

**Breakwater Construction**

**Arnold's Cove, NL**

**Environmental Registration Document**

**Submitted to the Government of Newfoundland and Labrador**

**Department of Environment and Conservation**

**Environmental Assessment Division**

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

**Prepared By:** Public Works and Government Services Canada

**Date:** April 2014

**Project No.:** R.069711.001

## **TABLE OF CONTENTS**

1.0	NAME OF UNDERTAKING: .....	3
2.0	PROPONENT: .....	3
3.0	THE UNDERTAKING:.....	3
3.1	Nature of the Undertaking:.....	3
3.2	Purpose/Rationale/Need for the Undertaking: .....	3
4.0	DESCRIPTION OF THE UNDERTAKING: .....	4
4.1	Geographical Location:.....	4
4.2	Physical Features:.....	4
4.3	Construction: .....	4
4.4	Operation:.....	5
4.5	Occupations: .....	5
5.0	APPROVAL OF THE UNDERTAKING: .....	6
6.0	SCHEDULE:.....	6
7.0	FUNDING: .....	6

### **LIST OF APPENDICES**

Appendix A	Site Photo
Appendix B	Site Plan
Appendix C	Topo Map

**1.0 NAME OF UNDERTAKING:**

Breakwater Construction, Arnold's Cove, NL (P/N R.069711.001)

**2.0 PROPONENT:**

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Small Craft Harbours Branch – Southern Area
  
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**3.0 THE UNDERTAKING:**

**3.1 Nature of the Undertaking:**

The proposed undertaking represents an enhancement of the existing DFO SCH facilities in Arnold's Cove, Newfoundland and Labrador. It involves the construction of a rubblemound breakwater, which will provide shelter to the existing wharf infrastructure from wave action and undertow.

**3.2 Purpose/Rationale/Need for the Undertaking:**

An existing wharf infrastructure is currently exposed to harsh wave action and storm undertow conditions. As a result of this exposure the construction of a rubblemound breakwater has been proposed. The rubblemound breakwater will provide shelter to the wharf from high sea conditions and provide safe access to the berthage areas of the wharf to meet the operational requirements of facility

users. The proposed project complies with DFO SCH's mandate to keep harbours critical to the fishing industry open and in good repair.

The breakwater is required in this location to protect the existing harbour infrastructure, therefore alternative locations were not considered.

#### **4.0 DESCRIPTION OF THE UNDERTAKING:**

##### **4.1 Geographical Location:**

The proposed project site is located along the shoreline of the Avalon Peninsula, Newfoundland. Approximate NAD coordinates of the project site are 47° 45' 27" N, 53° 59' 20" W. Access to the site is provided by municipal roads through the community of Arnold's Cove, which may be accessed via provincial route 1, approximately 140 kilometres west of the City of St. John's.

##### **4.2 Physical Features:**

The proposed breakwater will measure approximately 160m (long) by 45 m (wide), for a total footprint, along the seabed below LNT of 7000 m<sup>2</sup>. Approximately 24 785 m<sup>3</sup> of core stone, 6 930 m<sup>3</sup> of filter stone and 10 005 m<sup>3</sup> of armour stone of varying sizes will be imported to the site. The area adjacent to the breakwater will be infilled using material such as core and filterstone to develop a laydown / service area (see Appendix A & B). The armourstone material will be trucked to the site and will be placed using an excavator(s), working above the high water mark, from the shoreline/breakwater structure or atop a barge. The successful contractor will determine the exact construction methodology and source for the armourstone, however material will have to come from an approved quarry.

##### *Physical and Biological Environment*

Arnold's Cove is located in eastern Newfoundland. More specifically it is located along the isthmus of the Avalon Peninsula. The project site is located within the south-eastern barrens subregion. This subregion is described as being dominated by heathlands. The topography is generally undulating with shallow heavily compacted till and numerous large erratics. According to site photographs the site is very industrialized with fishery related infrastructure, with very little natural vegetation remaining in the areas of development.

Both the Red Crossbill and Monarch Butterfly were identified as species under the Species at Risk Act that could potentially occupy the project area. However, as described above, the proposed project site is not likely to provide critical or limiting habitat for these species and does not contain any environmental components that are considered to be important, sensitive, threatened or endangered that are likely to be affected by the project.

##### **4.3 Construction:**

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

Construction of the breakwater is expected to require 5 months to complete. Commencement of the proposed project is tentatively scheduled for the 2011/2012 fiscal year.

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.

An active fishery is executed from the project area. The duration of the construction phase of the proposed project is likely to extend into the fishing season. As a result, minor disruptions to harbour and fishing operations can be anticipated.

#### **4.4** Operation:

Routine maintenance and repair projects will be carried out on an as-required basis over the estimated fifty (50) year life of the structure.

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 Arnold's Cove 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 breakwater is expected to require approximately 5 months to complete. Commencement of the proposed project is tentatively scheduled for the 2011/2012 fiscal year.

The following list outlines occupations that 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. The successful contractor will ultimately determine actual occupations created as a result of the proposed project. 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 – Laborers - 7217 - construction only

- 2 – Heavy Equipment Operators - 7217 - construction only
- 5 – Truck Drivers - 7217 - construction only
- 2 – Flag Persons - 7611 - construction only
- 1 – 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.

<b>Approvals/Certificate/Permits</b>	<b>Regulatory Authority</b>
NL Environmental Assessment Registration	NL Department of Environment and Conservation, Environmental Assessment Division
Request for Review	Fisheries and Oceans Canada
Application to Alter a Body of Water	NL Department of Environment and Conservation, Water Resources Division
Navigable Waters Protection Approval	Transport Canada
Quarry Permit	NL Department of Mines and Energy
Lease / Permit to Occupy Crown Lands	NL Department of Government Services


**6.0 SCHEDULE:**

The proposed project could commence at the earliest in July 2014. This timeline would allow for completion of a federal environmental assessment prior to initiating a call for tender. Depending on the responses provided by the above noted regulators, as well as federal funding, commencement of the project could be delayed by up to 6 months to a year.

**7.0 FUNDING:**

The total cost estimate for all phases of the proposed project, as provided by the proponent, is approximately \$1.8 million. Funds will be provided by Small Craft Harbours Branch, Fisheries and Oceans Canada.

April 16, 2014  
Date

  
\_\_\_\_\_  
Environmental Assessment Representative

**APPENDIX A**

**PHOTOS**



Appendix A-1. Location of proposed project

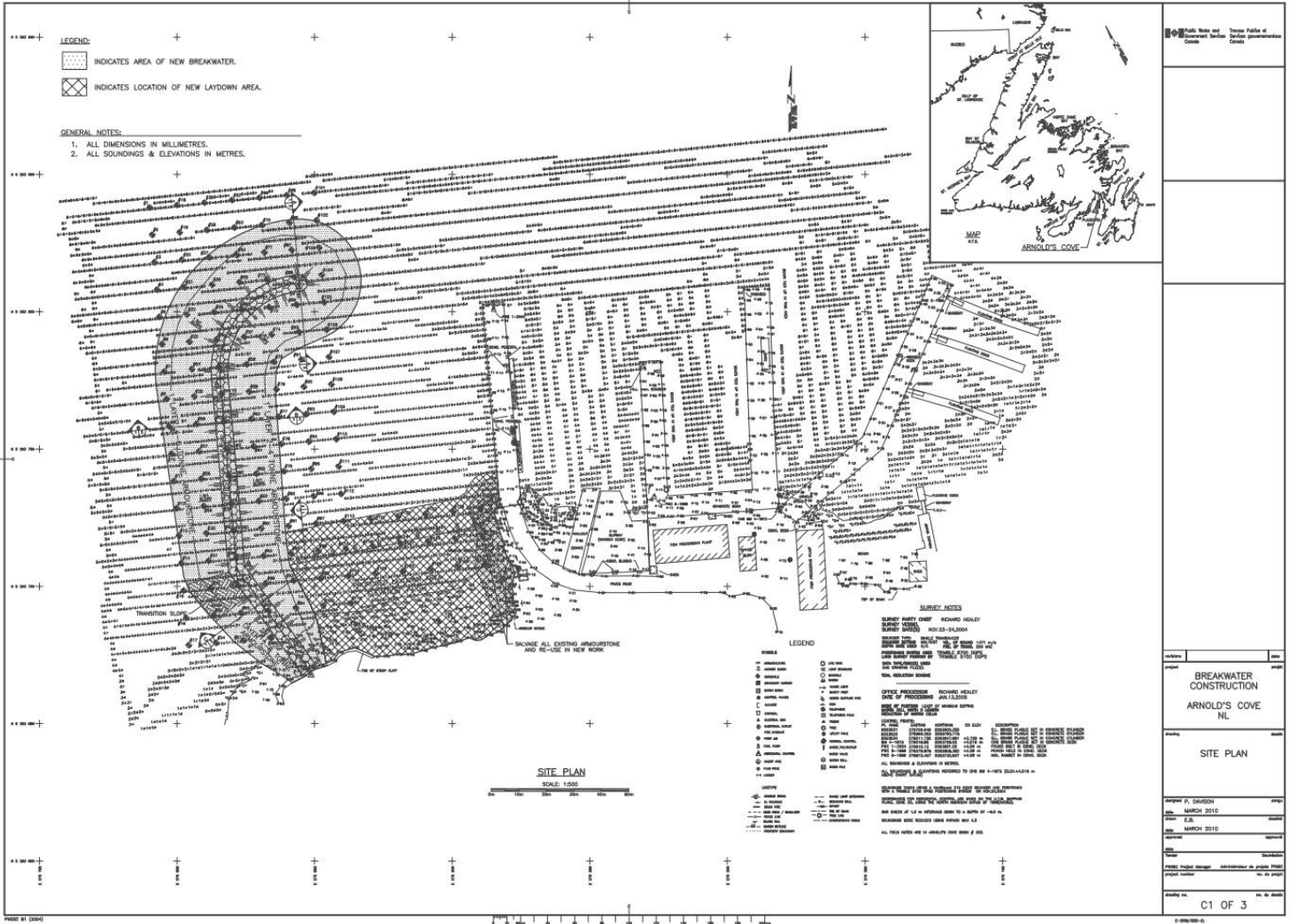


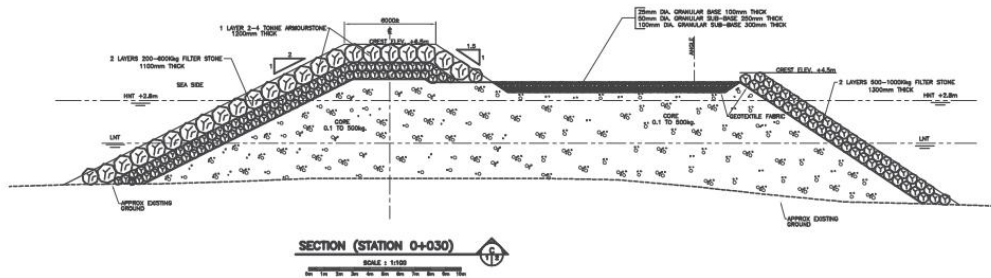
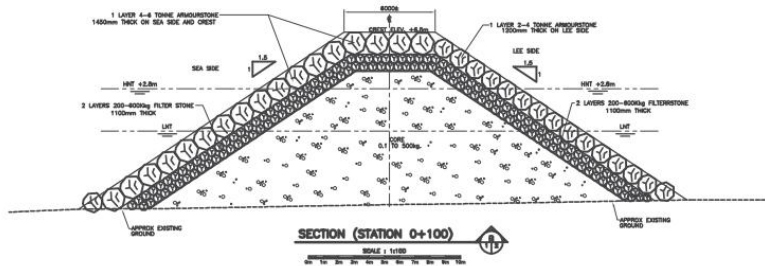
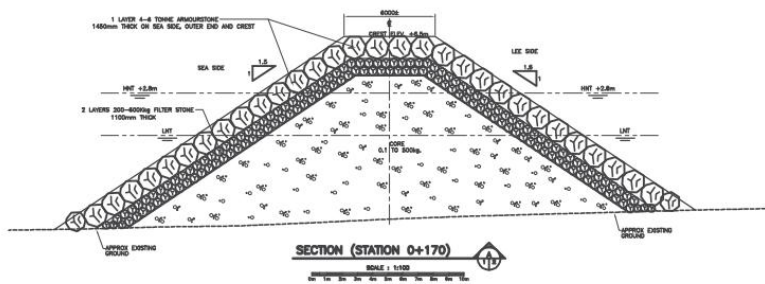


Appendix A-2. Proposed breakwater footprint and proposed infill area for service/laydown area

**APPENDIX B**

**SITE PLANS**





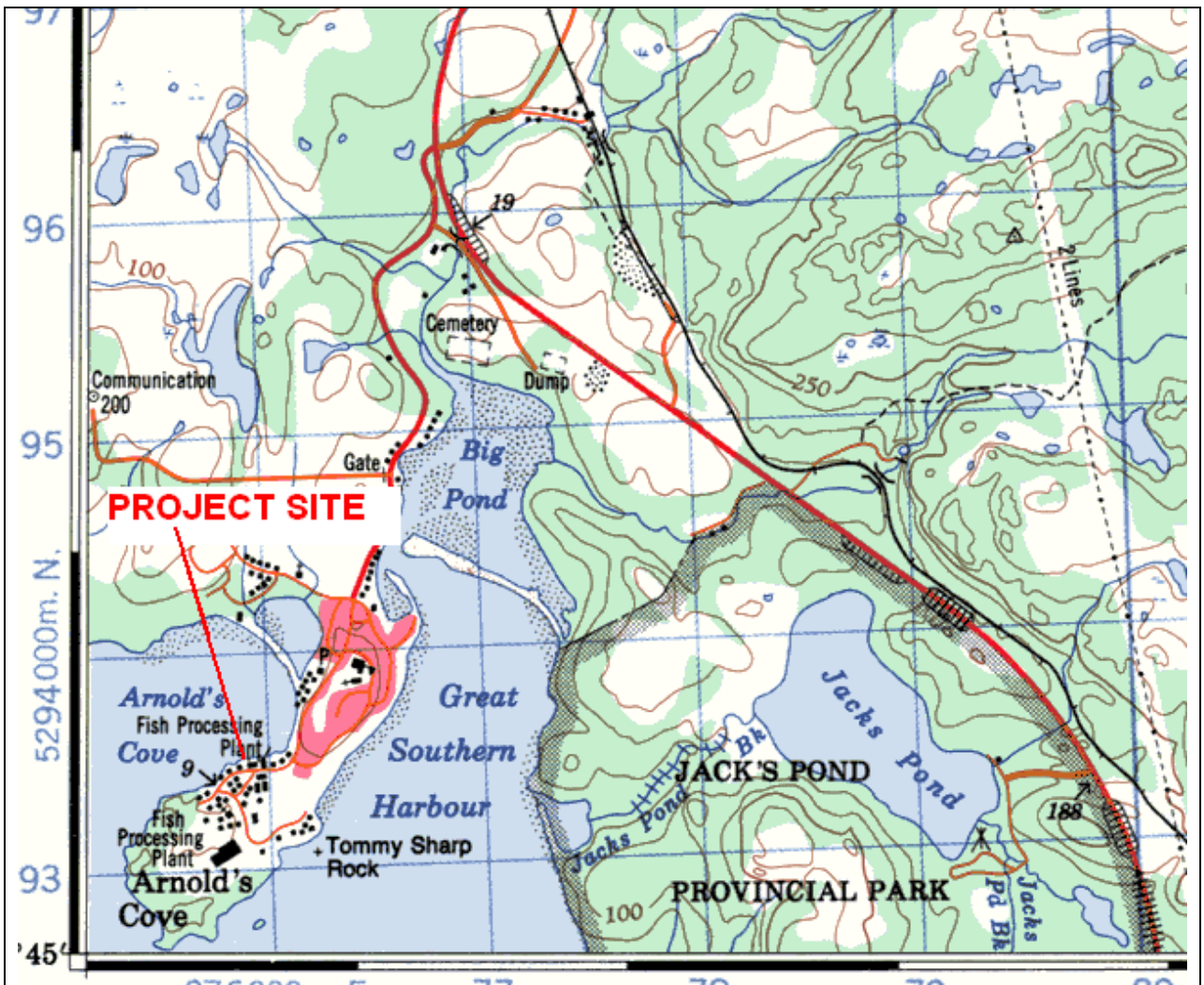
- NOTES:**  
 1. ALL DIMENSIONS IN MILLIMETRES.  
 2. ALL ELEVATIONS IN METRES.

Path Works and  
 Environment Services  
 Group  
 Project File of  
 Breakwater Construction

<b>BREAKWATER CONSTRUCTION ARNOLDS COVE NL</b>	
<b>SECTIONS</b>	
DATE: P13	DATE: P13
BY: MARCH 2010	BY: MARCH 2010
CHK: MARCH 2010	CHK: MARCH 2010
APP: MARCH 2010	APP: MARCH 2010
DESIGN: MARCH 2010	DESIGN: MARCH 2010
CONSTRUCTION: MARCH 2010	CONSTRUCTION: MARCH 2010
<b>R.029879.001</b>	
<b>C2 OF 3</b>	
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**APPENDIX C**

**TOPO MAP**



Appendix C-1: Topographic Map of Proposed Site Location: Arnold's Cove (Sunnyside 01/N/13) Each square represents 1 km<sup>2</sup>.

