



PER No.:	20-034
Tenant:	Seaspan ULC
Project:	Seaspan Outfitting Pier Extension
Project Location:	10 Pemberton Avenue, North Vancouver
Vancouver Fraser Port Authority SID No.:	DNV059
Land Use Designation:	Industrial
Permit Holder(s):	Seaspan ULC
Category of Review:	C
Date of Approval:	October 22, 2021
Date of Expiry:	October 31, 2024

PROJECT DESCRIPTION

For the purposes of this project permit, (the Permit), the project is understood to include the following works on Vancouver Fraser Port Authority (the "Port Authority") property:

- Demolition of the existing timber outfitting pier, including:
 - Removal of approximately 590 wood creosote treated piles and four steel piles and supporting timber pile caps
 - Removal of existing timber pier surface, stringers and decking trestle
 - Removal and repurposing of the existing floating walkways from both sides of the existing outfitting pier
 - Removal and reuse of nine existing floating steel camels
 - Removal of eight multi-timber pile dolphins securing the camels

- Construction of a new outfitting pier constructed of steel piles and a concrete deck approximately 272 m in length and 19 m in width, including:
 - Installation of approximately 126 X 1.1 m diameter vertical piles supporting pile caps and piers, for a total in-water footprint of 119.7 m²
 - Installation of 19 concrete pile caps (including the abutment) at bents from the shoreline to the outer mooring dolphin
 - Installation of concrete or composite spans between bents
 - Installation concrete cast in place deck slabs
 - Installation of ancillary deck infrastructure including rail mounted traveling portal crane, buildings, fenders and mooring bollards
 - Installation of a mooring dolphin consisting of 4 X 1.2 m diameter steel piles connected to the new outfitting pier via a dolphin catwalk
 - Dredging the area surrounding the pier to accommodate changes in bathymetry in the basin associated with sediment transport and Seaspan vessel activities.

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 the Permit Holder fails to comply with any of the project and environmental conditions set out in 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 project and environmental conditions that must be followed by the Permit Holder to mitigate potential or foreseeable adverse environmental and other effects.

All the 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.	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 shall provide an Infrastructure Surveyed Data Drawing that includes topographic and utility locate data based on surveys in accordance with the Port Authority's Record Drawing Standards. 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. 20-034 A to I . 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 all plans, documents, and notices required under this Permit to the following email address: per@portvancouver.com and referencing PER No. 20-034 .	
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 Permit Holder shall prepare and submit a self-report form to the Port Authority demonstrating compliance with conditions at each of the following project phases: <ul style="list-style-type: none"> a) Prior to construction Conditions (self-report shall be submitted a minimum of 15 business days prior to the commencement of construction, or any physical activities, to a maximum of 90 business days prior to construction, or any physical activities) b) Construction Conditions (self-report shall be submitted within 90 days following the conclusion of the first phase of dredging) c) Conditions Upon Project Completion (self-report shall be submitted within 60 business days of completion of construction) 	
13.	The Port Authority shall have unfettered access to environmental compliance documentation and the Project site at all times during construction without notice.	
14.	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.	
15.	All conditions in this Permit which expressly or by their nature survive expiration or termination of this Permit will remain in effect after the expiration or termination of this Permit.	
	CONDITIONS - PRIOR TO COMMENCING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES	SUBMISSION TIMING (business days)
16.	The Permit Holder shall submit Issued For Construction Drawings for proposed works in accordance with the Port Authority's Record Drawing Standards. These drawings shall be signed and sealed and approved for construction by a professional engineer licensed to practice in the Province of British Columbia. In addition, these drawings shall be submitted in both AutoCAD and PDF format and 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.	5 business days before commencing construction or any physical activities
17.	For buildings, structures, and proposed interior changes to buildings that are reviewable under the National Building Code and National Fire Code, the Permit Holder shall apply for a Port Authority Building Permit.	40 business days before commencing construction of applicable buildings

18.	The Permit Holder shall submit a draft construction communications plan and construction notice in accordance with the Port Authority's Public Consultation Guidelines. The plan shall outline how the Permit Holder will engage and communicate with the public and stakeholders leading up to and during construction. The plan shall be updated as necessary and upon request by the Port Authority to ensure public and stakeholders are provided with relevant information as it becomes available. The Permit Holder shall carry out the Project in accordance with the construction communications plan, and any subsequent updates made to the Port Authority's satisfaction.	20 business days before commencing construction or any physical activities
19.	The Permit Holder shall provide a draft construction notice to the Port Authority's satisfaction in accordance with the Port Authority's Public Consultation Guidelines.	20 business days before commencing construction or any physical activities
20.	The Permit Holder shall distribute a construction notice to residents and businesses to an area. This shall be completed to the Port Authority's satisfaction. The Permit Holder shall notify the Port Authority when such distribution has been completed. The Permit Holder will also send a copy of the construction notice via email to the Norgate Community Association.	10 business days before commencing construction or any physical activities
21.	The Permit Holder shall submit a marine mammal monitoring plan, to the Port Authority's satisfaction. The marine mammal monitoring plan may be integrated into an updated construction environmental management plan, where appropriate. The Permit Holder shall share the marine mammal plan, or updated CEMP, with Indigenous Groups who have requested to receive it, adhering to the same submission timing.	20 business days before commencing in-water activities
22.	At least two days prior to commencing any physical activities, the Permit Holder shall notify the Harbour Master and VFPA Environmental Programs, email: Harbour_Master@portvancouver.com EnvironmentalPrograms@portvancouver.com .	2 business days before commencing construction or any physical activities
23.	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
24.	The Permit Holder shall inform the BC Coast Pilots (bccp@bcpilots.com) and the Pacific Pilotage Authority (marineops@ppa.gc.ca) of their Marine Construction Staging area, as well as inform them of any changes in the capacity of the new dolphins prior to commencing any construction, or vessel-related activities. Any concerns raised by the BC Coast Pilots or Pacific Pilotage Authority must be addressed prior to commencing in water works / vessel-related activities.	20 business days before commencing construction or any physical activities
25.	The Permit Holder shall provide a Project schedule to the Port Authority showing the anticipated start dates for all major phases of the Project as identified by the Port Authority. The Permit Holder shall notify the Port Authority of any material changes to the Project schedule and, upon request, shall provide an updated Project schedule.	20 business days before commencing construction or any physical activities
CONDITIONS - DURING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES		
26.	The Permit Holder shall notify the Port Authority upon commencement of construction, or any physical activities (e.g., mobilization to the Project site).	

27.	With the exception of dredging activities, general construction and physical activities related to the Project shall be conducted from Monday to Saturday between the hours of 7:00 am and 8:00 pm . No construction and physical activities shall take place on Sundays or holidays. These hours shall not be modified without prior approval of the Port Authority. To request permission to conduct activities outside these hours, the Permit Holder must submit a written request no less than 30 business days prior to the desired start date. Dredging activities may be carried out 24 hours a day, 7 days a week between August 16 and February 28 annually.
28.	The Permit Holder shall notify the Port Authority of any complaints received from the community and stakeholders during construction and indicate how the Permit Holder has responded to such complaints.
29.	The Permit Holder shall remove all abandoned utilities from the Project site, both underground and aboveground. At locations of connection to municipal works (i.e., at property lines), the abandoned utilities shall be capped. The Permit Holder shall provide detailed drawings of abandoned utilities and capped connections in both AutoCAD and PDF format in accordance with the Port Authority's Record Drawing Standards.
30.	<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.
31.	The Permit Holder, or their contractor, 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 events shall take place as required by the environmental monitor, the construction environmental management plan, or the Port Authority, provided that monitoring will be full time when works are underway that have the potential to adversely affect fish or fish habitat.
32.	<p>The Permit Holder shall carry out the Project in accordance with the construction environmental management plan provided by the Permit Holder, and any subsequent updates made to it, to the Port Authority's satisfaction.</p> <p>Any updates made to the construction environmental management plan shall be made available to Indigenous groups who have requested to receive it, as an updated version becomes available.</p>
33.	<p>The Permit Holder shall provide environmental monitoring reports to the Port Authority's satisfaction as specified in the construction environmental management plan or more frequently if the Port Authority requires. Monitoring reports shall include acoustic monitoring results and details on pile diameter, hammer model and energy, water depth and type of bubble curtain (stacked rings).</p> <p>Any environmental monitoring reports shall be made available to Indigenous groups who have requested to receive them, as they become available.</p>
34.	<p>Vibratory pile installation is recommended as the primary method used for pile installation works. If impact pile driving is necessary, the following additional mitigation measures shall be implemented:</p> <ul style="list-style-type: none"> a) Conduct hydroacoustic monitoring during impact pile driving to monitor underwater sound at approximately 10 m away from the sound source.

	<p>b) Install and use an effective sound attenuation device (e.g., bubble curtain) to reduce peak sound pressure levels to below 206 dB re: 1 µPa and a SELcum of 186 dB re: µPa2s outside of the sound attenuation device to protect fish.</p> <p>c) Establish a cetacean exclusion zone (e.g., perimeter around the noise source) prior to impact pile driving where sound levels are not to exceed 160 dB RMS re: 1 µPa at the edge of the cetacean exclusion zone during impact pile driving. Monitor for cetaceans within the cetacean exclusion zone for at least 30 minutes prior to the start of impact pile driving. If a cetacean enters the cetacean exclusion zone, temporarily suspend impact pile driving until the individual has left the exclusion zone or has not been sighted for 30 minutes.</p> <p>d) The use of a soft start procedure shall be implemented where the impact energy is gradually increased over a 10 minute period. The soft start procedure shall also be implemented any time after there is a break of 30 minutes or more during impact pile driving.</p> <p>e) If hydroacoustic monitoring indicates sound levels in excess of the abovementioned thresholds, impact pile driving shall cease and only resume after additional mitigation measures are implemented to effectively reduce sound levels below the above-mentioned thresholds.</p> <p>The above measures shall also be implemented for vibratory pile installation conducted between March 1 and August 15, inclusive, or if multiple piles are installed simultaneously, unless five consecutive days of hydroacoustic monitoring demonstrates, to the port authority's satisfaction, that the above thresholds are not exceeded.</p>
35.	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.
36.	The Permit Holder shall conduct a salvage and relocation of crabs at pile placement locations 24 hours prior to pile driving. The Permit Holder shall submit a copy of any applicable fish collection permits and crab salvage reports within 90 days of completing crab salvage activities. Any salvage reports shall be made available to Indigenous groups who have requested to receive them, as they become available.
37.	The Permit Holder shall carry out the Project in accordance with the dredge management plan, and any subsequent updates made to the Port Authority's satisfaction. Any updates to the dredge management plan shall be made available to Indigenous groups who have requested to receive it, as the updated version becomes available.
38.	Dredgeate run-off water shall be contained, tested, and treated, as required, prior to discharge. Run-off water shall not be discharged from the containment barge to Burrard Inlet or any other waterbody unless water quality results, or a dewatering plan specifying treatment and discharge criteria, have been submitted to the Port Authority's satisfaction.
39.	Dredging shall be completed using a clamshell bucket, ensuring slow and controlled drops of the bucket to minimize the risk of death of fish.
40.	Without limiting the generality of permit condition #2, the Permit Holder shall dredge/load all material intended for disposal at sea under a valid Disposal at Sea Permit pursuant to the provisions of Part 7, Division 3 of the <i>Canadian Environmental Protection Act</i> , 1999.
41.	The Permit Holder shall ensure that dredged material that is intended for upland placement complies with all applicable legislation and regulations. The Permit Holder shall appropriately manage any contamination associated with the dredged material and maintain records of off-site disposal.
42.	The Permit Holder shall not disturb the seabed outside the Project site.

43.	The Permit Holder shall not permit barges or other vessels used during the Project to ground on the foreshore or seabed or otherwise disturb the foreshore or seabed (including disturbance as a result of vessel propeller wash), excepting only such disturbance as is reasonably required resulting from the use of barge spuds.	
	CONDITIONS – PRIOR TO OPERATION	SUBMISSION TIMING (Business Days)
44.	The Permit Holder shall provide an updated stormwater management plan that incorporates the new outfitting pier. The Permit Holder shall also provide a copy of the updated stormwater management plan to Indigenous groups who have requested to receive it, as the updated version becomes available.	90 days before commencing operation of the new outfitting pier
	CONDITIONS - UPON COMPLETION	SUBMISSION TIMING (Business Days)
45.	The Permit Holder shall notify the Port Authority upon completion of the Project.	Upon substantial completion
46.	The Permit Holder shall provide record drawings, including a Project site plan that clearly identifies the location of works, 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.	Within 40 business days of completion
47.	The Permit Holder must send record drawings of all newly constructed and/or demolished marine works to the Database Information Office of the Canadian Hydrographic Service (250-363-6360 or chsdatacentre@dfo-mpo.gc.ca) to arrange for the relevant Canadian Hydrographic Service charts to be updated. The Port Authority Marine Operations department must be copied on the request (navigation.review@portvancouver.com).	Within 40 business days of completion
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 commence by October 31, 2022 (the Commencement Date) and be completed no later than October 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 Commencement Date, the Permit Holder must apply to the Port Authority in writing no later than 40 business days prior to that date.• 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>

PROJECT AND ENVIRONMENTAL REVIEW DECISION

Project Permit PER No. 20-034 is approved by:

ORIGINAL COPY SIGNED

THERESA RAWLE
ACTING DIRECTOR, PLANNING & DEVELOPMENT

October 22, 2021
DATE OF APPROVAL

CONTACT INFORMATION

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

Project & Environmental Review
Tel.: 604-665-9047
Fax: 1-866-284-4271
Email: PER@portvancouver.com
Website: www.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.



PORT of
vancouver


PROJECT AND ENVIRONMENTAL REVIEW REPORT

PER NO. 20-034 SEASPAN OUTFITTING PIER EXTENSION

Prepared for: Director, Planning & Development

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 PORT of vancouver Vancouver Fraser Port Authority		VANCOUVER FRASER PORT AUTHORITY PROJECT AND ENVIRONMENTAL REVIEW REPORT
PER No.:	20-034	
Tenant:	Seaspan ULC	
Project:	Outfitting Pier Extension	
Project Location	10 Pemberton Avenue, North Vancouver	
Vancouver Fraser Port Authority SID No.:	DNV059	
Land Use Designation:	Industrial	
Applicant(s):	Seaspan ULC	
Applicant Address:	10 Pemberton Avenue, North Vancouver	
Category of Review:	C	
Recommendation:	That PER No. 20-034 for Outfitting Pier Extension be approved.	

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 documents the Port Authority’s project and environmental review of PER No. 20-034: Outfitting Pier Extension (the “Project”) proposed by Seaspan ULC (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 a “designated project” under the *Impact Assessment Act* and an impact assessment as described in the *Impact Assessment Act* IAA is not required. However, the 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. The project and environmental review process is designed to provide 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 consultations carried out by the Port Authority. A full list of information sources germane to the review is provided in Appendix B.

This project and environmental review report is NOT a project authorization. This project and environmental review report summarizes the review outcome, and provides the basis for approval or denial. Should the project be approved, the report is accompanied by a project permit (the Permit) and the conclusions described in this report require compliance with the conditions in the Permit.

2 PROJECT DESCRIPTION

The Applicant proposes to construct a new outfitting pier located within the Vancouver Shipyards site at 10 Pemberton Avenue in North Vancouver. The project includes the removal of the existing timber outfitting pier; a timber structure approximately 155 meters in length and 10 meters in width (originally constructed in 1966 and extended in 1974) and replacing it with a new outfitting pier constructed of steel piles and a concrete deck approximately 272 meters in length and 19 meters in width. The new pier would effectively be a replacement and extension of the existing pier.

The new pier would have an increased footprint of approximately 3,700 square meters. Approximately 590 creosote and steel piles are proposed to be removed and replaced with approximately 126 new steel piles. Dredging is proposed for the area located adjacent to the new pier to allow for construction, and for vessel draft during operations. The new pier includes modular building provisions for three washrooms, a two-storey office, and two change rooms, at the north west corner.

The project would allow for increased capacity and improved efficiency for shipbuilding operations and support work under the National Shipbuilding Strategy (NSS), among other operations of the shipyard. Seaspan is under contract with the Canadian federal government through the NSS Program to construct and launch several non-combat vessels for Fisheries and Oceans Canada, Canadian Coast Guard, and non-combat support ships for the Royal Canadian Navy.

2.1 Proposed Works

Demolition of the existing timber outfitting pier, 155 m in length and 10 m in width including:

- Removal of approximately 590 wood creosote treated piles and four steel piles and supporting timber pile caps
- Removal of existing timber pier surface, stringers and decking trestle
- Removal and repurposing of the existing floating walkways from both sides of the existing outfitting pier
- Removal and reuse of nine existing floating steel camels
- Removal of eight multi-timber pile dolphins securing the camels

Construction of a new outfitting pier above the water surface with an area of approximately 272 m in length and 19.2 m in width including:

- Installation of approximately 126 X 1.1 m diameter vertical piles, supporting pile caps and piers, for a total in-water footprint of 119.7 m²
- Installation of 19 concrete pile caps (including the abutment) at bents from the shoreline to the outer mooring dolphin
- Installation of concrete or composite spans between bents
- Installation of concrete cast in place deck slabs
- Installation of ancillary deck infrastructure, including rail mounted traveling portal crane, buildings, fenders and mooring bollards
- Installation of a mooring dolphin consisting of four X 1.2 m diameter steel piles connected to the new outfitting pier via a dolphin catwalk
- Dredging the area surrounding the pier to accommodate changes in bathymetry in the basin associated with sediment transport and Seaspan vessel activities.

2.2 Proposed Construction Methods

Construction would include in-water and over-water construction activities within the Vancouver shipyards site. Marine equipment including barges, clamshell, pile drivers, tugs, cranes, drill rig, excavators, loaders, vibratory and impact hammer, air compressor and welding equipment will be used throughout construction. The equipment, materials and contractors are anticipated to arrive at the site via marine and land transportation.

Demolition of the existing timber outfitting pier is proposed in an isolated work area through removal of the pier deck infrastructure and existing deck slabs, removal of pier caps and stringers, and removal of timber piles and steel piles through vibro-extraction (where possible). Timber piles that break during initial extraction would be removed with a clamshell bucket. Additional debris would be removed from around the old pier area. Removal of existing vessel tie-up floats and timber/steel dolphins is also required. An existing outfall discharge pipe would be protected and reconnected to the newly constructed outfitting pier.

Demolition would be followed by dredging of a pocket to -8.8 metres chart datum using an environmental clamshell dredge. All dredging activities are proposed to be conducted within Fisheries and Oceans Canada's least risk to fish and fish habitat window of August 16 to February 28 annually. All other project activities are proposed to occur throughout the year.

Cantitravel construction of the new outfitting pier is a potential method of construction. Cantitravel involves the use of a custom fabricated bridge unit that supports a crane and accommodates multiple work fronts as it advances along the length of the pier, supported solely on the pier's pile foundations. The Cantitravel unit allows installation of all major structural elements in sequence. Alternatively, the pier may be constructed using spud barges, jack-up barges, barge derricks, and/or other floating construction equipment.

Dredging activities, including maintenance, crew shift changes, moving spud and flat-bottomed barges and ongoing bathymetric surveys are proposed to be carried out 24 hours a day, 7 days a week within the least risk fish window. With the exception of dredging, construction is proposed to take place within regular port authority construction hours of Monday to Saturday between the hours of 7:00 a.m. and 8:00 p.m., and no construction or physical activities are to take place on Sundays or statutory holidays.

Construction is scheduled to occur over an 18-month period starting in Q1 2022, and completing around Q3 2023.

3 VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS

The following Port Authority departments have reviewed the application and have the following project considerations.

3.1 Planning

Planning has reviewed the application and has the following land use comments. The proposal meets Planning's requirements, based on the primary considerations of the land use designation and current land use policies.

3.1.1 Land Use Designation

The proposed continued use of the area for vessel manufacturing and marine support services conforms to the designation of "Industrial" in Vancouver Fraser Port Authority's Land Use Plan.

3.2 Engineering

The proposed Project intends to replace aging infrastructure with new steel piles, mooring dolphins, concrete cast in place deck slabs and ancillary deck infrastructure. This includes services and utilities that are to be determined at the detailed design phase.

Engineering has reviewed the application and requires the Applicant to adhere to the following:

- Signed and sealed drawings approved for construction by a professional engineer to be submitted prior to commencement of construction;
- On completion of the project the Applicant shall provide record drawings.

These are reflected in condition No. 16 and 46 in the Permit.

The proposal meets Engineering’s requirements, subject to adherence to the listed project and environmental conditions in the Permit.

3.3 Marine Operations

The proposed Project does not cause any navigational concerns as it is fully within the Applicant’s waterlot and will only impact the Applicant’s operations for the duration of construction.

Marine Operations have reviewed the application and require the Applicant to adhere to the following:

- Notify the Harbour Master two days prior to commencing construction;
- Contact Canadian Coast Guard for issuance of a NavWarn;
- Inform the BC Coast Pilots & Pacific Pilotage Authority of the Marine Construction Staging Plan;
- Position vessels and barges in such a way that is safe to Marine traffic;
- Send newly constructed record drawings of marine works to the Canadian Hydrographic Service.

These are reflected in condition Nos. 22, 23, 24, 30 and 47 in the Permit.

The proposal meets Marine Operations’ requirements, subject to adherence to the listed project and environmental conditions in the Permit.

4 STAKEHOLDER CONSULTATION

The proposed Project was assessed to have potential impacts to stakeholders and the local community and consultation activities were determined to be required. The following sections describe the stakeholder consultation activities undertaken by the Applicant and the Port Authority as part of the project and environmental review.

4.1 Municipal Consultation

The proposed Project was assessed by the Port Authority to have potential impacts to municipal interests. A referral letter was sent to the District of North Vancouver on March 2, 2021 notifying them of the proposal.

The District of North Vancouver responded with comments on the proposed Project. Below is a table summarizing the comments received and how they were considered as part of the project and environmental review.

Issue	Mitigations and Permit Conditions	Rationale
Due to the nature of the proposed work both in water and on land, it is important that the contractor obtain an Erosion and Sediment Control Plan for review and approval as noted in the CEMP.	Condition No. 32 of the Permit requires the Applicant to carry out all work in accordance with the construction environmental management plan provided by the Applicant. The construction environmental management plan summarizes erosion and sediment control measures.	Adherence to an approved construction environmental management plan will ensure potential impacts to the marine environment are appropriately mitigated.
Request for additional information regarding potential increase in traffic on District roads during construction.	None required.	Construction traffic volumes are unknown at this time, but unlikely to significantly affect roads in the area. Construction equipment, materials and contractors are set to arrive at the site via both marine and land transportation. The

		Applicant may need to consult directly with District staff to discuss any municipal requirements that apply to road traffic.
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4.2 North Shore Waterfront Liaison Committee - Liaison Group Notification

The proposed Project was assessed to be of potential interest to the North Shore Waterfront Liaison Committee (NSWLC) community liaison group. A referral letter was sent to the committee as part of their March 12, 2021 meeting package, notifying them of the proposed Project. The Port Authority did not receive any comments from the NSWLC.

5 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 March 1 to March 30, 2021. At the close of the 30 calendar day public comment period, no comments were received from the public.

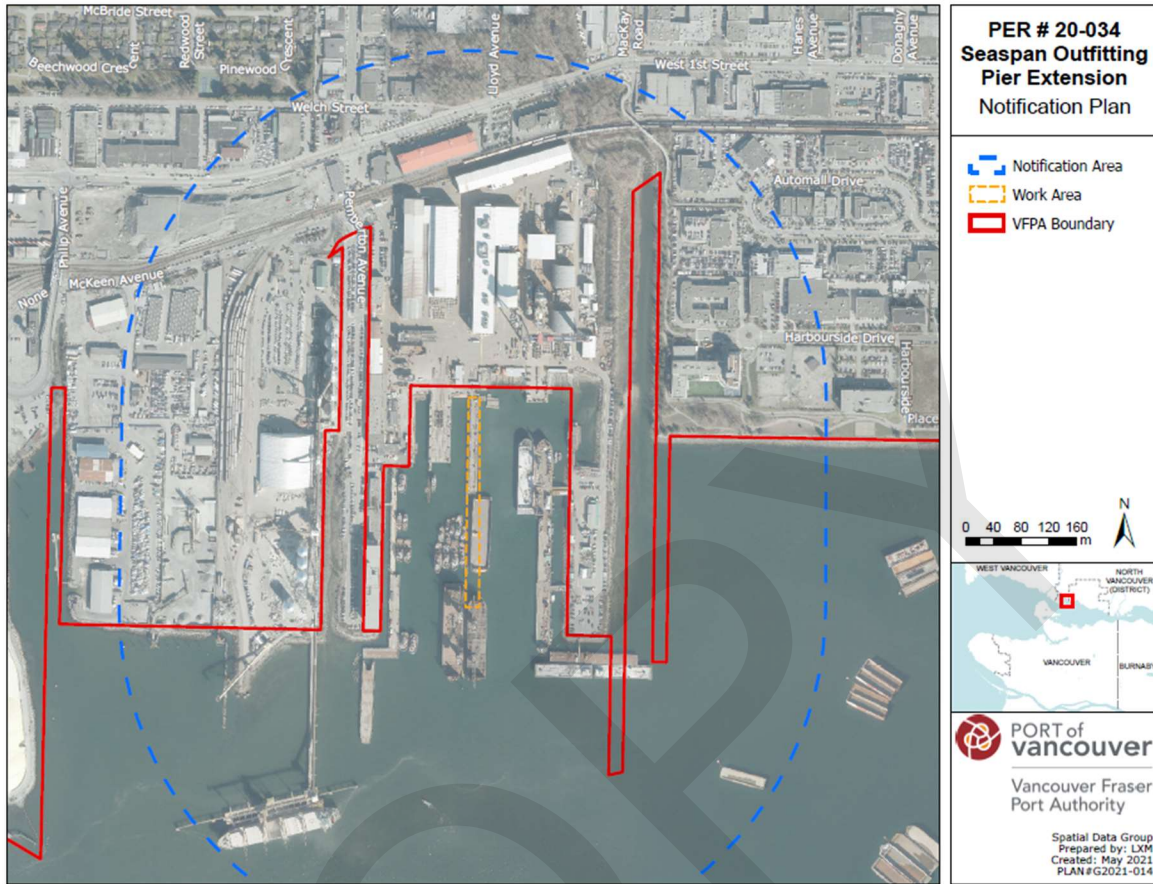
5.1 Summary of Public Engagement

A description of the Project and proposed works, and all supporting materials were posted to the Port Authority’s website in March 2021. In addition, the notice of intent was posted to the Canadian Impact Assessment Registry as noted above. A link to the Canadian Impact Assessment registry posting was included on the Port Authority’s and the Applicant’s project specific webpages. Links were provided from the port authority’s webpage to the Applicant’s website for more information.

The proposed Project was assessed by the Port Authority to have potential impacts to community interests in the surrounding area during construction. These include potential impacts such as noise caused by pile removal and installation activities, or dredging activities during construction.

As a result, the Applicant is required to send a construction notice to adjacent residents and businesses in the District and City of North Vancouver as shown in the map below. The notification area is within approximately 500 m from the project site. The Applicant is also required to send a copy of the construction notice via email to the Norgate Community Association. The construction notice shall be distributed by the Applicant at least 10 business days prior to the start of works. The construction notice will also be posted on the Port Authority’s and the Applicant’s websites. This is set out conditions No. 19 and 20 in the project permit.

Map of notification area



6 INDIGENOUS CONSULTATION

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

The following Indigenous groups were consulted:

- Musqueam Indian Band
- Squamish Nation
- Tsleil-Waututh Nation

The following consultation activities were conducted - on February 11, 2021, a referral package was sent to each of the Indigenous groups listed above. The referral package included:

- Consultation letter
- Participation Funding Agreement
- Attachments:
 - Seaspan Outfitting Pier Extension Application document
 - Appendix A – Project and Environmental Review application submission requirements and application form
 - Appendix B – Location Plan
 - Appendix C – Site Plan
 - Appendix D – Seaspan Site Photo Log
 - Appendix E – Design Drawings

- Appendix F – Construction Fire Safety Plan
- Appendix G – Pre-Demolition Hazardous Building Materials Assessment
- Appendix H – Geotechnical Report
- Appendix I – Biophysical Survey Report – Subtidal Dive Survey
- Appendix J – Dredge Sediment Report
- Appendix K – Archeological Overview Assessment
- Appendix L – Construction Environmental Management Plan
- Appendix M – Fisheries and Oceans Request for Review Application
- Appendix N – Draft Communications Plan
- Appendix O – Draft Material for the North Shore Waterfront Liaison Committee (NSWLC)

Comments were requested from Indigenous groups within 45 calendar days, by March 29, 2021. On March 17, 2021, reminders were sent to those Indigenous groups who had not yet submitted comments to indicate that the end of the comment window was upcoming. The consultation period was subsequently extended.

The Port Authority provided written responses to the comments provided by various Indigenous groups, in July and August 2021. Meetings were also held with interested Indigenous groups to discuss the project in April 2021 and again in August 2021. The comment window for the project closed on August 26, 2021.

Below is a table summarizing comments received by the Port Authority from Indigenous groups and how they were considered as part of the Project and Environmental Review:

Issue	Mitigations and Permit Conditions	Rationale
Concerns regarding the potential for the project to impact undisturbed archaeological or cultural heritage resources.	None.	As no ground disturbing activities are planned for the proposed project, further archaeological studies are not planned.
Potential for construction activities (i.e., machinery and equipment) to affect water quality and subsequently impact fish habitat.	The applicant submitted a Construction and Environmental Management Plan (CEMP), which included a number of mitigation measures relating to water quality, including the following based on specific feedback from Indigenous groups: <ul style="list-style-type: none"> • Requiring that drip trays be placed under all stationary equipment • Requiring that a large spill kit be available on-site at all times • Details regarding the maintenance of fuel containers 	None.
Potential for dredging activities to affect water quality.	The applicant has prepared a Dredge Management Plan, which indicates that a silt curtain will be in place for dredging activities.	None.
Potential impacts of underwater noise to fish during pile driving.	See conditions No. 34 & 35.	None.

<p>Occurrence of in-water activities outside of the Department of Fisheries and Oceans (DFO) Least Risk window for fish in Burrard Inlet.</p>	<p>None.</p>	<p>Dredging will occur during the DFO least risk fish window and all other activities will occur year-round with appropriate mitigations in place.</p>
<p>Role of the environmental monitor (EM) and the ability of the EM to stop work.</p>	<p>See condition No. 31 & 33. Additional details regarding the role of the EM are contained in the CEMP submitted by the applicant. This includes granting the EM the authority to issue stop-work orders.</p>	<p>None.</p>
<p>Concerns that a cumulative effects assessment was not included.</p>	<p>None.</p>	<p>Consideration of cumulative effects is inherently integrated into the Port Authority's environmental reviews and initiatives. While the Port Authority does not have a legislative requirement to explicitly consider cumulative effects, the past and current effects of development on the environment provide the context for PER.</p>
<p>Concerns that the project may result in an increase in marine traffic and noise.</p>	<p>None.</p>	<p>It is not anticipated that any increased capacity brought about by the project would have a notable impact on marine traffic in the area. Construction impacts are to be confined to the Applicant's waterlot and only impact their own operations.</p>
<p>Concerns regarding the potential for the project to impact marine mammals.</p>	<p>A Marine Mammal Management Plan will be developed for the project. See condition No. 21.</p>	<p>None.</p>

The Port Authority has made a meaningful effort to consult with all potentially affected Indigenous groups. Based on the record of consultation, the Port Authority is of the view that the duty to consult has been met.

7 ENVIRONMENTAL EFFECTS REVIEW

To fulfill its responsibilities under the *Canada Marine Act* and the *Impact Assessment Act*, the Port Authority must make a determination on the potential environmental effects of a proposed project on Port Authority managed lands and waters prior to authorizing those works to proceed. To make that determination, the Port Authority considers the residual adverse effects of the Project, that is, the effects after mitigation measures have been taken into account.

This section of the project and environmental review report summarizes the environmental effects review conducted for the Project, and provides the environmental effects decision. The environmental review also considered the information provided in the previous sections of this report.

7.1 Scope of Environmental Review

The environmental review includes consideration of the potential environmental effects of the proposed Project, taking into account mitigation measures to avoid or reduce those effects. This review considered the Project components and physical activities described in Section 2.

The temporal scope of the review includes Project construction and operation.

The environmental review considered potential adverse environmental and social effects of the Project on 14 environmental components (e.g., species with special status, aquatic species and their habitat, recreational interests, etc.) and from accidents and malfunctions. These environmental components are aspects of the biophysical and socio-economic environment considered to have ecological, economic, social, cultural, archaeological, or historical importance.

Section 7.2 summarizes the results of the environmental effects review and proposed mitigations.

7.2 Environmental Effects and Mitigation Summary

Project information pertinent to the environmental review includes the following:

- A subtidal marine biophysical dive survey was conducted within the footprint of the new outfitting pier and dredge area in June 2020 to assess and characterize the marine environment potentially affected by the Project. Substrates observed throughout the survey area were dominated by fines or sand. Overall, limited species diversity and low density were observed within the Project area. Dungeness crab, red rock crab, and horse clams were observed on the soft bottom habitat, while plumose anemones, ochre stars, shiner perch and striped perch were observed on, or around, the existing dolphin/pile structures. The most common organism observed throughout the survey area was the mottled star. Algae was generally rare, with sugar wrack kelp being the most commonly observed species.
- The construction environmental management plan (CEMP) submitted as part of the application identified mitigation measures to be implemented during the Project, including: environmental monitoring by a qualified professional, isolating the work area using floating silt curtains, visual monitoring for marine mammals and adherence to a cetacean exclusion zone, hydroacoustic monitoring during impact pile driving to monitor underwater sound, and implementing spill prevention planning.
- Sediment sampling identified contaminated surface sediment in the western portion of the basin which has been characterized and delineated in consultation with Environment and Climate Change Canada (ECCC). Sediments not suitable for disposal at sea will be appropriately handled and disposed in an upland licensed landfill facility permitted to receive contaminated sediment. Sediment chemistry analysis indicated that a portion of the upper elevation and deeper portions of sediment within the dredge pocket may meet criteria and be suitable for disposal at sea.
- The dredge management plan identified mitigation measures to be implemented during dredging, including: isolating the work area using floating silt curtains, conducting a salvage program within the construction area to capture and relocate slow moving resident marine species such as crabs, dredging contaminated sediment using an environmental clamshell bucket to limit sediment suspension in the water column, and sequencing dredging to first remove contaminated sediments (up to approximately 1.5 metres below the seabed) and collect confirmatory samples, followed by dredging material intended for disposal at sea.

- A Request for Review and supplemental information were submitted to Fisheries and Oceans Canada (DFO). In response, DFO recommended mitigations to be implemented to reduce potential impacts to fish and fish habitat. These include monitoring by a qualified environmental professional, conducting hydroacoustic monitoring during impact pile driving, using an effective sound attenuation device (e.g., bubble curtain) to reduce peak sound pressure levels to below 206 dB re: 1 µPa and a SELcum of 186 dB re: µPa2s outside of the sound attenuation device to protect fish and pinnipeds, establishing a cetacean exclusion zone (e.g., perimeter around the noise source) prior to impact pile driving where sound levels are not to exceed 160 dBRMS re: 1 µPa at the edge of the cetacean exclusion zone, and using a soft start procedure during impact pile driving.
- A desktop-based archaeological review determined that the risk of impact to archaeological or protected historical resources is very low. Additional detailed archaeological studies were not recommended.

The following table summarizes the potential environmental effects the project could have on the identified environmental components.

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
Air quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on air quality during construction activities from equipment operation. Mitigation measures to reduce the potential for adverse effects will be implemented as detailed in the construction environmental management plan. This includes an idling reduction, the turning off of emission sources when not in use, and dust control if needed. Construction activities will be temporary and short-term in duration (i.e., intermittent over an approximately 18 month period).</p> <p>With mitigation in place, residual adverse effects on air quality are not expected to be significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lighting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects from lighting during nighttime construction activities and operation. Mitigation measures will be implemented to reduce those effects, including pointing temporary construction lights downward and placing task lighting close to the work area. Lighting is anticipated to have minimal adverse effects due to the location of the Project in an industrial zone and construction works being limited to marine activities.</p> <p>With mitigation in place, residual adverse effects from Project-related lighting are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
Noise	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse noise effects during construction activities.</p> <p>Mitigation measures to reduce the potential for adverse effects will be implemented as detailed in the construction environmental management plan. With the exception of dredging, construction activities will be conducted during regular hours. Construction noise is anticipated to have minimal adverse effects due to the location of the Project in an industrial zone and works being limited to marine activities.</p> <p>With mitigation in place, residual adverse effects on noise are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Soils	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Project is located within subtidal and intertidal areas in Burrard Inlet. Soils are not anticipated to be affected by the Project.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sediments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects to sediment from spills during marine construction activities and suspension of sediments during dredging.</p> <p>Mitigation measures outlined in the construction environmental management plan and the dredge management plan will be implemented during construction to mitigate adverse effects to sediments. These include isolating the work area using floating silt curtains, dredging contaminated sediment using an environmental clamshell bucket to limit sediment suspension in the water column, monitoring for turbidity during in-water works, and implementing a spill prevention, containment and clean-up plan.</p> <p>During operation, surface water on the new pier will be directed to the upland and incorporated into the existing upland stormwater management system.</p> <p>With mitigation in place, residual adverse effects on sediment quality are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ground water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Project is located within subtidal and intertidal areas in Burrard Inlet. Groundwater is not anticipated to be affected by the Project.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
Surface water and water bodies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on surface water and water bodies from spills during marine construction activities and suspension of sediments during dredging.</p> <p>Potential adverse effects will be reduced through the implementation of mitigation measures outlined in the construction environmental management plan and dredge management plan, including isolating the work area using floating silt curtains, dredging contaminated sediment using an environmental clamshell bucket to limit sediment suspension in the water column, sequencing dredging to first remove contaminated sediments followed by dredging material intended for disposal at sea, monitoring for turbidity during in-water works, and implementing a spill prevention, containment and clean-up plan.</p> <p>During operation, surface water on the new pier will be directed to the upland and incorporated into the existing upland stormwater management system.</p> <p>With mitigation in place, residual adverse effects on surface water and water bodies are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Species/habitat with special status</p> <p>Assessed under section 79 of the <i>Species at Risk Act</i>, as applicable</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>There is potential for adverse effects on species with special status during construction activities. Federally-listed fish and marine mammal species have the potential to be found in the Project area. None of these species were identified at the site during the biophysical survey.</p> <p>Mitigation measures to reduce the potential for adverse effects will be implemented as detailed in the construction environmental management plan, including: visual monitoring for marine mammals and adherence to a cetacean exclusion zone, hydroacoustic monitoring during impact pile driving to monitor underwater sound, and use of an effective sound attenuation device (e.g., bubble curtain) to reduce peak sound pressure levels to below 206 dB re: 1 µPa and a SELcum of 186 dB re: µPa2s outside of the sound attenuation device to protect fish and pinnipeds.</p> <p>With mitigation in place, residual adverse effects on species/habitat with special status are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
Terrestrial resources (e.g., vegetation, wildlife, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Project is located within subtidal and intertidal areas in Burrard Inlet and the surrounding area is predominantly industrial land. No disturbance or removal of terrestrial vegetation is proposed as part of the Project.</p> <p>Terrestrial resources are not anticipated to be affected by the Project.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The Project is located within subtidal and intertidal areas in Burrard Inlet. Wetland habitat is not anticipated to be affected by the Project.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Aquatic resources (e.g., aquatic plants, fish and fish habitat, waterbirds, marine mammals, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Project-related activities have the potential to disturb aquatic species and fish habitat (e.g., through induced turbidity and other changes to water quality, underwater noise, displacement of species during construction, and accidental spills).</p> <p>Potential adverse effects will be reduced through the implementation of mitigation measures outlined in the construction environmental management plan and dredge management plan, including: environmental monitoring by a qualified professional, isolating the work area using floating silt curtains, visual monitoring for marine mammals and adherence to a cetacean exclusion zone, hydroacoustic monitoring during impact pile driving to monitor underwater sound, use of an effective sound attenuation device (e.g., bubble curtain) to reduce peak sound pressure levels to below 206 dB re: 1 µPa and a SELcum of 186 dB re: µPa2s outside of the sound attenuation device to protect fish and pinnipeds, dredging contaminated sediment using an environmental clamshell bucket, and salvaging and relocating crabs outside of the Project area prior to pile driving and dredging.</p> <p>With mitigation in place, residual adverse effects on aquatic resources are expected to be not significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Health and socio-economic conditions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Based on the very low magnitude of residual effects on air and noise, the Project is not expected to cause adverse effects on health or socio-economic conditions of people, including Indigenous people.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Component	Potential Adverse Effects?		Overview of Potential Adverse Effects, Mitigation Measures, and Residual Adverse Effects	Significant Residual Adverse Effects?	
	Yes	No		Yes	No
Archaeological, physical, and cultural heritage resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The Project is located within an area of historical fill and disturbance. An archaeological review determined that the risk of impact to archaeological or protected historical resources is very low. Adverse effects on archaeological, physical, and cultural heritage resources are not anticipated.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Accidents and malfunctions Assessed as required by the <i>Canada Marine Act</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There is potential for adverse effects on surface water from accidental equipment leaks or spills. Mitigation measures will be in place to reduce potential for adverse, project-related effects due to accidents, by implementing the measures outlined in the construction environmental management plan. With mitigation measures in place, the effect of an accident or malfunction on the environment, if it were to occur, is predicted to be not significant.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Residual adverse effects (i.e., effects that remain with mitigation in place) were identified for the following environmental components:

- Air quality
- Lighting
- Noise
- Sediment
- Surface water and waterbodies
- Species or habitat with special status
- Aquatic resources
- Accidents and malfunctions

Overall, the residual adverse effects of the Project on the environmental components are characterized as:

- Low in magnitude, because impacts are anticipated to be not significant with mitigations in place
- Local in geographic extent, because effects will be limited to the Project area and immediate vicinity
- Short-term in duration because Project construction will be intermittent and temporary for approximately 18 months and unlikely to result in ongoing effects on water quality or aquatic resources once construction is complete
- Continuous (daily to weekly) in frequency during Project construction
- Reversible/temporary because residual adverse effects of the Project would cease once the Project construction is complete

In conclusion, based on the characterization above, the mitigation measures proposed by the Applicant and the permit conditions, the residual adverse effects from the Project are predicted to be not significant.

7.3 Environmental Effects Review Decision

In completing the project and environmental effects 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 Permit conditions, the Project is not likely to cause significant adverse environmental effects.

ORIGINAL COPY SIGNED

LISA MCCUAIG
MANAGER, ENVIRONMENTAL PROGRAMS

October 14, 2021

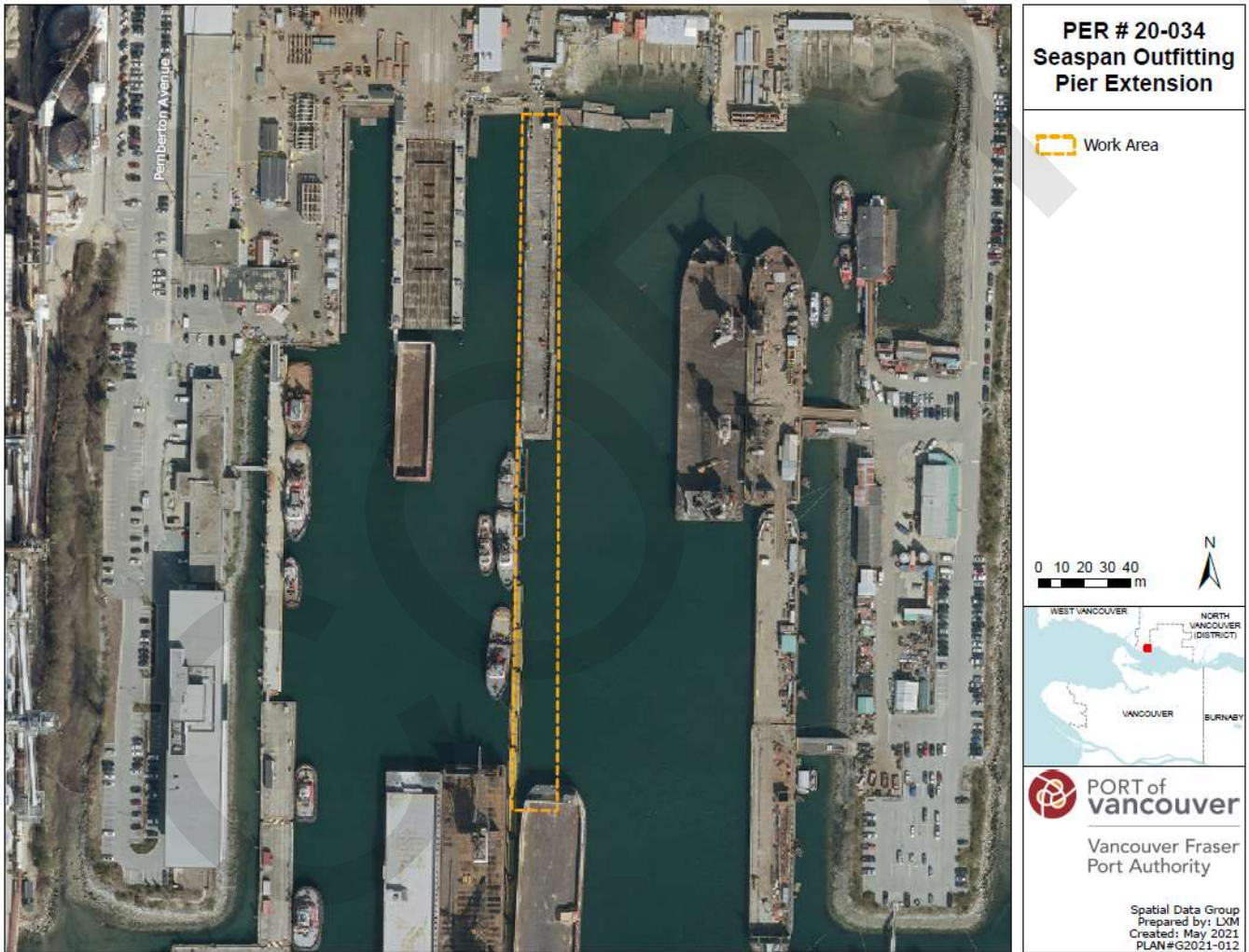
DATE OF DECISION

8 CONCLUSION

In completing the project and environmental review, the Port Authority concludes that with the implementation of proposed mitigation measures and conditions described in the Permit, the Project has appropriately addressed all identified concerns.

It is the recommendation of staff that this application be approved subject to conformance with the project and environmental conditions listed in project permit **PER No. 20-034**.

APPENDIX A Location Plan

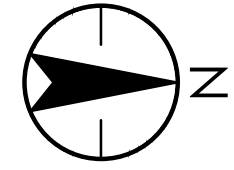


APPENDIX B

List of Information Sources

The Port Authority has relied on the following sources of information in the project and environmental review of the Project:

- Application form and materials submitted by Applicant on behalf of the tenant on November 19, 2020;
- All Project correspondence from November 19, 2020 to September 16, 2021;
- All plans and drawings labelled PER No.20-034-A to I;
- “Construction Fire Safety Plan – Outfitting Pier Extension Project”, November 19, 2020, Seaspan;
- “Pre-Demolition Hazardous Building Materials Assessment – T-dock Outfitting Pier”, October 5, 2020, Stantec Consulting Ltd.;
- “Preliminary Geotechnical Design Report - Seaspan Outfitting Pier Expansion”, October 16, 2020, Stantec Consulting Ltd.;
- “Seaspan Shipyard: T-dock Outfitting Pier Subtidal SCUBA Survey – Biophysical Subtidal SCUBA Survey Results”, August 10, 2020, Stantec Consulting Ltd.;
- “Dredge Sediment Report Samplien and Analysis Plan - Seaspan Vancouver Shipyard Outfitting Pier”, November 6, 2020, Stantec Consulting Ltd.



VANCOUVER FRASER PORT AUTHORITY
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A

WHARF

VANCOUVER SHIPYARDS HEAD OFFICE

MARINE TRANSPORTATION SERVICES

ADMINISTRATION BUILDING

TOOL CRIB

CHALET

WHARF

GL-SYNGROLIFT

SERVICES SHOP

FUEL DEPOT

TIMBER CLUSTER PILES TO REMAIN

FLOATING STEEL CAMEL TO REMAIN

8 TIMBER CLUSTER PILES AND 9 FLOATING STEEL CAMEL TO BE REMOVED

FLOATING TIMBER WALKWAY TO BE REMOVED AND REPURPOSED

TIMBER T DOCK TO BE DEMOLISHED

VANCOUVER HARBOUR

BARGE MAINTENANCE TERMINAL

LOAD OUT PIER

WR

ST-04

MPB TIE UP

PARKING

MAINTENANCE SHOP

WASTE AREA

Reference Drawing List:

- Existing wood & concrete Pile Plan from 216131-201 -1- C.dwg
- Outfitting Pier Layout from Concept Layout Draft6.dwg
- Geotech Investigation Map From VFPA S2019-013.dwg
- Vancouver shipyard Base Plan from Simplified Site Plan.dwg
- Borehole and CPT/SCPT from Test_Hole_Plan.dwg
- Bathymetric data from Merged-Bathy-Contours.dwg

Revision	By	Appd.	Date
C	LM	CR	20.11.18
B	LM	CR	20.10.14
A	LM	CR	20.06.15

LEGEND:

- EXISTING PIER TO BE REMOVED/ DEMOLISHED
- BUILDINGS
- MARINE TRANSPORTATION SERVICES

Permit-Seal

PRELIMINARY
 FOR INFORMATION ONLY

Consultants



1100-111 Dunsmuir Street
 Vancouver BC V6B 6A3
 www.stantec.com

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Client/Project



SEASpan VANCOUVER SHIPYARDS
 OUTFITTING PIER EXPANSION
 NORTH VANCOUVER, BRITISH COLUMBIA

File Name: 115619249-101.DWG

LM CR LM 20.05.16
 Dwn. Chkd. Dgrn. YYJMM/DD

Title

OUTFITTING PIER
 SITE DEMOLITION PLAN

Project No.
 115619249

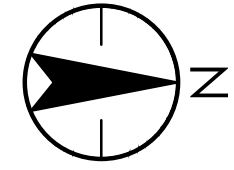
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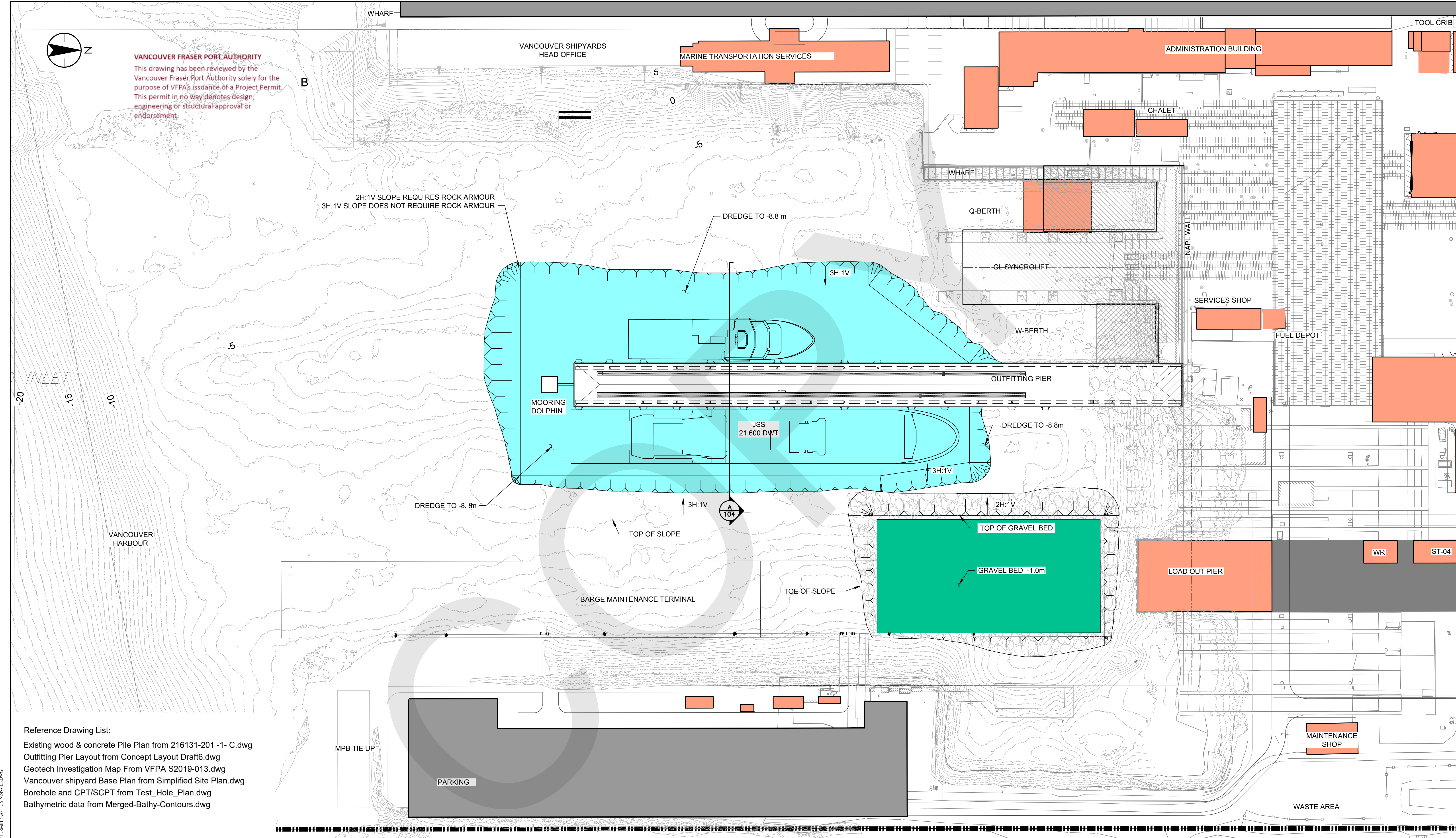
Revision

C



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2H:1V SLOPE REQUIRES ROCK ARMOUR
 3H:1V SLOPE DOES NOT REQUIRE ROCK ARMOUR



- Reference Drawing List:
- Existing wood & concrete Pile Plan from 216131-201 -1- C.dwg
 - Outfitting Pier Layout from Concept Layout Draft6.dwg
 - Geotech Investigation Map From VFPA S2019-013.dwg
 - Vancouver shipyard Base Plan from Simplified Site Plan.dwg
 - Borehole and CPT/SCPT from Test_Hole_Plan.dwg
 - Bathymetric data from Merged-Bathy-Contours.dwg

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Revision	By	Appd.	YYMMDD
D	LM	CR	20.11.18
C	LM	CR	20.11.10
B	LM	CR	20.10.14
A	LM	CR	20.06.15

LEGEND:

- DREDGE POCKET
- VESSEL OUTLINES
- OUTFITTING PIER
- BUILDINGS
- MARINE TRANSPORTATION SERVICES
- DREDGED AREA

Permit-Seal

PRELIMINARY

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Client/Project

SEASPAN VANCOUVER SHIPYARDS
 OUTFITTING PIER EXPANSION
 NORTH VANCOUVER, BRITISH COLUMBIA

File Name: 115619249-103.DWG

LM	CR	LM	20.05.29
Dwn.	Chkd.	Dgrn.	YYMMDD

Title

OUTFITTING PIER
 SITE GENERAL ARRANGEMENT

Project No. 115619249

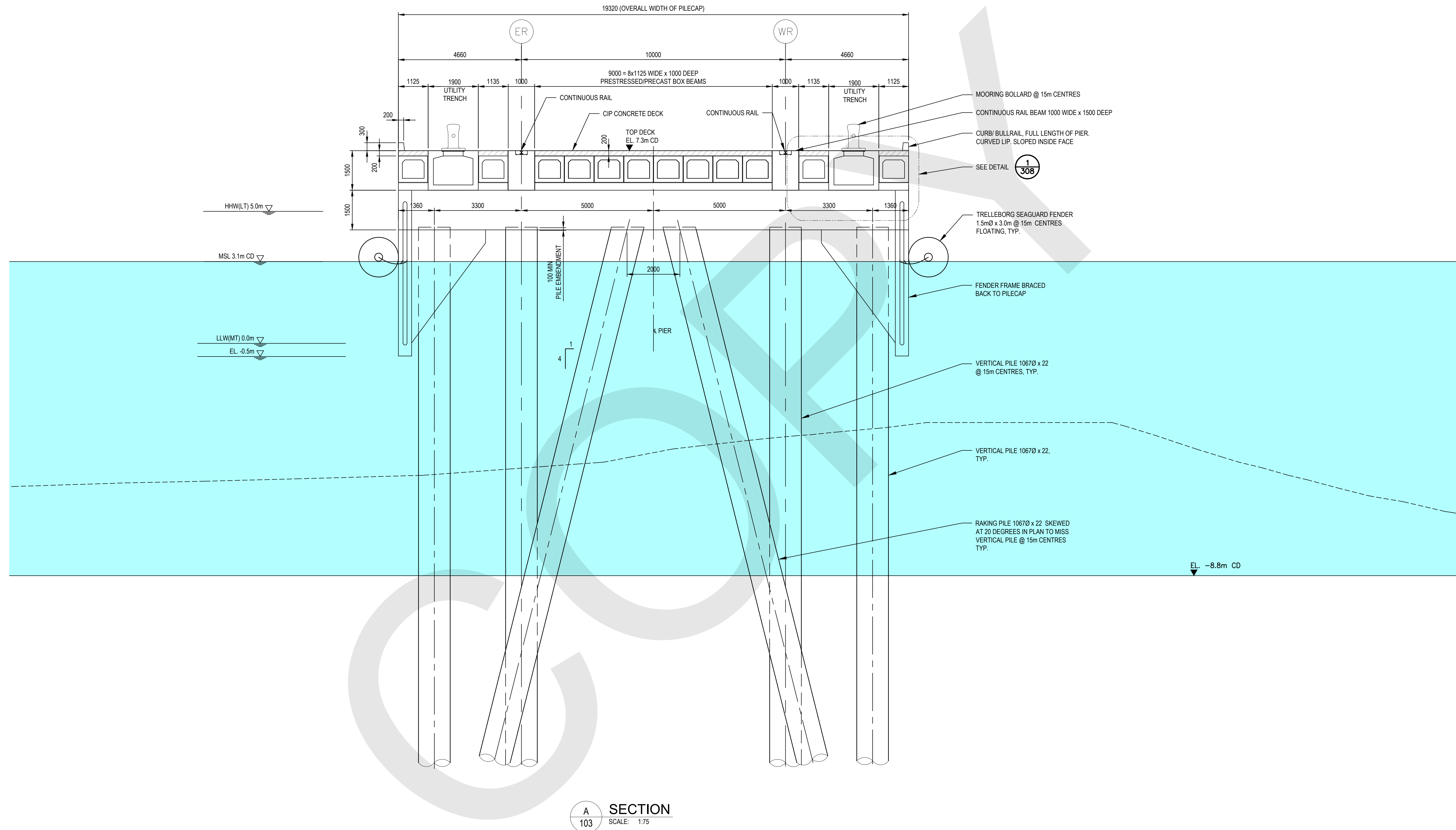
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Revision D

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C




A SECTION
 103 SCALE: 1:75

U:\115619249\4 DRAWINGS\02 WORK IN PROGRESS DRAWINGS\FOR PERMITTING\115619249-104.DWG 11/18/2020 8:13 AM ORIGINAL SHEET - ARCH D


Revision	By	Appd.	YYMMDD
C	LM	CR	20.11.18
B	LM	CR	20.10.14
A	LM	CR	20.06.15

Permit-Seal	Consultants
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>PRELIMINARY</p> <p>FOR INFORMATION ONLY</p> </div>	



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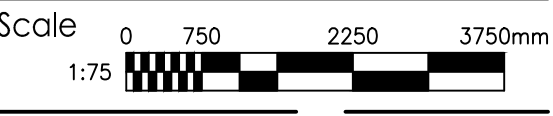
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SEASPAN VANCOUVER SHIPYARDS
 OUTFITTING PIER EXPANSION
 NORTH VANCOUVER, BRITISH COLUMBIA

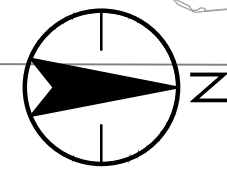
Client/Project	File Name	Dwn.	Chkd.	Dsgn.	YYMMDD
SEASPAN VANCOUVER SHIPYARDS OUTFITTING PIER EXPANSION NORTH VANCOUVER, BRITISH COLUMBIA	115619249-104.DWG	LM	CR	LM	20.05.29 YYMMDD

Title	Project No.	Scale	Drawing No.	Revision
OUTFITTING PIER GENERAL ARRANGEMENT CROSS SECTION	115619249	1:75	115619249-104	C

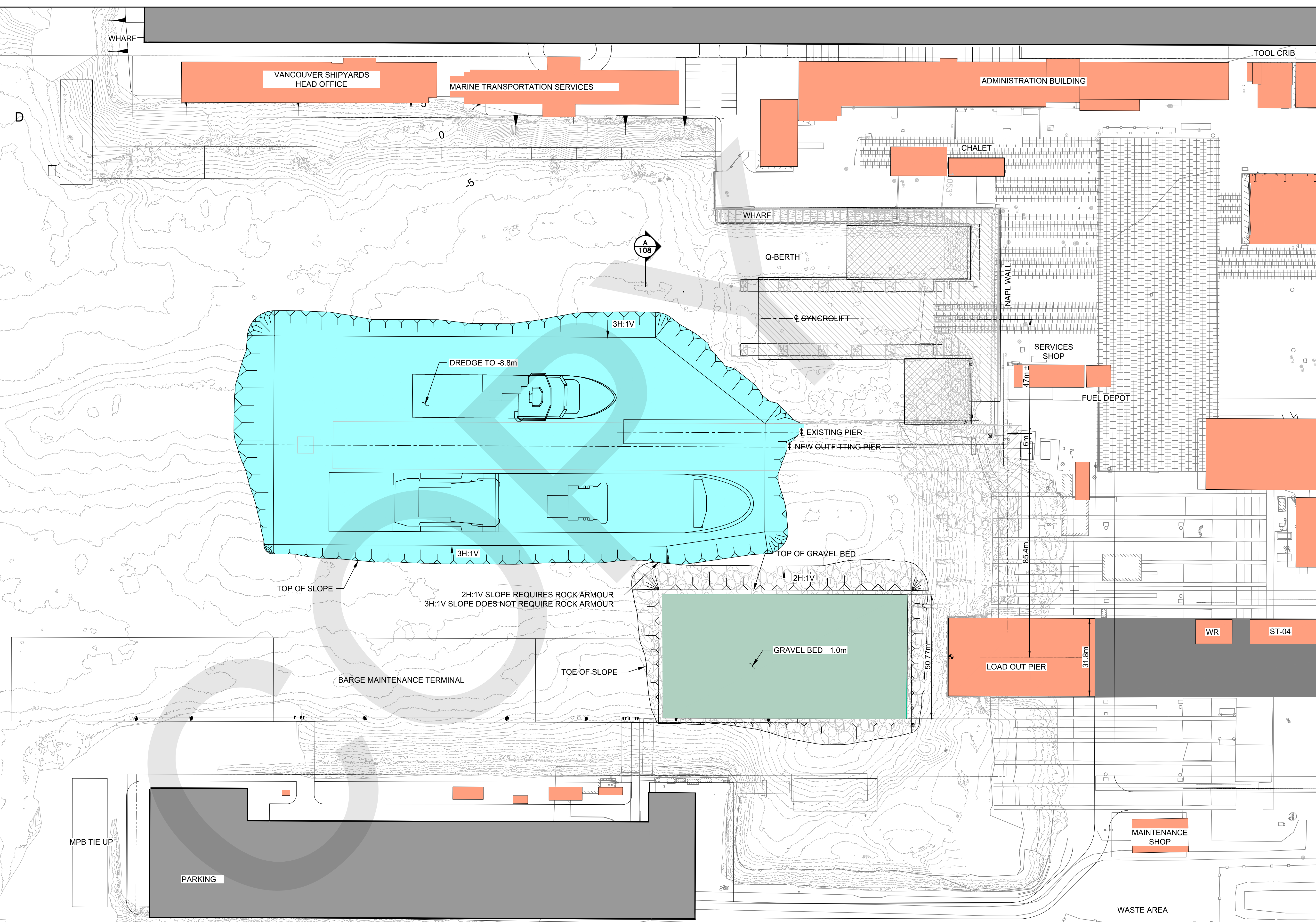


Revision

C



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POINT TABLE			
POINT	EASTING	NORTHING	ELEVATION
1	492292.73	5462220.41	-8.800
2	492289.61	5462064.44	-8.800
3	492374.99	5462062.73	-8.800
4	492378.21	5462223.70	-8.800
5	492372.99	5462263.86	-8.800
6	492328.62	5462264.71	-8.800

U:\115619249\4 DRAWINGS\02 WORK IN PROGRESS DRAWINGS\01 PERMITTING\115619249-105.DWG
11/18/2020 11:17 PM

Revision	By	Appd.	YYMMDD
D	ISSUED FOR PERMITTING	LM	CR 20.11.18
C	ISSUED FOR 60% MODIFIED	LM	CR 20.11.10
B	ISSUED FOR 60% REVIEW	LM	CR 20.10.14
A	ISSUED FOR 30% REVIEW	LM	CR 20.06.15

LEGEND:

- DREDGE POCKET
- VESSEL OUTLINES
- OUTFITTING PIER
- BUILDINGS
- PHASE 1 DREDGED AREA
- GRAVEL BED (BY OTHERS)

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 OUTFITTING PIER EXPANSION
 NORTH VANCOUVER, BRITISH COLUMBIA

File Name: 115619249-105.DWG

JL	CHK	LM	20.05.22
Dwn.	Chkd.	Dgrn.	YYMMDD

Title

OUTFITTING PIER
 DREDGE PLAN

Project No.
115619249

Drawing No.
115619249-105

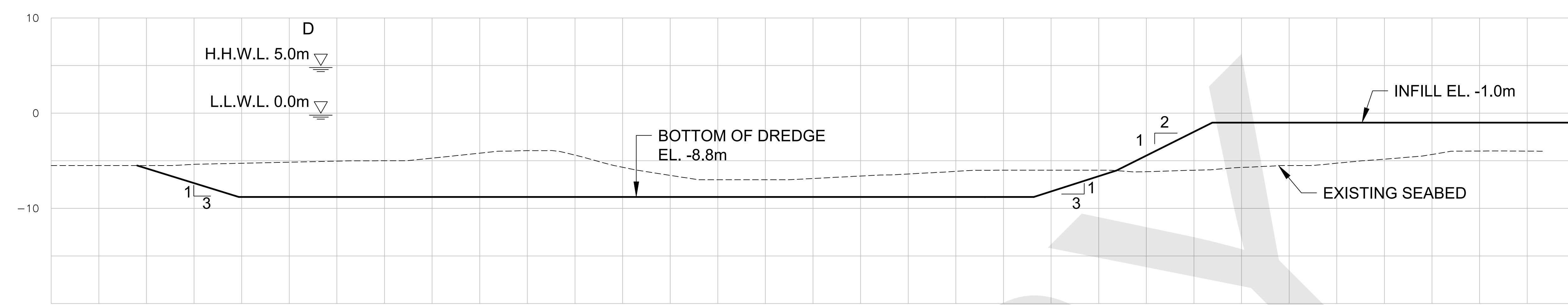
Scale 0 7.5 22.5 37.5m
1:750

Revision
D

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E



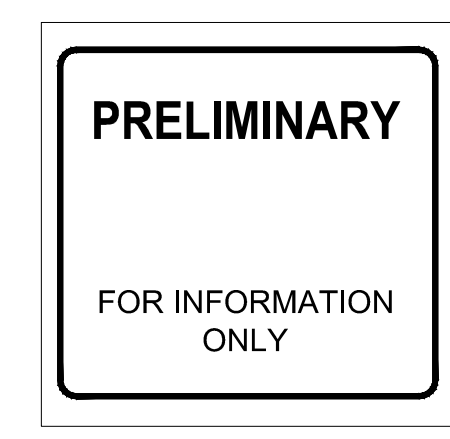
A SECTION
SCALE: 1:400

COPY

U:\115619249\4_DRAWINGS\02_WORK IN PROGRESS_DRAWINGS\015619249-108.DWG
11/18/2020 8:15 AM

Revision	By	Appd.	YY.MM.DD
D	LM	CR	20.11.18
C	LM	CR	20.11.10
B	LM	CR	20.10.14
A	LM	CR	20.06.15

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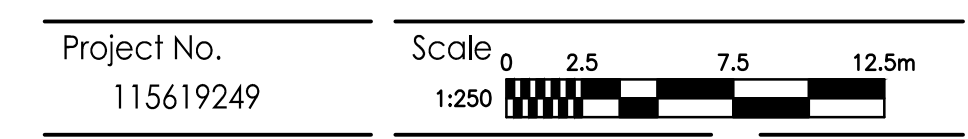


SEASpan VANCOUVER SHIPYARDS
OUTFITTING PIER EXPANSION
NORTH VANCOUVER, BRITISH COLUMBIA

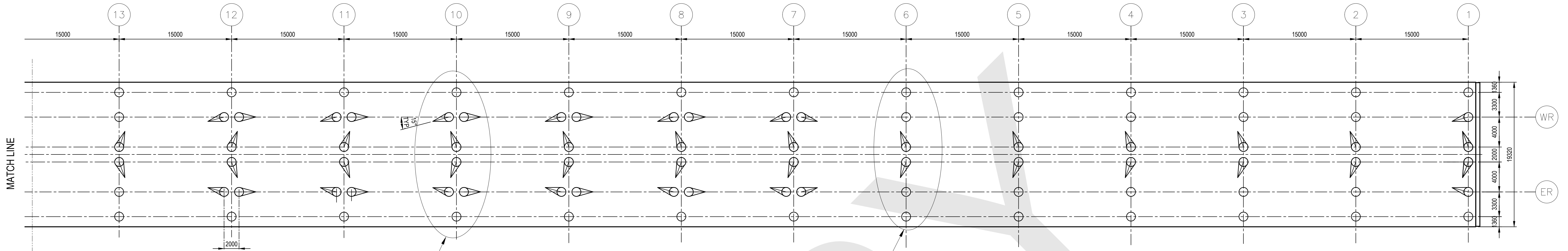
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		Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title

OUTFITTING PIER
DREDGE CROSS SECTIONS

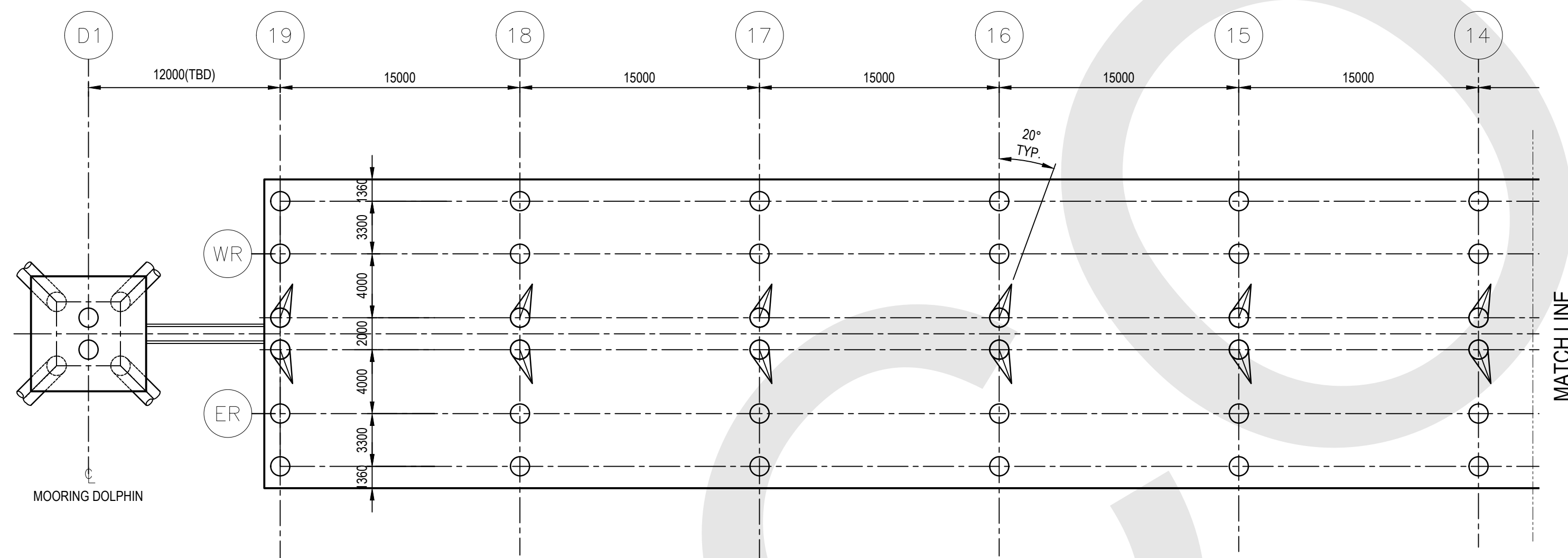


Project No. 115619249
Drawing No. 115619249-108
Revision D

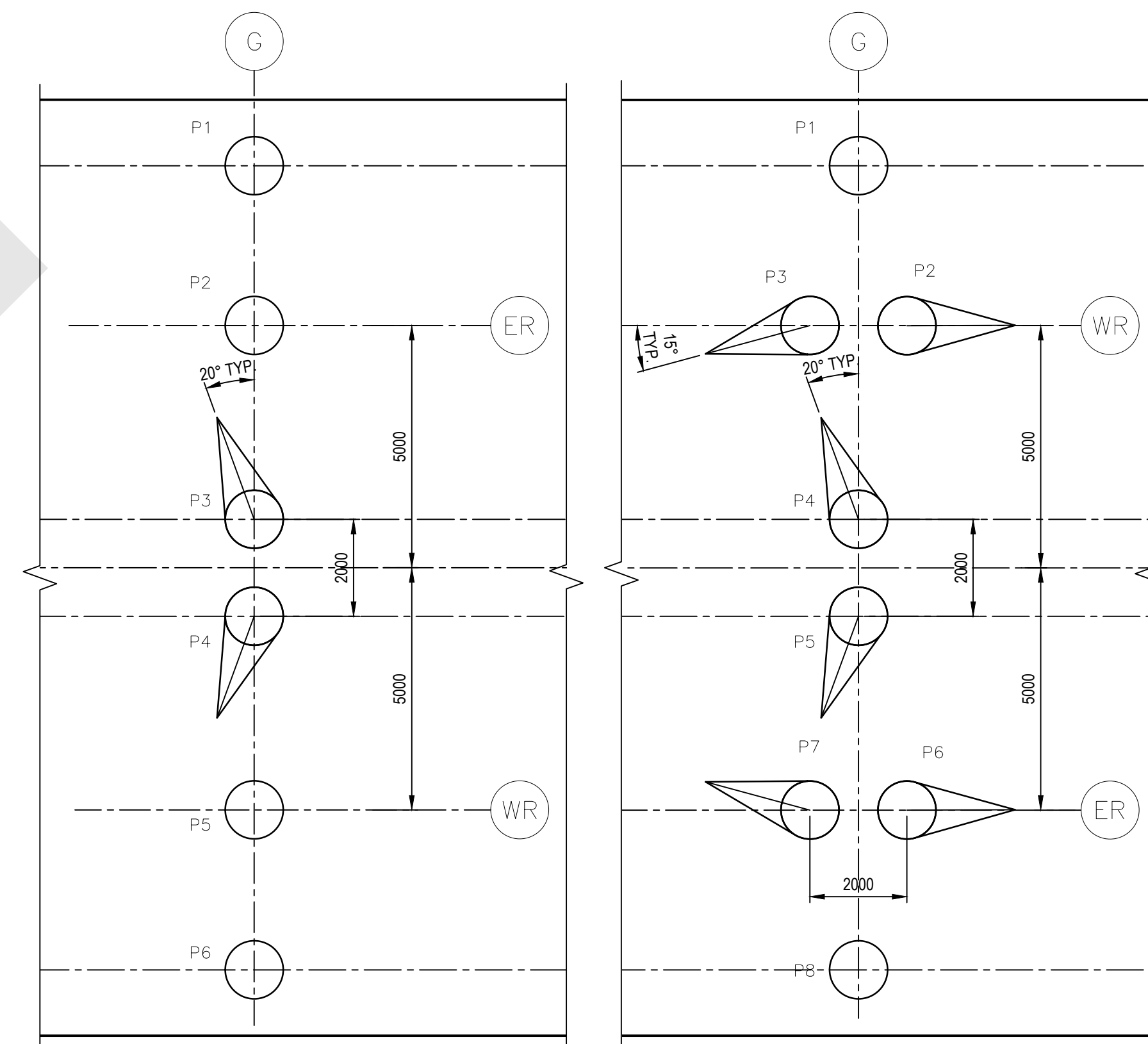


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F

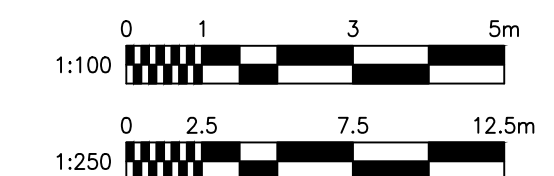


PIER DECK PLAN
 SCALE: 1:400



1 TYPICAL DETAIL
 SCALE: 1:100
 (P3 & P4 SKEW ANGLE REVERSED GRID 12-21)

2 DETAIL
 SCALE: 1:100



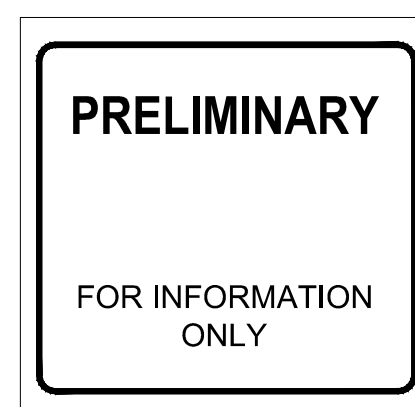
U:\115619249\4 DRAWINGS\02 WORK IN PROGRESS DRAWINGS\01 PERMITTING\115619249-201.DWG 11/18/2020 8:18 AM

Revision	By	Appd.	YY.MM.DD
C	LM	CR	20.11.18
B	LM	CR	20.11.10
A	LM	CR	20.10.14

LEGEND:

- ⊗ VERTICAL PILE
- ⊗ PAKER PILE
- ⊕ CENTERLINE EAST RAIL
- ⊖ CENTERLINE WEST RAIL
- ⊙ DOLPHIN NUMBER
- ⊙ PIER GRID NUMBER

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 OUTFITTING PIER EXPANSION
 NORTH VANCOUVER, BRITISH COLUMBIA

File Name: 115619249-201.DWG
 Dwn. CR LM 20.10.15
 Chkd. Dgpr. YY.MM.DD

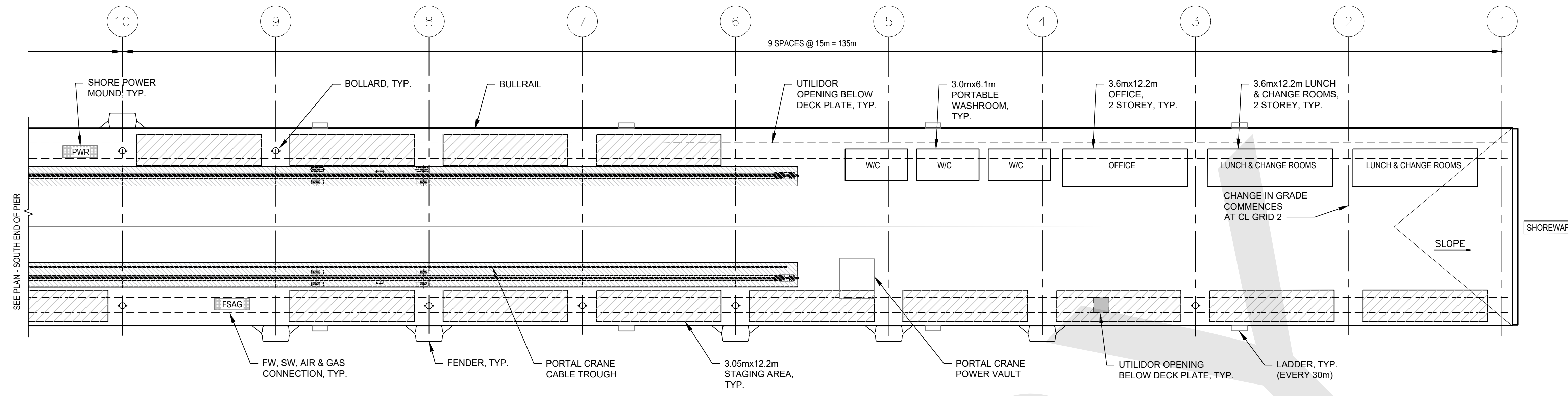
Title

OUTFITTING PIER
 PILING
 GENERAL ARRANGEMENT

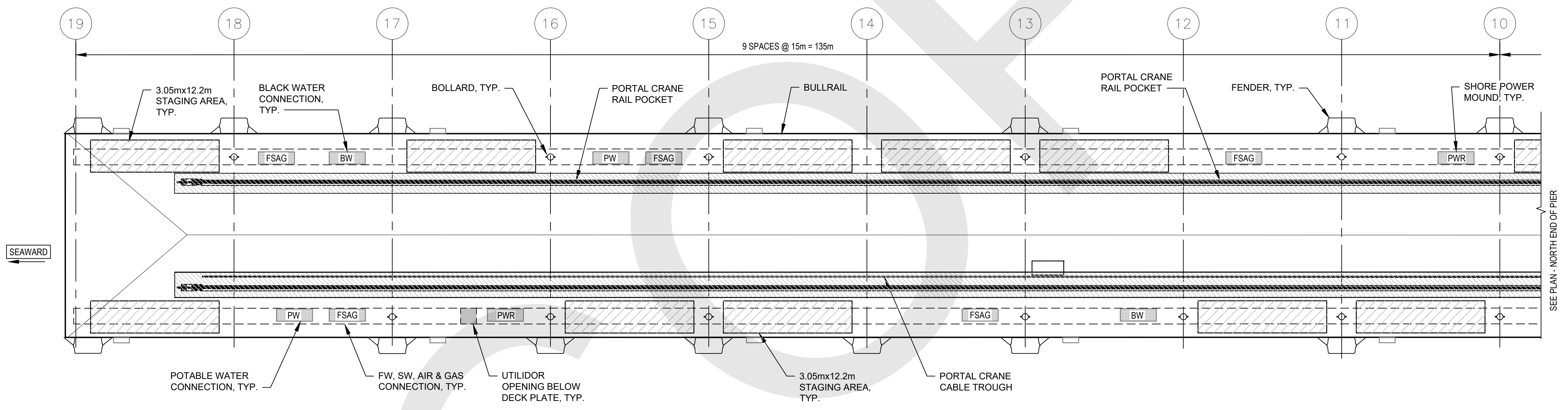
Project No. 115619249 Scale

Drawing No. 115619249-201 Revision

115619249-201 C



PLAN - NORTH END PIER
SCALE: 1:250



PLAN - SOUTH END PIER
SCALE: 1:250

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G

U:\115619249\4 DRAWINGS\02 WORK IN PROGRESS DRAWINGS\FOR PERMITTING\115619249-302.DWG
17/10/2020 8:36 AM

Revision	By	Appd.	YYMMDD
D	LM	CR	20.11.18
C	LM	CR	20.11.10
B	LM	CR	20.10.24
A	LM	CR	20.06.15

LEGEND:

- PIER GRID NUMBER
- STAGING AREA

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OUTFITTING PIER EXPANSION
NORTH VANCOUVER, BRITISH COLUMBIA

File Name: 115619249-302.DWG

JL	CR	LM	20.10.28
Dwn.	Chkd.	Dsgn.	YYMMDD

Title

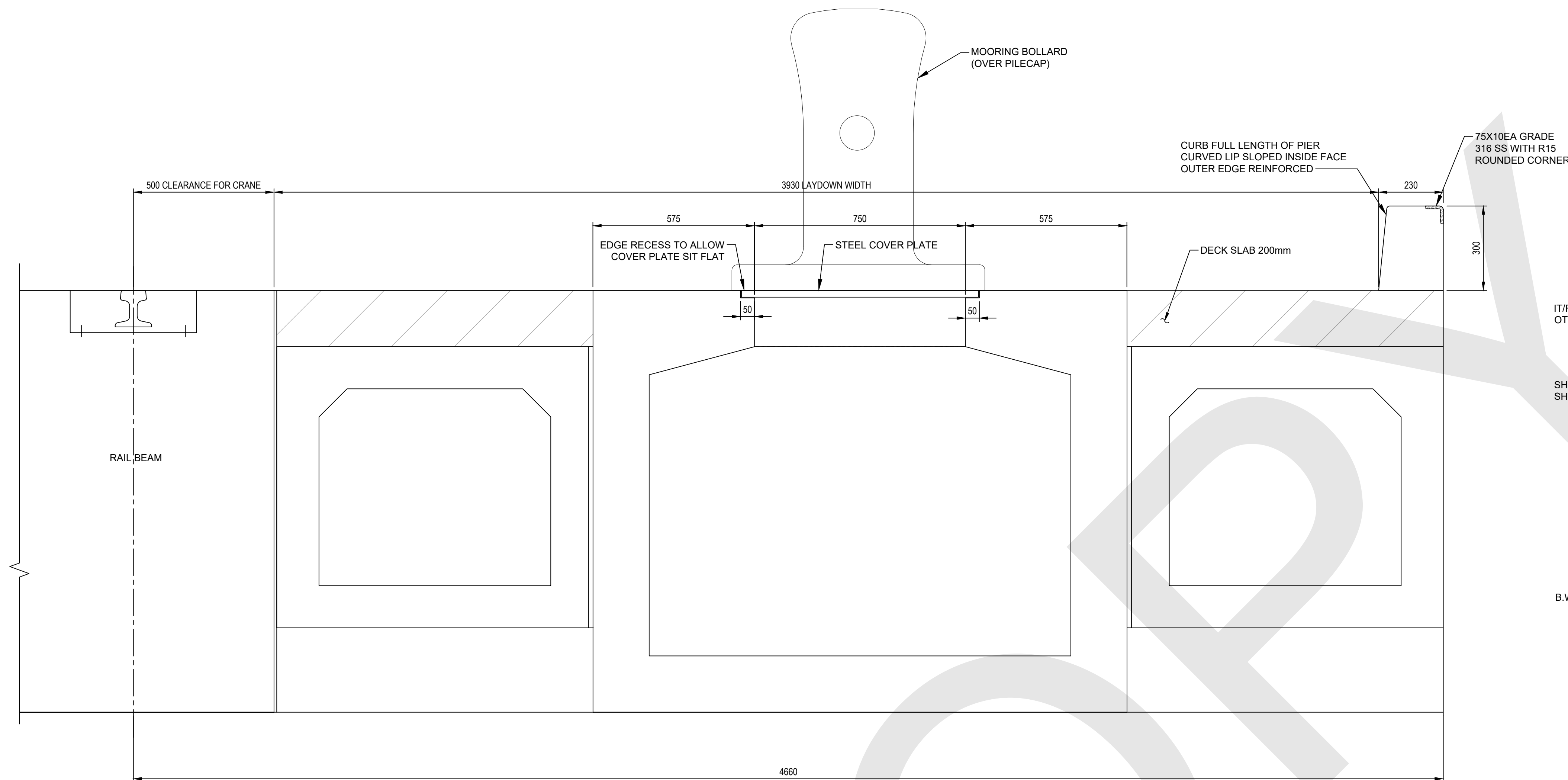
OUTFITTING PIER
GENERAL ARRANGEMENT
PIER DECK PLAN

Project No. 115619249

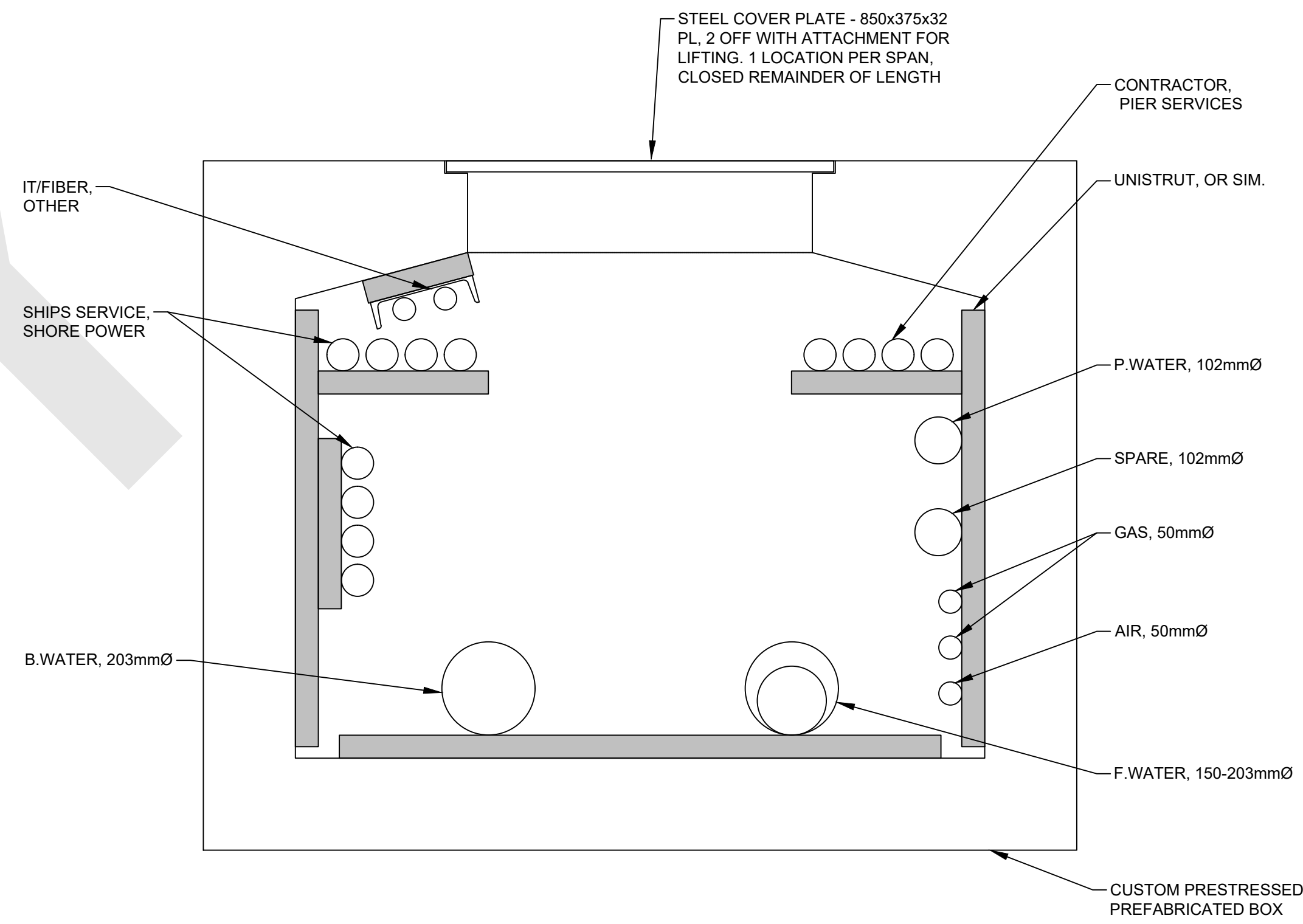
Drawing No. 115619249-302

Scale 0 2.5 20.0 37.5m
1:250

Revision D



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1 DETAIL
 104 SCALE: 1:10

UTILIDOR CROSS SECTION
 SCALE: 1:10

U:\115619249\4_DRAWINGS\02_WORK IN PROGRESS_DRAWINGS\FOR PERMITTING\115619249-308.DWG 11/18/2016 9:02 AM

Revision	By	Appd.	YY.MM.DD
C	LM	CR	20.11.18
B	LM	CR	20.10.14
A	LM	CR	20.06.15

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 OUTFITTING PIER EXPANSION
 NORTH VANCOUVER, BRITISH COLUMBIA

File Name: 115619249-308.DWG

JL	CR	LM	20.06.01
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title

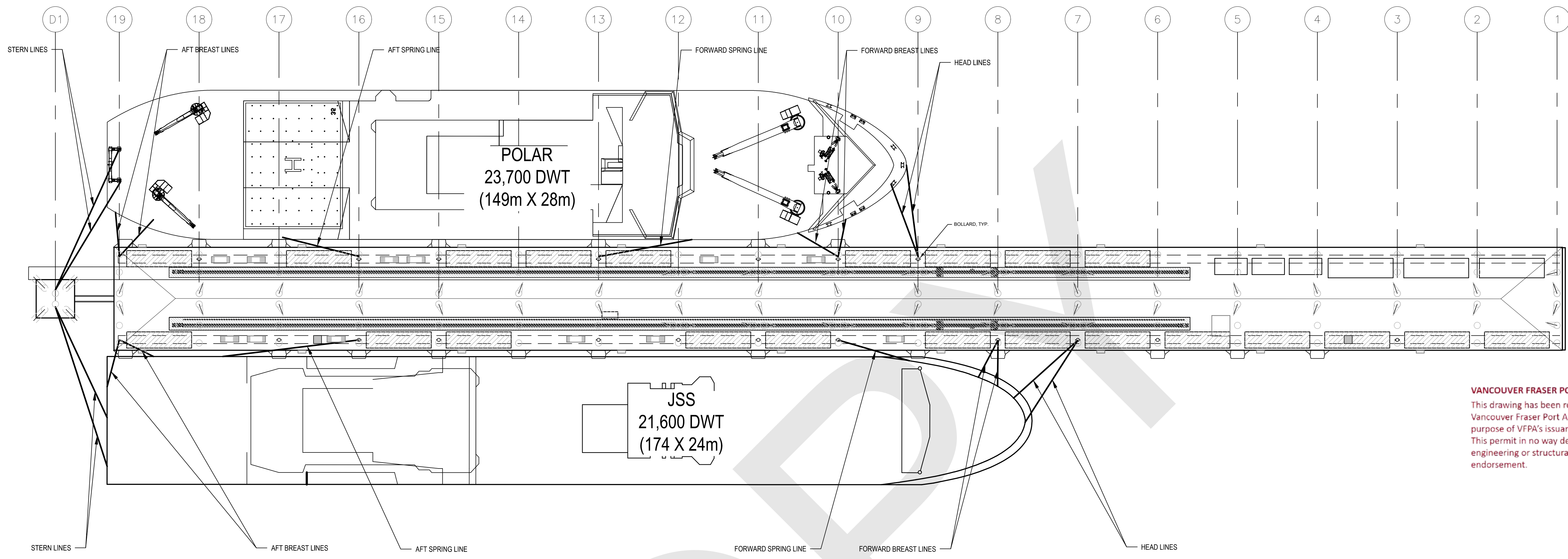
OUTFITTING PIER
 UTILITY TRENCH
 SERVICE DETAILS

Project No. 115619249

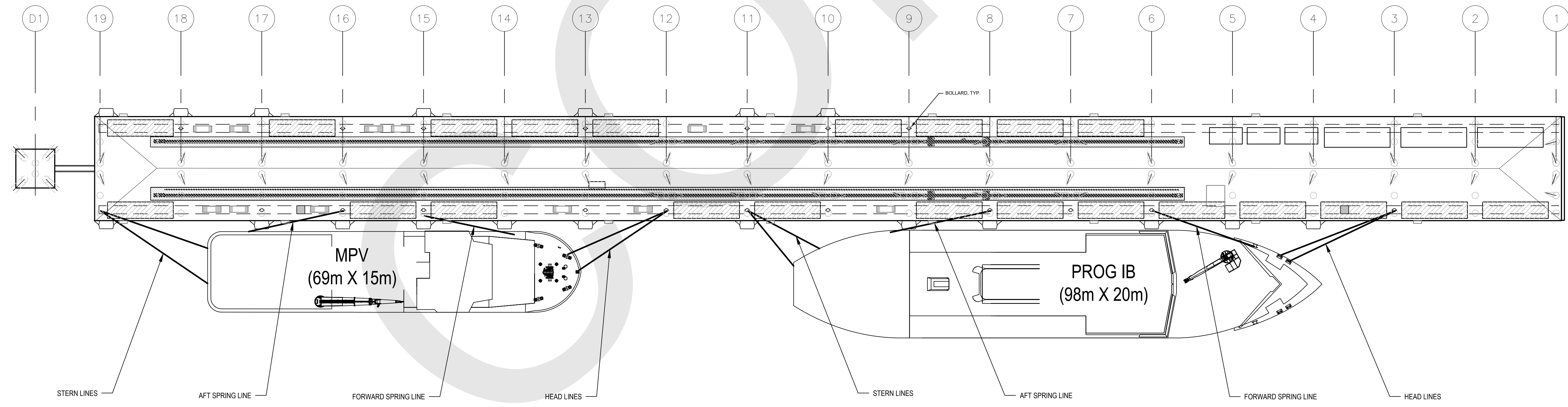
Drawing No. 115619249-308

Scale 1:10

Revision C



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17/10/2020 9:53 AM

Revision	By	Appd.	YY.MM.DD
D	LM	CR	20.11.18
C	LA	CR	20.11.10
B	LA	CR	20.10.14
A	LA	CR	20.06.15

NOTE:
 1. THE MOORING ANALYSIS WAS CONDUCTED FOR THE JSS AND POLAR VESSELS, EXCLUDING OOSV, MPV AND PROG IB VESSELS.

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 OUTFITTING PIER EXPANSION
 NORTH VANCOUVER, BRITISH COLUMBIA

File Name: 115619249-501.DWG
 J.L. CR LA 20.10.26
 Dwn. Chkd. Dgpr. YY.MM.DD

Title
 OUTFITTING PIER
 GENERAL ARRANGEMENT VESSEL MOORING
 PLAN FOR OPERATIONAL CONDITIONS

Project No.
 115619249

Drawing No.
 115619249-501

Scale
 1:400

Revision
 D