City Hall: 218-692-2688
Planning & Zoning: 218-692-2689
Fax: 218-692-2687

13888 Daggett Bay Rd
Crosslake, Minnesota 56442
www.cityofcrosslake.org

**CITY OF CROSSLAKE**
**PLANNING COMMISSION/BOARD OF ADJUSTMENT**
**May 27, 2022**
**9:00 A.M.**
Crosslake City Hall
13888 Daggett Bay Rd, Crosslake MN 56442
(218) 692-2689

**PUBLIC HEARING NOTICE**

**Applicant:** Real Deal LLC & Dale Hathaway

**Authorized Agent: N/A**

**Site Location:** 13192 Gladick Lane, Crosslake, MN 56442 on Rush Lake-GD

**Variance for:**

- Lake setback of 50 feet where 75 feet is required to proposed structure
- Road right-of-way (ROW) of 21.8 feet where 35 feet is required to proposed patio
- Road right-of-way (ROW) setback of 13.8 feet where 35 feet is required to proposed structure
- Lake setback of 51 feet where 75 feet is required to proposed septic system
- Road right-of-way (ROW) setback of 3 feet where 10 feet is required to proposed septic system

**To construct:**

- A footprint of a 2,068 square foot two story plus lower-level walkout structure consisting of a dwelling, attached garage, tuck-under lake side deck and a covered porch plus a 240 square foot side deck
- 176 square foot patio
- A new septic system

**Notification:** Pursuant to Minnesota Statutes Chapter 462, and the City of Crosslake Zoning Ordinance, you are hereby notified of a public hearing before the City of Crosslake Planning Commission/Board of Adjustment. Property owners have been notified according to MN State Statute 462 & published in the local newspaper. Please share this notice with any of your neighbors who may not have been notified by mail.

**Information:** Copies of the application and all maps, diagrams or documents are available at Crosslake City Hall or by contacting the Crosslake Planning & Zoning staff at 218-692-2689. Please submit your comments in writing including your name and mailing address to Crosslake City Hall or (crosslakepz@crosslake.net).

**STAFF REPORT**

Property Owner/Applicant: Real Deal LLC & Dale Hathaway

Parcel Number(s): 14170610, 14170611

Application Submitted: April 11, 2022

Action Deadline: June 9, 2022

City 60 Day Extension Letter sent / Deadline: N/A / N/A

Applicant Extension Received / Request: N/A / N/A

City Council Date: N/A

**Authorized Agent:**

**Variance for:**

- Lake setback of 50 feet where 75 feet is required to proposed structure
- Road right-of-way (ROW) of 21.8 feet where 35 feet is required to proposed patio
- Road right-of-way (ROW) setback of 13.8 feet where 35 feet is required to proposed structure
- Lake setback of 51 feet where 75 feet is required to proposed septic system
- Road right-of-way (ROW) setback of 3 feet where 10 feet is required to proposed septic system

**To construct:**

- A footprint of a 2,068 square foot two story plus lower-level walkout structure consisting of a dwelling, attached garage, tuck-under lake side deck and a covered porch plus a 240 square foot side deck
- 176 square foot patio
- A new septic system

**Current Zoning:** Shoreland District

| **Existing Impervious Coverage:** | **Proposed Impervious Coverage:** |
|---|---|
| 7.0% | 19.0% |

- A stormwater management plan was submitted with the variance application
- Septic design was submitted for approval pending variance outcome

**Development Review Team Minutes:**

- Did not hold a meeting due to a resubmittal of a previously denied variance

**Parcel History:**

- Gladick First Addition established in 1968
- August 1971 – 20x30 dwelling & septic
- June 2021 – Septic design was submitted to Crow Wing County Land Services
- September 2021 – Denied variance for setbacks to the lake, road right-of-way and dwelling

- March 2022 – Denied variance for setbacks to the lake, road right-of-way and dwelling

**Agencies Notified and Responses Received:**
**County Highway Dept:** No comments were received as of 5-13-2022
**DNR:** No comments were received as of 5-13-2022
**City Engineer:** N/A
**Lake Association:** No comments were received as of 5-13-2022
**Township:** N/A
**Crosslake Public Works:** No comments were received as of 5-13-2022
**Crosslake Park, Recreation & Library:** N/A
**Concerned Parties:** Comment received 5-13-2022 opposed from Silvernail

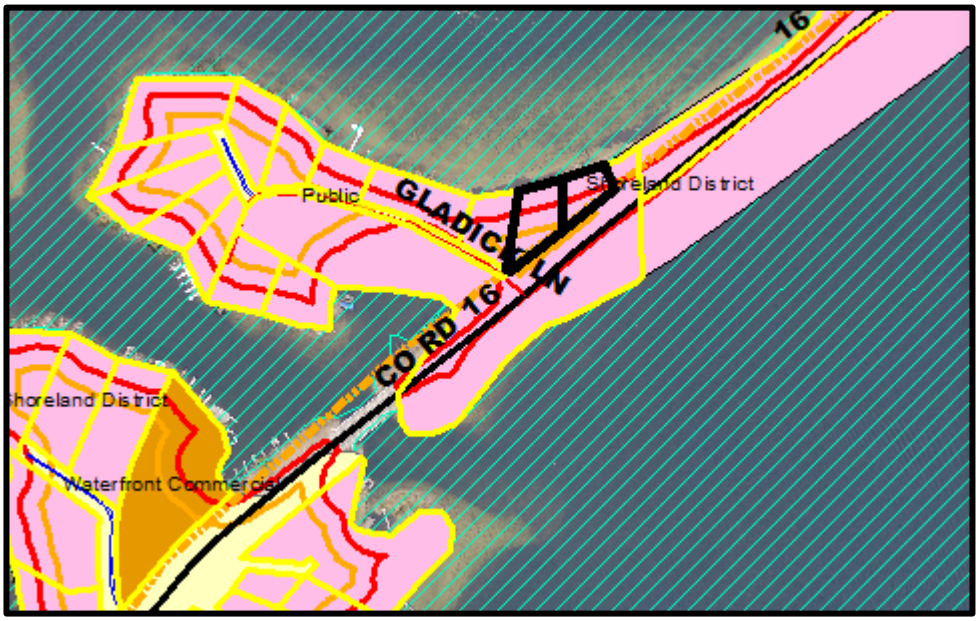
**POSSIBLE MOTION:**
To approve/table/deny the variance to allow:

- Lake setback of 50 feet where 75 feet is required to proposed structure
- Road right-of-way (ROW) of 21.8 feet where 35 feet is required to proposed patio
- Road right-of-way (ROW) setback of 13.8 feet where 35 feet is required to proposed structure
- Lake setback of 51 feet where 75 feet is required to proposed septic system
- Road right-of-way (ROW) setback of 3 feet where 10 feet is required to proposed septic system

**To construct:**

- A footprint of a 2,068 square foot two story plus lower-level walkout structure consisting of a dwelling, attached garage, tuck-under lake side deck and a covered porch plus a 240 square foot side deck
- 176 square foot patio
- A new septic system

As shown on the certificate of survey dated 5-3-2022



# CERTIFICATE OF SURVEY

**LOTS 2 & 3, BLOCK ONE, GLADICK FIRST ADDITION,**
**SECTION 17, TOWNSHIP 137 NORTH, RANGE 27 WEST,**
**CROW WING COUNTY, MINNESOTA**
**TOTAL AREA = 16,629 SQ.FT.± / 0.4 ACRES±**
**BUILDABLE AREA = 100 SQ. FT.**

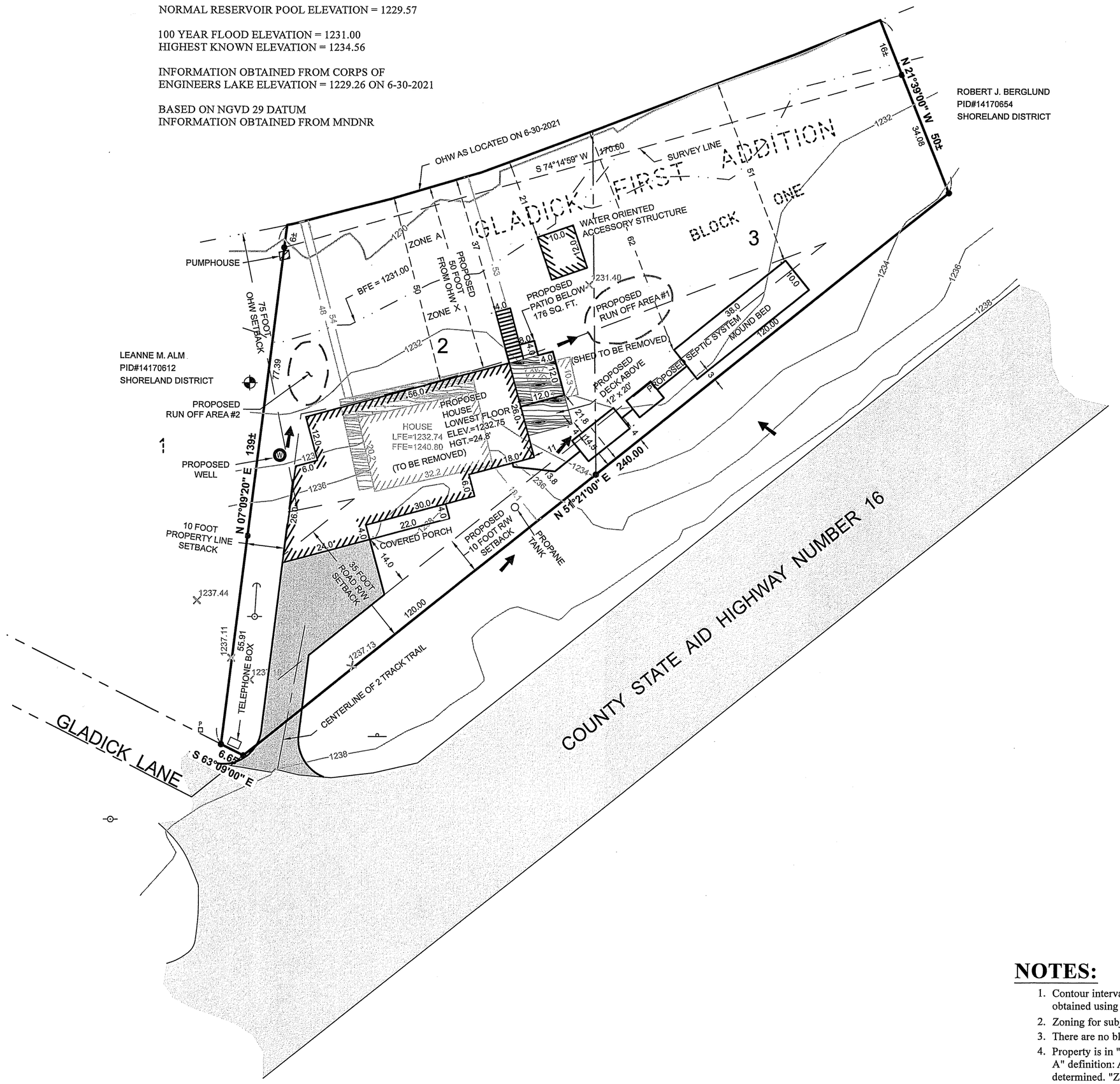
## *RUSH LAKE*

**GENERAL DEVELOPMENT CLASSIFICATION**
NORMAL RESERVOIR POOL ELEVATION = 1229.57

100 YEAR FLOOD ELEVATION = 1231.00
HIGHEST KNOWN ELEVATION = 1234.56

INFORMATION OBTAINED FROM CORPS OF
ENGINEERS LAKE ELEVATION = 1229.26 ON 6-30-2021

BASED ON NGVD 29 DATUM
INFORMATION OBTAINED FROM MNDNR




### *LEGAL DESCRIPTION PER DOCUMENT NUMBER A-870108*

Lots Two (2) and three (3), Block One (1), Gladick First Addition, according to the plat thereof on file and of record in the Office of the County Recorder, Crow Wing County, Minnesota.

together with all hereditaments and appurtenances.

**IMPERVIOUS CALCULATIONS**

| EXISTING | IMPERVIOUS AREA (sq.ft.) | Net Area (sq.ft) | Percent Impervious (sq.ft) |
|---|---|---|---|
| House | 650 | 16,629 | 3.9% |
| Shed & Pump House | 132 | 16,629 | 0.8% |
| Concrete | 178 | 16,629 | 1.1% |
| Driveway | 206 | 16,629 | 1.2% |
| **Total** | **1,166** | **16,629** | **7.0%** |

**IMPERVIOUS CALCULATIONS**

| PROPOSED | IMPERVIOUS AREA (sq.ft.) | Net Area (sq.ft) | Percent Impervious (sq.ft) |
|---|---|---|---|
| Proposed Building & Covered Porch | 2,068 | 16,629 | 12.4% |
| Water Oriented Accessory Structure | 120 | 16,629 | 0.7% |
| Patio | 176 | 16,629 | 1.1% |
| Driveway | 800 | 16,629 | 4.8% |
| **Total** | **3,164** | **16,629** | **19.0%** |

| RUN OFF CALCULATIONS | | | | | |
|---|---|---|---|---|---|
| Total Impervious Surface Area (from table above) | 3,164 sq. ft. | X | 0.0833 ft. | = | 264 cu. ft. |

### PROPOSED RUN OFF AREA #1

TOP SURFACE AREA = 306 SQ. FT.
BOTTOM SURFACE AREA = 140 SQ. FT.
1' DEEP WITH 3:1 SIDE SLOPES
TOTAL RUN OFF STORAGE PROPOSED = 223 CU. FT.

### PROPOSED RUN OFF AREA #2

TOP SURFACE AREA = 140 SQ. FT.
BOTTOM SURFACE AREA = 37 SQ. FT.
1' DEEP WITH 3:1 SIDE SLOPES
TOTAL RUN OFF STORAGE PROPOSED = 88 CU. FT.

### TOTAL PROPOSED RUN OFF AREA

311 CU. FT.

## LEGEND

- DENOTES EXISTING SIGN(S)
- DENOTES EDGE OF EXISTING BITUMINOUS
- DENOTES EDGE OF EXISTING CONCRETE
- DENOTES EDGE OF EXISTING WOODEN DECKING
- DENOTES EDGE OF PROPOSED BITUMINOUS
- 1208 — DENOTES EXISTING INTERMEDIATE CONTOURS
- 1234.5 — DENOTES SPOT ELEVATION (EXISTING GRADE)
- DENOTES EXISTING UTILITY POLE W/ GUY WIRE
- DENOTES EXISTING PHONE PEDESTAL & PHONE BOX
- **BENCHMARK:** SET 3/8" IRON ROD IN EAST FACE OF A 24" SPRUCE
  ELEV. = 1232.76
  BASED ON NGVD 29 DATUM
- DENOTES MONUMENT FOUND

ORIENTATION OF THIS BEARING SYSTEM IS BASED ON THE RECORDED PLAT OF GLADICK FIRST ADDITION.

N

20 0 20 40

SCALE IN FEET
ON 22" x 34" SHEET

## NOTES:

1. Contour interval as shown = 2 foot. Based on NGVD 29 datum. Contours shown have been obtained using standard survey topographic methodologies. Field located on 6-30-2021.
2. Zoning for subject tract = "Shoreland District".
3. There are no bluffs within surveyed property.
4. Property is in "Zone X" and "Zone A" as per the FIRM, Flood Insurance Rate Map. "Zone A" definition: Areas of 100-year flood base elevations and flood hazard factors not determined. "Zone X" definition: Areas of minimal flooding.
5. No wetlands were found on 6-4-2021 at the site per Ben Meister, Meister Environmental, LLC. MN Certified Wetland Delineator #1031.
6. Parcel IDs of subject parcel: 14170610 & 14170611.
7. The E911 address of subject parcel: 13192 Gladick Lane.
8. Walk Out Level to OHW = 50 feet
   Main Level to OHW = 50 feet
   Second Level to OHW = 50 feet
9. Proposed septic system designed by Seth Gravdahl.


30206 Rasmussen Road
Suite 1
P. O. Box 874
Pequot Lakes, MN 56472
218-568-4940
www.stonemarksurvey.com


I HEREBY CERTIFY THAT THIS SURVEY, PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

Cynthia M. Hiddle

CYNTHIA M. HIDDLE PLS#44881

DATE: 5/3/2022 LIC. NO. 44881

| REVISIONS | | | |
|---|---|---|---|
| DESCRIPTION | DATE | BY | |
| Revised steps | 4-25-2022 | BJF | |
| Added Dimensions | 5-3-2022 | CMH | |

| | |
|---|---|
| PROJECT MANAGER: | CMH |
| CHECKED BY: | RJF |
| DRAWN BY: | CMH |
| PROJECT No.: | 21182-1 |
| FILE NAME: | C21182-1a.dwg |
| FIELD BOOK: | BOOK 464 PG. 14&15 |
| DATE: | 4-8-2022 |
| SCALE: | HORZ. 1"=20' VERT. NONE |

CERTIFICATE OF SURVEY

Merry Brummer
9987 209th Avenue NW
Elk River, MN 55330

SHEET 1 OF 1

Cad 5/2/2022 4:26 PM - F:\Drawings\2021\21182 Brummer\C21182-1a.dwg

# History of 13192 Gladick Lane Variance Application and Planning Commission feedback

**Objection Summary from session on Sept 24, 2021**

- Planning Commission objection: no closer than existing deck or structure
  - Revised plan
    - Existing structure is 48' from lake
    - Revised to 50' from lake
- Planning Commission objection: smaller in size, 2 or 3 bedrooms (less parking and septic size needed)
  - Revised plan
    - Reduced to 3 bedrooms
- Planning Commission objection: add only one additional floor
  - Revised plan
    - Reduced to add only one floor, now a 2 story with a walk-out
- Planning Commission objection: possibly look at the newly presented septic system
  - Revised plan
    - Proposed an advanced, Type IV septic system

**Objection Summary from session on March 25, 2022**

Minutes from the March 25, 2022, Planning and Zoning Commission Meeting have not been posted to the City of Crosslake Planning Commission website at the time of the variance application on April 11, 2022.

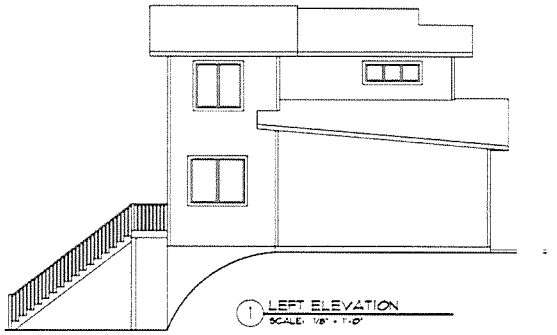
- Based on dialog during the Planning and Zoning Commission Meeting on March 25, 2022, the following modifications to the variance application have been made:
  - Revised plan
    - Moved septic system 11' further from lake, closer to house, drain field is now 51' from lake
    - Reduced the height of the house by 18"
    - Reduced the width of the house by 4'
      - Reduced impervious to 19%


Current structure roadside

Current structure lakeside

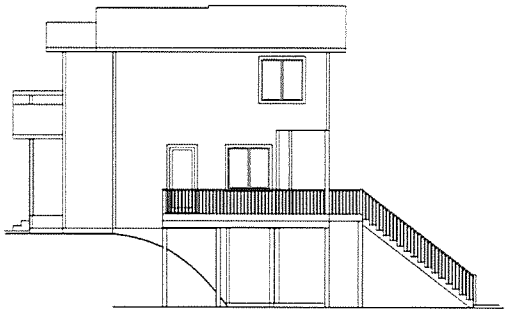
# New Elevations


1 ROAD ELEVATION
SCALE: 1/8" = 1'-0"



1 LEFT ELEVATION
SCALE: 1/8" = 1'-0"

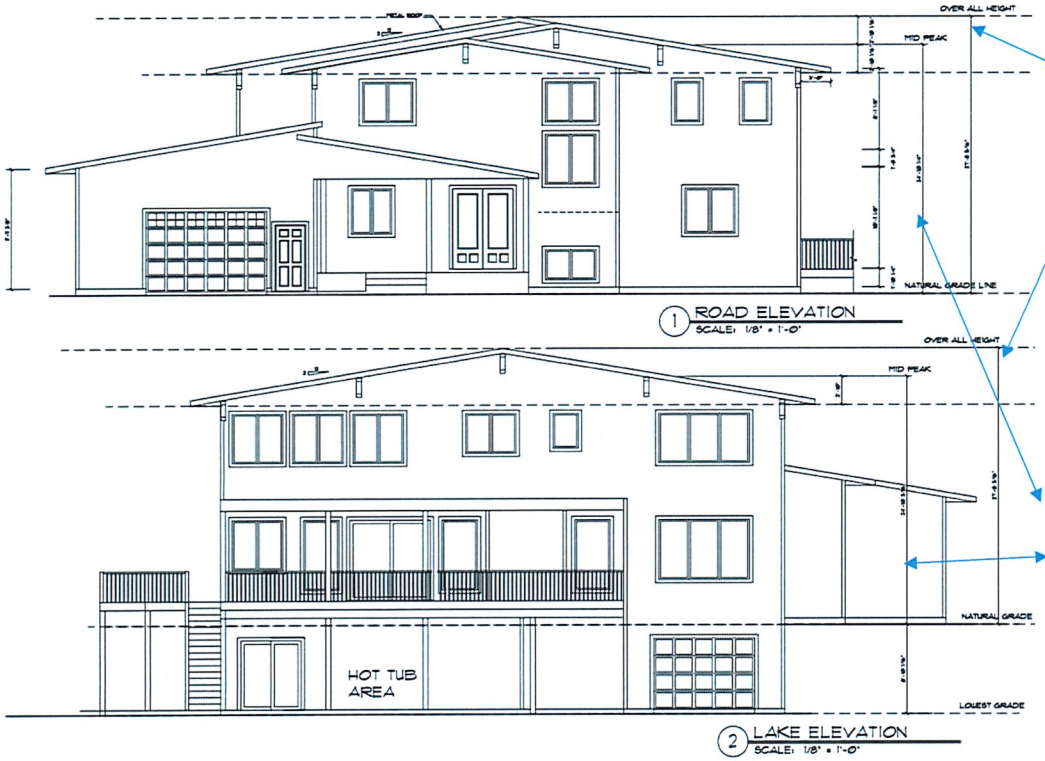

2 LAKE ELEVATION
SCALE: 1/8" = 1'-0"



3 RIGHT ELEVATION
SCALE: 1/8" = 1'-0"

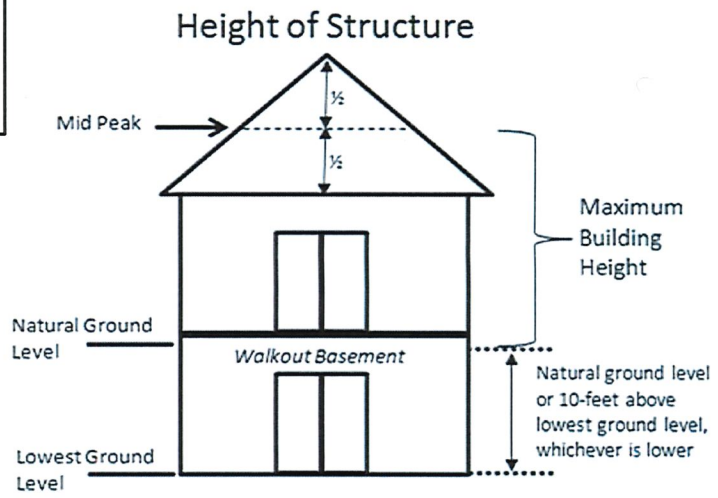
Cut 125 yards for basement and Fill 155 yard for septic
Use the cut from the basement for the septic then bring in more fill if necessary

# Mid-peak calculation – Height of Structure



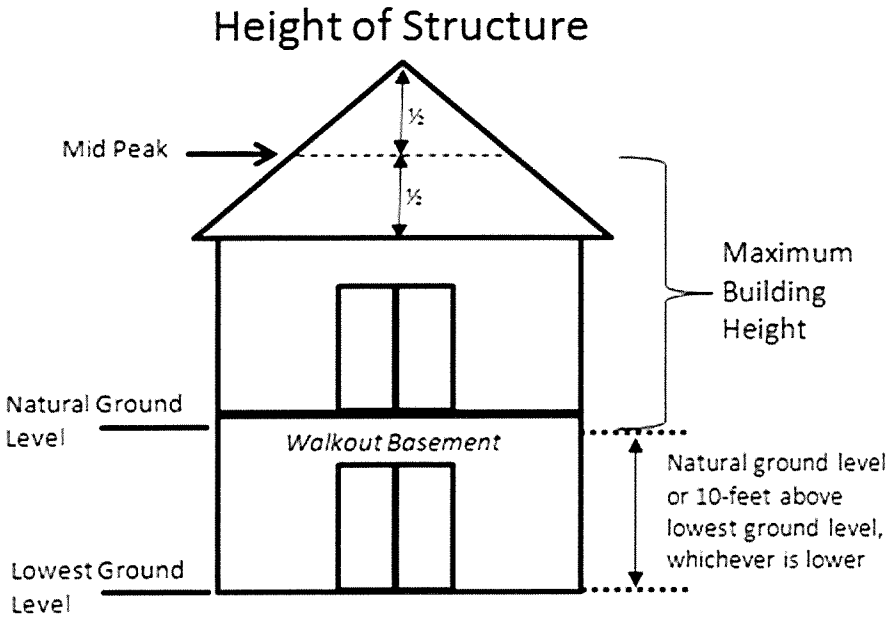

Height of Structure
27’ 8 5/16”

Mid-Peak
24’ 10 ¼”




The mid-peak calculation is 24’ 10 1/4”, which does not exceed the 35’ height maximum.

# Mid-peak calculation




At the March 25th Planning Commission Meeting there were questions regarding the height of the structure and how it was measured. The structure was and continues to me measured using the method documented according to the Code of Ordinances for the City of Crosslake, Minnesota

**CHAPTER 26 – LAND USE**

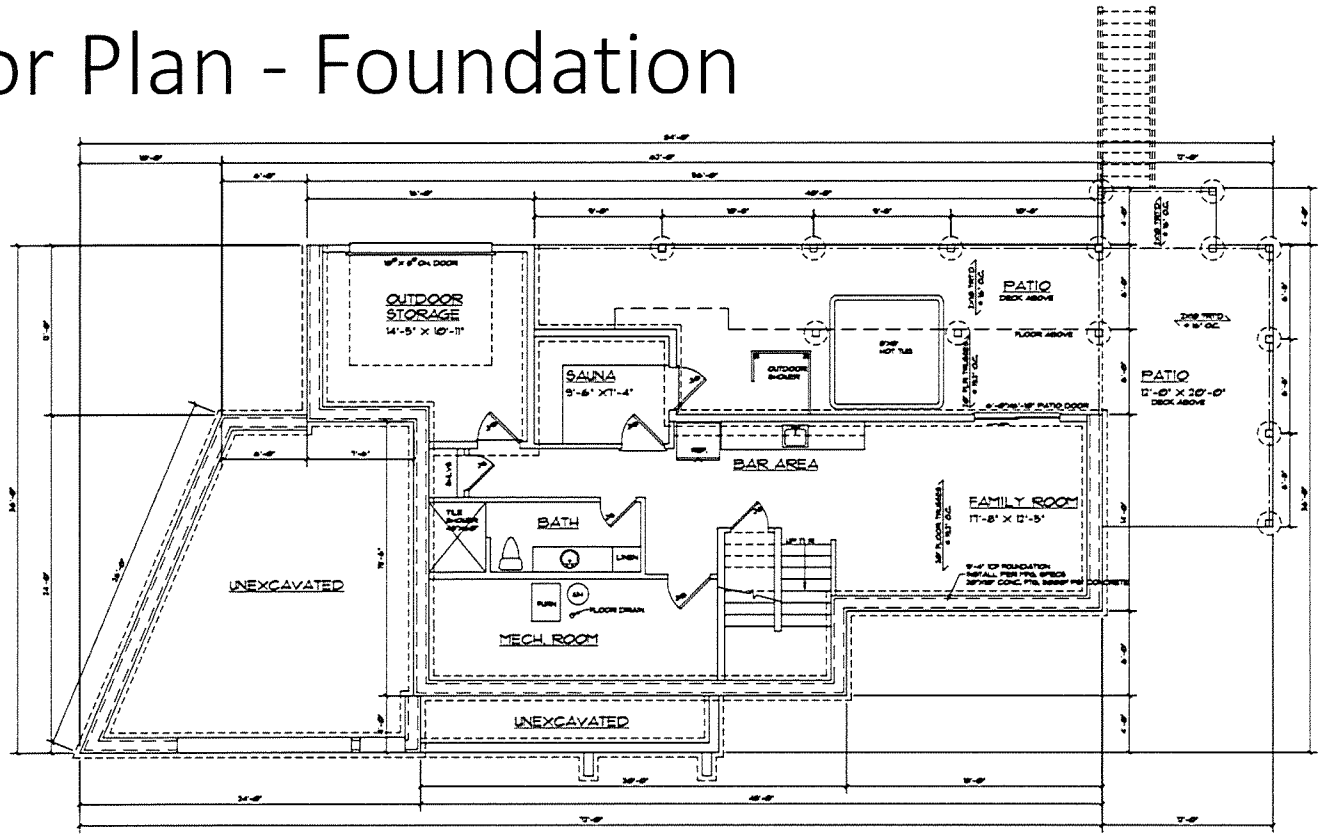
Effective date: April 14, 2014, Revised: October 19, 2021

Page 36 - Sec. 26-310 Height of Structures Unless otherwise specified, structures in the shoreland district shall not exceed 35 feet in height.

Page 134 ARTICLE 43 DEFINITIONS

**HEIGHT OF STRUCTURE** The vertical distance between the mean natural grade at the building or ten feet above the lowest ground level, whichever is lower, and the highest point of a flat roof or mean height between the eaves and the ridge for gable, hip, mansard, gambrel, or other pitched or hipped roofs.

# Floor Plan - Foundation

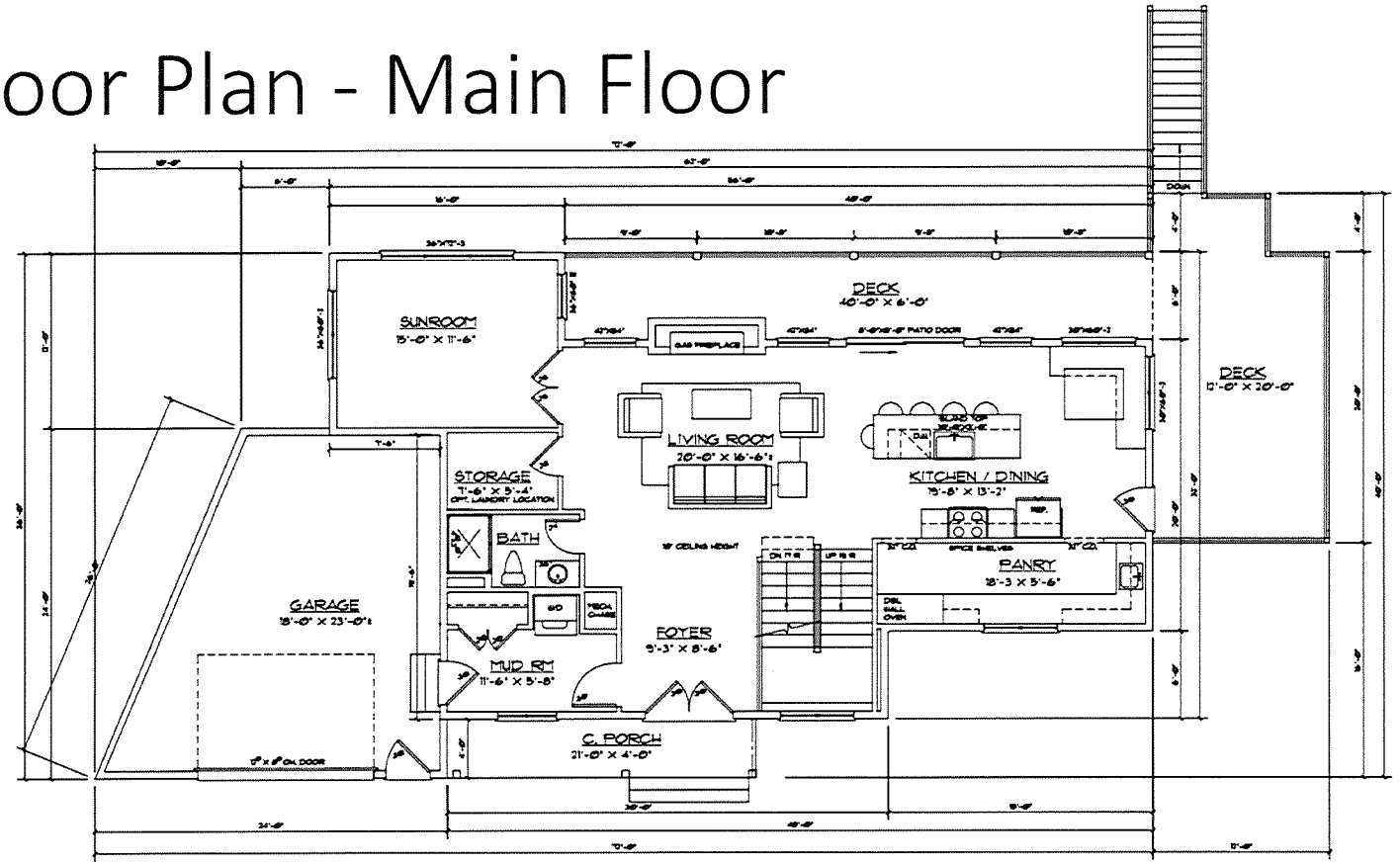



PRELIMINARY
NOT FOR CONSTRUCTION

1 FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

| | |
|---|---|
| FINISHED BASEMENT | 666 SQ. FT. |
| MAIN FLOOR PLAN | 1303 SQ. FT. |
| SECOND FLOOR | 1469 SQ. FT. |
| HOUSE TOTAL | 3440 SQ. FT. |
| GARAGE | 442 SQ. FT. |

# Floor Plan - Main Floor

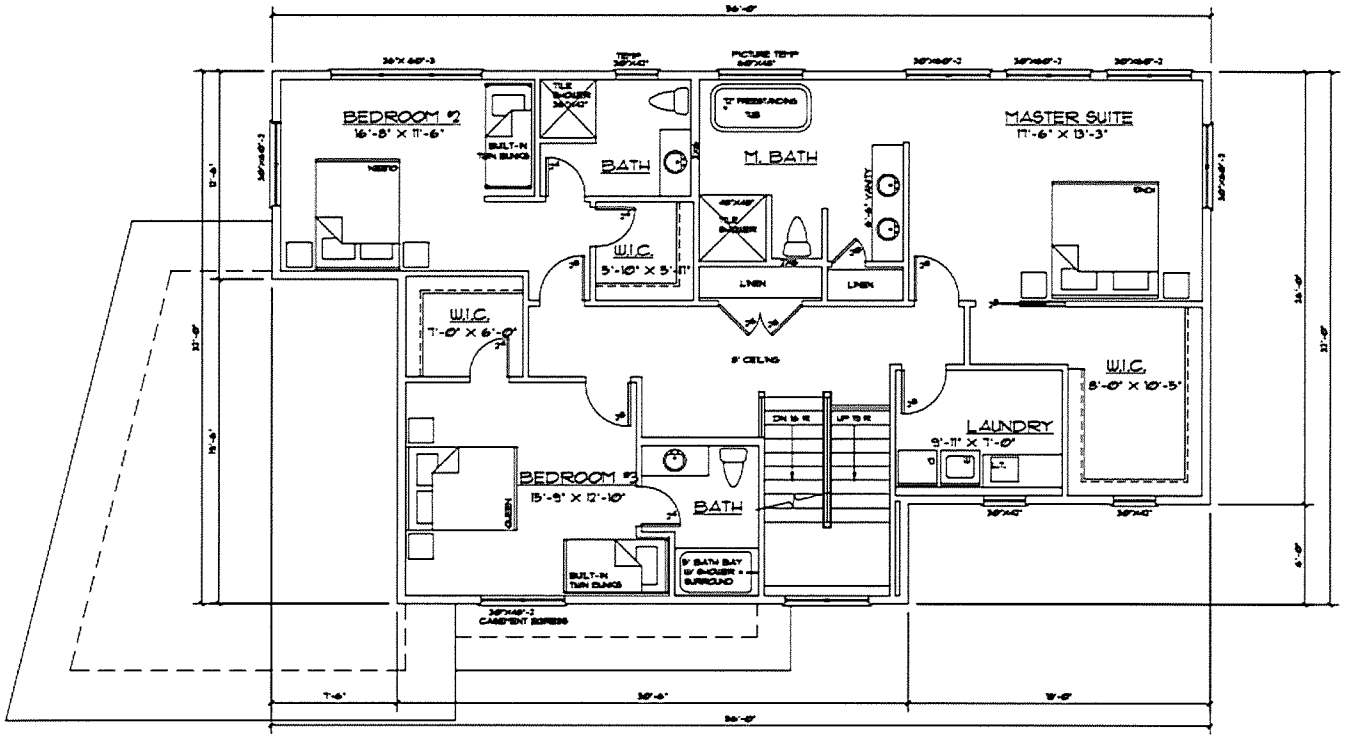



PRELIMINARY
NOT FOR CONSTRUCTION

1 MAIN FLOOR PLAN
SCALE: 1/8" = 1'-0"

| | |
|---|---|
| FINISHED BASEMENT | 666 SQ. FT. |
| MAIN FLOOR PLAN | 1305 SQ. FT. |
| SECOND FLOOR | 1469 SQ. FT. |
| HOUSE TOTAL | 3440 SQ. FT. |
| GARAGE | 442 SQ. FT. |

# Floor Plan - Second Floor




1 SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

| | |
|---|---|
| FINISHED BASEMENT | 666 SQ. FT. |
| MAIN FLOOR PLAN | 1305 SQ. FT. |
| SECOND FLOOR | 1469 SQ. FT. |
| HOUSE TOTAL | 3440 SQ. FT. |
| GARAGE | 442 SQ. FT. |

# Landscape Plan

Grass

Building

Driveway

Sand Blanket

Deck/patio/covered entry/stairs

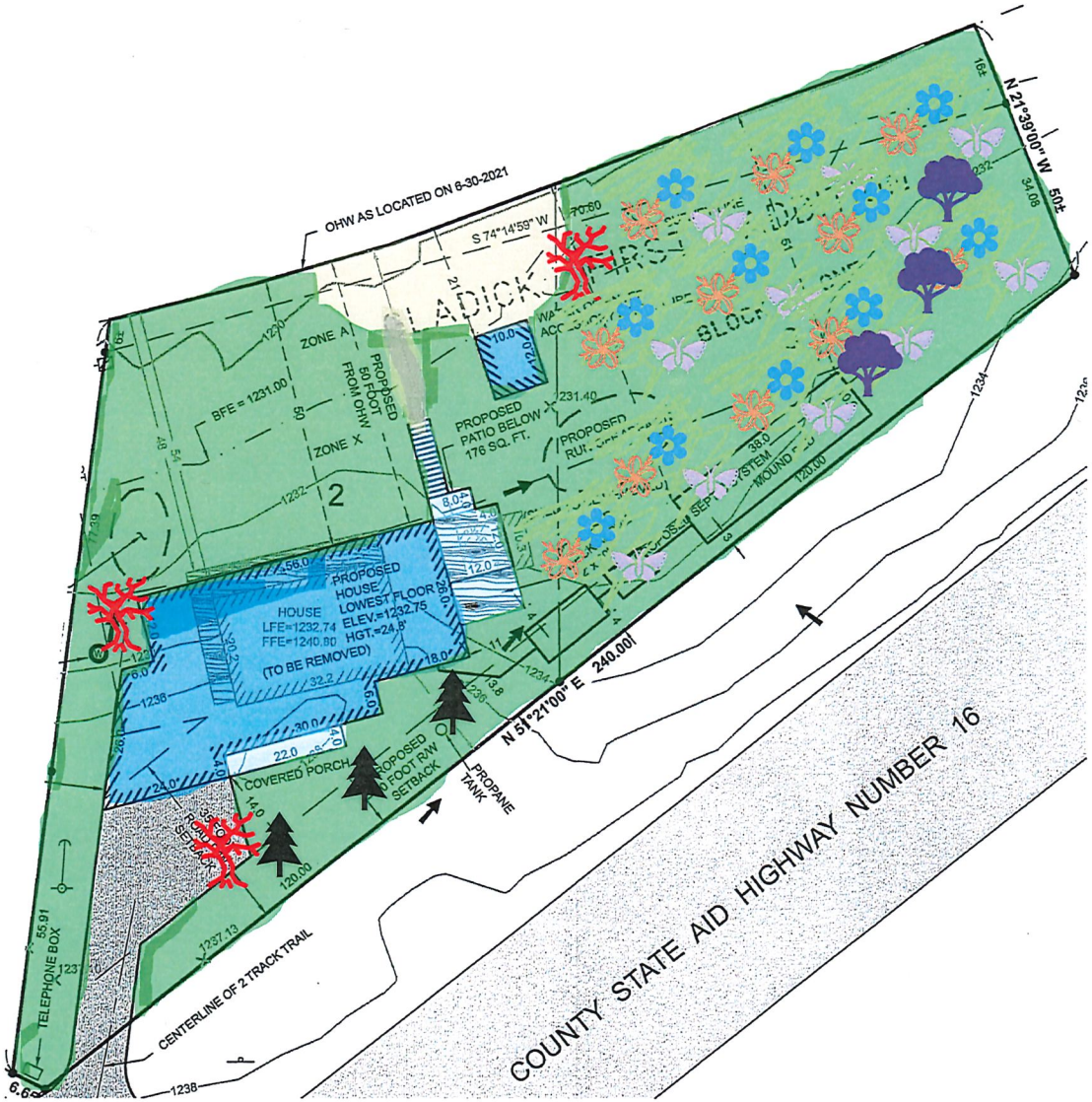
4’ Walkway

New MNL Septic Mound & Pollinator Wet Mesic mix

Existing tree

Tree to be removed

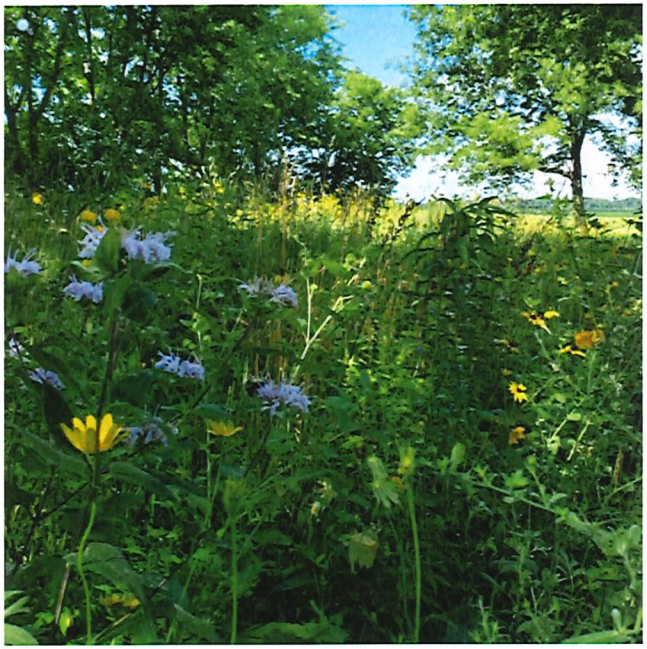
New tree to be planted



# Shoreline and Septic System Erosion Control

To control erosion, reduce run-off and protect the lake - deep-rooted native plants be will planted to create a system that mimics naturally stable shoreline and optimizes natural beauty.

- Designed for the use of stormwater and to reduce runoff.
- A silt fence will be implemented and maintained to control erosion/sediment during construction.



### MNL Septic Mound Mix

Specially designed with great species for poor-soil septic mound and drain field areas. The University of Minnesota recommends native grasses and wildflowers to improve soil stability and providing a cover to limit frost depths.

### MNL Pollinator Mix Wet Mesic

A diverse seed mix to create native pollinator habitat in wet to medium moisture soils.

# Crow Wing County Mound Design

Property Owner: Merry Brummer Date: 1/24/2022

Mailing Address: 13459 Island View Rd

City: Crosslake State: MN Zip: 56442

Home Phone Number: Cell: 612-598-8917

Site Address: 13192 Gladick Ln

City: Crosslake State: MN Zip: 56442

Driving directions if no address issued:

Legal Description:

Sec: 17 Twp: 137 Range: 27 Twp Name: Crosslake

Parcel Number: 14170611 + 0610

Lake/ River: Rush Lake/River Classification: GD

## Flow Data

Number of Bedrooms: 3

Dwelling Classification: I

System Type: IV Norweco ATU

GPD: 450 960 treatment tank

| Estimated Flow in Gallons per Day (GPD) | | | |
|---|---|---|---|
| Bedrooms | Class I | Class II | Class III |
| 2 | 300 | 225 | 180 |
| 3 | 450 | 300 | 218 |
| 4 | 600 | 375 | 256 |
| 5 | 750 | 450 | 294 |
| 6 | 900 | 525 | 332 |
| 7 | 1050 | 600 | 370 |
| 8 | 1200 | 675 | 408 |

## Wells

Deep Well: Proposed Deep

Shallow Well: Select One

Wells to be sealed (if applicable)?

## Setbacks

Tank(s) to: Well 80 Drainfield to: Well 100+ Sewer Line to well: 65

House 5 House 50 Air Test: No

Property Line 4 Property Line 1

**Additional System Notes and Information:** 3 br advanced septic using a Norweco 960 aeration tank. Addn'l 12" of sand for 4' of seperation.

Designer Name: Seth Gravdahl License Number: 2951

Address: 10199 Ossawinnamakee Rd

City: Pequot Lakes State: MN Zip: 56472

Home Phone Number: Cell: 218-831-3980

E-Mail Address: sethgravdahl@gmail.com

I hereby certify that I have completed this work in accordance with all applicable requirements.

Designer Signature: _____ Date: 1/24/2022

# Crow Wing County Mound Design



Property Owner: Merry Brummer  Date: 1/24/2022  Designer's Initials: SG

## Tank Sizing

A. Septic Tank Capacity: 1300 Gallons – Per Norweco Specifications ↖ 7080.1930 Subp. 6
Tank Type: 3 Compartments  Filter: Yes
Garbage Disposal/Basement Lift Station: Disposal and Lift

B. Pump Tank Capacity: 600 Gallons (7080.2100)
   a. Alarm Type: Electric

| Septic Tank Capacity | | |
|---|---|---|
| Bedrooms | Minimum | GD/BL |
| 5 or less | 1,500 | 2,250 |
| 6 or 7 | 2,000 | 3,000 |
| 8 or 9 | 2,500 | 3,750 |

## Soils

C. Depth to Restricting Layer: 2ft.
D. Depth of Clean Sand at Upslope Edge: 2ft.
E. Native SSF: .83 (Perc. Rate [Optional]  MPI)
F. Land Slope: 0%

| Absorption Width Ratio Table | | |
|---|---|---|
| Texture | SSF | AWR |
| Sand | 0.83 | 1.00 |
| Fine Sand | 1.67 | 2.00 |
| Sandy Loam | 1.27 | 1.52 |
| Loam | 1.67 | 2.00 |
| Silt Loam | 2.00 | 2.40 |
| Clay Loam | 2.20 | 2.67 |

## Rock Bed Dimensions

G. GPD 450 × .83= 373.5sq. ft.
H. Rock Bed Width: 10ft.
I. Rock Bed Length: 38ft.
J. Cubic Yards of Rock (H) × (I) × Rock Depth 1ft. ÷ 27 = 14 yds³

## Mound Size Calculations

K. AWR (from table): 1 × Rock Bed Width (H): 10 = 10ft. (Absorption Width)
L. Absorption Width (K): 10ft. – Rock Bed Width (H): 10ft. = 0ft. (Downslope Minimum)
M. Depth of washed sand (D): 2+ 1 ft. of rock + 1 ft. of cover = 4ft. (Upslope Height)
N. Enter upslope berm value from Berm Multiplier Table: 3
O. Upslope berm multiplier (N): 3 × upslope height (M): 4 = 12ft. (Upslope Width)
P. Rock bed width (H): 10ft. × land slope (F): 0% × 0.01 = 0.0ft. (Drop in Elevation)
Q. Upslope height (M): 4ft. + drop in elevation (P): 0.0ft. = 4ft. (Downslope Height)
R. Enter downslope berm value from Berm Multiplier Table: 3
S. Downslope height (Q): 4 × Downslope berm multiplier (R): 3 = 12 ft. (Downslope Width)
T. Select the larger number of Step (L) and Step (S): 12ft.
U. Upslope width (O): 12 + rock bed width (H): 10 + downslope width (T): 12 = 34ft. (Mound Width)
V. Upslope width (O): 12 + rock bed length (I): 38 + Upslope width (O): 12 = 62ft. (Mound Length)
W. Final Mound Dimensions Are: Width (U): 34ft. by Length (V): 62ft.

| Berm Multiplier Table | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Slope→ | 0% | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% |
| Upslope Berm ↓ 3/1 | 3.00 | 2.91 | 2.83 | 2.75 | 2.68 | 2.61 | 2.54 | 2.48 | 2.42 | 2.36 | 2.31 | 2.26 | 2.21 |
| 4/1 | 4.00 | 3.85 | 3.70 | 3.57 | 3.45 | 3.33 | 3.23 | 3.12 | 3.03 | 2.94 | 2.86 | 2.78 | 2.70 |
| 5/1 | 5.00 | 4.76 | 4.54 | 4.35 | 4.17 | 4.00 | 3.85 | 3.70 | 3.57 | 3.45 | 3.33 | 3.23 | 3.12 |
| 6/1 | 6.00 | 5.66 | 5.36 | 5.08 | 4.84 | 4.62 | 4.41 | 4.23 | 4.05 | 3.90 | 3.75 | 3.61 | 3.49 |
| 7/1 | 7.00 | 6.54 | 6.14 | 5.79 | 5.46 | 5.19 | 4.93 | 4.70 | 4.49 | 4.30 | 4.12 | 3.95 | 3.80 |
| Downslope Berm ↓ 3/1 | 3.00 | 3.09 | 3.19 | 3.30 | 3.41 | 3.53 | 3.66 | 3.80 | 3.95 | 4.11 | 4.29 | 4.48 | 4.69 |
| 4/1 | 4.00 | 4.17 | 4.35 | 4.54 | 4.76 | 5.00 | 5.26 | 5.56 | 5.88 | 6.25 | 6.67 | 7.14 | 7.69 |
| 5/1 | 5.00 | 5.26 | 5.56 | 5.88 | 6.25 | 6.67 | 7.14 | 7.69 | 8.33 | 9.09 | 10.00 | 11.11 | 12.50 |
| 6/1 | 6.00 | 6.38 | 6.82 | 7.32 | 7.89 | 8.57 | 9.38 | 10.34 | 11.54 | 13.04 | 15.00 | 17.65 | 21.43 |
| 7/1 | 7.00 | 7.53 | 8.14 | 8.86 | 9.72 | 10.77 | 12.07 | 13.73 | 15.91 | 18.92 | 23.33 | 30.43 | 43.75 |

# Crow Wing County Mound Design



Property Owner: Merry Brummer
Date: 1/24/2022

Designer's Initials: SG

## Determine Pump Capacity

1) Gravity Distribution Pump Capacity Range: 10 - 45 GPM

*Skip to Pump Head Requirements if pumping to gravity

2) Pressure Distribution:

a) Number of laterals: 3

b) Lateral Size: 1.5in.

c) Perforation spacing: 3ft.

d) Check Table 4 to see the maximum number of perforations per lateral.

3) Lateral Length (choose):

a) End manifold: rock bed length: 38 - 2 ft. = 36ft.

b) Center manifold: rock bed length /2: 19 - 1 ft. = 18ft.

c) Choose 3a or 3b: 36ft.

4) Total Perforation Determination:

a) (3c): 36ft. ÷ (2c): 3ft. + 1 = 13 Perforations / Lateral

b) (4a): 13 × (2a): 3 = 39 Total Number of Perforations

c) Select perforation discharge from Table 1 = .74 GPM/Perf.

d) (4b): 39 × (4c): 0.74 GPM/Perf. = 28.86 GPM

## PUMP HEAD REQUIREMENTS

5) Elevation difference:

a) Elevation difference between pump and point of discharge 4ft.

b) If pumping to a pressure distribution system, (5a) + 5 = 9ft.

c) Choose 5a if pumping to gravity or 5b for pressure: 9ft.

6) Friction loss:

a) Select a value from Table 2: 1.55ft. / 100 ft. of pipe

b) Pipe length to drainfield: 12ft. × 1.25 = 15ft.

c) (6a): 1.55 × (6b): 15 ÷ 100 = 0.23 Total Friction Loss

7) Drainback:

a) Actual Pipe length 12ft. × .17 gal/ft. (Table 3) = 2.04 gal

8) (5c): 9ft. + (6c): 0.23ft. = 9.23 Total Head Required

9) Minimum Pump Size 28 GPM (4d) & 9ft. of dynamic head (8)

**Table 1**
Perforation Discharge (GPM/perf.)

| Ft. of Head | 7/32" Perf | 1/4" Perf |
|---|---|---|
| 1.0 | 0.56 | 0.74 |
| 2.0 | 0.80 | 1.04 |

Use 1.0 for single homes, 2.0 for everything else

**Table 2**
Friction Loss in Plastic Pipe

| Flow (GPM) | 1.5" | 2" | 3" |
|---|---|---|---|
| 20 | 2.47 | 0.73 | 0.11 |
| 25 | 3.73 | 1.11 | 0.16 |
| 30 | 5.23 | 1.55 | 0.23 |
| 35 | 6.96 | 2.06 | 0.30 |
| 40 | 8.91 | 2.64 | 0.39 |
| 45 | 11.07 | 3.28 | 0.48 |
| 50 | 13.46 | 3.99 | 0.58 |
| 55 | | 4.76 | 0.70 |
| 60 | | 5.60 | 0.82 |
| 65 | | 6.48 | 0.95 |
| 70 | | 7.44 | 1.09 |

**Table 3**
Volume of Liquid in Pipe

| Pipe Diameter | Gal/Ft. |
|---|---|
| 1.25 in. | 0.078 |
| 1.5 in. | 0.11 |
| 2.0 in. | 0.17 |

**Table 4**
Max Perforations/Lateral

| Perf. Spacing | 1.25" Pipe | 1.5" Pipe | 2" Pipe |
|---|---|---|---|
| 2.5 ft. | 14 | 18 | 28 |
| 3 ft. | 13 | 17 | 26 |
| 3.3 ft. | 12 | 16 | 25 |
| 4 ft. | 11 | 15 | 23 |
| 5 ft. | 10 | 14 | 22 |

# Crow Wing County Mound Design



Property Owner: Merry Brummer  Date: 1/24/2022  Designer's Initials: SG

Please record the depths of all horizons, redoximorphic features, restricting layers, and saturated soils. Include all chroma and hue values.

#1 Proposed Site Boring From 6/20/21

| Depth (in.) | Texture | Color |
|---|---|---|
| 1-3 | Sandy Loam | 10yr 3/3 |
| 3-24 | Med Sand | 10yr 4/4 |
| 24+ | Med Sand | Redox/Water |
| | | |
| | | |

#1 Alternate Site

| Depth (in.) | Texture | Color |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

#2 Proposed Site

| Depth (in.) | Texture | Color |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

#2 Alternate Site

| Depth (in.) | Texture | Color |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

* Additional Soil Testing to be done in the Spring

**Soil Sizing Factors/Hydraulic Loading Rates**

| Perc. Rate | Texture | SSF | HLR | Perc. Rate | Texture | SSF | HLR |
|---|---|---|---|---|---|---|---|
| <0.1 | Coarse Sand | | | 16 to 30 | Loam | 1.67 | 0.60 |
| 0.1 to 5 | Sand | 0.83 | 1.20 | 31 to 45 | Silt Loam | 2.00 | 0.50 |
| 0.1 to 5 | Fine Sand | 1.67 | 0.60 | 46 to 60 | Clay Loam | 2.20 | 0.45 |
| 6 to 15 | Sandy Loam | 1.27 | 0.79 | > 60 | Clay Loam | **** | 0.24 |

**Description of Soil Treatment Areas**

| | Proposed Site | | Alternate Site | |
|---|---|---|---|---|
| Disturbed Areas? | | | | |
| Compacted Areas? | No | | | |
| Flooding Potential? | No | | | |
| Run on Potential? | No | | | |
| Limiting Layer Depth | Proposed #1<br>24" | Proposed #2 | Alternate #1 | Alternate #2 |
| Slope % and Direction | 0 | | | |
| Landscape Position | sidehill | | | |
| Vegetation Types | grass/brush | | | |
| Soil Texture | Med Sand | | | |
| Soil Sizing Factor | 0.83 | | Select One | |

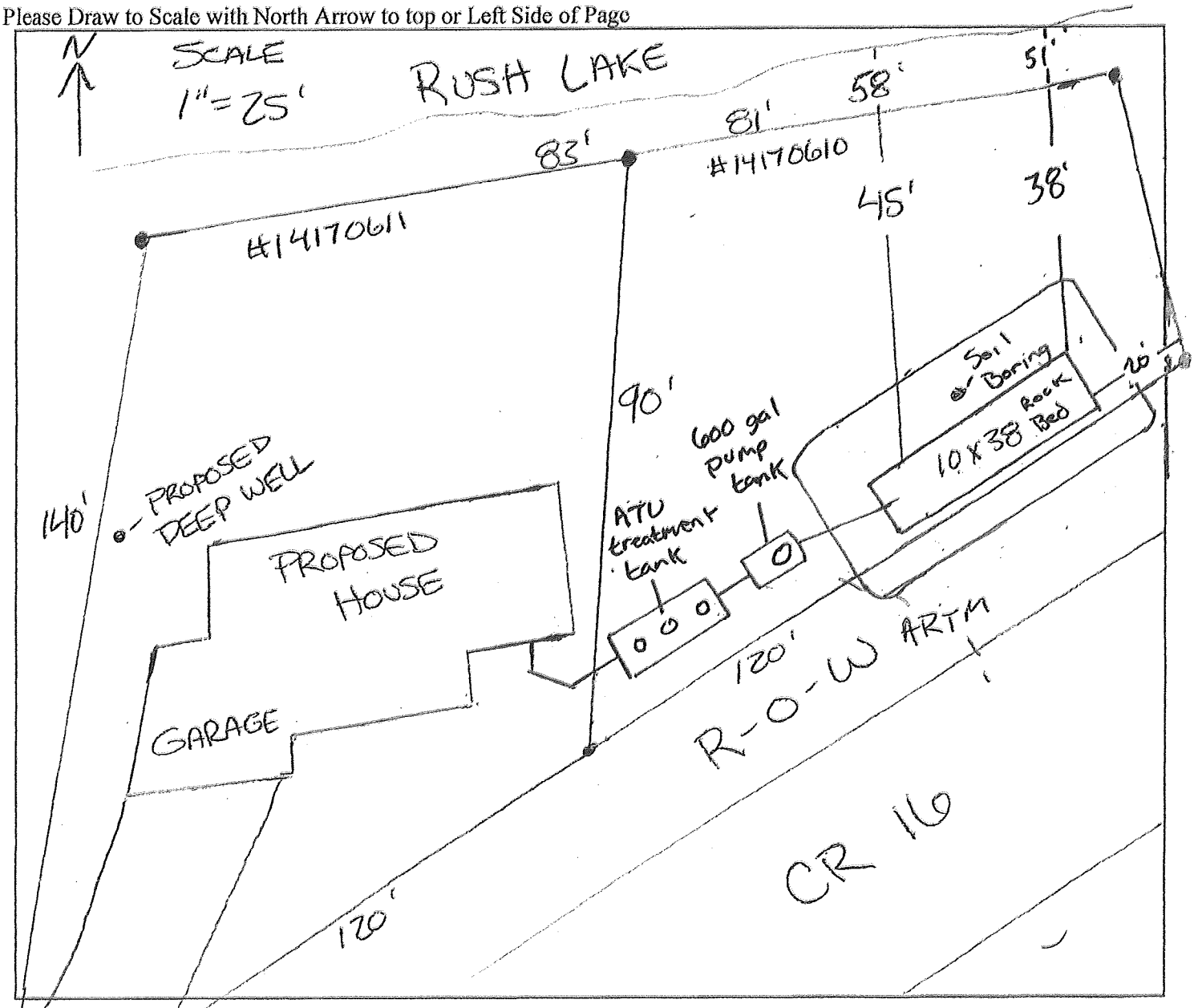
# Crow Wing County Mound Design



Property Owner: Merry Brummer

Date: 1/24/2022

Please Draw to Scale with North Arrow to top or Left Side of Page




**Please show all that apply (Existing or Proposed):**

| | | |
|---|---|---|
| Wells within 100 ft. of a Drainfield | Disturbed/Compacted Areas | Access Route for Tank Maintenance |
| Water lines within 10 ft. of a Drainfield | Component Location | Property Lines |
| Drainfield Areas | OHW | Structures |
| Boring Locations | Lot Easements | Setbacks |

**Elevations:**

Benchmark Elevation: 100 Ground Level @ mound

Elevation of Sewer Line at House: 104.5

Tank Inlet Elevation: 104

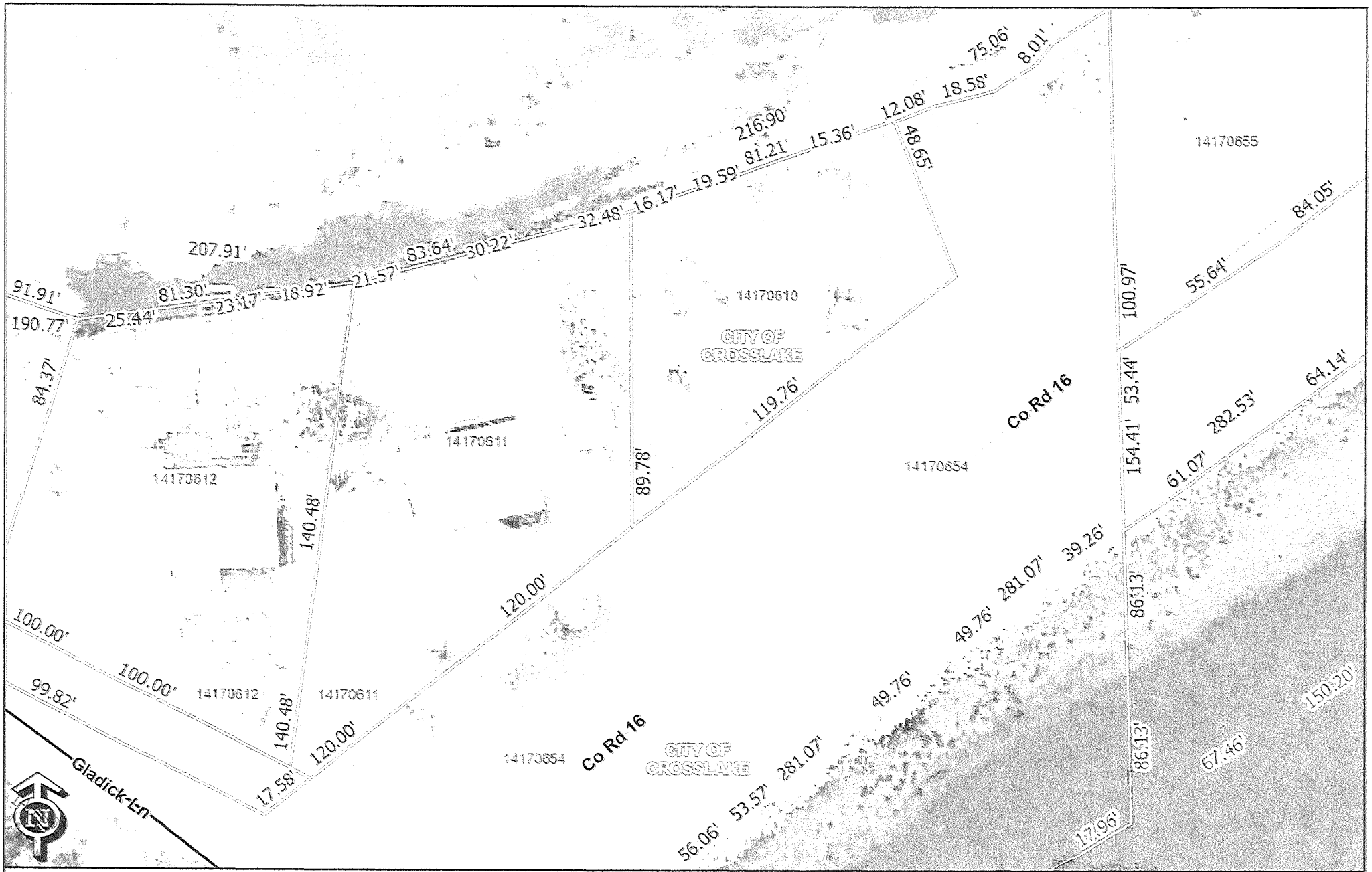
Drainfield Elevation: 103

Pump Elevation: 99

Pump Discharge Elevation: 104

Restricting Layer Elevation: 98

Designer Signature: _____ Date: 1/24/2022




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.

Brummer

Date: 1/24/2022 Time: 2:13:01 PM

CROW WING COUNTY MINNESOTA

6 of 7

# Map Unit Description (MN)

Crow Wing County, Minnesota

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

## D77D--Graycalm-Grayling complex, 12 to 25 percent slopes

### Graycalm

*Extent:* 25 to 65 percent of the unit
*Landform(s):* rises on outwash plains
*Slope gradient:* 12 to 25 percent
*Parent material:* outwash
*Restrictive feature(s):* greater than 60 inches
*Flooding:* none
*Ponding:* none
*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 5
*Wind erodibility group (WEG):* 2
*Wind erodibility index (WEI):* 134
*Kw factor (surface layer)* .15
*Land capability, nonirrigated* 4s
*Hydric soil:* no
*Hydrologic group:* A
*Potential for frost action:* low

| *Representative soil profile:* | | *Texture* | *Permeability* | *Available water capacity* | *pH* |
|---|---|---|---|---|---|
| A -- | 0 to 4 in | Loamy sand | rapid | 0.35 to 0.43 in | 4.5 to 5.5 |
| Bw1 -- | 4 to 20 in | Loamy sand | rapid | 1.29 to 1.61 in | 5.0 to 6.0 |
| Bw2 -- | 20 to 31 in | Sand | rapid | 0.44 to 0.66 in | 5.0 to 6.0 |
| E and Bt -- | 31 to 79 in | Sand | rapid | 2.38 to 3.81 in | 5.5 to 6.5 |

### Grayling

*Extent:* 29 to 45 percent of the unit
*Landform(s):* rises on outwash plains
*Slope gradient:* 12 to 25 percent
*Parent material:* outwash
*Restrictive feature(s):* greater than 60 inches
*Flooding:* none
*Ponding:* none
*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5
*Wind erodibility group (WEG):* 2
*Wind erodibility index (WEI):* 134
*Kw factor (surface layer)* .20
*Land capability, nonirrigated* 4s
*Hydric soil:* no
*Hydrologic group:* A
*Potential for frost action:* low

| *Representative soil profile:* | | *Texture* | *Permeability* | *Available water capacity* | *pH* |
|---|---|---|---|---|---|
| A -- | 0 to 8 in | Loamy sand | rapid | 0.63 to 0.87 in | 5.1 to 6.5 |
| Bw -- | 8 to 47 in | Sand | rapid | 1.95 to 4.29 in | 5.1 to 6.5 |
| BC -- | 47 to 79 in | Sand | rapid | 1.59 to 2.23 in | 5.1 to 6.5 |

This report provides a semitabular listing of some soil and site properties and interpretations that are valuable in communicating the concept of a map unit. The report also provides easy access to the commonly used conservation planning information in one place. The major soil components in each map unit are displayed. Minor components may be displayed if they are included in the database and are selected at the time the report is generated.

# Subsurface Sewage Treatment System Management Plan

Property Owner: Merry Brummer Phone: 612-598-8917 Date: 1/24/22

Mailing Address: 13459 Island View Rd City: Crosslake Zip: 56442

Site Address: 13192 Gladick Ln City: Crosslake Zip: 56442

This management plan will identify the operation and maintenance activities necessary to ensure long-term performance of your septic system. Some of these activities must be performed by you, the homeowner. Other tasks must be performed by a licensed septic service provider or maintenance provider.

System Designer: Recommends SSTS check every 6 months.
Local Government: Recommends SSTS check every _____ months.
State Requirement: Requires SSTS check every 36 months.
*(State requirements are based on MN Rules Chapter 7080.2450, Subp. 2 & 3)*

**My System needs to be checked every 6 months.**

**Homeowner Management Tasks:**

*Leaks* – Check (look, listen) for leaks in toilets and dripping faucets. Repair leaks promptly.

*Surfacing sewage* – Regularly check for wet or spongy soil around your soil treatment area.

*Effluent filter – Inspect and clean twice a year or more.* Every 3-6 months for cleaning

*Alarms* – Alarm signals when there is a problem. Contact a service or maintenance provider any time an alarm signals.

*Event counter or water meter* – Record your water use.

-recommend meter readings be conducted (*circle one:* DAILY WEEKLY MONTHLY N/A)

**Licensed septic service provider or maintenance provider (Check all that apply):**

- ☐ Check to make sure tank is not leaking
- ☐ Check and clean the in-tank effluent filter (if exists)
- ☐ Check the sludge/scum layer levels in all septic tanks
- ☐ Recommend if tank should be pumped
- ☐ Check inlet and outlet baffles
- ☐ Check the drainfield effluent levels in the rock layer
- ☐ Check the pump and alarm system functions
- ☐ Check wiring for corrosion and function
- ☐ Check dissolved oxygen and effluent temperature in tank
- ☐ Provide homeowner with list of results and any action to be taken
- ☐ Flush and clean laterals if cleanouts exist

"I understand it is my responsibility to properly operate and maintain the sewage treatment system on this property, utilizing the Management Plan. If requirements in the Management Plan are not met, I will promptly notify the permitting authority and take necessary corrective actions. If I have a new system, I agree to adequately protect the reserve area for future use as a soil treatment system."

Property Owner Signature: _____ Date: _____

Designer Signature: _____ Date: 1/24/22

**See Reverse Side for Management Log**

# Maintenance Log

| Activity | Date Accomplished | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Check frequently:*** | | | | | | | | | | |
| Leaks: check for plumbing leaks | | | | | | | | | | |
| Soil treatment area check for surfacing | | | | | | | | | | |
| Lint filter: check, clean if needed | | | | | | | | | | |
| Effluent screen: if owner-maintained | | | | | | | | | | |
| Water usage rate (monitor frequency _____) | | | | | | | | | | |
| ***Check annually:*** | | | | | | | | | | |
| Caps: inspect, replace if needed | | | | | | | | | | |
| Sludge & Scum/Pump | | | | | | | | | | |
| Inlet & Outlet baffles | | | | | | | | | | |
| Drainfield effluent leaks | | | | | | | | | | |
| Pump, alarm, wiring | | | | | | | | | | |
| Flush & clean laterals if cleanouts exists | | | | | | | | | | |
| Other:_____ | | | | | | | | | | |
| Other:_____ | | | | | | | | | | |

Notes: - Clean Effluent filter every 3-6 months.
-Recommend Pump calibration every 36 months.

1,300 gal total tank size

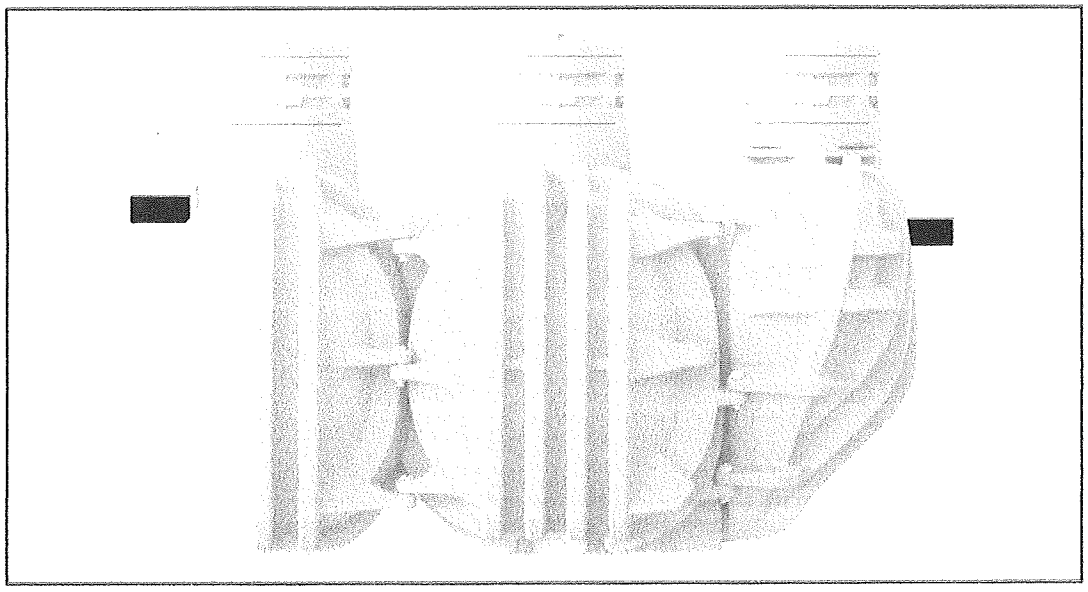
nor

MODELS 960 AND TNT WITH SERVICE PRO® CONTROL CENTER

# SPECIFICATIONS

## GENERAL SPECIFICATIONS

The contractor shall furnish and install one complete Singulair Green Bio-Kinetic wastewater treatment system with all necessary parts and equipment as described in the following specifications. Treatment of the domestic wastewater shall be accomplished by the extended aeration process with non-mechanical flow equalization, pretreatment of the influent and filtration of the final effluent. The treatment system shall provide primary, secondary and tertiary treatment of the wastewater flow, and if required, chlorination and dechlorination of the effluent prior to discharge. All treatment processes shall be contained within a single tank which shall be manufactured using high density polyethylene resin. The wastewater treatment system shall be a Singulair Green as manufactured by Norweco, Inc., Norwalk, Ohio, USA. Systems not including integral pretreatment or non-mechanical flow equalization shall not be considered for this application.



The wastewater treatment system shall include high density polyethylene tankage providing separate pretreatment, aeration and final clarification chambers. The tankage shall be furnished with a Schedule 40 PVC inlet hub, removable sealed pretreatment cover, submerged transfer ports, aerator mounting riser with removable vented cover, molded outlet coupling, Bio-Kinetic system mounting riser with removable sealed cover and Schedule 40 PVC outlet hub. Principal items of electro-mechanical equipment supplied with the Singulair Green wastewater treatment system shall be a UL Listed 1725 RPM mechanical aerator, UL Listed Service Pro electrical control center, Bio-Static sludge return and a Bio-Kinetic tertiary treatment device for flow equalization and final filtration of system effluent.

SPECIFICATIONS

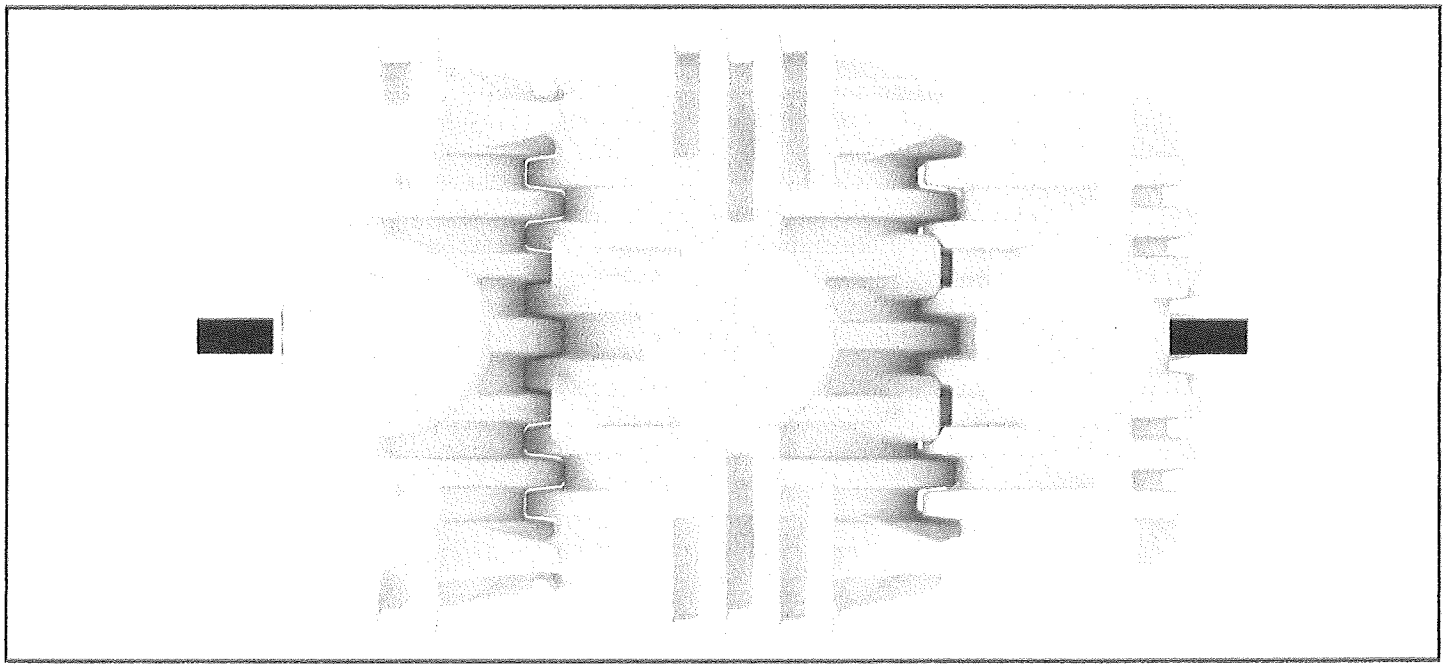
# SINGULAIR GREEN®

## OPERATING CONDITIONS

The Singulair Green system shall be certified to treat up to 600 GPD (gallons per day) of domestic wastewater. Total holding capacity of the system shall provide a minimum of 48 hour retention of the daily flow. The pretreatment chamber shall provide at least 18 hour retention, the extended aeration chamber shall provide at least 24 hour retention and the clarification chamber shall provide at least 6 hour retention. The non-mechanical flow equalization device shall increase each individual chamber and total system retention time in direct proportion to loading. Design of the system shall include a compartmented tank and a non-mechanical flow equalization device to insure successful treatment performance without upset even when the significant runoff period is six hours. Hydraulic design considerations of the system and flow equalization device shall be such that intermittent peak flow factors as high as four shall not upset hydraulic reliability within the system. Capability of the system to perform as outlined shall be certified by an independent testing laboratory and approved for use by the local governing regulatory agency.

## PRETREATMENT CHAMBER

The pretreatment chamber shall be an integral part of the wastewater treatment system. All domestic wastewater shall be preconditioned and flow equalized while passing through the pretreatment chamber prior to being introduced to the extended aeration chamber. The outlet of the pretreatment chamber shall be equipped with a discharge tee that extends vertically into the liquid so that only the preconditioned equalized flow from the center area of the chamber is displaced to the extended aeration chamber. The discharge tee and transfer port shall be of adequate size to handle a peak flow factor of four without restricting the outlet and disturbing hydraulic displacement to the extended aeration chamber. A removable inspection cover shall be incorporated into the top of the pretreatment chamber to allow tank and transfer tee inspection.

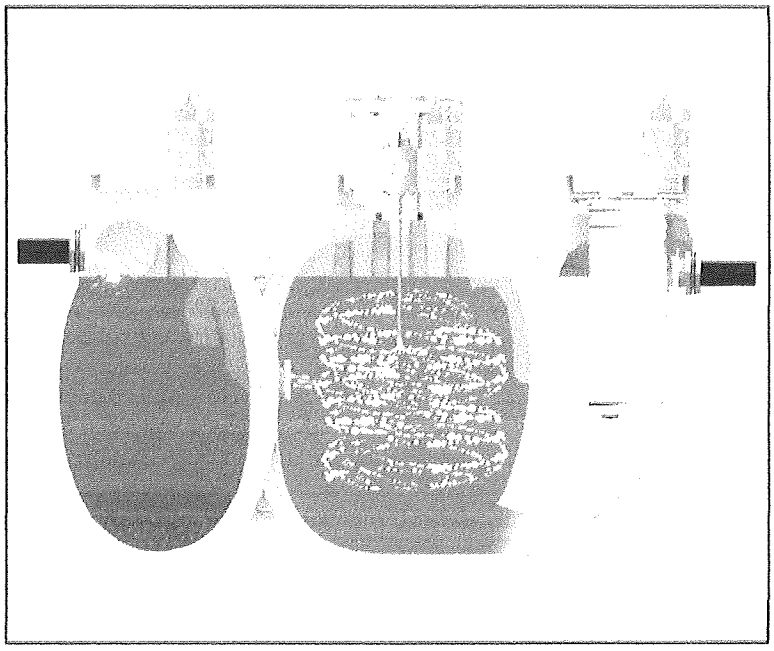


## AERATION CHAMBER

The extended aeration chamber shall provide in excess of 24 hour retention of the equalized daily flow. The chamber shall be of sufficient size to provide a minimum of 80 cubic feet of tank capacity per pound of applied BOD. The aeration chamber shall be an integral part of the system flow path and configured to insure effective mixing of microorganisms, wastewater and fresh air. No area of the chamber shall be isolated from process mixing, thereby eliminating dead or quiescent areas of the treatment chamber which are detrimental to the treatment process. Influent into the aeration chamber shall be preconditioned, equalized flow from the pretreatment chamber and settled solids via the Bio-Static sludge return.

## FINAL CLARIFICATION CHAMBER

The final clarification chamber shall consist of 5 functionally independent zones operating together to provide satisfactory settling and clarification of the equalized flow. An inlet zone shall be provided and shall dissipate transfer turbulence at the flow inlet of the clarification chamber. Its performance shall also eliminate turbulence in other zones of the clarifier. Liquid shall be hydraulically displaced from the inlet zone to the sludge return zone. Hydraulic currents shall sweep settled sludge from the hoppered walls and return these solids via the inlet zone to the aeration chamber. As solids are removed, liquid is displaced to the hopper zone of the clarifier. In this zone, settling by gravity takes place. Three of the four sidewalls are slanted to form a hopper which directs all settled material back to the sludge return zone. Clarified liquid from the hopper zone shall be displaced into the final settling zone to provide additional clarification of the liquid. The liquid is displaced to the outlet zone for final filtration and discharge from the system. Non-mechanical equalization of the flow, through all 5 zones, shall provide optimal settling and clarification.

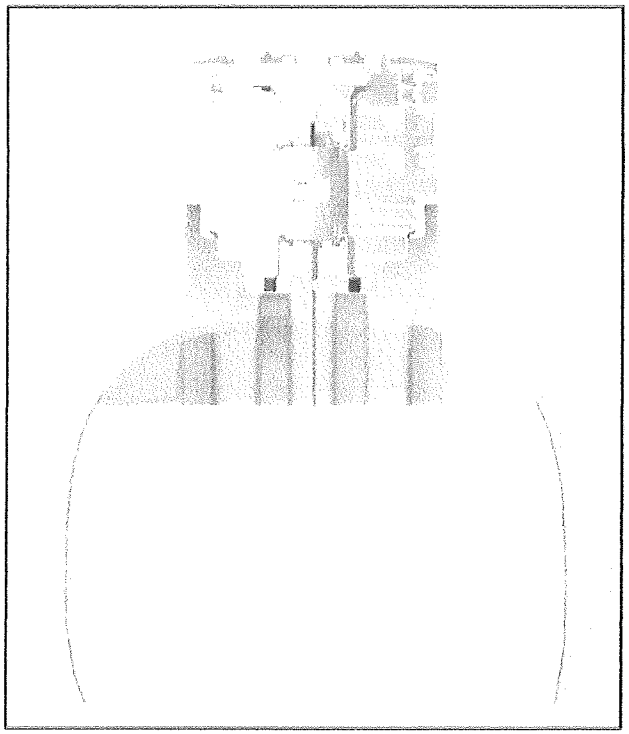


## BIO-STATIC® SLUDGE RETURN

A Bio-Static sludge return shall be mounted into the opening in the aeration/clarification chamber wall to provide positive return of settled solids. Aeration chamber hydraulic currents shall enter the sludge return and be directed through the Bio-Static device into the second zone of the clarification chamber. The Bio-Static sludge return shall accomplish resuspension and return of settled solids without disturbing the clarified liquid in the final settling zone and outlet zone.

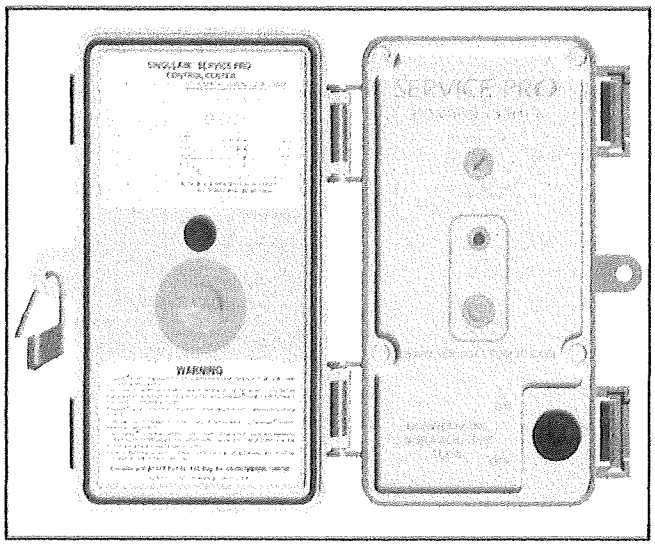
## MECHANICAL AERATOR

The Singulair aerator shall be installed in a rotationally molded, heavy duty, high density polyethylene aerator mounting riser above the aeration chamber. Fresh air shall be supplied through a rotationally molded, heavy duty, polyethylene access cover above the aerator. The vented access cover shall be threaded and secured to the mounting riser with two security screws. The aerator shall be UL Listed and include plated mounting brackets, NEMA 6 rated electrical connector, fractional horsepower motor, molded plastic lifting handle, molded plastic air intake screens, molded plastic foam restrictor, stainless steel aspirator shaft and molded glass-filled nylon aspirator tip. The motor shall contain precision manufactured o-ring type seals installed between the motor shell and the machined aluminum endbells to insure watertight integrity. Molded Viton elastomer shaft seals shall protect the bearings from contamination. Only the stainless steel aspirator shaft and glass-filled nylon aspirator tip shall be in contact with the liquid. There shall be no submerged electrical motors, bearings or fixed air piping in the aeration system. The Singulair aerator motor shall not exceed the motor nameplate rating when installed and operated as recommended. The fractional horsepower aerator motor shall be equipped with a foam restrictor to protect the motor against high water and foam. The motor shall be 4 pole, 1725 RPM, 115 volt, 60 hertz, single phase, ball bearing constructed with a 1.0 service factor. It shall draw 4.0 amps when operating at the rated nameplate voltage. Aerators without UL listing have not demonstrated compliance with international electrical standards for safety and reliability and shall not be considered for this application.



# BIO-KINETIC®

## SERVICE PRO® CONTROL CENTER




The Service Pro electrical control center shall control all aspects of treatment plant operation using a microprocessor based platform. The prewired control center shall contain nonvolatile memory to prevent the loss of programming in the event of a power failure. For protection of wiring and components, the electrical controls shall be mounted in an injection molded, lockable, corrosion proof, NEMA rated enclosure designed specifically for outdoor use. The enclosure shall be equipped with a tamper evident seal to discourage unauthorized access. The Service Pro control center shall be a UL Listed assembly and shall include a time clock, alarm light, audible alarm, reset button and power switch. The control center shall monitor all treatment system operating conditions including aerator over current, aerator under current and open motor circuit. In the event the control center detects one of these conditions, power to the aerator shall be interrupted, a diagnostic sequence shall begin and the visual alarm shall activate. After a programmed recovery interval, an automatic restart attempt shall be initiated. If normal aerator operation does not resume during 24 programmed recovery and restart cycles, the audible alarm shall activate.

## TIME CLOCK

The aerator run cycle shall be controlled by an adjustable, prewired time clock. The minimum setting shall not permit the aerator to be "off" for more than 30 minutes per hour. It shall be adjustable in 5 minute increments and designed such that any adjustment results in additional run time up to "continuous" operation (60 minutes per hour). The Service Pro TNT controls shall include a non-adjustable time clock. Use of a time clock can seriously affect system performance and operating cost. Systems that have not been performance certified at the minimum time clock setting by an independent testing laboratory shall not be considered for this application.

## SERVICE PRO® ADVANCED CONTROLS (Optional)

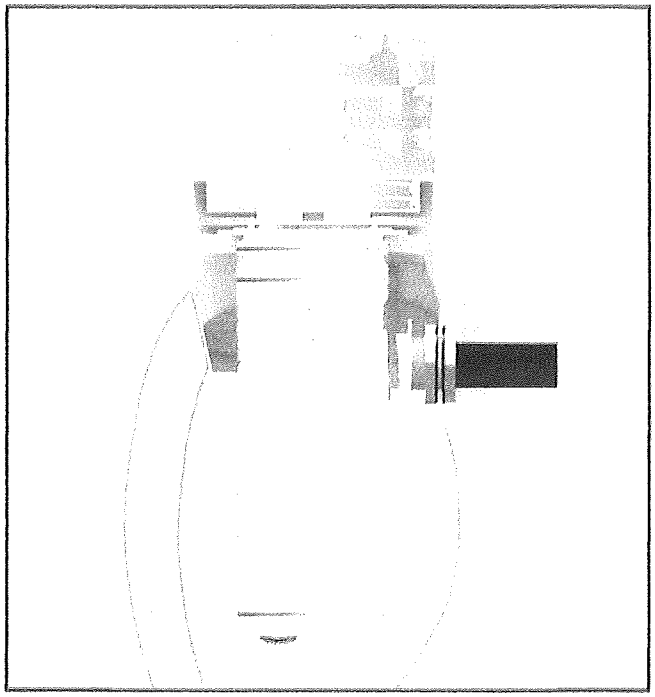
Advanced system control options shall be available for all Singulair Green Bio-Kinetic wastewater treatment systems. Service Pro control center options include the Service Pro control center with Monitoring, Compliance and Diagnostic (MCD) technology and the Service Pro control center with Total Nitrogen Treatment (TNT) technology.

The Service Pro control center with MCD technology shall be a UL Listed assembly and shall include a time clock, integral telemetry system, main alarm light, power light, phone light, aerator alarm light, three auxiliary alarm lights, reset button and power switch. The control center shall monitor all treatment system operating conditions including aerator over current, aerator under current and open motor circuit. In the event the control center detects one of these conditions, power to the aerator shall be interrupted, a diagnostic sequence shall begin and the visual alarm shall activate. After a programmed recovery interval, an automatic restart attempt shall be initiated. If normal aerator operation does not resume during 24 programmed recovery and restart cycles, the audible alarm shall activate and the telemetry system shall report the specific condition to the Service Pro monitoring center. In the event that any of the auxiliary inputs detect abnormal operation of the treatment system auxiliary equipment, the audible and visual alarms shall immediately activate and the telemetry system shall report the alarm condition to the monitoring center.

The Service Pro TNT control center shall provide the same Monitoring, Compliance and Diagnostic functions as the Service Pro control center with MCD technology. However, the Service Pro TNT control center shall include a non-adjustable time clock. The non-adjustable time clock shall create a 60 minute aeration cycle followed by a 60 minute anoxic cycle during which the aerator shall be off. This aeration cycle shall insure Total Nitrogen Treatment of the wastewater.

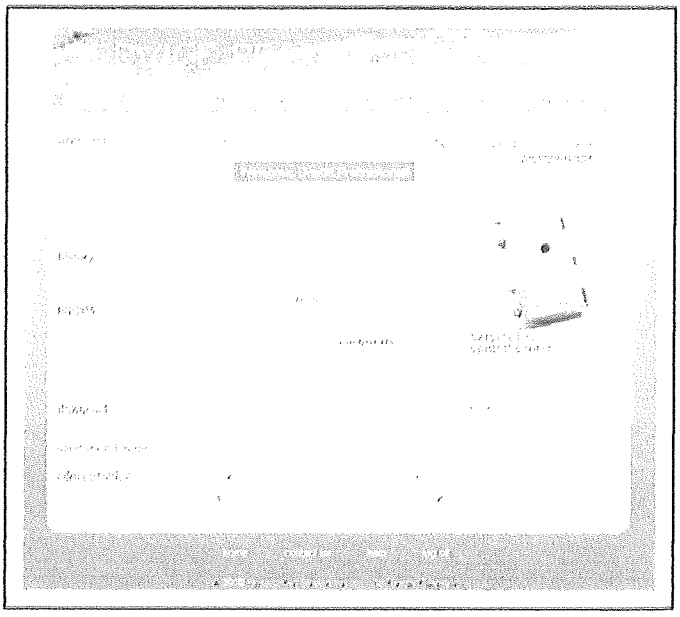
# SPECIFICATIONS

## BIO-KINETIC® SYSTEM



A Bio-Kinetic system shall be installed in the mounting riser above the clarification chamber. The Bio-Kinetic system shall provide non-mechanical flow equalization through all plant processes including pretreatment, aeration, clarification, tertiary filtration, chlorination and dechlorination. The assembly shall be supplied with locking lugs and removable moisture/vapor shield and shall consist of a design flow and peak flow micronically molded filter, baffled perimeter settling zone, flow distribution deck, lifting handles, level indicator, adjustment lugs, optional chlorination feed tube, unbaffled perimeter settling zone, solids contact zone, vertical inlet zone, compartmented settling zone consisting of 42 baffled chamber plates, effluent stilling well, final discharge zone, adjustable outlet weir, optional dechlorination feed tube, outlet zone and gasketed discharge flange. All components shall be manufactured from inert synthetic materials or rubber, assembled in circular fashion and connected to a plastic outlet coupling. The outlet coupling shall accept a 4" diameter, Schedule 40 PVC pipe. The Bio-Kinetic system shall be installed with the inverts of the design flow equalization ports located at the normal liquid level of the clarifier. If intermittent flow rates exceed the capacity of the design flow ports, flow shall be held upstream until the intermittent flow dissipates. If the intermittent flow continues to increase, the liquid level may reach a pair of sustained flow equalization ports. With four ports in use, flow through the system increases while continuing to provide flow equalization to all upstream and downstream processes. Peak flow equalization ports are supplied but should not be required. Optional Blue Crystal and Bio-Max tablet feed tubes shall be positioned such that the flow-activated chemical cannot contact the liquid upstream of the feed tubes.

## FLOW EQUALIZATION



The wastewater treatment system shall include a demand use, non-mechanical, flow equalization device. The device shall control normal residential flow rates and reduce typical residential flow surges. The flow equalization rate shall be dependent upon the specific loading pattern and the duration of flow surges. At the 600 GPD (gallons per day) NSF Standard 40 design loading schedule, minimum performance of the device shall equalize daily flow an average of 50%.

## SERVICE PRO® MONITORING CENTER

The Service Pro monitoring center shall include a 256 bit encrypted password protected website for interface with the monitoring center database. Access to the secure website shall be obtained through a unique user name and password that provides tiered access to data from monitored treatment systems. Access level tiers shall include dealers, service providers, regulatory agencies and individual system owners. Dealers and service providers shall be able to create accounts, maintain service records and grant regulatory agencies access to the information. Individual system owners shall be able to view information regarding their own systems, as well as download instructional information. Integrity of stored data shall be maintained through the use of multiple servers operating in geographically isolated locations.

MNL

8740 77th Street NE Otsego, MN 55362

# MNL Septic Mound Mix

*Based on U of MN recommendations for landscaping septic mounds/drainfields, and will not interfere with septic operation. Height 1-3'*

| | Scientific Name | Common Name | % of Mix | Seeds/ Sq Ft | PLS lbs/ac | Bloom Season |
|---|---|---|---|---|---|---|
| Grasses: | Bouteloua curtipendula | Side-oats Grama | 30.50 | 13.38 | 3.66 | |
| | Bromus kalmii | Prairie Brome | 6.00 | 2.12 | 0.72 | |
| | Elymus trachycaulus | Slender Wheat Grass | 5.00 | 1.52 | 0.60 | |
| | Schizachyrium scoparium | Little Bluestem | 26.00 | 17.19 | 3.12 | |
| | Sporobolus heterolepis | Prairie Dropseed | 2.50 | 1.76 | 0.30 | |
| Forbs: | Allium stellatum | Prairie Onion | 0.75 | 0.36 | 0.09 | Summer |
| | Asclepias tuberosa | Butterfly Milkweed | 1.50 | 0.28 | 0.18 | Summer |
| | Aquilegia canadensis | Columbine | 0.20 | 0.33 | 0.02 | Spring |
| | Chamaecrista fasciculata | Partridge Pea | 2.00 | 0.24 | 0.24 | Fall |
| | Dalea candida | White Prairie Clover | 4.50 | 3.77 | 0.54 | Summer |
| | Dalea purpurea | Purple Prairie Clover | 6.25 | 4.13 | 0.75 | Summer |
| | Echinacea pallida | Pale Purple Coneflower | 2.75 | 0.63 | 0.33 | Summer |
| | Heliopsis helianthoides | Common Ox-eye | 3.75 | 1.04 | 0.45 | Summer |
| | Lespedeza capitata | Round-headed Bushclover | 0.50 | 0.18 | 0.06 | Summer |
| | Liatris punctata | Dotted Blazing Star | 0.25 | 0.08 | 0.03 | Summer |
| | Monarda fistulosa | Wild Bergamot | 0.30 | 0.93 | 0.04 | Summer |
| | Monarda punctata | Spotted Bee Balm | 0.20 | 0.79 | 0.02 | Summer |
| | Penstemon grandiflorus | Large-flower Penstemon | 0.50 | 0.31 | 0.06 | Spring |
| | Ratibida columnifera | Long-headed Coneflower | 1.50 | 2.78 | 0.18 | Summer |
| | Rudbeckia hirta | Black-eyed Susan | 1.40 | 5.68 | 0.17 | Summer |
| | Solidago nemoralis | Gray Goldenrod | 0.30 | 3.97 | 0.04 | Fall |
| | Solidago rigida | Stiff Goldenrod | 0.50 | 0.90 | 0.06 | Fall |
| | Solidago speciosa | Showy Goldenrod | 0.50 | 2.09 | 0.06 | Fall |
| | Symphyotrichum laeve | Smooth Blue Aster | 0.70 | 1.70 | 0.08 | Fall |
| | Symphyotrichum oolentangiense | Sky-blue Aster | 0.85 | 3.00 | 0.10 | Fall |
| | Tradescantia bracteata | Long-bracted Spiderwort | 0.30 | 0.13 | 0.04 | Spring |
| | Verbena stricta | Hoary Vervain | 0.50 | 0.62 | 0.06 | Summer |
| | | | 100.00 | 69.90 | 12.00 | |

| | |
|---|---|
| Seeds/sq ft: | 70.00 |
| Grass Species: | 5 |
| Sedge Species: | 1 |
| Forb Species: | 22 |

*Seed mixes are subject to change based on availability*

## Cheryl

**From:** Brooke Silvernail <brookesil@outlook.com>
**Sent:** Thursday, May 12, 2022 5:53 PM
**To:** crosslakepz@crosslake.net
**Subject:** Real Deal LLC & Brummer Variance Application

Brooke and Laurie Silvernail
13086 Gladick Lane
Crosslake, MN 56442
218/839-5555

To Whom it may concern:

To my knowledge this is the third time they have submitted an application for the construction of a 3 story home on a piece of property that is far to small for what they are hoping to accomplish. We (the local home owners on Gladick lane) have objected to this size construction twice and now again with the third drawing. The changes they have made are minimal.

With the minimal changes from one plan to the next this house is still way out of proportion for the amount of land they have to work with. Keeping in mind that the rest of us have had to go by the laws of the setbacks, and property elevations, so why should someone new coming in be allowed to overbuild just because they want to. Also, Mentioned in item #4, the house they are attempting to build on this peninsula in fact does NOT match the neighboring houses. They are proposing far too much square footage, too many levels, and a flat roof slope on top of it. This would create even more issues. The "homes" here on our peninsula are one story with a few having a walkout. These homes are mostly family dwellings with a small town feel. The snow plows could clip the mound and make it unusable and/or get buried in snow that's plowed off CR 16. Leaving the septic system unusable until the spring thaw. The mound for the neighbors two houses to the East of us had its mound clipped two winters ago.

We are not opposed to them building the house of their dreams, but, perhaps they just chose the wrong property to build it on. We will do all we possibly can to remain quaint on our small little peninsula .

This is way too much house for this property as mentioned in the objection summary by the P&Z committee dated Sept. 24, 2021. The existing house is only 640 s.f. per floor on two floors (main level and walkout). The new lower level plan has 666 s.f and the new main floor plan has 1305 s.f. and there is 1469 s.f. on the upper level floor plan which overall is 2.7 times the original house. The lesser roof slope just makes the elevations more ugly. As mentioned in item 4 contrary to this house plan it is **NOT** matching the neighboring houses. The applicant refers in item 4. to the house to the North which is three stories high but it's not on our little peninsula. It's further North. All the homes on our peninsula are one story with a few having a walkout. This would be totally out of character for our little piece of property and a gross overload of that small parcel with the square footage proposed. The septic, which Crow Wing County objected to because of its closeness to CR 16 which is legitimate argument, is still in a bad location as the snow plows could clip off that mound and make it unusable and/or get buried in snow plowed off CR 16. It would likely freeze up or be unusable until late Spring if that happens. They have already clipped the neighbor's mound last winter.

Please consider our concerns and deny this variance until they can reduce the footprint and overall square footage. Thank you.

Brooke & Laurie Silvernail

**Variance Application**
Planning and Zoning Department
13888 Daggett Bay Road, Crosslake, MN 56442
218.692.2689 (Phone) 218.692.2687 (Fax) www.cityofcrosslake.org

Receipt Number: 969955 $506.00 Permit Number: 220037V

Property Owner(s): Real Deal LLC and Dale Hathaway 218-831-1995

Mailing Address: 13459 Island View Road, Crosslake, MN 56442

Site Address: 13192 Gladick Lane, Crosslake, MN 56442

Phone Number: 612-598-8917

E-Mail Address: merrybb5@gmail.com

Parcel Number(s): 14170610 and 14170611

Legal Description: GLADICK FIRST ADDITION LOT 2 & 3 BLOCK 1

Sec 17 Twp 137 Rge 26 ☐ 27 ☑ 28 ☐

Lake/River Name: Rush Lake

Do you own land adjacent to this parcel(s)? ____ Yes X No

If yes list Parcel Number(s)_____

Authorized Agent:_____

Agent Address:_____

Agent Phone Number:_____

**Variances**
(Check applicable requests)

- ■ Lake/River Setback — 50' where 75' is required
- ■ Road Right-of-Way Setback — 13.8' where 35' is required
- ☐ Bluff Setback
- ☐ Side Yard Setback
- ☐ Wetland Setback
- ■ Septic Tank Setback — 3' where 10' is required to ROW
- ■ Septic Drainfield Setback — 51' where 75' is required to lake
- ☐ Impervious Coverage
- ☐ Accessory Structure
- ☐ Building Height
- ☒ Patio ~~Size~~ ROW — 21.8' where 35' is required
- ☐ _____
- ☐ _____

Signature of Property Owner(s) _____ Date 4-10-2002

Signature of Authorized Agent(s)_____ Date_____

- All applications must be accompanied by a signed Certificate of Survey
- Fee $500 for Residential and Commercial Payable to "City of Crosslake" + $6.00 copies
- No decisions were made on an applicant's request at the DRT meeting. Submittal of an application after DRT does not constitute approval. Approval or denial of applications is determined by the Planning Commission/Board of Adjustment at a public meeting as per Minnesota Statute 462 and the City of Crosslake Land Use Ordinance.

For Office Use:
Application accepted by _____ Date 4/11/22 Land Use District SL

Lake Class GD Septic: Compliance design SSTS Design New type A Installation TBI
450 GPD

# Practical Difficulty Statement

Pursuant to City of Crosslake Ordinance Article 8 – Variances may be granted when it is found that strict enforcement of the Land Use Ordinance will result in a "practical difficulty".

Please answer the following questions regarding the "practical difficulty" for your variance request.

1. Is the Variance request in harmony with the purposed and intent of the Ordinance?
   Yes ☐ No ☐
   Why:
   **Defer to the Planning Commission/Board of Adjustment**

2. Is the Variance consistent with the Comprehensive Plan?
   Yes ☐ No ☐
   Why:
   **Defer to the Planning Commission/Board of Adjustment**

3. Is the property owner proposing to use the property in a reasonable manner not permitted by the Land Use Ordinance?
   Yes ■ No ☐
   Why:
   Yes, the property is an irregular lake lot with an extremely small building envelope on a county highway which makes the lot unable to meet the setback requirements. The current structures are eyesores and the house is unsafe. Owners are proposing removal of current structures then build new house and shed.

4. Will the issuance of a Variance maintain the essential character of the locality?
   Yes ■ No ☐
   Why:
   Yes, by removing the current buildings which are unsightly and unsafe, then building a new house and shed it will match the neighboring houses on each side. Both neighbors have modern lake homes with garages and the neightbor to the north has a larger, taller structure than is being proposed. The proposed design's character is consistent with modern, updated lake homes, garages and sheds.

5. Is the need for a Variance due to circumstances unique to the property and not created by the property owner?
   Yes ■ No ☐
   Why:
   Yes, it is a nonconforming, irregular lot which causes the need for variances.

6. Does the need for a Variance involve more than economic considerations?
   Yes ■ No ☐
   Why:
   Yes, the new house will be 2' further back from the lake than the existing house. The exisiting house is an eyesore in the community as well as unihabitable and unsafe.
   The owner has reseached and consulted with Advanced Septic Desgners to identify an advanced, type IV septic system that will protect the lake better than a holding tank.
   The owner is willing to invest in an advanced system in order to preserve lake health and help to introduce these types of systems to Crosslake.

City of Crosslake Planning Commission/Board of Adjustment

FINDINGS OF FACT

SUPPORTING / DENYING A VARIANCE REQUEST

*A Variance may be granted by the Planning Commission/Board of Adjustment when it is found that strict enforcement of the Land Use Ordinance will result in a "practical difficulty" according to Minnesota Statute Chapter 462. The Planning Commission/Board of Adjustment should weigh each of the following questions to determine if the applicant has established that there are "practical difficulties" in complying with regulations and standards set forth in the Land Use Ordinance.*

1. Is the Variance request in harmony with the purposes and intent of the Ordinance?
   Yes No
   Why:

2. Is the Variance consistent with the Comprehensive Plan?
   Yes No
   Why:

3. Is the property owner proposing to use the property in a reasonable manner not permitted by the Land Use Ordinance?
   Yes No
   Why:

4. Will the issuance of a Variance maintain the essential character of the locality?
Yes No
Why:

5. Is the need for a Variance due to circumstances unique to the property and not created by the property owner?
Yes No
Why?

6. Does the need for a Variance involve more than economic considerations?
Yes No
Why: