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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 26, 2016

RECEIVED
OCT 07 2016
COUNTY ENGINEER

Mr. Thad Rutherford
Southstar at Vintage Oaks, LLC
1114 Lost Creek Blvd. Suite 270
Austin, Texas 78746

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Vintage Oaks at the Vineyard, WWTP; located in the Vintage Oaks at the Vineyard subdivision "The Hills" off Hwy 46 in the New Braunfels ETJ, Texas
Regulated Entity ID: RN108877069; Additional ID No.: 13000029

NAME OF PROJECT: Vintage Oaks at the Vineyard, The Hills; Located on the north side of TX Highway 46 approximately 3 miles east of FM3009, New Braunfels, Texas
Regulated Entity ID: RN108334111; Additional ID No.: 13000039

PLAN TYPE: Request for Technical Clarification of Water Pollution Abatement Plans (WPAP); 30 Texas Administrative Code (TAC) Chapter 213; Edwards Aquifer Protection Program

Dear Rutherford:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the request for technical clarification of the approved WPAP for the above-referenced project(s) submitted to the San Antonio Regional Office by M&S Engineering, Inc. on behalf of Southstar at Vintage Oaks, LLC on September 16, 2016.

As presented to the TCEQ, the submitted request describes the change of 5.67 acres of greenspace area into irrigation area, due to comments received by TCEQ Permitting in regards to obtaining a Texas Land Application Permit (TLAP). The change is a result of suitability of the soil for irrigation use. The greenspace area was associated to the pervious area within Vintage Oaks at the Vineyard, The Hills, which was approved as a single-family development with less than 20 percent impervious cover; waiving the requirements for permanent treatment. The original irrigation area was approved within the Vintage Oaks at the Vineyard, WWTF Edwards Aquifer Protection Plan, which approved 51.03 acres for the construction of a wastewater treatment facility (WWTF) accompanied with irrigation spray fields. The 5.67 acre change effects both referenced approved WPAP applications.

Based on the engineer's submitted clarification materials, the proposed project would require a modification to both approved WPAPs.

- Vintage Oaks at the Vineyard, The Hills
- Vintage Oaks at the Vineyard, WWTF

According to 30 TAC 213.4 (j), any development of land previously identified as undeveloped in the original water pollution abatement plan requires a modification to the previously approved plan. Areas designated as pervious cover within an approved WPAP cannot be used for wastewater effluent irrigation. In addition, irrigation must not occur beyond the limits of the designated irrigation areas.

If a modification is submitted prior to TLAP approval and completed within the Edwards Aquifer Protection Program (EAPP), any potential changes to TLAP can result in additional modifications for the EAPP. If you have any questions or require additional information, please contact Ms. Lillian Butler of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4026.

Sincerely,

Todd Jones, Water Section Work Leader
San Antonio Regional Office
Texas Commission on Environmental Quality

TJ/LB/eg

cc: Mr. Heath L. Woods, P.E., M&S Engineering, LLC
Mr. Charlie Thomas, P.E., City of New Braunfels
Mr. Thomas H. Hornseth, P.E., Comal County
Mr. Roland Ruiz, Edwards Aquifer Authority
Mr. H. L. Saur, Comal Trinity GCD
TCEQ Central Records, Building F, MC 212


1606
1343
1334
1340
1347
1369
1363
1355
1344
1348
1364

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

RECEIVED
FEB 25 2016
COUNTY ENGINEER

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 19, 2016

Mr. Thad Rutherford
Southstar at Vintage Oaks, LLC
1114 Lost Creek Blvd. Suite 270
Austin, Texas 78746

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Vintage Oaks at the Vineyard, The Hills; Located on the north side of TX Highway 46 approximately 3 miles east of FM3009, New Braunfels, Texas

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

Regulated Entity ID: RN108334111; Additional ID No.: 13000039

Dear Mr. Rutherford:

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 Southstar at Vintage Oaks, LLC on December 9, 2015. Final review of the WPAP was completed after additional material was received on January 26, 2016. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed residential project will have an area of approximately 652.55 acres. It will include the development of 750 single-family residential lots, associated utilities, and roads, including TxDOT improvements. There is a designated green space of 157.18 acres. The impervious cover will be 130.15 acres (19.94 percent). Project wastewater generated by 440 single-family residential lots will be disposed of by conveyance to the proposed Vintage Oaks at the Vineyard – The Hills (WQ0015320001) wastewater treatment plant owned by Southstar at Vintage Oaks, LLC. Project wastewater generated by 310 lots, that

are greater than one acre, will be serviced by on-site sewage facilities. According to a letter dated, December 8, 2015, signed by Mr. 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

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 project site is underlain by the Lower Cretaceous member of the Person Formation. A total of thirty-five (35) features were identified during the assessment. Four (4) sensitive geologic features were identified as two (2) caves (S-24 & S-25) and two (2) fractured rock zones (S-10 & S-11). The remaining non-sensitive features include thirteen (13) manmade features and eighteen (18) geologic features. The San Antonio Regional Office site assessment conducted on January 8, 2016 revealed the site generally as described in the application.

Natural buffers were proposed for the four (4) natural sensitive features, S-10, S-11, S-24 and S-25. No regulated activities such as construction or soil disturbing activities will take place within the 50 ft. natural buffers. The size is generally based on the drainage area for each sensitive feature.

The odd shape setbacks for features S-24 and S-25 are illustrated on the construction plans. The setbacks for each feature are described in the following table.

Identification No.	Buffer Description
S-10	50 ft. north, 50 ft. south, 50 ft. east, 50 ft. west
S-11	50 ft. north, 50 ft. south, 50 ft. east, 50 ft. west
S-24	50 ft. north, 180 ft. south, 50 ft. east, 50 ft. west
S-25	50 ft. north, 180 ft. south, 50 ft. east, 50 ft. west

SPECIAL CONDITION

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.

RECEIVED
FEB 25 2016
COUNTY ENGINEER

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. Five (5) wells exists on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

<u>After Completion of Construction:</u>

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.

RECEIVED
FEB 25 2016
COUNTY 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.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Ms. Lillian Butler of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4026.

Sincerely,

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

LB/LB/eg

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

cc: Mr. Heath L. Woods, P.E., M&S Engineering, LLC
Mr. Mario Jorge, P.E., TxDOT San Antonio District
Mr. Charlie Thomas, P.E., City of New Braunfels
Mr. Thomas H. Hornseth, P.E., Comal County
Mr. Roland Ruiz, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

COMAL COUNTY

RECEIVED

FEB 11 2016

COUNTY ENGINEER

TCEQ-R13

FEB 09 2016

SAN ANTONIO

Transmittal Letter

M&S Engineering, L.L.C.
Mailing: PO Box 970
Physical: 6477 FM 311
Spring Branch, Texas 78070
Phone: (830) 228-5446 / Fax: (830) 885-2170
www.msengr.com

M & S ENGINEERING, L.L.C.
Engineers, Planners, Surveyors

Attention:
Lillian Butler
14250 Judson Rd.
San Antonio, TX 78233

From: Jeremy More
Date: February 9, 2015
Re: Vintage Oaks at the Vineyard – Residential
Job Number: 14BSW002

We are sending you			
☐ Under Separate Cover: [Subject/Regarding]			
☐ Attached	☐ Copy of Letter	☐ Specifications	☐ Legal Documents
☐ Original Drawings	☐ Plats	☐ Change Order	☒ Other: See Below
☒ Copy of Drawings	☐ Reports	☐ Invoices/Billing	

Detailed Description	Seal/Sign Date	Revised Date	DWG. Page #	Qty
Response Letter (PSI and M&S Engineering)				1 Each
Project Description Attachment C				6
Cave Exhibits(2 Pages) and Site Photos (3 Pages)				6 Each

These are transmitted as checked below		
☒ For Approval	☐ Approved as Submitted	☐ Resubmit copies for approval
☐ For Your Use	☐ Approved as Noted	☐ Submit [#] copies for distribution
☐ As Requested	☐ Returned for Corrections	☐ Return [#] corrected prints
☐ For Review and Comment	☐ Revise and Resubmit	☐ FOR BIDS DUE:

Comments:

Delivery Method & CC's:

Drop off

Received By: Signature

M&S ENGINEERING
CIVIL | ELECTRICAL | STRUCTURAL | MEP

376 LANDA STREET
NEW BRAUNFELS , TX 78130
830.629-2988 PH | 830.228.4197 FX
FIRM FI-394
WWW.MSENGR.COM

February 9, 2016

Ms. Lillian Butler
Edwards Aquifer Protection Program
TCEQ
14250 Judson Rd.
San Antonio TX 78233
(210)490-3096

RE: Southstar at Vintage Oaks LLC
ID No. 13000039; Regulated Entity No. RN108334111

Dear Ms. Butler:

We received comments on the request for approval of a Water Pollution Abatement Plan (WPAP) on February 03, 2016. The list below is how we responded to the comments and how they were addressed.

Geologic Assessment (TCEQ-0585)

1. Item Number 1: Updated map submitted by PSI to clearly show the scale and dimensions of site features S-24 and S-25.

General Information Form (TCEQ-0587)

2. Item Attachment C: Project description has been updated by stating the impervious calculations do include the TxDOT improvements in the TxDOT ROW.
   We received comments from TxDOT on the environmental review. TxDOT clearly stated that the TCEQ approval needed to state that the impervious cover from the TxDOT improvements were approved. We request that a statement to satisfy TxDOT be added to the WPAP approval.

Please see the attached items.
If you have any questions or require additional information, please contact me or Heath Woods at (830) 629-2988.

Sincerely,

Jeremy More
M&S Engineering

CIVIL • ELECTRICAL • SURVEYING
A FULL SERVICE COMPANY

PSI Information To Build On
Engineering • Consulting • Testing

February 9, 2016

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

Attn: Mr. Heath Woods, P.E.

Re: Cave Features S-24 & S-25
Vintage Oaks at The Vineyard The Hills
Approximate 637-Acre Tract
Highway 46, Comal County, Texas
PSI Project No. 435-2481

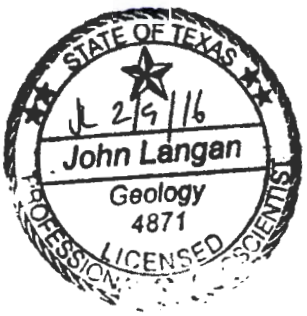
Dear Mr. Woods:

Professional Service Industries, Inc. (PSI) has completed additional assessment of cave features S-24 and S-25, as requested by the Texas Commission on Environmental Quality (TCEQ) in their February 3, 2016 correspondence.

The attached plan view and cross-sections of each feature show the limited horizontal extent of the caves. S-24 was shallow, with a rock floor that sloped to the north and got slightly deeper, approximately 5' in depth, with a floor of loose soil and leaves. S-25 was a little deeper, approximately 6-7' in depth, and had one lateral arm that extended approximately 12', with a sloping soil floor. No speleothems were observed in either cave, and the only faunal evidence was white scat beneath the opening of S-25. Ferns were noted in crevices around the mouth of S-25, suggesting a consistent source of moisture. Other vegetation included persimmon, ashe-juniper, agarita, and mustang grapevines. The lateral distance between the features is approximately 150'

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

Respectfully submitted,
PROFESSIONAL SERVICE INDUSTRIES, INC.



John Langan, P.G.
Environmental Department Manager

Attachment C

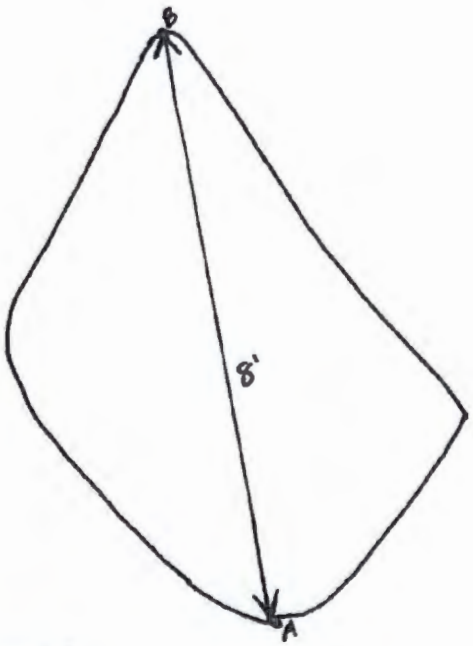
PROJECT DESCRIPTION

The area of the site is in the ETJ on New Braunfels, but is grandfathered out due to the masterplan being submitted prior to the ETJ's boundary movement (see attached letter). The existing impervious cover are building structures, water wells and ranch roads on site (See Attached Existing Site Plan). The site was a home/farm and used for agricultural purposes. The existing structures and roads will be demolished. Some water wells will be left and others will be capped.

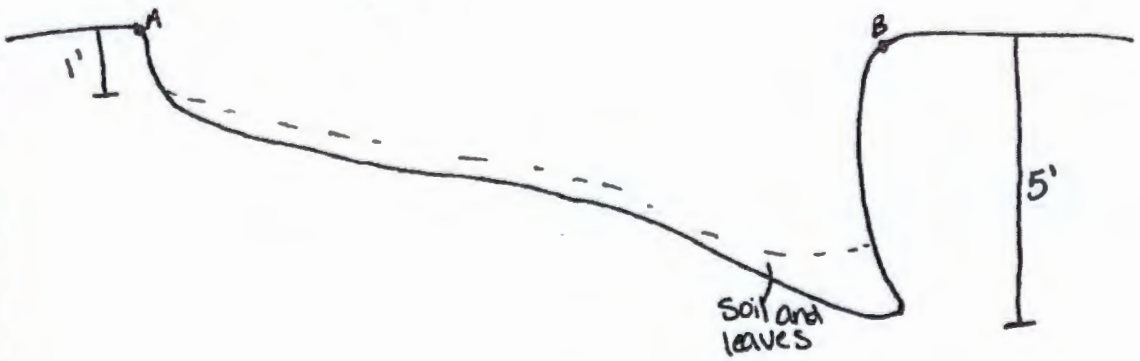
The proposed development is to be a Single Family Residential Subdivision, located on 652.55 acres, adjacent to highway 46 and along Unit 1 and Unit 4 of Vintage Oaks. The site would ultimately include approximately 418.57 acres of single-family residential lots (95.80 acres of impervious cover), 157.18 acres of green space, and 76.80 acres of street right-of-way, including TxDOT Improvements (34.35 acres of impervious cover). 750 total lots to be developed; 310 lots being greater than one acre and 440 being less than 1 acres per lot. The 440 smaller lots will be served by a waste water treatment facility. The 310 lots that are greater than one acre wastewater, will be serviced by on-site sewage facilities.

A small portion of this subdivision falls in the 100 year floodplain area. The streets and TxDOT Improvements are accounted for in the impervious cover calculations.

Vintage Oaks at the Vineyards, The Hills is located within the Dry Comal Creek & Little Bear Creek watershed. The proposed development and highway modifications create approximately 130.15 acres of impervious cover (19.94% of the total site acreage). The total acreage of the project is the 652.55 acres.



STATE OF TEXAS
JL 2/9/16
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST



psi Information To Build On
Engineering • Consulting • Testing

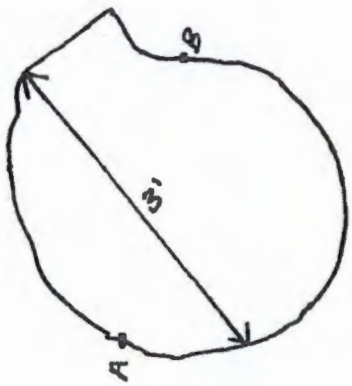
PSI, Inc.
Three Burwood Lane
San Antonio, Texas 78216

PROJECT NAME:
Vintage Oaks at the
Vineyards the Hills
Comal County, Texas

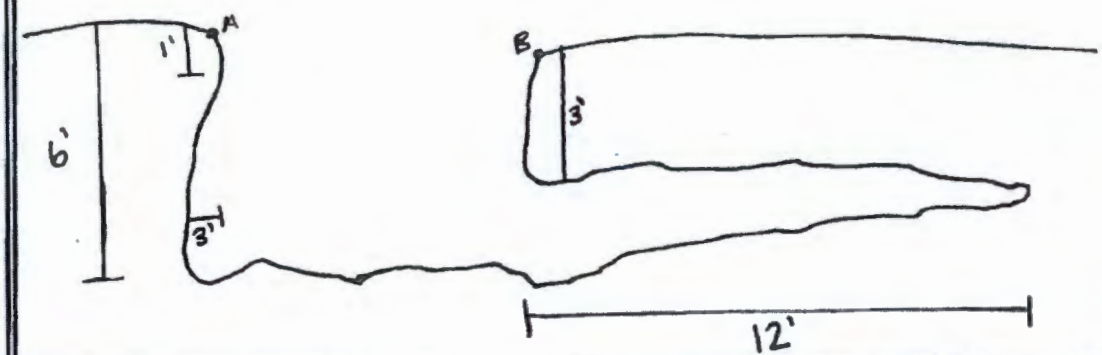
PROJECT NO.:435-2483

Cave Features
S-24

N



STATE OF TEXAS
JL 2/9/16
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST



psi Information To Build On
Engineering • Consulting • Testing

PSI, Inc.
Three Burwood Lane
San Antonio, Texas 78216

PROJECT NAME:
Vintage Oaks at the
Vineyards the Hills
Comal County, Texas

PROJECT NO.:435-2483

Cave Features
S-25

N



1. View of cave feature S-24, located at 29-46-47.2; 98-14-23.1, near the eastern property line of the site.



2. View of cave feature S-25, located at 29-46-45.4; 98-14-24.3, a few feet southwest of feature S-24.



2. View inside feature S-25, showing lateral extent and soil floor. Note apparent white "scat" on rock in the right foreground, likely from trogloxene species.



3. View of vegetation around feature S-25, including persimmon, ashe-juniper, ferns and mustang grapevines.

COMAL

M&S ENGINEERING
CIVIL | ELECTRICAL | STRUCTURAL | MEP

376 LANDA STREET
NEW BRAUNFELS , TX 78130
830.629-2988 PH | 830.228.4197 FX
FIRM FI-394
WWW.MSENGR.COM

January 26, 2016
Ms. Lillian Butler
Edwards Aquifer Protection Program
TCEQ
14250 Judson Rd.
San Antonio TX 78233
(210)490-3096

RECEIVED
FEB 11 2016
COUNTY ENGINEER
TCEQ R-13 2016 JAN 26 16:48

RE: Southstar at Vintage Oaks LLC
ID No. 13000029; Regulated Entity No. RN108877069

Dear Ms. Butler:

We received comments on the request for approval of a Water Pollution Abatement Plan (WPAP) on January 13, 2015. The list below is how we responded to the comments and how they were addressed.

TCEQ Core Data Form (TCEQ-10400)

1. Item Number 37 & 38: The latitude and longitude coordinates have been relocated to a more centralized location for the site.

Geologic Assessment (TCEQ-0585)

2. Item Number 4, Attachment A: The missing site features have been added and the locations of the features have been updated.
3. Item Number 14: The page has been updated to show that there are 5 wells on site; 4 will be abandoned and 1 (feature S-7) will remain used.
4. S-10: The infiltration rating has been updated.
5. S-11: The infiltration rating has been updated.
6. S-24 & S-25: An exhibit of features S-24 and S-25 has been added. There was no any apparent connections between the two caves.

Water Pollution Abatement Plan (TCEQ-0584)

7. Item Number 14: The volumes of wastewater was recalculated based on New Braunfels Utilities Water and Wastewater Design Criteria. Page 3 from form 0584 has been revised to show the new amount and the separation of wastewater created by the larger lots to that created by the smaller lots.
8. S-24 & S-25: The proposed OSSF for the lots are the following:
    a. Aerobic wastewater treatments system with drip irrigation
    b. Aerobic wastewater treatment system with spray/sprinkler irrigation
    c. Leaching panels/ chambers
    d. Evaportransipartive (ET beds) waste treatment system.

    An exhibit of those two lots have been created and available the usable area has been displayed.
9. The Site Plan Sheet shows the 100-Year flood plain. It is located on Sheet 1 of the WPAP Site Plan toward the western boundary of the site. There is a call out that points it out.

CIVIL • ELECTRICAL • SURVEYING
A FULL SERVICE COMPANY

10. Item Number 20: Form TCEQ-0584, Page 4 has been corrected to show 5 existing wells. All wells will be abandoned except for S-7. The wells have also been added to the site plans, existing plans and other exhibits in the WPAP.

Temporary Stormwater (TCEQ-0602)

11. Sensitive Feature Drainage Area: The Drainage areas for the sensitive feature are currently being displayed by the drainage areas on the Site Plan Sheet 1 and 2. The drainage areas were determined by contour lines generated through LIDAR data. The drainage area are extended to the boundary of the proposed site for this WPAP.
12. Sensitive Feature Boundary Areas: The sensitive feature buffer zones were designed based on the drainage areas formed from the LIDAR data. The drainage area and buffer zone extends to the boundary of the proposed site for this WPAP because that is the area that is governed by this WPAP. A buffer can't be proposed on a developed site.
13. Item Number 9, Attachment F: Exhibits 1 through 3 have been updated.

Please see the attached items.
If you have any questions or require additional information, please contact me or Heath Woods at (830) 629-2988.

Sincerely,

Jeremy More
M&S Engineering

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*								
	City	NEW BRAUNFELS	State	TEXAS	ZIP	781302	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 in the Vintage Oaks at the Vineyard Subdivision off Hwy 46 in the New Braunfels ETJ. The site entrance is 0.53 miles northwest of Hwy 46 and Herbelin Rd. intersection.

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

37. Latitude (N) In Decimal:	29.77833	38. Longitude (W) In Decimal:	98.25028

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	46	42	98	15	01

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:	Heath L. Woods, P.E.	41. Title:	Department Manager

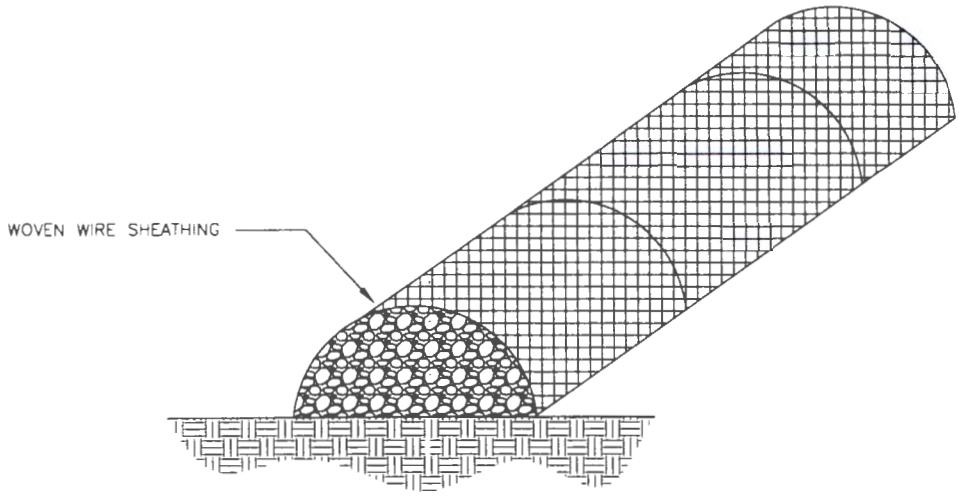
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(830) 228 - 5446	104	(830) 885 - 2170	hwoods@msengr.com

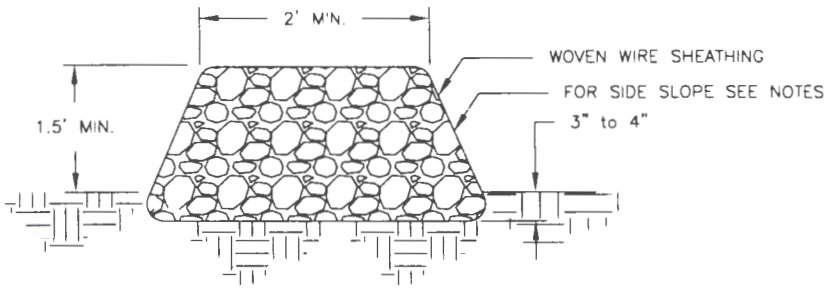
SECTION V: Authorized Signature

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	**Job Title:**	Agent - Engineer
Name *(In Print)* :	Heath L. Woods, P.E.	**Phone:**	(830) 228 - 5446
Signature:	Heath L. Woods	**Date:**	1/21/16





NOTES:

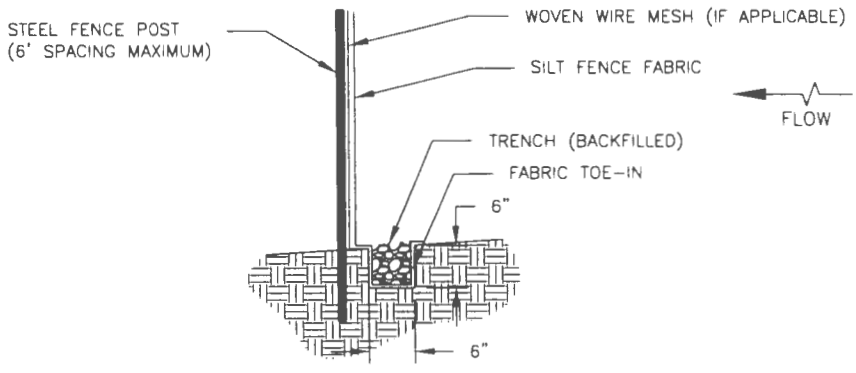
1. USE ONLY CLEAN, OPEN GRADED ROCK 5–8 INCH DIAMETER FOR STREAM FLOW CONDITIONS; USE OPEN GRADED ROCK 3–5 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED.
3. THE BERM SHOULD 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 1



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.

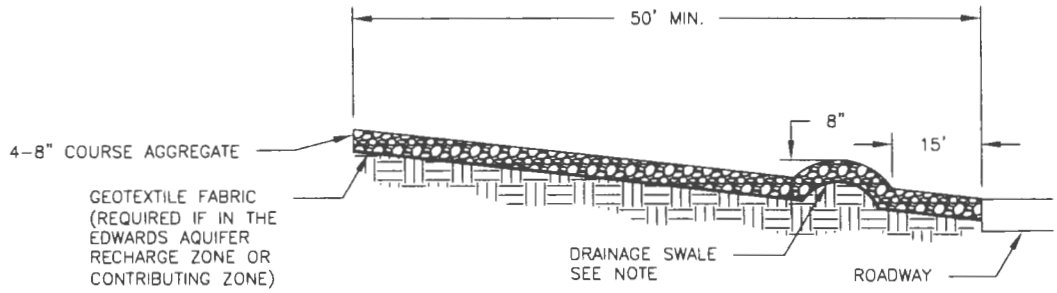
MAINTENANCE AND REMOVAL:

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.

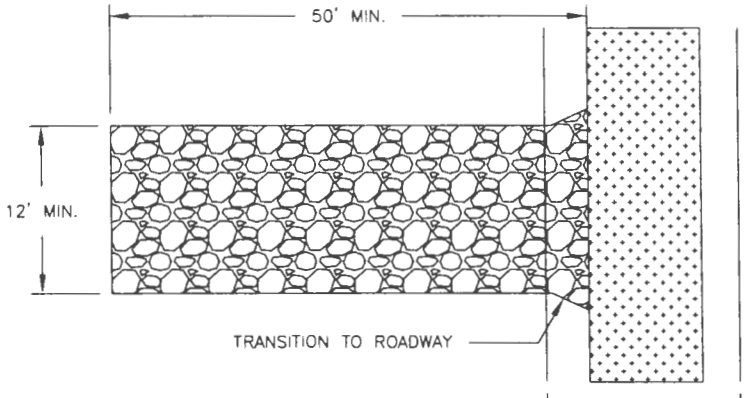
13. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE. THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

SILT FENCE

EXHIBIT 2



PROFILE
N.T.S.



PLAN VIEW
N.T.S.

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 3

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100 % Domestic	183,750 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 183,750	

Note: *75,950 Produced by 1 ac. or larger lots
*107,800 produced by less than 1 ac. lots

15. Wastewater will be disposed of by:

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

☒ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

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

☒ Sewage Collection System (Sewer Lines):

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

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

☐ The SCS was previously submitted on_____.

☐ The SCS was submitted with this application.

☒ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the Ovivo microBLOX MBR (name) Treatment Plant. The treatment facility is:

☐ Existing.
☒ Proposed.

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

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 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.
☐ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____

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

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

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

☒ There are 5 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

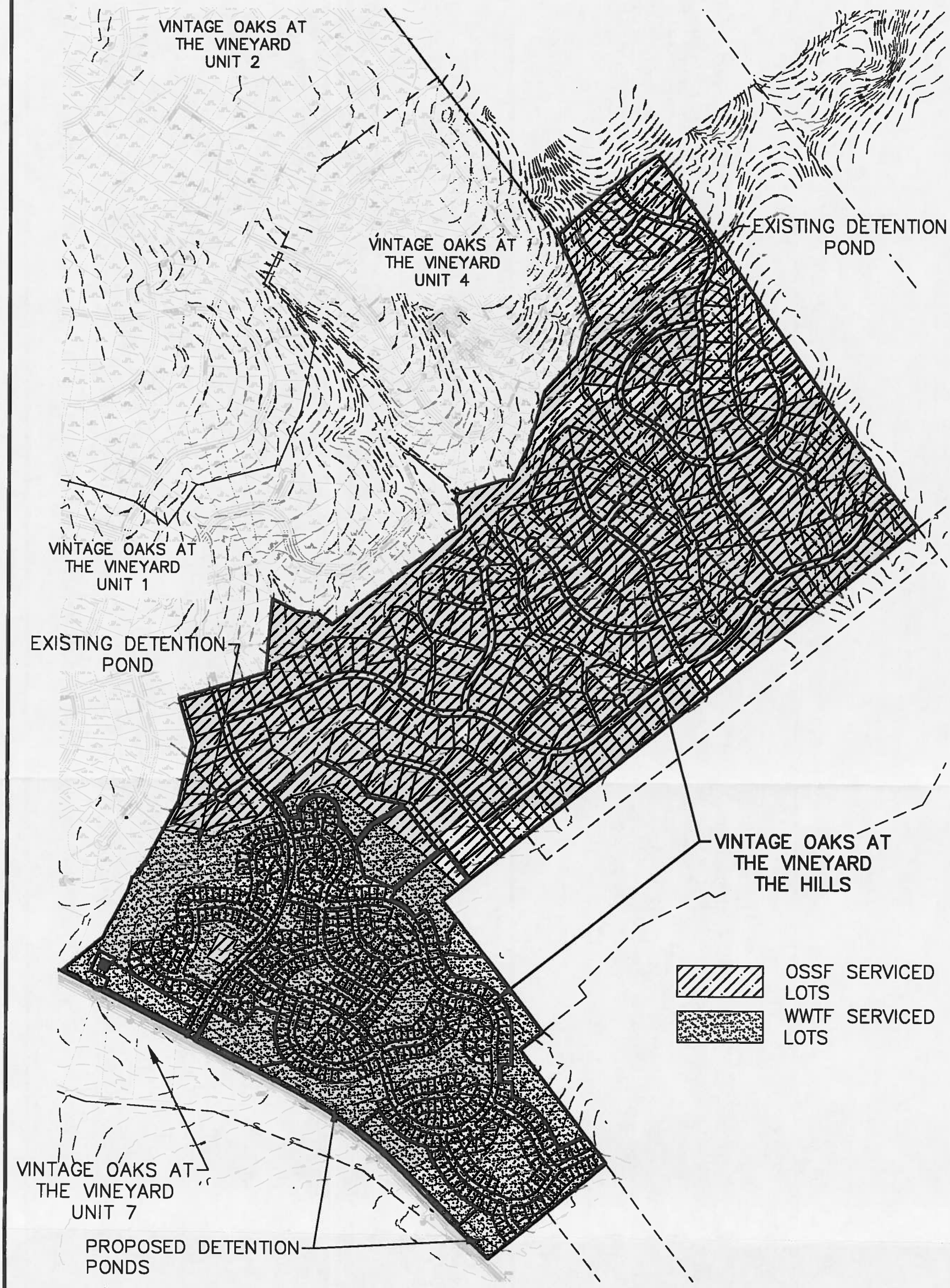
☐ The wells are not in use and have been properly abandoned.
☒ The wells are not in use and will be properly abandoned.
☒ The wells are in use and comply with 16 TAC §76.

Note: All wells will be abandoned except for S-7.

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

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

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.



THE HILLS– PROPOSED SITE PLAN



Information To Build On
Engineering • Consulting • Testing
PSI, Inc.
7400 Blanco Road, Suite 257
San Antonio, Texas 78216

PROJECT NAME:
Vintage Oaks at The Vineyards The Hills
Comal County, Texas

PROJECT NO.:435-2483

Cave Features S-24 & S-25

Schematics



GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Vintage Oaks at the Vineyard The Hills

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)	RQD	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	29-46-23.4	98-15-31.1	MB	30	Kek	320	125	12						5	35	X			X	Hillside
S-2	29-46-15	98.15-5.1	MB/Well	30	Kek	1	1	>100						5	35	X		X		Hillside
S-3	29-46-16.8	98-15-4.8	MB	30	Kek	150	40	7						5	35	X			X	Hillside
S-4	29-46-15	98-15-5	MB/Well	30	Kek	1	1	>100						5	35	X		X		Hillside
S-5	29-46-17	98-14-56.5	MB	30	Kek	325	250	12						15	20	X			X	Hillside
S-6	29-46-14.5	98-15-23.2	MB	30	Kek	4	4	5						9	39	X		X		Hillside
S-7	29-46-14.9	98-15-25.3	MB/Well	30	Kek	1	1	>100						5	35	X		X		Hillside
S-8	29-47-22	98-14-43	MB	30	Kek	250	90	10								X			X	Hillside
S-9	29-47-20.2	98-14-34	MB	30	Kek	350	180	12						5	35				X	Hillside
S-10	29-47-16	98-14-38	Z	30	Kek	650	150	15	N30E	10	3	0.4	N	35	75		X		X	Streambed
S-11	29-47-6.7	98-14-48.8	Z	30	Kek	50	140	5			5	0.4	C	35	65		X		X	Streambed
S-12	29-47-7.7	98-14-45.3	O	5	Kek	250	100	8			1	0.1	N	15	20	X			X	Streambed
S-13	29-46-45.2	98-15-12	CD	5	Kek	15	5	3					F	20	25	X			X	Streambed
S-14	29-46-46	98-15-12.6	MB	30	Kek	125	35	5						5	35	X			X	Hillside
S-15	29-46-51	98-15-4.2	O	5	Kek	50	20	5			2	0.2	F	20	25	X			X	Streambed
S-16	29-46-57.4	98-14-54.7	O	5	Kek	250	75	8			3	0.4	C	25	30	X			X	Streambed
S-17	29-46-29.9	98-15-22	CD	5	Kek	3	3	0.5					F	15	20	X		X		Hillside
S-18	29-47-3	98-14-52.8	F		Kek	>5000	50	75					F	18	38	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 11/13/15

Sheet 1 of 3

STATE OF TEXAS
JL 1/21/16
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSC

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

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: VOATV The Hills

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	<1.6	≥1.6	
S-19	29-47-18.1	98-14-29	O	5	Kek	100	15	10			3	0.2	C	15	20	X			X	drainage
S-20	29-46-35.9	98-15-17.8	MB	30	Kek	140	140	8					F	4	34	X			X	stock tank
S-21	29-46-17.5	98-15-23.9	CD	5	Kek	1.5	1	0.5					F	10	15	X		X		hillside
S-22	29-47-20.5	98-14-29.8	O	5	Kek	80	25	10			4	0.1	C	15	20	X			X	drainage
S-23	29-47-10	98-14-28	O	5	Kek	30	15	20			1	0.2		7	12	x			x	drainage
S-24	29-46-47.2	98-14-23.1	C	30	Kek	8	8	4					C	25	55		X	X		hillside
S-25	29-46-45.4	98-14-24.3	C	30	Kek	4	4	7					C	25	55		X	X		hillside
S-26	29-46-44	98-14-34.3	MB	30	Kek	1	1	>100						5	35	X		X		hillside/well
S-27	29-46-48.6	98-14-36.9	MB	30	Kek	1	1	>100						5	35	X		X		hillside/well
S-28	29-46-53	98-14-33	O	5	Kek	25	20	5					C	10	15	X			X	drainage
S-29	29-46-58	98-14-35	O	5	Kek	35	15	7					N	10	15	X			X	drainage
S-30	39-47-3	98-14-41	O	5	Kek	75	25	10					C	15	20	X			X	drainage
S-31	29-46-50	98-14-17	O	5	Kek	20	15	5			1	0.2	F	10	15	X			X	drainage
S-32	29-46-53	98-14-18	O	5	Kek	25	10	3					C	5	10	X			X	drainage

* DATUM:_____

2A TYF	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: November 13, 2015

Sheet ___ 2 3

STATE OF TEXAS
JL 1/21/16
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST

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



1. View of cave feature S-24, located at 29-46-47.2; 98-14-23.1, near the eastern property line of the site.



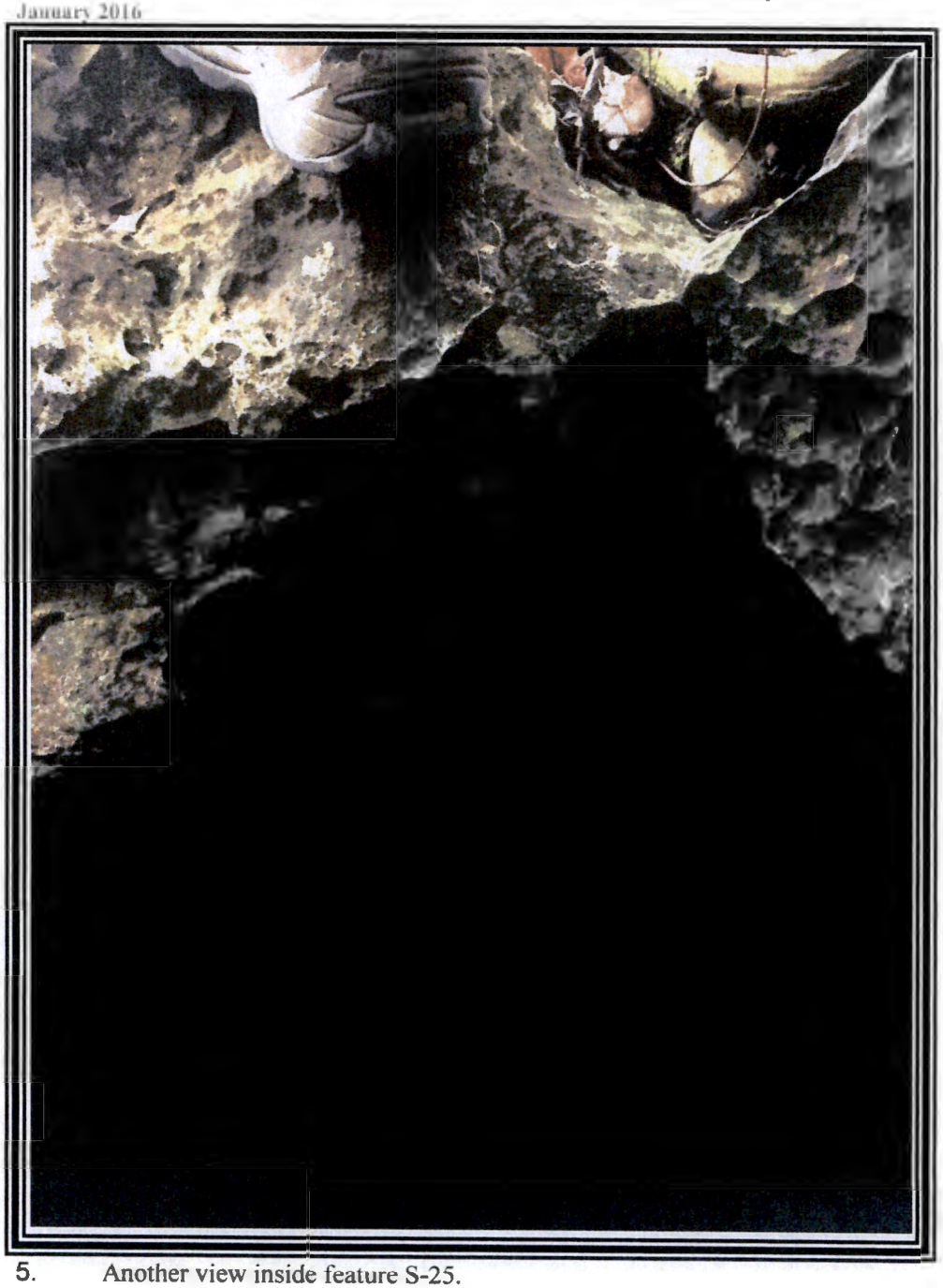
2. View of cave footprint of S-24, with virtually no lateral openings beyond the surface expression.



3. View of cave feature S-25, located at 29-46-45.4; 98-14-24.3, a few feet southwest of feature S-24.



4. View inside feature S-25, showing limited lateral extent in the subsurface.



5. Another view inside feature S-25.

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

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

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

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

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

    ☒ There are 5 (#) 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.

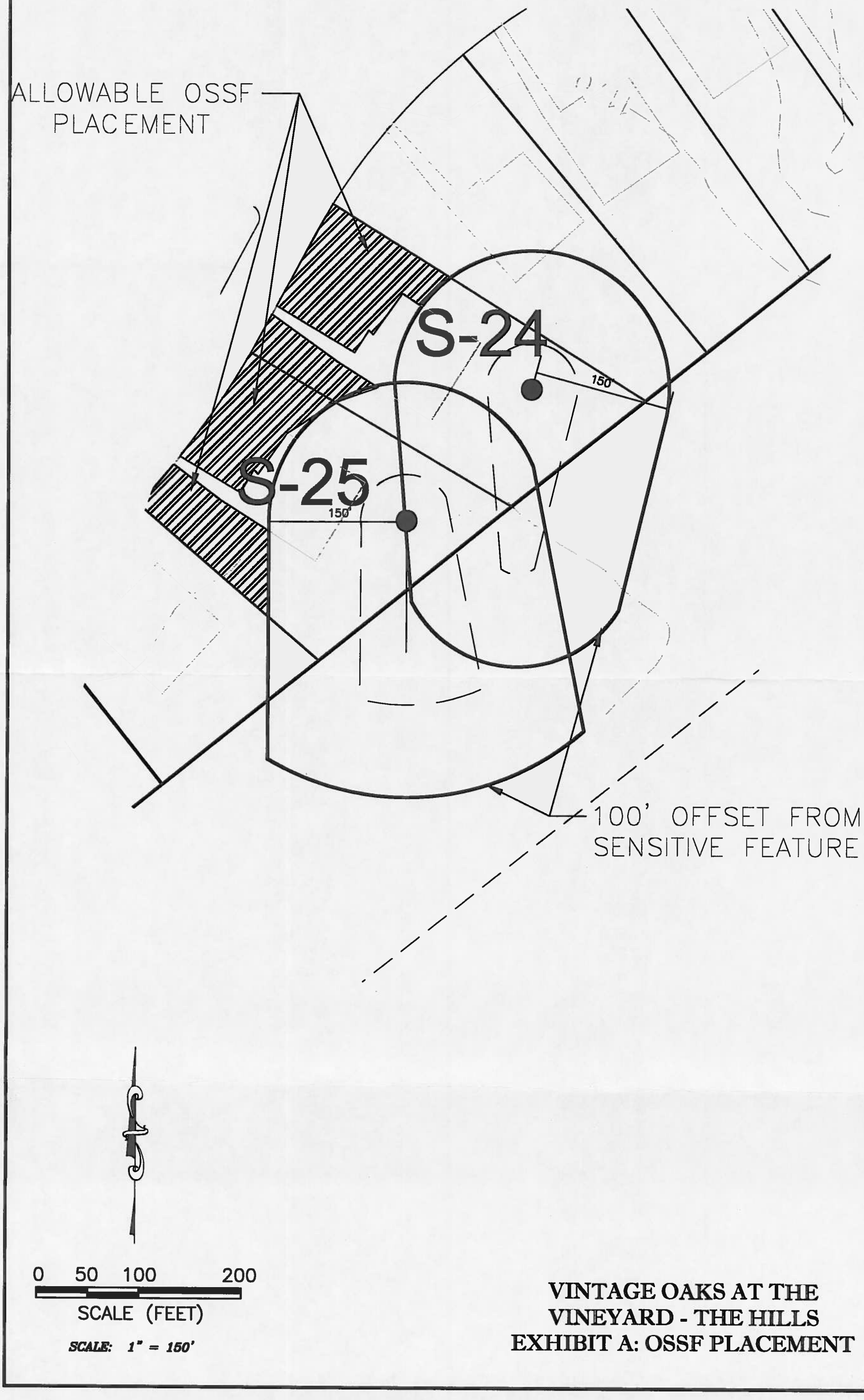
    ☒ The wells are not in use and will be properly abandoned. Note: 4 wells will be abandoned

    ☒ The wells are in use and comply with 16 TAC Chapter 76. 1 will remain in use (Feature S-7)

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

Administrative Information

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

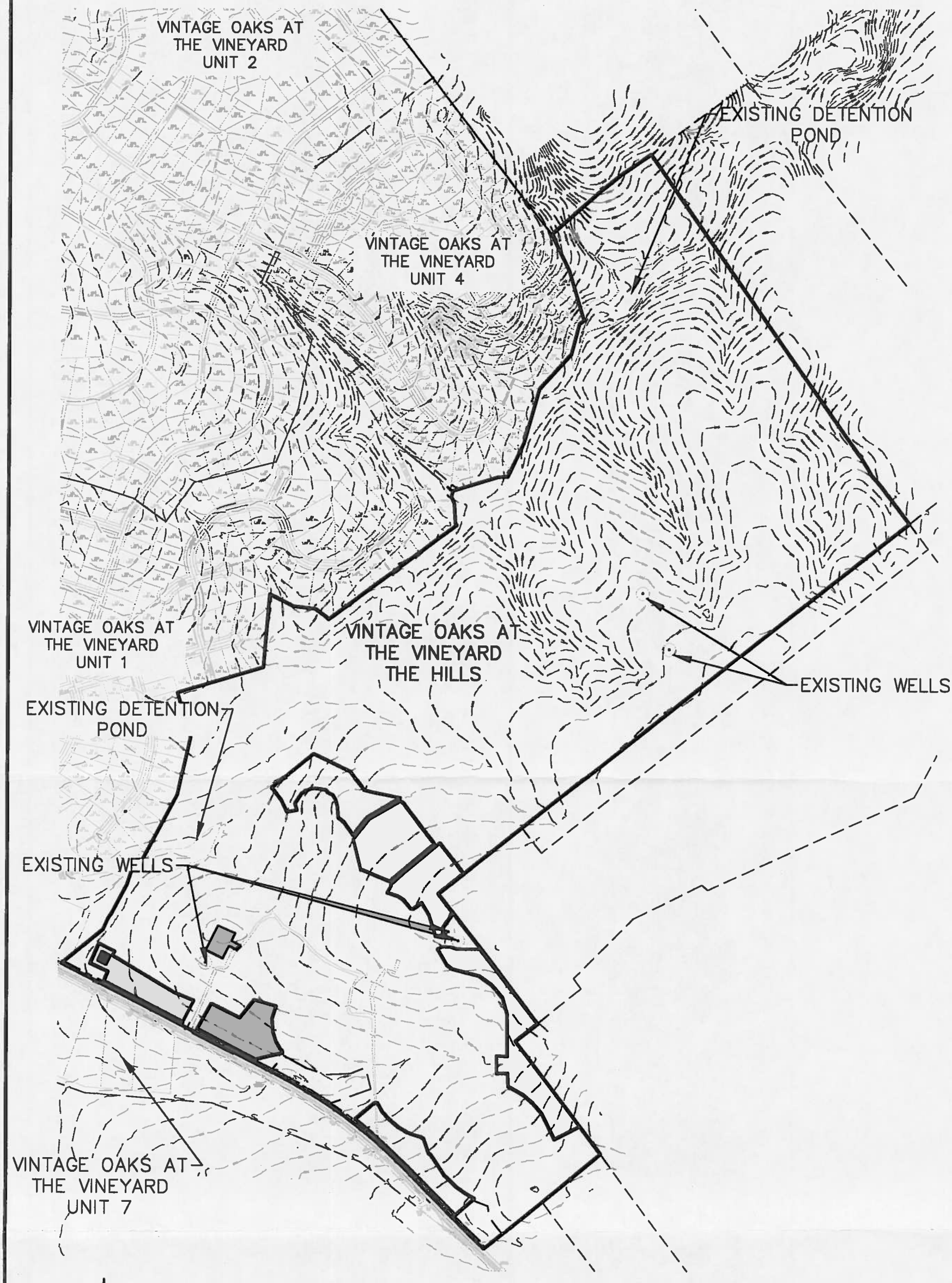


0 50 100 200

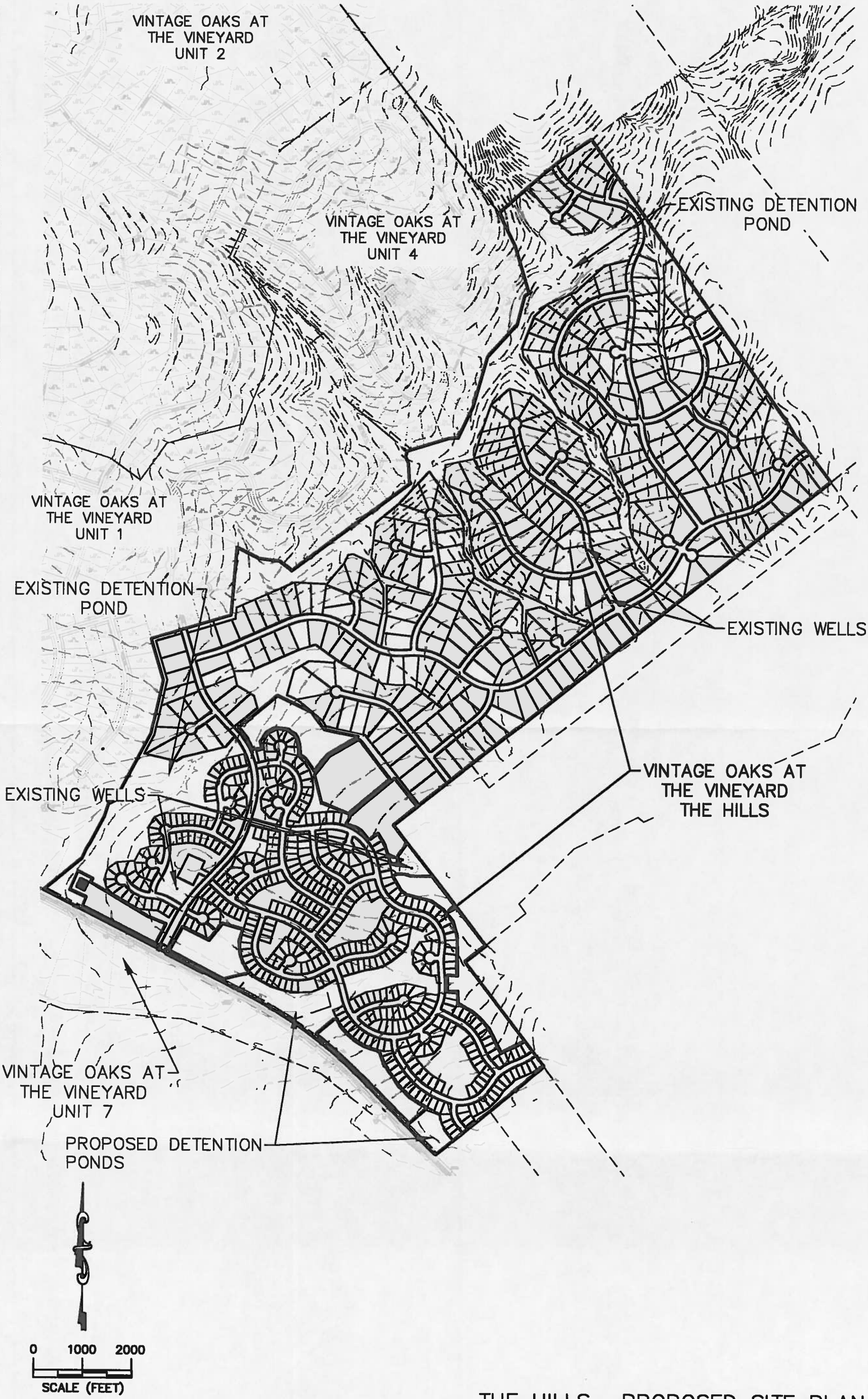
SCALE (FEET)

SCALE: 1" = 150'

VINTAGE OAKS AT THE VINEYARD - THE HILLS
EXHIBIT A: OSSF PLACEMENT



THE HILLS– EXISTING SITE PLAN



THE HILLS– PROPOSED SITE PLAN

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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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).

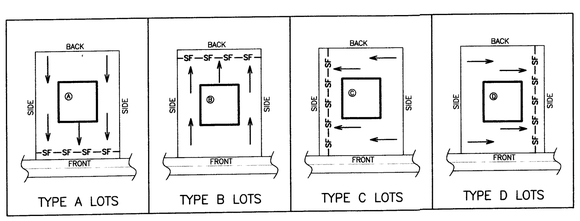
SOIL STABILIZATION NOTE

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.

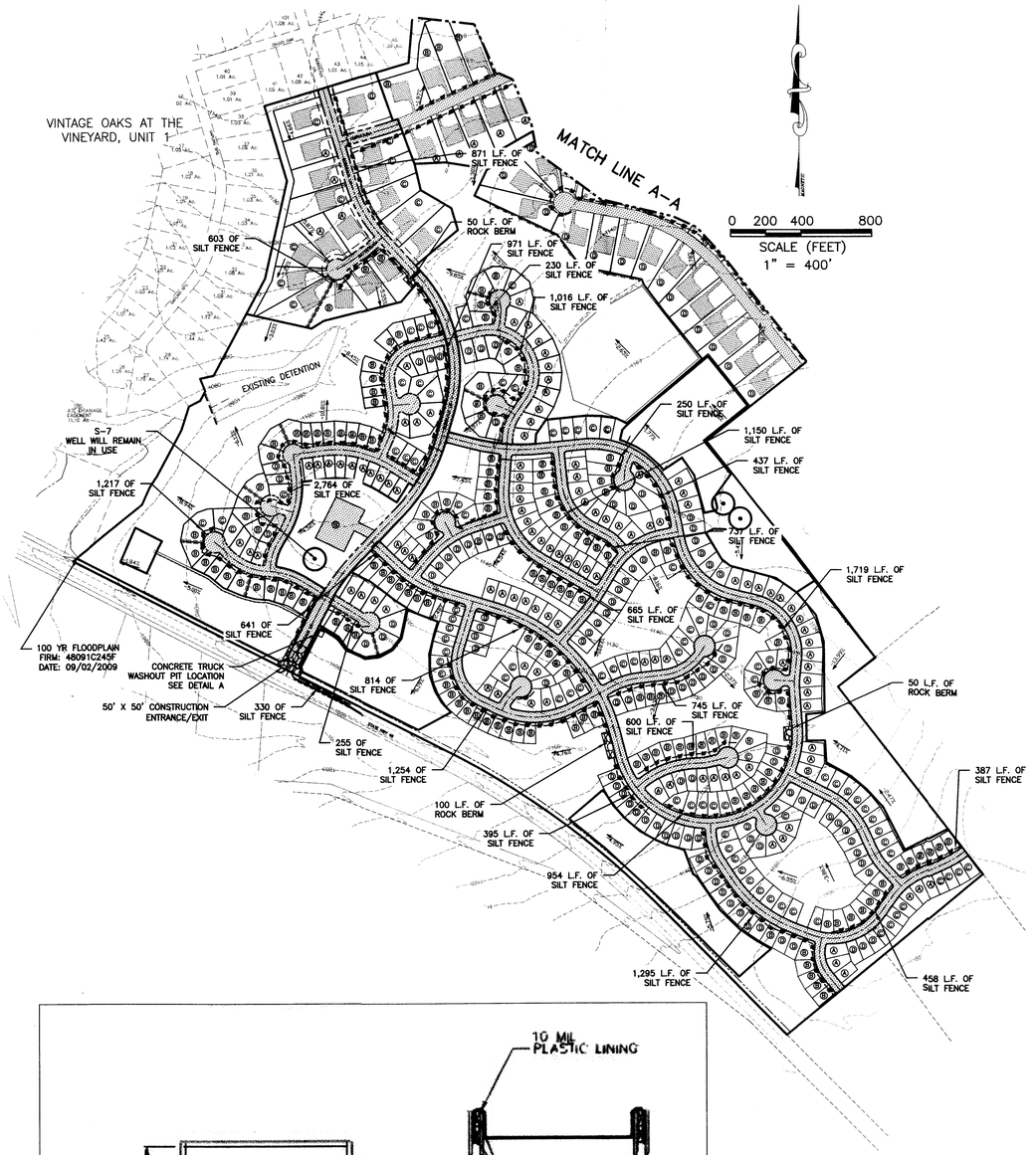
BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

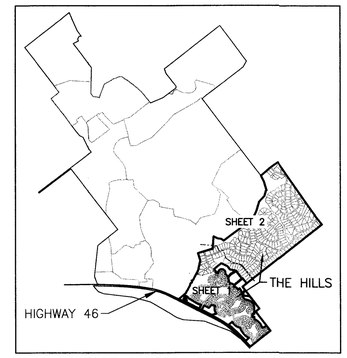
MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)



THE TYPICAL DRAINAGE PATTERN OF EACH LOT WILL BE BE DETERMINED BY THE EXISTING CONTOURS. ALL DRAINAGE OF LOTS WILL FLOW AWAY FROM BUILDING PAD.
(1 AC. LOT HOME BUILDING PAD: 6100 SF; AND ⅛ AC. LOT HOME BUILDING PAD: 4330 SF. THESE CALCULATIONS USED TO DETERMINE IMPERVIOUS COVER)





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

LEGEND:

- EXIST LOT LINE
- EXIST PROPERTY BOUNDARY
- 300 EXIST CONTOUR
- S-5 EXIST SITE FEATURES
- PROP PROJECT LIMITS
- PROP RIGHT-OF-WAY
- 2.472 PROP WATER FLOW DIRECTION
- PROP SILT FENCE
- SENSITIVE FEATURE BUFFER ZONE
- PROP ROCK BERM
- CONSTRUCTION ENTRANCE/EXIT
- DISTURBED AREA
- WELL

WELL NOTE:

NOTE
ALL WELLS WILL BE ABANDONED EXCEPT FOR S-7 LOCATED ON SHEET 1 TOWARD THE WESTERN SIDE OF THE SITE.

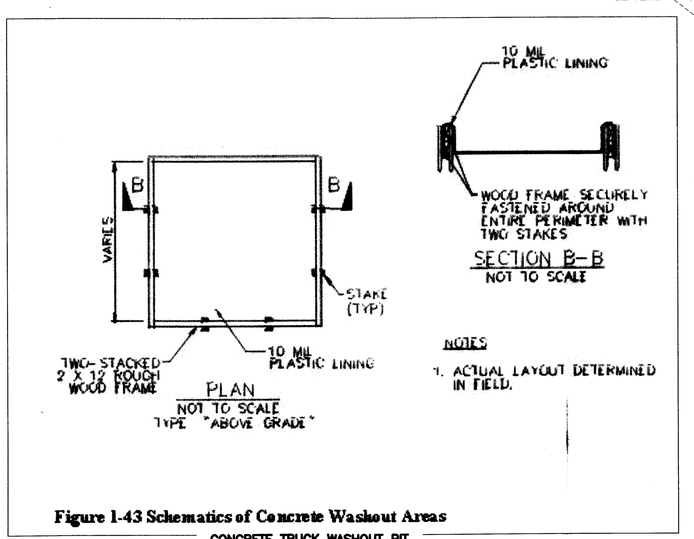


Figure 1-43 Schematics of Concrete Washout Areas

CONCRETE TRUCK WASHOUT PIT
DETAIL A

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1394

BRANCH OFFICES
P.O. BOX 391 78123
McQUEENEY, TEXAS
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

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

HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
1/26/16

REVISIONS

VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: DECEMBER 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 1 OF 3

Date: Jan 25, 2016, 10:22am User ID: jmore
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-SPN-001.dwg

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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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).

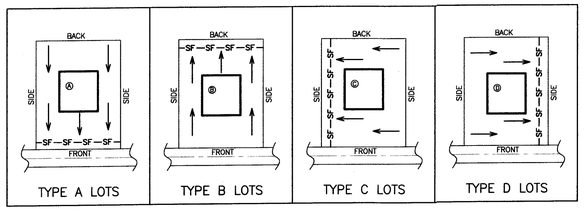
SOIL STABILIZATION NOTE

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.

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)

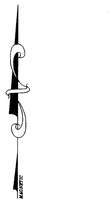


THE TYPICAL DRAINAGE PATTERN OF EACH LOT WILL BE BE DETERMINED BY THE EXISTING CONTOURS. ALL DRAINAGE OF LOTS WILL FLOW AWAY FROM BUILDING PAD.
(1 AC. LOT HOME BUILDING PAD: 6100 SF; AND ⅛ AC. LOT HOME BUILDING PAD: 4330 SF. THESE CALCULATIONS USED TO DETERMINE IMPERVIOUS COVER)

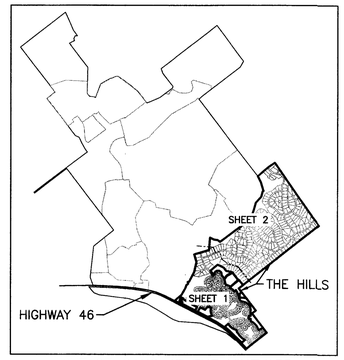
SENSITIVE FEATURE BUFFER:

NOTE
CONTRACTOR/OWNER SHOULD REFERENCE THE TECHNICAL GUIDANCE FOR BEST MANAGEMENT PRACTICE FROM TCEQ ON WHAT IS ALLOWED IN THIS AREA.





0 200 400 800
SCALE (FEET)
1" = 400'



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

LEGEND:

- EXIST LOT LINE
- EXIST PROPERTY BOUNDARY
- 300 EXIST CONTOUR
- S-5 EXIST SITE FEATURES
- PROP PROJECT LIMITS
- PROP RIGHT-OF-WAY
- PROP WATER FLOW DIRECTION
- PROP SILT FENCE
- SENSITIVE FEATURE BUFFER ZONE
- PROP ROCK BERM
- CONSTRUCTION ENTRANCE/EXIT
- DISTURBED AREA
- WELL

WELL NOTE:

NOTE
ALL WELLS WILL BE ABANDONED EXCEPT FOR S-7 LOCATED ON SHEET 1 TOWARD THE WESTERN SIDE OF THE SITE.

REVISIONS

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

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
1/20/16

VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: DECEMBER 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET:
2 OF 3

Date: Jan 26, 2016, 9:09am User ID: jmore
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-SPN-001.dwg

LOCATION MAP
NOT TO SCALE

S-8
S-9
S-19
U
D
S-10
S-22
S-11
S-12
S-30
S-23
S-18
S-16
U
D
S-34
S-33
S-29
S-15
S-35
S-14
S-13
S-28
S-32
S-27
S-31
S-20
S-24
S-26
S-25
S-17
Kek
Kek
S-1
S-21
S-7
S-6
S-2
S-3
S-4
S-5
Kek

THE HILLS
WPAP RESIDENTIAL
BOUNDARY (652.55 AC.)

SCALE:
1" = 400' HORIZONTAL

LEGEND

———	BOUNDARY LINE
S-1	ROCK OUTCROP
Kek	LOWER CRETACEOUS EDWARDS KANIER FORMATION

GEOLOGIC ASSESSMENT
for
THE HILLS TRACT
COMAL COUNTY, TEXAS

STATE OF TEXAS
11/10/15
John Lanigan
Geology
4871
LICENSED
PROFESSIONAL GEOLOGIST

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

REVISIONS:

JOB NO. 04352483
FILE: 04352483-01
DATE: 11/10/2015
DESIGN: ~
DRAWN: J LEAL
CHECKED: J LANGAN
SHEET 1 OF 1

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 11, 2015

RECEIVED

DEC 16 2015

COUNTY ENGINEER

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-The Hills, located 0.53 miles northwest of Highway 46 and Herbelin Road, New Braunfels, Texas

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

Dear Mr. Hornseth:

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

Please forward your comments to this office by January 11, 2016.

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

Sincerely

Todd Jones
Water Section Work Leader
San Antonio Regional Office

TJ/eg

WATER POLLUTION ABATEMENT PLAN

Vintage Oaks at the Vineyard – The Hills

TCEQ-R13
DEC 09 2015
SAN ANTONIO



Prepared for:

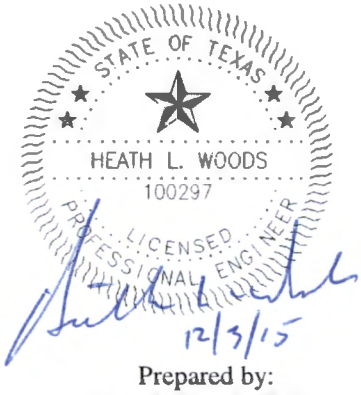
Thad Rutherford
Southstar at Vintage Oaks, LLC
1114 Lost Creek Blvd., Suite 270
Austin, TX 78746

Prepared by:

M & S ENGINEERING
ENGINEERS I PLANNERS I SURVEYORS

M&S Engineering Project Number: 7014BSW003

Main Office:
Mailing:
Post Office Box 970
Spring Branch, Texas 78070
Telephone: 830/228-5446
Facsimile: 830/885-2170
Physical:
6477 FM 311
Spring Branch, Texas 78070
Web: www.msengr.com



Prepared by:
Heath Woods, P.E.
M&S Engineering, L.L.C.
Texas Registered Engineering Firm F-1394

Branch Offices:
Mailing:
Post Office Box 391
McQueeney, Texas 78123

Mailing:
376 Landa St
New Braunfels, Texas 78130

NOVEMBER 2015

TCEQ

TCEQ Core Data Form

TCEQ Use Only

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)*

[X] 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.)*

[X] Yes [ ] No WPAP

3. Customer Reference Number *(if issued)*

CN 604123554

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

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

RN 108334111

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:*

[X] 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) [X] 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)*

thad@southstarcommunities.com

13. Telephone Number

(305) 476 - 1515

14. Extension or Code

15. Fax Number *(if applicable)*

(512) 436-9507

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 [X] 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)*

[X] 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 THE HILLS

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*								
	City	NEW BRAUNFELS	State	TEXAS	ZIP	781302	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 in the Vintage Oaks at the Vineyard Subdivision off Hwy 46 in the New Braunfels ETJ. The site entrance is 0.53 miles northwest of Hwy 46 and Herbelin Rd. intersection.

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

37. Latitude (N) In Decimal:	29.778		38. Longitude (W) In Decimal:	98.257	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	46	41	98	15	26

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:	Heath L. Woods, P.E.	41. Title:	Department Manager

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(830) 228 - 5446	104	(830) 885 - 2170	hwoods@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	Job Title:	Agent - Engineer
Name *(In Print)* :	Heath L. Woods, P.E.	Phone:	(830) 228 - 5446
Signature:	Heath L. Woods	Date:	12/3/15

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

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

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

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

Technical Review

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

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

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

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

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills						**2. Regulated Entity No.: 108334111**			
3. Customer Name: Thad Rutherford						**4. Customer No.: 604123554**			
5. Project Type: (Please circle/check one)	New		Modification			Extension		Exception	
6. Plan Type: (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential		Non-residential			**8. Site (acres):**		652.55 acres	
9. Application Fee:	$10,000.00		**10. Permanent BMP(s):**			N/A			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Comal		**14. Watershed:**			Dry Comal & Little Bear			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	X	___	___	___
Region (1 req.)	___	X	___	___	___
County(ies)	___	X	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	_X_Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge _X_New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.
Heath L Woods Print Name of Customer/Authorized Agent
Heath L Woods 12/3/15 Signature of Customer/Authorized Agent Date

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

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

Texas Commission on Environmental Quality

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

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

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

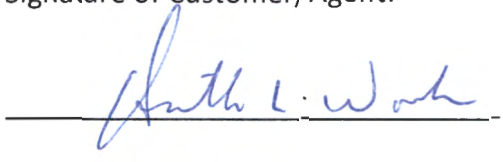
Signature

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

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

Date: 12/3/15

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills
2. County: Comal
3. Stream Basin: Dry Comal & Little Bear
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☐ Modification
   ☐ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

Contact Person: Thad Rutherford
Entity: Southstar at Vintage Oaks, LLC
Mailing Address: 1114 Lost Creek Blvd., Suite 270
City, State: Austin, Texas Zip: 78746
Telephone: (305)476-1515 FAX: (512)436-9507
Email Address: thad@southstarcommunites.com

8. Agent/Representative (If any):

Contact Person: Heath L. Woods, P.E.
Entity: M&S Engineering, LLC
Mailing Address: 376 Landa St.
City, State: New Braungels, Texas Zip: 78130
Telephone: (830)629-2988 FAX: (830)228-4197
Email Address: hwoods@msengr.com

9. Project Location:

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

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

This site is located in the Vintage Oaks at the Vineyard subdivision off Hwy 46 in the New Braunfels ETJ. The site entrance is 0.53 miles northwest of Hwy 46 and Herbelin Rd. intersection.

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

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

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

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

☐ Survey staking will be completed by this date: _____

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

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

15. Existing project site conditions are noted below:

☐ Existing commercial site
☐ Existing industrial site
☒ Existing residential site
☒ Existing paved and/or unpaved roads
☐ Undeveloped (Cleared)
☒ Undeveloped (Undisturbed/Uncleared)
☒ Other: Two Existing Ponds

Prohibited Activities

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

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

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

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

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

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

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

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

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

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

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

Administrative Information

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

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

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

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

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

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

Road Map

ATTACHMENT A – ROAD MAP



Attachment B

USGS/Edwards Recharge Zone Map

USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

BAT CAVE QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983 (south central zone)

Imagery.....NAIP, May 2010
Roads.....©2006-2012 TomTom
Names.....GNIS, 2012
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 2004
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2012

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NT
Grid Zone Designation
14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.7

TEXAS

QUADRANGLE LOCATION

Anhalt	Smithson Valley	Sattler
Bulverde	Bat Cave	New Braunfels West
Longhorn	Schertz	Marion

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Interstate Route		State Route	
US Route		Local Road	
Ramp		4WD	

Interstate Route US Route State Route

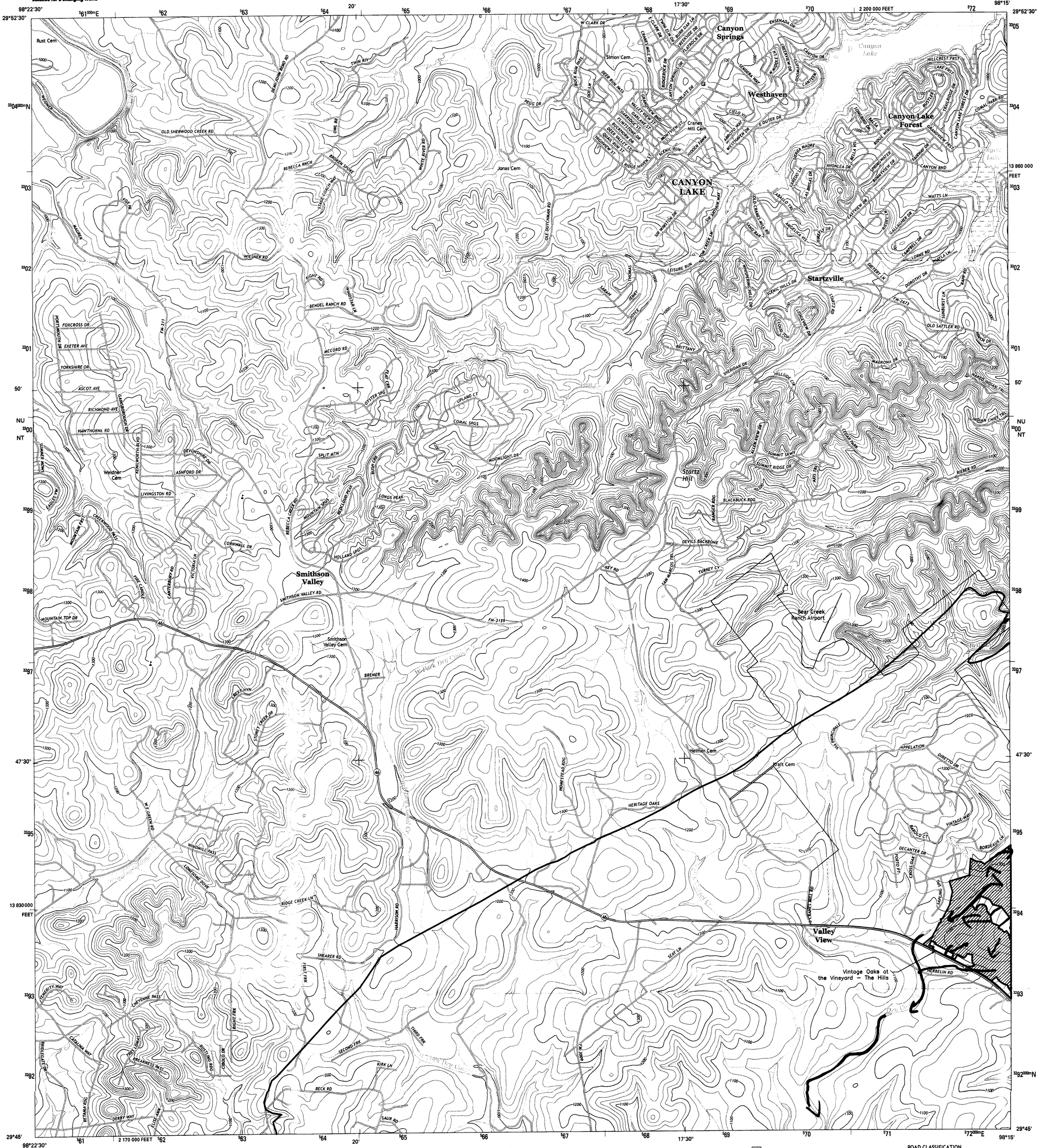
BAT CAVE, TX
2013

USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

SMITHSON VALLEY QUADRANGLE
TEXAS-COMAL CO.
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983 (south central zone)

Imagery.....NAIP, May 2010
Roads.....©2006-2012 TomTom
Names.....GNIS, 2012
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 2003
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2012

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
MN 4° 41' 83 MILS
GN 0° 20' 6 MILS

U.S. National Grid
100,000-m Square ID: NU / NT
Grid Zone Designation: 14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.7

TEXAS
QUADRANGLE LOCATION

Spring Branch	Fischer	Devils Backbone
Anhalt	Smithson Valley	Sattler
Bulverde	Bat Cave	New Braunfels West

ROAD CLASSIFICATION
Interstate Route
US Route
Ramp
State Route
Local Road
4WD
Interstate Route US Route State Route

SMITHSON VALLEY, TX
2013

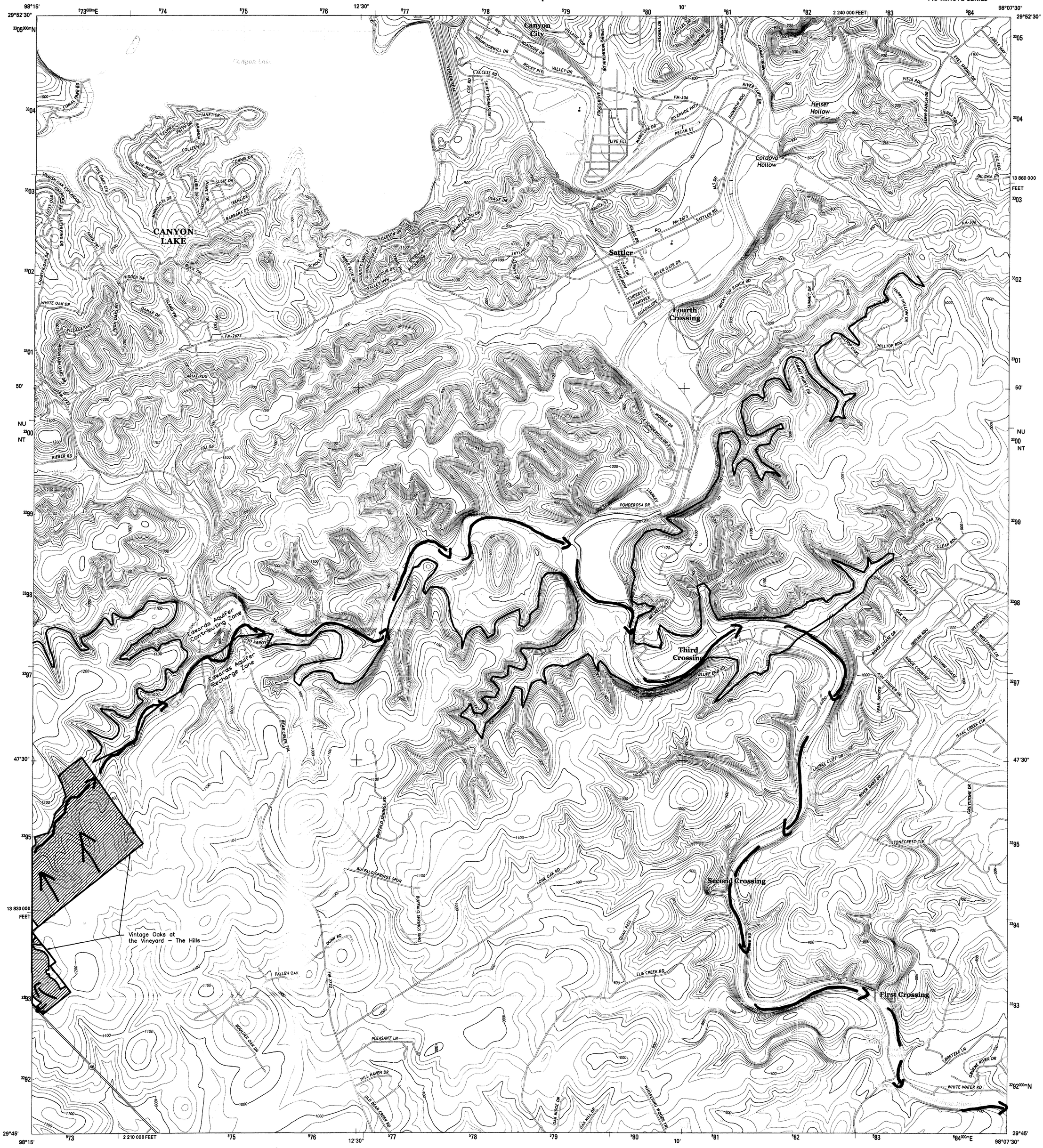
ADJOINING 7.5' QUADRANGLES

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

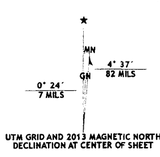
The National Map US Topo

SATTLER QUADRANGLE
TEXAS-COMAL CO.
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983 (south central zone)

Imagery.....NAIP, May 2010
Roads.....©2006-2012 TomTom
Names.....GNIS, 2012
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 2003
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2012



UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID NU NT
Grid Zone Designation 14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.7



QUADRANGLE LOCATION

Fischer	Devils Backbone	Wimberley
Smithson Valley	Sattler	Hunter
Bat Cave	New Braunfels West	New Braunfels East

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Interstate Route		State Route	
US Route		Local Road	
Ramp		4WD	

Interstate Route · US Route · State Route

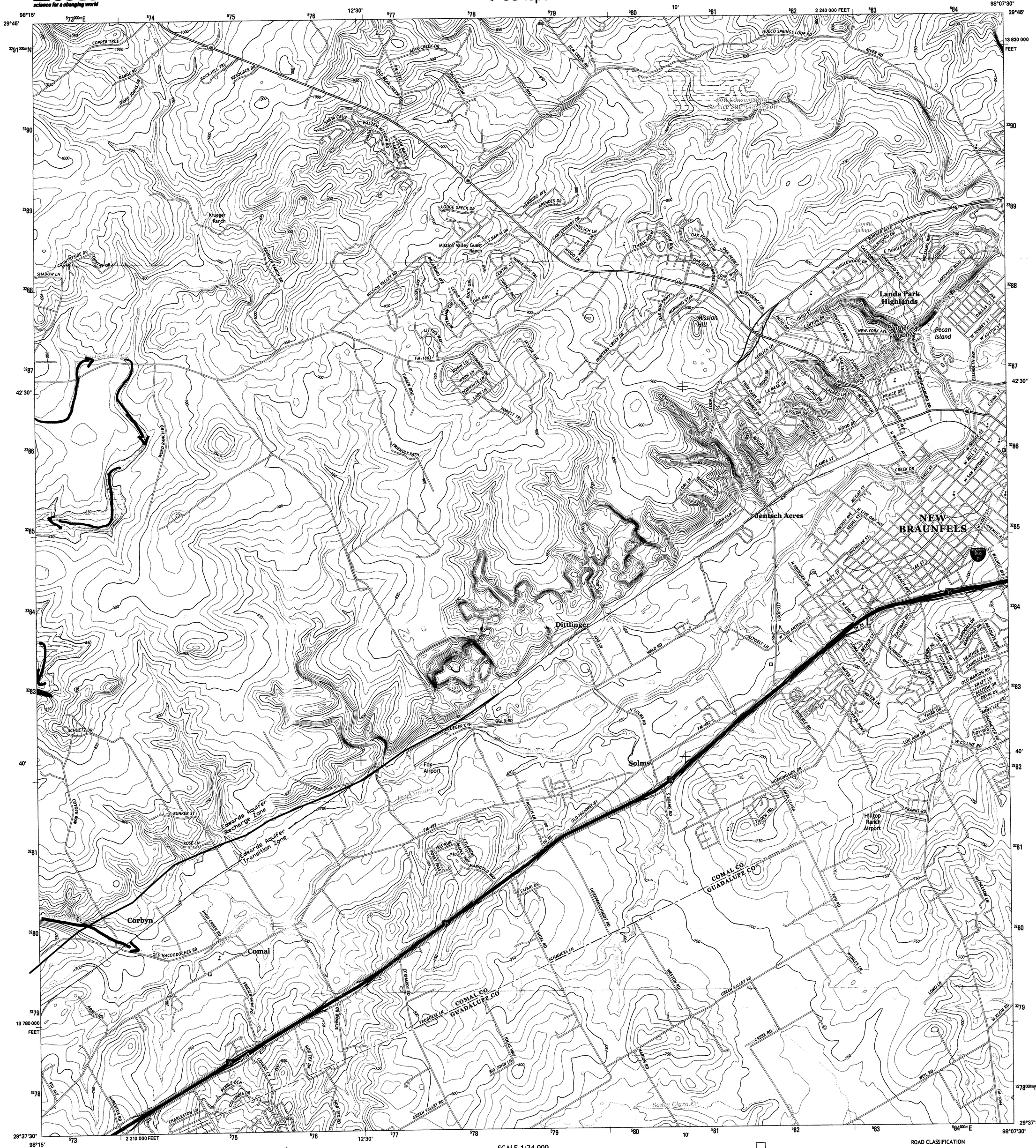
SATTLER, TX
2013

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

NEW BRAUNFELS WEST QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983 (south central zone)

Imagery.....NAIP, May 2010
Roads.....©2006-2012 TomTom
Names.....GNIS, 2012
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 2004
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2012

MN 4° 37' E 82 MILS
GN 0° 24' W 7 MILS

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NT
Grid Zone Designation 14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.7



QUADRANGLE LOCATION

Smithson Valley	Sattler	Hunter
Bat Cave	New Braunfels West	New Braunfels East
Schertz	Marion	McQueeney

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Interstate Route		State Route	
US Route		Local Road	
Ramp		4WD	

Interstate Route US Route State Route

NEW BRAUNFELS WEST, TX
2013

Project Description

Attachment C

PROJECT DESCRIPTION

The area of the site is in the ETJ on New Braunfels, but is grandfathered out due to the masterplan being submitted prior to the ETJ's boundary movement (see attached letter). The existing impervious cover are building structures, water wells and ranch roads on site (See Attached Existing Site Plan). The site was a home/farm and used for agricultural purposes. The existing structures and roads will be demolished. Some water wells will be left and others will be capped.

The proposed development is to be a Single Family Residential Subdivision, located on 652.55 acres, adjacent to highway 46 and along Unit 1 and Unit 4 of Vintage Oaks. The site would ultimately include approximately 418.57 acres of single-family residential lots (95.80 acres of impervious cover), 157.18 acres of green space, and 76.80 acres of street right-of-way (34.35 acres of impervious cover). 750 total lots to be developed; 310 lots being greater than one acre and 440 being less than 1 acres per lot. The 440 smaller lots will be served by a waste water treatment facility. The 310 lots ,that are greater than one acre wastewater, will be serviced by on-site sewage facilities.

A small portion of this subdivision falls in the 100 year floodplain area. The streets are accounted for in the impervious cover calculations.

Vintage Oaks at the Vineyards, The Hills is located within the Dry Comal Creek & Little Bear Creek watershed. The proposed development and highway modifications create approximately 130.15 acres of impervious cover (19.94% of the total site acreage). The total acreage of the project is the 652.55 acres.



Comal County

OFFICE OF COMAL COUNTY ENGINEER

September 9, 2013

Ms. Shannon Mattingly,
Director of Planning and Community Development
City of New Braunfels Planning Dept.
424 S. Castell Ave.
New Braunfels, TX 78130

Re: Vintage Oaks at the Vineyard, within Comal County, Texas

Dear Ms. Mattingly,

During their meeting of September 5, 2013, the Comal County Commissioners Court considered and granted your request to vary from the "Interlocal Cooperation Agreement between Comal County and the City of New Braunfels for Subdivision Regulation within the Extraterritorial Jurisdiction of the City of New Braunfels" regarding proposed units within the referenced subdivision.

Pursuant to actions taken by the City Council on August 26, 2013, and by Commissioners Court on September 5, 2013, Comal County will enforce its subdivision rules and regulations for Vintage Oaks at the Vineyard, lying within the City of New Braunfels Extraterritorial Jurisdiction.

Should you have any questions, please let us know.

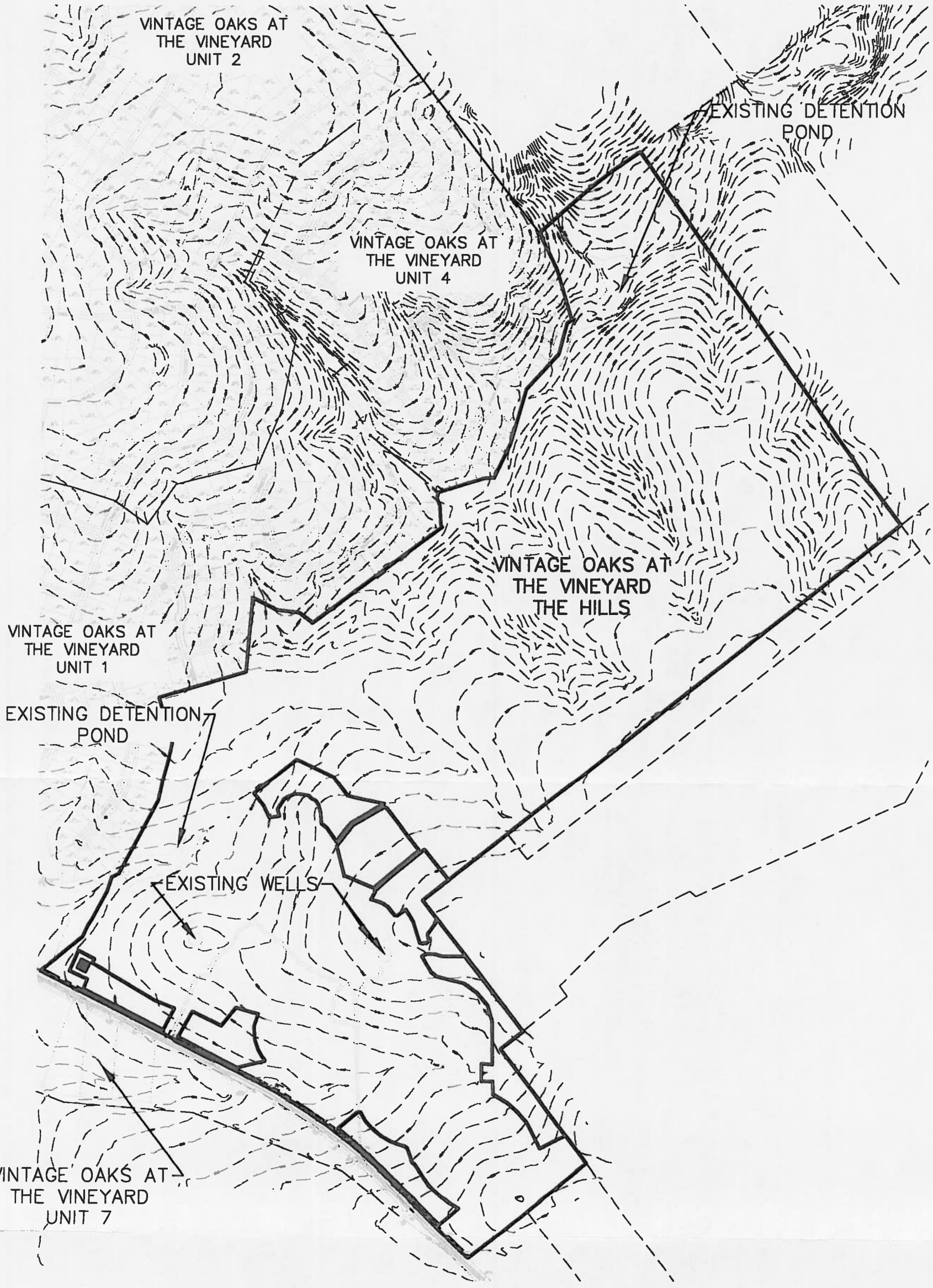
Thank you.

Sincerely,

Betty Lien
Subdivision Coordinator

xc: Mr. Gene Szakacsy, Comal County Road Superintendent (via email)

195 David Jonas Drive • New Braunfels, Texas 78132-3760 • (830) 608-2090 FAX (830) 608-2009 • www.ccco.org



THE HILLS– EXISTING SITE PLAN

Geologic Assessment

In This Section

TCEQ-0858
Geologic Assessment

Geologic Assessment Table

Stratigraphic Column

Narrative Description of Site Specific Geology

Site Geologic Map

GEOLOGIC ASSESSMENT

For

VINTAGE OAKS AT THE VINEYARDS THE HILLS
HIGHWAY 46
COMAL COUNTY, TEXAS

Prepared for

M&S ENGINEERING LTD.
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

Prepared by

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

PSI PROJECT NO.: 0435- 2481

November 13, 2015







Information To Build On
Engineering • Consulting • Testing

November 13, 2015

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

Attn: Mr. Heath Woods, P.E.

Re: Geologic Assessment
Vintage Oaks at The Vineyard The Hills
Approximate 637-Acre Tract
Highway 46, Comal County, Texas
PSI Project No. 435-2481

Dear Mr. Woods:

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. 164692 between M&S Engineering, Ltd. and PSI dated October 16, 2015.

PROJECT DESCRIPTION

The subject site is located on the north side of Highway 46, east of Cranes Mill Road, in Comal County, Texas. The Hills Tract is approximately 637-acres in size, and is an irregularly shaped parcel of undeveloped land that is hilly and rugged in places although some areas are open relatively flat fields of grass. The hillside slopes are occasionally steep and can dip in all directions. Northerly tributaries of Bear Creek drain the property in a general northeasterly or southeasterly 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 approximately 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the southeast with near vertical throws. Elevations at the Vintage Oaks at the Vineyard The Hills Tract site range from approximately 1,060 feet above mean sea level in the southwest portion of the tract to approximately 1,180 feet above mean sea level along the eastern property line of the tract.

Stratigraphy and Structure

Rocks at the site are members of the Lower Cretaceous Edwards Kainer Formation. The site is covered with a thin veneer of soil, and scattered expanses of dense to vuggy and fractured rock outcrops which are exposed throughout the site. In general, the hillsides contained variable amounts of boulder float and soil with outcrops exhibiting varying degrees of fractures and vug development. 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. The underlying Glen Rose Formation is composed of yellowish-tan, thinly bedded marly limestone.

The rocks at the site are mapped as the Dolomitic member of the Kainer Formation, which is a mudstone to grainstone, cherty, massively bedded, crystalline limestone. The rock weathers to a light gray in outcrop, and has abundant *Toucasia* bivalves. The underlying Basal nodular member of the Kainer Formation was also observed on the tract, and consists of shaly, nodular limestone and burrowed mudstone to wackestone, with gastropods, miliolids and *exogyra texana* bivalves. It is considered regionally as a lower confining unit, but locally water bearing through dissolution along bedding planes.

Four sensitive features scoring more than 40 points on the F-0585 form was observed on the subject tract and consisted of vuggy fractured rock zones in the Little Bear Creek streambed in the northeastern extension "arm". One of the features, S-10 is a large outcrop that has been partially cleared for site development activities associated with a nearby flood control spillway. The other feature, S-11 is heavily fractured, and shows the contact between the Kainer dolomitic member and the underlying basal nodular member. The other two are small caves on the east side of the tract (S-24 and S-25).

SITE INVESTIGATION

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. The purpose of the site investigation was to delineate

features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

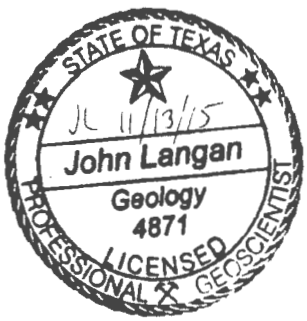
Four sensitive features were noted on The Hills tract. Two are in the northeast flowing Little Bear Creek drainage way in the northeastern "arm" of the site. These features are in alignment with a mapped fault that traverses the northeast "arm" of the subject tract, and receive directed water flow during precipitation events. Two small caves are located at fairly high elevations on the east side of the tract. Other, non-sensitive, predominantly man-made features were also identified, and included water wells, stock tanks, flood control spill ways and a septic tank. Please note that subtle features, buried or obscured from view, may be present on the tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

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

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

John Langan, P.G.
Environmental Department Manager



WARRANTY

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

This report has been prepared for the exclusive use of 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.

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

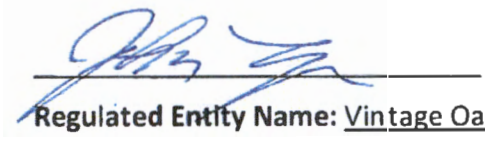
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: John Langan Telephone: 210/342-9377

Date: 11/13/15 Fax: 210/342-9401

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

Signature of Geologist:





Regulated Entity Name: Vintage Oaks at thbe Vineyard - The Hills

Project Information

1. Date(s) Geologic Assessment was performed: 10-11/15
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Anhalt clay, 1-3% Slopes	B	2
Rumple-Comfort Asso., undulating	B	2

Soil Name	Group*	Thickness(feet)

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = 400'
   Site Geologic Map Scale: 1" = 400'
   Site Soils Map Scale (if more than 1 soil type): 1" = 400'

9. Method of collecting positional data:

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

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

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

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

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

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

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

    ☒ There are 2 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☒ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

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

STRATIGRAPHIC COLUMN

Vintage Oaks at The Vineyard The Hills Tract
Highway 46
Comal County, Texas

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Georgetown Formation	2-20'	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: *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), Rumple-Comfort association, undulating (RUD), Anhalt clay, 1 to 3% slopes (AnB), Eckrant-Rock outcrop complex, steep (ErG) and Brackett-Rock outcrop Real complex, steep (BtG)

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.

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

Eckrant-Rock outcrop complex, steep is similar in profile, but are found on long, narrow slopes on high hills and ridges and along escarpments. The surface layer of Eckrant soil is very dark gray extremely stony clay about 10 inches thick. The lower portion of the surface layer is up to 75% stones and cobbles, and overlies the fractured limestone parent material.

Anhalt clays are well-drained clays that form as residuum on weathered limestones. The depth to the parent material is between 20 and 40 inches. It has low to moderately low permeability, and low water capacity, and well suited for agriculture.

Brackett-Rock outcrop series consist of shallow, loamy soils and rock outcrop on uplands in the Edwards Plateau land resource area. The surface layer is grayish brown gravelly clay loam that is between 6 and 14 inches thick. The underlying parent material is a weakly cemented limestone interbedded with a thin strata of pale yellow or pale brown shaly clay. These soils are well-drained with rapid surface runoff, moderately slow permeability, and very low available water capacity The soils are used as rangelands or habitat for wildlife, and are not suited for pasture or crops.

SITE GEOLOGIC NARRATIVE

Physiography

Comal County lies within two physiographic provinces, the Edwards Plateau and the Blackland Prairie. Most of Comal County lies within the Edwards Plateau, which is characterized by rugged and hilly terrain, with elevations in excess of 1,400' feet above sea level in the northwestern portion of the county. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Comal County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 650 feet to 1100 feet above sea level. The regional dip of the lower Cretaceous rocks in Comal County is approximately 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the southeast with near vertical throws. Elevations at the Vintage Oaks at the Vineyard The Hills Tract site range from approximately 1,170 feet above mean sea level in the east area of the tract to approximately 1,000 feet above mean sea level in the northeastern "arm" area of the tract.

Stratigraphy and Structure

Rocks at the site are members of the Lower Cretaceous Edwards Kainer Formation. The site is covered with a thin veneer of soil, and scattered expanses of dense to vuggy and fractured rock outcrops which are exposed throughout the site. In general, the hillsides contained variable amounts of boulder float and soil with outcrops exhibiting varying degrees of fractures and vug development. 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. The underlying Glen Rose Formation is composed of yellowish-tan, thinly bedded marly limestone.

The rocks at the site are mapped as the Dolomitic member of the Kainer Formation, which is a mudstone to grainstone, cherty, massively bedded, crystalline limestone. The rock weathers to a light gray in outcrop, and has abundant *Toucasia* bivalves. The underlying Basal nodular member of the Kainer Formation was also observed on the tract, and consists of shaly, nodular limestone and burrowed mudstone to wackestone, with gastropods, miliolids and *exogyra texana* bivalves. It is considered regionally as a lower confining unit, but locally water bearing through dissolution along bedding planes.

Four sensitive features scoring more than 40 points on the F-0585 form was observed on the subject tract and consisted of vuggy fractured rock zones in the Little Bear Creek streambed in the northeastern extension "arm". One of the features, S-10 is a large outcrop that has been partially cleared for site development activities associated with a nearby flood control spillway. The other feature, S-11 is heavily fractured, and shows the contact between the Kainer dolomitic member and the underlying basal nodular member. The other two are

small caves on the east side of the tract (S-24 and S-25). The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

Four sensitive features were noted on The Hills tract. Two are in the northeast flowing Little Bear Creek drainage way in the northeastern "arm" of the site. These features are in alignment with a mapped fault that traverses the northeast "arm" of the subject tract, and receive directed water flow during precipitation events. Two small caves are located at fairly high elevations on the east side of the tract. Other, non-sensitive, predominantly man-made features were also identified, and included water wells, stock tanks, flood control spill ways and a septic tank. Please note that subtle features, buried or obscured from view, may be present on the tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Vintage Oaks at the Vineyard The Hills

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)	PROD	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY			CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40		<1.8	≥1.8	
S-1	29-46-23.4	98-15-31.1	MB	30	Kek	320	125	12						5	35	X				X	Hillside
S-2	29-46-15	98.15-5.1	MB/Well	30	Kek	1	1	>100						5	35	X			X		Hillside
S-3	29-46-16.8	98-15-4.8	MB	30	Kek	150	40	7						5	35	X				X	Hillside
S-4	29-46-15	98-15-5	MB/Well	30	Kek	1	1	>100						5	35	X			X		Hillside
S-5	29-46-17	98-14-56.5	MB	30	Kek	325	250	12						15	20	X				X	Hillside
S-6	29-46-14.5	98-15-23.2	MB	30	Kek	4	4	5						9	39	X			X		Hillside
S-7	29-46-14.9	98-15-25.3	MB/Well	30	Kek	1	1	>100						5	35	X			X		Hillside
S-8	29-47-22	98-14-43	MB	30	Kek	250	90	10								X				X	Hillside
S-9	29-47-20.2	98-14-34	MB	30	Kek	350	180	12						5	35					X	Hillside
S-10	29-47-16	98-14-38	Z	30	Kek	650	150	15	N30E	10	3	0.4	N	25	65		X			X	Streambed
S-11	29-47-6.7	98-14-8.8	Z	30	Kek	50	140	5			5	0.4	C	25	55		X			X	Streambed
S-12	29-47-7.7	98-14-45.3	O	5	Kek	250	100	8			1	0.1	N	15	20	X				X	Streambed
S-13	29-46-45.2	98-15-12	CD	5	Kek	15	5	3					F	20	25	X				X	Streambed
S-14	29-46-46	98-15-12.6	MB	30	Kek	125	35	5						5	35	X				X	Hillside
S-15	29-46-51	98-15-4.2	O	5	Kek	50	20	5			2	0.2	F	20	25	X				X	Streambed
S-16	29-46-57.4	98-14-54.7	O	5	Kek	250	75	8			3	0.4	C	25	30	X				X	Streambed
S-17	29-46-29.9	98-15-22	CD	5	Kek	3	3	0.5					F	15	20	X			X		Hillside
S-18	29-47-3	98-14-52.8	F		Kek	>5000	50	75					F	18	38	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 11/13/15

Sheet 1 of 3

STATE OF TEXAS
JL 11/13/15
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST

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

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: VOATV The Hills

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)	ROD	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-19	29-47-18.1	98-14-29	O	5	Kek	100	15	10			3	0.2	C	15	20	X			X	drainage
S-20	29-46-35.9	98-15-17.8	MB	30	Kek	140	140	8					F	4	34	X			X	stock tank
S-21	29-46-17.5	98-15-23.9	CD	5	Kek	1.5	1	0.5					F	10	15	X		X		hillside
S-22	29-47-20.5	98-14-29.8	O	5	Kek	80	25	10			4	0.1	C	15	20	X			X	drainage
S-23	29-47-10	98-14-28	O	5	Kek	30	15	20			1	0.2		7	12	x			x	drainage
S-24	29-46-47.2	98-14-23.1	C	30	Kek	8	8	4					C	25	55		X	X		hillside
S-25	29-46-45.4	98-14-24.3	C	30	Kek	4	4	7					C	25	55		X	X		hillside
S-26	29-46-44	98-14-34.3	MB	30	Kek	1	1	>100						5	35	X		X		hillside/well
S-27	29-46-44	98-14-34.3	MB	30	Kek	1	1	>100						5	35	X		X		hillside/well
S-28	29-46-53	98-14-33	O	5	Kek	25	20	5					C	10	15	X			X	drainage
S-29	29-46-58	98-14-35	O	5	Kek	35	15	7					N	10	15	X			X	drainage
S-30	39-47-3	98-14-41	O	5	Kek	75	25	10					C	15	20	X			X	drainage
S-31	29-46-50	98-14-17	O	5	Kek	20	15	5			1	0.2	F	10	15	X			X	drainage
S-32	29-46-53	98-14-18	O	5	Kek	25	10	3					C	5	10	X			X	drainage

* DATUM:_____

2A TYF	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: November 13, 2015

Sheet ___ 2 3

STATE OF TEXAS
JL 11/13/15
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST

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

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: VOATV The Hills

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)	DIGS	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-33	29-46-52	98-14-45	O	5	Kek	20	10	3					C	5	10	X			X	drainage
S-34	29-46-54	98-14-46	O	5	Kek	25	15	5					C	5	10	X			X	drainage
S-35	29-46-53	98-14-52	O	5	Kek	5	2	1					C	5	10	X			X	hillside

* DATUM:_____

2A TYF	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: November 13, 2015

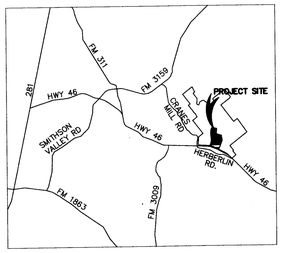
Sheet 3 3

STATE OF TEXAS
JL 11/13/15
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST

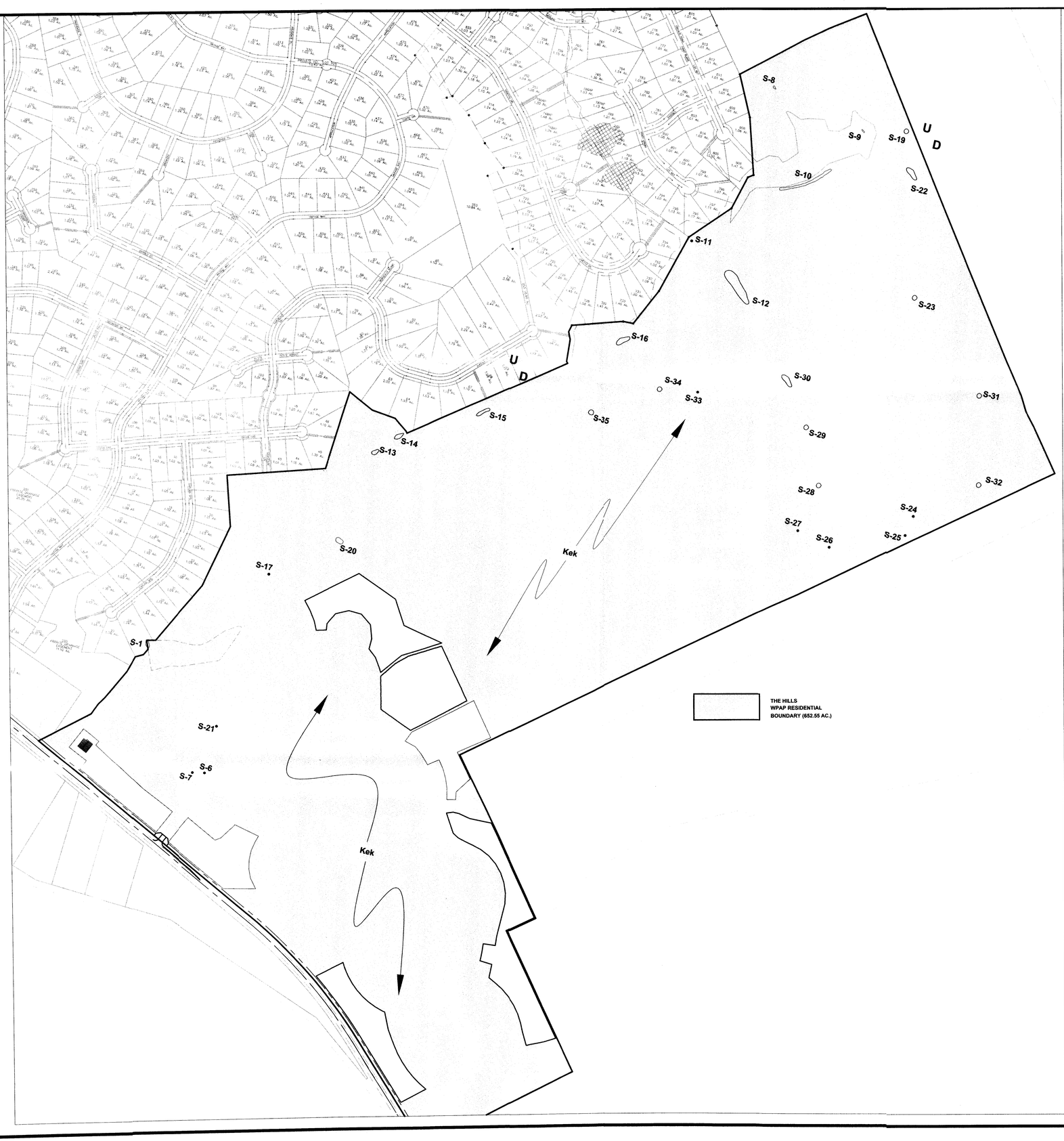
TCEQ-0585-Table (Rev. 10-01-04)

Custom Soil Resource Report
Soil Map





LOCATION MAP
NOT TO SCALE



SCALE:
1" = 400' HORIZONTAL

LEGEND

———	BOUNDARY LINE
S-1	ROCK OUTCROP
Kek	LOWER CRETACEOUS EDWARDS KANIER FORMATION

GEOLOGIC ASSESSMENT
for
THE HILLS TRACT
COMAL COUNTY, TEXAS

STATE OF TEXAS
11/10/15
John Langan
Geology
4471
LICENSED PROFESSIONAL GEOLOGIST

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

REVISIONS:

JOB NO. 04352483
FILE: 04352483-01
DATE: 11/10/2015
DESIGN: -
DRAWN: J LEAL
CHECKED: J LANGAN
SHEET 1 OF 1



1. View of man-made spillway feature S-1 located at 29-46-23.4; 98-15-31.1, in the western portion of The Hills tract, roughly 1,200 feet north of Highway 46.



2. View man-made water well feature S-2 located at 29-46-16; 98-15-5.1, in the northeast portion of the site.



3. View of man-made stock tank feature S-3, located at 29-46-16.8; 98-15-4.8, just north of well feature S-2 in the northeast portion of the site.



4. View of another well feature S-4, located at 29-46-15; 98-15-5, south of well feature S-2.



5. View of well house of feature S-4.



6. View of stock tank feature S-5, located at 29-46-17; 98-14-56.5, in the northeast portion of the site.



7. View of septic tank feature S-6, located at 29-46-14.5; 98-15-23.2.



8. View of water well feature S-7, located at 29-46-14.9; 98-15-25.3.



9. View of man-made stock tank feature S-8, located at 29-47-22; 98-14-43, in the northern portion of the site.



10. View of feature S-8, after several precipitation events, on November 8, 2015.



11. View of man-made spillway feature S-9 located at 29-47-20.2; 98-14-34, in the northern portion of the site.



12. View of the fractured rock outcrop feature S-10, at 29-47-15; 98-14-43.1. This area has undergone clearing activity between 2012 and 2014.



13. View of vuggy rock in feature S-10.



14. View of exposed vuggy rock in feature S-10. This feature has had some limited clearing done as part of site development.



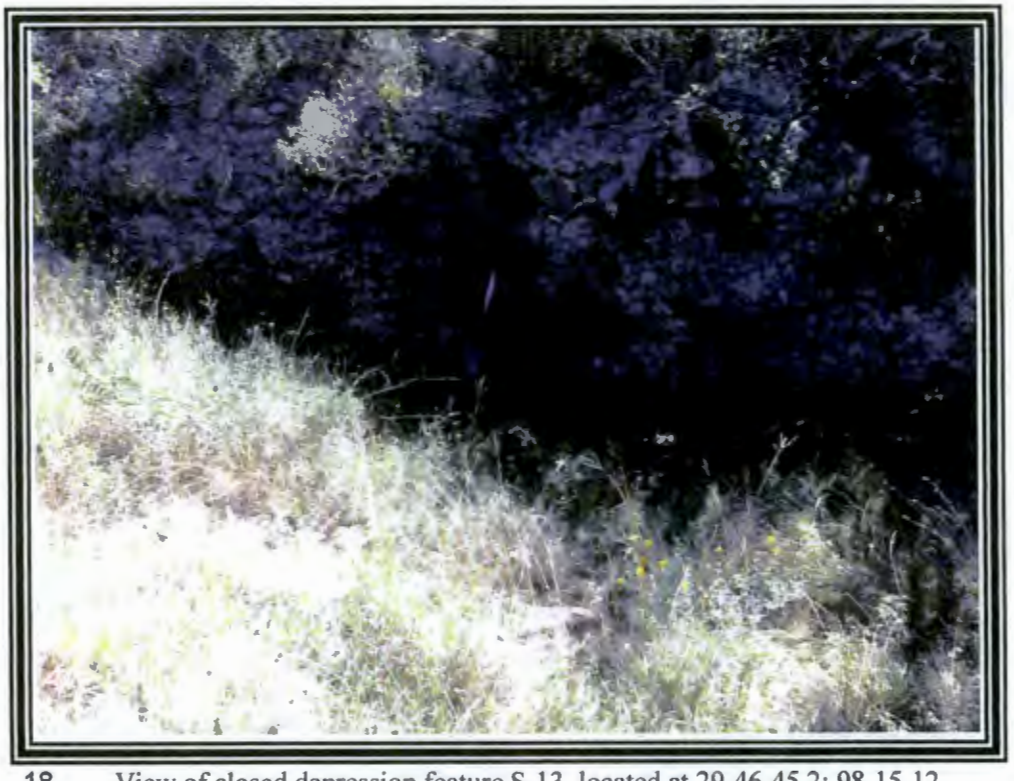
15. View of outcrop feature S-11, located at 29-47-6.7; 98-14-48.8. In the northern portion of the site. This photo shows the contact between the overlying Dolomitic member of the Kainer with the Basal Nodular member of the Kainer.



16. View of outcrop feature S-12, located at 29-47-7.7; 98-14-45.3.



17. Another view of outcrop feature S-12.



18. View of closed depression feature S-13, located at 29-46-45.2; 98-15-12.



19. View of man-made excavation feature S-14, located at 29-46-46; 98-15-12.6.



20. View of fractured rock and fault feature S-15, located at 29-46-51; 98-15-4.2.



21. View of fractured rock outcrop and fault feature S-16, located at 29-46-57.4; 98-14-54.7.



22. View of closed depression feature S-17 located at 29-46-29.9; 98-15-22, in the western portion of The Hills tract, southeast of Sapling Spring.



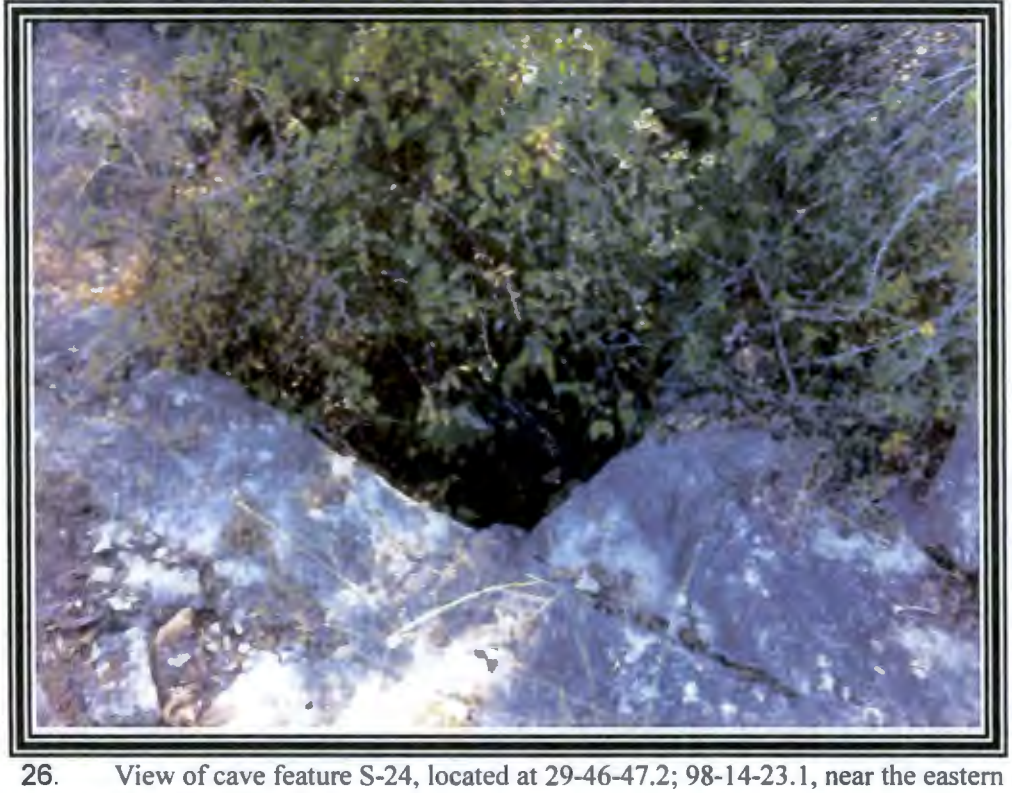
23. View of fractured rock outcrop feature S-19 located at 29-47-19; 98-14-29, in the north corner of The Hills tract, east of Pinot Blanc Lane.



24. View of man-made stock tank feature S-20 located at 29-46-35.9; 98-15-17.8, in the west-central portion of The Hills tract, southeast of Bordeaux Lane.



25. View of solution cavity feature S-21, located at 29-46-17.5; 98-15-23.9, in the southwestern portion of the site.



26. View of cave feature S-24, located at 29-46-47.2; 98-14-23.1, near the eastern property line of the site.



27. View of cave feature S-25, located at 29-46-45.4; 98-14-24.3, a few feet southwest of feature S-24.



28. View of well feature S-26, located at 29-46-44; 98-14-34, in the east portion of the site.



29. View of plugged well feature S-27, located at 29-46-48.6; 98-14-36.9, in the east portion of the site.



30. View of fractured rock feature S-28, located at 29-46-53; 98-14-32, in the east-central portion of the site.



31. View of fractured rock feature S-30, located at 29-47-3; 98-14-41, in the east-central portion of the site.



32. View northeast along the west property line from the southwest corner.



33. View southeast along the south property line from the southwest corner. Highway 46 is on the right.

In This Section

TCEQ-0584
Water Pollution Abatement Plan Application

Attachment A
Factors Affecting Water Quality

Attachment B
Volume and Character of Stormwater

Attachment C
Suitability Letter from Authorized Agent

Attachment D
Exception to the Required Geologic Assessment

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

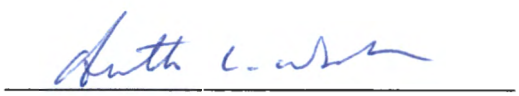
Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

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

Date: 12/3/15

Signature of Customer/Agent:



Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills

Regulated Entity Information

1. The type of project is:

   ☒ Residential: Number of Lots: 750
   ☐ Residential: Number of Living Unit Equivalents: _____
   ☐ Commercial
   ☐ Industrial
   ☐ Other: _____

2. Total site acreage (size of property): 652.55

3. Estimated projected population: 1878

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	3841992	÷ 43,560 =	88.2
Parking	330900	÷ 43,560 =	7.60
Other paved surfaces	1496286	÷ 43,560 =	34.35
Total Impervious Cover	5669178	÷ 43,560 =	130.15

Total Impervious Cover 130.15 **÷ Total Acreage** 652.55 **X 100 =** 19.94**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100 % Domestic	130,000 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 130,000	

15. Wastewater will be disposed of by:

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

☒ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

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

☒ Sewage Collection System (Sewer Lines):

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

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

☐ The SCS was previously submitted on_____.

☐ The SCS was submitted with this application.

☒ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the Ovivo microBLOX MBR (name) Treatment Plant. The treatment facility is:

☐ Existing.
☒ Proposed.

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

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 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.
☐ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____

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

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

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

☒ There are 3 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☒ The wells are not in use and will be properly abandoned.
☒ The wells are in use and comply with 16 TAC §76.

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

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

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

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

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

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

26. ☒ Surface waters (including wetlands).

☐ N/A

27. ☒ Locations where stormwater discharges to surface water or sensitive features are to occur.

☐ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

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

Factors Affecting Water Quality

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 The Hills at Vintage Oaks at the Vineyard is comprised of 24 sub-basins which total to approximately 5,840 acres. The stormwater runoff for the pre-project conditions of The Hills would be across rocky soil, with native grasses. The site has an average slope ranging from 2% to 20%. Using SCS methods peak discharges for each sub-basin were calculated. A summary of the pre- and post-project conditions follows.

10-Year Pre- and Post-Project Stormwater Data

Sub-Basin	Pre-Project Curve Number	Post-Project Curve Number	Pre-Project Discharge (cfs)	Post-Project Discharge (cfs)
1-1A	73	73	2,831	2,831
1-1B	73	79	582	687
1-2	80	80	326	326
1-3	71	73	382	407
1-4A	75	79	451	503
1-4B	71	83	300	412
1-4C	71	83	504	697
1-5	84	84	216	216
1-6	84	84	474	474
1-7	79	79	360	360
1-7A	80	80	158	158
1-8	79	79	624	624
1-9	80	80	115	115
2-1	73	84	230	452
2-2	70	82	185	375
2-3	71	79	162	326
2-4	73	83	119	236
2-5	71	81	194	389
2-6	73	82	141	276
2-7	73	83	515	1,006
2-8	73	84	85	166
2-9	73	84	84	164
2-10	75	80	245	468
2-11	74	84	105	202

100-Year Pre- and Post-Project Stormwater Data

Sub-Basin	Pre-Project Curve Number	Post-Project Curve Number	Pre-Project Discharge (cfs)	Post-Project Discharge (cfs)

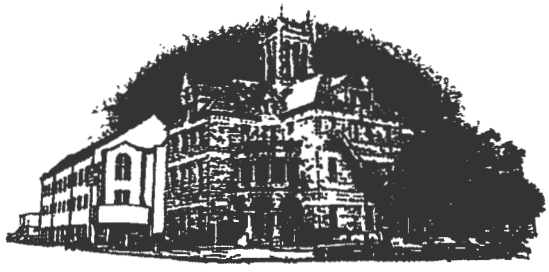
1-1A	73	73	5,627	5,627
1-1B	73	79	1,141	1,260
1-2	80	80	591	591
1-3	71	73	776	807
1-4A	75	79	862	917
1-4B	71	83	600	723
1-4C	71	83	1,016	1,225
1-5	84	84	379	379
1-6	84	84	826	826
1-7	79	79	668	668
1-7A	80	80	285	285
1-8	79	79	1144	1144
1-9	80	80	210	210
2-1	73	84	387	669
2-2	70	82	323	570
2-3	71	79	255	462
2-4	73	83	199	348
2-5	71	81	315	560
2-6	73	82	234	410
2-7	73	83	833	1,451
2-8	73	84	163	282
2-9	73	84	178	307
2-10	75	80	339	612
2-11	74	84	170	295

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 and the Little Bear Creek.

Suitability Letter from Authorized Agent

Attachment C

Suitability Letter From Authorized Agent



Comal County

OFFICE OF COMAL COUNTY ENGINEER

December 8, 2015

Mr. Heath Woods, P.E.
M&S Engineering, LLC
P.O. Box 970
Spring Branch, TX 78070

Re: Vintage Oaks at the Vineyard – The Hills On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Woods:

In accordance with TAC §213.5(b)(4)(F)(ii), and after receiving additional information on December 8, 2015, Comal County has found that the referenced site utilizing On-Site Sewage Facilities (see attached exhibit) is suitable for the use of private sewage facilities (except for areas listed below) 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 December 4, 2015 and December 8, 2015:

- The Geologic Assessment, prepared by Professional Service Industries, Inc.
- The Water Pollution Abatement Plan, prepared by M&S Engineering, LLC
- Map defining the areas utilizing On-Site Sewage Facilities

Areas that are not Suitable

The Geologic Assessment identified 4 recharge features as sensitive. Below is a list of said sensitive features:

Feature ID	Latitude	Longitude
S-10	29° 47'16"	98° 14'38"
S-11	29° 47'6.7"	98° 14'8.8"
S-24	29° 46'47.2"	98° 14'23.1"
S-25	29° 46'45.4"	98° 14'24.3"

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. Furthermore, tanks, lined ET beds and sewer pipe with watertight joints are not allowed within 50' of these sensitive features.

Finally, 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.

Finally, on a separate matter, according to TAC §285.4(c), persons proposing residential subdivisions within Comal County and using on-site sewage facilities (OSSFs) for sewage disposal are required to submit planning materials for the residential subdivision to Comal County. The planning materials shall be prepared by a professional engineer or professional sanitarian and shall include an overall site plan, topographic map, 100-year floodplain map, soil survey, location of water wells, locations of easements as identified in TAC §285.91(10) (relating to Tables), a complete report detailing the types of OSSFs to be considered and their compatibility with area-wide drainage and groundwater, and a comprehensive drainage plan. Comal County also asks for an existing improvements sketch and gate combination(s) in order to adequately inspect the site for use of OSSFs for sewage disposal. We have included Comal County's *Application for Licensing Authority Recommendation for Private Sewerage Facilities for a Proposed Subdivision* for your use.

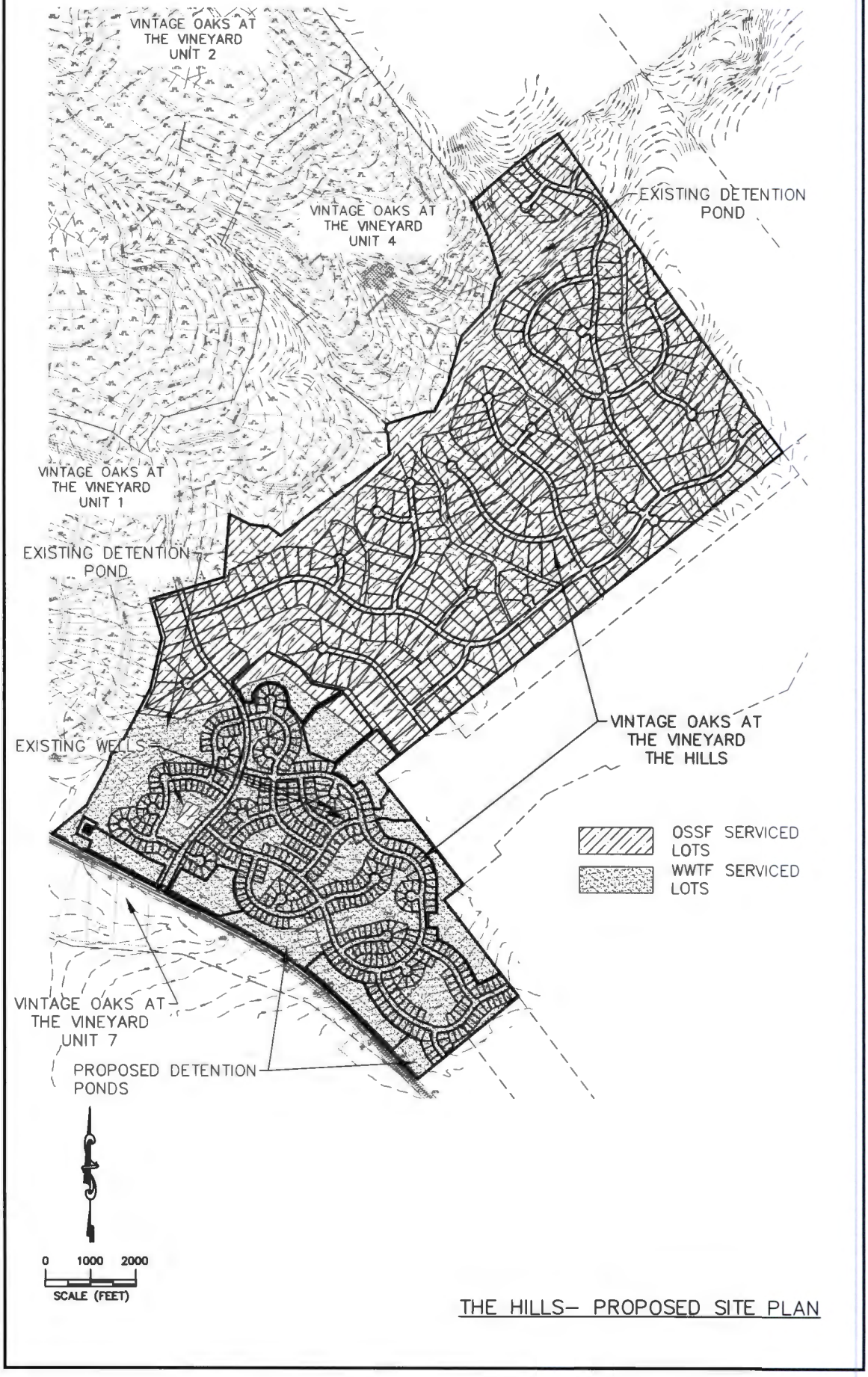
If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

Robert Boyd, P.E.
Comal County Assistant Engineer

attachments a/s

cc: Donna Eccleston, Comal County Commissioner Precinct No. 1



THE HILLS– PROPOSED SITE PLAN

Application for Licensing Authority Recommendation
for Private Sewerage Facilities for a Proposed Subdivision

Date: _____

Subdivision Name: _____

Owner's Name: _____

Address: _____

Phone #: _____

Fee Schedule:
5 or less tracts: $20/tract
6 or more tracts: $100 base fee + $5/tract

Total Fee: $ _____

Received by: _____

Make Check Payable to Comal County

According to TAC §285.4(c), persons proposing residential subdivisions, manufactured housing communities, multi-unit residential developments, business parks, or other similar structures that use OSSFs for sewage disposal shall submit planning materials, prepared by a professional engineer or professional sanitarian, for these developments to the permitting authority and receive approval prior to submitting an OSSF application:

- An overall site plan
- Topographic map
- 100-year floodplain map
- Soil survey
- Location of water wells
- Locations of easements as identified in TAC §285.91(10) (relating to Tables)
- A complete report detailing the types of OSSFs to be considered and their compatibility with area-wide drainage and groundwater
- A comprehensive drainage plan
- Edwards Aquifer requirements that are pertinent to the proposed OSSF
- If the proposed development includes restaurants or buildings with food service establishments, the planning materials must show adequate land area for doubling the land needed for the treatment units

Comal County also asks for an existing improvements sketch and gate combination(s) in order to adequately inspect the site for use of OSSFs for sewage disposal.

_____
Applicant/Agent Signature

Date of Review (must be within 45 days of receipt): _____

☐ Approved

☐ Denied

Reason(s) for Denial: _____

_____

_____

_____

Reviewer: _____, D.R.

*** Note: This sheet shall be first with all planning materials listed above following behind.**

Revised August 2010

Attachment D

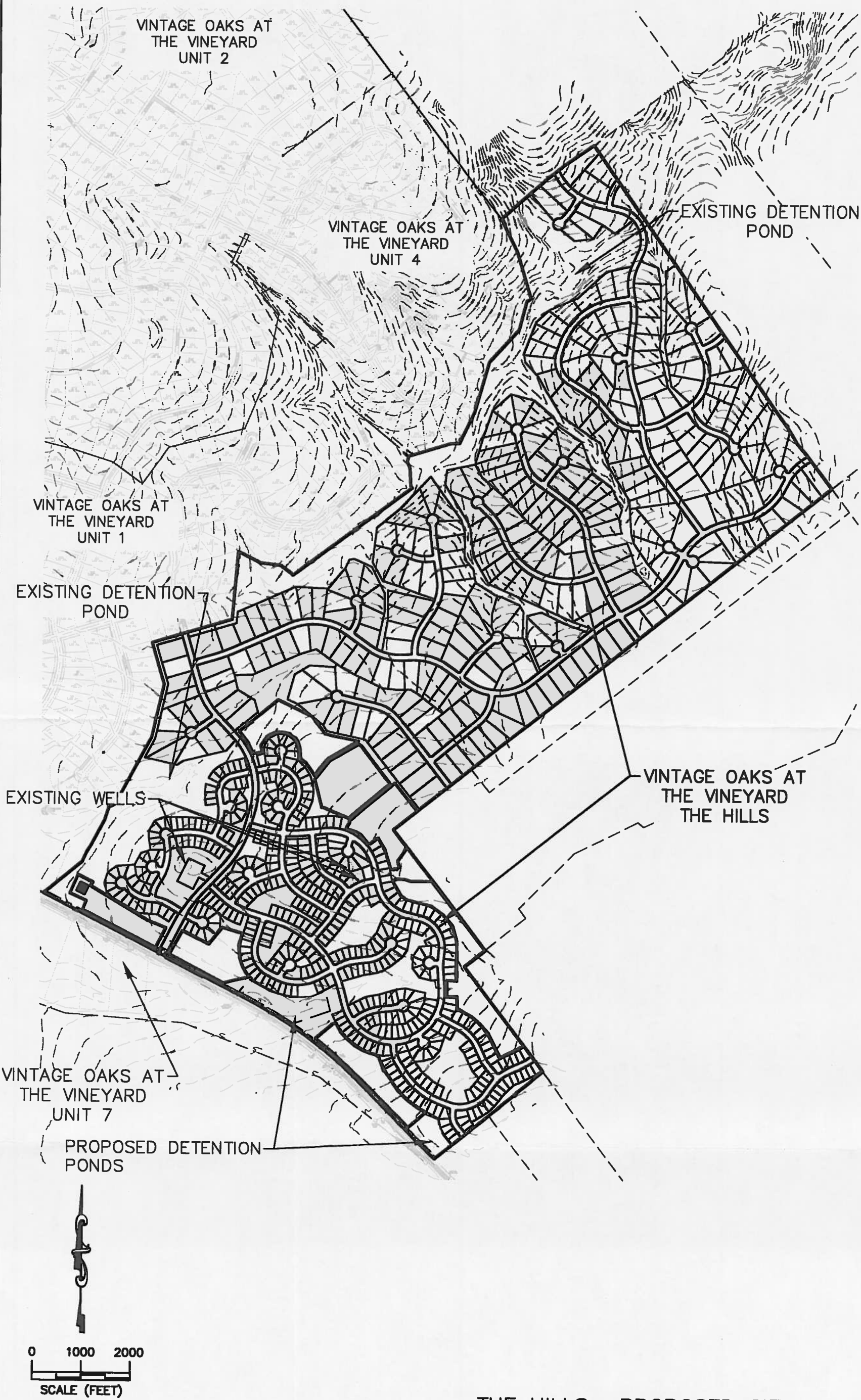
Exception to the Required Geologic Assessment

Not Applicable

Attachment D

Exception To The Required Geologic Assessment

NOT APPLICABLE



THE HILLS– PROPOSED SITE PLAN

In This Section

TCEQ-0602
Temporary Stormwater Section

Attachment A
Spill Response Actions

Attachment B
Potential Sources of Contamination

Attachment C
Sequence of Major Activities

Attachment D
Temporary Best Management Practices and Measures

Attachment E
Request to Temporarily Seal a Feature

Attachment F
Structural Practices

Attachment G
Drainage Area Map

Attachment H
Temporary Sediment Pond(s) Plans and Calculations

Attachment I
Inspection and maintenance of BMPs

Attachment J
Schedule of Interim and Permanent Soil Stabilization Practices

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

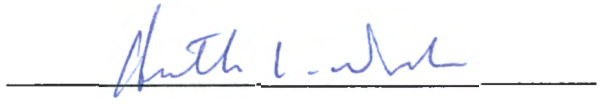
Signature

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

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

Date: 12/3/15

Signature of Customer/Agent:



Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

   These fuels and/or hazardous substances will be stored in:

   ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☐ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Dry Comal & Little Bear Creek

Temporary Best Management Practices (TBMPs)

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

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

☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

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

☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

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

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

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

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

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

☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

Attachment A

Spill Response Actions

Spill Response Actions

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.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

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

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

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

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

(5) Other agencies which may need to be consulted include, but are not limited to, the County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment 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.

Potential Sources of Contamination

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.

5. Tar, fertilizers, cleaning solvents, detergents, and petroleum based products.
   Remedy: The contractor will be responsible for immediate cleanup should an unexpected rain occur. 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.

Sequence of Major Activities

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: 34.35 acres disturbed
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: 95.80 acres disturbed
   (Assumed 6100 sq. ft. disturbed area per lots 1 acre or larger and 4330 sq. ft. disturbed area per lots less than 1 acre.)

Construction entrances for site will be accessed from Hwy 46.

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. Stabilized Construction Entrance, 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. Stabilized Construction Entrance, 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-foot radius natural buffer zone adjacent to and upgradient of any 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-foot radius of naturally-occurring sensitive features. 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 50-foot radius) the disturbed soils will be protected from erosion by silt fences as outlined above.

Request to Temporarily Seal a Feature

Attachment E

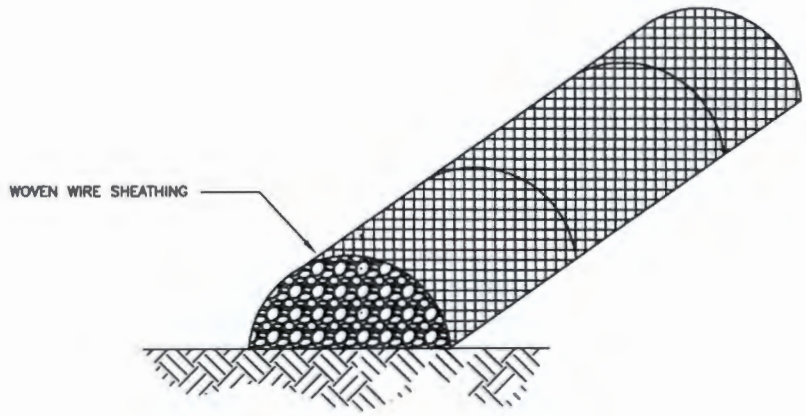
Request to Temporarily Seal a Feature

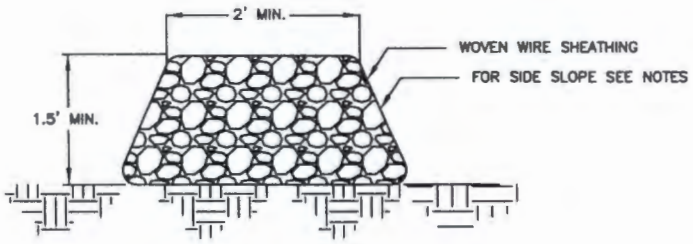
NOT APPLICABLE

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 a stabilized construction entrance, rock berms and silt fences to prevent the excavated material from leaving the site.





NOTES:

1. USE ONLY CLEAN, OPEN GRADED ROCK 4–8 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 ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE, AND/OR FABRIC CORE–WOVEN WIRE SHEATHING, SHALL BE REPLACED WHEN THE STRUCTURE CEASED TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. 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 SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS, SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK BERM

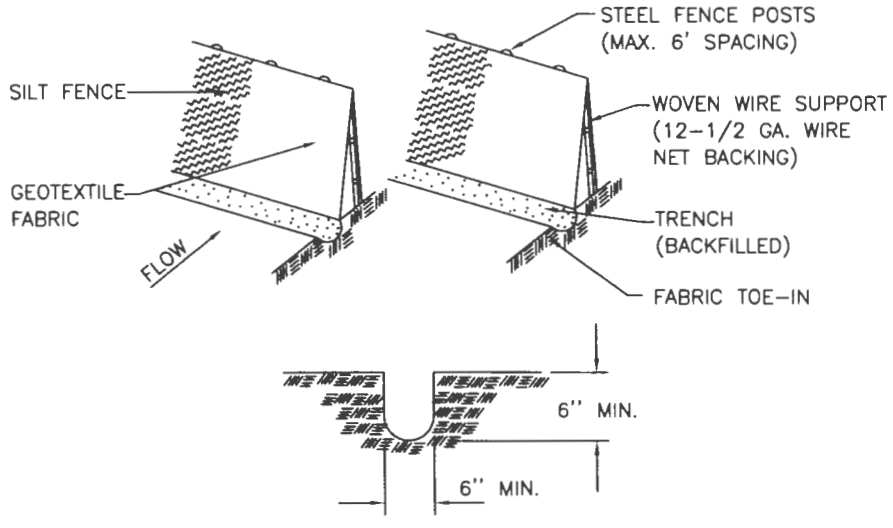
EXHIBIT 1

SCALE - NTS	
DATE - MAY 2013	
DRAWN - BGM	
SHEET - 1 OF 1	

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-1384

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
387 WEST MILL STREET
NEW BRAUNFELS, TEXAS 78130



TRENCH CROSS-SECTION

NOTES:

1. STEELPOSTS 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.
2. 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 (e.g. pavement) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. 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.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. 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.

SILT FENCE

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)

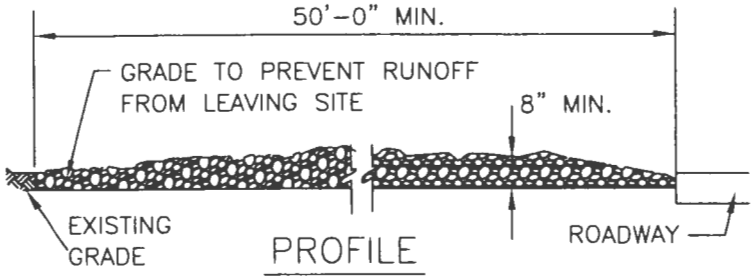
EXHIBIT 2

SCALE - NTS
DATE - MAY 2013
DRAWN - BGM
SHEET - 1 OF 1

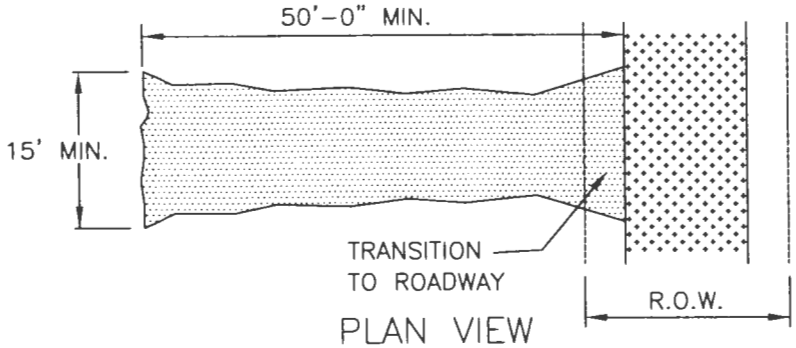
MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5448
FAX # (830) 885-2170

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

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
387 WEST MILL STREET
NEW BRAUNFELS, TEXAS 78130



PROFILE



PLAN VIEW

NOTES:

1. STONE SIZE- 3 TO 5 INCH OPEN GRADED ROCK.

2. LENGTH- AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.

3. THICKNESS- NOT LESS THAN 8 INCHES.

4. WIDTH- NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.

5. WASHING-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 CRUSHED STONE WHICH DRAINS INTO AN APPROVED STRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE USING APPROVED METHODS.

6. MAINTENANCE- 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.

7. DRAINAGE- ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

STABILIZED CONSTRUCTION ENTRANCE

EXHIBIT 3

SCALE - NTS	
DATE - MAY 2013	
DRAWN - BGM	
SHEET - 1 OF 1	

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-1384

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

387 WEST MILL STREET
NEW BRAUNFELS, TEXAS 78130

Drainage Area Map

Attachment G

Drainage Area Map

Temporary sediment basins are not attainable in this development due to the numerous sub-basins that drain the property. It would be more efficient to use a regional sediment pond, but due to the large amount of drainage area it is not feasible to build a temporary structure of the necessary magnitude to treat large point discharges. Instead, silt fences will be used to limit pollutant discharges before becoming concentrated channel flow.
A rock berm will be used to further limit runoff discharge of pollutants from the site.

UNIT 1

UNIT 2

UNIT 4

UNIT 7

THE HILLS

1-1

1-2

1-5

1-6

1-7

1-8

1-9

2-1

2-2

2-3

2-4

2-5

2-6

2-7

2-8

2-9

2-10

2-11

LEGEND:

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

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

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
12/3/15

VINTAGE OAKS AT THE VINEYARD
THE HILLS

WATER POLLUTION ABATEMENT PLAN
DRAINAGE AREA MAP

JOB: 14BSW002
DATE: NOVEMBER 2015
SCALE: 1" = 500'
INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 1 OF 1

Date: Oct 19, 2015, 5:26pm User ID: jmore
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-DA-001.dwg

Attachment H

Temporary Sediment Pond(s) Plans and Calcualtions

Attachment H

Temporary Sediment Pond(s) Plans and Calculations

NOT APPLICABLE

Inspection and Maintenance of BMPs

Attachment I

Inspection and Maintenance for BMPs

The BMPs for the construction of this project will be the use of rock berms and silt fencing. The following inspection and maintenance procedures will be implemented:

1. Stabilized Construction Entrance/Exit, Silt fencing and rock berms 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 and silt fencing 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.
   a. For Rock Berms:
      1. Contractor shall remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approval manner that will not cause any additional siltation.
      2. The berm should be replaced when the structures ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
   b. For Temporary Construction Entrance/Exit:
      1. All sediment spilled, dropped, washed or tracked onto public right-of-way should be removed immediately by contractor.
      2. When necessary, wheels should be cleaned to remove sediment prior to entrance onto right-of-way.
      3. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
   c. For Silt Fence:
      1. Remove sediment when buildup reaches 6 inches.
      2. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location if the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

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.

Schedule of Interim and Permanent Soil Stabilization Practices

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.

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

Texas Commission on Environmental Quality

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

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

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

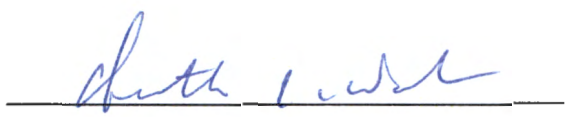
Signature

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

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

Date: 12/3/15

Signature of Customer/Agent



Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills

Permanent Best Management Practices (BMPs)

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

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

   ☒ N/A

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

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

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

☒ N/A

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

   ☒ N/A

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

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

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

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

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

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

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

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

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

☐ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.

☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

☒ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. ☒ **Attachment C - BMPs for On-site Stormwater**.

☐ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.

☒ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

8. ☒ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☐ N/A

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

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☐ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☐ Design calculations (TSS removal calculations)
☐ TCEQ construction notes
☐ All geologic features
☐ All proposed structural BMP(s) plans and specifications

☒ N/A

11. ☐ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☐ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☐ Signed by the owner or responsible party
    ☐ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☐ A discussion of record keeping procedures

    ☒ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☒ N/A

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

    ☒ N/A

20% or Less Impervious Cover Waiver

Attachment A

20% Or Less Impervious Cover Waiver

NOT APPLICABLE

BMPs for Ungradient Stormwater

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 acres are currently undeveloped. No BMPs are required because the site will be re-vegetated after construction is complete.

BMPs for On-site Stormwater

Attachment C

BMPs for On-Site Stormwater

The proposed Vintage Oaks at the Vineyard, The Hills is less than 20% impervious cover, therefore no permanent BMP is required for the runoff entering the Dry Comal Creek or the Little Bear Creek.

BMPs for Surface Streams

Attachment D

BMPs for Surface Streams

The proposed Vintage Oaks at the Vineyard, The Hills is less than 20% impervious cover, therefore not filtration is required for the runoff the Dry Comal Creek or the Little Bear Creek.

According to the geologic assessment, there are two sensitive feature on this site, identified as S-10 and S-11.

S-10 (Streambed) Located in the vicinity of existing lots.
S-11 (Streambed) Located in the vicinity of existing lots.

- 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.

Request to Seal Features

Attachment E

Request To Seal Features

NOT APPLICABLE

Construction Plans

Attachment F

Construction Plans

NOT APPLICABLE

Inspection, Maintenance, Repair and Retrofit Plan

Attachment G

Inspection, Maintenance, Repair, And Retrofit Plan

NOT APPLICABLE

Pilot-Scale Field Testing Plan

Attachment H

Pilot-Scale Field Testing Plan

NOT APPLICABLE

Measures for Minimizing Surface Stream Contamination

Attachment I

Measures for Minimizing Surface Stream Contamination

The proposed Vintage Oaks at the Vineyard, The Hills is less than 20% impervious cover, therefore no filtration is required for the runoff the Dry Comal Creek or Little Bear Creek.

Detention ponds 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 pond will utilize the existing stream contours and will not be excavated. The pond will discharge through a set of box culverts with an emergency overflow weir. Exit velocities will be controlled by appropriately sized energy dissipater blocks and rock rip rap.

According to the geologic assessment, there were sensitive features identified on this site that required permanent filtration BMPs. 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.

Agent Authorization

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 Thad Rutherford,
Print Name

Chief Operating Officer,
Title - Owner/President/Other

of Southstar at Vintage Oaks, LLC,
Corporation/Partnership/Entity Name

have authorized Heath L. Woods
Print Name of Agent/Engineer

of M & S Engineering
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.

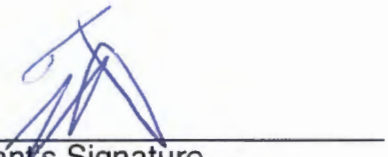
2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

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

11/4/15
Date

THE STATE OF Texas §

County of Comal §

KRISTINA ELAINE DENHAM
Notary Public, State of Texas
My Commission Expires
January 21, 2017

BEFORE ME, the undersigned authority, on this day personally appeared Thad Rutherford 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 4 day of November, 2015.

Kristina Elaine Denham
NOTARY PUBLIC

Kristina Elaine Denham
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: January 21, 2017

Fee Form

In This Section

TCEQ-0574
Application Fee Form

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Vintage Oaks at the Vineyard, The Hills
Regulated Entity Location: Adjacent to Unit 1 & 4 of Vintage Oaks at the Vineyard
Name of Customer: Thad Rutherford, Southstar at Vintage Oaks, LLC
Contact Person: Heath L, Woods, P.E. Phone: (830)629-2988
Customer Reference Number (if issued):CN 604123554
Regulated Entity Reference Number (if issued):RN 108334111

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☒ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	652.55 Acres	$ 10,000.00
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: 12/3/15

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

Pollutant Calculations

In This Section

TSS Removal and BMP Sizing Calculations

Pollutant Calculations

In This Section

TSS Removal and BMP Sizing Calculations

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 N 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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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).

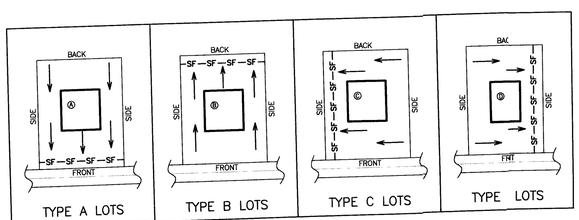
SOIL STABILIZATION NOTE

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.

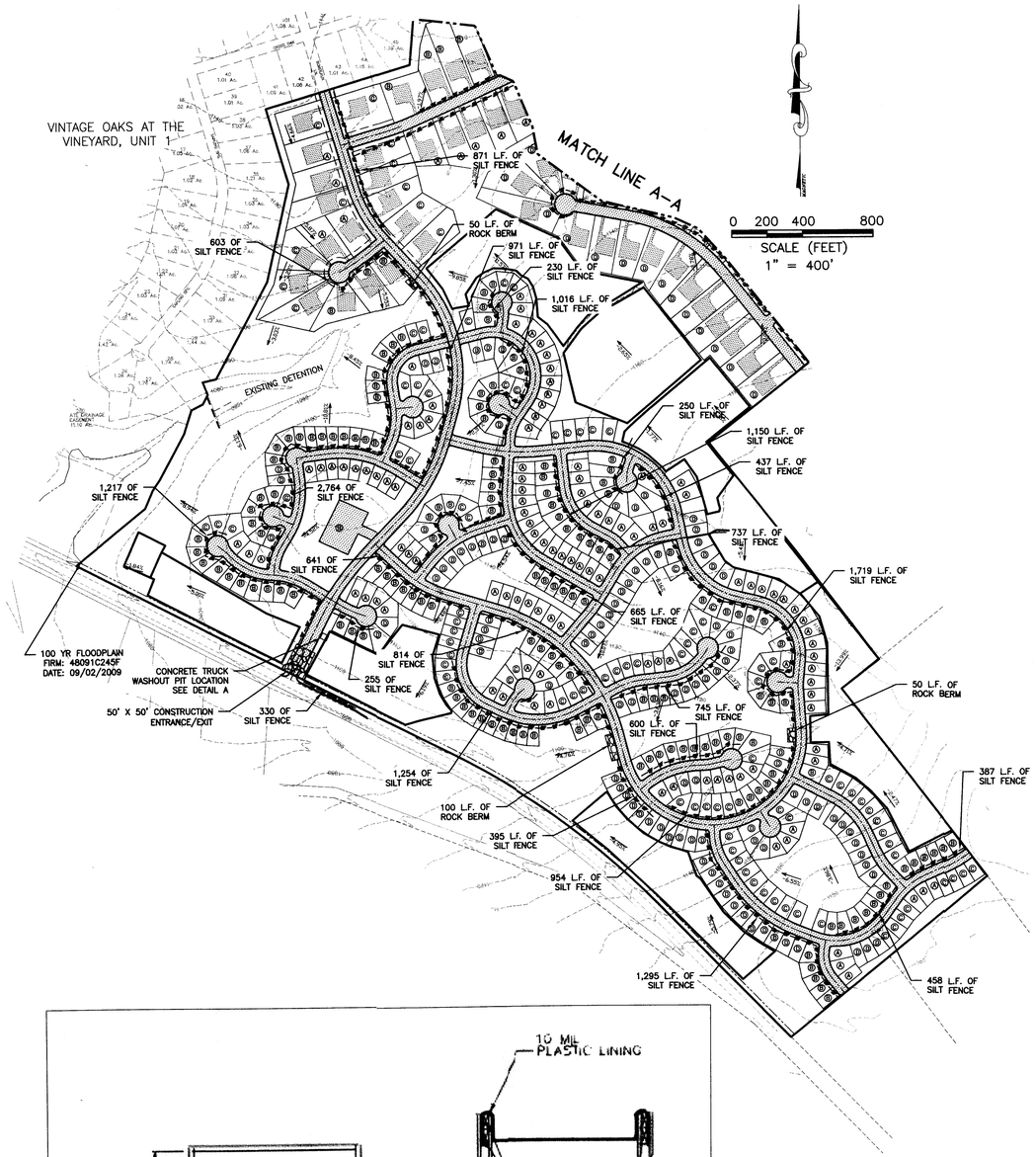
BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

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

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)



THE TYPICAL DRAINAGE PATTERN OF EACH LOT WILL BE BE DETERMINED BY THE EXISTING CONTOURS. ALL DRAINAGE OF LOTS WILL FLOW AWAY FROM BUILDING PAD.
(1 AC. LOT HOME BUILDING PAD: 6100 SF; AND ⅛ AC. LOT HOME BUILDING PAD: 4330 SF. THESE CALCULATIONS USED TO DETERMINE IMPERVIOUS COVER)



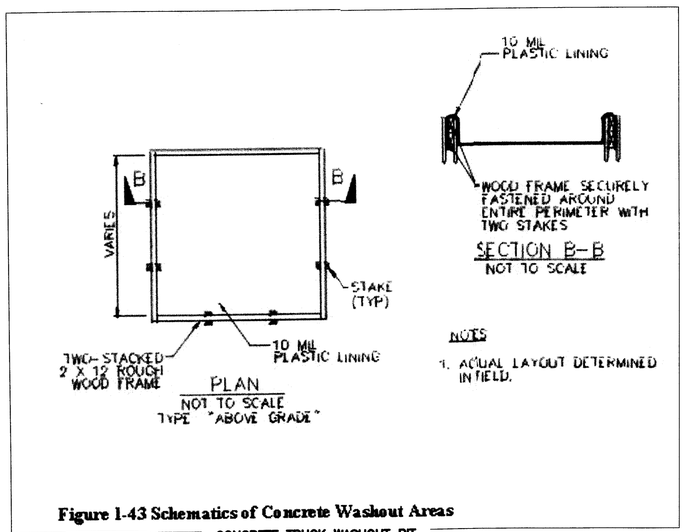
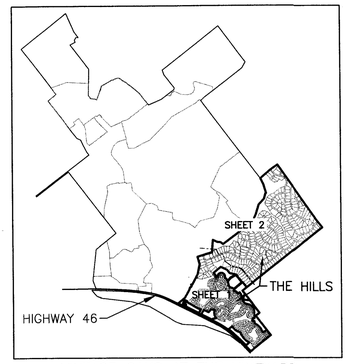


Figure 1-43 Schematics of Concrete Washout Areas

CONCRETE TRUCK WASHOUT PIT DETAIL A



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

LEGEND:

- EXIST LOT LINE
- EXIST PROPERTY BOUNDARY
- 300 EXIST CONTOUR
- S-S EXIST SITE FEATURES
- PROP PROJECT LIMITS
- PROP RIGHT-OF-WAY
- PROP WATER FLOW DIRECTION
- PROP SILT FENCE
- SENSITIVE FEATURE BUFFER ZONE
- PROP ROCK BERM
- CONSTRUCTION ENTRANCE/EXIT
- DISTURBED AREA

REVISIONS

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

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
12/3/15

VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: DECEMBER 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 1 OF 3

Date: Dec 03, 2015, 1:03pm User ID: jmore
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-SPH-001.dwg

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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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).

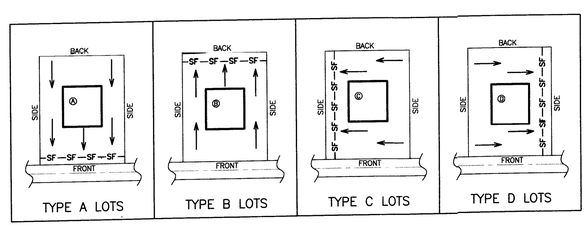
SOIL STABILIZATION NOTE

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.

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)

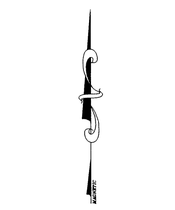


THE TYPICAL DRAINAGE PATTERN OF EACH LOT WILL BE BE DETERMINED BY THE EXISTING CONTOURS. ALL DRAINAGE OF LOTS WILL FLOW AWAY FROM BUILDING PAD.
(1 AC. LOT HOME BUILDING PAD: 6100 SF; AND ⅛ AC. LOT HOME BUILDING PAD: 4330 SF. THESE CALCULATIONS USED TO DETERMINE IMPERVIOUS COVER)

SENSITIVE FEATURE BUFFER:

NOTE
CONTRACTOR/OWNER SHOULD REFERENCE THE TECHNICAL GUIDANCE FOR BEST MANAGEMENT PRACTICE FROM TCEQ ON WHAT IS ALLOWED IN THIS AREA.







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

LEGEND:

- EXIST LOT LINE
- EXIST PROPERTY BOUNDARY
- 300 EXIST CONTOUR
- S-5 EXIST SITE FEATURES
- PROP PROJECT LIMITS
- PROP RIGHT-OF-WAY
- PROP WATER FLOW DIRECTION
- PROP SILT FENCE
- SENSITIVE FEATURE BUFFER ZONE
- PROP ROCK BERM
- CONSTRUCTION ENTRANCE/EXIT
- DISTURBED AREA

REVISIONS

M&S ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1394

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TX 78070
PHONE # (830) 885-4220
FAX # (830) 885-2170

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
12/3/15

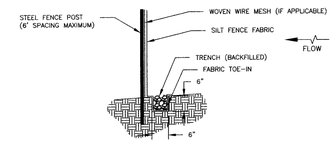
VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: DECEMBER 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET:
2 OF 3

Date: Dec. 03, 2015, 1:09pm User ID: jmorris
File: S:\Active Projects\14BSW002 - VOV The Hills\dwg\14BSW002-WPAP-SPN-001.dwg



NOTES:

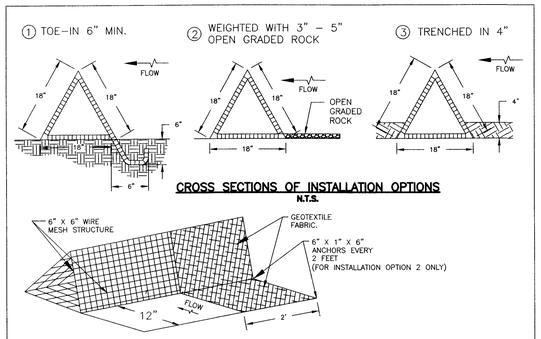
1. TRIANGULAR SEDIMENT FILTER DIKES MAY BE SUBSTITUTED FOR SILT FENCE IN AREAS WHERE INSTALLATION OF SILT FENCE IS NOT POSSIBLE OR WHERE VEHICLE ACCESS MUST BE MAINTAINED PROVIDED THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE ACRE.
2. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE 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:

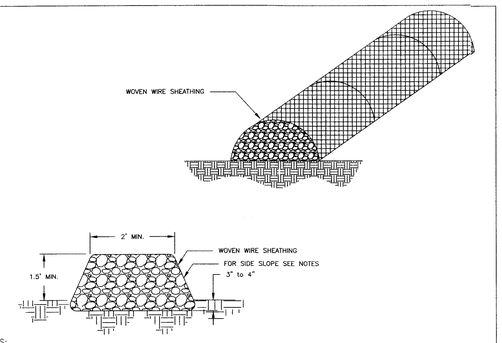
1. DIKES MAY BE MOVED TO ALLOW VEHICLE TRAFFIC, THEN REINSTALLED TO MAINTAIN SEDIMENT CONTROL.
2. GEOTEXTILE FABRIC SHOULD BE THE SAME SPECIFICATIONS AS USED IN FOR SILT FENCES.
3. THE DIKE STRUCTURE SHOULD BE 6 GAUGE 6" X 6" WIRE MESH FOLDED INTO TRIANGULAR FORM 18" ON EACH SIDE, WRAPPED IN GEOTEXTILE 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:

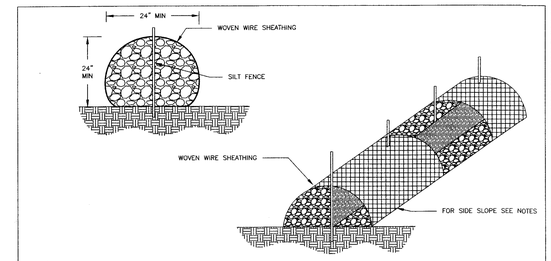
1. USE ONLY CLEAN, OPEN GRADED ROCK 5-8 INCH DIAMETER FOR STREAM FLOW CONDITIONS; USE OPEN GRADED ROCK 3-5 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED.
3. THE BERM SHOULD 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:

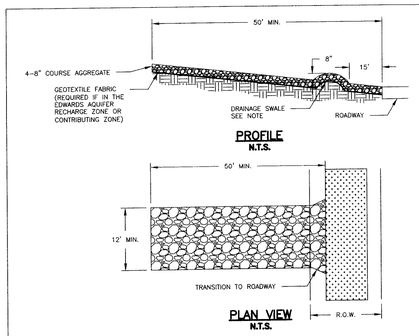
1. SILT FENCE FABRIC, FENCE POSTS, AND WOVEN WIRE MATERIAL SHOULD BE AS SPECIFIED IN THE SILT FENCE DETAIL.
2. BERM WOVEN WIRE SHEATHING AND ROCK FILL SHOULD BE AS SPECIFIED IN THE ROCK BERM DETAIL.
3. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE.
4. INSTALL THE SILT FENCE ALONG THE 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:

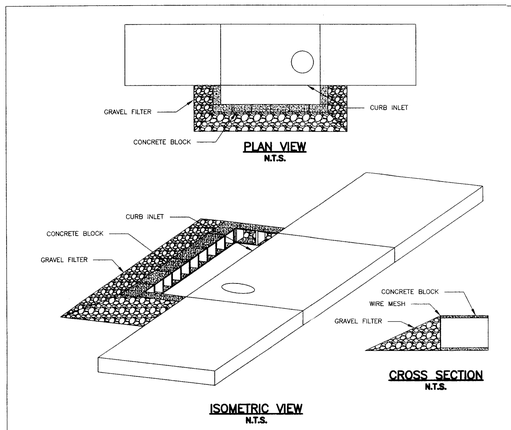
1. THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION WITH A MINIMUM THICKNESS OF 8 INCHES.
2. IF THE SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 8 INCHES HIGH WITH 3:1 (H:V) SIDESLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF 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:

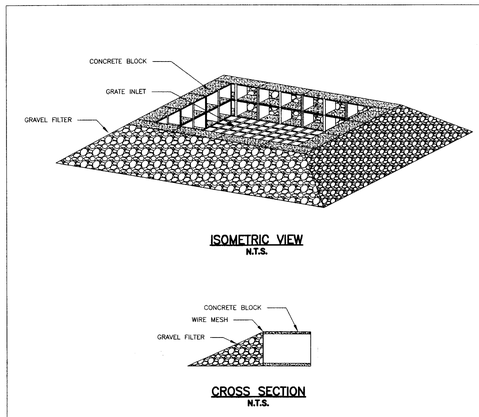
1. TWO CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ABUTTING THE CURB AT EITHER SIDE OF THE INLET OPENING.
2. A 2" X 4" STUD SHOULD BE CUT AND PLACED THROUGH THE OUTER HOLES OF EACH SPACER BLOCK TO HELP KEEP THE FRONT BLOCKS IN PLACE.
3. CONCRETE BLOCKS SHOULD BE PLACED ON THEIR SIDES ACROSS THE FRONT 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
CIVIL | ELECTRICAL | STRUCTURAL | MEP | SURVEYING
3000 CUSTER ROAD, SUITE 270-309, PLANO, TEXAS 75075

CONTACT
WWW.MSENGR.COM
PHONE: (830) 228-5446
FAX: (830) 885-2170

MAIN OFFICE
6477 FM 311
SPRING BRANCH, TX 78070

BRANCH OFFICE
PO BOX 311
NEW BRAUNFELS, TX 78130
PHONE: (830) 629-2988

HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
12/3/15

VINTAGE OAKS AT THE VINEYARD, THE HILLS

PROPOSED STORM WATER POLLUTION PREVENTION PLAN DETAILS

JOB: 148SW002
DATE: DECEMBER 2015
DRAWN: PM:
DESIGN: DM:
PEER: OTHER:

REVISIONS:

DELTA	DESCRIPTION

SHEET: 3 OF 3

Date: Dec 03, 2015, 12:19pm User ID: jmore
File: S:\Active Projects\148SW002 VOY The Hills\dwg\148SW002-WPAP- PSWSP-DTL-001.dwg

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 19, 2015

RECEIVED

AUG 31 2015

COUNTY ENGINEER

Mr. Thad Rutherford
Southstar at Vintage Oaks, LLC
1114 Lost Creek Blvd. Suite 270
Austin, Texas 78746

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Vintage Oaks at the Vineyard, The Hills; Located in the Vintage Oaks at the Vineyard subdivision off Hwy 46 in the New Braunfels ETJ, 0.53 miles northwest of Hwy 46 and Herbelin Rd. intersection; New Braunfels, Texas

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

Edwards Aquifer Protection Program ID No. 13-15050502; Investigation No. 1251924; Regulated Entity No. RN108334111

Dear Mr. Rutherford:

The Texas Commission on Environmental Quality (TCEQ) received notice from Mr. Heath L. Woods, P.E., with M&S Engineering, Inc., on August 18, 2015 to withdraw the above referenced application from review on your behalf. The application fee of $8,000 will be applied to the resubmittal, once the revisions have been made to the WPAP.

If you have any questions or require additional information, please contact Ms. Lillian Butler of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4026

Sincerely,

Todd Jones, Water Section Work Leader
San Antonio Region Office
Texas Commission on Environmental Quality
TJ/LB/eg

cc: Mr. Heath L. Woods, P.E., M&S Engineering LLC
Mr. Roland Ruiz, Edwards Aquifer Authority
Mr. Thomas H. Hornseth, P.E., Comal County Engineer
Mr. Charlie Thomas, P.E., City of New Braunfels Engineer
TCEQ Central Records, Building F, MC 212

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 7, 2015

RECEIVED

MAY 11 2015

COUNTY ENGINEER

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

Re: PROJECT NAME: Vintage Oaks at the Vineyard – The Hills, located 0.53 miles northwest of the US Highway 46 and Herbelin Road intersection, New Braunfels, Texas

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

Dear Mr. Hornseth:

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

Please forward your comments to this office by June 7, 2015.

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

Sincerely

Todd Jones
Water Section Work Leader
San Antonio Regional Office

TJ/eg

WATER POLLUTION ABATEMENT PLAN

Vintage Oaks at the Vineyard – The Hills



TCEQ-R13
MAY 05 2015
SAN ANTONIO

RECEIVED
MAY 11 2015
COUNTY ENGINEER

Prepared for:

Thad Rutherford
Southstar at Vintage Oaks, LLC
1114 Lost Creek Blvd., Suite 270
Austin, TX 78746

Prepared by:

M & S ENGINEERING
ENGINEERS I PLANNERS I SURVEYORS

M&S Engineering Project Number: 7014BSW003

Main Office:
Mailing:
Post Office Box 970
Spring Branch, Texas 78070
Telephone: 830/228-5446
Facsimile: 830/885-2170
Physical:
6477 FM 311
Spring Branch, Texas 78070
Web: www.msengr.com



Prepared by:
Heath Woods, P.E.
M&S Engineering, L.L.C.
Texas Registered Engineering Firm F-1394

Branch Offices:
Mailing:
Post Office Box 391
McQueeney, Texas 78123

Mailing:
376 Landa St
New Braunfels, Texas 78130

April 2015

TCEQ

TCEQ Core Data Form

TCEQ Use Only

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)*

[X] 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.)*

[X] Yes [ ] No WPAP

3. Customer Reference Number *(if issued)*

CN 604123554

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

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

RN N/A

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:*

[X] 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) [X] 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)*

thad@southstarcommunities.com

13. Telephone Number ( ) -

14. Extension or Code

15. Fax Number *(if applicable)* (512)436-9507

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)*

[X] 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 - THE HILLS

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*								
	City	NEW BRAUNFELS	**State**	TEXAS	**ZIP**	781302	**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 in the Vintage Oaks at the Vineyard Subdivision off Hwy 46 in the New Braunfels ETJ. The site entrance is 0.53 miles northwest of Hwy 46 and Herbelin Rd. intersection.

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

37. Latitude (N) In Decimal:	29.804333		**38. Longitude (W) In Decimal:**	98.269547	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	46	08	98	15	26

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:	Lance Klein, P.E., P.H., C.F.M.	**41. Title:**	Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(830) 228 - 5446		(830) 885 - 2170	lklein@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	**Job Title:**	Agent - Engineer		
Name *(In Print)* :	Heath L. Woods, P.E.			**Phone:**	(830) 228 - 5446
Signature:	Heath L. Woods			**Date:**	4/28/15

General Information

In This Section

TCEQ-0587
General Information Form

Attachment A
Road Map

Attachment B
USGS/Edwards Recharge Zone Map

Attachment C
Project Description

TCEQ-R13
MAY 05 2015
SAN ANTONIO
RECEIVED
MAY 11 2015
COUNTY ENGINEER

General Information Form

Texas Commission on Environmental Quality

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

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

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

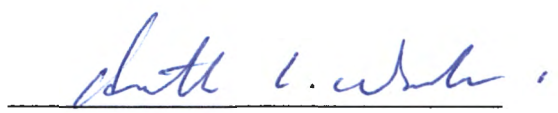
Signature

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

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

Date: 4-27-2015

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills
2. County: Comal
3. Stream Basin: Dry COMAL CREEK
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☐ Modification
   ☐ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

Contact Person: Thad Rutherford
Entity: Southstar at Vintage Oaks, LLC
Mailing Address: 1114 Lost Creek Blvd., Suite 270
City, State: Austin, Texas Zip: 78746
Telephone: 78746 FAX: (512)436-9507
Email Address: thad@southstarcommunites.com

8. Agent/Representative (If any):

Contact Person: Heath L. Woods, P.E.
Entity: M&S Engineering, LLC
Mailing Address: 376 Landa St.
City, State: New Braungels, Texas Zip: 78130
Telephone: (830)629-2988 FAX: (830)228-4197
Email Address: hwoods@msengr.com

9. Project Location:

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

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

This site is located in the Vintage Oaks at the Vineyard subdivision off Hwy 46 in the New Braunfels ETJ. The site entrance is 0.53 miles northwest of Hwy 46 and Herbelin Rd. intersection.

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

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

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

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

☐ Survey staking will be completed by this date: _____

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

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

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

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

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

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

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

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

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

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

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

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

Administrative Information

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

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

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

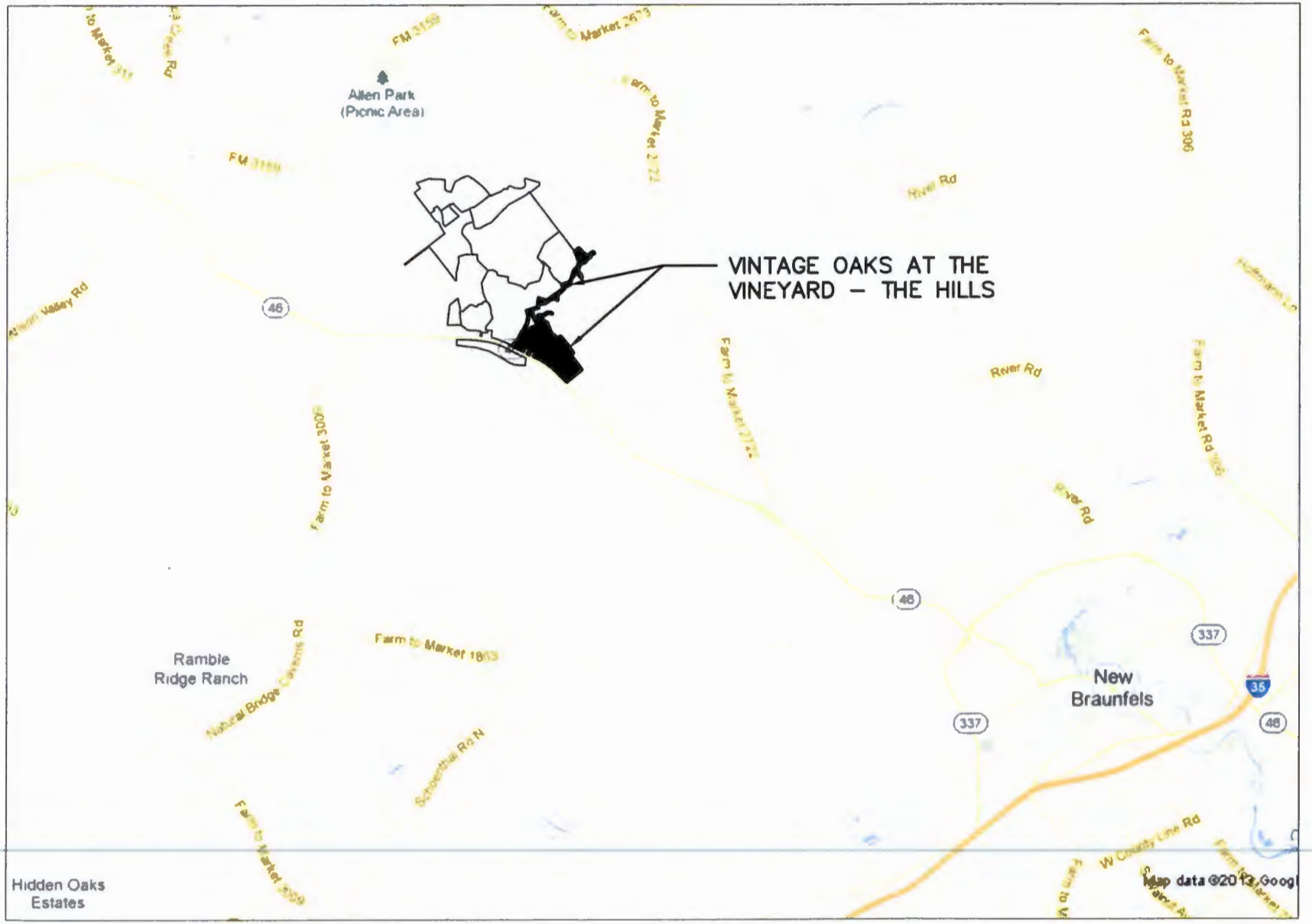
- ☐ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☒ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

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

Road Map

ATTACHMENT A – ROAD MAP



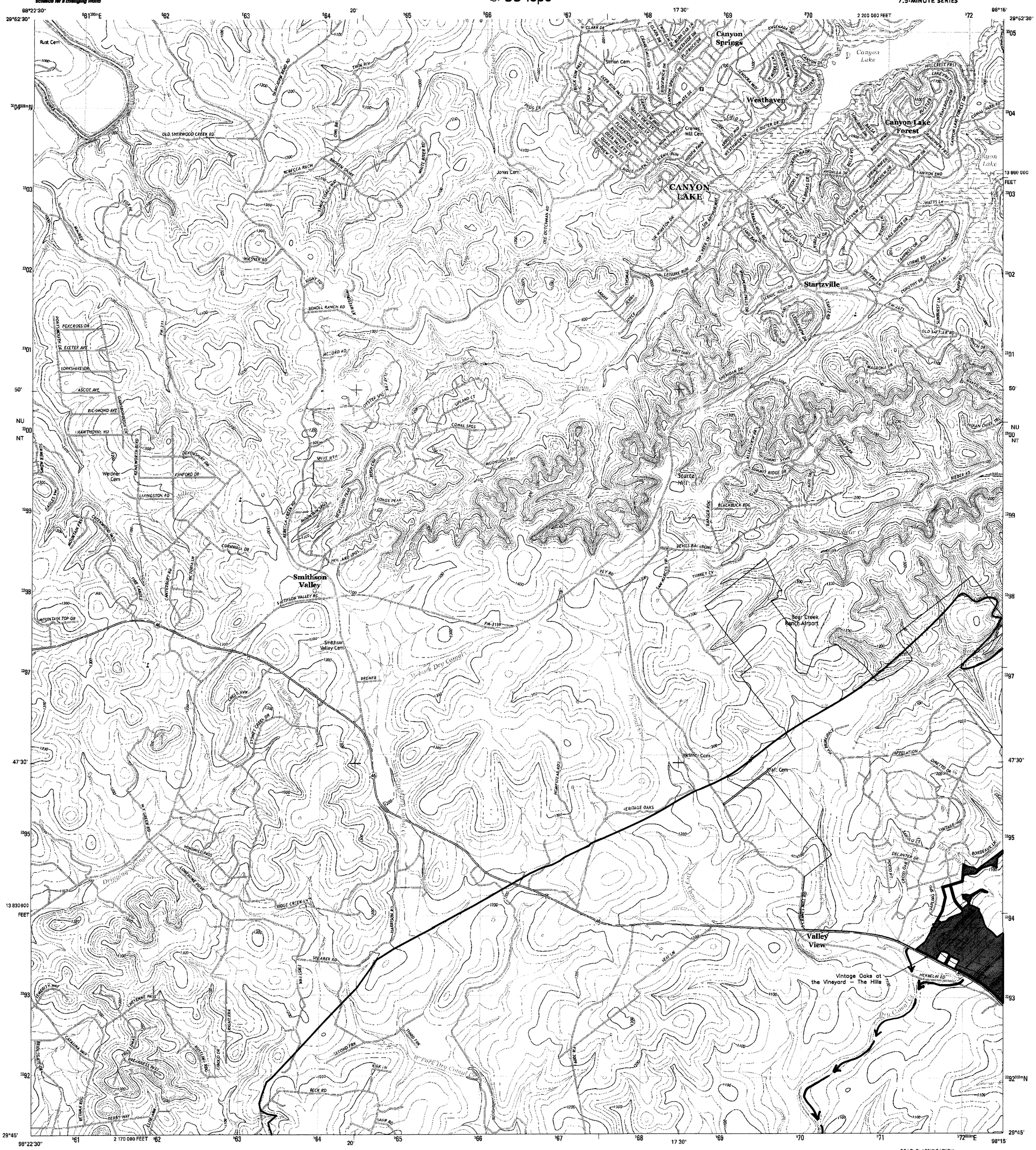
USGS/Edwards Recharge Zone Map

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

SMITHSON VALLEY QUADRANGLE
TEXAS-COMAL CO.
7.5-MINUTE SERIES


Canyon Springs
Canyon Lake
Westhaven
Canyon Lake Forest
CANYON LAKE
Startzville
Smithson Valley
Bear Creek Ranch Airport
Valley View
Vintage Oaks at the Vineyard – The Hills
Rust Cem
Jonas Cem
Cranes Mill Cem
Weidner Cem
Smithson Valley Cem
Helmic Cem
Traf. Cem
Stacey Hill
Canyon Lake
Dripping Springs Creek
Dry Comal Creek
W. Fork Dry Comal Creek
OLD SHERWOOD CREEK RD
WAESNER RD
BENDELL RANCH RD
MCCORD RD
SMITHSON VALLEY RD
FM-3159
SCENIC HILLS DR
LEISURE RUN
SCENIC RUN
OLD CRANES MILL RD
CANYON DR
COMAL PARK RD
LORNE RD
CAMPBELL DR
DOROTHY DR
WATTS LN
CANYON END
OLD SATTLER RD
RIEBER RD
YEY RD
BECK RD
SHEARER RD
HARRISON RD
HERBELIN RD
BLACKBUCK RDG
DEVILS BACKBONE
SUMMIT RIDGE DR
HILLCREST FRST
CANYON LAKE FOREST DR
TRAILRIDGE DR
RIDGE WIND
SPRINGWATER
ROMYVIEW DR
CANYON VIEW DR
AVONLEA DR
SIERRA MADRE
LABRADO TRL
MEADOW PARK
SUNNY SLOPE
SUNSET RIDGE
HILLSIDE CT
MADRONA DR
SHERIDAN DR
BRITTANY
UPLAND CT
COMAL SPGS
MOONLIGHT DR
SPLIT HTH
LONGS PEAK
MOUNTAIN SPGS
HOLLAND SPGS
CORNWALL DR
CANTERBURY RD
VICTORIA
KENILWORTH RD
DEVONSHIRE DR
ASHFORD DR
LIVINGSTON RD
YORKSHIRE DR
ASCOT AVE
RICHMOND AVE
HAWTHORN MD
GAINSBOROUGH DR
EXETER AVE
FOXCROSS DR
POST SOUTH DR
MOUNTAIN TOP DR
FIRE CANDLE
CREEKWOOD PASS
MOUNTAIN PASS
SUMMER HOME
EAGLES WY
WINDMILL PASS
LONESOME DOVE
RIDGE CREEK LN
CHEYENNE PASS
CATALINA WAY
BRIDGEGATE DR
BETAMA RDG
DERBY WAY
ELDE WAY
CLEMENTS WAY
DREAMREST TRL
MUSTANG RDG
DINGO DR
JOGHT FRK
FIRST FRK
SECOND FRK
THIRD FRK
KIRK LN
HIGHTEST RD
HERITAGE OAKS
APPELATION
DIRECTO DR
VINTAGE WAY
BORDEAUX LN
DECANTER DR
GRAND OAK
GRAND PL
GRAPEVINE WAY
GRAPEVINE CT
SAN MARCOS TRL
TURKEY CV
TURKEY RUN
CLEAR SPGS
CLEAR SPGS DR
CLEAR SPGS CT
CLEAR SPGS WAY
CLEAR SPGS TRL
CLEAR SPGS CV
CLEAR SPGS PL
CLEAR SPGS LN
CLEAR SPGS RD
CLEAR SPGS CIR
CLEAR SPGS PKWY
CLEAR SPGS BLVD
CLEAR SPGS AVE
CLEAR SPGS ST

USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

SATTLER QUADRANGLE
TEXAS-COMAL CO.
7.5-MINUTE SERIES

98°15' 29°52'30" 96°07'30" 29°45'

Canyon Lake
CANYON LAKE
Canyon City
Sattler
Fourth Crossing
Third Crossing
Second Crossing
First Crossing
Cordova Hollow
Hoiser Hollow
Edwards Aquifer Contributing Zone
Edwards Aquifer Recharge Zone
Vintage Oaks at the Vineyard – The Hills
Guadalupe River
Dry Bean
Dry Comal Creek
Comal River
Elm Creek
Bear Creek
Blue Hole
Spring Creek
Live Fls
PO
FM-3073
FM-306
FM-1863
FM-2722
SATTLER RD
RIEBE RD
LONE OAK RD
BUFFALO SPRINGS RUN
BUFFALO SPRINGS DR
LONE OAK RD
ELM CREEK RD
FALLEN OAK
BOULDER OAK DR
PLEASANT LN
HILL HAVEN DR
OLD BEAR CREEK RD
WHITE WATER RD
BRETTAE LN
CHELSEA RIVER DR
RIVER RD
RIVER CAT DR
ROAD TOP RANCH RD
MELLTOP RDG
HAPPY HOLLOW DR
SUMMIT DR
SUMMIT POINT DR
BLUFF END RD
LAUREL CLIFF DR
RIVER OAKS DR
GREYSTONE DR
STONECREST CIR
ISAAC CREEK CIR
WESTWOOD
WESTSHORE LN
AUTUMN VALLEY
MOSS COUNTRY
TRAIL DRIVER
ASH JUNIPER DR
CLEAR RDG
OAK VIEW
OAK WILL DR
WHISPERING WOODS TRL
OAK RIDGE DR
MOBILE DR
LITTLE ROCKPORT DR
TARGET
PONDEROSA DR
MESA VERDE
ROCKY RIV
VALLE DR
ROADSIDE DR
WHIPPOORWILL DR
VILLAGE TRL
SPRINGSIDE DR
EDGEWOOD DR
S ACCESS RD
SAINT THOMAS DR
COE RD
TARBORO RD
CANNAN RD
TAMLEY DR
TEGINA DR
RIVER CLIFF DR
RAINBOW RDG
RIVERSIDE PATH
MARICOPA DR
PECAN ST
OSAGE DR
ARROYO
ALS DR
MCCLAIN DR
SKY VIEW DR
TRAILS END
TRIPLE PEAK DR
BOOTY SADDLE
HILLTOP DR
LARSON DR
LOMITA DR
VALLE CANYON
PLUMLEE
COLUMBUS
SCHOOL
ARCHER DR
DANLER DR
SHAMROCK
BLUE HILL
WHITE OAK DR
VILLAGE OAK
MOUNTAIN OAKS DR
CHARTER OAK DR
SPANISH OAK TERRACE
LOST OAK
LAUREL RIDGE
LAUREL RIDGE DR
COMAL TRACE DR
RIVER OAK CIR
SPANISH OAK DR
COMAL TRACE
JANET DR
SILVIA SUE DR
COLLEEN DR
LEMON DR
BLUE WATER DR
CONNIE DR
SUSIE DR
NANCY DR
IRENE DR
BARBARA DR
NIMITZVIEW CIR
ELVIRA DR
ELVIRA PL
ELVIRA CIR
JOEL'S WAY
EVES SPRING DR
VISTA RDG
SIERRA RDG
FOX RDG
PALOMA DR
ALS DR
ROCKY RIV
VALLE DR
ROADSIDE DR
WHIPPOORWILL DR
SPRINGSIDE DR
EDGEWOOD DR
S ACCESS RD
SAINT THOMAS DR
COE RD
VIEW DR
RIVER REAL
TARBORO RD
CANNAN RD
TAMLEY DR
TEGINA DR
RIVER CLIFF DR
RAINBOW RDG
RIVERSIDE PATH
MARICOPA DR
PECAN ST
OSAGE DR
ARROYO
ALS DR
MCCLAIN DR
SKY VIEW DR
TRAILS END
TRIPLE PEAK DR
BOOTY SADDLE
HILLTOP DR
LARSON DR
LOMITA DR
VALLE CANYON
PLUMLEE
COLUMBUS
SCHOOL
ARCHER DR
DANLER DR
SHAMROCK
BLUE HILL
WHITE OAK DR
VILLAGE OAK
MOUNTAIN OAKS DR
CHARTER OAK DR
SPANISH OAK TERRACE
LOST OAK
LAUREL RIDGE
LAUREL RIDGE DR
COMAL TRACE DR
RIVER OAK CIR
SPANISH OAK DR
COMAL TRACE
JANET DR
SILVIA SUE DR
COLLEEN DR
LEMON DR
BLUE WATER DR
CONNIE DR
SUSIE DR
NANCY DR
IRENE DR
BARBARA DR
NIMITZVIEW CIR
ELVIRA DR
ELVIRA PL
ELVIRA CIR
JOEL'S WAY
EVES SPRING DR
VISTA RDG
SIERRA RDG
FOX RDG
PALOMA DR
CHERRY ST
HANOVER
GUADALUPE
OAK DR
PECAN ROW
RIVER CAT DR
ROAD TOP RANCH RD
SUMMIT DR
HAPPY HOLLOW DR
MELLTOP RDG
SUMMIT POINT DR
BLUFF END RD
LAUREL CLIFF DR
RIVER OAKS DR
GREYSTONE DR
STONECREST CIR
ISAAC CREEK CIR
WESTWOOD
WESTSHORE LN
AUTUMN VALLEY
MOSS COUNTRY
TRAIL DRIVER
ASH JUNIPER DR
CLEAR RDG
OAK VIEW
OAK WILL DR
WHISPERING WOODS TRL
OAK RIDGE DR
MOBILE DR
LITTLE ROCKPORT DR
TARGET
PONDEROSA DR
MESA VERDE

USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

BAT CAVE QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983 (south central zone)

Imagery.....NAIP, May 2010
Roads.....©2006-2012 TomTom
Names.....GNIS, 2012
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 2004
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2012

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NT
Grid Zone Designation 14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011. A metadata file associated with this product is draft version 0.6.7

TEXAS

QUADRANGLE LOCATION

Ashill	Smithson Valley	Sattler
Belvedere	Bat Cave	New Braunfels West
Loughran	Schertz	Marion

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route US Route State Route

BAT CAVE, TX
2013

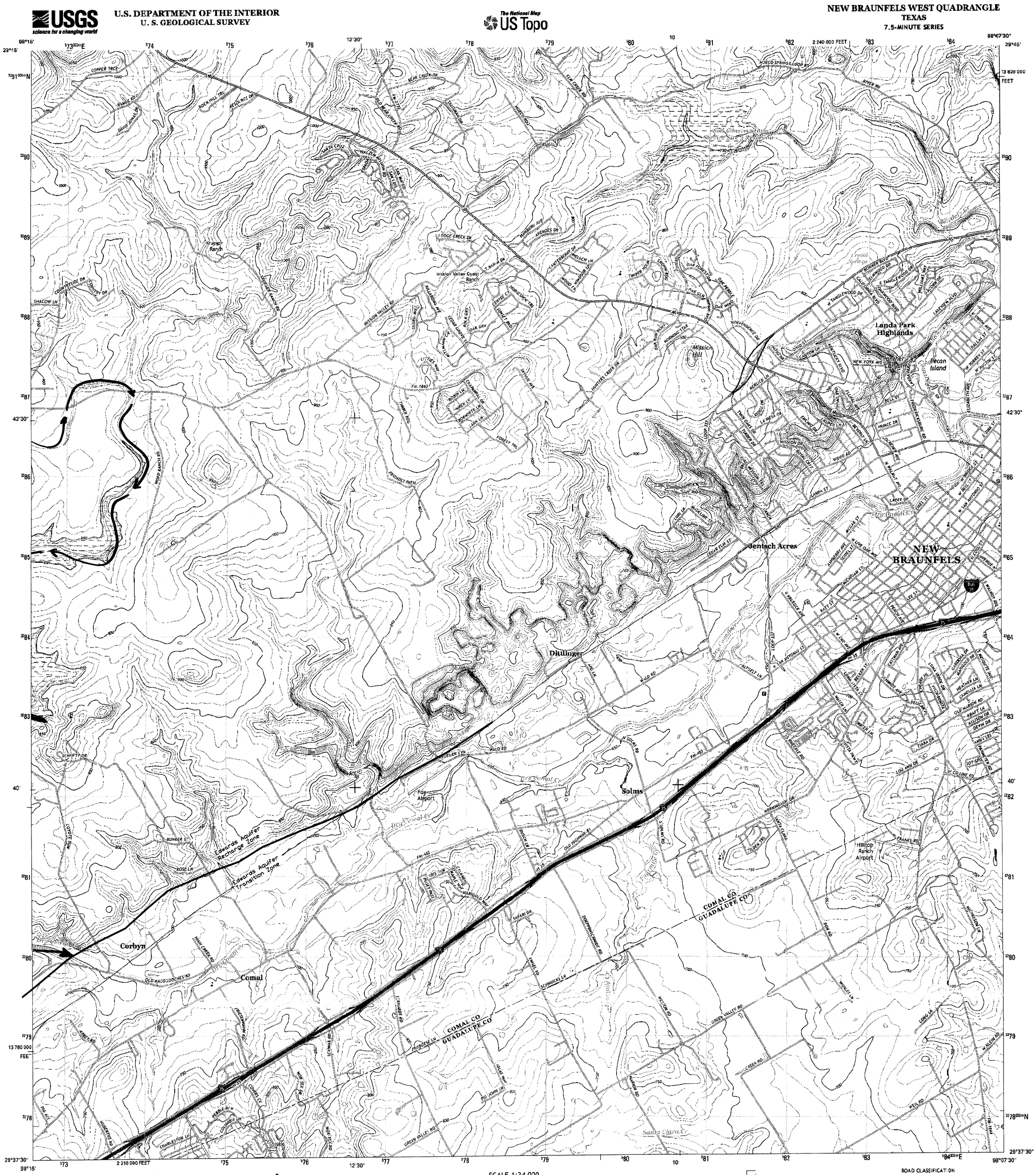
TCEQ-R13
MAY 05 2015
SAN ANTONIO
RECEIVED
MAY 11 2015
COUNTY ENGINEER

USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

NEW BRAUNFELS WEST QUADRANGLE
TEXAS
7.5-MINUTE SERIES


98°15'
29°45'
98°07'30"
42'30"
10
2 240 000 FEET
13 820 000 FEET
13 780 000 FEET
2 210 000 FEET
12'30"
40'
29°37'30"
COPPER TRCE
RANGE RD
DAVID JONES DR
ROCK HILL TRL
RESOURCE DR
BEAR CREEK DR
FM-1103
OLD BEAR CREEK RD
TALISMAN DR
HUECO RD
ELM CREEK RD
HUECO SPRINGS LOOP RD
RIVER RD
SAN CRISTOBAL
WALDEN RANCH
SAN MATEO
SAN LUIS
Mission Valley Guest Ranch
LODGE CREEK DR
MANBURG AVE
ARENDES DR
CANTERBURY DR
WELSCH LN
WOOD HAVEN DR
TIMBER HOLW
CROWN RDG
OAK FOREST DR
OAK PEBBLE
OAK GLN
OAK MEADOW DR
OAK RUN PKWY
MORNING STAR
INDEPENDENCE DR
COUNTRYSIDE DR
COUNTRY DR
SHADOW LN
MISSION VALLEY RD
RILLWOOD AVE
HILLWOOD WAY
CEDAR GROVE CT
FOLK GRV
OAK GRV
CENTER CT
HORSESHOE TRL
LUNDY BLVD
LITTLE WAY
MISTY MEADOW CIR
FM-1863
TIMBER RDG
FOREST TRL
ROBIN LN
CARDINAL DR
WREN LN
BOBWHITE LN
LARK LN
SKYLINE AVE
FRIENDLY PATH
WOOD RANCH RD
Mission Hill
HUNTERS CREEK DR
KERLICK LN
RIDGE LN
LA MESA TRL
TWIN OAKS DR
TIMBER DR
MISSION TRL
MISSION DR
ROYAL CT
LOOP 337
PALMWOOD DR
ELAINE AVE
OAK LN
BELL ST
PRINCE DR
BEVERLY LN
FREDERICKSBURG RD
ELIZABETH AVE
WOOD RD
LANDA ST
LAREE DR
ISBELL ST
W MAUSS AVE
W MILLS ST
W SAN ANTONIO ST
W MILL ST
W KATY ST
W LEE ST
S WALNUT AVE
S CASTELL AVE
S SEGUIN AVE
S LIVE OAK AVE
S PRESCOTT ST
S APPLE ST
S WALNUT AVE
S CASTELL AVE
S SEGUIN AVE
S LIVE OAK AVE
S PRESCOTT ST
S APPLE ST
W TANGLEWOOD DR
E TANGLEWOOD DR
BONHEFF BLVD
ELMWOOD DR
CRAWFORD BLVD
CALIFORNIA BLVD
WILLIAMS WAY
ACORN DR
LAKEVIEW BLVD
W UNION AVE
DALLAS ST
W TORREY ST
W MAUSS ST
NEW YORK AVE
KENTUCKY BLVD
ILLINOIS AVE
OHIO ST
ILLINOIS DR
KENTUCKY LN
Landa Park
Highlands
Panther Canyon
Pecan Island
Bridgeview
Landa Park
Central Springs
Jentsch Acres
NEW BRAUNFELS
Dittlinger
Solms
Fox Airport
Hilltop Ranch Airport
Mission Valley Guest Ranch
Corbyn
Comal
Edwards Aquifer Recharge Zone
Edwards Aquifer Transition Zone
COMAL CO
GUADALUPE CO
SCHIFFTY DR
BUNKER ST
ROSE LN
COYOTE WAY
OLD HIGHWAY 81
FM-482
IRIS ILLA
PALEY PASS
CLEAMON MAPLE WAY
MARIGOLD WAY
SAFARI DR
DOERPINSCHMIDT RD
SCHMUCKS LN
ENGEL RD
WILD RD
FM-482
N SOLMS RD
SOLMS RD
HORNINGSIDE DR
SANTA CLARA
TILDEN TRL
FRANK'S RD
KOM RD
MICHELSON LN
WEIL RD
GREEN VALLEY RD
LONG LN
KRAFT LN
ALLISON DR
DEVIN DR
ANN LEE
PALMETTO RD
TIARA DR
LOU ANN DR
W COLINE RD
HEATHER LN
CAMELLIA LN
MARIGOLD DR
CARDENIA DR
MESQUITE AVE
OLD NACOGDOCHES RD
ABBEY RD
FRIESENHAHN CO
SCHMELZ RD
NOR TEX RR
COMAL CR
HIGH CREEK RD
PIG AV
HUBERTUS RD
CHARLESTON LN
GEBBLE RCH
COLUMBIA LN
BIG JOHN LN
IDLES WAY
MARION RD
WEIL RD
CREEK RD
TEL TAP
Santa Clara Cr
Dry Comal Cr
Blieders Cr
Spring Br
Dry Comal Cr
Dry Comal Cr
Dry Comal Cr

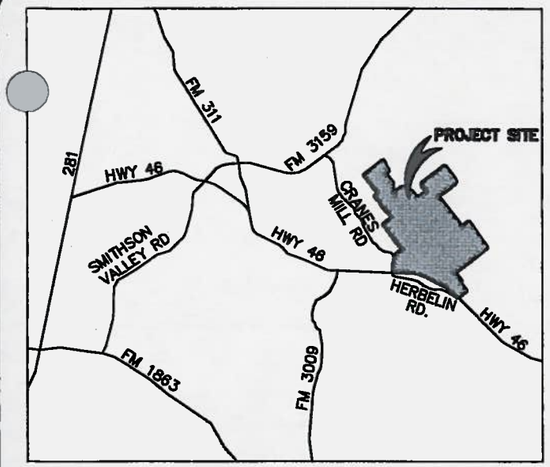
Project Description

PROJECT DESCRIPTION

The area of the site is in the ETJ on New Braunfels, and was at one point a residential tract. The existing impervious cover are building structures, water wells and ranch roads on site (See Attached Existing Site Plan). The site was a home/farm and used for agricultural purposes. The existing structures and roads will be demolished. Some water wells will be left and others will be capped.

The proposed development is to be a Single Family Residential Subdivision, located on 305.86 acres, adjacent to highway 46. The site would ultimately include approximately 110.38 acres of single-family residential lots, and 36.7 acres of street right-of-way. A small portion of this subdivision falls in the 100 year floodplain area. The streets are accounted for in the impervious cover calculations.

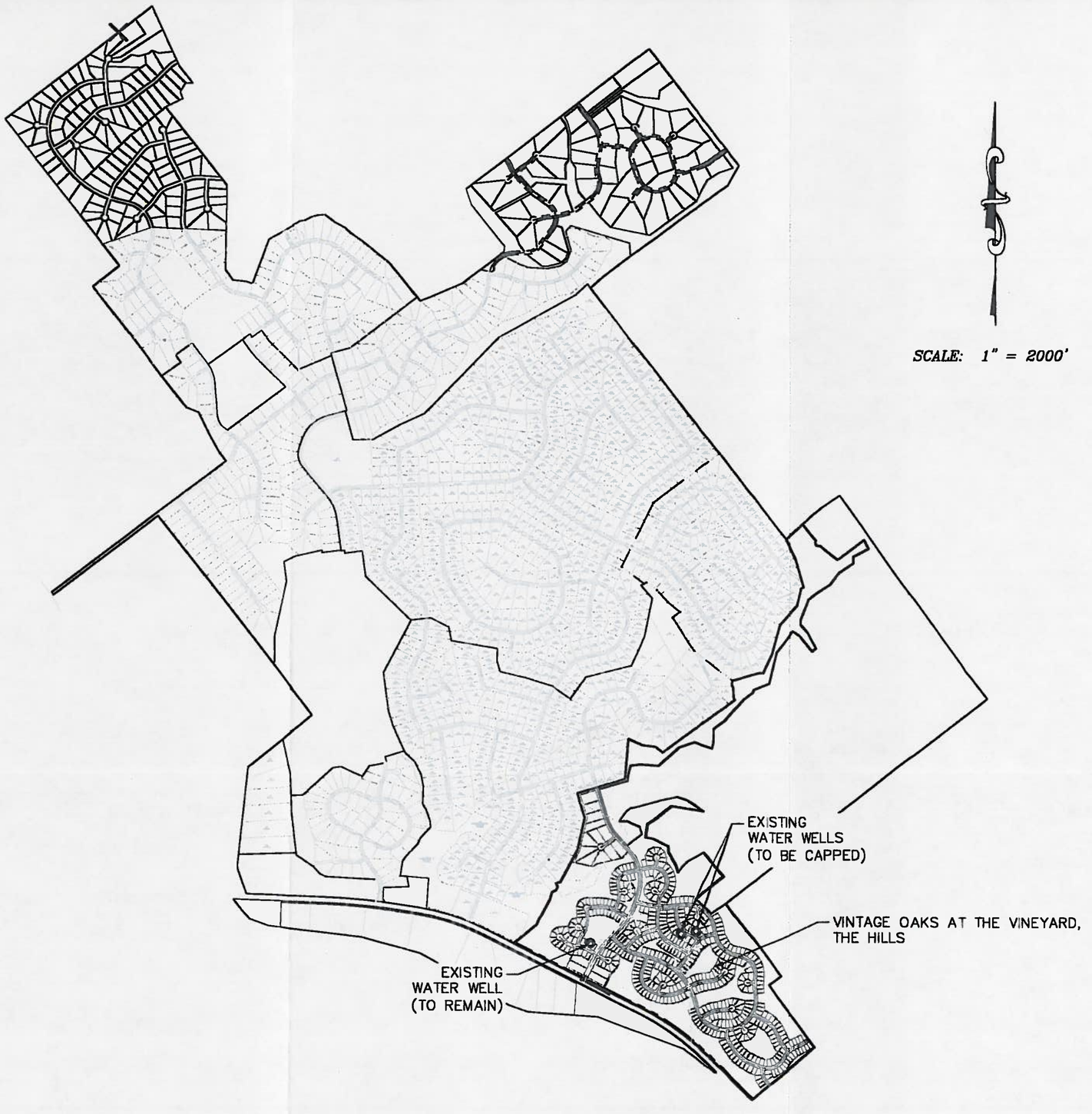
Vintage Oaks at the Vineyards, The Hills is located within the Dry Comal Creek watershed. The proposed development and highway modifications create approximately 60.61 acres of impervious cover (19.82% of the total site acreage). The total acreage of the project is the 305.86 acres.



LOCATION MAP
NOT TO SCALE

EXISTING WELLS o

NOTE: WELL LOCATIONS PROVIDED BY PSI
GEOLOGICAL ASSESSMENT STUDY
JOB #0435-1948



SCALE: 1" = 2000'

M & S
ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM NO F-1394

SHERWOOD
SURVEYING, LLC

POST OFFICE BOX 992
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446

VINTAGE OAKS AT THE VINEYARD - EXISTING SITE

Date: Apr 27 6:10pm User ID: bmendez File: S:\Active Projects\1485WOO2 VOV The Hills\dwg\z_SITE EXHIBITS.

In This Section

TCEQ-0858
Geologic Assessment

Narrative Description of Geology

Overview Maps

Site Geologic Map and Geologic Assessment Tables

Site Photographs

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

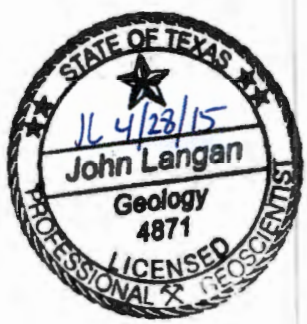
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: John Langan Telephone: 210/342-9377

Date: 4/28/15 Fax: 210/342-9401

Representing: PSI (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Vintage Oaks at The Vineyards The Hills

Project Information

1. Date(s) Geologic Assessment was performed: 9/30-10/16/14
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Comfort-Rock outcrop complex, undulating (CrD)	B	1-3
Rumple-Comfort Association (RUD) 1-8% slopes	B	1-3
Anhalt clay 1-3% slopes (AnB)	C	1-3

Soil Name	Group*	Thickness(feet)

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = 400'
   Site Geologic Map Scale: 1" = 400'
   Site Soils Map Scale (if more than 1 soil type): 1" = 400'

9. Method of collecting positional data:

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

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.
12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.
13. ☐ The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☒ There are 3 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☒ The wells are not in use and will be properly abandoned.
    - ☒ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

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

GEOLOGIC ASSESSMENT

For

VINTAGE OAKS AT THE VINEYARDS THE HILLS
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.
7400 Blanco Road, Suite 257
San Antonio, Texas 78216
Telephone (210) 616-2119

PSI PROJECT NO.: 0435- 1948

October 22, 2014

Information To Build On
Engineering • Consulting • Testing

October 22, 2014

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

Attn: Mr. Heath Woods, P.E.

Re: Geologic Assessment
Vintage Oaks at The Vineyard The Hills
Approximate 305-Acre Tract
Highway 46, Comal County, Texas
PSI Project No. 435-1948

Dear Mr. Woods:

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. 134336 between M&S Engineering, Ltd. and PSI dated September 22, 2014.

PROJECT DESCRIPTION

The subject site is located on the north side of Highway 46, east of Cranes Mill Road, in Comal County, Texas. The Hills Tract is approximately 305-acres in size, and is an irregularly shaped parcel of undeveloped land that is hilly and rugged in places although some areas are open relatively flat fields of grass. The hillside slopes are occasionally steep and can dip in all directions. Northerly tributaries of Bear Creek drain the property in a general northeasterly or southeasterly 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 approximately 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the southeast with near vertical throws. Elevations at the Vintage Oaks at the Vineyard The Hills Tract site range from approximately 1,170 feet above mean sea level in the east area of the tract to approximately 1,000 feet above mean sea level in the northeastern "arm" area of the tract.

Stratigraphy and Structure

Rocks at the site are members of the Lower Cretaceous Edwards Kainer Formation. The site is covered with a thin veneer of soil, and scattered expanses of dense to vuggy and fractured rock outcrops which are exposed throughout the site. In general, the hillsides contained variable amounts of boulder float and soil with outcrops exhibiting varying degrees of fractures and vug development. 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. The underlying Glen Rose Formation is composed of yellowish-tan, thinly bedded marly limestone.

The rocks at the site are mapped as the Dolomitic member of the Kainer Formation, which is a mudstone to grainstone, cherty, massively bedded, crystalline limestone. The rock weathers to a light gray in outcrop, and has abundant *Toucasia* bivalves. The underlying Basal nodular member of the Kainer Formation was also observed on the tract, and consists of shaly, nodular limestone and burrowed mudstone to wackestone, with gastropods, miliolids and *exogyra texana* bivalves. It is considered regionally as a lower confining unit, but locally water bearing through dissolution along bedding planes.

Two sensitive features scoring more than 40 points on the F-0585 form was observed on the subject tract and consisted of vuggy fractured rock zones in the Little Bear Creek streambed in the northeastern extension "arm". One of the features, S-10 is a large outcrop that has been partially cleared for site development activities associated with a nearby flood control spillway. The other feature, S-11 is heavily fractured, and shows the contact between the Kainer dolomitic member and the underlying basal nodular member.

SITE INVESTIGATION

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. The purpose of the site investigation was to delineate

features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

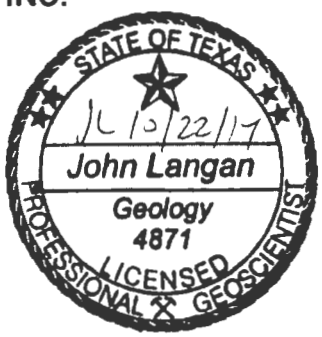
Two sensitive features were noted in the northeast flowing Little Bear Creek drainage way in the northeastern "arm" of the site. These features are in alignment with a mapped fault that traverses the northeast "arm" of the subject tract, and receive directed water flow during precipitation events. Other, non-sensitive, predominantly man-made features were also identified, and included water wells, stock tanks, flood control spill ways and a septic tank. Please note that subtle features, buried or obscured from view, may be present on the tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

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

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

John Langan, P.G.
Environmental Department Manager



psi

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 The Hills Tract
Highway 46
Comal County, Texas

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Georgetown Formation	2-20'	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: *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), Rumple-Comfort association, undulating (RUD), and Anhalt clay, 1 to 3% slopes (AnB).

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.

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

Anhalt clays are well-drained clays that form as residuum on weathered limestones. The depth to the parent material is between 20 and 40 inches. It has low to moderately low permeability, and low water capacity, and well suited for agriculture.

SITE GEOLOGIC NARRATIVE

Physiography

Comal County lies within two physiographic provinces, the Edwards Plateau and the Blackland Prairie. Most of Comal County lies within the Edwards Plateau, which is characterized by rugged and hilly terrain, with elevations in excess of 1,400' feet above sea level in the northwestern portion of the county. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Comal County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 650 feet to 1100 feet above sea level. The regional dip of the lower Cretaceous rocks in Comal County is approximately 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the southeast with near vertical throws. Elevations at the Vintage Oaks at the Vineyard The Hills Tract site range from approximately 1,170 feet above mean sea level in the east area of the tract to approximately 1,000 feet above mean sea level in the northeastern "arm" area of the tract.

Stratigraphy and Structure

Rocks at the site are members of the Lower Cretaceous Edwards Kainer Formation. The site is covered with a thin veneer of soil, and scattered expanses of dense to vuggy and fractured rock outcrops which are exposed throughout the site. In general, the hillsides contained variable amounts of boulder float and soil with outcrops exhibiting varying degrees of fractures and vug development. 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. The underlying Glen Rose Formation is composed of yellowish-tan, thinly bedded marly limestone.

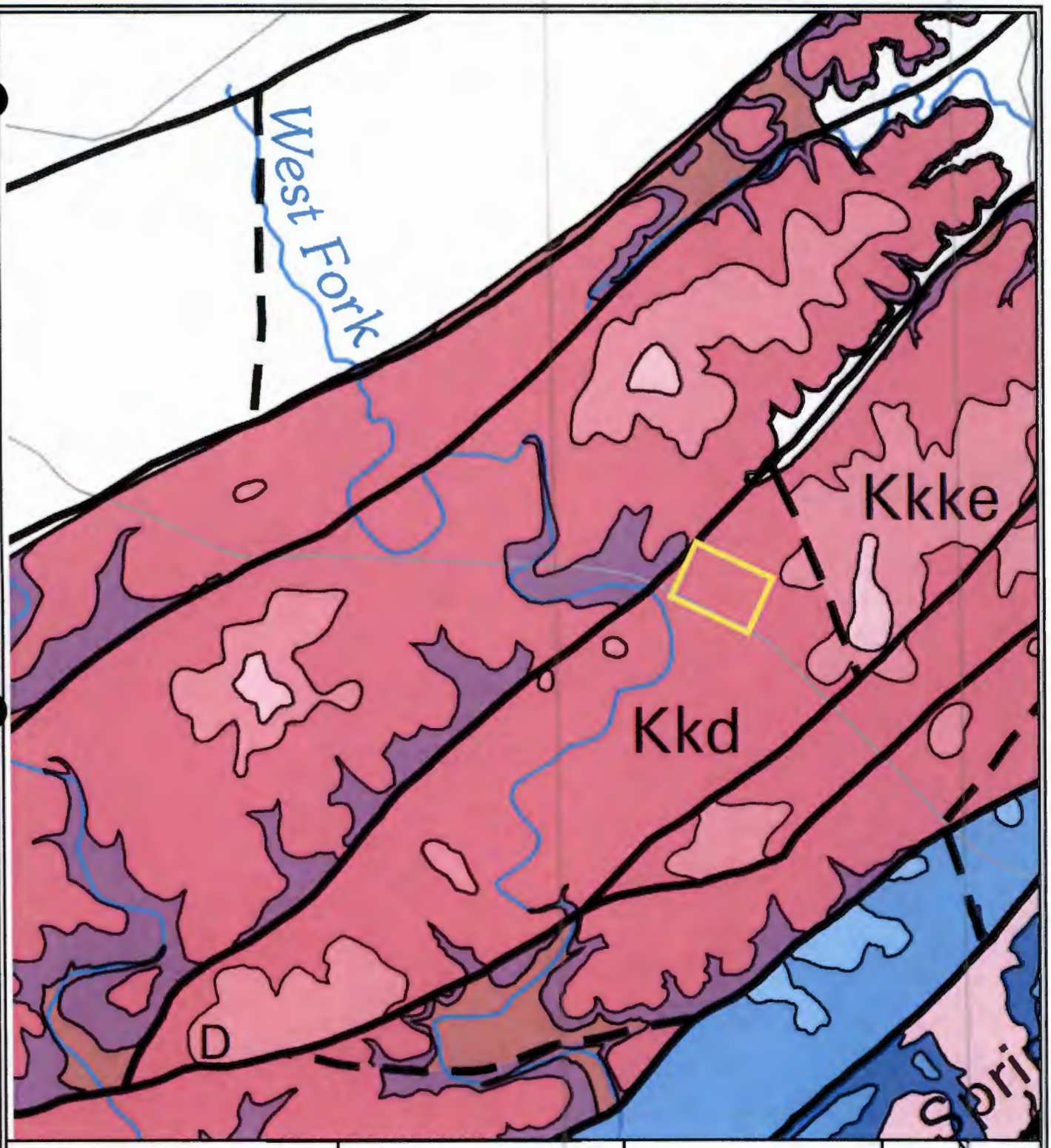
The rocks at the site are mapped as the Dolomitic member of the Kainer Formation, which is a mudstone to grainstone, cherty, massively bedded, crystalline limestone. The rock weathers to a light gray in outcrop, and has abundant *Toucasia* bivalves. The underlying Basal nodular member of the Kainer Formation was also observed on the tract, and consists of shaly, nodular limestone and burrowed mudstone to wackestone, with gastropods, miliolids and *exogyra texana* bivalves. It is considered regionally as a lower confining unit, but locally water bearing through dissolution along bedding planes.

Two sensitive features scoring more than 40 points on the F-0585 form was observed on the subject tract and consisted of vuggy fractured rock zones in the Little Bear Creek streambed in the northeastern extension "arm". One of the features, S-10 is a large outcrop that has been partially cleared for site development activities associated with a nearby flood control spillway. The other feature, S-11 is heavily fractured, and shows the contact between the Kainer dolomitic member and the underlying basal nodular member.

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

SUMMARY

Two sensitive features were noted in the northeast flowing Little Bear Creek drainage way in the northeastern "arm" of the site. These features are in alignment with a mapped fault that traverses the northeast "arm" of the subject tract, and receive directed water flow during precipitation events. Other, non-sensitive, predominantly man-made features were also identified, and included water wells, stock tanks, flood control spill ways and a septic tank. Please note that subtle features, buried or obscured from view, may be present on the tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.



PSI Information To Build On
Engineering • Consulting • Testing
PSI, Inc.
7400 Blanco Road, Suite 257
San Antonio, Texas 78216

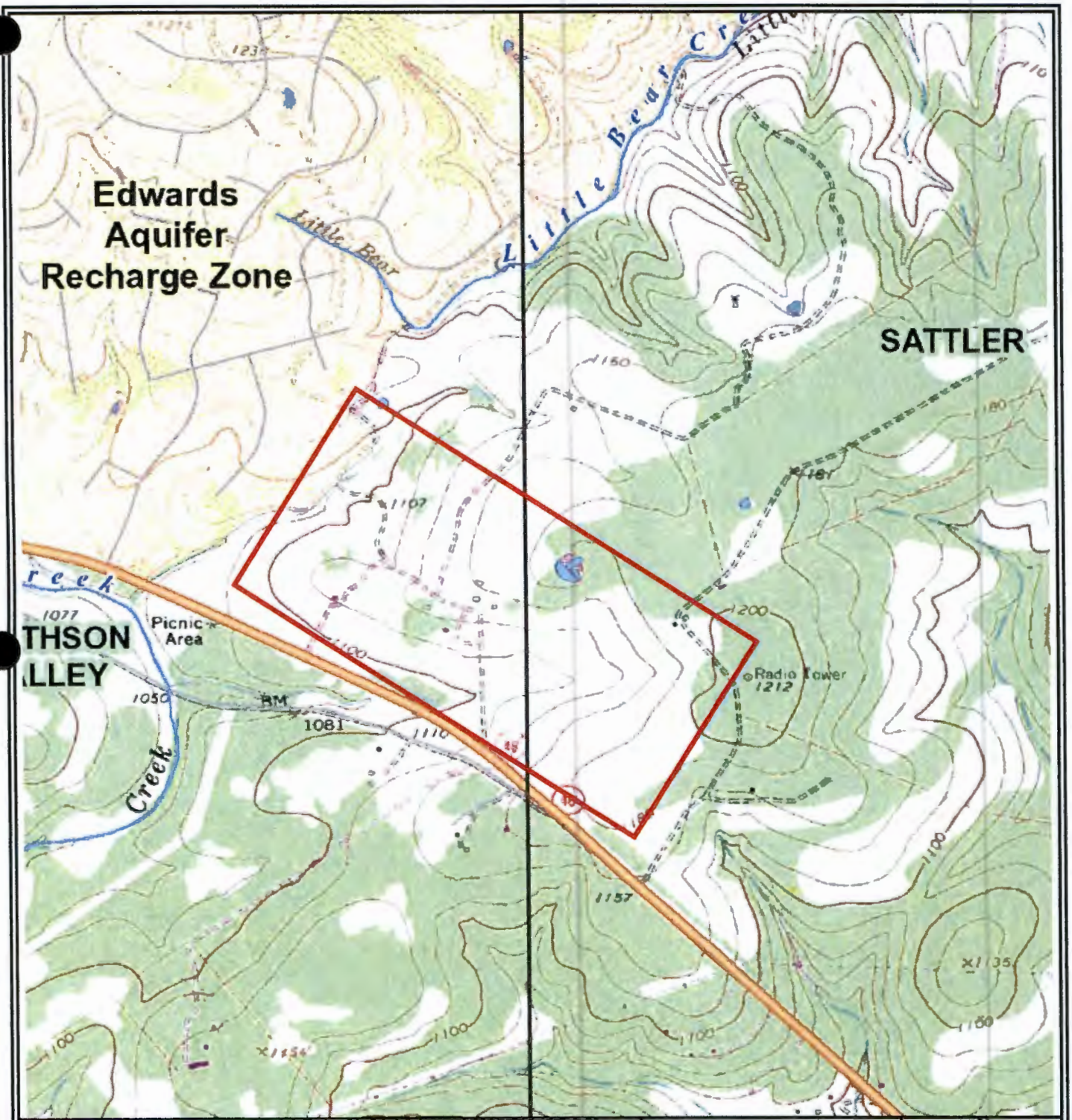
PROJECT NAME:
Vintage Oaks at The Vineyards The Hills
Comal County, Texas

PROJECT NO.:435-1948

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

(USGS, 2005)

N



PSI *Information To Build On*

Engineering • Consulting • Testing

PSI, Inc.
7400 Blanco Road, Suite 257
San Antonio, Texas 78216

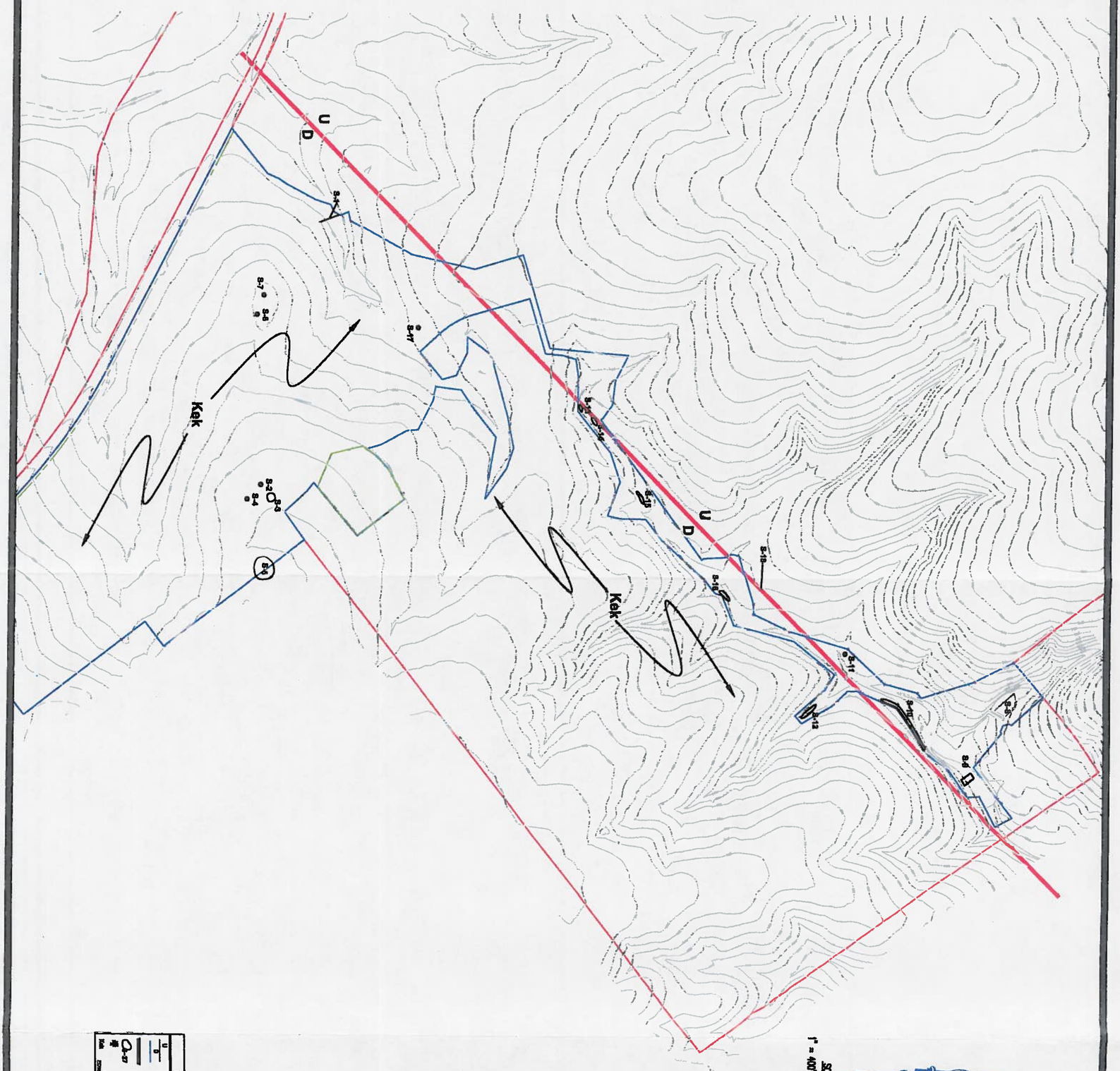
PROJECT NAME:
Vintage Oaks at The Vineyards The Hills
Highway 46
Comal County, Texas

PROJECT NO.:435-1948

Topographic Map/Edwards Aquifer Recharge Zone Map

N





LEGEND

	FAULT LINE
	BOUNDARY LINE
	FLOOD PLAIN
Qs-07	ROCK OUTCROP
Qs	SOLIFLUCTION LOBE
Kek	LOWER CRETACEOUS (COMANCHE) EDWARDS GARNER FORMATION

SCALE:
1" = 400' HORIZONTAL

REVISIONS:

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

GEOLOGIC ASSESSMENT
for
VINTAGE OAKS AT THE VINEYARD
THE HILL

JOB NO. 085519548
FILE: 085519548.GI
DATE: 10/17/2014
DESIGN: -
DRAWN: J.LEAL
CHECKED: J.LANDAU
SHEET 1 OF 1

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: Vintage Oaks at the Vineyard The Hills																	
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
S-1	29-46-23.4	98-15-31.1	MB	30	Kek	320	125	12						5	35	X			X	Hillside
S-2	29-46-16	98-15-5.1	MB/well	30	Kek	1	1	>100						5	35	X		X		Hillside
S-3	29-46-16.6	98-15-4.8	MB	30	Kek	150	40	7						5	35	X			X	Hillside
S-4	29-46-15	98-15-5	MB/well	30	Kek	1	1	>100						5	35	X		X		Hillside
S-5	29-46-17	98-14-56.5	MB	30	Kek	325	250	12						15	20	X			X	Hillside
S-6	29-46-14.5	98-15-23.2	MB	30	Kek	4	4	5						9	39	X		X		Hillside
S-7	29-46-14.9	98-15-25.3	MB/well	30	Kek	1	1	>100						5	35	X		X		Hillside
S-8	29-47-22	98-14-43	MB	30	Kek	250	90	10								X			X	Hillside
S-9	29-47-20.2	98-14-34	MB	30	Kek	350	180	12						5	35	X			X	Hillside
S-10	29-47-16	98-14-38	Z	30	Kek	650	150	15	N30E	10	3	0.4	N	25	65		X		X	streambed
S-11	29-47-6.7	98-14-46.8	Z	30	Kek	50	10	5			5	0.4	C	25	55		X		X	streambed
S-12	29-47-7.7	98-14-45.3	O	5	Kek	250	100	6			1	0.1	N	15	20	X			X	streambed
S-13	29-46-45.2	98-15-12	CD	5	Kek	15	5	3					F	20	25	X			X	streambed
S-14	29-46-46	98-15-12.6	MB	30	Kek	125	35	5						5	35	X			X	Hillside
S-15	29-46-51	98-15-4.2	O	5	Kek	150	20	5			2	0.2	F	20	25	X			X	streambed
S-16	29-46-57.4	98-14-54.7	O	5	Kek	250	75	8			3	0.4	C	25	30	X			X	streambed
S-17	29-46-29.9	98-15-22	CD	5	Kek	3	3	0.5					F	15	20	X		X		Hillside
S-18	29-47-3	98-14-52.8	F	20	Kek	>5000	50	75					F	18	38	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: October 22, 2014

Sheet __1__ of __1__

STATE OF TEXAS
JL 10/22/14
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOLOGIST

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



1. View of man-made spillway feature S-1 located at 29-46-23.4; 98-15-31.1, in the western portion of The Hills tract, roughly 1,200 feet north of Highway 46.



2. View man-made water well feature S-2 located at 29-46-16; 98-15-5.1, in the northeast portion of the site.



3. View of man-made stock tank feature S-3, located at 29-46-16.8; 98-15-4.8, just north of well feature S-2 in the northeast portion of the site.



4. View of another well feature S-4, located at 29-46-15; 98-15-5, south of well feature S-2.



5. View of well house of feature S-4.



6. View of stock tank feature S-5, located at 29-46-17; 98-14-56.5, in the northeast portion of the site.



7. View of septic tank feature S-6, located at 29-46-14.5; 98-15-23.2.



8. View of water well feature S-7, located at 29-46-14.9; 98-15-25.3.



9. View of man-made stock tank feature S-8, located at 29-47-22; 98-14-43, in the northern portion of the site.



10. View of man-made spillway feature S-9 located at 29-47-20.2; 98-14-34, in the northern portion of the site.



11. View of the northern portion of vuggy fractured rock outcrop feature S-10, at 29-47-16; 98-14-38.



12. View of vuggy rock in feature S-10.



13. View of exposed vuggy rock in feature S-10. This feature has had some limited clearing done as part of site development.



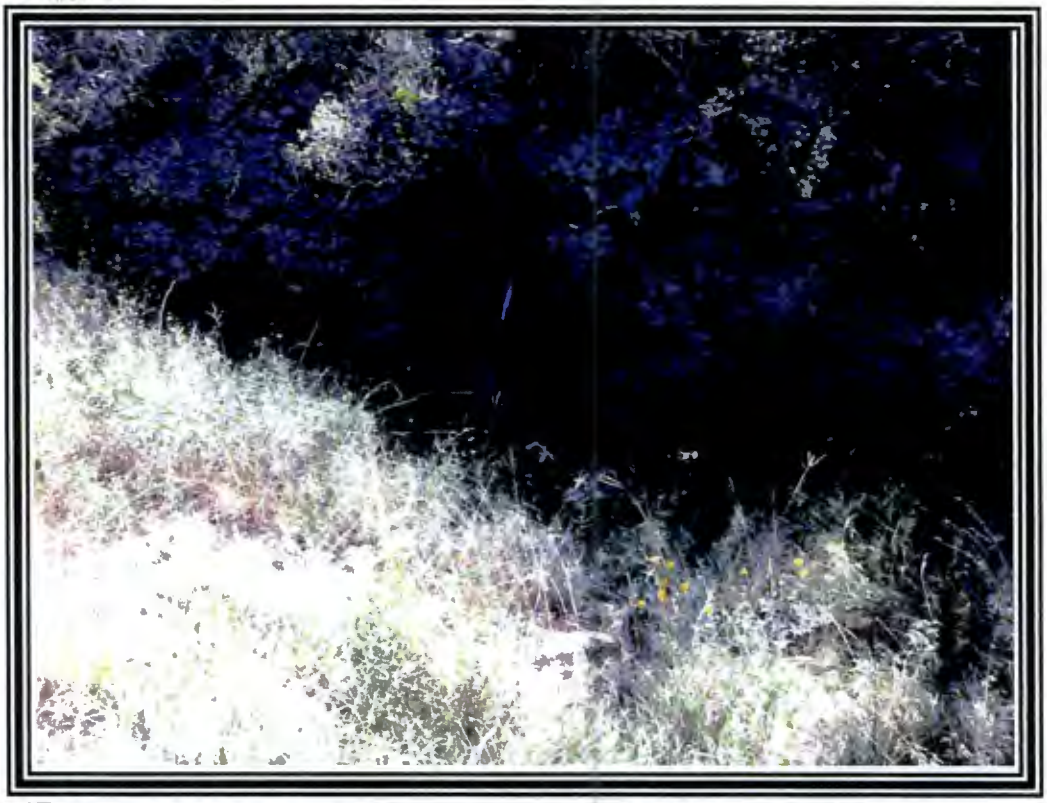
14. View of outcrop feature S-11, located at 29-47-6.7; 98-14-48.8. In the northern portion of the site. This photo shows the contact between the overlying Dolomitic member of the Kainer with the Basal Nodular member of the Kainer.



15. View of outcrop feature S-12, located at 29-47-7.7; 98-14-45.3.



16. Another view of outcrop feature S-12.



17. View of closed depression feature S-13, located at 29-46-45.2; 98-15-12.



18. View of man-made excavation feature S-14, located at 29-46-46; 98-15-12.6.



19. View of fractured rock and fault feature S-15, located at 29-46-51; 98-15-4.2.



20. View of fractured rock outcrop and fault feature S-16, located at 29-46-57.4; 98-14-54.7.



21. View of closed depression feature S-17, located at 29-46-29.9; 98-15-22.

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 KANIER FORMATION

GEOLOGIC ASSESSMENT
for
VINTAGE OAKS AT THE VINEYARD
THE HILL

STATE OF TEXAS
11/22/14
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST

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

REVISIONS:

JOB NO. 04351948
FILE: 04351948.01
DATE: 10/17/2014
DESIGN: -
DRAWN: J LEAL
CHECKED: J LANGAN
SHEET 1 OF 1

In This Section

TCEQ-0584
Water Pollution Abatement Plan Application

Attachment A
Factors Affecting Water Quality

Attachment B
Volume and Character of Stormwater

Attachment C
Suitability Letter from Authorized Agent

Attachment D
Exception to the Required Geologic Assessment

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

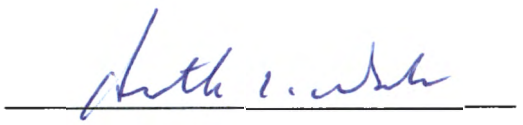
Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

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

Date: 4-27-2015

Signature of Customer/Agent:



Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills

Regulated Entity Information

1. The type of project is:

   ☒ Residential: Number of Lots:479
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☐ Commercial
   ☐ Industrial
   ☐ Other:_____

2. Total site acreage (size of property):305.86

3. Estimated projected population:1,193

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	1,450,548	÷ 43,560 =	33.30
Parking	280,962	÷ 43,560 =	6.45
Other paved surfaces	908,666	÷ 43,560 =	20.86
Total Impervious Cover	2,640,176	÷ 43,560 =	60.61

Total Impervious Cover 2,640,176 **÷ Total Acreage** 305.86 **X 100 =** 19.82**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100% Domestic	130,000Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 130,000	

15. Wastewater will be disposed of by:

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

☒ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

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

☒ Sewage Collection System (Sewer Lines):

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

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

☐ The SCS was previously submitted on_____.

☐ The SCS was submitted with this application.

☒ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the Ovivo microBLOX MBR (name) Treatment Plant. The treatment facility is:

☐ Existing.
☒ Proposed.

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

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 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.
☐ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____

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

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

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

☒ There are 3 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☒ The wells are not in use and will be properly abandoned.
☒ The wells are in use and comply with 16 TAC §76.

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

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

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

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

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

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

26. ☒ Surface waters (including wetlands).

☐ N/A

27. ☒ Locations where stormwater discharges to surface water or sensitive features are to occur.

☐ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

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

Factors Affecting Water Quality

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.

Volume and Character of Stormwater

Volume and Character of Stormwater

The overall contributing drainage area for The Hills at Vintage Oaks at the Vineyard is comprised of 13 sub-basins which total to approximately 5,000 acres. The stormwater runoff for the pre-project conditions of The Hills would be across rocky soil, with native grasses. The site has an average slope ranging from 2% to 12%. Using SCS methods peak discharges for each sub-basin were calculated. A summary of the pre- and post-project conditions follows.

10-Year Pre- and Post-Project Stormwater Data

Sub-Basin	Pre-Project Curve Number	Post-Project Curve Number	Pre-Project Discharge	Post-Project Discharge
			(cfs)	(cfs)
1-1A	73	73	2,831	2,831
1-1B	73	79	582	687
1-2	80	80	326	326
1-3	71	73	382	407
1-4A	75	79	451	503
1-4B	71	83	300	412
1-4C	71	83	504	697
1-5	84	84	216	216
1-6	84	84	474	474
1-7	79	79	360	360
1-7A	80	80	158	158
1-8	79	79	624	624
1-9	80	80	115	115

100-Year Pre- and Post-Project Stormwater Data

Sub-Basin	Pre-Project Curve Number	Post-Project Curve Number	Pre-Project Discharge	Post-Project Discharge
			(cfs)	(cfs)
1-1A	73	73	5,627	5,627
1-1B	73	79	1,141	1,260
1-2	80	80	591	591
1-3	71	73	776	807
1-4A	75	79	862	917
1-4B	71	83	600	723
1-4C	71	83	1,016	1,225
1-5	84	84	379	379
1-6	84	84	826	826

1-7	79	79	668	668
1-7A	80	80	285	285
1-8	79	79	1144	1144
1-9	80	80	210	210

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.

Suitability Letter from Authorized Agent

Comal County

OFFICE OF COMAL COUNTY ENGINEER

November 21, 2014

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

Re: Vintage Oaks at the Vineyard – The Hills On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Mendez:

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 November 20, 2014:

- 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. Because the site will be used as a small business and all improvements on the site are less than 20%, the Water Pollution Abatement Plan requested a waiver to the requirements for other permanent BMPs and measures. Below is a list of said sensitive features:

Feature ID	Latitude	Longitude
S-10	29° 47'16"	98° 14'38"
S-11	29° 47'6.7"	98° 14'48.8"

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. Furthermore, tanks, lined ET beds and sewer pipe with watertight joints are not allowed within 50' of these sensitive features.

Finally, 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

Attachment D

Exception to the Required Geologic Assessment

Not Applicable

Attachment D

Exception To The Required Geologic Assessment

NOT APPLICABLE

Temporary Stormwater

In This Section

TCEQ-0602
Temporary Stormwater Section

Attachment A
Spill Response Actions

Attachment B
Potential Sources of Contamination

Attachment C
Sequence of Major Activities

Attachment D
Temporary Best management Practices and Measures

Attachment E
Request to Temporarily Seal a Feature

Attachment F
Structural Practices

Attachment G
Drainage Area Map

Attachment H
Temporary Sediment Pond(s) Plans and Calculations

Attachment I
Inspection and Maintenance of BMPs

Attachment J
Schedule of Interim and Permanent Soil Stabilization Practices

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

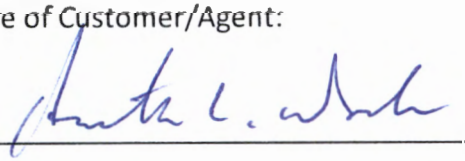
Signature

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

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

Date: 4-27-2015

Signature of Customer/Agent:



Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

   These fuels and/or hazardous substances will be stored in:

   ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☐ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: 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. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

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

☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

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

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

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

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

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

☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

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.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

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

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

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

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

(5) Other agencies which may need to be consulted include, but are not limited to, the County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment 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.

Potential Sources of Contamination

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.

Sequence of Major Activities

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: 36.7 acres disturbed
   Detention Pond: 6.82 acres disturbed
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: 33.3 acres disturbed
   (Assumed 3,041 sq. ft. disturbed area per lot.)

Construction entrances for site will be accessed from Hwy 46.

Temporary Best Management Practices and Measures

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. Stabilized Construction Entrance, 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. Stabilized Construction Entrance, 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-foot radius natural buffer zone adjacent to and upgradient of any 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-foot radius of naturally-occurring sensitive features. 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 50-foot radius) the disturbed soils will be protected from erosion by silt fences as outlined above.

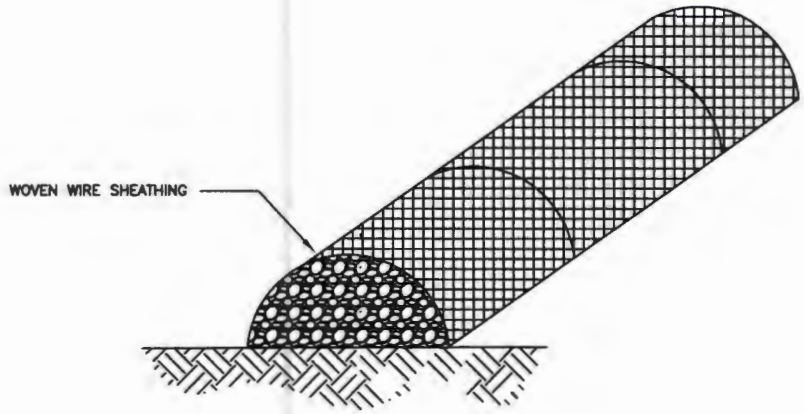
Request to Temporarily Seal a Feature

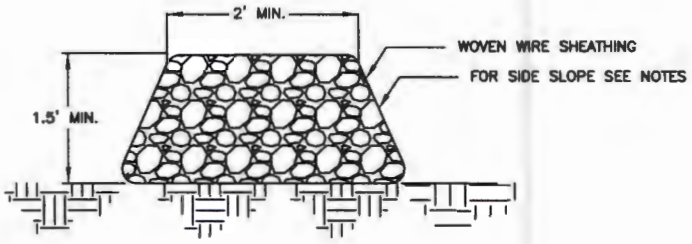
Request to Temporarily Seal a Feature

NOT APPLICABLE

Structural Practices

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





NOTES:

1. USE ONLY CLEAN, OPEN GRADED ROCK 4–8 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 ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE, AND/OR FABRIC CORE–WOVEN WIRE SHEATHING, SHALL BE REPLACED WHEN THE STRUCTURE CEASED TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. 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 SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS, SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK BERM

EXHIBIT 1

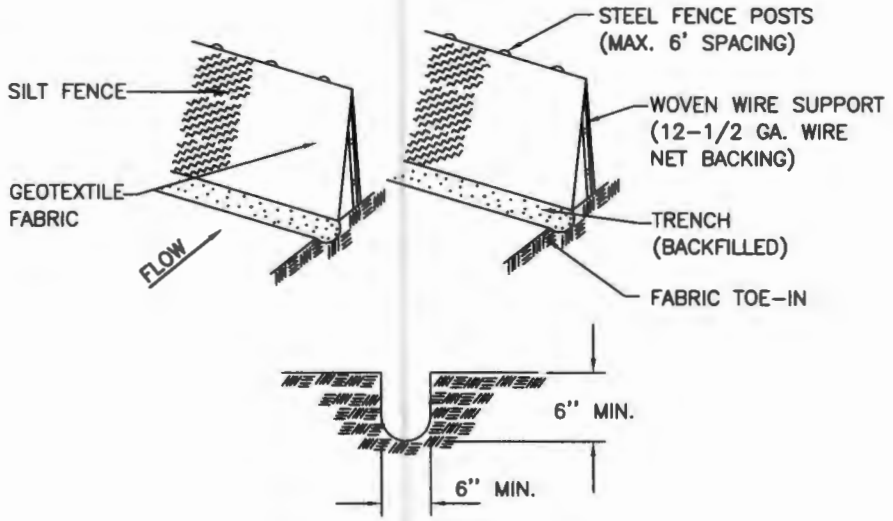
SCALE - NTS	
DATE - MAY 2013	
DRAWN - BGM	
SHEET - 1 OF 1	

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5448
FAX # (830) 885-2170

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

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

387 WEST MILL STREET
NEW BRAUNFELS, TEXAS 78130



TRENCH CROSS-SECTION

NOTES:

1. STEELPOSTS 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.
2. 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 (e.g. pavement) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. 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.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. 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.

SILT FENCE

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)

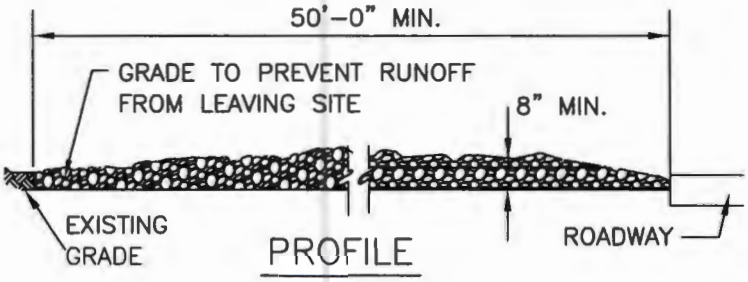
EXHIBIT 2

SCALE - NTS
DATE - MAY 2013
DRAWN - BGM
SHEET - 1 OF 1

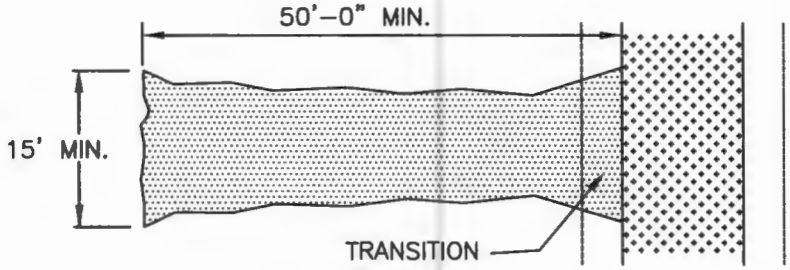
MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

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

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
387 WEST MILL STREET
NEW BRAUNFELS, TEXAS 78130



PROFILE



PLAN VIEW

NOTES:

1. STONE SIZE- 3 TO 5 INCH OPEN GRADED ROCK.

2. LENGTH- AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.

3. THICKNESS- NOT LESS THAN 8 INCHES.

4. WIDTH- NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.

5. WASHING-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 CRUSHED STONE WHICH DRAINS INTO AN APPROVED STRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE USING APPROVED METHODS.

6. MAINTENANCE- 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.

7. DRAINAGE- ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

STABILIZED CONSTRUCTION ENTRANCE

EXHIBIT 3

SCALE - NTS	
DATE - MAY 2013	
DRAWN - BGM	
SHEET - 1 OF 1	

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-1384

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
387 WEST MILL STREET
NEW BRAUNFELS, TEXAS 78130

Attachment G

Drainage Area Map

Temporary sediment basins are not attainable in this development due to the numerous sub-basins that drain the property. It would be more efficient to use a regional sediment pond, but due to the large amount of drainage area it is not feasible to build a temporary structure of the necessary magnitude to treat large point discharges. Instead, silt fences will be used to limit pollutant discharges before becoming concentrated channel flow.
A rock berm will be used to further limit runoff discharge of pollutants from the site.

Attachment H

Temporary Sediment Pond(s) Plans and Calcualtions

Temporary Sediment Pond(s) Plans and Calculations

NOT APPLICABLE

Inspection and Maintenance of BMPs

Inspection and Maintenance for BMPs

The BMPs for the construction of this project will be the use of rock berms and silt fencing. The following inspection and maintenance procedures will be implemented:

1. Stabilized Construction Entrance/Exit, Silt fencing and rock berms 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 and silt fencing 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.
   a. For Rock Berms:
      1. Contractor shall remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approval manner that will not cause any additional siltation.
      2. The berm should be replaced when the structures ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
   b. For Temporary Construction Entrance/Exit:
      1. All sediment spilled, dropped, washed or tracked onto public right-of-way should be removed immediately by contractor.
      2. When necessary, wheels should be cleaned to remove sediment prior to entrance onto right-of-way.
      3. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
   c. For Silt Fence:
      1. Remove sediment when buildup reaches 6 inches.
      2. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location if the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

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.

Schedule of Interim and Permanent Soil Stabilization Practices

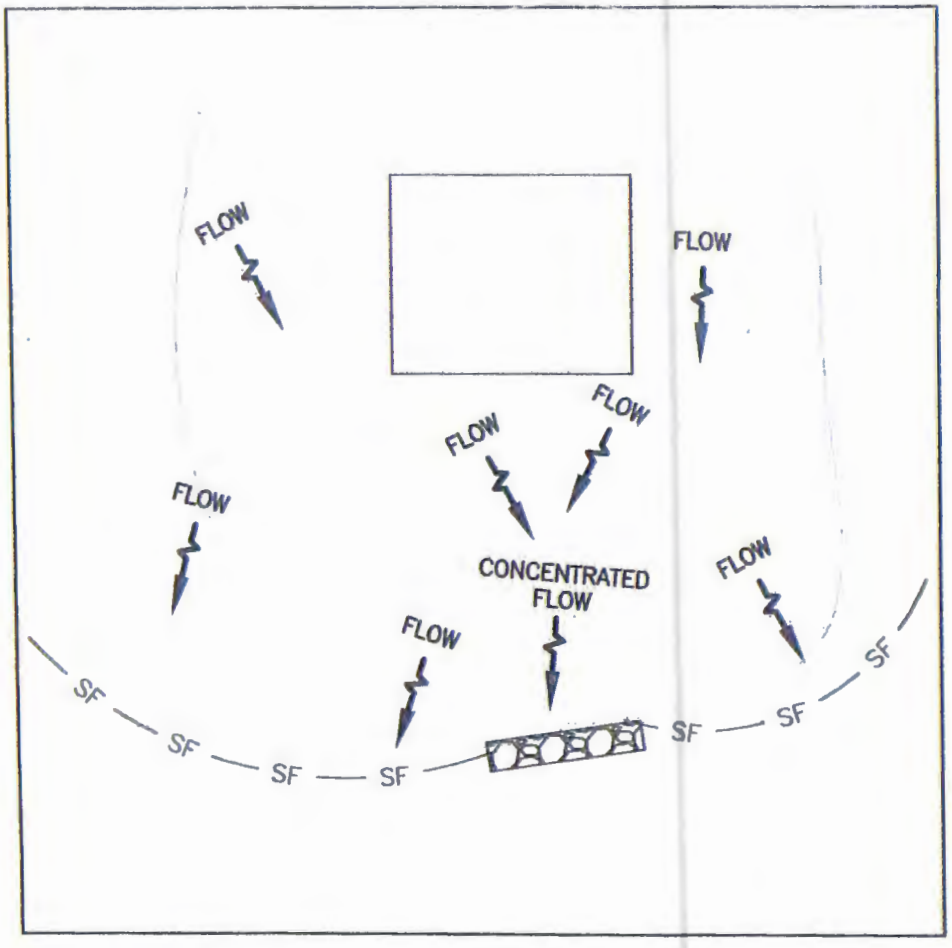
Schedule of Interim and Permanent Soil Stabilization Practices

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.

LE -	NTS
ATE -	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 Ungradient 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

Texas Commission on Environmental Quality

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

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

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

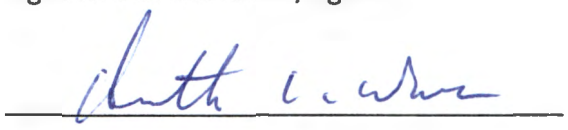
Signature

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

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

Date: 4-27-2015

Signature of Customer/Agent



Regulated Entity Name: Vintage Oaks at the Vineyard, The Hills

Permanent Best Management Practices (BMPs)

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

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

   ☒ N/A

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

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

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

☒ N/A

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

   ☒ N/A

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

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

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

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

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

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

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

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

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

☐ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.

☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

☒ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. ☒ **Attachment C - BMPs for On-site Stormwater.**

☐ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.

☒ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

8. ☒ **Attachment D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☐ N/A

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

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features.** A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☐ **Attachment F - Construction Plans.** All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☐ Design calculations (TSS removal calculations)
☐ TCEQ construction notes
☐ All geologic features
☐ All proposed structural BMP(s) plans and specifications

☒ N/A

11. ☐ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☐ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☐ Signed by the owner or responsible party
    ☐ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☐ A discussion of record keeping procedures

    ☒ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☒ N/A

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

    ☒ N/A

20% or Less Impervious Cover Waiver

Attachment A

20% Or Less Impervious Cover Waiver

NOT APPLICABLE

BMPs for Ungradient Stormwater

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 acres are currently undeveloped. No BMPs are required because the site will be re-vegetated after construction is complete.

BMPs for On-site Stormwater

Attachment C

BMPs for On-Site Stormwater

The proposed Vintage Oaks at the Vineyard, The Hills is less than 20% impervious cover, therefore no permanent BMP is required for the runoff entering the Dry Comal Creek.

BMPs for Surface Streams

BMPs for Surface Streams

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

According to the geologic assessment, there are two sensitive feature on this site, identified as S-3 and S-8.

S-10 (Streambed) Located in the vicinity of existing lots.
S-11 (Streambed) Located in the vicinity of existing lots.

- 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.

Request to Seal Features

Request To Seal Features

NOT APPLICABLE

Construction Plans

Attachment F

Construction Plans

NOT APPLICABLE

Inspection, Maintenance, Repair and Retrofit Plan

Attachment G

Inspection, Maintenance, Repair, And Retrofit Plan

NOT APPLICABLE

Pilot-Scale Field Testing Plan

Attachment H

Pilot-Scale Field Testing Plan

NOT APPLICABLE

Measures for Minimizing Surface Stream Contamination

Attachment I

Measures for Minimizing Surface Stream Contamination

The proposed Vintage Oaks at the Vineyard, The Hills is less than 20% impervious cover, therefore no filtration is required for the runoff the Dry Comal Creek.

Detention ponds 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 pond will utilize the existing stream contours and will not be excavated. The pond will discharge through a set of box culverts with an emergency overflow weir. Exit velocities will be controlled by appropriately sized energy dissipater blocks and rock rip rap.

According to the geologic assessment, there were sensitive features identified on this site that required permanent filtration BMPs. 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.

Agent Authorization

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 Thad Rutherford,
Print Name

Chief Operating Officer,
Title - Owner/President/Other

of Southstar at Vintage Oaks, LLC,
Corporation/Partnership/Entity Name

have authorized Heath L. Woods
Print Name of Agent/Engineer

of M & S Engineering
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

12/8/14
Date

THE STATE OF Texas §

County of Travis §

HEATHER HAYES
My Commission Expires
February 20, 2018

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 9 day of December 2014.

Heather Hayes
NOTARY PUBLIC

Heather Hayes
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: February 20, 2018

In This Section

TCEQ-0574
Application Fee Form

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Vintage Oaks at the Vineyard, The Hills
Regulated Entity Location: Adjacent to Unit 1 & 4 of Vintage Oaks at the Vineyard
Name of Customer: Thad Rutherford, Southstar at Vintage Oaks, LLC
Contact Person: Heath L, Woods, P.E. Phone: (830)629-2988
Customer Reference Number (if issued):CN 604123554
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☒ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	305.86 Acres	$ 8,000.00
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: 4/28/15

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

M&S Engineering, L.L.C.
P.O. Box 970
Spring Branch, TX 78070
(830) 228-5446

Broadway National Bank
P.O. Box 17001 • San Antonio, Texas 78217 • 210/283-8500

88-2193/1140

27351

Security features. Details on back.

Eight thousand dollars and no/100s**********

DATE
04/30/15

AMOUNT
$8,000.00

PAY
TO THE
ORDER
OF

TCEQ

AUTHORIZED SIGNATURE

MP

⑈027351⑈ ⑆114021933⑆ ⑈0391166⑈

M&S ENGINEERING, L.L.C.

27351

WPAP The Hills

DELUXE FOR BUSINESS 1-800-888-6327

Pollutant Calculations

In This Section

TSS Removal and BMP Sizing Calculations

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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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).

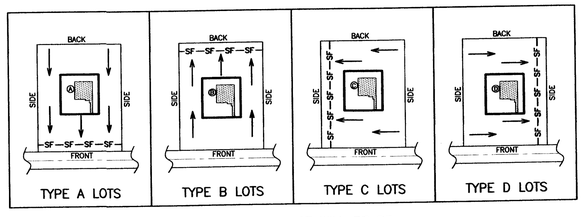
SOIL STABILIZATION NOTE

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.

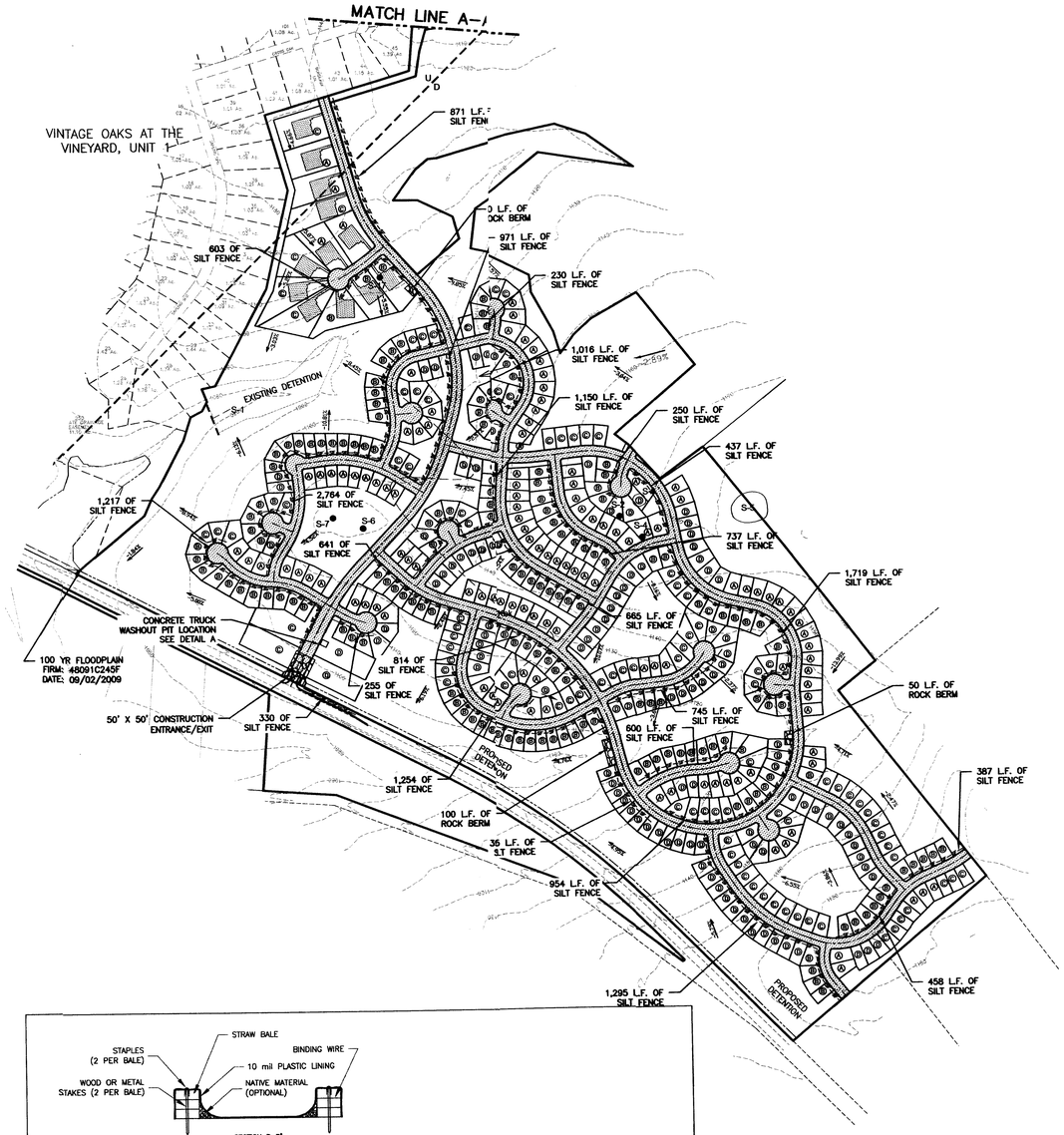
BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

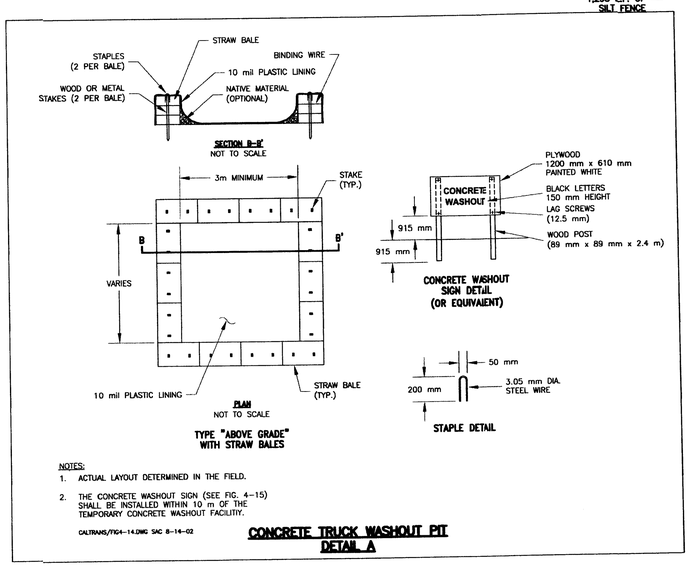
MULCHING/MATS CAN BE USED TO PROTECT THE DISTURBED AREAS WHILE VEGETATION BECOMES ESTABLISHED.

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)



THE TYPICAL DRAINAGE PATTERN OF EACH LOT WILL BE BE DETERMINED BY THE EXISTING CONTOURS. ALL DRAINAGE OF LOTS WILL FLOW AWAY FROM BUILDING PAD.
(1 AC. LOT HOME BUILDING PAD: 11,260 SF; AND ⅛ AC. LOT HOME BUILDING PAD: 3,000 SF. THESE CALCULATIONS USED TO DETERMINE IMPERVIOUS COVER)

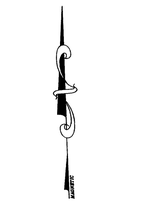


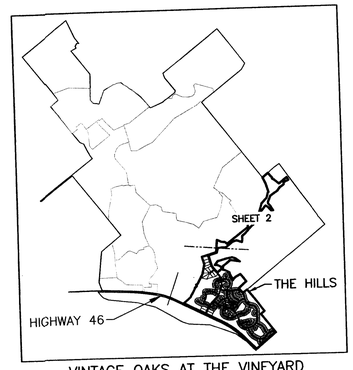


NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE FIG. 4-15) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

CALTRANS/TIC4-14.DWG SAC 8-14-02

CONCRETE TRUCK WASHOUT PIT DETAIL A





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

LEGEND:

— — — — —	EXIST LOT LINE
————	EXIST PROPERTY BOUNDARY
— — — 300 — — —	EXIST CONTOUR
S-5	EXIST SITE FEATURES
————	PROP PROJECT LIMITS
————	PROP RIGHT-OF-WAY
	PROP WATER FLOW DIRECTION
—SF—SF—SF—SF—SF—	PROP SILT FENCE
	PROP DISTURBED AREA
	PROP ROCK BERM
	CONSTRUCTION ENTRANCE/EXIT

SITE FEATURES:
ALL SITE FEATURES SHOWN HAVE BEEN EVALUATED AND ARE NOT CLASSIFIED AS BEING SENSITIVE. THESE SITE FEATURES DO NOT REQUIRE A BUFFER ZONE.

RECEIVED
MAY 11 2015
COUNTY ENGINEER

TCEQ-R13
MAY 05 2015
SAN ANTONIO

REVISIONS

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

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
5/1/2015

VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: APRIL 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 1 OF 3

Date: May 04, 2015, 12:32pm User ID: bmendez
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-SPH-001.dwg

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 DVERSIONARY 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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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.

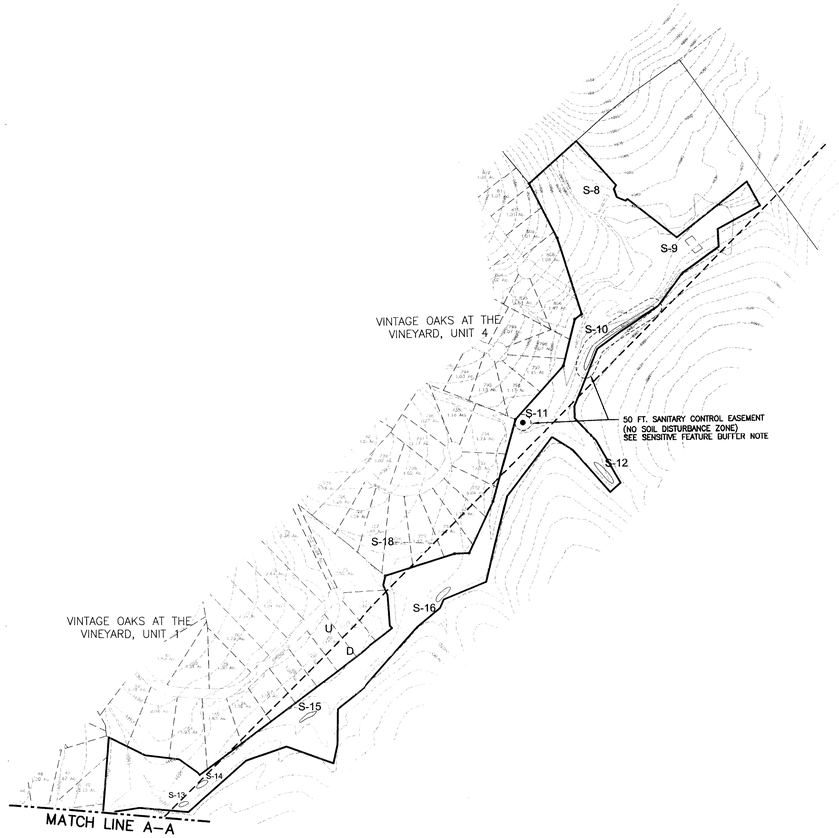
BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

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

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)

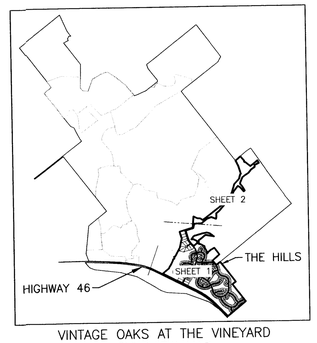
SENSITIVE FEATURE BUFFER:

NOTE
CONTRACTOR/OWNER SHOULD REFERENCE THE TECHNICAL GUIDANCE FOR BEST MANAGEMENT PRACTICE FROM TCEQ ON WHAT IS ALLOWED IN THIS AREA.





0 200 400 800
SCALE (FEET)
1" = 400'



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

LEGEND:

	EXIST TOP CRV
	EXIST INTERIOR CONTOURS
	EXIST CONTOURS
S-5	EXIST SITE FEATURES
	PROP PROJECT LIMITS
	PROP RIGHT-OF-WAY
	PROP WATER FLOW DIRECTION
—SF—SF—SF—SF—	PROP SILT FENCE
	PROP DISTURBED AREA
RS-3S	PROP ROCK BERM
	CONSTRUCTION ENTRANCE/EXIT

SITE FEATURES:

ALL SITE FEATURES SHOWN HAVE BEEN EVALUATED AND ARE NOT CLASSIFIED AS BEING SENSITIVE. THESE SITE FEATURES DO NOT REQUIRE A BUFFER ZONE.

RECEIVED
MAY 11 2015
COUNTY ENGINEER

TCEQ-R13
MAY 05 2015
SAN ANTONIO

REVISIONS

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

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
4/30/15

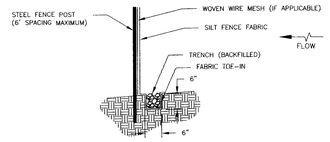
VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: APRIL 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 2 OF 3

Date: Apr 27, 2015, 6:57am User ID: bmendez
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-SPPL-001.dwg



NOTES:

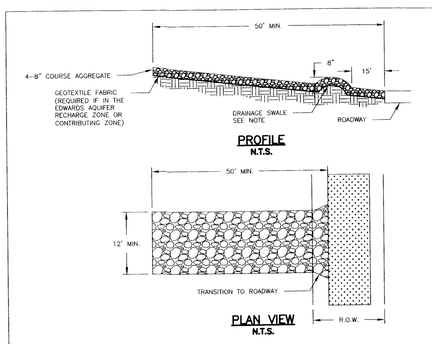
1. TRIANGULAR SEDIMENT FILTER DIKES MAY BE SUBSTITUTED FOR SILT FENCE IN AREAS WHERE INSTALLATION OF SILT FENCE IS NOT POSSIBLE OR WHERE VEHICLE ACCESS MUST BE MAINTAINED PROVIDED THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE ACRE.
2. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE 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



PROFILE
N.T.S.

PLAN VIEW
N.T.S.

NOTES:

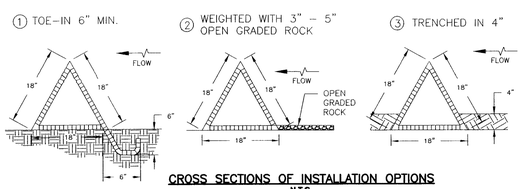
1. THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION WITH A MINIMUM THICKNESS OF 8 INCHES.
2. IF THE SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 8 INCHES HIGH WITH 3:1 (H:V) SIDESLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF 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:

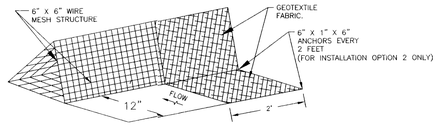
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, 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



CROSS SECTIONS OF INSTALLATION OPTIONS
N.T.S.



NOTES:

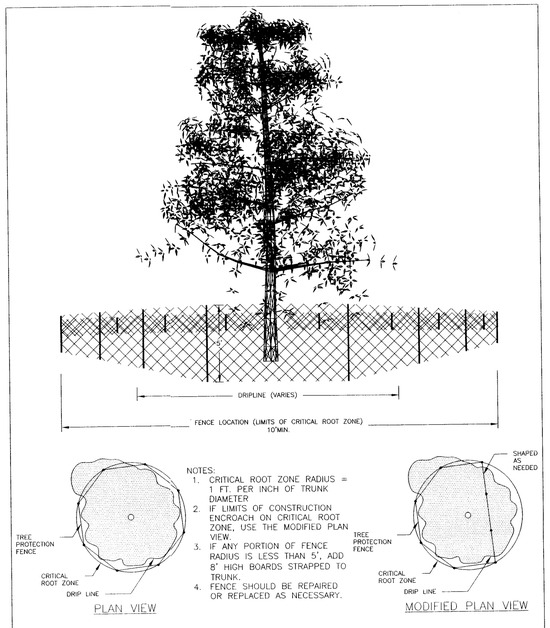
1. DIKES MAY BE MOVED TO ALLOW VEHICLE TRAFFIC, THEN REINSTALLED TO MAINTAIN SEDIMENT CONTROL.
2. GEOTEXTILE FABRIC SHOULD BE THE SAME SPECIFICATIONS AS USED IN FOR SILT FENCES.
3. THE DIKE STRUCTURE SHOULD BE 6 GAUGE 6" X 6" WIRE MESH FOLDED INTO TRIANGULAR FORM 18" ON EACH SIDE, WRAPPED IN GEOTEXTILE 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:

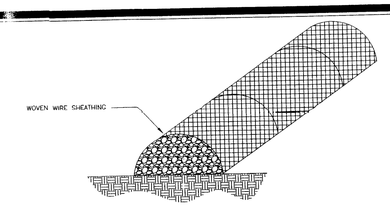
1. CRITICAL ROOT ZONE RADIUS = 1 FT. PER INCH OF TRUNK DIAMETER
2. IF LIMITS OF CONSTRUCTION ENCROACH ON CRITICAL ROOT ZONE, USE THE MODIFIED PLAN VIEW.
3. IF ANY PORTION OF FENCE RADIUS IS LESS THAN 5', ADD 8' HIGH BOARDS STRAPPED TO TRUNK.
4. FENCE SHOULD BE REPAIRED OR REPLACED AS NECESSARY.

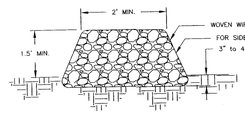
PLAN VIEW

MODIFIED PLAN VIEW

TREE PROTECTION CONSTRUCTION FENCE

EXHIBIT A6





NOTES:

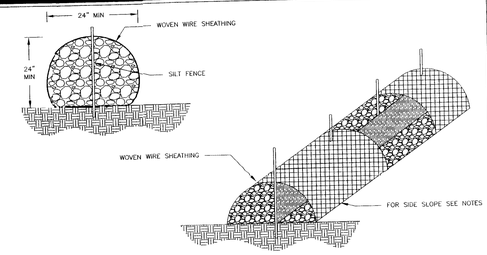
1. USE ONLY CLEAN, OPEN GRADED ROCK 5-8 INCH DIAMETER FOR STREAM FLOW CONDITIONS; USE OPEN GRADED ROCK 3-5 INCHES DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED.
3. THE BERM SHOULD 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 SLT 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

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 670
SPRING BRANCH, TEXAS 78070
PHONE # (830) 885-2170
FAX # (830) 885-2170

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
4/30/15

VINTAGE OAKS AT THE VINEYARD
THE HILLS

WATER POLLUTION ABATEMENT PLAN
DETAILS

JOB: 14BSW003
DATE: OCTOBER 2014
SCALE: N.T.S.

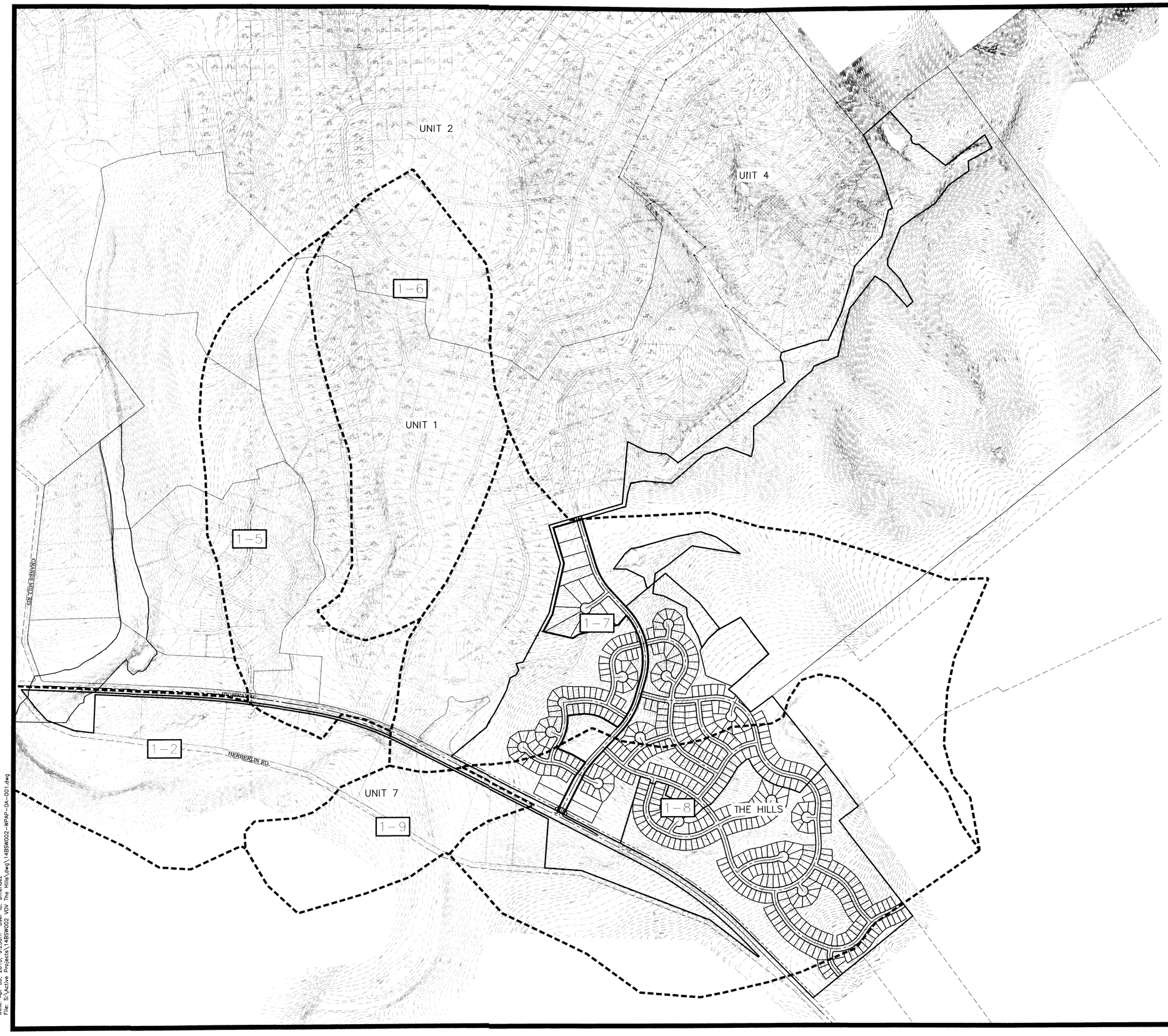
INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET:
3 OF 3

RECEIVED
MAY 11 2015
COUNTY ENGINEER

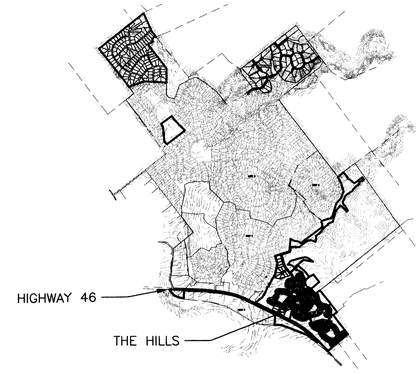
TCEQ-R13
MAY 05 2015
SAN ANTONIO

Date: Apr 27, 2015, 6:55am User ID: bmendez
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-DTL-001.dwg



LEGEND:

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



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

RECEIVED
MAY 11 2015
COUNTY ENGINEER

TCEQ-R13
MAY 05 2015
SAN ANTONIO

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-1394

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED
PROFESSIONAL ENGINEER
4/30/15

VINTAGE OAKS AT THE VINEYARD
THE HILLS

WATER POLLUTION ABATEMENT PLAN
DRAINAGE AREA MAP

JOB: 14BSW002
DATE: DECEMBER 2014
SCALE: 1" = 500'
INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 1 OF 1

Date: Apr 30, 2015, 9:25am User ID: bmendez
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-DA-001.dwg

PSI Information To Build On
Engineering • Consulting • Testing

RECEIVED
AUG 19 2015
COUNTY ENGINEER

July 22, 2015

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

Attn: Mr. Heath Woods, P.E.

Re: Sensitive Feature Narrative
Vintage Oaks at The Vineyard The Hills
Approximate 305-Acre Tract
Highway 46, Comal County, Texas
PSI Project No. 435-1948

Dear Mr. Woods:

In response to the request for additional information from the Texas Commission on Environmental Quality (TCEQ), Professional Service Industries, Inc. (PSI) offers the following narrative on the two sensitive features (S-10 and S-11) identified during the geologic recharge assessment for the above referenced project in compliance with the requirements for regulated developments located on the Edwards Aquifer Recharge Zone (EARZ.

PROJECT DESCRIPTION

The subject site is located on the north side of Highway 46, east of Cranes Mill Road, in Comal County, Texas. The Hills Tract is approximately 305-acres in size, and is an irregularly shaped parcel of undeveloped land that is hilly and rugged in places although some areas are open relatively flat fields of grass. The hillside slopes are occasionally steep and can dip in all directions. Northerly tributaries of Bear Creek drain the property in a general northeasterly or southeasterly 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.

SENSITIVE FEATURES

Two sensitive features scoring more than 40 points on the F-0585 form was observed on the subject tract and consisted of vuggy fractured rock zones in the Little Bear Creek streambed in the northeastern extension "arm". One of the features, S-10 is a large outcrop that has been partially cleared for site development activities associated with a nearby flood control spillway. The other feature, S-11 is heavily fractured, and shows the contact between the Kainer dolomitic member and the underlying basal nodular member. These features are in alignment with a mapped fault that traverses the northeast "arm" of the subject tract, and receive directed water flow during precipitation events.

Features S-10 and S-11 will be protected by 50 foot buffers/setbacks around the perimeters of the features. Native vegetation will remain in place in these areas to allow a natural state exist to the extent practicable. The buffers will consist of dense native grasses and forbs, in mosaic of shrubs and trees, predominantly live oak and ashe-juniper.

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

Respectfully submitted,

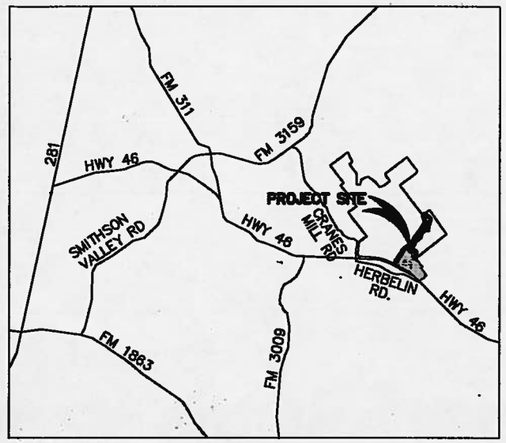
PROFESSIONAL SERVICE INDUSTRIES, INC.

John Langan, P.G.
Environmental Department Manager

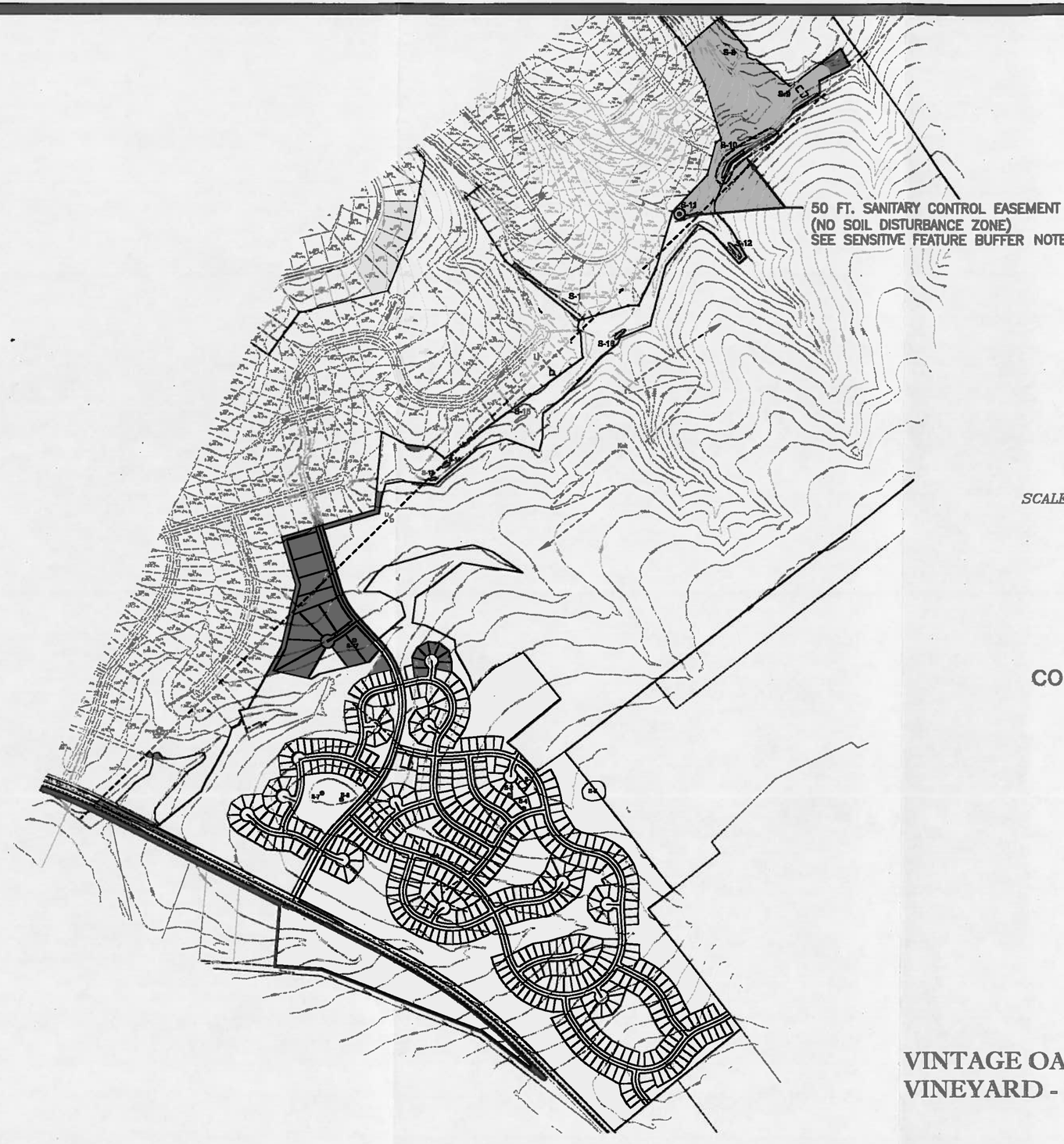


RECEIVED
AUG 19 2015
COUNTY ENGINEER

psi



LOCATION MAP
NOT TO SCALE



SCALE: 1" = 1000'

TCEQ-R13
JUL 23 2015
SAN ANTONIO

RECEIVED
AUG 19 2015
COUNTY ENGINEER

M & S
ENGINEERING, L.L.C.
ENGINEERS, PLANNERS, SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM NO. F-1394

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

VINTAGE OAKS AT THE VINEYARD - THE HILLS

Date: Jul 22, 2015, 3:57pm User ID: bmendez File: S:\Active Projects\14BSWO02 VOV The Hills\dwg\14BSWO02-WPAP-SPN-001.dwg

Comal

M&S ENGINEERING
CIVIL | ELECTRICAL | STRUCTURAL | MEP

376 LANDA STREET
NEW BRAUNFELS , TX 78130
830.629-2988 PH | 830.228.4197 FX
FIRM F-394
WWW.MSENGR.COM

July 13, 2015

Ms. Lillian Butler
Edwards Aquifer Protection Program
TCEQ
14250 Judson Rd.
San Antonio TX 78233
(210)490-3096

RECEIVED
JUL 24 2015
COUNTY ENGINEER

RE: Southstar at Vintage Oaks LLC
Investigation No. 1251924; Regulated Entity No. RN108334111

Dear Ms. Butler:

We received comments on the request for approval of a Water Pollution Abatement Plan (WPAP) on July 10, 2015. The list below is how we responded to the comments and how they were addressed.

Water Pollution Abatement Plan Application (TCEQ-0584)

1. Item #4, Table 1-Impervious Cover Table: We have included in the "Attachment A" a summary of what is entailed for each area of impervious cover.

2. Item #15, Sewage collection System (Sewer Lines): This system is intended to treat the entire site for its waste water needs

3. Site Plan updated to show locaton if the package plant.

4. Site Plan updated to show location of the storage plan and irrigation areas.

5. Site Plan updated to show area of storage pond location.

Please see the attached items.
If you have any questions or require additional information, please contact me or Heath Woods at (830) 629-2988.

Sincerely,

Brian Mendez
M&S Engineering

Cc: File

CIVIL • ELECTRICAL • SURVEYING
A FULL SERVICE COMPANY

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.

Table 1 – Impervious Cover Table
A listing to summarize the total Impervious Cover of Proposed Project.

-Structures/Roof tops: Impervious cover of the 1 Ac. lots and the High Density lots
-Parking: Impervious cover of parking and sidewalks of 1 Ac. lots and High Density lots
-Other paved surfaces: Impervious cover of all roads in the subdivision

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 PORTON 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 ABATMENT 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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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).

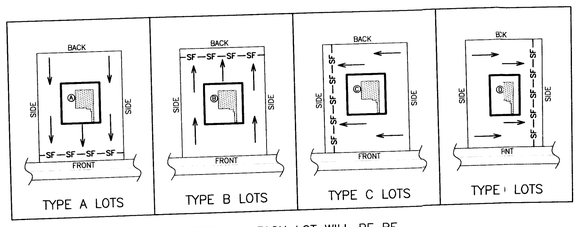
SOIL STABILIZATION NOTE

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.

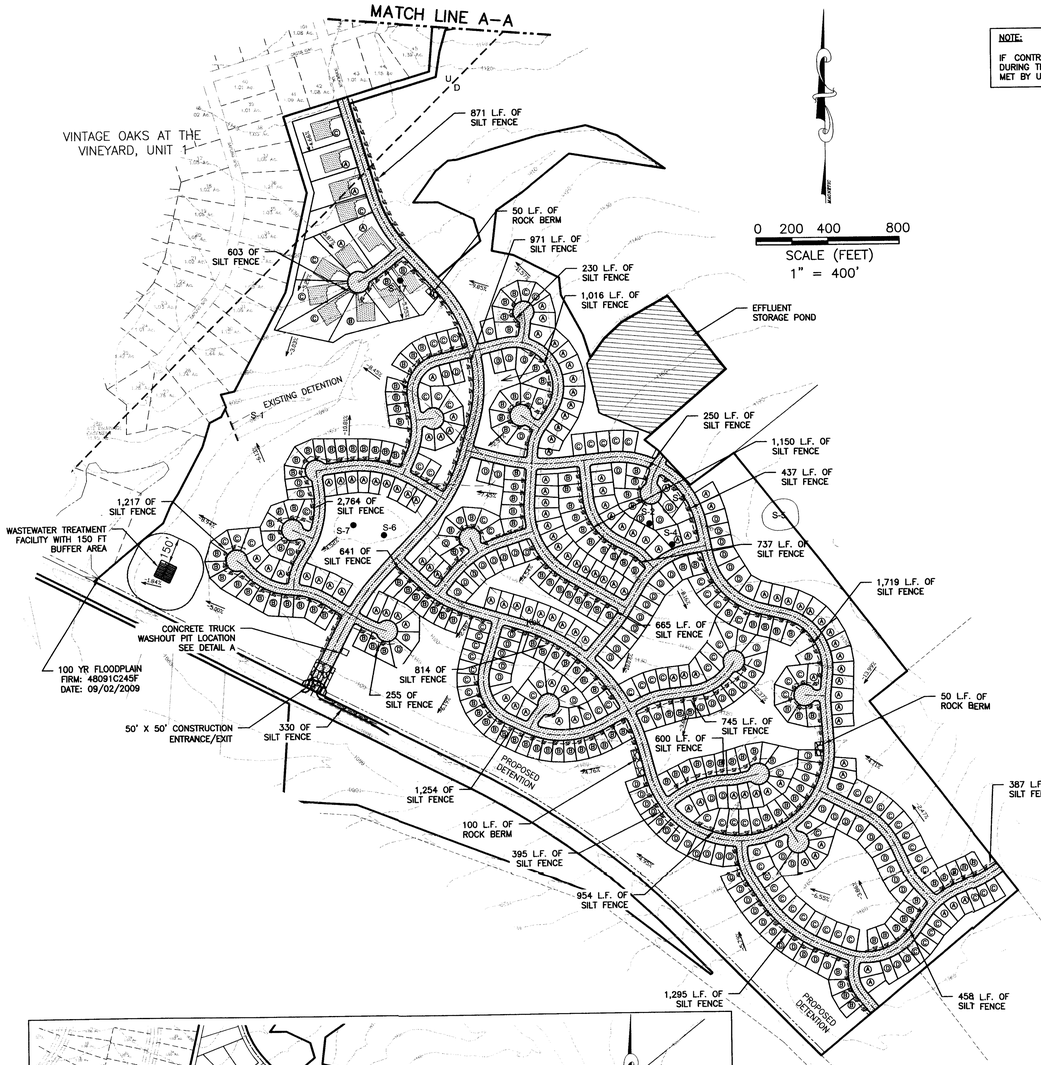
BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

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

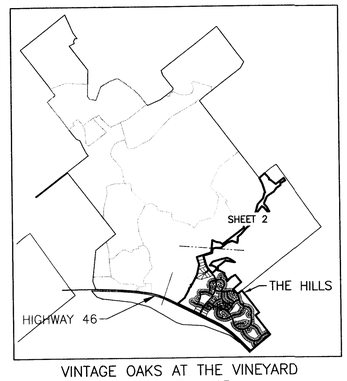
SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)



THE TYPICAL DRAINAGE PATTERN OF EACH LOT WILL BE BE DETERMINED BY THE EXISTING CONTOURS. ALL DRAINAGE OF LOTS WILL FLOW AWAY FROM BUILDING PAD.
(1 AC. LOT HOME BUILDING PAD: 11,260 SF; AND ⅛ AC. LOT HOME BUILDING PAD: 3,000 SF. THESE CALCULATIONS USED TO DETERMINE IMPERVIOUS COVER)



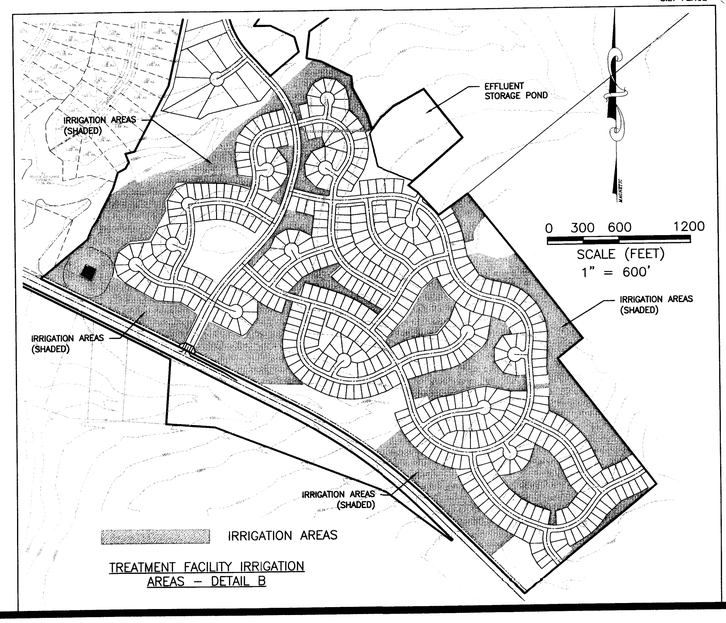
NOTE:
IF CONTRACTOR/DEVELOPER WISHES TO SAVE A TREE DURING THIS DEVELOPMENT, PROPER MEASURES CAN BE MET BY USING THE EXHIBIT AS ON SHEET 3.



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

LEGEND:

- EXIST LOT LINE
- EXIST PROPERTY BOUNDARY
- 350 EXIST CONTOUR
- S-5 EXIST SITE FEATURES
- PROP PROJECT LIMITS
- PROP RIGHT-OF-WAY
- PROP WATER FLOW DIRECTION
- SF SF SF SF SF PROP SILT FENCE
- PROP DISTURBED AREA
- PROP ROCK BERM
- CONSTRUCTION ENTRANCE/EXIT



TREATMENT FACILITY IRRIGATION AREAS – DETAIL B

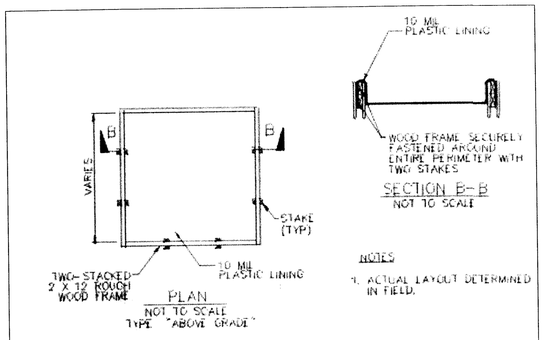


Figure 1-43 Schematics of Concrete Washout Areas

CONCRETE TRUCK WASHOUT PIT
DETAIL A

REVISIONS

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

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

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
7/14/15

VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: APRIL 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET: 1 OF 3

Date: Jul 14, 2015, 10:15am User ID: bmendez
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-SPN-001.dwg

Comal county

M&S ENGINEERING
CIVIL | ELECTRICAL | STRUCTURAL | MEP

376 LANDA STREET
NEW BRAUNFELS , TX 78130
830.629-2988 PH | 830.228.4197 FX
FIRM FI-394
WWW.MSENGR.COM

June 17, 2015

Ms. Lillian Butler
Edwards Aquifer Protection Program
TCEQ
14250 Judson Rd.
San Antonio TX 78233
(210)490-3096

RECEIVED
JUL 24 2015
COUNTY ENGINEER

RECEIVED TCEQ
2015 JUN 19 AM 11:33
SAN ANTONIO
REGION

RE: Southstar at Vintage Oaks LLC
Investigation No. 1251924; Regulated Entity No. RN108334111

Dear Ms. Butler:

We received comments on the request for approval of a Water Pollution Abatement Plan (WPAP) on June 3, 2015. The list below is how we responded to the comments and how they were addressed.

1. Geological Assessment item #7: Mr. John Langan, P.G. has updated his report on the septic tank.
2. Water Pollution Abatement Plan item #4: The Project Description (General Information TCEQ-0584) has been updated to clarify the impervious cover.
3. Item # 15: There are two sections of development in the Vintage Oaks at the Vineyard Subdivision, The Hills. There is 13.36 acres of this development that will be 1 acre lots (12 Lots). The remaining high density development, being 292.50 acres, will dispose of wastewater through a Sewage Collection System.
4. Item # 24: The Detail A has been updated as requested on sheet 1 of 3. Sheet 3 of 3, Exhibit A2 has been updated. Sheet 3 of 3, Exhibit A6: We are not obligated to save trees with this development, but if the developer does wish to save a tree, this Detail Exhibit A6 will be used for direction.
5. Item # 4, Attachment B: This item now includes the data and remedy as requested.
6. Item # 4: The site is being used for a mixed of Low and High density development. The project description has been updated to indicate this.
7. Item # 8, Attachment D: The sensitive features have been updated with the correct feature ID #.

Please see the attached items.
If you have any questions or require additional information, please contact me or Heath Woods at (830) 629-2988.

Sincerely,

Brian Mendez
M&S Engineering

Cc: File

CIVIL • ELECTRICAL • SURVEYING
A FULL SERVICE COMPANY

PROJECT DESCRIPTION

The area of the site is in the ETJ on New Braunfels, and was at one point a residential tract. The existing impervious cover are building structures, water wells and ranch roads on site (See Attached Existing Site Plan). The site was a home/farm and used for agricultural purposes. The existing structures and roads will be demolished. Some water wells will be left and others will be capped.

The proposed development is to be a Single Family Residential Subdivision, located on 305.86 acres, adjacent to highway 46. The site would ultimately include approximately 110.38 acres of single-family residential lots (39.75 acres of impervious cover), and 36.7 acres of street right-of-way (20.86 acres of impervious cover). 479 total lots to be developed; 12 lots being greater than one acre and 467 being .20 acres per lot. The 467 smaller lots will be served by a waste water treatment facility.

A small portion of this subdivision falls in the 100 year floodplain area. The streets are accounted for in the impervious cover calculations.

Vintage Oaks at the Vineyards, The Hills is located within the Dry Comal Creek watershed. The proposed development and highway modifications create approximately 60.61 acres of impervious cover (19.82% of the total site acreage). The total acreage of the project is the 305.86 acres.

PSI Information To Build On
Engineering • Consulting • Testing

October 22, 2014

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

Attn: Mr. Heath Woods, P.E.

Re: Geologic Assessment
Vintage Oaks at The Vineyard The Hills
Approximate 305-Acre Tract
Highway 46, Comal County, Texas
PSI Project No. 435-1948

Dear Mr. Woods:

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. 134336 between M&S Engineering, Ltd. and PSI dated September 22, 2014.

PROJECT DESCRIPTION

The subject site is located on the north side of Highway 46, east of Cranes Mill Road, in Comal County, Texas. The Hills Tract is approximately 305-acres in size, and is an irregularly shaped parcel of undeveloped land that is hilly and rugged in places although some areas are open relatively flat fields of grass. The hillside slopes are occasionally steep and can dip in all directions. Northerly tributaries of Bear Creek drain the property in a general northeasterly or southeasterly 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

level in the northwestern portion of the county. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Comal County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 650 feet to 1100 feet above sea level. The regional dip of the lower Cretaceous rocks in Comal County is approximately 15 feet per mile towards the southeast. The faults are predominantly normal, down-to-the southeast with near vertical throws. Elevations at the Vintage Oaks at the Vineyard The Hills Tract site range from approximately 1,170 feet above mean sea level in the east area of the tract to approximately 1,000 feet above mean sea level in the northeastern "arm" area of the tract.

Stratigraphy and Structure

Rocks at the site are members of the Lower Cretaceous Edwards Kainer Formation. The site is covered with a thin veneer of soil, and scattered expanses of dense to vuggy and fractured rock outcrops which are exposed throughout the site. In general, the hillsides contained variable amounts of boulder float and soil with outcrops exhibiting varying degrees of fractures and vug development. 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. The underlying Glen Rose Formation is composed of yellowish-tan, thinly bedded marly limestone.

The rocks at the site are mapped as the Dolomitic member of the Kainer Formation, which is a mudstone to grainstone, cherty, massively bedded, crystalline limestone. The rock weathers to a light gray in outcrop, and has abundant *Toucasia* bivalves. The underlying Basal nodular member of the Kainer Formation was also observed on the tract, and consists of shaly, nodular limestone and burrowed mudstone to wackestone, with gastropods, miliolids and *exogyra texana* bivalves. It is considered regionally as a lower confining unit, but locally water bearing through dissolution along bedding planes.

Feature S-6, a septic tank, will be removed and properly abandoned in accordance with TAC 285.36. Two sensitive features scoring more than 40 points on the F-0585 form was observed on the subject tract and consisted of vuggy fractured rock zones in the Little Bear Creek streambed in the northeastern extension "arm". One of the features, S-10 is a large outcrop that has been partially cleared for site development activities associated with a nearby flood control spillway. The other feature, S-11 is heavily fractured, and shows the contact between the Kainer dolomitic member and the underlying basal nodular member.

SITE INVESTIGATION

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. The purpose of the site investigation was to delineate

features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

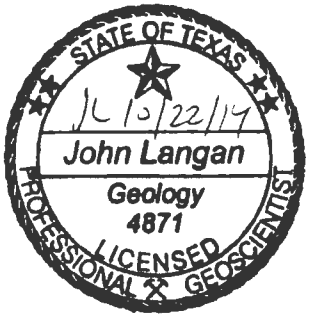
Two sensitive features were noted in the northeast flowing Little Bear Creek drainage way in the northeastern "arm" of the site. These features are in alignment with a mapped fault that traverses the northeast "arm" of the subject tract, and receive directed water flow during precipitation events. Other, non-sensitive, predominantly man-made features were also identified, and included water wells, stock tanks, flood control spill ways and a septic tank. Please note that subtle features, buried or obscured from view, may be present on the tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

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

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

John Langan, P.G.
Environmental Department Manager



psi

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.

5. Tar, fertilizers, cleaning solvents, detergents, and petroleum based products.
   Remedy: The contractor will be responsible for immediate cleanup should an unexpected rain occur. 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.

BMPs for Surface Streams

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

According to the geologic assessment, there are two sensitive feature on this site, identified as S-10 and S-11.

S-10 (Streambed) Located in the vicinity of existing lots.
S-11 (Streambed) Located in the vicinity of existing lots.

- 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.

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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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).

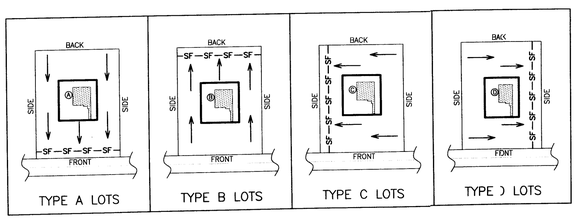
SOIL STABILIZATION NOTE

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.

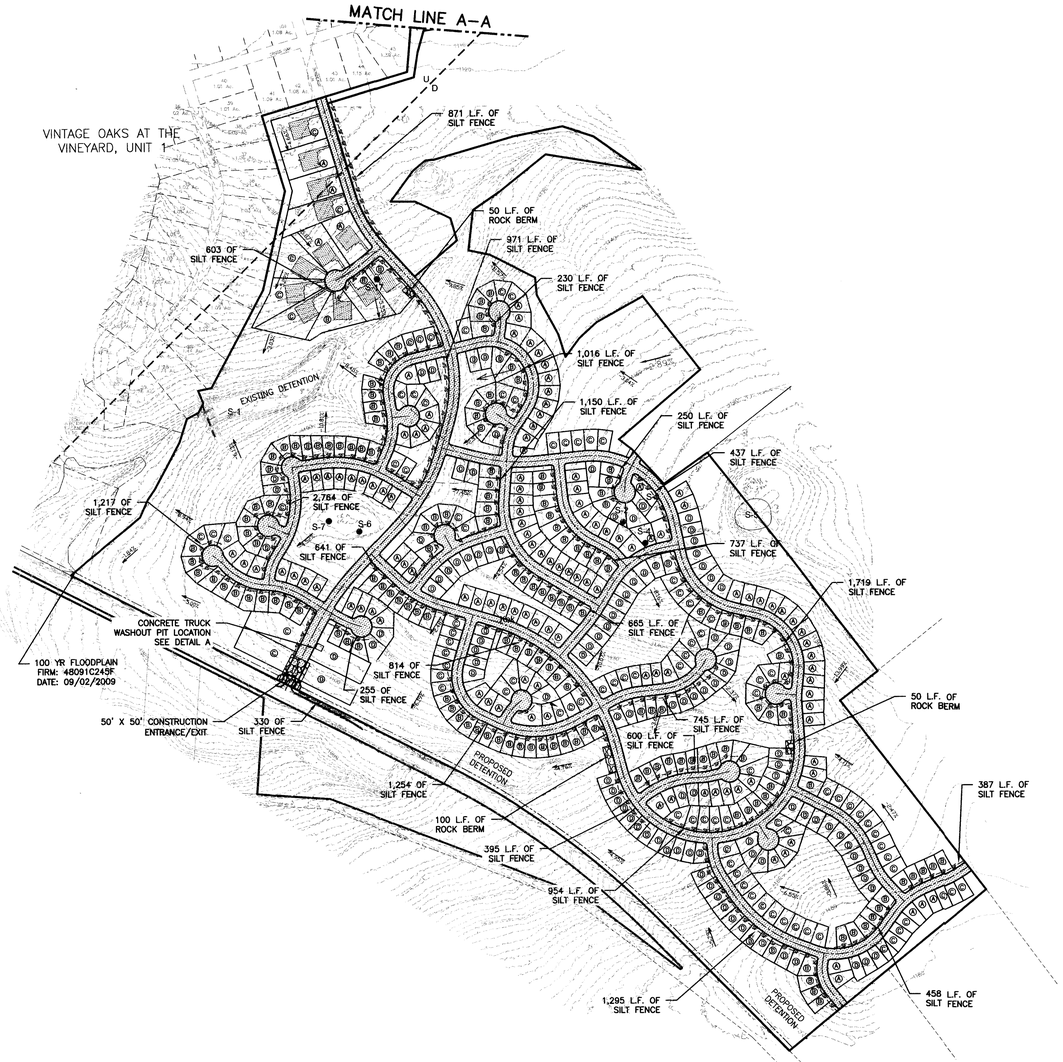
BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

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

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)



THE TYPICAL DRAINAGE PATTERN OF EACH LOT WILL BE BE DETERMINED BY THE EXISTING CONTOURS. ALL DRAINAGE OF LOTS WILL FLOW AWAY FROM BUILDING PAD.
(1 AC. LOT HOME BUILDING PAD: 11,260 SF; AND ⅛ AC. LOT HOME BUILDING PAD: 3,000 SF. THESE CALCULATIONS USED TO DETERMINE IMPERVIOUS COVER)



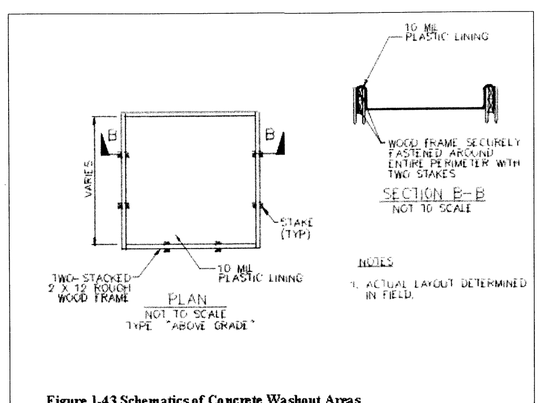
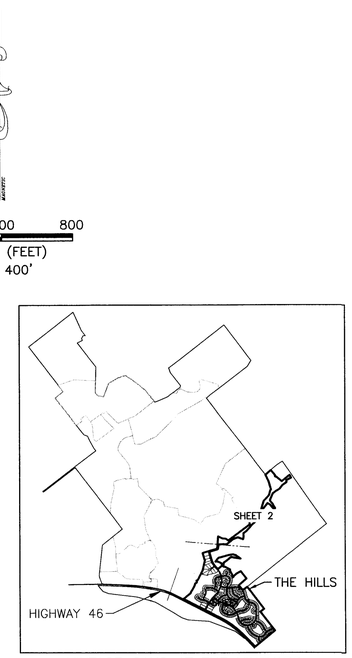


Figure 1-43 Schematics of Concrete Washout Areas

CONCRETE TRUCK WASHOUT PIT DETAIL A



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

0 200 400 800
SCALE (FEET)
1" = 400'

LEGEND:

- EXIST LOT LINE
- EXIST PROPERTY BOUNDARY
- 500 EXIST CONTOUR
- S-5 EXIST SITE FEATURES
- PROP PROJECT LIMITS
- PROP RIGHT-OF-WAY
- 2.47% PROP WATER FLOW DIRECTION
- —SF—SF—SF—SF— PROP SILT FENCE
- PROP DISTURBED AREA
- PROP ROCK BERM
- CONSTRUCTION ENTRANCE/EXIT

NOTE:
IF CONTRACTOR/DEVELOPER WISHES TO SAVE A TREE DURING THIS DEVELOPMENT, PROPER MEASURES CAN BE MET BY USING THE EXHIBIT A6 ON SHEET 3.

REVISIONS

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

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

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

HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/15

VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: APRIL 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET:
1 OF 3

Date: Jun 18, 2015, 4:18pm User ID: bmendez
File: S:\Active Projects\14BSW002 VOV The Hills\dwg\14BSW002-WPAP-SPN-001.dwg

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.

TEMPORARY BMP NOTE:
SEE ATTACHED SHEETS FOR TEMPORARY BMP DETAILS. ADDITIONAL BMP DETAILS PROVIDED BUT NOT CALLED OUT ON PLANS MAY BE USED AT CONTRACTOR'S DISCRETION.

SOIL DISTURBANCE NOTE

SOIL DISTURBANCES WILL OCCUR TO CLEARING, GRUBBING, AND GRADING OF AREAS TO BE USED FOR THE RESIDENTIAL LOTS, 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.

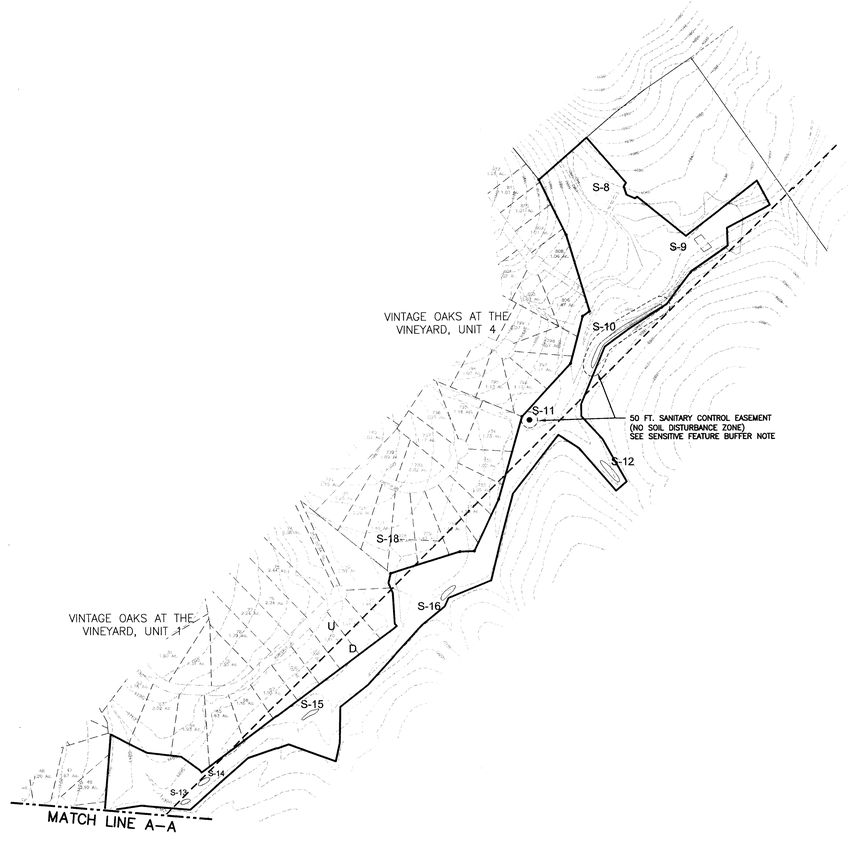
BARE SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

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

SILT FENCE NOTE:
SILT FENCE WILL BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FT OF FENCE. (AS REQUIRED BY TCEQ RG-348, INSTALLATION: ITEM 2)

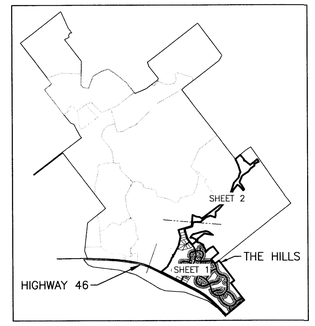
SENSITIVE FEATURE BUFFER:

NOTE
CONTRACTOR/OWNER SHOULD REFERENCE THE TECHNICAL GUIDANCE FOR BEST MANAGEMENT PRACTICE FROM TCEQ ON WHAT IS ALLOWED IN THIS AREA.





0 200 400 800
SCALE (FEET)
1" = 400'



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

LEGEND:

- EXIST LOT LINE
- EXIST PROPERTY BOUNDARY
- 400 EXIST CONTOUR
- S-5 EXIST SITE FEATURES
- PROP PROJECT LIMITS
- PROP RIGHT-OF-WAY
- PROP WATER FLOW DIRECTION
- SF SF SF SF SF PROP SILT FENCE
- PROP DISTURBED AREA
- RS-25 PROP ROCK BERM
- CONSTRUCTION ENTRANCE/EXIT

NOTE:
IF CONTRACTOR/DEVELOPER WISHES TO SAVE A TREE DURING THIS DEVELOPMENT, PROPER MEASURES CAN BE MET BY USING THE EXHIBIT A6 ON SHEET 3.

REVISIONS

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) 885-2220
FAX # (830) 885-2170

BRANCH OFFICES
P.O. BOX 391
McQUEENEY, TEXAS 78123
376 LANDA STREET
NEW BRAUNFELS, TEXAS 78130

STATE OF TEXAS
HEATH L. WOODS
100297
LICENSED PROFESSIONAL ENGINEER
6/18/15

VINTAGE OAKS AT THE VINEYARD
THE HILLS
WATER POLLUTION ABATEMENT PLAN

JOB: 14BSW003
DATE: APRIL 2015
SCALE: 1" = 400'

INTERNAL REVIEW:
DESIGN:
PEER:
PM:
DM:
OTHER:

SHEET:
2 OF 3

Date: Jun 18, 2015, 4:22pm User ID: bmenden
File: S:\Active Projects\14BSW003 (Old The Hills)\dwg\14BSW002-WPAP-SPN-001.dwg