

Lakeland Shores City Council Meeting  
October 5, 2017, 6:30 p.m.  
Lakeland City Hall



*a special place to be!*

- 1) Regular Council Meeting
  - Call to Order
  - Roll Call
  - Pledge of Allegiance
  - Adopt Agenda
  
- 2) Consent Agenda (Items may be pulled for discussion and/or separate action)
  - A) Approve September 6, 2017 City Council Meeting Minutes
  - B) Approve Monthly Claims and Financial Reports
  
- 3) Public Comments
  - A) Mr. Bob Lind
  
- 4) Unfinished and New Business
  - A) PUBLIC HEARING, Consideration of Resolution No. 2017-10-01, Variance Request, 125 Lakeland Shores Road
  
- 5) Council and Staff Reports
  - A) Roads Commissioner Report
  - B) Treasurer Report
  - C) City Clerk/Zoning Administrator Report
  - D) Mayor and Council Reports
  
- 6) Agency Reports
  - A) Washington County Sheriff Report
  - B) Fire Department Report
  
- 7) Adjourn

# Lakeland Shores City Council Meeting Minutes | 2017 September 6

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Regular City Council Meeting  
Lakeland City Hall

**Lakeland Shores City Council Meeting Call to Order:** Mayor Brian Zeller opened the September 5, 2017 City Council meeting at 6:00 p.m.

**Roll Call:**

**Council Present:** Mayor Brian Zeller, Council Member Tim Schroeder, and Council Member Randy Kopesky

**Council Absent:** Council Member Tom Wilson and Council Member John Bischoff

**Staff Present:** City Treasurer Tom Niedzwiecki, Interim City Clerk

The Pledge of Allegiance was said.

**Review and Approve Meeting Agenda:** Council Member Kopesky made a motion to adopt the agenda; Mayor Zeller seconded. All ayes, 3-0. Agenda Adopted.

**Review and Approve Consent Agenda** (Items may be pulled for discussion or separate action):

- A) Approve August 3, 2017 City Council Meeting Minutes
- B) Approve Monthly Claims and Financial Report
- C) Waiver of Liability

**Mayor Zeller made a motion to approve Consent Agenda as presented; Council Member Schroeder seconded; All ayes, 3-0. Consent Agenda approved.**

**Public Comments:**

There were no public comments.

**Unfinished and New Business:**

**Consideration of Revised Lease Agreement with City of Lake St. Croix Beach -** The City of Lake St. Croix Beach reviewed the draft lease agreement and approved with the removal of paragraph 11 relating to disputes.

**Mayor Zeller made a motion to approve revised Lease Agreement with City of Lake St. Croix Beach as presented; Council Member Schroeder seconded; All ayes, 3-0. Revised Lease Agreement approved.**

**Consideration of Financial Contribution for Flashing LED Sign System –** A request from the City of Lakeland was provided in the packet regarding a financial contribution for a new flashing LED sign system at the school. Mayor Zeller advised more information is needed regarding the request.

**Mayor Zeller made a motion to table the request to a future Council meeting. Council Member Schroeder seconded: All ayes, 3-0.**

**Consideration of Resolution No. 2017-09-01, Preliminary 2018 Budget and Levy –** City Treasurer Niedzwiecki advised the preliminary budget does reflect the change in clerk compensation as determined in the budget work session. The preliminary budget can be decreased in the final budget but cannot be increased.

**Council Member Kopesky made a motion to adopt Resolution No. 2017-09-01, as presented. Mayor Zeller seconded: A roll call vote was taken, All ayes 3-0. Resolution approved.**

**Council and Staff Reports:**

**Roads Commissioner Report –** There was no roads report.

**City Treasurer Report –** City Treasurer Niedzwiecki reviewed the August financial reports noting it is projected that the City will come in approximately \$13,000 under budget. The savings are a result of licenses and permit, Mayor/Council wages and administration fees.

**City Clerk/Zoning Administrator Report -** Interim City Clerk provided an update on building permits, elections and the records retention schedule.

**Mayor and Council Reports:**

**Mayor Zeller -** Mayor Zeller advised a variance application has been submitted and will be reviewed at the October meeting

**Council Member Kopesky:** Council Member Kopesky commented on the Yellow Ribbon Alliance meeting, new board members and flags being installed at the park. The committee has been taking donations for the Veteran's Memorial and is still looking for donations. There is a dinner in November and a boat has been donated for sale that includes a boat slip for a year.

**Council Member Schroeder:** Council Member Schroeder has no report but noted the recycling committee has determined billing will go through the City of Lakeland and there may be a fee for that.

**Agency Reports**

**Washington County Sheriff's Report:** The monthly reports were provided to the Council.

**Fire Department Report:** There was no Fire Department report.

**Engineering Report:** There was no Engineering report.

**Adjourn:** Mayor Zeller made a motion to adjourn the meeting; Council Member Schroeder seconded the motion; All ayes; 3-0; Motion carried. Mayor Zeller adjourned the meeting at 6:26 p.m.

City Council of Lakeland Shores

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Brian Zeller, Mayor

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Interim City Clerk

ATTN

# Item 3A

**From:** Bob Lind <[bob@mnpartybus.com](mailto:bob@mnpartybus.com)>  
**Date:** September 26, 2017 at 2:07:05 PM CDT  
**To:** Kim Points <[lakelandshores@gmail.com](mailto:lakelandshores@gmail.com)>  
**Subject:** Re: Commercial lot

Yep. Sorry. It will be used for limo bus company and construction company. Thx, Bob

On Sep 26, 2017, at 8:22 AM, Kim Points <[lakelandshores@gmail.com](mailto:lakelandshores@gmail.com)> wrote:

Can you address the proposed use as well?

On September 26, 2017, at 8:08 AM, Bob Lind <[bob@mnpartybus.com](mailto:bob@mnpartybus.com)> wrote:

Hi Kim, this is the lot I am looking to buy. I would like to put up a concrete Bldg approx 70'x100' minimum. I would like to request a 15' set back to the lot on the south. So the back of the building would be facing south. Also questioning sewer and water. Is there any future plans to run city sewer and water? Can I stub out a 4" pipe for sewer and a 1" pipe for water and not do well and septic. We really have no need for water there and can rent a satellite toilet? Let me know if you have any more questions for me. What is the address for the meeting on Oct 5th and what time would you like me to be there? Thx, Bob 612/308-1698



**City of Lakeland Shores**  
P.O. Box 246 Lakeland Shores, Minnesota 55043

Tel. (651) 436-1789

Fax (651) 436-6964

**Application for a Variance Amendment**

1. Name and address of applicant Telephone No.

<u>Cates Fine Homes</u>	Home: <u>N/A</u>
<u>2000 Industrial Blvd</u>	Office: <u>651-439-2844</u>
<u>Stillwater MN 55082</u>	Fax: <u>651-430-2922</u>
<u>Jennifer Cates Peterson</u>	Cellular: <u>651-983-9734</u>

2. Legal description of property including street address:

50 ft. tract former RR R/W  
subdivision name County Auditor's Plat  
No. 10 Lot 8 subdivision CD 42065

3. Name(s) and address of owners and other parties with a legal interest in the property.

Tom Scanlan 125 Lakeland Shores Rd. N.

4. A certified list of names and addresses of the record owners of all property within 500 feet. Provide list on address labels.

5. Attach up to date survey and site plan 1"=.20' scale, showing:

- a. parcel dimensions
- b. location, dimensions, and square footage of all existing structures and proposed building(s), including heights, setbacks, floor plans and elevations
- c. curb cuts, driveways, access roads, parking spaces, off-street loading areas, and sidewalks,
- d. elevations and bluff line(s)

6. Landscape plan to be provided with building permit application or as required.

7. Septic plan for onsite disposal. Must be approved by Washington County Department of Health.

8. The variance(s) requested and the reasons for the request.

9. Enclose the application fee (non-refundable) in the amount of \$100. In addition to the non-refundable fee, the undersigned applicant agrees to deposit an amount of \$500 to cover review costs incurred by the City, and to reimburse the City for any costs which may exceed the deposit.

The City Council holds regular meetings on the first Thursday of the month at 6:30 p.m. at the Lakeland City Hall, 690 Quinnell Avenue North, Lakeland, Minnesota. To be scheduled or placed on the agenda, please call the City Clerk at 651-436-1789 at least seven days before the meeting.

Dated: 8/15/17

Applicant(s) Juan Francisco Altamirano

Zoning Administrator Review

Application accepted as: \_\_\_\_\_ complete  
\_\_\_\_\_ incomplete

If incomplete, information required to complete: \_\_\_\_\_

1. Application fee \$ 100.00  
2. Cost deposit \$ \_\_\_\_\_  
3. Other \$ 500.00  
Total enclosed \$ 600.00

\_\_\_\_\_  
Zoning Administrator  
8/18/17  
Date received

\_\_\_\_\_  
City Clerk  
8/18/17  
Date received

Variations shall only be granted where there are particular hardships which make the strict enforcement of the Ordinance impractical. Hardship means the proposed use of the property and associated structures in question cannot be established under the conditions allowed by the Ordinance; the plight of the landowner is due to circumstances unique to his property, not created by the landowner; and the variance, if granted, will not alter the essential character of the locality. Economic considerations alone shall not constitute a hardship for the reasonable use of the property and associated structures under the conditions allowed by the ordinance. In addition, no variance shall be granted that would permit any use that is prohibited by the ordinance in which the subject property is located. Conditions may be imposed in the granting of a variance to insure compliance and to protect adjacent properties and the public interest. Please provide 10 copies of all information requested (one set of labels).



To: Lakeland Shores City Council

From: Tom Scanlan, homeowner  
Jennifer Cates Peterson, Cates Fine Homes  
Michael Huber, Huber Architects

Date: August 9, 2017

Re: 125 Lakeland Shores Road, Lakeland Shore, MN

We are submitting an application for the following due to the home being nonconforming:

1. Remodel and addition to existing home.
2. Raise boat house out of flood plain
3. Install path from current home to current boat house
4. Future garage

#### EXISTING HOME

The plans and documents submitted show the following:

1. Height of home to go to 34' at tallest point, measured from grade at front entry. Homes existing height is currently 22'
2. Two stall existing attached garage to be removed and a three stall attached garage rebuilt in same location. Garage addition compiles with the 15' side property line setback.
3. A future master bedroom suite to be built on southeast side of existing building. Addition is set back 8' from the existing home, which makes the structure further from bluff line. This addition meets side south property line set back requirement.
4. Pitch of roof will be changed from 6/12 to a 12/12, this will help for better run off into gutter system and help with load control.
5. The existing foundation will remain as is. Front entry will be modified with frost footing work. Existing exterior walls will remain in the same location to be remodeled for new window locations.

#### BOAT HOUSE

We are also submitting for approval raising the existing "boat house" three courses of block (24") in order to raise the existing 1<sup>st</sup> floor out of the flood plain. This "boat house" was once the main structure on this property and has a rest room and kitchen. See survey for the current elevation and the proposed elevation.

#### PATH TO RIVER

Pathway located at 125 Lakeland Shores Drive, Lakeland Shores MN is located on the east side of the lot winding down the river bank in a manner not affecting the existing trees. It is composed of mainly organic materials to blend in with existing vegetation. The pathway will be made with Glacier field stone boulders for retain-age, geo-grid for soil stabilization. Fiber mat cloth will also wrap the pathway and boulders to help with the erosion. Too further stabilize the hillside along the path there will be Gro-Low Sumac and Dwarf Bush Honeysuckle planted 5' on center. Both species are native and spread by rhizome roots structure to also help anchor everything down and create a natural appearance to the path. The materials for the actual path will be 3/4" decorative gravel.

#### FUTURE GARAGE

Please notice the survey shows a future detached garage. This garage will meet setback requirements. It has also been factored into the Stormwater Management Plan calculations.

#### PLEASE NOTE:

We have submitted an Erosion Control/Stormwater Management Plan, Construction Details, Planting Plan and a Hydro CAD model performed by Elan Design Lab and a Grading plan and Survey performed by Cornerstone Land Surveying to City of Lakeland Shores as well as the Middle St Croix Watershed Management Organization.

# STAFF REPORT

## October 5, 2017 City Council Meeting

**TO:** Mayor & City Council Members

**Date:** September 1, 2017

**RE:** Variance for structural setback from a Bluff Line

### Background

The Applicant, Cates Fine Homes, on behalf of the Owner Tom Scanlan, has requested a variance for setback related a bluffline on the property located at 125 Lakeland Shores Road N. The legal description of the property is identified on Attachment A. The application includes a remodel and addition to the existing home, raising of the boat house removing it from the flood plain, and plans for a future garage. The plans submitted say the path is to be designed by others. Not enough information has been provided for review of the path and therefore the path should not be approved as part of this request. The structure is a non-conforming structure in terms of the current setbacks therefore requiring a variance. The following staff report summarizes the requested variance.

A duly noticed public hearing was published for October 5, 2017 at 6:30 PM, and individual property owners were notified within ¼-mile (1,320-feet) of the proposed project location.

### Project Summary

Applicant: Cates Fine Homes Owner: Tom Scanlan	Site Size: 2.79 Acres Location: 125 Lakeland Shores Road N Zoning & Land Use: Zone A Residential
Request: Variance from structural bluff line (riverway) setback for remodel and addition	

As referenced above, the Applicant is requesting the variance:

- Structural Setback from bluff line requirement of 50 feet

The following summary of the requested variance and proposed project is as follows:

- The Applicant is proposing to construct and remodel the home to include a new height to go to 34' at the tallest point, measured from grade at the front entry. The current height of the home is 22'. The proposed height of 34' does meet the current structural height restriction.
- The existing two stall attached garage will be removed and a three stall attached garage rebuilt in the same location. The new garage addition does comply with the current 15' side yard property line setback.

- The remodel includes a future master bedroom suite to be built on the southeast side of the existing building. The proposed addition is set back 8' from the existing home which would make the proposed structure further from the bluff line but no 50 feet back as required. The proposed addition does meet the side south property line set back requirement of 15'.
- The proposed plan calls for the pitch of the roof to be changed from 6/12 to a 12/12 slope for anticipated better run off to the gutter system and benefit load control of run off.
- The proposed plan does indicate the existing foundation will remain as is. The front entry will be modified with frost footing work. The existing exterior walls will remain the same location to be remodeled for new window locations

### **Review Criteria**

According to the City Code, Chapter 151.066, Sect. C, establishes the criteria for granting and review of variance requests. The variance application review requires the Applicant to prepare a statement of reasons why the request is made describing the hardship and the plans shall contain sufficient information for the Board to determine whether the proposed variance will meet all applicable development standards if the variance is granted. Chapter 152.009, Sect. I states the "City may grant a variance in any particular case where the subdivider can show that by reason of the exceptional topography or other physical conditions, the strict compliance to these regulations could cause an exceptional and undue hardship on the enjoyment of a substantial property right. Such relief may be granted provided there is no detriment to the public welfare and no impairment of intended purpose of this regulation."

Additionally, Chapter 153.018, Sect. E of the City Code outlines specific language relating to the granting of a variance: "Variances shall only be granted where there are particular hardships which make the strict enforcement of this ordinance impractical. Hardship means the proposed use of the property and associated structures in question cannot be established under the conditions allowed by this Chapter; the plight of the landowner is due to circumstances unique to his property, not created by the landowners after May 1, 1974; and the variance, if granted will not alter the essential character of the locality. Economic considerations alone shall not constitute a hardship for the reasonable use of the property and associated structures under the conditions allowed by the Chapter. In addition, no variance shall be granted that would permit any use that is prohibited in this Chapter in which the subject property is located. Conditions may be imposed in the granting of a variance to insure compliance and to protect adjacent properties and the public interest, especially in regard to the view from the river."

### **Existing Site Conditions**

The subject property is located in and is described as Plat No. 10 Lot 8. The parcel is approximately 2.79 acres and is rectangular in shape. The lot has its primary frontage on Lakeland Shores Road North. The home was constructed in 1959 as a one story rambler.

**Variance Requests - Zoning Standards**

The ordinance setbacks are established in Chapter 153.008 of the City’s Code, which breaks down the applicable standards for Minimum Dimensional Requirements. The following analysis is provided for your review and consideration:

Standard	Current	Proposed	Variance	Description
Height of Structure	22’	34”	N/A	The proposed new height of structure meets the current requirement
Removal of 2-stall garage and 3-stall garage rebuilt	?????	?????	N/A	The addition of a 3-car garage complies with the 15’ side property setback requirement.
Future Master bedroom suite on southeast side of existing building	N/A	29.7’	N/A	The future Master Bedroom suite to be built on the southeast side of the existing building will be set back an additional 8’. The addition is located 29.7’ from the bluffline.
Roof Pitch to be changed	6/12 Pitch	12/12 Pitch	N/A	The pitch of the roof to be changed to allow for better run off into the gutter system and benefit load control. Meets current standards.
Foundation, Footings and exterior walls	????	Same	N/A	The existing foundation will remain as is. The front entry will be modified with frost footing work. Existing exterior walls will remain in the same location to be remodeled for new window locations.
Raising of Boat House	???	+ 3 courses of block	N/A	The current Boat House will be raised three courses of block (24”0 to raise the existing 1 <sup>st</sup> floor out of the flood plain.
General Addition and Remodel Setbacks	????	22 feet	28 feet of variance	The remodel and addition requires a variance from the back lot line setback to meet current standards of 50’

The Applicant’s narrative describes the reason that the variances area needed: (They did not describe

**Engineering Standards**

The Engineer’s comments are attached for your review and consideration. Conditions relating to approval are included in this report.

**Other Agency Review**

The site is located in the Middle St. Croix Watershed Management Organization and all necessary approvals and permits should be obtained from them prior to construction. Washington County Environmental Services has issued a Certificate of Compliance and does certify the subsurface sewage treatment system installed has been inspected and found to be in compliance. The plan has been submitted to the Department of Natural Resources and no comments have been received.

**Summary - Draft Findings and Conditions**

As described in previous sections and contained in the Applicant’s narrative, the reasoning for the variances is primarily attributed to the fact that the home was constructed prior to the current setback areas.

The following draft findings related to the hardship (practical difficulty) are provided for your review and consideration:

- The home was built in the location prior to the current river setback requirements.
- The boathouse is an existing nonconforming structure built prior to the current setback requirements.
- .

Staff would recommend approval of the variances within the following conditions:

- The current foundation and existing exterior walls will remain as is.
- The variance shall be recorded at the Washington County recorder.
- All fees and escrow dollars due to the City are up to date.
- The applicant submit additional design information relating to the path improvements as a separate grading permit and, if the work requires it, also submit a Conditional Use Permit application.

**Action requested:**

Staff has prepared the attached draft resolution of approval for your review and consideration.

*Attachments*

- Variance Application
- Applicant’s Narrative
- Survey

WCES Certificate of Compliance  
Application to Middle St. Croix Watershed Management Organization  
City Engineer Review

## Attachment A

### LEGAL DESCRIPTION:

#### PARCEL 1

All that part of Lakeland City, (now vacated) described as follows, to-wit: Bounded on the North by a line drawn parallel with and 50 feet North of the North line of Section 2, Township 28, Range 20 West; on the South by a line drawn parallel to and 1600 feet North of the center line of Court Street, as shown by said Plat; on the West by the Easterly line of the existing right of way of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company, and on the East by the Westerly shoreline of St. Croix River. Also hereby granting to the said party of the second part for passage to and from the land above described and hereby conveyed for vehicles, invited guests, animals and on foot, over a strip of land 20 feet in width, lying immediately East of and adjoining said right of way of the said Chicago, Milwaukee, St. Paul and Pacific Railroad Company, described as follows, to-wit: Beginning in the center of Court Street as shown on said Plat, where the same intersects the Easterly line of the right of way of the said Chicago, Milwaukee, St. Paul and Pacific Railroad Company; thence following the Easterly line of said right of way to the land above described and hereby conveyed the Westerly 20 feet of the premises above described and hereby conveyed are subject to Easements for ingress and egress for the same purposes and uses as described in the foregoing easement.

Otherwise designated as Lot 8, County Auditors Plat #10. Said Survey and Plat dated March 6, 1945, recorded July 6, 1945 in Plat Book "D", page 97.

AND

#### PARCEL 2

All that tract of land, 50 feet in width, more or less, on the Easterly side of the center line of the Chicago, Milwaukee, St. Paul, and Pacific Railroad Company right-of-way, located in Washington County, Minnesota, which tract of land contains approximately 8,600 square feet and can be described as follows: Commencing at a point on the center line of said right-of-way, which point is distant 1,298 feet South, more or less, from the center line of Putnam Street, Lakeland City, as measured along the center line of said right-of-way, thence proceeding Southerly along the center line of said right-of-way a distance of 172 feet and there terminating. The above described tract of land abuts or crosses that certain tract of land, the legal description of which is attached hereto as Exhibit A and incorporated herein by reference.



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for All of Us®

## MEMORANDUM

TO: Kim Points, Clerk, City of Lakeland Shores, Minnesota  
FROM: John D. Parotti, PE | City Engineer  
DATE: September 15, 2017  
RE: 125 Lakeland Shores Road - Scanlan, City Engineer Review  
SEH No. LAKSH 138249 14.00

The City Engineer is in receipt of the following documents which have been provided for review:

- Certificate of Survey prepared by Cornerstone Land Surveying, Inc. with revision date of August 11, 2017
- Grading & Erosion Control Management Plan prepared by Elan Design Lab with revision date of September 8, 2017
- Stormwater Management Plan prepared by Elan Design Lab with revision date of September 8, 2017
- Stormwater Pollution Prevention Plan (SWPPP) prepared by Elan Design Lab with revision date of September 8, 2017

### REVIEW COMMENTS

Based on an engineering review of the above documents, the following comments are provided for consideration:

1. This property is located in the City's Shoreland Management Area (Zone A - River A). As a result, the City's Shoreland Management Area Ordinance (Ch. 153) applies.
2. This property is also partially located in the St. Croix River floodplain. Therefore, the City's Floodplain Ordinance (Ch. 154) applies.
3. Chapter 153.008.C.6 requires a grading permit for any grading, filling, excavating or changing the topography landward of the high water mark. 153.088.C.6 provides an exception to the requirement for grading permit for those projects where grading is limited to the *"minimum area necessary for a structure, sewage disposal system, and private road and parking area undertaken pursuant to a validly issued building permit."*
  - a. It is the Engineer's opinion that this project meets the above exception for grading landward of the bluffline and therefore, a grading permit is not required for this work.
  - b. Proposed work on the bluff (gravel path to be designed by others) will require a grading permit. See subsequent comments for more detail.
4. The letter dated August 9, 2017 from Tom Scanlan, Jennifer Cates Peterson and Michael Huber (on Cates Fine Homes letterhead) states that a path will be installed from the current home to the current boathouse. While the plans show a location for a trail, there is a note on the Stormwater Management Plan which states *"6' Wide Gravel Path to Be Designed By Others"*. As a result, the gravel path is not considered part of this application and therefore must be submitted separately for review and approval.

**Note: At a minimum, a Grading Permit is required for the construction of the path as required by Ch. 153.008.C.6.**

Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 156 High Street, Suite 300, New Richmond, WI 54017-1128  
SEH is 100% employee-owned | [sehinc.com](http://sehinc.com) | 715.246.9906 | 888.881.4281 | 888.908.8166 fax

5. **The St. Croix River elevations should be labeled on the plans as follows: 100-yr Floodplain (1% chance occurrence) = 692.0.** Ordinary High Water Level (OHWL) = 680.0 is noted correctly on the survey.
6. The principal structure appears to be approximately 139 feet from the OHWL of 680. The minimum setback from OHWL is 100 feet. The principal structure meets this requirement.
7. The boathouse is located approximately 25 feet from the OHWL of 680. The minimum setback from OHWL is 100 feet. The boathouse does not meet this requirement. However, since this is an existing, nonconforming structure, it is the City Engineer's understanding that this does not require a variance to remain.
8. The applicant proposes to "raise the boathouse out of the floodplain". However, according to the survey, the existing floor elevation of the boathouse is 693.0 which complies with the City's requirement to have the first floor elevation 1' above the 100-yr flood elevation of 692.0.
9. The raising of the boathouse results in a crawl space below the 100-yr flood elevation of 692.0. If the value of the proposed improvements to the boathouse exceeds 50% of the existing value of the structure, it must be floodproofed in accordance with FEMA Technical Bulletin 10-01. If alternative methods of floodproofing are used (i.e. flood vents), a Conditional Use Permit is required.
10. Impervious surface calculations are provided on the Certificate of Survey. These calculations can be summarized as follows:

Existing Impervious Surface = 11.1% (to shoreline)  
Proposed Impervious Surface = 15.1% (to shoreline)

Both the existing and proposed calculated impervious surface are below the maximum allowed by City Ordinance of 20%.
11. The property slopes generally from west to east. The average grade west of the home is 1% +/- . On the east side of the home the grade is approximately 7% and the bluff slope reaches slopes as steep as 60% +/- (1v:1.7h).
12. The project proposes to construct an infiltration basin on the west side of the principal structure and south side of the driveway.
13. Runoff from the south and west sides of the roof of the principal structure will be directed to the proposed infiltration basin.
14. It is recommended that a shallow depression be constructed along the north side of the principal structure with a berm at the bluff line to retain and infiltrate runoff from the north side of the roof. This will reduce the potential for erosion on the bluff at this location.
15. Drainage calculations have been received. However, the Middle St. Croix Watershed Management Organization (WMO) is currently reviewing these calculations and, since the WMO standards and the standards contained in the City's Ordinance are very similar, the City Engineer will not review this information in detail unless specifically asked to do so by the City Council or by the WMO.
16. The proposed project would demolish the existing home (except for the foundation) and construct a new home on the existing foundation. The project also includes construction of a master suite addition on the south side of the home and a larger garage (expanded away from the river).
17. The new home will be placed in same general location as the existing home. The south, east and north walls of the proposed building follow the existing building footprint. It should be noted that the existing (and proposed) home is located 22 feet from the bluff line at the closest point.
18. Portions of the existing home are located within the 50-foot bluffline setback. The proposed home will be constructed in this location within the setback. The proposed building location does not comply with the

City's bluffline setback of 50 feet. The southeast corner of the house is approximately 22 feet from the bluffline and the northern most corner of the existing deck to remain is 34.4' feet from the bluffline.

Note: There are slopes on the property which meet the City's definition of a bluffline that appear to be the result of constructing a walkout structure on the property. If these slopes are considered to be bluffs, the resulting bluffline setback is 0'

19. The proposed master bedroom suite is located 29.7 from the bluffline which is within the bluffline setback.
20. The Erosion Control / Stormwater Management Plan contains detailed direction to the contractor with respect to grading activities and related staging and erosion control. These directives must be adhered to by the contractor until the project is complete and the entire site is fully stabilized with the approved landscaping and vegetation.
21. The survey shows a "proposed future water service" located along the south side of the driveway.  
**Note: Contact the Lakeland Water Utility at (651) 436-8444 for new water service connection.**
22. The plans indicate a septic system is, or will be located in the center island of the driveway and west of the circle drive, south of the driveway. A copy of a septic system permit dated March 27, 2017 from and a Certification of Compliance dated May 23, 2017 from Washington County has been received.

Other agencies with jurisdiction over this project have also been asked to review the application materials and provide comment. If any of the comments provided herein conflict with comments provided by those agencies, it is recommended that the City apply the more conservative. It is recommended that the above be considered by the City and, if approval is given, made conditions of approval. If revisions are made to these plans for any reason, the revised plans must be resubmitted to the City for review.

**CITY OF LAKELAND SHORES, MINNESOTA  
RESOLUTION NO. 2017-10-01**

**RESOLUTION APPROVING A VARIANCE FROM BLUFFLINE SETBACK AT 125  
LAKELAND SHORES ROAD, LAKELAND SHORES, MN**

**WHEREAS**, the City of Lakeland Shores is a municipal corporation organized and existing under the laws of the State of Minnesota; and

**WHEREAS**, the City of lakeland Shores had adopted zoning, subdivision, and building regulations as part of the Lakeland Shores Code of Ordinances, to promote the orderly, economic, and safe development and utilization of land within the City; and

**WHEREAS**, Cates Fine Homes (“Applicant”) on behalf of Tom Scanlan (“Owner”) has submitted an application for a variance from the required 50 foot bluffline setback to allow for construction and property improvements; and

**WHEREAS**, the real property affected by said application is located at 125 Lakeland Shores Road North in the City of Lakeland Shores, Minnesota with a legal description as identified in **Exhibit A**; and is

**NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF LAKELAND SHORES, WASHINGTON COUNTY, MINNESOTA**, that it does hereby approve the request of the Applicants, based upon the following findings pursuant to of the City’s Zoning Ordinance which provides that a Variance may be granted if a hardship is demonstrated. The City Council’s Findings relating to the standards are as follows:

- The home was built in the location prior to the current river bluffline setback requirements
- The boathouse is an existing nonconforming structure built prior to the current setback requirements.

**FURTHER BE IT RESOLVED**, that the following conditions of approval of the Variances shall be met:

- The current foundation and existing exterior walls will remain as is.

- The variance shall be recorded at the Washington County recorder.
- All fees and escrow dollars due to the City are up to date.
- The applicant shall submit additional design information relating to the path improvements as a separate grading permit and, if the work requires it, also submit a Conditional Use Permit application.

Adopted by the Lakeland Shores City Council this 5th day of October, 2017.

\_\_\_\_\_  
 Brian Zeller, Mayor

State of Minnesota            )  
                                           ) ss.  
 County of Washington        )

I, the undersigned, being the duly qualified and appointed Interim Clerk of the City of Lakeland Shores, Minnesota do hereby certify that I have carefully compared the foregoing resolution adopted at a meeting of the Lakeland Shores City Council on October 5, 2017 with the original thereof on file in my office and the same is a full, true and complete transcript thereof.

Witness my hand as such City Clerk and the corporate seal of the City of Lakeland Shores, Washington County, Minnesota this 5th day of October, 2016.

\_\_\_\_\_  
 Interim Clerk  
 City of Lakeland Shores



# CERTIFICATE OF COMPLIANCE

### SITE/OWNER INFORMATION

<b>Site Address:</b> 125 Lakeland Shores Rd N, City Of Lakeland Shores	<b>Property ID#:</b> 0202820110009
<b>Property Owner:</b> Scanlan Thomas	
<b>Mailing Address:</b> 125 Lakeland Shores Rd N	<b>Mail City/State/ZIP:</b> Lakeland Mn 55043

### SSTS CONTRACTOR INFORMATION

<b>Installation Business:</b> Bill Wolfe Excavating	<b>MPCA License #:</b>
<b>Certified Individual on Job:</b>	<b>Date of Installation:</b> 05/23/2017

### INSPECTION INFORMATION

<b>County Inspector:</b> Christopher W. LeClair REHS	<b>MPCA Registration No.</b> C6836 <b>County Permit No.</b>
<b>Dates of Inspections:</b> 05/23/2017	
<b>System Components:</b> Pressure Bed <i>See as-built for detailed system component information</i>	
<b>Well Setbacks:</b> 50 Feet <b>Well Status:</b> Well installed at time of inspection	

### COUNTY VERIFICATION OF SOIL CONDITIONS

<b>County Inspector Who Verified Soil Conditions:</b> Chris LeClair <i>See soil observation logs</i> <b>Tank Replacement Only:</b> No
<b>Depth of Restriction</b> 56 Inches <b>Depth System Installed Below Grade</b> 20 Inches
<b>Vertical Separation Provided at the Time of Installation</b> 36.00 Inches <b>SWF:</b> No <b>Class V Injection Well:</b> No

### CERTIFIED STATEMENT

This certifies that the subsurface sewage treatment system installed at the aforementioned address was inspected during installation and found to be in compliance with requirements of the Washington County Development Code, Chapter Four, Subsurface Sewage Treatment System Regulations (Washington County Ordinance #179), and Minnesota Rules, Chapter 7080-7083. This Certificate of Compliance is valid for five (5) years from the date of issuance unless Washington County finds evidence of an imminent threat to public health and safety. Supporting documentation with detailed information on the system can be found on the attached as-built.

Christopher W. LeClair REHS f40aed427dd46be43f3c7fb25471d51a31a641e060e041f7a588795f540a50f5	C6836 MPCA Reg. #	05/23/2017 Date
<b>County Inspector</b>		



901 N 3rd St, Suite 120  
Minneapolis, MN 55401  
tel 612.260.7980  
fax 612.260.7990  
www.elanlab.com

## TECHNICAL MEMORANDUM

DATE: August 17, 2017 (Revised 9/21/2017)  
TO: Mike Isensee, Middle St. Croix Watershed Management Organization  
FROM: Steve Johnston, PE  
RE: **Drainage Calculations**  
**125 Lakeland Shores Rd, Lakeland, MN**

The report has been revised to reflect the required treatment volumes associated with the new gravel path alignment. The gravel path now has a larger area and a greater volume of runoff from existing impervious surfaces is now being treated in the West Basin to compensate.

Attached you will find the Grading & Erosion Control Plan, Stormwater Management Plan, and Stormwater Pollution Prevention Plan. The proposed drainage system collects the runoff from the majority of new impervious surfaces before the runoff reaches the bluff.

Currently, the site is occupied by a home with an attached garage, a shed, and a beach house located at the bottom of the bluff. The new home will be reconstructed using the foundation and other portions of the existing home. The new home will feature an attached garage and have a larger footprint than the existing home. A gravel path will be constructed from the home down to the building at the bottom of the bluff. The driveway will be widened and resurfaced. In addition, a proposed future detached garage location is shown on the plans. This detached garage will not be built at this time but the plan does provide treatment of its runoff. Both the existing and proposed home will encroach on the city's 50 foot bluff setback and will require grading within 40 feet of the bluff line.

This report relies on generalized soil information from the USDA/NRCS and hand auger borings performed by NTI. Based on these resources we have assumed that the surface soils are classified as Hydrologic Soil Group A. The soil borings taken in the septic drain field indicate the bedrock layer is located about 4.5 feet below the existing ground elevation. See the attached Septic Report for the septic borings. The hand auger borings performed within the infiltration basins generally confirmed this condition. The one exception was in HA-5 in which there was only 3 feet of depth before auger refusal. For this reason the north infiltration basin was eliminated.

The remaining infiltration basins have been designed to provide more than 3' of depth between the infiltration basin bottom and the bedrock layer identified in the hand auger borings.

RE: 125 Lakeland Shores Road Stormwater Management  
Date: August 27, 2017  
Page 2 of 2

The stormwater management system is required to capture 1.1" of runoff from new impervious surfaces. Two infiltration basins on-site have been sized to capture runoff from new and reconstructed impervious surfaces to meet this requirement. See sheet C3.1 for the proposed drainage map with basin locations and treatment volumes. The following calculation was performed to determine the required infiltration volume for each basin:

$$\text{Required Infiltration Volume} = \text{New Impervious area (ft}^2\text{)} \times 1.1" / 12$$

It was not feasible to capture runoff from the North Roof, East Roof and the proposed gravel path without disturbing the river bank beyond the bluff line. The required infiltration volume for these three areas equals 312 ft<sup>3</sup>. To compensate, the West Basin captures 350 ft<sup>3</sup> of runoff from the resurfaced existing impervious driveway in addition to the 115 ft<sup>3</sup> of runoff it collects from the new impervious areas draining to it.

The new impervious area on site equals 12,248 ft<sup>2</sup>, requiring a treatment volume of 1,123 ft<sup>3</sup>. The proposed infiltration basins on-site provide a combined treatment volume of 1,170 ft<sup>3</sup>.

Assuming an infiltration rate of 0.8 in/hour, all basins will drain dry within 15 hours or less of a 1.1" rainfall event.

Runoff from higher intensity storms will pass through the rain gardens and then overflow and flow to the river. Care has been taken to minimize soil disturbance at the bluff line and avoid concentration of flow.

Pretreatment is provided by the turfed areas in between the impervious surfaces and the infiltration basins.

It appears that the proposed stormwater management system meets all applicable watershed requirements. If you have any questions or need additional information regarding this report, please feel free to contact me at [sjohnston@elanlab.com](mailto:sjohnston@elanlab.com) or 612-260-7982.

Encl: Generalized Soil Report  
Septic Report  
NTI Geotechnical Report Dated 8/23/2017  
Sheets C2.1, C3.1, C3.2  
Existing Survey

cc: Élan File No.: CLS17015



United States  
Department of  
Agriculture

NRCS

Natural  
Resources  
Conservation  
Service

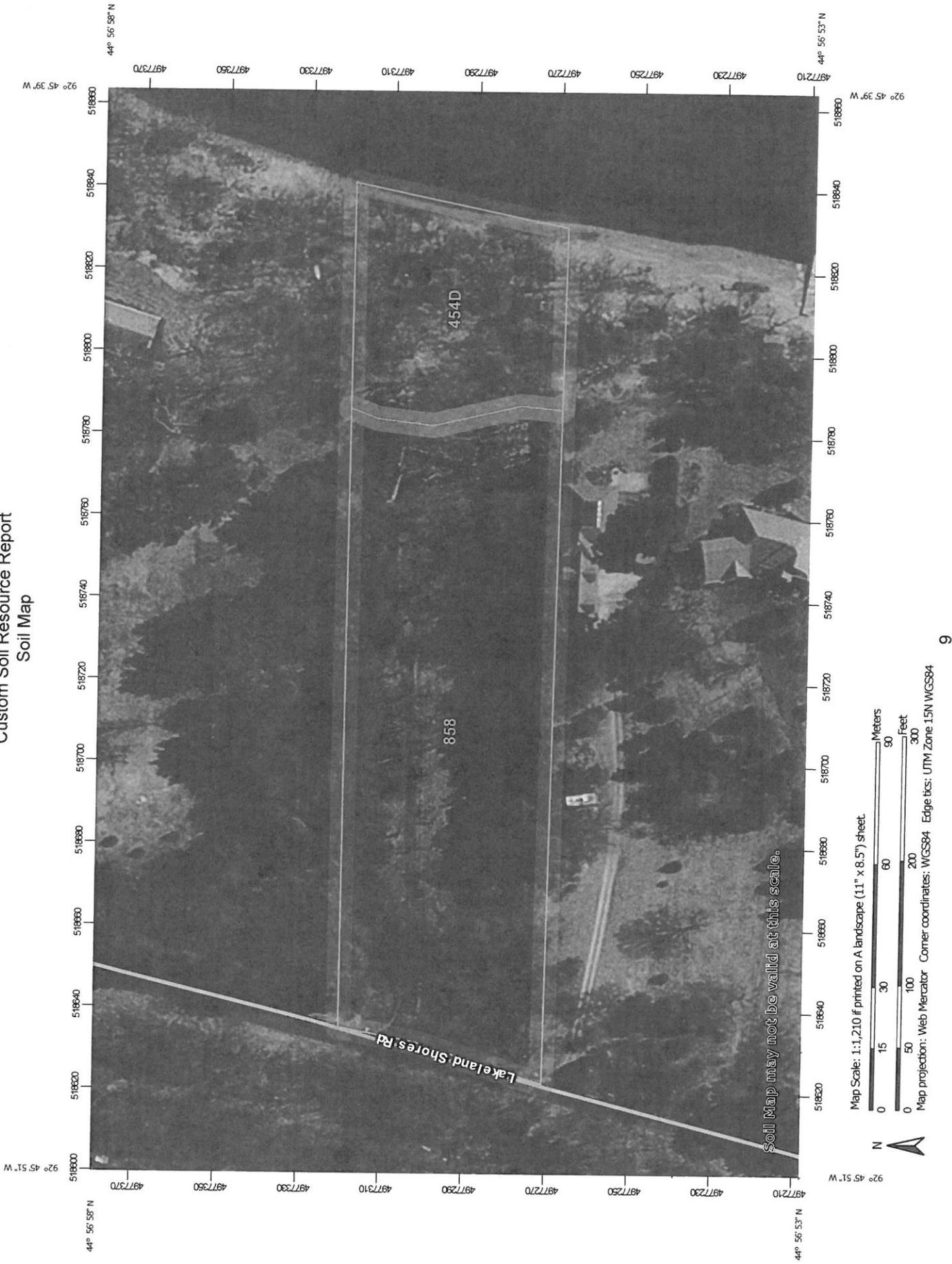
A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Washington County, Minnesota



July 21, 2017

# Custom Soil Resource Report Soil Map



## Map Unit Legend

Washington County, Minnesota (MN163)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
454D	Mahtomedi loamy sand, 12 to 25 percent slopes	0.7	25.2%
858	Urban land-Chetek complex, 0 to 3 percent slopes	1.9	74.8%
<b>Totals for Area of Interest</b>		<b>2.6</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

## Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Washington County, Minnesota

### 454D—Mahtomedi loamy sand, 12 to 25 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1t95l  
*Elevation:* 670 to 1,600 feet  
*Mean annual precipitation:* 27 to 33 inches  
*Mean annual air temperature:* 39 to 46 degrees F  
*Frost-free period:* 135 to 180 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Mahtomedi and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Mahtomedi

##### Setting

*Landform:* Outwash plains  
*Landform position (two-dimensional):* Shoulder  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Outwash

##### Typical profile

*A - 0 to 5 inches:* loamy sand  
*E - 5 to 8 inches:* sand  
*Bw - 8 to 30 inches:* gravelly coarse sand  
*C - 30 to 60 inches:* gravelly sand

##### Properties and qualities

*Slope:* 12 to 25 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 15 percent  
*Available water storage in profile:* Low (about 4.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A  
*Other vegetative classification:* Sandy (G090XN022MN)  
*Hydric soil rating:* No

#### Minor Components

##### Antigo

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

**Demontreville**

*Percent of map unit: 3 percent*  
*Hydric soil rating: No*

**Kingsley**

*Percent of map unit: 3 percent*  
*Hydric soil rating: No*

**858—Urban land-Chetek complex, 0 to 3 percent slopes**

**Map Unit Setting**

*National map unit symbol: 1t96f*  
*Elevation: 800 to 1,950 feet*  
*Mean annual precipitation: 27 to 33 inches*  
*Mean annual air temperature: 39 to 46 degrees F*  
*Frost-free period: 135 to 180 days*  
*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Urban land: 65 percent*  
*Chetek and similar soils: 35 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Urban Land**

**Setting**

*Landform: Outwash plains*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*

**Interpretive groups**

*Land capability classification (irrigated): None specified*  
*Other vegetative classification: Not Suited (G090XN024MN)*  
*Hydric soil rating: Unranked*

**Description of Chetek**

**Setting**

*Landform: Outwash plains*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Parent material: Outwash*

**Typical profile**

*Ap - 0 to 6 inches: sandy loam*  
*Bt - 6 to 20 inches: gravelly sandy loam*  
*2C - 20 to 60 inches: gravelly coarse sand*

**Properties and qualities**

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: More than 80 inches*

## Custom Soil Resource Report

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 3.5 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

*Other vegetative classification:* Sandy (G090XN022MN)

*Hydric soil rating:* No

## Log Of Soil Borings

Location of Project:		125 Lakeland Shores Rd N, Lakeland Shores, MN 55043			
Borings Made By:		Midwest Soil Testing		Date:	11/10/16
Auger Used:		Hand/Bucket		Classification System:	USDA
Boring Number:		1		Boring Number:	
Surface Elevation of Boring		99.60' Benchmark = 100.00' Top Of Deep Well		Surface Elevation of Boring	
				99.60'	
Depth In Inches		<u>Soils Encountered</u>		Depth In Inches	
				<u>Soils Encountered</u>	
0-36 36-44 44-56		10YR 2/2 Medium Sand 10YR 3/4 Medium Sand 10YR 3/4 Medium Sand With Gravel 27% Rock Fragments Refusal At 56"		0-29 29-38 38-45 45-56	
				10YR 2/2 Medium Sand 10YR 3/3 Medium Sand 10YR 3/4 Medium Sand 10YR 3/4 Medium Sand With Gravel ≈25% Rock Fragments Refusal At 56"	
End Of Boring At:		56"/94.93'		End Of Boring At:	
				56"/94.93'	
Redox Present At:		None		Redox Present At:	
				None	
Standing Water Present At:		None		Standing Water Present At:	
				None	
Boring Number:		3		Boring Number:	
Surface Elevation of Boring		99.70'		Surface Elevation of Boring	
				99.70'	
Depth In Inches		<u>Soils Encountered</u>		Depth In Inches	
				<u>Soils Encountered</u>	
0-34 34-49 49-58		10YR 2/2 Medium Sand 10YR 3/4 Medium Sand 10YR 3/4 Medium Sand With Gravel ≈25% Rock Fragments Refusal At 58"		0-35 35-48 48-57	
				10YR 2/2 Medium Sand 10YR 3/4 Medium Sand 10YR 3/4 Medium Sand With Gravel 22% Rock Fragments Refusal At 57"	
End Of Boring At:		58"/94.87'		End Of Boring At:	
				57"/94.95'	
Redox Present At:		None		Redox Present At:	
				None	
Standing Water Present At:		None		Standing Water Present At:	
				None	

**PERCOLATION TEST DATA SHEET**

Company Name Midwest Soil Testing License Number L2896

Percolation Test Performed by Midwest Soil Testing

Homeowner Name \_\_\_\_\_

Address 125 Lakeland Shores Rd N

Test Hole # P-1 Diameter of hole 6 inches

Method of scratching sidewall N/A

Depth to bottom of hole 20 inches Depth of gravel at bottom 2 inches

Date presoak started 11/9/16 Starting at 1:20 PM

Depth of initial water filling 8 above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours N/A

Date perc readings conducted 11/9/16 Starting at 1:25 PM

Maximum depth above hole bottom during test 8 inches

Directions: Enter elapsed time and drop in water level and the rest will be calculated

#	Elapsed Time (min)	Time Interval (min)	Drop in Water Level (inches)	Percolation Rate (mpi)	% Difference	10% Goal Reached*
1	3	3	3.25	0.9	NA	NA
2	6	3	3.13	1.0	4.0	YES
3	9	3	3.00	1.0	4.2	YES
4	12	3	3.00	1.0	0.0	YES
5	15	3	2.88	1.0	4.2	YES
6	18	3	2.88	1.0	0.0	YES
7		0		0.0	0.0	0
8		0		0.0	0.0	0

\* 3 consecutive percolation rates must be within 10% or less of each other

**AVERAGE PERC RATE = 1 MPI**

**PERCOLATION TEST DATA SHEET**

Company Name Midwest Soil Testing License Number L2896  
 Percolation Test Performed by Midwest Soil Testing  
 Homeowner Name \_\_\_\_\_  
 Address 125 Lakeland Shores Rd N  
 Test Hole # P-2 Diameter of hole 6 inches  
 Method of scratching sidewall N/A  
 Depth to bottom of hole 20 inches Depth of gravel at bottom 2 inches  
 Date presoak started 11/9/16 Starting at 1:20 PM  
 Depth of initial water filling 8 above hole bottom  
 Method used to maintain 12" of water depth in hole for 4 hours N/A  
 Date perc readings conducted 11/9/16 Starting at 1:45 PM  
 Maximum depth above hole bottom during test 8 inches

Directions: Enter elapsed time and drop in water level and the rest will be calculated

#	Elapsed Time (min)	Time Interval (min)	Drop in Water Level (inches)	Percolation Rate (mpi)	% Difference	10% Goal Reached*
1	3	3	3.75	0.8	NA	NA
2	6	3	3.63	0.8	3.3	YES
3	9	3	3.75	0.8	3.2	YES
4	12	3	3.63	0.8	3.3	YES
5	15	3	3.63	0.8	0.0	YES
6	18	3	3.5	0.9	3.7	YES
7		0		0.0	0.0	0
8		0		0.0	0.0	0

\* 3 consecutive percolation rates must be within 10% or less of each other

**AVERAGE PERC RATE = 0.8 MPI**



## GEOTECHNICAL EXPLORATION AND FACTUAL ENGINEERING REVIEW

*125 Lakeland Shores*

*Lakeland*

*Minnesota*

*NTI Project No. 17.IGH03309.000*

***Prepared For:***

Cate Fine Homes  
2000 Industrial Boulevard  
Stillwater, MN 55082

---



**NTI**<sup>™</sup>  
NORTHERN  
TECHNOLOGIES, LLC

6160 Carmen Avenue East  
Inver Grove Heights, MN 55076  
P: 651.389.4191 F: 651.389.4190  
[www.NTIgeo.com](http://www.NTIgeo.com)

Unearthing confidence<sup>™</sup>

August 23, 2017

Cates Fine Homes  
2000 Industrial Boulevard  
Stillwater, MN 55082

Attn: Jennifer Cates Peterson

Subject: Geotechnical Exploration and Factual Engineering Report  
**125 Lakeland Shores**  
Lakeland, Minnesota  
NTI Project No. 17.IGH03309.000

Dear Ms. Peterson,

In accordance with your request and subsequent authorization, Northern Technologies, LLC (NTI) conducted a Geotechnical Exploration for the above referenced project. Our services included the advancement of two exploration hand auger probes and preparation of a factual engineering report. Our work was performed in general accordance with our proposal dated August 14, 2017.

Soil samples obtained at the site will be held for 60 days at which time they will be discarded. Please advise us in writing if you wish to have us retain them for a longer period. You will be assessed an additional fee if soil samples are retained beyond 60 days.

We appreciate the opportunity to have been of service on this project. If there are any questions regarding the soils explored or our review and recommendations, please contact us at your convenience at (651) 389-4191.

Northern Technologies, LLC

Robert R. Hawkins  
Graduate Geologist

Steven D. Gerber, P.E.  
Senior Engineer

Precision · Expertise · Geotechnical · Materials

FARGO · BISMARCK · GRANDFORKS · MINDT · INVERGROVEHEIGHTS · RAMSEY · RAPIDCITY · SIOUXFALLS



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## **1.0 INTRODUCTION**

### **1.1 Scope of Services**

The purpose of this factual report is to present a summary of our geotechnical exploration and provide the soil conditions encountered at the project area. Our “scope of services” was limited to the following:

1. Explore the project subsurface by means of five (5) hand auger probes extending to a depth of approximately 5 feet below existing grade, and collect representative samples for characterizing the index and engineering properties of soils strata at site.

## **2.0 EXPLORATION PROGRAM RESULTS**

### **2.1 Exploration Scope**

The field exploration was completed on August 22, 2017 with the five hand auger probes extending to a depth of approximately 3 to 6 feet below existing ground surface. Some of the hand auger probes were terminated early due to the presence of cobbles in the soil strata. The hand auger probes were performed by a single technician utilizing a 4-inch bucket hand auger.

NTI located the probes relative to existing site features, and determined their approximate elevation using a handheld Trimble GeoXH 6000 GPS unit. Probe locations and elevations should be considered to be approximate. Please refer to the Probe Location Diagram and the Probe Logs in Appendix B.

### **2.2 Subsurface Conditions**

The soil profile generally consisted of 10 to 22 inches of topsoil over native terrace deposits extending to the termination depths of the borings. The native soils included poorly graded sand (SP), poorly graded sand with silt (SP-SM), and silty sand (SM).

### **2.3 Groundwater Conditions**

The technician observed the borings for groundwater (if any) during and at the completion of the exploration. At the time of the field exploration, measureable groundwater was not encountered in either of the probeholes.

The site soils were conducive to movement of groundwater both laterally and vertically over time. The moisture content of such soils can vary annually and per recent precipitation. Such soils and other regional dependent conditions may produce groundwater entry of project excavations.



### 3.0 CLOSURE

The scope of services for this project does not include either specifically or by implication any environmental or biological assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of Cates Fine Homes for specific application to the proposed 125 Lakeland Shores project in Lakeland, Minnesota. Northern Technologies, LLC has endeavored to comply with generally accepted geotechnical engineering practice common to the local area. Northern Technologies, LLC makes no other warranty, expressed or implied.

#### Northern Technologies, LLC

Robert R. Hawkins  
Graduate Geologist

Steven D. Gerber, P.E.  
Senior Engineer

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a Duly Licensed Professional Engineer under the Laws of the State of Minnesota.

---

Steven D. Gerber

Date: 08/23/17 Reg. No.



## APPENDIX A

GEOTECHNICAL EVALUATION OF RECOVERED SOIL SAMPLES  
FIELD EXPLORATION PROCEDURES  
GENERAL NOTES  
WATER LEVEL SYMBOL  
DESCRIPTIVE TERMINOLOGY  
RELATIVE PROPORTIONS  
PARTICLE SIZES  
CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES

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## GEOTECHNICAL EVALUATION OF RECOVERED SOIL SAMPLES

We visually examined recovered soil samples to estimate distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We then classified the soils according using the Unified Soil Classification System (ASTM D2488). A chart describing this classification system and general notes explaining soil sampling procedures are presented within appendices attachments.

The stratification depth lines between soil types on the logs are estimated based on the available data. In-situ, the transition between type(s) may be distinct or gradual in either the horizontal or vertical directions. The soil conditions have been established at our specific boring locations only. Variations in the soil stratigraphy may occur between and around the borings, with the nature and extent of such change not readily evident until exposed by excavation. These variations must be properly assessed when utilizing information presented on the boring logs.

We request that you, your design team or contractors contact NTI immediately if local conditions differ from those assumed by this report, as we would need to review how such changes impact our recommendations. Such contact would also allow us to revise our recommendations as necessary to account for the changed site conditions.

### FIELD EXPLORATION PROCEDURES

#### ***Soil Sampling – Standard Penetration Boring:***

Soil sampling was performed according to the procedures described by ASTM D-1586. Using this procedure, a 2 inch O.D. split barrel sampler is driven into the soil by a 140-pound weight falling 30 inches. After an initial set of six inches, the number of blows required to drive the sampler an additional 12 inches is recorded (known as the penetration resistance (i.e. “N-value”) of the soil at the point of sampling. The N-value is an index of the relative density of cohesionless soils and an approximation of the consistency of cohesive soils.

#### ***Soil Sampling – Power Auger Boring:***

The boring(s) was/were advanced with a 6-inch nominal diameter continuous flight auger. As a result, samples recovered from the boring are disturbed, and our determination of the depth, extend of various stratum and layers, and relative density or consistency of the soils is approximate

#### ***Soil Classification:***

Soil samples were visually and manually classified in general conformance with ASTM D-2488 as they were removed from the sampler(s). Representative fractions of soil samples were then sealed within respective containers and returned to the laboratory for further examination and verification of the field classification. In addition, select samples were submitted for laboratory tests. Individual sample information, identification of sampling methods, method of advancement of the samples and other pertinent information concerning the soil samples are presented on boring logs and related report attachments.

---



**GENERAL NOTES**

<i>DRILLING and SAMPLING SYMBOLS</i>		<i>LABORATORY TEST SYMBOLS</i>	
<b>SYMBOL</b>	<b>DEFINITION</b>	<b>SYMBOL</b>	<b>DEFINITION</b>
C.S.	Continuous Sampling	W	Moisture content-percent of dry weight
P.D.	2-3/8" Pipe Drill	D	Dry Density-pounds per cubic foot
C.O.	Cleanout Tube	LL, PL	Liquid and plastic limits determined in accordance with ASTM D 423 and D 424
3 HSA	3 1/4" I.D. Hollow Stem Auger	Q <sub>u</sub>	Unconfined compressive strength-pounds per square foot in accordance with ASTM D 2166-66
4 FA	4" Diameter Flight Auger		
6 FA	6" Diameter Flight Auger		
2 1/2 C	2 1/2" Casing		
4 C	4" Casing		
D.M.	Drilling Mud	Pq	Penetrometer reading-tons/square foot
J.W.	Jet Water	S	Torvane reading-tons/square foot
H.A.	Hand Auger	G	Specific Gravity – ASTM D 854-58
NXC	Size NX Casing	SL	Shrinkage limit – ASTM 427-61
BXC	Size BX Casing	Ph	Hydrogen ion content-meter method
AXC	Size AX casing	O	Organic content-combustion method
SS	2" O.D. Split Spoon Sample	M.A.	Grain size analysis
2T	2" Thin Wall Tube Sample	C*	One dimensional consolidation
3T	3" Thin Wall Tube Sample	Q <sub>c</sub>	Triaxial Compression

\* See attached data Sheet and/or graph

**WATER LEVEL SYMBOL**

Water levels shown on the boring logs were determined at the time and under the conditions indicated. In sand, the indicated levels can be considered relatively reliable for most site conditions. In clay soils, it is not possible to determine the ground water level within the normal scope of a test boring investigation, except where lenses or layers of more pervious water bearing soil are present; and then a long period of time may be necessary to reach equilibrium. Therefore, the position of the water level symbol for cohesive or mixed soils may not indicate the true level of the ground water table. The available water level information is given at the bottom of the log sheet.

**DESCRIPTIVE TERMINOLOGY**

<b>TERM</b>	<b>RELATIVE DENSITY</b>		<b>TERM</b>	<b>CONSISTENCY</b>	
	<b>N<sub>60</sub> Value (corrected)</b>			<b>N<sub>60</sub> Value (corrected)</b>	
Very Loose	0 – 4		Soft	0-4	
Loose	5 – 8		Medium	5-8	
Medium Dense	9 – 16		Rather Stiff	9 – 15	
Dense	16 – 30		Stiff	16 – 30	
Very Dense	Over 30		Very Stiff	Over 30	

**RELATIVE PROPORTIONS**

<b>TERMS</b>	<b>RANGE</b>
Trace	0 – 5%
A little	5 – 15%
Some	15 – 30%

**PARTICLE SIZES**

<b>MATERIAL</b>	<b>DESCRIPTION</b>	<b>U.S. SIEVE SIZE</b>
Boulders		Over 3"
	Gravel	Coarse
Sand		Medium
	Coarse	#4 to #10
	Medium	#10 to #40
Silt and Clay	Fine	#40 to #200
		Determined by Hydrometer Test



**CLASSIFICATION of SOILS for ENGINEERING PURPOSES**

ASTM Designation D-2487 and D2488 (Unified Soil Classification System)

Major Divisions	Group Symbol	Typical Name	Classification Criteria	
<b>Course Grained Soils</b> More than 50% retained on No. 200 sieve *	<b>Gravels</b> 50% or more of coarse fraction retained on No. 4 sieve. Clean Gravels	<b>GW</b>	Well-graded gravels and gravel-sand mixtures, little or no fines.	
		<b>GP</b>	Poorly graded gravels and gravel-sand mixtures, little or no fines.	
		<b>GM</b>	Silty gravels, gravel-sand-silt mixtures.	
		<b>GC</b>	Clayey gravels, gravel-sand-clay mixtures.	
		<b>SW</b>	Well-graded sands and gravelly sands, little or no fines.	
	<b>Sands</b> More than 50% of coarse fraction passes No. 4 sieve. Clean Sands	<b>SP</b>	Poorly-graded sands and gravelly sands, little or no fines.	
		<b>SM</b>	Silty sands, sand-silt mixtures.	
		<b>SC</b>	Clayey sands, sand-clay mixtures.	
		<b>Sands with Fines</b> Gravelly with Fines	<b>GW</b>	Well-graded gravels and gravel-sand mixtures, little or no fines.
			<b>GP</b>	Poorly graded gravels and gravel-sand mixtures, little or no fines.
<b>Fine Grained Soils</b> More than 50% passes No. 200 sieve *	<b>Silts and Clays</b> Liquid Limit of 50% or less	<b>ML</b>	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.	
		<b>CL</b>	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	
		<b>OL</b>	Organic silts and organic silty clays of low plasticity.	
		<b>MH</b>	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.	
		<b>CH</b>	Inorganic clays of high plasticity, fat clays.	
	<b>Silts and Clays</b> Liquid Limit greater than 50%.	<b>OH</b>	Organic clays of medium to high plasticity.	
		<b>MH</b>	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.	
		<b>CH</b>	Inorganic clays of high plasticity, fat clays.	
		<b>OL</b>	Organic silts and organic silty clays of low plasticity.	
		<b>CL</b>	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	
<b>Highly Organic Soils</b>	<b>Pt</b>	Peat, muck and other highly organic soils.		

**Classification on basis of percentage of fines.**  
 Less than 5% passing No. 200 Sieve: GW, GP, SW, SP  
 More than 12% passing No. 200 Sieve: GM, GC, SM, SC  
 From 5% to 12% passing No. 200 Sieve: Borderline Classification requiring use of dual symbols.

Cu = D60 / D10 greater than 4.  
 Cz = (D30)<sup>2</sup> / (D10 x D60) between 1 & 3.

Not meeting both criteria for GW materials.

Atterberg limits below "A" line, or P.I. less than 4.  
 Atterberg limits above "A" line with P.I. greater than 7.

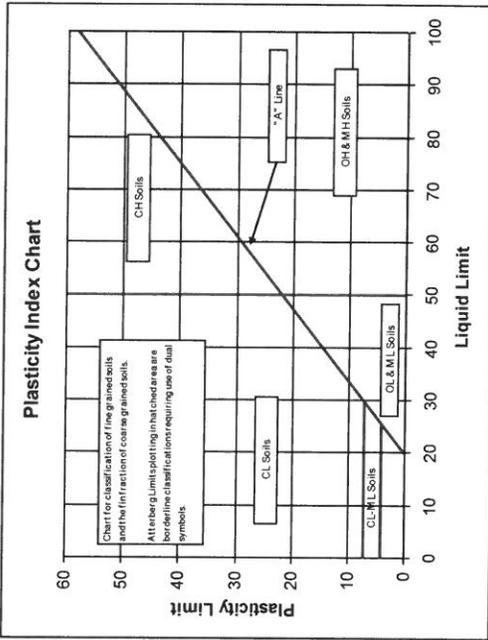
Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols.

Cu = D60 / D10 greater than 6.  
 Cz = (D30)<sup>2</sup> / (D10 x D60) between 1 & 3.

Not meeting both criteria for SW materials.

Atterberg limits below "A" line, or P.I. less than 4.  
 Atterberg limits above "A" line with P.I. > 7.

Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols.





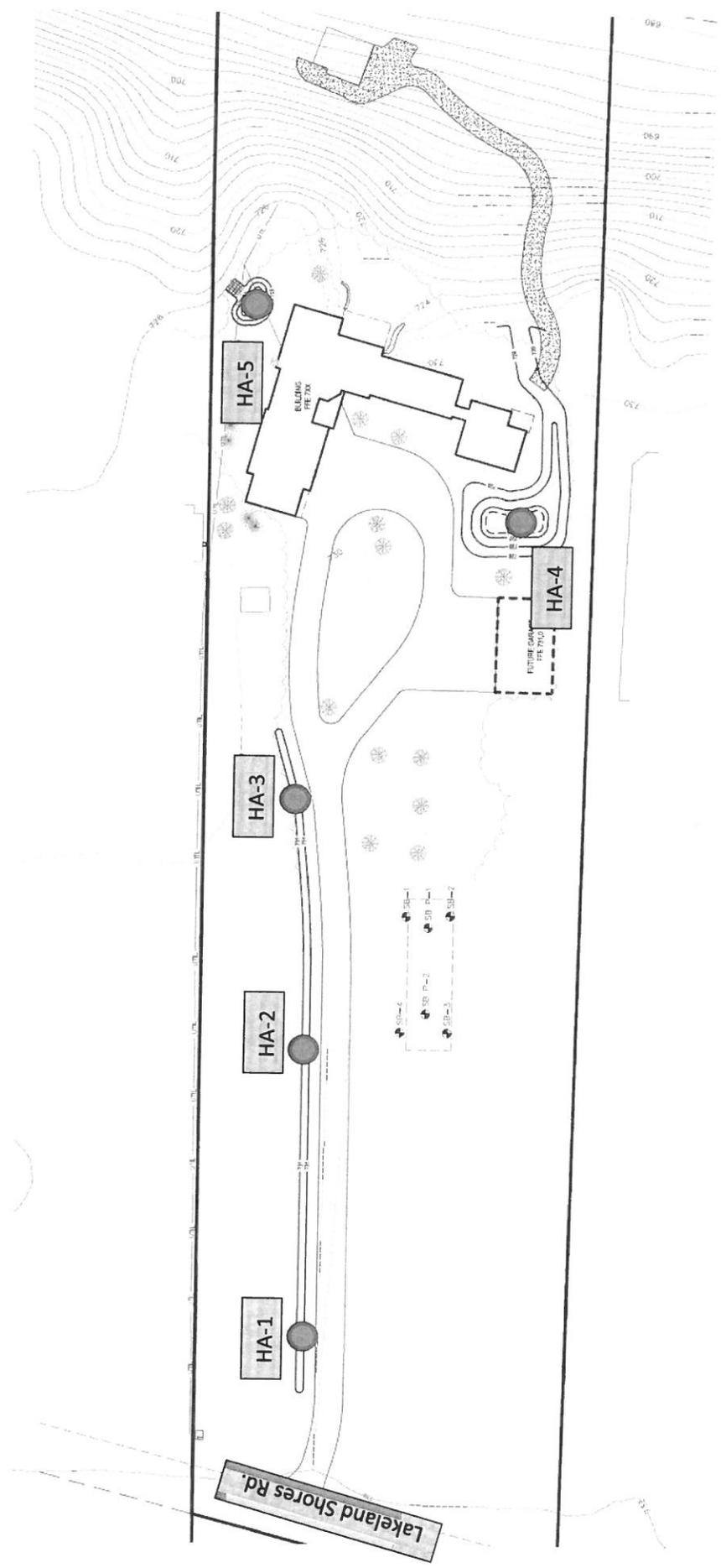
125 Lakeland Shores  
Lakeland, Minnesota  
NTI Project No. 17.IGH03309.000

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## APPENDIX B

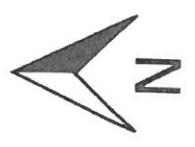
BORING LOCATION DIAGRAM  
SOIL BORING LOG

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Probe Location Diagram  
 125 Lakeland Shores  
 Lakeland, Minnesota  
 NTI Project #: 17.IGH03309.000  
 NOTE: Probe locations are approximate.

Completed Hand Auger Probe Locations: ●



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TECHNOLOGIES, LLC

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6160 Carmen Ave. E  
Inver Grove Heights, MN, 55076  
P: 651-389-4191  
www.NTIGeo.com

# BORING NUMBER HA-1

PAGE 1 OF 1

CLIENT \_\_\_\_\_ PROJECT NAME 125 Lakeland Shores

PROJECT NUMBER 17.IGH03309.000 PROJECT LOCATION Lakeland, MN

DATE STARTED 8/22/17 COMPLETED 8/22/17 GROUND ELEVATION 732 ft HOLE SIZE 6 1/2 in.

DRILLING CONTRACTOR NTI GROUND WATER LEVELS:

DRILLING METHOD 3 1/4 in H.S.A AT TIME OF DRILLING --- No groundwater observed.

LOGGED BY Robert Hawkins CHECKED BY Ryan Benson AT END OF DRILLING ---

CAVE IN (ft) --- FROST DEPTH (ft) --- AFTER DRILLING ---

NOTES Elevation determined using Trimble GeoXH 6000 (NAVD 88 GeoID 09 datum).

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	DYNAMIC CONE PENETROMETER	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0		TOPSOIL (10 Inches)									
0.8		SILTY SAND, (SM) reddish brown to dark brown, fine to coarse grained, moist, trace gravel (Terrace Deposit)	HA 1								
2.5			HA 2								
			HA 3								
4.0			HA 4								
4.3		SILTY SAND WITH GRAVEL, (SM) reddish brown, fine to coarse grained, moist, occasional cobbles (Terrace Deposit)	HA 5								

Encountered apparent hand auger refusal at 4.25 feet due to cobbles.  
Bottom of borehole at 4.3 feet.

NTI\COLUMNS HAND BORING WIDCP - NTI 2016-08-10.GDT - 8/22/17 15:37 - HIRAMBEY\1-PROJECTS\2017 PROJECTS\125 LAKELAND SHORES\GINT\125 LAKELAND SHORES.GPJ



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**BORING NUMBER HA-2**

PAGE 1 OF 1

CLIENT \_\_\_\_\_ PROJECT NAME 125 Lakeland Shores

PROJECT NUMBER 17.IGH03309.000 PROJECT LOCATION Lakeland, MN

DATE STARTED 8/22/17 COMPLETED 8/22/17 GROUND ELEVATION 731 ft HOLE SIZE 6 1/2 in.

DRILLING CONTRACTOR NTI GROUND WATER LEVELS:

DRILLING METHOD 3 1/4 in H.S.A AT TIME OF DRILLING --- No groundwater observed.

LOGGED BY Robert Hawkins CHECKED BY Ryan Benson AT END OF DRILLING ---

CAVE IN (ft) --- FROST DEPTH (ft) --- AFTER DRILLING ---

NOTES Elevation determined using Trimble GeoXH 6000 (NAVD 88 GeolD 09 datum).

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	DYNAMIC CONE PENETROMETER	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0		TOPSOIL (22 Inches)									
1.8			HA 1								
2.5		POORLY GRADED SAND WITH SILT, (SP-SM) reddish brown to brown, fine to coarse grained, moist, trace gravel (Terrace Deposit)	HA 2								
3.0			HA 3								
3.3		POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) reddish brown, fine to coarse grained, moist, occasional cobbles (Terrace Deposit)	HA 4								

Encountered apparent hand auger refusal at 4.25 feet due to cobbles.  
Bottom of borehole at 3.3 feet.

NTI COLUMNS HAND BORING WDCP - NTI 2016-08-10.GDT - 8/22/17 15:37 - H:\RAMSEY\11 PROJECTS\2017 PROJECTS\1125 LAKELAND SHORES\GINT\125 LAKELAND SHORES.GPJ



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CLIENT \_\_\_\_\_ PROJECT NAME 125 Lakeland Shores

PROJECT NUMBER 17.IGH03309.000 PROJECT LOCATION Lakeland, MN

DATE STARTED 8/22/17 COMPLETED 8/22/17 GROUND ELEVATION 730 ft HOLE SIZE 6 1/2 in.

DRILLING CONTRACTOR NTI GROUND WATER LEVELS:

DRILLING METHOD 3 1/4 in H.S.A AT TIME OF DRILLING --- No groundwater observed.

LOGGED BY Robert Hawkins CHECKED BY Ryan Benson AT END OF DRILLING ---

CAVE IN (ft) --- FROST DEPTH (ft) --- AFTER DRILLING ---

NOTES Elevation determined using Trimble GeoXH 6000 (NAVD 88 Geoid 09 datum).

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	DYNAMIC CONE PENETROMETER	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0		TOPSOIL (21 Inches)	HA 1								
1.8		POORLY GRADED SAND WITH SILT, (SP-SM) reddish brown to brown, fine to coarse grained, moist, trace gravel (Terrace Deposit)	HA 2								
2.5			HA 3								
			HA 4								
4.3			HA 5								
4.5		POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) reddish brown, fine to coarse grained, moist, occasional cobbles (Terrace Deposit)									

Encountered apparent hand auger refusal at 4.5 feet due cobbles.  
Bottom of borehole at 4.5 feet.

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**BORING NUMBER HA-4**

CLIENT \_\_\_\_\_ PROJECT NAME 125 Lakeland Shores

PROJECT NUMBER 17.IGH03309.000 PROJECT LOCATION Lakeland, MN

DATE STARTED 8/22/17 COMPLETED 8/22/17 GROUND ELEVATION 730 ft HOLE SIZE 6 1/2 in.

DRILLING CONTRACTOR NTI GROUND WATER LEVELS:

DRILLING METHOD 3 1/4 in H.S.A AT TIME OF DRILLING --- No groundwater observed.

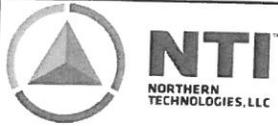
LOGGED BY Robert Hawkins CHECKED BY Ryan Benson AT END OF DRILLING ---

CAVE IN (ft) --- FROST DEPTH (ft) --- AFTER DRILLING ---

NOTES Elevation determined using Trimble GeoXH 6000 (NAVD 88 Geoid 09 datum).

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	DYNAMIC CONE PENETROMETER	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0		TOPSOIL (21 Inches)									
1.8			HA 1								
2.5		POORLY GRADED SAND, (SP) reddish brown, fine to coarse grained, moist, trace gravel (Terrace Deposit)	HA 2								
			HA 3								
			HA 4								
			HA 5								
			HA 6								
6.0		Bottom of borehole at 6.0 feet.									

NTI COLUMNS HAND BORING WDCP - NTI 2016-08-10.GDT - 8/22/17 15:38 - HIRAMSEYI-PROJECTS\2017 PROJECTS\125 LAKELAND SHORES\NTI\125 LAKELAND SHORES.GPJ



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**BORING NUMBER HA-5**

CLIENT \_\_\_\_\_ PROJECT NAME 125 Lakeland Shores  
 PROJECT NUMBER 17.IGH03309.000 PROJECT LOCATION Lakeland, MN  
 DATE STARTED 8/22/17 COMPLETED 8/22/17 GROUND ELEVATION 729 ft HOLE SIZE 6 1/2 in.  
 DRILLING CONTRACTOR NTI GROUND WATER LEVELS:  
 DRILLING METHOD 3 1/4 in H.S.A AT TIME OF DRILLING --- No groundwater observed.  
 LOGGED BY Robert Hawkins CHECKED BY Ryan Benson AT END OF DRILLING ---  
 CAVE IN (ft) --- FROST DEPTH (ft) --- AFTER DRILLING ---  
 NOTES Elevation determined using Trimble GeoXH 6000 (NAVD 88 Geoid 09 datum).

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	POCKET PEN. (tsf)	DYNAMIC CONE PENETROMETER	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0		TOPSOIL (20 Inches)	HA 1								
1.7		POORLY GRADED SAND WITH SILT, (SP-SM) reddish brown, fine to medium grained, moist, trace gravel, occasional cobbles (Terrace Deposit)	HA 2		727.3						
2.5			HA 3								
3.0		Encountered hand auger refusal at 3 feet due to cobbles. Bottom of borehole at 3.0 feet.			726.0						

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Community City Of Lakeland Shores

Permit Number \_\_\_\_\_

Owner Blickenderfer Mary M

Owner Address 37379 S Crane Lake Rd , Deer River Mn  
56636

Applicant Tom Scanlan

**PERMISSION IS HEREBY GRANTED**

To execute the work specified in this permit on the following identified property upon express condition that said persons and their agents, and employees shall conform in all respects to the provisions of Ordinance #196, Washington county Development Code, Chapter Four, Subsurface Sewage Treatment System Regulations. This permit may be revoked at any time upon violation of any of the provisions of said ordinance.

Project Address 125 Lakeland Shores Rd N, City Of Lakeland Shores

Geo Code 0202820110009

Designer Inspect Minnesota, Midwest Soil Testing

**Type of System: New Installation Pressure Bed**

Design Criteria	Bed Sizing	Pressure Distribution
Depth to Restriction: 56 Inches	Square Feet: 250.00	Number of Laterals: 7
Land Slope: 0.00 %	Rock Bed Width: 20.00 Feet	Perforation Spacing: 3.0 Feet
Flow Rate: 750.00 GPD	Rock Bed Length: 62.50 Feet	Perforation Diameter: 3/16 Inch
	Depth of Rock: 6 Inches	Lateral Diameter: 1-1/2 Inches
	Bed Depth Maximum: 20 Inches	Total Dynamic Head: 30 Feet
		Pump 1: 61 GPM

**Tank Sizes**

Tank 1: 1500 Gallons

Tank 2: 1000 Gallons

Tank 3: 1000 Gallons

Pump Tank 1: 1000 Gallons

---

### Authorized Work/Special Conditions

The granting of this permit does not alleviate the applicant from obtaining any other Federal, State, or local permits required by law for this project.

Printed copy of permit must be onsite during installation Building sewer can be no closer than 20 feet from well and must be pressure tested Schedule 40 within 50 feet. Call at least 24 hours before the time you need an inspection. Domestic strength waste only. Industrial waste and hazardous wastes cannot enter the septic system. Establish a vegetative cover over the soil treatment area within 30 days of the installation. Protect the soil treatment area from erosion until the vegetative cover is established. Install a meter to monitor wastewater flow. Install only when soil is below the plastic limit (dry soil conditions). Install water meter. Insulate tank lids to a value of R-10 if tanks are 2 feet or less from the surface. Minimum 50 feet from septic tank to well. Pressurized laterals can be no further apart than 36 inches and require accessible cleanouts at the end of each lateral. This system must be installed by a certified/licensed sewage treatment system installer holding a current license with the Minnesota Pollution Control Agency. Use of tanks registered with the Minnesota Pollution Control Agency required. Effluent Filter & Alarm Required on outlet of last tank in series

#### Required Inspections:

---

Permit Issuance Date: 03/27/2017

Permit Expiration Date: 03/27/2018

03/27/2017 - Issued

# MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION

455 Hayward Avenue, Oakdale, MN 55128  
Phone 651.275.1136 x22 fax 651.275.1254 www.mscwmo.org

## APPLICATION FOR SINGLE LOT RESIDENTIAL PROJECT REVIEW

Project information to be completed by the applicant. Applicant must notify the community before submitting to MSCWMO.  
Approval of a project by the MSCWMO Board in no way purports to permit acts which may be prohibited by other governmental agencies.

Date Received by MSCWMO: \_\_\_\_\_

Name of Project:	125 Lakeland Shores		
Purpose of Project:	Home renovation/addition		
Location of Project (street address, if known):	125 Lakeland Shores Road		
City or Township:	Lakeland, MN		
Legal Description:	Section: 2	¼ Section: _____	Township: 28 N Range: 20 W
Project Description:	A new home will be constructed using the foundation and other portions of the existing home. In addition, the site landscaping will be updated and the existing driveway will be widened.		

Name of Authorized Agent:	Steve Johnston		
Representing:	Tom Scanlan		
Street Address:	901 N 3rd Street		
City:	Minneapolis	State:	MN Zip: 55401
Day Telephone:	612-260-7980	Fax:	_____
 (Signature of Authorized Agent)			

Name of Property Owner:	Tom Scanlan		
Owner's Street Address:	125 Lakeland Shores Road		
Owner's City:	Lakeland	State:	MN Zip: 55043
Owner's Telephone:	_____	Owner's Fax:	_____

### Required Submittal Items:

- \_\_\_\_\_ Review Fee: Single Lot Residential \$350
- \_\_\_\_\_ Existing conditions map showing at a minimum: North point, scale, section lines, property boundary and legal description, zoning, total acreage, streets and other public ways, permanent structures, utilities, easements, bluff lines, wetlands and surface water (showing 100-year flood and OHW elevations), shoreland areas, topographic data (showing contour intervals of not more than 2 feet), soil survey information, and other significant physical features and natural resources
- \_\_\_\_\_ Proposed grading plan showing at a minimum: North point, scale, section lines, grading limits, existing and proposed contours, soil boring locations, utilities, septic, well, easements, bluff lines, wetlands and surface water (showing 100-year flood and OHW elevations), shoreland areas, existing and proposed structures, lowest floor elevations for proposed structures, all required buffers and setbacks, and grading quantities
- \_\_\_\_\_ Erosion and Sediment Control Plan that meets the requirements of Section 7.0 of the MSCWMO Watershed Management Plan that shows the location, type and quantity and installation timeframes for erosion and sediment controls, identifies responsible party for inspections, and includes pollution prevention and final stabilization measures.
- \_\_\_\_\_ Calculations showing the total area (in square feet) of new and fully reconstructed impervious surfaces.
- \_\_\_\_\_ Stormwater plan showing all proposed drainage features, flow arrows, location and construction details of stormwater practices, construction standards and final planting plan (when applicable- see Single Lot

Location: