FISHERIES AND OCEANS
CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA) 2012

Anse-Bleue – DFO-SCH
Basin Re-dredging and Containment Cell Construction
PROJECT EFFECTS DETERMINATION REPORT

GENERAL INFORMATION

1. Project Title: Construction of a new containment cell and basin re-dredging	
2 Proponent: Fisheries and Oceans Canada - Small Craft Harbours (DFO-SCH)	
3. Other Contacts:	**4. Role of each contact:**
a) PSPC – Christian Brazeau, Environmental Specialist	a) OGD Consultant
5. Source of Project Information (Contact): Shane Doiron – Project Manager, PSPC	
6. Received Date: September 5, 2018	
7. PATH No.:	**8. DFO File No:**
9. Other relevant file numbers:	
a) PSPC ES File No. R.100380.001 / PSPC PM File No. R.101838.001	
b) NPA File No.	

BACKGROUND

10. Background about Proposed Development (including a description of the proposed development):

The proposed project will take place at Anse-Bleue DFO-SCH #2502, an active Small Craft Harbour facility servicing the commercial fishery. The project will include the creation of a containment cell (approximately 15,000 m^2 with the walls), north of the existing marginal wharf, with a capacity to hold approximately 18,300 m^3. The walls will be built up to an elevation of 5.0 meters above chart datum, and the east wall of the cell will be connected to the existing concrete deck of structure 401. The east side of the existing timber cribwork of structure 401 will also be covered with filter and armour stones for stabilization/solidification purposes. A base for the walls will be constructed with core stone to establish the perimeter of the cell and to provide a dry working platform. The placement of the new construction cell will require the reconfiguration/reconstruction of structure 302 (breakwater), and the relocation of the boat haulout 502. The project will also include the installation of a new floating wharf (Appendix A).

During the project development stage, two potential areas for the placement of the containment cell were surveyed to determine the area of least impact. The first option/area considered was located west of the harbour where Dillon Consulting Ltd (2018) observed an extensive eelgrass area (see Appendix A – Figure 4 and Appendix C). The second area considered was within the harbour basin, just north of the existing marginal wharf, where most of the area was characterized by a sandy substrate, macrofloral debris and a significantly smaller cover of thick eelgrass beds. It was decided, to avoid the extensive eelgrass area to the west of the harbour, that the containment cell would be placed within the basin where habitats are already disturbed.

Upon completion of the containment cell, the basin at Anse-Bleue will be dredged, with the dredged material disposed in the new cell. Dredging at Anse-Bleue has been conducted annually with the material stored in the parking lot (Appendix A-Figure 2). This material is currently being removed and relocated to an approved off-site disposal facility. The total area for the upcoming dredge is approximately 13,000 m^2, with a total dredge volume of approximately 12,000 m^3 (Appendix A – Figure 4). Once the construction work completed, the total additional footprint will be approximately 17,800 m^2.

The new containment cell is being constructed in anticipation of dredging that is required annually in the basin at Anse-Bleue Harbour. The water depth within sections of the harbour basin becomes a safety concern every year for safe passage to and from the wharf. Closing and/or relocating the harbour facility is not a viable option (both socio-economically and environmentally), and the "do nothing" option does not address the issue. Therefore, dredging the basin and disposal of the dredge material within a designed containment cell are being considered as the only viable means of ensuring a safe and operable facility for the users.

Various disposal options for the basin material have been considered, however a marine sediment sampling program carried out in the summer of 2018 indicated that disposal options for the basin material are limited (see Appendix C). The material is not suitable for Disposal at Sea and has significant restrictions for land-based disposal as well. The dredge disposal options were compared to the hierarchy of waste management options, specifically 1) beneficial use (ie. beach nourishment); 2) off-site recycling, or in the context of this project, recycling within the littoral drift system (Disposal at Sea); and 3) disposal in the marine environment or disposal in the upland environment. Due to the presence of various contaminants in the basin material, none of the aforementioned options may be considered. The dredge material must be managed as a waste material and due to the large quantity of material that must be disposed of, managing the dredge material on site is the most viable option.

This Project Effects Determination (PED) report is being conducted to fulfill the requirements under Section 67 of the *Canadian Environmental Assessment Act*, 2012. A review of the DFO-SCH Project Environmental Risk Assessment Form determined that this project is considered High-risk, and is being assessed as such.

PROJECT REVIEW

1. DFO's rationale for the project review:

Project is on federal land ☒ and;

- ☒ DFO is the proponent.
- ☐ DFO to issue *Fisheries Act* Authorization or *Species at Risk Act* Permit.
- ☐ DFO to provide financial assistance to another party to enable the project to proceed.
- ☐ DFO to issue licence or lease federal land to enable the project to proceed.

12. a) Fisheries Act Section(s) (if applicable): n/a
b) Species at Risk Act Section(s) (if applicable): n/a

13. Primary Authority: DFO-SCH

14. Primary Authority's rationale for involvement:

- ☒ Primary Authority is the proponent.
- ☐ Primary Authority to provide financial assistance to enable the project to proceed.
- ☐ Primary Authority to provide a licence or an interest in land.
- ☐ Primary Authority to issue a regulatory permit, approval or authorization.

15. Other Authorities involved in review:	**16. Other Authority's rationale for involvement:**
a) DFO-Fisheries Protection Program (FPP) b) Transport Canada – Navigation Protection Program (NPP) and Environmental Affairs and Aboriginal Consultation Unit (TCEA) c) New Brunswick Department of Environment and Local Government	a) *Fisheries Act* • Permit requirement: The project has been referred to the DFO-FPP for review. If the Program is of the view that the proposal will result in serious harm to fish, an Authorization will be required from the Program under Paragraph 35(2)(b) of the *Fisheries Act* in order to proceed with the proposed project. The proponent will comply with any/all conditions of the Authorization. b) *Navigation Protection Act* • Approval Requirement: The *Navigation Protection Act* (NPA) approval and review process is being conducted for the proposed project. The proponent will comply with all/any conditions of the NPA approval. c) New Brunswick *Clean Environment Act* and the *Environmental Impact Assessment Regulation* • The construction of the containment cell portion of the proposed project is listed under Schedule A (item m) of the New Brunswick Environmental Impact Assessment (EIA) Regulation. As such, the project will be registered with the Department of Environment and Local Government as an Environmental Impact Assessment.

17. Other Contacts and Responses (Government Agencies, Other Organizations, Harbour Authority, etc.):

a. DFO Area Aboriginal Program Coordinator (Georges Moore)

b. Anse-Bleue Harbour Authority (Germain Landry)

Aboriginal Consultation

PSPC, on behalf of DFO-SCH, carried out an Aboriginal Assessment at Anse-Bleue in accordance with DFO-SCH's Preliminary Duty to Consult Assessment Guide. This Guide is intended to provide basic information to DFO-SCH in the Maritimes and Gulf Regions and to assist its Program Managers in making informed, prudent decisions that take into account statutory and other legal obligations, as well as policy objectives, related to Aboriginal and treaty rights. The Supreme Court of Canada has held that the Crown has a duty to consult and, where appropriate, accommodate when the Crown contemplates conduct that might adversely impact potential or established Aboriginal or treaty rights. While there may be other reasons to undertake consultations (e.g., good governance, policy-based, etc.), three elements are required for a legal duty to consult to arise:

1. There is contemplated or proposed Crown conduct.
2. The Crown has knowledge of potential or established Aboriginal or treaty rights.
3. The potential or established Aboriginal or treaty rights may be adversely impacted by the Crown.

Through the Duty to Consult (DTC) process, the DFO Area Aboriginal Program Coordinator and the Harbour Authority (HA) advised that there are no Aboriginal vessels that fish for commercial purposes from the Anse-Bleue SCH and the harbour is not known to be used for Aboriginal traditional, food or ceremonial fisheries. As the project is not anticipated to adversely impact potential or established Aboriginal or treaty rights, and no archaeological sites have been identified in the project area, consultation will not be pursued for this project.

Public Consultation

The project will provide a viable means of ensuring safety and efficient operation of the harbour. The new containment cell will be encased within the harbour basin and will not, along with the other proposed structures, impact adjacent landowners sight-line. No negative public concern is expected as a result of this project. Therefore, public consultation was not deemed necessary as part of this determination.

18. Scope of Project (details of the project subject to review):

Project Description

The proposed project will take place at Anse-Bleue DFO-SCH #2502, an active Small Craft Harbour facility servicing the commercial fishery. The project will include the creation of a containment cell (approximately 15,000 m^2 with the walls), north of the existing marginal wharf, with a capacity to hold approximately 18,300 m^3. A significant portion of the expansion will be situated below the High Normal Tide (HNT) mark (see Appendix A). The walls will be built up to an elevation of 5.0 meters above chart datum, and the east wall of the cell will be connected to the existing concrete deck of structure 401. The east side of the existing timber cribwork of structure 401 will be covered with filter and armour-stones for stabilization/solidification purposes. A base for the walls will be constructed with core stone to establish the perimeter of the cell and to provide a dry working platform. This design takes into consideration larger than normal tides and storm surges associated with future sea-level rise projections (Daigle 2017). The placement of the new construction cell will require the reconfiguration/reconstruction of structure 302 (breakwater), and the relocation of the boat haulout 502. The project will also include the installation of a new floating wharf (see Appendix A).

There is an existing access road to the project site, therefore no temporary road construction is required. Excavators and dump trucks to be used during construction will carry out the work from the dry, constructing a core stone base for the walls below the HNT mark to establish a dry working platform. The same work procedures will be conducted to rebuild the breakwater adjacent to the west side of the new breakwater.

Upon completion of the containment cell, the entire basin will be dredged to 1.5 m below chart datum.

Operation

The Environmental Management System (EMS) with an integrated Environmental Management Plan (EMP) for the Harbour Authority of Anse-Bleue covers operational aspects of the environmental management and is the mitigation measure for the environmentally responsible aspects of harbour operation (fueling, waste disposal, activities on the property, and water). The proposed Project will not affect continued operations at the Anse-Bleue SCH.

Decommissioning

This facility is not presently planned to be decommissioned. At the time of decommissioning, DFO-SCH will develop a site specific re-use or reclamation plan that is appropriate for the applicable environmental legislation and Fisheries and Oceans Canada policies.

Scheduling

The construction activities are expected to commence in February 2019 and are anticipated to be completed by March 31, 2020, pending funding and approvals. Basin dredging will take place once cell is complete, i.e. by March 31, 2020.

19. Location of Project:

Anse-Bleue DFO-SCH (harbour code 2502) is located on the southern coastline of the Baie des Chaleurs, on the northeastern shore of New Brunswick, in Gloucester County. The Harbour is approximately 50 km north east of Bathurst and can be accessed via provincial route 320 (Appendix A). The approximate coordinates of the project area are Latitude 47◦49'49.11" N and Longitude 65◦04'45.36" W.

20. Environment Description:

1. Physical Environment

Anse-Bleue is located in the Maritimes Lowlands ecoregion which is characterized by warm summers and mild, snowy winters. The dominant soils are Humo-Ferric Podzols and Gray Luvisols with compact subsoils that restrict internal drainage. Significant areas of Gleysols, Fibrisols on flat and raised bogs, and Mesisols on fens also exist. The beaches consist of sandstone overburden with sand, which form low dunes near shore. The shoreline of the Baie des Chaleurs in this area is made up of high sandstone cliffs 15 to 30 m high with narrow beaches. The harbour basin bottom consists of sandstone overburden with a layer of sandy material approximately 100 to 1,000 millimetres (mm) thick (New Brunswick Department of Natural Resources and Energy 2008). There is a rubble mound breakwater located at the harbour entrance that protects the wharf basin and immediate shoreline against storms and erosion. The topography, in the immediate vicinity of the Anse Bleue wharf slopes to the northeast towards Chaleur Bay. As such, it is expected that groundwater flow in the area underlying the property would be towards the northeast. The subject property is located approximately 1.5 metres above sea level.

The Canadian Climate Normals (1971 to 2000) recorded from the climate station in Bathurst (47°37.2' N 65°39.0' W), New Brunswick (the closest station to the proposed project location) indicate an annual daily mean temperature of 4.5 C, with extremes ranging from –36.1 C to 36.5 C. Measurable precipitation averages 1058.6 mm annually. Extreme daily precipitation has been recorded at 89.7 mm.

A Marine Sediment Sampling Program (MSSP) was completed in 2018 by Dillon Consulting. Samples were collected from the harbour basin, within the proposed dredge area, to characterize the sediment chemistry in an effort to facilitate the selection of disposal options for the sediment to be removed from the waterlot. Sediment samples suggest that the material is predominantly sand (39.9%) and silt (35.1%), with some clay (23.6%) and little gravel (1.4%). The laboratory analytical results of the sediment samples indicated exceedances of the applicable upland disposal criteria for select parameters, including (see UBHS/MSSP Report in Appendix D):

- PAHs in sediment exceeding:
    - CEPA Disposal at Sea Screening Criteria – Lower Level Screening Criteria;
    - CCME Soil Quality Guidelines (SoQGs) for the protection of potable water;
    - CCME SoQGs for the protection of freshwater aquatic life (for napththalene and phenanthrene).
- PAHs in Leachate:
    - Synthetic Precipitation Leaching Procedure (SPLP): exceedance of CCME Water Quality Guidelines for the Protection of Freshwater Aquatic Life for fluoranthene and pyrene.
- Metals:

- Hot water boron concentrations exceeded the agricultural land use CCME SoQG.
- Sodium Adsorption Ratio:
  - Exceeding the CCME SoQGs and the Loggies Pit Dredge Material Acceptance Criteria.
- pH:
  - Exceeding CCME SoQGs, the Loggies Pit Dredge Material Acceptance Criteria, and the Nepisiguit-Chaleur Region Solid Waste Commission Acceptance Criteria.

2. Biological Environment

a) General Ecology

The Anse-Bleue DFO-SCH is located inside the Caraquet Ecodistrict of the Eastern Lowlands Ecoregion, which is a crescent of land averaging 10 km wide that rims the Acadian Peninsula coastline. It begins at the mouth of the Nepisiguit River, curves around Miscou Island, and ends at the mouth of the Miramichi River (Zelazny, 2007). The dominant soils are Humo-Ferric Podzols and Gray Luvisols with compact subsoils that restrict internal drainage. Significant areas of Gleysols, Fibrisols on flat and raised bogs, and Mesisols on fens also exist. The beaches consist of sandstone overburden with sand, which form low dunes near shore. The shoreline of the Baie des Chaleurs in this area is made up of high sandstone cliffs 15 to 30 m high with narrow beaches. The harbour basin bottom consists of sandstone overburden with a layer of sandy material approximately 100 to 1,000 millimetres (mm) thick. Human activities along this Ecodistrict have resulted in a dominant forest of intolerant hardwood species: red maple, trembling aspen, and grey birch. Traces of sugar maple, yellow birch, and beech occur only along the inland perimeter (Zelazny, 2007). This Ecodistrict provides habitat for moose, black bear, white-tailed deer, red fox, snowshoe hare, porcupine, fisher, coyote, beaver, ruffed grouse, bobcat, marten, raccoon, and muskrat (Ecological Stratification Working Group, 1995).

b) Aquatic Species

Fish species that inhabit near-shore areas and migrate through the Anse-Bleue Small Craft Harbour include American Eel (*Anguilla rostrata*), Rainbow Smelt (*Osmerus mordax*), Alewife (*Alosa pseudoharengus)*, Striped bass (*Morone saxatilis*) and Atlantic Salmon (*Salmo salar*). Pelagic fish species in the vicinity of Anse-Bleue Harbour include Atlantic mackerel (*Scomber scombrus*), Atlantic herring (*Clupea harengus*), and Dogfish (*Squalus acanthias*). Blue Mussels (*Mytilus edulis*) inhabit the near-shore area of the Anse-Bleue Small Craft Harbour Moonsnail (*Euspira heros*) and Atlantic deep sea scallop (*Placopecten magellanicusare*) are also found in the vicinity of Anse-Bleue Harbour. Fishing grounds for Lobster (*Homarus americanus*), Rock Crab (*Cancer irroratus*), Toad Crab (*Hyas araneus*) exist approximately 5 km offshore from the Harbour. Lobster will migrate to within 300m from the harbour in July and August and approximately 1 km away the rest of the year (PSPC 2011). Other species that are found in the waters adjacent to Anse-Bleue include Snow crab (*Chionoecetes opilio*), Atlantic cod (*Gadus morhua*), American plaice (*Hippoglossoides platessoides)*, Red hake (*Urophycis chuss*) and Sea urchin (*Strongylocentrotus droebachiensis*).

An underwater benthic habitat survey conducted in 2018 has revealed that the proposed dredge area is comprised of a mix of sandy substrate (10 to 70% cover) and macrofloral debris (primarily unattached eelgrass; 10 to 70% cover). However, an area of thick eelgrass beds (10 to 100% cover) overlying sandy substrate (between <5% and 10% cover) was observed in front of the existing marginal wharf, north of the containment cell, where the new containment cell will be constructed. The eelgrass appears to be in good health. Macrofaunal species observed within the eelgrass beds included Atlantic rock crab (*Cancer irroratus*), Periwinkle (*Littorina sp.*), Stickleback fish species (*Gasterosteus sp.*) and Hermit crab (*Pagurus sp.*). Based on these observations, the majority of the potential habitat present within the proposed dredge and containment cell area does not likely offer unique or preferred habitat for any ecological receptor population or community, with the exception of the eelgrass beds, as noted above (Dillon 2018).

c) Migratory Birds

The Maritime Breeding Bird Atlas identifies a total of 93 species of birds in the geographical block which contains Anse-Bleue (20LT49), 10 of which are listed as confirmed for breeding (Bird Studies Canada, 2018). Anse-Bleue is located approximately 15 km east of the Pokeshaw Rock, a sea stack that possesses steep, sheer cliffs that rise approximately 16 m from the sea, with the cap being 30 by 40 m diameter. In 1986, a total of 1371 pairs of nesting Double-crested Cormorants were recorded at the Rock, representing about 1.5% of the Atlantic coast population (IBA Canada, 2018). The second closest important bird area, located approximately 40 km west of Anse-Bleue, is known as Miscou Island. Piping Plovers are known to breed on the Island's beaches. Large numbers of shorebirds and waterfowl also use the beaches and lagoons on Miscou Island during fall migration.

d) Species at Risk

The potential for impact of the proposed project on Species at Risk was considered during this assessment. A search of the Atlantic Canada Conservation Data Centre (ACCDC) database was conducted. The ACCDC provided 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) listed as extirpated, endangered and threatened or of special concern.

Species at risk or of concern identified in the area include:

- **Barn Swallow** (*Hirundo rustica)* is listed as Endangered on Schedule 1 of SARA and by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Barn Swallows nest largely in and on artificial structures, including barns and other outbuildings, garages, houses, bridges, and road culverts. Barn Swallows prefer various types of open habitats for foraging, including grassy fields, pastures, various kinds of agricultural crops, lake and river shorelines, cleared rights-of-way, cottage areas and farmyards, islands, wetlands, and subarctic tundra (Environment Canada 2018). In the event a Barn Swallow is found nesting within the project site during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment. All project activities will be conducted in accordance with the *Migratory Birds Convention Act*, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project.

- **Bank Swallow** (*Riparia riparia*) is listed as Threatened on Schedule 1 of SARA and COSEWIC. The Bank swallow breeds in all Canadian provinces and winters primarily in South America. It nests in a wide variety of natural and artificial sites with vertical banks, including riverbanks, lake and ocean bluffs, aggregate pits, road cuts, and stock piles of soil. Sand-silt substrates are preferred for excavating nest burrows. Breeding sites tend to be somewhat ephemeral due to the dynamic nature of bank erosion. Breeding sites are often situated near open terrestrial habitat used for aerial foraging (e.g., grasslands, meadows, pastures, and agricultural cropland) (Environment Canada, 2018). In the event a Bank Swallow is found nesting during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment. All project activities will be conducted in accordance with the Migratory Birds Convention *Act*, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project.

- **Bobolink** (*Dolichonyx oryzivorus*) listed as Threatened on Schedule 1 of SARA and COSEWIC. The Bobolink breeds in all Canadian provinces (no territories) and winters in southern South America. It nests mainly in forage crops (e.g., hayfields and pastures dominated by a variety of species, such as clover, Timothy, Kentucky Bluegrass, and broadleaved plants). The Bobolink also occurs in various grassland habitats including wet prairie, graminoid peatlands and abandoned fields. It is generally not abundant in short-grass prairie, Alfalfa fields, or in row crop monocultures (e.g., corn, soybean, wheat) (Environment Canada 2018). There are no expected interactions between the Bobolink and the project due to lack of suitable habitat at the site.

- **Eastern Wood-Pewee** *(Contopus virens)* designated as a species of special concern on Schedule 1 of SARA and by COSEWIC. The Eastern Wood-Pewee breeds from southeastern Saskatchewan to the Maritime Provinces, south to southeastern Texas and east to the U.S. Atlantic coast. It winters primarily in northern South America. In Canada, the Eastern Wood-pewee is mostly associated with the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in forest stands of intermediate age and in mature stands with little understory vegetation. During migration, a variety of habitats are used, including forest edges, early successional clearings, and primary and secondary lowland tropical forest, as well as cloud forest (Environment Canada 2018). There are no expected interactions between the Eastern Wood-Pewee and the project due to lack of suitable habitat at the site.

- **Canada Warbler** *(Wilsonia Canadensis):* listed under Schedule 1 of SARA and COSEWIC as Threatened, and At Risk provincially. The Canada Warbler is found in a variety of forest types, but it is most abundant in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. It is also found in riparian shrub forests on slopes and in ravines and in old-growth forests with canopy openings and a high density of shrubs, as well as in stands regenerating after natural disturbances, such as forest fires, or anthropogenic disturbances, such as logging. (Environment Canada 2018). There are no expected interactions between the Canada Warbler and the project due to lack of suitable habitat at the site.

- **Bald Eagle** *(Haliaeetus leucocephalus*) is listed provincially as At Risk in New Brunswick (New Brunswick Energy and Resource Development 2018). In New Brunswick, the bald eagle begins to nest as early as February. Breeding occurs in April through mid-May. Any disturbance during this sensitive period may cause the bird and its mate to abandon their nest. The young usually leave the nest by the end of August. The bald eagle uses sticks and plant material to build its nest in the top of a tall tree – often a large white pine. It usually uses the same nest for a number of years. The bald eagle becomes territorial during breeding season, and will defend an area up to two kilometres around its nest. It prefers a site near open water – an abundant source of fish. In New Brunswick, a number of our coastal islands provide suitable habitat and are common nesting sites. In winter, the bird is frequently found in the southwestern part of the province – a good source of food since the Bay of Fundy does not freeze over. There are no expected interactions between the Bald Eagle and the project due to the absence of nesting site within 5 km of the project site (ACCDC 2018). All project activities will be conducted in accordance with the *Migratory Birds Convention Act*, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project.

- **Red-shouldered Hawk** *(Buteo lineatus)* is listed under as Special Concern under SARA and May be at Risk at the provincial level. The bird prefers deciduous or mixed-wood forests containing shade-tolerant hardwood trees close to wetland areas. Hardwood forests covering eastern North America were gradually cut or cleared during European settlement. Quantity and quality of forested habitat declined dramatically. Forest regeneration of recent decades has created new habitat. Large woodlots (10 to 100 hectares) can sustain viable Red-shouldered Hawk populations provided larger raptors do not interfere. There are no expected interactions between the Red-shouldered Hawk and the project due to lack of suitable habitat at the site.

- **Common Nighthawk** *(Chordeiles minor)* listed under Schedule 1 of SARA and COSEWIC as Threatened*,* and At Risk by the province of New Brunswick*.* The Common Nighthawk nests in a wide range of open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. The Common Nighthawk probably benefited from the newly-opened habitats created by the massive deforestation associated with the arrival of European settlers in eastern Canada and United States. The appearance of gravel roofs contributed to the expansion of the Common Nighthawk's habitat in North America. In the event a Common Nighthawk is found nesting during any construction activities, the general prohibitions under the *Species at Risk Act* will apply in order to protect the birds and their residences from destruction and harassment. All project activities will be conducted in accordance with the *Migratory Birds Convention Act*, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project

Although not listed in the ACCDC search, the following species are highly mobile and may occur near the project site:

- Populations of **Atlantic salmon** (*Salmo salar*) inhabit rivers as well as smaller brooks in New Brunswick. Individuals would be found seasonally in the lower river sections and coastal zone both as smolts migrating to feed in the sea, and as adults returning to rivers to spawn. The salmon of this area are part of the Gaspé-Southern Gulf of St. Lawrence Designatable Unit which is listed as of special concern by COSEWIC. The Gaspé-Southern Gulf of St. Lawrence Designatable Unit has no status as yet under the SARA (Environment Canada 2018).

- The **striped bass** (*Morone saxatilis*) is listed as endangered in Atlantic Canada. Note that this listing is by COSEWIC, the recommending body for additions to the SARA. At present, the species has not been listed under SARA. The striped bass is highly mobile in spring, summer, and autumn. Canadian striped bass overwinter in deep freshwater lakes in Atlantic Canada. They are voracious predators and can grow to over 20 kilograms in weight. They have specific spawning habitats, requiring very long estuaries in which the eggs and larvae, suspended in the turbulence and currents, can drift slowly from fresh through brackish to saline waters. Young-of-the-year and yearling bass inhabit deeper waters in estuaries and bays. Post yearling bass range in schools along the coast. Their early diet is chiefly invertebrates, but they switch to fish as they grow, following prey species into bays and estuaries. Larger striped bass can be highly migratory and move hundreds of kilometers in a season (Environment Canada 2018).

- The **American eel** (*Anguilla rostrata*) is listed as Threatened by COSEWIC (Environment Canada 2018). This eel is classed as a catadromous fish, which means that on attaining sexual maturity, adult eels migrate downstream to the sea where ultimately they spawn. Spawning migration occurs between August and December, with downstream movement is most active at night, during the first several hours after sunset. Peak migration activity usually occurs during September and October. Yellow eels (sexually immature adult stage) may also be found migrating seaward

in the autumn but they are believed to be moving to overwintering sites within the river or estuary. Yellow eels are generally active at night, retiring to burrows in muddy bottoms or to other cover during daylight. Temperature influences the degree of seasonal activity and eels become noticeably less active when the water temperature drops below 11°C in autumn. During winter, eels hibernate in the bottom mud. Eels are voracious carnivores and consume a variety of fishes and invertebrates such as insects, crayfish, snails and worms (DFO, 2014).

e) Environmentally Significant Areas and Wetlands

A search of the ACCDC database yielded no sensitive environmental areas in the vicinity of the Anse-Bleue DFO-SCH. There are no provincially significant, regulated or unmapped wetlands located near the project site (Government of New Brunswick 2018). The closest Environmentally Significant Areas (ESAs), as designated by the Nature Trust of New Brunswick, include:

- **Pointe des Deux-Rivieres** (approximately 5.5 km south of project site): This is one of the few remaining productive Oyster beds on the Acadian peninsula.

- **Caraquet River/Madeleine Salt Marsh** (approximately 6.5 km south of project site): This small river system is good for fishing speckled sea trout and is unique for its late fall run of Atlantic Salmon. The river is directly linked to the success of the Oyster beds in the bay as it supplies nutrients/food and influences the salinity of the bay. There is an aquaculture operation in the upper bay.

- **Village Acadien/Riviere du Nord** (approximately 4.5 km southwest of project site): The Riviere du Nord/Village Acadien complex is a large, highly productive, relatively undisturbed fresh and salt marsh behind a mostly forested shoreline, representing some of the best high tidal marsh habitat in northeastern NB. It was previously used primarily by migrating waterfowl, as there was no permanency of brood-rearing habitat due to tidal influence. Black Ducks, Blue-winged Teal, American Widgeon and Northern Pintail, in addition to shorebirds, Herons, mammals and amphibians should be attracted to the area. Approximately 50 broods of waterfowl are anticipated per year.

- **Dune de Maisonette** (approximately 9 km east of project site): This is a very sensitive moving ecosystem, about 1.7 km in length, eroding easily due to its sparse vegetation cover. The dune protects the Bay of Caraquet from the more salty waters of the Chaleur Bay. The current is strongest at the northeastern part of the Bay of Caraquet, so the water retention created by the dunes induces warmer water in the bay. This creates excellent habitat for molluscs. 60-70% of all NB Oysters are harvested in Caraquet Bay. Bird colonies near end of dune include Common Tern (100 nesting in 1990 - unconfirmed recently), Herring Gulls and Black-backed Gulls. Piping Plover were recorded in 1988, but not since. It is possible that Willet breed here (at present only known to breed as far north as Bouctouche).

3. Human Environment

The Anse-Bleue wharf facility and the western breakwater structure are located on properties identified as being owned by Public Works and Government Services Canada (PWGSC) and are designated as PID #20627139 and #20627147, respectively. A restaurant/diving clubhouse and the Anse-Bleue Harbour Authority building are situated on a property identified as being owned by PWGSC (PID #20087474) which borders the wharf property to the south. These three properties together cover an area of 16.0 hectares

Facilities surrounding the project site include the existing harbour infrastructure: the west breakwater, the main wharf, a marginal wharf, a small breakwater west of the main wharf, and a containment cell (see site photographs in Appendix B). A small number of homes, less than fifty, are centered around the wharf. The wharf and the industry from the sea support the majority of the residents in the community. Fishing occurs offshore of Anse-Bleue in waters of two metres and deeper, approximately 300 metres from the wharf. Lobster and herring are fished in the spring and herring is fished again in the late summer. Smelt is fished in the fall near the wharf.

The Harbour Authority, through a lease agreement with DFO-SCH, manages the property and facilities. The Harbour Authority will coordinate between the fisheries and the contractor to ensure the project proceeds with the least possible disruption. The proposed project site serves both recreational and commercial users, with 17 commercial vessels and a few recreational boats. There are no other known human activities at the proposed work site. Noise caused by this project is expected to be similar to noise levels when the wharf is operating at the peak of the commercial fishing season. The work associated with the dredging project will provide safe navigational conditions within the Harbour. There are no known hazard lands, municipal lands or zoning designations that will be affected by this proposed project. There is one shellfish aquaculture site (MS-0709) located approximately 1.6 km north of the project site (NBDAAF 2018).

A Phase II Environmental Site Assessment (ESA) noted the presence of two private water wells on the property (MGI 2004). Water is supplied to the Port Authority Building from a potable well located near the southwest corner of the building and to the Restaurant/Diving Clubhouse from a potable well located near the southwest corner of the building (see Appendix A - Figure 2).

Lands adjacent to the coastlines in the Maritimes tend to have high archaeological potential given their historic importance and proximity to transportation routes and fishing resources. The shoreline around and including Anse-Bleue is considered high potential for heritage and archaeological resources. There is are two historic sites (CkDg-10 and CkDg-4) located approximately 3.4 km from the project site, near Dugas, NB, and one historical cemetary located approximately 6.5 km from the project site, near Maisonnette, NB (New Brunswick Department of Tourism, Heritage and Culture, 2013).

Noise caused by this project is expected to be similar to noise levels when the wharf is operating at the peak of the commercial fishing season. The proposed construction schedule for the Project is during the winter and spring, prior to the peak fishing and summer tourism season. Work is to be carried out during times acceptable to the local authorities to mitigate any disturbance to Anse-Bleue Harbour users and nearby residents.

There are no known hazard lands, municipal lands or zoning designations that will be affected by this proposed project.

21. Scope of Effects Considered (section 5(1) and 5(2) of CEAA 2012)

Table 1: Potential Project / Environment Interactions Matrix

Project Phase / Physical Work/Activity	*As per Section 5(1)*			*Section 5(1c) Aboriginal Interest*				*Section 5(2)*			*Due Diligence*						
	Fish (Fisheries Act)	*Aquatic Species (SARA)*	*Birds (MBCA)*	*Health and Socio Economic*	*Physical and Cultural Heritage*	*Land use*	*HAPA* Significance*	*Health and Socio Economic*	*Physical and Cultural Heritage*	*HAPA* Significance*	*Water (ground, surface, drainage, etc.)*	*Wetlands*	*Terrestrial / Aquatic Species*	*Fish*	*Birds*	*Soil / Marine Sediments*	*Air Quality*
Containment Cell Construction and Basin Dredging																	
Transportation of material and equipment	P	P	P	-	-	-	-	-	-	-	P	-	P	P	P	P	P
Construction of containment cell, boat haul-out, floating wharf, and re-construction of breakwater	P	P	P	-	-	-	P	-	-	P	P	-	P	P	P	P	P
Basin dredging and disposal of dredge material	P	P	P	-	-	-	P	-	-	P	P	-	P	P	P	P	P
Operation/Maintenance	The operation/maintenance phase is covered by the EMP/EMS as stated in Section 18 and is not considered further in the PED.																

Decommissioning/ Abandonment	There are no plans to decommission/abandon the facility.

***structure, site or thing that is of historical, archaeological, paleontological or architectural significance*

P = possible interaction

"-" = no interaction

Evaluation of Environmental Effects

The Valued Ecological Components (VECs) selected in Table 1 are addressed in Sections 22 and 23 of the PED. The physical works/activities and required mitigation measures are detailed. The assessment is based on:

- information provided by the proponent;
- a review of project related activities;
- an appraisal of the environmental setting, and identification of resources at risk;
- the identification of potential impacts within the temporal and spatial bounds; and
- personal knowledge and professional judgment of the assessor.

The significance of project related impacts was determined in consideration of their frequency, the duration and geographical extent of the effects, magnitude relative to natural or background levels, and whether the effects are reversible or are positive or negative in nature. These criteria are described in Table 2 and used in Section 23.

Table 2: Assessment Criteria for Determination of Significance

Magnitude	Magnitude, in general terms, may vary among issues, but is a factor that accounts for size, intensity, concentration, importance, volume and social or monetary value. It is rated as compared with background conditions, protective standards or normal variability.	
	Small	Relative to natural or background levels
	Moderate	Relative to natural or background levels
	Large	Relative to natural or background levels
Reversibility	Reversible	Effects can be reversed
	Irreversible	Effects are permanent
Geographic Extent	Immediate	Confined to project site
	Local	Effects beyond immediate project site but not regional in scale
	Regional	Effects on a wide scale
Duration	Short-term	Between 0 and 6 months in duration
	Medium-term	Between 6 months and 2 years
	Long-term	Beyond 2 years
Frequency	Once	Occurs only once
	Intermittent	Occurs occasionally at irregular intervals
	Continuous	Occurs on a regular basis and regular intervals

Methodology

The environmental effects evaluation methodology used in this report focuses the evaluation on those environmental components of greatest concern. The VECs most likely to be affected by the project as described are indicated in Table 1. VECs were selected based on ecological importance to the existing environment (above), the relative sensitivity of environmental components to project influences, and their relative social, cultural or economic importance. The potential impacts resulting from these interactions are described below.

Scoping

This environmental effects evaluation considers the full range of project / environment interactions and the environmental factors that could be affected by the project as defined above and the significance of related impacts with mitigation.

22. Environmental Effects:

Given the developed and disturbed nature of the project site, it is unlikely that any of the species at risk would be found at or near the project site, as the habitat is unsuitable. However, Barn Swallows are known to take advantage of nesting sites offered by various man-made structures, such as under bridges, culverts and wharves. Therefore, a site visit and/or nest survey will be required prior to any construction activities slated to occur between mid-April to late August.

The proposed dredge area is comprised of a mix of sandy substrate (10 to 70% cover) and macrofloral debris (primarily unattached eelgrass; 10 to 70% cover). However, an area of thick eelgrass beds (10 to 100% cover) overlying sandy substrate (between <5% and 10% cover) was observed in front of the existing marginal wharf, north of the containment cell, where the new containment cell will be constructed. The eelgrass appears to be in good health. Macrofaunal species observed within the eelgrass beds included Atlantic rock crab (*Cancer irroratus*), Periwinkle (*Littorina sp.*), Stickleback fish species (*Gasterosteus sp.*) and Hermit crab (*Pagurus sp.*). Eel-grass beds are highly productive areas of primary production and are an important contributor to the base of the coastal food web. However, the eelgrass beds are located within the active part of the harbour, in front of a marginal wharf, where fishing vessels can disburb and resuspend sediments, and disturb fish activities during the spawning season. The DFO-FPP will assess the impacts of the proposed project and determine if an Authorization is required as per Section 35(1) of the *Fisheries Act*.

Potential Project/Environment Interactions and their effects are outlined below. The effects are described for each project phase.

Construction Activities:

- Potential increased suspended solid/sediments and turbidity adjacent to the project site during dredging, cell construction and placement of armour rocks may affect marine water quality in the vicinity of the project;
- Construction activities may result in construction related debris or toxic material entering the water and affecting marine water quality;
- Potential for introduction of invasive species into the marine environment during construction and dredging activities;
- Potential reduction in air quality due to emissions from construction related vehicles;
- Elevated noise levels may occur at the harbour. This could cause disruption to nesting or migration of birds or disruption to local land users;
- Disturbance to fish and destruction of fish habitat in the immediate project area;
- Disturbance to terrestrial/aquatic species during transportation, construction, and dredging activities;
- Food scraps could enhance populations of predators during construction period;
- Disturbance of birds during construction and dredging activities;
- Interaction with commercial fishing activities during dredging and construction activities;
- Interaction with recreational use (including fishing) of the harbour during construction and dredging activities;
- Potential discovery and disturbance or loss of heritage/archaeological resources during cell construction;
- Worker health and safety during construction activities;
- Potential disruption to local land owners from construction activities and roadway users during transportation of materials and equipment to/from the project site.

Navigation Consideration:

Environmental effects of the project on navigation are taken into consideration as part of the Project Effects Determination (PED) only when the effects are indirect, i.e. resulting from a change in the environment affecting navigation. Direct effects on navigation are not considered in the PED, but any measures necessary to mitigate direct effects will be included as terms and conditions associated with work approved or permitted pursuant to the *Navigation Protection Act*.

23. Mitigation Measures for Project:

Table 3: Potential Project/Environment Interactions and Recommended Mitigation Measures

Wharf Reconstruction and Extension	
Effect	**Recommended Mitigation Measures**
Potential increase in suspended solid/sediments and turbidity adjacent to project site that may impact marine water quality, fish and fish habitat (*Small, Reversible, Local, Short Term, Intermittent)*	• Visual monitoring for suspended solids shall occur on a daily basis. If any changes occur in the turbidity of the water in the vicinity of the work area as a result of construction activities, the work must be immediately stopped to determine if further mitigation measures are required. • Weather conditions are to be assessed on a daily basis to determine the potential risk of weather on the project. Work is to be scheduled to avoid periods of heavy precipitation and to prevent erosion and release of sediment and/or sediment-laden water during the construction. • Keep the clearing of riparian vegetation necessary for access to the construction site to a minimum. Use existing trails and roads wherever possible as access routes to avoid disturbance to the riparian vegetation. Preserve trees, shrubs and grasses near the shoreline. • Vegetate any disturbed areas by planting and seeding with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring. • Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved. • Heavy machinery will not be allowed in the water. Machinery shall be operated on land above the high water mark, in a manner that minimizes disturbance to the banks and bed of the waterbody. • Any excavated sediment will be stored in a contained storage area to prevent runoff into the harbor. • Where possible, install site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., excavation, dredging). • Erosion and sediment controls will be visually monitored throughout the life of the project, and repaired immediately if necessary. • Conduct work in a manner that prevents the release of debris (e.g. cribbing, ballast, sediment, etc.) or any deleterious substance into any body of water. • Conduct work during low wind, wave and tidal conditions.
Potential construction-related debris that may impact fish and birds *(Small, Reversible, Local, Short Term, Intermittent)*	• All construction debris will be disposed of in a provincially approved manner. Ensure that there will be no adverse impact on water quality associated with his operations and activities by: ensuring that there will be no debris dumped or left floating in a watercourse; taking necessary action to prevent any fine materials from entering a watercourse; using clean aggregates and stone, free from organics, mud, and excessive fines in the work, where such materials may come in contact with a watercourse; taking all necessary measures to prevent surface runoff of fine materials into any watercourse. • All construction material/debris entering the marine environment will be immediately retrieved and disposed of in a provincially approved manner. • Any waste (demolition materials, recyclables, and hazardous) shall be removed and placed into suitable lidded containers or bins as it is generated. Bins are to be clearly labelled. No temporary storage of waste outside of approved container will be allowed • During the transportation of wastes, bins must be covered to ensure that wastes do not escape and pollute roadways, public lands or private property • At no time shall waste and/or volatile materials (including but not limited to mineral spirits, oil or paint thinner) be disposed of into waterways, storm or sanitary sewers • After completion of Project construction activities, the Contractor shall remove any trash and debris from the work site and areas to be restored. This includes all man-made materials and construction debris (e.g. concrete washout, wire, hardware, metal, plastic, glass, ceramic, rubber, etc.) that may be left on site.

	• Cut, seal and stain all lumber away from the water using only products that are approved for use by the Pest Management Regulatory Agency, Health Canada. All sealed and stained lumber should be completely dry before being used near water.
	• Use concrete that is pre-cast and cured away from the water if possible. Where this is not feasible pour concrete in place only using industry approved techniques and applicable standards (e.g., Tremie Process in accordance with CSA A23.1) and all available measures (e.g., watertight molds, sheet piles, properly sealed chutes and funnels, site dewatering, wave and current protection, etc) to ensure there is no seepage/spillage of concrete or concrete residues into the marine environment.
	• Concrete waste:
	  ○ Do not discharge residual or rejected concrete on site
	  ○ Immediately clean any accidental release of concrete on site prior to solidification
	  ○ Do not wash and clean concrete vehicles on site
	  ○ Perform dumping of residual material and truck cleaning operations only at the concrete plant
	• Removal of creosote-treated timber:
	  ○ Remove any piles using a slow steady pull to minimize the disturbance of the substrate and avoid bringing contaminated sediments to the surface. Vibratory extraction would be the preferred method for pile removal. Direct pull may be appropriate depending on substrate type, pile length, and structural integrity of the piling
	  ○ A reasonable attempt should be made to remove entire piles. Depending on the sensitivity of the habitat at the site, if a pile breaks off it may not be advisable to dredge the remainder out

Potential accidental release toxic materials entering the marine environment and affecting marine water quality, fish and fish habitat *(Small to Large, Reversible, Local, Short Term, Once)*	• Ensure Contractor has an emergency response plan to control any fuel spills, which will include having on site appropriate spill response equipment readily available for immediate deployment. All spills and releases must be reported to the relevant federal, provincial, or territorial government departments. The emergency response plan must include the appropriate phone number for reporting releases in the area as well as phone numbers for local authorities (Police or Fire departments). • Ensure Contractor has on hand emergency phone numbers for the Harbour Authority and any fish processors or buyers or other operators to alert them to possible contamination of the harbour should a spill occur, so as to shut down or divert water intakes and sources. • All construction material used must be clean and non-toxic (free of fine sediment, fuel, oil, grease, and/or any contaminants). • All hazardous substances (any substance that is poisonous, exhibits flammability, corrosive, reactive or toxic) shall be stored and handled in a manner which is not harmful to human life and will not pollute the environment. • On-site crews must have emergency spill clean-up equipment, adequate for the activity involved, on-site. Spill equipment will include, as a minimum, at least one 250L (i.e., 55 gallon) overpak spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. • All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). • Machinery must be checked for leakage of lubricants or fuel. • Refueling must be done at least 30 m from any water body. • Toxic materials must be kept in a contained storage area, at least 30 m from any water body. • Machinery will not be allowed in the water, where required machines will operate from the shore or a barge.

Potential for introduction of invasive species into the marine environment that may affect fish, fish habitat, birds, and aquatic species *(Small, Reversible, Local, Short Term, Once)*	• To minimize the possibility of fish habitat contamination and the spread of aquatic invasive species, all construction equipment which will be immersed into the harbour, or has the possibility of coming into contact with such water during the course of the work, must be cleaned to ensure that they are free of marine growth and invasive species. Equipment may include boats, cranes, excavators, haul trucks, pumps, pipelines and other all miscellaneous tools and equipment previously used in a marine environment. Provide, upon request, a record of assurance (i.e., dates of cleaning, type of cleaning, location of last mobilization, type of cleaning material used, etc.) indicating that the mitigation measures, as per DFO guidelines for invasive species, has occurred. • Vessels should be compliant with all *Canada Shipping Act, 2001*, requirements for inspection, which includes certification of the vessel and adequate training and appropriate certificate of competency for the operators. • Ensure that all vessels will have procedures in place to ensure safeguards 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.
Potential reduction in air quality due to equipment/vehicle emissions *(Small, Reversible, Local, Short Term, Intermittent)*	• All equipment and vehicles are to be kept in good state of repair. • Idling of equipment and vehicles is to be limited to the extent necessary. • Ensure that there will not be any excessive dust produced from vehicles travelling on gravel surfaces that will have an impact on adjacent residences and businesses.
Potential noise disturbance affecting birds, fish and land use activities *(Small, Reversible, Local, Short Term, Intermittent)*	• All equipment and vehicles are to be kept in a good state of repairs. • Best practices to minimize noise including equipment muffling. • Work is to be carried out during hours agreed upon with the Departmental Representative to mitigate any disturbance to harbour users and residents.
Potential disturbance to fish and loss of fish habitat in the immediate project area (*Small, Reversible, Immediate, Short Term, Intermittent*)	• Time the work to prevent disruption to sensitive fish life stages by adhering to any appropriate fisheries timing windows. In general, project activities should be conducted outside the June 1 to September 30 window. • The contractor shall be monitoring fish death in the vicinity of the project site, and halt pile-driving work if any mammals are observed within at least a 1-km radius, or fish deaths are detected within the harbor. • In the event that unexpected fish spawning is discovered in the project area (ie. herring), work should be stopped and the PSPC Project Manager be contacted immediately for further direction. • Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows. • Where required, measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry. • A Request for Review will be submitted to DFO-FPP. The project will adhere to mitigation measures proposed by DFO-FPP in a letter of advice. If a paragraph 35(2)(b) *Fisheries Act* authorization is deemed required, measures proposed by DFO-SCH and accepted by DFO-FPP to offset serious harm to fish must be adhered to.
Potential increased predators from presence of food scraps that may affect fish and birds *(Small, Reversible, Local, Short Term, Intermittent)*	• Contractors shall ensure that food scraps and garbage are not left at the work site. • In the event food scraps and garbage are found on site, they will immediately be disposed of in a properly secured waste receptacle.
Potential disturbance to birds and terrestrial/aquatic species. *(Small, Reversible, Immediate, Short-term, Intermittent)*	• Sensitive coastal habitats (i.e., any area in which plant or animal life or their habitats are either rare or especially valuable) must not be accessed nor used as staging areas.

	• Ensure that concentrations of seabirds, waterfowl, or shorebirds not be approached when accessing the construction site, accessing wharves, or transporting supplies. • Ensure that wetlands or other sensitive coastal habitats (i.e., any area in which plant or animal life or their habitats are either rare or especially vulnerable) be avoided and not used as staging /storage areas. • If a nest is found during vegetation clearing activities, the nest site and neighbouring vegetation must be left undisturbed until nesting is completed. Construction activities must also be minimized in the immediate area until nesting is completed. • Lights are to be shielded and aimed downwards and in the opposite direction of bird nesting habitats. • All work to be conducted in accordance with the *Migratory Birds Convention Act,* which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operational phase of the project. Should construction be planned between April and August, a site visit and/or nest survey shall be conducted to ensure no impact to migratory birds or species at risk (e.g Barn Swallows). Should additional migratory birds or species at risk be identified on or near the project site, additional mitigation measures (e.g. timing or buffers) and federal/provincial coordination may be required. • The Canadian Wildlife Service (CWS) Birds and Oil Response Plan Guidance will be followed in the event of a petroleum spill in or near the water. • The contractor shall be monitoring marine mammal activities in the vicinity of the project site, and halt pile-driving work if any mammals are observed within at least a 1-km radius, or fish deaths are detected within the harbor. • All vessels and machinery should be well muffled, and maintained in proper working order and must be regularly checked for leakage of lubricants or fuel. • Construction waste or any miscellaneous unused materials must be recovered for either disposal in a designated facility or placed in storage. Under no circumstances will materials be deliberately thrown into the marine or terrestrial environment.
Potential disruption or loss of heritage/archaeological resources. *(Moderate, Irreversible, Immediate, Short-term, Once)*	• All construction personnel will be responsible for reporting any unusual materials unearthed during construction activities to the construction supervisor. Ensure care is taken to observe for evidence of archaeological deposits while work is being completed. • In those situations where the find is believed to be an archaeological resource, the construction supervisor will immediately stop work in the vicinity of the find and notify the site superintendent and the Departmental Representative. • If an archaeological resource is discovered, and archaeological curator at the New Brunswick Department of Tourism, Culture and Heritage (Provincial Archaeological Services) shall be contacted at: 506-453-2738. • Work will only resume in the vicinity of the discovery when authorized by the project manager and the construction supervisor, after approval has been granted by the New Brunswick Department of Tourism, Culture, and Heritage. • In the event of the discovery of human remains or evidence of a burial site, work will immediately cease and the nearest law enforcement agency will be contacted immediately by the project manager and/or the construction supervisor.

Potential interaction with commercial fishing activities and recreational harbour users due to restricted harbour use (*Small, Reversible, Immediate, Short Term, Intermittent*)	• Work is to be carried out during hours agreed upon with the Departmental Representative to mitigate any disturbance to harbour users and residents. The Harbour Authority will coordinate all construction/vessel activities within the harbour for the duration of the project so as to avoid unnecessary interference with fishers/aquaculture operations. Any and all stipulations of federal, provincial, or municipal authorities or their officers must be strictly followed.
Potential disruption to local land owners from construction activities and roadway users during transportation of materials and equipment to/from the project site. *(Small, Reversible, Local, Short Term, Intermittent)*	• Vehicles and equipment will be maintained in good working order. • All machinery must be well muffled at all times. Contractors should avoid any sharp or loud noises (e.g., not blow horns or whistles) and should maintain constant noise levels. If necessary, trucks may be required to avoid the use of "hammer" braking along specific sections of the route, while radio communication should replace whistle blasts and horns. • Excessive idling of motorized equipment/vehicles will not be permitted. • Neighbouring/affected landowners will be notified and consulted on the project and timelines. • The contractor shall obtain all necessary permits (e.g., Access Permit/Certificate of Setback, Highway Usage Permit, Special Permits) and adhere to applicable legislation (e.g., Community Planning Act, Highway Act (Transfer of Administration and Control), Provincial Motor Vehicle Act) for transportation over public roadways. • Seasonal weight restrictions will be strictly adhered to. • Accidental spillage that occurs during hauling will be promptly removed from the highway following appropriate safety procedures. • The NBDTI District Engineer will be contacted immediately in the event of a road, bridge, culvert or other transportation-related issue.
Worker health and safety *(Medium-term, other criteria not applicable)*	• Site Access must be restricted to authorized workers only. • Workers in contact with hazardous materials must be provided with and use appropriate personal protective equipment. • Proper safety procedures must be followed for the duration of the project as per applicable municipal, provincial and federal regulations. • Employees will be trained in health and safety protocols (i.e. safe work practices, emergency response). • Ensure that all trucks are road worthy, and that drivers observe all speed and weight limits on site. • Site access must be restricted to authorized visitors.

24. Description of any Significant Adverse Environmental Effects of the project (after applying mitigation):

Although the potential exists for short-term environmental effects during the Project phase, including potential disruption to fisheries and the destruction of fish habitat, the implementation of recommended mitigation measures should minimize impacts of the project on the environment.

25. Other Monitoring and Compliance Requirements (i.e. *Fisheries Act* or *Species at Risk Act)*: None

•

CONCLUSION

26. Conclusion on Significance of Adverse Environmental Effects:
The Federal Authorities have evaluated the project in accordance with Section 67 of *Canadian Environmental Assessment Act (CEAA), 2012*. On the basis of this evaluation, the departments have determined that the project is not likely to cause significant adverse environmental effects with mitigation and, therefore can proceed as proposed.

27. Prepared by: _____ **28. Date:** October 31, 2018

29. Name: Christian Brazeau

30. Title: Environmental Specialist

31. Approved by: _____ **32. Date:** Nov. 5/2018

33. Name: Patrick Mazerolle

34. Title: DFO-SCH Senior Project Engineer

DECISION

35. Decision Taken

- ☒ The project is not likely to cause significant adverse environmental effects, and DFO may exercise its power, duty or function.
- ☐ The project is likely to cause significant adverse environmental effects, and DFO has decided not to exercise its power, duty or function.
- ☐ The project is likely to cause significant adverse environmental effects, and DFO will ask the Governor in Council to determine if the significant adverse environmental effects are justified in the circumstances.

36. Approved by: _____ **37. Date:** _____

38. Name: Patrick Mazerolle

39. Title: DFO-SCH Senior Project Engineer

40. Transport Canada

Project Title:		
TC File No.:		
NPP File No.:		
Environmental Review Decision:		
Reviewed by:		
Signature:		**Date:**
Mailing Address:		
Tel:		
Fax:		
Email:		
Recommended by:		
Signature:		**Date:**
Approved By:		
Signature:		**Date:**

40. References:

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APPENDIX A

Site Location, Air Photograph
and Drawings

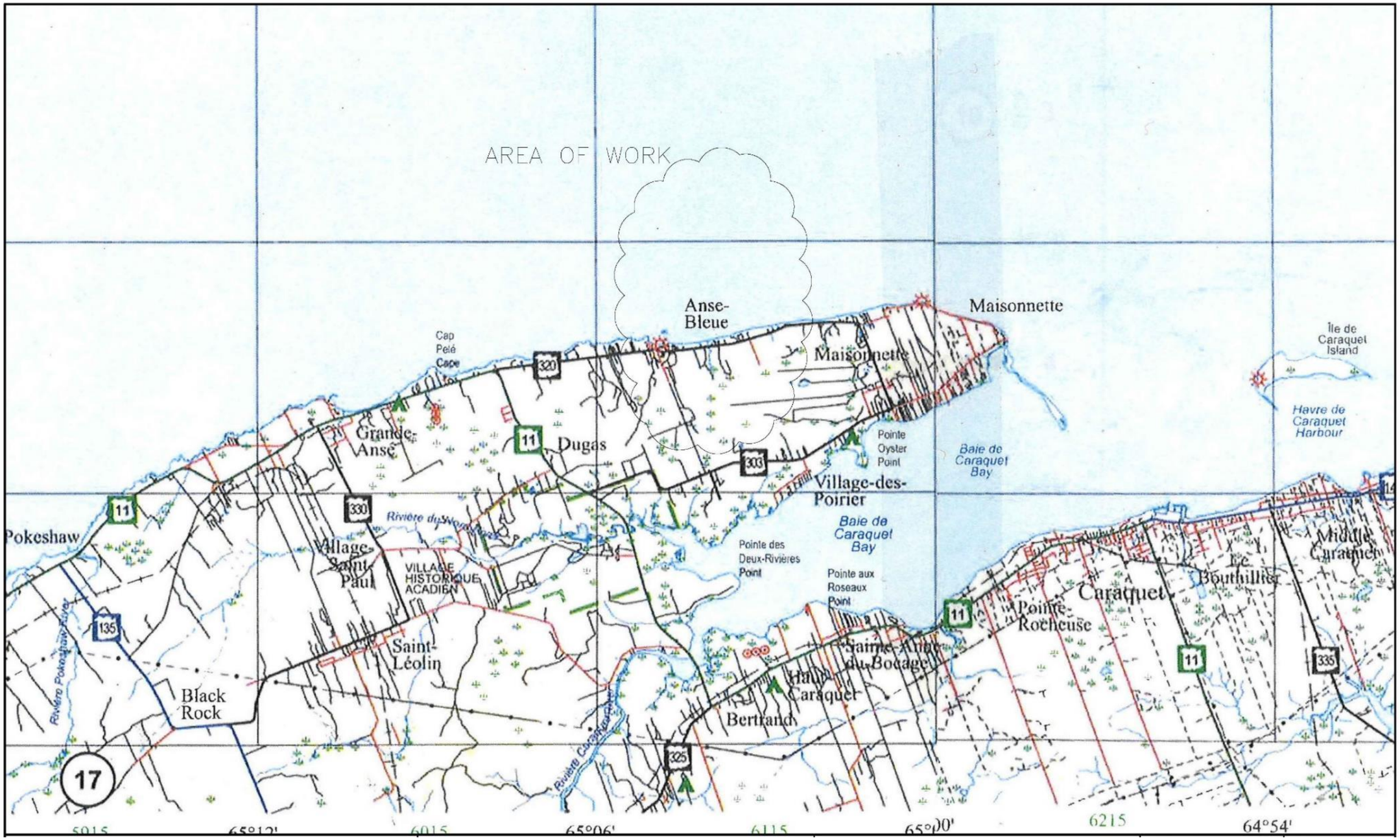

Figure 1. Project site location.

Figure 2. Aerial photo of Anse-Bleue DFO-SCH.

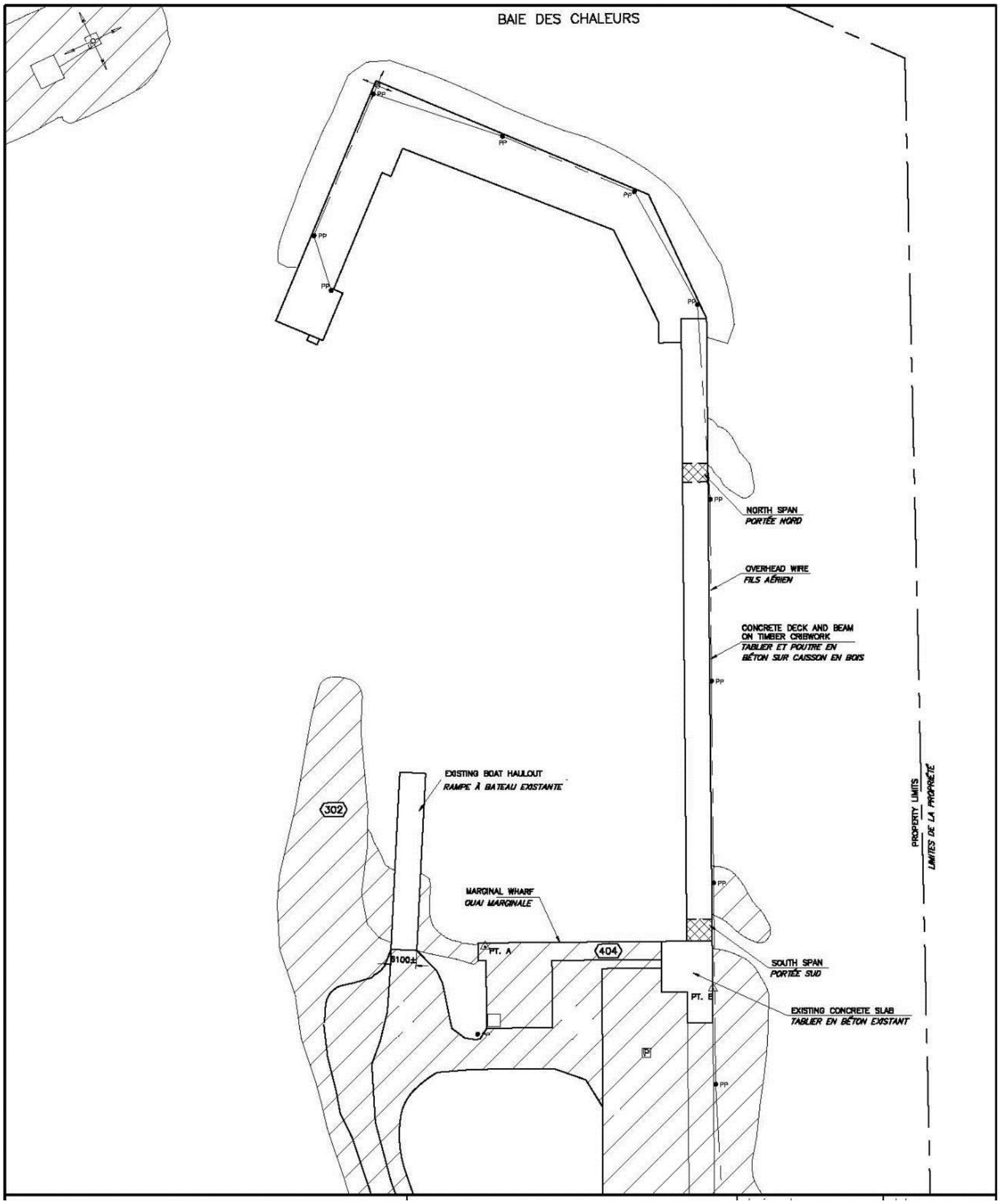

Figure 3. Existing Site Plan.

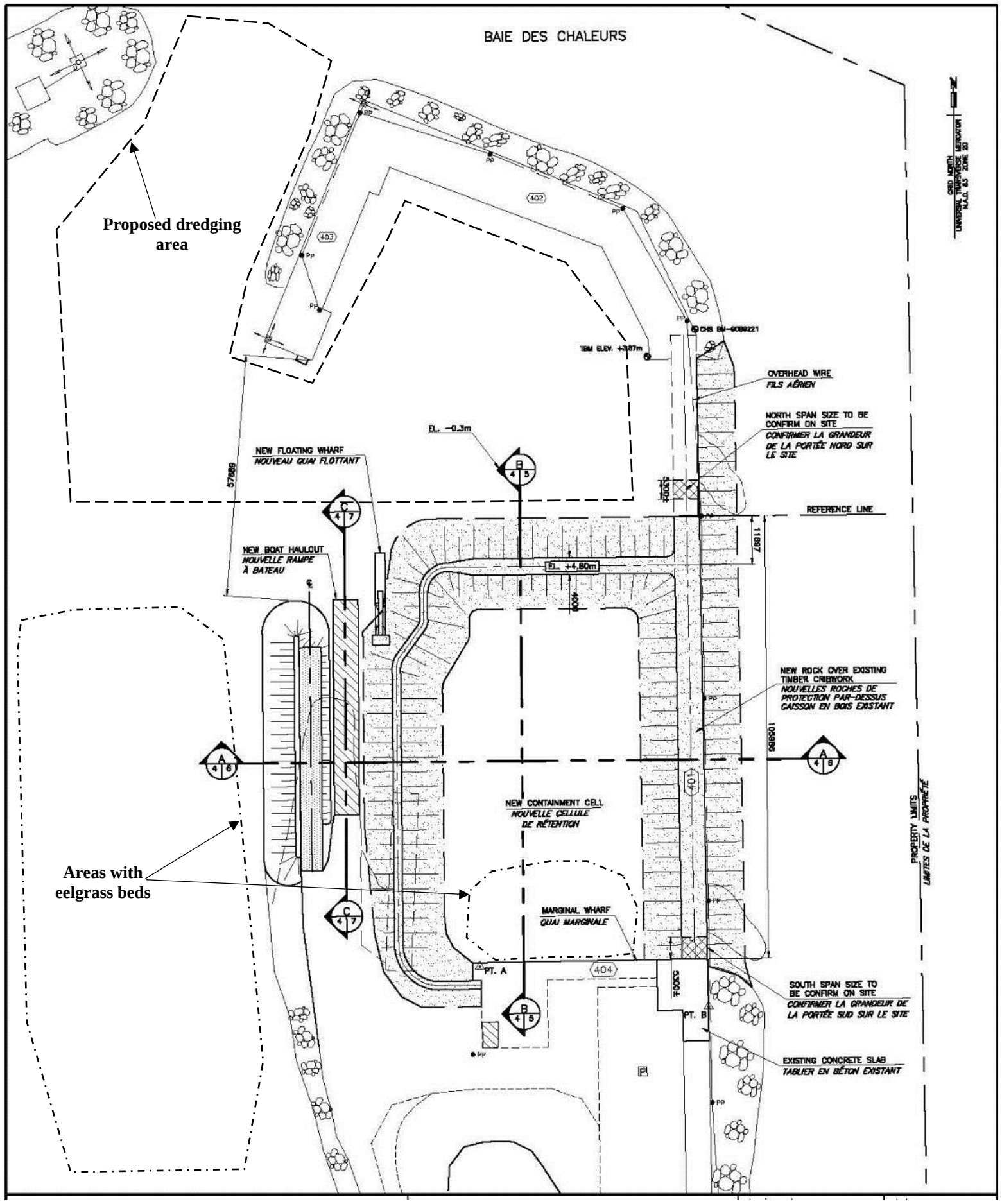

Figure 4. Proposed new work/structures.

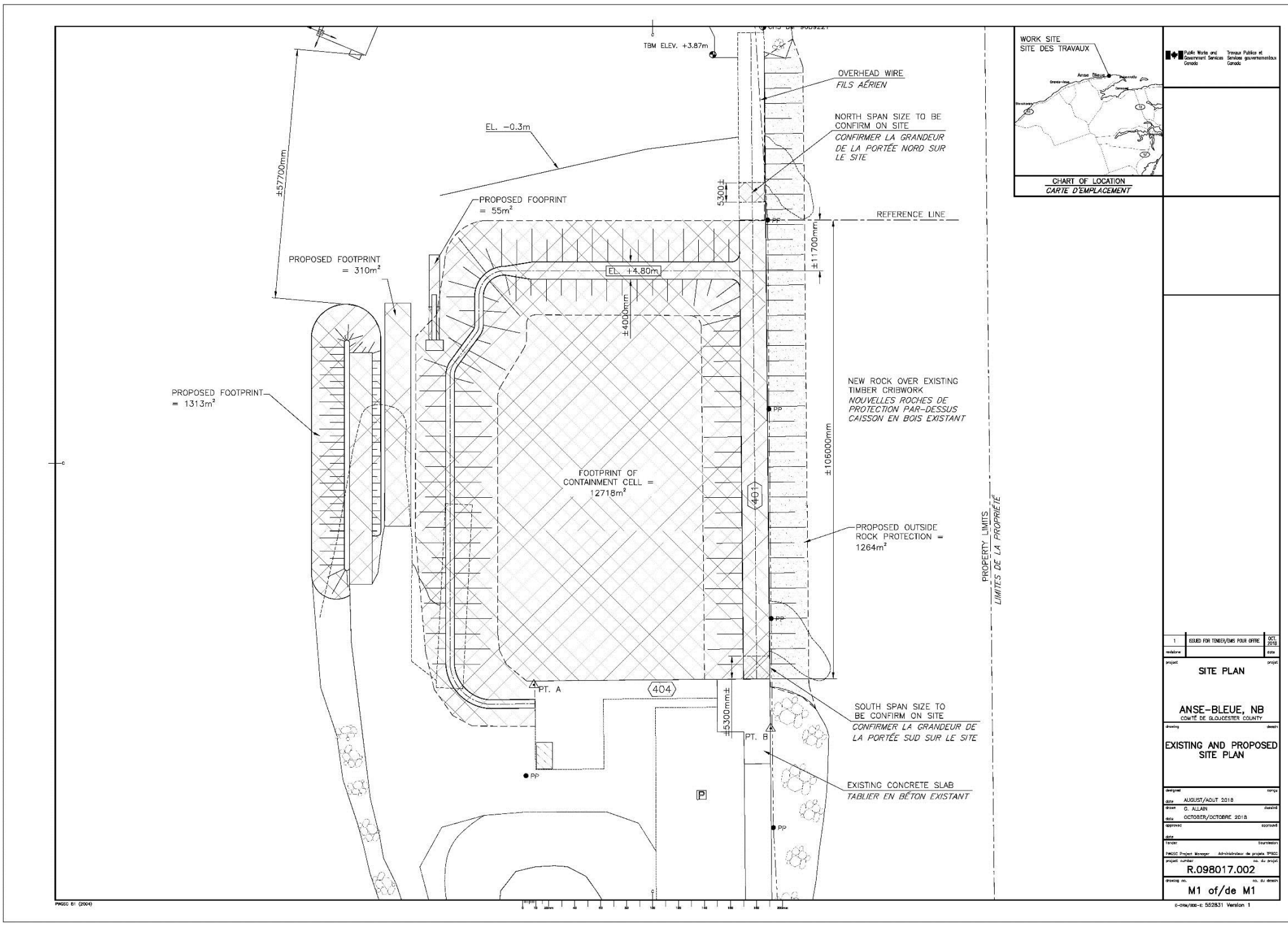

Figure 5. New proposed footprint

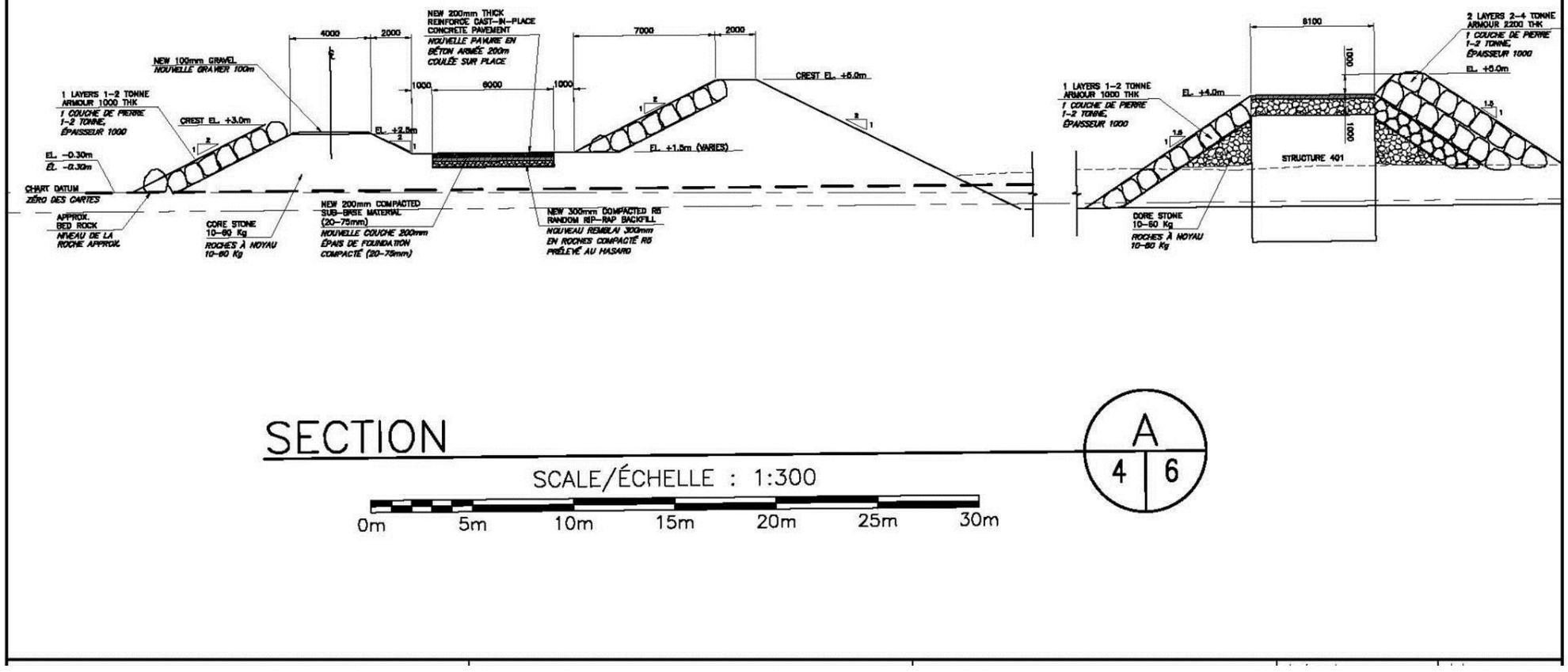

Figure 6. Proposed new work – cross-section

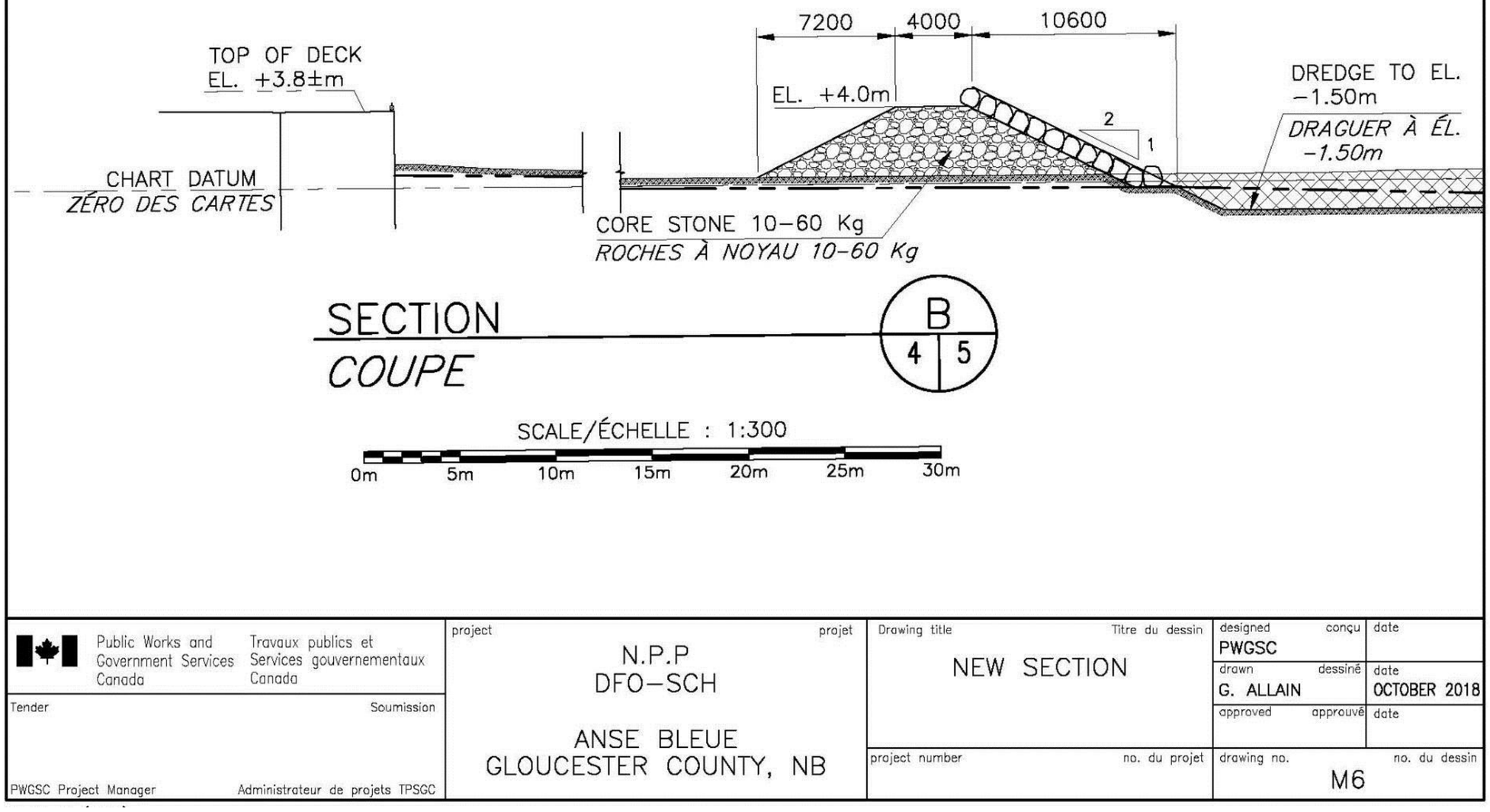

Figure 7. Proposed new work – cross-section

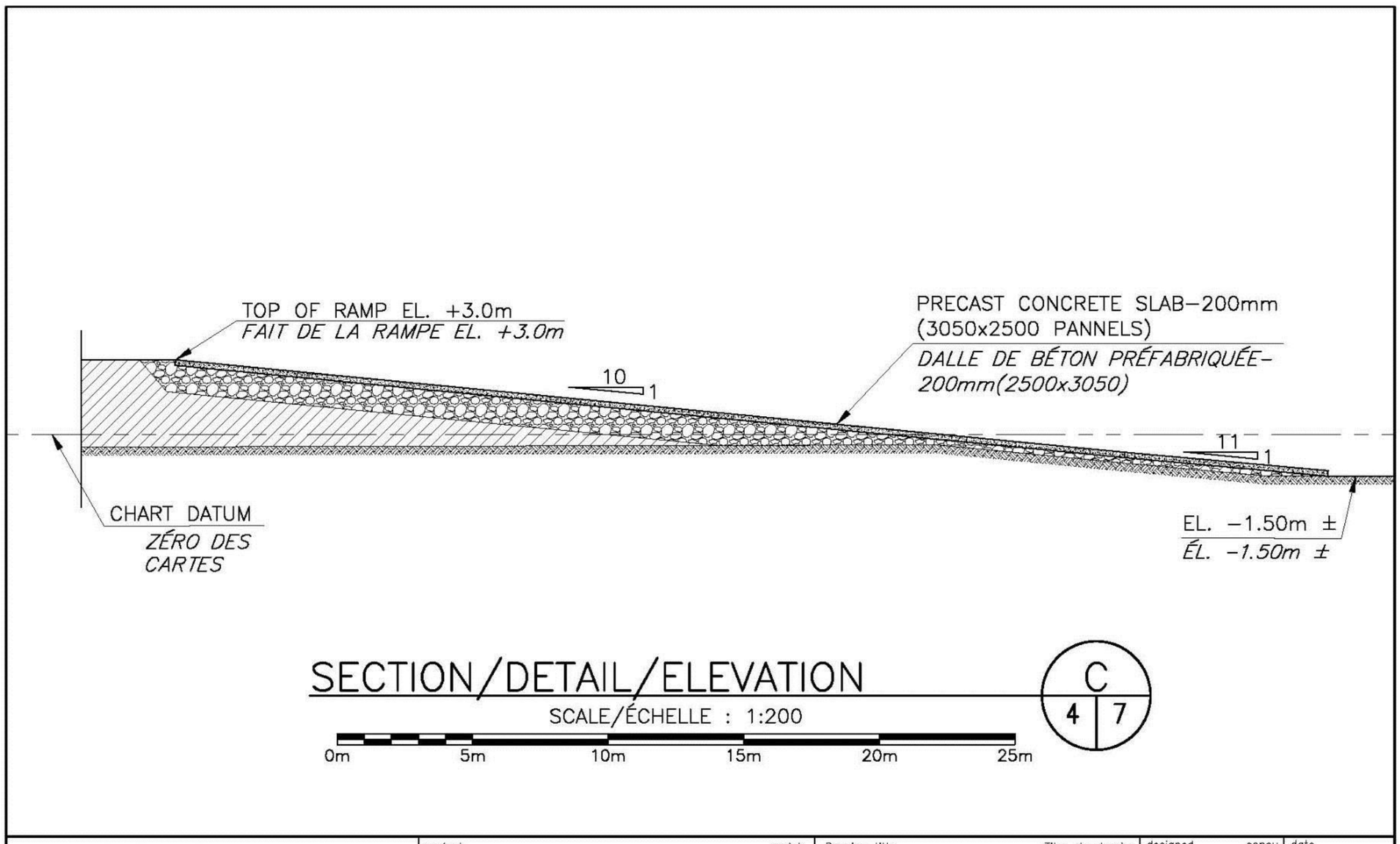

Figure 8. Proposed new work – cross-section

APPENDIX B

Site Photographs

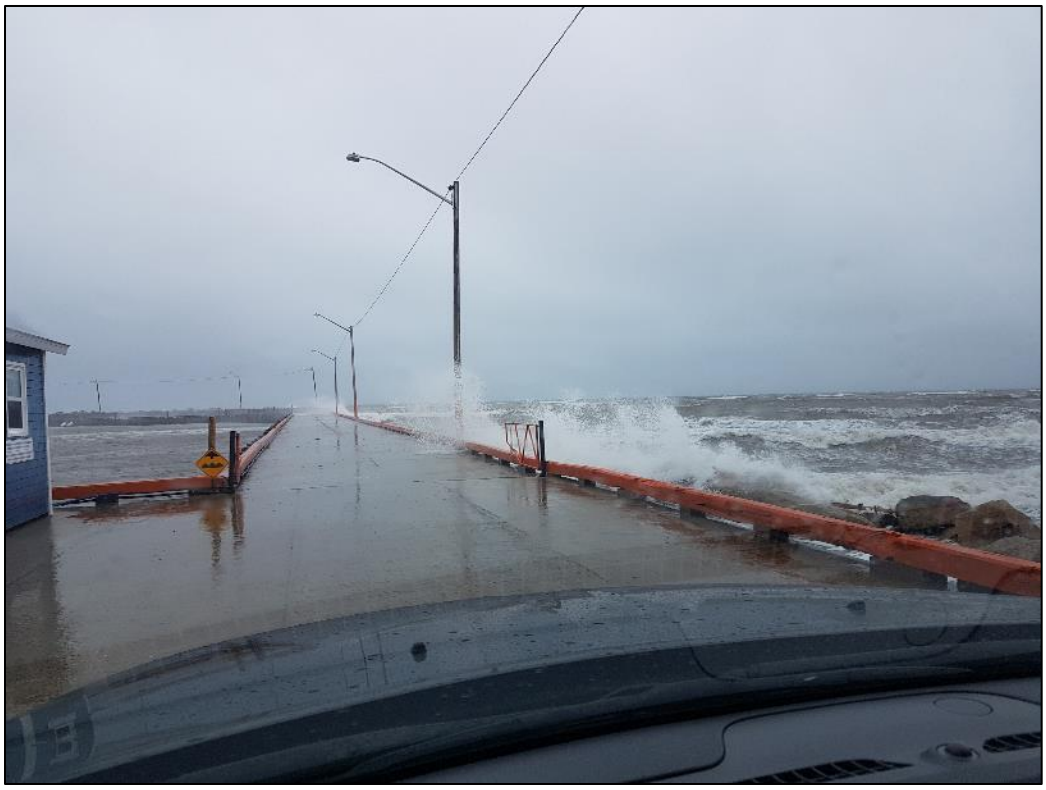

Photo 1. Structure 401 looking north.

Photo 2. Marginal wharf (structure 404) looking northwest.

Photo 3. Looking north at the wharf structures 402 and 403 and breakwater.

Photo 4. Looking north at breakwater and harbour channel.

Photo 5. Looking south from structure 302.

Photo 6. Looking north at breakwater.

Photo 7. Looking west at structure 302 and marginal wharf.

Photo 8. Looking north from wharf structure 401(inside basin).

Photo 9. Looking south at wharf structure 401 and the marginal wharf.

Photo 10. Looking south at marginal wharf (structure 404) and boat launch (structure 502).

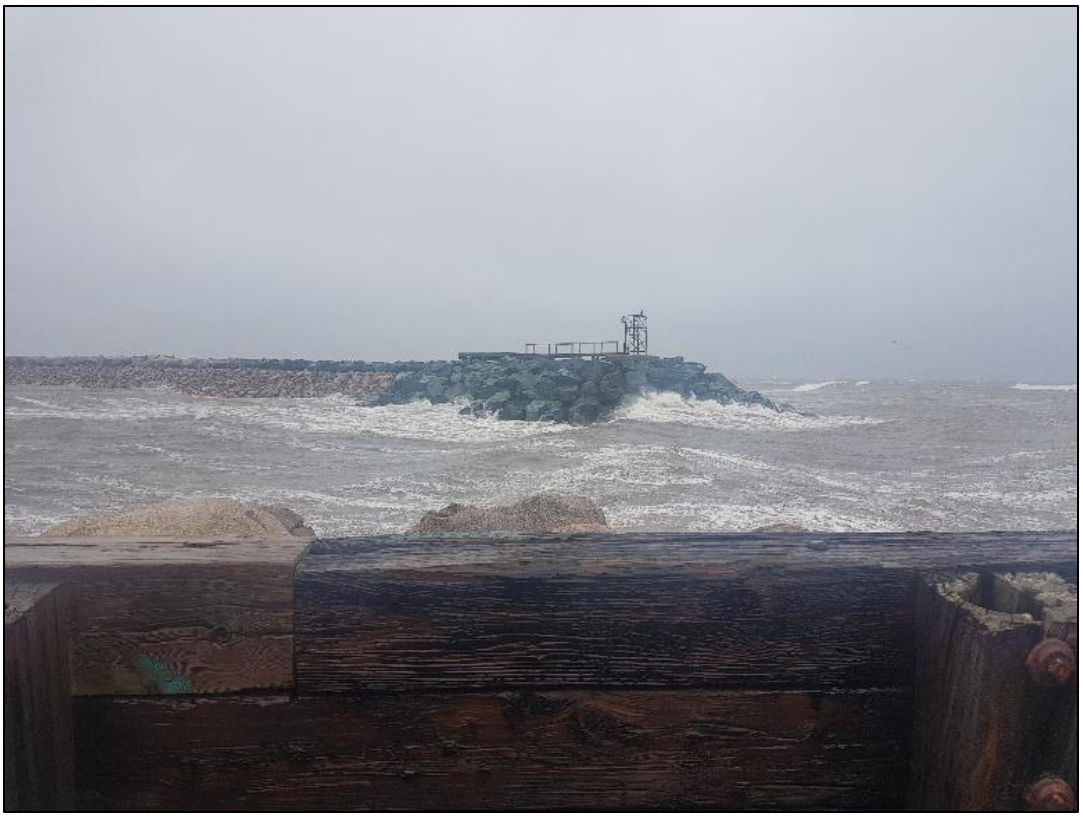

Photo 11. Looking west, from wharf 403, at the breakwater.

APPENDIX C

Marine Sediment Sampling Program and Underwater Benthic Habitat Survey
(Dillon 2018)