



150457000

PARCEL	150457000
APP	SEPTIC
YEAR	2018
SCANNED	
LAKE	Little Toad

2018 Onsite Septic System Application

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

REC
 JUL 09 2018

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: 150457000

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 24 Township 139 Range 39 Township Name Height of Land South

Lake Name Little Toad Lake Classification RD

Legal Description: Lot 8 Meadow Bay

Project Address: 40232 Meadow Bay

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

Owner's First Name William + Valerie Owner's Last Name Bebler

Mailing Address 1128 38th Ave S City, State, Zip Moorhead, MN 56560

Phone Number 218 329 6248

3. DESIGNER/INSTALLER INFORMATION

Designer Name Scott Ellingson Company Name Scott's Septic Services, LLC License # 3947

Address 201 Meadow Cir Ashby MN 56309 Phone Number 218-205-1667

Installer Name Tim Stenger Company Name Stenger Excavating LLC License # 553

Address 35295 St Hwy 34 Phone Number 218-841-4954
Detroit Lakes, MN 56501

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

6-27-18 Date of site evaluation

Design Flow 300 Gallons Per Day

Number of Bedrooms 2

Garbage Disposal Yes No

Dishwasher Yes No

Lift station in House Yes No

Grinder pump in House Yes No

Well Depth Shallow

Depth of other wells within

100 ft of system Shallow

Original Soil yes Compacted Soil no

Type of Soil Observation

Pit Probe Boring

Depth to Restricting Layer

Maximum Depth of System

Size of All Tanks to be installed

gal Single Compartment Septic Tank gal Separate Lift Station

gal Compartmented Tank 1000-gal 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 1 (This # will be reported to MPCA at end of year.)

PARCEL	150457000
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YEAR	2018

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

Type of chamber _____
 Depth of Rock _____

Alarm? Yes No _____
 Type of Alarm manual float
 Size of Lift Pump _____
 Size of Lift Line _____

PROPOSED SETBACKS

	TANK	DRAINFIELD
Distance to Well	<u>55'</u>	_____
Distance to Building	<u>22'</u>	_____
Distance to Property Line	<u>12'</u>	_____
Distance to OHW of Lake	<u>86'</u>	_____
Distance to Pressure Line	<u>10'</u>	_____
Distance to Wetland/Protected Water	<u>_____</u>	_____

***Attach Worksheets

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

Soil Borings (three are required)

Depth	Texture	Color	Structure	Depth	Texture	Color	Structure

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, Scott Ellingson 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).

Scott Ellingson
 Signature of Designer

6-29-18
 Date



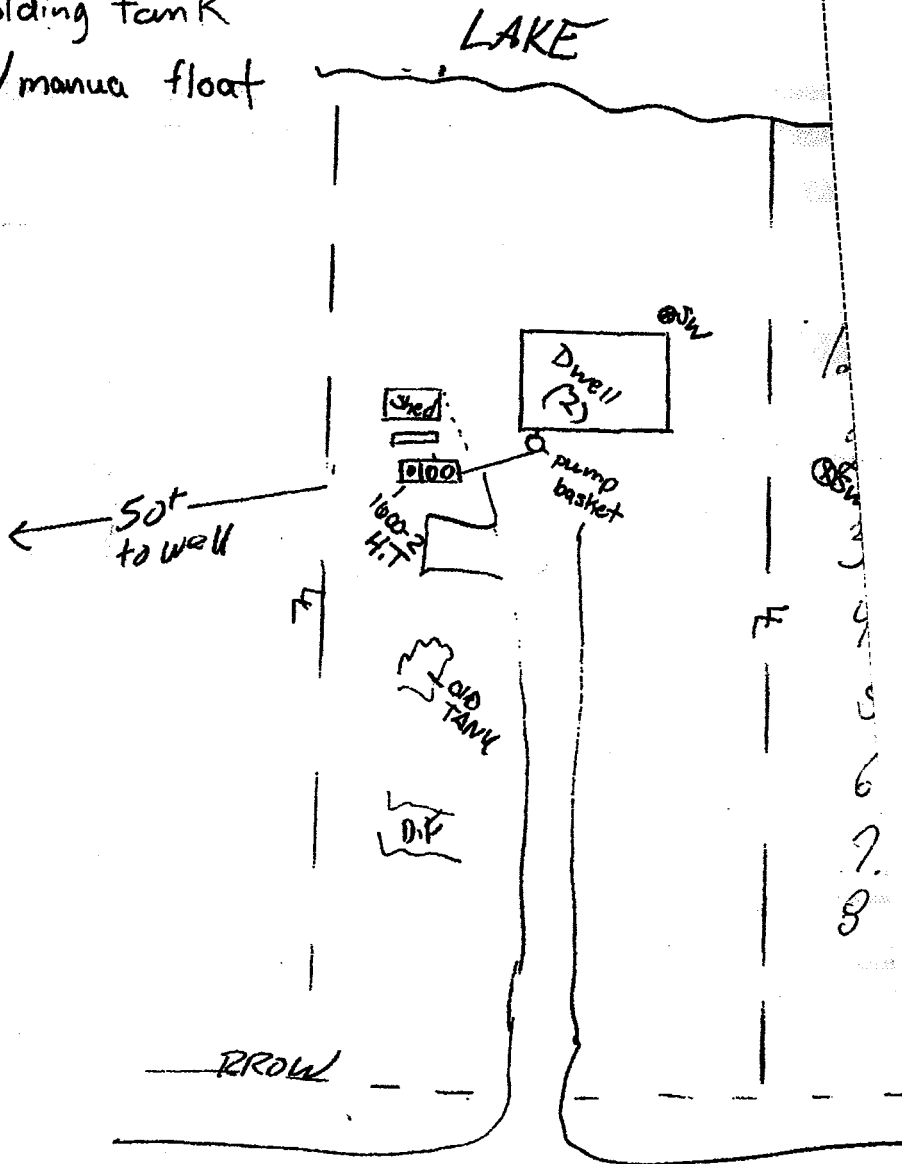
Scott Ellingson
 201 Meadow Circle, Ashby, MN 56309
 218-205-1667

PARCEL # 120451000



SKETCH C

2 beds
 Install 1000-2 gal
 Holding tank
 w/manual float



Application Approved by: Paul A. Stall Date: 7/10/18
Amount Paid \$150.00 Receipt Number _____ 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 manual Alarm manufacturer _____

Lift pump in system? Yes No Pump manufacturer _____

Number of bedrooms 2

Component Information

Tank size 160021c Tank manufacturer Brown

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

TANK only

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>150</u>	_____
Distance to Building	<u>10</u>	_____
Distance to Property Line	<u>10</u>	_____
Distance to OHW of Lake	<u>125</u>	_____
Distance to Pressure Line	<u>10</u>	_____
Distance to Wetland/Protected Water	_____	_____

Date System Installed 7/10/18 Installer Tim Stenger EPC Inspector Paul A. Stall

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 Paul A. Stall Title ISFS Inspector Date 7/10/18

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

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

Application Approved by: Lance A. Stall Date: 7/10/18
Amount Paid \$150.00 Receipt Number _____ 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 manual Alarm manufacturer _____

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Number of bedrooms 2

Component Information

Tank size 160021c Tank manufacturer Brown

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

TANK only

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>	_____
Distance to Building	<u>+10</u>	_____
Distance to Property Line	<u>10</u>	_____
Distance to OHW of Lake	<u>+75</u>	_____
Distance to Pressure Line	<u>+10</u>	_____
Distance to Wetland/Protected Water	_____	_____

Date System Installed 7/10/18 Installer Tim Stenger EPC Inspector Lance A. Stall

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 Lance A. Stall Title ISTS Inspector Date 7/10/18

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

**PERMIT MUST BE
POSTED AT THE
CONSTRUCTION SITE**

Becker County Planning & Zoning
835 Lake Ave, P O Box 787
Detroit Lakes, MN 56502-0787
Phone (218)-846-7314; Fax (218)-846-7266

Onsite Septic System Site Evaluation/Design

Tax Parcel Number 15.0457000
Fire Number _____

Legal Description: Lot 8 Meadow Bay Point Section 24 TWP 139N Range 32W

Lake Name LITTLE TOAD Lake Classification _____ Township Name Highway Land

Owner's Name Norman Williams Address 809 So Drive Fargo 58103

City FARGO State/Zip ND Phone Number 701-235-5830

Number of Bedrooms 2
Design Flow 300 GPD

Well Casing Depth 60'
Depth of other Wells within
100 ft of system _____

Garbage Disposal (Yes) (No)
Grinder Pump/Lift Station
In House (Yes) (No)

Type of Observation: Probe Pit Boring
Original Soil (Yes) (No) Compacted Soil (Yes) (No)
Depth to Restricting Layer 2'
Maximum of Depth of System 3'
Perc Rate _____ Soil Sizing Factor 1.67

Proposed Design
 Replace Septic Tank
 Septic Tank/Drainfield
 Drainfield Only
 Holding Tank
 Lift Station

Type of Drainfield
 Standard (gravelless/chamber)
 Standard (rock depth _____)
 Standard Bed
 Mound At Grade
 Pressurized Bed

SOIL BORING LOG

DEPTH (INCHES)	TEXTURE	COLOR & MUNSELL NO.	STRUCTURE
0'-2"	TOP Soil	10YR 3-2	BLOCKY PLATY PRISMATIC NONE
2'-3"	SAND	10YR 5-4	BLOCKY PLATY PRISMATIC NONE
3'-3"	LOAMY SAND	10YR 5-6	BLOCKY PLATY PRISMATIC NONE
3'-10.5"	SAND	10YR 5-4	BLOCKY PLATY PRISMATIC NONE
5'-7"	CLAY	10YR 7-1	BLOCKY PLATY PRISMATIC NONE

SOIL BORING LOG

DEPTH (INCHES)	TEXTURE	COLOR & MUNSELL NO.	STRUCTURE
			BLOCKY PLATY PRISMATIC NONE
			BLOCKY PLATY PRISMATIC NONE
			BLOCKY PLATY PRISMATIC NONE
			BLOCKY PLATY PRISMATIC NONE

Attach Perc Test Information If Required

Name and Address of Designer John Racer Phone 5733516

MPCA Number 286 Date of Site Evaluation 6-10-99 Signature of Designer John Racer

Name of Installer (if different from Designer) _____ MPCA Number 286

FOR USE BY BECKER COUNTY ENVIRONMENTAL SERVICES DEPARTMENT ONLY

*** Any changes to the permit must first be approved by Becker County Planning & Zoning. No system shall be covered up without inspection by Becker County Planning & Zoning.
*** Inspections must be scheduled at least 24 hours prior to time requested.

Date Received 7/12/99 Application Fee 75⁰⁰ State Surcharge 150 Total 75⁵⁰

Application is hereby denied
 Application is hereby granted to N. Williams to install an individual septic system according to the specifications of the site evaluation and design submitted to the Becker County Environmental Services Office. By Order of: Debi Mottgen

Signature of Becker County Qualified Employee 7/12/00 Date Permit Issued 7/12/99 Permit Number 13600

This permit expires on _____

1274 0

Onsite Septic System Site Evaluation/Design

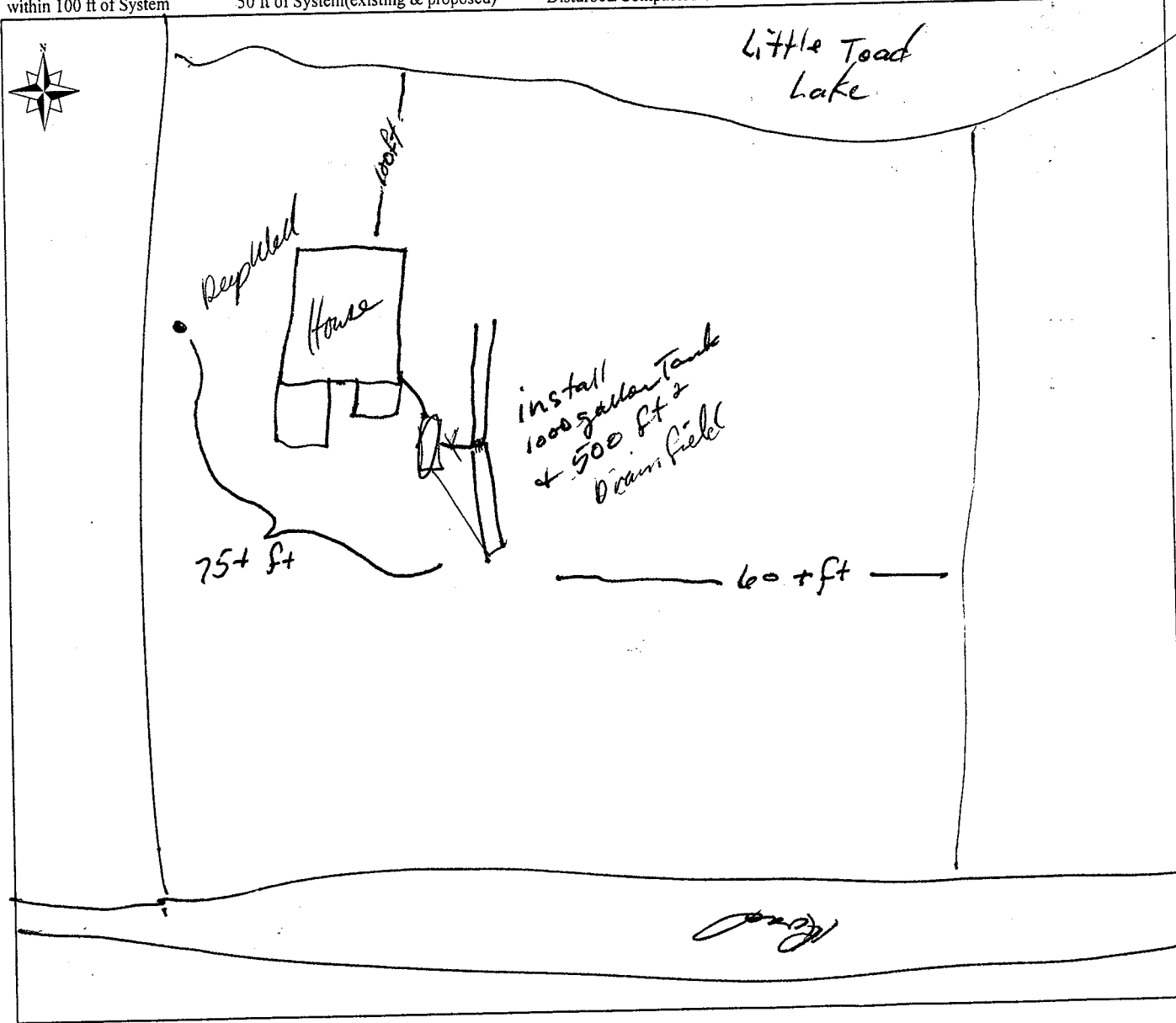
Fire Number _____
Tax Parcel Number 15 0458000

Legal Description: <u>Meadow Bay Point Lot 9</u>			
Lake/Stream Name	Lake/Stream Class	Section TWP Range	Township Name
<u>Little Toad</u>	<u>RD</u>	<u>24 139 39</u>	<u>Height of Land</u>
Property Owner	Address	City, State, Zip Code	Phone Number
<u>Roger Rolfs</u>	<u>RD 3 Box 519</u>	<u>Frazee, MN 5</u>	<u>3340 2408</u>
ISTS Designer I / Designer II	License Number	Address	Phone Number
<u>Tom Falk</u>	<u>622</u>	<u>Vergas</u>	<u>392 2893</u>

Site Plan

The site plan must be drawn to dimension or to scale:

- *All Wells within 100 feet of the System
- *Existing & Proposed Buildings
- *Distance from OHW
- *Soil Boring & Perc Test Locations
- *Distance from all Wells within 100 ft of System
- *Easements
- *Distance from Property Lines
- *Dimensions of Lot
- *Distance from Water Lines within 50 ft of System (existing & proposed)
- *Location of any Unsuitable Disturbed/Compacted Soil
- *Tank Access Route
- *Scale - One inch = _____ ft



[Handwritten signature]

- PERCOLATION TEST SHEET -

Test hole location _____ Hole # 1 Date test hole was prepared: 10/3/08

Depth of hole bottom: 24 inches Diameter of hole: 6 inches

Soil Data from test hole:

depth, inches	soil texture:	soil color
<u>1-7</u>	<u>Topsoil</u>	<u>10 yr 6/6</u>
<u>2-60</u>	<u>sand</u>	

Method of scratching sidewall: Drop W.M. Depth of pea size gravel in bottom of hole: 2 inches

Date and hour of initial water filling: 1 pm 10/3 Depth of initial water filling: 12 above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours: _____

Percolation test conducted by: Tom Fall Percolation test started at 1 (am/pm)

Maximum water depth above hole bottom during test: 6 inches

TIME	INTERVAL (MINUTES)	WATER DEPTH	WATER DROP (fraction)	WATER DROP (decimal)	PERC RATE CALCULATION	conversions
<u>1:25</u> <u>1:35</u>	START <u>10</u>	<u>6</u> <u>1</u>	<u>5</u>		$\frac{6}{\text{TIME}} \div \frac{5}{\text{DROP}} = \frac{2}{\text{PERC}} \text{ A}$	1/16 = .06 1/8 = .13 3/16 = .19
<u>1:36</u> <u>1:46</u>	REFILL <u>10</u>	<u>6</u> <u>1</u>	<u>5</u>		$\frac{10}{\text{TIME}} \div \frac{5}{\text{DROP}} = \frac{2}{\text{PERC}} \text{ B}$	1/4 = .25 5/16 = .31
<u>1:47</u> <u>1:57</u>	REFILL <u>10</u>	<u>6</u> <u>1</u>	<u>5</u>		$\frac{10}{\text{TIME}} \div \frac{5}{\text{DROP}} = \frac{2}{\text{PERC}} \text{ C}$	3/8 = .38 7/16 = .44
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ D}$	1/2 = .5
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ E}$	9/16 = .56 5/8 = .63
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ F}$	11/16 = .69
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ G}$	3/4 = .75 13/16 = .81
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ H}$	7/8 = .88 15/16 = .94

Ten Percent Calculation *

A, B, C

Largest # of ABC - Smallest # of ABC = 2

Smallest # of ABC x 0.10 = _____

C, D, E

Largest # of CDE - Smallest # of CDE = _____

Smallest # of CDE x 0.10 = _____

E, F, G

Largest # of EFG - Smallest # of EFG = _____

Smallest # of EFG x 0.10 = _____

B, C, D

Largest # of BCD - Smallest # of BCD = _____

Smallest # of BCD x 0.10 = _____

D, E, F

Largest # of DEF - Smallest # of DEF = _____

Smallest # of DEF x 0.10 = _____

F, G, H

Largest # of FGH - Smallest # of FGH = _____

Smallest # of FGH x 0.10 = _____

* If the top number in each set of boxes is larger than the bottom number then take another reading. If the top number is equal or smaller than bottom number, average the three numbers for the perc rate.

INDIVIDUAL SEWAGE TREATMENT SYSTEM WORKSHEET

- FLOW**
- A. Estimated 600 gpd
 measured _____ x 1.5 = _____ gpd
- SEPTIC TANK VOLUME**
- B. 1000 gallons
- SOILS (Site evaluation data)**
- C. Depth to restricting layer = _____ feet
 D. Maximum depth of system C - 3 ft = _____ feet
 E. Texture _____ Percolation rate _____ MPI
 F. SSF _____ sq ft/gpd
 G. Slope _____%

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	

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

- TRENCH BOTTOM AREA**
- H. For trenches with 6 inches of rock below the pipe:
 $A \times F = \text{_____} \times \text{_____} = \text{_____}$ sq ft of bottom area
- I. For trenches with 12 inches of rock below the pipe:
 $A \times F \times 0.8 = \text{_____} \times \text{_____} \times 0.8 = \text{_____}$ sq ft of bottom area
- J. For trenches with 18 inches of rock below the pipe:
 $A \times F \times 0.66 = \text{_____} \times \text{_____} \times 0.66 = \text{_____}$ sq ft of bottom area
- K. For trenches with 24 inches of rock below the pipe:
 $A \times F \times 0.6 = \text{_____} \times \text{_____} \times 0.6 = \text{_____}$ sq ft of bottom area
- BED BOTTOM AREA**
- L. For seepage beds with 6 or 12 inches of rock below the pipe;
 $1.5 \times A \times F = 1.5 \times \text{_____} \times \text{_____} = \text{_____}$ sq ft of bottom area

Percolation Rate in Minutes per Inch (MPI)	Soil Texture	Square feet per gallon per day
Faster than 0.1 *	Coarse Sand
0.1 to 5	Sand	0.83
0.1 to 5	Fine Sand **	1.67
6 to 15	Sandy Loam	1.27
16 to 30	Loam	1.67
31 to 45	Silt Loam	2.00
46 to 60	Clay Loam	2.20
Slower than 60***	Clay

* Soil too coarse for sewage treatment. Use systems for rapidly permeable soils.
 ** Soil having 50% or more of fine sand plus very fine sand.
 *** Soil with too high a percentage of clay for installation of an inground standard system.

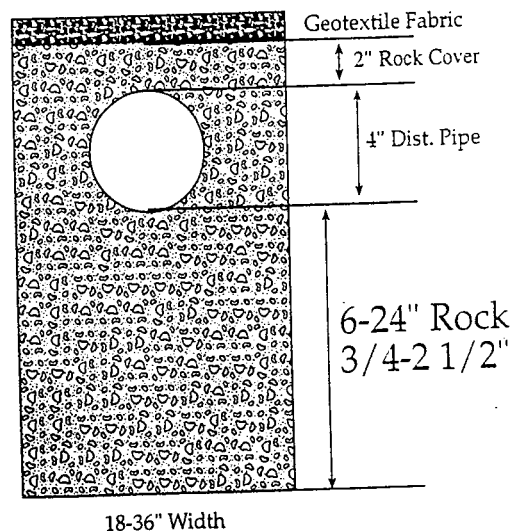
- ROCK VOLUME IN CU FT**
- M. Rock depth below distribution pipe plus 0.5 foot times bottom area:
 $M = \text{Rock depth} + 6 \text{ inches} \times \text{Area (H,I,J,L,K)}$
 $(\text{_____} + 0.5 \text{ ft}) \times \text{_____} = \text{_____}$ cu ft
- ROCK VOLUME IN CU YDS**
- N. Volume in cu ft divided by 27
 $M \div 27 = \text{cu yds}$ _____ $\div 27 = \text{_____}$ cu yds
- ROCK WEIGHT**
- O. Cubic yards times 1.4 = tons
 $N \times 1.4 = \text{tons}$ _____ $\times 1.4 = \text{_____}$ tons

6 inches = 0% Reduction*
12 inches = 20% Reduction
18 inches = 34% Reduction
24 inches = 40% Reduction
 * sizing for gravelless trench

- SYSTEM LENGTH**
- P. Select trench width = _____ ft
- Q. Divide bottom area by trench width: (H, I, J, or K) \div P = lineal feet
 _____ \div _____ = _____ lineal feet
- Q1. Gravelless Design
 $A \times F \div (3 \text{ for } 10" \text{ pipe, } 2 \text{ for } 8" \text{ pipe, width of the Chamber})$
 _____ \div _____ = _____ feet

- LAWN AREA**
- R. Select trench spacing, center to center = _____ feet
- S. Multiply trench spacing by lineal feet R \times Q = sq ft of lawn area
 _____ \times _____ = _____ sq ft

If the site evaluation determines a mound system, please attach the mound design worksheets.



TEST HOLE #1

TEST HOLE #2

DEPTH IN INCHES	SOIL TEXTURE	MUNSELL COLOR	STRUCTURE	DEPTH IN INCHES	SOIL TEXTURE	MUNSELL COLOR	STRUCTURE
1-7	Topsoil	—	BLOCKY PLATY PRISMATIC NONE	1-7	Topsoil	—	BLOCKY PLATY PRISMATIC NONE
7-60	Sand	10YR 6/6	BLOCKY PLATY PRISMATIC NONE	7-60	Sand	10YR 6/6	BLOCKY PLATY PRISMATIC NONE
			BLOCKY PLATY PRISMATIC NONE				BLOCKY PLATY PRISMATIC NONE
			BLOCKY PLATY PRISMATIC NONE				BLOCKY PLATY PRISMATIC NONE
			BLOCKY PLATY PRISMATIC NONE				BLOCKY PLATY PRISMATIC NONE
Depth to standing water				Depth to standing water			
Depth to mottling				Depth to mottling			

Describe the surface features (slope, runoff, weather conditions, vegetation type, evidence of compaction, etc.)

SYSTEM IS NEW () REPAIR SYSTEM DESIGN GRAVITY FLOW () PRESSURE DISTRIBUTION

WATER USES: NUMBER OF BEDROOMS 4 DEPTH OF SYSTEM 24
 NUMBER OF BATHROOMS _____
 () WASHING MACHINE TOTAL SQ. FT OF STRUCTURE _____
 () DISHWASHER SYSTEM DESIGN FLOW 600 GPD
 () WATER SOFTENER SOIL SIZING FACTOR .83
 () GARBAGE DISPOSAL TANK SIZE _____ PUMP SIZE _____
 TYPE OF RESIDENCE LIFT STATION SIZE _____ LENGTH OF LIFT LINE _____
 (X) TYPE I () TYPE II AREA SIZE 500 SQ FT TOTAL DYNAMIC HEAD _____
 () TYPE III () TYPE IV DOSE VOLUME _____

Name of Designer I _____ Date of Site Evaluation 10/3/98
 Designer II Tom Fall 849 2388
 MPCA Number 622 Phone 342-2843

I certify that the site evaluation has been completed in accordance with all provisions of ISTS Minnesota Rules Chapter 7080.

Signature of Evaluator Tom Fall Date 10/3/98

For Office Use Only
 Date Site Evaluation / Design received 10-5-98 Received by [Signature]
 Date Site Evaluation approved 10-5-98 Approved by [Signature]

- PERCOLATION TEST SHEET -

Test hole location _____ Hole # 2 Date test hole was prepared: 10/3/98

Depth of hole bottom: 24 inches Diameter of hole: 6 inches

Soil Data from test hole:

depth, inches	soil texture:	soil color
<u>1-7</u>	<u>Topsoil</u>	<u>10yR 6/4</u>
<u>7-60</u>	<u>Sand</u>	<u>10yR 6/4</u>

Method of scratching sidewall: Pipe w/ Screen Depth of pea size gravel in bottom of hole: 2 inches

Date and hour of initial water filling: 1pm 10/3 Depth of initial water filling: 19 above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours: _____

Percolation test conducted by: To Jack Percolation test started at 1 (am/pm).

Maximum water depth above hole bottom during test: 6 inches

TIME	INTERVAL (MINUTES)	WATER DEPTH	WATER DROP (fraction)	WATER DROP (decimal)	PERC RATE CALCULATION	conversions
<u>1:27</u> <u>1:37</u>	START <u>10</u>	<u>6</u> <u>1</u>	<u>5</u>	-----	$\frac{10}{\text{TIME}} \div \frac{5}{\text{DROP (Decimal)}} = \frac{2}{\text{PERC}} \text{ A}$	1/16 = .06 1/8 = .13 3/16 = .19
<u>1:38</u> <u>1:48</u>	REFILL <u>10</u>	<u>6</u> <u>1</u>	<u>5</u>	-----	$\frac{10}{\text{TIME}} \div \frac{5}{\text{DROP (Decimal)}} = \frac{2}{\text{PERC}} \text{ B}$	1/4 = .25 5/16 = .31
<u>1:49</u> <u>1:59</u>	REFILL <u>10</u>	<u>6</u> <u>1</u>	<u>5</u>	-----	$\frac{10}{\text{TIME}} \div \frac{5}{\text{DROP (Decimal)}} = \frac{2}{\text{PERC}} \text{ C}$	3/8 = .38 7/16 = .44
-----	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}} \text{ D}$	1/2 = .5
-----	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}} \text{ E}$	9/16 = .56 5/8 = .63
-----	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}} \text{ F}$	11/16 = .69
-----	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}} \text{ G}$	3/4 = .75 13/16 = .81
-----	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}} \text{ H}$	7/8 = .88 15/16 = .94

Ten Percent Calculation *

A, B, C

Largest # of ABC - Smallest # of ABC = 2

Smallest # of ABC x 0.10 = _____

C, D, E

Largest # of CDE - Smallest # of CDE = _____

Smallest # of CDE x 0.10 = _____

E, F, G

Largest # of EFG - Smallest # of EFG = _____

Smallest # of EFG x 0.10 = _____

B, C, D

Largest # of BCD - Smallest # of BCD = _____

Smallest # of BCD x 0.10 = _____

D, E, F

Largest # of DEF - Smallest # of DEF = _____

Smallest # of DEF x 0.10 = _____

F, G, H

Largest # of FGH - Smallest # of FGH = _____

Smallest # of FGH x 0.10 = _____

* If the top number in each set of boxes is larger than the bottom number then take another reading. If the top number is equal or smaller than bottom number, average the three numbers for the perc rate.

- PERCOLATION TEST SHEET -

Test hole location _____ Hole # _____ Date test hole was prepared: _____

Depth of hole bottom: _____ inches Diameter of hole: _____ inches

Soil Data from test hole:

depth, inches	soil texture:	soil color
_____	_____	_____
_____	_____	_____
_____	_____	_____

Method of scratching sidewall: _____ Depth of pea size gravel in bottom of hole: _____ inches

Date and hour of initial water filling: _____ Depth of initial water filling: _____ above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours: _____

Percolation test conducted by: _____ Percolation test started at _____ (am / pm).

Maximum water depth above hole bottom during test: _____ inches

TIME	INTERVAL (MINUTES)	WATER DEPTH	WATER DROP (fraction)	WATER DROP (decimal)	PERC RATE CALCULATION
____	START	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ A
____	REFILL	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ B
____	REFILL	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ C
____	REFILL	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ D
____	REFILL	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ E
____	REFILL	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ F
____	REFILL	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ G
____	REFILL	-----	-----	-----	$\frac{\text{DROP}}{\text{TIME}} = \text{PERC}$ H

conversions

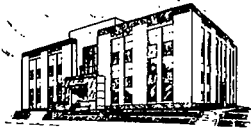
- 1/16 = .06
- 1/8 = .13
- 3/16 = .19
- 1/4 = .25
- 5/16 = .31
- 3/8 = .38
- 7/16 = .44
- 1/2 = .5
- 9/16 = .56
- 5/8 = .63
- 11/16 = .69
- 3/4 = .75
- 13/16 = .81
- 7/8 = .88
- 15/16 = .94

Ten Percent Calculation *

A, B, C	
Largest # of ABC	Smallest # of ABC
_____ - _____ = _____	
Smallest # of ABC × 0.10 = _____	
C, D, E	
Largest # of CDE	Smallest # of CDE
_____ - _____ = _____	
Smallest # of CDE × 0.10 = _____	
E, F, G	
Largest # of EFG	Smallest # of EFG
_____ - _____ = _____	
Smallest # of EFG × 0.10 = _____	

B, C, D	
Largest # of BCD	Smallest # of BCD
_____ - _____ = _____	
Smallest # of BCD × 0.10 = _____	
D, E, F	
Largest # of DEF	Smallest # of DEF
_____ - _____ = _____	
Smallest # of DEF × 0.10 = _____	
F, G, H	
Largest # of FGH	Smallest # of FGH
_____ - _____ = _____	
Smallest # of FGH × 0.10 = _____	

* If the top number in each set of boxes is larger than the bottom number then take another reading. If the top number is equal or smaller than bottom number, average the three numbers for the perc rate.



BECKER COUNTY

835 LAKE AVENUE, P.O. BOX 787
 DETROIT LAKES, MINNESOTA 56502-0787
 (218) 846-7314

Application No.
Tax Parcel No. 15, 0458, 000

SKETCH PLAN FORM H

Please be as complete as possible. Include all of the items listed below where applicable.

GENERAL CHECKLIST

- scale
- north arrow
- lot dimensions
- structure location
- side lot setback
- road setback
- septic tank location
- drainfield location
- location of all wells within 100' of drainfield - NONE
- fill & grading limits - DRIVEWAY (COMPLETED)
- vegetation alteration limits

WATER RESOURCE CHECKLIST

- location of ordinary high water level (OHWL)
- location of present water line
- setback from OHWL
- location of highest known water level
- existing local drainage
- location of wetland areas - NONE ↑

Scale of Diagram: 1 inch = 50 feet

Drawing By: ROGER ROUF

Date of Drawing: AUG 2, 2001

Impervious surface coverage calculation
 $3000 \text{ FT}^2 \div 65340 \text{ FT}^2$
 Impervious surface onsite Total Lot area ft²
 = 0.045 x 100 = 4.5 %
 Total percentage of impervious coverage

Remarks: _____

Signature _____

