

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>6/11/2021</u>	Sec / Twp / Rng	<u>S-17, T-49, R-26</u>
Parcel ID	<u>35-0-027902</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Daniel Curtiss</u>	Owners address (if different)	
Property Address:	<u>38591 496th Ln. Palisade Mn 56469</u>	<u>38591 496th Ln</u>	
City / State / Zip:	<u>Palisade Mn 56469</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: New System to Replace failing existing system		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	<u>Must meet Deep well setbacks 20 ft supply pipe & 50ft Drainfield / tank</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 Yes No

Soil logs completed and attached Yes No

Perk test completed and attached (if applicable) Yes No

Soil loading rate (gpd/ft²) 0.78

Percolation rate (if applicable) _____

Depth/elev to SHWT 78"

Flooding or run-on potential Yes No
(comments)

Depth to system bottom maximum (or elev minimum) 3.5 ft

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) _____

Floodplain designation and elev - 100 yr/10 yr (if applicable) _____

Soil Survey information determined (see attachment) Yes 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>Daniel Curtiss</u>	Date <u>6/11/2021</u>
Property Address / PID: <u>38591 496th Ln. Palisade Mn 56469</u>	

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent matl's:	<input checked="" type="checkbox"/> Till <input type="checkbox"/> Outwash <input type="checkbox"/> Lacustrine <input type="checkbox"/> Alluvium <input type="checkbox"/> Organic <input type="checkbox"/> Bedrock
landscape position:	<input checked="" type="checkbox"/> Summit <input type="checkbox"/> Shoulder <input type="checkbox"/> Side slope <input type="checkbox"/> Toe slope
soil survey map units:	<u>928C</u> slope <u>Flat</u> % direction- <u>East & west</u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit	Elevation <u>101.9'</u>	Depth to SHWT <u>78"</u>			
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 29	Med Sand	<35	10YR4/6		Loose	Loose	Granular
29 - 48	Med Sand	<35	10YR4/4		Loose	Loose	Granular
48 - 54 54 - 78	Med Sand	<35	10YR5/4 10YR6/4		Loose	Loose	Granular
78	Silt Sand	<35	10YR4/4	7.5YR5/6	Friable	Weak	Platy
Comments:							

38591 496th Ln. Palisade Mn 56469 **Soil Log #2**

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>101.9'</u>	Depth to SHWT <u>84"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 16	Med Sand	<35	10YR4/6		Loose	Loose	Granular
16 - 32	Med Sand	<35	10YR4/4		Loose	Loose	Granular
32 - 48	Med Sand	<35	10YR5/4		Loose	Loose	Granular
48 - 84	Med Sand	<35	10YR6/4		Loose	Loose	Granular

38591 496th Ln. Palisade Mn 56469 **Soil Log #3**

		<input type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation _____	Depth to SHWT _____		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive

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 #

Pressure Bed Design

Property Owner: Daniel Curtiss Date: 6/11/2021

Site Address: 38591 496th Ln Palisade Mn PID: 35-0-027902

Comments: Owner Identified Property lines

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
Install Jacobson 1650 2/Compartment tank
- 4) *** Gallon septic tank (minimum) Tank options:
- 5) GPD/ft² Soil Loading Rate ft² bed req'd, or ft² LUG minimum
(must match soil boring log) 450 x 1.27 = 572 sq Ft.
- 6) *** ft desired bed width, leads to a ft bed length
(25' maximum)
- 7) *** ft lateral spacing ft perforation spacing (maximum 3 for both)
 manifold connection
- 8) *** laterals feet long perfs / lateral perfs total
(1/2 perf means the first perf starts at the middle feed manifold)
- 9) *** inch perfs at feet residual head gives 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 perfs/lateral = , line #8 must be less --> OK
- 10) doses per day (4 minimum)
- 11) gallons per dose (treatment volume)
- 12) inch diameter laterals (or smaller) will meet "5x pipe volume"
*** inch diameter laterals (or smaller) must be used to meet "4x pipe volume" requirement
 inch diameter laterals (or smaller) will meet "3x pipe volume"
- 13) *** feet of inch supply line leads to gallons of drainback volume
("top feed" to control the drainback)
- 14) gallons TOTAL pump out volume (treatment + drainback)
- 15) feet vertical lift from pump to dispersal area, leads to a
- 16) *** GPM @ 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) *** 8.2 inch swing on Demand float, or Timed dosing of 3.1 min ON (confirm pump rate with drawdown test and adjust as necessary)
(<100% of design flow requires a larger OFF time) 3.9 hrs OFF
- 19) 12 inches of from bottom of tank to "pump OFF" float, and/or to cover pump
- 20) *** 20 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
- 21) *** 23 inches from bottom of tank to "Hi Level" float (add 5-15 inches if Time Dosed)
- 22) 241 gallons reserve capacity (after High Level Alarm is activated)
- 23) 78 inches, or 6.50 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) *** 42 inches, or 3.5 ft. Below existing grade **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
Install Bottom of rockbed at approx. Elv. = 100'
- 26) *** 9 inches of rock below the pipe
3 inches of rock to cover the pipe
- 27) Overall Dimensions: 16.0 ft. wide by 36.0 ft. long Pressure Bed
- 28) *** Rock Bed materials:
16 ft. by 36.0 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#

6/11/2021
Date

Installer Summary

1000 gallon Septic tank (minimum) none Install Jacobson 1650

533 gallon Dose tank (minimum) at 12.69 gpi

34 GPM @ 30 ft. of head, Pump required

8.2 inch swing on Demand float or 3.1 minutes ON time & 3.9 hours OFF time

20 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float

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

170 ft. of 2.0 inch supply line with end feed manifold connection

5 laterals 1.50 inch diameter 34.0 feet long 3.0 ft lateral spacing

7/32 inch perfs 3.0 ft perforation spacing

No Effluent filter & alarm

5 clean out & valve box assembly

Pressure Bed:

16.0 ft. wide by 36.0 ft. Long

Bottom of rock no more than:

42 inches, or 3.5 ft. Below existing grade

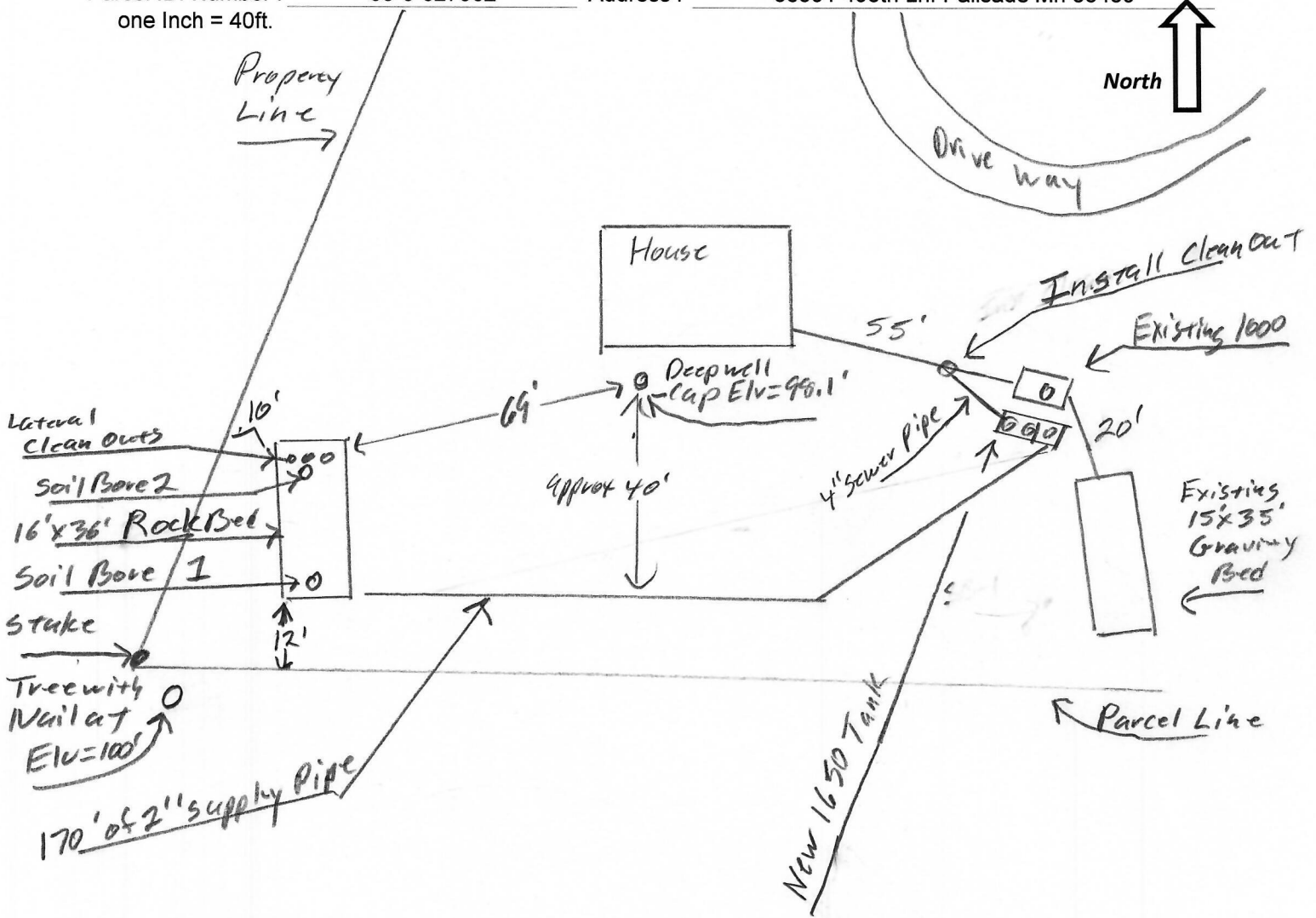
9 inches of rock below the pipe

Overall Dimensions: 16 ft. wide by 36.0 ft. long Pressure Bed

Rock Bed materials: 26 yd³ or *1.4= 36 ton

{ Design Drawing }

Property Owner: Daniel Curtiss Date: 6/11/21 Designer's Initials: JB
 Parcel ID. Number: 35-0-027902 Address: 38591 496th Ln. Palisade Mn 56469
 one Inch = 40ft.



Top of Existing Deep Well Cap Elv. = 98.1'
 Grade at New Tank Location Elv. = 93.2'
 Owner Identified Property lines

	Surface/ SHWT	Nail on Tree = Bench Mark 100'		Existing Grade at Pressure Bed Corners	
Soil Bore 1	101.9' / 78"	Bench Mark	100'	SW Elv. = 101.8'	SE Elv. = 101.9'
Soil Bore 2	101.9' / 84"	Ground Elv. BM	99.2'	NW Elv. = 102.1'	NE Elv. = 101.3'
Soil Bore 3		Ground Elv. Tank	93.2'	Bottom of Rockbed Approx. Elv. = 100'	
		SE Corner house	96.3'	Existing Tank Inlet Sewer pipe Elv. = 91.5'	

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: Daniel Curtiss

Date: 6/11/2021

Site Address: 38591 496th Ln Palisade Mn

PID: 35-0-027902

Comments: Type I Pressure Bed / 3 bedroom

- 1 This is a type I Pressure Bed for a Existing 3 bedroom House.
Existing Tank and drainfield Non-Compliant. Abandon Existing drainfield.
Existing Tank to be pumped, collapsed, filled or removed.
- 2 Soil separation is at 78" with a NE corner of pressure bed area the lowest. NE corner Elv. = 101.3'
Installer to build up NE Corner with excavated soil to berm up corner. Install bottom of rockbed at Elv.= 100'
- 3 There is an existing Deep well at SW corner of house approx. 69 ft from NE corner of Pressure Bed.
Drainfield and tanks must meet 50 ft setback to deep well, 2" supply pipe must meet 20 ft setback to Deep well.
Top of deep well cap Elv. = 98.1' approx. 69 ft. NE of proposed pressure bed.
- 4 Bench Mark (Elv. = 100') is nail on Oak Tree, SW of proposed pressure bed.
- 5 The Pressure bed area will be 16 ft. wide and 36 ft. long. Bottom of rock bed at Approx. Elv 100'.
The NE corner is the lowest corner, use the excavated soil to build the berm out from NE corner.
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 6 demand doses per day. approx. 104 gallons per dose, 8.2 inches of tank level. Install alarm at 3 inches from pump on level.
Install pump with 34 GPM and 30 Ft. head.
Install all manholes, inspection pipes and clean-outs to grade or above, (recommend 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.

Designed to Aitkin Co. and MPCA recommendations and requirements.

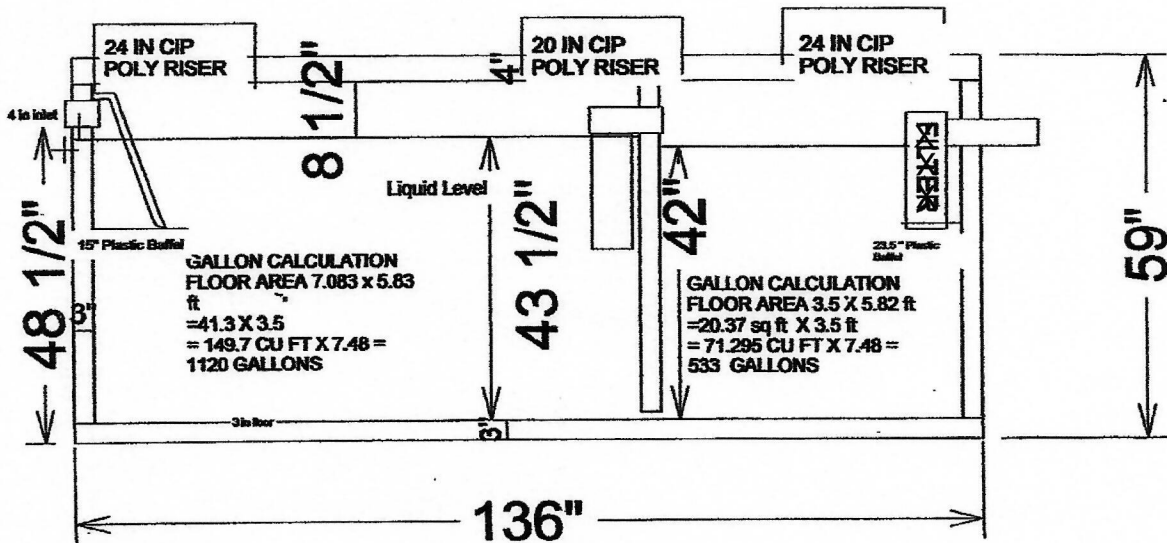
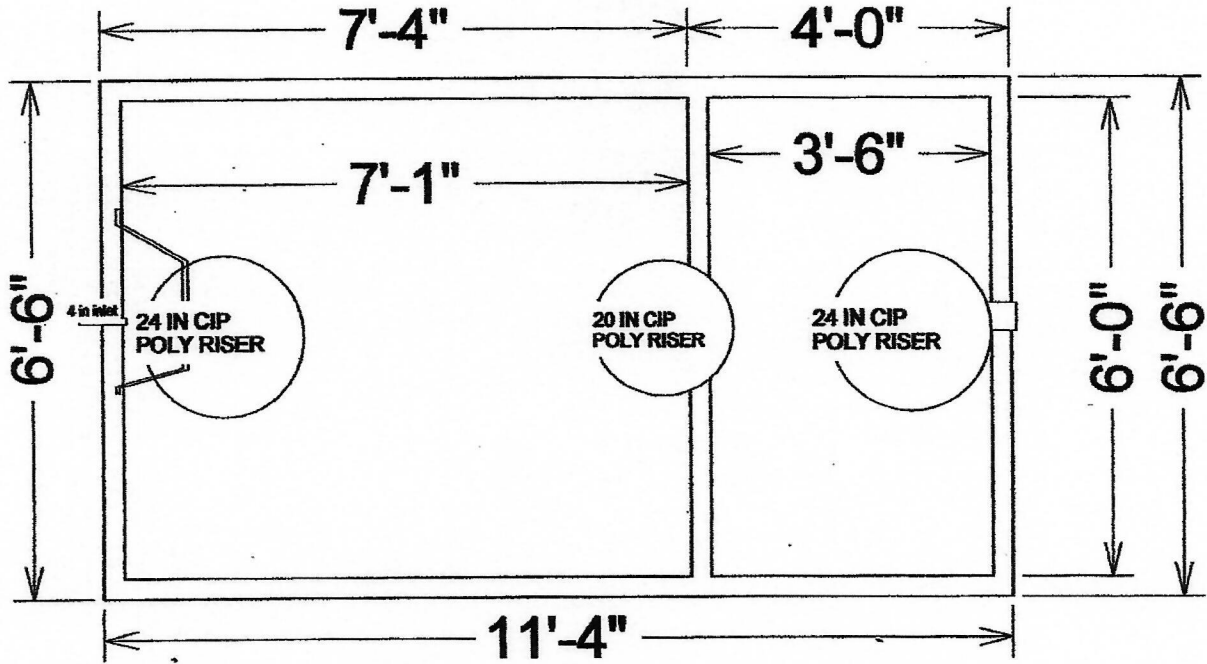

Designer/Signature

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



Detailed Parcel Report

Parcel Number: 35-0-027902

General Information

Township/City:	WAUKENABO TWP		
Taxpayer Name:	CURTISS, DANIEL		
Taxpayer Address:	38591 496TH LANE PALISADE MN 56469		
Property Address:	38591 496th Ln		
Township:	49	Lake Number:	1913700
Range:	26	Lake Name:	ROUND - WAUKENABO - BACK LOT
Section:	17	Acres:	7.00
Green Acres:	No	School District:	1.00
Plat:			
Brief Legal Description:	7 AC IN LOT 3 IN DOC 187636		

Tax Information

Class Code 1:	Residential 1 unit
Class Code 2:	Unclassified
Class Code 3:	Unclassified
Homestead:	Owner Homestead
Assessment Year:	2021
 Estimated Land Value:	\$32,200.00
Estimated Building Value:	\$132,100.00
Estimated Total Value:	<hr/> \$164,300.00
 Prior Year Total Taxable Value:	\$136,440.00
 Current Year Net Tax (Specials Not Included):	\$744.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$372.00
Delinquent Taxes:	No

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

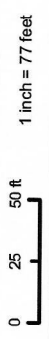
**** Balance Due on a parcel does not include late payment penalties.**



Date: 5/19/2021

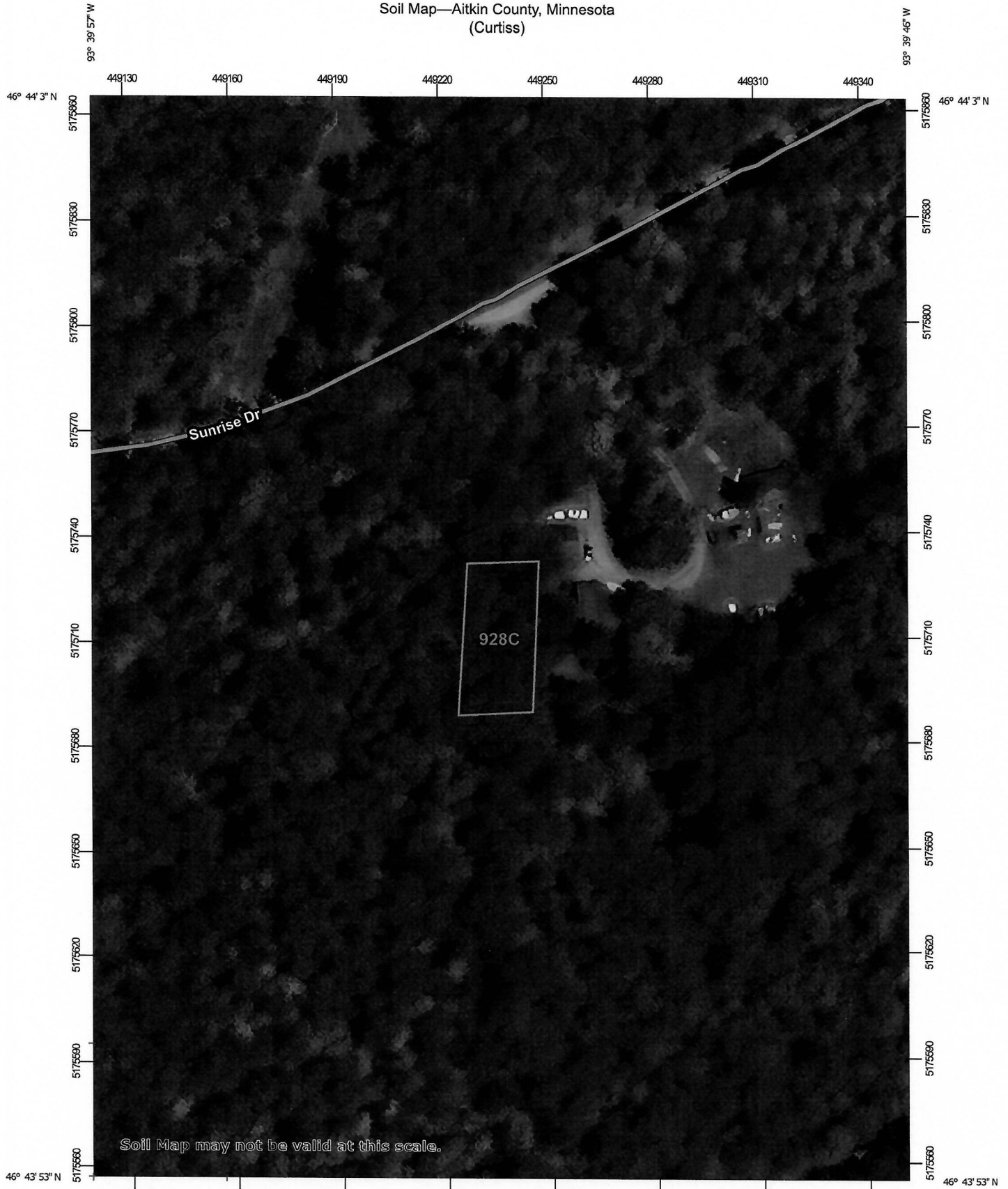
Curtiss

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.



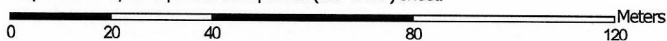
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Soil Map—Aitkin County, Minnesota
(Curtiss)



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



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Aitkin County, Minnesota

928C—Cushing-Mahtomedi complex, 2 to 10 percent slopes

Map Unit Setting

National map unit symbol: gjk4
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

Cushing and similar soils: 50 percent
Mahtomedi and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cushing

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

E - 0 to 16 inches: very fine sandy loam
B/E - 16 to 19 inches: loam
Bt - 19 to 44 inches: loam
C - 44 to 60 inches: loam

Properties and qualities

Slope: 2 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water capacity: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Forage suitability group: Sloping Upland, Acid (G090AN006MN)

Other vegetative classification: Sloping Upland, Acid
(G090AN006MN)
Hydric soil rating: No

Description of Mahtomedi

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and gravelly outwash

Typical profile

A - 0 to 4 inches: loamy sand
E - 4 to 15 inches: coarse sand
Bw - 15 to 26 inches: gravelly coarse sand
C - 26 to 60 inches: gravelly sand

Properties and qualities

Slope: 2 to 10 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 capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Sandwick and similar soils

Percent of map unit: 4 percent
Landform: Flats
Hydric soil rating: Yes

Meehan and similar soils

Percent of map unit: 4 percent
Hydric soil rating: No

Cathro and similar soils

Percent of map unit: 4 percent
Landform: Bogs
Hydric soil rating: Yes

Alstad and similar soils

Percent of map unit: 3 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 21, Jun 4, 2020