

Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>8/27/2019</u>	Sec / Twp / Rng	<u>S-24, T-49, R-25</u>
Parcel ID	<u>19-1-067300</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Dona Sackett</u>	Owners address (if different)	
Property Address:	<u>48753 285th Ave. Palisade MN 56469</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: Mound designed in yard Property line by others		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 (owner stated 57 ft.)	
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 checked="" type="checkbox"/> No
Property lines determined (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in 200' of transient noncommunity water supply (TNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Req'd setbacks determined (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in an inner wellhead mgmt zone (CWS/NTNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Utilities located & identified (gopher state one call)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Buried water supply pipe w/in 50' of system	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Access for system maintenance (shown on site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site located in Shoreland (w/in 1000' of lake, 300' of river)	<input 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>NW corner of downslope berm will be constructed over existing gravity bed</u>				
	<u>Approx. 8 sq. ft.</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>0.60</u>		Percolation rate (if applicable) _____
Depth/elev to SHWT	<u>12"</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>(+24")</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) _____ From Aitkin Co. GIS Map 100 yr appears to be 1216' Lot Elv. At Mound is 1220'
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>Dona Sackett</u>	Date <u>8/27/2019</u>
Property Address / PID: <u>48753 285th Ave. Palisade MN 5646</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 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>1353B</u> slope <u>2</u> % direction- <u>NW</u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97.9</u>	Depth to SHWT <u>12"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 4	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
4 - 12	Loam	<35	10YR4/3		Friable	Loose	Granular
12 - 14	Loam	<35	10YR6/3	7.5YR5/6	Friable	Weak	Granular
		<35			Loose	Loose	Granular
		<35			Loose	Loose	Granular
Comments:							

48753 285th Ave. Palisade MN 56469		Soil Log #2					
		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97.8'</u>		Depth to SHWT <u>14"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 12	Loam	<35	10YR4/3		Friable	Loose	Granular
12 - 14	Sandy Loam	<35	10YR5/3		Loose	Loose	Granular
14 - 18	Silt Loam	<35	10YR6/3	7.5 YR5/6	Friable	Weak	Blocky
		<35					

48753 285th Ave. Palisade MN 56469		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 #

Mound Design - Aitkin county

Property Owner: Dona Sackett

Date: 8/27/2019

Site Address: 48753 285th Ave. Palisade MN 56469

PID: 19-1-067300

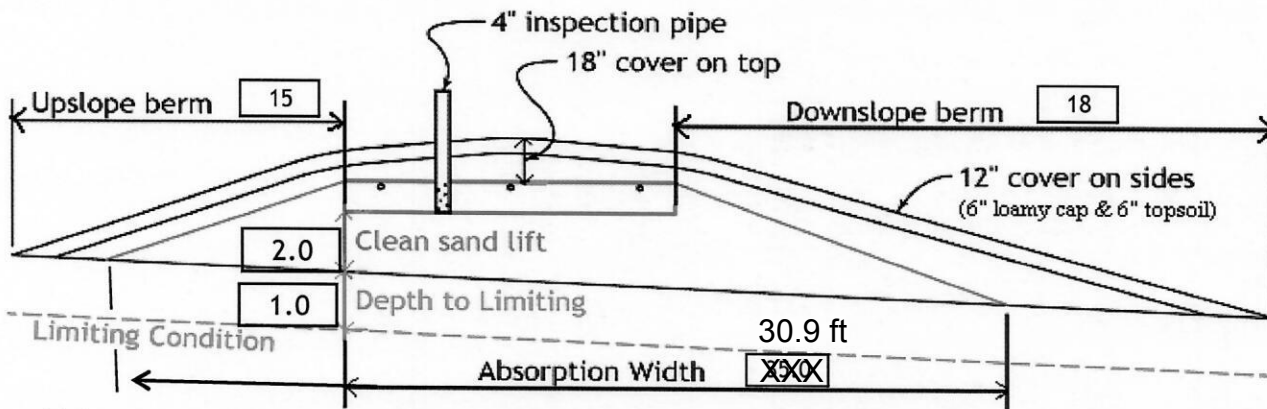
Comments: _____

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

- 1) bedroom Type Residential System
- 2) GPD design flow
- 3) Garbage disposal or pumped to septic Install Jacobson 1650 2/ compartment tank
- 4) Gal Septic tank (code minimum) Gal Septic tank (design size / LUG req'd)
Tank options: Effluent filter & alarm req'd
- 5) GPD/ft² mound sand loading rate contour loading rate of req's a min ft. long rockbed
- 6) ft rockbed width ft rockbed length
- 7) ft lateral spacing ft perforation spacing (maximum of 3 for both)
 manifold connection
- 8) laterals feet long perfs / lateral perfs total
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9) inch perfs at feet residual head gives gpm flow rate per perforation
for this perf size & spacing, & pipe size on line 12, max perfs/lateral = , line #8 must be less --> OK
- 10) doses per day (4 minimum)
- 11) gallons per dose (treatment volume) 1.50 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)

There will be 2 alarms on system when complete, one on effluent filter and one on the pump tank

- 23) 0.60 gpd/ft² 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) 2 percent site slope (0-20% range) 2 (% 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):
 35.0 greater of: absorption width OR sand slope
- 28) 0.0 ft. upslope and sideslope sand upslope ~~14.1~~ use 7 ft sand up slope
 10.0 ft. Downslope sand down slope 13.9
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) 4:1 upslope ratio 15 ft. upslope berm
- 30) 4:1 sideslope 17 ft. sideslope berms
- 31) 4:1 downslope 18 ft. downslope berm
- 32) Overall Dimensions: 10.0 ft. wide by 25.0 ft. long Rock bed
 43 ft. wide by 59 ft. long Mound footprint



Note:
 For 0 to 1% slopes, *Absorption Width* is measured from the *Bed* equally in both directions.
 For slopes >1%, *Absorption Width* is measured downhill from the upslope edge of the *Bed*.

- 33) Rock Bed:
 10.0 ft. by 25.0 ft. by 9 inches under pipe, plus 20% gives 12 yd³ or *1.4= 17 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)
 31.5 up + 42.1 downslope + 15.2 ends + 19.4 under rock = 130 yd³ or *1.4= 182 ton
 plus 20%
- 35) Loamy Cap:
 39 ft. by 55 ft. 6" deep, plus 20% gives 48 yd³ or *1.4= 67 ton
- 36) Topsoil:
 43 ft. by 59 ft. 6" deep, plus 20% gives 57 yd³ or *1.4= 80 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#

8/27/2019
 Date

Installer Summary

1120 gallon Septic tank (minimum) Tank options: Effluent filter & alarm req'd
 Install Jacobson 1650 2/ compartment tank
 533 gallon Dose tank (minimum) at 12.69 gpi

18 GPM @ 18 ft. of head, Pump required
 4.0 inch swing on Demand float which translates to roughly 3.0 inches of float tether length
 if time dosing is required --> 2.8 minutes ON time & 5.1 hours OFF time

16 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
 19 inches from bottom of tank to "Hi Level Alarm" or 29 inches to "Hi level alarm" if time dosed

45 ft. of 2.0 inch supply line with end feed manifold connection
 (Tip: "top feed" manifold to control drainback)

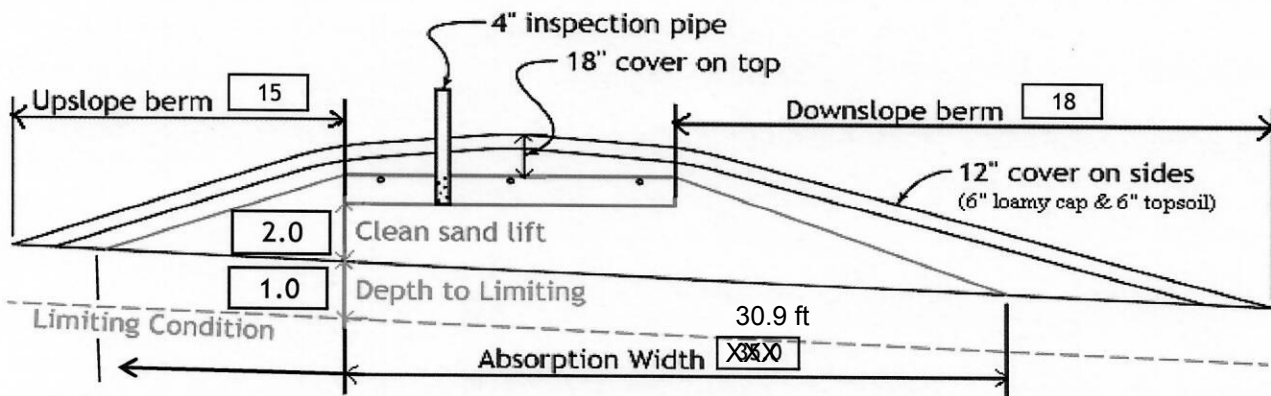
24 inch, or 2.0 ft. Sand Lift Mound
 10.0 ft. wide by 25.0 ft. long Rock bed
 3 laterals 1.50 inch diameter 23.0 ft. long 3.0 ft. lateral spacing
 1/4" inch perfs 3.0 ft. perforation spacing

Yes Effluent filter & alarm
 3 clean out & valve box assemblies

35.0 ft. Total sand ABSORPTION width (minimum)
 Use 7 ft. ~~1x1~~ ft. upslope and sideslope (sand beyond rockbed, minimum)
 13.9 ft. Downslope (sand beyond rockbed, minimum)

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

4:1 upslope ratio	15 ft. upslope berm
4:1 sideslope	17 ft. sideslope berms
4:1 downslope	18 ft. downslope berm



Note:

For 0 to 1% slopes, *Absorption Width* is measured from the *Bed* equally in both directions.
 For slopes >1%, *Absorption Width* is measured downhill from the upslope edge of the *Bed*.

Rock Bed:	12.0 yd ³ or *1.4=	17 ton	9 inches under pipe
Mound Sand:	130 yd ³ or *1.4=	182 ton	calculation based on 3:1/4:1 slope from top of rockbed
Loamy Cap:	48 yd ³ or *1.4=	67 ton	6" deep
Topsoil:	57 yd ³ or *1.4=	80 ton	6" deep

There will be 2 alarms on system when complete, one on effluent filter and one on the pump tank

INSPECTOR CHECKLIST - mound

48/53 285th Ave. Palisade MN 56469

- 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 _____ 1120 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 _____ 533 gallons

- dose pump _____ 18 gpm 18 head VERIFY PUMP CURVE 2.8 min ON 5.1 hr OFF

- float setting drop 4.0 inches at 12.7 gpi "DESIGNED" 3.0 inches approx float tether length
51.0 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 25.0
Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)

- Absorption Sand beyond rock Use 7 ft sand up slope
~~14~~ upslope 13.9 downslope

- Bermed topsoil beyond rockbed 15 upslope 17 sideslope 18 downslope

- cover depth of 12-18"+ VERIFY
- 3 laterals (1-2' from edge of rock)
- 1.50 inch pipe size (Sch40 pipe & fittings)
- 3.0 ft lateral spacing

- 1/4" inch perforations
- 3.0 ft perforation spacing

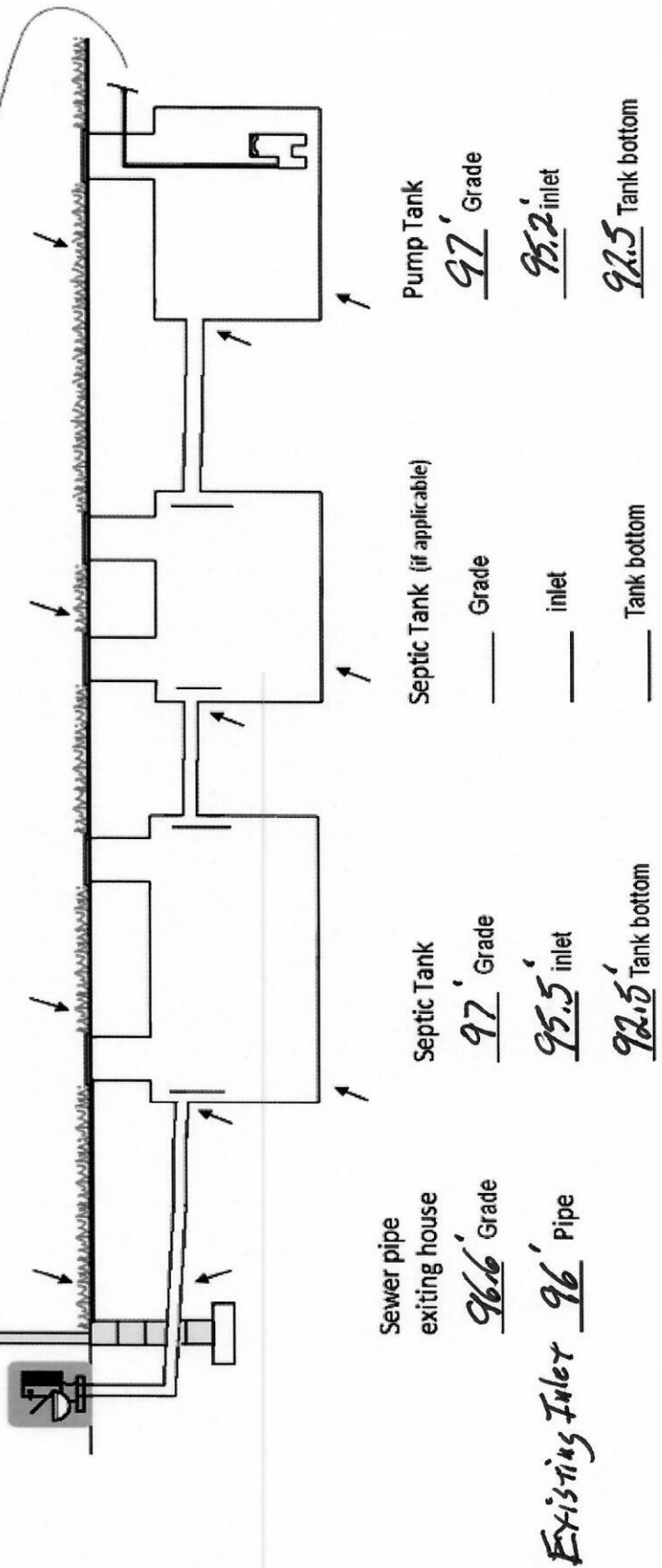
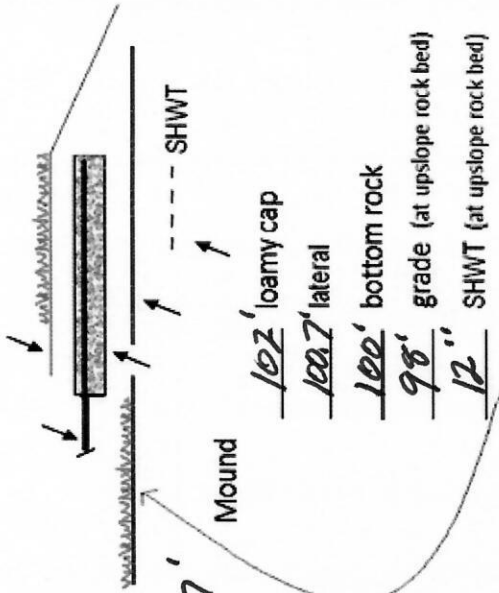
- Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY
- clean outs (no hard 90's)
- 4" inspection pipe to bottom of rock, anchored VERIFY

- Abandon existing system - if necessary Re-use existing tank certification
- monitoring plan and type _____
- well abandonment form - if necessary _____

System Elevations

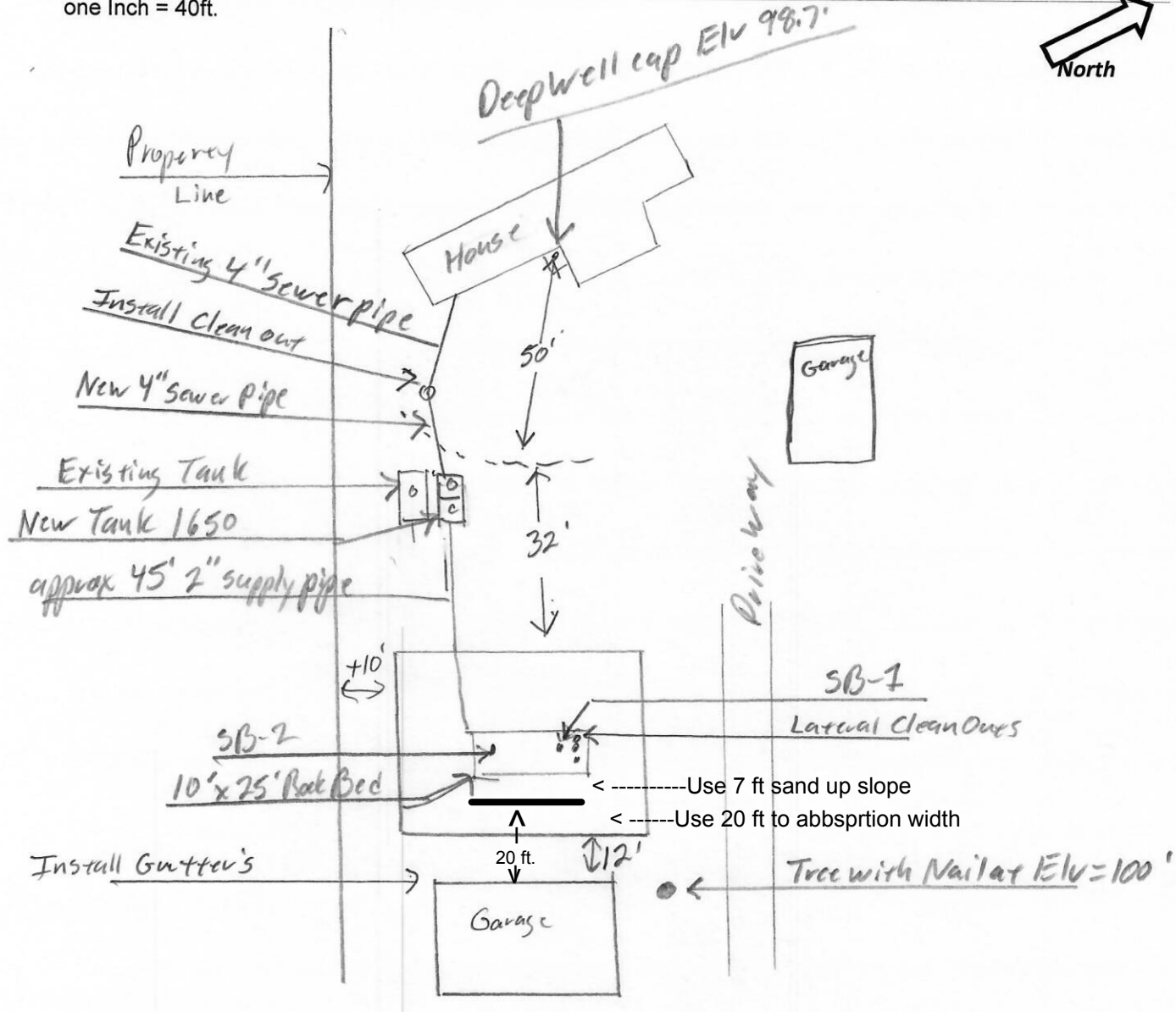
Elv = 100' benchmark Nail on Tree SE of Mound
Top of Existing Well Motor Elv = 98.7'

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



{ Design Drawing }

Property Owner: Dona Sackett Date: 8/27/19 Designer's Initials: JB
 Parcel ID. Number: 19-1-067300 Address: 48753 285th Ave. Palisade MN 56469
 one Inch = 40ft.



	Surface/ SHWT	Nail on Tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	97.9'/12"	Bench Mark	100'		Upslope edge of rockbed Elv.= 97'
Soil Bore 2	97.8'/14"	Ground Elv. BM	98.7'		Bottom of Rockbed Elv.= 100'
Soil Bore 3		Ground Elv. Tank	97'		Top of Washed sand Elv.= 100'
	Ground at	Existing house	96.6'	SW Corner	Existing tank inlet Elv.= 96'

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: Dona Sackett

Date: 8/27/19

Site Address: 48753 285th Ave. Palisade MN 56469

PID: 19-1-067300

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

- 1 This is a type I mound for a 2 bedroom House. Existing deep well location is next to House. (Owner stated 57' deep well)
- 2 Owner stated deep well 57 ft. Haskamp well .
- 3 Existing tank to be pumped, collapsed, removed, exiting gravity bed to be abandon.
8 sq. ft. of the down slope berm will cover existing gravity bed, outside of absorption area.
- 4 Bench Mark Elevation is a nail on a tree near SE corner of mound area, Elv. = 100'.
- 5 Install Jacobson 1650 Compartment tank for gravity flow from house, install cleanout at junction with existing pipe.
- 6 Elevation contour of rock bed upslope edge is 98'.
The area size of the rock bed is 10' x 25' . Absorption area is 25' x 35'.
Sand absorption area is 11.1 ft. up slope + 10 ft. rockbed + 13.9' downslope = approx. 35 ft. wide sand base.
Berms are 15ft. Upslope, 18ft. Down slope, 10ft. Rock bed = approx. 43ft. Wide.
Overall mound size is approx. 43' wide x 59' long and approx. 4' high. End Berms are 17 ft.
- 7 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.
- 8 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.
- 9 The Jacobson 1650 compartment tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 51 gallons per dose, 4 inches of tank level. Install alarm at 3 inches from pump on level.
Install all manholes, inspection pipes and clean-outs to grade or above, insulate top of tank.
- 10 Install Effluent filter on septic tank outlet, install electric alarm on filter.
Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to tank.
Install 1.5" laterals with 9" of rock under them. Install clean-outs at far end of laterals.
Drill 1/4" 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.
- 11 Installer will pressure test and squirt height laterals when finished.

Designed to Aitkin Co. and MPCA recommendations and requirements.



Designer Signature

Brummer Septic LLC.
Design Company

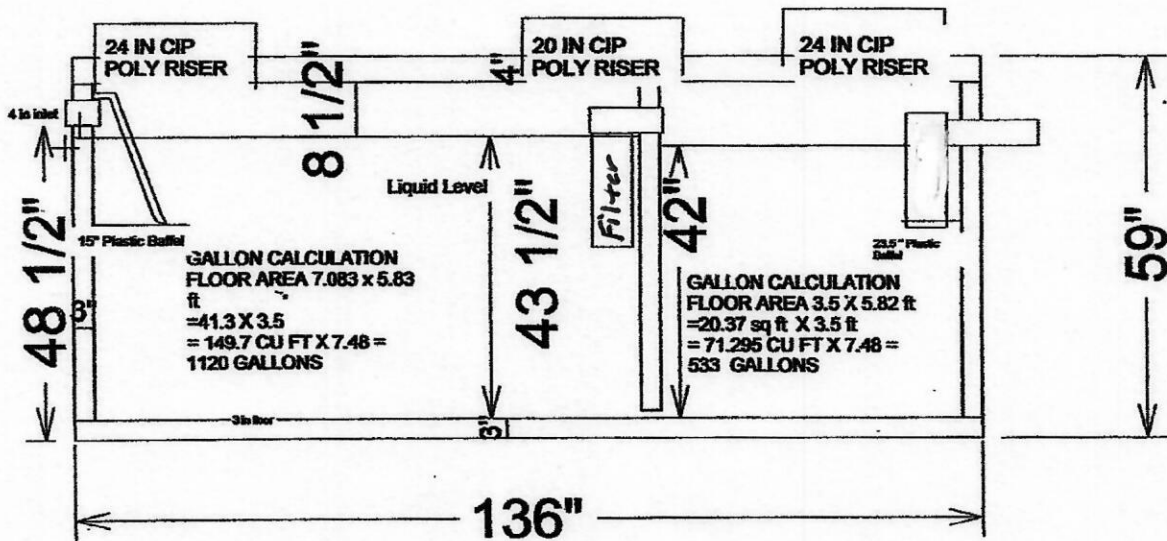
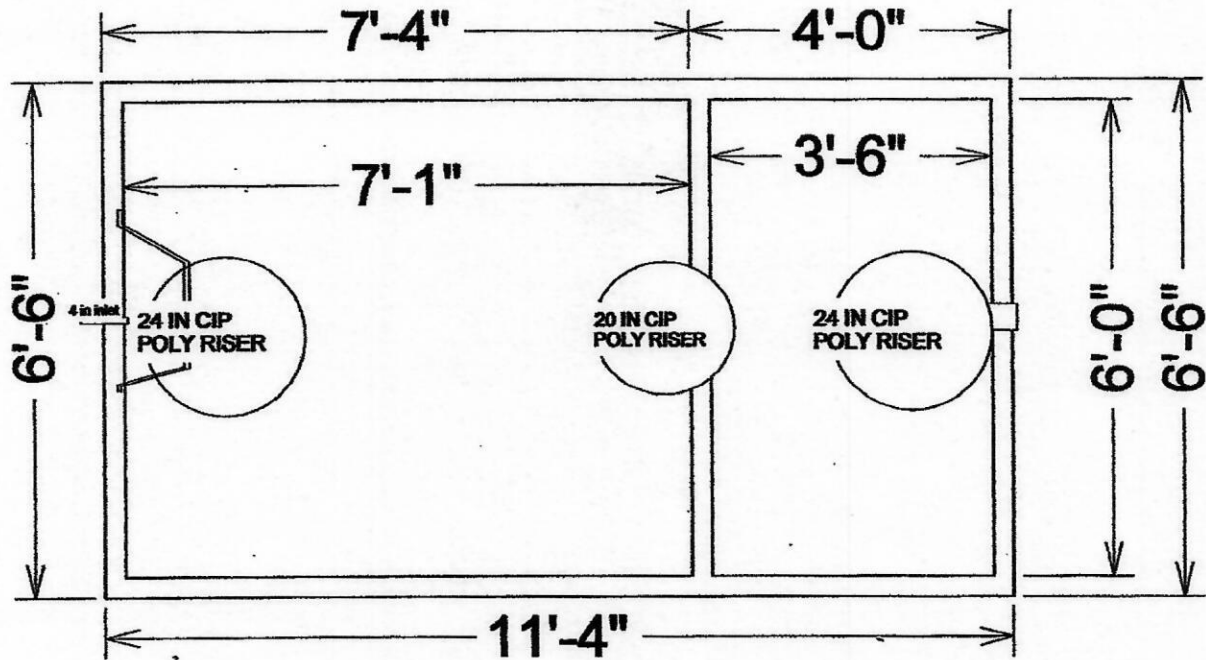
L-1347
License#

There will be 2 alarms on system when complete, one on effluent filter and one on the pump tank

Install upslope berm first then install washed sand, Keep washed sand at least 20 ft. from garage.
Install upslope berm with heavier material, Build it high enough to hold washed sand at 20 ft from garage.

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: 19-1-067300

General Information

Township/City:	LOGAN TWP	Lake Number:	1060400
Taxpayer Name:	SACKETT, DONA MAE	Lake Name:	Mississippi River
Taxpayer Address:	48753 285TH AVE	Acres:	0.00
Property Address:	PALISADE MN 56469	School District:	1.00
Township:	49		
Range:	25		
Section:	24		
Green Acres:	No		
Plat:	RIVERSIDE ACRES		
Brief Legal Description:	LOT 31 BLK 1		

Tax Information

Class Code 1:	Residential 1-3 units Previously SRR
Class Code 2:	Unclassified
Class Code 3:	Unclassified
Homestead:	Owner Homestead
Assessment Year:	2019
Estimated Land Value:	\$26,900.00
Estimated Building Value:	\$37,500.00
Estimated Total Value:	\$64,400.00
Prior Year Total Taxable Value:	\$34,740.00
Current Year Net Tax (Specials Not Included):	\$158.00
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.



Sackett



Date: 7/17/2019

0 45 90 ft 1 inch = 125 feet

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.

Search			
Map Unit Legend			
Aitkin County, Minnesota (MN001)			
Aitkin County, Minnesota (MN001)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1353B	Cutaway loamy fine sand, 1 to 6 percent slopes	0.1	100.0%
Totals for Area of Interest		0.1	100.0%

Soil Map

Scale (not to scale) ▾

Warning: Soil Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:20,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Aitkin County, Minnesota

1353B—Cutaway loamy fine sand, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: gjd4
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

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

Description of Cutaway

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope, summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy outwash over loamy till

Typical profile

A - 0 to 2 inches: loamy fine sand
E,Bw,E' - 2 to 26 inches: loamy sand
2E/B,2B/E - 26 to 49 inches: loam
2C - 49 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 high to high (0.20 to 2.00 in/hr)
Depth to water table: About 41 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

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

Minor Components

Northwood and similar soils

Percent of map unit: 6 percent

Landform: Depressions

Hydric soil rating: Yes

Sandwich and similar soils

Percent of map unit: 6 percent

Landform: Swales

Hydric soil rating: Yes

Dusler 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