

Planning Memorandum

To: Sunfish Lake Mayor Dan O'Leary and City Councilmembers

From: Lori Johnson, City Planner

Date: May 8, 2024 (for the May 14 meeting)

Re: **5960 Zehnder Road – Major Site Plan Review and Variance**
WSB Project No. 024347-000

GENERAL INFORMATION

Applicant/Owner:	Bryan Sommerland		
Project Location:	5960 Zehnder Road– PID 383350002070		
Acreage:	.88 acres		
Existing Land Use	Single-Family Residential		
Zoning:	Zoned R-1 within Shoreland Overlay District		
Surrounding Land Use / Zoning:	Surrounded by Single Family Homes/R-1 Zoning		
Comprehensive Plan:	The City of Sunfish Lake (2040) Comprehensive Plan guides this property for Rural Residential land use.		
Deadline for Agency Action:	Application Date:	01-02-2024	
	Application Complete:	03-25-2024	
	60 Days:	05-24-2024	
	Extension Letter Mailed:	n/a	
	120 Days:	n/a	
Attachments:	Location Map Aerial Narrative Plan Set (8 pages) Engineering Memo 03-22-24 Septic System Design (20 pages)		

CONSIDERATIONS RELATED TO THE REQUEST

1. Overview.

Bryan Sommerland, applicant/owner, has made an application for a Major Site Plan Review and Variance to allow for the installation of a new septic system at 5960 Zehnder Road. The current septic system on the property is failing and the applicant has been working with Steve Kleist of

Inspectron, who is the city's septic inspector, to get a new system installed on this property. The applicant/owner is in the process of selling the property and the new system needs to be installed prior to the sale of the property.

The major site plan application has been requested for this property because of the visibility of this property to the lake and the amount of work that is proposed for the project. The work being proposed has the potential to alter the appearance of the property from the lake. According to the City's Shoreland Ordinance, septic systems must be placed at least 150 feet from the Ordinary High Water Level (OHWL). The applicant is proposing a 19-foot setback from the OHWL, thus the need for a variance from the setback requirement.

The current location of the failing septic system is in the front yard of the site along Zehnder Road. The system that is failing is significantly smaller than what is required for the home at this point in time. There are also soil issues in the current location. The only location that is available for the new system is in the rear yard of the site adjacent to the lake.

The existing home on site is considered nonconforming as the building does not meet setback requirements from the OHWL. All buildings are required to have a 200-foot setback from the OHWL, and they must also have a 100-foot setback from the public street in the front yard of the site. The garage attached to the home is located 80-feet from the property line adjacent to Zehnder Road, and the home is setback less than 60 feet from the OHWL on the east side of the property. Again, septic systems are required to be setback 150 feet from the OHWL.

Given that there are limited options for the location of the septic system based on setback requirements, there is no way to avoid a variance for a necessary and required septic system to serve this home. The home cannot be utilized without a septic system. The variance section of this report lays out the rationale for approving a variance for this project.

Also of note is the height of the mound system that will be installed adjacent to the lake. An unfortunate circumstance in this situation is that the home will have lower-level views of the lake affected by the septic system. The elevation of the slope goes from 934 near the house to 938.5 at the top of the mound, which creates a 3:1 slope for the mound, and a 4.5-foot difference between the top and bottom of the mound. Again, and unfortunately, due to the size, design and location of the system, this likely cannot be avoided.

DNR Approval. The Minnesota DNR Area Hydrologist was notified of the proposed request. The DNR Hydrologist has responded that she has no issues with this request/proposal.

Site Plan Review Criteria

The Planning Commission, as its basis of recommendation, and the City Council, as its basis for decision on major projects, shall evaluate the effects of the proposed site plans according to the criteria below:

1. Whether the proposed improvements are compatible and in harmony with the existing structures in the surrounding community.
2. Whether the proposed improvements preserve the character and nature of the surrounding community, including the natural landscape and woodland characteristics of the community.

3. Whether the proposed improvements are not constructed of unsightly, improper or unsuitable materials.
4. Whether the proposed improvements will not materially adversely affect any natural resources in the community, except when there is no feasible and prudent alternative to the proposed location of the improvements. For purposes of this clause, "natural resources" shall include, but not be limited to, all mineral, animal, botanical, air, water, land, timber, soil, quietude, recreational, historical, scenic and aesthetic resources.
5. Whether the proposed site and improvements shall have an appearance that will not have an adverse effect upon adjacent residential properties.
6. Whether the proposed site improvement complies with drainage requirements, as provided in Section 1216.04 of this Ordinance.
7. Whether the proposed site and improvements are consistent with the purposes of the zoning ordinance.

Additional Shoreland Overlay Evaluation Criteria

A thorough evaluation of the water body and the topographic, vegetation, and soils conditions on the site shall be made to ensure:

1. The prevention of soil erosion or other possible pollution of public waters, both during and after construction.
2. The visibility of structures and other facilities as viewed from public waters is limited.
3. The site is adequate for water supply and on-site sewage treatment.
4. The types, uses, and numbers of watercraft that the project will generate are compatible in relation to the suitability of public waters to safely accommodate these watercrafts.

Variance Review Criteria

In considering all requests for a variance and in taking subsequent action, the Planning Commission and the City Council shall make a finding of fact that the proposed action will not:

1. Impair an adequate supply of light and air to adjacent property.
2. Unreasonably increase the congestion in the public street.
3. Have the effect of allowing any district uses prohibited therein, permit a lesser degree of flood protection than the flood protection elevation for the particular area, or permit standards which are lower than those required by State law.
4. Increase the danger of fire or endanger the public safety.

5. Unreasonably diminish or impair established property values within the neighborhood, or in any way be contrary to the intent of this Title.
6. Violate the intent and purpose of the Comprehensive Plan.
7. Violate any of the terms or conditions of Item 2, below.

Variances/Practical Difficulties

The applicant has provided a narrative that outlines reasoning in support of granting the 131-foot variance to the OHWL setback. A variance from the terms of this Ordinance shall not be granted unless it can be demonstrated that:

1. Practical difficulties will result if the variance is denied due to the existence of special conditions and circumstances which are peculiar to the land, structure, or building involved and which are not applicable to other lands, structures or buildings in the same district. *The practical difficulty in this situation is that the existing buildings are nonconforming, and the lot size cannot accommodate a required and necessary septic system for the continued operation of the home site.*
 - a. Special conditions may include exceptional topographic or water conditions or, in the case of an existing lot or parcel of record, narrowness, shallowness, insufficient area or shape of the property. *The existing house pre-dates the City zoning code and is closer to the property lines and the OHWL than the current required setbacks. It is not possible to place the septic system in the front yard of the site due to driveway location, soil conditions, setback requirements and lack of space.*
 - b. Practical difficulties caused by the special conditions and circumstances may not be solely economic in nature if a reasonable use of the property exists under the terms of this Title. *This property cannot be reasonably used without a septic system and there are no alternative locations for such system.*
 - c. Special conditions and circumstances causing practical difficulties shall not be a result of lot size or building location when the lot qualifies as a buildable parcel. *This parcel is not vacant and the applicant is trying to work within the existing ordinances to the greatest extent possible.*
2. Compliance with the requirements of the provisions of this Ordinance would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of this Ordinance or deny the applicant the ability to put the property in question to a reasonable use and the proposed variance permits the owner to use the property in a reasonable manner. *Compliance with the ordinance would deprive the owner of rights commonly enjoyed by other properties in the same district under the terms of this Ordinance, and the property cannot be put to a reasonable use without a variance.*
3. The special conditions and circumstances causing the practical difficulties do not result from the actions of the applicant. *The property owner was not responsible for the original construction and is now dealing with a situation that is essentially beyond his control with a failing septic system.*
4. Granting the variance requested will not confer on the applicant any special privilege that is denied by this Ordinance to other lands, structures or buildings in the same district under the same conditions. *No special privilege would be gained by replacing a required septic system.*

5. The request is not a use variance. *This is not a use variance.*
6. The variance requested is the minimum variance necessary to accomplish the intended purpose of the applicant. *There are essentially no other options for the location of the septic system. The applicant has explored all other options. The proposal that has been submitted is the minimum variance necessary to construct a septic system.*
7. The request does not create an inconvenience to neighboring properties and uses. *This request will not create an inconvenience to neighboring properties. All proposed improvements are located on this property in the only location possible.*
8. The variance requested is in harmony with the purpose and intent of the Ordinance. *Staff finds this to be true of the requested variance.*
9. The variance requested is consistent with the Comprehensive Plan. *Staff finds this to be true of the requested variance.*
10. The variance requested will not alter the essential character of the locality. *Staff finds this to be true of the requested variance.*

The information provided in this staff report and on the proposed plans indicate that all above criteria have been met for major site plan approval, variance approval and shoreland considerations. No public comments have been received as of the date of the staff report publication.

Planning Commission: The Planning Commission met on April 18, 2024 after an on-site meeting. The Planning Commission reviewed the site and the location of the septic system and concurred with the staff report and recommended approval of the major site plan review and variance. The Planning Commission also recommended that the City consider reviewing the setback requirement for septic systems from the Ordinary High Water Level in the Shoreland Ordinance to determine if the current setback requirement of 150-feet is still reasonable or required.

RECOMMENDATION

Based on the foregoing considerations and applicable ordinances, staff recommends approval of the major site plan review and setback variance for a septic system subject to the following findings of fact and conditions of approval:

Findings of Fact:

1. The location of the subject property is as follows:
5960 Zehnder Road
SUNFISH LAKE, MN 55077
2. The planning report dated April 11, 2024, and May 8, 2024 prepared by WSB are incorporated herein by reference.
3. The Applicant has submitted an application for a major site plan review and a variance request.
4. Requests for major site plan review and variances require Planning Commission review and City Council approval.
5. Notices for public hearings regarding requests on lots within the Shoreland Overlay district must be sent to the Department of Natural Resources.

6. The Sunfish Lake Planning Commission reviewed the applicant's request for major site and building plan approval at the April 18, 2024 Planning Commission meeting.
7. Upon review of the planning report and application information, the City Council found that the proposed site and building plan meets Ordinance requirements. The following findings support the City Council's recommendation for approval of the site plan and variance:

Variance of 131 feet to the 150 foot OHWL setback requirement:

- a. The practical difficulty in this situation is that the existing buildings are nonconforming, and the lot size cannot accommodate a required and necessary septic system for the continued operation of the home site.
- b. The existing house pre-dates the City zoning code and is closer to the property lines and the OHWL than the current required setbacks. It is not possible to place the septic system in the front yard of the site due to driveway location, soil conditions, setback requirements and lack of space.
- c. This property cannot be reasonably used without a septic system and there are no alternative locations for such system.
- d. This parcel is not vacant and the applicant is trying to work within the existing ordinances to the greatest extent possible
- e. Compliance with the ordinance would deprive the owner of rights commonly enjoyed by other properties in the same district under the terms of this Ordinance, and the property cannot be put to a reasonable use without a variance.
- f. The property owner was not responsible for the original construction and is now dealing with a situation that is essentially beyond his control with a failing septic system.
- g. No special privilege would be gained by replacing a required septic system.
- h. This is not a use variance.
- i. There are essentially no other options for the location of the septic system. The applicant has explored all other options. The proposal that has been submitted is the minimum variance necessary to construct a septic system.
- j. This request will not create an inconvenience to neighboring properties. All proposed improvements are located on this property in the only location possible.
- k. The variance is in harmony with the purpose and intent of the ordinance, is consistent with the comprehensive plan, and will not alter the essential character of the locality.

Major Site and Building Plans:

- a. The proposed improvements, with the exception of the required setback, meet R-1 and Shoreland Overlay District requirements and standards.
- b. The proposed development addresses Ordinance requirements pertaining to grading, drainage and stormwater management, landscaping, and screening.
- c. The proposed home meets Ordinance requirements pertaining to building size, and material use.
- d. The development meets other applicable Zoning Ordinance criteria.

Conditions of Approval:

1. Construction of all improvements shall occur in substantial conformance with the plans recommended for approval at the April 18, 2024, Planning Commission meeting.
2. The applicant must obtain all other permits as may be required.
3. The applicant shall comply with all applicable federal, state, and local laws, rules and ordinances.
4. The applicant must adhere to and remain in compliance with the requirements of this Resolution, applicable performance standards, and such other requirements as may apply.
5. Staff will need to perform an inspection of the installed erosion controls and tree protection before any construction activities begin on site.
6. Requirements of the engineering memo from the City Engineer, Justin Messner, dated March 22, 2024 must be met.

**CITY OF SUNFISH LAKE
DAKOTA COUNTY, MINNESOTA**

RESOLUTION NO. 24-XX

**RESOLUTION APPROVING MAJOR SITE PLAN APPROVAL AND A VARIANCE
FOR THE PROPERTY AT 5960 ZEHNDER ROAD, SUNFISH LAKE, DAKOTA
COUNTY, MINNESOTA.**

WHEREAS, Applicant and property owner Bryan Sommerland, submitted an application for the approval of a major site plan and a 131-foot variance to the 150-foot setback requirement from the Ordinary High Water Level to allow for the installation of a new septic system at 5960 Zehnder Road, Sunfish Lake, Dakota County, Minnesota, legally described as:

Lot 7, Block 2 Horse Shoe Lake

WHEREAS, a request for major site plan approval and a variance requires Planning Commission review and City Council approval; and

WHEREAS, City staff reviewed the application and outlined their review comments in planning reports dated April 18, 2024 and May 5, 2024, prepared by WSB; and

WHEREAS, the Sunfish Lake Planning Commission held a public hearing at their April 18, 2024 meeting and reviewed the major site plan approval request and a variance application along with the referenced staff report; and

WHEREAS, upon hearing the staff presentations, applicant testimony, and public testimony, the Planning Commission closed the public hearing and recommended to the City Council approval of the variance on a vote of 4-0 vote; and

WHEREAS, upon hearing testimony from the applicant and holding further discussions on the major site plan and variance proposed, the City Council made a determination that the major site plan should be approved and a practical difficulty does exist with regard to the variance request; and

WHEREAS, the following findings support the City Council's rationale for approval:

1. The location of the subject property is as follows:
5960 Zehnder Road
SUNFISH LAKE, MN 55077
2. The planning report dated April 11, 2024, and May 8, 2024 prepared by WSB are incorporated herein by reference.
3. The Applicant has submitted an application for a major site plan review and a variance request.

4. Requests for major site plan review and variances require Planning Commission review and City Council approval.
5. Notices for public hearings regarding requests on lots within the Shoreland Overlay district must be sent to the Department of Natural Resources.
6. The Sunfish Lake Planning Commission reviewed the applicant's request for major site and building plan approval at the April 18, 2024 Planning Commission meeting.
7. Upon review of the planning report and application information, the City Council found that the proposed site and building plan meets Ordinance requirements and a practical difficulty does exist with respect to the requested variance. The following findings support the City Council's recommendation for approval of the site plan and variance:

Variance of 131 feet to the 150 foot OHWL setback requirement:

- a. The practical difficulty in this situation is that the existing buildings are nonconforming, and the lot size cannot accommodate a required and necessary septic system for the continued operation of the home site.
- b. The existing house pre-dates the City zoning code and is closer to the property lines and the OHWL than the current required setbacks. It is not possible to place the septic system in the front yard of the site due to driveway location, soil conditions, setback requirements and lack of space.
- c. This property cannot be reasonably used without a septic system and there are no alternative locations for such system.
- d. This parcel is not vacant and the applicant is trying to work within the existing ordinances to the greatest extent possible
- e. Compliance with the ordinance would deprive the owner of rights commonly enjoyed by other properties in the same district under the terms of this Ordinance, and the property cannot be put to a reasonable use without a variance.
- f. The property owner was not responsible for the original construction and is now dealing with a situation that is essentially beyond his control with a failing septic system.
- g. No special privilege would be gained by replacing a required septic system.
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- i. There are essentially no other options for the location of the septic system. The applicant has explored all other options. The proposal that has been submitted is the minimum variance necessary to construct a septic system.
- j. This request will not create an inconvenience to neighboring properties. All proposed improvements are located on this property in the only location possible.
- k. The variance is in harmony with the purpose and intent of the ordinance, is consistent with the comprehensive plan, and will not alter the essential character of the locality.

Major Site and Building Plans:

- a. The proposed improvements, with the exception of the required setback, meet R-1 and Shoreland Overlay District requirements and standards.
- b. The proposed development addresses Ordinance requirements pertaining to grading, drainage and stormwater management, landscaping, and screening.
- c. The proposed home meets Ordinance requirements pertaining to building size, and material use.
- d. The development meets other applicable Zoning Ordinance criteria.

Conditions of Approval:

1. Construction of all improvements shall occur in substantial conformance with the plans recommended for approval at the April 18, 2024, Planning Commission meeting.
2. The applicant must obtain all other permits as may be required.
3. The applicant shall comply with all applicable federal, state, and local laws, rules and ordinances.
4. The applicant must adhere to and remain in compliance with the requirements of this Resolution, applicable performance standards, and such other requirements as may apply.
5. Staff will need to perform an inspection of the installed erosion controls and tree protection before any construction activities begin on site.
6. Requirements of the engineering memo from the City Engineer, Justin Messner, dated March 22, 2024 must be met.

WHEREAS, the Sunfish Lake City Council considered the application for major site plan approval and a variance at their meeting on May 14, 2024 and;

NOW THEREFORE BE IT RESOLVED THAT the City Council of the City of Sunfish Lake hereby approves the major site plan and a 131-foot setback variance to the Ordinary High Water Level for the installation of a septic system.

This resolution is adopted by the City Council of the City of Sunfish Lake this 14th day of May, 2024.

Dan O'Leary, Mayor

Attest:

Christy Wilcox, City Clerk

Location Map for 5960 Zehnder Road



Aerial for 5960 Zehnder Road



Supplemental Information

I am attempting to sell my home and have a pending contract from an eligible buyer. Upon listing the home I learned my septic system is deemed 'non compliant' according to Sunfish Lake due mainly to 'soil conditions'.

I have sought contractors to replace the septic system in order to be able to transfer the deed. The contractor recommended a septic system designer, Brent Matter, whom I hired and has provided a plan for the new septic system. This option completely changes my backyard, resulting in the requirement change the design and accessibility of my home significantly. In addition to changing accessibility of inhabitants to be able to utilize a walk out on the lowest level of the house (where two bedrooms are located), the changes require d could reduce the value of the home.

I am applying for a variance due to no options to be compliant required setbacks due to:

- Location of the home on the parcel
- Not sufficient available space in the backyard to handle the required size of the new drain field, meeting required setbacks from property lines with neighboring properties, and
- Lot is located on Horseshoe Lake.

For these reasons, I am seeking approval for a variance request to continue with Septic System replacement.

Bryan Sommerland

816-914-8877



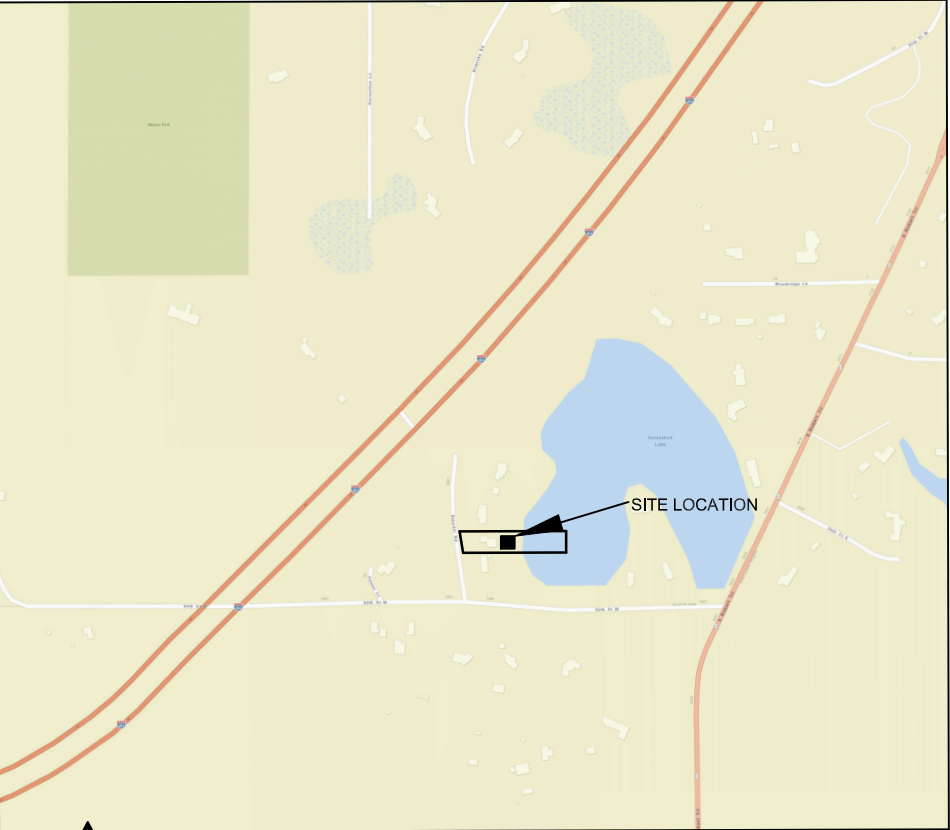
INDEX TO PLAN SHEETS	
Sheet Title	Sheet. No.
TITLE SHEET	1
EXISTING CONDITIONS, AND DEMOLITION PLAN	2
SITE PLAN	3
GRADING PLAN	4
FINAL EROSION CONTROL PLAN	5
DETAILS	6-8

THIS PLAN CONTAINS 8 TOTAL SHEETS

SITE ADDRESS
5960 ZEHNDER ROAD
SUNFISH LAKE, MN 55077

SITE LEGAL DESCRIPTION
LOT 7, BLOCK 2, HORSE SHOE LAKE, DAKOTA
COUNTY, MINNESOTA.

ZONING
R1- RESIDENTIAL



VICINITY MAP
VICINITY MAP NOT TO SCALE

NOTES

- 1.) NO CONSTRUCTION MAY BEGIN UNTIL EROSION AND SEDIMENT CONTROLS ARE IN PLACE AND APPROVED BY THE CITY OF SUNFISH LAKE.
2.) NO CONSTRUCTION MAY BEGIN UNTIL A PRECONSTRUCTION MEETING IS HELD WITH THE CITY OF SUNFISH LAKE.
3.) PREVAILING SPECIFICATIONS: CITY OF SUNFISH LAKE, DAKOTA COUNTY, MN MUTCD, MNDOT SPECIFICATIONS, CEAM SPECIFICATIONS.
4.) NO CHANGES SHALL BE MADE TO APPROVED PLANS WITHOUT WRITTEN CONSENT OF THE CITY OF SUNFISH LAKE.
5.) ONLY CITY OF SUNFISH LAKE EMPLOYEES ARE PERMITTED TO OPERATE VALVES AND HYDRANTS.
6.) ELEVATIONS FOR CONNECTING TO EXISTING STUBS FOR SANITARY SEWER, WATER, AND STORM SEWER WILL NEED TO BE FIELD VERIFIED.
7.) EXISTING "AS-BUILT" INFO IS FROM TOPOGRAPHIC SURVEY.

CALL BEFORE YOU DIG
GOPHER STATE
ONE CALL
TWIN CITY AREA 651-454-0002
MIL TOLL FREE 1-800-252-1166

**Engineering, Surveying
& Planning**
JOHNSON & SCOFIELD INC.
1203 Main Street Red Wing, MN 55066
ph. 651.388.1558 fax 651.388.1559

I HEREBY CERTIFY THAT THIS PLAN,
SPECIFICATION, OR REPORT WAS PREPARED BY
ME OR UNDER MY DIRECT SUPERVISION AND I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MINNESOTA
Steven P. Voigt
Steven P. Voigt, PE
DATE 3-14-2024 REG. NO. 20034

DESIGNED	SPD\SPV	REVISED	BY	DATE	LATEST REVISION:
DRAWN	SPD				Prepared For:
CHECKED	SPV				BRYAN SOMMERLAND
					5960 ZENDER ROAD
					SUNFISH LAKE, MN 55077
					PHONE 816-914-8877
					EMAIL SOMMERLAND@ATT.NET

SEPTIC SYSTEM REPLACEMENT
5960 ZEHNDER ROAD
SUNFISH LAKE, MINNESOTA

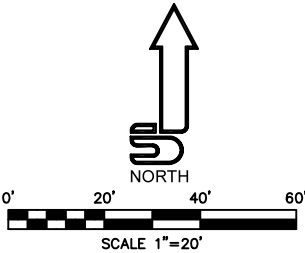
TITLE SHEET

SHEET 1 OF 8 SHEETS

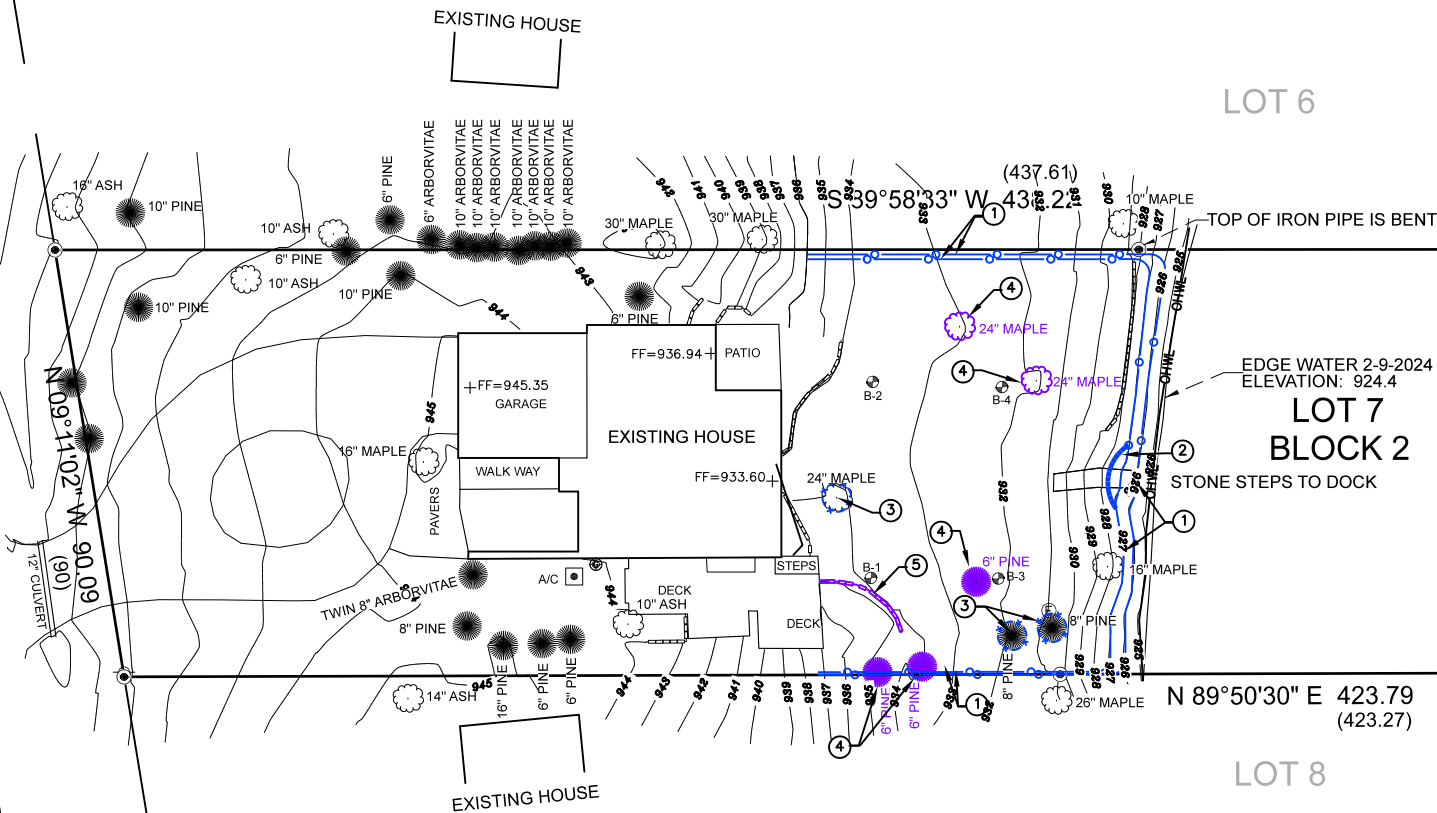
CALL BEFORE YOU DIG

GOPHER STATE
ONE CALL

TWIN CITY AREA 651-454-0002
MIL. TOLL FREE 1-800-252-1166



ZEHNDER ROAD



HORSESHOE LAKE
INVENTORY ID 19-51
OHWL:924.90 (NAD27)

N 00°01'56" E 87.94
(488.87)

EROSION CONTROL NOTES

- CONTRACTOR SHALL INSTALL PERIMETER SILT FENCE BEFORE START OF ANY CONSTRUCTION ACTIVITY. TO PREVENT SEDIMENT RUNOFF FROM REACHING THE CURB OR STREET RIGHT OF WAY. PERIMETER DOWNSLOPE SILT FENCE SHALL BE INSTALLED ACROSS ALL PRIVATE LOTS. WHILE STILL VULNERABLE DUE TO EXPOSED SOIL, ROCK CHECK DAMS WILL BE PLACED EVERY 25 FEET ALONG THE CENTERLINE OF EACH DRAINAGE SWALE ON GRADES EXCEEDING 4% TO REDUCE FLOW VELOCITIES THAT CAUSE EROSION. SEE DETAIL.
- THE PROPERTY HAS A DRIVEWAY. NO ROCK CONSTRUCTION ENTRANCE IS PLANNED. INSTEAD ALL ADJACENT STREETS WILL BE SWEEPED DAILY, AS NEEDED THROUGHOUT THE DAY, OR AS DIRECTED BY THE CITY, TO REMOVE ALL ACCUMULATED MATERIALS. FAILURE TO PERFORM ANY STREET SWEEPING WITHIN SIX HOURS OF NOTICE BY THE CITY WILL RESULT IN THE WORK BEING PERFORMED BY THE CITY AND ALL ASSOCIATED COSTS BILLED. THE CITY ALSO REQUIRES REMOVAL OF ACCUMULATED MATERIALS ON STREETS DURING WINTER.
- SUFFICIENT TOPSOIL IS TO BE SALVAGED TO PROVIDE COVER AFTER GRADING OPERATIONS. ALL SOIL STOCKPILES AND FINISHED GRADED AREAS ARE TO BE SEEDED IMMEDIATELY IN ORDER TO ESTABLISH VEGETATION WITH WHEAT OR RYE GRASS @ 100 LB./ACRE DURING CONSTRUCTION. INSTALL AND MAINTAIN APPROVED INLET PROTECTION AT ALL ACTIVE STORM SEWER INLETS. SEE DETAIL ON SHEET 5. SEDIMENT RUNOFF SHOULD BE MINIMIZED BY RESPONSIBLE SITE EROSION CONTROL. EROSION CONTROL MEASURES MUST BE INSPECTED BY THE CITY BEFORE ANY GRADING ACTIVITY BEGINS. TO PREVENT SILT AND SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM, A FILTER BAG INSERT, SEDIMENT CONTROL INLET HAT, ROCK LOG RING OR OTHER DEVICE APPROVED BY THE CITY, SHALL BE INSTALLED AT THE INLET.
- ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED AS SOON AS POSSIBLE. AREAS THAT HAVE BEEN DISTURBED OR AT FINISH GRADE, BUT HAVE NO ACTIVE WORK, SHALL BE SEEDED AND MULCHED OR SODDED WITHIN 14 DAYS. EXCEPT ON SLOPES STEEPER THAN 4H:1V. STEEPER SLOPES SHALL BE SEEDED AND COVERED WITH AN EROSION CONTROL BLANKET OR SEEDED AND MULCHED WITH A TACKIFYING AGENT OR SODDED. AS SOON AS POSSIBLE AFTER GRADING OPERATIONS HAVE BEEN COMPLETED, TOPSOIL SHALL BE SPREAD AND THE ENTIRE SITE SHALL BE VEGETATED. FINAL SITE STABILIZATION SHALL BE EVIDENT WHEN SEEDED GRASS IS PRESENT ON ALL EXPOSED GRADING AREAS AND HAS GROWN TO A LENGTH OF 6 INCHES AND THERE ARE NO SIGNS OF ONGOING EROSION. IF SOD IS PLACED IN-LIEU OF SEED, IT SHALL BE WATERED AND MAINTAINED AND SHOW NO SIGNS OF STRESS FOR AT LEAST 30 DAYS. THE CITY SHALL APPROVE FINAL SITE STABILIZATION.
- A CONCRETE WASHOUT AREA IS REQUIRED FOR ALL CONCRETE CONSTRUCTION. THE WASHOUT SYSTEM CAN BE A PORTABLE UNIT PROVIDED BY THE CONCRETE SUPPLIER OR AN IN-GROUND SYSTEM CONSTRUCTED BY THE CONTRACTOR. ONE ACCEPTABLE METHOD OF CREATING AN IN-GROUND WASHOUT PIT WOULD BE TO EXCAVATE A 3 FOOT DEEP AREA (MIN. 3' WIDTH X VARIABLE LENGTH AS NEEDED), LINED WITH 10 MIL. PLASTIC AND PERIMETER ANCHORED WITH SAND BAGS OR AGGREGATE. IF THE LINING BECOMES DAMAGED (PUNCTURED OR RIPPED), THE WASHOUT SHALL NOT BE USED UNTIL THE LINING IS REPAIRED. CONCRETE POURS SHALL NOT BE CONDUCTED DURING OR BEFORE AN ANTICIPATED STORM EVENT. CONCRETE WASTES SHALL BE ALLOWED TO HARDEN, BROKEN UP, THEN DISPOSED OF ACCORDING TO LOCAL ORDINANCE. THIS WASHOUT PIT SHALL BE LOCATED AWAY FROM ALL STEEP SLOPES AND DRAINAGE INLETS.
- A NPDES STORM WATER PERMIT FOR CONSTRUCTION IS NOT REQUIRED FOR THIS PROJECT.

KEYNOTES:

- INSTALL SILT FENCE. SEE DETAIL ON SHEET 6.
- INSTALL BIO-LOGS. SEE DETAIL ON SHEET 6.
- INSTALL TREE PROTECTION. SEE DETAIL ON SHEET 8.
- CLEAR AND GRUB EXISTING TREE
- REMOVE RETAINING WALL

BMP LIST

ITEM	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY
1	SILT FENCE	LF	440
2	BIO LOG	LF	20

LEGEND

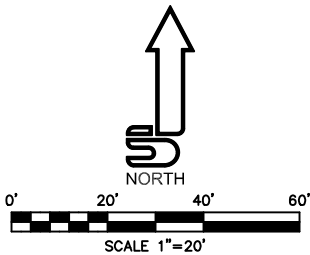
These standard symbols will be found on this plan sheet.

- SECTION LINE
- CENTERLINE ROAD
- PROPERTY BOUNDARY
- LOT BOUNDARY
- PROPERTY CORNER
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING GAD METER
- EXISTING TELEPHONE POLE
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- EXISTING ELECTRIC METER
- SOIL BORING
- EXISTING AIR CONDITIONING UNIT
- EXISTING CONIFEROUS TREE TO BE CLEARED AND GRUBBED
- EXISTING DECIDUOUS TREE TO BE CLEARED AND GRUBBED
- PROPOSED SILT FENCE
- PROPOSED TREE PROTECTION
- PROPOSED BIO LOG

CALL BEFORE YOU DIG

GOPHER STATE
ONE CALL

TWIN CITY AREA 651-454-0002
MIN. TOLL FREE 1-800-252-1166



LEGEND

These standard symbols will be found on this plan sheet.

- SECTION LINE
- CENTERLINE ROAD
- PROPERTY BOUNDARY
- LOT BOUNDARY
- PROPERTY CORNER
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING GAD METER
- EXISTING TELEPHONE POLE
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- EXISTING ELECTRIC METER
- SOIL BORING
- EXISTING AIR CONDITIONING UNIT
- PROPOSED SANITARY PIPE
- PROPOSED SEPTIC TANK MANHOLE
- LIMITS OF SEPTIC SYASTEM
- PROPOSED RETAINING WALL
- PROPOSED CONIFEROUS TREE
- PROPOSED DECIDUOUS TREE
- PROPOSED SEPTIC ROCK BED
- PROPOSED SEPTIC FIELD

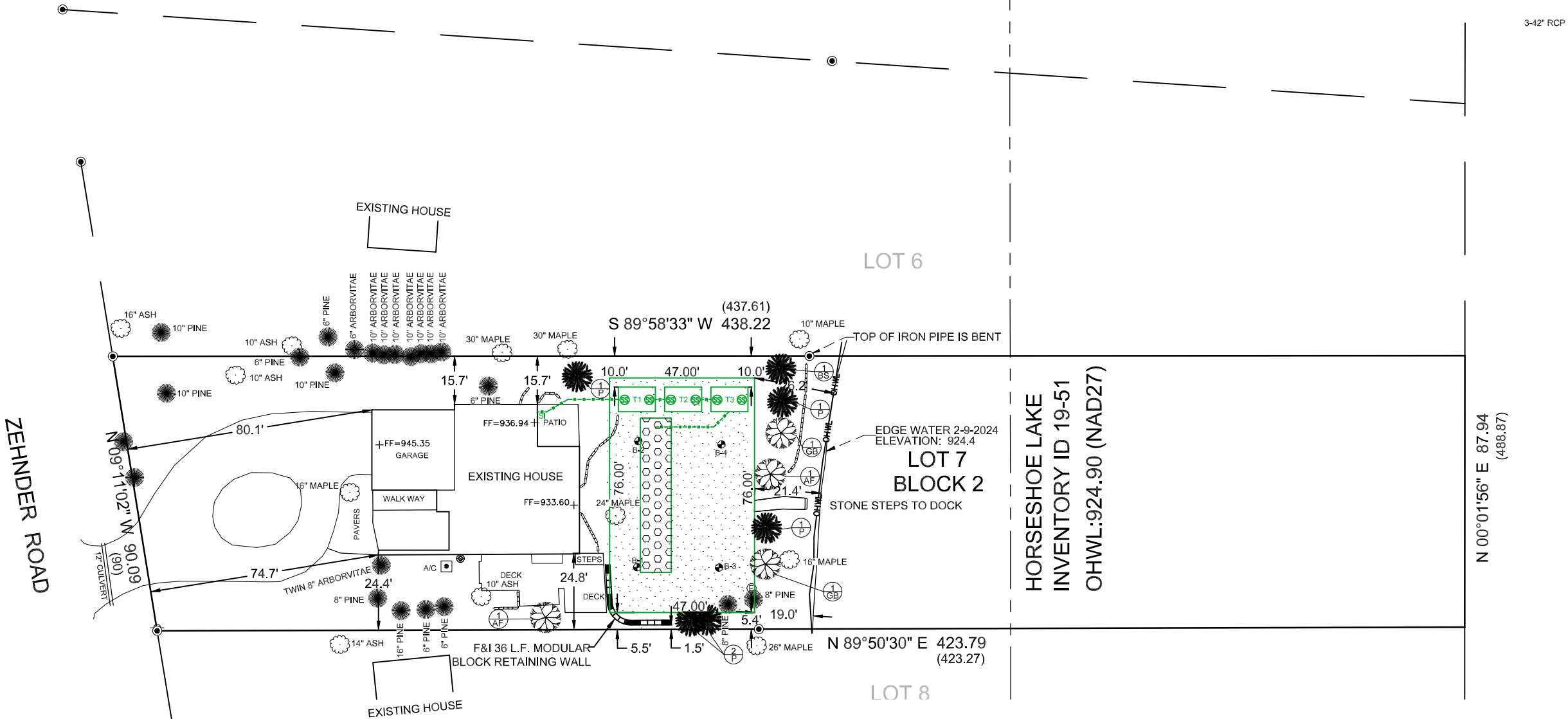
AREA NOTES

LOT AREA.....0.875 ACRES (38,122 SF)
TOTAL DISTURBED AREA.....0.103 ACRES(4,500 SF)
EXISTING IMPERVIOUS.....0.147 ACRES (6425 SF) (17%)
TOTAL PROPOSED IMPERVIOUS AREA.....0.147 ACRES (6425 SF) (17%) - NO CHANGE
TOTAL PROPOSED GREEN SPACE.....0.728 ACRES (31,697 SF) (83%)

TREE SCHEDULE

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE
2	GB	Ginkgo biloba (male tree only)	GINKGO	MIN. 2" DIAMETER
2	AF	Acer x FreemanII	Autumn Blaze Maple	MIN. 2" DIAMETER
5	P	Pinus	PINE	MIN. 6" HEIGHT
1	BS	Picea pungens	Blue Spruce	MIN. 6" HEIGHT

SEE SHEET 8 FOR TREE PLANTINGS DETAILS

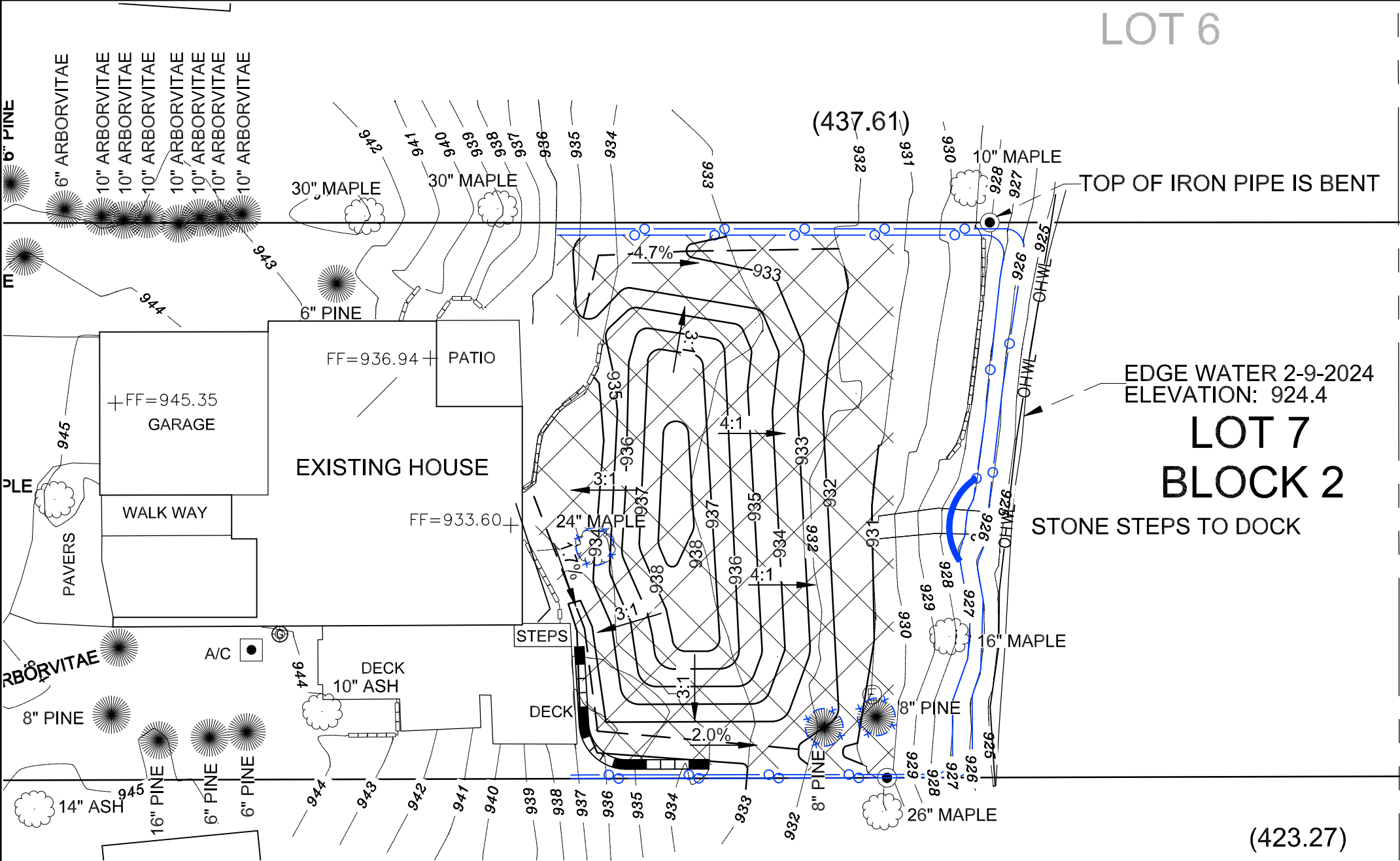


LANDSCAPE NOTES

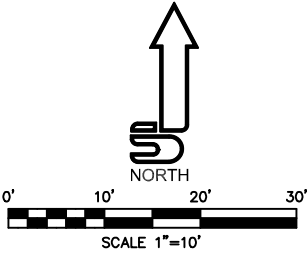
- ALL STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" SHALL BE USED AS THE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIALS.
- PLANT ESTABLISHMENT PERIOD (PEP) IS 12 MONTHS FROM THE TIME OF ACCEPTANCE. THE CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE DURING THIS TIME, AND SHALL REPLACE ALL DEAD MATERIAL DURING PEP.
- ALL PLANT MATERIAL SHALL BE BALLED AND BURLAPPED, OR CONTAINER GROWN.
- ALL PLANT MATERIAL SHALL BE HEALTHY, FREE OF DISEASE AND PEST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY MAINTAINING ALL PLANT MATERIALS AND LAWN DURING PEP. THIS INCLUDES WATERING, MULCHING, SPRAYING, OR FERTILIZING ALL LAWN AND PLANT MATERIALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THIS PLAN BEFORE PRICING THIS PLAN.
- ONLY THE OWNER MAY SUBSTITUTE ANY SPECIES OR QUANTITIES SHOWN ON THIS PLAN.
- ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE OWNER BEFORE, DURING, AND AFTER PLANTING.
- THE CONTRACTOR SHALL AVOID ALL UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE. THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO ANY PLANTINGS.
- LANDSCAPE BED SHALL HAVE A MINIMUM 6" DEPTH OF WOOD MULCH, OR WASHED LANDSCAPING ROCK. THE ENTIRE PERIMITTER OF THE BED SHALL HAVE 6" TALL EDGING INSTALLED.

LEGEND

SHEET 4 OF 8 SHEETS



CALL BEFORE YOU DIG
GOPHER STATE
ONE CALL
TWIN CITY AREA
651-454-0002
MN. TOLL FREE
1-800-252-1166



LEGEND

These standard symbols will be found on this plan sheet.

- SECTION LINE
- CENTERLINE ROAD
- PROPERTY BOUNDARY
- LOT BOUNDARY
- PROPERTY CORNER
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING GAD METER
- EXISTING TELEPHONE POLE
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- EXISTING ELECTRIC METER
- SOIL BORING
- EXISTING AIR CONDITIONING UNIT
- PROPOSED SANITARY PIPE
- PROPOSED SEPTIC TANK MANHOLE
- LIMITS OF SEPTIC SYSTEM
- PROPOSED RETAINING WALL
- PROPOSED CONIFEROUS TREE
- PROPOSED DECIDUOUS TREE
- PROPOSED SILT FENCE
- PROPOSED TREE PROTECTION
- PROPOSED BIO LOG
- PROPOSED CONTOUR AND ELEVATION
- PROPOSED SPOT ELEVATION
- PROPOSED GROUND SLOPE
- EROSION FIBER BLANKET AND AREA TO BE SEED OR SODDED

HORSESHOE LAKE
INVENTORY ID 19-51
OHWL:924.90 (NAD27)

EROSION CONTROL NOTES

- SUFFICIENT TOPSOIL IS TO BE SALVAGED TO PROVIDE COVER AFTER GRADING OPERATIONS. ALL SOIL STOCKPILES AND FINISHED GRADED AREAS ARE TO BE SEEDDED IMMEDIATELY IN ORDER TO ESTABLISH VEGETATION WITH WHEAT OR RYE GRASS @ 100 LB./ACRE DURING CONSTRUCTION. INSTALL AND MAINTAIN APPROVED INLET PROTECTION AT ALL ACTIVE STORM SEWER INLETS. SEE DETAIL ON SHEET 5. SEDIMENT RUNOFF SHOULD BE MINIMIZED BY RESPONSIBLE SITE EROSION CONTROL. EROSION CONTROL MEASURES MUST BE INSPECTED BY THE CITY BEFORE ANY GRADING ACTIVITY BEGINS. TO PREVENT SILT AND SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM, A FILTER BAG INSERT, SEDIMENT CONTROL INLET HAT, ROCK LOG RING OR OTHER DEVICE APPROVED BY THE CITY, SHALL BE INSTALLED AT THE INLET.
- ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED AS SOON AS POSSIBLE. AREAS THAT HAVE BEEN DISTURBED OR AT FINISH GRADE, BUT HAVE NO ACTIVE WORK, SHALL BE SEEDDED AND MULCHED OR SODDED WITHIN 14 DAYS, EXCEPT ON SLOPES STEEPER THAN 4H:1V. STEEPER SLOPES SHALL BE SEEDDED AND COVERED WITH AN EROSION CONTROL BLANKET OR SEEDDED AND MULCHED WITH A TACKIFYING AGENT OR SODDED.
- WITHIN 48 HOURS AFTER GRADING OPERATIONS HAVE BEEN COMPLETED, TOPSOIL SHALL BE SPREAD AND THE ENTIRE SITE SHALL BE VEGETATED. FINAL SITE STABILIZATION SHALL BE EVIDENT WHEN SEEDDED GRASS IS PRESENT ON ALL EXPOSED GRADING AREAS AND HAS GROWN TO A LENGTH OF 6 INCHES AND THERE ARE NO SIGNS OF ONGOING EROSION. IF SOD IS PLACED IN-LIEU OF SEED, IT SHALL BE WATERED AND MAINTAINED AND SHOW NO SIGNS OF STRESS FOR AT LEAST 30 DAYS. THE CITY SHALL APPROVE FINAL SITE STABILIZATION.

BMP LIST

1	SILT FENCE	LF	440
2	BIO LOG	LF	20
3	EROSION CONTROL BLANKET	SY	500
4	TURF ESTABLISHMENT	SY	500

SEEDING

JRK ULTRA SUNNY LAWN MIX WITH TAZO

BLEND: 20% KENTUCKY BLUEGRASS, 20% KENTUCKY BLUEGRASS, 10% KENTUCKY BLUEGRASS, 20% CREEPING RED FESCUE, 30% TURF TYPE PERENNIAL RYEGRASS

NEW LAWN RATE: 5-7 LBS/1,000SF
OVER-SEEDING RATE: 4-5 LBS/1,000SF

25 LB. BAG SKU: G205125
50 LB. BAG SKU: G205150

THE FERTILIZER WILL BE A STARTER 9-23-30
FERTILIZER APPLICATION RATE: 50 LBS/5,000 S.F.



Engineering, Surveying
& Planning
JOHNSON & SCOFIELD INC.
1203 Main Street Red Wing, MN 55066
ph. 651.388.1558 fax 651.388.1559

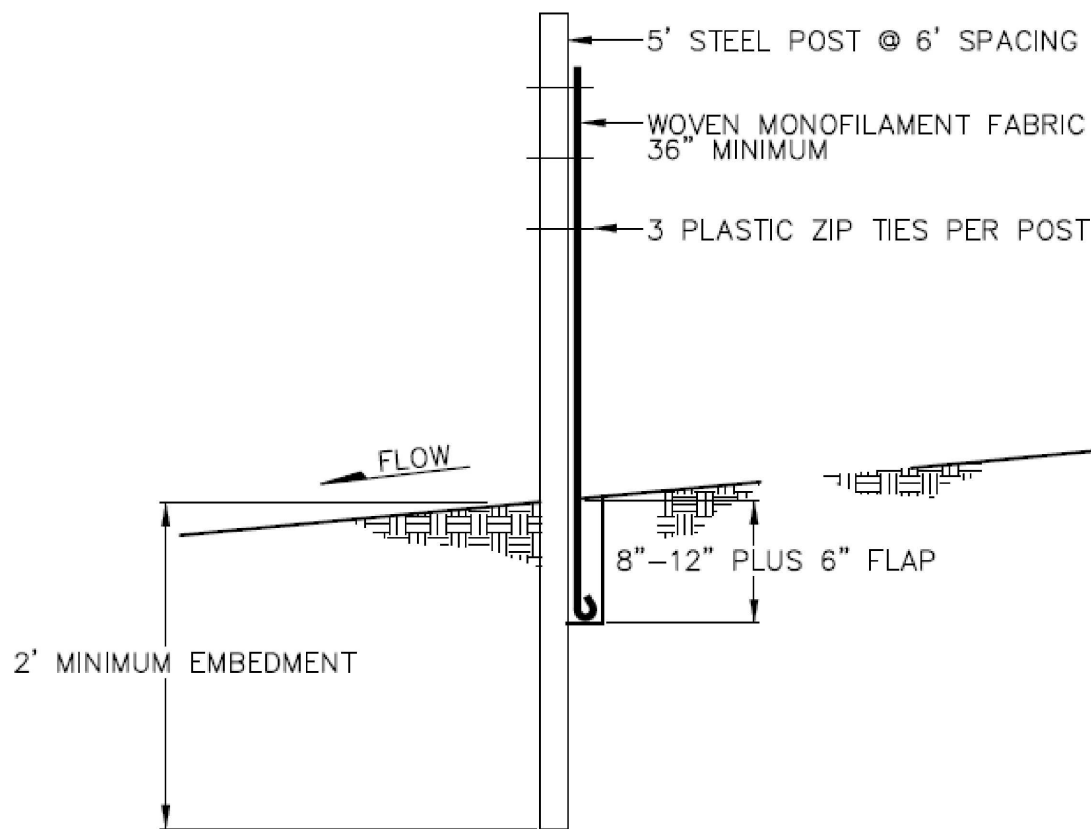
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA


Steven P. Voigt, PE
DATE 3-14-2024 REG. NO. 20034

DESIGNED	SPD\SPV	REVISED	BY	DATE	LATEST REVISION:
DRAWN	SPD				Prepared For:
CHECKED	SPV				BRYAN SOMMERLAND
					5960 ZENDER ROAD
					SUNFISH LAKE, MN 55077
					PHONE 816-914-8877
					EMAIL SOMMERLAND@ATT.NET

SEPTIC SYSTEM REPLACEMENT
5960 ZEHNDER ROAD
SUNFISH LAKE, MINNESOTA

FINAL EROSION CONTROL

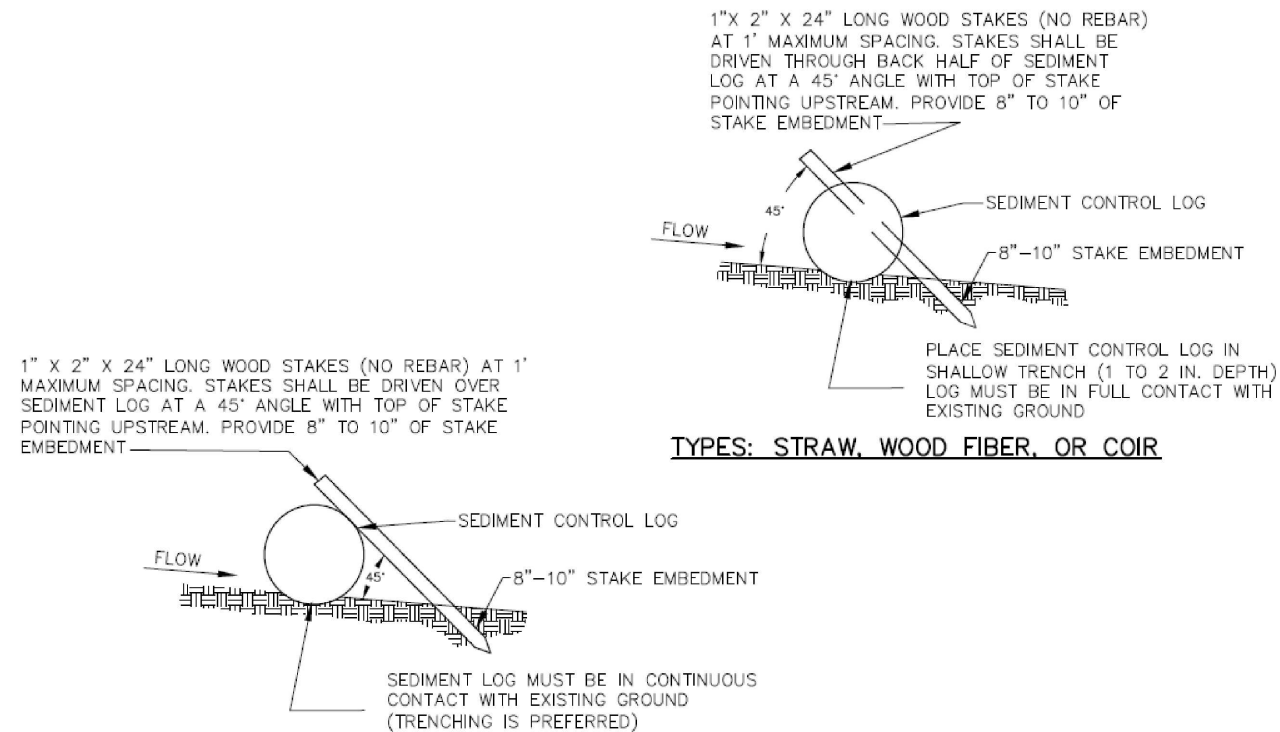


MACHINE SLICED SILT FENCE

- NOTES: 1. WOOD POSTS MAY BE USED IN NON-CRITICAL AREAS. WOOD POST SPACING AT 4' MAXIMUM. STEEL POSTS ARE REQUIRED WHEN HEAVY DUTY SILT FENCE IS SPECIFIED.
2. SILT FENCE MUST BE CLEANED OR REPLACED WHEN SILT DEPTH IS 1/3 HEIGHT OF FABRIC.

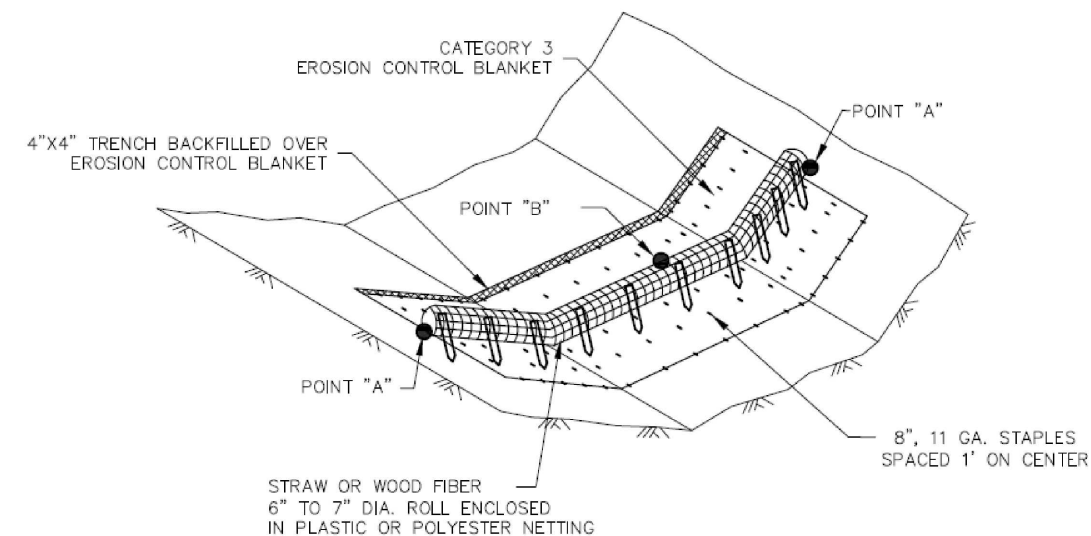
NOT TO SCALE

SILT FENCE INSTALLATION



TYPES: STRAW, WOOD FIBER, OR COIR

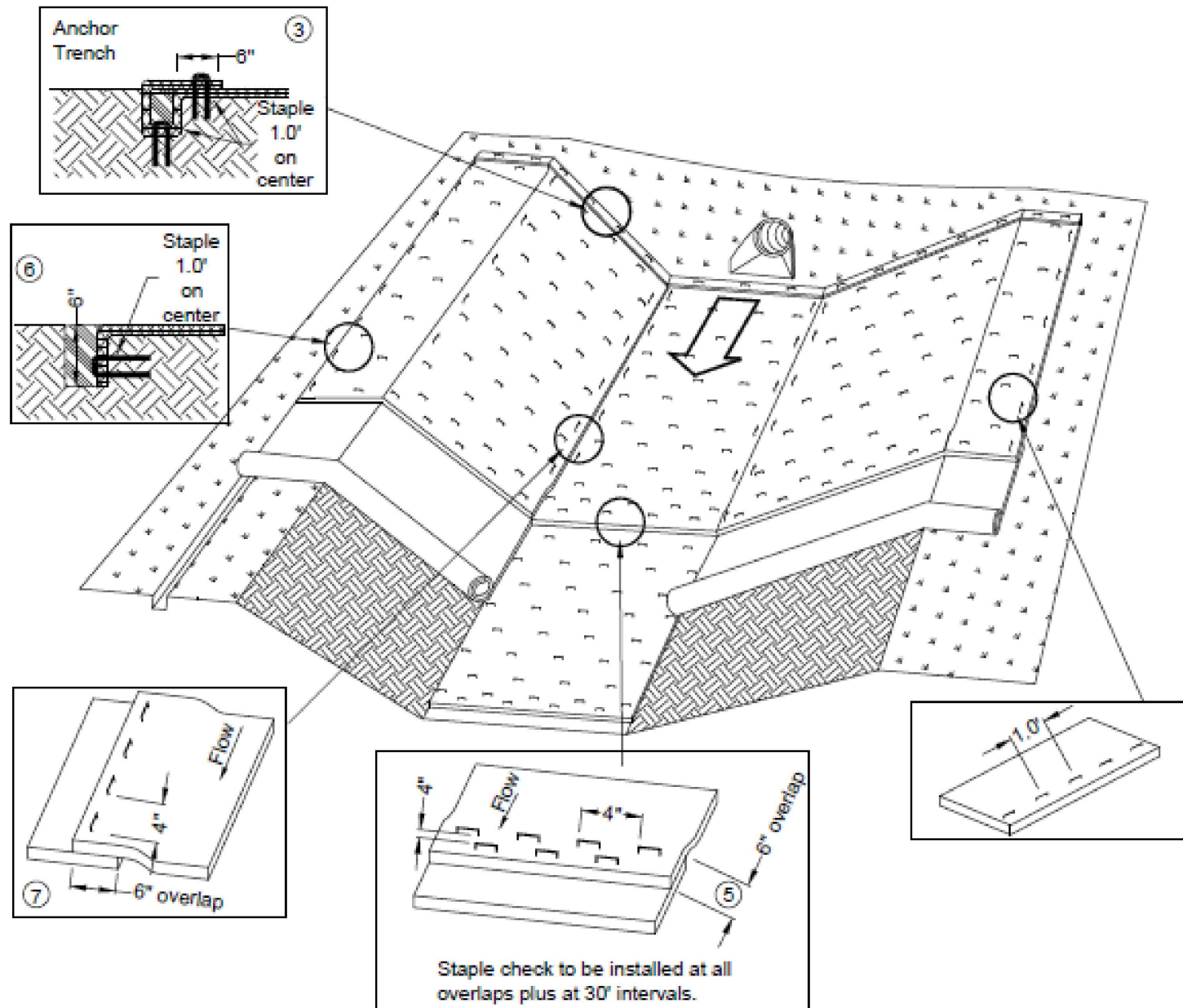
TYPES: WOOD CHIP, COMPOST, OR ROCK



- POINT 'A' SHALL BE A MINIMUM OF 6 INCHES HIGHER THAN POINT 'B' TO ENSURE WATER FLOWS OVER THE BIOROLL AND DOES NOT FLANK THE EDGES AND CAUSE EROSION.
- DITCH CHECK SPACING SHALL BE DETERMINED FROM THE FOLLOWING FORMULA:
APPROXIMATE SPACING OF DITCH CHECKS (FT) = $\frac{\text{DITCH CHECK HEIGHT (FT)}}{\% \text{ CHANNEL SLOPE}} \times 100$

NOT TO SCALE

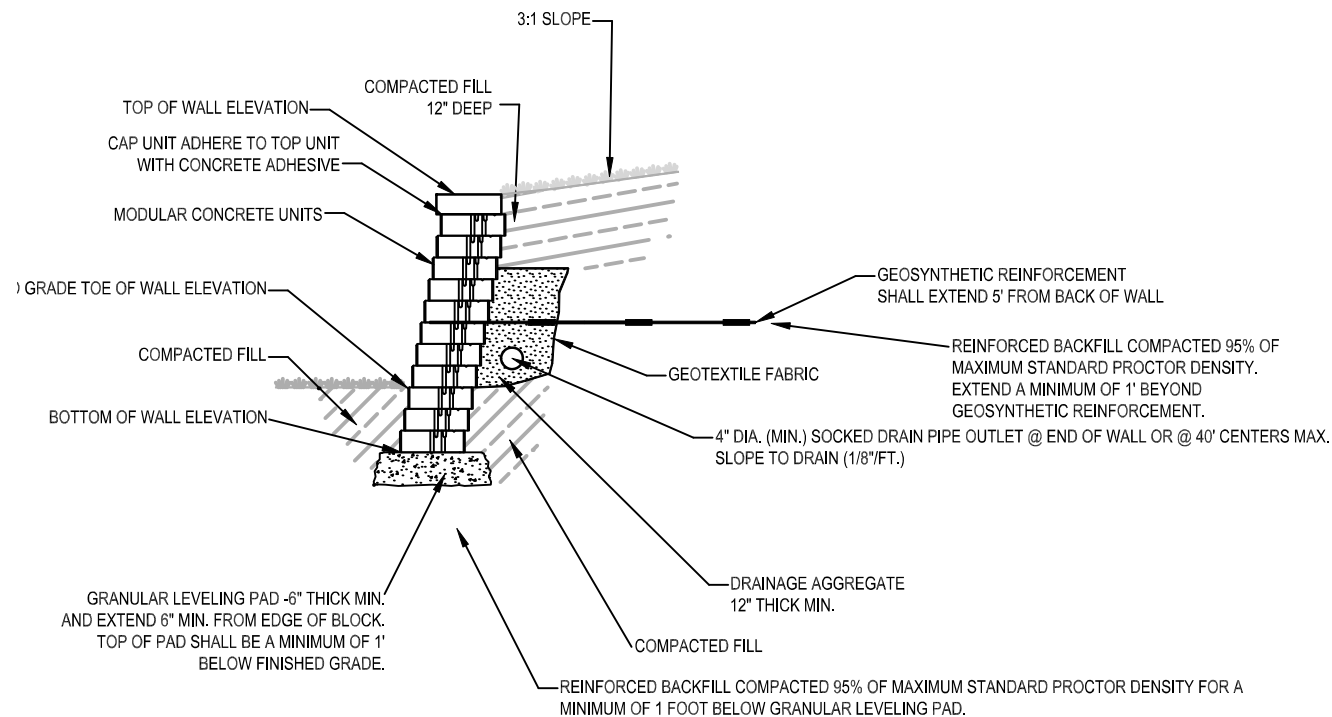
SEDIMENT LOG INSTALLATION



Perspective

NOT TO SCALE

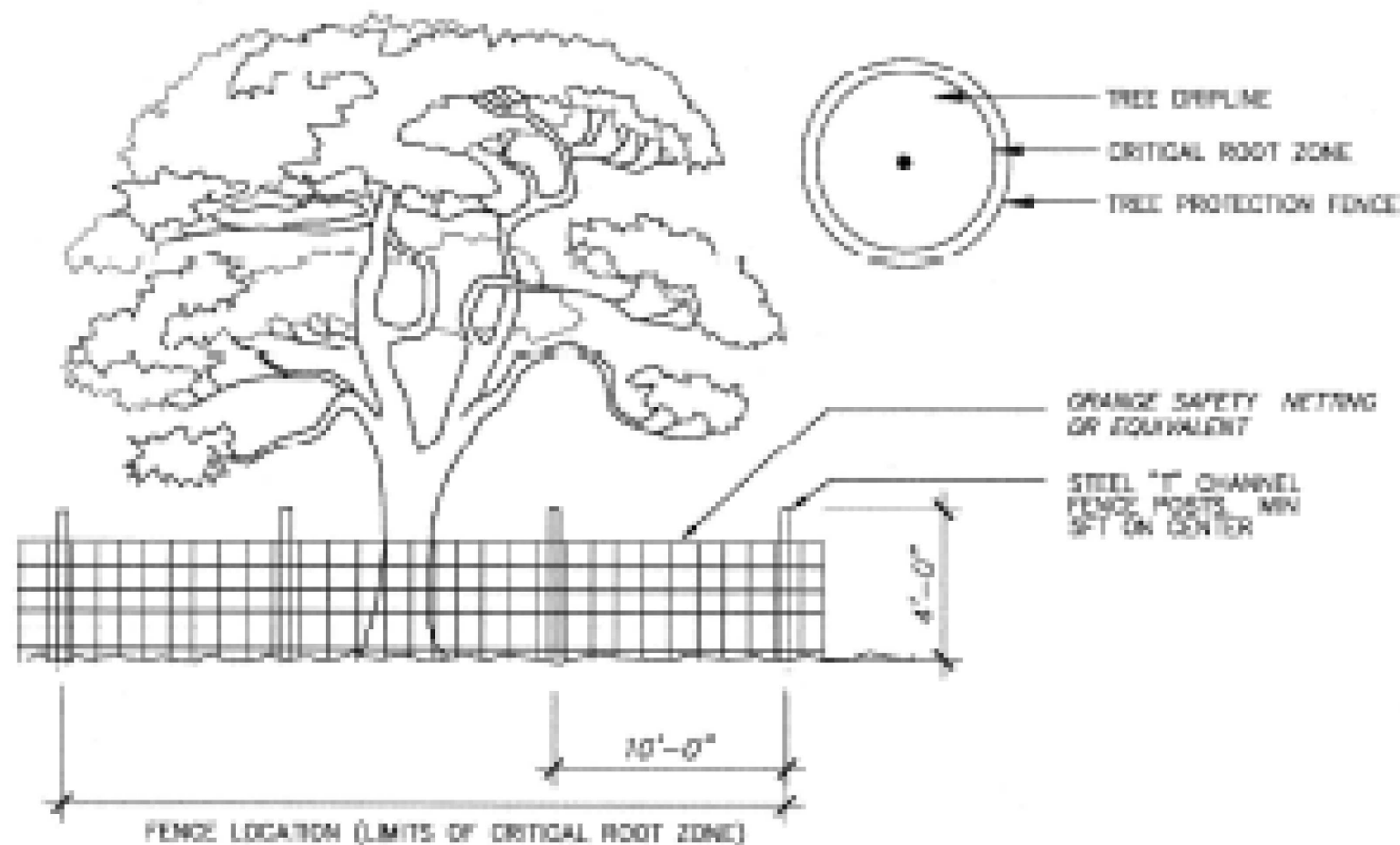
EROSION CONTROL BLANKET



NOTES: FOLLOW MANUFACTURER'S INSTALLATION GUIDES

NOT TO SCALE

REINFORCED RETAINING WALL DETAIL



NOT TO SCALE

TREE PROTECTION

NOTES:
SCARIFY BOTTOM AND SIDES OF THE HOLE.

REMOVE CONTAINER AND SCORE OUTSIDE WALL OF SOIL MASS.

SET PLANT ON UNDISTURBED NATIVE SOIL, OR COMPACTED BACKFILL SOIL.

INSTALL PLANT SO THAT THE ROOT FLARE IS AT OR UP TO 2" ABOVE FINISHED GRADE.

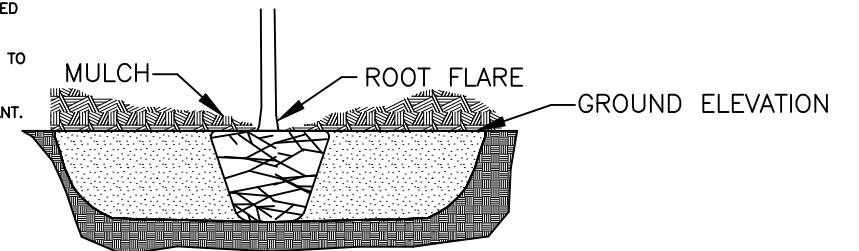
BACKFILL TO $\pm 12"$ OF THE ROOTBALL, THEN WATER PLANT. REMOVE THE TOP 1/3 OF THE BURLAP FROM THE ROOTBALL.

PLUMB AND BACKFILL WITH BACKFILL SOIL.

WATER TO FILL VOIDS AND SETTLE PLANT.

WATER THOROUGHLY WITHIN 2 HOURS OF PLANTING.

PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.



NOT TO SCALE

CONTAINER STOCK PLANTING DETAIL

NOTES:
SCARIFY BOTTOM AND SIDES OF THE HOLE.

SET PLANT ON UNDISTURBED NATIVE SOIL, OR COMPACTED BACKFILL SOIL.

INSTALL PLANT SO THAT THE ROOT FLARE IS AT OR UP TO 2" ABOVE FINISHED GRADE.

BACKFILL TO $\pm 12"$ OF THE ROOTBALL, THEN WATER PLANT. REMOVE THE TOP 1/3 OF THE BURLAP FROM THE ROOTBALL.

PLUMB AND BACKFILL WITH BACKFILL SOIL.

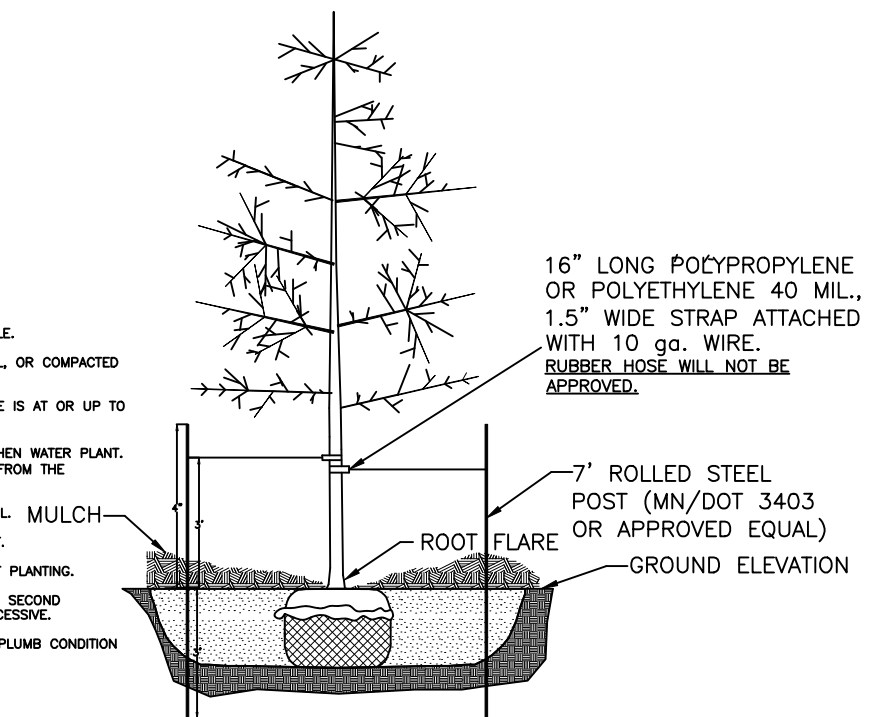
WATER TO FILL VOIDS AND SETTLE PLANT.

WATER THOROUGHLY WITHIN 2 HOURS OF PLANTING.

PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

ONLY TREES THAT CANNOT MAINTAIN A PLUMB CONDITION WILL BE REQUIRED TO BE STAKED.

REMOVE STAKES AFTER PEP HAS ENDED.



NOT TO SCALE

BALLED AND BURLAPPED TREE PLANTING AND STAKING DETAIL

Memorandum

To: Lori Johnson, AICP – City Planner

From: Justin Messner, PE – City Engineer

Date: March 22, 2024

Re: 5960 Zehnder Road – Septic System Replacement Site Plan Review
City of Sunfish Lake, MN
WSB Project No. 024347-000

Project Background

The Applicant is proposing to replace an existing septic system with a new mound system, site grading and landscaping. The following review is only for engineering and site grading issues. Septic system design will be reviewed and approved by the appropriate agency. Comments are based on the submittal received from the applicant on March 14, 2024. Additional engineering comments may be provided upon revised submittals.

The following requirements and comments need to be addressed for the project to move forward.

General Notes

1. Engineered drawings for the retaining walls shall be reviewed by the City of Sunfish Lake Building Official.

Grading, Erosion Control and Restoration

1. Upon completion of the as-built, an on-site final inspection with city staff, the builder, and the resident will be required.

Conclusions and Recommendations

Based upon our review of the engineering and site grading for this proposed development, we have determined that the proposed site and grading plans submitted on March 14, 2024, are found to be in accordance with City requirements and we recommend approval from an engineering standpoint for this project. Septic system design will need to be reviewed and approved by the appropriate agency prior to issuance of the permit.

"BLACKWATER SYSTEMS"

BRENT D. MATTER

646 ROUNDHOUSE STREET

SHAKOPEE, MN 55379

(952) 250-1649

bdmatter@outlook.com

TYPE III SSTs

SITE EVALUATION, SOIL BORINGS

With LGU Soil Verification

&

SEPTIC SYSTEM DESIGN

DATE: October 31, 2023

FOR: Gary & Judith Sommerland

ADDRESS: 5960 Zehnder Road
Sunfish Lake, MN 55077

PHONE NUMBER: (507) 298-1626 c/o Steve Holt, Installer

SITE LOCATION: 5960 Zehnder Road.
PID #383350002070

Please Note: Time Dosing & Effluent Filter are required with a Filter Alarm & Maintenance agreement to professionally clean filter as directed by manufacturer.

1250 & 1000 Gal. Septic Tanks
1500 Gal. Pump Chamber
Rock Bed 10' X 50'
32 Tons Washed Rock
Absorption Width 33'
Min. Sand Base 47' X 76'
336 Tons Washed Sand
Up/Sideslope 10/13 Downslope 27'
Sand Depth 24" to 28"
18' Head 29 GPM perf/sp 7/32"-3'

SEPTIC SYSTEM DESIGN

DESIGN CRITERIA;

A New SSTS for an existing 4 Bedroom single family type I home with a garbage disposal is proposed. The 4 bedroom sized drainfield is to be utilized with reduced flow at 450gpm.

WATER USAGE;

450 gallons per day maximum.

PERCOLATION RATE;

Estimated >60 MPI due to damaged soils from scaping & filling over existing drainfield.

SEPTIC TANK;

Install one new 1250-gallon single compartment septic tank followed by the one new 1000-gallon single compartment septic tank, please see detail.

NOTES: 1) Tanks require pumping once every three years

2) Use "APPROVED" tanks only.

3) Effluent Filter Required w/ Alarm & Maintenance Agreement.

PUMP CHAMBER;

Install a 1,500-gallon precast tank. Set as specified.

NOTES: 1) An event counter required

2) Use "APPROVED" tanks only.

3) Time Dosing Required

DRAINFIELD;

Treatment Mound, Pressure distribution required. Located on 3% slope. Total mound Sand area is 47 feet by 76 feet. Rock bed measures 10 feet by 50 feet. 32 Tons of rock required. Downslope dike width is 27 feet, upslope dike width is 10 feet and the end dikes are 13 feet. Tons of sand required. Please see detail.

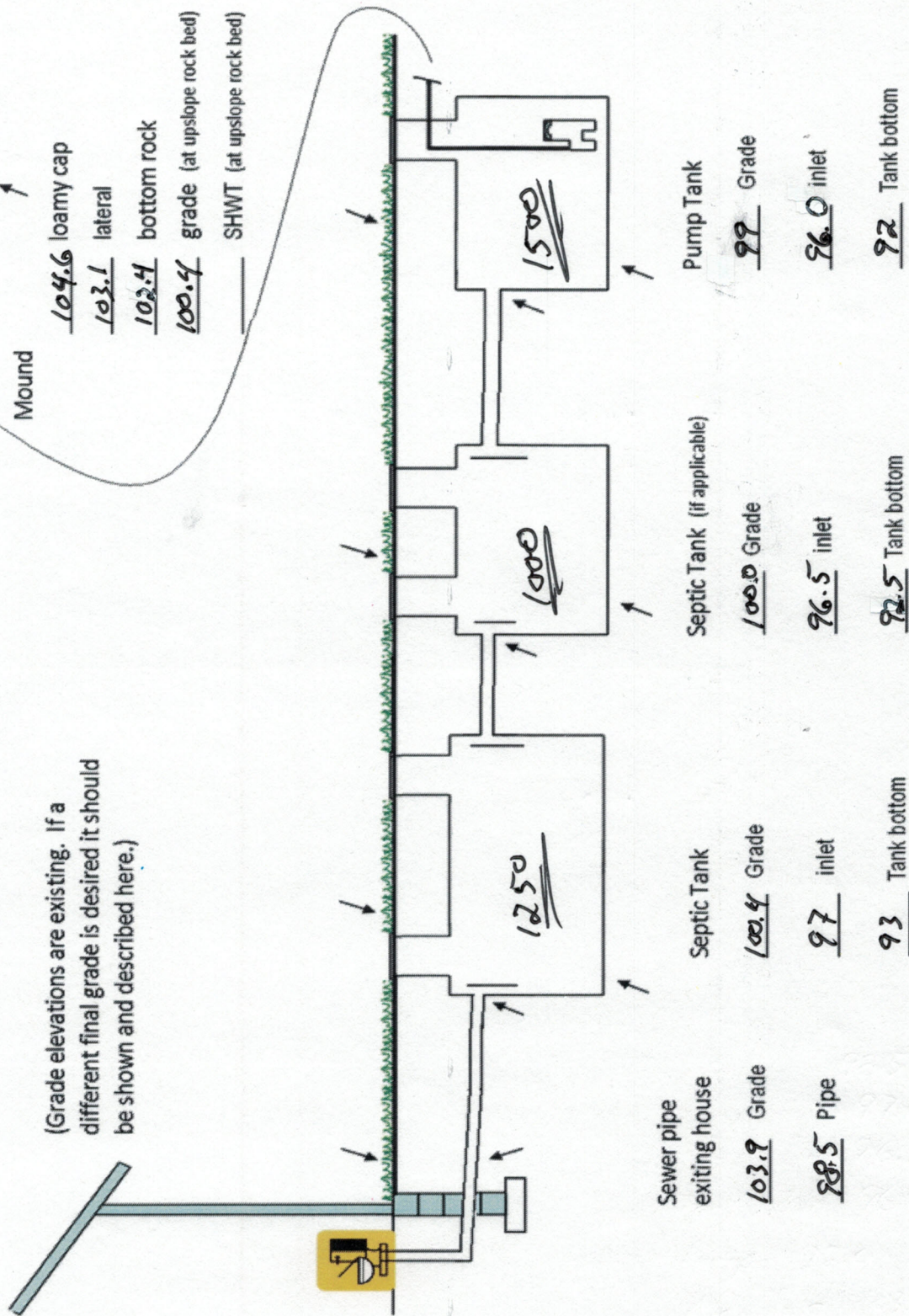
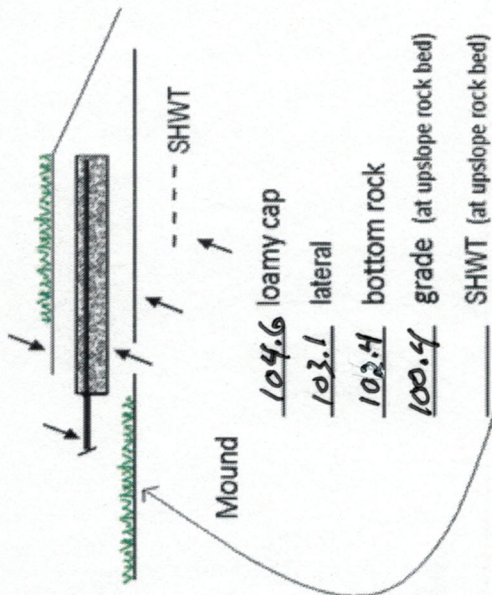
GENERAL CONSTRUCTION PRACTICES;

Divert all surface water away from the drainfield area. Do not disturb the drainfield area during construction. Fence off the drainfield area before permit application. If there are any questions regarding this design, please contact Brent Matter at (952) 250-1649.

System Elevations

100.0 benchmark Basement Floor

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



Installer Summary

2250

gallon Septic tank (minimum)

1500

gallon Dose tank (minimum)

29

GPM @

18

ft. of head, Pump required

3.2

inch swing on Demand float

which translates to roughly

2.6

inches of float tether length

REQUIRED Time Dosing of:

3.2

minutes ON

6.8

hours OFF

18

inches to "timer ON" float

34

inches to "Hi level" float

21

inches from bottom of tank to "pump ON" float, or

24

inches from bottom of tank to "Hi Level Alarm" or

25

ft. of

2.0

inch supply line

with

end feed

manifold connection

(Tip: "top feed" manifold to control drainback)

24

inch, or

2.0

ft. Sand Lift Mound

10.0

ft. wide by

50.0

ft. long Rock bed

3

laterals

1.50

inch diameter

48.0

ft. long

3.0

ft. lateral spacing

7/32

inch perfs

3.0

ft. perforation spacing

No

Effluent filter & alarm

3

clean out & valve box assemblies

33.0

ft. Total sand ABSORPTION width (minimum)

0.0

ft. upslope and sideslope (sand beyond rockbed, minimum)

23.0

ft. Downslope (sand beyond rockbed, minimum)

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

3:1

upslope ratio

10

ft. upslope berm

3:1

sideslope

13

ft. sideslope berms

4:1

downslope

27

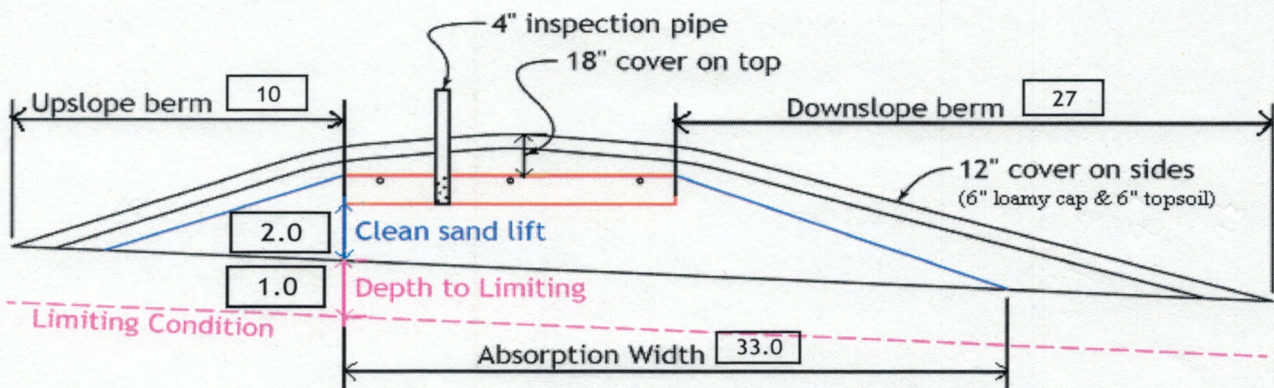
ft. downslope berm

Tank options: Multiple tanks or compartments req'd 50% larger tank with multiple comp/tanks

at

29.41

gpi



Note:

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

Rock Bed:	23.0	yd ³ or *1.4=	32	ton	9	inches under pipe
Mound Sand:	240	yd ³ or *1.4=	336	ton	calculation based on 3:1/4:1 slope from top of rockbed	
Loamy Cap:	69	yd ³ or *1.4=	97	ton	6"	deep
Topsoil:	80	yd ³ or *1.4=	112	ton	6"	deep

Preliminary & Field Evaluation Form

Owner Information

Date	<u>10/25/2020</u>	Sec / Twp / Rng	<u></u>
Parcel ID	<u>383350002070</u>	LUG (county, city, township)	<u>City of Sunfish Lake</u>
Property Owner:	<u>Gary & Judith Sommerland</u>	Owners address (if different)	<u></u>
Property Address:	<u>5960 Zehnder Road</u>		<u></u>
City / State / Zip:	<u>Sunfish Lake, MN 55077</u>		<u></u>

Flow Information and Waste Type / Strength

Estimated Design flow	<u>450</u>	Anticipated Waste strength	☐ Hi Strength	☒ Domestic
Comments: Type III mound over Existing Drainfield/Cut & Filled soils w/ Reduced Flow Rate.		Any Non-Domestic Waste	☐ Yes (class V)	☒ No
		Sewage ejector/grinder pump	☐ Yes	☒ No
		Water softener	☒ Yes	☐ No
		Garbage Disposal	☒ Yes	☐ No
		Daycare / In home business	☐ Yes	☒ No

Site Information

Existing & proposed lot improvements located (see site map)	☒ Yes	☐ No	Well casing depth	<u>150' plus</u>
Easements on lot located (see site map)	☐ Yes	☒ No	Drainfield w/in 100' of residential well	☐ Yes ☒ No
Property lines determined (see site map)	☒ Yes	☐ No	Site w/in 200' of transient noncommunity water supply (TNCWS)	☐ Yes ☒ No
Req'd setbacks determined (see site map)	☒ Yes	☐ No	Site w/in an inner wellhead mgmt zone (CWS/NTNCWS)	☐ Yes ☒ No
Utilities located & identified (gopher state one call)	☒ Yes	☐ No	Buried water supply pipe w/in 50' of system	☐ Yes ☒ No
Access for system maintenance (shown on site map)	☒ Yes	☐ No	Site located in Shoreland (w/in 1000' of lake, 300' of river)	☐ Yes ☒ No
Soil treatment area protected	☒ Yes	☐ No	Site map prepared with previous items included	☒ Yes ☐ No

Construction related issues

[illegible]

Designer Signature	Brent D. Matter	2003
	Company	License #

Mound Design

Property Owner: Gary & Judith Sommerland

Date: 10/25/2020

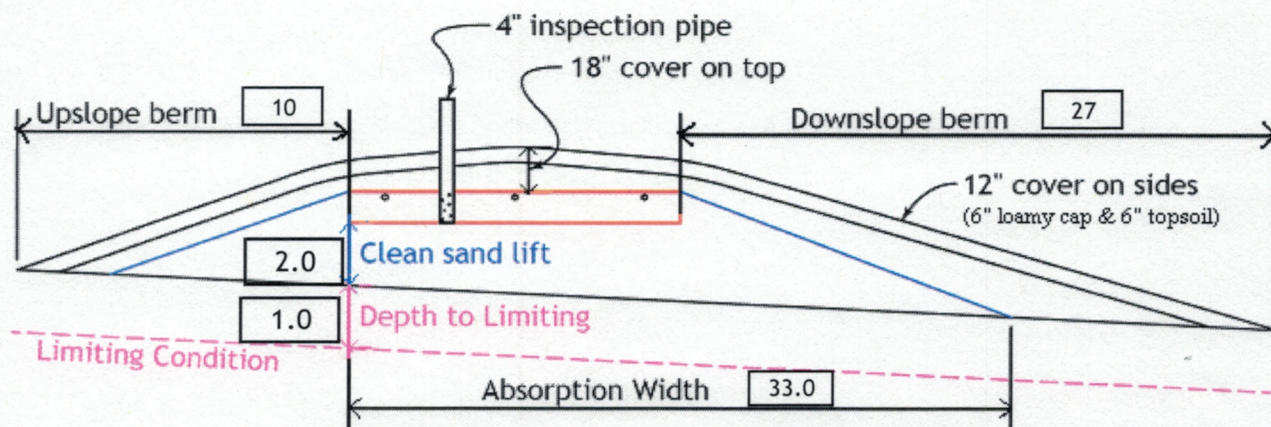
Site Address: 5960 Zehnder Road

PID: 383350002070

Comments: Type III mound over Existing Drainfield/Cut & Filled soils w/ Reduced Flow RateInstructions: = enter data = adjust if desired = computer calculated - DO NOT CHANGE!

- 1) 4 bedroom Type III Other Establishment System
- 2) 450 GPD design flow
- 3) Yes Garbage disposal or pumped to septic 50% larger tank with multiple comp/tanks
- 4) 2250 Gal Septic tank (code minimum) 2250 Gal Septic tank (design size / LUG req'd)
Tank options: Multiple tanks or compartments req'd
- 5) 1.0 GPD/ft² mound sand loading rate contour loading rate of 12 req's a min 37.5 ft. long rockbed
- 6) 10.0 ft rockbed width 50.0 ft rockbed length
- 7) 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum of 3 for both)
end feed manifold connection
- 8) 3 laterals 48.0 feet long 17.0 perfs / lateral 51 perfs total
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9) 7/32 inch perfs at 1 feet residual head gives 0.56 gpm flow rate per perforation
for this perf size & spacing, & pipe size on line 12, max perfs/lateral = 19, line #8 must be less --> OK
- 10) 5.0 doses per day (4 minimum)
- 11) 90 gallons per dose (treatment volume)
- 12) 1.50 inch diameter laterals must be used to meet "4x pipe volume" requirement
- 13) 25 feet of 2.0 inch supply line leads to 4 gallons of drainback volume
(Tip: "top feed" manifold to control the drainback)
- 14) 94 gallons TOTAL pump out volume (treatment + drainback)
- 15) 12 feet vertical lift from pump to mound laterals, leads to a:
- 16) 29 GPM @ 18 feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)
- 17) 500 gal Dose tank (code minimum) 1500 gal Dose tank (design size / LUG req'd) at 29.41 gpi
leads to a: REQUIRED Time Dosing of:
- 18) 3.2 inch swing on Demand float, (this delivers Average flow, =70% of Peak design flow)
- 19) 18 inches from bottom of tank to "Pump OFF" float 3.2 min ON
- 20) 21 inches from bottom of tank to "Pump ON" float 6.8 hrs OFF
- 21) 24 inches from bottom of tank to "Hi Level" float 18 inches to "Timer ON" float
34 inches to "Hi Level" float
- 22) 794 gallons reserve capacity (after High Level Alarm is activated-demand dosed)

- 23) 0.30 gpd/ft² Absorption area Soil Loading Rate, which gives a mound ratio of 3.3 (minimum)
(this must match the soil boring log) desired mound ratio 3.3
- 24) 4 percent site slope (0-20% range) 4 (% downslope site slope, if different than upslope)
- 25) 12 inches, or 1.0 ft. to Redox or other limiting condition (need at least 12" to be a Type I)
Treatment zone contains 0 inches of 0% soil credit, and 0 inches of 50% soil credit. Giving a:
- 26) 24 inch, or 2.0 ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 27) 33.0 ft. Total ABSORPTION width (with sand beyond rockbed as follows:)
- 28) 0.0 ft. upslope and sideslope
23.0 ft. Downslope
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) 3:1 upslope ratio 10 ft. upslope berm
- 30) 3:1 sideslope 13 ft. sideslope berms
- 31) 4:1 downslope 27 ft. downslope berm
- 32) Overall Dimensions:
- | | | | | |
|------|-------------|------|----------|-----------------|
| 10.0 | ft. wide by | 50.0 | ft. long | Rock bed |
| 47 | ft. wide by | 76 | ft. long | Mound footprint |



Note:

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

- 33) Rock Bed:
10.0 ft. by 50.0 ft. by 9 inches under pipe, plus 20% gives 23 yd³ or *1.4= 32 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)
185 31.3 up + 69.3 downslope + 12.8 ends + 40.7 under rock = 240 yd³ or *1.4= 336 ton
plus 20%
- 35) Loamy Cap:
43 ft. by 72 ft. 6" deep, plus 20% gives 69 yd³ or *1.4= 97 ton
- 36) Topsoil:
47 ft. by 76 ft. 6" deep, plus 20% gives 80 yd³ or *1.4= 112 ton

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

Designer Signature	Brent D. Matter	2003	10/25/2020
	Company	License#	Date

Soil Observation Log

Owner Information

Property Owner / project: Gary & Judith Sommerland

Date 10/25/2023

Property Address / PID: 5960 Zehnder Road

Soil Survey Information

☐ refer to attached soil survey

Parent mat'l's: ☒ Till ☐ Outwash ☐ Lacustrine ☐ Alluvium ☐ Organic ☐ Bedrock

landscape position: ☐ Summit ☐ Shoulder ☒ Side slope ☐ Toe slope

soil survey map units: _____ slope 6 % direction- downhill

Soil Log #1

☒ Boring ☐ Pit		Elevation <u>100.4</u>		Depth to SHWT <u>14"</u>			
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0-7	Loam Fill	<35	7.5YR 2.5/2		Friable	Weak	Blocky
7-14	Med Sandy Loam	<35	7.5YR 4/3		Friable	Weak	Granular
14-19	Med Sandy Loam	<35	7.5YR 4/4	S2 Const 2.5YR 3/4	Friable	Weak	Granular
19-26	Med Sandy Loam	<35	7.5YR 3/4	2.5YR 5/2 Depletions	Friable	Weak	Granular
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive

Comments: Borings 1 & 3 locations indicate that the grade was graded then filled with black loam

5960 Zehnder Road

Soil Log #2

☒ Boring		☐ Pit	Elevation		99.9	Depth to SHWT		28"
Depth (in)	Texture	fragment %	matrix color		redox color	consistence	grade	shape
0-8	Med Sandy Loam	<35	7.5YR 2.5/2			Friable	Weak	Blocky
8-12	Med Sandy Loam	<35	7.5YR 4/3			Friable	Weak	Granular
12-28	Med Sandy Loam	<35	7.5YR 4/4			Friable	Weak	Granular
28-36	Med Sandy Loam	<35	7.5YR 3/4 S2	2.5YR 3/4	Constrtns	Friable	Weak	Granular
		<35 35 - 50 >50				loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive

5960 Zehnder Road

Soil Log #3

Depth (in)	☒ Boring	☐ Pit	Elevation	98.8	Depth to SHWT	12"	shape
	Texture	fragment %	matrix color	redox color	consistence	grade	
0-6	Loam Fill	<35	7.5YR 2.5/2		Friable	Weak	Blocky
6-12	Med Sandy Loam	<35	7.5YR 4/3		Friable	Weak	Granular
12-29	Med Sandy Loam	<35	7.5YR 4/4	S2 Const 2.5YR 3/4	Friable	Weak	Granular
		<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

LUG soil verify Signature

Brent D. Matter

Company

Inspection Inc
for
Sunfish Lake

2003

License #

Date

1027-23

5960 Zehnder Road

Soil Log #4

☒ Boring		☐ Pit		Elevation		99		Depth to SHWT		32"	
Depth (in)	Texture	fragment %	matrix color	redox color		consistence		grade		shape	
0-8	Med Sandy Loam	<35	7.5YR 2.5/2			Friable		Weak		Blocky	
8-12	Med Sandy Loam	<35	7.5YR 4/3			Friable		Weak		Granular	
12-32	Silt Loam	<35	10YR 4/2			Friable		Weak		Platy	
32-48	Silt Loam	<35	10YR 7/2	2.5YR 3/4 Constrtns		Firm		Weak		Platy	
		<35 35 - 50 >50				loose friable firm rigid		loose weak moderate strong		single grain granular blocky prismatic platy massive	

5960 Zehnder Road

Soil Log #5

Depth (in)	☐ Boring	☐ Pit	Elevation	Depth to SHWT			
	Texture	fragment %	matrix color	redox color	consistence	grade	shape
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive

I hereby certify this work was completed in accordance with MN 7080 and any local req's.



Designer Signature

Brent D. Matter

Company

2003

License #

INSPECTOR CHECKLIST - mound

☐ 5960 Zehnder Road

☐ WELL setbacks: 20'- 50' to sewer line req's MDH pressure test form (5 psi for 15 min)
50' to everything 100' to drainfield 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 10' to bed, tank & sewer line. (else sewer line > 12" below)

☐ Sewer line & tank connection (no hard 90's, long sweep 90 or 2-45's, slope minimum 1" in 8' = 1%)
(no depth req's, clean out every 100', Sch 40 pipe)

☐ Septic tank and risers (water tight risers, baffles, insulated, proper depth, existing verified by pumping)
mfg _____ 2250 gallons Multiple tanks or compartments req'd

☐ Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.

☐ No effluent filter & alarm

☐ Dose tank, risers and piping (water tight risers, insulated, proper depth, drainback)
mfg _____ 1500 gallons

REQUIRED Time Dosing of:
 3.2 min ON 6.8 hr OFF

☐ dose pump _____ 29 gpm 18 head VERIFY PUMP CURVE

☐ verify that installed "vertical lift from pump to laterals" is no more than design value of 12 feet

☐ float setting drop 3.2 inches at 29.4 gpi "DESIGNED" 2.6 inches approx float tether length
94.0 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 50.0

☐ Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)

☐ Absorption Sand beyond rock 0.0 upslope 23.0 downslope

☐ Bermed topsoil beyond rockbed 10 upslope 13 sideslope 27 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

☐ 7/32 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 _____



Septic System Management Plan for Above Grade Systems

The goal of a septic system is to protect human health and the environment by properly treating wastewater before returning it to the environment. Your septic system is designed to kill harmful organisms and remove pollutants before the water is recycled back into our lakes, streams and groundwater.

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 maintainer or service provider. However, it is YOUR responsibility to make sure all tasks get accomplished in a timely manner.

The University of Minnesota's *Septic System Owner's Guide* contains additional tips and recommendations designed to extend the effective life of your system and save you money over time.

Proper septic system design, installation, operation and maintenance means safe and clean water!

Property Owner **Gary & Judith Sommerland**

Property Address **5960 Zehnder Road**

Property ID **383350002070**

System Designer **Brent D. Matter**

Phone **952-250-1649**

System Installer

Phone

Service Provider/Maintainer

Phone

Permitting Authority **City of Sunfish Lake**

Phone

Permit #

Date Inspected

Keep this Management Plan with your *Septic System Owner's Guide*. The *Septic System Owner's Guide* includes a folder designed to hold maintenance records including pumping, inspection and evaluation reports. Ask your septic professional to also:

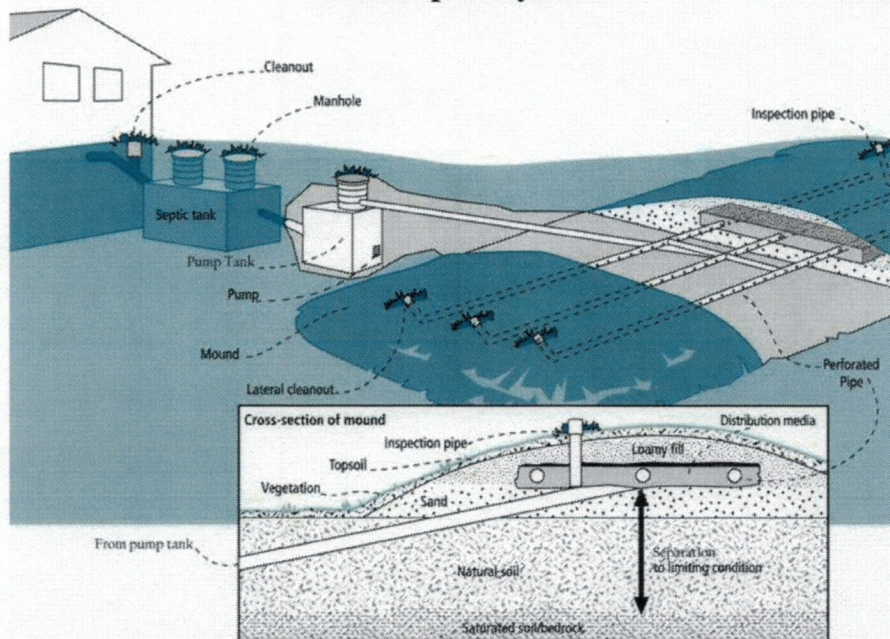
- Attach permit information, designer drawings and as-builts of your system, if they are available.
- Keep copies of all pumping records and other maintenance and repair invoices with this document.
- Review this document with your maintenance professional at each visit; discuss any changes in product use, activities or water-use appliances.

For a copy of the *Septic System Owner's Guide*, call 1-800-876-8636 or go to <http://shop.extension.umn.edu/>

<http://septic.umn.edu>



Your Septic System



Septic System Specifics

System Type: ☐ I ☐ II ☒ III ☐ IV* ☐ V*
(Based on MN Rules Chapter 7080.2200 – 2400)

- ☐ System is subject to operating permit*
☐ System uses UV disinfection unit*
 Type of advanced treatment unit _____
 *Additional Management Plan required

Dwelling Type

Number of bedrooms: 4 using 3 Bdrm Flow Rate
 System capacity/ design flow (gpd): 450
 Anticipated average daily flow (gpd): 315
 Comments Filter Required w/ Maintenance Agreement
 Business? No What type? _____

Well Construction

Well depth (ft): 150' plus
☒ Cased well Casing depth: >50'
☐ Other (specify): _____
 Distance from septic (ft): _____
 Is the well on the design drawing? ☒ Y ☐ N

Septic Tank

- ☐ One tank Tank volume: _____ gallons
 Does tank have two compartments? ☒ Y ☐ N
☒ Two tanks Tank volume: 2250 gallons
☐ Tank is constructed of Concrete
☐ Effluent Screen type: _____
☒ Pump Tank 1500 gallons
☐ Effluent Pump make/model: _____
 Pump capacity 29 GPM
 TDH 18' Feet of head
☐ Alarm location Basement

Soil Treatment Area (STA)

Mound/At-Grade area (width x length): 47 ft x 76 ft
 Rock bed size (width x length): 10 ft x 50 ft
 Location of additional STA: _____
☒ Cleanouts or inspection ports
☒ Surface water diversions
☒ Additional STA not available



Homeowner Management Tasks

These operation and maintenance activities are your responsibility. Use the chart on page 6 to track your activities.

Identify the service intervals recommended by your system designer and your local government. The tank assessment for your system will be the shortest interval of these three intervals. Your pumper/maintainer will determine if your tank needs to be pumped.

System Designer: check every 36 months
Local Government: check every 36 months
State Requirement: check every 36 months

My tank needs to be checked
every 36 months

Seasonally or several times per year

- *Leaks.* Check (listen, look) for leaks in toilets and dripping faucets. Repair leaks promptly.
- *Surfacing sewage.* Regularly check for wet or spongy soil around your soil treatment area. If surfaced sewage or strong odors are not corrected by pumping the tank or fixing broken caps, call your service professional. *Untreated sewage may make humans and animals sick.*
- *Alarms.* Alarms signal when there is a problem; contact your maintainer any time the alarm signals.
- *Lint filter.* If you have a lint filter, check for lint buildup and clean when necessary. Consider adding one after washing machine.
- *Effluent screen.* If you do not have one, consider having one added the next time the tank is cleaned.

Annually

- *Water usage rate.* A water meter can be used to monitor your average daily water use. Compare your water usage rate to the design flow of your system (listed on the next page). Contact your septic professional if your average daily flow over the course of a month exceeds 70% of the design flow for your system.
- *Caps.* Make sure that all caps and lids are intact and in place. Inspect for damaged caps at least every fall. Fix or replace damaged caps before winter to help prevent freezing issues.
- *Water conditioning devices.* See Page 5 for a list of devices. When possible, program the recharge frequency based on *water demand (gallons)* rather than *time (days)*. Recharging too frequently may negatively impact your septic system.
- *Review your water usage rate.* Review the Water Use Appliance chart on Page 5. Discuss any major changes with your pumper/maintainer.

During each visit by a pumper/maintainer

- Ask if your pumper/maintainer is licensed in Minnesota.
- Make sure that your pumper/maintainer services the tank through the manhole. (NOT through a 4" or 6" diameter inspection port.)
- Ask your pumper/maintainer to accomplish the tasks listed on the Professional Tasks on Page 4.



Professional Management Tasks

These are the operation and maintenance activities that a pumper/maintainer performs to help ensure long-term performance of your system. Professionals should refer to the O/M Manual for detailed checklists for tanks, pumps, alarms and other components. Call 800-322-8642 for more details.

- Written record provided to homeowner after each visit.

Plumbing/Source of Wastewater

- Review the Water Use Appliance Chart on Page 5 with homeowner. Discuss any changes in water use and the impact those changes may have on the septic system.
- Review water usage rates (if available) with homeowner.

Septic Tank/Pump Tanks

- *Manhole lid.* A riser is recommended if the lid is not accessible from the ground surface. Insulate the riser cover for frost protection.
- *Liquid level.* Check to make sure the tank is not leaking. The liquid level should be level with the bottom of the outlet pipe. (If the water level is below the bottom of the outlet pipe, the tank may not be watertight. If the water level is higher than the bottom of the outlet pipe of the tank, the effluent screen may need cleaning, or there may be ponding in the drainfield.)
- *Inspection pipes.* Replace damaged caps.
- *Baffles.* Check to make sure they are in place and attached, and that inlet/outlet baffles are clear of buildup or obstructions.
- *Effluent screen.* Check to make sure it is in place; clean per manufacturer recommendation. Recommend retrofitted installation if one is not present.
- *Alarm.* Verify that the alarm works.
- *Scum and sludge.* Measure scum and sludge in each compartment of each septic and pump tank, pump if needed.

Pump

- *Pump and controls.* Check to make sure the pump and controls are operating correctly.
- *Pump vault.* Check to make sure it is in place; clean per manufacturer recommendations.
- *Alarm.* Verify that the alarm works.
- *Drainback.* Check to make sure it is operating properly.
- *Event counter or run time.* Check to see if there is an event counter or run time log for the pump. If there is one, calculate the water usage rate and compare to the anticipated average daily flow listed on Page 2.

Soil Treatment Area

- *Inspection pipes.* Check to make sure they are properly capped. Replace caps that are damaged.
- *Surfacing of effluent.* Check for surfaced effluent or other signs of problems.
- *Lateral flushing.* Check lateral distribution; if cleanouts exist, flush and clean as needed.
- *Ponding.* Check for ponding. Excessive ponding in at-grade and mound beds indicates problems.

All other components – inspect as listed here:



Water-Use Appliances and Equipment in the Home

Appliance	Impacts on System	Management Tips
Garbage disposal	• Uses additional water. • Adds solids to the tank. • Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area.	• Use of a garbage disposal is not recommended. • Minimize garbage disposal use. Compost instead. • To prevent solids from exiting the tank, have your tank pumped more frequently. • Add an effluent screen to your tank.
Washing machine	• Washing several loads on one day uses a lot of water and may overload your system. • Overloading your system may prevent solids from settling out in the tank. Unsettled solids can exit the tank and enter the soil treatment area.	• Choose a front-loader or water-saving top-loader, these units use less water than older models. • Limit the addition of extra solids to your tank by using a liquid or easily biodegradable detergents. • Install a lint filter after the washer and an effluent screen on your tank. • Wash only full loads. • Limit use of bleach-based detergents. • Think even – spread your laundry loads throughout the week.
2 nd floor laundry	• The rapid speed of water entering the tank may reduce performance.	• Install an effluent screen in the septic tank to prevent the release of excessive solids to the soil treatment area. • Be sure that you have adequate tank capacity.
Dishwasher	• Powdered and/or high-phosphorus detergents can negatively impact the performance of your tank and soil treatment area. • New models promote “no scraping”. They have a garbage disposal inside.	• Use gel detergents. Powdered detergents may add solids to the tank. • Use detergents that are low or no-phosphorus. • Wash only full loads. • Scrape your dishes anyways to keep undigested solids out of your septic system.
Grinder pump (in home)	• Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area.	• Expand septic tank capacity by a factor of 1.5. • Include pump monitoring in your maintenance schedule to ensure that it is working properly. • Add an effluent screen.
Large bathtub (whirlpool)	• Large volume of water may overload your system. • Heavy use of bath oils and soaps can impact biological activity in your tank and soil treatment area.	• Avoid using other water-use appliances at the same time. For example, don’t wash clothes and take a bath at the same time. • Use oils, soaps, and cleaners in the bath or shower sparingly.
Clean Water Uses	Impacts on System	Management Tips
High-efficiency furnace	• Drip may result in frozen pipes during cold weather.	• Re-route water into a sump pump or directly out of the house. Do not route furnace recharge to your septic system.
Water softener Iron filter Reverse osmosis	• Salt in recharge water may affect system performance. • Recharge water may hydraulically overload the system.	• These sources produce water that is not sewage and should not go into your septic system. • Reroute water from these sources to another outlet, such as a dry well, draitile or old drainfield.
Surface drainage Footing drains	• Water from these sources will likely overload the system.	• When replacing consider using a demand-based recharge vs. a time-based recharge. • Check valves to ensure proper operation; have unit serviced per manufacturer directions



Maintenance Log

Track maintenance activities here for easy reference. See list of management tasks on pages 3 and 4.

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										
Check annually:										
Water usage rate (monitor frequency____)										
Caps: inspect, replace if needed										
Water use appliances – review use										
Other:										

Notes: _____

Mitigation/corrective action plan: _____

"As the owner of this SSTS, 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 this 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 _____

Management Plan Prepared By: **Brent D. Matter**

Certification # **2003**

Permitting Authority: **City of Sunfish Lake**

Owners Septic System Management Plan

Date: 10/25/2020

Property Address: 5960 Zehnder Road

Septic Systems can be an expensive investment, good maintenance will ensure they last a lifetime. The purpose of a septic system is to properly "decompose" the pollutants before the water is recycled back into the groundwater. If you're not taking this seriously, ask yourself where your well water comes from.

Your septic design lists all the components of your system and their location. Keep the design, this management plan and the UofM "Septic System Owners Guide" in a safe place for future reference. For a copy of the Owners guide call the University of MN at 1-800-876-8636.

Some of the following tasks you can do yourself, some require a professional, but is it YOUR responsibility to see that it gets done.

Homeowner Tasks

- Do your best to conserve water. Don't overload your septic with multiple large water uses at the same time or on the same day.
- Fix household leaks promptly (leaky toilet, dripping faucets).
- Limit bleach and anti-bacterial products. Use Biodegradable dishwasher detergent.
- Consider a lint filter on your clothes washer.
- Regularly check for wet or spongy soil around your drainfield.
- Have a septic professional check your tanks every 3 years to determine if they need pumping.
- If you have a septic tank filter (effluent filter) clean it on a regular basis (or have a professional do it).
- If a septic alarm goes off, call your septic professional to diagnose the problem.
- Notify the County/City/Township when this management plan is not being met.
- Be aware of and protect your secondary drainfield site.

Professional Tasks

- Disclose the location of the secondary drainfield (if applicable).
- Respond to alarms and diagnose problems as needed.
- Review water use with the owner, check for a "soggy" drainfield.
- Pump the septic tanks as needed and ensure they are in proper working order.
- Verify the pump, dose amount, HI Level Alarm & drainback are all working properly.

"As the owner, I understand it is my responsibility to properly operate and maintain this septic system".

Property Owner Signature: _____ **Date** _____