

**Breakwater Construction**  
**Plate Cove, Plate Cove West, 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 - Eastern Area

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

**Date:** January 21, 2009

**Project No.:** R.029879.001

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**1.0 NAME OF UNDERTAKING:**

Breakwater Construction, Plate Cove, NL (P/N R.029879.001)

**2.0 PROPONENT:**

- (i) Fisheries and Oceans Canada (DFO)  
Small Craft Harbours Branch – Eastern Area
  
- (ii) 1144 Topsail Road  
Mount Pearl, NL  
A1N 5E8
  
- (iii) Mr. Gary Sooley  
DFO, Small Craft Harbours (SCH)  
Area Manager – Eastern  
1144 Topsail Road  
Mount Pearl, NL  
A1N 5E8  
Phone: (709) 772-4414 Fax: (709) 772-2659
  
- (iv) Shawn Kean  
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10 Barters Hill  
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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 Plate Cove West, Newfoundland and Labrador. It involves the construction of a 155 m rubble mound breakwater.

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

The proposed new breakwater will protect the existing wharf from the impacts of wave action and under-tow from the northeast winds in the region. It will also increase berthing capacity for fishing vessels, allowing an additional 60 m of wharfage to be used at all times. In addition the breakwater will provide an estimated useful life of at least thirty (30) years. The proposed project complies with DFO SCH's mandate to keep harbours critical to the fishing industry open and in good repair.

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

### **4.1 Geographical Location:**

The proposed project site is located along the western shoreline of Plate Cove on the north coast of the Bonavista Peninsula. Project coordinates are approximately 48° 30' 03" N, 53° 30' 19" W. Access to DFO SCH property is provided by municipal roads which may be accessed from the southeast via Provincial Route 235. A topographical map indicating the location of the project is included in Appendix A.

### **4.2 Physical Features:**

The proposed project involves constructing a 155 metre breakwater with a width and height of 32 m and 8 m respectively. Construction will include the placement of approximately 9400 m<sup>3</sup> of core stone, 3900 m<sup>3</sup> of filter stone, and 6000 m<sup>3</sup> of 1-4 tonne armour stone (Appendix B). The rubble mound breakwater construction materials will be obtained from a provincially licensed quarry and trucked in dump trucks to the project site. Excavators working from above the annual high water will place the stone in the water. The breakwater site is presently accessible via an existing parking area. No site blasting or dredging is proposed. An aerial photo of the project site is available in the Appendix A.

No other projects or alternative sites were evaluated since the users have indicated to DFO this proposal will address current operational requirements.

#### *Physical and Biological Environment*

The proposed project site is situated approximately 200 m north of an existing finger pier wharf at the DFO SCH facilities in Plate Cove West. The immediate project site is characterized primarily by a moderately sloped pebble-cobble beach backed by a steeply sloped, vegetated embankment. There are several permanent residences in the general area, although none exist within the immediate vicinity of the project site.

The shoreline of Plate Cove is characterized largely by exposed bedrock and pebble-cobble sediments. The upland environment is largely forested, with intermittent areas of grass and shrub vegetation. A brook empties into the head of Plate Cove, forming a barachois approximately 500 m south of the project site.

According to DFO's annual Angler's Guide, there are no scheduled rivers within 200 m of the project site. There are no known terrestrial wildlife or animal habitats in the immediate project area. Other fauna within the project area are limited to near shore fish species such as cunner, tomcod, winter flounder, and capelin. Marine mammals such as seals and whales frequent the general area of Bonavista Bay, but it is not likely they inhabit the immediate project area.

Plate Cove West falls within the North Shore Forest Ecoregion in the northeastern edge of the island of Newfoundland. The landscape is, for the most part, gently rolling with scattered small hills less than 130 m asl in elevation.

This ecoregion is one of the most geologically diverse regions in the province, with underlying rock formations belonging to four geological zones: the Dunnage zone; the Gander zone; the Avalon zone; and the Humber zone. The rocks in these zones include shales, sandstones, conglomerates and volcanic rocks. The soils are dominated by humo ferric podzols (brown soils containing mostly inorganic material), organic fibrisols (occurring in peatlands with high organic content), and ferrohumic podzols (dark soils with high organic content). Most of the ecoregion is in direct contact with the North Atlantic Ocean, and the irregular coastline extends the influence of the sea far inland which results in greater exposure to wind. The warmest summers of any coastal area in Newfoundland occur here. It is the driest ecoregion on the Island of Newfoundland, with moisture deficiencies common in summer. The highest annual temperatures are experienced in July (15°C to 16°C) and the lowest temperatures in February (-5°C to -7°C). The mean annual precipitation ranges from 1100 mm to 1300 mm.

The Plate Cove West area is within the distribution range of the Blue Whale, North Atlantic Right Whale, Barrow's Goldeneye (Eastern Population), and Red Crossbill; all placed on Schedule 1 of the Species at Risk Act by the Committee on the Status of Endangered Wildlife In Canada (COSEWIC). The area is also within the distribution range of the Ivory Gull, Shore-eared Owl, and Eskimo Curlew; all considered Species at Risk by the Government of Newfoundland and Labrador. However, it is unlikely that the proposed project site contains any critical, limiting, or sensitive habitat for any of the abovenoted species.

#### **4.3**    Construction:

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

Construction of the rubblemound breakwater is expected to require 3.5 – 4 months to complete. Commencement of the proposed project is tentatively scheduled for April 1, 2010.

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 seasonal 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 the harbour and nearby fish plant operations can be anticipated. However, the goal of this project is to improve and accommodate the fishing industry in the immediate region.

#### **4.4**    Operation:

Once constructed, routine maintenance and repair projects of the breakwater would normally include repositioning or replacing breakwater material that has become dislodged from the structure. Such activities will be carried out on an as-required basis over the life of the structure.

The proposed undertaking will increase berthing capacity for fishing vessels, allowing an additional 60 m of wharfage to be used.

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 Plate Cove West 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:

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 breakwater/wharf construction projects throughout the Province, which is outlined below.

- 2 – Professional Engineers - 0211 - entire project
- 1 – 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
- 2 – Laborers - 7217 - construction only
- 2 – Heavy Equipment Operators - 7217 - construction only
- 5 – Truck Drivers - 7217 - construction only
- 2 – Flag Person - 7611 - construction only
- 1 – Office Clerk - 1211 - 1 for construction and 1 for engineering
- 1 – Construction Foremen/Superintendents - 7217 - construction only

**4.6** Project-Related Documents:

N/A

**5.0** **APPROVAL OF THE UNDERTAKING:**

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

Approvals/Certificate/Permits	Regulatory Authority
NL Environmental Assessment Registration	NL Department of Environment and Conservation, Environmental Assessment Division

Fish Habitat Approval	Fisheries and Oceans Canada, Oceans and Habitat Management Branch
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, April 1, 2010. This timeline would allow for completion of a federal environmental assessment prior to initiating a call for tender.

**7.0 FUNDING:**

Funds for this proposed project will be provided by Small Craft Harbours Branch, Fisheries and Oceans Canada. Their address (and contact person) is as follows:

Mr. Gary Sooley  
DFO, Small Craft Harbours  
Area Manager – Eastern  
1144 Topsail Road  
Mount Pearl, NL  
A1N 5E8  
Phone: (709) 772-4414 Fax: (709) 772-2659

January 21, 2010  
Date

Shawn Kean  
Environmental Assessment Representative

## 8.0 REFERENCES

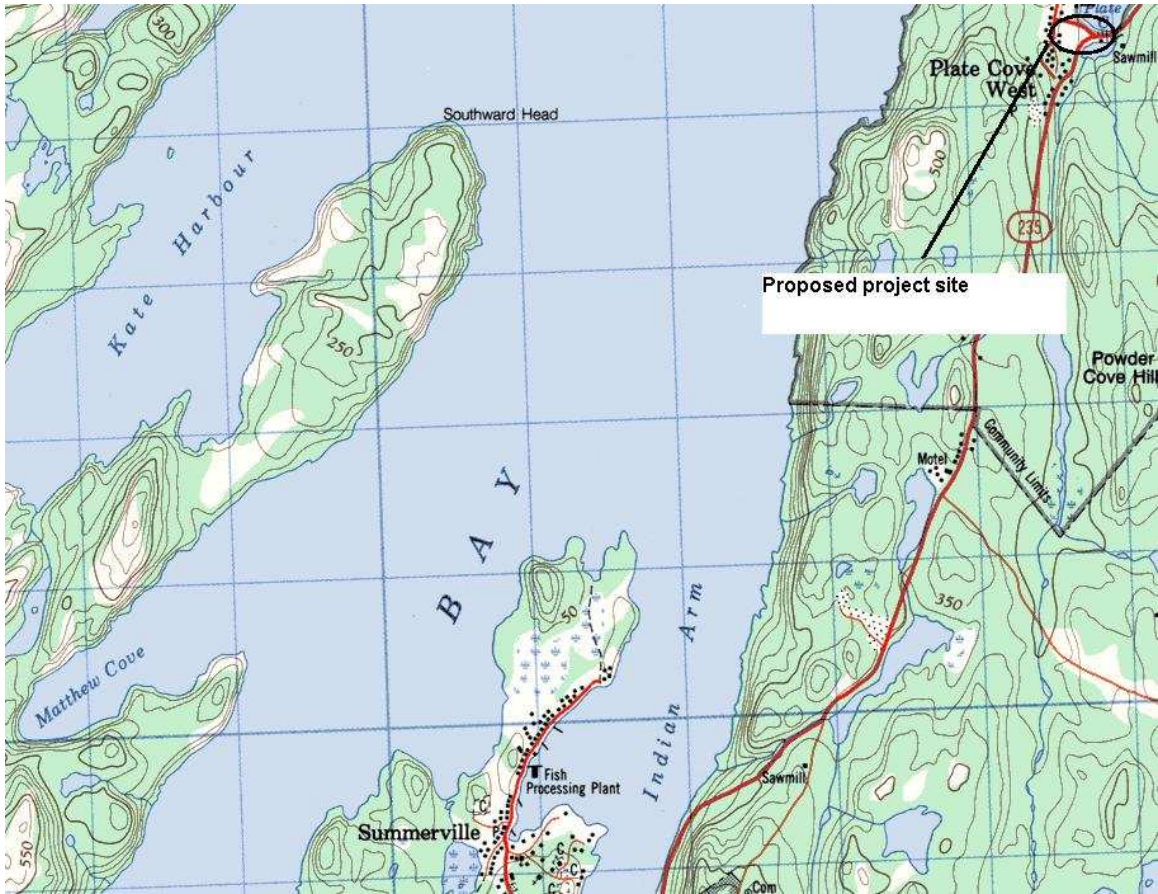
Species at Risk – Environment Canada, Canadian Wildlife Service. 2006. Species at Risk Web Mapping Application. URL – [http://www.sis.ec.gc.ca/ec\\_species/ec\\_species\\_e.phtml](http://www.sis.ec.gc.ca/ec_species/ec_species_e.phtml)

Angular's Guide – Fisheries and Oceans Canada. 2009. [http://www.nfl.dfo-mpo.gc.ca/folios/00090/docs/anglersguide\\_guidedepecheur\\_2009-10-eng.pdf](http://www.nfl.dfo-mpo.gc.ca/folios/00090/docs/anglersguide_guidedepecheur_2009-10-eng.pdf)

Ecoregions of Newfoundland – Natural Resources. 2007. Government of NL and Labrador. <http://www.nr.gov.nl.ca/forestry/maps/>



**APPENDIX A**  
**TOPOGRAPHIC MAP AND PHOTOS**



NTS Mapsheet: 02 C/05 Sweet Bay  
Scale 1:50,000  
Each square block represents 1 km<sup>2</sup>



Aerial view of the community of Plate Cove West, with project site noted.



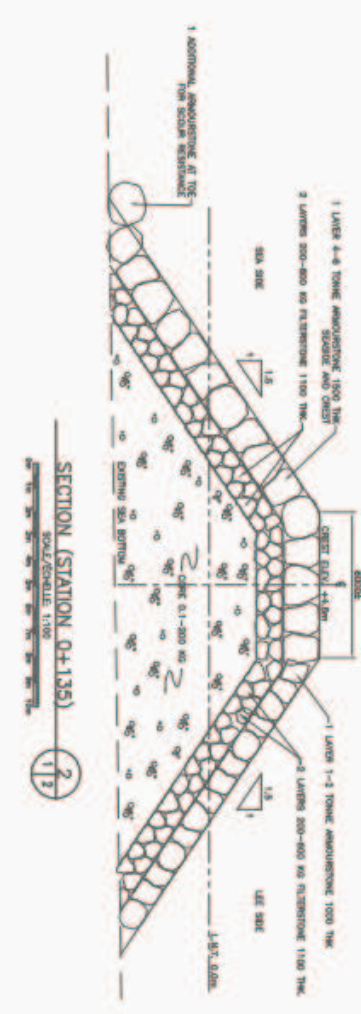
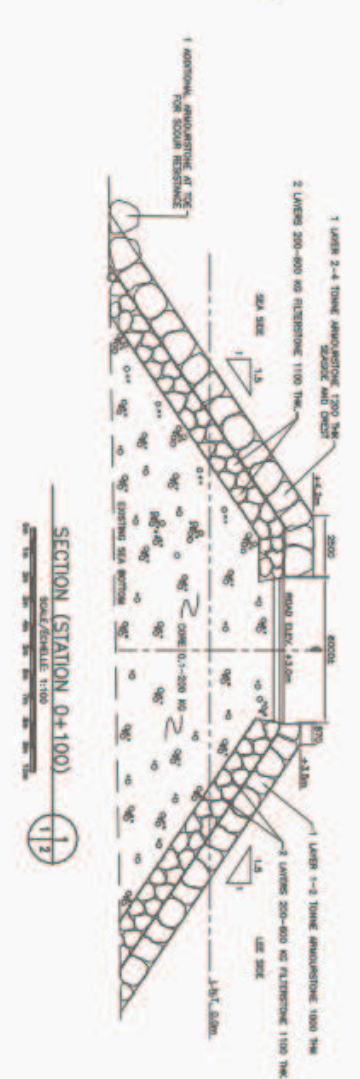
Approximation of the proposed breakwater footprint.

**APPENDIX B**

**SITE PLAN**



1. ALL DIMENSIONS & MATERIALS TO BE PROVIDED BY CONTRACTOR.



PHONE #	PENETRATION	TYPE OF MATERIAL
# 1	+4.00m	SMALL STONES
# 2	+4.20m	SMALL STONES
# 3	+4.30m	SMALL STONES
# 4	+4.40m	SMALL STONES
# 5	+4.50m	SMALL STONES
# 6	+4.60m	SMALL STONES
# 7	+4.70m	SMALL STONES
# 8	+4.80m	SMALL STONES
# 9	+4.90m	SMALL STONES
# 10	+5.00m	SMALL STONES
# 11	+5.10m	SMALL STONES
# 12	+5.20m	SMALL STONES
# 13	+5.30m	SMALL STONES
# 14	+5.40m	SMALL STONES
# 15	+5.50m	SMALL STONES
# 16	+5.60m	SMALL STONES
# 17	+5.70m	SMALL STONES
# 18	+5.80m	SMALL STONES
# 19	+5.90m	SMALL STONES
# 20	+6.00m	SMALL STONES
# 21	+6.10m	SMALL STONES
# 22	+6.20m	SMALL STONES
# 23	+6.30m	SMALL STONES
# 24	+6.40m	SMALL STONES
# 25	+6.50m	SMALL STONES
# 26	+6.60m	SMALL STONES
# 27	+6.70m	SMALL STONES
# 28	+6.80m	SMALL STONES
# 29	+6.90m	SMALL STONES
# 30	+7.00m	SMALL STONES
# 31	+7.10m	SMALL STONES
# 32	+7.20m	SMALL STONES
# 33	+7.30m	SMALL STONES
# 34	+7.40m	SMALL STONES
# 35	+7.50m	SMALL STONES
# 36	+7.60m	SMALL STONES
# 37	+7.70m	SMALL STONES
# 38	+7.80m	SMALL STONES
# 39	+7.90m	SMALL STONES
# 40	+8.00m	SMALL STONES

NOTES  
- DIMENS USED 1M STEEL ROD & S/LB HAMMER

DIVING PROBES -  
SEAFORCE DIVING (2009)



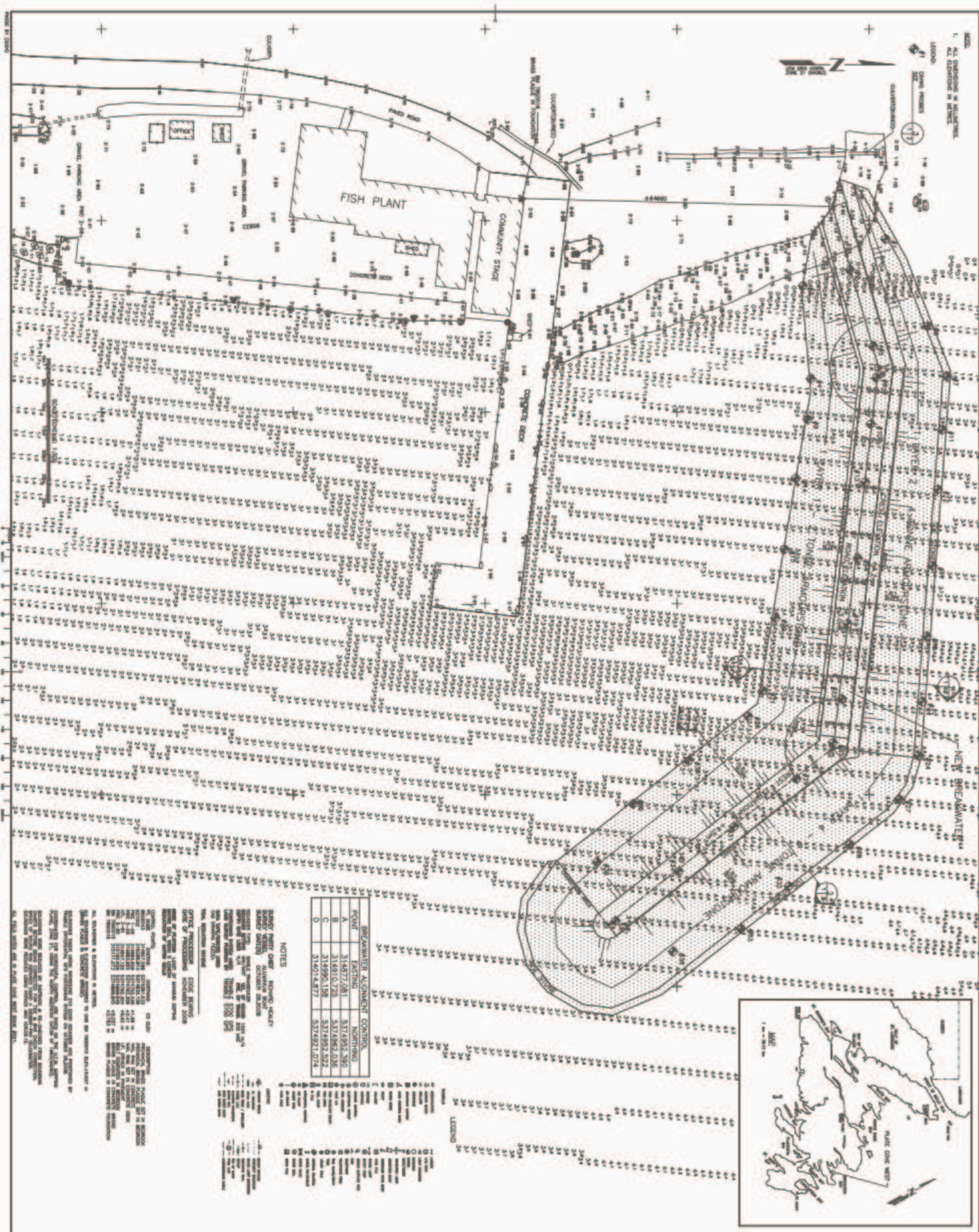
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1:100

BREAKWATER  
CONSTRUCTION  
PLATE COVE WEST, NL

SECTIONS  
&  
PROBES

Project Name	BREAKWATER CONSTRUCTION PLATE COVE WEST, NL
Client	SEAFORCE DIVING (2009)
Scale	1:100
Sheet No.	C2 OF 2





<p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li>Concrete Box</li> <li>Breakwater Structure</li> <li>Other</li> </ul>	
<p><b>NOTES</b></p> <p>1. ALL DIMENSIONS IN METERS.</p> <p>2. ALL DIMENSIONS IN METERS.</p>	
<p><b>DATE OF PREPARATION: OCTOBER 2008</b></p> <p><b>SCALE: AS SHOWN</b></p> <p><b>PROJECT: BREAKWATER CONSTRUCTION</b></p> <p><b>SITE: PLATE COVE WEST, NL</b></p>	
<p><b>DESIGNED BY: [Name]</b></p> <p><b>CHECKED BY: [Name]</b></p> <p><b>DATE: [Date]</b></p>	
<p><b>PROJECT NO: [Number]</b></p> <p><b>SHEET NO: [Number]</b></p> <p><b>TOTAL SHEETS: [Number]</b></p>	

**PLATE COVE WEST, NL**

**SITE PLAN**

**BREAKWATER CONSTRUCTION**

**C1 OF 2**





