

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>7/6/2023</u>	Sec / Twp / Rng	<u>S-23, T-49, R-25</u>
Parcel ID	<u>60-0-003400</u>	LUG (county, city, township)	<u>City of Palisade</u>
Property Owner:	<u>Jeffrey Germain</u>	Owners address (if different)	<u>Aitkin Co.</u>
Property Address:	<u>48225 Great River Rd. Palisade MN 65469</u>		<u>48225 Graet River Road</u>
City / State / Zip:			<u>Palisade Mn 56469</u>

Flow Information and Waste Type / Strength			
Estimated Design flow	<u>600</u>	Anticipated Waste strength	<input type="checkbox"/> Hi Strength <input checked="" type="checkbox"/> Domestic
Comments: 24" mound in old garden area Owner's plan for future lift in basment		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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Well casing depth	Existing Shallow Well NE of house
Easements on lot located (see site map)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Drainfield w/in 100' of residential well	<input type="checkbox"/> Yes <input checked="" 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>Call Gopher One may be phone lines buried</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) 0.60

Percolation rate (if applicable) _____

Depth/elev to SHWT 13"

Flooding or run-on potential ☐ Yes ☒ No
(comments)

Depth to system bottom maximum (or elev minimum) (+ 24")

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) _____

Soil Survey information determined (see attachment) ☒ Yes ☐ No

Floodplain designation and elev - 100 yr/10 yr (if applicable) _____
Out side of 100 year flood zone

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: Jeffrey Germain

Date 7/6/2023

Property Address / PID: 48225 Great River Rd. Palisade MN

Soil Survey Information

☐ refer to attached soil survey

Parent mat'l's: ☐ Till ☐ Outwash ☒ Lacustrine ☐ Alluvium ☐ Organic ☐ Bedrock

landscape position: ☐ Summit ☐ Shoulder ☒ Side slope ☐ Toe slope

soil survey map units: 672 & 1982 slope 1 % direction- West

Soil Log #1

☒ Boring ☐ Pit

Elevation 97.9'

Depth to SHWT 16"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 10	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
10 - 16	Sandy Loam	<35	10YR5/3		Loose	Loose	Granular
16 - 20	Sandy Loam	<35	10YR5/3	7.5YR4/4	Loose	Loose	Granular
20	Clay Loam	<35	10YR6/2	7.5YR5/6	Friable	Moderate	Platy
		<35			Loose	Loose	Granular

Comments:

48225 Great River Rd. Palisade MN 65469

Soil Log #2

<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit Elevation <u>98'</u> Depth to SHWT <u>13"</u>							
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 13	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
13 - 18	Loam	<35	10YR5/3	7.5YR4/4	Friable	Weak	Granular
		<35			Loose	Loose	Granular
		<35					
		<35			Loose	Loose	Granular

48225 Great River Rd. Palisade MN 65469

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 #

Mound Design - Aitkin county

Property Owner: Jeffrey Germain

Date: 7/6/2023

Site Address: 48225 Great River Rd. Palisade MN 65469

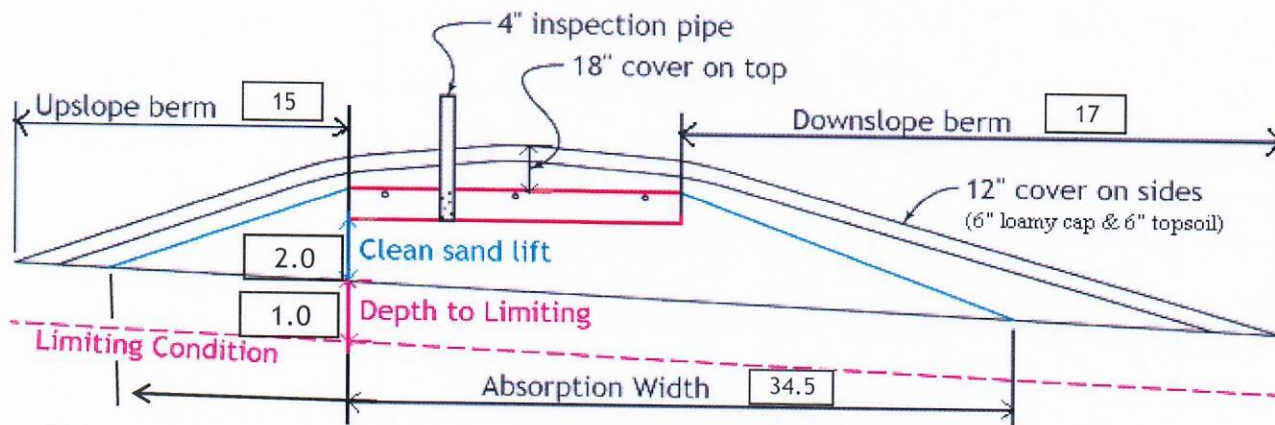
PID: 60-0-003400

Comments:

Instructions: = enter data = adjust if desired = computer calculated - DO NOT CHANGE!

- 1) 4 bedroom Type I Residential System
- 2) 600 GPD design flow
- 3) No Garbage disposal or pumped to septic Install 1650 Jacobson 2/Compartment Septic tank
- 4) 1000 Gal Septic tank (code minimum) 1000 Gal Septic tank (design size / LUG req'd)
Tank options: Multiple tanks or compartments req'd
- 5) 1.2 GPD/ft² mound sand loading rate contour loading rate of 12 req's a min 50 ft. long rockbed
- 6) 10.0 ft rockbed width 50.0 ft rockbed length
- 7) 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum of 3 for both)
end feed manifold connection
- 8) 3 laterals 48.0 feet long 17.0 perfs / lateral 51 perfs total
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9) 7/32 inch perfs at 1 feet residual head gives 0.56 gpm flow rate per perforation
for this perf size & spacing, & pipe size on line 12, max perfs/lateral = 19, line #8 must be less --> OK
- 10) 7.0 doses per day (4 minimum)
- 11) 86 gallons per dose (treatment volume)
- 12) 1.50 inch diameter laterals must be used to meet "4x pipe volume" requirement 1.50 5x
- 13) 50 feet of 2.0 inch supply line leads to 9 gallons of drainback volume 2.00 3x
(Tip: "top feed" manifold to control the drainback)
- 14) 95 gallons TOTAL pump out volume (treatment + drainback) Install Jacobson 520 pump tank.
- 15) 15 feet vertical lift from pump to mound laterals, leads to a:
- 16) 29 GPM @ 22 feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)
- 17) 500 gal Dose tank (code minimum) 520 gal Dose tank (design size / LUG req'd) at 16.57 gpi
leads to a
- 18) 5.7 inch swing on Demand float, or timed dosing of 3.3 min ON (confirm pump rate with drawdown
(this delivers Average flow, =70% of Peak design flow) 5.1 hrs OFF test and adjust as necessary)
- 19) 12 inches from bottom of tank to "Pump OFF" float
- 20) 18 inches from bottom of tank to "Pump ON" float, or 12 inches to "Timer ON" float if time dosed
- 21) 21 inches from bottom of tank to "Hi Level" float, or 31 inches to "Hi Level" float if time dosed
- 22) 172 gallons reserve capacity (after High Level Alarm is activated)

- 23) **0.60** gpd/ft² Absorption area Soil Loading Rate, which gives a mound ratio of **2** (minimum)
(this must match the soil boring log) desired mound ratio **2.0**
- 24) **1** percent site slope (0-20% range) **1** (% downslope site slope, if different than upslope)
- 25) **12** inches, or **1.0** ft. to Redox or other limiting condition (need at least 12" to be a Type I)
Treatment zone contains **0** inches of 0% soil credit, and **0** inches of 50% soil credit. Giving a:
- 26) **24** inch, or **2.0** ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 27) **20.0** ft. base absorption width (with sand beyond rockbed as follows):
34.5 greater of: absorption width OR sand slope
- 28) **5.0** ft. upslope and sideslope sand upslope **11.6**
5.0 ft. Downslope sand down slope **12.9**
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) **4:1** upslope ratio **15** ft. upslope berm
- 30) **4:1** sideslope **16** ft. sideslope berms
- 31) **4:1** downslope **17** ft. downslope berm
- 32) Overall Dimensions: **10.0** ft. wide by **50.0** ft. long Rock bed
42 ft. wide by **82** ft. long Mound footprint



Note:

For 0 to 1% slopes, *Absorption Width* is measured from the *Bed* equally in both directions.
For slopes >1%, *Absorption Width* is measured downhill from the upslope edge of the *Bed*.

- 33) Rock Bed:
10.0 ft. by **50.0** ft. by **9** inches under pipe, plus 20% gives **23** yd³ or *1.4= **32** ton
- 34) Mound Sand: (note: volume is based on 3:1/4:1 slope from top of rockbed, Exchange sand for loamy cap if desired)
47.5 up + **54.9** downslope + **14.2** ends + **38.0** under rock = **186** yd³ or *1.4= **260** ton
plus 20%
- 35) Loamy Cap:
38 ft. by **78** ft. 6" deep, plus 20% gives **66** yd³ or *1.4= **92** ton
- 36) Topsoil:
42 ft. by **82** ft. 6" deep, plus 20% gives **77** yd³ or *1.4= **108** ton

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

Design Signature

Brummer Septic LLC.
Company

L-1347
License#

7/6/2023
Date

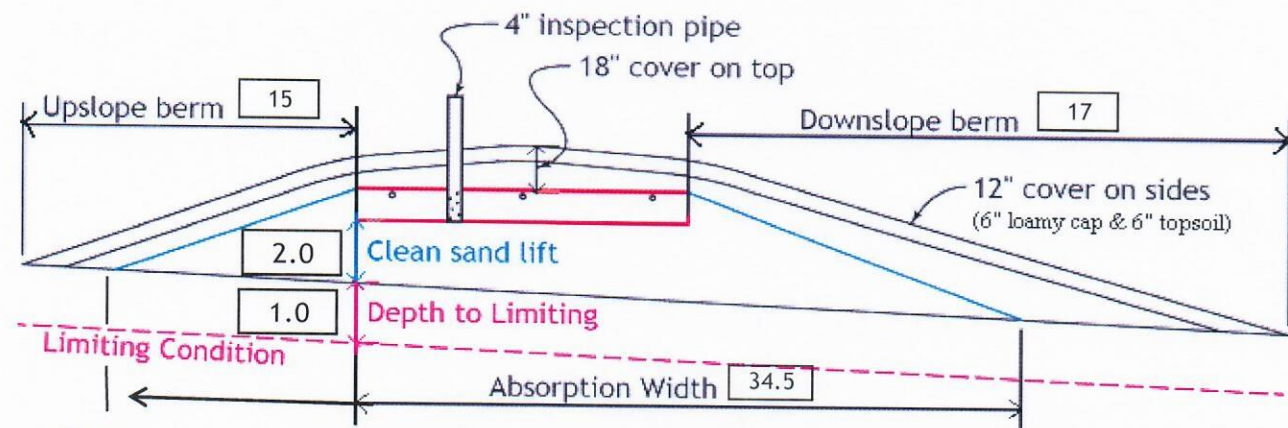
Installer Summary

1000	gallon Septic tank (minimum)	Tank options: Multiple tanks or compartments req'd Install 1650 Jacobson 2/Compartment Septic tank at 16.57 gpi	
520	gallon Dose tank (minimum)		
29	GPM @	22	ft. of head, Pump required
5.7	inch swing on Demand float	which translates to roughly 3.9 inches of float tether length if time dosing is required -->	
18	inches from bottom of tank to "pump ON" float, or	3.3	minutes ON time & 5.1 hours OFF time
21	inches from bottom of tank to "Hi Level Alarm" or	12	inches to "timer ON" float
		31	inches to "Hi level alarm" if time dosed
50	ft. of	2.0	inch supply line with end feed manifold connection (Tip: "top feed" manifold to control drainback)
24	inch, or	2.0	ft. Sand Lift Mound
10.0	ft. wide by	50.0	ft. long Rock bed
3	laterals	1.50	inch diameter 48.0 ft. long 3.0 ft. lateral spacing
7/32	inch perfs	3.0	ft. perforation spacing
No	Effluent filter & alarm		
3	clean out & valve box assemblies		

34.5	ft. Total sand ABSORPTION width (minimum)
11.6	ft. upslope and sideslope (sand beyond rockbed, minimum)
12.9	ft. Downslope (sand beyond rockbed, minimum)

Specific slope ratios give BERM widths (topsoil beyond rockbed) of:

4:1	upslope ratio	15	ft. upslope berm
4:1	sideslope	16	ft. sideslope berms
4:1	downslope	17	ft. downslope berm



Note:

For 0 to 1% slopes, Absorption Width is measured from the Bed equally in both directions.
For slopes >1%, Absorption Width is measured downhill from the upslope edge of the Bed.

Rock Bed:	23.0 yd ³ or *1.4=	32	ton	9	inches under pipe
Mound Sand:	186 yd ³ or *1.4=	260	ton	calculation based on 3:1/4:1 slope from top of rockbed	
Loamy Cap:	66 yd ³ or *1.4=	92	ton	6"	deep
Topsoil:	77 yd ³ or *1.4=	108	ton	6"	deep

INSPECTOR CHECKLIST - mound

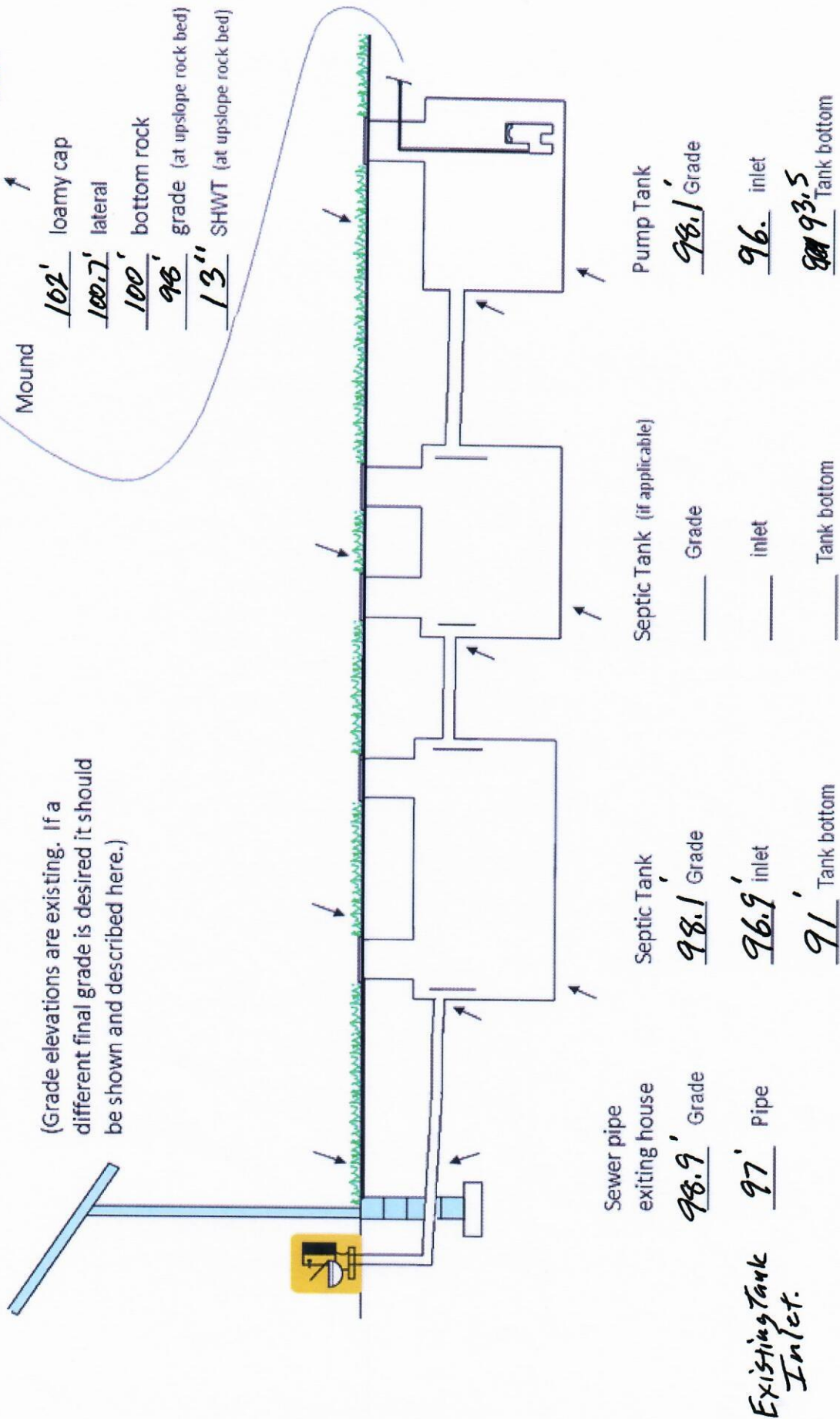
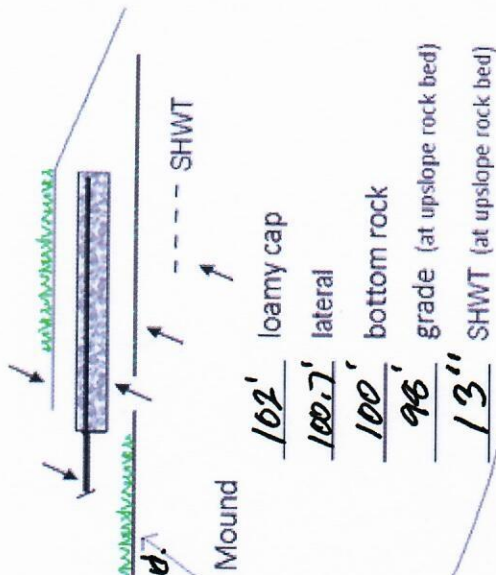
48225 Great River Rd. Palisade MN 55469

- ☐ WELL setbacks: 20' to pressure tested sewer line (5 psi for 15 min)
50' to everything 100' to dispersal area with shallow well
- ☐ PROPERTY LINES setback: 10' to everything
- ☐ Road setback: platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.
- ☐ LAKE / BLUFF setback: 20' for bluff. Lakes: GD __, RD __, NE __. Protected wetland __.
- ☐ Building setbacks: 10' for everything, 20' for dispersal area.
- ☐ WATER LINE under pressure se 10' to bed, tank & sewer line. (else sewer line > 12" below, else ok w/pvc)
- ☐ Sewer line & baffle connection (no 90's, 3' between 45's, slope min 1" in 8', max 2" in 8')
(no depth req's, clean out every 100', Sch 40 pipe)
- ☐ Septic tank and risers (water tight, insulated, proper depth, existing verified by pumping)
mfg _____ 1000 gallons Multiple tanks or compartments req'd
- ☐ Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.
- ☐ No effluent filter & alarm
- ☐ Dose tank risers and piping (water tight, insulated, proper depth, drainback)
mfg _____ 520 gallons
- ☐ dose pump _____ 29 gpm 22 head VERIFY PUMP CURVE 3.3 min ON 5.1 hr OFF
- ☐ float setting drop 5.7 inches at 16.6 gpi "DESIGNED" 3.9 inches approx float tether length
95.0 gal dose divided by _____ gpi "INSTALLED" = _____ inches float drop (field corrected)
LABEL pump requirements and drawdown on riser or panel
- ☐ Cam lock reachable from grade - 30" max. J-hook weep hole. Supply line access (no hard 90's)
2.0 inch supply pipe: Sch40, sloped 1/8"+, supported by 4" sch40 sleeve or compacted, and buried 6"+.
- ☐ splice box / control panel / electrical connections
- ☐ flow measurement: CT, ETM, time dosed, home water meter
- ☐ mound absorption area rough up
- ☐ mound rock dimensions 10.0 X 50.0
- ☐ Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
- ☐ Absorption Sand beyond rock 11.6 upslope 12.9 downslope
- ☐ Bermed topsoil beyond rockbed 15 upslope 16 sideslope 17 downslope
- ☐ cover depth of 12-18"+ VERIFY
- ☐ 3 laterals (1-2' from edge of rock)
- ☐ 1.50 inch pipe size (Sch40 pipe & fittings)
- ☐ 3.0 ft lateral spacing
- ☐ 7/32 inch perforations
- ☐ 3.0 ft perforation spacing
- ☐ Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY
- ☐ clean outs (no hard 90's)
- ☐ 4" inspection pipe to bottom of rock, anchored VERIFY
- ☐ Abandon existing system - if necessary ☐ Re-use existing tank certification
- ☐ monitoring plan and type _____
- ☐ well abandonment form - if necessary _____

System Elevations

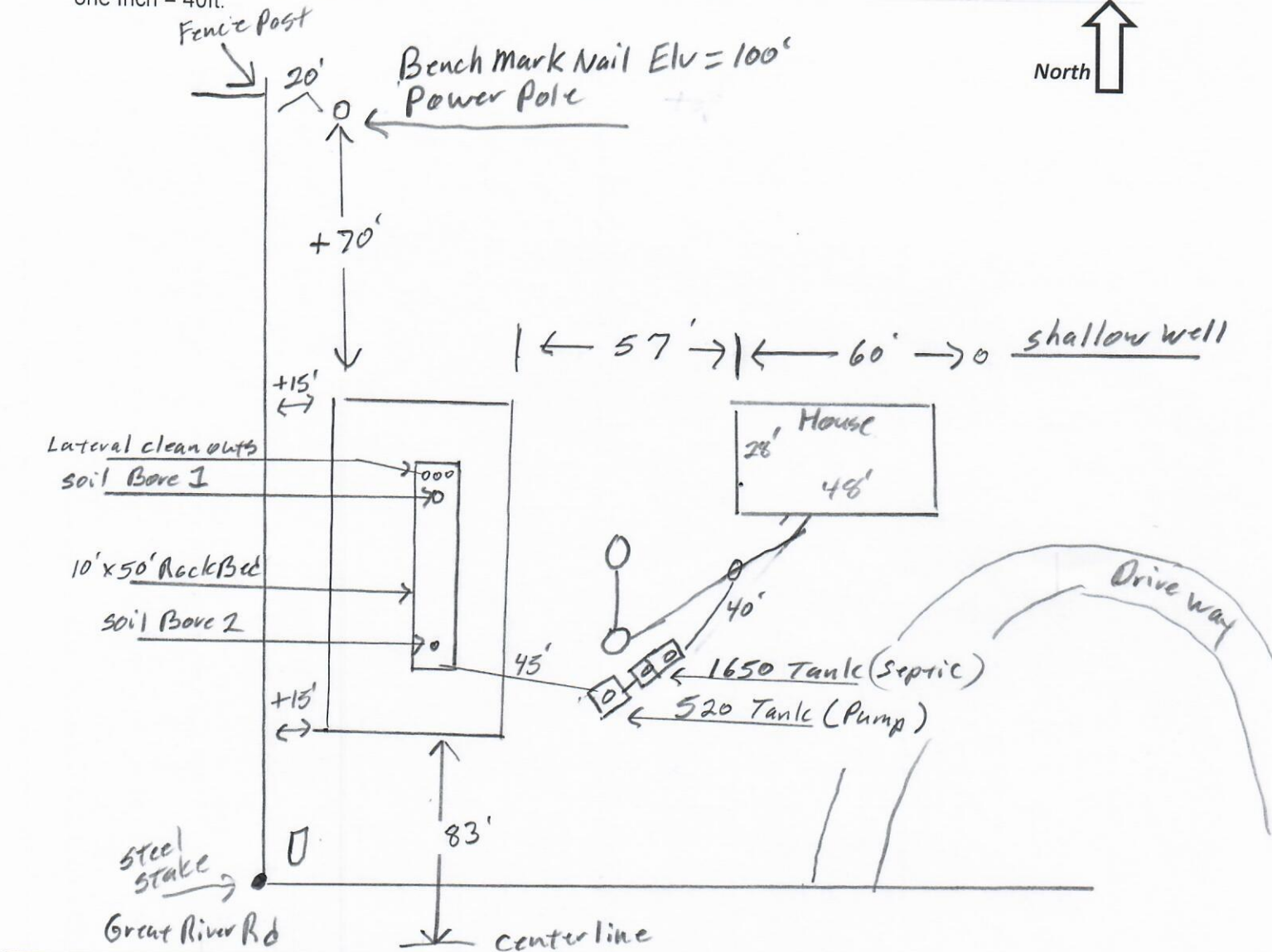
Elv = 100' benchmark Nail on Power Pole North of road.

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



{ Design Drawing }

Property Owner: Jeffrey Germain
 Parcel ID. Number : 60-0-003400
 one Inch = 40ft.
 Date: 7/6/23
 Designer's Initials : JB
 Address : 48225 Great River Rd. Palisade MN 65469



Surface/ SHWT		Nail on Power Pole= Bench Mark 100'		Existing Grade	
Soil Bore 1	97.9'/16"	Bench Mark	100'	Upslope Edge Rockbed Elv.=98'	
Soil Bore 2	98'/13"	Ground Elv. BM	98	Bottom of Rockbed Elv.= 100'	
Soil Bore 3		Ground Elv. Tank	98.1'	Top of washed sand Elv.= 100	
Ground at		house	98.9'	Extising Inlet Pipe Elv. = 97'	

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

Component Location

OHW ordinary high water

Lot Easements

Access Route for Tank Maintenance

Property Lines

Structures

Setbacks

Mound Design Notes - Aitkin county

Property Owner: Jeffrey Germain

Date: 7/6/23

Site Address: 48225 Great River Rd. Palisade MN 65469

PID: 60-0-003400

Comments: **Mound design may not follow Aitkin co. Auto fill form for mound design.**

- 1 This is a type I mound for a 4 bedroom House. Existing Shallow well location will be NE of House.
- 2 Existing seepage tanks to be pumped, collapsed and filled or removed.
- 3 West property line is steel stake at RW and Fence post West of Power pole in back (Prior Owner stated)
- 4 Bench Mark Elevation = 100' is a nail on a Power pole North of mound area approx. 70 ft.
Top of power transformer box next to power pole is at Elv.= 101.6'
- 5 Install Jacobson 1650 2/ Compartment Septic tank for gravity flow from house, Check existing pipe for reuse .
Owner may install plumbing lift in the basement in the future, install 1650 2/Compartment Septic Tank.
Install clean-out near tank because of landscape at house.
Raise all manholes and tank inspection pipes to above final grade. Insulate top of tank.
Install 520 Jacobson Pump tank with gravity flow from 1650 septic tank.
- 7 Owner will have to keep Existing Tanks pumped before project begins to try and dry up tank area.
- 8 Elevation contour of rock bed upslope edge is 98'.
The area size of the rock bed is 10' x 50' . Absorption area is 50' x 34.5'.
Sand absorption area is 11.6 ft. up slope + 10 ft. rockbed + 12.9 downslope = approx. 34.5 ft. wide sand base.
Berms are 15ft. Upslope, 17ft. Down slope, 10ft. Rock bed = approx. 42ft. Wide.
Overall mound size is approx. 42' wide x 70' long and approx. 4' high. End Berms at 16 ft. wide.
The bench mark is the nail on the Power pole near mound area, BM = Elv. 100'.
- 9 Installer to double check bench mark. Installer should confirm bench mark and sand height Elv. with inspector.
Installer should record bench mark Elv. and sand height on installation inspection form.
- 10 The top of the washed sand and bottom of rock bed is Elv. 100'.
It is important that the soils do not get compacted, and that clean washed sand is used.
- 11 The Jacobson 520 pump tank will be gravity flow from septic tank. Install the pump for 7 demand doses per day. approx. 95 gallons per dose, 5.7 inches of tank level. Install alarm at 3 inches from pump on level.
Install all manholes, inspection pipes and clean-outs to grade or above, insulate top of tank.
Recommend raising manholes 4" above finished grade. Recommend installing an Effluent filter on septic tank out-let.
Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to tank.
Install 1.5" laterals with 9" of rock under them. Install clean-outs at far end of laterals.
Drill 7/32" holes for Perf sizing, 36" on centers.
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
- 12 MPCA Recommends an event counter on all septic systems with a pump.

Designed to Aitkin Co. and MPCA recommendations and requirements.

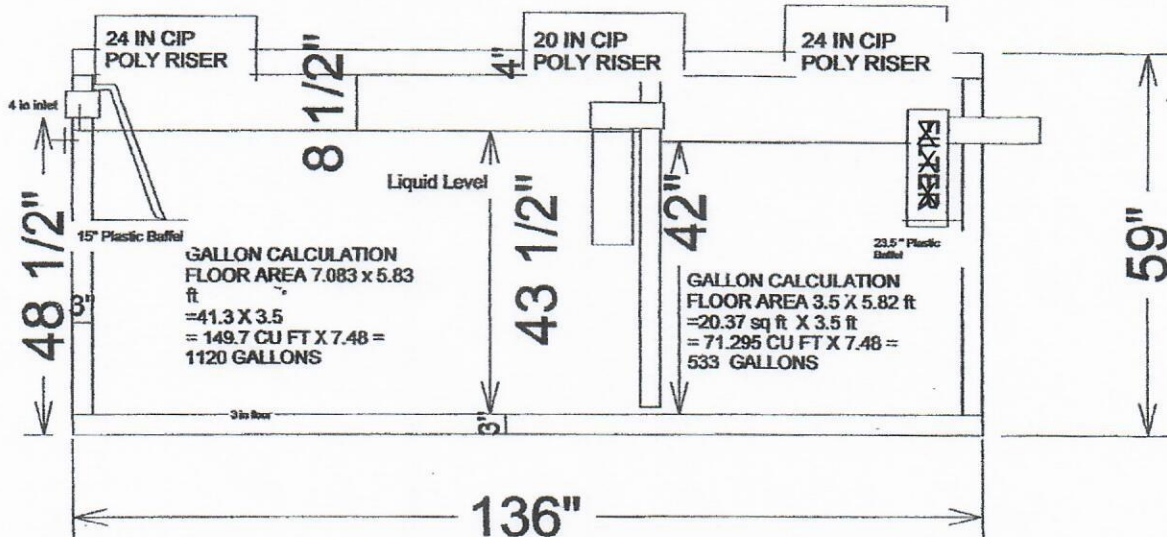
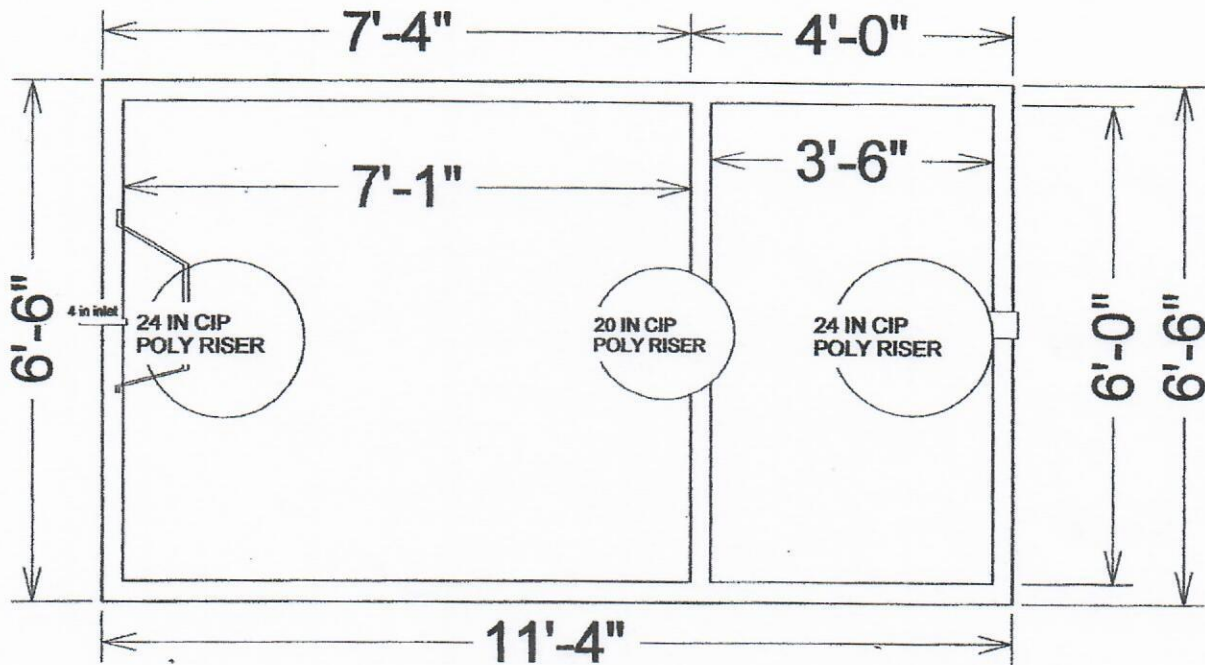

Designer Signature

Brummer Septic LLC.
Design Company

L-1347
License#

1650 Gallon 2 Compartment Septic Tank

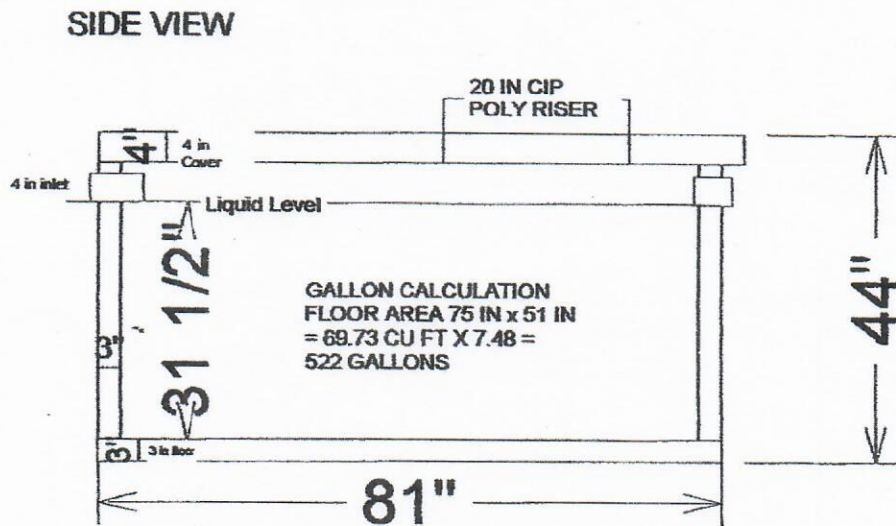
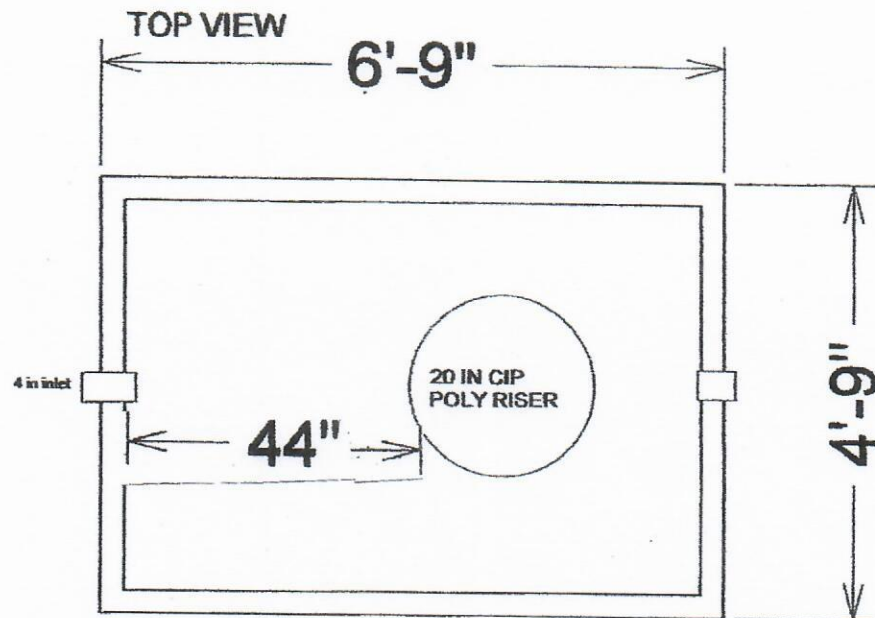
TOP VIEW



SIDE VIEW

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

520 Gallon Pump Tank



522 gals. / 31.5" = 16.57 GPI

Drawings Owned BY Jacobson Precast, Inc.

36641 HWY 169, Aitkin, Mn 56431

DDo not copy drawings without permission of the Owner



Detailed Parcel Report

Parcel Number: 60-0-003400

General Information

Township/City: PALISADE CITY
Taxpayer Name: GERMAIN, JEFFREY A & JENNIFER L
Taxpayer Address: 48225 GREAT RIVER RD
PALISADE MN 56469
Property Address: 48225 Great River Rd
Township: 49 Lake Number: 1060400
Range: 25 Lake Name: Mississippi River
Section: 23 Acres: 2.84
Green Acres: No School District: 1.00
Plat:
Brief Legal Description: PART OF LOT 5 IN DOC 418098

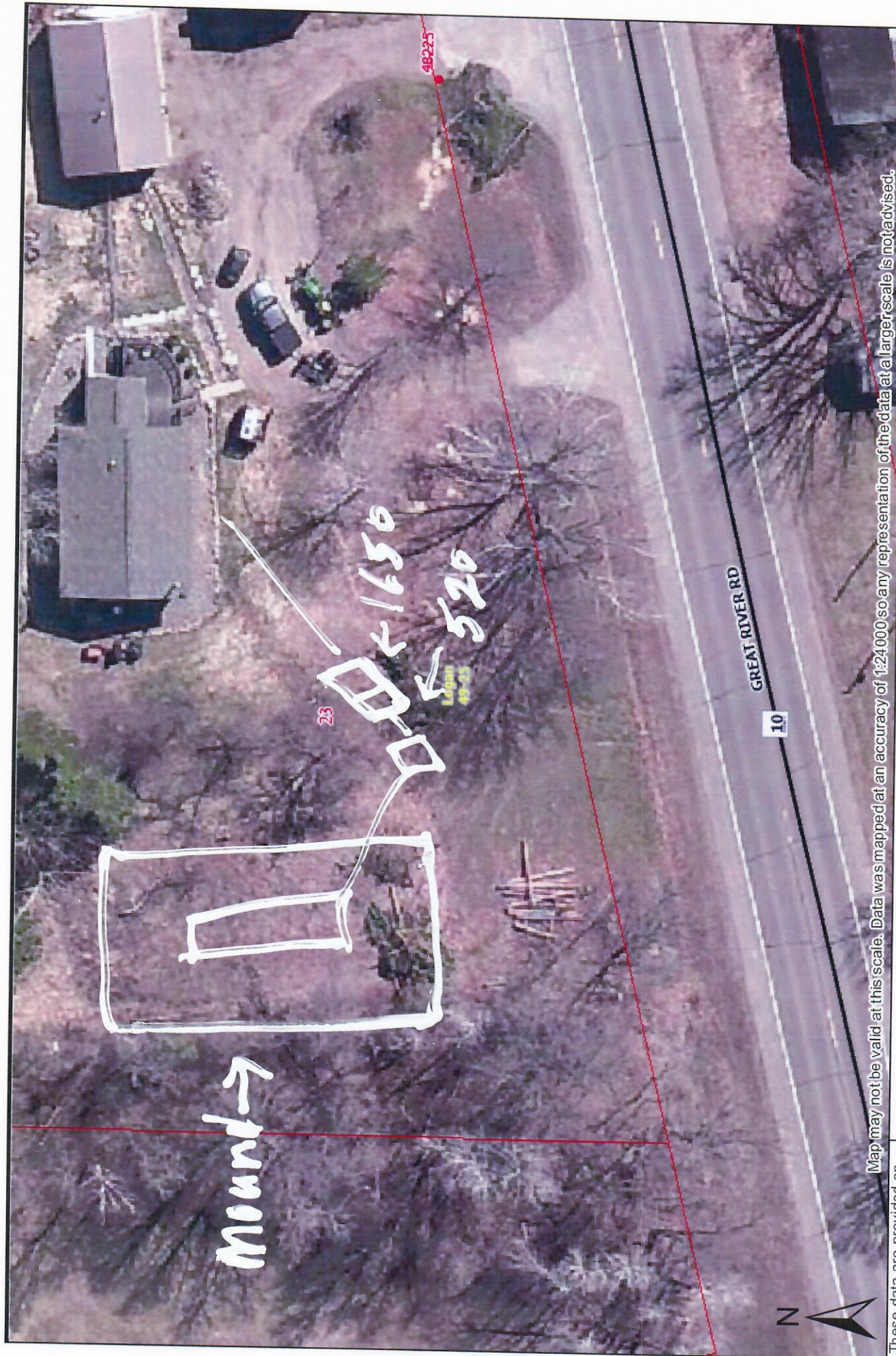
Tax Information

Class Code 1: Non-Homestead Qualifying Single Res Unit
Class Code 2: Unclassified
Class Code 3: Unclassified
Homestead: Non Homestead
Assessment Year: 2023

Estimated Land Value:	\$30,300.00
Estimated Building Value:	\$162,600.00
Estimated Total Value:	<u>\$192,900.00</u>
Prior Year Total Taxable Value:	\$162,121.00
Current Year Net Tax (Specials Not Included):	\$1,894.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$947.00
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.



Map may not be valid at this scale. Data was mapped at an accuracy of 1:24,000 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.

Germain



Date: 7/7/2023

Web AppBuilder for ArcGIS

1 inch = 47 feet

0 0.003 0.006 mi

1:564

Search				
Map Unit Legend				
Aitkin County, Minnesota (MN0001)				
Aitkin County, Minnesota (MN0001)				
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	
672	Willosoippi loam	0.1	32.4%	
1982	Baudette-Spooner complex	0.1	67.6%	
Totals for Area of Interest		0.2	100.0%	



Aitkin County, Minnesota

1982—Baudette-Spooner complex

Map Unit Setting

National map unit symbol: gjfs
Elevation: 980 to 1,310 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 37 to 41 degrees F
Frost-free period: 95 to 105 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Baudette and similar soils: 55 percent
Spooner and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Baudette

Setting

Landform: Lake plains
Landform position (two-dimensional): Backslope, summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty lacustrine deposits

Typical profile

A - 0 to 4 inches: silt loam
E - 4 to 9 inches: silt loam
Bt - 9 to 21 inches: silt loam
C - 21 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Forage suitability group: Sloping Upland, Acid (G088XN006MN)
Hydric soil rating: No

Description of Spooner

Setting

Landform: Flats on lake plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty and clayey lacustrine deposits

Typical profile

A - 0 to 7 inches: silt loam
E - 7 to 22 inches: silt loam
Btg - 22 to 27 inches: silt loam
C - 27 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Forage suitability group: Level Swale, Neutral (G088XN001MN)
Hydric soil rating: Yes

Minor Components

Cathro and similar soils

Percent of map unit: 5 percent
Landform: Bogs
Hydric soil rating: Yes

Sax and similar soils

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 18, Oct 4, 2017

Aitkin County, Minnesota

672—Willosippi loam

Map Unit Setting

National map unit symbol: gjjb
Elevation: 980 to 1,310 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 37 to 41 degrees F
Frost-free period: 95 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Willosippi

Setting

Landform: Swales on lake plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: loam
Eg - 7 to 12 inches: fine sandy loam
Btg1-4,Cg1 - 12 to 42 inches: stratified loamy sand to silty clay loam
Cg2,Cg3 - 42 to 60 inches: stratified loamy sand to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Forage suitability group: Level Swale, Acid (G088XN005MN)
Hydric soil rating: Yes

Minor Components

Sandwick and similar soils

Percent of map unit: 3 percent

Landform: Flats

Hydric soil rating: Yes

Hamre and similar soils

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

Gravelly soils

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

Aftad and similar soils

Percent of map unit: 2 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 18, Oct 4, 2017

