

# Preliminary & Field Evaluation Form

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Owner Information			
Date	<u>7/20/2021</u>	Sec / Twp / Rng	<u>S-18, T-47, R-23</u>
Parcel ID	<u>30-0-030102</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Terry Olson</u>	Owners address (if different)	
Property Address:	<u>37053 St Hwy 65 McGregor MN 55760</u>	<u>37053 St Hwy 65 McGregor MN 55760</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: Replacing a failing inground system		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	Existing 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) <span style="float: right;">By Owner</span>	<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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Soil treatment area protected	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site map prepared with previous items included	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Construction related issues	_____				
	_____				

### Soil Information

		Evidence of site:	
		Cut	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Filled	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Compacted	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Disturbed	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Original soils	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Soil logs completed and attached	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Perk test completed and attached (if applicable) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Soil loading rate (gpd/ft <sup>2</sup> )	<u>0.60</u>		Percolation rate (if applicable) _____
Depth/elev to SHWT	<u>13"</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) _____
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 #



37053 St Hwy 65 McGregor MN 55760

**Soil Log #2**

		<input type="checkbox"/> Boring	<input checked="" type="checkbox"/> Pit	Elevation <u>97.8'</u>		Depth to SHWT <u>13"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 5	Topsoil Sandy Loam	<35	10YR3/2		Loose	Loose	Granular
5 - 13	Silt Loam	<35	10YR5/3		Friable	Weak	Blocky
13 - 15	Silt Loam	<35	10YR5/3	7.5YR5/4	Friable	Weak	Blocky

37053 St Hwy 65 McGregor MN 55760

**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: Terry Olson

Date: 7/20/2021

Site Address: 37053 St Hwy 65 McGregor MN 55760

PID: 30-0-030102

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
- 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) 0.60 gpd/ft<sup>2</sup> 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) 6 percent site slope (0-20% range) 6 (% 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!!!**

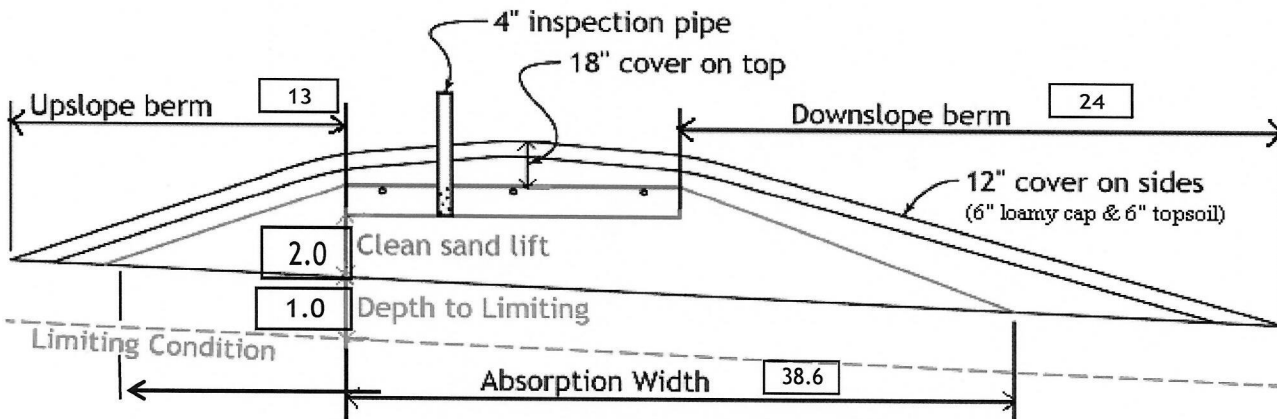
27) 20.0 ft. base absorption width (with sand beyond rockbed as follows):  
 38.6 greater of: absorption width OR sand slope

28) 0.0 ft. upslope and sideslope sand upslope 9.7  
 10.0 ft. Downslope sand down slope 18.9

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

29) 4:1 upslope ratio 13 ft. upslope berm  
 30) 4:1 sideslope 18 ft. sideslope berms  
 31) 4:1 downslope 24 ft. downslope berm

32) Overall Dimensions: 10.0 ft. wide by 37.5 ft. long Rock bed  
 47 ft. wide by 74 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 37.5 ft. by 9 inches under pipe, plus 20% gives 17 yd<sup>3</sup> or \*1.4= 24 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)  
 35.3 up + 82.7 downslope + 19.2 ends + 31.9 under rock = 203 yd<sup>3</sup> or \*1.4= 284 ton  
 plus 20%

35) Loamy Cap: 43 ft. by 70 ft. 6" deep, plus 20% gives 67 yd<sup>3</sup> or \*1.4= 94 ton

36) Topsoil: 47 ft. by 74 ft. 6" deep, plus 20% gives 77 yd<sup>3</sup> or \*1.4= 108 ton

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

*J. Brummer*  
 Designer Signature

Brummer Septic LLC.  
 Company

L-1347  
 License#

7/20/2021  
 Date

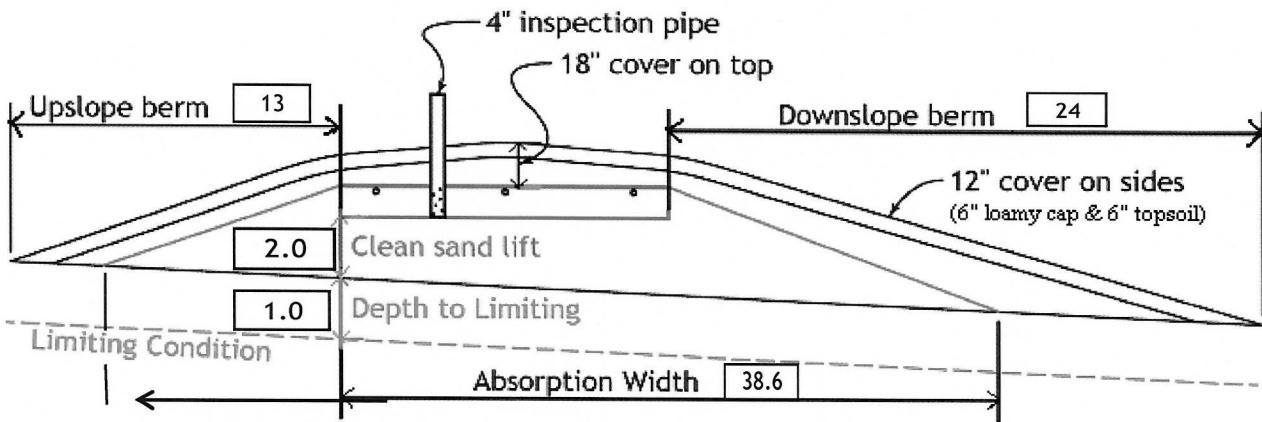
# Installer Summary

- 1000 gallon Septic tank (minimum)                      Tank options: none
- 520 gallon Dose tank (minimum)                      at 16.57 gpi
- 27 GPM @ 22 ft. of head, Pump required
- 4.6 inch swing on Demand float    which translates to roughly 3.3 inches of float tether length  
if time dosing is required --> 2.9 minutes ON time & 5.1 hours OFF time
- 17 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
- 20 inches from bottom of tank to "Hi Level Alarm" or 30 inches to "Hi level alarm" if time dosed
- 75 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 37.5 ft. long Rock bed
- 3 laterals 1.50 inch diameter 35.5 ft. long 3.0 ft. lateral spacing
- 1/4" inch perfs 3.0 ft. perforation spacing
- No Effluent filter & alarm
- 3 clean out & valve box assemblies

- 38.6 ft. Total sand ABSORPTION width (minimum)
- 9.7 ft. upslope and sideslope (sand beyond rockbed, minimum)
- 18.9 ft. Downslope (sand beyond rockbed, minimum)

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

4:1 upslope ratio	13 ft. upslope berm
4:1 sideslope	18 ft. sideslope berms
4:1 downslope	24 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:	17.0 yd <sup>3</sup> or *1.4=	24 ton	9 inches under pipe
Mound Sand:	203 yd <sup>3</sup> or *1.4=	284 ton	calculation based on 3:1/4:1 slope from top of rockbed
Loamy Cap:	67 yd <sup>3</sup> or *1.4=	94 ton	6" deep
Topsoil:	77 yd <sup>3</sup> or *1.4=	108 ton	6" deep

## INSPECTOR CHECKLIST - mound

37053 St Hwy 65 McGregor MN 55/60

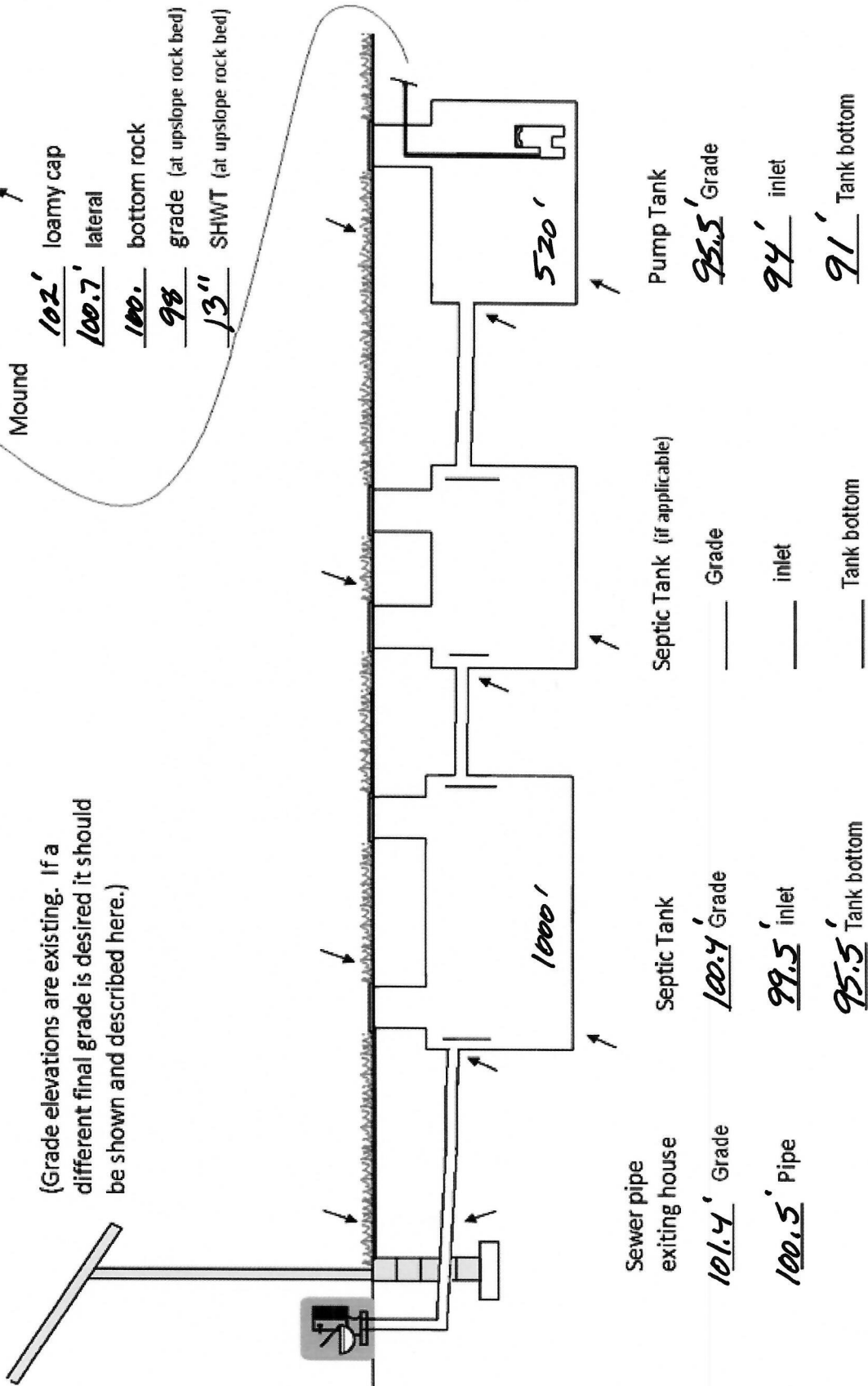
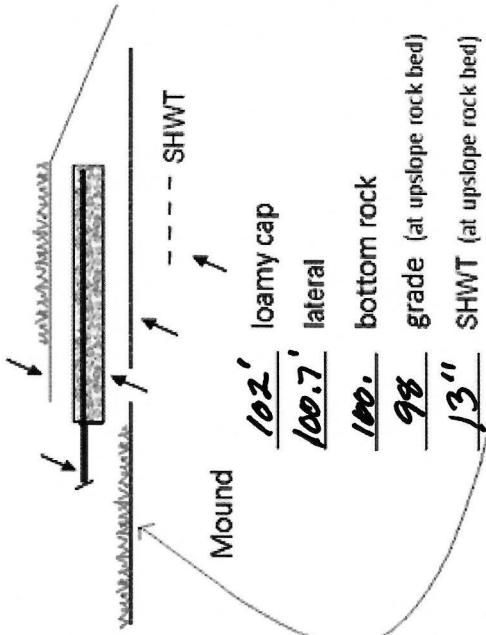
- WELL setbacks: 20' to pressure tested sewer line (5 psi for 15 min)  
50' to everything 100' to dispersal area with shallow well
- PROPERTY LINES setback: 10' to everything
- Road setback: platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.
- LAKE / BLUFF setback: 20' for 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 \_\_\_\_\_ 520 gallons
  
- dose pump \_\_\_\_\_ 27 gpm 22 head VERIFY PUMP CURVE 2.9 min ON 5.1 hr OFF
  
- float setting drop 4.6 inches at 16.6 gpi "DESIGNED" 3.3 inches approx float tether length  
77.0 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 37.5  
Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
  
- Absorption Sand beyond rock 9.7 upslope 18.9 downslope
  
- Bermed topsoil beyond rockbed 13 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

Elv = 100' benchmark *Nail on Power Pole*

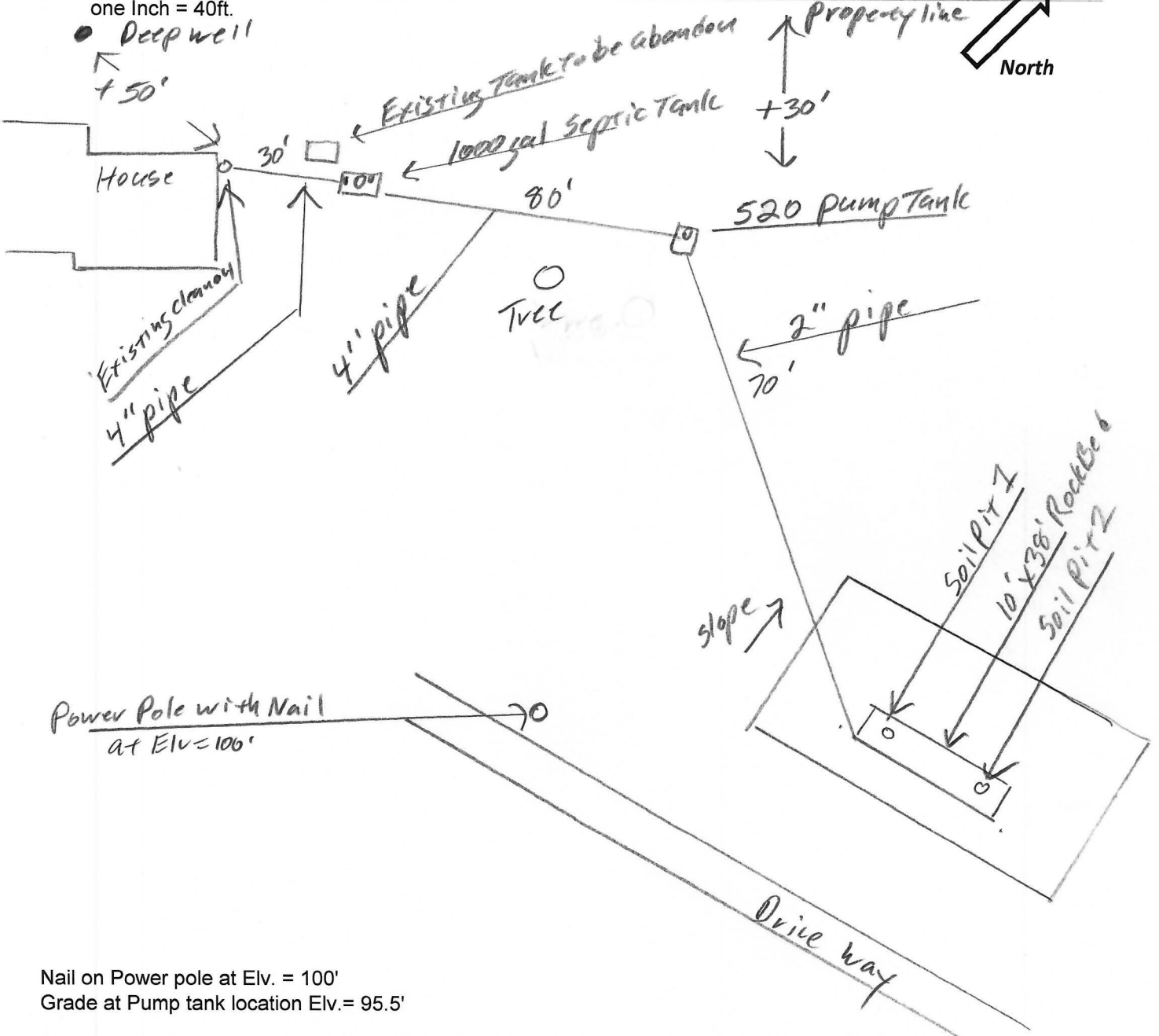
(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)



Sewer pipe exiting house	<u>101.4'</u> Grade	Septic Tank	<u>100.4'</u> Grade	Septic Tank (if applicable)	Grade _____	Pump Tank	<u>95.5'</u> Grade
	<u>100.5'</u> Pipe		<u>99.5'</u> inlet		inlet _____		<u>94'</u> inlet
			<u>95.5'</u> Tank bottom		Tank bottom _____		<u>91'</u> Tank bottom

# { Design Drawing }

Property Owner: terry Olson Date: 7/20/21 Designer's Initials: JB  
 Parcel ID. Number: 30-0-030102 Address: 37053 St Hwy 65 McGregor MN 55760



Nail on Power pole at Elv. = 100'  
 Grade at Pump tank location Elv. = 95.5'

Surface/ SHWT		Nail on power pole = Bench Mark		Existing Grade	
Soil Pit 1	97.8'/13"	Bench Mark	100'		Upslope Edge of Rockbed Elv. = 98'
Soil Pit 2	97.8'/13"	Ground Elv. BM	98'		Bottom of Rockbed Elv. = 100'
Soil Bore 3		Ground Elv. Tank	100.4'	Septic	Top of Washed Sand Elv. = 100'
	Ground at	Existing house	101.4'		Elev. Of Sewer pipe at House Elv. = 100.4'

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: Terry Olson

Date: 7/20/21

Site Address: 37053 St Hwy 65 McGregor MN 55760

PID: 30-0-030102

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. Existing deep well location is NW of House.
- 2 Existing tank to be pumped. Collapsed, filled or removed. Existing drainfield to be abandon.
- 3 North property line is Plus 50 ft from any part of the septic system.
- 4 Bench Mark Elevation is a nail on Power Pole SW corner of mound area.
- 5 Install Jacobson 1000 single Compartment tank for gravity flow from house.  
There is an existing clean-out on East end of house.  
Install 520 Pump tank Down slope approx. 80 ft from septic tank.
- 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 38.6'.  
Sand absorption area is 9.7 ft. up slope + 10 ft. rockbed + 18.9 downslope = approx. 38.6 ft. wide sand base.  
Berms are 13ft. Upslope, 24ft. Down slope, 10ft. Rock bed = approx. 47ft. Wide.  
Overall mound size is approx. 47' wide x 74' long and approx. 4' high. End berms are 18 ft wide.
- 7 The bench mark is the nail on the power pole 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 520 pump tank will be gravity flow from septic tank . Install the pump for 7 demand doses per day. approx. 77 gallons per dose, 4.6 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 Install a 2" supply pipe from pump tank to end manifold in rock bed, install so pipe drains back to pump tank.  
Install 1.5" laterals with 9" of rock under them. ( Install Lateral clean-outs at far end of laterals. Recommended )
- 11 **Drill 1/4" holes for Perf sizing, 36" on centers.**  
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.

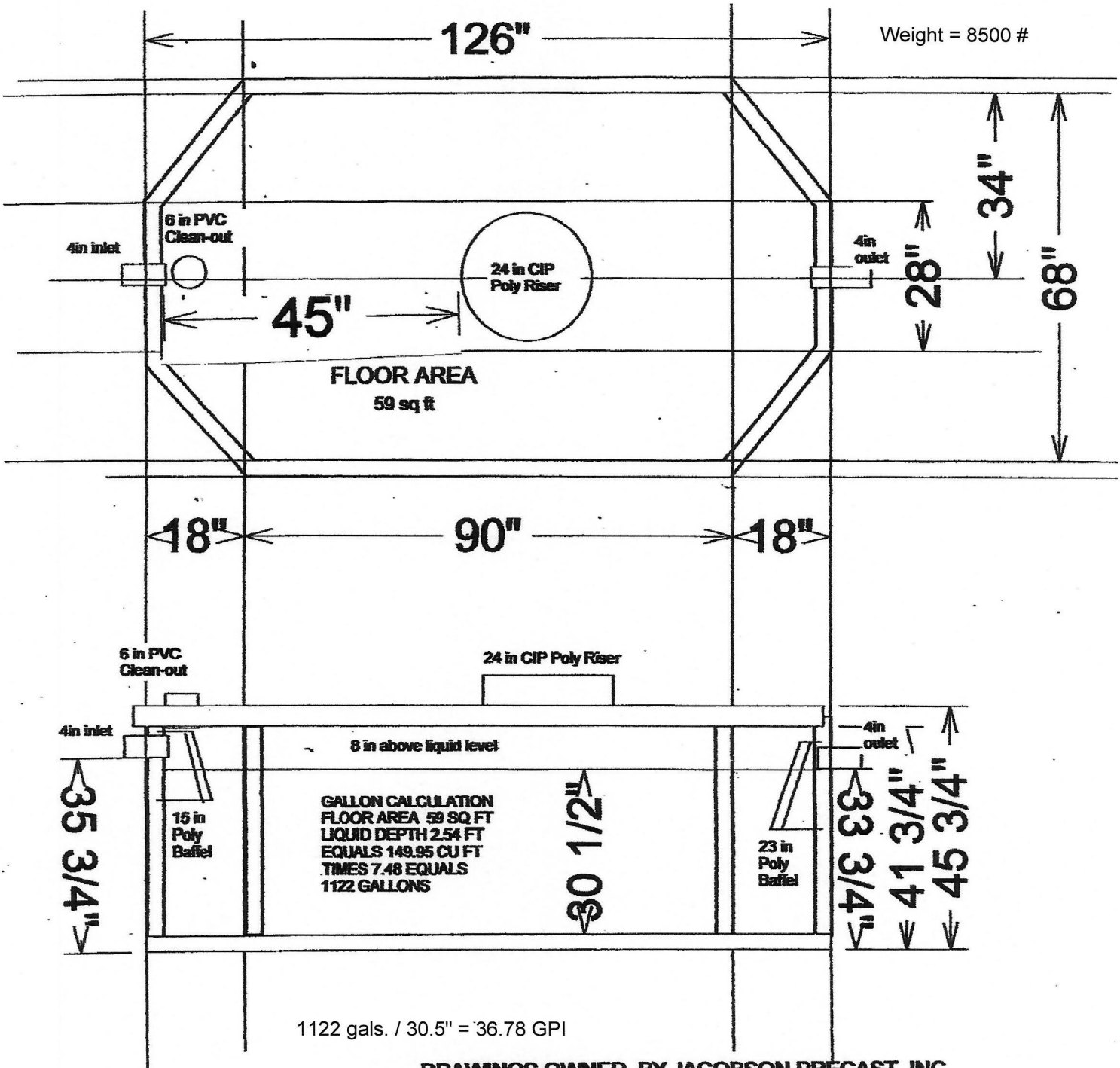
Designed to Aitkin Co. and MPCA recommendations and requirements.

  
Designer Signature

Brummer Septic LLC.  
Design Company

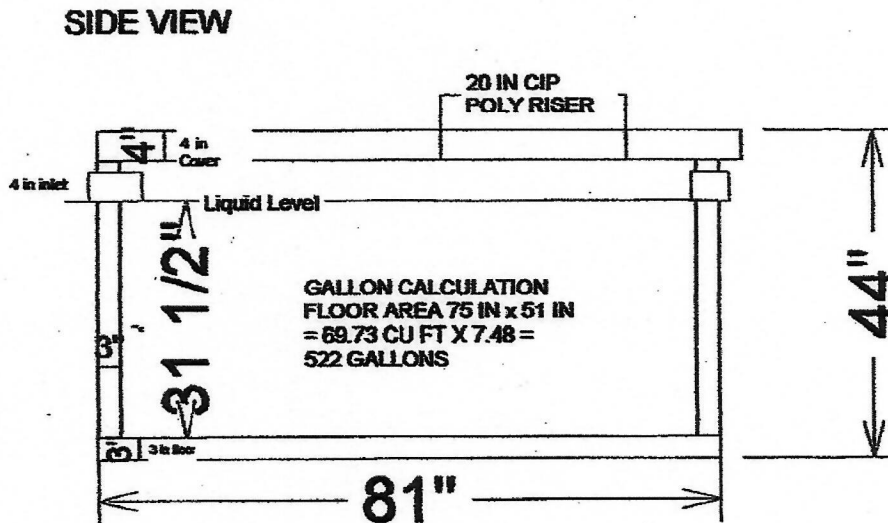
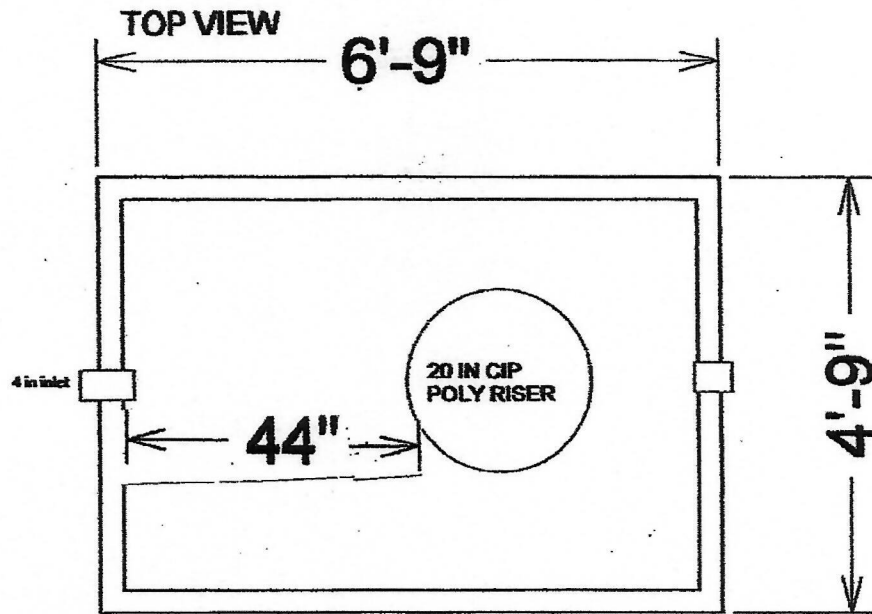
L-1347  
License#

# 1000 GALLON SINGLE COMPARTMENT PUMP TANK



**DRAWINGS OWNED BY JACOBSON PRECAST, INC**  
**36641 Hwy 169, Aitkin, Mn 56431**  
**Do not use without permission of the Owner**

# 520 Gallon Pump Tank



522 gals. / 31.5" = 16.57 GPI

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

**DDo not copy drawings without permission of the Owner**



# Detailed Parcel Report

Parcel Number: 30-0-030102

## General Information

Township/City: SPALDING TWP  
 Taxpayer Name: OLSON, TERRY & BARBARA  
 Taxpayer Address: 37053 STATE HWY65  
 MCGREGOR MN 55760  
 Property Address: 37053 STATE HWY 65  
 Township: 47 Lake Number: 0  
 Range: 23 Lake Name:  
 Section: 18 Acres: 7.59  
 Green Acres: No School District: 4.00  
 Plat:  
 Brief Legal Description: 520 X 635 FT IN SE SE

## Tax Information

Class Code 1: Residential 1 unit  
 Class Code 2: Unclassified  
 Class Code 3: Unclassified  
 Homestead: Owner Homestead  
 Assessment Year: 2021

Estimated Land Value:	\$37,000.00
Estimated Building Value:	\$270,500.00
Estimated Total Value:	<u>\$307,500.00</u>
Prior Year Total Taxable Value:	\$298,044.00
Current Year Net Tax (Specials Not Included):	\$2,472.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$1,236.00
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.**



Map may not be valid at this scale. Data was mapped at an accuracy of 1:24000 so any representation of the data at a larger scale is not advised.

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.

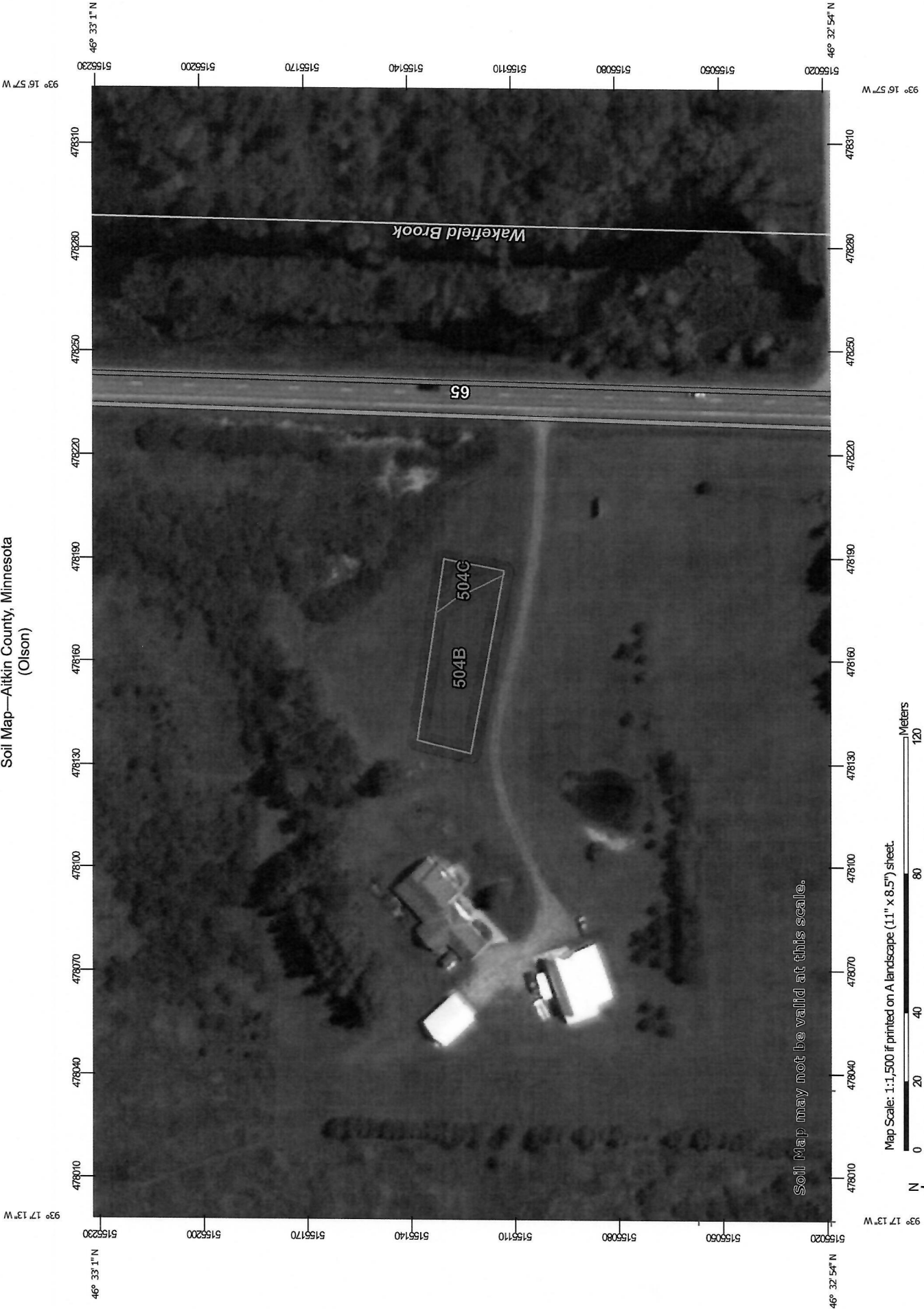
Olson



Date: 7/21/2021

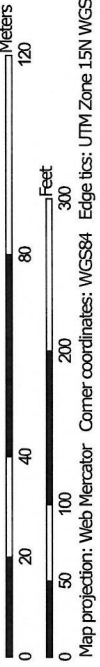
1:1,108 0 35 70 ft 1 inch = 92 feet

Soil Map—Aitkin County, Minnesota  
(Olson)



Soil Map may not be valid at this scale.

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



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



## Aitkin County, Minnesota

### 504B—Duluth fine sandy loam, 1 to 6 percent slopes

#### Map Unit Setting

*National map unit symbol:* gjh7  
*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:* All areas are prime farmland

#### Map Unit Composition

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

#### Description of Duluth

##### Setting

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

##### Typical profile

*A - 0 to 3 inches:* fine sandy loam  
*E,Bw,2BE,2Bt - 3 to 41 inches:* clay loam  
*2C - 41 to 60 inches:* loam

##### Properties and qualities

*Slope:* 1 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)  
*Depth to water table:* About 13 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 percent  
*Available water capacity:* High (about 10.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C/D  
*Forage suitability group:* Sloping Upland, Acid (G090AN006MN)  
*Other vegetative classification:* Sloping Upland, Acid (G090AN006MN)  
*Hydric soil rating:* No

### Minor Components

#### **Rifle and similar soils**

*Percent of map unit:* 3 percent

*Landform:* Bogs

*Hydric soil rating:* Yes

#### **Mahtowa and similar soils**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Blackhoof and similar soils**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Dusler and similar soils**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Cromwell and similar soils**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Cutaway and similar soils**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 21, Jun 4, 2020