

BC Hydro Peace Canyon Dam

HAZARD BUOYS

Notice of Works

Canadian Navigable Waters Act

March 22, 2024

Submitted to:

Transport Canada
Suite 620-800 Burrard Street
Vancouver BC V6Z 2J8

Submitted by:

British Columbian Hydro and Power Authority
Site C Clean Energy Project
333 Dunsmuir Street
Vancouver BC V6B 5R3

INTRODUCTION

The *Canadian Navigable Waters Act* (CNWA) regulates works that are in, on, over, under, through or across any navigable water in Canada. The CNWA includes a schedule of navigable waters requiring regulatory approval for works that risk a substantial interference with navigation. As part of the CNWA, the Minor Works Order is used to identify works “that are likely to slightly interfere with navigation.” The Minor Works Order requires proponents to deposit a Notice of Work with Transport Canada. In accordance with this requirement, this Notice of Works describes the installation of five buoys approximately 1 km downstream of the Peace Canyon Dam (PCN) as described below.

PUBLIC USE AND HAZARDS

The PCN Dam is located approximately 6 kilometres upstream from the town of Hudson’s Hope. Approximately 1 km downstream of the dam, several naturally occurring rock bedding planes extend into the river at an elevation of 459m. These bedding planes are sometimes referred to as “river fingers”, “riverine fingers” or “river spits” (“The Fingers”).

During periods of higher flows from the PCN Dam, the Fingers are inundated and currents in this location become stronger, posing a risk to boaters and fishers using the channel. Currently, BC Hydro has an audible public warning system and signage cautioning boaters and fishers to evacuate the channel during these high flow periods.

The Site C reservoir, once operational, will have a Minimum Normal Reservoir Level (MNRL) operating range of 460m. The Fingers will be permanently flooded and will no longer be used for fishing. The areas will however become a submerged hazard for boaters due to its 1 metre elevation below the MNRL operating range of 460m. In order to address this hazard, BC Hydro is proposing to install five safety buoys to warn the public of the hazard. The proposed locations of buoy installation, approximate distance between buoys, as well as contour information, are shown in Appendix A.

In addition to the safety buoys, BC Hydro will continue to operate the public warning system, and will install new signage approximate 2.5 km downstream of the dam identifying the hazards and the associated buoys. The locations of the signs will be determined based on local topography.

DESCRIPTION OF WORK AND ACCESS

The proposed hazard buoys will be installed during low flows when the Fingers are exposed. Each buoy will be individually moored to sound bedrock in the riverbed with a chain and anchor. The buoys are 76cm diameter steel spheres painted orange with a diamond symbol. As shown in Appendix A, the distance between the buoys ranges between approximately 65 m and 112 m, allowing boaters to navigate through in case of emergency. Construction specifications, details of the anchor plates, rock anchor and buoy layouts are shown in attached Appendix B Issued for Construction drawings. Access and transport of equipment and materials to the Fingers will be by boat. BC Hydro will be sourcing all equipment and materials that will meet the minimum Transport Canada and Canadian Coast Guard guidelines.

All information set out in the Component Application Package is based on construction planning at the time of application. Activities may be somewhat different depending on final design and procurement, including contractors’ preferences for equipment, sequencing of activities and construction means and methods. All activities will be carried out in accordance with the Site C Construction Environmental Management Plan (CEMP).¹

¹https://www.sitecproject.com/sites/default/files/construction-environmental-management-plan-CEMP-rev-11_0.pdf

LOCATION

Buoy Location coordinates:

HB1: Lat: 55.9950392 Long: -121.976698246
HB2: Lat: 55.9942500 Long: -121.977969630
HB3: Lat: 55.9947233 Long: -121.978694645
HB4: Lat: 55.9957112 Long: -121.977546279
HB5: Lat: 55.9951599 Long: -121.979340478

SCHEDULE

The hazard buoys and their anchors will be constructed and installed between April and June of 2024 during periods of low flows in the Peace River.

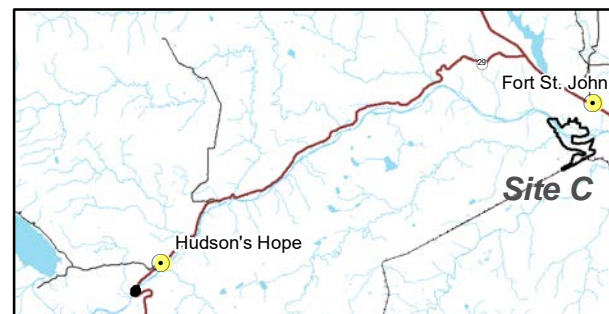
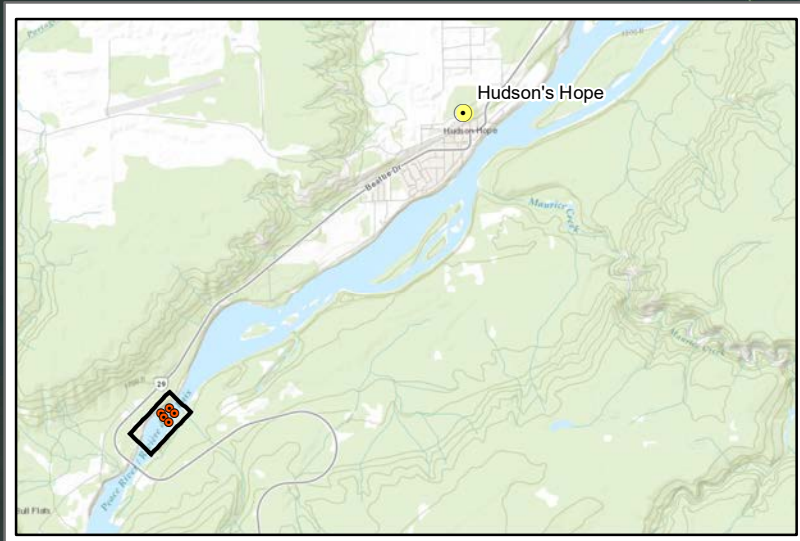
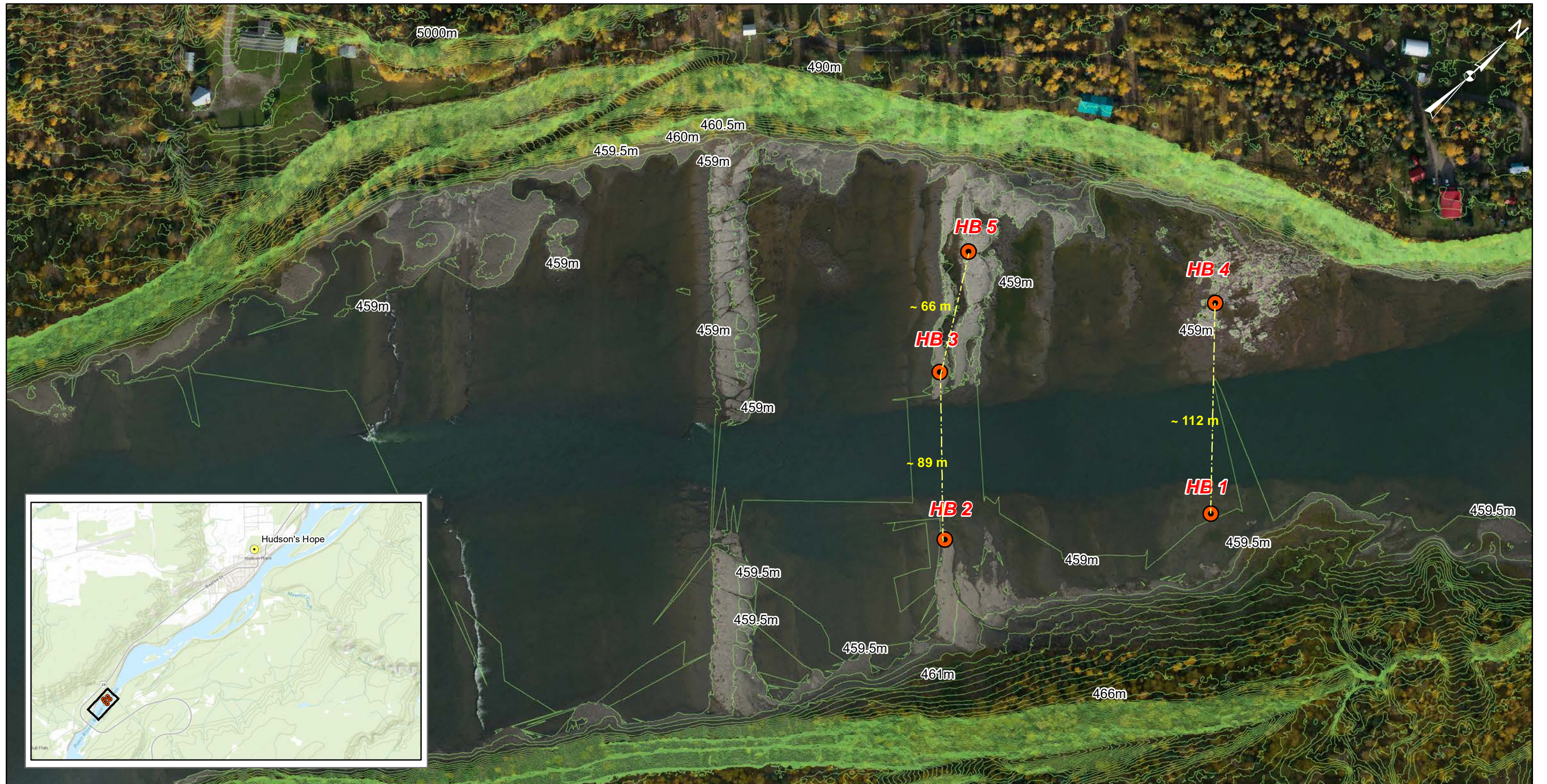
PUBLIC BOATER ACCESS

Communication to boaters will be done in accordance with the Boater Communication Protocol² set out in the Project's Construction Safety Management Plan and forthcoming Operations Safety Management Plan, as well as conditions included as part of any issued CNWA or Conditional Water Licences approvals.

² <https://www.sitecproject.com/sites/default/files/construction-safety-management-plan-revision-2-20220309.pdf>

Appendix A

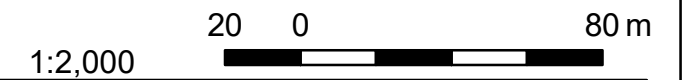
1016-N11-01908 Location and Contour Map



Map Notes:
 1. Datum: NAD83
 2. Projection: UTM Zone 10N
 3. Imagery: 15cm LiDAR Ortho 2019

Legend

- Buoy Locations
- 50cm Contour
- Approximate distance between buoys



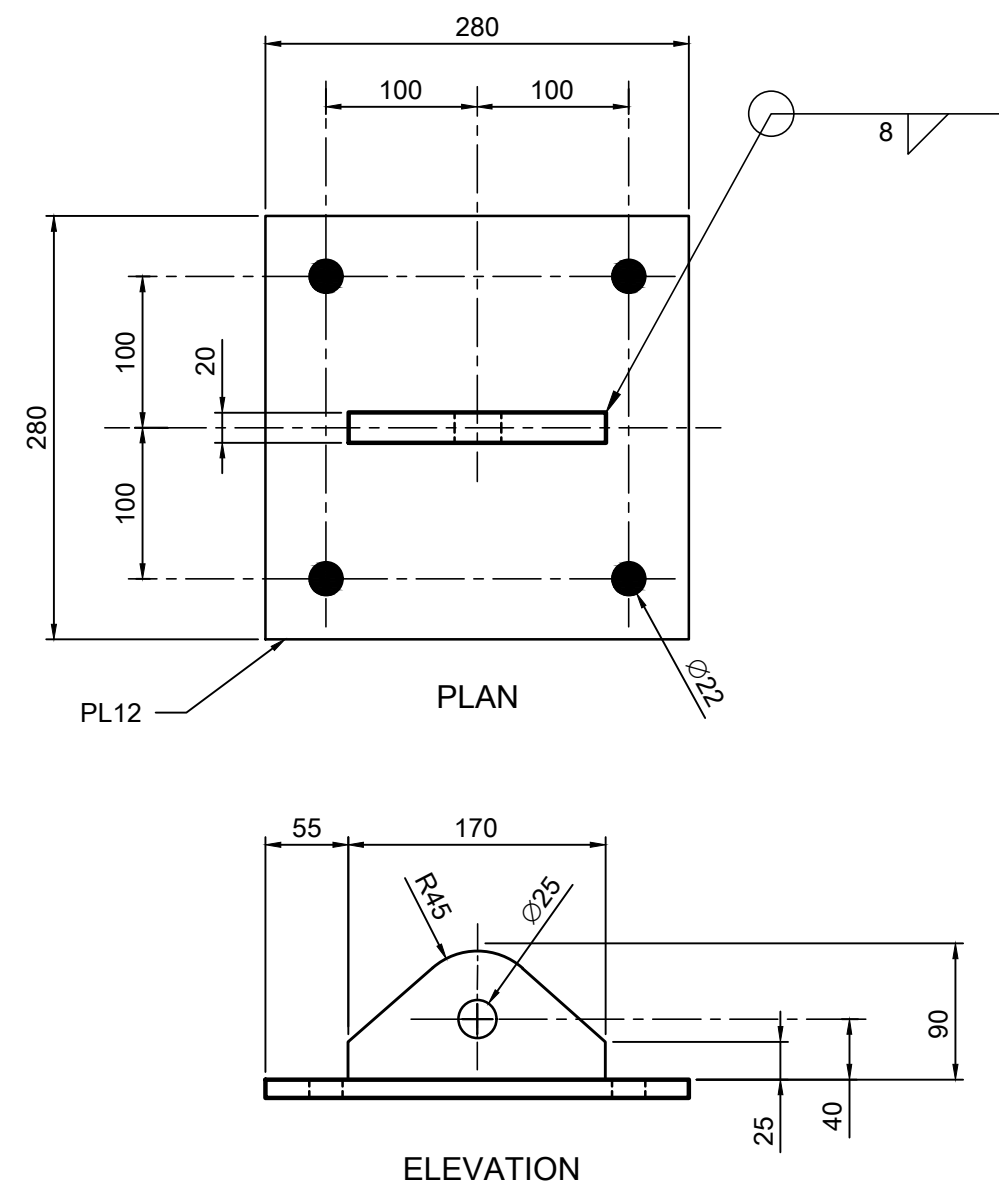
| | | | |
|------------------------------------|---------------|--------|----------------|
| | | | |
| Safety Buoys at PCN Fingers | | | |
| Date | Mar. 07, 2024 | DWG NO | 1016-N11-01908 |
| | | | R 2 |

Construction of the Site C Clean Energy Project is subject to required regulatory and permitting approvals.

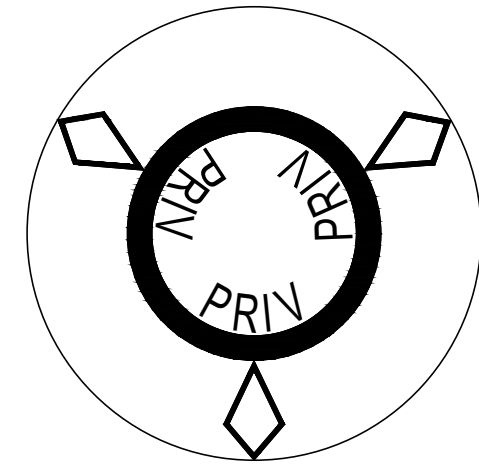
Appendix B
Issued for Construction Drawing



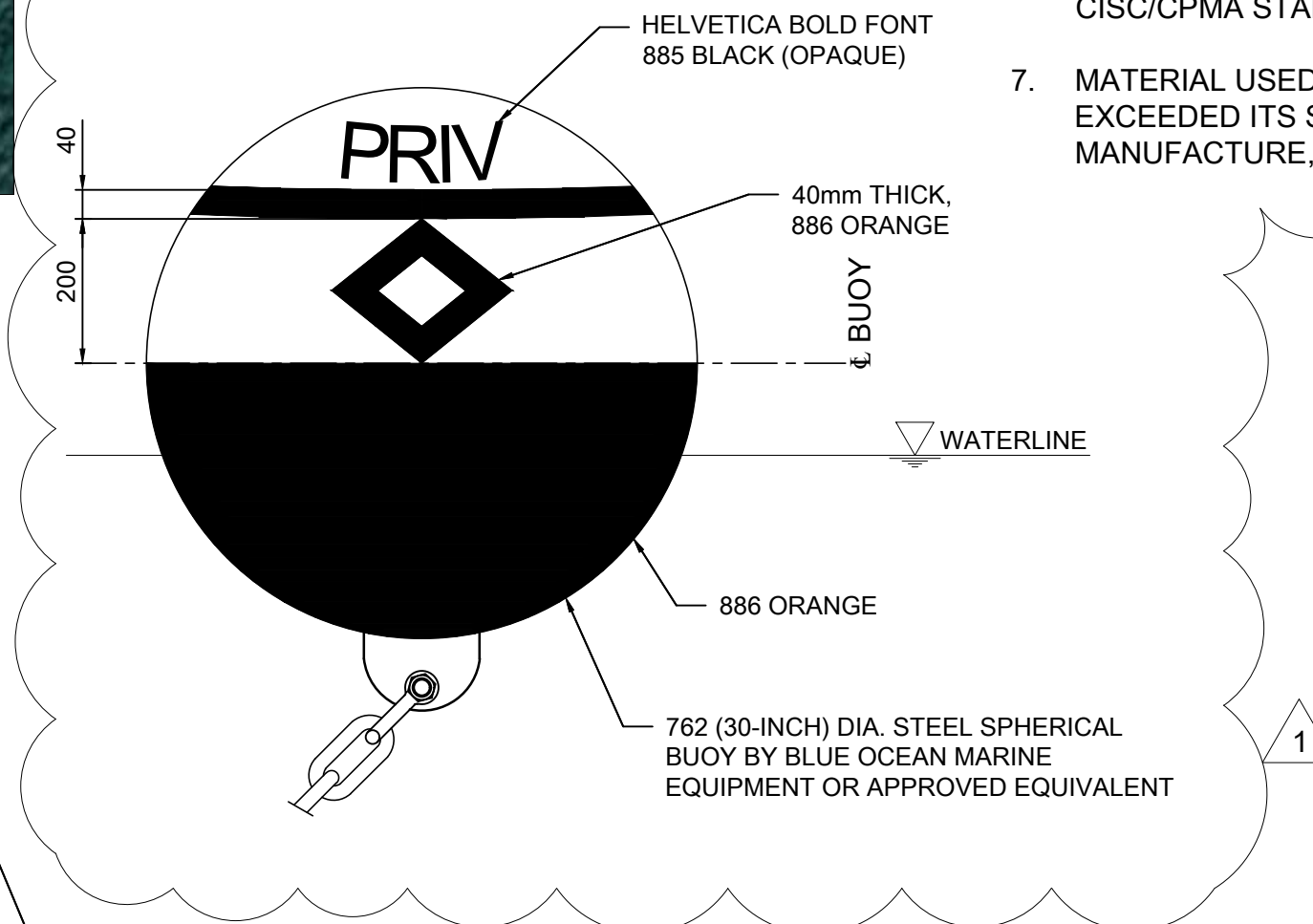
BUOY LAYOUT
NTS



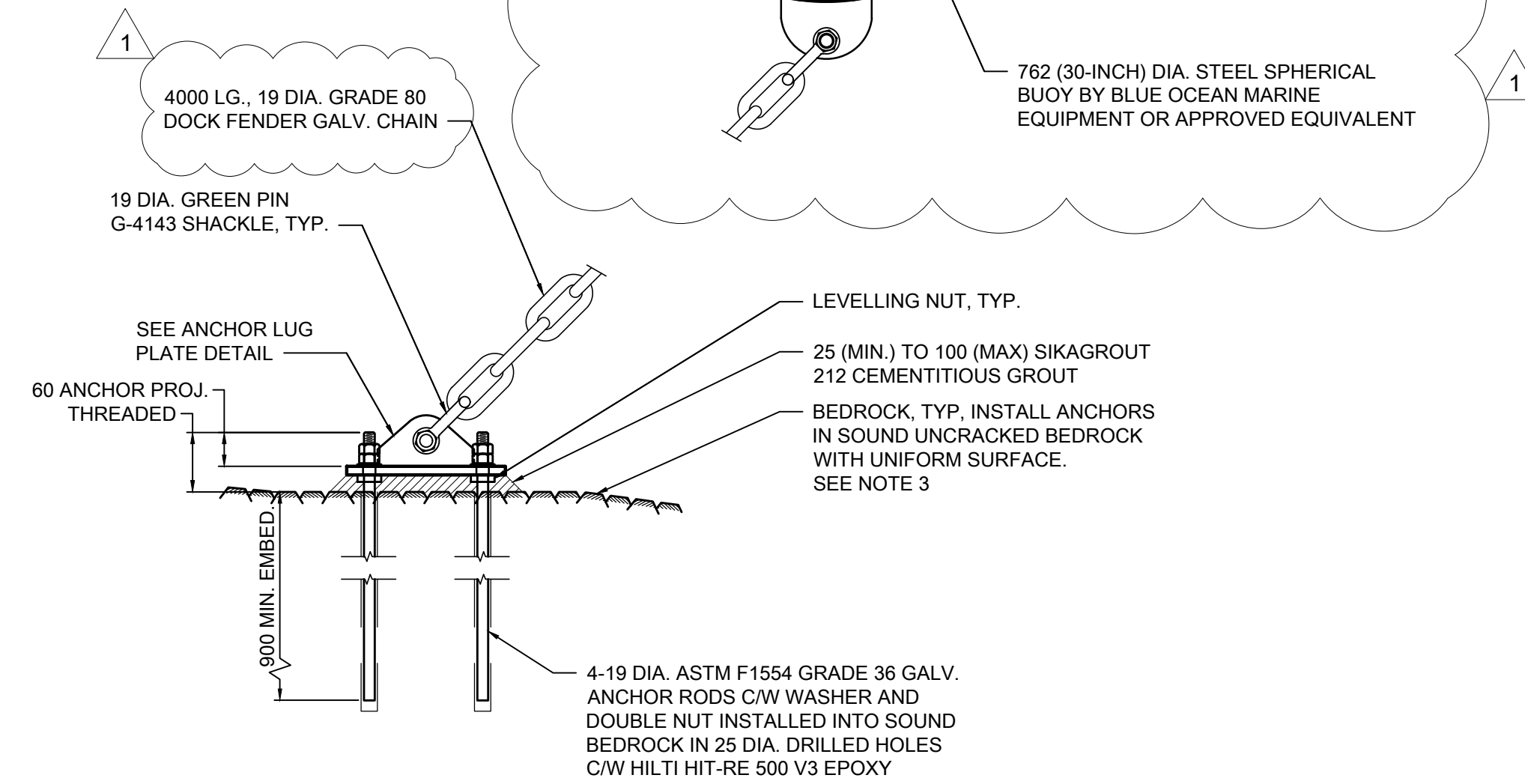
ANCHOR LUG PLATE DETAIL
SCALE 1:5



BUOY PLAN
NTS

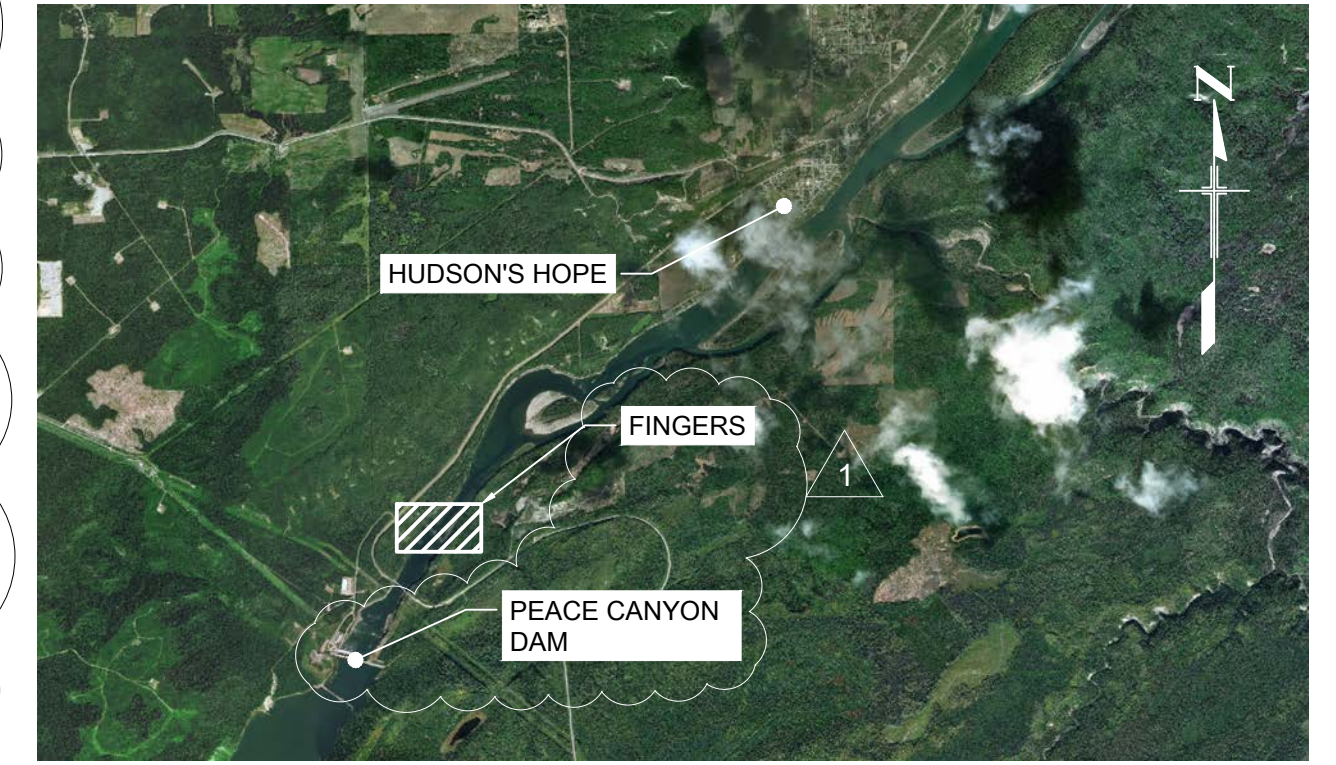


ROCK ANCHOR DETAIL
SCALE 1:10



BUOY COATING

- PREPARATION SHALL BE SSPC-SP 16 (PROFILE 40 TO 75 MICRONS), OR AS SPECIFIED BY THE COATING MANUFACTURER.
- COAT SHALL BE A WHITE EPOXY COAT IN ACCORDANCE WITH NACE NO. 12/AWS_C2.23M /SSPC-CS 23 AND SSPC-PA 1 WITH A DFT RANGE OF 40 - 62 μm (1.5 - 2.5 MILS) AND SHALL BE ONE OF THE FOLLOWING:
 - INDUSTRIES: AMERCOAT 235
 - CARBOGUARD 890
 - WILLIAMS: DURA-PLATE 235
- COAT SHALL BE AN ORANGE EPOXY PAINT (WHERE REQUIRED) IN ACCORDANCE WITH SSPC-PA 1 WITH A DFT RANGE OF 150 - 200 μm (6 - 8 MILS) AND SHALL BE ONE OF THE FOLLOWING:
 - INDUSTRIES: AMERCOAT 235
 - CARBOGUARD 890
 - WILLIAMS: DURA-PLATE 235
- SHALL BE A POLYSILOXANE COATING IN ACCORDANCE WITH SSPC-PA 1 WITH A DFT RANGE OF 100 - 150 μm (4 - 6 MILS) AND SHALL BE ONE OF THE FOLLOWING:
 - INDUSTRIES: PSX 700
 - CARBOXANE 2000
 - WILLIAMS: SHER-LOXANE 800
- TOPCOAT COLOR SHALL BE IN ACCORDANCE WITH U.S. FEDERAL STANDARD FOR GOVERNMENT PROCUREMENT, COLOURS, VOL. 1, FED-STD-595B, COLOUR SPECIFICATION, ORANGE #886, AND BLACK #885 OR APPROVED EQUIVALENT.
- PRIMER, INTERMEDIATE COAT AND TOPCOAT TO A SURFACE SHALL BE COMPATIBLE AND SHALL ALL BE SUPPLIED BY THE SAME COATING MANUFACTURER. USING PRIMERS, INTERMEDIATE COAT, OR TOPCOAT FROM DIFFERENT MANUFACTURERS ON THE SAME SURFACE SHALL NOT BE PERMITTED. SHOP PRIMER SHALL BE IN ACCORDANCE WITH CISC/CPMA STANDARD 2.
- MATERIAL USED FOR PRIMING AND COATING SHALL NOT HAVE EXCEEDED ITS SHELF LIFE, OR ONE YEAR SINCE THE DATE OF MANUFACTURE, WHICHEVER IS LESS.



KEY PLAN

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS NOTED OTHERWISE.
 - DO NOT SCALE DRAWING. FOR DIMENSIONS NOT SHOWN, REQUEST INFORMATION FROM ENGINEER.
 - ENGINEER OF RECORD OR ASSIGNED DELEGATE SHALL INSPECT BEDROCK CONDITIONS AT PROPOSED ANCHOR LOCATIONS AND PROVIDE CONTRACTOR APPROVAL PRIOR TO ANCHOR INSTALLATION.
 - COORDINATES ARE BASED ON NAD83/UTM ZONE 10N DATUM.
- STRUCTURAL STEEL**
- DESIGN, SUPPLY, FABRICATION, ERECTION, INSPECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF CISC HANDBOOK OF STEEL CONSTRUCTION.
 - ALL STRUCTURAL STEEL SHALL BE NEW MATERIAL TO CSA STANDARD CAN/CSA G40.20 & G40.21.
 - HOT ROLLED SHAPES SHALL BE GRADE 350W, EXCEPT CHANNELS, ANGLES, AND PLATES WHICH SHALL BE GRADE 300W.
 - STRUCTURAL STEEL PLATE SHALL BE GRADE 350W, EXCEPT STEEL BUOY PLATEWORK IN WHICH 300W IS PERMITTED.
 - HOLLOW STRUCTURAL SECTIONS SHALL BE GRADE 350W, CLASS "C".
 - ALL PLATES AND PIPES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION TO ASTM A123/A123M. APPLY ZINC-RICH PAINT TO DAMAGED AREAS IN ACCORDANCE WITH ASTM A780.
 - WELDING ELECTRODES TO BE TYPE E49XX, UNLESS NOTED OTHERWISE.
 - WELDS SHALL CONFORM TO CSA STANDARD W59. FABRICATORS SHALL BE PROPERLY CERTIFIED IN ACCORDANCE WITH CSA W47.1.
 - ALL BOLTS, NUTS, WASHERS, SHALL BE GALVANIZED AND CONFORM TO ASTM F3125 GRADE A325.
 - ALL COTTER PINS TO BE BOWTIE STAINLESS STEEL COTTER PINS.
 - GALVANIZED SURFACES DAMAGED DURING CONSTRUCTION SHALL BE TOUCHED UP WITH GALVAFROID AS PER MANUFACTURER'S RECOMMENDATIONS AT NO COST TO THE OWNER.
 - COORDINATES ARE APPROXIMATE AND SHALL FIELD FIT BASED ON SITE CONDITION WITH APPROVAL BC HYDRO REPRESENTATIVE.

| LOCATION COORDINATES | | |
|----------------------|----------|---------|
| BUOY | NORTHING | EASTING |
| HB1 | 6206000 | 563828 |
| HB2 | 6205911 | 563750 |
| HB3 | 6205963 | 563704 |
| HB4 | 6206074 | 563774 |
| HB5 | 6206011 | 563663 |

THIS DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF [NAME OF CLIENT] (CLIENT) AND IS ISSUED PURSUANT TO [THE RELEVANT AGREEMENT] BETWEEN CLIENT AND [HATCH LTD.] ("HATCH"). UNLESS OTHERWISE AGREED IN WRITING WITH CLIENT OR SPECIFIED ON THIS DRAWING, HATCH DOES NOT ACCEPT AND DISCLAIMS ANY AND ALL LIABILITY OR RESPONSIBILITY ARISING FROM ANY USE OF OR RELIANCE ON THIS DRAWING BY ANY THIRD PARTY OR ANY MODIFICATION OR MISUSE OF THIS DRAWING BY CLIENT. AND (B) THIS DRAWING IS CONFIDENTIAL AND ALL INTELLECTUAL PROPERTY RIGHTS EMBODIED OR REFERENCED IN THIS DRAWING REMAIN THE PROPERTY OF HATCH.



| ROLE | NAME | SIGNATURE | DATE |
|-----------------|-------------|-----------|------------|
| DRAFTSPERSON | A. SINGH | NR | 2024/03/14 |
| DESIGNER | C. FLATHER | NR | 2024/03/14 |
| CHECKER | D. BODNARUK | | 2024/03/14 |
| DESIGN COORD. | N/A | | |
| RESP. ENG. | J. WALKER | | 2024/03/14 |
| LEAD DISC. ENG. | N/A | | |
| ENG. MANAGER | N/A | | |
| PROJ. MANAGER | D. BONIN | | 2024/03/14 |

**PEACE CANYON
FINGERS HAZARD BUOYS
LAYOUT AND DETAILS**

| Ref Drawing No. | DRAWING No. | DRAWING TITLE | REG. PROFESSIONAL | No. | DESCRIPTION | AS BY | JW CHK'D | 2024-04-15 DATE |
|-----------------|-------------|---------------|-------------------|-----|---|-------|----------|-----------------|
| | | | | 1 | ISSUED FOR CONSTRUCTION - REVISED BUOY MARKINGS | | | |
| | | | | | | | | |

| | | |
|---------------------|------------------------------------|-------|
| SCALE - OR AS NOTED | DWG. No. H372684-0000-230-260-0001 | REV 1 |
|---------------------|------------------------------------|-------|

DRAWING APPROVAL STATUS: CONSTRUCTION