

# Preliminary & Field Evaluation Form

Owner Information			
Date	<u>8/15/2022</u>	Sec / Twp / Rng	<u>S-12, T-46, R-27</u>
Parcel ID	<u>07-0-026106</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Ronald Hickerson</u>	Owners address (if different)	
Property Address:	<u>40924 320Th Ln Aitkin Mn 56431</u>		<u>11701 95th St. NW</u>
City / State / Zip:			<u>Otsego MN 55330</u>

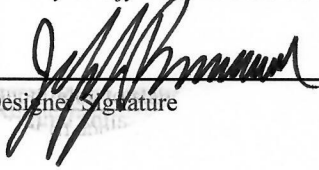
Flow Information and Waste Type / Strength			
Estimated Design flow	<u>450</u>	Anticipated Waste strength	<input type="checkbox"/> Hi Strength <input checked="" type="checkbox"/> Domestic
Comments: Trenches will be varied lengths 1st & 2nd Trenches will be 60 ft. long 3rd trench will be 33 ft long.		Any Non-Domestic Waste	<input type="checkbox"/> Yes (class V) <input checked="" type="checkbox"/> No
		Sewage ejector/grinder pump	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Water softener	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Garbage Disposal	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Daycare / In home business	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Site Information					
Existing & proposed lot improvements located (see site map)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Well casing depth	Existing deep well	
Easements on lot located (see site map)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Drainfield w/in 100' of residential well	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Property lines determined (see site map) By Owner	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in 200' of transient noncommunity water supply (TNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Req'd setbacks determined (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in an inner wellhead mgmt zone (CWS/NTNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Utilities located & identified (gopher state one call)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Buried water supply pipe w/in 50' of system	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Access for system maintenance (shown on site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site located in Shoreland (w/in 1000' of lake, 300' of river)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Soil treatment area protected	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site map prepared with previous items included	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Construction related issues (see site map)	<u>Owner has not set grade for new trailer house.</u>				

### Soil Information

		Evidence of site:	
		Cut	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Filled	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Compacted	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Disturbed	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Original soils	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Soil logs completed and attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Perk test completed and attached (if applicable)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Soil loading rate (gpd/ft <sup>2</sup> )	<u>0.78</u>	Percolation rate (if applicable)	_____
Depth/elev to SHWT	<u>74"</u>	Flooding or run-on potential (comments)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Depth to system bottom maximum (or elev minimum)	<u>38"</u>	Flood elevation (if applicable)	_____
Depth/elev to standing water (if applicable)	_____	Elevation of ordinary high water level (if applicable)	_____
Depth/elev to bedrock (if applicable)	<u>74" ( 35% - 50% )</u>	Floodplain designation and elev - 100 yr/10 yr (if applicable)	_____
Soil Survey information determined (see attachment)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Differences between soil survey and field evaluation (if applicable)	_____		
	_____		

I hereby certify this evaluation was completed in accordance with MN 7080 and any local req's.

  
 \_\_\_\_\_  
 Designer Signature

Brummer Septic LLC.  
 \_\_\_\_\_  
 Company

L-1347  
 \_\_\_\_\_  
 License #

# Soil Observation Log

www.SepticResource.com vers 12.4

Owner Information	
Property Owner / project: <u>Ronald Hickerson</u>	Date <u>8/15/2022</u>
Property Address / PID: <u>40924 320Th Ln Aitkin Mn 56431</u>	

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent mat'l's:	<input type="checkbox"/> Till <input checked="" type="checkbox"/> Outwash <input type="checkbox"/> Lacustrine <input type="checkbox"/> Alluvium <input type="checkbox"/> Organic <input type="checkbox"/> Bedrock
landscape position:	<input type="checkbox"/> Summit <input type="checkbox"/> Shoulder <input checked="" type="checkbox"/> Side slope <input type="checkbox"/> Toe slope
soil survey map units:	<u>454F</u> slope <u>4</u> %    direction- <u>South</u>

Soil Pit #1							
		<input type="checkbox"/> Boring	<input checked="" type="checkbox"/> Pit	Elevation <u>99.2'</u>	Depth to SHWT <u>76"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 30	Sandy Loam	<35	10YR4/4		Loose	Loose	Granular
30 - 51	Med Sand	<35	10YR4/4		Loose	Loose	Granular
51 - 76	Med Sand with some rock	<35	10YR5/4		Loose	Loose	Granular
76 - 84	Med Sand with Cobble	35 - 50	10YR4/4		Loose	Loose	Granular
Comments:							

40924 320Th Ln Aitkin Mn 56431

**Soil Pit #2**

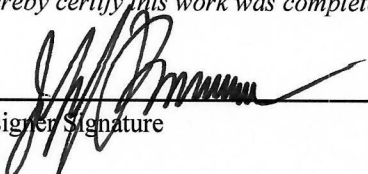
<input type="checkbox"/> Boring <input checked="" type="checkbox"/> Pit    Elevation <u>98.1'</u> Depth to SHWT <u>74"</u>							
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 28	Sandy Loam	<35	10YR4/4		Loose	Loose	Granular
28 - 39	Med Sand	<35	10YR4/4		Loose	Loose	Granular
39 - 74	Med Sand with some rock	<35	10YR5/4		Loose	Loose	Granular
74 - 84	Med Sand with Cobble	35 - 50	10YR4/4		Loose	Loose	Granular

40924 320Th Ln Aitkin Mn 56431

**Soil Pit #3**

<input type="checkbox"/> Boring <input checked="" type="checkbox"/> Pit    Elevation <u>100'</u> Depth to SHWT <u>84"</u>							
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 8	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
8 - 26	Sandy Loam	<35	10YR4/4		Loose	Loose	Granular
26 - 33	Med Sand	<35	10YR4/4		Loose	Loose	Granular
33 - 64	Med Sand with some rock	<35	10YR5/4		Loose	Loose	Granular
64 - 84	Med Sand	<35	10YR4/4		Loose	Loose	Granular

I hereby certify this work was completed in accordance with MN 7080 and any local req's.

  
 \_\_\_\_\_  
 Designer Signature

Brummer Septic LLC.  
 \_\_\_\_\_  
 Company

L-1347  
 \_\_\_\_\_  
 License #  
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# Gravity Trenches Design

contact Troy Johnson at  
www.SepticResource.com  
for questions or comments

(includes pump to gravity)

Property Owner: Ronald Hickerson Date: 8/15/2022

Site Address: 40924 320th Ln Aitkin Mn 56431 PID: 0-026106

Comments: This auto fill form doesn't calculate rock depth deeper than 6" under pipe.

instructions:  = req'd input  = input or default  = calculated field \*\*\* = installer info

- 1)  bedroom Type  Residential System
- 2)  GPD design flow
- 3)  Garbage disposal or pumped to septic
- 4) \*\*\*  Gallon septic tank (minimum) Tank options:
- 5)  GPD/ft<sup>2</sup> Soil Loading Rate (must match soil boring log)  ft<sup>2</sup> area req'd, or  ft<sup>2</sup> LUG minimum / final amt
- 6) \*\*\*  desired # of 3' wide trenches, leads to  ft. Long trenches (avg) or  lineal ft (total)
- 7)  inches, or  ft. to Redox or other limiting condition (This must match the soil boring log)
- 8)  inches, or  ft. of vertical separation required leads to bottom of rock no more than:
- 9) \*\*\*  inches, or  ft. Below existing grade **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 10) \*\*\*  inches of rock below the pipe
- 11) Overall Dimensions:  Trenches  ft. wide by  ft. Long or  lineal ft (total)
- 12) \*\*\* Rock materials:  ft. by  ft. by  inches total, plus 20% gives  yd<sup>3</sup> or \*1.4=  ton

450 GPD x 1.27 = 572 Sq Ft Required. 572 / 3 ft wide trenches = 191 lin ft of trenches  
 191 Lin Ft. x .8 ( 12" rock under pipe ) = 153 lin Ft .... 153 Lin Ft  
 Install 2 trenches each one 60 ft long trenches with 12" rock under pipe, 3 ft wide.  
 Install 1 trench 33 ft long trench with 12" rock under pipe, 3 ft wide.

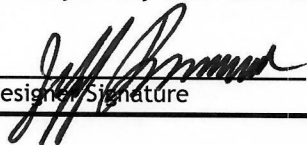
450 GPD

For pump to gravity systems: Not Needed **gravity flow system**

- 13)  doses per day ( 4 minimum)
- 14)  gallons per dose (treatment volume)
- 15) \*\*\*  feet of  inch supply line leads to  gallons of drainback volume ("top feed" manifold to control drainback)
- 16)  gallons TOTAL pump out volume (treatment + drainback)
- 17)  feet vertical lift from pump to highest trench, leads to a
- 18) \*\*\*  GPM @  feet of head, Pump requirement (10-45 gpm)
- 19) \*\*\*  gal Dose tank (minimum) at  gpi
- 20) \*\*\*  inch swing on Demand float, or Timed dosing of  min ON (confirm rate with drawdown test and adjust as necessary)  hrs OFF
- 21)  inches from bottom of tank to "pump OFF" float, and/or to cover pump
- 22) \*\*\*  inches from bottom of tank to "pump ON" float, or  inches to "timer ON" float
- 23) \*\*\*  inches from bottom of tank to "Hi Level" float (add 5-15 inches if Time Dosed)
- 24)  gallons reserve capacity (after High Level Alarm is activated)

450 GPD

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

  
Designer/Signature

Brummer Septic LLC  
Company

L-1347  
License#

8/15/2022  
Date

450 GPD

450 GPD

# Installer Summary

gallon Septic tank (minimum)      none

Trenches     ft. wide    by  ft. Long (avg)  
or  lineal ft (total)

Effluent filter & alarm

Bottom of rock no more than:

inches, or     ft. Below existing grade

inches of rock below the pipe    = 153 lin. Ft. of trenches

1st & 2nd Trenches will be 60 ft. long  
3rd trench will be 33 ft long.

Rock materials:     yd<sup>3</sup> or \*1.4=     ton

All trenches will be 3 ft wide

For pump to gravity systems:

gallon Dose tank (minimum)      at approximately  gpi

GPM @     ft. of head, Pump required  
(pump curve CAN NOT exceed 45 gpm at this elevation)

inch swing on Demand float      or  minutes ON time &  hours OFF time

inches from bottom of tank to "pump ON" float, or  inches to "timer ON" float

inches from bottom of tank to "Hi Level Alarm" float

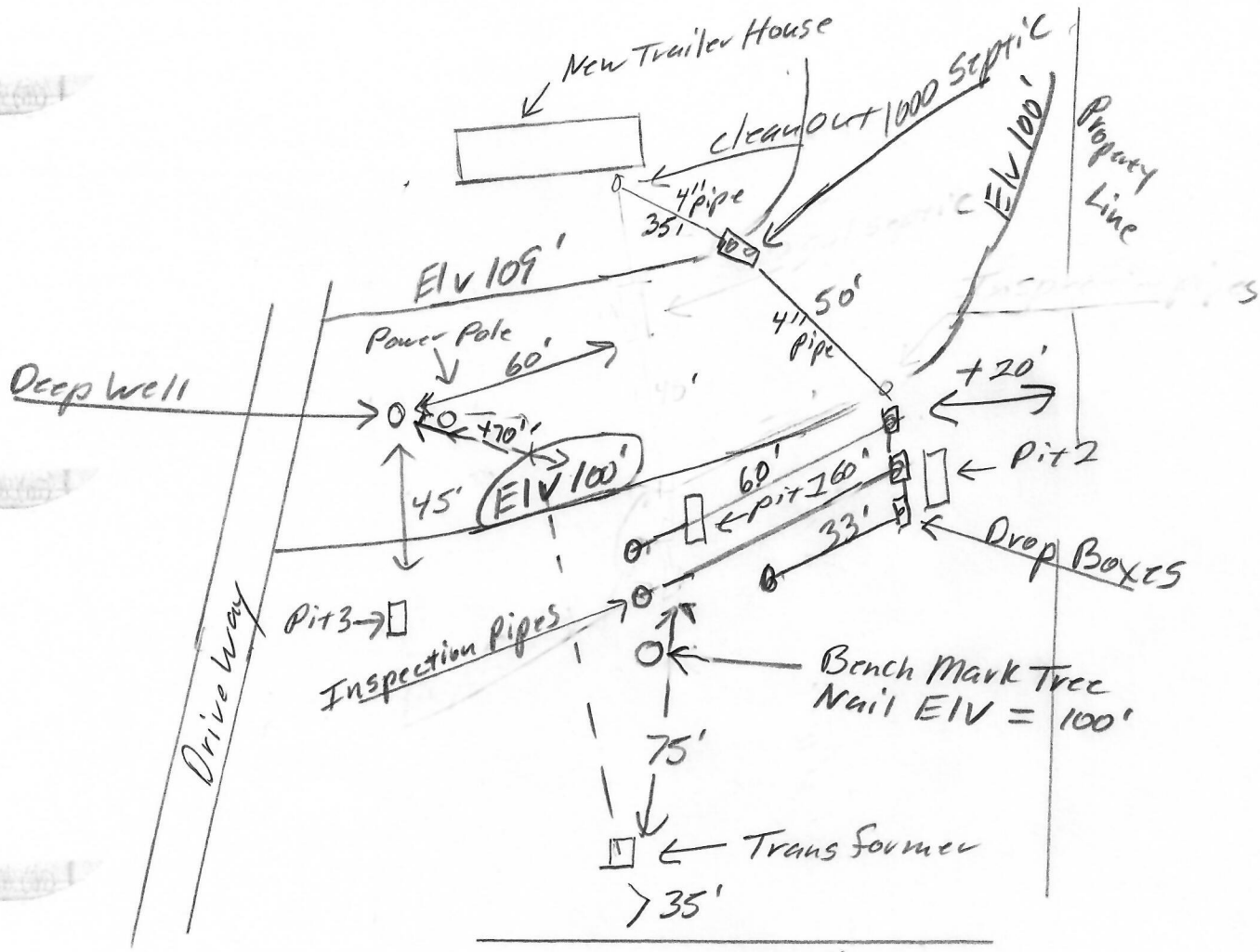
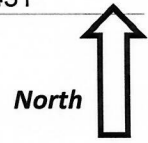
ft. of     inch supply line





# { Design Drawing }

Property Owner: Ronald Hickerson Date: 7/27/22 Designer's Initials: JB  
 Parcel ID. Number: 07-0-026106 Address: 40924 320Th Ln Aitkin Mn 56431  
 one Inch = 40ft.



Grade at well Location EIV = 108.8'  
 Estimated Grade for New Trailer House EIV = 109'  
 + 70' to 1st Trench from Deep Well

road

Estimated Bottom of Rock in trenches  
 Trench #1 Bottom Elvc. = 96.7'  
 Trench #2 Bottom Elvc. = 95.9'  
 Trench #3 Bottom Elvc. = 95'

Surface/ SHWT		Nail on Tree = Bench Mark 100'		Existing Grade	
Soil Pit1	99.2' / 76"	Bench Mark	100'	Trench #1 Ave. EIV. = 99.2'	
Soil Bore 2	98.1' / 74"	Ground Elv. BM	99.3'	Trench #2 Ave. EIV. = 98.4'	
Soil Bore 3	100' / 84"	Ground Elv. Tank	112.6	Existing	Trench #3 Ave. EIV. = 97.5'
	Grade at	Trailer House	112.5'	Existing	Estimated Tank Inlet EIV. = 107'

Please show all that apply ( Existing )  
 Wells within 100ft. Of Drain field.  
 Water lines within 10 ft. of Drain field.  
 Drain field Areas:

Please Draw to Scale with North to Top or Left Side of Page:

Disturbed/Compacted Areas	Access Route for Tank Maintenance
Component Location	Property Lines
OHW ordinary high water	Structures
Lot Easements	Setbacks

## Mound Design Notes - Aitkin county

Property Owner: Ronald Hickerson

Date: 8/15/2022

Site Address: 40924 320th Ln Aitkin Mn 56431

PID: 07-0-026106

Comments: Type I Gravity Trenches / 3 bedroom

- 1 This is a type I Gravity Trench septic system for a proposed 3 bedroom Trailer House.  
Soil separation is at 74" Depth to Cobble in soil.
- 2 There is an existing Deep well to the West of the trenches.
- 3 Existing trailer house is going to be removed and the area were new trailer is located will be lowered.  
This new elevation will be approx. Elv.= 109', Existing elevation is 112.5'  
New trailer house will be located in approx. same location as old trailer house only lower ( approx. 3.5 ft ).
- 4 Bench Mark ( Elv. = 100' ) is the Nail on Oak tree West of trenches.
- 5 Calculations for Sq Ft required are: 450 GPD x 1.27 soil sizing = 572 sq ft  
572 sq ft. / 3 ft wide trenches = 191 Lin. Ft required.  
191 Lin Ft. x .8 ( 12" rock under 4" pipe ) = 153 lin. ft required.  
Trenches 1 & 2 will be 60 ft long, 3rd trench will be 33 ft long, All trenches will be 3 ft wide.
- 6 Install 3 Trenches 3 ft wide, 12" rock under pipe. ( 18" total rock depth ).  
Install drop boxes for serial distribution to each trench.  
Install 4" inspection pipes at each trench terminal end.  
Install 4" inspection pipe to bottom of rock, secure in rock and raise to above final grade.  
Recommend also Installing 4" inspection pipes at each Drop box.  
Elevation of the bottom of the rock will be approx. 2.5 ft deep.  
Cover rock with fabric and 12" to 18" of soil.
- 7 Installer to double check bench mark. Installer should confirm bench mark height Elv. with inspector.  
Installer should record bench mark Elv. and bottom of rockbed height on installation inspection form.  
It is important that the soils do not get compacted, and area stays protected.
- 8 Install a 1000 gallon septic tank Min. to gravity flow from dwelling. Install with gravity flow to the dropboxes.  
Install all manholes, inspection pipes and clean-outs to grade or above, recommend 4" above finished grade.
- 9 Owner is responsible to maintain protection of trench area through construction of house and septic system.

Designed to Aitkin Co. and MPCA recommendations and requirements.

  
Designer Signature

Brummer Septic LLC.  
Design Company

L-1347  
License#



# Minnesota Well Index

## General Information

<b>Unique Well ID:</b>	<b>659530</b>	<b>Well Name:</b>	<b>HICKERSON, RON</b>	<b>County:</b>	<b>Aitkin</b>	<b>Aquifer:</b>	<b>Quat. buried artes. aquifer</b>
<b>Well Elevation (msl in feet):</b>	<b>1262</b>	<b>Drilled Depth (ft):</b>	<b>120</b>	<b>Well Completed (ft):</b>	<b>120</b>	<b>Date Drilled:</b>	<b>04/26/2001</b>
<b>Township:</b>	<b>46</b>	<b>Range:</b>	<b>27</b>	<b>Dir:</b>	<b>W</b>	<b>Section:</b>	<b>12</b>
<b>Subsection:</b>	<b>CCCACC</b>	<b>Use:</b>	<b>domestic</b>	<b>Well Status:</b>	<b>Active</b>	<b>To Bedrock:</b>	
<b>Driller:</b>	<b>McAlpine Well Drilling</b>	<b>Entry Date:</b>	<b>08/14/2001</b>	<b>Update Date:</b>	<b>09/08/2017</b>		

## Related Resources:

[Go to MN Well Index Map](#)    [Well Log Report](#)    [Scanned Record\(s\)](#)    [Stratigraphy Report](#)

<b>More Details</b>	<b>Stratigraphy</b>	<b>Address</b>	<b>Chemical Data</b>	<b>Construction</b>	<b>Pump Test</b>
<b>Static Water</b>	<b>Comments</b>	<b>Location Changes</b>	<b>Overview Map</b>		

Description	From(ft)	To(ft)	Color	Hardness	Lith Primary	Lith Secondary	Interpretation
SAND, GRAVEL, & ROCK	0	23	BROWN	SOFT	SAND	COBL	sand +larger-brown
CLAY	23	35	RED	MEDIUM	CLAY		clay-red
FINE SAND	35	43	BROWN	SOFT	SAND		sand-brown
CLAY & ROCKS	43	105	BROWN	HARD	CLAY		pebbly sand/silt/clay-brown
SAND	105	120	BRN/GRY	SOFT	SAND		sand

I.S.T.S. SITE LOCATIONS FOR NEW LOTS

OWNER: Annabell Slette  
HC 5 Box 311  
Aitkin, MN. 56431

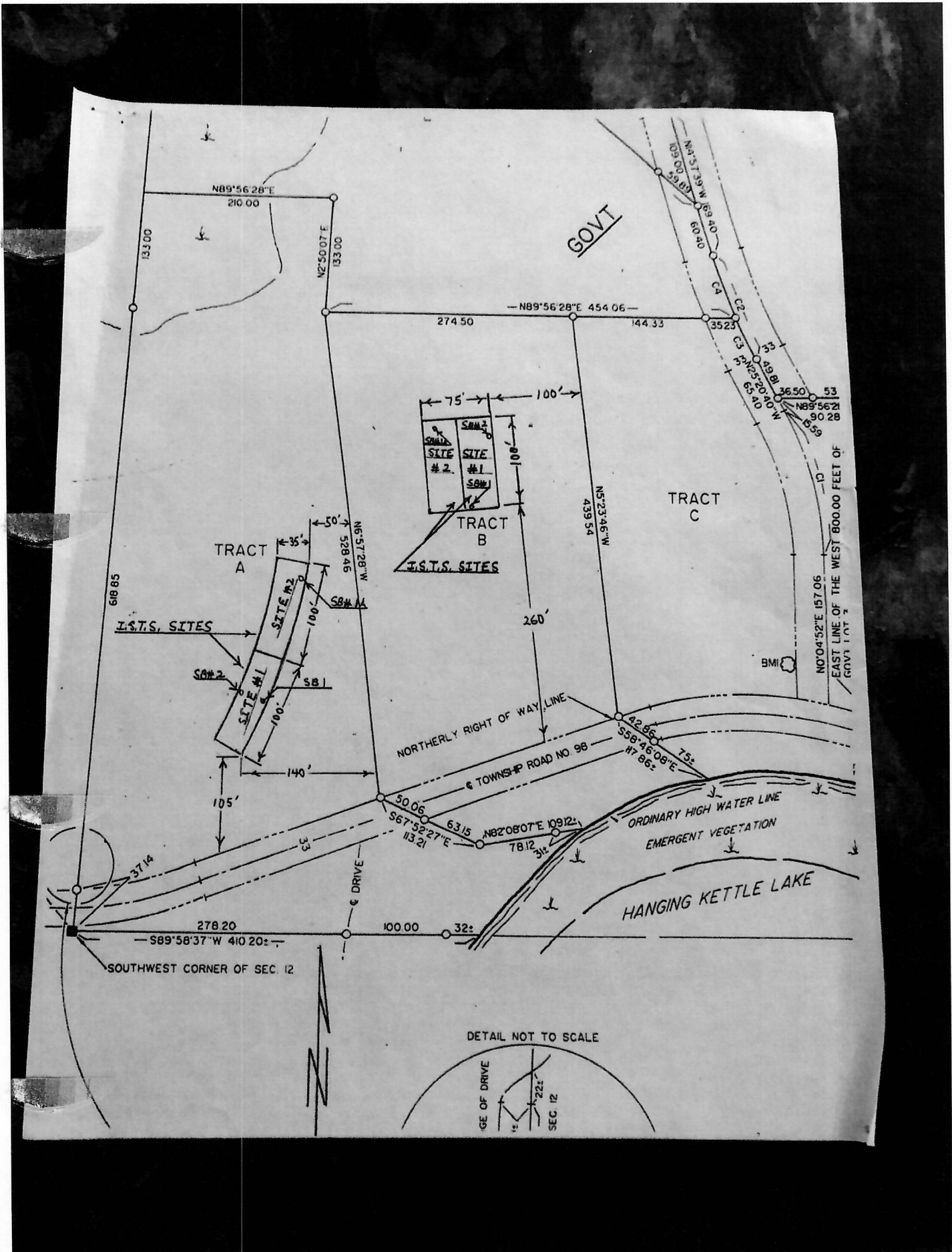
PREPARED FOR: Steve Slette

TRACT LOCATION: SEC 12, TWP 46, RGE 27 (Tract's "A" & "B")

ITEMS INCLUDED: Soil Boring Logs, Sketch Sheet

PREPARED BY: Charles J. Virginia  
Rt. 3 Box 2565  
Aitkin, MN. 56431  
Telephone #: (218) 927-3619  
MPCA Lic. #: 1392

SIGNATURE: Charles Virginia DATE: September 1, 1999







General Information

Township/City: FARM ISLAND TWP
Taxpayer Name: HICKERSON, RONALD & CHARLENE TRUST
Taxpayer Address: 11701 95TH ST NW
Property Address: OTSEGO MN 55330
Township: 46
Range: 27
Section: 12
Green Acres: No
Plat:
Brief Legal Description: PT LOT 3 (TRACT B)
Lake Number: 1017000
Lake Name: HANGING KETTLE LAKE
Acres: 3.78
School District: 1.00

Tax Information

Class Code 1: Non-Comm Seasonal Residential Recreational
Class Code 2: Unclassified
Class Code 3: Unclassified
Homestead: Non Homestead
Assessment Year: 2022

Estimated Land Value: \$67,000.00
Estimated Building Value: \$3,200.00
Estimated Total Value: \$70,200.00
Prior Year Total Taxable Value: \$58,000.00
Current Year Net Tax (Specials Not Included): \$396.00
Total Special Assessments: \$0.00
\*\*Current Year Balance Not Including Penalty: \$0.00
Delinquent Taxes: No

\* For more information on delinquent taxes, please call the Aitkin County Treasurer's Office at 218-927-7325.

\*\* Balance Due on a parcel does not include late payment penalties.

\*\*Current Year



Map may not be valid at this scale. Data was mapped at an accuracy of 1:24000 so any representation of the data at a larger scale is not advised.

These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

Hickerson



Web App Builder for ArcGIS

1:2,257 0 0.01 0.02 m 1 inch = 188 feet

Date: 7/9/2022

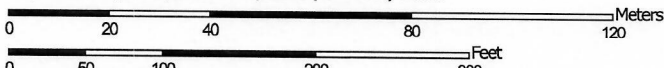


Soil Map—Aitkin County, Minnesota  
(Hickerson)



Soil Map may not be valid at this scale.

Map Scale: 1:1,500 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

## Aitkin County, Minnesota

### 454F—Mahtomedi gravelly loamy sand, 25 to 40 percent slopes

#### Map Unit Setting

*National map unit symbol:* gjgz  
*Elevation:* 980 to 1,640 feet  
*Mean annual precipitation:* 25 to 30 inches  
*Mean annual air temperature:* 39 to 45 degrees F  
*Frost-free period:* 120 to 140 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Mahtomedi and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Mahtomedi

##### Setting

*Landform:* Outwash plains  
*Landform position (two-dimensional):* Shoulder, backslope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy and gravelly outwash

##### Typical profile

*A - 0 to 2 inches:* gravelly loamy sand  
*E - 2 to 15 inches:* loamy coarse sand  
*Bw - 15 to 30 inches:* gravelly sand  
*C - 30 to 60 inches:* gravelly sand

##### Properties and qualities

*Slope:* 25 to 40 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Available water supply, 0 to 60 inches:* Low (about 4.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* A  
*Forage suitability group:* Not Suited (G090AN024MN)  
*Other vegetative classification:* Not Suited (G090AN024MN)

*Hydric soil rating:* No

### **Minor Components**

#### **Leafriver and similar soils**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Meehan and similar soils**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Soils with less gravel**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Soils with more gravel**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Newson and similar soils**

*Percent of map unit:* 2 percent

*Landform:* Swales

*Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 22, Sep 10, 2021