

Preliminary & Field Evaluation Form

Parcel ID # 08-0-012500

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>7/21/2017</u>	Sec / Twp / Rng	<u>S-8, T-48, R-25</u>
Parcel ID	<u>19-0-040500</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Mickal Erickson</u>	Owners address (if different)	
Property Address:	<u>29324 480th St Palisade MN 56469</u>	<u>16 Maple Ave.</u>	
City / State / Zip:		<u>West Orange NJ 07052</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:		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 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	Un-Known	
Easements on lot located (see site map)	<input type="checkbox"/> Yes	<input 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)	<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 type="checkbox"/> No	Buried water supply pipe w/in 50' of system	<input checked="" 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>Next to Miisissippi River Flood Plane</u>				

Soil Information

Evidence of site:

- | | | |
|-----------|------------------------------|--|
| Cut | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Filled | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Compacted | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Disturbed | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

Original soils Yes No

Soil logs completed and attached Yes No

Perk test completed and attached (if applicable) Yes No

Soil loading rate (gpd/ft²) 0.60

Percolation rate (if applicable) _____

Depth/elev to SHWT 16"

Flooding or run-on potential Yes No
 (comments) Base Flood Elv. Is 1215.4
 Elv. Next to house is 1216.3

Depth to system bottom maximum (or elev minimum) (+ 24")

Flood elevation (if applicable) 1215.4'

Depth/elev to standing water (if applicable) _____

Elevation of ordinary high water level (if applicable) _____

Depth/elev to bedrock (if applicable) _____

Soil Survey information determined (see attachment) Yes No

Floodplain designation and elev - 100 yr/10 yr (if applicable) 100/1215.04'

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

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Owner Information

Property Owner / project:	<u>Mickal Erickson</u>	Date	<u>7/21/2017</u>
Property Address / PID:	<u>29324 480th St Palisade MN 56469</u>	Parcel # <u>08-0-012500</u>	

Soil Survey Information

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 checked="" type="checkbox"/> Summit	<input type="checkbox"/> Shoulder	<input type="checkbox"/> Side slope	<input type="checkbox"/> Toe slope		
soil survey map units:	<u>625</u>		slope <u>3</u> %	direction- <u>North</u>		

Soil Log #1

Boring Pit Elevation 98.4' Depth to SHWT 16"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 9	Topsoil	<35	10YR3/2		Loose	Loose	Granular
9 - 16	Silt Loam	<35	10YR5/6		Friable	Loose	Blocky
16	Silt Loam	<35	10Y5/3	10Y6.1 & 7.5YR5/6	Friable	Loose	Blocky
		<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

Comments:

29324 480th St Palisade MN 56469 **Soil Log #2**

<input checked="" type="checkbox"/> Boring		<input type="checkbox"/> Pit		Elevation <u>98.4'</u>		Depth to SHWT <u>16"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 9	Topsoil	<35	10YR3/2		Loose	Loose	Granular
9 - 16	Silt Loam	<35	10YR5/6		Friable	Loose	Blocky
16	Silt Loam	<35	10Y5/3	10Y6.1 & 7.5YR5/6	Friable	Loose	Blocky
		<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

29324 480th St 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			Loose	Loose	Granular
		<35			Friable	Loose	Blocky
		<35			Friable	Weak	Blocky
		<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: Mickal Erickson

Date: 7/21/2017

Site Address: 29324 480th St Palisade MN 56469

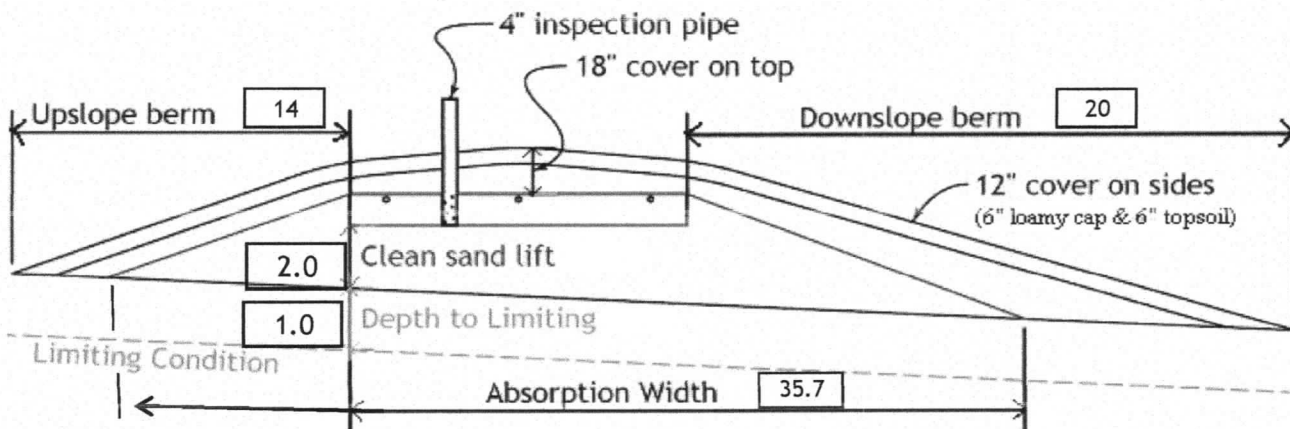
PID: 19-0-040500

Comments: Mound will be on high spot use down slope berm both ways (North & South)

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 Compartment tank
- 4) Gal Septic tank (code minimum) Gal Septic tank (design size / LUG req'd)
Tank options: ~~none~~ *Electric Alarm on pump.*
- 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)

- 23) gpd/ft² 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 yd³ 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 = yd³ or *1.4= ton
 plus 20%
- 35) Loamy Cap:
 ft. by ft. 6" deep, plus 20% gives yd³ or *1.4= ton
- 36) Topsoil:
 ft. by ft. 6" deep, plus 20% gives yd³ 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#

7/21/2017
 Date

INSPECTOR CHECKLIST - mound

29324 480th St 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 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 _____ 1120 gallons none _____

- Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.
- ~~No Yes effluent filter & alarm~~ **Electric Alarm.**
- Dose tank risers and piping (water tight, insulated, proper depth, drainback)
mfg _____ 533 gallons
- dose pump _____ 27 gpm 24 head VERIFY PUMP CURVE 3.1 min ON 5.1 hr OFF
- float setting drop 6.7 inches at 12.7 gpi "DESIGNED" 4.4 inches approx float tether length
85.0 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 10.7 upslope 15.0 downslope
- Bermed topsoil beyond rockbed 14 upslope 17 sideslope 20 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

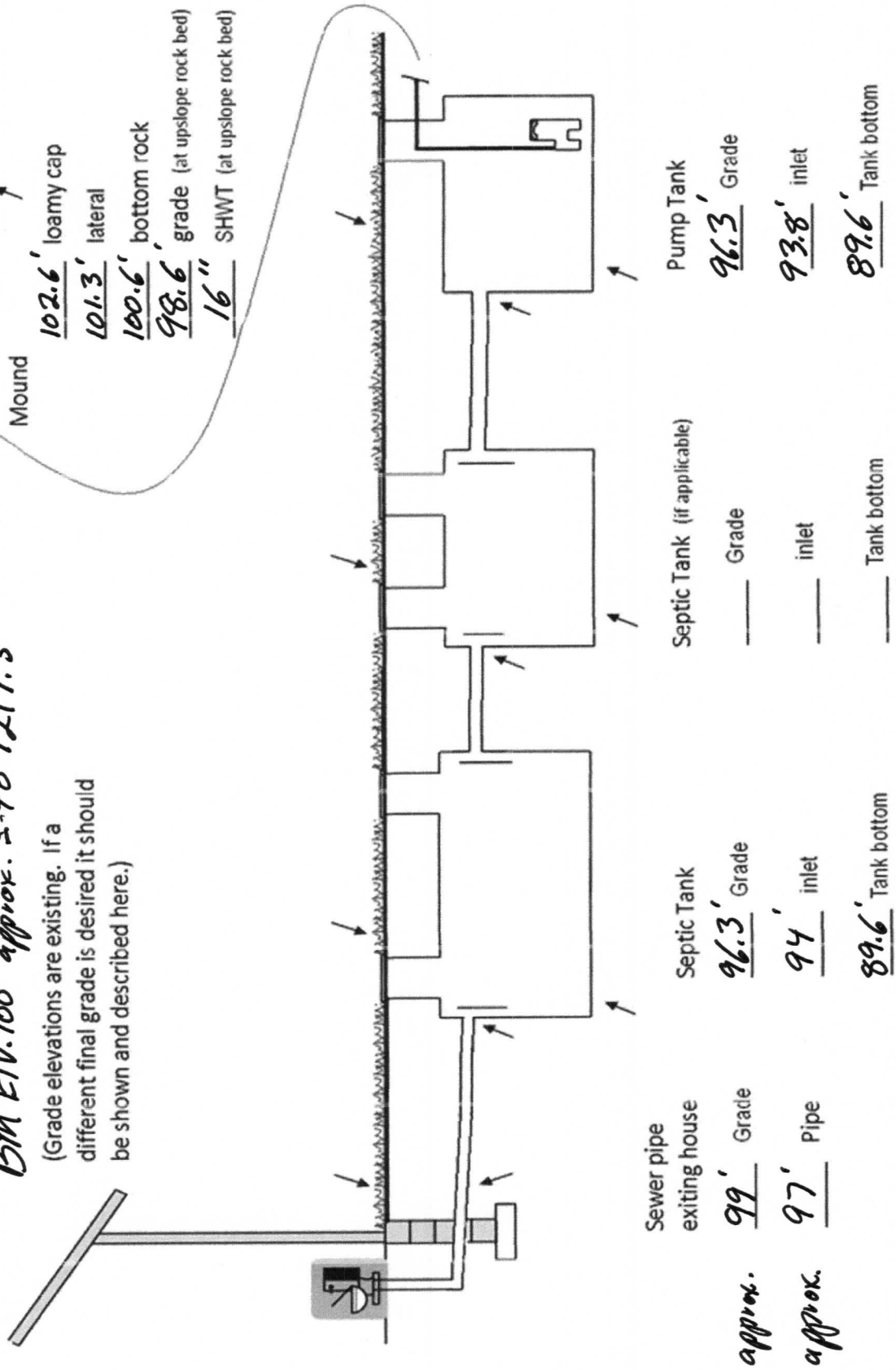
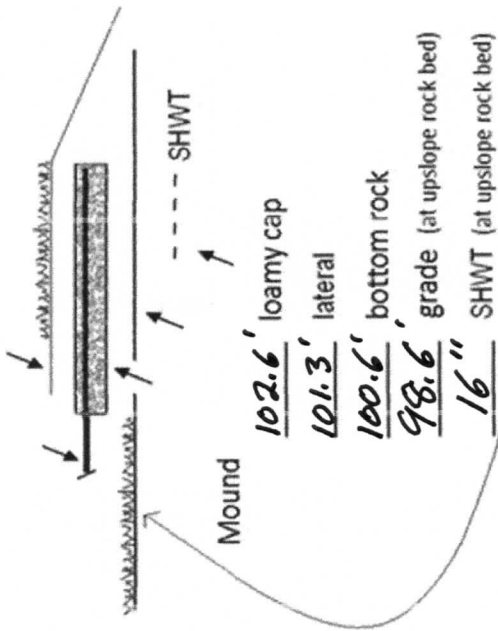
- Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY
- clean outs (no hard 90's)
- 4" inspection pipe to bottom of rock, anchored VERIFY

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

System Elevations

BM = Elev. 100' benchmark Kirchman Door Sill Plate.
 BM Elev. 100' approx. 5-to 1217.3'.

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



Mound Design Notes - Aitkin county

Property Owner: Mickal Erickson

Date: 7/21/2017

Site Address: 29324 480th St Palisade MN 56469

PID: 19-0-040500

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

- 1 This is a type I mound for proposed 3 bedroom House.
Existing Approx. Location West of House, Un-Known.
Bench Mark Elv. = 100 ft. is the sill plate for the kitchen door on South side of house.
National Flood Insurance papers say flood Elv. 1215.4', and grade at house is 1216.3'.
Sill Plate at Approx. 1217.3' or Elv. 100'. Flood is at approx. 98.1'.
- 2 Install Jacobson 1650 combination tank approx. 125 ft. from house. Install clean-out near house.
Install tank with inlet approx. 2.5 ft. below existing grade, gravity flow from house, no garbage disposal or lift.
Install manholes and risers above Elv. 99.1', make sure they are water tight and sturdy. (+1ft. Over flood)
Maybe mound heavy soil cover over septic tank to Elv. 99' to protect from flood inundation.
Manhole covers should be sealed or water tight, electrical supply should be water tight.
- 3 Elevation contour of rock bed upslope edge is 98.6' East end, slight drop over the length of rockbed to the West.
The area size of the rock bed is 10' x 37.5'. Absorption area is approx. 37.5' x 36'.
Berms are 20ft. Down slope + 10ft. Rock bed + 14 ft. Up slope = approx. 44ft. Wide.
Build 17ft. East & 17 Ft. West berms + 37.5 ft. rock bed = approx.72ft. Long mound
Overall mound size is approx. 44' wide x 72' long and approx. 4' high.
- 4 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.
The top of the sand and bottom of rock bed is Elv. 100.6'.
- 5 It is important that the soils do not get compacted, and that clean sand is used.
The Jacobson 1650 tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 85 gallons per dose, 6.7 inches of tank level. Install alarm at 3 inches from pump on level.
Install all manholes, inspection pipes and clean-outs to +1ft. Above flood 1215.4' or (Elv. 99.1').
Install pump on 4 " block. Pump curve for 27GPM. and 24 ft. head.
- 6 Install approx. 115 ft. of 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.
Install inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
Installer will pressure test and squirt height laterals when finished.
- 7 Under 7080-2270 A provision shall be made to prevent the pump from operating when inundated with flood water.

Designed to Aitkin Co. and MPCA recommendations and requirements.

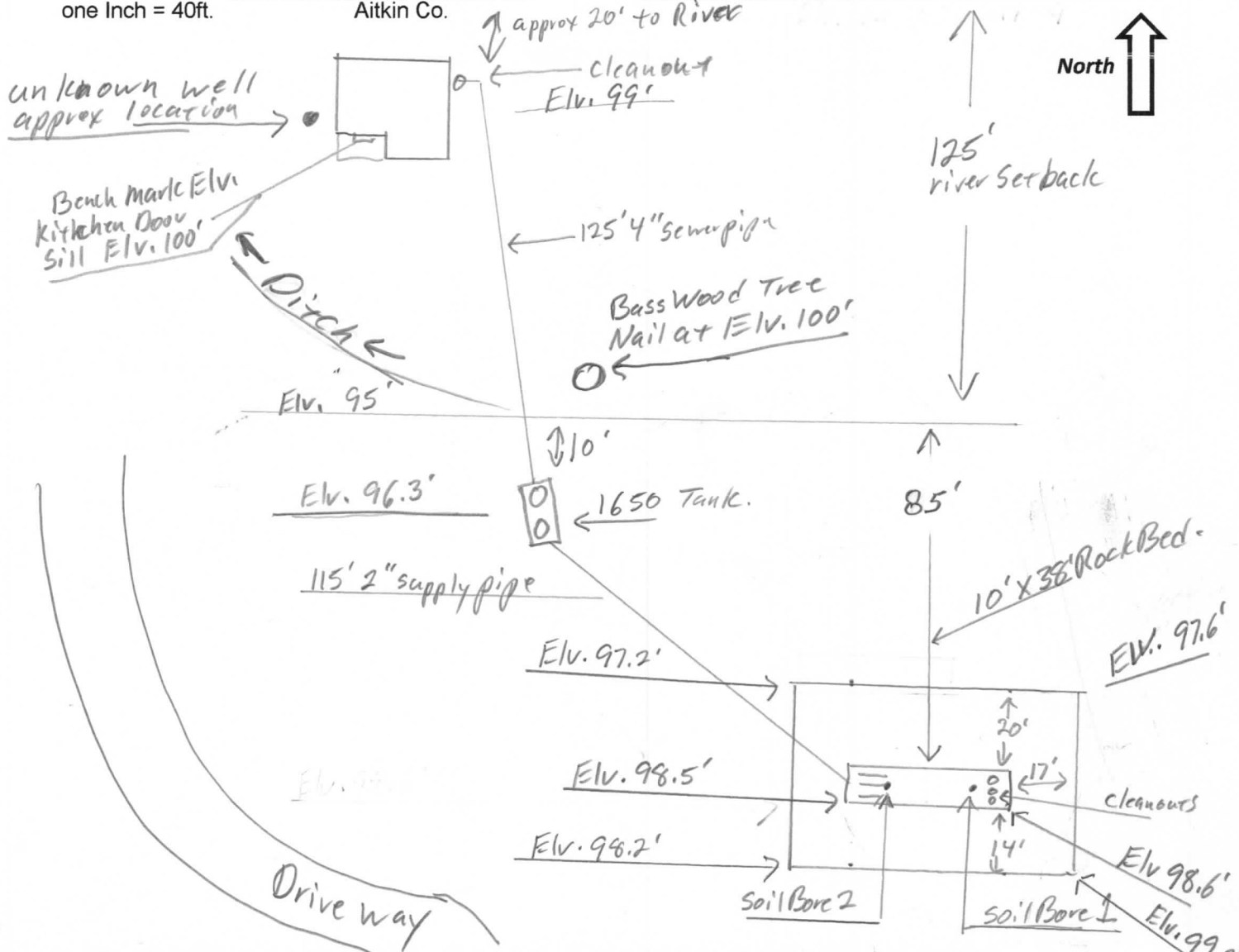

Designer Signature

Brummer Septic LLC.
Design Company

L-1347
License#

{ Design Drawing }

Property Owner: Mickal Erickson Date: 7/21/2017 Designer's Initials: JB
 Parcel ID. Number: 19-0-040500 Address: 29324 480th St Palisade MN 56469
 one Inch = 40ft. Aitkin Co.



From National Flood Ins. Program Elv. Cert. Paper work Elv. Near house 1216.3 Approx. = to Elv. 99'
 Approx. Elv. 1215.4 = Elv. 98.1' That's the best the Septic Designer could come up with.
 Bench Mark Location Kitchen door sill plate South Face door Elv. = 100'

	Surface/ SHWT	Kit. Door sill = Bench Mark 100'		Existing Grade	
Soil Bore 1	98.4'/16"	Bench Mark	100'	top of Washed Sand	100.6'
Soil Bore 2	98.4'/16"	Ground Elv. BM	99'	bottom of rock	100.6'
Soil Bore 3		Ground Elv. Tank	96.3'		
	Ground at	Existing house	99.0'		

Please show all that apply (Existing)

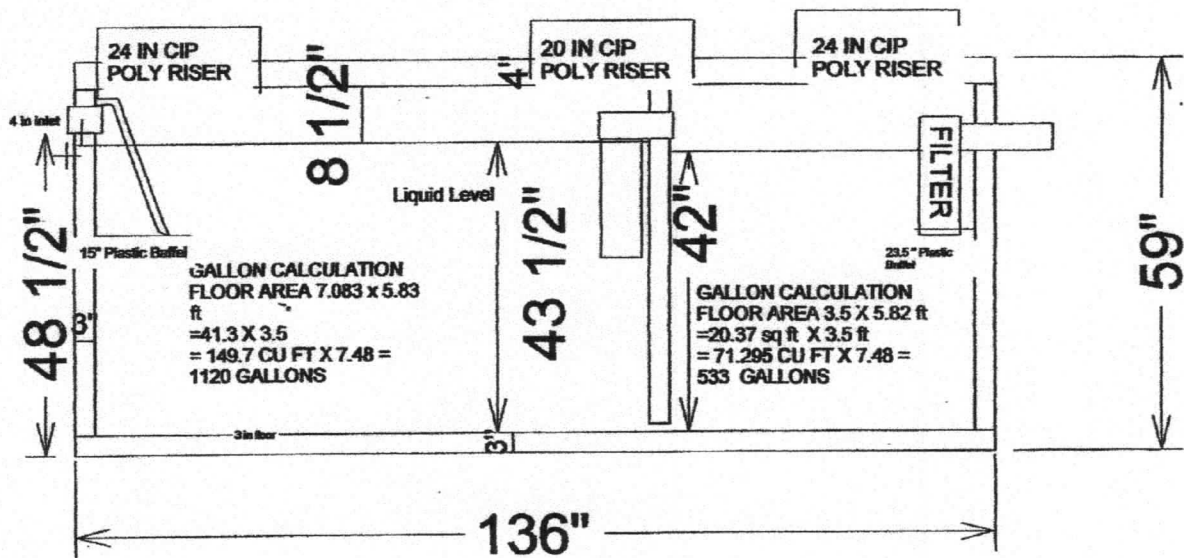
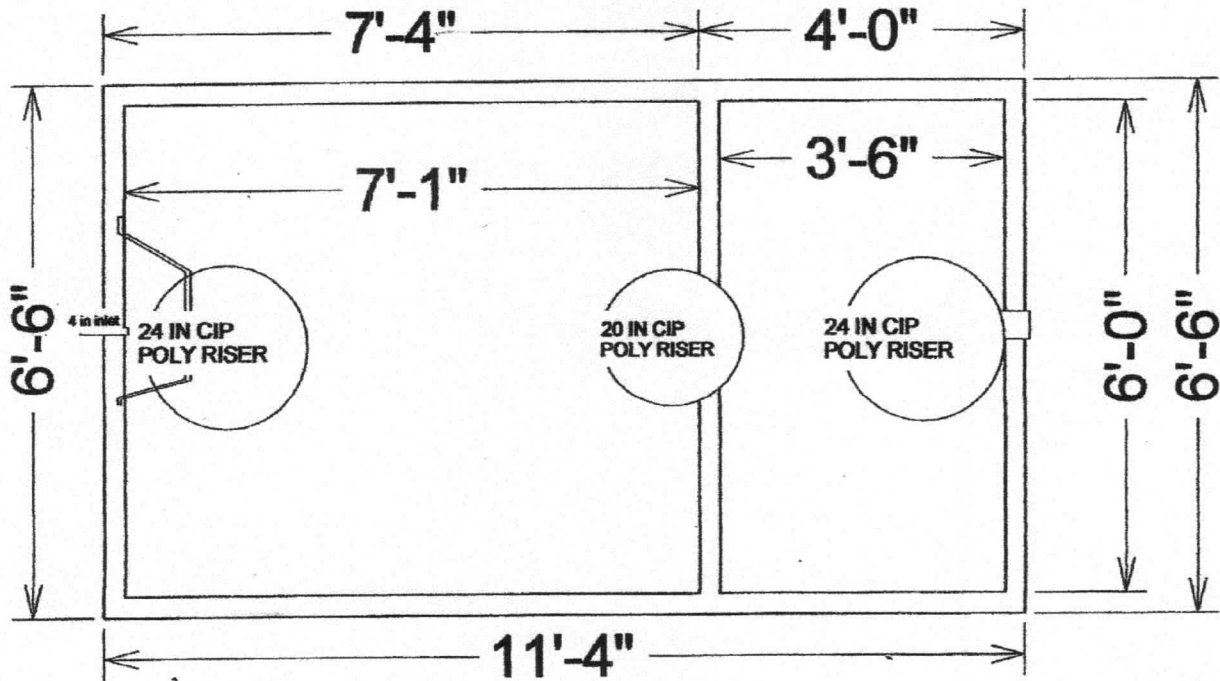
- Wells within 100ft. Of Drain field.
- Water lines within 10 ft. of Drain field.
- Drain field Areas:

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 |

1650 Gallon 2 Compartment Septic Tank

TOP VIEW



SIDE VIEW

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

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



Detailed Parcel Report

Parcel Number: 19-0-040500

General Information

Township/City: LOGAN TWP
Taxpayer Name: ERICKSON, MICKAL
Taxpayer Address: 16 MAPLE AVENUE
 WEST ORANGE NJ 07052
Property Address: 29324 480th St
Township: 49.0 **Lake Number:** 1060400
Range: 25 **Lake Name:** Mississippi River
Section: 23 **Acres:** 5.85
Green Acres: No **School District:** 1.00
Plat:
Brief Legal Description: LOT 4

Tax Information

Class Code 1: Residential Non-Homestead (Single Unit)
Class Code 2: Unclassified
Class Code 3: Unclassified
Homestead: Non Homestead
Assessment Year: 2017

Estimated Land Value:	\$12,100.00
Estimated Building Value:	\$11,600.00
Estimated Total Value:	<u>\$23,700.00</u>
Prior Year Total Taxable Value:	\$33,300.00
Current Year Net Tax (Specials Not Included):	\$280.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$140.00
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.**



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Map Unit Legend

Aitkin County, Minnesota (MN001)				
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	
625	Sandwick loamy sand	0.3	100.0%	
Totals for Area of Interest		0.3	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

625—Sandwich loamy sand

Map Unit Setting

National map unit symbol: gjj4
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: Not prime farmland

Map Unit Composition

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

Description of Sandwich

Setting

Landform: Swales on moraines
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy outwash over loamy till

Typical profile

E - 0 to 6 inches: loamy sand
Bw,E' - 6 to 34 inches: sand
2E/B,2Btg - 34 to 55 inches: loam
2Cg - 55 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat):
 Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Other vegetative classification: Level Swale, Low AWC, Acid
 (G088XN007MN)
Hydric soil rating: Yes

Minor Components

Northwood and similar soils

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

Dusler and similar soils

Percent of map unit: 3 percent

Hydric soil rating: No

Alstad and similar soils

Percent of map unit: 3 percent

Hydric soil rating: No

Stuntz and similar soils

Percent of map unit: 3 percent

Hydric soil rating: No

Cutaway 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 17, Sep 19, 2016

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION						FOR INSURANCE COMPANY USE
A1. Building Owner's Name Mickal Erickson					Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 29324 480TH STREET					Company NAIC Number:	
City Palisade		State Minnesota		ZIP Code 56469		
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) Government Lot 4, Sec. 23, Twp 49, Rng 25, Aitkin County, MN, PID 19-0-040500						
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) <u>Residential</u>						
A5. Latitude/Longitude: Lat. <u>46.711056</u> Long. <u>-93.473222</u> Horizontal Datum: <input type="checkbox"/> NAD 1927 <input checked="" type="checkbox"/> NAD 1983						
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.						
A7. Building Diagram Number <u>2A</u>						
A8. For a building with a crawlspace or enclosure(s):						
a) Square footage of crawlspace or enclosure(s) _____ sq ft						
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____						
c) Total net area of flood openings in A8.b _____ sq in						
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No						
A9. For a building with an attached garage:						
a) Square footage of attached garage _____ sq ft						
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____						
c) Total net area of flood openings in A9.b _____ sq in						
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No						
SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION						
B1. NFIP Community Name & Community Number Aitkin County 270628				B2. County Name Aitkin		B3. State Minnesota
B4. Map/Panel Number 2706280190	B5. Suffix B	B6. FIRM Index Date 03-15-1982	B7. FIRM Panel Effective/ Revised Date 03-15-1982	B8. Flood Zone(s) A6	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth) 1215.4	
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9: <input checked="" type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____						
B11. Indicate elevation datum used for BFE in Item B9: <input checked="" type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____						
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA						

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expiration Date: November 30, 2018

IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 29324 480TH STREET			Policy Number:
City Palisade	State Minnesota	ZIP Code 56469	Company NAIC Number

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: Construction Drawings* Building Under Construction* Finished Construction
 *A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO.
 Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: Mn/Dot Vertical Datum: NGVD 1929

Indicate elevation datum used for the elevations in items a) through h) below.

NGVD 1929 NAVD 1988 Other/Source: _____

Datum used for building elevations must be the same as that used for the BFE.

Check the measurement used.

- | | | | |
|---|---------|--|---------------------------------|
| a) Top of bottom floor (including basement, crawlspace, or enclosure floor) _____ | | <input type="checkbox"/> feet | <input type="checkbox"/> meters |
| b) Top of the next higher floor _____ | | <input type="checkbox"/> feet | <input type="checkbox"/> meters |
| c) Bottom of the lowest horizontal structural member (V Zones only) _____ | | <input type="checkbox"/> feet | <input type="checkbox"/> meters |
| d) Attached garage (top of slab) _____ | | <input type="checkbox"/> feet | <input type="checkbox"/> meters |
| e) Lowest elevation of machinery or equipment servicing the building
(Describe type of equipment and location in Comments) _____ | | <input type="checkbox"/> feet | <input type="checkbox"/> meters |
| f) Lowest adjacent (finished) grade next to building (LAG) _____ | 1216.30 | <input checked="" type="checkbox"/> feet | <input type="checkbox"/> meters |
| g) Highest adjacent (finished) grade next to building (HAG) _____ | | <input type="checkbox"/> feet | <input type="checkbox"/> meters |
| h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support _____ | | <input type="checkbox"/> feet | <input type="checkbox"/> meters |

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

Were latitude and longitude in Section A provided by a licensed land surveyor? Yes No Check here if attachments.

Certifier's Name Larry Huhn	License Number 24332	Place Seal Here	
Title Land Surveyor			
Company Name Northwoods Surveying			
Address PO Box 117			
City Darwin	State Minnesota		ZIP Code 55324
Signature 	Date 03-27-2017	Telephone (320) 583-3830	Ext.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including type of equipment and location, per C2(e), if applicable)

**DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY
COMMUNITY ACKNOWLEDGMENT FORM**

*O.M.B. NO. 1660-0015
Expires February 28, 2014*

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 1.38 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the form. This collection is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015). NOTE: Do not send your completed form to this address.

This form must be completed for requests involving the existing or proposed placement of fill (complete Section A) **OR** to provide acknowledgment of this request to remove a property from the SFHA which was previously located within the regulatory floodway (complete Section B).

This form must be completed and signed by the official responsible for floodplain management in the community. **The six digit NFIP community number and the subject property address must appear in the spaces provided below. Incomplete submissions will result in processing delays.** Please refer to the MT-1 instructions for additional information about this form.

Community Number: _____ Property Name or Address: _____

A. REQUESTS INVOLVING THE PLACEMENT OF FILL

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision Based on Fill (LOMR-F) or Conditional LOMR-F request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a Conditional LOMR-F, will be obtained. For Conditional LOMR-F requests, the applicant has or will document Endangered Species Act (ESA) compliance to FEMA prior to issuance of the Conditional LOMR-F determination. For LOMR-F requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. Section 9 of the ESA prohibits anyone from "taking" or harming an endangered species. If an action might harm an endangered species, a permit is required from U.S. Fish and Wildlife Service or National Marine Fisheries Service under Section 10 of the ESA. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by DHS-FEMA, all analyses and documentation used to make this determination. For LOMR-F requests, we understand that this request is being forwarded to DHS-FEMA for a possible map revision.

Community Comments:

Community Official's Name and Title: <i>(Please Print or Type)</i>		Telephone No.:
Community Name:	Community Official's Signature: <i>(required)</i>	Date:

B. PROPERTY LOCATED WITHIN THE REGULATORY FLOODWAY

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this request for a LOMA. We understand that this request is being forwarded to DHS-FEMA to determine if this property has been inadvertently included in the regulatory floodway. We acknowledge that no fill on this property has been or will be placed within the designated regulatory floodway. We find that the completed or proposed project meets or is designed to meet all of the community floodplain management requirements.

Community Comments:

Community Official's Name and Title: <i>(Please Print or Type)</i>		Telephone No.:
Community Name:	Community Official's Signature <i>(required)</i> :	Date:

CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	BASE FLOOD WATER SURFACE ELEVATION			
					REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MISSISSIPPI RIVER								
AA	172,925	360	6320	2.6	1207.4	1207.4	1207.9	0.5
AB	175,790	280	5330	3.1	1207.7	1207.7	1208.2	0.5
AC	178,435	310	6000	2.7	1208.0	1208.0	1208.5	0.5
AD	180,455	240	3970	4.1	1208.2	1208.2	1208.7	0.5
AE	185,940	490	5920	2.8	1209.4	1209.4	1209.9	0.5
AF	198,030	3350	5740	2.8	1211.2	1211.2	1221.7	0.5
AG	204,300	1110	9620	1.7	1212.0	1212.0	1212.5	0.5
MISSISSIPPI RIVER (NEAR PALISADE)								
A	2805 ²	230	2920	4.5	1214.8	1214.8	1214.9	0.1
B	4615 ²	260	3830	3.4	1215.4	1215.4	1215.4	0.0
C	7615 ²	250	4320	3.0	1215.8	1215.8	1215.9	0.1
D	10,365 ²	240	3710	3.5	1216.2	1216.2	1216.3	0.1
E	13,075 ²	270	4270	3.0	1216.6	1216.6	1216.6	0.2
F	16,735 ²	280	5120	2.5	1217.0	1217.0	1217.2	0.2
G	21,246 ²	270	4320	3.0	1217.4	1217.5	1217.7	0.3
H	26,765 ²	220	3740	3.5	1217.9	1217.9	1218.4	0.5
I	29,669 ²	4081	11,735	1.1	1218.3	1218.3	1218.3	0.0
J	33,226 ²	4688	13,614	1.0	1218.6	1218.6	1218.6	0.0
K	39,323 ²	6814	20,311	0.6	1219.0	1219.0	1219.0	0.0
L	42,798 ²	6448	20,301	0.6	1219.2	1219.2	1219.2	0.0
M	46,488 ²	2185	7915	1.6	1219.5	1219.5	1219.5	0.0
N	48,481 ²	3480	17,990	0.7	1219.7	1219.7	1219.7	0.0
O	50,279 ²	998	6961	1.9	1219.7	1219.7	1219.7	0.0
P	51,067 ²	637	4636	2.8	1219.8	1219.8	1219.8	0.0
Q	51,929 ²	588	4493	2.9	1219.9	1219.9	1219.9	0.0

¹FEET ABOVE COUNTY BOUNDARY
²FEET ABOVE LIMIT OF DETAILED STUDY (850 FEET DOWNSTREAM OF SOO LINE RAILROAD)

Henry R. L.
 MN 24332

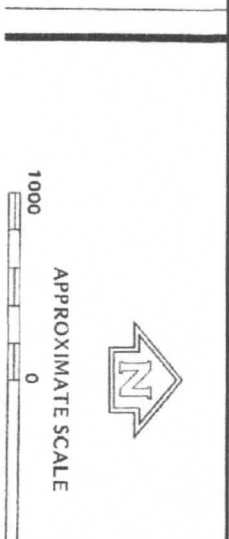
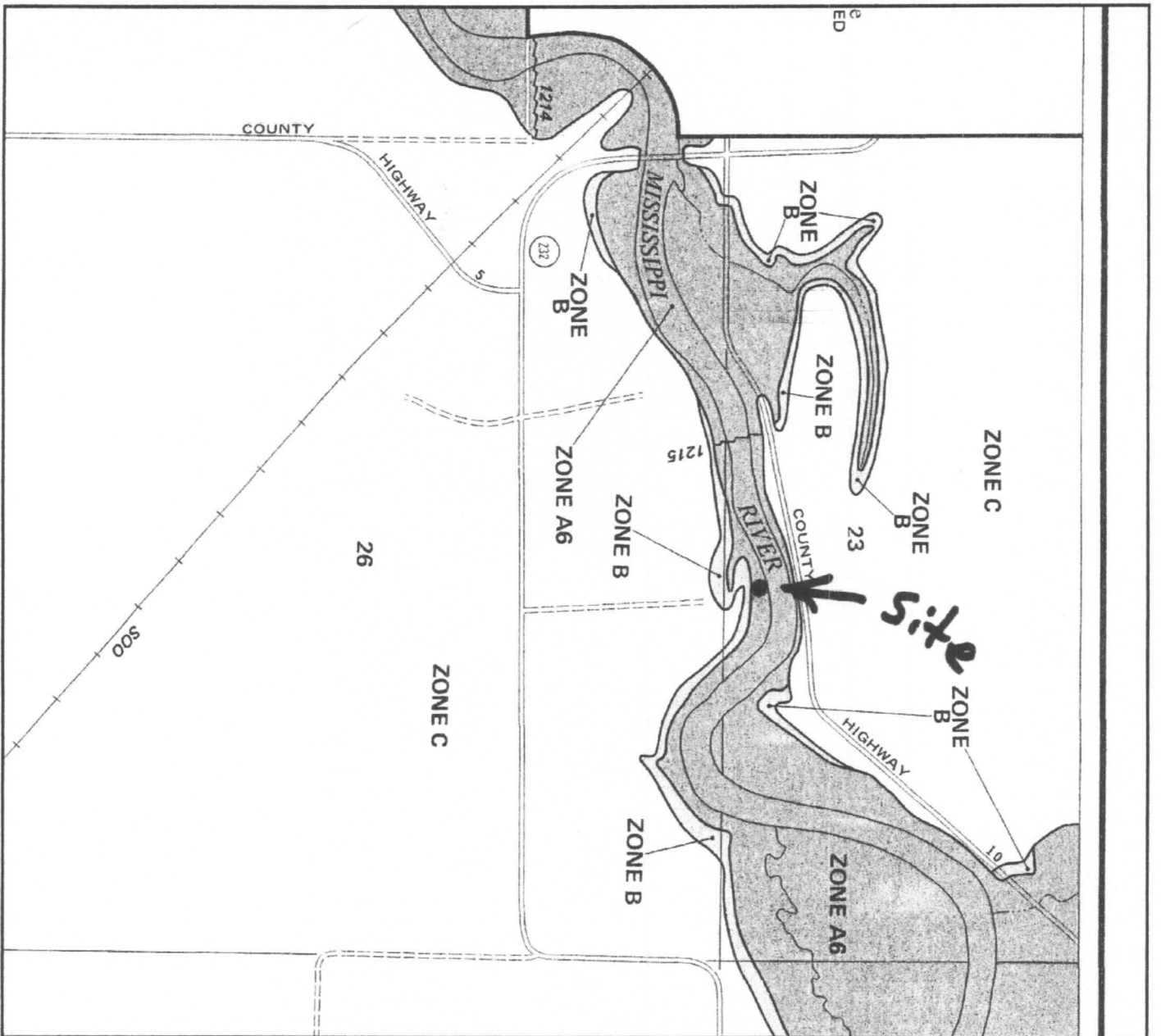
FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOODWAY DATA

TABLE 3

AITKIN COUNTY, MN
 (UNINCORPORATED AREAS)

MISSISSIPPI RIVER



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

COUNTY OF
AITKIN,
MINNESOTA
(UNINCORPORATED AREAS)

PANEL 190 OF 500
(SEE MAP INDEX FOR PANELS NOT PRINTED)

Handwritten: Mary [unclear]
MN 24332

COMMUNITY-PANEL NUMBER
270628 0190 B

EFFECTIVE DATE:
MARCH 15, 1982

federal emergency management agency
federal insurance administration

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Harry H. L.

MM 24332

