Bell Environment Engineering Corp

KATHY J BELL, MS PE - PRINCIPAL ENGINEER

F10323

kathy@bell-environment.com

1323 CR 3260, Quitman, TX 75783 903 967-2478

ONSITE SEWAGE FACILITY OVERALL SITE SUITABILITY SUMMARY FOR POST OAK LAKES PHASE 1 FM 514 & FM 17 WOOD COUNTY, TX Marsh 2023

- Site Suitability Summary
- Overall Site Plan
- Topographic Map
- Federal Emergency Management Agency (FEMA) 100-year floodplain map
- USDA Natural Resources Conservation Service Soil Survey Map
- Soil Evaluations
- General Drainage Map
- County Road Map
- Disposal Methods

ONSITE SEWAGE FACILITY OVERALL SITE SUITABILITY SUMMARY FOR

POST OAK LAKES Phase 1 WOOD COUNTY 3/9/2023

Developer Contact Information:

Bryant Consulting & Development LLC Kenny Bryant 2931 Ridge Rd STE 101 Box 110 Rockwall, TX 75032

337 356-3759 email: kenny@bryantcondev.com

Reviewer Contact Information:

Bell Environment Engineering Firm #10323 Kathy J Bell, MS PE 1323 CR 3260 Quitman, TX 75783

903 647-1278 email: kathy@bell-environment.com

Location:

FM 514 & FM 17 TX, Wood County, TX 75797

DIRECTIONS

From the intersection of HWY 154 and FM 17, head west for 1.7 mi. Continue onto FM514 for 0.12 mi.

Summary:

The subdivision is approximately 23.9 acres located west of Yantis, TX, Wood County. There are 9 proposed lots. All lots are greater than 1 acre.

This is phase 1 of the Post Oak Lakes development. The balance of the parcel has not been reviewed in this document. Lots 1-9 were evaluated for OSSF suitability, access, and drainage.

The subdivision will be served by Lake Fork Water Supply. There are no existing or planned private or public wells.

The subdivision On Site Sewage Facility (OSSF) feasibility is limited due to high water table, soil type, slope, restrictive layer, and proximity to a pond. A Disposal Methods attachment has listed the potential systems for each lot. These lots meet the requirements for an OSSF listed in the Disposal Methods attachment by lot number. A site evaluation and permit are required for each lot prior to individual OSSF installation.

Roads are proposed to be gravel with 60 ft. easement. Roads and culverts will meet Wood County standards for road base and culvert size. Stormwater flow increases by 1.4% with little change in flow direction.

Feasibility Evaluation

The following details the evaluation required by Wood County for a subdivision.

Facility Planning. §285.4 Effective December 27, 2012.

(a) Land planning and site evaluation. Property that will use an on-site sewage facility (OSSF) for sewage disposal shall be evaluated for overall site suitability.

The following requirements apply to all sites where an OSSF may be located.

- (1) Residential lot sizing.
 - (A) Platted or unplatted subdivisions served by a public water system. Subdivisions of single-family dwellings platted or created after the effective date of this section, served by a public water supply and using individual OSSFs for sewage disposal, shall have lots of at least 1/2 acre.

The lots are greater than 1/2 acres.

(B) Platted or unplatted subdivisions not served by a public water system. Subdivisions of single-family dwellings platted or created after the effective date of this section, not served by a public water supply and using individual OSSFs, shall have lots of at least one acre.

The owner states that Lake Fork Water Supply will supply drinking water to the lots. Private wells are not planned.

(C) A platted or unplatted subdivision where one tract is divided into four or fewer parts; where each tract is five acres or larger; and each tract is to be sold, given, or otherwise transferred to an individual who is related to the owner within the third degree by consanguinity or affinity, as determined under Texas Government Code, Chapter 573 is exempt from submitting planning materials required in this section.

Not applicable. There are greater than four divided lots which will be sold to unrelated persons.

(2) Manufactured housing communities or multi-unit residential developments. The owners of manufactured housing communities or multi-unit residential developments that are served by an OSSF and rent or lease space shall submit a sewage disposal plan to the permitting authority for approval. The total anticipated sewage flow for the individual tract of land shall not exceed 5,000 gallons per day. The plan shall be prepared by a professional engineer or professional sanitarian. This plan is in addition to the requirements of subsection (c) of this section.

N/A The subdivisions are not manufactured housing community or multiunit residential developments

(b) Approval of OSSF systems on existing small lots or tracts.

Not applicable all lots in this subdivision are 0.50 acres or larger.

(3) Site Evaluation:

In accordance to §285.30 of the TCEQ'S Rules and Regulations the proposed subdivision property has been evaluated for soil suitability for an onsite sewage facility system (OSSF).

Attached are OSSF soil evaluation forms for each lot.

Based on the general site evaluation data, overall suitability review; lots will be suitable for systems listed in the Disposal Method attachment depending on the building and treatment areas. The final recommendations for specific OSSFs shall be determined during the site-specific site evaluations performed by a site evaluator or professional engineer, at a later date.

- (c) Review of subdivision or development plans. 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 for these developments to the permitting authority and receive approval prior to submitting an OSSF application.
 - (1) As required by TCEQ the planning materials prepared by a professional engineer are attached:
 - (A) An overall site plan providing tract size and locations of current and proposed tracts is attached.
 - (B) A topographic map of the area with the subdivision location imposed on the map is attached.

- (C) A Federal Emergency Management Agency (FEMA) 100-year floodplain map with the subdivision location imposed on the map is attached. The lots are not located in a flood plain.
- (D) A USDA Natural Resources Conservation Service Soil Survey Map with the subdivision imposed on the map is attached.

 Before any OSSF is installed a site-specific site evaluation shall be conducted by a licensed site evaluator or PE and the appropriate OSSF shall be determined based on the site-specific evaluation.
- (E) There were no water wells observed or planned within 150 ft.
- (F) The locations of easements, as identified in §285.91(10) of this title (relating to Tables) are shown on the overall site plan.

 Electric and pipe line easements will affect the location of an OSSF. Ponds will restrict placement of an OSSF.
- (G) A general drainage map showing the drainage flow patterns is attached.
- (H) Based on an engineer review of the overall site plan, the information from the general site evaluations performed, and information from the USDA Soil Survey Map; the subdivision meets the minimum requirements of TCEQ's OSSF program for site specific OSSF systems as indicated in the "Disposal Method" attachment.

It is recommended that the developer, homeowner, and installer work with a qualified registered site evaluator or professional engineer (PE) to ensure the proper type and location of the OSSF. Special attention may be needed concerning the location of the home, out buildings, driveway, pool, waterways, etc., to allow for proper installation of the OSSF due to soil type, water table depth, setback distances, slope, or drainage issues.

The Approval of this OSSF Overall Site Suitability Summary by Wood County does not permit the construction of any OSSF system in this subdivision. Each lot owner is responsible for a site-specific site evaluation and design for the proposed OSSF for that lot.

Any problems arising from the improper installation of an OSSF are not the responsibility of this reviewer but are the responsibilities of the site evaluator, designer, and the installer.

A county road map with the subdivision location on the map along with the directions is attached

(I) other requirements, including Edwards Aguifer requirements that are pertinent to the proposed OSSF.

The site is not in the Edwards Aquifer recharge area.

(2) 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. The designer may consider increasing the amount of land area for the treatment units beyond doubling the minimum required area.

The development does not include restaurants or buildings with food service establishments. If a subdivision includes restaurants or buildings with food service establishments; OSSF planning materials will show adequate land area for doubling the land needed for the treatment units.

(3) The permitting authority will either approve or deny the planning materials, in writing, within 45 days of receipt.

Adopted December 5, 2012 Effective December 27, 2012

Drainage and Roads

Access to lots is from state roads. Interior roads are private gravel roads. The roads will meet the Wood County standards.

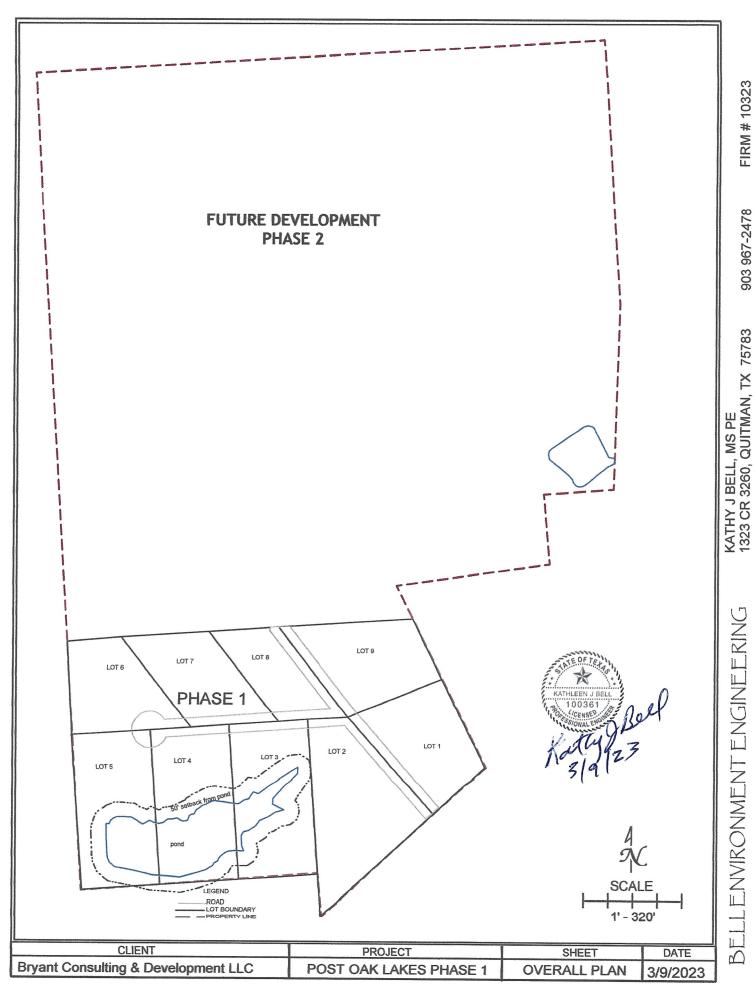
Off-site stormwater drainage increases by 1.4%. Stormwater flow or direction will not substantially change. Stormwater will continue to discharge to the road ditches. Interior drainage culverts have not been evaluated but will meet Wood County standards as needed.

Engineer Signature

date

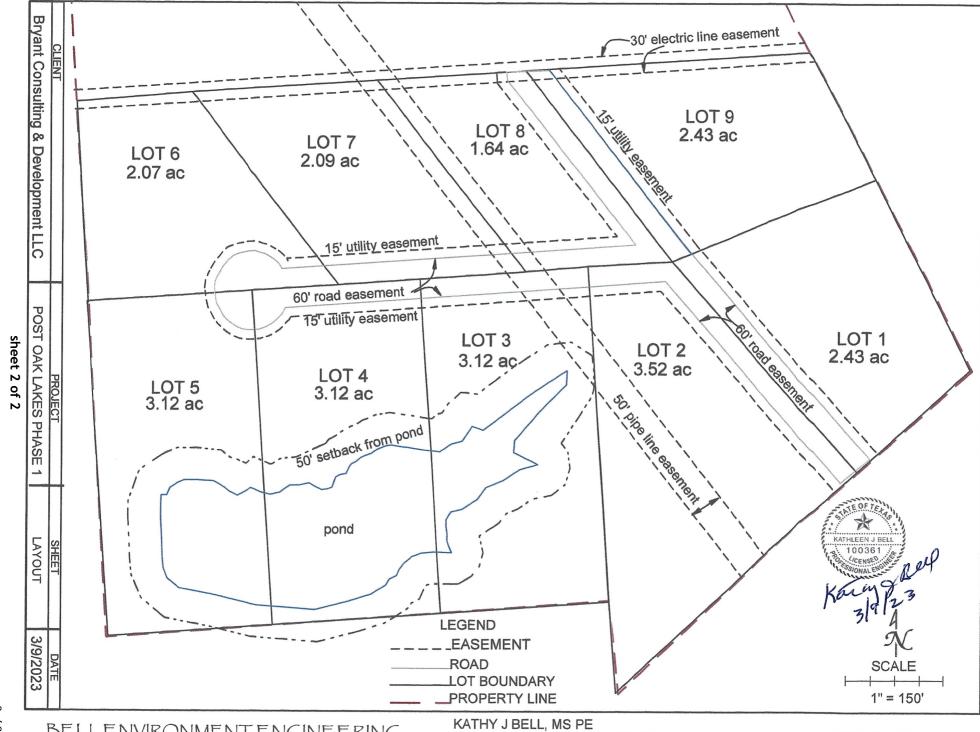
ATTACHMENTS

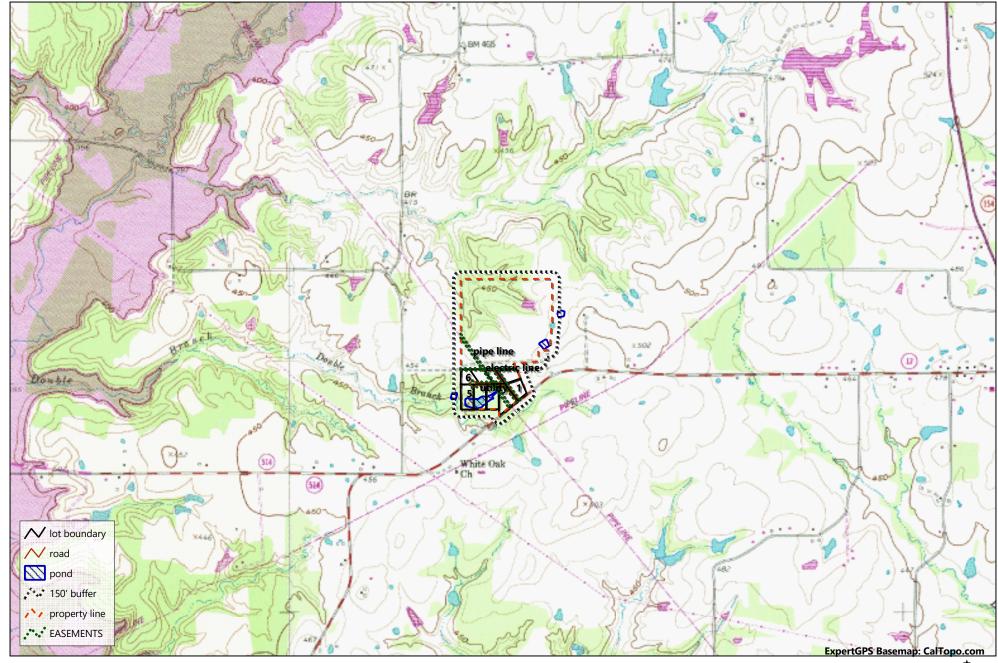
- 1. Overall Site Plan
- 2. Topographical Map
- 3. FEMA map
- 4. USDA Soil Survey Map
- 5. General Drainage Map
- 6. Soil Map and Evaluations
- 7. County Road Map
- 8. Disposal Methods



FIRM # 10323

903 967-2478

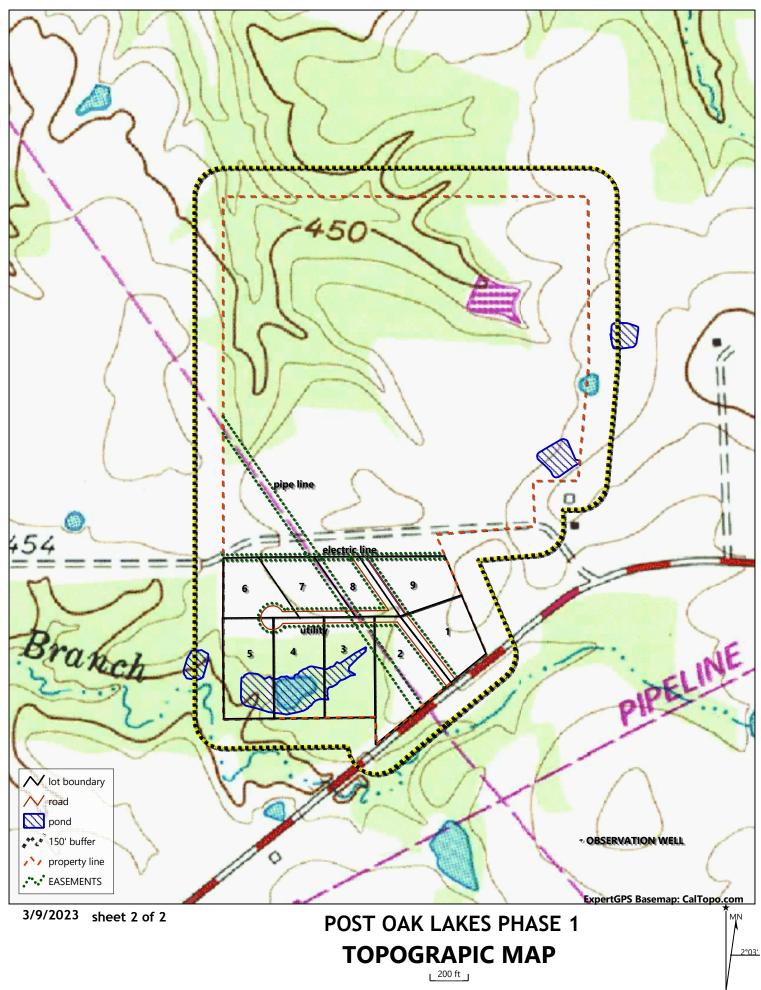




3/9/2023 sheet 1 of 2

POST OAK LAKES PHASE 1
TOPOGRAPIC MAP





10 of 23

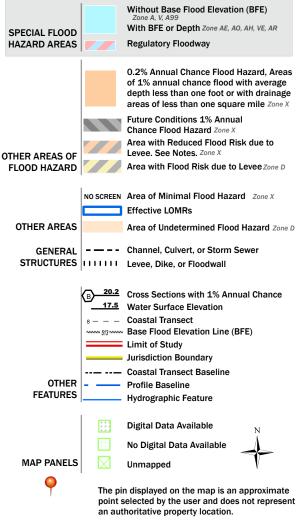
National Flood Hazard Layer FIRMette



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend POST OAKS LAKES PHASE 1

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/5/2023 at 12:04 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

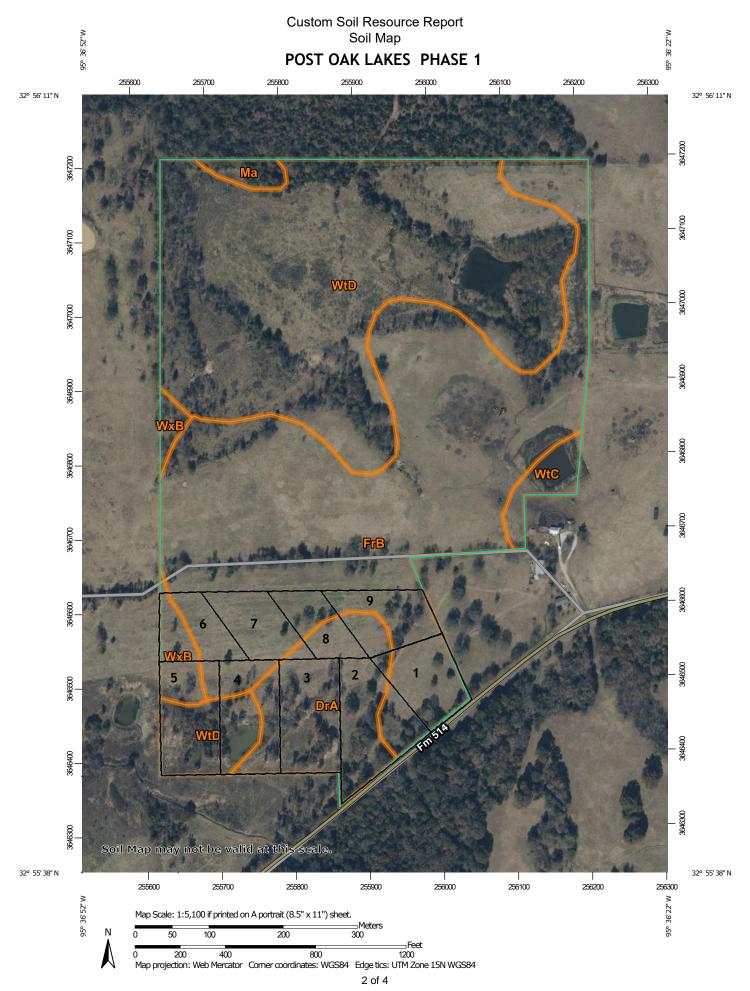
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



POST OAK LAKES PHASE 1

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



POST OAK LAKES PHASE 1

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

(o)

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

å

Spoil Area Stony Spot

00

Very Stony Spot

Ŷ

Wet Spot Other

Δ

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

00

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

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

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

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

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Wood County, Texas Survey Area Data: Version 20, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Nov 17, 2019—Nov 24. 2019

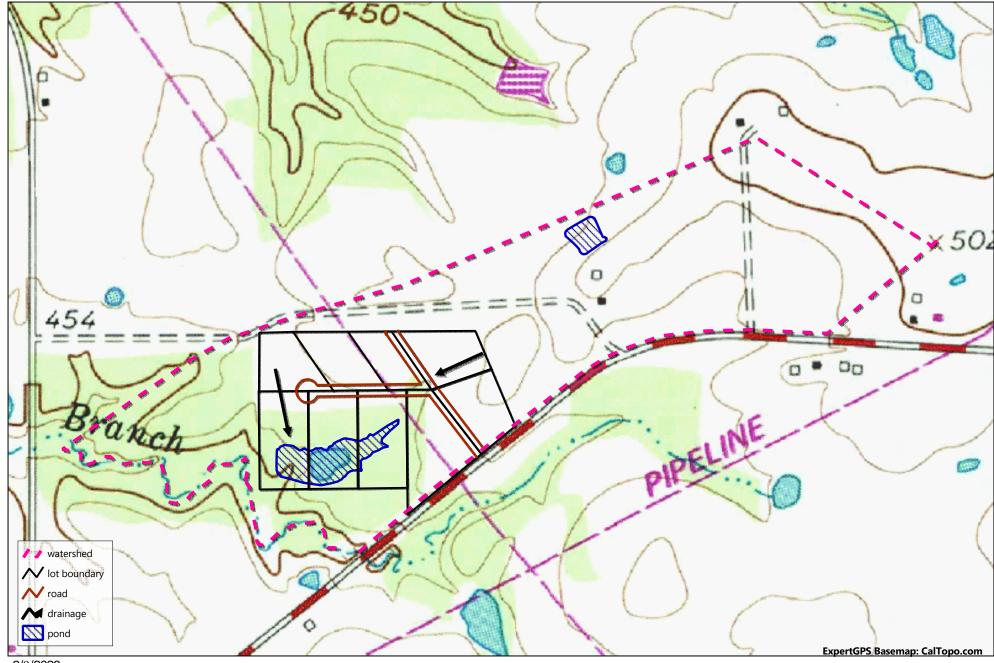
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

POST OAK LAKES PHASE 1

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DrA	Derly, frequently ponded-Raino complex, 0 to 1 percent slopes	8.6	8.5%
FrB	Freestone fine sandy loam, 1 to 3 percent slopes	45.6	45.0%
Ма	Manco loam, frequently flooded	0.9	0.9%
WtC	Woodtell loam, 2 to 5 percent slopes	1.6	1.6%
WtD	Woodtell loam, 5 to 15 percent slopes	42.6	42.0%
WxB	Woodtell-Raino complex, 1 to 3 percent slopes	2.2	2.2%
Totals for Area of Interest		101.4	100.0%



3/9/2023

POST OAK LAKES PHASE 1 GENERAL DRAINAGE

1 of 2

1 250 ft 1



POST OAK LAKES Phase 1 3/9/2023

Stormwater Flow

Q=CIA

Q Maximum rate of runoff cfs

C runoff coefficient

C = Cr + Ci + Cv + Cs

I averasge rainfall intensity in/hr

A drainage area acre

50%	20%	10%	4%	2%	1%
(2-year)	(5-year)	(10-year)	(25-year)	(50-year)	(100-year)
4.6	6.1	7.1	8.4	9.7	10.8

I Intensity

Pre Construction	С	Α
RESIDENCE	0.31	0.20
PASTURE	0.30	88.13
		total

Q cfs						
0.3	0.4	0.4	0.5	0.6	0.7	
122.0	160.2	188.4	223.1	256.3	284.9	
122.3	160.6	188.8	223.6	256.9	285.6	

Post Construction	C	Α
RESIDENCE	0.31	2.00
PASTURE	0.30	85.61
ROAD GRAVEL	0.80	0.72
		total

	Q cfs						
2.9	3.8	4.4	5.2	6.0	6.7		
118.5	155.6	183.0	216.7	248.9	276.8		
2.7	3.5	4.1	4.9	5.6	6.2		
124.1	162.9	191.5	226.8	260.5	289.7		

Q	increase
%	increase

1.8	2.3	2.7	3.2	3.7	4.1
1.4%	1.4%	1.4%	1.4%	1.4%	1.4%

There will be a slight increase in off site storm water discharge that is mostly into county road ditches. All roads will be private driveways and will not be converted to county roads.

POST OAK LAKES Phase 1 WOOD COUNTY 3/9/2023

LOTS 1-4, 7-9 Soil Type DrA - Derly,							
Depth (Feet)	Texture Class	Gravel Analysis (If Applicable)	Water Table Range	Restrictive Horizon	Observations		
1 FT.	II	n/a	POTENTIAL	NONE	Frequently ponded		
2 FT.	II	n/a	POTENTIAL	NONE			
3 FT.	III	n/a	POTENTIAL	NONE			
4 FT.	III	n/a	POTENTIAL	NONE			
5 FT.	III	n/a	POTENTIAL	NONE			

	LOTS 1, 2, 4-9 Soil Type FrB—Freestone								
Depth (Feet)	Texture Class	Gravel Analysis (If Applicable)	Water Table Range	Restrictive Horizon	Observations				
1 FT.	II	n/a		NONE					
2 FT.	III	n/a		NONE					
3 FT.	III	n/a	POTENTIAL	NONE					
4 FT.	III	n/a	POTENTIAL	NONE					
5 FT.	III	n/a	POTENTIAL	NONE					

sheet 1 of 3 18 of 23

POST OAK LAKES Phase 1 WOOD COUNTY 3/9/2023

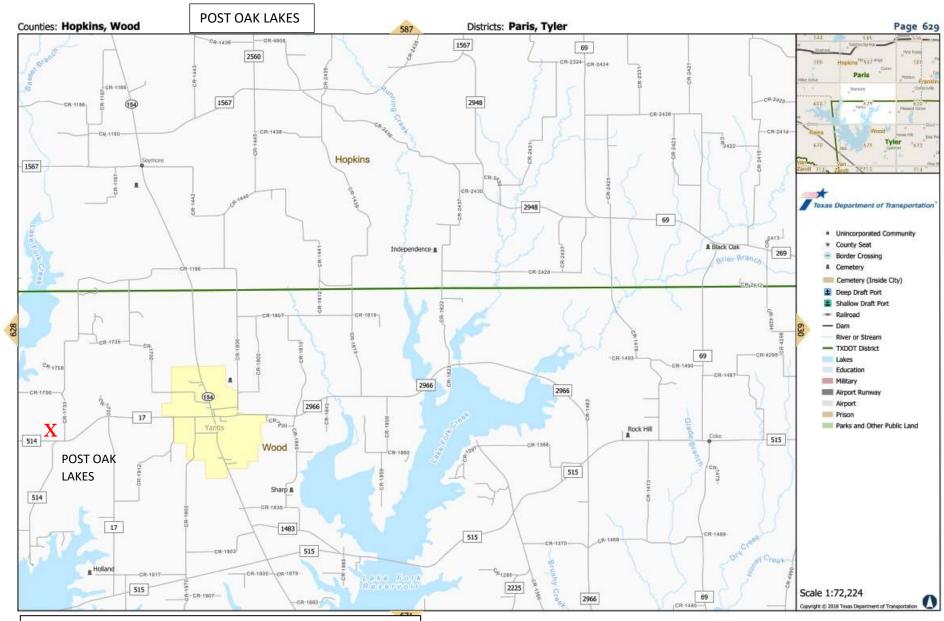
	LOTS 4, 5 Soil Type WtD - Woodtell Loam							
Depth (Feet)	Texture Class	Gravel Analysis (If Applicable)	Water Table Range	Restrictive Horizon	Observations			
1 FT.	II	n/a	NONE	NONE	Slope 5 to 15%			
2 FT.	III	n/a	POTENTIAL	NONE				
3 FT.	IV	n/a	POTENTIAL	NONE				
4 FT.	IV	n/a	POTENTIAL	NONE				
5 FT.	IV	n/a	POTENTIAL	NONE				

	LOTS 5, 6 Soil Type WxB—Woodtell Raino							
Depth (Feet)	Texture Class	Gravel Analysis (If Applicable)	Water Table Range	Restrictive Horizon	Observations			
1 FT.	II	n/a	NONE					
2 FT.	IV	n/a	NONE					
3 FT.	IV	n/a	NONE					
4 FT.	IV	n/a	NONE	4.5 ft densic bedrock				
5 FT.	IV	n/a	NONE					

sheet 2 of 3 19 of 23

20 of 23

sheet 3 of 3



DIRECTIONS

From the intersection of HWY 154 and FM 17, head west for 1.7 mi. Continue onto FM 514 for 0.12 mi

https://www.dot.state.tx.us/apps-cg/grid_search/_includes/countymapbook/Pages/713.pdf

POST OAK LAKES Phase 1 SUITABLE DISPOSAL METHODS

		Class Ib, II(8)		WATER	RESTRICTIVE
Disposal Method/Treatment	LOT	or III(8)	Class IV	TABLE	FEATURE
				MEASURED FROM BOTTOM OF MEDIA(7)	
				UF I	WEDIA(7)
Absorptive drainfield(2) (285.33(b)(1))Septic tank	N/A	S	U	2 feet	2 feet
Absorptive drainfield(2) Secondary treatment	N/A	S	U	2 feet	2 feet
Lined E-T(2) Septic tank	1-9	S	S	N/A	N/A
Lined E-T(2) Secondary treatment	1-9	S	S	N/A	N/A
Unlined E-T(2) Septic tank	N/A	S	S	2 feet	2 feet
Unlined E-T(2) Secondary treatment	N/A	S	S	2 feet	2 feet
Pumped Effluent Drainfield(3)	5, 6	S	S	2 feet	1 foot
Leaching chamber(2) Septic tank	N/A	S	U	2 feet	2 feet
Leaching chamber(2) Secondary treatment	N/A	S	U	2 feet	2 feet
Gravelless pipe(2) Septic tank	N/A	S	U	2 feet	2 feet
Gravelless pipe(2) Secondary treatment	N/A	S	U	2 feet	2 feet
Drip Irrigation Septic tank/ filter	5, 6	S	S	2 feet	1 foot
Drip Irrigation Secondary treatment/ filter	1, 2, 4-9	S	S	1 foot	6 inches
Low Pressure Dosing Septic tank	5, 6	S	S	2 feet	1 foot
Low Pressure Dosing Secondary treatment	5, 6	S	S	2 feet	1 foot
Mound (4) Septic tank	1, 2, 4-9	S	S	2 feet	1.5 feet
Mound(4) Secondary treatment	1, 2, 4-9	S	S	2 feet	1.5 feet
Surface application Secondary treatment	1-9	S(6)	S(6)	N/A	N/A
Surface application Non-standard treatment	1-9	S(6)	S(6)	N/A	N/A
Soil Substitution(2) Septic tank	N/A	S	U	2 feet	2 feet
Soil Substitution(2) Secondary Treatment	N/A	S	U	2 feet	2 feet

Page 1 of 2 22 of 23

POST OAK LAKES Phase 1 SUITABLE DISPOSAL METHODS

NOTES:
S = Suitable U = Unsuitable
(1) An absorptive drainfield may be used, if a rock horizon is at least 6 inches above the bottom of the excavation, see §285.33(b)(1).
(2) If the slope in the drainfield area is greater than 30% or is complex, the area is unsuitable for the disposal method.
(3) Can only be installed in an area where the slope is less than or equal to 2.0%.
(4) Can only be installed in an area where the slope is less than 10%.
(5) Requires disinfection before disposal. A form of pressure distribution shall be used for effluent disposal in fractured or fissured rock.
(6) Requires vegetation cover and disinfection.
(7) When no media exists, measure from the bottom of the excavation or pipe, whichever is less.
(8) May require gravel analysis for further suitability analysis (see §285.30(b)(1)(B)).
(9) If OSSF is located within a Flood Hazard, see §285.31(c)(2) for special planning requirements.
(10) Includes fissured rock.
All OSSFs require surface drainage controls if slope is less than 2%.
(N/A) NOT APPLICABLE TO ANY LOT

Page 2 of 2 23 of 23