISH FILTER (ONSITE)			
11. SCS (Linear Ft.):	NONE		**12. AST/UST (No. Tanks):**			0			
13. County:	HAYS		**14. Watershed:**			ONION CREEK			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	X	__	__
Region (1 req.)	X	__	__
County(ies)	__	__	__
Groundwater Conservation District(s)	__Edwards Aquifer Authority XBarton Springs/ Edwards Aquifer __Hays Trinity __Plum Creek	__Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin XBuda __Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	__Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	__Austin __Cedar Park __Florence __Georgetown __Jerrell __Leander __Liberty Hill __Pflugerville __Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	__	__	__	__	__
Region (1 req.)	__	__	__	__	__
County(ies)	__	__	__	__	__
Groundwater Conservation District(s)	__ Edwards Aquifer Authority __Trinity-Glen Rose	__Edwards Aquifer Authority	__Kinney	__EAA __Medina	__EAA __Uvalde
City(ies) Jurisdiction	__Castle Hills __Fair Oaks Ranch __Helotes __Hill Country Village __Hollywood Park __San Antonio (SAWS) __Shavano Park	__Bulverde __Fair Oaks Ranch __Garden Ridge __New Braunfels __Schertz	NA	__San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.
VINCENT D. MUSAT, P.E., LEED AP Print Name of Customer/Authorized Agent
5.15.2023 Signature of Customer/Authorized Agent Date

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

FORESITE group

2. General Information Form

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.

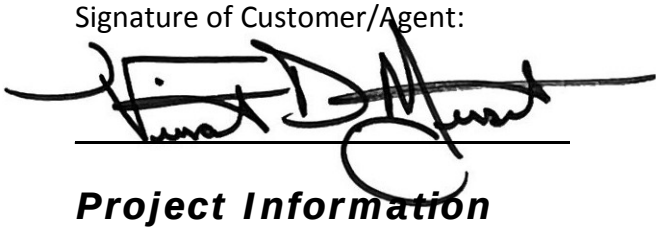
Signature

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: VINCENT D. MUSAT, P.E.

Date: 5.15.2023

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: GARLIC CREEK COMMONS
2. County: HAYS
3. Stream Basin: GARLIC CREEK
4. Groundwater Conservation District (If applicable): BARTON SPRINGS/EDWARDS AQUIFER GCD
5. Edwards Aquifer Zone:
   - [ ] Recharge Zone
   - [x] Transition Zone
6. Plan Type:
   - [x] WPAP
   - [ ] SCS
   - [x] Modification
   - [ ] AST
   - [ ] UST
   - [ ] Exception Request

7. Customer (Applicant):

Contact Person: NEIL H. HARRIS
Entity: FIRST GL BUDA, LLC
Mailing Address: 149 COLONIAL ROAD
City, State: MANCHESTER, CT Zip: 06042
Telephone: 860.669.5560 FAX: _____
Email Address: JBELLOCK@FIRSTHARTFORD.COM

8. Agent/Representative (If any):

Contact Person: VINCENT D. MUSAT, P.E.
Entity: FORESITE GROUP
Mailing Address: 901 E MOPAC EXPY BLDG 1 STE 300
City, State: AUSTIN, TX Zip: 78746
Telephone: 770.368.1399 FAX: _____
Email Address: VMUSAT@FG-INC.NET

9. Project Location:

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

10. ☒ 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.

THE PROJECT IS LOCATED NEAR THE SOUTHWEST CORNER OF FM 1626 AND FM 967 INTERSECTION AT 230 FM 1626 BUDA, TX 78610. THE SITE IS JUST WEST OF THE CVS LOCATED AT 220 FM 1626, BUDA, TX 78610

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

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

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

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

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

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

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

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

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

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

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

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

Administrative Information

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

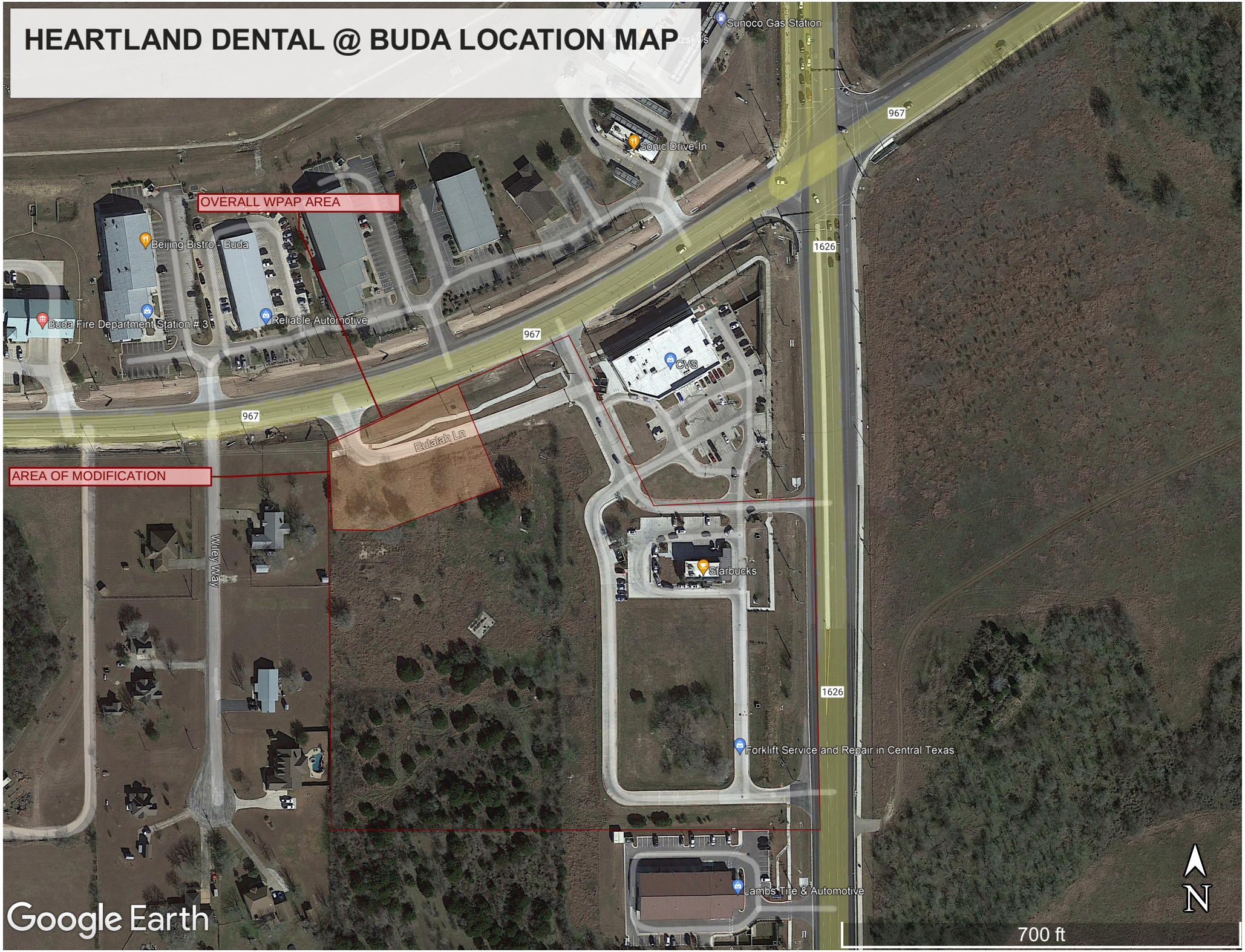
- [X] For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- [ ] For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- [ ] For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- [ ] A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- [ ] A request for an extension to a previously approved plan.

19. [X] Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

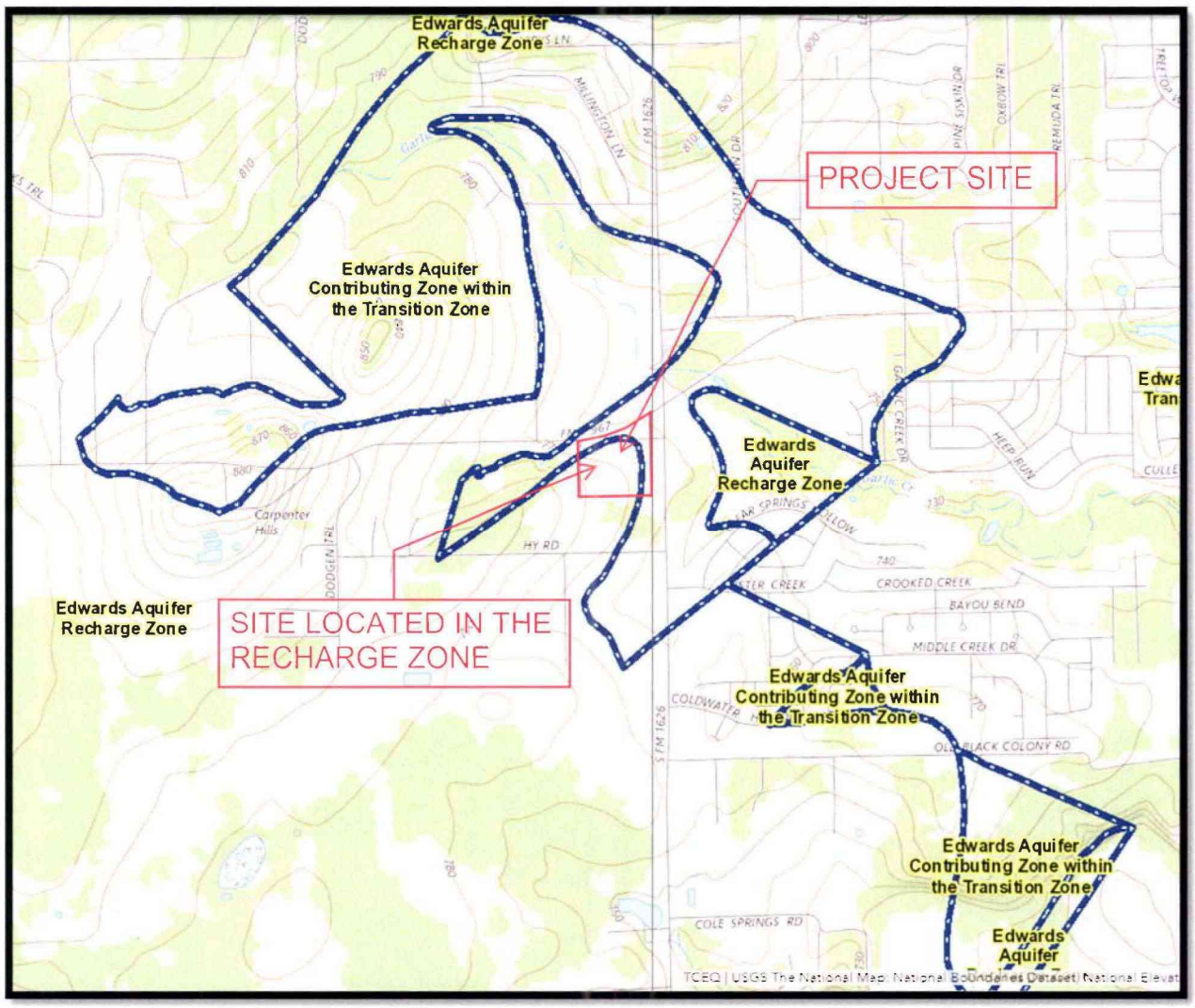
- [ ] TCEQ cashier
- [ ] Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- [ ] San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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


HEARTLAND DENTAL @ BUDA LOCATION MAP
Sunoco Gas Station
Sonic Drive-In
967
OVERALL WPAP AREA
Beijing Bistro - Buda
1626
Buda Fire Department Station # 3
Reliable Automotive
967
CVS
967
Eulalah Ln
AREA OF MODIFICATION
Wiley Way
Starbucks
1626
Forklift Service and Repair in Central Texas
Lambs Tire & Automotive
Google Earth
N
700 ft

USGS/Edwards Recharge Zone Map



MOUNTAIN CITY/BUDA
QUADRANGLE 7.5-MINUTE SERIES

FORESITE group

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D/B/A Foresite Consulting Group of Texas, LLC

Texas Commission on Environmental Quality
1200 Park 35 Circle
Austin, TX 78753

Re: Attachment C
Project Description for WPAP Modification
Heartland Dental at Buda
SWC of FM 967 and FM 1626
Buda, Hays County, Texas 78610

To whom it may concern:

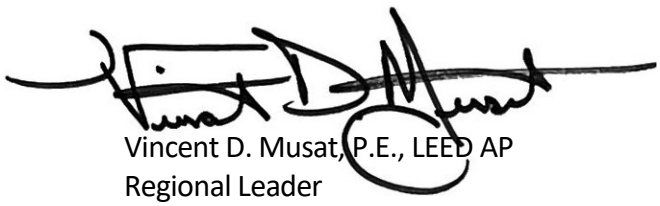
Please accept this Engineer's summary letter as our project description for the above referenced project. The project is located at the southwest corner of FM 967 and FM 1626 Buda, Texas 78610, in the Full Purpose limits of the City of Buda in Hays County, Texas.

The proposed project consists of the development of a 1.161 acre lot (Lot 3B) to be developed as a dental clinic, and approximately 0.16 acres of offsite improvements for an internal drive and drainage diversion. On Lot 3B, there are 0.14 acres of existing impervious cover, and an additional 0.58 acres of impervious cover are proposed. An additional 0.07 acres of impervious cover are proposed offsite for the circulation drive.

The subject site is currently zoned Form District 4 (FD4) and located within the Onion Creek Watershed. No portion of the subject site is located within the FEMA 100-year floodplain according to FIRM Panel #48209CO260F dated 9/2/2005. The site is located within the Edwards Aquifer Recharge zone and the Contributing Zone within the Transition Zone. A Contech Jellyfish Filter is utilized for water quality of on-site flows, and the existing pond on site – which is designed and approved for fully developed conditions – is utilized for detention.

To our knowledge, the enclosed application materials are complete, correct, and in full compliance with the TCEQ requirements. Should you have any questions regarding this project or application, please do not hesitate to contact our office.

Sincerely,



Vincent D. Musat, P.E., LEED AP
Regional Leader
Foresite Group, LLC

FORESITE group

3. Geological Assessment Form

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: Kevin Denson, P.G. Telephone: 512 442-1122

Date: 5/14/2015 Fax: 512-442-1181

Representing: Terracon Consultants, Inc.; TBPG 50058 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: 14.99-Acre Tract, SWC FM 967 and FM 1626

Project Information

1. Date(s) Geologic Assessment was performed: 5/8/2015
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)
KrB	D	0 to 5.5

** 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" = 60'
   Site Geologic Map Scale: 1" = 60'
   Site Soils Map Scale (if more than 1 soil type): 1" = _____'

9. Method of collecting positional data:

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

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

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

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

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

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

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

    ☒ There are 3 (#) 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.

*At the time of this Geological Assessments completion, the wells called out in #14 and shown on the provided Site Geologic Map we're in use. However, at the time of this submittal, they are not in use and will be properly abandoned as stated in the next section on #20.

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: 14.99-Acre Tract, SWC FM 967 and FM 1626, Buda, Texas

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
W-1	30° 5.73	97° 52.63	MB	30	Ked										30	X				
W-2	30° 5.75	97° 52.60	MB	30	Ked										30	X				
W-3	30° 5.68	97° 52.53	MB	30	Ked										30	X				

* DATUM NAD27

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

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

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

I have read, I understood, and I have followed the Texas Natural Resource Conservation Commission's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC 213

MK Denson

Date 5/14/2015

TNRCC-0585-Table (Rev. 5-1-02)

Sheet 1 of 1

TABLE 1

Stratigraphic Column
14.99-Acre Tract
SWC FM 967 and FM 1626
Buda, Texas

HYDROGEOLOGIC SUBDIVISION	FORMATION	THICKNESS (feet)	LITHOLOGY
Upper Confining Unit	Del Rio	50-60	Calcareous, fossiliferous clay

Source: Small, Hanson, and Hauwert, 1996

5/15/2015

STATE OF TEXAS
MARK KEVIN DENSON
GEOLOGY
1594
LICENSED PROFESSIONAL GEOSCIENTIST

Terracon

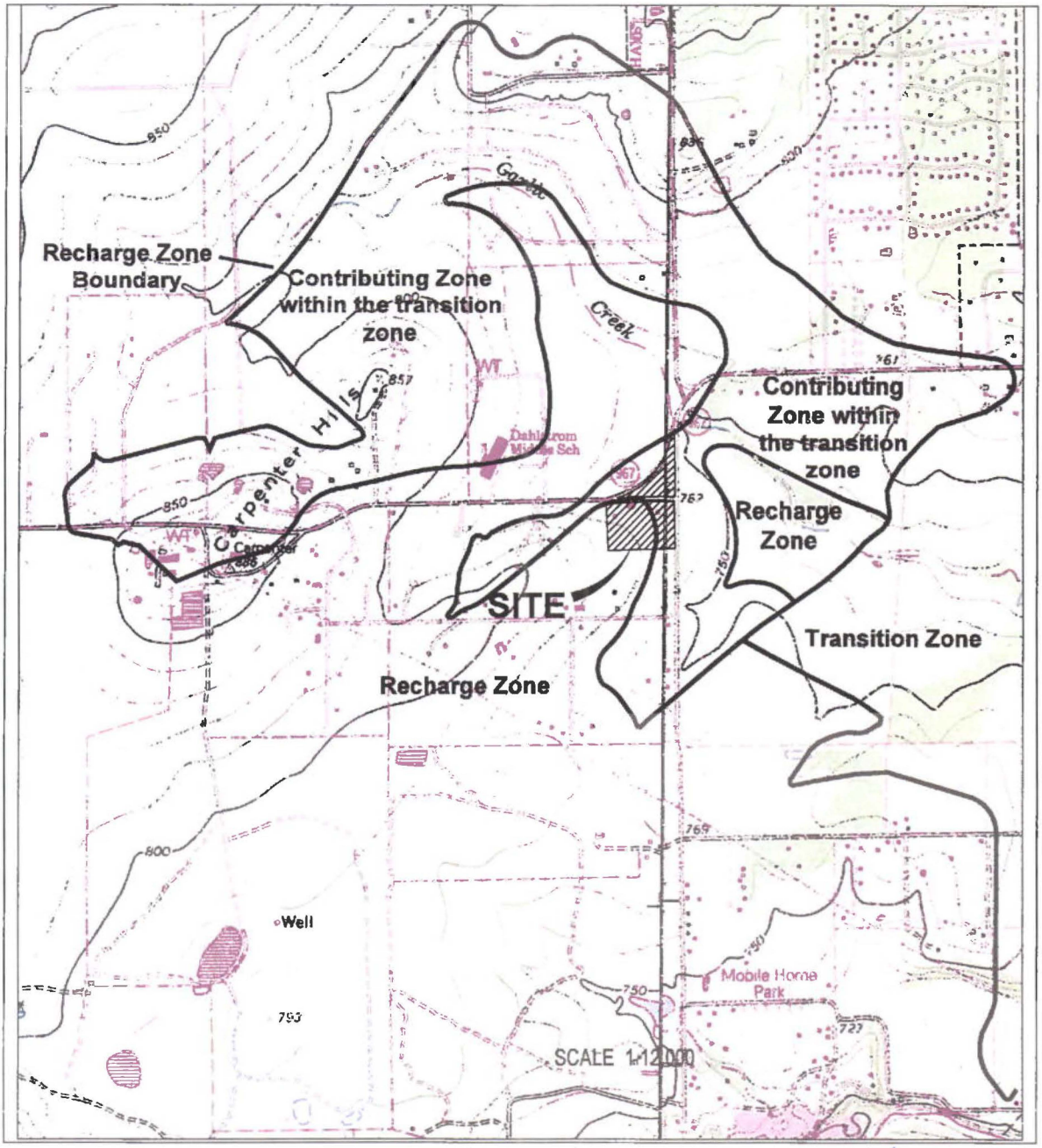
SITE-SPECIFIC GEOLOGY

The Geologic Assessment (GA) of the 14.99-Acre Tract was performed by Mr. Kevin Denson, P.G., of Terracon on May 8, 2015. The site includes several parcels of land located at the southwest corner of FM 967 and FM 1626 in Buda, Texas. The site is mostly undeveloped, vegetated land, with the exception of three existing residences and associated structures. A total of three water wells appear to exist at the site, in the vicinity of the residential homesteads. A construction site is located in the northeast portion of the site. Exhibit 1 is a site location map depicting the site in relationship to the surrounding area. The site is characterized as gently sloping to the northeast, and site elevation ranges from approximately 776 feet above mean sea level (msl) in the southwest corner of the site, to approximately 759 feet msl in the northeast corner of the site. Surface drainage offsite is towards Garlic Creek, located approximately 500 feet northeast of the site. The 100-year floodplain is not located on the site (FEMA Map 48209C0260F, dated September 2, 2005).

The Geologic Site Map is provided as Exhibit 2. The surficial geologic unit present at the site has been identified as the Del Rio Formation. The Recharge Zone Boundary of the Edwards Aquifer is located within the site boundaries, and the site has been mapped within both the Recharge Zone and the Contributing Zone within the Transition Zone (see Exhibit 1). The Del Rio Formation consists of calcareous, fossiliferous clay that commonly contains pyrite and gypsum. The Del Rio is up to 60 feet thick in the area and forms the upper confining unit for the Edwards Aquifer. The fossil oyster *Ilymatogyra arietina* is very abundant and are locally known as "rams horns". Table 1 (attached) is a stratigraphic column prepared for the site. Evidence of onsite faulting was not observed at the site, although an onsite fault is mapped on a published geologic map (*Geologic Map of the Austin Area, Texas*). The mapped fault, which trends toward the northeast, is associated with the Balcones Fault zone which represents the dominant structural trend in the vicinity of the site. The completed Geologic Assessment form is attached.

No geologic features were observed on the site. Due to the lack of significant sensitive recharge features observed on the site and the presence of Del Rio clay as the surficial geologic unit, the potential for fluid movement to the Edwards aquifer beneath the site is considered low.

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



SCALE 1:12,000

1 .5 0 KILOMETERS 1

1000 0 METERS 1000

1 .5 0 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000

CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

5/15/2015

STATE OF TEXAS
MARK KEVIN DENSON
GEOLOGY
1594
LICENSED
PROFESSIONAL GEOSCIENTIST

Buda, Texas
30097-A7-TF-024
1968 (Photorevised 1994)
7.5 MINUTE SERIES (TOPOGRAPHIC)

Project Mngr: KD	Project No. 96157255	Terracon Consulting Engineers and Scientists	TOPOGRAPHIC MAP
Drawn By: Austin CAD	Scale: AS SHOWN	5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735	SWC FM 967 and FM 1626
Checked By: KD	File No. 96157255	PH. (512) 442-1122 FAX. (512) 442-1181	Buda, Hays County, Texas
Approved By: KD	Date: May 14, 2015		EXHIBIT 1

5/5/2015
STATE OF TEXAS
MARK KEVIN DENSON
GEOLOGY
1594
LICENSED
PROFESSIONAL GEOSCIENTIST

LEGEND

- Property Boundary
- Approximate Location of Mapped Fault
- Kdr — Del Rio Formation
- ⊗ — Apparent Water Well

N

TT

0 30 60

APPROXIMATE SCALE IN FEET

Source: Geologic Map of the Austin Area, Texas

Project Mngr: KD	Project No. 96157255
Drawn By: Austin CAD	Scale: AS SHOWN
Checked By: KD	File No. 96157255
Approved By: KD	Date: May 14, 2015

Terracon
Consulting Engineers and Scientists
5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735
PH. (512) 442-1122 FAX. (512) 442-1181

SITE GEOLOGIC MAP

SWC FM 967 and FM 1626

Buda, Hays County, Texas

EXHIBIT 2

FORESITE group

4. Modification of a Previously Approved Plan

Modification of a Previously Approved Plan

Texas Commission on Environmental Quality

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

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

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

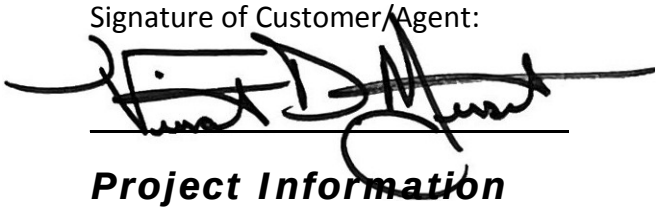
Signature

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

Print Name of Customer/Agent: VINCENT D. MUSAT P.E.

Date: 5.15.2023

Signature of Customer/Agent:



Project Information

1. Current Regulated Entity Name: Garlic Creek Commons
   Original Regulated Entity Name: _____
   Regulated Entity Number(s) (RN): 111704615
   Edwards Aquifer Protection Program ID Number(s): 11001717, 11001095, 11001433
   ☒ The applicant has not changed and the Customer Number (CN) is: 605522234
   ☐ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

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

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

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

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	12.12	12.12
Type of Development	COFFEE SHOP, COMMERCIAL PADS	DEVELOPMENT OF COMMERCIAL PAD
Number of Residential Lots	0	0
Impervious Cover (acres)	4.13	4.93
Impervious Cover (%	36.06%	39.49%
Permanent BMPs	3 CONTECH JELLYFISH	+1 CONTECH JELLYFISH
Other	VEGE. FILTER STRIP	

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

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

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

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

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

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

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

FORESITE group

901 S. MoPac Expy, Building 1, Suite 300
Austin, Texas 78746
o | 770.368.1399
f | 770.368.1944
w | www.foresitegroup.net
D/B/A Foresite Consulting Group of Texas, LLC

RE: Attachment A - Original Approval Letter and Approved Modification Letters

A copy of the original approval letter and copies of any modification approval letters are attached.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 6, 2018

Mr. Neil Ellis
First GL Buda, LLC
149 Colonial Rd.
Manchester, Connecticut 06042

Re: Edwards Aquifer: Hays County
NAME OF PROJECT: Starbucks Buda; located at 230 FM 1626, Buda, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 11001095; Regulated Entity No. RN110375433

Dear Mr. Ellis:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Application for the above-referenced project submitted to the Austin Regional Office by Big Red Dog Engineering Consulting, Inc. on behalf of First GL Buda, LLC on April 24, 2018. Final review of the WPAP was completed after additional material was received on June 25, 2018. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed 12.12-acre project site lies within the Edwards Aquifer recharge zone. Construction of the proposed project will consist of one (1) building, access drives and parking areas. Existing impervious cover (IC) consisting of three (3) foundations will be demolished. The total acreage of IC for the project is 1.96 acres (16.16 %). Project wastewater will be disposed of by conveyance to the existing City of Buda Wastewater Treatment Plant.

In addition to the described activities, temporary erosion and sedimentation controls will be installed prior to commencing site disturbance and maintained during construction.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, two (2) partial sedimentation/filtration basins and an interim vegetated filter strip (VFS) will be constructed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005) to treat stormwater runoff. The proposed basins will be constructed to treat this project and future phases of development. The proposed sand filter ponds are designed to treat two drainage areas that total 7.17 acres and 4.56 acres of IC. The desired TSS load removal for the project is 3,833 lbs.

Pond A will treat a drainage basin of 4.57 acres with 2.87 acres IC and 0.21 acres of existing IC. The required TSS load removal of this basin is 2,388 lbs. with a water quality volume of 9,844 ft^3 (14,926 ft^3 provided). This pond will treat future phases of development.

Pond B will treat the proposed Starbucks site drainage basin of 2.60 acres with 1.69 acres IC and 0.08 acres of existing IC. The required TSS load removal of this basin is 1,445 lbs. with a water quality volume of 6,245 ft^3 (8,256 ft^3 provided). An interim VFS will treat 0.51 acres IC at the northern entrance road until a permanent BMP is available in future phases. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment (GA) included in the application the site is located in the Edwards Aquifer Recharge Zone. The Del Rio Formation overlies the Buda Formation Georgetown Formation. The GA listed three (3) water wells as sensitive manmade features, that were discovered onsite. A site assessment conducted by TCEQ on May 31, 2018 revealed that the site was accurately described the GA. No additional sensitive geologic features were discovered during the site assessment.

SPECIAL CONDITIONS

I. Additional WPAP approvals or Modifications are required prior to commencing additional regulated activities.
II. All permanent and interim pollution abatement measures shall be operational prior to occupancy.
III. All sediment and/or media removed from the site during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed

Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

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

<u>During Construction:</u>

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

13. Three (3) water wells exist onsite. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Bryan Maynard, of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Robert Sadlier
Water Section Team Leader
Austin Region Office

RCS/bgm

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

cc: Mr. Michael V. Reyes, P.E., Big Red Dog Engineering Consulting, Inc., Austin
Mr. John Nett, City Engineer, City of Buda
Mr. John Dupnik, P.G., General Manager, Barton Springs/Edwards Aquifer Conservation District

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 3, 2019

Mr. Neil H. Ellis
First GL Buda, LLC
149 Colonial Road
Manchester, CT 06042

Re: Edwards Aquifer, Hays County

NAME OF PROJECT: Starbucks Buda; Located southwest of the intersection of FM 967 and FM1626, Buda, Texas

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

Edwards Aquifer Protection Program ID No. 11001433; Regulated Entity No. RN110375433

Dear Mr. Ellis:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the Austin Regional Office by Big Red Dog, a Division of WGI on behalf of First GL Buda, LLC on January 31, 2019. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

A Water Pollution Abatement Plan was approved by letter dated July 6, 2018 (EAPP ID No. 11001095). The letter approved a development project including one building, drives, parking, and two partial sedimentation/filtration basins.

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 12.12 acres. It will include the construction of one building, drives, parking, utilities, water quality facilities, and associated appurtenances. The impervious cover will be 1.958 acres (16.16 percent) for this phase of development. Water quality facilities are sized for this phase and future development. Project wastewater will be disposed of by conveyance to the existing Buda Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, two Jellyfish systems and an interim engineered vegetative filter strip (VFS), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 1,758 pounds of TSS generated from the 1.958 acres of impervious cover. The water quality facilities are sized for this project and future phases combining for 3.48 acres of impervious cover; the associated required TSS treatment is 3,124 pounds of TSS. A separate approval is required for future phases.

The individual treatment measures will consist of two Jellyfish systems and a VFS. Drainage area F1 will have 1.84 acres of impervious cover and requires the treatment of 1,652 pounds of TSS. The required peak flowrate is 1.88 ft^3/sec. Jellyfish model JFPD0808-10-2 will be used to accommodate these requirements.

Drainage area F2 will have 1.13 acres of impervious cover and requires the treatment of 1,014 pounds of TSS. The required peak flowrate is 1.15 ft^3/sec. Jellyfish model JFPD0806-6-2 will be used to accommodate these requirements.

The interim engineered vegetative filter strip will be used to treat the equivalent of 458 pounds of TSS generated from 0.51 acres of impervious cover. The interim VFS will be removed and new water quality facilities will be implemented upon development of future phases.

The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment included with the application, the surficial unit is Del Rio Formation. No sensitive features were identified in the Geologic Assessment. The TCEQ site assessment conducted on February 21, 2019 revealed the site to be generally as described.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated July 6, 2018.

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

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

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

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

During Construction:

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

After Completion of Construction:

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

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

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact James "Bo" Slone, P.G. of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

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

RCS/jcs

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

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

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

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

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

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

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

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

_____
LANDOWNER-AFFIANT

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

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

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

GIVEN under my hand and seal of office on this __ day of _____, ____.

_____
NOTARY PUBLIC

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

Change in Responsibility for Maintenance on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

COPY

R-11

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 3, 2019

Mr. Neil H. Ellis
First GL Buda, LLC
149 Colonial Road
Manchester, CT 06042

Re: Edwards Aquifer, Hays County

NAME OF PROJECT: Starbucks Buda; Located southwest of the intersection of FM 967 and FM1626, Buda, Texas

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

Edwards Aquifer Protection Program ID No. 11001433; Regulated Entity No. RN110375433

Dear Mr. Ellis:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the Austin Regional Office by Big Red Dog, a Division of WGI on behalf of First GL Buda, LLC on January 31, 2019. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

A Water Pollution Abatement Plan was approved by letter dated July 6, 2018 (EAPP ID No. 11001095). The letter approved a development project including one building, drives, parking, and two partial sedimentation/filtration basins.

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 12.12 acres. It will include the construction of one building, drives, parking, utilities, water quality facilities, and associated appurtenances. The impervious cover will be 1.958 acres (16.16 percent) for this phase of development. Water quality facilities are sized for this phase and future development. Project wastewater will be disposed of by conveyance to the existing Buda Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, two Jellyfish systems and an interim engineered vegetative filter strip (VFS), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 1,758 pounds of TSS generated from the 1.958 acres of impervious cover. The water quality facilities are sized for this project and future phases combining for 3.48 acres of impervious cover; the associated required TSS treatment is 3,124 pounds of TSS. A separate approval is required for future phases.

The individual treatment measures will consist of two Jellyfish systems and a VFS. Drainage area F1 will have 1.84 acres of impervious cover and requires the treatment of 1,652 pounds of TSS. The required peak flowrate is 1.88 ft^3/sec. Jellyfish model JFPD0808-10-2 will be used to accommodate these requirements.

Drainage area F2 will have 1.13 acres of impervious cover and requires the treatment of 1,014 pounds of TSS. The required peak flowrate is 1.15 ft^3/sec. Jellyfish model JFPD0806-6-2 will be used to accommodate these requirements.

The interim engineered vegetative filter strip will be used to treat the equivalent of 458 pounds of TSS generated from 0.51 acres of impervious cover. The interim VFS will be removed and new water quality facilities will be implemented upon development of future phases.

The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment included with the application, the surficial unit is Del Rio Formation. No sensitive features were identified in the Geologic Assessment. The TCEQ site assessment conducted on February 21, 2019 revealed the site to be generally as described.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated July 6, 2018.

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

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

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

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

During Construction:

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

After Completion of Construction:

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

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

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact James "Bo" Slone, P.G. of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

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

RCS/jcs

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

COPY

R-11

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 25, 2019

Mr. Nicholas O. Corbett, P.E.
Big Red Dog, A Division of WGI
2021 E. 5th Street, Suite 200
Austin, Texas 78702

Re: Edwards Aquifer, Hays County
Starbucks Buda; located SW of FM 967 and FM 1626, Buda Texas
Request for Modification to an Approved Water Pollution Abatement Plan (WPAP-MOD)
30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 11001717; Regulated Entity No. RN110375433

Dear Mr. Corbett:

We are in the process of technically reviewing the WPAP-MOD application you submitted on the above-referenced project. Before we can proceed with our review, the following comments relating to the application must be addressed.

1. With respect to the inspection of temporary stormwater BMPs, please update Attachment I to provide guidelines as to how the inspections will be conducted. Refer to TCEQ RG-348 for guidance.

We ask that you submit one original and one copy of the amended materials to supplement the WPAP-MOD application to this office by no later than **14 days from the date of this letter**, to avoid the denial of the plan. If the response to this notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, a second notice will be sent to you requiring a response within 14 days from the notice date. 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 will be denied unless you provide written notification that the application is being withdrawn. Please note that because the technical review is in progress the application fee will be forfeited. If you have any questions or require additional information, please contact James "Bo" Slone, P.G. of the Edwards Aquifer Protection Program of the Austin regional office at (512) 339-2929.

Sincerely,

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

COPY

RCS/jcs

Cc: Mr. Neil H. Ellis
First GL Buda, LLC
149 Colonial Road
Manchester, CT 06042

FORESITE group

901 S. MoPac Expy, Building 1, Suite 300
Austin, Texas 78746
o | 770.368.1399
f | 770.368.1944
w | www.foresitegroup.net
D/B/A Foresite Consulting Group of Texas, LLC

RE: Attachment B - Narrative of Proposed Modifications

The existing site contains a detention pond served by 3 Contech Jellyfish Filters. The proposed modification consists of a swale conveying all undeveloped upgradient flow into the detention pond, and a Contech Jellyfish Filter to treat flows from the proposed development.

This Modification proposes 0.656 Acres of new Impervious Cover, which is to be treated by the proposed Contech Jellyfish Filter and the existing detention pond. The detention pond has been designed to limit developed flows to pre-developed conditions. The treated runoff will be slowly released onto its natural path to not disrupt the natural flow of the land. Detention for the 2-, 10-, 25-, and 100-year storm events are required. Existing conditions are 12.06% impervious cover on the site. The proposed addition will result in 61.84% impervious cover on the site. The pond has been sized and designed for future, fully developed site conditions.

FORESITE group

901 S. MoPac Expy, Building 1, Suite 300
Austin, Texas 78746
o | 770.368.1399
f | 770.368.1944
w | www.foresitegroup.net
D/B/A Foresite Consulting Group of Texas, LLC

RE: Attachment C - Current Site Plan of the Approved Project

The Current Site Plan of the Approved Project has been included as a part of this submittal.

NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL

WWW.BIGREDDOG.COM
BIG RED DOG a division of KIMLEY»HORN
2201 EAST 5TH STREET, SUITE 200
AUSTIN, TEXAS, 78702
512-869-5560
FIRM NO. F-10065

NICHOLAS O. CORBETT
125373
LICENSED PROFESSIONAL ENGINEER
9-13-19

PROJECT:
GARLIC CREEK COMMONS
SWC FM 967 & FM 1626
BUDA, HAYS COUNTY, TEXAS

SHEET TITLE:
EXISTING CONDITIONS

SHEET
C100
5 OF 52
2019-XXX

5. Water Pollution Abatement Plan Application

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.

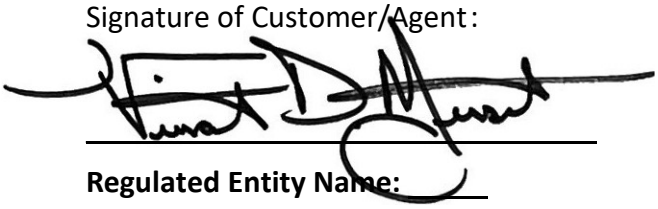
Signature

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: Vincent D. Musat, P.E.

Date: 5.15.2023

Signature of Customer/Agent:



Regulated Entity Name: ____

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):12.12

3. Estimated projected population:_____

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	20,811	÷ 43,560 =	0.47
Parking	61,400	÷ 43,560 =	1.41
Other paved surfaces	110,935	÷ 43,560 =	2.54
Total Impervious Cover	193,146	÷ 43,560 =	4.43

Total Impervious Cover 4.43 **÷ Total Acreage** 12.12 **X 100 =** 36.58**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100% Domestic	500 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 500	

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 BUDA WASTEWATER (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" = 20'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Panel 48209C0260F Dated 9/2/2005

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 3 (#) 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.

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RE: Attachment A - Factors Affecting Water Quality

Urbanization will affect water quality by increasing sediment loading and introducing nutrients, pathogens, oxygen-demanding matter and toxic pollutants to receiving waters.

Factors affecting water quality for the proposed development include the following:

1. Proposed road and vehicular traffic
2. Human litter

The runoff will be captured by the proposed Contech Jellyfish Filters and the proposed detention ponds. These ponds have been designed to limit developed flows to pre-developed conditions. The treated runoff will be slowly released onto its natural path to not disrupt the natural flow of the land. Detention for the 2-, 10-, 25-, and 100-year storm events are required. The ponds on site have been sized and designed for future, fully developed site conditions. The detention ponds will mitigate pollutants from the factors listed above.

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RE: Attachment B - Volume and Character of Stormwater

The total site area is ±12.12 acres, and the proposed development will result in ±0.66 new acres of impervious cover. The Contech jellyfish filters have been sized and designed for these fully developed conditions.

Stormwater runoff will be treated by the approved Contech Jellyfish filters, and the site will use the existing water quality and detention pond for capture. The proposed conditions maintain the offsite flow patterns to their existing discharge points. Discharge to these points will be required to comply with the Clean Water Act of 1977.

Please refer to the plan set for more information, including drainage area maps

6. Temporary Stormwater Section

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.

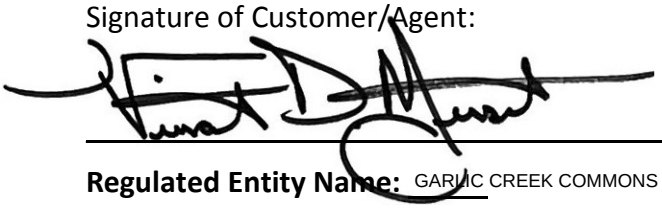
Signature

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: VINCENT D. MUSAT, P.E.

Date: 5.15.2023

Signature of Customer/Agent:



Regulated Entity Name: GARLIC CREEK COMMONS

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: ONION CREEK

Temporary Best Management Practices (TBMPs)

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

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

- [x] 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.
- [x] 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.
- [x] A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
- [x] 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. [x] 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.
   - [x] There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. [x] **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. [x] **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.

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RE: Attachment A - Spill Response Actions

Spills will be reported to the City of Buda (via 911 in emergencies). Hydrocarbons or hazardous substances spilled during construction will be cleaned up immediately upon detection. Waterways will be broomed and vacuumed as required. Contaminated soil will be excavated and removed to a TCEQ approved disposal site. The TCEQ will be notified immediately upon detection.

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

1. Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4 .

2. Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.

3. Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings) .

4. Establish a continuing education program to indoctrinate new employees.

5. Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

1. To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.

2. Store hazardous materials and wastes in covered containers and protect from vandalism.

3. Place a stockpile of spill cleanup materials where it will be readily accessible.

4. Train employees in spill prevention and cleanup.

5. Designate responsible individuals to oversee and enforce control measures.

6. Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise clean-up activities.

7. Do not bury or wash spills with water.

8. Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.

9. Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

10. Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.

11. Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.

12. Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

1. Clean up leaks and spills immediately.

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

3. Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

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

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

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

4. Follow the practice below for a minor spill:

5. Contain the spread of the spill.

6. Recover spilled materials.

7. Clean the contaminated area and properly dispose of contaminated materials. 1-120

Semi-Significant Spills

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

1. Contain spread of the spill.

2. Notify the project foreman immediately.

3. If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

4. If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

5. If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

1. Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

3. Notification should first be made by telephone and followed up with a written report.

4. The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

5. Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc. More information on spill rules and appropriate responses is available on the TCEQ website at:

http://www.tceq.texas.gov/response

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RE: Attachment B - Potential sources of contamination

Potential sources of contamination at the site include:

1. Construction vehicles tracking mud onto the roadway.
2. Fueling of construction vehicles.
3. Short-term storage and use of fertilizers for use in existing vegetation.
4. Possible littering around the construction site.
5. Sediment caused by erosion.

All activities will be constructed in a manner to minimize the potential for impact to the environment.

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RE: Attachment C - Potential sources of contamination

The following sequence of activities will be a part of the construction sequence, and will be reflected on the plans submitted with this report:

1. Trees will be fertilized prior to any construction activity. (0.16 ACR.)
2. Install temporary erosion controls per the approved plan. (1.16 ACR.)
3. Contact the Planning and Development Review Department and Environmental Inspection three days prior to construction to schedule a pre-construction conference. (1.16 ACR.)
4. The Environmental Project Manager, and/or Site Supervisor, and/or designated responsible party, and the General Contractor will follow the SWPPP. (1.16 ACR.)
5. Temporary E & S controls will be inspected and maintained weekly and prior to anticipated rainfall events and after rainfall events, in accordance with the SWPPP posted on site. (1.16 ACR.)
6. Begin site demolition, clearing and construction activities. (1.16 ACR.)
7. Begin rough cut for utilities and proposed grading. Remove any associated debris. Dispose all demolished material to an approved off-site facility. (1.16 ACR.)
8. Complete the storm sewer connections. (0.06 ACR.)
9. Complete the proposed roadway grading and surfacing. (0.52 ACR.)
10. Temporary controls to be inspected and maintained weekly and prior to anticipated rainfall events and after rainfall events, as needed. (1.16 ACR.)
11. Complete permanent erosion control and restoration of site vegetation. (1.16 ACR.)
12. Remove temporary erosion/sedimentation controls and tree protection. Restore any areas disturbed during removal of erosion/sedimentation controls. (1.16 ACR.)

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RE: Attachment D - Temporary Best Management Practices

Temporary Erosion and Sediment Control Best Management Practices (BMPs) shall be designed and placed in accordance with the City of Austin and TCEQ requirements. The temporary BMPs shall be installed prior to any site preparation work (clearing, grubbing, or excavation).

TYPE "NS" SILT FENCE:
Silt fence shall be installed down gradient of areas of soil disturbance. Silt fence will keep sediment and pollutants from entering zones of environmentally sensitive features and streams outside of the limits of construction. See the City of Buda Standard Detail on the Construction Plans for details on construction and installation.

CONSTRUCTION EXIT:
A stabilized Construction Exit made of crushed stone will be installed at the construction entrance to prevent the off-site transport of sediment by construction vehicles.

CONCRETE WASHOUT AREA:
A concrete washout area will be designated and enclosed with silt fence to prevent the off-site transport of excess concrete.

TREE PROTECTION FENCE:
Tree protection shall be installed around trees designated as to be kept to prevent tree damage and potential damage or disturbance of the tree's root zone. See the City of Buda Standard Detail on the Construction Plans for details on construction and installation.

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RE: Attachment E - Request to Temporarily Seal a Feature

There are no features that will require temporary sealing during construction.

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RE: Attachment F - Structural Practices

Flows from upgradient areas will be diverted from the exposed soils of the site with a swale to the south of the site. This swale will divert all upgradient flow to the existing detention pond. No structural practices are located within the floodplain. Additionally, temporary structural practices implemented under this application shall consist of silt fence and a stabilized construction exit, which will be inspected weekly and after every rain event to ensure that it is functioning as intended.

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RE: Attachment G - Drainage Area Map

A drainage area map has been included in the construction documents that accompany this WPAP Modification submittal package.

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RE: Attachment H - Temporary Sediment Pond Plans and Calculations

There are no temporary sediment ponds associated with this development.

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RE: Attachment I - Inspection and Maintenance for BMPs

The following is a schedule for inspection and maintenance for Temporary BMPs:

- Silt Fence: Inspect daily and after every rain event any repairs must be done within 24 of failure.
- Temporary Inlet Protection: Inspect daily and after every rain event any repairs must be done within 24 of failure.
- Tree Protection: Inspect weekly.
- Stabilized Construction Entrances: Inspect weekly and after every rain event any repairs must be done within 24 hours of failure.
- Earthen Berm: Inspect weekly and after every rain event any repairs must be done within 24 hours of failure.

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RE: Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

The following is a schedule interim and permanent soil stabilization practices:

- Prior to site disturbance: Install all temporary vegetation features.
- During construction: Maintain all temporary vegetation features and install soil stabilization matting on slopes greater than 3:1 as described in the Edwards Aquifer Technical Guidance Manual Section 1.3. Inspect all temporary features on a weekly basis and after all rain events.
- After completion of construction: Install all permanent vegetation and geotextile features.
- After completion of permanent erosion and sedimentation: Remove all temporary vegetation and soil stabilization matting features.
- If construction is temporarily stopped unexpectedly: If disturbed area is not to be worked on for more than 14 days, disturbed area needs to be stabilized by re-vegetation, mulch, tarp, or re-vegetation matting. If construction is permanently stopped, install all permanent vegetation and geotextile features and remove all temporary vegetation and soil stabilization matting feature.

7. Permanent Stormwater Section

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.

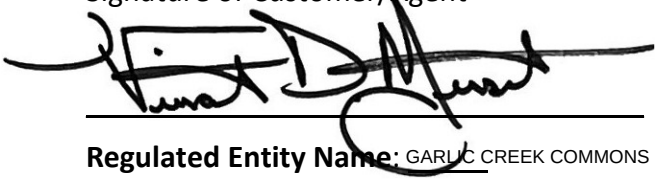
Signature

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: VINCENT D. MUSAT, P.E.

Date: 5.15.2023

Signature of Customer/Agent



Regulated Entity Name: GARLIC CREEK COMMONS

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

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

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

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

☐ N/A

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

   ☐ N/A

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

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

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

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

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

- [ ] A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- [x] 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. [x] **Attachment C - BMPs for On-site Stormwater**.
   - [x] 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.
   - [x] 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.
   - [x] 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. [x] **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:
    - [x] Design calculations (TSS removal calculations)
    - [x] TCEQ construction notes
    - [x] All geologic features
    - [x] All proposed structural BMP(s) plans and specifications
    - [ ] N/A

11. [X] **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:
    - [X] Prepared and certified by the engineer designing the permanent BMPs and measures
    - [ ] Signed by the owner or responsible party
    - [X] Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    - [X] A discussion of record keeping procedures

    [ ] N/A

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

    [X] N/A

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

    [X] N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    [ ] N/A

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

    [ ] N/A

FORESITE group

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RE: Attachment A - 20% or Less Impervious Cover Waiver

A request to waive the requirements is not being requested due to the impervious cover being more than 20%.

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RE: Attachment B - BMPs for Upgradient Stormwater

As shown on sheet C-2, Grading Plan, Upgradient Stormwater that runs onto the site is caught in a swale on the south side of the parking lot for this site. Additionally, the upstream watershed is entirely undeveloped, and water quality is not required.

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RE: Attachment C - Permanent BMP's for On-Site Stormwater

An addition of a Contech Jellyfish filter has been selected as the permanent Best Management Practice (BMP) to reduce the increase in total suspended solids (TSS) load associated with the site development. This Jellyfish filter is designed to provide water quality for the proposed development and to meet the Texas Commission on Environmental Quality (TCEQ) Technical Guidance Manual Expectations. The TSS removal calculations, submitted along with this application, show the Jellyfish filter has been oversized to provide 100% TSS removal, as required by the City of Buda.

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RE: Attachment F - Construction Plans

Construction plans for this project have been prepared and have been submitted along with this application.

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RE: Attachment G - Factors Affecting Water Quality

According to the City of Buda's Code, Section 1.01.06 B and C, the City of Austin's criteria manuals were adopted as the Engineering Criteria Manual and are to be referenced. Per the City of Austin's Environmental Criteria Manual, "Water quality controls required for commercial and multi-family development shall be maintained by the property owner".

Contech Jellyfish Filters:

See Jellyfish Filter Owner's Manual for Inspection/Maintenance instructions attached.

CONTECH®
ENGINEERED SOLUTIONS

Jellyfish® Filter
Owner's Manual

Jellyfish® Filter

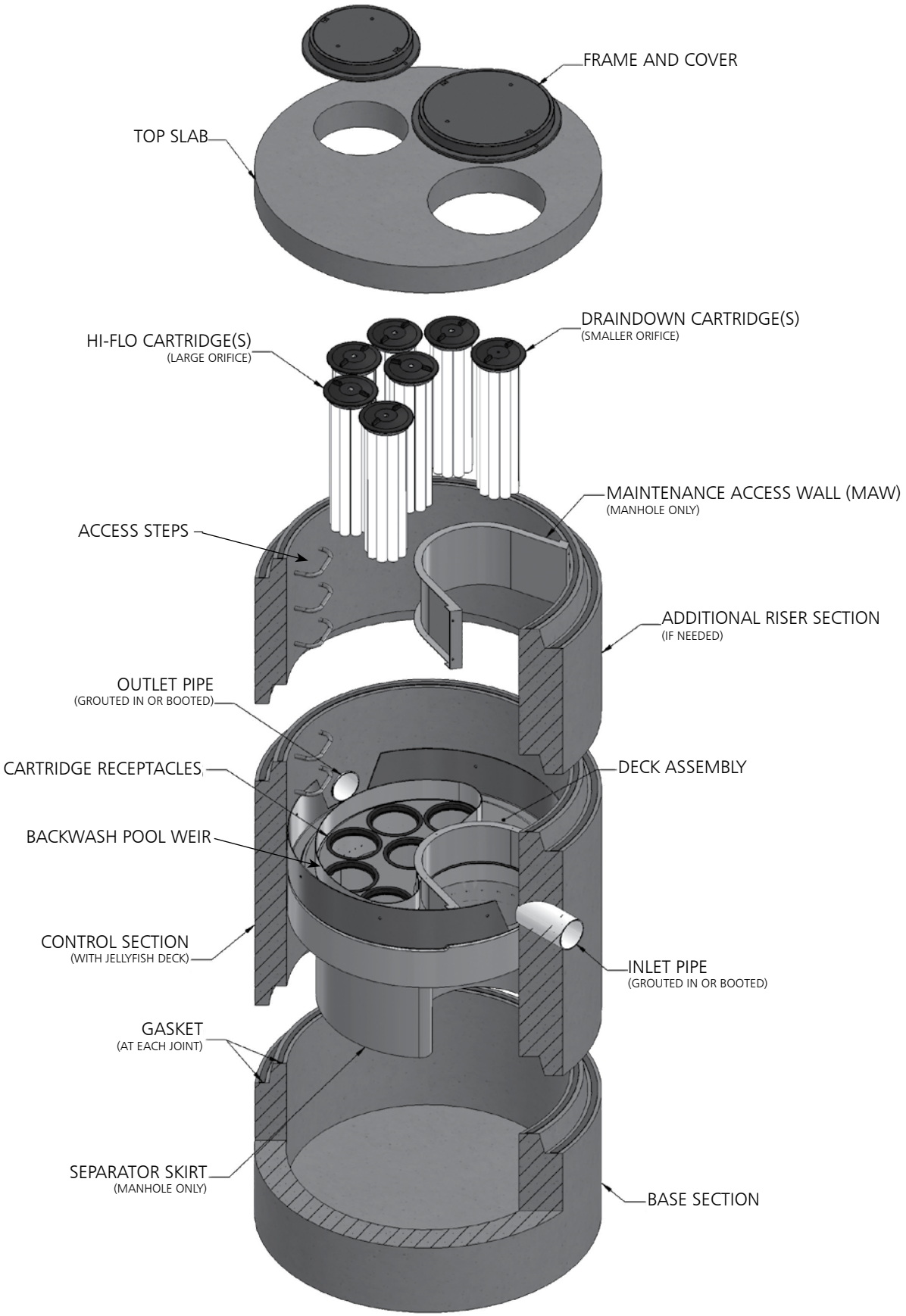
Table of Contents

THANK YOU FOR PURCHASING THE JELLYFISH® FILTER!

Contech Engineered Solutions would like to thank you for selecting the Jellyfish Filter to meet your project's stormwater treatment needs. With proper inspection and maintenance, the Jellyfish Filter is designed to deliver ongoing, high levels of stormwater pollutant removal.

If you have any questions, please feel free to call us or e-mail us:

Contech Engineered Solutions
9025 Centre Pointe Drive, Suite 400 | West Chester, OH 45069
513-645-7000 | 800-338-1122
www.ContechES.com
info@conteches.com


FRAME AND COVER
TOP SLAB
DRAINDOWN CARTRIDGE(S)
(SMALLER ORIFICE)
HI-FLO CARTRIDGE(S)
(LARGE ORIFICE)
MAINTENANCE ACCESS WALL (MAW)
(MANHOLE ONLY)
ACCESS STEPS
ADDITIONAL RISER SECTION
(IF NEEDED)
OUTLET PIPE
(GROUTED IN OR BOOTED)
CARTRIDGE RECEPTACLES
DECK ASSEMBLY
BACKWASH POOL WEIR
CONTROL SECTION
(WITH JELLYFISH DECK)
INLET PIPE
(GROUTED IN OR BOOTED)
GASKET
(AT EACH JOINT)
SEPARATOR SKIRT
(MANHOLE ONLY)
BASE SECTION

WARNINGS / CAUTION

1. FALL PROTECTION may be required.
2. WATCH YOUR STEP if standing on the Jellyfish Filter Deck at any time; Great care and safety must be taken while walking or maneuvering on the Jellyfish Filter Deck. Attentive care must be taken while standing on the Jellyfish Filter Deck at all times to prevent stepping onto a lid, into or through a cartridge hole or slipping on the deck.
3. The Jellyfish Filter Deck can be SLIPPERY WHEN WET.
4. If the Top Slab, Covers or Hatches have not yet been installed, or are removed for any reason, great care must be taken to NOT DROP ANYTHING ONTO THE JELLYFISH FILTER DECK. The Jellyfish Filter Deck and Cartridge Receptacle Rings can be damaged under high impact loads. This type of activity voids all warranties. All damaged items to be replaced at owner's expense.
5. Maximum deck load 2 persons, total weight 450 lbs.

Safety Notice

Jobsite safety is a topic and practice addressed comprehensively by others. The inclusions here are intended to be reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s) and Contractor(s). OSHA and Canadian OSH, and Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Contractor's responsibility and outside the scope of Contech Engineered Solutions.

Confined Space Entry

Secure all equipment and perform all training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to proceed safely at all times.

Personal Safety Equipment

Contractor is responsible to provide and wear appropriate personal protection equipment as needed including, but not limited to safety boots, hard hat, reflective vest, protective eyewear, gloves and fall protection equipment as necessary. Make sure all equipment is staffed with trained and/or certified personnel, and all equipment is checked for proper operation and safety features prior to use.

- Fall protection equipment
- Eye protection
- Safety boots
- Ear protection
- Gloves
- Ventilation and respiratory protection
- Hard hat
- Maintenance and protection of traffic plan

Chapter 1

1.0 – Owner Specific Jellyfish Filter Product Information

Below you will find a reference page that can be filled out according to your Jellyfish Filter specification to help you easily inspect, maintain and order parts for your system.

Owner Name:	
Phone Number:	
Site Address:	
Site GPS Coordinates/unit location:	
Unit Location Description:	
Jellyfish Filter Model No.:	
Contech Project & Sequence Number	
No. of Hi-Flo Cartridges	
No. of Cartridges:	
Length of Draindown Cartridges:	
No. of Blank Cartridge Lids:	
Bypass Configuration (Online/Offline):	

Notes:

_____

_____

_____

_____

Chapter 2

2.0 – Jellyfish Filter System Operations and Functions

The Jellyfish Filter is an engineered stormwater quality treatment technology that removes a high level and wide variety of stormwater pollutants. Each Jellyfish Filter cartridge consists of eleven membrane - encased filter elements ("filtration tentacles") attached to a cartridge head plate. The filtration tentacles provide a large filtration surface area, resulting in high flow and high pollutant removal capacity.

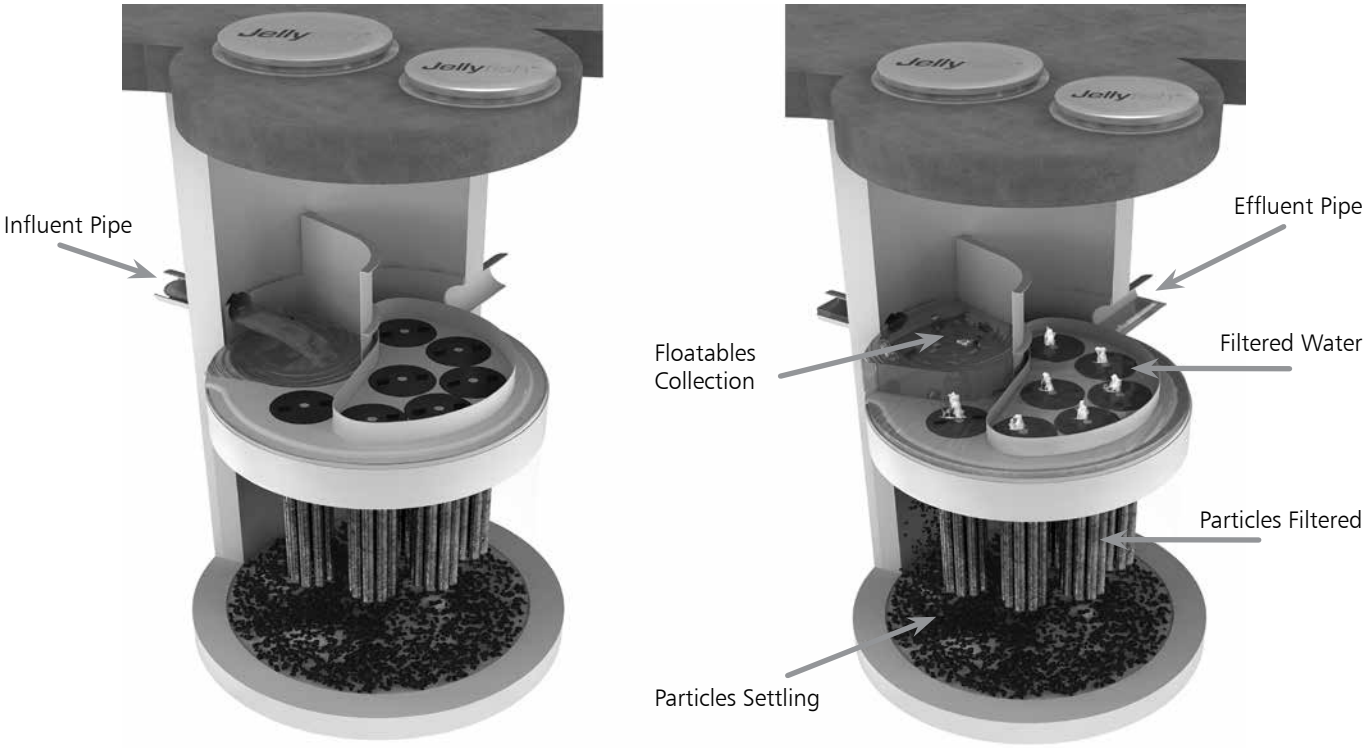
The Jellyfish Filter functions are depicted in Figure 1 below.

FIGURE 1

Jellyfish Filter Treatment Functions

Membrane Filtration

Section View with Maintenance Access Wall (MAW) Cutaway



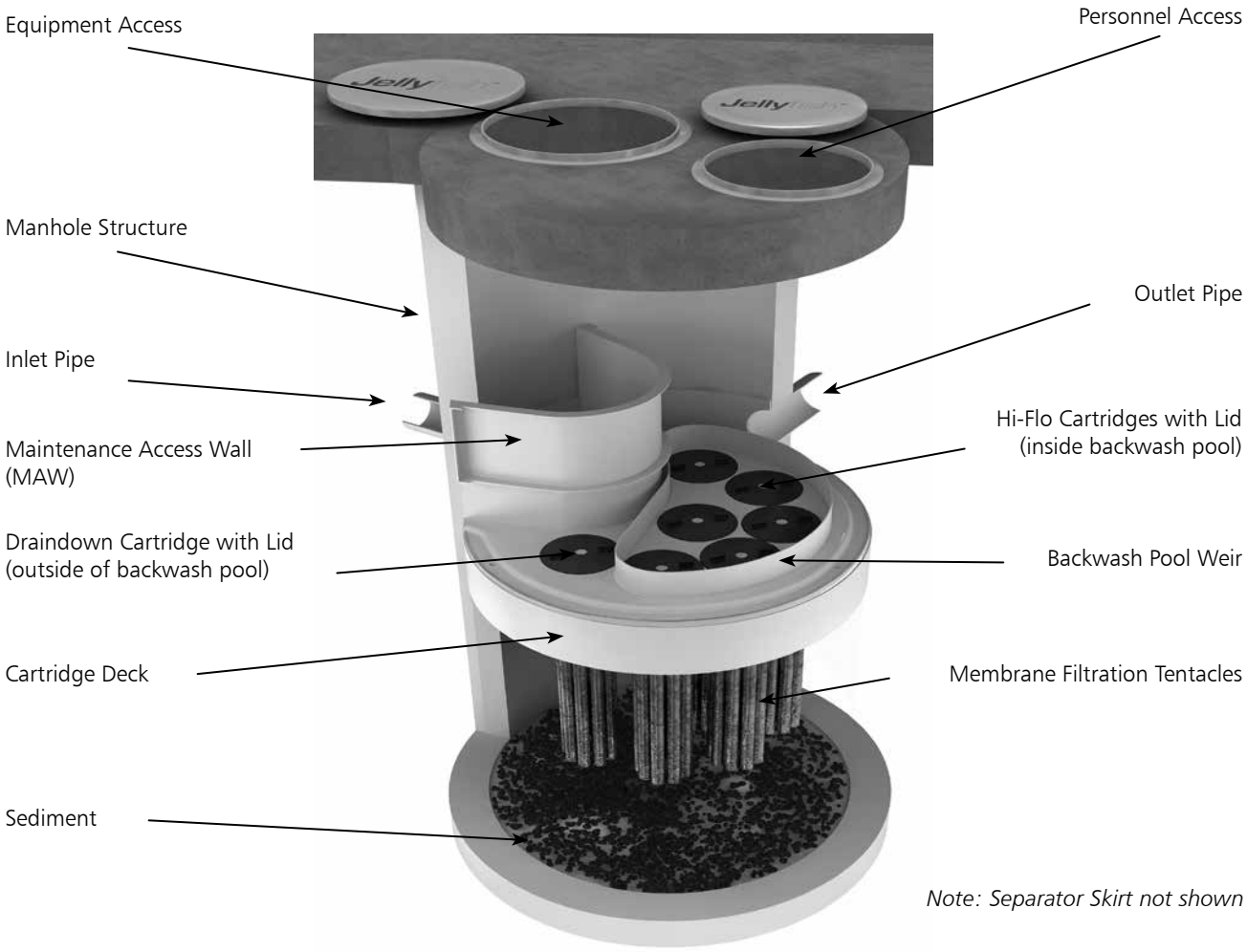
Jellyfish Filter cartridges are backwashed after each peak storm event, which removes accumulated sediment from the membranes. This backwash process extends the service life of the cartridges and increases the time between maintenance events.

For additional details on the operation and pollutant capabilities of the Jellyfish Filter please refer to additional details on our website at www.ContechES.com.

2.1 – Components and Cartridges

The Jellyfish Filter and components are depicted in Figure 2 below.

FIGURE 2 **Jellyfish Filter Components**



Tentacles are available in various lengths as depicted in Table 1 below.

Table 1 – Cartridge Lengths / Weights and Cartridge Lid Orifice Diameters

Cartridge Lengths	Dry Weight	Hi-Flo Orifice Diameter	Draindown Orifice Diameter
15 inches (381 mm)	10 lbs (4.5 kg)	35 mm	20 mm
27 inches (686 mm)	14.5 lbs (6.6 kg)	45 mm	25 mm
40 inches (1,016 mm)	19.5 lbs (8.9 kg)	55 mm	30 mm
54 inches (1,372 mm)	25 lbs (11.4 kg)	70 mm	35 mm

2.2 – Jellyfish Membrane Filtration Cartridge Assembly

The Jellyfish Filter utilizes multiple membrane filtration cartridges. Each cartridge consists of removable cylindrical filtration "tentacles" attached to a cartridge head plate. Each filtration tentacle has a threaded pipe nipple and o-ring. To attach, insert the top pipe nipples with the o-ring through the head plate holes and secure with locking nuts. Hex nuts to be hand tightened and checked with a wrench as shown below.

2.3 – Jellyfish Membrane Filtration Cartridge Installation

- Cartridge installation will be performed by trained individuals and coordinated with the installing site Contractor. Flow diversion devices are required to be in place until the site is stabilized (final paving and landscaping in place). Failure to address this step completely will reduce the time between required maintenance.
- Descend to the cartridge deck (see Safety Notice and page 3).
- Refer to Contech's submittal drawings to determine proper quantity and placement of Hi-Flo, Draindown and Blank cartridges with appropriate lids. Lower the Jellyfish membrane filtration cartridges into the cartridge receptacles within the cartridge deck. It is possible that not all cartridge receptacles will be filled with a filter cartridge. In that case, a blank headplate and blank cartridge lid (no orifice) would be installed.

Cartridge Assembly

Do not force the tentacles down into the cartridge receptacle, as this may damage the membranes. Apply downward pressure on the cartridge head plate to seat the lubricated rim gasket (thick circular gasket surrounding the circumference of the head plate) into the cartridge receptacle. (See Figure 3 for details on approved lubricants for use with rim gasket.)

- Examine the cartridge lids to differentiate lids with a small orifice, a large orifice, and no orifice.
  - Lids with a small orifice are to be inserted into the Draindown cartridge receptacles, outside of the backwash pool weir.
  - Lids with a large orifice are to be inserted into the Hi-Flo cartridge receptacles within the backwash pool weir.
  - Lids with no orifice (blank cartridge lids) and a blank headplate are to be inserted into unoccupied cartridge receptacles.
- To install a cartridge lid, align both cartridge lid male threads with the cartridge receptacle female threads before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation.

3.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.
Inspection activities are typically conducted from surface observations and include:

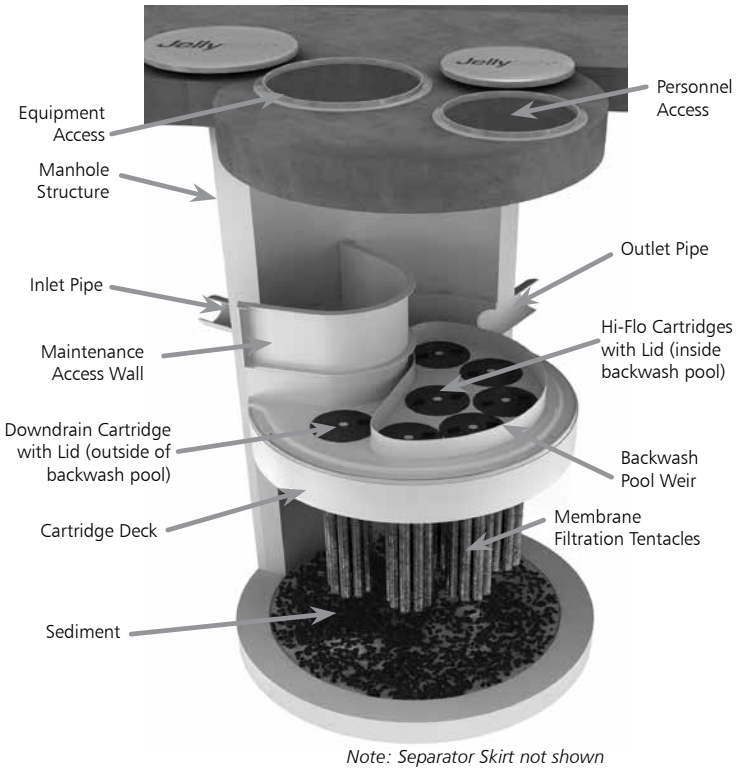
- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed

4.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; *or per the approved project stormwater quality documents (if applicable), whichever is more frequent*.



Note: Separator Skirt not shown

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

5.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

5.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.

Inspection Utilizing Sediment Probe

- Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

5.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

6.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

7.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

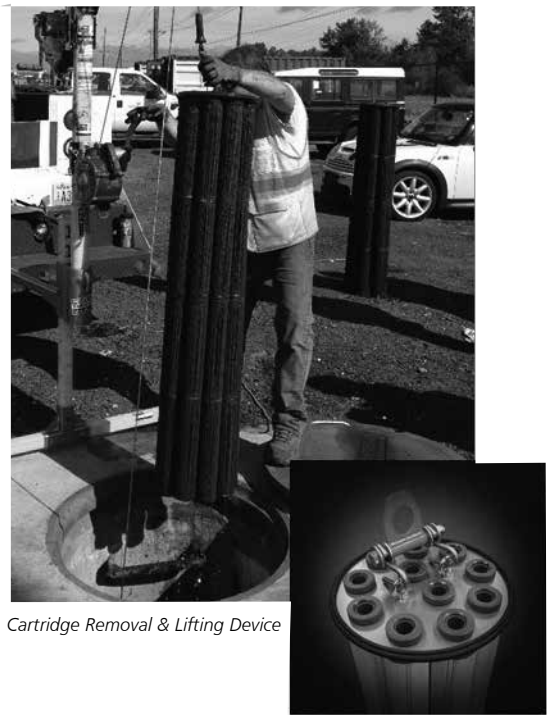
1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. *Caution: Dropping objects onto the cartridge deck may cause damage*.
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

7.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. *Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs*.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

7.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.
2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.



Cartridge Removal & Lifting Device

3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. *Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane*.
4. Collected rinse water is typically removed by vacuum hose.

5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

7.3 Sediment and Flotables Extraction

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.
3. Pressure wash cartridge deck and receptacles to remove all

Rinsing Cartridge with Contech Rinse Tool

sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.

4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.
6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some

Vacuuming Sump Through MAW

vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

7.4 Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. *Caution: Do not force the cartridge downward; damage may occur.*
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

7.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

7.6 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

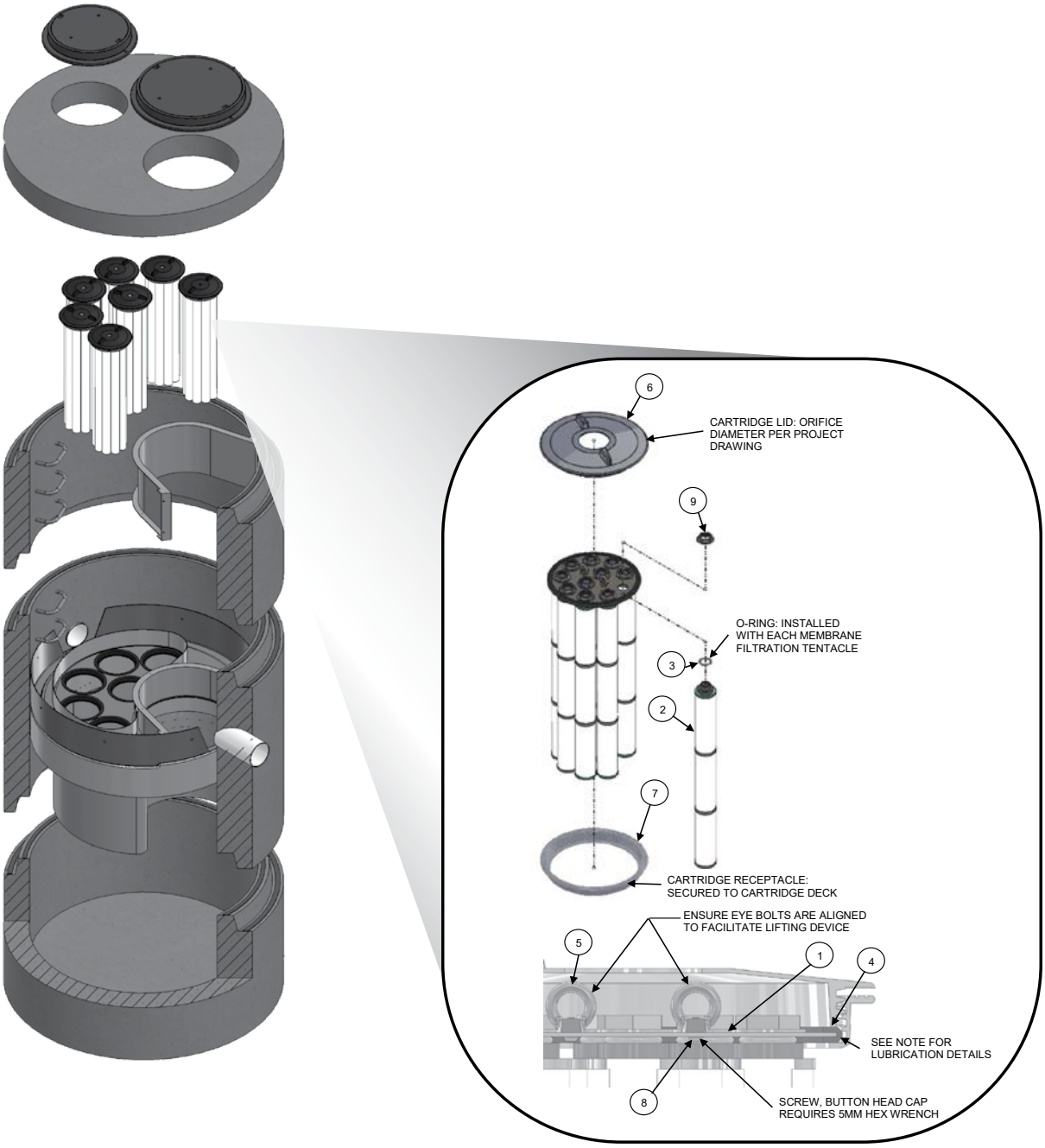


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 14IN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP SCREW M6X14MM SS
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
78713	LA-CO	LUBRI-JOINT
40501	HERCULES	DUCK BUTTER
30600	OATEY	PIPE LUBRICANT
PSLUBXL1Q	PROSELECT	PIPE JOINT LUBRICANT

NOTES:

Head Plate Gasket Installation:
Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2: Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lid (Item 6). Follow Lubricant manufacturer's instructions.

Lid Assembly:
Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clock-wise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

Jellyfish Filter Inspection and Maintenance Log

Owner: _____ Jellyfish Model No.:_____

Location: _____ GPS Coordinates: _____

Land Use: Commercial:_____ Industrial: _____ Service Station:_____

Road/Highway:____ Airport: _____ Residential: _____ Parking Lot:_____

Date/Time:					
Inspector:					
Maintenance Contractor:					
Visible Oil Present: (Y/N)					
Oil Quantity Removed					
Floatable Debris Present: (Y/N)					
Floatable Debris removed: (Y/N)					
Water Depth in Backwash Pool					
Cartridges externally rinsed/re-commissioned: (Y/N)					
New tentacles put on Cartridges: (Y/N)					
Sediment Depth Measured: (Y/N)					
Sediment Depth (inches or mm):					
Sediment Removed: (Y/N)					
Cartridge Lids intact: (Y/N)					
Observed Damage:					
Comments:					

FORESITE group

8. Agent Authorization Form

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

I Neil H. Ellis,
Print Name

Chairman of the Board,
Title - Owner/President/Other

of First GL Buda, LLC,
Corporation/Partnership/Entity Name

have authorized VINCENT D. MUSAT, P.E., LEED AP
Print Name of Agent/Engineer

of FORESITE GROUP, LLC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

3/31/23
Date

THE STATE OF Connecticut §

County of Hartford §

BEFORE ME, the undersigned authority, on this day personally appeared Neil Ellis 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 31 day of March, 2023

Susan K Wright
NOTARY PUBLIC

Susan K Wright
Typed or Printed Name of Notary

MY COMMISSION EXPIRES:

SUSAN K. WRIGHT
Notary Public, State of Connecticut
My Commission Expires Aug. 31, 2026

FORESITE group

9. Application Fee Form

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Garlic Creek Commons

Regulated Entity Location: SWC of FM 967 and FM 1626

Name of Customer: First GL Buda LLC

Contact Person: Vincent Musat Phone: 770-368-1399

Customer Reference Number (if issued):CN 605522234

Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☒ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde

☐ Comal ☐ Kinney

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

☐ Austin Regional Office

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

☐ San Antonio Regional Office

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

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☒ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	12.118 Acres	$ 6500
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: 5.15.2023

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

FORESITE group

10. Core Data Form

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

☒ Other **MODIFICATION**

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 603145905		**RN 111704615**

SECTION II: Customer Information

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

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

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

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

FIRST GL BUDA LLC

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0802110836	32055799376	47-2467786	

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

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

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

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

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:							
	149 Colonial Road						
City	Manchester	**State**	CT	**ZIP**	06042	**ZIP + 4**	1270

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	jbellock@firsthartford.com

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

(860) 646-6555		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

GARLIC CREEK COMMONS

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	149 Colonial Road							
	City	Manchester	**State**	CT	**ZIP**	06042	**ZIP + 4**	1270
24. County	Hartford							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	SWC OF FM 967 AND FM 1626				
26. Nearest City			**State**	**Nearest ZIP Code**	
BUDA			TX	78610	

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	30.096342		**28. Longitude (W) In Decimal:**	-97.876841	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
1540		531120	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

To own and lease the property in Buda TX

34. Mailing Address:	**149 Colonial Road**							
	City	**Manchester**	**State**	**CT**	**ZIP**	**06042**	**ZIP + 4**	**1270**
35. E-Mail Address:	**jbellock@firsthartford.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(860) 646-6555		( ) -

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

☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
		EAPP ID NO. 11001717 EAPP ID NO. 11001095 EAPP ID NO. 11001433 RN 111704615		
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	VINCENT D. MUSAT, P.E., LEED AP	**41. Title:**	REGIONAL LEADER
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(770 **)** 368-1399		**( ) -**	VMUSAT@FG-INC.NET

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:	FORESITE GROUP, LLC	**Job Title:**	REGIONAL LEADER
Name *(In Print):*	VINCENT D. MUSAT	**Phone:**	**(** 770 **)** 368- **1399**
Signature:		**Date:**	5.5.2023

FORESITE group

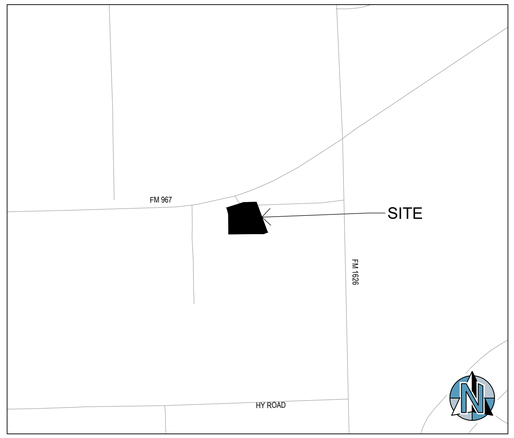
11. Site Construction Plans

SITE DEVELOPMENT PLANS FOR:

HEARTLAND DENTAL AT BUDA

SOUTHWEST CORNER OF FM 967 AND FM 1626
BUDA, TX 78610
ZONED: F4 (FORM DISTRICT 4)

SHEET INDEX



VICINITY MAP
NOT TO SCALE

SITE DISTURBED AREA = 1.249 AC.

PROJECT DIRECTORY

OWNER
FIRST HARTFORD REALTY CORPORATION
149 COLONIAL RD
MANCHESTER, CT 06042
(713)255-0280
CONTACT: JONATHAN BELLOCK

DEVELOPER
FIRST HARTFORD REALTY CORPORATION
149 COLONIAL RD
MANCHESTER, CT 06042
(713)255-0280
CONTACT: JONATHAN BELLOCK

CIVIL ENGINEER
FORESITE GROUP, LLC
1999 BRYAN STREET, SUITE 890
DALLAS, TX 75201
(770) 368-1399
CONTACT: VINCENT D. MUSAT, P.E. LEED AP

ARCHITECT
DESIGNTRAIT ARCHITECTS
2525 S LAMAR BLVD #6
AUSTIN, TX 78704
(512)542-0073
CONTACT: HENRY HO

SURVEYOR
4WARD LAND SURVEYING
4120 FREIDRICH LANE, SUITE 200
AUSTIN, TX 78744
(737)285-3393
CONTACT: PAUL GUERRERO RPLS

GEOTECHNICAL ENGINEER
RABA KISTNER
8100 CAMERON RD, STE. B-150
AUSTIN, TX 78735
(512)339-1745
CONTACT: REED S. KISTLER, P.E.

LOCAL ISSUING AUTHORITY
CITY OF BUDA
405 E LOOP ST, BUILDING 100
BUDA, TX 78610
(512)312-0084
CONTACT: BRIAN SCALES-MARTINEZ

DEPARTMENT OF TRANSPORTATION
TXDOT
7901 N I 35
AUSTIN, TX 78753
(512)832-7000
CONTACT: TUCKER FERGUSON, P.E.

UTILITY PROVIDERS

WATER SERVICE PROVIDER
CITY OF BUDA
405 E LOOP ST, BUILDING 100
BUDA, TX 78640
(512)523-1077
CONTACT: BRIAN MARTINEZ-SCALES

SANITARY SEWER SERVICE PROVIDER
CITY OF BUDA
405 E LOOP ST, BUILDING 100
BUDA, TX 78610
(512)523-1077
CONTACT: BRIAN MARTINEZ-SCALES

ELECTRICAL SERVICE PROVIDER
PEDERNALES ELECTRIC COOPERATIVE
1810 FM150 W
KYLE, TX 78640
(800)868-4791 EXT. 7542
CONTACT: TAYLOR GLENN

GAS SERVICE PROVIDER
CENTERPOINT ENERGY
1111 LOUISIANA ST
HOUSTON, TX 77002
(512)962-9404
CONTACT: TARA VINCENT

TELEPHONE SERVICE PROVIDER

VERIZON

PREPARED BY:

FORESITE group

TBPE Firm No. F-12878
Foresite Group, LLC
901 S. MoPac Expressway
Building 1, Suite 300
Austin, TX 78746
D/B/A Foresite Consulting Group of Texas, LLC

w | foresitegroup.net
o | 770.368.1399
f | 770.368.1944

CONTACT:
VINCENT D. MUSAT, P.E. LEED AP
(770) 368-1399

FG PROJECT NUMBER:
489.057

BENCHMARKS	
NAME	DESCRIPTION
TBM #1	½" IRON ROD WITH "4WARD CONTROL" CAP SET. ELEV = 764.32'
TBM #2	SQUARE CUT ON TOP OF CONCRETE CURB ON THE NORTH SIDE OF FM 367 ±30' SOUTHWEST FROM A BUDA SPORTS CENTER SIGN AT 331013 FM 967 ELEV = 762.70'
TBM #3	SQUARE CUT ON TOP OF CONCRETE DRAINAGE WALL ON THE SOUTH SIDE OF FM. 967 AND ON THE WEST SIDE OF THE CVS PHARMACY ±=46' NORTHEAST FROM A POWER POLE ELEV = 765.45'

ENGINEER:
FORESITE group
TBPE Firm No. F-12878
Foresite Group, LLC
901 S. MoPac Expressway
Suite 300
Austin, TX 78746
D/B/A Foresite Consulting Group of Texas, LLC.
o | 770.368.1399
f | 770.368.1944
w | www.foresitegroup.net

DEVELOPER:
FIRST HARTFORD REALTY CORPORATION
9121 ELIZABETH ROAD, SUITE 105
HOUSTON, TX 77055
(713) 255-0280

CONTACT: JONATHAN BELLOCK

PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:
STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED
PROFESSIONAL ENGINEER
3.7.2023

REVISIONS | DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

COVER

SHEET NUMBER:
G-1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER:
489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\G-1 COVER.DWG

GENERAL NOTES

1. GENERAL PROVISIONS
    a. THE GENERAL NOTES PRESENTED HEREIN ARE NOT INTENDED TO SUPERCEDE GOVERNING JURISDICTIONAL CRITERIA THAT MAY APPLY. FOR SPECIFIC ITEMS NOT IDENTIFIED ON THE CONSTRUCTION PLANS, OR THAT CONFLICT WITH JURISDICTIONAL REQUIREMENTS, THE CONTRACTOR SHALL REQUEST INFORMATION FROM THE ENGINEER AND JURISDICTIONAL INSPECTOR PRIOR TO COMMENCEMENT OF WORK AND ORDERING OF APPLICABLE MATERIALS.
    b. COMPLY WITH ALL APPLICABLE STATE, FEDERAL, AND LOCAL BUILDING AND UTILITY INSTALLATION CODES. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS UNLESS THE STANDARDS OF THE JURISDICTION OF AUTHORITY ARE MORE STRINGENT.
    c. THESE DRAWINGS MY CONTAIN SHEETS PREPARED BY OTHER PROFESSIONALS WHICH BEAR THE NAME, ADDRESS, AND LOGO OF THE PROFESSIONAL. FORESITE GROUP, INC. IS NOT RESPONSIBLE FOR DRAWINGS PREPARED BY OTHER PROFESSIONALS.
    d. DESIGN DATA PROVIDED IN ELECTRONIC FORMAT IS FOR INFORMATION PURPOSES ONLY AND SHOULD BE USED AT THE CONTRACTOR'S OWN RISK, AND IS PROVIDED WITHOUT REPRESENTATIONS AND WARRANTIES. IN THE EVENT THERE ARE CONFLICTS BETWEEN THE INFORMATION REFLECTED ON THE LATEST REVISION OF THE SEALED PLAN SHEETS AND INFORMATION PROVIDED VIA ELECTRONIC FORMAT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF THE DISCREPANCY. WHERE SUCH CONFLICTS EXIST, THE INFORMATION REFLECTED ON THE ISSUED SEALED PLAN SHEETS SHALL CONTROL UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
    e. DO NOT DEVIATE FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.
    f. OBTAIN ALL REQUIRED CONSTRUCTION RELATED PERMITS, INCLUDING DEMOLITION PERMIT, BEFORE STARTING WORK. RETAIN COPIES OF ALL PERMITS AT THE PROJECT SITE AT ALL TIMES.
    g. REFERENCES TO "BY OTHERS" IN THESE CONSTRUCTION DRAWINGS INDICATE ACTIONS NOT TO BE INCLUDED IN THE CONTRACT, BUT WILL BE PERFORMED BY OTHERS AT THE DIRECTION OF THE OWNER/DEVELOPER. COORDINATION WITH OTHER ENTITIES FOR CONSTRUCTION OF THESE ITEMS IN A MANNER TO PREVENT RECONSTRUCTION OR INCREASED COSTS, AS WELL AS ADVERSE IMPACTS TO THE SCHEDULE IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. SUBMITTALS, TESTING, AND QUALITY CONTROL
    a. THE CONTRACTOR SHALL SUBMIT A COPY OF THE SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION. PRIOR TO SUBMISSION, THE CONTRACTOR SHALL THOROUGHLY CHECK SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES FOR COMPLETENESS AND FOR COMPLIANCE WITH THE CONSTRUCTION PLANS. THE CONTRACTOR SHALL ALSO VERIFY ALL DIMENSIONS AND FIELD CONDITIONS PERTAINING TO THE SHOP DRAWINGS AND SHALL COORDINATE ANY RELATED WORK. AT THE TIME OF SUBMISSION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF DEVIATIONS IN SUBMITTALS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR'S RESPONSIBILITY FOR ERRORS AND OMISSIONS IN SUBMITTALS IS NOT RELIEVED BY THE ENGINEER'S REVIEW OF SUBMITTALS.
    b. THE CONTRACTOR IS RESPONSIBLE FOR ALL QUALITY CONTROL TESTING. MINIMUM TESTING SHALL INCLUDE, BUT NOT BE LIMITED TO: A) PIPING AND STRUCTURAL EXCAVATION, BEDDING, BACKFILL MATERIALS AND DENSITY TESTS; B) DETERMINATION OF COMPACTIVE EFFORT NEEDED FOR COMPLIANCE WITH THE DENSITY REQUIREMENTS; C) CONCRETE AND ASPHALT QUALITY CONTROL TESTING INCLUDING DESIGN MIX REVIEW, MATERIALS, FIELD SLUMP AND AIR CONTENT, AND FIELD- AND LAB-CURED STRENGTH SAMPLES AND TESTING.
    c. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED TESTING OR APPROVALS FOR ANY WORK (OR ANY PART THEREOF) IF LAWS OR REGULATIONS OF ANY REGULATORY AGENCY
    d. SPECIFICALLY REQUIRE TESTING, INSPECTIONS OR APPROVAL. THE CONTRACTOR SHALL PAY ALL ASSOCIATED COSTS AND SHALL FURNISH THE DEVELOPER AND ENGINEER THE REQUIRED CERTIFICATES OF INSPECTION, TESTING OR APPROVAL.
    e. ANY DESIGN OR TESTING LABORATORY UTILIZED BY THE CONTRACTOR SHALL BE AN INDEPENDENT LABORATORY ACCEPTABLE TO THE DEVELOPER AND THE ENGINEER, APPROVED IN WRITING, AND COMPLYING WITH THE LATEST EDITION OF THE "RECOMMENDED REQUIREMENTS FOR INDEPENDENT LABORATORY QUALIFICATION," PUBLISHED BY THE AMERICAN COUNCIL OF INDEPENDENT LABORATORIES.
    f. ALL TEST RESULTS SHALL BE PROVIDED (PASSING AND FAILING) ON A REGULAR AND IMMEDIATE BASIS TO THE DEVELOPER AND ENGINEER.
3. THE FOLLOWING ARE ACTIVITIES TO BE PERFORMED PRIOR TO DEMOLITION AND CONSTRUCTION ACTIVITIES AND CONCURRENT WITH STAGING/STAKEOUT OF THE PROJECT:
    a. THE CONTRACTOR SHALL SEQUENCE THE WORK AND PROVIDE TEMPORARY MEASURES AS NEEDED TO MAINTAIN ACCESS EASEMENTS INCLUDING FIRE LANES THROUGH THE SITE AT ALL TIMES DURING CONSTRUCTION. TEMPORARY PROVISIONS MAY INCLUDE, BUT ARE NOT LIMITED TO: BARRICADES, FLASHING LIGHTS, FLAGMAN, TEMPORARY PAVEMENT, AND DIRECTIONAL SIGNAGE.
    b. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THE OWNER FOR TIMING OF CONSTRUCTION TASKS THAT MAY AFFECT ADJOINING PROPERTY USERS.
    c. THE CONTRACTOR SHALL BE FAMILIAR WITH AND FOLLOW ALL RECOMMENDATIONS GIVEN BY <NAME THE GEOTECH AND ENVIRONEMNTAL REPORTS, WHO THEY ARE BY, AND THE DATES> DURING DEMOLITION AND SITE CONSTRUCTION.
    d. THE CONTRACTOR SHALL PROTECT BENCHMARKS, PROPERTY CORNERS, AND OTHER SURVEY MONUMENTS FROM DAMAGE OR DISPLACEMENT. IF A MARKER NEEDS TO BE REMOVED, IT SHALL BE REFERENCED BY A LICENSED LAND SURVEYOR AND REPLACED, AS NECESSARY, BY SAME.
    e. IF CONSTRUCTION IS OCCURING IN AN EXISTING DEVELOPMENT, THE CONTRACTOR IS TO COORDINATE WITH THE ARCHITECT AND/OR SITE LIGHTING CONTRACTOR TO DETERMINE WHAT TEMPORARY OR PERMANENT MODIFICATIONS/IMPROVEMENTS ARE REQUIRED TO KEEP THE EXISTING SITE LIGHTING SYSTEM OPERATIONAL FOR EXISTING AND NEW DEVELOPMENT.
    f. ENSURE CORRECT HORIZONTAL AND VERTICAL ALIGNMENT OF ALL TIES BETWEEN PROPOSED AND EXISTING PAVEMENTS, CURB AND GUTTER, SIDEWALKS, WALLS, AND UTILITIES BEFORE BEGINNING WORK. NOTIFY ENGINEER IF DISCREPANCIES EXIST.
    g. THE CONTRACTOR SHALL INSTALL INITIAL EROSION AND SEDIMENT CONTROL AND TREE PROTECTION MEASURES. REFER TO TREE PROTECTION PLANS AND EROSION & SEDIMENTATION CONTROL PLANS IN THIS SET FOR REQUIREMENTS.
    h. EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE, AND THERE MAY BE ADDITIONAL EXISTING UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR LOCATIONS SHOWN. THE CONTRACTOR IS TO FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE PROJECT LIMITS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, INCLUDING ELEVATION OF UTILITIES WHERE EXISTING AND PROPOSED UNDERGROUND UTILITIES/STORM SEWERS INTERSECT. NOTIFY THE OWNER AND ENGINEER IF DISCREPANCIES ARE FOUND THAT WILL AFFECT THE CONSTRUCTION PROJECT.
    i. NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS IN THE FIELD AND THE SURVEY SHOWN ON THE PLANS BEFORE PROCEEDING WITH ANY NEW CONSTRUCTION.
    j. CONTRACTOR SHALL DOCUMENT EXISTING CONDITION OF ADJACENT PROPERTIES AND ROADWAYS BY PHOTOGRAPHS AND VIDEO PRIOR TO START OF CONSTRUCTION
4. EQUIPMENT STORAGE: DO NOT PARK EQUIPMENT OR STORE MATERIALS IN STATE, COUNTY, OR CITY RIGHT-OF-WAY.
5. SIGNS (LOCATION, NUMBER, AND SIZE) SHOWN ON THESE DRAWINGS ARE NOT APPROVED UNDER THE GENERAL DEVELOPMENT PERMIT. A SEPARATE PERMIT IS REQUIRED FOR ONSITE SIGNAGE.
6. HIGH INTENSITY LIGHTING USED DURING CONSTRUCTION, IF ANY, SHALL BE ARRANGED TO CONCEAL THE SOURCE OF LIGHT FROM PUBLIC VIEW AND PREVENT INTERFERENCE WITH TRAFFIC.
7. THE ENTIRE PROJECT SITE SHALL BE THOROUGHLY CLEANED AT THE COMPLETION OF THE WORK. CLEAN ALL INSTALLED PIPELINES, STRUCTURES, SIDEWALKS, PAVED AREAS, ACCUMULATED SILT IN PONDS, AND ALL ADJACENT AREAS AFFECTED BY WORK. EQUIPMENT TO CLEAN THESE SURFACES SHALL BE SUBJECT TO APPROVAL BY THE DEVELOPER.

WORK WITHIN D.O.T. RIGHT-OF-WAY

1. ALL PAVEMENT MARKINGS WITHIN D.O.T. RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH D.O.T. SPECIFICATIONS.
2. RE-ESTABLISH ALL RIGHT-OF-WAY AREA, WHICH IS DAMAGED OR DISTURBED, TO ORIGINAL CONDITION OR BETTER.
3. ALL WORK IN D.O.T. RIGHT-OF-WAY SHALL COMPLY WITH D.O.T. SPECIFICATIONS.

TRAFFIC CONTROL

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN PRIOR TO CONSTRUCTION. THE M.O.T. PLAN SHALL SHOW ALL PROPOSED TRAFFIC CONTROL SIGNS, PAVEMENT MARKINGS, BARRICADES, AND OTHER DEVICES AND SHALL DETAIL ALL PROPOSED CONSTRUCTION SEQUENCING. THE M.O.T. PLAN SHALL BE APPROVED BY THE ENGINEER, OWNER, AND ROADWAY JURISDICTIONAL AGENCY PRIOR TO CONSTRUCTION. ALL PROPOSED ROADWAY AND DRIVEWAY LANE CLOSURES AND TIMING SHALL BE CLOSELY COORDINATED WITH THE ROADWAY JURISDICTIONAL AGENCY PRIOR TO CONSTRUCTION.
2. ALL TEMPORARY TRAFFIC CONTROL SIGNAGE, APPURTENANCES AND MARKINGS SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH THE MUTCD, LATEST EDITION.
3. CONTRACTOR SHALL CONTACT PROPERTY OWNERS TO BE AFFECTED BY CONSTRUCTION AND COORDINATE TEMPORARY DRIVEWAY CLOSURES AND SEQUENCING. MAINTAIN ACCESS FOR ALL PROPERTY OWNERS DURING CONSTRUCTION.
4. APPLY WATER, TACKIFIERS, OR OTHER BEST MANAGEMENT PRACTICES AS NECESSARY TO CONTROL DUST NEAR THE ROADWAY..
5. MAINTAIN TRAFFIC CONTROL DEVICES TO ENSURE PLACEMENT OF BARRICADES AND FUNCTION OF LIGHTS IS MAINTAINED THROUGHOUT CONSTRUCTION.
6. COORDINATE ALL LANE CLOSURES WITH THE LOCAL JURISDICTION HAVING AUTHORITY.
7. THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH OTHER CONTRACTORS WHO MAY BE WORKING IN THE IMMEDIATE VICINITY.

STRUCTURE & SITE DEMOLITION

1. VERIFY THAT HAZARDOUS MATERIALS HAVE BEEN REMEDIATED IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REGULATIONS BEFORE PROCEEDING WITH BUILDING DEMOLITION OPERATIONS.
2. ENVIRONMENTAL & GEOTECHNICAL: REVIEW ALL PROJECT ENVIRONMENTAL AND GEOTECHNICAL REPORTS AN BECOME FAMILIAR WITH ALL ISSUES BEFORE DEMOLITION.
3. EXISTING UTILITIES: LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED UTILITIES SERVING BUILDINGS AND STRUCTURES PRIOR TO COMMENCEMENT OF DEMOLITION.
    a. ARRANGE TO SHUT OFF INDICATED UTILITIES WITH UTILITY COMPANIES.
    b. IF REMOVAL, RELOCATION, OR ABANDONMENT OF UTILITY SERVICES WILL AFFECT ADJACENT OCCUPIED BUILDINGS, THEN PROVIDE TEMPORARY UTILITIES THAT BYPASS BUILDINGS AND STRUCTURES TO BE DEMOLISHED AND MAINTAIN CONTINUITY OF SERVICE TO OTHER BUILDINGS AND STRUCTURES.
    c. DO NOT COMMENCE DEMOLITION OPERATIONS UNTIL TEMPORARY EROSION AND SEDIMENT CONTROL AND PLANT-PROTECTION MEASURES ARE IN PLACE.
    d. OBTAIN THE DEMOLITION PERMIT FROM THE LOCAL AUTHORITY PRIOR TO STARTING DEMOLITION ACTIVITIES.
    e. EXISTING UTILITIES TO REMAIN: MAINTAIN UTILITY SERVICES TO REMAIN AND PROTECT FROM DAMAGE DURING DEMOLITION OPERATIONS.
4. EXISTING FACILITIES TO REMAIN: PROTECT ADJACENT WALKWAYS, LOADING DOCKS, BUILDING ENTRIES, AND OTHER BUILDING FACILITIES THAT ARE TO REMAIN DURING DEMOLITION OPERATIONS. MAINTAIN EXITS FROM EXISTING BUILDINGS. PROMPTLY REPAIR ANY FACILITIES DAMAGED BY CONSTRUCTION OPERATIONS TO OWNER'S SATISFACTION AT NO ADDITIONAL COST TO THE OWNER.
5. AREAS OF GENERAL DEMOLITION: IN AREAS DEPICTED ON THE PLAN OR LEGEND AS AN AREA OF "GENERAL DEMOLITION", THE CONTRACTOR IS TO REMOVE AND WASTE ALL ASPHALT, UTILITIES, STRUCTURES, AND OTHER FEATURES UNLESS OTHERWISE CALLED OUT "TO REMAIN". IN THE EVENT OF UNFORSEEN CONDITIONS, SUCH AS UTILITIES OR FEATURES NOT INDICATED ON THE PLAN IN THE AREA OF GENERAL DEMOLITION, THE CONTRACTOR IS TO PROVIDE NOTICE TO THE ENGINEER OF THE DISCREPANCY PRIOR TO COMMENCEMENT OF CONSTRUCTION TO CONFIRM WHETHER SUCH ITEMS ARE TO BE DEMOLISHED.
6. TEMPORARY PROTECTION: ERECT TEMPORARY PROTECTION, SUCH AS WALKS, FENCES, RAILINGS, CANOPIES, AND COVERED PASSAGEWAYS, WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION, AS INDICATED, OR AS OTHERWISE DIRECTED BY OWNER.
7. REMOVE TEMPORARY BARRIERS AND PROTECTIONS WHERE HAZARDS NO LONGER EXIST. WHERE OPEN EXCAVATIONS OR OTHER HAZARDOUS CONDITIONS REMAIN, LEAVE TEMPORARY BARRIERS AND PROTECTIONS IN PLACE.
8. REMOVE DEMOLITION WASTE MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION
9. DO NOT BURN DEMOLISHED MATERIALS UNLESS SPECIAL WRITTEN PERMISSION IS OBTAINED FROM OWNER AND ENGINEER.
10. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY BUILDING DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO THE EXISTING CONDITION BEFORE BUILDING DEMOLITION OPERATIONS BEGAN.

SITE CLEARING

1. PROJECT CONDITIONS
    a. TRAFFIC: MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING SITE-CLEARING OPERATIONS.
    b. ENVIRONMENTAL & GEOTECHNICAL: REVIEW ALL PROJECT ENVIRONMENTAL AND GEOTECHNICAL REPORTS AND BECOME FAMILIAR WITH ALL ISSUES BEFORE SITE CLEARING.
    c. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE SITE CLEARING.
    d. DO NOT COMMENCE SITE CLEARING OPERATIONS UNTIL TEMPORARY EROSION- AND SEDIMENTATION-CONTROL AND PLANT-PROTECTION MEASURES ARE IN PLACE.
2. TEMPORARY EROSION AND SEDIMENTATION CONTROL
    a. PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT SOIL EROSION, DISCHARGE OF SOIL-BEARING WATER RUNOFF, OR AIRBORNE DUST TO ADJACENT PROPERTIES, ROADWAYS, AND WALKWAYS, AS SHOWN ON THE INCLUDED EROSION AND SEDIMENTATION CONTROL PLAN INCLUDED IN THESE CONSTRUCTION DRAWINGS AND ADDITIONALLY ANY REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
    b. VERIFY THAT FLOWS OF WATER REDIRECTED FROM CONSTRUCTION AREAS OR GENERATED BY CONSTRUCTION ACTIVITY DO NOT BYPASS BEST MANAGEMENT PRACTICES TO TREAT CONSTRUCTION STORMWATER, AND DO NOT DIVERT RUNOFF TO PROTECTED AREAS, OTHER PROPERTIES, OR RIGHTS-OF-WAY THAT ARE NOT INTENDED WHEN PROJECT CONSTRUCTION IS COMPLETE.
    c. INSPECT, MAINTAIN, AND REPAIR EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
    d. REMOVE EROSION AND SEDIMENTATION CONTROLS WHEN SITE IS STABILIZED AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.
3. TREE AND PLANT PROTECTION
    a. PRIOR TO COMMENCEMENT OF LAND DISTURBANCE, INSTALL TREE PROTECTION IN ACCORDANCE WITH THE TREE PROTECTION PLANS INCLUDED IN THESE CONSTRUCTION DRAWINGS.
    b. REPAIR OR REPLACE TREES, SHRUBS, AND OTHER VEGETATION INDICATED TO REMAIN OR BE RELOCATED THAT ARE DAMAGED BY CONSTRUCTION OPERATIONS, IN A MANNER APPROVED BY ENGINEER.
4. EXISTING UTILITIES
    a. LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP UTILITIES INDICATED TO BE REMOVED OR ABANDONED IN PLACE. ARRANGE WITH UTILITY COMPANIES TO SHUT OFF INDICATED UTILITIES.
    b. INTERRUPTING EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED:
    c. NOTIFY UTILITY OWNER NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.
    d. DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT UTILITY OWNER'S WRITTEN PERMISSION.
    e. POTHOLE EXISTING WATER LINES, UNDERGROUND ELECTRICAL LINES, GAS LINES, UNDERGROUND TELEPHONE LINES, FIBER OPTIC, AND ANY OTHER EXISTING UTILITY LINES WITHIN THE PROJECT LIMITS DURING SITE CLEARING AND DEMOLITION ACTIVITIES. SURVEY THE EXISTING UTILITY ELEVATIONS AND PROVIDE THE SURVEYED FIELD LOCATIONS AND DEPTHS TO THE ENGINEER FOR REVIEW. THESE EXISTING UTILITIES MAY REQUIRE RELOCATION.
5. CLEARING AND GRUBBING
    a. REMOVE OBSTRUCTIONS, CONCRETE, ASPHALT, TREES, SHRUBS, AND OTHER VEGETATION INDICATED TO BE REMOVED ON PLANS TO PERMIT INSTALLATION OF NEW CONSTRUCTION.
    b. DO NOT REMOVE TREES, SHRUBS, AND OTHER VEGETATION INDICATED TO REMAIN OR TO BE RELOCATED.
    c. GRIND DOWN STUMPS AND REMOVE ROOTS, OBSTRUCTIONS, AND DEBRIS TO A DEPTH OF 12 INCHES BELOW EXPOSED SUBGRADE.
    d. USE ONLY HAND METHODS FOR GRUBBING WITHIN ZONES TO BE PROTECTED.
    e. PROTECT ANY AREAS WHERE COMPACTION BY MECHANIZED EQUIPMENT MAY BE LIMITED. DO NOT STRIP TOPSOIL FROM SURFACE AREAS WHERE INFILTRATION BMP'S OR SEPTIC SYSTEMS WILL BE INSTALLED.
    f. THE SUBGRADE TO REMAIN SHALL BE SCARIFIED AND COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FOLLOWING CLEARING AND GRUBBING ACTIVITIES.
6. TOPSOIL STRIPPING
    a. REMOVE SOD AND GRASS BEFORE STRIPPING TOPSOIL.
    b. STRIP TOPSOIL IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER WASTE MATERIALS.
    c. STOCKPILE TOPSOIL AWAY FROM EDGE OF EXCAVATIONS WITHOUT INTERMIXING WITH SUBSOIL. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST AND EROSION BY WATER. SEE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS FOR ADDITIONAL TOPSOIL STOCKPILING REQUIREMENTS.
    d. LEGALLY DISPOSE OF SURPLUS TOPSOIL. SURPLUS TOPSOIL IS THAT WHICH EXCEEDS QUANTITY INDICATED TO BE STOCKPILED OR REUSED.

SITE WATER DISTRIBUTION

1. GENERAL
    a. REGULATORY REQUIREMENTS:
        1) COMPLY WITH ALL REQUIREMENTS OF THE UTILITY COMPANY SUPPLYING WATER, INCLUDING BUT NOT LIMITED TO BACKFLOW PREVENTION.
        2) COMPLY WITH THE STANDARDS AND SPECIFICATIONS OF AUTHORITIES HAVING JURISDICTION FOR PUBLICLY OWNED POTABLE-WATER-MAINS, APPURTENANCES, AND SERVICE PIPING, INCLUDING MATERIALS, INSTALLATION, TESTING, AND DISINFECTION.
    b. PIPING MATERIALS SHALL BEAR LABEL, STAMP, OR OTHER MARKINGS OF SPECIFIED TESTING AGENCY.
    c. INTERRUPTION OF EXISTING WATER-DISTRIBUTION SERVICE: NOTIFY OWNER AT LEAST 2 DAYS PRIOR TO INTERRUPTION OF EXISTING WATER SERVICES.
    d. COORDINATE WITH UTILITY COMPANY FOR REQUIRED INSPECTIONS AND FOR CONNECTION OF WATER MAIN AND SERVICES BEFORE STARTING CONSTRUCTION.
    e. ALL PRIVATELY OWNED WATER SERVICES, BOTH FIRE AND DOMESTIC, ARE SUBJECT TO ALL APPLICABLE BUILDING CODES.
2. COPPER TUBE AND FITTINGS
    a. SOFT COPPER TUBE: ASTM B 88, TYPE K , WATER TUBE, ANNEALED TEMPER.
    b. COPPER SOLDER-JOING FITTINGS: ASME B16.18, CAST-COPPER-ALLOY
    c. OPPER, PRESSURE-SEAL FITTINGS:
        1) NPS 2 AND SMALLER: WROUGHT-COPPER FITTING WITH EPDM O-RING SEAL IN EACH END.
        2) NPS 2-1/2 TO NPS 4: BRONZE FITTING WITH STAINLESS-STEEL GRIP RING AND EPDM O-RING SEAL IN EACH END.
    d. BRONZE FLANGES: ASME B16.24, CLASS 150, WITH SOLDER-JOINT END. FURNISH CLASS 300 FLANGES IF REQUIRED TO MATCH PIPING.
    e. COPPER UNIONS: MSS SP-123, CAST-COPPER-ALLOY, HEXAGONAL-STOCK BODY WITH BALL-AND-SOCKET, METAL-TO-METAL SEATING SURFACES, AND SOLDER-JOINT OR THREADED ENDS.
3. DUCTILE-IRON PIPE AND FITTINGS
    a. MECHANICAL-JOINT, DUCTILE-IRON PIPE: AWWA C151, WITH MECHANICAL-JOINT BELL AND PLAIN SPIGOT END UNLESS GROOVED OR FLANGED ENDS ARE INDICATED.
        1) MECHANICAL-JOINT, DUCTILE-IRON FITTINGS: AWWA C110, DUCTILE- OR GRAY-IRON STANDARD PATTERN OR AWWA C153, DUCTILE-IRON COMPACT PATTERN.
        2) GLANDS, GASKETS, AND BOLTS: AWWA C111, DUCTILE- OR GRAY-IRON GLANDS, RUBBER GASKETS, AND STEEL BOLTS.
    b. PUSH-ON-JOINT, DUCTILE-IRON PIPE: AWWA C151, WITH PUSH-ON-JOINT BELL AND PLAIN SPIGOT END UNLESS GROOVED OR FLANGED ENDS ARE INDICATED.
    c. PUSH-ON-JOINT, DUCTILE-IRON FITTINGS: AWWA C110 DUCTILE OR GRAY IRON STANDARD PATTERN OR AWWA C153 DUCTILE IRON COMPACT PATTERN.
        1) GASKETS: AWWA C111, RUBBER.
        2) FLANGES: ASME 16.1, CLASS 125, CAST IRON.
4. PVC PIPE AND FITTINGS
    a. PVC, SCHEDULE 40 PIPE: ASTM D 1785. PVC, SCHEDULE 40 SOCKET FITTINGS: ASTM D 2466.
    b. PVC, STANDARD DIMENSIONAL RATIO (DR) PIPE AND FITTINGS: ASTM D2241 (DR AS NOTED ON PLANS) FOR PLAIN END PIPE AND ASTM 2672 FOR BELLED PIPE. PIPE TO BE LISTED BY NSF INTERNATIONAL TO NSF 61 AND NSF 14 (USE FOR POTABLE WATER APPLICATIONS.)
        1) SOLVENT WELD BELL END PRODUCTS TO MEET ASTM D2672.
    c. PVC, AWWA PIPE: AWWA C900 (CLASS AS NOTED ON PLAN), WITH BELL END WITH GASKET, AND WITH SPIGOT END.
    d. MECHANICAL-JOINT, DUCTILE-IRON FITTINGS: AWWA C110, DUCTILE- OR GRAY-IRON STANDARD PATTERN OR AWWA C153, DUCTILE-IRON COMPACT PATTERN.
5. PE PIPE AND FITTINGS
    a. PE, ASTM PIPE: ASTM D 2239, SIDR 5, 3, 7, OR 9; WITH PE COMPOUND NUMBER OT GIVE PRESSURE RATING NOT LESS THAN 200 PSIG
        1) INSERT FITTINGS FOR PE PIPE: ASTM D2609, MADE OF PA, PP, OR PVC WITH SERRATED MALE INSERT ENDS MATCHING INSIDE OF PIPE. INCLUDE BANDS OR CRIMP RINGS.
        2) MOLDED PE FITTINGS: ASTM D 3350, PE RESIN, SOCKET OR BUTT FUSION TYPE, MADE TO MATCH PE PIPE DIMENSIONS AND CLASS.
    b. PE, AWWA PIPE: AWWA C906, DR NO 7, 3, 9, OR 9.3 WITH PE COMPOUND NUMBER REQUIRED TO GIVE PRESSURE RATING NOT LESS THAN 200 PSIG.
        1) PE, AWWA FITTINGS: AWWA C906, SOCKET OR BUTT FUSION TYPE WITH DR NUMBER MATCHING AND PIPE AND PE COMPOUND NUMBER REQUIRED TO GIVE PRESSURE RATING NOT LESS THAN 200 PSIG.
    c. PE, FIRE SERVICE PIPE: ASTM F 614, AWWA C906, OR EQUIVALENT FOR PE WATER PIPE; FMG APPROVED, WITH MINIMUM THICKNESS EQUIVALENT TO FMG CLASS 200.
        1) MOLDED PE FITTINGS: ASTM D 3350, PE RESIN, SOCKET OR BUTT FUSION TYPE, MADE TO MATCH PE PIPE DIMENSIONS AND CLASS.
6. GATE VALVES
    a. AWWA, CAST-IRON GATE VALVES: NONRISING-STEM, RESILIENT-SEATED GATE VALVES: GRAY- OR DUCTILE-IRON BODY AND BONNET; WITH BRONZE OR GRAY- OR DUCTILE-IRON GATE, RESILIENT SEATS, BRONZE STEM, AND STEM NUT.
        1) STANDARD: AWWA C509.
        2) MINIMUM PRESSURE RATING: 250 PSIG.
        3) END CONNECTIONS: MECHANICAL JOINT.
        4) INTERIOR COATING: COMPLYING WITH AWWA C550.
7. GATE VALVE ACCESSORIES AND SPECIALTIES
    a. TAPPING-SLEEVE ASSEMBLIES: SLEEVE AND VALVE COMPATIBLE WITH DRILLING MACHINE.
        1) TAPPING SLEEVE: CAST- OR DUCTILE-IRON OR STAINLESS-STEEL, TWO-PIECE BOLTED SLEEVE WITH FLANGED OUTLET FOR NEW BRANCH CONNECTION. INCLUDE SLEEVE MATCHING SIZE AND TYPE OF PIPE MATERIAL BEING TAPPED AND WITH RECESSED FLANGE FOR BRANCH VALVE.
        2) VALVE: AWWA C500, CAST-IRON, NONRISING-STEM, RESILIENT-SEATED GATE VALVE WITH OVERSIZE SEAT RINGS TO PERMIT ENTRY OF CUTTER. INLET FLANGE SHALL CONFORM TO AWWA C110 CLASS 125 WITH MACHINED PROJECTION TO MATE TAPPING SLEEVE OUTLET FLANGE. ALIGNMENT RING SHALL CONFORM TO MSS STANDARD SP-60.
    b. VALVE BOXES: COMPLY WITH AWWA M44 FOR CAST-IRON VALVE BOXES. INCLUDE TOP SECTION, ADJUSTABLE EXTENSION OF LENGTH REQUIRED FOR DEPTH OF BURIAL OF VALVE, PLUG WITH LETTERING "WATER," AND BOTTOM SECTION WITH BASE THAT FITS OVER VALVE AND WITH A BARREL APPROXIMATELY 5 INCHES IN DIAMETER.
8. BACKFLOW PREVENTERS
    a. DOUBLE-CHECK, DETECTOR-ASSEMBLY BACKFLOW PREVENTERS:
        1) STANDARDS: ASSE 1048 AND UL LISTED AWWA C510-92. APPROVED BY THE FOUNDATION FOR CROSS-CONNECTIONS CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA.
        2) OPERATION: CONTINUOUS-PRESSURE APPLICATIONS.
        3) PRESSURE LOSS: 5 PSIG MAXIMUM, THROUGH MIDDLE 1/3 OF FLOW RANGE.
        4) BODY: CAST IRON WITH INTERIOR LINING COMPLYING WITH AWWA C550 OR THAT IS FDA APPROVED.
        5) END CONNECTIONS: FLANGED.
        6) CONFIGURATION: DESIGNED FOR HORIZONTAL, STRAIGHT THROUGH FLOW.
9. WATER METER BOXES
    a. DESCRIPTION: CAST-IRON BODY AND COVER FOR DISC-TYPE WATER METER, WITH LETTERING "WATER METER" IN COVER; AND WITH SLOTTED, OPEN-BOTTOM BASE SECTION OF LENGTH TO FIT OVER SERVICE PIPING.
10. CONCRETE VAULTS
    a. DESCRIPTION: PRECAST, REINFORCED-CONCRETE VAULT, DESIGNED FOR A-16 LOAD DESIGNATION ACCORDING TO ASTM C 857 AND MADE ACCORDING TO ASTM C 858.
        1) LADDER: ASTM A 36/A 36M, STEEL OR POLYETHYLENE-ENCASED STEEL STEPS.
        2) MANHOLE: ASTM A 48/A 48M CLASS NO. 35A MINIMUM TENSILE STRENGTH, GRAY-IRON TRAFFIC FRAME AND COVER.
            a) DIMENSION: 24-INCH MINIMUM DIAMETER, UNLESS OTHERWISE INDICATED.
        3) DRAIN: ASME A112.6.3, CAST-IRON FLOOR DRAIN WITH OUTLET OF SIZE INDICATED. INCLUDE BODY ANCHOR FLANGE, LIGHT-DUTY CAST-IRON GRATE, BOTTOM OUTLET, AND INTEGRAL OR FIELD-INSTALLED BRONZE BALL OR CLAPPER-TYPE BACKWATER VALVE.
11. FIRE HYDRANTS
    a. DRY-BARREL FIRE HYDRANTS: FREESTANDING, WITH ONE NPS 4-1/2 AND TWO NPS 2-1/2 OUTLETS, 5-1/4-INCH MAIN VALVE, DRAIN VALVE, AND NPS 6 MECHANICAL-JOINT INLET. INCLUDE INTERIOR COATING ACCORDING TO AWWA C550. HYDRANT SHALL HAVE CAST-IRON BODY, COMPRESSION-TYPE VALVE OPENING AGAINST PRESSURE AND CLOSING WITH PRESSURE.
        1) STANDARD: AWWA C502.
        2) PRESSURE RATING: 250 PSIG.
12. FIRE DEPARTMENT CONNECTIONS
    a. FIRE DEPARTMENT CONNECTIONS: FREESTANDING, WITH CAST-BRONZE BODY, THREAD INLETS ACCORDING TO NFPA 1963 AND MATCHING LOCAL FIRE DEPARTMENT HOSE THREADS, AND THREADED BOTTOM OUTLET. INCLUDE LUGGED CAPS, GASKETS, AND CHAINS; LUGGED SWIVEL CONNECTION AND DROP CLAPPER FOR EACH HOSE-CONNECTION INLET; 18-INCH-HIGH BRASS SLEEVE; AND ROUND ESCUTCHEON PLATE.
13. VALVE APPLICATIONS
    a. DRAWINGS INDICATE VALVE TYPES TO BE USED. WHERE SPECIFIC VALVE TYPES ARE NOT INDICATED, THE FOLLOWING REQUIREMENTS APPLY:
        1) UNDERGROUND VALVES, NPS 3 AND LARGER: AWWA, CAST-IRON, NONRISING-STEM, RESILIENT-SEATED GATE VALVES WITH VALVE BOX.
        2) USE THE FOLLOWING FOR VALVES IN VAULTS AND ABOVEGROUND:
            a) GATE VALVES, NPS 2 AND SMALLER: BRONZE, NONRISING STEM.
            b) GATE VALVES, NPS 3 AND LARGER: AWWA, CAST IRON, OS&Y RISING STEM, RESILIENT SEATED.
            c) CHECK VALVES: AWWA C508, SWING TYPE.
14. FIELD QUALITY CONTROL
    a. PIPING TESTS: CONDUCT PIPING TESTS BEFORE JOINTS ARE COVERED AND AFTER CONCRETE THRUST BLOCKS HAVE HARDENED SUFFICIENTLY. FILL PIPELINE 24 HOURS BEFORE TESTING AND APPLY TEST PRESSURE TO STABILIZE SYSTEM. USE ONLY POTABLE WATER.
    b. HYDROSTATIC TESTS: TEST AS DIRECTED BY THE LOCAL AUTHORITY, OR, IF METHOD IS NOT PRESCRIBED, TEST IN ACCORDANCE WITH AWWA C605 (PVC PIPE) OR AWWA C600 (DUCTILE IRON PIPE).
    c. DISINFECTION: CLEAN AND DISINFECT POTABLE WATER MAINS AS DIRECTED BY THE LOCAL AUTHORITY, OR, IF METHOD IS NOT PRESCRIBED BY THE LOCAL AUTHORITY, USE PROCEDURE DESCRIBED IN AWWA C651.
    d. PREPARE REPORTS OF TESTING ACTIVITIES AND SUBMIT TO THE ENGINEER FOR APPROVAL.
15. IDENTIFICATION
    a. INSTALL CONTINUOUS UNDERGROUND DETECTABLE WARNING TAPE DURING BACKFILLING OF TRENCH FOR UNDERGROUND WATER-DISTRIBUTION PIPING. LOCATE BELOW FINISHED GRADE, DIRECTLY OVER PIPING.

SITE SANITARY SEWERS

1. PROJECT CONDITIONS
    a. INTERRUPTION OF EXISTING SANITARY SEWERAGE SERVICE: COORDINATE AS REQUIRED WITH THE LOCAL SANITARY SEWER AUTHORITY BEFORE STARTING CONSTRUCTION.
    b. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE BEGINNING SANITARY SEWER INSTALLATION OPERATIONS. FIELD VERIFY ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS BY POT-HOLING THE LINES. SURVEY EXISTING UTILITIES AND PROVIDE HORIZONTAL AND VERTICAL LOCATION INFORMATION TO THE ENGINEER TO DETERMINE OF ANY UTILITIES WILL CONFLICT WITH THE PROPOSED DESIGN.
2. DUCTILE-IRON, GRAVITY SEWER PIPE AND FITTINGS
    a. PIPE: ASTM A 746, FOR PUSH-ON JOINTS.
    b. COMPACT FITTINGS: AWWA C153, DUCTILE IRON, FOR PUSH-ON JOINTS.
    c. GASKETS: AWWA C111, RUBBER.
3. PVC PIPE AND FITTINGS
    a. PVC GRAVITY SEWER PIPING: ASTM D 3034 PVC GRAVITY SEWER PIPE FOR SIZES 4 INCH THROUGH 15 INCH; ASTM F 679 PVC GRAVITY SEWER PIPE FOR SIZES GREATER THAN 15 INCH; BELL-AND-SPIGOT ENDS AND WITH INTEGRAL ASTM F 477, ELASTOMERIC SEALS FOR GASKETED JOINTS.
4. CLEANOUTS
    a. CAST-IRON CLEANOUTS:
        1) DESCRIPTION: ASME A112.36.2M, ROUND, GRAY-IRON HOUSING WITH CLAMPING DEVICE AND ROUND, SECURED, SCORIATED, GRAY-IRON COVER. INCLUDE GRAY-IRON FERRULE WITH INSIDE CALK OR SPIGOT CONNECTION AND COUNTERSUNK, TAPERED-THREAD, BRASS CLOSURE PLUG.
        2) TOP-LOADING CLASSIFICATION: TRAFFIC RATED, HEAVY DUTY, IN ALL PAVED AREAS AND AREAS SUBJECT TO VEHICULAR TRAFFIC.
        3) SEWER PIPE FITTING AND RISER TO CLEANOUT: ASTM A 74, SERVICE CLASS, CAST-IRON SOIL PIPE AND FITTINGS.
    b. PVC CLEANOUTS: PVC BODY WITH PVC THREADED PLUG. INCLUDE PVC SEWER PIPE FITTING AND RISER TO CLEANOUT OF SAME MATERIAL AS SEWER PIPING. USE IN LIGHT DUTY APPLICATIONS WHERE THERE IS PEDESTRIAN TRAFFIC ONLY OR IN LANDSCAPED AREAS.
5. MANHOLES
    a. STANDARD PRECAST CONCRETE MANHOLES:
        1) DESCRIPTION: ASTM C 478, PRECAST, REINFORCED CONCRETE, OF DEPTH INDICATED, WITH PROVISION FOR SEALANT JOINTS.
        2) DIAMETER: 48 INCHES MINIMUM UNLESS OTHERWISE INDICATED.
        3) BALLAST: INCREASE THICKNESS OF PRECAST CONCRETE SECTIONS OR ADD CONCRETE TO BASE SECTION, AS REQUIRED TO PREVENT FLOATATION.
        4) BASE SECTION: 6-INCH MINIMUM THICKNESS FOR FLOOR SLAB AND 4-INCH MINIMUM THICKNESS FOR WALLS AND BASE RISER SECTION; WITH SEPARATE BASE SLAB OR BASE SECTION WITH INTEGRAL FLOOR.
        5) RISER SECTIONS: ASTM C478 WITH MINIMUM WALL THICKNESS IN ACCORDANCE WITH WALL "B" IN CLASS TABLES OF ASTM C76, OF LENGTH TO PROVIDE DEPTH INDICATED.
        6) TOP SECTION: ECCENTRIC-CONE, CONCENTRIC-CONE OR FLAT-SLAB-TOP TYPE AS INDICATED; WITH TOP OF CONE OF SIZE THAT MATCHES GRADE RINGS.
        7) JOINT SEALANT: ASTM C 443, RUBBER GASKET.
        8) RESILIENT PIPE CONNECTORS: ASTM C 923, CAST OR FITTED INTO MANHOLE WALLS, FOR EACH PIPE CONNECTION.
        9) STEPS: SHALL NOT BE INSTALLED UNLESS INDICATED.
        10) GRADE RINGS: PRECAST REINFORCED-CONCRETE RINGS MEETING REQUIREMENTS OF ASTM C478WITH DIAMETER MATCHING MANHOLE FRAME AND COVER, AND WITH HEIGHT AS REQUIRED TO ADJUST MANHOLE FRAME AND COVER TO INDICATED ELEVATION AND SLOPE. MAXIMUM RING ADJUSTMENT SHALL BE 18 INCHES.
    b. MANHOLE FRAMES AND COVERS:
        1) DESCRIPTION: FERROUS; 32-INCH ID BY 7- TO 9-INCH RISER, WITH 4-INCH- MINIMUM-WIDTH FLANGE AND 30-INCH- DIAMETER COVER. INCLUDE INDENTED TOP DESIGN WITH LETTERING CAST INTO COVER, USING WORDING EQUIVALENT TO "SANITARY SEWER."
        2) MATERIAL: ASTM A48, GRADE 35B GRAY IRON CASTING UNLESS OTHERWISE INDICATED.
6. IDENTIFICATION
    a. ARRANGE FOR INSTALLATION OF GREEN WARNING TAPES DIRECTLY OVER PIPING AND AT OUTSIDE EDGES OF UNDERGROUND MANHOLES.
        1) USE WARNING TAPE OR DETECTABLE WARNING TAPE OVER FERROUS PIPING.
        2) USE DETECTABLE WARNING TAPE OVER NONFERROUS PIPING AND OVER EDGES OF UNDERGROUND MANHOLES.
7. FIELD QUALITY CONTROL
    a. INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED. INSPECT AFTER APPROXIMATELY 24 INCHES OF BACKFILL IS IN PLACE, AND AGAIN AT COMPLETION OF PROJECT.
        1) DEFECTS REQUIRING CORRECTION INCLUDE THE FOLLOWING:
            a) ALIGNMENT: LESS THAN FULL DIAMETER OF INSIDE OF PIPE IS VISIBLE BETWEEN STRUCTURES.
            b) DEFLECTION: FLEXIBLE PIPING WITH DEFLECTION THAT PREVENTS PASSAGE OF BALL OR CYLINDER OF SIZE NOT LESS THAN 92.5 PERCENT OF PIPING DIAMETER.
            c) DAMAGE: CRUSHED, BROKEN, CRACKED, OR OTHERWISE DAMAGED PIPING.
            d) INFILTRATION: WATER LEAKAGE INTO PIPING.
            e) EXFILTRATION: WATER LEAKAGE FROM OR AROUND PIPING.
        2) REPLACE DEFECTIVE PIPING USING NEW MATERIALS, AND REPEAT INSPECTIONS UNTIL DEFECTS ARE WITHIN ALLOWANCES SPECIFIED.
        3) REINSPECT AND REPEAT PROCEDURE UNTIL RESULTS ARE SATISFACTORY.
    b. TEST NEW PIPING SYSTEMS, AND PARTS OF EXISTING SYSTEMS THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED, FOR LEAKS AND DEFECTS.
        1) DO NOT ENCLOSE, COVER, OR PUT INTO SERVICE BEFORE INSPECTION AND APPROVAL.
        2) TEST COMPLETED PIPING SYSTEMS ACCORDING TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
        3) SCHEDULE TESTS AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION WITH AT LEAST 24 HOURS ADVANCE NOTICE, OR AS NOTED IN THE WATER & SEWER NOTES, WHICHEVER IS MORE STRINGENT.
        4) SUBMIT A SEPARATE REPORT FOR EACH TEST TO THE ENGINEER FOR APPROVAL.
        5) AIR TESTS: TEST SANITARY SEWERAGE ACCORDING TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, UNI-B-6, AND THE FOLLOWING:
            a) TEST PLASTIC GRAVITY SEWER PIPING ACCORDING TO ASTM F 1417.
        6) MANHOLES: PERFORM NEGATIVE AIR PRESSURE TEST ACCORDING TO ASTM C1244 .
    c. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.
    d. REPLACE LEAKING PIPING USING NEW MATERIALS, AND REPEAT TESTING UNTIL LEAKAGE IS WITHIN ALLOWANCES SPECIFIED.

SITE STORM UTILITY DRAINAGE PIPING

1. PIPE AND FITTINGS- GENERAL
    a. ALL STORMWATER PIPE, INLETS, HEADWALLS, AND RELATED APPURTENANCES SHALL MEET LOCAL JURISDICTION STANDARDS.
    b. ALL STORMWATER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH PIPE MANUFACTURERS INSTRUCTIONS.
2. STEEL PIPE AND FITTINGS
    a. CORRUGATED-STEEL PIPE AND FITTINGS: ASTM A 760/A 760M, TYPE I WITH FITTINGS OF SIMILAR FORM AND CONSTRUCTION AS PIPE.
        1) ASPHALT COATING: ASPHALT COATINGS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF COATING, PAVING, AND LINING FOR AASHTO M190 OR ASTM A849
        2) ALUMINIZED TYPE 2: ALUMINIZED STEEL TYPE 2 COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 274 OR ASTM A929.
        3) STANDARD-JOINT BANDS: CORRUGATED STEEL COUPLING BANDS SHALL BE MADE OF THE SAME BASE METAL AND COATINGS AS THE CSP TO A MINIMUM OF 18 GAUGE, WITH ENDS REROLLED WITH ANNULAR CORRUGATIONS FOR PROPER INDEXING.
3. PE PIPE AND FITTINGS
    a. CORRUGATED PE DRAINAGE PIPE AND FITTINGS NPS 3 TO NPS 10: AASHTO M 252M; NPS 12 TO NPS 48: AASHTO M 294M TYPE S, WITH SMOOTH WATERWAY FOR COUPLING JOINTS.
    b. SILT-TIGHT COUPLINGS: PE SLEEVE WITH ASTM D 1056, TYPE 2, CLASS A, GRADE 2 GASKET MATERIAL THAT MATES WITH TUBE AND FITTINGS.
4. PVC CORRUGATED PIPE AND FITTINGS
    a. CORRUGATED PVC DRAINAGE PIPE AND FITTINGS NPS 4 TO NPS 36: SMOOTH INTERIOR, ASTM F949, 46 PSI STIFFNESS WHEN TESTED IN ACCORDANCE WITH ASTM D2412. PVC COMPOUND HAVING A MINIMUM CELL CLASSIFICATION OF 12454 AS DEFINED IN ASTM D1784. FITTINGS: SMOOTH INTERIOR, ASTM F949, SECTION 5.2.3 OR F794, SECTION 7.2.4. JOINTS SHALL BE MADE WITH INTEGRALLY-FORMED BELL AND SPIGOT GASKETED CONNECTIONS. MANUFACTURER SHALL PROVIDE DOCUMENTATION SHOWING NO LEAKAGE WHEN GASKETED PIPE JOINTS ARE TESTED IN ACCORDANCE WITH ASTM D3212. ELASTOMERIC SEALS (GASKETS) SHALL MEET ASTM F477.
5. CONCRETE PIPE AND FITTINGS
    a. REINFORCED-CONCRETE SEWER PIPE AND FITTINGS: ASTM C 76. BELL-AND-SPIGOT OR TONGUE-AND-GROOVE ENDS AND GASKETED JOINTS WITH ASTM C 443, RUBBER GASKETS OR SEALANT JOINTS WITH ASTM C 990, BITUMEN OR BUTYL-RUBBER SEALANT. CLASS III, WALL B.
    b. CAST-IRON AREA DRAINS: ASME A112.6.3 GRAY-IRON ROUND BODY WITH ANCHOR FLANGE AND ROUND GRATE. INCLUDE BOTTOM OUTLET WITH INSIDE CALK OR SPIGOT CONNECTION, OF SIZES INDICATED.
6. MANHOLES
    a. STANDARD PRECAST CONCRETE MANHOLES:
        1) DESCRIPTION: ASTM C 478, PRECAST, REINFORCED CONCRETE, OF DEPTH INDICATED, WITH PROVISION FOR SEALANT JOINTS.
        2) DIAMETER: 48 INCHES MINIMUM UNLESS OTHERWISE INDICATED.
        3) BALLAST: INCREASE THICKNESS OF PRECAST CONCRETE SECTIONS OR ADD CONCRETE TO BASE SECTION AS REQUIRED TO PREVENT FLOATATION.
        4) BASE SECTION: 6-INCH MINIMUM THICKNESS FOR FLOOR SLAB AND 4-INCH MINIMUM THICKNESS FOR WALLS AND BASE RISER SECTION, AND SEPARATE BASE SLAB OR BASE SECTION WITH INTEGRAL FLOOR.
        5) RISER SECTIONS: 4-INCH MINIMUM THICKNESS, AND LENGTHS TO PROVIDE DEPTH INDICATED.
        6) TOP SECTION: ECCENTRIC-CONE, CONCENTRIC-CONE OR FLAT-SLAB-TOP TYPE AS INDICATED; WITH TOP OF CONE OF SIZE THAT MATCHES GRADE RINGS.
        7) JOINT SEALANT: ASTM C 990, BITUMEN OR BUTYL RUBBER.
        8) STEPS: INDIVIDUAL FRP STEPS OR FRP LADDER, WIDE ENOUGH TO ALLOW WORKER TO PLACE BOTH FEET ON ONE STEP AND DESIGNED TO PREVENT LATERAL SLIPPAGE OFF STEP. CAST OR ANCHOR STEPS INTO SIDEWALLS AT 12- TO 16-INCH INTERVALS. OMIT STEPS IF TOTAL DEPTH FROM FLOOR OF MANHOLE TO FINISHED GRADE IS LESS THAN 48 INCHES.
    b. MANHOLE FRAMES AND COVERS:
        1) DESCRIPTION: FERROUS; 24-INCH ID BY 7- TO 9-INCH RISER WITH 4-INCH- MINIMUM WIDTH FLANGE AND 26-INCH- DIAMETER COVER. INCLUDE INDENTED TOP DESIGN WITH LETTERING CAST INTO COVER, USING WORDING EQUIVALENT TO "STORM SEWER."
        2) MATERIAL: ASTM A 536, GRADE 60-40-18 DUCTILE IRON UNLESS OTHERWISE INDICATED.
7. INLET & JUNCTION BOXES
    a. STANDARD PRECAST CONCRETE:
        1) DESCRIPTION: ASTM C 478, PRECAST, REINFORCED CONCRETE, OF DEPTH INDICATED, WITH PROVISION FOR SEALANT JOINTS.
        2) BASE SECTION: 6-INCH MINIMUM THICKNESS FOR FLOOR SLAB AND 4-INCH MINIMUM THICKNESS FOR WALLS AND BASE RISER SECTION, AND SEPARATE BASE SLAB OR BASE SECTION WITH INTEGRAL FLOOR.
        3) RISER SECTIONS: 4-INCH MINIMUM THICKNESS, 48-INCH DIAMETER, AND LENGTHS TO PROVIDE DEPTH INDICATED.
        4) TOP SECTION: ECCENTRIC-CONE, CONCENTRIC-CONE OR FLAT-SLAB-TOP TYPE AS INDICATED; WITH TOP OF CONE OF SIZE THAT MATCHES GRADE RINGS.
        5) JOINT SEALANT: ASTM C 990, BITUMEN OR BUTYL RUBBER.
        6) STEPS: INDIVIDUAL FRP STEPS OR FRP LADDER, WIDE ENOUGH TO ALLOW WORKER TO PLACE BOTH FEET ON ONE STEP AND DESIGNED TO PREVENT LATERAL SLIPPAGE OFF STEP. CAST OR ANCHOR STEPS INTO SIDEWALLS AT 12- TO 16-INCH INTERVALS. OMIT STEPS IF TOTAL DEPTH FROM FLOOR OF CATCH BASIN TO FINISHED GRADE IS LESS THAN 48 INCHES.
        7) PIPE CONNECTORS: ASTM C 923, RESILIENT, OF SIZE REQUIRED, FOR EACH PIPE CONNECTING TO BASE SECTION.
8. STORMWATER DETENTION STRUCTURES
    a. CAST-IN-PLACE CONCRETE, STORMWATER DETENTION STRUCTURES: CONSTRUCTED OF REINFORCED-CONCRETE BOTTOM, WALLS, AND TOP; DESIGNED ACCORDING TO ASTM C 890 FOR A-16 (AASHTO HS20-44), HEAVY-TRAFFIC, STRUCTURAL LOADING; OF DEPTH, SHAPE, DIMENSIONS, AND APPURTENANCES INDICATED.
        1) BALLAST: INCREASE THICKNESS OF CONCRETE AS REQUIRED TO PREVENT FLOATATION.
        2) GRADE RINGS: INCLUDE TWO OR THREE REINFORCED-CONCRETE RINGS, OF 6- TO 9-INCH TOTAL THICKNESS, THAT MATCH 24-INCH- DIAMETER FRAME AND COVER.
        3) STEPS: INDIVIDUAL FRP STEPS OR FRP LADDER, WIDE ENOUGH TO ALLOW WORKER TO PLACE BOTH FEET ON ONE STEP AND DESIGNED TO PREVENT LATERAL SLIPPAGE OFF STEP. CAST OR ANCHOR STEPS INTO SIDEWALLS AT 12- TO 16-INCH INTERVALS. OMIT STEPS IF TOTAL DEPTH FROM FLOOR OF STRUCTURE TO FINISHED GRADE IS LESS THAN 48 INCHES.
        4) FORM AND CAST WIERS AND PIPE OPENINGS AS INDICATED ON DRAWINGS.
    b. MANHOLE FRAMES AND COVERS: ASTM A 536, GRADE 60-40-18, DUCTILE-IRON CASTINGS DESIGNED FOR HEAVY-DUTY SERVICE.
9. PIPE OUTLETS
    a. PRE-CAST HEAD WALLS: PRE-CAST REINFORCED CONCRETE, WITH APRON AND TAPERED SIDES.
    b. SLOPE PAVED HEAD WALLS: CAST-IN-PLACE REINFORCED CONCRETE AS SHOWN ON DRAWINGS.
    c. RIPRAP BASINS: BROKEN, IRREGULARLY SIZED AND SHAPED, GRADED STONE ACCORDING TO NSSGA'S "QUARRIED STONE FOR EROSION AND SEDIMENT CONTROL." MINIMUM STONE SIZE AND DIMENSIONS AS SHOWN ON DRAWINGS.
10. PIPING INSTALLATION
    a. INSTALL LOCATOR WIRE OR TAPE 6-INCHES ABOVE ALL NON-METALLIC PIPING.
    b. INSTALL BEDDING AND BACKFILL IN ACCORDANCE WITH PIPE MANUFACTURERS INSTRUCTIONS.
    c. BEGIN INSTALLATION AT DOWNSTREAM PIPING CONNECTION TO OUTFALL POINT.
    d. CONSTRUCT ALL HEADWALLS FLUSH WITH EXISTING AND PROPOSED EMBANKMENT SLOPES.
11. CLEANING
    a. CLEAN INTERIOR OF PIPING OF DIRT AND SUPERFLUOUS MATERIALS.

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STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED PROFESSIONAL ENGINEER
3.7.2023

REVISIONS	DATE

PROJECT MANAGER: VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY: FG
JURISDICTION: CITY OF BUDA
DATE: JANUARY, 2023
TITLE:

GENERAL NOTES

SHEET NUMBER:

G-2

COMMENTS: NOT RELEASED FOR CONSTRUCTION
JOB/FILE NUMBER: 489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\G-2 GENERAL NOTES.DWG

EARTH MOVING

1. PROJECT CONDITIONS
   a. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE BEGINNING EARTH MOVING OPERATIONS.
   b. DO NOT COMMENCE EARTH MOVING OPERATIONS UNTIL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES, ARE IN PLACE.
   c. DO NOT COMMENCE EARTH MOVING OPERATIONS UNTIL PLANT PROTECTION MEASURES ARE IN PLACE.
   d. DO NOT COMMENCE EARTH MOVING OPERATIONS WITHOUT REVIEWING AND MAKING PROVISIONS FOR ALL GEOTECHNICAL RECOMMENDATIONS MADE IN THE PROJECT GEOTECHNICAL REPORT. COMPLY WITH RECOMMENDATIONS IN THE GEOTECHNICAL REPORT REGARDING GENERAL SITE PREPARATION, BUILDING PAD PREPARATION, PAVEMENT SECTIONS, FILL, AND EXCAVATION.
   e. RETAIN A COPY OF THE PROJECT GEOTECHNICAL REPORT AT THE WORK SITE AT ALL TIMES. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE PROJECT GEOTECHNICAL REPORT SHALL BE RESOLVED IN FAVOR OF THE PROJECT GEOTECHNICAL REPORT.
   f. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTH MOVING OPERATIONS.
   g. PROTECT AND MAINTAIN EROSION AND SEDIMENTATION CONTROLS DURING EARTH MOVING OPERATIONS.
2. DEWATERING
   a. PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.
   b. PROTECT SUBGRADES FROM SOFTENING, UNDERMINING, WASHOUT, AND DAMAGE BY RAIN OR WATER ACCUMULATION.
   c. DESIGN AND PROVIDE DEWATERING SYSTEM USING ACCEPTED AND PROFESSIONAL METHODS CONSISTENT WITH CURRENT INDUSTRY PRACTICE. PROVIDE DEWATERING SYSTEM OF SUFFICIENT SIZE AND CAPACITY TO CONTROL GROUNDWATER IN A MANNER THAT PRESERVES STRENGTH OF FOUNDATION SOILS, DOES NOT CAUSE INSTABILITY OR RAVELING OF EXCAVATION SLOPES, AND DOES NOT RESULT IN DAMAGE TO EXISTING STRUCTURES. LOWER WATER LEVEL IN ADVANCE OF EXCAVATION BY UTILIZING WELLS, WELLPOINTS, OR SIMILAR POSITIVE CONTROL METHODS. MAINTAIN THE GROUNDWATER LEVEL TO A MINIMUM OF TWO (2) FEET BELOW EXCAVATIONS. PROVIDE PIEZOMETERS AS DIRECTED BY THE ENGINEER TO DOCUMENT THAT THE GROUNDWATER LEVEL IS BEING MAINTAINED.
   d. BY ACCEPTABLE MEANS, CONTRACTOR SHALL CONTROL ALL WATER REGARDLESS OF SOURCE AND IS RESPONSIBLE FOR PROPER DISPOSAL OF THE WATER. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY SUPPLEMENTAL MEASURES TO CONTROL SEEPAGE, GROUNDWATER, OR ARTESIAN HEAD.
   e. OPEN PUMPING WITH SUMPS AND DITCHES SHALL BE ALLOWED, PROVIDED IT DOES NOT RESULT IN BOILS, LOSS OF FINES, SOFTENING OF THE GROUND, OR INSTABILITY OF SLOPES. SUMPS SHALL BE LOCATED OUTSIDE OF LOAD BEARING AREAS SO THE BEARING SURFACES WILL NOT BE DISTURBED. WATER CONTAINING SILT IN SUSPENSION SHALL NOT BE PUMPED INTO SEWER LINES OR ADJACENT WATER BODIES. DURING NORMAL PUMPING AND UPON DEVELOPMENT OF WELL(S), LEVELS OF FINE SAND OR SILT IN THE DISCHARGE OF WATER SHALL NOT EXCEED FIVE (5) PPM.
   f. CONTINUOUSLY MAINTAIN EXCAVATIONS IN A DRY CONDITION WITH POSITIVE DEWATERING METHODS DURING PREPARATION OF SUBGRADE, INSTALLATION OF PIPE, AND CONSTRUCTION OF STRUCTURES UNTIL THE CRITICAL PERIOD OF CONSTRUCTION AND/OR BACKFILL IS COMPLETED TO PREVENT DAMAGE OF SUBGRADE SUPPORT, PIPING, STRUCTURE, SIDE SLOPES, OR ADJACENT FACILITIES FOR FLOTATION OR OTHER HYDROSTATIC PRESSURE IMBALANCE.
   g. WHEN CONSTRUCTION IS COMPLETE, PROPERLY REMOVE ALL DEWATERING EQUIPMENT FROM THE SITE, INCLUDING WELLS AND RELATED TEMPORARY ELECTRICAL SERVICE.
3. SUBGRADE
   a. NOTIFY PROJECT GEOTECHNICAL ENGINEER WHEN EXCAVATIONS HAVE REACHED REQUIRED SUBGRADE.
   b. IF PROJECT GEOTECHNICAL ENGINEER DETERMINES THAT UNSATISFACTORY SOIL IS PRESENT, CONTINUE EXCAVATION AND REPLACE WITH COMPACTED BACKFILL OR FILL MATERIAL AS DIRECTED.
   c. PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS AND PAVEMENTS WITH A PNEUMATIC-TIRED AND LOADED 10-WHEEL, TANDEM-AXLE DUMP TRUCK WEIGHING NOT LESS THAN 15 TONS TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES. EXCAVATE SOFT SPOTS, UNSATISFACTORY SOILS, AND AREAS OF EXCESSIVE PUMPING OR RUTTING, AS DETERMINED BY PROJECT GEOTECHNICAL ENGINEER, AND REPLACE WITH COMPACTED BACKFILL OR FILL AS DIRECTED.
   d. IN HEAVY DUTY PAVEMENT AREAS WHERE GRAVEL BASE IS SHOWN, THE GRAVEL AGGREGATE BASE SHALL BE EXTENDED UNDER THE CURB AND GUTTER SECTION TO PROVIDE ADDITIONAL STABILITY FOR TRUCK TRAVEL.
4. UTILITY TRENCH BEDDING AND BACKFILL
   a. PLACE AND COMPACT BEDDING COURSE ON TRENCH BOTTOMS AND WHERE INDICATED. SHAPE BEDDING COURSE TO PROVIDE CONTINUOUS SUPPORT FOR BELLS, JOINTS, AND BARRELS OF PIPES AND FOR JOINTS, FITTINGS, AND BODIES OF CONDUITS.
   b. PROVIDE BEDDING IN ACCORDANCE WITH TRENCH DETAIL PROVIDED.
   c. CAREFULLY COMPACT INITIAL BACKFILL UNDER PIPE HAUNCHES AND COMPACT EVENLY UP ON BOTH SIDES AND ALONG THE FULL LENGTH OF PIPING OR CONDUIT TO AVOID DAMAGE OR DISPLACEMENT OF PIPING OR CONDUIT.
   d. BACKFILL ALL UTILITIES IN ACCORDANCE WITH TRENCH DETAIL PROVIDED.
5. COMPACTION OF SOIL BACKFILLS AND FILLS
   a. PLACE BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
   b. PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE. COMPACT SOIL MATERIALS AS INDICATED ON DRAWINGS OR AS INDICATED IN THE PROJECT GEOTECHNICAL REPORT.
   c. PROVIDE CONSTRUCTION PHASE MONITORING AND TESTING AS RECOMMENDED IN THE PROJECT GEOTECHNICAL REPORT. PROVIDE TEST REPORTS TO THE ENGINEER FOR REVIEW AND APPROVAL.
6. GRADING
   a. GENERAL: UNIFORMLY GRADE AREAS TO A SMOOTH SURFACE, FREE OF IRREGULAR SURFACE CHANGES. COMPLY WITH COMPACTION REQUIREMENTS AND GRADE TO CROSS SECTIONS, LINES, AND ELEVATIONS INDICATED.
      1) PROVIDE A SMOOTH TRANSITION BETWEEN ADJACENT EXISTING GRADES AND NEW GRADES.
      2) CUT OUT SOFT SPOTS, FILL LOW SPOTS, AND TRIM HIGH SPOTS TO COMPLY WITH REQUIRED SURFACE TOLERANCES.
   b. LANDSCAPE ISLANDS: FILL ALL CURBED ISLANDS TO TOP OF CURB WITH TOPSOIL AND APPLY SEED AND MULCH UNLESS DRAWINGS INDICATE OTHERWISE.
   c. SLOPES: DO NOT CREATE CUT OR FILL SLOPES STEEPER THAN 3H:1V WITHOUT OBTAINING SPECIAL WRITTEN PERMISSION FROM THE ENGINEER OF RECORD AND PROJECT GEOTECHNICAL ENGINEER.
7. PROTECTION
   a. PROTECTING GRADED AREAS: PROTECT NEWLY GRADED AREAS FROM TRAFFIC, FREEZING, AND EROSION. KEEP FREE OF TRASH AND DEBRIS. SEE EROSION AND SEDIMENT CONTROL PLAN AND NOTES FOR FURTHER INFORMATION.

ASPHALT PAVING

1. FIELD CONDITIONS
   a. ENVIRONMENTAL LIMITATIONS: DO NOT APPLY ASPHALT MATERIALS IF SUBGRADE IS WET OR EXCESSIVELY DAMP, IF RAIN IS IMMINENT OR EXPECTED BEFORE TIME REQUIRED FOR ADEQUATE CURE, OR IF THE FOLLOWING CONDITIONS ARE NOT MET:
      1) PRIME COAT: MINIMUM SURFACE TEMPERATURE OF 60 DEG F.
      2) TACK COAT: MINIMUM SURFACE TEMPERATURE OF 60 DEG F.
      3) SLURRY COAT: COMPLY WITH WEATHER LIMITATIONS IN ASTM D 3910.
      4) ASPHALT BASE COURSE: MINIMUM SURFACE TEMPERATURE OF 40 DEG F AND RISING AT TIME OF PLACEMENT.
      5) ASPHALT SURFACE COURSE: MINIMUM SURFACE TEMPERATURE OF 60 DEG F AT TIME OF PLACEMENT.
2. ASPHALT MATERIALS
   a. REFER TO PROJECT GEOTECHNICAL REPORT AND PROJECT DRAWINGS FOR REQUIRED ASPHALT MATERIAL DESIGN.
   b. AGGREGATES SHALL MEET THE REQUIREMENTS OF THE LOCAL DEPARTMENT OF TRANSPORTATION.
   c. RECLAIMED ASPHALT PAVEMENT (RAP) SHALL NOT BE USED IN THE MIX DESIGN.
3. PATCHING
   a. ASPHALT PAVEMENT: SAW CUT PERIMETER OF PATCH AND EXCAVATE EXISTING PAVEMENT SECTION TO SOUND BASE. EXCAVATE RECTANGULAR OR TRAPEZOIDAL PATCHES, EXTENDING 12 INCHES INTO PERIMETER OF ADJACENT SOUND PAVEMENT, UNLESS OTHERWISE INDICATED. CUT EXCAVATION FACES VERTICALLY. REMOVE EXCAVATED MATERIAL. RECOMPACT EXISTING UNBOUND-AGGREGATE BASE COURSE TO FORM NEW SUBGRADE.
   b. TACK COAT: BEFORE PLACING PATCH MATERIAL, APPLY TACK COAT UNIFORMLY TO VERTICAL ASPHALT SURFACES ABUTTING THE PATCH. APPLY AT A RATE OF 0.05 TO 0.15 GAL./SQ. YD.
      1) ALLOW TACK COAT TO CURE UNDISTURBED BEFORE APPLYING HOT-MIX ASPHALT PAVING.
      2) AVOID SMEARING OR STAINING ADJOINING SURFACES, APPURTENANCES, AND SURROUNDINGS. REMOVE SPILLAGES AND CLEAN AFFECTED SURFACES.
   c. PLACING PATCH MATERIAL: FILL EXCAVATED PAVEMENT AREAS WITH HOT-MIX ASPHALT BASE MIX FOR FULL THICKNESS OF PATCH AND, WHILE STILL HOT, COMPACT FLUSH WITH ADJACENT SURFACE.
4. SURFACE PREPARATION
   a. GENERAL: IMMEDIATELY BEFORE PLACING ASPHALT MATERIALS, REMOVE LOOSE AND DELETERIOUS MATERIAL FROM SUBSTRATE SURFACES. ENSURE THAT PREPARED SUBGRADE IS READY TO RECEIVE PAVING. SAWCUT EXISTING PAVEMENT TO THE JOINED TO PROVIDE VERTICAL FACES BETWEEN NEW AND EXISTING SURFACES.
   b. EMULSIFIED ASPHALT PRIME COAT: APPLY UNIFORMLY OVER SURFACE OF COMPACTED UNBOUND-AGGREGATE BASE COURSE AT A RATE OF 0.10 TO 0.30 GAL./SQ. YD. PER INCH DEPTH . APPLY ENOUGH MATERIAL TO PENETRATE AND SEAL, BUT NOT FLOOD, SURFACE. ALLOW PRIME COAT TO CURE.
      1) IF PRIME COAT IS NOT ENTIRELY ABSORBED WITHIN 24 HOURS AFTER APPLICATION, SPREAD SAND OVER SURFACE TO BLOT EXCESS ASPHALT. USE ENOUGH SAND TO PREVENT PICKUP UNDER TRAFFIC. REMOVE LOOSE SAND BY SWEEPING BEFORE PAVEMENT IS PLACED AND AFTER VOLATILES HAVE EVAPORATED.
      2) PROTECT PRIMED SUBSTRATE FROM DAMAGE UNTIL READY TO RECEIVE PAVING.
   c. TACK COAT: APPLY UNIFORMLY TO SURFACES OF EXISTING PAVEMENT AT A RATE OF 0.02 TO 0.08 GAL./SQ. YD.
      1) ALLOW TACK COAT TO CURE UNDISTURBED BEFORE APPLYING HOT-MIX ASPHALT PAVING.
      2) AVOID SMEARING OR STAINING ADJOINING SURFACES, APPURTENANCES, AND SURROUNDINGS. REMOVE SPILLAGES AND CLEAN AFFECTED SURFACES.
5. PLACING HOT-MIX ASPHALT
   a. MACHINE PLACE HOT-MIX ASPHALT ON PREPARED SURFACE, SPREAD UNIFORMLY, AND STRIKE OFF. PLACE ASPHALT MIX BY HAND IN AREAS INACCESSIBLE TO EQUIPMENT IN A MANNER THAT PREVENTS SEGREGATION OF MIX. PLACE EACH COURSE TO REQUIRED GRADE, CROSS SECTION, AND THICKNESS WHEN COMPACTED.
      1) PLACE HOT-MIX ASPHALT BASE COURSE IN NUMBER OF LIFTS AND THICKNESSES INDICATED.
      2) PLACE HOT-MIX ASPHALT SURFACE COURSE IN SINGLE LIFT.
      3) SPREAD MIX AT A MINIMUM TEMPERATURE OF 250 DEG F.
      4) BEGIN APPLYING MIX ALONG CENTERLINE OF CROWN FOR CROWNED SECTIONS AND ON HIGH SIDE OF ONE-WAY SLOPES UNLESS OTHERWISE INDICATED.
      5) REGULATE PAVER MACHINE SPEED TO OBTAIN SMOOTH, CONTINUOUS SURFACE FREE OF PULLS AND TEARS IN ASPHALT-PAVING MAT.
   b. PLACE PAVING IN CONSECUTIVE STRIPS NOT LESS THAN 10 FEET WIDE UNLESS INFILL EDGE STRIPS OF A LESSER WIDTH ARE REQUIRED.
6. JOINTS
   a. CONSTRUCT JOINTS TO ENSURE A CONTINUOUS BOND BETWEEN ADJOINING PAVING SECTIONS. CONSTRUCT JOINTS FREE OF DEPRESSIONS, WITH SAME TEXTURE AND SMOOTHNESS AS OTHER SECTIONS OF HOT-MIX ASPHALT COURSE.
   b. CONSTRUCT SMOOTH TRANSITIONS BETWEEN NEW AND EXISTING PAVING SECTIONS.
7. COMPACTION
   a. GENERAL: BEGIN COMPACTION AS SOON AS PLACED HOT-MIX PAVING WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. COMPACT HOT-MIX PAVING WITH HOT, HAND TAMPERS OR WITH VIBRATORY-PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS. COMPLETE COMPACTION BEFORE MIX TEMPERATURE COOLS TO 185 DEG F.
      1) INITIAL LIFT: AVERAGE OF 92% OF MAXIMUM THEORETICAL DENSITY.
      2) TOP SURFACE LIFT: AVERAGE OF 93% OF MAXIMUM THEORETICAL DENSITY.
      3) TOLERANCE: +2.0%, -1.0% OF ANY INDIVIDUAL TEST.
   b. FINISH ROLLING: FINISH ROLL PAVED SURFACES TO REMOVE ROLLER MARKS WHILE HOT-MIX ASPHALT IS STILL WARM.
   c. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC FOR AT LEAST 24 HOURS AFTER PLACEMENT FOR THE BINDER COURSE, AND AT LEAST 72 HOURS AFTER PLACEMENT FOR THE FINAL WEARING SURFACE.
   d. IF THE AMBIENT AIR TEMPERATURE IS IN EXCESS OF 90 DEGREES FAHRENHEIT DURING THE 72 HOUR PROTECTION PERIOD, THE PAVEMENT SURFACE SHALL BE FLOODED WITH WATER TO RAPIDLY COOL THE PAVEMENT AT LEAST ONCE PER DAY.
8. FIELD QUALITY CONTROL
   a. TESTING AGENCY: ENGAGE A QUALIFIED TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.
   b. CONDUCT TESTS AND REPORTS SPECIFIED IN THE PROJECT GEOTECHNICAL REPORT.
   c. TESTING AGENCY MUST INSPECT AND APPROVE THE SUBGRADE, EACH FILL LAYER, AND THE SUBBASE AND BASE COURSE.
   d. PROMPTLY SEND TEST REPORTS TO THE ENGINEER FOR REVIEW AND APPROVAL.
   e. REMOVE AND REPLACE OR INSTALL ADDITIONAL HOT-MIX ASPHALT WHERE TEST RESULTS OR MEASUREMENTS INDICATE THAT IT DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS.

CONCRETE PAVING

1. PROJECT CONDITIONS
   a. TRAFFIC CONTROL: MAINTAIN ACCESS FOR VEHICULAR AND PEDESTRIAN TRAFFIC AS REQUIRED FOR OTHER CONSTRUCTION ACTIVITIES.
2. STEEL REINFORCEMENT
   a. PLAIN-STEEL WELDED WIRE REINFORCEMENT: ASTM A 1064/A 1064M, FABRICATED FROM AS-DRAWN STEEL WIRE INTO FLAT SHEETS.
   b. REINFORCING BARS: ASTM A 615/A 615M, GRADE 60; DEFORMED.
   c. JOINT DOWEL BARS: ASTM A 615/A 615M, GRADE 60 PLAIN-STEEL BARS. CUT BARS TRUE TO LENGTH WITH ENDS SQUARE AND FREE OF BURRS.
   d. BAR SUPPORTS: BOLSTERS, CHAIRS, SPACERS, AND OTHER DEVICES FOR SPACING, SUPPORTING, AND FASTENING REINFORCING BARS, WELDED WIRE REINFORCEMENT, AND DOWELS IN PLACE. MANUFACTURE BAR SUPPORTS ACCORDING TO CRSI'S "MANUAL OF STANDARD PRACTICE" FROM STEEL WIRE, PLASTIC, OR PRECAST CONCRETE OF GREATER COMPRESSIVE STRENGTH THAN CONCRETE SPECIFIED.
3. CONCRETE MATERIALS
   a. CEMENTITIOUS MATERIAL: USE CEMENTITIOUS MATERIALS, OF SAME TYPE, BRAND, AND SOURCE THROUGHOUT PROJECT.
   b. NORMAL-WEIGHT AGGREGATES: ASTM C 33, UNIFORMLY GRADED. PROVIDE AGGREGATES FROM A SINGLE SOURCE.
      1) MAXIMUM COARSE-AGGREGATE SIZE: 1 INCH NOMINAL.
      2) FINE AGGREGATE: FREE OF MATERIALS WITH DELETERIOUS REACTIVITY TO ALKALI IN CEMENT.
4. RELATED MATERIALS
   a. JOINT FILLERS: ASTM D 1751, ASPHALT-SATURATED CELLULOSIC FIBER IN PREFORMED STRIPS.
5. WHEEL STOPS
   a. WHEEL STOPS: PRECAST, AIR-ENTRAINED CONCRETE, 2500-PSI MINIMUM COMPRESSIVE STRENGTH. PROVIDE CHAMFERED CORNERS AND DRAINAGE SLOTS ON UNDERSIDE AND HOLES FOR ANCHORING TO SUBSTRATE.
6. SIDEWALKS
   a. SIDEWALKS: SLOPE SIDEWALKS AWAY FROM BUILDING WITH A 1.5% CROSS-SLOPE UNLESS DRAWINGS INDICATE OTHERWISE.
7. PREPARATION
   a. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE PLACING CONCRETE.
8. STEEL REINFORCEMENT
   a. GENERAL: COMPLY WITH CRSI'S "MANUAL OF STANDARD PRACTICE" FOR FABRICATING, PLACING, AND SUPPORTING REINFORCEMENT.
   b. CLEAN REINFORCEMENT OF LOOSE RUST AND MILL SCALE, EARTH, ICE, OR OTHER BOND-REDUCING MATERIALS.
   c. ARRANGE, SPACE, AND SECURELY TIE BARS AND BAR SUPPORTS TO HOLD REINFORCEMENT IN POSITION DURING CONCRETE PLACEMENT. MAINTAIN MINIMUM COVER TO REINFORCEMENT.
   d. INSTALL WELDED WIRE REINFORCEMENT IN LENGTHS AS LONG AS PRACTICABLE. LAP ADJOINING PIECES AT LEAST ONE FULL MESH, AND LACE SPLICES WITH WIRE. OFFSET LAPS OF ADJOINING WIDTHS TO PREVENT CONTINUOUS LAPS IN EITHER DIRECTION.
   e. ZINC-COATED REINFORCEMENT: USE GALVANIZED-STEEL WIRE TIES TO FASTEN ZINC-COATED REINFORCEMENT. REPAIR CUT AND DAMAGED ZINC COATINGS WITH ZINC REPAIR MATERIAL.
9. JOINTS
   a. GENERAL: FORM CONSTRUCTION, ISOLATION, AND CONTRACTION JOINTS AND TOOL EDGES TRUE TO LINE, WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE UNLESS OTHERWISE INDICATED.
      1) WHEN JOINING EXISTING PAVING, PLACE TRANSVERSE JOINTS TO ALIGN WITH PREVIOUSLY PLACED JOINTS UNLESS OTHERWISE INDICATED.
      2) ENSURE FORMS PROVIDE CORRECT HORIZONTAL AND VERTICAL ALIGNMENT BETWEEN NEW AND EXISTING PAVEMENTS, SIDEWALKS, CURB AND GUTTER, ETC.
   b. CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATIONS OF PAVING AND AT LOCATIONS WHERE PAVING OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR UNLESS PAVING TERMINATES AT ISOLATION JOINTS.
      1) CONTINUE STEEL REINFORCEMENT ACROSS CONSTRUCTION JOINTS UNLESS OTHERWISE INDICATED. DO NOT CONTINUE REINFORCEMENT THROUGH SIDES OF PAVING STRIPS UNLESS OTHERWISE INDICATED.
      2) PROVIDE TIE BARS AT SIDES OF PAVING STRIPS WHERE INDICATED.
      3) KEYED JOINTS: PROVIDE PREFORMED KEYWAY-SECTION FORMS OR BULKHEAD FORMS WITH KEYS UNLESS OTHERWISE INDICATED. EMBED KEYS AT LEAST 1-1/2 INCHES INTO CONCRETE.
      4) DOWELED JOINTS: INSTALL DOWEL BARS AND SUPPORT ASSEMBLIES AT JOINTS WHERE INDICATED. LUBRICATE OR COAT WITH ASPHALT ONE-HALF OF DOWEL LENGTH TO PREVENT CONCRETE BONDING TO ONE SIDE OF JOINT.
   c. ISOLATION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, OTHER FIXED OBJECTS, AND WHERE INDICATED.
      1) LOCATE EXPANSION JOINTS AT INTERVALS OF 30 FEET UNLESS OTHERWISE INDICATED.
      2) EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT.
      3) TERMINATE JOINT FILLER NOT LESS THAN 1/2 INCH OR MORE THAN 1 INCH BELOW FINISHED SURFACE IF JOINT SEALANT IS INDICATED.
      4) PLACE TOP OF JOINT FILLER FLUSH WITH FINISHED CONCRETE SURFACE IF JOINT SEALANT IS NOT INDICATED.
      5) FURNISH JOINT FILLERS IN ONE-PIECE LENGTHS. WHERE MORE THAN ONE LENGTH IS REQUIRED, LACE OR CLIP JOINT-FILLER SECTIONS TOGETHER.
      6) DURING CONCRETE PLACEMENT, PROTECT TOP EDGE OF JOINT FILLER WITH METAL, PLASTIC, OR OTHER TEMPORARY PREFORMED CAP. REMOVE PROTECTIVE CAP AFTER CONCRETE HAS BEEN PLACED ON BOTH SIDES OF JOINT.
   d. CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS, AS FOLLOWS:
      1) GROOVED JOINTS: FORM CONTRACTION JOINTS AFTER INITIAL FLOATING BY GROOVING AND FINISHING EACH EDGE OF JOINT WITH GROOVING TOOL TO A 1/4-INCH RADIUS. REPEAT GROOVING OF CONTRACTION JOINTS AFTER APPLYING SURFACE FINISHES. ELIMINATE GROOVING-TOOL MARKS ON CONCRETE SURFACES.
      2) SAWED JOINTS: FORM CONTRACTION JOINTS WITH POWER SAWS EQUIPPED WITH SHATTERPROOF ABRASIVE OR DIAMOND-RIMMED BLADES. CUT 1/8-INCH- WIDE JOINTS INTO CONCRETE WHEN CUTTING ACTION WILL NOT TEAR, ABRADE, OR OTHERWISE DAMAGE SURFACE AND BEFORE DEVELOPING RANDOM CONTRACTION CRACKS.
      3) DOWELED CONTRACTION JOINTS: INSTALL DOWEL BARS AND SUPPORT ASSEMBLIES AT JOINTS WHERE INDICATED. LUBRICATE OR COAT WITH ASPHALT ONE-HALF OF DOWEL LENGTH TO PREVENT CONCRETE BONDING TO ONE SIDE OF JOINT.
   e. EDGING: AFTER INITIAL FLOATING, TOOL EDGES OF PAVING, GUTTERS, CURBS, AND JOINTS IN CONCRETE WITH AN EDGING TOOL TO A 1/4-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES. ELIMINATE EDGING-TOOL MARKS ON CONCRETE SURFACES.
10. FIELD QUALITY CONTROL
   a. TESTING AGENCY: ENGAGE A QUALIFIED TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.
   b. PROMPTLY SEND TEST REPORTS TO THE ENGINEER FOR REVIEW AND APPROVAL.
   c. TESTING SERVICES: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C 172 SHALL BE PERFORMED BY THE GENERAL CONTRACTOR'S TESTING AGENCY ACCORDING TO THE FOLLOWING REQUIREMENTS:
      1) TESTING FREQUENCY: OBTAIN AT LEAST ONE COMPOSITE SAMPLE FOR EACH 100 CU. YD. OR FRACTION THEREOF OF EACH CONCRETE MIXTURE PLACED EACH DAY. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIXTURE, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
      2) SLUMP: ASTM C 143/C 143M; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
      3) AIR CONTENT: ASTM C 231, PRESSURE METHOD; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE.
      4) CONCRETE TEMPERATURE: ASTM C 1064/C 1064M; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN IT IS 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
      5) COMPRESSION TEST SPECIMENS: ASTM C 31/C 31M; CAST AND LABORATORY CURE ONE SET OF THREE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
      6) COMPRESSIVE-STRENGTH TESTS: ASTM C 39/C 39M; TEST ONE SPECIMEN AT SEVEN DAYS AND TWO SPECIMENS AT 28 DAYS. A COMPRESSIVE-STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE STRENGTH FROM TWO SPECIMENS OBTAINED FROM SAME COMPOSITE SAMPLE AND TESTED AT 28 DAYS.
   d. STRENGTH OF EACH CONCRETE MIXTURE WILL BE SATISFACTORY IF AVERAGE OF ANY THREE CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE-STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.
   e. TEST RESULTS SHALL BE REPORTED IN WRITING TO ENGINEER, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIXTURE PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7- AND 28-DAY TESTS.
   f. ADDITIONAL TESTS: TESTING AND INSPECTING AGENCY SHALL MAKE ADDITIONAL TESTS OF CONCRETE WHEN TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTHS, OR OTHER REQUIREMENTS HAVE NOT BEEN MET, AS DIRECTED BY ENGINEER.
   g. CONCRETE PAVING WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.
   h. ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF REPLACED OR ADDITIONAL WORK WITH SPECIFIED REQUIREMENTS.
   i. PREPARE TEST AND INSPECTION REPORTS.
11. REPAIRS AND PROTECTION
   a. REMOVE AND REPLACE CONCRETE PAVING THAT IS BROKEN, DAMAGED, OR DEFECTIVE OR THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION. REMOVE WORK IN COMPLETE SECTIONS FROM JOINT TO JOINT UNLESS OTHERWISE APPROVED BY ENGINEER.
   b. DRILL TEST CORES, WHERE DIRECTED BY ENGINEER, WHEN NECESSARY TO DETERMINE MAGNITUDE OF CRACKS OR DEFECTIVE AREAS. FILL DRILLED CORE HOLES IN SATISFACTORY PAVING AREAS WITH PORTLAND CEMENT CONCRETE BONDED TO PAVING WITH EPOXY ADHESIVE.
   c. PROTECT CONCRETE PAVING FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVING FOR AT LEAST 14 DAYS AFTER PLACEMENT. WHEN CONSTRUCTION TRAFFIC IS PERMITTED, MAINTAIN PAVING AS CLEAN AS POSSIBLE BY REMOVING SURFACE STAINS AND SPILLAGE OF MATERIALS AS THEY OCCUR.
   d. MAINTAIN CONCRETE PAVING FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL. SWEEP PAVING NOT MORE THAN TWO DAYS BEFORE DATE SCHEDULED FOR SUBSTANTIAL COMPLETION INSPECTIONS.

PAVEMENT MARKINGS

1. QUALITY ASSURANCE
   a. REGULATORY REQUIREMENTS: COMPLY WITH MATERIALS, WORKMANSHIP, AND OTHER APPLICABLE REQUIREMENTS OF STATE DOT OR LOCAL MUNICIPALITY FOR PAVEMENT-MARKING WORK.
2. FIELD CONDITIONS
   a. ENVIRONMENTAL LIMITATIONS: PROCEED WITH PAVEMENT MARKING ONLY ON CLEAN, DRY SURFACES AND AT A MINIMUM AMBIENT OR SURFACE TEMPERATURE OF 40 DEG F FOR ALKYD MATERIALS, 55 DEG F FOR WATER-BASED MATERIALS, AND NOT EXCEEDING 95 DEG F.
3. PAVEMENT-MARKING PAINT
   a. PAVEMENT-MARKING PAINT: ALKYD-RESIN TYPE, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH AASHTO M 248; COLORS COMPLYING WITH FS TT-P-1952. COLOR: AS INDICATED.
   b. ALL PAVEMENT MARKING WITHIN D.O.T. RIGHT-OF-WAY SHALL BE THERMOPLASTIC AND IN ACCORDANCE WITH D.O.T. SPECIFICATIONS.
4. PAVEMENT MARKING
   a. APPLY TEMPORARY PAVEMENT MARKING BEFORE TRAFFIC IS ALLOWED ON ANY NEWLY PAVED AREA OR AS SITE CONDITIONS DICTATE. ALLOW FINAL WEARING SURFACE TO AGE FOR A MINIMUM OF 30 DAYS BEFORE APPLYING FINAL PERMANENT PAVEMENT MARKING.
5. PROTECTING AND CLEANING
   a. PROTECT PAVEMENT MARKINGS FROM DAMAGE AND WEAR DURING REMAINDER OF CONSTRUCTION PERIOD.
   b. CLEAN SPILLAGE AND SOILING FROM ADJACENT CONSTRUCTION USING CLEANING AGENTS AND PROCEDURES RECOMMENDED BY MANUFACTURER OF AFFECTED CONSTRUCTION.

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BUDA, HAYS COUNTY, TEXAS

SEAL:

VINCENT D. MUSAT
87005
3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023

TITLE:

GENERAL NOTES

SHEET NUMBER:

G-2.1

COMMENTS:

NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER:

489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\G-2 GENERAL NOTES.DWG

GENERAL NOTES:

1) CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE DEMOLITION PERMIT FROM CITY OF BUDA PRIOR TO DEMOLITION OF THE SITE.

2) ALL INITIAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO ANY WORK INCLUDING DEMOLITION.

3) ALL CONSTRUCTION RELATED PERMITS DURING THE CONSTRUCTION PHASE OF THIS PROJECT ARE THE RESPONSIBILITY OF CONTRACTOR.

4) REMOVE SHRUBS AND TREES AS NOTED. GRUB OUT ROOTS AND STUMPS AND LEGALLY DISPOSE OF DEBRIS.

DEMOLITION NOTES:

1) ALL NEW WORK SHOWN IN THESE SHEETS MUST COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL BUILDING AND UTILITY INSTALLATION CODES.

2) ALL MATERIALS AND CONSTRUCTION METHODS MUST BE IN ACCORDANCE WITH TXDOT STANDARD SPECIFICATIONS EXCEPT IN CASES WHERE, WITHIN CITY OF BUDA JURISDICTION, THE CITY STANDARD SPECIFICATIONS ARE MORE STRINGENT.

3) THERE MAY BE ADDITIONAL UTILITIES NOT SHOWN ON THESE PLANS. ENGINEER ASSUMES NO RESPONSIBILITY FOR LOCATIONS SHOWN, AND IT IS THE RESPONSIBILITY OF CONTRACTOR TO FIELD VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF CONSTRUCTION AND TO NOTIFY THE OWNER IN CASE OF DISCREPANCIES THAT AFFECT THE CONSTRUCTION PROJECT.

4) CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION OF AND LIAISON WITH UTILITY COMPANIES IN THE PROCESS OF LOCATION AND RELOCATION OF AND TIE-IN TO PUBLIC UTILITIES.

5) CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE THAT MAY OCCUR TO ANY ADJACENT STRUCTURES OR PROPERTY, OR ANY EXISTING STRUCTURES WITHIN LIMITS OF CONSTRUCTION THAT ARE DESIGNATED ON THE PLANS TO REMAIN, AND SHALL REPAIR OR REPLACE SUCH DAMAGED PROPERTY TO THE PROPERTY OWNER'S SATISFACTION AT NO COST TO OWNER.

6) CONTRACTOR MUST NOT DEVIATE FROM THESE PLANS AND SPECIFICATIONS WITHOUT THE PRIOR WRITTEN CONSENT OF ENGINEER.

7) CONTRACTOR IS RESPONSIBLE FOR CONTACTING CITY OF BUDA AND ALL EXISTING UTILITY PROVIDERS BEFORE REMOVING ANY/ALL UTILITIES FROM THEIR EXISTING LOCATION ON THE SITE. THE CONTRACTOR MUST PERFORM ALL UTILITY DEMOLITION OR RELOCATION ACTIVITIES IN ACCORDANCE WITH THE EXISTING UTILITIES SPECIFICATIONS, MATERIALS, AND REQUIREMENTS.

8) CONTRACTOR IS TO SEQUENCE THE WORK AND PROVIDE TEMPORARY MEASURES AS NECESSARY TO MAINTAIN ACCESS TO THE SITE THROUGH ALL ENTRANCES AT ALL TIMES DURING CONSTRUCTION. TEMPORARY PROVISIONS MAY INCLUDE, BUT ARE NOT LIMITED TO: BARRICADES, FLASHING LIGHTS, FLAGMAN, TEMPORARY PAVEMENT, AND DIRECTIONAL SIGNAGE AS NECESSARY TO ACCOMPLISH THE WORK.

9) CONTRACTOR SHALL CONSIDER COORDINATION ASPECTS OF CRANES AND CONSTRUCTION EQUIPMENT OPERATIONS DURING DEMOLITION ACTIVITY.

10) CONTRACTOR EQUIPMENT MUST NOT BE PARKED IN COUNTY, CITY OR STATE RIGHT-OF-WAY, AND MUST BE STORED WITHIN SITE.

11) CONTRACTOR SHALL COORDINATE WITH CITY OF BUDA AS REQUIRED DURING ALL DEMOLITION AND NEW CONSTRUCTION ACTIVITIES.

12) CONTRACTOR TO DISPOSE OF ANY HAZARDOUS MATERIALS IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.

13) ALL ITEMS DESIGNATED FOR REMOVAL SHALL BE LEGALLY DISPOSED OF, OFF SITE.

14) CONTRACTOR TO CONTACT UTILITIES PROTECTION CENTER PRIOR TO ANY EXCAVATION.

15) CONTRACTOR TO POT HOLE EXISTING WATER LINE, UNDERGROUND ELECTRICAL LINES, GAS LINE, UNDERGROUND TELEPHONE, FIBER OPTIC, AND ANY OTHER UTILITY LINES WITHIN THE RIGHT OF WAY DURING DEMOLITION ACTIVITIES AND COORDINATE FIELD LOCATIONS AND DEPTHS OF THESE UTILITIES WITH ENGINEER FOR PROPOSED UTILITY CROSSINGS AND PROPOSED PAVEMENT OVER EXISTING LINES. THESE LINES MAY REQUIRE RELOCATION.

16) CONTRACTOR MUST BE FAMILIAR WITH AND FOLLOW ALL RECOMMENDATIONS GIVEN BY THE GEOTECHNICAL REPORT BY RABA KISTNER DATED 12/27/2022 DURING DEMOLITION AND SITE CONSTRUCTION.

EROSION CONTROL NOTES
(SEE ALSO EROSION CONTROL PLAN)

1) EROSION CONTROL DEVICES ARE TO BE INSTALLED PRIOR TO ANY CLEARING OR EARTHWORK OPERATIONS AND MUST BE MAINTAINED THROUGHOUT CONSTRUCTION AND UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ALL DISTURBED AREAS.

2) CONTRACTOR MUST PROVIDE DUST CONTROL AND SHALL PROTECT ADJACENT PAVEMENTS FROM SOIL ACCUMULATION DURING CONSTRUCTION.

3) ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY THE ENGINEER OR OTHER INSPECTORS AS DETERMINED BY FIELD CONDITIONS.

LEGEND

- BUILDING/CONCRETE TO BE REMOVED
- ASPHALT, GRAVEL, AND/OR CURB & GUTTER TO BE REMOVED
- TREES AND BRUSH TO BE REMOVED
- EXISTING FENCE
- PROPERTY LINE
- LIMITS OF CONSTRUCTION
- TREE PROTECTION FENCE
- EXISTING TREE TO BE REMOVED

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

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3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

DEMOLITION PLAN

SHEET NUMBER:

C-0

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\C-0 DEMOLITION PLAN.DWG

GENERAL NOTES:

1) ALL PROPOSED DIMENSIONS USED TO SHOW THE GEOMETRIC LAYOUT OF THE PROPOSED PARKING LOT ARE SHOWN AT THE FACE OF CURB. ALL PROPOSED DIMENSIONS USED TO SHOW THE GEOMETRIC LAYOUT OF THE PROPOSED BUILDING LOCATION ARE GIVEN AT THE OUTSIDE FACE OF THE BUILDING CORNERS. ALL CURB RADII ARE GIVEN AT THE FACE OF CURB.

2) CONTRACTOR MUST NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS IN THE FIELD AND THE SURVEY SHOWN ON THE PLANS BEFORE PROCEEDING WITH ANY NEW CONSTRUCTION.

3) CONTRACTOR IS RESPONSIBLE FOR CORRECT HORIZONTAL AND VERTICAL ALIGNMENT OF ALL TIES BETWEEN PROPOSED AND EXISTING PAVEMENTS, CURB AND GUTTER, SIDEWALKS, WALLS, AND UTILITIES.

SITE NOTES:

1) TRACT IS ZONED: FORM DISTRICT 4 (F4).

2) SEE ARCHITECTURAL PLANS FOR BUILDING FLOOR PLAN DIMENSIONS, DOOR LOCATIONS, SITE LIGHTING PLAN, AND OTHER ARCHITECTURAL DETAILS.

3) NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED UNTIL ALL SITE IMPROVEMENTS HAVE BEEN COMPLETED ON THE SITE.

4) HIGH INTENSITY LIGHTING FACILITIES MUST BE SO ARRANGED THAT THE SOURCE OF ANY LIGHT IS CONCEALED FROM THE PUBLIC VIEW AND DOES NOT INTERFERE WITH TRAFFIC. (SEE PHOTOMETRICS PLAN IN ARCH. PLANS).

5) ALL BUFFERS, TREE SAVE AREAS, AND UNDISTURBED AREAS MUST BE CLEARLY IDENTIFIED BY FLAGGING AND/OR FENCING PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE.

6) NO OUTSIDE STORAGE IS PROPOSED. THIS INCLUDES SUPPLIES, VEHICLE, EQUIPMENT, PRODUCTS, ETC.

7) SIGNS (LOCATION, NUMBER, AND SIZE) ARE NOT APPROVED UNDER THIS DEVELOPMENT PERMIT. A SEPARATE PERMIT IS REQUIRED FOR ON-SITE SIGNAGE.

8) ALL PAVEMENT MARKING WITHIN CITY OF BUDA RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF BUDA SPECIFICATIONS.

9) <<SUBGRADE TREATMENT>> <<AGGREGATE BASE>> SHALL EXTEND UNDER THE GUTTER TO PROVIDE ADDITIONAL STABILITY FOR TRUCK TRAVEL.

10) ALL CONSTRUCTION RELATED PERMITS DURING THE CONSTRUCTION PHASE OF THIS PROJECT ARE THE RESPONSIBILITY OF THE OWNER, HOWEVER A CONTRACTOR/DEVELOPER CAN DO PERMITTING WITH AGENT AUTHORIZATION.

11) CONSTRUCTION TRAILERS ARE TO BE PERMITTED THROUGH THE BUILDING INSPECTIONS DIVISION OF THE CITY OF BUDA DEVELOPMENT DEPARTMENT.

12) ALL EROSION, SEDIMENT CONTROL AND TREE PROTECTION MEASURES MUST BE INSTALLED PRIOR TO ANY GRADING.

13) CITY OF BUDA ACCEPTS NO RESPONSIBILITY FOR THE AMERICANS WITH DISABILITIES ACT (ADA), EXCEPT FOR NOTIFICATION REQUIREMENT. THE OWNER/DEVELOPER IS SOLELY RESPONSIBLE FOR COMPLIANCE FOR SAID ACT.

14) ENGINEER CONTACT: VINCENT D. MUSAT, P.E. LEED AP, (770) 368-1399.

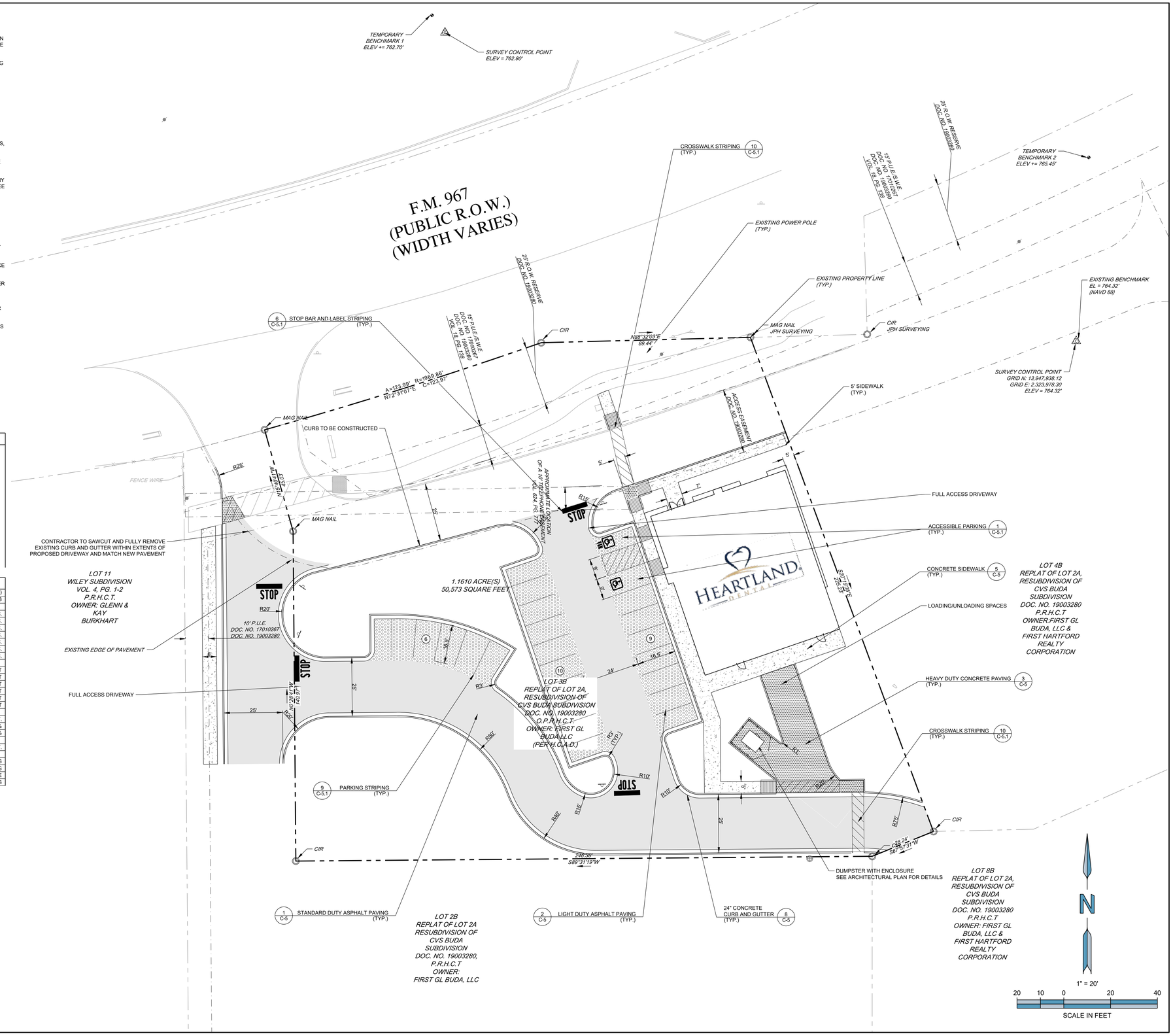
15) CONTRACTOR MUST COORDINATE WITH THE CITY/COUNTY JURISDICTION, WATER AND SEWER JURISDICTION, AND DEPARTMENT OF TRANSPORTATION INSPECTORS REGARDING ALL CERTIFICATE OF OCCUPANCY REQUIREMENTS AND COORDINATE WITH THE ENGINEER APPROXIMATELY 8 WEEKS PRIOR TO ANTICIPATED CERTIFICATE OF OCCUPANCY DATE REGARDING ANY ITEMS REQUIRING APPROVAL OR CERTIFICATIONS BY THE ENGINEER.

LEGEND

- HEAVY DUTY CONCRETE PAVING
- STANDARD DUTY ASPHALT PAVING
- LIGHT DUTY ASPHALT PAVING
- SIDEWALK CONCRETE PAVING
- PROPERTY LINE
- (#) PARKING COUNT
- TRAFFIC SIGN

SITE DATA

ZONING:		F4 (FORM DISTRICT 4)
PARCEL IDENTIFICATION NUMBER:		R167008
TOTAL SITE AREA:		1.161 AC.
DISTURBED AREA:		1.249 AC.
PERVIOUS SURFACE AREA:		0.448 AC.
IMPERVIOUS SURFACE AREA:		0.796 AC.
OPEN SPACE AREA REQUIRED:		0.348 AC.
OPEN SPACE AREA EXISTING:		1.025 AC.
OPEN SPACE AREA PROPOSED:		0.719 AC.
LANDSCAPE BUFFER -	FRONT:	0 FT
	SIDE:	5 FT
	REAR:	0 FT
BUILDING SETBACK -	FRONT:	0 FT
	SIDE:	5 FT
	REAR:	15 FT
TOTAL GROUND FLOOR AREA:		4385 S.F.
BUILDING COVERAGE MAXIMUM:		60 %
BUILDING COVERAGE PROPOSED:		8.7 %
PARKING RATIO REQUIRED -	MEDICAL CLINIC:	1 SPACE / 400 S.F.
PARKING REQUIRED:		11 SPACES
PARKING PROVIDED:		15 SPACES
ACCESSIBLE PARKING REQUIRED:		1 SPACE
ACCESSIBLE PARKING PROVIDED:		2 SPACES



811 Know what's below Call before you dig

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CDC\C-1 SITE & PAVING PLAN.DWG

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DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

SITE & PAVING PLAN

SHEET NUMBER:

C-1

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

GENERAL NOTES:

1) ALL SPOT ELEVATIONS SHOWN ARE AT THE BOTTOM OF CURB/TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

2) ALL PROPOSED SIDEWALKS MUST BE BUILT WITH A 1.5% CROSS-SLOPE AWAY FROM THE BUILDING.

SITE NOTES:

1) CONTRACTOR SHALL CLEAN OUT ACCUMULATED SILT IN STORM WATER CONVEYANCE CHANNELS AND PIPES AT END OF CONSTRUCTION WHEN DISTURBED AREAS HAVE BEEN STABILIZED.

2) CONTRACTOR SHALL COORDINATE WITH CITY OF BUDA INSPECTIONS DURING CONSTRUCTION.

3) NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED UNTIL ALL SITE IMPROVEMENTS HAVE BEEN COMPLETED.

4) CONTRACTOR SHALL CONSTRUCT EROSION CONTROL BARRIERS PER THE EROSION CONTROL PLAN AND MAINTAIN UNTIL PERMANENT VEGETATION IS ESTABLISHED.

5) CONTRACTOR MUST RE-ESTABLISH ALL RIGHT-OF-WAY AREAS WHICH WERE DAMAGED OR DISTURBED DURING CONSTRUCTION TO ORIGINAL CONDITIONS OR BETTER DURING AUTHORIZED WORK. ALL WORK IN CITY OF BUDA RIGHT-OF-WAY MUST COMPLY WITH CITY OF BUDA SPECIFICATIONS.

6) ALL CURBED LANDSCAPE ISLANDS MUST BE FILLED TO TOP OF CURB WITH TOPSOIL AND SEEDED.

7) MAXIMUM CUT OR FILL SLOPES IS 3H:1V.

8) TREE PROTECTION FENCE MUST BE INSTALLED PRIOR TO ANY CLEARING OR GRADING ACTIVITIES.

9) TOPOGRAPHIC DATA SHOWN BASED ON POINT AND CONTOUR DATA FROM SURVEY PROVIDED BY 4WARD LAND SURVEYING DATED 9/27/2022.

10) IN ALL AREAS OF FILL OR OTHERWISE DISTURBANCE OF EXISTING CONDITIONS, UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL FULLY AND COMPLETELY REMOVE AND LEGALLY DISPOSE OFF-SITE, ALL PLANT MATERIALS INCLUDING BUT NOT LIMITED TO ROOT SYSTEMS, CONCRETE, REINFORCED CONCRETE, ASPHALT DEBRIS, UNDERBRUSH, TOPSOIL, AND OTHER DELETERIOUS MATERIAL. THE SUBGRADE TO REMAIN SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY FOLLOWING FULL REMOVAL OF THESE MATERIALS.

11) CONTRACTOR SHALL REFER TO SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION REPORTS AS PROVIDED BY OWNER FOR RECOMMENDATIONS ASSOCIATED WITH: GENERAL SITE PREPARATION, BUILDING PAD PREPARATION, SUBGRADE PREPARATION, AREAS TO RECEIVE FILL, AREAS TO BE OVEREXCAVATED, PAVEMENT SECTIONS, FILL, SLOPES AND EXCAVATION. CONTRACTOR IS TO HAVE THIS REPORT ON THE JOB SITE FOR REFERENCE AT ALL TIMES. CONTRACTOR IS TO PROVIDE EARTHWORK OPERATIONS AND CONSTRUCTION PHASE MONITORING TO ENSURE THAT ALL COMPACTION IS COMPLETED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. CONTRACTOR SHALL PROVIDE TESTING REPORTS TO THE OWNER REGARDING COMPACTION TESTING PER THE TESTING PROTOCOL IN THE GEOTECHNICAL REPORT.

12) IT IS THE RESPONSIBILITY OF CONTRACTOR TO OBTAIN QUALIFIED PROFESSIONAL ADVICE WHEN QUESTIONS ARISE CONCERNING DESIGN AND EFFECTIVENESS OF EROSION CONTROL DEVICES. **ENGINEER CONTACT: VINCENT D. MUSAT, P.E. LEED AP (770) 368-1399.**

13) NO PORTION OF THIS PROPERTY LIES WITHIN A SPECIAL FLOOD HAZARD AREA PER PANEL 48209C0260F DATED 9/2/2005.

14) DETENTION FACILITIES AND EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

15) EXTREME CAUTION SHALL BE USED WHEN WORKING WITHIN THE VICINITY OF THE EXISTING OVERHEAD POWER LINES. CONTRACTORS SHALL NOTIFY/COORDINATE WITH PEDERNALES ELECTRIC COOPERATIVE PRIOR TO CONSTRUCTION.

16) STORM WATER MANAGEMENT SHALL BE IN ACCORDANCE WITH CITY, COUNTY, STATE, AND OTHER APPROPRIATE ORDINANCES AND REGULATIONS IN EFFECT AT TIME OF CONSTRUCTION PLAN APPROVAL.

LEGEND

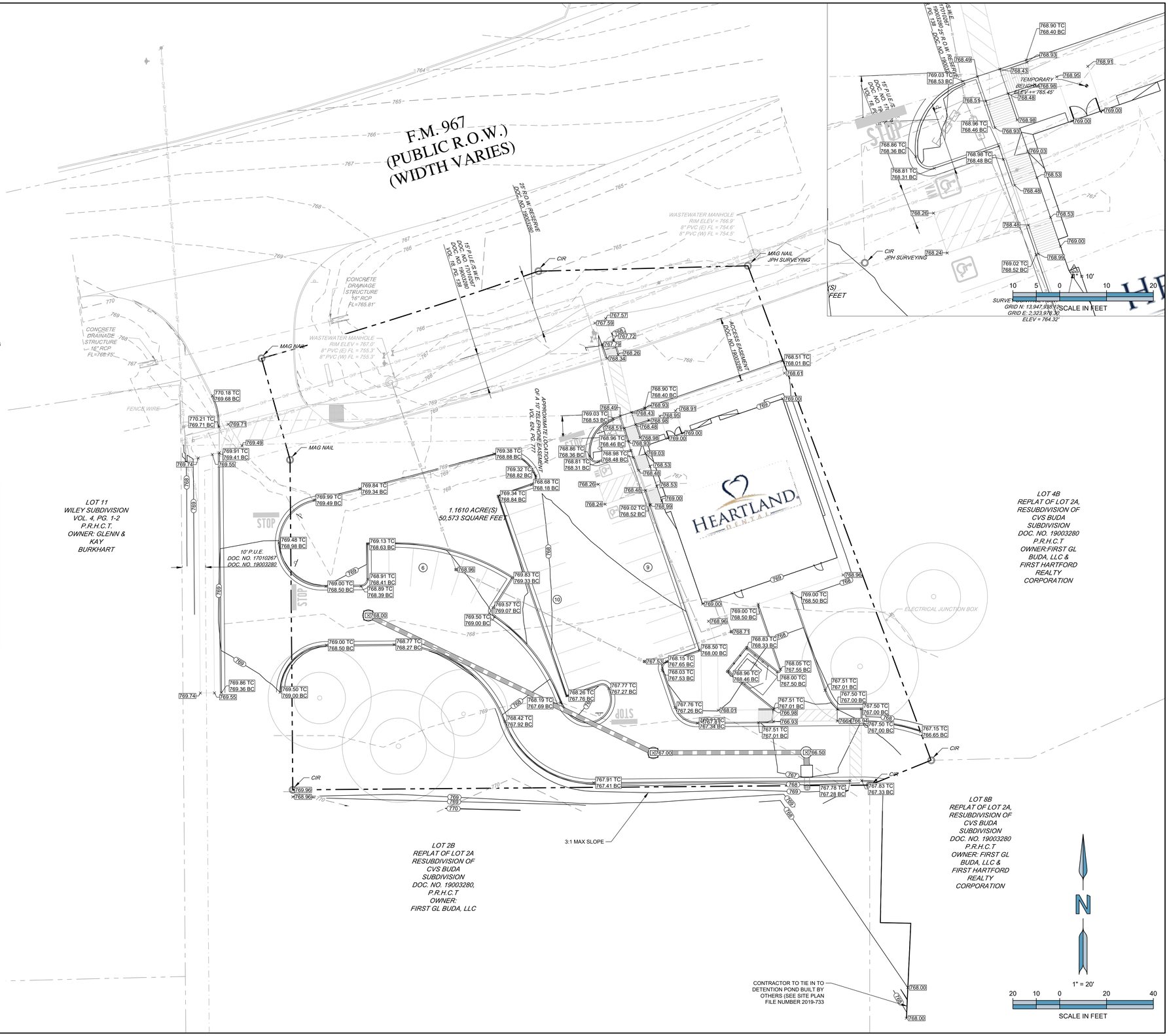
XXXX	EXISTING CONTOURS
XXXX	PROPOSED CONTOURS
	EXISTING STORM PIPE
	PROPOSED STORM PIPE
XXXX.XX	EXISTING SPOT ELEVATION
XXXX.XX	PROPOSED SPOT ELEVATION
XXXX.XX TC / XXXX.XX BC	PROPOSED SPOT ELEVATION FOR TOP OF CURB / BOTTOM OF CURB
XXXX.XX TW / XXXX.XX BW	PROPOSED SPOT ELEVATION FOR TOP OF WALL / BOTTOM OF WALL AT FINISHED SURFACE GRADE (SEE STRUCTURAL FOR FOOTING ELEVATIONS)

BENCHMARKS

NAME	DESCRIPTION
TBM #1	½" IRON ROD WITH "4WARD CONTROL" CAP SET, ELEV = 764.32'
TBM #2	SQUARE CUT ON TOP OF CONCRETE CURB ON THE NORTH SIDE OF FM 967 ±30' SOUTHWEST FROM A BUDA SPORTS CENTER SIGN AT 331013 FM 967 ELEV = 762.70'
TBM #3	SQUARE CUT ON TOP OF CONCRETE DRAINAGE WALL ON THE SOUTH SIDE OF FM. 967 AND ON THE WEST SIDE OF THE CVS PHARMACY ±=46' NORTHEAST FROM A POWER POLE ELEV = 765.45'

811 Know what's below Call before you dig

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CDIC-2 GRADING PLAN.DWG



ENGINEER:

FORESITE group

TBPE Firm No. F-12878
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901 S. MoPac Expressway
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DEVELOPER:

FIRST HARTFORD REALTY CORPORATION

9121 ELIZABETH ROAD, SUITE 105
HOUSTON, TX 77055
(713) 255-0280

CONTACT: JONATHAN BELLOCK

PROJECT:

HEARTLAND DENTAL

FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:

STATE OF TEXAS — VINCENT D. MUSAT — 87005 — LICENSED PROFESSIONAL ENGINEER — 3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

GRADING PLAN

SHEET NUMBER: C-2

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

GENERAL NOTES:

1) ALL HEAD WALL SECTIONS MUST BE CONSTRUCTED TO BE FLUSH WITH THE EXISTING DITCH BANK AND PROPOSED EMBANKMENT SLOPES.

SITE NOTES:

1) CONTRACTOR SHALL CLEAN OUT ACCUMULATED SILT IN STORM WATER CONVEYANCE CHANNELS AND PIPES AT END OF CONSTRUCTION WHEN DISTURBED AREAS HAVE BEEN STABILIZED.

2) CONTRACTOR SHALL COORDINATE WITH CITY OF BUDA INSPECTIONS DURING CONSTRUCTION.

3) NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED UNTIL ALL SITE IMPROVEMENTS HAVE BEEN COMPLETED.

4) CONTRACTOR SHALL CONSTRUCT EROSION CONTROL BARRIERS PER THE EROSION CONTROL PLAN AND MAINTAIN UNTIL PERMANENT VEGETATION IS ESTABLISHED.

5) CONTRACTOR SHALL RE-ESTABLISH ALL RIGHT-OF-WAY AREA WHICH WAS DAMAGED OR DISTURBED DURING CONSTRUCTION TO ORIGINAL CONDITIONS OR BETTER DURING AUTHORIZED WORK. ALL WORK IN CITY OF BUDA RIGHT-OF-WAY MUST COMPLY WITH CITY OF BUDA SPECIFICATIONS.

6) ALL PLASTIC STORM PIPE SHOWN ON THIS PLAN MUST BE WRAPPED WITH LOCATION WIRE AND TAPE.

7) ALL CMP STORM PIPE TO BE ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE. ALL HDPE MUST BE AASHTO TYPE "S" AND SHALL BE INSTALLED IN ACCORDANCE TO ASTM D2321 OR AASHTO SECTION 30 STANDARD PRACTICES AND AS RECOMMENDED BY THE MANUFACTURER. ALL RCP STORM PIPE MUST BE CLASS III UNLESS OTHERWISE NOTED. HP PIPE SHALL CONFORM TO AASHTO M330/ASTM F2881 WITH WATER TIGHT JOINTS PER ASTM D3212).

8) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN QUALIFIED PROFESSIONAL ADVICE WHEN QUESTIONS ARISE CONCERNING DESIGN AND EFFECTIVENESS OF EROSION CONTROL DEVICES. **ENGINEER CONTACT: VINCENT D. MUSAT, P.E. LEED AP (770) 368-1399.**

9) NO PORTION OF THIS PROPERTY LIES WITHIN A SPECIAL FLOOD HAZARD AREA PER PANEL 48209C0260F DATED 9/2/2005.

10) DETENTION FACILITIES AND EROSION CONTROL MEASURES ARE TO BE CONSTRUCTED PRIOR TO ANY OTHER CONSTRUCTION ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

11) EXTREME CAUTION MUST BE USED WHEN WORKING WITHIN THE VICINITY OF THE EXISTING OVERHEAD POWER LINES. CONTRACTORS TO NOTIFY/COORDINATE WITH PEDERNALES ELECTRIC COOPERATIVE PRIOR TO CONSTRUCTION.

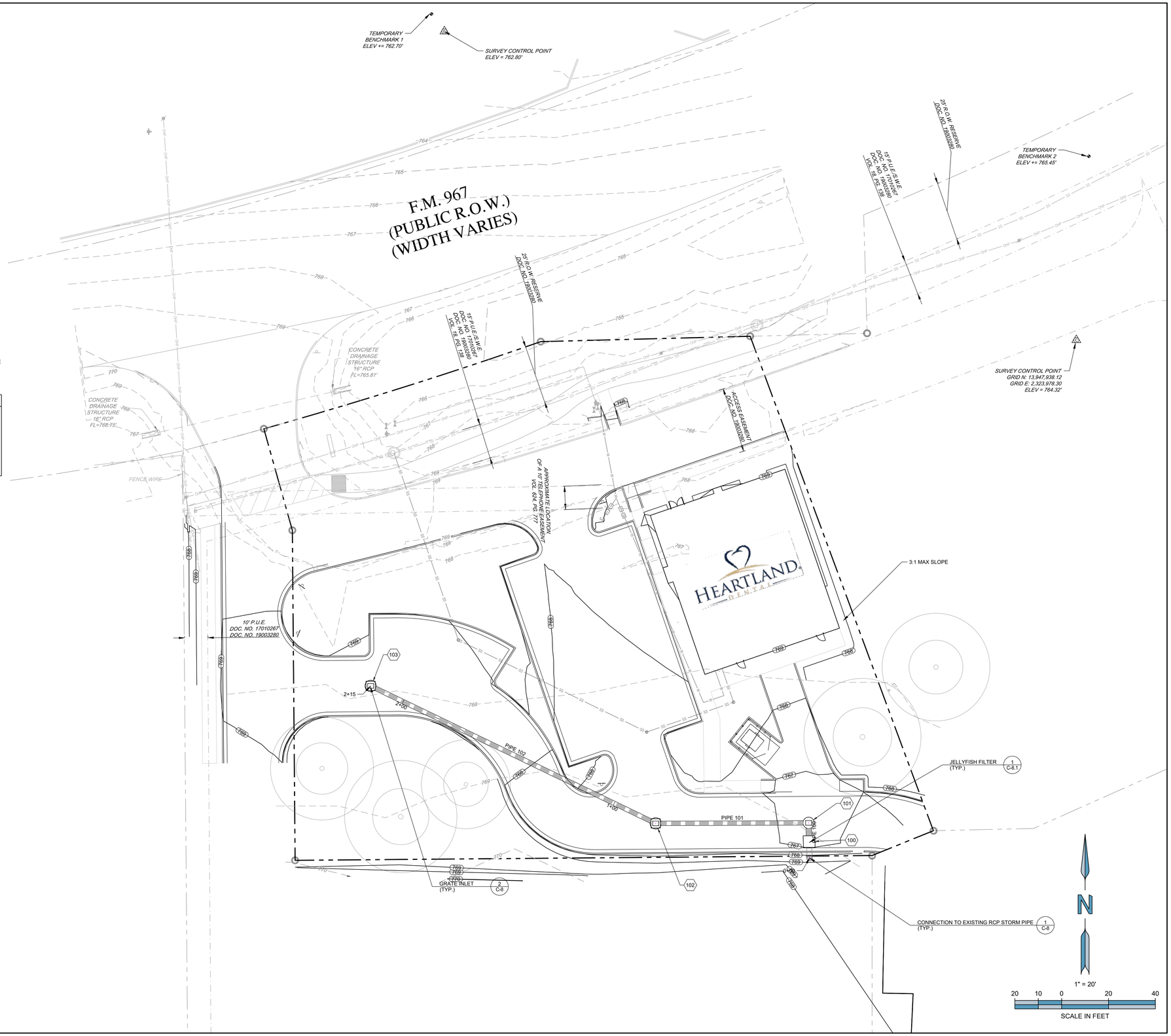
12) STORM WATER MANAGEMENT TO BE IN ACCORDANCE WITH CITY, COUNTY, STATE, AND OTHER APPROPRIATE ORDINANCES AND REGULATIONS IN EFFECT AT TIME OF CONSTRUCTION PLAN APPROVAL.

13) CONTRACTOR MUST INSTALL DOWNSTREAM STORM PIPE CONNECTION IN THE RIGHT-OF-WAY PRIOR TO INSTALLATION OF ON-SITE STORM PIPING AND/OR STORM WATER DETENTION FACILITY. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES SHOWN ON THE PLANS BY POT HOLING THE LINES AND HAVE THE LINES SURVEYED, INCLUDING HORIZONTAL AND VERTICAL LOCATION. THE SURVEYED POINTS ARE TO BE SENT TO THE PROJECT ENGINEER TO DETERMINE IF ANY UTILITY CONFLICTS WILL AFFECT THE CURRENT STORM DRAINAGE DESIGN.

LEGEND	
XXXX	EXISTING CONTOURS
XXXX	PROPOSED CONTOURS
	EXISTING STORM PIPE
	PROPOSED STORM PIPE

BENCHMARKS	
NAME	DESCRIPTION
TBM #1	½" IRON ROD WITH "4WARD CONTROL" CAP SET. ELEV = 764.32'
TBM #2	SQUARE CUT ON TOP OF CONCRETE CURB ON THE NORTH SIDE OF FM 367 ±30' SOUTHWEST FROM A BUDA SPORTS CENTER SIGN AT 331013 FM 967 ELEV = 762.70'
TBM #3	SQUARE CUT ON TOP OF CONCRETE DRAINAGE WALL ON THE SOUTH SIDE OF FM. 967 AND ON THE WEST SIDE OF THE CVS PHARMACY ±=46' NORTHEAST FROM A POWER POLE ELEV = 765.45'

Know what's below Call before you dig



ENGINEER:

FORESITE group

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901 S. MoPac Expressway
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DEVELOPER:

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(713) 255-0280

CONTACT: JONATHAN BELLOCK

PROJECT:

HEARTLAND DENTAL

FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:

STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED PROFESSIONAL ENGINEER
3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

DRAINAGE PLAN

SHEET NUMBER:

C-2.1

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\C-2.1 DRAINAGE PLAN.DWG

GENERAL NOTES:

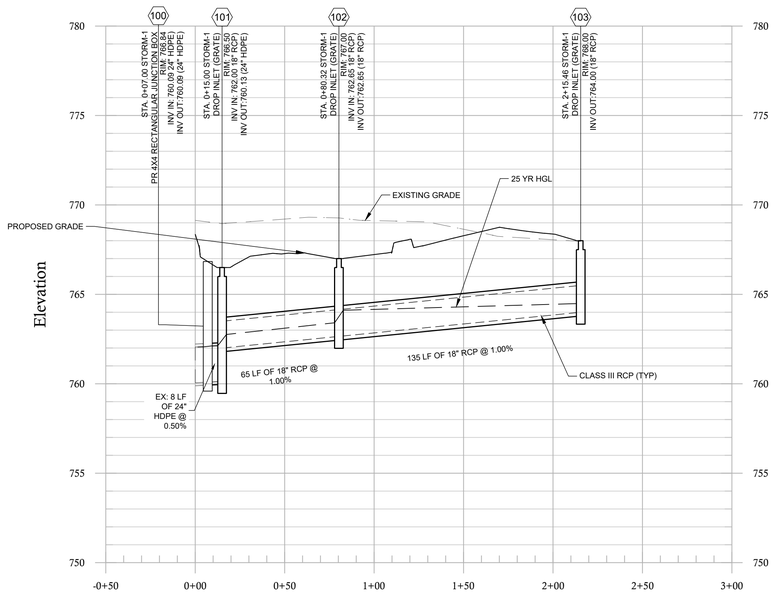
1) PIPE LENGTHS REFLECT THE PIPES LINEAR LENGTH AND ARE SHOWN FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

2) EXISTING UTILITY DEPTHS ARE APPROXIMATED BASED ON 4 FT COVER FROM THE EXISTING GROUND SURFACE. PROPOSED UTILITY DEPTHS ARE BASED ON 4 FT OF COVER FROM THE PROPOSED GROUND SURFACE. CONTRACTOR TO FIELD VERIFY ALL UTILITY DEPTHS AT CROSSING AND CONTACT ENGINEER IMMEDIATELY IF CONFLICTS ARE ENCOUNTERED.

3) CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS OF UTILITIES IN RIGHT-OF-WAY TO AVOID CONFLICTS. CONTACT ENGINEER IMMEDIATELY IF FIELD ELEVATIONS DIFFER FROM THE DESIGN DRAWINGS.

4) CONTRACTOR SHALL MAINTAIN MINIMUM 2' OF COVER OVER METAL AND PLASTIC PIPES DURING CONSTRUCTION ACTIVITIES.

STORM-1
1" = 40' H, 1"=4' V



BENCHMARKS	
NAME	DESCRIPTION
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TBM #2	SQUARE CUT ON TOP OF CONCRETE CURB ON THE NORTH SIDE OF FM 967 ±30' SOUTHWEST FROM A BUDA SPORTS CENTER SIGN AT 331013 FM 967 ELEV = 762.70'
TBM #3	SQUARE CUT ON TOP OF CONCRETE DRAINAGE WALL ON THE SOUTH SIDE OF FM. 967 AND ON THE WEST SIDE OF THE CVS PHARMACY ±=46' NORTHEAST FROM A POWER POLE ELEV = 765.45'

HORIZONTAL 1" = 40'
40 20 0 40 80
SCALE IN FEET

VERTICAL 1" = 4'
4 2 0 4 8
SCALE IN FEET

ENGINEER:
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TBPE Firm No. F-12878
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FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:
STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED PROFESSIONAL ENGINEER
3.7.2023

REVISIONS DATE

PROJECT MANAGER: VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY: FG
JURISDICTION: CITY OF BUDA
DATE: JANUARY, 2023
TITLE:

STORM SEWER PROFILES

SHEET NUMBER:
C-2.2

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

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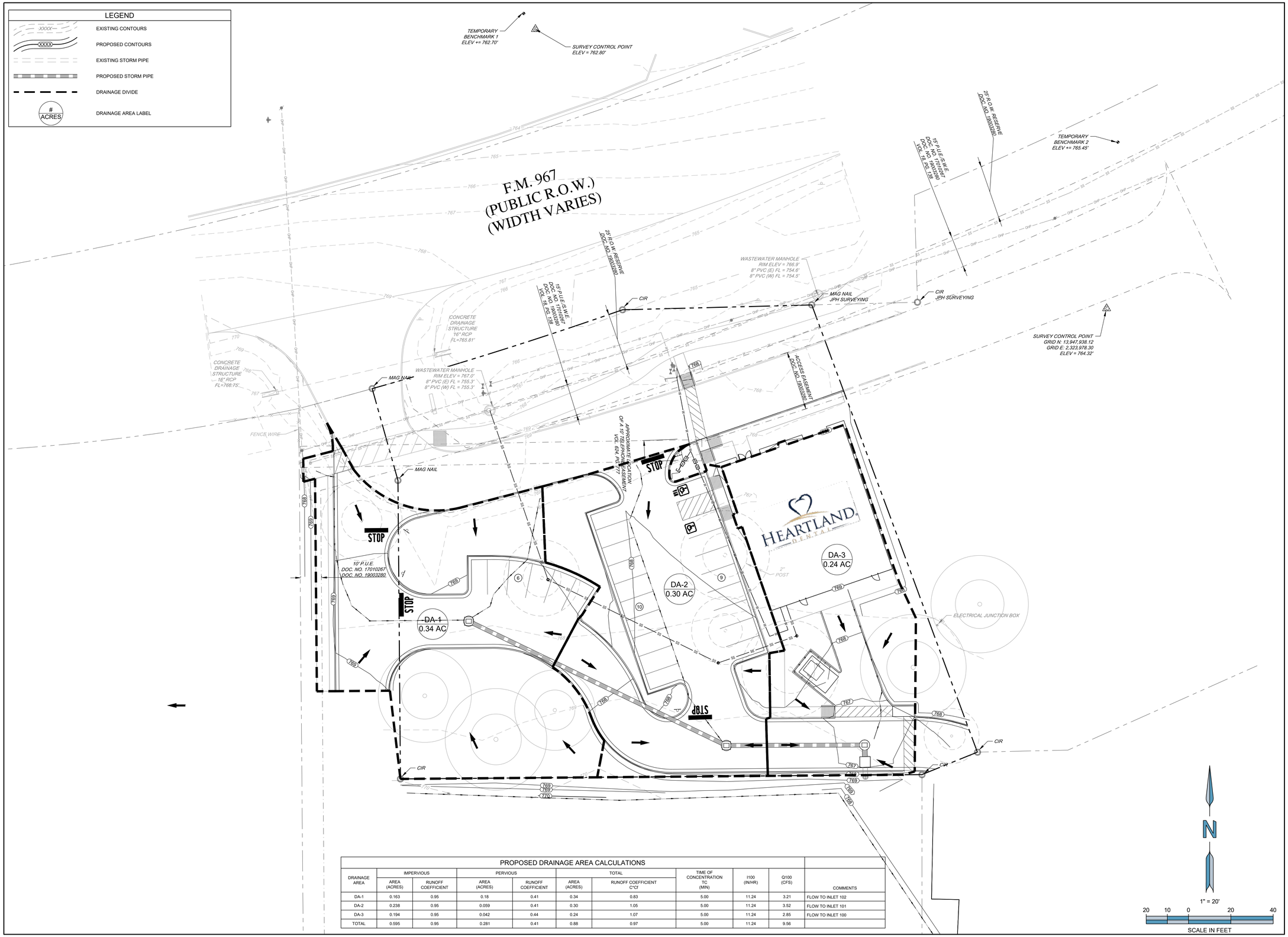

PROPOSED DRAINAGE AREA CALCULATIONS

DRAINAGE AREA	IMPERVIOUS AREA (ACRES)	IMPERVIOUS RUNOFF COEFFICIENT	PERVIOUS AREA (ACRES)	PERVIOUS RUNOFF COEFFICIENT	TOTAL AREA (ACRES)	TOTAL RUNOFF COEFFICIENT C*Ci	TIME OF CONCENTRATION TC (MIN)	I100 (IN/HR)	Q100 (CFS)	COMMENTS
DA-1	0.163	0.95	0.18	0.41	0.34	0.83	5.00	11.24	3.21	FLOW TO INLET 102
DA-2	0.238	0.95	0.059	0.41	0.30	1.05	5.00	11.24	3.52	FLOW TO INLET 101
DA-3	0.194	0.95	0.042	0.44	0.24	1.07	5.00	11.24	2.85	FLOW TO INLET 100
TOTAL	0.595	0.95	0.281	0.41	0.88	0.97	5.00	11.24	9.56	

ENGINEER:

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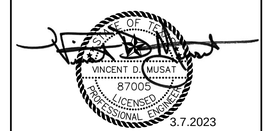
CONTACT: JONATHAN BELLOCK

PROJECT:

HEARTLAND DENTAL

FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:



REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

PROPOSED DRAINAGE AREA MAP

SHEET NUMBER:

C-2.4

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

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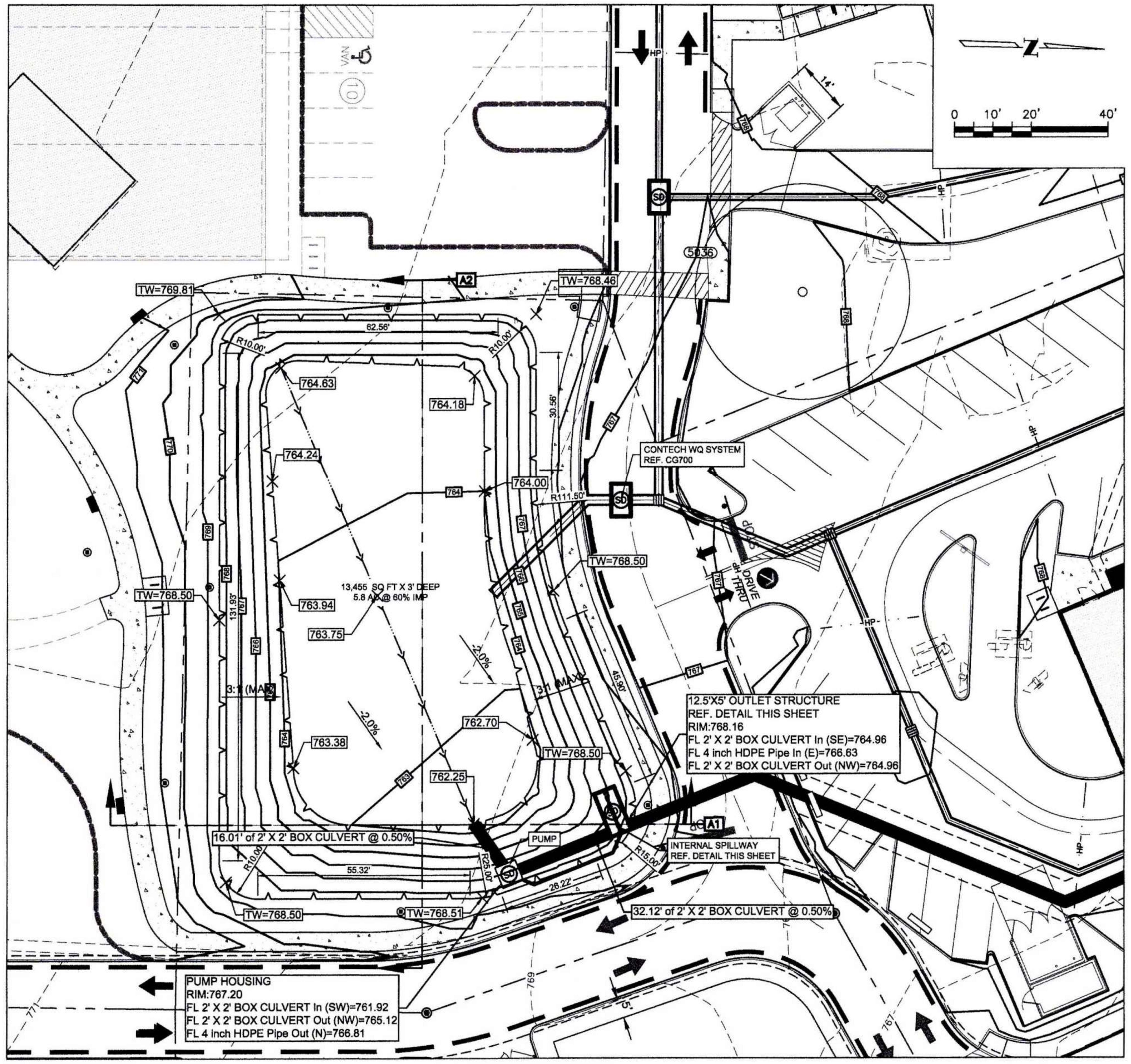
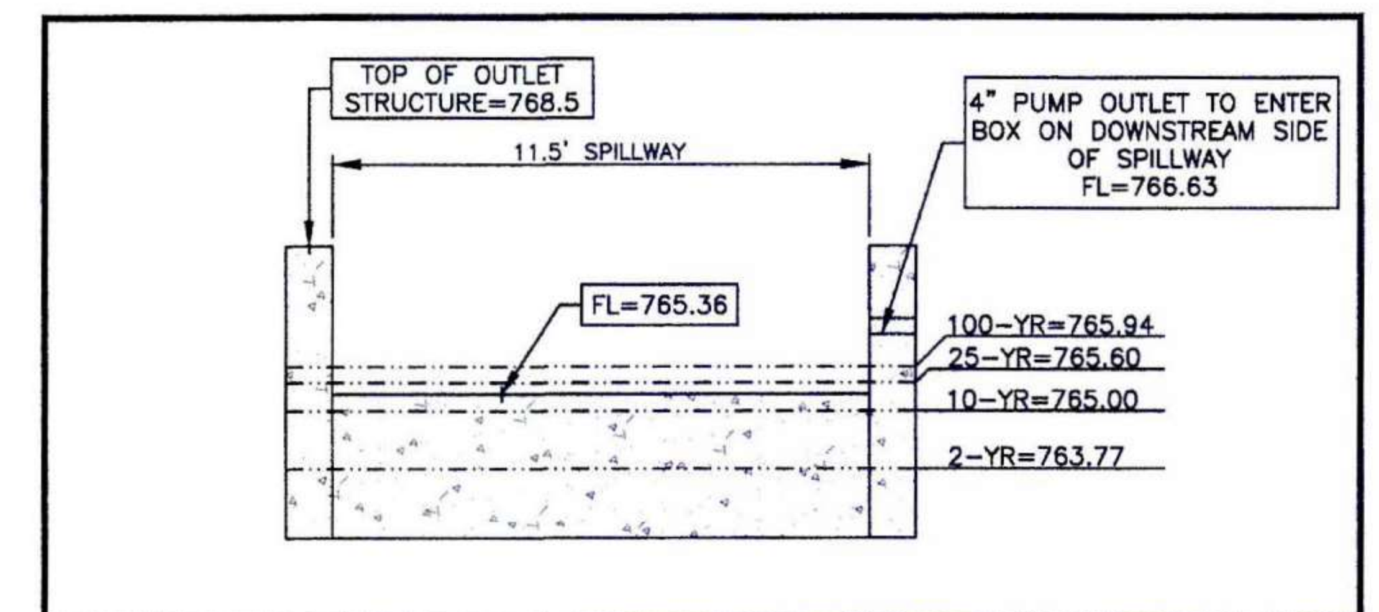
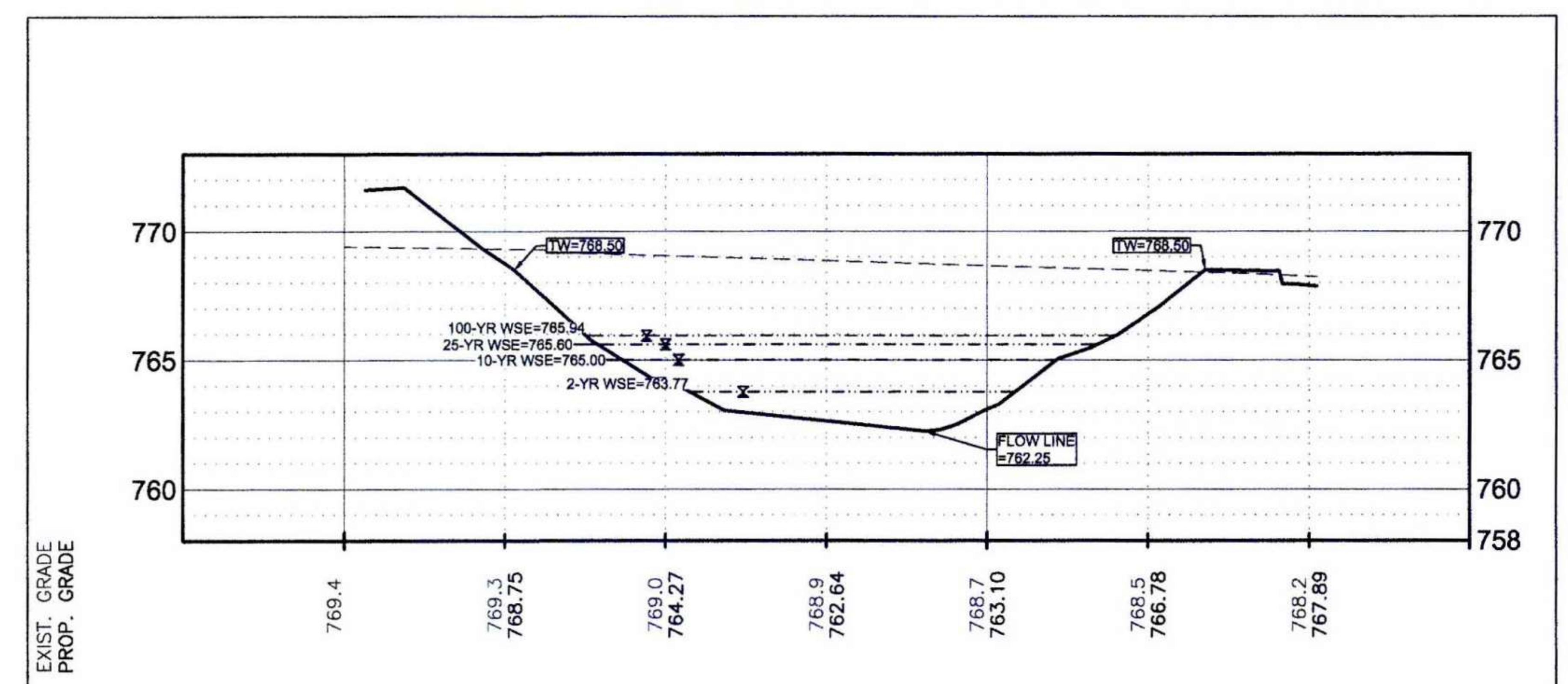


ELEV (FT-MSL)	DEPTH (FT)	INFLOW (CFS)	STORAGE (AC-FT)	DISCHARGE (CFS)	
762.25	0.00	0.00	0.00	0.00	
763.25	1.00	7.81	0.02	4.00*	
763.77	**1.52**	**7.14**	**0.06**	**4.00***	**2-YEAR**
764.25	2.00	12.66	0.11	4.00*	
765.00	**2.75**	**15.60**	**0.23**	**8.00***	**10-YEAR**
765.25	3.00	28.12	0.28	8.00*	
765.60	**3.35**	**20.79**	**0.35**	**11.97**	**25-YEAR**
765.94	**3.69**	**29.53**	**0.43**	**23.37**	**100-YEAR**

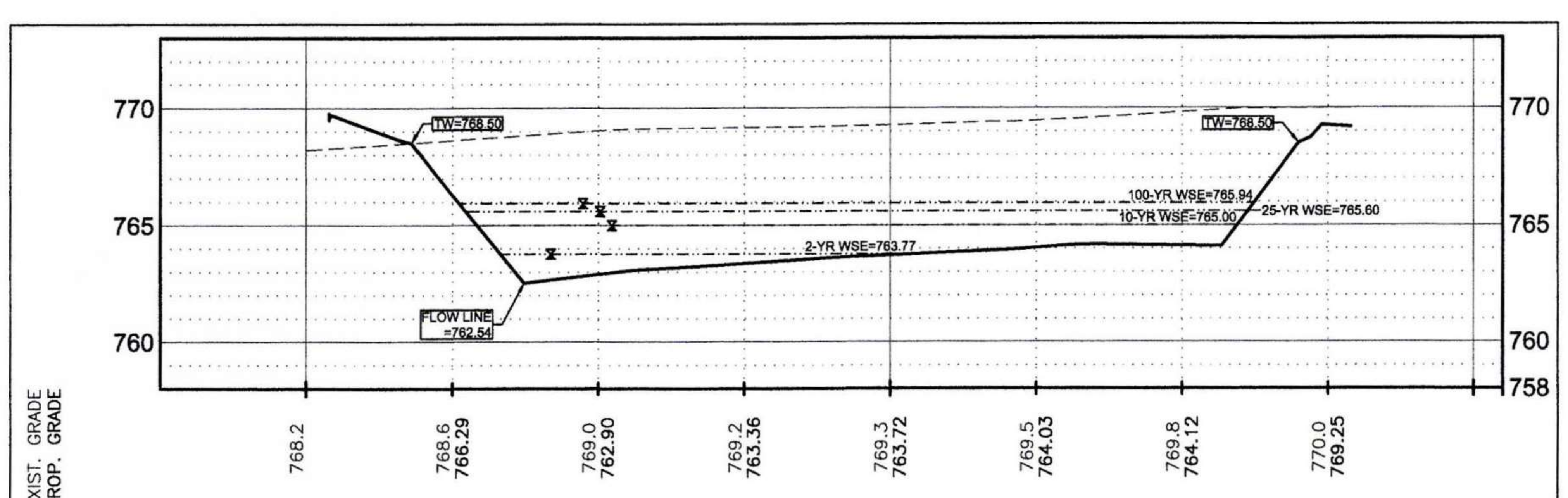
* FLOWS CONTROLLED BY A TRIPLE PUMP SYSTEM.
DESIGN FOR PUMPS SYSTEM INCLUDED IN THIS PLAN SET.



DETENTION POND 'C' OUTLET STRUCTURE
SCALE: 1" = 4'



DETENTION POND SECTION A1



DETENTION POND SECTION A2

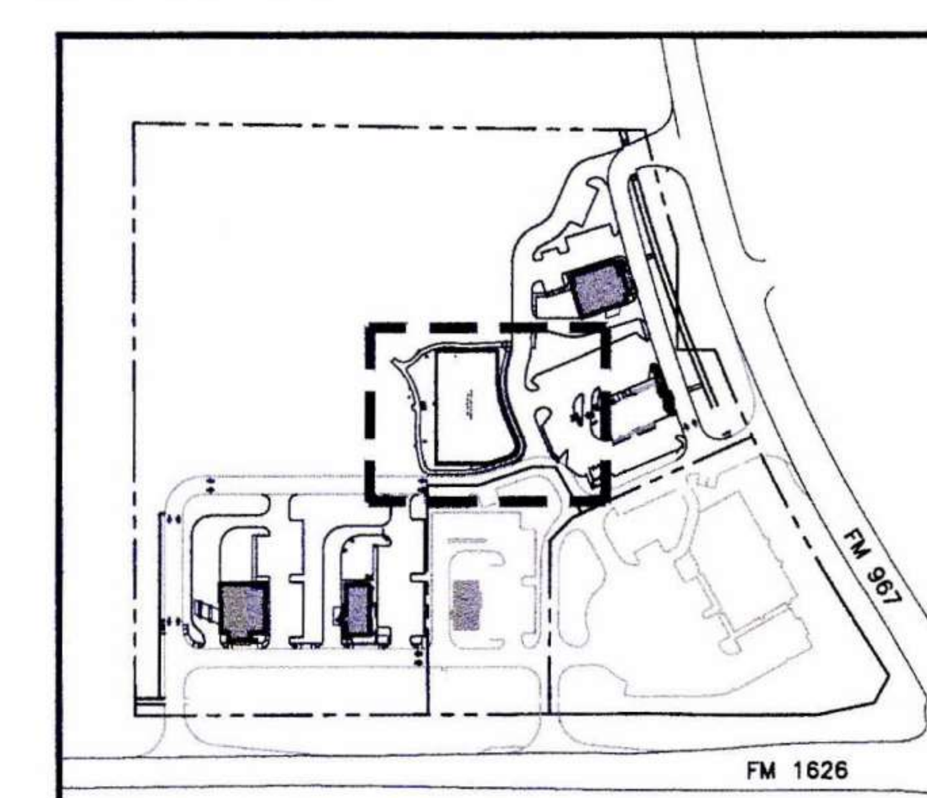
LEGEND

	BOUNDARY / RIGHT OF WAY
	EASEMENT / SETBACK
	CURB / EDGE OF PAVEMENT
OU	OVERHEAD UTILITY LINE
	RETAINING / SCREEN WALL
XXXX	EXIST. GRADE ELEVATIONS
XXXX	PROP. GRADE ELEVATIONS
	DRAINAGE SWALE FLOW LINE
	DIRECTION OF FLOW
	TREE W/ TAG (TO REMAIN)
XXX.00	PROPOSED FINISHED GRADE
XXX.00	PROPOSED FINISHED GRADE
TC	TOP OF CURB ELEVATION
G	GUTTER ELEVATION
FL	FLOW LINE ELEVATION
HP	HIGH POINT ELEVATION
LP	LOW POINT ELEVATION
ME	MATCH EXISTING ELEVATION
PE	PAD ELEVATION
FF	FINISHED FLOOR ELEVATION
TW	TOP OF WALL ELEVATION
GW	FINISHED GRADE AT WALL
2%	2% MAXIMUM CROSS SLOPE FOR ACCESSIBLE ROUTE IN THIS AREA

NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL

WWW.BIGREDDOG.COM
512-669-5560
BIG RED DOG a division of WGI
2021 EAST 5TH STREET, SUITE 200
AUSTIN, TEXAS, 78702
FIRM NO. F-15085

NICHOLAS O. CORBETT
125373
LICENSED
PROFESSIONAL ENGINEER
3-13-19



SITE KEY
NO SCALE

SITE PLAN APPROVAL Sheet ____ of 52
FILE NUMBER 2019-XXX APPLICATION DATE 08/2019
APPROVED BY COMMISSION ON N/A UNDER THE CITY OF BUDA UNIFIED DEVELOPMENT CODE.
EXPIRATION DATE ________ CASE MANAGER ________

CITY ENGINEER, CITY OF BUDA
RELEASED FOR GENERAL COMPLIANCE: ________ ZONING F4
Rev. 1________ Correction 1________
Rev. 2________ Correction 2________
Rev. 3________ Correction 3________

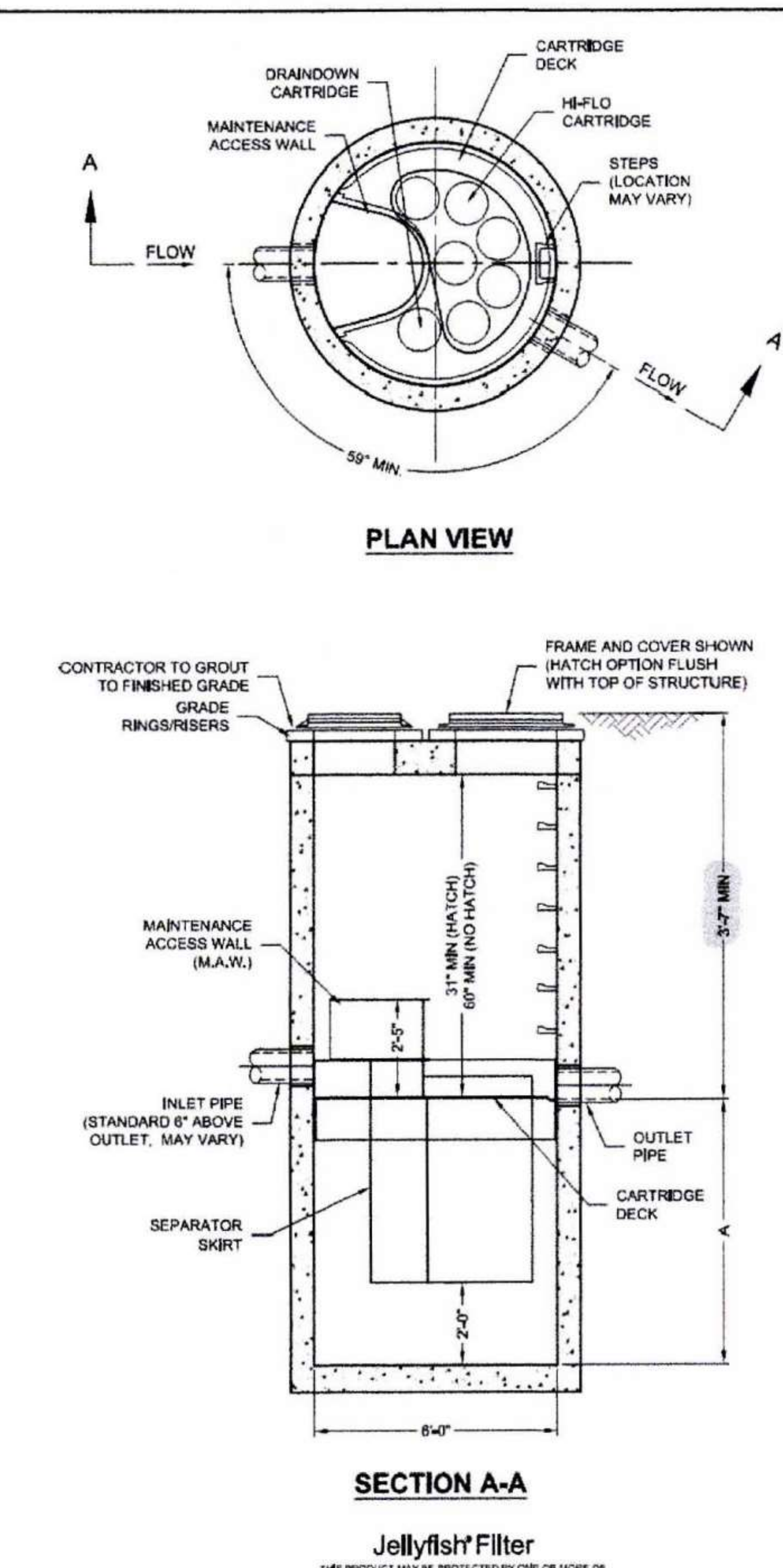
Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

PROJECT: GARLIC CREEK COMMONS
SWC FM 967 & FM 1626
BUDA, HAYS COUNTY, TEXAS

SHEET TITLE: DETENTION POND 'C' PLAN

SHEET
CG602
25 OF 52
2019-XXX

NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL

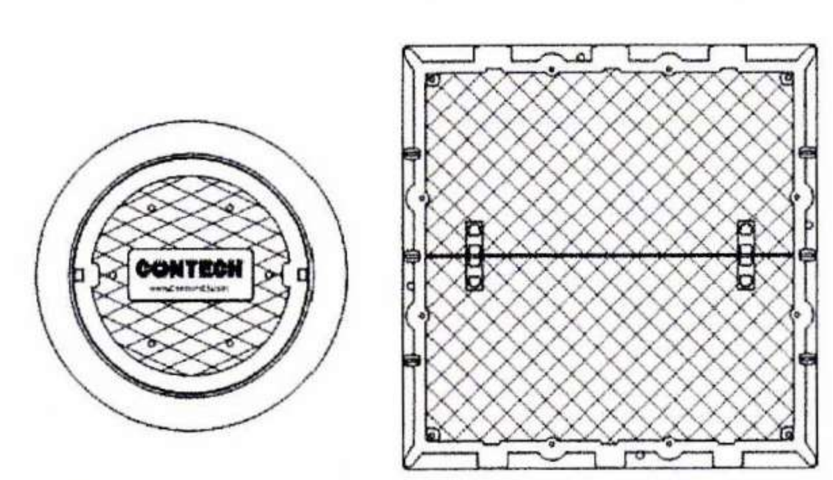


JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø72" MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 1.16 CFS. IF THE SITE CONDITIONS EXCEED 1.16 CFS AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE DEPTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-5"	5'-3"	4'-2"	3'-2"
FLOW RATE HIGH-FLO / DRAINDOWN (cfs) (per cart)	0.18 / 0.09	0.13 / 0.065	0.09 / 0.045	0.05 / 0.025
MAX. CARTS HIGH-FLO / DRAINDOWN	6 / 1			



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

HATCH
(48" x 48" CAST INTO SLAB)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			*
WATER QUALITY FLOW RATE (cfs)			*
PEAK FLOW RATE (cfs)			*
RETURN PERIOD OF PEAK FLOW (yrs)			*
# OF CARTRIDGES REQUIRED (HF / DD)			* / *
CARTRIDGE SIZE			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	*	*	*
INLET PIPE #2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

JELLYFISH JF6
STANDARD DETAIL
OFFLINE CONFIGURATION

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: **Buda Commons**
Date Prepared: 7/30/2019

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: $L_M = 27.2(A_N \times P)$

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	Hays	
Total project area included in plan * =	1.80	acres
Predevelopment impervious area within the limits of the plan * =	0.38	acres
Total post-development impervious area within the limits of the plan* =	1.80	acres
Total post-development impervious cover fraction * =	1.00	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	1275	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	1.80	acres
Predevelopment impervious area within drainage basin/outfall area =	0.38	acres
Post-development impervious area within drainage basin/outfall area =	1.80	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	1275	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	JF	abbreviation
Removal efficiency =	86	percent

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

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

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 =	1.80	acres
A_I =	1.80	acres
A_P =	0.00	acres
L_R =	1768	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	1275	lbs.
F =	0.72	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348
Pages Section 3.2.22

Offsite area draining to BMP =	0.00	acres
Offsite impervious cover draining to BMP =	0.00	acres
Rainfall Intensity =	0.40	inches per hour
Effective Area =	1.62	acres
Cartridge Length =	54	inches
Peak Treatment Flow Required =	0.65	cubic feet per second

7. Jellyfish
Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size

Jellyfish Size for Flow-Based Configuration =	JF6-4-1	
Jellyfish Treatment Flow Rate =	0.80	cfs

SITE PLAN APPROVAL Sheet ____ of 52
FILE NUMBER 2019-XXX APPLICATION DATE 08/2019
APPROVED BY COMMISSION ON N/A UNDER THE CITY OF BUDA UNIFIED DEVELOPMENT CODE.
EXPIRATION DATE ____ CASE MANAGER ____

CITY ENGINEER, CITY OF BUDA
RELEASED FOR GENERAL COMPLIANCE: ____ ZONING F4
Rev. 1 ____ Correction 1 ____
Rev. 2 ____ Correction 2 ____
Rev. 3 ____ Correction 3 ____

Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

512-669-5560 WWW.BIGREDDOG.COM
BIG RED DOG a division of WGI
2021 EAST 5TH STREET, SUITE 200 AUSTIN, TEXAS, 78702
FIRM NO. F-15085

PROJECT: GARLIC CREEK COMMONS
SWC FM 967 & FM 1626
BUDA, HAYS COUNTY, TEXAS

SHEET TITLE: WATER QUALITY DETAILS & TCEQ CALCULATIONS

UTILITY NOTES:

1) PEDERNALES ELECTRIC COOPERATIVE WILL PROVIDE UNDERGROUND ELECTRICAL SERVICE FROM THE EXISTING SERVICE POLE TO THE TRANSFORMER PAD. CONTRACTOR MUST PROVIDE TWO 5" PVC (SCH 80) CONDUITS AND A PULL STRING FROM THE EXISTING ELECTRICAL SERVICE POLE TO THE PROPOSED TRANSFORMER LOCATION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR INSTALLING THREE 5" PVC CONDUITS AND SECONDARY WIRING FROM THE TRANSFORMER PAD TO THE PROPOSED BUILDING. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE POWER SERVICE INSTALLATION AND SHALL COORDINATE WITH THE POWER COMPANY FOR FINAL UNDERGROUND CONDUIT LOCATIONS.

2) CENTERPOINT ENERGY WILL PERFORM THE GAS SERVICE CONNECTION, INSTALL THE CONDUIT, AND SET THE METER FOR THE BUILDING. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE SERVICE FROM THE METER INTO THE PROPOSED BUILDING. CONTRACTOR MUST COORDINATE WITH CENTERPOINT ENERGY.

3) CONTRACTOR SHALL PROVIDE AND INSTALL A 3" PVC CONDUIT WITH PULL STRING, FROM THE EXISTING TELEPHONE SERVICE POLE TO THE TELEPHONE BOARD IN THE BUILDING. THE CONTRACTOR MUST ALSO PROVIDE A #6 GROUND WIRE AT THE TELEPHONE BOARD FOR THE TELEPHONE COMPANY TO INSTALL A PHONE LINE.

4) CITY OF BUDA WILL FURNISH THE DOMESTIC WATER METER. THE CONTRACTOR IS RESPONSIBLE FOR TAPPING THE EXISTING WATER LINE. THE CONTRACTOR MUST PROVIDE AND INSTALL THE METER BOX, DOUBLE CHECK BACKFLOW PREVENTER AND ENCLOSURE, AND THE WATER SERVICE LINE FROM THE WATER METER TO THE BUILDING.

5) CITY OF BUDA WILL FURNISH THE IRRIGATION METER. THE CONTRACTOR IS RESPONSIBLE FOR TAPPING THE EXISTING WATER LINE. THE CONTRACTOR MUST PROVIDE AND INSTALL THE METER BOX, DOUBLE CHECK BACKFLOW PREVENTER AND ENCLOSURE, AND THE IRRIGATION LINES SHOWN ON THE IRRIGATION PLAN (CONTRACTOR TO PROVIDE).

6) CONTRACTOR SHALL COORDINATE AS REQUIRED WITH CITY OF BUDA INSPECTIONS DURING CONSTRUCTION FOR REQUIRED INSPECTIONS.

7) THIS SITE INDICATES POTABLE WATER SERVICE AND SANITARY SEWER LATERALS. THIS WORK TO BE INSTALLED BY A LICENSED PLUMBER AS REQUIRED BY LOCAL OR STATE REGULATIONS. ALL WORK MUST BE INSPECTED CITY OF BUDA CODES AND INSPECTION DEPARTMENT.

8) ALL ON-SITE PVC PIPE MUST ADHERE TO THE TRENCH DETAIL PROVIDED.

9) ALL CONDUIT, PIPE, AND CHASE PIPE SHALL BE WRAPPED WITH THE APPROPRIATE LOCATION WIRE AND TAPE.

10) NO PRESSURE REDUCING VALVES ARE TO BE INSTALLED ON FIRE LINES. ALL FIRE LINES ARE TO BE INSPECTED BY CITY OF BUDA FIRE SERVICE PRIOR TO COVERING.

11) CONTRACTOR SHALL NOTIFY WATER AND SEWER INSPECTOR PRIOR TO START OF CONSTRUCTION.

12) CONTRACTOR SHALL PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS INCLUDING ALL RIM ELEVATIONS, INVERT ELEVATIONS, PIPE SIZES, AND PIPE MATERIAL FOR ALL PUBLIC MAINS TO THE ENGINEER AS SOON AS INSTALLATION IS COMPLETE.

13) CONTRACTOR SHALL INSTALL THE DOWNSTREAM SANITARY SEWER CONNECTION IN THE RIGHT-OF-WAY PRIOR TO THE INSTALLATION OF THE ON-SITE SERVICE LATERALS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES SHOWN ON THE PLANS BY POT HOLING THE LINES. THE CONTRACTOR SHALL HAVE THE LINES SURVEYED, INCLUDING HORIZONTAL AND VERTICAL LOCATION, AND THE SURVEYED POINTS SENT TO THE PROJECT ENGINEER TO DETERMINE IF ANY UTILITY CONFLICTS WILL AFFECT THE CURRENT SANITARY SEWER DESIGN.

14) PVC WATER LINES LESS THAN 3" SHALL BE ASTM D 1785, SCH40 WITH INTEGRALLY MOLDED BELL ENDS, ASTM D 2672. PVC WATER LINES 3" AND LARGER SHALL BE AWWA C900, RATED DR 18 (CLASS 150) WITH INTEGRALLY MOLDED BELL ENDS, ASTM D3139. DIP WATER LINES SHALL BE AWWA C151, THICKNESS CLASS 50.

15) PVC SANITARY SEWER LINES SHALL BE ASTM D 3034, RATED SDR 35 WITH INTEGRALLY MOLDED BELL ENDS, ASTM D 3034, TABLE 2, WITH FACTORY SUPPLIED ELASTOMERIC GASKETS AND LUBRICANT. DIP SANITARY SEWER LINES SHALL BE ASTM A746, CLASS 50 WITH AWWA C111, RUBBER GASKET JOINT DEVICES. PRESSURE RATED SANITARY SEWER LINES SHALL BE ASTM D 224, SDR 26 WITH INTEGRALLY MOLDED BELL ENDS, ASTM D 3139 WITH ASTM F477 FACTORY SUPPLIED GASKETS.

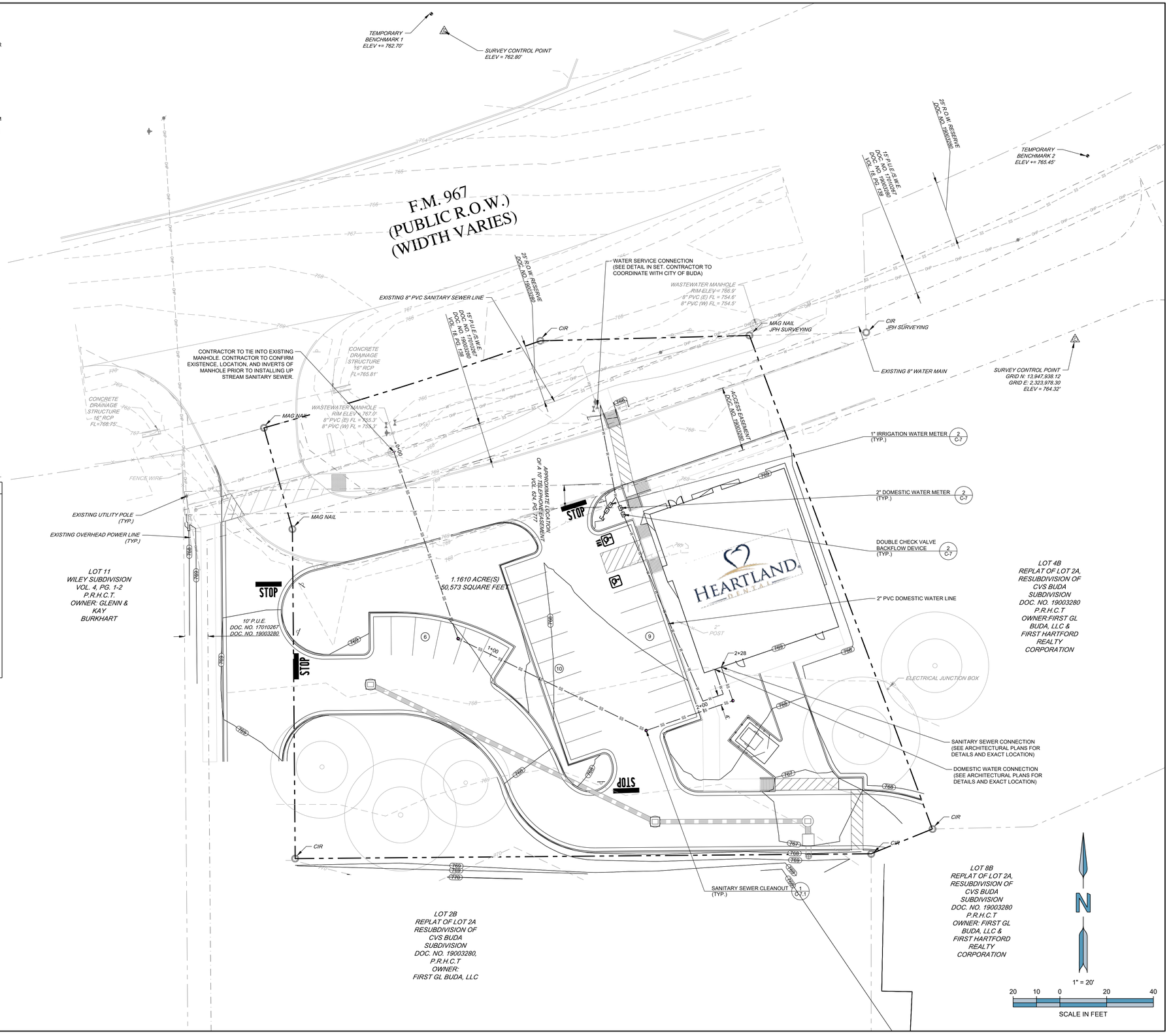
16) DEMOLISHED UTILITIES NOT DEPICTED ON THIS SHEET. REFER TO THE DEMOLITION PLAN.

LEGEND

X X X	EXISTING FENCE LINE
	PROPERTY LINE
CATV CATV	EXISTING CABLE TELEVISION LINE
FOC FOC FOC	EXISTING FIBER OPTIC LINE
OHP OHP OHP	EXISTING OVERHEAD POWER LINE
UGE UGE	EXISTING UNDERGROUND POWER LINE
UGT UGT	EXISTING UNDERGROUND TELEPHONE LINE
GAS GAS GAS	EXISTING GAS LINE
SS SS SS	EXISTING SANITARY SEWER LINE
W W W	EXISTING WATER LINE
	EXISTING STORM LINE
CATV CATV	PROPOSED CABLE TELEVISION LINE
FOC FOC FOC	PROPOSED FIBER OPTIC LINE
OHP OHP OHP	PROPOSED OVERHEAD POWER LINE
UGE UGE	PROPOSED UNDERGROUND POWER LINE
UGT UGT	PROPOSED UNDERGROUND TELEPHONE LINE
GAS GAS GAS	PROPOSED GAS LINE
SS SS SS	PROPOSED SANITARY SEWER LINE
W W W	PROPOSED WATER LINE
FW FW FW	PROPOSED FIRE WATER LINE
	PROPOSED STORM LINE

CONTRACTOR TO CONTACT UTILITIES PROTECTION CENTER PRIOR TO ANY EXCAVATION

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



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DEVELOPER:

FIRST HARTFORD REALTY CORPORATION

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CONTACT: JONATHAN BELLOCK

PROJECT:

HEARTLAND DENTAL

FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:

STATE OF TEXAS — VINCENT D. MUSAT — 87005 — LICENSED PROFESSIONAL ENGINEER — 3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

UTILITIES PLAN

SHEET NUMBER:

C-3

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\C-3 UTILITIES PLAN.DWG

GENERAL NOTES:

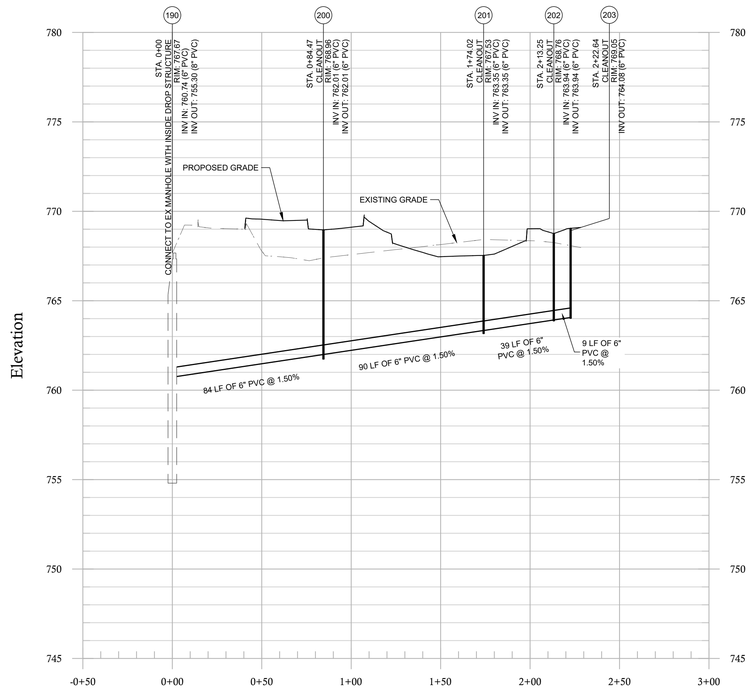
1) PIPE LENGTHS REFLECT THE PIPES LINEAR LENGTH AND ARE SHOWN FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

2) EXISTING UTILITY DEPTHS ARE APPROXIMATED BASED ON 4 FT COVER FROM THE EXISTING GROUND SURFACE. PROPOSED UTILITY DEPTHS ARE BASED ON 4 FT OF COVER FROM THE PROPOSED GROUND SURFACE. CONTRACTOR TO FIELD VERIFY ALL UTILITY DEPTHS AT CROSSING AND CONTACT ENGINEER IMMEDIATELY IF CONFLICTS ARE ENCOUNTERED.

3) CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS OF UTILITIES IN RIGHT-OF-WAY TO AVOID CONFLICTS. CONTACT ENGINEER IMMEDIATELY IF FIELD ELEVATIONS DIFFER FROM THE DESIGN DRAWINGS.

4) CONTRACTOR SHALL MAINTAIN MINIMUM 2' OF COVER OVER METAL AND PLASTIC PIPES DURING CONSTRUCTION ACTIVITIES.

SS-1
1" = 40' H, 1"=4' V



BENCHMARKS	
NAME	DESCRIPTION
TBM #1	½" IRON ROD WITH "4WARD CONTROL" CAP SET. ELEV = 764.32'
TBM #2	SQUARE CUT ON TOP OF CONCRETE CURB ON THE NORTH SIDE OF FM 367 ±30' SOUTHWEST FROM A BUDA SPORTS CENTER SIGN AT 331013 FM 967 ELEV = 762.70'
TBM #3	SQUARE CUT ON TOP OF CONCRETE DRAINAGE WALL ON THE SOUTH SIDE OF FM. 967 AND ON THE WEST SIDE OF THE CVS PHARMACY ±=46' NORTHEAST FROM A POWER POLE ELEV = 765.45'

HORIZONTAL 1" = 40'
40 20 0 40 80
SCALE IN FEET

VERTICAL 1" = 4'
4 2 0 4 8
SCALE IN FEET

ENGINEER:

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DEVELOPER:

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CONTACT: JONATHAN BELLOCK

PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:
STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED
PROFESSIONAL ENGINEER
3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

SANITARY SEWER PROFILES

SHEET NUMBER:
C-3.1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER:
489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\C-3.2 SANITARY SEWER PROFILES.DWG

GENERAL EROSION CONTROL NOTES:

1) THE ESCAPE OF SEDIMENT FROM THE SITE IS TO BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO ALL LAND DISTURBING ACTIVITIES THROUGHOUT THE ENTIRE PROJECT.

2) EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

3) ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

4) A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.

5) THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND BEST MANAGEMENT PRACTICES, WHETHER TEMPORARY OR PERMANENT.

6) EROSION CONTROL DEVICES THAT ARE INSTALLED AS DIRECTED BY AN INSPECTOR BUT NOT SHOWN ON THE APPROVED PLAN ARE THE RESPONSIBILITY OF THE CONTRACTOR.

7) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN QUALIFIED PROFESSIONAL ADVICE WHEN QUESTIONS ARISE CONCERNING TIMING, DESIGN AND EFFECTIVENESS OF EROSION CONTROL DEVICES. ENGINEER CONTACT: **<24HOUR MCNAME> <(24H) ###-####>.**

8) ALL SLOPES STEEPER THAN 4:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING AS SLOPES ARE CONSTRUCTED.

9) THE CONTRACTOR IS TO STOCKPILE AND REUSE TOPSOIL TO DRESS FINAL GRADES. CONFIRM THE STOCKPILE LOCATION WITH THE OWNER PRIOR TO COMMENCEMENT OF CONSTRUCTION. SEE GRADING AND DRAINAGE PLANS FOR NOTES REGARDING EXCESS TOPSOIL AND OTHER UNCLASSIFIED FILL/EXCAVATION.

10) THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANING OUT OF ANY ACCUMULATED SILT IN THE STORM DRAINAGE PIPES AT END OF CONSTRUCTION WHEN DISTURBED AREAS HAVE BEEN STABILIZED.

11) CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION CONTROL MEASURES UNTIL THE ENTIRE PROJECT HAS UNDERGONE FINAL STABILIZATION AND ALL CONSTRUCTION HAS BEEN COMPLETED.

12) RED LINE COMMENTS ON WORKING SETS OF PLANS SHOULD BE MAINTAINED ON SITE FOR ANY CHANGES MADE TO EROSION CONTROL PLAN. COMMENTS SHOULD INCLUDE DATE AND JUSTIFICATION FOR CHANGES.

13) OFF SITE VEHICLE TRACKING OF DIRT, SOILS, AND SEDIMENTS AND THE GENERATION OF DUST ARE TO BE MINIMIZED OR ELIMINATED TO THE MAXIMUM EXTENT PRACTICAL. DUST CONTROL MEASURES MAY CONSIST OF APPLICATION OF MULCHES, VEGETATIVE COVER, SPRAY-ON ADHESIVES, CALCIUM CHLORIDE; THE USE OF IRRIGATION; AND/OR THE CONSTRUCTION OF BARRIERS TO PROTECT FROM WIND OR SCREEN AIRBORNE PARTICULATES.

14) IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION EXIT PAD DOES NOT SUFFICIENTLY REMOVE MUD FROM VEHICLE TIRES, THE TIRES SHOULD BE WASHED BEFORE LEAVING THE PROJECT SITE. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON THE CONSTRUCTION PAD OR OTHER AREA STABILIZED WITH CRUSHED STONE. ALL RUNOFF FROM WASHING AREAS MUST BE DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN INCLUDED IN THESE PLANS.

15) AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

16) WASTE MATERIALS ARE NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

STREAMS AND WETLANDS

1) NO CONSTRUCTION ACTIVITY IS TO BE CONDUCTED WITHIN THE BANKS OF JURISDICTIONAL STREAMS OR WITHIN A WETLAND AREA EXCEPT UPON RECEIPT OF AUTHORIZATION FOR SUCH ACTIVITY FROM THE U.S. ARMY CORPS OF ENGINEERS.

BMP MAINTENANCE (PART III.G)

1) THE CONTRACTOR IS TO TAKE IMMEDIATE ACTION UPON DISCOVERY OF ANY DEFICIENCIES IN EROSION CONTROL BEST MANAGEMENT PRACTICES, WHETHER OR NOT IT IS INCLUDED IN AN INSPECTION REPORT.

2) ALL STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE CLEANED OUT OR RECONSTRUCTED WHEN SEDIMENT VOLUMES EXCEED 1/3 OF THE STORAGE CAPACITY OF THE MEASURE. .

3) ALL SILT FENCE STORAGE MUST BE CLEANED OUT OR RECONSTRUCTED WHEN SEDIMENT VOLUMES EXCEED 1/2 OF THE HEIGHT OF THE SILT FENCE.

4) SEDIMENT CLEANED OUT FROM STORAGE DEVICES AND SILT FENCE IS TO BE SPREAD IN UPLAND AREAS, MIXED WITH TOPSOIL, AND MULCHED OR SEEDED IMMEDIATELY. DO NOT SPOIL IN AREAS WHERE STRUCTURAL FILLS ARE REQUIRED (SUCH AS PAVEMENT, BUILDING FOOTPRINTS, ETC.)

5) WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE IS PRECLUDED BY SNOW COVER OR OTHER ADVERSE WEATHER CONDITIONS, STABILIZATION MEASURES ARE TO BE INITIATED AS SOON AS PRACTICABLE.

6) WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (E.G., THE TOTAL TIME PERIOD THAT THE CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED.

7) REAPPLICATION OF VEGETATIVE BMPS MAY BE REQUIRED TO ACHIEVE FULL COVERAGE. REFER TO VEGETATIVE BMP NOTES AND DETAILS FOR INSTALLATION AND MAINTENANCE OF VEGETATIVE BMP'S.

INSPECTIONS (PART III.F.7)

1) IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO MAKE SURE THAT INSPECTIONS ARE BEING PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS PERMIT NOTED BELOW.

2) EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

3) MEASURE RAINFALL ONCE EVERY 24 HOURS UNTIL A NOTICE OF TERMINATION IS SUBMITTED. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

4) CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) MUST INSPECT THE FOLLOWING AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER: (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE ; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION ; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE MUST BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY ARE TO BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART III.F.7. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

5) BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN MUST BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES IS TO BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.

RETENTION OF RECORDS (PART VI):

1) THE PRIMARY PERMITTEE IS TO RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL 3 YEARS FROM THE DATE THAT A NOTICE OF TERMINATION IS SUBMITTED AS REQUIRED BY PART II.E.3:

- A) A COPY OF THE SWPPP;
- B) ALL REPORTS AND ACTIONS REQUIRED BY THIS PERMIT, INCLUDING A COPY OF THE CONSTRUCTION SITE NOTICE.
- C) ALL DATA USED TO COMPLETE THE NOI, IF AN NOI IS REQUIRED FOR COVERAGE UNDER THIS GENERAL PERMIT
- D) ALL RECORDS OF SUBMITTAL OF FORMS SUBMITTED TO THE OPERATOR OF ANY MS4 RECEIVING THE DISCHARGE AND TO THE SECONDARY OPERATOR OF A LARGE CONSTRUCTION SITE, IF APPLICABLE.

RISK REDUCTION/POLLUTION CONTROL (PART IV.D.3.c)

GENERAL

1) AN EFFORT IS TO BE MADE TO MAINTAIN THE MINIMUM AMOUNT OF MATERIAL NEEDED TO COMPLETE THE JOB ONSITE.

2) ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS.

3) PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL

4) SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER

5) WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER

6) MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED

7) THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

BULK STORAGE

1) BULK STORAGE INCLUDES THE STORAGE OF RAW OF FINISHED PRODUCTS AND BYPRODUCTS STORED IN LARGE PILES OR STACKS ON A TEMPORARY OR PERMANENT BASIS, INCLUDING GRAVEL, COMPOST, CHEMICALS, LOGS, TREATED WOOD, SAWDUST, WOOD CHIPS, COAL, BUILDING MATERIALS, CONCRETE, AND METAL PRODUCTS. FOR BULK STORAGE OF TOPSOIL, REFER TO TOPSOIL STOCKPILING BMP'S.

2) BULK MATERIALS MUST NOT BE ALLOWED TO WASH OFF THE SITE OR DISCHARGE INTO SURFACE WATERS. PROTECT STOCKPILES WITH A WATERPROOF COVER, WHERE FEASIBLE.THE COVER SHOULD BE ADEQUATELY SECURED AND REMAIN IN PLACE AT ALL TIMES WHEN STOCKPILE MATERIALS ARE NOT BEING USED. WHEN INFEASIBLE, RUNOFF FROM THE STOCKPILE SHOULD BE DIVERTED TO STRUCTURAL EROSION & SEDIMENT CONTROL BMP'S.

3) LOCATE STOCKPILES A MINIMUM OF 50 FEET FROM CONCENTRATED FLOW AREAS.

4) INSPECT DAILY FOR EROSION AND/OR LEACHING OF STOCKPILES OF RAW MATERIALS.

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LIQUID STORAGE

1) LIQUID STORAGE CONTAINERS MUST HAVE TIGHT FITTING LIDS AND BE PROPERLY LABELED WITH THE CONTENTS AND ANY POSSIBLE HAZARDS.

2) ALL LIQUID STORAGE CONTAINERS ARE TO BE PLACED IN A DESIGNATED AREA WITH A SECONDARY CONTAINMENT SYSTEM, SUCH AS CURBING, BERMS, DIKES, LINERS, OR USE OF SPILL PALLETS SUCH THAT CONTENTS WILL NOT DISCHARGE, FLOW, OR BE WASHED INTO THE STORMWATER DRAINAGE SYSTEM IF THE CONTAINER LEAKS OR RUPTURES. SECONDARY CONTAINMENT IS TO BE DESIGNED TO STORE 110% OF THE VOLUME OF THE LARGEST CONTAINER OR 10% OF THE VOLUME OF ALL CONTAINERS, WHICHEVER IS GREATER.

3) RUNOFF BEYOND SECONDARY STORAGE AREAS SHOULD BE DIVERTED TO EROSION CONTROL BMP'S. IF BMP'S WITH A SKIMMER DEVICE ARE CONSTRUCTED ON THE PROPERTY, LIQUID STORAGE CONTAINMENT RUNOFF IS TO BE DIVERTED TO SUCH MEASURES.

4) PROVIDE BARRIERS AROUND LIQUID STORAGE AREAS TO PREVENT DAMAGE FROM VEHICLES OR EQUIPMENT.

6) ADDITIONAL REQUIREMENTS ARE INCLUDED IN THE PLAN FOR OIL/PETROLEUM STORAGE.INSPECT DAILY FOR LEAKS AND SPILLS.

7) USE DRY ABSORBENTS, SUCH AS ABSORBENT GRANULES, SOCKS, AND PADS TO CLEAN UP ANY SPILLS OR LEAKING FLUIDS.

WASTE DISPOSAL

1) ALL WASTE MATERIALS WILL BE COLLECTED AND STORED TO BE PROPERLY DISPOSED OF AT A LICENSED SOLID WASTE MANAGEMENT COMPANY.

2) LOCATE WASTE COLLECTION AREAS AWAY FROM STREETS, GUTTERS, WATERCOURSES, AND STORM DRAINS. WASTE COLLECTION AREAS, SUCH AS DUMPSTERS, ARE OFTEN BEST LOCATED NEAR CONSTRUCTION SITE ENTRANCES OR THE SOURCE OF DISPOSAL TO MINIMIZE TRAFFIC ON DISTURBED SOIL. DISPOSAL SHALL BE PERIODICALLY AS NEEDED.

3) COVER TEMPORARY WASTE PILES WITH A WATERPROOF COVER WHEN FEASIBLE TO DO SO.

4) NO CONSTRUCTION MATERIALS WILL BE BURIED ONSITE.

5) ALL PERSONNEL WILL BE INSTRUCTED CONCERNING WASTE DISPOSAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR THIS INSTRUCTION, AND WILL BE RESPONSIBLE FOR SEEING THAT THESE INSTRUCTIONS ARE FOLLOWED.

6) INSPECT SOLID WASTE DISPOSAL AREAS DAILY TO ENSURE THERE ARE NO LEAKS OR SPILLS, AND THERE IS NO LOOSE/UNSECURED TRASH OR SOLID WASTE MATERIAL.

HAZARDOUS MATERIALS

1) THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

- A) PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RE-SEALABLE.
- B) ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED.
- C) IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

2) ALL HAZARDOUS WASTE MATERIALS (AS DEFINED IN 40 CFR PART 261) WILL BE SEPARATED FROM CONSTRUCTION WASTE AND WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES, AND THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

3) MATERIAL DATA SAFETY SHEETS FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF THE MSDS SHEETS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

4) HAZARDOUS WASTE STORAGE AREAS SHOULD, AT A MINIMUM, BE SHELTERED FROM PRECIPITATION AND RAISED OFF THE GROUND WITH SECONDARY CONTAINMENT (SUCH AS SPILL PALLETS) TO PREVENT LEACHING AND DELIVERY FROM RUNOFF. ALL STORAGE MUST COMPLY WITH STATE AND FEDERAL REGULATIONS.

SANITARY WASTE

1) ALL SANITARY WASTE WILL BE MANAGED APPROPRIATELY BY PERMANENT EXISTING ON-SITE FACILITIES OR PORTABLE UNITS.

2) ALL SANITARY WASTE TO BE DISPOSED OF PROPERLY ACCORDING TO STATE AND FEDERAL CODE.

3) A MINIMUM OF ONE SANITARY UNIT WILL BE PROVIDED FOR EVERY TEN (10) WORKERS ON SITE OR AS OTHERWISE REQUIRED BY LOCAL REGULATIONS.

ON-SITE VEHICLE MAINTENANCE

1) FOR ALL OUTDOOR MAINTENANCE ACTIVITIES, A TARP OR GROUND CLOTH AND DRIP PANS SHOULD BE PLACED BENEATH THE VEHICLE TO CAPTURE SPILLS AND DRIPS.

2) AVOID CHANGING MOTOR OIL OR OTHER VEHICLE FLUIDS, OR PERFORMING HEAVY EQUIPMENT MAINTENANCE NEAR A STORMWATER DRAIN, DRAINAGE DITCH, SURFACE WATER, OR ANYWHERE WHERE THE CONTAMINANTS COULD COME INTO CONTACT WITH RAIN OR STORMWATER RUNOFF.

3) ALWAYS USE FUNNELS WHEN POURING LIQUIDS, AND USE DRIP PANS UNDER A VEHICLE WHEN UNCLIPPING HOSES, UNSCREWING FILTERS, AND REMOVING OTHER PARTS THAT ARE SUBJECT TO LEAKS. CLEAN UP VEHICLE FLUIDS WITH RAGS OR ABSORBENT MATERIALS IMMEDIATELY.

CONCRETE WASHOUT

1) WASHOUT OF THE DRUM OF A CONCRETE TRUCK ON THE CONSTRUCTION SITE IS PROHIBITED. CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, AND THE REAR OF VEHICLES WILL ONLY BE ALLOWED IN DESIGNATED CONCRETE WASHDOWN AREAS SHOWN IN THIS PLAN, AND CONCRETE WASHDOWN AREAS MUST HAVE THE Cw BMP INSTALLED IN ACCORDANCE WITH PLAN REQUIREMENTS AND DETAILS. IF NO CONCRETE WASHOUT AREA IS SHOWN, THE PLAN MUST BE AMENDED FOR CONCRETE WASHOUT TO BE ALLOWED AT THE LOCATION THAT IS DESIGNATED ON THE PLAN. WASHDOWN MUST ADDITIONALLY MEET THE FOLLOWING PRACTICES:

- A) PREVENT WASHDOWN WATER FROM FLOWING OUT OF THE WASHDOWN AREA;
- B) USE THE MINIMUM AMOUNT OF WATER TO WASH DOWN TOOLS, MIXER CHUTES, HOPPERS, AND THE REAR OF ANY VEHICLES;
- C) REMOVE ANY CONCRETE SEDIMENT FROM THE AREA SURROUNDING THE WASHOUT AREA BEFORE IT HARDENS; AND
- D) REMOVE ANY CONCRETE RESIDUE FROM THE AREA ONCE IT HAS HARDENED.
- E) NEVER DISCHARGE OR DUMP RAW, EXCESS OR WASTE MATERIALS, SLURRY, OR RINSE WATER INTO A STORMWATER DRAIN, DRAINAGE DITCH, OR SURFACE WATER. APPROPRIATELY DISPOSE OF ANY SOLID CONCRETE OR ASPHALT WASTE, INCLUDING DUST PRODUCED FROM SAWCUTTING/MILLING OPERATIONS.

PETROLEUM / OIL PRODUCTS

1) INSPECT VEHICLES AND EQUIPMENT DAILY FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.

2) THERE IS TO BE NO ON-SITE STORAGE OF PETROLEUM FOR FUELING. MOBILE PETROLEUM TRUCKS ARE TO BE USED TO FUEL CONSTRUCTION EQUIPMENT ON-SITE. ON-SITE FUELING IS TO BE PERFORMED AT A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORMWATER, STORMWATER DRAINS, DRAINAGE DITCHES, AND SURFACE WATERS.PLACE TEMPORARY CAPS OVER NEARBY CATCH BASINS AND OPEN MANHOLES SO THAT IF A SPILL OCCURS IT IS PREVENTED FROM ENTERING THE STORMWATER DRAINAGE SYSTEM. WHERE POSSIBLE, DESIGNATE AREAS FOR FUELING WHERE RUNOFF DISCHARGES TO A SEDIMENT STORAGE AREA WITH A SKIMMER DEVICE.

3) ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

4) A SPILL PREVENTION, CONTROL, AND COUNTERMEASURES (SPCC) PLAN TO MEET THE EPA OIL SPILL PROGRAM REGULATIONS MAY BE REQUIRED IF ANY SINGLE PETROLEUM STORAGE UNIT EXCEEDS 660 GALLONS, OR A TOTAL OF MORE THAN 1,320 GALLONS OF FUEL ARE STORED ON SITE. THIS PLAN WAS PREPARED WITH THE UNDERSTANDING THRESHOLDS FOR THE PREPARATION OF AN SPCC PLAN WOULD NOT BE EXCEEDED, AND THAT ON-SITE FUEL STORAGE WILL NOT BE PROVIDED.

5) NOTHING IN THIS PERMIT IS TO BE CONSTRUED TO PRECLUDE THE INSTITUTION OF ANY LEGAL ACTION OR RELIEVE THE PERMITTEE FROM ANY RESPONSIBILITIES, LIABILITIES, OR PENALTIES TO WHICH THE PERMITTEE IS OR MAY BE SUBJECT UNDER THE LAWS OF THE STATE; NOR IS THE OPERATOR RELIEVED FROM ANY RESPONSIBILITIES, LIABILITIES OR PENALTIES TO WHICH THE PERMITTEE IS OR MAY BE SUBJECT UNDER SECTION 311 OF THE CLEAN WATER ACT OR SECTION 106 OF COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT.

FERTILIZERS

1) FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A CLEAN, DRY PLACE. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

2) AVOID FERTILIZER APPLICATION WHEN IT IS RAINING OR WHEN HEAVY RAIN IS FORECAST

3) FERTILIZER GRANULES SHOULD BE WORKED INTO THE SOIL RATHER THAN BROADCAST AND LEFT ON THE SURFACE.

4) SWEEP UP DRY FERTILIZER GRANULES THAT FALL ON PAVEMENT OR OTHER HARD SURFACES. DO NOT HOSE OR BLOW OFF.

FUNGICIDES/PESTICIDES

1) DO NOT MIX OR PREPARE PESTICIDES OR FUNGICIDES NEAR A STORMWATER DRAIN, DRAINAGE DITCH, OR SURFACE WATER. PREPARE THE MINIMUM AMOUNT OF PESTICIDE NEEDED FOR THE JOB AND USE THE LOWEST RATE THAT WILL EFFECTIVELY CONTROL PESTS/UNDESIRABLE VEGETATION.

2) READ AND FOLLOW THE LABEL DIRECTIONS AND APPLY ALL FUNGICIDES AND PESTICIDES AS DIRECTED. FOLLOW FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS GOVERNING THE USE, STORAGE, AND DISPOSAL OF PESTICIDES AND TRAINING OF APPLICATORS AND PEST CONTROL ADVISORS.

3) DO NOT APPLY FUNGICIDES OR PESTICIDES WHEN IT IS RAINING OR RAIN IS FORECAST.

4) PESTICIDES ARE NEVER BE APPLIED DIRECTLY TO SURFACE WATERS OR WITHIN 100' OF A STREAM BANK OR SHORELINE.

5) SWEEP UP DRY PESTICIDE THAT FALLS ONTO PAVEMENT OR OTHER IMPERVIOUS SURFACES. DO NOT HOSE OFF. FOLLOW MANUFACTURER INSTRUCTIONS FOR SPILLS AND LEAKS.

PAINT PRODUCTS

1) ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

2) FOR WATER-BASED PAINTS, CLEAN PAINTING EQUIPMENT IN A SINK OR BASIN CONNECTED TO THE SANITARY SEWER OR IN THE CONCRETE WASHOUT AREA. CLEAN UP NON-WATER BASED PAINTS, FINISHES, AND OTHER MATERIALS IN A MANNER THAT ENABLES COLLECTION OF WASTE PAINT AND SOLVENTS FOR RECYCLING AND PROPER DISPOSAL. NEVER POUR WASTE PAINT DOWN A STORM DRAIN OR INTO A CONCENTRATED FLOW AREA.

SPILL CLEANUP AND CONTROL

FOR SPILLS THAT IMPACT SURFACE WATER, OR FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT (800) 426-2675.

FOR SPILLS GREATER THAN 25 GALLONS WITH NO SURFACE WATER IMPACT, TCEQ MUST BE CONTACTED WITHIN 24 HOURS.

FOR SPILLS LESS THAN 25 GALLONS WITH NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

1) LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES MADE AVAILABLE TO SITE PERSONNEL.

2) MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP ARE TO BE KEPT IN OR NEAR MATERIAL STORAGE AREAS. THIS INCLUDES BUT IS NOT LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, SORBENTS, AND CLEARLY LABELED WASTE CONTAINERS.

3) ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY.

4) THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

5) FOLLOWING A SPILL, MEASURES WILL BE TAKEN/PROCEDURES ADJUSTED TO PREVENT THIS TYPE OF SPILL FROM RE-OCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL BE INCLUDED IN THE ASSESSMENT.

CONSTRUCTION SEQUENCE (PART III.F.2)

THE FOLLOWING SEQUENCE OF ACTIVITIES ARE TO BE IMPLEMENTED IN THE ORDER SHOWN, UNLESS INCLEMENT WEATHER, SITE CONDITIONS, REVISIONS, RECOMMENDATIONS FROM THE PRE-CONSTRUCTION CONFERENCE, OR OTHER REASON JUSTIFIES A DEVIATION FROM THIS SCHEDULE. IF A DEVIATION IS UNDERTAKEN OR ANTICIPATED, THE LOCAL JURISDICTION IS TO BE NOTIFIED AND THE CHANGE OF SEQUENCE RECORDED IN THE DAILY LOG.

PHASE-I: CLEARING, GRADING, DEMOLITION, AND INSTALLATION OF INITIAL BMP'S

1) OBTAIN AND POST A COPY OF THE LAND DISTURBANCE PERMIT ON THE SITE. A COPY OF THE FILED NOTICE OF INTENT (NOI) AND DELIVERY RETURN RECEIPT IS TO BE STORED WITH THE APPROVED CONSTRUCTION PLANS ON-SITE, ALONG WITH SETTING UP STORAGE FOR FILING FOR REPORTS REQUIRED BY THE NPDES PERMIT. LAND DISTURBANCE CANNOT COMMENCE LESS THAN 14 DAYS FROM THE DATE ON THE DELIVERY RECEIPT.

2) SET UP A PRE-CONSTRUCTION CONFERENCE ON-SITE WITH THE OWNER, CONTRACTOR, DESIGN TEAM MEMBERS AS NEEDED, AND LOCAL ISSUING AUTHORITY TO REVIEW CONSTRUCTION REQUIREMENTS.

3) COORDINATE THE DISCONNECTION AND REMOVAL OF ANY EXISTING UTILITIES ON-SITE TO BE REMOVED OR ABANDONED. FIELD CONFIRM THE LOCATION OF ALL EXISTING UTILITIES BY POTHOLING.

4) STAKE LIMITS OF DISTURBED AREA AND TREE PROTECTION AREAS.

5) INSTALL TREE SAVE FENCING TO DELINEATE BUFFER AND TREE SAVE AREAS AS SHOWN ON THE PLAN.

6) CONSTRUCT THE CONSTRUCTION ENTRANCE(S) AT THE PROPOSED LOCATION(S) SHOWN ON THE PLANS. (TEMPORARY STREET ACCESS PERMITS MAY BE REQUIRED.)

7) INSTALL ALL PERIMETER SILT BARRIERS AS SHOWN ON THE PLAN SHEETS.

8) CLEAR AND GRUB ROUTES TO THE MINIMUM EXTENT NEEDED TO CONSTRUCT STRUCTURAL BEST MANAGEMENT PRACTICES IN CONCENTRATED FLOW AREAS SHOWN ON THE INITIAL PHASE PLAN. THIS INCLUDES EXCAVATED SEDIMENT TRAPS, SEDIMENT BASINS, ROCK DAMS,SILT GATES, AND DIVERSIONS.

9) INSTALL STRUCTURAL BMP'S IN CONCENTRATED FLOW AREAS WITH MINIMAL DISTURBANCE TO ADJACENT AREAS.

10) INSTALL SKIMMER DEVICES ON STRUCTURAL BMP'S AS SHOWN ON THE PLANS.

11) COMMENCE CLEARING, GRUBBING, AND DEMOLITION OPERATIONS. CONSTRUCT ALL REMAINING BMP'S SHOWN ON THE PLANS CONCURRENT WITH CLEARING AND GRUBBING OPERATIONS.

12) COMMENCE DEMOLITION ACTIVITY CONCURRENT WITH CLEARING AND GRUBBING ACTIVITY. CONSTRUCTION DEBRIS SHOULD BE SORTED FROM VEGETATIVE DEBRIS FOR PROPER DISPOSAL.

13) APPLY TEMPORARY VEGETATION (Ds1/Ds2) IN ACCORDANCE WITH PLANS AND NOTES FOR CLEARED AREAS.

PHASE-II: GRADING AND UTILITY CONSTRUCTION

1) CONSTRUCT ALL STRUCTURAL BMP'S SHOWN ON THE PLAN WHERE COMPLETION OF GRADING AND UTILITY CONSTRUCTION IS NOT NECESSARY FOR INSTALLATION.

2) COMMENCE ROUGH GRADING ON-SITE. INSTALL STRUCTURAL AND VEGETATIVE BMP'S AS SHOWN ON THE PLAN AS EACH AREA IS COMPLETED. FOR LARGE FILLS AND MAJOR EARTH MOVING ACTIVITIES THAT CHANGE CONVEYANCE OF STORMWATER RUNOFF, THE INSTALLATION OF DIVERSIONS, DOWN DRAINS, AND STRUCTURES ON THE PLANS ARE TO BE BE CONSTRUCTED TO MAINTAIN THE PROTECTION OF SLOPES AND ROUTING OF WATER TO THE STRUCTURAL STORAGE LOCATIONS. THIS MAY INCLUDE PHASED INSTALLATION OF DOWN DRAINS WITH DIVERSIONS ALONG THE FACE OF LARGE FILL AREAS.

3) INSTALL PERMANENT STORMWATER MANAGEMENT AREAS AS SHOWN. WHERE PERMANENT STORMWATER MANAGEMENT AREAS HAVE WATER QUALITY COMPONENTS, INSTALL SKIMMER OR RETROFITTING DEVICES AS SHOWN ON THE PLAN AND DO NOT CONSTRUCT WATER QUALITY DEVICES UNTIL FINAL STABILIZATION HAS TAKEN PLACE. WHERE INFILTRATION IS A PART OF A STORMWATER MANAGEMENT COMPONENT, MAINTAIN THE BOTTOM OF THE INFILTRATION AREA A MINIMUM OF SIX INCHES ABOVE FINAL GRADE, TO BE EXCAVATED ONCE FINAL STABILIZATION OF THE SITE IS COMPLETE.

4) CONSTRUCT TEMPORARY AND PERMANENT DRAINAGE STRUCTURES AS NECESSARY FOR CONVEYANCE DURING GRADING ACTIVITIES. INSTALL STORM OUTLET PROTECTION CONCURRENT WITH CONSTRUCTION OF ANY DRAINAGE OUTFALL.

5) AS FINAL GRADE OF SLOPES ARE ACHIEVED, TRACK OR BENCH AS SHOWN ON THE PLANS. INSTALL SLOPE STABILIZATION REQUIRED IN THE PLANS CONCURRENT WITH THE ESTABLISHMENT OF FINAL GRADE OF SLOPES AND CONVEYANCE CHANNELS.

6) INSTALL INLET SEDIMENT TRAPS CONCURRENT WITH THE CONSTRUCTION OF STORM DRAIN STRUCTURES. PROTECT INLETS WHERE EXCAVATION HAS NOT BEEN BACKFILLED AND INLET PROTECTION ESTABLISHED BY DIVERTING TO COMPLETED INLET SEDIMENT TRAPS.

7) SPREAD FERTILIZER AND GRASS SEED/SODDING ALONG WITH RECOMMENDED MULCHING (IF SEEDED) AS SOON AS FINAL GRADE IS ACHIEVED IN ACCORDANCE WITH THE PLAN SHEETS AND ANY APPLICABLE LANDSCAPE PLAN.

8) COMMENCE FINAL GRADING OF ALL ROADS, PARKING LOTS, AND BUILDING PADS.

9) EXCAVATE AND BACKFILL UTILITY CONSTRUCTION IN SECTIONS TO MINIMIZE OPEN EXCAVATION. WHERE UTILITIES ARE AT FINAL GRADE, PLACE PERMANENT SEEDING IN ACCORDANCE WITH PHASE-III PLANS.

PHASE-III - FINAL CONSTRUCTION, LANDSCAPING, AND PERMANENT STABILIZATION

1) AS SOON AS CONCRETE BUILDING PADS ARE POURED, ALL AREAS AROUND THE PADS AND STREET/PARKING AREAS ARE TO BE TEMPORARILY VEGETATED.

2) CONSTRUCT BUILDING PAD AND FOUNDATIONS.

3) CONSTRUCT ALL LEVEL SPREADERS AND MAINTAIN STORM OUTLET PROTECTION AT PIPE OUTLETS AS SHOWN ON THE PLANS.

4) PLACE GRADED AGGREGATE BASE FOR ROADS AND DRIVES. MODIFY ALL CURB INLET SEDIMENT TRAPS AS NEEDED, BOTH FOR DIVERSION OF WATER INTO THE RAISED THROATS AND FOR THE INLET. (Sd2-P MAY BE INSTALLED ON THE GUTTER IN MOST CASES).

5) INSTALL CURBING AND SIDEWALKS. DURING THIS PHASE, CURBING MAY ACT AS A RUNOFF DIVERSION. THE CONTRACTOR MUST MAINTAIN CONVEYANCE AS SHOWN IN THE PLANS, WHICH MAY REQUIRE CONSTRUCTING A SEGMENT OF CURB AT A LATER DATE TO MAINTAIN PROPER CONVEYANCE OF STORMWATER.

6) AFTER A CURING TIME OF NO LESS THAN SEVEN DAYS, BACKFILL CURBS AND SMOOTH SHOULDER GRADES. PLACE FINAL LANDSCAPING/STABILIZATION ON SHOULDERS AS SOON AS SEASON AND CONSTRUCTION ACTIVITY ALLOWS. IF FINAL STABILIZATION WILL NOT BE IMMEDIATE, PLACE TEMPORARY SEEDING OR MULCH ON THE SHOULDERS.

7) PAVE ALL STREETS AND PARKING AREAS. SEDIMENT INLET TRAP PROTECTION MAY REQUIRE MODIFICATION TO MATCH PLAN.

8) ALL SEDIMENT PONDS AND PERIMETER SILT FENCE IS TO BE MAINTAINED FOR THE DURATION OF BUILDING AND SITE CONSTRUCTION. AT COMPLETION OF BUILDING/SITE INFRASTRUCTURE CONSTRUCTION, ALL AREAS ARE TO BE PERMANENTLY VEGETATED.

9) UPON FINAL STABILIZATION TO STORMWATER MANAGEMENT AREAS, INSTALLATION OF WATER QUALITY AND/OR INFILTRATION MEASURES ARE TO BE COMPLETED. IMMEDIATELY UPON COMPLETION, AS-BUILT SURVEYS OF THESE MUST BE COMPLETED AND PROVIDED TO THE ENGINEER FOR REVIEW. NOTE THAT IMPROPERLY CONSTRUCTED STORMWATER MANAGEMENT AREAS MAY RESULT IN ADDITIONAL LAND DISTURBANCE. CORRECTIVE ACTION, IF REQUIRED, IS TO BE TAKEN BEFORE A NOTICE OF TERMINATION IS FILED.

10) UPON FINAL STABILIZATION OF 100% OF THE CONTRIBUTING ON-SITE DRAINAGE AREAS, REMOVE THE RESPECTIVE TEMPORARY STRUCTURAL BMP'S USE PERMANENT VEGETATIVE BMP'S AND LANDSCAPING SHOWN ON THE LANDSCAPE PLAN TO STABILIZE DISTURBED AREAS FROM STRUCTURAL BMP'S AS THEY ARE REMOVED.

NOTICE OF TERMINATION (NOT)

1) THE PRIMARY PERMITTEE IS TO SUBMIT A NOTICE OF TERMINATION ONCE THE FOUR FOLLOWING CRITERIA ARE MET:

- A) THE ENTIRE STANDALONE DEVELOPMENT HAS UNDERGONE FINAL STABILIZATION;
- B) ALL STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THE NPDES PERMIT HAVE CEASED; AND
- C) THE SITE IS IN COMPLIANCE WITH THIS PERMIT AND ALL TEMPORARY BMP'S HAVE BEEN REMOVED.

2) IF THE PRIMARY PERMITTEE HAS ELECTED TO SUBMIT NOI'S FOR SEPARATE PHASES OF THE STANDALONE DEVELOPMENT, THE PHASE OR PHASES OF THE STANDALONE DEVELOPMENT ON THE NOT MUST CORRESPOND TO THE PHASE OR PHASES IN THE NOI.

SITE DETAILS:

1) NATURE OF THE CONSTRUCTION ACTIVITY = DEMOLITION, CLEARING & GRUBBING, AND RETAIL DEVELOPMENT.

2) CONSTRUCTION SCHEDULE = SEE THIS SHEET.

3) TOTAL AREA OF THE SITE = 1.16 ACRES.

4) TOTAL DISTURBED AREA OF THE SITE = 1.25 ACRES.

5) EXISTING TOPOGRAPHIC MAP = SEE SHEET SERIES V-1.

6) PLAN INDICATING DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES = SEE SHEET SERIES C-2.

7) PLAN INDICATING AREAS OF SOIL DISTURBANCE = SEE SHEET SERIES C-2.

8) SEE SHEET SERIES C-4 FOR ALL STRUCTURAL AND NONSTRUCTURAL BMP'S.

9) IDENTIFICATION OF RECEIVING WATER(S) = STREAM.

10) WETLAND ACREAGE AT THE SITE = 0 ACRES TOTAL.

11) NO PORTION OF THE SUBJECT PROPERTY LIES WITHIN A 100 YEAR FLOOD HAZARD AREA PER FIRM MAP NUMBER 48209C0260F DATED 9/2/2005.

12) DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE = SEE SHEET SERIES C-4.

SOIL TYPE	
KrB	KRUM CLAY 1 TO 3 PERCENT SLOPES
DeB	DENTON SILTY CLAY 1 TO 3 PERCENT SLOPES

ENGINEER:

FORESITE group

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SEAL:

VINCENT D. MUSAT
87005
3.7.2023

REVISIONS	DATE

PROJECT MANAGER: VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY: FG
JURISDICTION: CITY OF BUDA
DATE: JANUARY, 2023
TITLE:

EROSION CONTROL NOTES

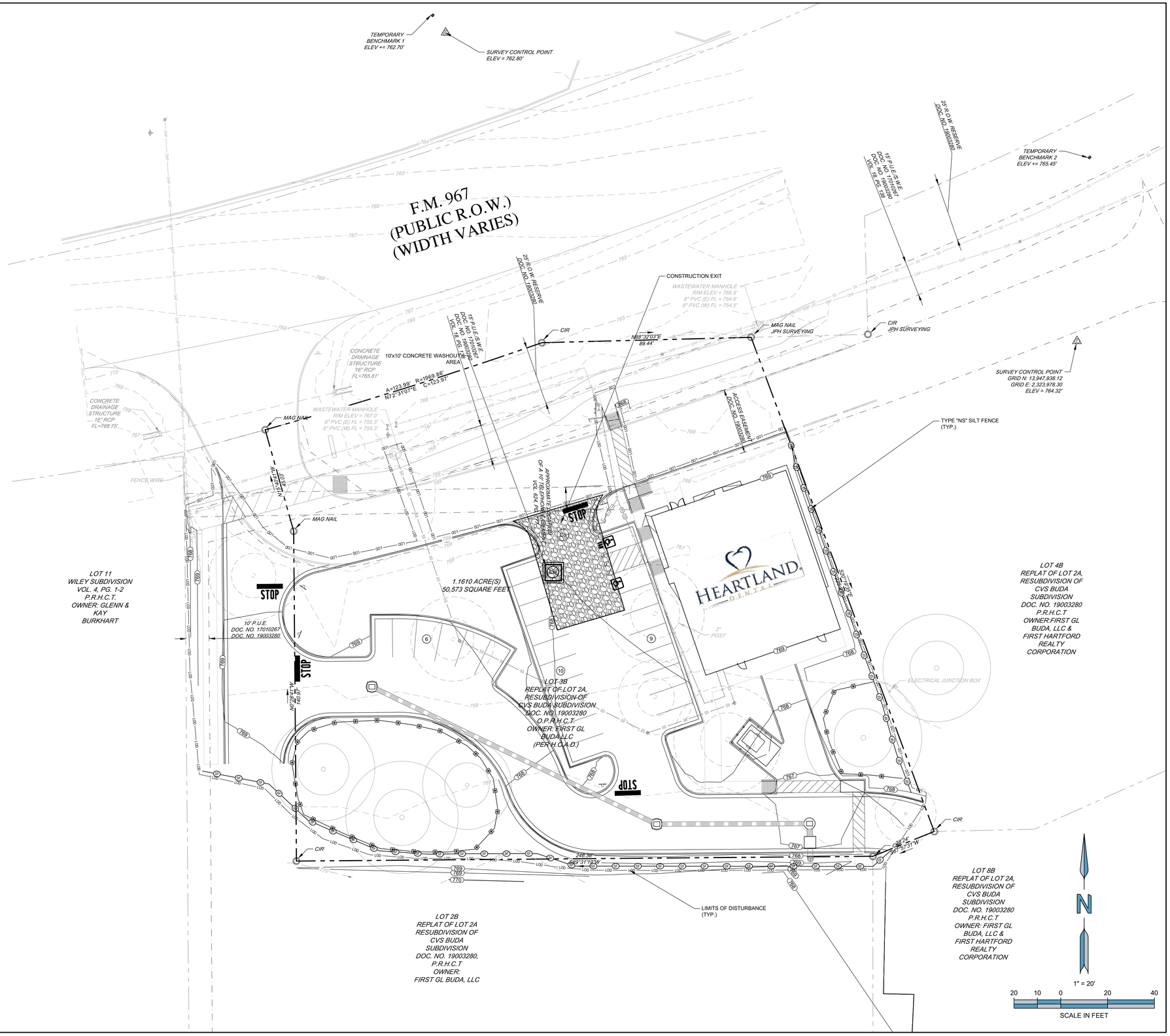
SHEET NUMBER: C-4

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

STRUCTURAL PRACTICES			
CODE	PRACTICE	DETAIL	SYMBOL
Co	CONSTRUCTION EXIT		Co
Cw	CONCRETE WASHOUT AREA		
SF	SEDIMENT BARRIER		SF
Sd2-E	INLET SEDIMENT TRAP EXCAVATED INLET SEDIMENT TRAP		
Sd2-F	INLET SEDIMENT TRAP FILTER FABRIC WITH SUPPORTING FRAME		
Sd2-P	INLET SEDIMENT TRAP CURB INLET PROTECTION		
Sd3	TEMPORARY SEDIMENT BASIN		Sd3
Sd4	TEMPORARY SEDIMENT TRAP		Sd4
St	STORM DRAIN OUTLET PROTECTION		St
Tr	TREE PROTECTION		

LEGEND			
CODE	PRACTICE	DETAIL	SYMBOL
N/A	LIMITS OF DISTURBANCE	N/A	LOD



Know what's below Call before you dig

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CDC-4.5 ESPC FINAL PLAN.DWG

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REVISIONS	DATE

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JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

FINAL EROSION CONTROL PLAN

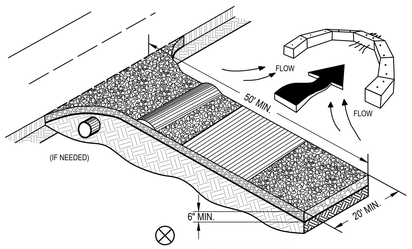
SHEET NUMBER:

C-4.3

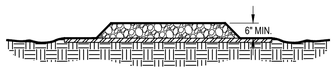
COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057

EXIT DIAGRAM



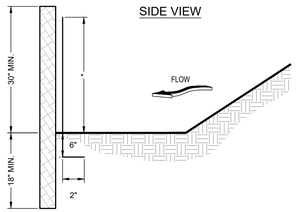
ENTRANCE ELEVATION



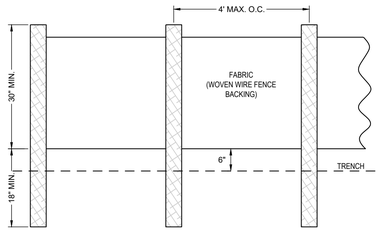
NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%..
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Co **CRUSHED STONE CONSTRUCTION EXIT**
NOT TO SCALE

SIDE VIEW

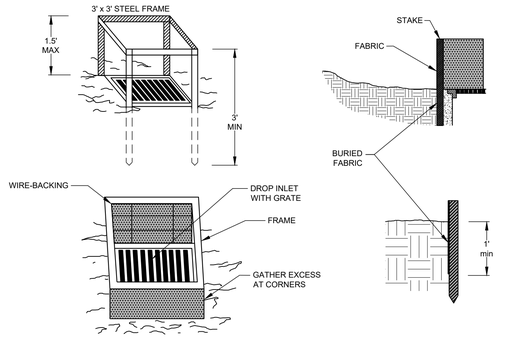


FRONT VIEW



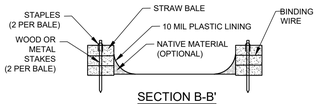
NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

SF **SILT FENCE**
NOT TO SCALE

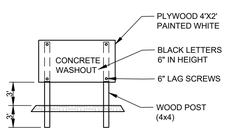


NOTES:
1. FOR STAKES, USE STEEL WITH A MINIMUM LENGTH OF 3 FEET.
2. SPACE STAKES EVENLY AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART, AND SECURELY DRIVE THEM INTO THE GROUND, MINIMUM OF 18 INCHES DEEP.
3. TO PROVIDE NEEDED STABILITY TO THE INSTALLATION, FRAME WITH 2 X 4 INCH WOOD STRIPS AROUND THE CREST OF THE OVERFLOW AREA AT A MAXIMUM OF 1.5 FEET ABOVE THE DROP INLET CREST.
4. PLACE THE BOTTOM 12 INCHES OF THE FABRIC IN A TRENCH AND BACKFILL THE TRENCH WITH CRUSHED STONE OF COMPACTED SOIL.
5. FASTEN FABRIC SECURELY TO THE STAKES AND FRAME. JOINTS MUST BE OVERLAPPED TO THE NEXT STAKE.
6. THE TOP OF THE FRAME AND FABRIC MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE FROM THE DROP INLET TO KEEP RUNOFF FROM BYPASSING THE INLET. IT MAY BE NECESSARY TO BUILD A TEMPORARY DIKE ON THE DOWN SLOPE SIDE OF THE STRUCTURE TO PREVENT BYPASS FLOW.

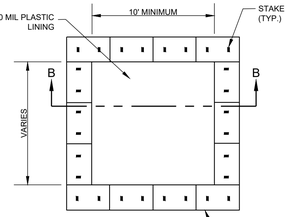
Sd2-F **INLET SEDIMENT TRAP - FILTER FABRIC WITH SUPPORTING FRAME**
NOT TO SCALE



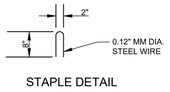
SECTION B-B'
NOT TO SCALE



CONCRETE WASHOUT SIGN DETAIL
(OR EQUIVALENT)



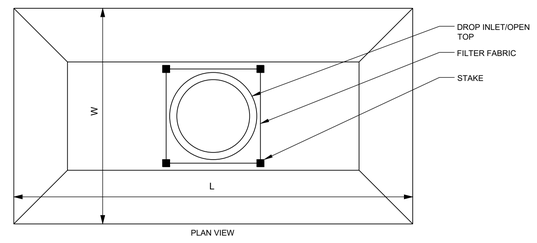
PLAN
NOT TO SCALE
TYPE 'ABOVE GRADE'
WITH STRAW BALES



STAPLE DETAIL

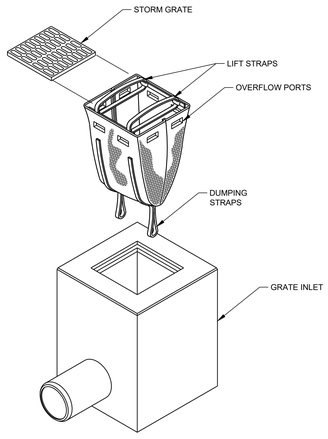
NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE FIG. 4-15) SHALL BE INSTALLED WITHIN 10' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Cw **CONCRETE WASHOUT**
NOT TO SCALE



PLAN VIEW

Sd2-E **EXCAVATED INLET SEDIMENT TRAP**
NOT TO SCALE



SS **SILT SACK**
NOT TO SCALE

Know what's **below**
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FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

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PROFESSIONAL ENGINEER
3.7.2023

REVISIONS	DATE

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DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

EROSION CONTROL DETAILS

SHEET NUMBER:
C-4.4

COMMENTS:
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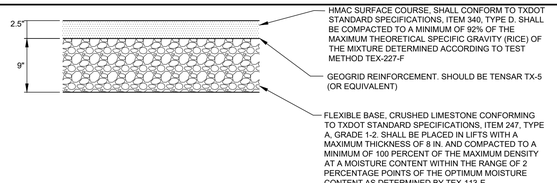
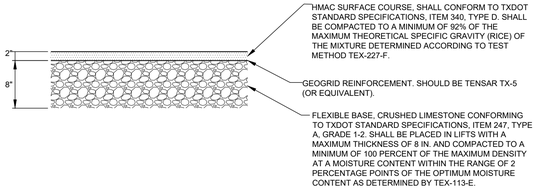
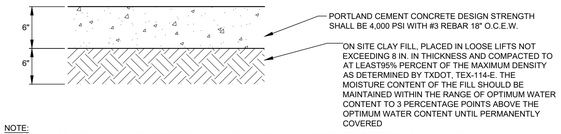


1 C-5 STANDARD DUTY ASPHALT PAVING
NOT TO SCALE

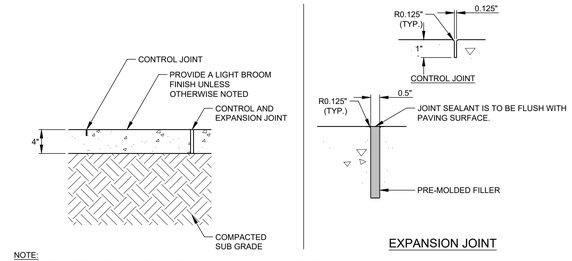


2 C-5 LIGHT DUTY ASPHALT PAVING
NOT TO SCALE



NOTE:
1. DETAIL REFLECTS HEAVY DUTY CONCRETE PAVING RECOMMENDATION BY PROJECT GEOTECHNICAL ENGINEER.
2. CONCRETE CONTRACTION JOINTS SHALL BE LOCATED AT NO LESS THAN 15' ON CENTER. THE JOINTS SHALL EXTEND TO A DEPTH 1/4 OF THE SLAB THICKNESS. IF SAW CUTTING THE JOINTS IS TO BE EMPLOYED, THE JOINTS SHOULD BE CUT WHILE THE CONCRETE IS STILL "GREEN" AND AS SOON AFTER PLACEMENT AS THE EQUIPMENT CAN BE MOVED ONTO THE PAVEMENT WITHOUT DISTURBING THE CONCRETE FINISH.

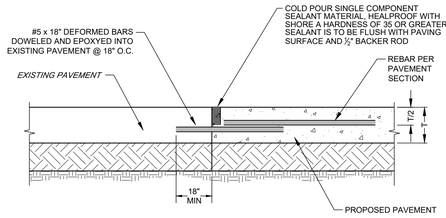
3 C-5 HEAVY DUTY CONCRETE PAVING
NOT TO SCALE



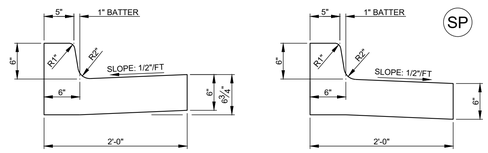
EXPANSION JOINT

NOTE:
1. UNLESS OTHERWISE INDICATED, PREFORMED EXPANSION JOINTS TO BE 40'-0" O.C. MAX. OR AT BACK OF CURB, CHANGE OF DIRECTION, OTHER WALK UTILITY APPURTENANCE, OR FACE OF STRUCTURE.
2. CONCRETE SHALL HAVE A DESIGN STRENGTH OF 4,000 PSI UNLESS SPECIFIED OTHERWISE
3. REINFORCING SHALL BE #3 DEFORMED BARS SPACED 18" O.C.E.W.
4. UNLESS OTHERWISE INDICATED, CONTROL JOINTS AT 5'-0" O.C.
5. ALL SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 1.5% (1:67).

4 C-5 CONCRETE SIDEWALK
NOT TO SCALE



5 C-5 CONCRETE CONNECTION
NOT TO SCALE



NOTE:
1. 1/2" PRE FORMED EXPANSION JOINTS REQUIRED AT ALL STRUCTURES AND RADIUS POINTS.
2. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS = 40.0'
3. MAXIMUM DISTANCE DUMMY JOINTS = 10.0'
4. CONCRETE STRENGTH = 3000 P.S.I., SLOPE = 2" MAX. FINISH SHALL BE SMOOTHED AND EVENED WITH WOODEN FLOAT.

6 C-5 24" CONCRETE CURB AND GUTTER
NOT TO SCALE

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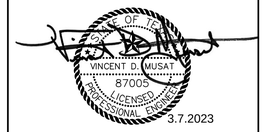

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

PAVING DETAILS

SHEET NUMBER:
C-5

COMMENTS:
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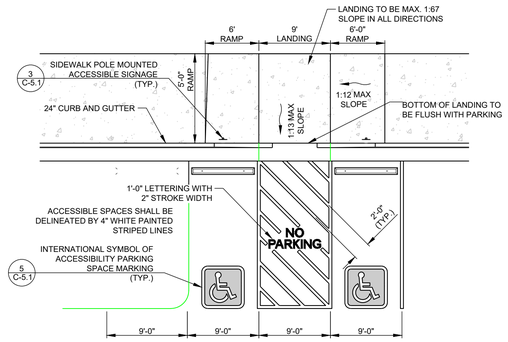
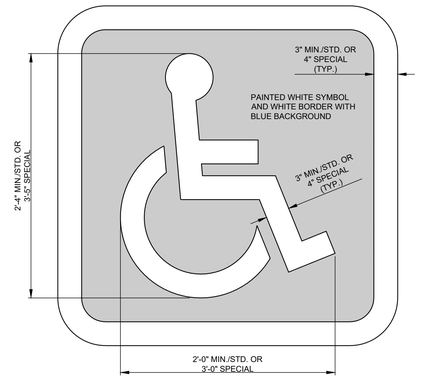
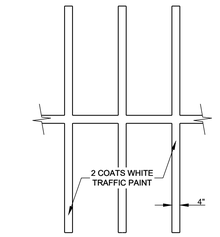


NOTE:
1. SEE GRADING PLAN FOR ELEVATIONS. ACCESSIBLE SPACES AND LOADING AREAS SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
2. DIMENSIONS SHOWN ARE FROM CENTER OF STRIPE TO CENTER OF STRIPE.

1 C-5.1 ACCESSIBLE PARKING
NOT TO SCALE

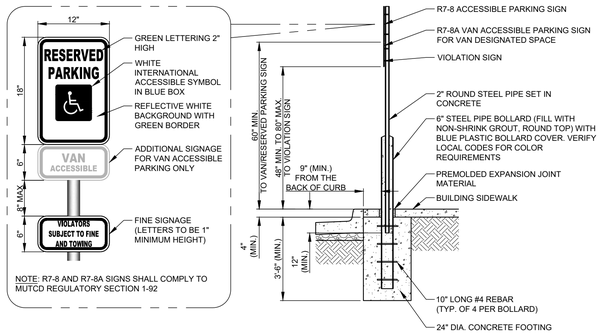


5 C-5.1 INTERNATIONAL SYMBOL OF ACCESSIBILITY PARKING SPACE MARKING
NOT TO SCALE



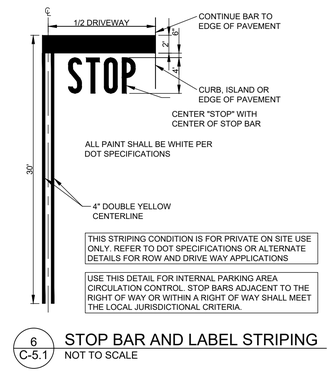
NOTE: SEE SITE DEVELOPMENT PLAN FOR PARKING DIMENSIONS & LAYOUT

9 C-5.1 PARKING STRIPING
NOT TO SCALE



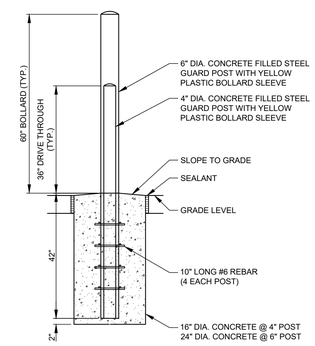
NOTE: R7-8 AND R7-8A SIGNS SHALL COMPLY TO MUTCD REGULATORY SECTION 1-92

3 C-5.1 BOLLARD ACCESSIBLE SIGNAGE
NOT TO SCALE

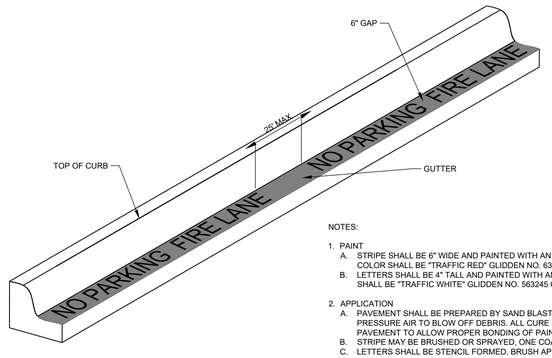


6 C-5.1 STOP BAR AND LABEL STRIPING
NOT TO SCALE

10 C-5.1 CROSSWALK STRIPING
NOT TO SCALE



4 C-5.1 BOLLARD
NOT TO SCALE



NOTES:

1. PAINT
   A. STRIPE SHALL BE 6" WIDE AND PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT. COLOR SHALL BE "TRAFFIC RED" GLIDDEN NO. 63251 OR EQUAL.
   B. LETTERS SHALL BE 4" TALL AND PAINTED WITH AN EXTERIOR ACRYLIC PAINT. COLOR SHALL BE "TRAFFIC WHITE" GLIDDEN NO. 563245 OR EQUAL.
2. APPLICATION
   A. PAVEMENT SHALL BE PREPARED BY SAND BLASTING OR GRINDING FOLLOWED BY HIGH PRESSURE AIR TO BLOW OFF DEBRIS. ALL CURE SHALL BE REMOVED FROM NEW PAVEMENT TO ALLOW PROPER BONDING OF PAINT.
   B. STRIPE MAY BE BRUSHED OR SPRAYED, ONE COAT TO FINISH.
   C. LETTERS SHALL BE STENCIL FORMED, BRUSH APPLIED, AND SPACED AS DETAILED ON THIS SHEET.
   D. STRIPING TO BE PAINTED ON GUTTER.

11 C-5.1 FIRE LANE PAVEMENT MARKING
NOT TO SCALE

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3.7.2023

REVISIONS	DATE

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DRAWING BY:	FG
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DATE:	JANUARY, 2023
TITLE:	

PAVING DETAILS

SHEET NUMBER:
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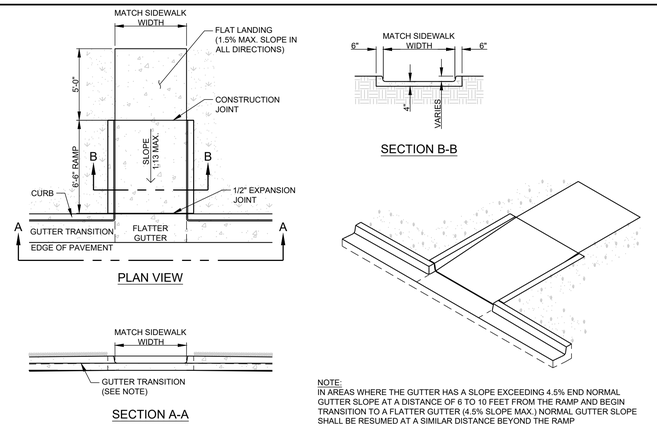
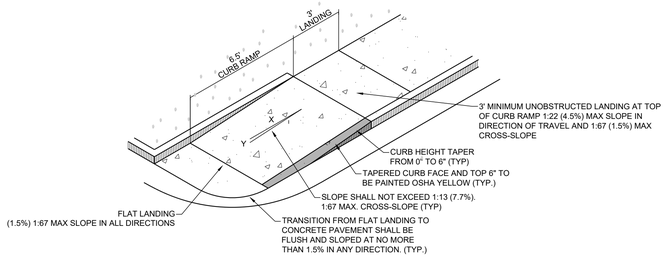
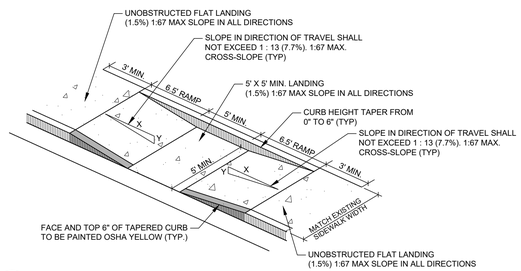


NOTE:
IN AREAS WHERE THE GUTTER HAS A SLOPE EXCEEDING 4.5% END NORMAL GUTTER SLOPE AT A DISTANCE OF 6 TO 10 FEET FROM THE RAMP AND BEGIN TRANSITION TO A FLATTER GUTTER (4.5% SLOPE MAX.) NORMAL GUTTER SLOPE SHALL BE RESUMED AT A SIMILAR DISTANCE BEYOND THE RAMP

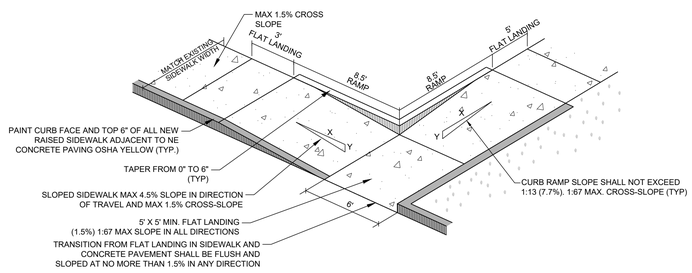
1 C-5.2 ACCESSIBLE CURB RAMP
NOT TO SCALE



2 C-5.2 ACCESSIBLE CURB RAMP WITH RETURNED CURB AND TAPERED CURB
NOT TO SCALE



3 C-5.2 PARALLEL ACCESSIBLE CURB RAMP
NOT TO SCALE



4 C-5.2 ACCESSIBLE CURB RAMP AT BUILDING CORNER
NOT TO SCALE

ENGINEER:
FORESITE group
TBPE Firm No. F-12878
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901 S. MoPac Expressway
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D/B/A Foresite Consulting Group of Texas, LLC.
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f | 770.368.1944
w | www.foresitegroup.net

DEVELOPER:
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9121 ELIZABETH ROAD, SUITE 105
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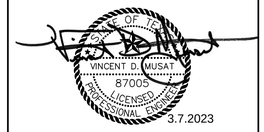
(713) 255-0280
CONTACT: JONATHAN BELLOCK

PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:


REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

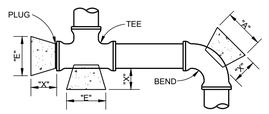
PAVING DETAILS

SHEET NUMBER:
C-5.2

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER:
489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CDIC-5 PAVING DETAILS.DWG

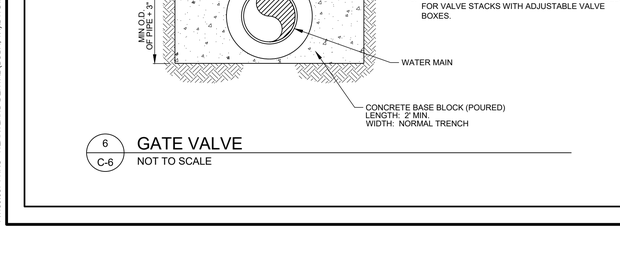


HORIZONTAL THRUST BLOCK NOTES:
RETAINER GLANDS OR OTHER RESTRAINING DEVICES MAY BE REQUIRED AS NEEDED.

1. ALL CALCULATIONS ARE BASED ON A WATER LINE PRESSURE OF 150 p.s.i. AND AN ALLOWABLE SOIL BEARING VALUE OF 2,500 POUNDS PER SQUARE FOOT.
2. 2000 PSI. CONCRETE SHALL BE USED FOR ALL BLOCKING.
3. THE MINIMUM VERTICAL DIMENSIONS OF ALL BLOCKING SHALL BE 1.5 TIMES THE PIPE DIAMETER WITH AT LEAST 0.75 TIMES THE PIPE DIAMETER EXTENDING BOTH ABOVE AND BELOW THE PIPE CENTERLINE. THIS DIMENSION DETERMINES THE "X" DIMENSION FOR 11 1/4° BENDS.
4. FOR 22-1/2°, 45°, 90°, AND TEE AND PLUGS, THE VERTICAL DIMENSION SHALL BE EQUAL TO THE HORIZONTAL DIMENSION SHOWN TO PRODUCE THE REQUIRED MINIMUM AREA.
5. ALL MINIMUM AREAS ARE IN SQUARE FEET.

PIPE SIZE	X DIA. FEET	11.25°		22.5°		45°		90°		TEE & PLUG	
		"A"	MIN. AREA	"A"	MIN. AREA	"A"	MIN. AREA	"A"	MIN. AREA	"E"	MIN. AREA
4"	1.5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6"	1.5	1.00	1.00	1.00	1.00	1.14	1.30	1.55	2.40	1.30	1.70
8"	1.5	1.00	1.00	1.08	1.18	1.52	2.31	2.07	4.27	1.74	3.02
10"	1.5	1.00	1.00	1.35	1.84	1.90	3.61	2.58	6.66	2.17	4.71
12"	1.5	1.00	1.33	1.63	2.65	1.86	5.19	3.10	9.60	2.61	6.79

2 C-6 HORIZONTAL THRUST BLOCKING
NOT TO SCALE

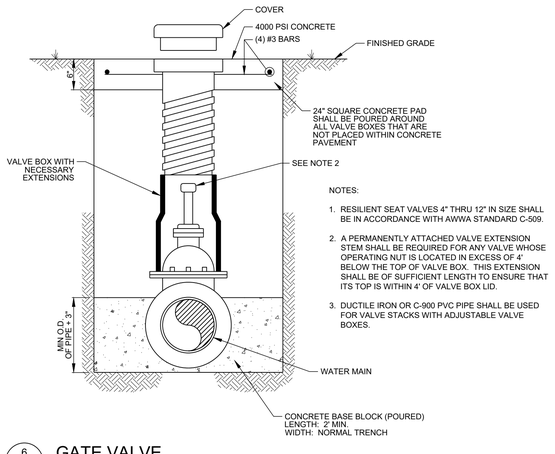


Δ	11.25°		22.50°		30°		45°		67.50°		90°	
I.D. (IN)	THRUST TONS	VOL. CY	THRUST TONS	VOL. CY	THRUST TONS	VOL. CY	THRUST TONS	VOL. CY	THRUST TONS	VOL. CY	THRUST TONS	VOL. CY
4,6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5
10,12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7

VERTICAL THRUST BLOCK NOTES:

1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 P.S.I.
2. VOLUMES OF VERTICAL BEND THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THRUST ON THE VERTICAL BEND.
3. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
4. CONCRETE FOR BLOCKING SHALL BE 2,000 P.S.I. CONCRETE.
5. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.

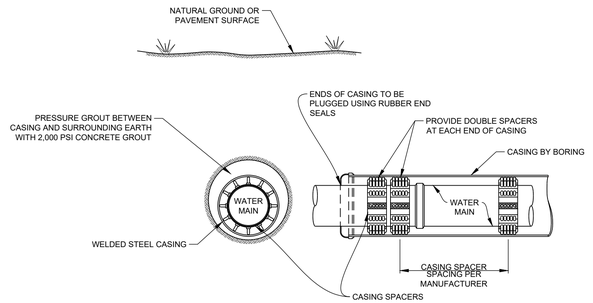
3 C-6 VERTICAL THRUST BLOCKING
NOT TO SCALE



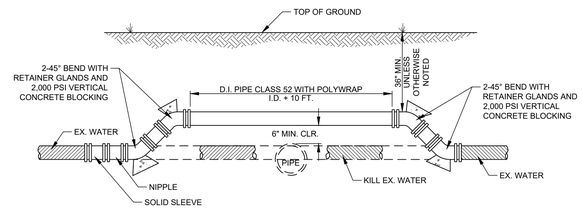
NOTES:

1. RESILIENT SEAT VALVES 4" THRU 12" IN SIZE SHALL BE IN ACCORDANCE WITH AWWA STANDARD C-509.
2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHOSE OPERATING NUT IS LOCATED IN EXCESS OF 4' BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO ENSURE THAT ITS TOP IS WITHIN 4' OF VALVE BOX LID.
3. DUCTILE IRON OR C-900 PVC PIPE SHALL BE USED FOR VALVE STACKS WITH ADJUSTABLE VALVE BOXES.

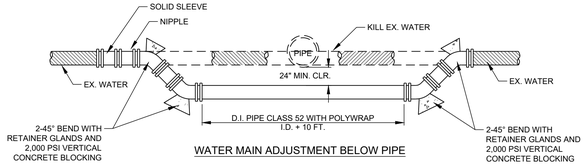
6 C-6 GATE VALVE
NOT TO SCALE



4 C-6 BORING DETAIL
NOT TO SCALE

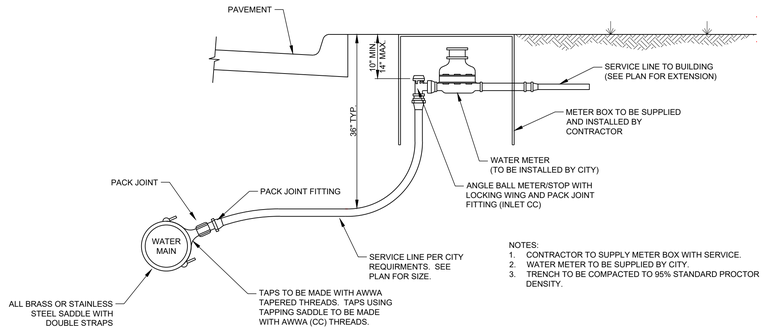


WATER MAIN ADJUSTMENT ABOVE PIPE



WATER MAIN ADJUSTMENT BELOW PIPE

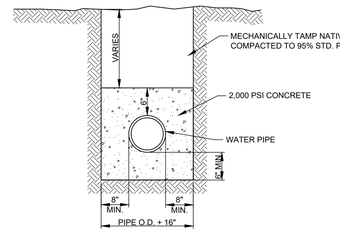
5 C-6 WATER ADJUSTMENT DETAIL
NOT TO SCALE



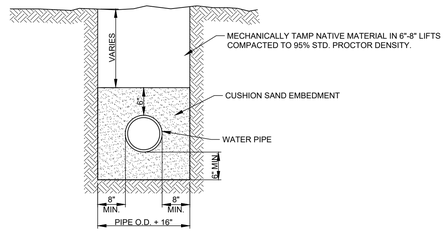
NOTES:

1. CONTRACTOR TO SUPPLY METER BOX WITH SERVICE.
2. WATER METER TO BE SUPPLIED BY CITY.
3. TRENCH TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.

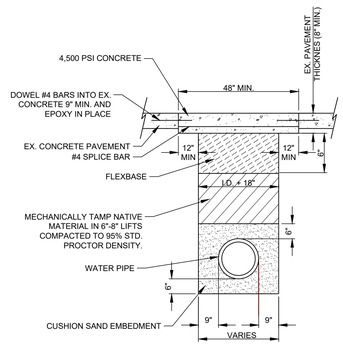
7 C-6 WATER SERVICE CONNECTION
NOT TO SCALE



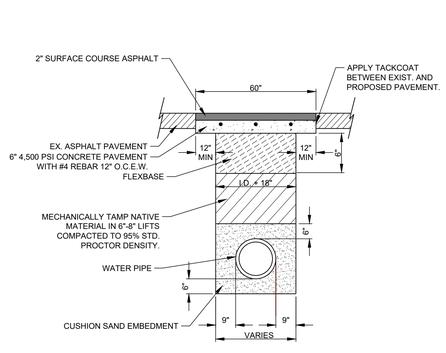
8 C-6 CONCRETE ENCASEMENT
NOT TO SCALE



9 C-6 WATER EMBEDMENT
NOT TO SCALE



CONCRETE PAVEMENT REPAIR



ASPHALT PAVEMENT REPAIR

10 C-6 PAVEMENT REPAIR
NOT TO SCALE

ENGINEER:
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DEVELOPER:
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(713) 255-0280

CONTACT: JONATHAN BELLOCK

PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:
STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED PROFESSIONAL ENGINEER
3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

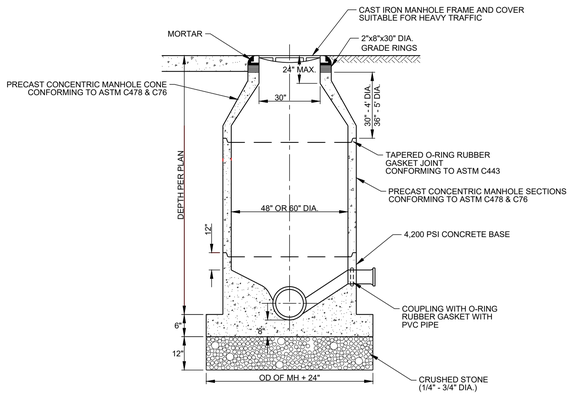
WATER DETAILS

SHEET NUMBER:
C-6

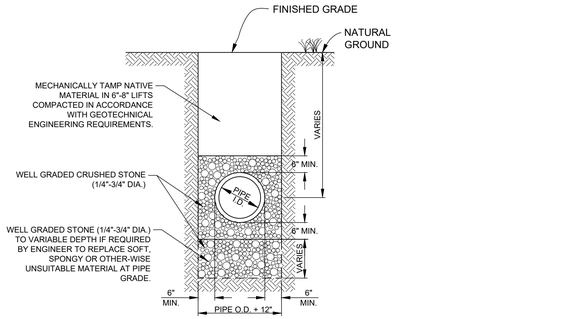
COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER:
489.057

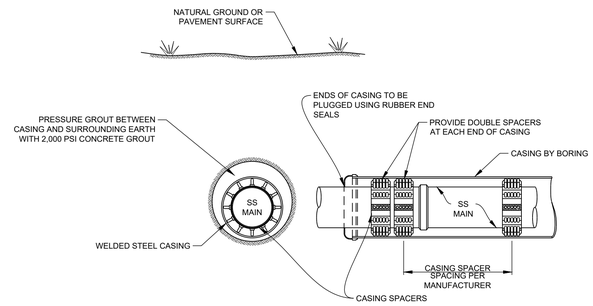
F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\C-6 WATER DETAILS.DWG



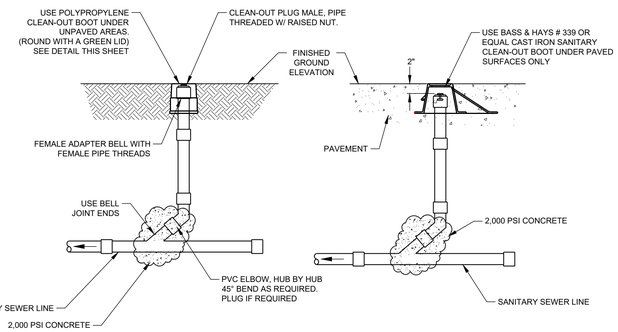
1 C-7 **PRECAST MANHOLE**
NOT TO SCALE



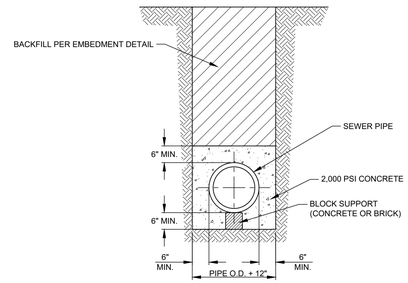
3 C-7 **SANITARY SEWER EMBEDMENT**
NOT TO SCALE



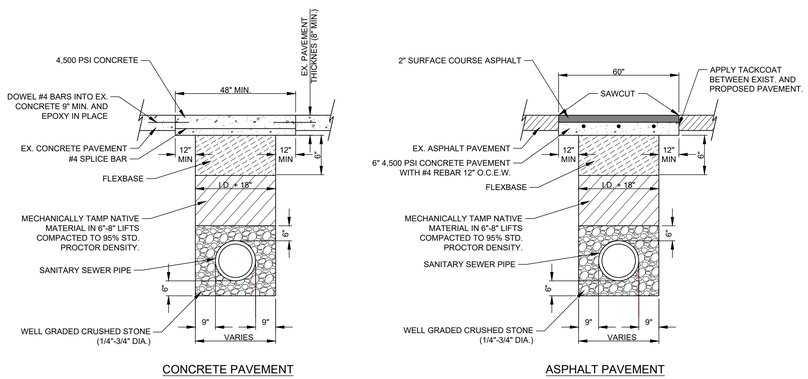
5 C-7 **BORING DETAIL**
NOT TO SCALE



4 C-7 **SANITARY SEWER CLEANOUT**
NOT TO SCALE



6 C-7 **CONCRETE ENCASEMENT**
NOT TO SCALE



7 C-7 **PAVEMENT REPAIR**
NOT TO SCALE

ENGINEER:
FORESITE group
TBPE Firm No. F-12878
Foresite Group, LLC
901 S. MoPac Expressway
Suite 300
Austin, TX 78746
D/B/A Foresite Consulting Group of Texas, LLC.
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f | 770.368.1944
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DEVELOPER:
FIRST HARTFORD REALTY CORPORATION
9121 ELIZABETH ROAD, SUITE 105
HOUSTON, TX 77055
(713) 255-0280
CONTACT: JONATHAN BELLOCK

PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:
STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED PROFESSIONAL ENGINEER
3.7.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

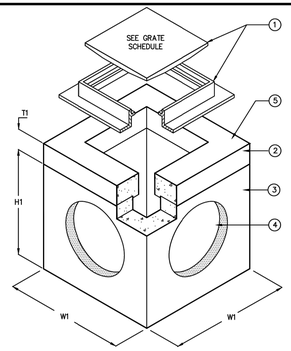
SANITARY SEWER DETAILS

SHEET NUMBER:
C-7

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

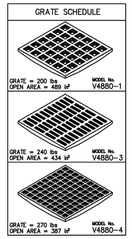
JOB/FILE NUMBER:
489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\C-7 SANITARY DETAILS.DWG



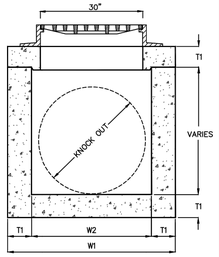
ISOMETRIC VIEW

GRATE SCHEDULE



KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	CAST IRON FRAME & GRATE
2	1	TOP SECTION
3	1	PRECAST CONCRETE BASIN SECTION
4	4	THIN WALL KNOCKOUT ON ALL 4 SIDES. SEE KO DIMENSION FOR MAXIMUM PIPE O.D.
5	1	NAMEPLATE MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL: CB4880

NOTE:
RISER SECTION AVAILABLE IN 6" TO 12" DEPTHS.



SECTION VIEW

MODEL	W1	W2	H1	H2	T1	T2	K0	GRATE SIZE	OPEN AREA	WEIGHT LBS
CB-30	42"	30"	42"	36"	6"	6"	30"	30"x30"x2"	490	3,675
CB-36	48"	36"	42"	36"	6"	6"	32"	30"x30"x2"	693	4,585
CB-48	60"	48"	54"	48"	6"	6"	48"	30"x30"x2"	693	7,250
CB-60	72"	60"	66"	60"	6"	6"	60"	30"x30"x2"	693	10,500
CB-72	84"	72"	78"	72"	6"	6"	72"	30"x30"x2"	693	15,350
CB-84	96"	84"	78"	72"	6"	6"	72"	30"x30"x2"	693	19,500

GRADE-1

SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

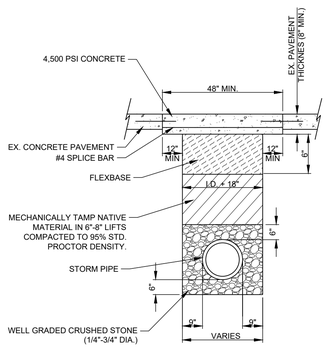
PROJECT: .
CUSTOMER: .
ENGINEER: .
ORDER #: . PROJ #: .
DATE: . LOCATION: .

PARK USA

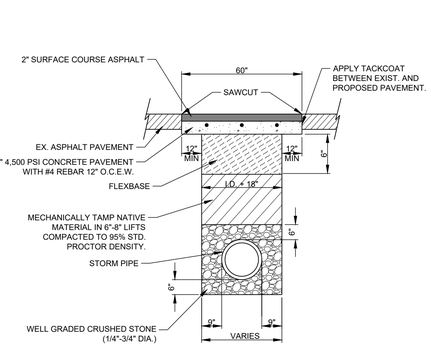
www.parkusa.com 888-611-PARK

TYPE-A GRATE INLET
MODEL CB4880 30" THRU 84"

PM	PC	DRN	ENG	DWG. NO.	REV.
..	..	..	..	CB4880-1	
DATE 12/2020					



CONCRETE PAVEMENT REPAIR



ASPHALT PAVEMENT REPAIR

3
C-8

PAVEMENT REPAIR

NOT TO SCALE

ENGINEER:

FORESITE group

TBPE Firm No. F-12878
Foresite Group, LLC
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HEARTLAND DENTAL

PROJECT:
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BUDA, HAYS COUNTY, TEXAS

SEAL:

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	JANUARY, 2023
TITLE:	

STORM SEWER DETAILS

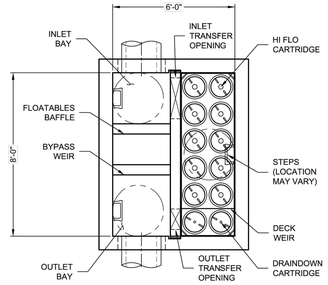
SHEET NUMBER:

C-8

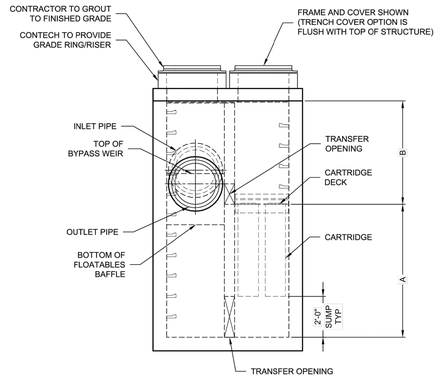
COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER:
489.057

F:\489.057 FHRC - HEARTLAND DENTAL (BUDA, TX)\DWG\CD\C-8 STORM DETAILS.DWG



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



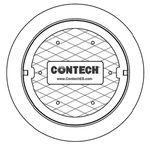
ELEVATION VIEW

JELLYFISH DESIGN NOTES

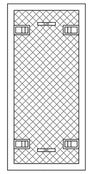
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD

CARTRIDGE SELECTION

CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	5'-4"	4'-3"	3'-3"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	1.96	1.47	0.98	0.54
DECK TO INSIDE TOP (MIN) (B)	5.00	4.00	4.00	4.00



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



24" TRENCH COVER
(LENGTH VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	*
WATER QUALITY FLOW RATE (cfs)	*
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED (HF / DD)	*
CARTRIDGE LENGTH	*

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	*	*	*	*	*
INLET #2	*	*	*	*	*
OUTLET	*	*	*	*	*

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE or www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

Jellyfish® Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENT NO. 8,287,726; 8,221,618; US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

CONTECH®
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JELLYFISH JFPD0806
STANDARD DETAIL
PEAK DIVERSION CONFIGURATION

1 C-8.1.1 JELLYFISH FILTER
NOT TO SCALE

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: FM967/1626
Date Prepared: 12/12/2022

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 Equation 3.3: $L_M = 34.0(A_N \times P)$
Pages 3-27 to 3-30

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 100% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	Hays	
Total project area included in plan * =	1.30	acres
Predevelopment impervious area within the limits of the plan =	0.20	acres
Total post-development impervious area within the limits of the plan* =	0.81	acres
Total post-development impervious cover fraction * =	0.62	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	691	lbs.

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = JellyFish

Total drainage basin/outfall area =	1.30	acres
Predevelopment impervious area within drainage basin/outfall area =	0.20	acres
Post-development impervious area within drainage basin/outfall area =	0.81	acres
Post-development impervious fraction within drainage basin/outfall area =	0.62	
$L_{M\ THIS\ BASIN}$ =	691	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	JF	abbreviation
Removal efficiency =	82.0	percent

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

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

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 =	1.30	acres
A_I =	0.81	acres
A_P =	0.49	acres
L_R =	768	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	691	lbs.
F =	0.90	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP =	0.00	acres
Offsite impervious cover draining to BMP =	0.00	acres

Calculations from RG-348
Pages Section 3.2.22

Rainfall Intensity =	1.10	inches per hour
Effective Area =	0.75	acres
Cartridge Length =	54	inches
Peak Treatment Flow Required =	**0.83**	cubic feet per second

7. Jellyfish
Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size

Jellyfish Size for Flow-Based Configuration =	JFPD0806-5-1	
Jellyfish Treatment Flow Rate =	0.98	cfs

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CONTACT: JONATHAN BELLOCK

PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:
STATE OF TEXAS
VINCENT D. MUSAT
87005
LICENSED
PROFESSIONAL ENGINEER
5.9.2023

REVISIONS	DATE

PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	MAY, 2023
TITLE:	

WATER QUALITY DETAILS

SHEET NUMBER:
C-8.1

COMMENTS:
FOR REFERENCE ONLY

JOB/FILE NUMBER:
489.057

I:\COMMON\CAD\TREATMENT\13 JELLYFISH FILTER\40 STANDARD DRAWINGS\JFPDDWG\JFPD0806-D1L NEW.DWG 10/9/2018 10:38 AM

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GENERAL LANDSCAPE NOTES:

1. WARRANTY: ALL PLANTS SHALL BE WARRANTED TO REMAIN ALIVE, HEALTHY, AND IN THRIVING CONDITION FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE
2. PLANTS SHALL MEET DOT SPECIFICATIONS AND AMERICAN STANDARD FOR NURSERY STOCK STANDARDS.
3. PLANTS SHALL BE SPECIMEN QUALITY. PLANTS SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF.
4. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO THE MAIN BODY OF THE PLANT AND NOT FROM BRANCH TIP TO TIP. IF A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE AS LARGE AS THE MAXIMUM SIZE SPECIFIED.
5. SHADE TREES SHALL BE STRAIGHT UNLESS OTHERWISE SPECIFIED
6. PLANTS SHALL BE SUBJECT TO REVIEW BY OWNER'S REPRESENTATIVE. OWNER'S REPRESENTATIVE SHALL BE THE SOLE JUDGE OF THE QUALITY AND ACCEPTABILITY OF MATERIALS AND PLACEMENT.
7. PLANTING PLANS INDICATE DIAGRAMMATIC LOCATIONS ONLY. SITE ADJUSTMENTS OF PLANTING DESIGN AND RELOCATION OF PLANT MATERIAL INSTALLED PRIOR TO OWNER REPRESENTATIVE'S APPROVAL SHALL BE DONE WITHOUT PENALTY OR ADDITIONAL COST TO OWNER. STAKE PLANT LOCATIONS AT SITE AND OBTAIN OWNER REPRESENTATIVE'S APPROVAL PRIOR TO PLANT INSTALLATION.
8. PLACE PLANTS UPRIGHT AND TURNED SO THAT THE MOST ATTRACTIVE SIDE IS VIEWED.
9. BE FAMILIAR WITH UNDERGROUND UTILITIES BEFORE DIGGING. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OF UTILITY LINES.
10. PROVIDE SHOVEL-CUT TRENCH AT SHRUB BEDS IN LAWN AREAS UNLESS OTHERWISE NOTED.
11. PROVIDE 3" THICKNESS MULCH AT ALL PLANTS AND PLANTING BEDS. MULCH MUST BE 3" THICK AT TIME OF FINAL WALK-THROUGH. MULCH IN SHRUB AND TREE PLANTING BEDS SHALL BE PINE STRAW UNLESS OTHERWISE NOTED. MULCH IN GROUNDCOVER BEDS TO BE SHREDDED HARDWOOD UNLESS OTHERWISE NOTED.
12. MAINTENANCE WORK SHALL BE PERFORMED UNTIL DATE OF FINAL ACCEPTANCE BY OWNER'S REPRESENTATIVE.
13. CONTRACTOR'S PRICES SHALL INCLUDE ALL LABOR AND MATERIAL NECESSARY TO COMPLETE THE WORK, I.E. MULCH, PLANTING, SOIL MIX, WOOD AND WIRE STAKING MATERIAL, ETC.
14. QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWING SHALL BE FURNISHED. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE OWNER'S REPRESENTATIVE ASSUMES NO LIABILITY FOR OMISSION OR ERRORS. HIS ESTIMATES ARE ONLY AN AID FOR CLARIFICATION OF UNITS AND A CHECK FOR THE CONTRACTOR TO COMPARE WITH HIS OWN ESTIMATES. DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF OWNER'S REPRESENTATIVE. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR EXTRA QUANTITIES NECESSARY TO COMPLETE THE WORK.
15. WHERE LANDSCAPING AREAS ADJOIN GRASSED RIGHTS-OF-WAY, SUCH AREAS SHALL BE CONSIDERED PART OF THE LANDSCAPED AREA FOR PURPOSES OF MAINTENANCE. AS OF COMPLETION OF SITE IMPROVEMENTS, THE PROPERTY OWNER SHALL HAVE AN IMPLIED EASEMENT OF THE RIGHT-OF-WAY EXTENDING FROM THE SITE TO THE ROAD PAVEMENT IN ORDER TO COMPLETE THE REQUIRED MAINTENANCE.
16. CONTRACTOR TO DESIGN-BUILD IRRIGATION SYSTEM TO PROVIDE 100% COVERAGE OF NEW PLANT MATERIAL. IRRIGATION HEADS TO BE INSTALLED FLUSH WITH GRADE.

PLANT SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	CONT	CAL	
	23	LAGERSTROEMIA X `NATCHEZ` / CRAPE MYRTLE	B & B	3"CAL	
	8	QUERCUS SHUMARDII / SHUMARD RED OAK	B & B	4"CAL	
	6	QUERCUS TEXANA / TEXAS RED OAK	B & B	4"CAL	
SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE		
	23	ILEX CORNUTA `NEEDLEPOINT` / NEEDLEPOINT HOLLY	3 GAL		30" o.c.
	16	LOROPETALUM CHINENSE RUBRUM 'PEACK' / PURPLE PIXIE® DWARF FRINGE FLOWER	3 GAL		24" o.c.
	21	MYRICA CERIFERA 'DON'S DWARF' / DON'S DWARF WAX MYRTLE	3 GAL		36" o.c.
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CONT		
	1,572	LIRIOPE SPICATA / CREEPING LILY TURF	4"POT		10" o.c.
SOD/SEED	QTY	BOTANICAL / COMMON NAME	CONT		
	18,039 SF	CYNODON DACTYLON `TIF 419` / BERMUDA GRASS	SOD		

EXISTING TREE REMOVAL

PROTECTED TREES (8 TO 20 CALIPER INCHES) REPLACED ON A 1:1 CALIPER INCH RATIO.		SIGNATURE TREES (20 TO 30 CALIPER INCHES) REPLACED ON A 3:1 CALIPER INCH RATIO.	
NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
5000	BURR OAK (19")	5005	POST OAK (21")
5004	RED OAK (18")	DEAD AND DYING TREES NO REPLACEMENT REQUIRED.	
5006	RED OAK (16")		
5008	BURR OAK (13")	5010	PINE (23")
TOTAL PROTECTED TREE INCHES TO REPLACE 66 CALIPER INCHES		TOTAL SIGNATURE TREE INCHES TO REPLACE 63 CALIPER INCHES	

TREE MITIGATION
(129 TOTAL INCHES TO REPLACE)

NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
PROTECTED TREES (8 TO 20 CALIPER INCHES) WHEN PRESERVED, PROTECTED TREES COUNT FOR 1 SHADE TREE CREDIT.		SIGNATURE TREES (20 TO 30 CALIPER INCHES) WHEN PRESERVED, SIGNATURE TREES COUNT FOR 3 SHADE TREE CREDITS.	
5003	LIVE OAK (19")	5001	ASH (22")
----------------		5002	ASH (24")
		5009	LIVE OAK (25")
TOTAL PROTECTED SHADE TREE CREDITS (1) 3 CALIPER INCH SHADE TREE= 3 CALIPER INCHES		TOTAL SIGNATURE SHADE TREE CREDITS (9) 3 CALIPER INCH SHADE TREES = 27 CALIPER INCHES	

EXISTING TREE PRESERVATION
(30 TOTAL INCHES OF CREDIT)

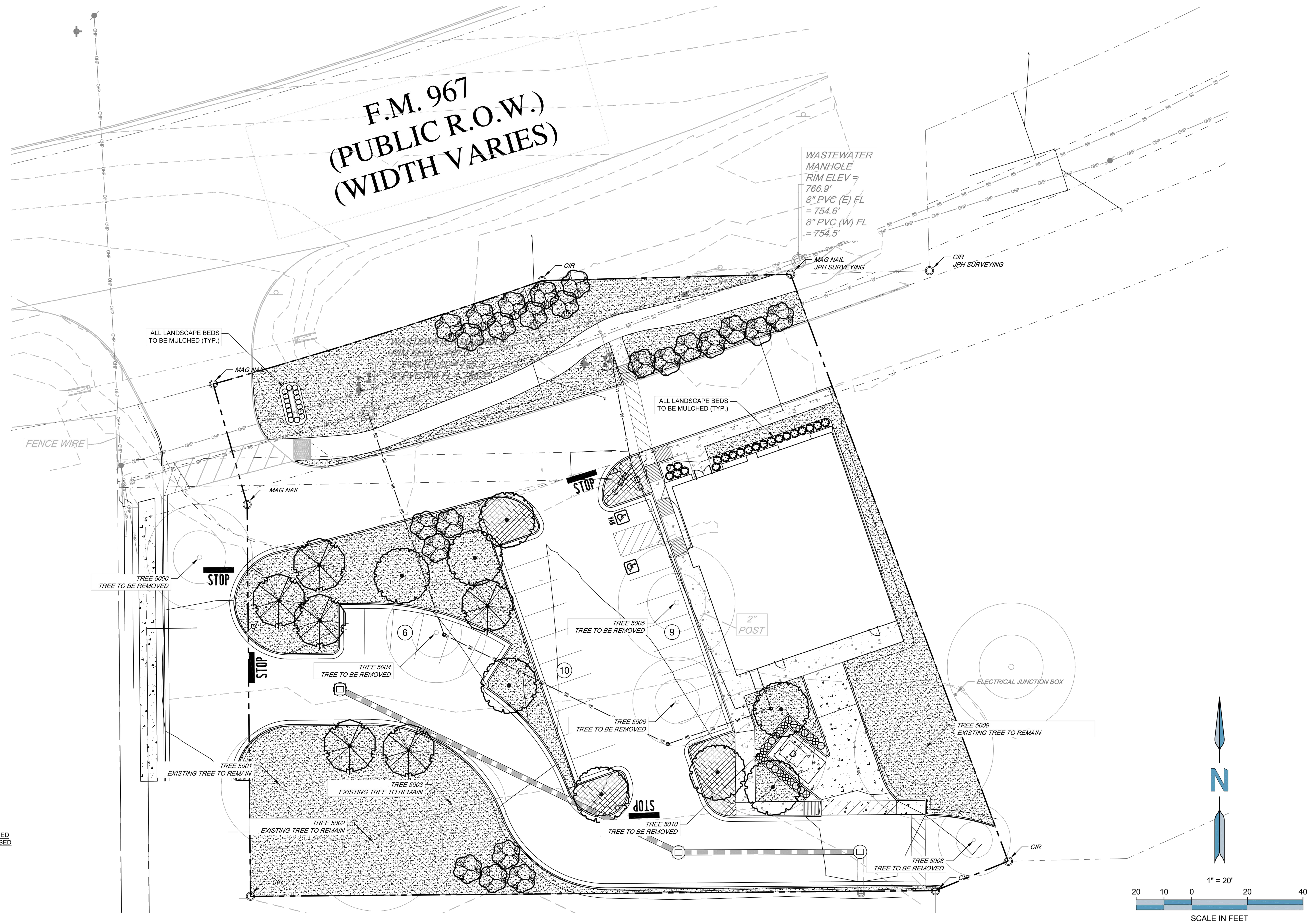
LANDSCAPE REQUIREMENTS:

PERIMETER LANDSCAPING:
- TEN FOOT WIDE LANDSCAPING STRIP REQUIRED ALONG THE F.M. 967 PROPERTY LINE.
  208.72 LF / 40 LF = 5.2 TREES REQUIRED
  6 TREES PROPOSED

INTERNAL LANDSCAPING:
- ONE SHADE TREE FOR EVERY FIFTEEN PARKING SPACES OR FRACTION THEREOF.
  25 PARKING SPACES / 15 PARKING SPACES = 1.7 TREES REQUIRED
  2 TREES PROPOSED

EVERY PARKING SPACE SHALL BE WITHIN 80 FEET OF A TREE TRUNK.

REPLACEMENT TREES
- TOTAL REPLACEMENT INCHES REQUIRED
  66 CALIPER INCHES + 63 CALIPER INCHES = 129 CALIPER INCHES REQUIRED
  129 REPLACEMENT INCHES REQUIRED - 30 TOTAL SHADE TREE CREDIT INCHES = 99 CALIPER INCHES REQUIRED
  = 99 CALIPER INCHES PROPOSED



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PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:
THESE PLANS WERE PREPARED UNDER THE SUPERVISION AND DIRECTION OF

JASON V. WECKERLY, RLA #2788

THESE PLANS ARE RELEASED FOR INITIAL REVIEW PURPOSES ONLY.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

REVISIONS	DATE

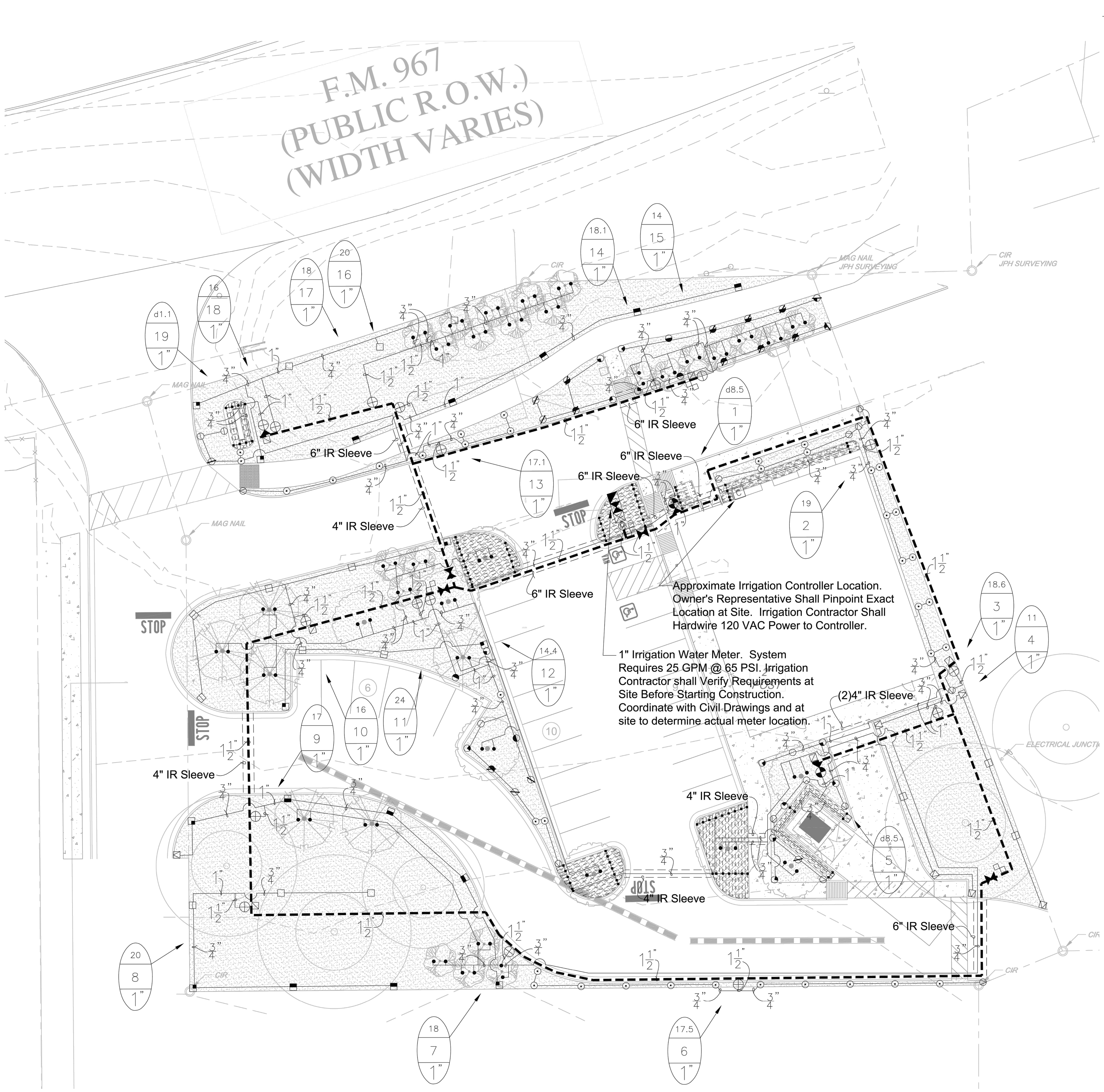
PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	FG
JURISDICTION:	CITY OF BUDA
DATE:	01/03/2023

TITLE:
LANDSCAPE PLAN

SHEET NUMBER:
L-1

COMMENTS: NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 489.057



SPECIAL NOTES:

IRRIGATION CONTRACTOR WILL BE RESPONSIBLE TO ADHERE TO ALL LOCAL CODES/ORDINANCES AND TO COMPLY WITH STATE OF TEXAS TCEQ REQUIREMENTS FOR IRRIGATION SYSTEM INSTALLATION.

ALL QUICK COUPLER VALVES SHALL BE INSTALLED IN PURPLE VALVE BOX AND MUST BE CLEARLY LABELED: "NON-POTABLE, NOT SAFE FOR DRINKING".

IRRIGATION IN TEXAS IS REGULATED BY TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ), P.O. BOX 13807, AUSTIN, TEXAS 78711-3087. WWW.TCEQ.STATE.TX.US

GENERAL NOTES

1. ALL MAINLINES TO HAVE A MINIMUM OF 18" OF COVER. (CLASS 200 PVC PIPE).
2. ALL LATERAL AND SUB-MAIN PIPE TO HAVE A MINIMUM OF 12" OF COVER. (CLASS 200 PVC PIPE).
3. NO ROCKS, BOULDER, OR OTHER EXTRANEOUS MATERIALS TO BE USED IN BACKFILLING OF TRENCH.
4. ALL PIPE TO BE INSTALLED AS PER MANUFACTURERS' SPECIFICATIONS.
5. ALL THREADED JOINTS TO BE COATED WITH TEFLON TAPE OR LIQUID TEFLON.
6. ALL LINES TO BE THOROUGHLY FLUSHED BEFORE INSTALLATION OF SPRINKLER HEADS.
7. SPRINKLER AND RELATED EQUIPMENT TO BE INSTALLED AS PER DETAILS.
8. ALL ELECTRICAL JOINTS TO BE MADE USING WATERPROOF CONNECTIONS AS SHOWN ON DETAILS.
9. ALL EQUIPMENT NOT SPECIFIED IN THE LEGEND SHALL BE DETERMINED AND FURNISHED BY THE CONTRACTOR.
10. NO ELECTRICAL CONNECTIONS SHALL BE MADE IN THE FIELD EXCEPT AT A VALVE CONTROL BOX OR ANOTHER VALVE BOX SPECIFICALLY FOR CONNECTIONS.
11. ANY DISCREPANCY BETWEEN THIS SHEET AND OTHERS IN THIS SET MUST BE REFERRED TO THE IRRIGATION CONSULTANT BY THE CONTRACTOR FOR CLARIFICATION BEFORE PRECEEDING WITH THE WORK.
12. ALL 24 VOLT WIRE SHALL BE #12 UF/UL FOR COMMON WIRE, AND #14 UF/UL FOR CONTROL WIRES, DIRECT BURIAL, SOLID COPPER.
13. CONTRACTOR TO BE RESPONSIBLE FOR PROPER COVERAGE OF AREAS TO BE WATERED. I.E. ADJUST HEADS WITH INSUFFICIENT COVERAGE DUE TO BLOCKAGE BY EXISTING OR PROPOSED SITE FEATURES.
14. CONTRACTOR TO REFER TO LANDSCAPE PLAN TO KEEP SPRINKLER EQUIPMENT AND ACCESSORY MATERIAL FROM INTERFERING WITH PROPER PLANTING, i.e. VERIFY ROOT BALL SIZE FOR PLANTING.
15. CONTRACTOR SHALL PROVIDE EXPANSION COILS AT EACH WIRE CONNECTION IN VALVE BOX (WRAP AROUND 3/4" PIPE 12 TIMES).
16. CONTRACTOR TO UTILIZE APPROPRIATE AUTOMATIC DRAIN DEVICE WHERE LOW HEAD DRAINAGE MAY OCCUR.
17. ALL SPRINKLERS TO BE MOUNTED ON SWING JOINTS - REFER TO DETAILS.
18. CONTRACTOR SHALL UTILIZE VALVE I.D. TAGS ON ALL REMOTE CONTROL VALVES.
19. 24 VOLT WIRE SHALL BE COLOR CODED; COMMON-WHITE, CONTROL-RED.
20. CONTRACTOR SHALL INSTALL MANUFACTURERS' RECOMMENDED GROUNDING EQUIPMENT FOR POWER SUPPLY AND VALVE OUTPUT WITH (2) 5/8" COPPER CLAD GROUND RODS.
21. CONTRACTOR SHALL INSTALL MANUFACTURERS' RECOMMENDATION ON FAULT GROUND AND LIGHTNING PROTECTION.
22. ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR TO OWNER:
    A. TWO WRENCHES FOR DISASSEMBLING AND ADJUSTING EACH TYPE OF SPRINKLER HEADS AND VALVE SUPPLIED.
    B. TWO KEYS FOR EACH OF THE AUTOMATIC CONTROLLERS.
    C. TWO QUICK COUPLER KEYS WITH MATCHING HOSE SWIVELS.
23. SYSTEM IS DIAGRAMMATIC TO IMPROVE CLARITY. ALL MAINLINE PIPING ELECTRIC VALVES AND WIRING ARE TO BE INSTALLED IN LANDSCAPE AREAS AND WITHIN PROPERTY BOUNDARIES. CONTRACTOR SHALL REFERENCE THE LANDSCAPE PLAN PRIOR TO THE INSTALLATION OF PIPING TO AVOID CONTACT WITH PLANT MATERIALS EXISTING OR NEW.
24. CONTRACTOR TO ADD EXTENSION RISER TO POP-UP HEADS WHEN NEEDED FOR PROPER COVERAGE.
25. CONTRACTOR SHALL INSTALL SPRINKLER EQUIPMENT 12" FROM FOUNDATIONS. ALSO INSTALL SPRINKLERS 4" FROM CURB OR WALKS.
26. PRIOR TO BID IRRIGATION CONTRACTOR SHALL VERIFY RIGHT-OF-WAY AND BACKFLOW REQUIREMENTS. NO LATER THAN FIVE DAYS BEFORE BID SUBMITTALS CONTRACTOR SHALL NOTIFY CONSULTANT OF ANY CHANGES FROM PLANS AND SPECIFICATIONS.
27. IRRIGATION CONTRACTOR SHALL PROVIDE THE OWNER AND LANDSCAPE ARCHITECT WITH A REPRODUCIBLE CROSS MEASURED AS-BUILT DRAWING OF THE INSTALLED IRRIGATION SYSTEM IN AUTOCAD 2004 FORMAT BEFORE FINAL ACCEPTANCE.
28. A 1-YEAR WARRANTY PERIOD SHALL BE PROVIDED FOR SYSTEM AFTER SUBSTANTIAL COMPLETION IS ACCEPTED. START UP AND ADJUSTING OF SYSTEM IN SPRING TIME SHALL BE INCLUDED IN WARRANTY.
29. PRIOR TO BID, CONTRACTOR SHALL VERIFY THAT ALL MATERIALS, INSTALLATION PARAMETERS AND OPERATIONS CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. NO LATER THAN FIVE DAYS BEFORE BID SUBMITTALS CONTRACTOR SHALL NOTIFY IRRIGATION CONSULTANT/DESIGNER OF ANY CHANGES REQUIRED DUE TO CURRENT CODE OR ORDINANCE DISCREPANCIES. IF CONTRACTOR DOES NOT COMPLY TO THIS NOTIFICATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY INSTALLATION CHANGE AND REDESIGN COSTS FOR NON-COMPLIANCE.
30. THE IRRIGATION CONTRACTOR IS REQUIRED BY LAW TO NOTIFY TEXAS ONE CALL (800-245-4545) 72 HOURS PRIOR TO ANY EXCAVATION. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. IRRIGATION CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF SAID UTILITIES WHETHER OR NOT TEXAS ONE CALL IS NOTIFIED.
31. IT IS THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO COORDINATE PIPING WITH THE LANDSCAPE SUBCONTRACTOR TO AVOID CONFLICT WITH PLANTING BEDS. IT WILL BE THE RESPONSIBILITY OF THE IRRIGATION SUBCONTRACTOR TO MOVE PIPING TO ALLOW PROPER PLACEMENT OF PLANT MATERIAL. THE IRRIGATION CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER.
32. ALL IRRIGATION WORK SHALL BE INSTALLED UNDER THE SUPERVISION OF A LICENSED (IN THE STATE OF TEXAS) IRRIGATION CONTRACTOR.
33. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM STATIC PRESSURE ON SITE PRIOR TO STARTING WORK.
34. IT IS THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO SECURE ALL REQUIRED PERMITS AND PAY ALL ASSOCIATED FEES UNLESS OTHERWISE NOTED. ALL LOCAL CODES SHALL PREVAIL OVER ANY DISCREPANCIES CONTAINED IN THESE DOCUMENTS.
35. ELECTRIC POWER SHALL BE PROVIDED TO CONTROLLER LOCATION BY GENERAL CONTRACTOR. IRRIGATION CONTRACTOR SHALL PROVIDE FINAL HARD-WIRE TO CONTROLLERS.
36. SPRINKLER HEAD SPACING SHALL NOT EXCEED 50% OF SPRAY DIAMETER BASED ON MANUFACTURERS OPERATING SPECIFICATIONS.
37. PRESSURE AT ANY POINT WITHIN A ZONE SHALL NOT VARY BY MORE THAN 10% FROM THE DESIGN SPRINKLER OPERATING PRESSURE. SEE SPECIFICATIONS FOR TESTING.
38. UNLESS OTHERWISE NOTED, THE CONTRACTOR MUST COMPLETE 2 PRESSURE TESTS OF THE IRRIGATION SYSTEM MAINLINE (BOTH TO SHOW NO DROP IN PRESSURE DURING DURATION OF TEST.
    A. 2-HOUR PRESSURE TEST AT 1.5 TIMES THE SYSTEM STATIC PRESSURE
    B. 24-HOUR PRESSURE TEST AT THE SYSTEM STATIC PRESSURE
39. IRRIGATION INSTALLATION CONTRACTOR SHALL PROVIDE OWNER WITH A COLOR-CODED ZONES DIAGRAM PLAN, 8-1/2"X11" LAMINATED SHEET(S), TO IDENTIFY CONTROLLER STATION TO THE CONTROL VALVE NUMBER FOR EACH CONTROLLER. TO BE LOCATED IN ADHESIVE POUCH ATTACHED INSIDE OF CONTROLLER(S).

IRRIGATION LEGEND

1" WATER METER, SYSTEM REQUIRES 25 GPM @ 65 PSI. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE SYSTEM REQUIREMENTS AT SITE BEFORE STARTING CONSTRUCTION.

NOTE: IF STATIC PRESSURE IF FOUND TO EXCEED 90 PSI, CONTRACTOR SHALL INSTALL A WATTS PRESSURE REDUCING SUSTAINING VALVE (WITH HIGH TENSION SPRING) IN ORDER TO REDUCE PRESSURE ON SYSTEM.

MANUAL DRAIN VALVE. SCH 80 PVC TRUE UNION BALL VALVE. DETAIL-E.

WATTS #909-M1-QT-1-1/2", 1-1/2" REDUCED PRESSURE ASSEMBLY BACKFLOW PREVENTER. DETAIL-F.

WINTERIZATION ASSEMBLY. DETAIL-B.

RAIN BIRD ESP-24-LXME CONTROLLER: 24 STATION, MODULAR CONTROLLER, FOUR PROGRAMS, WALL MOUNTED. DETAIL-J IRRIGATION CONTRACTOR SHALL ALSO INSTALL A WIRELESS MINII CLIK II RAIN SENSOR AND A FREEZE-CLIK DEVICE.

MASTER VALVE - RAIN BIRD 150-EFB-CP-PRS BRASS ELECTRIC REMOTE CONTROL VALVE, 1"-1/2 SIZE, MOUNTED WITH SCH 80 PVC BALL VALVE WITH PRESSURE REGULATION DEVICES, WIRED TO MASTER VALVE CIRCUIT AT CONTROLLER. DETAIL-O.

RAIN BIRD 100-PEB-PRS PLASTIC ELECTRIC REMOTE CONTROL VALVE, 1" SIZE, MOUNTED WITH SCH 80 PVC TRUE UNION BALL VALVE, MOUNTED WITH PRESSURE REGULATION DEVICE. DETAIL-A.

RAIN BIRD 1806-SAM, 6" POP-UP LAWN SPRAY SPRINKLER, 15' RADIUS, FULL-4.0 GPM, HALF-2.0 GPM, QUARTER-1.0 GPM, 30 PSI. DETAIL-C.

RAIN BIRD 1806-SAM, 6" POP-UP LAWN SPRAY SPRINKLER, 12' RADIUS, FULL-2.6 GPM, HALF-1.3 GPM, QUARTER-0.65 GPM, 30 PSI. DETAIL-C.

RAIN BIRD 1806-SAM, 6" POP-UP LAWN SPRAY SPRINKLER, 10' RADIUS, FULL-2.0 GPM, HALF-1.0 GPM, QUARTER-0.5 GPM, 30 PSI. DETAIL-C.

RAIN BIRD 1806-SAM, 6" POP-UP LAWN SPRAY SPRINKLER, 8' RADIUS, FULL-1.1 GPM, HALF-0.55 GPM, QUARTER-0.28 GPM, 30 PSI. DETAIL-C.

RAIN BIRD 1806-SAM, 6" LAWN SIDE STRIP SPRAY SPRINKLER, 4' X 30' RADIUS, 1.5 GPM, 30 PSI. DETAIL-C.

RAIN BIRD 1806-SAM, 6" LAWN END STRIP SPRAY SPRINKLER, 4' X 15' RADIUS, 1.0 GPM, 30 PSI. DETAIL-C.

RAIN BIRD TREE ROOT WATERING ASSEMBLY. RWS-BG-04. 1.0 GPM. DETAIL-S.

HUNTER I-20-06-SS LAWN ROTOR, 40' RADIUS, FULL-8.0 GPM, HALF-4.0 GPM, QUARTER-2.0 GPM, 45 PSI, DETAIL-U.

HUNTER I-20-06-SS LAWN ROTOR, 30' RADIUS, FULL-4.0 GPM, HALF-2.0 GPM, QUARTER-1.0 GPM, 45 PSI, DETAIL-U.

RAIN BIRD #5 QUICK COUPLING VALVE 1" SIZE. CONTRACTOR TO SUPPLY TWO QCV KEYS AND MATCHING HOSE SWIVELS. DETAIL-P.

SCH 80 PVC TRUE UNION BALL VALVE, SIZED SAME AS MAINLINE, MOUNTED IN CARSON VALVE BOX, DETAIL-Q.

RAIN BIRD DRIP ZONE ASSEMBLY KIT, MODEL #XCZ-100-PRB-COM . 1" SIZE DETAIL-L.

POINT OF CONNECTION - DRIP LINE TUBING TO PVC PIPE, DETAIL-M,N.

DRIP TUBING: RAIN BIRD XFS DRIPLINE DRIP TUBING, .6 GPH, 12" CENTERS, STAKED EVERY TURN OR EVERY 4', INSTALL NETAFIM AIR RELIEF VALVE KIT IN 10" CIRCULAR VALVE BOX AT HIGH POINT OF EACH ZONE AND INSTALL NETAFIM DRIP DRAIN VALVE(S) IN 10" CIRCULAR VALVE BOX AT LOW POINT(S) OF EACH ZONE. DETAIL-M,N,Q,R,S.

IRRIGATION CONTRACTOR SHALL INSTALL RAIN BIRD DRIP OPERATION INDICATOR KIT AT EACH END OF ALL DRIP ZONE AREAS.

MAINLINE PIPE: 1-1/2" SIZE IF NOT NOTED. CLASS 200 PVC PIPE UTILIZING SCH 40 PVC FITTINGS.

IRRIGATION SLEEVE: CLASS 200 PVC, SIZE NOTED ON PLAN. DETAIL-H.

LATERAL LINE PIPE: CLASS 200 PVC PIPE UTILIZING SCH 40 PVC FITTINGS, SIZE NOTED.

3" ELECTRICAL CONDUIT SLEEVE.

NOTES:

1. ALL SPRINKLERS WILL BE MOUNTED ON (3) MARLEX STREET ELLS WITH A SCHED. 80 NIPPLE SIZE OF SPRINKLER INLET.
2. CONTRACTOR TO UTILIZE A AUTOMATIC DRAIN CHECK VALVE DEVICE WHERE LOW HEAD DRAINAGE MAY OCCUR.
3. ALL WIRE WILL BE COLOR CODED DIRECT BURIAL UL/UF WIRE: COMMON (WHITE) #12-1, CONTROL (RED) #14-1.
4. ALL PIPING AND WIRING UNDER HARDTOPS WILL BE IN CLASS 200 PVC PIPE SLEEVE.

TYPICAL VALVE INDICATOR

28.5 — GALLONS PER MIN.
10 — STATION NUMBER
$1\frac{1}{2}$ — VALVE SIZE

N

1" = 20'

20 10 0 20 40

SCALE IN FEET

ENGINEER:
FORESITE group
TBPE Firm No. F-12878
Foresite Group, LLC
901 S. MoPac Expressway
Suite 300
Austin, TX 78746
o | 770.368.1399
f | 770.368.1944
w | www.foresitegroup.net
D/B/A Foresite Consulting Group of Texas, LLC.

DEVELOPER:
FIRST HARTFORD REALTY CORPORATION
9121 ELIZABETH ROAD, SUITE 105
HOUSTON, TX 77055
(713) 255-0280

CONTACT: JONATHAN BELLOCK

PROJECT:
HEARTLAND DENTAL
FM 967 AND FM 1626
BUDA, HAYS COUNTY, TEXAS

SEAL:

REVISIONS	DATE

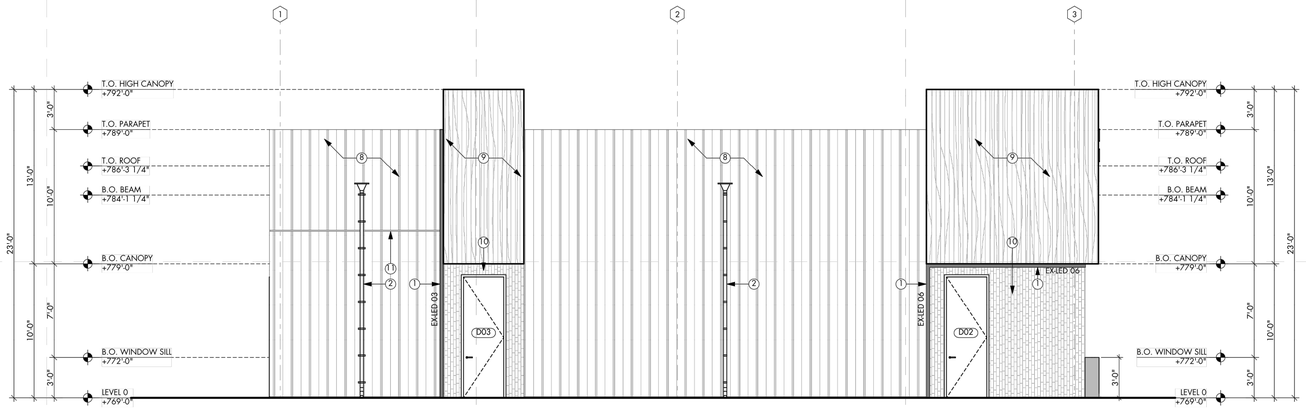
PROJECT MANAGER:	VINCENT D. MUSAT, P.E. LEED AP
DRAWING BY:	ICS
JURISDICTION:	CITY OF BUDA
DATE:	01/09/2023
TITLE:	IRRIGATION PLAN
SHEET NUMBER:	I-1
COMMENTS:	NOT RELEASED FOR CONSTRUCTION
JOB/FILE NUMBER:	489.057

EXTERIOR FINISH LEGEND

- EXTERIOR CORRUGATED METAL PANEL
- EXTERIOR METAL PANEL - WOOD
- EXTERIOR STACKED TILE/STONE

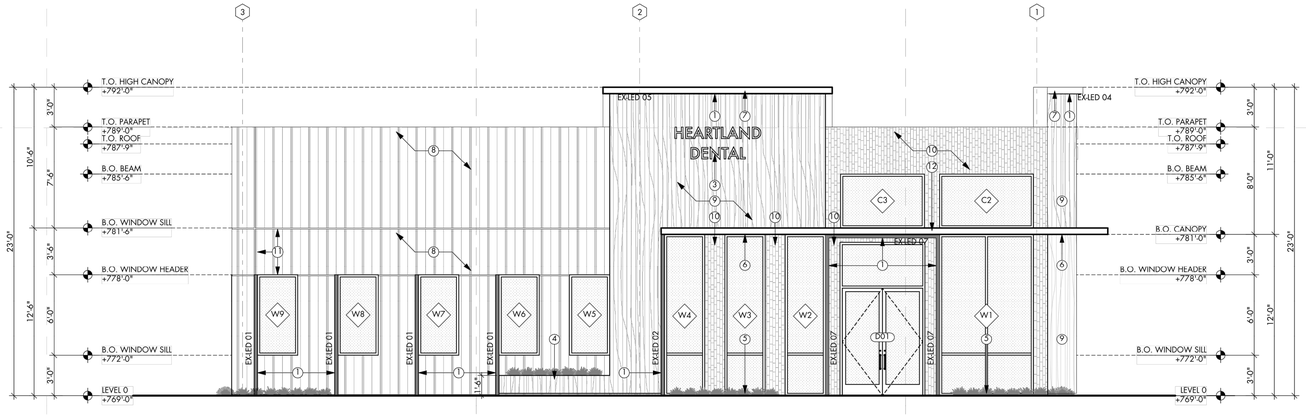
KEYNOTES | EXTERIOR ELEVATION

1. Scheduled Exterior Accent Light Fixture - Refer to Lighting Schedule for Spec.
2. 4"x5" Through Wall Prefinished Scupper/Conductor Head with Aluminum Rain Leader Downspout, Connected to Underground Storm Collection System. Coordinate with Civil.
3. Illuminated Exterior Sign, Verify and Coordinate with Owner. Provide Power and Blocking as Required/Needed.
4. Landscaped Raised Planter Bed.
5. Landscaped Recessed Concrete Planter Bed, Flush with Sidewalk.
6. Metal Entry Canopy.
7. High Canopy with Light Fixture, Refer to Light Schedule for Spec.
8. Perforated Metal Panelling - EX-M1 on Painted Smooth Hardie Board.
9. Exterior ACP Wood Clad - EX-WD1.
10. Exterior Tile Clad - EX-TL1.
11. Painted Fry Reglet Reveal.



SOUTH ELEVATION 2

SCALE: 3/16" = 1'-0"



NORTH ELEVATION 1

SCALE: 3/16" = 1'-0"

DESIGNTRAIT ARCHITECTS

SEAL

REGISTERED ARCHITECT DANIEL TOUNDATE 23509 STATE OF TEXAS

02/20/2023

PROJECT

Hearthland Dental Shell - Buda

FM 967 AND FM 1626

BUDA, TX, HAYS COUNTY

DRAWN BY HH

SHEET ISSUE

2/20/23 | Site Plan Elevations

SHEET TITLE

BUILDING ELEVATIONS

SHEET

A6.1

EXTERIOR FINISH LEGEND

- EXTERIOR CORRUGATED METAL PANEL
- EXTERIOR METAL PANEL - WOOD
- EXTERIOR STACKED TILE/STONE

KEYNOTES | EXTERIOR ELEVATION

1. Scheduled Exterior Accent Light Fixture - Refer to Lighting Schedule for Spec.
2. 4"x5" Through Wall Prefinished Scupper/Conductor Head with Aluminum Rain Leader Downspout, Connected to Underground Storm Collection System. Coordinate with Civil.
3. Illuminated Exterior Sign, Verify and Coordinate with Owner. Provide Power and Blocking as Required/Needed.
4. Landscaped Raised Planter Bed.
5. Landscaped Recessed Concrete Planter Bed, Flush with Sidewalk.
6. Metal Entry Canopy.
7. High Canopy with Light Fixture, Refer to Light Schedule for Spec.
8. Perforated Metal Panelling - EX-M1 on Painted Smooth Hardie Board.
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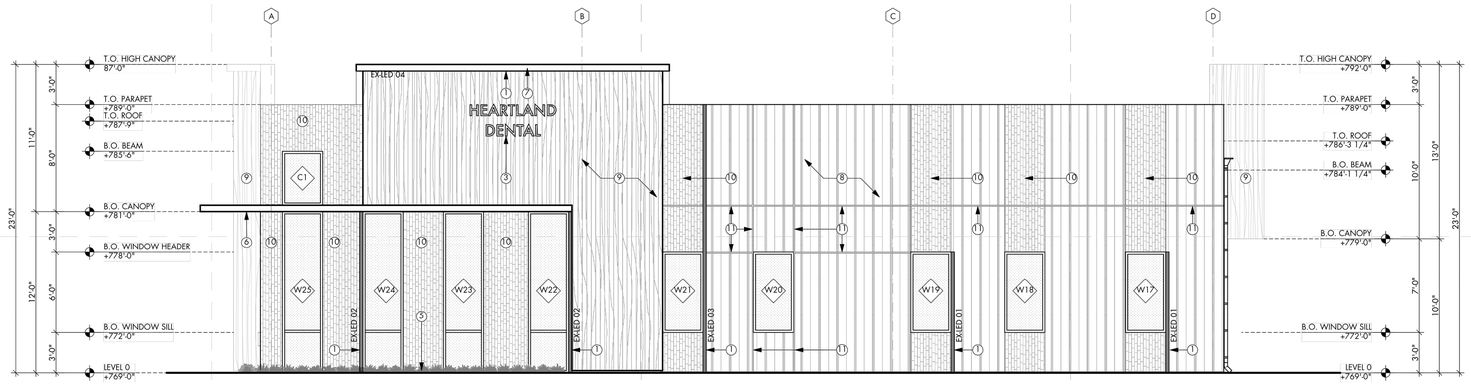
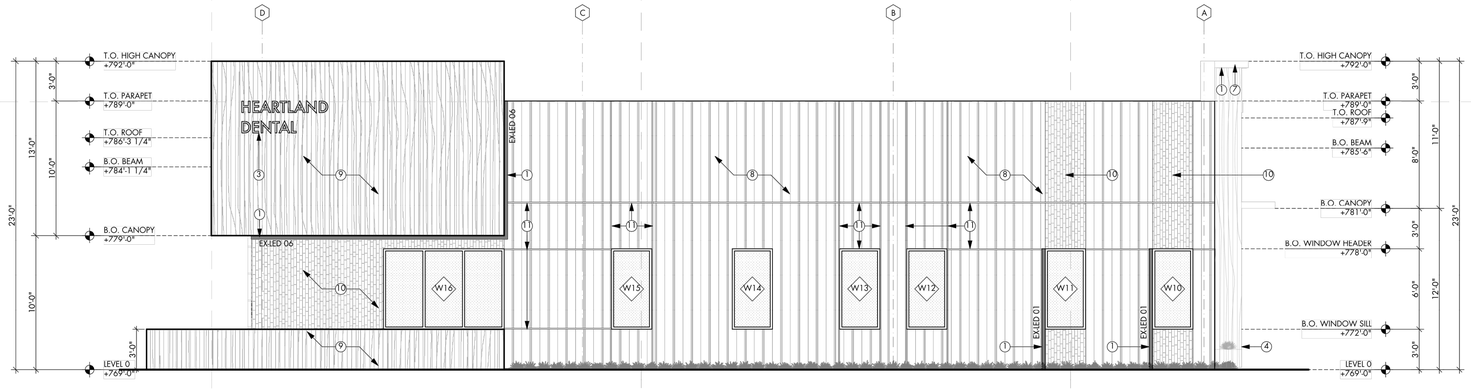
10. Exterior Tile Clad - EX-TL1.
11. Painted Fry Reglet Reveal.



WEST ELEVATION 2

SCALE: 3/16" = 1'-0"



EAST ELEVATION 1

SCALE: 3/16" = 1'-0"

DESIGNTRAIT ARCHITECTS

SEAL

REGISTERED ARCHITECT — DANIEL TOUNDATE — 23509 — STATE OF TEXAS

02/20/2023

PROJECT

Heartland Dental Shell - Buda
FM 967 AND FM 1626
BUDA, TX, HAYS COUNTY

DRAWN BY HH

SHEET ISSUE

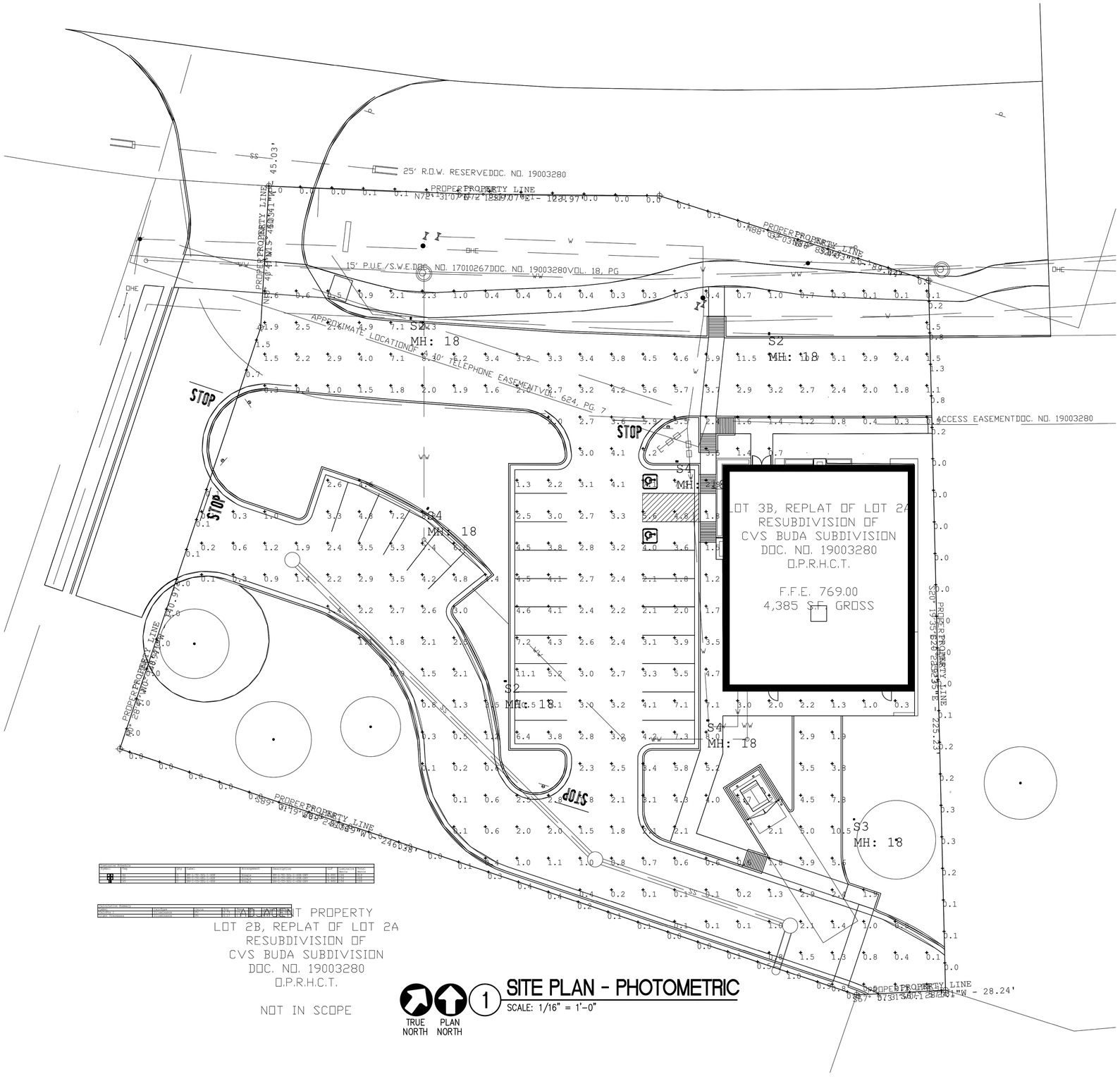
2/20/23 | Site Plan Elevations

SHEET TITLE

BUILDING ELEVATIONS

SHEET

A6.2



1 SITE PLAN - PHOTOMETRIC
SCALE: 1/16" = 1'-0"

TRUE NORTH PLAN NORTH

DESIGNTRAIT ARCHITECTS
DRAWN BY: AYS CHECKED BY: AYS
AYS Engineering, LLC
MEP CONSULTING ENGINEERING
411 W. Main Street, Suite 310 • Round Rock • TX 78664
www.AYSeng.com • 512-961-6835
TBPE Firm F-10298

SEAL
STATE OF TEXAS
AARON DENNINGTON
111364
LICENSED
PROFESSIONAL ENGINEER
4/21/25

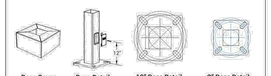
PROJECT
Heartland Dental Shell - Buda
FM 967 AND FM 1626
BUDA,TX, HAYS COUNTY

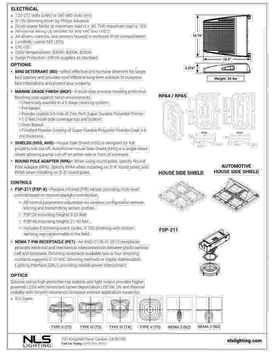
DRAWN BY AYS

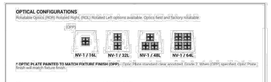
SHEET ISSUE
2/27/23 | PROGRESS SET

SHEET TITLE
Site Plan - Photometrics

SHEET
EU1.1







SSAP-18-5S-188-9BC-SGL-xx-3430-xx

NLS LIGHTING

SSAP

Square Straight Aluminum Pole

SSAP-18-5S-188-9BC-SGL-xx-3430-xx

SSAP ORDERING GUIDE

Cat#	Height	Pole Dimension	Gauge	Base Pattern
SSAP	18	5S	188	9BC

POLE EPA DATA

MOUNTING CONFIGURATION

Base Cover

Base Detail

12" Base Detail

9" Base Detail

Heartland Dental Buda
TYPE S2
NV-1-T2-32L-1-40K-UNV-DSP3

NLS LIGHTING

NV-1

AREA LIGHTING

FORM AND FUNCTION

- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION

- Die Cast Aluminum
- External cooling fins, Finite Element Analysis (FEA) designed

ELECTRICAL

OPTIONS

LUMENS

BUG RATINGS

OPTICAL CONFIGURATIONS

MOUNTING OPTIONS

OPTIONAL

Heartland Dental Buda
TYPE S3
NV-1-T3-32L-1-40K-UNV-DSP3

NLS LIGHTING

NV-1

AREA LIGHTING

FORM AND FUNCTION

- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION

- Die Cast Aluminum
- External cooling fins, Finite Element Analysis (FEA) designed

ELECTRICAL

OPTIONS

LUMENS

BUG RATINGS

OPTICAL CONFIGURATIONS

MOUNTING OPTIONS

OPTIONAL

Heartland Dental Buda
TYPE S4
NV-1-T4-48L-1-40K-UNV-DSP3

NLS LIGHTING

NV-1

AREA LIGHTING

FORM AND FUNCTION

- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION

- Die Cast Aluminum
- External cooling fins, Finite Element Analysis (FEA) designed

ELECTRICAL

OPTIONS

LUMENS

BUG RATINGS

OPTICAL CONFIGURATIONS

MOUNTING OPTIONS

OPTIONAL

DESIGNTRAIT
ARCHITECTS

DRAWN BY:	CHECKED BY:
AD	CA

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www.AYSeng.com•512-961-6835
TBPE Firm F-10298

SEAL

AARON DENNINGTON
111364
3/7/23

PROJECT
Heartland Dental Shell - Buda
FM 967 AND FM 1626
BUDA,TX, HAYS COUNTY

DRAWN BY
AYS

SHEET ISSUE
3/7/23 | PERMIT SET

SHEET TITLE
Site Plan -
Specifications

SHEET
EU1.2

CAUTION: DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE THE PROPERTY OF THE ARCHITECT AND MAY ONLY BE USED IN CONJUNCTION WITH THIS PROJECT.

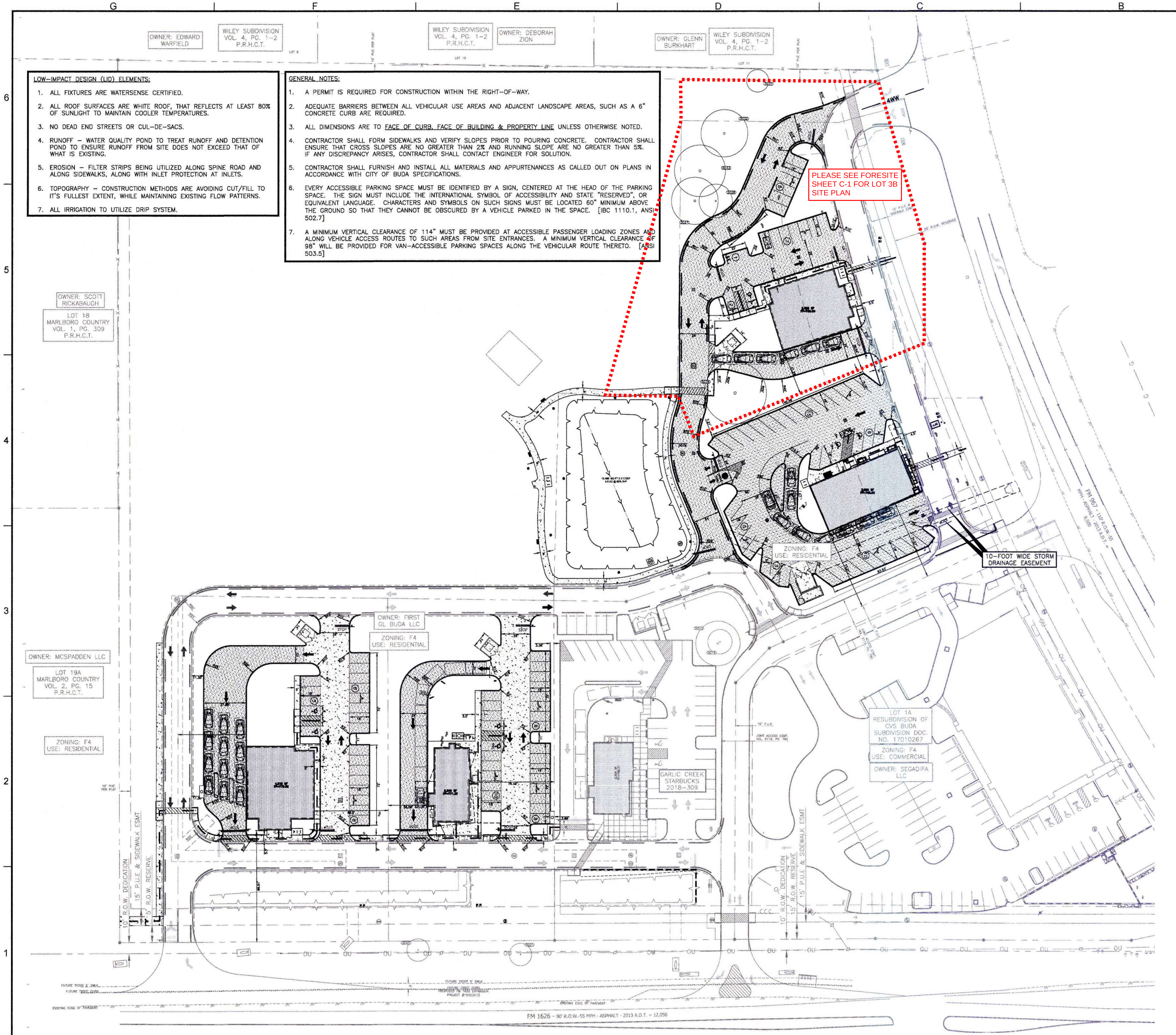
NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL

LOW-IMPACT DESIGN (LID) ELEMENTS:

1. ALL FIXTURES ARE WATERSENSE CERTIFIED.
2. ALL ROOF SURFACES ARE WHITE ROOF, THAT REFLECTS AT LEAST 80% OF SUNLIGHT TO MAINTAIN COOLER TEMPERATURES.
3. NO DEAD END STREETS OR CUL-DE-SACS.
4. RUNOFF – WATER QUALITY POND TO TREAT RUNOFF AND DETENTION POND TO ENSURE RUNOFF FROM SITE DOES NOT EXCEED THAT OF WHAT IS EXISTING.
5. EROSION – FILTER STRIPS BEING UTILIZED ALONG SPINE ROAD AND ALONG SIDEWALKS, ALONG WITH INLET PROTECTION AT INLETS.
6. TOPOGRAPHY – CONSTRUCTION METHODS ARE AVOIDING CUT/FILL TO IT'S FULLEST EXTENT, WHILE MAINTAINING EXISTING FLOW PATTERNS.
7. ALL IRRIGATION TO UTILIZE DRIP SYSTEM.

GENERAL NOTES:

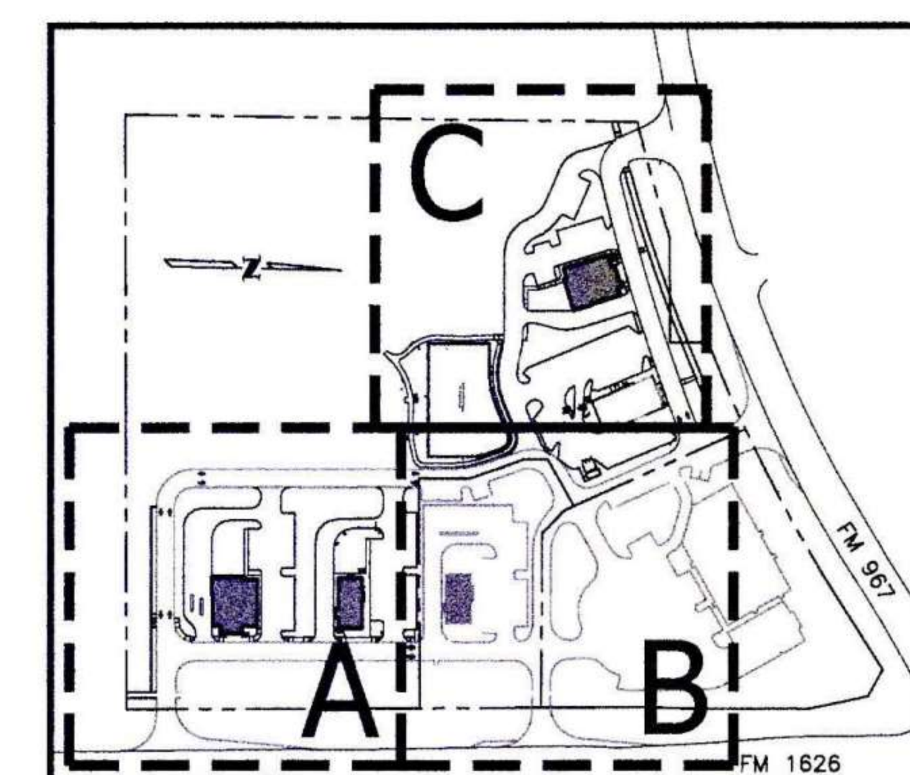
1. A PERMIT IS REQUIRED FOR CONSTRUCTION WITHIN THE RIGHT-OF-WAY.
2. ADEQUATE BARRIERS BETWEEN ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, SUCH AS A 6" CONCRETE CURB ARE REQUIRED.
3. ALL DIMENSIONS ARE TO FACE OF CURB, FACE OF BUILDING & PROPERTY LINE UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL FORM SIDEWALKS AND VERIFY SLOPES PRIOR TO POURING CONCRETE. CONTRACTOR SHALL ENSURE THAT CROSS SLOPES ARE NO GREATER THAN 2% AND RUNNING SLOPE ARE NO GREATER THAN 5%. IF ANY DISCREPANCY ARISES, CONTRACTOR SHALL CONTACT ENGINEER FOR SOLUTION.
5. CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND APPURTENANCES AS CALLED OUT ON PLANS IN ACCORDANCE WITH CITY OF BUDA SPECIFICATIONS.
6. EVERY ACCESSIBLE PARKING SPACE MUST BE IDENTIFIED BY A SIGN, CENTERED AT THE HEAD OF THE PARKING SPACE. THE SIGN MUST INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND STATE "RESERVED", OR EQUIVALENT LANGUAGE. CHARACTERS AND SYMBOLS ON SUCH SIGNS MUST BE LOCATED 60" MINIMUM ABOVE THE GROUND SO THAT THEY CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE. [IBC 1110.1, ANSI 502.7]
7. A MINIMUM VERTICAL CLEARANCE OF 114" MUST BE PROVIDED AT ACCESSIBLE PASSENGER LOADING ZONES AND ALONG VEHICLE ACCESS ROUTES TO SUCH AREAS FROM SITE ENTRANCES. A MINIMUM VERTICAL CLEARANCE OF 98" WILL BE PROVIDED FOR VAN-ACCESSIBLE PARKING SPACES ALONG THE VEHICULAR ROUTE THERETO. [ANSI 503.5]



SCALE - 1"=40'

LEGEND

- BOUNDARY / RIGHT OF WAY
- EASEMENT / SETBACK
- CURB / EDGE OF PAVEMENT
- EXISTING BUILDING FACE
- BUILDING PAD AREA
- CONCRETE PAVEMENT
- MEDIUM CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- ACCESSIBLE ROUTE (ADA)
- FIRE LANE STRIPING
- TOP / BOTTOM OF SLOPE
- OVERHEAD UTILITY LINE
- RETAINING / SCREEN WALL
- PARKING LOT BUMPER CURB
- BICYCLE PARKING RACK
- ACCESSIBLE PARKING
- SIGN
- UTILITY POLE
- GUY WIRE
- ELECTRIC PULL BOX
- ELECTRIC MANHOLE
- ELEC. / TELE. RISER
- GAS METER
- WASTEWATER MANHOLE
- CLEAN-OUT
- WATER METER VAULT
- WATER VALVE
- FIRE HYDRANT
- BACKFLOW PREVENTER
- STORM DRAINAGE INLET
- STORM DRAIN MANHOLE
- ROD/NAIL FOUND OR SET
- BENCHMARK
- BUILDING ENTRANCE
- TREE



SITE KEY
NO SCALE

SITE PLAN APPROVAL Sheet 8 of 52
FILE NUMBER 2019-XXX APPLICATION DATE 08/2019
APPROVED BY COMMISSION ON N/A UNDER THE CITY OF BUDA UNIFIED DEVELOPMENT CODE.
EXPIRATION DATE ________ CASE MANAGER ________

CITY ENGINEER, CITY OF BUDA
RELEASED FOR GENERAL COMPLIANCE: ________ ZONING F4
Rev. 1 ________ Correction 1 ________
Rev. 2 ________ Correction 2 ________
Rev. 3 ________ Correction 3 ________

Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

BIG RED DOG a division of WGI
2021 EAST 5TH STREET, SUITE 200 AUSTIN, TEXAS, 78702
FIRM NO. F-15085
512-669-5560
WWW.BIGREDDOG.COM

NICHOLAS O. CORBETT 125373 LICENSED PROFESSIONAL ENGINEER 8-13-19

PROJECT: GARLIC CREEK COMMONS
SWC FM 967 & FM 1626
BUDA, HAYS COUNTY, TEXAS

SHEET TITLE: OVERALL SITE PLAN

SHEET CS100
8 OF 52
2019-XXX