



AGENDA OF THE PLANNING
COMMISSION
CITY OF BIRCHWOOD VILLAGE
WASHINGTON COUNTY, MINNESOTA
October 4, 2018
7:00 P.M.

CALL TO ORDER

APPROVE AGENDA

REGULAR AGENDA

- A. Review Variance Case No. 18-03-VB for 27 Birchwood Lane*
1. Discuss & Recommendation to City Council

ADJOURN

Staff Memo w/ Sec 304 elements – pp. 2-3
Planner's Recommendation – pp. 4-5
Sec 301 Conditional Uses – p. 6
Sec 306 Conditional Use Permits – pp. 7-9
Applicant's letter – p. 10
Variance Application – pp. 11-14
CUP Application – pp. 15-16
Resolution 2013-13 – pp. 17-22
Bid Materials – pp. 23-26
Certificate of Survey – p. 27
1 Wall Plan – p. 28
2 Wall Plan – pp. 29-33

* Denotes items that have supporting documentation provided

MEMORANDUM

October 2, 2018

TO: Birchwood Planning Commission
FROM: Tobin Lay, City Administrator
SUBJECT: Variance Case No. 18-03-VB



Dear Commissioners,

Enclosed is a Variance and Conditional Use Permit applications from Terence & Mary Kay O'Loughlin (Case No. 18-03-VB) to replace/repair a landslide area in their back yard that recently slide into the lake and for the following variances to improve the slope:

- A variance from the 50-foot Ordinary High Water Level (OHWL) setback requirement for one or more retaining walls to be built beyond the OHWL, per 302.020.4.c;
- A variance to grade within and beyond the OHWL setback, per 302.055.2.a.4;
- A variance from the 10-foot side yard setback to repair/replace/extend stairs; currently 4 feet from the north property line;
- A variance from the 4-foot height limit, per 302.070.5, to construct one or more retaining walls that exceed the height limit; at least one wall to reach 6 feet 8 inches tall (with at least 5 feet 8 inches exposed) or greater;
- A variance from the 44-inch maximum width for stairways, per 302.080.2.a;
- A variance from the 32-square foot maximum size for a landing, per 302.080.2.c;
- A variance from the 25% impervious surface limit, per 302.050.

Notices have been mailed to each of the neighboring properties within 200 ft. and to the DNR and RCWD, as required. No response had been received at the time this packet was assembled on Tuesday October 2, 2018.

NO PUBLIC HEARING WILL TAKE PLACE AT THIS MEETING BECAUSE THE NEWSPAPER FAILED TO PUBLISH THE NOTICE IN TIME. Per City Attorney Kantrud's recommendation, the public hearing will be held during next week's City Council meeting. Notice has been made.

Approval was granted previously for this same request in 2013 but it was not acted on within the required one year time period so is no longer effective. That approval is also enclosed for your reference.

Enclosed is City Engineer Thatcher's (acting Planner) recommendation and Sections 301 and 306. Below are the new Section 304 variance elements that must be satisfied in order for the Commission to recommend approval:

SUBD. 1.

- A. Variances shall only be permitted
 - i. when they are in harmony with the general purposes and intent of the ordinance and
 - ii. when the variances are consistent with the comprehensive plan.
- B. Variances may be granted when the applicant for the variance establishes that there are practical difficulties in complying with the zoning ordinance.

SUBD. 2. "Practical difficulties," as used in connection with the granting of a variance, means that

- i. Special conditions or circumstances exist which are peculiar to the land, structure, or building involved.
- ii. The condition which result in the need for the variance were not created by the applicant's action or design solution. The applicant shall have the burden of proof for showing that no other reasonable design solution exists.
- iii. The granting of a variance will result in no increase in the amount of water draining from the property.
- iv. Granting the variance will not impair an adequate supply of light and air to adjacent property, or unreasonably diminish or impair established property values within the surrounding area, or in any other respect impair the public health, safety, or welfare of the residents of the City.
- v. No variance shall be granted simply because there are no objections or because those who do not object outnumber those who do.
- vi. Financial gain or loss by the applicant shall not be considered if reasonable use for the property exists under terms of the Zoning Code.

Request/Recommendation

Staff requests Commissioners:

- 1) Review, discuss & approve or deny enclosed Variance No. 18-03-VB.

Thanks!

Regards,
Tobin Lay

Tobin Lay

From: Steven W. Thatcher <sthatcher@thatcher-eng.com>
Sent: Monday, October 1, 2018 2:32 PM
To: Tobin Lay
Subject: RE: Variance Materials - 27 Birchwood Lane RCWD #18-127R

Tobin,

In accordance with your request, Thatcher Engineering Inc. (TEI) prepared this Report based on our findings to date. TEI reviewed the following documents ("Documents"):

1. Letter from Terence O'Loughlin (O'Loughlin) to you dated September 28, 2018.
2. Request for Variance from O'Loughlin to City of Birchwood Village dated September 28, 2018.
3. Application for a Conditional Use Permit from O'Loughlin to City of Birchwood Village dated September 28, 2018.
4. Resolution Approving a Conditional Use Permit and Seven Variance for 27 Birchwood Lane (Resolution 2013-13) dated July 10, 2013.
5. Proposal from Chris Ochs, LAC Enterprises dba Windsor Companies (Windsor), to O'Loughlin dated September 26, 2018.
6. Proposal from Yardmasters Landscape, Inc. (Yardmaster) to O'Loughlin dated September 18, 2018.
7. Certificate of Survey prepared by E. G. Rud & Sons, Inc. dated March 26, 2009.
8. Plan sheets C1.0, C2.0, C3.0, C4.0, and C5.0 (Plans) prepared and signed by Jon E. Aamodt, P.E. of Northland Consulting Engineers on September 27, 2018.

TEI's analysis is as follows:

1. Document #1 shows that O'Loughlin requests approval for work including either:
 - a. Repair and restore hill to former elevations and contours using geogrid soil stabilization and plant slope stabilization shrubs (see separate proposals and drawings of Windsor Companies and Yardmaster Landscapes attached to Applications); or
 - b. Build 1 or 2 new upper segmental block walls (see drawings of Northland).
2. Document #5 shows that Windsor states "Please keep in mind this may only be a temporary fix as there is no guarantee the hillside will stay in place and not erode upon severe weather conditions again."
3. Document #8 shows Plans of the proposed work including the following:
 - a. "Owners Option – If Approved. MNDOT Type 2 RIPRAP."
4. Documents #1 through #8 do not show the following:
 - a. Whether or not the Owner is proposing to construct "Owners Option – If Approved. MNDOT Type 2 RIPRAP."
 - b. Which contractor will perform the work (Windsor or Yardmaster).

TEI's Recommendations to the City of Birchwood Village are as follows:

1. Approve contingent on the following:
 - a. Approval of the Department of Natural Resources, Rice Creek Watershed District, and White Bear Lake Conservation District (City Code 306.030 paragraph 2) including whether or not Department of Natural Resources, Rice Creek Watershed District, and White Bear Lake Conservation District will approve the construction of MNDOT Type 2 RIPRAP.
 - b. The appropriate conditions shown in Resolution Approving a Conditional Use Permit and Seven Variance for 27 Birchwood Lane (Resolution 2013-13) dated July 10, 2013 (Document #4).

- c. Approval is only for the work in the Plans prepared and signed by Jon E. Aamodt, P.E. of Northland Consulting Engineers on September 27, 2018 (Document #8).

Please let me know if you have any questions.

Thanks,
Steve

Steven Thatcher, PE
Thatcher Engineering Inc.

6201 Creek Valley Road
Edina, MN 55439
Phone: 612-781-2188 Cell: 612-867-7234 Fax: 612-781-2188 Web: www.thatcher-eng.com

301. ZONING CODE: GENERAL PROVISIONS

301.070. CONDITIONAL USES. Certain accessory uses permitted within the City have greater than usual chances to present safety hazards, impact on neighboring people and property, and nuisance situations. Because of these greater effects, the City requires these uses to be covered under Conditional Use Permits. Applications for Conditional Use Permits must comply with all provisions of Section 306. CONDITIONAL USE PERMITS.

1. A Conditional Use Permit shall be required for the following projects:

- a. Any land disturbance activity where the slope is toward a lake, pond, wetland, or watercourse leading to such waters, and the alteration is closer to such waters than the structure setback requirement. See Note at end of Section 301.070.
- b. Any land disturbance activity where such work involves an area greater than four hundred (400) square feet and/or more than fifty (50) cubic yards in volume. See Note at end of Section 301.070.
- c. Any swimming pool with a capacity over three thousand (3000) gallons or with a depth of over three and one-half (3 1/2) feet of water.
- d. Any tennis court.
- e. Any solar energy system for heating, cooling, electrical generation or other purposes.
- f. Home occupation.

NOTE: A separate Conditional Use Permit is not required for a land disturbance activity in conjunction with construction as part of a building permit as granted. However, as part of the Building Permit Application, the applicant shall provide information required pursuant to Section 306.030 and shall follow all provisions of Sections 302.050 IMPERVIOUS SURFACES and 302.055 LAND DISTURBANCE ACTIVITY STANDARDS.

306. ZONING CODE: CONDITIONAL USE PERMITS

306.010. PROCEDURE FOR OBTAINING CONDITIONAL USE PERMIT. Any person applying for a Conditional Use Permit (see Section 301.070 for uses requiring a permit) shall fill out and submit to the City Clerk at least fourteen (14) days prior to the Planning Commission meeting a "Conditional Use Permit form" (copies available at City Hall). A fee, to be set by the City Council, shall be paid.

306.020. CONDITIONAL USE REQUIREMENTS AND STANDARDS. Applications for Conditional Uses must include Required Information and demonstrate that the Requirements and Standards for each Conditional Use will be met. See Section 301.070 for uses requiring Conditional Use Permits.

306.030. CONDITIONAL USE PERMIT FOR LAND DISTURBANCE ACTIVITY.

1. Purpose. The purpose of Section 306.030 is to control or eliminate storm water runoff, soil erosion, and sedimentation in the City and adjacent jurisdictions.
2. No permit for any land disturbance activity shall be granted until the applicant obtains all necessary approvals from the Department of Natural Resources, the Rice Creek Watershed District, the White Bear Lake Conservation District, and any Agency, Department or Government entity which has jurisdiction over the project.
3. Required Information in Application for Land Disturbance Activity
 - a. Plans: Existing, Construction, and Final Site Plans must include detail on how the applicant intends to control and minimize erosion and storm water runoff and to follow Section 302.050 IMPERVIOUS SURFACES and Section 302.055 LAND DISTURBANCE ACTIVITY STANDARDS. A combination of successive Best Management Practices may be used to achieve the standards and requirements.

Existing Site Plan: A map of existing site conditions showing the site and immediately adjacent areas, including:

1. The name and address of the applicant, date and scale of drawings, and number of sheets.
2. Location of the tract on map of the City of Birchwood Village.
3. Existing topography with a contour interval appropriate to the topography of the land, but in no case having a contour interval greater than two (2) feet. Include designation of areas that have the potential for serious erosion problems, e.g. slope of greater than twelve (12) percent.
4. A delineation of all streams, public waters, and wetlands located on and immediately adjacent to the site and any classification given to the water bodies by the Minnesota Department of Natural Resources, The Minnesota Pollution Control Agency, and/or the U.S. Army Corps of Engineers.
5. Location and dimensions of existing storm water drainage systems and natural drainage patterns on and immediately adjacent to the site with delineation of the direction rate at which storm

water in conveyed from the site and identification of the receiving streams, public waters, wetland, and/or on-site locations.

6. A description of the soils of the site, including a map indicating soil types of the areas to be disturbed.
7. Location of existing vegetative cover.
8. Locations of highest known water levels of adjoining lakes, ponds, and wetlands.
9. Location and size of existing structures.

Site Construction Plan. A site construction plan including:

1. Locations, dimensions, and volumes of all proposed land disturbance activities including any vegetation proposed for removal.
2. Locations and dimensions of all temporary soil and construction material stockpiles.
3. Locations and dimensions of all construction site erosion control and permanent stabilization measures to meet City and State Codes both during and after the construction process.
4. Schedule of anticipated starting and ending dates of each land disturbance activity and construction site erosion control, storm water runoff control, and inspection and maintenance activity.

Plan of Final Site Conditions. A plan of final site conditions at the same scale as the existing site map showing the site changes including:

1. Finished grading shown at same contour interval as provided above to clearly indicate proposed changes, pre-existing topography, and final conditions.
 2. A landscape plan including dimensions, locations, type, and description of all proposed landscape materials which will be on the site.
 3. A drainage plan of the developed site including final storm water drainage systems and natural drainage patterns on and immediately adjacent to the site with delineation of the direction in which storm water in conveyed from the site.
 4. The proposed size, alignment, and intended uses of all structures to be on the site.
 5. Location and sizes of all areas which will be paved or covered with other impervious material including a description of the materials used.
 6. Location of any fill or excavation on slopes greater than twelve (12) percent for review for permanent slope stability.
 7. Any other information which would help the City in reviewing the plan.
- b. Demonstration that the work will not adversely affect the water or wildlife of lakes, ponds, or wetlands into which water from the altered land will drain, or adversely affect adjacent parcels of land.

- c. Exception: The Building Official may waive the submission of construction documents and other data if the nature of the work applied for is such that reviewing of this information is not necessary to obtain compliance with the code.

306.080. NOTIFICATION AND PROCEDURES FOR CONDITIONAL USE PERMITS

1. Notice of Conditional Use Permit application shall be mailed at least 10 days prior to the Planning Commission meeting to each owner of property within 200 feet of the property to which the Conditional Use Permit relates, and when applicable to the Department of Natural Resources. The City Clerk shall mail such notices. The City shall also give such notice as may be required by state statute.
2. The City Clerk shall refer the permit application to the Planning Commission. The Planning Commission shall consider the petition at its next regular meeting.
3. The petitioner or his/her representative shall appear before the Planning Commission at the next regularly scheduled meeting in order to answer questions concerning the proposed conditional use.
4. The Planning Commission will consider possible adverse effects of the proposed conditional use and what additional requirements may be necessary to prevent such adverse effects.
5. The Planning Commission is authorized to recommend Conditional Use Permits.
6. The recommendation by the Planning Commission is to be forwarded to the Council for action.
7. The report of the Planning Commission shall be placed on the agenda of the Council at its next regular meeting following referral from the Planning Commission. The council must take action on the application within sixty (60) days after receiving the report of the Planning Commission. If it grants the Conditional Use Permit, the Council may impose conditions it considers necessary to protect the public health, safety and welfare. Notice of final action shall be sent when applicable to the Minnesota Department of Natural Resources within ten (10) days.
8. The Council may require posting of a bond or other guarantee to insure compliance with its conditions.
9. Each Conditional Use Permit issued by the City shall be recorded with the County Recorder.
10. The City shall make a decision on a Conditional Use Permit within the time limitation of Minnesota Statutes Section 15.99.

306.090 REVOCATION.

1. A violation of any condition set forth or required by the City Council in granting a Conditional Use Permit shall be a violation of this Code, and the City Council after Notification and Procedures per Section 306.090, may terminate the Conditional Use Permit.
2. A Conditional Use Permit shall become null and void one year after it was granted, unless made use of within the year, or a longer period of time if prescribed by the Council at the time the permit is issued.

Mr. Tobin Lay
Administrator
City of Birchwood

September 28, 2018

Re: Request for conditional use and variance permits – 27 Birchwood Lane.

Dear Mr. Lay,

Enclosed are Applications for conditional use and variance permits necessary to repair the recent damage to our property from a mudslide, and to prevent another occurrence in the future. In general, the work that we ask the permits to approve consists of the following:

- (a) Remove the soil on the shore from the mudslide and replace in the hole on the hill;
- (b) Remove the existing stairs to allow repair and reinforcement of the existing wall on the OHWL and, after repair to the wall, relocate the stairs;
- (c) Repair and reinforce the existing wall on the OHWL with a new 6" thick concrete wall between the existing buttresses (see plans and specifications of Northland Consulting Engineers attached to Applications; work to be done by Gunderson Construction Co., White Bear);
- (d) Alternatively, either:
 - (i) Repair and restore hill to former elevations and contours using geogrid soil stabilization and plant slope stabilizing shrubs (see separate proposals and drawings of Windsor Companies and Yardmaster Landscapes attached to Applications); or
 - (ii) Build 1 or 2 new upper segmental block walls (see drawings of Northland).

We look forward to seeing you at the Planning Committee meeting Thursday, October 4 at 7 p.m. Thank you, Tobin, for you all your help in managing this matter.

Sincerely,

Terence O'Loughlin

REQUEST FOR VARIANCE

1. Date of Application: 9/28/18

(Requests for variances submitted prior to the 15th of the month will be considered by the Planning Commission at its next meeting on the first Tuesday of the month. Requests submitted after the 15th will be considered at the following meeting. All final decisions on variance applicants are made by the city council, which meets on the second Tuesday of every month.)

2. Name of Applicant(s) TERENCE + MARYKAY O'LOUGHLIN, LIFE ESTATE COVEES
JOSEPH C. GAYLORD, REMAINDERMAN COVEER

Address 27 BIRCHWOOD LAKE

City BIRCHWOOD, WA

O'LOUGHLIN Business Phone 651 247-2868 GAYLORD Home Phone 651 895-3054

3. Address of Property Involved if different from above

4. Name of Property Owner(s) if different from above and describe applicant's interest in the property.

SEE # 2

5. Specific Code Provision from which Variance is Requested. 301.070.1.a;

6. Describe in narrative form what the applicant is proposing to do that requires a variance. 302.020.4.c; 302.055.2a4; 302.080.2a+c; 302.050.

- (a) REMOVE SOIL FROM BEACH TO HOLE ON HILL FROM MUDSLIDE;
- (b) EITHER BUILD 1 OR 2 NEW UPPER WALL(S) OR, ALTERNATIVELY, REPAIR + RESTORE HILLSIDE TO PRIOR CONFIGURATION + CONTOUR;
- (c) REMOVE AND RELOCATE STAIRS;
- (d) REINFORCE EXISTING LOWER WALL? SEE ATTACHED

DRAWINGS FROM NORTHLAND ENGINEER/D & LANDSCAPE ARCHITECTS
WORK PROPOSALS FROM WINDSOR AND YARD MASTER
 SIGNATURE OF APPLICANT(S) Terence O'Laughlin Mary Kay O'Laughlin

(Handwritten signatures of Terence O'Laughlin and Mary Kay O'Laughlin)

7. Type of Project

New Construction (empty lot) _____

Addition _____

Demolition _____

Landscaping _____

Repair or removal of nonconforming structure AND REINFORCE EXISTING WALL ✓

Other (describe) REMOVE AND RELOCATE STAIRS ✓

BUILD 1 OR 2 NEW UPPER WALLS

8. Type of Structure Involved

Single Dwelling _____

Garage _____

Tennis Court _____

Grading/Filling ✓

Double Dwelling _____

Addition _____

Pool _____

Other Accessory (describe) ✓ SEE #6+7

9. Using the criteria in the city code for a variance (set forth in the attached sheet), explain why a variance is justified in this situation and describe what hardship would result from denial of the variance.

THE DAMAGE CAUSED BY THE MUDSLIDE CANNOT
BE REPAIRED, AND ANOTHER MUDSLIDE CANNOT
BE PREVENTED, UNLESS THE REQUESTED
VARIANCES ARE GRANTED

10. Describe any measures the applicant is proposing to undertake if the variance is granted, including measures to decrease the amount of water draining from the property.

SEE ATTACHED DRAWINGS

11. Describe any alternatives the applicant considered (if any) that do not require a variance.

THERE ARE NO ALTERNATIVES

12. Can an emergency vehicle (Fire Truck or Ambulance) access all structures on the property after the proposed change? Yes No
13. Does the proposed change bring any other nonconforming use into conformity with the city building code? Yes No

If yes, explain _____

14. Are there other governmental regulations that apply to the proposed action, including requirements of the Rice Creek Watershed District? Yes No
If yes, please identify the regulations.

CHECKING WITH DNR + RICE CREEK

15. Please provide the applicable information in the following Table

	Existing	Proposed	Change
1. Total Square Footage of Lot			
2. Maximum impervious surface (25% of item 1)			0
3. Roof Surface			
4. Sidewalks			0
5. Driveways			0
6. Other impervious surface			0
7. Total of items 3-6			
8. Percent impervious surface			

16. Please attach the following:
- Legal description of property
 - Plot Plan drawn to scale showing existing and proposed structures on the lot. Also show structures on adjacent lots.

SBE ATTACHED SURVEY WHICH INCLUDES LEGAL DESCRIPTION

2. Criteria for Granting a Variance. Variances may only be granted in Minnesota Statutes, Chapter 462.

Variances to the strict application of the provisions of the Code may be granted, however, no variance may be granted that would allow any use that is prohibited within the City. Conditions and safeguards may be imposed on the variances so granted. A variance shall not be granted unless the following criteria are met:

- a. Special conditions or circumstances exist which are peculiar to the land, structure, or building involved.
- b. The condition which result in the need for the variance were not created by the applicant's action or design solution. The applicant shall have the burden of proof for showing that no other reasonable design solution exists.
- c. The variance is proved necessary in order to secure for the applicant the right or rights that are enjoyed by other owners in the same area of the district.
- d. The granting of a variance will result in no increase in the amount of water draining from the property.
- e. Granting the variance will not impair an adequate supply of light and air to adjacent property, or unreasonably diminish or impair established property values within the surrounding area, or in any other respect impair the public health, safety, or welfare of the residents of the City.
- f. No variance shall be granted simply because there are no objections or because those who do not object outnumber those who do.
- g. Financial gain or loss by the applicant shall not be considered if reasonable use for the property exists under terms of the Zoning Code.

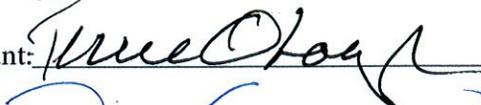
NOTICE:

***The City and its representatives accept no responsibility for errors and/or damages caused due to incomplete and/or inaccurate information herein. It is the responsibility of the applicant to ensure the accuracy and completeness of this information.**

***The City will hold applicant responsible for any damage to public streets & roadways in the course of construction, landscape, excavating, filing and grading operations.**

***Under penalty of perjury the applicant declares that the information provided in and enclosed herewith is complete and all documents represented are true and correct representations of the actual project/building which will be built in conformance with such representation if approved.**

Signature of Applicant:



Date:

9/27/18





**City of Birchwood Village
CONDITIONAL USE PERMIT APPLICATION**

City of Birchwood Village
207 Birchwood Avenue
Birchwood, MN 55110

Office Ph. # 651-426-3403
Email: info@cityofbirchwood.com

Two Sets of Plans Received: _____

Date Issued: _____

Permit No: _____

Project Address: 27 BIRCHWOOD LANE

Permit Applicant: TERENCE + MARY KAY O'LOUGHLIN Phone No: SEE BELOW

▪ Contractor License No: _____ Expiration Date: _____

Homeowner: TERENCE + MARY KAY O'LOUGHLIN, LIFE ESTATE OWNERS Phone No: CELL: 651 247 2868
HOME: 651 426-2033

Permit For: Land Disturbance Swimming Pool Tennis Court Solar Energy Home Occupation

Area / Volume / Capacity of use: _____

Sq. Feet: _____ Length: _____ Width: _____ Height: _____

Legal of Site Location: SEE LEGAL DESCRIPTION IN ATTACHED SURVEY

PID#: _____

Proximity to Wetlands or Lakeshore: 5-6'

Setbacks: Front Yard _____ Rear Yard Side/s Yard _____

Description of Work (required site plan is attached) SEE APPLICATION FOR VARIANCES & ATTACHED DRAWINGS

Special Approvals	Required	Received	Not Required
Washington County			
Rice Creek Watershed			
Dept Natural Resource			
Wild Conservation Dist			

Permit Fee	\$
Plan Reviewer Fee	\$
State Surcharge Fee	\$

Supporting Information: Explain how the use will meet all of the applicable standards and conditions in Section 306 of the Zoning Code. Attach additional sheets if necessary.

SEE DRAWINGS ATTACHED TO VARIANCE APPLICATION

RESOLUTION NO. 2013-13

**RESOLUTION APPROVING A CONDITIONAL USE PERMIT
AND SEVEN VARIANCES FOR 27 BIRCHWOOD LANE
WITHIN THE CITY OF BIRCHWOOD VILLAGE, MINNESOTA**

WHEREAS, a proposal (13-2-SB) has been submitted by Terrance and Mary Kay O'Loughlin requesting a conditional use permit and seven variances from the City of Birchwood Village Zoning Code:

- A Conditional Use Permit for a land disturbance activity where the slope of the land is toward a lake and the alteration is closer to the lake than the structure setback requirement, per Code Section 301.070.1.a;
- A 50-foot variance from the 50-foot setback requirement for two retaining walls, per 302.020.4.c, in order to locate one retaining wall at the OHWL and a second wall approximately 12 feet back from that;
- A 20-foot variance to grade within 20 feet of the Ordinary High Water Level, per 302.055.2.a.4;
- A 6-foot variance from the 10-foot side yard setback in order to construct the new top flight of stairs in the existing location: 4 feet from the north property line.
- A 2-foot, 8-inch variance from the 4-foot height limit, per 302.080.2.a, in order to construct one retaining wall 6 feet 8 inches tall (with only 5 feet 8 inches exposed) and a second retaining wall at 4-feet in height;
- A 4-inch variance from the 44-inch maximum width for stairways, per 302.080.2.a, in order to construct stairs which are 48 inches wide;
- A 70-square-foot variance from the 32-square foot maximum size for a landing, per 302.080.2.c, in order to construct a landing that is no more than 102 square feet in size and no more than 4 feet in width;
- A 4.4% variance from the 25% impervious area limit to allow 34.6% lot cover – the site being grandfathered-in at 30.2% (per 302.050); and

At the following Site:

ADDRESS: 27 Birchwood Lane

LEGAL DESCRIPTION: Lot 13, BIRCHWOOD, and all that part of Lot 12 BIRCHWOOD, lying between the westerly line of said Lot 12 extended to the shore of White Bear Lake and a line drawn from the southwest corner of said Lot 12 to said lakeshore that intersects a line drawn easterly at right angles to said west line at a point 192.48 feet northerly from said southwest corner and which said point of intersection is 4 feet east of said westerly line, according to the plat thereof on file and of record in the office of the County Recorder, Washington County, MN (PID #: 1903021330016); and

WHEREAS, the Planning Commission has held a public hearing as required by the City Zoning Code on June 4, 2013; and

WHEREAS, the proposed walls will stabilize the soil while attempting to maintain the natural slope of the land as much as safely possible; and

WHEREAS, the City Council has considered the advice and recommendations of the Planning Commission regarding the effect of the proposed variances upon the health, safety, and welfare of the community and its Comprehensive Plan, as well as any concerns related to compatibility of uses, traffic, property values, light, air, danger of fire, and risk to public safety in the surrounding areas; and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Birchwood Village, that the City accepts and adopts the following findings of the Planning Commission:

For the Conditional Use Permit:

1. The proposal is consistent with the city's Comprehensive Plan.
2. The proposal is consistent with existing and future land uses in the area.
3. The proposal conforms to the Zoning Code requirements.
4. That the special conditions attached in the form of a conditional use permit are hereby approved.
5. That the proposed action will not:
 - a. Impair an adequate supply of light and air to adjacent property,
 - b. Unreasonably diminish or impair established property values within the surrounding area,
 - c. In any other respect impair the public health, safety or welfare or the residents of the City.
 - d. Depreciate values in the area
 - e. Over-burden neither the existing public services nor the capacity of the City to service the area.
 - f. Alter traffic generation beyond the capabilities of the streets serving the site.

For the Variances:

1. That the proposed actions will not:
 - a. Impair an adequate supply of light and air to adjacent property,
 - b. Unreasonably diminish or impair established property values within the surrounding area,
 - c. In any other respect impair the public health, safety or welfare or the residents of the City.
2. That the variances are proved necessary in order to secure for the applicant the right or rights enjoyed by other owners in the same area of the district.
3. That the variances are not being granted simply because there are no objections or because those

who do not object outnumber those who do.

4. That a financial gain or loss by the applicant is not a consideration.
5. Special conditions or circumstances exist which are peculiar to the land involved.

FURTHER, BE IT RESOLVED, that the City Council of the City of Birchwood Village hereby approves the requested conditional use permit and variances subject to the following conditions:

1. All application materials, maps, drawings and descriptive information submitted with this application shall become part of this permit.
2. Per Section 306.090, if within one (1) year after granting the conditional use permit and variances, the use has not been completed or utilized, the permit shall become null and void unless a petition for an extension of time in which to complete or utilize the use has been granted by the City Council.
3. Any violation of any condition set forth by this resolution shall be a violation of the City code and of the Conditional Use Permit and the City Council, after notification and procedures per Section 306.090, may terminate the Conditional Use Permit.
4. *The applicant shall obtain a zoning permit for the work prior to beginning any grading or construction activity.*
5. The applicant shall verify their property lines and have the property pins exposed throughout construction, including at the time of inspection, to insure that all work is contained within the limits of the property.
6. Maximum height of the wall closest to the OHWL is 6 feet, 8 inches. Maximum exposed height of the wall closest to the OHWL is 5 feet, 8 inches. Maximum height of the second wall (both actual and exposed) is 4 feet.
7. The proposed contours shall tie into the existing contours along the side lot lines so that the project does not affect adjacent properties.
8. The pervious paver landing shall be shaped as shown on the site plan and 3-D graphic – not as shown on the landscape plan.

Prior to the issuance of a zoning permit, the applicant shall:

9. Sign and return a copy of the resolution to the City Clerk as evidence of consent to comply with the conditions stated therein.
10. Provide stormwater calculations for the proposed pavers showing the rate of infiltration, to be reviewed and approved by the City Engineer. (Should be designed to accommodate the 2.8-inch rain event within 48 hours.)

- 11. Provide a stormwater mitigation feature to off-set the amount of new impervious area proposed. The feature should be designed to infiltrate at the 2.8-inch rain fall event within 48 hours. Design to be reviewed and approved by the City Engineer.
- 12. Provide soil borings or other infiltration test to document that the existing soils can infiltrate at the proposed rates. Data to be approved by the City Engineer.
- 13. Provide proof of neighbor's permission to enter their property for the construction period.
- 14. Provide structural wall plans signed by a licensed structural engineer.
- 15. Revise the landscape plan to identify the rip rap material and to show the planting between the upper and lower walls. Revised landscape plan subject to approval by the staff planner.
- 16. Revise the plan to reflect the following elevations: the toe of bottom wall shall be placed at 924.4, the top of the bottom wall shall be at 931.0. There shall be at least 11 feet between the bottom wall and the upper wall and the grade shall rise at least 3 feet between the two. The toe of the upper wall shall be placed at 934.0 and the top of the upper wall shall be at 938.0. The rip rap on the waterward side of the bottom wall shall be at least one foot in height at a 3 to 1 slope, unless otherwise required by the DNR.
- 17. Revise the plan to show a 36-inch tall standard guard rail at the top of the bottom wall, design to meet 4-inch sphere standard.

During grading and construction activity on site, the applicant shall:

- 18. Install a silt fence at the toe of the slope.
- 19. Set pins at the OHWL, prior to installing the water-ward retaining wall.

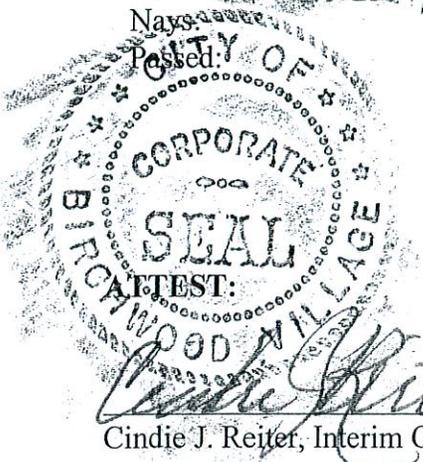
The foregoing resolution, offered by Council member Hulsick and supported by Council member Lafay, was declared carried on the following vote:

Ayes: Wingfield, Hulsick, Lafay, Hulsick, Wingfield

Nays: _____

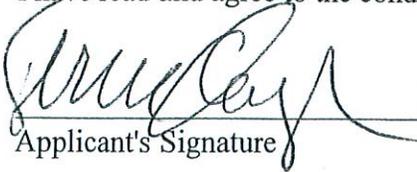
Passed: _____

Mary Wingfield
Mary Wingfield, Mayor



Cindie J. Reiter
Cindie J. Reiter, Interim City Clerk

Approval is contingent upon execution and return of this document to the City Clerk.
I have read and agree to the conditions of this resolution as outlined above.

 7/10/13
Applicant's Signature Date

Drafted by Samantha Crosby,
White Bear Lake City Planner
4701 Highway 61, White Bear Lake, MN 55110

NOTARY PAGE

State of Minnesota
County of Washington

Before me appeared Terrance O'Laughlin (applicant)
on 10th (date) of July (month), 2013.

Cindie Reiter Roberts
Notary, Cindie J Reiter Roberts





GEOGRID SLOPE RENOVATION

TERRY OLOUGHLIN
27 BIRCHWOOD LANE
WHITE BEAR LAKE, MN 55110

Sales: Chris Ochs
BACK YARD SLOPE RENOVATION
 27 Birchwood Lane White Bear Lake, MN 55110

Est ID: EST1053172
Date: Sep-26-2018

Email: tjol1938@gmail.com
Phone:

- All necessary and applicable Taxes are included below -

- **PROPOSAL NOTES:**

Project scope is as follows:

1. Excavate remaining area proposed for geogrid soil stabilization
2. Install geogrid and replace soils with compaction every 6 inches in height, repeat for a total of 4 layers
3. Include erosion control tubing to reduce rain water runoff
4. Staple heavy duty erosion control blanket on top of compacted area
5. Plant slope stabilizing shrubs to complete project

*Please keep in mind this may only be a temporary fix as there is no guarantee the hillside will stay in place and not erode upon severe weather conditions again.

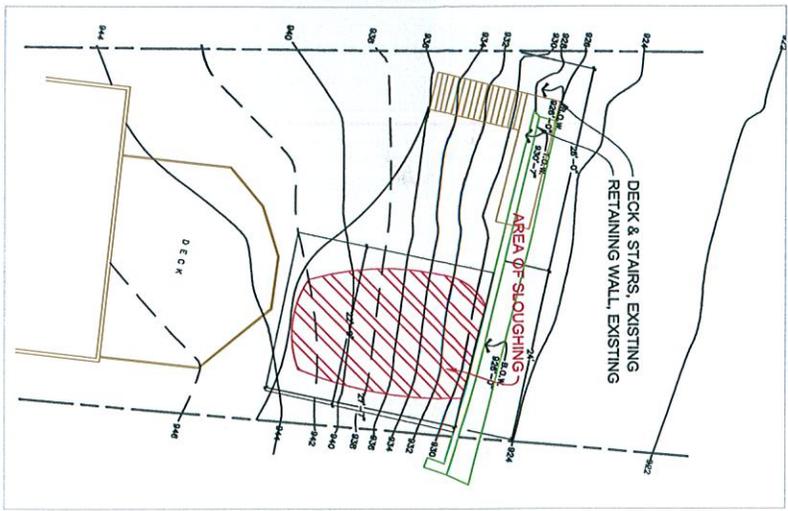
Windsor Companies has suggested a tiered block or concrete retaining walls with heavily rooting plants as a preferable solution for steep hillside erosion control.

HILLSIDE RESTORATION GEOGRID	\$46,886.26
HILLSIDE RESTORATION GG - PLANTING	\$5,109.02
Subtotal	\$51,995.28
Taxes	\$35.93
Estimate Total	\$52,031.21

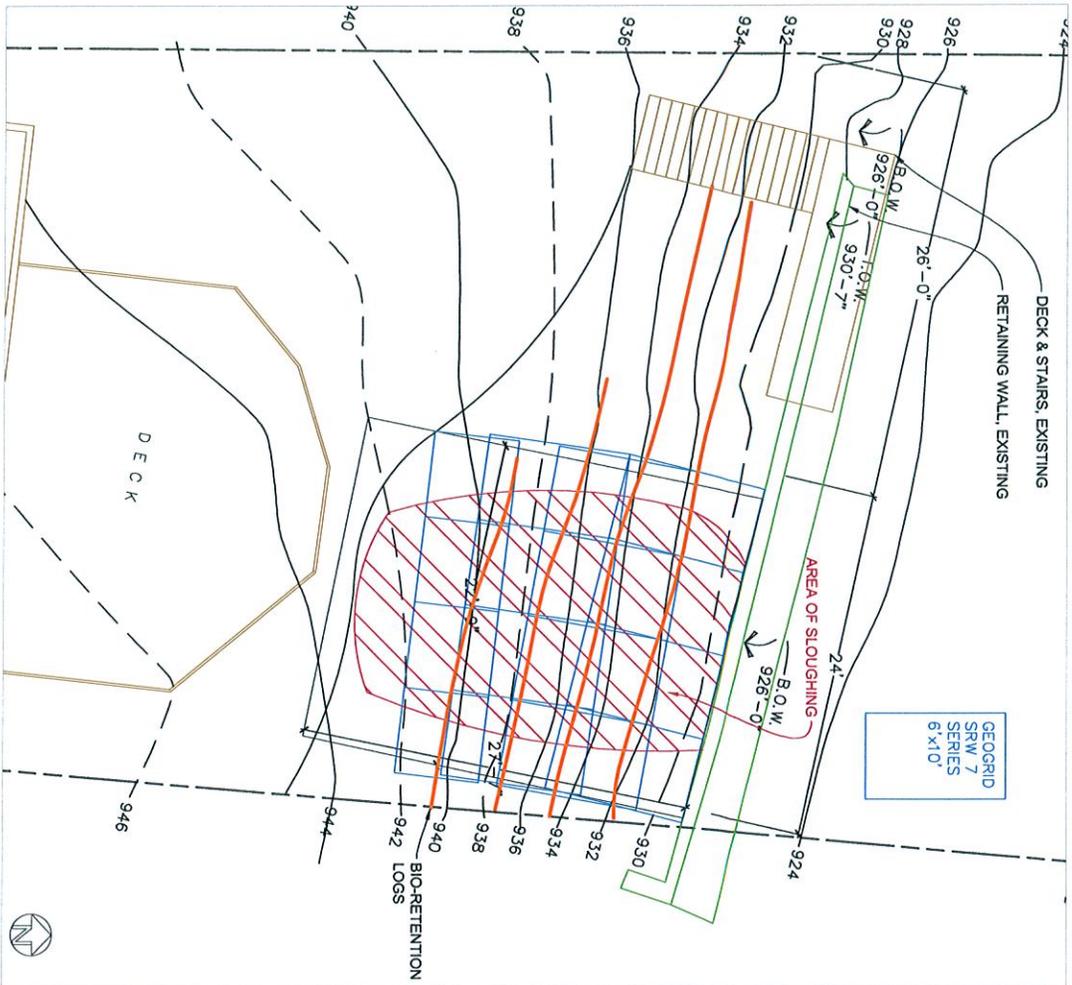
LAC Enterprises dba Windsor Companies
 1175 Hwy 36 East
 St. Paul

P.6514820205
 F.6514820607

www.windsorcompanies.com
 info@windsorcompanies.com
 page 1 of 2

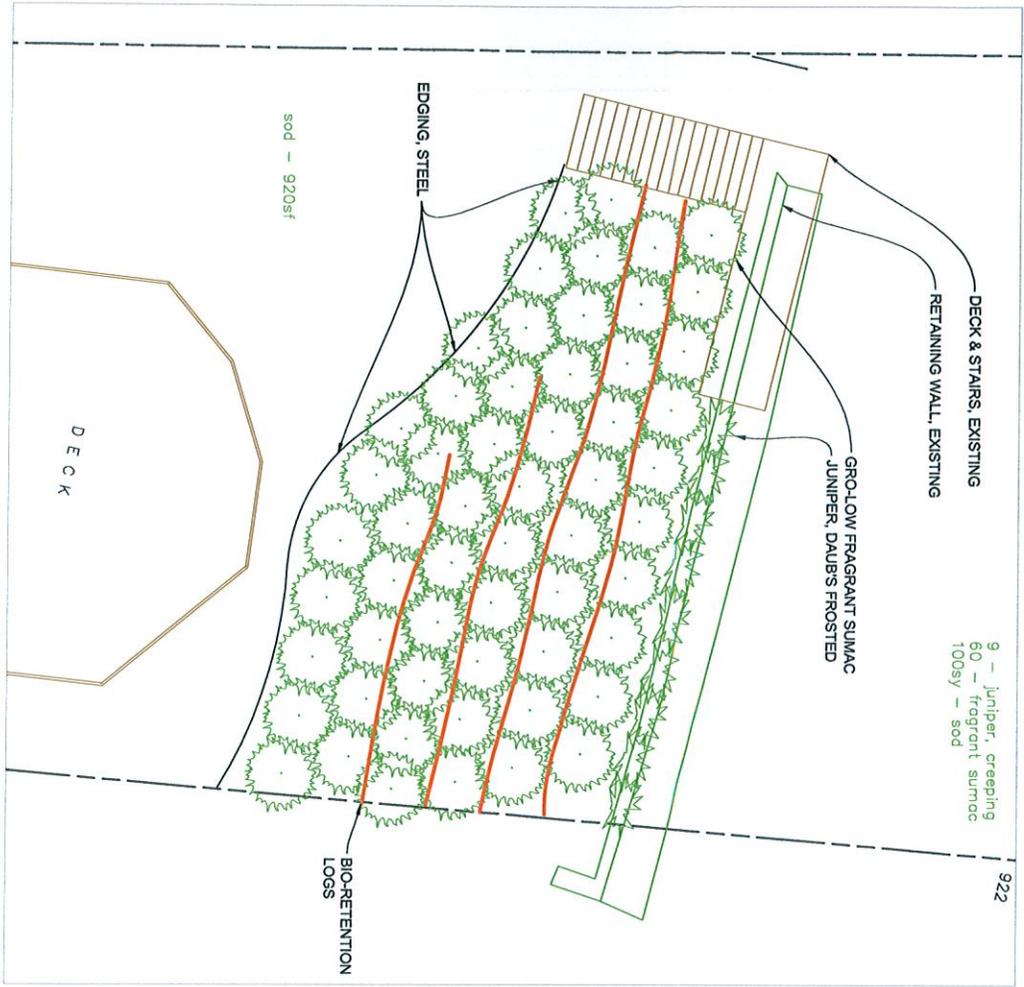


1 EXISTING CONDITION
Scale: 1/16"=1'-0"



2 PROPOSED STRUCTURAL REPAIR
Scale: 1/8"=1'-0"

<p>OLAUGHLIN 27 Birchwood Ln Birchwood, mn</p>		<p>Landscape Site Plan</p>													
<p>WINDSOR COMPANIES online portfolio: www.windsorcompanies.com T: 851.482.0205 / F: 851.482.0607 1176 Highway 56 East / Saint Paul MN 55108</p>															
<p>LANDSCAPE DESIGN, INSTALLATION & MAINTENANCE</p>															
<table border="1"> <thead> <tr> <th>REV. NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV. NO.	DATE	DESCRIPTION										<p>DATE: 10/20/2015 PROJECT: 27 BIRCHWOOD LN DRAWN BY: gpo DESIGN BY: gpo</p>	<p>SCALE: 1/8"=1'-0" SHEET # L101</p>	<p>PROJECT: 27 BIRCHWOOD LN DATE: 10/20/2015</p>
REV. NO.	DATE	DESCRIPTION													



1 PLANTING PLAN
Scale: 1/8"=1'-0"



Gro-Low Fragrant Sumac (60)



Daub's Frosted Juniper (16)

<p>OLAUGHLIN 27 Birchwood Ln Birchwood, mn</p>		<p>Landscape Site Plan</p>																																	
<p>WINDSOR COMPANIES online portfolio: www.windsorcompanies.com T: 851.482.0206 / F: 851.482.0807 1175 Highway 28 East / Saint Paul MN 55108</p> <p>LANDSCAPE DESIGN, INSTALLATION & MAINTENANCE © 2008 WINDSOR COMPANIES, INC.</p>																																			
<p>DESIGN BY: gpo</p> <p>DRAWN BY: gpo</p> <p>PROJECT RATING: BY: []</p> <p>DATE: 10/09/08</p>	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>REV. NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV. NO.	DATE	DESCRIPTION																															<p>SCALE: 1/8"=1'-0"</p> <p>SHEET # L102</p>
REV. NO.	DATE	DESCRIPTION																																	

PROPOSAL

PROPOSAL #
2122



YARDMASTERS LANDSCAPES, INC.
4157 Omaha Ave N
Stillwater, MN 55082
(651) 439-1750
info@yardmasterslandscapes.com

www.yardmasterslandscapes.com

ARCHITECT
DATE 9/18/2018
BILLING ADDRESS
Terry OLoughlin
27 Birchwood Ln.
Birchwood, MN 55110
PHONE (Primary) 651-247-2868
PHONE (Alternate)
EMAIL tjol1938@gmail.com

PROJECT ADDRESS

LANDSCAPE CONSTRUCTION CONTRACT

QTY	UOM	ITEM	DESCRIPTION	TOTAL
1	EA	Misc Expense	Install multi sized river rock along entire shoreline on 6 Oz. Erosion fabric Specs include Size of granite boulders, 6" to 14"	8,150.00
1	ea	Misc Expense	Repair hillside Specs include Fill hole with compactible clay/soil mix in 12" lifts then lay geogrid enforcement over entire area. Approx. 4 to 6 lifts of clay soil and geogrid are required Install sod to match top of yard grade, stake solid (includes cleaning up soils that slid down the hill	43,000.00
	ea	Misc Expense	Option: Install modular block retaining wall approx 6 ft. in from concrete wall at bottom of hill Specs include Install 8" diamond block wall approx 6 ft. tall wall, 50 ft. long, including base course with 2 layers of geogrid, 12" of compacted CS base under wall, 16" of 3/4 clear washed rock behind wall with filter fabric separator/drain pipes and outpouts behind wall (45,663.00)	0.00
			MIN Sales Tax	0.00

Thank you for the opportunity to bid your project.

YARDMASTERS LANDSCAPES, Inc. hereby proposes to furnish time and materials as described and specified here FOR THE SUM OF

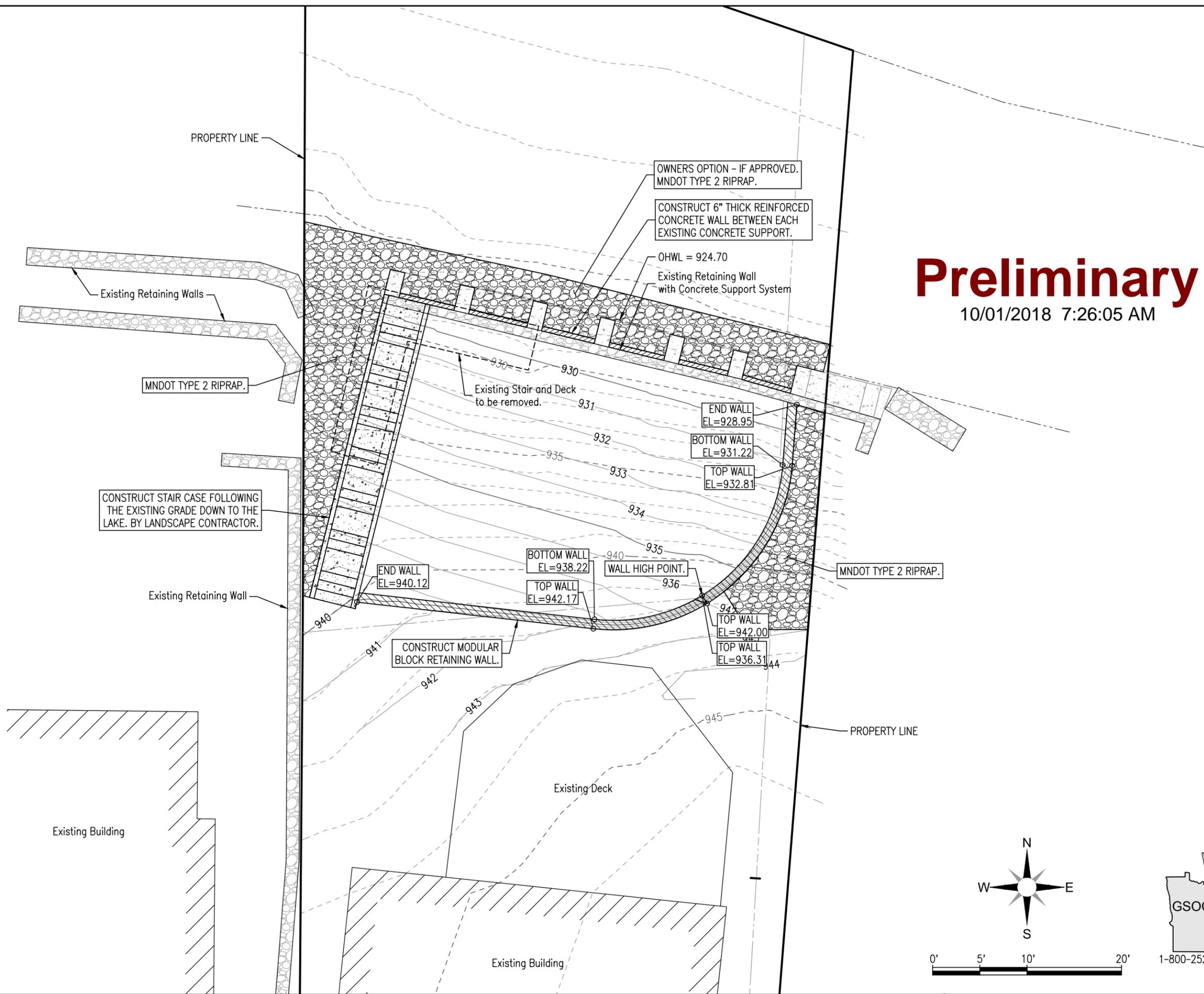
\$51,150.00

Signing of this proposal binds both parties to the price, work description, specifications, conditions and payment agreement as detailed above.

Client Signature _____ Date _____

Salesperson Signature _____ Date _____

S:\A JOBS UNDER DESIGN\18-550 27 Birchwood Lane - Retaining Wall\18-550 Trace.dwg Sep 27, 2018 - 10:11am Trent



Preliminary
 10/01/2018 7:26:05 AM

PRELIMINARY
 DO NOT USE FOR
 CONSTRUCTION

I hereby certify that I am a Professional Engineer.

PROJ #: 18-550
 DATE: 09-27-18
 DRAWN BY: TTP
 CHECKED BY: JEA

SITE PLAN

SHEET

C4.0



1-800-252-1166

CONCRETE

- MIXING, BATCHING, TRANSPORTING, PLACING, AND CURING OF ALL CONCRETE, AND SELECTION OF CONCRETE MATERIALS, SHALL CONFORM TO ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS," EXCEPT AS NOTED BELOW. PROPORTIONS OF AGGREGATE TO CEMENTITIOUS PASTE SHALL BE SUCH AS TO PRODUCE A DENSE, WORKABLE MIX THAT CAN BE PLACED WITHOUT SEGREGATION OR EXCESS FREE SURFACE WATER.
- ALL CONCRETE USED IN SURFACES EXPOSED TO THE WEATHER SHALL CONTAIN AN ACCEPTABLE ADMIXTURE TO PRODUCE AIR-ENTRAINED CONCRETE WITH TOTAL AIR CONTENT, AS NOTED IN THE CONCRETE MIX SPECIFICATION TABLE. TOLERANCE FOR AIR CONTENT SHALL BE +/-1 PERCENT. AIR CONTENT SHALL BE MEASURED AT THE DISCHARGE OF THE TRUCK. IF CONCRETE IS PUMPED, AIR CONTENT SHALL BE MEASURED AT THE DISCHARGE END OF THE PUMP LINE. TESTS FOR AIR CONTENT SHALL MEET ASTM C172 REQUIREMENTS.

CONCRETE MIX DESIGN TABLE

LOCATION	f _c ' (PSI)	TEST AGE (DAYS)	MAX W/C RATIO	AIR CONTENT (%)	MAX. AGGREGATE SIZE
MISCELLANEOUS CONCRETE, .	4,500	28	0.45	6.0	1"

REINFORCING STEEL

- ALL REINFORCING SHALL BE NEW BILLET STOCK ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE. BARS SHALL BE SECURELY TIED IN PLACE WITH #16 DOUBLE-ANNEALED IRON WIRE. BARS SHALL BE SUPPORTED ON ACCEPTABLE CHAIRS. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING OF REINFORCED CONCRETE STRUCTURES." CONTRACTOR SHALL COORDINATE REINFORCING STEEL PLACEMENT DETAILS AND PROVIDE TEMPLATES FOR PLACING STEEL IN CONGESTED AREAS AS NECESSARY.
- NO REINFORCING BARS SHALL BE SPLICED BY WELDING
- WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR TO PLATES, ANGLES, ETC, IS PROHIBITED,

ADHESIVE ANCHORS

- ACCEPTABLE ADHESIVE (EPOXY) ANCHORS SHALL BE AS FOLLOWS:
 - A. INSTALLED IN CONCRETE:
 - HILTI "HIT-HY 200" (ICC-ES ESR-3187)
 - SIMPSON STRONG-TIE "SET-XP" (ICC-ES ESR-2508)
 - APPROVED ALTERNATE WITH A CURRENT ICC-ES REPORT
- UNLESS NOTED OTHERWISE, ANCHORS SHALL BE ASTM A615, GRADE 60 REINFORCING STEEL DOWELS.
- HOLES SHALL BE DRILLED WITH ROTARY IMPACT HAMMER OR EQUIVALENT METHOD TO PRODUCE A HOLE WITH A ROUGH INSIDE SURFACE. CORE DRILLING HOLES IS NOT PERMITTED.
- NO REINFORCING SHALL BE CUT TO INSTALL ADHESIVE ANCHORS.
- TWO-PART ADHESIVES SHALL BE MIXED, APPLIED, AND CURED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS IN THE ICC-ES REPORT. ALL PLACEMENT AND CURING SHALL BE CONDUCTED WITH CONCRETE AND AIR TEMPERATURES ABOVE 50 DEGREES FAHRENHEIT. ADHESIVE SHALL BE APPLIED ONLY TO CLEAN, DRY CONCRETE. POSITIVE PROTECTION SHALL BE PROVIDED SO THAT ANCHORS ARE NOT DISTURBED DURING THE CURING PERIOD.
- DEFECTIVE OR ABANDONED HOLES SHALL BE FILLED WITH NON-SHRINK GROUT OR AN INJECTABLE ADHESIVE MATCHING THE ADJACENT CONCRETE COMPRESSIVE STRENGTHS. NOTIFY THE STRUCTURAL ENGINEER OF DEFECTIVE OR ABANDONED HOLES IN WALLS AND COLUMNS. THESE ELEMENTS MAY REQUIRE NON-SHRINK GROUT WITH A COMPRESSIVE MODULUS OF ELASTICITY MATCHING THAT OF THE ADJACENT CONCRETE.

NONSHRINK GROUT

- GROUT SHALL BE AN APPROVED NONSHRINK CEMENTITIOUS GROUT CONTAINING NATURAL AGGREGATES DELIVERED TO THE JOB SITE IN FACTORY PREPACKAGED CONTAINERS REQUIRING ONLY THE ADDITION OF WATER.
- THE MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE AT LEAST 6,000 PSI.
- GROUT SHALL BE MIXED, APPLIED, AND CURED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

LATERAL PRESSURE ON SUBGRADE WALLS

- THE DESIGN PRESSURES FOR SUBGRADE WALLS ARE BASED ON A "DRAINED" CONDITION.

EXISTING STRUCTURE

- EXISTING STRUCTURAL DIMENSIONS AND MEMBER SIZES ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO FABRICATION. THE CONTRACTOR SHALL VERIFY THE ACTUAL CONFIGURATION OF EXISTING CONSTRUCTION AND THE CONDITION OF THE STRUCTURE BEFORE BEGINNING WORK.
- ANY DISCREPANCIES OF UNSOUND CONDITIONS SHALL BE REPORTED TO THE ENGINEER FOR RESOLUTION BEFORE BEGINNING WORK.

GENERAL WALL AND GRADING NOTES:

- MATERIAL FOR LEVELING PAD SHALL BE COMPACTED SAND OR GRAVEL, OVERSIZED AS SHOWN AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- DRAINAGE AGGREGATE SHALL BE ANGULAR, CLEAN STONE WITH 75-100% PASSING #3/4 SIEVE, 0-60% PASSING #4, 0-50% PASSING #40 AND 0-5% PASSING #200 SIEVE, COPACTED TO 95% STANDARD PROCTOR DENSITY.
- DRAINAGE PIPE SHALL BE PERFORATED PVC WRAPPED WITH GEOTECTILE ASTM F 405 OR ASTM F 758
- REINFORCED BACKFILL SHALL BE SHALL BE ANGULAR GRAVEL WITH 100% PASSING 1" SIEVE, 20-100% PASSING #4, 0-60% PASSING #40 AND 0-10% PASSING #200 SIEVE.
- REFER TO ATTACHED STANDARD MANUFACTURER DETAILS FOR ADDITIONAL SEGMENTAL WALL INFORMATION
- THE SEGMENTAL RETAINING WALL DESIGN IS BASED ON VERSA-LOCK TYPE WALL. IF THE OWNER WISHES TO UTILIZE A DIFFERENT WALL SYSTEM, SUBMIT SHOP DRAWINGS AND CALCULATIONS CERTIFIED BY A MN PROFESSIONAL ENGINEER FOR REVIEW PRIOR TO ORDERING ANY MATERIAL.
- CLASS 2 RIP RAP SHALL BE ANGULAR OR CRUSHED AND PLACED ON AN APPROVED WOVEN GEOTEXTILE, SUBMIT SPECIFICATIONS FOR REVIEW BY ENGINEER.
- DEPTH OF GEOTEXTILE FABRIC EMBEDMENT SHALL BE EQUAL TO THE RETAINED HEIGHT FOR THE PROJECT. (i.e. IF THE WALL RETAINS 4'-0" OF EARTH THE EMBEDMENT DEPTH SHALL BE AT LEAST 4'-0".)
- GEOTEXTILE FABRIC SHALL BE PLACED AT EVERY THIRD BLOCK AS SHOWN.

SHEET INDEX

- C1.0 - NOTES AND SITE LOCATION
- C2.0 - SITE PLAN WITH GRADES
- C3.0 SEGMENTAL RETAINING WALL
- C4.0- NEW CONCRETE WALL DETAILS
- C5.0 - ADDITIONAL SEGMENTAL WALL INFO



VICINITY MAP



TERRY O'LOUGHLIN
SLOPE CORRECTIONS

27 BIRCHWOOD LANE, WHITE BEAR LAKE, MN 55110

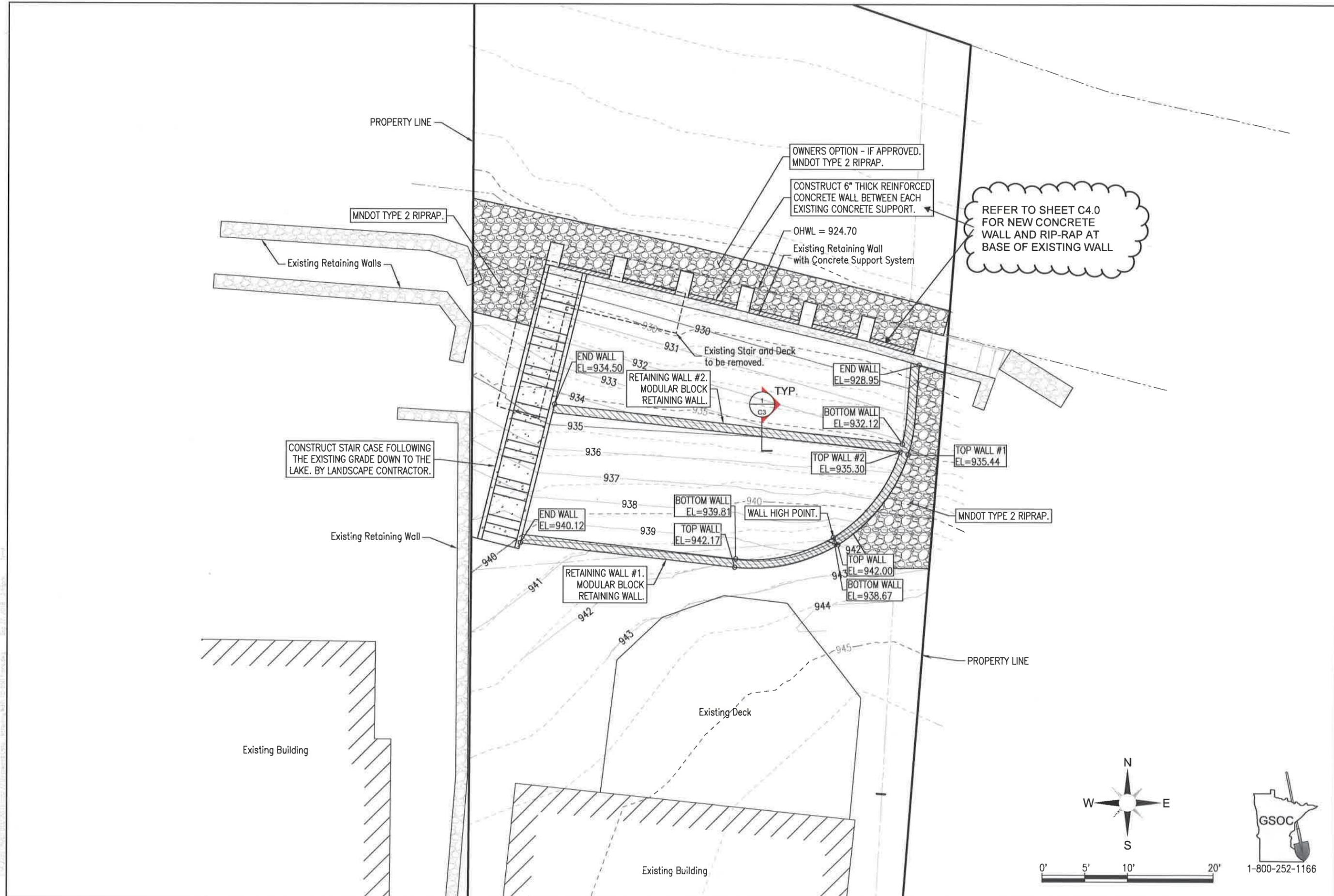
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Jon E. Aarnodt
Engineer: Jon E. Aarnodt

PROJ #: 18-550
DATE: 09-27-18
DRAWN BY: TTP
CHECKED BY: JEA

STRUCTURAL NOTES

SHEET
C1.0

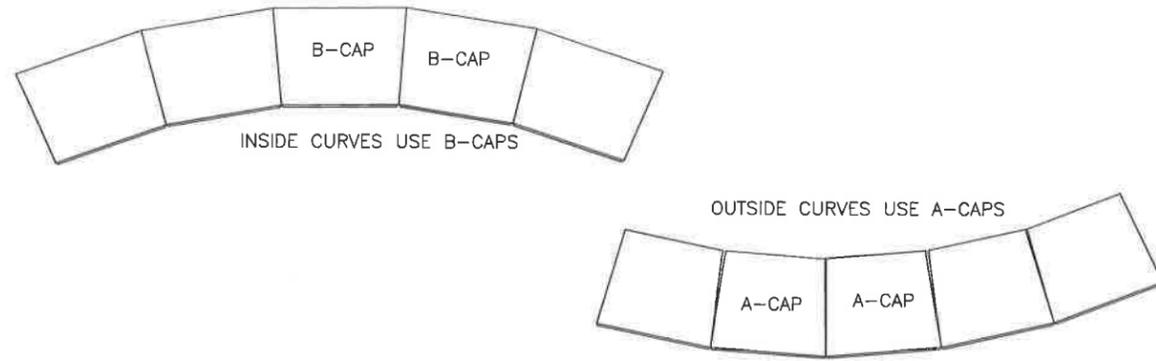


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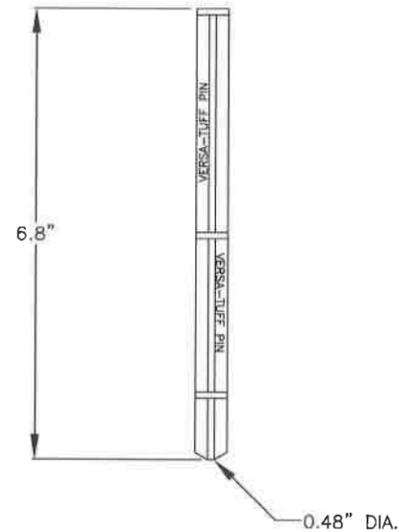
Jon E. Aarndt
Engineer: Jon E. Aarndt
Lic. No.: 248338
09-27-18

PROJ #: 18-550
DATE: 09-27-18
DRAWN BY: TTP
CHECKED BY: JEA

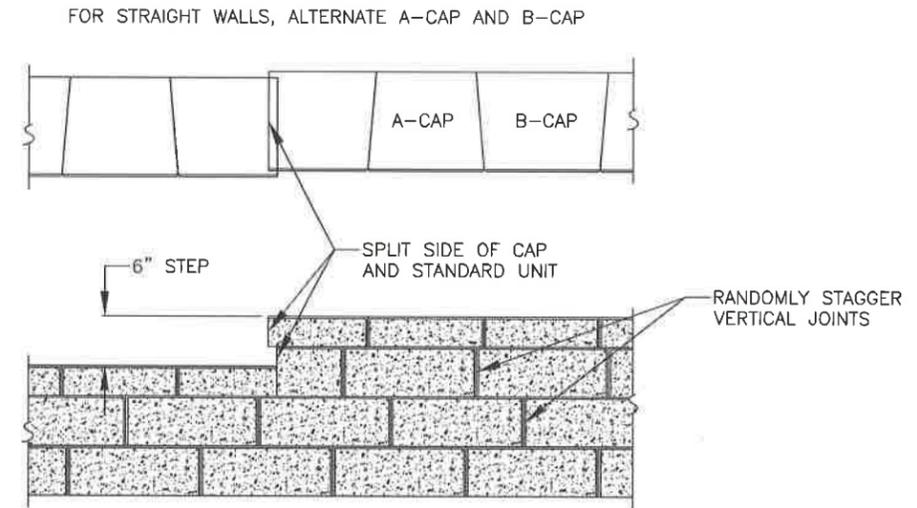
SITE PLAN
SHEET
C2.0



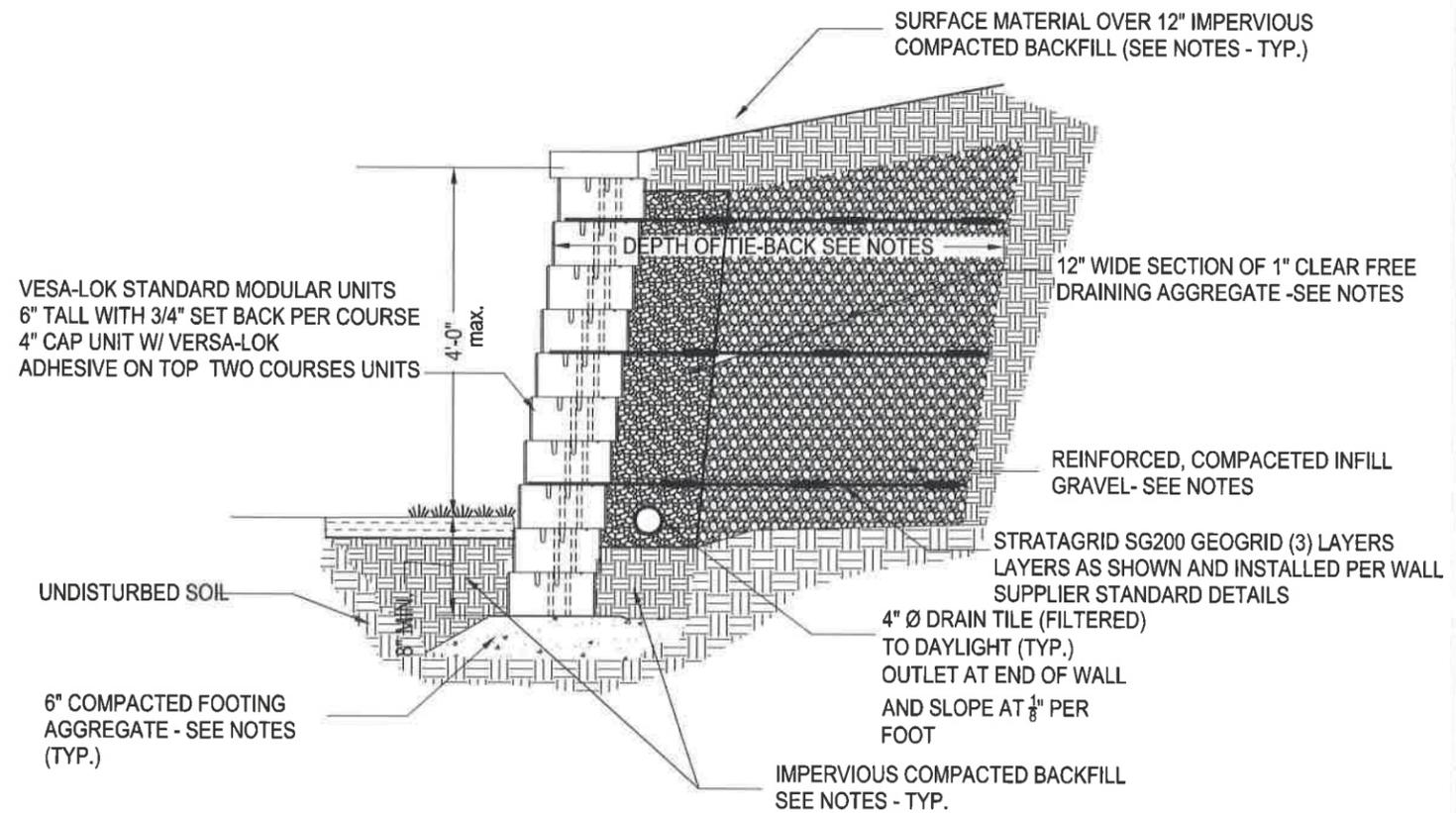
CAPPING DETAIL-PLAN VIEW
CURVES
SCALE: NONE



VERSA-TUFF PIN
PIN DIMENSIONS
SCALE: NONE



CAPPING DETAIL-PROFILE
STEP AT TOP OF WALL
SCALE: NONE



1
C3 **TYPICAL SECTION**
1/2" = 1'-0"

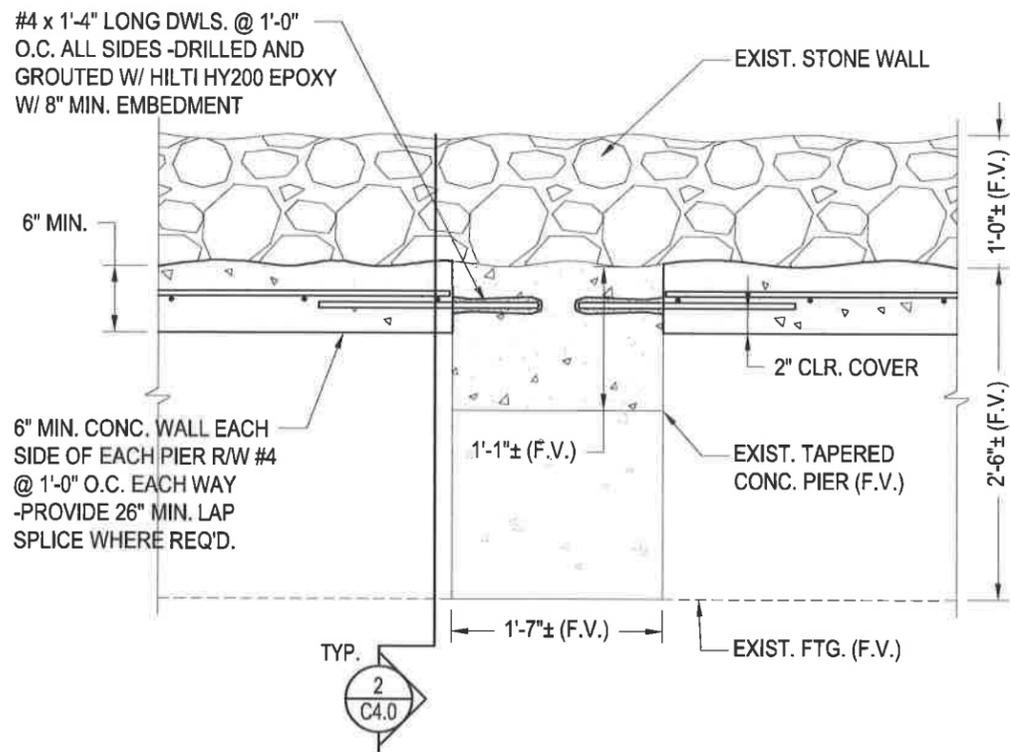
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Jon E. Aarnoot
Engineer: Jon E. Aarnoot
09-27-18
Lic. No: 24838

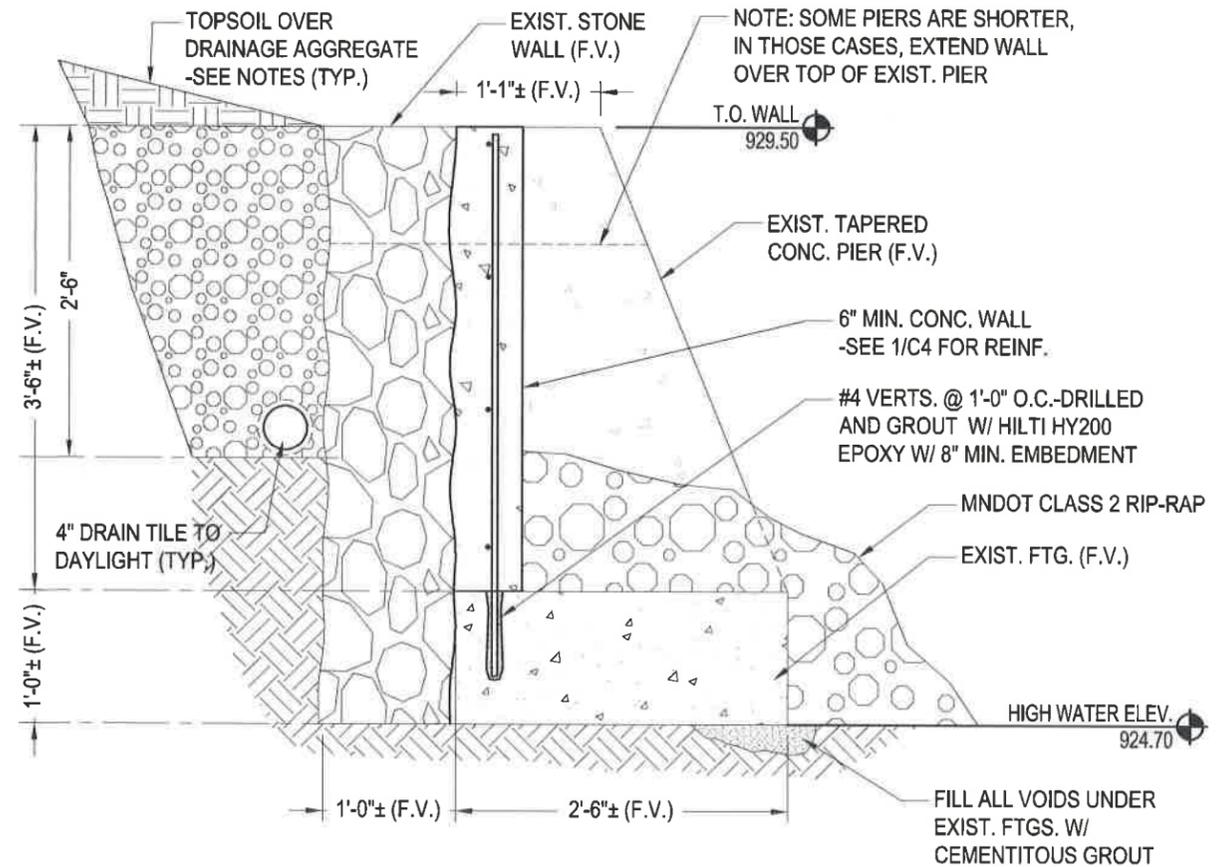
PROJ #: 18-550
DATE: 09-27-18
DRAWN BY: TTP
CHECKED BY: JEA

STRUCTURAL NOTES

SHEET
C3.0



1 PLAN VIEW @ EXISTING PIER
3/4"=1'-0"



2 SECTION @ EXISTING PIER
3/4"=1'-0"

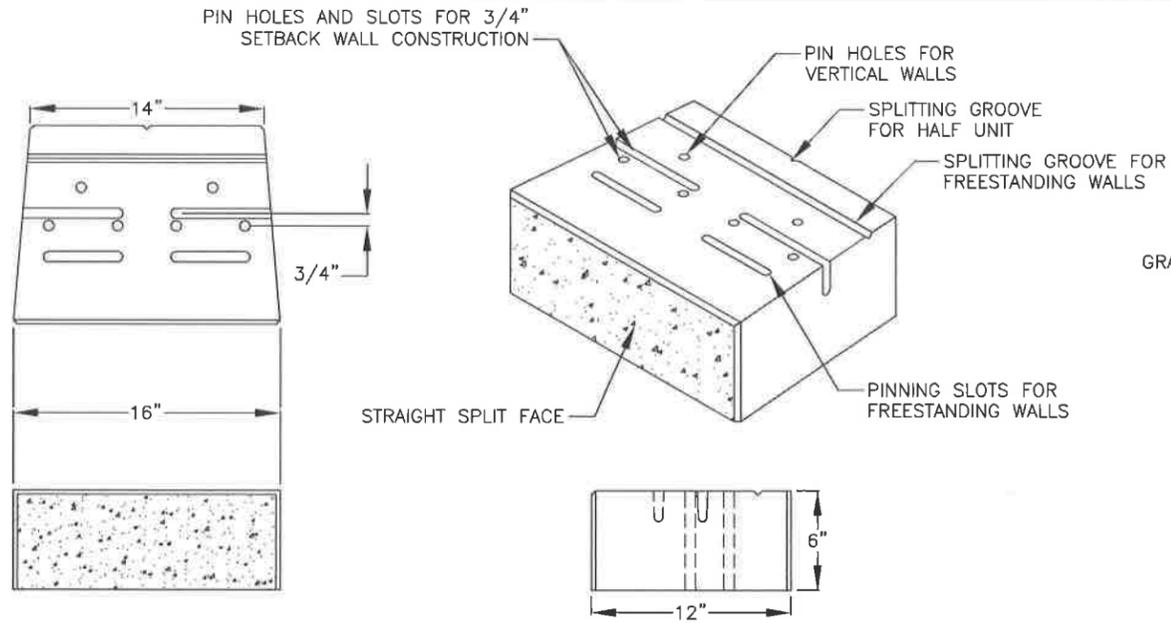
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Jon E. Aarnold
Engineer: Jon E. Aarnold
Lic. No.: 24838

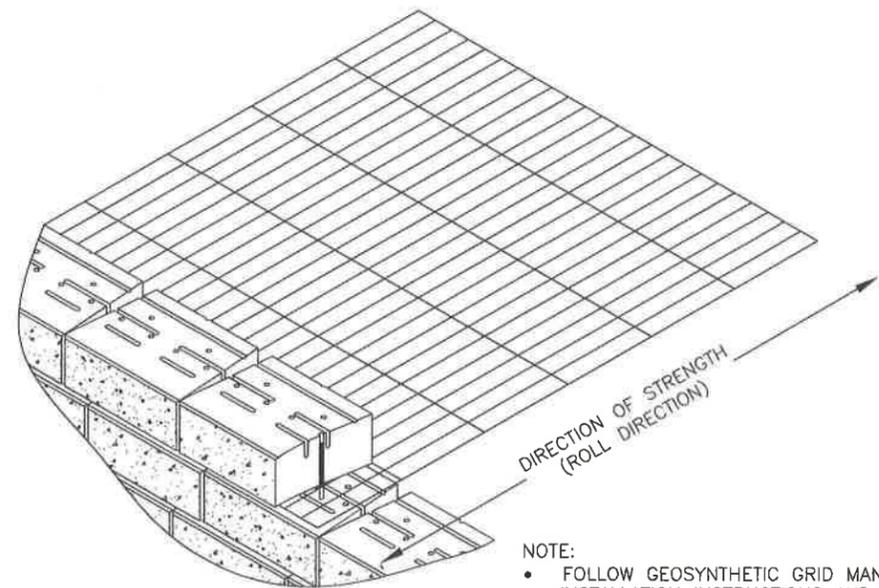
PROJ #: 18-550
DATE: 09-27-18
DRAWN BY: TTP
CHECKED BY: JEA

STRUCTURAL NOTES

SHEET
C4.0

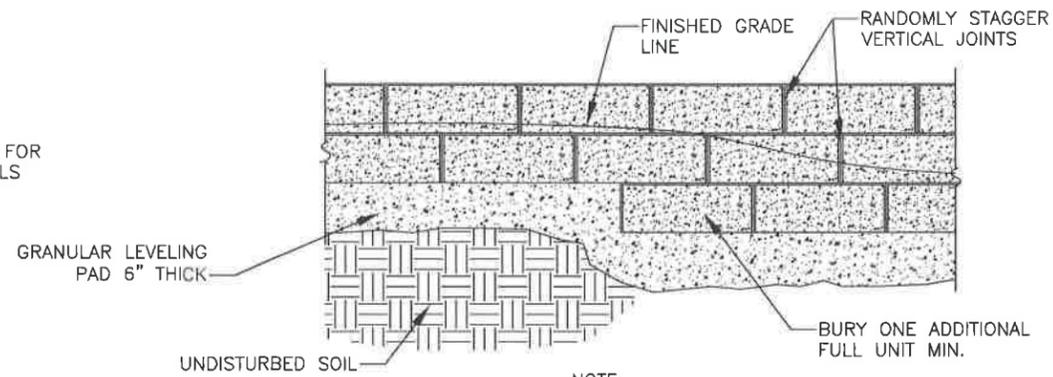


VERSA-LOK UNIT
UNIT DIMENSIONS
SCALE: NONE



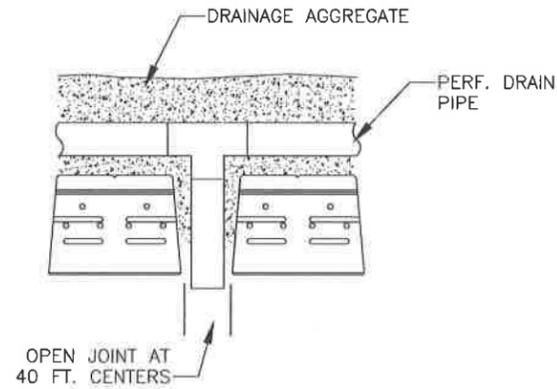
GEOSYNTHETIC INSTALLATION DETAIL
SCALE: NONE

- NOTE:
- FOLLOW GEOSYNTHETIC GRID MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SPECIFICATIONS
 - GEOGRID LENGTH AND ELEVATION PLACEMENT SHALL BE DETERMINED BY WALL DESIGN ENGINEER

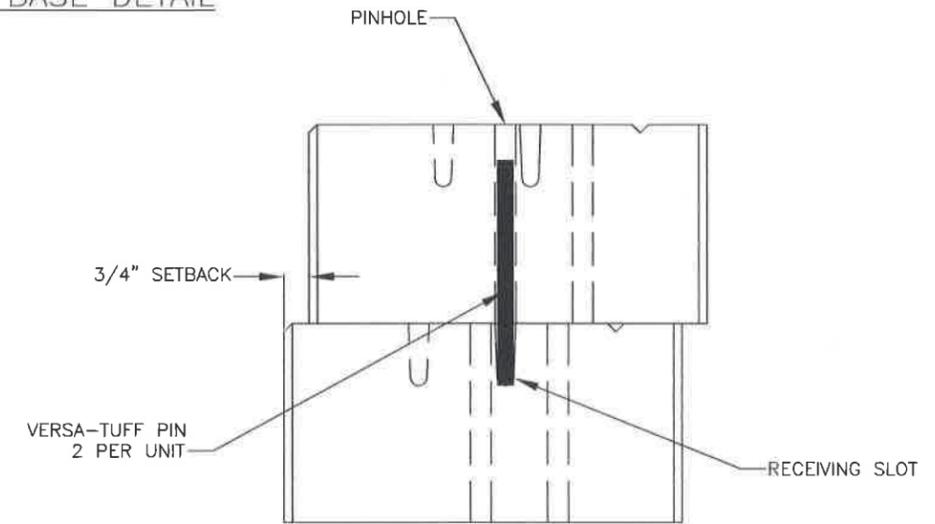


- NOTE:
- LIMIT CHANGES IN BASE ELEVATION TO 6" PER STEP TO AVOID DIFFERENTIAL SETTLEMENT
 - STEP AS NEEDED TO MINIMIZE BURIED UNITS AND MAINTAIN MINIMUM REQUIRED EMBEDMENT

STEPPING BASE DETAIL
SCALE: NONE



DRAIN DETAIL
SCALE: NONE



PINNING DETAIL
CROSS SECTION
SCALE: NONE

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.

Jon E. Armold
Engineer: Jon E. Armold

09-27-18
Lic. No: 24838

PROJ #: 18-550
DATE: 09-27-18
DRAWN BY: TTP
CHECKED BY: JEA

STRUCTURAL NOTES

SHEET
C 5.0