

## Bijaya Adhikari

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**From:** Mardy Semmler  
**Sent:** November 21, 2017 4:41 PM  
**To:** Conway, Amanda  
**Cc:** Bijaya Adhikari; Freda Wilson  
**Subject:** FW: 17-HCAA-01564 Hamlet of Aklavik Bridge Construction and Culvert Installation - Responses to DFO Information Requests  
**Attachments:** Figure 1 VHWHY03035\_Aklavik\_Culvert.pdf; Figure 2\_Aklavik\_Topo\_R0\_DESIGN-Option1 with piles-SK-01.pdf

Amanda

Additional information requested by DFO – N3L1-1839 – Hamlet of Aklavik Bridge Construction and Culvert Installation – Bickish Road.

Mardy

**From:** Hoos, Rick [mailto:Rick.Hoos@tetrattech.com]  
**Sent:** November 21, 2017 4:37 PM  
**To:** Mardy Semmler <semmlerm@inuvwb.ca>; Bijaya Adhikari <adhikarib@inuvwb.ca>  
**Cc:** Freda Wilson <wilsonf@inuvwb.ca>; Fred Behrens <SAOAKlavik@permafrost.com>  
**Subject:** RE: 17-HCAA-01564 Hamlet of Aklavik Bridge Construction and Culvert Installation - Responses to DFO Information Requests

Mardy:

For your information and consideration, this email serves to address the information requests raised by the Department of Fisheries and Oceans with respect to the Aklavik Bridge Construction and Culvert Installation project.

DFO's specific information requests and our responses (in red) to each are provided below as follows:

1. The footprint (size of culvert, rip rap placement, fill placement, bank reshaping) in m<sup>2</sup> below the high water mark for the installation of the new culvert /ramp/ water crossing. Are there any technical drawings prepared?

Response: The culvert is 12 m long and has a diameter of 1.5 m. Details regarding fill placement, and rip rap placement and other considerations are provided in the attached Figure 1. The banks of the former drainage channel to be crossed at the culvert crossing site will not be reshaped but approximately 8 m of bank on each side of the channel will be infilled to cover the culvert as illustrated in Figure 1. The footprint of fill placement below the normal high water mark of the channel will be approximately 32 m<sup>2</sup>.

2. Will the new culvert be embedded? Will it pass fish?

To mitigate potential impacts on the underlying permafrost, the culvert will not be embedded into the bed of the former drainage channel. Rather, as illustrated in Figure 1, the culvert will be placed on a 100-200 mm thick layer of clear crushed rock (4 inch), which in turn will be placed on a sandwiched layer of non-woven geotextile fabric and geogrid. The materials placed below the culvert will serve to stabilize and enhance the integrity of the culvert and prevent migration of the crushed rock into the bed of the channel.

As illustrated in Figure 1, channel water is anticipated to fill the lower half of the culvert for most, or all of the open-water season (unless it dries completely, which is not expected to occur). As a result, the small fish species which could potentially frequent this portion of the former drainage channel, in particular sticklebacks and potentially juvenile pike would be able to pass through the culvert.

3. The footprint (embankments, rip rap placement, bank reshaping) in m<sup>2</sup> below the high water mark for the installation of the clear span bridge. It looks like it would just be some rip rap, but any clarification is appreciated.

As illustrated in the attached Figure 2, the toes of the rip-rap covered embankment berms on both sides of the clear span bridge are designed to remain several metres away from and up-gradient of the surveyed top of bank of the stream to be crossed by the bridge. As a result no rip-rap is expected to be placed in the stream bed. However, due to temporary seasonal flooding, which is anticipated to occur in most years, all sides of the embankments will be armoured with rip-rap to mitigate possible erosion concerns during seasonal flooding events.

Please confirm receipt of this information.

Regards,

Rick

**Richard Hoos, MSc., R.P. Bio.** | Principal Consultant  
p. 604.608.8914 | c. 604.813.4952 | f. 604.684.6241  
[rick.hoos@tetrattech.com](mailto:rick.hoos@tetrattech.com)

Nehtruh-EBA/Tetra Tech Canada Inc.



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**From:** Bijaya Adhikari [<mailto:adhikarib@inuvwb.ca>]

**Sent:** November-09-17 3:34 PM

**To:** Fred Behrens

**Cc:** [Rick.Hoos@tetrattech.com](mailto:Rick.Hoos@tetrattech.com); Mardy Semmler; Freda Wilson; Conway, Amanda

**Subject:** FW: 17-HCAA-01564 Hamlet of Aklavik Bridge Construction and Culvert Installation Application Package

Good Afternoon Fred,

Email below from DFO regarding N3L1-1839 Hamlet of Aklavik Water Licence Application – Bridge Construction and Culvert Installation.

Please provide the additional information as requested by the DFO.

Thank you,

Bijaya

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**From:** Conway, Amanda [<mailto:Amanda.Conway@dfo-mpo.gc.ca>]

**Sent:** November 9, 2017 1:04 PM

**To:** Bijaya Adhikari <[adhikarib@inuvwb.ca](mailto:adhikarib@inuvwb.ca)>

**Cc:** Mardy Semmler <[semmlerm@inuvwb.ca](mailto:semmlerm@inuvwb.ca)>

**Subject:** RE: 17-HCAA-01564 Hamlet of Aklavik Bridge Construction and Culvert Installation Application Package

Hello,

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received the proposal for Hamlet of Aklavik Bridge Construction and Culvert Installation on November 2, 2017.

We require additional information for a review under the *Fisheries Act*. In order for us to review the proposal and to determine whether regulatory review is required, we ask that you provide the following information:

1. The footprint (size of culvert, rip rap placement, fill placement, bank reshaping) in m<sup>2</sup> below the high water mark for the installation of the new culvert /ramp/ water crossing. Are there any technical drawings prepared?
2. Will the new culvert be embedded? Will it pass fish?
3. The footprint (embankments, rip rap placement, bank reshaping) in m<sup>2</sup> below the high water mark for the installation of the clear span bridge. It looks like it would just be some rip rap, but any clarification is appreciated.

Once we receive the requested information we will continue our review. In your response please quote the file number and title provided in this email.

Yours sincerely,

Amanda Conway  
Fisheries Protection Biologist  
Fisheries and Oceans Canada

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**From:** Bijaya Adhikari [<mailto:adhikarib@inuvwb.ca>]

**Sent:** November-02-17 6:35 PM

**To:** Dan Carmichael; [eisc@jointsec.nt.ca](mailto:eisc@jointsec.nt.ca); FPP.CA / PPP.CA (DFO/MPO); [tech-rp@jointsec.nt.ca](mailto:tech-rp@jointsec.nt.ca); [info@inuvialuit.com](mailto:info@inuvialuit.com); [loretta.ransom@ec.gc.ca](mailto:loretta.ransom@ec.gc.ca); [ec.eenordrpntno-eanorthpnrnwt.ec@canada.ca](mailto:ec.eenordrpntno-eanorthpnrnwt.ec@canada.ca); Lorie Fyfe; Charles Klengenberg; [patrick\\_clancy@gov.nt.ca](mailto:patrick_clancy@gov.nt.ca); [Peter\\_Workman@gov.nt.ca](mailto:Peter_Workman@gov.nt.ca); [accfinance@northwestel.net](mailto:accfinance@northwestel.net); Michelle Gruben; [wmacnwt@jointsec.nt.ca](mailto:wmacnwt@jointsec.nt.ca); [Adrian.Paradis@CanNor.gc.ca](mailto:Adrian.Paradis@CanNor.gc.ca); [fjmc-rp@jointsec.nt.ca](mailto:fjmc-rp@jointsec.nt.ca); [katie\\_rozestraten@gov.nt.ca](mailto:katie_rozestraten@gov.nt.ca); [stephen.charlie@gwichin.nt.ca](mailto:stephen.charlie@gwichin.nt.ca)

**Cc:** Mardy Semmler; Freda Wilson

**Subject:** 17-HCAA-01564 N3L1-1839 Hamlet of Aklavik Bridge Construction and Culvert Installation Application Package

Good Afternoon,

The Hamlet of Aklavik submitted a water licence application for bridge construction and culvert installation on the traditional access road identified as Bickish Road.

The IWB request your review and comments on this application.

The application package includes:

1. 170721 Hamlet of Aklavik – Schedule C – Application for Water Licence;
2. 170724 Hamlet of Aklavik - Authorization to Nehruh-EBA Consulting for Water Licence Application

- and documents submission on behalf of Hamlet of Aklavik;
3. 170803 N3L1-1839 Hamlet of Aklavik - IWB Additional Information Request;
  4. 171018 N3L1-1839 Hamlet of Aklavik – Project Description Report for the Design and Construction of the Proposed Aklavik Bridge – Updated September 2017;
  5. 171018 N3L1-1839 Hamlet of Aklavik – Project Description Report: Culvert Installation Project – Aklavik Traditional Trail;
  6. 171018 N3L1-1839 Hamlet of Aklavik - Bridge and Culvert Waste Management Plan;
  7. 171018 N3L1-1839 Hamlet of Aklavik - Bridge and Culvert Spill Contingency Plan;
  8. 171018 N3L1-1839 Hamlet of Aklavik - Bridge and Culvert Erosion and Sediment Control Plan;
  9. 171018 N3L1-1839 Hamlet of Aklavik - Bridge-DFO Self-Assessment.

The above pdf files (1- 9) can be accessed by clicking the following Dropbox link or copy and paste into your browser:

<https://www.dropbox.com/sh/nbtxk2x7bprpw7j/AAALjhXVbjG8-imVCA8kQUSwa?dl=0>

Please provide your written comments by **November 24, 2017**. If no response is received by the due date, we will assume that your organization has no comments with the submitted application.

Written submissions can be sent to:

**Executive Director  
Inuvialuit Water Board  
P.O. Box 2531  
Inuvik, NT X0E 0T0  
Email : [semmlerm@inuvwb.ca](mailto:semmlerm@inuvwb.ca)**

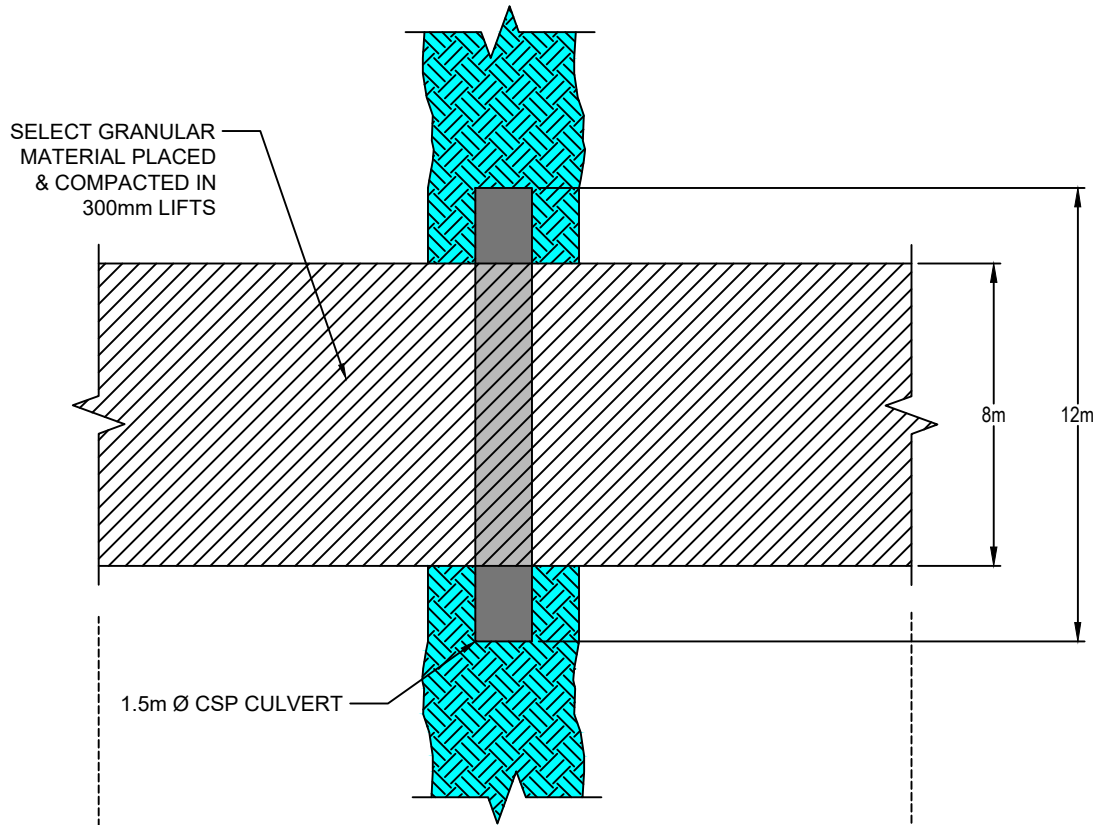
Should you require further information or clarification, please contact me at 867-678-8610 or Mardy Semmler, Executive Director, at [semmlerm@inuvwb.ca](mailto:semmlerm@inuvwb.ca) or phone 867-678-8609.

Thank you,

Bijaya

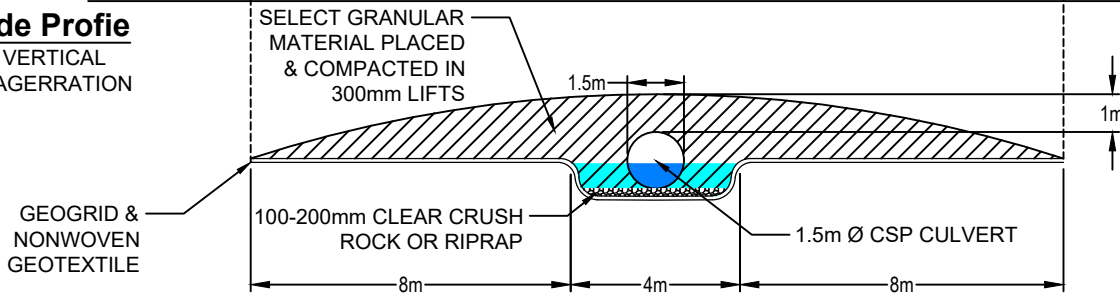
*Bijaya Adhikari, PhD  
Science and Regulatory Coordinator  
Inuvialuit Water Board  
P.O. Box 2531, Inuvik, NT X0E 0T0  
Tel: (867) 678-8610  
Fax: (867) 678-2943  
Email: [adhikarib@inuvwb.ca](mailto:adhikarib@inuvwb.ca)  
Website: [www.inuvwb.ca](http://www.inuvwb.ca)*

**Plan View**



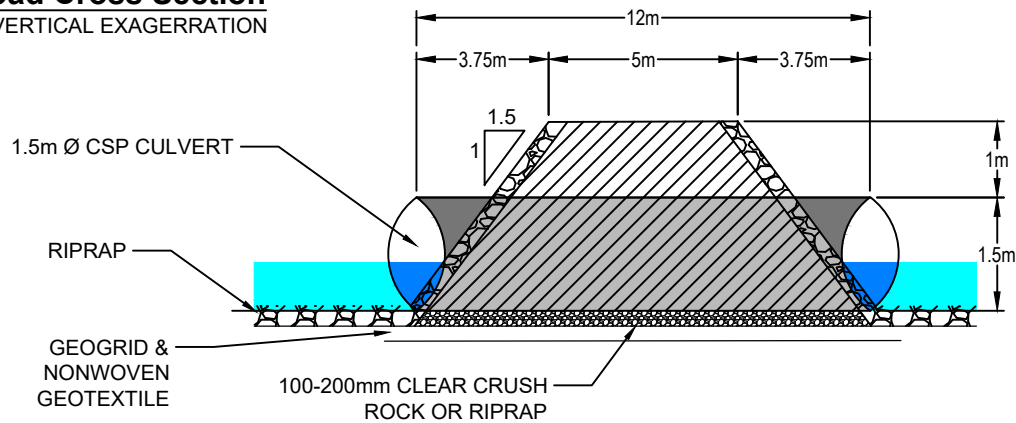
**Side Profile**

NO VERTICAL EXAGERRATION



**Road Cross Section**

2x VERTICAL EXAGERRATION



**ISSUED FOR REVIEW**

Q:\Vancouver\Transportation\TRN\_VHWPY\Projects\TRN\_VHWPY03035\_Aklavik\_Bridge\CADD\Culvert\_Crossing\HWPY03035\_Aklavik\_Culvert.dwg [FIGURE 1] November 21, 2017 - 2:57:46 pm (BY: LAW, YORK)

SCALE 1:200



CLIENT



HAMLET OF AKLAVIK



**AKLAVIK BRIDGE**

**CULVERT CROSSING**

PROJECT NO.  
TRN.VHWPY03035-01

DWN  
YL

CKD  
RH

REV  
0

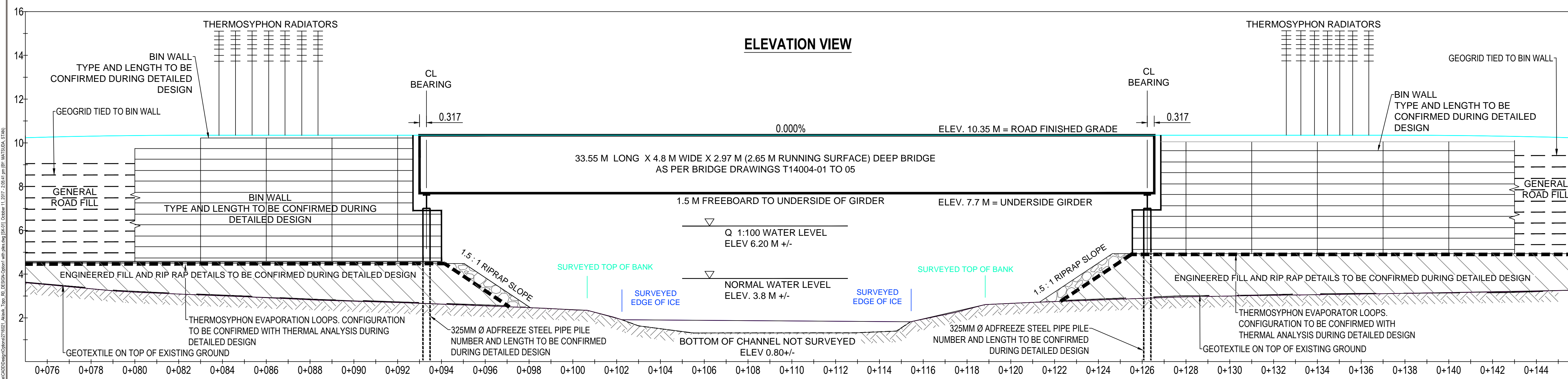
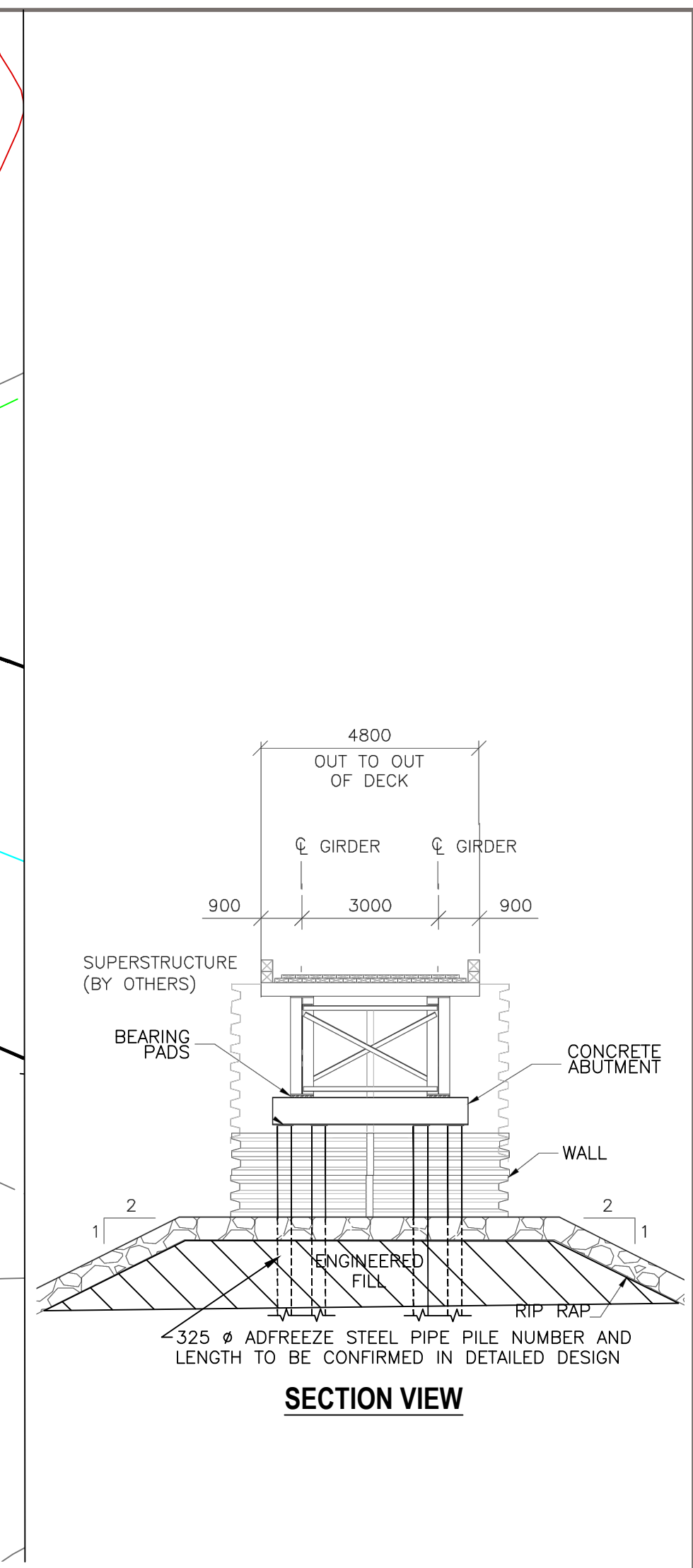
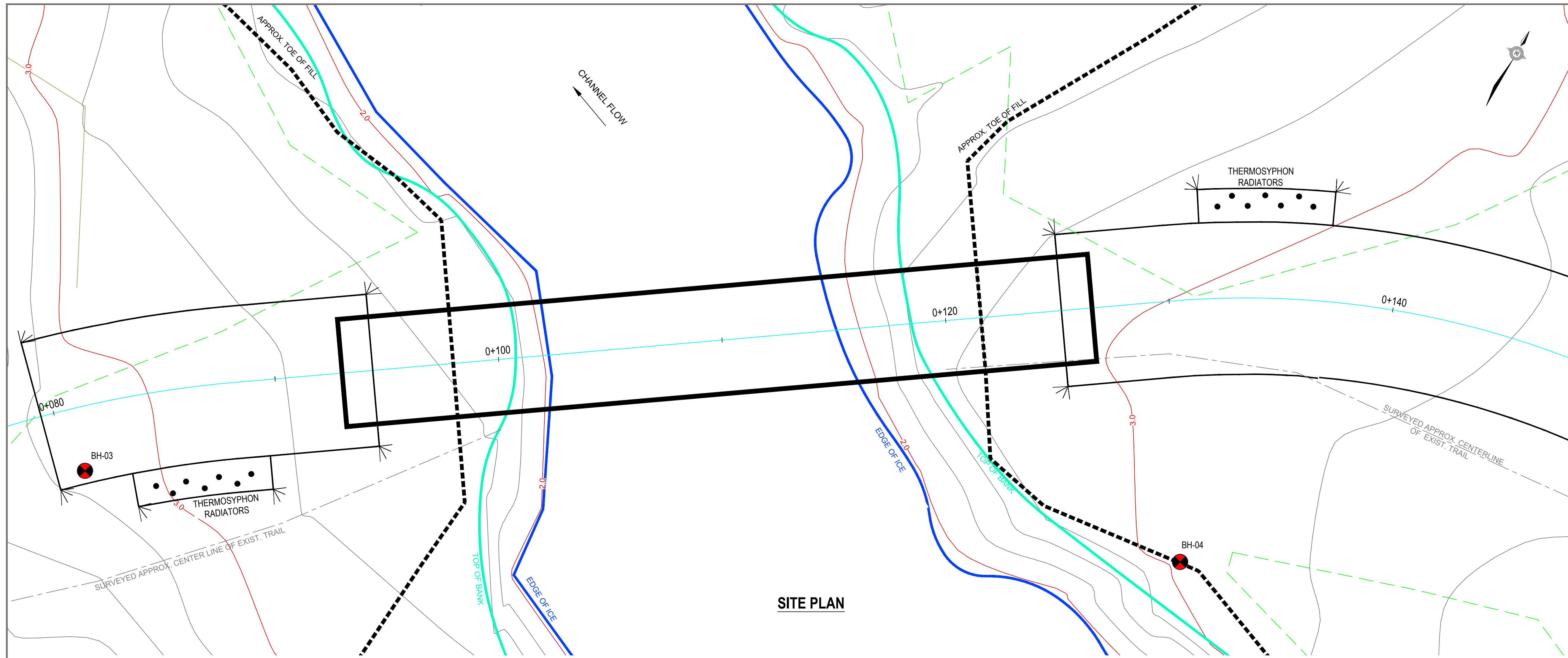
OFFICE  
VANC

DATE  
November 21, 2017



**Figure 1**





**MATERIALS LEGEND**

- RIPRAP (AS REQUIRED)
- ENGINEERED FILL
- NON-WOVEN GEOTEXTILE SEPARATOR
- THERMOSYPHON EVAPORATOR LOOPS
- BIN WALL
- ADFREEZE STEEL PIPE PILES

**LEGEND**

- VEGETATION LINE
- BOREHOLE

**NOTES**

- 1) TOPOGRAPHIC INFORMATION BASED ON SURVEY CONDUCTED BY MACKENZIE DELTA GEOMATICS NOVEMBER 3 TO 5, 2016. (DRAWING 2716021\_AKLAVIK\_TOPO\_R0.DWG, NOVEMBER 10, 2016).
- 2) CO-ORDINATES IN UTM 8 NAD83 (CSRS) 2010 GRID. ELEVATIONS CGVDD28 DATUM HT2.0 GEOID MODEL.
- 3) CONTOURS GENERATED BY TETRA TECH. CONTOUR INTERVAL 0.25 M

**ISSUED FOR REVIEW**

**REVISIONS**

NUM	DATE	DWN	CKD	APR	DESCRIPTION

**DRAWING STATUS**

NUM	DATE	APR	DESCRIPTION

**CLIENT**

HAMLET OF AKLAVIK

**AKLAVIK BRIDGE**

**PRELIMINARY BRIDGE GENERAL ARRANGEMENT**

**TETRA TECH**  
Complex World Clear Solutions

**PROFESSIONAL SEAL**  
E.M. GROZIC  
LICENSEE  
19027  
19/11/2017

**NEHTRUH - EBA**

PROJECT No. TRN.VHWY03035	OFFICE VANCOUVER	DES SM	CKD LQ	REV 0	DRAWING 
DATE OCT 11, 2017	SHEET No. 1 of 1	DWN SM	APP SM	STATUS A	<b>SK-01</b>