

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Jon Niermann, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 3, 2016

Mr. Karl Hittle
KHCR Company, LLC
28 Hunters Point
New Braunfels, TX 78132-4709

RECEIVED
JUN 08 2016
COUNTY ENGINEER

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: **Endeavor Healthcare at Hunters Creek**; Located on the south side of Hunters Village approximately 700 feet west of Oak Run Parkway; New Braunfels, Texas

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

Regulated Entity No. RN109128959; Additional ID No. 13000119

Dear Mr. Hittle:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the San Antonio Regional Office by Moeller & Associates on behalf of KHCR Company, LLC on March 10, 2016. Final review of the WPAP was completed after additional material was received on April 21, 2016 and May 24, 2016. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby **approved** subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 0.70 acres. It will include a 3,000 square foot office building, associated parking and utility services. The

impervious cover will be 0.44 acres (62.9 percent). Project wastewater will be disposed of by conveyance to the existing Gruene Wastewater Treatment Plant owned by the City of New Braunfels.

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 rooftop Rainwater Harvesting Systems and three 15 foot engineered Vegetative Filter Strips, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 395 pounds of TSS generated from the 0.44 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The treatment measures for the Rainwater Harvesting Systems are listed in the table below.

Rainwater Harvesting System						
Tank No.	Contributing Area (acres)	Required Capture Volume (ft ³)	Design Capture Volume (ft ³)	Required TSS Removal (lb/year)	Design TSS Removal (lb/year)	Irrigated Area (ft ²)
1	0.035	187.5	214	31.5	31.5	692.7
2	0.035	187.5	214	31.5	31.5	692.7
Total	0.070	375	428	63	63	1,385.4

The three vegetative filter strips will treat 332 pounds of TSS generated from 0.37 acres of impervious cover, will each have a uniform slope of less than 20 percent, a vegetative cover of at least 80 percent or more, will be 15 feet wide (in the direction of flow), and extend along the entire length of the contributing area.

GEOLOGY

According to the geologic assessment included with the application, the site is located on the Person Formation. No geologic or manmade features were identified by the project geologist. The San Antonio Regional Office site assessment conducted on April 1, 2016 revealed the site was generally as described in the geologic assessment.

SPECIAL CONDITIONS

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

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

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

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

must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

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

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. No wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter,

construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

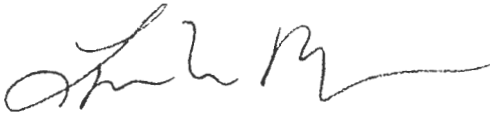
18. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
19. The applicant shall be responsible for maintaining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

Mr. Karl Hittle
June 3, 2016
Page 6

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. Joshua Vacek of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4028.

Sincerely,



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

LB/JV/eg

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

cc: Mr. Shane Klar, P.E., Moeller & Associates
Mr. Roland Ruiz, Edwards Aquifer Authority
Mr. Thomas H. Hornseth, P.E., Comal County Engineer
Mr. Robert Camareno, City of New Braunfels
Mr. George Wissmann, Comal Trinity Water Conservation District
TCEQ Central Records, Building F, MC 212

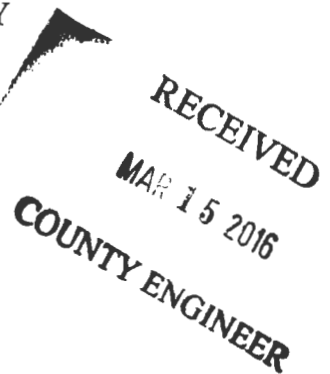
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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 10, 2016



Mr. Thomas H. Hornseth, P.E.
Comal County Engineer
195 David Jonas Drive
New Braunfels TX 78132-3710

Re: Edwards Aquifer, Comal County
PROJECT NAME: **Endeavor Healthcare at Hunters Creek**, located on the south side of Hunters Village approximately 700 feet west of Oak Run Parkway, New Braunfels, Texas

PLAN TYPE: Application for Approval of a **Water Pollution Abatement Plan (WPAP)** 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program

Dear Mr. Hornseth:

The referenced application is being forwarded to you pursuant to the Edwards Aquifer Rules. The Texas Commission on Environmental Quality (TCEQ) is required by 30 TAC Chapter 213 to provide copies of all applications to affected incorporated cities and underground water conservation districts for their comments prior to TCEQ approval. More information regarding this project may be obtained from the TCEQ Central Registry website at http://www.tceq.state.tx.us/permitting/central_registry/.

Please forward your comments to this office by April 10, 2016.

The Texas Commission on Environmental Quality appreciates your assistance in this matter and your compliance efforts to ensure protection of the State's environment. If you or members of your staff have any questions regarding these matters, please feel free to contact the San Antonio Region Office at (210) 490-3096.

Sincerely

A handwritten signature in blue ink that reads "Todd Jones".

Todd Jones
Water Section Work Leader
San Antonio Regional Office

TJ/eg

RECEIVED

MAR 15 2016

TCEQ-R13

MAR 10 2016

COUNTY ENGINEER

SAN ANTONIO

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 if not withdrawn the application will be denied and the application fee will be forfeited.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

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

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

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

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

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

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

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

1. Regulated Entity Name: Endeavor Healthcare at Hunters Creek					2. Regulated Entity No.:				
3. Customer Name: KHCR Company, LLC					4. Customer No.:				
5. Project Type: (Please circle/check one)	New		<u>Modification</u>			Extension		Exception	
6. Plan Type: (Please circle/check one)	<u>WPAP</u>	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential		<u>Non-residential</u>			8. Site (acres):		0.70	
9. Application Fee:	\$3,000.00		10. Permanent BMP(s):				Yes		
11. SCS (Linear Ft.):	N/A		12. AST/UST (No. Tanks):				N/A		
13. County:	Comal		14. Watershed:				Bliders Creek		

Application Distribution

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

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

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

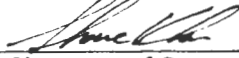
Austin Region			
County:	Hays	Travis	Williamson
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/ Edwards Aquifer <input type="checkbox"/> Hays Trinity <input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

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

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

Shane Klar, PE

Print Name of Customer/Authorized Agent



03/10/2016

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):

WATER POLLUTION ABATEMENT PLAN
FOR
ENDEAVOR HEALTHCARE AT HUNTERS CREEK

PREPARED FOR
Texas Commission on Environmental Quality

Region 13 – San Antonio
14250 Judson Road
San Antonio, Texas 78233
210-490-3096 (office)
210-545-4329 (fax)

RECEIVED
MAR 15 2016
COUNTY ENGINEER

PREPARED BY



F-13351

Shane Klar, P.E.
1040 N. Walnut Ave., Ste B
New Braunfels, TX 78130

Prepared
March 10, 2016



RECEIVED
MAR 15 2015
COUNTY ENGINEER

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: Shane Klar, P.E.

Date: 3/10/16

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Endeavor Healthcare at Hunters Creek

2. County: Comal

3. Stream Basin: Unnamed Tributary of Blieders Creek

4. Groundwater Conservation District (If applicable): N/A

5. Edwards Aquifer Zone:

- Recharge Zone
- Transition Zone

6. Plan Type:

- WPAP
- SCS
- Modification
- AST
- UST
- Exception Request

7. Customer (Applicant):

Contact Person: Mr. Karl Hittle

Entity: KHCR Company, LLC

Mailing Address: 28 Hunters Point

City, State: New Braunfels, TX

Telephone: (830) 214-2568

Email Address: _____

Zip: 78132-4709

FAX: (830) 358-7607

8. Agent/Representative (If any):

Contact Person: Shane Kalr, P.E.

Entity: Moeller & Associates

Mailing Address: 1040 N. Walnut Ave

City, State: New Braunfels, TX

Telephone: 830-358-7127

Email Address: shaneklar@ma-tx.com

Zip: 78130

FAX: 830-515-5611

9. Project Location:

- The project site is located inside the city limits of New Braunfels.
- The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of New Braunfels.
- 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 site is located on the south side of Hunters Village approximately 700 feet west of the intersection of Oak Run Parkway and Hunters Village.

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: 3/10/16

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

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

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

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

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

- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

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

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



PROPOSED SITE

FM 1863

SH 46

OAK RUN HWY



**ENDEAVOR HEALTHCARE
AT HUNTER CREEK**

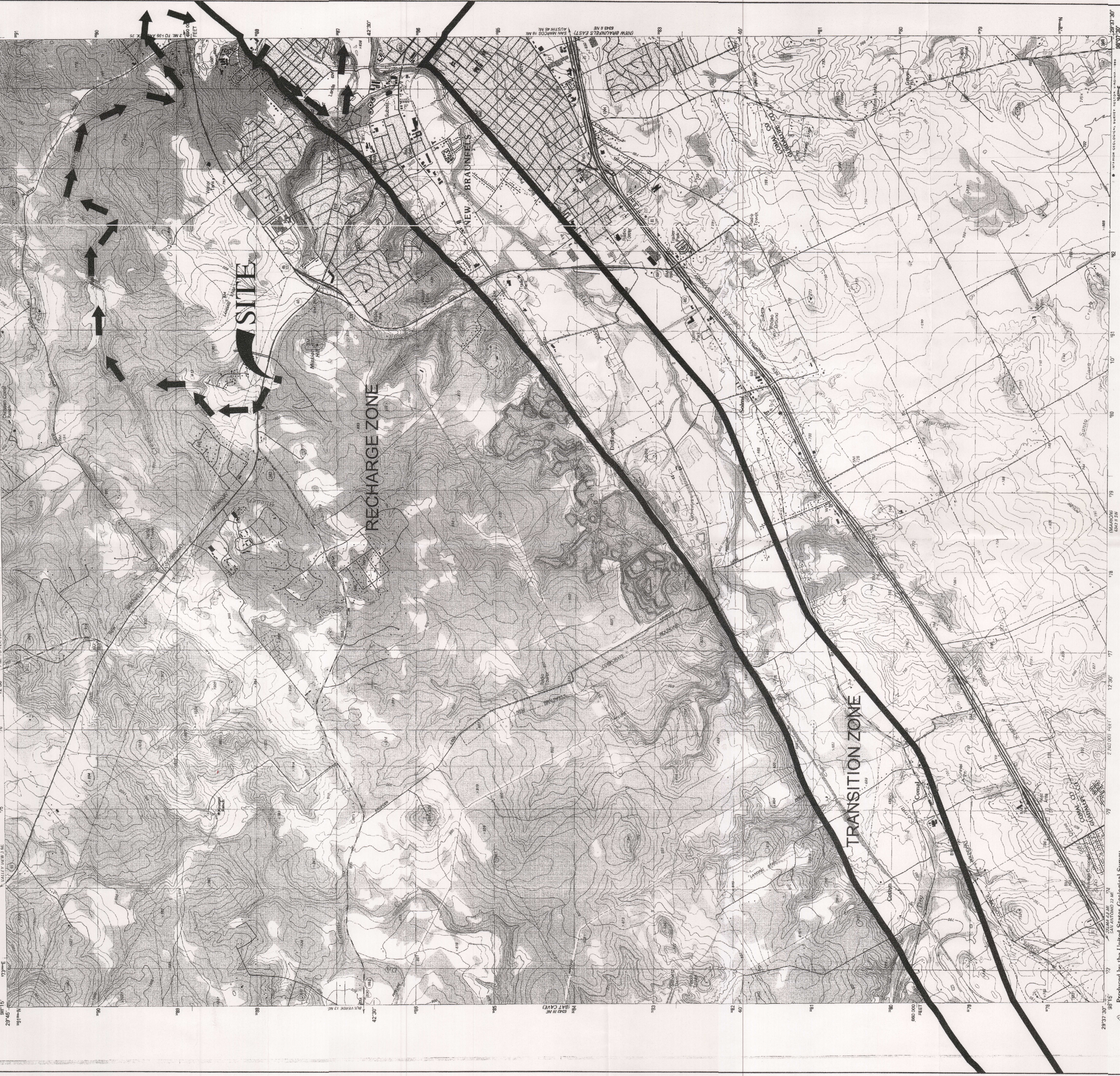
LOCATION MAP



1 inch = 1,000 feet

NEW BRAUNFELS WEST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Produced by the United States Geological Survey
Revised in cooperation with the Texas Water Development Board
Control by USGS, NOS/NOAA, and USICE
Compiled by the Army Map Service by photogrammetric methods
from aerial photographs taken 1956. Field checked 1958
From original topographic maps and aerial photographs taken 1936. Field checked 1987
May edited 1988
Projection and 10,000-foot grid ticks: Texas coordinate
system, south central zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 14
to piece on the predicted North American Datum 1983
to piece on the predicted North American Datum 1983
28 meters east as shown by dashed contour ticks
Five red dashed lines indicate selected fence and field lines
generally visible on aerial photographs. This information is unclassified

UTM GRID AND 1983 MAGNETIC NORTH
LINE LOCATIONS SHOWN
MAGNAN IS APPROXIMATE

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

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

SCALE 1:24,000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODESIC DATUM OF 1983

RECEIVED
MAR 15 2016
COUNTY ENGINEER

TCEQ-R13
MAR 10 2016
SAN ANTONIO

NEW BRAUNFELS WEST, TEX.
2898-F17-004
1988
DMA 503 II NF-SERIES 1922

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or hard surface
Improved surface
Unimproved road
Interstate Route
U.S. Route
State Route



Produced by the United States Geological Survey in cooperation with the Defense Mapping Agency

Compiled from aerial photographs taken 1956. Revisions in purple on the original map were made from aerial photographs taken 1968 and 1970. Contours were updated from the original map. Conflicts may exist between some updated features and previously mapped contours.

North American Datum of 1927 (NAD 27). Projection and Lambert Conformal Conic. Zone 14. Blue 1000-foot Universal Transverse Mercator ticks, zone 14 north. The values of the shift between NAD 27 and NAD 83 Survey (NAD 83) are shown on the map.

SCALE 1:24,000
1:24,000 FEET
1:24,000 METERS
CONTOUR INTERVAL 10 FEET
SUPER-ELEVATION CONTOUR INTERVAL 5 FEET
NATIONAL GRID SYSTEM, DATUM OF 1983

QUADRANGLE LOCATION
2899-4-14

ROAD CLASSIFICATION
Primary highway
Lightly road, hard or hard surface
Secondary highway
Unimproved road
Interstate Route
U. S. Route
State Route

NEW BRAUNFELS EAST, TEX.
2898-F1-F1-024
1988
REVISED 1984
DMA 5-53 8 REV. SERIES 1982

ATTACHMENT "C"
Project Description

The proposed site is located on a 0.70 acre lot within Hunters Creek Business Park. The entire site will be disturbed with 0.44 acres of impervious cover (62.9%). The lot is located within the New Braunfels city limits on the north side of Hunters Village approximately 700 west of the intersection at Oak Run Parkway and Hunters Village. The site is served by New Braunfels Utilities for electric, water, and wastewater. The site is currently cleared, and there are no above ground improvements.

The proposed use for the project is a 3,000 square foot professional office building. No other planned uses are proposed for the site.

The proposed construction will include minor grading for the parking areas and building pad, utility service lines, and building infrastructure.

According to the Flood Insurance Rate Map No. 48091C0435F, the site is outside of the flood plain. The entire site drains to an unnamed tributary of Blieders creek. The building's roof runoff will be captured and treated by two rainwater harvesting systems located on the southern corners of the building while the rest of the site will drain to Vegetative Filter Strips along the northern and southern boundaries of the site. The Rainwater Harvesting System and the Vegetative Filter Strips will ensure the quality of water exiting without adversely affecting the downstream drainage patterns.

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COUNTY ENGINEER

GEOLOGIC ASSESSMENT

For

ENDEAVOR HEALTHCARE AT HUNTER'S
CREEK
HUNTERS VILLAGE
NEW BRAUNFELS, COMAL COUNTY, TEXAS

Prepared for

MOELLER & ASSOCIATES
1040 N. WALNUT AVENUE
NEW BRAUNFELS, TEXAS 78130

Prepared by

Professional Service Industries, Inc.
Three Burwood Lane
San Antonio, Texas 78216
Telephone (210) 342-9377

PSI PROJECT NO.: 0435-2626

February 24, 2016



February 24, 2016

Moeller & Associates
1040 N. Walnut Avenue
New Braunfels, Texas 78130

Attn: Mr. Jeff Moeller, P.E.

Re: Geologic Assessment
Endeavor Healthcare at Hunter's Creek
Hunters Village
New Braunfels, Comal County, Texas
PSI Project No. 435-2626

RECEIVED
MAR 15 2016
COUNTY ENGINEER

Dear Mr. Moeller:

Professional Service Industries, Inc. (PSI) has completed a geologic recharge assessment for the above referenced project in compliance with the Texas Commission on Environmental Quality (TCEQ) requirements for regulated developments located on the Edwards Aquifer Recharge Zone (EARZ). The purpose of this report is to describe surficial geologic units and identify the locations and extent of significant recharge features present in the development area.

AUTHORIZATION

Authorization to perform this assessment was given by a signed copy of PSI Proposal No. 170654 between Moeller & Associates and PSI dated January 26, 2016.

PROJECT DESCRIPTION

The subject site is located on the south side of Hunters Village, at the east end of the cul-de-sac in New Braunfels, Comal County, Texas. The Hunter's Creek Business Park – Lot 5 tract is approximately 0.75-acres in size, and is a rectangular shaped parcel of undeveloped land with a flat to slightly rolling topography sloping gently to the west-northwest. A small unnamed tributary to Blieder's Creek bed borders the tract to the west. The site vegetation consists primarily of native grasses as the site was previously cleared of trees and shrubbery.

REGIONAL GEOLOGY

Physiography

Comal County lies within two physiographic provinces, the Edwards Plateau and the Blackland Prairie. Most of Comal County lies within the Edwards Plateau, which is characterized by rugged and hilly terrain, with elevations in excess of 1,400' feet above sea

level in the northwestern portion of the county. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Comal County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 650 feet to 1100 feet above sea level. The regional dip of the lower Cretaceous rocks in Comal County is approximately 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the southeast with near vertical throws. Elevations at the Hunter's Creek Business Park – Lot 5 tract are approximately 857 feet above mean sea level, with a slight slope to the west-northwest.

Stratigraphy and Structure

Rocks underlying the site consist of the Lower Cretaceous Edwards Person Formation. The site is overlain with a thin veneer of grass covered soil. Rock outcrops are not exposed at the site although limestone and chert fragments are present. According to "The Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County Texas" written by the USGS, the Person Formation ranges in thickness from 180 to 224 feet and forms the upper formation of the Edwards Group. The Person Formation and the underlying Kainer Formation comprises the Edwards Aquifer, a federally-designated sole source aquifer for the region.

The rocks at the site are mapped as the cyclic and marine member of the Person Formation. The lithology ranges from chert-bearing mudstone to packstone to miliolid grainstone. Underlying the cyclic and marine member is the leached and collapsed member of the Person Formation which consists of chert-bearing mudstone to grainstone with abundant collapse breccia.

No sensitive features scoring more than 40 points on the F-0585 form were observed on the subject tract. No non-sensitive recharge features were found as well. No significant outcrops, closed depressions or other suspect recharge features were observed on the site. Scattered limestone fragments were present but no distinct rock outcrops were observed.

SITE INVESTIGATION

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. The purpose of the site investigation was to delineate features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

No sensitive or non-sensitive features were observed on the subject tract. Please note that subtle features, buried or obscured from view, may be present on the tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during



future clearing/construction activities, please contact our office for additional assistance.

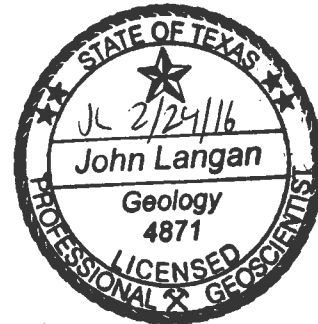
We appreciate this opportunity to be of service to you. If you have any questions, please do not hesitate to contact our office.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.



John Langan, P.G.
Environmental Department Manager



WARRANTY

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a general geological recharge assessment of this site. PSI warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted geologic methods, only for the site described in this report. These methods have been developed to provide the client with information regarding apparent indications of existing or potential conditions relating to the subject site and are necessarily limited to the conditions observed at the time of the site visit and research. This report is also limited to the information available at the time it was prepared. In the event additional information is provided to PSI following the report, it will be forwarded to the client in the form received for evaluation by the client. There is a possibility that conditions may exist which could not be identified within the scope of the assessment or which were not apparent during the site visit. PSI believes that the information obtained from others during the review of public information is reliable; however, PSI cannot warrant or guarantee that the information provided by others is complete or accurate.

This report has been prepared for the exclusive use of Moeller & Associates. for the site discussed herein. Reproductions of this report cannot be made without the expressed approval Moeller & Associates. The general terms and conditions under which this assessment was prepared apply solely to Moeller & Associates. No other warranties are implied or expressed.



RECEIVED
MAR 15 2016
COUNTY ENGINEER

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: John Langan

Telephone: 210/342-9377

Date: February 24, 2016

Fax: 210/342-9401

Representing: PSI TBPG No. 50128 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Enclaveor Healthcare at Hunter's Creek

Project Information

1. Date(s) Geologic Assessment was performed: 2/5/16

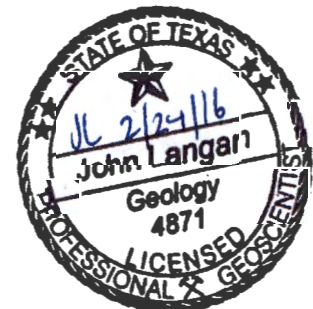
2. Type of Project:

- WPAP
 SCS

- AST
 UST

3. Location of Project:

- Recharge Zone
 Transition Zone
 Contributing Zone within the Transition Zone



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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Rumple-Comfort Asso., 1-8% slopes	B	2

* 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" = 20'
 Site Geologic Map Scale: 1" = 20'
 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: _____
10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. Surface geologic units are shown and labeled on the Site Geologic Map.

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

Administrative Information

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

STRATIGRAPHIC COLUMN

**Endeavor Healthcare at Hunter's Creek
Hunters Village
New Braunfels, Comal County, Texas**

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Georgetown Formation	2-20'	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: <i>waconella wacoensis</i> brachiopod; low porosity and permeability development.
Person Formation	180-224'	Limestones and dolomites, extensive porosity development in "honeycomb" sections, interbedded with massive recrystallized limestones with more limited permeabilities (especially Regional Dense Member separating the Person and Kainer Formations).
Kainer Formation	260-310'	Hard, miliolid limestones, overlying calcified dolomites and dolomite. Leached evaporitic "Kirschberg" zone of very porous and permeable collapse breccia formed by the dissolution of gypsum. Overlies the basal nodular (Walnut) bed.
Glen Rose Limestone (upper)	350-500	Yellowish-tan thinly bedded limestone and marl. Alternating beds of varying hardness erodes to "stairstep" topography. Marine fossils common.

SOILS NARRATIVE

According to the Soil Survey of Comal County, published by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the Texas Agricultural Extension Service, reissued in 1984, the soils beneath the subject property have been classified as Rumble-Comfort association, undulating (RUD).

Rumble-Comfort association soils are shallow to moderately deep soils on uplands in the Edwards Plateau. The surface layer is a dark reddish brown cherty clay loam about 10 inches thick, and overlies a subsoil of reddish brown cherty clay with abundant limestone fragments to a depth of 28 inches. The underlying parent material is an indurated limestone. The soil is well drained, with medium surface runoff, moderately slow permeability, and very low available water capacity. The soil is not suited for cropland, or cultivation, but is used as range land and habitat for wildlife.



SITE GEOLOGIC NARRATIVE

Physiography

Comal County lies within two physiographic provinces, the Edwards Plateau and the Blackland Prairie. Most of Comal County lies within the Edwards Plateau, which is characterized by rugged and hilly terrain, with elevations in excess of 1,400' feet above sea level in the northwestern portion of the county. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Comal County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 650 feet to 1100 feet above sea level. The regional dip of the lower Cretaceous rocks in Comal County is approximately 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the southeast with near vertical throws. Elevations at the Hunter's Creek Business Park – Lot 5 tract are approximately 857 feet above mean sea level, with a slight slope to the west-northwest.

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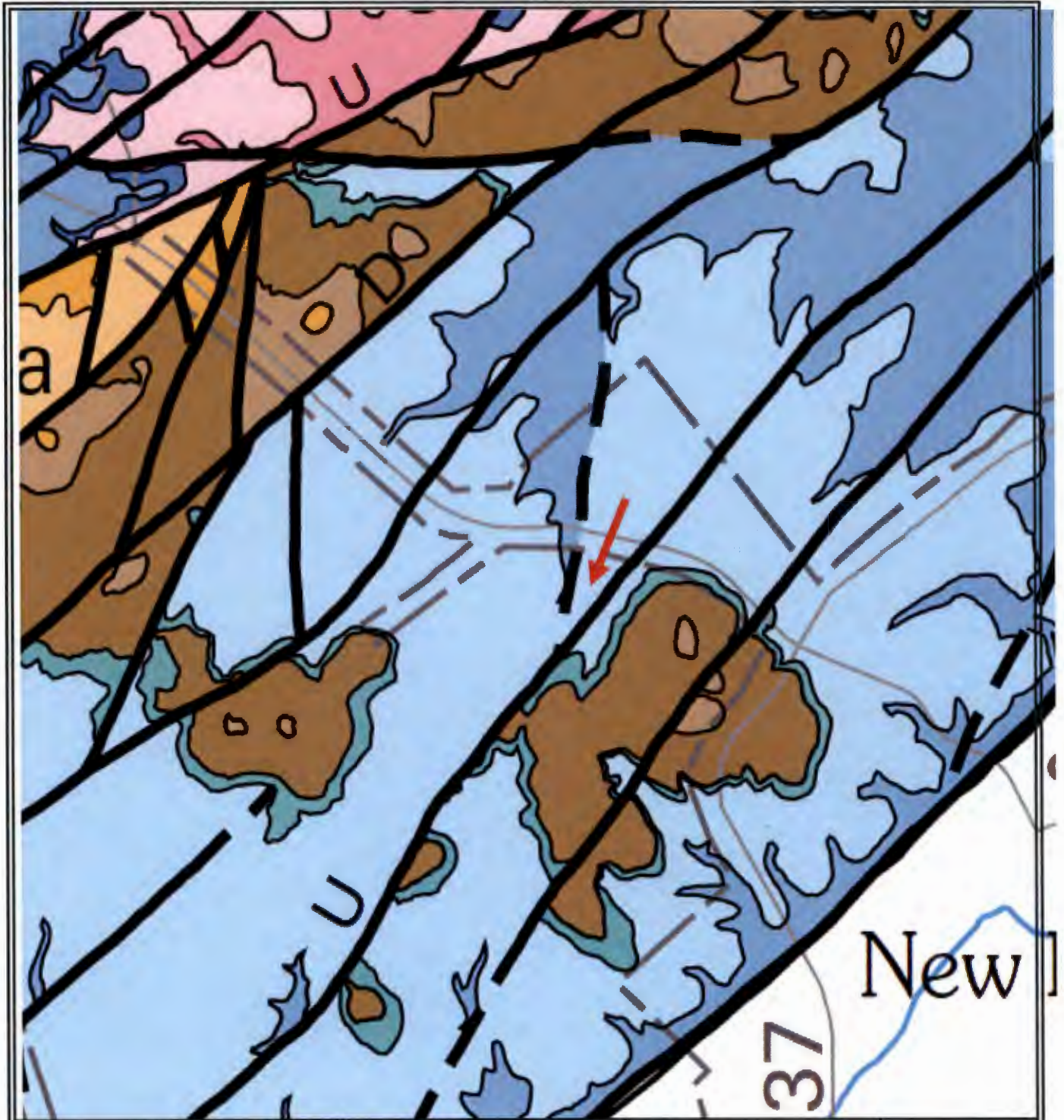
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SUMMARY



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psi Information
To Build On
 Engineering • Consulting • Testing
 PSI, Inc.
 3 Burwood Lane
 San Antonio, Texas 78216

PROJECT NAME:
 Endeavor Healthcare at
 Hunter's Creek
 Hunters Village
 New Braunfels, Comal
 County, Texas

PROJECT NO.:435-2626

Geologic Map of
 Edwards Aquifer
 Recharge Zone, South-
 Central Texas

(USGS, 2005)
RECEIVED



MAR 15 2016

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February 2016



1. View north along the east property line from the southeast corner of the Endeavor Healthcare at Hunters Creek in New Braunfels, Texas.

February 2016



2. View northwest of the site interior from the southeast corner.

February 2016



3. View west along the south property line from the southeast corner.

February 2016



4. View northeast of the site interior from the southwest corner.

February 2016



5. View north along the west property line from the southwest corner of the site.

February 2016



6. View southeast of the site interior from the northwest corner of the site. Note lack of outcrops and native vegetation.

February 2016



7. View east along the northern property line from the northwest corner. Hunters Village Drive is on the left.

February 2016



8. View south along the east property line from the northeast corner. Note storm water retention structure on the east adjacent property.

February 2016



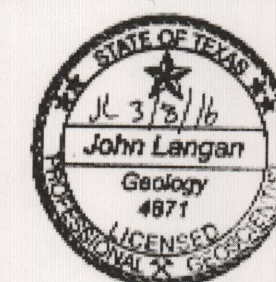
9. View southwest of the site interior from the northeast corner of the tract.

February 2016



10. View west along the north property line from the northeast corner.

GEOLOGIC ASSESSMENT
for
ENDEAVORS HEALTHCARE AT HUNTERS CREEK
HUNTER'S VILLAGE
NEW BRAUNFELS, COMAL COUNTY, TEXAS



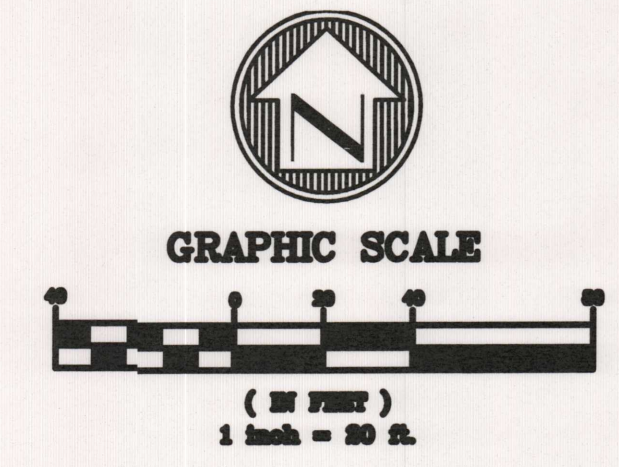
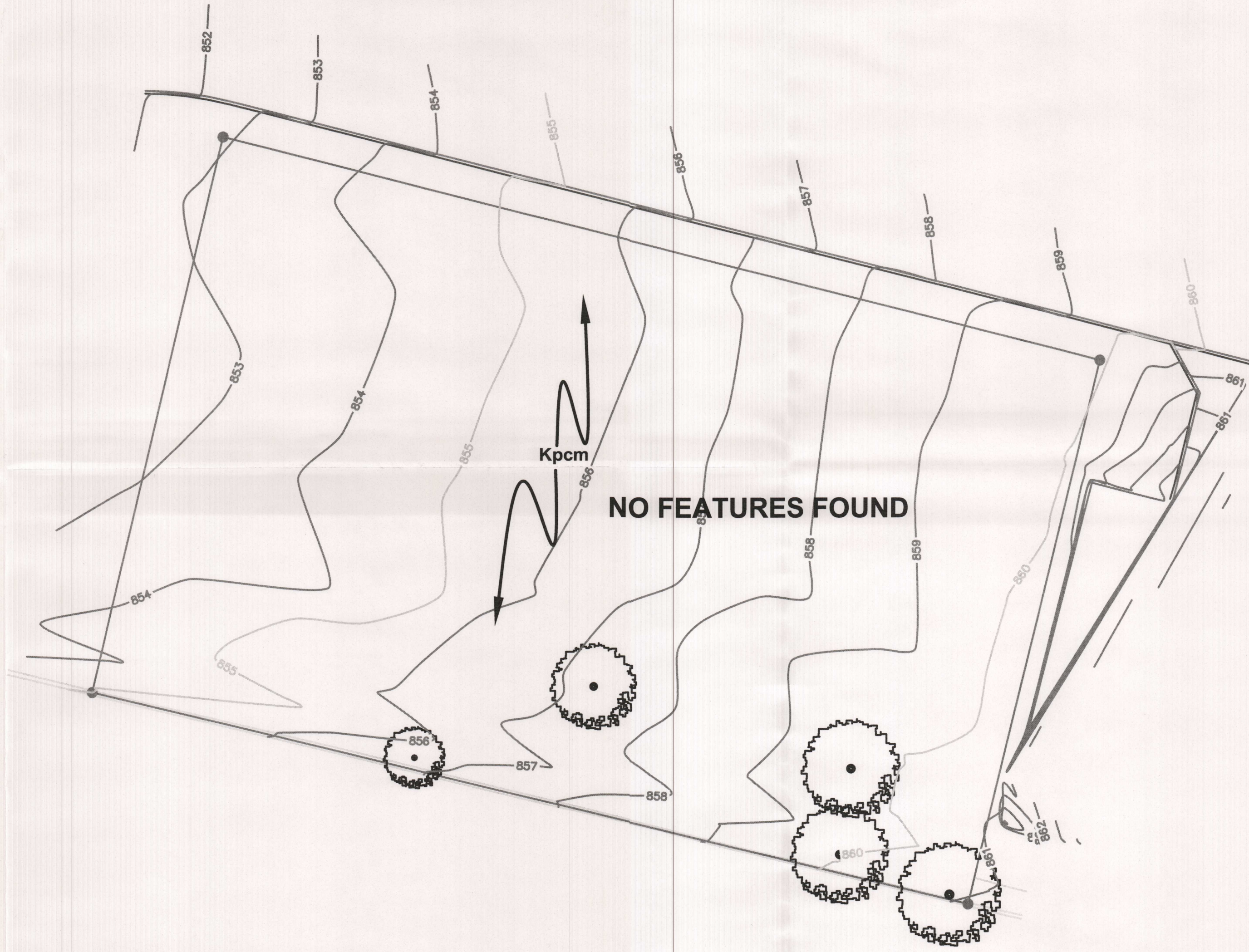
psi Information To Build On
Engineering • Consulting • Testing
7400 BLANCO ROAD, SUITE 257
SAN ANTONIO, TEXAS 78216

REVISIONS:

JOB NO. 04352626
FILE: 04352626.01
DATE: 03/08/2016
DESIGN: -
DRAWN: J LEAL
CHECKED: -
SHEET 1 OF 1

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MAR 15 2016
COUNTY ENGINEER

TCEQ-R13
MAR 10 2016
SAN ANTONIO



LEGEND

Kpcm - LOWER CRETACEOUS PERSON
FM. CYCLIC & MARINE MEMBER

Water Pollution Abatement Plan Application

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MAR 15 2016
COUNTY ENGINEER

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: Shane Klar, P.E

Date: 03/10/2016

Signature of Customer/Agent:



Regulated Entity Name: Endeavor Healthcare at Hunters Creek

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): 0.70

3. Estimated projected population: 0

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	3,000	÷ 43,560 =	0.07
Parking	15,986	÷ 43,560 =	0.37
Other paved surfaces		÷ 43,560 =	
Total Impervious Cover	18,986	÷ 43,560 =	0.44

Total Impervious Cover 0.44 ÷ Total Acreage 0.70 X 100 = 62.9% 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 = _____ Ft² ÷ 43,560 Ft²/Acre = _____ acres.

10. Length of pavement area: _____ feet.

Width of pavement area: _____ feet.

L x W = _____ Ft² ÷ 43,560 Ft²/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:

<u>100</u> % Domestic	<u>500</u> Gallons/day
<u> </u> % Industrial	<u> </u> Gallons/day
<u> </u> % Commingled	<u> </u> Gallons/day
TOTAL gallons/day <u>500</u>	

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 Gruene 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) source(s): FEMA Panel Number 48091C0435F 9/2/2009

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

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

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

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

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

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

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

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

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

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

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

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

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

Administrative Information

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

ATTACHMENT "A"
Factors Affecting Water Quality

The development will consist of a building structure of approximately 3,000 square feet, and associated parking with a Rainwater Harvesting System and Vegetative Filter Strips. This will result in minimal to no pollution from the site. Some pollution may originate from automobile wastes and cleaning chemicals which may have an effect on surface water by sediments leaving the site after a rainfall event.

ATTACHMENT "B"
Volume and Character of Stormwater

The development of this site will result in a minimal increase in stormwater run-off. Onsite stormwater within the building area will be captured and treated by a Rainwater Harvesting System and the remaining parking and drives will drain to Vegetative Filter strips along the north and south boundary of the site. There is only a small portion of offsite runoff that runs through the site in a 15' drainage easement to the south of the property.

The drainage onsite will continue maintain existing drainage patterns.

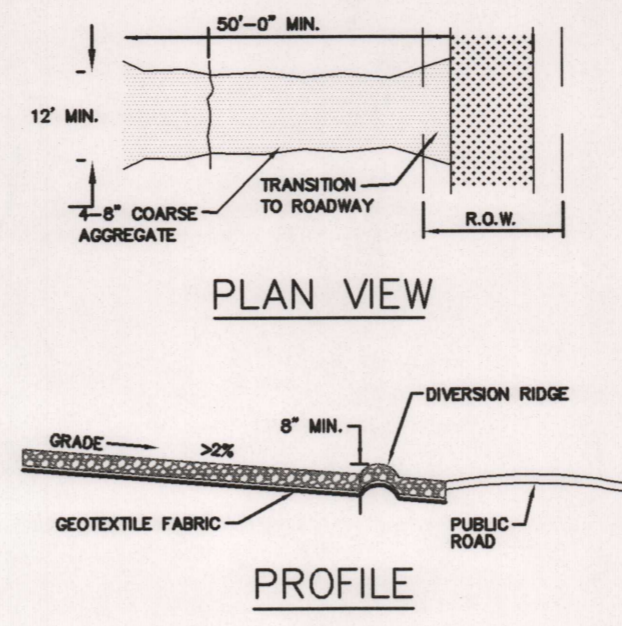
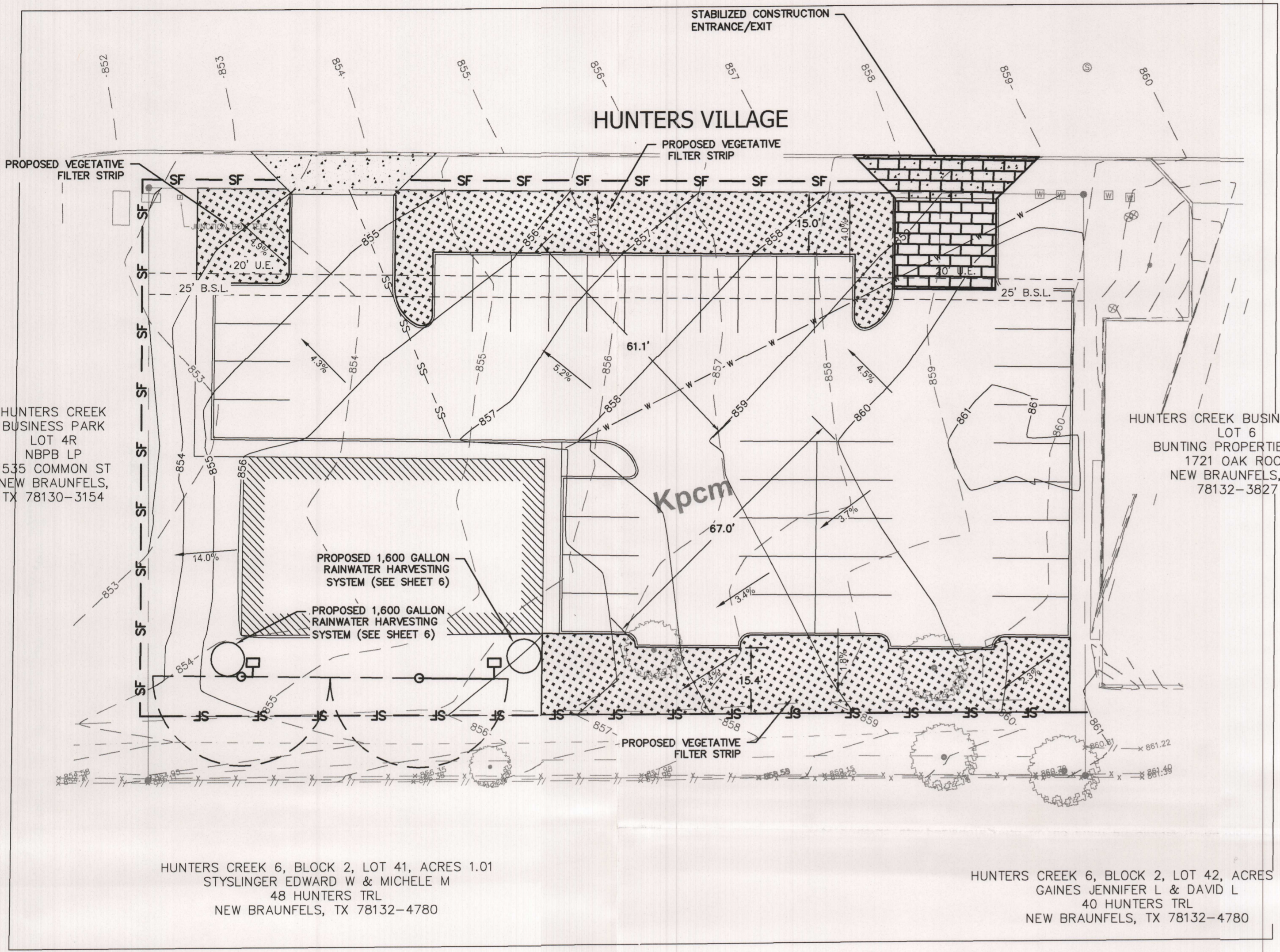
ATTACHMENT "C"
Suitability Letter from Authorized Agent

There is no proposed OSSF.

ATTACHMENT "D"
Exception to the Required Geologic Assessment

No exception will be requested.

Drawing Name: N:\Projects\H1002.101 Lot 5 Hunters Creek Bus PA\Civil\Construction Drawings\3 WPAP SITE PLAN EROSION CONTROL.dwg User: shankar Mar 10, 2016 3:44pm



STABILIZED CONSTRUCTION ENTRANCE / EXIT

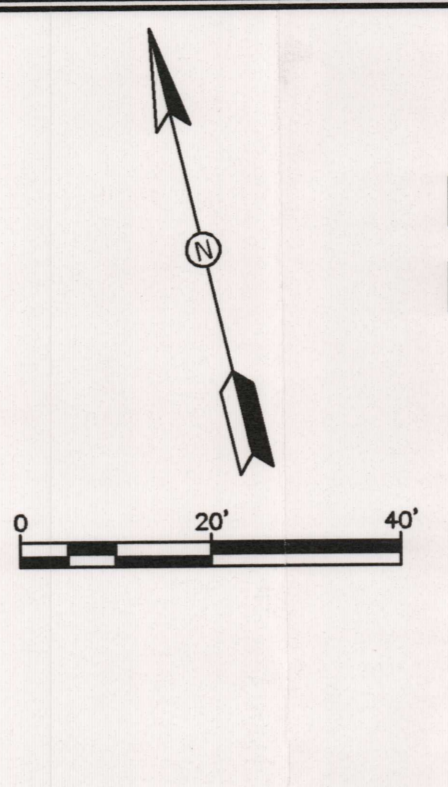
- Materials:**
- The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
 - The aggregate should be placed with a minimum thickness of 8 inches.
 - The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd², a mullen burst rating of 140 lb/in², and an equivalent opening size greater than a number 50 sieve.
 - If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.
- Installation:**
- Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
 - The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
 - The construction entrance should be at least 50 feet long.
 - If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
 - Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
 - Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
 - Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
 - Install pipe under pad as needed to maintain proper public road drainage.
- Inspection and Maintenance Guidelines:**
- The entrance should be maintained in a condition, which will prevent tracking or lowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
 - All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
 - When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
 - 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.
 - All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

TOTAL LAND AREA	=	0.70 AC
TOTAL DISTURBED AREA	=	0.70 AC
TOTAL IMPERVIOUS AREA	=	0.44 AC
% IMPERVIOUS	=	62.9%

SOIL STABILIZATION NOTE
 ALL DISTURBED SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITH 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

LEGEND

- PROPOSED VEGETATIVE FILTER STRIP
- PROPOSED RETENTION/IRRIGATION AREA
- EXISTING CONTOUR
- PROPOSED CONTOUR
- GRADE BREAK
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- LIMITS OF DISTURBED AREA
- SLOPE/FLOW ARROW



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

- Written construction notification must be given to the appropriate TCEQ regional office no later than 48 hours prior to commencement of the regulated activity. Information must include the date on which the regulated activity will commence, the name of the approved plan for the regulated activity, and the name of the prime contractor and the name and telephone number of the contact person.
- All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan and the TCEQ letter including the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
- If any sensitive feature is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. The regulated activities near the sensitive feature may not proceed until the TCEQ has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality.
- No temporary aboveground hydrocarbon and hazardous substance storage tank system is installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
- Prior to commencement of construction, all temporary erosion and sedimentation (E&S) control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. Controls specified in the temporary storm water section of the approved Edwards Aquifer Protection Plan are required during construction. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. The controls must remain in place until disturbed areas are revegetated and the areas have become permanently stabilized.
- 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).
- Sediment must be removed from sediment traps or sedimentation ponds no later than when design capacity has been reduced by 50%. A permanent stake must be provided that can indicate when the sediment occupies 50% of the basin volume.
- 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).
- All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
- Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.
- The following records shall be maintained and made available to the TCEQ upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.
 - A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
 - B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
 - C. any development of land previously identified as undeveloped in the original water pollution abatement plan.
- The holder of any approved Edwards Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
 - A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
 - B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
 - C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

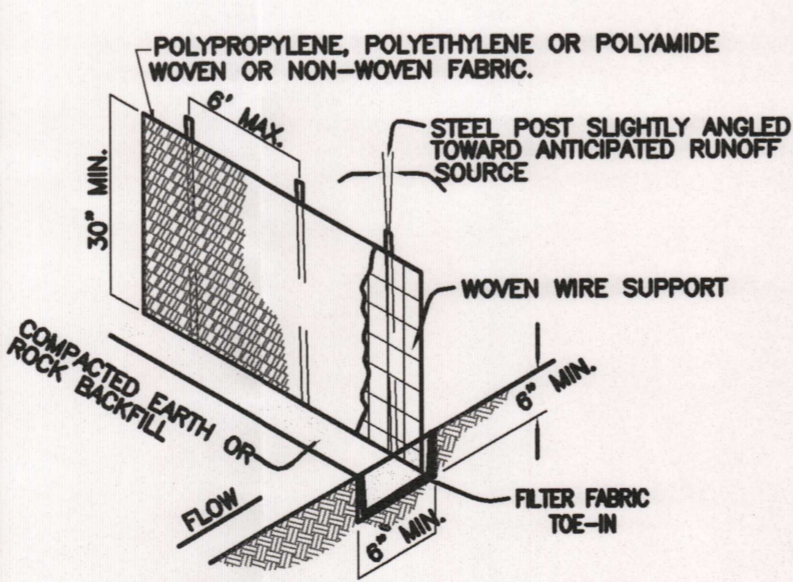
Austin Regional Office
 2800 S. IH 35, Suite 100
 Austin, Texas 78704-5712
 Phone (512) 339-2929
 Fax (512) 339-3795

San Antonio Regional Office
 14250 Judson Road
 San Antonio, Texas 78233-4480
 Phone (210) 490-3096
 Fax (210) 545-4329

SILT FENCE

- Materials:**
- Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in², ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.
 - Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft², and Brinell hardness exceeding 140.
 - Woven wire backing to support the fabric should be galvanized 2' x 4' welded wire, 12 gauge minimum.
- Installation:**
- Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of 1- foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet.
 - Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre/100 feet of fence.
 - The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.
 - The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
 - Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.
 - Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

- Inspection and Maintenance Guidelines:**
- Inspect all fencing weekly, and after any rainfall.
 - Remove sediment when buildup reaches 6 inches.
 - Replace any torn fabric or install a second line of fencing parallel to the torn section.
 - Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
 - When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.



HYDRAULIC MULCH

- Materials:**
- Hydraulic Mulches:** Wood fiber mulch can be applied alone or as a component of hydraulic matrices. Wood fiber mulch applied alone is typically applied at the rate of 2,000 to 4,000 lb/acre. Wood fiber mulch is manufactured from wood or wood waste from lumber mills or from urban sources.
- Hydraulic Matrices:** Hydraulic matrices include a mixture of wood fiber and acrylic polymer or other tackifier as binder. Apply as a liquid slurry using a hydraulic application machine (i.e., hydro seeder) at the following minimum rates, or as specified by the manufacturer to achieve complete coverage of the target area: 2,000 to 4,000 lb/acre wood fiber mulch, and 5 to 10% (by weight) of tackifier (acrylic copolymer, guar, psyllium, etc.)
- Bonded Fiber Matrix:** Bonded fiber matrix (BFM) is a hydraulically applied system of fibers and adhesives that upon drying forms an erosion resistant blanket that promotes vegetation, and prevents soil erosion. BFM's are typically applied at rates from 3,000 lb/acre to 4,000 lb/acre based on the manufacturer's recommendation. A biodegradable BFM is composed of materials that are 100% biodegradable. The binder in the BFM should also be biodegradable and should not dissolve or disperse upon re-wetting. Typically, biodegradable BFM's should not be applied immediately before, during or immediately after rainfall if the soil is saturated. Depending on the product, BFM's typically require 12 to 24 hours to dry and become effective.
- Installation:**
- Prior to application, roughen embankment and fill areas by rolling with a crimping or punching type roller or by track walking. Track walking shall only be used where other methods are impractical.
 - To be effective, hydraulic matrices require 24 hours to dry before rainfall occurs.
 - Avoid mulch over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Inspection and Maintenance Guidelines:**
- Mulched areas should be inspected weekly and after each rain event to locate and repair any damage.
 - Areas damaged by storms or normal construction activities should be regraded and hydraulic mulch reapplied as soon as practical.



NO.	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES
 Engineering Solutions
 1000 N. WALNUT AVE., STE. B, NEW BRAUNFELS, TX, 78130
 PH: 830-358-7127 www.moeller-tx.com
 TBEPE.FIRM.E-13351

WPAP SITE PLAN EROSION CONTROL REVIEW SET

ENDEAVOR HEALTH CARE AT HUNTERS CREEK
 NEW BRAUNFELS, TEXAS, 78130

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 COUNTY ENGINEER

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

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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: Shane Klar, P.E.

Date: 03/10/2016

Signature of Customer/Agent:



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Regulated Entity Name: Endeavor Helthcare at Hunters Creek

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: Unnamed Tributary of Blieders Creek

Temporary Best Management Practices (TBMPs)

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

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

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

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

Soil Stabilization Practices

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

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

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

Administrative Information

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

ATTACHMENT "A"
Spill Response Actions

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Spill Prevention and Control

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 spills 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, and 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 BMP's.

(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 BMP's 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.

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.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

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

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately

(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.

(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

(8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.

(9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.

(2) Discourage "topping off" of fuel tanks.

(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

ATTACHMENT "B"

Potential Sources of Contamination

The only potential sources of contamination are construction equipment leaks, re-fueling spills, port-o-lets, and the total suspended solids (TSS) due to the construction activities on-site. There are no other anticipated potential sources of contamination.

ATTACHMENT "C"

Sequence of Major Activities

Stages of Construction:

1. Installation of temporary BMP's.
2. Minor site grading: This includes the removal of organic material and other debris within the proposed parking and building site. Approximate total disturbed area = 0.70 acres.
3. Grading: Cutting and filling of the proposed site to prepare the site for parking and foundation construction. Approximate total disturbed area = 0.70 acres.
4. Utility installation: All primary utility mains have already been installed and are available at the site. Sewer, water, gas, and electrical services will be installed at this time.
5. Finished grading: Final landscaping, Parking and building infrastructure are installed. Approximate total disturbed area = 0.70 acres.

ATTACHMENT "D"

Temporary BMP's and Measures

The following sequence will be followed for installing temporary BMP's:

1. Silt fence will be constructed on the downgradient side of proposed site.
2. A stabilized construction exit will be installed prior to any site work.

A. Silt Fence will be installed on the most downgradient side of the site and will reduce potential pollution from any stormwater that originates onsite or offsite. A stabilized construction exit will be constructed at the entrance of the site; this will reduce the amount of contaminants leaving the site.

B. Silt fence will be placed on the downgradient side of each proposed improvement to contain pollutants generated from onsite runoff. Disturbed areas will be seeded to replace destroyed vegetation. The existing vegetation located downgradient of each proposed improvement will work in conjunction with the silt fence, rock berms, and stabilized construction entrance to prevent pollution of water originating onsite and/or flowing offsite.

C. The proposed silt fences, and stabilized construction entrance constructed upgradient of the existing streams will prevent pollutants from entering them, as well as the aquifer. According to the Geologic Assessment, there are no sensitive features with the project boundary.

D. There were no sensitive features identified in the Geologic Assessment.

ATTACHMENT "E"

Request to Temporarily Seal a Feature

There will be no request to temporarily seal a feature.

ATTACHMENT "F"

Structural Practices

Stabilized Construction Exit and Silt fence will be used to protect disturbed soils and to prevent contamination from leaving the project site.

ATTACHMENT "G"

Drainage Area Map

See Drainage Area Map at the end of this section.

ATTACHMENT "H"

Temporary Sediment Pond Plans and Calculations

There will not be more than 10 acres of disturbed soil in one common drainage area that will occur at one time. Silt fence will be used for small drainage areas. No sediment ponds will be constructed due to the minimal amount of soil disturbance.

ATTACHMENT "I"

Inspection and Maintenance for BMP's

Inspection and Maintenance Plan

The contractor is required to inspect the control and fences at weekly intervals and after any rainfall events to insure that they are functioning properly. The contractor is required to document any changes on the Site Plan, documentation must include person performing task, task performed, and date. The contractor must also document if proper inspection measures have been taken while making changes. The person(s) responsible for maintenance controls and fences shall immediately make any necessary repairs to damaged areas.

Temporary Construction Entrance/Exit: The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way. 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. All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

Silt Fence: Remove sediment when buildup reaches 6 inches. Replace any torn fabric or install a second line of fencing parallel to the torn section. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

TCEQ staff will be allowed full access to the property during construction of the project for inspecting controls and fences and to verify that the accepted plan is being utilized in the field. TCEQ staff has the right to speak with the contractor to verify plan changes and modifications.

Documentation: All scheduled inspection and maintenance measures made to the temporary BMPs must be documented clearly on the WPAP Site Plan showing inspection/maintenance measures performed, date, and person responsible for inspection and maintenance. Any changes made to the location or type of controls shown on the accepted plans, due to onsite conditions, shall be documented on the site plan that is part of this Water Pollution Abatement Plan. No other changes shall be made unless approved by TCEQ and the Design Engineer. Documentation shall clearly show changes made, date, person responsible for the change, and the reason for the change.

Owner's Information:

Owner: KHCR Company, LLC
Contact: Karl Hittle
Phone: (830) 214-2568
Address: 28 Hunters Point
New Braunfels, Texas 78132

Design Engineer:

Company: Moeller & Associates
Contact: Shane Klar, P.E.
Phone: (830) 358-7127
Address: 1040 N. Walnut Ave., Ste. B
New Braunfels, Texas 78130

Person or Firm Responsible for Erosion/Sedimentation Control Maintenance:

Company: _____

Contact: _____

Phone: _____

Address: _____

Signature of Responsible Party: _____

This portion of the form shall be filled out and signed by the responsible party prior to construction.

ATTACHMENT “J”

Schedule of Interim and Permanent Soil Stabilization Practices

Areas which are disturbed by construction staging and storage areas will be hydro mulched with the appropriate seed mixture. Areas between the edge of pavement and property line will also be hydro mulched. There will be no fill slopes exceeding a 3:1 slope, and all fill slopes will be hydro mulched. Installation and acceptable mixtures of hydro mulch are as follows:

Materials:

Hydraulic Mulches: Wood fiber mulch can be applied alone or as a component of hydraulic matrices. Wood fiber applied alone is typically applied at the rate of 2,000 to 4,000 lb/acre. Wood fiber mulch is manufactured from wood or wood waste from lumber mills or from urban sources.

Hydraulic Matrices: Hydraulic matrices include a mixture of wood fiber and acrylic polymer or other tackifier as binder. Apply as a liquid slurry using a hydraulic application machine (i.e., hydro seeder) at the following minimum rates, or as specified by the manufacturer to achieve complete coverage of the target area: 2,000 to 4,000 lb/acre wood fiber mulch, and 5 to 10% (by weight) of tackifier (acrylic copolymer, guar, psyllium, etc.)

Bonded Fiber Matrix: Bonded fiber matrix (BFM) is a hydraulically applied system of fibers and adhesives that upon drying forms an erosion resistant blanket that promotes vegetation, and prevents soil erosion. BFMs are typically applied at rates from 3,000 lb/acre to 4,000 lb/acre based on the manufacturer’s recommendation. A biodegradable BFM is composed of materials that are 100% biodegradable. The binder in the BFM should also be biodegradable and should not dissolve or disperse upon re-wetting. Typically, biodegradable BFMs should not be applied immediately before, during or immediately after rainfall if the soil is saturated. Depending on the product, BFMs typically require 12 to 24 hours to dry and become effective.

Seed Mixtures:

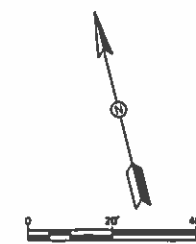
Dates	Climate	Species	(lb/ac.)
Sept. 1 to Nov. 30	Temporary Cool Season	Tall Fescue	4.0
		Oats	21.0
		Wheats	30.0
		Total	55.0
Sept. 1 to Nov. 30	Cool Season Legume	Hairy Vetch	8.0
May 1 to Aug. 31	Temporary Warm Season	Foxtail Millet	30.0

Fertilizer: Fertilizer should be applied at the rate of 40 pounds of nitrogen and 40 pounds of phosphorus per acre, which is equivalent to about 1.0 pounds of nitrogen and phosphorus per 1000 square feet.

Installation:

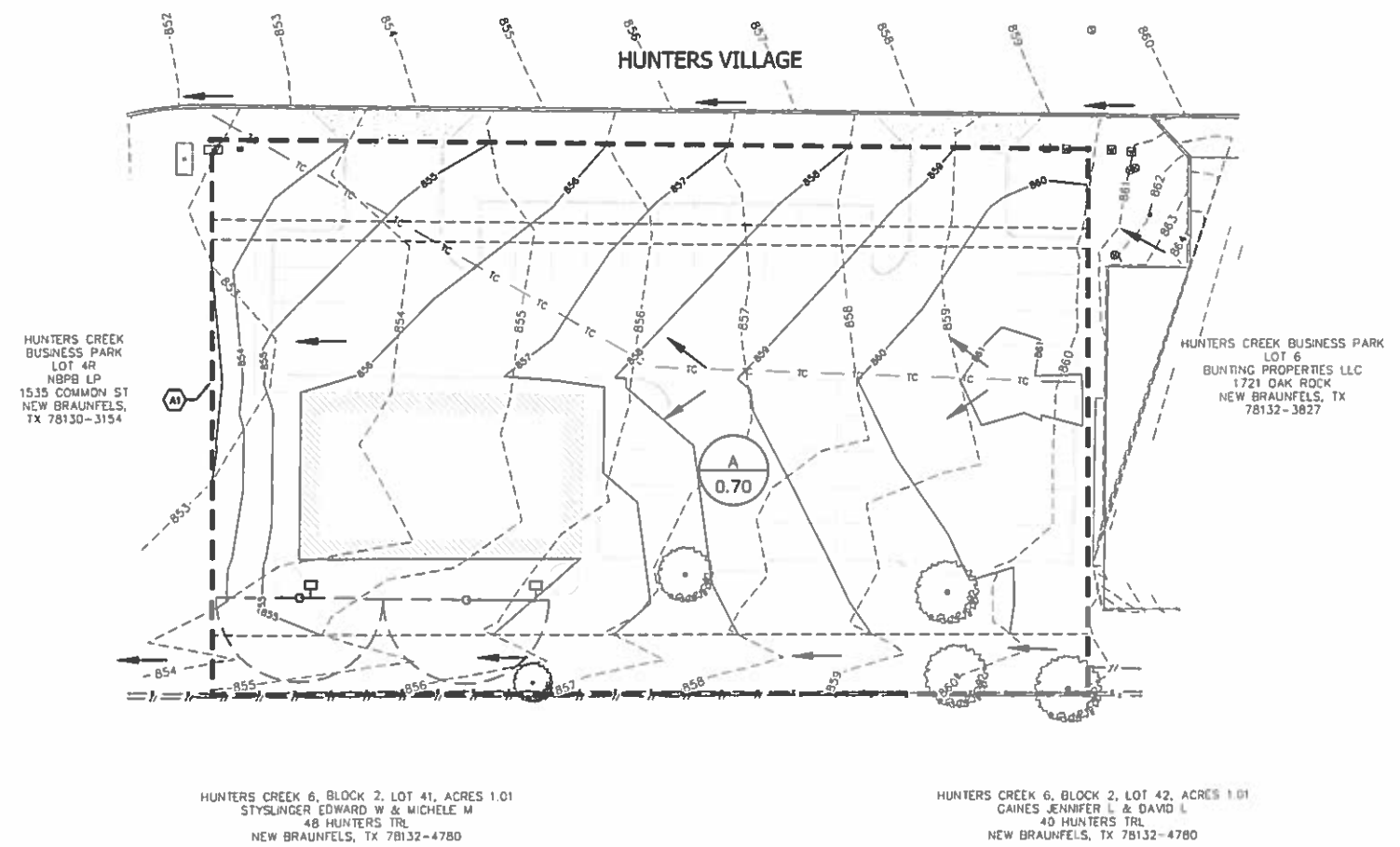
- (1) Prior to application, roughen embankment and fill areas by rolling with a crimping or punching type roller or by track walking. Track walking shall only be used where other methods are impractical.
- (2) To be effective, hydraulic matrices require 24 hours to dry before rainfall occurs.
- (3) Avoid mulch over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.

Drawing Name: K:\Projects\41022.101 Lot 3 Hunters Creek Bus PA (Civil)\Construction Drawings\2 DRAINAGE AREA MAP.dwg User: ammoeller Mar 10, 2016 - 11:52am



LEGEND

- LIMITS OF DRAINAGE AREA
- TC - TC - TIME OF CONCENTRATION
- - - 900 - - - EXISTING CONTOURS
- - - 800 - - - PROPOSED CONTOURS
- FLOW ARROWS
- (A) DRAINAGE BASIN LABEL
- (9.0) BASIN AREA (AC)
- (A1) SUB-DRAINAGE AREA LABEL
- (2.0) SUB-DRAINAGE AREA (AC)
- [A1] INLET LABEL
- (A1) ANALYSIS POINT LABEL



RECEIVED
MAR 15 2016
COUNTY ENGINEER

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

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF SHANE A. KLAR, P.E. 115810 ON March 10, 2016. IT IS TO BE USED FOR BIDDING AND PERMITTING PURPOSES ONLY. NOT TO BE USED FOR CONSTRUCTION.

NO	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES
Engineering Solutions
1040 N. WALNUT AVE., STE. B, NEW BRAUNFELS, TX 78130
P.O. BOX 330 - TEL: 361-1331

DRAINAGE AREA MAP
REVIEW SET

ENDEAVOR HEALTH CARE
AT HUNTERS CREEK
NEW BRAUNFELS, TEXAS, 78130

RECEIVED
MAR 15 2016
COUNTY ENGINEER

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.

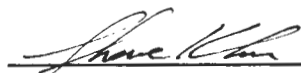
Signature

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: Shane Klar, P.E.

Date: 03/10/2016

Signature of Customer/Agent

 _____

Regulated Entity Name: Endeavor Healthcare at Hunters Creek

Permanent Best Management Practices (BMPs)

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

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

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

N/A

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

N/A

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

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

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

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

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

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

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

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

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

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

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

Responsibility for Maintenance of Permanent BMP(s)

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

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

ATTACHMENT "A"
20% or Less Impervious Cover Waiver

The proposed development is a professional office building and the 20% Impervious Cover Waiver does not apply. Permanent BMP's will be designed in accordance with TCEQ requirements for the removal of TSS generated by the proposed development.

ATTACHMENT "B"
BMP's for Upgradient Stormwater

The only upgradient flow coming to the site is through a drainage easement to the south of the property. The upgradient stormwater will not comingle with any untreated stormwater from the site. Reference the Drainage Area Map of the Hunters Creek Business Park WPAP(Approved by TCEQ June 5, 2006, EAPP #1964.01) for drainage patterns for the area.

ATTACHMENT "C"
BMP's for On-Site Stormwater

The permanent BMP's used to treat on-site stormwater runoff will be a Rainwater Harvesting System and Vegetative Filter Strips. Please refer to the Drainage Area Map in the Temporary Stormwater Section for areas of treatment and BMP structures used.

ATTACHMENT "D"
BMP's for Surface Streams

The Rainwater Harvesting System and Vegetative Filter Strips will be installed to prevent pollutants from entering surface streams and, ultimately, the aquifer. There were no sensitive features identified by the Geological Assessment.

The natural vegetation located downgradient of proposed improvements will provide additional filtration to help prevent pollution from entering streams, sensitive features, and the aquifer.

ATTACHMENT "G"
Inspection, Maintenance, Repair, and Retrofit Plan

Retention/Irrigation Maintenance and Monitoring Procedures

- *Inspections.* The irrigation system, including pumps, should be inspected and tested (or observed while in operation) to assure proper operation at least 6 times annually. Two of these inspections should occur during or immediately following wet weather. Any leaks, broken spray heads, or other malfunctions with the irrigation system should be repaired immediately. In particular, sprinkler heads must be checked to determine if any are broken, clogged, or not spraying

properly. All inspection and testing reports should be kept on site and accessible to inspectors.

- *Sediment Removal.* Remove sediment from splitter box, basin, and wet wells at least two times per year or when the depth reaches 3 inches.
- *Irrigation Areas.* To the greatest extent practicable, irrigation areas are to remain in their natural state. However, vegetation must be maintained in the irrigation area such that it does not impede the spray of water from the irrigation heads. Tree and shrub trimmings and other large debris should be removed from the irrigation area.
- *Mowing.* The upper stage, side slopes, and embankment of a retention basin must be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins must be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed.
- *Debris and Litter Removal.* Debris and litter will accumulate near the basin pump and should be removed during regular mowing operations and inspections. Particular attention should be paid to floating debris that can eventually clog the irrigation system.
- *Erosion Control.* The pond side slopes and embankment may periodically suffer from slumping and erosion, although this should not occur often if the soils are properly compacted during construction. Regrading and revegetation may be required to correct the problems.
- *Nuisance Control.* Standing water or soggy conditions in the retention basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing and debris removal).
- *Rainwater Evacuation.* The Rainwater Harvesting system tanks shall be emptied at least weekly.

Vegetative Filter Strips Maintenance and Monitoring Procedures

- *Pest Management - An Integrated Pest Management (IPM) Plan* should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.
- *Seasonal Mowing and Lawn Care -* If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter

may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.

- *Inspection* - Inspect filter strips at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.
- *Debris and Litter Removal* - Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e. level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year.
- *Sediment Removal* - Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.
- *Grass Reseeding and Mulching* - A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted, and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established.

ATTACHMENT "I"

Measures for Minimizing Surface Stream Contamination

All surface streams will be protected from erosion by not allowing runoff to exceed existing velocities. The stormwater runoff for the property will be directed into the Aqualogic Filtration System and Vegetative Filter Strips where the pollutants will be removed.


Attachment "G"

Maintenance Plan for Rainwater Harvesting System

Rainwater Harvesting System Location: The Rainwater collection system will be located at both southern corners of the building.

Owner: KHCR Company, LLC
28 Hunters Point
New Braunfels, Texas 78132-4709
Phone: (830) 214-2568

Rainwater Harvesting System Maintenance and Monitoring Procedures will be implemented to ensure that the proposed BMP functions as designed.



Karl Hittle
KHCR Company, LLC

3-10-16

Date

I have reviewed the attached maintenance and monitoring procedures and to the best of my knowledge certify that, if they are followed as outlined, the Rainwater Harvesting System will function as designed.



Shane Klar, P.E.

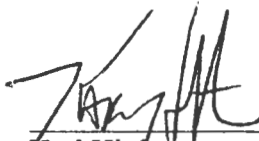
Attachment "G"

Maintenance Plan for Vegetative Filter Strips

Location: The vegetative filter strips will be located along the north and south boundary of the site.

Owner: KHCR Company, LLC
28 Hunters Point
New Braunfels, Texas 78132-4709
Phone: (830) 214-2568

The Vegetative Filter Strip Maintenance and Monitoring Procedures will be implemented to ensure that the proposed BMP functions as designed.

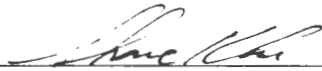


Karl Hittle
KHCR Company, LLC

3-10-16

Date

I have reviewed the attached maintenance and monitoring procedures and to the best of my knowledge certify that, if they are followed as outlined, the Vegetative Filter Strips will function as designed.



Shane Klar, P.E.

Drawing Name: N:\Projects\H1002.101 Lot 5 Hunters Creek Bus PKA\Civil\Construction Drawings\6 WATER QUALITY DETAILS.dwg User: abnankler Mar 10, 2016 - 12:01pm

Rainwater Harvesting Design Calculations

Minimum Treatment Capacity: 375 ft³, 2,805 gal (3,000 ft² building @ 1.5 in rainfall depth)
 Provided Treatment Capacity: 428 ft³, 3,200 gal

Active Irrigation Period: 168 hrs, 7 days

Tank 1 (S-1)
 Volume = 1,600 gal
 Time to Empty = 84 hrs
 Pump Flow to Empty = 457 gpd (0.32 gpm: use 1 sprinkler @ 0.92 gpm)

Tank 2 (S-2)
 Volume = 1,600 gal
 Time to Empty = 84 hrs
 Pump Flow to Empty = 457 gpd (0.32 gpm: use 1 sprinkler @ 0.92 gpm)

* Time to empty Tank 1 & Tank 2 = 29 hrs < 168 hr maximum
 * Volume emptied in 29 hrs = 4,800 gal > 4,705 gal minimum

Sprinklers: Rain Bird 3504-PC

Nozzle	Pressure (psi)	Pattern	Radius (ft)	Flow Rate (gpm)	
S-1	1.0	35	180"	21'	0.92
S-2	1.0	35	180"	21'	0.92

Total Dynamic Head (TDH)



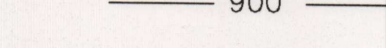
TDH = H_p + H_f + H_e
 Pressure Head (H_p) = 81 ft (2.31 ft/psi)
 Elevation Head (H_e) = 0 ft neglecting variable head over submersible pump
 Friction Head (H_f) = $\frac{1.2(10.4397)(L)(Q)^{1.85}}{(C)^{1.85}(D)^{4.8655}} = 0.25\text{ft}$
 L = Length of pipe (ft)
 C = Hazen-Williams coefficient (150 for SCH 40 PVC)
 Q = Flow Rate (gpm)
 D = Pipe Diameter (in)

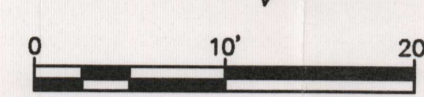
TDH = 81.25 ft

Pump Requirements: 0.92 gpm @ 81.25 ft TDH

* Timer shall be set to spray in intervals not to exceed 2 hours

LEGEND

 PROPOSED RETENTION/IRRIGATION AREA
 EXISTING CONTOUR
 PROPOSED CONTOUR

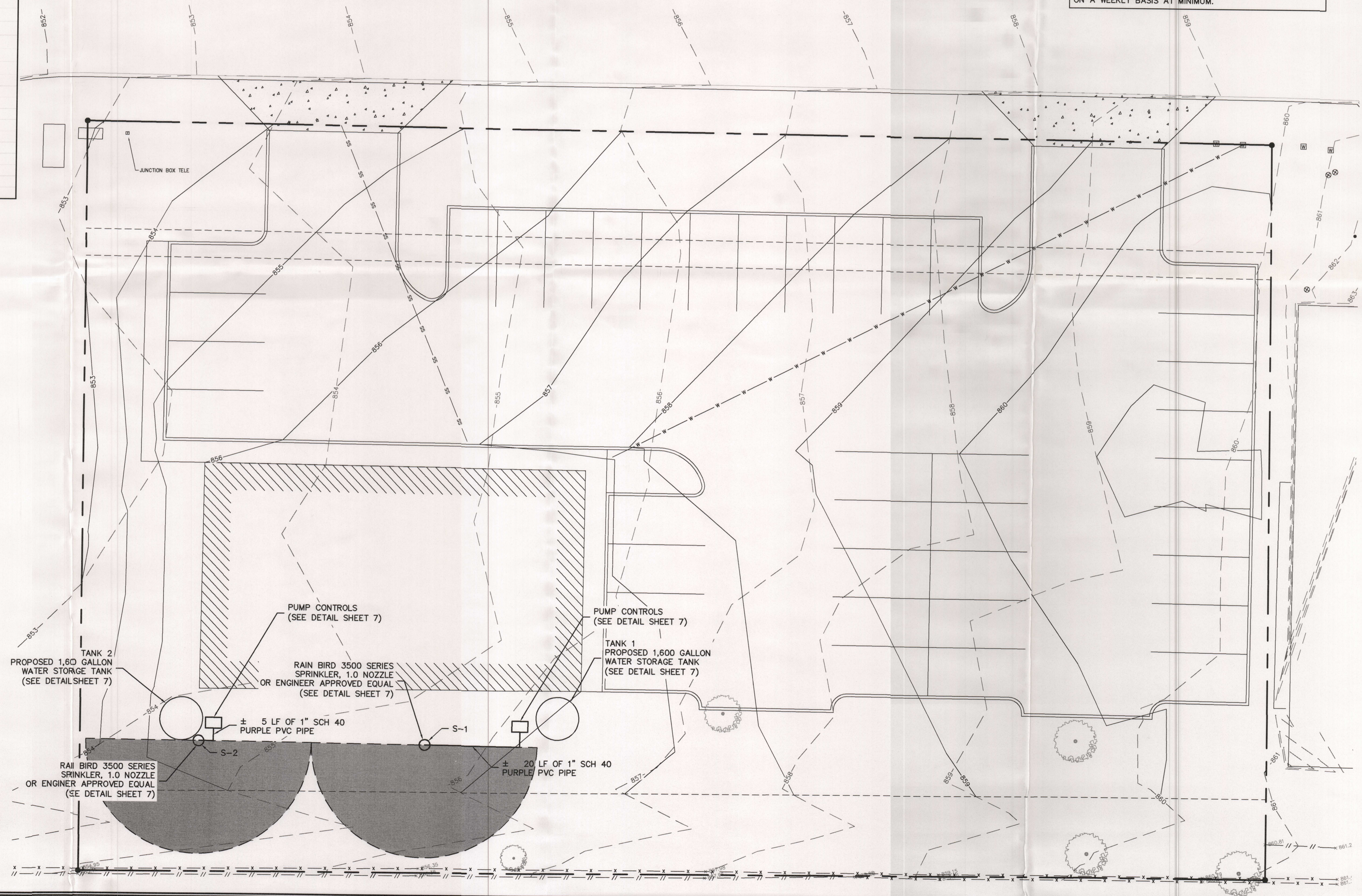



3,000 SF BUILDING
 3,000 SF * 1.5" RAINFALL = 375 CF

REQUIRED RETENTION VOLUME = 375 CF
 2,805 GAL


AVAILABLE RETENTION VOLUME = 428 CF
 3,200 GAL

NOTE: BOTH RAINWATER HARVESTING TANKS TO BE EMPTIED ON A WEEKLY BASIS AT MINIMUM.






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SHANE KLAR
115810
LICENSED PROFESSIONAL ENGINEER
State of Texas

NO.	DATE	ISSUES AND REVISIONS



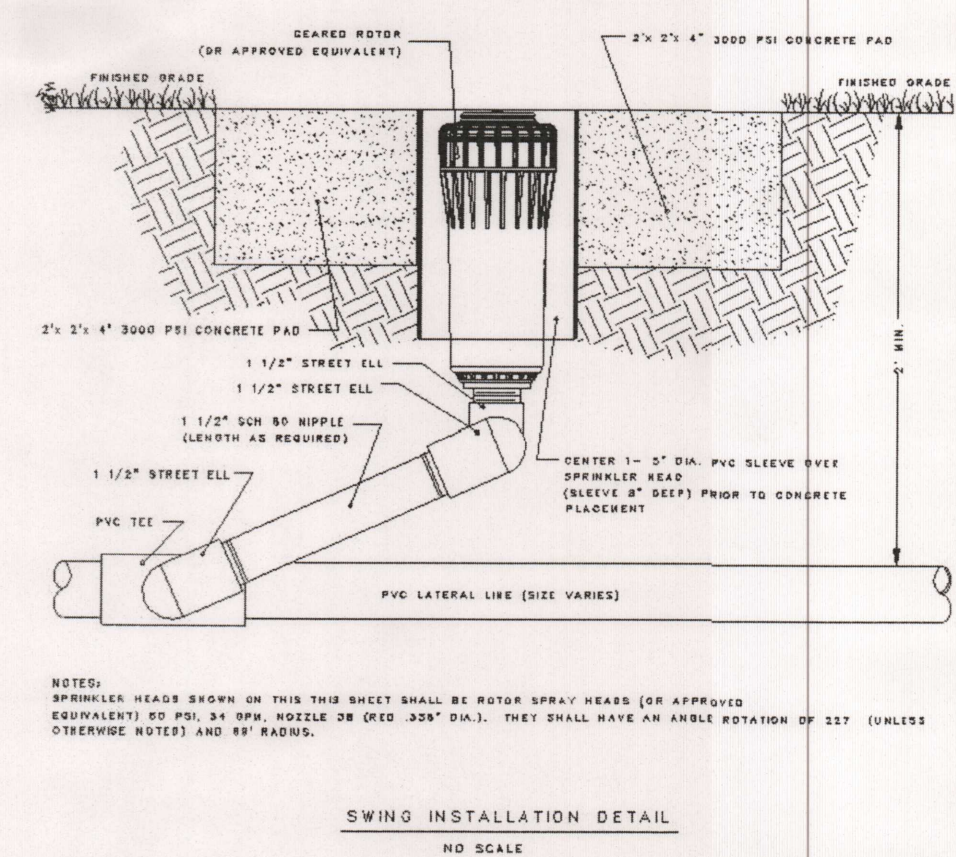
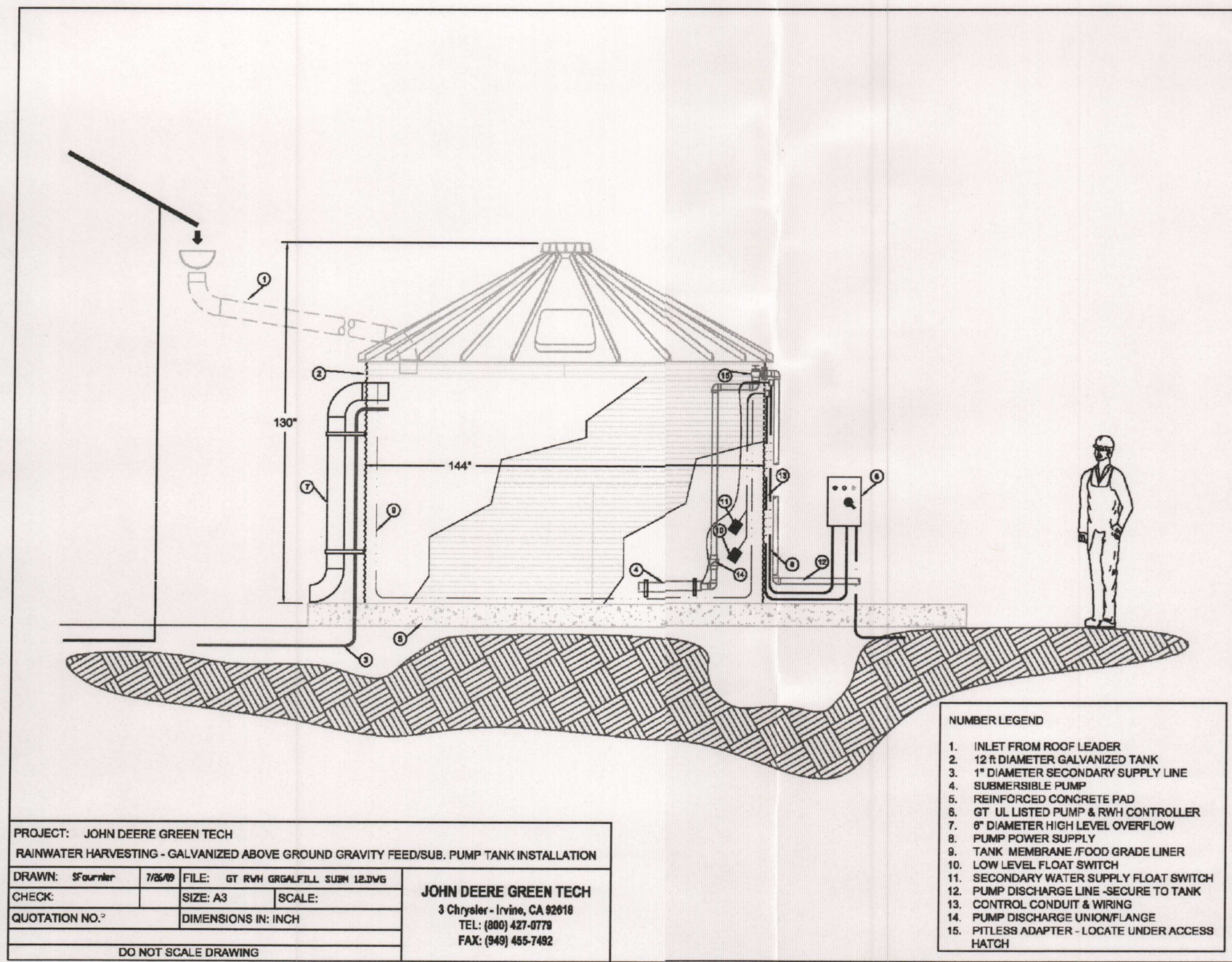
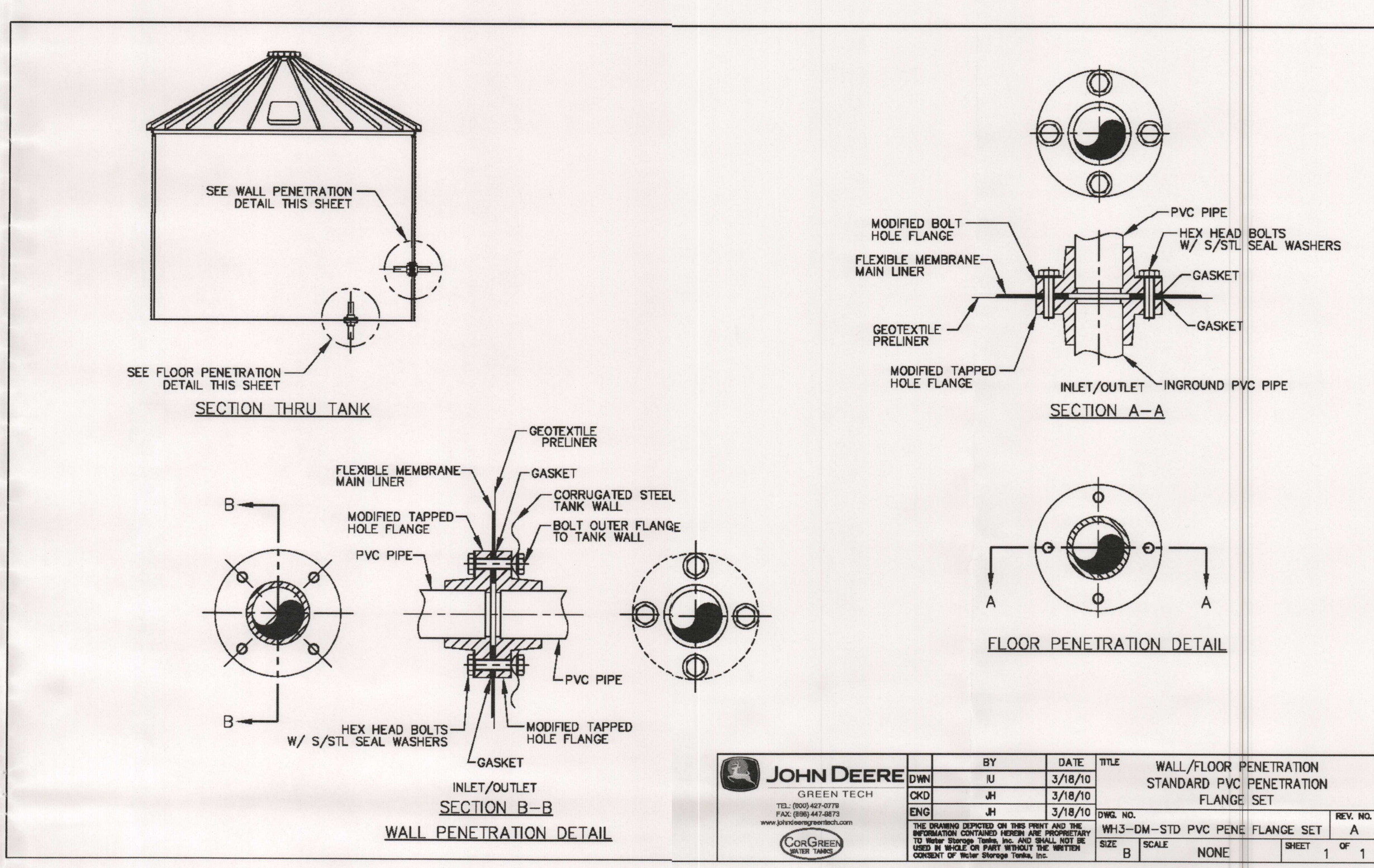
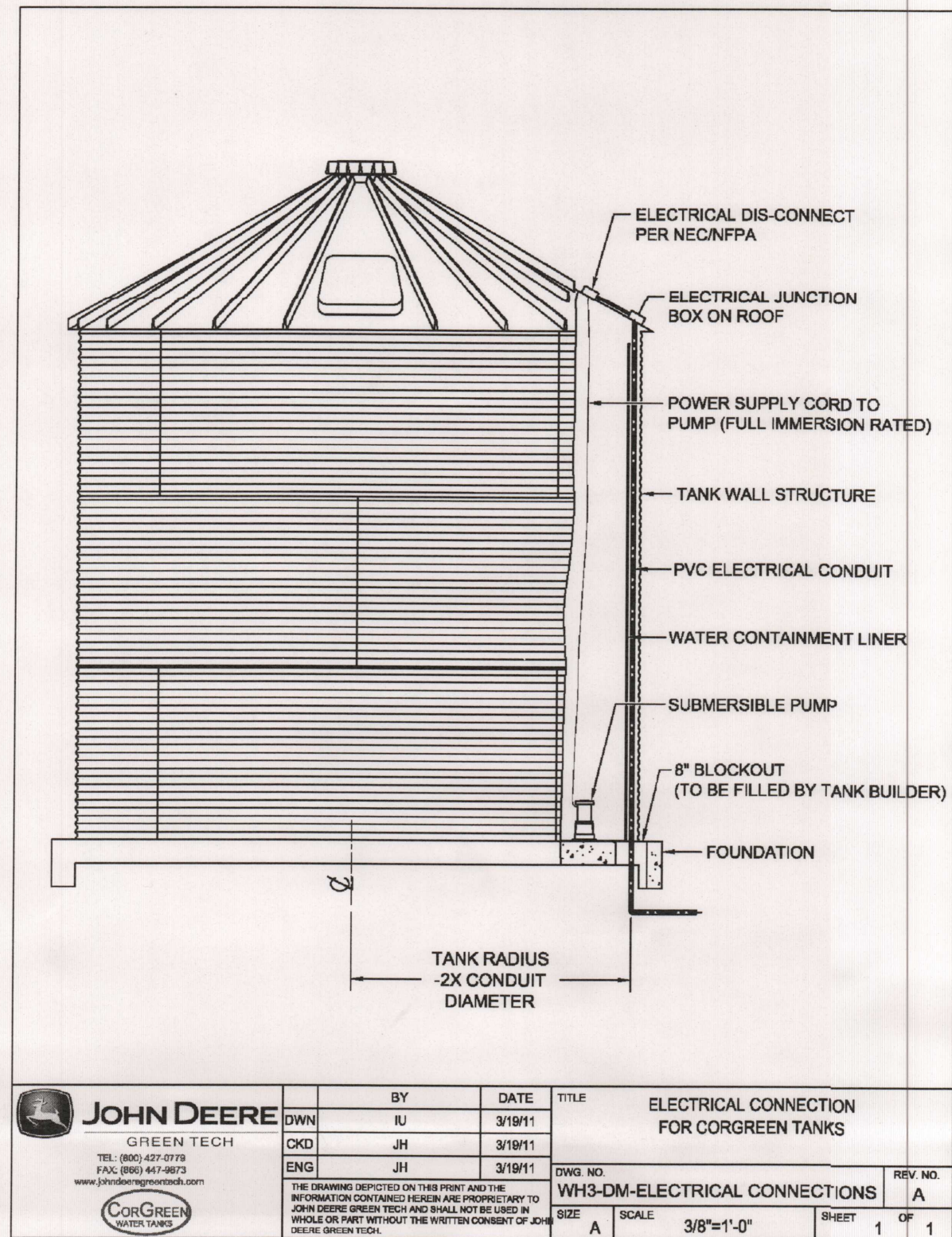
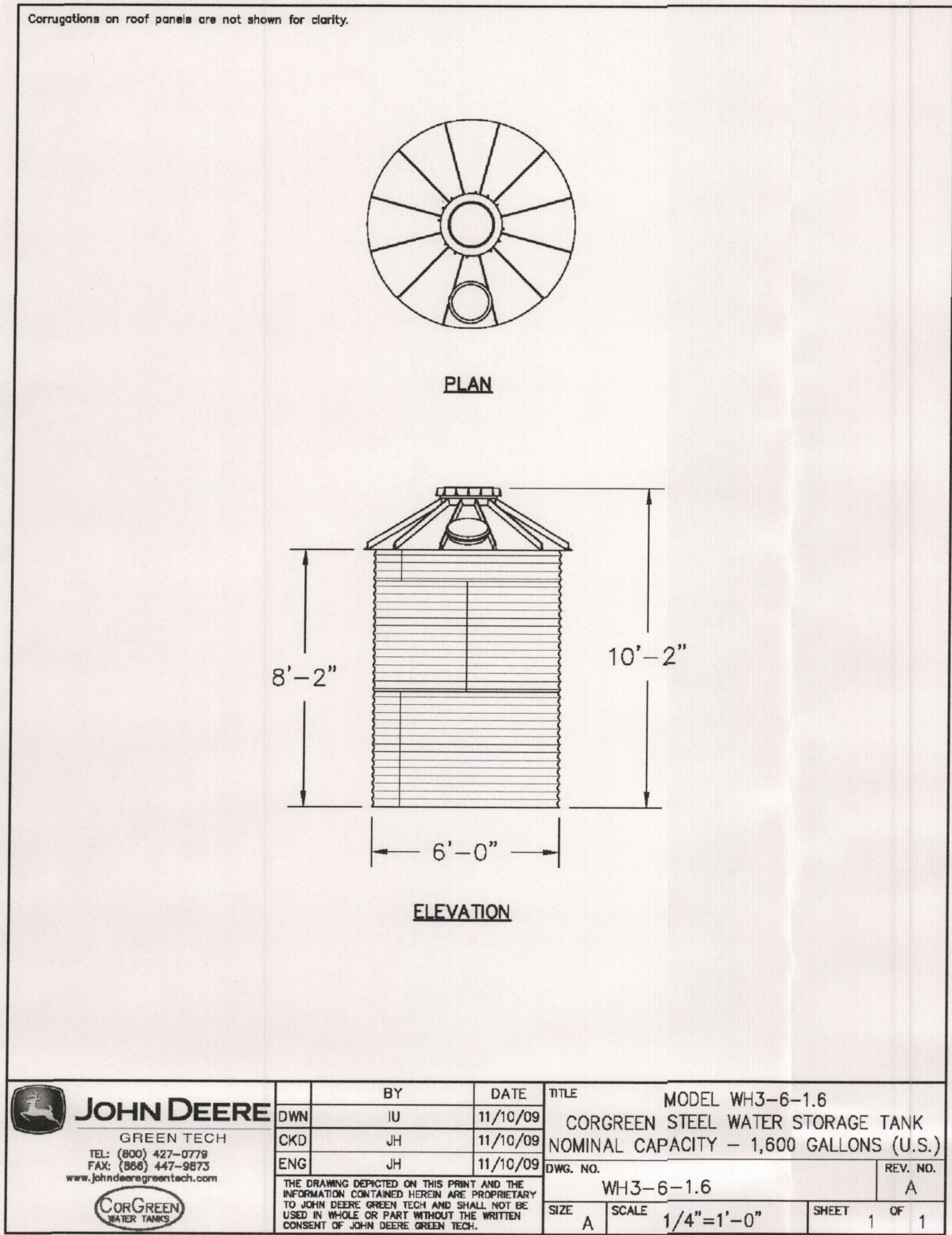
MOELLER & ASSOCIATES
Engineering Solutions

1040 N. WALNUT AVE., STE. B, NEW BRAUNFELS, TX. 78130
 PH: 830-368-7127 www.moeller-tx.com
 1888-888-8888

WATER QUALITY DETAILS 1
 TCEQ-R13
 MAR 10 2016
 SAN ANTONIO REVIEW SET

ENDEAVOR HEALTH CARE
 AT HUNTERS CREEK
 NEW BRAUNFELS, TEXAS, 78130
 RECEIVED
 MAR 15 2016
 COUNTY ENGINEER

Drawing Name: N:\Projects\110002.101 Lot 5 Hunters Creek Bus PKA\Civil\Construction Drawings\7 WATER QUALITY DETAILS 2.dwg User: shonektor Mar 10, 2016 1:04:50pm



JOHN DEERE	BY: JH	DATE: 11/15/09	TITLE: MODEL WH3-6-1.6 CORNGREEN STEEL WATER STORAGE TANK
GREEN TECH	CHK: JH	DATE: 11/15/09	NOMINAL CAPACITY - 1,500 GALLONS (U.S.)
TEL: (800) 427-8778	ENG: JH	DATE: 11/15/09	SCALE: 1/4"=1'-0"
FAX: (360) 441-9973	REV: A		SHEET 1 OF 1

JOHN DEERE	BY: JH	DATE: 3/19/10	TITLE: ELECTRICAL CONNECTION FOR CORNGREEN TANKS
GREEN TECH	CHK: JH	DATE: 3/19/10	WH3-DM-ELECTRICAL CONNECTIONS
TEL: (800) 427-8778	ENG: JH	DATE: 3/19/10	SCALE: 3/8"=1'-0"
FAX: (360) 441-9973	REV: A		SHEET 1 OF 1

JOHN DEERE	BY: JH	DATE: 3/19/10	TITLE: WALL/FLOOR PENETRATION STANDARD PVC PENETRATION FLANGE SET
GREEN TECH	CHK: JH	DATE: 3/19/10	WH3-DM-STD PVC PENE FLANGE SET
TEL: (800) 427-8778	ENG: JH	DATE: 3/19/10	SCALE: NONE
FAX: (360) 441-9973	REV: A		SHEET 1 OF 1

PROJECT: JOHN DEERE GREEN TECH	1. INLET FROM ROOF LEADER
RAINWATER HARVESTING - GALVANIZED ABOVE GROUND GRAVITY FEEDSUB. PUMP TANK INSTALLATION	2. 12\"/>
DRAWN: STANLEY	3. 12\"/>
DATE: 10/24/14	4. SUBMERSIBLE PUMP
SCALE: AS SHOWN	5. REINFORCED CONCRETE PAD
PROJECT: JOHN DEERE GREEN TECH	6. 6\"/>
13000 S. DEER CREEK BLVD. SUITE 100	7. 6\"/>
IRVINE, CA 92618	8. PUMP POWER SUPPLY
TEL: (949) 427-8778	9. TANK MEMBRANE FOOD GRADE LINER
FAX: (949) 462-4882	10. LOW LEVEL FLOW SWITCH
	11. SECONDARY WATER SUPPLY FLOAT SWITCH
	12. PUMP DISCHARGE LINE SECURE TO TANK
	13. CONTROL CONDUIT & WIRING
	14. PUMP DISCHARGE LINE ANGLE
	15. PIPES/ADAPTER - LOCATE UNDER ADDRESS PLATE

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

STATE OF TEXAS
SHANE KLAR
115810
LICENSED PROFESSIONAL ENGINEER
3/10/16

NO.	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES
Engineering Solutions

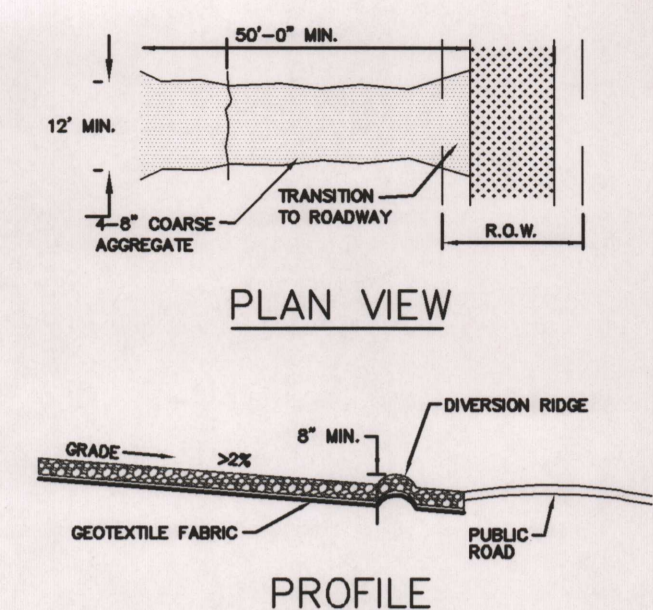
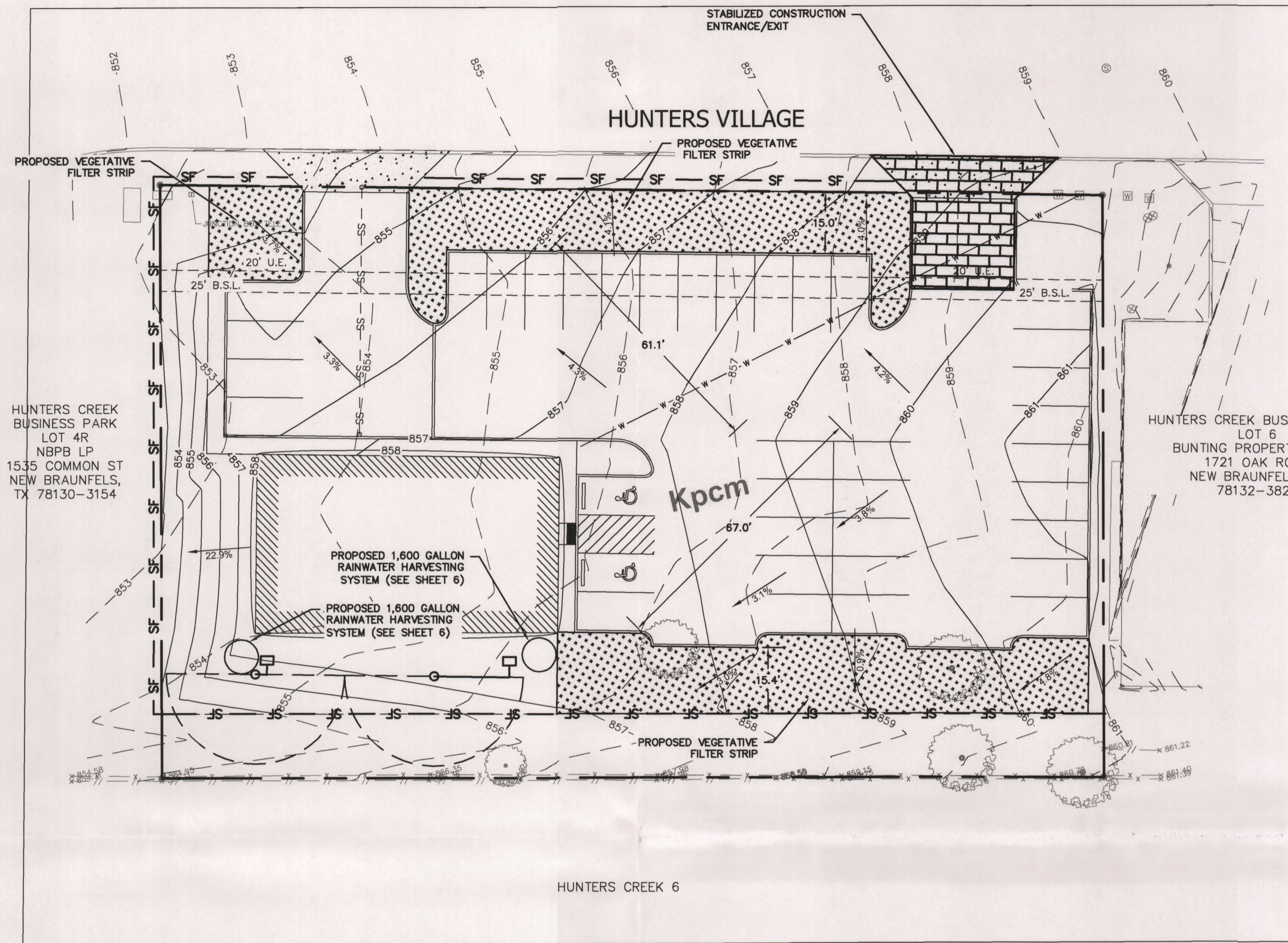
1040 N. WALNUT AVE. STE. B, NEW BRAUNFELS, TX, 78130
PH: 830-252-1177 FAX: 830-252-1331

WATER QUALITY DETAILS 2
REVIEW SET

ENDEAVOR HEALTH CARE
AT HUNTERS CREEK
NEW BRAUNFELS, TEXAS, 78130

RECEIVED
MAR 15 2016
COUNTY ENGINEER

Drawing Name: N:\Projects\H1002\101 Lot 5 Hunters Creek Bus PK\Civil\Construction Drawings\3 WPAP SITE PLAN EROSION CONTROL.dwg User: shaneklar Apr 13, 2016 10:52am



STABILIZED CONSTRUCTION ENTRANCE / EXIT

- Materials:**
- The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
 - The aggregate should be placed with a minimum thickness of 8 inches.
 - The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd², a mullen burst rating of 140 lb/in², and an equivalent opening size greater than a number 50 sieve.
 - If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.
- Installation:**
- Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
 - The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
 - The construction entrance should be at least 50 feet long.
 - If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
 - Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
 - Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
 - Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
 - Install pipe under pad as needed to maintain proper public road drainage.

- Inspection and Maintenance Guidelines:**
- The entrance should be maintained in a condition, which will prevent tracking or lowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
 - All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
 - When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
 - 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.
 - All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

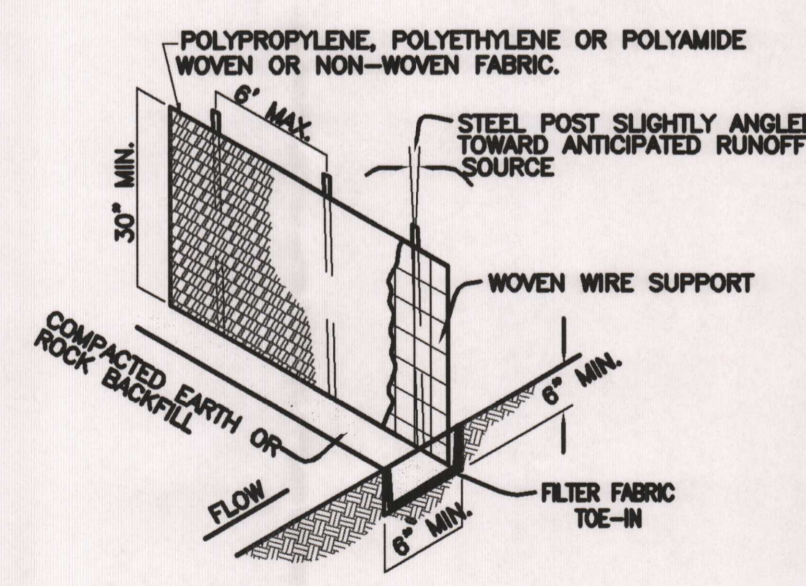
TOTAL LAND AREA	=	0.70 AC
TOTAL DISTURBED AREA	=	0.70 AC
TOTAL IMPERVIOUS AREA	=	0.44 AC
% IMPERVIOUS	=	62.9%

SOIL STABILIZATION NOTE
ALL DISTURBED SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITH 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

SILT FENCE

- Materials:**
- Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in², ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.
 - Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft², and Brinell hardness exceeding 140.
 - Woven wire backing to support the fabric should be galvanized 2' x 4' welded wire, 12 gauge minimum.
- Installation:**
- Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of 1-foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet.
 - Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is 1/4 acre/100 feet of fence.
 - The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.
 - The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
 - Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.
 - Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

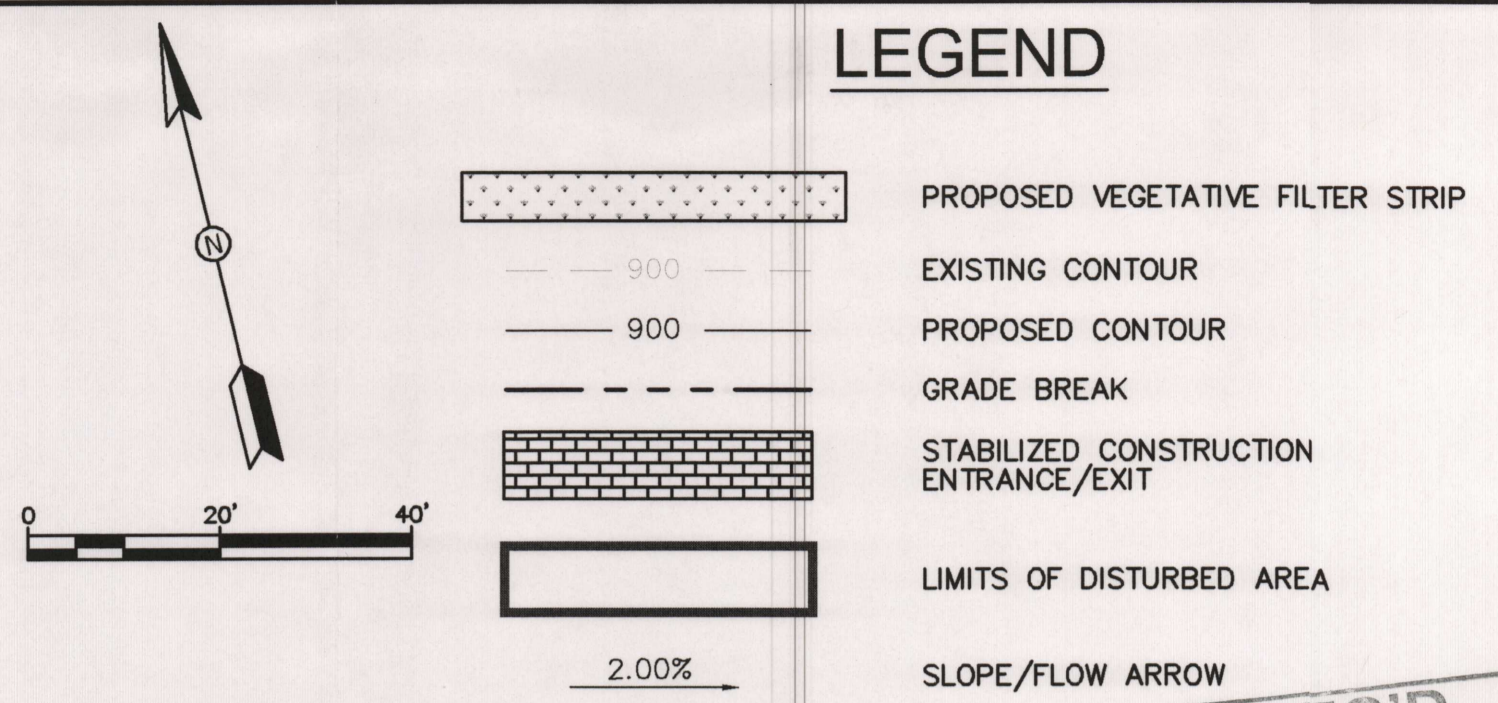
- Inspection and Maintenance Guidelines:**
- Inspect all fencing weekly, and after any rainfall.
 - Remove sediment when buildup reaches 6 inches.
 - Replace any torn fabric or install a second line of fencing parallel to the torn section.
 - Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular fabric dike may be preferable to a silt fence at common vehicle access points.
 - When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.



HYDRAULIC MULCH

- Materials:**
- Hydraulic Mulches:** Wood fiber mulch can be applied alone or as a component of hydraulic matrices. Wood fiber applied alone is typically applied at the rate of 2,000 to 4,000 lb/acre. Wood fiber mulch is manufactured from wood or wood waste from lumber mills or from urban sources.
- Hydraulic Matrices:** Hydraulic matrices include a mixture of wood fiber and acrylic polymer or other tackifier as binder. Apply as a liquid slurry using a hydraulic application machine (i.e., hydro seeder) at the following minimum rates, or as specified by the manufacturer to achieve complete coverage of the target area: 2,000 to 4,000 lb/acre wood fiber mulch, and 5 to 10% (by weight) of tackifier (acrylic copolymer, guar, psyllium, etc.)
- Bonded Fiber Matrix:** Bonded fiber matrix (BFM) is a hydraulically applied system of fibers and adhesives that upon drying forms an erosion resistant blanket that promotes vegetation, and prevents soil erosion. BFMs are typically applied at rates from 3,000 lb/acre to 4,000 lb/acre based on the manufacturer's recommendation. A biodegradable BFM is composed of materials that are 100% biodegradable. The binder in the BFM should also be biodegradable and should not dissolve or disperse upon re-wetting. Typically, biodegradable BFMs should not be applied immediately before, during or immediately after rainfall if the soil is saturated. Depending on the product, BFMs typically require 12 to 24 hours to dry and become effective.
- Installation:**
- Prior to application, roughen embankment and fill areas by rolling with a crimping or punching type roller or by track walking. Track walking shall only be used where other methods are impractical.
 - To be effective, hydraulic matrices require 24 hours to dry before rainfall occurs.
 - Avoid mulch over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.

- Inspection and Maintenance Guidelines:**
- Mulched areas should be inspected weekly and after each rain event to locate and repair any damage.
 - Areas damaged by storms or normal construction activities should be regraded and hydraulic mulch reapplied as soon as practical.



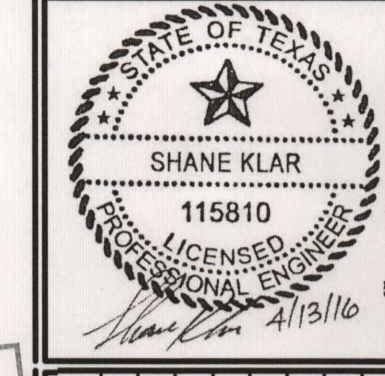
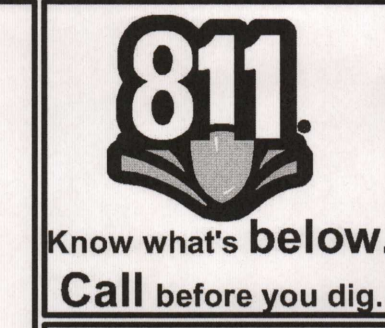
REC'D
APR 21 2016
Region 13

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

- Written construction notification must be given to the appropriate TCEQ regional office no later than 48 hours prior to commencement of the regulated activity. Information must include the date on which the regulated activity will commence, the name of the approved plan for the regulated activity, and the name of the prime contractor and the name and telephone number of the contact person.
- All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
- If any sensitive feature is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. The regulated activities near the sensitive feature may not proceed until the TCEQ has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality.
- No temporary aboveground hydrocarbon and hazardous substance storage tank system is installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
- Prior to commencement of construction, all temporary erosion and sedimentation (E&S) control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. Controls specified in the temporary storm water section of the approved Edwards Aquifer Protection Plan are required during construction. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. The controls must remain in place until disturbed areas are revegetated and the areas have become permanently stabilized.
- 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).
- Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake must be provided that can indicate when the sediment occupies 50% of the basin volume.
- 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).
- All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
- Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.
- The following records shall be maintained and made available to the TCEQ upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.
- The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
 - any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
 - any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
 - any development of land previously identified as undeveloped in the original water pollution abatement plan.

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2800 S. IH 35, Suite 100
Austin, Texas 78704-5712
Phone (512) 339-2929
Fax (512) 339-3795

San Antonio Regional Office
14250 Judson Road
San Antonio, Texas 78233-4480
Phone (210) 490-3096
Fax (210) 545-4329



NO.	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES
Engineering Solutions
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PH: 830-398-7127 www.mo-a-tx.com
IDBE FIRM #15581

WPAP SITE PLAN EROSION CONTROL

PERMIT SET

ENDEAVOR HEALTH CARE AT HUNTERS CREEK

NEW BRAUNFELS, TEXAS, 78130

SHEET
3
OF 10