

**Environmental Protection Plan,
Breakwater Construction,
Mary's Harbour, NL**



Prepared for:
Public Service and Procurement
Canada

On behalf of:

Fisheries and Oceans Canada –
Small Craft Harbours

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Abbreviations

DFO-SCH	Fisheries and Oceans Canada – Small Craft Harbours Branch
EA	Environmental Assessment
EPP	Environmental Protection Plan
PSPC	Public Service and Procurement Canada
NLDMAE	Newfoundland and Labrador Department of Municipal Affairs and Environment



1.0 INTRODUCTION

Fisheries and Oceans Canada – Small Craft Harbours Branch (DFO-SCH) is responsible for operating and maintaining a national system of harbours to provide commercial fish harvesters and other harbour users with safe and accessible facilities. The mandate of DFO-SCH is to keep the harbours that are critical to the fishing industry open and in good repair, and the Mary's Harbour SCH property is considered a core fishing harbour. DFO-SCH is proposing to construct a new rubble-mound breakwater (the Project) within Mary's Harbour to help protect harbour infrastructure from waves and other ocean conditions. Project drawings of the proposed breakwater are provided in Appendix A.

To address potential environmental concerns associated with routine construction activities and potential environmental emergencies, an Environmental Protection Plan (EPP) has been developed. This EPP was also developed to adhere to conditions set out by the Minister of the Newfoundland and Labrador Department of Municipal Affairs and Environment (NLDMAE) upon release of the Project from the provincial Environmental Assessment Registration process on November 1, 2018.

1.1 Purpose of the EPP

The EPP is the primary mechanism for the implementation of site-specific environmental mitigation and monitoring measures for construction activities associated with the Project. EPPs are designed to be proactive and used for effective and efficient implementation of procedures required for all personnel to reduce or eliminate potential adverse environmental effects. For this EPP, potential environmental effects include those associated with routine activities on-site during construction, as well as potential accidental events.

The EPP was developed in compliance with industry standard practices and regulatory requirements, and considers the issues and activities specific to the Project and Project site. The purposes of this EPP are to:

- Meet commitments to reduce or eliminate adverse environmental effects
- Document environmental concerns and provide clear and concise instructions for project personnel regarding appropriate environmental protection measures
- Provide direction for the management of accidental events or unplanned activities (contingency plans)
- Act as a reference document when planning and/or conducting specific activities or for recommending improvements
- Provide a mechanism for communication of changes to the EPP through a defined revision process

1.2 Roles and Responsibilities

DFO-SCH, as the Proponent, is responsible for ensuring the conditions of the EPP are adhered to on the worksite, and that the contractor selected to carry out the construction work will be in compliance with the EPP. As a result, DFO-SCH will be responsible for the following:

- Provide final approval of the EPP and subsequent revisions
- Monitor and inspect work activities on site



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- Liaise with relevant government agencies, community groups and/or Indigenous groups, as required, prior to or during construction activities

The Project Manager for DFO-SCH will advise the Contractor's General Site Manager of the recommendations within this document and work together with the Contractor to:

- Oversee the implementation of the EPP and confirm that staff and sub-contractors implement the EPP correctly
- Maintain document control of the EPP
- Be responsible for staff adhering to applicable approvals, authorizations, and permits
- Distribute the EPP and revisions to staff on site as identified in the controlled copy distribution list (Appendix B). Controlled distribution representatives are employees on site who have been identified and will maintain copies of the EPP document
- Conduct a review of the EPP on an as-needed basis
- Monitor, or designate a representative to monitor site preparation and other field activities for compliance with the EPP and regulatory requirements and commitments
- Report incidents of environmental non-compliance to the DFO-SCH departmental representative
- Maintain an updated training record to confirm that orientation / training of contractors and on-site staff has been completed (including names and dates when training was completed, included on the signature page (Section 9.0))
- In the event of an emergency, immediately contact the appropriate reporting agency as indicated in the EPP (Sections 4.1 and 7.0), as well as the DFO-SCH departmental representative

Project staff, contractors, and other on-site personnel will be responsible for the following:

- Review and familiarize themselves with the EPP
- Prior to commencing work, sign-off that they have read, understood, and accept the conditions in the EPP (Section 9.0)
- Implement commitments made in the EPP and confirm that personnel and subcontractors comply with the EPP, contract requirements, and applicable laws and regulations
- Report concerns related to the EPP immediately to the General Site Manager
- Report incidents (e.g., spills or other events) that may have an adverse effect on the environment immediately to the General Site Manager
- In coordination with the General Site Manager, obtain necessary approvals, authorizations, and permits for the work being carried out, and implement the conditions outlined in the documents

1.3 Environmental Orientation and Training

The Project Manager for DFO-SCH will ensure that the Contractor and its personnel, as well as new personnel arriving on-site involved with the construction activities for the Project, will receive proper environmental orientation and awareness training prior to the commencement of construction. Personnel will:

- Be competent to perform tasks properly and safely
- Understand their roles and responsibilities



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- Understand potential environmental effects of the Project as a whole and specific to their work activities
- Understand the environmental protection procedures to be applied during their work
- Have access to the necessary resources to implement prescribed environmental protection procedures
- Receive appropriate orientation at the start of construction

1.4 EPP Organization

This EPP focuses on routine activities as well as accidental events related to breakwater construction activities and provides instructions to address potential adverse environmental effects. The EPP is organized according to the following sections:

Section 1.0 Introduction – introduces the EPP and the regulatory setting that this EPP has been created for, and outlines the purpose and organization of the EPP, roles and responsibilities, and orientation and training requirements.

Section 2.0 Project Overview – provides an overview of the proposed breakwater construction, and the proponent undertaking the work. It also lists the permits, approvals, and authorizations that may be required for the Project, in addition to those already obtained.

Section 3.0 General Environmental Protection Procedures – describes environmental concerns and general environmental protection procedures associated with the Project and proposed construction activities.

Section 4.0 Contingency Plans – outlines contingency plans for fuel and hazardous material spills, climate change and extreme weather events, wildlife encounters, eelgrass encounters, and the discovery of historic resources.

Section 5.0 Environmental Compliance Monitoring – Outlines environmental monitoring requirements for the Project, based on regulatory conditions.

Section 6.0 EPP Revision Process – outlines the process for revising the EPP.

Section 7.0 Contact List– contains a list of key contacts relevant to the EPP.

Section 8.0 Reference Material – contains a list of references cited in the EPP, and other relevant sources of additional information.

Section 9.0 Signature Page – for employee and contractor sign-off.



2.0 PROJECT OVERVIEW

2.1 Proponent

As noted in Section 1.0, DFO-SCH is responsible for operating and maintaining a national system of harbours to provide commercial fish harvesters and other harbour users with safe and accessible facilities. The mandate of DFO-SCH is to keep the harbours that are critical to the fishing industry open and in good repair.

2.2 Proposed Construction Activities

The Project involves the construction of a rubble-mound breakwater within Mary's Harbour. The construction of the breakwater will involve the use of heavy equipment to build the breakwater from the shoreline out into the harbour. While it is anticipated that the construction of the breakwater will primarily be completed by building outward from the land, the potential does exist for vessels or a floating barge to be used during construction activities for the project.

The breakwater will measure approximately 165 m along the crest of the structure, which will be +4.25 m chart datum. The width of the structure is approximately 10 m at the shoreline but grows as the breakwater extends into the harbour and reaches an approximate width of 30 m as the structure turns and runs perpendicular to the shore. The total benthic footprint of the structure will be approximately 4,270 m².

The breakwater will be constructed with a base of core stone. Two layers of filter stone will be placed over this base. The completed filter stone will have a uniform thickness of approximately 1,100 mm. This will be topped with a layer of armour stone. The armour stone will have an approximate thickness of 1,200 mm on the sea side and crest of the breakwater, and an approximate thickness of 1,000 mm on the lee side. All rock material will be sourced from a licensed quarry and brought to the site by dump trucks. It is anticipated that the process of construction will be completed using an excavator working from the shoreline to place materials into the water, and moving outward as the breakwater progresses.

2.3 Regulatory Setting and Requirements

As per section 35.4(a) of the *NL Environmental Assessment Regulations*, the proposed breakwater was determined to require a provincial environmental assessment (EA) pursuant to the *NL Environmental Protection Act*. A registration document was submitted to the EA Division of NLDMAE in September 2018. In November 2018, The Minister of Municipal Affairs and Environment released the Project from the EA process, subject to specific conditions of approval that DFO-SCH must fulfill. One of these conditions is the development of an EPP to address environmental issues or concerns regarding environmental effects that could occur during construction activities. Additional permits that NLDMAE highlighted in its decision letter, and other permits that may be required, are listed in Table 2.1.



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Table 2.1 Permits and Authorizations that May Be Required for the Project

Government Agency	Applicable Legislation	Permit, Authorization or Approval	Relevant Activity
Provincial Authorizations			
NLDMAE	<i>Environmental Protection Act</i> , SNL 2002 c E-14.2, Section 83	Release from the EA Process	Overall construction and development of the Project
NLDMAE	<i>Environmental Protection Act (Gasoline and Associated Products Regulations)</i>	Certificate of approval for storage and handling of gasoline and associated products	Storage, handling, and transportation of fuels and chemicals
NLDMAE and Service NL	<i>Environmental Protection Act</i>	Waste Disposal Permit	Construction refuse/hazardous waste disposal
Newfoundland and Labrador Department of Natural Resources	<i>Quarry Minerals Act</i>	2018 Operation Permit	Sourcing quarry rock
Federal Authorizations			
DFO	<i>Fisheries Act</i>	<i>Fisheries Act</i> S35 (2) Authorization for works in fish bearing waters	Work that could impact fish habitat; Installation of culverts and/or bridges, if required
Transport Canada	<i>Navigation Protection Act</i>	Authorization of works in navigable waters	Activity (works, obstructions, depositing / throwing and dewatering activities) in navigable waters

As part of the federal EA process under CEAA 2012, both Transport Canada and DFO were contacted regarding the Project and potential permits that may be required. DFO issued a determination letter indicating that the Project would be unlikely to result in serious harm to fish. Transport Canada has received a notice of works application for the Project and will issue and approval under the *Navigation Protection Act*.

As part of the engagement process with Indigenous communities, a letter regarding the Project was sent to NunatuKavut Community Council for comment and feedback. A response has been received from the NunatuKavut Community Council indicating no current concerns with the proposed development.



3.0 GENERAL ENVIRONMENTAL PROTECTION PROCEDURES

The following sections provide general environmental protection measures for potential environmental interactions that could occur on the Project site during construction activities. In addition to the environmental protection measures outlined within this EPP, DFO-SCH and the successful contractor are required to adhere to mitigation measures that are outlined within the approved specifications for the Project.

3.1 Aquatic Invasive Species Management

3.1.1 Environmental Pathways

If equipment or vessels are being brought in from different regions or jurisdictions, environmental concerns include the potential transportation of aquatic invasive species into the harbour.

3.1.2 Environmental Protection Measures

Environmental protection measures include the following:

- Vessels that may be used during construction should be compliant with *Canada Shipping Act, 2001* requirements for inspection, which includes certification of the vessel and adequate training and appropriate certificate of competency for the operators. The floating barge must be cleaned prior to entering or leaving the harbour, to prevent the potential spread of aquatic invasive species.



3.2 Site Preparation

3.2.1 Environmental Pathways

Activities involved in site preparation can include grubbing, stripping, grading, and excavation. In the event that site preparation is required prior to the start of construction activities, potential environmental concerns include soil erosion from disturbed areas and stockpiles, and/or sediment runoff into nearby waterbodies or wetlands.

3.2.2 Environmental Protection Measures

Environmental protection measures include the following:

- Grading is only permitted within pre-determined rights-of-way and site preparation areas
- Grubbing limits are clearly identified in the field using flagging tape
- Required erosion protection and sediment control measures are put in place prior to grading in accordance with the erosion and sediment control measures (Section 3.4)
- Areas containing soil with high silt content or areas of previous erosion receives special erosion protection and sediment control techniques
- Areas that may require extensive grubbing are stabilized as soon as possible to reduce potential for erosion
- Schedule work to avoid times of heavy precipitation, where feasible
- A minimum of 15 m is maintained between grubbed areas and watercourses. Where practicable, grubbing limits adjacent to watercourses are flagged in the field using flagging tape
- Grubbing is not permitted within established buffer zones and setback distances from water bodies
- During grubbing, material will not be pushed into areas which are to be left undisturbed. Where necessary, geotextile filter fabric fencing is used to prevent movement / erosion of grubbed material into surrounding vegetation



3.3 Vehicle and Equipment Use and Maintenance

3.3.1 Environmental Pathways

Vehicles and equipment (e.g., excavators, pumps, generators) will be used in construction activities associated with the Project. Potential environmental pathways include air emissions, accidental spills of hydrocarbons, lubricants, or other hazardous products, and chronic leaks from equipment or vehicles on site.

3.3.2 Environmental Protection Measures

Environmental protection measures include the following:

- Machinery arriving on site will be in a clean condition and maintained free of fluid leaks and potential invasive species
- Machinery will be checked for leakage of lubricants or fuel and must be in good working order
- Refuelling will be done at least 100 m from a water body
- Basic petroleum spill clean-up equipment must be kept and maintained on-site during construction activities, and Project employees will be trained in the use of these kits. **Spills or leaks should be promptly contained, cleaned up, and reported to the 24-hour environmental emergencies report system (1-800-563-9089)**
- The proponent will adhere to the Fuel and Hazardous Material Spills Contingency Plan (Section 4.1) to enable a quick and effective response to a spill event
- Fuel on site will not be stored immediately adjacent to generators, and the fuel storage area must be well ventilated. Fuel will not be stored within 30 m of water bodies
- Hoses and connections on equipment are routinely inspected for leaks and drips
- Heavy equipment will be operated in a manner to maximize fuel efficiency, thereby reducing greenhouse gas emissions
- Vehicles transporting dangerous goods or hazardous products must display required placards and labelling in accordance with provincial legislation
- Only minor repairs and maintenance (e.g., lubrication) of 'non-mobile' equipment can be performed on-site. Where possible, major repairs are performed at a location outside of the Project site. If waste is stored on-site, it must include secondary containment. Waste oil is collected and recycled at an approved facility
- Drip pans must be placed underneath pumps, fuel storage, and portable generators. These pans must have potential capacity of 110% of volume. They should also be in a covered and secured area



3.4 Erosion and Sediment Control

3.4.1 Environmental Pathways

Eroded material could potentially cause siltation in water bodies or wetlands and, subsequently, potentially decrease the habitat quality for aquatic and terrestrial species.

3.4.2 Environmental Protection Measures

Environmental protection measures include the following:

- Primary means for controlling erosion is avoiding activity that contributes to erosion. The disturbance of new areas will be reduced where possible
- Schedule work to avoid wet, windy, and rainy periods that may increase the potential for erosion and sedimentation. Weather conditions should be checked daily to manage / prepare the site for these events
- Project activities will be suspended, and/or additional mitigation measures will be implemented if ocean conditions cause sediment or turbidity within the marine environment, outside the immediate vicinity of the Project
- DFO-SCH will ensure that an Erosion and Sediment Control Plan for the site that reduces risk of sedimentation of the marine environment during all phases of the Project is in place during construction activities. Erosion and sediment control measures should be maintained until disturbed ground has been permanently stabilized, suspended sediment has resettled, or runoff water is clear
- Construction materials used in a watercourse will be selected, handled, and treated in a manner to prevent the release or leaching of substances into the water that may be harmful to fish
- Rock material will be moved and installed into the marine environment in a manner that reduces the potential for sedimentation or turbidity to occur. This includes using an excavator to place material. There will be no uncontrolled dumping from vehicles
- Work, laydown, and storage areas will be monitored for erosion and appropriate repair action taken as necessary to reduce or eliminate erosion
- Erosion prevention and drainage control measures should be installed or implemented prior to land disturbance, such as working on or near the shoreline or within the marine environment. Control devices such as filter fabrics, silt curtains, and/or sediment traps should be in place to receive drainage from areas disturbed by site preparation and general construction activities
- Existing or new siltation control structures used in this work are monitored for excessive accumulation of sediment. Accumulated sediment from control structures is removed to gain full effectiveness of the systems. Effluent from control structures is released to flow overland for appropriate filtration prior to entering a waterbody



3.5 Site Drainage

3.5.1 Environmental Pathways

Potential environmental concerns associated with possible site drainage is siltation or leaching of chemicals that may affect the health of aquatic / terrestrial species and/or their habitat.

3.5.2 Environmental Protection Measures

Protection measures regarding erosion and sediment control (Section 3.4) are also applicable to site drainage. Environmental protection measures include:

- Effluent or runoff leaving the site will be required to conform to the requirements of the *Environmental Control Water and Sewage Regulations, 2003*
- Blockage of natural drainage patterns by construction activities will be avoided
- Erosion protection and sediment control are provided in accordance with Erosion and Sediment Control measures (Section 3.4)
- No debris from construction activities is allowed to be placed in drainage channel / ditches
- Schedule work to avoid wet, windy, and rainy periods that may increase erosion and sedimentation into the marine environment. Weather conditions should be checked daily to manage / prepare the site for these events
- Erosion prevention and drainage control measures should be installed or implemented prior to land disturbance, such as working on or near the shoreline or within the marine environment. Control devices such as filter fabrics, silt curtains, and/or sediment traps should be in place to receive drainage from areas disturbed by site preparation and general construction activities



3.6 Staging and Storage Areas

3.6.1 Environmental Pathways

Areas may be required on the Project site for storing and maintaining equipment, quarry rock, and/or supplies during activities associated with breakwater construction. Potential environmental concerns include erosion and run-off of sediment into nearby water bodies.

3.6.2 Environmental Protection Measures

Environmental protection measures include the following:

- Establishing new laydown or storage areas will follow the procedures for Erosion and Sediment Control (Section 3.4)
- Fuel will be stored, handled and transported according to Section 3.10 (Storage, Handling and Transfer of Petroleum Products and Other Hazardous Materials)
- Containers of petroleum products or chemicals that may be required on site will be tightly sealed against corrosion and rust and surrounded by an impermeable barrier in a dry, water-tight building or shed with an impermeable floor
- Waste oils and used lubricating oil will be retained in a tank or closed container and disposed of by a company licensed for handling and disposing of used oil products



3.7 Work In and Around the Marine Environment

3.7.1 Environmental Pathways

Environmental concerns associated with working in and around the marine environment includes potential direct physical disturbance to marine species and/or their habitats, effects from underwater noise, and contamination to the surrounding marine environment from accidental events or sedimentation / turbidity. Activities can also potentially result in the avoidance of an area by marine birds, fish, mammals, and/or nearshore terrestrial species that may be present.

3.7.2 Environmental Protection Measures

Environmental protection measures include the following:

- Equipment will be maintained and will have muffled exhausts to reduce noise
- There will be no discharge of waste into the marine environment
- Erosion and sediment control measures (Section 3.4) will be applied prior to construction activities, to reduce the potential for sedimentation of the surrounding marine environment
- Land-based equipment is serviced and fueled on land at least 30 m from the marine environment or in designated areas
- Mechanical inspections will be conducted routinely on equipment to search for leaks. Leaks will be repaired immediately
- Disturbed areas along the shoreline will be stabilized in a timely manner to prevent erosion
- Rock material will be moved and installed into the marine environment in a manner that reduces the potential for sedimentation or turbidity to occur. This includes using an excavator to place rocks in their locations. There will be no end-dumping from vehicles
- Vessels that may be used for construction activities will have safeguards in place against marine pollution: awareness training of all employees, means of retention of waste oil on board and discharge to shore-based reception facilities, capacity of responding to and clean-up of accidental spill caused by vessels involved in any particular project



3.8 Waste Management

3.8.1 Environmental Pathways

Waste (e.g., domestic and industrial wastes, grey water, paper, cardboard, and wood), if not properly controlled and disposed of, can be unsightly and could potentially cause human safety and health concerns. It also has the potential to attract wildlife to the Project site.

3.8.2 Environmental Protection Measures

Environmental protection measures include the following:

- Litter (including food waste) will not be discarded or left on-site by staff and/or contractors
- Solid waste will be handled according to the provincial *Environmental Protection Act*
- Waste receptacles will be installed at active areas for use by workers
- Solid waste produced by site personnel and operations will be collected and disposed of at an approved facility
- Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard
- Work areas will be kept clear of waste and litter to reduce the potential for human-wildlife interactions
- Waste that may attract animals (i.e., food) will be stored in covered, wildlife-proof containers
- Burning of waste is not permitted at the Project site



3.9 Sewage and Wastewater Disposal

3.9.1 Environmental Pathways

Potential environmental concerns related to the release of untreated sewage from on-site portable toilets include effects on human health, and adjacent ecosystems.

3.9.2 Environmental Protection Measures

Environmental protection measures include the following:

- The sewage disposal system present on site will comply with the *Newfoundland and Labrador Department of Health guidelines, the Lands Act, Waste Management Regulations, 2003*, and the *Environmental Control Water and Sewage Regulations, 2003* under the *Environmental Protection Act*.
- Sewage from portable toilets, if present on the Project site, will be removed by a licenced contractor and disposed of in compliance with applicable provincial legislation.
- Location of on-site facilities will be clearly marked, and vehicle traffic will not be permitted to operate within this defined boundary.



3.10 Storage, Handling, Use, and Disposal of Fuel and other Hazardous Materials

3.10.1 Environmental Pathways

Typical hazardous substances that may be used on-site include, but are not necessarily limited to:

- petroleum (including vehicle fuel), oil, and lubricants
- chlorinated and non-chlorinated solvents (e.g., cleaner-degreasers)
- flammable gases (e.g., acetylene)
- waste petroleum products (e.g., used engine oil)
- corrosives (e.g., battery acid)
- glycol (e.g., antifreeze)
- propane

Substances such as propane and acetylene are flammable can pose a potential threat as an asphyxiate to humans and animals. In liquid form, propane could potentially cause frostbite if contacted with skin. Propane containers, along with containers for other flammable materials, could potentially explode if exposed to heat or fire.

Environmental concerns with use of hazardous substances are a potential uncontrolled release to the environment through spillage, and subsequent adverse effects on terrestrial and aquatic species and/or habitat, soil, groundwater quality, and human health and safety.

3.10.2 Environmental Protection Measures

Environmental protection measures include the following:

- Staff and contractors will be trained appropriately for handling hazardous materials under the *WHMIS Regulations* under the *Occupational Health and Safety Act* prior to arriving on-site.
- Relevant current Safety Data Sheets (SDS) will be available on the site and their location will be communicated to staff and contractors during site orientation
- Precautions are taken to prevent and reduce the spillage, misplacement, or loss of fuels and other hazardous materials
- In the event of a reportable spill on-land or a spill, regardless of size, in the freshwater environment, the **Environmental Emergencies 24-Hour Report Line** is contacted by the General Site Manager: **St. John's: 709-772-2083 or Other Areas: 1-800-563-9089**. In addition, the General Site Manager reports the spill incident to **DFO at 709-772-4423**
- Personnel working on the project will be knowledgeable about response procedures.
- Fire and spill response materials must be kept nearby.
- Biodegradable fluids will be considered for use in place of petroleum products whenever possible, as a standard for best practices
- Handling and fueling procedures must comply with the *Storage and Handling of Gasoline and Associated Products Regulations* and additional requirements put forth by the NLDMAE in order to limit potential contamination of soil or water



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- Waste oils, lubricants, and other used oil are retained in a tank or closed container, and disposed of in accordance with the *Used Oil Control Regulations*. Waste oil generated and temporarily stored on-site must have secondary containment. Waste oil is recycled
- Soil contaminated by leaks of oil or grease from equipment is treated, or disposed of, according to the *Environmental Protection Act*.



3.11 Use of Generators

3.11.1 Environmental Pathways

Depending on the availability of electricity on site, the potential exists for generators to be used to support construction activities on site. Environmental concerns are associated with accidental spills or leaks that could contaminate soil and/or waterbodies.

3.11.2 Environmental Protection Measures

Environmental protection measures include the following:

- Fuel is not stored near generators or located within 100 m of a waterbody. Refueling and maintenance activities (including storage of oils, greases, diesel, gasoline, hydraulic and transmission fluids) will also occur at least 100 m from a body of water (including shoreline and wetlands), and on level terrain
- Waste oils and used lubricating oil will be retained in a tank or closed container, and disposed of by a company licensed for handling and disposing of used oil products
- Fuel storage containers are equipped with a spill tray with a capacity to contain 110% of the storage container volume
- Drip pans are placed underneath pumps and generators to contain leaks that may occur
- Hoses and connections on generators are routinely inspected for leaks, drips or other potential hazards
- Spill kits will be located at designated locations on site, and their locations will be included in site orientation. Personnel who work with generators will be required to be trained in spill response and the use of spill kits



3.12 Dust Control

3.12.1 Environmental Pathways

Potential environmental concerns associated with dust include effects to human health and on aquatic ecosystems and vegetation.

3.12.2 Environmental Protection Measures

Environmental protection measures include the following:

- Where feasible, mitigation measures such as dust suppressors or application of dust control to gravel roads during dry conditions will be implemented to reduce the potential for increased dust during Project activities
- Waste oil or other hydrocarbon products will not be used for dust control



3.13 Noise Control

3.13.1 Environmental Pathways

Potential environmental concerns associated with noise include effects on wildlife resources (distribution and abundance) and effects on nearby residents or people in the area.

3.13.2 Environmental Protection Measures

Environmental protection measures include the following:

- Machinery used for the Project will be equipped with mufflers to reduce noise for local residents, and local municipality construction by-laws will be adhered to.



4.0 CONTINGENCY PLANNING

4.1 Fuel and Hazardous Material Spills

4.1.1 Environmental Concerns

Fuel and hazardous materials can potentially be damaging to vegetation, soil, surface water, ground water, wildlife, aquatic organisms, historic resources, and human health and safety.

4.1.2 Environmental Protection Procedures

In case of a fuel or hazardous material spill, the following procedures will apply:

- The individual who discovers the leak or spill must make a reasonable attempt to immediately stop the leakage and contain the flow. Spill kits are located at designated central storage location(s)
- Spill location, type of fuel or hazardous material, spill volume, and terrain condition at the spill site are determined and reported immediately to the General Site Manager, who will report it immediately to DFO-SCH and Environment and Climate Change Canada. In the event of a reportable spill on-land, or spill regardless of size that may enter a waterbody frequented by fish, must be reported immediately to the

Environmental Emergencies 24 Hour Report Line

1 709-772-2083 or 1 800-563-9089

Pertinent information that is required in the report includes the following:

- Name of reporter and phone number
- Time of spill or leak
- Time of detection of spill or leak
- Type of product spilled or leaked
- Amount of product spilled or leaked
- Location of spill or leak
- Source of spill or leak
- Type of accident - collision, rupture, overflow, other
- Owner of product and phone number
- If the spill or leak is still occurring
- If the spill or leaked product is contained, and if not, where it is flowing
- Wind velocity and direction
- Temperature
- Proximity to water bodies, water intakes, and facilities
- Snow cover and depth, terrain, and soil conditions



ENVIRONMENTAL PROTECTION PLAN, BREAKWATER CONSTRUCTION, MARY'S HARBOUR, NL

Contingency Planning
December 11, 2018

The General Site Manager acts as the "On-Scene-Commander" for the purposes of cleaning up a fuel or hazardous materials spill. The General Site Manager is familiar with spill clean-up procedures and mobilization procedures of the clean-up equipment. The General Site Manager has full authority to take necessary and appropriate action without unnecessary delay. The overall responsibility of coordinating a clean-up and maintaining this contingency plan current and up-to-date is the General Site Manager. Staff are trained on the procedures to follow in case of hydrocarbon spills as well as information related to general communication line. A complete list of spill response equipment is generated and distributed on-site before the start of construction activities.



4.2 Climate Change and Extreme Weather Events

4.2.1 Environmental Concerns

Current and projected trends in sea level rise, wave heights, and storm intensities will be evaluated during the design process. Global sea levels are expected to rise, although the magnitude remains uncertain, due to: (i) thermal expansion of sea water caused by ocean warming; (ii) increase of wind speed; and (iii) water mass input from ice melt. In addition, storm events will occur more frequently in the future, which will be taken into account during breakwater design, to withstand and perform as required in the future climatic change environment.

Environmental concerns associated with climate change include the increase in extreme weather events and weather patterns that may put additional strain on infrastructure. This could include waves and storm events that may reduce the effectiveness of newly constructed breakwater infrastructure or reduce the potential life of the infrastructure over time.

4.2.2 Environmental Protection Procedures.

A contingency allowance for highest high tide of 0.3 m and over-estimation of likely operational and swell waves will be used to establish the crest elevation, layout, and subsequent permeability and armourstone size configurations. The contingency allowance reduces failure / integrity risk to the breakwater under the action of severe incident waves and large overtopping rates, during the operational life of the structure.



4.3 Wildlife Encounters

4.3.1 Environmental Concerns

Wildlife encounters pose a potential risk for stress or injury to both the wildlife and personnel on site during construction activities. Control measures and environmental protection procedures have been put in place to reduce this potential risk to wildlife and humans. Hunting, trapping or fishing by Project-associated staff (included contractors) is not permitted on the site; this will also include visitors.

The proposed Project is located near an Important Bird Area (St. Peter's Bay), which is approximately 9.5 km southeast from the Project site and is a known site for harlequin duck and common eiders. Harlequin duck is a species of Special Concern under the *Species at Risk Act* and is federally protected. Therefore, environmental concerns exist of potentially encountering these species along the shoreline during construction activity.

4.3.2 Environmental Protection Measures

The following measures are implemented to prevent and/or reduce wildlife encounters and potential risks to wildlife and humans:

- Site and working areas will be kept clean of food scraps and garbage (Section 3.8)
- Waste will be collected / stored for disposal in appropriate containers and routinely transferred to the local landfill
- No attempt will be made by workers at the Project site to chase, catch, divert, follow or otherwise harass wildlife by vehicle or on foot
- Equipment and vehicles will yield the right-of-way to wildlife in the event of an encounter
- No personal pets, domestic or wild, are allowed on the Project site
- Personnel should be aware of the potential for encounters with wildlife and they will immediately report sightings to the General Site Manager. The General Site Manager will report wildlife sightings and to assess actions for follow-up
- The General Site Manager is responsible for actions in response to nuisance animals (e.g., bears) at the Project site
- Under provincial wildlife regulations, the displacement and release of animals is the sole jurisdiction of the Newfoundland and Labrador Department of Fisheries and Land Resources - Wildlife Division and is to be undertaken only under appropriate supervision
- If the nest of a raptor or other bird is encountered during site preparation activity that might occur prior to construction, work in the vicinity of the nest is to be curtailed until the General Site Manager has had the opportunity to contact the Wildlife Division and appropriate mitigation is applied
- Staff, contractors, and visitors will not approach concentrations of marine mammals, seabirds, sea ducks or shorebirds that may gather near the Project site
- Mitigation measures can also be achieved through Project planning and scheduling of activities. Project construction activities will, on a best-effort basis, avoid the key migratory bird nesting period of May 1 to July 31



ENVIRONMENTAL PROTECTION PLAN, BREAKWATER CONSTRUCTION, MARY'S HARBOUR, NL

Contingency Planning
December 11, 2018

- If harlequin duck or common eider are discovered in the area during construction activity, the activities will cease until the bird(s) have left the vicinity of the Project site. Environment Canada and Climate Change will be contacted to determine the next steps on how to resume construction activities
- Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy, or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities.
- Furthermore, Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:
 - “5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
 - (2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds.”
- It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and associated regulations.



4.4 Eelgrass Encounters

4.4.1 Environmental Concerns

Eelgrass has been identified as an important marine plant species that provides a number of important services to marine fish species, including providing a nursing and refuge area for marine species. It also provides nutrient cycling in the marine environment, sediment stabilization, and carbon sequestration. If eelgrass is present in the area, construction activities could result in potential damage to eelgrass beds that may be present near the Project site.

4.4.2 Environmental Protection Procedures

The following measures are implemented to prevent and/or reduce interaction with eelgrass beds:

- Pre-construction benthic surveys were conducted in 2016 along the Project site to confirm the presence or absence of eelgrass and marine life. The survey results indicate the benthic environment is comprised mostly of silt, with rock and sand being prominent closer to shore. No eel grass was found in the area.
- If eelgrass is discovered during construction activities, activities will be ceased and the General Site Manager will be notified of the discovery
- The General Site manager will notify the DFO-SCH departmental representative of eelgrass presence, and the contractor will consult with DFO representatives to determine the potential next steps



4.5 Discovery of Historic Resources

4.5.1 Environmental Concerns

Historic resource material that is disturbed, destroyed or improperly removed from a site represents a potential cultural loss of information and history that could otherwise be handled and interpreted in an efficient and appropriate manner.

4.5.2 Environmental Protection Procedures

Environmental protection procedures include the following:

- If suspected archaeological material is encountered, stop work in the immediate area of the discovery until authorized personnel from DFO-SCH, having consulted with the Provincial Archaeologist, permit resumption of the work.
 - Report the find immediately to the General Site Manager
 - Mark the site's visible boundaries. Personnel will not move or remove artifacts or associated material unless the integrity of the material is threatened
- The General Site Manager will report the find with the following information to the DFO-SCH departmental representative, who will then contact the **Provincial Archaeologist Office (709-729-2462)** and comply with the instruction provided. The report to the PAO will include the following, as required:
 - nature of the find
 - precise descriptive and map location and the time of the find
 - nature of the activity resulting in the find
 - identity of the worker(s) making the find
 - present location of the material, if moved, and protective measures initiated for the material and the site
 - extenuating circumstances



5.0 ENVIRONMENTAL COMPLIANCE MONITORING

Environmental compliance monitoring will confirm that activities associated with breakwater construction are in compliance with regulatory guidelines and that, if required, mitigation measures are being implemented effectively. Site inspections and compliance monitoring review the implementation of the environmental protection procedures specified in this EPP and requirements specified in the applicable contracts and other relevant permits, authorizations, and approvals.

5.1 Site Inspections

Site inspections will be conducted by trained personnel and are completed before, during, and within seven days after site disturbances related to Project construction activities. Regular site inspections aid in the implementation of prescribed environmental protection measures. Details of site inspections are documented, and issues or concerns communicated to the General Site Manager.

For site inspections conducted prior to construction activity, details including vegetation, general terrain / topography, drainage patterns, and other details are recorded. Photographs are taken during each site inspection. The required frequency of site inspections performed during construction activities depend on the duration and type of activity being performed. However, an on-site construction inspector is typically present on a daily basis to monitor the progress of construction activities and to report on any environmental concerns.

5.2 Compliance Monitoring

DFO-SCH personnel and contractors must comply with relevant approvals, authorizations, permits, and legislation. Monitoring confirms that construction activities comply with applicable regulatory requirements and that the environmental protection procedures are being implemented effectively.

The DFO-SCH departmental representative will:

- Be responsible for implementing environmental compliance monitoring on-site
- Instruct successful contractors and their staff on the general, special, and technical environmental clauses to be implemented as part of monitoring requirements

Compliance monitoring will be directed to focus on measures to reduce and control the release or re-suspension of sediments into the marine environment as a result of construction activities, which could in turn result in effects to fish and fish habitat that may be present within the footprint of the proposed breakwater. Project staff are to comply with relevant approvals, authorizations, permits, and legislation. This includes the decision letter awarded to the Project by the NLDMAE – EA Division, which stipulates that measures will need to be taken to comply with the Canadian Environmental Quality Guidelines, whereby human activities in the marine environment should not cause suspended solid levels to increase by more than 10 percent of the anticipated natural conditions at the time.



ENVIRONMENTAL PROTECTION PLAN, BREAKWATER CONSTRUCTION, MARY'S HARBOUR, NL

Environmental Compliance Monitoring
December 11, 2018

DFO-SCH will be responsible for developing and implementing monitoring protocols regarding sedimentation within the marine environment and will be responsible to enforce these protocols during construction activities.



6.0 EPP REVISION PROCESS

The EPP is designed to act as a living document, and to document changes to environmental protection measures that may be site specific. As a result, revisions may be made to the EPP over the course of construction activities.

EPP holders may initiate revisions by forwarding proposed revisions to the DFO Departmental Representative. The following information will be provided on the Revision Request Form (see Appendix C) for revision requests:

- Section to be revised
- Nature of the revision
- Rationale for the revision (i.e., environment / worker safety)
- Who submitted the revision request

Approval for revisions will be the responsibility of the DFO Departmental Representative. When approval is received for the revision request, details of the revision will be distributed to Project staff and will be documented in the Revision History Log (Appendix D). Each revision will be accompanied by:

- Revision instructions
- List of sections being superseded
- An updated Table of Contents indicating the status of each section in the EPP

When EPP Holders receive a revision, they will, within two working days:

- Read the text of the revision
- Check the control sheet to confirm that the listed pages have been received
- Remove and destroy the superseded pages from their copy of the EPP
- Insert the revised pages in the proper place in their copy of the EPP
- Page check the EPP, using the updated table of contents to confirm the EPP is complete and current
- Enter the revision number and date entered on the Revision History Log
- Incorporate the revision into the area of responsibility, as appropriate
- Confirm that their personnel are familiar with the revisions



Contact List
December 11, 2018

7.0 CONTACT LIST

Table 7.1 Contact List

Entity	Contacts
DFO-SCH	Departmental Representative Paul Curran Tel. (709) 772-6660
Environmental Emergencies 24-Hour Report Line	St. John's, NL Tel. (709) 772-2083 Other Areas 1-800-563-9089
Environment and Climate Change Canada – Environmental Protection	Environmental Emergencies – Atlantic Region Environment and Climate Change Canada Dartmouth, NS Tel. (800) 668-6767 Fax. (902) 426-9709
Environment and Climate Change Canada – Canadian Wildlife Service	Manager – Northern Conservation Kim Mawhinney St. John's, NL Tel. (709) 772-7456 or (709) 690-3382 Fax. (709) 772-5097
Newfoundland and Labrador Department of Government Services (Service NL)	Assistant Deputy Minister Serious Workplace Accident Reports Tel. (709) 729-4444 (24-hour accident reporting line)
Newfoundland and Labrador Department of Fisheries and Land Resources – Wildlife Division	Senior Wildlife Biologist Wayne Barney Corner Brook, NL Tel. (709) 637-2014 Fax. (709) 637-2004
NLDMAE – Pollution Prevention Division	Environmental Scientist Doug Beales Western Regional Office, Corner Brook, NL Tel. (709) 637-2528 Fax. (709) 637-2541 Stephenville Tel. (709) 643-6114
NLDMAE – Water Resources Management Division	Director Haseen Khan Tel: (709) 729-2563 Fax: (709) 729-0320
Newfoundland and Labrador Department of Tourism, Culture, Industry and Innovation	Provincial Archaeologist Martha Drake St. John's, NL Tel. (709) 729-2462 Fax. (709) 729- 0870
RCMP	Mary's Harbour, NL Tel. (709)-621-6229



References
December 11, 2018

8.0 REFERENCES

DFO (Department of Fisheries and Oceans). 2013. Measures to Avoid Causing Harm to Fish and Fish Habitat. Available at: <http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html>

Newfoundland and Labrador Department of Environment and Conservation. Undated. Application for Permits and Licences. Pamphlet produced by the Newfoundland and Labrador Department of Environment and Conservation, Water Resources Division. Available at: http://www.env.gov.nl.ca/env/waterres/regulations/appforms/permit_brochure_oct_12.pdf



Signature Page
December 11, 2018

9.0 SIGNATURE PAGE

Fisheries and Oceans Canada – Small craft Harbours

The undersigned certify that they have reviewed, and understand their role and responsibility regarding:

MARY'S HARBOUR BREAKWATER CONSTRUCTION

ENVIRONMENTAL PROTECTION PLAN

As part of their Site Orientation

_____ representing _____

Name (Printed)

Company

Signature of above

Date

Name of General Site Manager or Supervisor

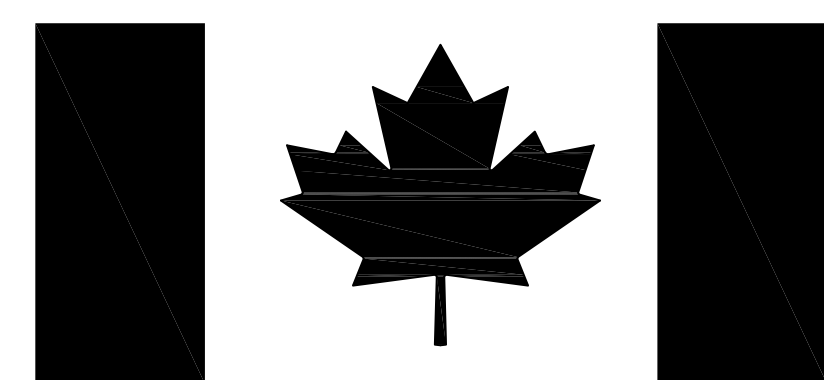
General Site Manager or Supervisor's Signature

Date



APPENDIX A

Project Drawings

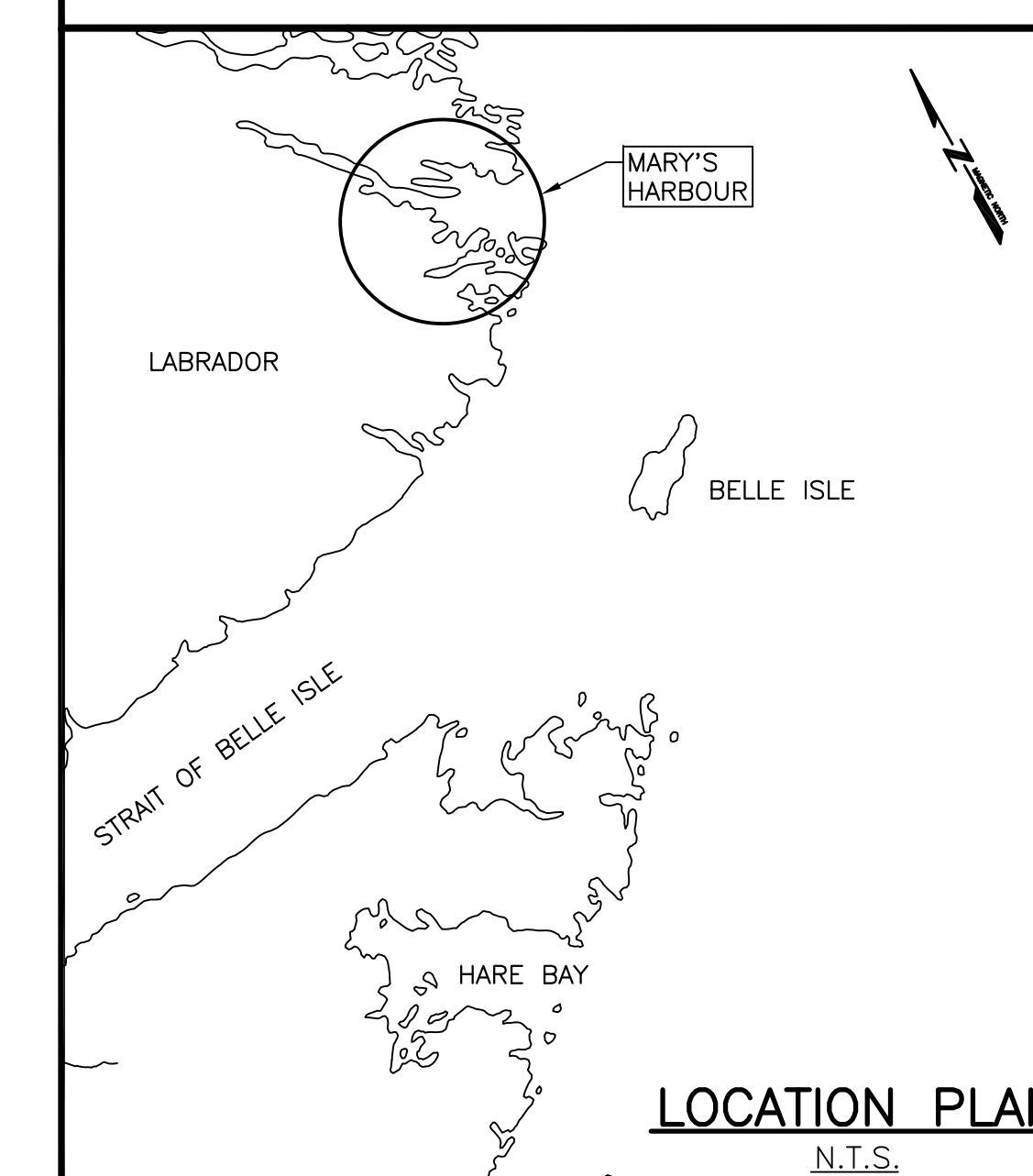
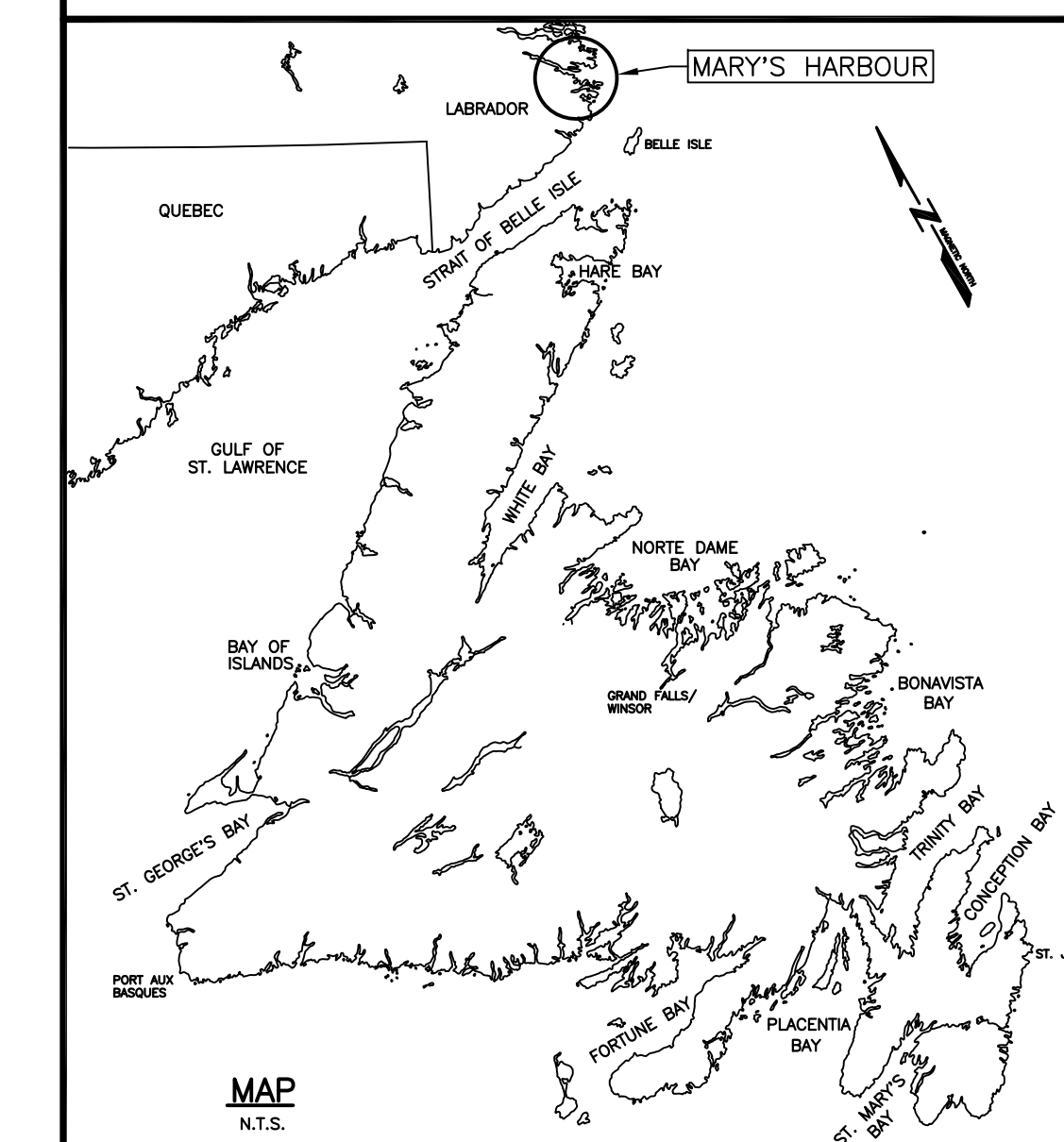


FISHERIES AND OCEANS
CANADA

**BREAKWATER CONSTRUCTION
MARY'S HARBOUR
NEWFOUNDLAND AND LABRADOR**

PROJECT No. 722614

SMALL CRAFT HARBOURS



LIST OF DRAWINGS:

C1 OF 1 SOUNDING AND TOPOGRAPHIC SURVEY
C2 OF 2 NEW SITE PLAN
C3 OF 3 SECTIONS

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 FRE. 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	5796250.483	5.684 m	I.P. WITH CAP SET IN BEDROCK
	776-1988	579814.23	5796270.68		I.P. WITH CAP SET IN BEDROCK
	PWC 1-2010	579191.040	579654.124	7.01 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	2.38 m	NAIL IN WOODEN DECK OF CRIB FOR DOCKS
	95F9336			6.298 m	CHS BRASS PLAQUE SET IN BEDROCK
	95F9337			8.525 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.

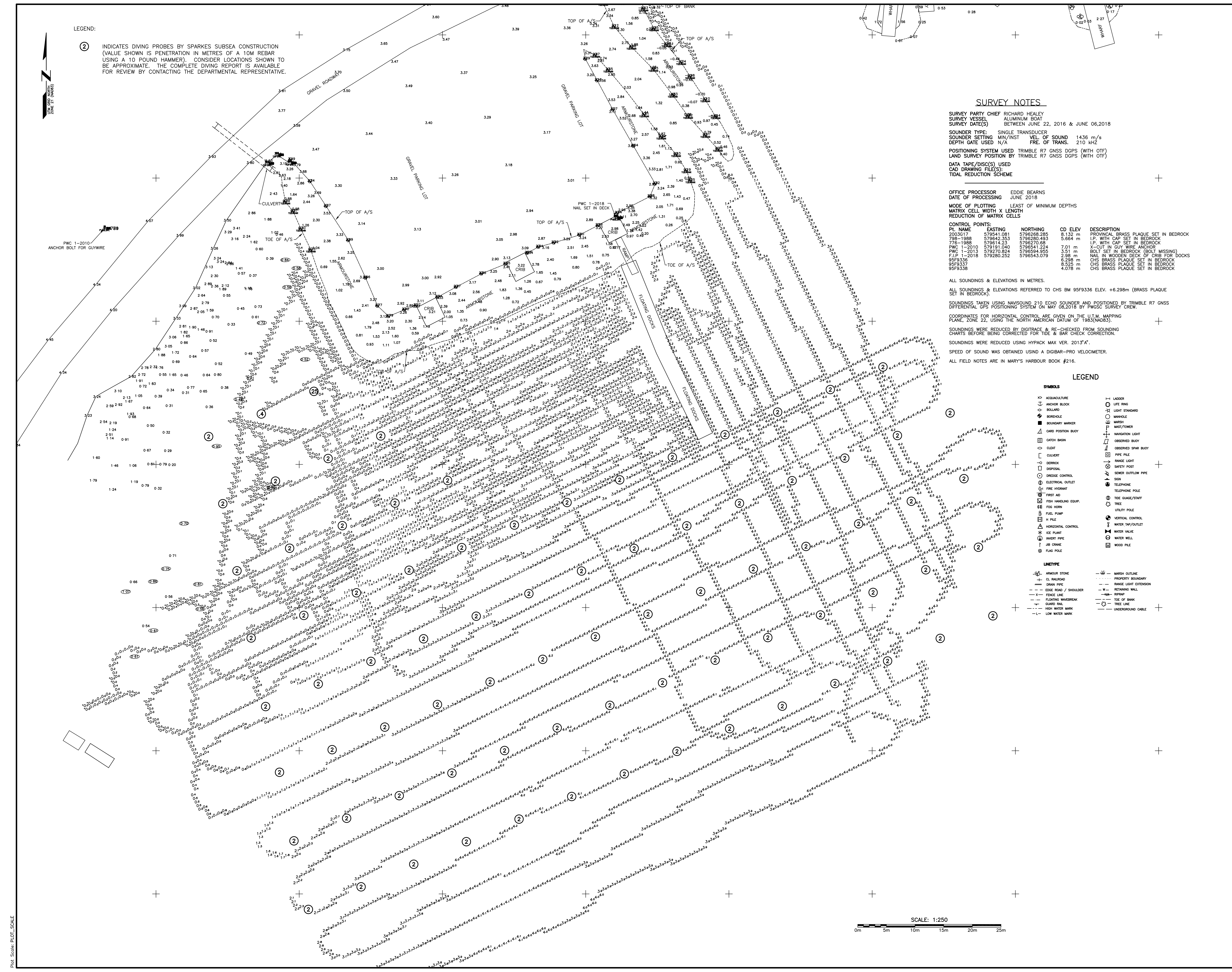
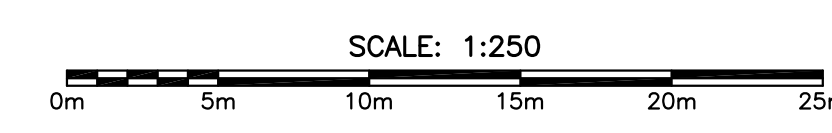
SPEED OF SOUND WAS OBTAINED USING A DIGIBAR-PRO VELOCIMETER.

ALL FIELD NOTES ARE IN MARY'S HARBOUR BOOK #216.

LEGEND

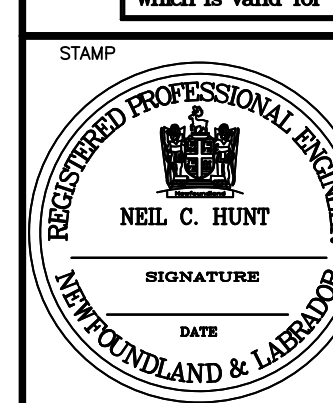
SYMBOLS	
⊙	ACQUACULTURE
⊙	ANCHOR BLOCK
⊙	BOULDER
⊙	BONDHOLE
⊙	BOUNDARY MARKER
⊙	CARD POSITION BUOY
⊙	CATCH BASIN
⊙	CEMENT
⊙	CLAYBILT
⊙	CONCRETE
⊙	DEBRIS
⊙	DISPOSAL
⊙	DREDGE CONTROL
⊙	ELECTRICAL OUTLET
⊙	FIRE HYDRANT
⊙	FIRST AID
⊙	FISH HANDLING EQUIP.
⊙	FOG HORN
⊙	FUEL PUMP
⊙	H PILE
⊙	HORIZONTAL CONTROL
⊙	ICE PLANT
⊙	INVERT PIPE
⊙	JIB CRANE
⊙	FLAG POLE
⊙	LAGGER
⊙	LIFE RING
⊙	LIGHT STANDARD
⊙	MINIPILE
⊙	MARSH
⊙	MAST/TOWER
⊙	NAVIGATION LIGHT
⊙	OBSERVED BUOY
⊙	OBSERVED SPAR BUOY
⊙	PIPE PILE
⊙	RANGE LIGHT
⊙	SAFETY POST
⊙	SEWER OUTFLOW PIPE
⊙	SOIL
⊙	TELEPHONE POLE
⊙	TELEPHONE POLE
⊙	TIDE GAUGE/STAFF
⊙	TREE
⊙	UTILITY POLE
⊙	VERTICAL CONTROL
⊙	WATER IN/OUTLET
⊙	WATER VALVE
⊙	WATER WELL
⊙	WOOD PILE

LINETYPE	
---	ARMOUR STONE
---	CL. RAILROAD
---	DRAIN PIPE
---	EDGE ROAD / SHOULDER
---	FENCE LINE
---	FLOATING BREAKWALL
---	GUARD RAIL
---	HIGH WATER MARK
---	LOW WATER MARK
---	MARSH OUTLINE
---	PROPERTY BOUNDARY
---	RANGE LIGHT EXTENSION
---	RETAINING WALL
---	RIPRAP
---	TOE OF BANK
---	TREE LINE
---	UNDERGROUND CABLE



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 2018.



A	ISSUED FOR TENDER	07/17/18
revisions		date
project		project

BREAKWATER CONSTRUCTION
MARY'S HARBOUR, NL

SOUNDING AND TOPOGRAPHIC SURVEY

designed N.H.	concu
date JULY 17, 2018	
drawn P.H.	dessine
date JULY 17, 2018	
approved	approuve
Tender	Submission
DFO Project Manager	
project number	no. du projet
722614	
drawing no.	no. du dessin
C1	

SMALL CRAFT HARBOURS



- NOTES:
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 CAD DRAWING FILE(S)
 TIDAL REDUCTION SCHEME

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MODE OF PLOTTING LEAST OF MINIMUM DEPTHS
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SPEED OF SOUND WAS OBTAINED USING A DIGIBAR-PRO VELOCIMETER.

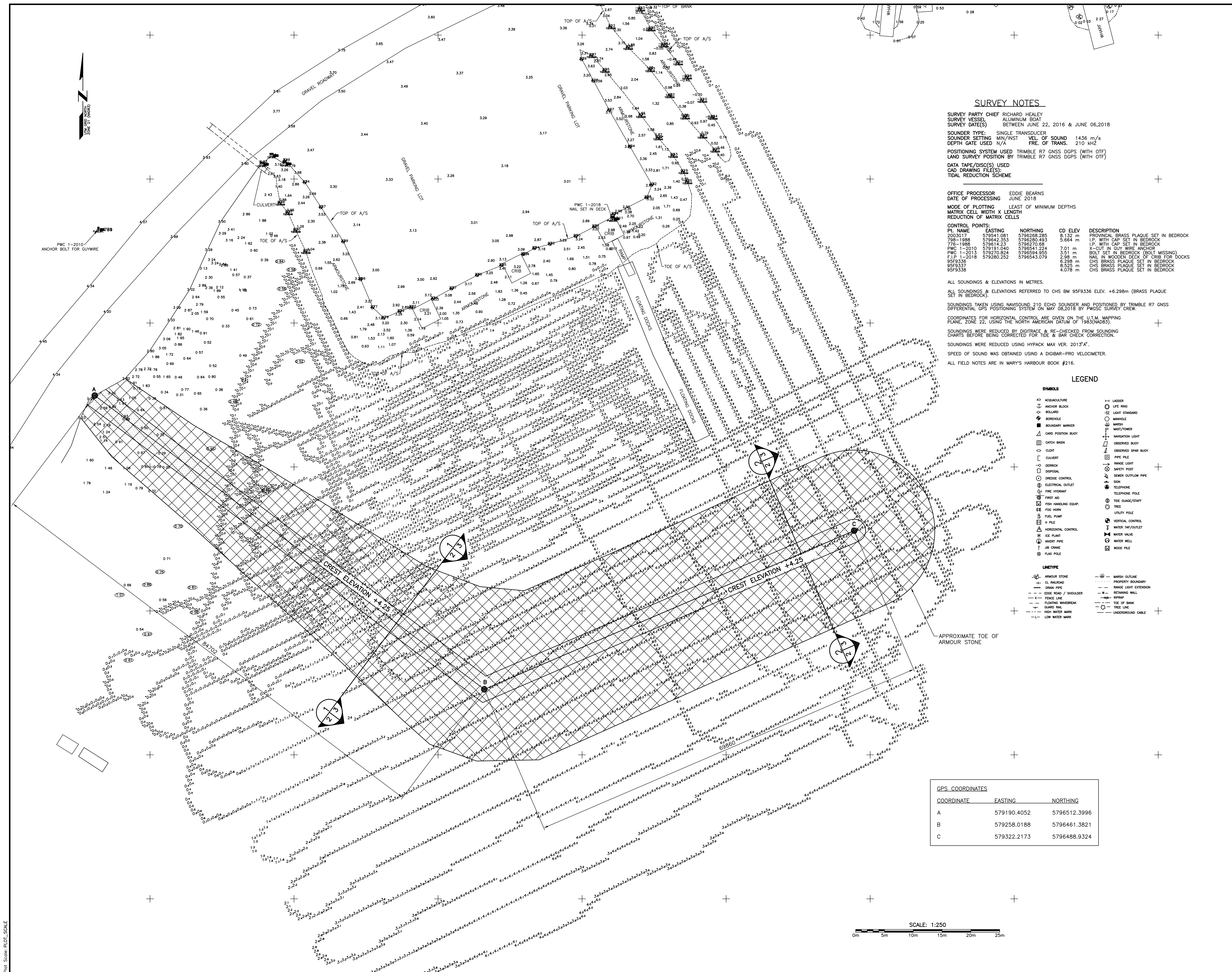
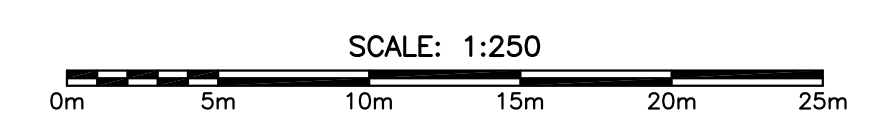
ALL FIELD NOTES ARE IN MARY'S HARBOUR BOOK #216.

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 □ MINORILE □ MARSH □ MAST/TOWER □ NAVIGATION LIGHT □ OBSERVED BUOY □ OBSERVED SPAR BUOY □ PILE □ PIPE □ RANGE LIGHT □ SAFETY POST □ SEMI-OUTFLOW PIPE □ SIGN □ TELEPHONE □ TELEPHONE POLE □ TIDE GAUGE/STAFF □ TREE □ UTILITY POLE □ VERTICAL CONTROL □ WATER IN/OUTLET □ WATER VALVE □ WATER WELL □ WOOD PILE |
|---|--|
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- | | |
|--|---|
| <ul style="list-style-type: none"> — ARMOUR STONE — CL. RAILROAD — DRAIN PIPE — EDGE ROAD / SHOULDER — FENCE LINE — FLOATING BREAKWATER — 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 2018.

REGISTERED PROFESSIONAL ENGINEER
 NEIL C. HUNT
 SIGNATURE
 DATE

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.	desin
date JULY 3, 2018	
approved	approve
Tender	Submission
DFD Project Manager	
project number	no. du projet
722614	
drawing no.	no. du dessin
C2	

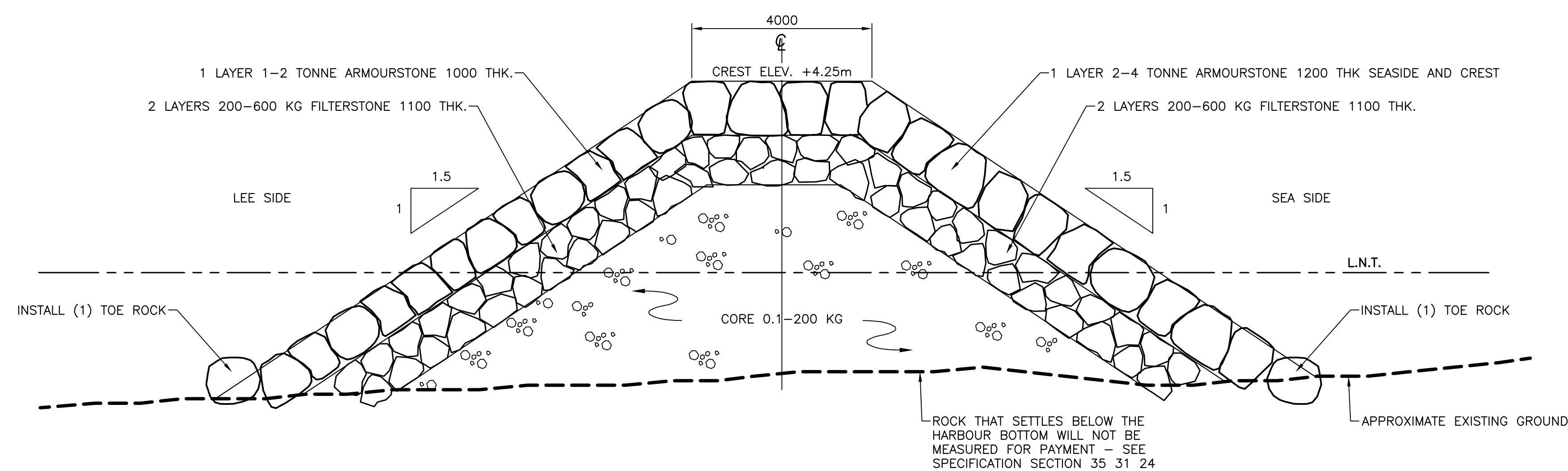
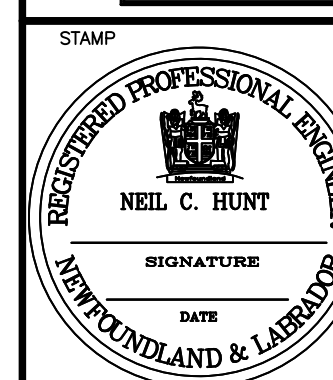
SMALL CRAFT HARBOURS



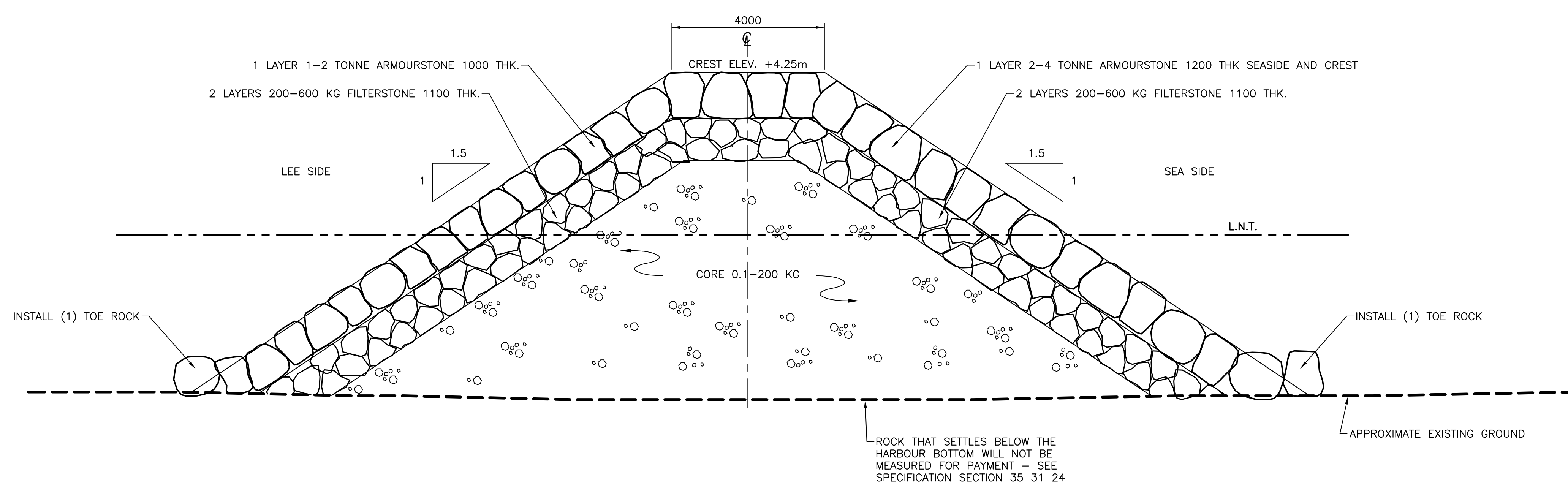
NOTES:

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

PROVINCE OF NEWFOUNDLAND
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 which is valid for the year 2018.



SECTION 1
 SCALE : 1:75



SECTION 2
 SCALE : 1:75

A	ISSUED FOR TENDER	07/03/18
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revisions		date
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project		project
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BREAKWATER CONSTRUCTION
MARY'S HARBOUR, NL

drawing	dessin
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SECTIONS

designed N.H.	conçu
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date	JULY 3, 2018	dessiné
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drawn P.H.	dessiné
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date	JULY 3, 2018	approuvé
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approved	approuvé
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Tender	Submission
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DFD Project Manager	no. du projet
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project number	722614
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drawing no.	C3
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APPENDIX B

Controlled Copy Distribution List

ENVIRONMENTAL PROTECTION PLAN, BREAKWATER CONSTRUCTION, MARY'S HARBOUR, NL

Department or Organization	Individual or Location

APPENDIX C

Revision Request Form

ENVIRONMENTAL PROTECTION PLAN, BREAKWATER CONSTRUCTION, MARY'S HARBOUR, NL

Revision Request Form - Atlantic Minerals Limited Environmental Protection Plan
SECTION TO BE REVISED:
NATURE OF REVISION:
RATIONALE FOR REVISION: (i.e., environment / worker safety)
SUBMITTED BY:
Please submit request to the General Manager

APPENDIX D

Revision History Log

