



APPLICATION

SYSTEM COMPLIANCE

With The Becker County Zoning Ordinance

Application Number	12747
Tax Parcel Number	10.0452001
Fire Number of Project Location	

A. GENERAL INFORMATION

1. Applicant's Name (Last, First, M.I.) <u>Stenerson, Mary Lou</u>		2. Authorized Agent (if applicable) <u>Tom Falk</u>	
3. Mailing Address (Street, RFD, Box Number, City, State, Zip Code) <u>HC09 BOX 148 Detroit Lakes, MN 56501</u>			
4. Day Phone	5. Evening Phone	6. Section <u>28</u>	7. Township <u>Eric</u>

B. PROPERTY DESCRIPTION

1. Lot(s), Block, Subdivision Name
W 300 FT OF SOUTH 726 FEET OF LOT 4

SEWAGE SYSTEM DATA

Anticipated Use

a. Single Family
b. Multiple Family
c. Commercial
d. Other (specify)

Type of Installation

a. Septic Tank Only
b. Drainfield Only
c. Septic Tank & Drainfield
d. Holding Tank
e. Septic Tank/Drainfield Lift Station

Type of Drainfield

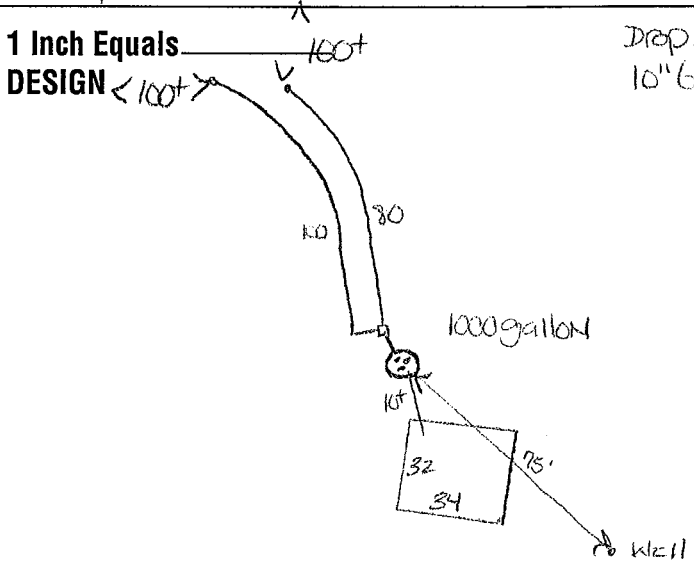
a. Standard System
b. Mound (pressure distribution)

Well Data

a. Depth 35'
b. Diameter 4"

Type of Well

a. Drilled
b. Sand Point



Show Distance Between Sewage System And Buildings, Property Lines, Lake, Road And All Wells Within 125 Feet.

Distances to Well:	=	Tank <u>75</u>	Drainfield <u>85</u>	Distance to Pressure Line:	=	Tank <u>10'</u>	Drainfield <u>10'</u>
Distance to Building:	=	<u>10</u>	<u>20</u>	Tank Capacity (gal. & Area of Drainfield (ft ²))	=	<u>1000</u>	<u>540</u>
Distance to Property Line:	=	<u>40</u>	<u>40</u>	Distance to Ordinary High Water Level:	=	<u>N/A</u>	<u>N/A</u>
Drainfield separation from Highest Known Ground Water Level, Impervious Lens or Soil Mottling:				=		<u>5'</u>	

I hereby certify with my signature that all data on my application forms, plans and specifications are true and correct.

Signature of Applicant _____ Date _____

TO BE COMPLETED BY PLANNING AND ZONING

CERTIFICATE IS HEREBY DENIED: (See back For Reasons)

CERTIFICATE IS HEREBY GRANTED: Based upon the application, addendum from, plans, specifications and all other supporting data. With proper maintenance this system can be expected to function satisfactory, however this is not a guarantee.

BECKER COUNTY PLANNING AND ZONING

Tatiana Johns
Signature

Chris
Title

Inspector 11-19-98
Date

- PERCOLATION TEST SHEET -

Test hole location _____ Hole # 2 Date test hole was prepared: 10-2-98
 Depth of hole bottom: 24 inches Diameter of hole: 6 inches
 Soil Data from test hole:

depth, inches	soil texture:	soil color
<u>1-10</u>	<u>Topsoil</u>	<u>10 yr 6/4</u>
<u>10-28</u>	<u>Sand loam</u>	<u>10 yr 6/6</u>
<u>28-60</u>	<u>ll</u>	

Method of scratching sidewall: pipe w/ Nail Depth of pea size gravel in bottom of hole: 2 inches
 Date and hour of initial water filling: 7:00 AM 10/2 Depth of initial water filling: 12 above hole bottom
 Method used to maintain 12" of water depth in hole for 4 hours: Stayed & poured
 Percolation test conducted by: Tom Falk Percolation test started at 7:10/3 (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>7:05 AM</u> <u>8:05</u>	START <u>60</u>	<u>6</u> <u>2 3/4</u>	<u>3/4</u>	<u>3.25</u>	$\frac{60}{\text{TIME}} \div \frac{3.25}{\text{DROP}} = \frac{18.4}{\text{PERC}} \text{ A}$	1/16 = .06 1/8 = .13 3/16 = .19
<u>8:05</u> <u>9:05</u>	REFILL <u>60</u>	<u>60</u> <u>2 3/4</u>	<u>3/4</u>	<u>3.25</u>	$\frac{60}{\text{TIME}} \div \frac{3.25}{\text{DROP}} = \frac{18.4}{\text{PERC}} \text{ B}$	1/4 = .25 5/16 = .31
<u>9:05</u> <u>10:05</u>	REFILL <u>60</u>	<u>60</u> <u>2 3/4</u>	<u>3/4</u>	<u>3.25</u>	$\frac{60}{\text{TIME}} \div \frac{3.25}{\text{DROP}} = \frac{18.4}{\text{PERC}} \text{ C}$	3/8 = .38 7/16 = .44
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{DECIMAL}} \text{ D}$	1/2 = .5
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{DECIMAL}} \text{ E}$	9/16 = .56 5/8 = .63
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{DECIMAL}} \text{ F}$	11/16 = .69
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{DECIMAL}} \text{ G}$	3/4 = .75 13/16 = .81
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{DECIMAL}} \text{ H}$	7/8 = .88 15/16 = .94

Ten Percent Calculation *

A, B, C	
Largest # of ABC	Smallest # of ABC = <u>18.4</u>
Smallest # of ABC	x 0.10 = _____
C, D, E	
Largest # of CDE	Smallest # of CDE = <u>18.4</u>
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	conversions
_____	START	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ A	1/16 = .06
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ B	1/8 = .13
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ C	3/16 = .19
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ D	1/4 = .25
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ E	5/16 = .31
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ F	3/8 = .38
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ G	7/16 = .44
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ H	1/2 = .5
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ E	9/16 = .56
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ F	5/8 = .63
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ F	11/16 = .69
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ G	3/4 = .75
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ G	13/16 = .81
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ H	7/8 = .88
_____	REFILL	-----	-----	-----	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ H	15/16 = .94

Ten Percent Calculation *

A, B, C

Largest # of ABC - Smallest # of ABC = _____

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.

#12747

Onsite Septic System Site Evaluation/Design

Fire Number 10.0452.001

Tax Parcel Number ~~10 0514 000~~

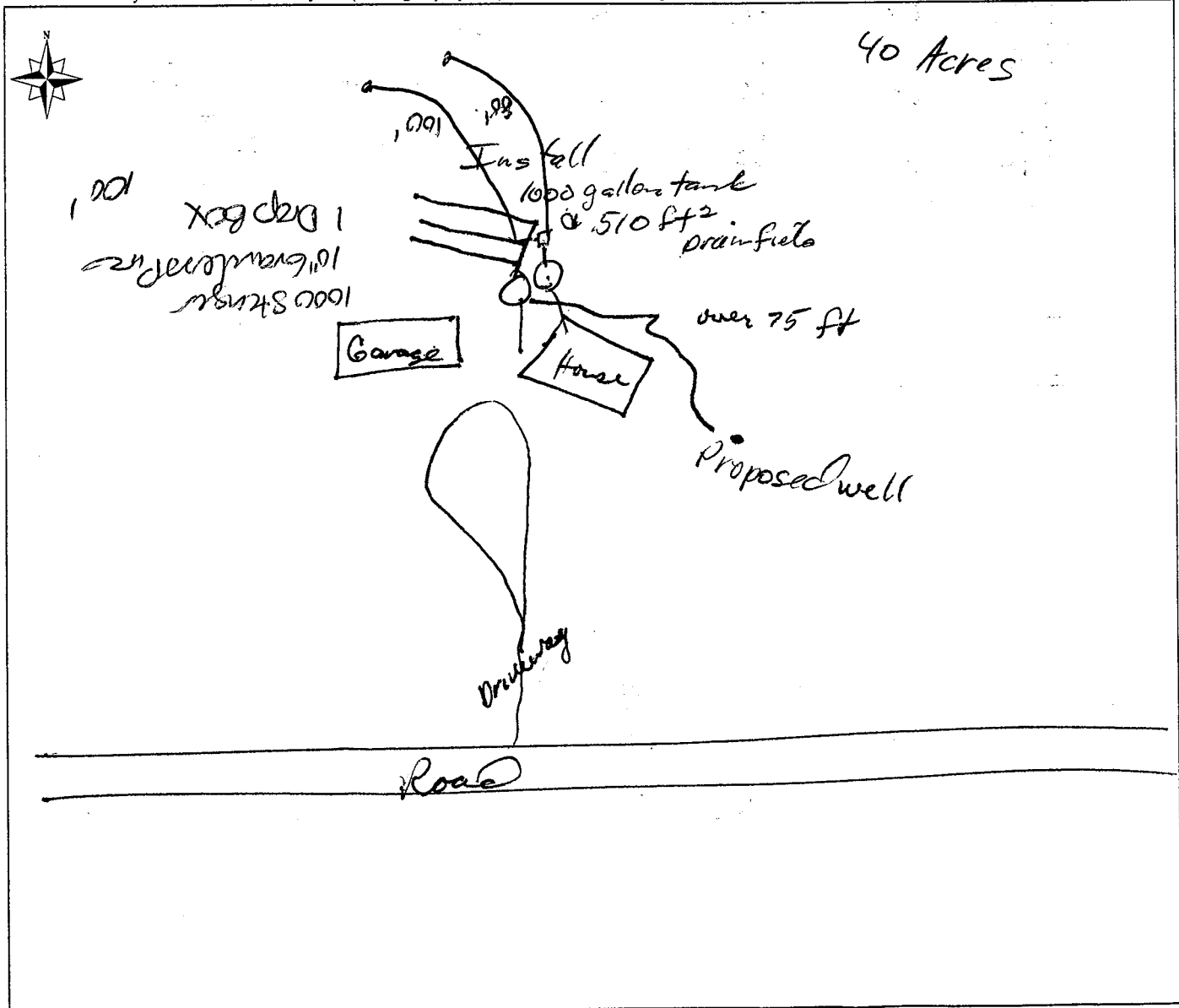
Western 300 FT of South 726 FT of Lot 4

Legal Description: 170' x 44' x 114' Beg at SEC COR S 20 11 W 39' N 9 03' NE						
Lake/Stream Name	Lake/Stream Class	Section	TWP	Range	Township Name	
N/A	N/A	20	139	40	ERIC	
Property Owner		Address		City, State, Zip Code		Phone Number
Mary Lou Stevenson		D. Lakes HC09 BOX 148				
ISTS Designer I / Designer II		License Number		Address		Phone Number
Tom Falk		622				342-2843

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



- PERCOLATION TEST SHEET -

Test hole location _____ Hole # 1 Date test hole was prepared: 10-2-98

Depth of hole bottom: 36 inches Diameter of hole: 6 inches

Soil Data from test hole:

depth, inches	soil texture:	soil color
<u>1-12</u>	<u>Topsoil</u>	<u>10 yr 6/9</u>
<u>12-36</u>	<u>Sand loam</u>	<u>10 yr 6/6</u>
<u>36-60</u>	<u>Sand loam</u>	<u>10 yr 6/6</u>

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

Date and hour of initial water filling: 7:00 A 10/2 Depth of initial water filling: 12 above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours: Stayed + Poured

Percolation test conducted by: Tom Falk Percolation test started at 7A 10/3 (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>7 Am</u> <u>8 Am</u>	START <u>60</u>	<u>6</u> <u>2 1/2</u>	<u>3 1/2</u>	<u>3.5</u>	$\frac{60}{\text{TIME}} \div \frac{3.5}{\text{DROP}} = \frac{17}{\text{PERC}}$ A	1/16 = .06 1/8 = .13 3/16 = .19
<u>8 Am</u> <u>9 Am</u>	REFILL <u>60</u>	<u>6</u> <u>2 1/2</u>	<u>3 1/2</u>	<u>2.5</u>	$\frac{60}{\text{TIME}} \div \frac{3.5}{\text{DROP}} = \frac{17}{\text{PERC}}$ B	1/4 = .25 5/16 = .31
<u>9 Am</u> <u>10 A</u>	REFILL <u>60</u>	<u>6</u> <u>2 1/2</u>	<u>3 1/2</u>	<u>3.5</u>	$\frac{60}{\text{TIME}} \div \frac{3.5}{\text{DROP}} = \frac{17}{\text{PERC}}$ C	3/8 = .38 7/16 = .44
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}}$ D	1/2 = .5
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}}$ E	9/16 = .56 5/8 = .63
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}}$ F	11/16 = .69
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}}$ G	3/4 = .75
---	REFILL	---	---	---	$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}}$ H	13/16 = .81 7/8 = .88 15/16 = .94

Ten Percent Calculation *

A, B, C

Largest # of ABC - Smallest # of ABC = _____

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 300 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.

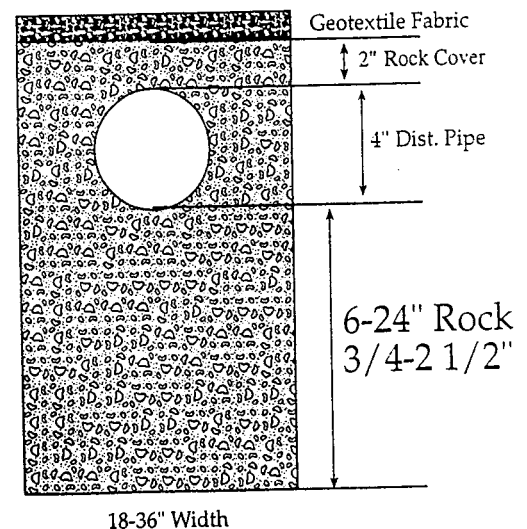
- ROCK VOLUME IN CU FT**
- M. Rock depth below distribution pipe plus 0.5 foot times bottom area:
 $M = \text{Rock depth} + 6 \text{ inches} \times \text{Area (H,I,J,L,K)}$
 $(\text{_____} + 0.5 \text{ ft}) \times \text{_____} = \text{_____}$ cu ft
- ROCK VOLUME IN CU YDS**
- N. Volume in cu ft divided 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) + P = lineal feet
 $\text{_____} \div \text{_____} = \text{_____}$ lineal feet
- Q1. Gravelless Design
 $A \times F \div (3 \text{ for } 10" \text{ pipe, } 2 \text{ for } 8" \text{ pipe, width of the Chamber})$
 $\text{_____} \times \text{_____} \div \text{_____} = \text{_____}$ feet

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

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



18-36" Width

TEST HOLE #1

TEST HOLE #2

DEPTH IN INCHES	SOIL TEXTURE	MUNSELL COLOR	STRUCTURE	DEPTH IN INCHES	SOIL TEXTURE	MUNSELL COLOR	STRUCTURE
1-12	Topsoil	—	BLOCKY PLATY PRISMATIC NONE	1-10	Topsoil	—	BLOCKY PLATY PRISMATIC NONE
12-36	Sand Loam	10y6/4	BLOCKY PLATY PRISMATIC NONE	10-28	Sand Loam	10y6/4	BLOCKY PLATY PRISMATIC NONE
36-60	Sand Loam	10y6/6	BLOCKY PLATY PRISMATIC NONE	28-60	Sand Loam	10y6/6	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.)

Pasture on grassland 2% slope

SYSTEM IS NEW REPAIR

SYSTEM DESIGN

GRAVITY FLOW PRESSURE DISTRIBUTION

WATER USES:

- WASHING MACHINE
- DISHWASHER
- WATER SOFTENER
- GARBAGE DISPOSAL

NUMBER OF BEDROOMS 2
 NUMBER OF BATHROOMS _____
 TOTAL SQ. FT OF STRUCTURE _____
 TANK SIZE 1000

DEPTH OF SYSTEM 24
 SYSTEM DESIGN FLOW 300 GPD
 SOIL SIZING FACTOR 1.67

TYPE OF RESIDENCE

- TYPE I TYPE II
- TYPE III TYPE IV

LIFT STATION SIZE _____
 SOIL TREATMENT _____
 AREA SIZE 510 SQ FT
 DOSE VOLUME _____

PUMP SIZE _____
 LENGTH OF LIFT LINE _____
 TOTAL DYNAMIC HEAD _____

Name of Designer I

Designer II

Tom Fall

Date of Site

Evaluation

10/3/98
8492388

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

10/7/98

For Office Use Only

Date Site Evaluation / Design received 10-5-98

Received by

Ph Johns

Date Site Evaluation approved 10-5-98

Approved by

Ph Sch