

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>9/23/2019</u>	Sec / Twp / Rng	<u>S-17, T-49, R-26</u>
Parcel ID	<u>35-0-029600</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Chris George</u>	Owners address (if different)	
Property Address:	<u>49310 386th Pl. Palisade MN 56469</u>		
City / State / Zip:			


Flow Information and Waste Type / Strength			
Estimated Design flow	<u>450</u>	Anticipated Waste strength	<input type="checkbox"/> Hi Strength <input checked="" type="checkbox"/> Domestic
Comments: 16' x 36.1' pressure bed		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	Shallow well in house	
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 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>9/23/2019 Dug Pit with Bryan Hargaze</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	<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>54"</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>18"</u>					
Depth/elev to standing water (if applicable)	_____		Flood elevation (if applicable)	_____		
Depth/elev to bedrock (if applicable)	_____		Elevation of ordinary high water level (if applicable)	_____		
Soil Survey information determined (see attachment)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Floodplain designation and elev - 100 yr/10 yr (if applicable)	_____		
Differences between soil survey and field evaluation (if applicable)	<u>Web Soil Survey not working map is down</u>					

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>Chris George</u>	Date <u>9/23/2019</u>
Property Address / PID: <u>49310 386th Pl. Palisade MN 56469</u>	

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent matl'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>928</u> slope <u>2</u> % direction- <u>North</u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit	Elevation <u>98.1</u>		Depth to SHWT <u>66"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 16	Sandy Loam	<35	10YR5/4		Loose	Loose	Granular
16 - 36	Med Sand	<35	10YR5/4		Loose	Loose	Granular
36 - 46 46 - 66	Med Sand	<35	10YR6/4 10YR5/4		Loose	Loose	Granular
66 -	Silt Loam	<35	10YR6/4	7.5YR5/6	Friable	Weak	Granular
Comments:							

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Soil Log #2

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97.3'</u>		Depth to SHWT <u>66"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape	
0 - 4	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular	
4 - 22	Sandy Loam	<35	10YR5/4		Loose	Loose	Granular	
22 - 66	Med Sand	<35	10YR5/4		Loose	Loose	Granular	
66 - 72	Med Sand	<35	10YR5/4	7.5YR5/4	Loose	Loose	Granular	
		<35						

49310 386th Pl. Palisade MN 56469

Soil Log #3

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>98.6'</u>		Depth to SHWT <u>70"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape	
0 - 7	Topsoil	<35	10YR3/2		Loose	Loose	Granular	
7 - 30	Sandy Loam	<35	10YR5/4		Loose	Loose	Granular	
30 - 62	Med Sand	<35	10YR5/4		Loose	Loose	Granular	
62 - 70	Fine sand	<35	10YR6/4		Loose	Loose	Granular	
70 - 74	Loam	<35	10YR4/4	Compacted	Friable	Weak	Granular	

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 #

49310 386th Pl. Palisade MN 56469								Soil Log #6	
		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97.1</u>		Depth to SHWT <u>54"</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	Sandy Loam	<35	10YR5/4		Loose	Loose	Granular		
24 - 54	Med Sand	<35	10YR5/4		Loose	Loose	Granular		
54 - 60	Loam	<35	10YR4/4	Compacted	Friable	Weak	Granular		
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive		

49310 386th Pl. Palisade MN 56469 **Soil Log PIT #1 9/23/2019 Byran H**

49310 386th Pl. Palisade MN 56469								Soil Log PIT #1 9/23/2019 Byran H	
		<input type="checkbox"/> Boring	<input checked="" type="checkbox"/> Pit	Elevation <u>97.1</u>		Depth to SHWT <u>54"</u>			
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape		
0 - 5	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular		
5 - 27	Sandy Loam	<35	10YR5/4		Loose	Loose	Granular		
24 - 54	Med Sand	<35	10YR6/4		Loose	Loose	Granular		
54 - 60	Loam	<35	10YR4/4	Compacted	Friable	Weak	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

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 Company

L-1347
 License #

Pressure Bed Design

Property Owner: Chris George Date: 9/23/2019

Site Address: 49310 386th Pl. Palisade MN 56469 PID: 35-0-029600

Comments: _____

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 1120 septic/ 533 pump
- 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) 450 x 1.27 = 572 sq Ft.
- 6) *** ft desired bed width, leads to a ft bed length
(25' maximum)
- 7) *** ft lateral spacing ft perforation spacing (maximum 3 for both)
 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) 1.25 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) *** 7.8 inch swing on Demand float, or Timed dosing of 2.9 min ON (confirm pump rate with drawdown test and adjust as necessary)
(<100% of design flow requires a larger OFF time) 4.8 hrs OFF
- 19) 12 inches of from bottom of tank to "pump OFF" float, and/or to cover pump
- 20) *** 20 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
- 21) *** 23 inches from bottom of tank to "Hi Level" float (add 5-15 inches if Time Dosed)
- 22) 241 gallons reserve capacity (after High Level Alarm is activated)
- 23) 54 inches, or 4.50 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) *** 18 inches, or 1.5 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: 16.0 ft. wide by 36.1 ft. long Pressure Bed
- 28) *** Rock Bed materials:
16 ft. by 36.1 ft. by 12 inches total, plus 20% gives 26 yd³ or *1.4= 36 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#

9-23-19
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

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

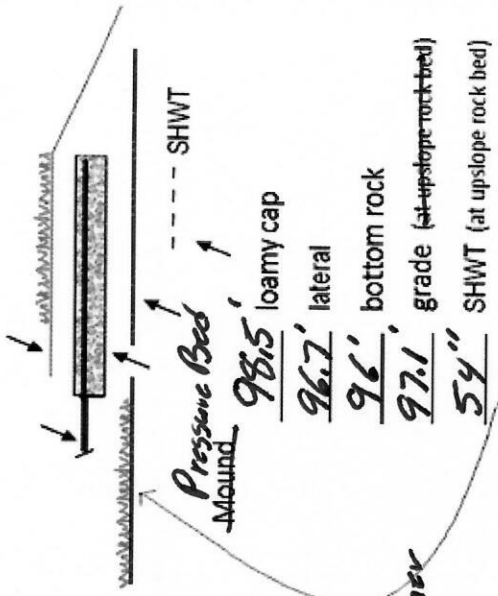
- WELL setbacks: 20' to pressure tested sewer line (5 psi for 15 min)
50' to everything 100' to dispersal area with shallow well
- PROPERTY LINES setback: 10' to everything
- Road setback: outer ditch, or 33' from center of township road, or 65' from center of cnty road
- LAKE / BLUFF setback: 20' for 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 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 _____ 34 gpm 22 head VERIFY PUMP CURVE 2.9 M on 4.8 H off
- float setting drop 7.8 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 16 X 36.1
- Rock depth below pipe 9 inches
- Rock bottom elevation 18.0 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 _____

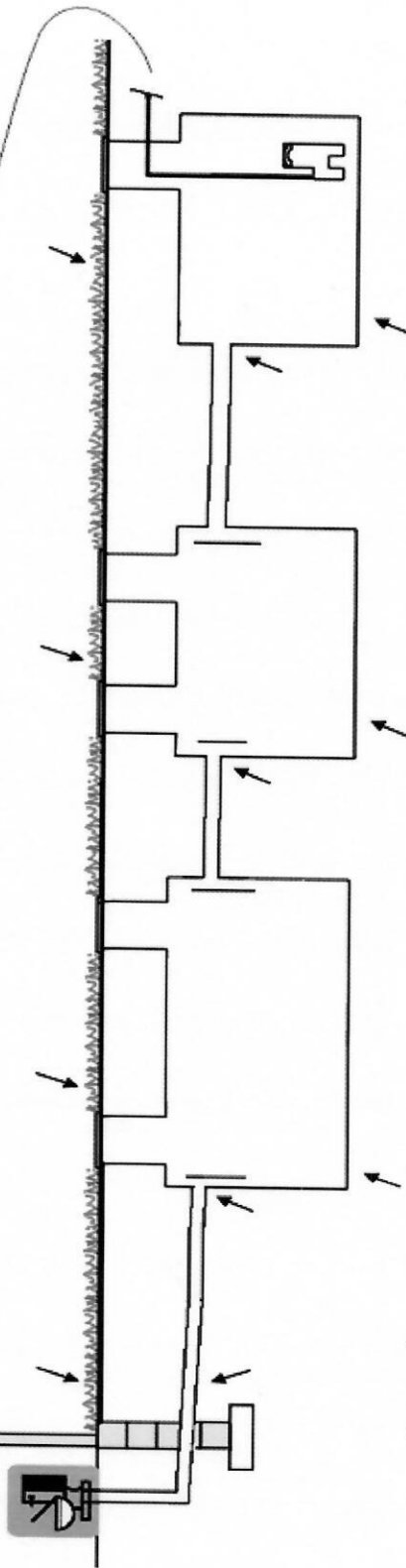
System Elevations

Elv = 100' benchmark Nail on Power Pole
Top of Telephone Ped Elv = 102.6'

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



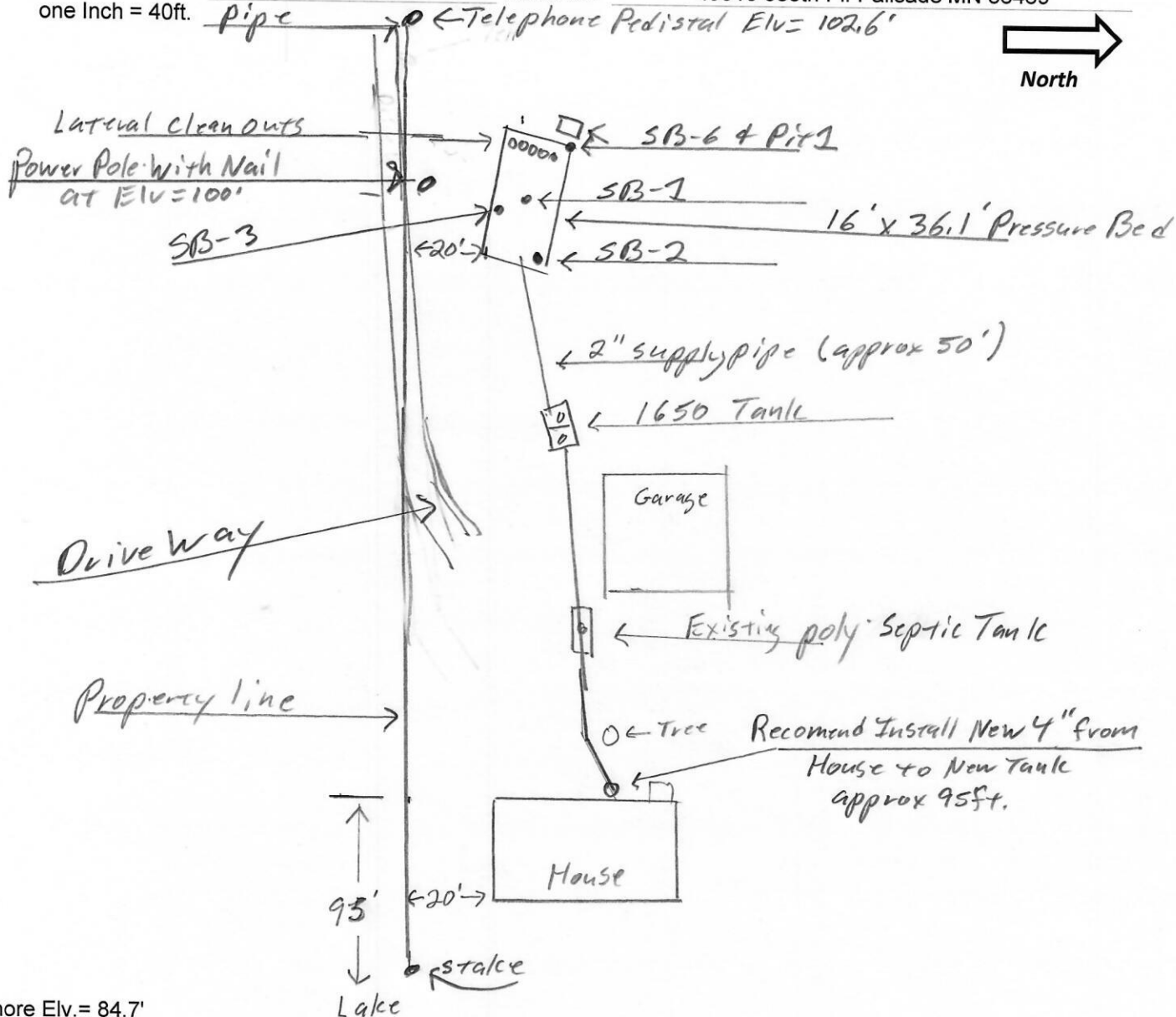
Lowest Corner



Sewer pipe exiting house	<u>89.7'</u> Grade	Septic Tank	<u>88.1'</u> Grade	Septic Tank (if applicable)	Grade	Pump Tank	<u>88.1'</u> Grade
approx. <u>88'</u> Pipe		<u>86'</u> inlet					<u>85.7'</u> inlet
		<u>82.5'</u> Tank bottom					<u>82.5'</u> Tank bottom

{ Design Drawing }

Property Owner: Chris George Date: 9/23/19 Designer's Initials: JB
 Parcel ID. Number: 35-0-029600 Address: 49310 386th Pl. Palisade MN 56469
 one Inch = 40ft.



Shore Elv. = 84.7'
 Round Lake Elv. = 78' on 9/23/2019

	Surface/ SHWT	Nail on Power Pole = Bench Mark 100'		Existing Grade at Press Bed	
Soil Bore 1	98.1'/66"	Bench Mark	100'	NE = 97.3'	SE = 97.8'
Soil Bore 2	97.3'/66"	Ground Elv. BM	99'	NW = 97.1'	SW = 98.3'
Soil Bore 3	98.6'/70"	Ground Elv. Tank	88.1'	New	Bottom of Rockbed Elv. = 96'
SB-6 & Pit 1	97.1'/54"	Existing House	89.7'	SW corner	Existing septic tank inlet Elv. = 87.6'

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: Chris George

Date: 9/23/2019

Site Address: 49310 386th Pl. Palisade MN 56469

PID: 35-0-029600

Comments: Type I Pressure Bed / 3 bedroom

- 1 This is a type I Pressure Bed for a proposed 3 bedroom House.
Soil separation is at 54" with a North slope of 1.4' across pressure bed area.
- 2 There is an existing shallow well somewhere under house.
- 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 proposed pressure bed.
Top of the Telephone Pedestal at West end of driveway is Elv. 102.6'
- 5 The Pressure bed area will be 16 ft. wide and 36 ft. long. Bottom of rock Elv 96'.
The NW corner is the lowest corner, use the excavated soil to build the berm out from NW corner.
Elevation of the bottom of the rock bed should be approx. 96'
The area size of the rock bed is 16' x 36' .
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 Combo tank will be gravity flow from dwelling. Install the pump for 5 demand doses per day. approx. 99 gallons per dose, 7.8 inches of tank level. Install alarm at 3 inches from pump on level.
Install pump with 34 GPM and 22 Ft. head.
Install all manholes, inspection pipes and clean-outs to grade or above, including existing 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 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.

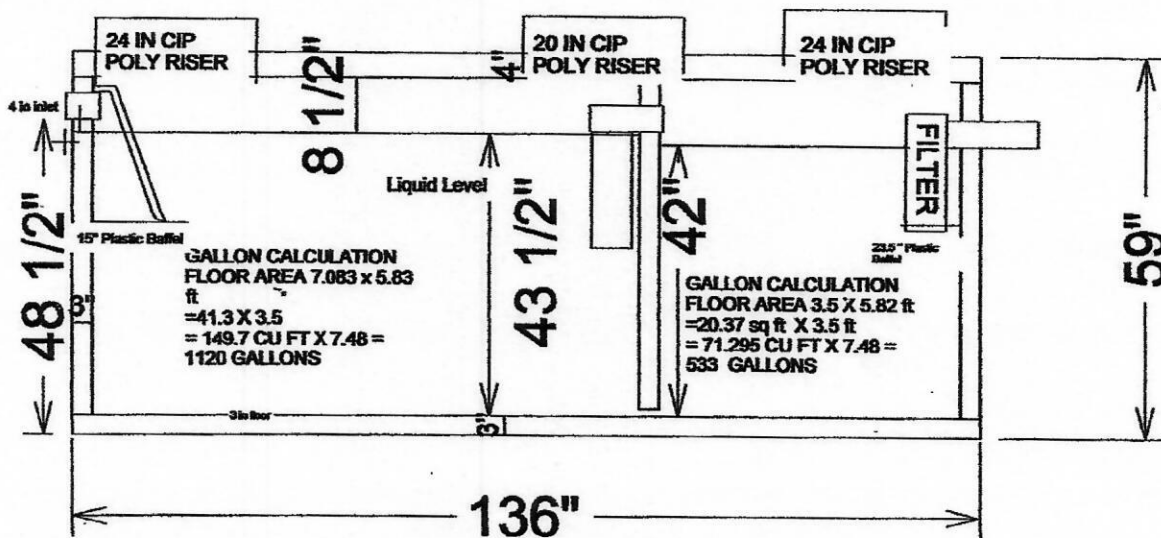
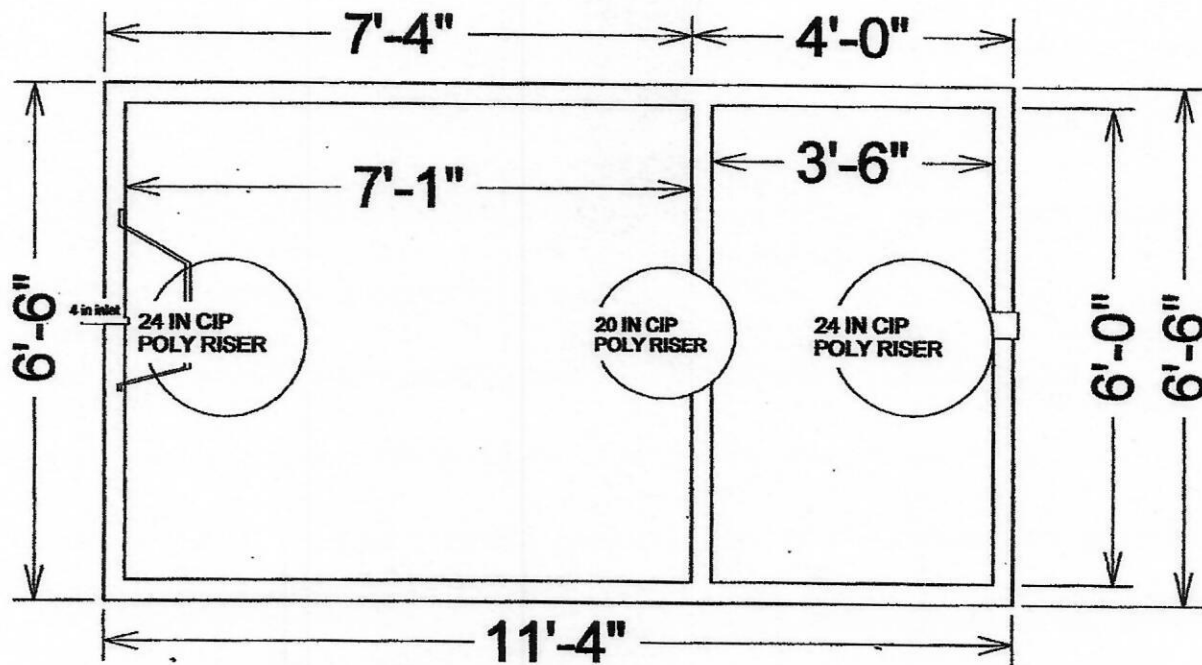

Designer Signature

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



Detailed Parcel Report

Parcel Number: 35-0-029600

General Information

Township/City: WAUKENABO TWP
Taxpayer Name: GEORGE, ANNE M ETAL
Taxpayer Address: NELSON, MARJORIE LE
19620 MILLPOND WAY
MAPLE GROVE MN 55311
Property Address: 49310 386th Pl
Township: 49 **Lake Number:** 1013700
Range: 26 **Lake Name:** ROUND LAKE (WAUKENABO TWP)
Section: 17 **Acres:** 1.95
Green Acres: No **School District:** 1.00
Plat:
Brief Legal Description: S 200 FT OF N 600 FT LOT 5 LESS W 950 FT

Tax Information

Class Code 1: Non-Comm Seasonal Residential Recreational
Class Code 2: Unclassified
Class Code 3: Unclassified
Homestead: Non Homestead
Assessment Year: 2019

Estimated Land Value:	\$168,700.00
Estimated Building Value:	\$84,100.00
Estimated Total Value:	<u>\$252,800.00</u>
Prior Year Total Taxable Value:	\$237,900.00
Current Year Net Tax (Specials Not Included):	\$1,986.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$993.00
Delinquent Taxes:	No

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

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



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

George



Date: 9/23/2019

928 = Cushing - Mahomed Complex