

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>8/29/2022</u>	Sec / Twp / Rng	<u>S-35, T-49, R-26</u>
Parcel ID	<u>35-0-059706</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Joel Robinson</u>	Owners address (if different)	
Property Address:	<u>46223 US Hwy 169 Aitkin MN 56431</u>		<u>46223 US Hwy 169 Palisade MN 56469</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: Gravity flow from crawl space Alternate sites established at time of split Alternate Site B will be 2nd site		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	Proposed 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 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	<hr/> <hr/>				

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 ²) <u>0.60</u>		Percolation rate (if applicable) _____
Depth/elev to SHWT <u>15"</u>		Flooding or run-on potential <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Depth to system bottom maximum (or elev minimum) <u>(+ 24")</u>		(comments) _____
Depth/elev to standing water (if applicable) _____		Flood elevation (if applicable) _____
Depth/elev to bedrock (if applicable) _____		Elevation of ordinary high water level (if applicable) _____
Soil Survey information determined (see attachment) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Floodplain designation and elev - 100 yr/10 yr (if applicable) _____
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

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Owner Information	
Property Owner / project: <u>Joel Robinson</u>	Date <u>8/29/2022</u>
Property Address / PID: 46223 US Hwy 169 Palisade MN 56469	46223 US Hwy 169 Palisade MN 56469

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent mat'l'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 type="checkbox"/> Summit <input type="checkbox"/> Shoulder <input checked="" type="checkbox"/> Side slope <input type="checkbox"/> Toe slope
soil survey map units:	<u>346 & 1002</u> slope <u>5</u> % direction- <u>West</u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit	Elevation <u>97.7'</u>	Depth to SHWT <u>15"</u>			
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 15	Loam	<35	10YR5/4		Loose	Loose	Granular
15 - 18	Loam	<35	10YR5/4	7.5YR5/6	Loose	Loose	Granular
18 - 22	Silt Loam	<35	10YR5/4	7.5YR5/6	Friable	Weak	Blocky
15 - 18							
Comments:							

46223 US Hwy 169 Aitkin MN 56431 **Soil Log #2**

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97.5'</u>	Depth to SHWT <u>17"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6 15-18	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 17	Loam	<35	10YR5/4		Loose	Loose	Granular
17 - 20	Loam	<35	10YR5/4	7.5YR5/6	Loose	Loose	Granular
20 - 22 15-18	Silt Loam	<35	10YR5/4	7.5YR5/6	Friable	Weak	Blocky

46223 US Hwy 169 Aitkin MN 56431 **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
20 - 22 15-18		<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
20 - 22 15-18		<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 #

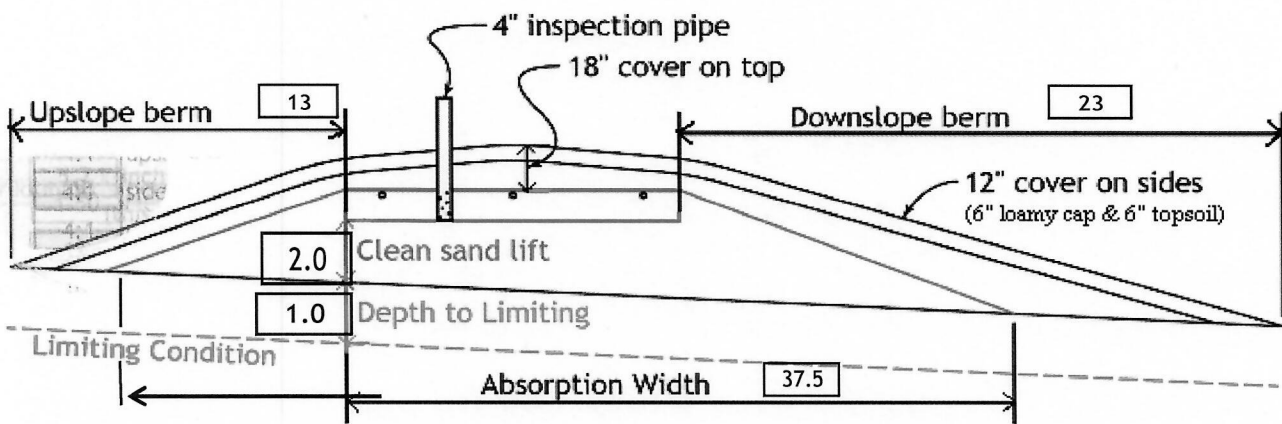
Mound Design - Aitkin county

Property Owner: Joel Robinson Date: 8/29/2022
 Site Address: ~~46223 US Hwy 169 Aitkin MN 56469~~ PID: 35-0-059706
 Comments: 46223 US Hwy 169 Palisade MN 56469

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

- 1) bedroom Type Residential System
- 2) GPD design flow
- 3) Garbage disposal or pumped to septic Install 1650 Jacobson 2/Compartment Tank
- 4) Gal Septic tank (code minimum) Gal Septic tank (design size / LUG req'd)
Tank options: none
- 5) GPD/ft² mound sand loading rate contour loading rate of req's a min ft. long rockbed
- 6) ft rockbed width ft rockbed length
- 7) ft lateral spacing ft perforation spacing (maximum of 3 for both)
 manifold connection
- 8) laterals feet long perfs / lateral perfs total
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9) inch perfs at feet residual head gives gpm flow rate per perforation
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) 1.50 5x
- 12) inch diameter laterals must be used to meet "4x pipe volume" requirement 2.00 3x
- 13) feet of inch supply line leads to gallons of drainback volume
(Tip: "top feed" manifold to control the drainback)
- 14) gallons TOTAL pump out volume (treatment + drainback)
- 15) feet vertical lift from pump to mound laterals, leads to a:
- 16) GPM @ feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)
- 17) gal Dose tank (code minimum) gal Dose tank (design size / LUG req'd) at gpi
leads to a
- 18) inch swing on Demand float, or timed dosing of min ON (confirm pump rate with drawdown
(this delivers Average flow, =70% of Peak design flow) hrs OFF test and adjust as necessary)
- 19) inches from bottom of tank to "Pump OFF" float
- 20) inches from bottom of tank to "Pump ON" float, or inches to "Timer ON" float if time dosed
- 21) inches from bottom of tank to "Hi Level" float, or inches to "Hi Level" float if time dosed
- 22) gallons reserve capacity (after High Level Alarm is activated)

- 23) gpd/ft² Absorption area Soil Loading Rate, which gives a mound ratio of (minimum)
 (this must match the soil boring log) desired mound ratio
- 24) percent site slope (0-20% range) (% downslope site slope, if different than upslope)
- 25) inches, or ft. to Redox or other limiting condition (need at least 12" to be a Type I)
 Treatment zone contains inches of 0% soil credit, and inches of 50% soil credit. Giving a:
- 26) inch, or ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 27) ft. base absorption width (with sand beyond rockbed as follows):
 greater of: absorption width OR sand slope
- 28) ft. upslope and sideslope sand upslope
 ft. Downslope sand down slope
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) upslope ratio ft. upslope berm
- 30) sideslope ft. sideslope berms
- 31) downslope ft. downslope berm
- 32) Overall Dimensions: ft. wide by ft. long Rock bed
 ft. wide by 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:
 ft. by ft. by inches under pipe, plus 20% gives yd³ or *1.4= 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)
 up + downslope + ends + under rock = yd³ or *1.4= ton
 plus 20%
- 35) Loamy Cap:
 ft. by ft. 6" deep, plus 20% gives yd³ or *1.4= ton
- 36) Topsoil:
 ft. by ft. 6" deep, plus 20% gives yd³ or *1.4= ton

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

[Signature] Brummer Septic LLC. L-1347 8/29/2022
 Designer Signature Company License# Date

Installer Summary

1000 gallon Septic tank (minimum)

Tank options: none

Install 1650 Jacobson 2/Compartment Tank

533 gallon Dose tank (minimum)

at 12.69 gpi

27 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 --> 2.7 minutes ON time & 5.1 hours OFF time

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

21 inches from bottom of tank to "Hi Level Alarm" or 31 inches to "Hi level alarm" if time dosed

45 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 37.5 ft. long Rock bed

3 laterals 1.50 inch diameter 35.5 ft. long 3.0 ft. lateral spacing

1/4" inch perfs 3.0 ft. perforation spacing

No Effluent filter & alarm

3 clean out & valve box assemblies

18

37.5 ft. Total sand ABSORPTION width (minimum)

10.0 ft. upslope and sideslope (sand beyond rockbed, minimum)

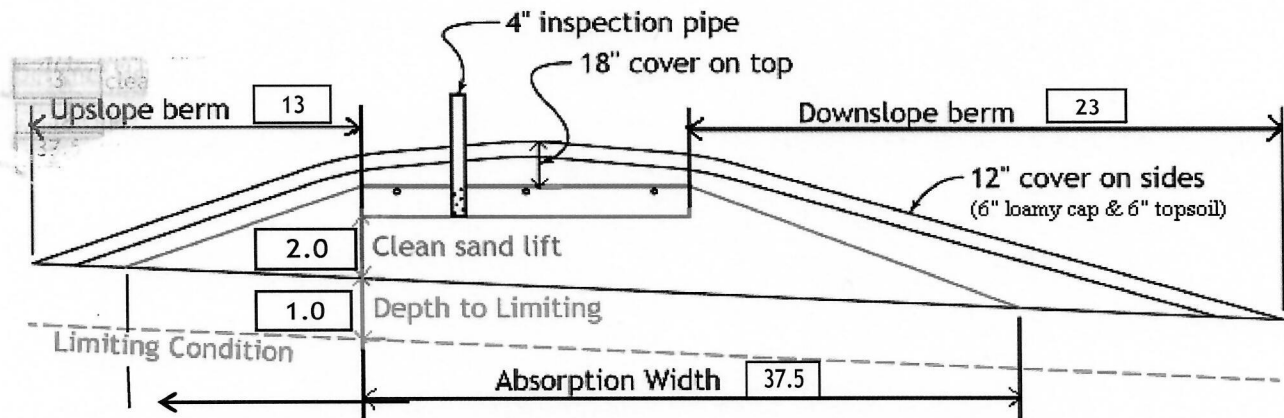
17.5 ft. Downslope (sand beyond rockbed, minimum)

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

4:1 upslope ratio 13 ft. upslope berm

4:1 sideslope 18 ft. sideslope berms

4:1 downslope 23 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*.

Upslope

Rock Bed:	17.0 yd ³ or *1.4=	24 ton	9 inches under pipe
Mound Sand:	192 yd ³ or *1.4=	269 ton	
Loamy Cap:	65 yd ³ or *1.4=	91 ton	6" deep
Topsoil:	76 yd ³ or *1.4=	106 ton	6" deep

INSPECTOR CHECKLIST - mound

46223 US Hwy 169 Atkin MN 56431

- 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)

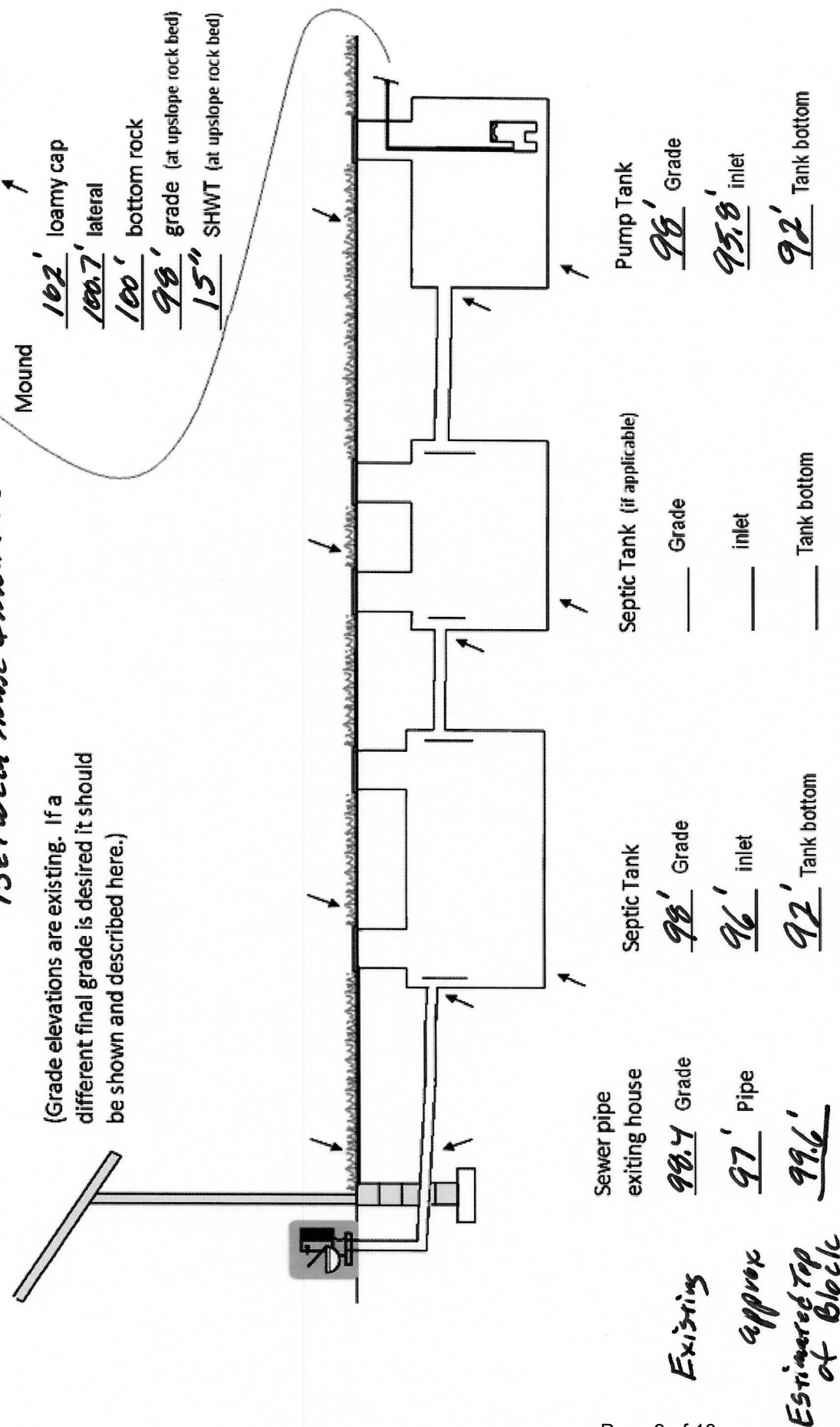
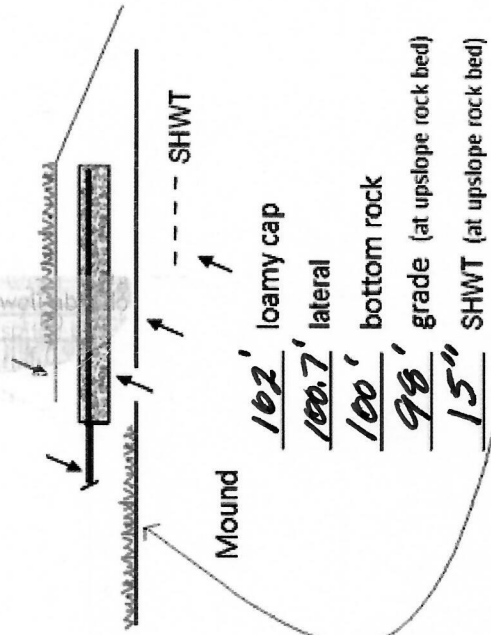
- Sewer line & baffle connection (no 90's, 3' between 45's, slope min 1" in 8', max 2" in 8')
(no depth req's, clean out every 100', Sch 40 pipe)

- Septic tank and risers (water tight, insulated, proper depth, existing verified by pumping)
- WELL mfg _____ 1000 gallons none _____
- 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 _____ 533 gallons
- dose pump _____ 27 gpm 22 head VERIFY PUMP CURVE 2.7 min ON 5.1 hr OFF
- float setting drop 5.7 inches at 12.7 gpi "DESIGNED" 3.9 inches approx float tether length
72.0 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 37.5
Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
- Absorption Sand beyond rock 10.0 upslope 17.5 downslope
- Bermed topsoil beyond rockbed 13 upslope 18 sideslope 23 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
- 1/4" 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 White Oak
Between house & mound.

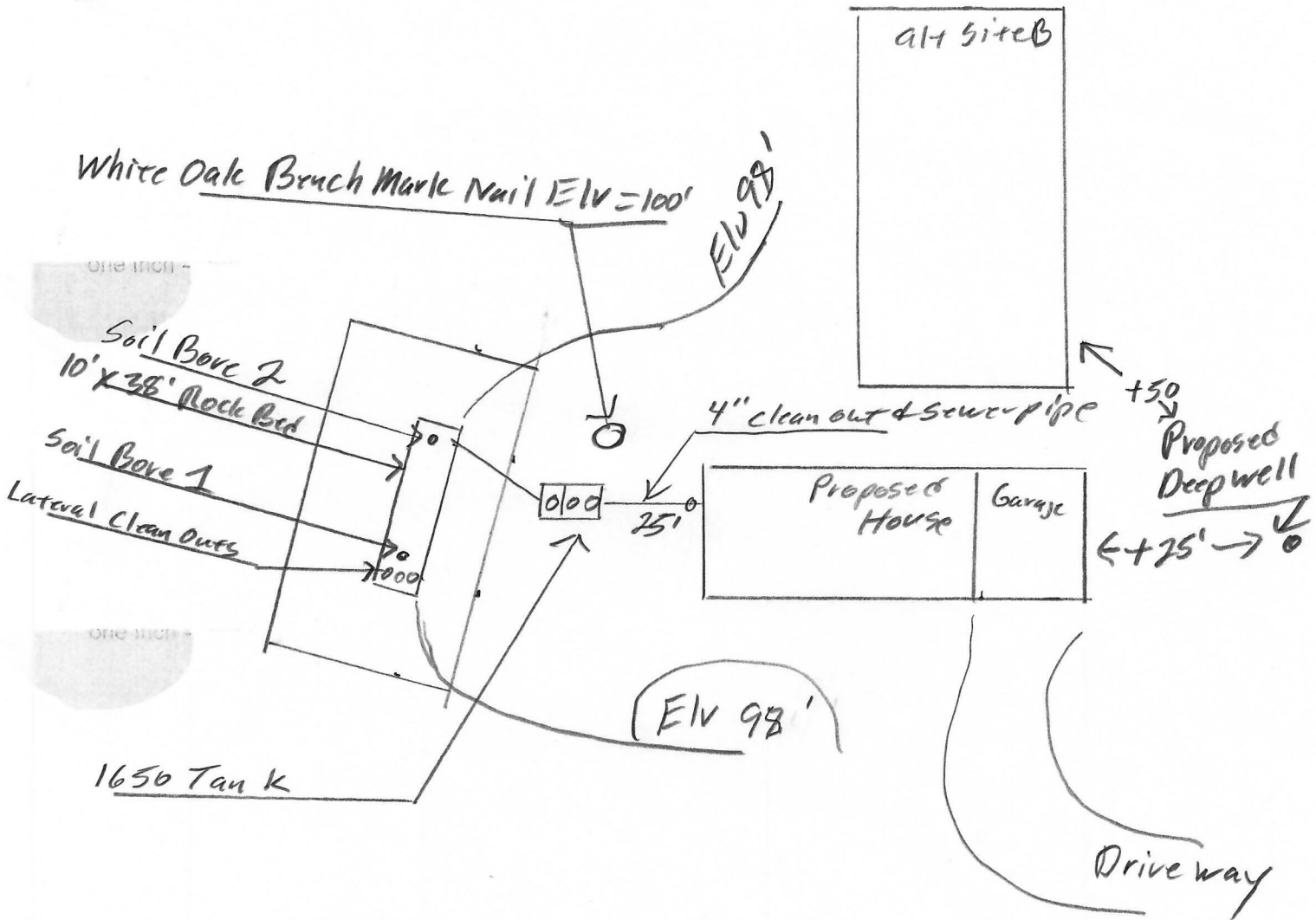
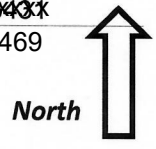
(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)



Existing
 approx
 Estimated Top
 of Block

{ Design Drawing }

Property Owner: Joel Robinson Date: 8/29/22 Designer's Initials: JB
 Parcel ID. Number: 35-0-059706 Address: ~~46223 US Hwy 169 Palisade MN 56469~~
 one Inch = 40ft. 46223 US Hwy 169 Palisade MN 56469



Elevation of House not Set at Time of Design
 Estimated New House Grade Elv. = 99' Estimated Top of Block Elv. = 99.6'

	Surface/ SHWT	Nail on Oak tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	97.7' / 15"	Bench Mark	100'		Upslope Edge of Rockbed Elv. = 98'
Soil Bore 2	97.5' / 17"	Ground Elv. BM	98.5'		Bottom of Rockbed Elv. = 100'
Soil Bore 3		Ground Elv. Tank	98'		Top of Washed Sand Elv. = 100'
		Ground at Proposed house	98.4'	NW corner	Estimated Sewer pipe at House Elv. = 97'

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

Estimated New f
 Si'

Mound Design Notes - Aitkin county

Property Owner: Joel Robinson

Date: 8/29/22

Site Address: 46223 US Hwy 169 Aitkin MN 56441

PID: 35-0-059706

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

- 1 This is a type I mound for a 3 bedroom House. Proposed deep well location will be East of House.
Elevation of House not set at time of design. Estimated Top of Block for crawl space Elv. = 99.6'
Estimated finished grade at house's NW corner Elv. = 99' Estimated sewer pipe at House Elv. = 97'
- 2 Alternate Site B is North of House.
- 3 No property lines with 50 ft of septic system.
- 4 Bench Mark Elevation is a nail on a White Oak tree near NE corner of mound area.
- 5 Install Jacobson 1650 Compartment tank for gravity flow from house (Elv. not set)
- 6 Elevation contour of rock bed upslope edge is 98'.
The area size of the rock bed is 10' x 38' . Absorption area is 38' x 37.5'.
Sand absorption area is 10 ft. up slope + 10 ft. rockbed + 17.5 ft. downslope = approx. 37.5 ft. wide sand base
Berms are 13ft. Upslope, 23ft. Down slope, 10ft. Rock bed = approx. 46ft. Wide.
Overall mound size is approx. 46' wide x 74' long and approx. 4' high. End Berms are 18 ft wide.
- 7 The bench mark is the nail on the White Oak tree near mound area, BM = Elv. 100'.
Installer to double check bench mark. Installer should confirm bench mark and sand height Elv. with inspector.
- 2 Installer should record bench mark Elv. and sand height on installation inspection form.
- 8 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.
- 9 The Jacobson 1650 compartment tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 72 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 installing an Effluent Filter with alarm on septic tank outlet.
- 10 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 Lateral clean-outs at far end of laterals. Recommended)
- 11 **Drill 1/4" 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.

2 inst"

Designed to Aitkin Co. and MPCA recommendations and requirements.


Designer Signature

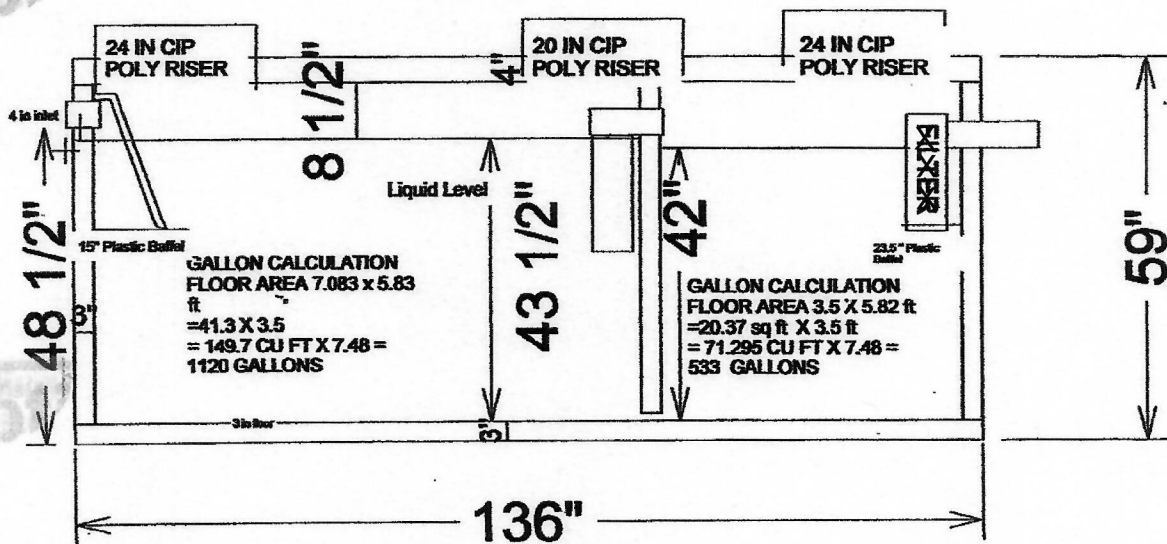
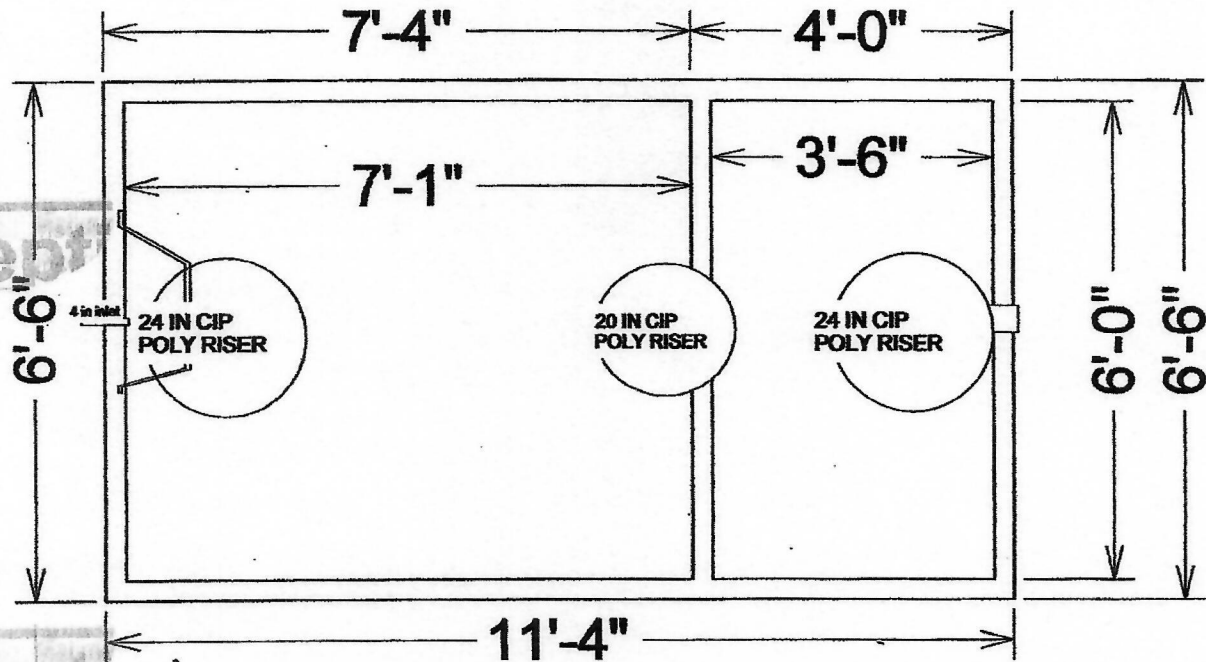
Brummer Septic LLC.
Design Company

L-1347
License#

Install
2 inst"

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: 35-0-059706

General Information

Township/City: WAUKENABO TWP
Taxpayer Name: ROBINSON, JOEL & KALLA
Taxpayer Address: 851 AIR PARK DR
 AITKIN MN 56431
Property Address: 46223 US HWY 169
Township: 49 **Lake Number:** 0
Range: 26 **Lake Name:**
Section: 35 **Acres:** 5.00
Green Acres: No **School District:** 1.00
Plat:
Brief Legal Description: S 1/2 OF N 1/2 OF N 1/2 OF SE OF SW

Tax Information

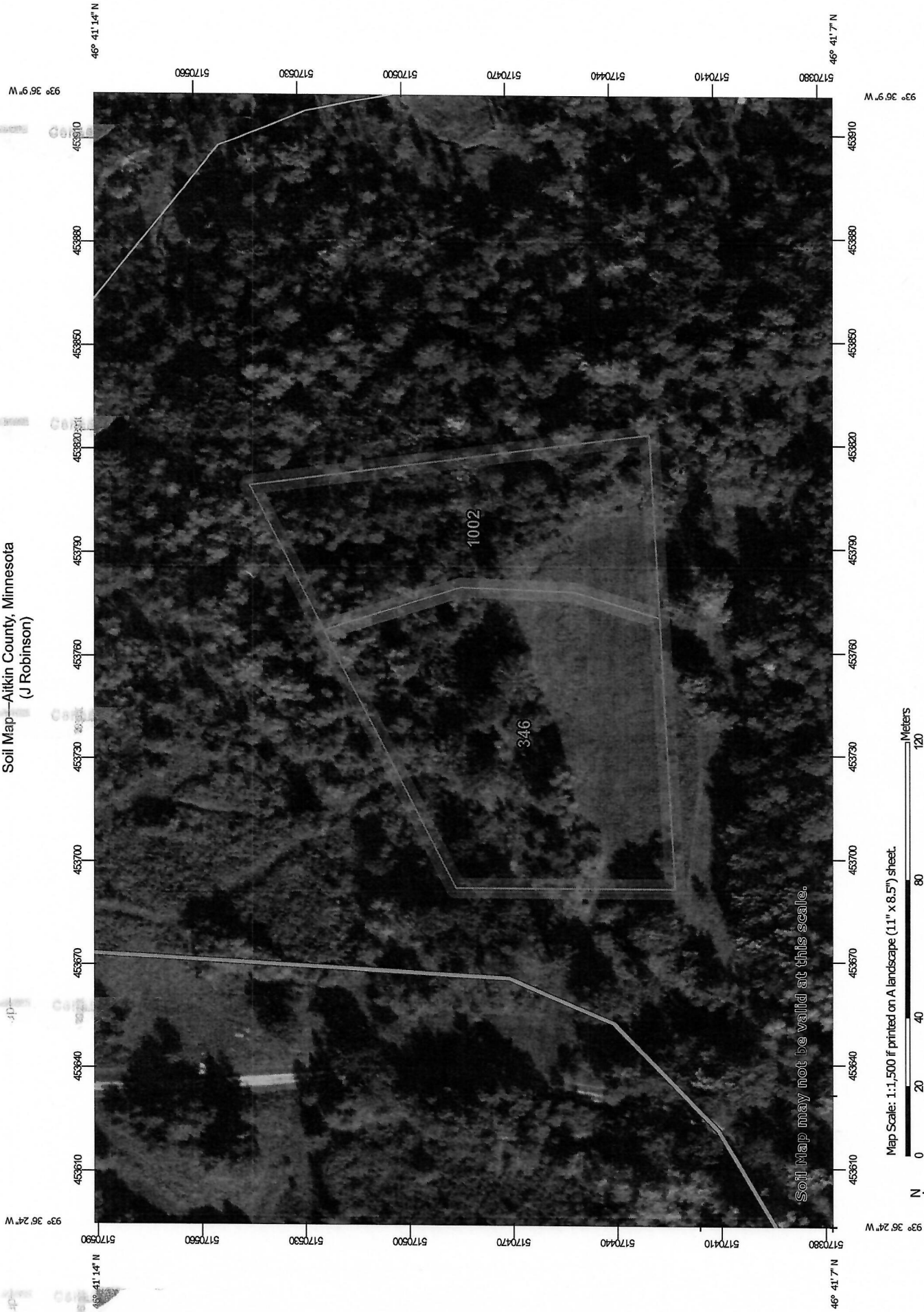
Class Code 1: Rural Vacant Land
Class Code 2: Unclassified
Class Code 3: Unclassified
Homestead: Non Homestead
Assessment Year: 2022

Estimated Land Value:	\$13,000.00
Estimated Building Value:	\$0.00
Estimated Total Value:	<u>\$13,000.00</u>
Prior Year Total Taxable Value:	\$11,300.00
Current Year Net Tax (Specials Not Included):	\$74.00
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.**

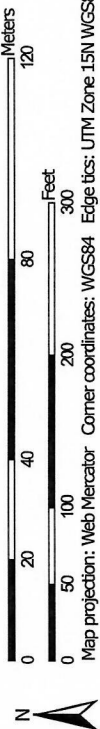
**** Balance Due on a parcel does not include late payment penalties.**

Soil Map—Aitkin County, Minnesota
(J Robinson)



Soil Map may not be valid at this scale.

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

346—Talmoon fine sandy loam

Map Unit Setting

National map unit symbol: gjgp
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: Prime farmland if drained

Map Unit Composition

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

Description of Talmoon

Setting

Landform: Swales on moraines
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy lacustrine deposits over loamy till

Typical profile

A - 0 to 10 inches: fine sandy loam
Eg - 10 to 17 inches: loam
BE,Btg - 17 to 31 inches: clay loam
Cg - 31 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: Level Swale, Acid (G090AN005MN)
Other vegetative classification: Level Swale, Acid (G090AN005MN)
Hydric soil rating: Yes

Minor Components

Rifle and similar soils

Percent of map unit: 5 percent

Landform: Bogs

Hydric soil rating: Yes

Stuntz and similar soils

Percent of map unit: 5 percent

Hydric soil rating: No

Sandwich and similar soils

Percent of map unit: 5 percent

Landform: Flats

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 22, Sep 10, 2021

Aitkin County, Minnesota

1002—Borosaprists and Fluvaquents soils, frequently flooded

Map Unit Setting

National map unit symbol: gjcd
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

Borosaprists, frequently flooded, and similar soils: 50 percent
Fluvaquents, frequently flooded, and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Borosaprists, Frequently Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Organic material

Typical profile

Oa1 - 0 to 27 inches: muck
Oa2 - 27 to 48 inches: muck
Cg - 48 to 60 inches: stratified sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: RareFrequentOccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very high (about 21.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Forage suitability group: Organic (G088XN014MN)
Other vegetative classification: Organic (G088XN014MN)
Hydric soil rating: Yes

Description of Fluvaquents, Frequently Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 16 inches: silt loam
Cg - 16 to 60 inches: stratified loamy sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very 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 0 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: B/D
Forage suitability group: Organic (G088XN014MN)
Other vegetative classification: Organic (G088XN014MN)
Hydric soil rating: Yes

Minor Components

Winterfield and similar soils

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

Thinner organic

Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: Yes

Pengilly and similar soils

Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 22, Sep 10, 2021