TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 25, 2011

Mr. Jon Van De Voorde, P.E.
Bluegreen Southwest One, L.P.
6060 North Central Expressway
Dallas, Texas 75206

Re: Edwards Aquifer, Comal County

Name of Project: Vintage Oaks at the Vineyard Unit 3, located along State Highway 46, approximately 1.3 miles east of the intersection with South Cranes Mill Road, about 9 miles northwest of New Braunfels, Texas

Type of Plan: Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program San Antonio File No. 2961.00, Investigation No. 894509
Regulated Entity No. RN106076003

Dear Mr. Van De Voorde:

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 M&S Engineering, LLC on behalf of Bluegreen Southwest One, L.P. on February 1, 2011. Final review of the WPAP was completed after additional material was received on April 6, and April 21, 2011. As presented to the TCEQ, the temporary best management practices (BMPs) and construction plans were prepared by a Texas licensed professional engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas licensed professional engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

Background

WPAPs were previously approved for two other units in the housing development. A WPAP was approved for Unit 1 by TCEQ letter dated September 18, 2006, and a WPAP was approved for Unit 2 by TCEQ letter dated May 7, 2007. No Edwards Aquifer protection plan was of record for the development as a whole.

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Project Description

The proposed residential project will have an area of approximately 217.5 acres. It will include the construction of 140 single-family residences. The impervious cover will be 30.66 acres (14.1 percent). According to a letter dated January 26, 2011, signed by Robert Boyd, P.E., with Comal County, the site in the development is conditionally acceptable for the use of on-site sewage facilities.

Permanent Pollution Abatement Measures

This single-family residential project will not have more than 20 percent impervious cover.

Geology

According to the geologic assessment included with the application, the site is on the Edwards Aquifer recharge zone and the contributing zone. A thin veneer of stony clayey soils reportedly overlies limestones of the Lower Cretaceous Kainer Formation, the lowermost formation of the Edwards Group over most of the site. Outcrops of bedrock were mostly found in a subtle drainage feature at the south end of the site. Two sensitive features, both sinkholes, were described. Two down-to-the-southeast faults are shown crossing the site. Neither was deemed a sensitive feature. The northern fault is the northern boundary of the recharge zone for the area. The San Antonio Regional Office conducted a site assessment on April 12, 2011. Two sinkholes, sensitive feature S-9, and another sensitive feature in drainage just east of the southern corner of the site, were located.

Sensitive Features

Natural buffers are proposed for three features. No regulated activities (such as construction or soil disturbing activities) will take place within the natural buffers. Trash will be removed from Feature S-9 and a natural buffer will be maintained around it. The natural buffer will extend at least 200 feet upgradient (northwest) of the subsurface extent of the sinkhole. In other directions, the natural buffer will extend at least 50 feet from the subsurface extent of the sinkhole.

The setback for the sinkhole located in drainage just east of the southern corner of the site will have a buffer that extends at least 200 feet in upgradient directions and at least 50 feet in other directions.

Any separate feature (identified as Feature S-17) will have a natural buffer that extends at least 200 feet in upgradient directions and at least 50 feet in other directions.

The buffer areas described above will encompass and protect all sensitive features. Physical barriers and sediment controls such as fencing, rock berms and/or silt fences are required at the edges of these buffers prior to the commencement of construction.

Special Conditions

1. Since this project will not have more than 20 percent impervious cover, an exemption from additional permanent BMPs is approved. If the percent impervious cover ever increases above 20 percent or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the appropriate regional office of these changes.

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

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.

If you have any questions or require additional information, please contact Alan G. Jones of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4074.

Sincerely,

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

MRV/AGJ/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

cc: Mr. Heath Woods, P.E., M&S Engineering, LLC
Mr. Tom Hornseth, P.E., Comal County
Mr. Karl J. Dreher, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Comal County

OFFICE OF COMAL COUNTY ENGINEER

January 26, 2011

Mr. Stephen Jackson
M&S Engineering, LLC
P.O. Box 970
Spring Branch, TX 78070

Re: Vintage Oaks at the Vineyard Unit 3 On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Jackson:

In accordance with TAC §213.5(b)(4)(F)(ii), Comal County has found that the entire referenced site (except for areas listed below) is suitable for the use of private sewage facilities and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified in TAC §285.40-42 based on the following information submitted to our office on January 26, 2011:

- The Geologic Assessment, prepared by Professional Service Industries, Inc.
- The Water Pollution Abatement Plan, prepared by M&S Engineering, LLC

Areas that are not Suitable

The Geologic Assessment identified 2 recharge features as sensitive. The Water Pollution Abatement Plan gave the following Permanent Pollution Abatement Measures to prevent pollutants from entering said features:

Feature ID	Latitude	Longitude	Permanent Pollution Abatement Measure
S-9	N 29°47'21"	W 98°16'26"	50' – 200' Buffer
S-17	N 29°47'3"	W 98°16'25"	50' – 200' Buffer

In accordance with the Water Pollution Abatement Plan, the areas within these 50' buffers are not suitable for the use of any aspect of an On-Site Sewage Facility. In addition, in accordance with TAC §285.91, Table X, Minimum Required Separation Distances for soil absorption systems, unlined ET beds, surface application (edge of spray area), and drip irrigation disposal systems are not suitable within 150' of these sensitive features.

Moreover, according to TAC §285.41(b), Bluegreen Southwest One, L.P., the owner of the referenced site, must inform, in writing, each prospective purchaser, lessee, or renter of the following:

- All lots within Vintage Oaks at the Vineyard Unit 3 are subject to the terms and conditions of TAC §285.40-42;
- A Permit to Construct is required from Comal County before an OSSF can be constructed in Vintage Oaks at the Vineyard Unit 3;
- A License to Operate is required from Comal County before an OSSF can be operated in Vintage Oaks at the Vineyard Unit 3;
- That an application for a water pollution abatement plan, as defined in TAC §213, has been made, whether it has been approved, and if any restrictions or conditions have been placed on that approval; and
- Minimum separation distances, as outlined in Table 10 of TAC §285.91, from the sensitive recharge features listed above.

Furthermore, according to TAC §285.42(a), if any recharge feature, not listed above, is discovered during construction of an OSSF, all regulated activities near the feature shall be suspended immediately. The owner shall immediately notify the TCEQ San Antonio office of the discovery of the feature. All activities regulated under TAC §213 shall not proceed near the feature until Comal County, in conjunction with the TCEQ San Antonio office, has reviewed and approved a plan proposed to protect the feature, the structural integrity of the OSSF, and the water quality of the aquifer. The plan shall be sealed, signed, and dated by a professional engineer.

If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

Robert Boyd, P.E.
Comal County Assistant Engineer

cc: Donna Eccleston, Comal County Commissioner Precinct No. 1
Betty Lien, Comal County Subdivision Coordinator

11-1-11 Vintage Oaks at the Vineyard, Unit 3 (Proposed)

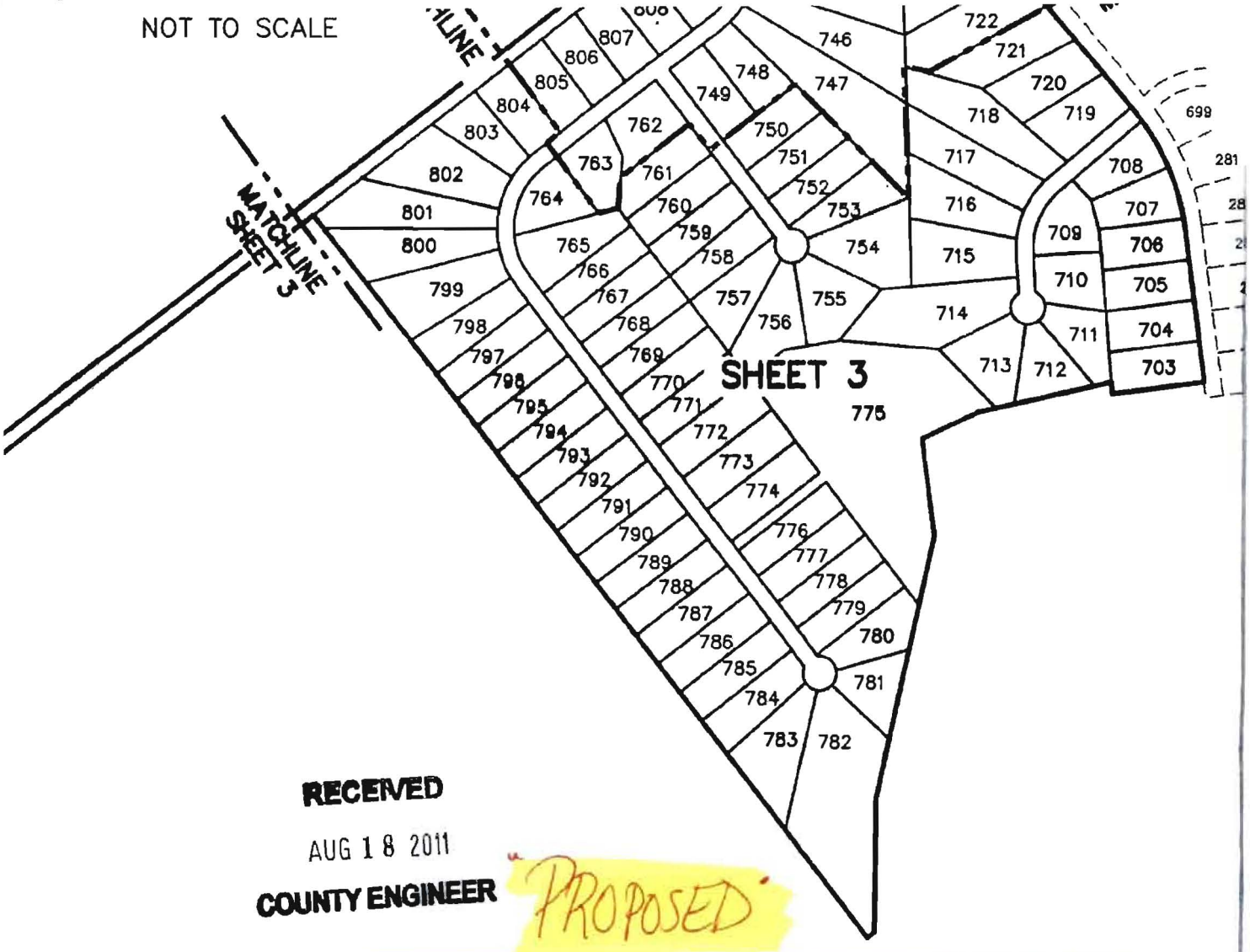
Robert,

Tom asked me to give this to you to make the Environmental Health Department aware of the noted sensitive features, according to their WPAP.

Thanks.

Betty

NOT TO SCALE



RECEIVED
AUG 18 2011
COUNTY ENGINEER

PROPOSED

VINTAGE OAKS AT THE VINEYARD, UNIT 3

SUBDIVISION PLAT

A 205.20 ACRE TRACT OF LAND BEING 4.41 ACRES OUT OF THE J. A. PLEASANT SURVEY NO.389, ABSTRACT NO. 475, AND 53.09 ACRES OUT OF THE SPENCER MORRIS SURVEY NO. 397, ABSTRACT NO. 411, AND 104.05 ACRES OUT OF THE CCSD AND RGNGRR CO. SURVEY NO. 841, ABSTRACT NO. 695, AND 43.64 ACRES OUT OF THE FRANZ HEIMER SURVEY NO. 912, ABSTRACT NO. 882 IN COMAL COUNTY, TEXAS AND BEING OUT OF A 2127.66 ACRE TRACT CONVEYED TO BLUEGREEN SOUTHWEST ONE, L.P. AND RECORDED IN DOCUMENT NO. 200606016591 OF THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS AND A 169.862 ACRE TRACT CONVEYED TO BLUEGREEN SOUTHWEST ONE, L.P., AND RECORDED IN DOCUMENT NO. 200606016590 OF THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS.

M & S

MAIN OFFICE
POST OFFICE BOX 970
SPRING BRANCH, TEXAS 78070
PHONE • (830) 228-5446
FAX • (830) 885-2170

BRANCH OFFICE
POST OFFICE BOX 391
McQUEENEY, TEXAS 78123
FAX • (830) 560-3203

ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM NO. F-1384

SHERWOOD SURVEYING, LLC
POST OFFICE BOX 992
SPRING BRANCH, TEXAS 78070
PHONE • (830) 228-5446

NOT TO SCALE

NOTES:

1. THIS PROPERTY LIES WITHIN A SPECIAL FLOOD HAZARD AREA, ZONE "A", THE 100-YEAR FLOOD ZONE, AS DEFINED BY THE FLOOD INSURANCE RATE MAP FOR COMAL COUNTY, TEXAS ON COMMUNITY PANEL NO.48091C0245F, EFFECTIVE DATE SEPTEMBER 02, 2009, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

2. THIS PROPERTY DOES LIE WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.

3. THIS PROPERTY DOES NOT LIE WITHIN AN EXTRA-TERRITORIAL JURISDICTION OF A MUNICIPALITY.

4. THIS PROPERTY WILL BE SERVED BY A STATE CERTIFIED PUBLIC WATER SUPPLY SYSTEM.

5. THIS PROPERTY WILL BE SERVED BY INDIVIDUAL ON-SITE SEWAGE FACILITIES.

6. PROPERTY OWNERS ARE ADVISED THAT THEY ARE RESPONSIBLE FOR MAINTENANCE OF DEDICATED EASEMENTS ON THEIR PROPERTY AND THAT THEY MAY NOT UTILIZE THESE EASEMENTS FOR ANY PURPOSE DETRIMENTAL TO THEIR INTENDED USE (I.E. NO STRUCTURES, SEPTIC TANKS FIELDS, ETC.). GRANTEES OF SAID DEDICATED EASEMENTS RESERVE THE RIGHT OF ACCESS TO SUCH EASEMENTS.

7. COMAL COUNTY REQUIRES A MINIMUM 25' BUILDING SET-BACK LINE FROM ROAD FRONTAGE.

8. THERE IS HEREBY DEDICATED A TWENTY (20) FOOT WIDE PUBLIC UTILITY, DRAINAGE, AND EMBANKMENT/BACKSLOPE EASEMENT ADJACENT TO ALL STREET RIGHT-OF-WAY LINES.

9. THERE IS HEREBY DEDICATED A TEN (10) FOOT WIDE PUBLIC UTILITY AND DRAINAGE EASEMENT ADJACENT TO ALL NON-STREET LOT LINES.

10. NO DRIVEWAY SHALL BE CONSTRUCTED BETWEEN THE LOTS AND ABUTTING RIGHT-OF-WAY WITHOUT FIRST OBTAINING A DRIVEWAY PERMIT FROM THE COMAL COUNTY ROAD DEPARTMENT.

11. A DRAINAGE STUDY HAS BEEN CONDUCTED BY M & S ENGINEERING FOR THIS PLAT AND IS AVAILABLE FOR REVIEW AT THE COMAL COUNTY ENGINEER'S OFFICE. AREAS IDENTIFIED BY THE STUDY AS BEING INUNDATED DURING CERTAIN STORM EVENTS HAVE BEEN DESIGNATED AS BUILDING SETBACKS. THE CONSTRUCTION OF BUILDINGS WITHIN THE BUILDING SETBACKS REQUIRES COMMISSIONERS COURT APPROVAL.

12. A WATER POLLUTION ABATEMENT PLAN (WPAP) STUDY HAS BEEN CONDUCTED BY M & S ENGINEERING FOR THIS PLAT. A LETTER OF APPROVAL FROM TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) HAS BEEN RECORDED IN DOC. NO. 201106021872 OF THE OFFICIAL RECORDS OF COMAL COUNTY TEXAS.

NATURAL BUFFER ZONE NOTE:
NATIVE GRASSES, FORBS AND TREES ADJACENT TO AND UPGRADIENT OF SENSITIVE FEATURES WILL REMAIN UNDISTURBED SO THAT RAINFALL MAY CONTINUE TO ENTER THE FEATURE.

WHEN ALL OR A PORTION OF THE BUFFER ZONE FOR A SENSITIVE FEATURE IS LOCATED WITHIN THE YARD OF A RESIDENTIAL TRACT, IT SHOULD BE SEPARATED BY A BARRIER, SUCH AS A FENCE, FROM CONVENTIONAL LANDSCAPING AND MAINTAINED IN THE NATURAL STATE.

13. BEARING BASED ON NAD 83 STATE PLAIN COORDINATES, SOUTH CENTRAL ZONE, AND ADJUSTED TO SURFACE USING A SCALE FACTOR OF 1.00015

14. 1/2" IRON PINS WILL BE SET AT ALL CORNERS, ANGLE POINTS AND POINTS OF CURVATURE, UNLESS OTHERWISE NOTED.

15. LOTS 711, 712, 713, 754, 755, 756, 775, 781, 782, 783, 819, 820, & 821 WILL NOT MEET THE MINIMUM ROAD FRONTAGE REQUIREMENTS FOR RESUBDIVISION IN COMAL COUNTY, TEXAS, AND THE SUBDIVIDING OF THESE LOTS FOR THE PURPOSE OF FINANCING HOME CONSTRUCTION FOR ANY OTHER PURPOSE WILL NOT COMPLY WITH THE CURRENT COMAL COUNTY SUBDIVISION REGULATIONS.

16. DETENTION FOR VINTAGE OAKS AT THE VINEYARD UNIT 3 IS OUTSIDE OF THE UNIT BOUNDARY AND IS RECORDED IN DOC. NO. _____ OF THE OFFICIAL RECORDS OF COMAL COUNTY TEXAS.

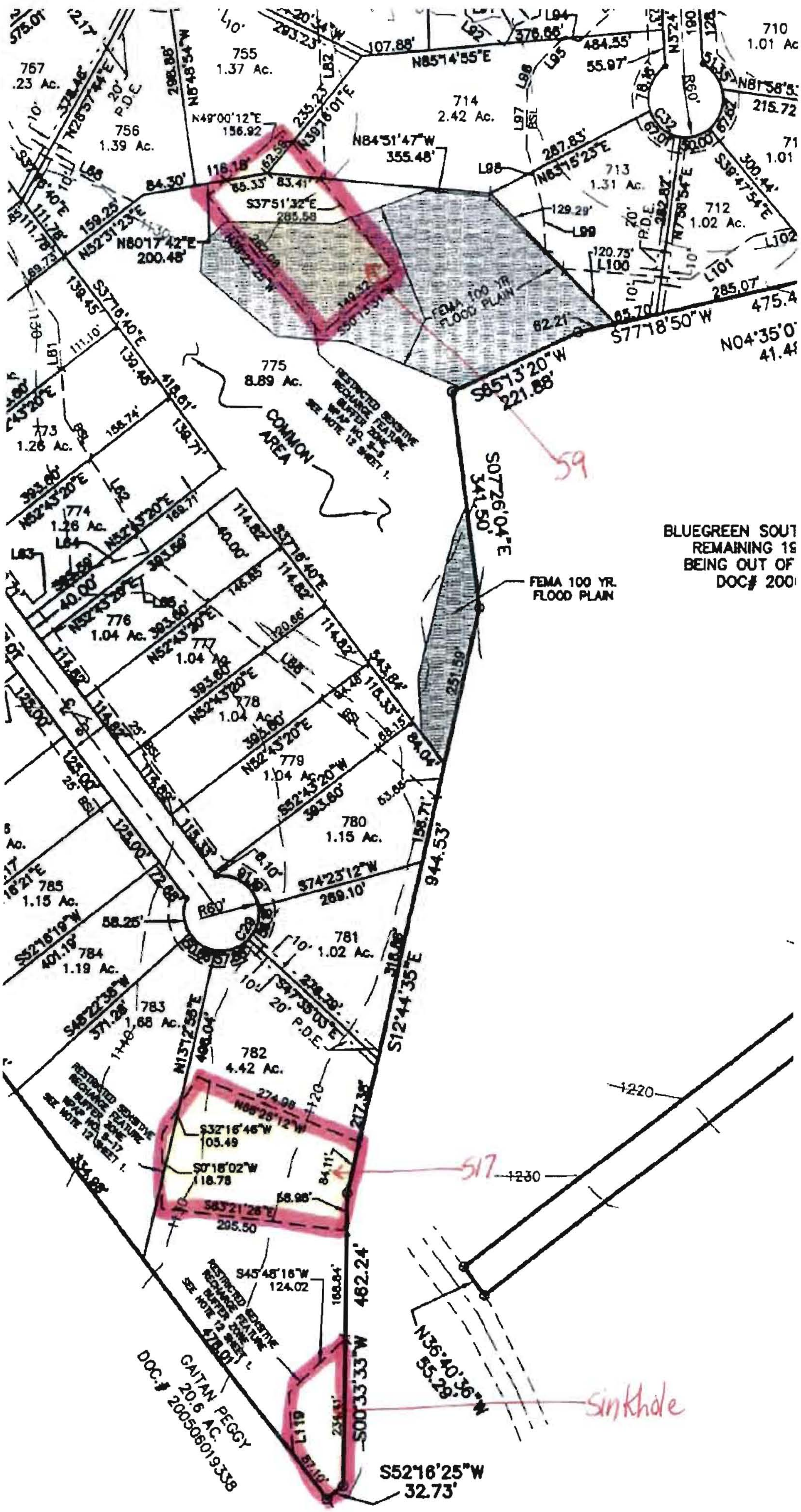
STATE OF TEXAS
COUNTY OF COMAL

KNOW ALL MEN BY THESE PRESENTS:

THE OWNERS OF THE LAND SHOWN ON THIS PLAT AND WHOSE NAME IS SUBSCRIBED HERETO, AND IN PERSON OR THROUGH A DULY AUTHORIZED AGENT, HEREBY DEDICATES TO THE USE OF THE PUBLIC FOREVER ALL STREETS, PARKS, WATER COURSES, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSE AND CONSIDERATIONS THEREIN EXPRESSED.

BLUEGREEN SOUTHWEST ONE, L.P.
A DELAWARE LIMITED PARTNERSHIP,
BY BLUEGREEN SOUTHWEST LAND, INC.
A DELAWARE CORPORATION, GENERAL PARTNER

BY:_____



755
1.37 Ac.
756
1.39 Ac.
714
2.42 Ac.
713
1.31 Ac.
712
1.02 Ac.
710
1.01 Ac
N49°00'12"E
156.92
N85°14'55"E
N84°31'47"W
355.48'
S37°51'32"E
285.58
N80°17'42"E
200.48'
N52°31'23"E
FEMA 100 YR. FLOOD PLAIN
S77°18'50"W
S85°13'20"W
221.88'
775
8.89 Ac.
COMMON AREA
RESTRICTED SENSITIVE RECHARGE FEATURE BUFFER ZONE MAP NO. S-9 SEE NOTE 12 SHEET 1.
59
S07°26'04"E
341.50'
BLUEGREEN SOUT
REMAINING 19
BEING OUT OF
DOC# 200
FEMA 100 YR. FLOOD PLAIN
776
1.04 Ac.
777
1.04 Ac.
778
1.04 Ac.
779
1.04 Ac.
780
1.15 Ac.
781
1.02 Ac.
782
4.42 Ac.
783
1.68 Ac.
784
1.19 Ac.
785
1.15 Ac.
S74°23'12"W
269.10'
944.53'
S12°44'35"E
RESTRICTED SENSITIVE RECHARGE FEATURE BUFFER ZONE MAP NO. S-17 SEE NOTE 12 SHEET 1.
S32°16'46"W
105.49
S0°18'02"W
118.78
S83°21'28"E
295.50
517
S45°48'16"W
124.02
RESTRICTED SENSITIVE RECHARGE FEATURE BUFFER ZONE SEE NOTE 12 SHEET 1.
462.24'
S00°33'33"W
N36°40'36"W
55.29'
Sinkhole
S52°16'25"W
32.73'
GAITAN PEGGY
20.6 AC.
DOC.# 2005060193338

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 1, 2011

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: Vintage Oaks at the Vineyard Unit 3, located along State Highway 46, approximately 1.3 miles east of the intersection with South Cranes Mill Road, New Braunfels, Texas
PLAN TYPE: Application for Approval of a Water Pollution Abatement Plan, 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
EAPP File No.: 2961.00

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 March 1, 2011.

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 PREVENTION PLAN

FOR

Vintage Oaks at the Vineyard Unit 3

M&S Engineering Project Number: 6BSW001

Prepared for:

Jon Van De Voorde, PE
Bluegreen Southwest One, L.P.
6060 North Central Expressway
Dallas, TX 75206

Prepared by:

M & S ENGINEERING, LLC
ENGINEERS | PLANNERS | SURVEYORS

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
1/27/11
M&S ENGINEERING, L.L.C.
F-1394

Main Office:
P. O. Box 970
Spring Branch, Texas 78070
830/228-5446
830-885-2170 FAX

Branch Office:
P. O. Box 391
McQueeney, Texas 78123
830-560-3200
830-560-3203 FAX

January 2011

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 — WPAP

3. Customer Reference Number *(if issued)*: CN 600675268

Follow this link to search for CN or RN numbers in Central Registry**

4. Regulated Entity Reference Number *(if issued)*: RN

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COUNTY ENGINEER

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:	☑ Corporation	☐ Individual	☐ Sole Proprietorship- D.B.A
☐ 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)*: Bluegreen Southwest One, L.P.

If new Customer, enter previous Customer below

End Date:

10. Mailing Address: 6060 North Central Expressway
Suite 138
City: Dallas State: TX ZIP: 75206 ZIP + 4:

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

12. E-Mail Address *(if applicable)*: jon.vandevoorde@bluegreencorp.com

13. Telephone Number: (972)850-3074

14. Extension or Code:

15. Fax Number *(if applicable)*: (214)753-4639

16. Federal Tax ID *(9 digits)*: 65-0796380

17. TX State Franchise Tax ID *(11 digits)*: 16509145617

18. DUNS Number *(if applicable)*:

19. TX SOS Filing Number *(if applicable)*: 10376311

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)*: Vintage Oaks at the Vineyard Unit 3

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*								
	City	New Braunfels	State	TX	ZIP	78132	ZIP + 4	
25. Mailing Address:								
	City		State		ZIP		ZIP + 4	

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

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)
1521	6552	236115	237210

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

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

35. Description to Physical Location:	This site is located along Highway 46, approximately 1.3 miles east of the intersection with S. Cranes Mill Road.

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

37. Latitude (N) In Decimal:	29.7742		38. Longitude (W) In Decimal:	98.2708	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	46	27	98	16	15

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:	Stephen Jackson	41. Title:	Hydrologist

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(830) 228-5446		(830) 885-2170	sjackson@msengr.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:	M&S Engineering, LLC	Job Title:	Agent - Engineer
Name *(In Print)* :	Heath Woods, P.E.	Phone:	(830) 228-5446
Signature:	Heath L. Woods	Date:	1/27/14

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: Vintage Oaks at the Vineyard Unit 3
COUNTY: Comal STREAM BASIN: Dry Comal Creek

EDWARDS AQUIFER: ✓ RECHARGE ZONE
__ TRANSITION ZONE

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

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: Jon Van De Voorde, PE
Entity: Bluegreen Southwest One, L.P.
Mailing Address: 6060 North Central Expressway
City, State: Dallas, TX Zip: 75206
Telephone: (830) 228-5446 FAX: (214) 753-4639

Agent/Representative (If any):

Contact Person: Heath Woods, P.E.
Entity: M&S Engineering, LLC
Mailing Address: 6477 FM 311
City, State: Spring Branch, Texas Zip: 78070
Telephone: (830) 228-5446 FAX: (830) 885-2170

2. __ This project is inside the city limits of _____.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
X 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.

This site is located along Highway 46, approximately 1.3 miles east of the intersection with S. Cranes Mill Road.

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
__ Undeveloped (Cleared)
X 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. X I am aware that the following activities are prohibited on the **Transition Zone** and are not proposed for this project:

(1) waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
(2) land disposal of Class I wastes, as defined in 30 TAC §335.1; and
(3) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

ADMINISTRATIVE INFORMATION

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:

Heath Woods, P.E.
Print Name of Customer/Agent

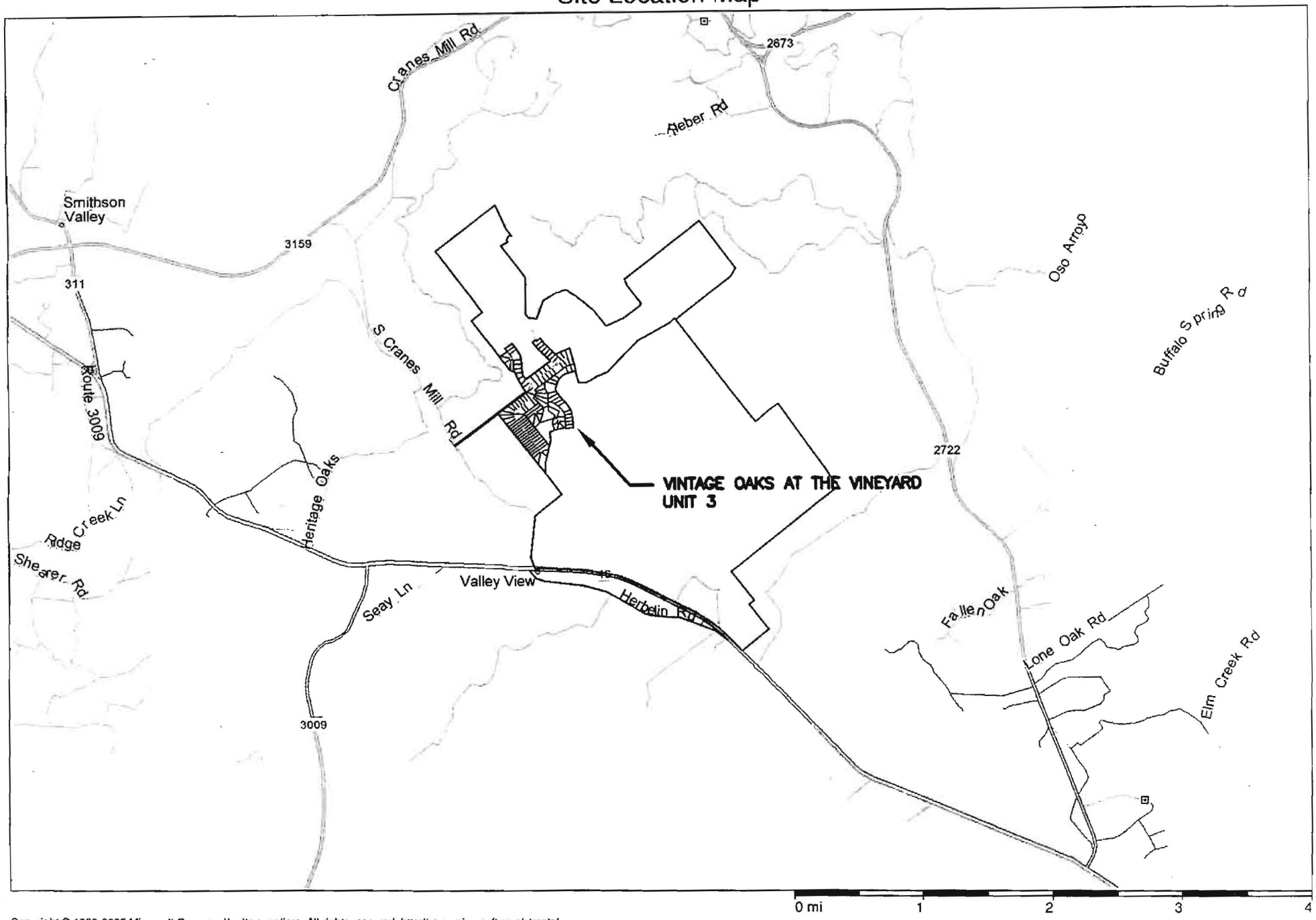
Heath L. Woods
Signature of Customer/Agent

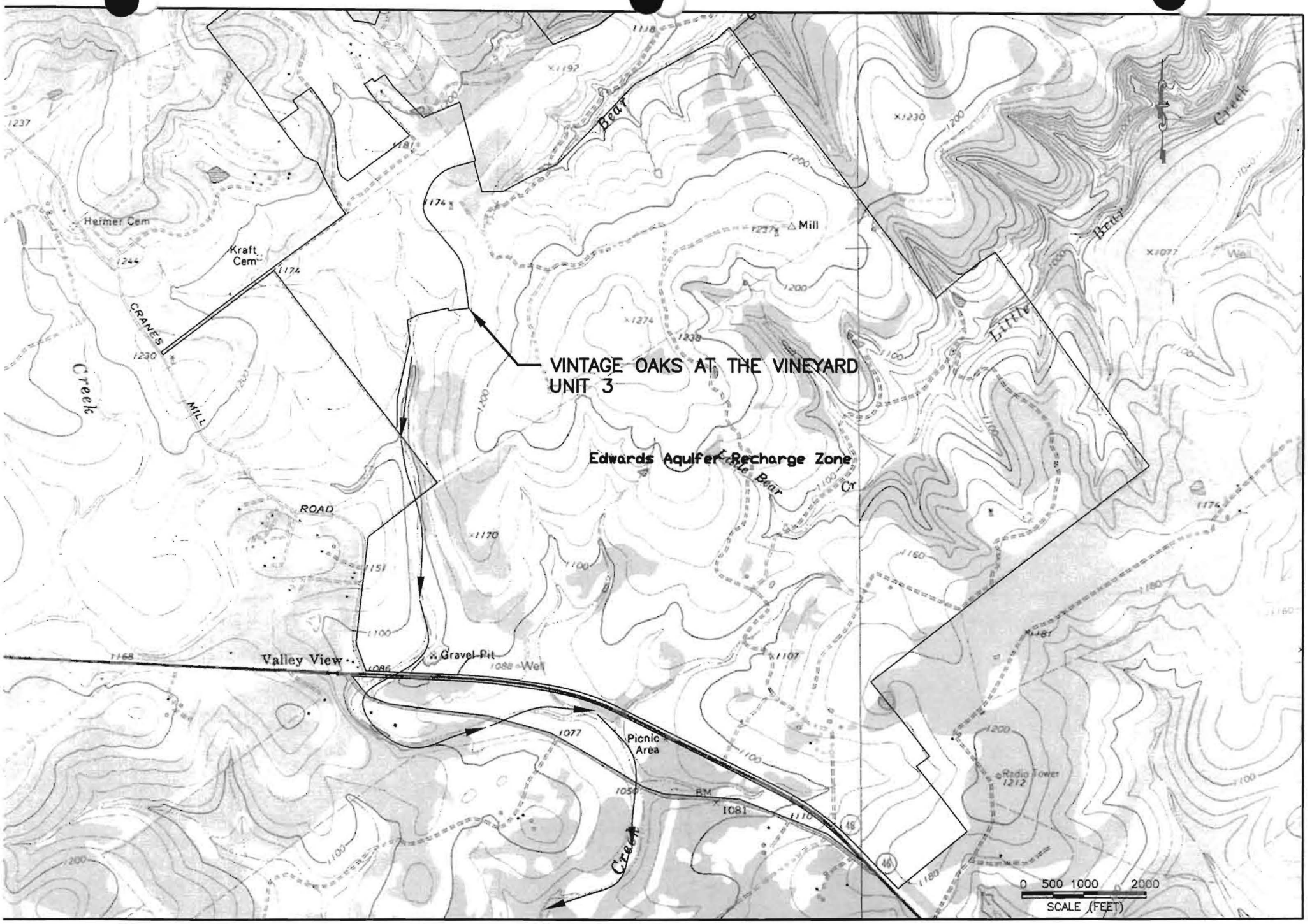
1/27/11
Date

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.

Site Location Map



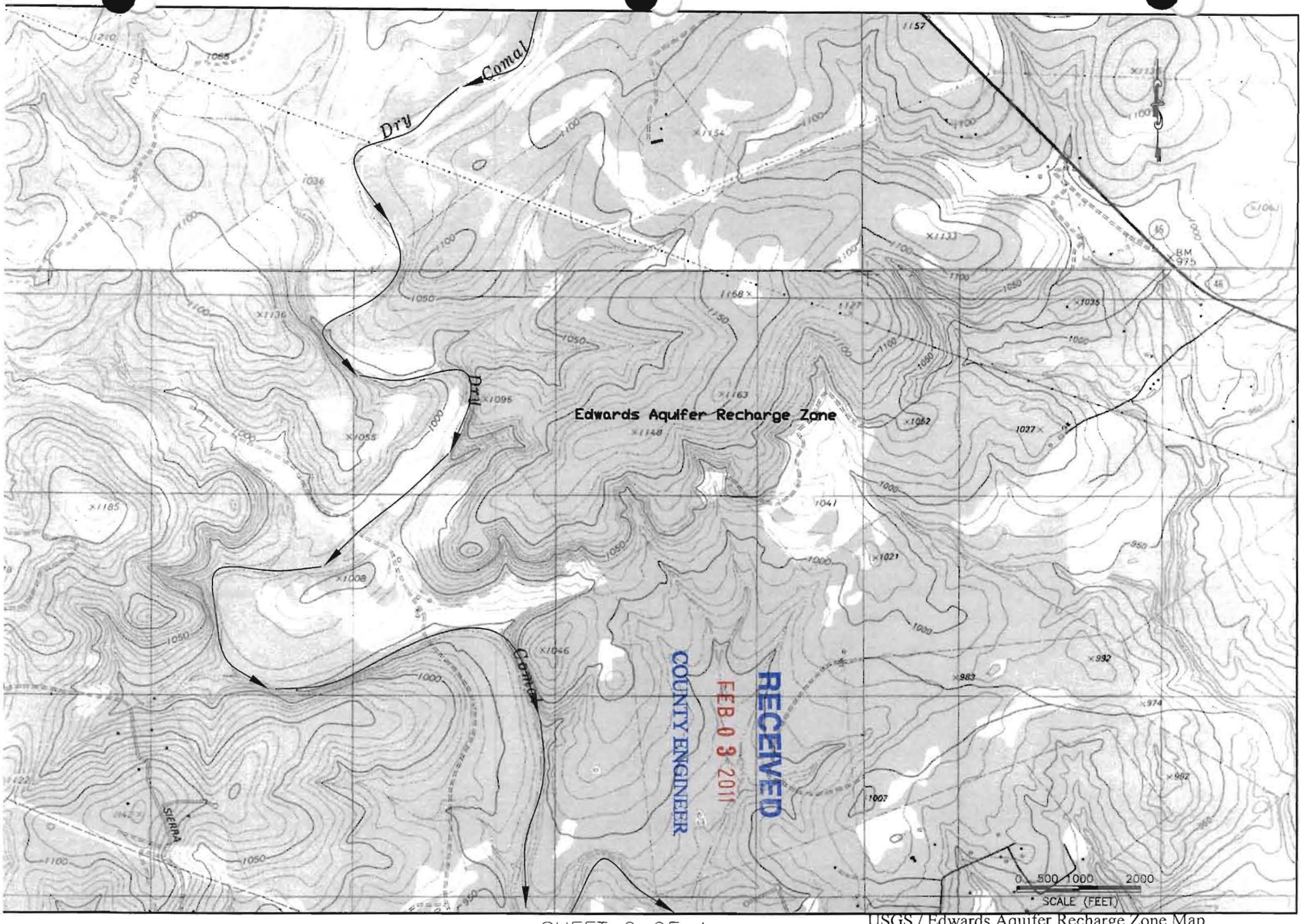


SHEET 1 OF 4

Vintage Oaks at the Vineyard Unit 3

Scale: 1" = 2000'

USGS / Edwards Aquifer Recharge Zone Map
Smithson Valley and Sattler Quad Sheets

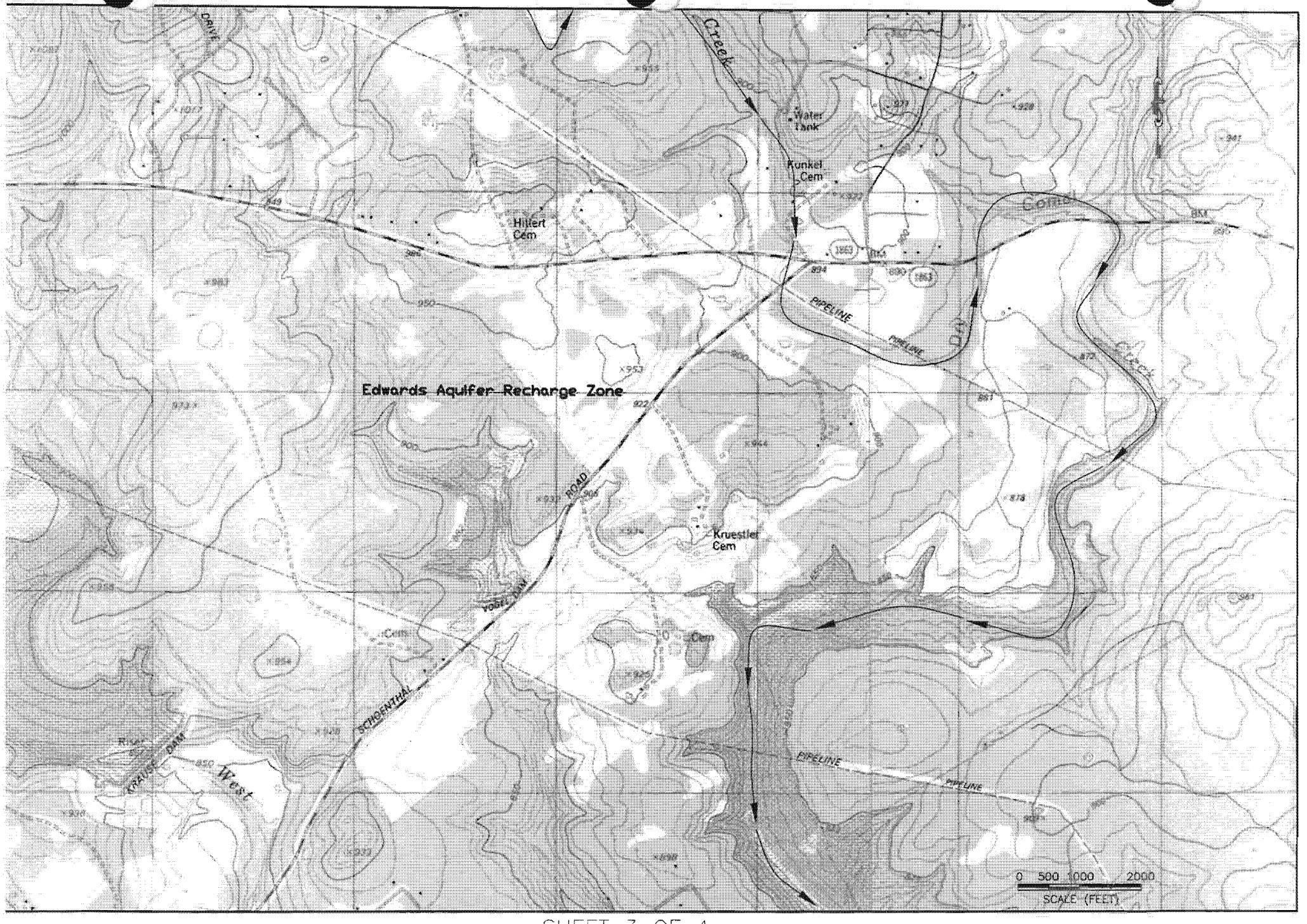


SHEET 2 OF 4

Scale: 1" = 2000'

USGS / Edwards Aquifer Recharge Zone Map
Smithson Valley, Sattler, New Braunfels West
and Bat Cave Quad Sheets

Vintage Oaks at the Vineyard Unit 3

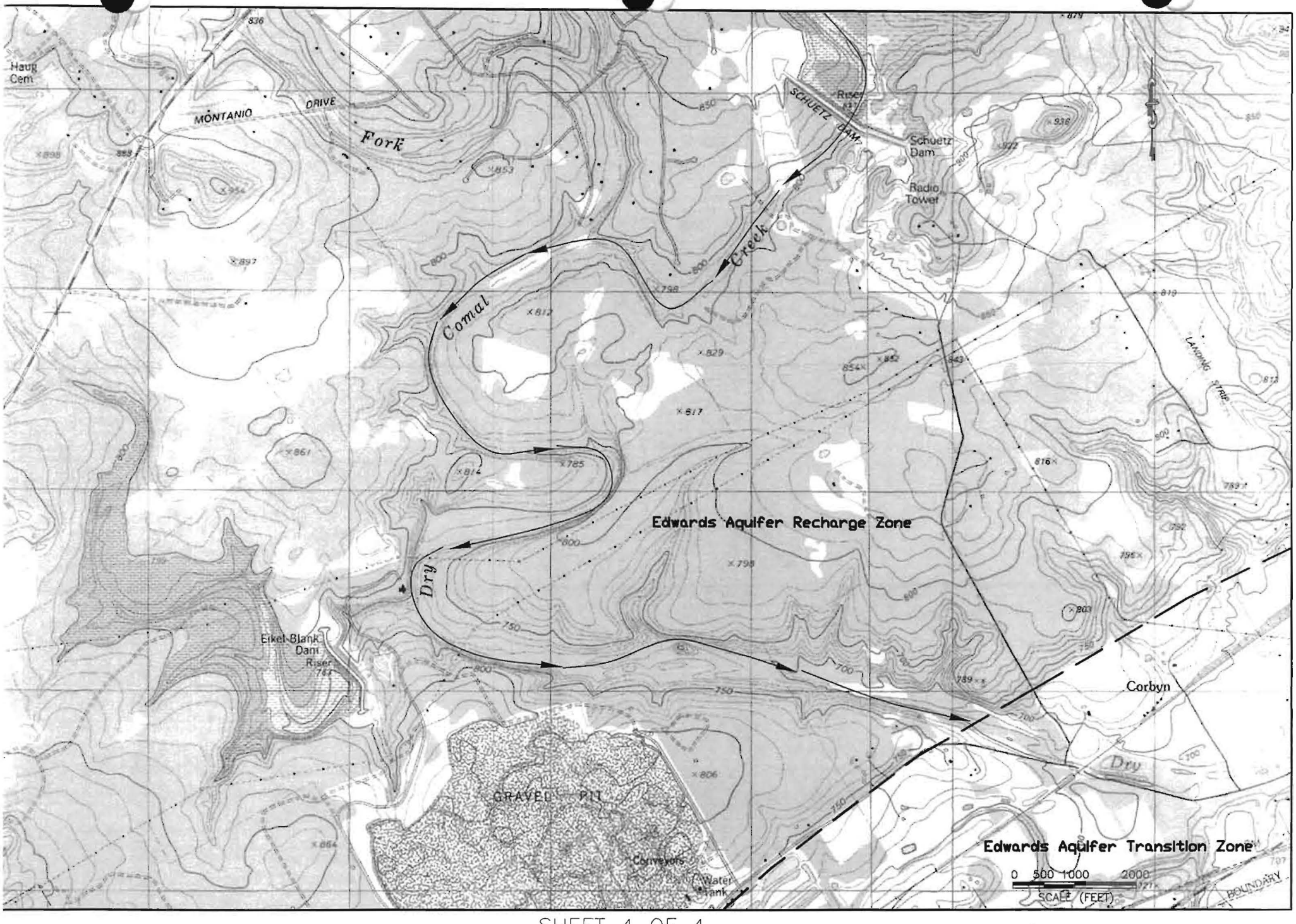


SHEET 3 OF 4

Vintage Oaks at the Vineyard Unit 3

Scale: 1" = 2000'

USGS / Edwards Aquifer Recharge Zone Map
New Braunfels West and Bat Cave Quad Sheets



SHEET 4 OF 4

Vintage Oaks at the Vineyard Unit 3

Scale: 1" = 2000'

USGS / Edwards Aquifer Recharge Zone Map
New Braunfels West and Bat Cave Quad Sheets

Attachment C

Project Description

The project is proposed to be a Single Family Residential Subdivision, located on 205.2 acres, bordering State Highway 46 and Cranes Mill Road on the western and southern boundaries. The proposed entrance is approximately 1420 feet east of the intersection of State Highway 46 and Cranes Mill Road. The site includes approximately 188.25 acres of single-family residential lots and 16.95 acres of street dedication. The streets are accounted for in the impervious cover calculations.

Vintage Oaks at the Vineyards Unit 3 is located within the major watershed of the Dry Comal Creek. The entire site drains directly to Dry Comal Creek. The proposed residential site is less than 20% impervious cover and thus requires no treatment for the run-off.

A detention pond will be constructed as part of this unit. The pond is located outside the Unit 3 boundaries approximately ¼ mile to the north.

GEOLOGIC ASSESSMENT

For the

VINTAGE OAKS AT THE VINEYARD
UNIT 3
HIGHWAY 46
COMAL COUNTY, TEXAS

Prepared for

M&S ENGINEERING, LTD.
6477 F.M. 311, P.O. BOX 970
SPRING BRANCH, TEXAS 78070

Prepared by

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

PSI PROJECT NO.: 435- 364

January 3, 2011

PSI Information To Build On
Engineering • Consulting • Testing

January 3, 2011

M&S Engineering, Ltd.
6477 F.M. 311, P.O. Box 970
Spring Branch, Texas 78070

Attn: Mr. Keith Strimple, P.E.

Re: Geologic Assessment
Unit 3
Vintage Oaks at the Vineyard
Highway 46
Comal County, Texas
PSI Project No. 435-364

Dear Mr. Strimple:

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

AUTHORIZATION

Authorization to perform this assessment was given by an electronic authorization on July 27, 2010 between M&S Engineering, Ltd. and PSI.

PROJECT DESCRIPTION

The subject site is located on the north side of Highway 46, approximately one and a half miles east of F.M. 3009 in Comal County, Texas. The Unit 3 tract is a 201.86-acre portion of an approximate 2,800-acre, irregularly shaped parcel of partially developed land that is hilly, with rugged, occasionally steep topographic slopes that dip in all directions. A subtle drainage feature traverses the lower portion of Unit 3 in a general southerly direction. The site vegetation consists primarily of native grasses, ashe juniper, live oak, burr oak, cedar elm and persimmon trees, with abundant mountain laurel, agarita, and prickly pear cactus.

REGIONAL GEOLOGY

Physiography

Comal County lies within two physiographic provinces, the Edwards Plateau and the Blackland Prairie. Most of Comal County lies within the Edwards Plateau, which is characterized by rugged and hilly terrain, with elevations in excess of 1,400' feet above sea level in the northwestern portion of the county. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Comal County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 650 feet to 1100 feet above sea level. The regional dip of the lower Cretaceous rocks in Comal County is 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the Gulf Coast, with near vertical throws. Elevations at the overall Vintage Oaks at the Vineyard site range from approximately 1,320 feet above mean sea level in the northwestern portion of the tract to approximately 1,060 feet above mean sea level in the southeast portion of the Vintage Oaks site, along Highway 46.

Stratigraphy and Structure

Rocks at Unit 3 of the Vintage Oaks site are members of the Lower Cretaceous Edwards Kainer Formation. The Unit 3 site is covered with a thin veneer of soil with some vuggy and fractured rock outcrops exposed about the site particularly in the subtle drainage feature. According to "The Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County Texas" written by the USGS, the Kainer Formation ranges between 260 and 310 feet thick and forms the lower member of the Edwards Group, beneath the Person Formation which compromises the Edwards Aquifer, a federally-designated sole source aquifer for the region.

SITE INVESTIGATION

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. As stated previously, outcrops of Kainer Formation were observed throughout the Unit 3 site primarily in the subtle drainage feature, with varying degrees of fracturing and

indications of interconnectedness, such as vugs, solution cavities or fractured rock zones. The purpose of the site investigation was to delineate features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

Two sensitive recharge features that scored higher than 40 points on the TCEQ scoring system were noted on the subject tract. Feature S-9 consisted of a sinkhole on a gently sloping hillside not associated with a streambed. S-9 is approximately 25' by 20' in diameter with a depth of approximately 15'. Much of the feature is filled by trash and soil. The catchment area appears to be small. No obvious evidence of significant water influx was noted. Feature S-17 consists of a sinkhole measuring approximately 55' by 30' with an approximate depth of 6'. The feature is located in a streambed and has a larger catchment area.

Stratigraphically, these features appear to be within the lower portion of the Edwards Kainer just above the Basal Nodular Member and the Glen Rose Limestone, which serves as a lower confining unit. The features may be related to faulting in the general area but obvious evidence of a relationship was not observed.

The general area of the three features consists of relatively open land covered primarily by grasses and a few scattered trees and shrubbery. The grass in the area is fairly tall, 1 to 3 feet high. The drainage features in the area are seasonal and appear to flow only after significant rainfall events. Please note that subtle features, obscured from view, may be present in the grassy areas. It is also likely that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

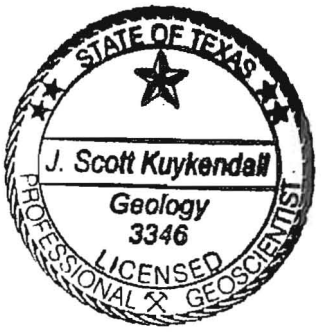
We appreciate this opportunity to be of service to you. If you have any questions, please do not hesitate to contact our office.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

J. Scott Kuykendall, P.G.
Project Manager

John Langan, P.G.
Environmental Department Manager



WARRANTY

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

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

STRATIGRAPHIC COLUMN

Vintage Oaks at the Vineyard
Unit 3
Highway 46
Comal County, Texas

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Georgetown Formation	<10'	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: *waconella wacoensis* brachiopod; low porosity and permeability development.
Person Formation	180-224'	Limestones and dolomites, extensive porosity development in "honeycomb sections, interbedded with massive recrystallized limestones with more limited permeabilities (especially Regional Dense Member separating the Person and Kainer Formations.
Kainer Formation	260-310'	Hard, miliolid limestones, overlying calcified dolomites and dolomite. Leached evaporitic "Kirschberg" zone of very porous and permeable collapse breccia formed by the dissolution of gypsum. Overlies the basal nodular (Walnut) bed.
Glen Rose Limestone (upper)	350-500	Yellowish-tan thinly bedded limestone and marl. Alternating beds of varying hardness erodes to "stairstep" topography. Marine fossils common.

SOILS NARRATIVE

According to the Soil Survey of Comal County, published by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the Texas Agricultural Extension Service, reissued in 1984, the soils beneath the subject property have been classified as Comfort-Rock outcrop complex, undulating (CrD), Doss silty clay, 1 to 5% slopes (DoC), Krum clay, 1 to 3% slopes (KrB), and Rumple-Comfort association, undulating (RuD).

Comfort extremely stony clay makes up between 49 and 95% of the Comfort-Rock outcrop series, and Indurated rock outcrop and soil less than 4 inches deep make up 5 to 36% of the complex. Typically, the surface layer is dark brown extremely stony soil about 6 inches thick. Cobbles, stones and "float" rock comprise about 45% of the surface. The subsoil extends to about 13 inches, and overlies the fractured limestone parent material. Comfort soil is well-drained, with slow to medium surface runoff, slow permeability, and very low water capacity.

Doss silty clay is a shallow, gently sloping soil on convex slopes of low hills and ridges on the Edwards Plateau uplands. The surface layer is dark grayish brown silty clay about 9 inches thick. The subsoil is a yellowish brown clay loam that extends to about 18 inches. From 18 to 24 inches is a weakly cemented weathered limestone and marl parent material. This soil is well drained, with medium surface runoff and moderately slow permeability, with low water capacity. Water erosion is a moderate hazard.

Krum clays are deep gently sloping soils on stream terraces and valley fills. Typically, the surface layer is dark gray clay roughly 16 inches thick. From 16 to 58 inches, the subsoil is grayish brown clay, which becomes browner and lighter colored with depth. This soil is well drained, with medium surface runoff, moderately slow permeability and high water capacity.

Rumple-Comfort association consists of shallow and moderately deep soils on uplands in the Edwards Plateau Land Resource Area. The surface layer of Rumple soil is dark reddish brown very cherty clay loam about 10 inches thick. The stoniness increases with depth, becoming about 75% cobbles and stone between 14 and 28 inches in depth. The surface layer of Comfort soil was described above. This association is well drained, with medium surface runoff, slow permeability and very low water capacity. These soils are best suited for range and wildlife habitat.

SITE GEOLOGIC NARRATIVE

Physiography

From northwest to southeast, the three physiographic provinces in Bexar County are: the Edwards Plateau, the Blackland Prairie, and the West Gulf Coastal Plain. The Edwards Plateau terrain is rugged and hilly, with elevations ranging from 1,000 feet to 1,900 feet above sea level. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Bexar County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 700 feet to 1100 feet above sea level. The faults are predominantly normal, down thrown-to-the Gulf Coast, with near vertical throws. The West Gulf Coastal Plain lies southeast of the Blackland Prairie, and is composed of relatively flat-lying beds of marl, clay and sandy clay. Elevation at the subject site ranges from approximately 1,120 feet to 1,280 above mean sea level. The topographic slope varies across the site.

Stratigraphy and Structure

The outcrops at the site appear to consist of the Lower Cretaceous Edwards Kainer Formation. According to "The Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Bexar County Texas" written by the USGS, the Kainer Formation ranges between 260 and 310 feet thick and forms the lower member of the Edwards Group, beneath the Person Formation and above the Glen Rose Formation. The Georgetown, Person and Kainer Formations compromise the Edwards Aquifer, a federally-designated sole source aquifer for the region. Underlying the Edwards Group is the Lower Cretaceous Glen Rose Formation.

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: Vintage Oaks at the Vineyard Unit 3

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)
Comfort rock outcrop complex, gently undulating (CrD)	C	1-3
Doss silty clay, 1 to 5 % slopes (DoC)	C	1-3
Krum clay, 1 to 3% slopes (KrB)	C	1-3
Rumple-Comfort association, undulating (RuD)	C	1-3

* 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" = 400'
Site Geologic Map Scale 1" = 400'

Site Soils Map Scale (if more than 1 soil type) 1" = no scale

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. X Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
   __ Geologic or manmade features were not discovered on the project site during the field investigation.

10. X 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.

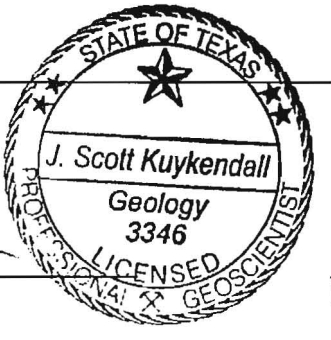
ADMINISTRATIVE INFORMATION

12. X One (1) original and three (3) copies of the completed assessment has been provided.

Date(s) Geologic Assessment was performed: July, August 2006
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.

J. Scott Kuykendall
Print Name of Geologist



210-342-9377
Telephone

210-342-9401
Fax

Signature of Geologist

January 3, 2011
Date

Representing: PSI, 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.

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.

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: Vintage Oaks at the Vineyard Unit 3 (Page 1 of 2)																
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)	DIP	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.0	>1.0	
S-1	29-47-44	98-16-19	O	5	KeK	200	100	1			1	0.2	O,F	15	20	X			X	Hillside
S-2	Deleted	(Duplicated feature)																		
S-3	29-47-34	98-16-24	O	5	KeK	150	150	2			2	0.3	O	15	20	X			X	Hillside
S-4	29-47-29	98-16-6	O	5	KeK	300	100	5			3	0.2	O	15	20	X			X	Drainage
S-5	29-47-27	98-16-40	O	5	KeK	300	125	8			4	0.25	O	15	20	X			X	Streambed
S-6	29-47-26	98-16-36	O	5	KeK	250	75	6			2	0.1	O	10	15	X			X	Streambed
S-7	29-47-21	98-16-31	O	5	KeK	220	30	6			2	0.1	O	10	15	X			X	Streambed
S-8	29-47-28	98-16-14	CD	5	KeK	8	5	1					O	5	10	X			X	Hillside
S-9	29-47-21	98-16-26	SH	20	KeK	25	20	15					N	20	40		X	X		Hillside
S-10	29-47-28	98-16-18	F	20	KeK	>4000	75	>100	NE-SW	10				9	39	X			X	Hillside
S-11	29-47-45	98-16-42	O	5	KeK	300	100	10			1	0.1	O	15	20	X		X		Hillside
S-12	29-47-38	98-16-40	F	20	KeK	>2500	75	>100	NE-SW	10				9	39	X			X	Hillside
S-13	29-47-36	98-16-29	CD	5	KeK	8	8	2.5					F	10	15	X		X		Hillside
S-14	29-48-01	98-16-07	MB	30	KeK	60	60	8					O	5	35	X			X	Stocktank
S-15	29-47-53	98-16-23	MB	30	KeK	200	60	10					O	5	34	X			X	Stocktank
S-16	29-47-15	98-16-27	O	5	KeK	1250	200	40			5	0.3	N	30	35	X			X	Streambed
S-17	29-47-3	98-16-25	SH	20	KeK	55	30	6					N	30	50		X		X	Streambed

* DATUM:

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

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

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

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

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

Date: January 3, 2011

Sheet 1 of 2

STATE OF TEXAS
J. Scott Kuykendall
Geology
3346
LICENSED
PROFESSIONAL GEOSCIENTIST

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

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: Vintage Oaks at the Vineyard Unit 3 (Page 2)

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)	TOL	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.0	>1.0	
S-18	Not on	Unit 3																		
S-19	Not on	Unit 3																		
S-20	29-47-20	98-16-13	O	5	KeK	250	75	1			1	0.1	O	15	20	X			X	Hillside
S-21	29-47-25	98-16-36	O	5	KeK	150	100	6			2	0.1	O	19	24	X			X	Drainage
S-22	29-47-39	98-16-18	O	5	KeK	450	50	20			2	0.2	O	15	20	X			X	Hillside
S-23	29-47-40	98-16-17	MB	30	KeK	250	40	3					F,C	5	35	X			X	Hillside Pond

* DATUM:

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

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

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

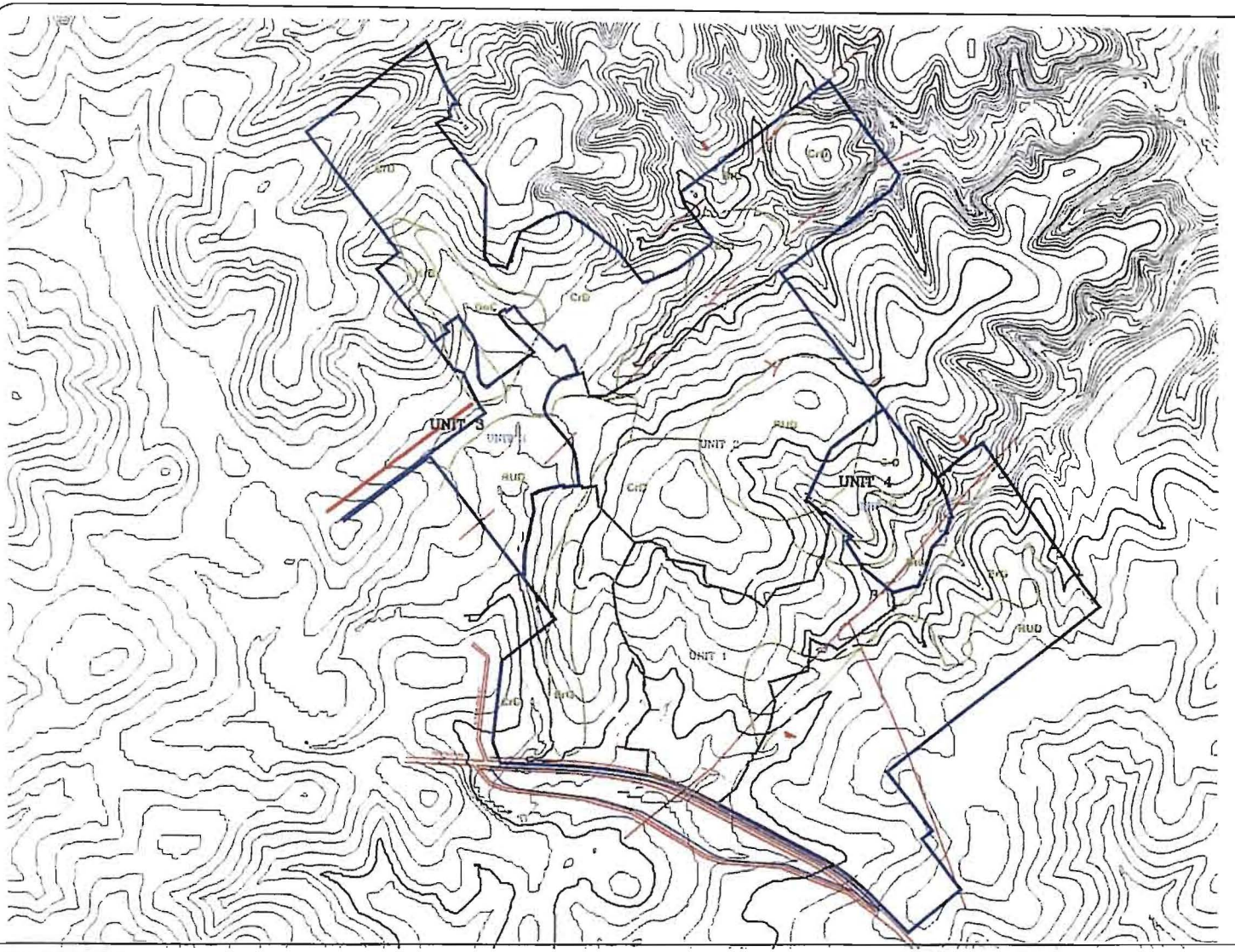
I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

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

STATE OF TEXAS
J. Scott Kuykendall
Geology
3346
LICENSED PROFESSIONAL GEOSCIENTIST

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

SCALE: NONE



LEGEND

BtG - BRACKETT-ROCK OUTCROP REAL COMPLEX, STEEP

CrD - COMFORT-ROCK OUT CROP COMPLEX, UNDULATING

DoC - DOSS SILTY CLAY, 1-5% SLOPES

ErG - ECKERT-ROCK OUTCROP COMPLEX, STEEP

KrB - KRUM CLAY 1-3% SLOPES

RUD - RUMPLE-COMFORT ASSOCIATION, UNDULATING

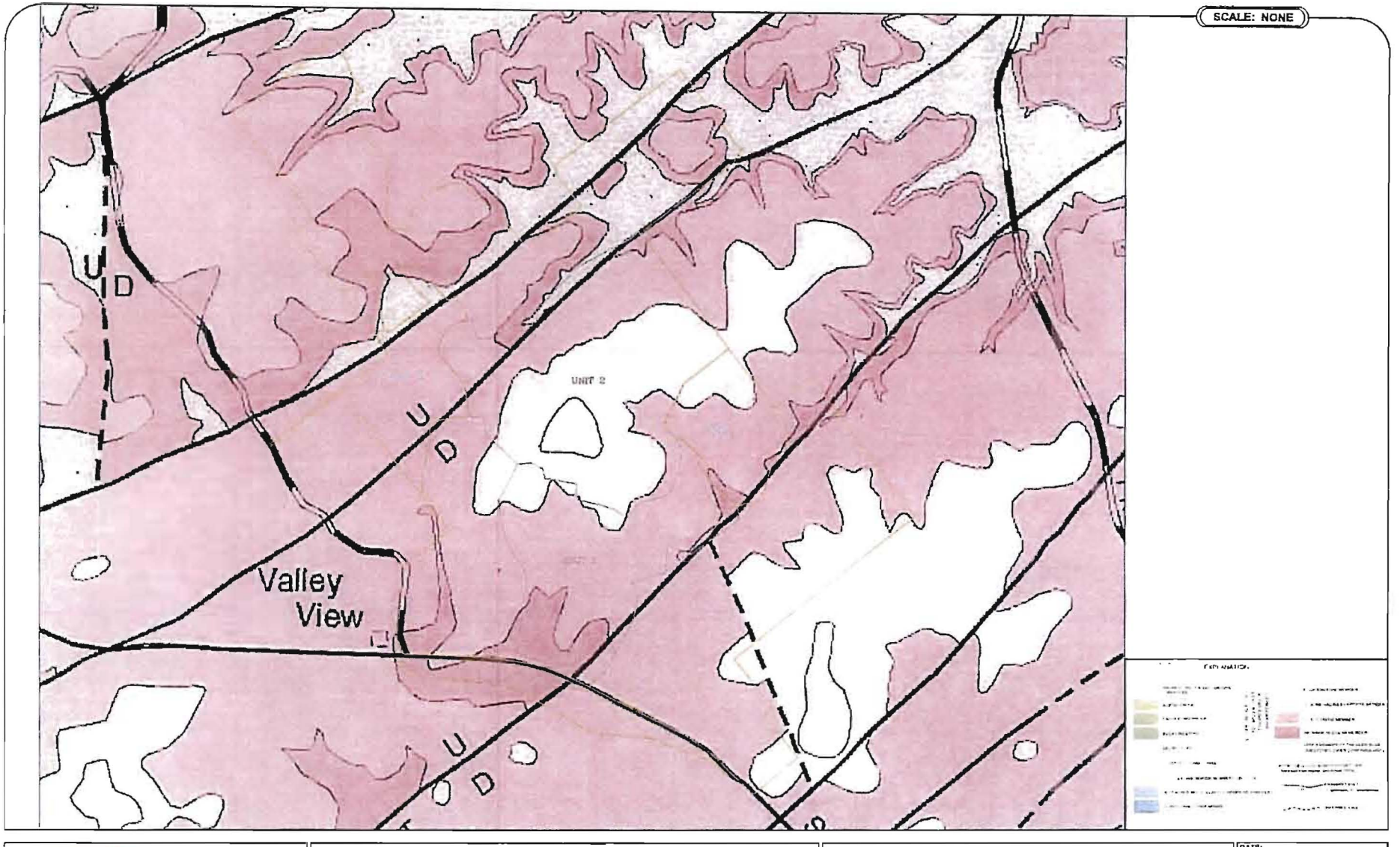
psi Information To Build On
Engineering Consulting Testing
THREE BURWOOD LANE
SAN ANTONIO, TEXAS 78216

SOILS MAP

VINTAGE OAKS AT THE VINYARD
UNITS 3 & 4

HIGHWAY 46
COMAL COUNTY, TEXAS

DATE:	08/02/10
DRAWN BY:	J. LEAL
PROJECT #:	0435364
DRAWING NAME:	0435364



Information To Build On
Engineering Consulting Testing
THREE BURWOOD LANE
SAN ANTONIO, TEXAS 78216

REGIONAL GEOLOGIC MAP

VINTAGE OAKS AT THE VINYARD
UNITS 3 & 4
HIGHWAY 46
COMAL COUNTY, TEXAS

DATE:	08/02/10
DRAWN BY:	J. LEAL
PROJECT #:	0435364
DRAWING NAME:	0435364

0 200 400 800
SCALE (FEET)

VINTAGE OAKS AT THE VINEYARD
OVERVIEW MAP
1" = 4000'

LEGEND:

- EXIST PROPERTY BOUNDARY
- EXIST FACE OF CURB
- 300 EXIST CONTOUR
- EXIST WATER FLOW DIRECTION
- 4.8% EXIST SLOPE
- PROP SENSITIVE FEATURE BUFFER ZONE
- 100-YEAR FLOODPLAIN

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1384

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
2/1/12

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN
CURRENT SITE PLAN

JOB: 6BSW001
DATE: JANUARY 2012
SCALE: 1" = 400'
INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

RECEIVED
FEB 10 2012
COUNTY ENGINEER

SHEET: 1 OF 6

Date: Jan 26, 2012, 9:55am User ID: ajackson
File: S:\Active Projects\6BSW003 VOV Unit 3\dwg\6BSW001-WPAP-ESPN-001.dwg

SCALE: NONE

psi Information To Build On
Engineering Consulting Testing
THREE BURWOOD LANE
SAN ANTONIO, TEXAS 78216

UNITS
3 & 4

VINTAGE OAKS AT THE VINYARD

HIGHWAY 46
COMAL COUNTY, TEXAS

DATE:	08/02/10
DRAWN BY:	J. LEAL
PROJECT #:	0435364
DRAWING NAME:	0435364

LOCATION MAP
NOT TO SCALE

SCALE:
1" = 400' HORIZONTAL

LEGEND	
U D	FAULT LINE
	BOUNDARY LINE
	FLOOD PLAIN
S-27	ROCK OUTCROP
	BOULDER FLOAT
Kek	LOWER CRETACEOUS EDWARDS KAINER FORMATION

GEOLOGIC ASSESSMENT
for
VINTAGE OAKS AT THE VINEYARD
UNIT 3

STATE OF TEXAS
Scott Kuykendall
Geology
3348
LICENSED
GEOSCIENTIST
1-11-11

psi Information To Build On
Engineering Consulting Testing
THREE BURWOOD LANE
SAN ANTONIO, TEXAS 78216

REVISIONS:
01

JOB NO. 0435384
FILE: 0435384-Unit 3
DATE: 11/05/10
DESIGN: -
DRAWN: J LEAL
CHECKED: S. Kuykendall
SHEET 1 OF 1

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: Vintage Oaks at the Vineyard Unit 3

RECEIVED
FEB 0 3 2011
COUNTY ENGINEER

REGULATED ENTITY INFORMATION

1. The type of project is:
   - X Residential: # of Lots: 140
   - ___ Residential: # of Living Unit Equivalents: ___
   - ___ Commercial
   - ___ Industrial
   - ___ Other: ___

2. Total site acreage (size of property): 205.2

3. Projected population: 370

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	490000	÷ 43,560 =	11.25
Parking	490000	÷ 43,560 =	11.25
Other paved surfaces	355449.6	÷ 43,560 =	8.16
Total Impervious Cover	1335549.6	÷ 43,560 =	30.66
Total Impervious Cover ÷ Total Acreage x 100 =			14.94

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:

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

15. Wastewater will be disposed of by:

X **On-Site** Sewage Facility (OSSF/Septic Tank):

X **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.

X Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

__ Sewage Collection System (Sewer Lines):

__ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

__ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

__ The SCS was previously submitted on _____.

__ The SCS was submitted with this application.
__ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

The sewage collection system will convey the wastewater to the _____ (name) Treatment Plant. The treatment facility is:
__ existing.
__ proposed.

16. 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" = 400 '.

18. 100-year floodplain boundaries
X Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
__ No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):
FEMA FIRM 48091C0245F Effective 09/02/2009

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 ____(#) 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:
X All **sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.
__ No **sensitive** geologic or manmade features were identified in the Geologic Assessment.
__ **ATTACHMENT D - Exception to the Required Geologic Assessment**. 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Heath L. Woods 1/27/11
Signature of Customer/Agent Date

Attachment A

Factors Affecting Water Quality

Potential sources of pollution that may be expected to affect the quality of storm water discharges from the site during construction include:

- Soil erosion due to clearing of site.
- Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings.
- Hydrocarbons from asphalt paving.
- Trash and litter from construction workers and material wrappings.
- Concrete truck washout.
- Tar, fertilizers, cleaning solvents, detergents, and petroleum based products.

Potential sources of pollution that may be expected to affect the quality of storm water discharges from the site after development include:

- Oil, grease fuel and hydraulic fluid contamination from vehicle drippings.
- Dirt and dust from vehicles.
- Trash and litter.

Attachment B

Volume and Character of Stormwater

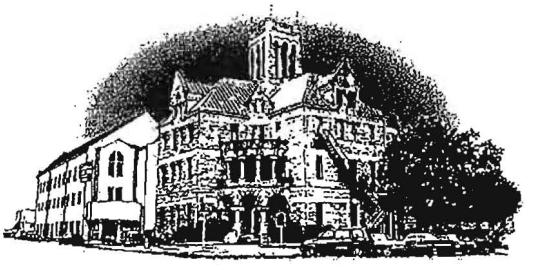
The overall contributing drainage area for Unit 3 of this project is comprised of 4 sub-basins which total to approximately 933 acres. The stormwater runoff for the pre-project conditions of Unit 3 would be across rocky soil, with native grasses. The site has an average slope ranging from 1% to 20%. Using SCS methods peak discharges for each sub-basin were calculated. A summary of the pre- and post-project conditions follows.

100-Year Peak Discharge Summary					
Sub-Basin	Area (acres)	Pre-Project Curve Number	Post-Project Curve Number	Pre-Project Discharge (cfs)	Post-Project Discharge (cfs)
1-3	344.20	71	73	776.42	806.87
1-4A	152.20	75	79	861.71	161.00
1-4B	136.20	71	83	600.32	723.23
1-4C	300.80	71	83	1015.80	1225.24
Unit 3 Outfall				2591.97	2484.91

The characteristics of the post-project stormwater generated onsite will be influenced by site features that generate non-point pollution. This non-point pollution will include oil and grease from the paved areas, suspended solids, sedimentation, and nutrients for lawn care, and possible pesticides and herbicides. The stormwater runoff will flow across pervious areas of rocky soil, with native grasses before discharging into the Dry Comal Creek.

Attachment C

OSSF Suitability Letter from Authorized Agent



Comal County

OFFICE OF COMAL COUNTY ENGINEER

January 26, 2011

Mr. Stephen Jackson
M&S Engineering, LLC
P.O. Box 970
Spring Branch, TX 78070

Re: Vintage Oaks at the Vineyard Unit 3 On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Jackson:

In accordance with TAC §213.5(b)(4)(F)(ii), Comal County has found that the entire referenced site (except for areas listed below) is suitable for the use of private sewage facilities and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified in TAC §285.40-42 based on the following information submitted to our office on January 26, 2011:

- The Geologic Assessment, prepared by Professional Service Industries, Inc.
- The Water Pollution Abatement Plan, prepared by M&S Engineering, LLC

Areas that are not Suitable

The Geologic Assessment identified 2 recharge features as sensitive. The Water Pollution Abatement Plan gave the following Permanent Pollution Abatement Measures to prevent pollutants from entering said features:

Feature ID	Latitude	Longitude	Permanent Pollution Abatement Measure
S-9	N 29°47'21"	W 98°16'26"	50' – 200' Buffer
S-17	N 29°47'3"	W 98°16'25"	50' – 200' Buffer

In accordance with the Water Pollution Abatement Plan, the areas within these 50' buffers are not suitable for the use of any aspect of an On-Site Sewage Facility. In addition, in accordance with TAC §285.91, Table X, Minimum Required Separation Distances for soil absorption systems, unlined ET beds, surface application (edge of spray area), and drip irrigation disposal systems are not suitable within 150' of these sensitive features.

195 David Jonas Drive • New Braunfels, Texas 78130 • (830) 608-2090 FAX (830) 608-2009

Moreover, according to TAC §285.41(b), Bluegreen Southwest One, L.P., the owner of the referenced site, must inform, in writing, each prospective purchaser, lessee, or renter of the following:

- All lots within Vintage Oaks at the Vineyard Unit 3 are subject to the terms and conditions of TAC §285.40-42;
- A Permit to Construct is required from Comal County before an OSSF can be constructed in Vintage Oaks at the Vineyard Unit 3;
- A License to Operate is required from Comal County before an OSSF can be operated in Vintage Oaks at the Vineyard Unit 3;
- That an application for a water pollution abatement plan, as defined in TAC §213, has been made, whether it has been approved, and if any restrictions or conditions have been placed on that approval; and
- Minimum separation distances, as outlined in Table 10 of TAC §285.91, from the sensitive recharge features listed above.

Furthermore, according to TAC §285.42(a), if any recharge feature, not listed above, is discovered during construction of an OSSF, all regulated activities near the feature shall be suspended immediately. The owner shall immediately notify the TCEQ San Antonio office of the discovery of the feature. All activities regulated under TAC §213 shall not proceed near the feature until Comal County, in conjunction with the TCEQ San Antonio office, has reviewed and approved a plan proposed to protect the feature, the structural integrity of the OSSF, and the water quality of the aquifer. The plan shall be sealed, signed, and dated by a professional engineer.

If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

Robert Boyd, P.E.
Comal County Assistant Engineer

cc: Donna Eccleston, Comal County Commissioner Precinct No. 1
Betty Lien, Comal County Subdivision Coordinator

Attachment D

Exception To The Required Geologic Assessment

NOT APPLICABLE

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.

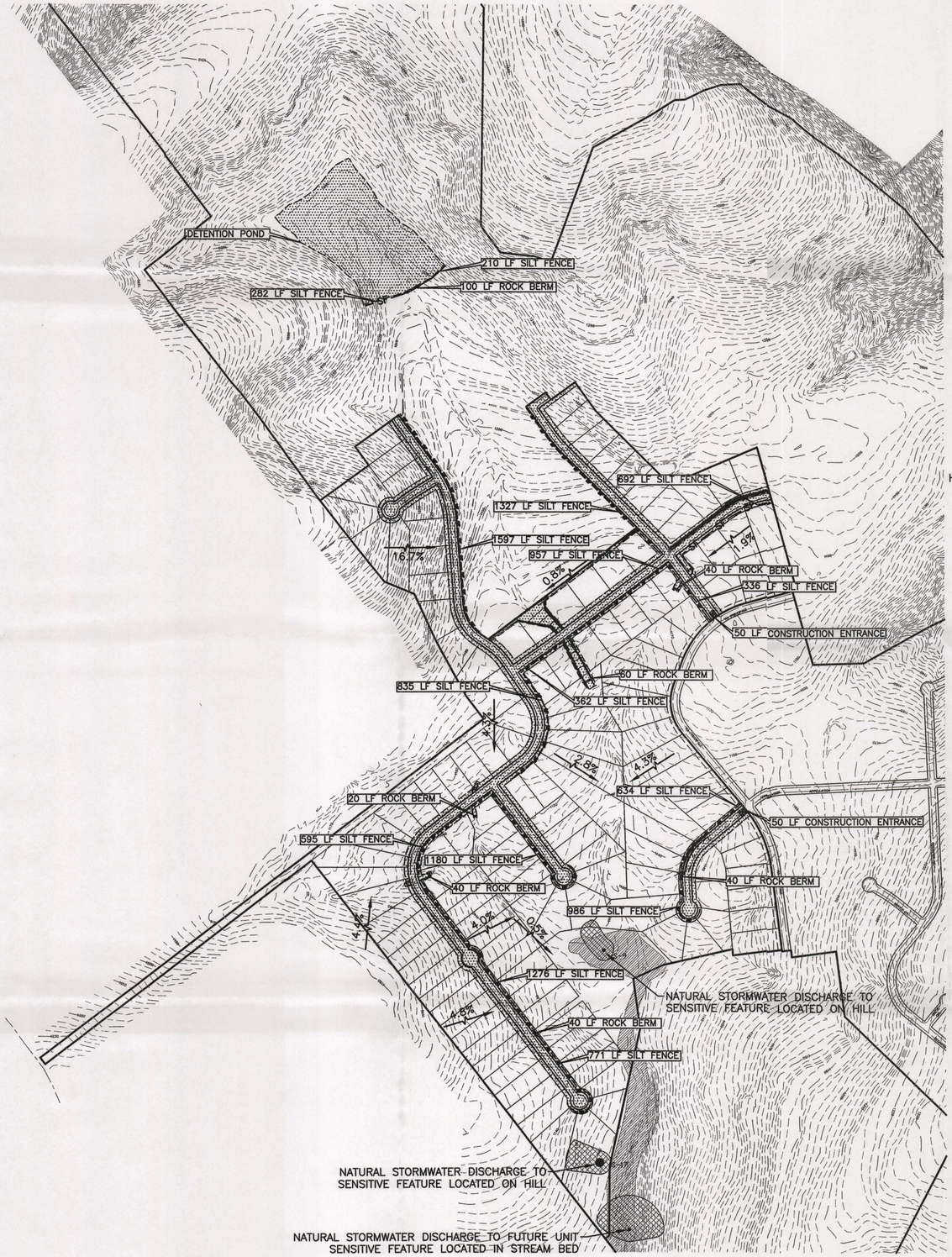
12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

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

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



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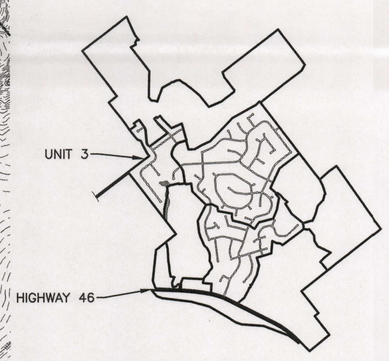
SCALE (FEET)



VINTAGE OAKS AT THE VINEYARD
OVERVIEW MAP
1" = 4000'

LEGEND:

- EXIST PROPERTY BOUNDARY
- EXIST FACE OF CURB
- EXIST CONTOUR
- PROP CONTOUR
- PROP FACE OF CURB
- PROP RIGHT-OF-WAY
- PROP SILT FENCE
- PROP DRAINAGE EASEMENT
- PROP WATER FLOW DIRECTION
- PROP SLOPE
- PROP SENSITIVE FEATURE BUFFER ZONE
- PROP DISTURBED AREA
- 100-YEAR FLOODPLAIN

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE BUILDING, PARKING, AND SAND FILTER. THESE DISTURBANCES CAN BE ATTRIBUTED TO, BUT NOT LIMITED TO, CLEARING AND GRUBBING RELATED TO BUILDING PAD, DRIVEWAY, UTILITY INSTALLATION, AND LANDSCAPE PREPARATION. THE REMAINING PORTIONS OF THE SITE NOT INVOLVED IN ANY OF THESE ACTIVITIES WILL REMAIN UNDISTURBED.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE INSTALLED TO PROVIDE A STABLE ENTRANCE/EXIT CONDITION FROM THE CONSTRUCTION SITE TO KEEP MUD AND SEDIMENT OFF PUBLIC ROADWAYS (REFER TO THE EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL FOR CONSTRUCTION INFORMATION).

SOIL STABILIZATION NOTE

TEMPORARY EROSION CONTROL MEASURES WILL BE USED TO STABILIZE DISTURBED AREAS (REFER TO EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL FOR CONSTRUCTION OF EROSION CONTROL MEASURES). TRAFFIC WILL BE ROUTED AROUND THESE AREAS TO REDUCE THE EXTENT OF DISTURBED AREAS BY REDUCING SEDIMENT LOADS TO SURFACE WATER.

BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.

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File: S:\Active Projects\6BSW001 VOV Unit 3\dwg\6BSW001-WPAP-SPN-001.dwg

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1384

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

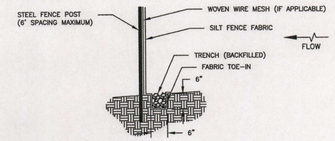
STATE OF TEXAS
HEATH L WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
2/1/11

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN
SITE PLAN

JOB: 6BSW001
DATE: JANUARY 2011
SCALE: 1" = 400'
INTERNAL REVIEW:
DESIGN: SRJ
PEER:
PM:
DM: L&K
OTHER:

SHEET: 1 OF 5



NOTES:

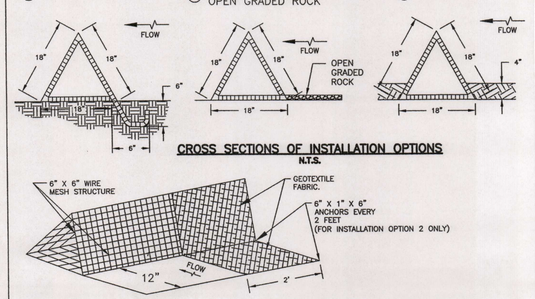
1. TRIANGULAR SEDIMENT FILTER DIKES MAY BE SUBSTITUTED FOR SILT FENCE IN AREAS WHERE INSTALLATION OF SILT FENCE IS NOT POSSIBLE OR WHERE VEHICLE ACCESS MUST BE MAINTAINED PROVIDED THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE ACRE.
2. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE 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/IN^2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND A MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
3. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT^2, AND BRINDELL HARDNESS EXCEEDING 140.
4. WOVEN WIRE BACKING IS REQUIRED IN THE EDWARDS AQUIFER RECHARGE AND CONTRIBUTING ZONE; OPTIONAL ELSEWHERE. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2"X4" WELDED WIRE, 12 GAUGE MINIMUM.
5. SILT FENCE SHOULD BE INSTALLED FOLLOWING THE CONTOURS AS CLOSE AS POSSIBLE. THE ENDS SHOULD BE CURVED UPSTREAM TO CREATE AN AREA OF WATER IMPOUNDMENT AND PREVENT FLOW FROM ESCAPING AROUND THE FENCE.
6. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT AND SPACED NOT MORE THAN 6 FEET ON CENTER.
7. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TREATED IN (E.G., PAVEMENT OR ROCK OUTCROP) WEIGHT FABRIC FLAP WITH 3" OF WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
8. 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.
9. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POSTS OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. WHERE ENDS MEET, OVERLAP FABRIC 3-FEET AND SECURELY FASTEN.

MAINTENANCE AND REMOVAL:

12. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
13. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE. 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.

SILT FENCE

EXHIBIT A1



NOTES:

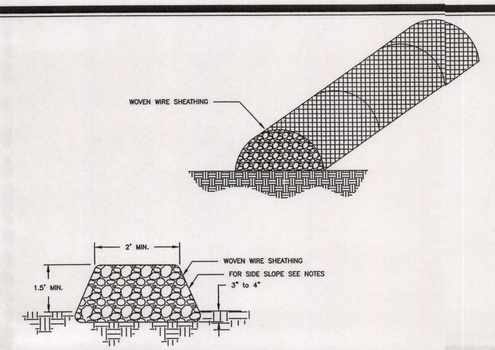
1. DIKES MAY BE MOVED TO ALLOW VEHICLE TRAFFIC, THEN REINSTALLED TO MAINTAIN SEDIMENT CONTROL.
2. GEOTEXTILE FABRIC SHOULD BE THE SAME SPECIFICATIONS AS USED IN FOR SILT FENCES.
3. THE DIKE STRUCTURE SHOULD BE 6 GAUGE 6" X 6" WIRE MESH FOLDED INTO TRIANGULAR FORM 18" ON EACH SIDE, WRAPPED IN GEOTEXTILE FABRIC.
4. DIKES SHALL BE PLACED IN A ROW PARALLEL TO CONTOURS, WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
5. FILTER FABRIC SHOULD LAP OVER ENDS 6" TO COVER DIKE TO DIKE JUNCTION; EACH JUNCTION SHOULD BE SECURED BY SHOAT RINGS.
6. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
7. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 3"-5" OPEN GRADED ROCK, OR TOED-IN 6" WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 4".
8. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 6 INCH WIRE STAPLES ON 2 FOOT CENTERS ON BOTH EDGES AND SKIRT, OR STAKED USING ⅜ INCH DIAMETER REBAR WITH TEE ENDS.

MAINTENANCE AND REMOVAL:

9. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF SIX INCHES, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
10. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN NOTE 8 ABOVE.

TRIANGULAR FILTER DIKE

EXHIBIT A2



NOTES:

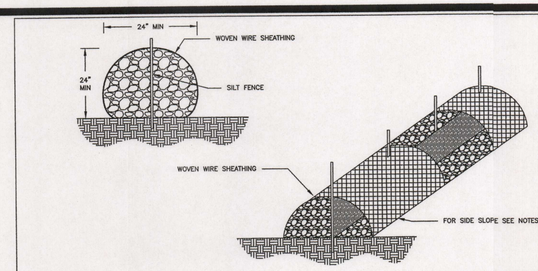
1. USE ONLY CLEAN, OPEN GRADED ROCK 5-8 INCH DIAMETER FOR STREAM FLOW CONDITIONS; USE OPEN GRADED ROCK 3-5 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED.
3. THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
4. FOR INSTALLATIONS IN ACTIVE STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
5. ROCK BERMS PLACED IN STATE RIGHT OF WAY WILL BE INSTALLED WITH A MAXIMUM SLOPE OF 6:1 OR FLATTER FOR ALL SLOPES PARALLEL TO THE FRONTAGE ROAD EDGE OF PAVEMENT.

MAINTENANCE AND REMOVAL:

6. REPAIR ANY LOOSE WIRE SHEATHING.
7. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION
8. THE STONE AND/OR FABRIC CORE - WOVEN WIRE SHEATHING, SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
9. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
10. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK BERM

EXHIBIT A3



NOTES:

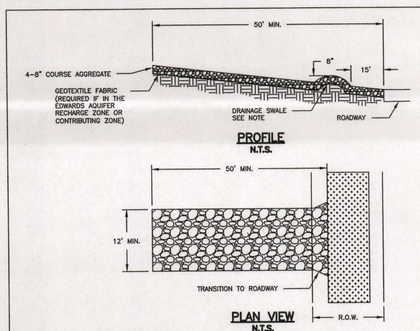
1. SILT FENCE FABRIC, FENCE POSTS, AND WOVEN WIRE MATERIAL SHOULD BE AS SPECIFIED IN THE SILT FENCE DETAIL.
2. BERM WOVEN WIRE SHEATHING AND ROCK FILL SHOULD BE AS SPECIFIED IN THE ROCK BERM DETAIL.
3. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE.
4. INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT, AS WITH A NORMAL SILT FENCE.
5. PLACE THE ROCK ALONG THE SHEATHING ON BOTH SIDES OF THE SILT FENCE AS SHOWN, TO A HEIGHT NOT LESS THAN 24 INCHES.
6. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
7. ROCK BERMS PLACED IN STATE RIGHT OF WAY WILL BE INSTALLED WITH A MAXIMUM SLOPE OF 6:1 OR FLATTER FOR ALL SLOPES PARALLEL TO THE FRONTAGE ROAD PAVEMENT.

MAINTENANCE AND REMOVAL:

8. THE HIGH SERVICE ROCK BERM SHOULD BE REMOVED WHEN THE SITE IS REVEGETATED OR OTHERWISE STABILIZED OR IT MAY REMAIN IN PLACE AS A PERMANENT BMP IF DRAINAGE IS ADEQUATE.
9. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE ON ROCK BERM.
10. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER.
11. REPAIR ANY LOOSE WIRE SHEATHING.
12. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
13. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
14. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

HIGH SERVICE ROCK BERM

EXHIBIT A4



NOTES:

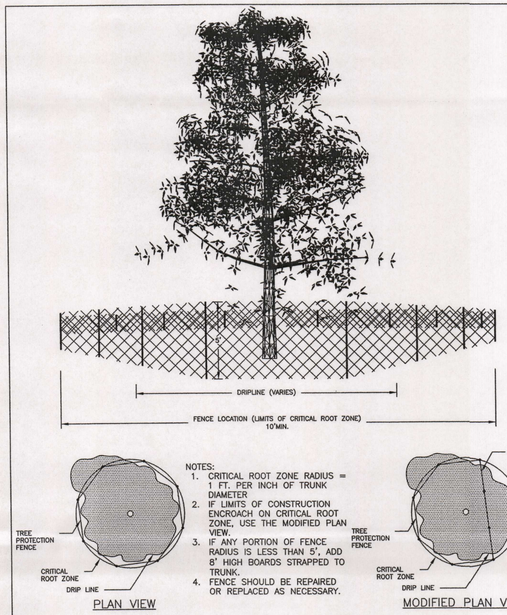
1. THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION WITH A MINIMUM THICKNESS OF 8 INCHES.
2. IF THE SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 8 INCHES HIGH WITH 3:1 (H:V) SIDESLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OX/YD^2, A MULLEN BURST RATING OF 140 LB/IN^2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. THE MINIMUM WIDTH OF THE ENTRANCE SHOULD BE 12 FT OR THE FULL WIDTH OF THE EXIT ROADWAY, WHICHEVER IS GREATER.
5. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
6. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH 4 INCH MINIMUM CRUSHED STONE OR COMMERCIAL RACK WHICH DRAINS TO A SEDIMENT TRAP OR BASIN.

MAINTENANCE:

7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. 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 ROADWAY MUST BE REMOVED IMMEDIATELY.
8. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE

EXHIBIT A5

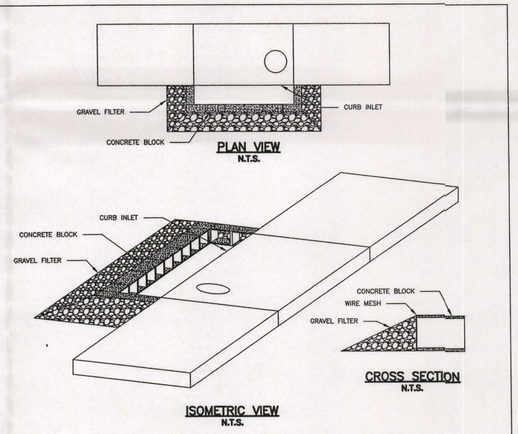


NOTES:

1. CRITICAL ROOT ZONE RADIUS = 1 FT. PER INCH OF TRUNK DIAMETER
2. IF LIMITS OF CONSTRUCTION ENCROACH ON CRITICAL ROOT ZONE, USE THE MODIFIED PLAN VIEW.
3. IF ANY PORTION OF FENCE RADIUS IS LESS THAN 5', ADD 8' HIGH BOARDS STRAPPED TO TRUNK.
4. FENCE SHOULD BE REPAIRED OR REPLACED AS NECESSARY.

TREE PROTECTION CONSTRUCTION FENCE

EXHIBIT A6



NOTES:

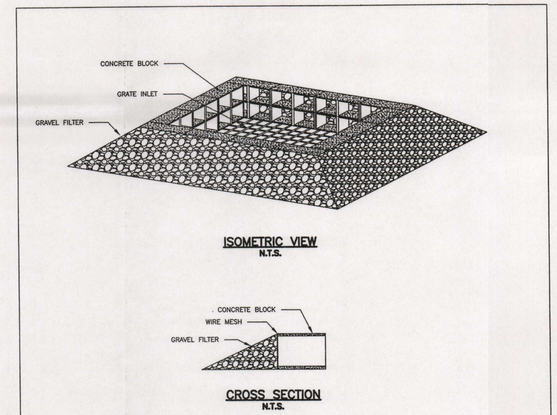
1. TWO CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ABUTTING THE CURB AT EITHER SIDE OF THE INLET OPENING.
2. A 2" X 4" STUD SHOULD BE CUT AND PLACED THROUGH THE OUTER HOLES OF EACH SPACER BLOCK TO HELP KEEP THE FRONT BLOCKS IN PLACE.
3. CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ACROSS THE FRONT OF THE INLET AND ABUTTING THE SPACER BLOCKS AS SHOWN ABOVE.
4. WIRE MESH WITH 1/2" OPENINGS SHOULD BE PLACED OVER THE OUTSIDE VERTICAL FACE OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS.
5. COARSE AGGREGATE SHOULD BE PILED AGAINST THE WIRE TO THE TOP OF THE BARRIER.

MAINTENANCE:

6. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT S THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND/OR REPLACED.

BLOCK AND GRAVEL CURB INLET FILTER

EXHIBIT A7



NOTES:

1. PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED, DEPENDING ON DESIGN NEEDS, BY STACKING COMBINATIONS OF 4-INCH, 8-INCH AND 12-INCH WIDE BLOCKS. THE BARRIER OF BLOCKS SHOULD BE BETWEEN 12 AND 24 INCHES HIGH.
2. WIRE MESH SHOULD BE PLACED OVER THE OUTSIDE VERTICAL FACE OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. WIRE MESH WITH 1/2-INCH OPENINGS SHOULD BE USED.
3. STONE SHOULD BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK BARRIER.

MAINTENANCE:

4. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND/OR REPLACED.

BLOCK AND GRAVEL DROP INLET FILTER

EXHIBIT A8

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M & S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1384

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
1/27/11

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN DETAILS

JOB: 6BSW001
DATE: JANUARY 2011
SCALE: N.T.S.

INTERNAL REVIEW:
DESIGN: SRO
PEER: JM
PM:
DM: BK
OTHER:

SHEET: 2 OF 5

Date: Jan 27, 2011, 7:46am User ID: sjackson
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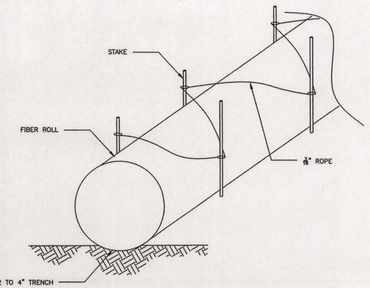
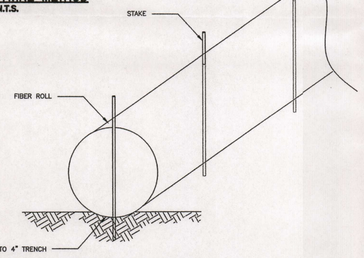


STAKE AND TWINE METHOD
N.T.S.



CENTER PUNCH METHOD
N.T.S.

FIBER ROLLS (1 OF 2)

EXHIBIT A9

NOTES:

1. INSTALL FIBER ROLLS AS SHOWN ON PLANS AND AS NECESSARY ALONG THE TOE, FACE, AND AT GRADE BREAKS OF EXPOSED AND ERODIBLE SLOPES TO SHORTEN SLOPE LENGTH AND SPREAD RUNOFF AS SHEET FLOW, AND DOWN-SLOPE OF EXPOSED SOIL AREAS, AND AROUND TEMPORARY STOCK PILES.
2. CORE MATERIAL SHOULD BE BIODEGRADABLE OR RECYCLABLE. MATERIAL MAY BE COMPOST, MULCH, ASPEN WOOD FIBERS, SHIPPED SITE VEGETATION, AGRICULTURAL RICE OR WHEAT STRAW, COCONUT FIBER, 100% RECYCLABLE FIBERS, OR SIMILAR MATERIALS.
3. CONTAINMENT MESH SHOULD BE 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTODEGRADABLE PLASTIC, POLYESTER, OR SIMILAR MATERIAL. WHEN THE FIBER ROLE WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM USE BIODEGRADABLE OR PHOTODEGRADABLE MESH. FOR TEMPORARY INSTALLATION RECYCLABLE MESH IS RECOMMENDED.
4. LOCATE FIBER ROLLS ON LEVEL CONTOURS SPACED AS FOLLOWS:

   SLOPE INCLINATION OF 4:1 (H:V) OR FLATTER:
   FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 20 FT.

   SLOPE INCLINATION OF 4:1 TO 2:1 (H:V):
   FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 15 FT (A CLOSER SPACING IS MORE EFFECTIVE)

   SLOPE INCLINATION OF 2:1 (H:V) OR GREATER:
   FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 10 FT. (A CLOSER SPACING IS MORE EFFECTIVE)
5. TURN THE ENDS OF THE FIBER ROLL UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE ROLL.
6. SECURE FIBER ROLLS INTO A 2 TO 4 IN. DEEP TRENCH WITH A WIDTH EQUAL TO THE DIAMETER OF THE FIBER ROLL.
7. SECURE FIBER ROLL USING EITHER THE STAKE AND TWINE OR CENTER PUNCH METHOD:

   STAKE AND TWINE METHOD:
   PARTIALLY POUND IN STAKES EVERY 2' ON ALTERNATING SIDES OF FIBER ROLL. WIND 3/16" BRAIDED ROPE FROM STAKE TO STAKE, LOOPING ONCE AROUND EACH STAKE. TORQUE DOWN STAKES TO PROVIDE TENSION ON THE ROPE, HOLDING THE ROLL IN PLACE.

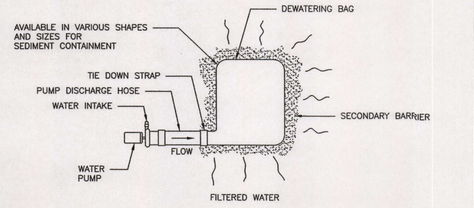
   CENTER PUNCH METHOD:
   DRIVE STAKES AT THE END OF EACH FIBER ROLL AND SPACED 4 FT MAXIMUM ON CENTER. USE STEEL BAR TO DRIVE PILOT HOLE AS NECESSARY.
8. USE WOOD STAKES WITH A NOMINAL CLASSIFICATION OF 0.75 BY 0.75 IN. AND MINIMUM LENGTHS OF 24 IN.
9. IF MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE ROLLS SHOULD BE OVERLAPPED, NOT ABUTTED.

MAINTENANCE:

10. REPAIR OF REPLACE SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER ROLLS.
11. IF THE FIBER ROLL IS USED AS A SEDIMENT CAPTURE DEVICE, OR AS AN EROSION CONTROL DEVICE TO MAINTAIN SHEET FLOWS, SEDIMENT THAT ACCUMULATES BEHIND THE ROLE MUST BE PERIODICALLY REMOVED IN ORDER TO MAINTAIN ITS EFFECTIVENESS. SEDIMENT SHOULD BE REMOVED WHEN THE ACCUMULATION REACHES ONE-HALF THE DESIGNATED SEDIMENT STORAGE DEPTH, USUALLY ONE-HALF THE DISTANCE BETWEEN THE TOP OF THE FIBER ROLL AND THE ADJACENT GROUND SURFACE. SEDIMENT REMOVED DURING MAINTENANCE MAY BE INCORPORATED INTO EARTHWORK ON THE SITE OR DISPOSED OF AT AN APPROPRIATE LOCATION.

FIBER ROLLS (2 OF 2)

EXHIBIT A10



NOTES:

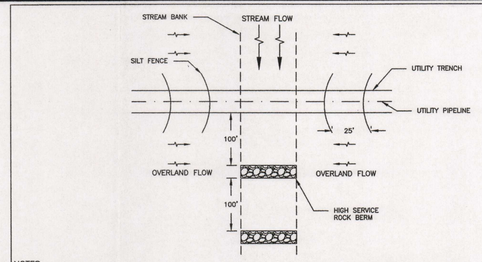
1. WATER IS PUMPED INTO ONE SIDE OF THE BAG AND SEEPS THROUGH THE BOTTOM AND SIDES OF THE BAG.
2. A SECONDARY BARRIER, SUCH AS A ROCK FILTER BED OR STRAW/HAY BALE BARRIER, IS PLACED BENEATH AND BEYOND THE EDGES OF THE BAG TO CAPTURE SEDIMENTS THAT ESCAPE THE BAG. FOR GREATEST EFFICIENCY, THE BAG SHOULD BE PLACED ON A BED OF AGGREGATE.
3. THE DEWATERING BAG SHOULD BE INSTALLED ON A SLIGHT SLOPE WITH THE INLET ON THE UPHILL SIDE.

MAINTENANCE:

4. REPLACE THE BAG WHEN IT NO LONGER FILTERS SEDIMENT OR PASSES WATER AT A REASONABLE RATE. THE BAG IS DISPOSED OF OFFSITE.
5. SEDIMENT REMOVED DURING THE MAINTENANCE OF A DEWATERING DEVICE MAY BE EITHER SPREAD ONSITE AND STABILIZED, OR DISPOSED OF AT A DISPOSAL SITE.
6. SEDIMENT THAT IS COMMINGLED WITH OTHER POLLUTANTS MUST BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

DEWATERING BAG DETAIL

EXHIBIT A11

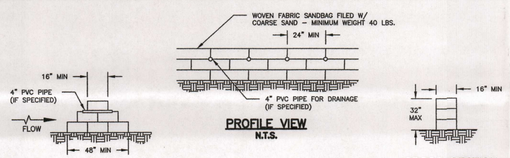


NOTES:

1. UNLESS PRIOR APPROVAL IS RECEIVED FROM TCEQ, UTILITY LINE CREEK CROSSINGS SHOULD BE MADE PERPENDICULAR TO THE CREEK FLOWLINE.
2. IF BASEFLOW IS PRESENT, TCEQ PERSONNEL SHOULD BE CONSULTED, AS IT MAY BE NECESSARY TO DIVERT OR PUMP WATER AROUND THE CONSTRUCTION AREA.
3. EVERY EFFORT SHOULD BE MADE TO KEEP THE ZONE OF IMMEDIATE CONSTRUCTION FREE OF SURFACE WATER. FOR CONSTRUCTION IN THE CREEK CHANNEL, A PIPE OF ADEQUATE SIZE TO DIVERT NORMAL STREAM FLOW SHOULD BE PROVIDED AROUND THE CONSTRUCTION AREA. DIVERSION MAY BE BY PUMPING OR GRAVITY FLOW USING TEMPORARY DAMS.
4. WHERE WATER MUST BE PUMPED FROM THE CONSTRUCTION ZONE, DISCHARGES SHOULD BE IN A MANNER THAT WILL NOT CAUSE SCOURING OR EROSION. ALL DISCHARGES SHALL BE ON THE UPSTREAM OR UPSLOPE SIDE OF EMPLACED EROSION CONTROL STRUCTURES. IF DISCHARGES ARE NECESSARY IN EASILY ERODIBLE AREAS, A STABILIZED, ENERGY-DISSIPATING DISCHARGE APRON SHALL BE CONSTRUCTED OF RIPRAP WITH MINIMUM STONE DIAMETER OF 6 INCHES AND MINIMUM DEPTH OF 12 INCHES. SIZE OF THE APRON IN LINEAR DIMENSIONS SHALL BE APPROXIMATELY 10 TIMES THE DIAMETER OF THE DISCHARGE PIPE.
5. BEFORE ANY TRENCHING, INSTALL TWO HIGH SERVICE ROCK BERMS AT 100- FT SPACING ACROSS THE CHANNEL (PERPENDICULAR TO THE FLOWLINE) DOWNSTREAM OF THE PROPOSED TRENCH. THESE BERMS SHOULD BE LOCATED BETWEEN 100 AND 300 FEET DOWNSTREAM OF THE PROPOSED TRENCH. LAY PIPE OR OTHER UTILITY LINE AND BURY AS SOON AS POSSIBLE AFTER TRENCHING.
6. AFTER INSTALLATION IS COMPLETE (OR AT THE END OF WORK DAY, IF INSTALLATION CANNOT BE COMPLETED BY END OF DAY), INSTALL SILT FENCING ALONG TRENCH LINE ON EITHER SIDE OF CREEK AT 25- FT INTERVALS, AS SHOWN.
7. MATERIAL EXCAVATED FROM THE TRENCH IN THE CREEK CHANNEL SHOULD NOT BE DEPOSITED ON THE CHANNEL BANKS. EXCAVATION SHOULD BE HAULED OUT OF THE CHANNEL OR USED IN BACKFILL OF OPEN TRENCH. NO LOOSE EXCAVATED MATERIAL SHOULD BE LEFT IN THE CHANNEL AT THE END OF A WORK DAY.
8. A CONCRETE CAP SHOULD BE PLACED OVER BURIED PIPE WITHIN THE CREEK, AND THE STREAMBED SHOULD BE RESTORED TO PROPER GRADE.
9. REVEGETATE THE DISTURBED AREA USING APPROPRIATE NATIVE OR ADAPTED GRASS SPECIES APPLIED EITHER WITH HYDROMULCH AT TWICE THE NORMAL APPLICATION RATE OR INCORPORATED WITH EROSION PROTECTION MATTING.

UTILITY LINE CREEK CROSSING

EXHIBIT A12



PROFILE VIEW
N.T.S.

CROSS SECTION (STREAM BED)
N.T.S.

CROSS SECTION (NO FLOW)
N.T.S.

NOTES:

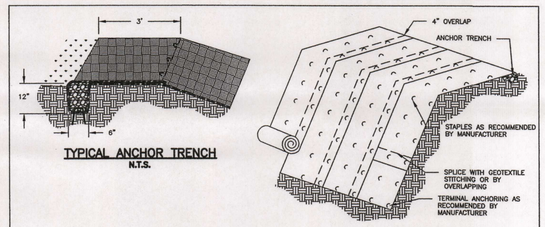
1. THE SAND BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BURLAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD², MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 TO 30 INCHES, WIDTH SHOULD BE 16 TO 18 INCHES AND THICKNESS SHOULD BE 6 TO 8 INCHES.
3. SANDBAGS SHOULD BE FILLED WITH COARSE GRADE SAND, FREE FROM DELETERIOUS MATERIAL. ALL SAND SHOULD PASS THROUGH A NO. 10 SIEVE. THE FILLED BAG SHOULD HAVE AN APPROXIMATE WEIGHT OF 40 POUNDS.
4. OUTLET PIPE (IF SPECIFIED) SHOULD BE SCHEDULE 40 OR STRONGER PVC HAVING A NOMINAL INTERNAL DIAMETER OF 4 INCHES.
5. IF INSTALLED IN A STREAM BED, THE BERM SHOULD HAVE A MINIMUM HEIGHT OF 18 INCHES, MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE TO THE TOP OF THE BERM.
6. IF INSTALLED IN STREAM BED, THE BERM SHOULD HAVE A MINIMUM WIDTH OF 48 INCHES MEASURED AT THE BOTTOM OF THE BERM AND 16 INCHES MEASURED AT THE TOP OF THE BERM.
7. IF INSTALLED IN STREAM BED, THE BASE OF THE BERM SHOULD HAVE AT LEAST 3 SANDBAGS. THESE CAN BE REDUCED TO 2 AND 1 BAG IN THE SECOND AND THIRD ROWS RESPECTIVELY.
8. FOR EACH ADDITIONAL 6 INCHES OF HEIGHT, AN ADDITIONAL SANDBAG MUST BE ADDED TO EACH ROW WIDTH.
9. RUNOFF WATER SHOULD FLOW OVER THE TOPS OF THE SANDBAGS OR THROUGH 4 INCH DIAMTER PVC PIPES EMBEDDED BELOW THE TOP LAYER OF THE BAGS (IF SPECIFIED).
10. WHEN A SANDBAG IS FILLED WITH MATERIAL, THE OPEND END OF THE SANDBAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.

MAINTENANCE AND REMOVAL:

11. THE SANDBAGS SHOULD BE RESHAPED OR REPLACED AS NEEDED DURING INSPECTION.
12. WHEN THE SILT REACHES 6 INCHES, THE ACCUMULATED SILT SHOULD BE REMOVED AND DISPOSED OF AT AN APPROVED SITE IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
13. THE SANDBAG BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED; REMOVAL SHOULD BE DONE BY HAND.

SAND BAG BERM

EXHIBIT A13



TYPICAL ANCHOR TRENCH
N.T.S.

TYPICAL SLOPE INSTALLATION
N.T.S.

TXDOT SOIL RETENTION BLANKET CLASSIFICATIONS

CLASS 1: SLOPE PROTECTION
- TYPE A - SLOPES 1:3 (V:H) OR FLATTER - CLAY SOILS
- TYPE B - SLOPES 1:3 (V:H) OR FLATTER - SANDY SOILS
- TYPE C - SLOPES STEEPER THAN 1:3 (V:H) - CLAY SOILS
- TYPE D - SLOPES STEEPER THAN 1:3 (V:H) - SANDY SOILS

CLASS 2: FLEXIBLE CHANNEL LINER
- TYPE E - SHEAR STRESS RANGE 0-2 POUNDS PER SQUARE FOOT
- TYPE F - SHEAR STRESS RANGE 0-4 POUNDS PER SQUARE FOOT
- TYPE G - SHEAR STRESS RANGE 0-6 POUNDS PER SQUARE FOOT
- TYPE H - SHEAR STRESS RANGE 0-8 POUNDS PER SQUARE FOOT
- TYPE I - SHEAR STRESS RANGE 0-10 POUNDS PER SQUARE FOOT
- TYPE J - SHEAR STRESS RANGE 0-12 POUNDS PER SQUARE FOOT

NOTES:

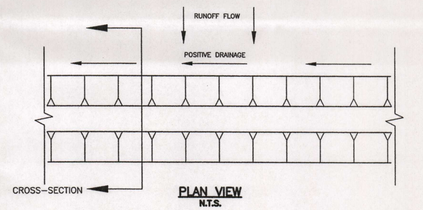
1. THE CONTRACTOR HAS THE OPTION OF UTILIZING TXDOT APPROVED PRODUCTS IN ACCORDANCE WITH THE CLASS AND TYPE AS SPECIFIED ON THE PLANS. THE APPROVED PRODUCT LIST AS OF OCTOBER 2009 CAN BE FOUND IN THE SWPPP SECTION 'STRUCTURAL AND NON-STRUCTURAL CONTROLS.' THE CURRENT APPROVED PRODUCT LIST MAY BE FOUND ON TXDOT'S WEB PAGE:
   HTTP://WWW.DOT.STATE.TX.US/BUSINESS/DOING_BUSINESS/PRODUCT_EVALUATION/EROSION_CONTROL.HTM
2. A TYPICAL INSTALLATION IS SHOWN. BLANKETS AND MATTING SHOULD ALWAYS BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. MATTING SHOULD BE INSTALLED IN UNIFORM CONTACT WITH THE SOIL.
4. ENSURE ALL STAPLES ARE FLUSH WITH THE GROUND.

MAINTENANCE:

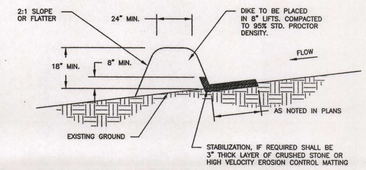
5. REPAIR ANY DAMAGE. APPLY NEW MATERIAL IF NECESSARY TO RESTORE FUNCTION.

SOIL RETENTION BLANKETS

EXHIBIT A14



PLAN VIEW
N.T.S.



CROSS SECTION
N.T.S.

DIVERSION DIKES (1 OF 2)

EXHIBIT A15

TABLE 1

CHANNEL GRADE	RIPRAP STABILIZATION
0.5 - 1%	4 INCH ROCK
1.1 - 2%	6 INCH ROCK
2.1 - 4%	8 INCH ROCK
4.1 - 5%	8 - 12 INCH RIPRAP

NOTES:

1. IF PLANS SPECIFY DIVERSIONS DIKES WITH STONE STABILIZATION (REQUIRED FOR VELOCITIES IN EXCESS OF 6 FPS) THE STONE SHOULD CONSIST OF RIPRAP PLACED IN A LAYER AT LEAST 3 INCHES THICK AND SHOULD EXTEND A MINIMUM HEIGHT OF 3 INCHES ABOVE THE DESIGN WATER SURFACE (AS NOTED IN PLANS) UP THE EXISTING SLOPE AND THE UPSTREAM FACE OF THE DIKE. STABILIZATION RIPRAP SHOULD CONFORM TO THE SPECIFICATIONS IN TABLE 1.
2. DIVERSION DIKES SHOULD BE INSTALLED PRIOR TO AND MAINTAINED FOR THE DURATION OF CONSTRUCTION AND SHOULD INTERCEPT NO MORE THAN 10 ACRES OF RUNOFF.
3. DIKES SHOULD HAVE A MINIMUM TOP WIDTH OF 2 FEET AND A MINIMUM HEIGHT OF COMPACTED FILL OF 18 INCHES MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE TO TOP OF THE DIKE AND HAVING SIDE SLOPES 2:1 OR FLATTER.
4. THE SOIL FOR THE DIKE SHOULD BE PLACED IN LIFTS OF 8 INCHES OF LESS AND BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
5. THE CHANNEL, WHICH IS FORMED BY THE DIKE, MUST HAVE POSITIVE DRAINAGE FOR ITS ENTIRE LENGTH TO AN OUTLET.
6. WHEN THE SLOPE EXCEEDS 2 PERCENT, OR VELOCITIES EXCEEDS 6 FEET PER SECOND (REGARDLESS OF SLOPE), STABILIZATION IS REQUIRED. SITUATIONS IN WHICH VELOCITIES DO NOT EXCEED 6 FEET PER SECOND, VEGETATION MAY BE USED TO CONTROL EROSION.

MAINTENANCE:

7. LOCATE AND REPAIR ANY DAMAGE TO THE CHANNEL OR CLEAR DEBRIS OR OTHER OBSTRUCTIONS SO AS NOT TO DIMINISH FLOW CAPACITY.
8. SILT SHOULD BE REMOVED IN A TIMELY MANNER TO PREVENT REMOBILIZATION AND TO MAINTAIN THE EFFECTIVENESS OF THE CONTROL.
9. IF EROSION IS OCCURRING ON THE FACE OF THE DIKE, THE SLOPES OF THE FACE SHOULD EITHER BE STABILIZED THROUGH MULCH OR SEEDING OR THE SLOPES OF THE FACE SHOULD BE REDUCED.
10. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

DIVERSION DIKES (2 OF 2)

EXHIBIT A16

REVISIONS

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1384

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
1/27/11

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN DETAILS

JOB: 6BSW001
DATE: JANUARY 2011
SCALE: N.T.S.

INTERNAL REVIEW:
DESIGN: RS
PEER: JM
PM:
DM: LBK
OTHER:

SHEET: 3 OF 5

Date: Jan 27, 2011, 7:46am User ID: sjackson
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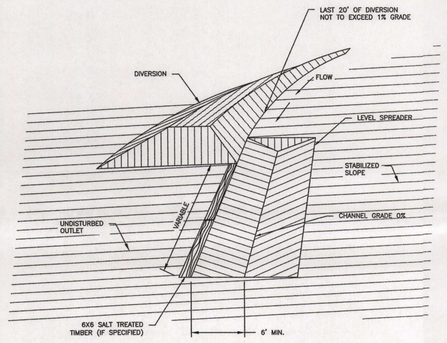
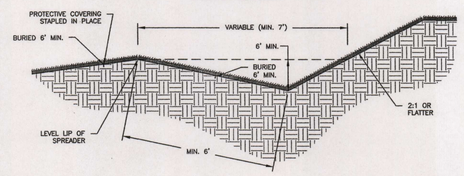


ISOMETRIC VIEW
N.T.S.

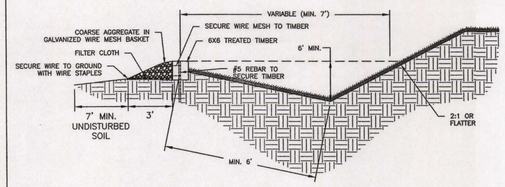
LEVEL SPREADER (1 OF 3)
EXHIBIT A17

CROSS SECTION



LEVEL SPREADER WITH VEGETATED LIP
N.T.S.

CROSS SECTION



LEVEL SPREADER WITH RIGID LIP
N.T.S.

LEVEL SPREADER (2 OF 3)
EXHIBIT A18

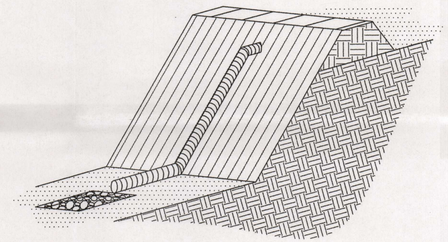
NOTES:

1. LEVEL SPREADERS SHOULD BE CONSTRUCTED ON UNDISTURBED SOIL (NOT FILL MATERIAL).
2. THE ENTRANCE TO THE SPREADER SHOULD BE SHAPED IN SUCH A MANNER AS TO INSURE THAT RUNOFF ENTERS DIRECTLY ONTO THE 0% GRADE CHANNEL.
3. CONSTRUCT A 20-FT TRANSITION SECTION FROM THE DIVERSION CHANNEL TO BLEND SMOOTHLY TO THE WIDTH AND DEPTH OF THE SPREADER.
4. THE LEVEL LIP SHOULD BE CONSTRUCTED AT 0% GRADE TO INSURE UNIFORM SPREADING OF STORMWATER RUNOFF.
5. THE LEVEL LIP MAY BE STABILIZED BY VEGETATION IF THE FLOW FROM THE 2-YEAR, 24-HOUR STORM IS EXPECTED TO BE LESS THAN 4 CFS, OTHERWISE A RIGID NON-ERODIBLE MATERIAL SHOULD BE USED.
6. PROTECTIVE COVERING FOR VEGETATED LIP SHOULD BE A MINIMUM OF 4 FEET WIDE EXTENDING 6 INCHES OVER THE LIP AND BURIED 6 INCHES DEEP IN A VERTICAL TRENCH ON THE LOWER EDGE. THE UPPER EDGE SHOULD BUTT AGAINST SMOOTHLY CUT SOD AND BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY-DUTY WIRE STAPLES.
7. RIGID LEVEL LIP SHOULD BE ENTRENCHED AT LEAST 2 INCHES BELOW EXISTING GROUND AND SECURELY ANCHORED TO PREVENT DISPLACEMENT. AN APRON OF COARSE AGGREGATE SHOULD BE PLACED TO TOP OF LEVEL LIP AND EXTENDED DOWN SLOPE AT LEAST 3 FEET. PLACE FILTER FABRIC UNDER STONE AND USE GALVANIZED WIRE MESH TO HOLD STONE SECURELY IN PLACE.
8. THE RELEASED RUNOFF MUST OUTLET ONTO UNDISTURBED STABILIZED AREAS WITH SLOPE NOT EXCEEDING 10%. SLOPE MUST BE SUFFICIENTLY SMOOTH TO PRESERVE SHEET FLOW AND PREVENT FLOW FROM CONCENTRATING.
9. IMMEDIATELY AFTER ITS CONSTRUCTION, APPROPRIATELY SEED AND MULCH THE ENTIRE DISTURBED AREA OF THE SPREADER.

MAINTENANCE:

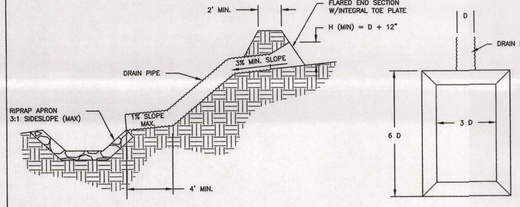
10. LEVEL SPREADER LIP SHOULD REMAIN AT 0% SLOPE TO ALLOW PROPER FUNCTION OF MEASURE.
11. THE CONTRACTOR SHOULD AVOID THE PLACEMENT OF ANY MATERIAL ON AND PREVENT CONSTRUCTION TRAFFIC ACROSS THE STRUCTURE. IF THE MEASURE IS DAMAGED BY CONSTRUCTION TRAFFIC, IT SHOULD BE REPAIRED IMMEDIATELY.

LEVEL SPREADER (3 OF 3)
EXHIBIT A19



ISOMETRIC VIEW
N.T.S.

PIPE SLOPE DRAIN (1 OF 2)
EXHIBIT A20



SECTION THRU PIPE
N.T.S.

RIPRAP APRON PLAN VIEW
N.T.S.

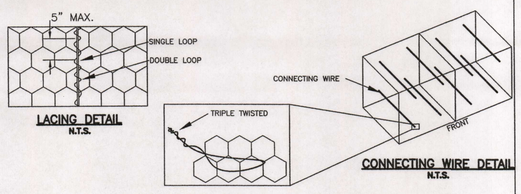
NOTES:

1. PIPE DIAMETER AS SHOWN IN PLANS.
2. THE PIPE MAY BE MADE OF ANY MATERIAL, RIGID OR FLEXIBLE, WHICH IS CAPABLE OF CONVEYING RUNOFF. THIS DRAINPIPE SHOULD BE COMPLETELY WATERTIGHT SO THAT NO WATER LEAKS ON TO THE SLOPE TO BE PROTECTED.
3. RIPRAP TO BE USED IN THE OUTLET APRON SHOULD CONSIST OF EITHER CRUSHED STONE OF BROKEN PORTLAND CEMENT CONCRETE. ALL STONES USED SHOULD WEIGH BETWEEN 0 TO 10 POUNDS EACH AND SHOULD BE AS NEARLY UNIFORM AS IS PRACTICAL.
4. A DIVERSION DIKE SHOULD BE CONSTRUCTED AT THE TOP OF THE SLOPE THAT IS TO BE PROTECTED. THIS DIKE SHOULD BE SIZED SO THAT NO RUNOFF MAY OVERTOP THE DIKE. THE SOIL AROUND AND UNDER THE ENTRANCE SECTION OF THE DRAINPIPE SHOULD BE HAND-TAMPED IN 8-INCH LIFTS TO PREVENT PIPING FAILURE AROUND THE INLET.
5. THE HEIGHT OF THE DIVERSION DIKE AT THE CENTERLINE OF THE INLET SHOULD BE EQUAL TO THE DIAMETER OF THE PIPE PLUS 12 INCHES.
6. A RIGID SECTION OF PIPE SHOULD BE INSTALLED THROUGH THE DIKE. A STANDARD FLARED-END SECTION WITH AN INTEGRAL TOE PLATE EXTENDING A MINIMUM OF 6-INCHES FROM THE BOTTOM OF THE END SECTION SHOULD BE ATTACHED TO THE INLET END OF THE PIPE USING WATERTIGHT FITTINGS.
7. A RIPRAP-LINED APRON SHOULD BE EXCAVATED TO ACCEPT THE RUNOFF FORM THE PIPE AND DISSIPATE THE ENERGY OF THE FLOW. THE WIDTH OF THE BOTTOM OF THE APRON SHOULD BE 3 TIMES THE PIPE DIAMETER AND THE LENGTH SHOULD BE A MINIMUM OF 6 TIMES THE PIPE DIAMETER. THE APRON SHOULD BE A MINIMUM OF 12-IINCHES DEEP AND LINED WITH RIPRAP WITH A THICKNESS OF AT LEAST 12 INCHES. THE APRON SHOULD BE DESIGNED SO THAT THE RELEASED FLOW HAS A VELOCITY LESS THAN 3 FEET PER SECOND.

MAINTENANCE:

8. LOCATE AND REPAIR ANY DAMAGE TO JOINTS OR CLOGGING OF THE PIPE.
9. IN CASE WHERE THE DIVERSION DIKE HAS DETERIORATED AROUND THE ENTRANCE OF THE PIPE, IT MAY BE NECESSARY TO REINFORCE THE DIKE WITH SANDBAGS OR TO INSTALL A CONCRETE COLLAR TO PREVENT FAILURE.
10. SIGNS OF EROSION AROUND THE PIPE DRAIN SHOULD BE ADDRESSED IN A TIMELY MANNER BY STABILIZING THE AREA WITH EROSION CONTROL MATS, CRUSHED STONE, CONCRETE OR OTHER APPROPRIATE METHOD.

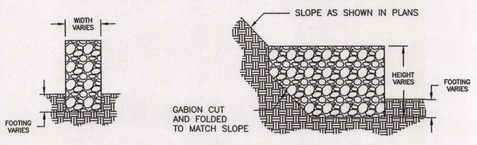
PIPE SLOPE DRAIN (2 OF 2)
EXHIBIT A21



LACING DETAIL
N.T.S.

CONNECTING WIRE DETAIL
N.T.S.

GABION BASKET HEIGHT, WIDTH, AND FOOTING AS SPECIFIED IN PLANS.



GABION BASKET SECTION
N.T.S.

GABION BASKET DETAIL
N.T.S.

GABION BASKET ASSEMBLY SPECIFICATIONS (1 OF 2)
EXHIBIT A22

NOTES:

1. WIRE GABION TO BE IN ACCORDANCE WITH ASTM A 974.
2. FILLER STONE TO BE CLEAN, HARD, DURABLE STONE THAT DOES NOT CONTAIN SHALE, CALICHE, OR OTHER SOFT PARTICLES.
3. EXCAVATE THE FOUNDATION TO THE EXTENT SHOWN ON THE PLANS. REMOVE ALL LOOSE OR OTHERWISE UNSUITABLE MATERIALS. CAREFULLY BACKFILL ALL DEPRESSIONS TO GRADE WITH SUITABLE MATERIALS AND COMPACT THE BACKFILL TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT FOUNDATION. REMOVE ANY BURIED DEBRIS PROTRUDING FROM THE FOUNDATION THAT WILL IMPEDE THE PROPER INSTALLATION AND FINAL APPEARANCE OF THE GABION AND CAREFULLY BACKFILL AND COMPACT VOIDS AS SPECIFIED ABOVE.
4. IF PVC WIRE COATING IS SPECIFIED, DO NOT PLACE PVC-COATED MATERIALS UNLESS THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE COATED WIRE ARE AT LEAST 15ºF ABOVE THE BRITTLENESS TEMPERATURE OF THE PVC.
5. WHEN FILTER MATERIAL IS REQUIRED, SPREAD IT UNIFORMLY ON THE PREPARED FOUNDATION SURFACE TO THE SLOPES, LINES, AND GRADES INDICATED ON THE PLANS. DO NOT PLACE FILTER MATERIAL BY METHODS THAT TEND TO SEGREGATE PARTICLE SIZES. REPAIR ALL DAMAGE TO THE FOUNDATION SURFACE THAT OCCURS DURING FILTER PLACEMENT BEFORE PROCEEDING WITH THE WORK. COMPACTION OF THE FILTER MATERIAL IS NOT REQUIRED, BUT FINISH THE MATERIAL TO PRESENT A REASONABLY EVEN SURFACE, WITHOUT MOUNDS OR WINDROWS.
6. WHEN FILTER FABRIC IS REQUIRED, PLACE IT AS SHOWN ON THE PLANS. ANY DEFECTS, RIPS, HOLES, FLAWS, OR DAMAGE TO THE MATERIAL MAY BE CAUSE FOR REJECTION. PLACE THE MATERIAL WITH THE LONG AXIS PARALLEL TO THE CENTERLINE OF THE STRUCTURE. PLACE SECURING PINS IN THE LAPPED LONGITUDINAL JOINT, SPACED ON APPROXIMATELY 10-FT. CENTERS. KEEP THE FABRIC MATERIAL FREE OF TENSION, STRESS, FOLDS, WRINKLES, OR CREASES. LAP THE MATERIAL AT LEAST 3 FT. ALONG THE LONGITUDINAL JOINT OF MATERIAL, OR LAP THE JOINTS 1 FT. AND SEW THEM.
7. WHEN FILTER FABRIC IS REQUIRED, PLACE SECURING PINS THROUGH BOTH STRIPS OF MATERIAL AT LAPPED JOINTS AT APPROXIMATELY THE MIDPOINT OF THE OVERLAP. PLACE ADDITIONAL SECURING PINS AS NECESSARY TO HOLD FILTER FABRIC IN POSITION. STORE FILTER FABRIC OUT OF DIRECT SUNLIGHT. AFTER PLACING FILTER FABRIC, COVER AS SOON AS POSSIBLE BUT WITHIN 3 DAYS.
8. ASSEMBLE EMPTY GABION UNITS INDIVIDUALLY, AND PLACE THEM TO THE LINES AND GRADES SHOWN ON THE PLANS WITH THE SIDES, ENDS, AND DIAPHRAGMS ERECTED TO ENSURE THAT ALL CREASES ARE IN THE CORRECT POSITION, THE TOPS OF ALL SIDES ARE LEVEL, AND ALL SIDES THAT ARE TO REMAIN EXPOSED ARE STRAIGHT AND PLUMB. FILL THE BASKET UNITS AFTER TRANSPORTING THEM TO THEIR FINAL POSITION.
9. PLACE THE FRONT ROW OF GABION UNITS FIRST, SAND SUCCESSIVELY CONSTRUCT UNITS TOWARD THE TOP OF THE SLOPE OR BACK OF THE STRUCTURE. PLACE THE INITIAL LINE OF BASKET UNITS ON THE PREPARED SURFACE, AND PARTIALLY FILL THEM TO PROVIDE ANCHORAGE AGAINST DEFORMATION AND DISPLACEMENT DURING SUBSEQUENT FILLING. STRETCH AND HOLD EMPTY BASKET UNITS AS NECESSARY TO REMOVE KINKS AND PROVIDE A UNIFORM ALIGNMENT. BEFORE FILLING, CONNECT ALL ADJOINING EMPTY GABION UNITS WITH LACING OR APPROVED FASTENERS ALONG THE PERIMETER OF THE CONTACT SURFACE TO OBTAIN A MONOLITHIC STRUCTURE. IF LACING WIRE IS USED, PROVIDE CONTINUOUS STITCHING WITH ALTERNATING SINGLE AND DOUBLE LOOPS AT INTERVALS OF NO MORE THAN 5 IN. SECURELY FASTEN ALL LACING WIRE TERMINALS.
10. JOIN TWISTED WIRE BASKETS THROUGH SELVAGE-TO-SELVAGE OR SELVAGE-TO-EDGE WIRE CONNECTION; DO NOT USE MESH-TO-MESH OR SELVAGE-TO-MESH WIRE CONNECTION EXCEPT WHERE BASKETS ARE OFFSET OR STACKED, IN WHICH CASE JOIN EACH MESH OPENING WHERE MESH WIRE MEETS SELVAGE OR EDGE WIRE.
11. CAREFULLY FILL THE BASKET UNITS WITH STONE, USING HAND PLACEMENT TO AVOID DAMAGING WIRE COATING, TO ENSURE AS FEW VOIDS AS POSSIBLE BETWEEN THE STONES AND TO MAINTAIN ALIGNMENT. CORRECT EXCESSIVE DEFORMATION AND BULGING OF THE MESH BEFORE FURTHER FILLING. TO AVOID LOCALIZED DEFORMATION, FILL THE BASKET UNITS IN A ROW IN STAGES CONSISTING OF MAXIMUM 12-IN. COURSES; DO NOT AT ANY TIME FILL A CELL TO A DEPTH EXCEEDING 1 FT. MORE THAN ITS ADJOINING CELL. DO NOT DROP STONES INTO BASKET UNITS FROM A HEIGHT GREATER THAN 36 IN.
12. FOR GABION UNITS MORE THAN 2 FT. HIGH, PLACE 2 UNIFORMLY SPACED INTERNAL CONNECTING WIRES BETWEEN EACH STONE LAYER IN ALL FRONT AND SIDE GABION UNITS, CONNECTING THE BACK AND THE FRONT FACES OF THE COMPARTMENTS. LOOP CONNECTING WIRES OR PREFORMED STIFFENERS AROUND 3 TWISTED WIRE-MESH OPENINGS OR A WELDED WIRE JOINT AT EACH BASKET FACE, AND SECURELY TWIST THE WIRE TERMINALS TO PREVENT LOOSENING.
13. ALONG ALL EXPOSED FACES, CAREFULLY PLACE THE OUTER LAYER OF STONE AND ARRANGE IT BY HAND TO ENSURE A NEAT AND COMPACT APPEARANCE. OVERFILL THE LAST LAYER OF STONE UNIFORMLY BY 1 TO 2 IN. TO COMPENSATE FOR FUTURE SETTLEMENT IN ROCK WHILE STILL ALLOWING FOR PROPER CLOSING OF THE LID AND PROVIDING AN EVEN SURFACE WITH A UNIFORM APPEARANCE. STRETCH LIDS TIGHT OVER THE STONE FILL, USING AN APPROVED LID-CLOSING TOOL, UNTIL LID MEETS THE PERIMETER EDGES OF THE FRONT AND END PANELS. DO NOT USE CROWBARS OR OTHER SINGLE-POINT LEVERAGE BARS FOR LID CLOSING. CLOSE THE LID TIGHTLY ALONG ALL EDGES, ENDS, AND INTERNAL-CELL DIAPHRAGMS WITH LACING WIRE OR APPROVED FASTENER. ENSURE THAT ALL PROJECTIONS OR WIRE ENDS ARE TURNED INTO THE BASKETS.
14. WHERE SHOWN IN THE PLANS OR WHERE A COMPLETE GABION UNIT CANNOT BE INSTALLED BECAUSE OF SPACE LIMITATIONS, CUT THE BASKET UNIT AND FOLD AND WIRE IT TOGETHER TO SUIT SITE CONDITIONS. FOLD THE MESH BACK AND NEATLY WIRE IT TO AN ADJACENT BASKET FACE.

GABION BASKET ASSEMBLY SPECIFICATIONS (2 OF 2)
EXHIBIT A22

REVISIONS

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1386

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
1/27/11

VINTAGE OAKS AT THE VINEYARD UNIT 3
WATER POLLUTION ABATEMENT PLAN DETAILS

JOB: 6BSW001
DATE: JANUARY 2011
SCALE: N.T.S.

INTERNAL REVIEW:
DESIGN: SRT
PEER: JM
PM:
DM: LBK
OTHER:

SHEET: 4 OF 5

Date: Jan 27, 2011, 7:48am User ID: sjackson
File: S:\Active Projects\6BSW001 VOV Unit 3\dwg\6BSW001-WPAP-DTL-001.dwg

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: Vintage Oaks at the Vineyard Unit 3

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. X 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: Dry Comal 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.

    X For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

    __ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

__ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

11. X **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. X 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Heath L. Woods
Signature of Customer/Agent

1/27/11
Date

Attachment A

Spill Response Action

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 an appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential dangers to humans and the environment fro spills and leaks.

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

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

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

General Measures

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

(2) Store hazardous materials and wastes in covered containers and protect form 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 runon during rainfall to the extent that it doesn't compromise clean up activities.

(7) Do not bury or wash spills with water.

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

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

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

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

(12) Keep waste storage areas clean, well organized, and equipment 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 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 as the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

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

(2) Use absorbent material on small spills rather than hosing down or burying the spill.

(3) Absorbent material 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 material.

(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 be 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.

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 Fueling

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon 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 recycle 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 runon 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

1. Oil, grease, fuel and hydraulic contamination from construction equipment and vehicle leakage.
   Remedy: Lubrication and fueling will be preformed in a designated area. This area will be monitored daily for contamination.

2. Miscellaneous trash and litter form construction workers.
   Remedy: Designated receptacles will be strategically located and workers will be directed to deposit trash there.

3. Construction debris.
   Remedy: Debris will be collected weekly and deposited in bins for offsite disposal. Situations requiring immediate attention will be handled on a case by case basis.

4. Asphalt products.
   Remedy: After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to maintain and asphalt wash-off should and unexpected rain occurs. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.

Attachment C

Sequence of Major Activities

1. Install erosion and sedimentation controls (i.e. Silt Fences and Stabilized Construction Entrances) as indicated on the approved construction plans
2. Construct drainage areas and roadways
   Roadway and Utilities: 29.05 acres disturbed
   Drainage Easements: 1.83 acres disturbed
   Detention Pond: 9.24 acres disturbed
   (Detention Pond is located outside of Unit 3, approximately ¼ mile to the north.)
3. Install landscaping or hydromulch to disturbed areas
4. Re-vegetate disturbed areas
5. Remove temporary erosion and sedimentation controls
6. Residential home construction, including building pads, driveways, and landscaping
   Residential Lots: 33.75 acres disturbed
   (Assumed 10,500 sq. ft. disturbed area per lot.)

Attachment D

Temporary Best Management Practices and Measures

All TBMPs will be installed prior to the beginning of site preparation and construction activities as per the Storm Water Pollution Prevention Plan. The TBMPs will remain in place and will be maintained until all construction has ceased and a perennial vegetative cover with a density of 70 percent has been established.

a. Silt fences and rock berms will be used to protect disturbed soils during construction in order to prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

b. Silt fences and rock berms will be used to protect disturbed soils during construction in order to 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 50 to 200-foot radius natural buffer zone adjacent to and upgradient of sensitive features will remain undisturbed so that rainfall may continue to enter the feature. The natural vegetated areas will ensure that pre-development stormwater quantity and quality will continue to recharge the aquifer via the feature. Rock berms will be placed downgradient of all construction activities so that potentially contaminated stormwater may be treated before leaving the sited and entering downstream surface water.

d. No construction will occur within a 50 to 200-foot radius of naturally-occurring sensitive features. The size and shape of the buffer zone will be determined by the contributing drainage area to the feature. The vegetative buffer zone will serve as both TMBP and BMP for the sensitive features. In the case that construction activities occur upgradient of a sensitive feature (greater than the 200-foot radius) the disturbed soils will be protected from erosion by silt fences as outlined above.

Attachment E

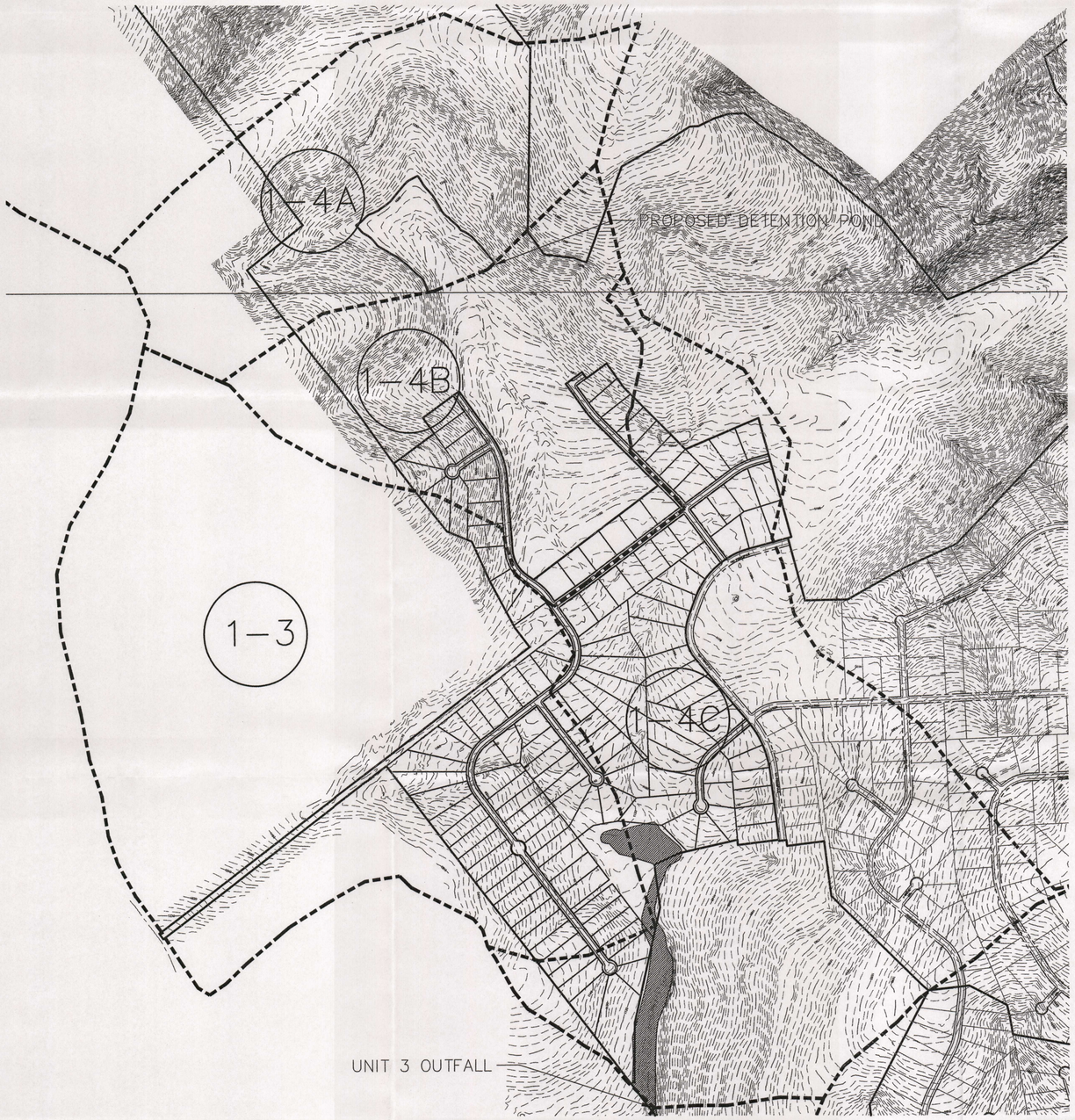
Request to Temporarily Seal a Feature

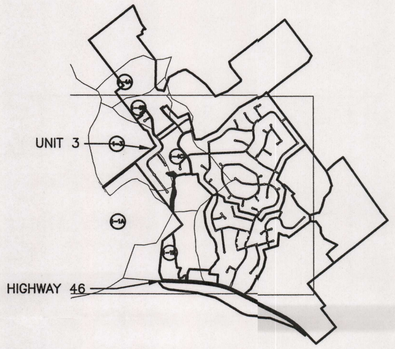
NOT APPLICABLE

Attachment F

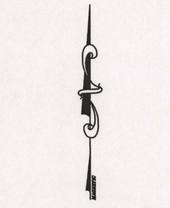
Structural Practices

The structural practices that will limit runoff discharge of pollutants form exposed areas of the site will be the use of the water trenches, rock berms, silt fences, and stabilized construction entrance to prevent the excavated material from leaving the site.





VINTAGE OAKS AT THE VINEYARD
OVERVIEW MAP
1" = 4000'



LEGEND:

- EXIST UNIT BOUNDARY
- EXIST RIGHT-OF-WAY
- EXIST LOT LINE
- EXIST EDGE OF PAVEMENT
- 300 EXIST CONTOUR
- PROP EDGE OF PAVEMENT
- PROP RIGHT-OF-WAY
- PROP DRAINAGE AREA
- 100-YEAR FLOODPLAIN

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1344

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
1/27/11

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN
DRAINAGE AREA MAP

JOB: 6BSW001
DATE: JANUARY 2011
SCALE: 1" = 500'
INTERNAL REVIEW:
DESIGN: SRS
PEER: JPM
PM:
DM: LBK
OTHER:

SHEET: 5 OF 5

Date: Jan 27, 2011, 8:20am User ID: sjackson
File: S:\Active Projects\6BSW001 VOV Unit 3\dwg\6BSW001-WPAP-DA-001.dwg

Attachment H

Temporary Sediment Pond(s) Plans and Calculations

NOT APPLICABLE

Attachment I

Inspection and Maintenance for BMPs

The BMPs for the construction of this project will be the use of rock berms, silt fencing, gravel filter bags, stabilized construction entrance and the utility trenches. The following inspection and maintenance procedures will be implemented:

1. Sift fencing, rock berms, and construction entrances must be in place prior to the start of construction and will remain in place until construction has been complete and the site stabilized from further erosion.

2. The contractor will inspect the rock berms, silt fencing and construction entrance at least once a week and within 24 hours of a storm of 0.5 inches or more in depth. The contractor will repair or replace any damaged TBMPs. The contractor shall correct damage or deficiencies as soon as practical after the inspection but no later than 7 days after the inspection.

3. Contractor will place trench excavation on the upgradient side of the trench.

4. All soil, sand, gravel, and excavated material stockpiled on-site will have appropriately sized silt fencing placed upgradient and down gradient.

5. The contractor will keep a record of the weekly inspections, noting the condition of the rock berms, silt fencing and construction entrance and any corrective action taken to maintain the erosion control structures. In addition to the inspection and maintenance reports, the operator should keep records of the construction activity on-site, in particular, the following information should be kept.

    A. The dates when major grading activities occur in a particular area.

    B. The dates when construction activities cease in an area, temporarily or permanently.

    C. The dates when an area is stabilized, temporarily or permanently.

    D. Records to be maintained in SWPPP.

Attachment J

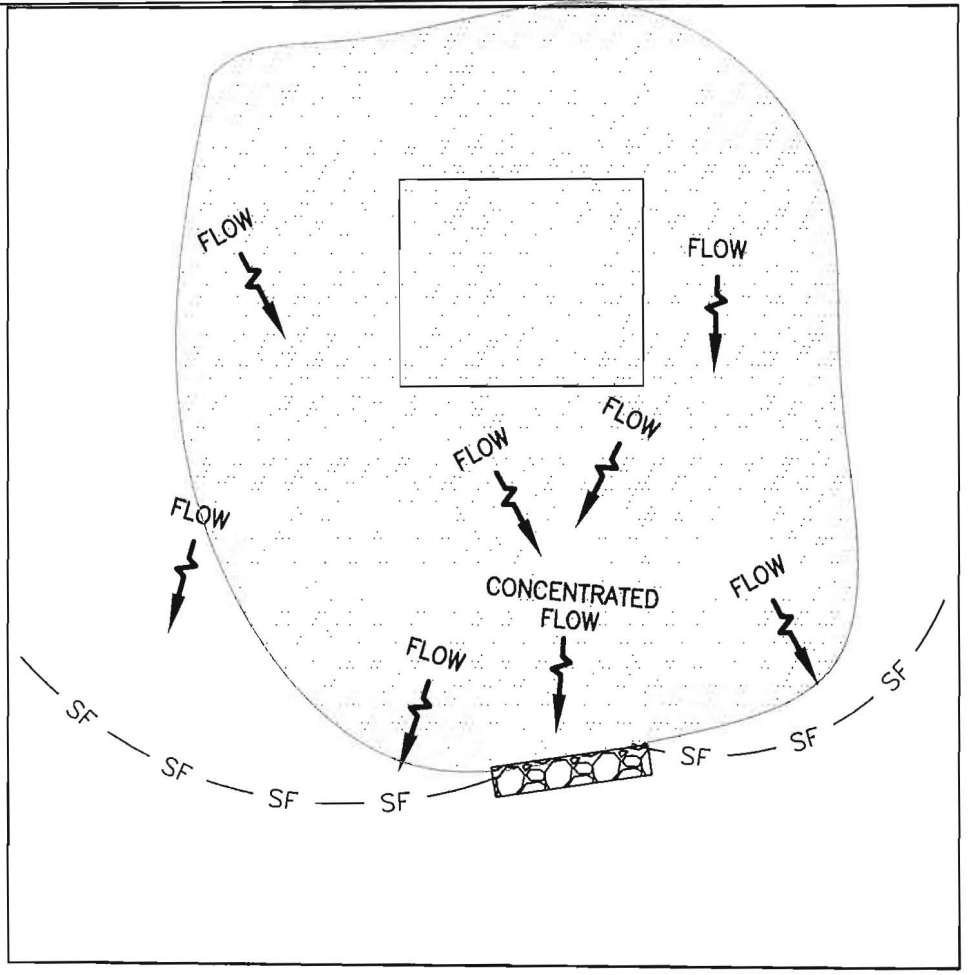
Schedule of Interim and Permanent Soil Stabilization Practices

The schedule of interim and permanent soil stabilization will be as follows:

1. Once construction of the project has commenced, the construction activity is planned to continue until the project is complete. The water, electrical, cable TV and telephone trenches will be excavated. The trenches will then be re-excavated and the water, electrical, cable TV and telephone lines will be installed. This work is intended to continue until all the lines are installed. The utility lines are located within the project boundaries as shown on the site plan. As soon as the underground utilities are installed, the road base will be installed and compacted providing the interim soil stabilization for the paved area and the permanent soil stabilization for the parking areas. Once the individual residential buildings are built and landscaped this will provide permanent soil stabilization for the building areas.

2. Much of the excavation for this project will be in solid rock, helping to minimize the amount of loose soil which has the potential to become suspended in runoff and washed downstream.

3. 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 temporary or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease in 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.



LEGEND

- PROPERTY LINE
- SF — SILT FENCE
- ROCK BERM
- BUILDING
- DISTURBED AREA
- FLOW DIRECTION

NOTES:

1. EACH PROPERTY OWNER IS RESPONSIBLE FOR ENSURING A STORM WATER POLLUTION PREVENTION PLAN IS DEVELOPED AND IMPLEMENTED IN ACCORDANCE WITH THE TPDES GENERAL PERMIT TXR150000. THIS PLAN MUST INCLUDE THE DESIGN AND PLACEMENT OF APPROPRIATE TEMPORARY CONTROLS SUCH AS SILT FENCE AND ROCK BERMS.
2. IF THE AVERAGE IMPERVIOUS COVER PER LOT EXCEEDS THE ASSUMPTIONS DESCRIBED IN THE APPROVED EDWARDS AQUIFER PLAN, A MODIFICATION TO THE PLAN MUST BE APPROVED PRIOR TO CONSTRUCTION.
3. THIS DETAIL PROVIDES GENERAL GUIDANCE FOR THE PLACEMENT OF CONTROLS. THESE CONTROLS SHOULD BE TAILORED TO FIT THE SPECIFIC ONSITE CONDITIONS AND THE PROPOSED CONSTRUCTION.
4. SILT FENCE SHOULD BE INSTALLED DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE ENDS OF THE FENCE SHOULD BE CURVED UPHILL TO CREATE AN IMPOUNDMENT AREA. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.
5. ROCK BERMS SHOULD BE INSTALLED IN AREAS OF CONCENTRATED FLOW WITH DRAINAGE AREA NOT TO EXCEED 5 ACRES.

SOIL STABILIZATION NOTES:

6. TEMPORARY EROSION CONTROL MEASURES WILL BE USED TO STABILIZE DISTURBED AREAS. TRAFFIC WILL BE ROUTED AROUND THESE AREAS TO REDUCE THE EXTENT OF DISTURBED AREAS BY REDUCING SEDIMENT LOADS TO SURFACE WATER.
7. BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.
8. MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.

SCALE -	NTS
DATE -	DEC 2009
DRAWN -	SRJ
SHEET -	1 of 1

TYPICAL LOT PLAN FOR TEMPORARY BMPS

M & S ENGINEERING, LLC
ENGINEERS AND PLANNERS

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE * (830) 228-5446
FAX * (830) 885-2170

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

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

REGULATED ENTITY NAME: Vintage Oaks at the Vineyard Unit 3

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

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

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

   ___ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
   ___ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is provided below:

   _____
   _____

3. N/A 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.

   X 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.
   ___ 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.

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

X 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.**

__ 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.

X 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.

__ **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. N/A **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. N/A **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. N/A 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Heath C. Woods 2/1/11
Signature of Customer/Agent Date

Attachment A

20% Or Less Impervious Cover Waiver

NOT APPLICABLE

Attachment B

BMPs for Upgradient Stormwater

The upgradient stormwater would continue to be accepted onto the project site. The stormwater runoff from the areas that are immediately upgradient of the site are currently undeveloped. No BMPs are required because the site will be re-vegetated after construction is complete.

Attachment C

BMPs for On-Site Stormwater

The proposed Vintage Oaks at the Vineyard, Unit 3 is less than 20% impervious cover, therefore no permanent BMP is required for the runoff entering the Dry Comal Creek. However, naturally vegetated buffer zones around sensitive recharge features will be maintained as a permanent BMP to provide treatment to potentially contaminated stormwater entering the sensitive features. The buffer zones will be recorded on the plat and will become deed restricted easements preventing any type of construction or development.

Attachment D

BMPs for Surface Streams

The proposed Vintage Oaks At The Vineyard, Unit 3 is less than 20% impervious cover, therefore not filtration is required for the runoff entering the Dry Comal Creek.

According to the geologic assessment, there were two sensitive features on this site, identified as S-9 and S-7.

S-9 (Sinkhole feature) Located in the vicinity of proposed lots.

S-17 (Streambed feature) Located in the vicinity of proposed lots.

Additionally, there is an as-yet unnamed sensitive feature in a future unit which will require a buffer zone that extends into Unit 3 on the same lot as S-17.

- Native grasses, forbs and trees adjacent to and upgradient of these features will remain undisturbed so that rainfall may continue to enter each feature. The natural vegetated areas would encompass a region between fifty (50) and two hundred (200) foot radius from the border of each feature in order to maintain pre-development recharge quantity and quality.
- When all or a portion of the buffer for these sensitive features is located with the yard of a residential tract, it should be separated by a barrier, such as a fence, from conventional landscaping and maintained in the natural state.

Attachment E

Request To Seal Features

NOT APPLICABLE

Attachment F

Construction Plans

NOT APPLICABLE

Attachment G

Inspection, Maintenance, Repair, And Retrofit Plan

NOT APPLICABLE

Attachment H

Pilot-Scale Field Testing Plan

NOT APPLICABLE

Attachment I

Measures For Minimizing Surface Stream Contamination

A detention pond will be constructed to mitigate the effects of development. In accordance with Comal County regulations, the pond will reduce the peak 100-year discharges to pre-development rates. The outlet will be constructed to discharge at non-erosive velocities.

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

I Jon Van De Voorde, PE ,
Print Name

VP of Development ,
Title - Owner/President/Other

of Bluegreen Southwest One, L.P. ,
Corporation/Partnership/Entity Name

have authorized Heath Woods, P.E.
Print Name of Agent/Engineer

of M&S Engineering, LLC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

1/26/11
Date

THE STATE OF Texas §

County of Dallas §

BEFORE ME, the undersigned authority, on this day personally appeared Jon Van De Voorde ~~Jan 21 2011~~ 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 26th day of January, 2011.

NOTARY PUBLIC

Stephanie M Lada
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10/14/2014

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

NAME OF PROPOSED REGULATED ENTITY: Vintage Oaks at the Vineyard Unit 3
REGULATED ENTITY LOCATION: New Braunfels
NAME OF CUSTOMER: Bluegreen Southwest One, L.P.
CONTACT PERSON: Jon Van De Voorde, PE PHONE: (972) 850-3074
(Please Print)

Customer Reference Number (if issued): CN 600675268 (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	205.2	Acres	$ 8000
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential		Acres	$
Sewage Collection System		L.F.	$
Lift Stations without sewer lines		Acres	$
Underground or Aboveground Storage Tank Facility		Tanks	$
Piping System(s)(only)		Each	$
Exception		Each	$
Extension of Time		Each	$

Signature

1/27/11
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.

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 6, 2012

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: Vintage Oaks at the Vineyard Unit 3, located approximately 1.3 miles east of S. Cranes Mill Road along Highway 46, New Braunfels, Texas
PLAN TYPE: Application for Approval of a Water Pollution Abatement Plan, 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
EAPP File No.: 2961.01

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 March 5, 2012.

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

Now being platted as Unit #6

WATER POLLUTION PREVENTION PLAN MODIFICATION

FOR

Vintage Oaks at the Vineyard Unit 3

M&S Engineering Project Number: 6BSW001

Prepared for:

Jon Van De Voorde, PE
Bluegreen Southwest One, L.P.
6060 North Central Expressway
Dallas, TX 75206

Prepared by:

M & S ENGINEERING, LLC
ENGINEERS | PLANNERS | SURVEYORS

Main Office:
P. O. Box 970
Spring Branch, Texas 78070
830/228-5446
830-885-2170 FAX

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
2/1/12
M&S ENGINEERING, L.L.C.
F-1394

Branch Office:
P. O. Box 391
McQueeney, Texas 78123
830-560-3200
830-560-3203 FAX

January 2012

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: Modification

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

☑ Yes ☐ No — WPAP

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 600675268		RN 106076003

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:	☐ Corporation	☐ Individual	☐ Sole Proprietorship- D.B.A
☐ 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:*

10. Mailing Address:

City		State		ZIP		ZIP + 4	

11. Country Mailing Information *(if outside USA)*	12. E-Mail Address *(if applicable)*

13. Telephone Number	14. Extension or Code	15. Fax Number *(if applicable)*
( )		( )

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)*

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)*

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*								
	City		State		ZIP		ZIP + 4	
25. Mailing Address:								
	City		State		ZIP		ZIP + 4	
26. E-Mail Address:								
27. Telephone Number		28. Extension or Code		29. Fax Number *(if applicable)*				
( ) -				( )				
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)				
34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*								

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

35. Description to Physical Location:					
36. Nearest City		County		State	Nearest ZIP Code
37. Latitude (N) In Decimal:			38. Longitude (W) In Decimal:		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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:	Stephen Jackson	41. Title:	Hydrologist
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(830) 228-5446		(830) 885-2170	sjackson@msengr.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:	M&S Engineering, LLC	Job Title:	Agent - Engineer
Name *(In Print)* :	Heath Woods, P.E.	Phone:	(830) 228-5446
Signature:	Heath L. Woods	Date:	2/1/12

WATER POLLUTION PREVENTION PLAN MODIFICATION

FOR

Vintage Oaks at the Vineyard Unit 3

M&S Engineering Project Number: 6BSW001

Prepared for:

Jon Van De Voorde, PE
Bluegreen Southwest One, L.P.
6060 North Central Expressway
Dallas, TX 75206

Prepared by:

M & S ENGINEERING, LLC
ENGINEERS | PLANNERS | SURVEYORS

Main Office:
P. O. Box 970
Spring Branch, Texas 78070
830/228-5446
830-885-2170 FAX

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
2/1/12
M&S ENGINEERING, L.L.C.
F-1394

Branch Office:
P. O. Box 391
McQueeney, Texas 78123
830-560-3200
830-560-3203 FAX

January 2012

In This Section

Modification of a Previously Approved Plan

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

1. Current Regulated Entity Name: Vintage Oaks at the Vineyard Unit 3
   Original Regulated Entity Name: Vintage Oaks at the Vineyard Unit 3
   Assigned Regulated Entity Numbers (RN): 1) RN106076003, 2) _____, 3) _____

   _X_ The applicant has not changed and the Customer Number (CN) is: CN 600675268
   ___ The applicant has changed. A new Core Data Form has been provided.

2. _X_ **Attachment A: Original Approval Letter and Approved Modification Letters:** A copy of the original approval letter and copies any letters approving modification are found at the end of this form.

3. A modification of a previously approved plan in requested for (check all that apply):

   ___ physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   ___ change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   _X_ development of land previously identified as undeveloped in the original water pollution abatement plan;
   ___ physical modification of the approved organized sewage collection system;
   ___ physical modification of the approved underground storage tank system;
   ___ physical modification of the approved aboveground storage tank system.

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

WPAP Modification Summary	Approved Project	Proposed Modification
Acres	217.5	217.5
Type of Development	Residential	Residential
Number of Residential Lots	140	143
Impervious Cover (acres)	30.66	33.63
Impervious Cover (%)	14.1%	15.5%
Permanent BMPs	Detention Pond	Detention Pond
Other		

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

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

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

5. _X_ **Attachment B: Narrative of Proposed Modification.** A narrative description of the nature of the proposed modification is provided at the end of this form. It discusses what was approved, including previous modifications, and how this proposed modification will change the approved plan.

6. _X_ **Attachment C: Current site plan of the approved project.** A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is provided at the end of this form. A site plan detailing the changes proposed in the submitted modification is required elsewhere.

   _X_ The approved construction has not commenced. The original approval letter, and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.

   ___ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.

   ___ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.

   ___ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.

   ___ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ___ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.

   _X_ Acreage has not been added to **or** removed from the approved plan.

8. _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.

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

Heath Woods, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

2/1/12
Date

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 25, 2011

Mr. Jon Van De Voorde, P.E.
Bluegreen Southwest One, L.P.
6060 North Central Expressway
Dallas, Texas 75206

Re: Edwards Aquifer, Comal County

Name of Project: Vintage Oaks at the Vineyard Unit 3, located along State Highway 46, approximately 1.3 miles east of the intersection with South Cranes Mill Road, about 9 miles northwest of New Braunfels, Texas

Type of Plan: Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program San Antonio File No. 2961.00, Investigation No. 894509
Regulated Entity No. RN106076003

Dear Mr. Van De Voorde:

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 M&S Engineering, LLC on behalf of Bluegreen Southwest One, L.P. on February 1, 2011. Final review of the WPAP was completed after additional material was received on April 6, and April 21, 2011. As presented to the TCEQ, the temporary best management practices (BMPs) and construction plans were prepared by a Texas licensed professional engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas licensed professional engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

Background

WPAPs were previously approved for two other units in the housing development. A WPAP was approved for Unit 1 by TCEQ letter dated September 18, 2006, and a WPAP was approved for Unit 2 by TCEQ letter dated May 7, 2007. No Edwards Aquifer protection plan was of record for the development as a whole.

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

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.

If you have any questions or require additional information, please contact Alan G. Jones of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4074.

Sincerely,

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

MRV/AGJ/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

cc: Mr. Heath Woods, P.E., M&S Engineering, LLC
Mr. Tom Hornseth, P.E., Comal County
Mr. Karl J. Dreher, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Attachment B

Narrative of Proposed Modification

The site plan has been adjusted to allow for an additional entrance to the subdivision from S Cranes Mill Rd. The modified site plan includes additional roadway impervious cover and three more residential lots. The adjusted impervious cover is still below 20%.

In This Section

TCEQ-0587
General Information Form

Attachment A
Road Map

Attachment B
USGS/Edwards Recharge Zone Map

Attachment C
Project Description

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: Vintage Oaks at the Vineyard Unit 3
COUNTY: Comal STREAM BASIN: Dry Comal Creek

EDWARDS AQUIFER: ✓ RECHARGE ZONE
__ TRANSITION ZONE

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

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: Jon Van De Voorde, PE
Entity: Bluegreen Southwest One, L.P.
Mailing Address: 6060 North Central Expressway
City, State: Dallas, TX Zip: 75206
Telephone: (830) 228-5446 FAX: (214) 753-4639

Agent/Representative (If any):

Contact Person: Heath Woods, P.E.
Entity: M&S Engineering, LLC
Mailing Address: 6477 FM 311
City, State: Spring Branch, Texas Zip: 78070
Telephone: (830) 228-5446 FAX: (830) 885-2170

2. __ This project is inside the city limits of _____.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
X 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.

This site is located along Highway 46, approximately 1.3 miles east of the intersection with S. Cranes Mill Road.

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

   (1) waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
   (2) land disposal of Class I wastes, as defined in 30 TAC §335.1; and
   (3) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

ADMINISTRATIVE INFORMATION

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:

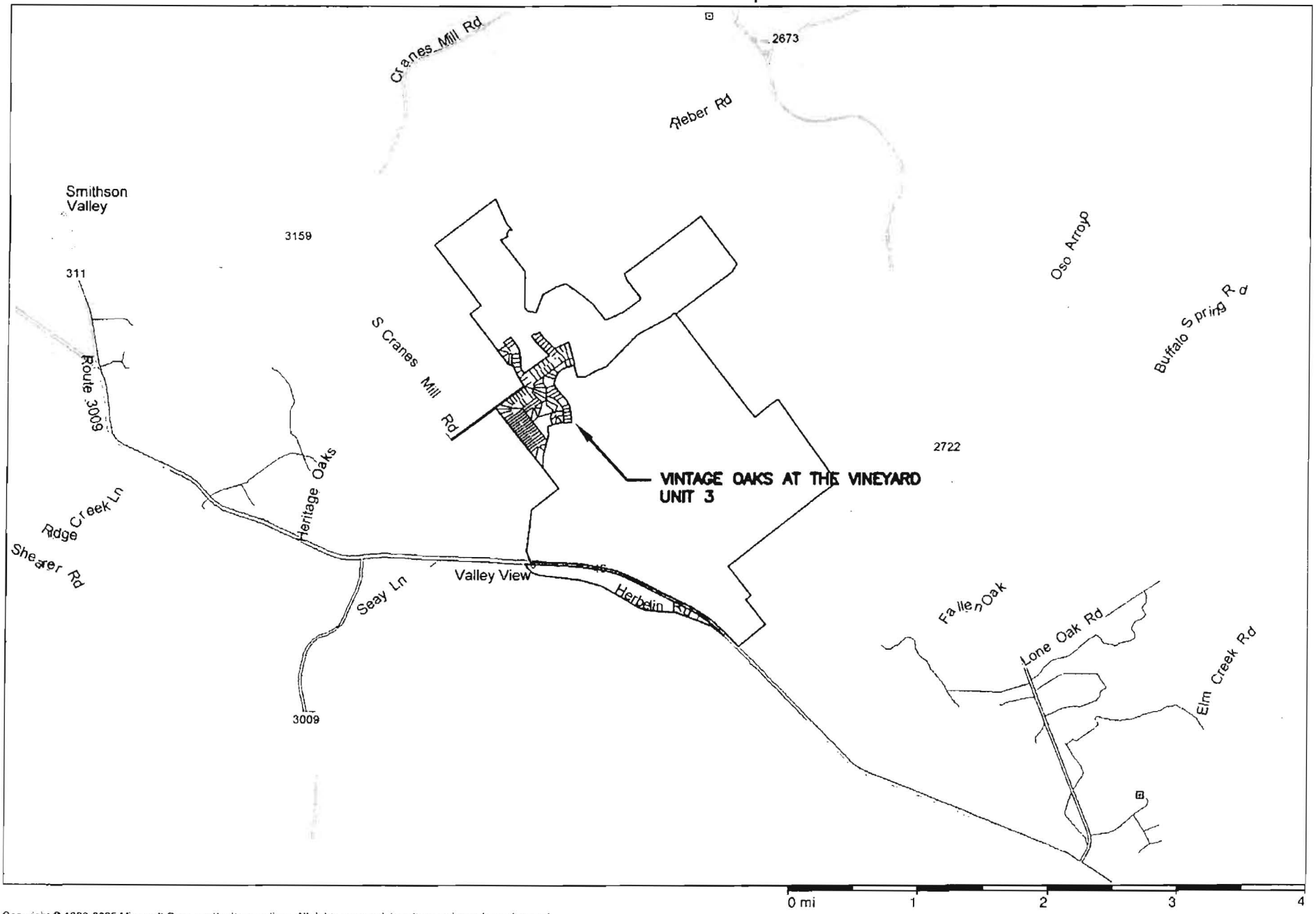
Heath Woods, P.E.
Print Name of Customer/Agent

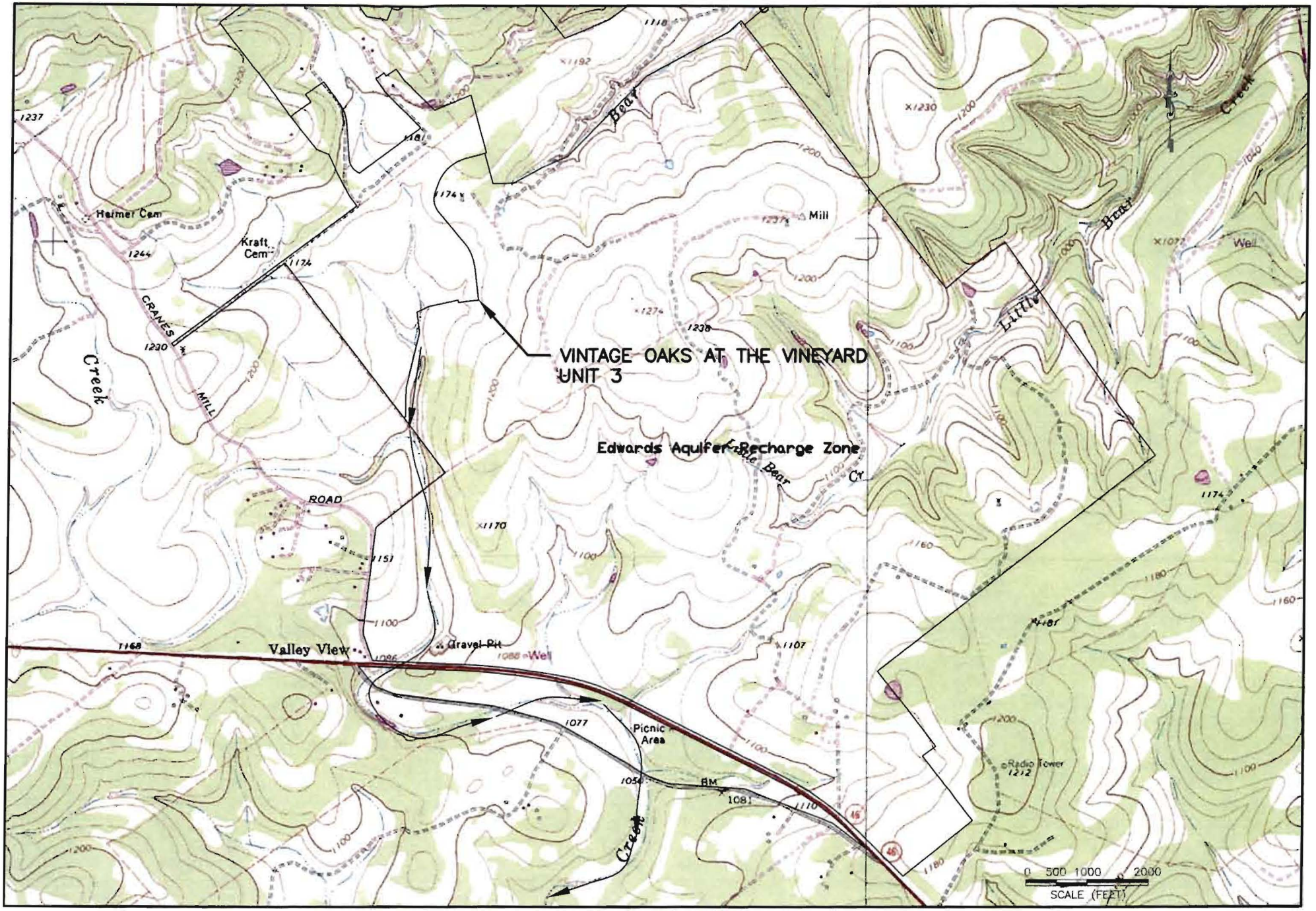
Signature of Customer/Agent — Date: 2/1/12

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.

Site Location Map



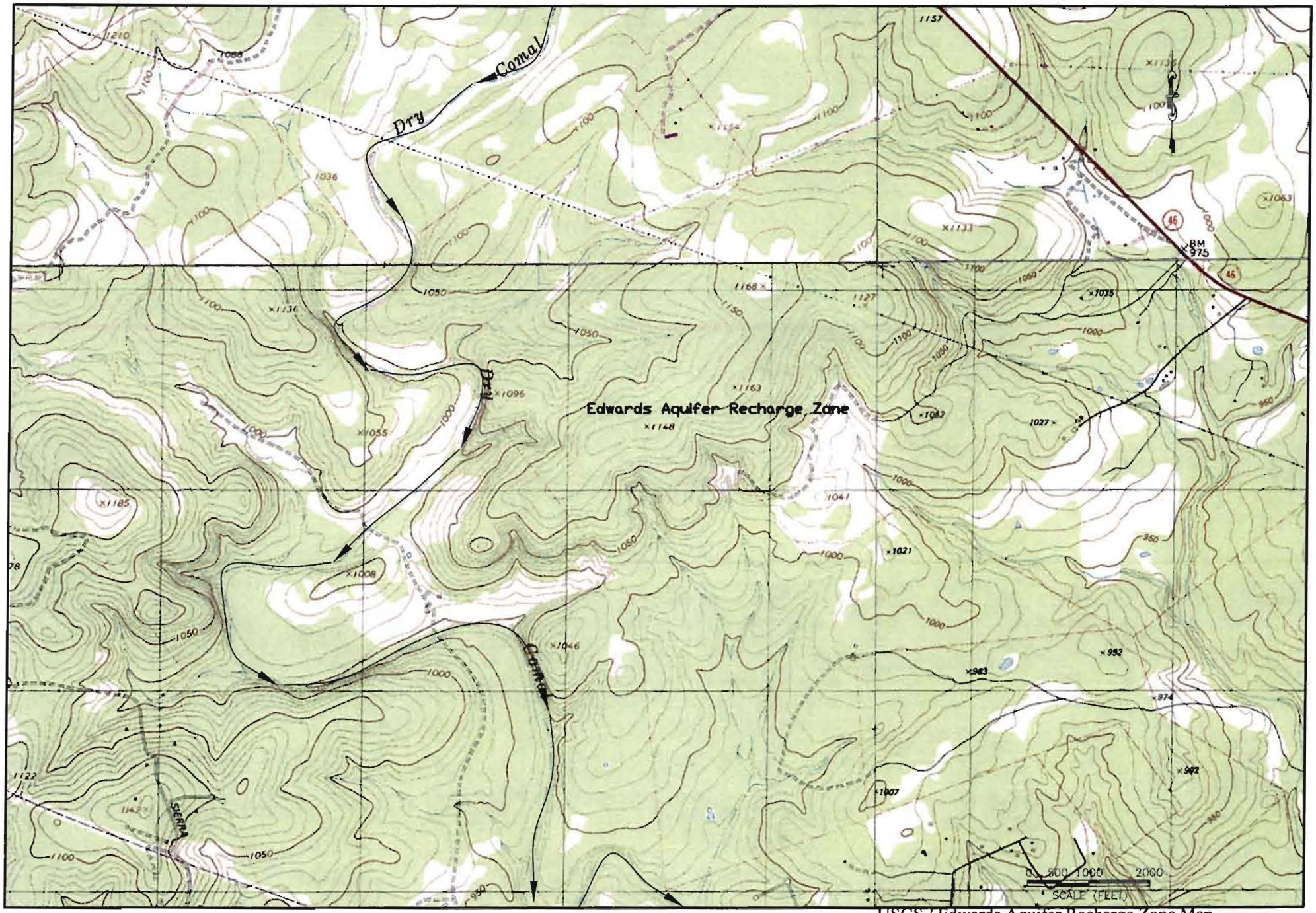


SHEET 1 OF 4

Vintage Oaks at the Vineyard Unit 3

Scale: 1" = 0'

USGS / Edwards Aquifer Recharge Zone Map
Smithson Valley and Sattler Quad Sheets

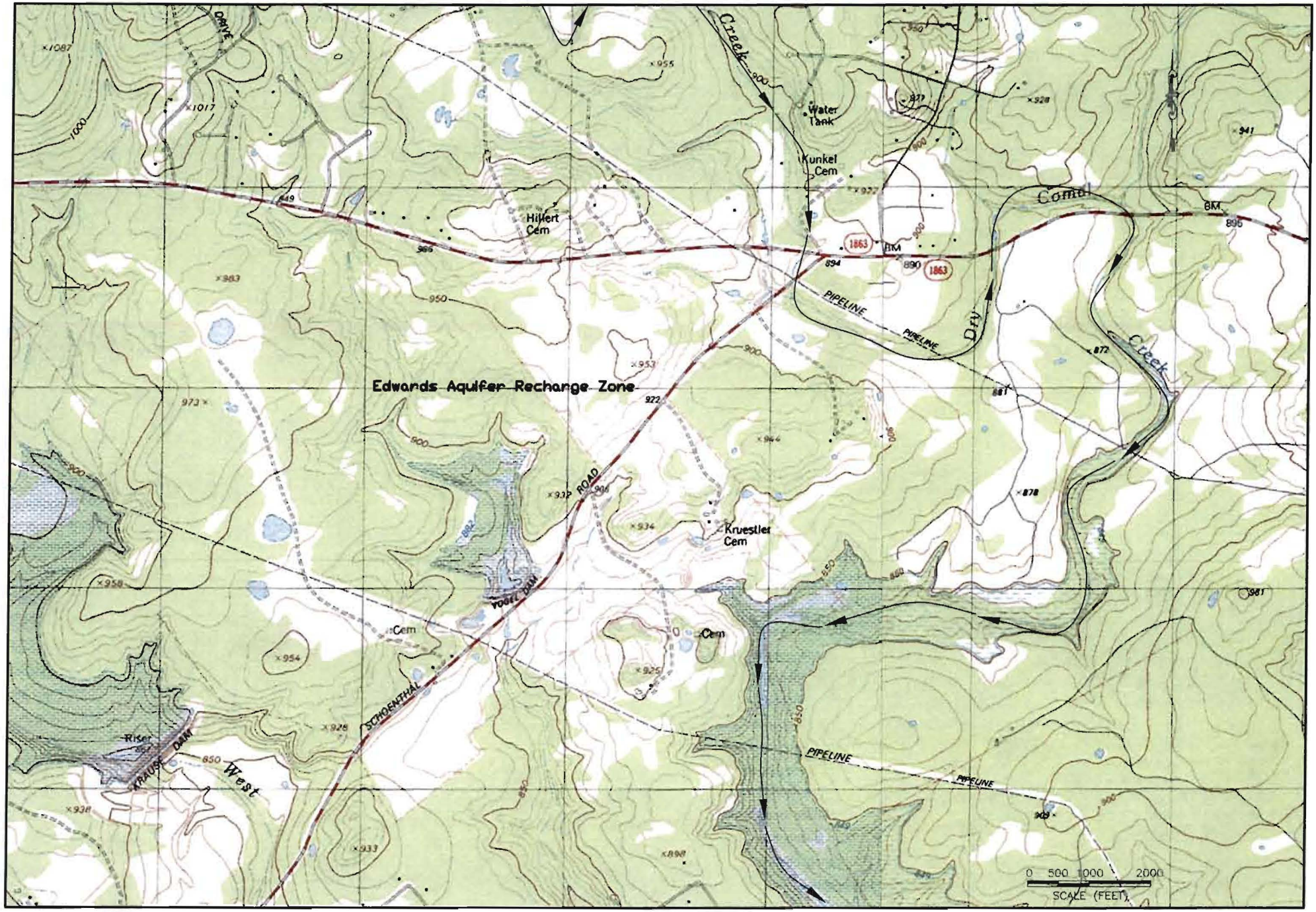


SHEET 2 OF 4

Vintage Oaks [redacted]ne Vineyard Unit 3

Scale: 1" = [redacted]0'

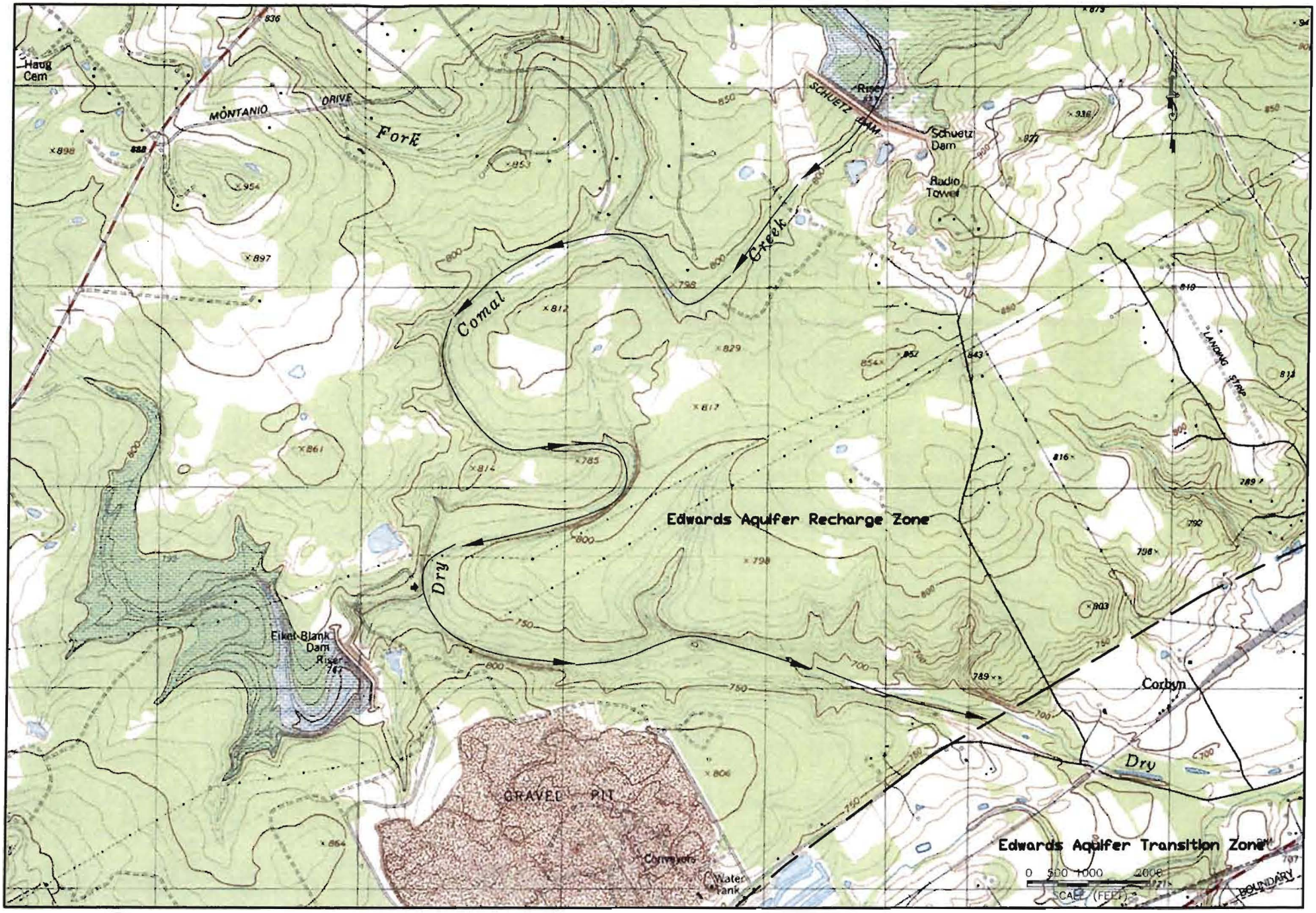
USGS / Edwards Aquifer Recharge Zone Map
Smithson Valley, Sattler, New Braunfels West
and Bat Cave Quad Sheets



Vintage Oaks [illegible]ne Vineyard Unit 3

Scale: 1" = [illegible]0'

USGS / Edwards Aquifer Recharge Zone Map
New Braunfels West and Bat Cave Quad S[illegible]



SHEET 4 OF 4

Vintage Oaks [illegible] ne Vineyard Unit 3

Scale: 1" = [illegible]0'

USGS / Edwards Aquifer Recharge Zone Map
New Braunfels West and Bat Cave Quad S[illegible]

Attachment C

Project Description

The project is proposed to be a Single Family Residential Subdivision, located on 217.5 acres, bordering State Highway 46 and Cranes Mill Road on the western and southern boundaries. The proposed entrance is approximately 1420 feet east of the intersection of State Highway 46 and Cranes Mill Road. The site includes approximately 183.34 acres of single-family residential lots and 21.86 acres of street dedication, and a 12.3 acre detention easement. The streets are accounted for in the impervious cover calculations.

The existing site is a ranch with gravel ranch roads being developed into a subdivision by units. There is no existing impervious cover in Unit 3.

The project is located within the major watershed of the Dry Comal Creek. The entire site drains directly to Dry Comal Creek. Two sensitive features lie within this unit, and will be protected by buffer zones. An additional sensitive feature lies to the south in a future unit, and a buffer zone for this extends onto the site. The proposed residential site is less than 20% impervious cover and thus, aside from sensitive feature buffer zones, other permanent BMPs will not be required. A detention pond will be constructed to mitigate increases in peak stormwater discharge due to development

In This Section

N/A: No change to Geologic Assessment

Geologic Assessment

There has been no change to the original Geologic Assessment.

In This Section

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: Vintage Oaks at the Vineyard Unit 3

REGULATED ENTITY INFORMATION

1. The type of project is:
   - X Residential: # of Lots: 143
   - ___ Residential: # of Living Unit Equivalents: ___
   - ___ Commercial
   - ___ Industrial
   - ___ Other: ___

2. Total site acreage (size of property): 217.5

3. Projected population: 378

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	500500	÷ 43,560 =	11.49
Parking	500500	÷ 43,560 =	11.49
Other paved surfaces	463914	÷ 43,560 =	10.65
Total Impervious Cover	1464922.8	÷ 43,560 =	33.63
Total Impervious Cover ÷ Total Acreage x 100 =			15.46

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	34020 gallons/day
0	% Industrial	0 gallons/day
0	% Commingled	0 gallons/day

TOTAL 34020 gallons/day

15. Wastewater will be disposed of by:
X **On-Site** Sewage Facility (OSSF/Septic Tank):
X **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.
X Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

__ Sewage Collection System (Sewer Lines):
__ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.
__ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.
__ The SCS was previously submitted on _____.

__ The SCS was submitted with this application.
__ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

The sewage collection system will convey the wastewater to the _____ (name) Treatment Plant. The treatment facility is:

__ existing.
__ proposed.

16. 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" = 400 '.

18. 100-year floodplain boundaries
X Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
__ No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):
FEMA FIRM 48091C0245F Effective 09/02/2009

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 ____(#) 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:
X All **sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.
__ No **sensitive** geologic or manmade features were identified in the Geologic Assessment.
__ **ATTACHMENT D - Exception to the Required Geologic Assessment**. 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

2/1/12
Date

Attachment A

Factors Affecting Water Quality

Potential sources of pollution that may be expected to affect the quality of storm water discharges from the site during construction include:

- Soil erosion due to clearing of site.
- Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings.
- Hydrocarbons from asphalt paving.
- Trash and litter from construction workers and material wrappings.
- Concrete truck washout.
- Tar, fertilizers, cleaning solvents, detergents, and petroleum based products.

Potential sources of pollution that may be expected to affect the quality of storm water discharges from the site after development include:

- Oil, grease fuel and hydraulic fluid contamination from vehicle drippings.
- Dirt and dust from vehicles.
- Trash and litter.

Attachment B

Volume and Character of Stormwater

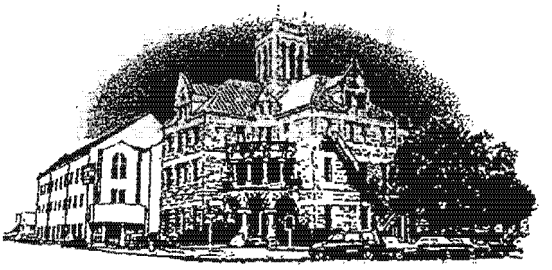
The overall contributing drainage area for Unit 3 of this project is comprised of 4 sub-basins which total to approximately 933 acres. The stormwater runoff for the pre-project conditions of Unit 3 would be across rocky soil, with native grasses. The site has an average slope ranging from 1% to 20%. Using SCS methods peak discharges for each sub-basin were calculated. A summary of the pre- and post-project conditions follows.

100-Year Peak Discharge Summary					
Sub-Basin	Area (acres)	Pre-Project Curve Number	Post-Project Curve Number	Pre-Project Discharge (cfs)	Post-Project Discharge (cfs)
1-3	344.20	71	73	776.42	806.87
1-4A	152.20	75	79	861.71	161.00
1-4B	136.20	71	83	600.32	723.23
1-4C	300.80	71	83	1015.80	1225.24
Unit 3 Outfall				2591.97	2484.91

The characteristics of the post-project stormwater generated onsite will be influenced by site features that generate non-point pollution. This non-point pollution will include oil and grease from the paved areas, suspended solids, sedimentation, and nutrients for lawn care, and possible pesticides and herbicides. The stormwater runoff will flow across pervious areas of rocky soil, with native grasses before discharging into the Dry Comal Creek.

Attachment C

OSSF Suitability Letter from Authorized Agent



Comal County

OFFICE OF COMAL COUNTY ENGINEER

January 26, 2011

Mr. Stephen Jackson
M&S Engineering, LLC
P.O. Box 970
Spring Branch, TX 78070

Re: Vintage Oaks at the Vineyard Unit 3 On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Jackson:

In accordance with TAC §213.5(b)(4)(F)(ii), Comal County has found that the entire referenced site (except for areas listed below) is suitable for the use of private sewage facilities and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified in TAC §285.40-42 based on the following information submitted to our office on January 26, 2011:

- The Geologic Assessment, prepared by Professional Service Industries, Inc.
- The Water Pollution Abatement Plan, prepared by M&S Engineering, LLC

Areas that are not Suitable

The Geologic Assessment identified 2 recharge features as sensitive. The Water Pollution Abatement Plan gave the following Permanent Pollution Abatement Measures to prevent pollutants from entering said features:

Feature ID	Latitude	Longitude	Permanent Pollution Abatement Measure
S-9	N 29°47'21"	W 98°16'26"	50' – 200' Buffer
S-17	N 29°47'3"	W 98°16'25"	50' – 200' Buffer

In accordance with the Water Pollution Abatement Plan, the areas within these 50' buffers are not suitable for the use of any aspect of an On-Site Sewage Facility. In addition, in accordance with TAC §285.91, Table X, Minimum Required Separation Distances for soil absorption systems, unlined ET beds, surface application (edge of spray area), and drip irrigation disposal systems are not suitable within 150' of these sensitive features.

195 David Jonas Drive • New Braunfels, Texas 78130 • (830) 608-2090 FAX (830) 608-2009

Attachment D

Exception To The Required Geologic Assessment

NOT APPLICABLE

In This Section

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: Vintage Oaks at the Vineyard Unit 3

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. X 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: Dry Comal 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.

    X For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

    ___ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

__ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

11. X **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. X 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Heath L. Woods
Signature of Customer/Agent

2/1/12
Date

Attachment A

Spill Response Action

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 an appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential dangers to humans and the environment fro spills and leaks.

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

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

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

General Measures

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

(2) Store hazardous materials and wastes in covered containers and protect form 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 runon during rainfall to the extent that it doesn't compromise clean up activities.

(7) Do not bury or wash spills with water.

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

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

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

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

(12) Keep waste storage areas clean, well organized, and equipment 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 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 as the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

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

(2) Use absorbent material on small spills rather than hosing down or burying the spill.

(3) Absorbent material 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 material.

(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 be 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.

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 Fueling

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon 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 recycle 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 runon 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

1. Oil, grease, fuel and hydraulic contamination from construction equipment and vehicle leakage.
   Remedy: Lubrication and fueling will be preformed in a designated area. This area will be monitored daily for contamination.

2. Miscellaneous trash and litter form construction workers.
   Remedy: Designated receptacles will be strategically located and workers will be directed to deposit trash there.

3. Construction debris.
   Remedy: Debris will be collected weekly and deposited in bins for offsite disposal. Situations requiring immediate attention will be handled on a case by case basis.

4. Asphalt products.
   Remedy: After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to maintain and asphalt wash-off should and unexpected rain occurs. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.

Attachment C

Sequence of Major Activities

1. Install erosion and sedimentation controls (i.e. Silt Fences and Stabilized Construction Entrances) as indicated on the approved construction plans
2. Construct drainage areas and roadways
   Roadway and Utilities: 35.29 acres disturbed
   Drainage Easements: 1.83 acres disturbed
   Detention Pond: 12.303 acres disturbed
   (Detention Pond is located outside of Unit 3, approximately ¼ mile to the north.)
3. Install landscaping or hydromulch to disturbed areas
4. Re-vegetate disturbed areas
5. Remove temporary erosion and sedimentation controls
6. Residential home construction, including building pads, driveways, and landscaping
   Residential Lots: 34.47 acres disturbed
   (Assumed 10,500 sq. ft. disturbed area per lot.)

Attachment D

Temporary Best Management Practices and Measures

All TBMPs will be installed prior to the beginning of site preparation and construction activities as per the Storm Water Pollution Prevention Plan. The TBMPs will remain in place and will be maintained until all construction has ceased and a perennial vegetative cover with a density of 70 percent has been established.

a. Silt fences and rock berms will be used to protect disturbed soils during construction in order to prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

b. Silt fences and rock berms will be used to protect disturbed soils during construction in order to 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 50 to 200-foot radius natural buffer zone adjacent to and upgradient of sensitive features will remain undisturbed so that rainfall may continue to enter the feature. The natural vegetated areas will ensure that pre-development stormwater quantity and quality will continue to recharge the aquifer via the feature. Rock berms will be placed downgradient of all construction activities so that potentially contaminated stormwater may be treated before leaving the sited and entering downstream surface water.

d. No construction will occur within a 50 to 200-foot radius of naturally-occurring sensitive features. The size and shape of the buffer zone will be determined by the contributing drainage area to the feature. The vegetative buffer zone will serve as both TMBP and BMP for the sensitive features. In the case that construction activities occur upgradient of a sensitive feature (greater than the 200-foot radius) the disturbed soils will be protected from erosion by silt fences as outlined above.

Attachment D

Temporary Best Management Practices and Measures

All TBMPs will be installed prior to the beginning of site preparation and construction activities as per the Storm Water Pollution Prevention Plan. The TBMPs will remain in place and will be maintained until all construction has ceased and a perennial vegetative cover with a density of 70 percent has been established.

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Attachment E

Request to Temporarily Seal a Feature

NOT APPLICABLE

Attachment F

Structural Practices

The structural practices that will limit runoff discharge of pollutants form exposed areas of the site will be the use of the water trenches, rock berms, silt fences, and stabilized construction entrance to prevent the excavated material from leaving the site.

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.

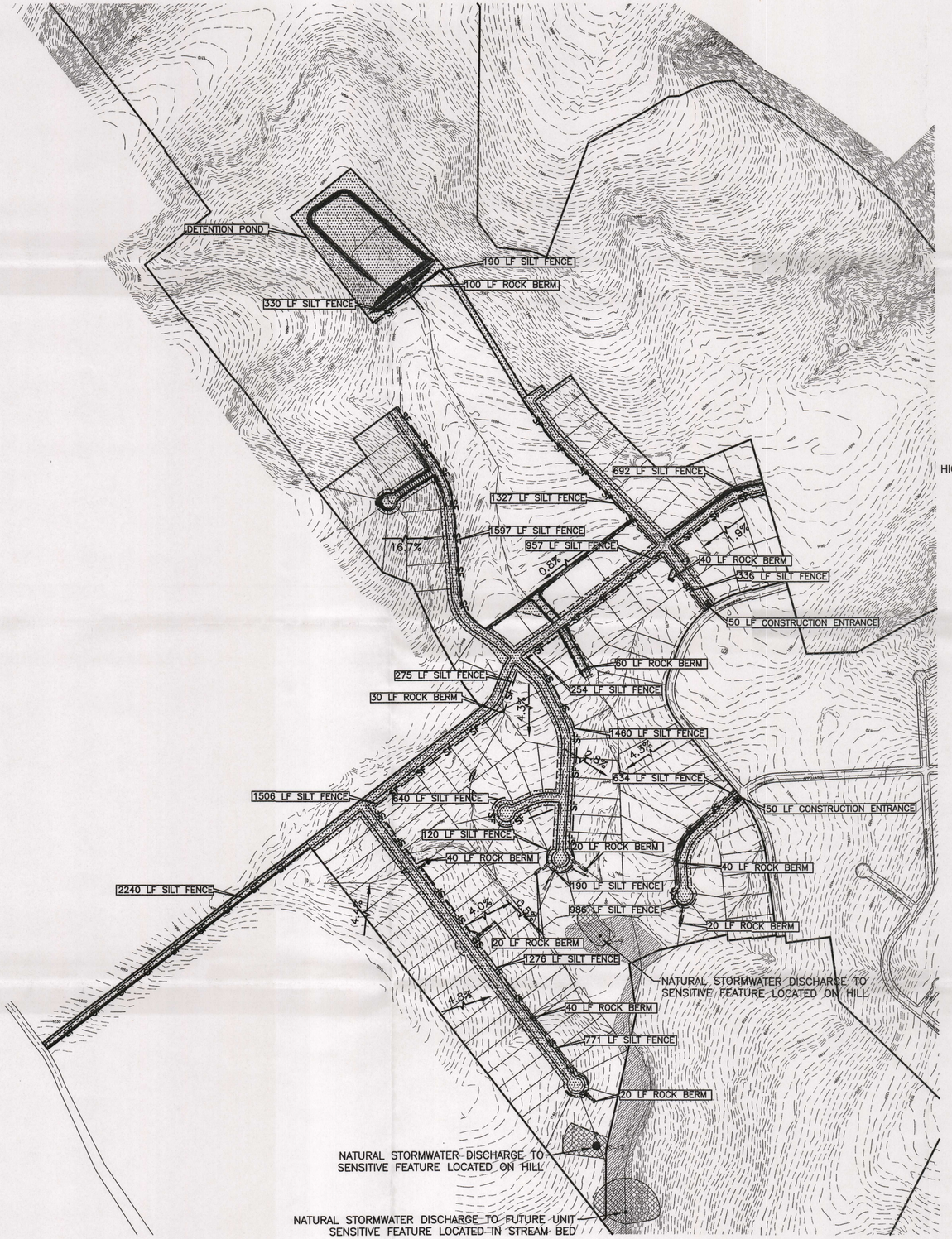
12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

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

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



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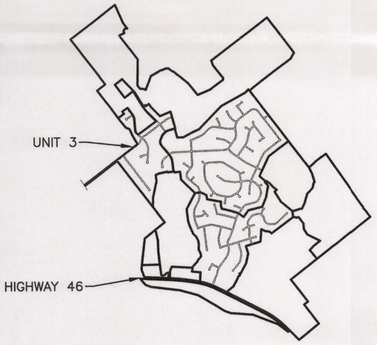
SCALE (FEET)



VINTAGE OAKS AT THE VINEYARD
OVERVIEW MAP
1" = 4000'

LEGEND:

	EXIST PROPERTY BOUNDARY
	EXIST FACE OF CURB
300	EXIST CONTOUR
300	PROP CONTOUR
	PROP FACE OF CURB
	PROP RIGHT-OF-WAY
	PROP SILT FENCE
	PROP DRAINAGE EASEMENT
	PROP WATER FLOW DIRECTION
4.8%	PROP SLOPE
	PROP SENSITIVE FEATURE BUFFER ZONE
	PROP DISTURBED AREA
	100-YEAR FLOODPLAIN

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE ROADS, ROAD RIGHT-OF-WAY, AND DETENTION POND. THESE DISTURBANCES CAN BE ATTRIBUTED TO, BUT NOT LIMITED TO, CLEARING AND GRUBBING RELATED TO BUILDING PAD, DRIVEWAY, UTILITY INSTALLATION, AND LANDSCAPE PREPARATION. THE REMAINING PORTIONS OF THE SITE NOT INVOLVED IN ANY OF THESE ACTIVITIES WILL REMAIN UNDISTURBED.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE INSTALLED TO PROVIDE A STABLE ENTRANCE/EXIT CONDITION FROM THE CONSTRUCTION SITE TO KEEP MUD AND SEDIMENT OFF PUBLIC ROADWAYS (REFER TO THE EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL FOR CONSTRUCTION INFORMATION).

SOIL STABILIZATION NOTE

TEMPORARY EROSION CONTROL MEASURES WILL BE USED TO STABILIZE DISTURBED AREAS (REFER TO EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL FOR CONSTRUCTION OF EROSION CONTROL MEASURES). TRAFFIC WILL BE ROUTED AROUND THESE AREAS TO REDUCE THE EXTENT OF DISTURBED AREAS BY REDUCING SEDIMENT LOADS TO SURFACE WATER.

BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.

Date: Jan 26, 2012, 9:58am User ID: sjackson
File: S:\Active Projects\6BSW003 VOV Unit 3\dwg\6BSW001-WPAP-SPN-001.dwg

REVISIONS

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TBAE REGISTERED ENGINEERING FIRM F-1384

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

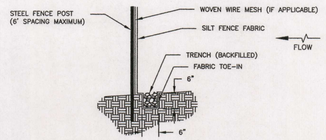
STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
2/1/12

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN SITE PLAN

JOB: 6BSW001
DATE: JANUARY 2012
SCALE: 1" = 400'
INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 2 OF 6



NOTES:

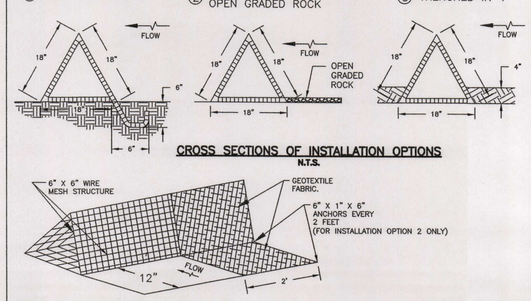
1. TRIANGULAR SEDIMENT FILTER DIKES MAY BE SUBSTITUTED FOR SILT FENCE IN AREAS WHERE INSTALLATION OF SILT FENCE IS NOT POSSIBLE OR WHERE VEHICLE ACCESS MUST BE MAINTAINED PROVIDED THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE ACRE.
2. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE 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/IN^2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND A MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
3. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT^2, AND BRINDELL HARDNESS EXCEEDING 140.
4. WOVEN WIRE BACKING IS REQUIRED IN THE EDWARDS AQUIFER RECHARGE AND CONTRIBUTING ZONE; OPTIONAL ELSEWHERE. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2"X4" WELDED WIRE, 12 GAUGE MINIMUM.
5. SILT FENCE SHOULD BE INSTALLED FOLLOWING THE CONTOURS AS CLOSE AS POSSIBLE. THE ENDS SHOULD BE CURVED UPSTREAM TO CREATE AN AREA OF WATER IMPOUNDMENT AND PREVENT FLOW FROM ESCAPING AROUND THE FENCE.
6. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT AND SPACED NOT MORE THAN 6 FEET ON CENTER.
7. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TREATED IN (E.G., PAVEMENT OR ROCK OUTCROP) WEIGHT FABRIC FLAP WITH 3" OF WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
8. 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.
9. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POSTS OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. WHERE ENDS MEET, OVERLAP FABRIC 3-FEET AND SECURELY FASTEN.

MAINTENANCE AND REMOVAL:

12. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
13. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE. 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.

SILT FENCE

EXHIBIT A1



NOTES:

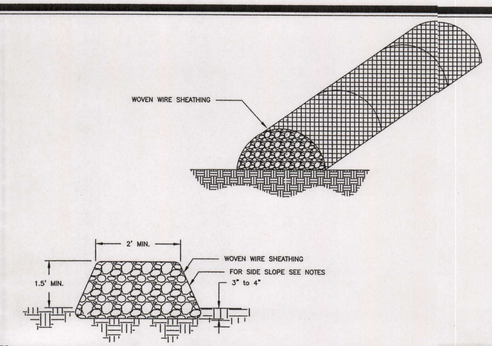
1. DIKES MAY BE MOVED TO ALLOW VEHICLE TRAFFIC, THEN REINSTALLED TO MAINTAIN SEDIMENT CONTROL.
2. GEOTEXTILE FABRIC SHOULD BE THE SAME SPECIFICATIONS AS USED IN FOR SILT FENCES.
3. THE DIKE STRUCTURE SHOULD BE 6 GAUGE 6" X 6" WIRE MESH FOLDED INTO TRIANGULAR FORM 18" ON EACH SIDE, WRAPPED IN GEOTEXTILE FABRIC.
4. DIKES SHALL BE PLACED IN A ROW PARALLEL TO CONTOURS, WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
5. FILTER FABRIC SHOULD LAP OVER ENDS 6" TO COVER DIKE TO DIKE JUNCTION; EACH JUNCTION SHOULD BE SECURED BY SHOAT RINGS.
6. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
7. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 3"-5" OPEN GRADED ROCK, OR TOED-IN 6" WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 4".
8. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 6 INCH WIRE STAPLES ON 2 FOOT CENTERS ON BOTH EDGES AND SKIRT, OR STAKED USING ⅜ INCH DIAMETER REBAR WITH TEE ENDS.

MAINTENANCE AND REMOVAL:

9. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF SIX INCHES, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
10. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN NOTE 8 ABOVE.

TRIANGULAR FILTER DIKE

EXHIBIT A2



NOTES:

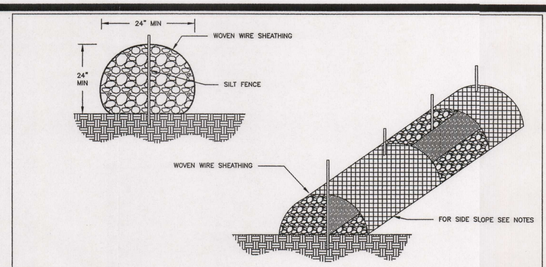
1. USE ONLY CLEAN, OPEN GRADED ROCK 5-8 INCH DIAMETER FOR STREAM FLOW CONDITIONS; USE OPEN GRADED ROCK 3-5 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED.
3. THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
4. FOR INSTALLATIONS IN ACTIVE STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
5. ROCK BERMS PLACED IN STATE RIGHT OF WAY WILL BE INSTALLED WITH A MAXIMUM SLOPE OF 6:1 OR FLATTER FOR ALL SLOPES PARALLEL TO THE FRONTAGE ROAD EDGE OF PAVEMENT.

MAINTENANCE AND REMOVAL:

6. REPAIR ANY LOOSE WIRE SHEATHING.
7. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION
8. THE STONE AND/OR FABRIC CORE - WOVEN WIRE SHEATHING, SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
9. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
10. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK BERM

EXHIBIT A3



NOTES:

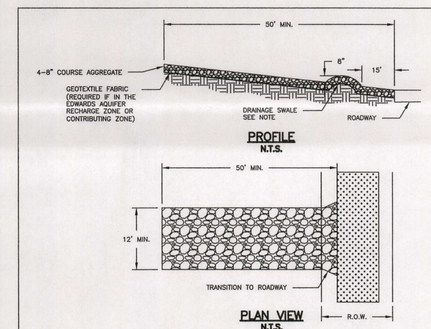
1. SILT FENCE FABRIC, FENCE POSTS, AND WOVEN WIRE MATERIAL SHOULD BE AS SPECIFIED IN THE SILT FENCE DETAIL.
2. BERM WOVEN WIRE SHEATHING AND ROCK FILL SHOULD BE AS SPECIFIED IN THE ROCK BERM DETAIL.
3. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE.
4. INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT, AS WITH A NORMAL SILT FENCE.
5. PLACE THE ROCK ALONG THE SHEATHING ON BOTH SIDES OF THE SILT FENCE AS SHOWN, TO A HEIGHT NOT LESS THAN 24 INCHES.
6. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
7. ROCK BERMS PLACED IN STATE RIGHT OF WAY WILL BE INSTALLED WITH A MAXIMUM SLOPE OF 6:1 OR FLATTER FOR ALL SLOPES PARALLEL TO THE FRONTAGE ROAD PAVEMENT.

MAINTENANCE AND REMOVAL:

8. THE HIGH SERVICE ROCK BERM SHOULD BE REMOVED WHEN THE SITE IS REVEGETATED OR OTHERWISE STABILIZED OR IT MAY REMAIN IN PLACE AS A PERMANENT BMP IF DRAINAGE IS ADEQUATE.
9. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE ON ROCK BERM.
10. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER.
11. REPAIR ANY LOOSE WIRE SHEATHING.
12. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
13. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
14. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

HIGH SERVICE ROCK BERM

EXHIBIT A4



NOTES:

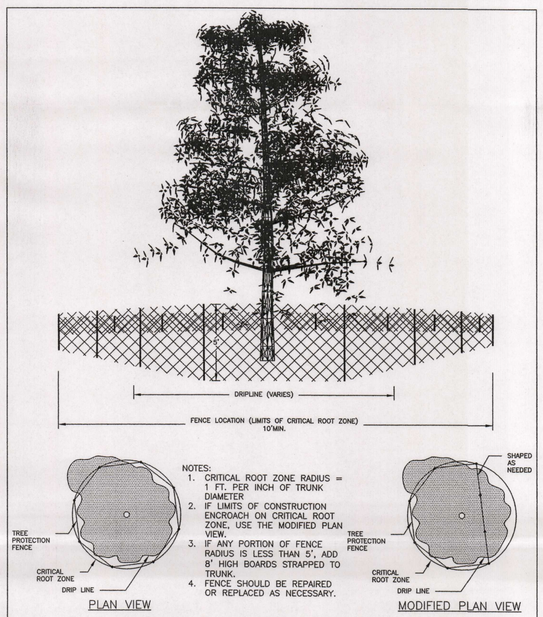
1. THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION WITH A MINIMUM THICKNESS OF 8 INCHES.
2. IF THE SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 8 INCHES HIGH WITH 3:1 (H:V) SIDESLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OX./YD^2, A MULLEN BURST RATING OF 140 LB/IN^2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. THE MINIMUM WIDTH OF THE ENTRANCE SHOULD BE 12 FT OR THE FULL WIDTH OF THE EXIT ROADWAY, WHICHEVER IS GREATER.
5. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
6. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH 4 INCH MINIMUM CRUSHED STONE OR COMMERCIAL RACK WHICH DRAINS TO A SEDIMENT TRAP OR BASIN.

MAINTENANCE:

7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. 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 ROADWAY MUST BE REMOVED IMMEDIATELY.
8. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE

EXHIBIT A5

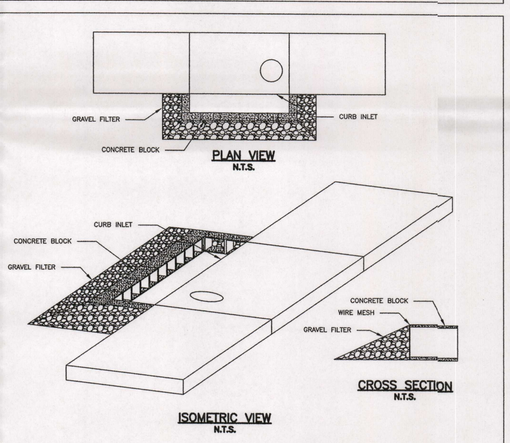


NOTES:

1. CRITICAL ROOT ZONE RADIUS = 1 FT. PER INCH OF TRUNK DIAMETER
2. IF LIMITS OF CONSTRUCTION ENCROACH ON CRITICAL ROOT ZONE, USE THE MODIFIED PLAN VIEW.
3. IF ANY PORTION OF FENCE RADIUS IS LESS THAN 5', ADD 8' HIGH BOARDS STRAPPED TO TRUNK.
4. FENCE SHOULD BE REPAIRED OR REPLACED AS NECESSARY.

TREE PROTECTION CONSTRUCTION FENCE

EXHIBIT A6



NOTES:

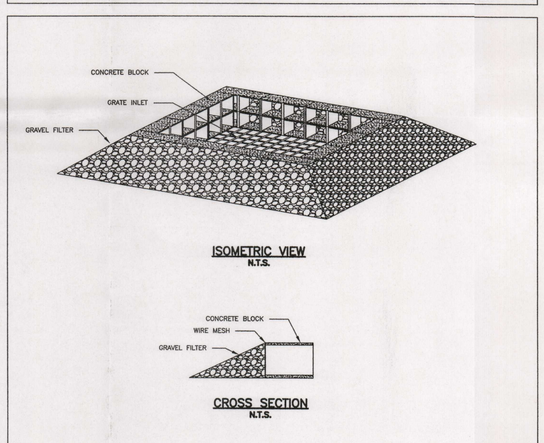
1. TWO CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ABUTTING THE CURB AT EITHER SIDE OF THE INLET OPENING.
2. A 2" X 4" STUD SHOULD BE CUT AND PLACED THROUGH THE OUTER HOLES OF EACH SPACER BLOCK TO HELP KEEP THE FRONT BLOCKS IN PLACE.
3. CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ACROSS THE FRONT OF THE INLET AND ABUTTING THE SPACER BLOCKS AS SHOWN ABOVE.
4. WIRE MESH WITH 1/2" OPENINGS SHOULD BE PLACED OVER THE OUTSIDE VERTICAL FACE OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS.
5. COARSE AGGREGATE SHOULD BE PILED AGAINST THE WIRE TO THE TOP OF THE BARRIER.

MAINTENANCE:

6. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT S THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND/OR REPLACED.

BLOCK AND GRAVEL CURB INLET FILTER

EXHIBIT A7



NOTES:

1. PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED, DEPENDING ON DESIGN NEEDS, BY STACKING COMBINATIONS OF 4-INCH, 8-INCH AND 12-INCH WIDE BLOCKS. THE BARRIER OF BLOCKS SHOULD BE BETWEEN 12 AND 24 INCHES HIGH.
2. WIRE MESH SHOULD BE PLACED OVER THE OUTSIDE VERTICAL FACE OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. WIRE MESH WITH 1/2-INCH OPENINGS SHOULD BE USED.
3. STONE SHOULD BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK BARRIER.

MAINTENANCE:

4. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND/OR REPLACED.

BLOCK AND GRAVEL DROP INLET FILTER

EXHIBIT A8

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1384

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
2/1/12

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN DETAILS

JOB: 6BSW001
DATE: JANUARY 2012
SCALE: N.T.S.

INTERNAL REVIEW:

DESIGN: _____
PEER: _____
PM: _____
DM: _____
OTHER: _____

SHEET: 3 OF 6

Date: Jan 26, 2012, 9:58am User ID: sjackson
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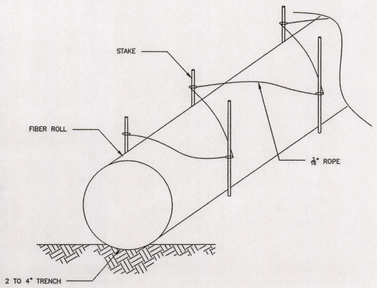
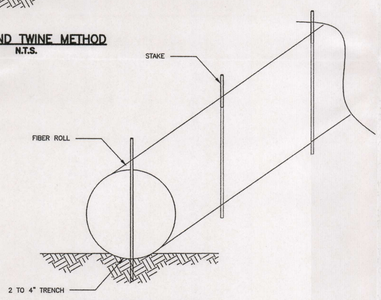


STAKE AND TWINE METHOD
N.T.S.



CENTER PUNCH METHOD
N.T.S.

FIBER ROLLS (1 OF 2)

EXHIBIT A9

NOTES:

1. INSTALL FIBER ROLLS AS SHOWN ON PLANS AND AS NECESSARY ALONG THE TOE, FACE, AND AT GRADE BREAKS OF EXPOSED AND ERODIBLE SLOPES TO SHORTEN SLOPE LENGTH AND SPREAD RUNOFF AS SHEET FLOW, AND DOWN-SLOPE OF EXPOSED SOIL AREAS, AND AROUND TEMPORARY STOCK PILES.
2. CORE MATERIAL SHOULD BE BIODEGRADABLE OR RECYCLABLE. MATERIAL MAY BE COMPOST, MULCH, ASPEN WOOD FIBERS, SHIPPED SITE VEGETATION, AGRICULTURAL RICE OR WHEAT STRAW, COCONUT FIBER, 100% RECYCLABLE FIBERS, OR SIMILAR MATERIALS.
3. CONTAINMENT MESH SHOULD BE 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTODEGRADABLE PLASTIC, POLYESTER, OR SIMILAR MATERIAL. WHEN THE FIBER ROLE WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. USE BIODEGRADABLE OR PHOTODEGRADABLE MESH. FOR TEMPORARY INSTALLATION RECYCLABLE MESH IS RECOMMENDED.
4. LOCATE FIBER ROLLS ON LEVEL CONTOURS SPACED AS FOLLOWS:

   SLOPE INCLINATION OF 4:1 (H:V) OR FLATTER:
   FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 20 FT.

   SLOPE INCLINATION OF 4:1 TO 2:1 (H:V):
   FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 15 FT (A CLOSER SPACING IS MORE EFFECTIVE)

   SLOPE INCLINATION OF 2:1 (H:V) OR GREATER:
   FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 10 FT. (A CLOSER SPACING IS MORE EFFECTIVE)
5. TURN THE ENDS OF THE FIBER ROLL UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE ROLL.
6. SECURE FIBER ROLLS INTO A 2 TO 4 IN. DEEP TRENCH WITH A WIDTH EQUAL TO THE DIAMETER OF THE FIBER ROLL.
7. SECURE FIBER ROLL USING EITHER THE STAKE AND TWINE OR CENTER PUNCH METHOD:

   STAKE AND TWINE METHOD:
   PARTIALLY POUND IN STAKES EVERY 2' ON ALTERNATING SIDES OF FIBER ROLL. WIND 3/16" BRAIDED ROPE FROM STAKE TO STAKE, LOOPING ONCE AROUND EACH STAKE. TORQUE DOWN STAKES TO PROVIDE TENSION ON THE ROPE, HOLDING THE ROLL IN PLACE.

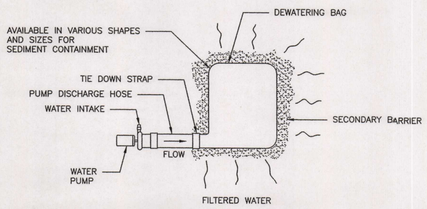
   CENTER PUNCH METHOD:
   DRIVE STAKES AT THE END OF EACH FIBER ROLL AND SPACED 4 FT MAXIMUM ON CENTER. USE STEEL BAR TO DRIVE PILOT HOLE AS NECESSARY.
8. USE WOOD STAKES WITH A NOMINAL CLASSIFICATION OF 0.75 BY 0.75 IN. AND MINIMUM LENGTHS OF 24 IN.
9. IF MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE ROLLS SHOULD BE OVERLAPPED, NOT ABUTTED.

MAINTENANCE:

10. REPAIR OF REPLACE SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER ROLLS.
11. IF THE FIBER ROLL IS USED AS A SEDIMENT CAPTURE DEVICE, OR AS AN EROSION CONTROL DEVICE TO MAINTAIN SHEET FLOWS, SEDIMENT THAT ACCUMULATES BEHIND THE ROLE MUST BE PERIODICALLY REMOVED IN ORDER TO MAINTAIN ITS EFFECTIVENESS. SEDIMENT SHOULD BE REMOVED WHEN THE ACCUMULATION REACHES ONE-HALF THE DESIGNATED SEDIMENT STORAGE DEPTH, USUALLY ONE-HALF THE DISTANCE BETWEEN THE TOP OF THE FIBER ROLL AND THE ADJACENT GROUND SURFACE. SEDIMENT REMOVED DURING MAINTENANCE MAY BE INCORPORATED INTO EARTHWORK ON THE SITE OR DISPOSED OF AT AN APPROPRIATE LOCATION.

FIBER ROLLS (2 OF 2)

EXHIBIT A10



NOTES:

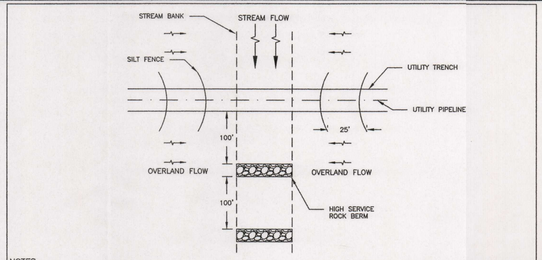
1. WATER IS PUMPED INTO ONE SIDE OF THE BAG AND SEEPS THROUGH THE BOTTOM AND SIDES OF THE BAG.
2. A SECONDARY BARRIER, SUCH AS A ROCK FILTER BED OR STRAW/HAY BALE BARRIER, IS PLACED BENEATH AND BEYOND THE EDGES OF THE BAG TO CAPTURE SEDIMENTS THAT ESCAPE THE BAG. FOR GREATEST EFFICIENCY, THE BAG SHOULD BE PLACED ON A BED OF AGGREGATE.
3. THE DEWATERING BAG SHOULD BE INSTALLED ON A SLIGHT SLOPE WITH THE INLET ON THE UPHILL SIDE.

MAINTENANCE:

4. REPLACE THE BAG WHEN IT NO LONGER FILTERS SEDIMENT OR PASSES WATER AT A REASONABLE RATE. THE BAG IS DISPOSED OF OFFSITE.
5. SEDIMENT REMOVED DURING THE MAINTENANCE OF A DEWATERING DEVICE MAY BE EITHER SPREAD ONSITE AND STABILIZED, OR DISPOSED OF AT A DISPOSAL SITE.
6. SEDIMENT THAT IS COMMINGLED WITH OTHER POLLUTANTS MUST BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

DEWATERING BAG DETAIL

EXHIBIT A11

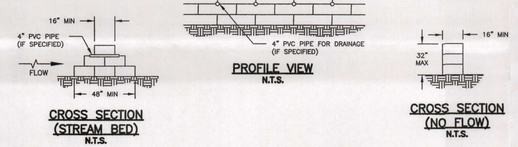


NOTES:

1. UNLESS PRIOR APPROVAL IS RECEIVED FROM TCEQ, UTILITY LINE CREEK CROSSINGS SHOULD BE MADE PERPENDICULAR TO THE CREEK FLOWLINE.
2. IF BASEFLOW IS PRESENT, TCEQ PERSONNEL SHOULD BE CONSULTED, AS IT MAY BE NECESSARY TO DIVERT OR PUMP WATER AROUND THE CONSTRUCTION AREA.
3. EVERY EFFORT SHOULD BE MADE TO KEEP THE ZONE OF IMMEDIATE CONSTRUCTION FREE OF SURFACE WATER. FOR CONSTRUCTION IN THE CREEK CHANNEL, A PIPE OF ADEQUATE SIZE TO DIVERT NORMAL STREAM FLOW SHOULD BE PROVIDED AROUND THE CONSTRUCTION AREA. DIVERSION MAY BE BY PUMPING OR GRAVITY FLOW USING TEMPORARY DAMS.
4. WHERE WATER MUST BE PUMPED FROM THE CONSTRUCTION ZONE, DISCHARGES SHOULD BE IN A MANNER THAT WILL NOT CAUSE SCOURING OR EROSION. ALL DISCHARGES SHALL BE ON THE UPSTREAM OR UPSLOPE SIDE OF EMPLACED EROSION CONTROL STRUCTURES. IF DISCHARGES ARE NECESSARY IN EASILY ERODIBLE AREAS, A STABILIZED, ENERGY-DISSIPATING DISCHARGE APRON SHALL BE CONSTRUCTED OF RIPRAP WITH MINIMUM STONE DIAMETER OF 6 INCHES AND MINIMUM DEPTH OF 12 INCHES. SIZE OF THE APRON IN LINEAR DIMENSIONS SHALL BE APPROXIMATELY 10 TIMES THE DIAMETER OF THE DISCHARGE PIPE.
5. BEFORE ANY TRENCHING, INSTALL TWO HIGH SERVICE ROCK BERMS AT 100-- FT SPACING ACROSS THE CHANNEL (PERPENDICULAR TO THE FLOWLINE) DOWNSTREAM OF THE PROPOSED TRENCH. THESE BERMS SHOULD BE LOCATED BETWEEN 100 AND 300 FEET DOWNSTREAM OF THE PROPOSED TRENCH. LAY PIPE OR OTHER UTILITY LINE AND BURY AS SOON AS POSSIBLE AFTER TRENCHING.
6. AFTER INSTALLATION IS COMPLETE (OR AT THE END OF WORK DAY, IF INSTALLATION CANNOT BE COMPLETED BY END OF DAY), INSTALL SILT FENCING ALONG TRENCH LINE ON EITHER SIDE OF CREEK AT 25-- FT INTERVALS, AS SHOWN.
7. MATERIAL EXCAVATED FROM THE TRENCH IN THE CREEK CHANNEL SHOULD NOT BE DEPOSITED ON THE CHANNEL BANKS. EXCAVATION SHOULD BE HAULED OUT OF THE CHANNEL OR USED IN BACKFILL OF OPEN TRENCH. NO LOOSE EXCAVATED MATERIAL SHOULD BE LEFT IN THE CHANNEL AT THE END OF A WORK DAY.
8. A CONCRETE CAP SHOULD BE PLACED OVER BURIED PIPE WITHIN THE CREEK, AND THE STREAMBED SHOULD BE RESTORED TO PROPER GRADE.
9. REVEGETATE THE DISTURBED AREA USING APPROPRIATE NATIVE OR ADAPTED GRASS SPECIES APPLIED EITHER WITH HYDROMULCH AT TWICE THE NORMAL APPLICATION RATE OR INCORPORATED WITH EROSION PROTECTION MATTING.

UTILITY LINE CREEK CROSSING

EXHIBIT A12



NOTES:

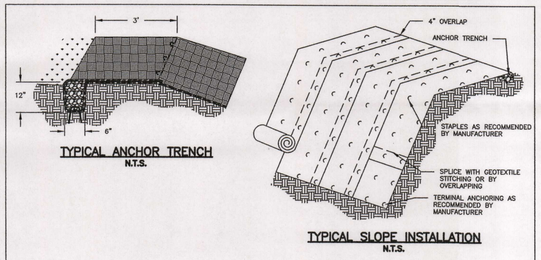
1. THE SAND BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BURLAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD², MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 TO 30 INCHES, WIDTH SHOULD BE 16 TO 18 INCHES AND THICKNESS SHOULD BE 6 TO 8 INCHES.
3. SANDBAGS SHOULD BE FILLED WITH COARSE GRADE SAND, FREE FROM DELETERIOUS MATERIAL. ALL SAND SHOULD PASS THROUGH A NO. 10 SIEVE. THE FILLED BAG SHOULD HAVE AN APPROXIMATE WEIGHT OF 40 POUNDS.
4. OUTLET PIPE (IF SPECIFIED) SHOULD BE SCHEDULE 40 OR STRONGER PVC HAVING A NOMINAL INTERNAL DIAMETER OF 4 INCHES.
5. IF INSTALLED IN A STREAM BED, THE BERM SHOULD HAVE A MINIMUM HEIGHT OF 18 INCHES, MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE TO THE TOP OF THE BERM.
6. IF INSTALLED IN STREAM BED, THE BERM SHOULD HAVE A MINIMUM WIDTH OF 48 INCHES MEASURED AT THE BOTTOM OF THE BERM AND 16 INCHES MEASURED AT THE TOP OF THE BERM.
7. IF INSTALLED IN STREAM BED, THE BASE OF THE BERM SHOULD HAVE AT LEAST 3 SANDBAGS. THESE CAN BE REDUCED TO 2 AND 1 BAG IN THE SECOND AND THIRD ROWS RESPECTIVELY.
8. FOR EACH ADDITIONAL 6 INCHES OF HEIGHT, AN ADDITIONAL SANDBAG MUST BE ADDED TO EACH ROW WIDTH.
9. RUNOFF WATER SHOULD FLOW OVER THE TOPS OF THE SANDBAGS OR THROUGH 4 INCH DIAMTER PVC PIPES EMBEDDED BELOW THE TOP LAYER OF THE BAGS (IF SPECIFIED).
10. WHEN A SANDBAG IS FILLED WITH MATERIAL, THE OPEND END OF THE SANDBAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.

MAINTENANCE AND REMOVAL:

11. THE SANDBAGS SHOULD BE RESHAPED OR REPLACED AS NEEDED DURING INSPECTION.
12. WHEN THE SILT REACHES 6 INCHES, THE ACCUMULATED SILT SHOULD BE REMOVED AND DISPOSED OF AT AN APPROVED SITE IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
13. THE SANDBAG BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED; REMOVAL SHOULD BE DONE BY HAND.

SAND BAG BERM

EXHIBIT A13



TXDOT SOIL RETENTION BLANKET CLASSIFICATIONS

CLASS 1: SLOPE PROTECTION
- TYPE A - SLOPES 1:3 (V:H) OR FLATTER - CLAY SOILS
- TYPE B - SLOPES 1:3 (V:H) OR FLATTER - SANDY SOILS
- TYPE C - SLOPES STEEPER THAN 1:3 (V:H) - CLAY SOILS
- TYPE D - SLOPES STEEPER THAN 1:3 (V:H) - SANDY SOILS

CLASS 2: FLEXIBLE CHANNEL LINER
- TYPE E - SHEAR STRESS RANGE 0-2 POUNDS PER SQUARE FOOT
- TYPE F - SHEAR STRESS RANGE 0-4 POUNDS PER SQUARE FOOT
- TYPE G - SHEAR STRESS RANGE 0-6 POUNDS PER SQUARE FOOT
- TYPE H - SHEAR STRESS RANGE 0-8 POUNDS PER SQUARE FOOT
- TYPE I - SHEAR STRESS RANGE 0-10 POUNDS PER SQUARE FOOT
- TYPE J - SHEAR STRESS RANGE 0-12 POUNDS PER SQUARE FOOT

NOTES:

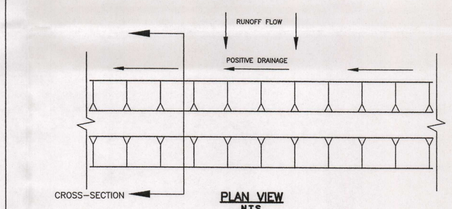
1. THE CONTRACTOR HAS THE OPTION OF UTILIZING TXDOT APPROVED PRODUCTS IN ACCORDANCE WITH THE CLASS AND TYPE AS SPECIFIED ON THE PLANS. THE APPROVED PRODUCT LIST AS OF OCTOBER 2009 CAN BE FOUND IN THE SWPPP SECTION 'STRUCTURAL AND NON-STRUCTURAL CONTROLS.' THE CURRENT APPROVED PRODUCT LIST MAY BE FOUND ON TXDOT'S WEB PAGE:
   HTTP://WWW.DOT.STATE.TX.US/BUSINESS/DOING_BUSINESS/PRODUCT_EVALUATION/EROSION_CONTROL.HTM
2. A TYPICAL INSTALLATION IS SHOWN. BLANKETS AND MATTING SHOULD ALWAYS BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. MATTING SHOULD BE INSTALLED IN UNIFORM CONTACT WITH THE SOIL.
4. ENSURE ALL STAPLES ARE FLUSH WITH THE GROUND.

MAINTENANCE:

5. REPAIR ANY DAMAGE. APPLY NEW MATERIAL IF NECESSARY TO RESTORE FUNCTION.

SOIL RETENTION BLANKETS

EXHIBIT A14



DIVERSION DIKES (1 OF 2)

EXHIBIT A15

TABLE 1

CHANNEL GRADE	RIPRAP STABILIZATION
0.5 - 1%	4 INCH ROCK
1.1 - 2%	6 INCH ROCK
2.1 - 4%	8 INCH ROCK
4.1 - 5%	8 - 12 INCH RIPRAP

NOTES:

1. IF PLANS SPECIFY DIVERSIONS DIKES WITH STONE STABILIZATION (REQUIRED FOR VELOCITIES IN EXCESS OF 6 FPS) THE STONE SHOULD CONSIST OF RIPRAP PLACED IN A LAYER AT LEAST 3 INCHES THICK AND SHOULD EXTEND A MINIMUM HEIGHT OF 3 INCHES ABOVE THE DESIGN WATER SURFACE (AS NOTED IN PLANS) UP THE EXISTING SLOPE AND THE UPSTREAM FACE OF THE DIKE. STABILIZATION RIPRAP SHOULD CONFORM TO THE SPECIFICATIONS IN TABLE 1.
2. DIVERSION DIKES SHOULD BE INSTALLED PRIOR TO AND MAINTAINED FOR THE DURATION OF CONSTRUCTION AND SHOULD INTERCEPT NO MORE THAN 10 ACRES OF RUNOFF.
3. DIKES SHOULD HAVE A MINIMUM TOP WIDTH OF 2 FEET AND A MINIMUM HEIGHT OF COMPACTED FILL OF 18 INCHES MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE TO TOP OF THE DIKE AND HAVING SIDE SLOPES 2:1 OR FLATTER.
4. THE SOIL FOR THE DIKE SHOULD BE PLACED IN LIFTS OF 8 INCHES OF LESS AND BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
5. THE CHANNEL, WHICH IS FORMED BY THE DIKE, MUST HAVE POSITIVE DRAINAGE FOR ITS ENTIRE LENGTH TO AN OUTLET.
6. WHEN THE SLOPE EXCEEDS 2 PERCENT, OR VELOCITIES EXCEEDS 6 FEET PER SECOND (REGARDLESS OF SLOPE), STABILIZATION IS REQUIRED. SITUATIONS IN WHICH VELOCITIES DO NOT EXCEED 6 FEET PER SECOND, VEGETATION MAY BE USED TO CONTROL EROSION.

MAINTENANCE:

7. LOCATE AND REPAIR ANY DAMAGE TO THE CHANNEL OR CLEAR DEBRIS OR OTHER OBSTRUCTIONS SO AS NOT TO DIMINISH FLOW CAPACITY.
8. SILT SHOULD BE REMOVED IN A TIMELY MANNER TO PREVENT REMOBILIZATION AND TO MAINTAIN THE EFFECTIVENESS OF THE CONTROL.
9. IF EROSION IS OCCURRING ON THE FACE OF THE DIKE, THE SLOPES OF THE FACE SHOULD EITHER BE STABILIZED THROUGH MULCH OR SEEDING OR THE SLOPES OF THE FACE SHOULD BE REDUCED.
10. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

DIVERSION DIKES (2 OF 2)

EXHIBIT A16

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1994

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100257
LICENSED PROFESSIONAL ENGINEER
2/1/12

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN DETAILS

JOB: 6BSW001
DATE: JANUARY 2012
SCALE: N.T.S.

INTERNAL REVIEW:

DESIGN: _____
PEER: _____
PM: _____
DM: _____
OTHER: _____

SHEET: 4 OF 6

Date: Jan 26, 2012, 9:59am User ID: sjackson
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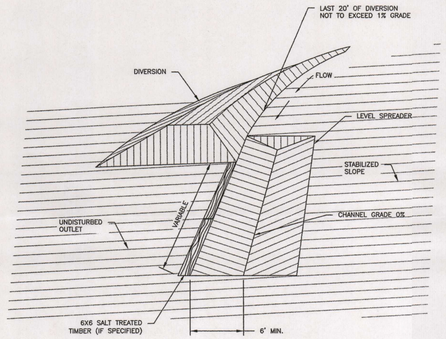
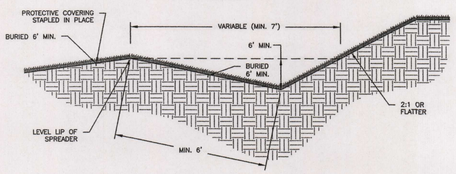


ISOMETRIC VIEW
N.T.S.

LEVEL SPREADER (1 OF 3)

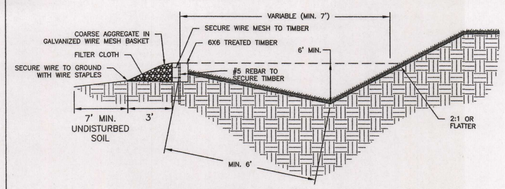
EXHIBIT A17

CROSS SECTION



LEVEL SPREADER WITH VEGETATED LIP
N.T.S.

CROSS SECTION



LEVEL SPREADER WITH RIGID LIP
N.T.S.

LEVEL SPREADER (2 OF 3)

EXHIBIT A18

NOTES:

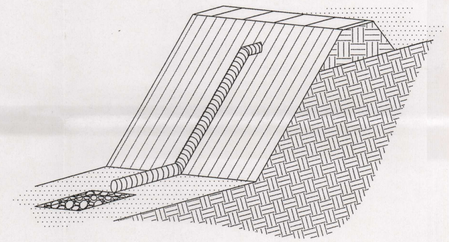
1. LEVEL SPREADERS SHOULD BE CONSTRUCTED ON UNDISTURBED SOIL (NOT FILL MATERIAL).
2. THE ENTRANCE TO THE SPREADER SHOULD BE SHAPED IN SUCH A MANNER AS TO INSURE THAT RUNOFF ENTERS DIRECTLY ONTO THE 0% GRADE CHANNEL.
3. CONSTRUCT A 20-FT TRANSITION SECTION FROM THE DIVERSION CHANNEL TO BLEND SMOOTHLY TO THE WIDTH AND DEPTH OF THE SPREADER.
4. THE LEVEL LIP SHOULD BE CONSTRUCTED AT 0% GRADE TO INSURE UNIFORM SPREADING OF STORMWATER RUNOFF.
5. THE LEVEL LIP MAY BE STABILIZED BY VEGETATION IF THE FLOW FROM THE 2-YEAR, 24-HOUR STORM IS EXPECTED TO BE LESS THAN 4 CFS, OTHERWISE A RIGID NON-ERODIBLE MATERIAL SHOULD BE USED.
6. PROTECTIVE COVERING FOR VEGETATED LIP SHOULD BE A MINIMUM OF 4 FEET WIDE EXTENDING 6 INCHES OVER THE LIP AND BURIED 6 INCHES DEEP IN A VERTICAL TRENCH ON THE LOWER EDGE. THE UPPER EDGE SHOULD BUTT AGAINST SMOOTHLY CUT SOD AND BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY-DUTY WIRE STAPLES.
7. RIGID LEVEL LIP SHOULD BE ENTRENCHED AT LEAST 2 INCHES BELOW EXISTING GROUND AND SECURELY ANCHORED TO PREVENT DISPLACEMENT. AN APRON OF COARSE AGGREGATE SHOULD BE PLACED TO TOP OF LEVEL LIP AND EXTENDED DOWN SLOPE AT LEAST 3 FEET. PLACE FILTER FABRIC UNDER STONE AND USE GALVANIZED WIRE MESH TO HOLD STONE SECURELY IN PLACE.
8. THE RELEASED RUNOFF MUST OUTLET ONTO UNDISTURBED STABILIZED AREAS WITH SLOPE NOT EXCEEDING 10%. SLOPE MUST BE SUFFICIENTLY SMOOTH TO PRESERVE SHEET FLOW AND PREVENT FLOW FROM CONCENTRATING.
9. IMMEDIATELY AFTER ITS CONSTRUCTION, APPROPRIATELY SEED AND MULCH THE ENTIRE DISTURBED AREA OF THE SPREADER.

MAINTENANCE:

10. LEVEL SPREADER LIP SHOULD REMAIN AT 0% SLOPE TO ALLOW PROPER FUNCTION OF MEASURE.
11. THE CONTRACTOR SHOULD AVOID THE PLACEMENT OF ANY MATERIAL ON AND PREVENT CONSTRUCTION TRAFFIC ACROSS THE STRUCTURE. IF THE MEASURE IS DAMAGED BY CONSTRUCTION TRAFFIC, IT SHOULD BE REPAIRED IMMEDIATELY.

LEVEL SPREADER (3 OF 3)

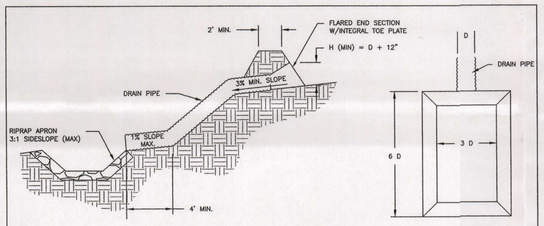
EXHIBIT A19



ISOMETRIC VIEW
N.T.S.

PIPE SLOPE DRAIN (1 OF 2)

EXHIBIT A20



SECTION THRU PIPE
N.T.S.

RIPRAP APRON PLAN VIEW
N.T.S.

NOTES:

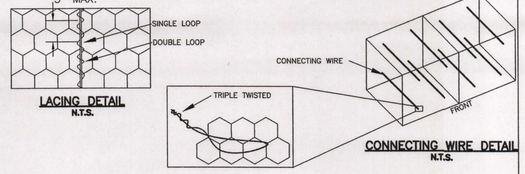
1. PIPE DIAMETER AS SHOWN IN PLANS.
2. THE PIPE MAY BE MADE OF ANY MATERIAL, RIGID OR FLEXIBLE, WHICH IS CAPABLE OF CONVEYING RUNOFF. THIS DRAINPIPE SHOULD BE COMPLETELY WATERTIGHT SO THAT NO WATER LEAKS ON TO THE SLOPE TO BE PROTECTED.
3. RIPRAP TO BE USED IN THE OUTLET APRON SHOULD CONSIST OF EITHER CRUSHED STONE OF BROKEN PORTLAND CEMENT CONCRETE. ALL STONES USED SHOULD WEIGH BETWEEN 0 TO 10 POUNDS EACH AND SHOULD BE AS NEARLY UNIFORM AS IS PRACTICAL.
4. A DIVERSION DIKE SHOULD BE CONSTRUCTED AT THE TOP OF THE SLOPE THAT IS TO BE PROTECTED. THIS DIKE SHOULD BE SIZED SO THAT NO RUNOFF MAY OVERTOP THE DIKE. THE SOIL AROUND AND UNDER THE ENTRANCE SECTION OF THE DRAINPIPE SHOULD BE HAND-TAMPED IN 8-INCH LIFTS TO PREVENT PIPING FAILURE AROUND THE INLET.
5. THE HEIGHT OF THE DIVERSION DIKE AT THE CENTERLINE OF THE INLET SHOULD BE EQUAL TO THE DIAMETER OF THE PIPE PLUS 12 INCHES.
6. A RIGID SECTION OF PIPE SHOULD BE INSTALLED THROUGH THE DIKE. A STANDARD FLARED-END SECTION WITH AN INTEGRAL TOE PLATE EXTENDING A MINIMUM OF 6-INCHES FROM THE BOTTOM OF THE END SECTION SHOULD BE ATTACHED TO THE INLET END OF THE PIPE USING WATERTIGHT FITTINGS.
7. A RIPRAP-LINED APRON SHOULD BE EXCAVATED TO ACCEPT THE RUNOFF FORM THE PIPE AND DISSIPATE THE ENERGY OF THE FLOW. THE WIDTH OF THE BOTTOM OF THE APRON SHOULD BE 3 TIMES THE PIPE DIAMETER AND THE LENGTH SHOULD BE A MINIMUM OF 6 TIMES THE PIPE DIAMETER. THE APRON SHOULD BE A MINIMUM OF 12-INCHES DEEP AND LINED WITH RIPRAP WITH A THICKNESS OF AT LEAST 12 INCHES. THE APRON SHOULD BE DESIGNED SO THAT THE RELEASED FLOW HAS A VELOCITY LESS THAN 3 FEET PER SECOND.

MAINTENANCE:

8. LOCATE AND REPAIR ANY DAMAGE TO JOINTS OR CLOGGING OF THE PIPE.
9. IN CASE WHERE THE DIVERSION DIKE HAS DETERIORATED AROUND THE ENTRANCE OF THE PIPE, IT MAY BE NECESSARY TO REINFORCE THE DIKE WITH SANDBAGS OR TO INSTALL A CONCRETE COLLAR TO PREVENT FAILURE.
10. SIGNS OF EROSION AROUND THE PIPE DRAIN SHOULD BE ADDRESSED IN A TIMELY MANNER BY STABILIZING THE AREA WITH EROSION CONTROL MATS, CRUSHED STONE, CONCRETE OR OTHER APPROPRIATE METHOD.

PIPE SLOPE DRAIN (2 OF 2)

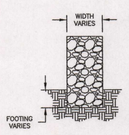
EXHIBIT A21



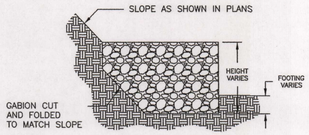
LACING DETAIL
N.T.S.

CONNECTING WIRE DETAIL
N.T.S.

GABION BASKET HEIGHT, WIDTH, AND FOOTING AS SPECIFIED IN PLANS.



GABION BASKET SECTION
N.T.S.



GABION BASKET DETAIL
N.T.S.

GABION BASKET ASSEMBLY SPECIFICATIONS
(1 OF 2)

EXHIBIT A22

NOTES:

1. WIRE GABION TO BE IN ACCORDANCE WITH ASTM A 974.
2. FILLER STONE TO BE CLEAN, HARD, DURABLE STONE THAT DOES NOT CONTAIN SHALE, CALICHE, OR OTHER SOFT PARTICLES.
3. EXCAVATE THE FOUNDATION TO THE EXTENT SHOWN ON THE PLANS. REMOVE ALL LOOSE OR OTHERWISE UNSUITABLE MATERIALS. CAREFULLY BACKFILL ALL DEPRESSIONS TO GRADE WITH SUITABLE MATERIALS AND COMPACT THE BACKFILL TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT FOUNDATION. REMOVE ANY BURIED DEBRIS PROTRUDING FROM THE FOUNDATION THAT WILL IMPEDE THE PROPER INSTALLATION AND FINAL APPEARANCE OF THE GABION AND CAREFULLY BACKFILL AND COMPACT VOIDS AS SPECIFIED ABOVE.
4. IF PVC WIRE COATING IS SPECIFIED, DO NOT PLACE PVC-COATED MATERIALS UNLESS THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE COATED WIRE ARE AT LEAST 15°F ABOVE THE BRITTLENESS TEMPERATURE OF THE PVC.
5. WHEN FILTER MATERIAL IS REQUIRED, SPREAD IT UNIFORMLY ON THE PREPARED FOUNDATION SURFACE TO THE SLOPES, LINES, AND GRADES INDICATED ON THE PLANS. DO NOT PLACE FILTER MATERIAL BY METHODS THAT TEND TO SEGREGATE PARTICLE SIZES. REPAIR ALL DAMAGE TO THE FOUNDATION SURFACE THAT OCCURS DURING FILTER PLACEMENT BEFORE PROCEEDING WITH THE WORK. COMPACTION OF THE FILTER MATERIAL IS NOT REQUIRED, BUT FINISH THE MATERIAL TO PRESENT A REASONABLY EVEN SURFACE, WITHOUT MOUNDS OR WINDROWS.
6. WHEN FILTER FABRIC IS REQUIRED, PLACE IT AS SHOWN ON THE PLANS. ANY DEFECTS, RIPS, HOLES, FLAWS, OR DAMAGE TO THE MATERIAL MAY BE CAUSE FOR REJECTION. PLACE THE MATERIAL WITH THE LONG AXIS PARALLEL TO THE CENTERLINE OF THE STRUCTURE. PLACE SECURING PINS IN THE LAPPED LONGITUDINAL JOINT, SPACED ON APPROXIMATELY 10-FT, CENTERS. KEEP THE FABRIC MATERIAL FREE OF TENSION, STRESS, FOLDS, WRINKLES, OR CREASES. LAP THE MATERIAL AT LEAST 3 FT. ALONG THE LONGITUDINAL JOINT OF MATERIAL, OR LAP THE JOINTS 1 FT. AND SEW THEM.
7. WHEN FILTER FABRIC IS REQUIRED, PLACE SECURING PINS THROUGH BOTH STRIPS OF MATERIAL AT LAPPED JOINTS AT APPROXIMATELY THE MIDPOINT OF THE OVERLAP. PLACE ADDITIONAL SECURING PINS AS NECESSARY TO HOLD FILTER FABRIC IN POSITION. STORE FILTER FABRIC OUT OF DIRECT SUNLIGHT. AFTER PLACING FILTER FABRIC, COVER AS SOON AS POSSIBLE BUT WITHIN 3 DAYS.
8. ASSEMBLE EMPTY GABION UNITS INDIVIDUALLY, AND PLACE THEM TO THE LINES AND GRADES SHOWN ON THE PLANS WITH THE SIDES, ENDS, AND DIAPHRAGMS ERECTED TO ENSURE THAT ALL CREASES ARE IN THE CORRECT POSITION. THE TOPS OF ALL SIDES ARE LEVEL, AND ALL SIDES THAT ARE TO REMAIN EXPOSED ARE STRAIGHT AND PLUMB. FILL THE BASKET UNITS AFTER TRANSPORTING THEM TO THEIR FINAL POSITION.
9. PLACE THE FRONT ROW OF GABION UNITS FIRST, SAND SUCCESSIVELY CONSTRUCT UNITS TOWARD THE TOP OF THE SLOPE OR BACK OF THE STRUCTURE. PLACE THE INITIAL LINE OF BASKET UNITS ON THE PREPARED SURFACE, AND PARTIALLY FILL THEM TO PROVIDE ANCHORAGE AGAINST DEFORMATION AND DISPLACEMENT DURING SUBSEQUENT FILLING. STRETCH AND HOLD EMPTY BASKET UNITS AS NECESSARY TO REMOVE KINKS AND PROVIDE A UNIFORM ALIGNMENT. BEFORE FILLING, CONNECT ALL ADJOINING EMPTY GABION UNITS WITH LACING OR APPROVED FASTENERS ALONG THE PERIMETER OF THE CONTACT SURFACE TO OBTAIN A MONOLITHIC STRUCTURE. IF LACING WIRE IS USED, PROVIDE CONTINUOUS STITCHING WITH ALTERNATING SINGLE AND DOUBLE LOOPS AT INTERVALS OF NO MORE THAN 5 IN. SECURELY FASTEN ALL LACING WIRE TERMINALS.
10. JOIN TWISTED WIRE BASKETS THROUGH SELVAGE-TO-SELVAGE OR SELVAGE-TO-EDGE WIRE CONNECTION; DO NOT USE MESH-TO-MESH OR SELVAGE-TO-MESH WIRE CONNECTION EXCEPT WHERE BASKETS ARE OFFSET OR STACKED, IN WHICH CASE JOIN EACH MESH OPENING WHERE MESH WIRE MEETS SELVAGE OR EDGE WIRE.
11. CAREFULLY FILL THE BASKET UNITS WITH STONE, USING HAND PLACEMENT TO AVOID DAMAGING WIRE COATING, TO ENSURE AS FEW VOIDS AS POSSIBLE BETWEEN THE STONES AND TO MAINTAIN ALIGNMENT. CORRECT EXCESSIVE DEFORMATION AND BULGING OF THE MESH BEFORE FURTHER FILLING. TO AVOID LOCALIZED DEFORMATION, FILL THE BASKET UNITS IN A ROW IN STAGES CONSISTING OF MAXIMUM 12-IN. COURSES; DO NOT AT ANY TIME FILL A CELL TO A DEPTH EXCEEDING 1 FT. MORE THAN ITS ADJOINING CELL. DO NOT DROP STONES INTO BASKET UNITS FROM A HEIGHT GREATER THAN 36 IN.
12. FOR GABION UNITS MORE THAN 2 FT. HIGH, PLACE 2 UNIFORMLY SPACED INTERNAL CONNECTING WIRES BETWEEN EACH STONE LAYER IN ALL FRONT AND SIDE GABION UNITS, CONNECTING THE BACK AND THE FRONT FACES OF THE COMPARTMENTS. LOOP CONNECTING WIRES OR PREFORMED STIFFENERS AROUND 3 TWISTED WIRE-MESH OPENINGS OR A WELDED WIRE JOINT AT EACH BASKET FACE, AND SECURELY TWIST THE WIRE TERMINALS TO PREVENT LOOSENING.
13. ALONG ALL EXPOSED FACES, CAREFULLY PLACE THE OUTER LAYER OF STONE AND ARRANGE IT BY HAND TO ENSURE A NEAT AND COMPACT APPEARANCE. OVERFILL THE LAST LAYER OF STONE UNIFORMLY BY 1 TO 2 IN. TO COMPENSATE FOR FUTURE SETTLEMENT IN ROCK WHILE STILL ALLOWING FOR PROPER CLOSING OF THE LID AND PROVIDING AN EVEN SURFACE WITH A UNIFORM APPEARANCE. STRETCH LIDS TIGHT OVER THE STONE FILL, USING AN APPROVED LID-CLOSING TOOL, UNTIL LID MEETS THE PERIMETER EDGES OF THE FRONT AND END PANELS. DO NOT USE CROWBARS OR OTHER SINGLE-POINT LEVERAGE BARS FOR LID CLOSING. CLOSE THE LID TIGHTLY ALONG ALL EDGES, ENDS, AND INTERNAL-CELL DIAPHRAGMS WITH LACING WIRE OR APPROVED FASTENER. ENSURE THAT ALL PROJECTIONS OR WIRE ENDS ARE TURNED INTO THE BASKETS.
14. WHERE SHOWN IN THE PLANS OR WHERE A COMPLETE GABION UNIT CANNOT BE INSTALLED BECAUSE OF SPACE LIMITATIONS, CUT THE BASKET UNIT AND FOLD AND WIRE IT TOGETHER TO SUIT SITE CONDITIONS. FOLD THE MESH BACK AND NEATLY WIRE IT TO AN ADJACENT BASKET FACE.

GABION BASKET ASSEMBLY SPECIFICATIONS
(2 OF 2)

EXHIBIT A22

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1384

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
2/1/12

VINTAGE OAKS AT THE VINEYARD UNIT 3

WATER POLLUTION ABATEMENT PLAN DETAILS

JOB: 6BSW001

DATE: JANUARY 2012

SCALE: N.T.S.

INTERNAL REVIEW:

DESIGN: _____

PEER: _____

PM: _____

DM: _____

OTHER: _____

SHEET: 5 OF 6

Date: Jan 26, 2012, 9:59am User ID: sjackson
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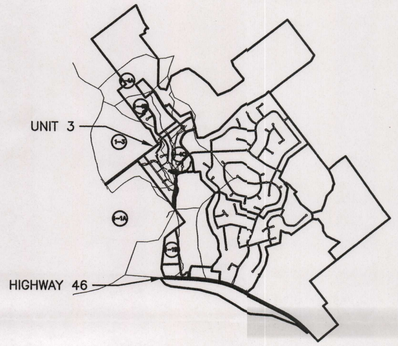
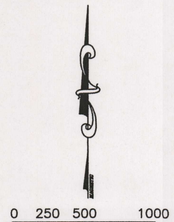
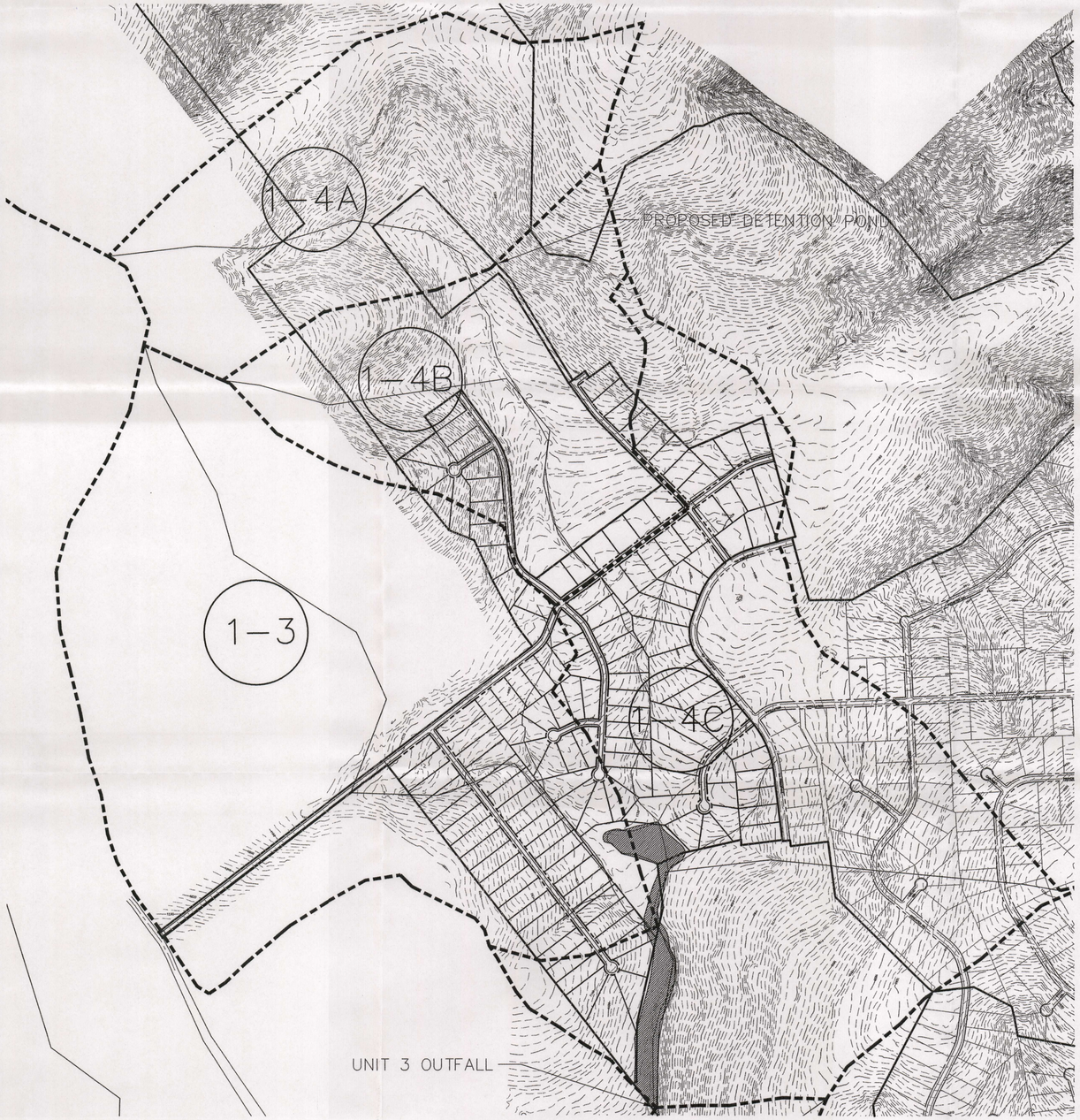


VINTAGE OAKS AT THE VINEYARD
OVERVIEW MAP
1" = 4000'





LEGEND:

- EXIST UNIT BOUNDARY
- EXIST RIGHT-OF-WAY
- EXIST LOT LINE
- EXIST EDGE OF PAVEMENT
- 300 EXIST CONTOUR
- PROP EDGE OF PAVEMENT
- PROP RIGHT-OF-WAY
- PROP DRAINAGE AREA
- 100-YEAR FLOODPLAIN

REVISIONS

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

M & S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TBAE REGISTERED ENGINEERING FIRM F-1294

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
2/1/12

VINTAGE OAKS AT THE VINEYARD
UNIT 3
WATER POLLUTION ABATEMENT PLAN
DRAINAGE AREA MAP

JOB: 6BSW001
DATE: JANUARY 2012
SCALE: 1" = 500'
INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 6 OF 6

Date: Jan 26, 2012, 10:03am User ID: gjackson
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Attachment D

BMPs for Surface Streams

The proposed Vintage Oaks At The Vineyard, Unit 3 is less than 20% impervious cover, therefore not filtration is required for the runoff entering the Dry Comal Creek.

According to the geologic assessment, there were two sensitive features on this site, identified as S-9 and S-17.

S-9 (Sinkhole feature) Located in the vicinity of proposed lots.

S-17 (Streambed feature) Located in the vicinity of proposed lots.

Additionally, there is an as-yet unnamed sensitive feature in a future unit which will require a buffer zone that extends into Unit 3 on the same lot as S-17.

- Native grasses, forbs and trees adjacent to and upgradient of these features will remain undisturbed so that rainfall may continue to enter each feature. The natural vegetated areas would encompass a region between fifty (50) and two hundred (200) foot radius from the border of each feature in order to maintain pre-development recharge quantity and quality.
- When all or a portion of the buffer for these sensitive features is located with the yard of a residential tract, it should be separated by a barrier, such as a fence, from conventional landscaping and maintained in the natural state.

Attachment E

Request To Seal Features

NOT APPLICABLE

Attachment F

Construction Plans

NOT APPLICABLE

Attachment G

Inspection, Maintenance, Repair, And Retrofit Plan

NOT APPLICABLE

Attachment H

Pilot-Scale Field Testing Plan

NOT APPLICABLE

Attachment I

Measures For Minimizing Surface Stream Contamination

A detention pond will be constructed to mitigate the effects of development. In accordance with Comal County regulations, the pond will reduce the peak 100-year discharges to pre-development rates. The outlet will be constructed to discharge at non-erosive velocities.

In This Section

TCEQ-0599
Agent Authorization Form

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

I Jon Van De Voorde, PE,
Print Name

VP of Development,
Title - Owner/President/Other

of Bluegreen Southwest One, L.P.,
Corporation/Partnership/Entity Name

have authorized Heath Woods, P.E.
Print Name of Agent/Engineer

of M&S Engineering, LLC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

Fee Form

In This Section

TCEQ-0574
Application Fee Form

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

NAME OF PROPOSED REGULATED ENTITY: Vintage Oaks at the Vineyard Unit 3
REGULATED ENTITY LOCATION: New Braunfels
NAME OF CUSTOMER: Bluegreen Southwest One, L.P.
CONTACT PERSON: Jon Van De Voorde, PE PHONE: (972) 850-3074
(Please Print)

Customer Reference Number (if issued): CN 600675268 (nine digits)

Regulated Entity Reference Number (if issued): RN 106076003 (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	217.5	Acres	$ 8000
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential		Acres	$
Sewage Collection System		L.F.	$
Lift Stations without sewer lines		Acres	$
Underground or Aboveground Storage Tank Facility		Tanks	$
Piping System(s)(only)		Each	$
Exception		Each	$
Extension of Time		Each	$

Signature

2/1/12
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.

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

Attachment H

Temporary Sediment Pond(s) Plans and Calculations

NOT APPLICABLE

Attachment I

Inspection and Maintenance for BMPs

The BMPs for the construction of this project will be the use of rock berms, silt fencing, gravel filter bags, stabilized construction entrance and the utility trenches. The following inspection and maintenance procedures will be implemented:

1. Sift fencing, rock berms, and construction entrances must be in place prior to the start of construction and will remain in place until construction has been complete and the site stabilized from further erosion.

2. The contractor will inspect the rock berms, silt fencing and construction entrance at least once a week and within 24 hours of a storm of 0.5 inches or more in depth. The contractor will repair or replace any damaged TBMPs. The contractor shall correct damage or deficiencies as soon as practical after the inspection but no later than 7 days after the inspection.

3. Contractor will place trench excavation on the upgradient side of the trench.

4. All soil, sand, gravel, and excavated material stockpiled on-site will have appropriately sized silt fencing placed upgradient and down gradient.

5. The contractor will keep a record of the weekly inspections, noting the condition of the rock berms, silt fencing and construction entrance and any corrective action taken to maintain the erosion control structures. In addition to the inspection and maintenance reports, the operator should keep records of the construction activity on-site, in particular, the following information should be kept.

    A. The dates when major grading activities occur in a particular area.

    B. The dates when construction activities cease in an area, temporarily or permanently.

    C. The dates when an area is stabilized, temporarily or permanently.

    D. Records to be maintained in SWPPP.

Attachment J

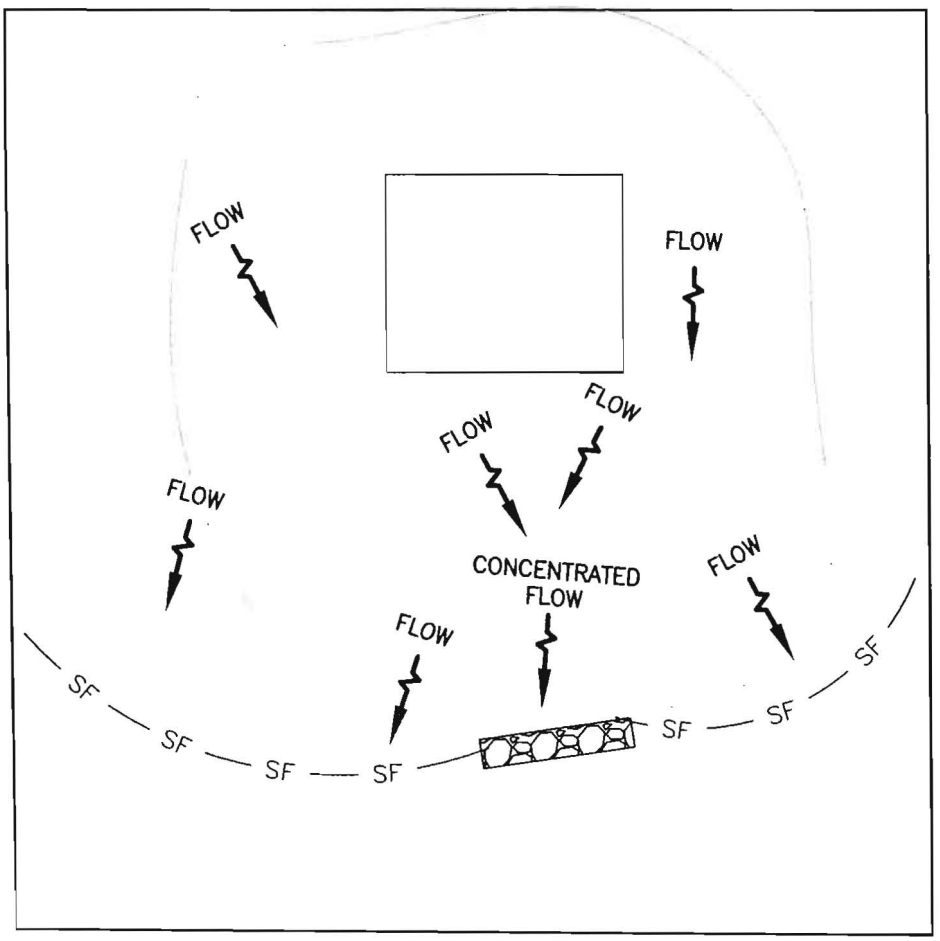
Schedule of Interim and Permanent Soil Stabilization Practices

The schedule of interim and permanent soil stabilization will be as follows:

1. Once construction of the project has commenced, the construction activity is planned to continue until the project is complete. The water, electrical, cable TV and telephone trenches will be excavated. The trenches will then be re-excavated and the water, electrical, cable TV and telephone lines will be installed. This work is intended to continue until all the lines are installed. The utility lines are located within the project boundaries as shown on the site plan. As soon as the underground utilities are installed, the road base will be installed and compacted providing the interim soil stabilization for the paved area and the permanent soil stabilization for the parking areas. Once the individual residential buildings are built and landscaped this will provide permanent soil stabilization for the building areas.

2. Much of the excavation for this project will be in solid rock, helping to minimize the amount of loose soil which has the potential to become suspended in runoff and washed downstream.

3. 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 temporary or permanently ceased. Where the initiation of stabilization measures by the 14^{th} day after construction activity temporary or permanently cease in 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 14^{th} day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.



LEGEND

- PROPERTY LINE
- SF — SILT FENCE
- ROCK BERM
- BUILDING
- DISTURBED AREA
- FLOW DIRECTION

NOTES:

1. EACH PROPERTY OWNER IS RESPONSIBLE FOR ENSURING A STORM WATER POLLUTION PREVENTION PLAN IS DEVELOPED AND IMPLEMENTED IN ACCORDANCE WITH THE TPDES GENERAL PERMIT TXR150000. THIS PLAN MUST INCLUDE THE DESIGN AND PLACEMENT OF APPROPRIATE TEMPORARY CONTROLS SUCH AS SILT FENCE AND ROCK BERMS.
2. IF THE AVERAGE IMPERVIOUS COVER PER LOT EXCEEDS THE ASSUMPTIONS DESCRIBED IN THE APPROVED EDWARDS AQUIFER PLAN, A MODIFICATION TO THE PLAN MUST BE APPROVED PRIOR TO CONSTRUCTION.
3. THIS DETAIL PROVIDES GENERAL GUIDANCE FOR THE PLACEMENT OF CONTROLS. THESE CONTROLS SHOULD BE TAILORED TO FIT THE SPECIFIC ONSITE CONDITIONS AND THE PROPOSED CONSTRUCTION.
4. SILT FENCE SHOULD BE INSTALLED DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE ENDS OF THE FENCE SHOULD BE CURVED UPHILL TO CREATE AN IMPOUNDMENT AREA. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.
5. ROCK BERMS SHOULD BE INSTALLED IN AREAS OF CONCENTRATED FLOW WITH DRAINAGE AREA NOT TO EXCEED 5 ACRES.

SOIL STABILIZATION NOTES:

6. TEMPORARY EROSION CONTROL MEASURES WILL BE USED TO STABILIZE DISTURBED AREAS. TRAFFIC WILL BE ROUTED AROUND THESE AREAS TO REDUCE THE EXTENT OF DISTURBED AREAS BY REDUCING SEDIMENT LOADS TO SURFACE WATER.
7. BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.
8. MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.

SCALE - NTS	TYPICAL LOT PLAN FOR TEMPORARY BMPS	M & S ENGINEERING, LLC. ENGINEERS AND PLANNERS
DATE - DEC 2009		
DRAWN - SRJ		
SHEET - 1 of 1		

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE • (830) 228-5446
FAX • (830) 885-2170

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

In This Section

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

REGULATED ENTITY NAME: Vintage Oaks at the Vineyard Unit 3

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.

   X 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.

   — 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.

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

X 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.**

__ 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.

X 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.

__ **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. N/A **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. N/A **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. N/A 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

2/1/12
Date

Attachment A

20% Or Less Impervious Cover Waiver

NOT APPLICABLE

Attachment B

BMPs for Upgradient Stormwater

The upgradient stormwater would continue to be accepted onto the project site. The stormwater runoff from the areas that are immediately upgradient of the site are currently undeveloped. No BMPs are required because the site will be re-vegetated after construction is complete.

Attachment C

BMPs for On-Site Stormwater

Two sensitive features lie within this unit, and will be protected by buffer zones. An additional sensitive feature lies to the south in a future unit, and a buffer zone for this extends onto the site. These naturally vegetated buffer zones around sensitive recharge features will be maintained as a permanent BMP to provide treatment to potentially contaminated stormwater entering the sensitive features. The buffer zones will be recorded on the plat and will become deed restricted easements preventing any type of construction or development. The proposed residential site is less than 20% impervious cover and thus, aside from sensitive feature buffer zones, other permanent BMPs will not be required.

201206019156 06/01/2012 11 00.45 AM 1/5

b/c

Deed Recordation Affidavit
Unit 3-Vintage Oaks
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §
County of Comal §

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

(1) That my name is Thad Rutherford and that I am the Senior Vice President for Southstar At Vintage Oaks, LLC, owner of the real property described below.

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

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on September 12, 2011
A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is Incorporated herein by reference.

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

A 33.02 acre tract of land being out of the W. M. Kingston Survey No. 303, Abstract No. 333, of a 2,806.421 acre tract conveyed to Southstar at Vintage Oaks, LLC, and recorded in Doc. No. 201206016338 of the Official Public Records of Comal County, Texas

LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this 30 day of May, 2012.

NOTARY PUBLIC

LAUREN L. KORB
Notary Public, State of Texas
My Commission Expires
March 29, 2016

THE STATE OF TEXAS §
County of ~~Comal~~ §Dallas

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 30 day of May, 2012.

NOTARY PUBLIC

Lauren L. Korb
Typed or Printed Name of Notary

LAUREN L. KORB
Notary Public, State of Texas
My Commission Expires
March 29, 2016

MY COMMISSION EXPIRES: March 29, 2016

TCEQ-0625 (Rev. 10/01/04)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 12, 2011

Mr. Jon Van De Voorde, P.E.,
Bluegreen Southwest One, LP
6060 North Central Expressway
Dallas, TX 75206

Re: Edwards Aquifer Protection Program, Comal County

Name of Project: Vintage Oaks at the Vineyard Unit 4; Located at the northeast corner of Hwy. 46 and Cranes Mill Road, Comal County, Texas

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

Edwards Aquifer Protection Program ID No. 2996.00; Investigation No. 942809; Regulated Entity No. RN106183676

Dear Mr. Van De Voorde:

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 M & S Engineering, LLC on behalf of Bluegreen Southwest One, LP on July 13, 2011. Final review of the WPAP was completed after additional material was received on August 30, 2011. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

Project Description

The proposed single-family residential project will have an area of approximately 32.5 acres. It will include the construction of six single-family residential homes and driveways. The impervious cover will be 1.38 acres (4.25 percent). According to a letter dated, June 28, 2011,

signed by Robert Boyd, P.E., with Comal County, the site in the development is acceptable for the use of on-site sewage facilities.

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, this single family residential project will not have more than 20 percent impervious cover. Temporary BMPs will be used to control sediment runoff during construction activities.

Geology

According to the geologic assessment included with the application, the site is located on the Lower Edwards Kainer Formation. The project geologist evaluated seven geologic features as not sensitive. The San Antonio Regional Office site assessment conducted on September 9, 2011 revealed the site is adequately described by the geologic assessment.

Special Conditions

1. Since this project will not have more than 20 percent impervious cover, an exemption from additional permanent BMPs is approved. If the percent impervious cover ever increases above 20 percent or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the appropriate regional office of these changes.

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 are located onsite. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

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

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

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.

If you have any questions or require additional information, please contact Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

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

MRV/CEF/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

cc: Mr. Heath Woods, P.E., M&S Engineering, LLC
Mr. Thomas Hornseth, P.E., Comal County Engineer
Mr. Karl J. Dreher, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Filed and Recorded
Official Public Records
Joy Streater, County Clerk
Comal County, Texas
06/01/2012 11:00:45 AM
DARLA 6 Page(s)
201206019156

Joy Streater

Now being platted as U3

TEXAS COMMISSION ON ENVIRONMENTAL QUALI

Protecting Texas by Reducing and Preventing Pollution

September 12, 2011

RECEIVED
SEP 27 2011
COUNTY ENGINEER

Mr. Jon Van De Voorde, P.E.,
Bluegreen Southwest One, LP
6060 North Central Expressway
Dallas, TX 75206

Re: Edwards Aquifer Protection Program, Comal County

Name of Project: Vintage Oaks at the Vineyard Unit 4; Located at the northeast corner of Hwy. 46 and Cranes Mill Road, Comal County, Texas

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

Edwards Aquifer Protection Program ID No. 2996.00; Investigation No. 942809; Regulated Entity No. RN106183676

Dear Mr. Van De Voorde:

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Project Description

The proposed single-family residential project will have an area of approximately 32.5 acres. It will include the construction of six single-family residential homes and driveways. The impervious cover will be 1.38 acres (4.25 percent). According to a letter dated, June 28, 2011,

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.

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.

If you have any questions or require additional information, please contact Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

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

MRV/CEF/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

cc: Mr. Heath Woods, P.E., M&S Engineering, LLC
Mr. Thomas Hornseth, P.E., Comal County Engineer
Mr. Karl J. Dreher, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

TEXAS COMMISSION ON ENVIRO

Protecting Texas by Reducing and Pr

Now area is being platted as 3

RECEIVED
JUL 19 2011
COUNTY ENGINEER

July 14, 2011

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: Vintage Oaks at the Vineyard Unit 4, located along State Highway 46 approximately 1.3 miles east of the intersection with S Cranes Mill Road, New Braunfels, Texas
PLAN TYPE: Application for Approval of a Water Pollution Abatement Plan, 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
EAPP File No.: 2996.00

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 August 13, 2011.

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 PREVENTION PLAN

FOR

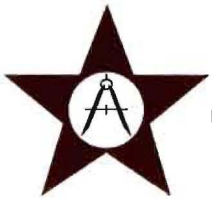
Vintage Oaks at the Vineyard Unit 4

M&S Engineering Project Number: 11BSW001

Prepared for:

Jon Van De Voorde, PE
Bluegreen Southwest One, L.P.
6060 North Central Expressway
Dallas, TX 75206

Prepared by:



M & S ENGINEERING, LLC
ENGINEERS | PLANNERS | SURVEYORS

Main Office:
P. O. Box 970
Spring Branch, Texas 78070
830/228-5446
830-885-2170 FAX

Branch Office:
P. O. Box 391
McQueeney, Texas 78123
830-560-3200
830-560-3203 FAX

June 2011

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 — WPAP

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 600675268		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:	☐ Corporation	☐ Individual	☐ Sole Proprietorship- D.B.A
☐ 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:*

10. Mailing Address:

City		State		ZIP		ZIP + 4	

11. Country Mailing Information *(if outside USA)*	12. E-Mail Address *(if applicable)*

13. Telephone Number	14. Extension or Code	15. Fax Number *(if applicable)*
( )		( )

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)*

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)*

Vintage Oaks at the Vineyard Unit 4

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*							
	City	New Braunfels	State	TX	ZIP	78132	ZIP + 4
25. Mailing Address:							
	City		State		ZIP		ZIP + 4

26. E-Mail Address:	jon.vandevoorde@bluegreencorp.com

27. Telephone Number	28. Extension or Code	29. Fax Number *(if applicable)*
(972) 850-3074		(214) 753-4639

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)
1521	6552	236115	237210

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

Residential Subdivision

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

35. Description to Physical Location:	This site is located along Highway 46, approximately 1.3 miles east of the intersection with S. Cranes Mill Road.

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

37. Latitude (N) In Decimal:	29.7754		38. Longitude (W) In Decimal:	98.2756	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	46	31.57	98	16	32.14

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:	Stephen Jackson	41. Title:	Hydrologistt

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(830) 228-5446		(830) 885-2170	sjackson@msengr.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:	M&S Engineering, LLC	Job Title:	Agent - Engineer
Name *(In Print)*:	Heath Woods, P.E.	Phone:	(830) 228-5446
Signature:	Heath L. Woods	Date:	7/12/11

In This Section

TCEQ-0587
General Information Form

Attachment A
Road Map

Attachment B
USGS/Edwards Recharge Zone Map

Attachment C
Project Description

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: Vintage Oaks at the Vineyard Unit 4
COUNTY: Comal STREAM BASIN: Dry Comal Creek

EDWARDS AQUIFER: ✓ RECHARGE ZONE
__ TRANSITION ZONE

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

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: Jon Van De Voorde, PE
Entity: Bluegreen Southwest One, L.P.
Mailing Address: 6060 North Central Expressway
City, State: Dallas, TX Zip: 75206
Telephone: ~~(830) 228-5446~~ (972) 850-3074 SRJ FAX: (214) 753-4639

Agent/Representative (If any):

Contact Person: Heath Woods, P.E.
Entity: M&S Engineering, LLC
Mailing Address: 6477 FM 311
City, State: Spring Branch, Texas Zip: 78070
Telephone: (830) 228-5446 FAX: (830) 885-2170

2. __ This project is inside the city limits of _____.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
X 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.

This site is located along Highway 46, approximately 1.3 miles east of the intersection with S. Cranes Mill Road.

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

(1) waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
(2) land disposal of Class I wastes, as defined in 30 TAC §335.1; and
(3) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

ADMINISTRATIVE INFORMATION

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:

Heath Woods, P.E.
Print Name of Customer/Agent

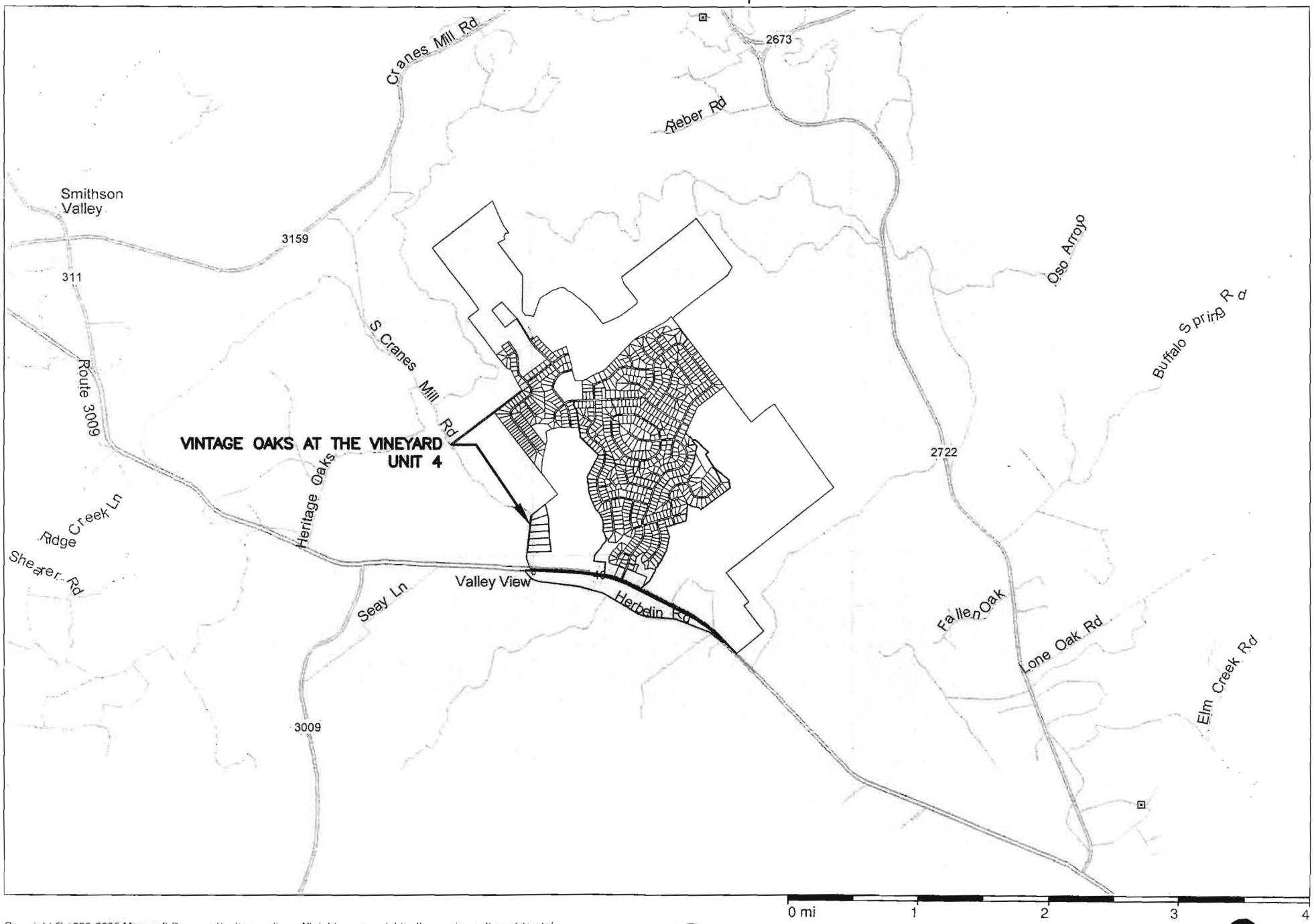
Heath L. Woods
Signature of Customer/Agent

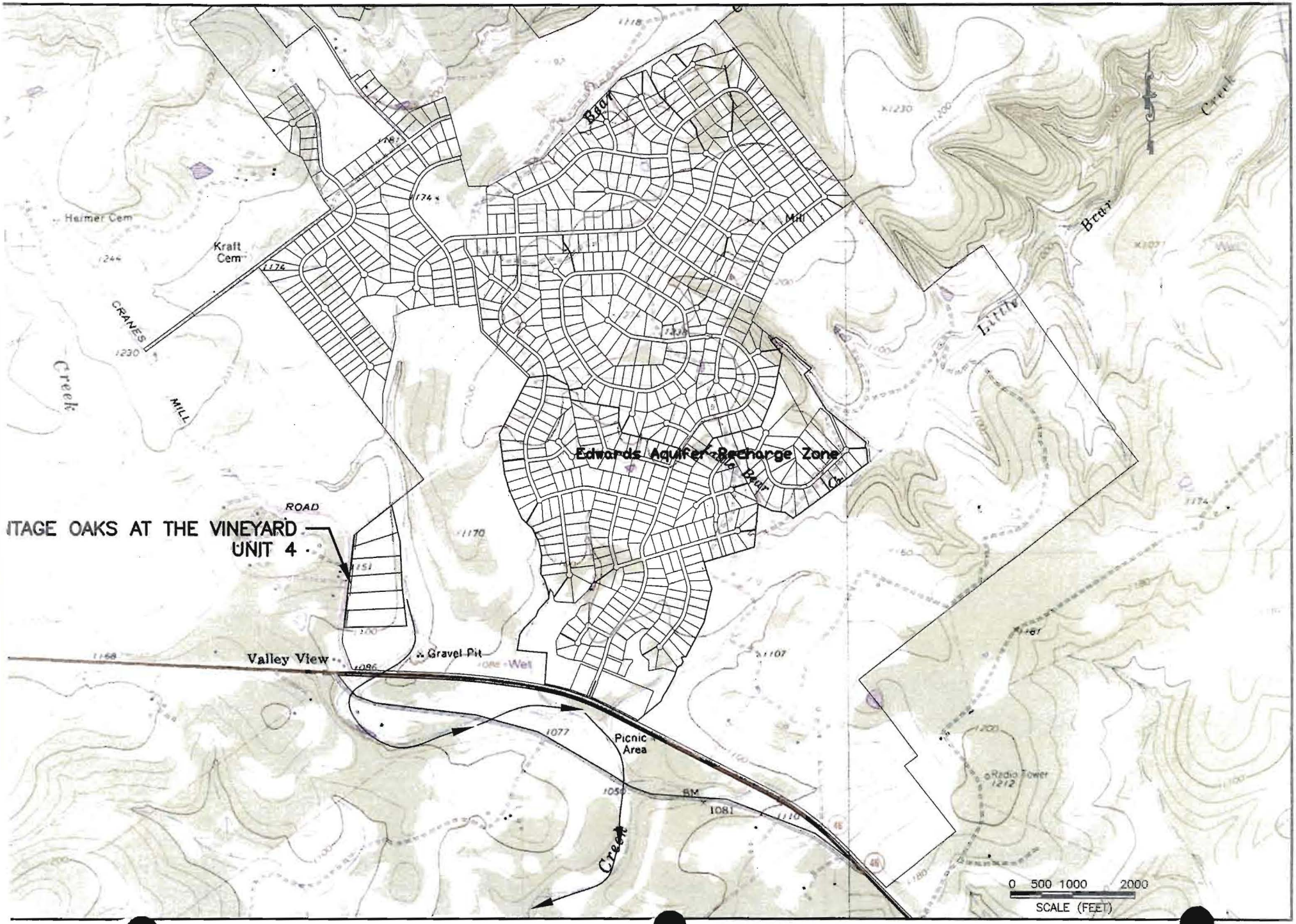
6/23/11
Date

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.

Site Location Map





SHEET 1 1

age Oaks at the Vineyard Unit 4

Scale: 1" = 2000'

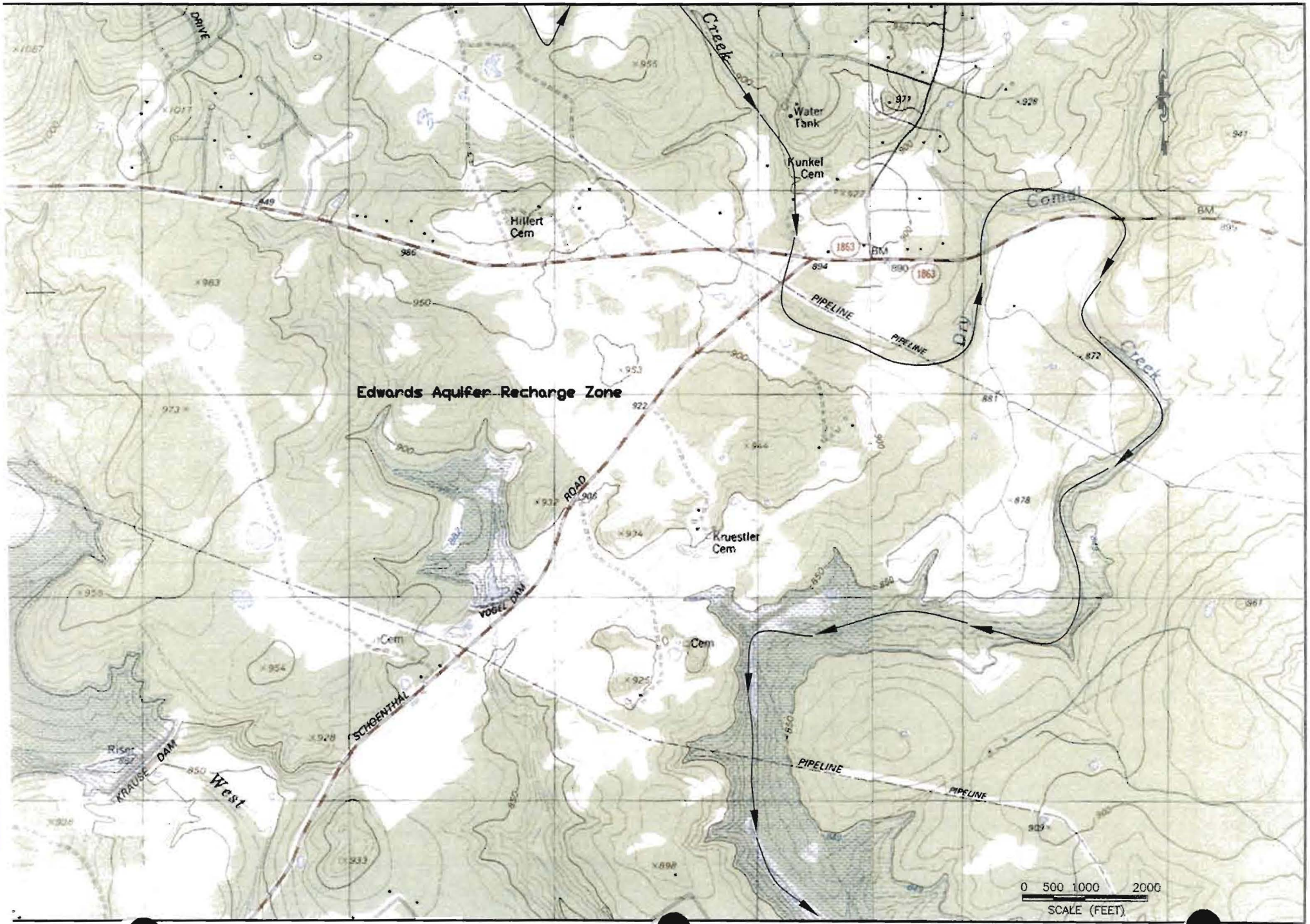
USGS / Edwards Aquifer Recharge Zone M...
Smithson Valley and Sattler Quad Sheets

SHEET 2 4

Scale: 1" = 2000

:age Oaks at the ...eyard Unit 4

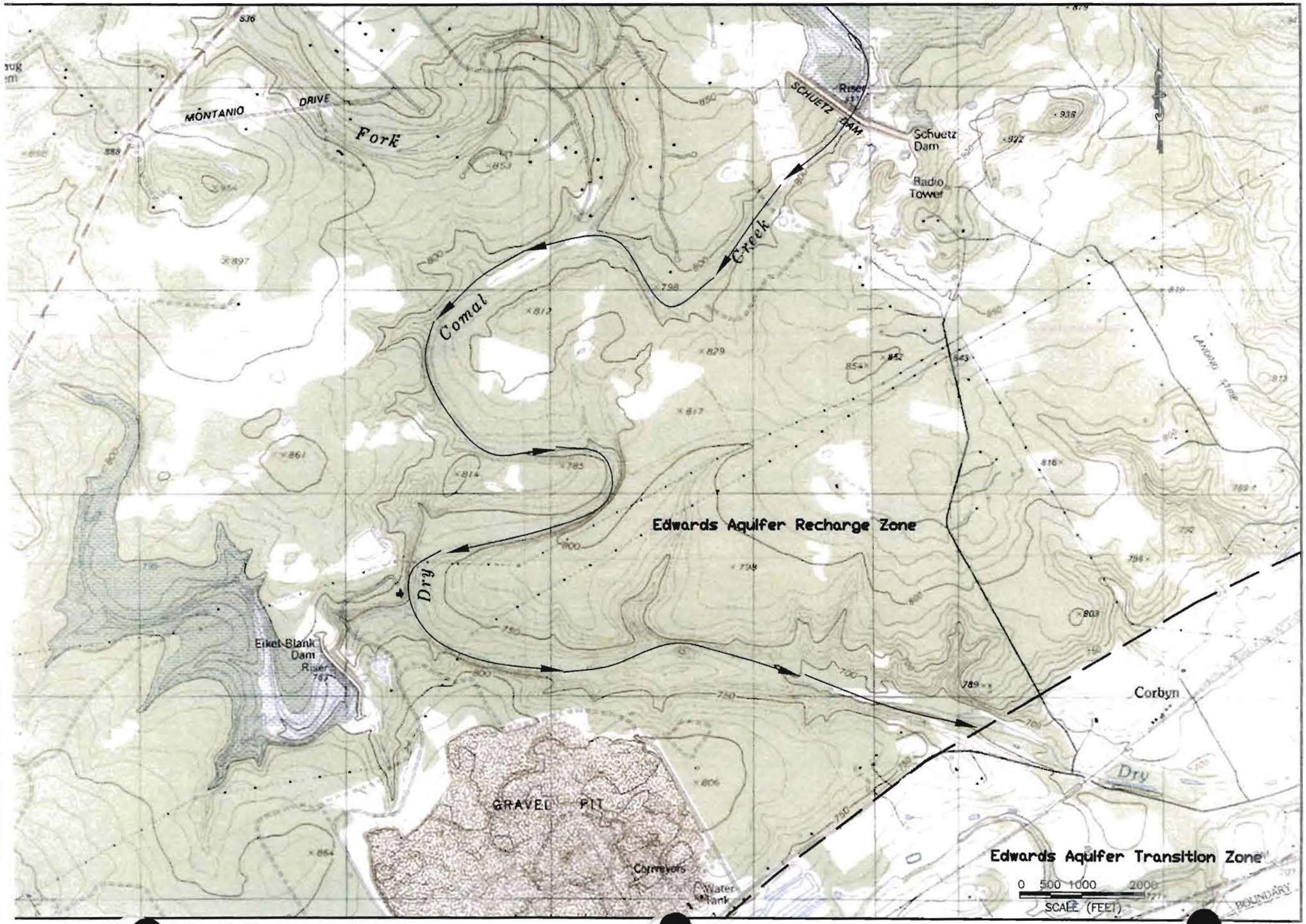
USGS / Edwards Aquifer Recharge Zone ...
Smithson Valley, Sattler, New Braunfels W...
and Bat Cave Quad Sheets



tage Oaks at the Vineyard Unit 4

Scale: 1" = 2000'

USGS / Edwards Aquifer Recharge Zone M...
New Braunfels West and Bat Cave Quad Sheets



tage Oaks at the ...eyard Unit 4

Scale: 1" = 2000'

USGS / Edwards Aquifer Recharge Zone l...
New Braunfels West and Bat Cave Quad Sheets

Attachment C

Project Description

The project is proposed to be a Single Family Residential Subdivision, located on 217.5 acres, bordering State Highway 46 and Cranes Mill Road on the western and southern boundaries. The proposed entrance is approximately 1420 feet east of the intersection of State Highway 46 and Cranes Mill Road. Unit 4 consists of 32.5 acres of single-family residential lots.

The existing site is a ranch with gravel ranch roads being developed into a subdivision by units. There is no existing impervious cover in Unit 4. Access to the proposed lots will be along the existing South Crane's Mill Road. No construction is proposed prior to the sale of lots. The only proposed disturbed area will be due to the construction of houses and parking performed by the individual lot owners.

The project is located within the major watershed of the Dry Comal Creek. The entire site drains directly to Dry Comal Creek. The upstream Unit 3 detention pond is sized to mitigate increases in peak stormwater discharge due to development for Unit 4 as well. There are no sensitive features within this unit. The proposed residential site is less than 20% impervious cover and thus, aside from the detention pond, other permanent BMPs will not be required.

In This Section

Information To Build On
Engineering • Consulting • Testing

GEOLOGIC ASSESSMENT

For the

VINTAGE OAKS AT THE VINEYARD
UNIT 4
HIGHWAY 46
COMAL COUNTY, TEXAS

Prepared for

M&S ENGINEERING, LTD.
6477 F.M. 311, P.O. BOX 970
SPRING BRANCH, TEXAS 78070

Prepared by

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

PSI PROJECT NO.: 435- 364

June 7, 2011

GEOLOGIC ASSESSMENT

For the

VINTAGE OAKS AT THE VINEYARD
UNIT 4
HIGHWAY 46
COMAL COUNTY, TEXAS

Prepared for

M&S ENGINEERING, LTD.
6477 F.M. 311, P.O. BOX 970
SPRING BRANCH, TEXAS 78070

Prepared by

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

PSI PROJECT NO.: 435- 364

June 7, 2011

PSI Information To Build On
Engineering • Consulting • Testing

June 7, 2011

M&S Engineering, Ltd.
6477 F.M. 311, P.O. Box 970
Spring Branch, Texas 78070

Attn: Mr. Keith Strimple, P.E.

Re: Geologic Assessment
Unit 4
Vintage Oaks at the Vineyard
Highway 46
Comal County, Texas
PSI Project No. 435-364

Dear Mr. Strimple:

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

AUTHORIZATION

Authorization to perform this assessment was given by a signed copy of PSI Proposal No. PO-435-6G0156 between M&S Engineering, Ltd. and PSI dated June 12, 2006.

PROJECT DESCRIPTION

The subject site is located on the north side of Highway 46, approximately one and a half miles east of F.M. 3009 in Comal County, Texas. Unit 4 is a portion of an approximate 2,800-acre, irregularly shaped parcel of undeveloped land that is hilly, with rugged, occasionally steep slopes that dip in all directions. Unit 4 is located on the west side of Vintage Oaks at the Vineyard and consists of a hillside sloping to the east and south. The site vegetation consists primarily of native grasses, ashe juniper, live oak, burr oak, cedar elm and persimmon trees, with abundant mountain laurel, agarita, and prickly pear cactus.

REGIONAL GEOLOGY

Physiography

Comal County lies within two physiographic provinces, the Edwards Plateau and the Blackland Prairie. Most of Comal County lies within the Edwards Plateau, which is characterized by rugged and hilly terrain, with elevations in excess of 1,400' feet above sea level in the northwestern portion of the county. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Comal County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 650 feet to 1100 feet above sea level. The regional dip of the lower Cretaceous rocks in Comal County is 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the Gulf Coast, with near vertical throws. Elevations at the overall Vintage Oaks at the Vineyard site range from approximately 1,320 feet above mean sea level in the northwestern portion of the tract to approximately 1,060 feet above mean sea level in the southeast portion of the Vintage Oaks tract, along Highway 46.

Stratigraphy and Structure

Rocks at the Unit 4 site are members of the Lower Cretaceous Edwards Kainer Formation. Unit 4 is covered with a thin veneer of soil with features including primarily vuggy and fractured rock outcrops exposed on the hillside. None of the features were considered sensitive. No obvious faulting or other structural features were noted on Unit 4. According to "The Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County Texas" written by the USGS, the Kainer Formation ranges between 260 and 310 feet thick and forms the lower member of the Edwards Group, beneath the Person Formation which compromises the Edwards Aquifer, a federally-designated sole source aquifer for the region.

SITE INVESTIGATION

The site investigation was performed by systematically traversing the Unit 4 tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones etc. The purpose of the site investigation was to delineate features with recharge potential that may warrant special protection or consideration. The results of the site

investigation are included in the attached TCEQ report format.

SUMMARY

No sensitive recharge features that scored 40 points or higher on the TCEQ scoring system were noted on the Unit 4 tract. The features mapped within Unit 4 consisted of mostly vuggy and fractured rock zones on the east and south sloping hillside. Stratigraphically, this area appears to be the lower portion of the Edwards Kainer above the Glen Rose Formation which serves as a lower confining unit for the Edwards aquifer.

The grass on the subject site was fairly tall, up to 3 feet as seen during the site mapping. It should be noted that subtle features, obscured from view, may be present in the grassy areas. It is also possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. As caves, sinkholes, or solution cavities may be encountered during future clearing/construction activities, please contact PSI for additional assistance.

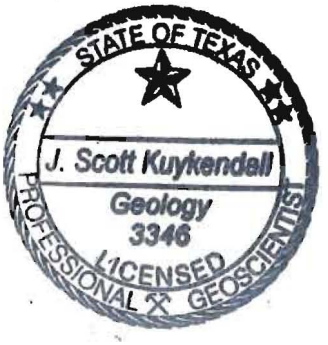
We appreciate this opportunity to be of service to you. If you have any questions, please do not hesitate to contact our office.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

J. Scott Kuykendall, P.G.
Project Manager

John Langan, P.G.
Environmental Department Manager



WARRANTY

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

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

STRATIGRAPHIC COLUMN

Vintage Oaks at the Vineyard
Unit 4
Highway 46
Comal County, Texas

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Georgetown Formation	<10'	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: *waconella wacoensis* brachiopod; low porosity and permeability development.
Person Formation	180-224'	Limestones and dolomites, extensive porosity development in "honeycomb sections, interbedded with massive recrystallized limestones with more limited permeabilities (especially Regional Dense Member separating the Person and Kainer Formations.
Kainer Formation	260-310'	Hard, miliolid limestones, overlying calcified dolomites and dolomite. Leached evaporitic "Kirschberg" zone of very porous and permeable collapse breccia formed by the dissolution of gypsum. Overlies the basal nodular (Walnut) bed.
Glen Rose Limestone (upper)	350-500	Yellowish-tan thinly bedded limestone and marl. Alternating beds of varying hardness erodes to "stairstep" topography. Marine fossils common.

SOILS NARRATIVE

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

Comfort extremely stony clay makes up between 49 and 95% of the Comfort-Rock outcrop series (CrD), and indurated rock outcrop and soil less than 4 inches deep make up 5 to 36% of the complex. Typically, the surface layer is dark brown extremely stony soil about 6 inches thick. Cobbles, stones and "float" rock comprise about 45% of the surface. The subsoil extends to about 13 inches, and overlies the fractured limestone parent material. Comfort soil is well-drained, with slow to medium surface runoff, slow permeability, and very low water capacity.

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: Vintage Oaks at the Vineyard Unit 4

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)
Comfort rock outcrop complex, gently undulating (CrD)	C	1-3

* 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" = 400'
Site Geologic Map Scale	1" = 400'
Site Soils Map Scale (if more than 1 soil type)	1" = no scale

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. _X_ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
__ Geologic or manmade features were not discovered on the project site during the field investigation.

10. __ 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.

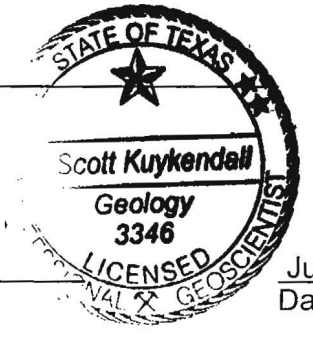
ADMINISTRATIVE INFORMATION

12. _X_ One (1) original and three (3) copies of the completed assessment has been provided.

Date(s) Geologic Assessment was performed: August 31 – September 02, 2006
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.

J. Scott Kuykendall
Print Name of Geologist



210-342-9377
Telephone

210-342-9401
Fax

Signature of Geologist

June 7, 2011
Date

Representing: PSI, 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.

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.

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: Vintage Oaks - Unit 4

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)	DIP/DIR	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	29-46-44	98-16-30	O	5	KeK	8	4	1					F	10	15	X		X		Hillside
S-2	29-46-47	98-16-27	O	5	KeK	600	85	15			3	0.2	F	25	30	X			X	Hillside
S-3	29-46-37	98-16-30	CD	5	KeK	5	5	1					F	10	15	X		X		Hillside
S-4	29-46-36	98-16-30	O	5	KeK	575	175	20			3	0.2	F	5	25	X		X		Hillside
S-5	29-46-36	98-16-27	O	5	KeK	450	150	10			4	0.2	F	20	25	X			X	Hillside
S-6	29-46-32	98-16-26	O	5	KeK	200	150	4			2	0.2	F	10	15	X		X		Hillside
S-7	29-46-47	98-16-24	O	5	KeK	1500	100	20			4	0.3	N	20	25	X			X	Hillside

* DATUM:

2A TYP	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.

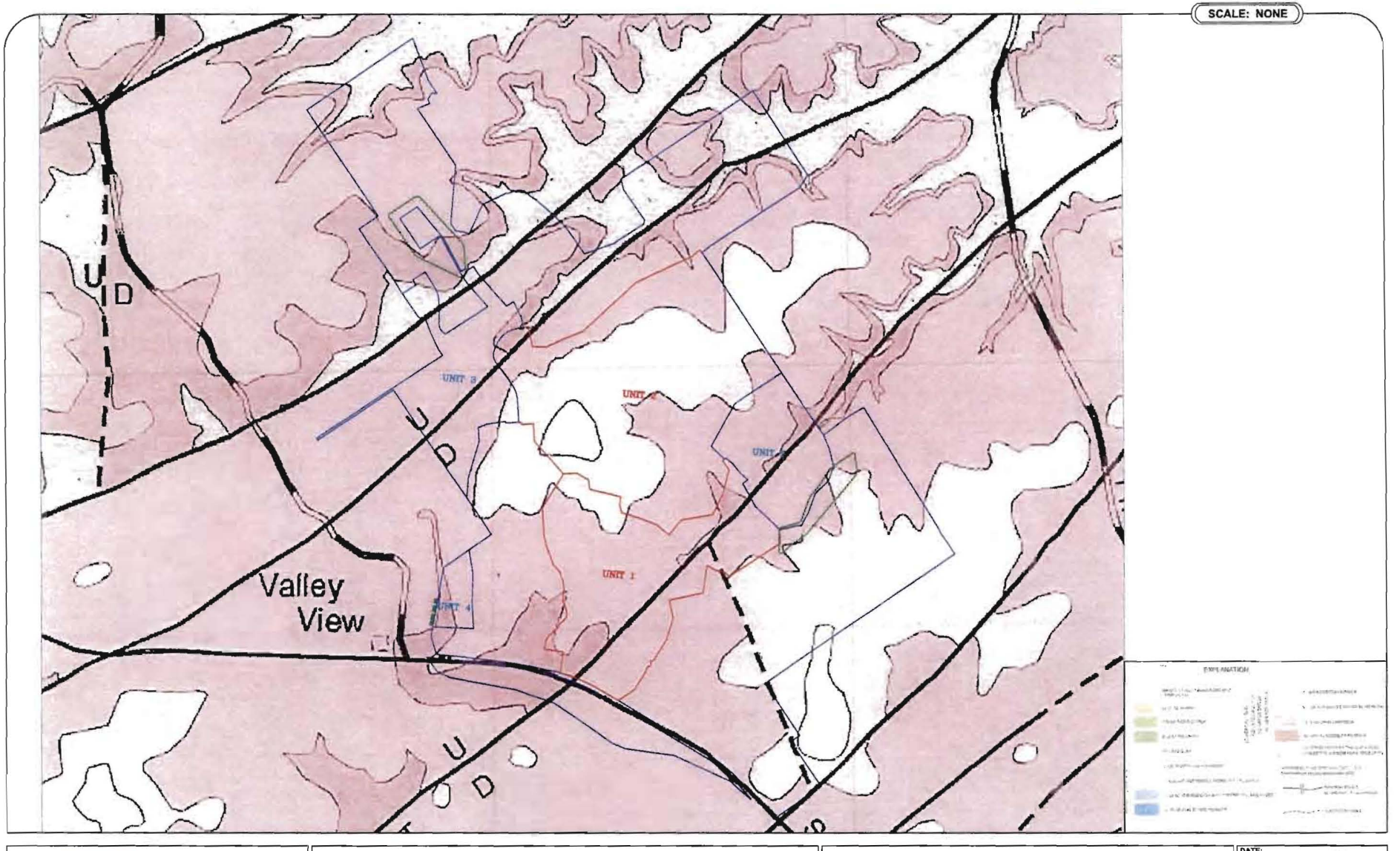
Date June 7, 2011

Sheet ___1___ of ___1___

STATE OF TEXAS
Scott Kuykendall
Geology
3346
LICENSED
PROFESSIONAL GEOSCIENTIST

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

SCALE: NONE



psi Information To Build On
Engineering Consulting Testing
THREE BURWOOD LANE
SAN ANTONIO, TEXAS 78216

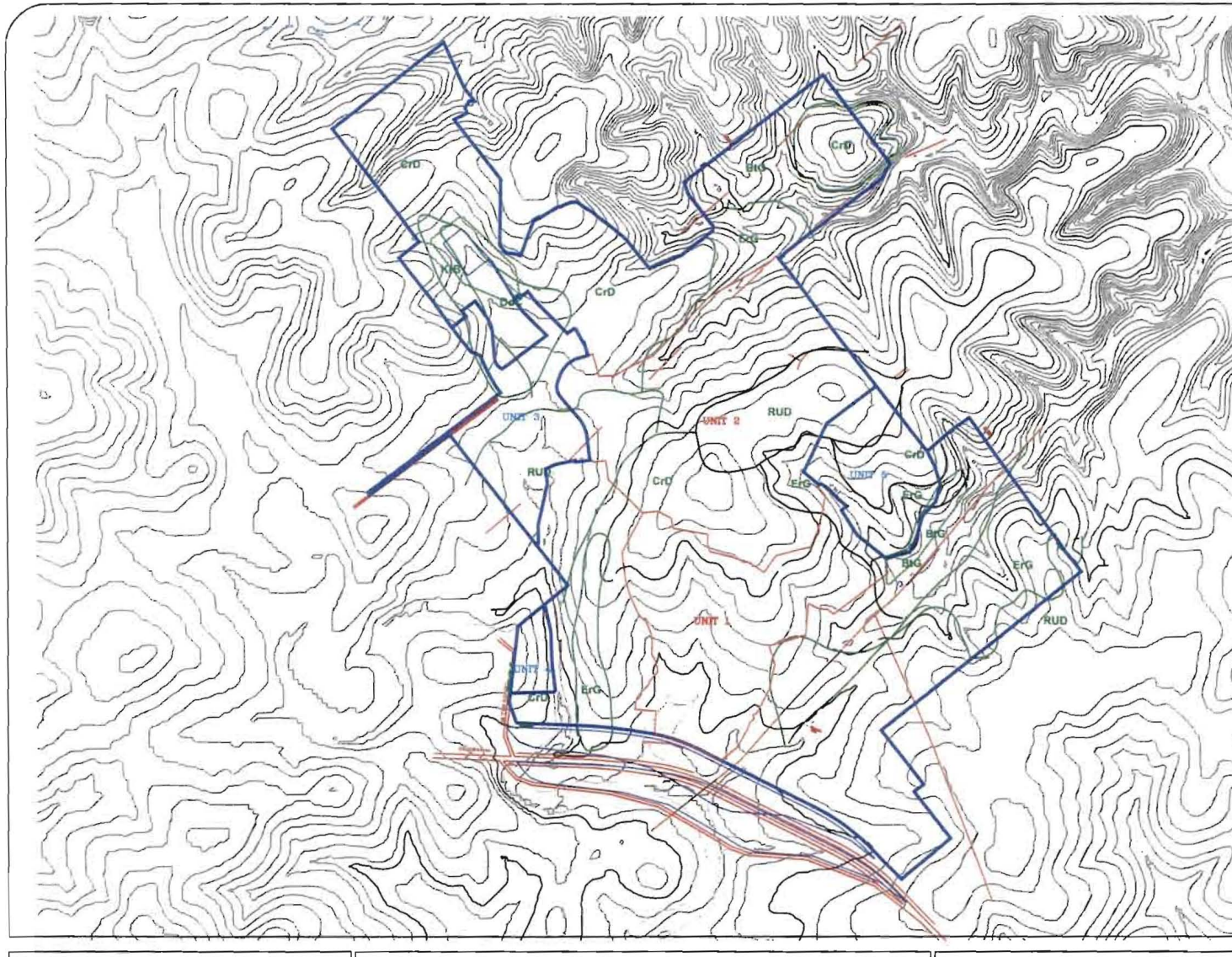
REGIONAL GEOLOGIC MAP

VINTAGE OAKS AT THE VINYARD
UNITS 4 & 5

HIGHWAY 46
COMAL COUNTY, TEXAS

DATE:	03/23/11
DRAWN BY:	J. LEAL
PROJECT #:	0435364
DRAWING NAME:	0435364

SCALE: NONE



LEGEND

- BtG - BRACKETT-ROCK OUTCROP REAL COMPLEX, STEEP
- CrD - COMFORT-ROCK OUT CROP COMPLEX, UNDULATING
- DoC - DOSS SILTY CLAY, 1-5% SLOPES
- ErG - ECKERT-ROCK OUTCROP COMPLEX, STEEP
- KrB - KRUM CLAY 1-3% SLOPES
- RUD - RUMPLE-COMFORT ASSOCIATION, UNDULATING

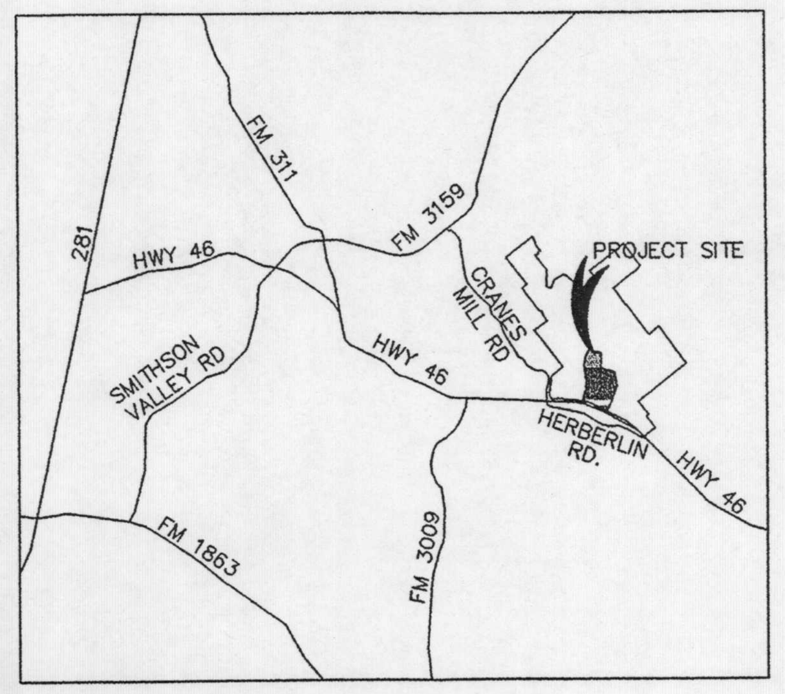
psi Information To Build On
Engineering Consulting Testing
THREE BURWOOD LANE
SAN ANTONIO, TEXAS 78216

SOILS MAP

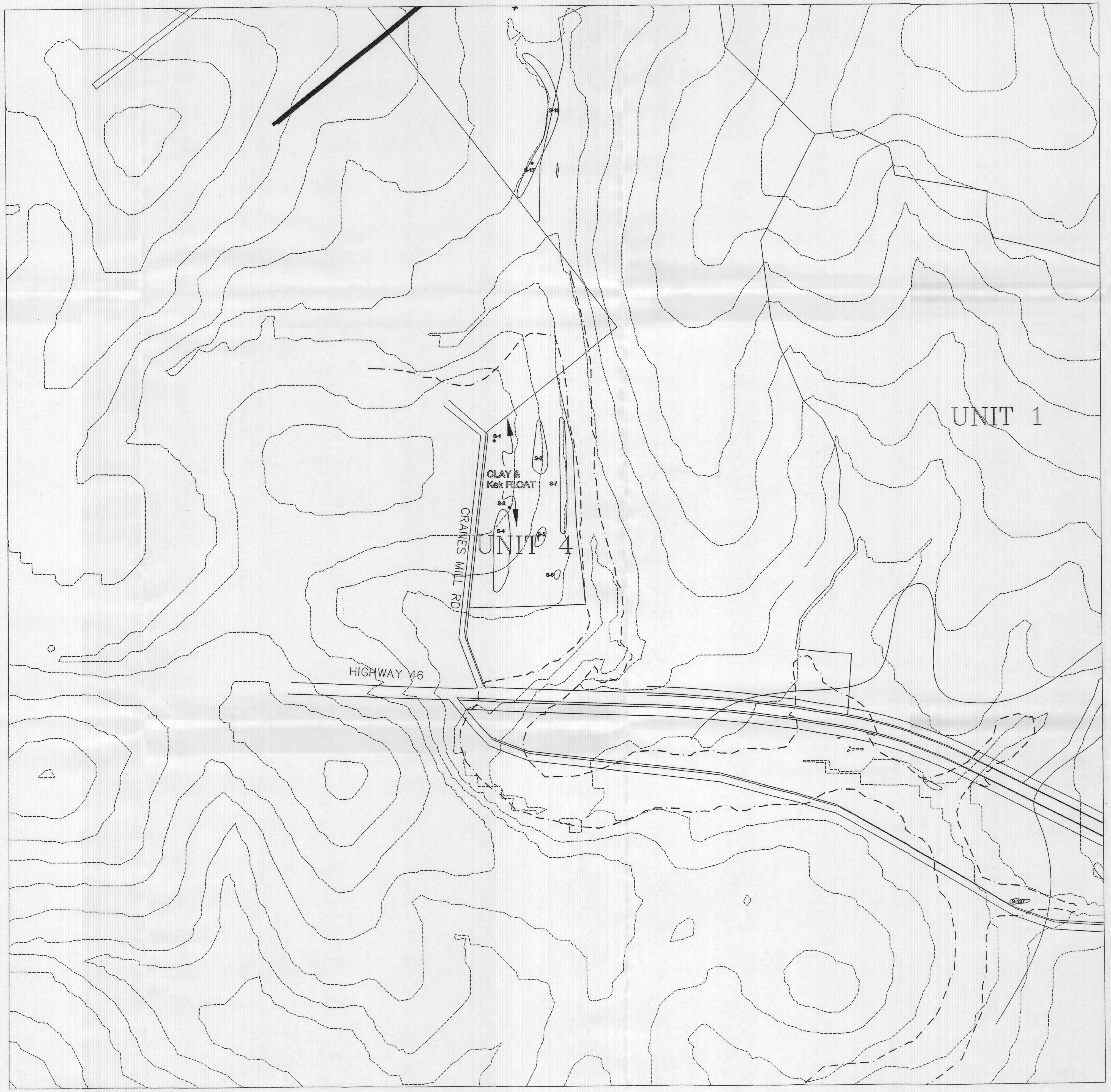
VINTAGE OAKS AT THE VINYARD
UNITS 4 & 5

HIGHWAY 46
COMAL COUNTY, TEXAS

DATE:	08/02/10
DRAWN BY:	J. LEAL
PROJECT #:	0435364
DRAWING NAME:	0435364



LOCATION MAP
NOT TO SCALE



SCALE:
1" = 400' HORIZONTAL

LEGEND

Symbol	Description
U / D	FAULT LINE
	BOUNDARY LINE
	FLOOD PLAIN
S-27	ROCK OUTCROP
	BOULDER FLOAT
Kek	LOWER CRETACEOUS EDWARDS KANIER FORMATION

TCEQ-R13
JUL 13 2011
SAN ANTONIO

GEOLOGIC ASSESSMENT
for
VINTAGE OAKS AT THE VINEYARD
UNIT 4

STATE OF TEXAS
J. Scott Kuykendall
Geology
3346
LICENSED
PROFESSIONAL GEOSCIENTIST
6-10-11

psi Information To Build On
Engineering Consulting Testing
THREE BURWOOD LANE
SAN ANTONIO, TEXAS 78216

REVISIONS:
01

JOB NO. 0435364
FILE: 0435364-Unit 4
DATE: 06/07/11
DESIGN: ~
DRAWN: J LEAL
CHECKED: S. Kuykendall

In This Section

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: Vintage Oaks at the Vineyard Unit 4

REGULATED ENTITY INFORMATION

1. The type of project is:
   - X Residential: # of Lots: 6
   - ___ Residential: # of Living Unit Equivalents: ___
   - ___ Commercial
   - ___ Industrial
   - ___ Other: ___

2. Total site acreage (size of property): 32.5

3. Projected population: 16

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	30056.4	÷ 43,560 =	0.69
Parking	30056.4	÷ 43,560 =	0.69
Other paved surfaces	0	÷ 43,560 =	
Total Impervious Cover	60112.8	÷ 43,560 =	1.38
Total Impervious Cover ÷ Total Acreage x 100 =			4.25

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	1440 gallons/day
0 % Industrial	0 gallons/day
0 % Commingled	0 gallons/day

TOTAL 1440 gallons/day

15. Wastewater will be disposed of by:
X **On-Site** Sewage Facility (OSSF/Septic Tank):
X **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.
X Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

__ Sewage Collection System (Sewer Lines):
__ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.
__ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.
__ The SCS was previously submitted on _____.

__ The SCS was submitted with this application.
__ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

The sewage collection system will convey the wastewater to the _____ (name) Treatment Plant. The treatment facility is:

__ existing.
__ proposed.

16. 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" = 400 '.

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):
FIRM 48091C0245F Effective: 09/02/2009

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. N/A 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. N/A 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. __ Locations where stormwater discharges to surface water or sensitive features.
X 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent — Date: 6/23/11

Attachment A

Factors Affecting Water Quality

Potential sources of pollution that may be expected to affect the quality of storm water discharges from the site during construction include:

- Soil erosion due to clearing of site.
- Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings.
- Hydrocarbons from asphalt paving.
- Trash and litter from construction workers and material wrappings.
- Concrete truck washout.
- Tar, fertilizers, cleaning solvents, detergents, and petroleum based products.

Potential sources of pollution that may be expected to affect the quality of storm water discharges from the site after development include:

- Oil, grease fuel and hydraulic fluid contamination from vehicle drippings.
- Dirt and dust from vehicles.
- Trash and litter.

Attachment B

Volume and Character of Stormwater

The overall contributing drainage area for Unit 4 of this project is approximately 257 acres. The stormwater runoff for the pre-project conditions of Unit 4 would be across rocky soil, with native grasses. The site has an average slope ranging from 1% to 20%. Using SCS methods peak discharges for each sub-basin were calculated. A summary of the pre- and post-project conditions follows.

100-Year Peak Discharge Summary					
Sub-Basin	Area (acres)	Pre-Project Curve Number	Post Project Curve Number	Pre-Project Discharge (cfs)	Post-Project Discharge (cfs)
1-1B	257	73	79	1140.87	1260.2

The characteristics of the post-project stormwater generated onsite will be influenced by site features that generate non-point pollution. This non-point pollution will include oil and grease from the paved areas, suspended solids, sedimentation, and nutrients for lawn care, and possible pesticides and herbicides. The stormwater runoff will flow across pervious areas of rocky soil, with native grasses before discharging into the Dry Comal Creek.

Comal County

OFFICE OF COMAL COUNTY ENGINEER

June 28, 2011

Mr. Stephen Jackson
M&S Engineering, LLC
P.O. Box 970
Spring Branch, TX 78070

Re: Vintage Oaks at the Vineyard Unit 4 On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Jackson:

In accordance with TAC §213.5(b)(4)(F)(ii), Comal County has found that the entire referenced site is suitable for the use of private sewage facilities and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified in TAC §285.40-42 based on the following information submitted to our office on June 28, 2011:

- The Geologic Assessment, prepared by Professional Service Industries, Inc.
- The Water Pollution Abatement Plan, prepared by M&S Engineering, LLC

Moreover, according to TAC §285.41(b), Bluegreen Southwest One, L.P., the owner of the referenced site, must inform, in writing, each prospective purchaser, lessee, or renter of the following:

- All lots within Vintage Oaks at the Vineyard Unit 4 are subject to the terms and conditions of TAC §285.40-42;
- A Permit to Construct is required from Comal County before an OSSF can be constructed in Vintage Oaks at the Vineyard Unit 4;
- A License to Operate is required from Comal County before an OSSF can be operated in Vintage Oaks at the Vineyard Unit 4;
- That an application for a water pollution abatement plan, as defined in TAC §213, has been made, whether it has been approved, and if any restrictions or conditions have been placed on that approval; and

Furthermore, according to TAC §285.42(a), if any recharge feature, not listed above, is discovered during construction of an OSSF, all regulated activities near the feature shall be suspended immediately. The owner shall immediately notify the TCEQ San Antonio office of the discovery of the feature. All activities regulated under TAC §213 shall not proceed near the feature until Comal County, in conjunction with the TCEQ San Antonio office, has reviewed and approved a plan proposed to protect the feature, the structural integrity of the OSSF, and the water quality of the aquifer. The plan shall be sealed, signed, and dated by a professional engineer.

If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

Robert Boyd, P.E.
Comal County Assistant Engineer

cc: Donna Eccleston, Comal County Commissioner Precinct No. 1
Betty Lien, Comal County Subdivision Coordinator

Attachment D

Exception To The Required Geologic Assessment

NOT APPLICABLE

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

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

SOIL DISTURBANCE NOTE

NO CONSTRUCTION IS PLANNED PRIOR TO SALE OF LOTS.

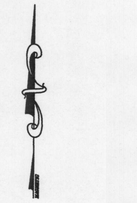
SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE BUILDING PADS, DRIVEWAY, UTILITY INSTALLATION, AND LANDSCAPE PREPARATION. THE REMAINING PORTIONS OF THE SITE NOT INVOLVED IN ANY OF THESE ACTIVITIES WILL REMAIN UNDISTURBED.

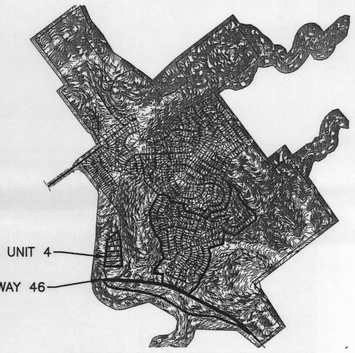
SOIL STABILIZATION NOTE

TEMPORARY EROSION CONTROL MEASURES WILL BE USED TO STABILIZE DISTURBED AREAS (REFER TO EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL FOR CONSTRUCTION OF EROSION CONTROL MEASURES). TRAFFIC WILL BE ROUTED AROUND THESE AREAS TO REDUCE THE EXTENT OF DISTURBED AREAS BY REDUCING SEDIMENT LOADS TO SURFACE WATER.

BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.





VINTAGE OAKS AT THE VINEYARD
OVERVIEW MAP
1" = 4000'

LEGEND:

———	EXIST PROPERTY BOUNDARY
———	EXIST FACE OF CURB
300	EXIST CONTOUR
300	PROP CONTOUR
———	PROP FACE OF CURB
———	PROP RIGHT-OF-WAY
4.8%	PROP WATER FLOW DIRECTION
	PROP SLOPE

TCEQ-R13
JUL 13 2011
SAN ANTONIO

REVISIONS

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1284

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
7/12/11

VINTAGE OAKS AT THE VINEYARD UNIT 4

WATER POLLUTION ABATEMENT PLAN
SITE PLAN

JOB: 11BSW001
DATE: JUNE 2011
SCALE: 1" = 400'
INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 1 OF 3

Date: Jul 12, 2011, 8:42am User ID: sjackson
File: S:\Active Projects\11BSW001 VOV Unit 4\dwg\11BSW001-WPAP-SPN-001.dwg

In This Section

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: Vintage Oaks at the Vineyard Unit 4

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. X 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: Dry Comal 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. X **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. X 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:

Heath Woods, P.E.
Print Name of Customer/Agent

Heath C. Woods
Signature of Customer/Agent

7/12/11
Date

Attacl

Spill Response Action

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 an appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential dangers to humans and the environment fro spills and leaks.

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

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

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

General Measures

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

(2) Store hazardous materials and wastes in covered containers and protect form 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 runon during rainfall to the extent that it doesn't compromise clean up activities.

(7) Do not bury or wash spills with water.

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

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

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

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

(12) Keep waste storage areas clean, well organized, and equipment 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 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 as the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

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

(2) Use absorbent material on small spills rather than hosing down or burying the spill.

(3) Absorbent material 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 material.

(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 be 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.

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 Fueling

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon 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 recycle 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 runon 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

1. Oil, grease, fuel and hydraulic contamination from construction equipment and vehicle leakage.
   Remedy: Lubrication and fueling will be preformed in a designated area. This area will be monitored daily for contamination.

2. Miscellaneous trash and litter form construction workers.
   Remedy: Designated receptacles will be strategically located and workers will be directed to deposit trash there.

3. Construction debris.
   Remedy: Debris will be collected weekly and deposited in bins for offsite disposal. Situations requiring immediate attention will be handled on a case by case basis.

4. Asphalt products.
   Remedy: After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to maintain and asphalt wash-off should and unexpected rain occurs. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.

Attachment C

Sequence of Major Activities

1. Residential home construction, including building pads, driveways, and landscaping
   Residential Lots: 1.38 acres disturbed
   (Assumed 10,000 sq. ft. disturbed area per lot.)

Attachment D

Temporary Best Management Practices and Measures

All TBMPs will be installed prior to the beginning of site preparation and construction activities as per the Storm Water Pollution Prevention Plan. The TBMPs will remain in place and will be maintained until all construction has ceased and a perennial vegetative cover with a density of 70 percent has been established.

a. Silt fences and rock berms will be used to protect disturbed soils during construction in order to prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

b. Silt fences and rock berms will be used to protect disturbed soils during construction in order to 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 50 to 200-foot radius natural buffer zone adjacent to and upgradient of sensitive features will remain undisturbed so that rainfall may continue to enter the feature. The natural vegetated areas will ensure that pre-development stormwater quantity and quality will continue to recharge the aquifer via the feature. Rock berms will be placed downgradient of all construction activities so that potentially contaminated stormwater may be treated before leaving the sited and entering downstream surface water.

d. No construction will occur within a 50 to 200-foot radius of naturally-occurring sensitive features. The size and shape of the buffer zone will be determined by the contributing drainage area to the feature. The vegetative buffer zone will serve as both TMBP and BMP for the sensitive features. In the case that construction activities occur upgradient of a sensitive feature (greater than the 200-foot radius) the disturbed soils will be protected from erosion by silt fences as outlined above.

Attachment E

Request to Temporarily Seal a Feature

NOT APPLICABLE

Attachment F

Structural Practices

The structural practices that will limit runoff discharge of pollutants form exposed areas of the site will be the use of the water trenches, rock berms, silt fences, and stabilized construction entrance as determined by the residential lot contractors to prevent the excavated material from leaving the site.

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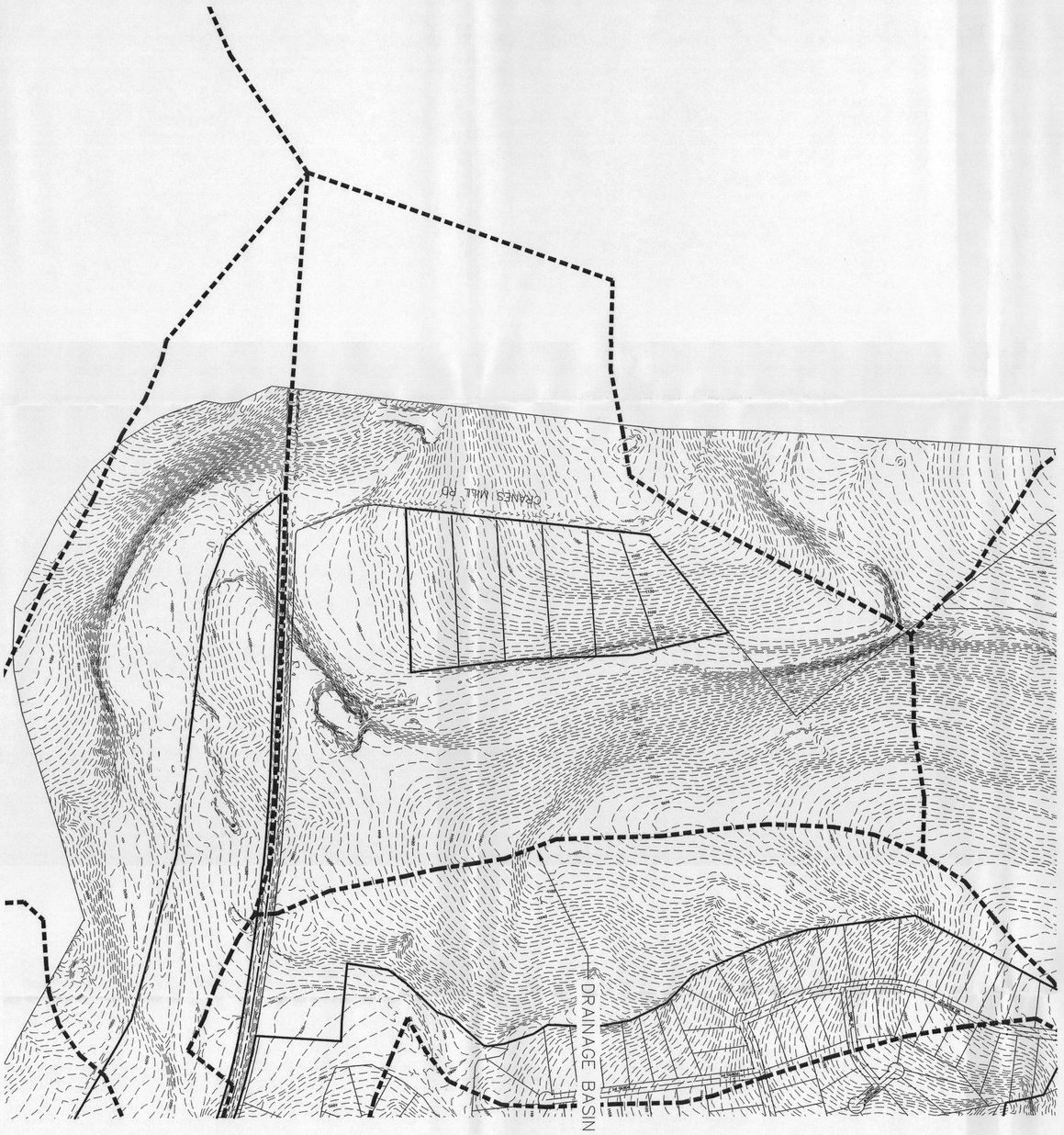
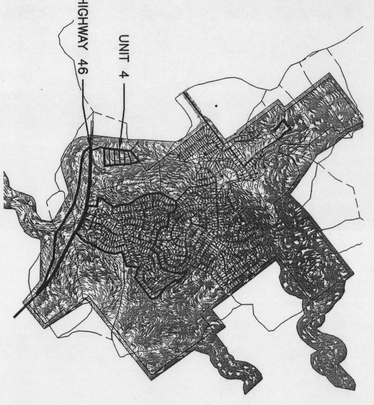
File: S:\Active Projects\11BSW001 VOV Unit 4\dwg\11BSW001-WPAP-DA-001.dwg





VINTAGE OAKS AT THE VINEYARD
DRAINAGE OVERVIEW MAP
1" = 4000'

LEGEND:

- EXIST UNIT BOUNDARY
- EXIST RIGHT-OF-WAY
- EXIST LOT LINE
- EXIST EDGE OF PAVEMENT
- 300 EXIST CONTOUR
- **PROP EDGE OF PAVEMENT**
- **PROP RIGHT-OF-WAY**
- **PROP DRAINAGE AREA**

0 200 400 800
SCALE (FEET)

TCEQ-R13
JUL 13 2011
SAN ANTONIO

VINTAGE OAKS AT THE VINEYARD
UNIT 4

WATER POLLUTION ABATEMENT PLAN
DRAINAGE AREA MAP

KEITH L. WOODS
103257
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
7/14/11

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

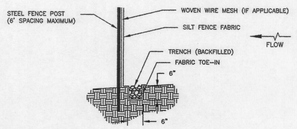
M & S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1394

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

JOB: 11BSW001
DATE: JUNE 2011
SCALE: 1" = 400'
INTERNAL REVIEW
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 2 OF 3

REVISIONS



NOTES:

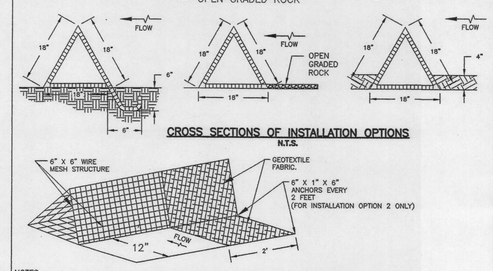
1. TRIANGULAR SEDIMENT FILTER DIKES MAY BE SUBSTITUTED FOR SILT FENCE IN AREAS WHERE INSTALLATION OF SILT FENCE IS NOT POSSIBLE OR WHERE VEHICLE ACCESS MUST BE MAINTAINED PROVIDED THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE ACRE.
2. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE 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 A MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
3. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT², AND BRINDELL HARDNESS EXCEEDING 140.
4. WOVEN WIRE BACKING IS REQUIRED IN THE EDWARDS AQUIFER RECHARGE AND CONTRIBUTING ZONE; OPTIONAL ELSEWHERE. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2"X4" WELDED WIRE, 12 GAUGE MINIMUM.
5. SILT FENCE SHOULD BE INSTALLED FOLLOWING THE CONTOURS AS CLOSE AS POSSIBLE. THE ENDS SHOULD BE CURVED UPSTREAM TO CREATE AN AREA OF WATER IMPOUNDMENT AND PREVENT FLOW FROM ESCAPING AROUND THE FENCE.
6. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT AND SPACED NOT MORE THAN 6 FEET ON CENTER.
7. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TREATED IN (E.G., PAVEMENT OR ROCK OUTCROP) WEIGHT FABRIC FLAP WITH 3" OF WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
8. 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.
9. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POSTS OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. WHERE ENDS MEET, OVERLAP FABRIC 3—FEET AND SECURELY FASTEN.

MAINTENANCE AND REMOVAL:

12. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
13. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE. 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.

SILT FENCE

EXHIBIT A1



NOTES:

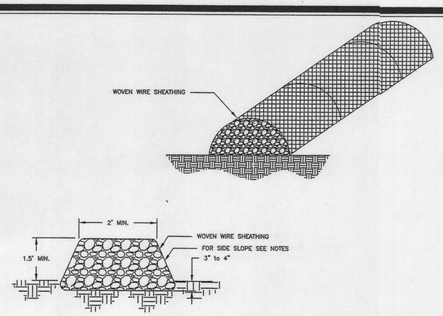
1. DIKES MAY BE MOVED TO ALLOW VEHICLE TRAFFIC, THEN REINSTALLED TO MAINTAIN SEDIMENT CONTROL.
2. GEOTEXTILE FABRIC SHOULD BE THE SAME SPECIFICATIONS AS USED IN FOR SILT FENCES.
3. THE DIKE STRUCTURE SHOULD BE 6 GAUGE 6" X 6" WIRE MESH FOLDED INTO TRIANGULAR FORM 18" ON EACH SIDE, WRAPPED IN GEOTEXTILE FABRIC.
4. DIKES SHALL BE PLACED IN A ROW PARALLEL TO CONTOURS, WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
5. FILTER FABRIC SHOULD LAP OVER ENDS 6" TO COVER DIKE TO DIKE JUNCTION; EACH JUNCTION SHOULD BE SECURED BY SHOAT RINGS.
6. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
7. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 3"–5" OPEN GRADED ROCK, OR TOED–IN 6" WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 4".
8. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 6 INCH WIRE STAPLES ON 2 FOOT CENTERS ON BOTH EDGES AND SKIRT, OR STAKED USING ⅜ INCH DIAMETER REBAR WITH TEE ENDS.

MAINTENANCE AND REMOVAL:

9. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF SIX INCHES, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
10. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN NOTE 8 ABOVE.

TRIANGULAR FILTER DIKE

EXHIBIT A2



NOTES:

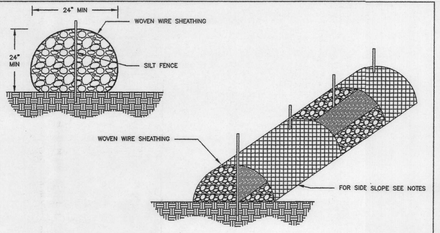
1. USE ONLY CLEAN, OPEN GRADED ROCK 5–8 INCH DIAMETER FOR STREAM FLOW CONDITIONS; USE OPEN GRADED ROCK 3–5 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED.
3. THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
4. FOR INSTALLATIONS IN ACTIVE STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
5. ROCK BERMS PLACED IN STATE RIGHT OF WAY WILL BE INSTALLED WITH A MAXIMUM SLOPE OF 6:1 OR FLATTER FOR ALL SLOPES PARALLEL TO THE FRONTAGE ROAD EDGE OF PAVEMENT.

MAINTENANCE AND REMOVAL:

6. REPAIR ANY LOOSE WIRE SHEATHING.
7. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION
8. THE STONE AND/OR FABRIC CORE – WOVEN WIRE SHEATHING, SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
9. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
10. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK BERM

EXHIBIT A3



NOTES:

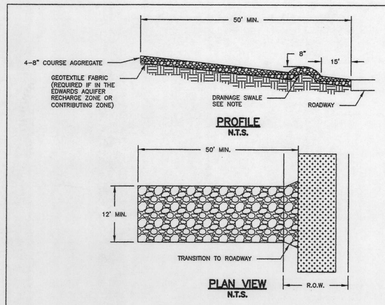
1. SILT FENCE FABRIC, FENCE POSTS, AND WOVEN WIRE MATERIAL SHOULD BE AS SPECIFIED IN THE SILT FENCE DETAIL.
2. BERM WOVEN WIRE SHEATHING AND ROCK FILL SHOULD BE AS SPECIFIED IN THE ROCK BERM DETAIL.
3. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE.
4. INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT, AS WITH A NORMAL SILT FENCE.
5. PLACE THE ROCK ALONG THE SHEATHING ON BOTH SIDES OF THE SILT FENCE AS SHOWN, TO A HEIGHT NOT LESS THAN 24 INCHES.
6. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
7. ROCK BERMS PLACED IN STATE RIGHT OF WAY WILL BE INSTALLED WITH A MAXIMUM SLOPE OF 6:1 OR FLATTER FOR ALL SLOPES PARALLEL TO THE FRONTAGE ROAD PAVEMENT.

MAINTENANCE AND REMOVAL:

8. THE HIGH SERVICE ROCK BERM SHOULD BE REMOVED WHEN THE SITE IS REVEGETATED OR OTHERWISE STABILIZED OR IT MAY REMAIN IN PLACE AS A PERMANENT BMP IF DRAINAGE IS ADEQUATE.
9. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE ON ROCK BERM.
10. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER.
11. REPAIR ANY LOOSE WIRE SHEATHING.
12. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
13. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
14. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

HIGH SERVICE ROCK BERM

EXHIBIT A4



NOTES:

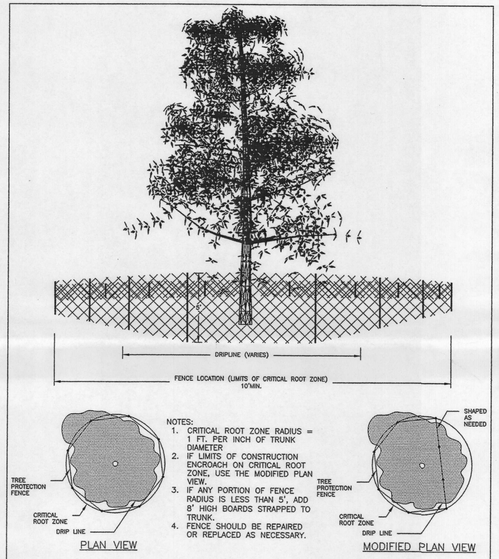
1. THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION WITH A MINIMUM THICKNESS OF 8 INCHES.
2. IF THE SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 8 INCHES HIGH WITH 3:1 (H:V) SIDESLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OX/YD², A MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. THE MINIMUM WIDTH OF THE ENTRANCE SHOULD BE 12 FT OR THE FULL WIDTH OF THE EXIT ROADWAY, WHICHEVER IS GREATER.
5. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
6. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH 4 INCH MINIMUM CRUSHED STONE OR COMMERCIAL RACK WHICH DRAINS TO A SEDIMENT TRAP OR BASIN.

MAINTENANCE:

7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. 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 ROADWAY MUST BE REMOVED IMMEDIATELY.
8. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE

EXHIBIT A5

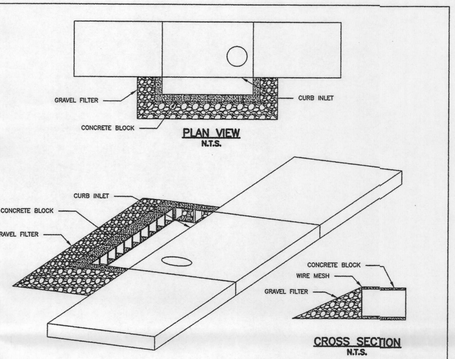


NOTES:

1. CRITICAL ROOT ZONE RADIUS = 1 FT. PER INCH OF TRUNK DIAMETER
2. IF LIMITS OF CONSTRUCTION ENCROACH ON CRITICAL ROOT ZONE, USE THE MODIFIED PLAN VIEW.
3. IF ANY PORTION OF FENCE RADIUS IS LESS THAN 5', ADD 8' HIGH BOARDS STRAPPED TO TRUNK.
4. FENCE SHOULD BE REPAIRED OR REPLACED AS NECESSARY.

TREE PROTECTION CONSTRUCTION FENCE

EXHIBIT A6



NOTES:

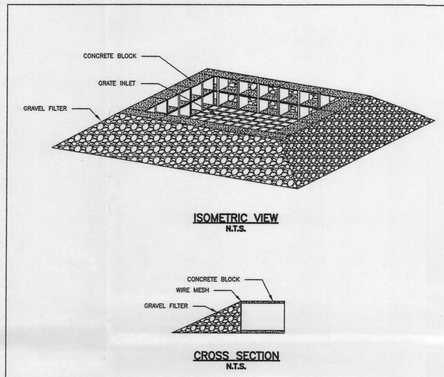
1. TWO CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ABUTTING THE CURB AT EITHER SIDE OF THE INLET OPENING.
2. A 2" X 4" STUD SHOULD BE CUT AND PLACED THROUGH THE OUTER HOLES OF EACH SPACER BLOCK TO HELP KEEP THE FRONT BLOCKS IN PLACE.
3. CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ACROSS THE FRONT OF THE INLET AND ABUTTING THE SPACER BLOCKS AS SHOWN ABOVE.
4. WIRE MESH WITH 1/2" OPENINGS SHOULD BE PLACED OVER THE OUTSIDE VERTICAL FACE OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS.
5. COARSE AGGREGATE SHOULD BE PILED AGAINST THE WIRE TO THE TOP OF THE BARRIER.

MAINTENANCE:

6. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT S THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND/OR REPLACED.

BLOCK AND GRAVEL CURB INLET FILTER

EXHIBIT A7



NOTES:

1. PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED, DEPENDING ON DESIGN NEEDS, BY STACKING COMBINATIONS OF 4–INCH, 8–INCH AND 12–INCH WIDE BLOCKS. THE BARRIER OF BLOCKS SHOULD BE BETWEEN 12 AND 24 INCHES HIGH.
2. WIRE MESH SHOULD BE PLACED OVER THE OUTSIDE VERTICAL FACE OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. WIRE MESH WITH 1/2–INCH OPENINGS SHOULD BE USED.
3. STONE SHOULD BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK BARRIER.

MAINTENANCE:

4. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND/OR REPLACED.

BLOCK AND GRAVEL DROP INLET FILTER

EXHIBIT A8

M & S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1394

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5448
FAX # (830) 885-2170

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

REVISIONS

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
7/12/11

VINTAGE OAKS AT THE VINEYARD UNIT 4

WATER POLLUTION ABATEMENT PLAN
DETAILS

JOB: 11BSW001
DATE: JUNE 2011
SCALE: N.T.S.

INTERNAL REVIEW:

DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 3 of 3

TCEQ-R13
JUL 13 2011
SAN ANTONIO

Date: Jul 12, 2011, 8:45am User ID: sjackson
File: S:\Active Projects\11BSW001 VOV Unit 4\dwg\11BSW001-WPAP-DTL-001.dwg

Attachment H

Temporary Sediment Pond(s) Plans and Calculations

NOT APPLICABLE

Attachment I

Inspection and Maintenance for BMPs

The BMPs for the construction of this project will be the use of rock berms, silt fencing, gravel filter bags, stabilized construction entrance and the utility trenches. The following inspection and maintenance procedures will be implemented:

1. Sift fencing, rock berms, and construction entrances must be in place prior to the start of construction and will remain in place until construction has been complete and the site stabilized from further erosion.

2. The contractor will inspect the rock berms, silt fencing and construction entrance at least once a week and within 24 hours of a storm of 0.5 inches or more in depth. The contractor will repair or replace any damaged TBMPs. The contractor shall correct damage or deficiencies as soon as practical after the inspection but no later than 7 days after the inspection.

3. Contractor will place trench excavation on the upgradient side of the trench.

4. All soil, sand, gravel, and excavated material stockpiled on-site will have appropriately sized silt fencing placed upgradient and down gradient.

5. The contractor will keep a record of the weekly inspections, noting the condition of the rock berms, silt fencing and construction entrance and any corrective action taken to maintain the erosion control structures. In addition to the inspection and maintenance reports, the operator should keep records of the construction activity on-site, in particular, the following information should be kept.

    A. The dates when major grading activities occur in a particular area.

    B. The dates when construction activities cease in an area, temporarily or permanently.

    C. The dates when an area is stabilized, temporarily or permanently.

    D. Records to be maintained in SWPPP.

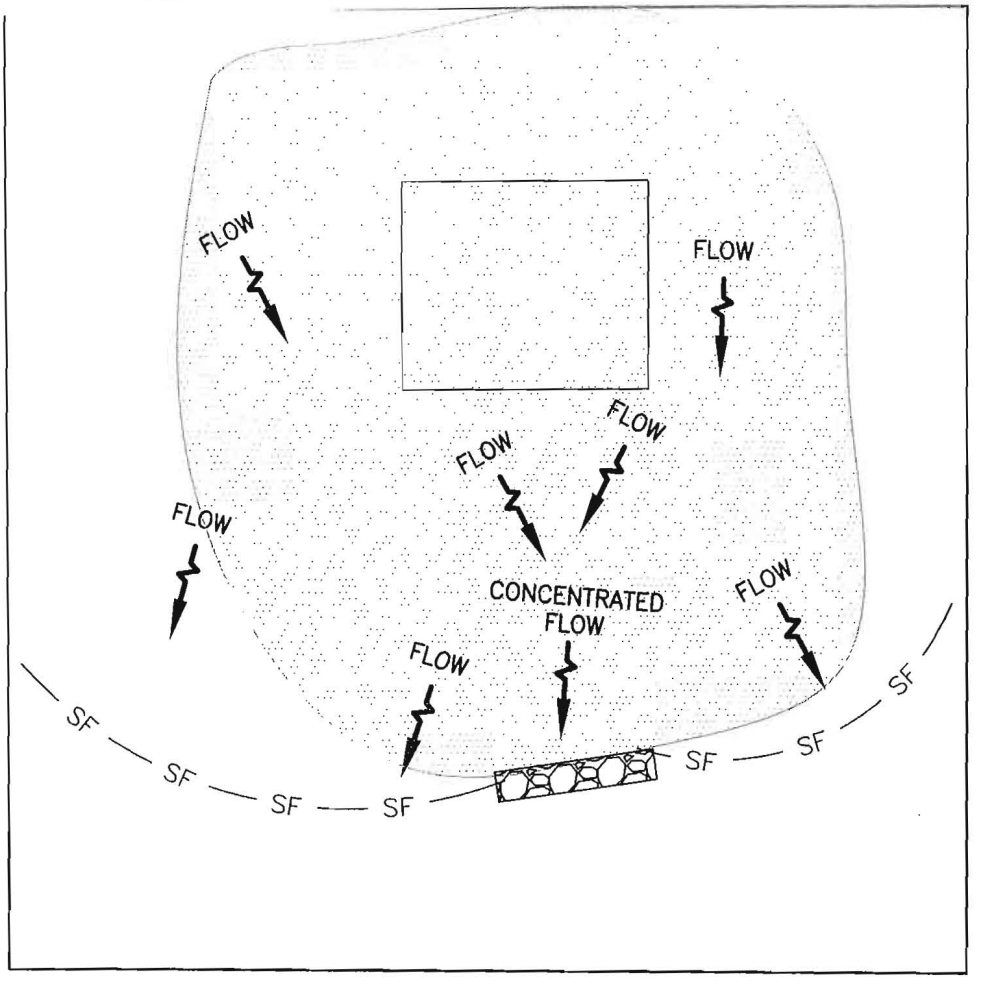
Attachment J

Schedule of Interim and Permanent Soil Stabilization Practices

The schedule of interim and permanent soil stabilization will be as follows:

1. Much of the excavation for this project will be in solid rock, helping to minimize the amount of loose soil which has the potential to become suspended in runoff and washed downstream.

2. 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 temporary or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease in 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.



LEGEND

- PROPERTY LINE
- SF — SILT FENCE
- ROCK BERM
- BUILDING
- DISTURBED AREA
- FLOW DIRECTION

NOTES:

1. EACH PROPERTY OWNER IS RESPONSIBLE FOR ENSURING A STORM WATER POLLUTION PREVENTION PLAN IS DEVELOPED AND IMPLEMENTED IN ACCORDANCE WITH THE TPDES GENERAL PERMIT TXR150000. THIS PLAN MUST INCLUDE THE DESIGN AND PLACEMENT OF APPROPRIATE TEMPORARY CONTROLS SUCH AS SILT FENCE AND ROCK BERMS.
2. IF THE AVERAGE IMPERVIOUS COVER PER LOT EXCEEDS THE ASSUMPTIONS DESCRIBED IN THE APPROVED EDWARDS AQUIFER PLAN, A MODIFICATION TO THE PLAN MUST BE APPROVED PRIOR TO CONSTRUCTION.
3. THIS DETAIL PROVIDES GENERAL GUIDANCE FOR THE PLACEMENT OF CONTROLS. THESE CONTROLS SHOULD BE TAILORED TO FIT THE SPECIFIC ONSITE CONDITIONS AND THE PROPOSED CONSTRUCTION.
4. SILT FENCE SHOULD BE INSTALLED DOWN–SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE ENDS OF THE FENCE SHOULD BE CURVED UPHILL TO CREATE AN IMPOUNDMENT AREA. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.
5. ROCK BERMS SHOULD BE INSTALLED IN AREAS OF CONCENTRATED FLOW WITH DRAINAGE AREA NOT TO EXCEED 5 ACRES.

SOIL STABILIZATION NOTES:

6. TEMPORARY EROSION CONTROL MEASURES WILL BE USED TO STABILIZE DISTURBED AREAS. TRAFFIC WILL BE ROUTED AROUND THESE AREAS TO REDUCE THE EXTENT OF DISTURBED AREAS BY REDUCING SEDIMENT LOADS TO SURFACE WATER.
7. BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.
8. MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.

SCALE -	NTS
DATE -	DEC 2009
DRAWN -	SRJ
SHEET -	1 of 1

TYPICAL LOT PLAN FOR TEMPORARY BMPS

M & S ENGINEERING, LLC.
ENGINEERS AND PLANNERS

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

BRANCH OFFICE
P.O. BOX 391
McQUEENEY, TEXAS 78123

In This Section

TCEQ-0600
Permanent Stormwater Section

Attachment A
20% or Less Impervious Cover Waiver

Attachment B
BMPs for Upgradient Stormwater

Attachment C
BMPs for On-site Stormwater

Attachment D
BMPs for Surface Streams

Attachment E
Request to Seal Features

Attachment F
Construction Plans

Attachment G
Inspection, Maintenance, Repair and Retrofit Plan

Attachment H
Pilot-Scale Field Testing Plan

Attachment I
Measures for Minimizing Surface Stream Contamination

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

REGULATED ENTITY NAME: Vintage Oaks at the Vineyard Unit 4

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.

   X 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.

   — 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.

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

X 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.**

__ 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.

X 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.

__ **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:

Heath Woods, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

10/23/11
Date

Attachment A

20% Or Less Impervious Cover Waiver

NOT APPLICABLE

Attachment B

BMPs for Upgradient Stormwater

The upgradient stormwater would continue to be accepted onto the project site. The stormwater runoff from the areas that are immediately upgradient of the site are currently undeveloped. No BMPs are required because the site will be re-vegetated after construction is complete.

Attachment C

BMPs for On-Site Stormwater

The proposed residential site is less than 20% impervious cover and thus, aside from the detention pond, other permanent BMPs will not be required.

Attachment D

BMPs for Surface Streams

The proposed Vintage Oaks At The Vineyard, Unit 4 is less than 20% impervious cover, therefore not filtration is required for the runoff entering the Dry Comal Creek.

According to the geologic assessment, there are no sensitive features on this site.

Attachment E

Request To Seal Features

NOT APPLICABLE

Attachment F

Construction Plans

NOT APPLICABLE

Attachment G

Inspection, Maintenance, Repair, And Retrofit Plan

NOT APPLICABLE

Attachment H

Pilot-Scale Field Testing Plan

NOT APPLICABLE

Attachment I

Measures For Minimizing Surface Stream Contamination

A detention pond will be constructed to mitigate the effects of development. In accordance with Comal County regulations, the pond will reduce the peak 100-year discharges to pre-development rates. The outlet will be constructed to discharge at non-erosive velocities.

In This Section

TCEQ-0599
Agent Authorization Form

Agent Authorization Form

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

I Jon Van De Voorde, PE ,
Print Name

VP of Development ,
Title - Owner/President/Other

of Bluegreen Southwest One, L.P. ,
Corporation/Partnership/Entity Name

have authorized Heath Woods, P.E.
Print Name of Agent/Engineer

of M&S Engineering, LLC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

1/26/11
Date

THE STATE OF Texas §

County of Dallas §

BEFORE ME, the undersigned authority, on this day personally appeared Jon Van De Voorde ~~Jan 26 2011~~ 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 26th day of January, 2011.

STEPHANIE M LADA
Notary Public, State of Texas
My Commission Expires
October 14, 2014

NOTARY PUBLIC

Stephanie M Lada
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10/14/2014

In This Section

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

NAME OF PROPOSED REGULATED ENTITY: Vintage Oaks at the Vineyard Unit 4
REGULATED ENTITY LOCATION: New Braunfels
NAME OF CUSTOMER: Bluegreen Southwest One, L.P.
CONTACT PERSON: Jon Van De Voorde, PE PHONE: (972) 850-3074
(Please Print)

Customer Reference Number (if issued): CN 600675268 (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	32.5	Acres	$ 4000
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential		Acres	$
Sewage Collection System		L.F.	$
Lift Stations without sewer lines		Acres	$
Underground or Aboveground Storage Tank Facility		Tanks	$
Piping System(s)(only)		Each	$
Exception		Each	$
Extension of Time		Each	$

Signature _____ Date 7/12/11

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