

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information

Date	<u>6/11/2020</u>	Sec / Twp / Rng	<u>S-26, T-48, R-25</u>
Parcel ID	<u>08-0-042100</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Terrence Huth</u>	Owners address (if different)	
Property Address:	<u>41539 290th PL. Aitkin MN 56431</u>	<u>427 3rd Ave. W</u>	
City / State / Zip:		<u>Shakopee MN 55379</u>	

Flow Information and Waste Type / Strength

Estimated Design flow	<u>300</u>	Anticipated Waste strength	<input type="checkbox"/> HI Strength	<input checked="" type="checkbox"/> Domestic
Comments: Type III Mound 3 ft sand base Type III Requires Aitkin Co. Operating Permit System requires an event counter		Any Non-Domestic Waste	<input type="checkbox"/> Yes (class V)	<input checked="" type="checkbox"/> No
		Sewage ejector/grinder pump	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
		Water softener	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
		Garbage Disposal	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
		Daycare / In home business	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Site Information

Existing & proposed lot improvements located (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Well casing depth	Proposed deep well Existing Shallow
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)	<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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Soil treatment area protected	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site map prepared with previous items included	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Construction related issues	<u>Must meet setback to shallow well until abandon</u>			

[illegible]


Designer Signature

Company

License #

Soil Observation Log

www.SepticResource.com vers 12.4

Owner Information

Property Owner / project: Terrence Huth

Date 6/11/2020

Property Address / PID: 41539 290th PL. Aitkin MN 56431

Soil Survey Information

☐ refer to attached soil survey

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

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

soil survey map units: 204B slope 5 % direction- NW

Soil Log #1

☒ Boring ☐ Pit Elevation 96.8' Depth to SHWT 10"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 8	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
8 - 10	Loam	<35	10YR5/4		Loose	Loose	Granular
10 - 18	Loam	<35	10YR5/4	7.5YR5/4 & 10YR6/2	Friable	Loose	Granular
18 - 22	Silt Loam	<35	10YR5/4	7.5YR5/6	Friable	Weak	Blocky
		<35					

Comments:

41539 290th PL. Aitkin MN 56431

Soil Log #2

<div> <div> <input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit </div> <div>Elevation <u>96.7'</u></div> <div>Depth to SHWT <u>10"</u></div> </div>							
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 8	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
8 - 10	Loam	<35	10YR5/4		Loose	Loose	Granular
10 - 18	Loam	<35	10YR5/4	7.5YR5/4 & 10YR6/2	Friable	Loose	Granular
		<35			Loose	Loose	Granular
		<35			Loose	Loose	Granular

41539 290th PL. Aitkin MN 56431

Soil Log #3

<div> <div> <input type="checkbox"/> Boring <input type="checkbox"/> Pit </div> <div>Elevation _____</div> <div>Depth to SHWT _____</div> </div>							
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: Terrence Huth

Date: 6/11/2020

Site Address: 41539 290th PL. Aitkin MN 56431

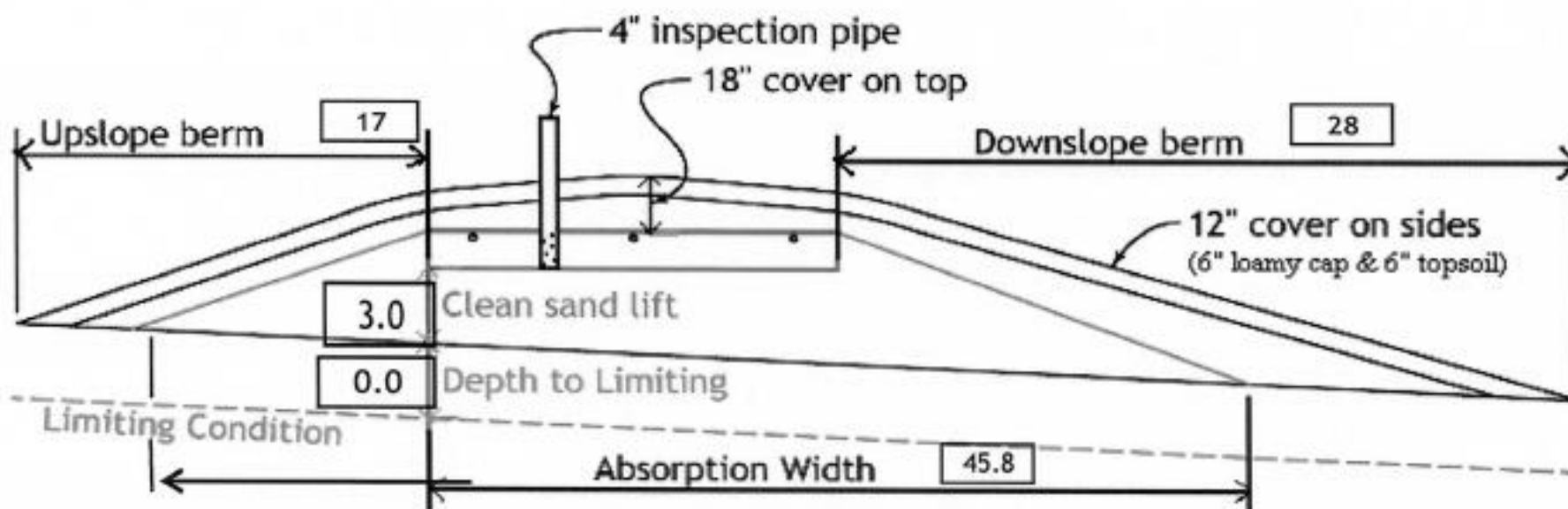
PID: 08-0-042100

Comments: Type III requires Aitkin Co. Operating Permit

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 1120septic/ 533 pump
- 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)
- 12) inch diameter laterals must be used to meet "4x pipe volume" requirement 1.50 5x
- 13) feet of inch supply line leads to gallons of drainback volume 2.00 3x
(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.

Designer Signature

Brummer Septic LLC.
Company

L-1347
License#

6/11/2020
Date

Installer Summary

1120 gallon Septic tank (minimum)

Tank options: none

533 gallon Dose tank (minimum)

Install 1650 Jacobson 2/Compartment tank 1120septic/ 533 pump
at 12.69 gpi

18 GPM @ 21 ft. of head, Pump required

4.1 inch swing on Demand float which translates to roughly 3.1 inches of float tether length
if time dosing is required --> 2.9 minutes ON time & 5.1 hours OFF time

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

19 inches from bottom of tank to "Hi Level Alarm" or 29 inches to "Hi level alarm" if time dosed

50 ft. of 2.0 inch supply line with end feed manifold connection

(Tip: "top feed" manifold to control drainback)

36 inch, or 3.0 ft. Sand Lift Mound

10.0 ft. wide by 25.0 ft. long Rock bed

3 laterals 1.50 inch diameter 23.0 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

45.8 ft. Total sand ABSORPTION width (minimum)

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

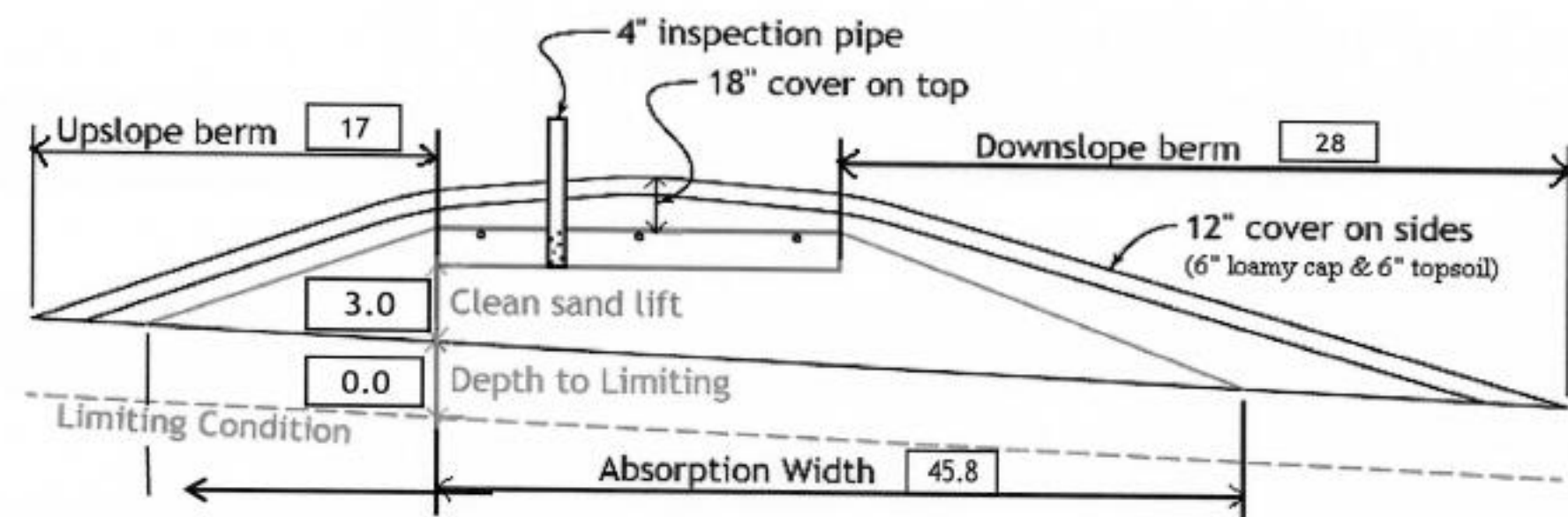
22.5 ft. Downslope (sand beyond rockbed, minimum)

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

4:1 upslope ratio 17 ft. upslope berm

4:1 sideslope 22 ft. sideslope berms

4:1 downslope 28 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: 12.0 yd³ or *1.4= 17 ton

Mound Sand: 282 yd³ or *1.4= 394 ton

Loamy Cap: 74 yd³ or *1.4= 104 ton

Topsoil: 85 yd³ or *1.4= 119 ton

9 inches under pipe

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

6" deep

6" deep

INSPECTOR CHECKLIST - mound

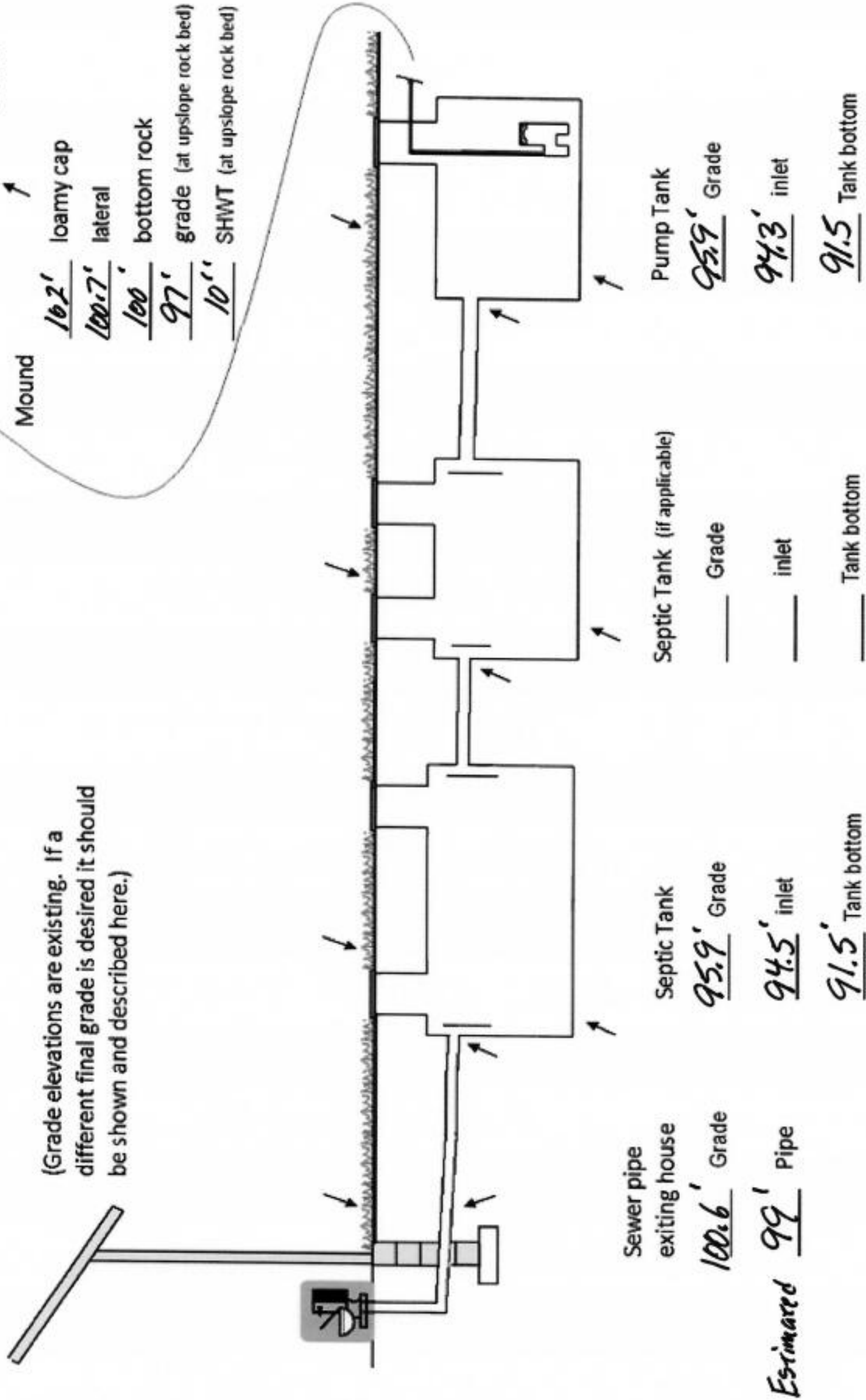
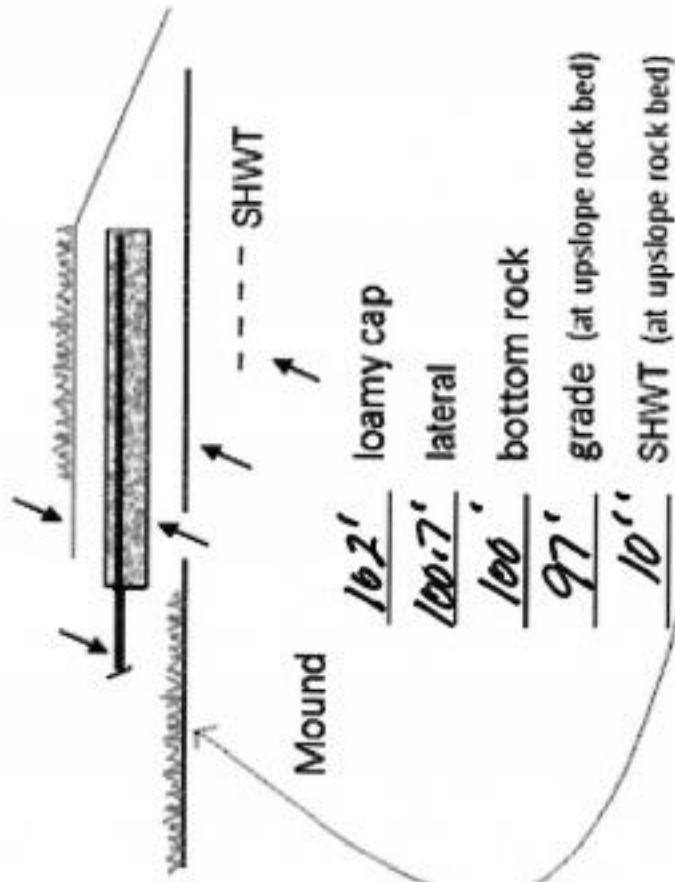
41539 290th PL. Aitkin MN 56431

<input type="checkbox"/>	WELL setbacks:	20' to pressure tested sewer line (5 psi for 15 min)		
		50' to everything	100' to dispersal area with shallow well	
<input type="checkbox"/>	PROPERTY LINES setback:	10' to everything		
<input type="checkbox"/>	Road setback:	platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.		
<input type="checkbox"/>	LAKE / BLUFF setback:	20' for bluff. Lakes: GD __, RD __, NE __. Protected wetland __.		
<input type="checkbox"/>	Building setbacks:	10' for everything, 20' for dispersal area.		
<input type="checkbox"/>	WATER LINE under pressure se	10' to bed, tank & sewer line. (else sewer line > 12" below, else ok w/pvc)		
<input type="checkbox"/>	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)		
<input type="checkbox"/>	Septic tank and risers (water tight, insulated, proper depth, existing verified by pumping)			
	mfg _____	1120	gallons	none _____
<input type="checkbox"/>	Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.			
<input type="checkbox"/>	No _____ effluent filter & alarm			
<input type="checkbox"/>	Dose tank risers and piping (water tight, insulated, proper depth, drainback)			
	mfg _____	533	gallons	
<input type="checkbox"/>	dose pump _____	18	gpm	21 head VERIFY PUMP CURVE 2.9 min ON 5.1 hr OFF
<input type="checkbox"/>	float setting drop	4.1	inches	at 12.7 gpi "DESIGNED" 3.1 inches approx float tether length
		52.0	gal dose	divided by _____ gpi "INSTALLED" = _____ inches float drop (field corrected)
	LABEL pump requirements and drawdown on riser or panel			
<input type="checkbox"/>	Cam lock reachable from grade - 30" max. J-hook weep hole. Supply line access (no hard 90's)			
<input type="checkbox"/>	2.0 inch supply pipe: Sch40, sloped 1/8"+, supported by 4" sch40 sleeve or compacted, and buried 6"+.			
<input type="checkbox"/>	splice box / control panel / electrical connections			
<input type="checkbox"/>	flow measurement: CT, ETM, time dosed, home water meter			
<input type="checkbox"/>	mound absorption area rough up			
<input type="checkbox"/>	mound rock dimensions	10.0	X	25.0
<input type="checkbox"/>	Sand lift depth	36	inches.	(Jar test : 2" sand leaves < 1/8" silt after 30 min)
<input type="checkbox"/>	Absorption Sand beyond rock	13.3	upslope	22.5 downslope
<input type="checkbox"/>	Bermed topsoil beyond rockbed	17	upslope	22 sideslope 28 downslope
<input type="checkbox"/>	cover depth of 12-18"+	VERIFY		
<input type="checkbox"/>	3 laterals (1-2' from edge of rock)			
<input type="checkbox"/>	1.50 inch pipe size (Sch40 pipe & fittings)			
<input type="checkbox"/>	3.0 ft lateral spacing			
<input type="checkbox"/>	1/4" inch perforations			
<input type="checkbox"/>	3.0 ft perforation spacing			
<input type="checkbox"/>	Air inlet at end of laterals, and at top feed manifold if necessary.	VERIFY		
<input type="checkbox"/>	clean outs (no hard 90's)			
<input type="checkbox"/>	4" inspection pipe to bottom of rock, anchored	VERIFY		
<input type="checkbox"/>	Abandon existing system - if necessary	<input type="checkbox"/>	Re-use existing tank certification	
<input type="checkbox"/>	monitoring plan and type _____			
<input type="checkbox"/>	well abandonment form - if necessary			

System Elevations

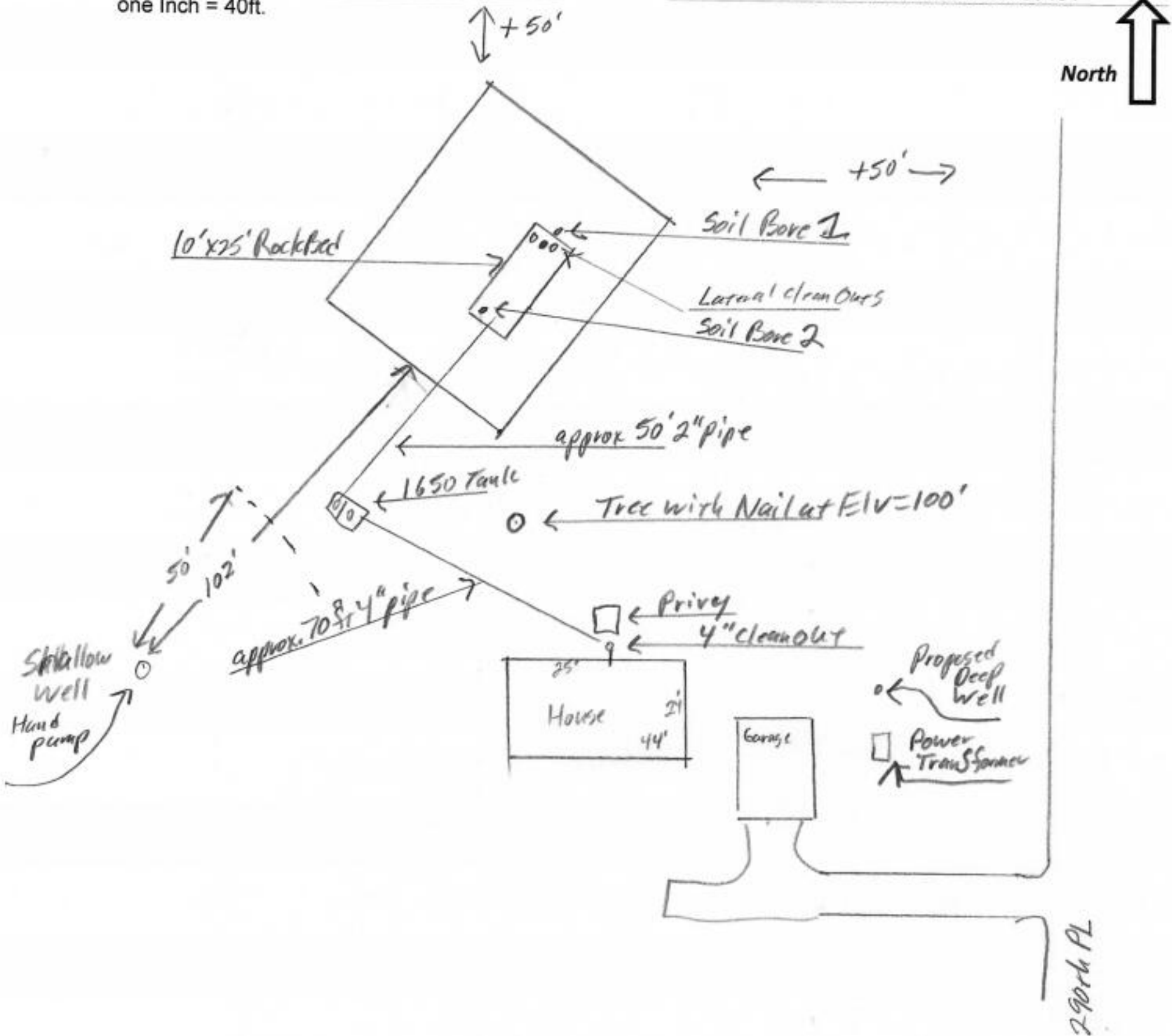
Elv = 100' benchmark *Nail on Tree Near Mound.*

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



{ Design Drawing }

Property Owner: Terrence Huth Date: 6/11/20 Designer's Initials: JB
 Parcel ID. Number: 08-0-042100 Address: 41539 290th PL. Aitkin MN 56431
 one Inch = 40ft.



	Surface/ SHWT	Nail on Tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	96.8' / 10"	Bench Mark	100'	Upslope Edge of Rockbed Elv.= 97'	
Soil Bore 2	96.7' / 10"	Ground Elv. BM	98.2'	Bottom of Rockbed Elv.= 100'	
Soil Bore 3		Ground Elv. Tank	95.9'	Top of Washed Sand Elv.= 100'	
	Ground at	Existing house	100.6'	Elv. Of Sewer pipe at Cabin Elv.= 99'	

Please show all that apply (Existing)

Wells within 100ft. Of Drain field.

Water lines within 10 ft. of Drain field.

Drain field Areas:

Please Draw to Scale with North to Top or Left Side of Page:

Disturbed/Compacted Areas

Component Location

OHW ordinary high water

Lot Easements

Access Route for Tank Maintenance

Property Lines

Structures

Setbacks

Mound Design Notes - Aitkin county

Property Owner: Terrence Huth

Date: 6/11/20

Site Address: 41539 290th PL. Aitkin MN 56431

PID: 08-0-042100

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

- 1 This is a type III mound , (Soil Separation 10") sized for a 2 bedroom system.
- 2 Existing Shallow well location is West of House. Proposed deep well is East of house.
- 3 Install a diversion ditch around NE side of mound from ditch in woods.
- 4 The house is gravity flow from North side of house, install clean-out near house.
- 5 Install 1650 Jacobson compartment tank for gravity flow from house.
Install tank low enough for drainback from mound to pump tank.
- 6 The berm slopes are at 4:1. The South berm is 102 ft from shallow well.
Mound location is on contour.
- 7 Elevation contour of rock bed upslope edge is 97' .
The area size of the rock bed is 10' x 25' . Absorption area is 25' x 45.8'.
Sand absorption area is 13.3 ft. up slope + 10 ft. rockbed + 22.5 downslope = approx. 45.8 ft. wide sand base.
Berms are 17ft. Upslope, 28ft. Down slope, 10ft. Rock bed = approx. 55ft. Wide.
Overall mound size is approx. 55' wide x 69' long and approx. 5' high. End berms are 17ft. Wide.
- 8 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.
The top of the sand and bottom of rock bed is Elv. 100'.
- 9 It is important that the soils do not get compacted, and that clean Washed sand is used.
- 10 The Jacobson 1650 tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 52 gallons per dose, 4.1 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 min. 4" above grade)
Install a 2" supply pipe from pump 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" perf holes spaced 3 ft. on center.**
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
- 12 Install Event counter on Effluent pump, calibrate pump and give gallons per event to Owner.
- 13 Designer does not guarantee or warranty any Type III systems.
Designed to Aitkin Co. and MPCA recommendations and requirements.



Designer Signature

Brummer Septic LLC.
Design Company

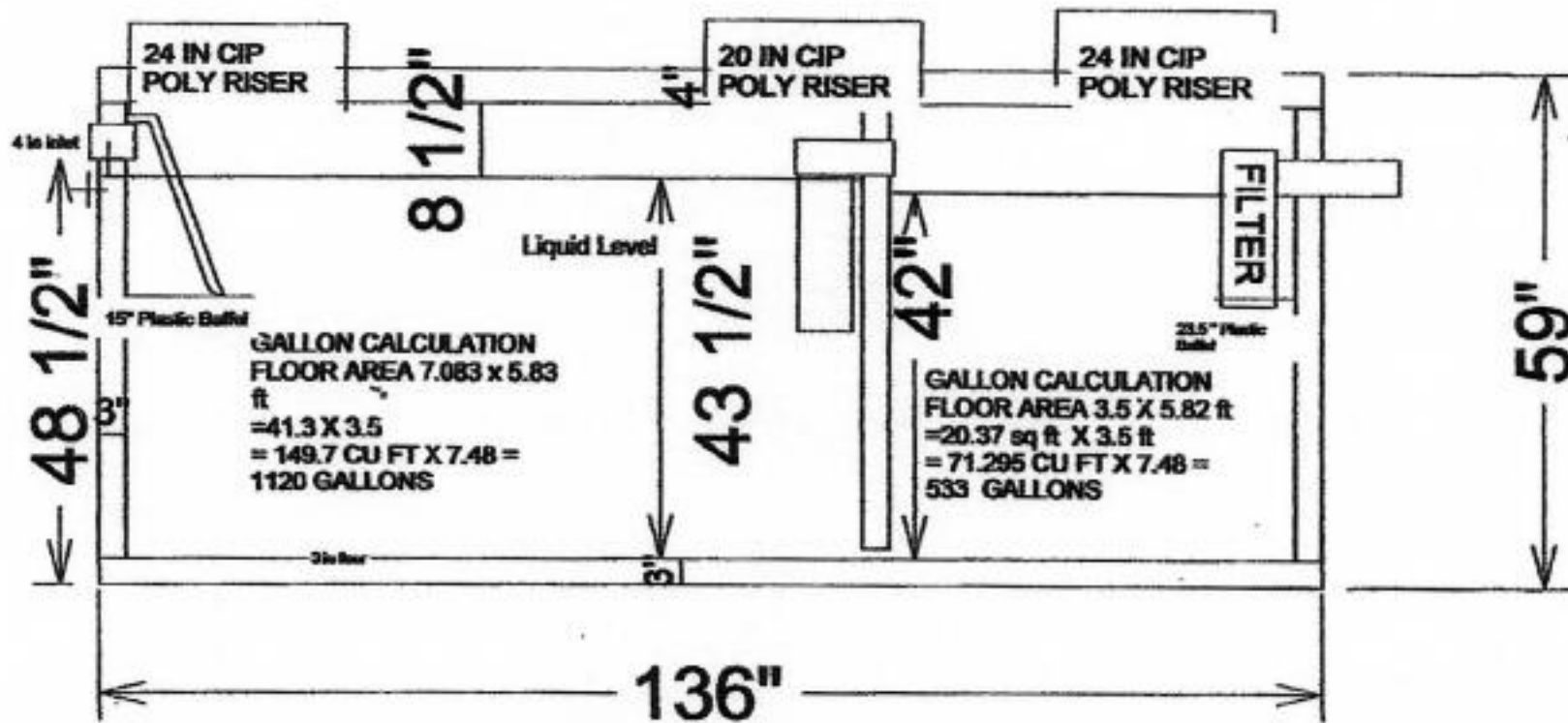
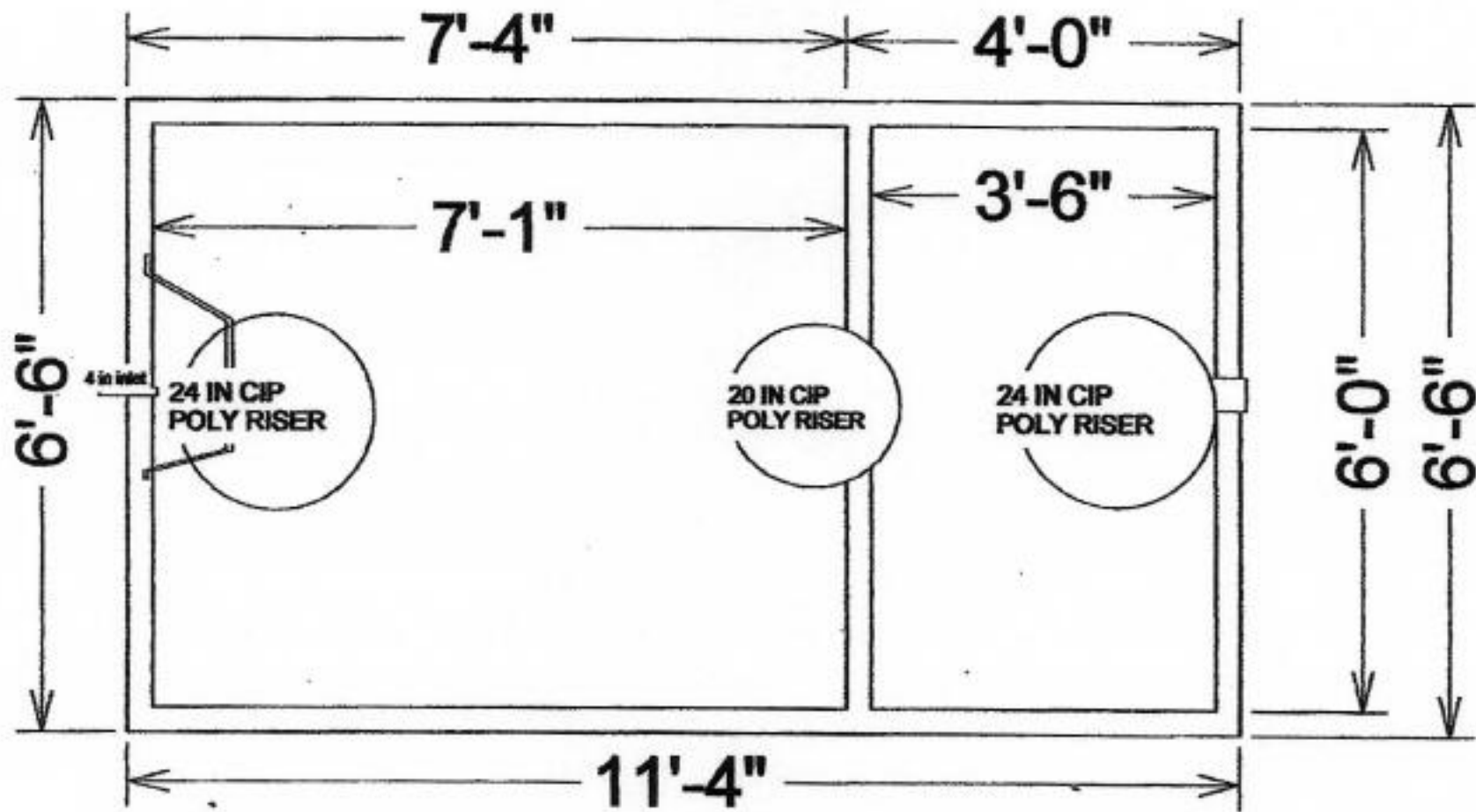
L-1347
License#

This System will require an Aitkin Co. Operator permit, annual inspection

Owner and installer are responsible for owner knowing how system is maintained.

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: 08-0-042100

General Information

Township/City:	FLEMING TWP	
Taxpayer Name:	HUTH, TERRENCE & SINDALA	
Taxpayer Address:	427 3RD AVE W	
	SHAKOPEE MN 55379	
Property Address:	41539 290th Pl	
Township:	48	Lake Number: 0
Range:	25	Lake Name:
Section:	26	Acres: 30.00
Green Acres:	No	School District: 1.00
Plat:		
Brief Legal Description:	S 3/4 OF SE-NE	

Tax Information

Class Code 1:	Non-Comm Seasonal Residential Recreational
Class Code 2:	Rural Vacant Land
Class Code 3:	Unclassified
Homestead:	Non Homestead
Assessment Year:	2020

Estimated Land Value:	\$44,500.00
Estimated Building Value:	\$25,300.00
Estimated Total Value:	<u>\$69,800.00</u>
Prior Year Total Taxable Value:	\$63,800.00
Current Year Net Tax (Specials Not Included):	\$468.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$0.00
Delinquent Taxes:	No

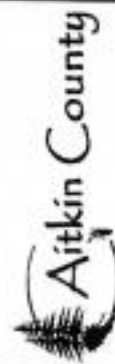
* For more information on delinquent taxes, please call the Aitkin County Treasurer's Office at 218-927-7325.

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

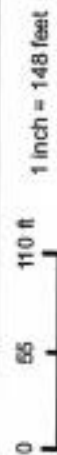


These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

Huth



Date: 6/11/2020



Soil Map—Aitkin County, Minnesota
(Huth)



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

6/11/2020
Page 1 of 3

Aitkin County, Minnesota

204B—Branstad loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: gjfx
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: All areas are prime farmland

Map Unit Composition

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

Description of Branstad

Setting

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

Typical profile

A - 0 to 2 inches: loam
E, Bw, E', E/B - 2 to 17 inches: fine sandy loam
Bt1, Bt2 - 17 to 36 inches: loam
Bt3 - 36 to 43 inches: loam
C - 43 to 60 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Sloping Upland, Neutral (G090AN002MN)
Hydric soil rating: No

Minor Components

Alstad and similar soils

Percent of map unit: 3 percent

Hydric soil rating: No

Cutaway and similar soils

Percent of map unit: 3 percent

Hydric soil rating: No

Cromwell and similar soils

Percent of map unit: 3 percent

Hydric soil rating: No

Hamre and similar soils

Percent of map unit: 2 percent

Landform: Depressions

Hydric soil rating: Yes

Talmoon and similar soils

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

Seelyeville and similar soils

Percent of map unit: 2 percent

Landform: Bogs

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 20, Sep 16, 2019