



**PORT of
vancouver**

Vancouver Fraser
Port Authority

**VANCOUVER FRASER PORT AUTHORITY
PROJECT AND ENVIRONMENTAL REVIEW
REPORT AND PERMIT**

PER No.:	20-208
Tenant:	Strathcona Connected Coast Network Corporation
Project:	Submarine Fibre Optic Telecommunication Cables
Project Location:	Burrard Inlet
Vancouver Fraser Port Authority SID No.:	VAN052; VAN057; VAN138; WVD035; WVD056
Land Use Designation:	Port Water and Commercial
Applicant/Permit Holder:	Strathcona Connected Coast Network Corporation
Category of Review:	B
Date of Approval:	March 31, 2022
Date of Expiry:	March 31, 2024

1 INTRODUCTION

The Vancouver Fraser Port Authority (the “Port Authority”), a federal Port Authority, manages lands under the purview of the *Canada Marine Act*, which imparts responsibilities for environmental protection. The Port Authority accordingly conducts project and environmental reviews of works and activities undertaken on these lands to ensure that the works and activities will not likely cause significant adverse environmental effects. This project and environmental review report and project permit (the “Permit”) documents the Port Authority’s project and environmental review of PER No. 20-208: Submarine Fibre Optic Telecommunication Cables (the “Project”) proposed by Baylink Networks Inc. working on behalf of Strathcona Connected Coast Network Corporation (the “Applicant”).

This project and environmental review was carried out to address the Port Authority’s responsibilities under the *Canada Marine Act*, and to meet the requirements of the *Impact Assessment Act*, as applicable. The proposed Project is not considered a “designated project” under the *Impact Assessment Act* and an impact assessment as described in the *Impact Assessment Act* is not required. However, Port Authority authorization is required for the proposed Project to proceed and in such circumstances, where applicable, Section 82 of the *Impact Assessment Act* requires federal authorities to assure themselves that projects will not likely cause significant adverse environmental effects. This review provides that assurance. In addition, the Port Authority considers other interests, impacts and mitigations through the project and environmental review.

The project and environmental review considered the application along with supporting studies, assessments and consultations carried out or commissioned by the Applicant, as well as other information provided by the Applicant. In addition, this project and environmental review considered other information available to the Port Authority and other consultation carried out by the Port Authority. A full list of information sources germane to the review is provided in the following pages of this report.

This Permit is the authorizing document allowing the Applicant to proceed with the Project subject to the listed project and environmental conditions.

2 PROJECT DESCRIPTION

Baylink Networks Inc., on behalf of Strathcona Connected Coast Network Corporation, proposes to install two submarine fibre optic cables in Burrard Inlet. The proposal is part of the “Connected Coast” project, which aims to bring high-speed communications infrastructure to remote coastal communities throughout BC.

A shore landing location at the Vancouver Convention Centre West would allow for connection to a major internet exchange point at 1050 West Pender Street, Vancouver. The cables would travel from the shore landing location, along the seabed in Burrard Inlet, through First Narrows and out towards Vancouver Island and the Sunshine Coast. The approximate lengths of the cables intended to be laid within federal waters managed by the Vancouver Fraser Port Authority are 4,322 metres and 4,379 metres; this includes the majority of the proposed cable route through Burrard Inlet up to approximately 625 metres west of the Lions Gate Bridge, as illustrated in the attached plan: PER No. 20-208-A. The cables would be armoured with an iron split pipe through the First Narrows, and at the shore landing location, for additional protection, and would be laid directly on the seabed.

The proposed shore landing location at the Vancouver Convention Centre West is within the City of Vancouver's jurisdiction. The cables would also travel through the Port Authority's navigational jurisdiction in English Bay, which extends west to Point Atkinson at Lighthouse Park.

In this project permit, the Project means the physical activities authorized by the Port Authority to be carried out pursuant to **PER No. 20-208**, as described below.

2.1 Proposed Works

The proposed Project works include:

- Installation of two fibre optic submarine cables measuring approximately 13.5 millimetres wide by 6.3 millimetres high and 4,322 metres and 4,379 metres in length.
- Installation of armoured split pipe around the cables for approximately 364 metres and 366 metres sections through First Narrows.

The proposed cable design is shown below in Figure 1, it includes a central optical fibre flanked by two steel rods, surrounded by a protective, non-toxic, outer jacket of high-density polyethylene (HDPE).

The cables would be installed by a cable-laying vessel and spaced approximately 50 metres apart on the surface of the seabed. Armouring, where proposed, would be placed over the cable as it is lowered to the seabed. All staging would take place on the cable-laying vessel.

The cables are proposed to be installed separately, with the first cable planned for installation during Spring 2022 and the second cable planned for installation in late 2022 or early 2023. Cable installation from the shore landing location to the First Narrows is anticipated to take approximately five hours per cable. Cable installation from First Narrows through the remainder of the Port Authority's navigational jurisdiction is anticipated to take an additional three hours per cable. Works may take place outside of regular construction hours in order to reduce impacts to shipping; the schedule will be determined closer to construction.

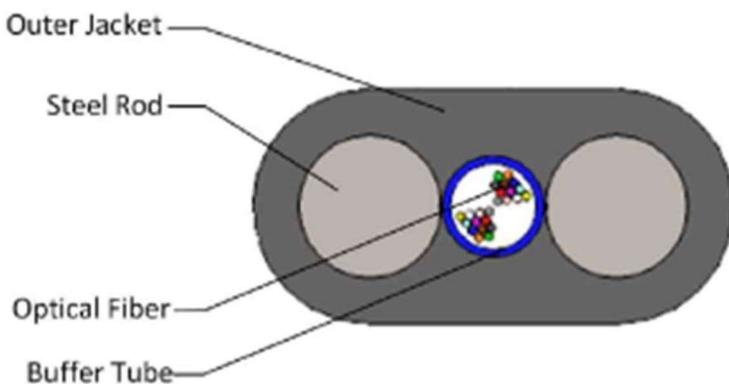


Figure 1. Cable cross section

2.2 Proposed Operations

Once installed and operational, data transmission through the cables would be monitored remotely. The fibre optic cables would be passive and transmit only light. The cables would not require power to transmit data. Due to their density (3.1 g/cm³) and flat profile, it is not anticipated that the cables would move around on the seabed.

Maintenance and physical inspection of the cables is not anticipated to be required. However, should a break or fault occur with one or both of the cables, the existing cable would be cut, and a new section of cable would be spliced onto it and re-laid on the seabed. Notification and provision of an incident specific repair plan to the Port Authority would take place prior to any works being carried out. The damaged cable would also be recovered during the repair process, and removed from the marine environment. For more description of this see Section 3.1 below.

3 VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS

The following Port Authority departments have undertaken and completed a review of these works and confirm that the proposal meets their requirements, subject to the listed project and environmental conditions.

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|---|---|---|
| <input checked="" type="checkbox"/> PER Planning | <input checked="" type="checkbox"/> PER Environment | <input checked="" type="checkbox"/> Engineering |
| <input checked="" type="checkbox"/> Marine Operations | <input checked="" type="checkbox"/> Public Engagement | <input checked="" type="checkbox"/> Indigenous Consultation |

3.1 Cable Routing

The proposed routing for the section of the cables within federal waters managed by the Vancouver Fraser Port Authority has been designed to minimize disruption to port users. The cables are proposed to follow the shoreline around Stanley Park, outside of the deep-sea navigation channel through the First Narrows, which is identified as Traffic Control Zone 1.

The Port Authority understands that the proposed routing within the Port Authority's navigational jurisdiction would align with an existing TELUS cable, and that the cables would travel through the navigation channel for approximately 7km before entering open water. The TELUS cable is understood to have been installed in the early 1980s, with no known anchor snags to date. The Port Authority has provided comments to Transport Canada in regard to navigation concerns with the proposed routing of the cables through the navigation channel; these concerns are discussed in Section 3.2 below.

Condition 6 requires that the Applicant carry out the project in accordance with the applicable standards and specifications set out in Section 2 and the information sources listed in Section 7, including the attached plans and drawings numbered **PER No. 20-208-A to D**.

Conditions 14, 31 and 35 require that the Applicant provide record drawings, including a Project site plan in UTM NAD83 that clearly identifies the location of the cables, in both AutoCAD and PDF format in accordance with the Port Authority's Record Drawing Standards upon completion of the Project.

Conditions 32 and 36 require that the Applicant contact the Database Information Office of the Canadian Hydrographic Service (CHS) to arrange for the relevant CHS charts to be updated upon completion of the Project.

Sections 4 and 6 of the report discuss the consultation and engagement that has been carried out with stakeholders.

3.2 Cable Burial Considerations and Maintenance and Repair

The cables are proposed to be laid directly on the surface of the seabed within the federal waters managed by the Port Authority. As the proposed cable route is outside the navigation channel and anchorage areas, surface laying, as opposed to cable burial, is considered acceptable. However, there is still a risk of the cables being damaged from shipping activities, as the proposed cable route travels through the busy inner harbour of the Port of Vancouver. In light of this, the Applicant has been advised of the risks with installing utilities in this area.

The cables are also proposed to be surface laid through the Port Authority's navigational jurisdiction in English Bay, where the cables would enter into the navigation channel west of the First Narrows. The Port Authority prefers the burial of cables within the navigation channel in order to reduce risks to navigation from emergency anchor drops or anchor dragging. However, we understand that, in this instance, cable burial is not practical and that surface laying of the cables is being proposed. In support of this approach, the Applicant advises as follows:

- Anchor penetration from large vessels can be up to 3 metres deep. There are no vessels in Canada with ploughs that would be able to cut a trench for cable burial at 3 metres deep or more.
- The cables are designed to break at a force of 4,400 kg (44 kN); the anchors of large vessels often have a holding strength of around 11,000 kg (110kN). Therefore, the anchors of large vessels would easily break the cables, if sufficient force was applied, rather than become entangled with them.
- The cables are designed with spring temper steel strength members to prevent cable kinking during deployment and have no wire wraps that could potentially entangle with an anchor.

The Port Authority also understands that the BC Coast Pilots have advised that they are not aware of large ship anchors snagging telecommunication cables along the BC coast. However, the Port Authority remains concerned that an emergency anchor drop from a passing deep-sea vessel could damage the cables, and note that emergency anchor drops do take place from time to time in the proposed location of the cables. A recent example of an emergency anchor drop in the proposed location of the cables took place on March 3, 2022, when a loaded grain bulker encountered a mechanical issue while transiting First Narrows, which required the ship to drop anchor close to Stanley Park, to the west of Siwash Rock.

Therefore, in the event of one, or both, of the proposed cables being damaged and requiring maintenance or repair, the Port Authority requires a detailed maintenance and repair plan to be in place prior to construction commencing, and an incident specific plan to be submitted prior to any maintenance or repair works taking place. The maintenance and repair plan should include the proposed methodology for repair and removal of the cable(s), procedures for contacting the port authority and relevant marine users, and an outline of what would be provided as part of an incident specific plan. The maintenance and repair plan would also be attached to the licence agreement for future reference.

Condition 18 requires that the Applicant submit a detailed maintenance and repair plan to the Port Authority's satisfaction.

Condition 33 requires that the Applicant undertake any required maintenance or repair in accordance with the approved maintenance and repair plan, or any updates approved by the Port Authority, and that any required revisions to the cable alignment shall be approved in advance by the Port Authority.

The Port Authority understands that redundancy has been considered in the design of the cable network to ensure minimum disruption for users should a break or fault occur in one, or both, of the cables. The cables would be routed separately to Vancouver Island and the Sunshine Coast from Vancouver, but would converge at Campbell River to create a redundancy loop. Therefore, should one cable be broken, fibre optic traffic would be re-routed to the other. Should both cables break, it is understood that significant disruption to users would occur, but that services could be maintained through utilizing redundant routes and partnership agreements. In light of this, the port authority requires a communications plan to be in place prior to construction commencing that includes draft messaging, approved by the Port Authority, for communications to the public and/or users in the event of service outages caused by damage to the cable(s) within the Port of Vancouver. The communications plan would also be attached to the licence agreement for future reference.

Condition 15 requires that the Applicant provide a communication plan that includes messaging for communication with the public and/or users in the event of damage to the cables. The plan is required to acknowledge that the owner/operator was aware of the risks to the cables from shipping activities, such as emergency anchor drops, when the route through the Port of Vancouver was determined.

The Port Authority has contacted Transport Canada to discuss the review of the proposed procedures for maintenance and repair within the Port Authority's navigational jurisdiction in English Bay, and communications with network users.

3.3 Marine Staging and Scheduling

The cable to Vancouver Island is proposed to be installed in Spring 2022, and the cable to the Sunshine Coast is proposed to be installed in late 2022 or early 2023. Specific dates and times for the installation of the cables are yet to be determined and will require coordination with the Port Authority and other marine stakeholders, including the BC Coast Pilots and Harbour Air Tower, as discussed in section 6 of the report. The following conditions are included in relation to these considerations.

Condition 19 requires that the Applicant submit a marine construction and staging plan to the Port Authority's satisfaction, 30 business days prior to any vessel-related activities. This plan must include the proposed dates and hours of operations.

Condition 20 requires that the Applicant submit a marine communications plan, to the Port Authority's satisfaction, 30 business days prior to any vessel-related activities. The plan must include details regarding communicating updates and impacts to marine users.

Condition 21 requires that the Applicant provide details of the proposed marine construction to the BC Coast Pilots, 30 business days prior to any vessel-related activities.

Condition 22 requires that the Applicant provide details of the proposed marine construction to the Harbour Air Tower, 30 business days prior to any vessel-related activities.

3.4 Construction Outside of Regular Work Hours

The cables would be installed by a cable-laying vessel, which would travel from the shore landing location to the First Narrows over a period of five hours per cable. The vessel would stay outside of the deep-sea navigation channel until west of First Narrows, where the cable route enters into the navigation channel. The presence of a slow moving vessel through Burrard Inlet may require that other vessels move around the cable-laying vessel and potentially enter the navigation channel, or the Harbour Air landing and takeoff area sea planes landing area, in order to pass by the cable-laying vessel. Therefore, in order to mitigate against potential impacts to vessel navigation during the installation periods, it is proposed that works take place during periods of low vessel activity, which may include periods outside of the Port Authority's regular construction hours of Monday to Saturday 7:00 a.m. to 8:00 p.m., excluding holidays.

In consideration of the cable-laying works potentially taking place outside of regular construction hours, impacts in relation to noise and light on sensitive areas have been reviewed. The Port Authority understands that the proposed works are not anticipated to generate significant noise or light impacts, and that vessels will travel at less than 4 kilometres/hour (2.2 knots) during construction operations to minimize engine noise and vessel wake. The works are proposed to take place in close proximity to Stanley Park (within 125 to 250 metres), which is considered to be a noise sensitive area. The park is closed daily between 10:00 p.m. and 6:00 a.m.; therefore, nighttime works would not impact park users. The closest residential areas to the works are 500 to 1,000 metres away. In respect to lighting, the Port Authority will also require that any task lighting used on the cable-laying vessel during hours of darkness is directed downwards onto the Project site to mitigate against any potential impacts from light spill to residents. In light of the above, and the relatively short installation time of approximately five hours per cable from the shore landing location to the First Narrows, it is unlikely that noise or light sensitive areas would be affected by the construction works, should they take place outside of regular Port Authority hours.

Condition 23 requires that construction and any physical activities related to the Project shall be conducted in accordance with the hours approved in the marine construction and staging plan, and that no modifications to

these hours shall occur without prior approval from the Port Authority and BC Coast Pilots, and notification to the Harbour Air Tower.

Condition 29 requires that during any vessel-related activities, the Applicant shall ensure that lights exhibited will not interfere with marine traffic transiting the area, and that any task lighting is directed downward to the Project area to limit light spill.

3.5 Environmental Considerations

All works within the Port Authority jurisdiction would be carried out in-water. The fibre optic cables are proposed to be surface laid over sand and gravel on the seabed. The design and materials of the cable are for subsea applications and are made from inert, non-toxic materials which will not leach into the environment over time.

The Project application identifies specific mitigation measures to be implemented during cable installation, including undertaking environmental monitoring by a qualified professional, implementing a spill prevention plan, and developing a marine mammal observation program during cable laying activities. In addition, the Applicant submitted a Request for Review to Fisheries and Oceans Canada (DFO) for sections of the Project. DFO provided advice for specific sections of the Project to reduce potential impacts to fish and fish habitat, specifically cable landing areas.

Given the cables low risk of Harmful Alteration, Disruption and Destruction (HADD) to fish and fish habitat, DFO provided no additional mitigation measures or timing restrictions related to the portion of the project within the port authority jurisdiction. The Port Authority, in determining its Project-specific conditions, considered this information.

4 INDIGENOUS CONSULTATION

The Port Authority has reviewed the proposed works and determined that the Project may have the potential to adversely impact Aboriginal or Treaty rights.

All reasonable efforts were made to consult with the following Indigenous groups:

- a) Cowichan Tribes
- b) Halalt First Nation
- c) Lyackson First Nation
- d) Musqueam Indian Band
- e) Penelakut Tribe
- f) S'ólhTéméxw Stewardship Alliance:
 - o Aitchelitz First Nation
 - o Chawathil First Nation
 - o Cheam First Nation
 - o Kwaw'Kwaw'Apilt First Nation
 - o Scowlitz First Nation
 - o Shxwha:y Village
 - o Skawahlook First Nation
 - o Skwah First Nation
 - o Skowkale First Nation
 - o Soowahlie First Nation
 - o Squiala First Nation
 - o Sumas First Nation
 - o Tzeachten First Nation
 - o Yakweakwoose First Nation
 - o Yale First Nation
- g) Seabird Island Band
- h) Shxw'ow'hamel First Nation
- i) Squamish Nation
- j) Stz'uminus First Nation

- k) Tsleil-Waututh Nation
- l) Ts'uubaa-asatx Nation

The following consultation activities were conducted:

- The Port Authority and Transport Canada worked together to coordinate Indigenous consultation for the proposed project
- A referral package was sent to Indigenous groups by Transport Canada on February 3, 2022, on behalf of both the Port Authority and Transport Canada. This package contained:
 - A referral letter
 - A link to the Applicant's project website (<https://connectedcoast.ca/>)
 - A link to a Sharepoint folder containing:
 - Maps outlining the scope of work within the Port Authority's jurisdiction and the scope of work within Transport Canada's jurisdiction
 - Application materials (e.g., application memo and design drawings)
- Where comments were received, the Port Authority prepared a coordinated response with Transport Canada
- Meetings were held with Indigenous groups, as requested

Below is a table summarizing comments received by the Port Authority and how they were considered as part of the project and environmental review.

Issue	Considerations	Mitigations and Permit Conditions
Concerns with respect to the potential for the project to impact kelp beds near Stanley Park	The Project application identified specific mitigation measures to be implemented during cable installation, including undertaking environmental monitoring by a qualified professional and placing the cable on the outer edge of kelp beds. In addition, the applicant submitted a Request for Review to Fisheries and Oceans Canada (DFO), and DFO provided no additional mitigation measures or timing restrictions related to the portion of the project within the port authority jurisdiction.	Condition 28 has been included to require environmental monitoring by a qualified professional during cable laying activities.
Concerns with respect to potential impacts to fish and fish habitat due to works occurring outside the least-risk window for Burrard Inlet	The Applicant submitted a Request for Review to Fisheries and Oceans Canada (DFO) for sections of the Project, and DFO provided no additional mitigation measures or timing restrictions related to the portion of the project within the port authority jurisdiction.	Condition 28 has been included to require environmental monitoring by a qualified professional during cable laying activities.
Concerns with respect to potential impacts to marine mammals	Interim Orders, made pursuant to the <i>Canada Shipping Act</i> , are in place that provide protections to Southern Resident killer whales. A 400m approach distance in Southern Resident critical habitat is in effect year round.	No further mitigations required.

Issue	Considerations	Mitigations and Permit Conditions
Concerns with respect to potential impacts to undisturbed archaeological resources.	No excavation or ground disturbing works are proposed within the port authority's jurisdiction.	No further mitigations required.

Based on the record of consultation, the Port Authority is of the view that the duty to consult has been met.

5 EXISTING POLICIES OR GUIDELINES

The Project area is designated as “Port Water” and “Commercial” in the Port Authority Land Use Plan (2020). The installation of utilities is permitted in all designations where compatible with primary uses on site. The installation of the fibre optic cables is considered compatible with the primary Port Water uses of transportation, navigation and commercial anchorages, and the primary Commercial uses of marine support services, warehousing and distribution centres, marinas, float plan terminals, tourism-related businesses, and boat moorage. The Project is therefore compliant with the Land Use Plan.

6 STAKEHOLDER CONSULTATION

6.1 Municipal Consultation

The proposed Project was assessed by the Port Authority to have potential impacts to municipal interests. A notification letter was sent to the City of Vancouver on January 10, 2022, notifying them of the proposed Project. No comments were received from the City of Vancouver.

6.2 Adjacent Tenant Consultation

The proposed Project was assessed by the Port Authority to have potential impacts to adjacent tenant interests. A consultation letter was sent to the following tenants who hold leases or licences near to the alignment on January 10, 2022 (or as noted), notifying them of the proposed Project:

- BC Transportation Financing Authority (BCTFA)
- Parkland Refining (B.C.) Ltd.
- B.C. Pavilion Corporation
- Vancouver Board of Parks and Recreation
- Greater Vancouver Sewerage & Drainage District (GVS&DD)
- Vancouver Aquarium Ltd.
- Tsleil-Waututh Nation
- Telus Communications Inc.
- Greater Vancouver Water District (GVWD) (forwarded by GVS&DD February 1, 2022)

The BCTFA responded to advise that previous comments had been addressed by the Applicant during the design process and that an as-built drawing set had been requested upon the completion of the works. The BCTFA advised that it had no further comments and that its real estate team would work with the Port Authority regarding any formal agreements required.

The Vancouver Board of Parks and Recreation requested details of any environmental assessments that had been completed for the project. A copy of the application material was provided for review; no further comments were received.

The GVS&DD Operations team reviewed the project in regard to the proximity of the cables to the West End Interceptor – Brockton Point Combined Overflow. As the cables are proposed to have a horizontal clearance of 12 metres from the infrastructure, no conflict with the sewer was identified. However, a liability statement for damage and a request to review any changes to the design was included in the response and forwarded to the Applicant for information.

The GVS&DD Operations team also forwarded the Port Authority's correspondence to the GVWD (Metro Vancouver's water department) for comment, noting that there are GVWD water mains in proximity to the proposed work, east of the First Narrows. The GVWD advised that its real estate team would work with the Port Authority regarding any formal agreements required.

Tsleil-Waututh Nation responded to advise that it had no comments as a licensee, but may provide comments separately during the Indigenous consultation process.

No comments were received from the other stakeholders.

6.3 Additional Stakeholder Consultation

The proposed Project was assessed by the Port Authority to have potential impacts to the following stakeholders. A consultation letter was sent to the following marine users and agencies on January 10, 2022 (or as noted), notifying them of the proposed Project:

- Pacific Pilotage Authority
- BC Coast Pilots
- Harbour Air Tower
- Harbour Air Dispatch
- Transport Canada
- Vancouver Harbour Flight Centre (sent January 20, 2022)
- Harbour Air (sent February 3, 2022)

Harbour Air Tower responded to advise that they require approximately one week of notice prior to the beginning of each cable laying operation in order to brief staff and to advise the seaplane operators of the works. This will help to ensure safe operations while the cable-laying vessel moves through the Harbour Air landing and takeoff area. Should this Project be approved, the Port Authority will require under conditions 20 and 22 that the Applicant provide details of the construction schedule or any modifications to the schedule to the Harbour Air Tower, at least 5 business days in advance of the works. Condition 22 also requires that the Applicant include a plan for coordinating with the Harbour Air Tower prior to working within, or in close proximity to the sea planes landing area.

The Port Authority has worked closely with Transport Canada through the course of this review, including in the alignment of the project description, joint posting to the Canadian Impact Assessment Registry and joint Indigenous consultation.

No comments were received from the other stakeholders.

6.4 Public Engagement

To meet requirements of section 86 of the *Impact Assessment Act*, the Port Authority posted a description of the Project and notice of public participation to the Canadian Impact Assessment Registry to provide the public 30 calendar days to comment on the project and provide community knowledge.

The comment period ran from January 19 to February 17, 2022. At the close of the 30-calendar day public comment period, no comments were received.

The proposed Project was assessed by the Port Authority to have minimal or no potential impacts to community interests in the surrounding area either during construction or once the project is completed. Therefore no construction notification was required.

7 INFORMATION SOURCES

The Port Authority has relied upon the following sources of information in its review of the Project.

- Application form and materials submitted by the Applicant on behalf of the tenant on January 4, 2022
- All Project correspondence from August 27, 2021 to March 30, 2022
- All plans and drawings labelled PER No.20-208-A to D
- Shapefiles received December 21, 2021 showing proposed cable alignment

8 PROJECT AND ENVIRONMENTAL REVIEW DECISION

In completing the project and environmental review, the Port Authority has reviewed and taken into account relevant information available on the proposed project and has considered any adverse impact that the Project may have on the rights of Indigenous peoples, Indigenous knowledge, community knowledge, comments received from the public, and measures that would mitigate any significant adverse environmental effects of the Project. We conclude that with the implementation of proposed mitigation measures and conditions described in the project and environmental conditions section below, the Project is not likely to cause significant adverse environmental effects.

In completing the project and environmental review, the Port Authority concludes that with the implementation of proposed mitigation measures and conditions described in the project and environmental conditions section below, the Project has appropriately addressed all identified concerns. Project Permit PER No. 20-208 is approved by:

ORIGINAL COPY SIGNED

CHRIS BISHOP
MANAGER, PROJECT AND ENVIRONMENTAL REVIEW

March 31, 2022

DATE OF APPROVAL

9 PROJECT AND ENVIRONMENTAL CONDITIONS

The Port Authority has undertaken and completed a review of the Project in accordance with the *Canada Marine Act* and Section 5 of the *Port Authorities Operations Regulations* and, as applicable, Section 82 of the *Impact Assessment Act*.

If at any time Strathcona Connected Coast network Corporation (the "Permit Holder") fails to comply with any of the project and environmental conditions set out in the project permit (the "Permit") below, or if the Port Authority determines that the Permit Holder has provided any incomplete, incorrect or misleading information in relation to the Project, the Port Authority may, in its sole and absolute discretion, cancel its authorization for the Project or change the project and environmental conditions to which such authorization is subject.

Pursuant to Section 29 of the *Port Authorities Operations Regulations*, the Port Authority may also cancel its authorization for the Project, or change the project and environmental conditions to which such authorization is subject, if new information is made available to the Port Authority at any time in relation to the potential adverse environmental and other effects of the Project.

The following are the minimum conditions that must be followed by the Permit Holder to mitigate potential or foreseeable adverse environmental and other effects.

Port Authority Guidelines and Record Drawing Standards referenced in this document can be located at: <https://www.portvancouver.com/permitting-and-reviews/per/project-and-environment-review-applicant/guidelines/>.

No.	GENERAL CONDITIONS
1.	The Permit Holder must have a valid lease, licence, or access agreement for the Project site prior to accessing the Project site or commencing construction or any other physical activities on the Project site. This Permit shall in no way limit any of the Permit Holder's obligations, or the Port Authority's rights, under such lease, licence, or access agreement.
2.	The Permit Holder shall at all times and in all respects, comply with and abide by all applicable statutes, laws, regulations and orders from time to time in force and effect, including all applicable environmental, labour and safety laws and regulations.
3.	This Permit in no way endorses or warrants the design, engineering, or construction of the Project and no person may rely upon this Permit for any purpose other than the fact that the Port Authority has permitted the construction of the Project, in accordance with the terms and conditions of this Permit.
4.	Under the terms of both this permit and the lease, licence or access agreement referenced under condition 1, the Permit Holder shall indemnify and save harmless the Port Authority in respect of all claims, losses, costs, fines, penalties or other liabilities, including legal fees, arising out of: (a) any bodily injury or death, property damage or any loss or damage arising out of or in any way connected with the Project; and (b) any breach by the Permit Holder of its obligations under this Permit.
5.	The Permit Holder is responsible for locating all existing site services and utilities, including any located underground. The Permit Holder is responsible for repair or replacement of any damage to existing site services and utilities, to the satisfaction of the Port Authority, that result from construction and operation of the Project.
6.	The Permit Holder shall undertake and deliver the Project to total completion in a professional, timely and diligent manner in accordance with applicable standards and specifications set out in the sections above entitled Project Description and Information Sources, including the attached plans and drawings numbered PER No. 20-208-A to D . The Permit Holder shall not carry out any other physical activities unless expressly authorized by the Port Authority.
7.	The Permit Holder shall cooperate fully with the Port Authority in respect of any review by the Port Authority of the Permit Holder's compliance with this Permit, including providing information and documentation in a timely manner, as required by the Port Authority. The Permit Holder is solely responsible for demonstrating the Permit Holder's compliance with this Permit.
8.	The Permit Holder shall review the Permit with all employees, agents, contractors, licensees and invitees working on the Project site, prior to such parties participating in any construction or other physical activities on the Project site. The Permit Holder shall be solely responsible for ensuring that all such employees, agents, contractors, licensees and invitees comply with this Permit.
9.	The Permit Holder shall make available upon request by any regulatory authority (such as a Fishery Officer) a copy of this Permit.
10.	Unless otherwise specified, the Permit Holder shall provide plans, documents, and notices required under this Permit to the following email address: per@portvancouver.com and referencing PER No. 20-208 .
11.	Unless otherwise specified, all plans, schedules, and other Project-related documentation that the Permit Holder is required to provide under this Permit, and any subsequent updates, must be to the Port Authority's satisfaction.
12.	The Port Authority shall have unfettered access to environmental compliance documentation and the Project site at all times during construction without notice.

13.	The Permit Holder must maintain and retain any records associated with, or produced by, actions or activities undertaken to achieve compliance or that indicate non-compliance with project permit conditions. These records must be made available at the request of the Port Authority.	
	CONDITIONS – PRIOR TO COMMENCING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES	SUBMISSION TIMING (business days)
14.	The Permit Holder shall provide Issued For Construction Drawings in UTM NAD83, including a Project site plan that clearly identifies the location of the cables, in both AutoCAD and PDF format, in accordance with the Port Authority's Record Drawing Standards. Both CAD & PDF file names must correspond to the Port Authority's record drawing index number (Section 2.10 –Port Authority Record Drawing Standards). These are to be signed and sealed drawings for proposed works approved for construction by a professional engineer licensed to practice in the Province of British Columbia.	5 business days before commencing construction or any physical activities
15.	The Permit Holder shall submit a communication plan in accordance with the Port Authority's Public Engagement Guidelines. The plan shall outline how the Permit Holder will engage and communicate with the public and stakeholders in the event of damage to the cables or service disruptions. The plan shall acknowledge that the owner/operator was aware of the risks from shipping activities when the route through the Port of Vancouver was determined. The plan shall be updated as necessary and upon request by the Port Authority. The Permit Holder shall carry out the Project in accordance with the communications plan, and any subsequent updates made to the Port Authority's satisfaction.	20 business days before commencing construction or any physical activities
16.	The Permit Holder shall have in place a spill prevention, containment and clean-up plan for hydrocarbon products (including fuel, oil and hydraulic fluid) and any other deleterious substances. Appropriate spill containment and clean-up supplies shall be available on the Project site at all times and all personnel working on the Project shall be trained on the spill prevention, containment and clean-up plan. The Permit Holder shall carry out the Project in accordance with the spill prevention, containment and clean-up plan.	Before commencing construction or any physical activities
17.	Prior to the commencement of any vessel-related activities, the Permit Holder shall contact Canadian Coast Guard (CCG) Marine Communications and Traffic Services (MCTS), (email: NAVWARN.MCTSPrinceRupert@innav.gc.ca ; Phone: 250-627-3070) regarding the issuance of a Navigational Warning (NAVWARN) to advise the marine community of potential hazards associated with the Project.	As per Coast Guard requirements
18.	The Permit Holder shall submit a detailed maintenance and repair plan to the Port Authority's satisfaction which includes: <ul style="list-style-type: none"> a) Detailed description of method of conducting repairs and method to remove any abandoned sections of cable following repair or maintenance works; b) Plan for coordinating communications regarding incident specific repair plan, notice of start of repair and notice of completion with the Port Authority, the BC Coast Pilots, the Harbour Air Tower and other relevant marine users; c) Details to be included in incident specific repair plan. 	30 days of prior to any vessel related activities

<p>19.</p>	<p>The Permit Holder shall submit a marine construction and staging plan to the Port Authority's satisfaction, which includes:</p> <ul style="list-style-type: none"> a) Identification of navigation related hazards and risk mitigation measures; b) Route of cable laying vessel; c) Dates and hours of operations; d) Description of activities taking place; e) Participating equipment and vessels (dimensions must be included); f) Emergency contacts; g) Special requests and/or additional information. <p>The Permit Holder shall carry out the Project in accordance with the marine construction and staging plan, including any subsequent updates made to the Port Authority's satisfaction.</p>	<p>30 business days prior to any vessel related activities</p>
<p>20.</p>	<p>The Permit Holder shall submit a marine communications plan, to the Port Authority's satisfaction, which includes:</p> <ul style="list-style-type: none"> a) Method of preferred communications with marine users; b) Method of communicating updates to marine users; c) Method of communicating navigation restrictions and channel closures with marine users; d) Plan for coordinating with the BC Coast Pilots prior to working within, or in close proximity to the navigation channel to establish any navigation restrictions and/or channel closures; e) Plan for coordinating with the Harbour Air Tower prior to working within, or in close proximity to the sea planes landing area. 	<p>30 business days prior to any vessel related activities</p>
<p>21.</p>	<p>Prior to the commencement of any vessel-related activities, the Permit Holder shall inform the BC Coast Pilots (email: bccp@bcpilots.com and directors@bcpilots.com) and cc navigation.review@portvancouver.com, providing them with the following information:</p> <ul style="list-style-type: none"> a) Route of cable laying vessel; b) Dates and hours of operations; c) Description of activities taking place; d) Participating equipment and vessels; e) Method of preferred communication. f) Plan for coordinating with the BC Coast Pilots in advance of working within, or in close proximity to the navigation channel to establish any navigation restrictions and/or channel closures. <p>If any concerns are raised by the BC Coast Pilots, these concerns must be addressed prior to commencing any vessel-related activities.</p>	<p>30 business days prior to any vessel related activities</p>

22.	<p>Prior to the commencement of any vessel-related activities, the Permit Holder shall inform the Harbour Air Tower (email: David.Weston@navcanada.ca), providing them with the following information:</p> <ul style="list-style-type: none"> a) Route of cable laying vessel; b) Dates and hours of operations; c) Description of activities taking place; d) Participating equipment and vessels; e) Method of preferred communication; f) Plan for coordinating with the Harbour Air Tower prior to working within, or in close proximity to the sea planes landing area. <p>If any concerns are raised by the Harbour Air Tower, these concerns must be addressed prior to commencing any vessel-related activities.</p>	5 business days prior to any vessel related activities
CONDITIONS – DURING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES		
23.	Construction and any physical activities related to the Project shall be conducted in accordance with the hours approved in the marine construction and staging plan. No construction works shall occur outside of the approved hours and the hours shall not be modified without prior approval from the Port Authority and BC Coast Pilots, and notification to the Harbour Air Tower.	
24.	The Permit Holder shall notify the Port Authority within two business days of any complaints received from the community and stakeholders during construction and indicate how the Permit Holder has responded to such complaints.	
25.	Without limiting the generality of permit condition #2, the Permit Holder shall not, directly or indirectly: (a) deposit or permit the deposit of a deleterious substance of any type in water frequented by fish in a manner contrary to Section 36 of the <i>Fisheries Act</i> ; or (b) adversely affect fish or fish habitat in a manner contrary to Section 35 of the <i>Fisheries Act</i> .	
26.	The Permit Holder shall immediately cease work and notify the Port Authority if the Permit Holder has reasonable grounds to believe that the Project has harmed fish or fish habitat, including observation of distressed, injured, or dead fish. The Permit Holder shall not resume work until authorized by the Port Authority.	
27.	The Permit Holder shall not disturb the river/seabed outside the Project site.	
28.	The Permit Holder shall engage a qualified environmental professional to monitor the Project in order to ensure that the works are carried out in compliance with this Permit. Monitoring shall take place as required by the environmental monitor, the application package, or the Port Authority, provided that monitoring will be full time when works are under way that have the potential to adversely affect fish or fish habitat.	

29.	<p>During any vessel-related activities, the Permit Holder shall:</p> <ul style="list-style-type: none"> a) Position vessels and equipment associated with the Project in such a manner so as not to obstruct line of sight to navigational aids or markers; b) Exhibit the appropriate lights and day shapes at all times; c) Monitor the VHF channel used for MCTS communications in the respective area at all times and participate as necessary; d) Be familiar with vessel movements in areas affected by the Project. e) Plan and execute the Project in a manner that will not impede navigation or interfere with vessel operations; and, f) During night hours, unless working 24 hours per day, ensure that the rig and associated equipment is moored outside the navigation channel and lit in accordance with all applicable regulations. g) During night hours, ensure that lights exhibited will not interfere with marine traffic transiting the area, and that any task lighting is directed downward to the Project area to limit light spill. 	
CONDITIONS – UPON COMPLETION		SUBMISSION TIMING (Business Days)
30.	The Permit Holder shall notify the Port Authority upon completion of the Project.	Upon substantial completion
31.	The Permit Holder shall provide record drawings in UTM NAD83, including a Project site plan that clearly identifies the location of the cables, in both AutoCAD and PDF format in accordance with the Port Authority's Record Drawing Standards.	Within 40 business days of completion
32.	The Permit Holder must contact the Database Information Office of the Canadian Hydrographic Service (CHS) at (250) 363-6360 or chsdatacentre@dfo-mpo.gc.ca to arrange for the relevant CHS charts to be updated.	Upon substantial completion
CONDITIONS – DURING OPERATION		
33.	The Permit Holder shall undertake any required maintenance or repair in accordance with the approved maintenance and repair plan, or any updates approved by the Port Authority. Any required revisions to the cable alignment must be approved in advance by the Port Authority.	
34.	The Permit Holder shall remove any abandoned sections of cable following any repair or maintenance works. Any requests to abandon cables must be submitted to the Port Authority for consideration on a case-by-case basis. Submitted requests to abandon cables will be considered and determined in the sole and unfettered discretion of the Port Authority, in accordance with the terms and conditions of the licence.	
35.	Should any approved revisions take place to the alignment of the cables, the Permit Holder shall provide revised record drawings in UTM NAD83, including a Project site plan that clearly identifies the location of cables, in both AutoCAD and PDF format (with an Engineers stamp where applicable) in accordance with the Port Authority's Record Drawing Standards. All drawings shall be named according to the record drawing index numbering system set out at Section 2.10 of the Port Authority's Record Drawing Standards.	

36.	Should any approved revisions take place to the alignment of the cables, the Permit Holder must contact the Database Information Office of the Canadian Hydrographic Service (CHS) at (250) 363-6360 or chsdatacentre@dfo-mpo.gc.ca to arrange for the relevant CHS charts to be updated.
37.	The Permit Holder shall remove cables at the end of life and/or upon termination of a valid licence with the Port Authority. Any requests to abandon cables must be submitted to the Port Authority for consideration on a case-by-case basis. Submitted requests to abandon cables will be considered and determined in the sole and unfettered discretion of the Port Authority, in accordance with the terms and conditions of the licence.
The Port Authority reserves the right to rescind or revise these conditions at any time that new information warranting this action is made available to the Port Authority.	
LENGTH OF PERMIT VALIDITY	
The Project must be completed no later than March 31, 2024 (the Expiry Date).	
AMENDMENTS	
<ul style="list-style-type: none"> • Details of any material proposed changes to the Project, including days and hours when construction and any physical activities will be conducted, must be submitted to the Port Authority for consideration of an amendment to this Permit. • For an extension to the Expiry Date, the Permit Holder must apply in writing to the Port Authority no later than 40 business days prior to that date. <p>Failure to apply for an extension as required may, at the sole discretion of the Port Authority, result in termination of this Permit.</p>	

CONTACT INFORMATION

Vancouver Fraser Port Authority
 100 The Pointe, 999 Canada Place
 Vancouver BC V6C 3T4 Canada

Project and Environmental Review
 Tel.: 604-665-9047
 Fax: 1-866-284-4271
 Email: PER@portvancouver.com
 Website: <http://portvancouver.com>

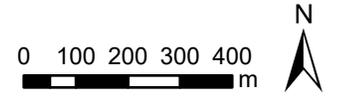
After normal business hours:

In the event of any land or marine construction incidents or concerns related to works carried out on-site under this permit, please contact the 24/7 Port Operations Centre 604-665-9086. In the event of an emergency requiring 'First Responders', please call 911 first.

PER 20-208 Submarine Fibre Optic Telecommunication Cables

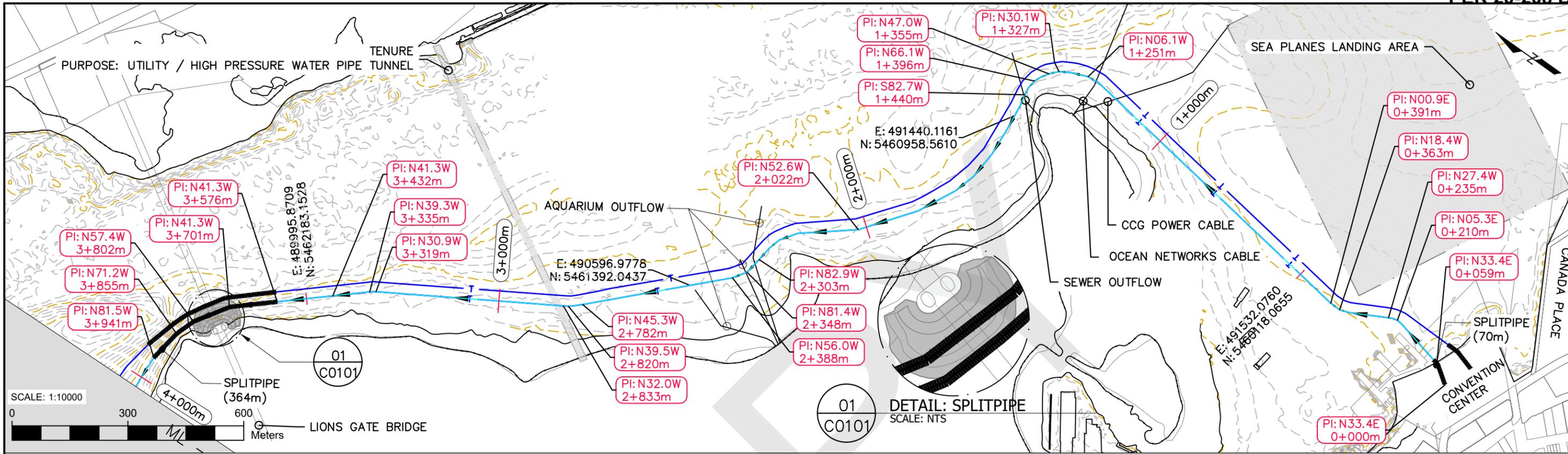
-  VFPA Boundary
-  Project Location

VANCOUVER FRASER PORT AUTHORITY
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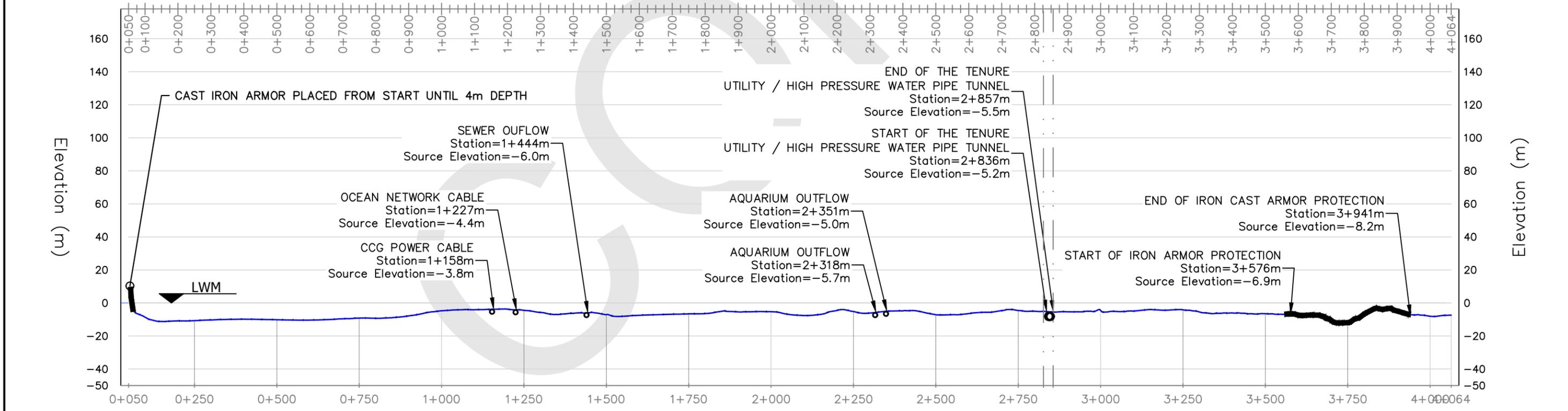


Spatial Data Group
 Prepared by: LXM
 Created: December 2021
 PLAN#G2021-090





Profile View of C01
Station: 0+050 4+064



EXISTING PLANT		EXISTING UTILITIES		PROPOSED PLANT		TERRAIN	
Parcel Data	PA	BC Hydro	Fortis BC	Telecom	Armor Protection	Rock	LWM
Low Water Mark	—	Storm	Sewer	Power Conduit	Telecom Conduit	Gravel	HWM
Construction	—	Priv. Elect. Pole	Gas Valve	Manhole	Vault	Grass	Eel Grass
Tenures	—	Main Switch	BC Hidro Transf.	Generator	Pole Mounted Cabinet	Asphalt	Eel Grass
Landscaping	—	Gas Serv.				Earth	Clam Bed
Water	—	Manhole				Roof	Kelp Bed
Existing Telecom	—					Contour	Sponge
Front Counter BC	—						

PREPARED BY:
BAYLINK networks

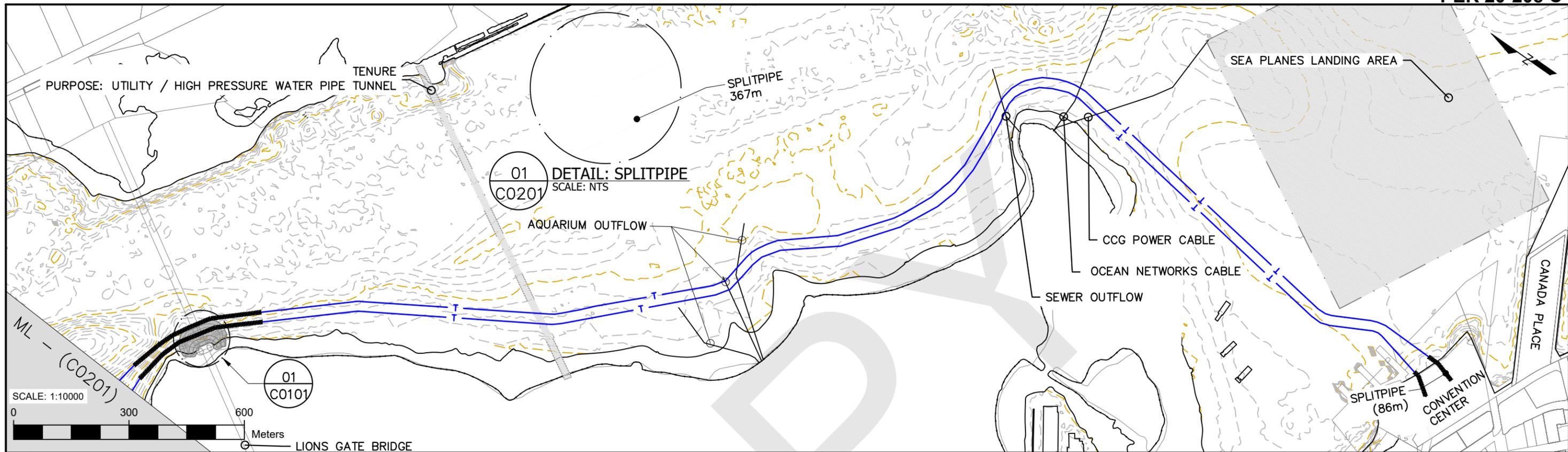
PREPARED FOR:
VANCOUVER FRASER PORT AUTHORITY

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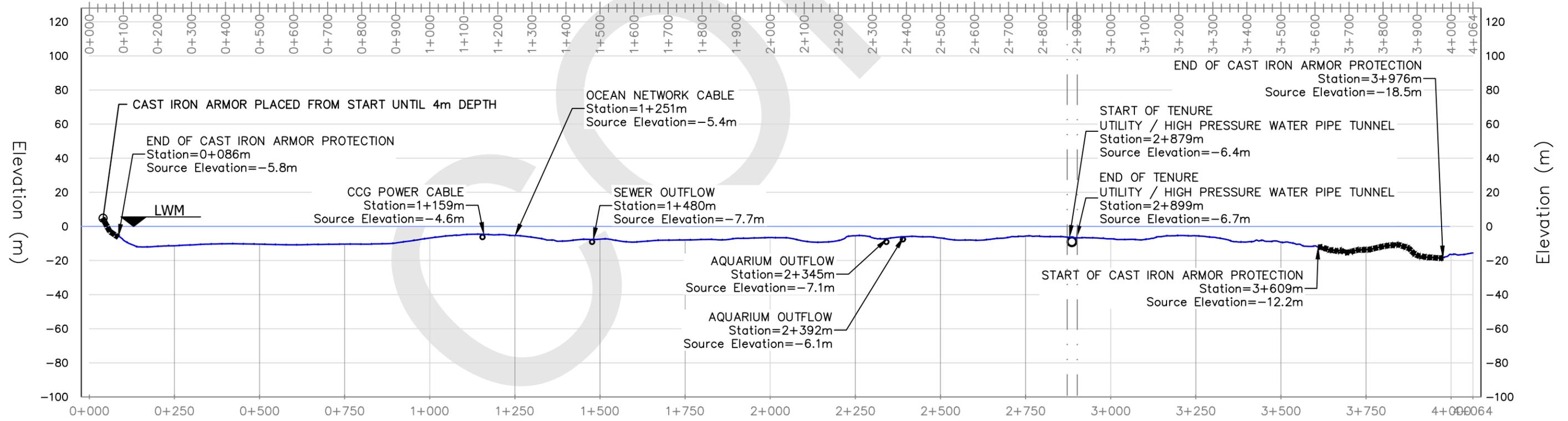
REV	YYYY/MM/DD	DESCRIPTION	DESIGNED BY:	KD	2020/12/09
REV 4	--	N/A	DRAWN BY:	AS	2020/12/16
REV 3	2022/01/04	CHANGED ORIENTATION	CHECKED BY:	DW	2021/07/28
REV 2	2021/09/14	ROUTE CHANGED TO AVOID NAVIG.	APPROVED BY:	DD	2021/07/28
REV 1	2021/07/18	GENERAL SUBMISSION			

PROJECT:	PROVIDER:	BLOCK:	BLOCK N°:	LOCATION:	PROJECT#:	DRAWING:	REVISION:
Connected Coast	BYL	CCN	PB1	VAN	P20002	C0101	R03
CUSTOMER: City West							
LOCATION: Vancouver - VPA							
SECTION: Permit Block 1							

Sheet: 05 of 14



Profile View of C02
Station: 0+000 4+064



EXISTING PLANT		EXISTING UTILITIES		PROPOSED PLANT		TERRAIN	
Parcel Data	BC Hydro	Telecom	Rock	Armor Protection	LWM	HWM	
Low Water Mark	Fortis BC	Power Conduit	Gravel	Telecom Conduit	Grass	Eel Grass	
Construction	Storm	Vault	Asphalt		Earth	Eel Grass	
Tenures	Sewer		Earth		Roof	Clam Bed	
Landscaping	Priv. Elect. Pole	Elect. Pole	Contour		Roof	Kelp Bed	
Water	Main Switch	Gas Serv.			Roof	Sponge	
Existing Telecom	Gas Valve	Manhole			Roof		
Front Counter BC	BC Hidro Transf.	Propane Tank			Roof		
		Pole Mounted Cabinet					

PREPARED BY:
BAYLINK networks

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PREPARED FOR:
VANCOUVER FRASER PORT AUTHORITY
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REV	YYYY/MM/DD	DESCRIPTION	DESIGNED BY:	KD	2020/12/09
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PROJECT:	PROVIDER:	BLOCK:	BLOCK N°:	LOCATION:	PROJECT#:	DRAWING:	REVISION:
Connected Coast	BYL	CCN	PB1	VAN	P20002	C0201	R03
CUSTOMER: City West							
LOCATION: Vancouver - VPA							
SECTION: Permit Block 1							

Sheet: 10 of 14

INSTALLATION INSTRUCTIONS

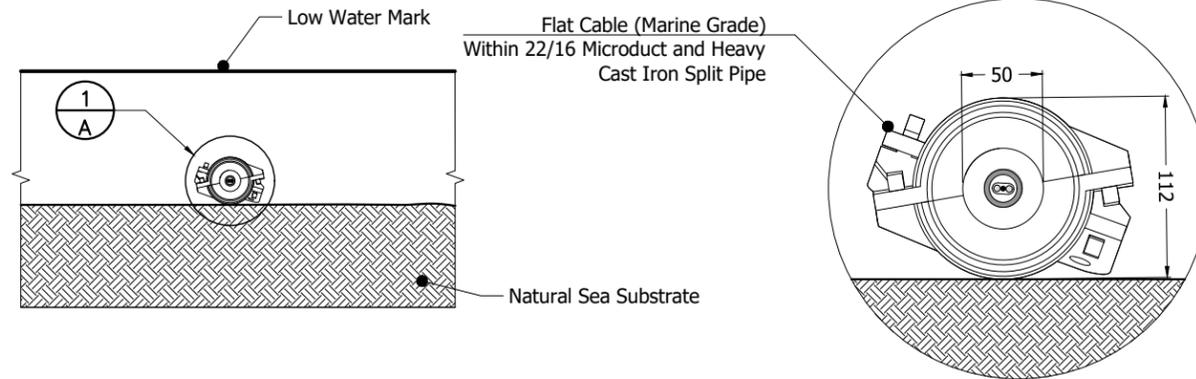
Heavy Cast Iron Split Pipe Trenching (Gravel, Soil, Beach)

Site Preparation

1. Ensure that all municipal, provincial, federal and company-specific regulations are met prior to beginning and throughout the installation process.
2. Beginning at the waterline during low tide, and ending at the end of the wake zone, visibly mark the proposed route according to the technical drawings.

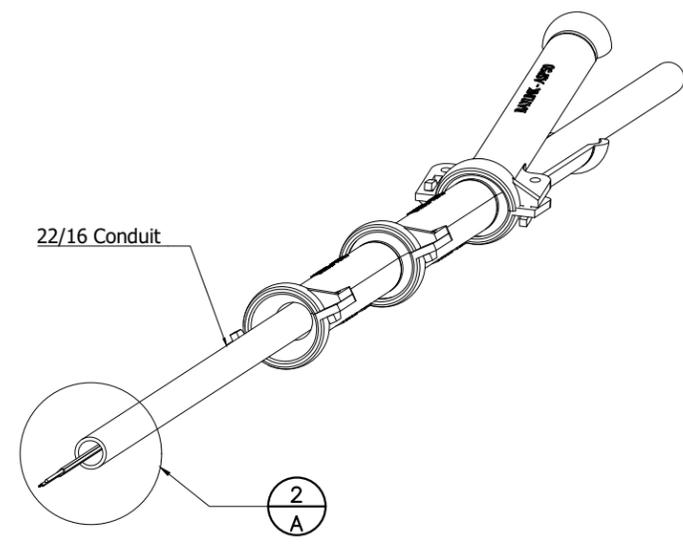
NOTE: Make certain that all necessary measures have been taken to locate all utilities in the area before planning the running line.

3. a. Assemble the length of split pipe to lay in the trench plus a tail end that can be used to begin the float assembly.
b. Lay the assembled split pipe into the trench.
4. To avoid unnecessary damage to the ocean floor, the split pipe must be dropped on top of the ocean floor instead of dragged. The tail of the bolted split pipe that will be laid in the water must be fixated to floats using a biodegradable hemp rope. A float is required for every three segments of split pipe.
5. Float the supported split pipe over the determined route and cut the floats free, allowing the cable to drop into place.
6. a. Remove large rocks and debris from the excavated soil before using it to backfill the trench. The backfill should be tamped continuously, ensuring full compaction on the entire trench line.

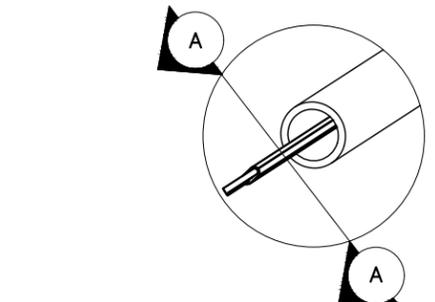


1 Crossing Utilities – Heavy Iron Split Pipe
Scale: 1:16

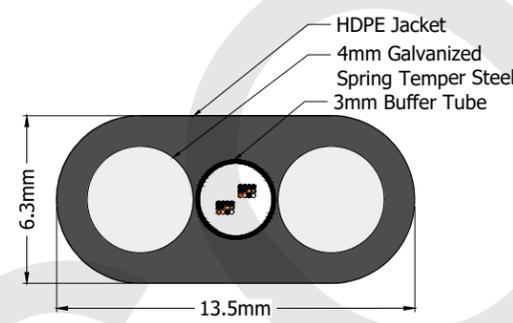
1 Detail: Flat marine Cable And Heavy Iron Cast
Scale: NTS



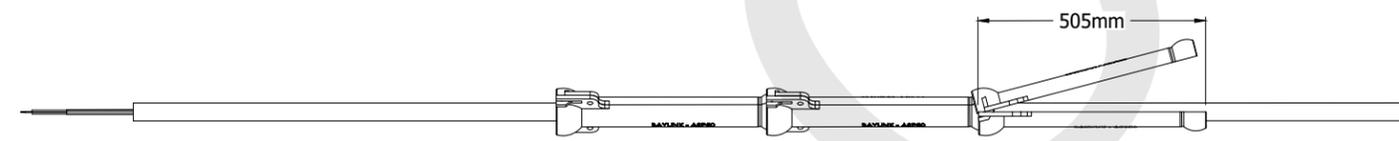
2 Isometric View – Heavy Iron Split Pipe
Scale: 1:16



2 Detail: 50mm HDPE Conduit
Scale: NTS



A Section: Marine Cable
Scale: NTS



Side View – Heavy Iron Split Pipe

Note: The split pipe is applied to the HDPE conduit in sections. A one meter tail of HDPE protrudes from the split pipe at the submerged end of the system.

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PREPARED BY:
BAYLINK networks

PREPARED FOR:
CityWest

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PROJECT:	PROVIDER:	BLOCK:	BLOCK N°:	LOCATION:	PROJECT#:	DRAWING:	REVISION:
Connected Coast	BYL	CCN	PB1	VAN	P20002	E0001	R03
CUSTOMER: City West							
LOCATION: Vancouver - VPA							
SECTION: Permit Block 1							

Sheet: 14 of 14