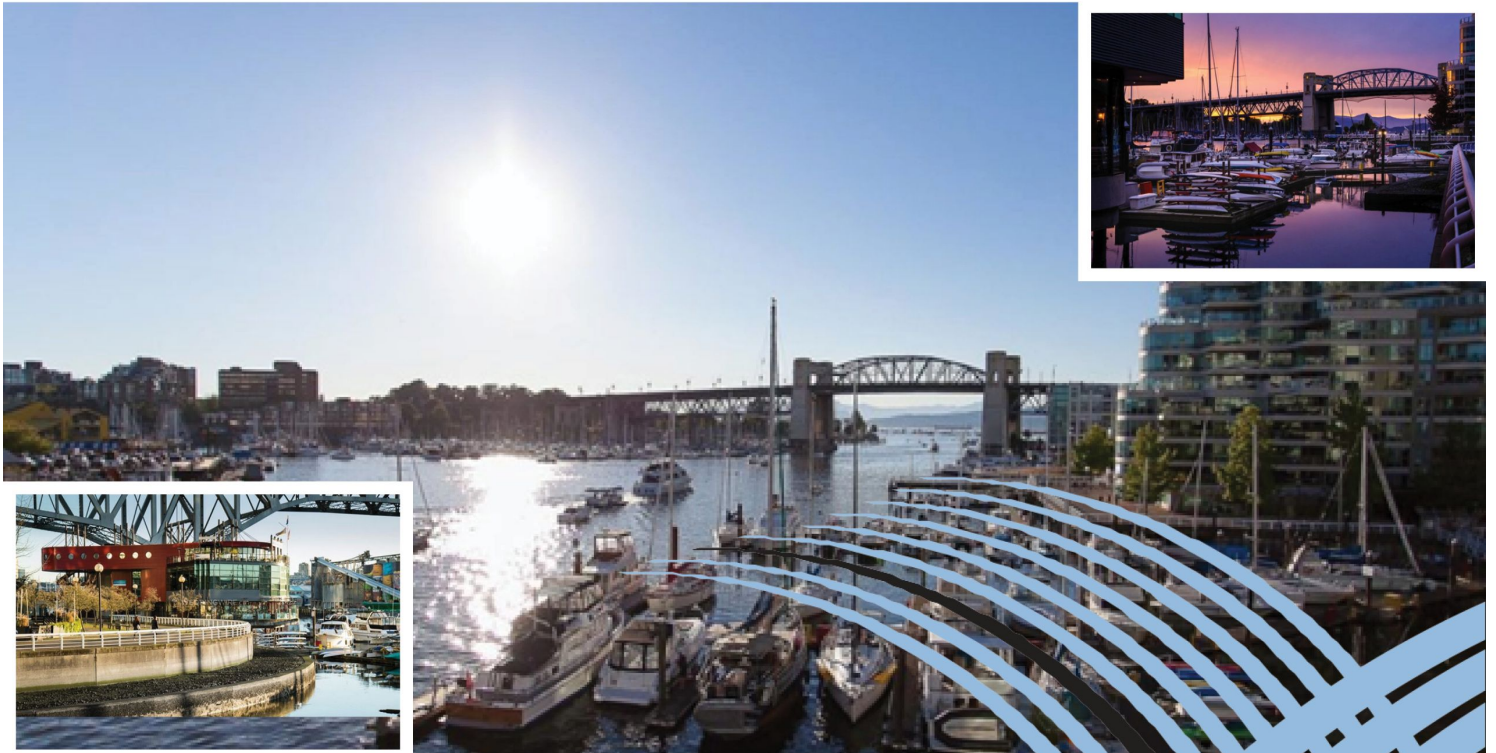


False Creek Yacht Club

Marina Retrofit Renewal Project



Prepared by:



Prepared for:



Date: January 2021



MARINA RENEWAL PROJECT

PROJECT DESCRIPTION

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1 INTRODUCTION

The False Creek Yacht Club (FCYC) was established on July 23, 1981 when a group of interested local boaters applied to the BC Government under the Society Act to create the False Creek Yacht Club (FCYC). FCYC is sited in False Creek directly across from Granville Island on either side and under the Granville Bridge. Refer to Exhibit 1 Location Plan. Note the existing Aqua Bus routes and embarkment locations are also identified for reference.

The FCYC is located at Latitude 49.2733 N and Longitude 123.1327 W.

The existing site plan of the Marina, its configuration and legal lots (one with the Provincial government and one with the Crown or the City of Vancouver) are noted on Exhibit 2: Existing Site Plan.

The FCYC is undertaking a renewal and retrofit of the existing marina, described herewith.

Exhibit 1: Location Plan

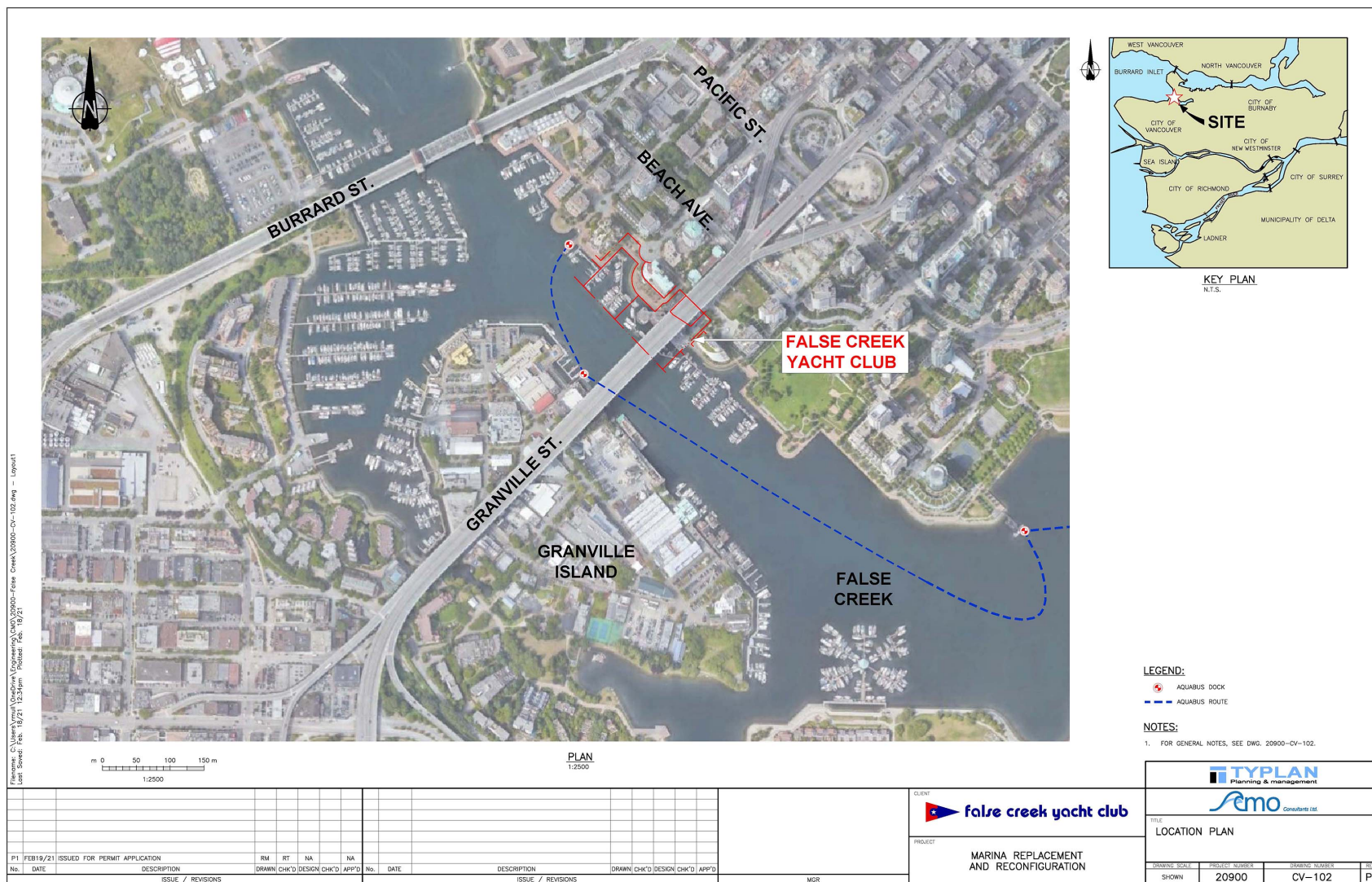
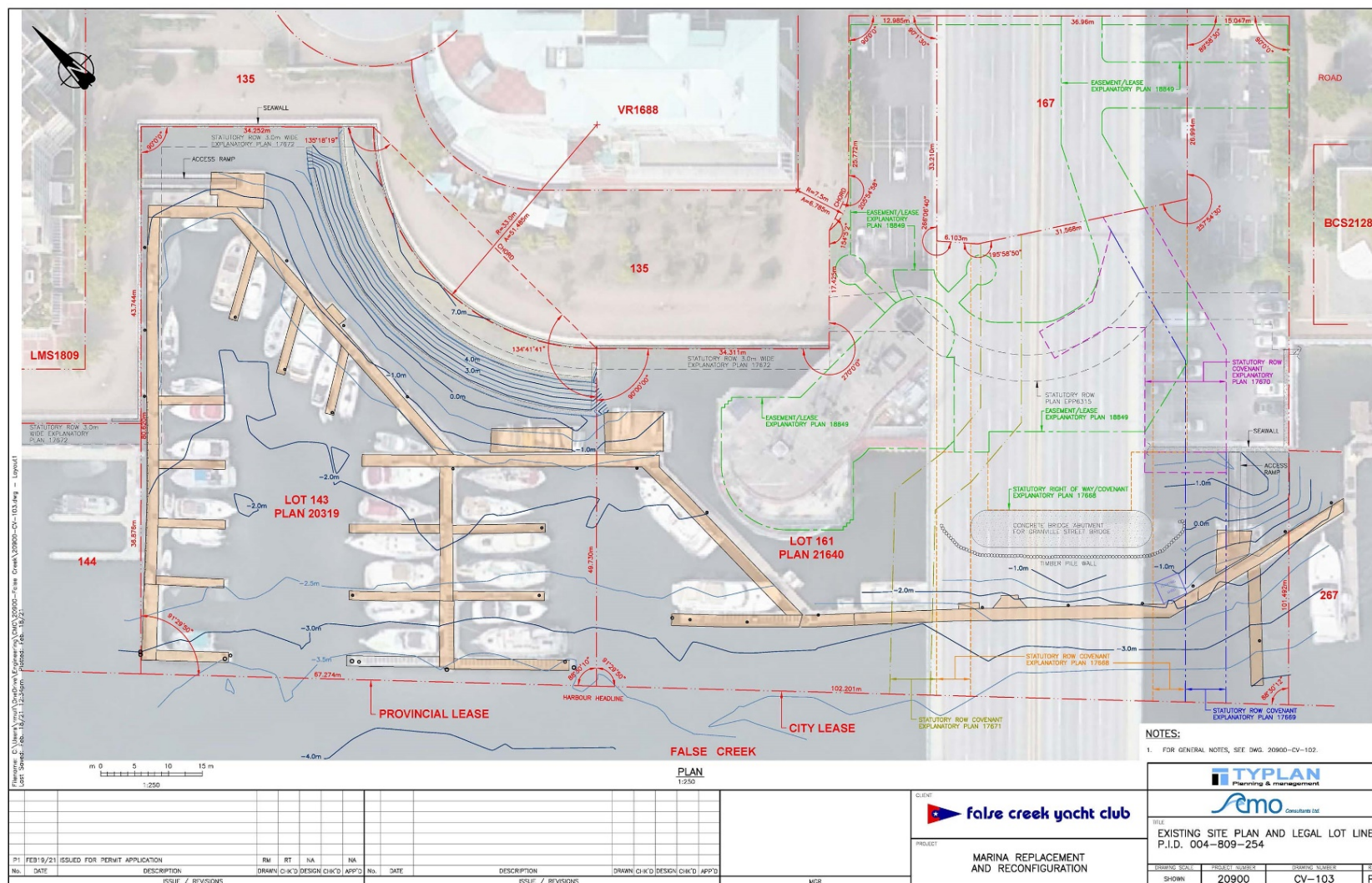


Exhibit 2: Existing Site Plan



1.1 Approving Agencies

This renewal/retrofit project requires an approval from the Navigation Protection Program (NPP) of Transport Canada (TC) who administer the Canadian Navigable Waters Act (CNWA) on behalf of the Federal Minister of Transport.

The FCYC is sited within two established water lot leases:

- Water lot lease with the Provincial Government; and
- Water lot lease with the Crown/City of Vancouver.

The Provincial water lot lease is managed by the Ministry of Forests Lands Natural Resources and Rural Development (FLNRD). FCYC has contacted FLNRD who have confirmed that no approval is required from their office.

The City of Vancouver water lot lease requires approval from a building permit perspective.

The Department of Fisheries and Oceans (DFO) represents a second Federal Authority (similar to NPP of TC) in which approval is required. DFO is responsible for:

“The Department's overarching **goal** is to protect Canada's three oceans, its coasts, waterways and fisheries, and to ensure these remain healthy for future generations.”

FCYC has retained Envirowest Consultants to undertake a self assessment associated with the proposed renewal /retrofit project.

1.2 Legal Description of Property

Stretching along False Creek on either side of the Granville Bridge, the FCYC accommodates approx. 110 boats of varying sizes, and is equipped with dock areas with BBQ's, dinghies, Kayak & SUP Storage & Use, the Folk Boat Sailing Vessel, laundry and showers, and pump out facilities. Existing city services (e.g., electrical water and sewer) are all connected to the City of Vancouver utilities.

Legally, the FCYC is sited on two water lots. They include:

- A provincial (water lot) lease described as Lot 143 Plan 20319; and

- Crown/City of Vancouver (water lot) lease lot 161 Plan 21640.¹

Refer to existing Site Plan illustrating the noted water lot leases.

1.3 The FCYC Renewal/Retrofit Project (Project Description)

FCYC is pursuing a renewal/retrofit project to support its initiative to secure its status under the Clean Marine BC (CMBC). CMBC is an innovative eco-certification program that recognizes marinas, boatyards, and other boating facilities for their implementation of environmental best practices.²

FCYC plans to renew /retrofit the marina to optimize site utilization while improving/replacing delapidated fingers and docks and replacing them with sound environmentally friendly ones. As part of renewal/ retrofit the existing piles, floats and docks have been assessed in regard to their condition, the majority of which are being replaced.

It is noted the renewal /retrofit will replace the existing main docks and fingers that has been designed with conduits to house all service lines, that currently reside on site and are connected to the City of Vancouver services.

No additional servicing capacity is required as a result of the renewal/retrofit. The general arrangement proposed by FCYC is presented on Exhibit 3 General Arrangement and the general arrangement in cross section is provided on Exhibit 4. Exhibit 5 Pile Plan and Pile List, provides a detailed summary of all of the piles that are to be removed, (both steel and timber) and proposed piles for the renewal/retrofit. A pile list is also presented that includes pile tip elevation, pile cut off elevation, pile length, pile size and unfactored force per pile.

1.3.1 Renewal Activities

The renewal activities include the following:

- Installation of an additional 7 new finger floats, sited within the extents of the existing the City of Vancouver water lot lease area (Lot 161 Plan 21640). The placement of these finger floats does not impact the navigational channel as they are sited within the City of Vancouver water lot.

¹ FCYC has identified Lot 161 as the City of Vancouver. However, as noted in the lease agreement FCYC is not sure of the actual ownership of the water lot. On the lease agreement it indicates the Crown but understand there is an agreement between the City regarding the Granville Street Bridge right of way. Clarification would be appreciated from the City of Vancouver.

² <https://georgiastrait.org/work/cleanmarinebc/>

- The placement of seven (7) proposed new finger floats (0.941 m wide or 1.22 m wide) will be secured with seven piles (within Lot 161) that consist of:
 - 1 finger float are 9.40 m in length, 0.941 m wide
 - 1 finger float 11.6 m in length, 0.941 m wide
 - 1 finger float is 12.1 m in length, 0.941 m wide
 - 1 finger float is 12.5 m in length, 0.941 m wide
 - 1 finger float is 13.2 m in length, 0.941 m wide
 - 1 finger float is 13.8 m in length, 0.941 m wide
 - 1 finger float is 14.5 m in length, 1.22 m wide
 - 1 finger float is 14.0 m in length, 1.22 m wide
 - 1 finger float is 18 m in length, 1.22 m wide

Relocation and expansion of the washroom structure within the City of Vancouver's lease area (Lot 161).

1.3.2 Retrofit Activities

The retrofit project consists of the following works:

- Removal of thirteen (24) timber piles.
- Removal of six (6) steel piles.
- Installation of 31 16" diameter steel pipe piles.
- Removal of all docks and floats and replacing them with new a new main float (width varies) and 16 replacement fingers.
- The retrofit project assessed of each pile (whether wood or steel) in term of their condition and need for replacement.

Exhibit 3: Proposed General Arrangement

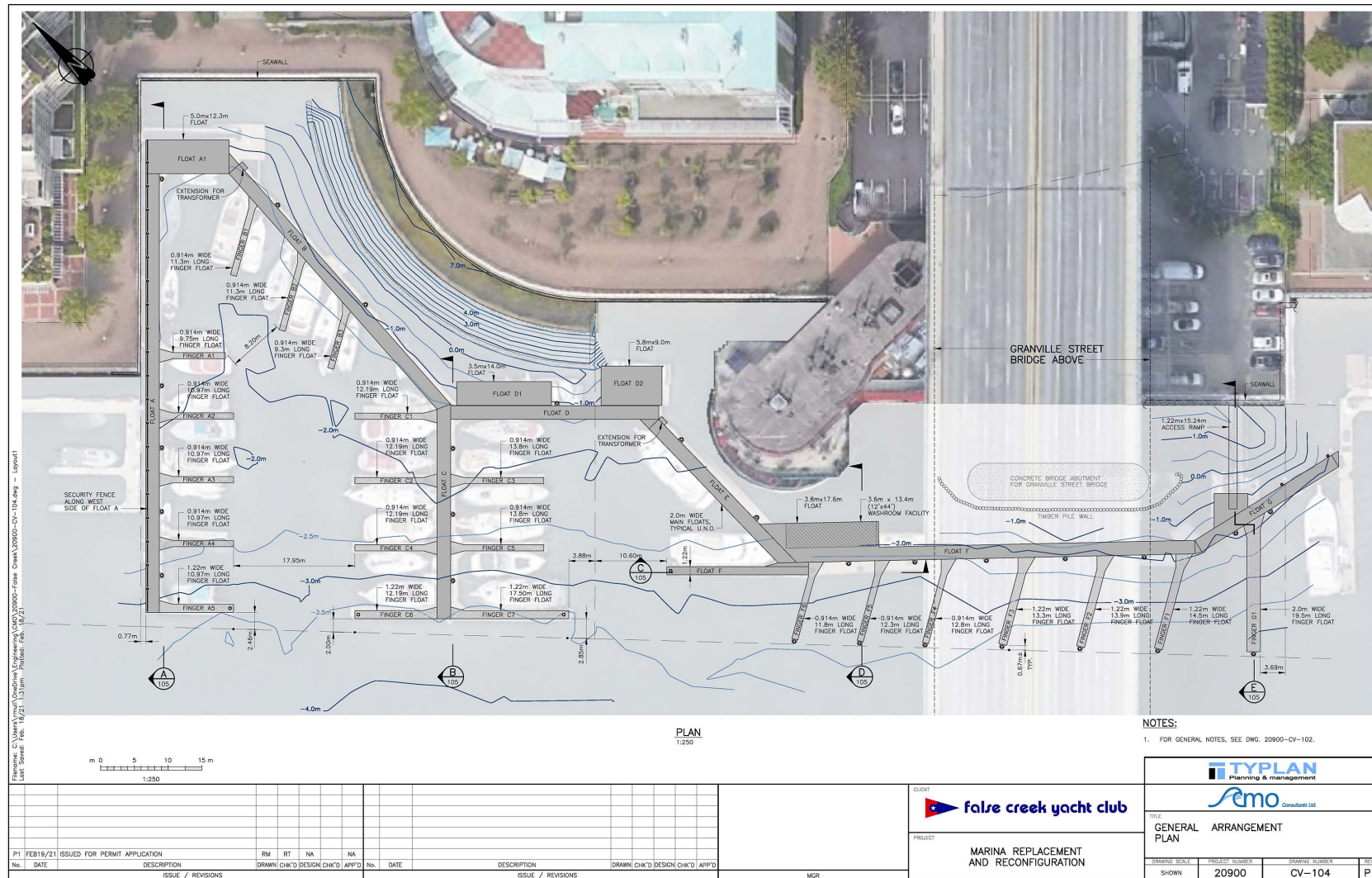


Exhibit 4: General Arrangements Cross Sections

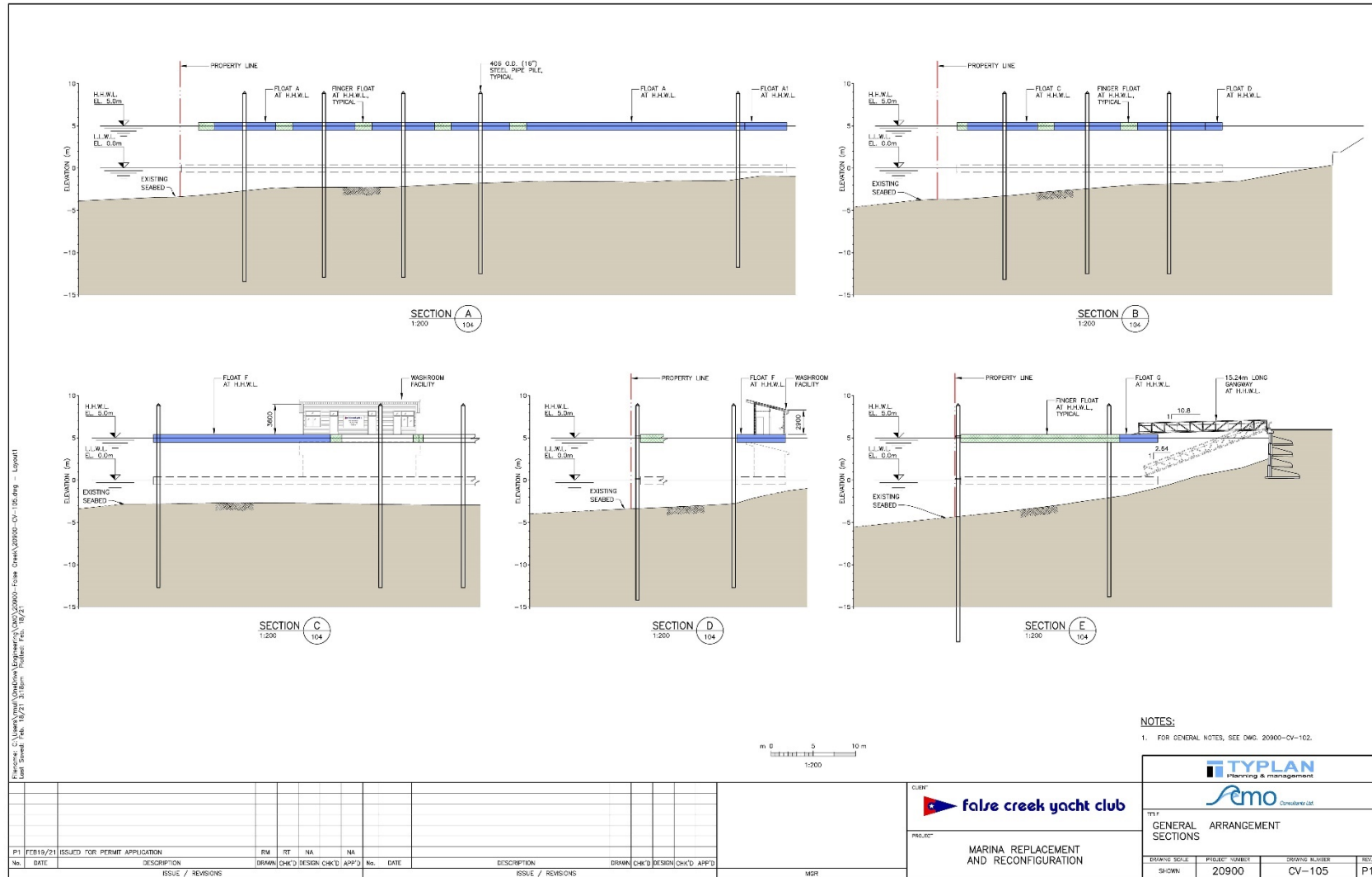
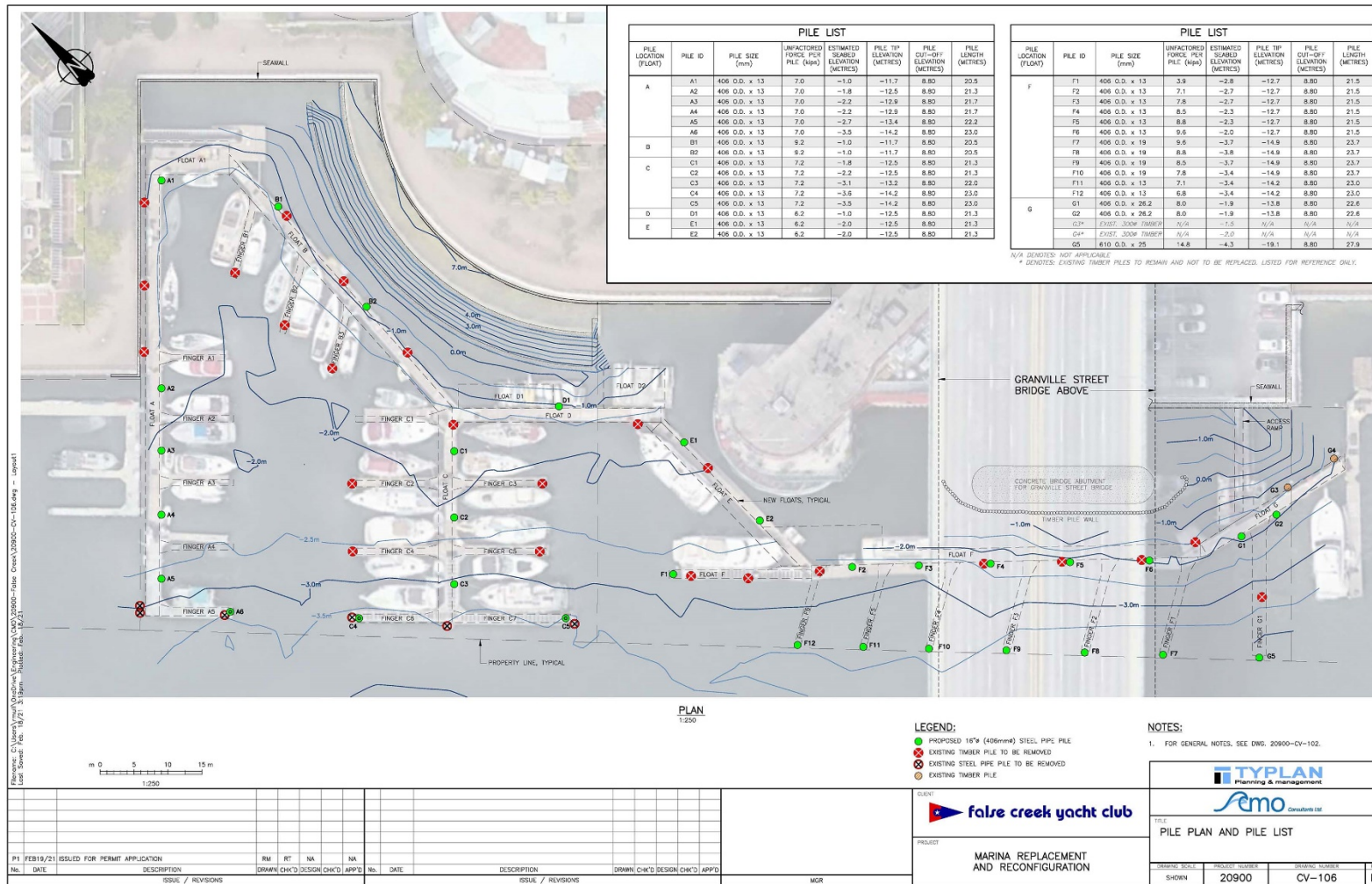


Exhibit 5: Pile Plan and Pile List



1.4 Electrical and Water Services Plan

As noted the existing FCYC is serviced via the City of Vancouver (services). The retrofit renewal project will be replacing the outdated docks and fingers, the new ones are designed with conduits to connect the services, that will be hooked into the existing system when construction is complete. To improve management and ongoing maintenance of the marina, an electrical and water servicing plan has been prepared and presented on Exhibit 6: Electrical and Water Services Plan. It is noted the total size of service infrastructure required based on total calculated demand inclusive of the washroom facility upgrade is 205,984 Watts, 600 volts, 1.74 3ph, and 198 amps.³

1.5 Fire and Safety Plan

A Fire and Safety Plan has been prepared outlining the locations of the following:

- Muster station;
- First aid kits;
- Spill kit;
- Fall in ladders;
- Fire hydrant station;
- Axe;
- Fire hose; and
- Fire extinguishers.

The Fire and Safety Plan is illustrated on Exhibit 7.

³ TCA Electric

Exhibit 6: Electrical and Water Services Plan

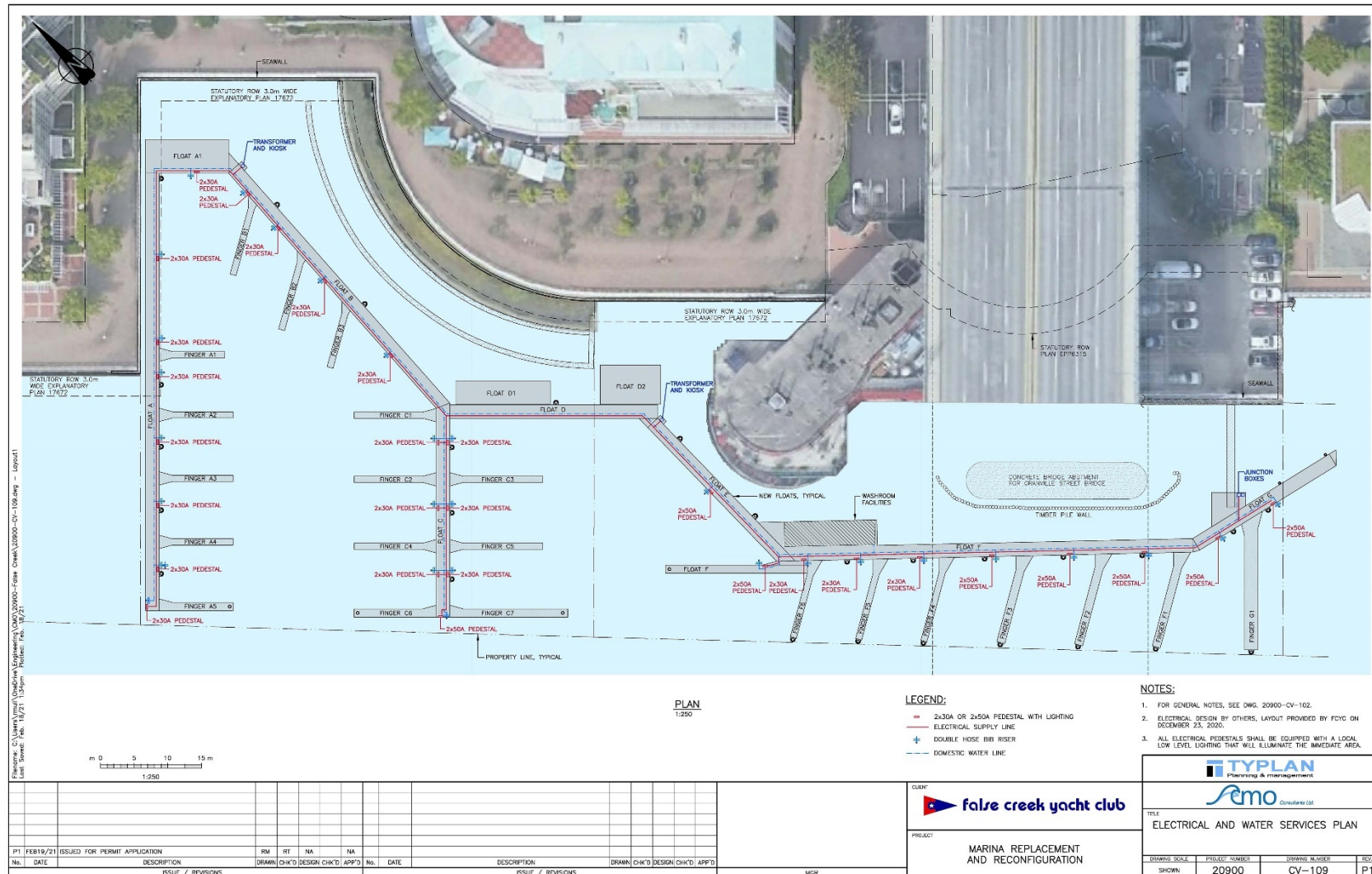
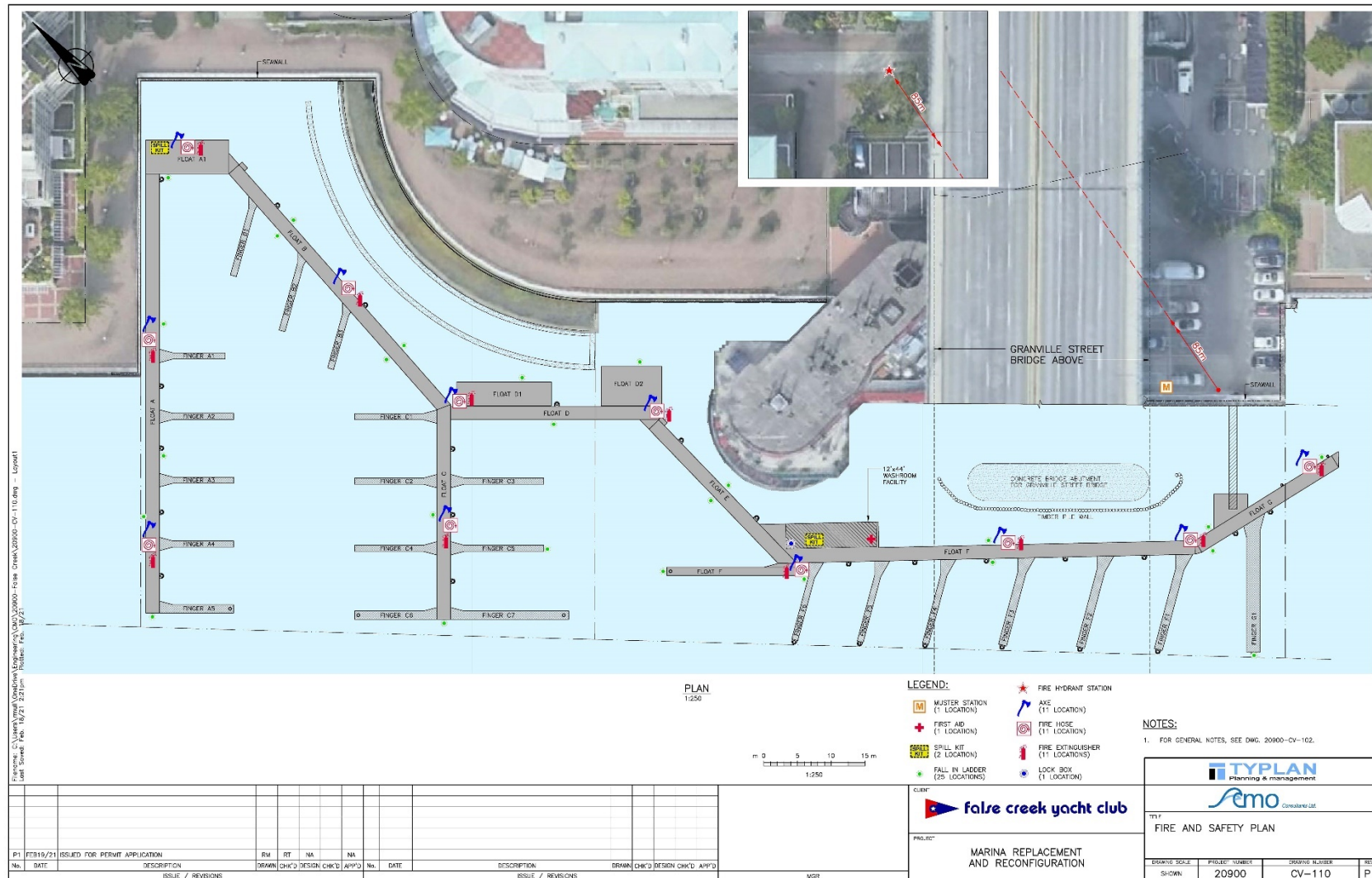


Exhibit 7: Fire and Safety Plan



1.6 Washroom Facility Upgrade

The existing washroom facility will be replaced with a new facility. Water and Sewer is provided to the site via the City of Vancouver hook up. Some additional load will be required to support the facilities replacement as noted. Detailed engineering drawings signed and stamped by a professional engineer will be submitted to the City of Vancouver will be provided pursuant to City of Vancouver application requirements. FCYC is aware of the requirements to meet building by law standards as set out by the City of Vancouver but requires clarification in that regard. At this level of review FCYC provides Exhibit 8 Washroom Facility Floor Plan and Sections and Exhibit 9 Washroom Facilities and Elevations.

Exhibit 8: Washroom Facility Floor Plan and Sections

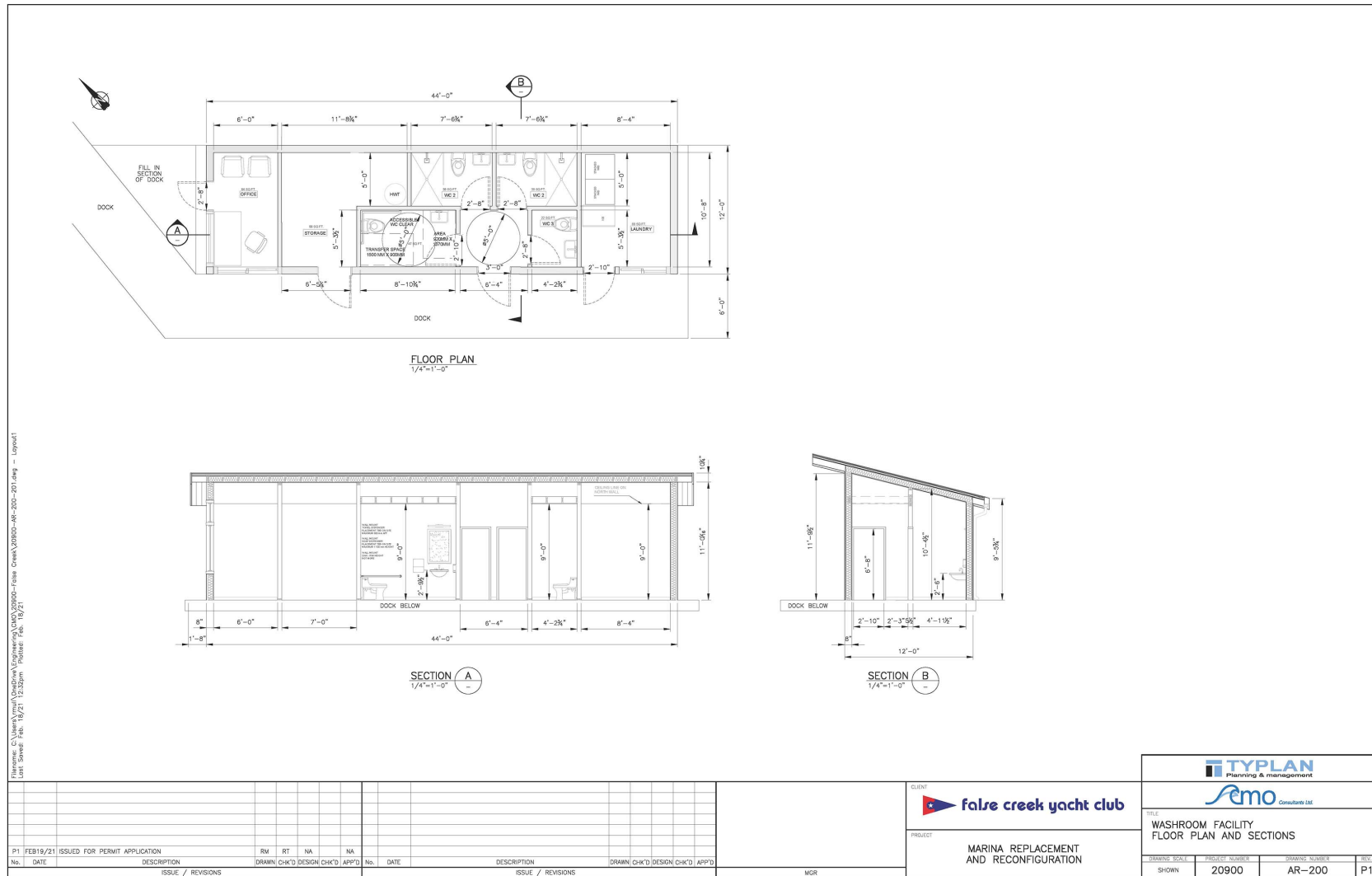
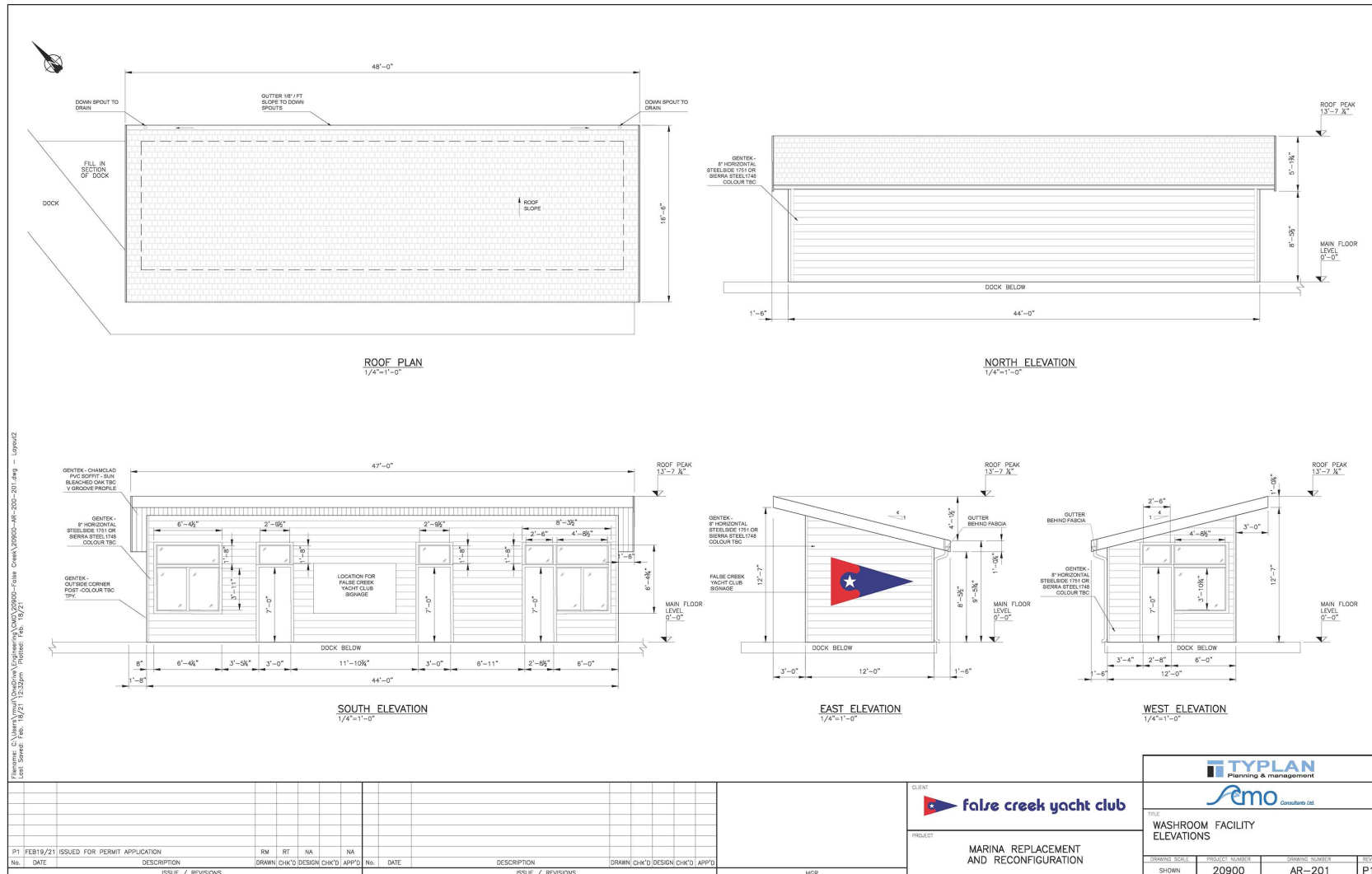


Exhibit 9: Washroom Facility Elevations



2 AQUATIC HABITAT ASSESSMENT

To ensure the aquatic habitat is not impacted as a result of the renewal/retrofit FCYC retained the services of a qualified environmental specialist (Envirowest Consultants Inc.) to undertake a self- assessment report that will be submitted to the Department of Fisheries and Oceans (DFO). Proposed professional services pertain the facilitation of environmental permitting of marina improvements, in particular obtaining a decision statement from DFO.

Based on preliminary investigations it is suggested that a *Fisheries Act* Authorization will not be issued for proposed improvements. Assuming DFO will conduct a review of the proposed improvements and issue a letter of advice for the works, the applicant will implement best environmental practices, and stating that an Authorization is not required. A decision has not been rendered at the time of this submission.

Request for Review letter report to be submitted to DFO will establish the environmental setting of the location of proposed works, including information and data pertaining to the benthic (i.e., bottom) environment immediately beneath the new finger floats. Typical information will include a description of the benthic invertebrate community (worms, scuds, and the like), and whether or not vegetation (e.g., eelgrass, large algae) is present. This will require 3 sediment grab samples (invertebrates) and underwater images (still photographs and video taken with a remote-operating vehicle (ROV; attached)) of the bottom. Historical fish use data for False Creek at and about the location of proposed works will be presented. The letter report will assess the impacts on fish and fish habitat.

The assessment will demonstrate best practices in the design of improvements, and how the design mitigates impacts on fish and fish habitat. The assessment will also present construction protocols that mitigate impacts to fish and fish habitat.

This report will be forwarded to the City of Vancouver upon request.

3 CONSTRUCTION STAGING

3.1 Construction Staging Overview

The proposed work plan to undertake the renewal /retrofit is envisioned to be undertaken during a four (4) week period in the early Fall of 2021.

It is the intent of the FCYC to request all members vacate the marina during the period of reconfiguration, so that the selected contractor has full access to the site.

In undertaking the work, a marine contractor (yet to be selected) will be retained to remove the floats, piles and gangways (refer to Exhibit 10 Float Pile and Gangway Removal Plan) and subsequently replace pre-assembled docks and floats and drive piles (refer to Exhibit 11 Float Replacement and Additional Float Plan).

The complete removal of the existing floats and gangways being removed will take approximately three (5) days and the preplacement will take approximately 15 days.

Exhibit 10: Float Pile and Gangway Removal Plan

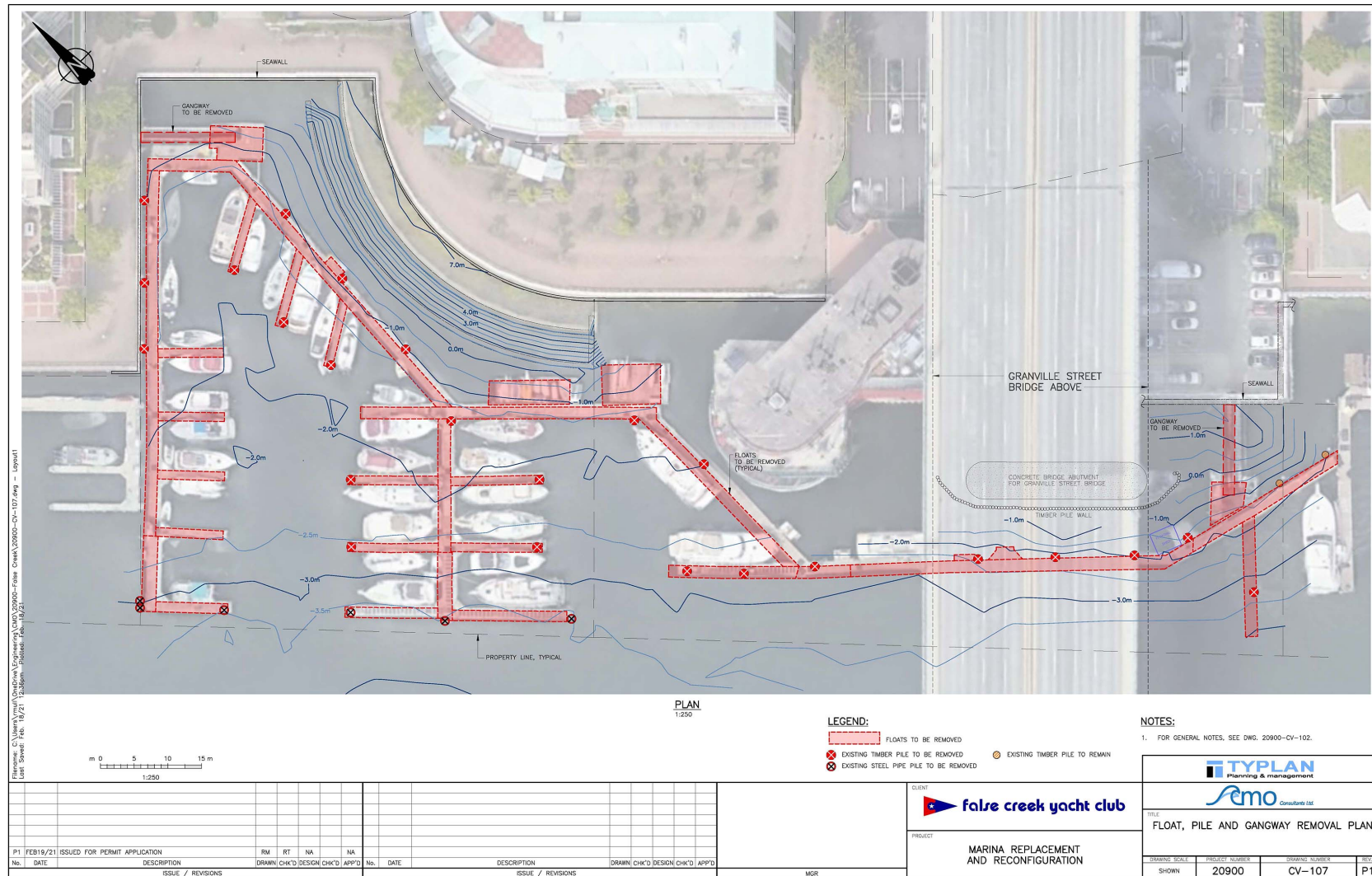
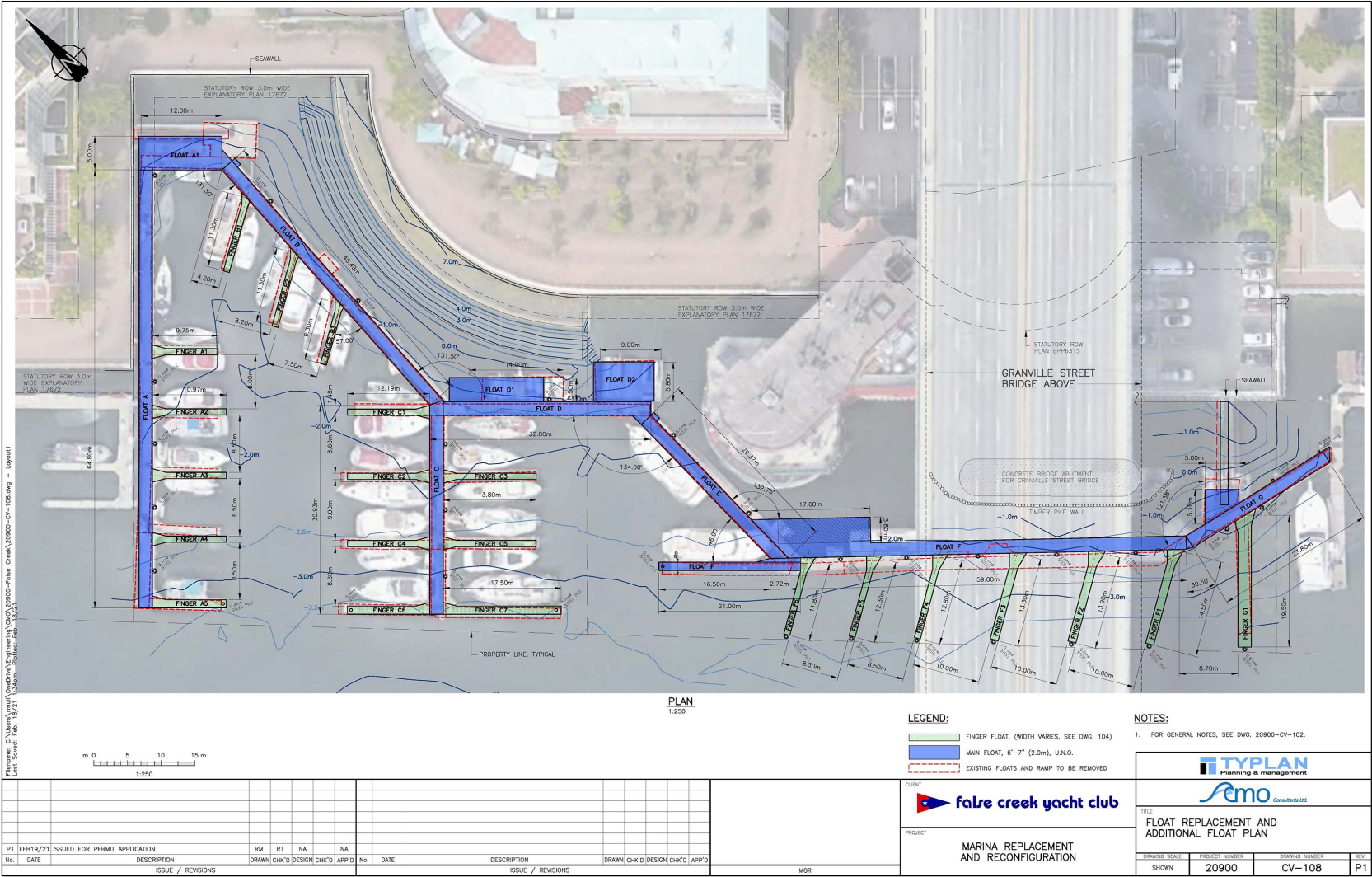


Exhibit 11 - Float Replacement and Additional Float Plan



As all member vessels will be out of the marina it will be much easier for the marine contractor to work within the water lots with the marine and barging equipment.

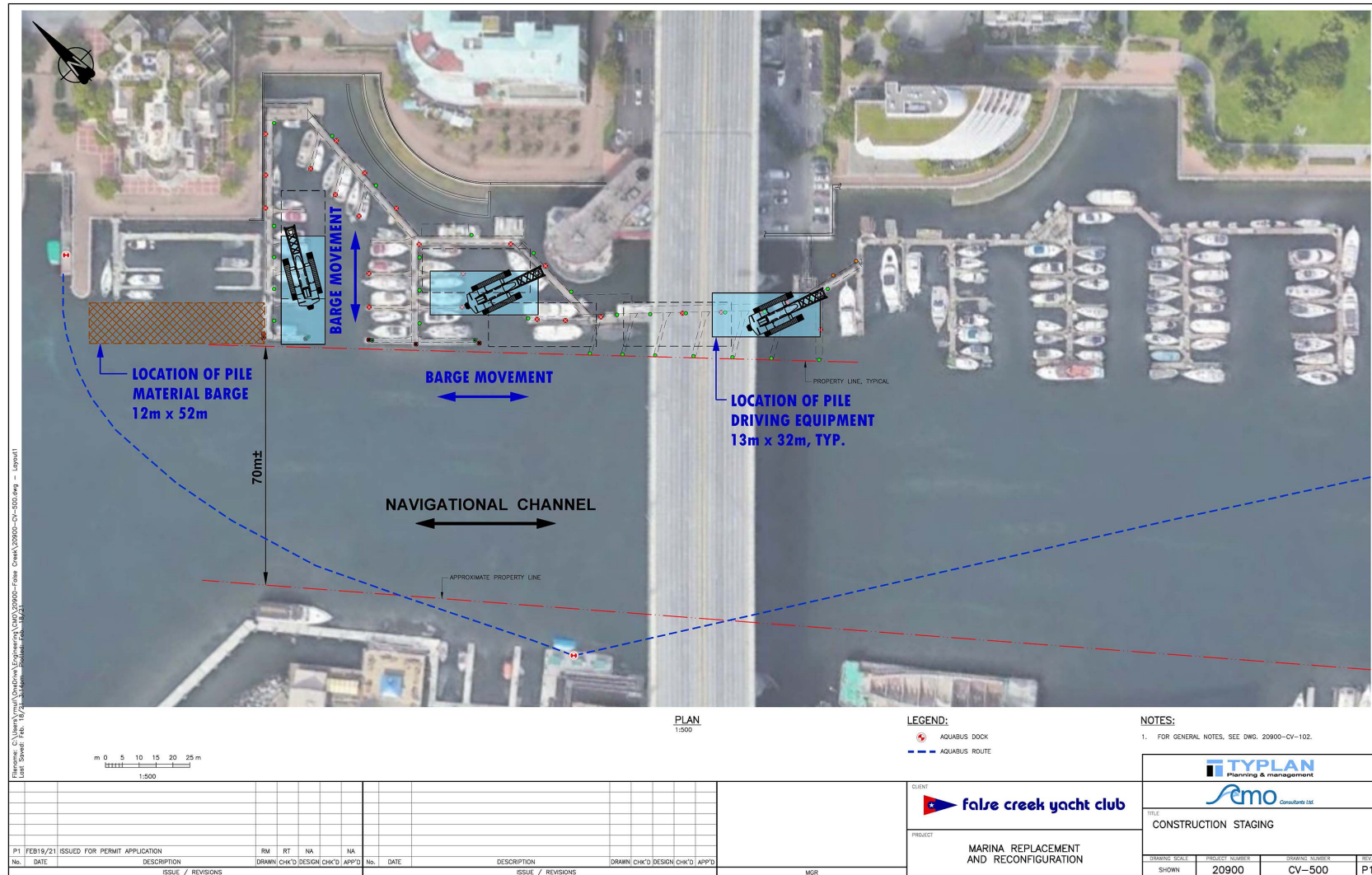
For both water lots all marine construction equipment will be sited within the existing water lots and therefore will not impact navigation within False Creek. The only interaction with the existing navigational channel will be the removal of and replacement of the old and the new infrastructure outlined herewith by tug and barge.

During such times, the movements will be conducted with full disclosure with all stated marine stakeholders (refer to section below).

Pile driving and securing the new fingers will be undertaken sequentially by the contractor working in a west to east sequencing direction, driving a pile and placing the finger accordingly. By sequentially undertaking the works as outlined, all marine construction works will be contained within the City of Vancouver water lot lease and the navigation passage and vessel movements will not be affected.

The Construction Staging Plan is illustrated on the Exhibit 11 below.

Exhibit 11: False Creek Marina Construction Staging Plan



3.2 Construction Activities and Pile Driving

Construction activities that have the potential to create nuisance effects on the surrounding community. FCYC will focus on the potential removal of piles by vibratory extraction or direct pull, and the installation of piles by vibratory or drop hammer from a barge for the new fingers.

Dismantling of old infrastructure, installation of new docks, floats, fingers will not create nuisance effects.

All in-water works will be conducted outside the most-risk fishery windows (March 1 - August 15), as defined by the DFO. FCYC will use best practices to minimize disruption and potential effects (e.g., noise, light, traffic) during construction to the local neighborhood, commercial owners and operators, tourists visiting Granville Island, and all marine users of the waterway.

Work, including pile driving for the new finger floats, will take place during normal daytime hours (between 8 am and 5 pm), and work will not be performed on weekends or statutory holidays. Best management practices including *Best Management Practices for Pile Driving and Related Operations, BC Marine and Pile Driving Contractors*, will be followed to minimize potential noise and other effects.

Measures associated with minimizing the effects of steel pipe pile driving and reducing potential acoustic impacts include the use of bubble curtains, pipe pile sleeve, and the use of a vibratory hammer until refusal.

3.3 Marine and Community Consultation during Retrofit and Renewal

FCYC will prepare a Marine Communication Plan (MCP) specific to construction, to outline marine communication protocols to be shared with False Creek stakeholders by the selected marine contractor. The objective is to limit potential conflicts between marine users, tourists, local residents and visitors to Granville Island, inclusive of on-going ferry operations.

The MCP will be a condition of approval of this project from NPP and will be the responsibility of the selected contractor. Those informed will include:

- False Creek Yacht Club Members
- Andorra Waterfront Dining and Patio
- Residents within 200m of the project site
- Granville Island Public Market
- False Creek Ferries
- Ocean Cement
- city of Vancouver
- City of Vancouver Police