Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information

Date	8/9/2023	Sec / Twp / Rng	S-20, T-45, R-26
Parcel ID	36-0-032800	LUG (county, city, township)	Aitkin Co.
Property Owner:	Steve Kompelien	Owners address (if different)	
Property Address:	38151 State Hwy 18 Aitkin MN 56431		9201 Golden Valley RD Apt. 403
City / State / Zip:			Golden Valley MN 55427

Flow Information and Waste Type / Strength

Estimated Design flow: 450

Comments: Gravity flow from slab on grade house.
House Elevation not set, house location might change.

Anticipated Waste strength	☐ Hi Strength	☑ Domestic
Any Non-Domestic Waste	☐ Yes (class V)	☑ No
Sewage ejector/grinder pump	☐ Yes	☑ No
Water softener	☐ Yes	☑ No
Garbage Disposal	☐ Yes	☑ No
Daycare / In home business	☐ Yes	☑ No

Site Information

Existing & proposed lot improvements located (see site map)	☐ Yes	☑ No	Well casing depth	Proposed deep well
Easements on lot located (see site map)	☐ Yes	☑ No	Drainfield w/in 100' of residential well	☑ Yes ☐ No
Property lines determined (see site map) Surveyed	☑ Yes	☐ No	Site w/in 200' of transient noncommunity water supply (TNCWS)	☐ Yes ☑ No
Req'd setbacks determined (see site map)	☑ Yes	☐ No	Site w/in an inner wellhead mgmt zone (CWS/NTNCWS)	☐ Yes ☑ No
Utilities located & identified (gopher state one call)	☐ Yes	☑ No	Buried water supply pipe w/in 50' of system	☐ Yes ☑ No
Access for system maintenance (shown on site map)	☑ Yes	☐ No	Site located in Shoreland (w/in 1000' of lake, 300' of river)	☑ Yes ☐ No
Soil treatment area protected	☑ Yes	☐ No	Site map prepared with previous items included	☑ Yes ☐ No

Construction related issues: Install pump tank low enough for drainback.. Large rock present on lot.

Soil Information

Original soils ☑ Yes ☐ No

Soil logs completed and attached ☑ Yes ☐ No

Soil loading rate (gpd/ft^2) 0.78

Depth/elev to SHWT 13"

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

Depth/elev to standing water (if applicable) _____

Depth/elev to bedrock (if applicable) _____

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

Differences between soil survey and field evaluation (if applicable) _____

Evidence of site:

Cut	☐ Yes	☑ No
Filled	☐ Yes	☑ No
Compacted	☐ Yes	☑ No
Disturbed	☐ Yes	☑ No

Perk test completed and attached (if applicable) ☐ Yes ☑ No

Percolation rate (if applicable) _____

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

Flood elevation (if applicable) _____

Elevation of ordinary high water level (if applicable) 1252.8'

Floodplain designation and elev - 100 yr/10 yr (if applicable) 1253.6'
Estimated Mound Grade at Elv. = 1260'

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: Steve Kompelien Date 8/9/2023

Property Address / PID: 38151 State Hwy 18 Aitkin MN 56431

Soil Survey Information

☐ refer to attached soil survey

Parent matl's: ☐ Till ☑ Outwash ☐ Lacustrine ☐ Alluvium ☐ Organic ☐ Bedrock

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

soil survey map units: 186 slope Flat % direction- South

Soil Log #1

☑ Boring ☐ Pit Elevation 97.9' Depth to SHWT 16"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 16	Sandy Loam	<35	7.5YR4/4		Loose	Loose	Granular
16 - 24	Sandy Loam	<35	7.5YR4/4	7.5YR5/6	Loose	Loose	Granular

Comments:

38151 State Hwy 18 Aitkin MN 56431 **Soil Log #2**

☑ Boring ☐ Pit Elevation 97.9' Depth to SHWT 13"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 13	Sandy Loam	<35	7.5YR4/4		Loose	Loose	Granular
13 - 19	Sandy Loam	<35	7.5YR4/4	7.5YR5/6	Loose	Loose	Granular

38151 State Hwy 18 Aitkin MN 56431 **Soil Log #3**

☑ Boring ☐ Pit Elevation 97.8' Depth to SHWT 13"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 13	Sandy Loam	<35	7.5YR4/4		Loose	Loose	Granular
13 - 19	Sandy Loam	<35	7.5YR4/4	7.5YR5/6	Loose	Loose	Granular

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

Designer Signature

Brummer Septic LLC.
Company

L-1347
License #

2011 purple code

Mound Design - Aitkin county

www.SepticResource.com (vers 15.2)

Property Owner: Steve Kompelien **Date:** 8/9/2023

Site Address: 38151 State Hwy 18 Aitkin MN 56431 **PID:** 36-0-032800

Comments:

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

1) 3 bedroom Type I Residential System

2) 450 GPD design flow

3) No Garbage disposal or pumped to septic Install1650 Jacobson 2/Compartment Septic / Pump Tank

4) 1000 Gal Septic tank (code minimum) 1000 Gal Septic tank (design size / LUG req'd)
Tank options: Effluent filter & alarm req'd

5) 1.2 GPD/ft^2 mound sand loading rate contour loading rate of 12 req's a min 37.5 ft. long rockbed

6) 10.0 ft rockbed width 38.0 ft rockbed length Use 38 ft.

7) 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum of 3 for both)
end feed manifold connection

8) 3 laterals 36.0 feet long 13.0 perfs / lateral 39 perfs total
(1/2 a perf means the first perf starts at the middle feed manifold)

9) 1/4" inch perfs at 1 feet residual head gives 0.74 gpm flow rate per perforation

for this perf size & spacing, & pipe size on line 12, max perfs/lateral = 16, line #8 must be less --> OK

10) 7.0 doses per day (4 minimum)

11) 64 gallons per dose (treatment volume)

1.50 5x

12) 1.50 inch diameter laterals must be used to meet "4x pipe volume" requirement

2.00 3x

13) 115 feet of 2.0 inch supply line leads to 20 gallons of drainback volume
(Tip: "top feed" manifold to control the drainback)

14) 84 gallons TOTAL pump out volume (treatment + drainback)

15) 15 feet vertical lift from pump to mound laterals, leads to a:

16) 29 GPM @ 24 feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)

17) 500 gal Dose tank (code minimum) 533 gal Dose tank (design size / LUG req'd) at 12.69 gpi
leads to a

18) 6.6 inch swing on Demand float, or timed dosing of 2.9 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) 19 inches from bottom of tank to "Pump ON" float, or 12 inches to "Timer ON" float if time dosed

21) 22 inches from bottom of tank to "Hi Level" float, or 32 inches to "Hi Level" float if time dosed

22) 254 gallons reserve capacity (after High Level Alarm is activated)

23) 0.78 gpd/ft² Absorption area Soil Loading Rate, (this must match the soil boring log) which gives a mound ratio of 1.5 (minimum) desired mound ratio 1.5

24) 0 percent site slope (0-20% range) 0 (% 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) 15.0 ft. base absorption width (with sand beyond rockbed as follows:)
20.0 greater of: absorption width OR sand slope

28) 2.5 ft. upslope and sideslope sand upslope 5.0 Use 5 ft
2.5 ft. Downslope sand down slope 5.0 Use 5 ft.

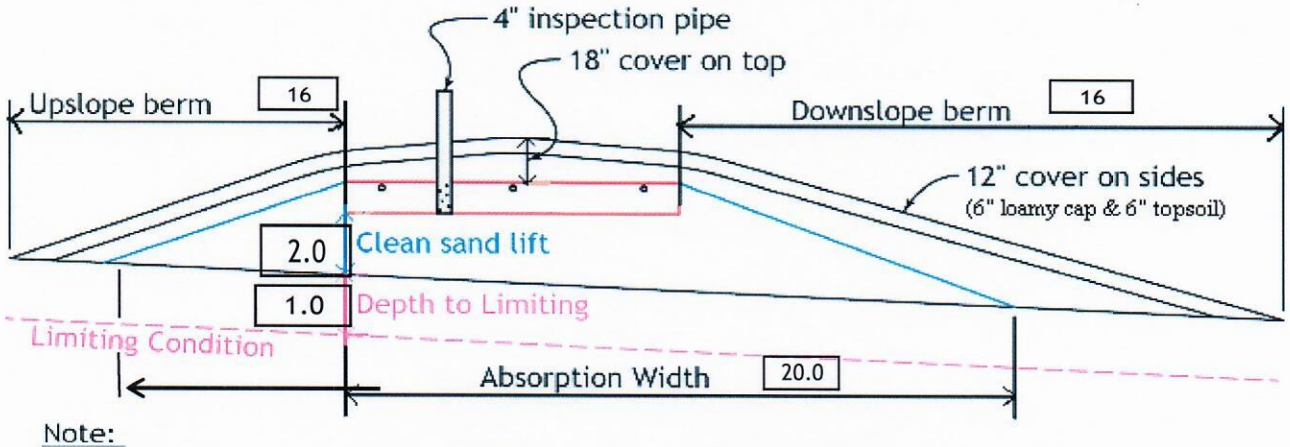
Individual slope ratios give BERM widths (topsoil beyond rockbed) of:

29) 4:1 upslope ratio 16 ft. upslope berm

30) 4:1 sideslope 16 ft. sideslope berms

31) 4:1 downslope 16 ft. downslope berm

32) Overall Dimensions: 10.0 ft. wide by 38.0 ft. long Rock bed
42 ft. wide by 70 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 38.0 ft. by 9 inches under pipe, plus 20% gives 17 yd³ or *1.4= 24 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)
41.3 up + 41.3 downslope + 13.3 ends + 28.1 under rock = 149 yd³ or *1.4= 209 ton
plus 20%

35) Loamy Cap:
38 ft. by 66 ft. 6" deep, plus 20% gives 56 yd³ or *1.4= 78 ton

36) Topsoil:
42 ft. by 70 ft. 6" deep, plus 20% gives 66 yd³ or *1.4= 92 ton

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

Designer Signature	Company	License#	Date
	Brummer Septic LLC.	L-1347	8/9/2023

Installer Summary

1000 gallon Septic tank (minimum)

Tank options: Effluent filter & alarm req'd
Install1650 Jacobson 2/Compartment Septic / Pump Tank
at 12.69 gpi

533 gallon Dose tank (minimum)

29 GPM @ 24 ft. of head, Pump required
6.6 inch swing on Demand float which translates to roughly 4.3 inches of float tether length
if time dosing is required --> 2.9 minutes ON time & 5.1 hours OFF time
19 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
22 inches from bottom of tank to "Hi Level Alarm" or 32 inches to "Hi level alarm" if time dosed

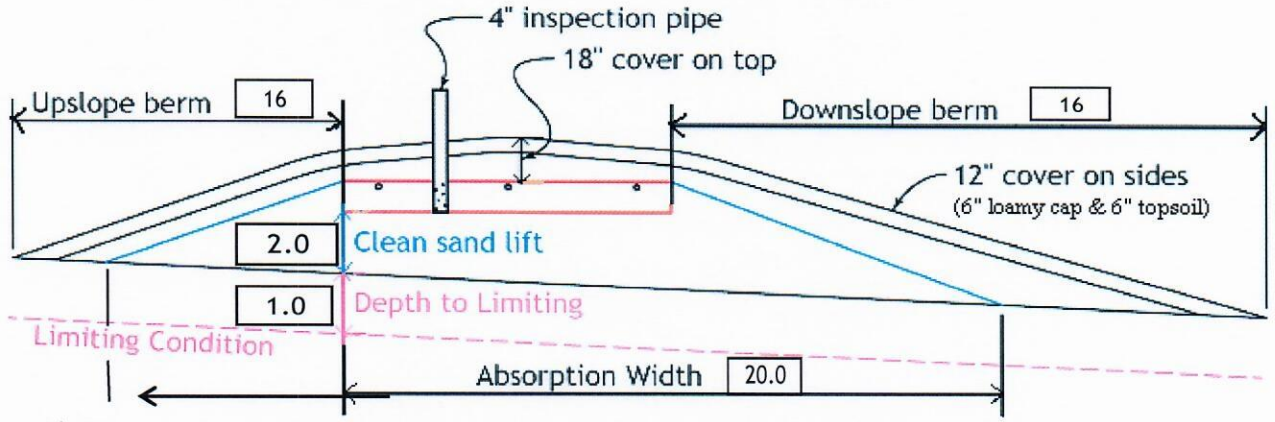
115 ft. of 2.0 inch supply line with end feed manifold connection
(Tip: "top feed" manifold to control drainback)

24 inch, or 2.0 ft. Sand Lift Mound
10.0 ft. wide by 38.0 ft. long Rock bed
3 laterals 1.50 inch diameter 36.0 ft. long 3.0 ft. lateral spacing
1/4" inch perfs 3.0 ft. perforation spacing

yes Effluent filter & alarm
3 clean out & valve box assemblies

20.0 ft.Total sand ABSORPTION width (minimum)
5.0 ft. upslope and sideslope (sand beyond rockbed, minimum)
5.0 ft. Downslope (sand beyond rockbed, minimum)

Specific slope ratios give BERM widths (topsoil beyond rockbed) of:
4:1 upslope ratio 16 ft. upslope berm
4:1 sideslope 16 ft. sideslope berms
4:1 downslope 16 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:	17.0 yd^3 or *1.4=	24	ton	9 inches under pipe
Mound Sand:	149 yd^3 or *1.4=	209	ton	
Loamy Cap:	56 yd^3 or *1.4=	78	ton	6" deep
Topsoil:	66 yd^3 or *1.4=	92	ton	6" deep

INSPECTOR CHECKLIST - mound

38151 State Hwy 18 Aitkin 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)
mfg_____ 1000 gallons Effluent filter & alarm req'd

☐ Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.

☐ yes effluent filter & alarm

☐ Dose tank risers and piping (water tight, insulated, proper depth, drainback)
mfg_____ 533 gallons

☐ dose pump _____ 29 gpm 24 head VERIFY PUMP CURVE 2.9 min ON 5.1 hr OFF

☐ float setting drop 6.6 inches at 12.7 gpi "DESIGNED" 4.3 inches approx float tether length
84.0 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 38.0

☐ Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)

☐ Absorption Sand beyond rock 5.0 upslope 5.0 downslope

☐ Bermed topsoil beyond rockbed 16 upslope 16 sideslope 16 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

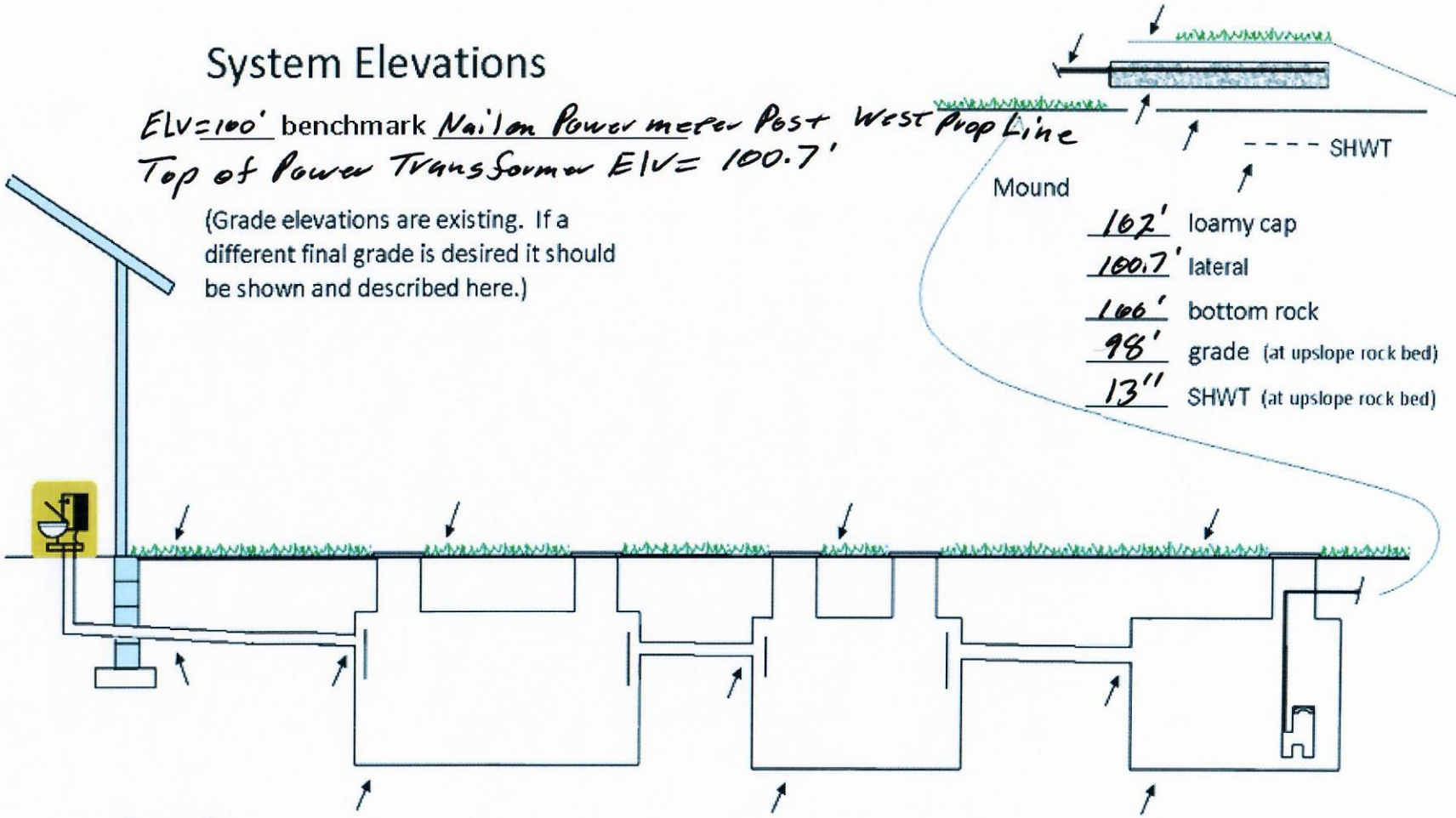
☐ monitoring plan and type _____

☐ well abandonment form - if necessary

System Elevations

ELV=100' benchmark Nail on Power meter Post West Prop Line
Top of Power Transformer ELV= 100.7'

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



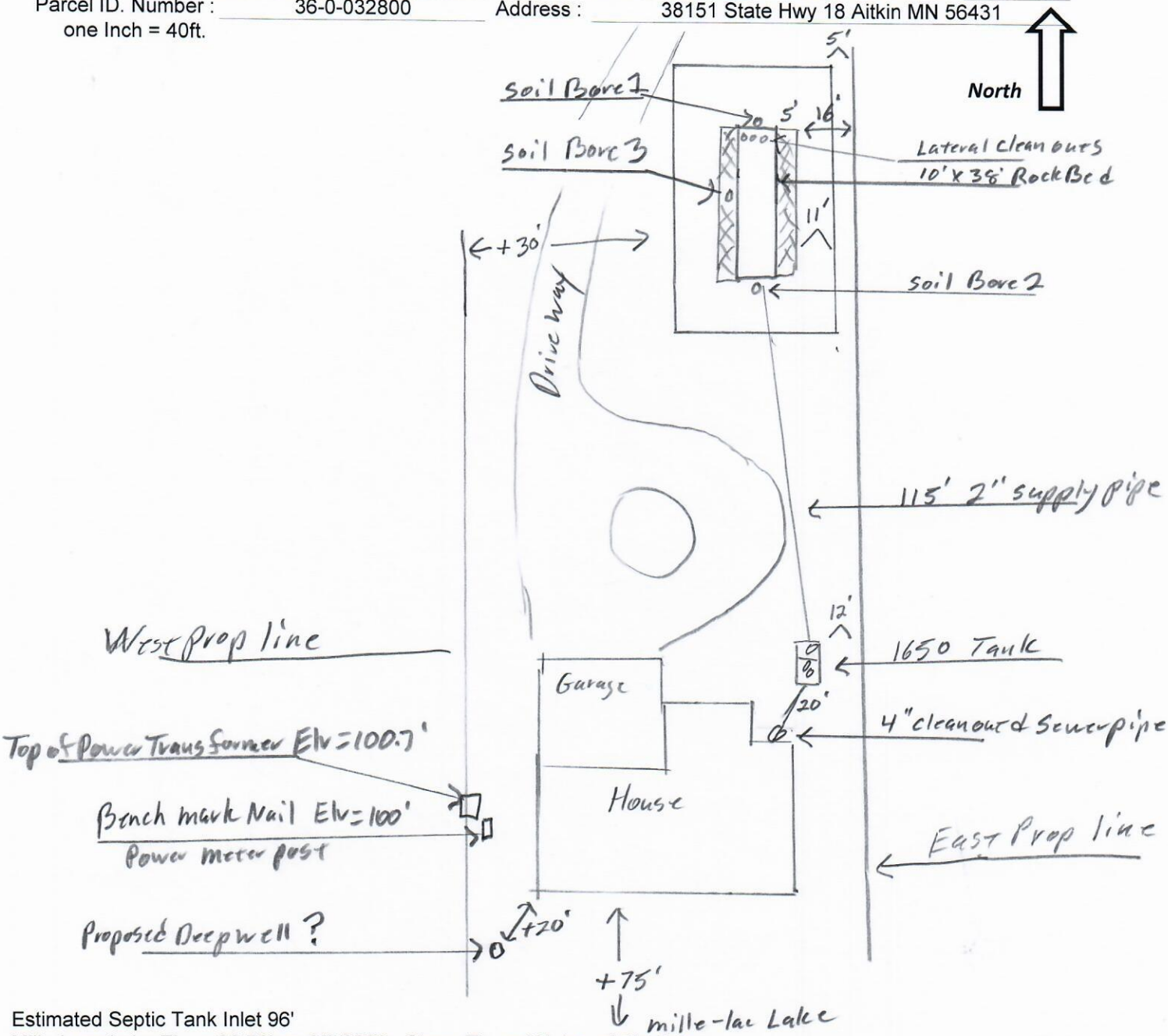
	Sewer pipe	Septic Tank	Septic Tank (if applicable)	Pump Tank
Proposed	~~exiting~~ house			
Existing	97.9' Grade	97.9' Grade	____ Grade	97.9 Grade
	96.5' Pipe	96' inlet	____ inlet	95.7' inlet
Estimated House Pad Elv=99.5'		92' Tank bottom	____ Tank bottom	92' Tank bottom

{ Design Drawing }

Property Owner: Steve Kompelien Date: 8/9/23 Designer's Initials : JB

Parcel ID. Number : 36-0-032800 Address : 38151 State Hwy 18 Aitkin MN 56431

one Inch = 40ft.



Estimated Septic Tank Inlet 96'

Mille-Lacs Lake Elv. = 89.78' on 8/9/2023 Shore Elv. = 95' top of Rip Rap.

	Surface/ SHWT	*Nail on Power Meter = Bench Mark 100'*			Existing Grade
Soil Bore 1	97.9' / 16"	Bench Mark	100'		Upslope Edge of Rockbed Elv.= 98'
Soil Bore 2	97.9' / 13"	Ground Elv. BM	98.5'		Bottom of Rockbed Elv.= 100'
Soil Bore 3	97.8' / 13"	Ground Elv. Tank	97.9'		Top of Washed Sand Elv.= 100'
	Ground at	Proposed house	97.9'	NE Corner	Estimated Sewer pipe at House Elv.= 96.5'

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.	Disturbed/Compacted Areas	Access Route for Tank Maintenance
Water lines within 10 ft. of Drain field.	Component Location	Property Lines
Drain field Areas:	OHW ordinary high water	Structures
	Lot Easements	Setbacks

Mound Design Notes - Aitkin county

Property Owner: Steve Kompelien **Date:** 8/9/23

Site Address: 38151 State Hwy 18 Aitkin MN 56431 **PID:** 36-0-032800

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

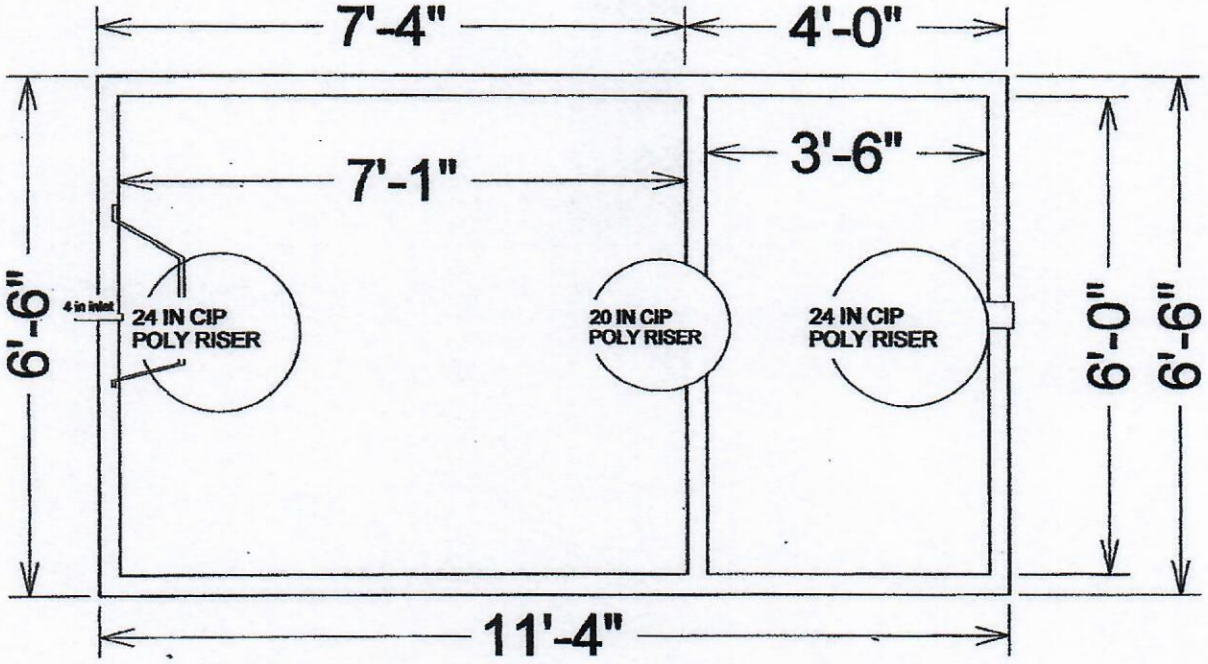
1 This is a type I mound for a 3 bedroom House. Proposed deep well location will be SW of House ?
2 House will be Slab on Grade, gravity flow to septic tank, no GD.
3 East property line is at fence or East of fence.
4 Bench Mark Elevation is a nail on Power Meter Post West of House. Top of Power Transformer Elv. = 100.7'
5 Install Jacobson 1650 2/ Compartment Septic/Pump tank for gravity flow from Slab on grade 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 20'.
Sand absorption area is 5 ft. East + 10 ft. rockbed + 5' West = approx. 20 ft. wide sand base.
East Washed sand (Absorption width must be 15 ft. from property line) staked at 16 ft from Property line.
Berms are 16ft. East , 10ft. Rock bed, 16 ft. West= approx. 42ft. Wide.
Overall mound size is approx. 42' wide x 70' long and approx. 4' high. End Berms are 16 ft wide.
7 The bench mark is the nail on the Power Meter Post west of House, BM = Elv. 100'.
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.
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. 84 gallons per dose, 6.6 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.
10 Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to pump 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.
Recommend raising all manholes 4" above finished grade for access.
Recommend Installing an Effluent filter and Alarm on septic tank outlet.
MPCA Recommends installing an event counter on all systems with a pump.

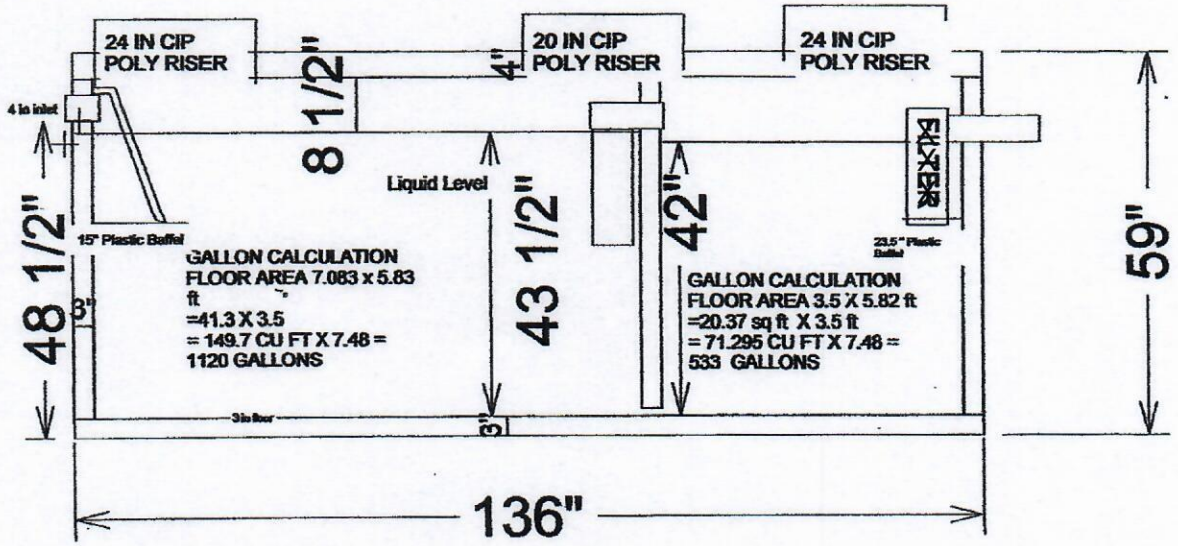
Designed to Aitkin Co. and MPCA recommendations and requirements.

Designer Signature | Brummer Septic LLC. Design Company | L-1347 License#

1650 Gallon 2 Compartment Septic Tank

TOP VIEW





SIDE VIEW

533 / 42" = 12.69 GPI

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

Aitkin County

Detailed Parcel Report

Parcel Number: 36-0-032800

General Information

Township/City:	WEALTHWOOD TWP		
Taxpayer Name:	KOMPELIEN, STEVE & KATHERINE		
Taxpayer Address:	9201 GOLDEN VALLEY RD APT 403 GOLDEN VALLEY MN 55427		
Property Address:	38151 STATE HWY 18		
Township:	45	**Lake Number:**	48000200
Range:	26	**Lake Name:**	MILLE LACS GD
Section:	20	**Acres:**	1.64
Green Acres:	No	**School District:**	1.00
Plat:			
Brief Legal Description:	PART OF LOT 1 S OF HY 18 IN DOCS 331108 & 347701		

Tax Information

Class Code 1:	Non-Comm Seasonal Residential Recreational
Class Code 2:	Unclassified
Class Code 3:	Unclassified
Homestead:	Non Homestead
Assessment Year:	2023

OHW 1252.8
100 YR 1253.6

Estimated Land Value:	$289,100.00
Estimated Building Value:	$1,000.00
Estimated Total Value:	$290,100.00
Prior Year Total Taxable Value:	$245,500.00
Current Year Net Tax (Specials Not Included):	$1,412.00
Total Special Assessments:	$0.00
****Current Year Balance Not Including Penalty:**	$706.00
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.**

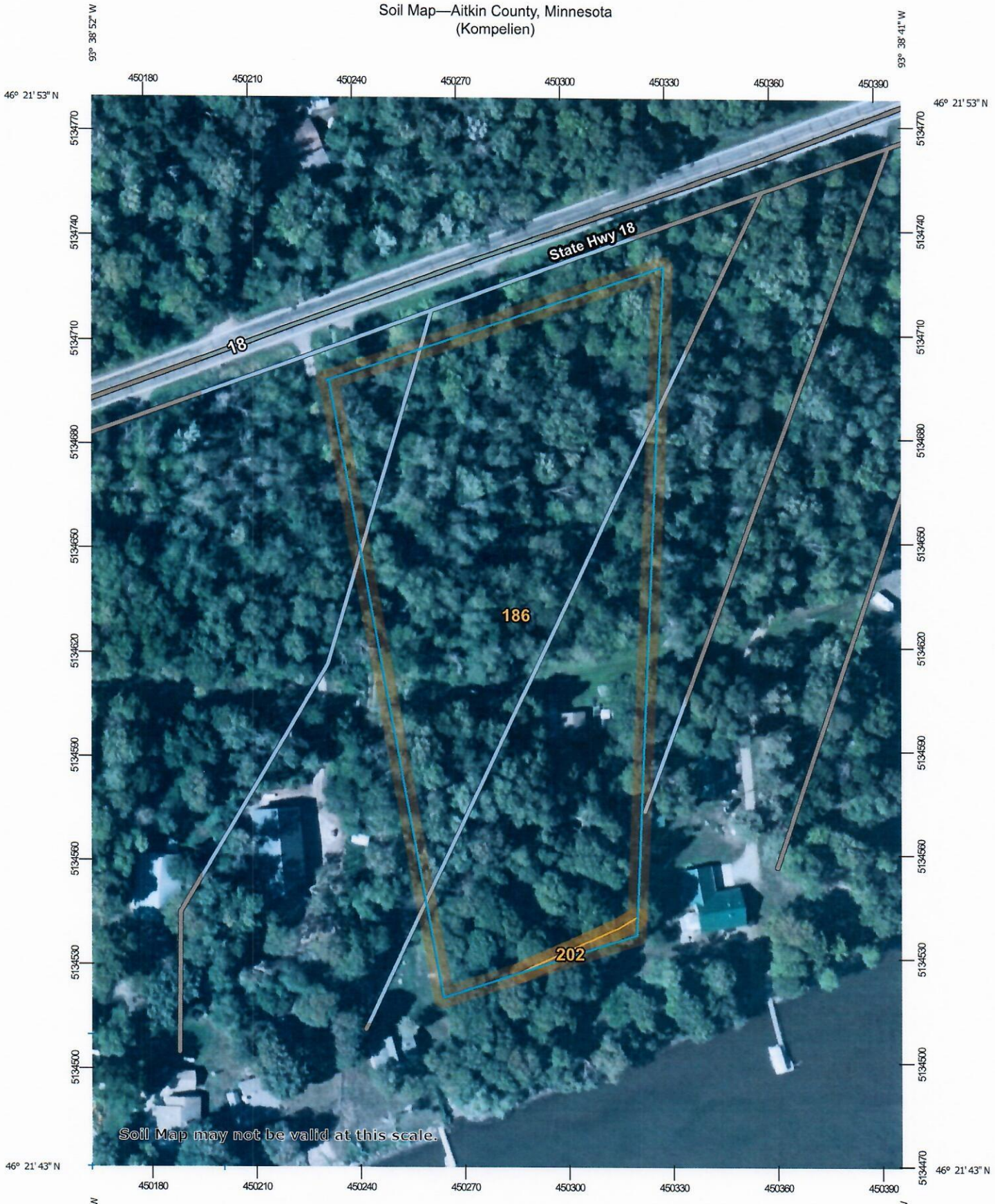
Map may not be valid at this scale. Data was mapped at an accuracy of 1:24000 so any representation of the data at a larger scale is not advised.

Kompelien

1:2,257 | 0 0.01 0.02 mi | 1 inch = 188 feet | Web AppBuilder for ArcGIS

Aitkin County

Date: 8/4/2023



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

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

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

Aitkin County, Minnesota

186—Nemadji loamy fine sand

Map Unit Setting

National map unit symbol: gjfh
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

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

Description of Nemadji

Setting

Landform: Flats on outwash plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy outwash

Typical profile

Ap - 0 to 6 inches: loamy fine sand
E,Bw,Bhs - 6 to 34 inches: fine sand
C1,C2 - 34 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly 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: About 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F090AY009WI - Moist Sandy Lowland
Forage suitability group: Sloping Upland, Low AWC, Acid (G090AN008MN)
Other vegetative classification: Sloping Upland, Low AWC, Acid (G090AN008MN)
Hydric soil rating: No

Minor Components

Omega and similar soils
Percent of map unit: 5 percent
Hydric soil rating: No

Leafriver and similar soils
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Newson and similar soils
Percent of map unit: 5 percent
Landform: Swales
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 23, Sep 6, 2022

Aitkin County, Minnesota

202—Meehan loamy sand

Map Unit Setting

National map unit symbol: gjfw
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

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

Description of Meehan

Setting

Landform: Flats on outwash plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy outwash

Typical profile

A - 0 to 4 inches: loamy sand
E, Bw - 4 to 28 inches: sand
Cg,C - 28 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F088XY011MN - Moist Sandy Mixed Forest
Forage suitability group: Level Swale, Low AWC, Acid (G090AN007MN)
Other vegetative classification: Level Swale, Low AWC, Acid (G090AN007MN)
Hydric soil rating: No

Minor Components

Seelyeville and similar soils
Percent of map unit: 3 percent
Landform: Bogs
Hydric soil rating: Yes

Roscommon and similar soils
Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: Yes

Friendship and similar soils
Percent of map unit: 2 percent
Hydric soil rating: No

Leafriver and similar soils
Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 23, Sep 6, 2022