



A



030349000

FOR SEWAGE SYSTEM

CERTIFICATE OF COMPLIANCE

With The Becker County Zoning Ordinance

Application Number 10476
Tax Parcel Number 03.0348.001
Fire Number of Project Location

A. GENERAL INFORMATION

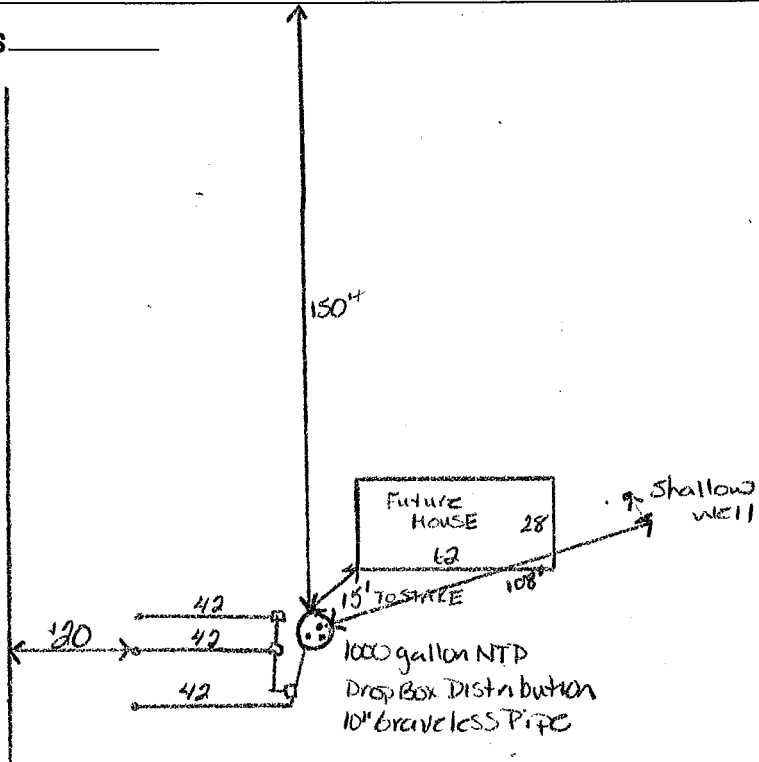
1. Applicant's Name (Last, First, M.I.) Kiewer, Joe		2. Authorized Agent (if applicable)	
3. Mailing Address (Street, RFD, Box Number, City, State, Zip Code) PO Box 401 Frazee, MN 56544			
4. Day Phone	5. Evening Phone	6. Section 33	7. Township Burlington

B. PROPERTY DESCRIPTION

1. Lot(s), Block, Subdivision Name
W 100' of E 690' of 6.7 A.C. of Lot b Bet Road + Boat Lake

- 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 50'
 - b. Diameter 2"
- Type of Well
- a. Drilled
 - b. Sand Point

1 Inch Equals DESIGN



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

Distances to Well:	=	Tank <u>108</u>	Drainfield <u>113</u>	Distance to Pressure Line:	=	Tank <u>150</u>	Drainfield <u>150</u>
Distance to Building:	=	<u>12</u>	<u>20</u>	Tank Capacity (gal. & Area of Drainfield (ft ²))	=	<u>1000</u>	<u>378</u>
Distance to Property Line:	=	<u>20'</u>	<u>20'</u>	Distance to Ordinary High Water Level:	=	<u>150</u>	<u>150</u>
Drainfield separation from Highest Known Ground Water Level, Impervious Lens or Soil Mottling:	=				=	<u>6'</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

Jatricia Duns
Signature
Chief Inspector 10-8-96
Title Date

Onsite Septic System Site Evaluation/Design

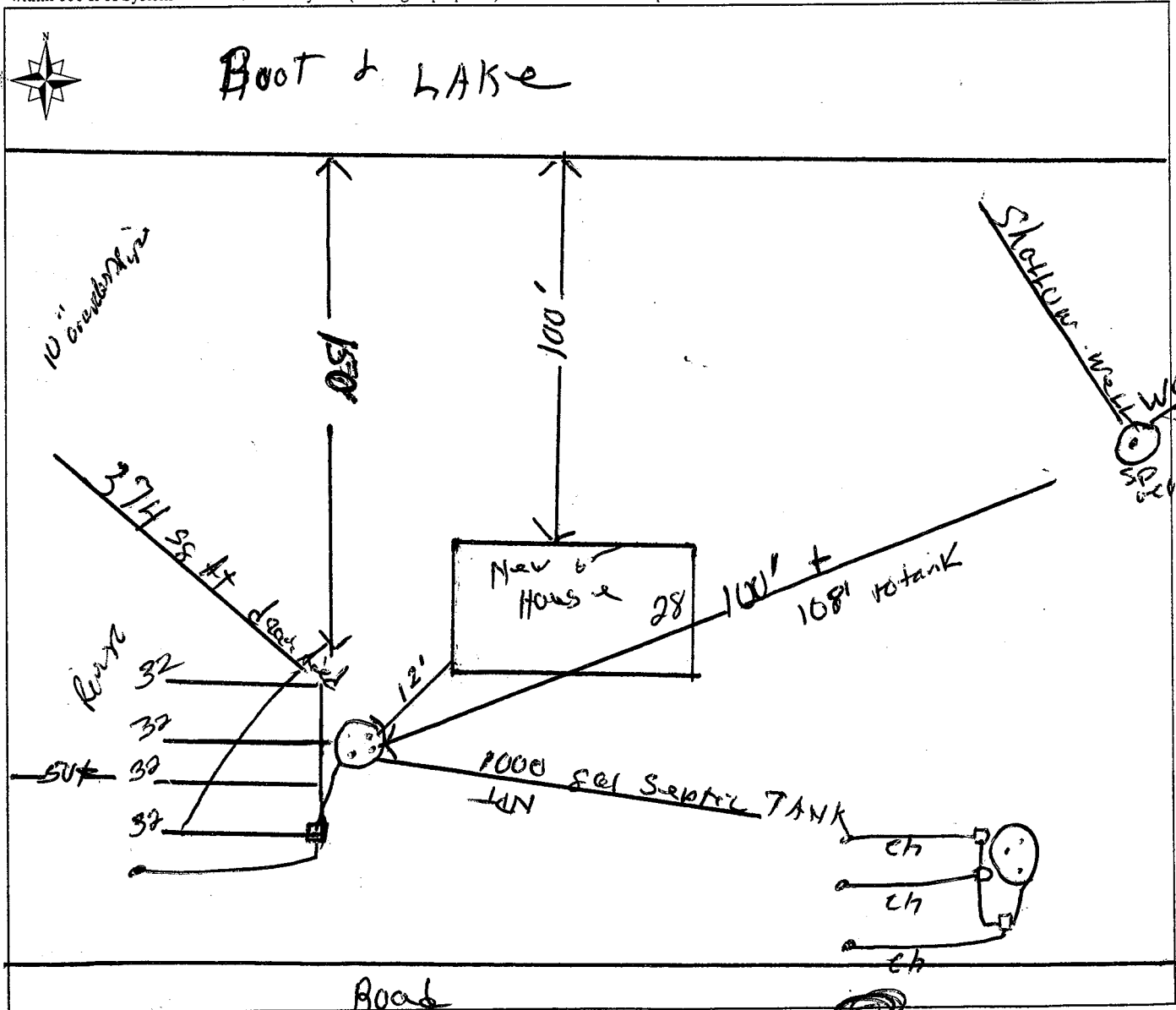
Fire Number _____
 Tax Parcel Number 03, 0348.001

Legal Description: <u>W 100' of E 690' of W 6.7Ac of lot 6 Bet Road & Boot Lake</u>					
Lake/Stream Name	Lake/Stream Class	Section	TWP	Range	Township Name
<u>Boot</u>	<u>NE</u>	<u>33</u>	<u>138</u>	<u>40</u>	<u>Barlington</u>
Property Owner	Address		City, State, Zip Code		Phone Number
<u>Joe Riewer</u>	<u>FRAZEE MN 56544</u>				
ISTS Designer I / Designer II	License Number	Address		Phone Number	
<u>Backhoe Services</u>		<u>FRAZEE, MN</u>		<u>334-4055</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



TEST HOLE #1

TEST HOLE #2

DEPTH IN INCHES	SOIL TEXTURE	MUNSELL COLOR	STRUCTURE	DEPTH IN INCHES	SOIL TEXTURE	MUNSELL COLOR	STRUCTURE
			BLOCKY PLATY PRISMATIC NONE				BLOCKY PLATY PRISMATIC NONE
	SAND		BLOCKY PLATY PRISMATIC NONE		SAND		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
			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:

- () WASHING MACHINE
- () DISHWASHER
- () WATER SOFTENER
- () GARBAGE DISPOSAL

NUMBER OF BEDROOMS 2
 NUMBER OF BATHROOMS 1
 TOTAL SQ. FT OF STRUCTURE 1000
 TANK SIZE 1000 gal

DEPTH OF SYSTEM 3'
 SYSTEM DESIGN FLOW 300 GPD
 SOIL SIZING FACTOR .83

TYPE OF RESIDENCE

- TYPE I () TYPE II
- () TYPE III () TYPE IV

LIFT STATION SIZE _____
 SOIL TREATMENT AREA SIZE 374 SQ FT
 DOSE VOLUME _____

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

Name of Designer I Backhoe Services
 Designer II _____

Date of Site Evaluation _____

MPCA Number 228

Phone _____

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

Signature of Evaluator Brenda Mynge Date 10/1/96

For Office Use Only

Date Site Evaluation / Design received 10/1/96 Received by Hebi Moltza

Date Site Evaluation approved 10/1/96 Approved by Hebi Moltza

A. Estimated 300 **FLOW** gpd
 measured _____ x 1.5 = _____ gpd

B. 1000 **SEPTIC TANK VOLUME** gallons

C. **SOILS** (Site evaluation data)
 Depth to restricting layer = 6' feet
 D. Maximum depth of system C - 3 ft = 3' feet
 E. Texture _____ Percolation rate _____ MPI
 F. SSF 83 sq ft/gpd
 G. Slope _____%

Estimated Sewage Flows in Gallons per day (gpd)				
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	

Septic Tank Capacities (in gallons)		
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:
 $A \times F = ___ \times ___ = ___ \text{ sq ft of bottom area}$

I. For trenches with 12 inches of rock below the pipe:
 $A \times F \times 0.8 = ___ \times ___ \times 0.8 = ___ \text{ sq ft of bottom area}$

J. For trenches with 18 inches of rock below the pipe:
 $A \times F \times 0.66 = ___ \times ___ \times 0.66 = ___ \text{ sq ft of bottom area}$

K. For trenches with 24 inches of rock below the pipe:
 $A \times F \times 0.6 = ___ \times ___ \times 0.6 = ___ \text{ sq ft of bottom area}$

BED BOTTOM AREA

L. For seepage beds with 6 or 12 inches of rock below the pipe;
 $1.5 \times A \times F = 1.5 \times ___ \times ___ = ___ \text{ sq ft of bottom area}$

Soil Characteristics and Required Areas for Sewage Treatment		
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:
 $M = \text{Rock depth} + 6 \text{ inches} \times \text{Area (H,I,J,L,K)}$
 $(___ + 0.5 \text{ ft}) \times ___ = ___ \text{ cu ft}$

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
 $___ \div ___ = ___ \text{ lineal feet}$

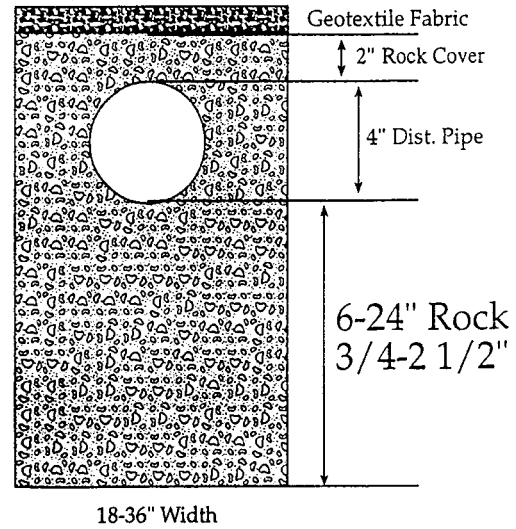
Q1. Gravelless Design
 $A \times F \div (3 \text{ for } 10" \text{ pipe, } 2 \text{ for } 8" \text{ pipe, width of the Chamber})$
drainfield oversized
 $300 \times 83 \div 3 = 83 \text{ feet}$

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
 $___ \times ___ = ___ \text{ sq ft}$

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



- 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	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC A	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
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC B	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC C	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC D	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC E	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC F	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC G	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC H	

Ten Percent Calculation *

A, B, C Largest # of ABC - Smallest # of ABC = _____ Smallest # of ABC x 0.10 = _____	B, C, D Largest # of BCD - Smallest # of BCD = _____ Smallest # of BCD x 0.10 = _____
C, D, E Largest # of CDE - Smallest # of CDE = _____ Smallest # of CDE x 0.10 = _____	D, E, F Largest # of DEF - Smallest # of DEF = _____ Smallest # of DEF x 0.10 = _____
E, F, G Largest # of EFG - Smallest # of EFG = _____ Smallest # of EFG 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 per cent.

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---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC D	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC E	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC F	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC G	
---	REFILL	---	---	---	TIME $\frac{\text{DROP}}{\text{PERC}}$ PERC H	

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A, B, C Largest # of ABC - Smallest # of ABC = _____ Smallest # of ABC x 0.10 = _____	B, C, D Largest # of BCD - Smallest # of BCD = _____ Smallest # of BCD x 0.10 = _____
C, D, E Largest # of CDE - Smallest # of CDE = _____ Smallest # of CDE x 0.10 = _____	D, E, F Largest # of DEF - Smallest # of DEF = _____ Smallest # of DEF x 0.10 = _____
E, F, G Largest # of EFG - Smallest # of EFG = _____ Smallest # of EFG x 0.10 = _____	F, G, H Largest # of FGH - Smallest # of FGH = _____ Smallest # of FGH x 0.10 = _____

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