TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 10, 2013
Revised January 16, 2014

RECEIVED
JAN 22 2014
COUNTY ENGINEER

Mr. Karl Hittle
KHCR Real Estate Holdings, LLC
28 Hunters Point
New Braunfels, Texas 78132-4709

Re: Edwards Aquifer, Comal County

Name of Project: KHCR Professional Building; Located on the north side of Hunters Village approximately 250 feet northwest of the intersection of Oak Run Parkway and Hunters Village; 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. RN106900103; Investigation No. 1121601; Additional ID No. 13-13091202

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 Real Estate Holdings, LLC on September 12, 2013. Final review of the WPAP was completed after additional material was received on November 14, 2013 and December 03, 2013. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. The 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 0.64 acres. It will include the construction of a 5,030 square foot office building, associated parking and utility services. The impervious cover will be 0.34 acres (53.1 percent). Project wastewater will be disposed of by conveyance to the existing Gruene Road Waste Water Treatment Plant owned by New Braunfels Utilities.

Permanent Pollution Abatement Measures

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, two (2) Rooftop Rainwater Harvesting Systems and one (1) 15 foot engineered Vegetative Filter Strip, 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 305 pounds of TSS generated from the 0.34 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The individual treatment measures are listed in the table below.

Rainwater Harvesting System							
Tank No.	Contributing Area	Req. Capture Volume (ft^3)	Design Capture Volume (ft^3)	Req. Irrigation Area (ft^2)	Design Irrigation Area (ft^2)	Req TSS Removal (lb/yr)	Design TSS Removal (lb/yr)
1	0.055	314.5	321	449	459	51	51
2	0.055	314.5	321	449	459	51	51
Total	0.11	629	642	*898*	*918*	102	102

Vegetative Filter Strip				
Contributing Area	Impervious Cover (ac)	Length (ft)	Width (ft)	Annual TSS Removal (lb/yr)
0.23	0.23	151	15	203

The vegetative filter strip will have a uniform slope of less than 20 percent, with a vegetated cover of at least 80 percent. The filter strip will be 15 feet wide (in the direction of flow), extend along the entire length of the contributing area with no obstructions to ensure stormwater flows through the filter strip.

Geology

According to the geologic assessment included with the application, the site is located over the Cyclic and marine members of the Person formation. Two non-sensitive features, F-1 (Man-made feature in bedrock) and feature F-2 (fault) were identified during the assessment. The San Antonio Regional Office site assessment conducted on November 12, 2013 revealed the site was generally as described in the geologic assessment.

Special Conditions

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

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

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

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

Sincerely,

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

LMB/AG/eg

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

cc: Mr. James Ingalls, P.E., Moeller & Associates
Mr. Thomas L. Carrasco, P.E., City of New Braunfels
Mr. Tom Hornseth, P.E., Comal County
Mr. Roland Ruiz, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

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

Sincerely,

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

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Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
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cc: Mr. James Ingalls, P.E., Moeller & Associates
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Mr. Tom Hornseth, P.E., Comal County
Mr. Roland Ruiz, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

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 neighboring lot to the east has a small portion of its drainage that naturally flows to our site. A temporary earthen swale will be constructed to direct the upgradient stormwater away from the site until the lot develops, at which time, the neighboring lot's drainage convey the runoff as previously master planned. Natural vegetation in the area of the upgradient stormwater will act as a vegetative filter to treat the upgradient storm flows. 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.

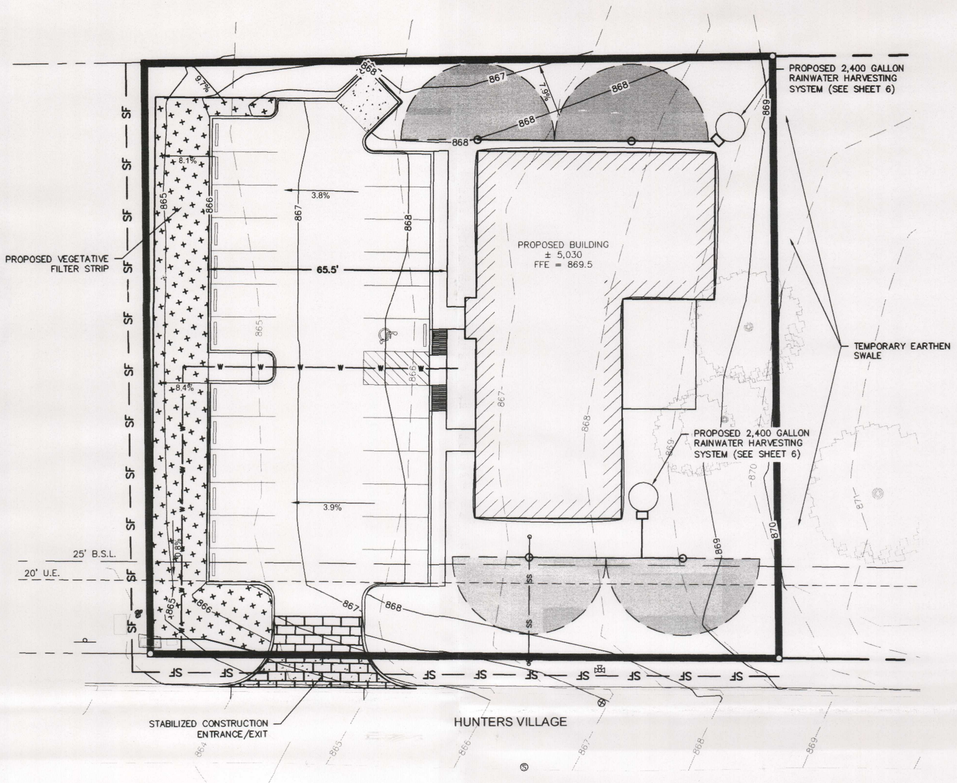
- *Debris and Litter Removal* - Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e. level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year.

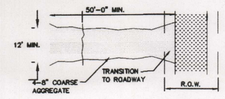
- *Sediment Removal* - Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by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

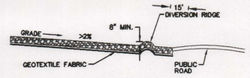
ATTACHMENT "I"
Measures for Minimizing Surface Stream Contamination

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.





PLAN VIEW



PROFILE

STABILIZED CONSTRUCTION ENTRANCE / EXIT

Materials:

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
(2) The aggregate should be placed with a minimum thickness of 8 inches.
(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd2, a mullen burst rating of 140 lb/in2, and an equivalent opening size greater than a number 50 sieve.
(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

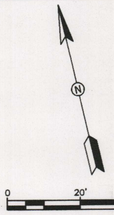
Installation:

(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
(3) The construction entrance should be at least 50 feet long.
(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
(8) Install pipe under pad as needed to maintain proper public road drainage.

Inspection and Maintenance Guidelines:

(1) 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.
(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

LEGEND



- PROPOSED VEGETATIVE FILTER STRIP
- PROPOSED RETENTION/IRRIGATION AREA
- 905 — EXISTING CONTOUR
- 900 — PROPOSED CONTOUR
- GRADE BREAK
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- LIMITS OF DISTURBED AREA
- 2.00% — SLOPE/FLOW ARROW

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

1. Written construction notification must be given to the appropriate TCEQ regional office no later than 48 hours prior to commencement of the regulated activity. Information must include the date on which the regulated activity will commence, the name of the approved plan for the regulated activity, and the name of the prime contractor and the name and telephone number of the contact person.
2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. The regulated activities near the sensitive feature may not proceed until the TCEQ has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality.
4. No temporary aboveground hydrocarbon and hazardous substance storage tank system is installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
5. Prior to commencement of construction, all temporary erosion and sedimentation (E&S) control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. Controls specified in the temporary storm water section of the approved Edwards Aquifer Protection Plan are required during construction. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. The controls must remain in place until disturbed areas are revegetated and the areas have become permanently stabilized.
6. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
7. Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake must be provided that can indicate when the sediment occupies 50% of the basin volume.
8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.
11. The following records shall be maintained and made available to the TCEQ upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;

B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;

C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

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

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

TOTAL LAND AREA	=	0.64 AC
TOTAL DISTURBED AREA	=	0.64 AC
TOTAL IMPERVIOUS AREA	=	0.34 AC
% IMPERVIOUS	=	53.1%

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:

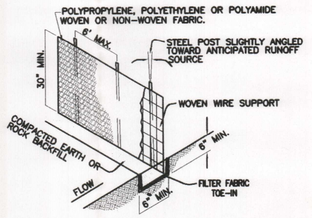
(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.
(2) Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft2, and Brindell hardness exceeding 140.
(3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12 gauge minimum.

Installation:

(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. 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.
(2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre/100 feet of fence.
(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.
(4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
(5) Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.
(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

Inspection and Maintenance Guidelines:

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



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:

(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.

Inspection and Maintenance Guidelines:

(1) Mulched areas should be inspected weekly and after each rain event to locate and repair any damage.
(2) Areas damaged by storms or normal construction activities should be regraded and hydraulic mulch reapplied as soon as practical.

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STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12-3-13

NO	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES Engineering Solutions
1040 N. WALNUT AVE, STE B, NEW BRAUNFELS, TX. 78130
PH: 830-358-7127 www.ma-tx.com
TBPE FIRM F-13351

WPAP SITE PLAN EROSION CONTROL

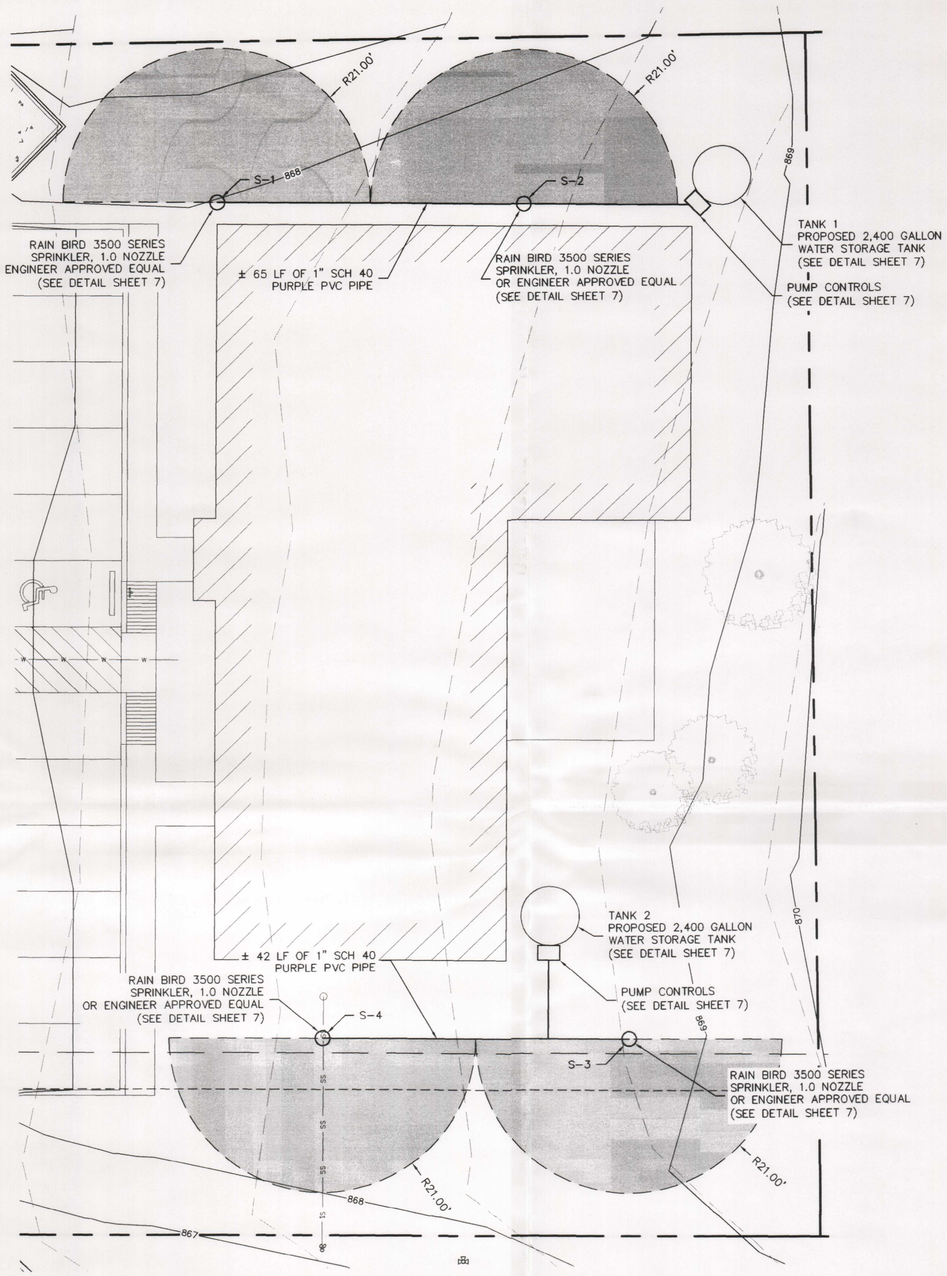
WPAP SET

KHCR PROFESSIONAL BUILDING

NEW BRAUNFELS, TX 78132

SHEET 3 OF 10

Drawing Name: N:\Projects\Vitt001.101 Lot 11B Hunters Creek Bus Pk\Engineering Reports\WPAP\3 WPAP SITE PLAN.dwg User: ShaneKlor Dec 03, 2013 - 1:59pm



CONTRACTOR TO PROVIDE ADDITIVE ALTERNATE PRICING FOR IRRIGATION OPTION DETAILED BELOW FOR RAINWATER HARVESTING SYSTEM. EACH RAINWATER HARVESTING UNIT TO HAVE AT A MINIMUM A MANUAL DRAIN VALVE ON EACH TANK

Rainwater Harvesting Design Calculations

Minimum Treatment Capacity: 629 ft^3, 4,705 gal (5,030 ft^2 building @ 1.5 in rainfall depth)
Provided Treatment Capacity 642 ft^3, 4,800 gal

Active Irrigation Period: 60 hrs, 2.5 days

Tank 1 (S-1, S-2)
Volume = 2,400 gal
Time to Empty = 22 hrs
Pump Flow to Empty = 2,620 gpd (1.84 gpm = 2 sprinklers @ 0.92 gpm)

Tank 2 (S-3, S-4)
Volume = 2,400 gal
Time to Empty = 22 hrs
Pump Flow to Empty = 2,620 gpd (1.84 gpm = 2 sprinklers @ 0.92 gpm)

* Time to empty Tank 1 & Tank 2 = 44 hrs < 60 hr maximum
* Volume emptied in 44 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
S-3	1.0	35	180°	21'	0.92
S-4	1.0	35	180°	21'	0.92

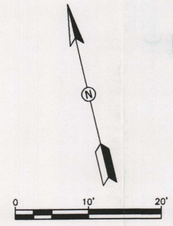
Total Dynamic Head (TDH)

$TDH = H_p + H_e + H_f$
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) = $\frac{1.2(10.4397)(L)(Q)^{1.85}}{(C)^{1.85}(D)^{4.8655}} = 0.25$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: 1.84 gpm @ 81.25 ft TDH

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



LEGEND

PROPOSED RETENTION/IRRIGATION AREA
900 EXISTING CONTOUR
900 PROPOSED CONTOUR

5,030 SF BUILDING
5,030 SF * 1.5" RAINFALL = 628.75 CF

REQUIRED RETENTION VOLUME = 629 CF
4,705 GAL

AVAILABLE RETENTION VOLUME = 642 CF
4,800 GAL

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

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DEC 09 2013
COUNTY ENGINEER

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12-5-13

NO	DATE	ISSUES AND REVISIONS

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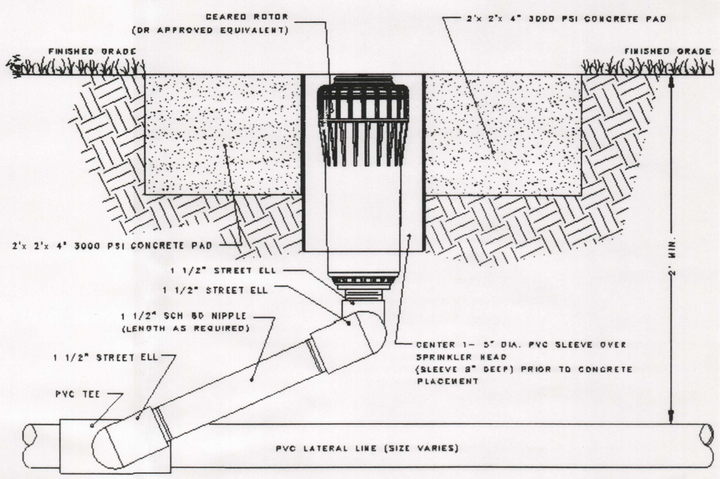
1040 N. WALNUT AVE., STE. B, NEW BRAUNFELS, TX. 78130
PH: 830-358-7127 www.mo-tx.com
TBPE FIRM #: 13951

WATER QUALITY DETAILS 1
WPAP SET

KHCR PROFESSIONAL BUILDING
NEW BRAUNFELS, TX 78132

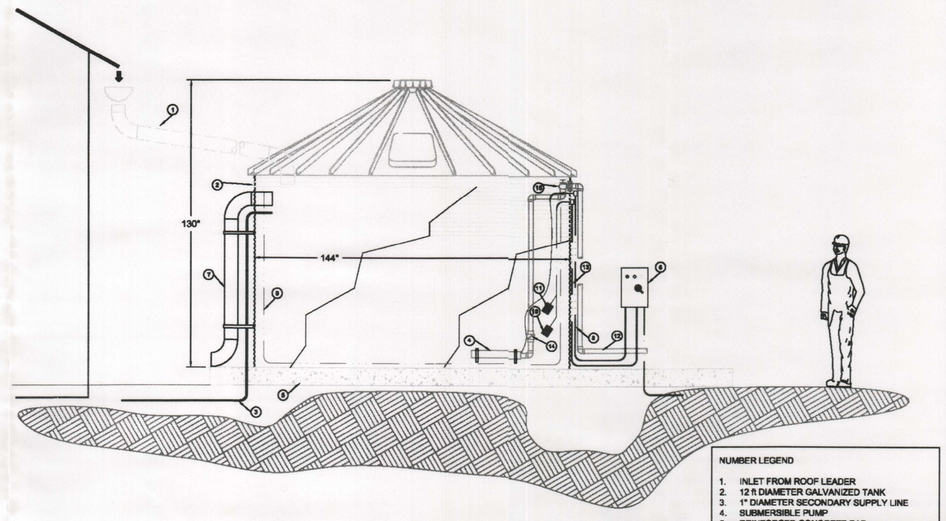
SHEET 6 OF 10



NOTES:
SPRINKLER HEADS SHOWN ON THIS THIS SHEET SHALL BE ROTOR SPRAY HEADS (OR APPROVED EQUIVALENT) 60 PSI, 34 GPM, NOZZLE 38 (REQ .338" DIA.). THEY SHALL HAVE AN ANGLE ROTATION OF 227 (UNLESS OTHERWISE NOTED) AND 89' RADIUS.

SWING INSTALLATION DETAIL

NO SCALE



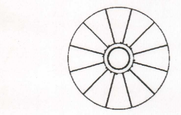
NUMBER LEGEND

1. INLET FROM ROOF LEADER
2. 12 ft DIAMETER GALVANIZED TANK
3. 1" DIAMETER SECONDARY SUPPLY LINE
4. SUBMERSIBLE PUMP
5. REINFORCED CONCRETE PAD
6. GT UL LISTED PUMP & RWH CONTROLLER
7. 6" DIAMETER HIGH LEVEL OVERFLOW
8. PUMP POWER SUPPLY
9. TANK MEMBRANE /FOOD GRADE LINER
10. LOW LEVEL FLOAT SWITCH
11. SECONDARY WATER SUPPLY FLOAT SWITCH
12. PUMP DISCHARGE LINE -SECURE TO TANK
13. CONTROL CONDUIT & WIRING
14. PUMP DISCHARGE UNION/FLANGE
15. PITLESS ADAPTER - LOCATE UNDER ACCESS HATCH

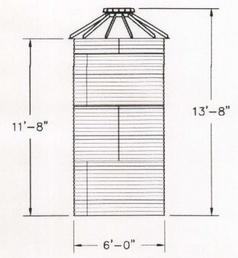
PROJECT: JOHN DEERE GREEN TECH			
RAINWATER HARVESTING - GALVANIZED ABOVE GROUND GRAVITY FEED/SUB. PUMP TANK INSTALLATION			
DRAWN: SCurrier	7/15/09	FILE: GT RWH GRSALTILL SUBM 12.3VG	
CHECK:		SIZE: A3	SCALE:
QUOTATION NO.*		DIMENSIONS IN: INCH	
DO NOT SCALE DRAWING			

JOHN DEERE GREEN TECH
3 Chrysler - Irvine, CA 92618
TEL: (800) 427-6778
FAX: (949) 455-7492

Corrugations on roof panels are not shown for clarity.



PLAN

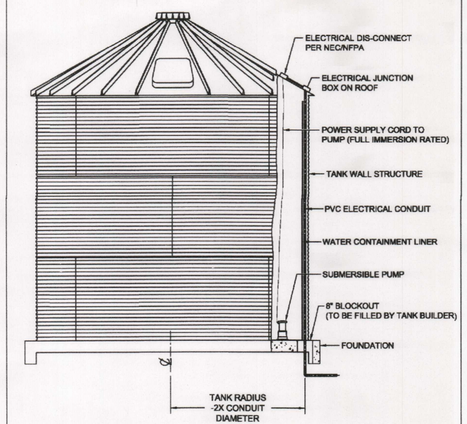


ELEVATION

		BY	DATE	TITLE
JOHN DEERE GREEN TECH	DWN	IU	10/5/09	MODEL WH3-6-2.4 CORGREEN STEEL WATER STORAGE TANK NOMINAL CAPACITY - 2,400 GALLONS (U.S.)
TEL: (800) 427-6778 FAX: (866) 447-6872 www.johndeerigreentech.com	CKD	JH	10/5/09	
CorGreen WATER TANKS	ENG	JH	10/5/09	DWG. NO. WH3-6-2.4 REV. NO. A

THE DRAWING DEPICTED ON THIS PRINT AND THE INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO Water Storage Tanks, Inc. AND SHALL NOT BE USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF JOHN DEERE GREEN TECH.

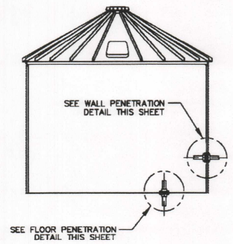
SIZE A | SCALE 1/4"=1'-0" | SHEET 1 OF 1



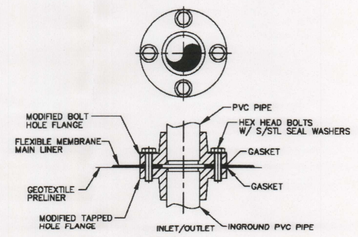
		BY	DATE	TITLE
JOHN DEERE GREEN TECH	DWN	IU	3/19/11	ELECTRICAL CONNECTION FOR CORGREEN TANKS
TEL: (800) 427-6778 FAX: (866) 447-6872 www.johndeerigreentech.com	CKD	JH	3/19/11	
CorGreen WATER TANKS	ENG	JH	3/19/11	DWG. NO. WH3-DM-ELECTRICAL CONNECTIONS REV. NO. A

THE DRAWING DEPICTED ON THIS PRINT AND THE INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO Water Storage Tanks, Inc. AND SHALL NOT BE USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF JOHN DEERE GREEN TECH.

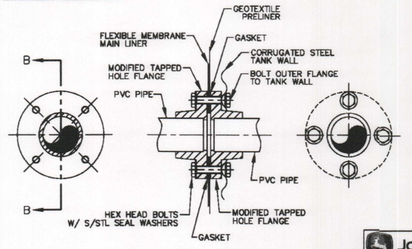
SIZE A | SCALE 3/8"=1'-0" | SHEET 1 OF 1



SECTION THRU TANK

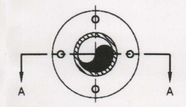


SECTION A-A



SECTION B-B

WALL PENETRATION DETAIL



FLOOR PENETRATION DETAIL

		BY	DATE	TITLE
JOHN DEERE GREEN TECH	DWN	IU	3/18/10	WALL/FLOOR PENETRATION STANDARD PVC PENETRATION FLANGE SET
TEL: (800) 427-6778 FAX: (866) 447-6872 www.johndeerigreentech.com	CKD	JH	3/18/10	
CorGreen WATER TANKS	ENG	JH	3/18/10	DWG. NO. WH3-DM-STD PVC PENE FLANGE SET REV. NO. A

THE DRAWING DEPICTED ON THIS PRINT AND THE INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO Water Storage Tanks, Inc. AND SHALL NOT BE USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF Water Storage Tanks, Inc.

SIZE B | SCALE NONE | SHEET 1 OF 1

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JAMES INGALLS
107416
LICENSED PROFESSIONAL ENGINEER
12-3-13

NO	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES Engineering Solutions
1040 N. WALNUT AVE. STE B, NEW BRAUNFELS, TX. 78130
PH: 830-358-7127 www.mo-1x.com
TBPE FIRM F-13351

WATER QUALITY BASIN DETAILS 2

WPAP SET

KHCR PROFESSIONAL BUILDING

NEW BRAUNFELS, TX 78132

SHEET 7 OF 10

Drawing Name: N:\Projects\HN1001.101 Lot 118 Hunters Creek Bus Pk\Engineering Reports\WPAP\6 WATER QUALITY DETAILS.dwg User: ShonerKor Dec 03, 2013 - 2:47pm

MOELLER & ASSOCIATES
Engineering Solutions

RECEIVED
NOV 19 2013
COUNTY ENGINEER

November 14, 2013

Mr. Alex Grant
Edwards Aquifer Protection Division, Region 13 (San Antonio)
Texas Commission on Environmental Quality
14250 Judson Road
San Antonio, TX 78233-4480

RE: KHCR Professional Building, Water Pollution Abatement Plan (WPAP)

This letter is in response to the fax received 11/12/2013 TCEQ as it pertains to the request for approval of a Water Pollution Abatement Plan. The comments received are in italics and our responses are in bold.

1. *The Inspection, Maintenance, Repair and Retrofit Plan (attachment G) was signed by someone other than the owner/applicant. This maintenance plan must be signed by the owner or responsible party. Please revise the attachment G with the owner's signature.*

   Attachment G has been revised per your comments. Please see attached.

Please accept these comments and revisions to the Water Pollution Abatement Plan for the referenced project. If you need additional information or have any questions, please do not hesitate to contact myself or Shane Klar.

Sincerely,

James Ingalls, P.E.
Attachments

2013 NOV 14 AM 8:11
RECEIVED TCEQ
SAN ANTONIO
REGION

Attachment "G"

Maintenance Plan for Vegetative Filter Strips

Location:	The vegetative filter strips will be located along the west boundary of the site.
Owner:	KHCR Real Estate Holdings 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.

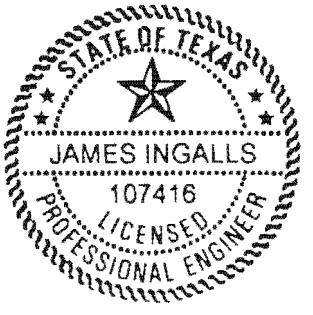
Karl Hittle
KHCR Real Estate Holdings

11-13-13
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.

11-12-13

James Ingalls, P.E.



Attachment "G"

Maintenance Plan for Rainwater Harvesting System

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

Owner:

KHCR Real Estate Holdings
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 Real Estate Holdings

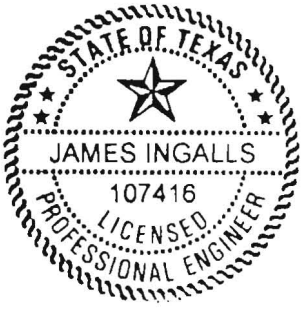
11-13-13
Date

RECEIVED
NOV 19 2013
COUNTY ENGINEER

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.

11-12-13

James Ingalls, P.E.



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 16, 2013

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: KHCR Professional Building, located at 216 Hunters Village, New Braunfels, Texas

PLAN TYPE: Application for Approval of a Water Pollution Plan (WPAP) 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
EAPP File No. and Regulated Entity No.: RN106900103
EAPP Additional ID: 13-13091201

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.

Please forward your comments to this office by October 16, 2013.

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

Todd Jones
Water Section Work Leader
San Antonio Regional Office

TJ/eg

WATER POLLUTION ABATEMENT PLAN

FOR

KHCR PROFESSIONAL BUILDING

PREPARED FOR

Texas Commission on Environmental Quality

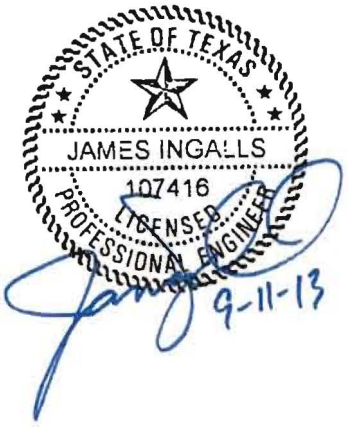
Region 13 – San Antonio
14250 Judson Road
San Antonio, Texas 78233
210-490-3096 (office)
210-545-4329 (fax)

PREPARED BY

MOELLER & ASSOCIATES
Engineering Solutions

F-13351

James Ingalls, P.E.
1040 N. Walnut Ave., Ste B
New Braunfels, TX 78130



Prepared
September 11, 2013

General Information Form
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

REGULATED ENTITY NAME: KHCR Professional Building
COUNTY: Comal STREAM BASIN: Un-named Tributary of Blieders Creek

EDWARDS AQUIFER: X RECHARGE ZONE
___ TRANSITION ZONE

PLAN TYPE: X WPAP ___ AST ___ EXCEPTION
___ SCS ___ UST ___ MODIFICATION

CUSTOMER INFORMATION

1. Customer (Applicant):

RECEIVED
SEP 23 2013
COUNTY ENGINEER

Contact Person: Karl Hittle
Entity: KHCR Real Estate Holdings, LLC
Mailing Address: 28 Hunters Point
City, State: New Braunfels Zip: 78132-4709
Telephone: (830) 214-2568 FAX: (830) 358-7607

Agent/Representative (If any):

Contact Person: James Ingalls
Entity: Moeller & Associates
Mailing Address: 1040 N. Walnut Ave.
City, State: New Braunfels Zip: 78130-7874
Telephone: (830) 358-7127 FAX: (830) 515-5611

2. X This project is inside the city limits of New Braunfels.
___ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
___ This project is not located within any city's limits or ETJ.

3. 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 north side of Hunters Village approximately 250 feet north west of the intersection of Oak Run Parkway and Hunters Village.

4. X **ATTACHMENT A - ROAD MAP**. A road map showing directions to and the location of the project site is attached at the end of this form.

5. X **ATTACHMENT B - USGS / EDWARDS RECHARGE ZONE MAP**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards

Recharge Zone is attached behind this sheet. The map(s) should clearly show:

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

6. X 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. **The TCEQ must be able to inspect the project site or the application will be returned.**

7. X **ATTACHMENT C - PROJECT DESCRIPTION**. Attached at the end of this form is a detailed narrative description of the proposed project.

8. Existing project site conditions are noted below:
___ Existing commercial site
___ Existing industrial site
___ Existing residential site
___ Existing paved and/or unpaved roads
X Undeveloped (Cleared)
___ Undeveloped (Undisturbed/Uncleared)
___ Other: _____

PROHIBITED ACTIVITIES

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

(1) waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
(2) new feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
(3) land disposal of Class I wastes, as defined in 30 TAC §335.1;
(4) the use of sewage holding tanks as parts of organized collection systems; and
(5) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

10. N/A 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

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

X For a Water Pollution Abatement Plan and Modifications, the total acreage of the site

where regulated activities will occur.

___ For an Organized Sewage Collection System Plans and Modifications, the total linear footage of all collection system lines.

___ For a UST Facility Plan or an AST Facility Plan, 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.

12. 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)

_X_ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

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

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:

James Ingalls, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

9-1-13
Date

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

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

ATTACHMENT "C"
Project Description

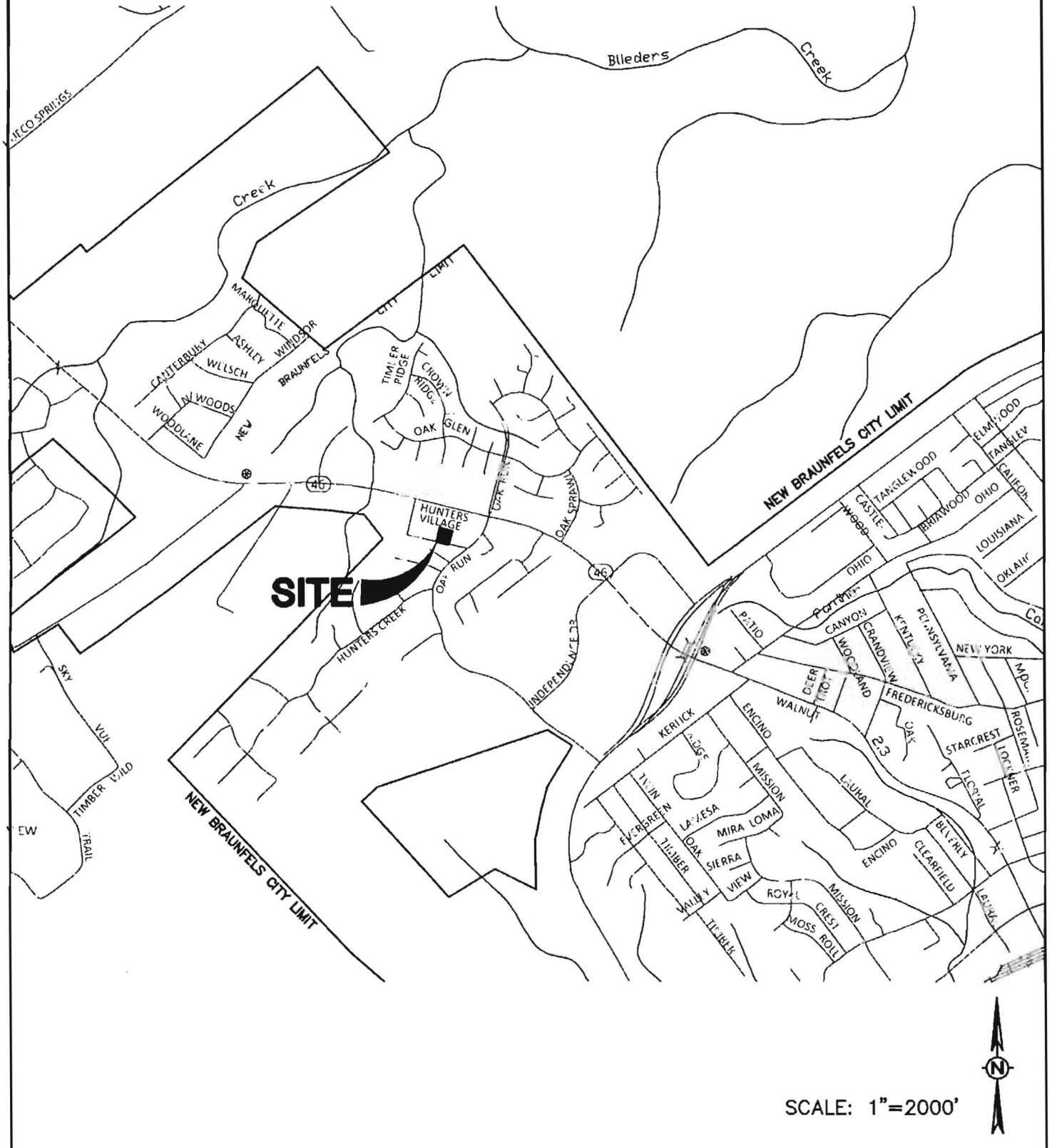
The proposed site is located on a 0.64 acre lot within Hunters Creek Business Park. The entire site will be disturbed with 0.34 acres of impervious cover (53.1%). The lot is located within the New Braunfels city limits on the north side of Hunters Village approximately 250 north west of the intersection 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 5,030 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 eastern corners of the building while the rest of the site will drain to Vegetative Filter Strips along the western boundary 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.

ATTACHMENT A



SCALE: 1"=2000'

MOELLER & ASSOCIATES
Engineering Solutions
1040 N. WALNUT AVE. STE B, NEW BRAUNFELS, TX. 78130
PH: 830-358-7127 www.ma-tx.com
TBPE FIRM F-13351

LOCATION MAP
KHCR PROFESSIONAL BUILDING

DRAWN BY: SAK CHECKED BY: JII

DATE: 9/2013

SHEET 1 OF 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NEW BRAUNFELS EAST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS
(BM 623)

NEW BRAUNFELS
MUNICIPAL AIRPORT

LAKE DUNLAP

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

Control by USGS and NOS/NOAA and USCE

Compiled from aerial photographs taken 1956. Revisions in purple and woodland compiled from aerial photographs taken 1986 and other sources and has been field checked. Map edited 1994
Conflicts may exist between some updated features and previously mapped contours

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

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

UTM GRID AND 1994 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

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

TEXAS
QUADRANGLE LOCATION

2998-414

ROAD CLASSIFICATION

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

NEW BRAUNFELS EAST, TEX.
29098-F1-TF-024

1958
REVISED 1994
DMA 6343 II NE-SERIES V882

INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA—1994

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NEW BRAUNFELS WEST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

SITE

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS

Produced by the United States Geological Survey
Revised in cooperation with the Texas Water Development Board

Control by USGS, NOS/NOAA, and USCE

Compiled by the Army Map Service by photogrammetric methods from aerial photographs taken 1956. Field checked 1958
Revised from aerial photographs taken 1986. Field checked 1987
Map 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
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 20 meters south and 28 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines generally visible on aerial photographs. This information is unchecked

UTM GRID AND 1988 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DIAGRAM IS APPROXIMATE

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

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

ROAD CLASSIFICATION

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

QUADRANGLE LOCATION

2998-413

NEW BRAUNFELS WEST, TEX.
29098-F2-TF-024

1988

DMA 6343 II NW-SERIES V822

GEOLOGIC ASSESSMENT

for:

Water Pollution Abatement Plan

KHCR Professional Building

0.642 Acres Located North of Hunter's Village and West of Oak Run Parkway New Braunfels, Texas

ARIAS & ASSOCIATES
Geotechnical · Environmental · Testing

Prepared for:

MOELLER & ASSOCIATES
Engineering Solutions

1040 N. Walnut Ave., Ste. B
New Braunfels, TX 78130

Job No. 2013-591
August 2013

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

REGULATED ENTITY NAME: KHCR Professional Building

TYPE OF PROJECT: X WPAP __ AST __ SCS __ UST

LOCATION OF PROJECT: X Recharge Zone __ Transition Zone __ Contributing Zone within the Transition Zone

PROJECT INFORMATION

1. X Geologic or manmade features are described and evaluated using the attached **GEOLOGIC ASSESSMENT TABLE**.

2. 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.

Soil Units, Infiltration Characteristics & Thickness		
Soil Name	Group*	Thickness (feet)
Rumple-Comfort Association, undulating	C	0 - 1.0

* 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.

3. X A **STRATIGRAPHIC COLUMN** is attached at the end of this form that shows formations, members, and thicknesses. The outcropping unit should be at the top of the stratigraphic column.

4. X A **NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY** is attached at the end of this form. The description must include a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure, and karst characteristics of the site.

5. X Appropriate **SITE GEOLOGIC MAP(S)** are attached:

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" = _____ '

6. Method of collecting positional data:

X Global Positioning System (GPS) technology.
__ Other method(s).

7. X The project site is shown and labeled on the Site Geologic Map.

8. X Surface geologic units are shown and labeled on the Site Geologic Map.

9. __ 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.
X Geologic or manmade features were not discovered on the project site during the field investigation.

10. NA The Recharge Zone boundary is shown and labeled, if appropriate.

11. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, 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 Chapter 76.
X There are no wells or test holes of any kind known to exist on the project site.

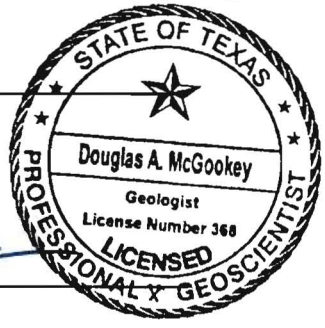
ADMINISTRATIVE INFORMATION

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

Date(s) Geologic Assessment was performed: May 31, 2013
Date(s)

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.

Douglas McGookey, P.G.
Print Name of Geologist



Signature of Geologist

210 694-4545
Telephone

210 694-4577
Fax

May 31, 2013
Date

Representing: Medina Consulting Company, Inc.
(Name of Company)

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

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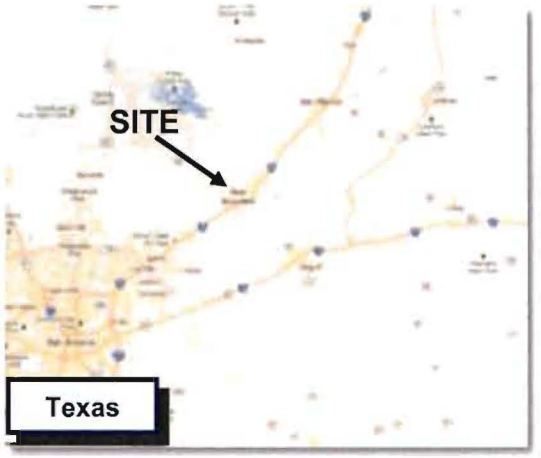
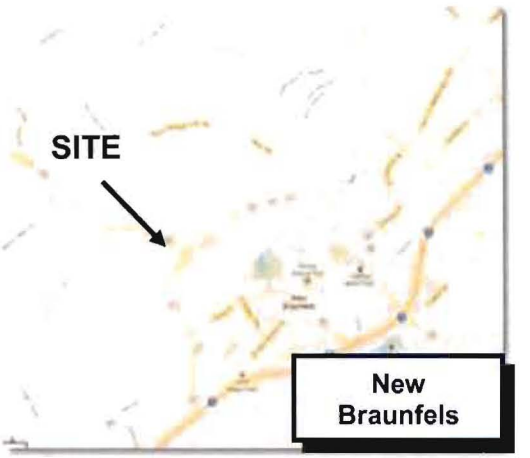
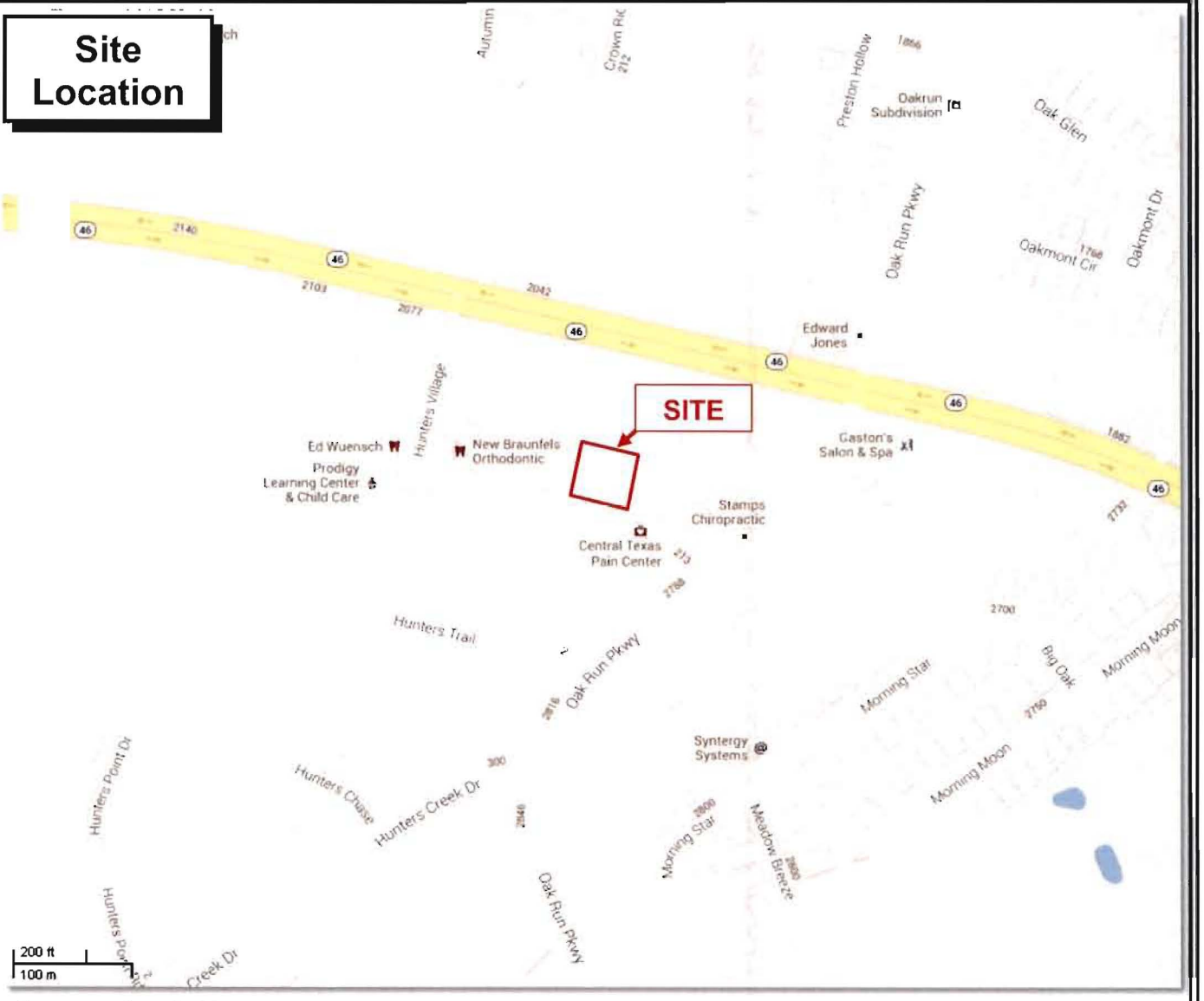




Site Location

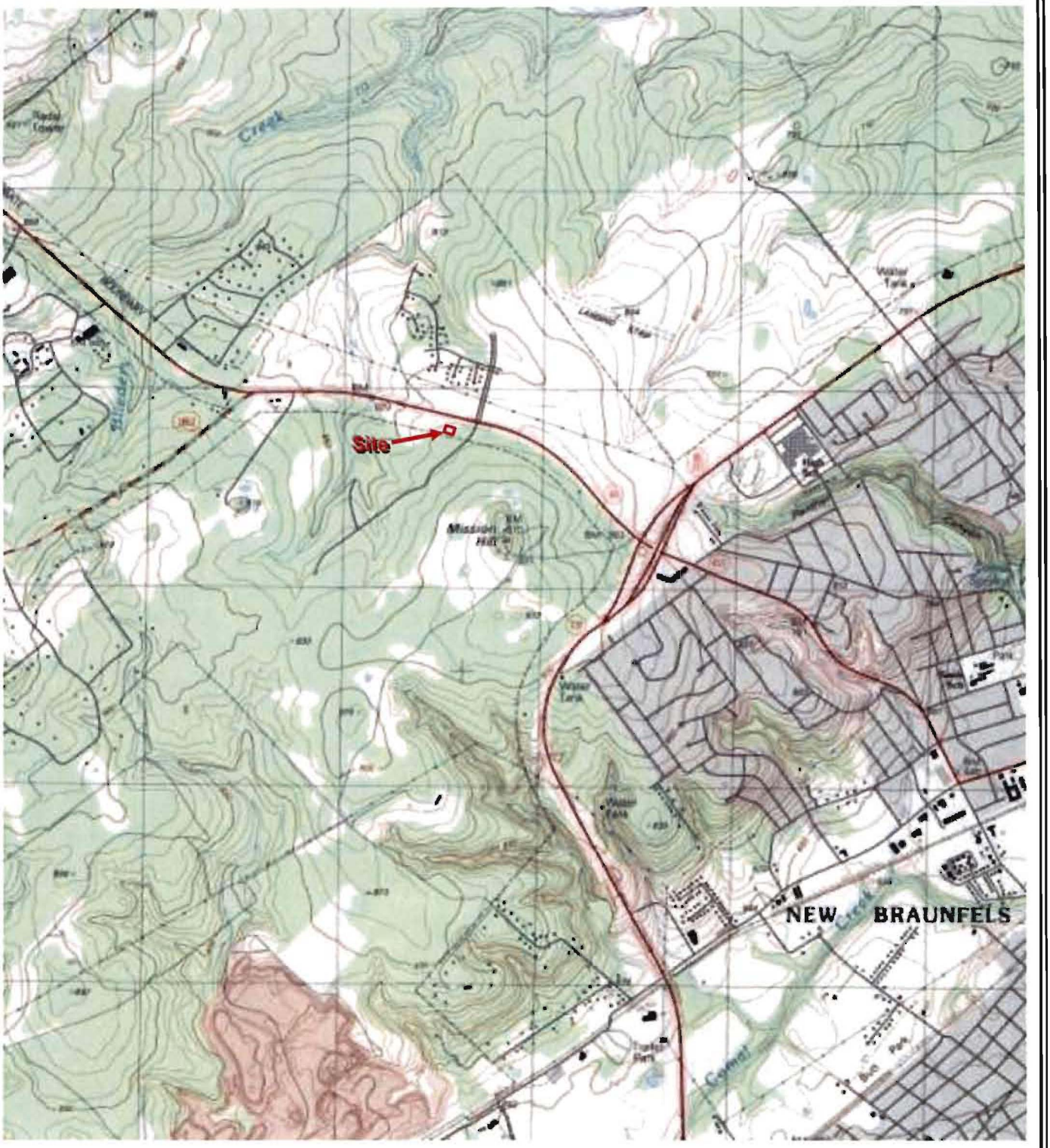


Source: Google 2013

Medina Consulting Company, Inc.	Drawn By: DM Scale: As Shown Date: August 2013	N	Site Location Map KHCR Professional Building New Braunfels, Comal County, Texas

Source: Google Earth 2013

Medina Consulting Company, Inc.	Drawn By: DM Scale: As Shown Date: August 2013	N	**Site and Vicinity Map** **KHCR Professional Building** **New Braunfels, Comal County, Texas**



Source: *New Braunfels West, Texas,*
US Geological Survey Map obtained from TNRIS, 2008

0 — 1 Mile

Scale

Medina Consulting Company, Inc.	Drawn By: DM Scale: As Shown Date: August 2013	N	**Topographic Map** **KHCR Professional Building** **New Braunfels, Comal County, Texas**

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: KHCR Professional Building

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
	Deg Min Sec	Deg Min Sec				X	Y	Z		10						<40	>40	<1.6	>1.6	
F-1	29°43'8.56"	-98°10'7.81"	MB	30	Person	150	1	1	NA	0	1	none	x	5	35	x		x		Hillside
F-2	?	?	F	20	Person	160	0	0	N60E	10	1	none	N O F	0	30	x		x		Hillside

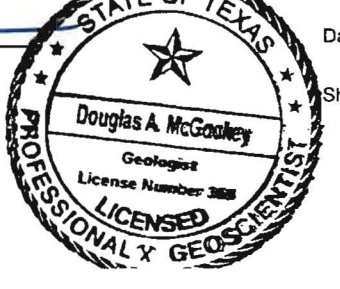
* DATUM: WGS84

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

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

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

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



Date August 6, 2013

Sheet 1 of 1

TCEQ-0585-Table (Rev. 10-01-04)

SOIL NARRATIVE

KHCR Professional Building
0.642 Acres Located North of Hunter's Village
and West of Oak Run Parkway
New Braunfels, Texas

Native soils at the surface of the Site consist of up to about 10 inches of reddish brown to light brown silty clay loam with about over limestone outcrops. This is likely Rumple soil that is dark reddish brown very cherty clay loam about 10 inches thick. Short, mowed grass covered the areas where soil was at the surface.

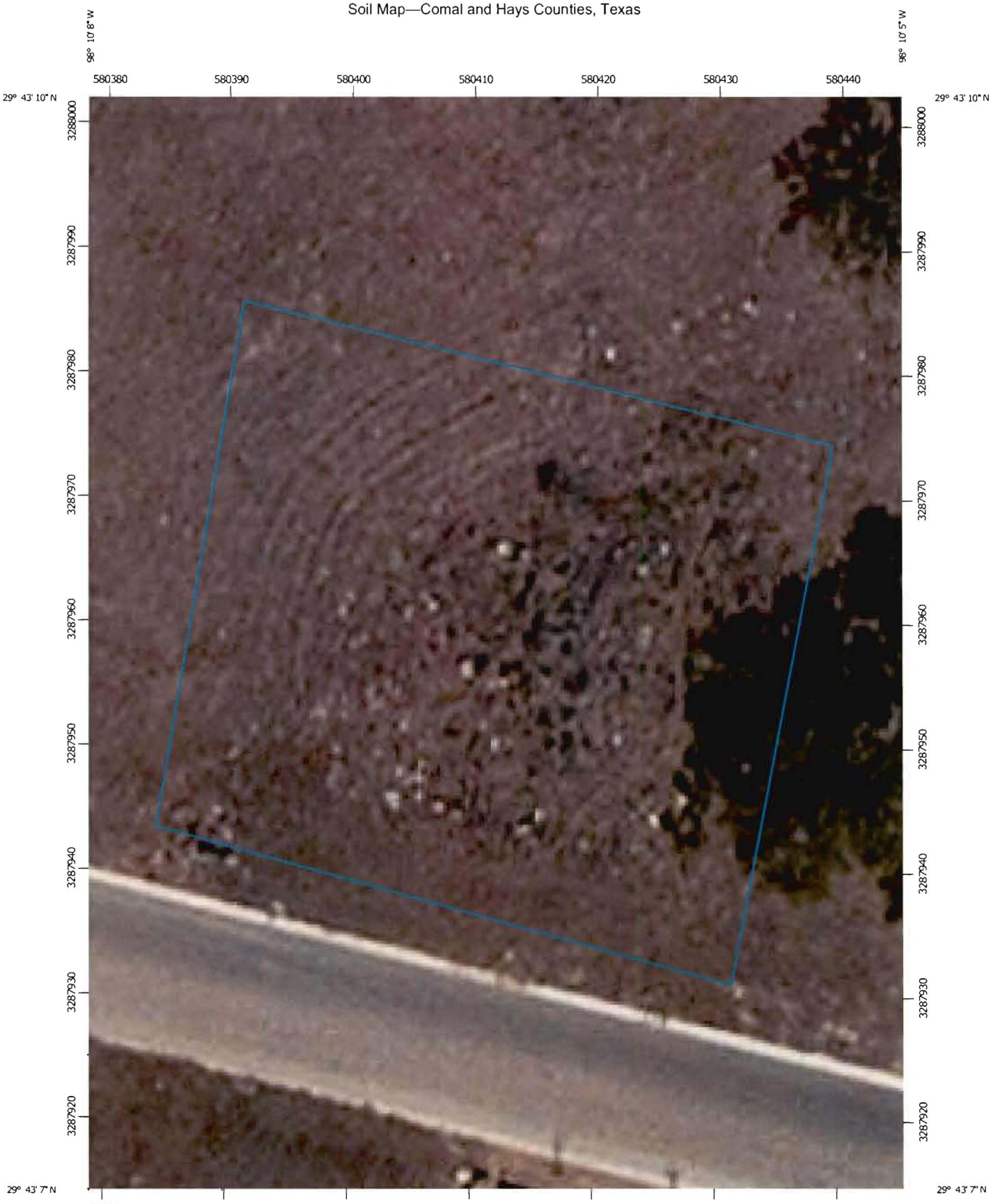
Surface soils are mapped as Rumple-Comfort Complex soils (USDA, *Soil Survey of Comal and Hays Counties).* This association consists of shallow and moderately deep soils on uplands in the Edwards Plateau Land Resource Area. Rumple soil makes up about 60 percent of the association, Comfort soil makes up 20 percent, and other soils, mainly Tarpley soils, make up 20 percent.

The Rumple soil makes up 39 to 82 percent of the individual areas, the Comfort soil makes up 5 to 42 percent, and the other soils make up less than 5 to 34 percent. The Rumple soil is on broad ridgetops and side slopes. It is mainly gently sloping. The Comfort soil is mainly in the more sloping areas near drainageways and near outcrops of rock. In places, there are narrow ledges of limestone.

Typically, the surface layer of the Rumple soil is dark reddish brown very cherty clay loam about 10 inches thick. Rounded chert and limestone cobbles and gravel cover about 20 percent of the surface. The subsoil to a depth of 14 inches is dark reddish brown very cherty clay, and to a depth of 28 inches it is dark reddish brown extremely stony clay that is about 75 percent, by volume, limestone fragments. The underlying material is indurated fractured limestone. The soil is mildly alkaline and noncalcareous throughout. The texture of the surface layer ranges from very cherty loam to cherty clay.

Typically, the surface layer of the Comfort soil is dark brown, neutral, extremely stony clay about 7 inches thick. The subsoil to a depth of 12 inches is dark reddish brown, mildly alkaline, extremely stony clay. The underlying material is indurated fractured limestone. The soil is noncalcareous throughout.

The soils in this association are well drained. Surface runoff is medium. However, runoff from large areas is much slower than from local areas because some of the water enters caves, sinkholess, rock crevices, and streambeds. Permeability is moderately slow in the Rumple soil and slow in the Comfort soil. The available water capacity is very low. The rooting zone is shallow in Comfort soil and moderately deep in Rumple soil. Water erosion is a moderate hazard.



Map Scale: 1:429 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 8, Sep 21, 2012

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2011—Feb 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Comal and Hays Counties, Texas (TX604)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
RUD	Rumple-Comfort association, 1 to 8 percent slopes	0.5	100.0%
Totals for Area of Interest		**0.5**	**100.0%**

STRATIGRAPHIC COLUMN

KHCR Professinal Building
0.642 Acres Located North of Hunter's Village
and West of Oak Run Parkway
New Braunfels, Texas

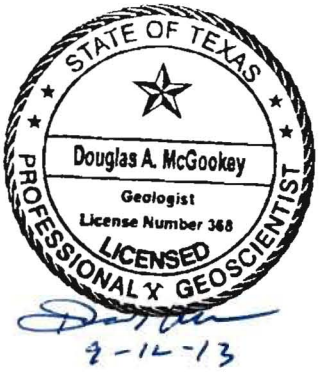
STRATIGRAPHIC COLUMN

Hydrogeologic subdivision			Group formation or member			Hydro-logic fuction	Thick-ness (feet)	Lithology	Cavern develop-ment	Porosity / permeability type
Erosional Surface										
Lower Cretaceous	II	Edwards aquifer	Edwards Group	Person Fm.	Cyclic & marine members undivided	AQ	80-100	Mudstone to packstone; miliolid grainstone; chert	Many sub-surface	Laterally extensive; water yielding
	III				Leached & col-lapsed members	AQ	80-100	Crystalline limestone; mudstone to grainstone; chert collapsed breccia	Extensive lateral devel-opment; large rooms	Majority not fabric / one of the most permeable
	IV				Regional dense member	CU	20-24	Dense, argillaceous mudstone	Very few; only vertical fracture enlargement	Not fabric / low permeability; vertical barrier
	V			Kainer Fm.	Grainstone member	AQ	50-60	Miliolid grainstone; mudstone to wackestone; chert	Few	Not fabric / recrystal-lization reduces permeability
	VI				Kirschberg evaporite member	AQ	50-60	Highly altered crystalline limestone; chalky mudstone; chert	Probably extensive cave devel.	Majority fabric / one of the most permeable
	VII				Dolomitic member	AQ	110-130	Mudstone to grainstone; crystaline limestone; chert	Caves rela-ted to struc-ture or bed-ding planes	Mostly not fabric; some bedding plane fabric / water-yielding
	VIII				Basal nodular member	Karst AQ; not karst CU	50-60	Shaly, nodular limestone; mudstone and miliolid grainstone	Large lateral caves at surface	Fabric; stratigraph-ically controlled / large conduit flow at surface; no permea-bility in subsurface
	Lower confining unit		Upper member of the Glen Rose Limestone			CU; evaporite beds AQ	350-500	Yellowish tan, thinly bedded limestone and marl	Some sur-face cave development	Some water product-ion at evaporite beds / relatively impermeable

Reference: U.S.G.S. Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas; Water-Resources Investigations Report 94-4117

Note: CU = Confining Unit; AQ = Aquifer

Source: *Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Bexar County, Texas*: US Geological Survey, Water Resource Investigations Report 95-4030.



GEOLOGY NARRATIVE

KHCR Professional Building
0.642 Acres Located North of Hunter's Village and West of Oak Run Parkway
New Braunfels, Texas

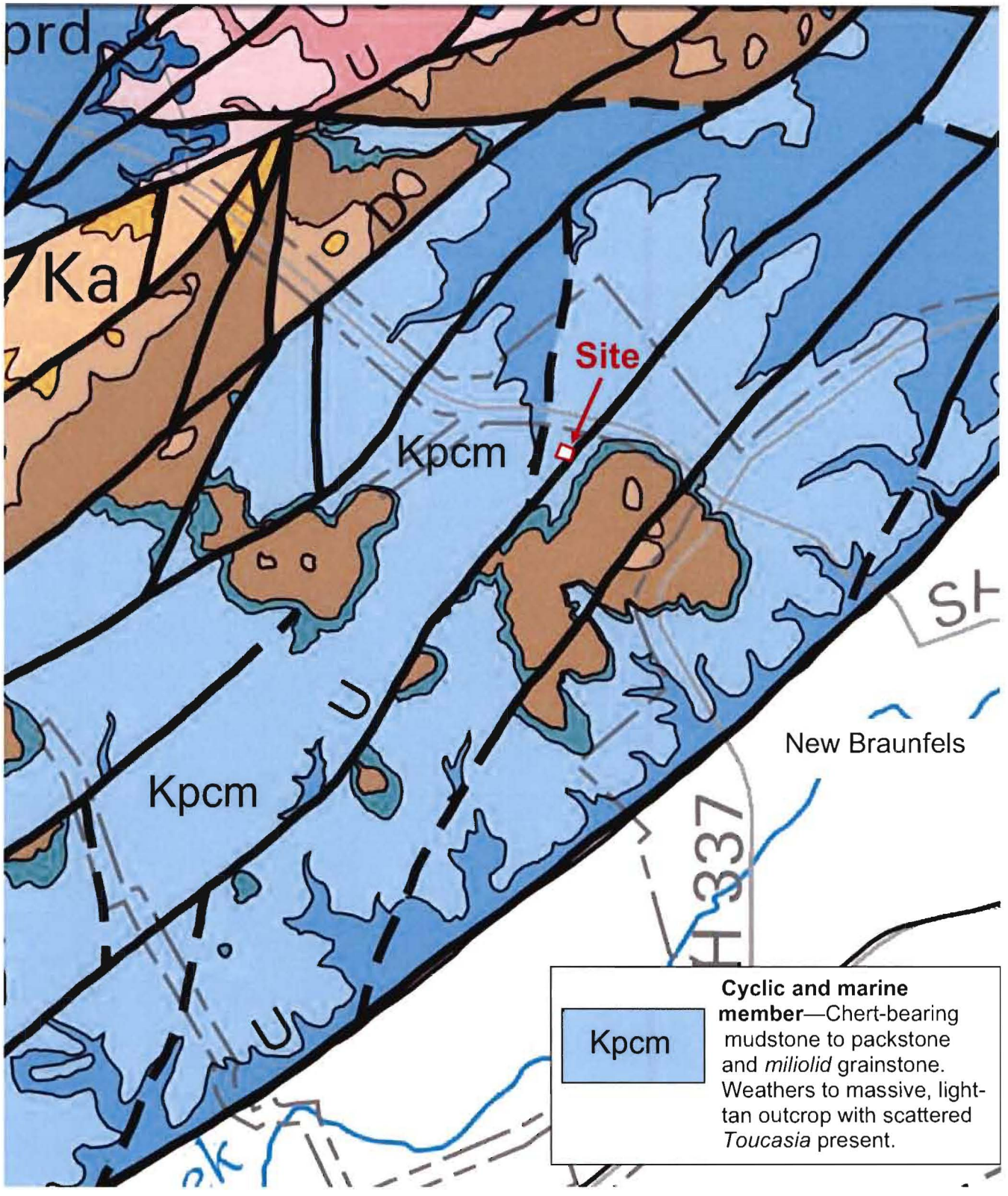
Hunter's Creek Lot 11B1 (the "Site") is a lies north of Hunter's Village and west of Oak Run Parkway in New Braunfels, Texas. The Site is level with a slight slope to the west.

The Site lies over the Cretaceous age Edwards Group, and lies over the Recharge Zone of the Edwards Aquifer (TCEQ *Edwards Aquifer Map Viewer*). The unit outcropping at the Site is the Cyclic and marine members of the Person Formation, which is part of the Edwards Group (Blome, Charles, and others, 2005). The Cyclic and marine members (undivided) consist of chert-bearing mudstone to packstone and *miliolid* grainstone. Exposed surfaces weather to massive, light-tan outcrops with scattered *Toucasia* present. This unit is one of the most productive hydrologically because of the large number of subsurface caverns associated with incipient karstification. The formation is very permeable with laterally extensive with fabric and nonfabric porosity.

The limestone bedrock of the Cyclic and marine members of the Person Formation was observed in a few small outcrops on the Site. Most of the surface at the Site was covered by short grass. Photographs showing the Site are attached.

No solution features were discovered on the Site. A fault is mapped in the area that is oriented northeast to southwest, but no surface trace of the fault was observed on the Site or in satellite photographs.

The potential for water to recharge the aquifer at the Site is low due to absence of karst and structural features and the relatively low permeability soil cover.



Source: Blome and Others, ***Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas*, 2005**

Medina Consulting Company, Inc.	Drawn By: DM Scale: None Date: May 2013	N	**Figure 4** **Geology Map** **KHCR Professional Building** **New Braunfels, Comal County, Texas**

Photographs:

Photograph 1. View across the Site from the northeast corner of the Site.

Photograph 2: Small outcrops of vuggy limestone are present on the Site, but no voids were observed.

REFERENCES

Barnes V.L. 1983, *Geologic Atlas of Texas, San Antonio, Sheet*, Bureau of Economic Geology, The University of Texas at Austin, Texas.

Blome, Charles, and others. 2005. *Geologic Map of the Edwards Aquifer Recharge Zone, South Central Texas*, US Geological Survey.

Texas Commission on Environmental Quality (TCEQ), *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge Zone*, TCEQ-0585-Instructions (Rev. 10-01-04).

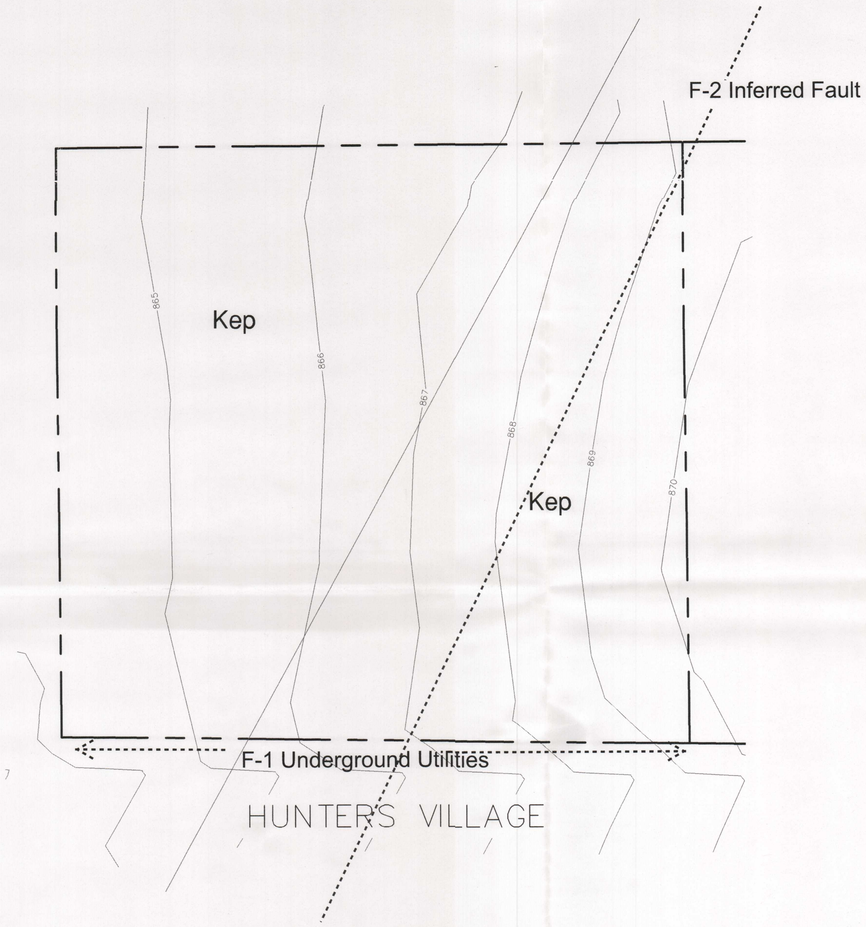
Texas Commission on Environmental Quality (TCEQ), *Edwards Aquifer Map Viewer* at: http://gis3.tceq.state.tx.us/website/iredwards2/viewer.htm, accessed May 2013.

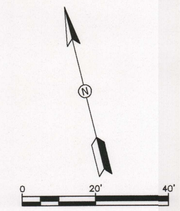
US Department of Agriculture. 1984. *Soil Survey of Comal and Hays Counties, Texas.* Natural Resource Conservation Service.

US Department of Agriculture. *Urban Hydrology for Small Watersheds, Technical Release No. 55.,Appendix A.* Natural Resource Conservation Service, <http://www.info.usda.gov/CED/ftp/CED/tr55.pdf > June, 1986.

US Geologic Survey, 1998 and 2008. *New Braunfels West, Texas*.

US Geological Survey. *Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Bexar County, Texas*, Water Resource Investigations Report 95-4030.

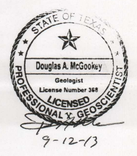




Site Geologic Map - KHCR Professional Building

By: DM September 10, 2013

ARIAS & ASSOCIATES, INC.
Geotechnical · Environmental · Testing



LEGEND

— — —	PROPERTY BOUNDARY
930	CONTOUR OF SURFACE ELEVATION
F-1	FEATURE IDENTIFICATION

STRATIGRAPHY

Kep	CRETACEOUS EDWARDS PERSON FORMATION

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

REGULATED ENTITY NAME: KHCR Professional Building

REGULATED ENTITY INFORMATION

1. The type of project is:
   ___ Residential: # of Lots: _____
   ___ Residential: # of Living Unit Equivalents: _____
   _X_ Commercial
   ___ Industrial
   ___ Other: _____

2. Total site acreage (size of property): 0.64

3. Projected population: 0

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

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	5,030	÷ 43,560 =	0.11
Parking	8,565	÷ 43,560 =	0.20
Other paved surfaces	1,217	÷ 43,560 =	0.03
Total Impervious Cover	14,812	÷ 43,560 =	0.34
Total Impervious Cover ÷ Total Acreage x 100 =			53.1%

5. _X_ **ATTACHMENT A - Factors Affecting Water Quality.** A description of any factors that could affect surface water and groundwater quality is provided at the end of this form.

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

FOR ROAD PROJECTS ONLY
Complete questions 7-12 if this application is exclusively for a road project.

7. Type of project:
   ___ TXDOT road project.
   ___ County road or roads built to county specifications.
   ___ City thoroughfare or roads to be dedicated to a municipality.
   ___ Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:
   ___ Concrete
   ___ Asphaltic concrete pavement
   ___ Other: _____

9. Length of Right of Way (R.O.W.): ____ feet.
Width of R.O.W.: ____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = ____ acres.

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

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

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

STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

13. _X_ **ATTACHMENT B - Volume and Character of Stormwater.** A description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is provided at the end of this form. The estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

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

100 % Domestic	500 gallons/day
____% Industrial	_____ gallons/day
____% Commingled	_____ gallons/day

TOTAL 500 gallons/day

15. Wastewater will be disposed of by:
N/A **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. The appropriate licensing authority's (authorized agent) written approval is provided at the end of this form. It states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable.
___ 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.

X Sewage Collection System (Sewer Lines):
X 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 Road WWTP (name) Treatment Plant. The treatment facility is:

_X_ existing.
___ proposed.

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

SITE PLAN REQUIREMENTS

Items 17 through 27 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.
_X_ No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):
FEMA Panel Number 48091CO435F

19. _X_ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.
___ The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
_X_ There are 0 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
___ The wells are not in use and have been properly abandoned.
___ The wells are not in use and will be properly abandoned.
___ The wells are in use and comply with 16 TAC §76.
_X_ 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.
_X_ No **sensitive** geologic or manmade features were identified in the Geologic Assessment.
___ **ATTACHMENT D - Exception to the Required Geologic Assessment**. An exception to the Geologic Assessment requirement is requested and explained at the end of this form.

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

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

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

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

26. _X_ Surface waters (including wetlands).

27. _X_ Locations where stormwater discharges to surface water or sensitive features.
___ There will be no discharges to surface water or sensitive features.

ADMINISTRATIVE INFORMATION

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

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

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:

James Ingalls, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

9-11-13
Date

ATTACHMENT "A"
Factors Affecting Water Quality

The development will consist of a building structure of approximately 5,030 square feet, and associated parking with a Rainwater Havesting 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. The hydrology calculations for existing and proposed conditions are broken out in the table below. 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 western boundary of the site. All offsite stormwater will be intercepted and directed north along the properties eastern border thru a temporary swale that will be removed once the neighboring property develops.

Table 1 - KHCR Professional Building Hydrology Calculations

Point	Area (ac)	"C" Value	T_c (min)	I_2 (in/hr)	I_{10} (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
A - Ex	0.64	0.35	20	3.65	5.44	6.51	8.51	0.82	1.22	1.60	2.38
A - Pro	0.64	0.80	20	3.65	5.44	6.51	8.51	1.87	2.79	3.67	5.45

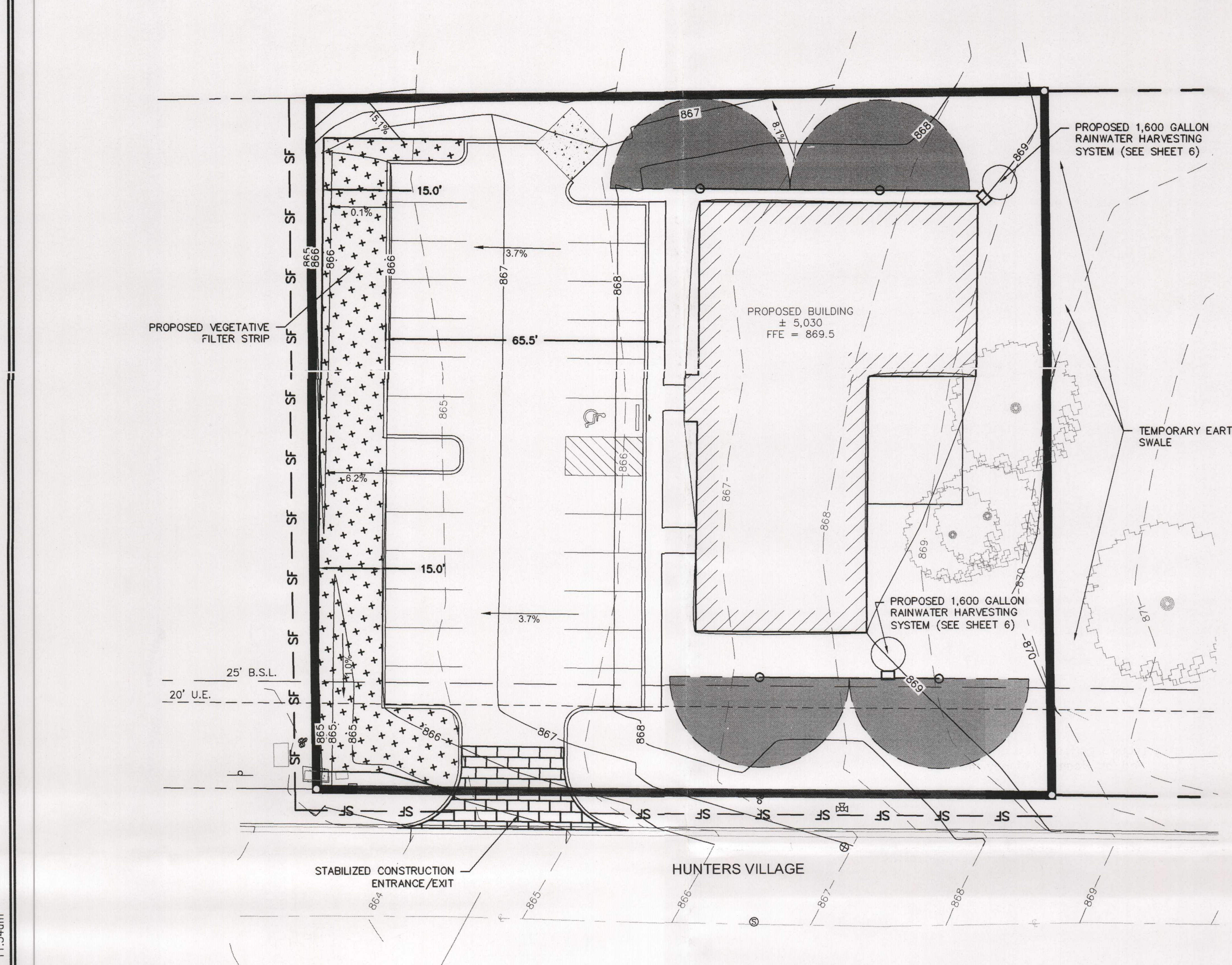
The drainage onsite will continue maintain existing drainage patterns.

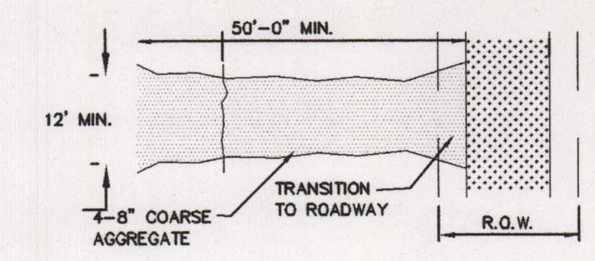
ATTACHMENT "C"
Suitability Letter from Authorized Agent

There is no proposed OSSF.

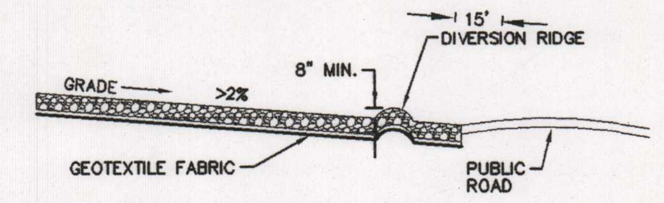
ATTACHMENT "D"
Exception to the Required Geologic Assessment

No exception will be requested.





PLAN VIEW



PROFILE

STABILIZED CONSTRUCTION ENTRANCE / EXIT

Materials:

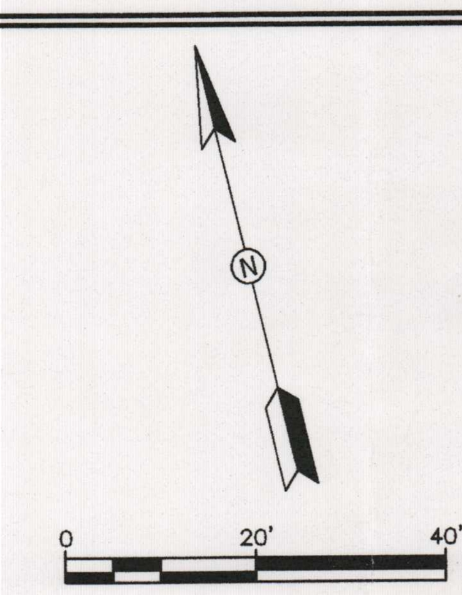
(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
(2) The aggregate should be placed with a minimum thickness of 8 inches.
(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd2, a mullen burst rating of 140 lb/in2, and an equivalent opening size greater than a number 50 sieve.
(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

Installation:

(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
(3) The construction entrance should be at least 50 feet long.
(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
(8) Install pipe under pad as needed to maintain proper public road drainage.

Inspection and Maintenance Guidelines:

(1) 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.
(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.



LEGEND

- PROPOSED VEGETATIVE FILTER STRIP
- PROPOSED RETENTION/IRRIGATION AREA
- 900 — EXISTING CONTOUR
- 900 — PROPOSED CONTOUR
- GRADE BREAK
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- LIMITS OF DISTURBED AREA
- 2.00% → SLOPE/FLOW ARROW

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

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

Austin Regional Office	San Antonio Regional Office
2800 S. IH 35, Suite 100	14250 Judson Road
Austin, Texas 78704-5712	San Antonio, Texas 78233-4480
Phone (512) 339-2929	Phone (210) 490-3096
Fax (512) 339-3795	Fax (210) 545-4329

TOTAL LAND AREA	=	0.64 AC
TOTAL DISTURBED AREA	=	0.64 AC
TOTAL IMPERVIOUS AREA	=	0.34 AC
% IMPERVIOUS	=	53.1%

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.

RECEIVED
SEP 2 3 2013
COUNTY ENGINEER

SILT FENCE

Materials:

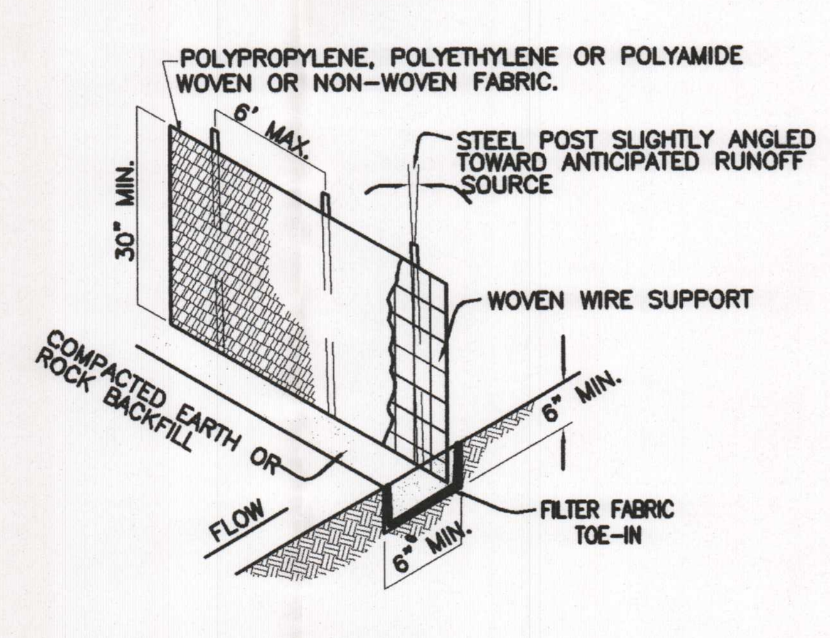
(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.
(2) Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft2, and Brindell hardness exceeding 140.
(3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12 gauge minimum.

Installation:

(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. 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.
(2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre/100 feet of fence.
(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.
(4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
(5) Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.
(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

Inspection and Maintenance Guidelines:

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



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:

(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.

Inspection and Maintenance Guidelines:

(1) Mulched areas should be inspected weekly and after each rain event to locate and repair any damage.
(2) Areas damaged by storms or normal construction activities should be regraded and hydraulic mulch reapplied as soon as practical.

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

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
9-12-13

NO	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES
Engineering Solutions
1040 N. WALNUT AVE, STE B, NEW BRAUNFELS, TX 78130
PH: 830-358-7127 www.ma-tx.com
TBPE FIRM F-13351

WPAP SITE PLAN EROSION CONTROL
WPAP SET

KHCR PROFESSIONAL BUILDING
NEW BRAUNFELS, TX 78132

TCEQ-R13
SEP 12 2013
SAN ANTONIO

SHEET 3 OF 9

Drawing Name: N:\!Projects\Hit001.101 Lot 11B Hunters Creek Bus Pk\Engineering Reports\WPAP\3 WPAP SITE PLAN.dwg User: klarsa Sep 12, 2013 - 11:34am

Temporary Stormwater Section
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

REGULATED ENTITY NAME: KHCR Professional Building

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:

___ Aboveground storage tanks with a cumulative storage capacity of less that 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.
X Fuels and hazardous substances will not be stored on-site.

2. X **ATTACHMENT A - Spill Response Actions**. A description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is provided at the end of this form.

3. N/A 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. X **ATTACHMENT B - Potential Sources of Contamination.** Describe in an attachment at the end of this form any other activities or processes which may be a potential source of contamination.
___ There are no other potential sources of contamination.

SEQUENCE OF CONSTRUCTION

5. X **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 provided at the end of this form. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

6. X 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. _X_ **ATTACHMENT D - Temporary Best Management Practices and Measures.** A description of the TBMPs and measures that will be used during and after construction are provided at the end of this form. For each activity listed in the sequence of construction, include appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

_X_ 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 has been provided in the attachment at the end of this form

a. 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.

b. 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.

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

d. 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 provided at the end of this form. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

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

9. _X_ **ATTACHMENT F - Structural Practices.** Describe 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. Placement of structural practices in floodplains has been avoided.

10. _X_ **ATTACHMENT G - Drainage Area Map.** A drainage area map is provided at the end of this form to support the following requirements.

___ 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.

_X_ 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.

11. N/A **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 has 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 provided as at the end of this form.

12. _X_ **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repairs, and, if necessary, retrofit is provided at the end of this form. A description of documentation procedures and recordkeeping practices is included in the plan.

13. _X_ 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. _X_ 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. N/A 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. _X_ 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. _X_ **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 at the end of this form.

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

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

ADMINISTRATIVE INFORMATION

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

21. X 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. X 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.

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:

James Ingalls, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

9-11-13
Date

ATTACHMENT "A"
Spill Response Actions

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 = 0.64 acres.
3. Grading: Cutting and filling of the proposed site to prepare the site for parking and foundation construction. Approximate total disturbed area = 0.64 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 = 0.64 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 Real Estate Holdings, LLC
Contact:	Karl Hittle
Phone:	(830) 214-2568
Address:	28 Hunters Point
	New Braunfels, Texas 78132

Design Engineer:

Company:	Moeller & Associates
Contact:	James Ingalls, 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 by 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.

LEGEND

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

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

NO	DATE	ISSUES AND REVISIONS

KHCR PROFESSIONAL BUILDING

NEW BRAUNFELS, TX 78132

DRAINAGE AREA MAP

REVIEW SET

MOELLER & ASSOCIATES
Engineering Solutions
1040 N. WALNUT AVE. STE B, NEW BRAUNFELS, TX. 78130
PH: 830-358-7127 www.ma-tx.com
TBPE FIRM F-13351

SHEET 2 of 9

Permanent Stormwater Section
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

REGULATED ENTITY NAME: KHCR Professional Building

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

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

2. X 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.

   X 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 provided below:

   _____

   _____

3. X 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.

4. X 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.

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

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

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

5. X 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.** This 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 found at the end of this form.

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

___ This 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 identified as **ATTACHMENT B** at the end of this form.

___ If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form.

_X_ If 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, an explanation is provided as **ATTACHMENT B** at the end of this form.

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

_X_ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is identified as **ATTACHMENT C** at the end of this form.

___ If 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, an explanation is provided as **ATTACHMENT C** at the end of this form.

8. _X_ **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 provided at the end of this form. Each feature identified in the Geologic Assessment as "sensitive" has been addressed.

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

_X_ The permanent sealing of or diversion of flow from a naturally-occurring "sensitive" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" features on this site.

N/A **ATTACHMENT E - Request to Seal Features.** A request to seal a naturally-occurring "sensitive" or "possibly sensitive" feature, that includes a justification as to why no reasonable and practicable alternative exists, is found at the end of this form. A request and justification has been provided for each feature.

10. _X_ **ATTACHMENT F - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided at the end of this form. Design Calculations, TCEQ

Construction Notes, all man-made or naturally occurring geologic features, all proposed structural measures, and appropriate details must be shown on the construction plans.

11. X **ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

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

___ Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by or prepared by the executive director.

__ **ATTACHMENT H - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field testing is provided at the end of this form.

13. X **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 provided at the end of this form. 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.

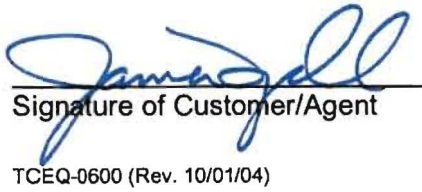
Responsibility for maintenance of permanent BMPs and measures after construction is complete.

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

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

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:

James Ingalls, P.E.
Print Name of Customer/Agent



Signature of Customer/Agent

9-11-13
Date

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 neighboring lot to the east has a small portion of its drainage that naturally flows to our site. A temporary earthen swale will be constructed to direct the upgradient stormwater away from the site until the lot develops, at which time, the neighboring lot's drainage convey the runoff as previously materplanned. Natural vegetation in the area of the upgradient stormwater will act as a vegetative filter to treat the upgradient storm flows. 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).

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.

TSS REMOVAL CALCULATIONS

FOR

KHCR PROFESSIONAL BUILDING

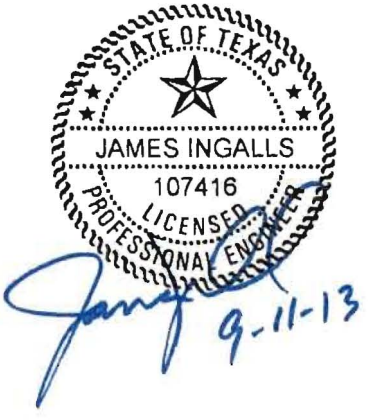
PREPARED BY

MOELLER & ASSOCIATES
Engineering Solutions

F-13351

James Ingalls, P.E.
1040 N. Walnut Ave., Ste B
New Braunfels, TX 78130

Prepared
September 11, 2013



Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: KHCR Professional Building
Date Prepared: 9/11/2013

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:

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

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

County =	Comal	
Total project area included in plan * =	0.64	acres
Predevelopment impervious area within the limits of the plan * =		acres
Total post-development impervious area within the limits of the plan * =	0.34	acres
Total post-development impervious cover fraction * =	0.53	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	305	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	0.11	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.11	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	102	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale

Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:

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

A_C =	0.11	acres
A_I =	0.11	acres
A_P =	0.00	acres
L_R =	130	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	102	lbs.
F =	0.78	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.00	inches
Post Development Runoff Coefficient =	0.82	
On-site Water Quality Volume =	338	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	68	
Total Capture Volume (required water quality volume(s) x 1.20) =	405	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = 405 cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.1	in/hr	Enter determined permeability rate or assumed value of 0.1
Irrigation area =	1621	square feet	
	0.04	acres	

8. Extended Detention Basin System — Designed as Required in RG-348 — Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin = NA cubic feet

9. Filter area for Sand Filters — Designed as Required in RG-348 — Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	NA	cubic feet	
Minimum filter basin area =	NA	square feet	
Maximum sedimentation basin area =	NA	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	NA	square feet	For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	NA	cubic feet	
Minimum filter basin area =	NA	square feet	
Maximum sedimentation basin area =	NA	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	NA	square feet	For maximum water depth of 8 feet

10. Bioretention System — Designed as Required in RG-348 — Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = NA cubic feet

11. Wet Basins — Designed as Required in RG-348 — Pages 3-66 to 3-71

Required capacity of Permanent Pool =	NA	cubic feet	Permanent Pool Capacity is 1.20 times the WQV
Required capacity at WQV Elevation =	NA	cubic feet	Total Capacity should be the Permanent Pool Capacity plus a second WQV.

12. Constructed Wetlands — Designed as Required in RG-348 — Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands = NA cubic feet

13. AquaLogic™ Cartridge System — Designed as Required in RG-348 — Pages 3-74 to 3-78

** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.

Required Sedimentation chamber capacity =	NA	cubic feet
Filter canisters (FCs) to treat WQV =	NA	cartridges

Attachment "G"

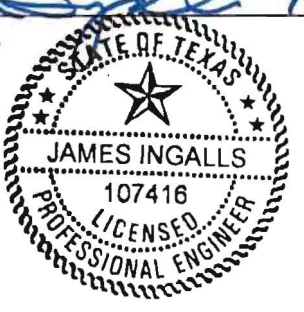
Maintenance Plan for Vegetative Filter Strips

Location:	The vegetative filter strips will be located along the west boundary of the site.
Owner:	KHCR Real Estate Holdings 28 Hunters Point New Braunfels, Texas 78132-4709 Phone: (830) 214-2568

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.

9-11-13

James Ingalls, P.E.



Attachment "G"

Maintenance Plan for Rainwater Harvesting System

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

Owner:

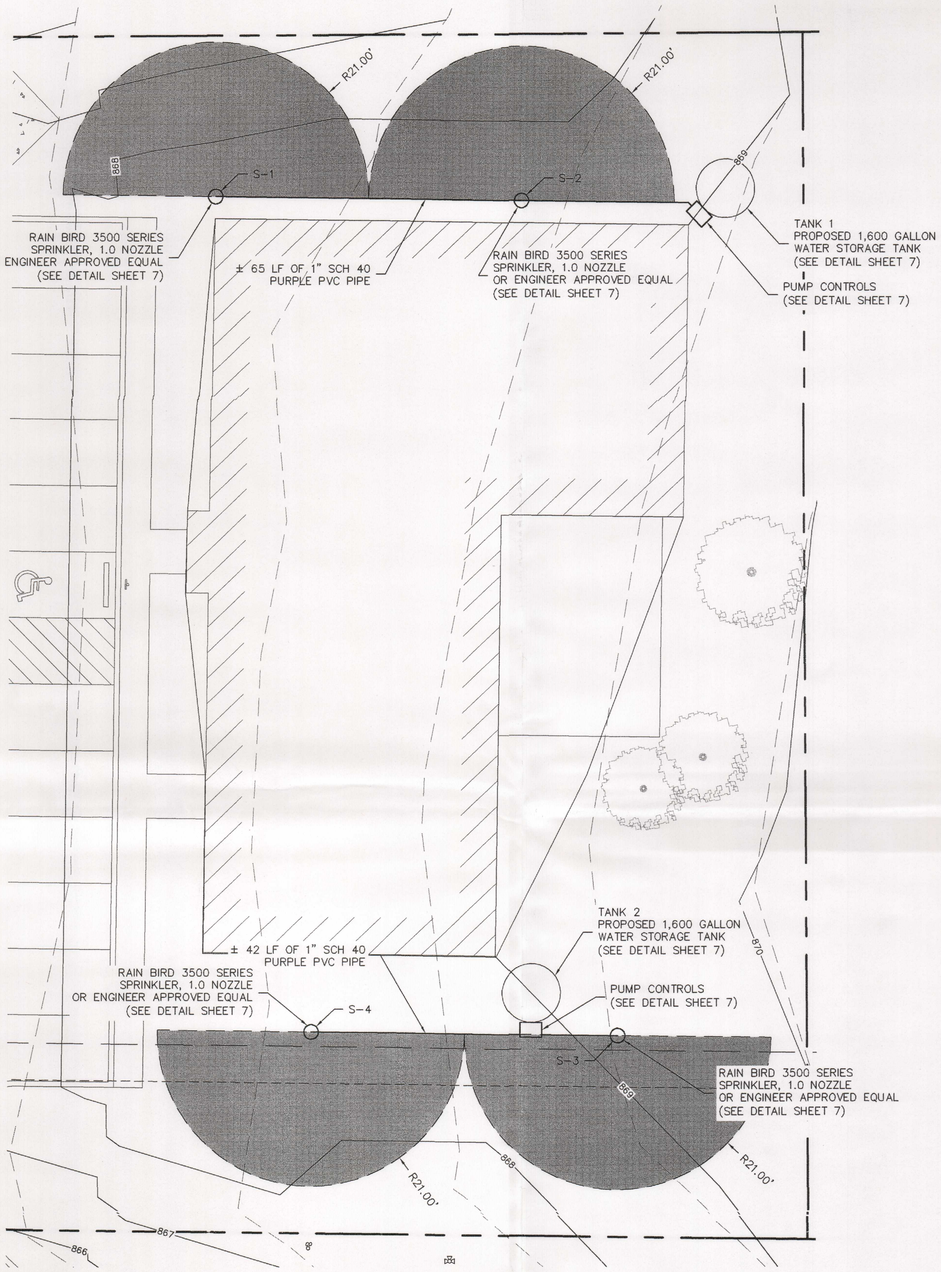
KHCR Real Estate Holdings
28 Hunters Point
New Braunfels, Texas 78132-4709
Phone: (830) 214-2568

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.

9-11-13

James Ingalls, P.E.

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER



Rainwater Harvesting Design Calculations

Minimum Treatment Capacity: 405 ft^3, 3,029 gal
Provided Treatment Capacity 428 ft^3, 3,200 gal

Active Irrigation Period: 60 hrs, 2.5 days

Tank 1 (S-1, S-2)
Volume = 1,600 gal
Time to Empty = 15 hrs
Pump Flow to Empty = 2,560 gpd (1.84 gpm = 2 sprinklers @ 0.92 gpm)

Tank 2 (S-3, S-4)
Volume = 1,600 gal
Time to Empty = 15 hrs
Pump Flow to Empty = 2,560 gpd (1.84 gpm = 2 sprinklers @ 0.92 gpm)

* Time to empty Tank 1 & Tank 2 = 30 hrs < 60 hr maximum
* Volume emptied in 30 hrs = 3,200 gal > 3,029 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
S-3	1.0	35	180°	21'	0.92
S-4	1.0	35	180°	21'	0.92

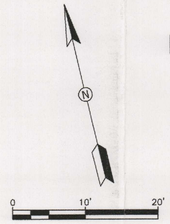
Total Dynamic Head (TDH)

$TDH = H_p + H_e + H_f$
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) = $\frac{1.2(10.4397)(L)(Q)^{1.85}}{(C)^{1.85}(D)^{4.8655}} = 0.25ft$
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: 1.84 gpm @ 81.25 ft TDH

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



LEGEND

PROPOSED RETENTION/IRRIGATION AREA
900 EXISTING CONTOUR
900 PROPOSED CONTOUR

REQUIRED RETENTION VOLUME	=	405 CF 3,029 GAL
AVAILABLE RETENTION VOLUME	=	428 CF 3,200 GAL
REQUIRED IRRIGATION AREA	=	1621 SF
PROPOSED IRRIGATION AREA	=	2,768 SF
NUMBER OF SPRINKLERS	=	4

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

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
9-12-13

NO	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES Engineering Solutions
1040 N. WALNUT AVE. STE B, NEW BRAUNFELS, TX. 78130
PH: 830-358-7127 www.ma-tx.com
TBPE FIRM F-13351

WATER QUALITY DETAILS 1
WPAP SET

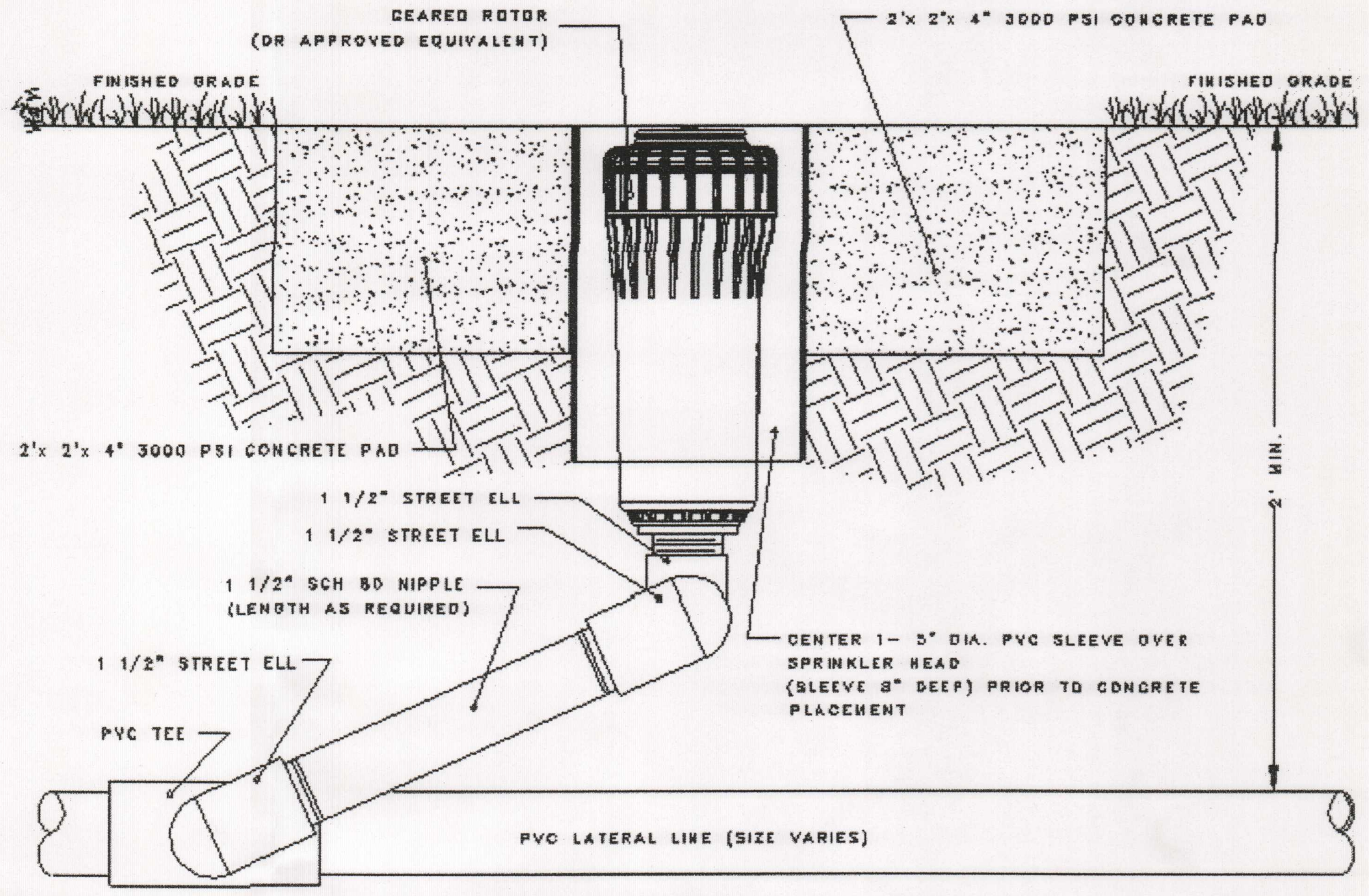
KHCR PROFESSIONAL BUILDING
NEW BRAUNFELS, TX 78132

RECEIVED
SEP 23 2013
WATER QUALITY

TCEQ-R13
SEP 12 2013
SAN ANTONIO

SHEET
6
OF 9

Drawing Name: N:\Projects\Vitt001.101 Lot 11B Hunters Creek Bus Pk\Engineering Reports\WPAP\6 WATER QUALITY DETAILS.dwg User: klorso Sep 12, 2013 - 11:29am

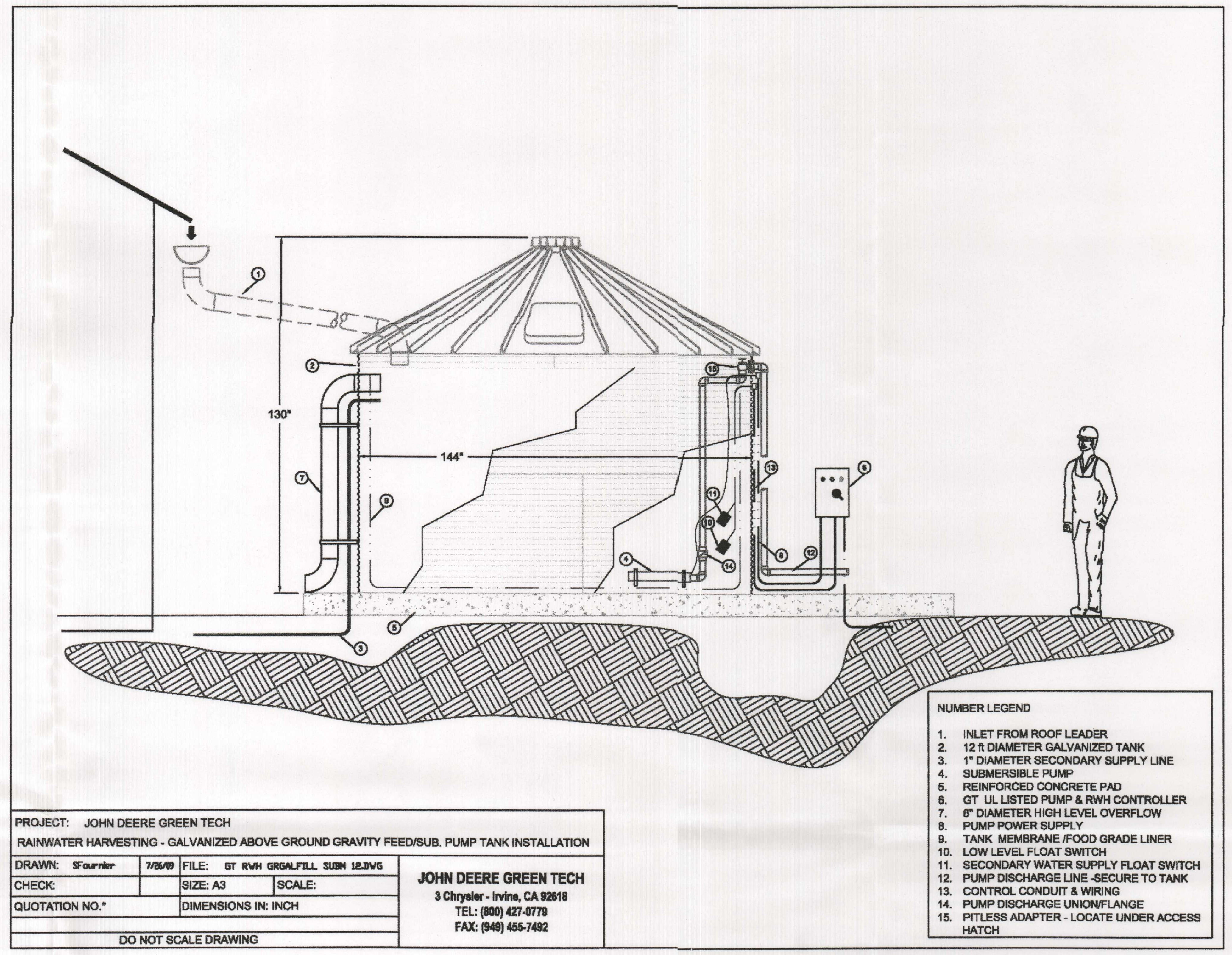


GEARED ROTOR
(OR APPROVED EQUIVALENT)
2'x 2'x 4" 3000 PSI CONCRETE PAD
FINISHED GRADE
FINISHED GRADE
2'x 2'x 4" 3000 PSI CONCRETE PAD
1 1/2" STREET ELL
1 1/2" STREET ELL
1 1/2" SCH 80 NIPPLE
(LENGTH AS REQUIRED)
1 1/2" STREET ELL
PVC TEE
CENTER 1- 5" DIA. PVC SLEEVE OVER SPRINKLER HEAD
(SLEEVE 8" DEEP) PRIOR TO CONCRETE PLACEMENT
2' MIN.
PVC LATERAL LINE (SIZE VARIES)

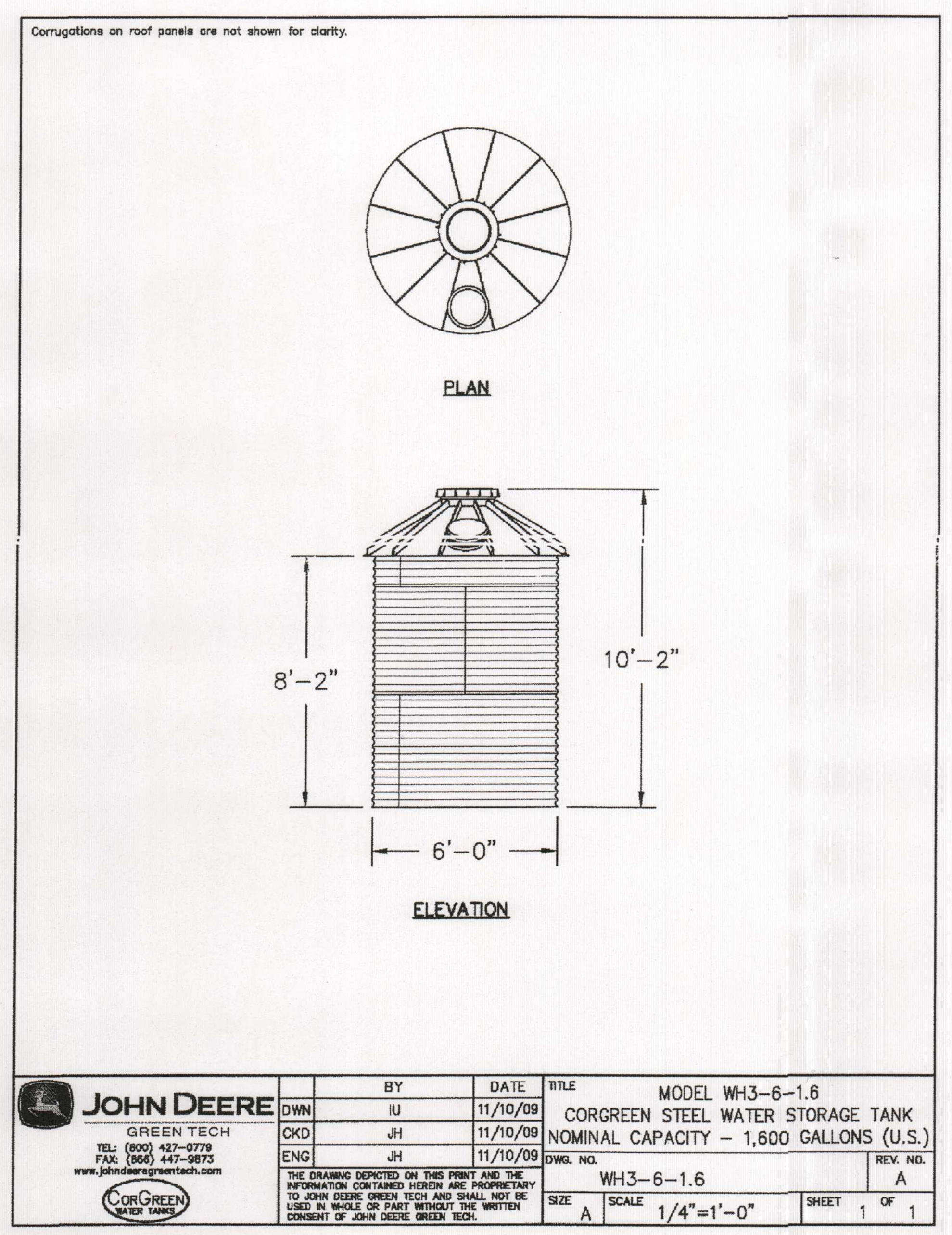
NOTES:
SPRINKLER HEADS SHOWN ON THIS THIS SHEET SHALL BE ROTOR SPRAY HEADS (OR APPROVED EQUIVALENT) 50 PSI, 34 GPM, NOZZLE 38 (RED .336" DIA.). THEY SHALL HAVE AN ANGLE ROTATION OF 227 (UNLESS OTHERWISE NOTED) AND 88' RADIUS.

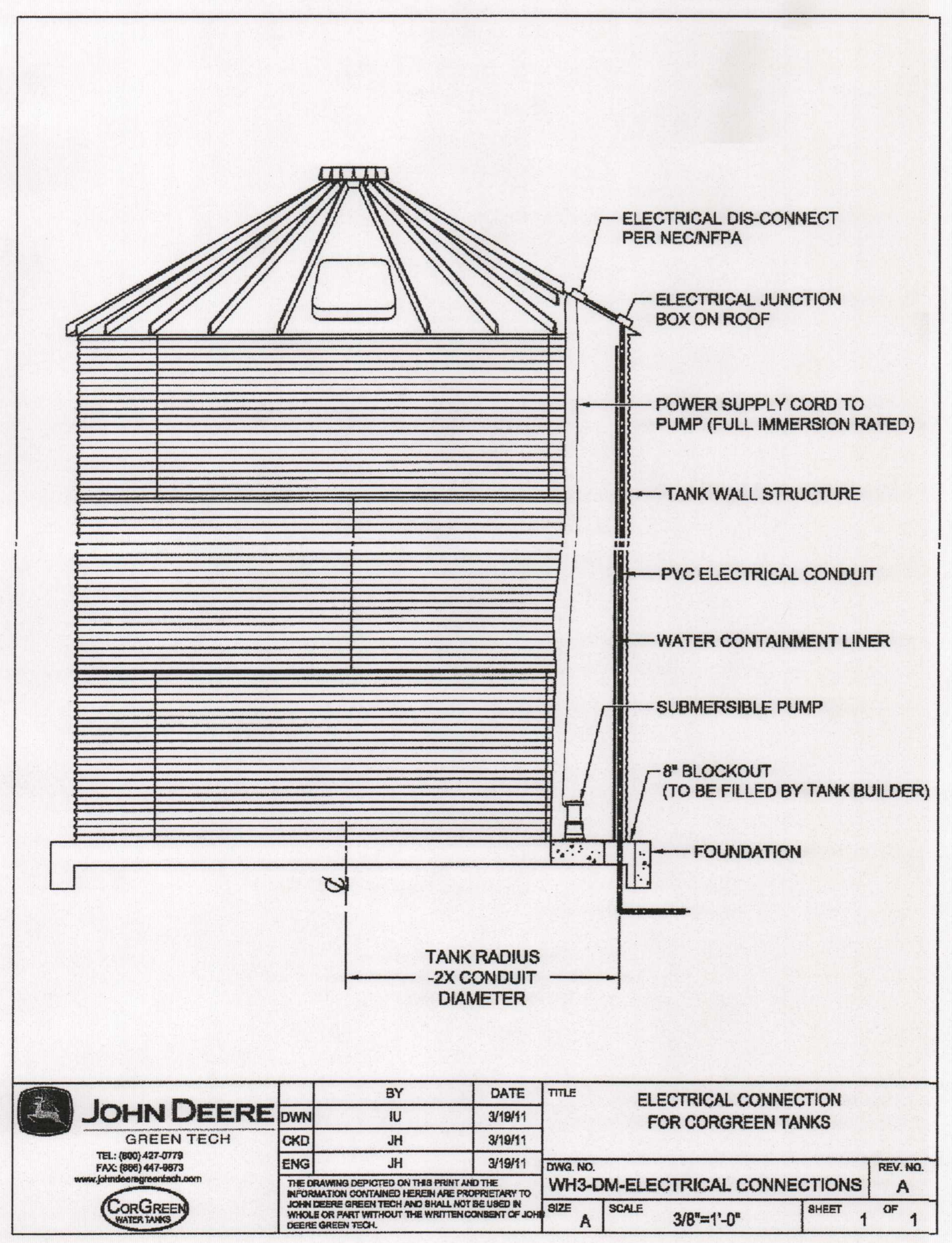
SWING INSTALLATION DETAIL

NO SCALE

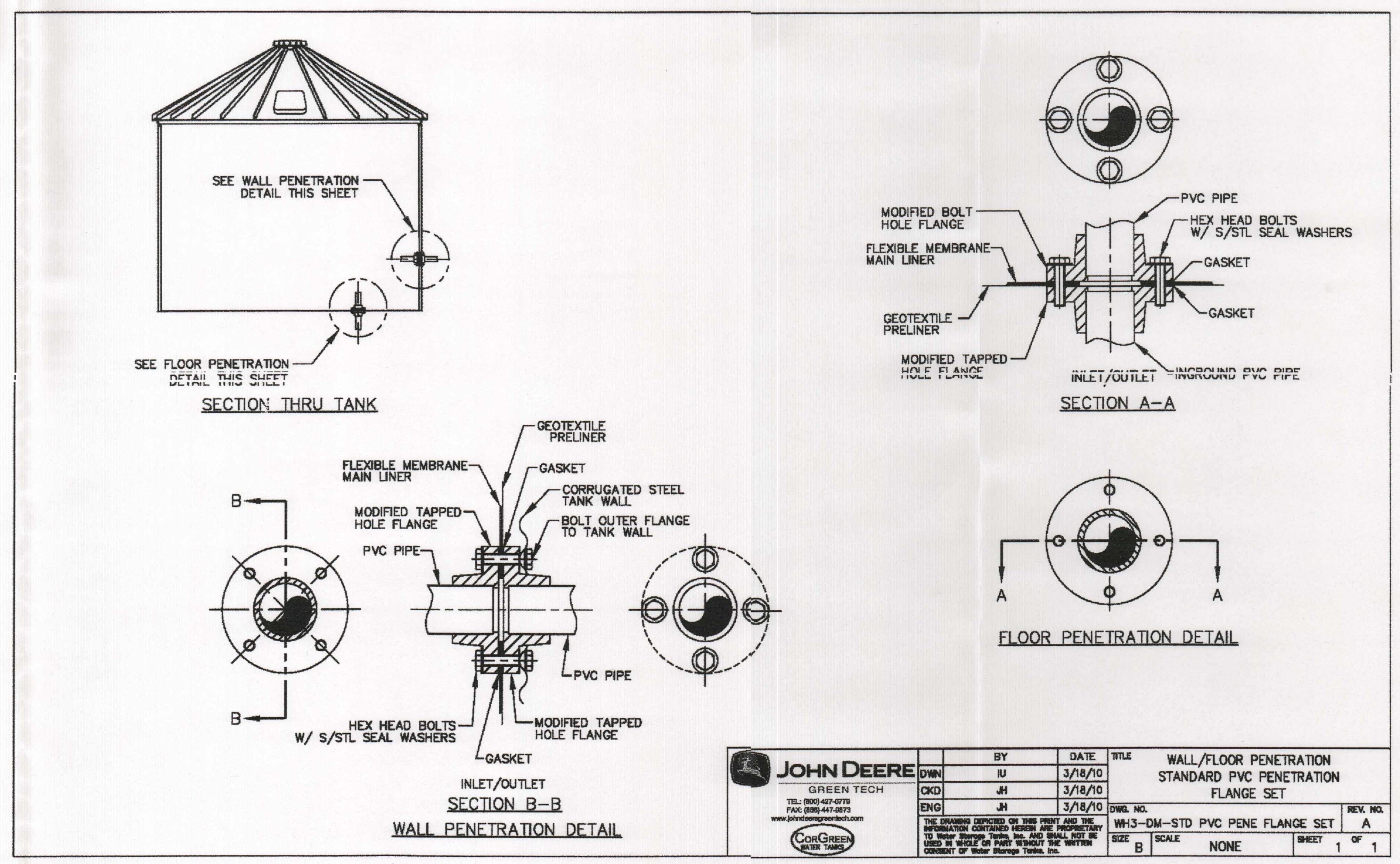


130"
144"
NUMBER LEGEND
1. INLET FROM ROOF LEADER
2. 12 ft DIAMETER GALVANIZED TANK
3. 1" DIAMETER SECONDARY SUPPLY LINE
4. SUBMERSIBLE PUMP
5. REINFORCED CONCRETE PAD
6. GT UL LISTED PUMP & RWH CONTROLLER
7. 6" DIAMETER HIGH LEVEL OVERFLOW
8. PUMP POWER SUPPLY
9. TANK MEMBRANE /FOOD GRADE LINER
10. LOW LEVEL FLOAT SWITCH
11. SECONDARY WATER SUPPLY FLOAT SWITCH
12. PUMP DISCHARGE LINE -SECURE TO TANK
13. CONTROL CONDUIT & WIRING
14. PUMP DISCHARGE UNION/FLANGE
15. PITLESS ADAPTER - LOCATE UNDER ACCESS HATCH
PROJECT: JOHN DEERE GREEN TECH
RAINWATER HARVESTING - GALVANIZED ABOVE GROUND GRAVITY FEED/SUB. PUMP TANK INSTALLATION
DRAWN: SFournier 7/26/09 FILE: GT RWH GRGALFILL SUBM 12.DWG
CHECK: SIZE: A3 SCALE:
QUOTATION NO.* DIMENSIONS IN: INCH
DO NOT SCALE DRAWING
JOHN DEERE GREEN TECH
3 Chrysler - Irvine, CA 92618
TEL: (800) 427-0779
FAX: (949) 455-7492





ELECTRICAL DIS-CONNECT PER NEC/NFPA
ELECTRICAL JUNCTION BOX ON ROOF
POWER SUPPLY CORD TO PUMP (FULL IMMERSION RATED)
TANK WALL STRUCTURE
PVC ELECTRICAL CONDUIT
WATER CONTAINMENT LINER
SUBMERSIBLE PUMP
8" BLOCKOUT (TO BE FILLED BY TANK BUILDER)
FOUNDATION
TANK RADIUS -2X CONDUIT DIAMETER
JOHN DEERE
GREEN TECH
ELECTRICAL CONNECTION FOR CORGREEN TANKS
WH3-DM-ELECTRICAL CONNECTIONS
3/8"=1'-0"



SEE WALL PENETRATION DETAIL THIS SHEET
SEE FLOOR PENETRATION DETAIL THIS SHEET
SECTION THRU TANK
MODIFIED BOLT HOLE FLANGE
FLEXIBLE MEMBRANE-MAIN LINER
GEOTEXTILE PRELINER
MODIFIED TAPPED HOLE FLANGE
PVC PIPE
HEX HEAD BOLTS W/ S/STL SEAL WASHERS
GASKET
GASKET
INLET/OUTLET
INGROUND PVC PIPE
SECTION A–A
GEOTEXTILE PRELINER
FLEXIBLE MEMBRANE-MAIN LINER
GASKET
CORRUGATED STEEL TANK WALL
MODIFIED TAPPED HOLE FLANGE
BOLT OUTER FLANGE TO TANK WALL
PVC PIPE
PVC PIPE
HEX HEAD BOLTS W/ S/STL SEAL WASHERS
MODIFIED TAPPED HOLE FLANGE
GASKET
INLET/OUTLET
SECTION B–B
WALL PENETRATION DETAIL
FLOOR PENETRATION DETAIL
JOHN DEERE
GREEN TECH
WALL/FLOOR PENETRATION STANDARD PVC PENETRATION FLANGE SET
WH3-DM-STD PVC PENE FLANGE SET
NONE

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

STATE OF TEXAS JAMES INGALLS 107416 LICENSED PROFESSIONAL ENGINEER 9-12-13

NO	DATE	ISSUES AND REVISIONS

MOELLER & ASSOCIATES
Engineering Solutions
1040 N. WALNUT AVE. STE B, NEW BRAUNFELS, TX. 78130
PH: 830-358-7127 www.ma-tx.com
TBPE FIRM F-13351

WATER QUALITY BASIN DETAILS 2

WPAP SET

KHCR PROFESSIONAL BUILDING

NEW BRAUNFELS, TX 78132

TCEQ-R13 SEP 12 2013 SAN ANTONIO

SHEET 7 OF 9

Drawing Name: N:\Projects\Hit001.101 Lot 11B Hunters Creek Bus Pk\Engineering Reports\WPAP\6 WATER QUALITY DETAILS.dwg User: Idorso Sep 12, 2013 - 11:29am

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

I Karl Hittle,
Print Name

Owner,
Title - Owner/President/Other

of KHCR Real Estate Holdings, LLC,
Corporation/Partnership/Entity Name

have authorized James Ingalls, P.E.
Print Name of Agent/Engineer

of Moeller & Associates
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

9-10-13
Date

THE STATE OF Texas §

County of Comal §

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

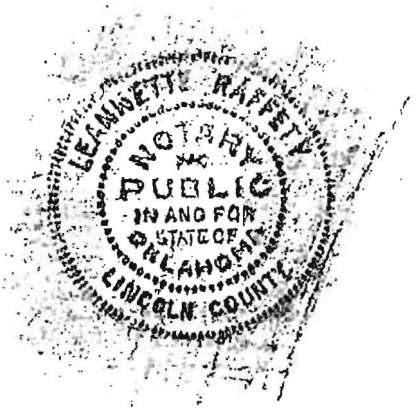
GIVEN under my hand and seal of office on this 10th day of Sept, 2013.

Leannette Raffety
NOTARY PUBLIC

Leannette Raffety
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 3-12-2017

Com# 01004230



Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Application Fee Form

NAME OF PROPOSED REGULATED ENTITY: KHCR Professional Building
REGULATED ENTITY LOCATION: 216 Hunters Village
NAME OF CUSTOMER: KHCR Real Estate Holdings, LLC
CONTACT PERSON: Karl Hittle PHONE: (830) 214-2568
(Please Print)

Customer Reference Number (if issued): CN _____ (nine digits)

Regulated Entity Reference Number (if issued): RN _____ (nine digits)

Austin Regional Office (3373) ☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362) ☐ Bexar ☑ Comal ☐ Medina ☐ Kinney ☐ Uvalde

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

☐ **Austin Regional Office**

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

☑ **San Antonio Regional Office**

☐ **Overnight Delivery to TCEQ:**
TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

Site Location (Check All That Apply): ☐ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	Size		Fee Due
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling		Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks		Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	0.64	Acres	$ 3,000
Sewage Collection System		L.F.	$
Lift Stations without sewer lines		Acres	$
Underground or Aboveground Storage Tank Facility		Tanks	$
Piping System(s)(only)		Each	$
Exception		Each	$
Extension of Time		Each	$

Signature _____ Date 9-11-13

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

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

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

Water Pollution Abatement Plans and Modifications
Contributing Zone Plans and Modifications

PROJECT	PROJECT AREA IN ACRES	FEE
One Single Family Residential Dwelling	< 5	$650
Multiple Single Family Residential and Parks	< 5 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $10,000

Organized Sewage Collection Systems and Modifications

PROJECT	COST PER LINEAR FOOT	MINIMUM FEE MAXIMUM FEE
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

PROJECT	COST PER TANK OR PIPING SYSTEM	MINIMUM FEE MAXIMUM FEE
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

PROJECT	FEE
Exception Request	$500

Extension of Time Requests

PROJECT	FEE
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Attachments **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒ Yes ☐ No

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(If issued)*
CN		RN

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy)

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

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

7. General Customer Information

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☐ No Change**

If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.

8. Type of Customer:			
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☒ Limited Partnership	☐ Other:

9. Customer Legal Name *(If an individual, print last name first: ex: Doe, John)* *If new Customer, enter previous Customer below* *End Date:*

KHCR Real Estate Holdings, LLC

10. Mailing Address: 28 Hunters Point

City	State	ZIP	ZIP + 4
New Braunfels	TX	78132	4709

11. Country Mailing Information *(if outside USA)*

12. E-Mail Address *(if applicable)*

13. Telephone Number (830) 214-2568

14. Extension or Code

15. Fax Number *(if applicable)* (830) 358-7606

16. Federal Tax ID *(9 digits)*	17. TX State Franchise Tax ID *(11 digits)*	18. DUNS Number *(if applicable)*	19. TX SOS Filing Number *(if applicable)*
	32051474750	N/A	0801815649

20. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. Independently Owned and Operated?

☒ Yes ☐ No

SECTION III: Regulated Entity Information

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

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information ☐ No Change** *(See below)*

If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.

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

KHCR Professional Building

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*	216 Hunters Village							
	City	New Braunfels	**State**	TX	**ZIP**	78132	**ZIP + 4**	4707
25. Mailing Address:	28 Hunters Point							
	City	New Braunfels	**State**	TX	**ZIP**	78132	**ZIP + 4**	4709

26. E-Mail Address:		
27. Telephone Number	**28. Extension or Code**	**29. Fax Number** *(if applicable)*
(830) 214-2568		(830) 358-7606

30. Primary SIC Code (4 digits)	**31. Secondary SIC Code** (4 digits)	**32. Primary NAICS Code** (5 or 6 digits)	**33. Secondary NAICS Code** (5 or 6 digits)
5999		453998	

34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

Professional Office Building

Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.

35. Description to Physical Location:	The project site is located on the north side of Hunters Village approximately 250 feet north west of the intersection of Oak Run Parkway and Hunters Village.

36. Nearest City	**County**	**State**	**Nearest ZIP Code**
New Braunfels	Comal	TX	78132

37. Latitude (N) In Decimal:	29.719193	**38. Longitude (W) In Decimal:**	-98.168507

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	43	9.09	98	10	6.63

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form or the updates may not be made. If your Program is not listed, check other and write it in. See the Core Data Form instructions for additional guidance.

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

SECTION IV: Preparer Information

40. Name:	James Ingalls, P.E.	**41. Title:**	Authorized Agent

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(830) 358-7127		(830) 515-5611	jamesi@ma-tx.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 9 and/or as required for the updates to the ID numbers identified in field 39.

(See the Core Data Form instructions for more information on who should sign this form.)

Company:	Moeller & Associates	**Job Title:**	Engineer
Name *(In Print)* :	James Ingalls, P.E.	**Phone:**	(830) 358-7127
Signature:		**Date:**	9-11-13

201306034762 08/14/2013 03:30:07 PM 1/4

New Braunfels Title Co.
G.F. # 81555KB

General Warranty Deed

4/TC

Date: August 14, 2013

Grantor: Hunters Creek Village, Ltd., a Texas Limited Partnership
651 N. Business 35, Suite 240, New Braunfels, Texas, 78130

Grantee: KHCR Real Estate Holdings, LLC, a Texas Limited Liability Company
28 Hunter's Point, New Braunfels, Texas, 78132

Consideration: Cash and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged.

Property (including any Improvements): Being 0.641 of an acre out of Lot 11B, Replat of HUNTER'S CREEK BUSINESS PARK, recorded in Document No. 200906010486, Map and Plat Records, Comal County, Texas and being described by metes and bounds in Exhibit "A" attached hereto and made a part hereof.

Reservations from Conveyance: None.

Exceptions to Conveyance and Warranty:

Validly existing easements, rights-of-way, and prescriptive rights, whether of record or not; all presently recorded and validly existing instruments, other than conveyances of the surface fee estate, that affect the Property; and taxes for 2013, which Grantee assumes and agrees to pay, but not subsequent assessments for that and prior years due to change in land usage, ownership, or both, the payment of which Grantor assumes.

Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells, and conveys to Grantee the Property, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold it to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds Grantor and Grantor's heirs and successors to warrant and forever defend all and singular the Property to Grantee and Grantee's heirs, successors, and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

The following restrictive covenants of record:

1. Document No. 200606052978, Official Public Records, Comal County, Texas, and Document No. 200906010486, Map and Plat Records, Comal County, Texas.

2. 25' building setback line and 20' front utility easement as shown on plat recorded under Document No. 200906010486, Map and Plat Records, Comal County, Texas.

3. Deed Recordation Affidavit filed July 3, 2008, under Document No. 200806026110 and refiled July 8, 2008, under Document No. 200806026420, Official Public Records, Comal County, Texas.

4. Subject property lies within the Edwards Water District as reflected upon the tax rolls.

When the context requires, singular nouns and pronouns include the plural.

Hunters Creek Village, Ltd., a Texas Limited Partnership

By: Jergins & Jergins Investments, LLC a Texas Limited Liability Company, General Partner

By: _____
Ernesto E. Jergins, President

STATE OF TEXAS)

COUNTY OF COMAL)

This instrument was acknowledged before me on Aug. 14, 2013, by Ernesto E. Jergins, as the President of Jergins & Jergins Investments, LLC a Texas Limited Liability Company, General Partner of Hunters Creek Village, Ltd., a Texas Limited Partnership, on behalf of said limited partnership.

KARIN BOOS
Notary Public, State of Texas
My Commission Expires
AUGUST 7, 2016

_____
Notary Public, State of Texas
My commission expires: _____

EXHIBIT "A"

D·A·MAWYER
LAND SURVEYING

METES AND BOUNDS DESCRIPTION
FOR A
0.641 OF AN ACRE TRACT OF LAND

Being 0.641 of an acre tract of land, a portion of Lot 11B, Hunter's Creek Business Park establishing Lot 11A and Lot 11B, Comal County, Texas, according to plat thereof recorded in Document No. 200906010486, of the Map and Plat records of Comal County, Texas, and said 0.641 of an acre tract of land being more particularly described as follows:

BEGINNING: At a ½" iron pin with cap stamped "DAM #5348 PROP. COR." set on the Northeast right-of-way line of Hunter's Village Drive (60' R.O.W.) for the Southeast corner of Lot 9 of Hunter's Creek Business Park, as recorded in Document No. 200606039930 of the Map and Plat Records of Comal County Texas, and being the Southwest corner of said Lot 11B and being the Southwest corner of this herein described tract of land;

THENCE: Departing said Southwest corner, and with the common lines of said Lot 11B and said Lot 9 of the Hunter's Creek Business Park, N 13° 08' 19" E, a distance of 160.71 feet to a ½" iron pin found on the Southwest line of Lot 11A of said Hunter's Creek Business Park establishing Lot 11A and Lot 11B, for the Northwest corner of said Lot 11B, and being the Northwest corner of this herein described tract of land;

THENCE: Departing said Northwest corner, and with the common lines of said Lot 11B and said Lot 11A, S 76° 53' 53" E, a distance of 172.00 feet to a ½" iron pin with cap stamped "DAM #5348 PROP. COR." set on the Southwest line of said Lot 11A, and being the Northeast corner of this herein described tract of land;

THENCE: Departing the Southwest line of said Lot 11A and across said Lot 11B, S 13° 06' 02" W, a distance of 164.07 feet to a ½" iron pin with cap stamped "DAM #5348 PROP. COR." set on the Northeast right-of-way line of Hunter's Village Drive, in the Southeasterly line of said Lot 11B, and being the Southeast corner of this herein described tract of land;

THENCE: Along the said Northeast right-of-way line of Hunter's Village Drive, N 75° 46' 38" W, a distance of 172.14 feet to the Point Of Beginning and containing a 0.641 of an acre, more or less.

Bearings based on the Texas State Plane Coordinate System, Texas South Central Zone (4204) NAD 83.

Survey Exhibit prepared this 1st day of August, 2013.

Drew A. Mawyer
Registered Professional Land Surveyor No. 5348

STATE OF TEXAS
REGISTERED
DREW A MAWYER
5348
PROFESSIONAL
LAND SURVEYOR

2700 Rolling Creek, Spring Branch, TX 78070 | T: 210.325.0858

This page has been added to comply with the statutory requirement that the clerk shall note the recording information at the bottom of the last page.

This page becomes part of the document identified by the instrument number affixed to the first page.

Filed and Recorded
Official Public Records
Joy Streater, County Clerk
Comal County, Texas
08/14/2013 03 30:07 PM
TERRI 4 Page(s)
201306034762

Joy Streater