

# Environmental Impact Assessment Registration Document

Causeway Assessment - Bridge Replacement

Shoal Harbour Causeway Bridge Replacement  
Balbo Drive, Clarenville, NL

EIA Registration Document - Version 0A

July 13th, 2022  
2200678.000



**ENGLOBE**

# Town of Clarenville

Prepared by:



---

**Elizabeth Dollmont, B.Sc.**  
Environmental Professional  
Environmental Engineering

Reviewed, supplemented, and approved by:



---

**Mike Smith**  
Project Professional  
Environmental Engineering

## Production team

Project Manager	Mark Keel
-----------------	-----------

## Englobe Corp.

Environmental Professional	Mike Smith, B.Tech., AScT., EP
Report Preparation	Elizabeth Dollmont, B.Sc

## Revisions and publications log

REVISION No.	DATE	DESCRIPTION
0A	July 13, 2022	Preliminary version published for Owner review

## Property and Confidentiality

“This report can only be used for the purposes stated therein. Any use of the report must take into consideration the object and scope of the mandate by virtue of which the report was prepared, as well as the limitations and conditions specified therein and the state of scientific knowledge at the time the report was prepared. Englobe Corp. provides no warranty and makes no representations other than those expressly contained in the report.

This document is the work product of Englobe Corp. Any reproduction, distribution, or adaptation, partial or total, is strictly forbidden without the prior written authorization of Englobe Corp. and its Client. For greater certainty, use of any and all extracts from the report is strictly forbidden without the written authorization of Englobe Corp. and its Client, given that the report must be read and considered in its entirety.

No information contained in this report can be used by any third party without the prior written authorization of Englobe Corp. and its Client. Englobe Corp. disclaims any responsibility or liability for any unauthorized reproduction, distribution, adaptation or use of the report.

If tests have been carried out, the results of these tests are valid only for the sample described in this report.

Englobe Corp.’s subcontractors who have carried out on-site or laboratory work are duly assessed according to the purchase procedure of our quality system. For further information, please contact your project manager.”

# Table of Contents

Registration Form.....	1
<b>1 The Proponent.....</b>	<b>1</b>
<b>2 The Undertaking .....</b>	<b>2</b>
2.1 Name of the Undertaking .....	2
2.2 Project Overview.....	2
2.3 Purpose / Rationale / Need for the Undertaking .....	2
2.4 Project Location .....	3
2.5 Siting Considerations.....	3
2.5.1 General Site Considerations.....	3
2.5.2 Other Location Considered.....	4
2.5.3 Zoning.....	4
2.5.4 Proximity to Wetlands and Watercourses .....	4
2.6 Physical Components and Dimensions of the Project .....	4
2.6.1 Land Requirements.....	4
2.7 Construction Details.....	4
2.8 Operation and Maintenance Details .....	6
2.9 Future Modification, Extensions, or Abandonment .....	6
2.10 Occupations.....	6
2.11 Project-Related Documents .....	7
<b>3 Description of the Existing Environment .....</b>	<b>8</b>
3.1 Physical and Natural Features .....	8
3.1.1 Site Topography and General Surface Drainage Regime .....	8
3.1.2 Significant Natural and Managed Areas .....	8
3.2 Cultural Features .....	9
3.3 Existing and Historic Land Uses.....	9
<b>4 Summary of Environmental Impacts.....</b>	<b>9</b>
<b>5 Summary of Proposed Mitigation .....</b>	<b>10</b>
5.1 Air Quality and Noise .....	10
5.2 Biology and Ecology .....	11
5.3 Groundwater .....	12
5.4 Other Considerations.....	12

6	Public and First Nations Involvement Process.....	12
7	Approval of Undertaking .....	13
8	Funding.....	13
9	Signature.....	13

## APPENDICES

- Appendix A General Site Plan
- Appendix B Site Photographs
- Appendix C Proposed Engineering Plan

# Registration Form

PURSUANT TO SECTION 49 (1) OF  
THE ENVIRONMENTAL ASSESSMENT REGULATIONS 54/03  
ENVIRONMENTAL PROTECTION ACT

## 1 The Proponent

**Name of Proponent:** The Town of Clarendville

**Principal Contact Person for purposes of Environmental Impact Assessment**

**Name:** Rick Wells

**Official Title:** Director of External Operations

**Telephone:** 709.466.7937

**Email:** rick@clarendville.net

### **Property Ownership**

This project is located on Balbo Drive, at the southern end of the Shoal Harbour Causeway where the Shoal Harbour River meets Random Sound, in Clarendville, NL. The land is owned by the Town of Clarendville.

# 2 The Undertaking

## 2.1 Name of the Undertaking

Shoal Harbour Causeway Bridge Replacement - The Town of Clarenville.

## 2.2 Project Overview

The project consists of the demolition of the current Shoal Harbour Causeway Bridge structure and the rebuilding of a new bridge structure in the Town of Clarenville. The approved scope of the project includes the replacement of the current structure with the preferred option of a concrete girder bridge that consists of a concrete and asphalt wear surface supported by six concrete girders on H-Pile supported foundations and wingwalls. The project aims to provide a bridge structure that will accommodate vehicular and pedestrian traffic.

The current structure is located along Balbo Drive, at the southern end of the Shoal Harbour Causeway where the Shoal Harbour River meets Random Sound. The bridge was constructed in 1963. Rehabilitation work was completed in 1986 and 2006. The current bridge measures approximately 8.7m wide and 33.7m long. It has a clear span of 22.86 m. It consists of five (5) single span concrete girders seated on two (2) mass concrete block abutments, supported on steel H-piles, with a concrete deck and asphalt driving surface.

As of June 2018, the bridge has been reduced to single lane traffic with a 25-tonne weight restriction following an inspection which identified significant structural deterioration. Since then, the Town has commissioned annual instream inspections and monthly inspections.

The following work will be undertaken by the Proponent for the new bridge:

- Planned road grades will match existing as closely as possible, respecting navigation and water level constraints, as well as Transportation Association of Canada (TAC) geometric road design guidelines. Englobe will review alignment and gradients once all constraints have been met.
- The bridge will consist of a cast-in-place concrete deck on post-tensioned girders that are fully integral with a pile-supported abutment.
- The existing abutments, including piles, cannot be incorporated into the new configuration.

## 2.3 Purpose / Rationale / Need for the Undertaking

The proposed project will involve work related to the demolition and replacement of the Shoal Harbour Causeway Bridge located on Balbo Drive (Shoal Harbour Causeway Bridge, Clarenville, NL). A portion of the Shoal Harbor Causeway Bridge has shown signs of aging and previously completed assessment recommended replacement of the bridge with a new concrete girder bridge due to its low maintenance costs and long service life. Not only will the new bridge provide safe and reliable transportation, but it will also be designed to accommodate future climate related events. The Town of Clarenville has decided to replace it with a structure that will withstand future climate change events. Therefore, replacement of the bridge and related infrastructure is required to continue providing access to a safe and reliable transportation within the Town of Clarenville.



## 2.4 Project Location

The current structure is located along Balbo Drive, at the southern end of the Shoal Harbour Causeway where the Shoal Harbour River meets Random Sound. See Appendix A for the general site plan.

To the south of the site location, there are paved roads and large amounts of forested area containing various herbaceous and woody vegetation. To the north there are a number of residential and commercial buildings. Located to the west of the site is the Shoal Harbour River and this is known to be a scheduled salmon river. The Shoal Harbour river flows out into the Shoal Harbour Causeway which then continues east into Random Sound, a large bay area.

## 2.5 Siting Considerations

### 2.5.1 General Site Considerations

The proposed location has been established based on the locations of the current infrastructure known as Shoal Harbour Bridge.

Englobe will rely on the geotechnical investigation that was provided by Wood for this project, as the report is recent (March 2020) and the boreholes are located within 6m of the planned abutments. The pertinent geotechnical parameters are the degree of consolidation of the underlying soils, ultimate limit state (ULS) and serviceability (SLS) bearing capacities of the native ground (including bedrock), the internal angle of friction and density of native and backfill material, and the modulus of horizontal subgrade reaction.

Englobe completed a hydraulic analysis for the bridge using the projected freshwater flows and sea levels to determine the new elevation for the bridge deck elevation. It was determined that the freshwater flows from the Shoal Harbour River, adjusted for a 20% increase due to climate change, show an insignificant rise in water elevation therefore the bridge deck is determined by the rise in sea levels and storm surges.

As the new bridge deck will be adjusted to 1.15m above the existing bridge deck, Balbo Drive will require additional road work to adjust the grade approaching the bridge. Assuming a 2% slope, 60 meters on either side of the bridge will require regrading. The change in the bridge height may also require increased width on the side slopes, Englobe will review the footprint as the design continues. As shown in Appendix A, the proposed bridge remediation is intercepting a watercourse according to the Town of Clarenville.

The Department of Transportation and Infrastructure and The Department of Environment and Climate Change will be contacted for the necessary permissions and permits. The bridge will be designed and constructed in consultation with Fisheries and Oceans Canada (DFO). The bridge will be designed and constructed to have minimal impact on fish and fish habitat and in accordance with:

- DFO's Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador (1998);
- DFO's Measures to avoid causing harm to fish and fish habitat and fish passage guidelines; and
- Other applicable guidelines and Fact Sheets.

The proposed design has the potential to improve hydraulics and can maintain navigation through the passageway. Maintaining navigation through the passageway can mitigate impediments for fish and invertebrate species within the Shoal Harbour Causeway area. Potential impacts and their mitigation strategies pertaining to this project for biological and ecological proxies are discussed further in Section 5.2 of this document.

It shall be noted that the exact location of any related infrastructure and connections to the existing bridge will be determined once the final location has been established.

## 2.5.2 Other Location Considered

No other locations were chosen as alternate areas to complete bridge construction.

## 2.5.3 Zoning

The project is a designated collector road located between an Environmental Protection Area and a Mixed-Use Zone within the Town of Clarendville. No land usage changes are being proposed as part of this project. Therefore, there are no concerns with the Zoning for this project.

## 2.5.4 Proximity to Wetlands and Watercourses

Shoal Harbour River is a scheduled salmon river and migration system, which may result in additional regulations to be followed during construction and may have impacts on construction activities.

No other wetlands were identified on the subject parcel.

For the drilling and excavation during bridge construction, it is anticipated that the disturbance will be limited to the construction in the approximate location shown on the attached Appendix A.

## 2.6 Physical Components and Dimensions of the Project

### 2.6.1 Land Requirements

The general bridge geometry consists of a 35m span and 10.9m wide deck. The bridge soffit has a 1m vertical clearance to the design high-water level, and the opening is trapezoidal to accommodate sloped abutment armouring in the form of rip rap. The abutments are founded on H-Piles that are oriented in weak-axis bending to provide the flexibility required to permit thermal and vehicle-induced translation and rotation, while being resistant to scour. Bridge geometry is shown on Appendix A.

## 2.7 Construction Details

The preliminary schedule for the project is shown below, it shall be noted that the schedule below is dependent on environmental constraints that are yet to be confirmed, and a pending decision by Town Council as to the timing of the commencement of construction. It is our recommendation that this project be tendered in Fall 2022 with a planned construction of Spring 2023.

The following preliminary schedule has been developed for the demolition and construction of the Shoal Harbour Bridge. The exact timing of each component will be refined as the project progresses depending on the actual time taken to complete the preceding task(s).

### Table 1: Preliminary Schedule

Task	Task Milestone Date
Topographic Survey	April 22, 2022
33% Package	May 13, 2022
66% Package	June 24, 2022
99% Package	July 22, 2022
IFT Package	July 29, 2022
Tender Date	August 1, 2022
Tender Close	August 26, 2022
Contract Award	August 26, 2022
Construction Start	September 2, 2022
Substantial Performance	October 6, 2023
Construction End	Construction End October 27, 2023
One Year Warranty Inspection	One Year Warranty Inspection October 7, 2024
Project Completion	Project Completion October 7, 2024

The estimated hours of construction will be from Monday to Friday between 7:00 A.M. and 7:00 P.M. except during the constant rate pumping where the work is 24 hrs/day.

The potential for environmental impacts within the duration of the project will be minimized as all construction and decommissioning activities will be undertaken in accordance with the environmental requirements of the Department of Transportation Specification Book for transportation projects.

Additionally, a decommissioning plan highlighting adverse environmental effect mitigation strategies and including site rehabilitation measures will be completed.

Once the existing data has been reviewed, a traffic detour plan will be developed and maintained during the construction of the new bridge. The intent is to have the traffic re-routed around the site via existing roads. Our traffic engineering team will be engaged in the project to help plan and phase the work to minimize vehicle and pedestrian traffic disruptions during construction. Proper signage and traffic control measures will be employed to allow for a safe work site and a detailed detour plan will be developed.

The following equipment is anticipated to be used for the construction procedures:

- Drilling: Drilling equipment, pumps, and generators.
- Earthwork (if required to manage runoff water, refer to paragraphs below for further details): Excavators, dozers, dump trucks, compaction equipment.

Potential sources of pollutants during the construction period are anticipated to include:

- Exhaust and other emissions from construction equipment.

- Noise from construction equipment.
- Water during drilling. The run-off water from the drilling operation will be controlled by the installation of erosion control structures. Typical installation for a drilling site includes utilizing site-specific measures to manage and direct the flow of water, installation of erosion control structures (silt fencing and/or hay bales), and utilization of the existing vegetated land where possible to minimize the effect on nearby streams. If necessary, a small sedimentation pond and ditch may be constructed to improve the control drill cuttings and run-off water.
- Silt from disturbed surface areas. This will be minimized by requiring the contractor to install silt fences and other erosion protection devices prior to ground disturbance and to reinstate disturbed areas as soon as is practical.
- Petroleum hydrocarbons from possible leaks, spills, or accidents from construction equipment and vehicles. This will be minimized by requiring the Contractor to have spill kits on-site and to conduct daily inspections of his equipment. No refueling or maintenance of vehicles will occur within 30 m of watercourses.

Demolition and removal of the existing bridge structure will be completed in a way that ensures no significant debris enter the causeway. All waste generated during construction will be stored in containers and removed off-site by the Contractor and brought to a licensed disposal facility in accordance with the Environmental Protection Act, SNL2002 CHAPTER E-14.2 and prior approval by the Department of Environment and Climate Change.

As a result of previous land use and current construction activities, it is not anticipated that significant site work (gravel, grading, etc.) will be required to provide access for the drilling equipment. Minimal site work may be required to properly direct drilling water, to be confirmed during a pre-drilling meeting on-site with the Contractor.

## 2.8 Operation and Maintenance Details

The bridge is a permanent operation. Winter Maintenance will consist of snow clearing and the application of sand and salt for ice control.

## 2.9 Future Modification, Extensions, or Abandonment

With respect to the new bridge proposed herein, since this bridge is a primary route of travel within the town of Clarendville, future abandonment of the bridge is not foreseen. The bridge will be designed to have a 75-year service life span and will consider 1:100 year flood flows per the hydraulic analysis.

## 2.10 Occupations

This project will be carried out to promote equity and fairness and, where possible, establish a workplace that is free of barriers.

The various types of occupations anticipated for this project include:

Occupations	National Occupation Classification (NOC) Code	Number of Proposed Workers
Civil Engineers	2131	2
Structural Engineers	2231	1
Engineering Technicians	2231	2
Road Surveyors	2154	1
Heavy Equipment Operators	7521	4
Drillers and Blasters	7372	2
Carpenters	7271	2
Heavy Equipment Mechanics	7312	1
Labourers	7621	1
Truck Drivers	7511	1
Concrete Finishers	7282	2
Concrete Technicians	7282	1
Material Technicians and Engineers	2231	1
Steel Erectors	7236	4
Senior Environmental Planner	2121	1

## 2.11 Project-Related Documents

The following project-related documents are referenced throughout this document:

- Climate Data related to the Shoal Harbor Bridge Replacement Project at Clarenville, Newfoundland and Labrador
- Harbourside Engineering Consultants. (2021). 2021 Inspection Report. Shoal Harbour Causeway Bridge.
- Meridian Engineering INC. (2021). Visual Inspection Report. Causeway Bridge Visual Inspection - Clarenville, NL.

# 3 Description of the Existing Environment

## 3.1 Physical and Natural Features

As noted previously Shoal Harbour River is a scheduled salmon river and migration system, which may result in additional regulations to be followed during construction and may have impacts on construction activities.

The results of a preliminary hydraulic analysis are included in the replacement options report which was completed to assess the current structure and site hydraulic conditions, and to determine a concept elevation profile for the replacement structure. As the current structure is located between the Shoal Harbour River and the Atlantic Ocean, the water level at the bridge site will be determined by either the extreme water level in the ocean or by the extreme freshwater flow from the Shoal Harbour River.

The new structure should be designed using the 1:100 year flood flow and accounting for climate change effects, tidal effects and sea level rises, and include 1m of freeboard. The elevation profile for the new structure should be adequately high enough to accommodate the design water level and freeboard. A hydraulic analysis and evaluation will be required during design of the new structure.

### 3.1.1 Site Topography and General Surface Drainage Regime

Englobe completed a topographic survey encompassing the existing bridge approaches, bridge, and bathymetric transects that permitted the creation of a digital terrain model of the site. This model facilitated the creation of the existing vertical and horizontal alignment, from which the planned geometric road design and bridge geometry could be established. It also was used to conduct the hydraulic analysis of the existing and planned bridge openings. The survey base plan shows the initial station of the work limits at 0+000 at the south end, and the end station at 0+225.000 through the bridge crossing that will be included in the detailed design.

As indicated above, much of the required infrastructure for the proposed bridge location already exists and limited ground disturbances other than the bridge itself are planned.

The project will rely on previously completed geotechnical investigations that were conducted. The pertinent geotechnical parameters are the degree of consolidation of the underlying soils, ULS and SLS bearing capacities of the native ground (including bedrock), the internal angle of friction and density of native and backfill material, and the modulus of horizontal subgrade reaction.

### 3.1.2 Significant Natural and Managed Areas

Clarenville's coastal zone includes two estuaries at the outlets of Shoal Harbour River and Lower Shoal Harbour River. Due to mixing of fresh and salt water; estuaries are particularly rich ecosystems that provide food and habitat for many aquatic species. They can also be very sensitive to land development and human activity.

Project activities will take place approximately 400 m away from the Shoal Harbour River estuaries; therefore, the project activities will not impact this area.

Zoning maps indicate that the site is located partially on environmentally protected area. As per the Town of Clarenville's Developmental Regulations, development within or adjacent to a watercourse or wetland within 30 meters must be approved or exempted by:

- 1) Department of Environment and Climate Change, Water Resources Management Division
- 2) Department of Fisheries, Farming, and Natural Resources, Lands Division
- 3) Coast Guard Canada - Navigable Waters Act,
- 4) Fisheries and Oceans Canada, Fish Habitat Management Division - Fisheries Act,
- 5) Environment Canada - Migratory Birds Act, and
- 6) any other provincial and federal agency having jurisdiction.

## 3.2 Cultural Features

There are no known cultural features at or in the immediate vicinity of the proposed project. However, the upper portion of the Shoal Harbour River has historically been used for fishing activities. The project site is currently developed, and previous construction has occurred. Surrounding land use is Residential Properties.

## 3.3 Existing and Historic Land Uses

There is no indication that there were previous developments on this site that may have been of cultural or historic interest.

# 4 Summary of Environmental Impacts

To proceed with the demolition and reconstruction of the bridge, the following construction activities are anticipated:

- Installation of environmental protection structures (such as silt fences and erosion control measures).
- Drilling of borehole(s).
- Hydraulic (pump) testing as required by NL ECC Guidelines.

One of the key criteria for selection of bridge replacement options will be the potential impact on the environmental conditions during and post construction. Potential structural design options will pose environmental, hydrological, and navigational challenges. Applicable permits and approvals granted by the authorities having jurisdiction will be required for some design options. The proposed design has the potential to improve hydraulics and can maintain navigation through the passageway. Maintaining navigation through the passageway can mitigate impediments for fish and invertebrate species within the Shoal Harbour Causeway area.

It is anticipated that the proposed work will have little effect on the surrounding environmental features. As noted in the previous section, the proposed bridge is not within 30 m of any mapped wetland according to a desktop review.

## 5 Summary of Proposed Mitigation

Different mitigation measures will be used throughout the project to minimize environmental impacts. General mitigation measures for this site are as follows:

- Planned road grades will match existing as closely as possible, respecting navigation and water level constraints, as well as TAC geometric road design guidelines. Englobe will review alignment and gradients once all constraints have been met.
- Disturbed areas will be reinstated as soon as is practical, silt fences and other erosion protection measures will also be used until disturbed vegetation is fully re-grown.
- Construction will be limited to the requirements of the drilling equipment.
- As the current structure is located between the Shoal Harbour River and the Atlantic Ocean, the water level at the bridge site will be determined by either the extreme water level in the ocean or by the extreme freshwater flow from the Shoal Harbour River.
- The new structure will be designed using the 1:100 year flood flow and accounting for climate change effects, tidal effects and sea level rises, and include 1m of freeboard.
- The elevation profile for the new structure should be adequately high enough to accommodate the design water level and freeboard.
- A hydraulic analysis and evaluation will be required during design of the new structure.
- The Contractors will be responsible to provide machinery in good working condition.
- Machinery will be operated on existing access roads, where possible, to prevent unnecessary disturbance of vegetation, tree root zones and soils.

### 5.1 Air Quality and Noise

**Dust:** Activities during the project have a small potential for short term reduction in air quality due to dust generated during activities and an increase in emissions from the use of heavy machinery (drilling equipment, trucks, etc.).

**Mitigation:** The generation of dust during activities is unlikely, however if dust is generated during project activities dust suppression by the application of water will be employed when required. The exact locations where water is to be applied, the amount of water to be applied, and the times at which it shall be applied will be determined on-site based on conditions. Waste oil will not to be used for dust control under any circumstances.

**Odours:** Activities could generate some short-term odours (i.e. diesel exhaust).



Mitigation: There are no residential properties located in close proximity to the proposed construction location but any odours from the drill rig or other equipment exhaust, etc., will be limited to within working hours.

**Noise Levels:** Project activities will result in noise caused by the use of machinery (drill rig/trucks).

Mitigation: Noise events will be of short duration, and project activities will be scheduled to be done during daytime hours where possible. All machinery should be well muffled. Contractors should avoid any sharp or loud noises where feasible (e.g., not blow horns or whistles).

## 5.2 Biology and Ecology

**Wetland habitat:** Mapped wetlands are present on the north/east portions of the property; however, the project is not expected to be within 30m of the mapped wetlands. Although unlikely, spills or leaks from project equipment/machinery and runoff water could enter the wetland habitat without appropriate mitigation measures.

Mitigation: A permit application will be submitted for project activities since the construction location is within a watercourse anticipated to be required for this project. Appropriate erosion and sediment control devices (silt fences, etc.) will be installed to prevent runoff. Furthermore, the watercourse will be visually monitored during the work and will stop if negative impacts are observed.

Weather conditions are to be assessed on a daily basis to determine the potential risk of weather on the project. Work will be scheduled to avoid periods of heavy precipitation.

Machinery will be checked for leakage of lubricants and fuel prior to beginning work each day. Basic petroleum spill clean-up equipment will be kept on site. All spills or leaks will be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633).

Hazardous materials (e.g., fuels, lubricants, hydraulic oil) and wastes (e.g., waste oil) will be managed so as to minimize the risk of chronic and/or accidental releases. A designated storage area for hazardous materials will be identified and located away from any watercourse habitats. Refueling will occur in a manor to minimize potential impacts to the surrounding environment and spill kits will be kept onsite.

**Spawning, feeding and breeding sites:** The site has been identified as a scheduled salmon river and migration system, which may result in additional regulations to be followed during construction and may have impacts on construction activities.

**Populations/communities of aquatic species (including flora, fish, birds, marine mammals, etc.):**

Project activities are not anticipated to generate significant disturbance to site. Limited vegetation disturbance is expected at the bridge site from the drilling equipment and implemented structures. The habitat where the drilling activities will occur is located within the Shoal Harbour Causeway and therefore aquatic species are expected to be within the project area. Mitigative measures below will be implemented regardless of presence or absence of aquatic species encountered during project activities.

Mitigation: Where feasible, activities will be limited to the time between dawn and dusk to avoid using artificial lighting which can potentially affect bird and bat use of nearby habitats (Canada, 2017). If construction timing restrictions are not possible, Parks Canada National Best Management Practices for Migratory Birds will be followed.

**Cultural fisheries:** The waters of the Shoal Harbour causeway have not been used for traditional fishing, however the upper Shoal Harbour River area has historically been used for fishing purposes.

**Vegetative cover:** The existing vegetation within the proposed site location appears to be small parcels of grass present on each side of the road directly before and after the bridge. There are no trees located in this direct area. Any vegetative cover disturbed during project activities will be replaced as part of the scope of the work.

**Migratory Birds:** Birds may occasionally be present on or near the site during migratory/bird season. However, they are unlikely to be nesting, breeding and feeding near the proposed drilling area due to the limited habitat and close human receptors (residences).

## 5.3 Groundwater

**Groundwater Quality:** The project is not anticipated to negatively impact groundwater conditions or quality.

**Mitigation:** Drilling activities will be done by a Licenced Well Drilling Company and in accordance with the Drilling Regulations under The Water Resources Act SNL 2002 CW 4.01. to ensure it is done to industry standards.

## 5.4 Other Considerations

All work will follow the Terms and Conditions of any NL ECC Water Resources Management, TRC letters and any other provincial or federal letters of advice.

# 6 Public and First Nations Involvement Process

The typical steps to involve the Public and First Nations are outlined below. Confirmation from the ECC will be required to ensure that the following steps are required for this specific project (or if additional steps are necessary).

The minimum public and First Nations consultation requirements of the Provincial EA registration guide will be followed (NLECC, 2022). A public notice containing the information specified in the registration guide will be delivered to the above noted stakeholders, in addition to the local Member of the Legislative Assembly (MLA), and the local service district prior to concluding the EIA process. No First Nation communities are located within the immediate study area.

Following the completion of the consultation process, a summary report on the public and First Nation involvement will be prepared and submitted to NL ECC in accordance with the EIA process requirements.

# 7 Approval of Undertaking

The following technical approvals are anticipated as being required for this project:

- Permit to Alter a Body of Water - Schedule B, Bridges
- Navigable Waters permit
- Environmental permits
- Water Resources Management

# 8 Funding

The development is being funded by a combination of the Town of Clarenville and Government of Newfoundland and Labrador.

# 9 Signature

*Rick Wells*

---

**Rick Wells**

Director of External Operations

Town of Clarenville

July 14, 2022

---

Date

# Appendix A General Site Plan




**eNGLOBE**



**ENGLOBE**



**LEGEND**

 Approximate Site Boundary

Overview of Site Area in Relation to the Town of Clarendville

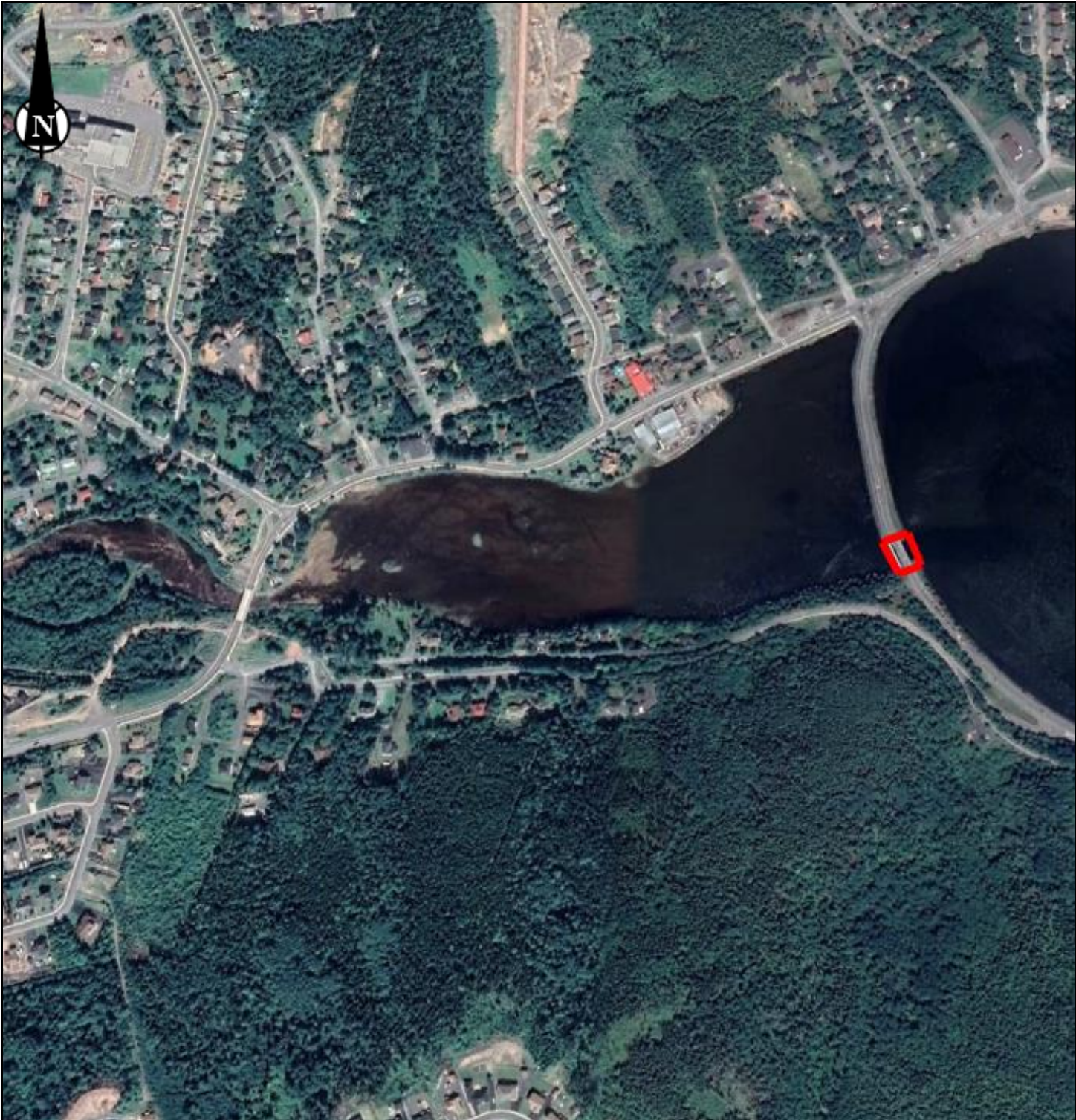
EIA Registration Document

Shoal Harbour Bridge, Clarendville, NL

2200678.000

July 15, 2022

NTS



**ENGLOBE**

Site Location Aerial Featuring Complete Causeway

Area EIA Registration Document

Shoal Harbour Bridge, Clarenville, NL

2200678.000

July 15, 2022



NTS

**LEGEND**

 **Approximate Site Boundary**




**ENGLOBE**



Site Plan  
EIA Registration Document  
Shoal Harbour Bridge, Clarenville, NL  
2200678.000  
June, 6, 2022

NTS

**LEGEND**

 Approximate Site Boundary

# Appendix B

## Site Photographs



**eNGLOBE**





**Photo 1** – Drone imagery of current bridge structure facing west.



**Photo 2** – Current bridge structure facing east.



**Photo 3** – Northern abutment of current bridge facing east.



**Photo 4** – Northern abutment of current bridge facing west



**Photo 5** – Drone imagery of site and surrounding area.



**Photo 6** – Close view of the east side of the bridge.

# Appendix C

## Proposed Engineering Plan

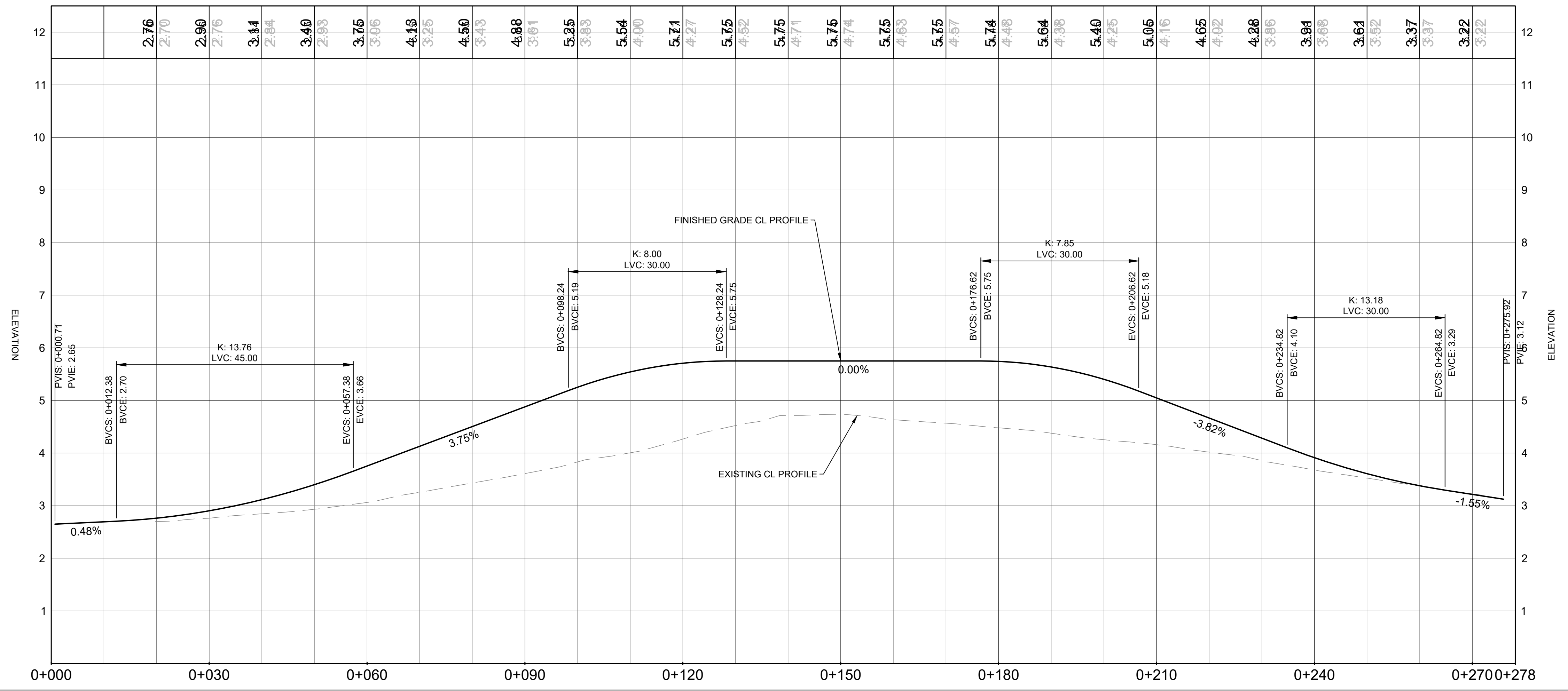
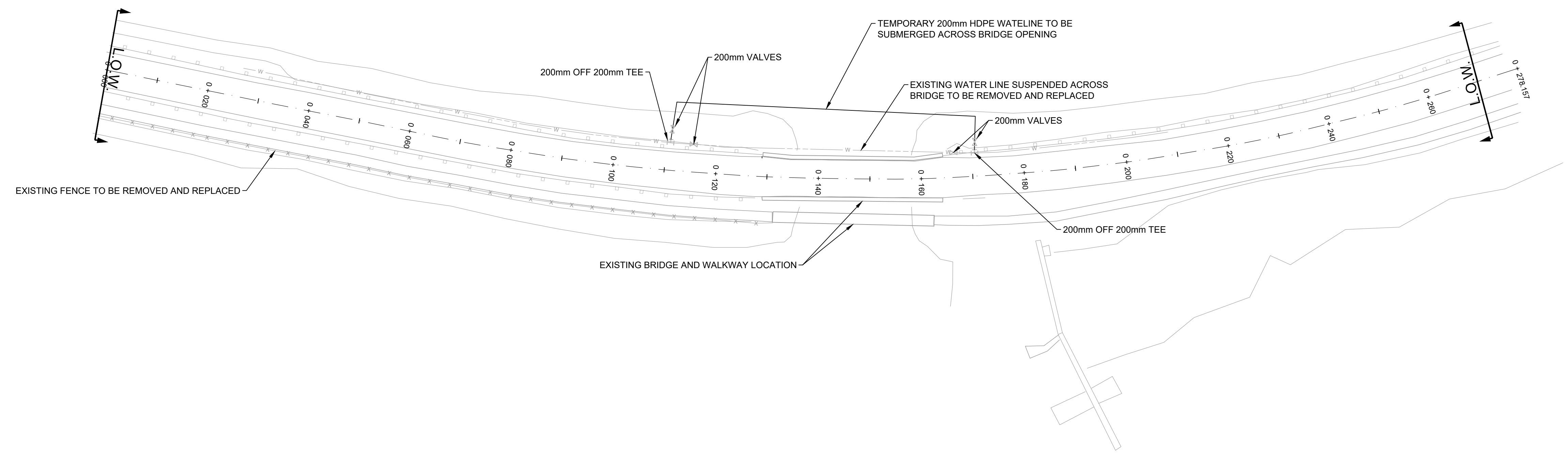


**ENGLOBE**



CONSULTANT:  
**ENGLOBE**

NOTES  
1. All guide rail to be removed and replaced within L.O.W (limits of work).



NO.	DESCRIPTION	DATE	BY
B	ISSUED FOR 66% CLIENT REVIEW	2022-06-23	MA
A	ISSUED FOR 33% CLIENT REVIEW	2022-05-13	MA

REVISIONS

A	A - PLAN, SECTION, ELEVATION, OR DETAIL NO.
B	B - NO. OF DRAWING WHERE ABOVE IS SHOWN

REFERENCE NORTH:

**PRELIMINARY ONLY**  
DATE PLOTTED: [ ] [ ] [ ] [ ] [ ] [ ]  
NOT TO BE USED FOR CONSTRUCTION

CONSULTANT  
**TOWN OF CLARENVILLE**

PROJECT  
**SHOAL HARBOUR CAUSEWAY BRIDGE REPLACEMENT**

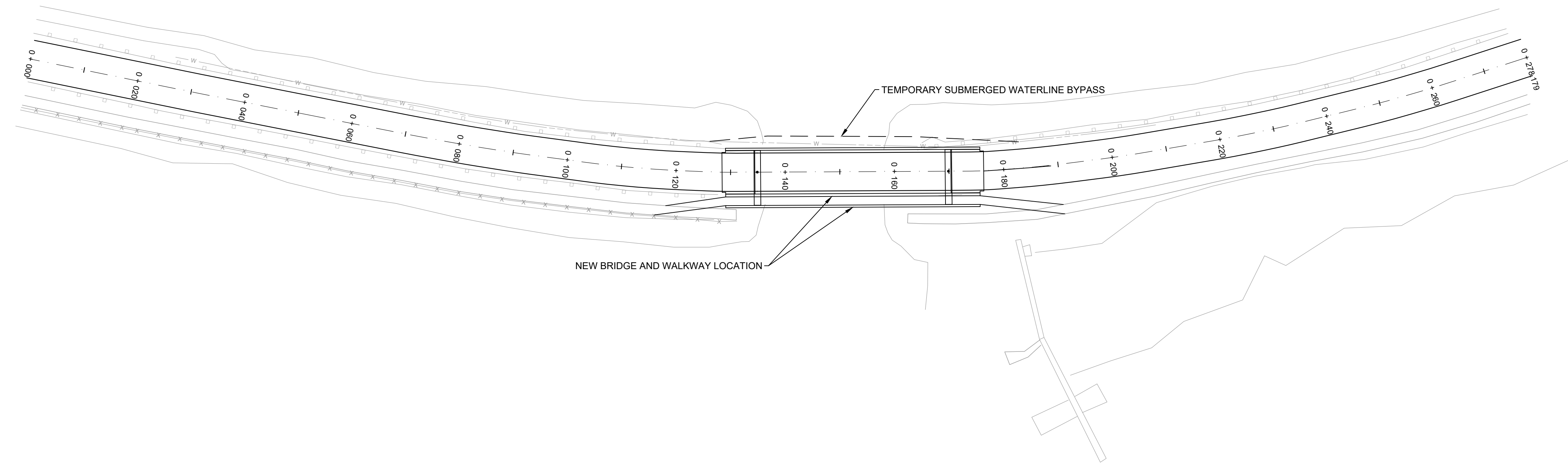
SHOAL HARBOUR NL  
DRAWING  
**EXISTING BRIDGE PLAN**

DRAWN BY SM	CHECKED BY CN	APPROVED BY CN
PROJECT NO. 17-RNC-22-00007	DWG. FILE NO. XX	FILE NO. XX
DATE 2022-06-23	SCALE 1:500	DRAWING NO. C01
		REV. A

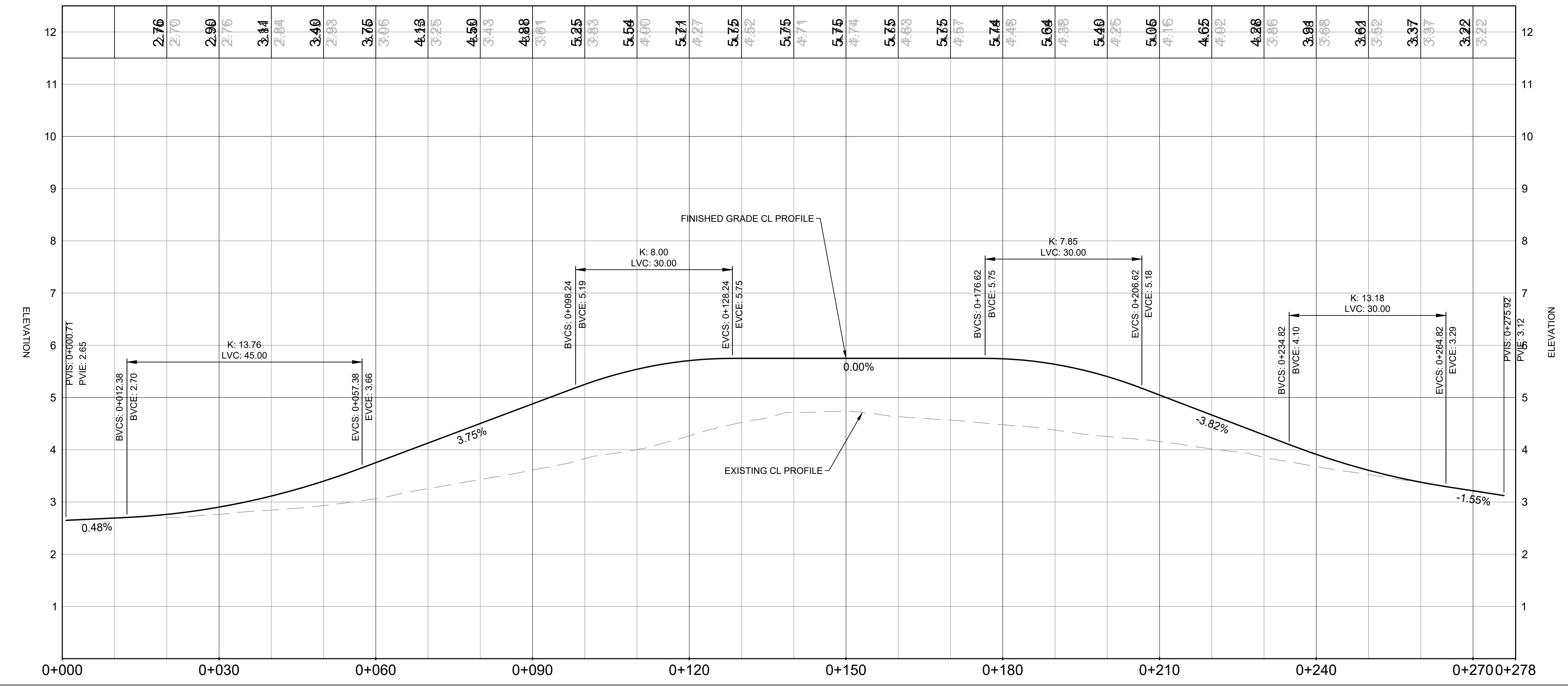
CONSULTANT:



NOTES  
1. REFER TO STRUCTURAL DRAWINGS FOR EXACT LOCATIONS OF ENTITIES NEAR BRIDGE.



NO.	DESCRIPTION	DATE	BY
B	ISSUED FOR 66% CLIENT REVIEW	2022-06-23	MA
A	ISSUED FOR 33% CLIENT REVIEW	2022-05-13	MA



REVISIONS

A	B
A - PLAN, SECTION, ELEVATION, OR DETAIL NO.	B - NO. OF DRAWING WHERE ABOVE IS SHOWN

REFERENCE NORTH:

**PRELIMINARY ONLY**  
DATE PLOTTED: \_\_\_\_\_  
NOT TO BE USED FOR CONSTRUCTION

CONSULTANT  
**TOWN OF CLARENVILLE**

PROJECT  
**SHOAL HARBOUR CAUSEWAY BRIDGE REPLACEMENT**

SHOAL HARBOUR NL  
DRAWING  
**NEW BRIDGE PLAN AND PROFILE**

DRAWN BY SM	CHECKED BY CN	APPROVED BY CN
PROJECT NO. 17-RNC-22-00007	DWG. FILE NO. XX	FILE NO. XX
DATE 2022-06-23	SCALE 1:500	DRAWING NO. C02
		REV. A



**eNGLOBE**