

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>5/12/2020</u>	Sec / Twp / Rng	<u>S-20, T-48, R-25</u>
Parcel ID	<u>08-0-031901</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Jason Jacobson</u>	Owners address (if different)	
Property Address:	<u>42195 328th Ave. Aitkin MN 56431</u>		
City / State / Zip:			

Flow Information and Waste Type / Strength			
Estimated Design flow	<u>600</u>	Anticipated Waste strength	<input type="checkbox"/> HI Strength <input checked="" type="checkbox"/> Domestic
Comments: Repacing failing system Install 4 bedroom pressure bed Future addition. Abandon existing shallow well		Any Non-Domestic Waste	<input type="checkbox"/> Yes (class V) <input checked="" type="checkbox"/> No
		Sewage ejector/grinder pump	<input checked="" type="checkbox"/> Yes <input 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	Proposed deep well Existing Shallow well to be abandon	
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) By Owner	<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>New plumbing inside house to exist house near SE corner</u>				

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 Yes No

Soil logs completed and attached Yes No

Perk test completed and attached (if applicable) Yes No

Soil loading rate (gpd/ft²) 0.78

Percolation rate (if applicable) _____

Depth/elev to SHWT 78"

Flooding or run-on potential (comments) Yes No

Depth to system bottom maximum (or elev minimum) 3.5'

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) _____

Soil Survey information determined (see attachment) Yes No

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

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>Jason Jacobson</u>	Date <u>5/12/2020</u>
Property Address / PID: <u>42195 328th Ave. Aitkin MN 56431</u>	

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent mat'l's:	<input type="checkbox"/> Till <input checked="" type="checkbox"/> Outwash <input checked="" type="checkbox"/> Lacustrine <input type="checkbox"/> Alluvium <input type="checkbox"/> Organic <input type="checkbox"/> Bedrock
landscape position:	<input checked="" type="checkbox"/> Summit <input checked="" type="checkbox"/> Shoulder <input type="checkbox"/> Side slope <input type="checkbox"/> Toe slope
soil survey map units:	<u>454C & 346</u> slope <u>5</u> % direction- <u>West</u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit	Elevation <u>99'</u>		Depth to SHWT <u>84"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 5	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
5 - 37	Med Sand	<35	10YR4/4		Loose	Loose	Granular
37 - 84	Med Sand	<35	10YR5/4		Loose	Loose	Granular
		<35					
		<35					

Comments:

42195 328th Ave. Aitkin MN 56431

Soil Log #2

<input checked="" type="checkbox"/> Boring <input 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 - 24	Loamy Sand	<35	10YR4/4		Loose	Loose	Granular
24 - 37	Med Sand	<35	10YR4/4		Loose	Loose	Granular
37 - 78	Med Sand	<35	10YR5/4		Loose	Loose	Granular
78	Clay Loam	<35	10YR5/4	2" layer then back to Med Sand Mottled 7.5YR5/6	Friable	Loose	Granular

42195 328th Ave. Aitkin MN 56431

Soil Log #3

<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit		Elevation <u>99.7'</u>		Depth to SHWT <u>84"</u>			
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 18	Sandy Loam	35 - 50	10YR4/4		Loose	Loose	Granular
18 - 84	Med Sand	<35	10YR4/4		Loose	Loose	Granular
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive

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


 Designer Signature

Brummer Septic LLC.
 Company

L-1347
 License #

Pressure Bed Design

Property Owner: Jason Jacobson Date: 5/12/2020

Site Address: 42195 328th Ave. Aitkin MN 56431 PID: 08-0-031901


Comments: _____

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

- 1) 4 bedroom Type I Residential System
- 2) 600 GPD design flow
- 3) Yes Garbage disposal or pumped to septic 50% larger tank w/mult comp/tanks, effluent filter & alarm req'd
Install Jacobson 1650 Compartment tank
- 4) *** 1000 Gallon septic tank (minimum) Tank options: multiple tanks or compartments req'd
- 5) 0.78 GPD/ft² Soil Loading Rate 769 ft² bed req'd, or 769 ft² LUG minimum
(must match soil boring log)
- 6) *** 19.0 ft desired bed width, leads to a 40.5 ft bed length
(25' maximum)
- 7) *** 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum 3 for both)
 end feed manifold connection
- 8) *** 6 laterals 38.5 feet long 13.0 perfs / lateral 78 perfs total
(1/2 perf means the first perf starts at the middle feed manifold)
- 9) *** 7/32 inch perfs at 1 feet residual head gives 0.56 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 = 14, line #8 must be less --> OK
- 10) 6 doses per day (4 minimum)
- 11) 100 gallons per dose (treatment volume)
- 12) 1.25 inch diameter laterals (or smaller) will meet "5x pipe volume"
*** 1.25 inch diameter laterals (or smaller) must be used to meet "4x pipe volume" requirement
 1.50 inch diameter laterals (or smaller) will meet "3x pipe volume"
- 13) *** 60 feet of 2.0 inch supply line leads to 10 gallons of drainback volume
("top feed" to control the drainback)
- 14) 110 gallons TOTAL pump out volume (treatment + drainback)
- 15) 12 feet vertical lift from pump to dispersal area, leads to a
- 16) *** 44 GPM @ 21 feet of head, Pump requirement
(>50 gpm may require additional 3-6' head allowance for discharge assy)

- 17) *** 522 gal Dose tank (minimum) at 16.57 gpi
- 18) *** 6.6 inch swing on Demand float, or Timed dosing of 2.5 min ON (confirm pump rate with drawdown test and adjust as necessary)
(<100% of design flow requires a larger OFF time) 4 hrs OFF
- 19) 12 inches of from bottom of tank to "pump OFF" float, and/or to cover pump
- 20) *** 19 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
- 21) *** 22 inches from bottom of tank to "Hi Level" float (add 5-15 inches if Time Dosed)
- 22) 157 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: 19.0 ft. wide by 40.5 ft. long Pressure Bed
- 28) *** Rock Bed materials: 19 ft. by 40.5 ft. by 12 inches total, plus 20% gives 35 yd³ or *1.4= 49 ton

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


Brummer Septic LLC.
L-1347

 Designer Signature Company License# Date

Electric Alarm on pump tank

Installer Summary

gallon Septic tank (minimum) multiple tanks Install Jacobson 1650
 gallon Dose tank (minimum) 50% larger tank w/mult comp/tanks, effluent filter & alarm req'd
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

laterals inch diameter feet long ft lateral spacing

inch perfs ft perforation spacing

Effluent filter & alarm
 clean out & valve box assembly

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

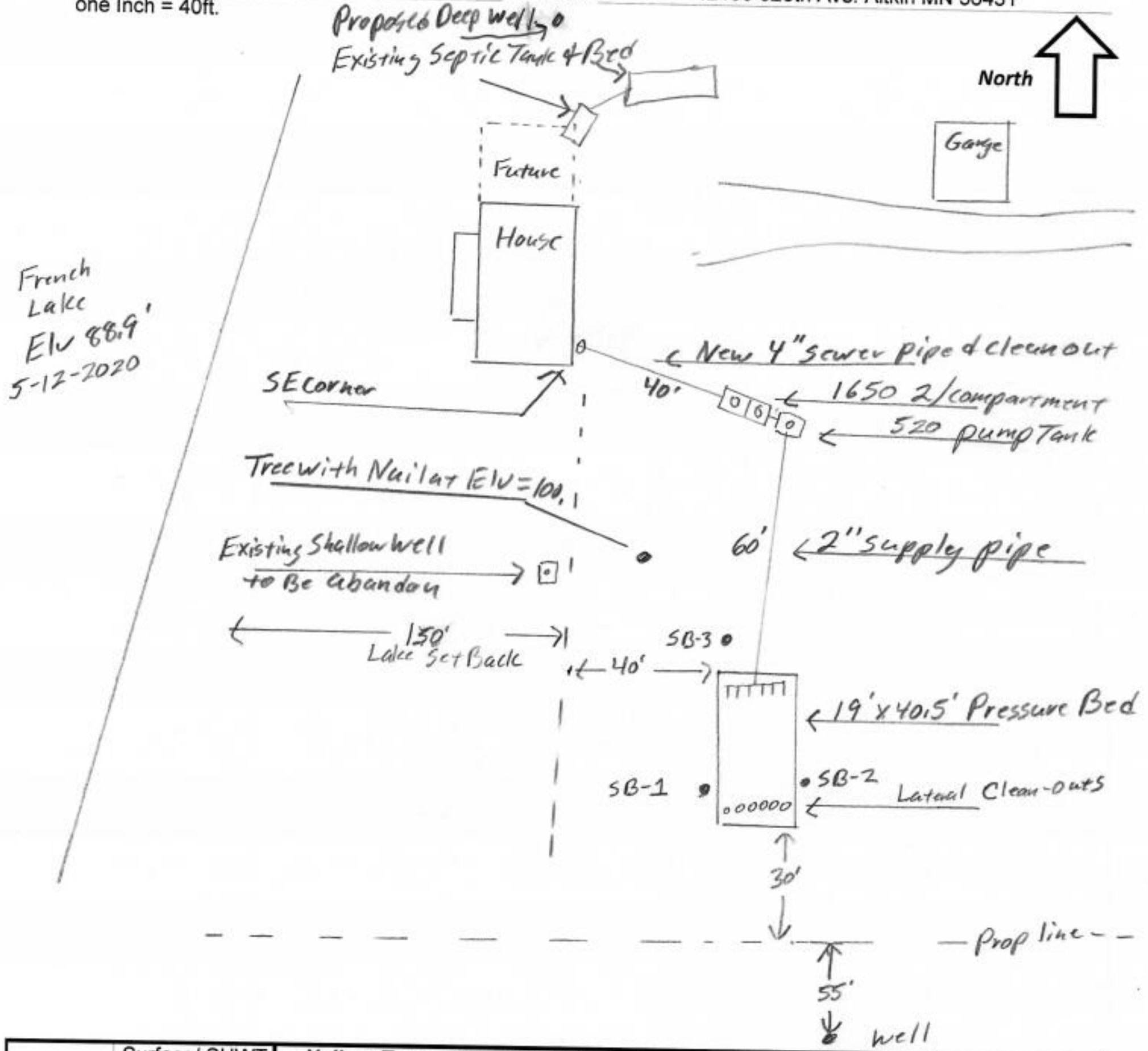
INSPECTOR CHECKLIST - Pressure bed

- 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 multiple tanks or compartments req'd
- Riser over outlet, riser over inlet, 6"+ inspection pipe over any remaining baffles.
- Yes effluent filter & alarm
- Dose tank risers and piping (water tight, insulated, proper depth, drainback)
mfg _____ 522 gallons
- dose pump _____ 44 gpm 21 head VERIFY PUMP CURVE 2.5 M on 4 H off
- float setting drop 6.6 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 19 X 40.5
- Rock depth below pipe 9 inches
- Rock bottom elevation 42.0 inches from Grade to bottom of rock (max)
- cover depth of 12"+ VERIFY
- 6 laterals (1-2' from edge of rock)
- 1.25 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: Jason Jacobson Date: 5/12/20 Designer's Initials: JB
 Parcel ID. Number: 08-0-031901 Address: 42195 328th Ave. Aitkin MN 56431
 one Inch = 40ft.



Surface/ SHWT	Nail on Tree = Bench Mark 100'		Existing Grade P-bed corners	
Soil Bore 1	99' / 84"	Bench Mark	100'	NW = 99.4', SW=99.8', NE=99.4', SE= 100.5'
Soil Bore 2	99.9' / 78"	Ground Elv. BM	98.3'	
Soil Bore 3	99.7' / 84"	Ground Elv. Tank	99'	Estimated Inlet Elv. = 96'
Ground at	SE house	99.5'		Lake Elv. = 86.7' shore Elv. = 88.9'

Please show all that apply (Existing)
 Wells within 100ft. Of Drain field.
 Water lines within 10 ft. of Drain field.
 Drain field Areas:

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

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

Mound Design Notes - Aitkin county

Property Owner: Jason Jacobson

Date: 5/12/2020

Site Address: 42195 328th Ave. Aitkin MN 56431

PID: 08-0-031901

Comments: Type I Pressure Bed / 4 bedroom

- 1 This is a type I Pressure Bed for a existing 4 bedroom House.
Soil separation is at 78" with a West slope of 1.4' across pressure bed area.
- 2 There is an existing shallow well to the West that will be abandon. Proposed Deep well meet setbacks.
- 3 Existing septic tank to be pumped and removed, existing drainfield to be abandon.
- 4 Bench Mark (Elv. = 100') is the nail on tree NW of pressure bed area.
The bottom of the house siding at the SE corner is Elv.= 100'
- 5 The Pressure bed area will be 19 ft. wide and 40.5 ft. long. Bottom of rock Elv 98'.
The NE corner is the lowest corner, use the excavated soil to build the berm out from NE corner.
Elevation of the bottom of the rock bed should be approx. 98'
The area size of the rock bed is 19' x 40.5' .
Cover rock bed with fabric and 12" to 18" of soil.
- 6 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.
- 7 The Jacobson 1650 2/Compartment septic tank will be gravity flow from main floor of dwelling.
Lower level of house will be lifted into gravity flow pipe. House will have new sewer out-let near SE corner
Install 520 pump tank with gravity flow from septic tank. Install the pump for 6 demand doses
per day. approx. 110 gallons per dose, 6.6 inches of tank level. Install alarm at 3 inches from pump on level.
Install pump with 44 GPM and 21 Ft. head.
Install all manholes, inspection pipes and clean-outs to grade or above, (recommend 4" above finished grade.)
- 8 Install a 2" supply pipe from pump 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 clean-outs at far end of laterals.(12" total inches of rock)
Drill 7/32" perf holes spaced 3 ft. apart.
Install inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
- 10 Installer will pressure test and squirt height laterals when finished. Give info to owner.
- 11 Owner is responsible to maintain protection of bed area through construction of house and septic system.

Designed to Aitkin Co. and MPCA recommendations and requirements.

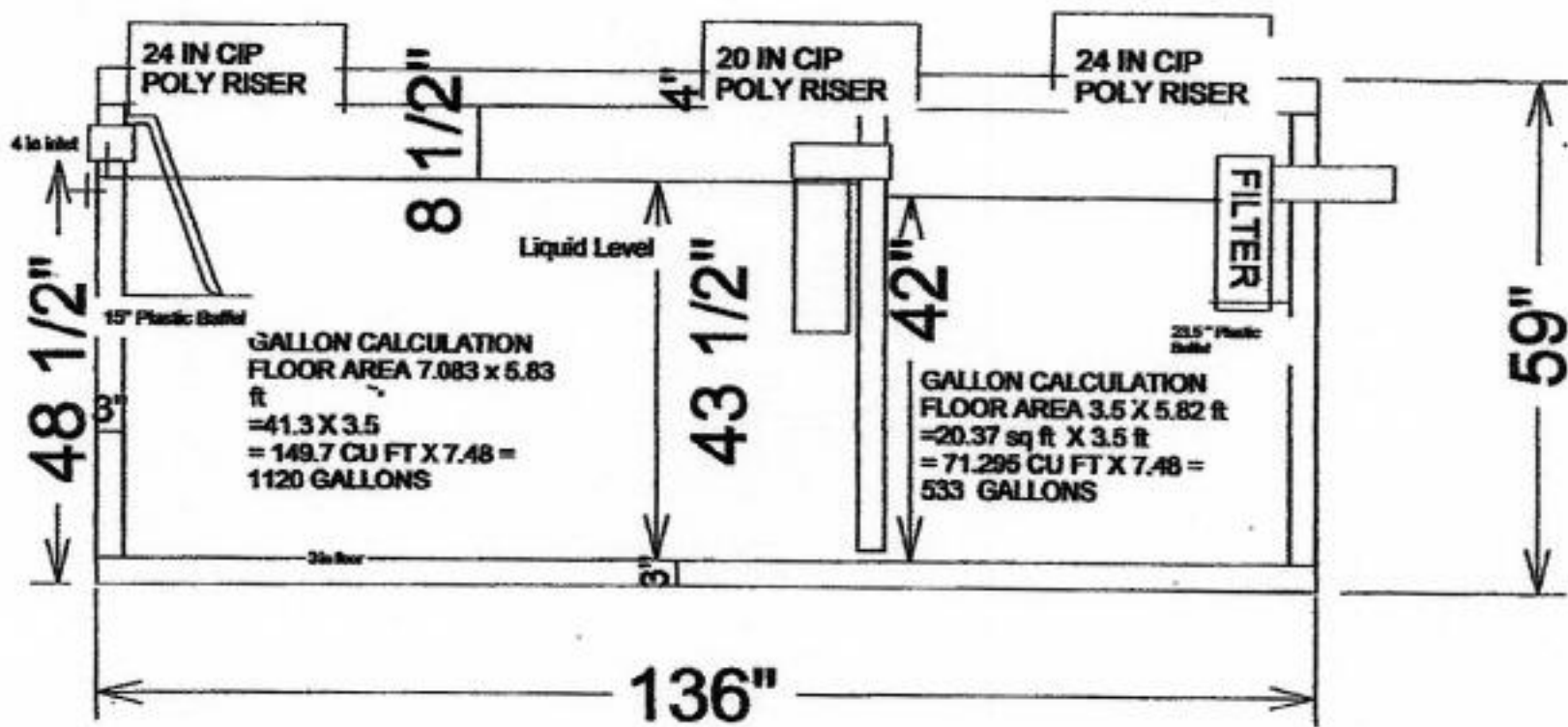
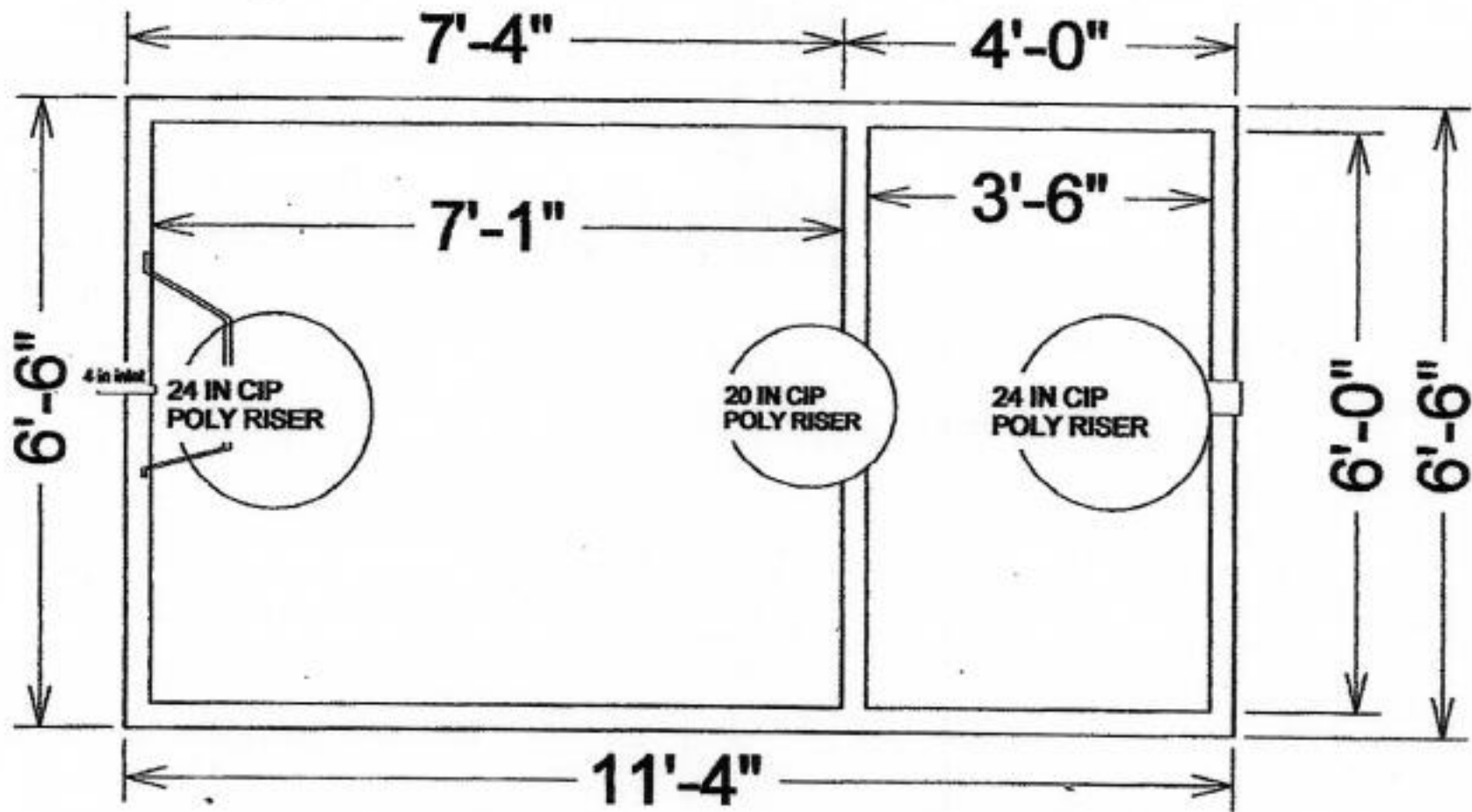

Designer Signature

Brummer Septic LLC.
Design Company

L-1347
License#

1650 Gallon 2 Compartment Septic Tank

TOP VIEW

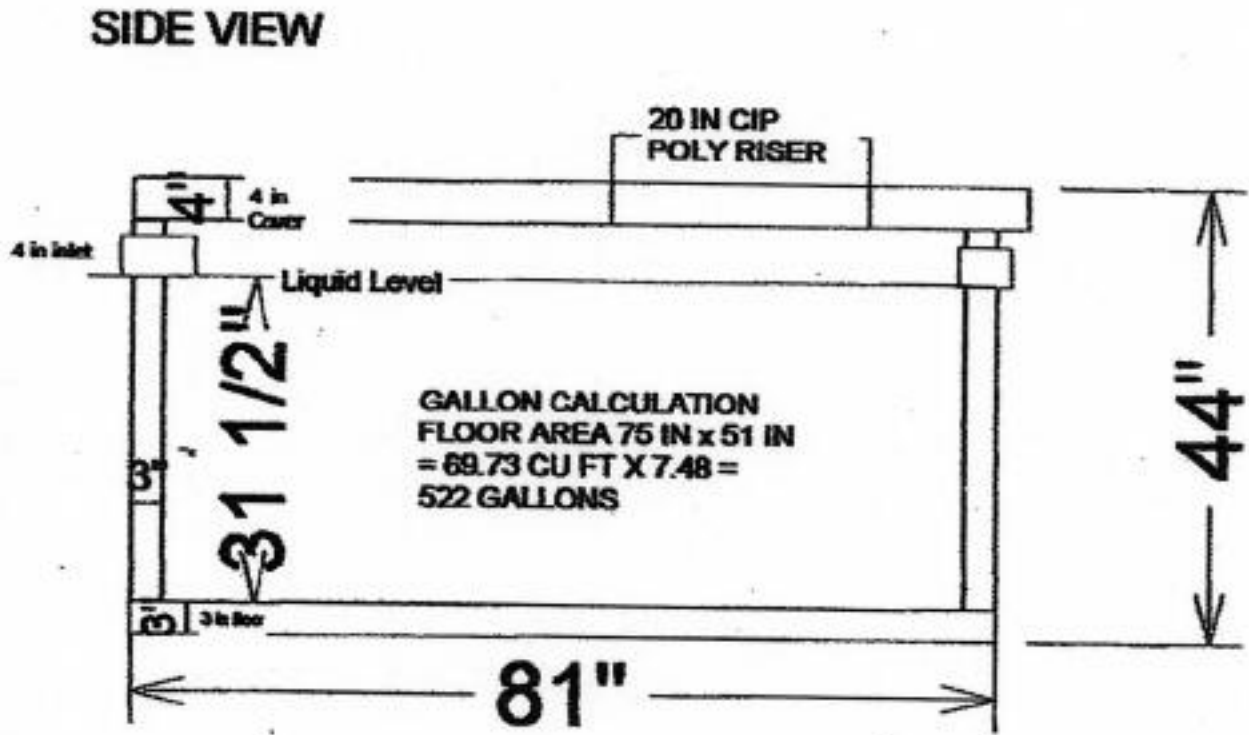
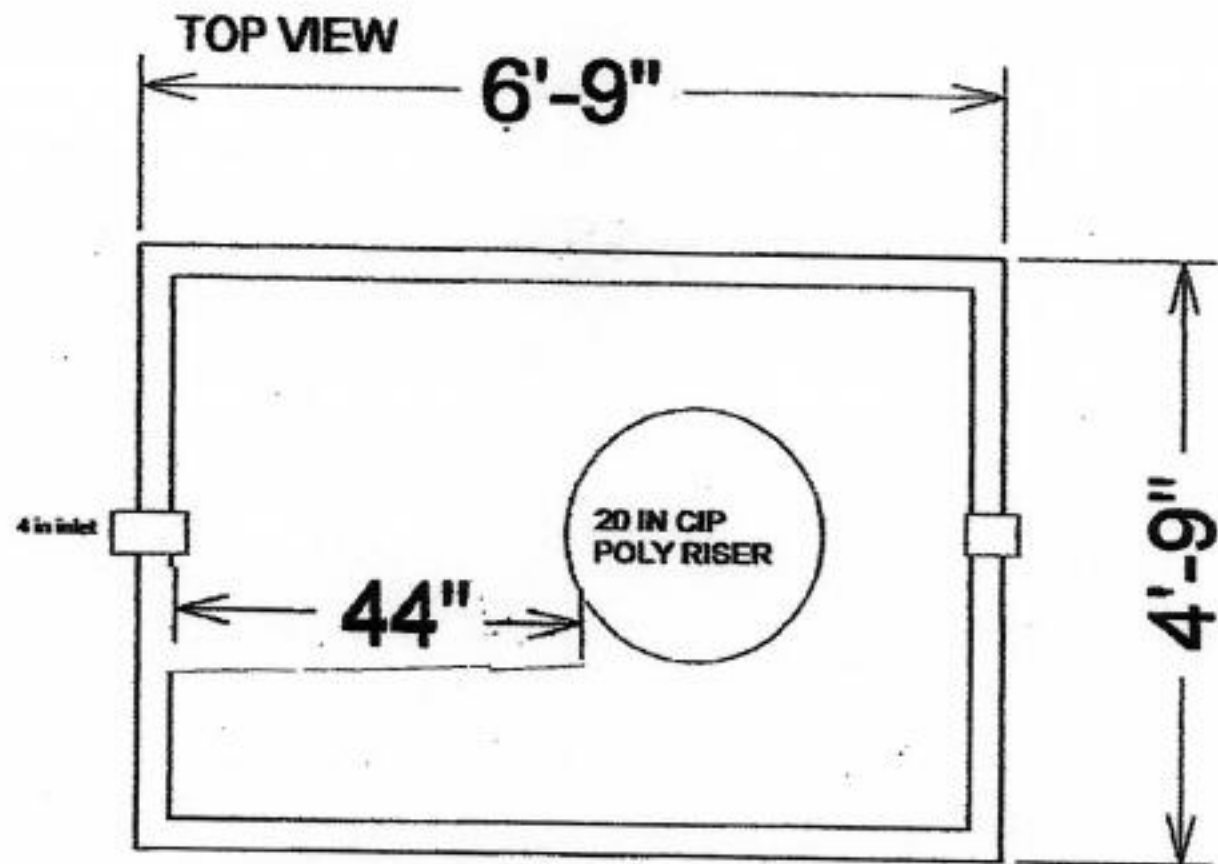


$533 / 42" = 12.69 \text{ GPI}$

SIDE VIEW

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

520 Gallon Pump Tank



522 gals. / 31.5" = 16.57 GPI

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

Do not copy drawings without permission of the Owner

General Information

Township/City:	FLEMING TWP		
Taxpayer Name:	MACY, ROGER & CAROLYN		
Taxpayer Address:	JACOBSON, HUBERT & RUTH L.E. 10723 RIVER HILL CIRCLE BRAINERD MN 56401		
Property Address:	42195 328th Ave		
Township:	48	Lake Number:	1010400
Range:	25	Lake Name:	FRENCH LAKE (FLEMING TWP)
Section:	20	Acres:	6.67
Green Acres:	No	School District:	1.00
Plat:			
Brief Legal Description:	S 1/2 OF LOT 5 LESS 4.58 AC IN B 96 D P 167 LESS N 400 FT		

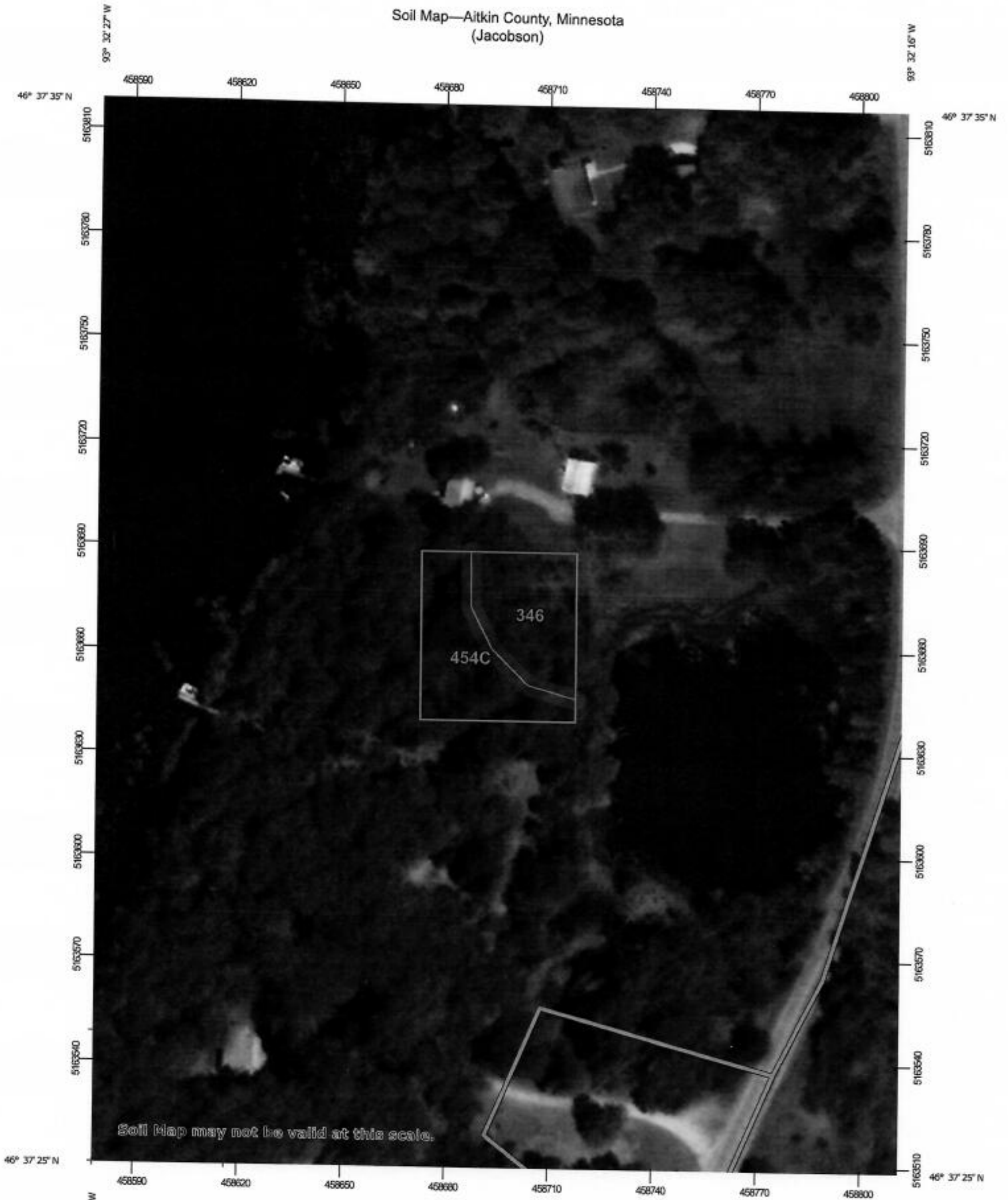
Tax Information

Class Code 1:	Residential 1 unit
Class Code 2:	Unclassified
Class Code 3:	Unclassified
Homestead:	Owner Homestead
Assessment Year:	2020
Estimated Land Value:	\$97,700.00
Estimated Building Value:	\$97,700.00
Estimated Total Value:	<u>\$195,400.00</u>
Prior Year Total Taxable Value:	\$161,467.00
Current Year Net Tax (Specials Not Included):	\$1,060.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$1,060.00
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
(Jacobson)



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



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



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
346	Talmoon fine sandy loam	0.3	47.4%
454C	Mahtomedi loamy coarse sand, 6 to 12 percent slopes	0.3	52.6%
Totals for Area of Interest		0.5	100.0%

Aitkin County, Minnesota

346—Talmoon fine sandy loam

Map Unit Setting

National map unit symbol: gjgp
Elevation: 980 to 1,640 feet
Mean annual precipitation: 25 to 30 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 120 to 140 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Talmoon

Setting

Landform: Swales on moraines
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy lacustrine deposits over loamy till

Typical profile

A - 0 to 10 inches: fine sandy loam
Eg - 10 to 17 inches: loam
BE,Btg - 17 to 31 inches: clay loam
Cg - 31 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: 30 percent
Available water storage in profile: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: Level Swale, Acid (G090AN005MN)
Hydric soil rating: Yes

Minor Components

Sandwick and similar soils

Percent of map unit: 5 percent

Landform: Flats

Hydric soil rating: Yes

Rifle and similar soils

Percent of map unit: 5 percent

Landform: Bogs

Hydric soil rating: Yes

Stuntz 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 20, Sep 16, 2019

Aitkin County, Minnesota

454C—Mahtomedi loamy coarse sand, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: gjgx
Elevation: 980 to 1,640 feet
Mean annual precipitation: 25 to 30 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 120 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Mahtomedi and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mahtomedi

Setting

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

Typical profile

A - 0 to 4 inches: loamy coarse sand
E - 4 to 17 inches: gravelly coarse sand
Bw - 17 to 38 inches: gravelly sand
C - 38 to 60 inches: gravelly sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Forage suitability group: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Newson and similar soils

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

Soils with more gravel

Percent of map unit: 2 percent

Hydric soil rating: No

Leafriver and similar soils

Percent of map unit: 2 percent

Landform: Depressions

Hydric soil rating: Yes

Meehan and similar soils

Percent of map unit: 2 percent

Hydric soil rating: No

Soils with less gravel

Percent of map unit: 2 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 20, Sep 16, 2019