

FIELD EVALUATION SHEET

PRELIMINARY EVALUATION DATE 5/12/2016, FIELD EVALUATION DATE 5/12/2016
 PROPERTY OWNER: Donna M. Kellar (Wiese) PHONE N/A
 ADDRESS: 38252 Deer St. CITY, STATE, ZIP: Aitkin, MN. 56431
 LEGAL DESCRIPTION: PT OF SW NE (TRACT B & 1/6 OF 1/4TH INT IN REVISED TRACT D)
 PIN# 24-0-013901 SEC 8 T 46 R 26 TWP NAME Nordland
 FIRE# LAKE/RIVER Nord Lake LAKE CLASS RD OHW n/a F

DESCRIPTION OF SOIL TREATMENT AREAS

	AREA #1	AREA #2	REFERENCE BM ELEV. <u>100</u>
DISTURBED AREAS	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	REFERENCE BM DESCRIPTION
COMPACTED AREAS	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<u>Center of small cement</u>
FLOODING	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<u>pad @ NW corner of existing</u>
RUN ON POTENTIAL	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<u>garage.</u>
SLOPE %	<u>2%</u>		
DIRECTION OF SLOPE	<u>E</u>		
LANDSCAPE POSITION	<u>upland</u>		
VEGETATION TYPES	<u>lawn</u>		

DEPTH TO STANDING WATER OR MOTTLED SOIL: BORING# 1 4', 1A _____, 2 3.75', 2A _____

BOTTOM ELEVATION--FIRST TRENCH OR BOTTOM OF ROCK BED: #1 100.3 FT., #2 _____ FT.

SOIL SIZING FACTOR: SITE # 1 2.00, SITE #2 _____

CONSTRUCTION RELATED ISSUES: Replacement system for an existing cabin. The old tank is to be insp. & reused and a 520 gal. pump tank. added. (1860 combo to be installed if old tank bad.)

LIC# L1392 SITE EVALUATOR SIGNATURE: _____

SITE EVALUATOR NAME: Charles J. Virginia TELEPHONE# 218-927-3619

LUG REVIEW CT 5-16-16 DATE _____

Comments: _____

SOIL BORING LOGS ON REVERSE SIDE

APPROVED

ONSITE INSPECTION
 NO ONSITE INSPECTION

SIGN CT 5-16-16 DATE _____

SOILS CHARTS FOR BOTH PROPOSED AND ALTERNATE SITES

1 (PROPOSED) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
0-6"	Topsoil	
6"-24"	Fine Sandy Loam	10YR4/4
24"-24"	Loam/Sand	10YR5/4
No mottling observed		

2 (PROPOSED) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
0-7"	Topsoil	
7"-28"	Fine Sandy Loam	10YR 4/4
28"-45"	Loam Sand	10YR5/4
No mottling observed		

1 (ALTERNATE) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
There is 300'+ between the proposed site and Deer St. All of which would be suitable for an alternate site.		

2 (ALTERNATE) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
There is 300'+ between the proposed site and Deer St. All of which would be suitable for an alternate site.		

⬆ 5-16-16

ADDITIONAL SOIL BORINGS MAY BE REQUIRED



Job #

University of Minnesota Mound Design Worksheet

Greater than 1% Slopes

A. FLOW
 Estimated or measured 450 gpd (see figure A-1)
 x 1.5 (safety factor) = 0 gpd

B. SEPTIC TANK LIQUID VOLUMES
 Septic tank capacity 1250 gallons (see figure C-1)
 Number of tanks/compartments 2
 Effluent Filter (yes/no) no

Number of Bedrooms	Minimum Capacity	Capacity with Garb. Disp.	Capacity with Disp. and Lift
2 or less	750	1125	1500
3 or 4	1000	1500	2000
5 or 6	1500	2250	3000
7, 8 or 9	2000	3000	4000

C. SOILS (Site evaluation data)

- Depth to restricting layer = 2.0 feet
- Depth of percolation tests = inches
- Texture Fine Sandy Loam
- Soil loading rate (see Figure D-33) 0.60 gpd/ft²
- Percolation rate MPI
- % Land Slope 2.0 %

D. ROCK LAYER DIMENSIONS

- Multiply average design flow (A) by 0.83 to obtain required area of rock layer: Item A x 0.83 =
 $\frac{450}{\text{gpd}} \times 0.83 \text{ ft}^2/\text{gpd} = \frac{380}{\text{ft}^2}$
- Determine rock layer width = $0.83 \text{ ft}^2/\text{gpd} \times \text{Linear Loading Rate (LLR)}$ (see LLR chart)
 $0.83 \text{ ft}^2/\text{gpd} \times \frac{12.00}{\text{ft}} = \frac{10.0}{\text{ft}}$

Perk Rate	LLR
<120 MPI	<=12
>=120 MPI	<=6

- Length of rock layer = area divided by width =
 $\frac{380.0}{\text{ft}^2} / \frac{10.0}{\text{ft}} = \frac{38.0}{\text{ft}}$

E. ROCK VOLUME

- Multiply rock area by rock depth to get cubic feet of rock
 $\frac{380.0}{\text{ft}^2} \times \frac{1.0}{\text{ft}} = \frac{380.0}{\text{ft}^3}$
- Divide ft³ by 27 ft³/yd³ to get cubic yards
 $\frac{380.0}{\text{ft}^3} / 27 = \frac{14.1}{\text{yd}^3}$
- Multiply cubic yards by 1.4 to get weight of rock in tons:
 $\frac{14.1}{\text{yd}^3} \times 1.4 \text{ ton/yd}^3 = \frac{19.7}{\text{tons}}$

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F. **ABSORPTION WIDTH** Absorption ratio: 2

1. Absorption width equals absorption ratio times rock layer width

$$\underline{2.00} \quad \times \quad \underline{10.0} \quad \text{ft} \quad = \quad \underline{20.0} \quad \text{ft}$$

G. **MOUND SLOPE WIDTH & LENGTH (Greater than 1%)**

1. Downslope absorption width = absorption width minus rock layer width

$$\underline{20.0} \quad \text{feet} \quad - \quad \underline{10.0} \quad \text{feet} \quad = \quad \underline{10.0} \quad \text{ft}$$

2. Calculate mound size
UPSLOPE

a. Depth of clean sand at upslope edge of rock layer = 3 feet minus distance to restricting layer(C1)

$$\underline{3.0} \quad \text{ft} \quad - \quad \underline{2.0} \quad \text{ft} \quad = \quad \underline{1.0} \quad \text{ft}$$

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 foot) to depth of cover (1 foot)

$$1 \text{ ft} + 1 \text{ ft} + 1 \text{ ft} = \underline{3.0} \quad \text{ft}$$

c. Upslope berm multiplier based on land slope (see figure D-34)
Selected berm multiplier: 3.70

d. Upslope width = berm multiplier(G2c) times upslope mound height(G2b):

$$\underline{3.70} \quad \times \quad \underline{3.0} \quad \text{ft} \quad = \quad \underline{11.1} \quad \text{ft}$$

DOWNSLOPE

e. Drop in elevation = rock layer width (D2) times percent landslope(C5) / 100

$$\underline{10.0} \quad \text{ft} \quad \times \quad \underline{2.0} \quad \% \quad / \quad 100 \quad = \quad \underline{0.2} \quad \text{ft}$$

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 (2b)

$$\underline{0.2} \quad \text{ft} \quad + \quad \underline{3.0} \quad \text{ft} \quad = \quad \underline{3.2} \quad \text{ft}$$

g. Downslope berm multiplier based on percent land slope (see Figure D-34)
Selected berm multiplier: 4.35

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

$$\underline{4.35} \quad \times \quad \underline{3.2} \quad = \quad \underline{14.0} \quad \text{ft}$$

i. Select greater of G1 and G2h as the downslope width 14.0 ft

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

$$\underline{11.1} \quad \text{ft} \quad + \quad \underline{10.0} \quad \text{ft} \quad + \quad \underline{14.0} \quad \text{ft} \quad = \quad \underline{35.1} \quad \text{ft}$$

k. Total mound length is the sum of upslope width (G2d) plus rock layer length (D3) plus upslope width (G2d)

$$\underline{11.1} \quad \text{ft} \quad + \quad \underline{38.0} \quad \text{ft} \quad + \quad \underline{11.1} \quad \text{ft} \quad = \quad \underline{60.2} \quad \text{ft}$$

Final Dimensions (slope >1%)	35.1 ft	x	60.2 ft
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I hereby certify that all work has been completed in accordance with all applicable ordinances, rules & laws

Charles Virginia (signature) L1392 (license #) 5/13/16 (date)

(K) 5-16-16

H. SAND VOLUME

1. Upslope Volume + Volume under rockbed + Downslope Volume

a. Upslope Volume: $(\text{depth of clean sand} + 1) \times (\text{upslope berm}) \times (\text{mound length}) / 2 = \text{ft}^3$

$$\frac{2.0}{\text{ft}} \times 11.1 \text{ ft} \times \frac{60.2}{\text{ft}} / 2 = 668.2 \text{ ft}^3$$

b. Volume under rockbed: $(\text{average depth of sand under rock}) \times (\text{rockbed width}) \times (\text{mound length}) = \text{ft}^3$

$$1.1 \text{ ft} \times 10.0 \text{ ft} \times 60.2 \text{ ft} = 662.2 \text{ ft}^3$$

c. Downslope Volume: $(\text{depth of clean sand} + 1) \times (\text{downslope berm}) \times (\text{mound length}) / 2 = \text{ft}^3$

$$\frac{2.2}{\text{ft}} \times 14.0 \text{ ft} \times \frac{60.2}{\text{ft}} / 2 = 927.1 \text{ ft}^3$$

Total cubic feet: = 2257.5 ft³

2. Divide ft³ by 27 ft³/yd³ to get cubic yards

$$\frac{2257.5}{27} = 83.6 \text{ yds}^3$$

3. Multiply cubic yards by 1.4 to get weight of sand in tons

$$83.6 \text{ yds}^3 \times 1.4 = 117.1 \text{ tons}$$

4. Add 10% for Constructability

$$117.1 \text{ tons} \times 1.1 = 128.8 \text{ tons}$$

No. of Bdrms	Class I	Class II	Class III	Class IV
2	300	225	180	60% of the values in the Class I, II or II 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	

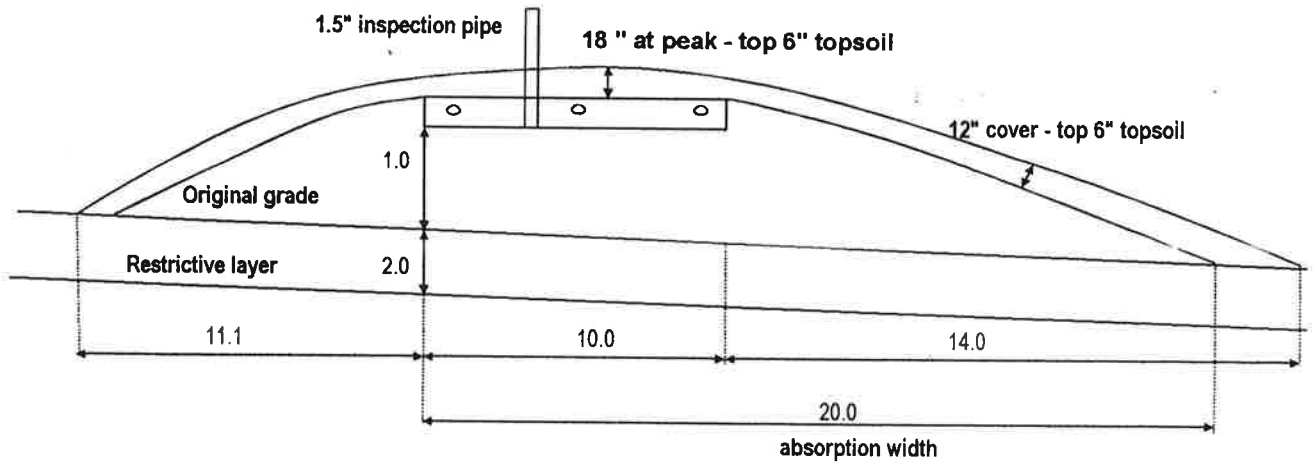
Perc Rate mpi	Soil Texture	Loading Rate gpd/sq ft	Absorption Ratio
<5	Coarse sand Loamy sand Med., Fine sand	1.20	1.00
6-15	Sandy loam	0.79	1.50
16-30	Loam	0.60	2.00
31-45	Silt Loam, Silt	0.50	2.40
46-60	Clay loam, Silty or Sandy Clay Loam	0.45	2.67
61-120	Silty or Sandy Clay or Clay	0.24	5
>120*			

*Must be other or performance.

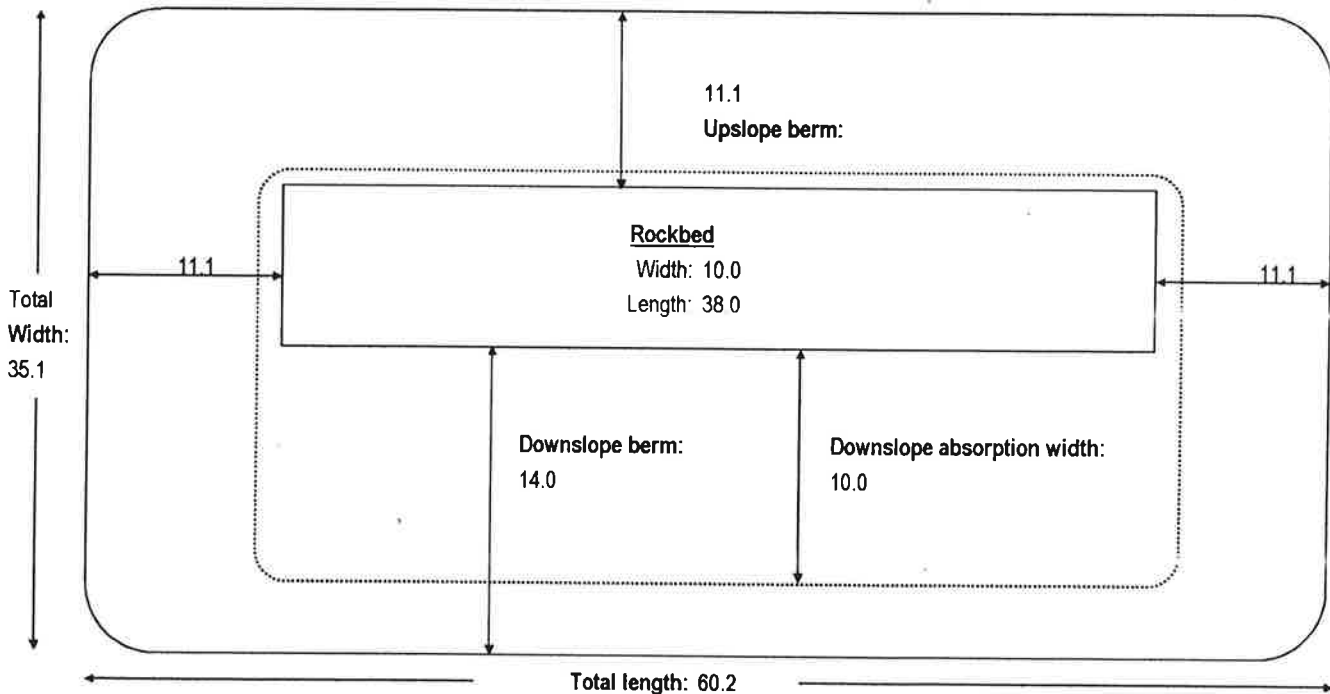
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D-34 Slope Multiplier Table

Land % Slope	Upslope				Downslope				
	multipliers for various slope ratios				multipliers for various slope ratios				
	3:1	4:1	5:1	6:1	3:1	4:1	5:1	6:1	7:1
0	3.00	4.00	5.00	6.00	3.00	4.00	5.00	6.00	7.00
1	2.91	3.85	4.76	5.66	3.09	4.17	5.26	6.38	7.53
2	2.83	3.70	4.54	5.36	3.19	4.35	5.56	6.82	8.14
3	2.75	3.57	4.35	5.08	3.30	4.54	5.88	7.32	8.86
4	2.68	3.45	4.17	4.84	3.41	4.76	6.25	7.89	9.72
5	2.61	3.33	4.00	4.62	3.53	5.00	6.67	8.57	10.77
6	2.54	3.23	3.85	4.41	3.66	5.26	7.14	9.38	12.07
7	2.48	3.12	3.70	4.23	3.80	5.56	7.69	10.34	13.73
8	2.42	3.03	3.57	4.05	3.95	5.88	8.33	11.54	15.91
9	2.36	2.94	3.45	3.90	4.11	6.25	9.09	13.04	18.92
10	2.31	2.86	3.33	3.75	4.29	6.67	10.00	15.00	23.33
11	2.26	2.78	3.23	3.61	4.48	7.14	11.11	17.65	30.43
12	2.21	2.70	3.12	3.49	4.69	7.69	12.50	21.43	43.75
13	2.17	2.62			4.95	8.29			
14	2.13	2.55			5.24	8.92			
15	2.09	2.48			5.55	9.57			
16	2.06	2.41			5.88	10.24			
17	2.03	2.35			6.24	10.94			
18	2.00	2.29			6.63	11.67			
19	1.97	2.23			7.04	12.42			
20	1.95	2.18			7.47	13.19			
21	1.93	2.13			7.93	13.99			
22	1.91	2.08			8.42	14.82			
23	1.89	2.03			8.93	15.67			
24	1.87	1.98			9.46	16.54			
25	1.85	1.93			10.02	17.44			



Mound Detail: Land slope > 1%



Notes:

Divert surface water away from mound.

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University of Minnesota Pressure Distribution System Design - 10/25/04

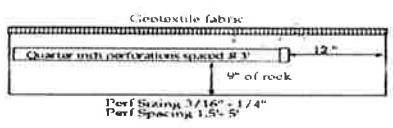
All boxed rectangles must be entered, the rest will be calculated.



1. Select number of perforated laterals:

2. Select perforation spacing = ft

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



4. Determine the number of spaces between perforations.
 Divide the length (3) by perforation spacing (2) and round down to nearest whole number.
 Perforation spacing = ft / ft =

5. Select perforation size inch

6. Number of perforations is equal to one plus the number of perforation spaces (4)
 * Check figure E-4 to assure the number of perforations per lateral guarantees < 10% discharge variation.
 spaces + 1 = perforations/lateral

Perforation Spacing ft	Pipe Diameter			
	1 inch	1.25 inch	1.5 inch	2.0 inch
2.5	8	14	18	28
3.0	8	13	17	26
3.3	7	12	16	25
4.0	7	11	15	23
5.0	6	10	14	22

Perforation Spacing feet	Pipe Diameter			
	1 inch	1.25 inch	1.5 inch	2.0 inch
2.5	12	19	25	39
3	11	18	24	37
3.3	10	17	23	36
4	10	16	21	33
5	9	15	20	31

7. A. Total number of perforations = perforations per lateral (5) times number of laterals (1).
 perfs/ lat x laterals = perforations

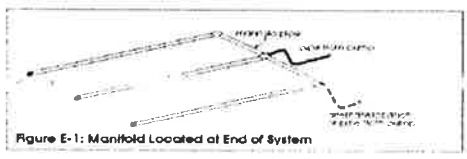
B. Calculate the square footage per perforation.
 Recommended value is 6-10 sqft/perf. Does not apply to at-grades.

1. Rock bed area = rock width (ft) x rock length (ft)
 ft x ft = ft²
 2. Square foot per perforation = Rock Bed Area / number of perfs (6)
 ft² / perfs = ft² / perf

8. Determine required flow rate by multiplying the total number of perforations (6A) by flow per perforations (see figure E-6)
 perfs x gpm / perfs = gpm

Head (feet)	Perforations diameter (inches)		
	3/16	7/32	1/4
1'	0.42	0.56	0.74
2'	0.59	0.80	1.04
5	0.94	1.26	1.65

a. Use 1.0 foot for single-family homes.
 b. Use 2.0 feet for anything else



9. Determine Minimum Pipe Size
 A. **Manifold on End.** If laterals are connected to header pipe as shown in Figure E-1, to select minimum required lateral diameter; enter figure E-4 or E-5 with perforation spacing and number of perforations per lateral. Select minimum diameter for perforated laterals = inches

B. **Center Manifold.** If perforated lateral system is attached to manifold pipe near the center, like Figure E-2, perforated lateral length (3) and number of perforations per lateral (5) will be approximately one half of that in step A. Using these values, select minimum diameter for perforated lateral = inches



I hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.
 (signature) L1392 (license #) (date)

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University of Minnesota Pump Selection Procedure - 10/25/04

All boxed rectangles must be entered, the rest will be calculated.



1. Determine pump capacity:

A. Gravity Distribution

1. Minimum required discharge is 10 gpm
 2. Maximum suggested discharge is 45 gpm
- For other establishments at least 10% greater than the water supply rate, but no faster than the rate at which effluent will flow out of the distribution device.

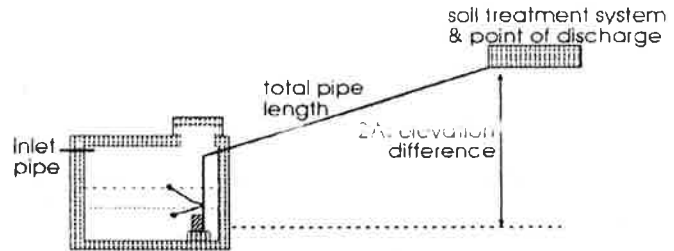
B. Pressure Distribution - see pressure design worksheet

Selected Pump Capacity: gpm

2. Determine Total Dynamic Head (TDH)

A. Elevation difference between pump and point of discharge.

feet



B. Special head requirement? (See Figure - Special Head Requirements)

feet

Special Head Requirements	
Gravity Distribution	0ft
Pressure Distribution	5ft

C. Friction loss in supply pipe

1. Select pipe diameter in

2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1)

Read friction loss in feet per 100 feet from Figure E-9

Friction loss = ft/ 100 ft of pipe

3. Determine total pipe length from pump discharge to soil system discharge point.

Estimate by adding 25 percent to pipe length for friction loss in fittings.

Pipe length times 1.25 = equivalent pipe length

ft x 1.25 = feet

4. Calculate total friction loss by multiplying friction loss (C2)

by the equivalent pipe length (C3) and divide by 100.

Friction Loss = ft/100ft X ft / 100 = feet

Flow Rate (gpm)	E-9 Friction Loss in Plastic Pipe per 100 ft		
	nominal pipe diameter		
	1.5"	2.0"	3"
20	2.47	0.73	0.11
25	3.73	1.11	0.16
30	5.23	1.55	0.23
35	6.96	2.06	0.3
40	8.91	2.64	0.39
45	11.07	3.28	0.48
50	13.46	3.99	0.58
55		4.76	0.7
60		5.6	0.82
65		6.48	0.95
70		7.44	1.09

D. Total head requirement is the sum of elevation difference (A), special head requirements (B), and total friction loss (C4).

ft + ft + ft

Total Head: feet

3. Pump Selection

1. A pump must be selected to deliver at least gpm (1A or B) with at least feet of total head (2D).

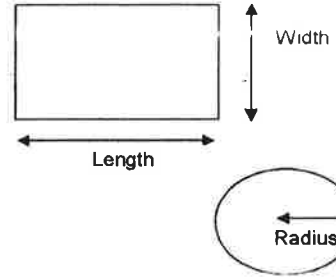
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 (signature) (license #)

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DOSING CHAMBER SIZING - 10/25/04

All boxed rectangles must be entered, the rest will be calculated.



- Determine area
 - Rectangle area = $L \times W$
 $\boxed{} \text{ ft} \times \boxed{} \text{ ft} = \underline{} \text{ ft}^2$
 - Circle area = $3.14 \times \text{radius}^2$
 $3.14 \times \boxed{}^2 \text{ ft} = \underline{} \text{ ft}^2$
 - Get area from manufacture
 $\boxed{} \text{ ft}^2$
- Calculate gallons per inch
 There are 7.5 gallons per cubic foot of volume, therefore multiply the area (1A, B or C) times the conversion factor and divide by 12 inches per foot to calculate gallon per inch.
 Surface area $\times 7.5 / 12 = \underline{} \text{ ft}^2 \times 7.5 / 12 \text{ in/ft} = \underline{16.6}$ gallon per inch
 (From Manufacturer)

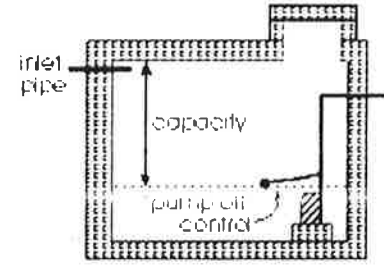
Legal Tank:
 500 gallons or
 100% the daily flow
 or Alternating Pumps

- Calculate total tank volume
 - Depth from bottom of inlet pipe to tank bottom = $\boxed{31.5}$ in
 - Total tank volume = depth from bottom of inlet pipe to tank bottom(3A) \times gal/in(2)
 $= \underline{31.5} \text{ in} \times \underline{16.6} \text{ gal/in} = \underline{522.3}$ gallons
- Calculate gallons to cover pump (with 2-3 inches of water covering pump)
 (Pump and block height + 2 inches) \times gallon per inch
 $(\boxed{12} + 2 \text{ in}) \times \underline{16.6} \text{ gal/in} = \underline{232.1}$ gallons
- Calculate total pumpout volume
 - Select pump size for 4-5 doses per day. Gallon per dose = $\text{gpd (see Figure A-1)} / \text{doses per day} =$
 $\boxed{450} \text{ gpd} / \boxed{5} \text{ doses/day} = \underline{90}$ gallons

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

Pipe Diameter inches	Liquid per foot gallons
1	0.045
1.25	0.078
1.5	0.110
2	0.170
2.5	0.250
3	0.380
4	0.660

- Calculate drainback
 - Determine total pipe length $\boxed{75.0}$ ft
 - Determine liquid volume of pipe, $\boxed{0.17}$ gal/ft (see figure E-20)
 - Drainback quantity = $\underline{75.0} \text{ ft (5B1)} \times \underline{0.17} \text{ gal/ft (5B2)} = \underline{12.8}$ gal
- Total pump out volume = dose volume(5A) + drainback (5B3)
 $\underline{90} \text{ gallons} + \underline{12.8} \text{ gallons} = \underline{102.8}$ gal



- Calculate float separation distance (using total pumpout volume)
 Total pumpout volume(5C) / gal/inch(2)
 $\underline{102.8} \text{ gal} / \underline{16.6} \text{ gal/in} = \underline{6.2}$ inch
- Calculate volume for alarm (typically 2 - 3 inches)
 Alarm depth (inch) \times gallon/inch(2) = $\boxed{2} \text{ in} \times \underline{16.6} \text{ gal/in} = \underline{33.16}$ gal
- Calculate total gallons = gallons over pump(4) + gallons pumpout(5C) + gallons alarm(7)
 $\underline{232.1} \text{ gal} + \underline{102.8} \text{ gal} + \underline{33.2} \text{ gal} = \underline{368.0}$ gal
- Total tank depth = total gallons(8) / gallon/in(2)
 $\underline{368.0} \text{ gallons} / \underline{16.58} \text{ gal/in} = \underline{22.2}$ in

Recommended		
Calculate reserve capacity (75% of the daily flow)		
Daily flow $\times 0.75 =$	450	$\times 0.75 = 337.5$ gallons

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

Charles M. ... (signature) L1392 (license #) 5/13/2016

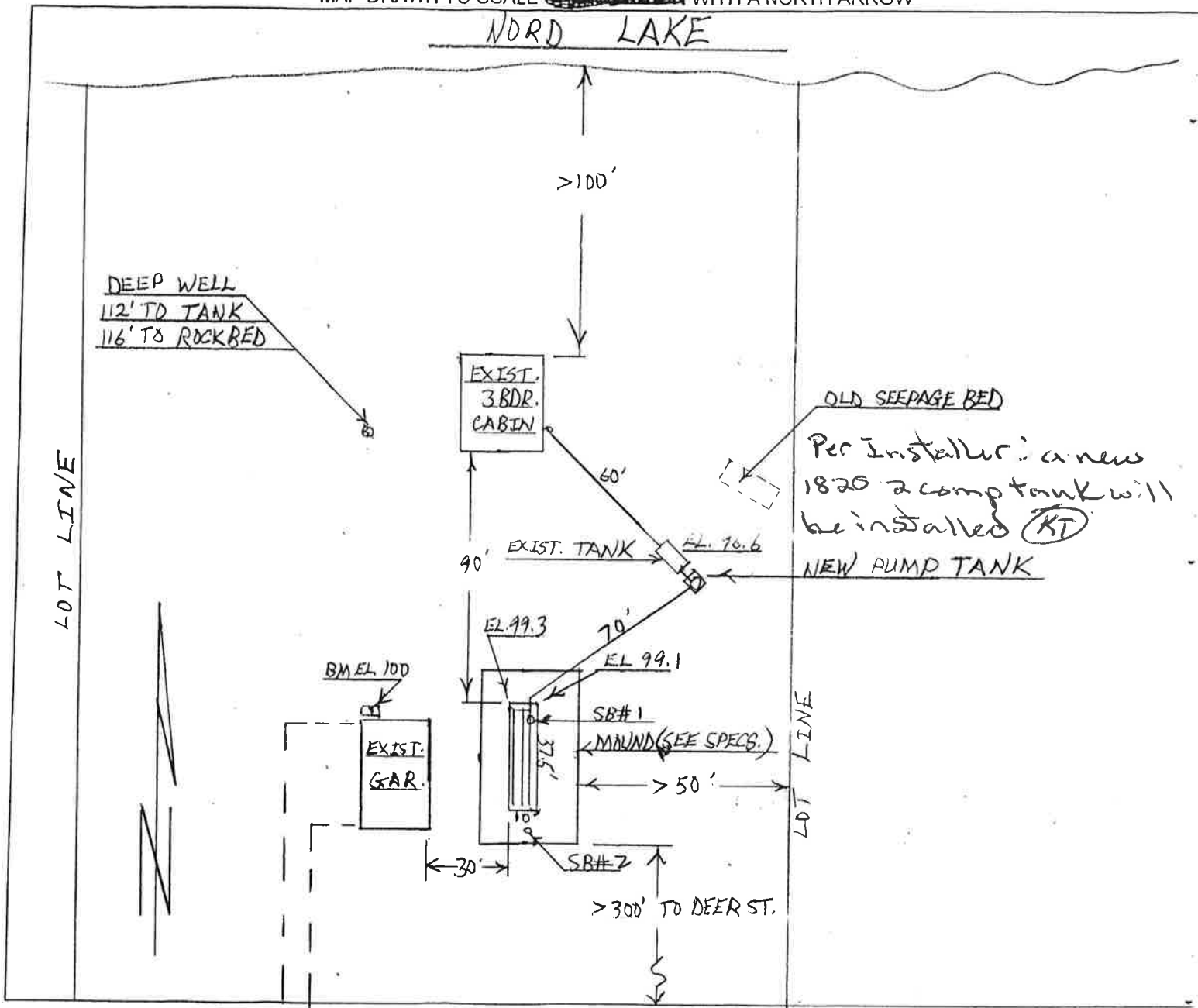
KT 5-16-16

CLIENT: _____

SKETCH PLAN

DATE: _____

MAP DRAWN TO SCALE _____ WITH A NORTH ARROW



CHECK OFF LIST--HAVE ALL OF THE FOLLOWING BEEN DRAWN ON THE MAP??

SHOW EXISTING OR PROPOSED

- WATER WELLS WITHIN 100 FT OF TREATMENT AREAS
- PRESSURE WATER LINES WITHIN 10 FT OF TREATMENT AREAS
- STRUCTURES
- ALL SOIL TREATMENT AREAS
- HORIZONTAL AND VERTICAL REFERENCE
- POINT OF SOIL BORINGS
- LOT EASEMENTS
- DISTURBED/ COMPACTED AREAS
- SITE PROTECTION--LATHE AND RIBBON EVERY 15 FT
- ACCESS ROUTE FOR TANK MAINTENANCE
- LOT IMPROVEMENTS
- ALL ISTS COMPONENTS
- DIRECTION OF SLOPE
- ALL LOT DIMENSIONS

REQUIRED SETBACKS

- STRUCTURES
- OHWL
- PROPERTY LINES

COMMENTS: (KT) 5-16-16

DESIGNER SIGNATURE Charles W. Virginia
LICENSE# L 1392

INDICATE ELEVATIONS

BENCHMARK	100
ELEVATION OF SEWER LINE @ HOUSE	94
ELEVATION @ TANK INLET (PUMP)	94.1
ELEVATION @ BOTTOM OF ROCK LAYER	100
ELEVATION @ BOTTOM OF BORING OR RESTRICTIVE LAYER	95.6
ELEVATION OF PUMP	92.3
ELEVATION OF DISTRIBUTION DEVICE	101

DATE 5/13/16

Subsurface Sewage Treatment System Management Plan

Property Owner: Donna M. Kellar (Weise) Phone: _____ Date: 5/13/16

Mailing Address: 2709 S. Garfield Ave. City: Sioux Falls, SD Zip: 57015

Site Address: 38252 Deer St. City: Aitkin, MN. Zip: 56431

This management plan will identify the operation and maintenance activities necessary to ensure long-term performance of your septic system. Some of these activities must be performed by you, the homeowner. Other tasks must be performed by a licensed septic service provider.

System Designer: check every 36 months.

Local Government: check every _____ months.

State Requirement: check every 36 months.

**My System needs to be checked
every 36 months.**

(State requirements are based on MN Rules Chapter 7080.2450, Subp. 2 & 3)

Homeowner Management Tasks

Leaks – Check (look, listen) for leaks in toilets and dripping faucets. Repair leaks promptly.

Surfacing sewage – Regularly check for wet or spongy soil around your soil treatment area.

Effluent filter – *Inspect and clean twice a year or more.*

Alarms – Alarm signals when there is a problem. Contact a service provider any time an alarm signals.

Event counter or water meter – Record your water use. *N/A*

-recommend meter readings be conducted (circle one: DAILY WEEKLY MONTHLY)

Professional Management Tasks

- Check to make sure tank is not leaking
- Check and clean the in-tank effluent filter
- Check the sludge/scum layer levels in all septic tanks
- Recommend if tank should be pumped
- Check inlet and outlet baffles
- Check the drainfield effluent levels in the rock layer
- Check the pump and alarm system functions
- Check wiring for corrosion and function
- Check dissolved oxygen and effluent temperature in tank
- Provide homeowner with list of results and any action to be taken
- Flush and clean laterals if cleanouts exist

"I understand it is my responsibility to properly operate and maintain the sewage treatment system on this property, utilizing the Management Plan. If requirements in the Management Plan are not met, I will promptly notify the permitting authority and take necessary corrective actions. If I have a new system, I agree to adequately protect the reserve area for future use as a soil treatment system."

Property Owner Signature: _____ Date: _____

Designer Signature: Charles A. Higgins Date: 5/13/16

See Reverse Side for Management Log

Maintenance Log

Activity	Date Accomplished									
<i>Check frequently:</i>										
Leaks: check for plumbing leaks										
Soil treatment area check for surfacing										
Lint filter: check, clean if needed										
Effluent screen: if owner-maintained										
Water usage rate (monitor frequency _____)										
<i>Check annually:</i>										
Caps: inspect, replace if needed										
Sludge & Scum/Pump										
Inlet & Outlet baffles										
Drainfield effluent leaks										
Pump, alarm, wiring										
Flush & clean laterals if cleanouts exists										
Other: _____										
Other: _____										

Notes: _____

Mitigation/corrective action plan: _____
