

Preliminary & Field Evaluation Form

24-066

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>5/13/2024</u>	Sec / Twp / Rng	<u>S-2, T-46, R-25</u>
Parcel ID	<u>09-0-002400</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Donald Johnson</u>	Owners address (if different)	
Property Address:	<u>29921 335th Ln. Aitkin Mn 56431</u>		<u>2122 105th St. W</u>
City / State / Zip:			<u>Bloomington MN 55431</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: Pressure Bed		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)	<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	<u>Gravity Flow Camper Dump into septic tank. Possible future House.</u>				

Aitkin County Soils Verification Sheet

Property Owner Donald Johnson Date: 5/7/24
 RE Code: 09-0-002400 Site Address: 29921 335th Ln. Aitkin MN 56431

Pit	Boring	1	Elevation	97.6'	Depth to SHWT	66"	Date	5/7/24
Depth (in)	Texture	Fragment%	Matrix Color	Redox Color	Consistence	Grade	Shape	
0 - 5	Sandy Loam / Top Soil	< 35%	10YR3/2		Loose	Loose	Granular	
5 - 30	Sandy Loam	< 35%	10YR5/4		Loose	Loose	Granular	
30 - 50	Med Sand	< 35%	10YR4/4		Loose	Loose	Granular	
50 - 66	Med Sand with Lamellae Layers	< 35%	10YR5/4 & 10YR4/4		Loose	Loose	Granular	
66"	Med Sand		10YR5/4	Mottles 7.5YR5/6	Loose	Loose	Granular	

Pit	Boring	Elevation	Depth to SHWT	Date	5/7/24		
Depth (in)	Texture	Fragment%	Matrix Color	Redox Color	Consistence	Grade	Shape

Larry Liljenquist
Signature

Larry Liljenquist
 Designer/Inspector
 License #: L-127
 Phone Number: 218-820-8886
 Date: 5/7/24

Jeff Brummer
Signature

Jeff Brummer
 Designer/Inspector
 License #: L-1347
 Phone Number: 218-821-0704
 Date: 5/7/24

Consistence	Grade	Shape
Loose	Loose	Single Grain
Friable	Weak	Granular, Blocky
Firm	Moderate	Prismatic, Platy
Rigid	Strong	Massive

Sketch

See Design Map

Pressure Bed Design

Property Owner: Donald Johnson Date: 5/13/2024

Site Address: 29921 335th Ln. Aitkin Mn 56431 PID: 09-0-002400

Comments: 3 Bedroom Pressure Bed for Camper and possible future House

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

- 1) 3 bedroom Type I Residential System
- 2) 450 GPD design flow
- 3) No Garbage disposal or pumped to septic
Install Jacobson 1650 Compartment tank
- 4) *** 1000 Gallon septic tank (minimum) Tank options: none
- 5) 0.78 GPD/ft² Soil Loading Rate 577 ft² bed req'd, or 577 ft² LUG minimum
(must match soil boring log)
- 6) *** 16.0 ft desired bed width, leads to a 36.1 ft bed length
(25' maximum)
- 7) *** 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum 3 for both)
end feed manifold connection
- 8) *** 5 laterals 34.1 feet long 12.0 perms / lateral 60 perms total
(1/2 perf means the first perf starts at the middle feed manifold)
- 9) *** 7/32 inch perms at 1 feet residual head gives 0.56 gpm flow rate per perforation
(If bed has > 1' of cover, increase residual head for cleanout req's)
for this perf size & spacing, & pipe size on line 12, max perms/lateral = 19, line #8 must be less --> OK
- 10) 4 doses per day (4 minimum)
- 11) 113 gallons per dose (treatment volume)
- 12) 1.50 inch diameter laterals (or smaller) will meet "5x pipe volume"
*** 1.50 inch diameter laterals (or smaller) must be used to meet "4x pipe volume" requirement
2.00 inch diameter laterals (or smaller) will meet "3x pipe volume"
- 13) *** 20 feet of 2.0 inch supply line leads to 3 gallons of drainback volume
("top feed" to control the drainback)
- 14) 116 gallons TOTAL pump out volume (treatment + drainback)
- 15) 12 feet vertical lift from pump to dispersal area, leads to a
- 16) *** 34 GPM @ 18 feet of head, Pump requirement
(>50 gpm may require additional 3-6' head allowance for discharge assy)

- 17) *** 533 gal Dose tank (minimum) at 12.69 gpi
- 18) *** 9.1 inch swing on Demand float, or Timed dosing of 3.4 min ON (confirm pump rate with drawdown
($<100\%$ of design flow requires a larger OFF time) 5.9 hrs OFF test and adjust as necessary)
- 19) 12 inches of from bottom of tank to "pump OFF" float, and/or to cover pump
- 20) *** 21 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
- 21) *** 24 inches from bottom of tank to "Hi Level" float (add 5-15 inches if Time Dosed)
- 22) 228 gallons reserve capacity (after High Level Alarm is activated)
- 23) 66 inches, or 5.50 ft. to Redox or other limiting condition (This must match the soil boring log)
- 24) 36 inches, or 3.00 ft. of vertical separation required
leads to bottom of rock no more than:
- 25) *** 30 inches, or 2.5 ft. Below existing grade **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 26) *** 9 inches of rock below the pipe
3 inches of rock to cover the pipe
- 27) Overall Dimensions: 16.0 ft. wide by 36.1 ft. long Pressure Bed
- 28) *** Rock Bed materials:
16 ft. by 36.1 ft. by 12 inches total, plus 20% gives 26 yd³ or *1.4= 36 ton

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#

5/13/24
Date

Installer Summary

gallon Septic tank (minimum) none Install Jacobson 1650

gallon Dose tank (minimum) at gpi

GPM @ ft. of head, Pump required

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 with manifold connection

laterals inch diameter feet long ft lateral spacing

inch perms ft perforation spacing

Effluent filter & alarm

clean out & valve box assembly

Pressure Bed:

ft. wide by ft. Long

Bottom of rock no more than:

inches, or ft. Below existing grade

inches of rock below the pipe

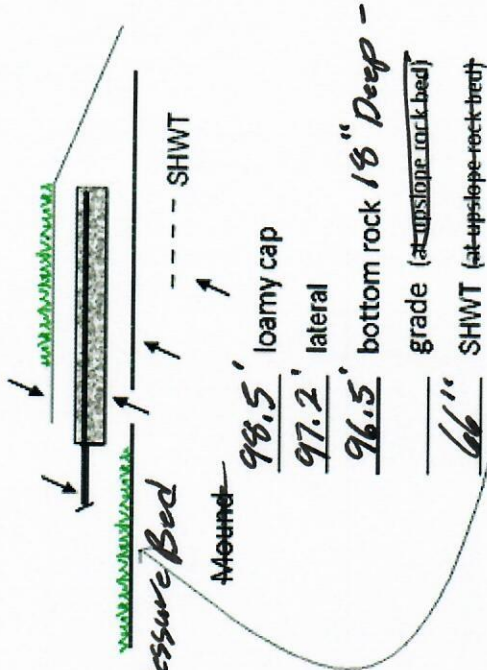
Overall Dimensions: ft. wide by ft. long Pressure Bed

Rock Bed materials: yd³ or *1.4= ton

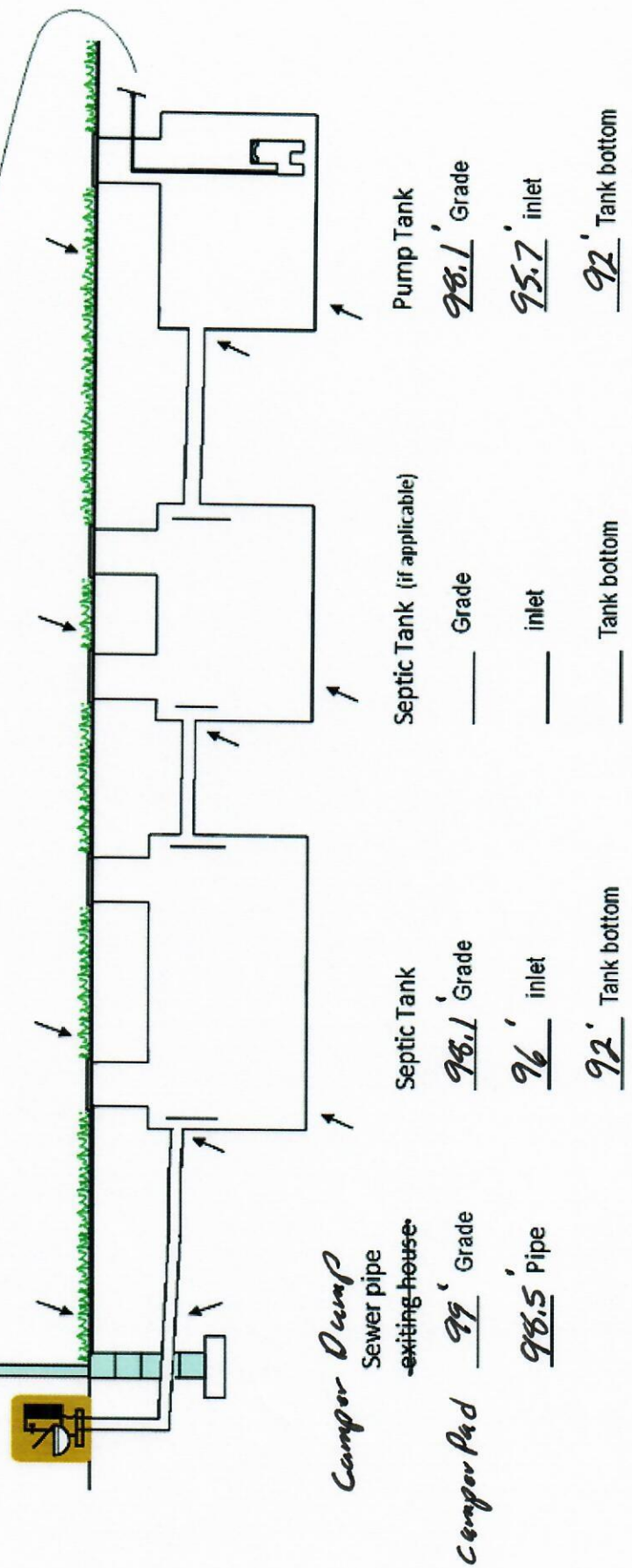
System Elevations

ELV = 100 benchmark Nail on Oak Tree North of Pressure Bed
 Top of Deep well cap ELV = 100.5'

(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)



98.5' loamy cap
 97.2' lateral
 96.5' bottom rock 18" Deep -
 grade (at upslope-rock bed)
 66" SHWT (at upslope-rock bed)



Campor Dump
 Sewer pipe exiting house

Campor Pad 99' Grade
 98.5' Pipe

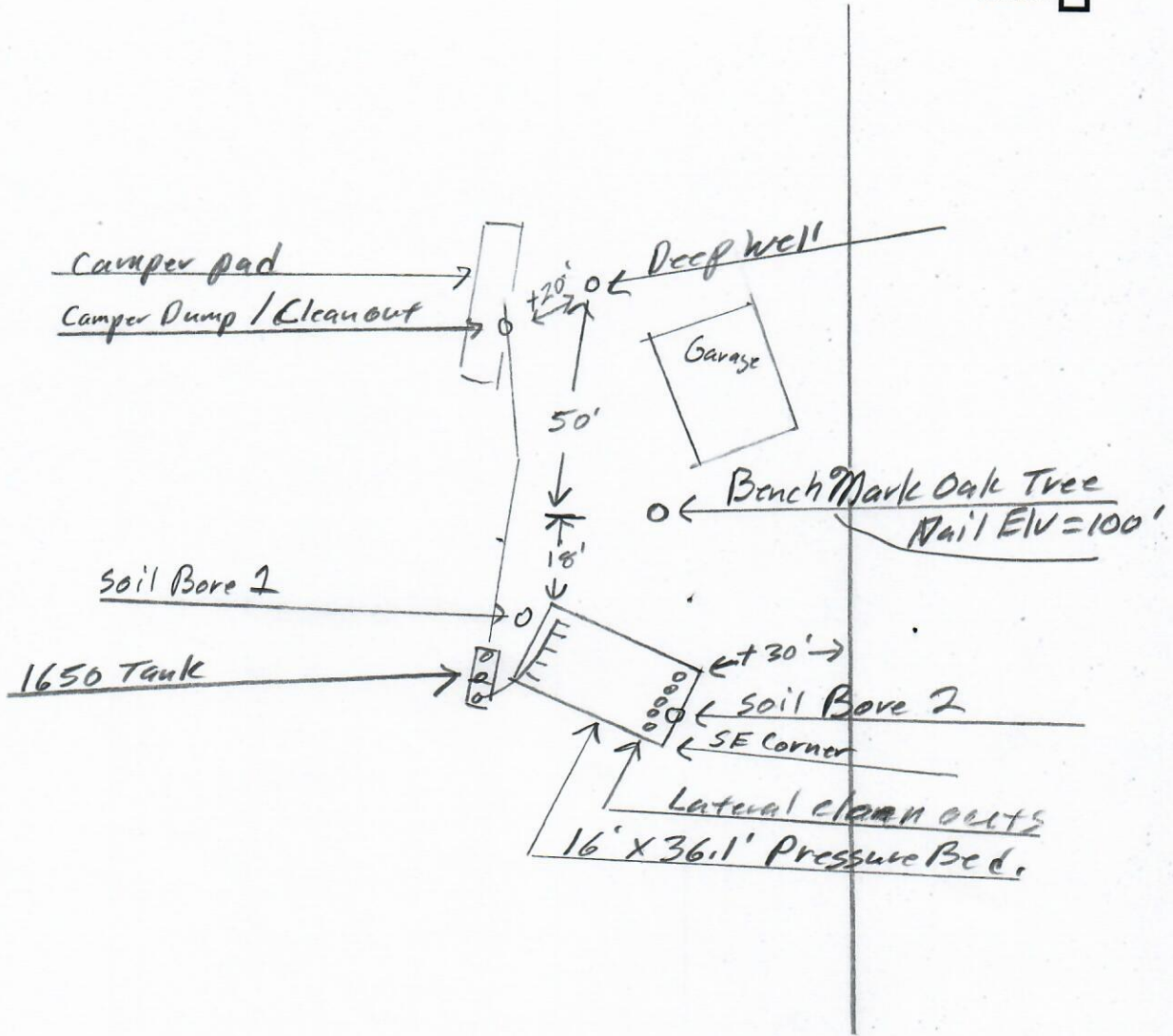
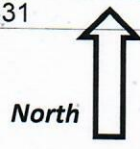
Septic Tank
 98.1' Grade
 96' inlet
 92' Tank bottom

Septic Tank (if applicable)
 Grade
 inlet
 Tank bottom

Pump Tank
 98.1' Grade
 95.7' inlet
 92' Tank bottom

{ Design Drawing }

Property Owner: Donald Johnson Date: 5/13/24 Designer's Initials: JB
 Parcel ID. Number: 09-0-002400 Address: 29921 335th Ln. Aitkin Mn 56431
 one Inch = 40ft.



Top of Deep Well Cap Elv. = 100.5' Garage Service door sill plate Elv. = 99.8'

	Surface/ SHWT	Nail on Oak tree = Bench Mark 100'		Existing Grade Pressure Bed Corners	
Soil Bore 1	97.6' / 66"	Bench Mark	100'	NW Elv. = 98.7'	NE Elv. = 98.9'
Soil Bore 2	98.3' / 77"	Ground Elv. BM	99.4'	SW Elv. = 98'	SE Elv. = 98.4'
Soil Bore 3		Ground Elv. Tank	98.1'	Bottom of Rockbed Elv. = 96.5'	
	Ground at	Camper Pad	99'	Estimated Tank In-Let Elv. = 96'	

Please show all that apply (Existing)

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

- Wells within 100ft. Of Drain field.
- Water lines within 10 ft. of Drain field.
- Drain field Areas:

- Disturbed/Compacted Areas
- Component Location
- OHW ordinary high water
- Lot Easements

- Access Route for Tank Maintenance
- Property Lines
- Structures
- Setbacks

Mound Design Notes - Aitkin county

Property Owner: Donald Johnson

Date: 5/13/2024

Site Address: 29921 335th Ln. Aitkin Mn 56431

PID: 09-0-002400

Comments: Type I Pressure Bed / 3 bedroom

- 1 This is a type I Pressure Bed for a Camper to start with than a proposed 3 bedroom House.
Soil separation is at 66" with a NW corner, Soil Bore #1.
- 2 There is an existing Deep well to the North that will be Plus 50 ft. from septic system. Deep well meets setbacks.
- 3 Install a camper dump station (clean-out) near camper site. Must be Plus 20 ft from Well, pressure test pipe.
- 4 Bench Mark (Elv. = 100') is nail on Oak Tree north of pressure bed. Top of deep well cap Elv.= 100.5'
- 5 The Pressure bed area will be 16 ft. wide and 36.1 ft. long. Bottom of rock Elv 95.3'.
The SW corner is the lowest corner Elv.= 98', Bottom of Rockbed Should be at Elv. = 96 or higher 96.5' = 18" deep.
Elevation of the bottom of the rock bed should be approx. 96.5'.
The area size of the rock bed is 16' x 36.1' .
Cover rock bed with fabric and 12" to 18" of soil.
- 6 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.
- 7 The Jacobson 1650 Combo tank will be gravity flow from dwelling. Install the pump for 4 demand doses per day. approx. 116 gallons per dose, 9.1 inches of tank level. Install alarm at 3 inches from pump on level.
Install pump with 34 GPM and 18 Ft. head.
Install all manholes, inspection pipes and clean-cuts to grade or above.
Recommend raising manhole 4" above finished grade.
- 8 Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to tank.
- 9 Install 1.5" laterals with 9" of rock under them. (Install Lateral clean-outs at far end of laterals. Recommended)
- 10 **Drill 7/32" perf holes spaced 3 ft. apart.**
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
- 11 Owner is responsible to maintain protection of bed area through construction of house and septic system.

MPCA recommends Installing an Effluent filter and Alarm on septic tank outlet.

MPCA recommends installing an event counter on all systems with a pump.

Designed to Aitkin Co. and MPCA recommendations and requirements.

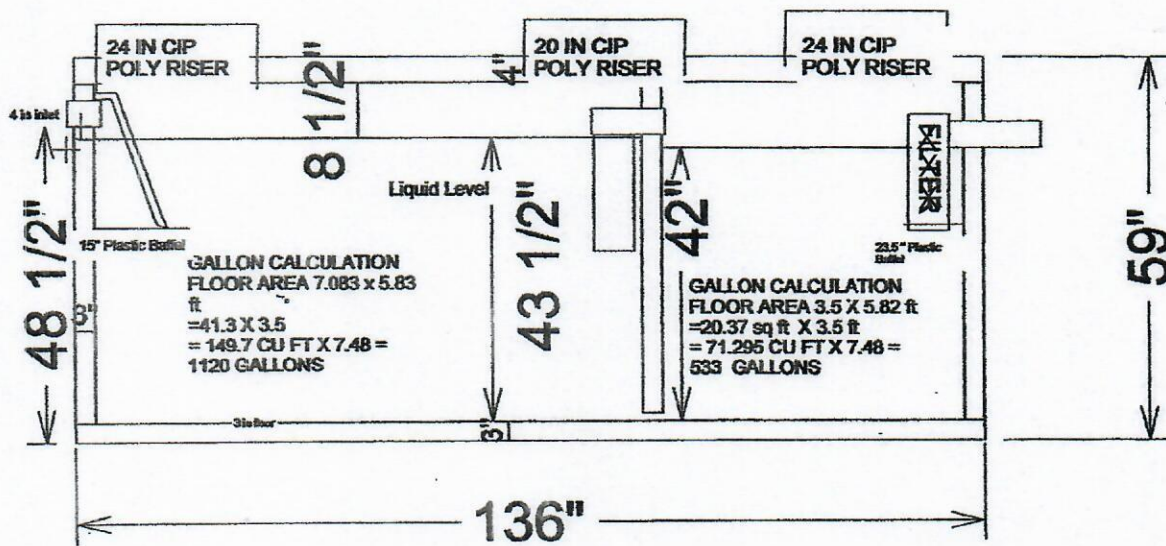
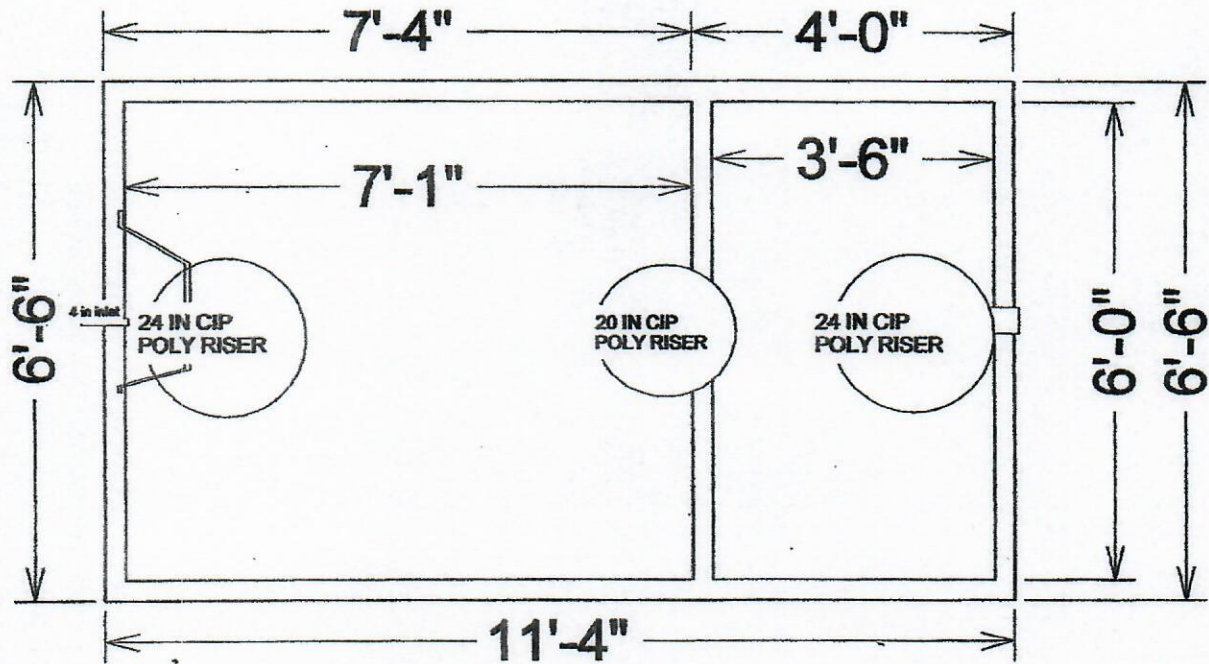

Designer Signature

Brummer Septic LLC.
Design Company

L-1347
License#

1650 Gallon 2 Compartment Septic Tank

TOP VIEW



$533 / 42" = 12.69 \text{ GPI}$

SIDE VIEW

Drawings Owned BY Jacobson Precast, Inc.
36641 HWY 169, Aitkin, Mn 56431

Minnesota Well Index

General Information

<i>Unique Well ID:</i>	131700	<i>Well Name:</i>	WEIR, LOWELL	<i>County:</i>	Aitkin	<i>Aquifer:</i>	Quat. buried artes. aquifer
<i>Well Elevation (msl in feet):</i>	1242	<i>Drilled Depth (ft):</i>	60	<i>Well Completed (ft):</i>	60	<i>Date Drilled:</i>	05/23/1977
<i>Township:</i>	46	<i>Range:</i>	25	<i>Dir:</i>	W	<i>Section:</i>	2
<i>Subsection:</i>	BCDBCC	<i>Use:</i>	domestic	<i>Well Status:</i>	Active	<i>Depth To Bedrock:</i>	
<i>Driller:</i>	North Star Drilling	<i>Entry Date:</i>	04/07/1988	<i>Update Date:</i>	08/18/2017		

Related Resources:

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

More Details **Stratigraphy** Address Chemical Data Construction Pump Test Static Water Comments Location Changes

Overview Map

<i>Description</i>	<i>From(ft)</i>	<i>To(ft)</i>	<i>Color</i>	<i>Hardness</i>	<i>Lith Primary</i>	<i>Lith Secondary</i>	<i>Interpretation</i>
SAND	0	11	BROWN	SOFT	SAND		sand-brown
SANDY CLAY	11	32	BROWN	MEDIUM	CLAY		clay+sand-brown
CLAY	32	37	GRAY	MEDIUM	CLAY		clay-gray
FINE SAND	37	60	GRAY	SOFT	SAND		sand-gray



Detailed Parcel Report

Parcel Number: 09-0-002400

General Information

Township/City: GLEN TOWNSHIP
 Taxpayer Name: JOHNSON, DONALD R & LORA J
 Taxpayer Address: 2122 105TH ST W
 BLOOMINGTON MN 55431
 Property Address: 29921 335th Ln
 Township: 46 Lake Number: 0
 Range: 25 Lake Name:
 Section: 2 Acres: 4.07
 Green Acres: No School District: 1.00
 Plat:
 Brief Legal Description: THAT PART OF W 550 FT LOT 4 S OF TWP RD IN D OC #166928

Tax Information

Class Code 1: Non-Homestead Qualifying Single Res Unit
 Class Code 2: Unclassified
 Class Code 3: Unclassified
 Homestead: Non Homestead
 Assessment Year: 2024

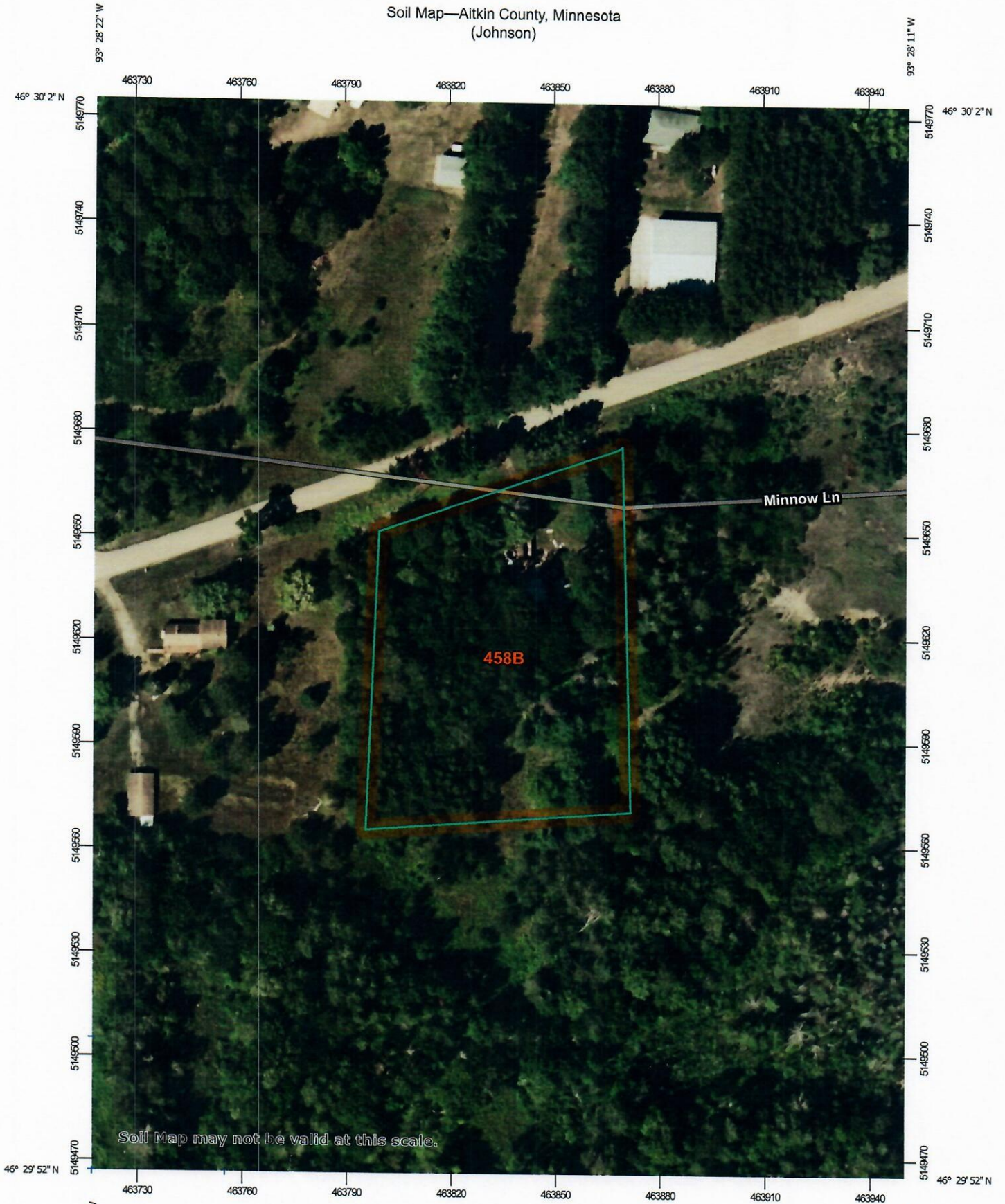
Estimated Land Value:	\$50,400.00
Estimated Building Value:	\$4,000.00
Estimated Total Value:	<u>\$54,400.00</u>
Prior Year Total Taxable Value:	\$48,800.00
Current Year Net Tax (Specials Not Included):	\$242.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$0.00
Delinquent Taxes:	No

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

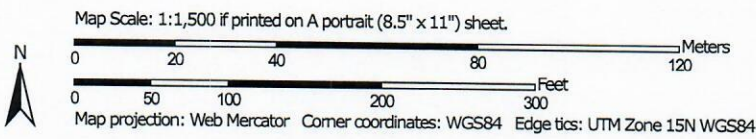
** Balance Due on a parcel does not include late payment penalties.



Soil Map—Aitkin County, Minnesota
(Johnson)



Soil Map may not be valid at this scale.



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Aitkin County, Minnesota

458B—Menahga loamy sand, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: gjh0
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

Menahga and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Menahga

Setting

Landform: Outwash plains
Landform position (two-dimensional): Backslope, summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash

Typical profile

A - 0 to 3 inches: loamy sand
E,Bw - 3 to 25 inches: sand
C1,C2 - 25 to 60 inches: sand

Properties and qualities

Slope: 1 to 6 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
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Uplands
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Gravelly soils

Percent of map unit: 3 percent

Hydric soil rating: No

Friendship

Percent of map unit: 3 percent

Hydric soil rating: No

Meehan

Percent of map unit: 3 percent

Hydric soil rating: No

Leafriver

Percent of map unit: 2 percent

Landform: Depressions

Hydric soil rating: Yes

Newson

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

Rifle

Percent of map unit: 2 percent

Landform: Bogs

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 24, Sep 9, 2023