EXHIBIT B

SANITARIAN DESIGN

Includes On-Site Sewage Facility Site Evaluation Summary and

On-Site Sewage Facility Information (Design)

Please NOTE: ***The 2-year Service Agreement noted in Exhibit B - Sanitarian Design will be a separate contract, NOT INCLUDED IN THIS CONTRACT, procured directly by State Parks Division at time of permitting by installer. Point of contact for that coordination will be Brad Hood, Regional Maintenance Specialist, State Park Division.***

April 11, 2020

On-Site Sewage Facility Site Evaluation Summary

Texas Parks & Wildlife
Bonham State Park
1363 State Park 24
Bonham, Texas 75418
Fannin County

Site Factors

Topography: The location has a slope of 5% to 8% to the south of the specific area where the septic system and the spray field will be located.

Setback requirements: All setback requirements from the property lines are in compliance. There is a lake located on the property.

Flood Hazard: The property is not located in the 100-year flood plain.

Ground Water Evaluation

No evaluation for seasonal ground water was performed as Class IV soil was encountered in the 12" to 24" zone. Deeper depths may have limestone and/or bedrock.

Soil Factors

The soil was tested to a depth of two feet.

The property appeared to drain well towards the south side of the property.

A soil texture analysis was made to a depth of two feet. Class IV soil was encountered in the 12" to 24" zone. Deeper depths may have limestone and/or bedrock.

Lot size: 250 Acres

Summary:

The property is approximately 250 acres. The spray field will be located on the north part of the property. No evaluation of seasonal ground water was conducted as Class IV soil was encountered in the 12" to 24" zone. The system is for Texas Parks & Wildlife - Bonham State Park with many facilities, campsites, etc. Estimated water use is 3500 GPD. This is based on two of the highest months of water bills for the previous twenty-four months.

3-1-2018 to 3-31-2018 / 96'600 gallons ÷ 30 days = 3220 average GPD
6-30-2018 to 7-31-2018 / 101'100 gallons ÷ 31 days = 3261 average GPD

Ed Holt 4-13-20

Edwin E. Holt, S.E. #OS0025282 Date
Holt and Sons Construction
903-249-2455
2263 CR 33040; Brookston, Texas 75421
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April 11, 2020

Site Evaluation
Soil Texture Evaluation Report Information

Test requested by: Texas Parks & Wildlife – Bonham State Park

Date Soil Survey Performed: April15, 2020

Site Location: 1363 State Park 24; Bonham, Texas 75418

County: Fannin **Proposed Excavation Depth:** Aerobic System

Soil boring Number 1				
Depth	Texture Class	Soil Texture	Restrictive Horizon	Observations
0" to 12"	III	Silty Clay Loam	NA	NA
12" to 24"	IV	Clay	Clay	NA
24" to 36"				*Deeper Depths may have limestone and/or bedrock
36" to 48".				
48" to 60"				

Soil Boring Number 2				
Depth	Texture Class	Soil Texture	Restrictive Horizon	Observations
0" to 12"	III	Silty Clay Loam	NA	NA
12" to 24"	IV	Clay	Clay	NA
24" to 36"				*Deeper Depths may have limestone and/or bedrock
36" to 48"				
48" to 60"				

I certify that the findings of this report are based on my field observations and are accurate to the best of my ability.

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April 11, 2020

Site Evaluation Information

Applicant Information:	Site Evaluator Information:
Name: Texas Parks & Wildlife Bonham State Park Address: 4200 Smith School Road City: Austin, Texas 78744 Phone: 903-227-0930 Jason Schooley	Name: Ed Holt #OS0025282 Address: 2263 County Road 33040 City: Brookston, Texas 75421 Phone: 903-249-2455
Property Location:	**Installer Information:**
Street/Road: 1363 State Park 24 City: Bonham, Texas 75418 County: Fannin Unincorporated Area: Yes Property Size: 250 Acres	Name: Business: Address: City: Phone:

Schematic of Lot or Tract

See Attached Drawing

Features of Site Area

No Presence of 100 Year Flood Zone
Yes Presence of adjacent ponds, streams, water impoundments
No Existing or proposed water well in nearby area:
No Organized sewage service available to lot or tract

Ed Holt 4-13-20

Edwin E. Holt, S.E. #OS0025282 Date

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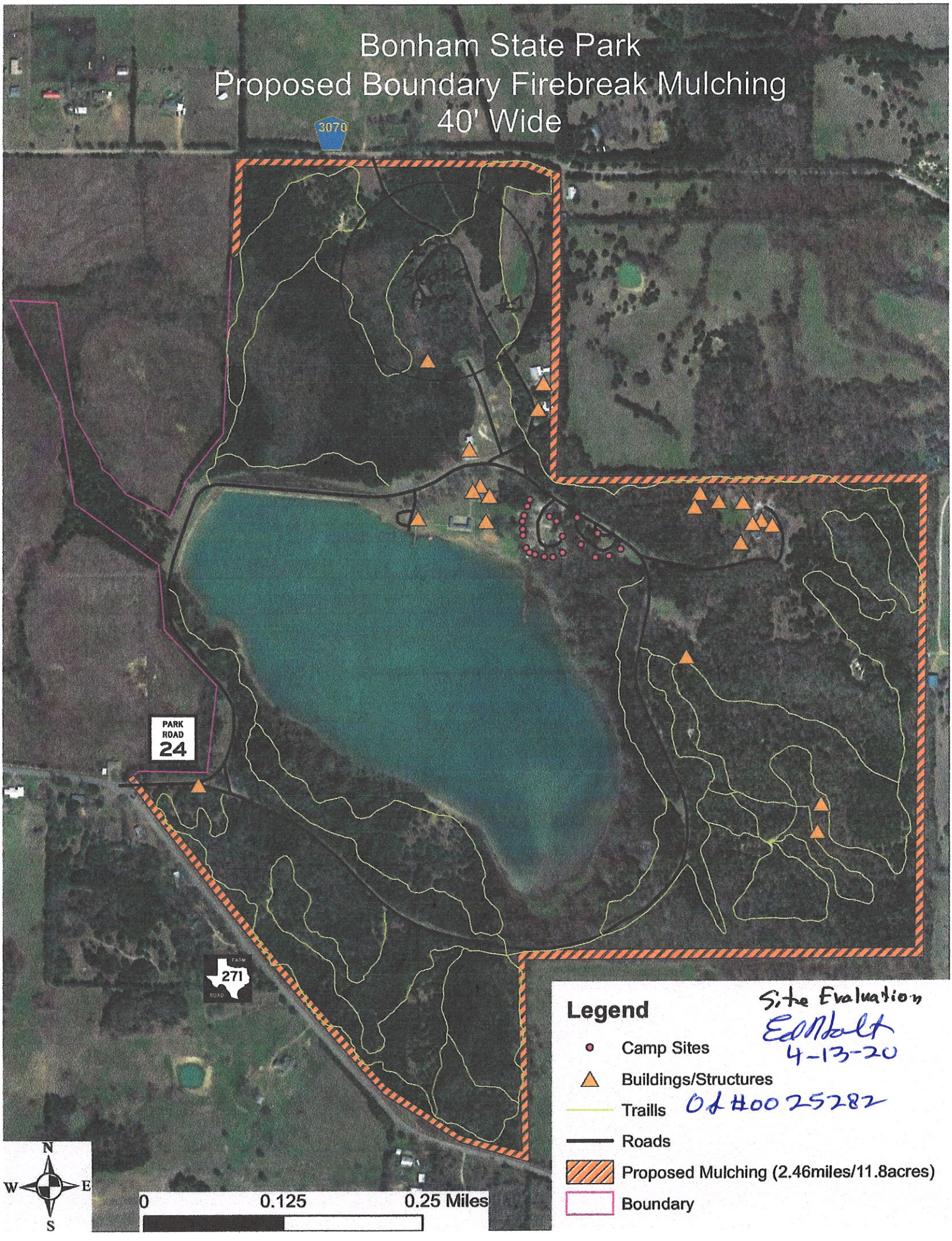
Bonham State Park
Proposed Boundary Firebreak Mulching
40' Wide
3070
PARK ROAD 24
FARM ROAD 271
Legend
Camp Sites
Buildings/Structures
Traills
Roads
Proposed Mulching (2.46miles/11.8acres)
Boundary
Site Evaluation
Ed Nolt
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N
W
E
S
0
0.125
0.25 Miles

April 11, 2020

On-Site Sewage Facility Information

Owner: Texas Parks & Wildlife – Bonham State Park

Property Located: 1363 State Park 24; Bonham, Texas 75418

County: Fannin

Description: 250 Acres

Site & Soil Evaluation: Soil texture test was performed to a depth of two feet and Class IV soil was encountered in 12" to 24" zone.
Deeper Depths may have limestone and/or bedrock

Absorption Field: The system is for Texas Parks & Wildlife - Bonham State Park with many facilities, campsites, etc. Estimated water use is 3500 GPD. This is based on two of the highest months of water bills for the previous twenty-four months.p
3-1-2018 to 3-31-2018 / 96'600 gallons ÷ 30 days = 3220 average GPD
6-30-2018 to 7-31-2018 / 101'100 gallons ÷ 31 days = 3261 average GPD

Application rate == .045 equals 77'777.28sq. ft. of area
The actual area to be utilized for the design proposal is 84'780.00 sq. ft.

Thirty sprinklers will be installed for a coverage area as follows:

sprinklers #1 thru #30
30' x 30' x 3.14 @ 360° = 2826.00 sq. ft.

Sprinkler Heads: The sprinkler heads are the "low angle" type with a maximum inlet pressure of 40 P.S.I. and any upper sprinkler heads will have check valves to prevent siphoning into the pump tank.

Aerobic Unit: The proposed aerobic treatment system is for **3 - Pro Flo 1500S** aerobic systems as approved by the TCEQ. (or three equivalent 1500 GPD aerobic unit) The treatment plant will treat 1500 gpd effluents. Chlorination will be added between the treatment and pump tanks

See Attached Documentation.

Pump Chamber & Reserve Volume: The pump chamber will have a minimum capacity of 500 gallons. The system will have an alarm unit, wired on a separate circuit from the pump, to provide a warning signal in case of pump failure or a tripped circuit breaker. The warning system will have a visible and audible high-water alarm. The reserve volume must be

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equivalent to 1/3 daily flow between the alarm on level and the inlet to the pump tank.

Pump & Supply Line: The pump must be at least a 1/2 H.P. submersible pump. The chlorinated effluent will discharge through a 3/4 " or larger distribution line to the sprinkler heads with a total application area as previously prescribed.

Method of Disinfection for Effluent: The system will have a **certified** liquid chlorination device that injects chlorine into the effluent in the pump tank.

Set Back/ Buffer Zones: All set back distances are in compliance.

Landscape Plan: The area for surface application of treated effluent has an established ground cover.

Service Agreement: A two-year service agreement will be provided by the Installer. This contract must meet the minimum requirements as outlined by the Texas Commission on Environmental Quality and Fannin County requirements.

System Summary: The system design is for **3 - Pro Flo 1500S (**or three equivalent 1500 GPD aerobic units**)** aerobic treatment systems for **Texas Parks & Wildlife – Bonham State Park**. The proposed treatment plant is an approved Class I system by TCEQ. Low angle sprinkler heads set to spray according to the drawing will dispose of the treated effluent. The system requires a visible and an audible high-water alarm ***installed on a separate circuit*** from the aeration pump

County regulations may require the property owner to maintain an ongoing maintenance agreement after the initial two-year maintenance agreement. **It is the property owner's responsibility to verify their county's requirements. The property owner must file an affidavit to the public with the County Clerk's Office.**

The design proposal is based on the minimum construction standards for on-site sewage facility as set forth by Title 30, Texas Administrative Code, Chapter 285, On-Site Sewage Facilities, and only indicates that a system can be installed which meets the minimum requirements.

Ed Holt 4-13-20

Edwin E. Holt, R.S., # 4168 — Date

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Design Specifications Starting at the existing 7500-gallon tank

A. The existing 7500-gallon tank:
This tank maybe left in the system unless on further inspection the tank is deemed unusable in the which it should be pumped out by a licensed pump company and filled with dirt according to TCEQ specifications.

B. The second, in-line, tank of 750 gallons should be pumped out and abandoned in place according to TCEQ specifications.

C. The 1st new set of tanks will be two – 2500-gallon concrete tanks with 2-20" Tuf-Tite risers per tank. The two 2500-gallon tanks will be booted together at the bottom with a 6" pipe. This set of tanks will serve as the dosing tanks. 4" schedule 40 PVC pipe will connect these tanks to the existing 7500-gallon tank.

1) Dosing Panel & Pumps:

a) Dosing panel will have automatic and manual controls, high water alarm, dosing time, alternating pump control, etc.
(110-volt, single phase, 30-amp panel)
b) Two dosing pumps should be used – ½ HP, 2" sewage pumps
c) 2" sch 40 PVC pipe should be used from the pump with unions and check valves to connect to the next component which is a diverter valve.
d) Dosing time will be set to not overdose the aerobic unit. Approximately 75 gallons per Aerobic Treatment Unit every hour for each unit.
e) A 2-inch, 3-station diverter valve will be installed with a cover. This valve will allow sequenced dosing between the three 1500 GPD Aerobic Treatment Units. A 2" sch 40 PVC pipe will be used to connect each one of the stations on the diverter valve to each of the aerobic treatment units.

2) Aerobic Treatment Units:

a) Three 1500 GPD aerobic treatment units will be installed next. These will be dosed alternately from the dosing tank system. These aerobic treatment units must meet with TCEQ design specifications. Aerobic Treatment Units must be equivalent to Pro Flo Model 1500S Aerobic Treatment Unit.
b) From the above three aerobic treatment units' effluent will gravity flow into a 2500-gallon concrete pump tank with 20" access ports through individual sch 40 4" PVC pipe connecting the aerobic treatment unit to the common pump tank.

3) Pump Tank & Pumps:

a) The pump tank will be a 2500-gallon concrete tank with three 4" entry ports and two 20" access ports. The pump tank will be equipped with dual alternating pumps and a control panel for the pumps. The control panel will be equipped with manual and automatic controls as well as high water

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alarms. There will be 1 ¼" PVC sch 40 piping used from these pumps to the diverter valves to be installed next.

b) Two 1 ¼" diverter valves will be installed next. Each individual pump will connect to a separate three station diverter valve. Each diverter valve will control three sets of 5 sprayheads. This is a total of 30 sprayheads for the whole distribution system.

4) Surface Application:

a) Surface application will use "K" rain heads with 3 ½ gpm nozzles. Each time a pump kicks on a different set of heads will spray until all 6 sets of heads are cycled through.

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Water Usage was determined from the 2 highest water uses for the park from the Bartley Woods Water Supply for the previous 24-month period.

A. Service begin date 2-1-2018
Service end date 2-20-2020

B. Periods used: (two highest use months)
1) 3-1-2018 to 3-31-2018 = 30 days
Water usage = 96'600 gallons
96'600 ÷ 30 days = 3;220 gallons average per day

2) 6-30-2018 to 7-31-2018 = 31 days
Water usage = 101'100 gallons
101'100 ÷ 31 days = 3'262 gallons average per day

3'220 + 3'262 = 6'482 ÷ 2 = 3'241 gallons
3'241 average highest water use

Note: See enclosed Bartley Woods Water Supply Records

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Surface Application:

A. Average highest water usage **3'241 GPD**
B. **3500 GPD** was used for actual calculations
C. **3500 GPD ÷ .045** absorption rate = 77'777.28 sq. ft. required
D. Area for individual heads
   1) 30' x 30' x 3.14 @ 360° = 2826.00 sq. ft. per each sprayhead
   2) 77'777.28 sq. ft. ÷ 2826.00 sq. ft./head = 27.52 heads required
   3) 30 heads are designed
      30 heads x 2826.00 sq. ft./head = 84'7800.00 sq. ft. designed.

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4-13-20

Aerobic Septic System Design:

Texas Parks & Wildlife
Bonham State Park
1363 State Park 24
Bonham, Texas 75418
Fannin County

Acres: approp 250 total

Note: Drawing is septic area and is not to scale

All Heads K Rain 30' R @ 360°

Ed Holt
4-13-20

All components are as specified in the design specifications

All piping between heads 1" sch 40 purple pvc pipe

STATE OF TEXAS
EDWIN E HOLT
4168
REGISTERED
PROFESSIONAL SANITARIAN