



DEWA - In-River Test Program

Marine Users Group

September 15th 2025

Template No. FRTP-CFP-PWD-50-QUA-TMP-00044 R0

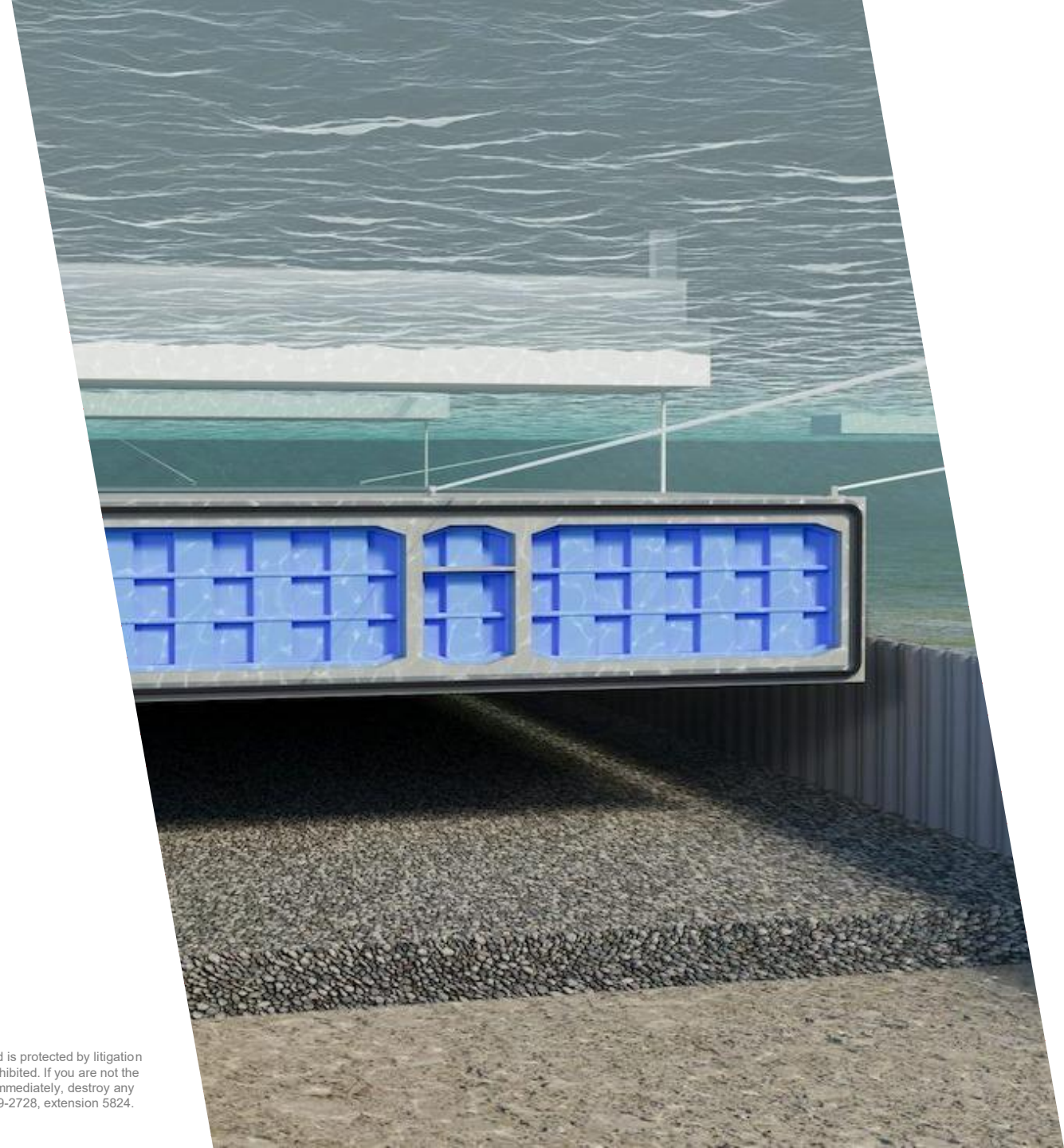
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Agenda

- 1 – Introductions
- 2 – Organization
- 3 – Previous MUG
- 3 – Scope Overview (Densification)
- 4 – Scope Overview (Ladner)
- 5 – Marine Construction Staging
 - Nav Detours
 - Staging Plans
 - Tug Support
- 6 – Marine Communication
 - Communication Strategy
 - Key Contacts
- 7 – Questions

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Organization - In-River Test Section



**Highway 99
Tunnel Program**



BRITISH
COLUMBIA



transportation
investment
corporation

Ministry of Transportation and Infrastructure Project,
The contract is administered by **Transportation Investment Corporation** ("Ti Corp.")



**CROSS FRASER
PARTNERSHIP**

Cross Fraser Partnership (CFP) is a joint-venture of 3 Partner
with the support of consultancy design Partner




BOUYGUES
CONSTRUCTION
CANADA



POMERLEAU



FCC
CANADA



ARCADIS



**THURBER
FUGRO**



TYPLAN
Planning & management

Ground Improvement, Trial Separation
Wall, & Test Dredge Contractor



FRPD

**Dens. Sub-
Contractor**

Ground
Improvements

**Geotech. Sub-
Contractor**

Geotechnical
Testing



FRPD

Piling
Works



FRPD

Dredging
Works

**Support Tugs
1000 HP / 3000 HP**

Support
Equip.

Previous MUG (June 2025)

Scope Overview of In-river Test Section

- Cofferdam removed from scope

Supplemental Test Dredge

- Marine Construction Staging Plans
- Marine Communication Plan
- Navigation Detours
- In-water Monitoring: ADCP/CTD noted
- Monitoring Buoy's
 - Refined Design
 - November 2025 & July 2026



Overview of Proposed Works & Objective

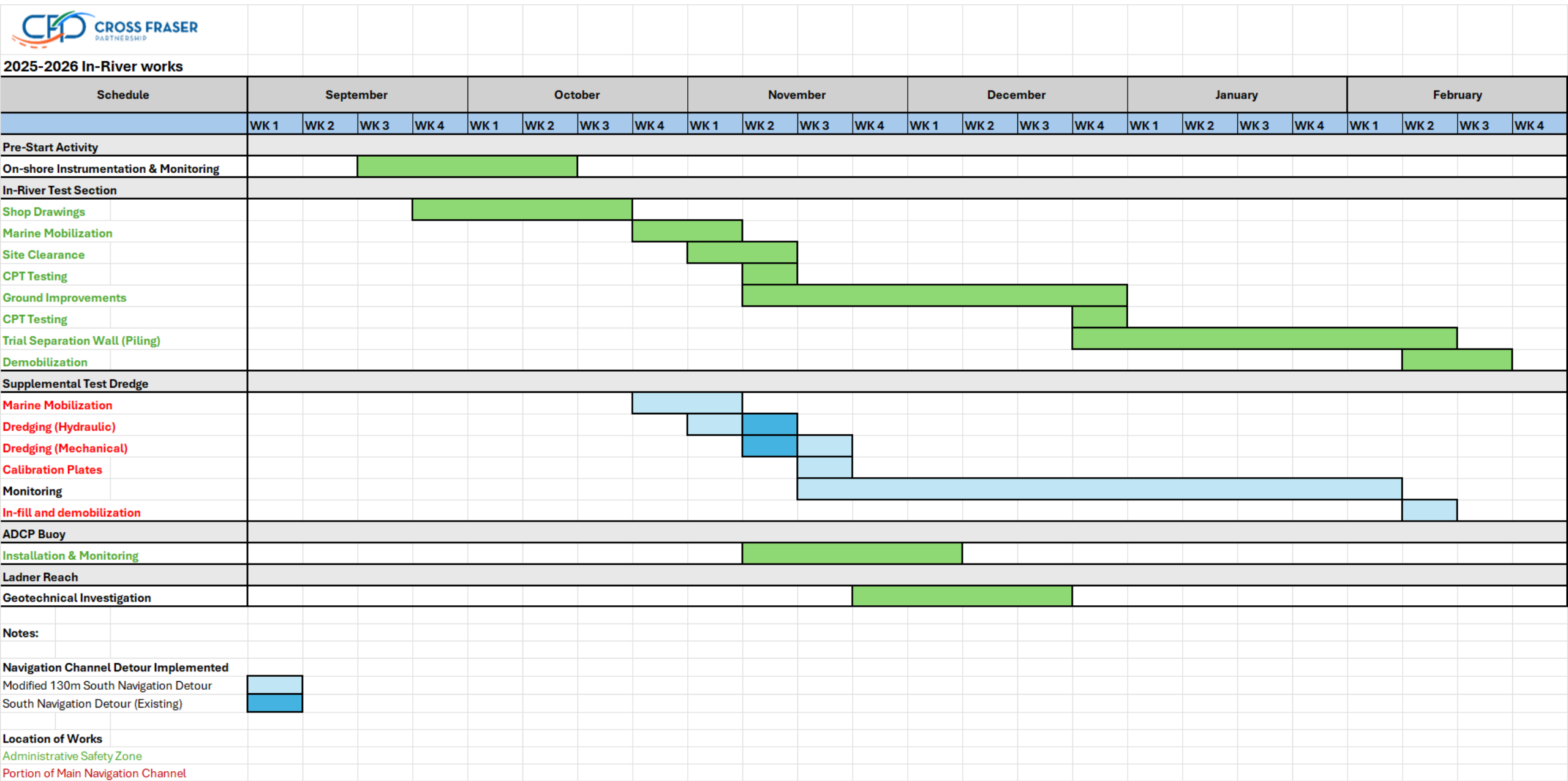
Cross Fraser Partnership (CFP) propose a:

1. Ground Improvement Program and Supplementary Test Dredge (the In-River Test Program); and,
2. Ladner Reach Geotechnical works

To support construction of the Fraser River Tunnel Project (FRTTP).

Works are proposed in a highly frequented area of the Fraser River utilized by Seaspans Ferries, Council of Marine Carriers and Fraser River Pilots

Marine and Construction Site Safety Critical – Implementation via communications, monthly MUG meetings, issuance of NAVWARNs, daily construction notices



In-River works

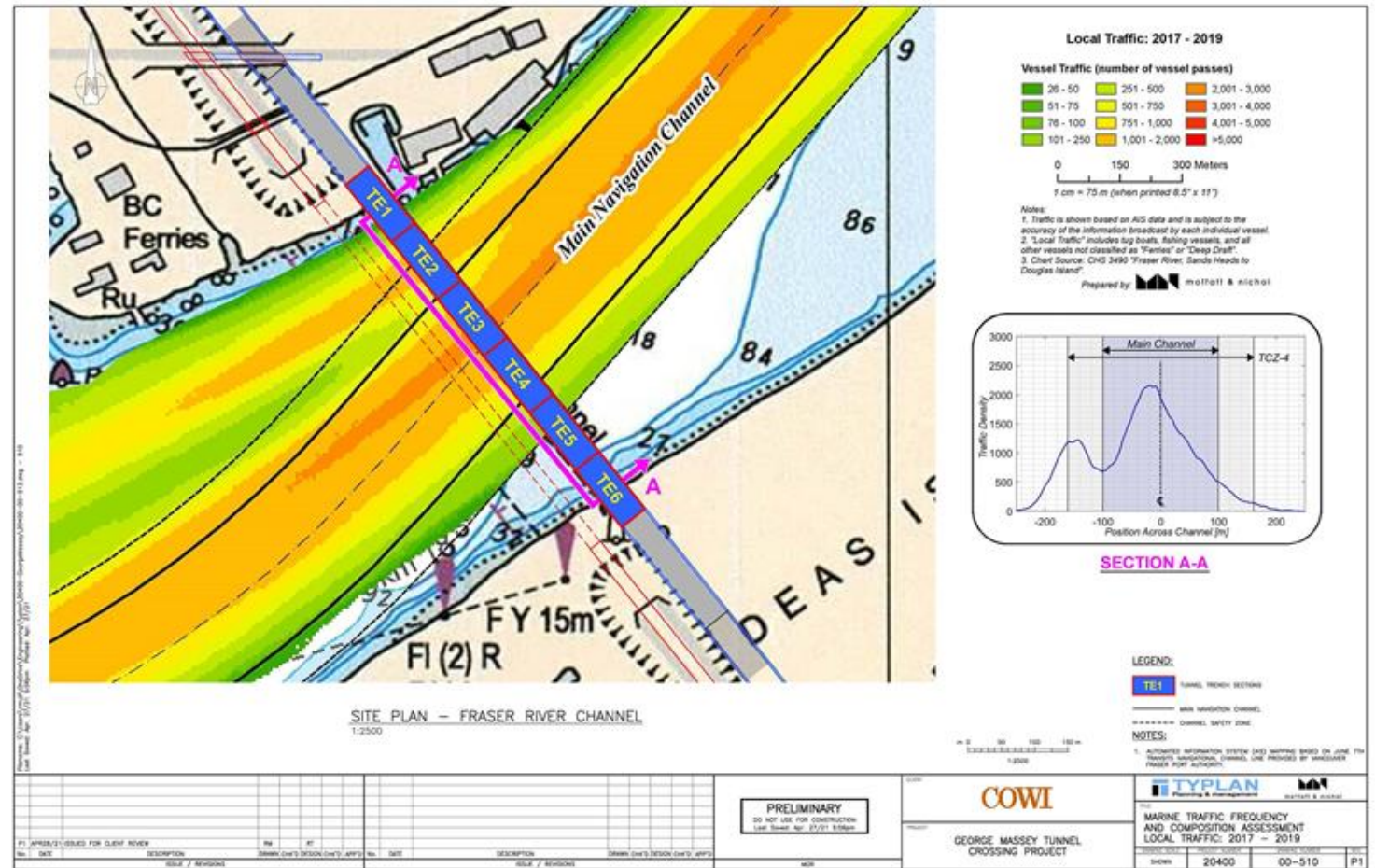
Works occur in highly navigated location of Fraser River

Potential conflicts between marine navigation and In-river works works to be addressed

Membership of the Council of Marine Carriers (CMC) and Seaspan Ferries frequently transit the area

Fraser River Pilots (FRP) also Transit area

Marine Construction Staging and Communication Protocols critical to avoid conflict



In-river Test Program and Supplemental Test Dredge

October 2025– February 2026



IN-RIVER TEST PROGRAM

FRPD CONTACTS

Project Manager – Sherry Kennedy, P.Eng, 604.813.5679
H&S Lead – Joe Lagos, 778.873.6725
Marine Superintendent – Jamie Steele, 604.315.0125

Pile Driving – Derrick with Spudded Barge w/
Crane: D.Reid, 350T Ringer Crane with
derrick dimensions 60' x 200'



Rock Placement/Removal – Derrick
with Spudded Barge w/ Crane: 200T
pedestal crane on spud barge with
dimensions of 49' x 122'



Densification Support Crane – Derrick
with Spudded Barge w/Crane: 150T
Crawler Crane on spud barge with
dimensions of 48' x 111



SUPPLEMENTAL TEST DREDGE

FRPD CONTACTS

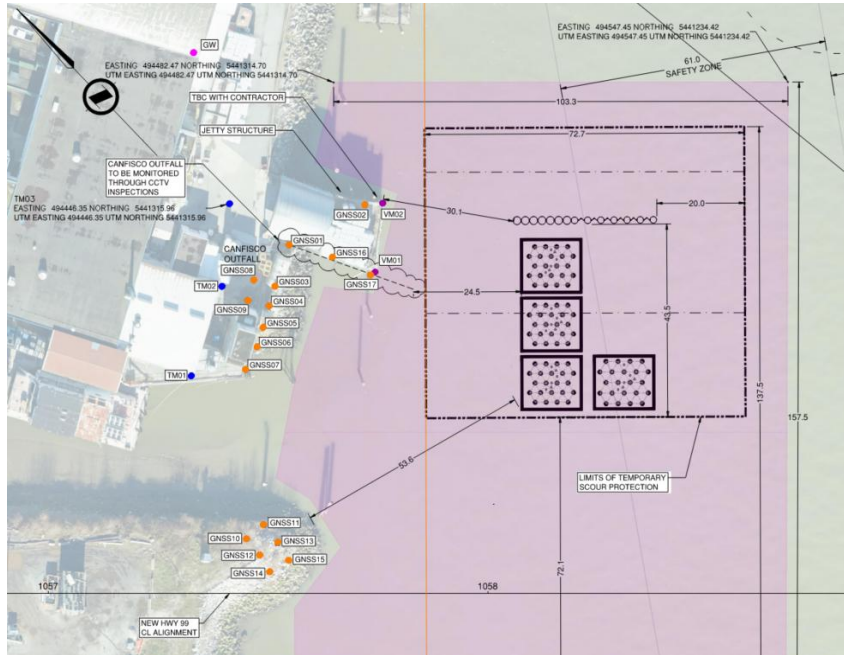
Project Manager – Sherry Kennedy, P.Eng, 604.813.5679
H&S Lead – Joe Lagos, 778.873.6725
Dredge Superintendent – Jason Ruiz, 778-791-9179

Mechanical Dredge – Derrick with Spudded Barge w/ Crane: 200T pedestal crane on spud barge with dimensions of 49' x 122'



Cutter Suction Dredge – FRPD Columbia 26" Cutter Suction Dredge with dimensions 44' x 160'





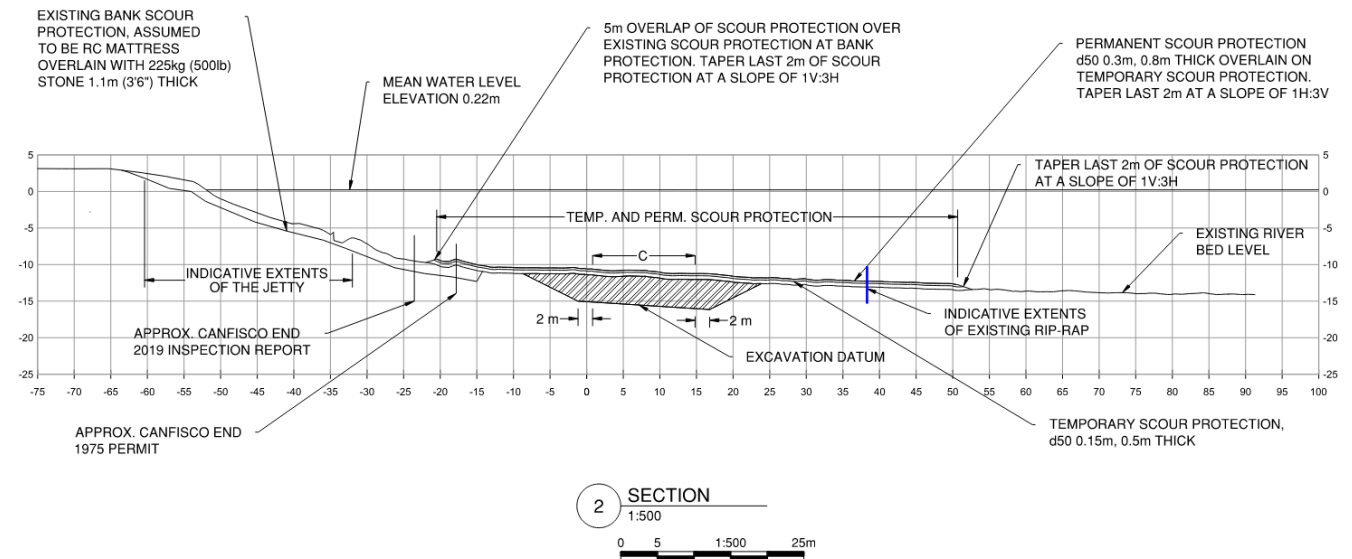
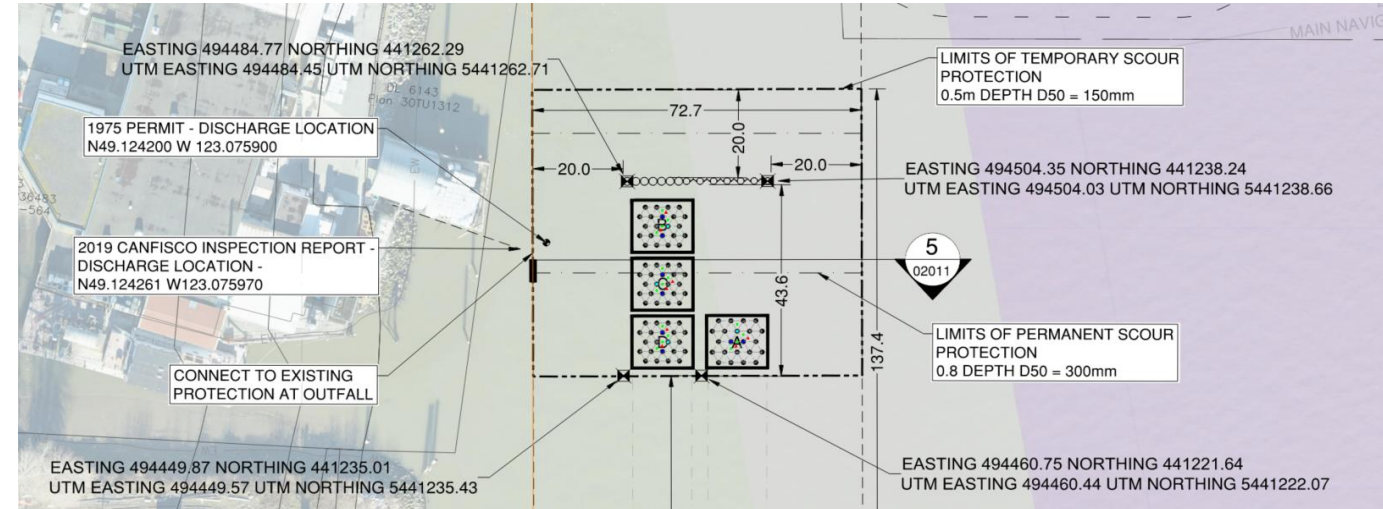
IN-RIVER TEST PROGRAM

CONSTRUCTION MONITORING

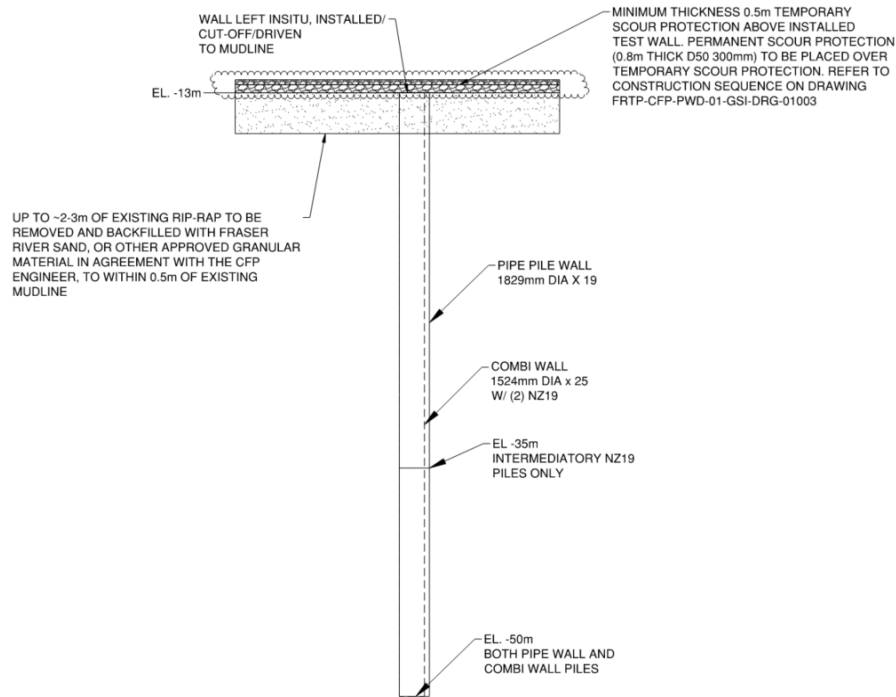
- Displacement and vibration monitoring of on-shore assets during construction
- Assess impact of vibrations and ground disturbance during tests
- Canfisco property, marine structures, North shoreline near Canfisco bay
- Canfisco outfall
- Bathy surveys for scour monitoring
- Instruments installed and baselined September 2025

SITE CLEARANCE AND GROUND IMPROVEMENT

- Purpose: Remove existing rip-rap & debris, Test different methods for densifying/strengthening the sand and silt. Validate future construction methods
- Duration: 9-weeks (Oct – Dec)
- Hours: Daily Monday – Saturday (7 AM – 5 PM)



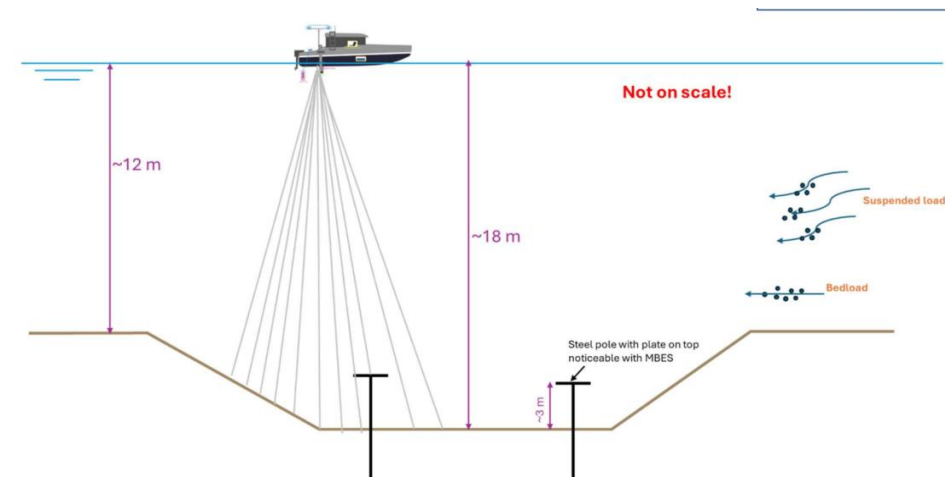
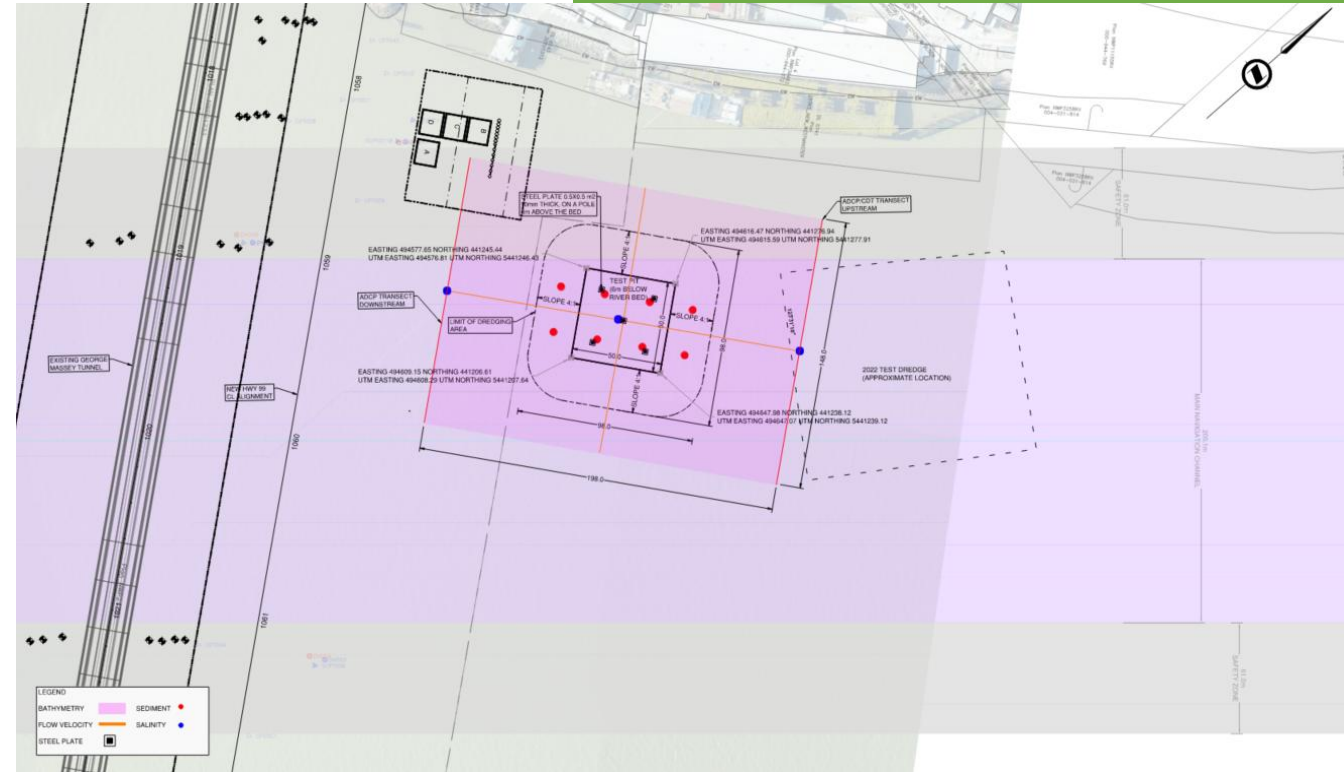
TRIAL SEPARATION WALL



- Purpose: Test drivability of piles and sheets, prove construction methods, observe local scour, assess vibration during piling, study underwater noise effects
- Monitoring for local / downstream scour to continue after completion of the scour protection for a period of 1-month & during freshet 2026
- Duration: 8-10 weeks (Dec to Feb)
- Hours: Daily Monday – Saturday (7 AM – 5 PM)

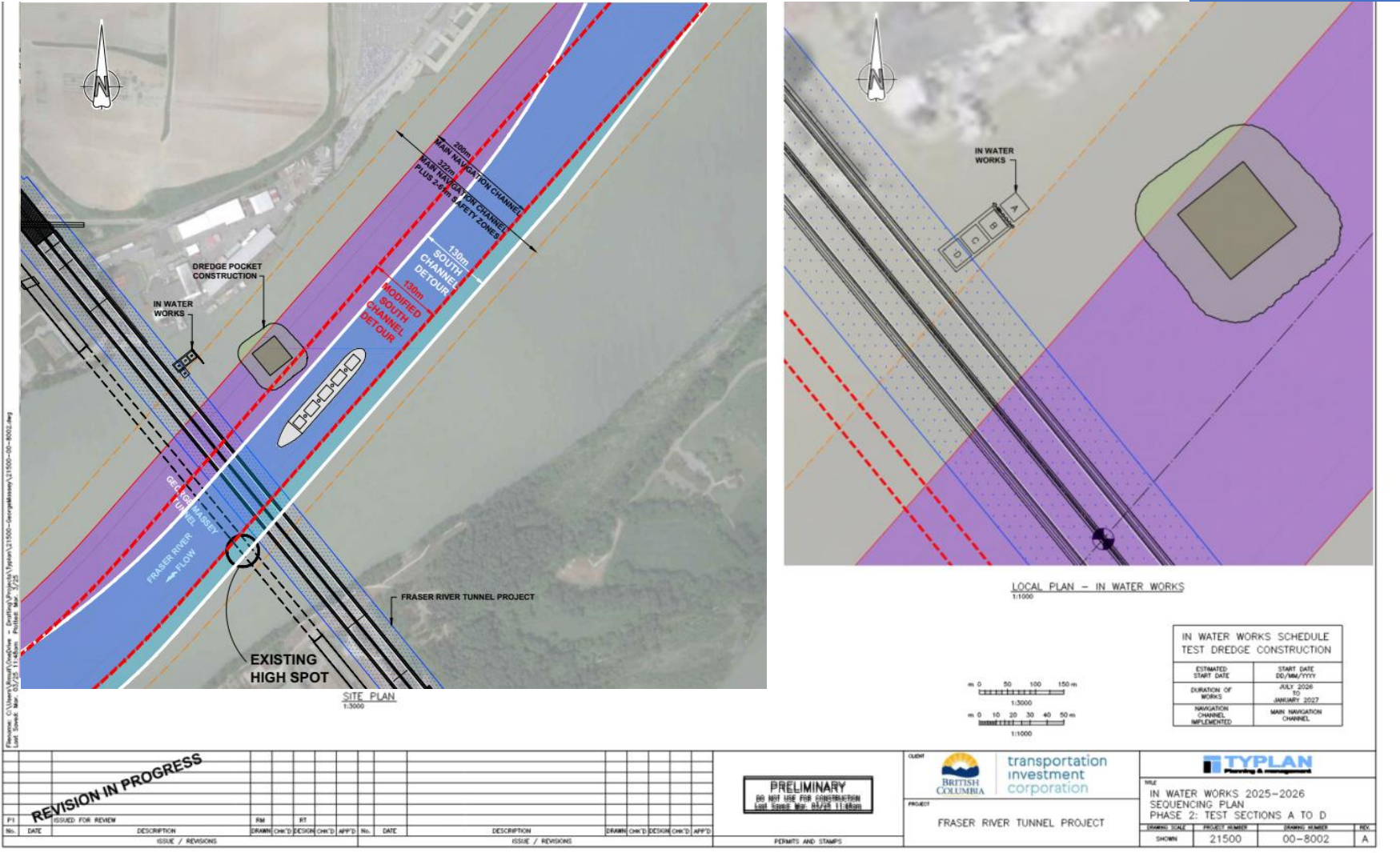
SUPPLEMENTAL TEST DREDGE

- Purpose: Measure rate of sedimentation, use collected data to calibrate validate hydraulic 3D model
- Duration:
 - 5-days Columbia
 - 6-days Clamshell Derrick
 - 4-days Pole/Plate install
 - 3-months bathymetric monitoring
- Hours of Work:
 - 24-hours per day during hydraulic dredge
 - Mon-Sat 7-5 PM during all other activities



NAVIGATION CHANNEL

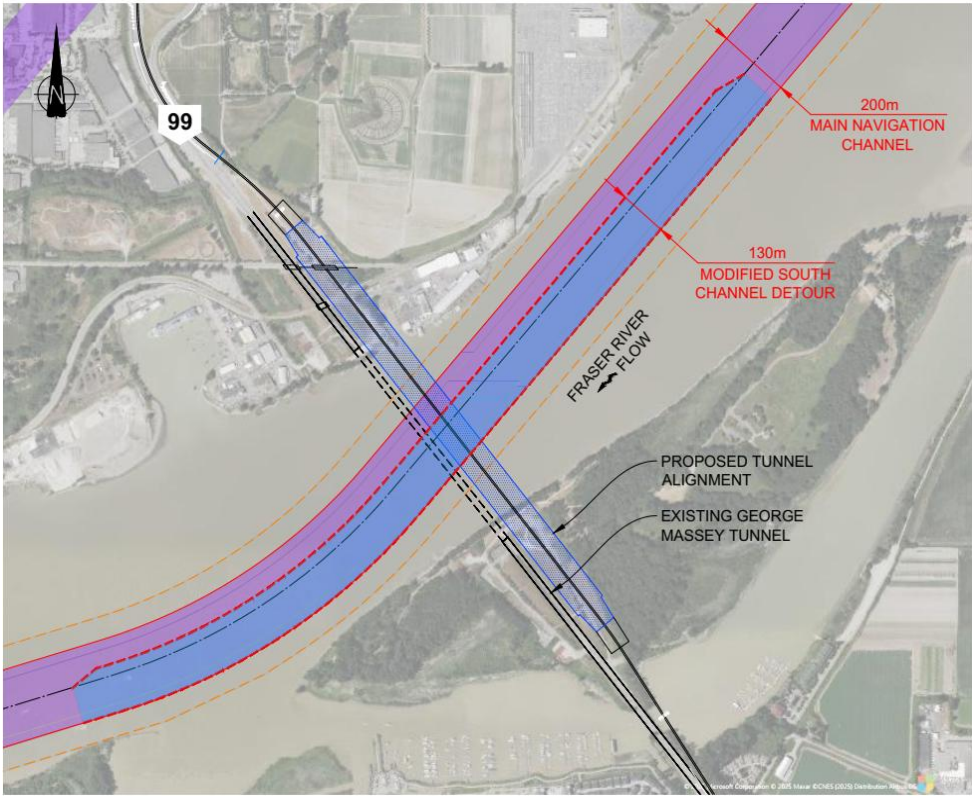
IN-RIVER TEST PROGRAM AND SUPPLEMENTAL DREDGE



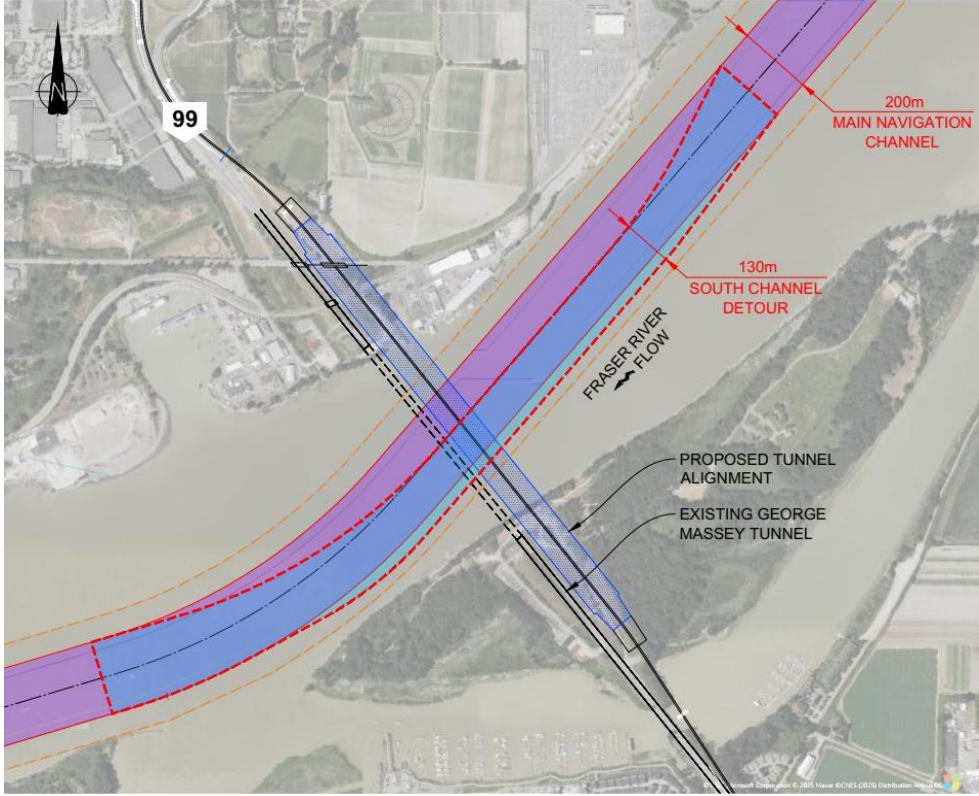
NAVIGATION CHANNEL DETOURS

BOTH THE SOUTH AND MODIFIED SOUTH NAVIGATION CHANNEL
DETOUR POTENTIALLY UTILIZED

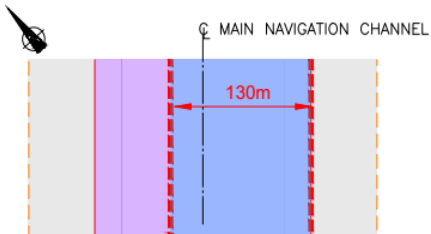
IN-RIVER TEST PROGRAM



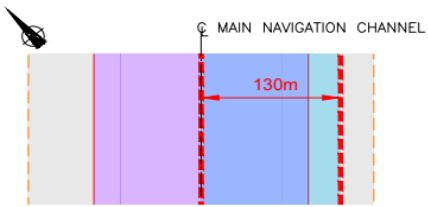
MODIFIED SOUTH CHANNEL DETOUR
1:5000



SOUTH CHANNEL DETOUR
1:5000



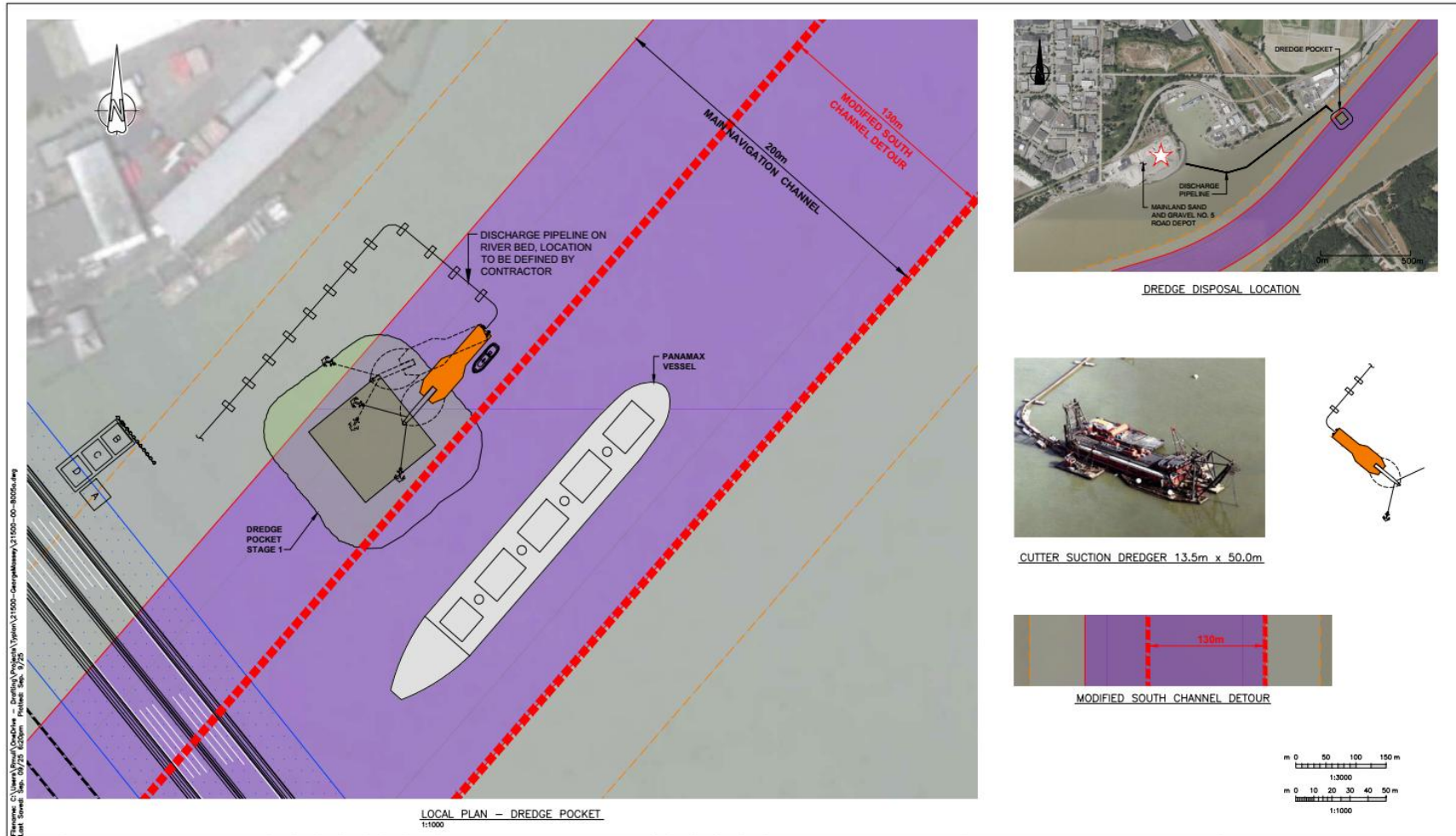
MODIFIED SOUTH CHANNEL DETOUR



SOUTH CHANNEL DETOUR

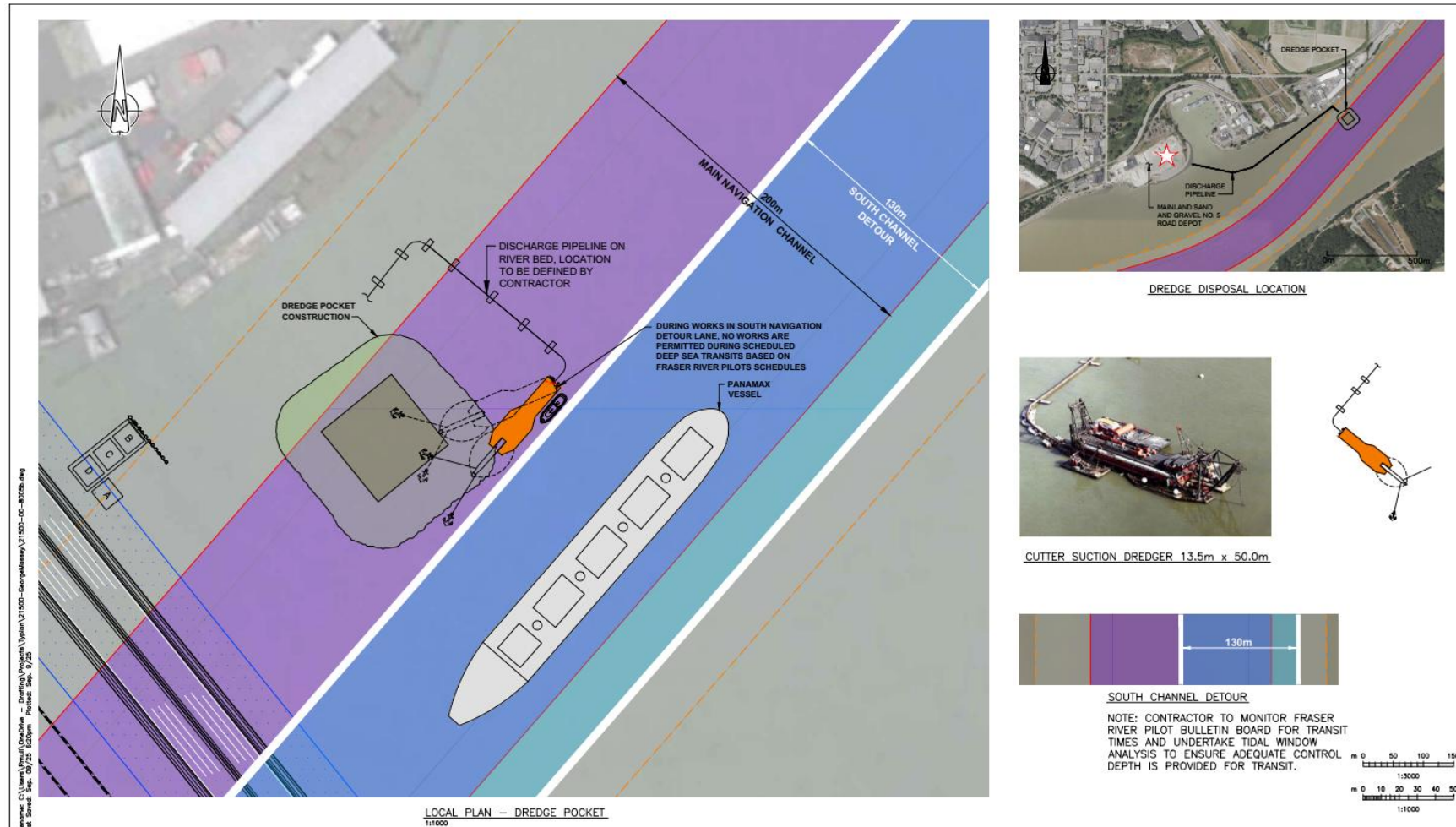
NAVIGATION CHANNEL DETOURS

IN-RIVER TEST PROGRAM (MODIFIED SOUTH NAVIGATION CHANNEL DETOUR)

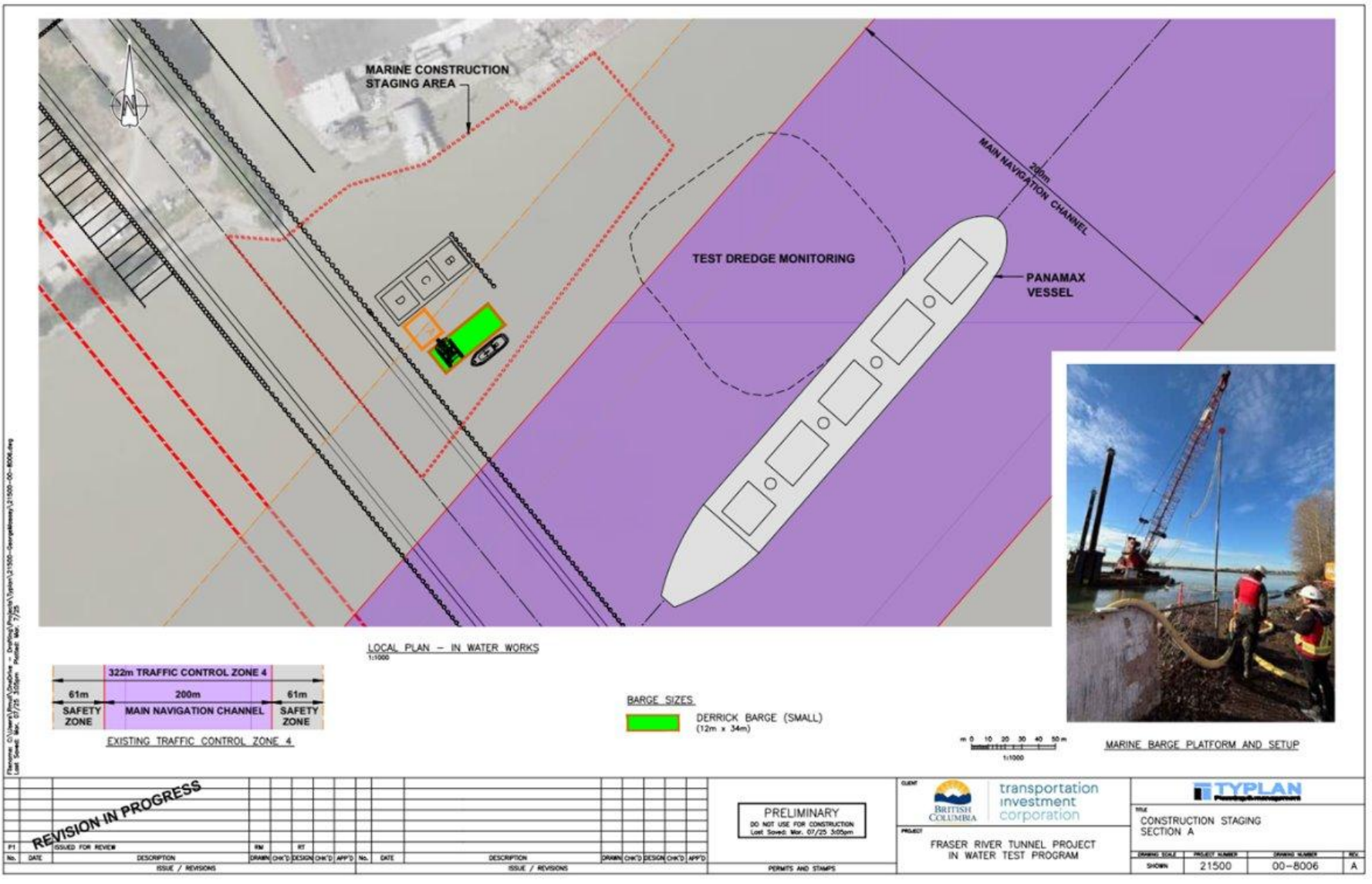


NAVIGATION CHANNEL DETOURS

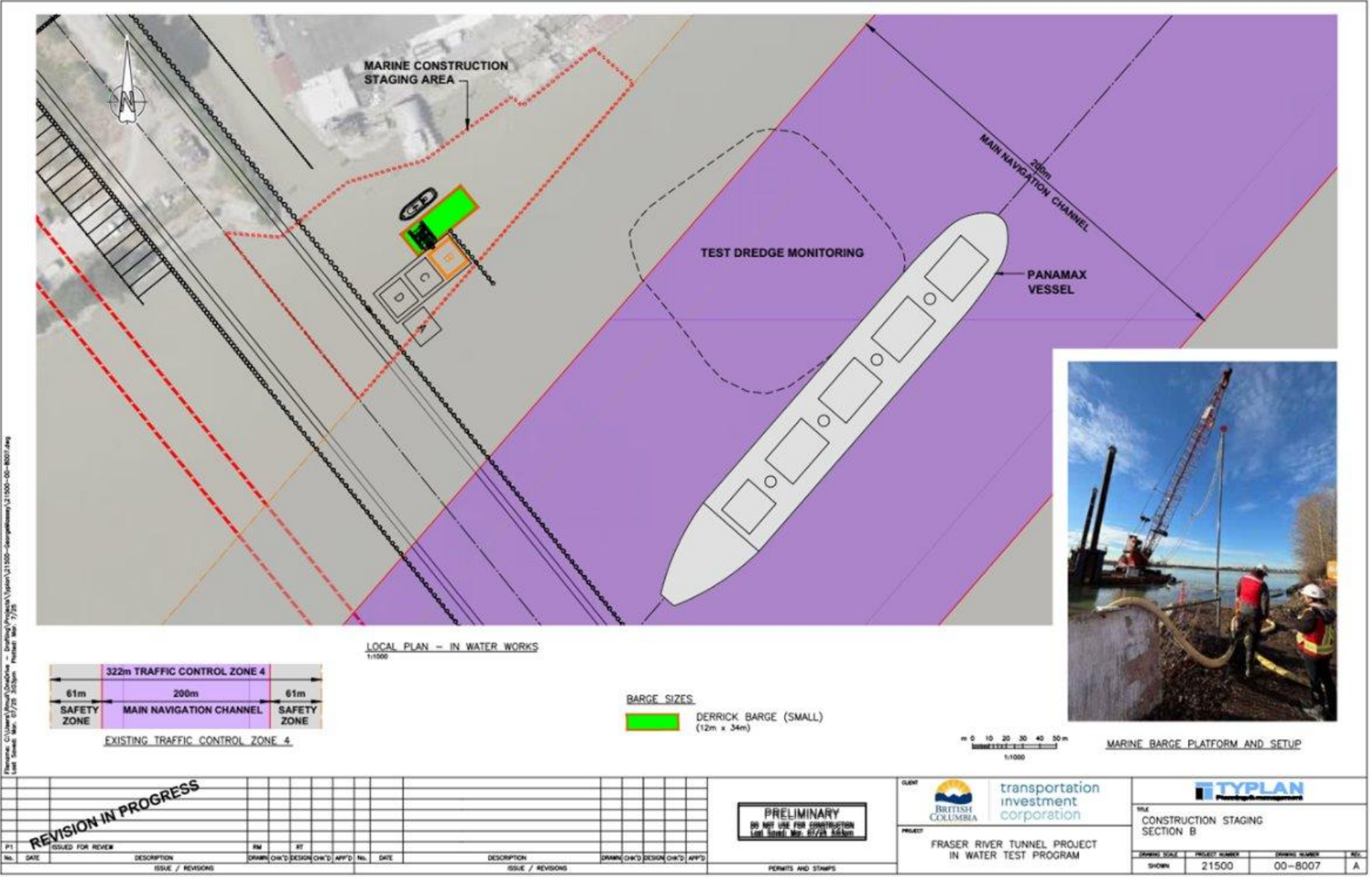
IN-RIVER TEST PROGRAM (SUPPLEMENTAL DREDGE SOUTH NAVIGATION CHANNEL DETOUR)



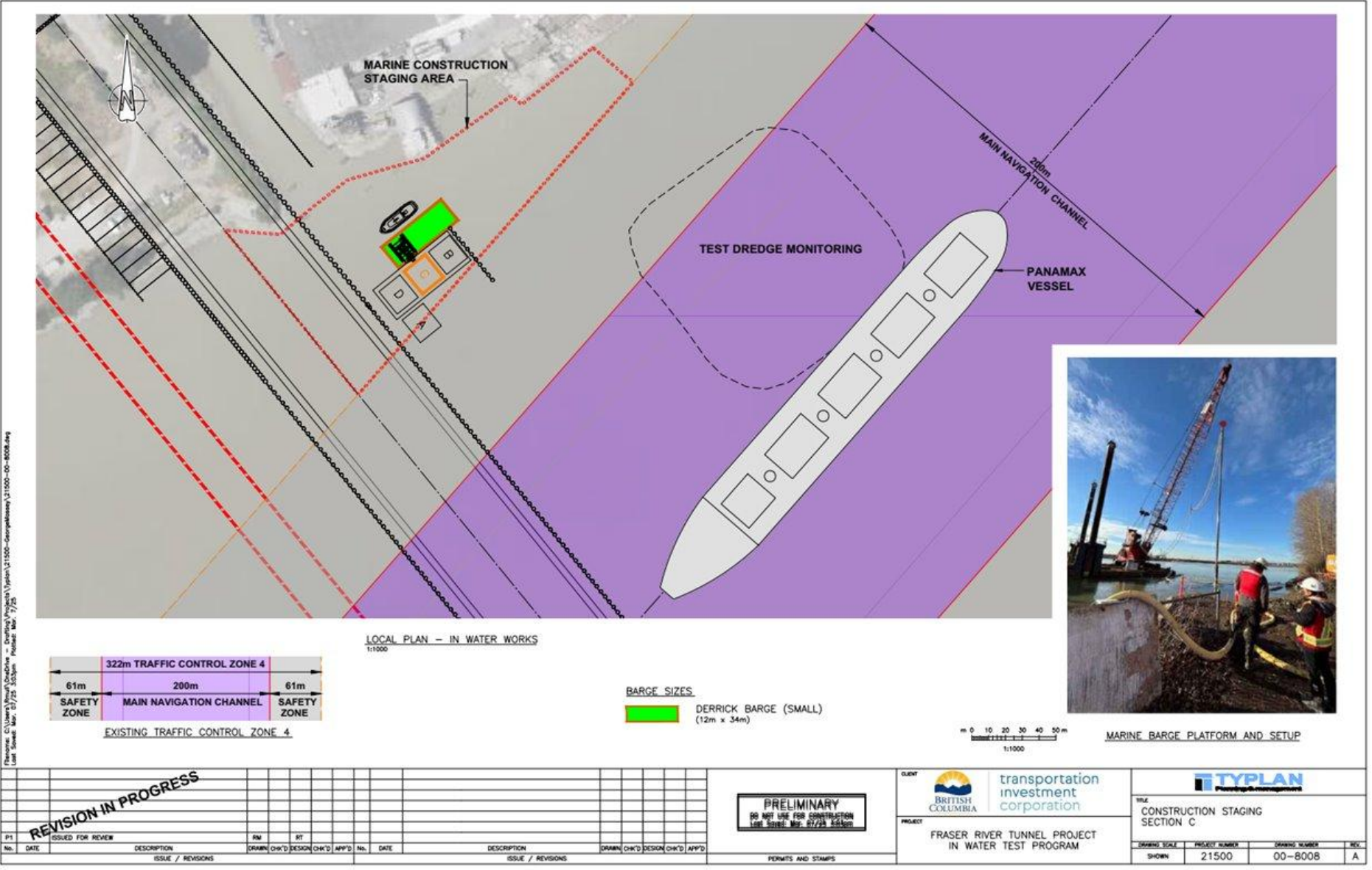
MARINE CONSTRUCTION STAGING



MARINE CONSTRUCTION STAGING



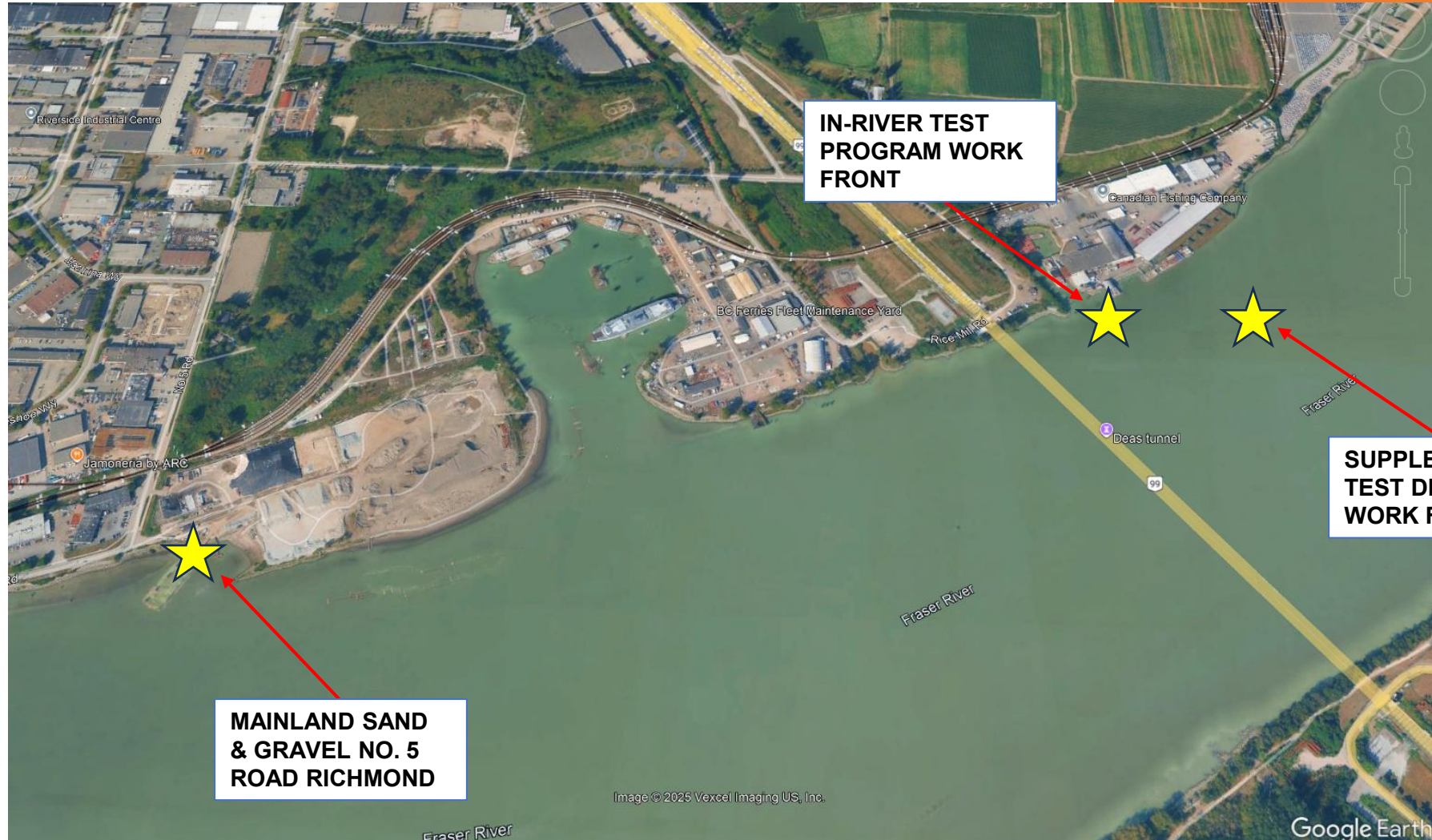
MARINE CONSTRUCTION STAGING



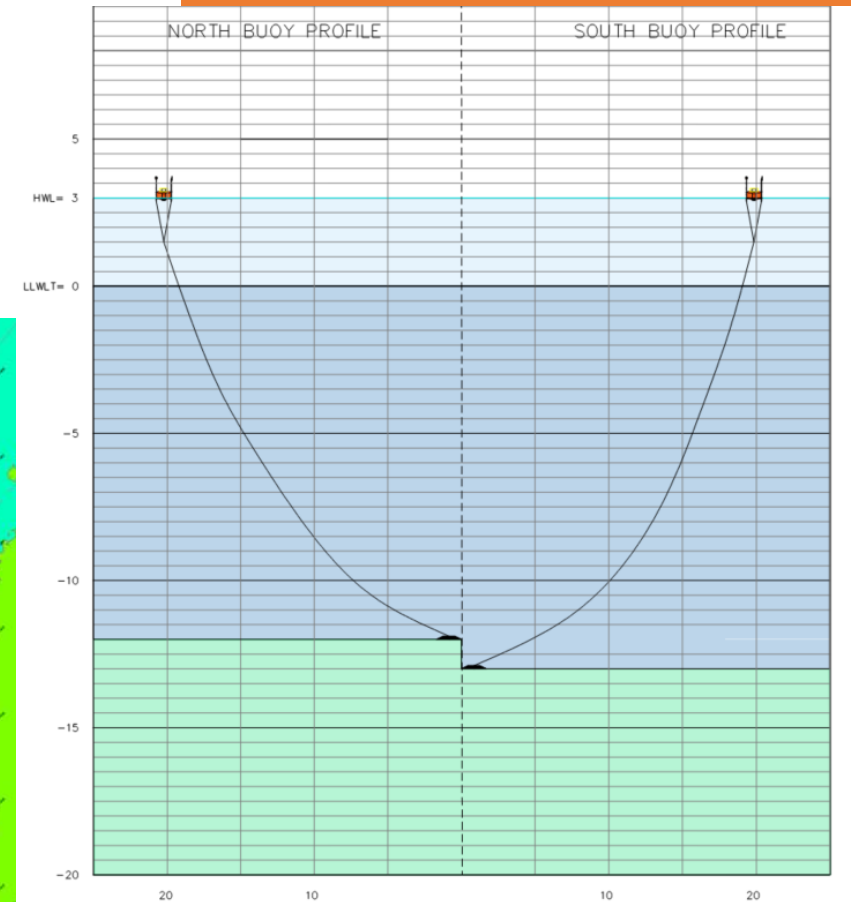
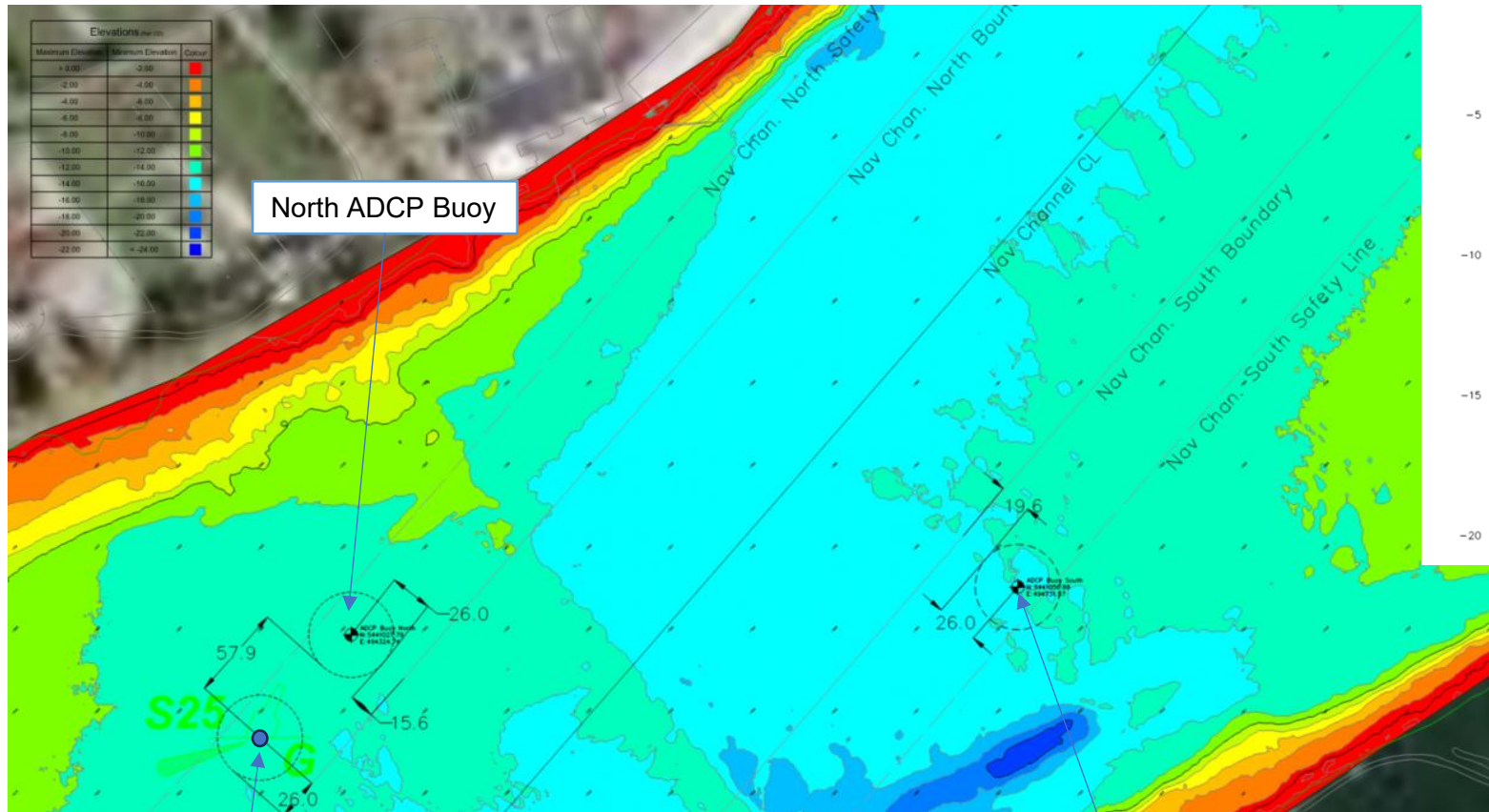
MARINE CONSTRUCTION STAGING



SUPPLEMENTAL TEST DREDGE ON-SHORE DISPOSAL FACILITY (DREDGE MATERIAL)



RIVER MONITORING BUOY – MOORED ADCP



- November 2025 & July 2026 (1-month period)
- Anchored to 2100 kg concrete block

NAVWARN / DAILY EXHIBITS

- NAVWARNs issued weekly to Mariners – 96 hours in advance VIA MCTSCCG
- NAVWARNs updated weekly for any significant change in the works and marine equipment locations .
- NAVWARNs cancelled to return navigation to normal operations
- Daily Construction Notices (Exhibits) provided to CMC FRP and FRIA
- . Planned positioning of marine construction equipment distributed at (8 AM daily)

Fisheries and Oceans
Canada
Canadian
Coast Guard

Pêches et Océans
Canada
Garde côtière
canadienne

Canada

Canadian Coast Guard
www.ccg-gcc.gc.ca

MCTS Western NAVWARN Issuing Desk
Website: nls.ccg-gcc.gc.ca
Phone: 250-627-3070
Email: mctsvictoria@pac.dfo-mpo.gc.ca

Navigational Warning Request

Organization Name: Crosser Fraser Partnership (CFP)

Site Name: Fraser River Tunnel Project: Geotechnical Investigations – Main river channel

Start Date and Time: January 31st 2025 at 12:00
End Date and Time: February 3rd 2025 at 08:00

Location of Activity: Fraser River in the vicinity of the existing George Massey Tunnel
Lat 49° 07' 17.99" N
Long 123° 04' 32.26" W

- The planned location of barge will be shared each day in a notification to marine users.

Brief Description of Work: Geotechnical investigation (**drilling**) works will be conducted from a **spud barge in the river**.

Hours of Operation: 24/7

Vessels on Site: PPMCC Derrick Barge (Vessel ID: PAMTAY), Westview Chinook Tug (Vessel ID: VG3278).

VHF Channel Monitored:
VHF channels to be monitored include: Channel 16 for the Canadian Coast Guard, Channel 74 for Emergencies, Channel 72 for Geotechnical Marine Contractors (Foundex).



Fraser River Tunnel Project
Suite 1100-401 West Georgia
Street Vancouver, BC V6B 5A1

Transportation Investment Corporation
Cross Fraser Partnership
2100 – 401 West Georgia Street
Vancouver, British Columbia
V6B 5A1

Date Range: March 31 – April 06, 2025

CFP Prime Contractor Designation

This daily notification provides an update on the status of geotechnical investigation works for the Fraser River tunnel project. These daily updates are a supplement to the weekly NAVWARN which should be referred to for further detail of the project.

The PPMC "PAMTAY" barge shown in Figure 1 will be operating in the North navigation channel. The Mercury "MLT 4" barge will be operating in the Steveston temporary moorage area (Figure 2).



Figure 1: Geotechnical Investigations Stage 16 (PAMTAY barge)

TUG ASSIST

NPP APPROVAL CONDITIONS

- **In –river Test Program**
- Tug assist specific to supporting marine traffic transits of the work site only) with 1000 HP will be available 24/7
- Tug assist will be available when project marine construction equipment is sited within in the main channel
- **Supplemental Test Dredge**
- At request of Pilots, a Azimuth Stern Drive Tug (3000 HP) within 4.5 hours of request will be in place



LADNER REACH GEOTECHNICAL INVESTIGATIONS

TEMPORARY STORAGE

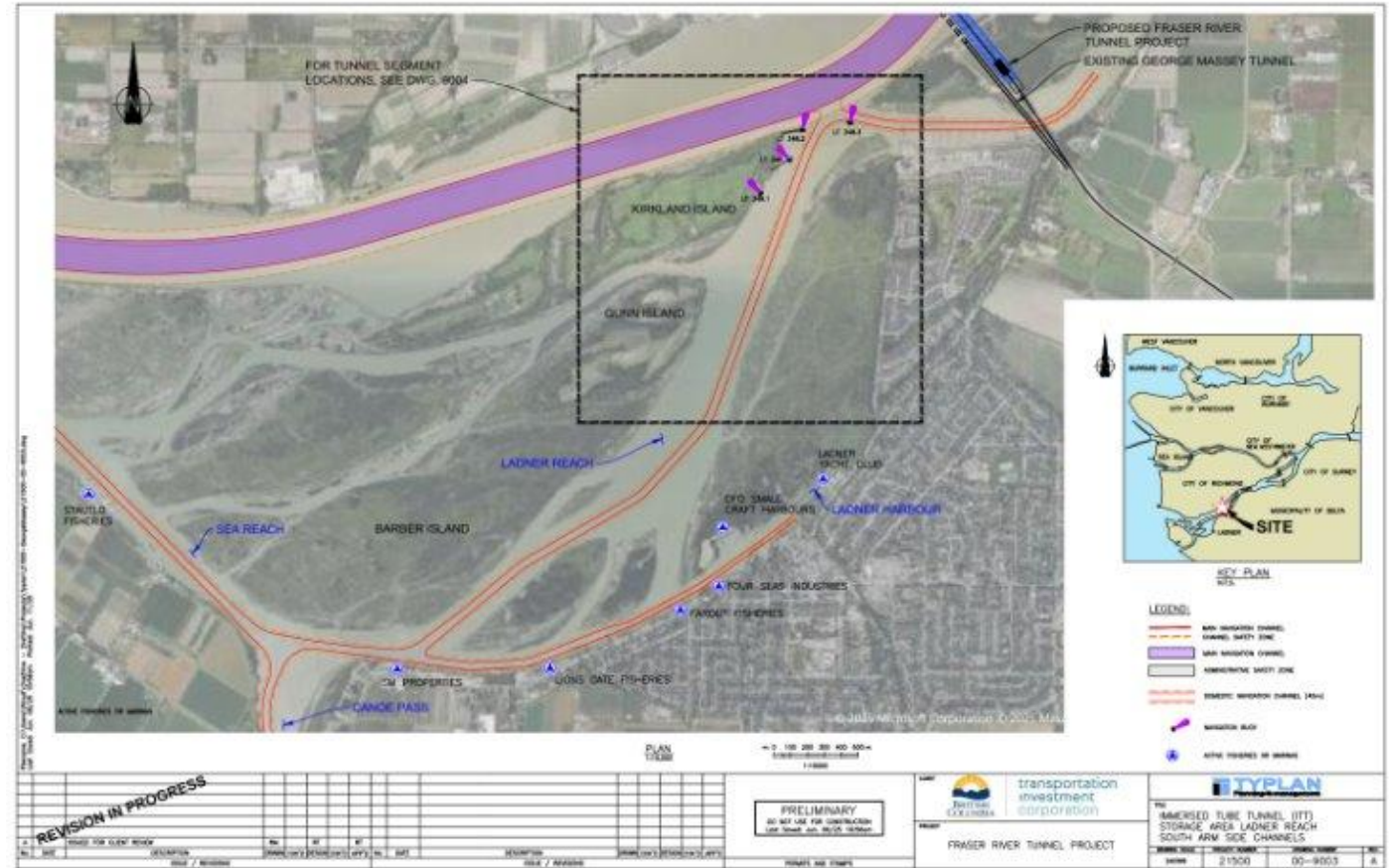


Ladner Reach Geotechnical Investigations

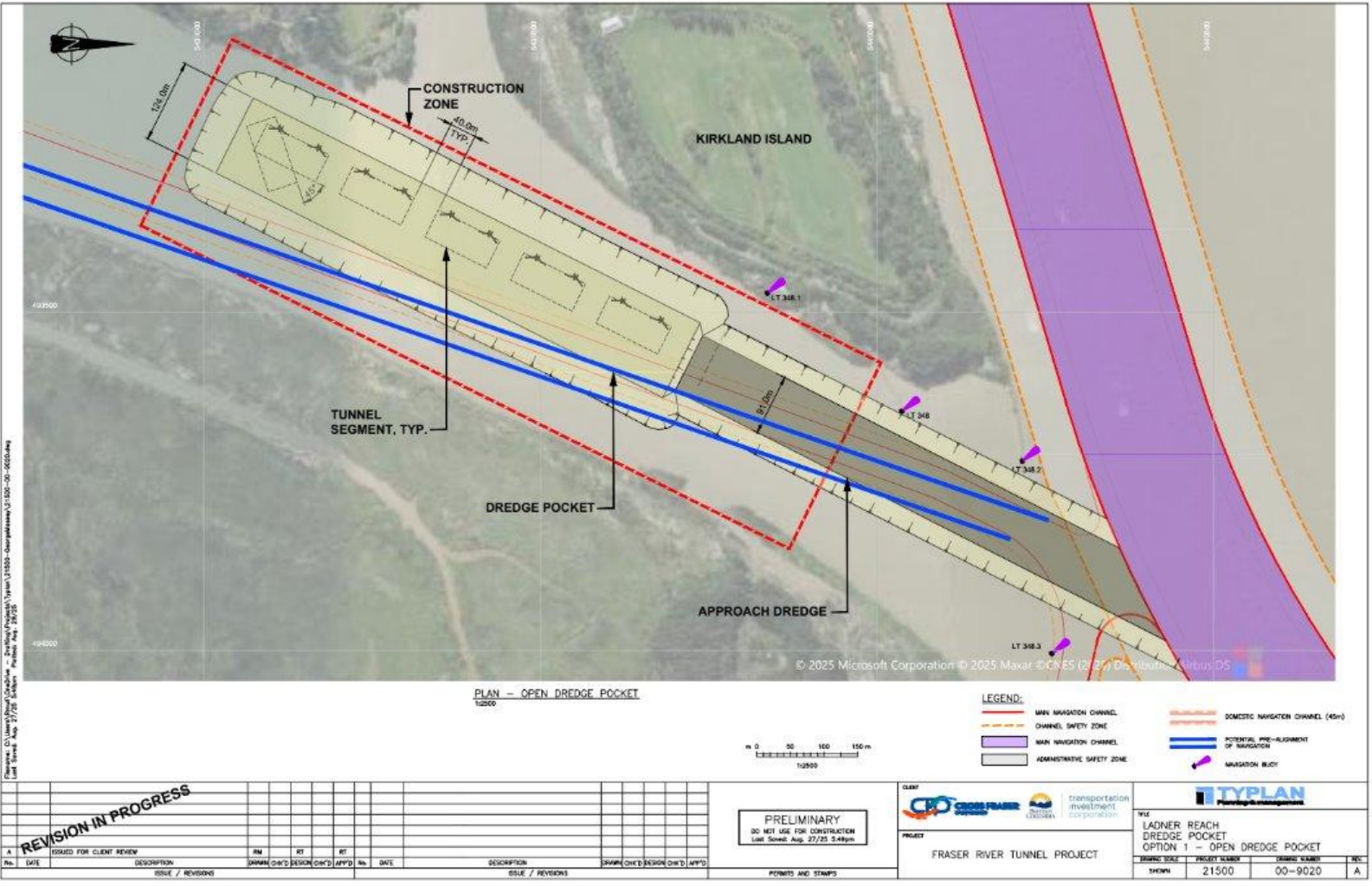
Geotechnical and Environmental Testing

Objective: Obtain site data to inform feasibility and design

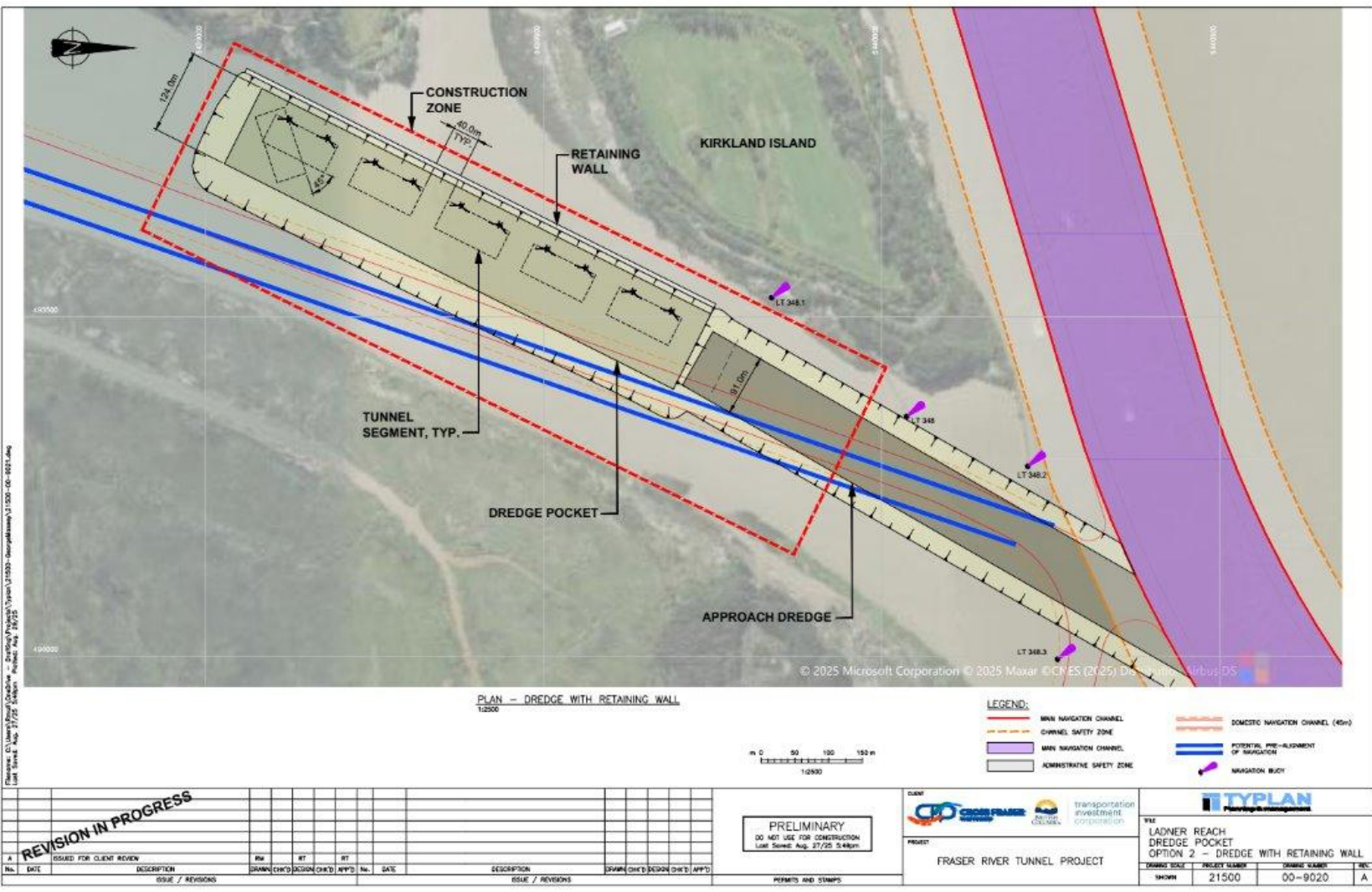
- Assess sediments, and subsurface conditions, characterize material for environmental permitting
- 18 x CPT Tests / 8 x Sonic Boreholes
- Marine Equipment - Shallow draft spud barge, support tug 400 HP
- **Target early-November 2025 for up to 4-weeks construction schedule**



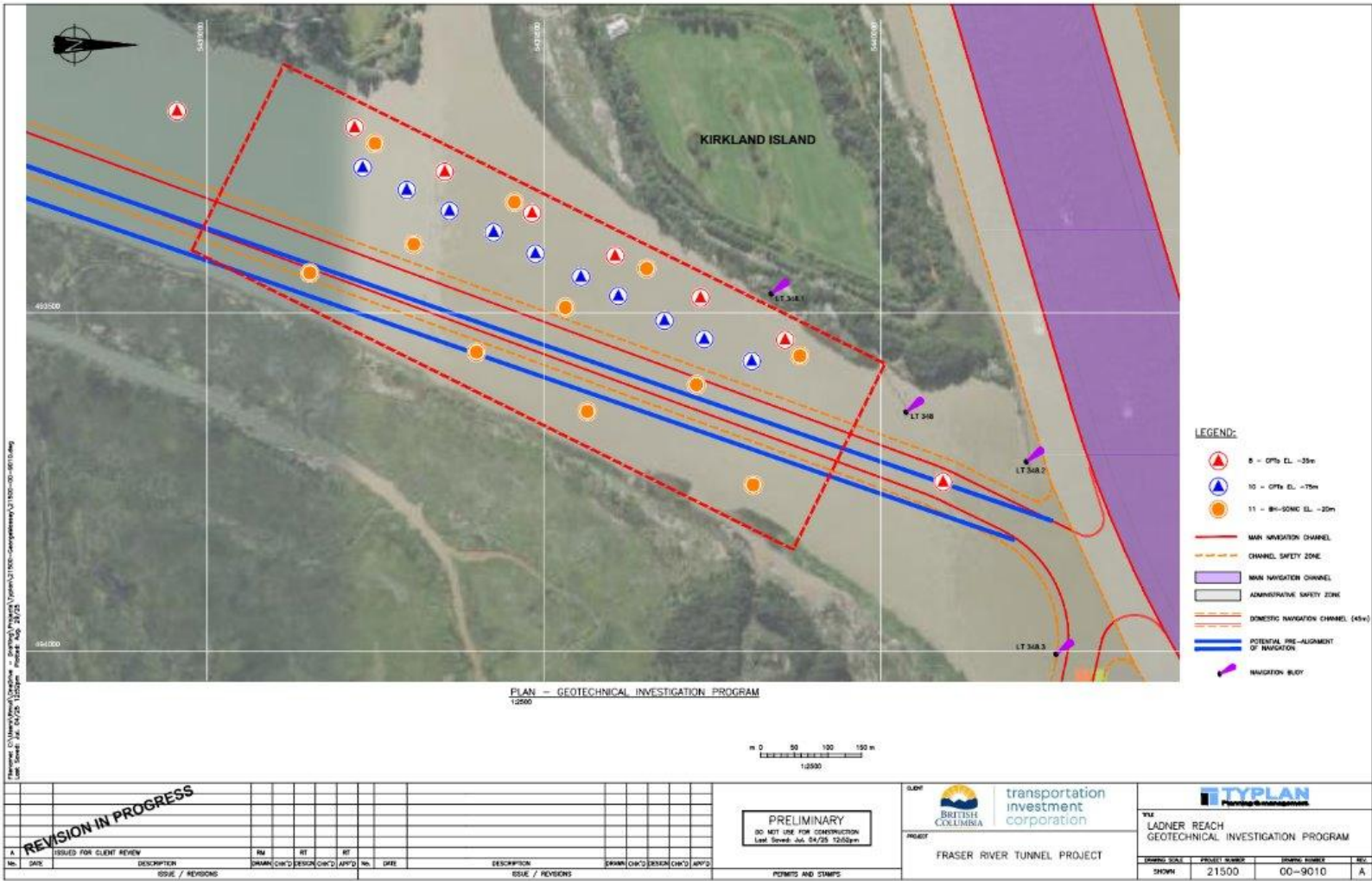
LADNER REACH MOORAGE : OPTION 1



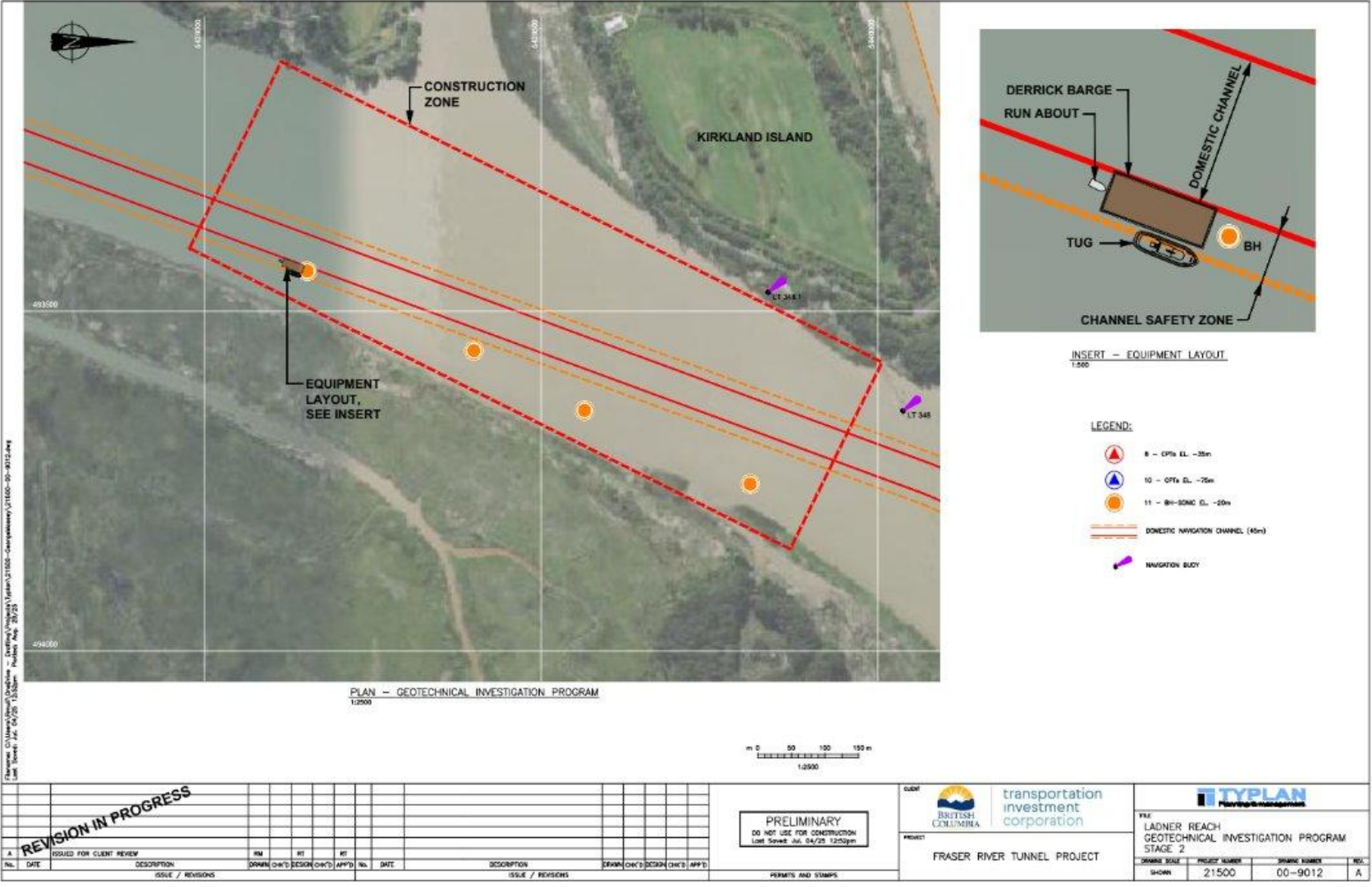
LADNER REACH ITT MOORAGE: OPTION 2



LADNER REACH GEOTECHNICAL INVESTIGATIONS: NAVIGATION CONTEXT



LADNER REACH GEOTECHNICAL INVESTIGATION: NAVIGATION CONTEXT



Thank you

Next MUG meeting will occur prior to
start of works

Scheduled for early October

