Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information

Date	6/3/2020	Sec / Twp / Rng	S-10, T-46, R24
Parcel ID	17-0-012902	LUG (county, city, township)	Aitkin Co.
Property Owner:	Herbert Heldt	Owners address (if different)	
Property Address:	24716 Dam Lake Rd. Aitkin MN 56431		
City / State / Zip:			

Flow Information and Waste Type / Strength

Estimated Design flow: 450

Comments:

Existing Septic System is failling

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	Existing 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) By Owner	☑ 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

Soil Information

Evidence of site:

Cut	☐ Yes	☑ No
Filled	☐ Yes	☑ No
Compacted	☐ Yes	☑ No
Disturbed	☐ Yes	☑ 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/ft^2) 0.60

Percolation rate (if applicable) _____

Depth/elev to SHWT 13"

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

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) _____

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

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

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

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

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

Soil Observation Log

www.SepticResource.com vers 12.4

Owner Information

Property Owner / project: Herbert Heldt Date 6/3/2020

Property Address / PID: 24716 Dam Lake Rd. Aitkin MN 564

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: 502 , 980 slope 3 % direction- South

Soil Log #1

☑ Boring ☐ Pit Elevation 97.7' 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	Loam	<35	10YR4/4		Loose	Loose	Granular
13 - 18	Loam	<35	10YR4/4	7.5YR5/4	Loose	Loose	Granular
18 - 22	Clay Loam	<35			Friable	Weak	Blocky
		<35					

Comments:

24716 Dam Lake Rd. Aitkin MN 56431 **Soil Log #2**

☑ Boring ☐ Pit Elevation 97.9' Depth to SHWT 14"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 14	Loam	<35	10YR4/4		Loose	Loose	Granular
14 - 18	Loam	<35	10YR4/4	7.5YR5/4	Loose	Loose	Granular
		<35			Loose	Loose	Granular
		<35			Loose	Loose	Granular

24716 Dam Lake Rd. Aitkin MN 56431 **Soil Log #3**

☑ Boring ☐ Pit Elevation 97.8' Depth to SHWT 14"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 14	Loam	<35	10YR4/4		Loose	Loose	Granular
14 - 18	Loam	<35	10YR4/4	7.5YR5/4	Loose	Loose	Granular
		<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 #

2011 purple code

Mound Design - Aitkin county

www.SepticResource.com (vers 15.2)

Property Owner: Herbert Heldt **Date:** 6/3/2020

Site Address: 24716 Dam Lake Rd. Aitkin MN 56431 **PID:** 17-0-012902

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 Tank Septic / pump

4) [1000] Gal Septic tank (code minimum) [1120] Gal Septic tank (design size / LUG req'd)
Tank options: none

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 [37.5] 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 [35.5] feet long [12.0] perfs / lateral [36] 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) [90] feet of [2.0] inch supply line leads to [15] gallons of drainback volume
(Tip: "top feed" manifold to control the drainback)

14) [79] gallons TOTAL pump out volume (treatment + drainback)

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

16) [27] GPM @ [23] 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) [6.2] 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) [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) [267] gallons reserve capacity (after High Level Alarm is activated)

Electric Alarm on pump tank

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) 3 percent site slope (0-20% range) 3 (% 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:)
35.7 greater of: absorption width OR sand slope

28) 0.0 ft. upslope and sideslope sand upslope 10.7
10.0 ft. Downslope sand down slope 15.0

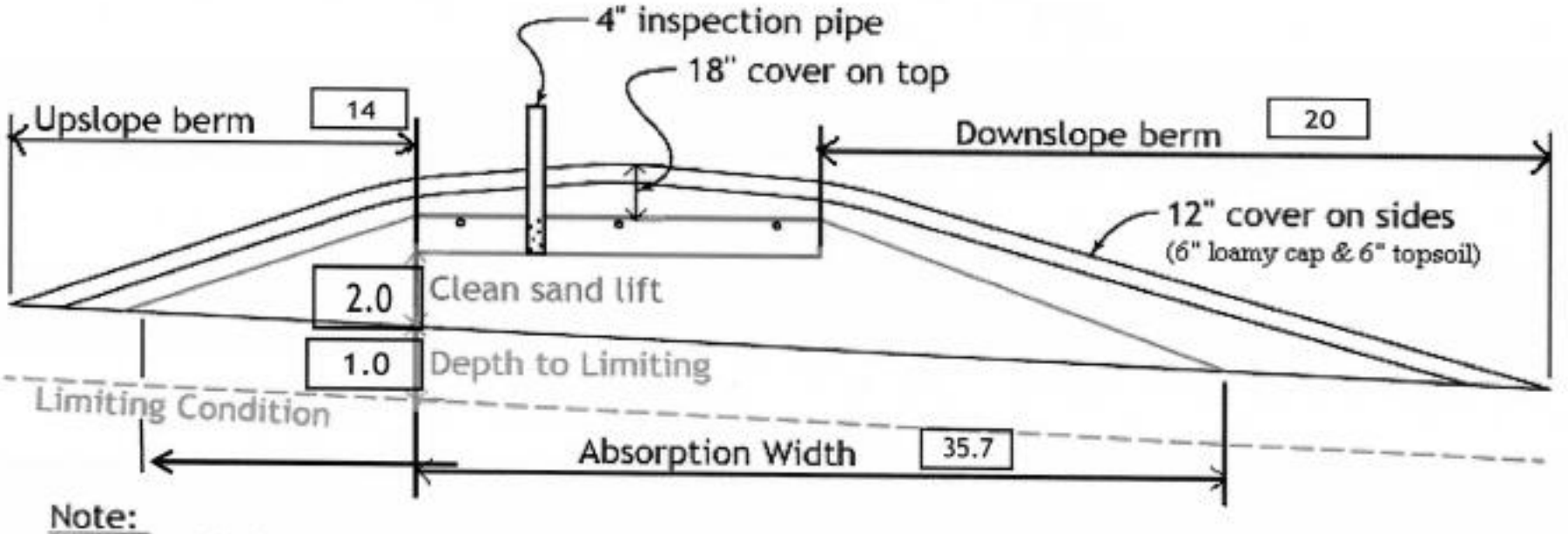
Individual slope ratios give BERM widths (topsoil beyond rockbed) of:

29) 4:1 upslope ratio 14 ft. upslope berm

30) 4:1 sideslope 17 ft. sideslope berms

31) 4:1 downslope 20 ft. downslope berm

32) Overall Dimensions: 10.0 ft. wide by 37.5 ft. long Rock bed
44 ft. wide by 72 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 37.5 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)
37.8 up + 58.1 downslope + 16.1 ends + 29.9 under rock = 170 yd³ or *1.4= 238 ton
plus 20%

35) Loamy Cap:
40 ft. by 68 ft. 6" deep, plus 20% gives 60 yd³ or *1.4= 84 ton

36) Topsoil:
44 ft. by 72 ft. 6" deep, plus 20% gives 70 yd³ or *1.4= 98 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	6/3/2020

Installer Summary

1120 gallon Septic tank (minimum)

Tank options: none

Install 1650 Jacobson 2/compartment Tank Septic / pump at 12.69 gpi

533 gallon Dose tank (minimum)

27 GPM @ 23 ft. of head, Pump required

6.2 inch swing on Demand float which translates to roughly 4.1 inches of float tether length

if time dosing is required --> 2.9 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

90 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

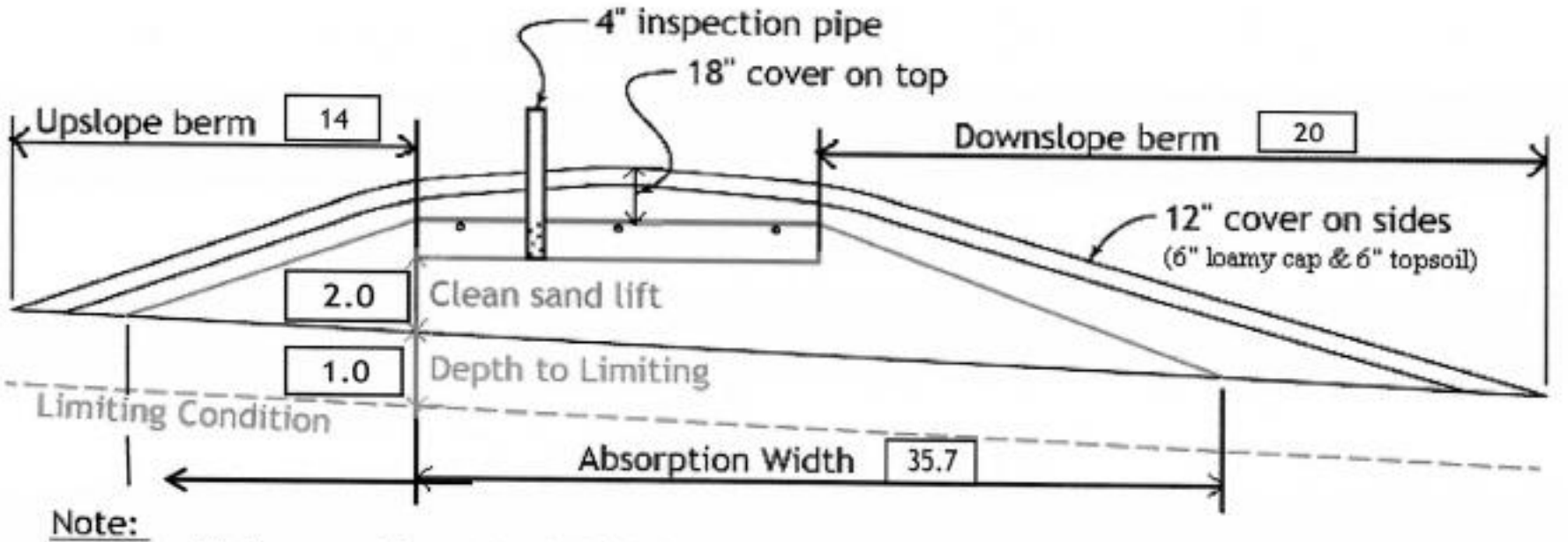
35.7 ft.Total sand ABSORPTION width (minimum)

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

15.0 ft. Downslope (sand beyond rockbed, minimum)

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

4:1	upslope ratio	14	ft. upslope berm
4:1	sideslope	17	ft. sideslope berms
4:1	downslope	20	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
Mound Sand:	170	yd^3 or *1.4=	238	ton
Loamy Cap:	60	yd^3 or *1.4=	84	ton
Topsoil:	70	yd^3 or *1.4=	98	ton

9 inches under pipe

calculation based on 3:1/4:1 slope from top of rockbed

6" deep

6" deep

INSPECTOR CHECKLIST - mound

24716 Dam Lake Rd. 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_____ 1120 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 23 head VERIFY PUMP CURVE 2.9 min ON 5.1 hr OFF

☐ float setting drop 6.2 inches at ☐ 12.7 gpi "DESIGNED" 4.1 inches approx float tether length
79.0 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 10.7 upslope 15.0 downslope

☐ Bermed topsoil beyond rockbed 14 upslope 17 sideslope 20 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

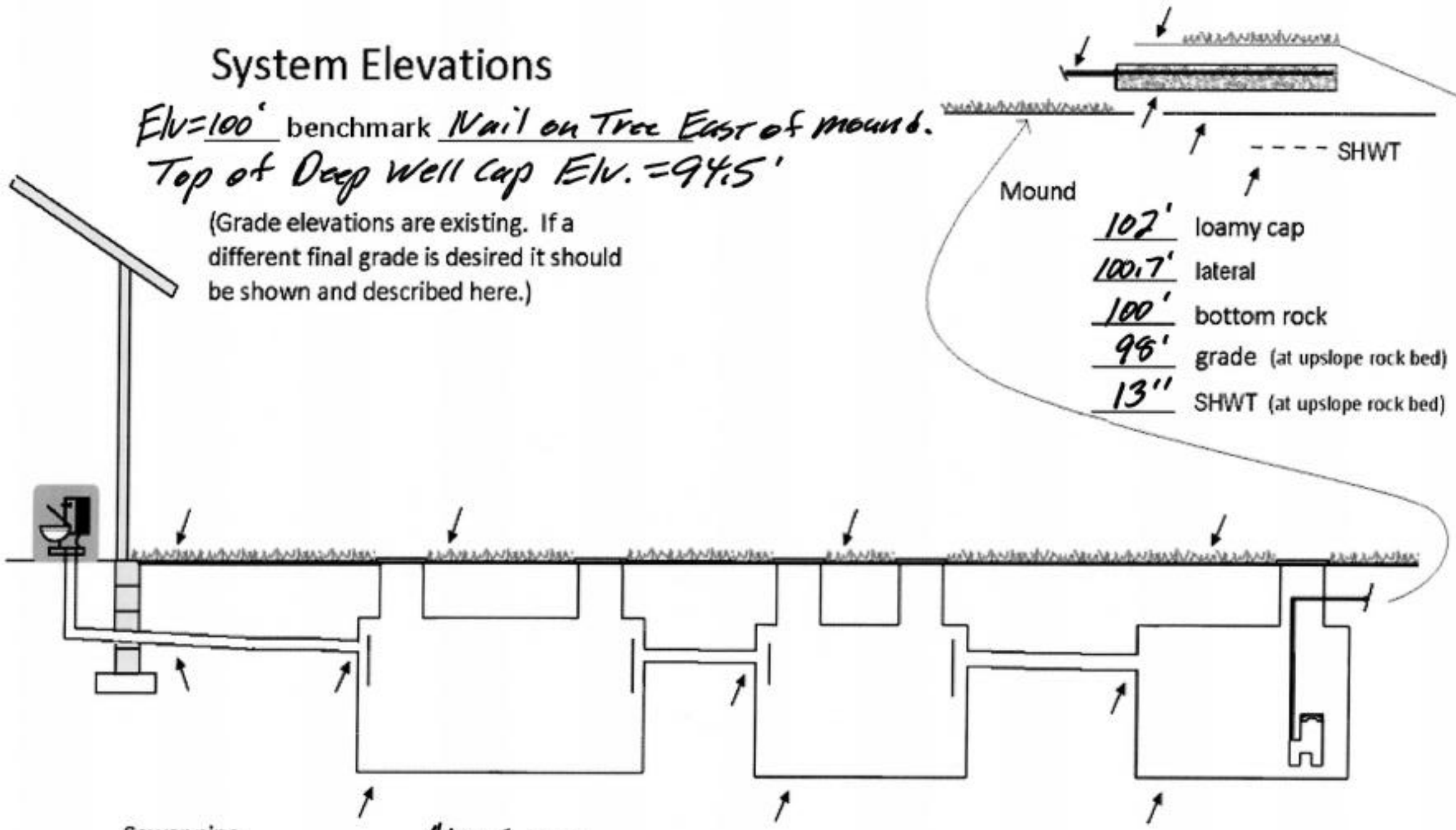
Electric Alarm on pump tank

System Elevations

Elv=100' benchmark Nail on Tree East of mound.

Top of Deep Well Cap Elv. =94.5'

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



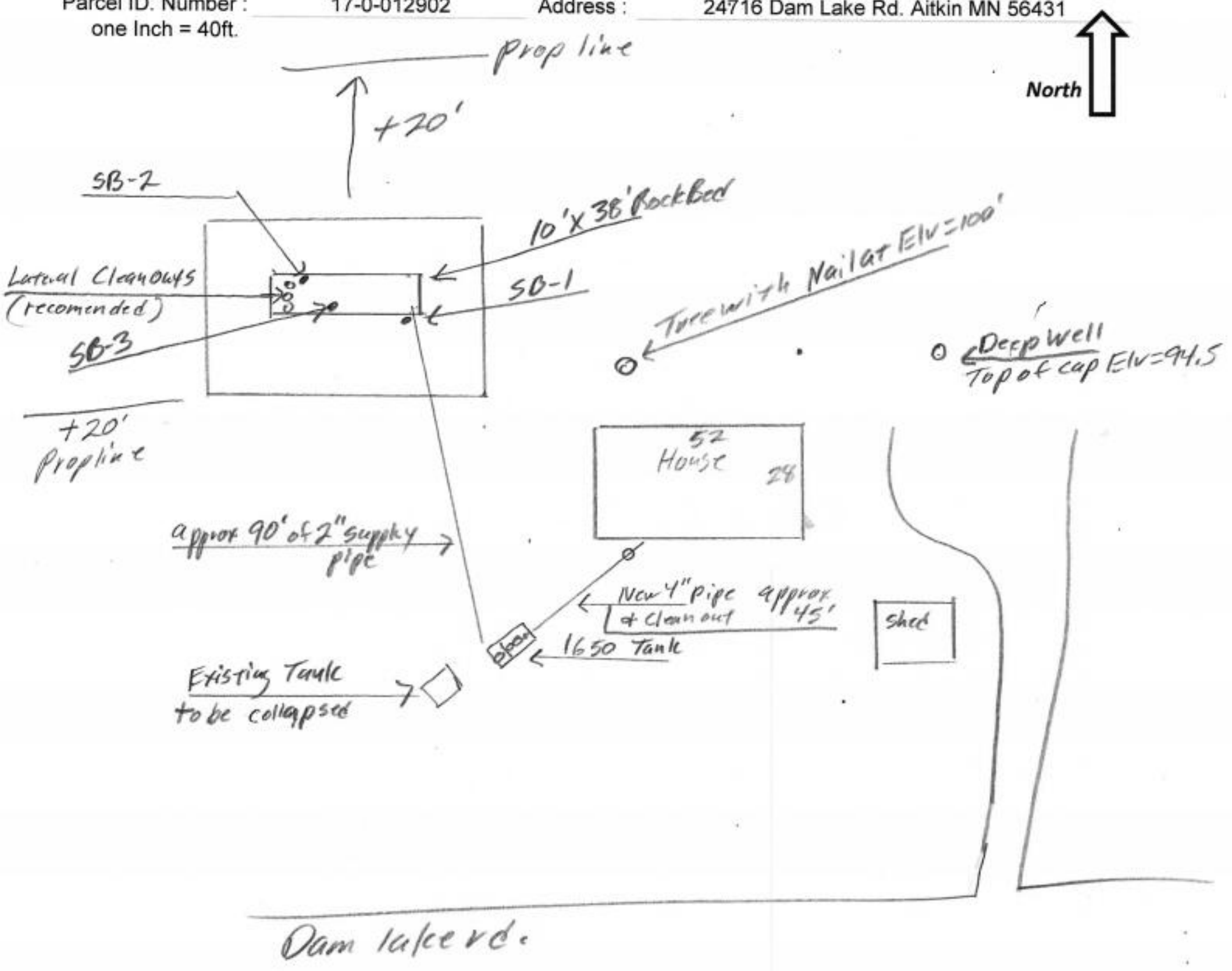
	Sewer pipe exiting house	Septic Tank (New 1650)	Septic Tank (if applicable)	Pump Tank
SW corner	96.7' Grade	95' Grade	____ Grade	95' Grade
approx -	95.7' Pipe	94' inlet	____ inlet	93.8' inlet
		91' Tank bottom	____ Tank bottom	91' Tank bottom

{ Design Drawing }

Property Owner: Herbert Heldt Date: 6/3/20 Designer's Initials : JB

Parcel ID. Number : 17-0-012902 Address : 24716 Dam Lake Rd. Aitkin MN 56431

one Inch = 40ft.



Top of deep well cap Elv.= 94.5'

	Surface/ SHWT	***Nail on Tree = Bench Mark 100'***			Existing Grade
Soil Bore 1	97.7' / 13"	Bench Mark	100'		Upslope Edge of Rockbed Elv.= 98'
Soil Bore 2	97.9' / 14"	Ground Elv. BM	97.2'		Bottom of Rockbed Elv.= 100'
Soil Bore 3	97.8' / 14"	Ground Elv. Tank	95'	New	Top of Washed Sand Elv.= 100'
	Ground at	Proposed house	96.7'	SW corner	Elv. Of Sewer pipe at Cabin Elv.= 95.7'

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: Herbert Heldt **Date:** 6/3/20

Site Address: 24716 Dam Lake Rd. Aitkin MN 56431 **PID:** 17-0-012902

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. Existing deep well location is NE of House.
2 Existing Septic system is failing. Pump collapse and fill existing tank, abandon drainfield.
3 Mound and tank meet setbacks to property lines + 20' in any direction.
4 Bench Mark Elevation is a nail on a tree near East end of mound area Elv.= 100'.
5 Install Jacobson 1650 Compartment tank for gravity flow from house.
Install clean-out near house and install new 4" sewer pipe to tank, (existing was home owner installed)
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 35.7'.
Sand absorption area is 10.7 ft. up slope + 10 ft. rockbed + 15 ft. downslope = approx. 35.7 ft. wide sand base.
Berms are 14ft. Upslope, 20ft. Down slope, 10ft. Rock bed = approx. 44ft. Wide.
Overall mound size is approx. 44' wide x 72' long and approx. 4' high. End Berms are 17 ft wide.
7 The bench mark is the nail on the 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 compartment tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 79 gallons per dose, 6.2 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 tank.
Install 1.5" laterals with 9" of rock under them. (Install Lateral clean-outs at far end of laterals. Recommended)
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.

Designed to Aitkin Co. and MPCA recommendations and requirements.

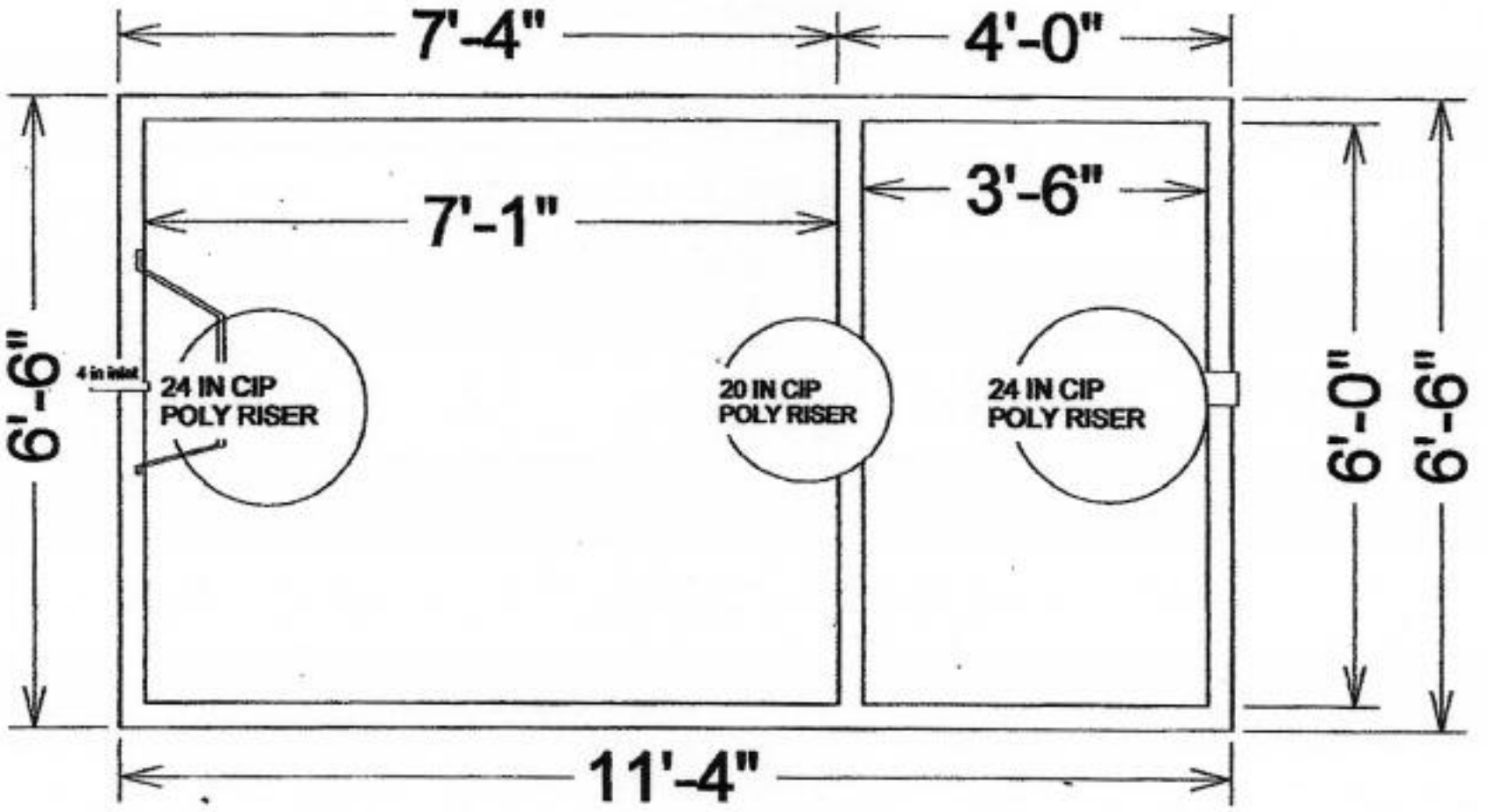
Designer Signature

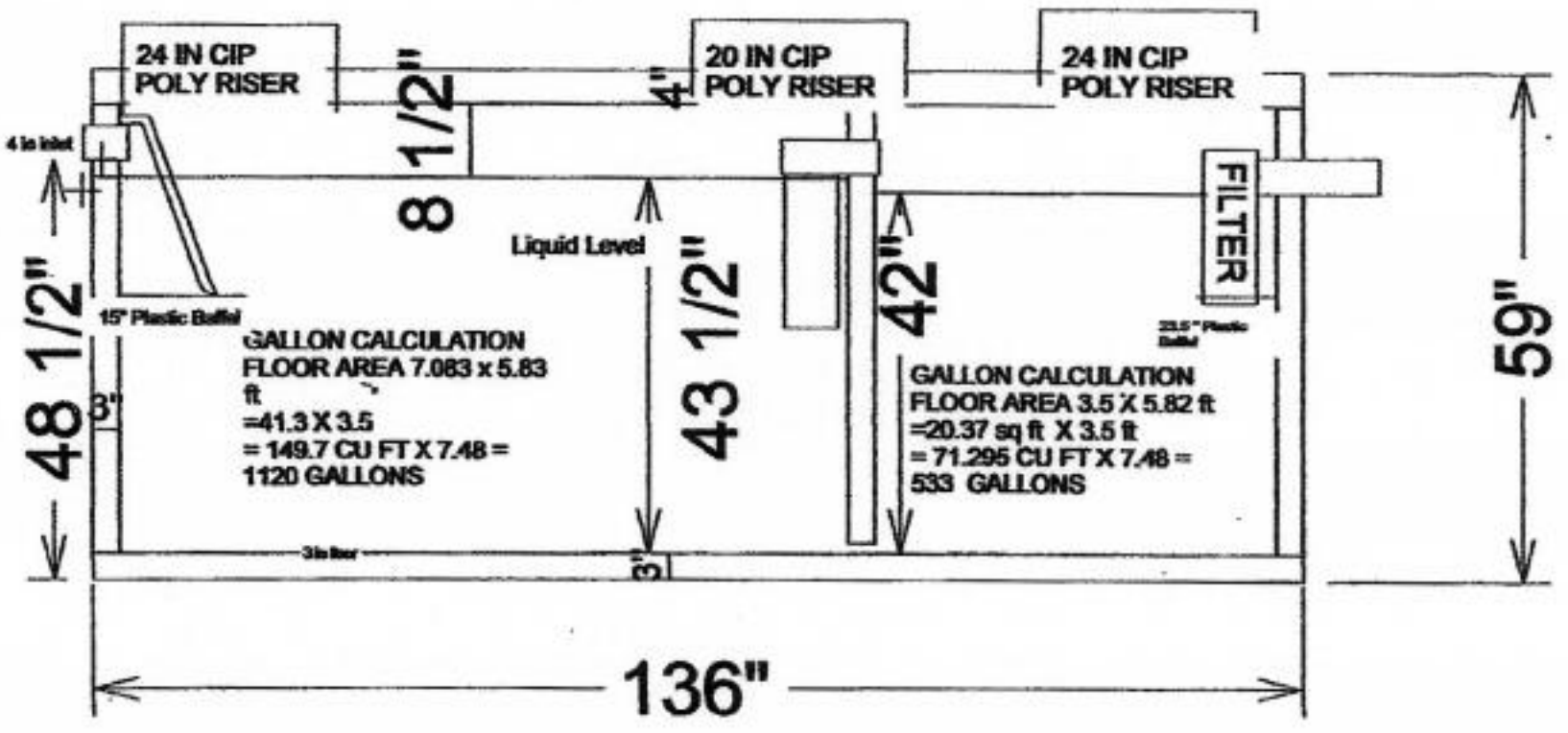
Brummer Septic LLC.
Design Company

L-1347
License#

1650 Gallon 2 Compartment Septic Tank

TOP VIEW





533 / 42" = 12.69 GPI

SIDE VIEW

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

Aitkin County

Detailed Parcel Report

Parcel Number: 17-0-012902

General Information

Township/City:	LEE TOWNSHIP
Taxpayer Name:	HELDT, HERBERT A
Taxpayer Address:	24716 DAM LAKE ST MCGREGOR MN 55760
Property Address:	24716 Dam Lake St
Township:	46
Range:	24
Section:	10
Green Acres:	No
Plat:	
Brief Legal Description:	W 1/2 OF SW 1/4 OF SE SW & E 1/2 OF SW SW LESS 1.08 AC HWY

Lake Number:	0
Lake Name:	
Acres:	23.92
School District:	4.00

Tax Information

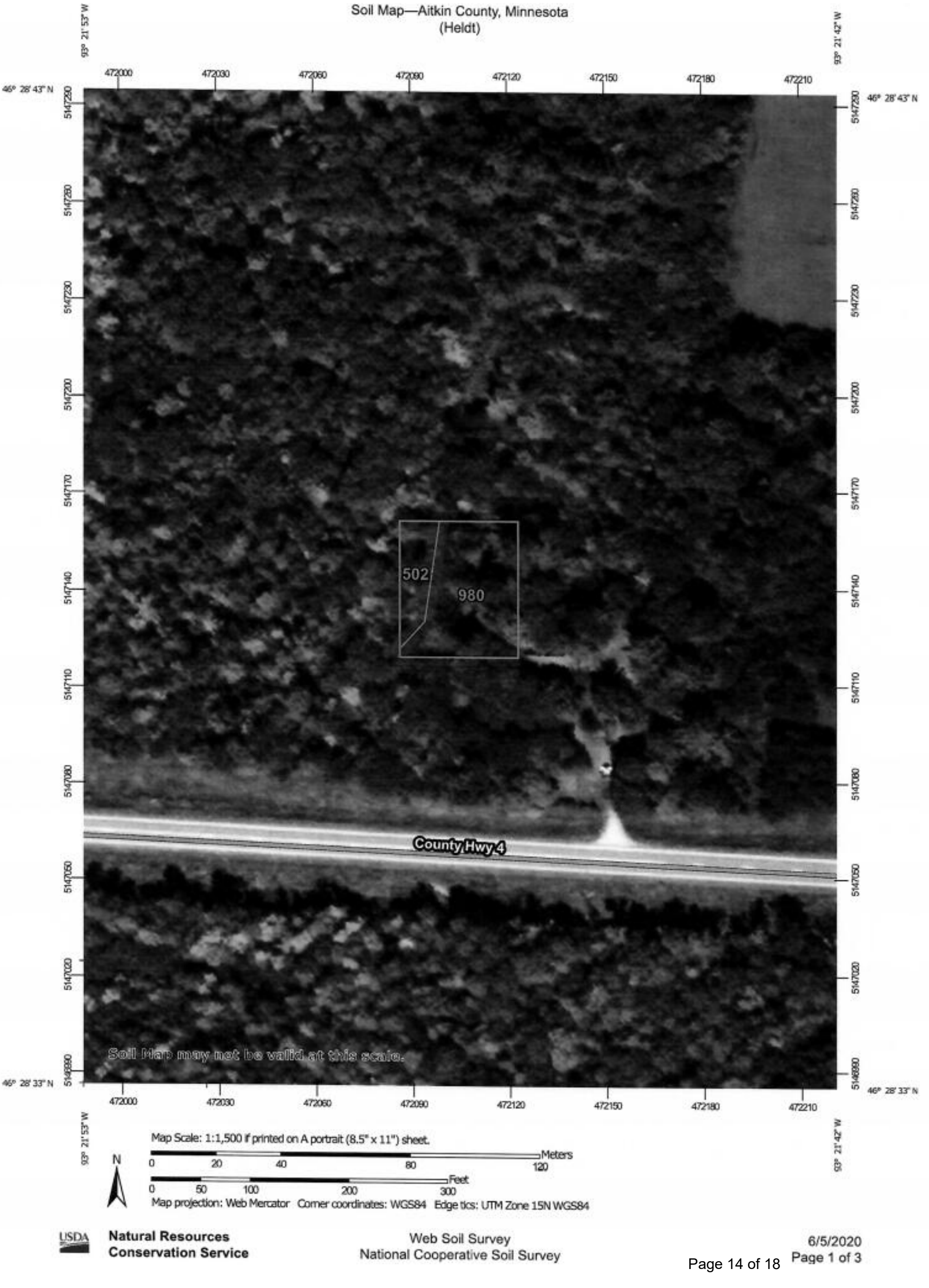
Class Code 1:	Residential 1 unit
Class Code 2:	Rural Vacant Land
Class Code 3:	Unclassified
Homestead:	Owner Homestead
Assessment Year:	2020

Estimated Land Value:	$45,800.00
Estimated Building Value:	$47,300.00
Estimated Total Value:	$93,100.00
Prior Year Total Taxable Value:	$62,620.00
Current Year Net Tax (Specials Not Included):	$510.00
Total Special Assessments:	$0.00
****Current Year Balance Not Including Penalty:**	$255.00
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
(Heldt)



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

USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

6/5/2020
Page 1 of 3

Aitkin County, Minnesota

502—Dusler silt loam

Map Unit Setting

National map unit symbol: gjh6
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

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

Description of Dusler

Setting

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

Typical profile

A - 0 to 5 inches: silt loam
Eg,2B/E - 5 to 21 inches: fine sandy loam
2Bt1,2Bt2 - 21 to 50 inches: clay loam
2C - 50 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: High (about 10.4 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)
Hydric soil rating: No

Minor Components

Duluth and similar soils
Percent of map unit: 7 percent
Hydric soil rating: No

Blackhoof and similar soils
Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Mahtowa and similar soils
Percent of map unit: 4 percent
Landform: Swales
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 20, Sep 16, 2019

Aitkin County, Minnesota

980—Blackhoof and Mahtowa soils

Map Unit Setting

National map unit symbol: gjk7
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

Mahtowa and similar soils: 45 percent
Blackhoof and similar soils: 45 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mahtowa

Setting

Landform: Depressions on moraines
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy till

Typical profile

Oa - 0 to 3 inches: muck
A - 3 to 11 inches: loam
Bg,C - 11 to 60 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very 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 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Forage suitability group: Organic (G090AN014MN)
Hydric soil rating: Yes

Description of Blackhoof

Setting

Landform: Depressions on moraines
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Organic material over loamy till

Typical profile

Oa - 0 to 10 inches: muck
A - 10 to 14 inches: clay loam
Bg,C - 14 to 60 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very high (about 14.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Forage suitability group: Organic (G090AN014MN)
Hydric soil rating: Yes

Minor Components

Seelyeville and similar soils

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

Stones on the surface

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

Dusler and similar soils

Percent of map unit: 3 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 20, Sep 16, 2019