Missouri Department of Health and Senior Services
On-Site Sewage System Construction Permit Application Packet

Instructions and Check Off List

Please type or print all information clearly. Provide all requested information accurately and completely. Incomplete applications will be returned for completion before a permit will be issued. As you complete the section, check the appropriate box. When all boxes are checked, the application is ready to return to the Health Department.

Provide the following information completely and accurately:

☐ 1. Property Owner: The name of the owner of the property as stated on the current deed, as recorded with the County Recorder.

☐ 2. Site Address: The address of the actual construction site of the system, including county. Complete the legal description (1/4 of 1/4 section, section, township, range), subdivision name and lot number, Latitude and Longitude, and the County Parcel Identification Number when known. Ask the County Assessor or check your real estate tax bill for this information.

☐ 3. Mailing address: The address that correspondence, permits, and other communications may be sent to. Include a daytime and an evening telephone number for the owner of the property.

☐ 4. System Is: Check the appropriate box to show the system is new construction (no system existed prior to this construction), system replacement (construction to replace present system), or system repair of an existing system (major repair of present system).

☐ 5. System Serves: Check residence or business, whichever is applicable. If a residence is attached to a business, check business but include residence in the system design. Provide the requested information below the appropriate box.

☐ 6. Water Supply: Check the appropriate box for your drinking water supply. City water, public water supply district, or a community system that meets Missouri Department of Natural Resources definitions of community public systems or non-community public systems are "Public"; provide the name of the supply. For "Private" supplies, give the type of supply. Locate the supply (well), neighboring supplies (wells) and water lines on the site layout.

☐ 7. Lot: Provide the lot size in acres or square feet. Give the percent slope and indicate on the Site Layout the direction of slope, and show a cross section of the slope and proposed system on the Slope Diagram.

Obtain soil data at the site, either a percolation test or soil morphology evaluation. Percolation tests must be performed by a certified percolation tester, or soil morphology evaluations must be performed by an onsite soil morphology evaluator, meeting the requirements in 19 CSR 20-3.080.

☐ 8. Soil Information: Check the appropriate box for percolation test or soil morphology, whichever is used. Indicate the slowest percolation rate as determined by the percolation test or indicate the proposed loading rate based on a soil morphology. Include a copy of the soil morphology evaluator's report or the percolation test forms with the application.

☐ 9. Name of Percolation Tester or Morphology Evaluator: Provide the name, address, telephone number, and identification number of the person providing the soil data.

☐ 10. Proposed System: Provide brief basic information about the proposed system; choose A, B, and/or C depending on the type of system. Provide the information necessary for that system. A Registered Professional Engineer must design systems checked as "Alternative"; include all data, calculations, drawings, or other information used to determine the design. Also include the Professional Engineer's name, address, telephone number, and seal. Locate the proposed system on the Site Layout (item 13) and show all setback distances, property lines, easements, and any other information requested.

☐ 11. Installer: Provide the name, address, telephone number and identification number of the person (not a firm) doing the system construction. Indicate if the installer is registered (y) or not (n).

Form is signed and dated; be sure percolation tests, soil morphology, and/or engineer's reports are all signed by the people providing the reports.

☐ 12. Signature of Owner or Agent: The property owner or designated agent must sign the form to attest to the accuracy and completion of the information in the packet.

☐ 13. Site Layout: Provide a drawing of the proposed system. Include all requested information from the application and on the Site Layout section.

☐ **Make copies of the application, Site Layout, all test results, reports, and drawings for your records.**

☐ **When you have completed the forms and checked off all of the boxes on this instruction sheet, return the application to the appropriate Department of Health and Senior Services office or county health department. DO NOT SEND WITH PERMIT APPLICATION FEE!**

☐ **Complete the On-Site Sewage Disposal System Construction Permit Application Fee form and submit it with your $90.00 permit application fee to the Missouri Department of Health and Senior Services, Fee Receipts, P.O. Box 570, Jefferson City, MO 65102. Do not send cash. Make checks or money orders payable to the Missouri Department of Health and Senior Services.**

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
CONSTRUCTION PERMIT APPLICATION

Application Number _____

Introduction

Thank you for contacting us concerning plans for your on-site sewage disposal system. As you may know, the Missouri Department of Health and Senior Services is required by law to regulate the design, construction and operation of on-site sewage disposal systems.

This packet contains forms and instructions to help you apply for a permit and to select an on-site sewage system that will comply with the regulations.

Enclosed in this packet you will find the following items:

1. The ON-SITE SEWAGE DISPOSAL SYSTEM CONSTRUCTION PERMIT APPLICATION FEE form.
2. The Permit Application form.
3. The Instruction and Check Off List.

Construction of your on-site sewage disposal system may not begin until a permit has been issued. To expedite this process, please follow these steps:

1. Contact an on-site sewage system contractor. A registered contractor will best be able to assist you with this process and is highly recommended. You also may choose to submit all of the information and install the system yourself or have a non-registered contractor assist you. However, the services of a certified person to conduct a percolation test or an authorized on-site morphology evaluator to provide a soil morphology will be required. The contractor should be able to help you select a system to suit your needs and will help you fill in the forms. You may also consult with your health department representative.

2. Fill in the "On-Site Sewage Disposal System Construction Permit Application Fee" form and submit it, along with the $90.00 fee, **to the address on the form.** NOTE: Submit fee and application to different addresses.

3. Use the "On-Site Sewage Permit Instructions and Check Off List" form to ensure that all of the required information has been gathered. Then, submit the completed application, percoloation test or soil morphology report, and all necessary drawings and plans **to the office from which you received the packet.**

4. Upon receipt of the completed application, a health department representative will schedule a site visit. If the results of the site visit and plan review are satisfactory and the permit application fee has been received, the permit will be issued and construction may begin.

If you or your contractor need additional information, or if we can help you with this in any way, please feel free to contact us.

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
ON-SITE SEWAGE SYSTEM
CONSTRUCTION PERMIT APPLICATION

Application Number	
Office use only	
Permit Number	
Reviewed By	EPHS #
EPHS Signature	

1. Property Owner Name (Last, First, MI): Missouri Department of Transportation
Contact: Phil Hamilton

2. Site Address (911/ENS): 10681 E. STATE Highway E

Subdivision: NA

Lot #:

City: Cadet

County: Washington

Zip code: 63630

Latitude:

Longitude:

1/4 1/4 Section Township Range

Parcel ID #:

Directions to Site: From Potosi take Hwy 21 north To route E & Turn Right Follow E approximately ½ mile to Modot facility on Left

3. Mailing **Address** (if different from above): 3956 East Main Street

Day phone number: (417) 469-9061

Night phone number: (417) 252-0960

City: Willow Springs

State: MO

Zip code: 65793

4. **System Is** New Construction ☒ System Replacement ☐ System Repair ☐

5. **System serves** Residence ☐ Business ☒ Worker

Single Family ☐ No. Bedrooms: Whirlpool Bath ☐ Garbage Disposal ☐ Dishwasher ☐

Multi-Family ☐ Laundry Facility ☐

Food Service ☐ NO Lodging ☐ NO Other (specify): Garage

7 daily x 25GPD = 175GPD
13 Part time x 5 GPD = 65 GPD
Daily Sewage Flow (gallons per day) 240 GPD
Design at 300 GPD

6. Water Supply: Public ☐ Private ☒

Name of Supply:

Type Supply: Bored well ☐ Dug Well ☐ Driven well ☐ Drilled well ☒ Other (specify):

7. Lot MoDOT Size # acres More than 10 # square feet % Slope 5 to 10% 5% at select Field

Indicate direction of slope on Site Layout. South West

8. Soil Information: Include percolation test or soil morphology report with the application enclosed

Percolation Test ☐ Percolation Rate (min/inch)

Soil Morphology ☒ Application Rate (gpd/sq. ft.) conventional system = U, alternate system, drip irrigation 0.2

9. **Name of Percolation Tester or Soil Evaluator**: Dan Klaproth

Tester Identification Number: 10080

Address: Smith & Company, 901 Vine Street

Phone Number: (573) 785-9621

City: Poplar Bluff

State: MO

Zip Code: 63901

MO 580-2180 (6-03)

E3.05

10. **Proposed System** Complete information only for the system you plan to construct.

A. ☐ Waste Stabilization Pond NO

Dimensions
length x width or diameter

Total Water Surface Area
square feet

Working Depth

NO Pond Seal

Native soil ☐ Artificial Liner ☐

Bentonite Clay ☐ Clay from another source ☐

Type of equipment used to compact soil:

Indicate location of discharge pipe, fence, gate, and all setback distances on Site Layout

B. ☒ Sewage Tank

Septic Tank – Pre treatment ☒ Liquid Capacity 500 gal.

Manufacturer: Material/Construction

NSF Class I Aeration Unit ☒ Treatment Capacity 500 gpd

Manufacturer: Material/Construction

Pump Tank ☒ Liquid Capacity 800 gal.

Manufacturer: Material/Construction

Distance from: Well ~280' Building House Tank – 10' Field – 25'

Property Lines ~240' Water Lines ~65' uphill

Stream, river, pond, or lake Neighbor's well NA

☐ NO Absorption Field

Distribution Box	☐	Pipe & Gravel-width ____	☐
Serial Distribution	☐	Chamber-width _____	☐
Flat Lot Layout	☐	Gravelless Pipe-dia. ____	☐
Dosed	☐	Other (specify)	☐
Pressure Distribution	☐	Total Absorption Area _____	

Trench Length(s) No. of Trenches

Trench Width Trench Depth

Distance from: Well House

Property Lines Water Lines

Stream, river, pond, or lake Neighbor's well

Show location of house, tank, absorption field, wells, water lines, bodies of water, geological features, easements, and all setback distances on the Site Layout.

C. ☒ Alternative System

Low Pressure Pipe System	☐	Sand Filter	☐	Mound System	☐
Drip Irrigation	☒	Wetlands	☐	Other (specify)	☐

Include supporting data, calculations, and drawings with the packet Included.

11. Installer | Registered y ☐ n ☐ | Identification Number

Name | Phone number ( ) -

Address

City State Zip code

All information contained in and with this application packet is true and accurate to the best of my knowledge.

12. Signature of Owner or Agent | Date

13. Site Layout

See enclosed design drawings

1. Show property lines and dimensions to reflect the shape and size of the property.
2. Diagram proposed system. Show appropriate elevations to indicate proper fall for system. System must be staked on the property for the Site Evaluation.
3. Show distances to house, well, water lines, property lines, geological features such as sinkholes, rock outcrops, lakes, ponds, streams, rivers, etc.
4. Show distances to neighbors' wells, homes, and sewage disposal systems.
5. Show locations of all percolation test holes or soil morphology test pits. Holes must be flagged on the property for site evaluation.
6. Show fence location around waste stabilization pond.
7. Use the slope diagram to show percent of slope. Use arrows on the Site Layout to indicate the direction of slope.
8. Indicate any known easements that exist for utilities, roads, private driveways, or other easements.

Slope Diagram

Show percent slope on diagram. Show cross section of system on slope.

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
PERCOLATION TEST RESULTS

Property owner _____ Site Address _____

Depth of hole _____ inches Test hole location _____

Diameter of hole _____ inches Date holes were prepared _____

Depth to restrictive layer _____ Time holes were initially filled _____ am/pm

Type of restrictive layer _____ Date test performed _____

% chert _____ Time test was started _____ am/pm

Name of Tester _____ Tester ID No. _____

Test Hole 1

Time	Interval (minutes)	Water Drop (fraction)	Water Drop (decimal)	Perc Rate

Test Hole 2

Time	Interval (minutes)	Water Drop (fraction)	Water Drop (decimal)	Perc Rate

Test Hole 3

Time	Interval (minutes)	Water Drop (fraction)	Water Drop (decimal)	Perc Rate

Test Hole 4

Time	Interval (minutes)	Water Drop (fraction)	Water Drop (decimal)	Perc Rate

Show all calculations and diagrams of test hole locations on the back of this form.

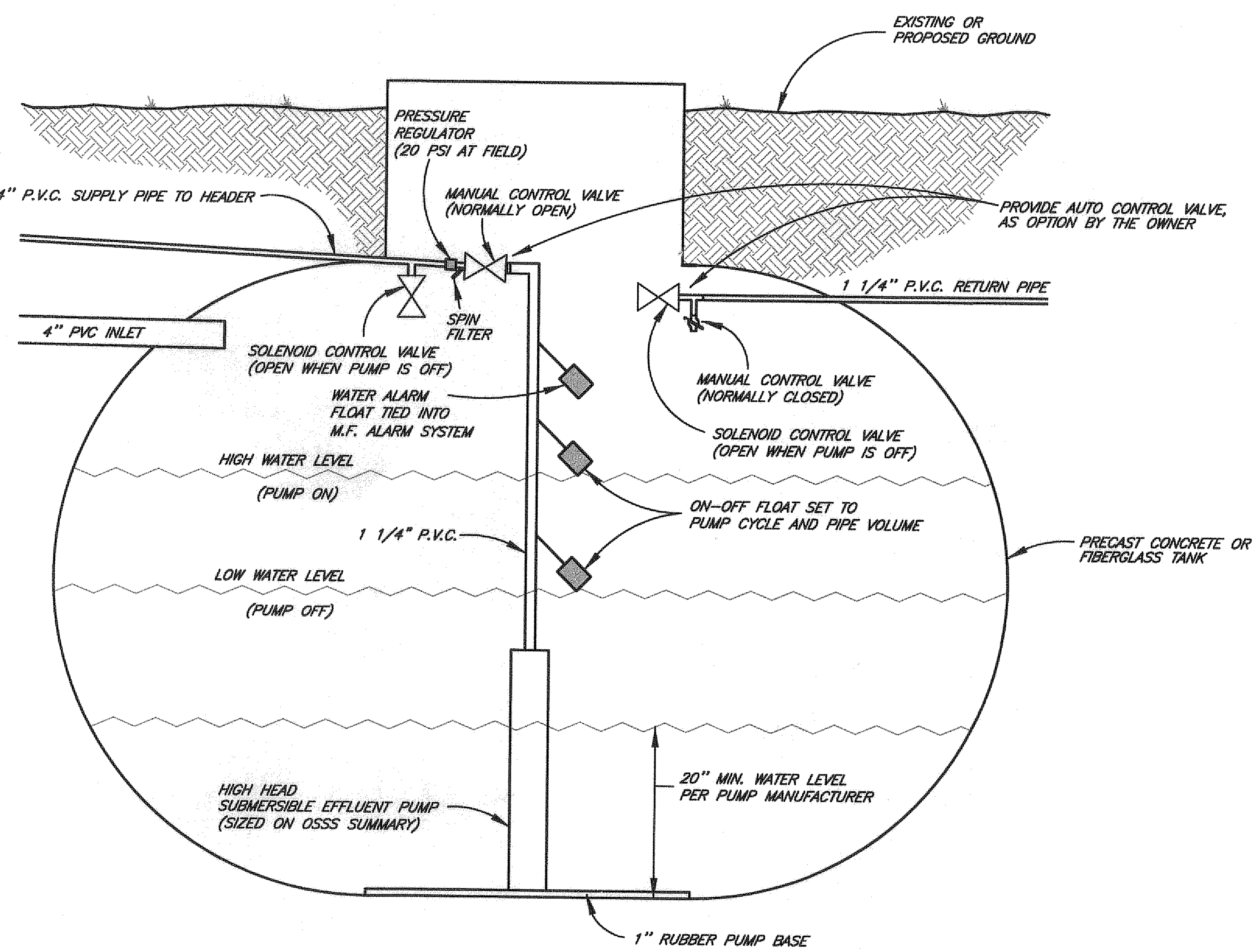
CALCULATIONS

DIAGRAM OF TEST HOLE LOCATIONS

1. Locate building or proposed building site.
2. Locate all test holes with distances from the building.
3. Locate any existing well and neighbor's well.
4. Locate property lines and all setback requirements.
5. Locate geological and topographical features.
6. Give slope and show direction of slope.

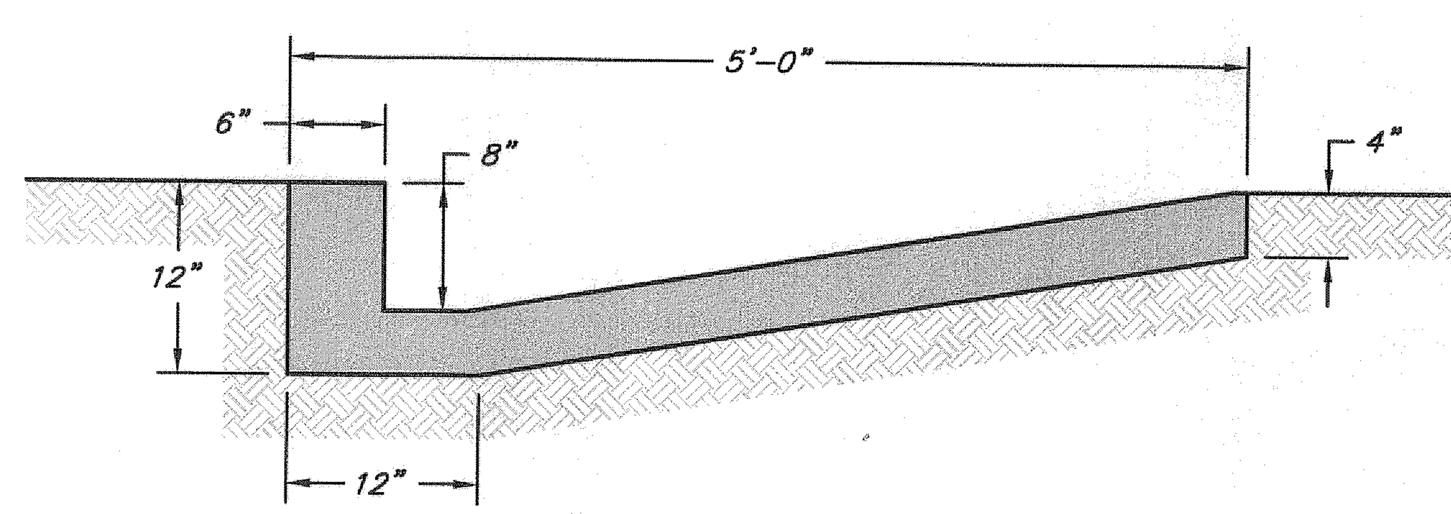
See enclosed design drawings

SIGNATURE OF TESTER Dan Klapatch 4/29/08

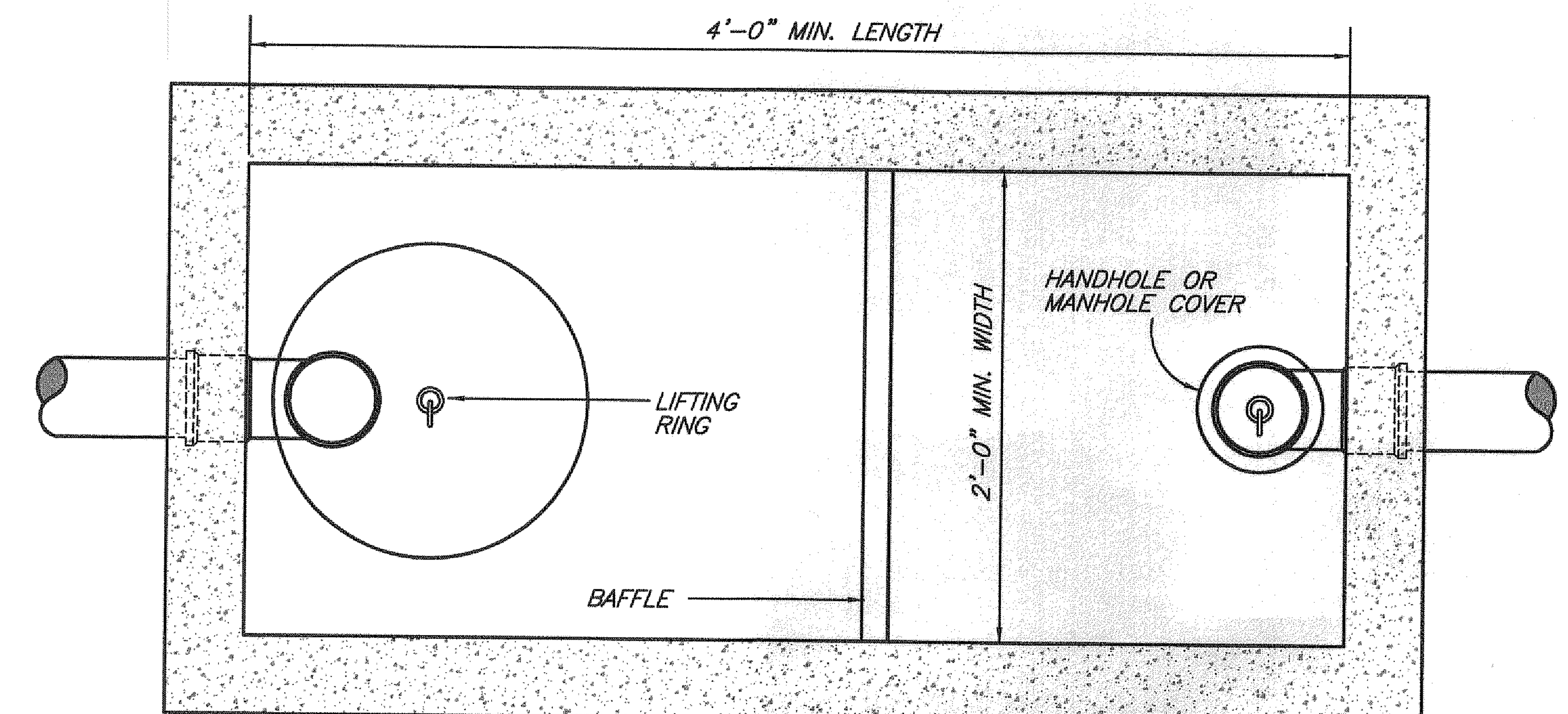


NOTE: DOSING TANK SHOWN WITH MANUAL BACK FLASH CONTROL VALVE. PROVIDE AUTO BACK FLASH CONTROL VALVES AS AN OPTION BY THE OWNER.

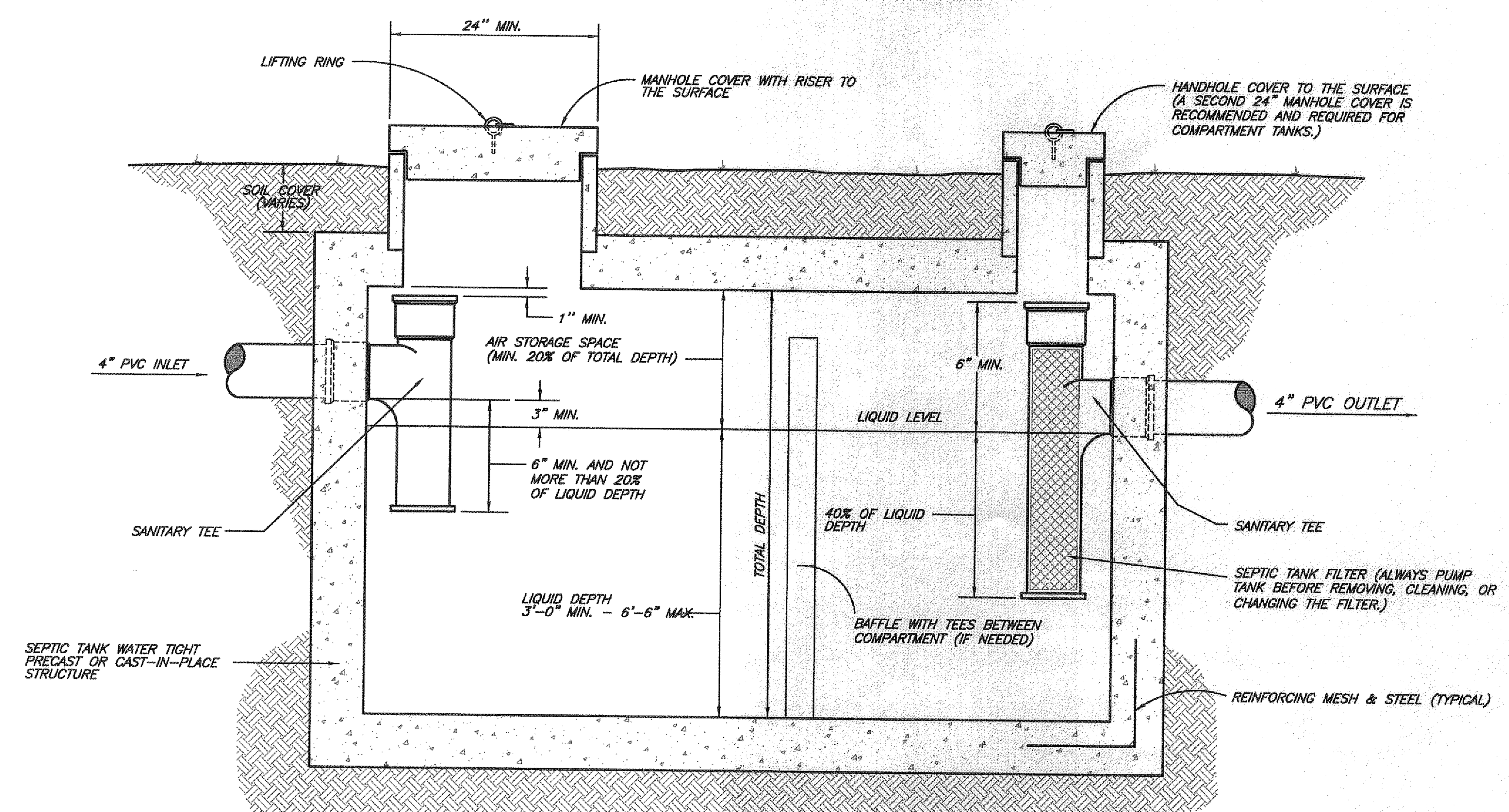
DOSING TANK
NOT TO SCALE



ASPHALT CURB AND GUTTER DETAIL
NOT TO SCALE



SEPTIC TANK - PLAN VIEW
NOT TO SCALE



SEPTIC TANK - SECTION VIEW
NOT TO SCALE

TYPICAL NOTES:
TYPICAL DRAWIN SHOW THE TYPICAL SYSTEM LAYOUT. SEE THE DESIGN TABLE AND PROPOSED SITE PLAN FOR SPECIFIC LAYOUT AND SYSTEM SIZES.

SEAL: STATE OF MISSOURI — DAN E. KLAPROTH — NUMBER E-24031 — REGISTERED PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE	BY	APP.

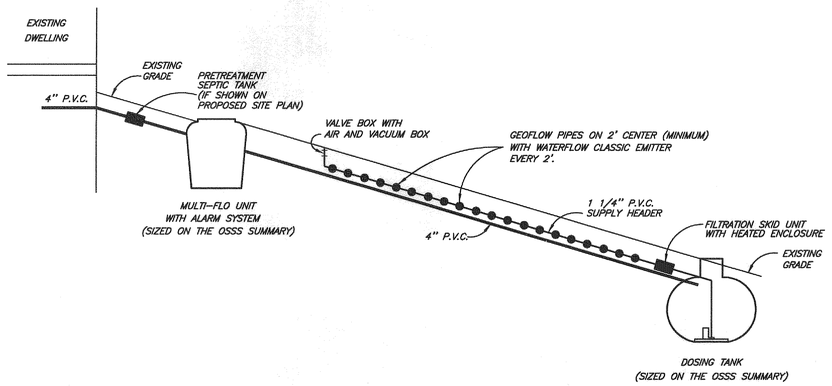
SURVEYED BY: N/A DATE: N/A
DESIGNED BY: DEK DATE: 4/08
DRAWN BY: JDD, RDS DATE: 4/08
CHECKED BY: DEK DATE: 4/08
FIELD BOOK: N/A
DRAWING FILE: 508043.dwg
0 30 60
THIS BAR WILL MEASURE 1" WHEN PRINTED AT FULL SCALE.

SMITH & CO. ENGINEERS
AN EMPLOYEE OWNED COMPANY
901 VINE STREET; P.O. BOX 72
POPLAR BLUFF, MISSOURI 63902
(573) 785-9621 FAX: (573) 785-2851 WWW.SHSMITHCO.COM

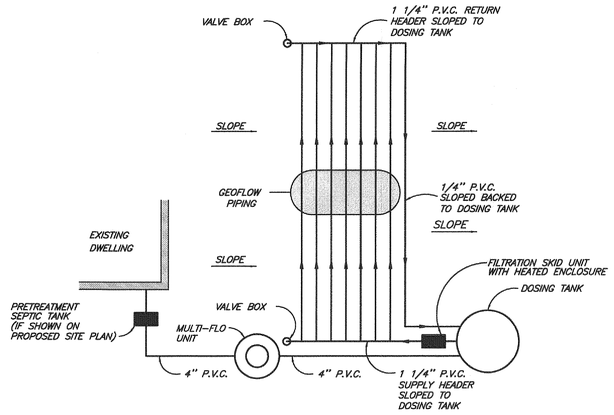
ONSITE WASTEWATER TREATMENT SYSTEM
1601 RTE. E,POTOSI,WASHINGTON COUNTY,MO.

SEPTIC AND DOSING TANKS TYPICAL DETAILS

JOB #: 508043
DRAWING #: 3135
SHEET: 3

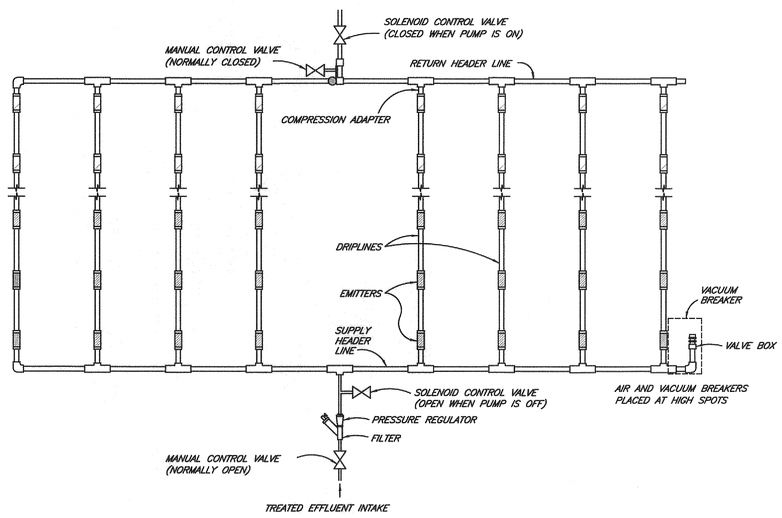


SIDE ELEVATION
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

TYPICAL DRIP IRRIGATION SYSTEM
NOT TO SCALE



TYPICAL SUBSURFACE DISPOSAL FIELD INSTALLATION DETAIL
NOT TO SCALE

SMITH & COMPANY - Onsite Wastewater Treatment System (OWTS) DESIGN SHEET			PROJECT NO:	508043.45
CLIENT ADDRESS: Missouri Department of Highway - South Central Distract, Willow Spring, Missouri			CLIENT:	MoDOT District 9
			COUNT:	Washington County
LOT ADDRESS: 10681 East Highway E, Potosi, Washington County, Missouri			SUBDIVISION:	MoDOT Lot
The OWTS shall be installed using procedures and materials as required by Missouri Department of Health (DHSS) - Title 19, Division CSR 20, Chapter 3.06.				Permit No.=needed
Contact the local County DHSS before starting construction for a construction permits and during construction for a site inspection of each phase.				Final Design Date:
This Alternative OWTS shall be installed by an Registered Advanced Installer as listed DHSS. The Installer shall have installed a minimum of five similar systems.				**April 29, 2008**
ITEMS	**DHSS SECTION**	**DESIGNED SIZE / REQUIRED**	**DESIGN UNITS**	**UNITS TYPES**	**OWTS Design Size**
Lot or Area Number				**number**	**NA**
Lot Size				acres	about 10
Type of Establishment		for sewage treatment			garage
Food Service Operation		increase system by 150 percent		yes/no	no
Sewage Flow Rate	(1)(E)	workers= dailly7X25 gal.+13X5 = 240 GPD		gallons	240
		minimum of 240 gallons per day		gallons	240
Design Flow Rate, Selected by Owner		percent of the minimum sewage flow rate	100%	gallons	300
Sewage BOD Load	(1)(E)	persons X 0.17 pounds per person		pounds	0.63
Treatment - Septic Tanks Capacity	(4)	precast concrete, minimum liquid capacity		gallons	#N/A
Pre-Treatment - Septic Tanks Capacity		pretreatment before Class I Treatment		gallons	not required #NA
Treatment - Class I A Aerator Unit		minimum liquid capacity		gallons/day	500
Jet, Inc.; Class I Tank and Aerator Treatment Unit with pretreatment, treatment, and settling tanks			OR Equal	model	Jet Inc. - J-500
Alternative - Drip Irrigation Systems	(6)H	DRIP/LPP System, loading rate		gal./sq. ft.	0.2
American Manufacturing Perc-Rite Drip Dispersal Semi-Auto System with one zone and emitter			OR Equal	model	ABD121-S121
American Manufacturing Filtration Skid Unit with amdripenclosure and DH-Inshit heater kit			OR Equal	model	ASD-15, 15 GPM
American Manufacturing Auto Backflush Controll Unit for above System			OR Equal	model	Owner'd Options
Total Absorption Area Trench Size		flow / loading rate		square feet	1500
Absorption Trench Separation		2 feet		feet	2.0
Absorption Trench Depth		general 6" to 1.0 foot		feet	.5-1.0
Calculated Total Trench Length		total absorption area / trench width		feet	750
Number of Trenches		select number of trenches		number	10
Calculated Pipe/Trench Length		total trench length / number of trenches		feet	75.0
Designed Pipe/Trench Length to Install		between calculated and less than 200 feet		feet	75
Designed Total Pipe/Trench Length		select pipe length per trench X # of pipes		feet	750
Pipe/Trench Center to Center Spacing		2 feet		feet	2
Absorption Field Area		design pipe length x spacing x # of pipes		square feet	1500
Design System Pressure		measured midway on header pipe		PSI	20
Number of Emitters		pipe length / emitter spacing		number	375
Total Field Flow		drip irrigation emitters X 0.6 GPH	0.60	gal./hour	225.0
Total Field Flow or Dosing Pump Rate		emitters X emitters GPH/60 min.		gal./min.	3.8
Dosing Tank with Effluent Pump		fiberglass or precast concrete tank	800.00	gallons	800
High Head turbine Effluent Pump		12 GPM, 110 volts, model		head feet	over 100
F. E. Myers, High Head turbine Effluent Pump for effluent pumping			OR Equal	model	Myers 2NFL-51-12ET
Total Dosing Time		flow rate / pump rate		minutes	80.0
Number of Irrigation Dosing Cycles		pump controlled by floats		cycles	4
Irrigation Dosing Cycles Volume		flow rate / cycles (plus pipe volume)		gallons	75.0
Irrigation Dosing Cycles Time		total dosing time / cycles		minutes	20.0
Head - Design System Head at Emitters		Design System Pressure X 2.31		feet	46.2
Head - 1-1/4" PVC Supply Line		0.0386 per foot plus 20% for fitting	50	feet	2.3
Head - 1-1/4" PVC Return Line		0.0386 per foot plus 20% for fitting	135	feet	6.3
Head - Dosing Pump Unit		manufacture's chart		feet	NA
Head - Filtration Skid Unit		manufacture's chart		feet	14.0
Head - Elevation Change		high point - pump elevation		feet	7
Head - Longest Drip Lateral Line		drip line length from manufacture's chart	75	feet	16
Total Head Lose in System		head lose sum		feet	91.8
Total Head Lose in System		head lose sum / 2.31		PSI	39.7
Construct Loading Zones of Equal Lengths		distributing value for zones		yes/no	NO
Alternate Absorption Field Area		is space available for alternate system		yes/no	YES
NOTES: Contractor shall provide cost for items listed as Owner's Options.					YES
Contractor shall use the above listed equipment or equal. Units shall be field checked for locations, sizes, and elevations.					YES
Contractor shall provide the Owner with shop drawings, manufacture warranties, and service/maintenance schedule.					YES
Contractor shall warranty and service the system and equipment for two years.					YES
Owner shall service the system & equipment after two years. The manufacture's maintenance schedule should be completed.					YES
Do not allow extra rain runoff flow over the field area. Do not drive over the absorption field, yard tractors only					NA
The system will fail if not maintained, not cleared, not back flushed, tanks not pumped, or the absorption field is damaged.					NA

SYSTEM DESIGN TABLE

TYPICAL NOTES:
TYPICAL DRAWIN SHOW THE TYPICAL SYSTEM LAYOUT. SEE THE DESIGN TABLE AND PROPOSED SITE PLAN FOR SPECIFIC LAYOUT AND SYSTEM SIZES.

SEAL: STATE OF MISSOURI REGISTERED PROFESSIONAL ENGINEER DIANE E. KLAPROTH NUMBER E-24031

NO.	REVISIONS	DATE	BY	APP.

SURVEYED BY: N/A DATE: N/A
DESIGNED BY: DEK DATE: 4/08
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SMITH & CO. ENGINEERS
A PUBLIC WORKS COMPANY
901 VINE STREET; P.O. BOX 72
POTOSI, MISSOURI 63664
(573) 785-9621 FAX: (573) 785-2651
WWW.SMSMITHCO.COM

ONSITE WASTEWATER TREATMENT SYSTEM
1601 RTE. E,POTOSI,WASHINGTON COUNTY,MO.

DRIP IRRIGATION SYSTEM
TYPICAL DETAILS AND TABLE

JOB #: 508043
DRAWING #: 3135
SHEET: 2

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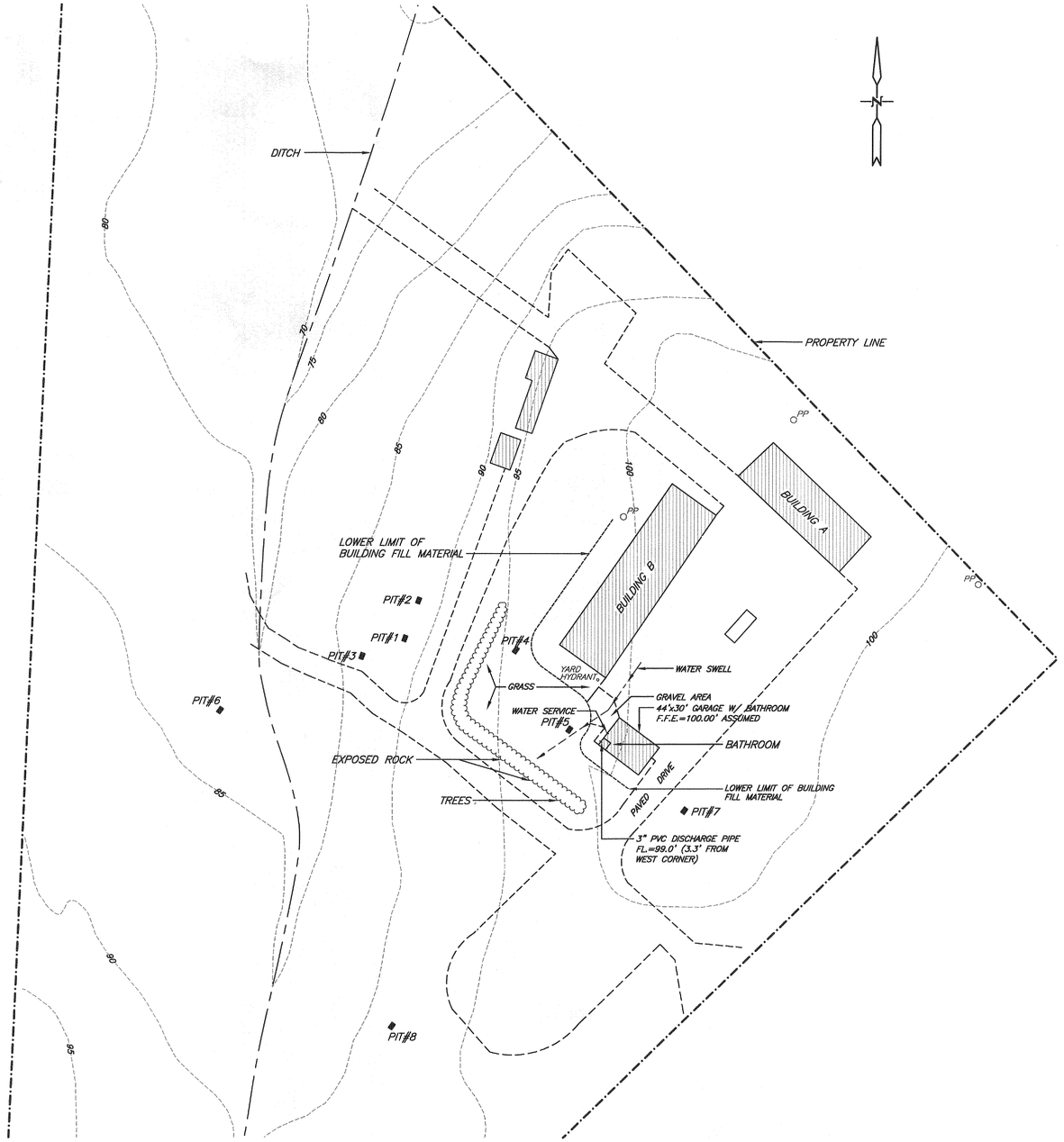
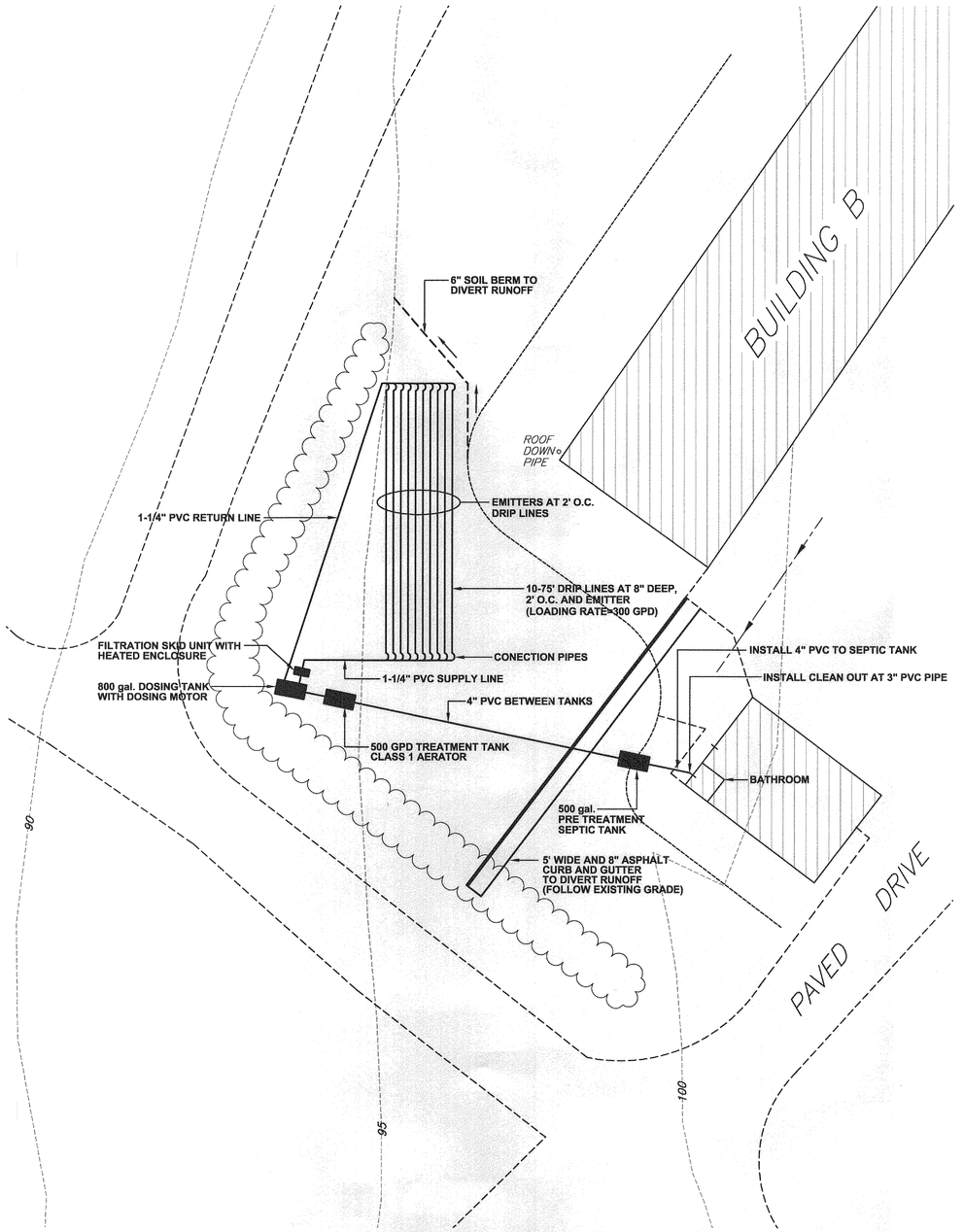


EXISTING SITE PLAN

0 60 120
(IN FEET)

NOTE:
THE TOP OF ROCK WAS FROM 2' TO 4' DEEP IN THE TEST PITS. AREAS OF EXPOSED ROCK WERE NOTED.



PROPOSED SITE PLAN - ONSITE WASTEWATER TREATMENT SYSTEM

0 20 40
(IN FEET)

NOTE:
SUPPLY ELECTRIC FROM THE GARAGE BUILDING TO THE TREATMENT TANK AND DOSING TANK.
SEE THE DRIP IRRIGATION SYSTEM STANDARD DETAIL FOR ADDITION DESIGN INFORMATION SPACING.

SEAL: STATE OF MISSOURI REGISTERED ENGINEER DAN E. KLAPROTH NUMBER E-24831

NO.	REVISIONS	DATE	BY	APP.

SURVEYED BY: N/A DATE: N/A
DESIGNED BY: DEK DATE: 4/08
DRAWN BY: JDO, RDS DATE: 4/08
CHECKED BY: DEK DATE: 4/08
FIELD BOOK: N/A
DRAWING FILE: 508043.dwg
0 30 60
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SMITH & CO. ENGINEERS
901 VINE STREET, P.O. BOX 72
POPLAR BLUFF, MISSOURI 63902
(573) 785-9621 FAX: (573) 785-2651 WWW.SHSMITHCO.COM

ONSITE WASTEWATER TREATMENT SYSTEM
1601 RTE. E, POTOSI, WASHINGTON COUNTY, MO.

SITE PLAN

JOB #: 508043
DRAWING #: 3135
SHEET: 1

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SITE CLASSIFICATION for
ON-SITE SEWAGE SYSTEM – 19 CSR 20-3.060(2) & (7)

Owner: Missouri Department of Transportation Pit/Core #: P4 Date: 1-23-2008

Suitability See recommendations below S – Suitable; PS – Provisionally Suitable; U – Unsuitable; for conventional system.

S **LANDSCAPE POSITION:** upland / shoulder Slope aspect: Southwest

Flooding frequency: None ☒ Rare ☐ Occasional ☐ Frequent ☐ Surface depression(s) in evaluated area? ___

S **& TOPOGRAPHY** Percent Slope: 5% Slope Type: Uniform ☐ Complex ☒

Shape across (contour): linear Shape down (profile): linear

SOIL CHARACTERISTICS (See Profile Description for details)

PS **TEXTURE** to a depth of 41 inches Depth of unsuitable texture 24-48 inches (Rock)

PS **STRUCTURE** to a depth of 41 inches Depth of unsuitable structure 41 inches

S **SOIL DRAINAGE** Type of water table: NA Depth to water table >48 inches

S Surface drainage limitations: divert surface water Runoff slope length +200 feet

PS **SOIL THICKNESS** Depth of bedrock: 24-48 inches Rock outcrops? yes

PS **RESTRICTIVE HORIZON** Type: rock Depth: 24-48" Thickness: bedrock

S **AVAILABLE SPACE** Estimated space available: more than 10 acres

Adequate for a conventional system? NO an alternative system? yes replacement area? yes

OTHER FACTORS Note any environmental hazards: ___

High groundwater contamination potential? (If yes, indicate reason): ___

Sinkhole ☐ NO Rapid permeability ☒ Depth to highly permeable bedrock ☒ Fill material /depth ☐ 24-48" by building

PS **OVERALL** Notes: ___

Overall site classification will be determined by the lowest of the uncorrectable characteristics.

- **S** An overall site classification of **suitable** indicates soil and site conditions favorable for the operation of a conventional absorption system.
- **PS** Sites classified as **provisionally suitable** require some modifications and careful planning, design, and installation for a conventional system or alternative system to function satisfactorily.
- **U** Sites originally classified as **unsuitable** may possibly be reclassified as **provisionally suitable** according to subsection (7)(K).
- An **unsuitable** site may be used for soil absorption systems, provided engineering, hydrogeologic and soil studies indicate to the administrative authority that a conventional or alternative system could be expected to function satisfactorily. These sites may be reclassified as **provisionally suitable** upon meeting the requirements of the administrative authority according to subsection (6)(K).

Recommendations* associated with Provisionally Suitable or Unsuitable classifications:

___ Trenches must not be dug when wet to prevent damaging soil/trench surfaces.

Yes Surface water diversion is needed. Divert at Fill material + between buildings.

___ An interceptor drain should be installed upslope at a depth of ___ inches.

___ Shallow or modified shallow placed trenches should be installed at a depth of ___ inches.

Yes An alternative/engineered system is needed to overcome site limitations. Drip Irrigation

Install Drip Irrigation with drip lines in grasses area between buildings and tree line.

Owner: Missouri Department of Transportion Date 1-23-2008

Comments/Recommendations

Install Drip Irrigation Alternative System, Divert runoff water.

*Recommendations are to assist the property owner, and their agents in complying with the standards, and are subject to approval by the administrative authority.

I, the undersigned, hereby certify that the site evaluation was made in accordance with the requirements of Sections 701.025-701.059 RSMo and 19 CSR 20-3.060 and 19 CSR 20-3.080, and that the data recorded is correct to the best of my knowledge.

Dan Klaproth, #10090 (Print name) Dan Klaproth (Signature) 2-27-2008 (Date)

Important Recommendations for Installers and Homeowners:

Protect the absorption area before and after construction. Do not drive over or store excavated materials on field area etc.

Shallow placed absorption systems utilize more permeable and better-aerated soil horizons.

Do not install soil absorption system when soil is wet.

Redirect surface water, house guttering, and foundation drains away from absorption field.

Establish & maintain adequate vegetative cover over the field.

Regularly inspect, maintain, and pump your sewage system.

Install water saving devices & practice water conservation.

Check for and repair any water leaks as soon as discovered.

Spread out water use, such as laundry, throughout the week.

Restrict garbage disposal use.

Do not put fats or grease into the sewage system.

Keep chemicals and hazardous wastes out of your system.

Use disinfectants and high strength cleaners sparingly.

Do not plan any building improvements, patios, etc. near the sewage system or repair area.

Minimum Set-Back Distances
Based on **19 CSR 20-3.060(1)(D) Table 1**
[See also (6)(D) for lagoons]

Minimum Distance from	Sewage Tank (feet)	Disposal Area (feet)	Lagoons (feet)
Private water supply well	50	100	100
Public water supply well	300	300	300
Cistern	25	25	25
Spring	50	100	100
Classified stream or lake	50	50	50
Stream or open ditch	25	25	25
Property lines	10	10**	75
Building foundation	5	15	[100]
Basement	15	25	[100]
Swimming pool	15	15	
Pressure water line	10	10	10
Suction water line	50	100	100
Upslope interceptor drain	-	10	
Downslope interceptor drain	-	25	
Embankment or cuts	-	20	
Edge of sink holes	50	100	500
Other absorption system	-	20	20

**Recommend 25 feet from downslope property line.

(Rev 4/11/03)

OFFICIAL USE - APPLICATION # _____

SITE EVALUATION for ON-SITE SEWAGE SYSTEM

Property Owner: Missouri Department of Transportation		Date: 1-23-2008	
Site Address: 1601 Hwy E		Mailing Address : 3956 E Main Street	
Potosi , MO		Willow Springs, MO 65793	
Subdivision, Lot: MoDOT		Day(417) 469-9081	Evening(417)252-6960
County: Washington	Legal Location: 1/4 1/4 1/4 ,S ,T ,R		
Residence - # Bedrooms: # People	Latitude: 37°51'1.8 N	Longitude: -90°45' 21.2"W	
Business - Type: Garage	Design flow: 300 gpd; System is: New [X]	Replacement [ ]	Repair [ ]

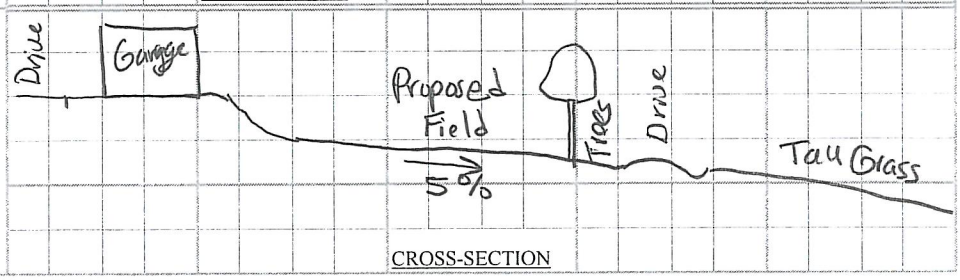
See enclosed 11"x17" drawing

Indicate North

SITE DIAGRAM

LEGEND

!



CROSS-SECTION

Site Diagram and Cross-Section : Show relative location of buildings, wells, roads, rock outcrops, depressions, sinkholes, location of soil observations, etc. Indicate the evaluated area(s) and direction of slope. (Property lines, easements, buried utilities, etc., are as observed, or as reported by property owner)

SOIL PROFILE DESCRIPTION

Owner: Missouri Department of Transportion Date: 1-23-2008

SOIL CHARACTERISTICS Excavation Depth: Pit (required for new installation) or Core #: 4

Vegetation: grass cover - mowed Parent Material:

Suitability (S, PS, U)	Horizon Designation	Horizon Depth / Boundary[1]	Munsell Color (moist)	Redoximorphic Features[2]	Texture USDA[3]	Texture % Clay	% Coarse Fragments by volume <3"	% Coarse Fragments by volume >3"	Consistence[4]	Structure[5]	Roots /Pores[6]	Shrink /Swell	Soil Group	Application Rate Conv. (Table 13)	Application Rate LPP (Table 14)
PS	A	0 7	2/1 10YR	-	Sil	15	0	0	Fr	1, F-m, GR	m, f-m m, F-m	-	III	.4	.3
PS	A	7 13	2/1 10YR	-	Sil	15	0	0	Fr	1, F-m, GR	m, f-m m, f-m	-	III	.4	.3
PS	AB	13 18	2/1 10YR	-	SiC	30	0	0	Fr	1, f-m, SBK 1, F, GR	m, f-m m, f-m	-	IVa	.3	.2
PS	Bt	18 25	4/6 10YR 3/2 10YR	-	VG C	60	5	35	Fi	2, F-m, SBK	c, vf-f m, f-m	low-mod	IVa	.2	.2
PS	Ct	25 34	5/6 10YR	4/3 10YR 2/1 10YR	SC VG	40	30	15	Fr	1, F-m, SBK 1, F, GR	F, vf m, vf-m	-	IVa	.3	.2
PS	Ct2	34 41	5/6 10YR	4/2 10YR	SC VG	40	30	15	Fr	1, F-m, SBK 1, F, GR	- m, vf-m	-	IVa	.3	.2
US	R	41			Rock									Rock	

Notes The rock depth varied from 24" to 48" in Pit #4. A total of eight pits were checked and the pits were similar to Pit-4. The rock depth in all pits ranged from 24" to 48". An alternative system is required. Per Washington DHSS, a drip irragation system is required.

Notations used on Soil Profile Description

(1) **Boundary** distinctness: A-abrupt, C-clear, G-gradual; topography: S-smooth, W-wavy, I-irregular;

(2) **Redox Features** Report low chroma Munsell colors and iron and manganese concentrations indicative of soil drainage limitations;

(3) **Texture** s-sand, ls-loamy sand, sl-sandy loam, l-loam, sil-silt loam, si-silt, scl-sandy clay loam, cl-clay loam, sicl-silty clay loam, sc-sandy clay, sic-silty clay, c-clay; Designate estimated clay content for all horizons;

(4) **Consistence** (report moist consistence) moist: fr-friable, fi-firm, vfi-very firm; wet: ss-slightly sticky, s-sticky, vs-very sticky and sp-slightly plastic, p-plastic, vp-very plastic; dry: sh-slightly hard, h-hard, vh-very hard;

(5) **Structure** grade: 1-weak, 2-moderate, 3-strong; size: f-fine (thin if platy), m-medium, c-coarse (thick if platy); shape: ABK-angular blocky, SBK-subangular blocky, GR-granular, PL-platy, PR prismatic, MA-massive;

(6) **Roots/Pores** abundance: f-few, c-common, m-many; size: vf-very fine, f-fine, m-medium, c-coarse.

DITCH

North

PROPERTY LINE

70
75
80
85
90
95
100

PP

BUILDING A

BUILDING B

LOWER LIMIT OF
BUILDING FILL MATERIAL

PIT#2

PIT#1

PIT#3

PIT#4

PIT#5

PIT#6

PIT#7

PIT#8

YARD
HYDRANT

WATER SWELL

GRASS

GRAVEL AREA
44'x30' GARAGE W/ BATHROOM
F.F.E.=100.00' ASSUMED

WATER SERVICE

BATHROOM

EXPOSED ROCK

DRIVE

PAVED

LOWER LIMIT OF BUILDING
FILL MATERIAL

TREES

3" PVC DISCHARGE PIPE
FL.=99.0' (3.3' FROM
WEST CORNER)

Highway E

EXISTING SITE PLAN

0 60 120

(IN FEET)