

# Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>12/22/2018</u>	Sec / Twp / Rng	<u>S-29, T-45, R-27</u>
Parcel ID	<u>11-1-082900</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Peter Capistrant</u>	Owners address (if different)	
Property Address:	<u>44370 232nd Ln. Aitkin MN 56431</u>		<u>22848 170th St.</u>
City / State / Zip:			<u>Big Lake MN 55309</u>

Flow Information and Waste Type / Strength			
Estimated Design flow	<u>900</u>	Anticipated Waste strength	<input type="checkbox"/> Hi Strength <input checked="" type="checkbox"/> Domestic
Comments: 4 Bedroom house septic sized at 6 bedroom Mound installed on Back Lot Parcel ID. 11-0-064601 System will have Effluent Filter & Alarm on Septic Tank Outlet Aitkin Co Requires some form of water meter on system with vacation rental Will install Event counter on Effluent Pump System will require an Operating permit because of 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	Existing deep well	
Easements on lot located (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Drainfield w/in 100' of residential well	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Property lines determined (see site map) By Others	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in 200' of transient noncommunity water supply (TNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Req'd setbacks determined (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in an inner wellhead mgmt zone (CWS/NTNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Utilities located & identified (gopher state one call)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Buried water supply pipe w/in 50' of system	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Access for system maintenance (shown on site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site located in Shoreland (w/in 1000' of lake, 300' of river)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Soil treatment area protected	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site map prepared with previous items included	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Construction related issues	<u>Will have to Cross under 232nd Street with sewer pipe.</u> <u>Insulate pipe under road and mark both end at road right of way</u>				

**Soil Information**

		<b>Evidence of site:</b>	
		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 <sup>2</sup> )	<u>0.60</u>	Percolation rate (if applicable)	_____
Depth/elev to SHWT	<u>16"</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>( + 24" )</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

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Owner Information	
Property Owner / project: <u>Peter Capistrant</u>	Date <u>12/22/2018</u>
Property Address / PID: <u>44370 232nd Ln. Aitkin MN 56431</u>	

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent mat'l's:	<input checked="" type="checkbox"/> Till <input type="checkbox"/> Outwash <input type="checkbox"/> Lacustrine <input type="checkbox"/> Alluvium <input type="checkbox"/> Organic <input type="checkbox"/> Bedrock
landscape position:	<input type="checkbox"/> Summit <input type="checkbox"/> Shoulder <input type="checkbox"/> Side slope <input type="checkbox"/> Toe slope
soil survey map units:	<u>504B &amp; 625</u> slope <u>6</u> %    direction- <u>East</u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit	Elevation <u>97.8'</u>		Depth to SHWT <u>20"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 8	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
8 - 16	Loam	<35	10YR4/4		Loose	Loose	Granular
16 - 20	Loam	<35	10YR5/4		Loose	Loose	Granular
20 - 24	Loam	<35	10YR5/4	7.5YR5/4	Loose	Loose	Granular
		<35			Loose	Loose	Granular

Comments:

44370 232nd Ln. Aitkin MN 56431

**Soil Log #2**

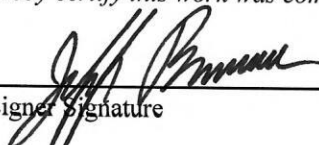
<input checked="" type="checkbox"/> Boring		<input type="checkbox"/> Pit		Elevation <u>97.4'</u>		Depth to SHWT <u>18"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 8	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
8 - 14	Loam	<35	10YR4/4		Loose	Loose	Granular
14 - 18	Loam	<35	10YR5/4		Loose	Loose	Granular
18 - 22	Loam	<35	10YR5/4	7.5YR5/4	Loose	Loose	Granular
		<35			Loose	Loose	Granular

44370 232nd Ln. Aitkin MN 56431

**Soil Log #3**

<input checked="" type="checkbox"/> Boring		<input type="checkbox"/> Pit		Elevation <u>97.5'</u>		Depth to SHWT <u>16"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 8	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
8 - 14	Loam	<35	10YR4/4		Loose	Loose	Granular
14-16	Loam	<35	10YR5/4		Loose	Loose	Granular
16-20	Loam	<35	10YR5/4	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

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: Peter Capistrant

Date: 12/22/2018

Site Address: 44370 232nd Ln. Aitkin MN 56431

PID: 11-1-082900

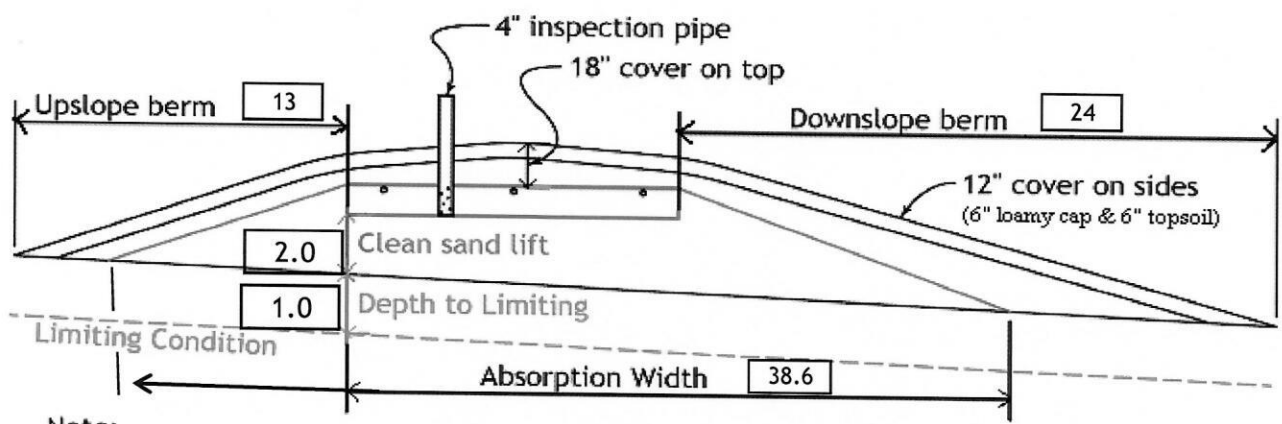
Comments: Back Lot 11-0-064601

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

- 1)  bedroom    Type  Residential    System    760 Pump tank near Mound
- 2)  GPD design flow    1650 Compartment Septic Tank
- 3)  Garbage disposal or pumped to septic    1000 gal. lift tank near house with event counter
- 4)  Gal Septic tank (code minimum)     Gal Septic tank (design size / LUG req'd)  
Tank options: Effluent filter & alarm req'd
- 5)  GPD/ft<sup>2</sup> mound sand loading rate    contour loading rate of  req's a min     ft. long rockbed
- 6)  ft rockbed width     ft rockbed length
- 7)  ft lateral spacing     ft perforation spacing    (maximum of 3 for both)  
 manifold connection
- 8)  laterals     feet long     perfs / lateral     perfs total  
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9)  inch perfs at  feet residual head    gives  gpm flow rate per perforation  
for this perf size & spacing, & pipe size on line 12, max perfs/lateral = , line #8 must be less --> OK
- 10)  doses per day    (4 minimum)
- 11)  gallons per dose    (treatment volume)    1.25 5x
- 12)  inch diameter laterals must be used to meet "4x pipe volume" requirement    2.00 3x
- 13)  feet of  inch supply line    leads to  gallons of drainback volume  
(Tip: "top feed" manifold to control the drainback)
- 14)  gallons TOTAL pump out volume (treatment + drainback)
- 15)  feet vertical lift from pump to mound laterals, leads to a:
- 16)  GPM @  feet of head, Pump requirement    (note: >50gpm may require an extra 3-6' of head)
- 17)  gal Dose tank (code minimum)     gal Dose tank (design size / LUG req'd)    at  gpi  
leads to a
- 18)  inch swing on Demand float,    or timed dosing of  min ON    (confirm pump rate with drawdown  
(this delivers Average flow, =70% of Peak design flow)     hrs OFF    test and adjust as necessary)
- 19)  inches from bottom of tank to "Pump OFF" float
- 20)  inches from bottom of tank to "Pump ON" float, or     inches to "Timer ON" float if time dosed
- 21)  inches from bottom of tank to "Hi Level" float, or     inches to "Hi Level" float if time dosed
- 22)  gallons reserve capacity    (after High Level Alarm is activated)

760 gallon Tank  
1000 gallon Tank

- 23) 0.60 gpd/ft<sup>2</sup> 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) 6 percent site slope (0-20% range) 6 (% 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):  
 38.6 greater of: absorption width OR sand slope
- 28) 0.0 ft. upslope and sideslope sand upslope 9.7  
 10.0 ft. Downslope sand down slope 18.9
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) 4:1 upslope ratio 13 ft. upslope berm
- 30) 4:1 sideslope 18 ft. sideslope berms
- 31) 4:1 downslope 24 ft. downslope berm
- 32) Overall Dimensions: 10.0 ft. wide by ~~XX~~0 ft. long Rock bed 38 ft  
 2 Rockbeds 47 ft. wide by ~~XX~~ ft. long Mound footprint 125 ft approx.



**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 75.0 ft. by 9 inches under pipe, plus 20% gives 34 yd<sup>3</sup> or \*1.4= 48 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)  
 55.4 up + 130.0 downslope + 19.2 ends + 63.9 under rock = 322 yd<sup>3</sup> or \*1.4= 451 ton  
 plus 20%
- 35) Loamy Cap:  
 43 ft. by 107 ft. 6" deep, plus 20% gives 103 yd<sup>3</sup> or \*1.4= 144 ton
- 36) Topsoil:  
 47 ft. by 111 ft. 6" deep, plus 20% gives 116 yd<sup>3</sup> or \*1.4= 162 ton

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

Brummer Septic LLC.
 

 L-1347
 

 12/22/2018

Designer Signature
Company
License#
Date

# Installer Summary

1650 gallon Septic tank (minimum)

Tank options: Effluent filter & alarm req'd

1000 gallon Dose tank (minimum)

1000 gal. lift tank near house with event counter  
at 36.78 gpi

42 GPM @ 27 ft. of head, Pump required

3.6 inch swing on Demand float which translates to roughly 2.8 inches of float tether length

if time dosing is required --> 3.2 minutes ON time & 4.5 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

120 ft. of 2.0 inch supply line with middle feed manifold connection

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

24 inch, or 2.0 ft. Sand Lift Mound

10.0 ft. wide by 75.0 ft. long Rock bed

6 laterals 1.50 inch diameter 36.5 ft. long 3.0 ft. lateral spacing

7/32 inch perfs 3.0 ft. perforation spacing

Yes Effluent filter & alarm

6 clean out & valve box assemblies

38.6 ft. Total sand ABSORPTION width (minimum)

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

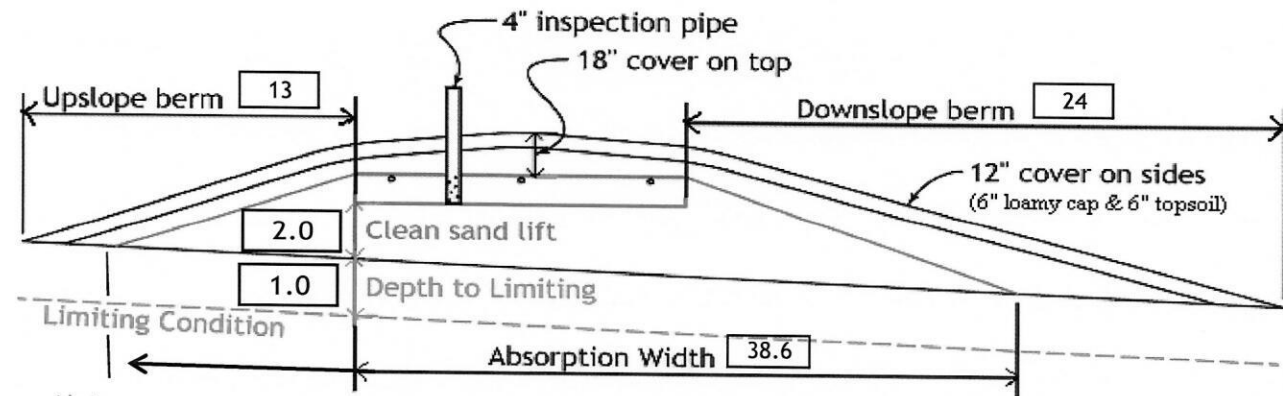
18.9 ft. Downslope (sand beyond rockbed, minimum)

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

4:1 upslope ratio 13 ft. upslope berm

4:1 sideslope 18 ft. sideslope berms

4:1 downslope 24 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:	34.0 yd <sup>3</sup> or *1.4=	48 ton	9 inches under pipe
Mound Sand:	322 yd <sup>3</sup> or *1.4=	451 ton	calculation based on 3:1/4:1 slope from top of rockbe
Loamy Cap:	103 yd <sup>3</sup> or *1.4=	144 ton	6" deep
Topsoil:	116 yd <sup>3</sup> or *1.4=	162 ton	6" deep

## INSPECTOR CHECKLIST - mound

443/U 232nd Ln. 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 set 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 \_\_\_\_\_ 1650 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 \_\_\_\_\_ 1000 gallons
- dose pump \_\_\_\_\_ 42 gpm 27 head VERIFY PUMP CURVE 3.2 min ON 4.5 hr OFF
- float setting drop 3.6 inches at 36.8 gpi "DESIGNED" 2.8 inches approx float tether length  
133.0 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 75.0
- Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
  
- Absorption Sand beyond rock 9.7 upslope 18.9 downslope
- Bermed topsoil beyond rockbed 13 upslope 18 sideslope 24 downslope
  
- cover depth of 12-18"+ VERIFY
- 6 laterals (1-2' from edge of rock)
- 1.50 inch pipe size (Sch40 pipe & fittings)
- 3.0 ft lateral spacing
  
- 7/32 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

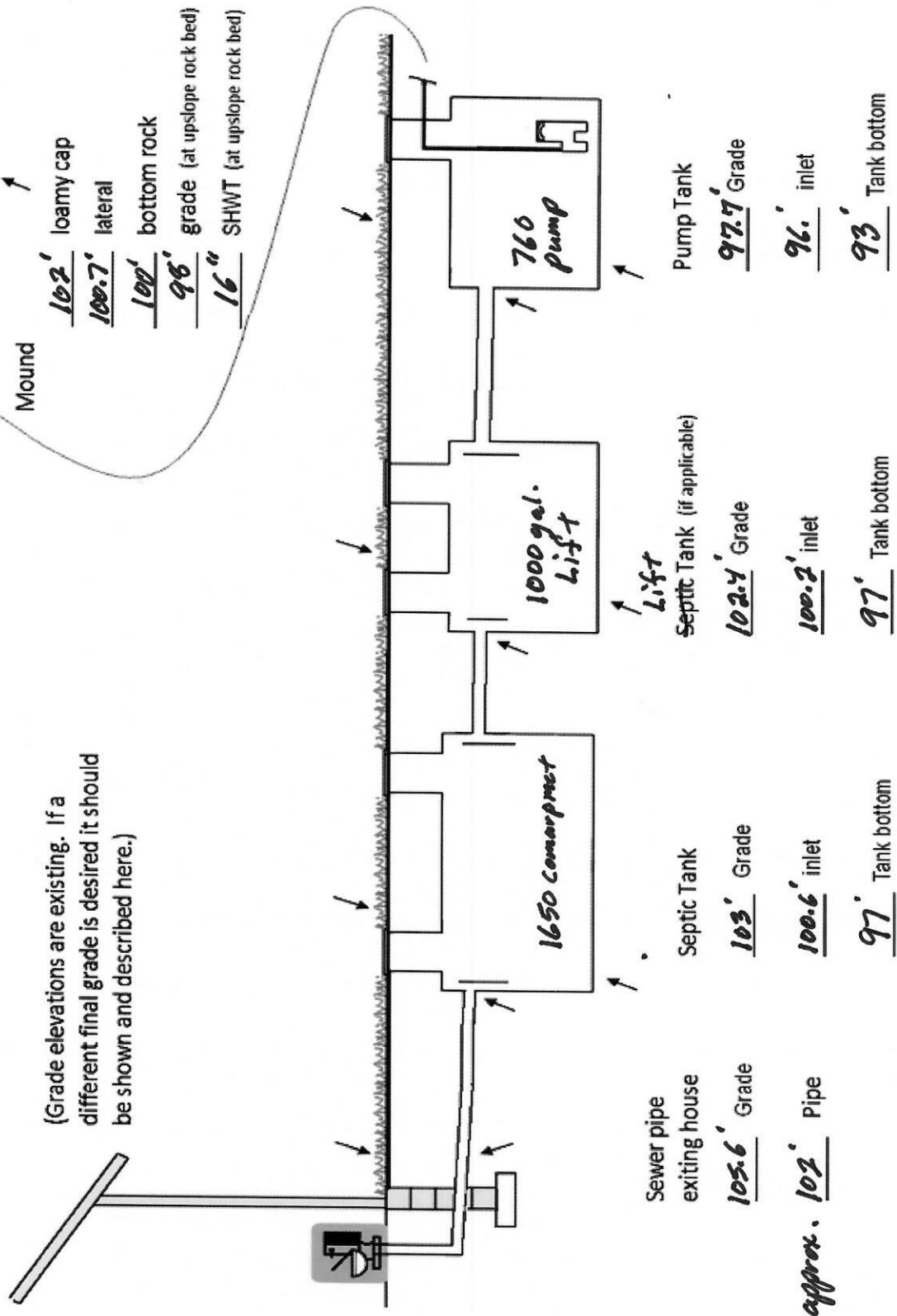
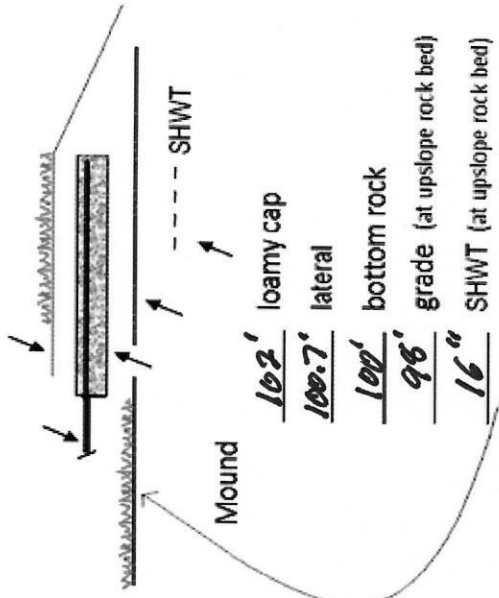
*1650 compartment Tank Effluent Filter & alarm*  
*1000 Lift Tank (20 GPM at 15ft head) + alarm & Event Counter*  
*760 Pump Tank (42 GPM at 27ft head) & alarm*



# 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.)



# Mound Design Notes - Aitkin county Page 1

Property Owner: Peter Capistrant

Date: 12/22/18

Site Address: 44370 232nd Ln. Aitkin MN 56431

PID: 11-1-082900

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

- 1 This is a type I mound for a 4 bedroom House, Septic sized for 6 bedrooms. Existing deep well location is North of House. Existing Deep Well North of House. ( 730528) Existing mound will be abandon, it is location South side of 232nd St.
- 2 Existing tank has crack in bottom ( pump, collapse, and remove) and mound fails soil separation.
- 3 East property line has Steel Stakes on line, Identified by Owner. West property line Identified by Owner.
  
- 4 New 1650 tank will be between house and Existing tank. The new mound will be located on South Lot Parcel 11-0-064601. Install a 1000 gallon lift tank near 1650 septic tank. Install a pump with 20 GPM at 15 ft. Head in this tank.
- 5 Near the 1000 gallon tank install pump control panel capable of 3 alarms and an event counter on the pump in the 1000 gallon Lift Tank. The pump for the mound will be in the 760 Gallon Pump Tank ( 42GPM at 27 Ft. Head). Effluent will gravity flow from the 1650 septic tank to the 1000 Lift tank. The 1000 gallon Lift tank will have event counter on the pump ( 20 GPM at 15 ft. head) and an Electric alarm on this Lift tank. The control panel for this pump will be capable of an event counter on this pump and three alarms, ( Effluent filter alarm, Lift pump alarm, Pump tank alarm).
- 6 Installer to calibrate event counter, ( either gallons per event, or gallons per minute of run time ). Please note this number. Events are to be based on 8 events per day at 113 gallons of pump out per event.
- 7 The reason for the 1000 gallon Lift tank is to surge the effluent to the 760 pump tank to decrease chances of freezing under Road, ( If it is left to gravity flow the Cold Effluent will trickle under road way).
- 8 The 1000 gallon pump will lift effluent up into a 4" sewer pipe that will gravity flow to the 760 Pump Tank. Install 4" clean-outs at beginning and every 100 feet there after to the 760 gallon Pump tank.
- 9 Bench Mark Elevation is a nail on a tree near NW corner of mound area. SE corner of shed's concrete sidewalk is Elv.= 104.6'.
  
- 10 Install Jacobson 1650 Compartment tank for gravity flow from house, ( Existing inlet Elv.= 100.4'). Install Effluent filter and alarm in 2nd compartment of 1650 tank. Center line of road Elv.= 101.9'. Install 1000 gallon pump tank for gravity flow from septic tank.
- 11 Insulate pipe under 232nd Street.. Mark were 4" sewer pipe crosses road ( Both sides of road ). 4" sewer pipe will gravity flow approx. 270 ft. to 760 gal. pump tank. Grade at pump tank location is Approx. Elv.= 97.7'.
  
- 12 Effluent will be pump up to a split rockbed ( Built on same contour). Split so downslope absorption area does not overlap.
- 13 Elevation contour of rock bed upslope edge is 98'.  
The area size of the rockbeds are each 10' x 38' . Absorption area is 38' x 38.6'.  
Sand absorption area is 9.7 ft. up slope + 10 ft. rockbed + 18.9 downslope = approx. 38.6 ft. wide sand base.  
Berms are 13ft. Upslope, 24ft. Down slope, 10ft. Rock bed = approx. 47ft. Wide.  
Overall mound size is approx. 47' wide x 124' long and approx. 4' high.
  
- 14 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.



## Mound Design Notes - Aitkin county Page 2

Property Owner: Peter Capistrant

Date: 12/22/18

Site Address: 44370 232nd Ln. Aitkin MN 56431

PID: 11-1-082900

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

15 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.

16 The Jacobson 760 pump tank pump will be 42 GPM at 27 ft. head.. Install the pump for 8 demand doses per day. approx. 133 gallons per dose, 5.3 inches of tank level. Install alarm at 3 inches from pump on level. Install all the tank's manholes, inspection pipes and clean-outs to grade or above, insulate top of tanks. Install a 2" supply pipe from pump tank to center manifold in rock bed, install so pipe drains back to tank. Install 1.5" laterals with 9" of rock under them. Install clean-outs at far end of laterals.

17 **Drill 7/32" holes for Perf sizing, 36" on centers.**

Install inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.

18 Installer will pressure test and squirt height laterals when finished.

**System will have Effluent Filter and Alarm on 1650 Compartment Septic Tank**

**System will have Event Counter and Alarm on Pump in 1000 gal. Lift tank. ( Aitkin Co. Operating Permit )**

**System will have an Alarm on the pump in the 760 Pump tank**

Designed to Aitkin Co. and MPCA recommendations and requirements.

  
Designer Signature

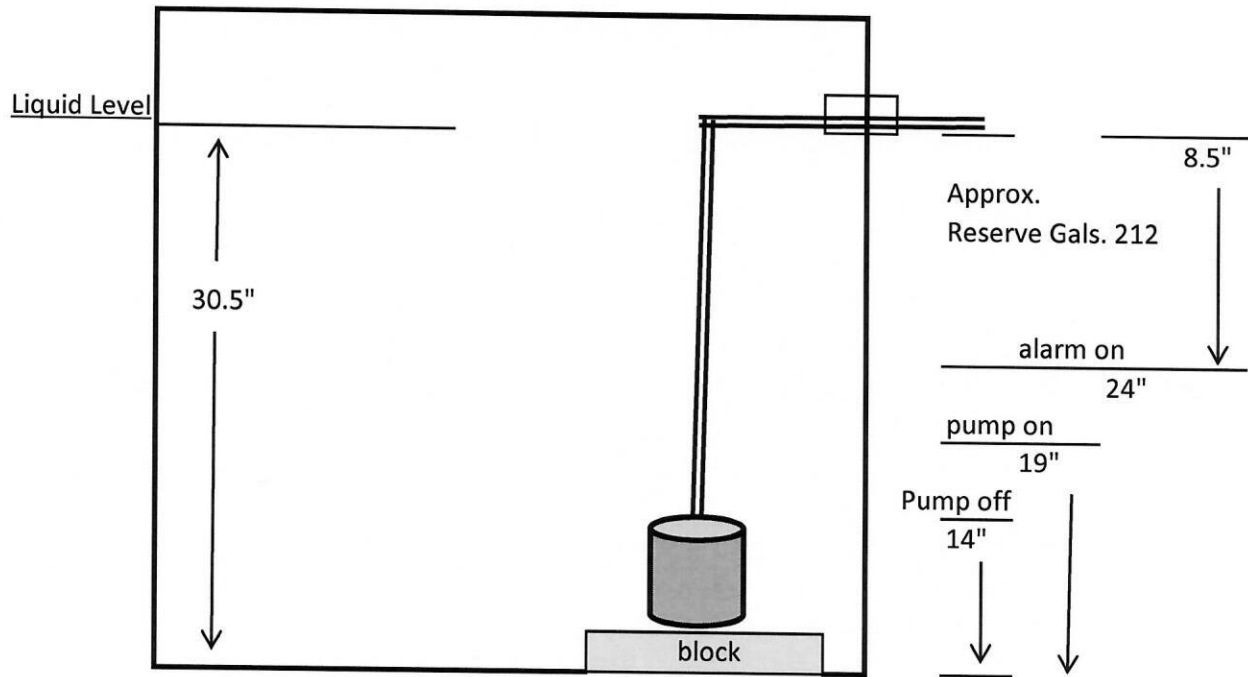
Brummer Septic LLC.  
Design Company

L-1347  
License#

**Peter Capistrant**

Parcel ID. 11-1-082900

Tank Mfg. Jacobson Pump Tank 760 gallons  
Tank Size: MFG. 24.91 gals. Per inch



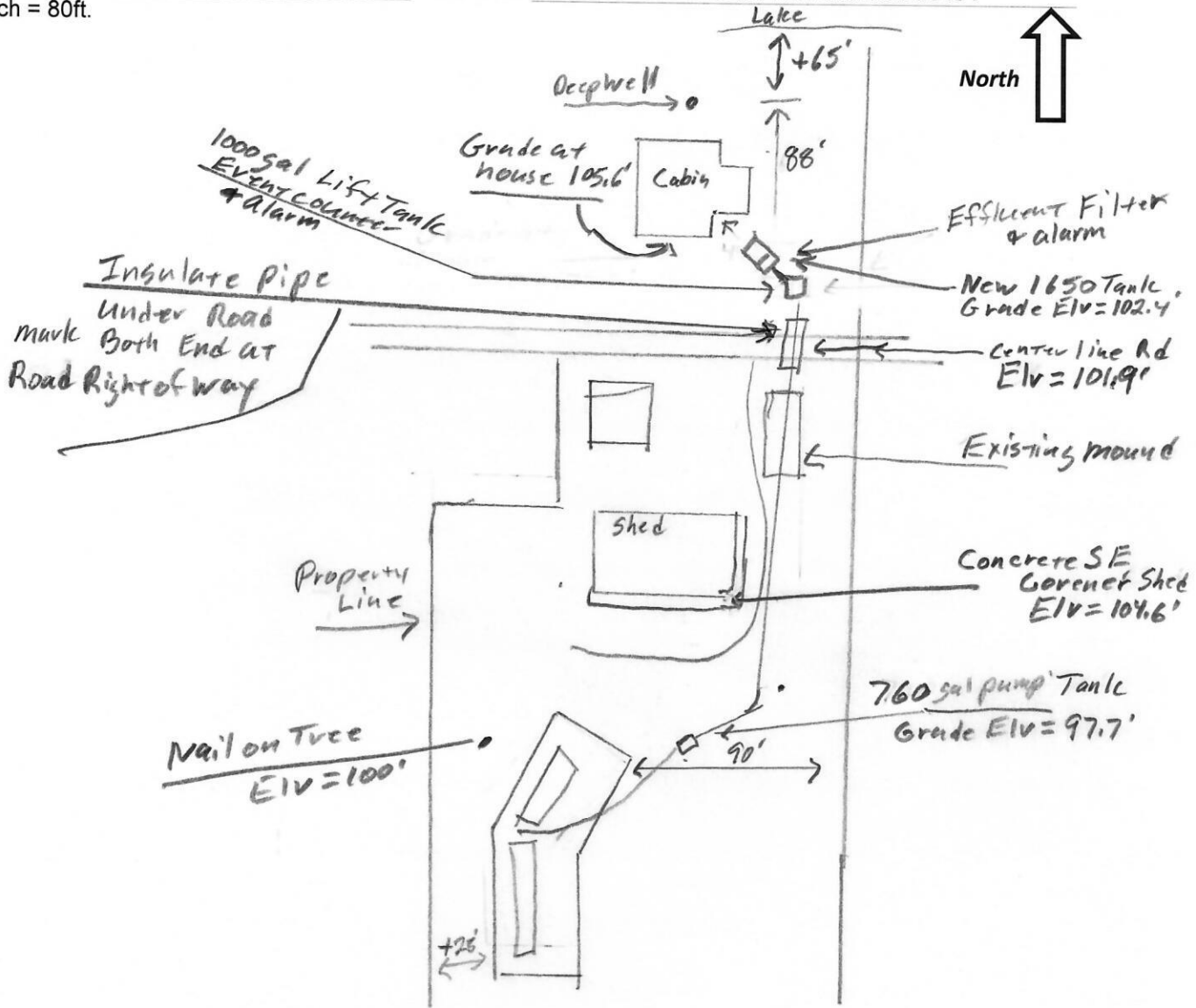
Assumes 10" pump

Pump out dose at 5.3" = (113 gals. dose + 20 drain back) = 133 pump out gals.

900 gpd ÷ 8 = 113 gals. Per Dose

# { Design Drawing }

Property Owner: Peter Capistrant Date: 12/22/18 Designer's Initials: JB  
 Parcel ID. Number: 11-1-082900 Address: 44370 232nd Ln. Aitkin MN 56431  
 one Inch = 80ft.



Center line of street by tank Elv. = 101.9'  
 Existing Septic Tank inlet Elv. = 100.4'

	Surface/ SHWT	Nail on tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	97.8'/20"	Bench Mark	100'	Septic	Upslope Edge Rockbed Elv. = 98'
Soil Bore 2	97.4'/18"	Elv. existing	102.4'	Pump	Bottom of Rockbed Elv. = 100'
Soil Bore 3	97.5'/16"	Ground Elv. Tank	97.7'		Top of Washed Sand Elv. = 100'
	Ground at	Existing house	105.6'		SE Corner of shed Elv. = 104.6'

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

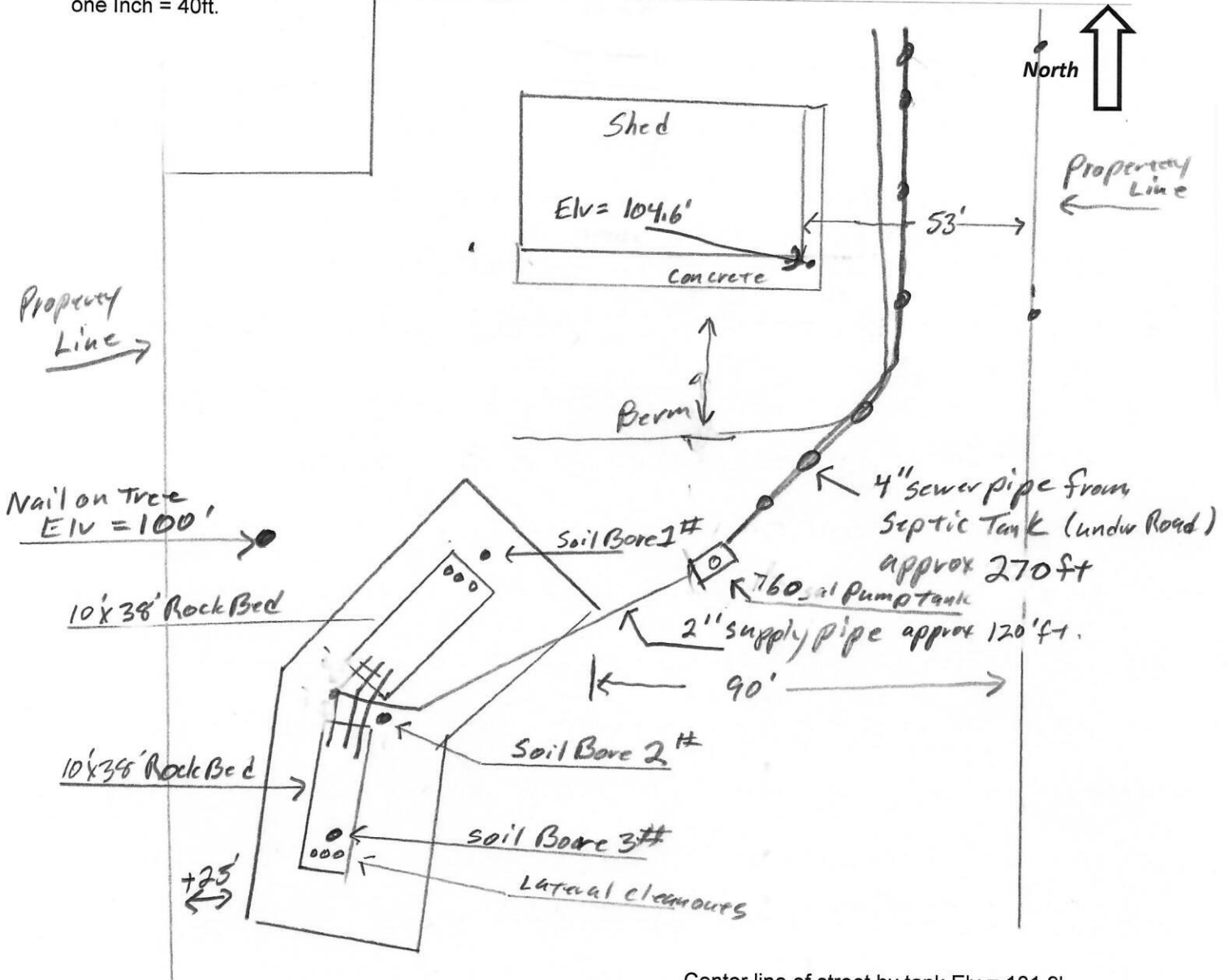
Structures

Lot Easements

Setbacks

# { Design Drawing }

Property Owner: Peter Capistrant Date: 12/22/18 Designer's Initials: JB  
 Parcel ID. Number: 11-1-082900 Address: 44370 232nd Ln. Aitkin MN 56431  
 one Inch = 40ft.



Center line of street by tank Elv. = 101.9'  
 Existing Septic Tank inlet Elv. = 100.4'

Surface/ SHWT	Nail on tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	97.8'/20"	Bench Mark	100'	Upslope Edge Rockbed Elv. = 98'
Soil Bore 2	97.4'/18"	Elv. existing	102.4'	Bottom of Rockbed Elv. = 100'
Soil Bore 3	97.5'/16"	Ground Elv. Tank	97.7'	Top of Washed Sand Elv. = 100'
	Ground at	Existing house	105.6'	SE Corner of shed Elv. = 104.6'

Please show all that apply ( Existing )

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

- Wells within 100ft. Of Drain field.
- Water lines within 10 ft. of Drain field.
- Drain field Areas:

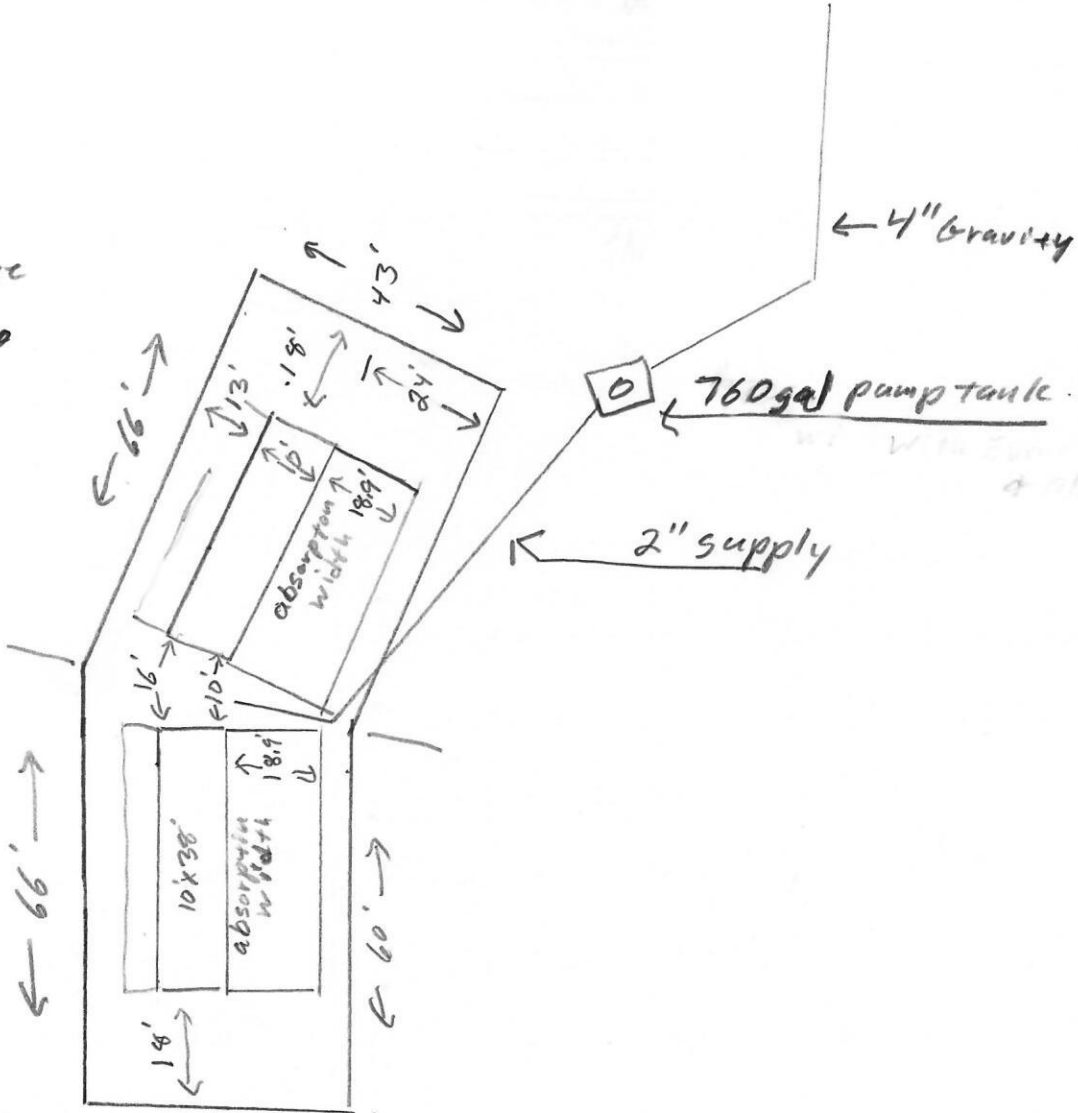
- Disturbed/Compacted Areas
- Component Location
- OHW ordinary high water
- Lot Easements
- Access Route for Tank Maintenance
- Property Lines
- Structures
- Setbacks

# { Design Drawing }

Property Owner: Peter Capistrant Date: 12/22/18 Designer's Initials: JB  
 Parcel ID. Number: 11-1-082900 Address: 44370 232nd Ln. Aitkin MN 56431  
 one inch = ft.



Nail on tree  
 Elv = 100'  
 → ○



Center line of street by tank Elv. = 101.9'  
 Existing Septic Tank inlet Elv. = 100.4'

	Surface/ SHWT	Nail on tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	97.8'/20"	Bench Mark	100'	Septic	Upslope Edge Rockbed Elv. = 98'
Soil Bore 2	97.4'/18"	Elv. existing	102.4'	Pump	Bottom of Rockbed Elv. = 100'
Soil Bore 3	97.5'/16"	Ground Elv. Tank	97.7'		Top of Washed Sand Elv. = 100'
	Ground at	Existing house	105.6'		SE Corner of shed Elv. = 104.6'

Please show all that apply ( Existing )

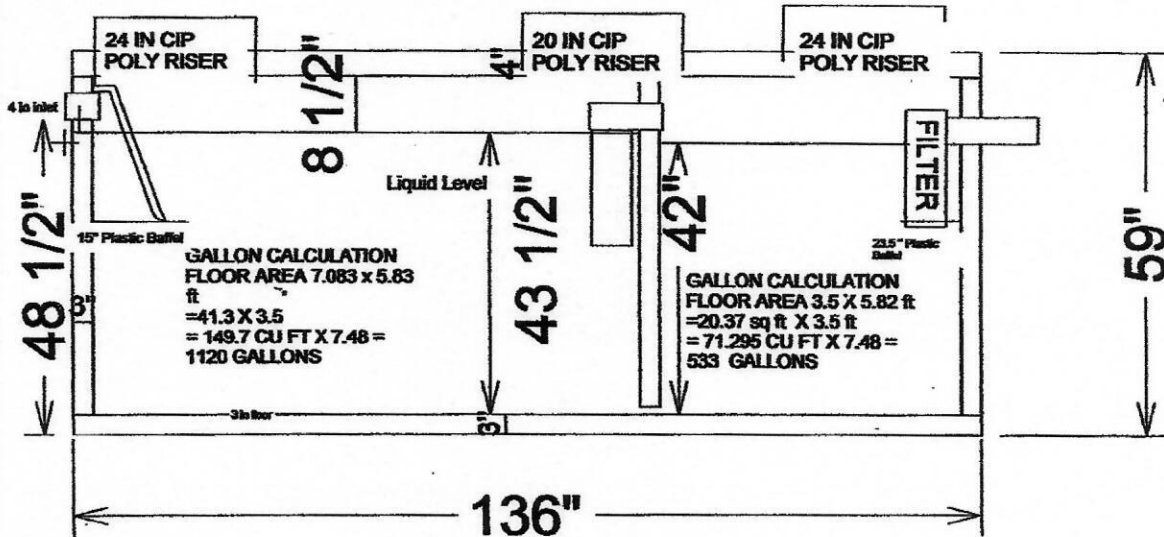
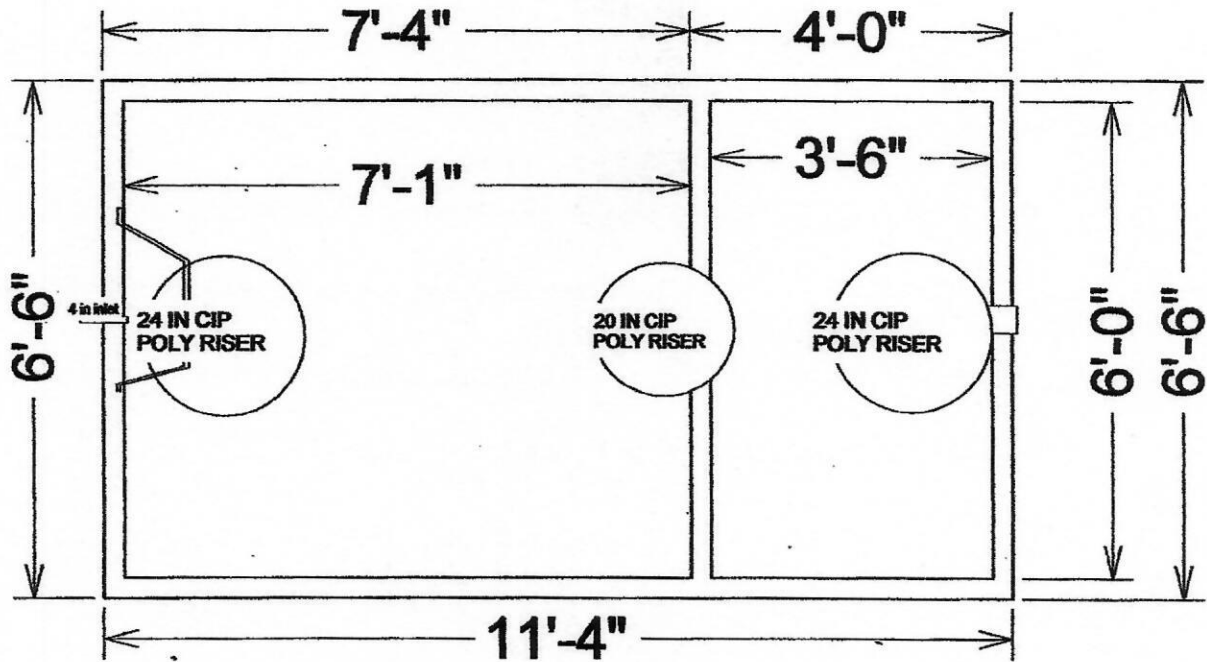
Please Draw to Scale with North to Top or Left Side of Page:

- Wells within 100ft. Of Drain field.
- Water lines within 10 ft. of Drain field.
- Drain field Areas:

- |                           |                                   |
|---------------------------|-----------------------------------|
| Disturbed/Compacted Areas | Access Route for Tank Maintenance |
| Component Location        | Property Lines                    |
| OHW ordinary high water   | Structures                        |
| Lot Easements             | Setbacks                          |

# 1650 Gallon 2 Compartment Septic Tank

## TOP VIEW



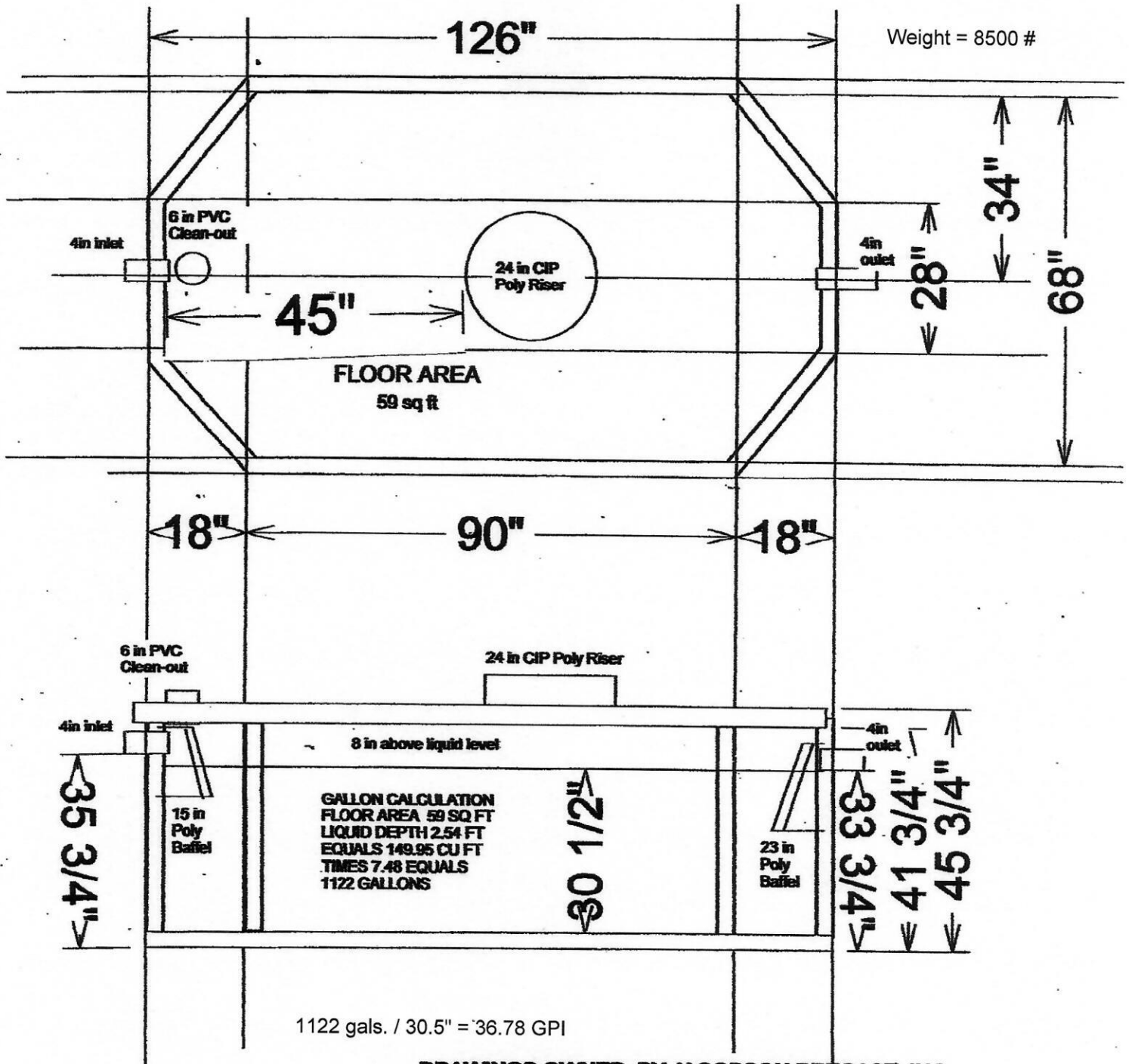
$533 / 42" = 12.69 \text{ GPI}$

## SIDE VIEW

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

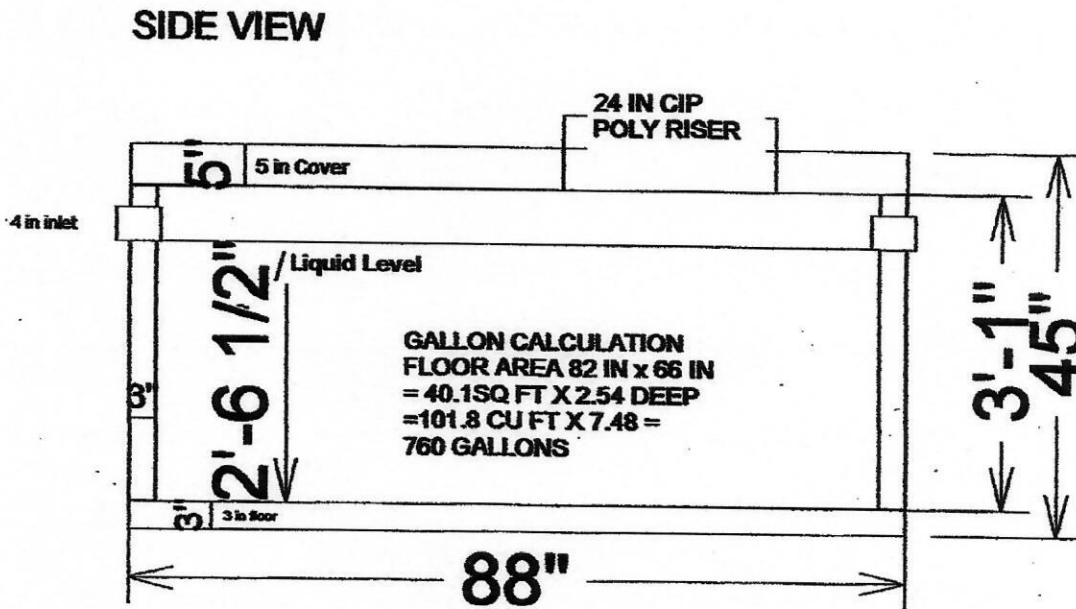
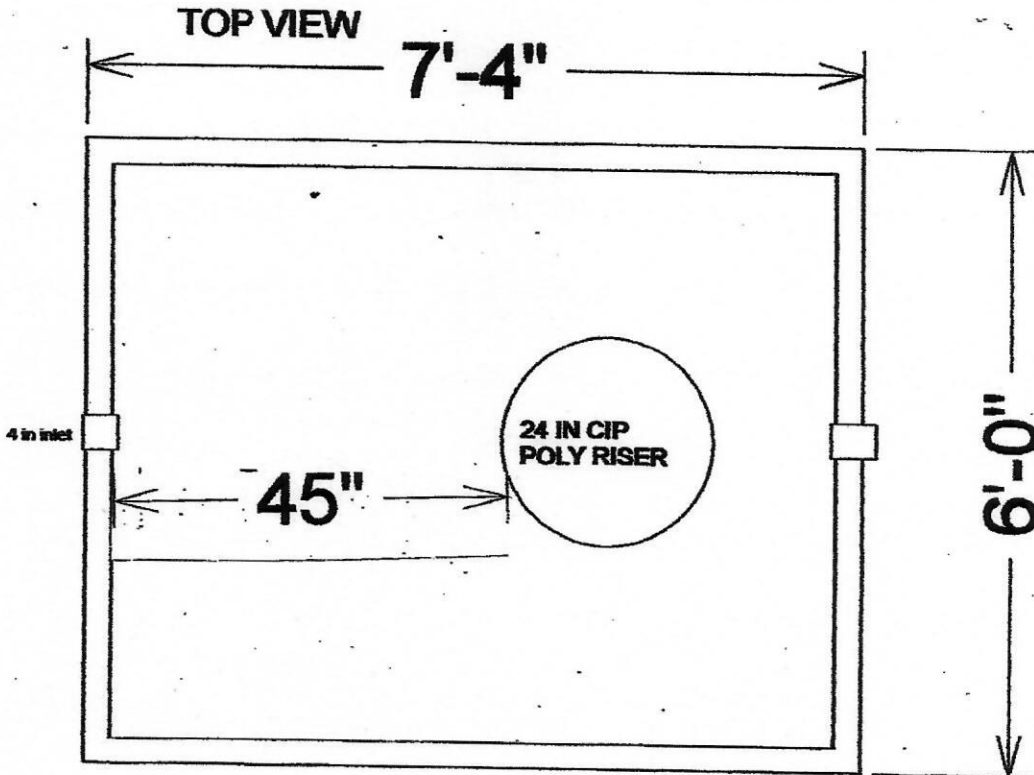


# 1000 GALLON SINGLE COMPARTMENT PUMP TANK



**DRAWINGS OWNED BY JACOBSON PRECAST, INC**  
36641 Hwy 169, Aitkin, Mn 56431  
Do not use without permission of the Owner

# 760 GALLON SINGLE COMPARTMENT PUMP TANK



760 gal. / 30.5" = 24.91 GPI

**DRAWINGS OWNED BY JACOBSON PRECAST, INC.**  
 36637 Hwy 169, Aitkin, Mn 56431  
 do not use without permission of the Owner



# Detailed Parcel Report

Parcel Number: 11-1-082801

## General Information

*west lake lot*

Township/City: HAZELTON TWP  
Taxpayer Name: CAPISTRANT, PETER & BARBARA TRUSTEE  
Taxpayer Address: 22848 170TH STREET  
BIG LAKE MN 55309  
Property Address:  
Township: 45 Lake Number: 1015700  
Range: 27 Lake Name: BIG PINE LAKE (Hazelton)  
Section: 29 Acres: 0.00  
Green Acres: No School District: 1.00  
Plat: WILDWOOD  
Brief Legal Description: LOT 11 LESS W 26 FT

## Tax Information

Class Code 1: Non-Comm Seasonal Residential Recreational  
Class Code 2: Unclassified  
Class Code 3: Unclassified  
Homestead: Non Homestead  
Assessment Year: 2018

Estimated Land Value:	\$35,700.00
Estimated Building Value:	\$0.00
Estimated Total Value:	<u>\$35,700.00</u>
Prior Year Total Taxable Value:	\$35,700.00
Current Year Net Tax (Specials Not Included):	\$258.00
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: 11-1-082900

## General Information *East lake lot.*

<b>Township/City:</b>	HAZELTON TWP	<b>Lake Number:</b>	1015700
<b>Taxpayer Name:</b>	CAPISTRANT, PETER & BARBARA TRUSTEE		
<b>Taxpayer Address:</b>	22848 170TH STREET		
	BIG LAKE MN 55309		
<b>Property Address:</b>	44370 232ND LANE		
<b>Township:</b>	45	<b>Lake Name:</b>	BIG PINE LAKE (Hazelton)
<b>Range:</b>	27	<b>Acres:</b>	0.00
<b>Section:</b>	29	<b>School District:</b>	1.00
<b>Green Acres:</b>	No		
<b>Plat:</b>	WILDWOOD		
<b>Brief Legal Description:</b>	LOT 12		

## Tax Information

<b>Class Code 1:</b>	Non-Comm Seasonal Residential Recreational
<b>Class Code 2:</b>	Unclassified
<b>Class Code 3:</b>	Unclassified
<b>Homestead:</b>	Non Homestead
<b>Assessment Year:</b>	2018

<b>Estimated Land Value:</b>	\$80,000.00
<b>Estimated Building Value:</b>	\$153,200.00
<b>Estimated Total Value:</b>	<u>\$233,200.00</u>
<b>Prior Year Total Taxable Value:</b>	\$224,700.00
<b>Current Year Net Tax (Specials Not Included):</b>	\$1,808.00
<b>Total Special Assessments:</b>	\$0.00
<b>**Current Year Balance Not Including Penalty:</b>	\$0.00
<b>Delinquent Taxes:</b>	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: 11-0-064601

## General Information

*Back lot.*

Township/City: HAZELTON TWP  
 Taxpayer Name: CAPISTRANT, PETER & BARBARA TRUSTEE  
 Taxpayer Address: 22848 170TH STREET  
 BIG LAKE MN 55309  
 Property Address:  
 Township: 45 Lake Number: 1915700  
 Range: 27 Lake Name: BIG PINE - HAZELTON - BACK LOT  
 Section: 29 Acres: 2.94  
 Green Acres: No School District: 1.00  
 Plat:  
 Brief Legal Description: 2.70 AC OF LOT 7 &.24 AC OF SW SE IN DOC 432225

## Tax Information

Class Code 1: Non-Comm Seasonal Residential Recreational  
 Class Code 2: Unclassified  
 Class Code 3: Unclassified  
 Homestead: Non Homestead  
 Assessment Year: 2018

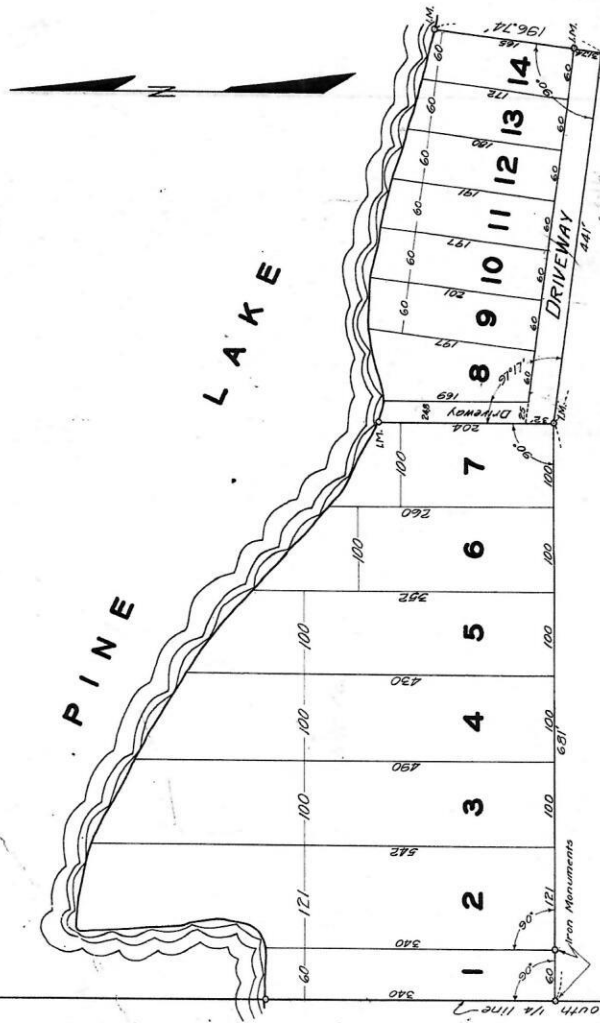
Estimated Land Value:	\$9,800.00
Estimated Building Value:	\$38,900.00
Estimated Total Value:	<u>\$48,700.00</u>
Prior Year Total Taxable Value:	\$45,100.00
Current Year Net Tax (Specials Not Included):	\$326.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$0.00
Delinquent 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.

**WILDWOOD  
AITKIN COUNTY**

Scale 1"=100' Glen G. Bickley C.E.



Govt Lot 7

Know all men by these presents that we, William E. Price and Cora E. Price his wife, the owners and proprietors of the following described property in Government Lot Seven (7) in Section Twenty-nine (29), Township Forty-five (45) North, Range Twenty-seven (27) West of the Fourth (4th) Principal Meridian, County of Aitkin, State of Minnesota, have caused a part of said Govt Lot Seven (7) as hereinafter described to be surveyed and planted and to be hereafter known as "WILDWOOD".

That part of Govt Lot 7, of Section 29, T.45N., R.27W., described as follows: beginning at a point on the North 1/4 line of said Section 29, 51x hundred and thirty-seven (377) feet, four tenths (0.4) feet North of the South West corner of said Lot 7, thence East 51x hundred eighty-one (581) feet, thence South Eighty-two (82) degrees and four hundred forty-one (441) feet, thence North Seventy-six (76) degrees and seventeen (17) minutes East, distance of One hundred ninety-six (196.74) feet more or less to the shore of Pine Lake, thence in a Westerly direction along said lake shore to the West line of said (thence) South along said West line a distance of Three hundred forty(340) feet more or less to the point of beginning, containing eight and four tenths (8.4) acres more or less, and as shown by the annexed plat, and we do hereby dedicate and donate to the public use forever the driveway as shown on the plat.

In testimony whereof we have hereunto set our hands and seals this 26th day of January AD. 1924.

In presence of:  
 William E. Price seal  
 Cora E. Price seal

On this 26th day of January AD. 1924, before me a Notary Public within and for said County and State personally appeared William E. Price and Cora E. Price, known to be the persons described in and who executed the foregoing instrument and acknowledged that they executed the same as their free act and deed.

My commission expires \_\_\_\_\_  
 Notary Public Aitkin Co. Minn.

I hereby certify that I have surveyed and plotted the land described on the plat as "Wildwood"; that this plat is a correct representation of said survey; that all distances are correctly shown on the plat in feet and decimals of a foot; that the instruments for the general survey shown in the volume as shown on the plat; that the outside boundary lines are correctly designated on the plat and that there are no wet lands or public highways to be designated on said plat other than shown thereon.

I hereby certify that taxes for the year 1923 on the lands described within are paid.  
 Glen G. Bickley  
 County Treasurer

The above certificate subscribed and sworn to before me this 26th day of January AD. 1924.

Glen G. Bickley  
 County Treasurer, Aitkin County Minnesota.

The above plat of "WILDWOOD" was accepted and approved by the County Commissioners of Aitkin County at a meeting held this 26th day of January AD. 1924.  
 Attest:  
 Glen G. Bickley  
 County Treasurer

71791

REGISTRAR'S OFFICE,  
 Aitkin County, Minn.  
 I hereby certify that the within instrument was filed in this office for record on the 26th day of January AD. 1924.  
 Registrar  
 Deputy

S.W. cor. Govt Lot 7.

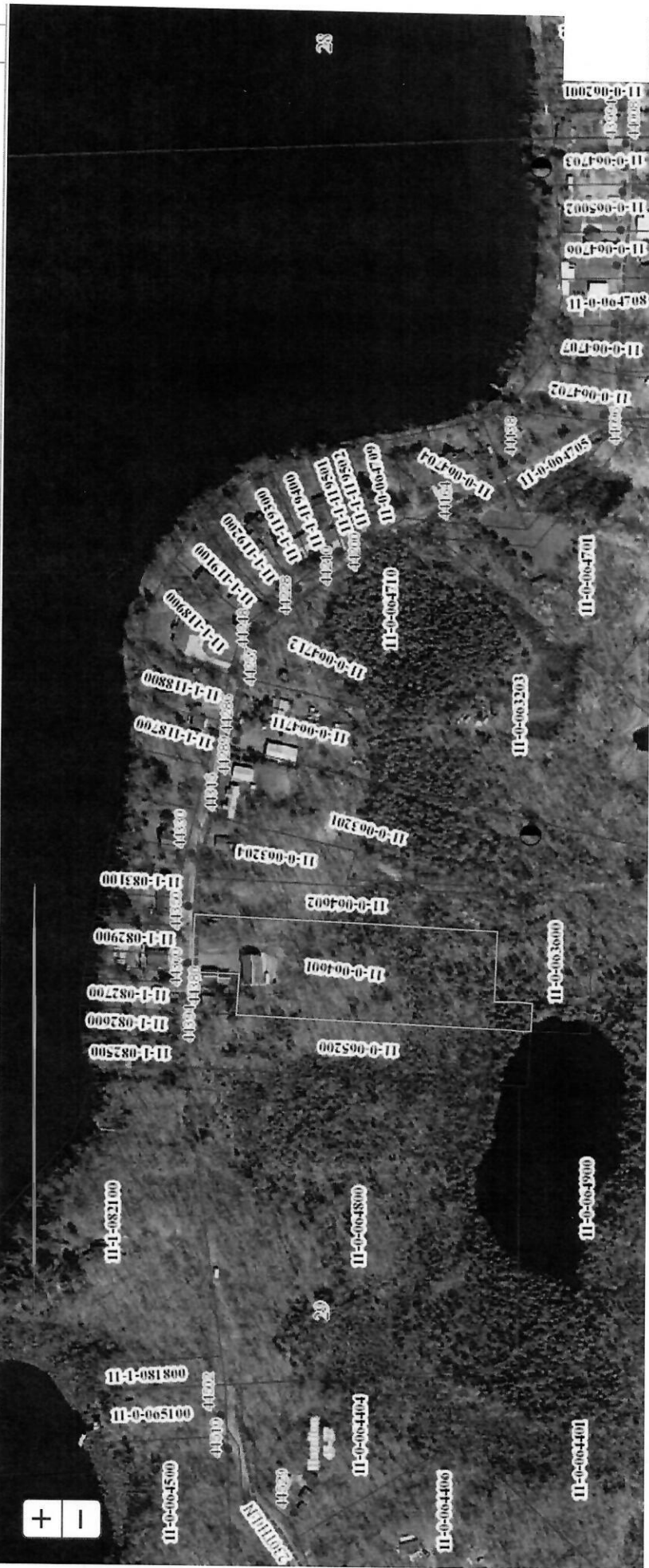


Wm. J. Janssen  
 Chairman Board of County Commissioners

**Aitkin County**

Zoom In Zoom Out Pan Zoom Prev Zoom Next Zoom Select Zoom Extent Clear Search Identify Legend Results View Buffer X/Y Map Tips Draw Measure Print Map

Navigation Tools





# Minnesota Well Index

## General Information

Unique Well ID:	<b>730528</b>	Well Name:	<b>CAPISTRANT, PETE</b>	County:	<b>Aitkin</b>	Aquifer:	<b>Quat. buried artes. aquifer</b>
Well Elevation (msl in feet):	<b>1278</b>	Drilled Depth (ft):	<b>101</b>	Well Completed (ft):	<b>101</b>	Date Drilled:	<b>11/02/2005</b>
Township:	<b>45</b>	Range:	<b>27</b>	Dir:	<b>W</b>	Section:	<b>29</b>
Subsection:	<b>DBACDA</b>	Use:	<b>domestic</b>	Well Status:	<b>Active</b>	Depth To Bedrock:	
Driller:	<b>Blue Water Wells</b>	Entry Date:		Update Date:	<b>08/09/2017</b>		

## Related Resources:

[Go to MN Well Index Map](#)  
 [Well Log Report](#)  
 [Scanned Record\(s\)](#)  
 [Stratigraphy Report](#)

[More Details](#)  
[Stratigraphy](#)  
[Address](#)  
[Chemical Data](#)  
[Construction](#)  
[Pump Test](#)  
[Static Water](#)  
[Comments](#)

[Location Changes](#)  
[Overview Map](#)

Description	From(ft)	To(ft)	Color	Hardness	Lith Primary	Lith Secondary	Interpretation
CLAY	0	6	RED	MEDIUM	CLAY		clay-red
GRAVEL (COARSE)	16	16	BROWN		GRVL		gravel (+larger)-brown
CLAY	16	32	BROWN	MEDIUM	CLAY		clay-brown
SANDY CLAY	32	80	BROWN	MEDIUM	CLAY		clay+sand-brown
SAND	80	101	BROWN	MEDIUM	SAND		sand-brown



Search			
Map Unit Legend			
Aitkin County, Minnesota (MN001)			
Aitkin County, Minnesota (MN001)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
504B	Duluth fine sandy loam, 1 to 6 percent slopes	0.1	9.6%
546	Lupton muck	0.1	6.1%
625	Sandwick loamy sand	0.9	84.3%
<b>Totals for Area of Interest</b>		<b>1.1</b>	<b>100.0%</b>



## Aitkin County, Minnesota

### 504B—Duluth fine sandy loam, 1 to 6 percent slopes

#### Map Unit Setting

*National map unit symbol:* gjh7  
*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

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

#### Description of Duluth

##### Setting

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

##### Typical profile

*A - 0 to 3 inches:* fine sandy loam  
*E,Bw,2BE,2Bt - 3 to 41 inches:* clay loam  
*2C - 41 to 60 inches:* loam

##### Properties and qualities

*Slope:* 1 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 low to moderately high (0.06 to 0.60 in/hr)  
*Depth to water table:* About 13 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 5 percent  
*Available water storage in profile:* High (about 10.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C/D  
*Forage suitability group:* Sloping Upland, Acid (G090AN006MN)  
*Hydric soil rating:* No

### Minor Components

#### **Blackhoof and similar soils**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Mahtowa and similar soils**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Rifle and similar soils**

*Percent of map unit:* 3 percent

*Landform:* Bogs

*Hydric soil rating:* Yes

#### **Cromwell and similar soils**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Cutaway and similar soils**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Dusler and similar soils**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 19, Sep 12, 2018

## Aitkin County, Minnesota

### 625—Sandwich loamy sand

#### Map Unit Setting

*National map unit symbol:* gjj4  
*Elevation:* 980 to 1,310 feet  
*Mean annual precipitation:* 20 to 27 inches  
*Mean annual air temperature:* 37 to 41 degrees F  
*Frost-free period:* 95 to 105 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

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

#### Description of Sandwich

##### Setting

*Landform:* Swales on moraines  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Parent material:* Sandy outwash over loamy till

##### Typical profile

*E - 0 to 6 inches:* loamy sand  
*Bw,E' - 6 to 34 inches:* sand  
*2E/B,2Btg - 34 to 55 inches:* loam  
*2Cg - 55 to 60 inches:* loam

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* About 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 20 percent  
*Available water storage in profile:* Low (about 5.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* C/D  
*Forage suitability group:* Level Swale, Low AWC, Acid  
(G088XN007MN)  
*Hydric soil rating:* Yes

### 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

#### **Dusler and similar soils**

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

#### **Northwood and similar soils**

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

#### **Stuntz 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 19, Sep 12, 2018