

SITE C CLEAN ENERGY PROJECT

Component Application Package – Halfway River Temporary Crossing 19.7B

Notification of Work (Public Resolution)

For Canadian Navigable Waters Act

November 10, 2020

Submitted to:

Transport Canada
Navigation Protection Program
Suite 1100 - 1166 W Pender Street
Vancouver, BC V6E 2R9

Submitted by:

BC Hydro and Power Authority
Site C Clean Energy Project
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**Site C Clean Energy Project – Halfway River Temporary Access Bridges
Design for Crossing 19.7B**

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Site C Clean Energy Project – Halfway River Temporary Access Bridges Design for Crossing 19.7B

1 INTRODUCTION

The Canadian Navigable Waters Act (CNWA) came into force on August 28, 2019. The CNWA includes a Schedule of navigable waters requiring regulatory approval for works that risk a substantial interference with navigation. Works required for construction and operation of the Site C Clean Energy Project (the Project) that occur on, over, under or through navigable waterways, as defined by the CNWA, must be permitted.

The Halfway River is a Peace River tributary between Fort St John and Hudson's Hope, BC and is not named in the CNWA Schedule of navigable waters. However, once the Site C reservoir is filled, the Halfway River lower reaches will become part of the Peace River, a Schedule waterbody under the CNWA.

This application is being submitted as a Notification of Work (Public Resolution) for the construction of a temporary causeway crossing over a backchannel of the Halfway River.

2 HALFWAY RIVER TEMPORARY CROSSINGS – RESERVOIR CLEARING

Site C Reservoir clearing in the lower Halfway River drainage requires machine access to both banks of the river and the construction of new access roads. There are seven bridge/causeway crossings that cross the mainstem of the Halfway River, with four back channel crossings, that are part of the new access road development.

This Notification of Work request is for one backchannel crossing over the Halfway River, labelled as 19.7B, as shown in the overview map in Attachment A.

The crossing spans a portion of the Halfway River that is Crown Land and are within the Occupant Licence to Cut (OLTC 19) area held by BC Hydro. The dimensions and approximate location of the crossing at site 19.7 is provided in Table 1.

Table 1. Location, dimensions and land description for Halfway River crossing at 19.7B

Halfway River Crossing ID	Latitude	Longitude	Land Description of Halfway River Crossing
19.7B	56.245644	-121.543624	Crown Foreshore, bed of the Halfway River and the Halfway River located within the North 1/2 of Section 34 Township 83 Range 23 West of The 6th Meridian Peace River District.

2.1 DESIGN OF CROSSING 19.7B

Crossing 19.7B is an approximately 35 m long constructed causeway with four culvert cross-drains (10 m long, 600 mm diameter, corrugated steel pipe). The crossing spans a backchannel of the Halfway River and will be constructed with instream gravel materials. The causeway would have a 5.0 m wide running surface and a top elevation of 457.4 m. The causeway will be constructed during the winter period under frozen or low flow conditions. The inlet and outlets of the culverts will only be armoured with riprap if water levels necessitate culvert protection. Details on the causeway materials and design profile are included Attachment B.

2.2 CONSTRUCTION SEQUENCE AND SCHEDULE

Construction of the Halfway River temporary access crossings began in October 2020 at the downstream end (Site ID 19.3A) and is progressing upstream as each crossing is built. Construction of the causeway crossing at 19.7B is planned to begin mid-December 2020.

Minor changes to location and design may be required in order to field fit the crossing to site conditions that exist during construction. These changes may be required due to the dynamic changes in gravel bar and channel locations that occur frequently in this drainage.

Decommission of the crossing will involve culvert removal.

3 PUBLIC BOATER ACCESS

Construction of temporary crossings in the Halfway River channel is expected to block boater access to lower portions of the Halfway River between September 1, 2020 and April 30, 2021. A map showing the river blockage extent has been included in Attachment A.

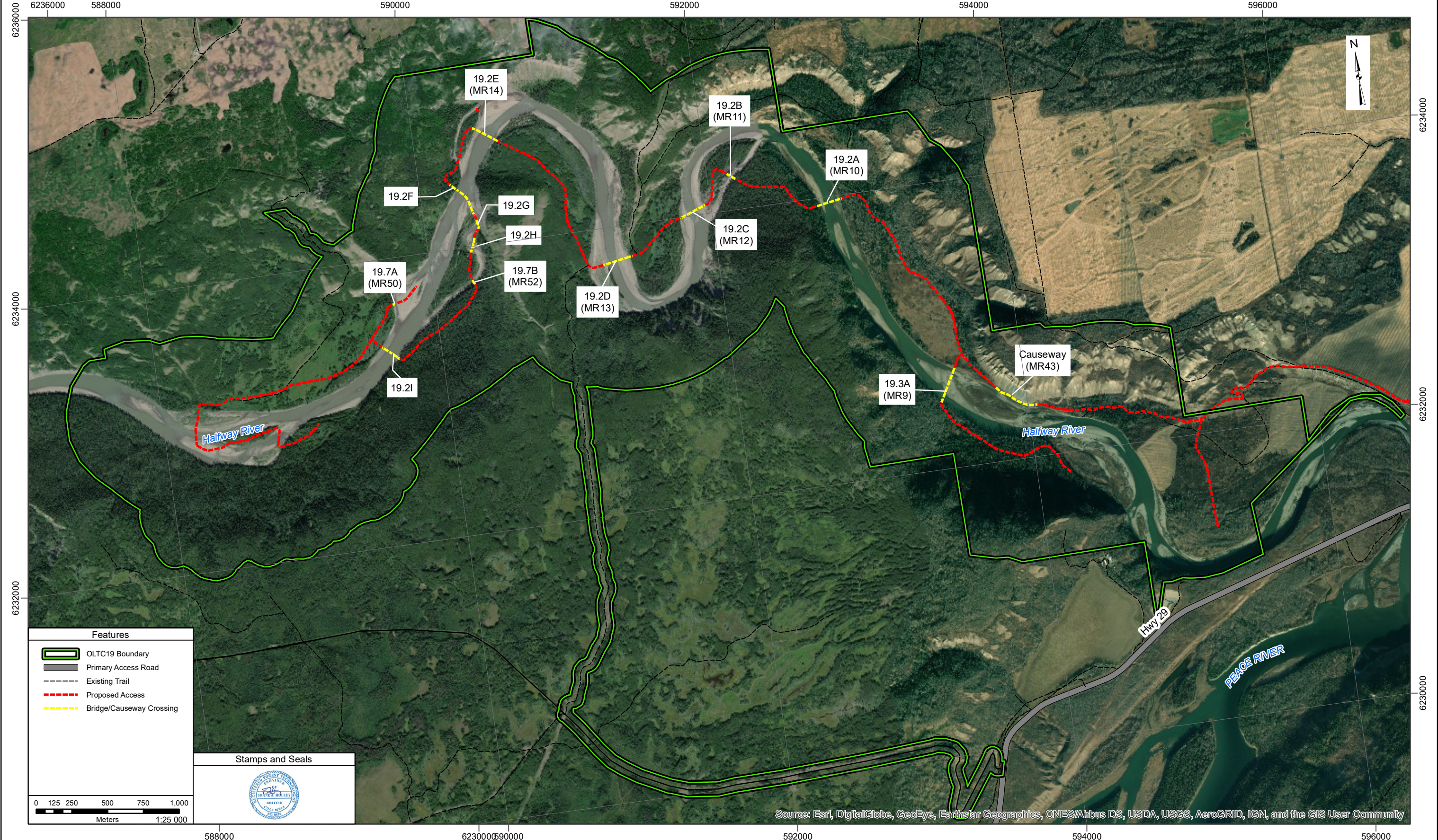
Crossings would be removed in April 2021 and boating access would be reinstated on or before May 1, 2021. The Halfway River boat launch would remain open during this period.

Communication to boaters ahead of river closures has been done in accordance with the Site C Boater Communication Protocol (Site C [Construction Safety Management Plan](#), Section 5.3.4.2). Signs that are visible to boaters are installed in various locations along the Halfway River alerting them to the upcoming blockage and potential hazard.






Attachment A – Maps

**Overview Map of Halfway River Temporary Access Crossings
Map of Halfway River Blockage Extent**


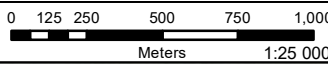
No.	Revisions	Made	Chkd	Appd	Date

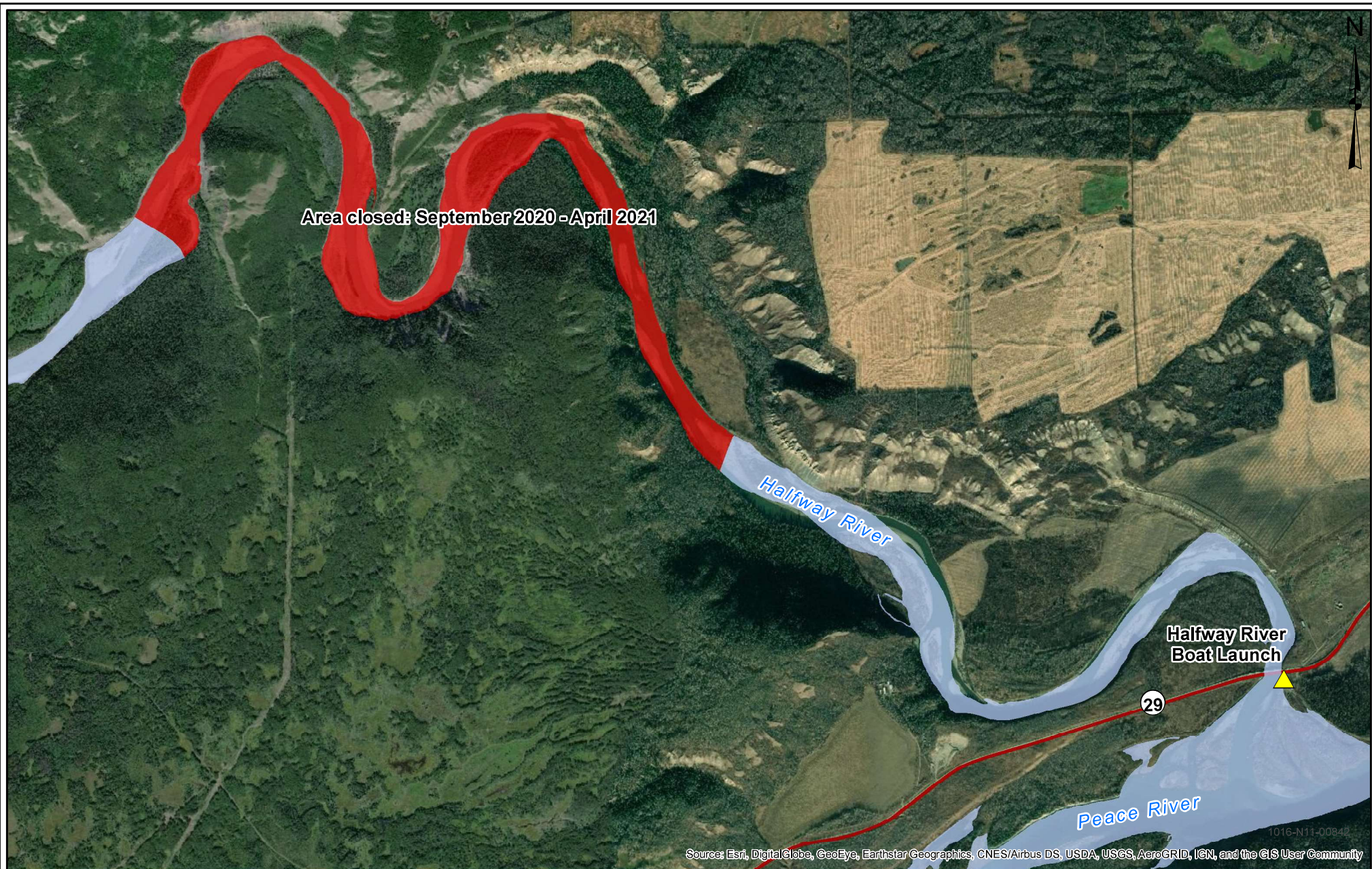


Features

-  OLTC19 Boundary
-  Primary Access Road
-  Existing Trail
-  Proposed Access
-  Bridge/Causeway Crossing

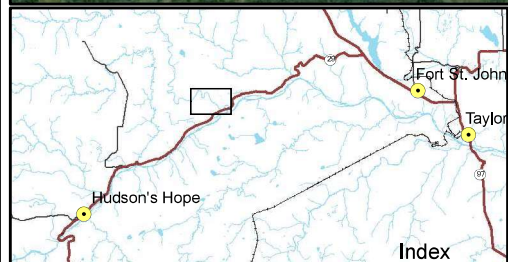
Stamps and Seals



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

1016-N11-00842



Map Notes:
 1. Datum: NAD83
 2. Projection: UTM Zone 10N
 3. Base Data: Province of B.C.
 4. Imagery: ESRI Online Basemapping

Legend

- Area closed: September 2020 - April 2021
- ▲ Halfway River Boat Launch
- Highway

1:30,000 0 1 km



Halfway River Closure Area

DATE	May 14, 2020	1016-N11-00842	R 0
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X:\ArcGIS\Projects\Public Affairs\Halfway River Closure - 1016-N11-00842.mxd

Attachment B

**Design Drawing, Plan and Profile View of Revised Temporary Access Crossing at 19.7B
over Halfway River**



BC Hydro

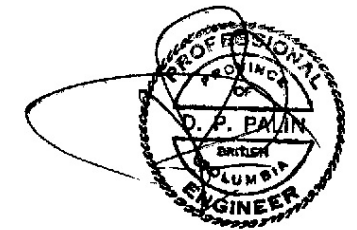
Power smart

HALFWAY RIVER SITE: 19.7-B

COORDINATES:
LATITUDE: 56.24013°
LONGITUDE: -121.54327°

DRAWING LIST

DRAWING NO	Drawing TITLE	REVISION
Trilogy 19.7-B-1	SITE PLAN AND PROFILE	0
Trilogy 19.7-B-2	PROFILE AND SECTIONS	0
Trilogy 19.7-B-3	LOW FLOW ROAD CROSSING GENERAL ARRANGEMENT	0



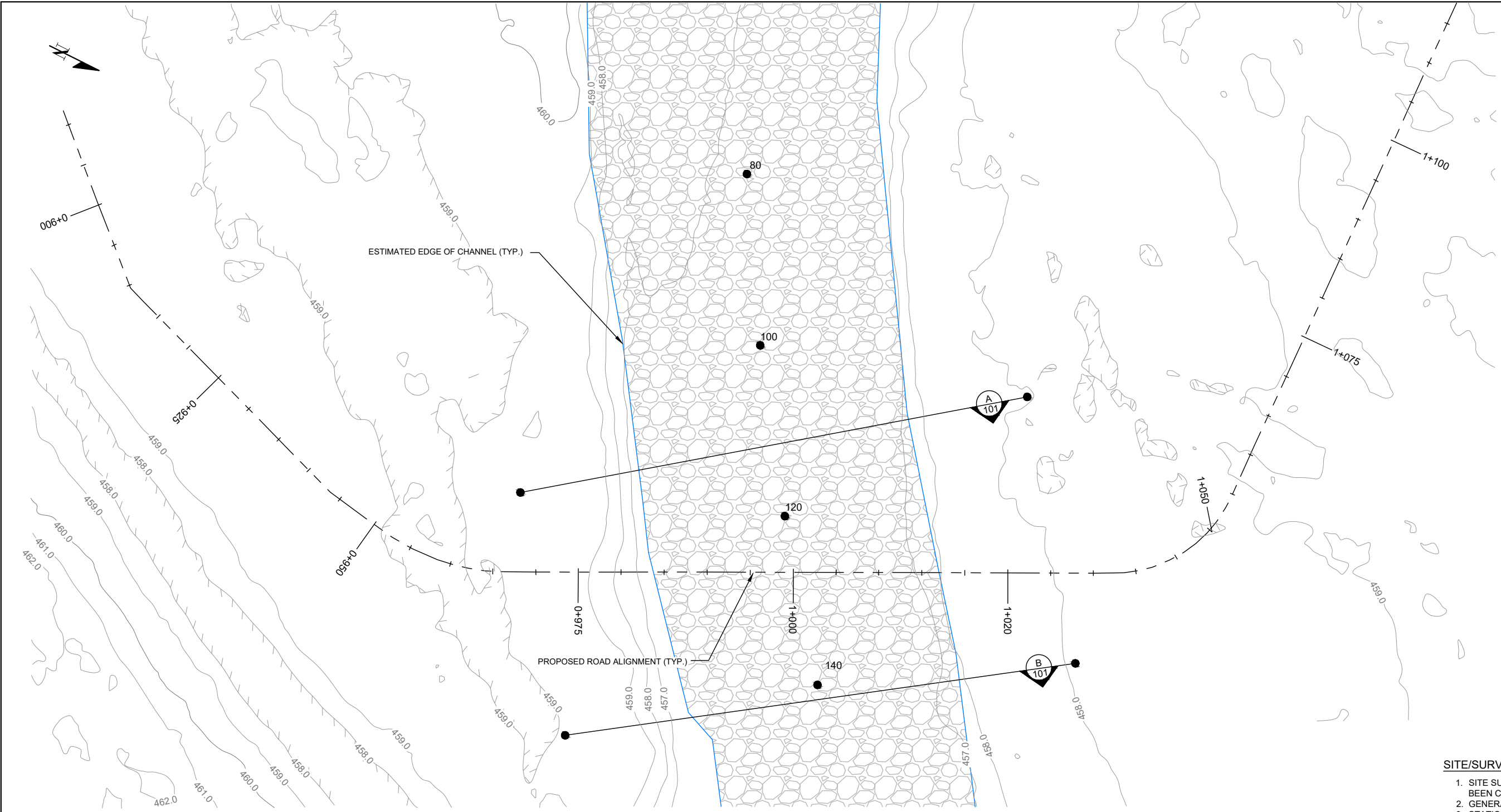
PREPARED BY:

DESCRIPTION: ISSUED FOR CONSTRUCTION
ISSUE DATE: 20/10/27



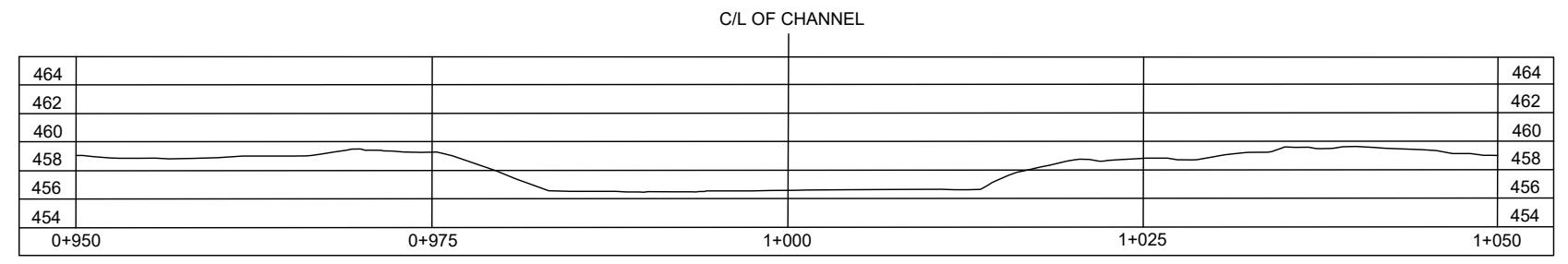
UNIT 315
7326 10TH STREET NE
CALGARY, AB
T2E 8W1

REV	YY/MM/DD	DESCRIPTION	DRWN	APVD
0	20/10/27	ISSUED FOR CONSTRUCTION	SN	DDW

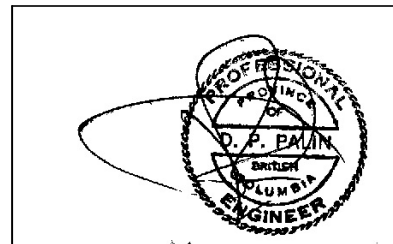


SITE PLAN
SCALE 1:500

- SITE/SURVEY NOTES:**
1. SITE SURVEY BASED ON LIDAR DATA. NO SITE SURVEY HAS BEEN COMPLETED.
 2. GENERAL SITE COORDINATES: N6233756 E590285 (UTM-10)
 3. STATIONING AND CONTOURS ARE IN METERS



GROUND PROFILE ALONG PROPOSED ROAD ALIGNMENT
SCALE 1:500



Trilogy Crossing Corp.
ENGINEERING, ENVIRONMENTAL, INSPECTION

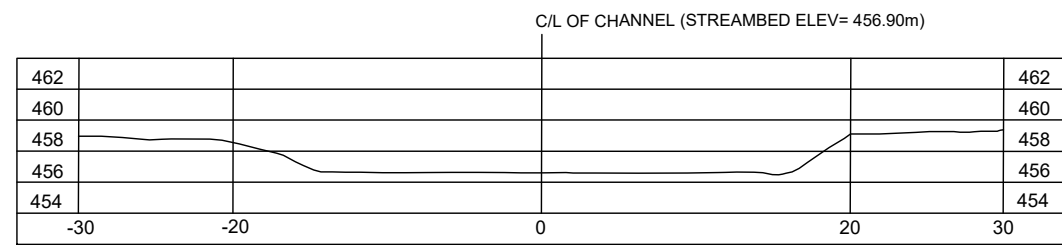
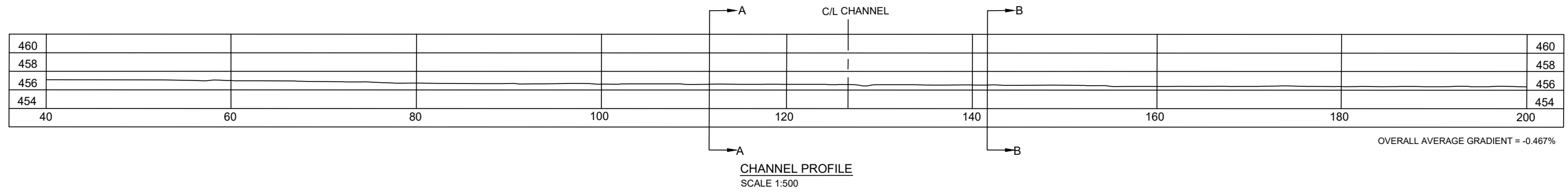
HALFWAY RIVER SITE: 19.7-B

SITE PLAN AND PROFILES

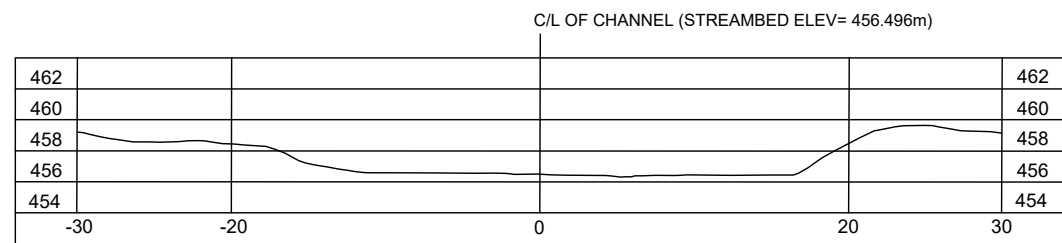
BC Hydro
Power smart

DESIGN	DRAWN	CHECKED	FILE
	M.MEILLEUR	CD	Trilogy 19.7-B-1
DATE	DATE	DATE	PROJECT NO.
0 27-OCT-2020	27-OCT-20	27-OCT-20	17PG0123
REVISIONS			Sheet 01 of 03

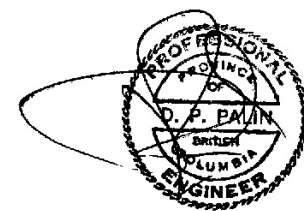
LAST DATE REVISED: 6-Nov-2020 1:42 PM



SECTION A
SCALE 1:500



SECTION B
SCALE 1:500



Trilogy Crossing Corp.
ENGINEERING, ENVIRONMENTAL, INSPECTION

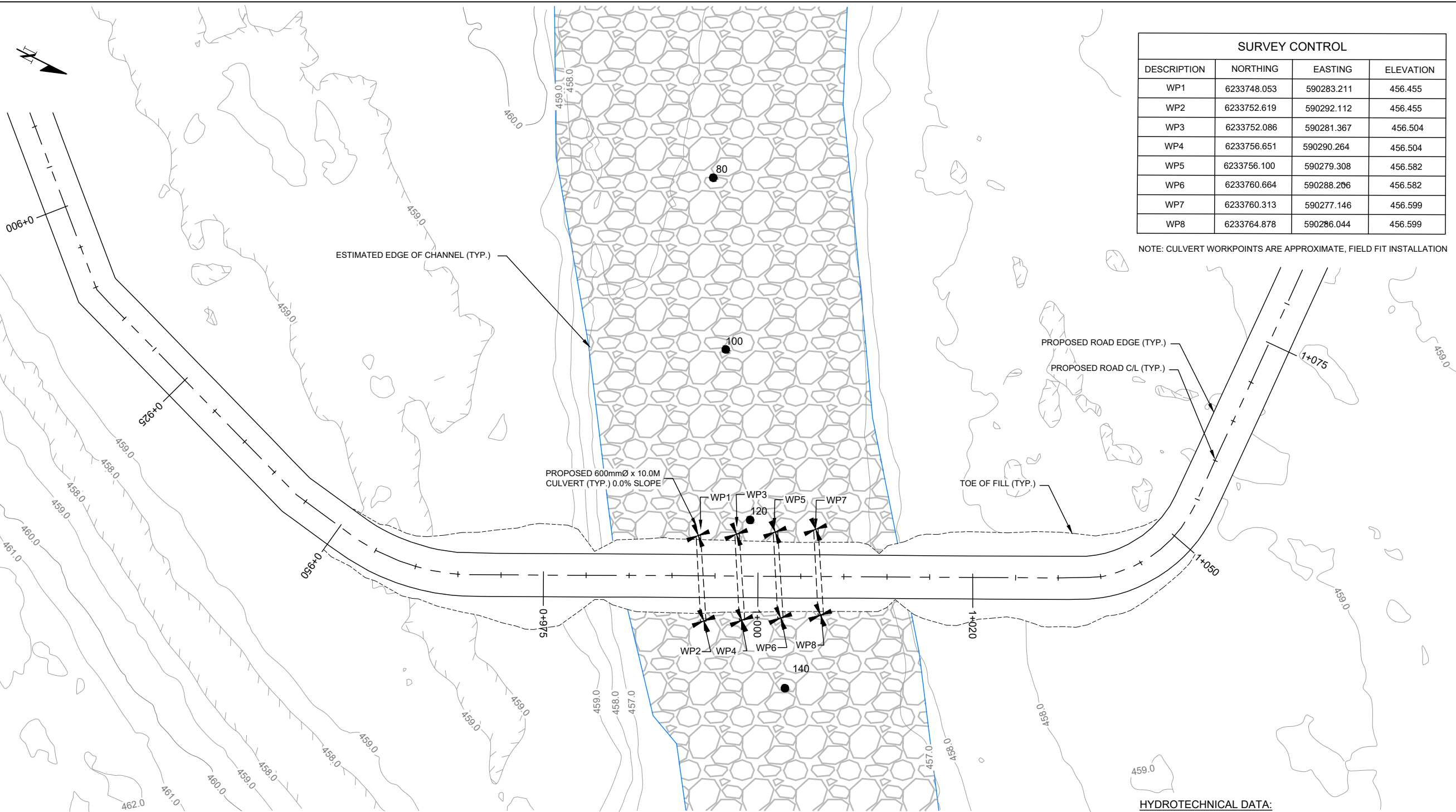
HALFWAY RIVER SITE: 19.7-B

PROFILES AND SECTIONS

BC Hydro
Power smart

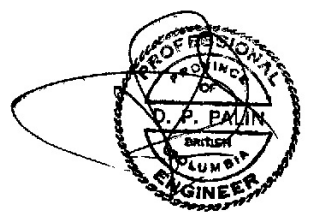
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	M.MEILLEUR	CD	Trilogy 19.7-B-2
DATE	DATE	DATE	PLAN
0 27-OCT-2020	27-OCT-20	27-OCT-20	17PG0123
REVISIONS			Sheet 02 of 03

LAST DATE REVISED: 6-Nov-2020 1:42 PM



SURVEY CONTROL			
DESCRIPTION	NORTHING	EASTING	ELEVATION
WP1	6233748.053	590283.211	456.455
WP2	6233752.619	590292.112	456.455
WP3	6233752.086	590281.367	456.504
WP4	6233756.651	590290.264	456.504
WP5	6233756.100	590279.308	456.582
WP6	6233760.664	590288.206	456.582
WP7	6233760.313	590277.146	456.599
WP8	6233764.878	590286.044	456.599

NOTE: CULVERT WORKPOINTS ARE APPROXIMATE, FIELD FIT INSTALLATION



- NOTES:**
- CULVERTS HAVE NOT BEEN DESIGNED TO HANDLE HIGH WATER FLOWS AND ARE INTENDED TO PROVIDE CHANNEL CONNECTIVITY ONLY.
 - DURING HIGH WATER FLOWS ROAD MAY BE UNDER WATER AT TIMES AND MAY REQUIRE MAINTENANCE FOLLOWING HIGH FLOW EVENTS.
 - SEASONAL Q10 ELEVATION MAY OVERTOP ROAD. LOW FLOW OPTION TO BE USED WHEN CHANNEL IS DRY, AND FLOWS SHOULD BE MONITORED DURING USE.

0	27-OCT-2020	Issue for Construction
REVISIONS		

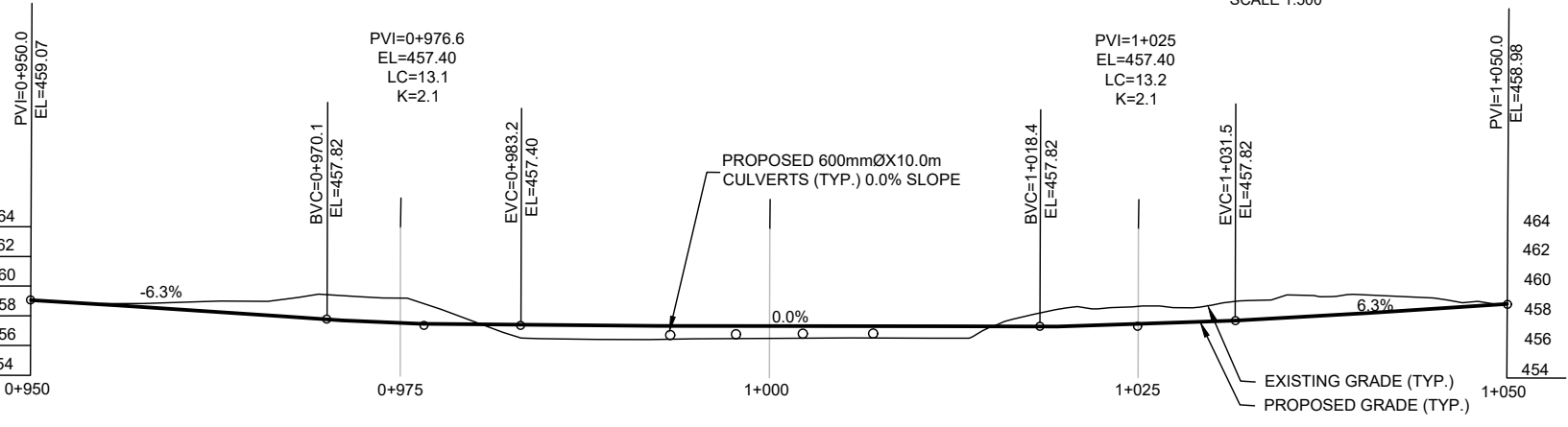


HALFWAY RIVER
SITE: 19.7-B

LOW FLOW ROAD CROSSING
GENERAL ARRANGEMENT



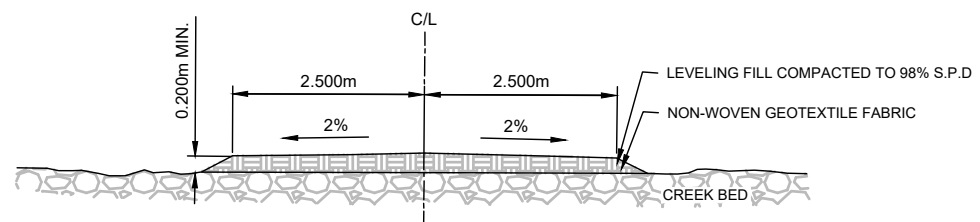
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CHECKED	DATE	PLAN	
CD	27-OCT-20	17PG0123	
Sheet 03 of 03			



GROUND PROFILE ALONG PROPOSED ROAD ALIGNMENT
SCALE 1:500

VOLUMES:
COMMON CUT: 480 m³
COMMON FILL: 200 m³

HYDROTECHNICAL DATA:
- HYDROLOGY COMPLETED BY DWB CONSULTING SERVICES LTD, DETAILS IN "HYDROTECHNICAL MEMO-PRELIMINARY MODELING ASSESSMENT OF BRIDGE OPTION AT SITE 19.7-B"
- STREAM CLASSIFICATION = S1
- SEASONAL Q10 DESIGN FLOW IS ESTIMATED @ 37.31m³/s
- SEASONAL Q10 DESIGN FLOW WATER ELEV. IS ESTIMATED @ 457.77m
- SEASONAL Q10 FLOW APPLIES TO NON-PEAK FLOW SEASON FROM SEPTEMBER TO APRIL.



ROAD ELEVATION
SCALE 1:100

LAST DATE REVISED: 6-Nov-2020 1:42 PM