Channel wall and breakwater reconstruction

Fox Island River, 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 - Western Area**
Prepared By:	**Public Works and Government Services Canada**
Date:	**January 19, 2012**
Project No.:	**R.049721.001**

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 NAME OF UNDERTAKING:

Channel wall and breakwater reconstruction, Fox Island River, NL (P/N R.049721.001)

2.0 PROPONENT:

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3.0 THE UNDERTAKING:

3.1 Nature of the Undertaking:

The proposed undertaking represents repairs to and enhancement of the existing DFO SCH facilities in Fox Island River, Port au Port Bay, Newfoundland and Labrador. It involves the reconstruction of two channel walls, construction of a rubblemound breakwater, and dredging. The proposed channel wall reconstruction and breakwater construction is intended to provide shelter to existing wharf infrastructure and reduce the frequency of future maintenance dredging.

3.2 Purpose/Rationale/Need for the Undertaking:

An existing steel sheet pile and rubblemound training walls are in a state of disrepair. This has resulted in an increased frequency of storm events affecting the DFO SCH marginal wharf and an increased requirement for dredging to maintain safe access through the channel. To correct these issues, the training wall structure must be replaced and enhanced.

4.0 DESCRIPTION OF THE UNDERTAKING:

4.1 Geographical Location:

The proposed project site is located along the eastern shoreline of Port au Port Bay, Newfoundland. Approximate WGS84 coordinates of the project site are 48° 41' 42" N, 58° 40' 52" W. Access to the site is provided via provincial route 462.

4.2 Physical Features:

The proposed project will be completed in phases:

Phase 1 will include the demolition and removal of a portion of an existing steel sheet pile and rubblemound training wall located on the north side of the access channel to Fox Island River. The existing steel sheet pile and rubblemound training wall will be replaced with armourstone protection in the channel and a rubblemound breakwater structure at the entrance to the channel. The new rubblemound breakwater will measure approximately 25 m wide by 120 m long at its base. Approximately 60 m of the seaward portion of the breakwater will be constructed below low-normal-tide (LNT), resulting in a new benthic footprint of approximately 1500 square metres. The remainder of the breakwater will be constructed on the shoreline, above LNT. Rubblemound material from the pre-existing training wall will be re-used where possible. Additional rock material will be obtained from a provincially approved quarry.

To facilitate the placement of the breakwater and ensure adequate draft for vessels utilizing the Fox Island River DFO SCH facility, approximately 5000 cubic metres of primarily sand and gravel sediment will be dredged from the outermost portion of the access channel. Dredging will be completed utilizing land-based equipment, including excavators working for the shoreline or mounted atop a floating barge. To adequately reach the dredge limits, fording of the river may also be required. Subject to the results of analytical testing of sediments, dredge spoils will be re-deposited on-site, above high-normal-tide (HNT), on DFO SCH property. If deemed unsuitable for disposal on-site the material will be transported to a provincially approved waste disposal site for disposal.

Future phases of the project will involve the complete demolition and removal of the remaining steel sheet pile and rubblemound training wall on the north side of the river access channel. The steel sheet pile wall will be replaced with armourstone protection. The steel sheet pile retaining wall on the south side of the river access channel will also be removed and replaced with armourstone.

*Note: Only Phase 1 of the project is currently proposed for construction. The design for future phases of the project has not been finalized. Any additional environmental and/or regulatory approvals deemed necessary to complete future project phases will be obtained at a later date.

Physical and Biological Environment

Within the general vicinity of the project site there are several houses, a marginal wharf structure, concrete boat launch, several sheds and other buildings. The DFO SCH facility consists of a marginal wharf, concrete boat launch and storage building. A benthic survey of the proposed Phase 1 breakwater footprint revealed that the seabed is a mixture of sand with lesser amounts of pebble. Benthic vegetation was largely absent during the survey and consisted primarily of storm toss. Kelp was observed attached to pebble substrates towards the outer end of the proposed breakwater footprint; no benthic fauna were observed. The immediate project area is dominated by a large sand spit and natural barachois. The landscape immediately upland of the project location is forested. Atlantic salmon and Eastern Brook trout are known to migrate to and from Fox Island River.

Fox Island River is located within the St. George's Bay subregion of the Western Newfoundland subregions. The subregion of St. Georges Bay includes the coastal plain and mountain slopes and river valleys from the southern end of Grand Lake to Robinsons River. Areas of deep undulating till occur locally. These are characterized by orthic podzols on sandy loams with the Dryopteris-Hylocomium-Balsam Fir type occurring in the mid-slope position.

On the steep mountainous slopes, gneiss, granite, sandstone and quartz are the most frequently encountered rock types and the parent material is a shallow, often stony, sandy loam till. The Hylocomium-Balsam Fir forest type occupies the midslope position underlain by orthic or gleyed podzols with seepage over bedrock. The occurrence of seepage waters ensures good forest growth and profuse regeneration after cutting. This landtype is also prevalent in the Corner Brook subregion.

The coastal plain is dominated by numerous coarse textured deposits, such as glacio-fluvial deposits, eskers, drumlins and kames. The generally, low productivity of these site is in stark contrast to most of Western Newfoundland. The Pleurozium-Balsam Fir and Gaulteria-Balsam Fir forest types are the most common in undisturbed landscapes, but these may be replaced by corresponding Black Spruce-Feathermoss types, Kalmia-Black spruce or Kalmia Heath after fire. Orthic podzols dominate these landscapes with gleyed humic podzols in transition to large peatland deposits. This is one of the few landtypes in the Western Newfoundland Ecoregion where serious growth and regeneration problems may be encountered.

According to the Fisheries and Oceans' Traditional Ecological Maps in the area, trout, capelin, eel, salmon, lobster, clam, and sea urchins may be found within or very near the project area (although none were observed during benthic surveying

conducted in December 2012). The Codroy Valley – Bay St. George – Port au Port Peninsula: Atlas of Significant Coastal and Marine Areas indicate that smelt and spawning capelin may also be found within project limits.

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 and threatened or of special concern. However, the Red Knot (*calidrus canutus rufa*), which is designated by COSEWIC as endangered, was reported within 5 km of the project site. Further refining the search criteria indicated that the sighting was not within 2.5 km of the project site. Additionally, Piping Plover (*Charadrius melodus melodus*), which are listed as endangered on Schedule 1 of the Species at Risk Act, are known to breed in the greater Bay St. George area. However, surveys completed in 1984, 2001 and 2006 reported no Piping Plovers in or near the project area. It is likely that the beach in Fox Island River does not provide suitable breeding habitat for the species (K. Baker, Environment Canada - personal communication - February 2011).

4.3 Construction:

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

Construction of the outer portion of the north channel wall and breakwater (Phase 1) is expected to require 4-6 months to complete. Commencement of the proposed project is tentatively scheduled for 2012/2013 fiscal year, subject to regulatory approval. Future phases of the project will also likely require 4-6 months to complete.

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. Sedimentation as a result of channel wall demolition, dredging and 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.

Fox Island River is a scheduled Atlantic Salmon River. In-channel work may interfere with normal salmon and smolt migration. Approval from Fisheries and Oceans Canada, Habitat Protection Division (DFO HPD) will be obtained prior to the commencement of any in-water work. Mitigations prescribed by DFO HPD - including timing restrictions to avoid potential conflict with migrating salmon – will be strictly adhered to.

4.4 Operation:

Routine maintenance and repair projects including repairs or replacement of displaced armourstone and maintenance dredging will be carried out on an as-required basis over the estimated thirty (30) 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 Fox Island River 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 Phase 1 of the project is expected to require 4-6 months to complete. Future phases will also likely require 4-6 months to complete. Commencement of Phase 1 of the proposed project is tentatively scheduled for the 2012/2013 fiscal year.

The following list outlines occupations which may be employed during the design and construction period of Phase 1 of the project. Future phases will likely require similar occupations and number of employees. 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 – 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

4.6 Project-Related Documents:

1. Benthic Environment Survey – Fox Island River
   Author: Baileys Marine Services. – December 2011

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	NL Department of Environment and Conservation, Environmental Assessment Division
Fish Habitat Approval	Fisheries and Oceans Canada, Habitat Protection Division
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	Service NL
Permit to disposal of dredge material	Service NL

6.0 SCHEDULE:

The proposed project could commence at the earliest, June 1, 2012. This timeline would allow for completion of a federal environmental assessment prior to initiating a call for tender and avoid potential conflict with migrating Atlantic Salmon. Depending on the responses provided by the abovenoted regulators, commencement of the project could be delayed by up to 6-12 months. Commencement of this project is subject to DFO SCH operational priorities and funding, which may further impact potential commencement dates.

7.0 FUNDING:

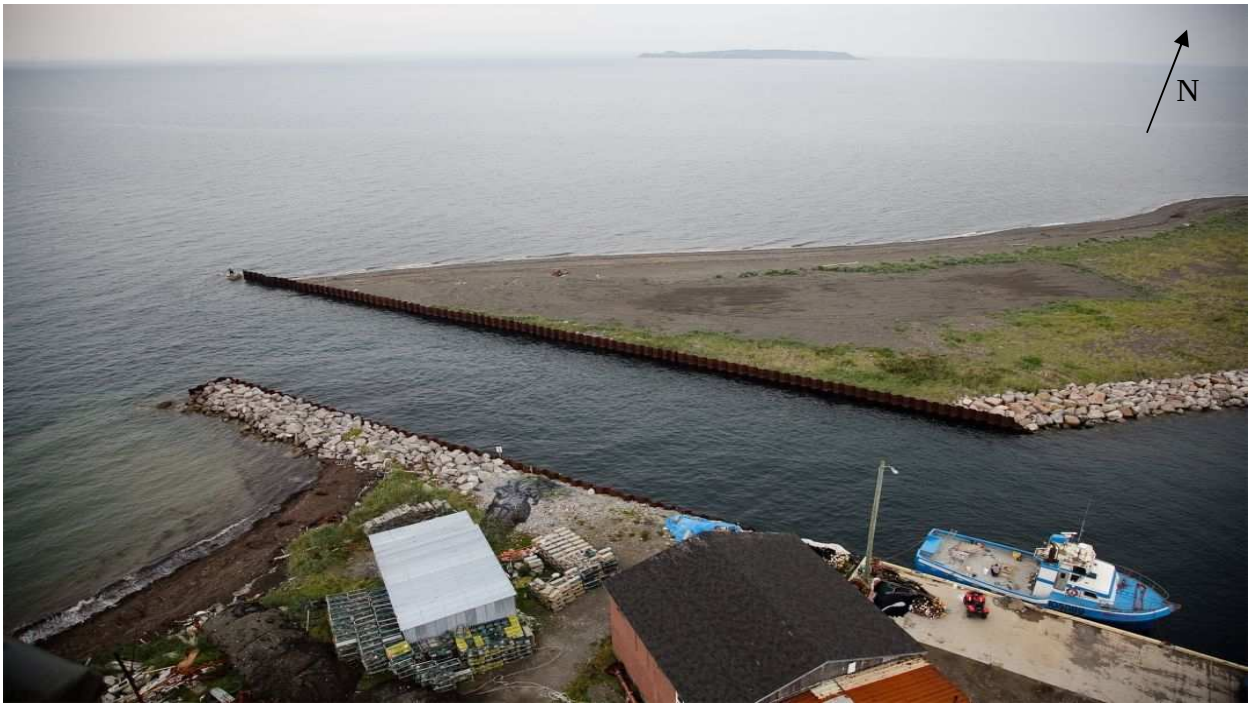
The total cost estimate for all phases of the proposed project, as provided by the proponent, is less than $3 million. Funds will be provided by Small Craft Harbours Branch, Fisheries and Oceans Canada.

January 19, 2012
Date

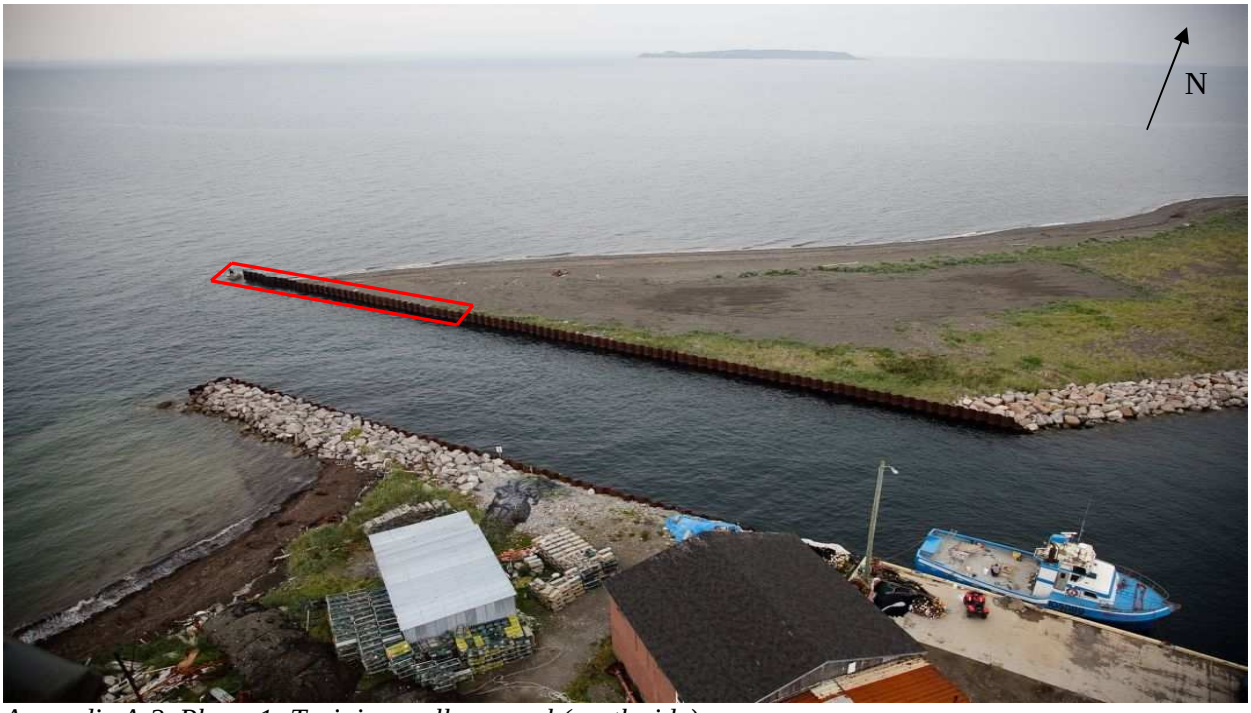
Environmental Assessment Representative

APPENDIX A

PHOTOS



Appendix A-1. Location of proposed project



Appendix A-2. Phase 1: Training wall removal (north side).

*Appendix A-3. Phase 1: Channel wall reconstruction and breakwater construction. * Illustration not to scale.*

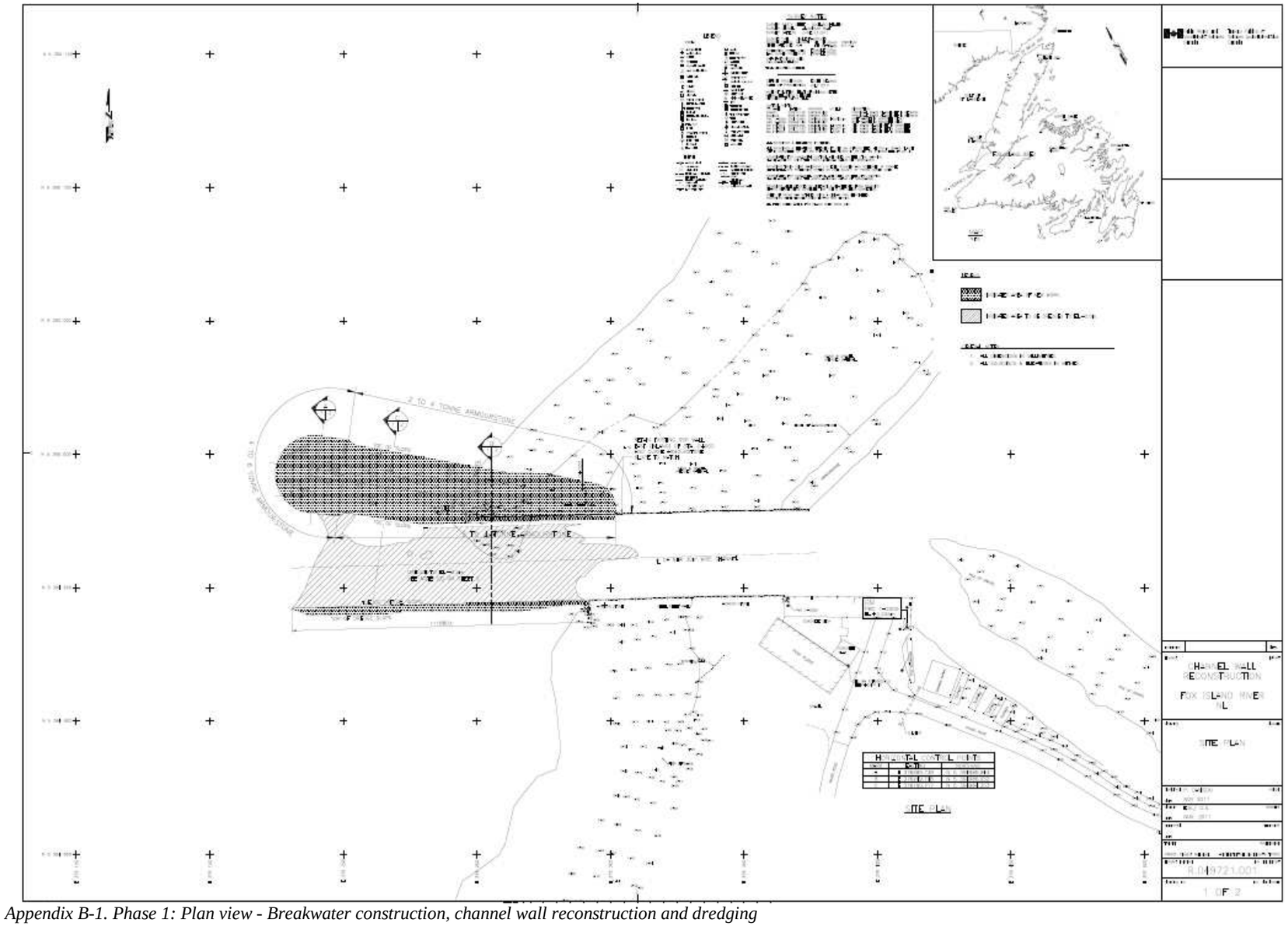
Appendix A-4. Phase 1: Channel dredging

Appendix A-5. Future phases: Training wall removal (north and south side).

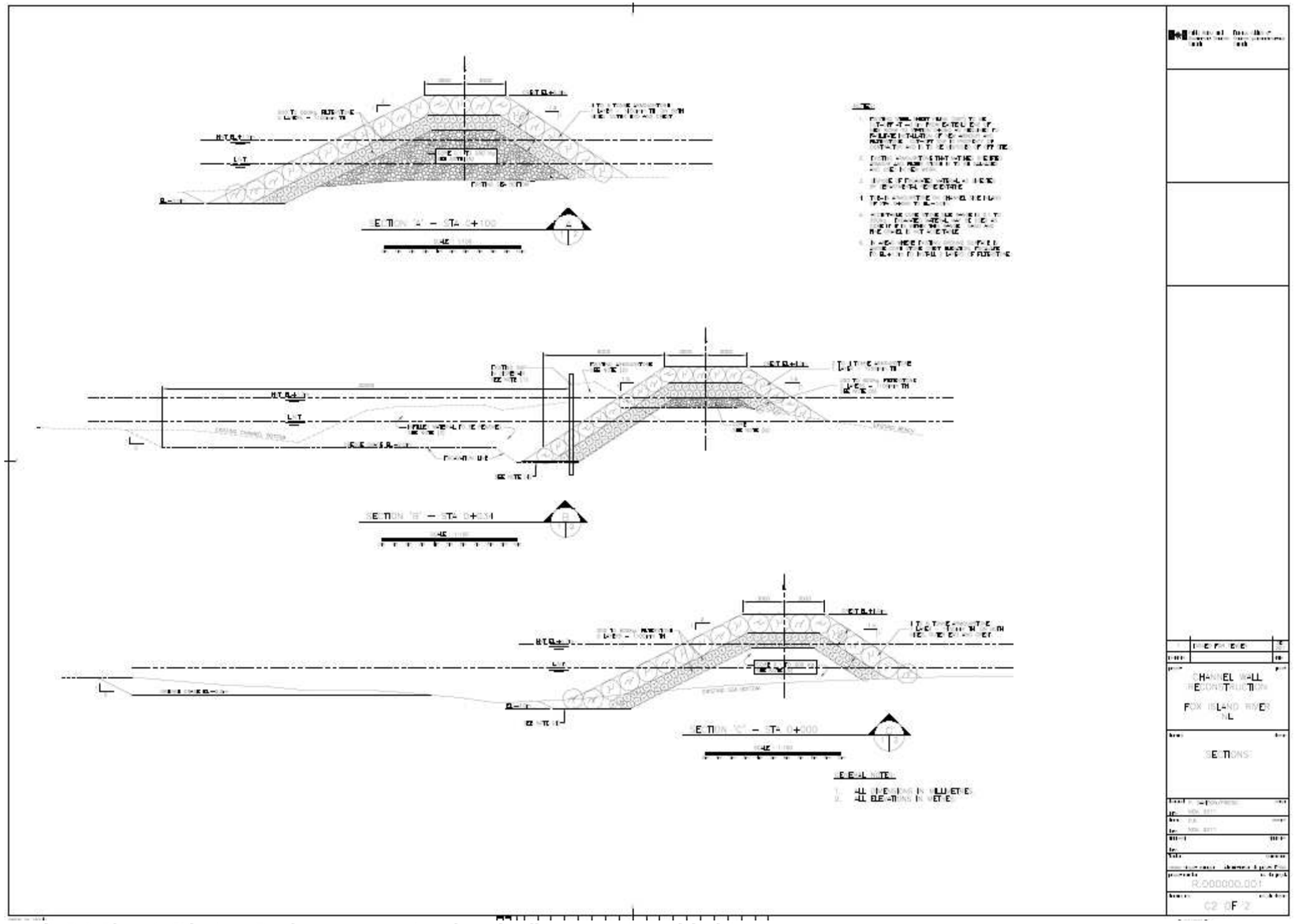
Appendix A-6. Future phases: Armourstone protection installation (north and south side).
**Illustration not to scale.*

APPENDIX B

SITE PLANS (Phase 1 Only)



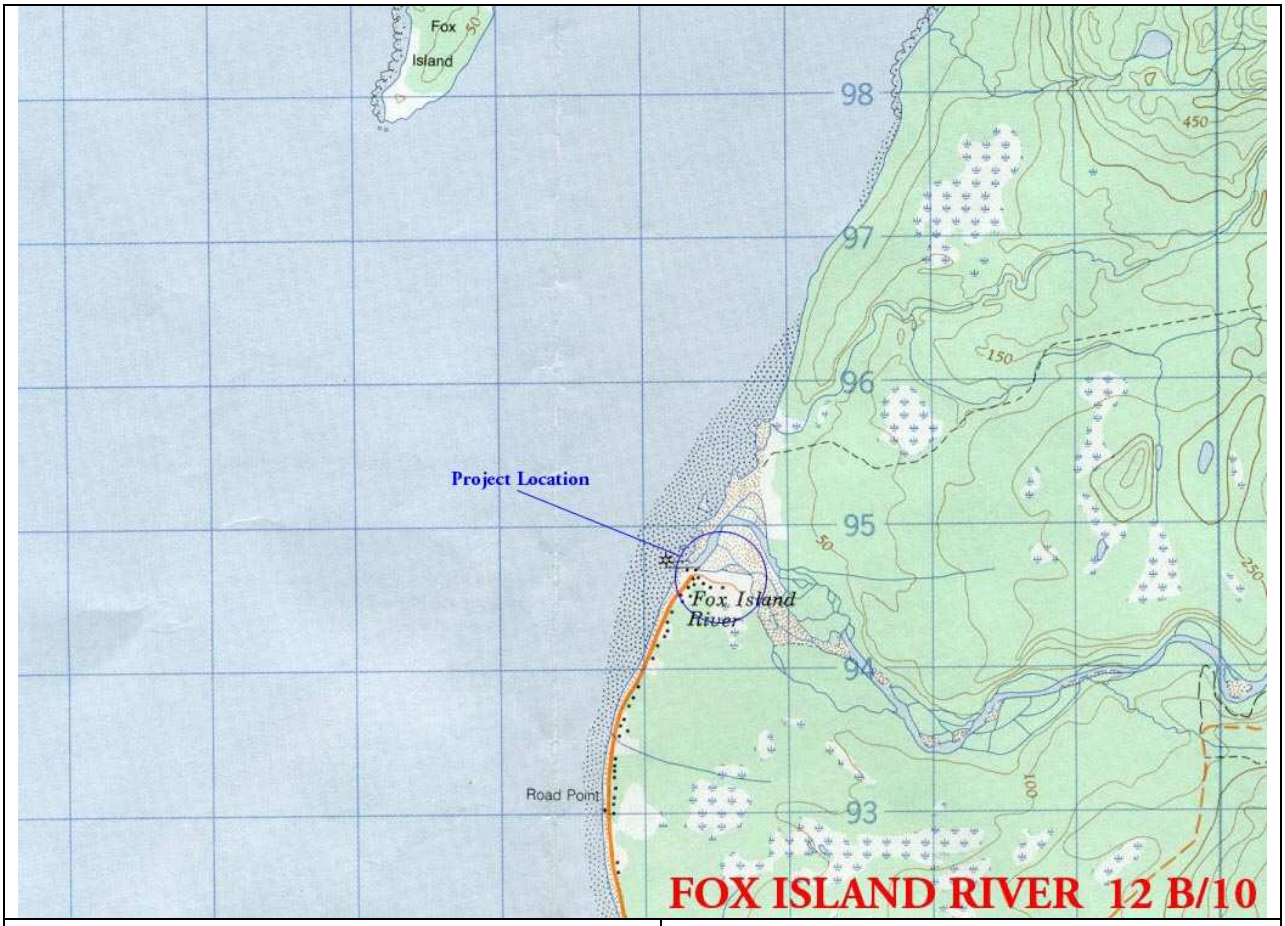
Appendix B-1. Phase 1: Plan view - Breakwater construction, channel wall reconstruction and dredging



Appendix B-2. Phase 1: Side view - Breakwater construction, channel wall reconstruction and dredging

APPENDIX C

TOPO MAP



Appendix C-1: Topographic map indicating location of proposed project (NTS Mapsheet Stephenville 12 B/10)