

**Breakwater Construction
Mary's Harbour, NL
Environmental Registration Document**

**Submitted to the Government of Newfoundland and Labrador
Department of Municipal Affairs and Environment
Environmental Assessment Division**

**Prepared For: Fisheries and Oceans Canada
Small Craft Harbours Branch**

Prepared By: Public Services and Procurement Canada

Date: August 31, 2018

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1.0 NAME OF UNDERTAKING:

Breakwater Construction, Mary's Harbour, NL

2.0 PROPONENT:

- (i) Department of Fisheries and Oceans Canada
Small Craft Harbours Branch (DFO-SCH)

- (ii) John Cabot Building, 10 Barters Hill
St. John's, NL
A1C 5X1

- (iii) Paul Curran
Regional Engineer
DFO, Small Craft Harbours
10 Barters Hill
St. John's, NL
A1C 5X1
Phone: (709) 772-6660
E-mail: paul.curran@dfo-mpo.gc.ca

- (iv) Mark McNeil
Environmental Services
Public Services and Procurement Canada
Suite 204, 1 Regent Square
Corner Brook, NL
A2H 7K6
Phone: (709) 637-4481
E-mail: mark.mcneil@pwgsc-tpsgc.gc.ca

3.0 THE UNDERTAKING:

3.1 Nature of the Undertaking:

The proposed undertaking represents the construction of a 165-meter long rubble mound breakwater in Mary's Harbour, Newfoundland and Labrador.

3.2 Purpose/Rationale/Need for the Undertaking:

The proposed breakwater construction will provide necessary protection to the existing wharf and infrastructure located at the DFO-SCH Mary's Harbour site.

4.0 DESCRIPTION OF THE UNDERTAKING:

4.1 Geographical Location:

The proposed project site is located adjacent to the Town of Mary's Harbour, NL, on the south coast of Labrador. Project coordinates are approximately 52° 18' 50" N, 55° 50' 11" W. Access to the site is provided by municipal roads through the community of Mary's Harbour, NL, which is accessed via provincial Route 510, the Trans Labrador Highway.

4.2 Physical Features:

The proposed project is for the construction of a rubble mound breakwater. The breakwater will measure approximately 165m in length along the crest of the structure, while the structure will have a footprint of approximately 4,270m² along the ocean bottom. The width will vary between approximately 10 and 30m. Construction will consist of importing and installing core material, filter stone, and armour stone. The rubble mound breakwater construction materials will be obtained from a licensed quarry and trucked in dump trucks to the project site where excavators will place the materials along the ocean floor.

The breakwater is required in this location to dissipate wave action in the harbour before it reaches the existing harbour infrastructure; therefore alternative locations were not considered.

Physical and Biological Environment

Mary's Harbour is located on the south coast of Labrador, approximately one hundred and seventy-eight (178) kilometres SSE of Cartwright, NL, and approximately 130 Kilometres NE of Blanc-Sablon, QC.

The immediate project site consists of multiple slipways and wharves currently in place at the site. A gravel parking area and concrete boat launch are also present. A floating dock extends from the gravel area and there are plans to place two other floating docks in the area. The surrounding shoreline is characterized primarily by exposed bedrock and placed armourstone protection. The upland area is characterized by a gravel roadway, grass/shrub cover and residential housing.

The project site is located within the Paradise River Ecoregion of Labrador. This ecoregion experiences cool summers and short, cold winters. This ecoregion has more of a continental climate than surrounding ecoregions; however, the climate on the coast is affected by maritime influences. The ecoregion is included in the zone of discontinuous permafrost that encompasses much of southern Labrador. The mean annual temperature is approximately 0°C, with a mean summer temperature of 8.5°C and a mean

winter temperature of -8.5°C. The mean annual precipitation varies from 900mm in the northeast to 1,100 mm in the southwest.

A mixture of groundfish (cod, lumpfish, flounder), marine mammals (dolphin/porpoise, whale, seal and other mammals), pelagic fish (capelin, herring, mackerel, salmon) and shellfish (mussels, rock crab, and snow crab) may be found within the general project area.

An underwater benthic survey was completed at the Project site in November 2016 utilizing video recordings taken along transects to investigate the habitat of the harbor. The results indicated that the benthic environment is primarily composed of silt, with increasing amounts of rock and sand near the shore. Observable marine life was limited to small amounts of mussels and snail shells. Due to the timing of the survey, the results may not reflect typical biological conditions of the site.

A search of the Atlantic Canada Conservation Data Centre (ACCDC) database was conducted which produced a list of rare/unique species (i.e. plants and animals) within a 5 km buffer zone (standard ACCDC procedure) of the site of the proposed work. All species were cross-referenced with Schedule 1 of the Species At Risk Act (SARA) and none were found to be listed as extirpated, endangered, threatened or of special concern.

4.3 Construction:

Commencement of this project is subject to DFO-SCH operational priorities and funding.

Construction of the breakwater is expected to require 14 weeks to complete. Commencement of the proposed project is scheduled for November 2018.

The most probable sources of potential pollutants are related to the use of heavy equipment. Accidental spills of heavy equipment fuel, engine oil, and hydraulic fluids are a possibility. Short-term sedimentation as a result of the placement of rock material into the marine environment can also be anticipated. Mitigation measures will be utilized to minimize potential interactions with the environment.

An active seasonal commercial fishery, including fish plant operations, is executed from another dock facility located approximately 500 m east of the Project site and some small boat users utilize the launch and floating dock near the Project site. The construction phase of the proposed project is not likely to overlap with the commercial or recreational fishing seasons. As a result, construction activities may result in minor disruptions to the harbour but no interruption nor displacement of fishing activity is expected.

4.4 Operation:

Routine maintenance and repair projects will be carried out on an as-required basis over the estimated thirty (30) year life of the structure.

The proposed undertaking represents an enhancement of the existing DFO-SCH facilities in Mary's Harbour, NL. The proposed improvements will provide protection to the existing infrastructure and allow for safer harbour operations.

Reasonably foreseeable pollutants occurring during the operational phase of the proposed project are limited to accidental discharges of vessel fuels, engine oils, and fishing industry related refuse.

The operation and maintenance of the facility will be under the control of the Harbour Authority of Mary's Harbour with the support of Fisheries and Oceans Canada, Small Craft Harbours Branch. Potential resource conflicts are not anticipated as a result of the operation of the proposed project.

4.5 Occupations:

Construction of the harbour improvements are expected to require 14 weeks to complete. Commencement of the proposed project is scheduled for November 2018.

The following list outlines occupations which may be employed during the design and construction period. Please note that this list represents only an approximation of the number and type of occupations that may be produced as a result of the proposed project. Actual occupations created as a result of the proposed project will ultimately be determined by the successful contractor. Occupations are expected to be comparable to those created for similar construction projects throughout the Province.

- 2–Professional Engineers - 0211 - entire project
- 2–Engineering Techs - 2231 - entire project
- 1–Surveyors - (1)-2113 and (1)-2154 - construction only
- 1–Rod and Chainmen - 7612 - construction only
- 1–Construction Inspector - 2264 - construction only
- 1–Draftsperson - 2253 - 2 months work
- 1–Secretary - 1241 - entire project
- 6–Labourers - 7217 - construction only
- 2–Heavy Equipment Operators - 7217 - construction only
- 5–Truck Drivers - 7217 - construction only
- 1–Flag Person - 7611 - construction only
- 2–Office Clerk - 1211 - 1 for construction and 1 for engineering
- 1–Construction Foremen/Superintendents - 7217 - construction only

5.0 **APPROVAL OF THE UNDERTAKING:**

The following is a list of the likely permits, licences and approvals required for this project.

Approvals/Certificate/Permits	Regulatory Authority
NL Environmental Assessment Registration ⁽¹⁾	NL Department of Municipal Affairs and Environment, Environmental Assessment Division
DFO–Request For Review (Serious Harm Determination; Aquatic Species At Risk) ⁽²⁾	Fisheries and Oceans Canada, Fisheries Protection Program
Permit to Alter a Body of Water	NL Department of Municipal Affairs and Environment, Water Resources Division
Navigation Protection Act Approval ⁽³⁾	Transport Canada
Quarry Permit ⁽⁴⁾	NL Department of Natural Resources

Notes: (1) This document; provincial permits are expected to be issued following release from further environmental assessment.

(2) The placement of the rubble mound breakwater was included in the DFO review conducted as part of previously approved and completed works to dredge the harbor and improve site access by infilling a section of the nearshore area to provide a level gravel area with armourstone protection around the perimeter. The breakwater placement was deemed to not pose Serious Harm or affect potential habitat of aquatic species at risk.

(3) An application has been made to Transport Canada (August 2018) for this approval.

(4) It is anticipated that the material will be sourced from existing licenced quarries operating in the region of the Project.

6.0 **ABORIGINAL CONSULTATION:**

The Project will benefit Mary's Harbour residents and among them, members of the NunatuKavut Community Council (NCC). A letter outlining plans for this Project was sent to the NCC on August 2, 2018. To date, no response has been received, however given the obvious positive benefits of the Project no response may be given.


7.0 **SCHEDULE:**

The proposed project is expected to commence in November 2018 and construction would occur over a fourteen (14) week period.

8.0 **FUNDING:**

The total cost estimate for all phases of the proposed project, as provided by the proponent, is approximately \$1.2 million. Funds will be provided by Small Craft Harbours Branch, Fisheries and Oceans Canada.

August 31, 2018
Date

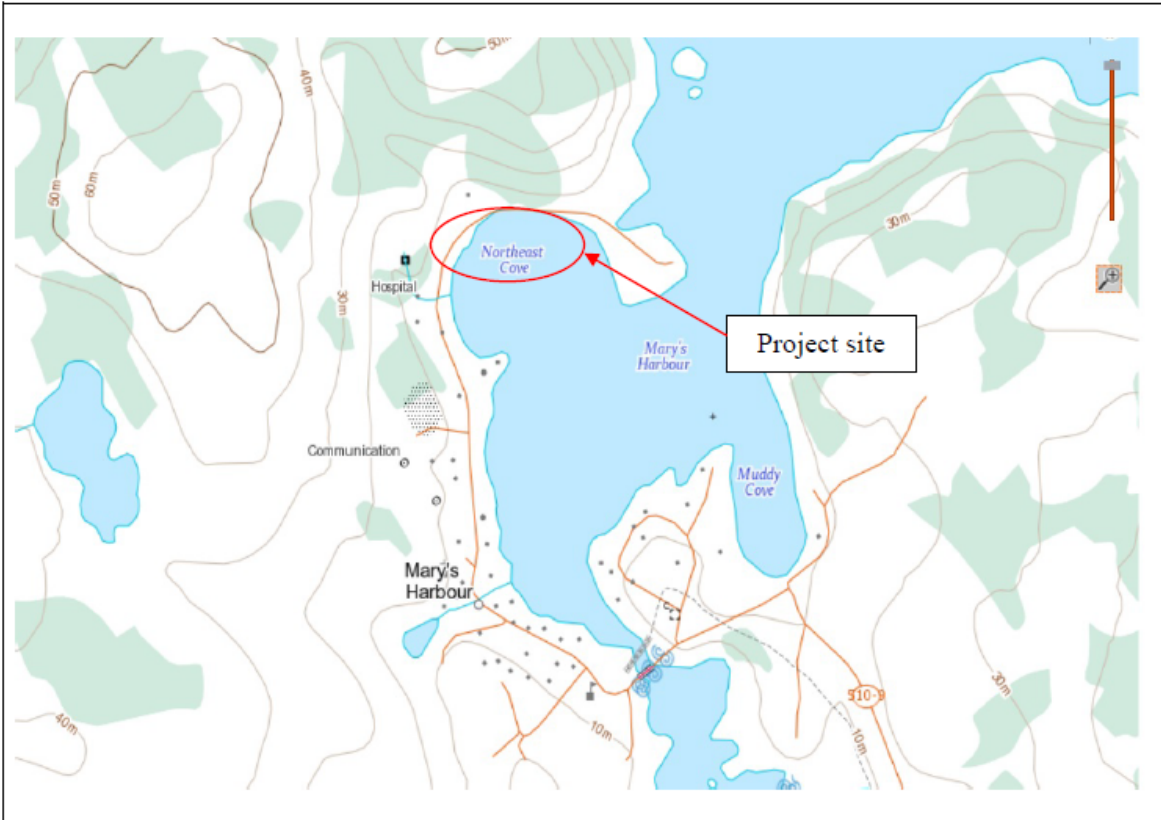
A handwritten signature in black ink, appearing to read "Matt McNeil". The signature is written in a cursive style with a prominent initial "M".

Environmental Specialist, PSPC

APPENDIX A

TOPO MAP

SITE PLAN



Description

Figure 1: Topographic Map of Proposed Sites
Location: Marys Harbour



SMALL CRAFT HARBOURS



- NOTES:
1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
 2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SURVEY NOTES

SURVEY PARTY CHIEF RICHARD HEALEY
 SURVEY VESSEL ALUMINUM BOAT
 SURVEY DATE(S) BETWEEN JUNE 22, 2016 & JUNE 06, 2018
 SOUNDER TYPE: SINGLE TRANSDUCER
 SOUNDER SETTING MIN/INST VEL. OF SOUND 1436 m/s
 DEPTH GATE USED N/A FREQ. OF TRANS. 210 KHZ
 POSITIONING SYSTEM USED TRIMBLE R7 GNSS DGPS (WITH OTF)
 LAND SURVEY POSITION BY TRIMBLE R7 GNSS DGPS (WITH OTF)
 DATA TAPE/DISC(S) USED
 CAD DRAWING FILE(S)
 TIDAL REDUCTION SCHEME

OFFICE PROCESSOR EDDIE BEARNS
 DATE OF PROCESSING JUNE 2018
 MODE OF PLOTTING LEAST OF MINIMUM DEPTHS
 MATRIX CELL WIDTH X LENGTH REDUCTION OF MATRIX CELLS
 CONTROL POINTS:

PL. NAME	EASTING	NORTHING	CD ELEV	DESCRIPTION
2003C17	579541.081	5796288.285	8.132 m	PROVINCIAL BRASS PLAQUE SET IN BEDROCK
798-1988	579842.353	5796280.483	5.684 m	I.P. WITH CAP SET IN BEDROCK
776-1988	579614.23	5796270.68	7.01 m	I.P. WITH CAP SET IN BEDROCK
PWC 1-2010	579191.040	5796541.224	3.51 m	X-CUT IN GUY WIRE ANCHOR
PWC 1-2013	579270.824	5796594.955	3.51 m	BOLT SET IN BEDROCK (BOLT MISSING)
PWC 1-2018	579280.252	5796543.079	6.298 m	NAIL IN WOODEN DECK OF CRIB FOR DOCKS
95F9336			8.225 m	CHS BRASS PLAQUE SET IN BEDROCK
95F9338			4.078 m	CHS BRASS PLAQUE SET IN BEDROCK

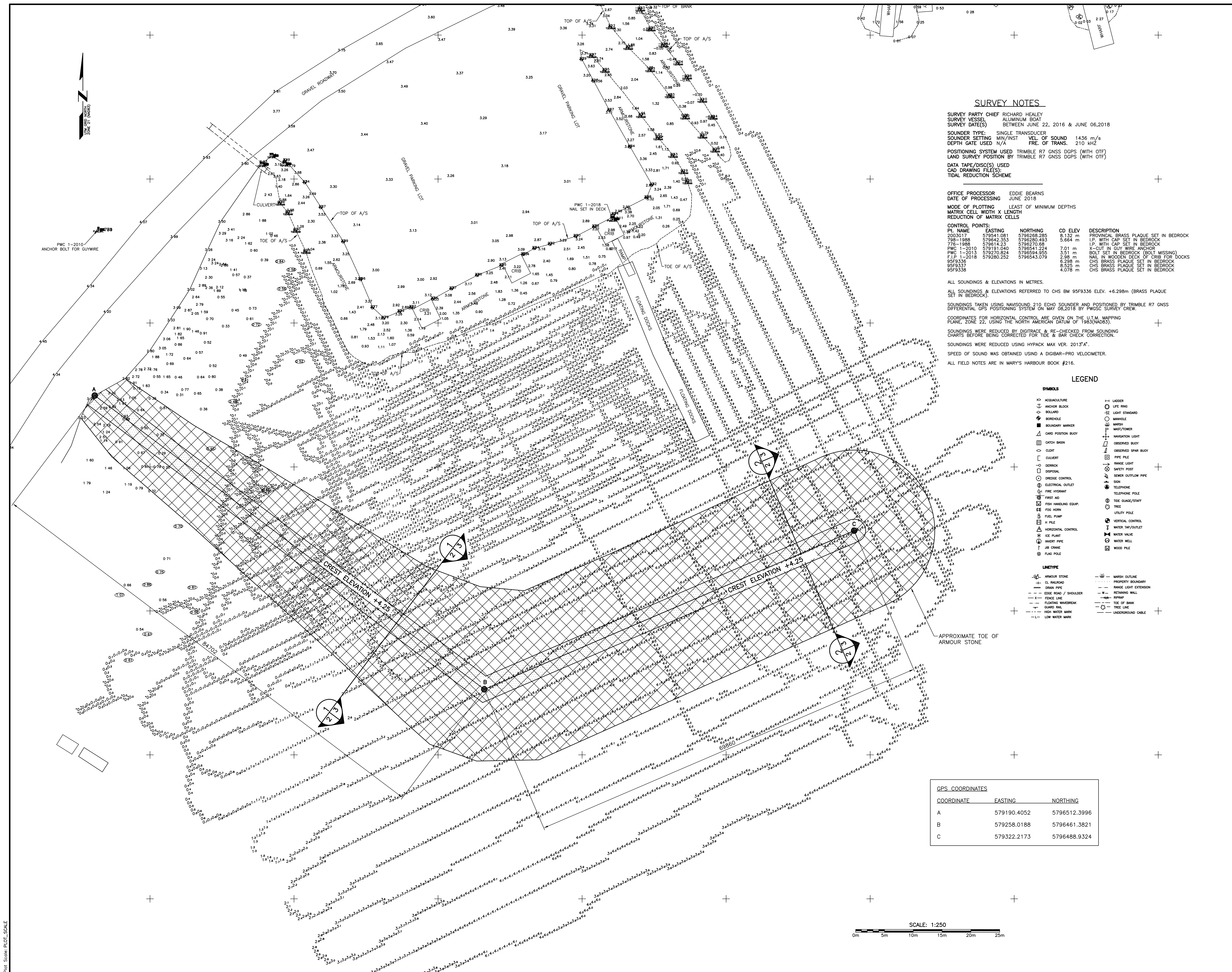
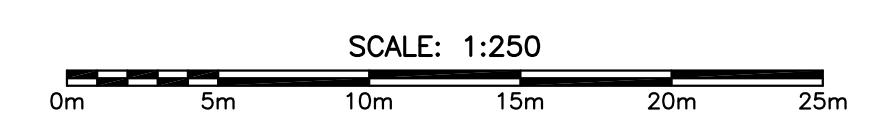
ALL SOUNDINGS & ELEVATIONS IN METRES.
 ALL SOUNDINGS & ELEVATIONS REFERRED TO CHS BM 95F9336 ELEV. +6.298m (BRASS PLAQUE SET IN BEDROCK)
 SOUNDINGS TAKEN USING NAVSOUND 210 ECHO SOUNDER AND POSITIONED BY TRIMBLE R7 GNSS DIFFERENTIAL GPS POSITIONING SYSTEM ON MAY 08, 2018 BY PWC/S SURVEY CREW.
 COORDINATES FOR HORIZONTAL CONTROL ARE GIVEN ON THE U.T.M. MAPPING PLANE, ZONE 22, USING THE NORTH AMERICAN DATUM OF 1983 (NAD83).
 SOUNDINGS WERE REDUCED BY DIGITRACE & RE-CHECKED FROM SOUNDING CHARTS BEFORE BEING CORRECTED FOR TIDE & BAR CHECK CORRECTION.
 SOUNDINGS WERE REDUCED USING HYPACK MAX VER. 2013.7A.
 SPEED OF SOUND WAS OBTAINED USING A DIGIBAR-PRO VELOCIMETER.
 ALL FIELD NOTES ARE IN MARY'S HARBOUR BOOK #216.

LEGEND

- | | |
|---|--|
| <ul style="list-style-type: none"> □ ACQUACULTURE □ ANCHOR BLOCK □ BOUNDARY □ BOUNDARY MARKER □ CARD POSITION BUOY □ CATCH BASIN □ CLAY PIT □ CONCRETE □ DISPOSAL □ DREDGE CONTROL □ ELECTRICAL OUTLET □ FIRE HYDRANT □ FIRST AID □ FISH HANDLING EQUIP. □ FOG HORN □ FUEL PUMP □ H PILE □ HORIZONTAL CONTROL □ ICE PLANT □ INVERT PIPE □ JIB CRANE □ FLAG POLE | <ul style="list-style-type: none"> □ LADDER □ LIFE RING □ LIGHT STANDARD □ MARSH □ MAST/TOWER □ NAVIGATION LIGHT □ OBSERVED BUOY □ OBSERVED SPAR BUOY □ PIPE PILE □ RAKE □ RANGE LIGHT □ SAFETY POST □ SEMI OUTFLOW PIPE □ SON □ TELEPHONE □ TELEPHONE POLE □ TIDE GAUGE/STAFF □ TREE □ UTILITY POLE □ VERTICAL CONTROL □ WATER IN/OUTLET □ WATER VALVE □ WATER WELL □ WOOD PILE |
|---|--|
-
- | | |
|---|---|
| <ul style="list-style-type: none"> — ARMOUR STONE — CL. RAILROAD — DRAIN PIPE — EDGE ROAD / SHOULDER — FENCE LINE — FLOATING WHARF/RAK — GUARD RAIL — HIGH WATER MARK — LOW WATER MARK | <ul style="list-style-type: none"> — MARSH OUTLINE — PROPERTY BOUNDARY — RANGE LIGHT EXTENSION — RETAINING WALL — RIPRAP — TIDE OF BANK — TREE LINE — UNDERGROUND CABLE |
|---|---|

GPS COORDINATES

COORDINATE	EASTING	NORTHING
A	579190.4052	5796512.3996
B	579258.0188	5796461.3821
C	579322.2173	5796488.9324



PROVINCE OF NEWFOUNDLAND
 PERMIT HOLDER
 This Permit Allows
 APN ENGINEERING INC.
 To practice Professional Engineering in Newfoundland and Labrador. Permit No. as issued by APENL F0282 which is valid for the year 2016.

REGISTERED PROFESSIONAL ENGINEER
 NEIL C. HUNT
 BIOGRAPHY
 NEWFOUNDLAND & LABRADOR

A	ISSUED FOR TENDER	07/03/18
revisions		date
project		project

BREAKWATER CONSTRUCTION
MARY'S HARBOUR, NL

drawing desin

NEW SITE PLAN

designed N.H.	concu
date JULY 3, 2018	
drawn P.H.	desine
date JULY 3, 2018	
approved	approve
Tender	Submission
DFD Project Manager	
project number 722614	no. du projet
drawing no. C2	no. du dessin