



320334101

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

Rcpt #  
70528-  
294654

Onsite Septic System Site Evaluation/Design

1. PROPERTY DATA (as it appears on the tax statement)

Parcel Number(s) of property system will be installed 32.0334.101  
(if parcel is a new split and a parcel number has not yet been issued, indicate the main parcel number from which the new parcel has been split from)

Section 1 Township 141 N Range 40 W Township Name Sugar Bush

Lake Name \_\_\_\_\_ Lake Classification \_\_\_\_\_

Legal Description: Lot #1 Strawberry Heights Addition

Project Address: 33319 330th St Ogema, MN 56569

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

Owner's First Name Andy Owner's Last Name Engum

Mailing Address 33319 330th St City, State, Zip Ogema, MN 56569

Phone Number 218-983-4115

3. DESIGNER/INSTALLER INFORMATION

Designer Name Ron Muff Company Name Muffs Trenching License # 5074

Address 2201 City Hwy 34 Phone Number 218-983-3377  
Ogema, Mn. 56569

Installer Name Andy Engum Company Name \_\_\_\_\_ License # \_\_\_\_\_

Address 33319 330th St Phone Number 218-983-4115  
Ogema, MN 56569

4. SYSTEM DESIGN INFORMATION

Date of Site Evaluation October 28, 2004

EXISTING SYSTEM STATUS - Check One

What will new system serve? Check one

- No existing system-new structure
- Cesspool/Seepage
- Failing (other than cesspool)
- Undersized
- Replacement or repair to existing

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

Design Flow 300 Gallons Per Day

Number of Bedrooms 1

Garbage Disposal Yes  No

Grinder Pump in House Yes  No

Lift station in House Yes  No

Well Depth 80'

Depth of other wells within

100 ft of system None

Original Soil  Compacted Soil \_\_\_\_\_

Type of Soil Observation

Pit \_\_\_\_\_ Probe \_\_\_\_\_ Boring \_\_\_\_\_

Depth to Restricting Layer > 60"

Maximum Depth of System 24"

Size of All Tanks to Be installed  
1000 gal Septic Tank  
 \_\_\_ gal Lift Station  
 \_\_\_ gal Holding Tank  
 \_\_\_ gal Other Tanks

Type of Drainfield Medium to be used  
 Chamber  
 H10 EQ36  
 \_\_\_ Drainfield Rock  
 \_\_\_ Rock Depth  
 \_\_\_ Gravelless  
 \_\_\_ Experimental  
 \_\_\_ No Drainfield

Type of Alarm None  
 Size of Lift Pump None  
 Size of Lift Line None

Type of Drainfield to be installed  
 Trench  
 \_\_\_ At-grade  
 \_\_\_ Pressure Bed  
 \_\_\_ Seepage Bed  
 \_\_\_ Mound

Size of Drainfield sq ft to be installed  
375 sq ft 75' lineal ft  
 \_\_\_ sq ft  
 \_\_\_ sq ft  
 \_\_\_ sq ft  
 \_\_\_ sq ft

SETBACKS

TANK	DRAINFIELD
Distance to Well <u>65'</u>	<u>80'</u>
Distance to Building <u>12'</u>	<u>25'</u>
Distance to Property Line <u>90'</u>	<u>90'</u>
Distance to OHW <u>-</u>	<u>-</u>
Distance to Pressure Line <u>-</u>	<u>-</u>

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

Depth	Texture	Color	Structure	Depth	Texture	Color	Structure
0-5	Topsoil	Black		only	Did one because		
5-22	Sandy Loam	Brown		I dug a pit			
22-37	Sandy Loam	Dark Brown					
37-60	Sand	Light Brown					

**5. DESIGNER'S CERTIFIED STATEMENT**

I, Ron Mutt 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).

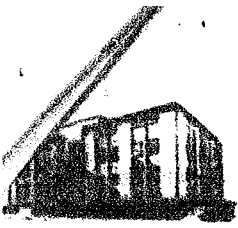
Signature of Designer [Signature] Date 10/29/04

\*\*\*\*\*FOR OFFICE USE ONLY\*\*\*\*\*  
 Application Approved by: [Signature] Date: 11-15-04  
 Amount Paid 110 Receipt Number 70528-29485 Permit Number \_\_\_\_\_

**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.

Signature [Signature] Title Supervisor of Inspectors Date 11-16-04  
 (Certificate of Compliance is not valid unless signed by a Registered Qualified Employee)  
 Date System Installed 11-5-04 Inspected by [Signature]



# BECKER COUNTY

835 LAKE AVENUE, P.O. BOX 787  
DETROIT LAKES, MINNESOTA 56802-0787  
(218) 848-7314

Application No.
Tax Parcel No.

## SKETCH PLAN FORM H

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

### GENERAL CHECKLIST

- easel
- north arrow
- lot dimensions
- structure location
- side lot setback
- road setback
- septic tank location
- drainfield location
- location of all wells within 100' of drainfield
- all grading details
- vegetation location details

### WATER RESOURCE CHECKLIST

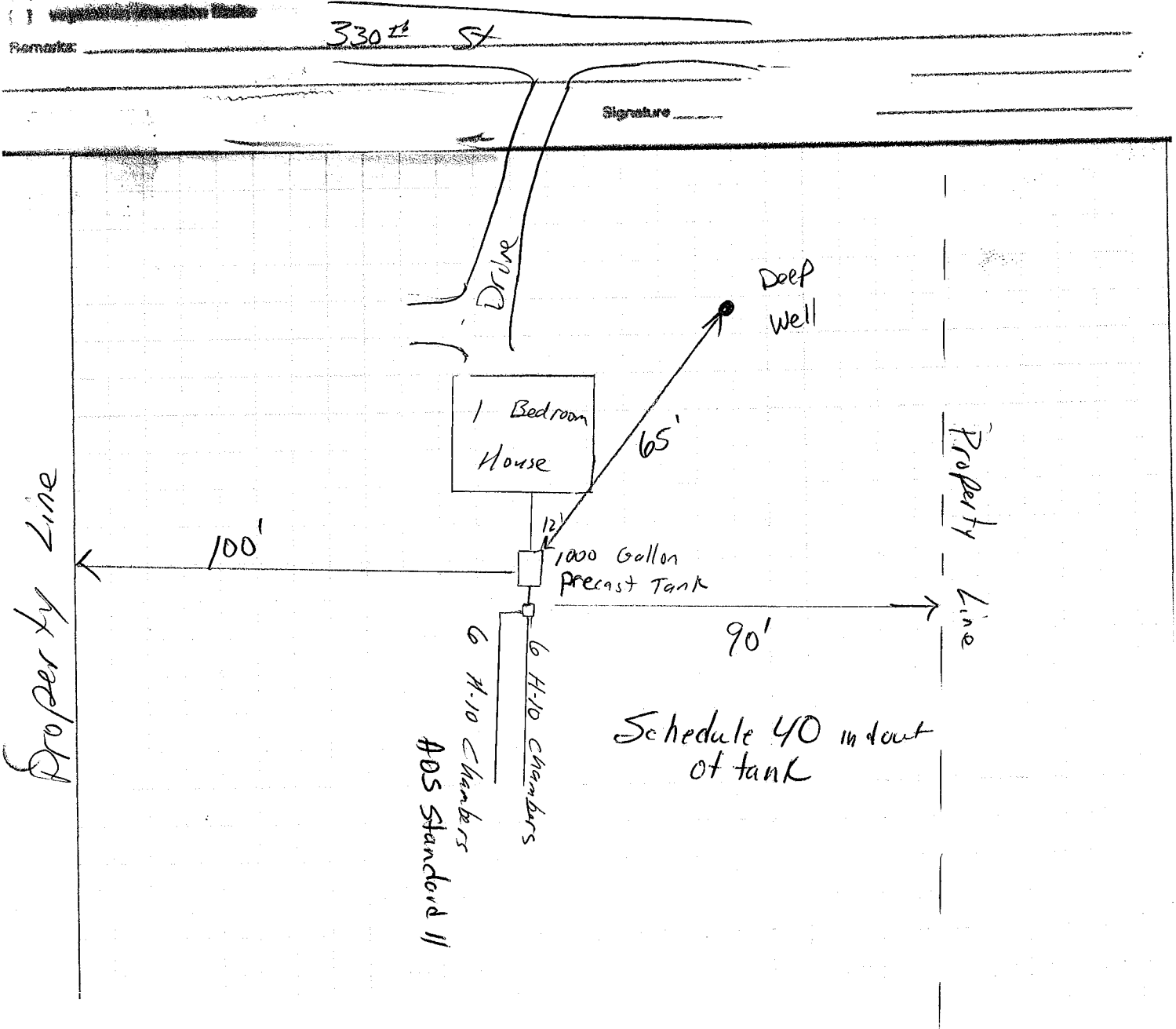
- location of ordinary high water level (OHWL)
- location of present water line
- setback from OHWL
- location of highest known water level
- existing local drainage
- location of wetland areas

Scale of Diagram: 1 inch = 30 feet

Drawing By: Ron Muff

Date of Drawing: 10/29/04

Remarks: \_\_\_\_\_



# Trench and Bed Worksheet

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

## 1. AVERAGE DESIGN FLOW

- A. Estimated 300 gpd (see figure A-1)  
 or measured  x 1.5 (safety factor) = 0 gpd
- B. Septic tank capacity 1000 gallons

A-1 Estimated Sewage Flows in GPD				
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 II
8	1200	675	408	columns

## 2. SOILS (Site evaluation data)

- C. Depth to restricting layer = > 5 feet
- D. Maximum depth of system Item C - 3 ft = 2 feet
- E. Texture Sandy Loam Percolation rate  mpi
- F. SSF 1.27 ft<sup>2</sup>/gpd (see figure D-15)
- G. % Land slope 1 %

D-15 Soil Characteristics & SSF		
Perc Rate mpi	Soil Texture	SSF sq ft/gpd
< 0.1 *	Coarse sand	0.83
0.1 - 5	Medium sand	0.83
	Loamy sand	
0.1 - 5**	Fine sand	1.67
6 - 15	Sandy loam	1.27
16 - 30	Loam	1.67
31 - 45	Silt loam, silt	2.00
46 - 60	Clay loam, sandy clay or silty clay	2.20
61 - 120***	Clay, sandy or silty clay	4.20
>120****		

C-1 Septic Tank Capacity in Gallons			
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

D-9: Soil Characteristics and Soil sizing factors (SSF) for Gravelless Pipe		
percolation rate (minutes/inch)	soil texture	lineal feet / gallon / day
Faster than 0.1 *	Coarse Sand	---
0.1 to 5	Medium Sand	0.28
	Loamy Sand	
0.1 to 5	Fine Sand **	0.6
6 to 15	Sandy Loam	0.42
16 to 30	Loam	0.56
31 to 45	Silt Loam	0.67
	Silt	
46 to 60	Clay Loam (CL)	0.74
	Sandy CL	
	Silty CL	
	Clay	
slower than 60***	Sandy Clay	---
	Silty Clay	

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

- \* No trench >25% of total system
- \*\* Soil with >50% fine sand particles
- \*\*\* A mound must be used
- \*\*\*\* An other or performance system

**3. TRENCH OR BED BOTTOM AREA**

H. For trenches with 6 inches of rock below the pipe:

$A \times F = \underline{300} \text{ gpd} \times \underline{1.27} \text{ ft/gpd} = \underline{381.0} \text{ ft}^2$

I. For trenches with 12 inches of rock below the pipe:

$A \times F \times 0.8 = \underline{300} \text{ gpd} \times \underline{1.27} \text{ ft/gpd} \times 0.8 = \underline{304.8} \text{ ft}^2$

J. For trenches with 18 inches of rock below the pipe:

$A \times F \times 0.66 = \underline{300} \text{ gpd} \times \underline{1.27} \text{ ft/gpd} \times 0.66 = \underline{251.5} \text{ ft}^2$

K. For trenches with 24 inches of rock below the pipe:

$A \times F \times 0.6 = \underline{300} \text{ gpd} \times \underline{1.27} \text{ ft/gpd} \times 0.6 = \underline{228.6} \text{ ft}^2$

L. For gravity beds with 6 or 12 inches of rock below the pipe;

$1.5 \times A \times F = 1.5 \times \underline{300} \text{ gpd} \times \underline{1.27} \text{ ft/gpd} = \underline{571.5} \text{ ft}^2$

M. For pressure beds with 6 or 12 inches of rock below the pipe;

$A \times F = \underline{300} \text{ gpd} \times \underline{1.27} \text{ ft/gpd} = \underline{381.0} \text{ ft}^2$

**4. DISTRIBUTION** (Check all that apply)

<input type="checkbox"/>	Bed (<6% slope)	<input type="checkbox"/>	Drop Boxes (any slope)	<input type="checkbox"/>	Rock
<input type="checkbox"/>	Trenches	<input checked="" type="checkbox"/>	Distribution Box (<3%)	<input checked="" type="checkbox"/>	Chamber
<input type="checkbox"/>	Pressure	<input checked="" type="checkbox"/>	Gravity	<input type="checkbox"/>	Gravelless

**5. SYSTEM WIDTH, LENGTH AND VOLUME**

M. Select width =  ft

N. If using rock, divide bottom area by width: (H, I, J or K) divided by P = lineal feet

$\underline{\quad\quad\quad} \text{ ft}^2 / \underline{0.0} \text{ ft} = \underline{\#DIV/0!} \text{ lineal feet}$

Rock depth below distribution pipe plus 0.5 foot times bottom area:

(Rock depth + 0.5 foot) x Area (H, I, J, K, L)

$(\underline{\quad\quad\quad} \text{ ft} + 0.5 \text{ ft}) \times \underline{\quad\quad\quad} \text{ ft}^2 = \underline{\quad\quad\quad} \text{ ft}^3$

Volume in cubic yards = volume in cubic feet divided by 27

$\underline{0.0} / 27 = \underline{0.0} \text{ yd}^3$

Weight of rock in tons = cubic yards times 1.4

$\underline{0.0} \times 1.4 = \underline{0.0} \text{ tons}$

O. If using 10" Gravelless Pipe, length = Flow (A) x Gravelless SSF (see figure D-9)

$\underline{300.0} \text{ gpd} \times \underline{0.42} \text{ ft/gpd} = \underline{126.0} \text{ lineal feet}$

P. If using a Chamber (H, I, J, K [based on height of chamber slats] divided by width of chamber in ft)

**2 bedroom house requires 12 chambers 75 lineal feet 375 square feet**

**7. LAWN AREA**

Q. Select trench spacing, center to center =  feet

R. Multiply trench spacing by lineal feet R x Q = sq. ft. of lawn area

$\underline{0} \times \underline{\#DIV/0!} = \underline{\#DIV/0!} \text{ ft}^2$

**8. LAYOUT**

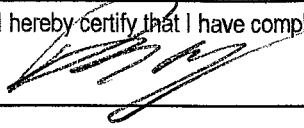
Select an appropriate scale; one inch =  feet

Show pertinent property boundaries, rights-of-way, easements.

Show location of house, garage, driveway, and all other improvements, existing or proposed.

Show location and layout of sewage treatment system, well and dimensions of all elevations

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

 (signature) 5074 (license #) 10/29/07 (date)

320  
763  
1917 (338)

1808  
374  
1111  
30799