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Our reference: PN12577709

September 27, 2022

Mr. Dave Seal
Glen House Resort/Point Comfort Marina
417 1000 Island Parkway

Project: **Dock Extension Point Comfort Marina**
Township of Leeds and the Thousand Islands

OWES wetland boundary assessment -mapping update

Dear Mr. Seal,

Please find the enclosed report regarding the Wetland Boundary Assessment and the extension of docks located at the Point Comfort Marina, and Glenhouse Resort, in the Township of Leeds and Thousand Islands.

We have completed the necessary inventories and assessments and provided recommendations to mitigate any environmental impacts from the project.

Please contact our office if you have any questions or require further project support.

Sincerely,

Chris Ellingwood
Sr. Terrestrial and Wetland Biologist

Jon Boxall
Wetland biologist
OWES certificate

Dock Extension
Glenhouse Resort
Thousand Island Parkway
Part Lot 11, Concession 1
Township of Leeds and the Thousand Islands

Wetland Boundary Assessment

1.0 Introduction

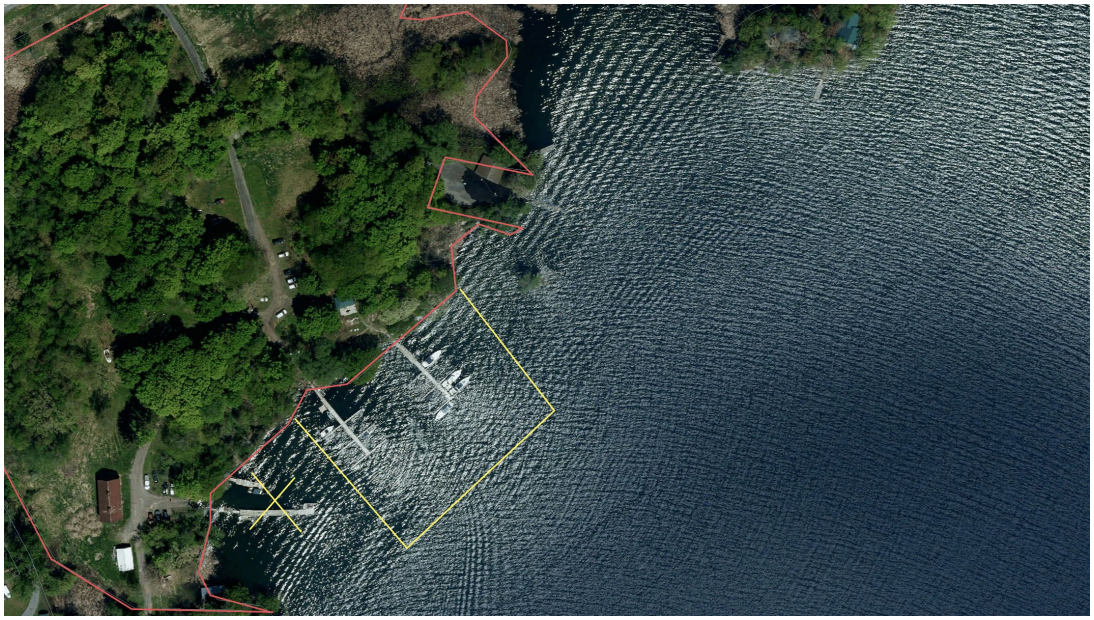
1.1 Background

GHD was retained by Glenhouse Resort and Point Comfort Marina to complete a Wetland Boundary Assessment for the expansion of existing recreational docking facilities on the St Lawrence River. MNRF has specifically requested the details of the wetland boundary assessment to determine the current extent of the boundary of the provincially significant Ivy Lea wetland complex offshore.

The property lies adjacent to, and within, the provincially significant Ivy Lea Complex wetland and the St. Lawrence River and as such to ensure the policies of the Cataraqui Region Conservation Authority (CRCA), Ministry of Natural Resources and Forestry (MNRF), and of the municipality are satisfied, a wetland boundary confirmation was required.

1.2 Study Site Location

The property is located approximately 10 km east of Gananoque, Ontario on the north shore of the St. Lawrence River. Specifically, it is located at 417 Thousand Island Parkway, also known as Part Lot 11, Concession 1, in the Township of Leeds and The Thousand Islands along the St. Lawrence River. (Figure 1).



Site Location

2.0 Study Methods

2.1 General Approach

A background literature review of existing data including the Official Plan schedules for Township of Leeds and The Thousand Islands, Ivy Lea wetland evaluation and on-line mapping available on MNRF Make-a -Map Natural Heritage GIS website, current and historical colour air photos and a review of the GHD and NHIC GIS databases of natural heritage features was conducted prior to the site visit. GHD had conducted a visit to this property several years ago.

A site visit was completed on August 18,2022 by GHD biologists experienced in wetland evaluation and delineation (OWES trained and certified since 1994). The site visit specifically examined the boundaries of the Provincially Significant Ivy Lea Wetland Complex (PSW), identified wetland communities, shoreline fish habitat, and assessed the suitability of habitat for Species at Risk. Depth soundings were taken with a handheld sonar and manually with a measured and marked pole. All points measured at the 2-meter mark were recorded by GPS to mark the wetland outer boundary.

The outer boundary of the wetland was delineated as per the Ontario Wetland Evaluation System-Southern Manual, MNRF, and the 3rd edition (2014 updates) that was the current manual at the time of our surveys. A more recent version has just been approved after our surveys (MNRF, December 2022, 4th edition).

The boundary that was reviewed was the outer boundary in the St. Lawrence River below the high water mark. A re-evaluation of the wetland scoring or status was not part of our scope. The wetland is designated as Provincially Significant.

The outer boundary of a lacustrine wetland (lake based) is as follows as per the MNRF 4th edition manual .

Wetlands on Ontario's major lakes and rivers There are a number of additional criteria that may be used to establish the open water boundaries of wetlands on southern Ontario's five major rivers (St. Clair, Detroit, Niagara, St. Lawrence and Ottawa) and on the shores of Lakes Huron, St. Clair, Erie, Ontario and Simcoe: 1. The 2 m depth contour (at low water) is to be used to define the deep water boundary of these wetlands (see exceptions above). If the evaluator encounters underwater shoals or knolls rising like islands from deeper water

and the tops of these are less than 2 m from the surface, they should be included in the wetland map and the wetland with which they are associated is to be defined as one wetland and evaluated as such.

3.0 Survey Results

3.1 Physical Site Characteristics

The study area has been used as a recreational docking area and marina for many years. A small parking area and access road in addition to several buildings are present near the shoreline here. The shoreline itself has retained its natural features and has been altered very little in the immediate area of the docks. (Photos 1 and 2)

Photo 1- Shore line looking East towards docks

Photo 2 -Shoreline east of docks looking west

Access to the two main floating docks is from suspended walkways/bridges anchored to the shore. (Photo 3).

Photo 3 showing docks, shoreline, and access walkway

3.2 Biological Inventories

3.2.1 Wetland Communities

Three types of wetland communities were identified within the study area and were part of the larger Ivy Lea Wetland Complex. Starting at the shoreline the docks float through a small area of rooted floating plants that quickly transition into a zone of submerged plants, over 95 percent of which were of the algae *Chara* genus. *Chara* covered almost the entire river bottom from near the shoreline to well past the 2-meter depth mark. No significant wetland species were noted during the field survey.
Figure 1 shows the wetland plant communities and 2-meter depth line.

4.0 Discussion and Analysis

4.1 Wetland Boundary

MNRF's mapping (blue shading below on Photo 6) and of the Provincially Significant Ivy Lea Wetland Complex in the study area shows the outer boundary running inside the eastern most dock and outside of the western most dock.

Using the existing mapping the additional docks would be mainly outside of the PSW.

GHD's wetland boundary mapping shows the 2-meter depth limit much further out into the river (Figure 1). Using this line creates a larger wetland area and keeps the new docks within the PSW. A factor that may explain this large discrepancy is the fact that water levels in the St Lawrence River fluctuate greatly from year to year and throughout the year. Controlled by dams, the river levels are managed by both the Canadian and American Governments. Slight fluctuations in levels can translate into areal differences when mapping aquatic

areas. Generally wetland mapping of the 2m contour represents the low water level depth. As this is a managed system, levels were noted as generally typical for the navigation season and summer season on the day of the site visit.

The substrate and vegetation cover in the open water of the wetland area within and surrounding the study area were homogenous throughout. In other words, the river/wetland bottom of the study area looked the same whether water depth was 1 meter or >3 meters. The riverine wetland bed was flat and comprised of smooth sandy and silty soils and fully vegetated with *Chara* species. Using the 2-meter depth rule as the demarcation of a wetland boundary in this type of situation is somewhat problematic. While vegetation was present, it was not comprised of greater than 10% submergent species that are rooted in the substrate with tall stems in the water column. But rather a homogeneous cover of this common warmwater algae species known as muskgrass or stinkweed *(Chara)*. Other submergent species in the inner part of the submerged wetland closer to shore included coontail *(Ceratrophyllum*, Eurasian water milfoil and Canada waterweed.

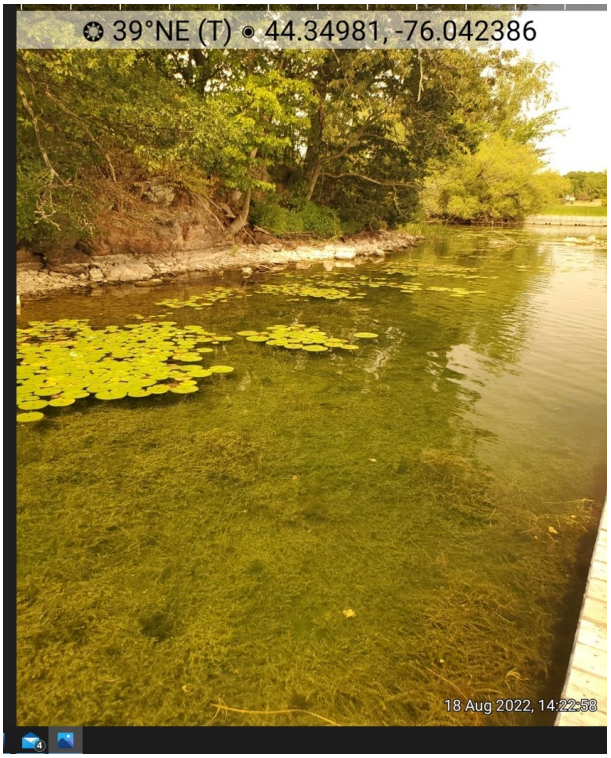


Photo 4 (left). View of river bottom at roughly the 2 m depth contour and change from *Chara* algae cover on river bottom (right) to unvegetated (left side of photo).

Photo 5 (right). View of nearshore zone and submergent marsh (su) and lilies (floating=f) vegetation in current PSW boundary.

Beyond the 2 m depth as per the key and nodal descriptions found in the OWES manual (Appendix 8 of manual), vegetation cover was virtually absent and much less than 10% coverage, therefore unvegetated (u) with no emergent species, as such it would be designated as “not wetland”.

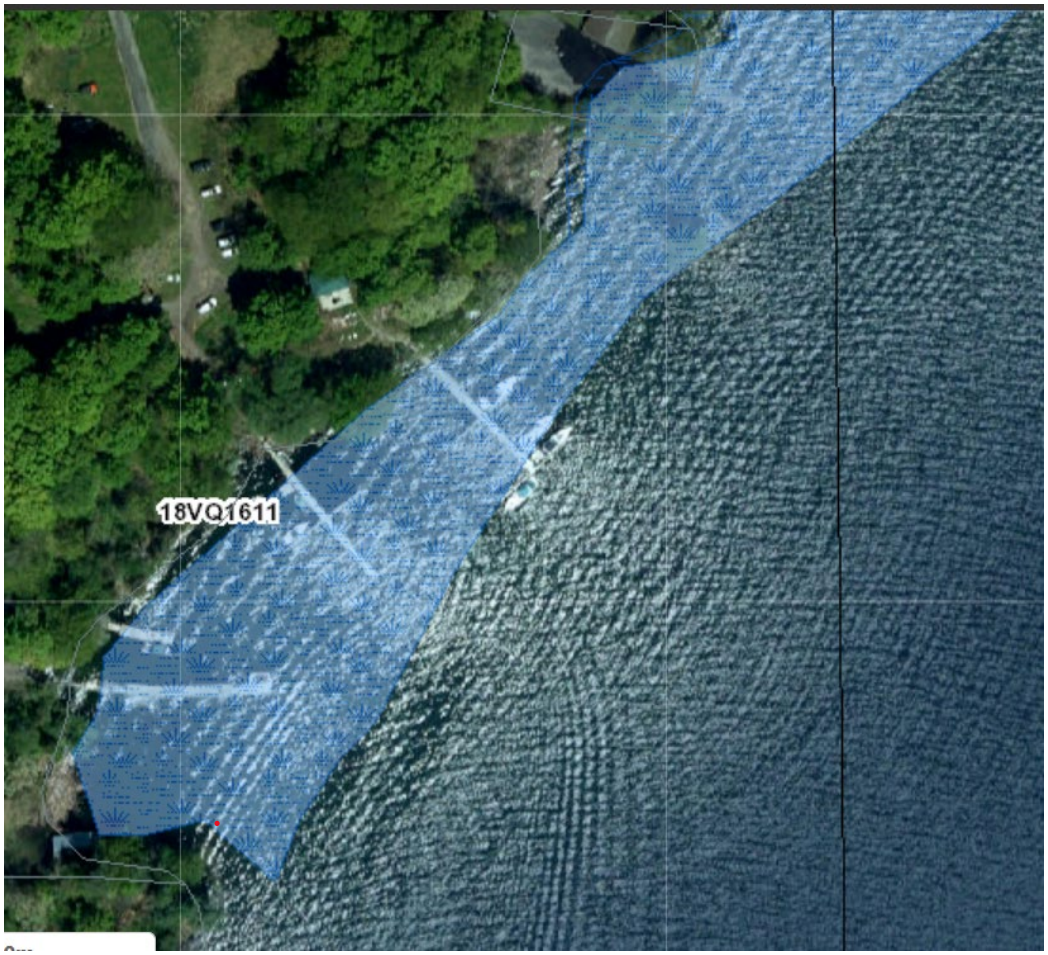


Photo 5. Existing Wetland Mapping Showing Wetland Boundary and Existing Docks

The existing docks are currently within the PWS. Increasing their reach further away towards the outer limit of the wetland would not cause any adverse effects to the wetland or its functions. The docks are floating type and anchored with blocks. Little alteration to the wetland bottom results from this type of structure and in fact it could be argued that some fish habitat is created with the addition of some structure to an otherwise uniform bottom habitat.

4.2 Boat house renovations

A boat house located on the shoreline had fallen into disrepair over the years. Repairs to the building were conducted above the high water mark and no in-water works conducted. As such no impacts on the shoreline, wetland or the PSW wildlife habitats occurred as a result.

5. Conclusion

The wetland boundary shown on MNRF mapping (blue shading in Photo 6 and pink shading on Figure 1-attached) is slightly different than the 2 m wetland boundary line identified by GHD biologists on their survey. The GHD line is shown in yellow and represents the 2 m depth line on that date. It is 10-20 m further out into the lake but variable in shape.

This is a relatively minor boundary change/mapping update.

Attachment 1

wetland boundary mapping

Data Disclaimer

Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2022.

Legend

1 cm = 24 meters

0 10 20 30 40

Meters

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 18N

Paper Size ANSI B

David Seal (Glenhouse Resort)
Glenhouse Resort, 417 1000 Island Parkway
Township of Leeds and the Thousand Islands
United Counties of Leeds and Grenville

OWES Wetland Evaluation

Wetland Delineation

Project No. 12577709
Revision No.
Date Sep 15, 2022

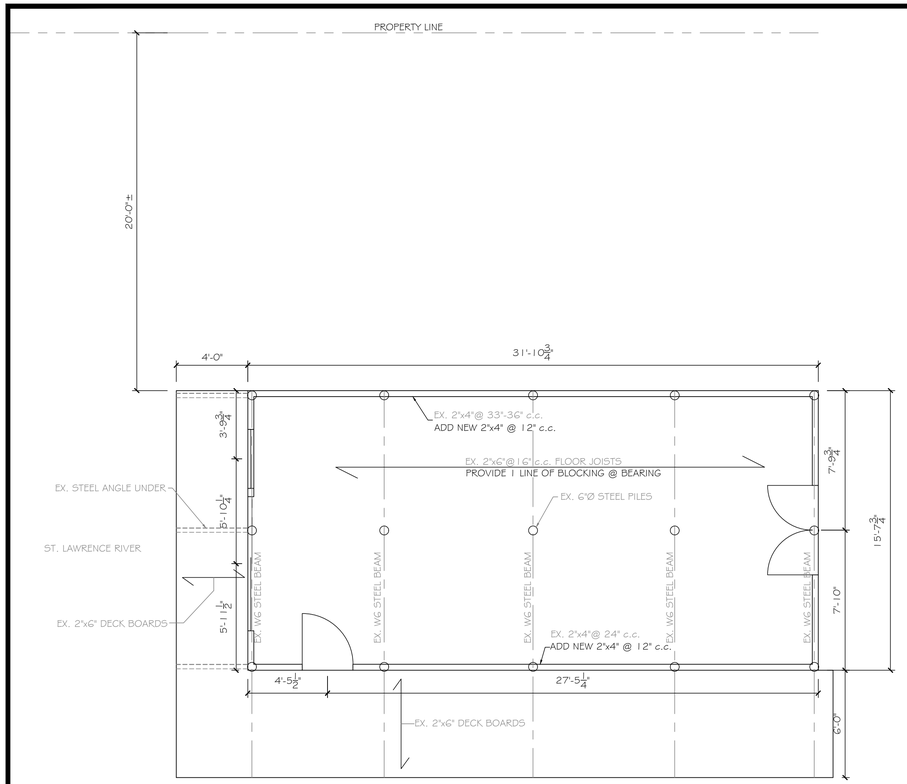
Figure 1

Q:\GIS\PROJECTS\12577000s\12577709\Layout\202209_OWES001\12577709_202209_OWES001_GIS001- Wetland Delineation.mxd
Print date: 15 Sep 2022 - 08:42

Data source: Image @ United Counties of Leeds and Grenville, SCOOP 2019.

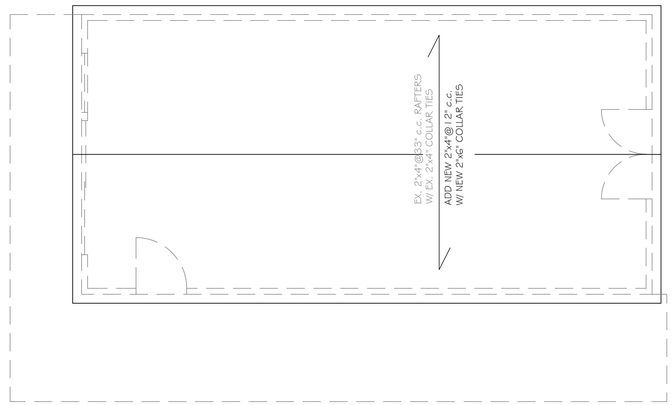
Attachment 2

Boathouse design drawings



FRAMING PLAN

SCALE: 1/4" = 1'-0"

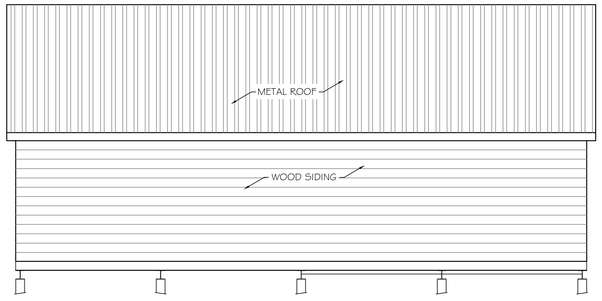


ROOF PLAN

SCALE: 1/4" = 1'-0"

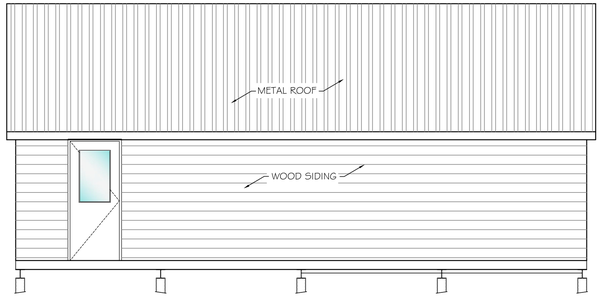
TYPICAL WALL SECTION

SCALE: 1/2" = 1'-0"



BACK ELEVATION

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



FRONT ELEVATION

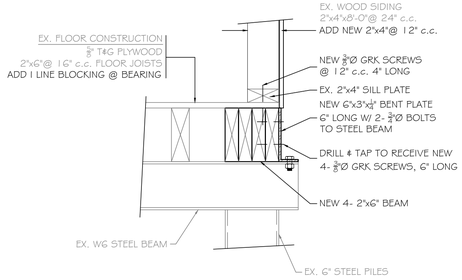
SCALE: 3/8" = 1'-0"

RIGHT ELEVATION

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

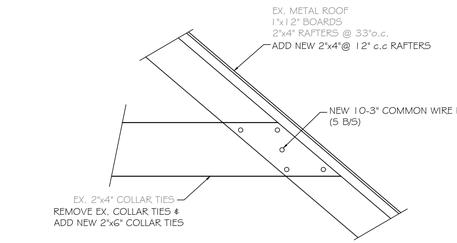
LEFT ELEVATION

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



DETAIL 1

SCALE: 1 1/2" = 1'-0"



DETAIL 2

SCALE: 1 1/2" = 1'-0"

GENERAL NOTES

1. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL REPORT ANY AND ALL DISCREPANCIES TO THE DESIGNER FOR REVIEW AND APPROVAL
3. ALL WORK TO BE DONE IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFEGUARDING AND LOCATING OF EXISTING UTILITIES AND STRUCTURES ON SITE.
5. CONTRACTOR IS RESPONSIBLE FOR DESIGN & STRUCTURE OF TEMPORARY SHORING

STRUCTURAL STEEL NOTES:

1. MAKE GOOD ALL SURFACES UPON COMPLETION OF CONSTRUCTION.
2. ALL STEEL SHALL CONFORM TO CSA G40.20-13 AND CSA G40.21-13 GRADE 350W, PLATES AND ANGLES 300W.
3. ALL STEEL IS DESIGNED AND SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE CISC 'CODE OF STANDARD PRACTICE FOR STRUCT. STEEL" AND CSA CAN-S16.1-14.
4. ALL BOLTS SHALL BE PLAIN 3/4" DIA ASTM A325 FRICTION TYPE (UNO).
5. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2 (TWO) BOLTS.
6. OVERSIZED OR SLOTTED HOLES IN BOLTED CONNECTIONS ARE NOT PERMITTED (UNO).
7. ALL STEEL SHALL BE SHOP PRIMED & 2 COATS OF EPOXY ANTI RUST PAINT TO MATCH EXISTING c/w TOUCH UP AS REQUIRED.

WOOD NOTES:

1. ALL LUMBER TO BE MIN. NO. 2 SPF TO CSA 086-09 ENGINEERING DESIGN IN WOOD.
2. WOOD EXPOSED TO EXTERIOR CLIMATIC CONDITIONS SHALL BE INCISED PRESSURE TREATED LUMBER. ALTERNATE DECAY RESISTANT APPLICATIONS MUST BE APPROVED BY THE DESIGN CONSULTANT.
3. ALL BOLTS FOR WOOD SHALL BE MIN GRADE A307.
4. NAILING AND FRAMING SHALL COMPLY WITH THE 2012 ONTARIO BUILDING CODE UNLESS NOTED OTHERWISE.
5. ALL PRE-MANUFACTURERED BRACKETS, FASTENERS AND COMPONENTS SHALL BE INSTALLED AS PER THE MANUFACTURERS RECOMMENDED INSTALLATION GUIDE.

DESIGN LOADS

ROOF:
DL = 16 PSF
SL = 35 PSF

FLOOR:
DL = 20 PSF
LL = 40 PSF

* PRIOR TO APPLICATION OF LOAD FACTORS

No.	By	Date	Revisions
1	B.O'B.	2023 06 12	FOR PERMIT
0	B.O'B.	2023 06 08	FOR REVIEW

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The contractor must check and verify all dimensions on the job prior to start of construction.

DRAWINGS ARE NOT TO BE SCALED

LICENSED PROFESSIONAL ENGINEER
B. D. CAMPBELL
100172021
2023 06 12
PROVINCE OF ONTARIO

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Project Title:

DAVE SEAL
BOATHOUSE

419 THOUSAND ISLAND PARKWAY,
LEEDS & THOUSAND ISLANDS

Drawing Title:

PLANS, ELEVATIONS & SECTION

Design:	Checked:	Approved:	Project No.:
BDC	BDC		10901
Drawn:	Checked:	Date:	Contract No.:
B.O'B.		2023 03 29	

Scale:
Horizontal: AS SHOWN
Vertical: AS SHOWN

Drawing No.: **1**

REV DATE: 6/8/2023