

Subsurface Sewage Treatment System Management Plan

Property Owner: Kitty Smasal Phone: 715-410-9214 Date: 5/24/2022
Mailing Address: 43609 320th Pl. City: Aitkin MN 56431 Zip: _____
Site Address: _____ City: _____ Zip: _____

This management plan will identify the operation and maintenance activities necessary to ensure long-term performance of your septic system. Some of these activities must be performed by you, the homeowner. Other tasks must be performed by a licensed septic service provider.

System Designer: check every 36 months.
Local Government: check every 36 months.
State Requirement: check every 36 months.

My System needs to be checked every 36 months.

(State requirements are based on MN Rules Chapter 7080.2450, Subp. 2 & 3)

Homeowner Management Tasks

Leaks – Check (look, listen) for leaks in toilets and dripping faucets. Repair leaks promptly.

Surfacing sewage – Regularly check for wet or spongy soil around your soil treatment area.

Effluent filter – *Inspect and clean twice a year or more.*

Owner ----> *Alarms* – Alarm signals when there is a problem. Contact a service provider any time an alarm signals.

Event counter or water meter – Record your water use.

-recommend meter readings be conducted (circle one): DAILY WEEKLY MONTHLY

Professional Management Tasks

- Check to make sure tank is not leaking
- Check and clean the in-tank effluent filter
- Check the sludge/scum layer levels in all septic tanks
- Recommend if tank should be pumped
- Check inlet and outlet baffles
- Check the drainfield effluent levels in the rock layer
- Check the pump and alarm system functions
- Check wiring for corrosion and function
- Check dissolved oxygen and effluent temperature in tank
- Provide homeowner with list of results and any action to be taken
- Flush and clean laterals if cleanouts exist

"I understand it is my responsibility to properly operate and maintain the sewage treatment system on this property, utilizing the Management Plan. If requirements in the Management Plan are not met, I will promptly notify the permitting authority and take necessary corrective actions. If I have a new system, I agree to adequately protect the reserve area for future use as a soil treatment system."

Property Owner Signature: Kitty Smasal Date: 6/23/22

Designer Signature: Jeff Brummer Date: 9/1/2021

See Reverse Side for Management Log

Maintenance Log

Activity	Date Accomplished
Check frequently:	
Leaks: check for plumbing leaks	
Soil treatment area check for surfacing	
Lint filter: check, clean if needed	
Effluent screen: if owner-maintained	
Water usage rate (monitor frequency _____)	
Check annually:	
Caps: inspect, replace if needed	
Sludge & Scum/Pump	
Inlet & Outlet baffles	
Drainfield effluent leaks	
Pump, alarm, wiring	
Flush & clean laterals if cleanouts exists	
Other: _____	
Other: _____	

Notes: Check alarm at least once a year. Pump Tanks at least once every 3 years.

Mow Drainfield Area at least once a year to keep brush and trees from growing

No Traffic on drainfield area, No Snowmobiles, No ATV's, No Parking.

Mitigation/corrective action plan: _____

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>5/23/2022</u>	Sec / Twp / Rng	<u>S-16, T-48, R-25</u>
Parcel ID	<u>08-1-065400</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Kitty Smasal</u> <u>715-410-9214</u>	Owners address (if different)	
Property Address:	<u>43609 320th Pl. Aitkin MN 56431</u>		
City / State / Zip:	_____		

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:		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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Well casing depth	Exsiting well to be sealed New Deep well drilled to meet setbacks	
Easements on lot located (see site map)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Drainfield w/in 100' of residential well	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Property lines determined (see site map) Surveyed	<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	_____				

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>0.78</u>		Percolation rate (if applicable) _____
Depth/elev to SHWT	<u>78"</u>		Flooding or run-on potential <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (comments)
Depth to system bottom maximum (or elev minimum)	<u>36"</u>		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)	<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>Kitty Smasal</u>	Date <u>5/23/2022</u>
Property Address / PID: <u>43609 320th Pl. 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 checked="" type="checkbox"/> Side slope <input type="checkbox"/> Toe slope
soil survey map units:	<u>870C</u> slope <u>2</u> % direction- <u>NW</u>

Soil Log #1							
		<input type="checkbox"/> Boring	<input checked="" type="checkbox"/> Pit	Elevation <u>99.9'</u>	Depth to SHWT <u>78"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 23	Sandy Loam	<35	10YR4/4		Loose	Loose	Granular
23 - 40	Coarse Sandy Loam	<35	7.5YR5/3		Loose	Loose	Granular
40 - 78	Med Sand	<35	10YR6/4		Loose	Loose	Granular
78				As deep as mini exc would dig			
Comments:							

43609 320th Pl. Aitkin MN 56431

Soil Log #2

		<input type="checkbox"/> Boring	<input checked="" type="checkbox"/> Pit	Elevation <u>98.6'</u>	Depth to SHWT <u>78"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 23	Sandy Loam	<35	10YR4/4		Loose	Loose	Granular
23 - 37	Coarse Sandy Loam	<35	7.5YR5/3		Loose	Loose	Granular
37 - 78	Med Sand	<35	10YR6/4		Loose	Loose	Granular
78				As deep as mini exc would dig			

43609 320th Pl. Aitkin MN 56431

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 #

Pressure Bed Design

Property Owner: Kitty Smasal Date: 5/24/2022
 Site Address: 43609 320th Pl. Aitkin MN 56431 PID: 08-1-065400
 Comments: Odd Shaped Pressure Bed

instructions: = req'd input = input or default = calculated field *** = installer info

- 1) bedroom Type Residential System
- 2) GPD design flow
- 3) Garbage disposal or pumped to septic
Install Jacobson 1650 Compartment tank
- 4) *** Gallon septic tank (minimum) Tank options: none
- 5) GPD/ft² Soil Loading Rate ft² bed req'd, or ft² LUG minimum
(must match soil boring log)
- 6) *** ft desired bed width, leads to a ft bed length **See Notes on Pressure Bed Size**
(25' maximum)
- 7) *** ft lateral spacing ft perforation spacing (maximum 3 for both)
See Notes on lateral lengths end feed manifold connection
- 8) *** laterals feet long perfs / lateral perfs total
(1/2 perf means the first perf starts at the middle feed manifold)
- 9) *** inch perfs at feet residual head gives gpm flow rate per perforation
(If bed has > 1' of cover, increase residual head for cleanout req's)
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) 1.50 inch diameter laterals (or smaller) will meet "5x pipe volume"
*** inch diameter laterals (or smaller) must be used to meet "4x pipe volume" requirement
2.00 inch diameter laterals (or smaller) will meet "3x pipe volume"
- 13) *** feet of inch supply line leads to gallons of drainback volume
("top feed" to control the drainback)
- 14) gallons TOTAL pump out volume (treatment + drainback)
- 15) feet vertical lift from pump to dispersal area, leads to a
- 16) *** GPM @ feet of head, Pump requirement
(>50 gpm may require additional 3-6' head allowance for discharge assy)

- 17) *** 533 gal Dose tank (minimum) at 12.69 gpi
- 18) *** 6.2 inch swing on Demand float, or Timed dosing of 3.4 min ON (confirm pump rate with drawdown test and adjust as necessary)
(<100% of design flow requires a larger OFF time) 5.9 hrs OFF
- 19) 12 inches of from bottom of tank to "pump OFF" float, and/or to cover pump
- 20) *** 18 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
- 21) *** 21 inches from bottom of tank to "Hi Level" float (add 5-15 inches if Time Dosed)
- 22) 267 gallons reserve capacity (after High Level Alarm is activated)
- 23) 78 inches, or 6.50 ft. to Redox or other limiting condition (This must match the soil boring log)
- 24) 36 inches, or 3.00 ft. of vertical separation required
leads to bottom of rock no more than:
- 25) *** 42 inches, or 3.5 ft. Below existing grade **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 26) *** 9 inches of rock below the pipe
3 inches of rock to cover the pipe
- 27) Overall Dimensions: 15.0 ft. wide by 25.7 ft. long Pressure Bed
- 28) *** Rock Bed materials:
15 ft. by 25.7 ft. by 12 inches total, plus 20% gives 18 yd³ or *1.4= 25 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#

5/24/2022
Date

Installer Summary

gallon Septic tank (minimum) none Install Jacobson 1650

gallon Dose tank (minimum) at gpi

GPM @ ft. of head, Pump required

inch swing on Demand float or minutes ON time & hours OFF time

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

inches from bottom of tank to "Hi Level Alarm" float

ft. of inch supply line with manifold connection

See Notes on Size and Shape of pressure bed

laterals inch diameter feet long ft lateral spacing

inch perfs ft perforation spacing

Effluent filter & alarm

clean out & valve box assembly

Pressure Bed: See Notes on size and shape of pressure bed

ft. wide by ft. Long

Bottom of rock no more than:

inches, or ft. Below existing grade

inches of rock below the pipe

Overall Dimensions: ft. wide by ft. long Pressure Bed

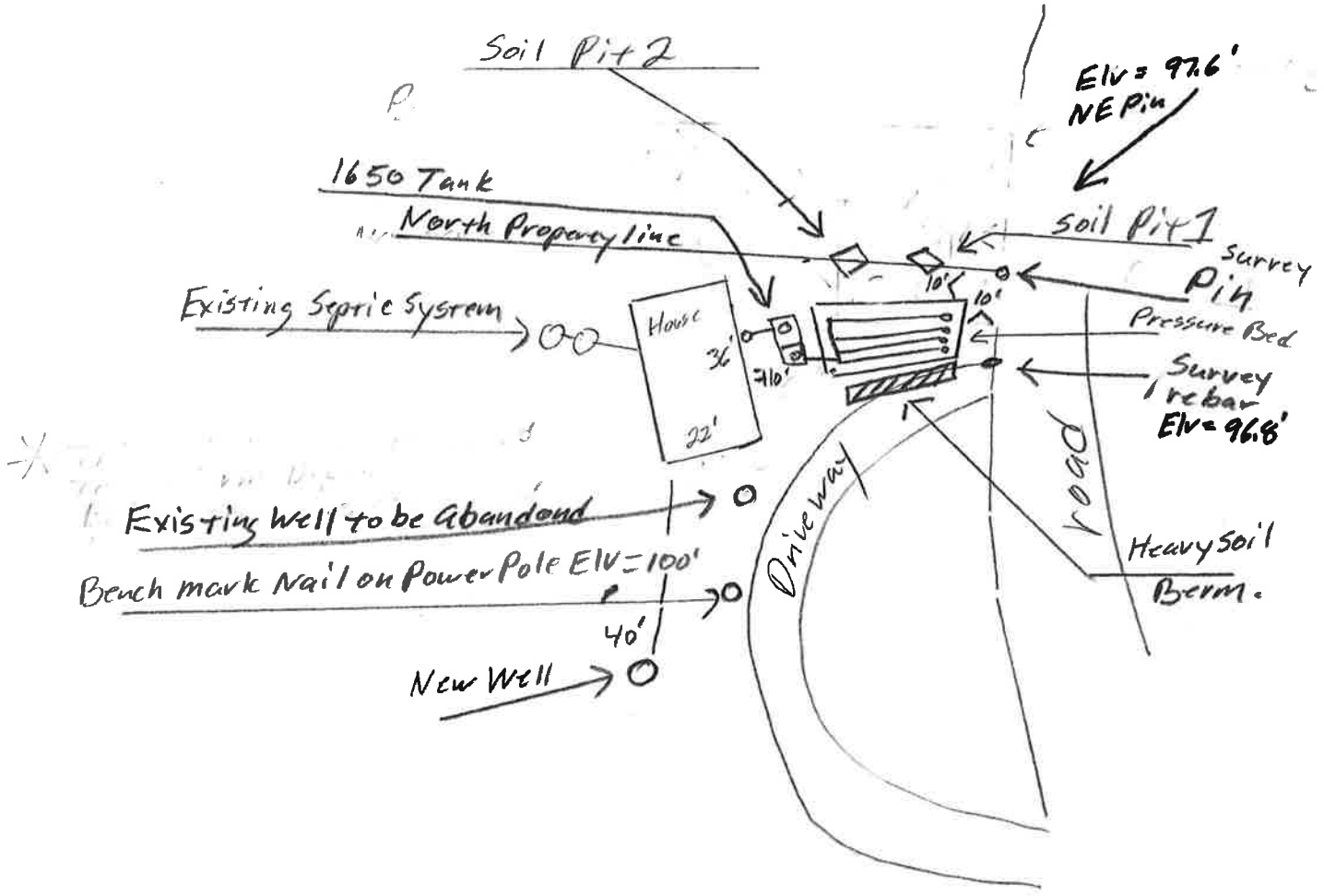
Rock Bed materials: yd³ or *1.4= ton

INSPECTOR CHECKLIST - Pressure bed

- 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: outer ditch, or 33' from center of township road, or 65' from center of cnty road
- LAKE / BLUFF setback: 20' for bluff. Lakes: gen 50', rec 75', nat 150'. Protected wetland 50'.
- Building setbacks: 10' for everything, 20' for dispersal area.
- WATER LINE under pressure 10' to bed, tank & sewer line.
- Sewer line & baffle connection (no 90's, 3' between 45's, slope of 1/8"/ft, or 1" in 8', or 1' in 96'.
(no depth req's, clean out every 100', Sch 40 D2665 or F891)
- Septic tank and risers (water tight, insulated, proper depth, existing verified by pumping)
mfg _____ 1000 gallons none _____
- Riser over outlet, riser over inlet, 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 _____ 23 gpm 18 head VERIFY PUMP CURVE 3.4 M on 5.9 H off
- float setting drop 6.2 inches
LABEL pump requirements and drawdown on riser or panel
- Cam lock, weep hole, supply line access (no hard 90, pipes reachable from grade)
- supply pipe sloped 1/8"+, supported by sch40 sleeve, and buried 6"+.
- splice box / control panel / electrical connections
- Bed dimensions 15 X 25.7
- Rock depth below pipe 9 inches
- Rock bottom elevation 42.0 inches from Grade to bottom of rock (max)
- cover depth of 12"+ VERIFY
- 5 laterals (1-2' from edge of rock)
- 1.50 inch pipe size (bigger is ok but do not exceed 4 times pipe volume)
- 3.0 ft lateral spacing
- 7/32 inch perforations (smaller is ok)
- 3.0 ft perforation spacing
- Air inlet at end of laterals, and at top feed manifold. VERIFY
- clean outs (deep bed 2' of head) (no hard 90's)
- 4" inspection pipe to bottom of rock, anchored VERIFY
- Abandon existing system if necessary
- monitoring plan and type _____

{ Design Drawing }

Property Owner: Kitty Smasal Date: 9/1/21 Designer's Initials: JB
 Parcel ID. Number: 08-1-065400 Address: 43609 320th Pl. Aitkin MN 56431
 one Inch = 40ft.



	Surface/ SHWT	Nail on power pole= Bench Mark 100'		Existing Grade	
Soil Pit 1	99.9' / 78"	Bench Mark	100'	NW Elv.= 100	NE Elv.= 99.6'
Soil Pit 2	98.6' / 78"	Ground Elv. BM	99'	SW Elv.= 100.1 SE Elv.= 99.3'	
Soil Bore 3		Ground Elv. Tank	100.3		
	Ground at	house	99.6'	NE corner	Estimated new sewer pipe 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 |

{ Design Notes }

Property Owner: Kitty Smasal Date: 5/24/2022 Designer's Initials: JB

PIN: 08-1-065400 Page: of

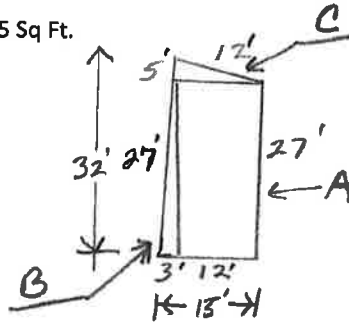
Required Sq Ft of this pressure bed = 385 Sq Ft.

Area Is $12' \times 27' = 324$ **A**

$3 \times 27 \times .5 = 40.5$ **B**

$5 \times 12 \times .5 = 30$ **C**

394.5 total sq ft.



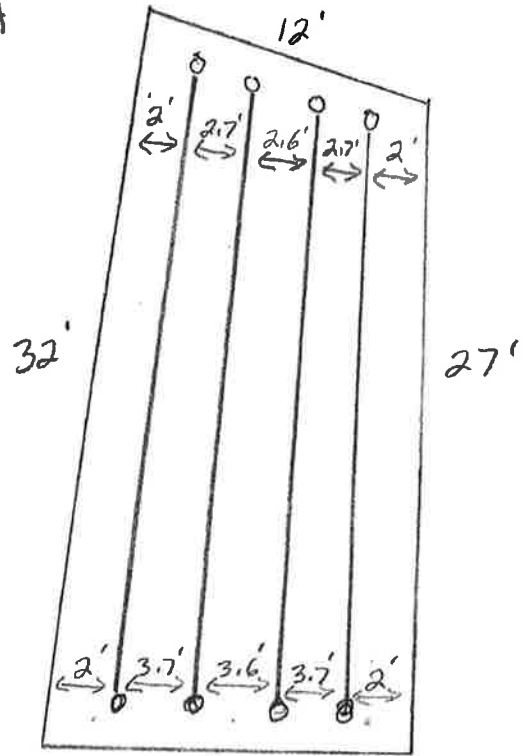
4 - 1.5" Laterals

$7/32$ Perfs = .566 GPM

Perfs Spaced 3ft apart.

Average lateral spacing 3ft

40 Perfs $\times .56 = 22.4$ GPM



	15'		
	30.5		
	29'		
	28'		
	26.5'		
	8.8		
	9.3		
	9.6		
	10.1		
40	11		

Length of lateral
Perfs at 3ft
On 1"

Mound Design Notes - Aitkin county

Property Owner: Kitty Smasal

Date: 9/1/2021

Site Address: 43609 320th Pl. Aitkin MN 56431

PID: 08-1-065400

Comments: Type I Pressure Bed / 2 bedroom Odd Shaped

1 Owner will seal existing well and drill new deep well to meet setbacks to septic system.

2 This is a type I Pressure Bed for a Existing 2 bedroom House.

Soil separation is at 78" with a South slope of .9' across pressure bed area.

3 Existing septic tank to be pumped and removed, existing drainfield to be abandon.

4 Bench Mark (Elv. = 100') is nail on power pole South of house. Bottom of rockbed approx. Elv.= 98'

5 The south edge of pressure bed is near existing driveway.

Installer will install heavy loam to clay loam berm 2 ft wide against South side of pressure bed.

6 Elevation of the bottom of the rock bed should be approx. 98'

The area size of the rock bed is 15 ft wide West end and 12 ft wide East end.

The area size of the rock bed is 32 ft Long North side and 27 ft long on South Side.

Pressure Bed is 10ft. From RW of 320th place, 10 ft from North property line, 20 ft from house.

Septic tank is +10ft from house and + 10ft from North property line.

Cover rock bed with fabric and 12" to 18" of soil.

7 Installer to double check bench mark. Installer should confirm bench mark height Elv. with inspector.

Installer should record bench mark Elv. and bottom of rockbed height on installation inspection form.

It is important that the soils do not get compacted, and area stays protected.

8 The Jacobson 1650 Combo tank will be gravity flow from dwelling. Install the pump for 4 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 pump with 23 GPM and 18 Ft. head.

Install all manholes, inspection pipes and clean-outs to grade or above. Insulate tank.

8 Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to tank.

9 Install 1.5" laterals with 9" of rock under them. (Install Lateral clean-outs at far end of laterals. Recommended)

See Notes on Lateral lay-out in the pressure bed.

Drill 7/32" perf holes spaced approx. 3 ft. apart.

10 Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.

11 Owner is responsible to maintain protection of bed area through construction of house and septic system.

12 Recommend installing an Effluent filter and alarm.

Designed to Aitkin Co. and MPCA recommendations and requirements.

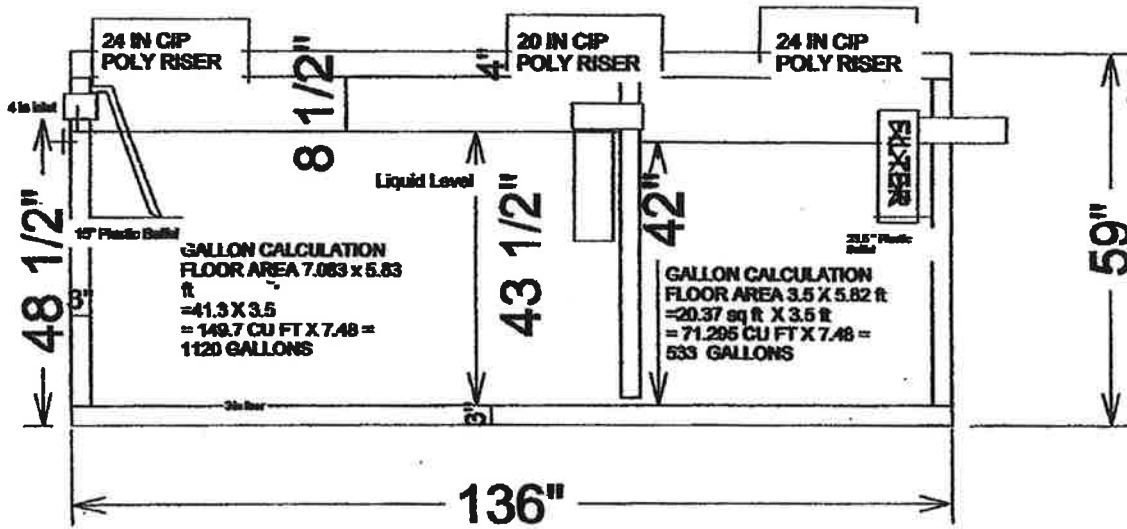
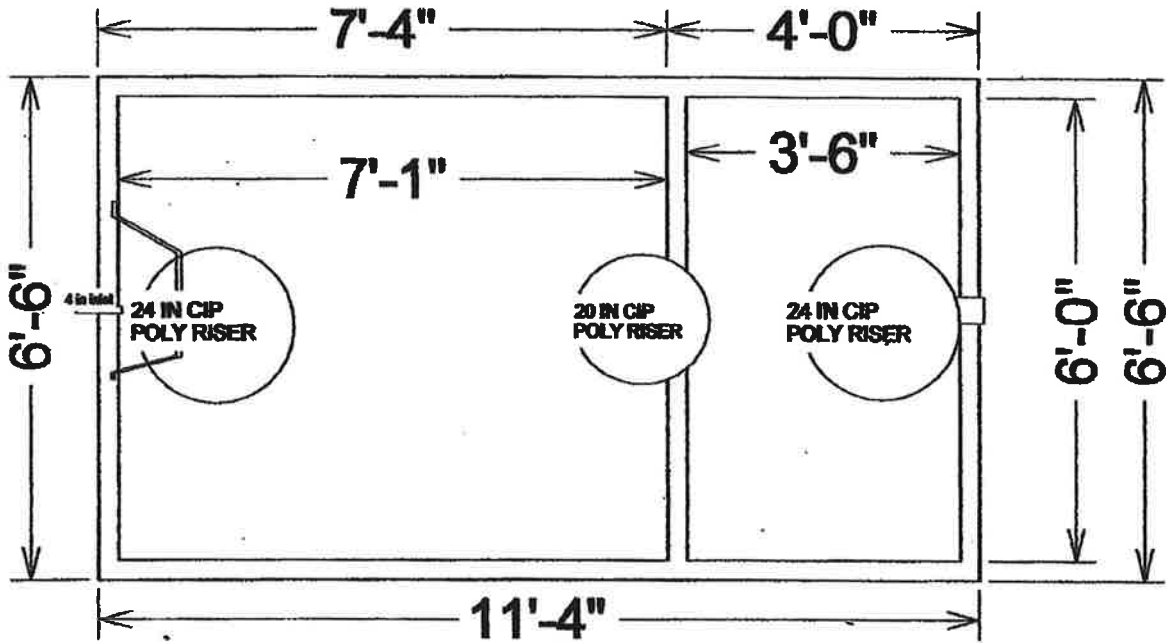
Designer Signature

Brummer Septic LLC.
Design Company

L-1347
License#

1650 Gallon 2 Compartment Septic Tank

TOP VIEW



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

SIDE VIEW

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



Detailed Parcel Report

Parcel Number: 08-1-065400

General Information

Township/City: FLEMING TWP
Taxpayer Name: SMASAL, KITTY S ETAL
Taxpayer Address: PO BOX 60
AITKIN MN 56431
Property Address: 43609 320th Pl
Township: 48 **Lake Number:** 1009900
Range: 25 **Lake Name:** GUN LAKE
Section: 16 **Acres:** 0.00
Green Acres: No **School District:** 1.00
Plat: FIRST ADDITION TO BREEZY ACRES
Brief Legal Description: LOT 8

Tax Information

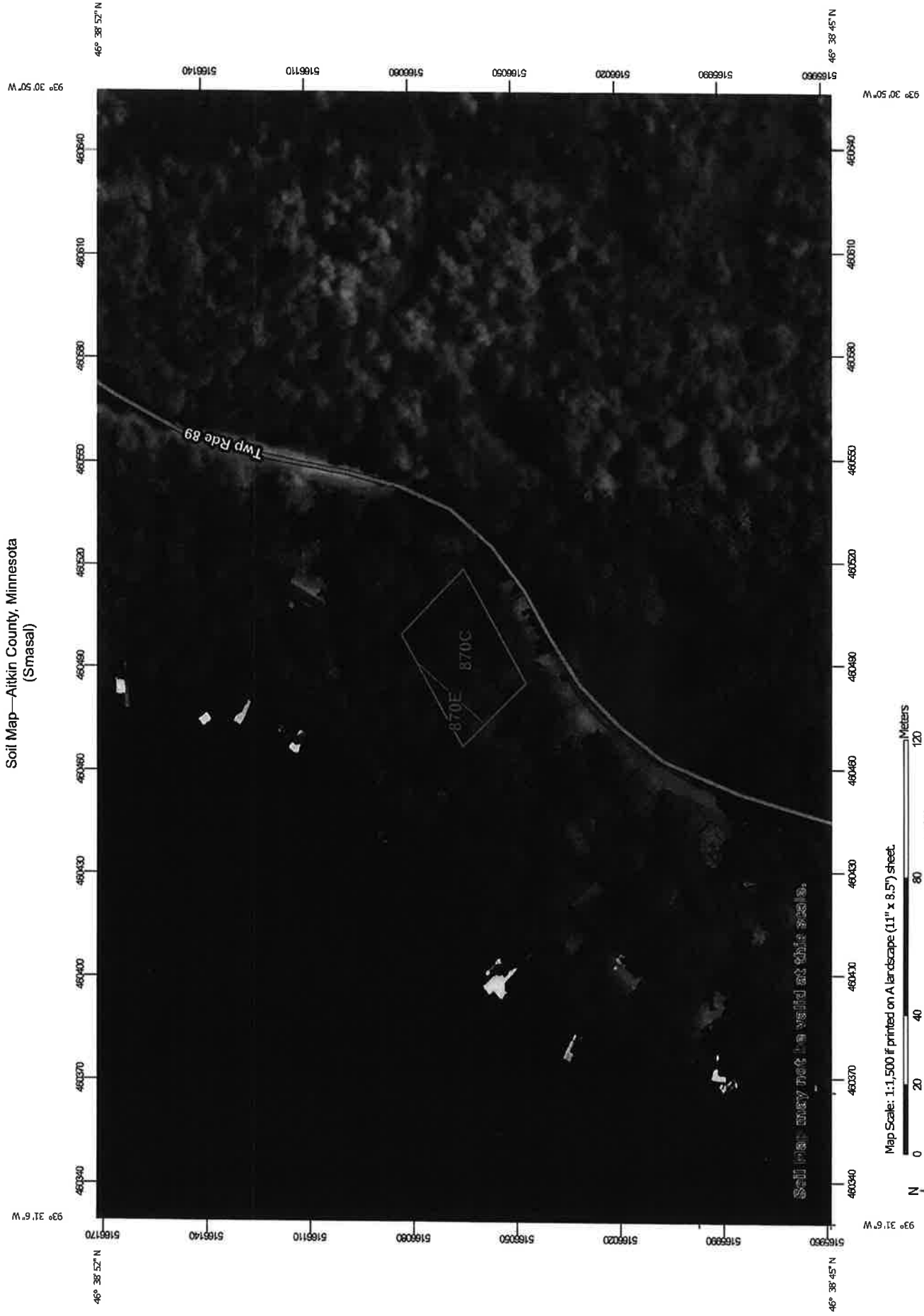
Class Code 1: Residential 1-3 units Previously SRR
Class Code 2: Unclassified
Class Code 3: Unclassified
Homestead: Owner Homestead
Assessment Year: 2021

Estimated Land Value:	\$90,900.00
Estimated Building Value:	\$61,100.00
Estimated Total Value:	<u>\$152,000.00</u>
Prior Year Total Taxable Value:	\$143,900.00
Current Year Net Tax (Specials Not Included):	\$1,224.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$612.00
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
(Smasal)



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



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



Aitkin County, Minnesota

870C—Itasca-Goodland complex, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: gjjy

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: Farmland of statewide importance

Map Unit Composition

Itasca and similar soils: 55 percent

Goodland and similar soils: 30 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Itasca

Setting

Landform: Moraines

Landform position (two-dimensional): Backslope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 4 inches: silt loam

E,Bw - 4 to 14 inches: silt loam

2B/E,2Bt - 14 to 49 inches: sandy loam

2C - 49 to 60 inches: sandy loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Forage suitability group: Sloping Upland, Acid (G088XN006MN)

Other vegetative classification: Sloping Upland, Acid
(G088XN006MN)
Hydric soil rating: No

Description of Goodland

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and silty glaciolacustrine deposits over sandy and gravelly outwash

Typical profile

A - 0 to 3 inches: silt loam
E,Bw,2EB,2Bt - 3 to 25 inches: sandy loam
3Bt - 25 to 33 inches: loamy sand
3C - 33 to 60 inches: coarse sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 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: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Forage suitability group: Sloping Upland, Acid (G088XN006MN)
Other vegetative classification: Sloping Upland, Acid (G088XN006MN)
Hydric soil rating: No

Minor Components

Talmoon and similar soils

Percent of map unit: 5 percent
Landform: Swales
Hydric soil rating: Yes

Cathro and similar soils

Percent of map unit: 5 percent
Landform: Bogs
Hydric soil rating: Yes

Cromwell and similar soils

Percent of map unit: 5 percent



Hydric soil rating: No

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 21, Jun 4, 2020

Aitkin County, Minnesota

870E—Itasca-Goodland complex, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: gjk0
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

Itasca and similar soils: 50 percent
Goodland and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Itasca

Setting

Landform: Moraines
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 2 inches: silt loam
E,Bw - 2 to 14 inches: silt loam
2B/E,2Bt - 14 to 53 inches: sandy loam
2C - 53 to 60 inches: sandy loam

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Forage suitability group: Steep; Coarse Texture; Low AWC (G088XN018MN)

Other vegetative classification: Steep; Coarse Texture; Low AWC
(G088XN018MN)
Hydric soil rating: No

Description of Goodland

Setting

Landform: Moraines
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and silty glaciolacustrine deposits over sandy and gravelly outwash

Typical profile

A - 0 to 3 inches: silt loam
E, B/E, 2Bt - 3 to 23 inches: sandy loam
3Bt - 23 to 34 inches: loamy sand
3C - 34 to 60 inches: coarse sand

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 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: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Forage suitability group: Sloping; Fine Texture (G088XN023MN)
Other vegetative classification: Sloping; Fine Texture (G088XN023MN)
Hydric soil rating: No

Minor Components

Alstad and similar soils

Percent of map unit: 5 percent
Hydric soil rating: No

Cromwell and similar soils

Percent of map unit: 5 percent
Hydric soil rating: No

Cathro and similar soils

Percent of map unit: 5 percent
Landform: Bogs

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 21, Jun 4, 2020

