



280280102

Certificate of Compliance Inspection Report

Last_Name Slininger
 First_Name Jonathon
 Mailing_Address 3029 41st Ave Court S
 Mailing_City Moorhead
 Mailing_State MN
 Mailing_Zip 56560

BECKER COUNTY ZONING

915 LAKE AVE
DETROIT LAKES, MN 56501
(218) 846-7314

Parcel_Number 280280102 Legal_Description HATFIELDS POINT Block 001 LOT 2
 Additional_Parcel: _____
 Sec_Twn_Rge 30-140-38 Designer_Name_and_Li Daryl Bergstrom L478
 Township_Name Shell Lake Inspection- Installer Name and Lic Bergstrom Backhoe Service L478

Insp- Effluent Screen Installed _____ Insp- Tank Size 15002/c + 600
 Insp- Alarm Required Yes Inspection- Type_of_Drainfield: Mound
 Insp- Lift Pump in System Yes Insp- Size of Drainfield 500
 Insp- Number of Bedrooms - Insp- Soil Verification +36

Insp- Tank_Dist_to_Well 50+ Insp- Drainfield_Dist_to_Well +50
 Insp- Tank_Dist_to_Bldg TBD Insp- Drainfield_Dist_to_Bldg TBD
 Insp- Tank_Dist_to_Property_Line 10+ Insp- Drainfield_Dist_to_Property_Line +10
 Insp- Tank_Dist_to_OHW +75 Insp- Drainfield_Dist_to_OHW +75
 Insp- Tank_Dist_to_Pressure_Line +10 Insp- Drainfield_Dist_to_Pressure_Line +10
 Insp- Tank_Dist_to_Wetland_Protected - Insp- Drainfield_Dist_to_Wetland_Protecte -

Inspection Notes: _____

Certificate of Compliance



) Certificate is Hereby Denied.

) Certificate is Hereby Granted Based upon the Application, addendum from, plans, specifications and all other supporting data. With Property maintenance, this system can be expected to function satisfactory, however this is not a guarantee.

Lavil A. Stall

Signature

Certification_Date 11/28/18

ISTS inspector

Title

(Certificate of Compliance is not valid unless signed by a Registered Qualified Employee)

RECEIVED
OCT 03 2018
ZONING

Onsite Septic System Application

Becker County Planning & Zoning
 915 Lake Ave, Detroit Lakes, MN 56501
 Phone (218)-846-7314; Fax (218)-846-7266

cell phone
 218
 841 9003

PARCEL	
APP	SEPTIC
YEAR	
SCANNED	
LAKE	

1. PROPERTY DATA (as it appears on the tax statement, purchase agreement or deed)

Parcel Number(s) of property where the system will be installed: 280280102

Is this a split of an existing property? Yes No

(If yes and a parcel number has not yet been assigned, indicate the main parcel number from which the new parcel was split.)

Section 30 Township 140 Range 038 Township Name Shell Lake

Lake Name Island Lake Lake Classification CA

Legal Description: Hatfields Point Block 001 Lot 2

Project Address: TBD White Pine Rd

2. PROPERTY OWNER INFORMATION (as it appears on the tax statement, purchase agreement or deed)

Owner's First Name Jonathon Owner's Last Name Slinger

Mailing Address 3029 41st Ave Court S City, State, Zip Moorehead, MN 56560

Phone Number 218-329-9398

3. DESIGNER/INSTALLER INFORMATION

Designer Name Jaryl Systa Company Name _____ License # _____

Address _____ Phone Number _____

Installer Name Jaryl Systa Company Name _____ License # 478

Address _____ Phone Number _____

4. SYSTEM DESIGN INFORMATION

System Status

What will new system serve? Check one

- Vacant Lot-No existing system-new structure
- Replacement - structure removed and being rebuilt
- Failing -Replacement- cesspool/seepage pit or other
- Enlargement of system-Undersized
- Repairs Needed to existing
- Additional system on property

- Dwelling
- Resort/Commercial
- Commercial (Non-resort)
- Other - explain below

9-28-2018 Date of site evaluation

Design Flow 600 Gallons Per Day

Number of Bedrooms 4

Garbage Disposal Yes No

Dishwasher Yes No

Lift station in House Yes No

Grinder pump in House Yes No

Well Depth no well yet

Depth of other wells within

100 ft of system _____

Original Soil Compacted Soil

Type of Soil Observation

Pit Probe Boring

Depth to Restricting Layer 16"

Maximum Depth of System 42'

Size of All Tanks to be installed

~~750~~ gal Single Compartment Septic Tank 600 gal Separate Lift Station

1500 gal Compartmented Tank _____ gal Holding Tank

_____ Pit Privy _____ Existing Tank to be used

_____ Existing tank w/new Additional Tank

_____ Existing tank w/new Lift Station

_____ Holding Tank with Privy

Total Number of tanks to be installed in this system 2 (This # will be reported to MPCA at end of year.)

PARCEL	
APP	SEPTIC
YEAR	

Type of Drainfield _____ Full Size of Drainfield _____ sq ft Reduced/Warranted size _____ sq ft
 _____ Chamber Trench _____ sq ft _____ sq ft
 _____ Rock Trench _____ sq ft _____ sq ft
 _____ Gravelless _____ sq ft _____ sq ft
 Mound 500 sq ft ***
 _____ Pressure Bed _____ sq ft ***
 _____ Seepage Bed _____ sq ft ***
 _____ At-grade _____ sq ft ***
 _____ Alternative / _____ sq ft *** **Attach Worksheets
 Performance

Type of chamber _____
 Depth of Rock 12"
 Alarm? Yes No _____
 Type of Alarm PS Partool
 Size of Lift Pump 2 HP
 Size of Lift Line 2"

PROPOSED SETBACKS

	TANK	DRAINFIELD
Distance to Well	_____	_____
Distance to Building	_____	_____
Distance to Property Line	<u>10'</u>	<u>10'</u>
Distance to OHW of Lake	<u>75'</u>	<u>75'</u>
Distance to Pressure Line	_____	_____
Distance to Wetland/Protected Water	_____	_____

Perc Rate 32 Soil Sizing Factor 1.67 *If SSF other than .83, attach Perc Test Data

Soil Borings (three are required)

Depth	Texture	Color	Structure		Depth	Texture	Color	Structure
0-6	black				0-6	black		
6-18	sandy 10cm	10y 4/6	blocky		6-16"	sandy 10cm	10y 4/6	
18-	redox				18- redox			

Depth	Texture	Color	Structure		Depth	Texture	Color	Structure
0-5	black							
5-20	sandy 10cm	10y 4/6	blocky					
20- redox								

5. REQUIRED DOCUMENTS

U of MN worksheets are required for mounds, pressure beds, seepage beds, at-grades or Type IV or Type V systems. Are the required worksheets attached? Yes _____ No

6. DESIGNER'S CERTIFIED STATEMENT

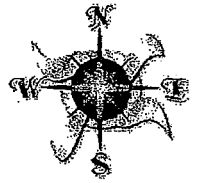
I, Don A. Eyrich certify that I have completed the preceding design work in accordance with all applicable requirements (including, but not limited to Minnesota Chapter 7080 and the Becker County Individual Sewage Treatment System Ordinance).

Signature of Designer Don A. Eyrich Date 9-28-2018

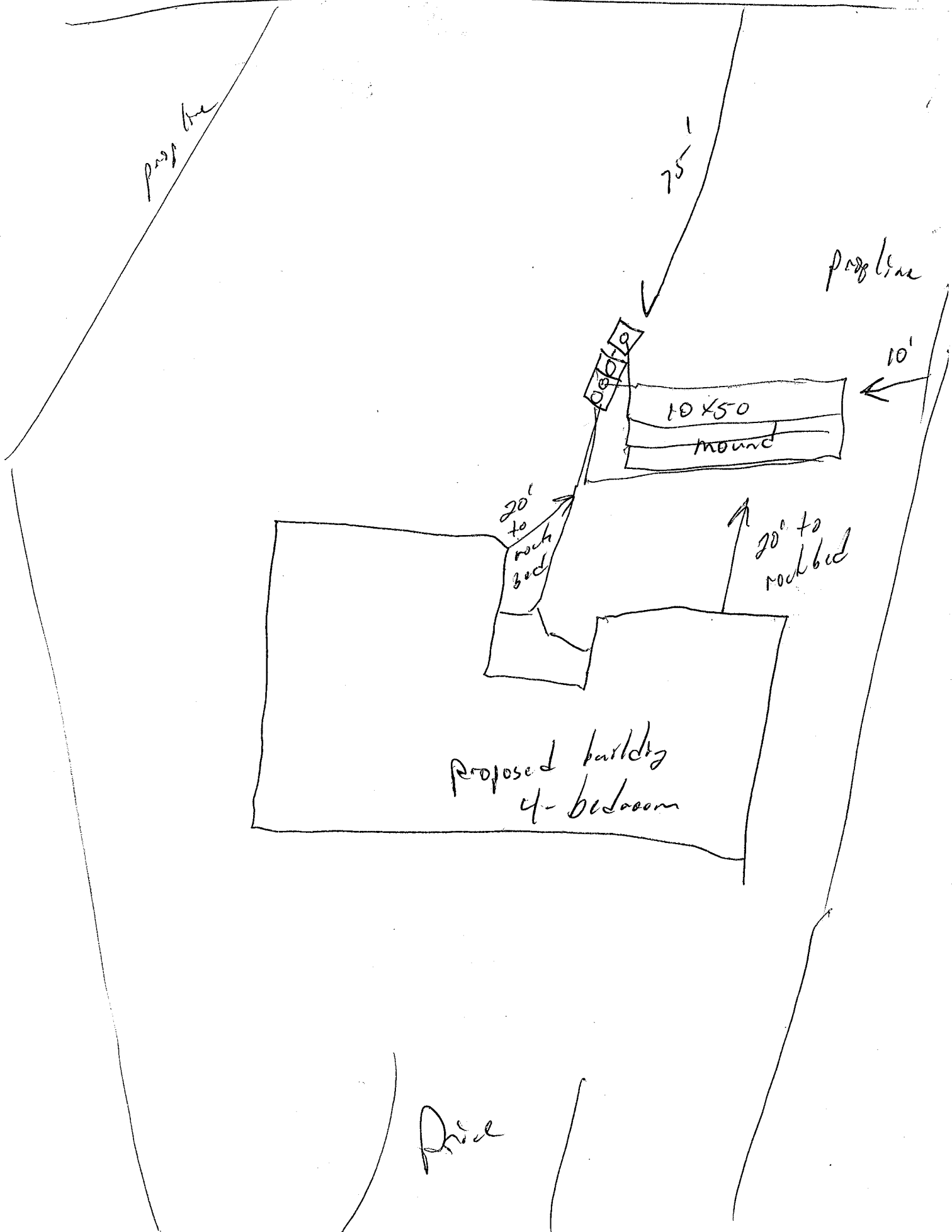
SKETCH OF PROPERTY

Please sketch all structures and septic systems on the property;
Include setbacks and wells within 100 feet of the property.

PARCEL	
APP	SEPTIC INSPECTION
YEAR	



Island Lake



A. FLOW

Estimated 600 gpd
or measured _____ x 1.5 = _____ gpd.

Estimated Sewage Flows in Gallons per day (gpd)

Number of Bedrooms	Type I	Type II	Type III	Type IV
2	300	225	180	60% of the values in Type I, II or III columns
3	450	300	218	
4	600	375	256	
5	750	450	294	
6	900	525	332	
7	1050	600	370	
8	1200	675	408	

B. SEPTIC TANK LIQUID VOLUMES

1500/60mp gallons

C. SOILS (refer to site evaluation)

1. Depth to restricting layer = 12 inches _____ feet
2. Depth of percolation tests = 12 inches
3. Texture loam Percolation rate 32 mpi
4. Land slope 1 %

Septic Tank Capacities (In gallons)

Number of Bedrooms	Minimum Liquid Capacity	Liquid capacity with garbage disposal
2 or less	750	1125
3 or 4	1000	1500
5 or 6	1500	2250
7, 8 or 9	2000	3000

D. ROCK LAYER DIMENSIONS

1. Multiply flow rate by 0.83 to obtain required area of rock layer: $A \times 0.83 =$

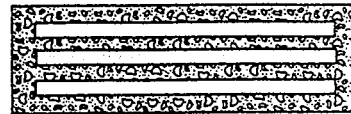
_____ gpd x 0.83 sq. ft./gpd = 500 sq. ft.

2. Select width of rock layer (max 10' if <120 mpi max 5') = _____ ft.

3. Length of rock layer = area ÷ width =
_____ sq. ft. ÷ _____ ft. = _____ ft.



Width 10 ft
<120mpi <10'
>120mpi <5'



Length 50 ft

E. ROCK VOLUME

1. Multiply rock area by rock depth to get cubic feet of rock; _____ sq. ft. x _____ ft. = _____ cu. ft.
2. Divide cu. ft. by 27 cu. ft./cu. yd. to get cubic yards; _____ cu. ft. ÷ 27 = 20 cu. yd.
3. Multiply cubic yards by 1.4 to get weight of rock in tons; _____ cu. yd. x 1.4 ton/cu. yd. = _____ tons.

F. ABSORPTION WIDTH

1. Percolation rate in top 12 inches of soil is 32 mpi
Texture loam

2. Select allowable soil loading rate from table;
1.60 gpd/ft²

3. Calculate adsorption width ratio by dividing rock layer

loading rate of 1.20 gpd/ft² by allowable soil loading rate;
 $1.20 \text{ gpd/ft}^2 \div 1.60 \text{ gpd/ft}^2 = 2$

4. Multiply adsorption width ratio by rock layer width to get required adsorption width;
10 x 2 ft = 20 ft

Absorption Width Sizing Table

Percolation Rate in Minutes per Inch (MPI)	Soil Texture	Gallons per day per square foot	Ratio of Absorption width to Rock Layer Width
Faster than 0.1	Coarse Sand	1.20	1.00
0.1 to 5	Sand	1.20	1.00
0.1 to 5	Fine Sand	0.60	2.00
6 to 15	Sandy Loam	0.79	1.52
16 to 30	Loam	0.60	2.00
31 to 45	Silt Loam	0.50	2.40
46 to 60	Clay Loam	0.45	2.67
60 to 120	Clay	0.24	5.00
Slower than 120	Clay	0.20	6.00

PRESSURE DISTRIBUTION SYSTEM

- Select number of perforated laterals 3
- Select perforation spacing = 3 feet.
- Since perforations should not be placed closer than 1 ft. to the edge of the rock layer (see diagram), subtract 2 ft. from the rock layer length.

$$\frac{50}{\text{Rock layer length}} - 2 \text{ ft.} = \underline{48} \text{ feet.}$$

- Determine the number of spaces between perforations. Divide the length above by perforation spacing and round down to nearest whole number.

$$\text{Length perf. spacing} = \frac{48}{(3)} \text{ ft.} \div \frac{3}{(2)} \text{ ft.} = \underline{16} \text{ spaces}$$

- Number of perforations is equal to one plus the number of perforation spaces .

$$\underline{16} \text{ spaces} + 1 = \underline{17} \text{ perforations/lateral}$$

- Multiply perforations per lateral by number of laterals to get total number of perforations.

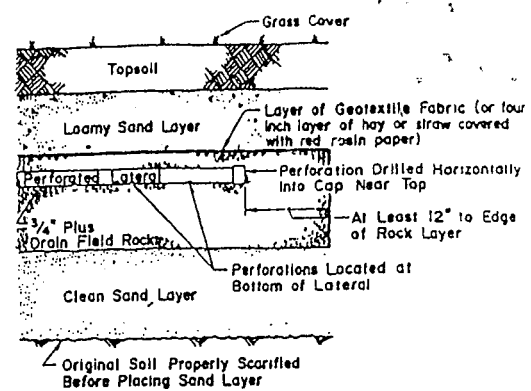
$$\frac{3}{\text{laterals}} \times \frac{17}{\text{perfs/lateral}} = \underline{51} \text{ perforations.}$$

- Determine required flow rate by multiplying number of perforations by flow per perforation

$$\frac{51}{\text{perfs}} \times \frac{.74}{\text{gpm/perf}} = \underline{38} \text{ gpm.}$$

- If laterals are connected to header pipe as shown on upper example, to select minimum required lateral diameter; enter table with perforation spacing and number of perforations per lateral. Select minimum diameter for perforated lateral = 2 inches.

- If perforated lateral system is attached to manifold pipe near the center, lower diagram, perforated lateral length and number of perforations per lateral will be approximately one half of that in step 8. Using these values, select minimum diameter for perforated lateral = _____ inches.

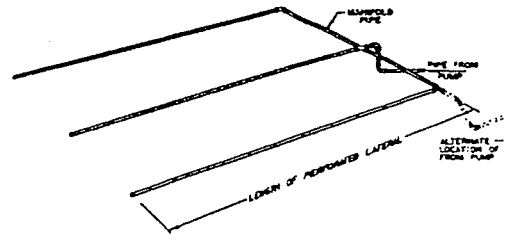


Required Perforation Discharge in gallons per minute (gpm)		
Discharge Head (feet)	$\frac{1}{2}$ inch perf	$\frac{1}{4}$ inch perf
1.0a	0.56	0.74
2.0b	0.80	1.04

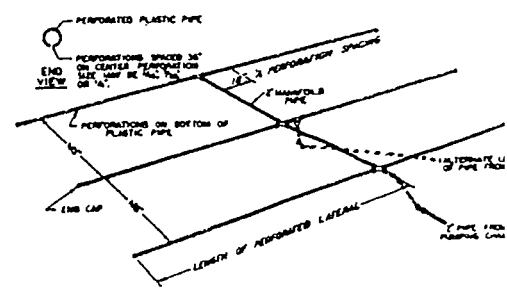
a. Use for single family homes
b. Use for all other applications

Maximum number of quarter inch perforations per lateral to guarantee < 10% discharge variation			
Perforation Spacing (feet)	$1\frac{1}{4}$	$1\frac{1}{2}$	2
2.5	14	18	28
3.0	13	17	26
3.3	12	16	25
4.0	11	15	23
5.0	10	14	22

MANIFOLD LOCATED AT END OF PRESSURE DISTRIBUTION SYSTEM



LAYOUT OF PERFORATED PIPE LATERALS FOR PRESSURE DISTRIBUTION IN WINDROW



G. MOUND SLOPE WIDTH & LENGTH
(landslope greater than 1%)

1. Downslope absorption width = absorption width (F) minus rock layer width (D2)
_____ ft - _____ ft = _____ ft

2. Calculate mound size
UPSLOPE

a. Depth of clean sand fill at upslope edge of rock layer = 3 ft minus the distance to restricting layer (C1)
3 ft - _____ ft = _____ ft

b. Mound height at the upslope edge of rock layer = depth of clean sand for separation (G2a) at upslope edge plus depth of rock layer (1 ft) plus depth of cover (1 ft)
_____ ft + 1ft + 1ft = _____ ft

c. Upslope berm multiplier based on land slope
_____ (see figure D-34)

d. Upslope width = berm multiplier (G2c) x upslope mound height (G2b):
_____ x _____ ft = _____ ft

DOWNSLOPE

e. Drop in elevation = rock layer width (D2) x percent landslope (C5) ÷ 100
_____ ft x _____ % ÷ 100 = _____ ft

f. Downslope mound height = depth of clean sand for slope difference (G2e) at downslope rock edge plus the mound height at the upslope edge of rock layer (G2b)
_____ ft + _____ ft = _____ ft

g. Downslope berm multiplier based on percent land slope
_____ (see figure D-34)

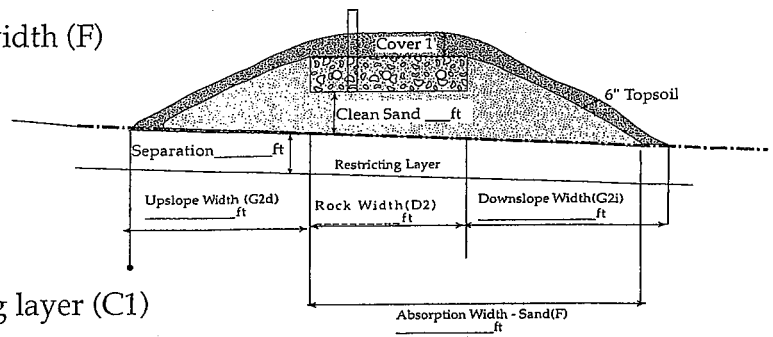
h. Downslope width = downslope multiplier (G2g) times downslope mound height (G2f)
_____ x _____ ft = _____ ft

i. Select the greater of G1 and G2h as the downslope width: _____ ft

j. Total mound width is the sum of upslope width (G2d) width plus rock layer width (D2) plus downslope width (G2i)
_____ ft + _____ ft + _____ ft = _____ ft

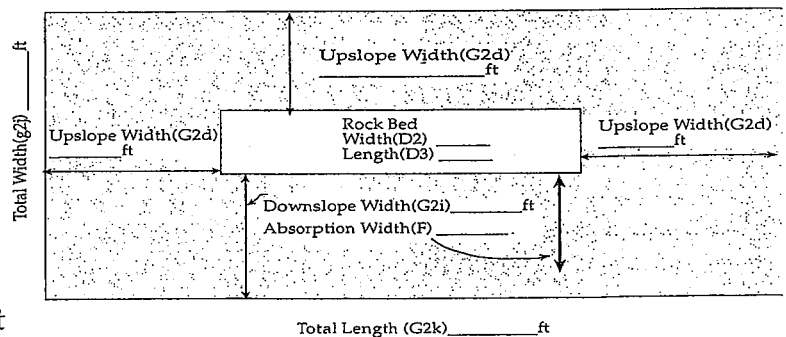
k. Total mound length is the sum of upslope width (G2d) plus rock layer length (D3) plus upslope width (G2d)
_____ ft + _____ ft + _____ ft = _____ feet

Landslope > 1% slope



D-34: SLOPE MULTIPLIER TABLE

Land Slope, in %	UPSLOPE multipliers for various slope ratios						DOWNSLOPE multipliers for various slope ratios				
	3:1	4:1	5:1	6:1	7:1	8:1	3:1	4:1	5:1	6:1	7:1
0	3.0	4.0	5.0	6.0	7.0	8.0	3.0	4.0	5.0	6.0	7.0
1	2.91	3.85	4.76	5.66	6.54	7.41	3.09	4.17	5.26	6.38	7.53
2	2.83	3.70	4.54	5.36	6.14	6.90	3.19	4.35	5.56	6.82	8.14
3	2.75	3.57	4.35	5.08	5.79	6.45	3.30	4.54	5.88	7.32	8.86
4	2.68	3.45	4.17	4.84	5.46	6.06	3.41	4.76	6.25	7.89	9.72
5	2.61	3.33	4.00	4.62	5.19	5.71	3.53	5.00	6.67	8.57	10.77
6	2.54	3.23	3.85	4.41	4.93	5.41	3.66	5.26	7.14	9.38	12.07
7	2.48	3.12	3.70	4.23	4.70	5.13	3.80	5.56	7.69	10.34	13.73
8	2.42	3.03	3.57	4.05	4.49	4.88	3.95	5.88	8.33	11.54	15.91
9	2.36	2.94	3.45	3.90	4.30	4.65	4.11	6.25	9.09	13.04	18.92
10	2.31	2.86	3.33	3.75	4.12	4.44	4.29	6.67	10.00	15.00	23.33
11	2.26	2.78	3.23	3.61	3.95	4.26	4.48	7.14	11.11	17.65	30.43
12	2.21	2.70	3.12	3.49	3.80	4.08	4.69	7.69	12.50	21.43	43.75



Final Dimensions:
_____ x _____

I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

_____ (signature) _____ (license #) _____ (date)

<=1% land slope

G. Mound Slope Width and Length (landslope less than or equal to 1%)

1. Absorption width (F) 20 ft

2. Calculate mound size

a. Determine depth of clean sand fill

at upslope edge of rock layer = 3 ft

minus the distance to restricting layer (C1)

3 ft - 1 ft = 2 ft

b. Mound height at the upslope edge of rock layer = depth of clean sand for separation (G2a)

at upslope edge plus depth of rock layer (1 ft) plus depth of cover (1 ft)

2 ft + 1ft + 1ft = 4 ft

c. Berm width = upslope mound height (G2b) times 4 (4 is recommended, but could be 3-12)

4 x 4 = 16 ft

d. The total landscape width is the sum of berm (G2c) width plus rock layer width (D2) plus berm width (G2c): 16 ft + 10 ft + 16 ft = 42 ft

e. Additional width necessary for absorption = absorption width (F) minus the landscape width (G2d)

 ft - ft = ft, if number is negative (<0) skip to g

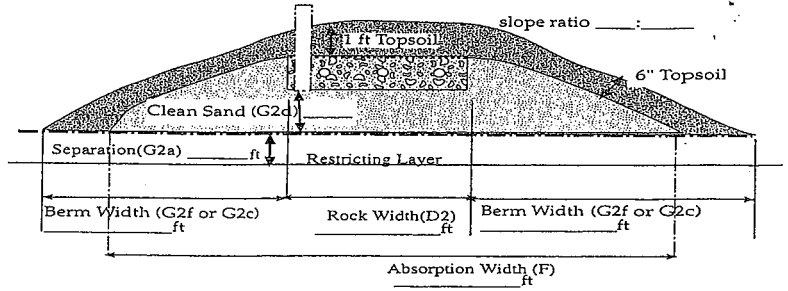
f. Final berm width = additional width (G2e) plus the berm width (G2c)

 ft + ft = ft

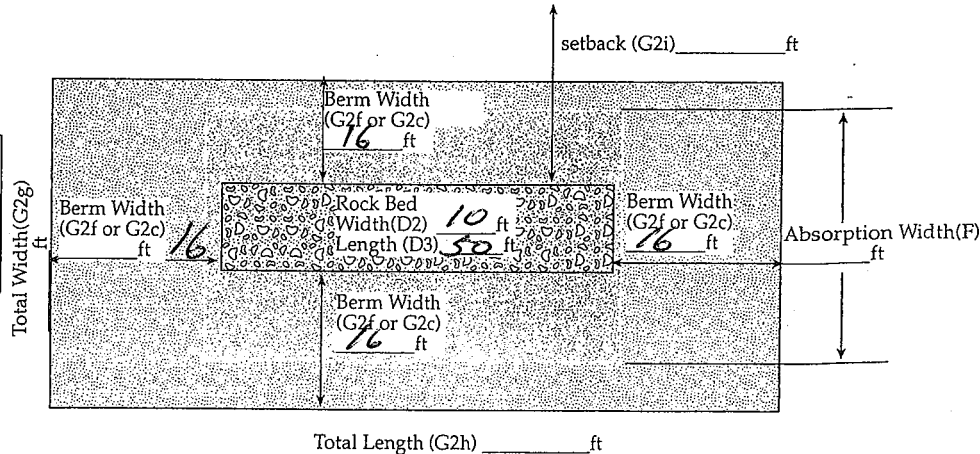
g. Total mound width is the sum of berm width (G2f or G2c) plus rock layer width (D2) plus berm width (G2f or G2c): ft + ft + ft = 42 ft

h. Total mound length is the sum of berm (G2f or G2c) plus rock layer length (D3) plus berm (G2f or G2c): 16 ft + 50 ft + 16 ft = 82 ft

i. Setbacks from the rockbed are calculated as follows: the absorption width (F) minus the rock bed width (D2) divided by 2: (10 ft - 2 ft) ÷ 2 = 5 ft



Final Dimensions:
42 x 82



I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.
[Signature] (signature) 478 (license #) 9-28-2018 (date)

***** FOR OFFICE USE ONLY *****

Application Approved by: Sand + Spell Date: 10/5/18
 Amount Paid: 150,00 Receipt Number 138778-693780 Permit Number _____
 NOTES: _____

INSPECTION REPORT

Home Information

Does the structure contain any of the following elements?

Garbage disposer Yes No Dishwasher Yes No
 Grinder pump Yes No Lift pump in basement Yes No
 Effluent screen installed? Yes No Effluent screen manufacturer _____

Alarm required? Yes No Alarm Type _____ Alarm manufacturer _____

Lift pump in system? Yes No Pump manufacturer _____

Number of bedrooms _____

Component Information

Tank size 1500cc + 600 lpf Tank manufacturer _____

Drainfield size 500
 Drainfield medium _____ Medium manufacturer Mound
 Drainfield medium size/depth _____

Soil Verification

Vertical separation verified for Boring #1 on _____ Depth _____
 Vertical separation verified for Boring #2 on _____ Depth _____
 Vertical separation verified for Boring #3 on _____ Depth _____

Setback Verification

	TANK	DRAINFIELD
Distance to Well	<u>50+</u>	<u>50+</u>
Distance to Building	<u>-</u>	<u>-</u>
Distance to Property Line	<u>10+</u>	<u>10+</u>
Distance to OHW of Lake	<u>25+</u>	<u>25+</u>
Distance to Pressure Line	<u>10+</u>	<u>10+</u>
Distance to Wetland/Protected Water	<u>-</u>	<u>-</u>

Date System Installed 10-17-18 Installer Bergstrom Inspector Ugh

CERTIFICATE OF COMPLIANCE

() Certificate Is Hereby Denied
 (X) Certificate is Hereby Granted Based upon the Application, addendum from, plans, specifications and all other supporting data.
 With property maintenance, this system can be expected to function satisfactory, however, this is not a guarantee.

Signature Sand + Spell Title ISTS inspector Date 11/28/18

(Certificate of Compliance is not valid unless signed by a Registered Qualified Employee)