



040094001

County Planning & Zoning

835 Lake Ave, P O Box 787
Detroit Lakes, MN 56502-0787
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RECEIVED
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ZONING

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 X R 04.0094.001
(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 X 18 Township X 141 Range X 41 Township Name _____

Lake Name N/A Lake Classification _____

Legal Description: E 500' of SW 1/4 of SE 1/4

Project Address: 22272 310th St Calloway, MN

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

Owner's First Name Darl Owner's Last Name STEFFL

Mailing Address 22272 310th St City, State, Zip Calloway, MN 56521

Phone Number ~~508~~

3. DESIGNER/INSTALLER INFORMATION

Designer Name WILLIAM ECK Company Name DT Environmental License # 2311

Address P.O. Box 153 Wausau Phone Number 218 473 2267

Installer Name Allen Luide Company Name _____ License # _____

Address _____ Phone Number _____

4. SYSTEM DESIGN INFORMATION

Date of Site Evaluation 10-30-07

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 600 Gallons Per Day
Number of Bedrooms 4
Garbage Disposal _____ Yes No
Grinder Pump in House _____ Yes No
Lift station in House _____ Yes No

Well Depth 100' +
Depth of other wells within 100 ft of system n/a

Original Soil Compacted Soil _____
Type of Soil Observation _____
Pit _____ Probe Boring _____
Depth to Restricting Layer 68"
Maximum Depth of System 32"

✓ entered

Size of All Tanks to Be installed
1500 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
 Size of Lift Pump N/A
 Size of Lift Line

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

Size of Drainfield sq ft to be installed
801 sq ft
 ___ sq ft
 ___ sq ft
 ___ sq ft
 ___ sq ft

SETBACKS
 TANK DRAINFIELD
 Distance to Well 50' 62'
 Distance to Building 10' 37'
 Distance to Property Line 100' + 100' +
 Distance to OHW
 Distance to Pressure Line

Perc Rate 2.5 Soil Sizing Factor 1.67 *If SSF other than .83, attach Perc Test Data

Depth	Texture	Color	Structure	Depth	Texture	Color	Structure
0-11	CLAY LOAM	10YR 2/3	Blocky moderate	0-9'	CLAY LOAM	10YR 2/3	Blocky moderate
11-68"	CLAY LOAM	10YR 5/4	Blocky moderate	9-70"	CLAY LOAM	10YR 5/4	Blocky moderate

5. DESIGNER'S CERTIFIED STATEMENT

I, William Eck 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).

William Eck Signature of Designer 11-3-07 Date

*****FOR OFFICE USE ONLY*****
 Application Approved by: Janet A. Stoll Date: 11/8/07
 Amount Paid: 100.00 Receipt Number 152235-376361 Permit Number _____

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.

Janet A. Stoll Signature Title ISTS inspector Date 11/9/07
 (Certificate of Compliance is not valid unless signed by a Registered Qualified Employee)
 Date System Installed 11/9/07 Inspected by Janet A. Stoll



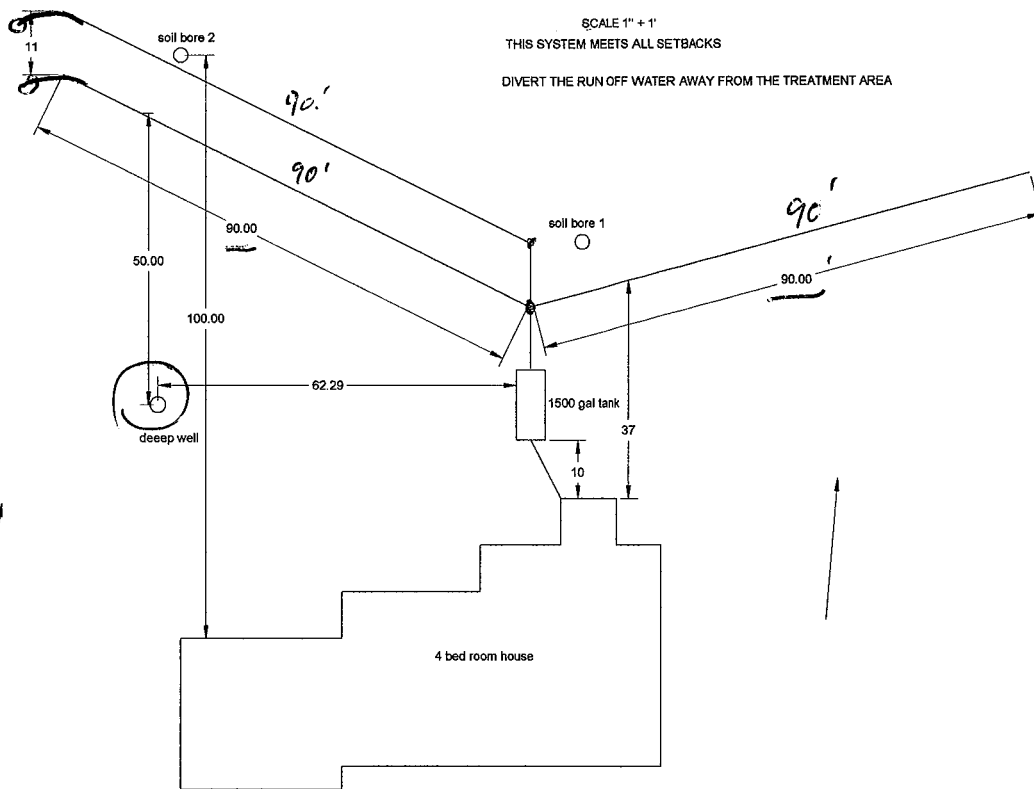
DAN STEFFL

DRAWN BY BE

SCALE 1" = 1'

THIS SYSTEM MEETS ALL SETBACKS

DIVERT THE RUN OFF WATER AWAY FROM THE TREATMENT AREA



11/9/07

Trench and Bed Worksheet

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

1. Flow

A. Estimated Flow gpd (Fig. A-1)



A-1 Estimated Sewage Flows in GPD

Number of Bedrooms	Class			
	I	II	III	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	

Pump Tank Minimum Sizing

500 gallons or 100% of Average Design Flow (A-1) or dual alternating pump system

2. Minimum Septic Tank Capacity

B. Septic tank capacity (Fig C-1) gallons Number of tanks/compartments

C. Effluent filter (yes/no)

C-1 Minimum Septic Tank Capacity in Gallons

Number of Bedrooms	Minimum Capacity	Capacity with GD*	Capacity with GD and pump in basement **
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

* GD = garbage disposal, Must have multiple tanks or compartments

** Must have multiple tanks, compartments or effluent screen

3. Pump Tank Specifications

D. Pump tank needed (yes/no) Minimum size if needed gallons

4. SOILS (Site evaluation data)

E. Depth to restricting layer = ft

F. Maximum depth of system Item E - 3 ft = $5.66 - 3 = 2.66$ ft

G. Texture Percolation Rate mpi if available

H. SSF ft²/gpd (see figure D-15)

I. % Slope %

D-15 Soil Characteristics & SSF

Perc Rate mpi	Soil Texture	Soil Sizing Factors ft ² /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****		

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

5. System Type

	Pressure Bed (<6% slope)
	Gravity Bed (<6% slope)
X	Trenches

Distribution Media Type

X	Rock
	Chamber
	Gravelless
	Other: _____

Method of Distribution

	Pressure
X	Drop Boxes
	Dist. Box (<3% slope)
	Other: _____

6. TRENCH OR BED BOTTOM AREA

J. For trenches with 6 inches of wide wall beneath the pipe or 10" diameter gravelless pipe:

$$A \times H = \underline{600} \text{ gpd} \times \underline{1.67} \text{ ft/gpd} = \underline{1002.0} \text{ ft}^2$$

K. For trenches with 12 inches of sidewall:

$$A \times H \times 0.8 = \underline{600} \text{ gpd} \times \underline{1.67} \text{ ft/gpd} \times 0.8 = \underline{801.6} \text{ ft}^2$$

L. For trenches with 18 inches of sidewall:

$$A \times H \times 0.66 = \underline{600} \text{ gpd} \times \underline{1.67} \text{ ft/gpd} \times 0.66 = \underline{661.3} \text{ ft}^2$$

M. For trenches with 24 inches of sidewall:

$$A \times H \times 0.6 = \underline{600} \text{ gpd} \times \underline{1.67} \text{ ft/gpd} \times 0.6 = \underline{601.2} \text{ ft}^2$$

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

$$1.5 \times A \times H = 1.5 \times \underline{600} \text{ gpd} \times \underline{1.67} \text{ ft/gpd} = \underline{NA} \text{ ft}^2$$

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

$$A \times H = \underline{600} \text{ gpd} \times \underline{0} \text{ ft/gpd} = \underline{NA} \text{ ft}^2$$

7. Trench and Bed Dimensions

P. Select required square feet of bottom area required based on depth of rock/gravelless pipe or height of chamber slats

$$\underline{801.0} \text{ ft}^2$$

(must use 6" of rock square footage for beds)

Q. Select width of trench or bed 3.0 ft

(use 3' for gravelless pipe, width of chamber or width of excavation for rock in trenches & beds can not be wider the 25')

R. For trenches or pressure beds the lineal feet required = required square footage / width of bottom of trench or bed

$$\underline{801.0} \text{ ft}^2 / \underline{3.0} \text{ ft} = \underline{267.0} \text{ lineal feet}$$

S. For gravity beds the lineal feet required = 1.5 x required square footage / width of bed

$$1.5 \times \underline{801.0} \text{ ft}^2 / \underline{3.0} \text{ ft} = \underline{NA} \text{ lineal feet}$$

8. Rock Sizing and Volume

T. Depth of media below pipe 1.0 ft

Cubic feet of rock needed = Rock depth below distribution pipe plus 0.5 foot times bottom area:

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

$$(\underline{1.0} \text{ ft} + 0.5 \text{ ft}) \times \underline{801.0} \text{ ft}^2 = \underline{1201.5} \text{ ft}^3$$

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

$$\underline{1201.5} / 27 = \underline{44.5} \text{ yd}^3$$

Weight of rock in tons = cubic yards times 1.4

$$\underline{44.5} \times 1.4 = \underline{62.3} \text{ tons}$$

Add in 10% extra for constructability = 1.1 X 62.3 = 68.5 tons

9. Layout

Select an appropriate scale; one inch = 1 ft

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) _____ (license #) _____ (date)

Local Unit of Government Approval

_____ (signature) _____ (registration #) _____ (date)