

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information

Date 7/26/2023 Sec / Twp / Rng S-4, T-44, R-23
 Parcel ID 25-0-005100 & 005200 LUG (county, city, township) Aitkin Co.
 Property Owner: Maynard Boelter Owners address (if different)
 Property Address: 19215 220th St. McGrath MN 56350 20633 Monroe St. NE
 City / State / Zip: _____ East Bethel MN 55011

Flow Information and Waste Type / Strength

Estimated Design flow 450 Anticipated Waste strength Hi Strength Domestic
 Any Non-Domestic Waste Yes (class V) No
 Comments: Gravity flow from house (Modular on slab) 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) Yes No By Owner 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 _____

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>32"</u>	Flooding or run-on potential (comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Depth to system bottom maximum (or elev minimum)	<u>(+ 12")</u>	Flood elevation (if applicable)	<u>NA</u>
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)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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>Maynard Boelter</u>	Date <u>7/26/2023</u>
Property Address / PID: <u>19215 220th St. McGrath MN 56350</u>	

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent mat'l's:	<input type="checkbox"/> Till <input checked="" 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>188B</u> slope <u>2</u> % direction- <u>West</u>

Soil Log #1								
		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>99'</u>	Depth to SHWT <u>32"</u>			
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape	
0 - 5	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular	
5 - 17	Sandy Loam	<35	10YR5/4		Loose	Loose	Granular	
17 - 32	Med Sand	<35	7.5YR5/4		Loose	Loose	Granular	
32 - 40	Fine sand With thin tight bands	<35	7.5YR4/4	7.5YR5/6	Friable	Weak	Granular	
Comments: Damp at 40"								


19215 220th St. McGrath MN 56350 **Soil Log #2**

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>99'</u>	Depth to SHWT <u>34"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 5	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
5 - 18	Sandy Loam	<35	10YR5/4		Loose	Loose	Granular
18 - 34	Med Sand	<35	7.5YR5/4		Loose	Loose	Granular
34 - 38	Fine sand With thin tight bands	<35	7.5YR4/4	7.5YR5/6	Friable	Weak	Granular

19215 220th St. McGrath MN 56350 **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: Maynard Boelter

Date: 7/26/2023

Site Address: 19215 220th St. McGrath MN 56350

PID: 25-0-005100 & 005200

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 Install 1650 Jacobson 2/Compartment septic/pump tank
- 4) 1000 Gal Septic tank (code minimum) 1000 Gal Septic tank (design size / LUG req'd)
Tank options: none
- 5) 1.2 GPD/ft² 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
- 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)
Can use 2" laterals also. 1.50 5x
- 12) 1.50 inch diameter laterals must be used to meet "4x pipe volume" requirement 2.00 3x
- 13) 30 feet of 2.0 inch supply line leads to 5 gallons of drainback volume
(Tip: "top feed" manifold to control the drainback)
- 14) 69 gallons TOTAL pump out volume (treatment + drainback)
- 15) 12 feet vertical lift from pump to mound laterals, leads to a:
- 16) 29 GPM @ 18 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) 5.4 inch swing on Demand float, or timed dosing of 2.4 min ON (confirm pump rate with drawdown
(this delivers Average flow, =70% of Peak design flow) 5.2 hrs OFF test and adjust as necessary)
- 19) 12 inches from bottom of tank to "Pump OFF" float
- 20) 17 inches from bottom of tank to "Pump ON" float, or 12 inches to "Timer ON" float if time dosed
- 21) 20 inches from bottom of tank to "Hi Level" float, or 30 inches to "Hi Level" float if time dosed
- 22) 279 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) 2 percent site slope (0-20% range) 2 (% downslope site slope, if different than upslope)

25) 24 inches, or 2.0 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) 12 inch, or 1.0 ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**

27) 20.0 ft. base absorption width (with sand beyond rockbed as follows):
 27.4 greater of: absorption width OR sand slope

28) 0.0 ft. upslope and sideslope sand upslope 7.4
 10.0 ft. Downslope sand down slope 9.6

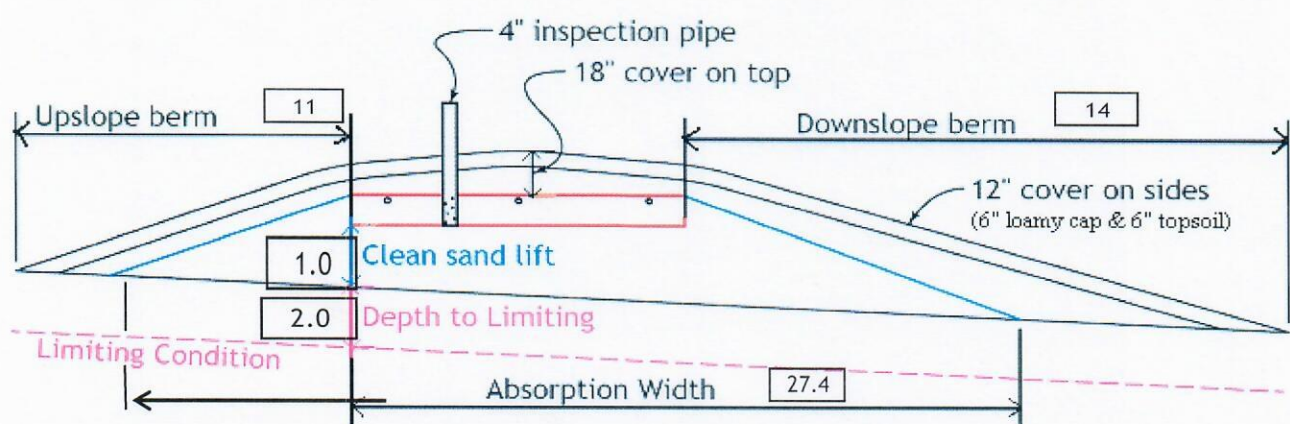
Individual slope ratios give BERM widths (topsoil beyond rockbed) of:

29) 4:1 upslope ratio 11 ft. upslope berm

30) 4:1 sideslope 13 ft. sideslope berms

31) 4:1 downslope 14 ft. downslope berm

32) Overall Dimensions: 10.0 ft. wide by 38.0 ft. long Rock bed
 35 ft. wide by 64 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)
 15.3 up + 21.8 downslope + 7.2 ends + 15.5 under rock = 72 yd³ or *1.4= 101 ton
 plus 20%

35) Loamy Cap: 31 ft. by 60 ft. 6" deep, plus 20% gives 42 yd³ or *1.4= 59 ton

36) Topsoil: 35 ft. by 64 ft. 6" deep, plus 20% gives 50 yd³ or *1.4= 70 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#
 7/26/2023 Date

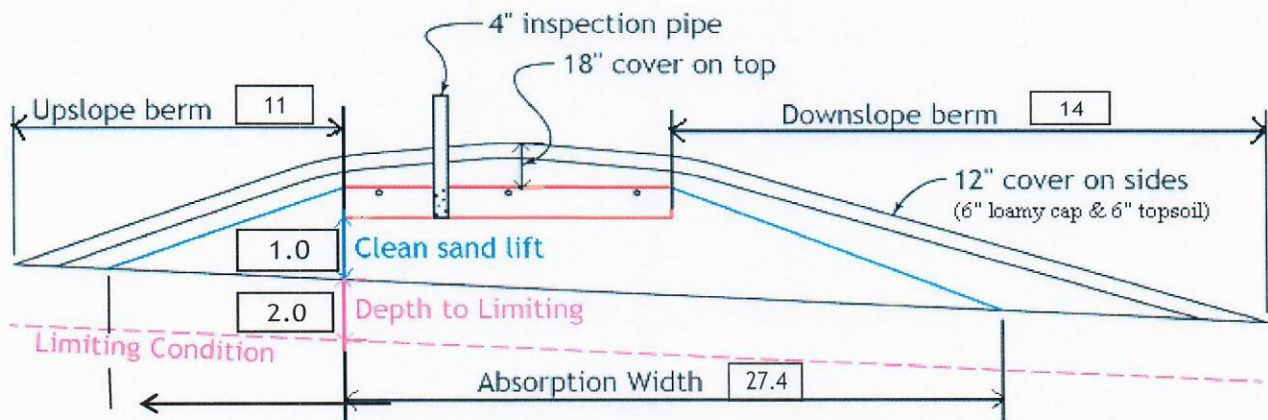
Installer Summary

1000 gallon Septic tank (minimum) Tank options: none
 Install 1650 Jacobson 2/Compartment septic/pump tank
 533 gallon Dose tank (minimum) at 12.69 gpi
 29 GPM @ 18 ft. of head, Pump required
 5.4 inch swing on Demand float which translates to roughly 3.7 inches of float tether length
 if time dosing is required --> 2.4 minutes ON time & 5.2 hours OFF time
 17 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
 20 inches from bottom of tank to "Hi Level Alarm" or 30 inches to "Hi level alarm" if time dosed
 30 ft. of 2.0 inch supply line with end feed manifold connection
 (Tip: "top feed" manifold to control drainback)
 12 inch, or 1.0 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
 No Effluent filter & alarm
 3 clean out & valve box assemblies

27.4 ft. Total sand ABSORPTION width (minimum)
 7.4 ft. upslope and sideslope (sand beyond rockbed, minimum)
 10.0 ft. Downslope (sand beyond rockbed, minimum)

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

4:1 upslope ratio	11 ft. upslope berm
4:1 sideslope	13 ft. sideslope berms
4:1 downslope	14 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:	72 yd ³ or *1.4=	101 ton	
Loamy Cap:	42 yd ³ or *1.4=	59 ton	6" deep
Topsoil:	50 yd ³ or *1.4=	70 ton	6" deep

INSPECTOR CHECKLIST - mound

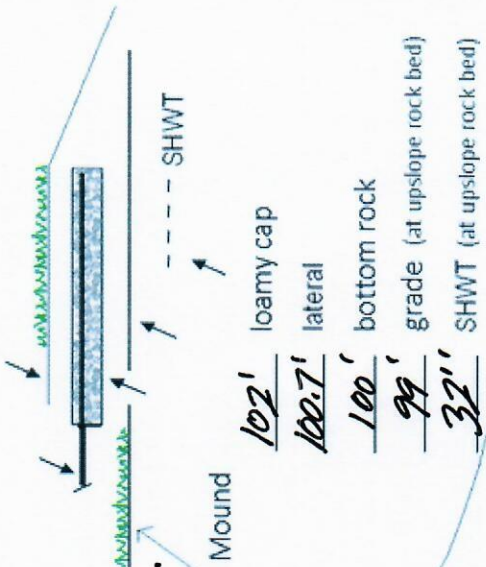
19215 220th St. McGrath MN 56350

- 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 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 _____ 29 gpm 18 head VERIFY PUMP CURVE 2.4 min ON 5.2 hr OFF
- float setting drop 5.4 inches at 12.7 gpi "DESIGNED" 3.7 inches approx float tether length
69.0 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 12 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
- Absorption Sand beyond rock 7.4 upslope 10.0 downslope
- Bermed topsoil beyond rockbed 11 upslope 13 sideslope 14 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

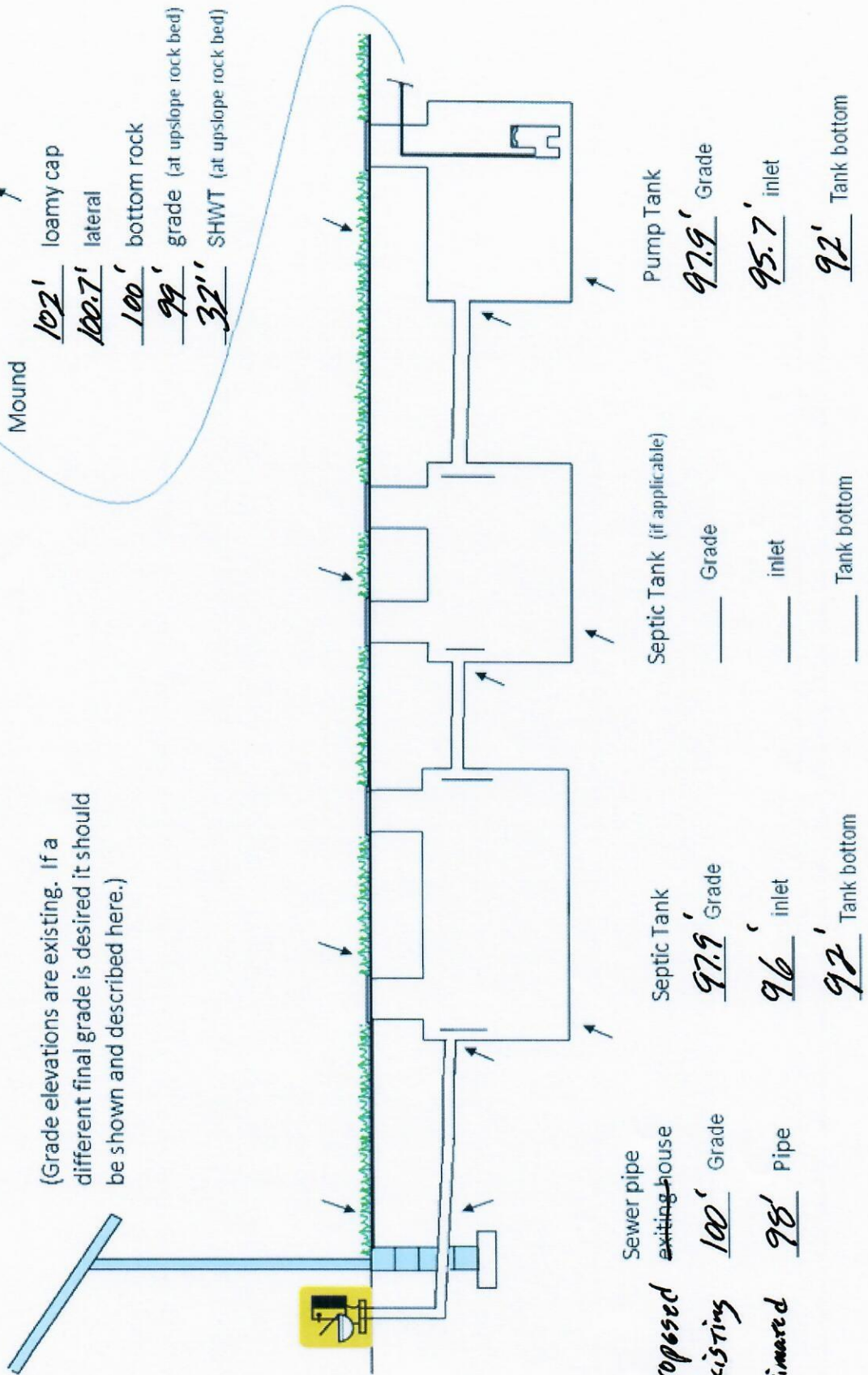
System Elevations

ELV = 100' benchmark Nail on Oak Tree NW of mound.

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



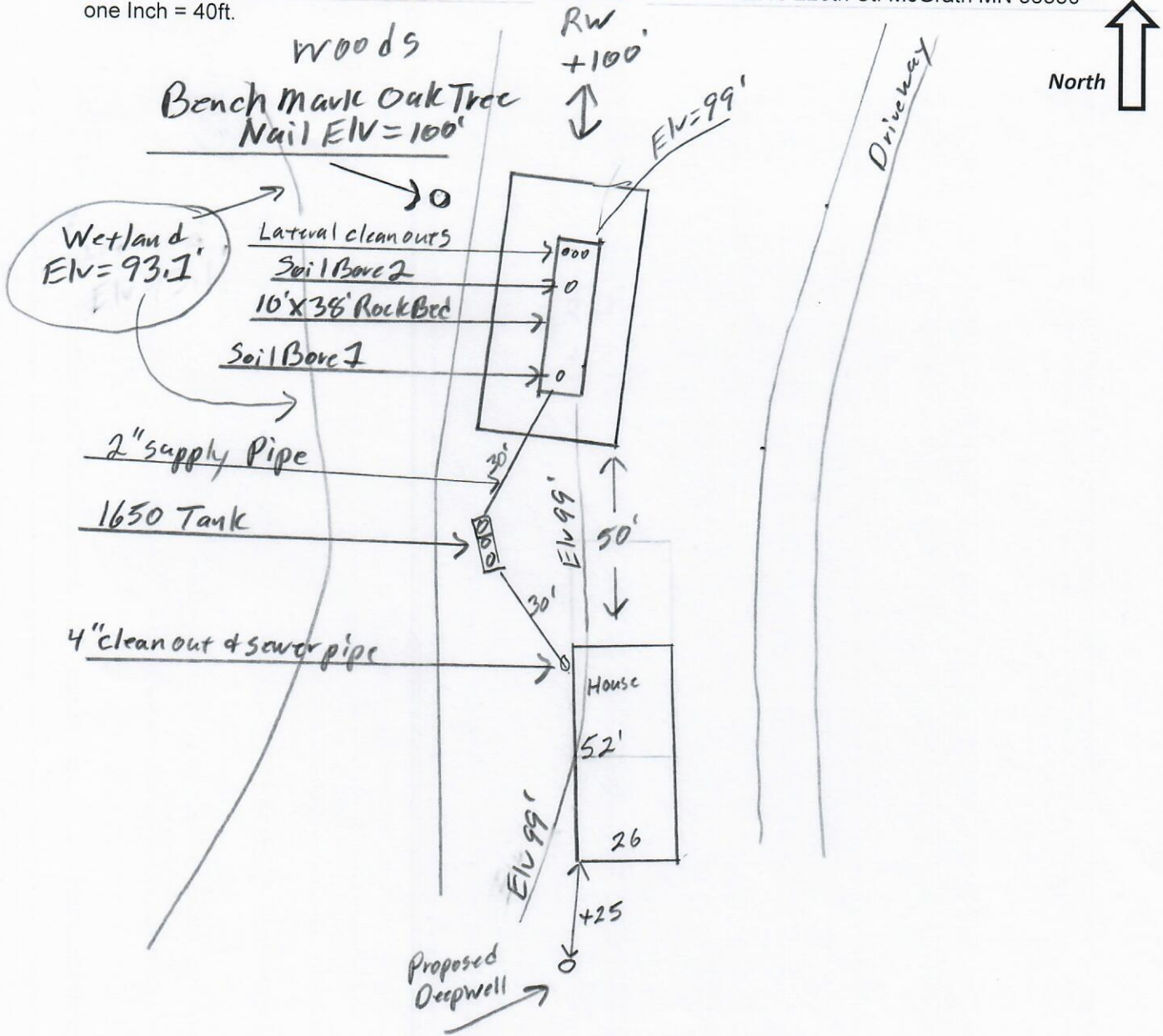
- Mound
- 102' loamy cap
- 100.7' lateral
- 100' bottom rock
- 99' grade (at upslope rock bed)
- 32" SHWT (at upslope rock bed)



Sewer pipe	Septic Tank	Septic Tank (if applicable)	Pump Tank
<u>Existing</u> 100' Grade	Septic Tank 97.9' Grade	Septic Tank (if applicable) Grade	Pump Tank 97.9' Grade
<u>Estimated</u> 98' Pipe	96' inlet	inlet	95.7' inlet
	92' Tank bottom	Tank bottom	92' Tank bottom

{ Design Drawing }

Property Owner: Maynard Boelter Date: 7/26/23 Designer's Initials: JB
 Parcel ID. Number: 25-0-005100 Address: 19215 220th St. McGrath MN 56350
 one Inch = 40ft.



Wetland West of Mound Elv. = 93.1'

Elevation of house not set at time of design. Modular house with a slab. Gravity flow.

Surface/ SHWT		Nail on Oak Tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	99' / 32"	Bench Mark	100'	Upslope Edge of Rockbed Elv. = 99'	
Soil Bore 2	99' / 34"	Ground Elv. BM	96.8'	Bottom of Rockbed Elv. = 100'	
Soil Bore 3		Ground Elv. Tank	97.9'	Top of Washed Sand Elv. = 100'	
Existing Grade		Proposed house	100'	Estimated Sewer pipe at House Elv. = 98'	

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: Maynard Boelter

Date: 7/26/23

Site Address: 19215 220th St. McGrath MN 56350

PID: 25-0-005100

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 South of House.
- 2 Modular House on slab, Gravity flow, No GD.
- 3 No Property lines within 100 'ft of septic system.
- 4 Bench Mark Elevation is a nail on an Oak tree near NW corner of mound area.
- 5 Install Jacobson 1650 2/Compartment Septic / Pump tank for gravity flow from Slab on grade house.
Install clean-out near house. House elevation not set at time of design.
- 6 Elevation contour of rock bed upslope edge is 99'.
The area size of the rock bed is 10' x 38' . Absorption area is 38' x 27.4'.
Sand absorption area is 7.4 ft. up slope + 10 ft. rockbed + 9.6 downslope = approx. 27.4 ft. wide sand base.
Berms are 11ft. Upslope, 14ft. Down slope, 10ft. Rock bed = approx. 35ft. Wide.
Overall mound size is approx. 35' wide x 64' long and approx. 3' high. End Berms are 13 ft wide.
- 7 The bench mark is the nail on 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.
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 2/compartment tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 69 gallons per dose, 5.4 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, (recommend 4" above finished grade).
- 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.** Can use 2" laterals
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
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.

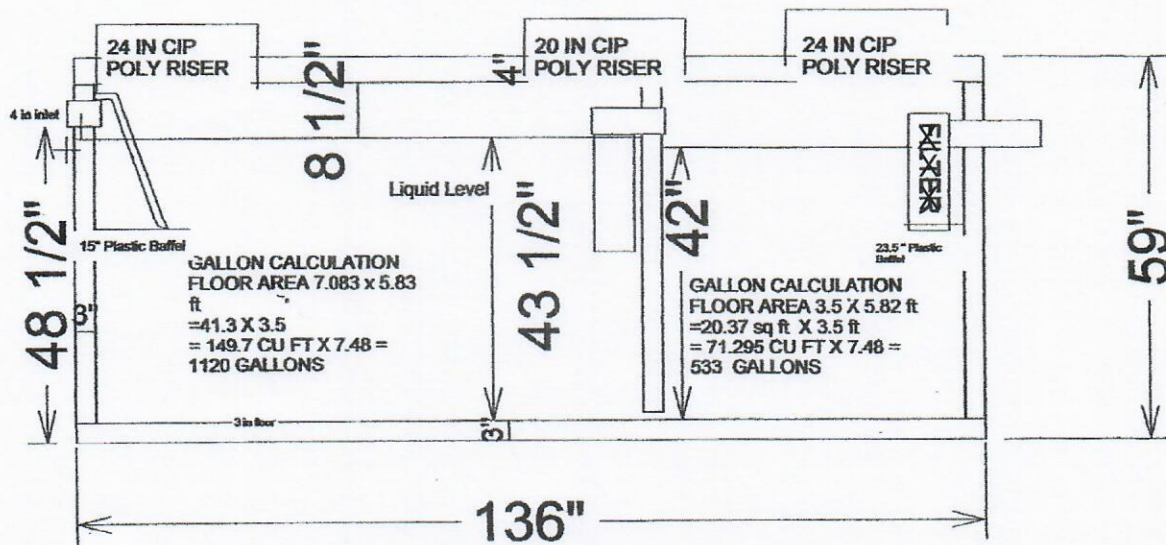
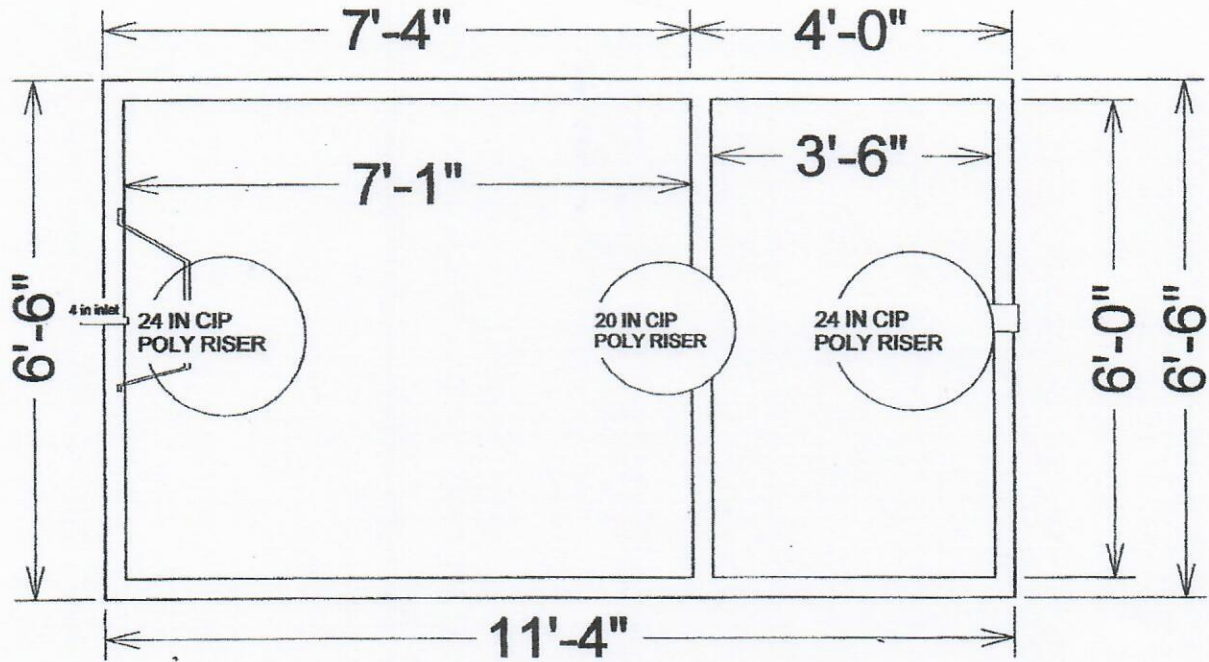

Designer Signature

Brummer Septic LLC.
Design Company

L-1347
License#

1650 Gallon 2 Compartment Septic Tank

TOP VIEW



SIDE VIEW

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

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

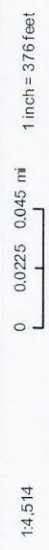


These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

Boelter



Web AppBuilder for ArcGIS



14.514

Date: 7/17/2023



Detailed Parcel Report

Parcel Number: 25-0-005100

General Information

House

Township/City: PLINY TWP
 Taxpayer Name: BOELTER, MAYNARD J & MILDRED B
 Taxpayer Address: 20633 MONROE ST NE
 EAST BETHEL MN 55011
 Property Address: 19215 220th St *Mc Grath Mn ~~56350~~ 56350*
 Township: 44 Lake Number: 0
 Range: 23 Lake Name:
 Section: 4 Acres: 42.83
 Green Acres: No School District: 4.00
 Plat:
 Brief Legal Description: (NE NE) LOT 1 LESS 1.80 AC HY R/W

Tax Information

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

Estimated Land Value:	\$109,700.00
Estimated Building Value:	\$31,000.00
Estimated Total Value:	<u>\$140,700.00</u>
Prior Year Total Taxable Value:	\$115,000.00
Current Year Net Tax (Specials Not Included):	\$578.00
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.



Detailed Parcel Report

Parcel Number: 25-0-005200

General Information

West

Township/City: PLINY TWP
 Taxpayer Name: BOELTER, MAYNARD J & MILDRED B
 Taxpayer Address: 20633 MONROE ST NE
 EAST BETHEL MN 55011
 Property Address:
 Township: 44 Lake Number: 0
 Range: 23 Lake Name:
 Section: 4 Acres: 43.51
 Green Acres: No School District: 4.00
 Plat:
 Brief Legal Description: (NW NE) LOT 2 LESS 1.74 HY R/W

Tax Information

Class Code 1: Rural Vacant Land
 Class Code 2: Unclassified
 Class Code 3: Unclassified
 Homestead: Non Homestead
 Assessment Year: 2023

Estimated Land Value: \$98,700.00
 Estimated Building Value: \$0.00
 Estimated Total Value: \$98,700.00

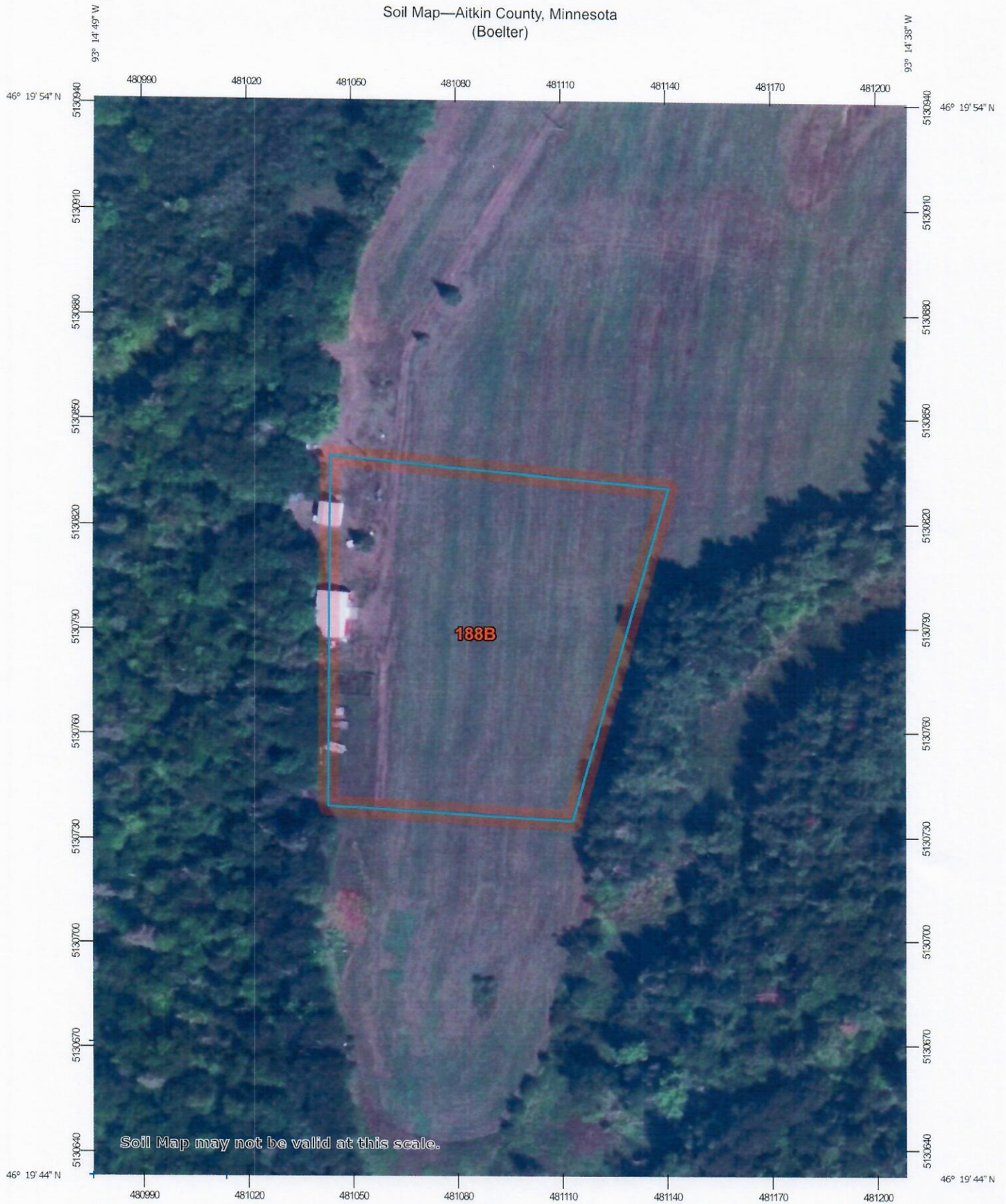
Prior Year Total Taxable Value: \$80,200.00

Current Year Net Tax (Specials Not Included): \$384.00
 Total Special Assessments: \$0.00
 **Current Year Balance Not Including Penalty: \$0.00
 Delinquent Taxes: No

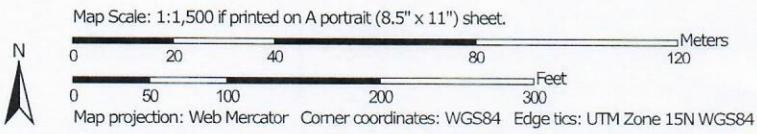
* For more information on delinquent taxes, please call the Aitkin County Treasurer's Office at 218-927-7325.

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

Soil Map—Aitkin County, Minnesota
(Boelter)



Soil Map may not be valid at this scale.



Aitkin County, Minnesota

188B—Omega loamy fine sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: gjfm
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

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

Description of Omega

Setting

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

Typical profile

E - 0 to 2 inches: loamy fine sand
Bs,C1,C2 - 2 to 60 inches: fine sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

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

Minor Components

Nemadji and similar soils

Percent of map unit: 5 percent

Hydric soil rating: No

Over ten percent gravel

Percent of map unit: 5 percent

Hydric soil rating: No

Newson and similar soils

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

Bushville and similar soils

Percent of map unit: 2 percent

Hydric soil rating: No

Leafriver and similar soils

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 23, Sep 6, 2022