

# Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>7/15/2020</u>	Sec / Twp / Rng	<u>S-10, T-46, R-27</u>
Parcel ID	<u>07-0-019602</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>James Ell</u>	Owners address (if different)	
Property Address:	<u>Next to 42843 Daisy St. Aitkin</u>	<u>17717 Iceland Trl</u>	
City / State / Zip:	<u>Aitkin MN 56431</u>	<u>Lakeville MN 55044</u>	

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: Elevation of house not set at time of design		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	Proposed deep well	
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	_____				
	_____				



# Soil Observation Log

www.SepticResource.com vers 12.4

Owner Information	
Property Owner / project: <u>James Ell</u>	Date: <u>7/15/2020</u>
Property Address / PID: <u>Next to 42843 Daisy St. Aitkin</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 checked="" type="checkbox"/> Shoulder <input type="checkbox"/> Side slope <input type="checkbox"/> Toe slope
soil survey map units:	<u>928D</u> slope <u>43928</u> %    direction- <u>NE</u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit	Elevation <u>97.7'</u>		Depth to SHWT <u>15"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 7	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
7 - 10	Clay Loam E-Horizon	<35	10YR5/3		Friable	Weak	Blocky
10 - 15	Clay Loam E-Horizon & B Horizon Mixed	<35	10YR5/3 & 7.5YR4/4		Friable	Weak	Blocky
15 - 26	Clay Loam	<35	7.5YR4/4	7.5YR5/6 & 7.5YR6/2	Friable	Moderate	Platy
		<35					
Comments:							

Next to 42843 Daisy St. Aitkin **Soil Log #2**

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97.8'</u>		Depth to SHWT <u>16"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 7	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
7 - 10	Clay Loam E-Horizon	<35	10YR5/3		Friable	Weak	Blocky
10 - 16	Clay Loam E-Horizon & B Horizon Mixed	<35	10YR5/3 & 7.5YR4/4		Friable	Weak	Blocky
16 - 18	Clay Loam	<35	7.5YR4/4	7.5YR5/6 & 7.5YR6/2	Friable	Moderate	Platy
		<35					

Next to 42843 Daisy St. Aitkin **Soil Log #3**

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>98'</u>		Depth to SHWT <u>14"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 7	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
7 - 10	Clay Loam E-Horizon	<35	10YR5/3		Friable	Weak	Blocky
10 - 14	Clay Loam E-Horizon & B Horizon Mixed	<35	10YR5/3 & 7.5YR4/4		Friable	Weak	Blocky
14 - 18	Clay Loam	<35	7.5YR4/4	7.5YR5/6 & 7.5YR6/2	Friable	Moderate	Platy
		<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: James Ell

Date: 7/15/2020

Site Address: Next to 42843 Daisy St. Aitkin

PID: 07-0-019602

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 1650 Jacobson 2/Compartment tank
- 4)  Gal Septic tank (code minimum)     Gal Septic tank (design size / LUG req'd)  
Tank options: none
- 5)  GPD/ft<sup>2</sup> mound sand loading rate    contour loading rate of  req's a min     ft. long rockbed
- 6)  ft rockbed width     ft rockbed length
- 7)  ft lateral spacing     ft perforation spacing    (maximum of 3 for both)  
 manifold connection
- 8)  laterals     feet long     perfs / lateral     perfs total  
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9)  inch perfs at  feet residual head    gives  gpm flow rate per perforation  
for this perf size & spacing, & pipe size on line 12, max perfs/lateral = , line #8 must be less --> OK
- 10)  doses per day    ( 4 minimum)
- 11)  gallons per dose    (treatment volume)
- 12)  inch diameter laterals must be used to meet "4x pipe volume" requirement    1.50 5x
- 13)  feet of  inch supply line    leads to  gallons of drainback volume    2.00 3x  
(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)

23)  gpd/ft<sup>2</sup> Absorption area Soil Loading Rate, which gives a mound ratio of  (minimum)  
 (this must match the soil boring log) desired mound ratio

24)  percent site slope (0-20% range)  (% downslope site slope, if different than upslope)

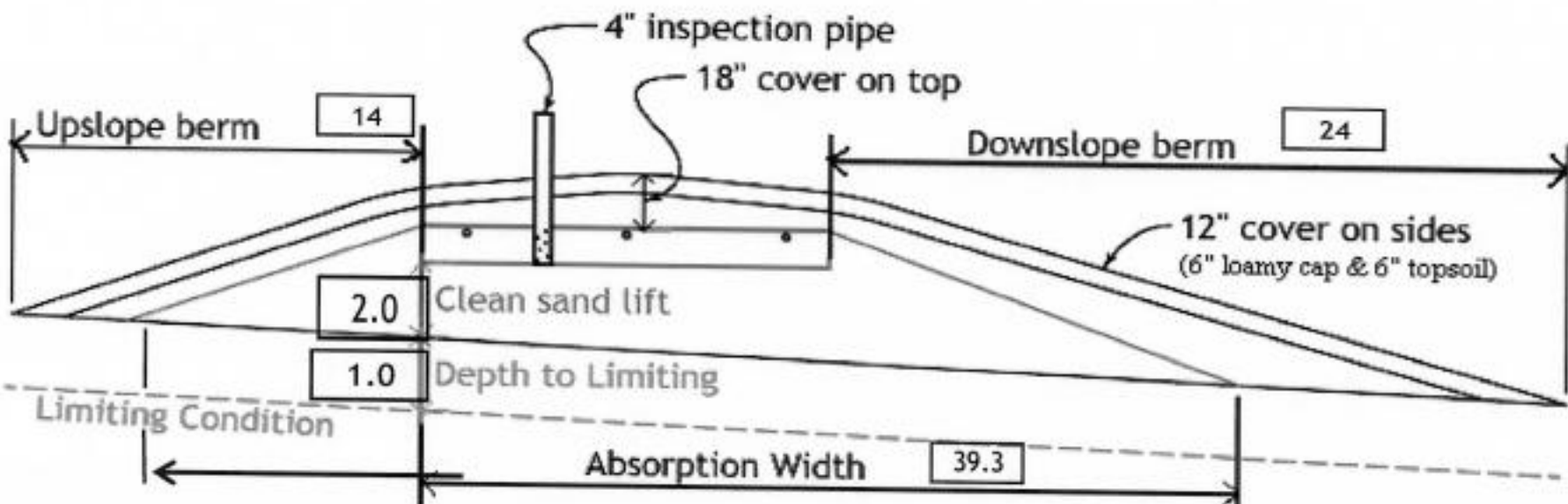
25)  inches, or  ft. to Redox or other limiting condition (need at least 12" to be a Type I)  
 Treatment zone contains  inches of 0% soil credit, and  inches of 50% soil credit. Giving a:  
 26)  inch, or  ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**

27)  ft. base absorption width (with sand beyond rockbed as follows):  
 greater of: absorption width OR sand slope

28)  ft. upslope and sideslope sand upslope   
 ft. Downslope sand down slope   
 Individual slope ratios give BERM widths (topsoil beyond rockbed) of:

29)  upslope ratio  ft. upslope berm  
 30)  sideslope  ft. sideslope berms  
 31)  downslope  ft. downslope berm

32) Overall Dimensions:  ft. wide by  ft. long Rock bed  
 ft. wide by  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*.

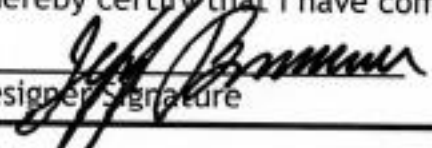
33) Rock Bed:  ft. by  ft. by  inches under pipe, plus 20% gives  yd<sup>3</sup> or \*1.4=  ton

34) Mound Sand: (note: volume is based on 3:1/4:1 slope from top of rockbed, Exchange sand for loamy cap if desired)  
 up +  downslope +  ends +  under rock =  yd<sup>3</sup> or \*1.4=  ton  
 plus 20%

35) Loamy Cap:  ft. by  ft. 6" deep, plus 20% gives  yd<sup>3</sup> or \*1.4=  ton

36) Topsoil:  ft. by  ft. 6" deep, plus 20% gives  yd<sup>3</sup> or \*1.4=  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#

7/15/2020  
 Date



## INSPECTOR CHECKLIST - mound

Next to 42843 Daisy St. Aitkin

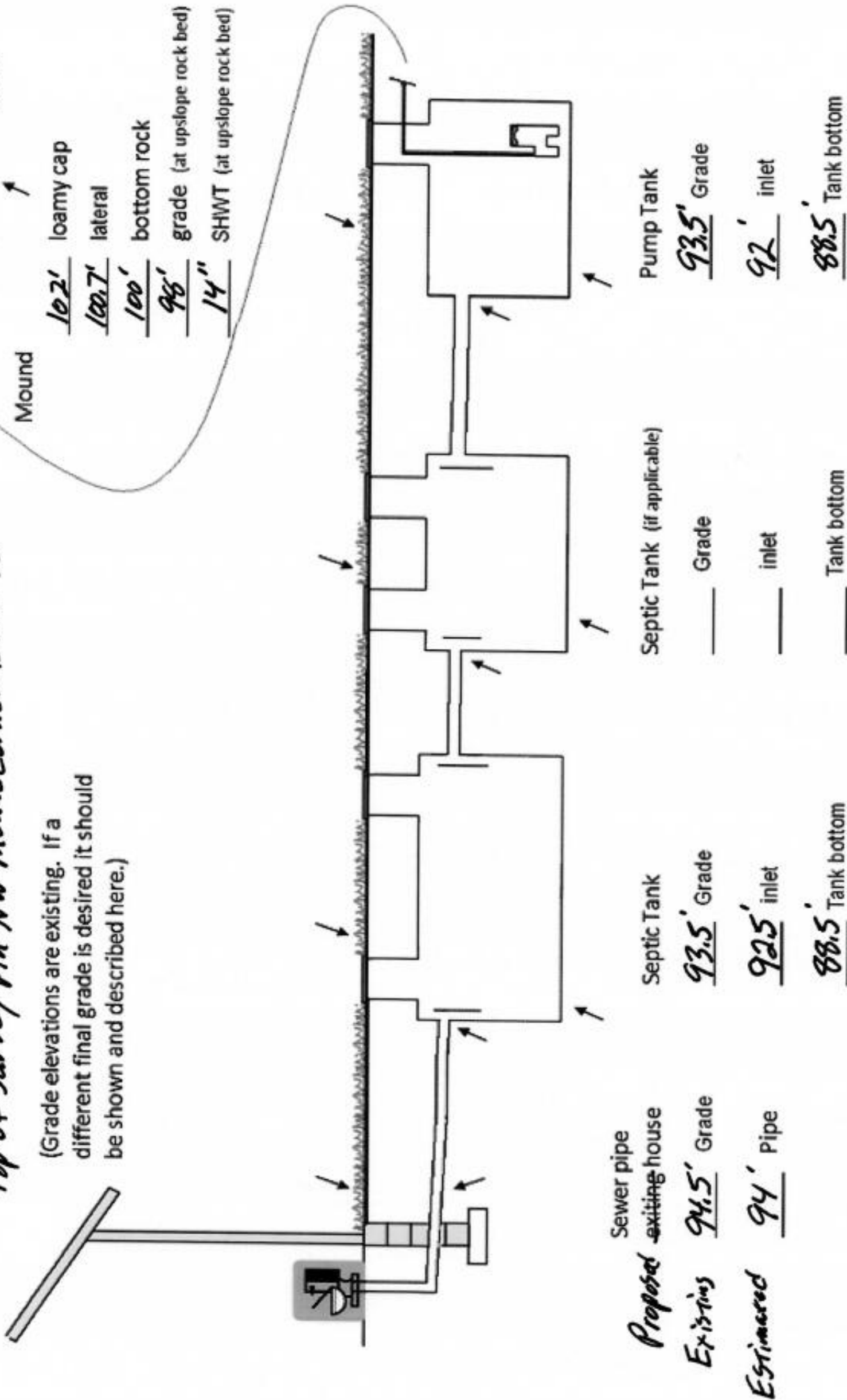
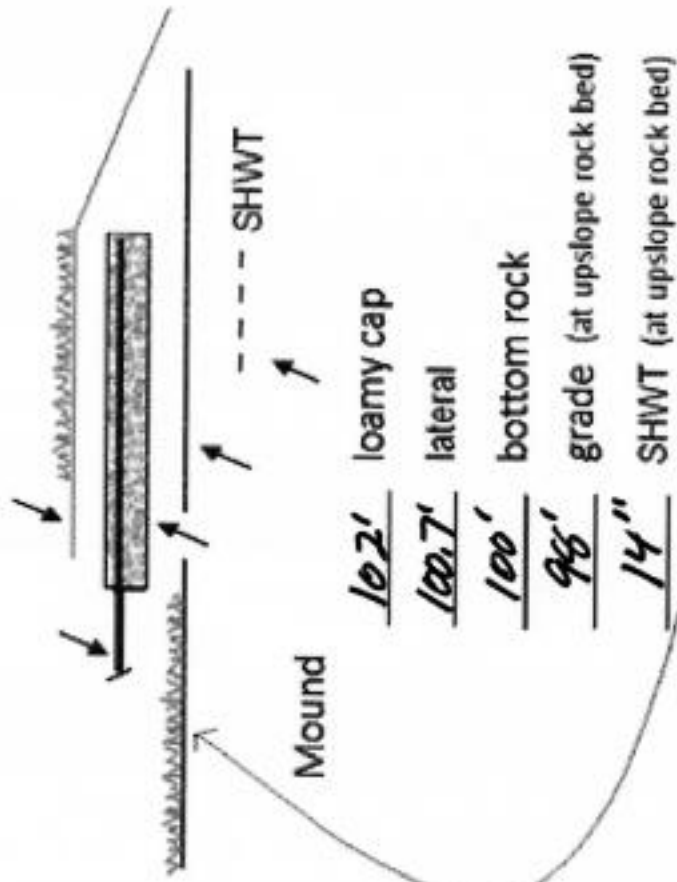
- WELL setbacks: 20' to pressure tested sewer line (5 psi for 15 min)  
50' to everything 100' to dispersal area with shallow well
- PROPERTY LINES setback: 10' to everything
- Road setback: platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.
- LAKE / BLUFF setback: 20' for bluff. Lakes: GD \_\_\_\_, RD \_\_\_\_, NE \_\_\_\_\_. Protected wetland \_\_\_\_.
- Building setbacks: 10' for everything, 20' for dispersal area.
- WATER LINE under pressure se 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 \_\_\_\_\_ 1000 gallons none \_\_\_\_\_
  
- Riser over outlet, riser over inlet or center, and 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 \_\_\_\_\_ 29 gpm 22 head VERIFY PUMP CURVE 2.6 min ON 5.2 hr OFF
  
- float setting drop 6.0 inches at 12.7 gpi "DESIGNED" 4.0 inches approx float tether length  
76.0 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 38.0
- Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
  
- Absorption Sand beyond rock 10.4 upslope 18.9 downslope
  
- Bermed topsoil beyond rockbed 14 upslope 18 sideslope 24 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

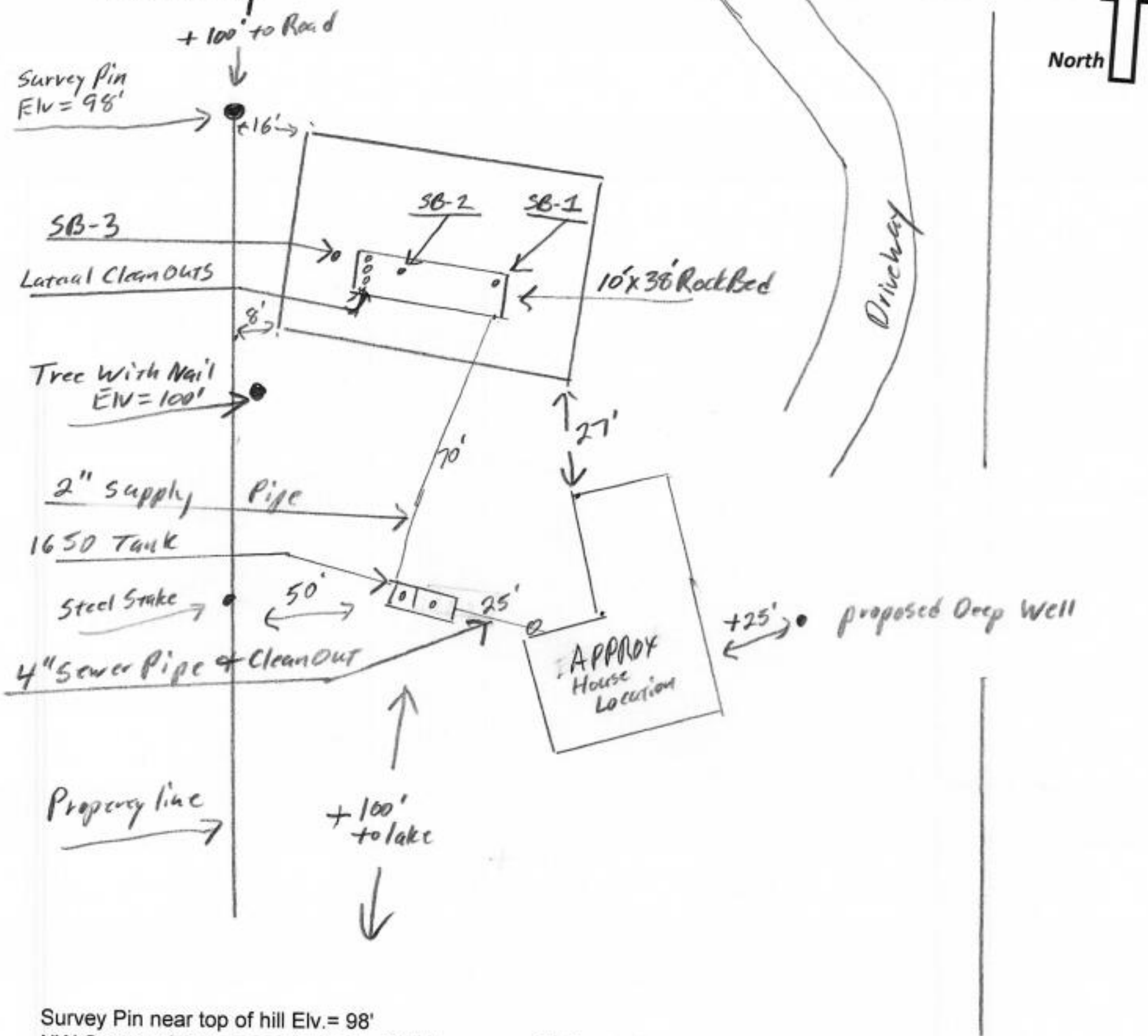
Elevation = 100' benchmark Nail on Tree  
Top of Survey Pin NW Mound Corner Elevation = 98'

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



# { Design Drawing }

Property Owner: James Ell      Date: 7/15/20      Designer's Initials: JB  
 Parcel ID. Number: 07-0-019602      Address: Next to 42843 Daisy St. Aitkin  
 one Inch = 40ft



Survey Pin near top of hill Elv. = 98'  
 NW Corner of house near tank Elv. = 94.5'      Estimated Lake Elv. = 64'

	Surface/ SHWT	Nail on Tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	97.7'/15"	Bench Mark	100'		Upslope Edge of Rockbed Elv. = 98'
Soil Bore 2	97.8'/16"	Ground Elv. BM	97'		Bottom of Rockbed Elv. = 100'
Soil Bore 3	98/14"	Ground Elv. Tank	93.5'		Top of Washed Sand Elv. = 100'
	Ground at Proposed house	97.7'	NW corner		Estimated Sewer pipe at House Elv. = 94'

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

## Mound Design Notes - Aitkin county

Property Owner: James Ell

Date: 7/15/20

Site Address: Next to 42843 Daisy St. Aitkin

PID: 07-0-019602

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

- 1 This is a type I mound for a 3 bedroom House. Proposed deep well location will be East of House.
- 2 Other's staked property Lines, found survey pin near NW mound corner. Survey pin Elv.= 98'
- 3 Upslope berm and rockbed on 4% slope, down slope berm on 7% slope.
- 4 Bench Mark Elevation = 100' is a nail on a tree near SW corner of mound area.
- 5 Install Jacobson 1650 Compartment tank for gravity flow from Slab on grade house ( Elv. not set )
- 6 Elevation contour of rock bed upslope edge is 98'.  
The area size of the rock bed is 10' x 38' . Absorption area is 38' x 39.3'.  
Sand absorption area is 10.4 ft. up slope + 10 ft. rockbed + 18.9 downslope = approx. 39.3 ft. wide sand base.  
Berms are 14ft. Upslope, 24ft. Down slope, 10ft. Rock bed = approx. 48ft. Wide.  
Overall mound size is approx. 48' wide x 74' long and approx. 4' high. End berms are 18 ft wide.
- 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. 76 gallons per dose, 6 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 Recommend Installing an 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 Lateral clean-outs at far end of laterals. Recommended )  
**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.

Designed to Aitkin Co. and MPCA recommendations and requirements.

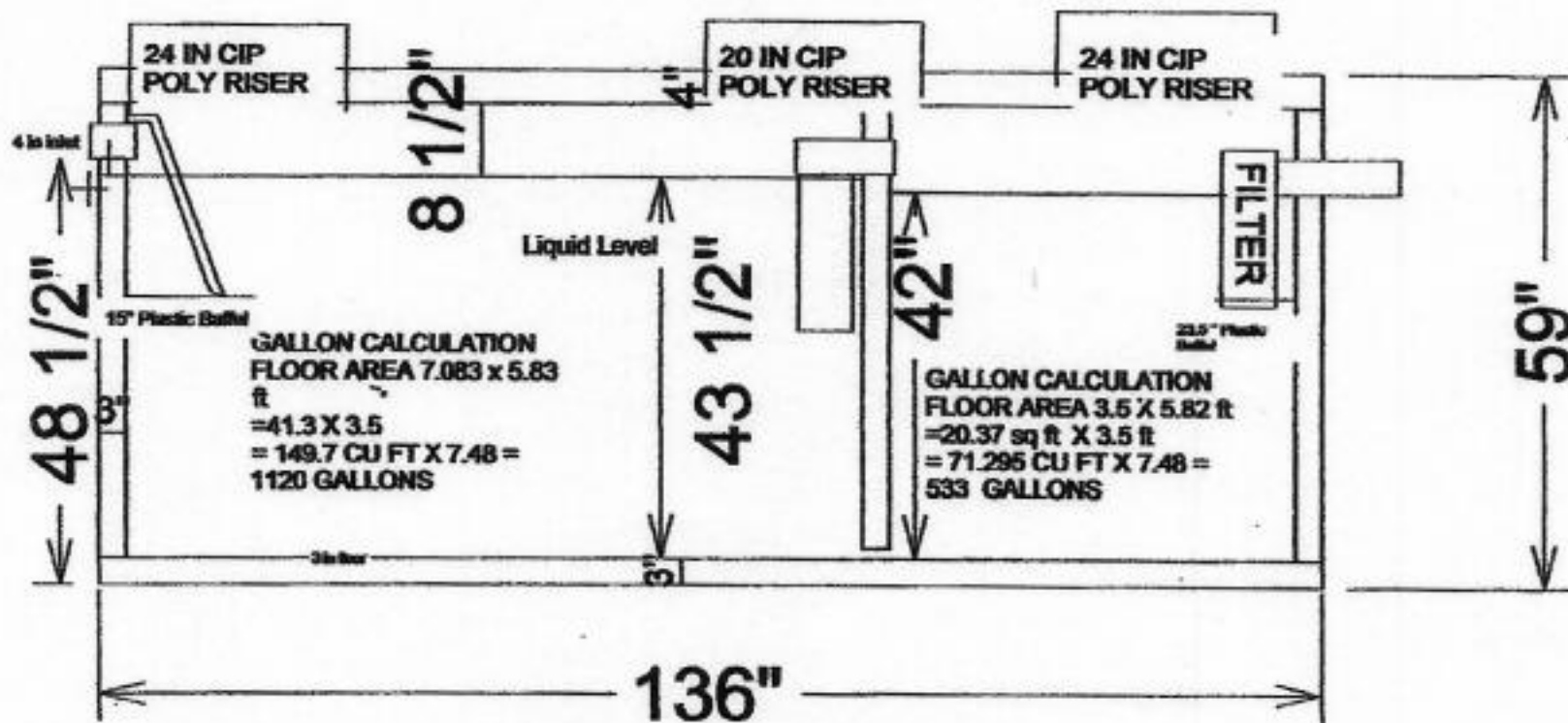
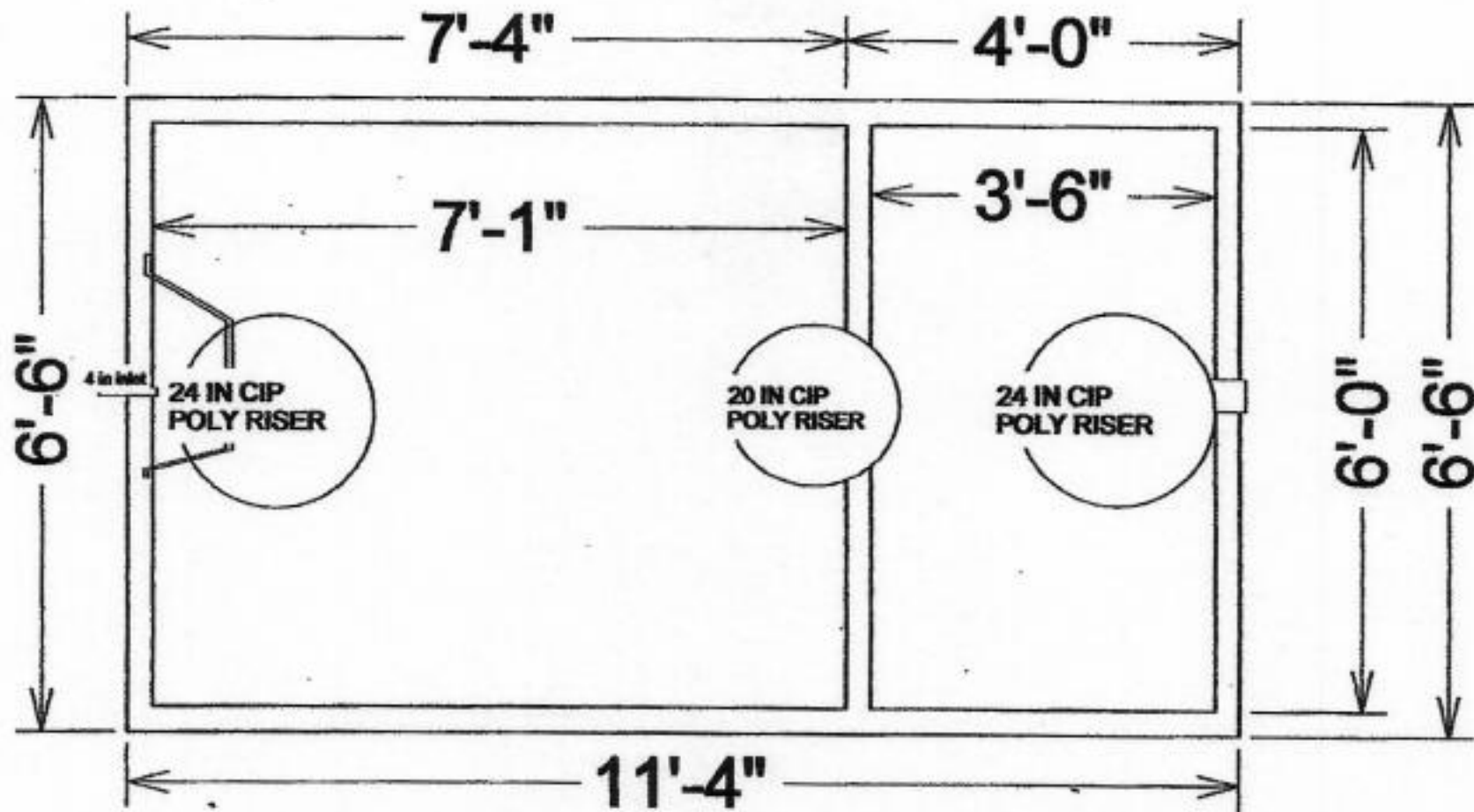
  
\_\_\_\_\_  
Designer Signature

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: 07-0-019602

## General Information

*Lake lot*

Township/City: FARM ISLAND TWP  
 Taxpayer Name: ELL, JAMES & JUDITH  
 Taxpayer Address: 17717 ICELAND TRL  
 LAKEVILLE MN 55044

Property Address:

Township:	46	Lake Number:	1016100
Range:	27	Lake Name:	HAMMAL LAKE <i>RD 75'</i>
Section:	10	Acres:	1.35
Green Acres:	No	School District:	1.00

Plat:

Brief Legal Description: E 175 FT OF W 375 FT OF GOVT LOT 7

## Tax Information

Class Code 1: Non-Comm Seasonal Residential Recreational  
 Class Code 2: Unclassified  
 Class Code 3: Unclassified  
 Homestead: Non Homestead  
 Assessment Year: 2020

Estimated Land Value:	\$83,900.00
Estimated Building Value:	\$0.00
Estimated Total Value:	<u>\$83,900.00</u>
Prior Year Total Taxable Value:	\$80,600.00
Current Year Net Tax (Specials Not Included):	\$570.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$0.00
Delinquent Taxes:	No

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

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



# Detailed Parcel Report

Parcel Number: 07-0-005804

## General Information

*Back lot at Daisy St.*

Township/City: FARM ISLAND TWP  
 Taxpayer Name: ELL, JAMES & JUDITH  
 Taxpayer Address: 17717 ICELAND TRL  
 LAKEVILLE MN 55044  
 Property Address:  
 Township: 46 Lake Number: 0  
 Range: 27 Lake Name:  
 Section: 3 Acres: 0.80  
 Green Acres: No School District: 1.00  
 Plat:  
 Brief Legal Description: E 175 FT OF W 375 FT OF SW SW LYING SLY OF DAISY ST

## Tax Information

Class Code 1: Rural Vacant Land  
 Class Code 2: Unclassified  
 Class Code 3: Unclassified  
 Homestead: Non Homestead  
 Assessment Year: 2020

Estimated Land Value:	\$1,300.00
Estimated Building Value:	\$0.00
Estimated Total Value:	<u>\$1,300.00</u>

Prior Year Total Taxable Value:

Current Year Net Tax (Specials Not Included):

Total Special Assessments:

\*\*Current Year Balance Not Including Penalty:

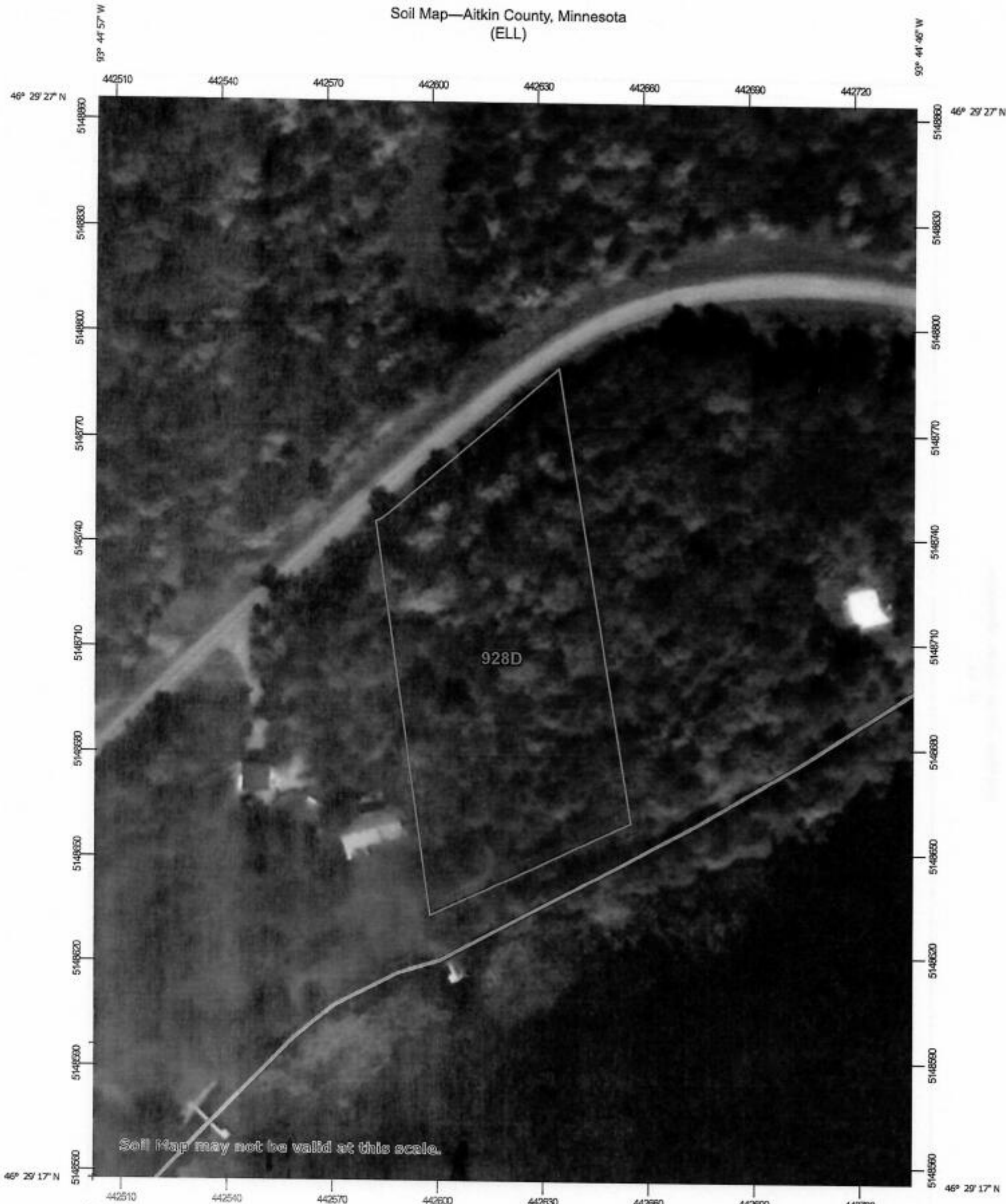
Delinquent Taxes: No

\* 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  
(ELL)



Soil Map may not be valid at this scale.



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

0 20 40 80 120 Meters

0 50 100 200 300 Feet

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



## Aitkin County, Minnesota

### 928D—Cushing-Mahtomedi complex, 10 to 25 percent slopes

#### Map Unit Setting

*National map unit symbol:* gjk5  
*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

*Cushing and similar soils:* 45 percent  
*Mahtomedi and similar soils:* 40 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Cushing

##### Setting

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

##### Typical profile

*E - 0 to 7 inches:* loam  
*B/E - 7 to 17 inches:* loam  
*Bt - 17 to 30 inches:* loam  
*C - 30 to 60 inches:* loam

##### Properties and qualities

*Slope:* 10 to 25 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 10 percent  
*Available water storage in profile:* High (about 9.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* C  
*Forage suitability group:* Sloping; Fine Texture (G090AN023MN)  
*Hydric soil rating:* No

## Description of Mahtomedi

### Setting

*Landform:* Moraines  
*Landform position (two-dimensional):* Shoulder, backslope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy and gravelly outwash

### Typical profile

*A - 0 to 3 inches:* loamy coarse sand  
*E - 3 to 13 inches:* coarse sand  
*Bw - 13 to 25 inches:* gravelly coarse sand  
*C - 25 to 60 inches:* gravelly sand

### Properties and qualities

*Slope:* 10 to 25 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 4.2 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

#### Alstad and similar soils

*Percent of map unit:* 8 percent  
*Hydric soil rating:* No

#### Cathro and similar soils

*Percent of map unit:* 7 percent  
*Landform:* Bogs  
*Hydric soil rating:* Yes

## Data Source Information

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