



General Water Licence Application  
(Application for a new Water Licence)

Document Date: April 2013

Application Submission Date: 04/08/2018  
Month/Day/Year

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NUNAVUT WATER BOARD  
OFFICE DES EAUX DU NUNAVUT

## DOCUMENT MANAGEMENT

Original Document Date: April 2010

### DOCUMENT AMENDMENTS

	Description	Date
(1)	Updated for public distribution as separate document from NWB Guide 4	June 2010
(2)	Updated NWB logos and reformatted table to allow rows to break across page	May 2011
(3)	Update NWB logo	April 2013
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		



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NUNAVUT IMALIRIYIN KATIMAYIT

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### GENERAL WATER LICENCE APPLICATION (APPLICATION FOR NEW WATER LICENCE)

The applicant is referred to the NWB's Guide 4: Guide to Completing and Submitting a Water Licence Application for a New Licence for more information about this application form.

LICENCE NO: (for NWB use only)													
<b>1. APPLICANT (PROPOSED LICENSEE) CONTACT INFORMATION</b> (name, address) City of Iqaluit Box 460, Iqaluit, Nunavut X0A 0H0  Phone: (867) 979-5600 Fax: (867) 979-5922 e-mail: M.Hamp@city.iqaluit.nu.ca	<b>2. APPLICANT REPRESENTATIVE CONTACT INFORMATION</b> if different from Block 1 (name, address) <b>Eric Shilts</b> <b>Concentric Geoscience Inc.</b> <b>2327 St. Laurent Blvd., Unit 100</b> <b>Ottawa, Ontario K1G 4J8</b>  Phone: (613) 824-8900 Fax: (613) 824-8901 e-mail: <a href="mailto:eric@concentricgeo.com">eric@concentricgeo.com</a> (Attach authorization letter.- <b>ATTACHED</b> )												
<b>3. NAME OF PROJECT</b> (including the name of the project location)  <b>The "Bridge to Nowhere – Repair to Abutments" project</b> <b>NIRB File: 18XN0001; NWB File: 8WLC-BTN</b>													
<b>4. LOCATION OF UNDERTAKING</b>  <b>Project Extents</b> <table border="1"> <tr> <td>NW</td> <td>63.756615° (7070005.25 m N)</td> <td>-68.462202° (526533.19 m E)</td> </tr> <tr> <td>NE</td> <td>63.756244° (7069964.23 m N)</td> <td>-68.461529° (526566.72 m E)</td> </tr> <tr> <td>SE</td> <td>63.756036° (7069940.72 m N)</td> <td>-68.462215° (526533.07 m E)</td> </tr> <tr> <td>SW</td> <td>63.756423° (7069983.64 m N)</td> <td>-68.462846° (526501.60 m E)</td> </tr> </table> <p><b>Camp Location(s) – No camp is required. Personnel will utilize lodging within Iqaluit.</b>                  Latitude: (   °   '   " N)      Longitude: (   °   '   " W)</p>		NW	63.756615° (7070005.25 m N)	-68.462202° (526533.19 m E)	NE	63.756244° (7069964.23 m N)	-68.461529° (526566.72 m E)	SE	63.756036° (7069940.72 m N)	-68.462215° (526533.07 m E)	SW	63.756423° (7069983.64 m N)	-68.462846° (526501.60 m E)
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SW	63.756423° (7069983.64 m N)	-68.462846° (526501.60 m E)											

**5. MAP** - Attach a topographical map, indicating the main components of the undertaking.

NTS Map Sheet No.: \_\_\_\_\_ Map Name: Bridge to Nowhere Map Scale: Topo

**6. NATURE OF INTEREST IN THE LAND** - Check any of the following that are applicable to the proposed undertaking (at least one box under the 'Surface' header must be checked).

**Sub-surface**

☐ Mineral Lease from Nunavut Tunngavik Incorporated (NTI)

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

☐ Mineral Lease from Indian and Northern Affairs Canada (INAC)

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

**Surface**

☐ Crown Land Use Authorization from Indian and Northern Affairs Canada (INAC)

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

☐ Inuit Owned Land (IOL) Authorization from Kitikmeot Inuit Association (KIA)

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

☐ IOL Authorization from Kivalliq Inuit Association (KivIA)

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

☐ IOL Authorization from Qikiqtani Inuit Association (QIA)

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

☐ Commissioner's Land Use Authorization

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

☒ Other: **City of Iqaluit**

Date (expected date) of issuance: \_\_\_\_\_ Date of expiry: \_\_\_\_\_

Name of entity(s) holding authorizations: \_\_\_\_\_

**7. NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION**

Indicate the land use planning area in which the project is located.

☐ North Baffin

☐ Keewatin

☒ South Baffin

☐ Sanikiluaq

☐ Akunnig

☐ West Kitikmeot

Is a land use plan conformity determination required?

☐ Yes

☒ No

If Yes, indicate date issued and attach copy \_\_\_\_\_

If No, provide written confirmation from NPC confirming that a land use plan conformity review is not required.



**8. NUNAVUT IMPACT REVIEW BOARD (NIRB) DETERMINATION**

Is an Article 12 Part 4 screening determination required?

☒ Yes

☐ No

If Yes, indicate date issued and attach copy **March 23, 2018**

If No, provide written confirmation from NIRB confirming that a screening determination is not required.

**9. DESCRIPTION OF UNDERTAKING – List and attach plans and drawings or project proposal.**

The proposed “Bridge to Nowhere – Repair to Abutments” project is located within the Qikiqtani region (South Baffin), approximately 3 kilometres (km) northeast from the City of Iqaluit. The Proponent intends to conduct repair and stabilization works to the abutments to the Bridge to Nowhere to prevent the collapse of the span structure. Heavy equipment (excavator, dump truck, backhoe) will be used to remove abutment materials, move construction materials, remove construction debris, and place granular fill. The program is proposed to take place from July to August 2018.

Repair to the existing abutments will require re-directing flow through the overflow culvert located on the westerly side of the bridge (Image 05 attached as Appendix 2\_Photos). As this culvert must be replaced the work area around it must be isolated from the channel. This will be achieved by installing a sandbag cofferdam. Once the new overflow culvert has been established, water flow will be redirected from the channel, by installation of a new sandbag cofferdam, to the overflow culvert. This will effectively isolate the main channel under the existing bridge structure to enable access to reinforce the existing bridge abutments. This will be achieved by installing steel plating, and concrete to shore-up the existing timber (Image 06 attached) structure and clean granular fill to rebuild the existing rock protection under the bridge span. Use of heavy equipment excavator, dump truck, backhoe) will be used to remove abutment materials, move construction materials, remove construction debris, and place granular fill. Personnel will be transported to and from the site using light passenger vehicle. Clean-up and restoration of the site will follow the repair works, and construction debris will be disposed of offsite at local landfill and recycling facilities. *(Please see Appendix 1\_Civil Structural Drawings & Appendix 2\_Photos).*

**10. OPTIONS – Provide a brief explanation of the alternative methods or locations that were considered to carry out the project.**

**Alternatives to conducting the reinforcement activity include:**

- 1) No action. This option is not feasible given to the high likelihood that, if left unmanaged, the existing structure would eventually fail. This poses an unacceptable risk to the public and the environment.
- 2) Alternate crossing location. This option was also discounted given the high likelihood to have a considerably larger impact to fisheries and water resources than contemplated in the current proposal. In addition, an alternate location would be cost prohibitive and still would not mitigate the hazards posed by the existing bridge structure.

**11. CLASSIFICATION OF PRIMARY UNDERTAKING - Indicate the primary classification of undertaking by checking one of the following boxes.**

☒ Industrial

☐ Agricultural

☐ Mining and Milling (includes exploration/drilling/exploration camps)

☐ Conservation

☐ Municipal (includes camps/lodges)

☐ Recreational

☐ Power

☐ Miscellaneous (describe below):

See Schedule II of *Northwest Territories Waters Regulations* for Description of Undertakings.

Information in accordance with applicable Supplemental Information Guidelines (SIG) must be submitted with a New Water Licence Application. Indicate which SIG(s) are applicable to your application. **NA – none of these apply**

- ☐ Hydrostatic Testing
- ☐ Tannery
- ☐ Tourist / Remote Camp
- ☐ Landfarm & On-Site Storage of Hydrocarbon Contaminated Soil
- ☐ Onshore Oil and Gas Exploration Drilling
- ☐ Mineral Exploration / Remote Camp
- ☐ Advanced Exploration
- ☐ Mine Development
- ☐ Municipal
- ☐ General Water Works
- ☐ Power

**12. WATER USE** - Check the appropriate box(s) to indicate the type(s) of water use(s) being applied for.

- |   |  |
|---|--|
| <input type="checkbox"/> To obtain water for camp/ municipal purposes | <input type="checkbox"/> To divert a watercourse                               |
| <input type="checkbox"/> To obtain water for industrial purposes      | <input checked="" type="checkbox"/> To modify the bed or bank of a watercourse |
| <input type="checkbox"/> To cross a watercourse                       | <input type="checkbox"/> Flood control   |
| <input type="checkbox"/> To alter the flow of, or store water         |  |
| <input type="checkbox"/> Other: _____                                 |  |

**13. QUANTITY AND QUALITY OF WATER INVOLVED** - For each type of water use indicated in Block 12, provide the source of water, the quality of the water source and available capacity, the estimated quantity to be used in cubic meters per day, method of extraction, as well as the quantities and qualities of water to be returned to source.

Name of water source(s) (show location(s) on map): **Niaqunguk (Apex) River**

Describe the quality of the water source(s) and the available capacity:

**No water will be required for the proposed works**

Provide the overall estimated quantity of water to be used: **0m<sup>3</sup>/day**

Provide the estimated quantity(s) of water to be used from each source: **0m<sup>3</sup>/day**

Indicate the estimated quantities to be used for each purpose (camp, drilling, etc.) **0m<sup>3</sup>/day**

Describe the method of extraction(s): **NA – we are not taking / using water**

Estimated quantity(s) of water returned to source(s) **0m<sup>3</sup>/day**

Describe the quality of water(s) returned to source(s): **0m<sup>3</sup>/day**

**14. WASTE** – Check the appropriate box(s) to indicate the types of waste(s) generated and deposited. **No waste is anticipated.**

- |  |   |
|--|---|
| <input type="checkbox"/> Sewage                  | <input type="checkbox"/> Waste oil                      |
| <input type="checkbox"/> Solid Waste             | <input type="checkbox"/> Greywater                      |
| <input type="checkbox"/> Hazardous               | <input type="checkbox"/> Sludges                        |
| <input type="checkbox"/> Bulky Items/Scrap Metal | <input type="checkbox"/> Contaminated soil and/or water |
| <input type="checkbox"/> Animal Waste            |   |
| <input type="checkbox"/> Other (describe): _____ |   |

**15. QUANTITY AND QUALITY OF WASTE INVOLVED** – For each type of waste indicated in Block 14, describe its composition, quantity in cubic meters/day, method of treatment and method of disposal.

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA

**16. OTHER AUTHORIZATIONS** – In addition to the sub-surface and surface land use authorizations provided in Block 6, indicate any other authorizations required in relation to the proposed undertaking. For each provide the following:

Authorization: **Request for Review**

Administering Agency: **Department of Fisheries and Oceans (DFO)**

Project Activity: **In-stream works.**

Date (expected date) of issuance: **May 15, 2018** Date of expiry: **March 31, 2018**

Authorization: **Screening Decision Report**

Administering Agency: **Nunavut Impact Review Board (NIRB)**

Project Activity: **Upland Use / Access**

Date (expected date) of issuance: **March 23, 2018** Date of expiry: **NA**

**17. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES** - Describe direct, indirect, and cumulative impacts related to water and waste.

A site specific Environmental Protection Plan (EPP) will be completed as a requirement of the tender process and will include detailed measures to address potential impacts such as: Spill Management (prevention & response), Erosion & Sediment Control, Contaminant Management, Riparian Management (clearing, stabilization, re-vegetation, restoration), and, guidance on use of machinery at the site including: cleaning, operation, fueling, washing, and fording.

As cited in the Screening Decision, the project will occur at an existing development and within a 100km radius to a number of other projects that are currently active, in addition to other projects proposed and currently undergoing assessment by the Board and listed in Table 1 of the Screening Decision Report, attached. It is noted that this project is unlikely to result in residual or cumulative impacts. The potential for cumulative impacts to water quality, fish and fish habitat, the marine environment, migratory and non-migratory birds, and terrestrial wildlife resulting from infrastructure upgrades and other projects occurring in the region has been identified and considered in the development of the NIRB's recommendations. Terms and conditions recommended for each of these projects are expected to reduce any residual impacts, and as such would limit or eliminate the potential for cumulative effects to occur.

**18. WATER RIGHTS OF EXISTING AND OTHER USERS OF WATER**

Provide the names, addresses and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature.

**No users were identified through the NIRB process. Given the localized nature of the project, and that flow of the watercourse will not be disrupted, downstream impacts are not anticipated**

Advise the Board if compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.

**19. INUIT WATER RIGHTS**

Advise the Board of any substantial affect of the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL) and advise the Board if negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more Designated Inuit Organization (DIO).

**The project is located outside IOL.**

**20. CONSULTATION –** Provide a summary of any consultation meetings including when the meetings were held, where and with whom. Include a list of concerns expressed and measures to address concerns.

*From NIRB Screening Report: 10323-18XN001*

**Notice regarding NIRB's screening of the project proposal was distributed on February 5, 2018 to community organizations in Iqaluit, as well as to relevant federal and territorial government agencies, Inuit organizations and other parties. The NIRB requested that interested parties review the proposal, and provide the Board with any comments or concerns by February 26, 2018 regarding:**

- **Whether the project proposal is likely to arouse significant public concern; and if so, why;**
- **Whether the project proposal is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; and if so, why;**
- **Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (and providing any recommended mitigation measure); and**
- **Any matter of importance to the Party related to the project proposal.**

**Please see Section 4. of the attached NIRB Screening Decision Report for detailed stakeholder comments.**

**21. SECURITY INFORMATION**

Provide an estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking. Estimates of reclamation costs must be based on the cost of having the necessary reclamation work done by a third party contractor if the operator defaults. The estimate must also include contingency factors appropriate to the particular work to be undertaken.

**NA – The City of Iqaluit is directly responsible for this project.**

Where applicable, the financial security assessment should be prepared in a manner consistent with the principals respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut*, Indian and Northern Affairs Canada, 2002.

**22. FINANCIAL INFORMATION**

Provide a statement of financial responsibility. **The City of Iqaluit is directly responsible for this project.**

If the applicant is a business entity, provide a list of the officers of the company.

If the applicant is a business entity attach a copy of the Certificate of Incorporation or evidence of registration of the company name.

**23. STUDIES UNDERTAKEN TO DATE** - List and attach copies of studies, reports, research, etc.

- ***Fish and Fish Habitat Assessment of the Niaqunguk (Apex) River, Lake Geraldine, and the Lake Geraldine Drainage Channel, September 2017, Nunami Stantec Limited, Prepared for the City of Iqaluit, Nunavut.***
- ***Screening Decision for Concentric Geoscience Inc.'s "Bridge to Nowhere – Repair to Abutments" Project Proposal, Qikiqtani (South Baffin) Region***

**24. PROPOSED TIME SCHEDULE** – Indicate the proposed start and completion dates for each applicable phase of development (construction, operation, closure, and post closure).

**The proposed schedule will only include Construction. To reflect this, all other boxes have been marked as Not Applicable below.**

Construction

Proposed Start Date:	<b>07/2018</b> (month/year)	Proposed Completion Date:	<b>08/2018</b> (month/year)
----------------------	--------------------------------	---------------------------	--------------------------------

Operation

Proposed Start Date:	<b>NA</b> (month/year)	Proposed Completion Date: :	<b>NA</b> (month/year)
----------------------	---------------------------	-----------------------------	---------------------------

Closure

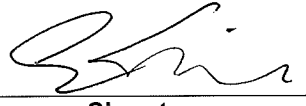
Proposed Start Date: :	<b>NA</b> (month/year)	Proposed Completion Date: :	<b>NA</b> (month/year)
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Post - Closure

Proposed Start Date:	<b>NA</b> (month/year)	Proposed Completion Date: :	<b>NA</b> (month/year)
----------------------	---------------------------	-----------------------------	---------------------------

For each applicable phase of development indicate which season(s) activities occur.

8

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____	
Information addressing Supplemental Information Guideline (SIG) , where applicable (see Block 11)			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____	
English Summary of Application.			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____	
Inuktitut and/or Inuinnaqtun Summary of Application.			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____	
Application Fee of \$30.00 CDN (Payee Receiver General for Canada).			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____	
Water Use Fee Deposit of \$30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____	
<b>28. SIGNATURE</b>			
<b>Eric Shilts</b>	<b>Project Manager</b>		<b>April 11, 2018</b>
<b>Name (Print)</b>	<b>Title (Print)</b>	<b>Signature</b>	<b>Date</b>

## **AUTHORIZATION LETTER**





12 April 2018

Nunavut Water Board

Attention: Dave Baines, MSc, EP  
Technical Advisor

**Re: City of Iqaluit – Bridge to Nowhere – Repair to Abutments –**  
**NIRB File: 18XN0001**  
**NWB File: 8WLC-BTN**

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admin@city.iqaluit.nu.ca

www.iqaluit.nu.ca

We have been informed by Concentric Engineering, who have been retained by the City to carry out the design works associated with the necessary repairs to the Road to Nowhere bridge structure in the City of Iqaluit, that this repair work, requiring work in, on or near the Niaqunguk (Apex) River, will require a Nunavut Water Board Type 'B' Water Licence.

Please accept this as our authority to have Concentric Engineering apply on behalf of the City of Iqaluit for this water licence.

Please be aware that until this repair work is completed, the bridge remains closed to public traffic. Your assistance in expediting the issuance of the necessary Type 'B' water licence is greatly appreciated so that the City can proceed with the repairs and expedite a return to service for this bridge.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

**Amy Elgersma**  
**Acting Chief Administrative Officer**  
**City of Iqaluit**  
**Box 460, Iqaluit, NU**  
**X0A 0H0**

**BRIDGE TO NOWHERE TOPO**



Iqaluit Airport

Iqaluit

Ikaluit

Bridge Location

Road to Nowhere

100 m

Niquungak River

Koojesse Inlet

## **NPC LETTER**



January 5, 2018

**Jaida Ohokannoak**

Manager, Technical Administration  
Nunavut Impact Review Board (NIRB)  
P.O. Box 1360, Cambridge Bay, NU X0B 0C0  
By email: [info@nirb.ca](mailto:info@nirb.ca)

**Veronique D'Amours-Gauthier**

Senior Fisheries Protection Biologist  
5204 50th Ave, Suite 301  
Yellowknife, NT X1A 1E2  
By email: [tveronique.damours-gauthier@dfo-mpo.gc.ca](mailto:tveronique.damours-gauthier@dfo-mpo.gc.ca); [fisheriesprotection@dfo-mpo.gc.ca](mailto:fisheriesprotection@dfo-mpo.gc.ca)

**Karén Kharatyan**

Manager of Licensing  
Nunavut Water Board (NWB)  
P.O. Box 119, Gjoa Haven, NU X0B 1J0  
By email: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca);  
[karen.kharatyan@nwb-oen.ca](mailto:karen.kharatyan@nwb-oen.ca)

**Eric Shilts**

Concentric Geoscience Inc.  
2327 St. Laurent Blvd., Unit 100  
Ottawa Ontario K1G 4J8 Canada  
By email: [eric@concentricgeo.com](mailto:eric@concentricgeo.com)

Dear Ms. Ohokannoak, Mr. Kharatyan, Ms. D'Amours-Gauthier, and Mr. Shilts:

**RE: NPC File # 148676 [Bridge to Nowhere - Repair to Abutments]**

The following works and activities have been proposed in the above-noted project proposal:

1. Repair of the abutments to Bridge to Nowhere to prevent the ultimate collapse of the span structure. The Bridge to Nowhere is located outside of the central core of the City of Iqaluit on the Road to Nowhere where it crosses the Niaqunguk River
2. Location: Qikiqtani Region; Iqaluit, Niaqunguk River

A complete description of the project proposal reviewed by the NPC can be accessed online using the link below.

The Nunavut Planning Commission (NPC) has determined that this project proposal is outside the area of an applicable regional land use plan. The project proposal requires screening by the Nunavut Impact Review Board (NIRB) because it does not belong to a class of exempt works or activities set out in Schedule 12-1 of the Nunavut Agreement.

By way of this letter, the NPC is forwarding the project proposal to the NIRB for screening. Project materials are available at the following address:

<http://lupit.nunavut.ca/portal/project-dashboard.php?appid=148676&sessionid=>

This decision applies only to the above noted project proposal as submitted. Proponents may not carry out projects and regulatory authorities may not issue licenses, permits and other authorizations in respect of projects if a review by the NPC is required.

If you have any questions, please do not hesitate to contact me at (867) 979-3444.

Sincerely,

A handwritten signature in black ink, reading "Goump Djalogue". The signature is fluid and cursive, with the first name "Goump" and last name "Djalogue" clearly distinguishable.

Goump Djalogue  
Senior Planner, RPP | MCIP  
Nunavut Planning Commission

**NIRB COVER LETTER FOR SCREENING LEVEL REPORT**



**NIRB File No.: 18XN001**

NPC File No.: 148676

ECCC File No.: 6300 000 040/001

DFO File No.: 18-HCAA-00134

INAC File No.: CIDMS # 1212113

March 23, 2018

To: The Honourable Dominic LeBlanc, P.C.  
Minister of Fisheries and Oceans and the Canadian Coast Guard  
Government of Canada  
House of Commons  
Ottawa, ON K1A 0A6

Sent via email: [min@dfo-mpo.gc.ca](mailto:min@dfo-mpo.gc.ca)

**Re: Screening Decision for Concentric Geoscience Inc.'s "Bridge to Nowhere – Repair to Abutments" Project Proposal, Qikiqtani (South Baffin) Region**

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Dear Honourable Minister:

On January 5, 2018 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen Concentric Geoscience Inc.'s "Bridge to Nowhere – Repair to Abutments" project proposal from the Nunavut Planning Commission (NPC or Commission), which noted that the project proposal is outside the area of an applicable regional land use plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and section 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (NuPPAA), the NIRB commenced screening this project proposal and assigned it file number 18XN001.

Following the assessment of all material information provided, the NIRB is recommending that a review of Concentric Geoscience Inc.'s "Bridge to Nowhere – Repair to Abutments" project is not required pursuant to paragraph 92(1)(a) of the NuPPAA.

Pursuant to its discretion under paragraph 92(2)(a) of the NuPPAA, the NIRB has determined that specific terms and conditions are appropriate for this project.



Accordingly, the NIRB is issuing the attached Screening Decision Report dated March 23, 2018 to the responsible Minister. The Screening Decision Report provides, among other things, the regulatory framework, project overview and the NIRB's assessment process, factors relevant for the determining significance of impacts and recommended project-specific terms and conditions.

Please note that the project proposal will not be enclosed due to the size of the electronic document and the limited bandwidth. However, an electronic copy of the project proposal is accessible online from the NIRB's online public registry at [www.nirb.ca](http://www.nirb.ca) by using any of the following search criteria:

- Project Name: Bridge to Nowhere - Repair to Abutments
- NIRB File No.: 18XN001
- Application No.: 125242

Please note that, the Board only directly addresses these notice letters to those individuals considered to be a "responsible Minister with decision-making authority" for the project as set out under the *NuPPAA*. However, regulatory authorities and other authorizing agencies associated with a proposed project (e.g. Regional Inuit Associations, Nunavut Water Board) will continue to be copied on the Notice of Release of the Screening Decision Report. The NIRB is providing these parties with notice and access to the Board's Screening Decision Report as required under s. 200(2) and in support of these parties in the fulfillment of their responsibilities under the *NuPPAA* and the *Nunavut Agreement* to address, and as appropriate, implement, to the fullest extent possible, any relevant NIRB recommendations contained in the Screening Decision Report.

We look forward to receiving a response from the responsible Minister and the NIRB remains available for consultation with the Minister regarding this report as necessary. If you have any questions or require clarification, please do not hesitate to contact the NIRB's Acting Director, Technical Services, Kelli Gillard at (867) 983-4619 or [kgillard@nirb.ca](mailto:kgillard@nirb.ca).

Sincerely,



Elizabeth Copland, Chairperson  
Nunavut Impact Review Board

cc: Lootie Toomasie, Chairperson Nunavut Water Board

Enclosure: Screening Decision Report, NIRB File No.: 18XN001 (March 23, 2018)

## **NIRB SCREENING LEVEL REPORT**



NPC File No.: 148676  
ECCC File No.: 6300 000 040/001  
DFO File No.: 18-HCAA-00134  
INAC File No.: CIDMS # 1212113

**March 23, 2018**

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Concentric Geoscience Inc.'s "Bridge to Nowhere – Repair to Abutments" is not required pursuant to paragraph 92(1)(a) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*).

Subject to the Proponent's compliance with the terms and conditions as set out in below, the NIRB is of the view that the project proposal is not likely to cause significant public concerns, and it is unlikely to result in significant adverse environmental and social impacts. The NIRB therefore recommends that the responsible Minister accepts this Screening Decision Report.

#### OUTLINE OF SCREENING DECISION REPORT

- 1) REGULATORY FRAMEWORK
- 2) PROJECT REFERRAL
- 3) PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS
- 4) ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NuPPAA*
- 5) VIEWS OF THE BOARD
- 6) RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS
- 7) MONITORING AND REPORTING REQUIREMENTS
- 8) OTHER NIRB CONCERNS AND RECOMMENDATIONS
- 9) REGULATORY REQUIREMENTS
- 10) CONCLUSION

#### REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Section 12.2.5 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and are confirmed by section 23 of the *NuPPAA*:

*Nunavut Agreement*, Article 12, Section 12.2.5: In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut

Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area.

The purpose of screening is provided for under section 88 of the *NuPPAA*:

*NuPPAA*, s. 88: The purpose of screening a project is to determine whether the project has the potential to result in significant ecosystemic or socio-economic impacts and, accordingly, whether it requires a review by the Board...

To determine whether a review of a project is required, the NIRB is guided by the considerations as set out under subsection 89(1) of *NuPPAA*:

*NuPPAA*, s. 89(1): The Board must be guided by the following considerations when it is called on to determine, on the completion of a screening, whether a review of the project is required:

- (a) a review is required if, in the Board's opinion,
  - i. the project may have significant adverse ecosystemic or socio-economic impacts or significant adverse impacts on wildlife habitat or Inuit harvest activities,
  - ii. the project will cause significant public concern, or
  - iii. the project involves technological innovations, the effects of which are unknown; and
- (b) a review is not required if, in the Board's opinion,
  - i. the project is unlikely to cause significant public concern, and
  - ii. its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

It is noted that subsection 89(2) of the *NuPPAA* provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b) of the *NuPPAA*.

As set out under subsection 92(1) of the *NuPPAA*, upon conclusion of the screening process, the Board must provide its written report the Minister:

*NuPPAA*, s. 92(1): The Board must submit a written report to the responsible Minister containing a description of the project that specifies its scope and indicating that:

- (a) a review of the project is not required;
- (b) a review of the project is required; or
- (c) the project should be modified or abandoned.

Where the NIRB determines that a project may be carried out without a review, the NIRB has the discretion to recommend specific terms and conditions to be attached to any approval of the project proposal pursuant to paragraph 92(2)(a) of *NuPPAA* as follows:

*NuPPAA*, s. 92(2) In its report, the Board may also

- (a) recommend specific terms and conditions to apply in respect of a project that it determines may be carried out without a review.

## PROJECT REFERRAL

On January 5, 2018 the NIRB received a referral to screen Concentric Geoscience Inc.'s "Bridge to Nowhere – Repair to Abutments" project proposal from the Nunavut Planning Commission (NPC or Commission), which noted that the project proposal is outside the area of an applicable regional land use plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Nunavut Agreement* and section 87 of the *NuPPAA*, the NIRB commenced screening this project proposal and assigned it file number 18XN001.

## PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

### 1. Project Scope

The proposed "Bridge to Nowhere – Repair to Abutments" project is located within the Qikiqtani region (South Baffin), approximately 3 kilometres (km) northeast from the City of Iqaluit. The Proponent intends to conduct repair and stabilization works to the abutments to the *Bridge to Nowhere* to prevent the collapse of the span structure. The program is proposed to take place from July to August 2018.

As required under subsection 86(1) of the *NuPPAA*, the Board accepts the scope of the "Bridge to Nowhere – Repair to Abutments" project as set out by Concentric Geoscience Inc. in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Stabilization works to the supporting structures (abutments) of the Bridge to Nowhere which crosses the Niaqunguk River (Apex River):
  - Replace existing overflow culvert with corrugated steel arch located on the western side of the bridge;
  - Re-direct flow under the span through the repaired overflow culvert. Flow to be returned to natural path under span once repairs are complete;
  - Installation of temporary sand bag cofferdams to isolate work areas around the culvert during replacement activities and under the bridge span during repair activities;
  - Installation of steel plates and concrete to reinforce the existing timber abutments;
  - Use of clean granular fill to rebuild existing rock protection under the bridge span;
- Use of heavy equipment (excavator, dump truck, backhoe) to remove abutment materials, move construction materials, remove construction debris, and place granular fill;
- Transportation of personnel and equipment via vehicles to bridge site;
- Clean-up and restoration of site following repair works with construction debris disposed-off at local landfill and recycling of corrugated steel; and
- Use of facilities in Iqaluit for accommodations, water source, and waste management and purchasing of local supplies for local and non-local construction workers.

## **2. Inclusion or Exclusion to Scoping List**

The NIRB has identified no additional works or activities in relation to the project proposal. As a result, the NIRB proceeded with screening the project based on the scope as described above.

## **3. Key Stages of the Screening Process**

The following key stages were completed:

<b>Date</b>	<b>Stage</b>
January 5, 2018	Receipt of project proposal and screening referral from the NPC
January 5, 2018	Information request(s)
February 1, 2018	Proponent responded to information request(s)
February 1, 2018	Scoping pursuant to subsection 86(1) of the <i>NuPPAA</i>
February 5, 2018	Public engagement and comment request
February 26, 2018	Receipt of public comments
March 16, 2018	Ministerial extension requested from the Minister of Crown - Indigenous Relations and Northern Affairs

## **4. Public Comments and Concerns**

Notice regarding the NIRB's screening of this project proposal was distributed on February 5, 2018 to community organizations in Iqaluit, as well as to relevant federal and territorial government agencies, Inuit organizations and other parties. The NIRB requested that interested parties review the proposal, and provide the Board with any comments or concerns by February 26, 2018 regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;
- Whether the project proposal is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; and if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (and providing any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

The following is a summary of the comments and concerns received by the NIRB:

### **Environment and Climate Change Canada (ECCC)**

- Recommended the Proponent submit their Environmental Protection Plan and information regarding sediment and erosion control for review by parties.

### **Fisheries and Oceans Canada (DFO)**

- Noted it is not aware of any significant public concern at this stage of review.

- Noted it does not have enough information to determine whether the project would result in serious harm, and requested that the Proponent provide the footprint (area in square metres) of the Project that would take place below the high water mark.
- Commented that it is not aware of any significant adverse impacts on wildlife habitat or Inuit harvest activities from the proposed project.
- Commented that it has no concerns with the mitigation measures outlined by the Proponent.
- Noted that the Proponent will need to submit a *Request for Review* form to DFO.
- Noted that DFO must be notified if the project has caused or is about to cause serious harm to fish that are part of or support a commercial, recreational, or Aboriginal fishery.

#### **Indigenous and Northern Affairs Canada (INAC)**

- Noted it is unable to offer comments on whether the project is likely to arouse significant public concern since the project application does not contain any detailed records of community engagement/consultation activities.
- Recommended the Proponent's Environmental Protection Plan be included with the project application and be submitted to the NIRB for review.

#### **5. Comments and Concerns with respect to Inuit Qaujimaningit, Traditional, and Community Knowledge**

No concerns or comments were received with respect to Inuit Qaujimaningit or traditional and community knowledge in relation to the proposed project.

#### **6. Time of Report Extension**

As a result of the high volume of screenings currently before the Board and continued vacancies in board member appointments challenging NIRB quorum requirements, the NIRB was not able to provide its screening decision report to the responsible Minister within 45 days as required by Article 12, Section 12.4.5 of the *Nunavut Agreement* and subsection 92(3) of the *NuPPAA*. Therefore, on March 16, 2018 the NIRB wrote to the Minister of Crown - Indigenous Relations and Northern Affairs, Government of Canada, seeking an extension to the 45-day timeline for the provision of the Board's Report.

#### **ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NuPPAA***

In determining whether a review of the project is required, the Board considered whether the project proposal had potential to result in significant ecosystemic or socio-economic impacts.

Accordingly, the assessment of impact significance was based on the analysis of those factors that are set out under section 90 of the *NuPPAA*. The Board took particular care to take into account Inuit Qaujimaningit, traditional and community knowledge in carrying out its assessment and determination of the significance of impacts.

The following is a summary of the Board's assessment of the factors that are relevant to the determination of significant impacts with respect of this project proposal:

1. *The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts.*

The proposed project is located within the municipal boundaries of the City of Iqaluit and has a small footprint that is limited to the *Bridge to Nowhere*, which crosses the Niaqunguk River (Apex River) and which is located approximately 3 km from the City. Personnel will access the Bridge to Nowhere with vehicles along an existing roadway. The proposed activities occur in an area that likely overlaps the range of small mammals such as arctic hare and arctic fox, migratory and non-migratory birds, and fish populations. Due to the proximity of the City, existing traffic, and ongoing reparation works, larger, wider-ranging wildlife are unlikely to interact with the project.

2. *The ecosystemic sensitivity of that area.*

The proposed project would occur in an area with no particular identified ecosystemic sensitivity. However, it should be noted that the Sylvia Grinnell Territorial Park is located approximately one (1) kilometre from Iqaluit and is unlikely to be affected by the proposed Project as it is located on a separate watershed. There is potential that the river may be used for recreational fishery but no information has been provided on this.

3. *The historical, cultural and archaeological significance of that area.*

Neither the Proponent nor any parties have identified any areas of historical, cultural and archaeological significance associated with the project areas; however it is noted that the project location at Apex River contributes significantly to the cultural identity and traditional activities of Iqaluit. . Further, because the proposed project would occur in a developed area within municipal boundaries, it would not be expected to impact any additional areas of historical, cultural, or archaeological significance. The Proponent would be required to contact the Government of Nunavut-Department of Culture and Heritage if any sites of historical, cultural or archaeological significance are encountered.

4. *The size of the human and the animal populations likely to be affected by the impacts.*

The proposed project would occur within the city of Iqaluit; as such, human populations are likely to be affected by project impacts. No specific animal populations have been identified as likely to be affected by potential project impacts.

5. *The nature, magnitude and complexity of the impacts; the probability of the impacts occurring; the frequency and duration of the impacts; and the reversibility or irreversibility of the impacts.*

As the “Bridge to Nowhere – Repair to Abutments” project is a proposed infrastructure project involving the repair of an existing bridge, the nature of potential impacts is considered to be well-known. Potential adverse impacts are likely to be localized to the Project footprint, of low magnitude, infrequent and short in duration. Based on past evidence



of similar scope of activities, potential adverse impacts will be reversible and mitigable with due care.

6. *The cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out.*

The proposed project would take place at an existing development and also within a 100 kilometre radius to a number of other projects that are currently active, in addition to other projects proposed and currently undergoing assessment by the Board as listed in Table 1 below. However, it is noted that this project is not likely to result in residual or cumulative impacts. The potential for cumulative impacts to water quality, fish and fish habitat, the marine environment, migratory and non-migratory birds, and terrestrial wildlife resulting from infrastructure upgrades and other projects occurring in the region has been identified and considered in the development of the NIRB's recommendations. Terms and conditions recommended for each of these projects are expected to reduce any residual impacts, and as such would limit or eliminate the potential for cumulative effects to occur.

**Table 1: Project List**

<b>NIRB Number</b>	<b>Project</b>	<b>Project Title</b>	<b>Project Type</b>
<b><i>Proposed Developments – undergoing assessment</i></b>			
16YN010		Ancient DNA in Lake Sediment	Research
17XN070		Iqaluit Power Plant Bulk Fuel Storage Upgrade	Infrastructure
<b><i>Active Projects</i></b>			
17UN006		Iqaluit Airport - Approach Lighting Replacement	Other
17XN021		Iqaluit Marine Infrastructure – Deep Sea Port	Infrastructure
17XN022		Iqaluit Marine Infrastructure - Small Craft Harbour	Infrastructure
17YN004		Northern Contaminants Air Monitoring: Passive Air Sampling for Organic Pollutants and Mercury	Research
17YN019		Iqaluit MET Mast	Research
<b><i>Past Projects</i></b>			
16YN010		Ancient DNA in Lake Sediment	Research
16YN028		Thule Whalebone House Excavation and Replication	Research
16YN057		The Burden of Infectious Pathogens in Clams in Iqaluit, Nunavut	Research
17UN025		Former Iqaluit Metal Dump Remediation	Other
17YN041		A Coastal, Pan-Canadian Collection of plants, microalgae and marine invertebrates for the Canadian Museum of Nature, as part of Canada C3	Research

7. *Any other factor that the Board considers relevant to the assessment of the significance of impacts.*

No other specific factors have been identified as relevant to the assessment of this project proposal.

#### VIEWS OF THE BOARD

In considering the factors as set out above in the screening of the project proposal, the NIRB has identified a number of issues below and respectfully provide the following views regarding whether or not the proposed project has the potential to result in significant impacts. In addition, the NIRB has proposed terms and conditions that would mitigate the potential adverse impacts identified.

**Administrative Conditions:**

To encourage compliance with applicable regulatory requirements and assist the Board and responsible authorities with compliance and effects monitoring for project activities, the following project-specific terms and conditions have been recommended: 1-4.

**Ecosystem, wildlife habitat and Inuit harvesting activities:**

**Issue 1:** Potential adverse impacts to migratory and non-migratory birds and terrestrial wildlife (small mammals), and their associated habitats due to human activity and disturbance, and increased noise generated from bridge upgrades and repair activities, including transportation of personnel and equipment by vehicles to the project site.

**Board views:** As discussed above in the assessment of factors relevant to this project proposal, the project would be limited to a short period of time and to a small geographic area within the municipality of Iqaluit. However, migratory and non-migratory birds and small mammals with limited home range sizes overlapping the project area may be affected by human activity, disturbance and noise.

The Proponent would also be required to follow the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, *Species at Risk Act*, and the *Wildlife Act (Nunavut)* see (Regulatory Requirements section).

**Recommended Mitigation Measures:** Measures have been recommended to mitigate any potential adverse impacts to birds and wildlife such as requiring the Proponent to not damage wildlife habitat during operations and to minimize wildlife attractants. The following terms and conditions are recommended: 6, 7 and 12 through 16. Further, term and condition 19 is recommended to mitigate the effects of noise on wildlife.

**Issue 2:** Potential negative impacts to surface water, fish and fish habitat, ground stability, soils and vegetation from temporary river alteration, erosion and sedimentation during construction activities, construction wastes, and potential fuel spills associated with the use of heavy machinery.

Board views: The potential for negative impacts is applicable to a small geographic area within an existing developed area, and it is noted that the flow of the water would be returned to its normal route following project activities. However, construction activities and the use of vehicles and heavy equipment could generate fuel spills and hazardous waste materials onsite, which may subsequently contaminate the surrounding soils, vegetation, and water. Working in and around the river banks could also lead to erosion and sedimentation and adversely impact fish habitat.

The Proponent has committed to developing and complying with an Environmental Protection Plan (EPP) and has clarified that its EPP would detail protocols for proper material handling and waste management, equipment and fuel storage, as well as spill preparedness and emergency response. Further, the Proponent has committed to following all environmental regulations, including Fisheries and Oceans Canada's (DFO) Nunavut Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat which recommends that works be avoided during the spawning period. The Proponent has also committed to ensuring the site is properly cleaned up and restored after project activities are completed.

The Proponent would require a water licence from the Nunavut Water Board. In addition, the Proponent would also be required to follow the *Fisheries Act* and may require a Fisheries Authorization from DFO.

Recommended Mitigation Measures: It is recommended that the potential negative impacts would be mitigated by measures requiring the Proponent to remove all garbage and undertake restoration of any disturbed areas at the end of project activities, to ensure all fuel is properly stored and that any refuelling occur in a proper manner. The following terms and conditions are recommended to mitigate the potential adverse impacts to water, fish and fish habitat, ground stability, soils and vegetation from ground disturbance, the river alteration, and fuel use: 8 through 11, 17, 18, 20 and 21.

**Issue 3:** Potential negative impacts to ambient air quality due to offsite migration of fugitive dust from project activities.

Board views: The potential for generation of fugitive dust is applicable to a small geographic area approximately three (3) kilometres from the community of Iqaluit, and potential adverse effects due to dust generation from the use of heavy machinery are anticipated to be low in magnitude, infrequent in occurrence and reversible in nature.

Recommended Mitigation Measures: It is recommended that the potential negative impacts to air quality be mitigated by measures such as requiring the Proponent to take appropriate dust suppression measures when undertaking construction activities including maintaining soil moisture during the project duration to ensure no fugitive dust migration offsite. Term and condition 18 has been recommended to address any potential air quality issues that may arise as a result of project activities.

**Issue 4:** Potential adverse impacts to public and traditional land use activities in the area due to bridge repair works including transportation of personnel and equipment to the site.

**Board Views:** Project-associated noise and disturbance could impact fish and wildlife in the area and in turn affect fishing or hunting opportunities. If situations arise where the project may interfere with traditional land use activities, a term and condition has been recommended to ensure minimal impacts to traditional land use activities.

**Recommended Mitigation Measures:** Term and condition 22 is recommended to ensure that the affected community and organizations are informed about the project proposal and term and condition 23 has been recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area. In addition terms and conditions 11 through 16 have been recommended to minimize disturbance to wildlife and birds.

**Issue 5:** Potential beneficial impacts to public and traditional land use activities in the area due to improved access and use of the Bridge to Nowhere.

**Board Views:** The Bridge to Nowhere was closed in September 2017 until the proposed repair work would be completed. It is anticipated that upon completion of the bridge upgrades and opening, residents of Iqaluit may have improved access to the land for traditional and recreational pursuits.

**Recommended Mitigation Measures:** Term and condition 22 is recommended to ensure that the affected community and organizations are informed about the project proposal and term and condition 23 has been recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area.

**Socio-economic effects on northerners:**

**Issue 6:** Potential adverse impacts to historical, cultural and archaeological sites from research activities.

**Board Views:** The Proponent is proposing to work within the municipal boundaries of Iqaluit, focused specifically on the Bridge to Nowhere. It is highly unlikely that the Proponent would come into contact with archaeological sites as the works would occur within a previously disturbed area. However, if any historical sites are encountered, the Proponent would be required to contact the Culture and Heritage Department and to follow the *Nunavut Act* (as recommended in Regulatory Requirements section).

**Recommended Mitigation Measures:** Term and condition 22 is recommended to ensure that available Inuit Qaujimaningit can inform project activities, and reduce the potential for negative impacts occurring due to lack of information.

**Significant public concern:**

**Issue 7:** No significant public concern was expressed during the public commenting period for this file.

Board Views: Follow up consultation and involvement of local community members is expected to mitigate any potential for public concern resulting from project activities.

Recommended Mitigation Measures: Term and condition 22 is recommended to ensure that the affected community and organizations are informed about the project proposal, and to mitigate any concerns that may arise from the project activities.

**Technological innovations for which the effects are unknown:**

No specific issues have been identified associated with this project proposal.

In considering the above factors and subject to the Proponent's compliance with the terms and conditions necessary to mitigate against the potential adverse environmental and social effects, the Board is of the view that the proposed project is unlikely to cause significant public concern and its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS

The Board is recommending the following specific terms and conditions to apply in respect of the project:

**General**

1. Concentric Geoscience Inc. (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.
2. The Proponent shall forward copies of all permits obtained and required for this project to the Nunavut Impact Review Board (NIRB) prior to the commencement of the project.
3. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 148676), to Fisheries and Oceans Canada, the Nunavut Water Board, and the NIRB (Online Application Form, February 1, 2018, additional correspondence February 2, 2018 and March 5, 2018).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

**Water Use**

5. The Proponent shall not use water, including constructing or disturbing any stream, lakebed or the banks of any definable water course unless approved by the Nunavut Water Board.

**Waste Disposal**

6. The Proponent shall keep all garbage and debris in bags placed in a covered metal container or equivalent until disposed of at an approved facility. All such wastes shall be kept inaccessible to wildlife at all times.

### **Fuel and Chemical Storage**

7. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
8. Unless otherwise authorized by the Nunavut Water Board, the Proponent shall locate all fuel and other hazardous materials a minimum of thirty-one (31) metres away from the high water mark of any water body and in such a manner as to prevent their release into the environment.
9. The Proponent shall ensure that re-fueling of all equipment occurs a minimum of thirty-one (31) metres away from the high water mark of any water body, unless otherwise authorized by the Nunavut Water Board.
10. The Proponent shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available during any transfer of fuel or hazardous substances, at all fuel storage sites, at all refuelling stations, and at vehicle maintenance areas.
11. The Proponent shall ensure that all personnel are properly trained in fuel and hazardous waste handling procedures, as well as spill response procedures. All spills of fuel or other deleterious materials of any amount must be reported immediately to the 24 hour Spill Line at (867) 920-8130.

### **Wildlife - General**

12. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
13. The Proponent shall not harass wildlife. This includes persistently circling, chasing, hovering over pursuing or in any other way harass wildlife, or disturbing large groups of animals.
14. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
15. The Proponent shall ensure that all project personnel are made aware of the measures to protect wildlife and are provided with training and/or advice on how to implement these measures.

### **Migratory Birds and Raptors Disturbance**

16. The Proponent shall not disturb or destroy the nests or eggs of any birds. If nests are encountered and/or identified, the Proponent shall take precaution to avoid further interaction and or disturbance (e.g., a 100 metres buffer around the nests). If active nests of any birds are discovered (i.e., with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have left the nest.

### **Ground Disturbance**

17. The Proponent shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles must be suspended if rutting occurs.

18. The Proponent shall implement suitable dust, erosion and sediment suppression measures on all areas before, during and after conducting activities in order to prevent sediments or fugitive dust from entering any waterbody or surrounding environment.
19. All construction and road vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.

### **Restoration of Disturbed Areas**

20. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
21. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state as practical as possible upon completion of field work.

### **Other**

22. The Proponent should engage with local residents regarding planned activities in the area and should solicit available Inuit Qaujimaningit and information regarding current recreational and traditional usage of the project area which may inform project activities. Posting of translated public notices and direct engagement with potentially interested groups and individuals prior to undertaking project activities is strongly encouraged.
23. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
24. The Proponent should, to the extent possible, hire local people and access local services where possible.

## **MONITORING AND REPORTING REQUIREMENTS**

In addition, the Board is recommending the following:

### **Environmental Protection Plan**

1. Prior to the start of project activities, the Proponent shall submit an Environmental Protection Plan (EPP) to the Nunavut Impact Review Board and to appropriate regulatory authorities including Environment and Climate Change Canada, Fisheries and Oceans Canada, and Indigenous and Northern Affairs Canada. At a minimum, this plan should include the following items:
  - Description of the applicable legislation;
  - Fish and fish habitat protection measures;
  - Erosion and sediment control (including a figure demarcating the placement of such measures);
  - Air quality including materials handling and waste management;
  - Equipment and fuel storage;
  - A protocol for spill preparedness and emergency response; and
  - General wildlife and mitigation measures.

The Proponent is encouraged to consult with the relevant federal and territorial government agencies to discuss project schedule and timelines so as to ensure adequate mitigation of potential environmental impacts in the project area.

## OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board is recommending the following:

### Change in Project Scope

1. Responsible authorities or Proponent shall notify the Nunavut Planning Commission and the NIRB of any changes in operating plans or conditions, including phase advancement, associated with this project prior to any such change.

### Bear and Carnivore Safety

2. The Proponent should review the Government of Nunavut's booklet on Bear Safety, which can be downloaded from this link: [http://gov.nu.ca/sites/default/files/bear\\_safety\\_-\\_reducing\\_bear-people\\_conflicts\\_in\\_nunavut.pdf](http://gov.nu.ca/sites/default/files/bear_safety_-_reducing_bear-people_conflicts_in_nunavut.pdf). Further information on bear/carnivore detection and deterrent techniques can be found in the "*Safety in Grizzly and Black Bear Country*" pamphlet, which can be downloaded from this link: [http://www.enr.gov.nt.ca/sites/default/files/web\\_pdf\\_wd\\_bear\\_safety\\_brochure\\_1\\_may\\_2015.pdf](http://www.enr.gov.nt.ca/sites/default/files/web_pdf_wd_bear_safety_brochure_1_may_2015.pdf).
3. There are polar bear and grizzly bear safety resources available from the Bear Smart Society with videos on polar bear safety available in English, French and Inuktitut at <http://www.bearsmart.com/play/safety-in-polar-bear-country/>. Information can also be obtained from Parks Canada's website on bear safety at the following link: <http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/d.aspx> or in reviewing the "*Safety in Polar Bear Country*" pamphlet, which can be downloaded from the following link: [http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/~media/pn-np/nu/auyuittuq/pdf/shared/PolarBearSafety\\_English.ashx](http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/~media/pn-np/nu/auyuittuq/pdf/shared/PolarBearSafety_English.ashx).
4. Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officer of Iqaluit, phone: 867-924-6235).

### Species at Risk

5. The Proponent review Environment and Climate Change Canada's "Environment Assessment Best Practice Guide for Wildlife at Risk in Canada", available at the following link: [http://www.sararegistry.gc.ca/virtual\\_sara/files/policies/EA%20Best%20Practices%202004.pdf](http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf). The guide provides information to the Proponent on what is required when Wildlife at Risk, including *Species at Risk*, are encountered or affected by the project.

### Migratory Birds

6. The Proponent review Canadian Wildlife Services' "Key migratory bird terrestrial habitat sites in the Northwest Territories and Nunavut", available at the following link: <http://publications.gc.ca/site/eng/317630/publication.html> and "Key marine habitat sites for migratory birds in Nunavut and the Northwest Territories", available at the following link: <http://publications.gc.ca/site/eng/392824/publication.html>. The guide provides information to the Proponent on key terrestrial and marine habitat areas that are essential to the welfare of various migratory bird species in Canada.



7. For further information on how to protect migratory birds, their nests and eggs when planning or carrying out project activities, consult Environment and Climate Change Canada's Incidental Take web page and the fact sheet "Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs" available at <http://www.ec.gc.ca/paom-itmb/>.

## REGULATORY REQUIREMENTS

The Proponent is also advised that the following legislation may apply to the project:

### **Acts and Regulations**

1. The *Fisheries Act* (<http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html>).
2. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://laws-lois.justice.gc.ca/eng/acts/n-28.8/>).
3. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (<http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>).
4. The *Species at Risk Act* (<http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html>). Attached in **Appendix A** is a list of Species at Risk in Nunavut.
5. The *Wildlife Act (Nunavut)* and its corresponding regulations (<http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html>).
6. The *Nunavut Act* (<http://laws-lois.justice.gc.ca/eng/acts/N-28.6/>). The Proponent must comply with the proposed terms and conditions listed in the attached **Appendix B**.
7. The *Navigation Protection Act* (<http://laws-lois.justice.gc.ca/eng/acts/N-22/index.html>).

## CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Concentric Geoscience Inc.'s "Bridge to Nowhere – Repair to Abutments". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated March 23, 2018 at Whale Cove, NU.



Elizabeth Copland, Chairperson

Attachments: Appendix A: Species at Risk in Nunavut  
Appendix B: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

## **Appendix A**

### **Species at Risk in Nunavut**

Due to the requirements of Section 79(2) of the Species At Risk Act (SARA), and the potential for project-specific adverse effects on listed wildlife species and its critical habitat, measures should be taken as appropriate to avoid or lessen those effects, and the effects need to be monitored. Project effects could include species disturbance, attraction to operations and destruction of habitat. This section applies to all species listed on Schedule 1 of SARA, as listed in the table below, or have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which may be encountered in the project area. This list may not include all species identified as at risk by the Territorial Government. The following points provide clarification on the applicability of the species outlined in the table.

- Schedule 1 is the official legal list of Species at Risk for SARA. SARA applies to all species on Schedule 1. The term “listed” species refers to species on Schedule 1.
- Schedule 2 and 3 of SARA identify species that were designated at risk by the COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1.
- Some species identified at risk by COSEWIC are “pending” addition to Schedule 1 of SARA. These species are under consideration for addition to Schedule 1, subject to further consultation or assessment.

If species at risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the species at risk Registry at <http://www.sararegistry.gc.ca> for information on specific species.

Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of species at risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.

For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.

Mitigation and monitoring measures must be undertaken in a way that is consistent with applicable recovery strategies and action/management plans.

Schedules of SARA are amended on a regular basis so it is important to check the SARA registry ([www.sararegistry.gc.ca](http://www.sararegistry.gc.ca)) to get the current status of a species.

Updated: September 2017

Terrestrial Species at Risk <sup>1</sup>	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility <sup>2</sup>
Migratory Birds			
Buff-breasted Sandpiper	Special concern	Schedule 1	ECCC
Eskimo Curlew	Endangered	Schedule 1	ECCC
Harlequin Duck (Eastern population)	Special Concern	Schedule 1	ECCC
Harris's Sparrow	Special Concern	Pending	ECCC
Horned Grebe (Western population)	Special Concern	Schedule 1	ECCC
Ivory Gull	Endangered	Schedule 1	ECCC
Peregrine Falcon	Special Concern ( <i>anatum-tundrius</i> complex <sup>3</sup> )	Schedule 1 - Schedule 3	ECCC
Red Knot ( <i>islandica</i> subspecies)	Special Concern	Schedule 1	ECCC
Red Knot ( <i>rufa</i> subspecies)	Endangered	Schedule 1	ECCC
Red-necked Phalarope	Special concern	Pending	ECCC
Ross's Gull	Threatened	Schedule 1	ECCC
Rusty Blackbird	Special Concern	Schedule 1	ECCC
Short-eared Owl	Special Concern	Schedule 1	ECCC
Vegetation			
Blanket-leaved Willow	Special Concern	Schedule 1	Government of Nunavut
Felt-leaf Willow	Special Concern	Schedule 1	Government of Nunavut
Porsild's Bryum (Moss)	Threatened	Schedule 1	Government of Nunavut
Arthropods			
Traverse Lady Beetle	Special Concern	Pending	Government of Nunavut
Terrestrial Wildlife			
Caribou (Barren-Ground population)	Threatened	Pending	Government of Nunavut
Dolphin and Union Caribou	Special Concern	Schedule 1	Government of Nunavut
Grizzly Bear (Western Population)	Special Concern	Pending	Government of Nunavut
Peary Caribou	Endangered	Schedule 1	Government of Nunavut
Peary Caribou (High Arctic Population)	Endangered	Schedule 2	Government of Nunavut
Peary Caribou (Low Arctic Population)	Threatened	Schedule 2	Government of Nunavut
Wolverine	Special Concern	Pending	Government of Nunavut
Wolverine (Western population)	Non-active	Pending	Government of Nunavut
Marine Wildlife			
Atlantic Walrus	Special Concern	Pending	DFO
Beluga Whale (Cumberland Sound population)	Endangered	Schedule 2	DFO
Beluga Whale (Eastern High Arctic – Baffin Bay population)	Special Concern	Pending	DFO
Beluga Whale (Eastern Hudson Bay population)	Endangered	Pending	DFO

Beluga Whale (Southeast Baffin Island – Cumberland Sound population)	Endangered	Schedule 2	DFO
Beluga Whale (Western Hudson Bay population)	Special Concern	Pending	DFO
Bowhead Whale (Eastern Arctic population)	Endangered	Schedule 2	DFO
Bowhead Whale (Eastern Canada – West Greenland population)	Special Concern	Pending	DFO
Killer Whale (Northwest Atlantic / Eastern Arctic populations)	Special Concern	Pending	DFO
Narwhal	Special Concern	Pending	DFO
Polar Bear	Special Concern	Schedule 1	Government of Nunavut/DFO
Fish			
Atlantic Cod, Arctic Lakes	Special Concern	Pending	DFO
Atlantic Wolffish	Special Concern	Schedule 1	DFO
Bering Wolffish	Special Concern	Schedule 3	DFO
Blackline Prickleback	Special Concern	Schedule 3	DFO
Fourhorn Sculpin	Special Concern	Schedule 3	DFO
Fourhorn Sculpin (Freshwater form)	Data Deficient	Schedule 3	DFO
Northern Wolffish	Threatened	Schedule 1	DFO
Roundnose Grenadier	Endangered	Pending	DFO
Spotted Whitefish	Threatened	Schedule 1	DFO
Thorny Skate	Special Concern	Pending	DFO

<sup>1</sup> The Department of Fisheries and Oceans has responsibility for aquatic species.

<sup>2</sup> Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

## Appendix B

### Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders



#### INTRODUCTION

The Department of Culture and Heritage (CH) routinely reviews land use applications sent to the Nunavut Water Board, Nunavut Impact Review Board and the Indigenous and Northern Affairs Canada. These terms and conditions provide general direction to the permittee/proponent regarding the appropriate actions to be taken to ensure the permittee/proponent carries out its role in the protection of Nunavut's archaeological and palaeontological resources.

#### TERMS AND CONDITIONS

- 1) The permittee/proponent shall have a professional archaeologist and/or palaeontologist perform the following **Functions** associated with the **Types of Development** listed below or similar development activities:

	<b>Types of Development</b> (See Guidelines below)	<b>Function</b> (See Guidelines below)
a)	Large scale prospecting	Archaeological/Palaeontological Overview Assessment
b)	Diamond drilling for exploration or geotechnical purpose or planning of linear disturbances	Archaeological/ Palaeontological Inventory
c)	Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities	Archaeological/ Palaeontological Inventory or Assessment or Mitigation

Note that the above-mentioned functions require either a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit. CH is authorized by way of the *Nunavut and Archaeological and Palaeontological Site Regulations*<sup>1</sup> to issue such permits.

- 2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.

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<sup>1</sup> P.C. 2001-1111 14 June, 2001

- 3) The permittee/proponent shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.
- 4) The permittee/proponent shall immediately contact CH at (867) 934-2046 or (867) 975-5500 should an archaeological site or specimen, or a palaeontological site or fossil, be encountered or disturbed by any land use activity.
- 5) The permittee/proponent shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation until permitted to proceed with the authorization of CH.
- 6) The permittee/proponent shall follow the direction of CH in restoring disturbed archaeological or palaeontological sites to an acceptable condition. If these conditions are attached to either a Class A or B Permit under the Territorial Lands Act Indigenous and Northern Affairs Canada directions will also be followed.
- 7) The permittee/proponent shall provide all information requested by CH concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.
- 8) The permittee/proponent shall make best efforts to ensure that all persons working under its authority are aware of these conditions concerning archaeological sites and artifacts and palaeontological sites and fossils.
- 9) If a list of recorded archaeological and/or palaeontological sites is provided to the permittee/proponent by CH as part of the review of the land use application the permittee/proponent shall avoid the archaeological and/or palaeontological sites listed.
- 10) Should a list of recorded sites be provided to the permittee/proponent, the information is provided solely for the purpose of the proponent's land use activities as described in the land use application, and must otherwise be treated confidentially by the proponent.

### **Legal Framework**

As stated in Article 33 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*:

*Where an application is made for a land use permit in the Nunavut Settlement Area, and there are reasonable grounds to believe that there could be sites of archaeological importance on the lands affected, no land use permit shall be issued without written consent of the Designated Agency. Such consent shall not be unreasonably withheld. [33.5.12]*

*Each land use permit referred to in Section 33.5.12 shall specify the plans and methods of archeological site protection and restoration to be followed by the permit holder, and any other conditions the Designated Agency may deem fit. [33.5.13]*

### **Palaeontology and Archaeology**

Under the *Nunavut Act*<sup>2</sup>, the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under

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<sup>2</sup> s. 51(1)

the *Nunavut Archaeological and Palaeontological Sites Regulations*<sup>3</sup>, it is illegal to alter or disturb any palaeontological or archaeological site in Nunavut unless permission is first granted through the permitting process.

## **Definitions**

As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

*“archaeological site” means a place where an archaeological artifact is found.*

*“archaeological artifact” means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement).*

*“palaeontological site” means a site where a fossil is found.*

*“fossil” includes:*

*Fossil means the hardened or preserved remains or impression of previously living organisms or vegetation and includes:*

- (a) natural casts;*
- (b) preserved tracks, coprolites and plant remains; and*
- (c) the preserved shells and exoskeletons of invertebrates and the preserved eggs, teeth and bones of vertebrates.*

## *Guidelines for Developers for the Protection of Archaeological Resources in the Nunavut Territory*

(Note: Partial document only, complete document at: [www.ch.gov.nu.ca/en/Archaeology.aspx](http://www.ch.gov.nu.ca/en/Archaeology.aspx))

## **Introduction**

The following guidelines have been formulated to ensure that the impacts of proposed developments upon heritage resources are assessed and mitigated before ground surface altering activities occur. Heritage resources are defined as, but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historic buildings and cairns. Effective collaboration between the developer, the Department of Culture, and Heritage (CH), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

CH is the Nunavut Government agency which oversees the protection and management of heritage resources in Nunavut, in partnership with land claim authorities, regulatory agencies, and the federal government. Its role in mitigating impacts of developments on heritage resources is as follows: to identify the need for an impact assessment and make recommendations to the appropriate regulatory agency; set the terms of reference for the study depending upon the scope of the development; suggest the names of qualified individuals

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<sup>3</sup> P.C. 2001-1111 14 June, 2001

prepared to undertake the study to the developer; issue an archaeologist or palaeontologist permit authorizing field work; assess the completeness of the study and its recommendations; and ensure that the developer complies with the recommendations.

The primary regulatory agencies that CH provides information and assistance to are the Nunavut Impact Review Board, for development activities proposed for Inuit Owned Lands (as defined in Section 1.1.1 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*), and the Indigenous and Northern Affairs Canada, for development activities proposed for federal Crown Lands.

A developer is the initiator of a land use activity. It is the obligation of the developer to ensure that a qualified archaeologist or palaeontologist is hired to perform the required study and that provisions of the contract with the archaeologist or palaeontologist allow permit requirements to be met; i.e. fieldwork, collections management, artifact and specimen conservation, and report preparation. On the recommendation of the contract archaeologist or palaeontologist in the field and the Government of Nunavut, the developer shall implement avoidance or mitigative measures to protect heritage resources or to salvage the information they contain through excavation, analysis, and report writing. The developer assumes all costs associated with the study in its entirety.

Through his or her active participation and supervision of the study, the contract archaeologist or palaeontologist is accountable for the quality of work undertaken and the quality of the report produced. Facilities to conduct fieldwork, analysis, and report preparation should be available to this individual through institutional, agency, or company affiliations. Responsibility for the curation of objects recovered during field work while under study and for documents generated in the course of the study as well as remittance of artifacts, specimens and documents to the repository specified on the permit accrue to the contract archaeologist or palaeontologist. This individual is also bound by the legal requirements of the *Nunavut Archaeological and Palaeontological Sites Regulations*.

### **Types of Development**

In general, those developments that cause concern for the safety of heritage resources will include one or more of the following kinds of surface disturbances. These categories, in combination, are comprehensive of the major kinds of developments commonly proposed in Nunavut. For any single development proposal, several kinds of these disturbances may be involved

- *Linear disturbances: including the construction of highways, roads, winter roads, transmission lines, and pipelines;*
- *Extractive disturbances: including mining, gravel removal, quarrying, and land filling;*
- *Impoundment disturbances: including dams, reservoirs, and tailings ponds;*
- *Intensive land use disturbances: including industrial, residential, commercial, recreational, and land reclamation work, and use of heritage resources as tourist developments.*



- *Mineral, oil and gas exploration: establishment of camps, temporary airstrips, access routes, well sites, or quarries all have potential for impacting heritage resources.*

### **Types of Studies Undertaken to Preserve Heritage Resources**

**Overview:** An overview study of heritage resources should be conducted at the same time as the development project is being designed or its feasibility addressed. They usually lack specificity with regard to the exact location(s) and form(s) of impact and involve limited, if any, field surveys. Their main aim is to accumulate, evaluate, and synthesize the existing knowledge of the heritage of the known area of impact. The overview study provides managers with baseline data from which recommendations for future research and forecasts of potential impacts can be made. A Class I Permit is required for this type of study if field surveys are undertaken.

**Reconnaissance:** This is done to provide a judgmental appraisal of a region sufficient to provide the developer, the consultant, and government managers with recommendations for further development planning. This study may be implemented as a preliminary step to inventory and assessment investigations except in cases where a reconnaissance may indicate a very low or negligible heritage resource potential. Alternately, in the case of small-scale or linear developments, an inventory study may be recommended and obviate the need for a reconnaissance.

The main goal of a reconnaissance study is to provide baseline data for the verification of the presence of potential heritage resources, the determination of impacts to these resources, the generation of terms of reference for further studies and, if required, the advancement of preliminary mitigative and compensatory plans. The results of reconnaissance studies are primarily useful for the selection of alternatives and secondarily as a means of identifying impacts that must be mitigated after the final siting and design of the development project. Depending on the scope of the study, a Class 1 or Class 2 Permit is required for this type of investigation.

**Inventory:** A resource inventory is generally conducted at that stage in a project's development at which the geographical area(s) likely to sustain direct, indirect, and perceived impacts can be well defined. This requires systematic and intensive fieldwork to ascertain the effects of all possible and alternate construction components on heritage resources. All heritage sites must be recorded on Government of Nunavut Site Survey forms. Sufficient information must be amassed from field, library and archival components of the study to generate a predictive model of the heritage resource base that will:

- allow the identification of research and conservation opportunities;
- enable the developer to make planning decisions and recognize their likely effects on the known or predicted resources; and
- make the developer aware of the expenditures, which may be required for subsequent studies and mitigation. A Class 1 or 2 permit is required.

**Assessment:** At this stage, sufficient information concerning the numbers and locations of heritage resources will be available, as well as data to predict the forms and magnitude of impacts. Assessments provide information on the size, volume, complexity and content of a

heritage resource, which is used to rank the values of different sites or site types given current archaeological knowledge. As this information will shape subsequent mitigation program(s), great care is necessary during this phase.

**Mitigation:** This refers to the amelioration of adverse impacts to heritage resources and involves the avoidance of impact through the redesign or relocation of a development or its components; the protection of the resource by constructing physical facilities; or, the scientific investigation and recovery of information from the resource by excavation or other method. The type(s) of appropriate mitigative measures are dictated by their viability in the context of the development project. Mitigation strategies must be developed in consultation with, and approved by, the Department of Culture and Heritage. It is important to note that mitigation activities should be initiated as far in advance of the construction of the development as possible.

**Surveillance and monitoring:** These may be required as part of the mitigation program.

*Surveillance* may be conducted during the construction phase of a project to ensure that the developer has complied with the recommendations.

*Monitoring* involves identification and inspection of residual and long-term impacts of a development (i.e. shoreline stability of a reservoir); or the use of impacts to disclose the presence of heritage resources, for example, the uncovering of buried sites during the construction of a pipeline.

## **APPENDIX I – CIVIL STRUCTURAL DRAWINGS**

GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS (INCLUDING LATEST AMENDMENTS) AND OTHER LOCAL AUTHORITIES HAVING JURISDICTION.
2. WHERE DOCUMENTS AND STANDARDS ARE REFERENCED IN THE NOTES, THEY SHALL BE THE LATEST EDITIONS, UNLESS OTHERWISE NOTED OR SHOWN.
3. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED ON THE JOB BY THE CONTRACTOR. CONTRACTOR IS TO REPORT DISCREPANCIES TO THE ENGINEER PROMPTLY AND BEFORE CONSTRUCTION.
4. READ DRAWINGS IN CONJUNCTION WITH SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS, WHERE APPLICABLE.
5. BEFORE PROCEEDING WITH WORK, CHECK ALL THE DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS AGAINST THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS (WHERE APPLICABLE) AND REPORT DISCREPANCIES TO THE CONSULTANT.
6. ANY HORIZONTAL AND VERTICAL DESIGN LOADINGS NOTED SHALL NOT BE EXCEEDED DURING CONSTRUCTION.
7. DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR SAFETY:

1. PERSONNEL, EQUIPMENT, AND BUILDING MATERIALS SHALL BE REMOVED FROM THE ISOLATED WORK ZONE PRIOR TO WATER REACHING THE MAXIMUM ALLOWABLE WATER LEVEL INDICATED.
2. CONTRACTOR TO CONTINUOUSLY MONITOR PRECIPITATION AND ASSOCIATED CHANGES IN WATER LEVEL.

ENVIRONMENTAL REQUIREMENTS

1. THE CONTRACTOR SHALL ENSURE COMPLIANCE WITH ALL MUNICIPAL, TERRITORIAL, AND FEDERAL AUTHORITIES HAVING JURISDICTION OVER THE DURATION OF THE PROJECT.
2. WHERE NOTIFICATION, EVALUATION, AND APPROVALS ARE REQUIRED FOR THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE REQUIRED INFORMATION AND PAYMENT OF ASSOCIATED FEES OR PERMITS.
3. THE NOTIFICATION AND APPROVAL PROCESS SHALL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OVER A WATERCOURSE (DEPARTMENT OF FISHERIES & OCEANS) DISPOSAL OF MATERIALS (CITY OF IQALUIT) AND ENVIRONMENTAL COMPLIANCE (MINISTRY OF ENVIRONMENT).

SITE PROTECTION:

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE SAFETY BARRIERS/ HOARDING DURING THE CONSTRUCTION PHASE.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE SIGNAGE ON THE ROADWAY TO CLOSE THE BRIDGE TO VEHICULAR TRAFFIC DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE FLAG PERSONS AT EACH END OF WORK AREA FOR DIRECTING TRAFFIC DURING CONSTRUCTION.
4. ROAD TO NOWHERE BRIDGE IS CURRENTLY AND WILL REMAIN CLOSED UNTIL THE REPAIRS HAVE BEEN COMPLETED.
5. ASTRO HILL BRIDGE IS TO REMAIN OPEN DURING REPAIRS. REPAIR WORK TO BE COMPLETED ONLY DURING NON-RUSH HOUR.

CONSTRUCTION LOADS:

1. CONSTRUCTION WORK SHALL NOT EXCEED 25psf DURING THE COURSE OF THE WORK.

MATERIALS AND EXECUTION:

CONCRETE:

1. CONCRETE MATERIALS, PROCEDURES, TOLERANCES AND WORKMANSHIP SHALL CONFORM TO THE LATEST ISSUE OF CSA A23.1 AND A23.2. A COPY OF THIS STANDARD SHALL BE AVAILABLE ON SITE.
2. PROVIDE CERTIFICATION THAT PLANT, EQUIPMENT, AND MATERIALS USED IN THE PRODUCTION OF CONCRETE COMPLY WITH THE REQUIREMENTS OF CSA-A23.1.
3. PROVIDE CERTIFICATION THAT MIX PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF SPECIFIED QUALITY AND STRENGTH.
4. CEMENT SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD A300.
5. CONCRETE ADMIXTURES SHALL CONFORM TO CSA STANDARD CAN3-A266.4, SHALL BE COMPATIBLE WITH EACH OTHER WHERE MORE THAN ONE IS USED, AND USED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. NO WATER IS TO BE ADDED TO THE CONCRETE ON THE SITE OR TO THE CONCRETE IN THE TRUCK UNDER ANY CIRCUMSTANCE.
7. CONCRETE THAT HAS BEEN IN THE READY MIX TRUCK FOR LONGER THAN 1½ HOURS SHALL BE REJECTED.
8. MEASURES MUST BE TAKEN TO ENSURE PROPER CURING OF CONCRETE. REFER TO SECTION 21 OF CSA A23.1.
9. COLD WEATHER CONCRETING, WHERE APPLICABLE, SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 21 OF CSA A23.1 AND ACI STANDARD 306 ("RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING").
10. FLOWABLE CONCRETE (ABANDONMENT GROUT/NON SHRINK GROUT) SHALL BE CONTROLLED LOW-STRENGTH MATERIAL CONSISTING OF FLUID MIXTURE OF CEMENT, AGGREGATE, WATER AND WITH ADMIXTURES AS NECESSARY TO PROVIDE WORKABLE PROPERTIES WITH 28-DAY COMPRESSIVE STRENGTH. MINIMUM COMPRESSIVE STRENGTH OF 10MPa @ 28 DAYS.
11. FLOWABLE CONCRETE MATERIAL SHALL BE DESIGNED SO THAT IT CAN FLOW INTO EXCAVATION AND FILL THE ENTIRE SPACE WITHOUT VIBRATION AND SEGREGATION. THE MATERIAL SHALL BE PLACED INTO THE EXCAVATION SO THAT IT FILLS THE ENTIRE SPACE WITHOUT VOIDS BEING CREATED BENEATH HORIZONTAL PROJECTIONS OR IN OTHER LOCATIONS WITHIN THE EXCAVATION.

GRANULARS

1. GRANULAR A AGGREGATES SHALL CONSIST OF CRUSHED ROCK COMPOSED OF HARD, UNCOATED, FRACTURED FRAGMENTS, PRODUCED FROM ROCK FORMATIONS OR BOULDERS OF UNIFORM QUALITY, OR A MIXTURE OF CRUSHED GRAVEL, SAND AND FINES COMPOSED OF HARD, DURABLE, UNCOATED PARTICLES, PRODUCED FROM NATURALLY FORMED DEPOSITS, OR CRUSHED SLAG PRODUCED FROM IRON BLAST FURNACE OR NICKEL SLAG. PARTICLE SIZES NO LARGER THAN 25mm. STEEL SLAG SHALL NOT BE USED. RECLAIMED ASPHALT PAVEMENT CONTAINING STEEL SLAG AGGREGATES WILL NOT BE ACCEPTABLE.
2. RIP-RAP SHALL BE PRODUCED FROM CRUSHED OR FRACTURED BEDROCK FRAGMENTS WITH 100% FRACTURED FACES OR CRUSHED FROM COBBLES OR BOULDERS GREATER THAN 300mm DIAMETER AND SHALL NOT DETERIORATE WHEN EXPOSED TO AIR AND WATER AND SHALL BE RESISTANT TO DETERIORATION BY CYCLES OF WETTING, DRYING, FREEZING, AND THAWING. RECLAIMED PORTLAND CEMENT CONCRETE MAY NOT BE USED. RIP-RAP SHALL CONFORM TO R10 GRADATION REQUIREMENTS, WITH 100% OF MASS PASSING THROUGH 180MM SCREEN.
3. GRANULAR SHALL BE PLACED IN LIFTS NOT GREATER THAN 6".
4. GRANULAR SHALL BE COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.

CORRUGATED STEEL PLATE:

1. CORRUGATED STEEL PLATE SHALL BE NEW MATERIAL CONFIRMING TO THE REQUIREMENTS OF CSA, G401 WITH A YIELD STRENGTH OF 230MPA.

GUIDE RAIL

1. GUIDE RAIL STEEL SHALL BE NEW MATERIAL CONFORMING TO THE REQUIREMENTS OF CSA G40.20/G40.21-04 WITH A YIELD STRENGTH OF 345MPA
2. WASHER SHALL NOT BE INSTALLED AT FRONT FACE OF RAIL. ONE BOLT LOCATED AT CENTRE OF STEEL BEAM GUIDE RAIL. BOLT HEAD SHALL BE ROUNDED.

STRUCTURAL WOOD:

1. DESIGN ALL TIMBER IN ACCORDANCE WITH CSA 086-09, ENGINEERING DESIGN IN WOOD.
2. SAWN LUMBER PRODUCTS SHALL BE MANUFACTURED IN ACCORDANCE WITH CSA STANDARD 0141, SOFTWOOD LUMBER. THESE PRODUCTS SHALL BE VISUALLY GRADED TO THE NATIONAL LUMBER GRADES AUTHORITY STANDARD GRADING RULES FOR CANADIAN LUMBER.
3. WOOD FRAMING TO BE SURFACE DRY NO. 2 GRADE SPF OR BETTER.
4. PRESSURE/PRESERVATIVE TREATED LUMBER SHALL BE IN ACCORDANCE WITH CSA STANDARD 080.
5. SOFT WOOD PLYWOOD SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD 0151, FOR EXTERIOR USE.
6. NAILS, SPIKES, AND STAPLES SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD B111. POWER DRIVEN FASTENERS MAY ONLY BE SUBSTITUTED IF THE SHANK DIAMETER IS EQUAL OR GREATER THAN THE SPECIFIED DIAMETER.
7. LAG SCREW MATERIALS AND DIMENSIONS AS PER CSA STANDARD B34 MISCELLANEOUS BOLTS AND SCREWS.

CULVERT:

1. CORRUGATED STEEL ARCH SHALL BE PROVIDED IN ACCORDANCE WITH CSA 6401.
2. MANUFACTURE'S RECOMMENDATIONS FOR TRANSPORTING, UNLOADING, STORING AND HANDLING OF PIPE SHALL BE FOLLOWED.
3. BACKFILL CULVERT IN UNIFORM LAYERS NOT EXCEEDING 12". BOTH SIDES OF CULVERT SHALL BE BACKFILLED SIMULTANEOUSLY.

GEOTEXTILE:

1. GEOTEXTILE SHALL BE NON-WOVEN, CLASS II.

DRAWING LIST:

- CVR – GENERAL NOTES AND DRAWING LIST  
C1 – ROAD TO NOWHERE BRIDGE SITE PLAN  
C2 – ROAD TO NOWHERE BRIDGE CONSTRUCTION AND STAGING DETAILS  
C3 – ROAD TO NOWHERE BRIDGE ABUTMENT DETAILS  
C4 – ASTRO HILL BRIDGE & APEX BRIDGE SITE PLAN  
C5 – ASTRO HILL BRIDGE & APEX BRIDGE CONSTRUCTION DETAILS

SCOPE OF WORK:

ROAD TO NOWHERE BRIDGE:

1. BYPASS STAGES INCLUDING TEMPORARY SANDBAG COFFERDAM AND CULVERT REPLACEMENT.
2. BRIDGE ABUTMENT REPAIRS INCLUDING INSTALLATION OF CORRUGATED STEEL PLATES AROUND EXISTING WOOD CRIBS AND GROUT FILL OF CRIBS.
3. RE-GRADING WITH GRANULAR FILL AND RIP-RAP INCLUDING A ROCK APRON

APEX BRIDGE:

1. REPLACEMENT OF WOOD CURB.
2. REPLACEMENT OF MISSING BOLTS.
3. LOCALIZED REPAIRS TO APPROACH BANKS AS INDICATED, CONSISTING OF FILLING AREAS OF WASHOUT AND INSTALLING ADDITIONAL RIP-RAP PROTECTION.

ASTRO HILL BRIDGE:

1. LOCALIZED REPAIRS TO APPROACH BANKS AS INDICATED, CONSISTING OF FILLING AREAS OF WASHOUT AND INSTALLING ADDITIONAL RIP-RAP PROTECTION.

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NOTES:

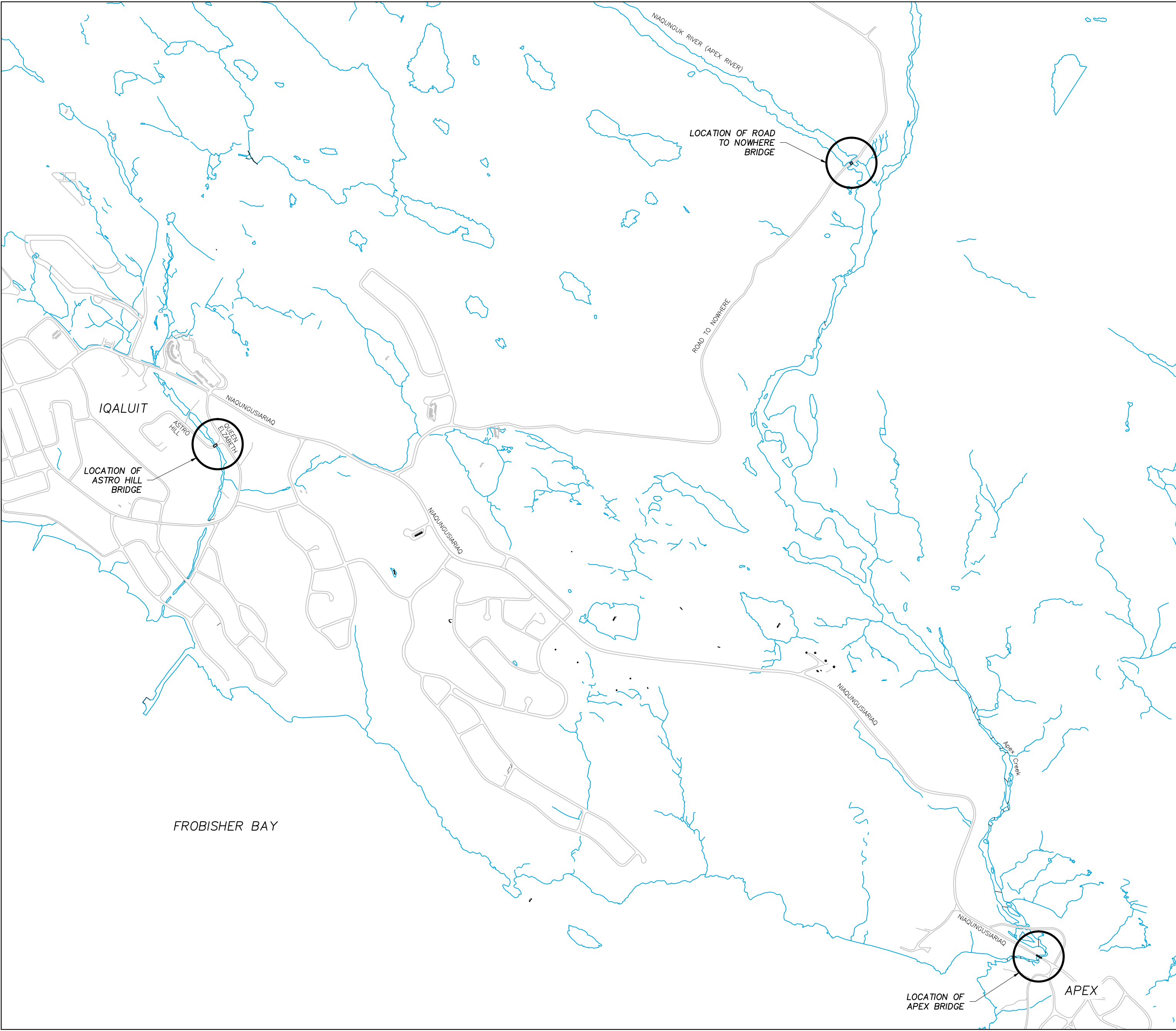
CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR REPORTING ALL DISCREPANCIES TO OWNER AND/OR CONSULTANT PRIOR TO TENDER CLOSING.

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KEY PLAN:



 **LOCATION PLAN**  
SCALE: NTS

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Toll Free 1-866-919-4530

**IQALUIT**  
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Toll Free 1-866-919-8899

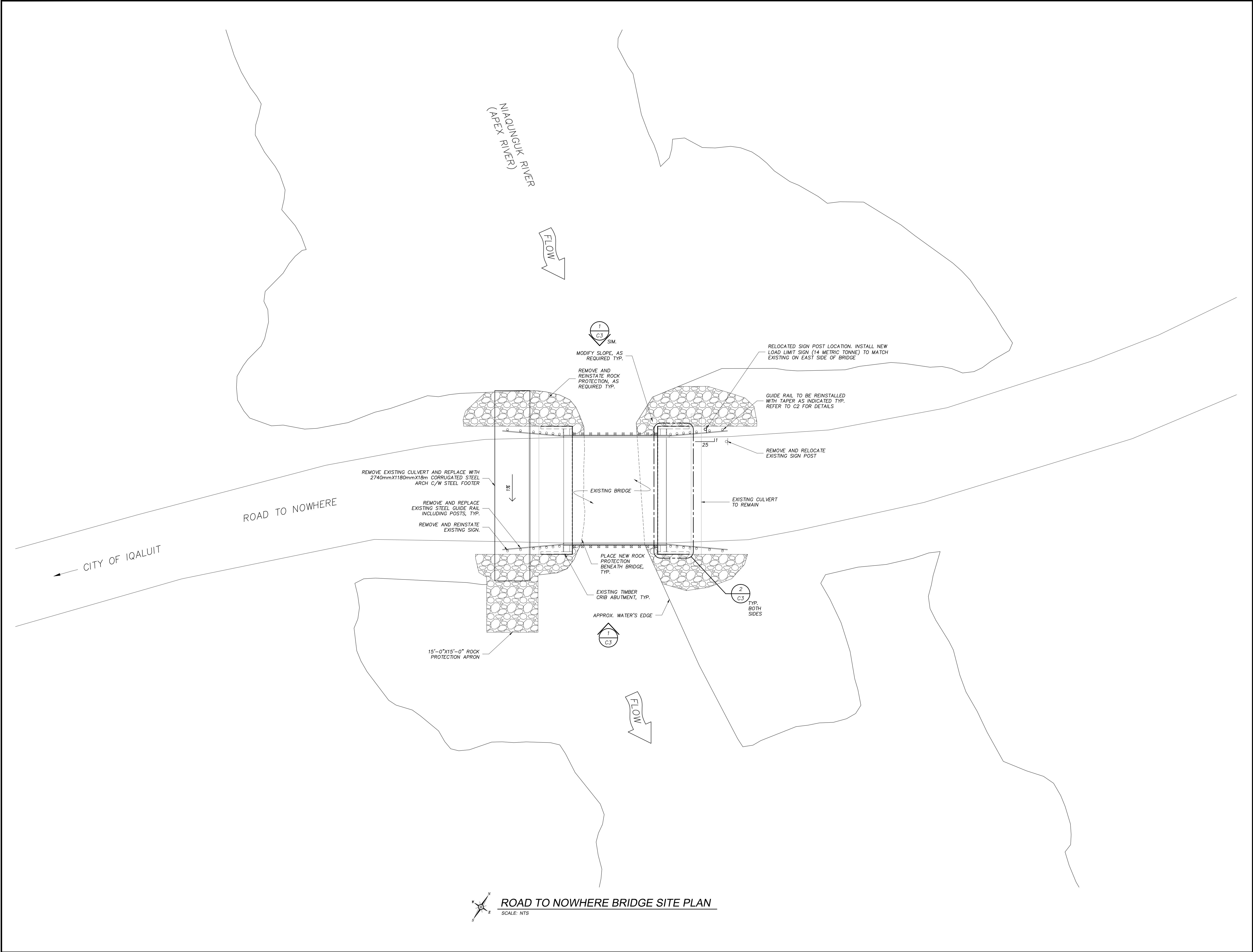
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Toll Free 1-866-919-4531

**TORONTO**  
Tel. 1-647-351-0095

**COQUITLAM**  
Toll Free 1-866-919-4531

CLIENT NAME:	CITY OF IQALUIT
PROJECT ADDRESS:	IQALUIT, NUNAVUT
PROJECT NAME:	BRIDGE REPAIRS
DRAWING TITLE:	GENERAL NOTES, DRAWING LIST & LOCATION PLAN
DESIGN: TJP DRAWN: JAVA APP'VD: STP	SCALE: NTS DATE: DEC /2017 FILE No: 17-7519
SHEET No.	





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PROJECT ADDRESS:

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PROJECT NAME:

BRIDGE REPAIRS

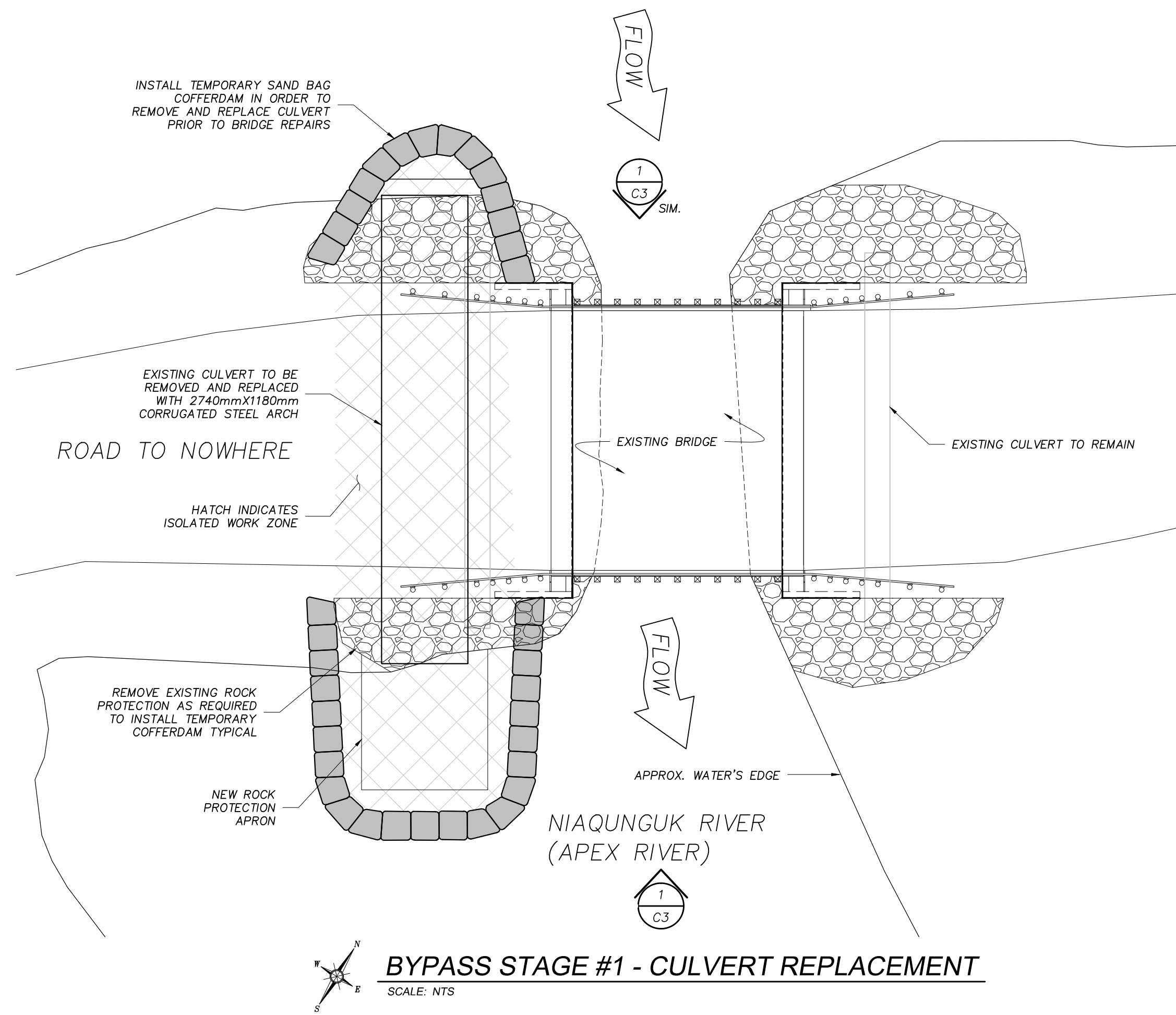
DRAWING TITLE:

ROAD TO NOWHERE BRIDGE SITE PLAN

DESIGN:	TJP	SCALE:	NTS
DRAWN:	JAVA	DATE:	DEC /2017
APPVD:	STP	FILE No:	17-7519

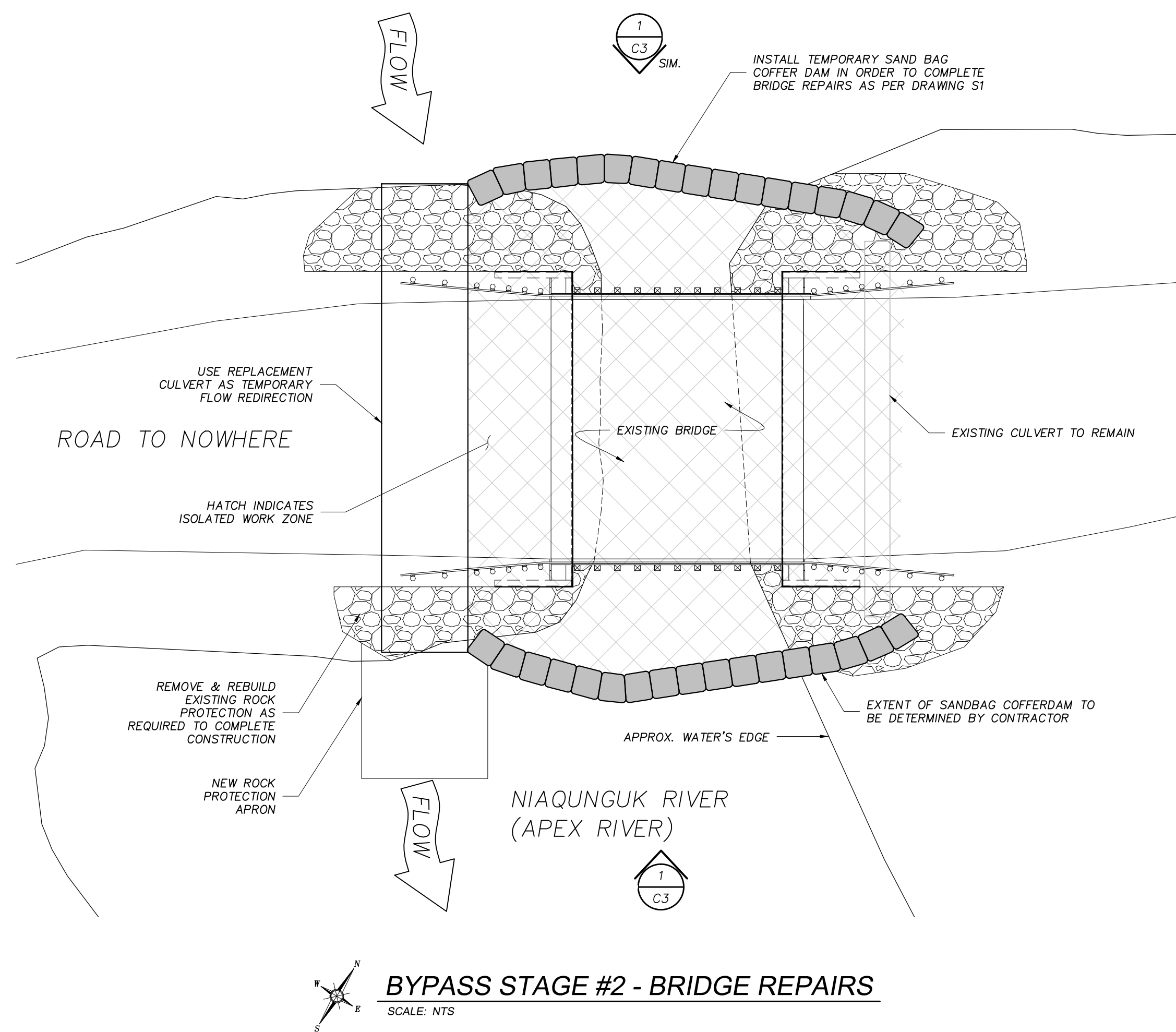
SHEET No.

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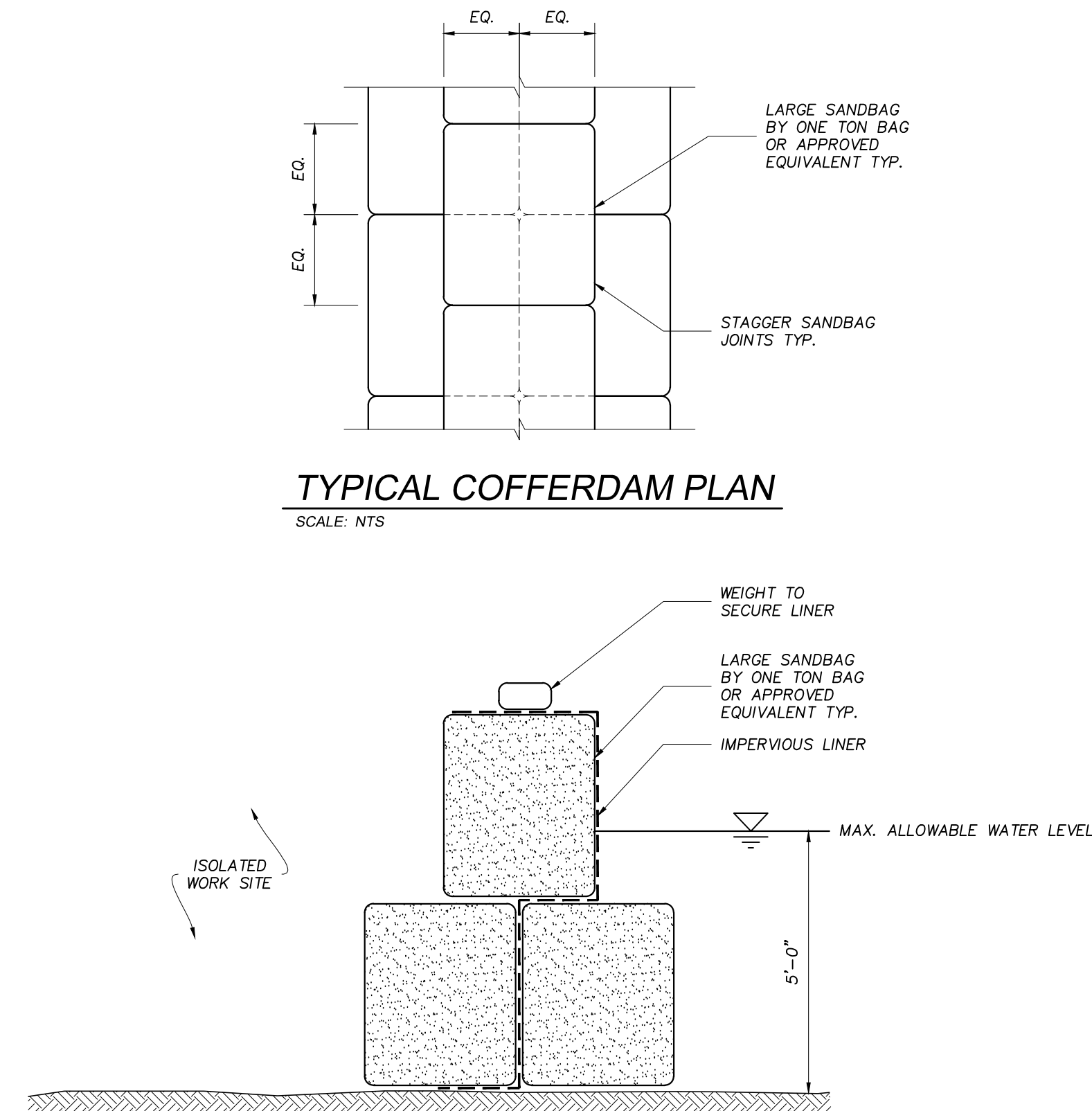
**BYPASS STAGE #1 - CULVERT REPLACEMENT**

SCALE: NTS



**BYPASS STAGE #2 - BRIDGE REPAIRS**

SCALE: NTS

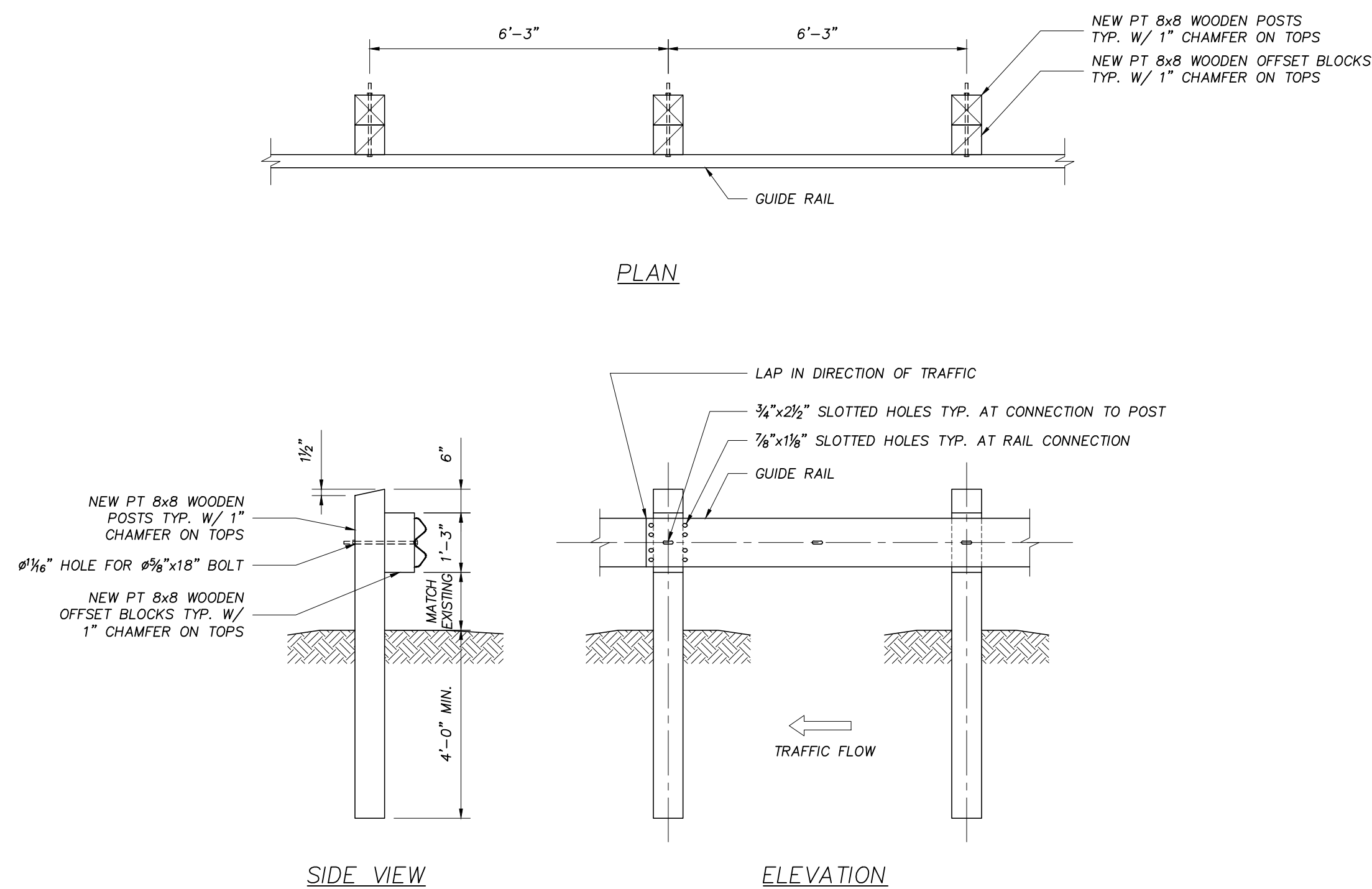


**TYPICAL COFFERDAM PLAN**

SCALE: NTS

**TYPICAL COFFERDAM DETAIL**

SCALE: NTS



**PLAN**

**SIDE VIEW**

**ELEVATION**

**STEEL BEAM GUIDE RAIL**

SCALE: NTS

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PROJECT NAME:

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DRAWING TITLE:

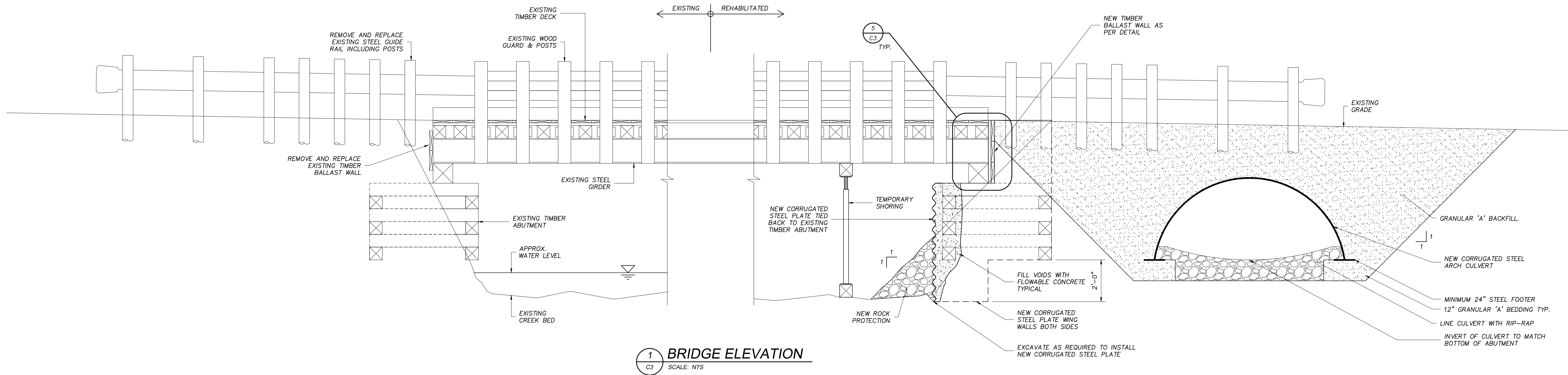
ROAD TO NOWHERE BRIDGE CONSTRUCTION STAGING & DETAILS

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DRAWN: JAVA	DATE: DEC /2017
APPVD: STP	FILE No: 17-7519

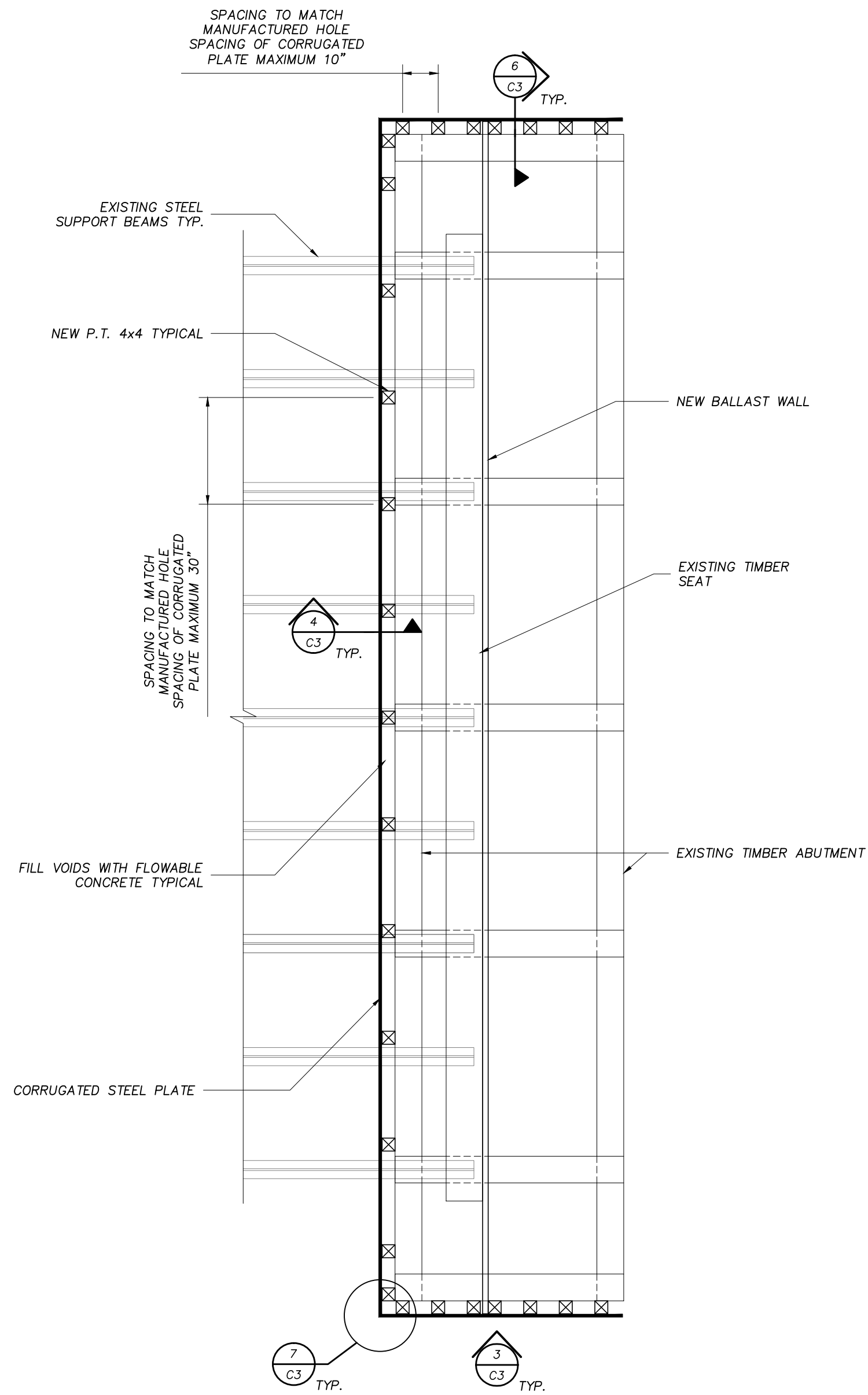
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C2

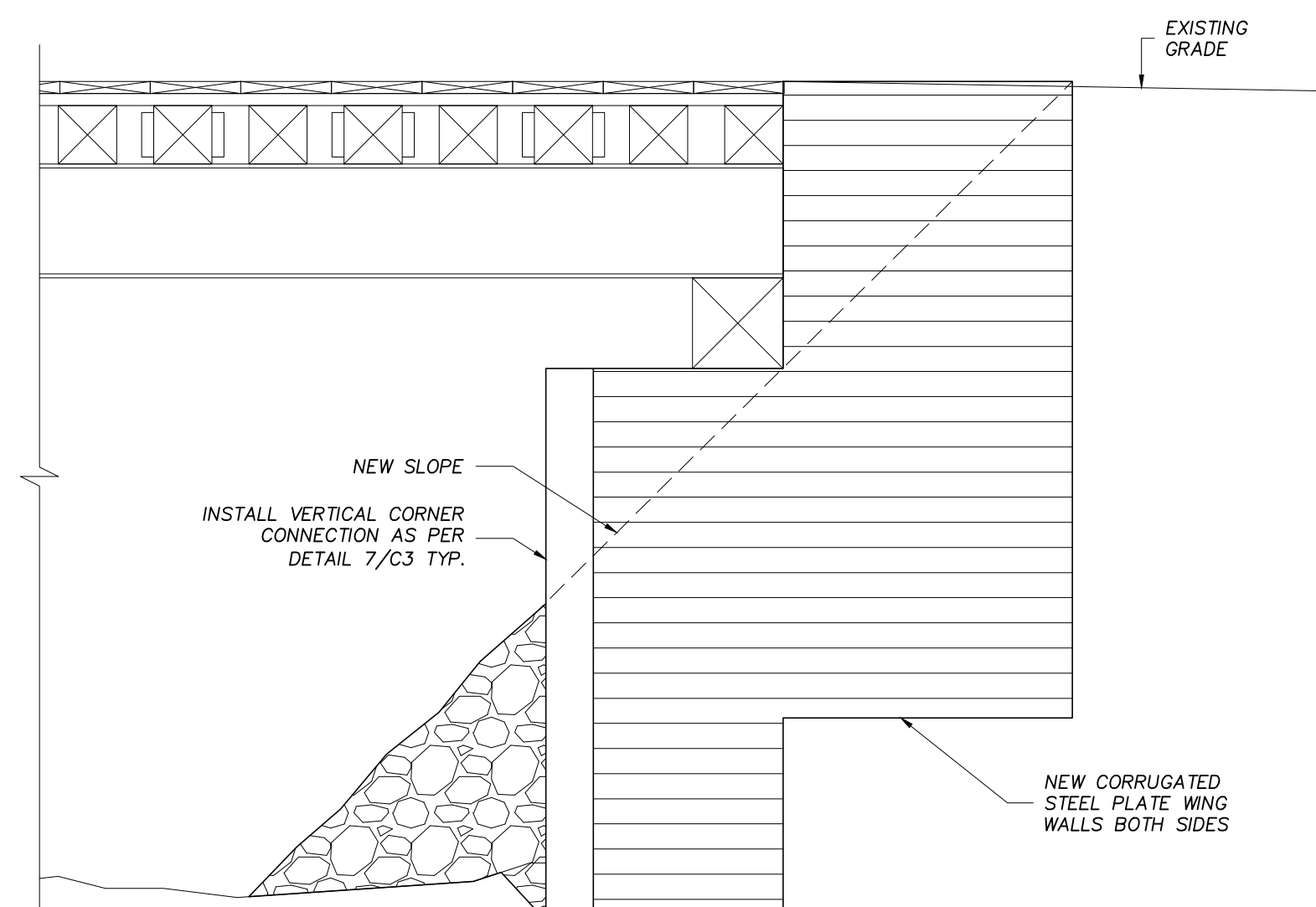




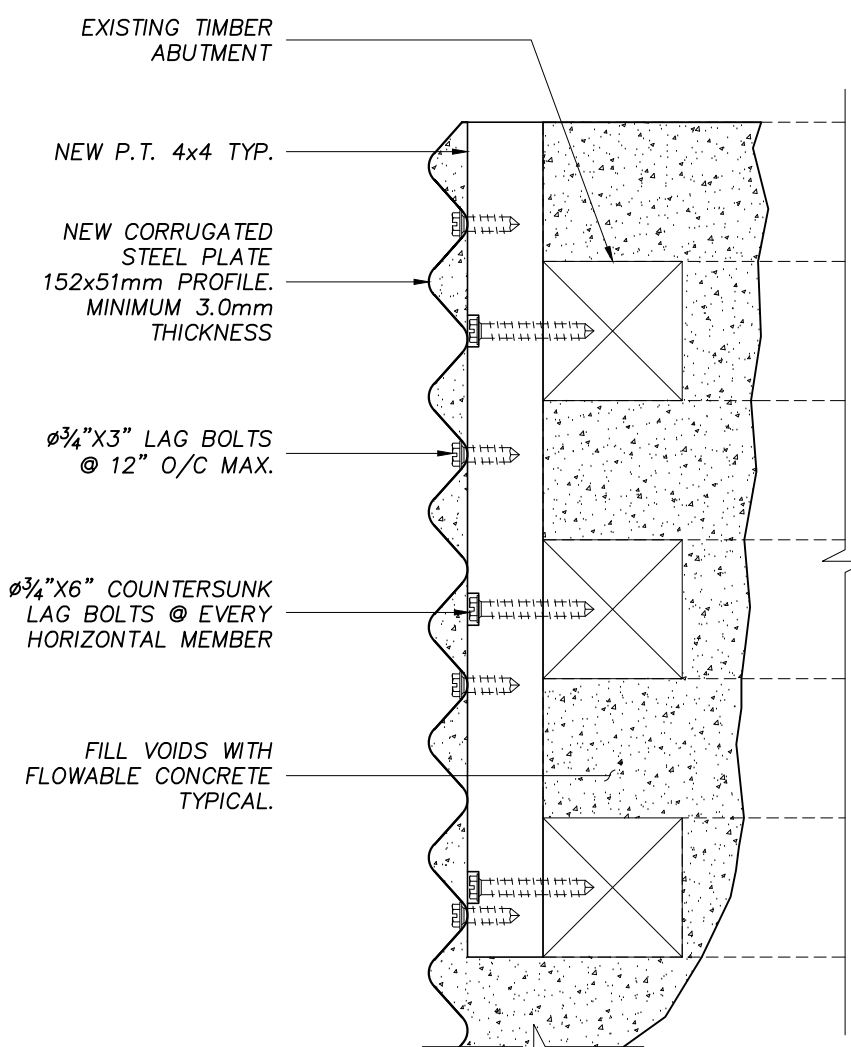
1 BRIDGE ELEVATION  
C3 SCALE: NTS



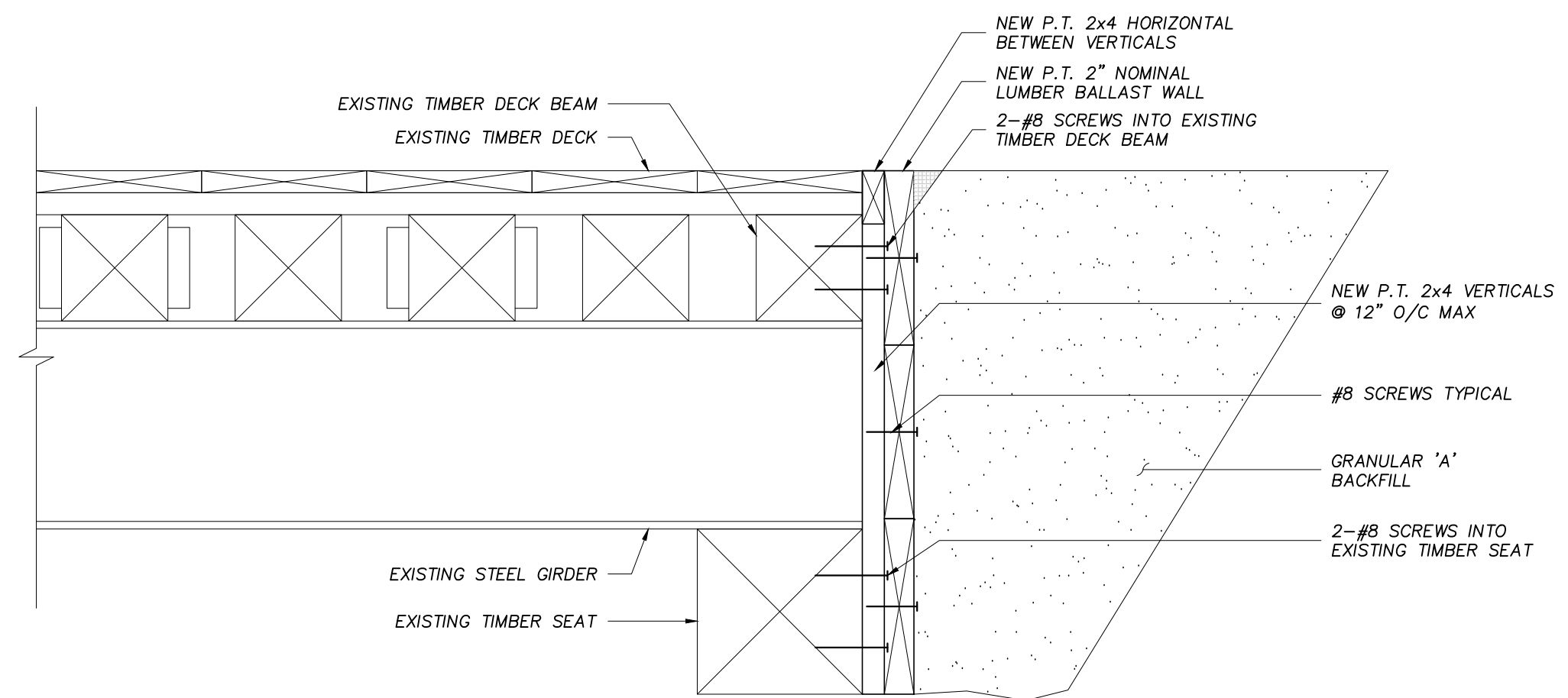
2 ABUTMENT PLAN  
C3 SCALE: NTS  
NOTE: DETAIL APPLIES TO BOTH SIDES OF BRIDGE



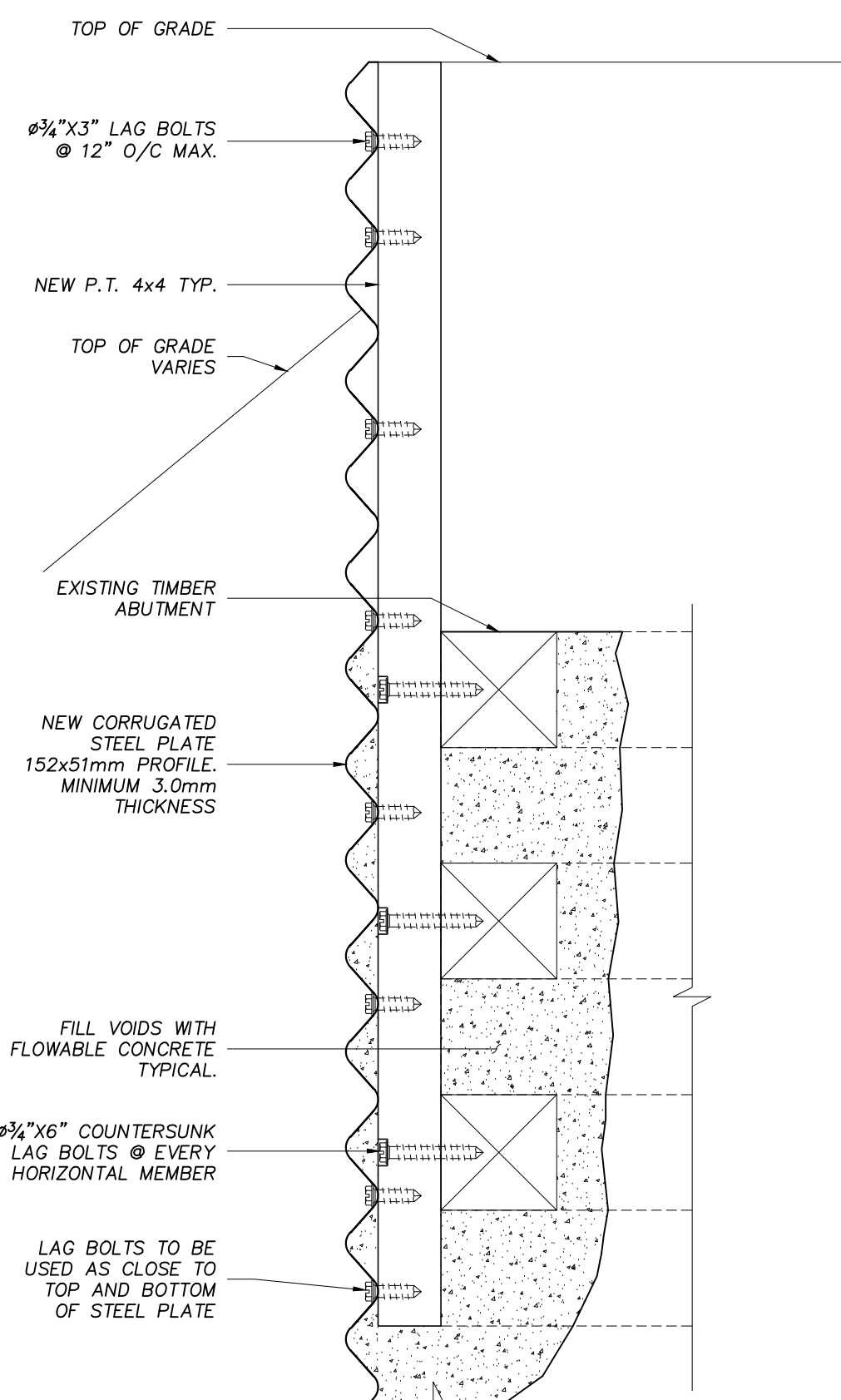
3 WING WALL ELEVATION  
C3 SCALE: NTS  
NOTE: DETAIL APPLIES TO BOTH SIDES OF BRIDGE



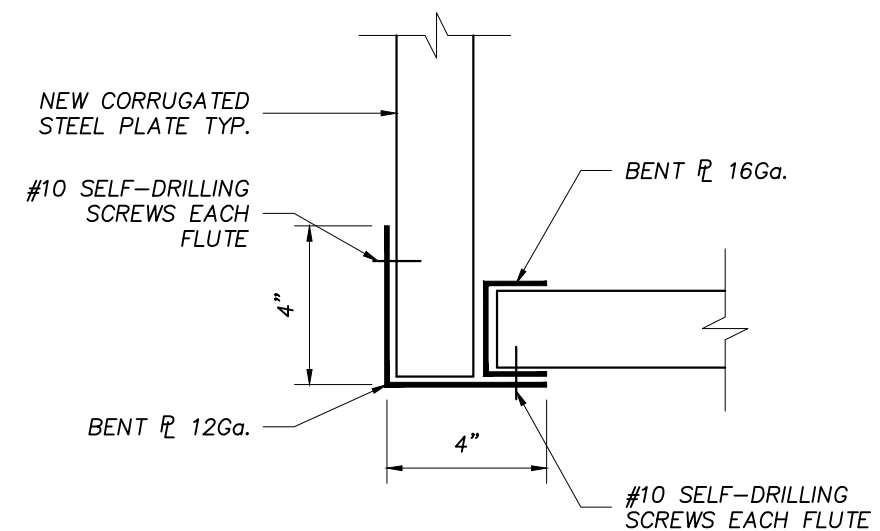
4 DETAIL  
C3 SCALE: NTS  
NOTE: DETAIL APPLIES TO BOTH SIDES OF BRIDGE



5 DETAIL  
C3 SCALE: NTS  
NOTE: DETAIL APPLIES TO BOTH SIDES OF BRIDGE



6 DETAIL  
C3 SCALE: NTS  
NOTE: DETAIL APPLIES TO BOTH SIDES OF BRIDGE



7 DETAIL  
C3 SCALE: NTS

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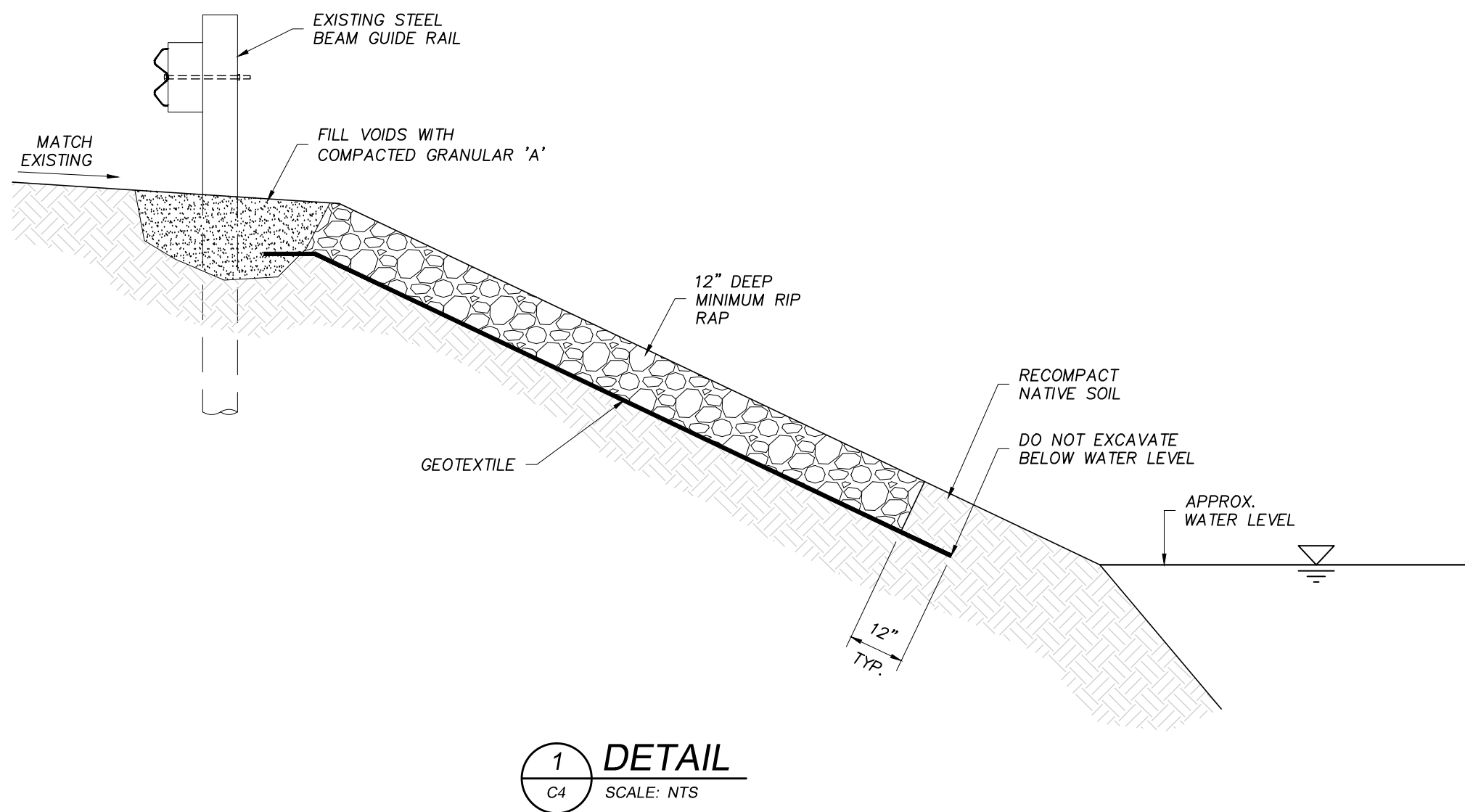
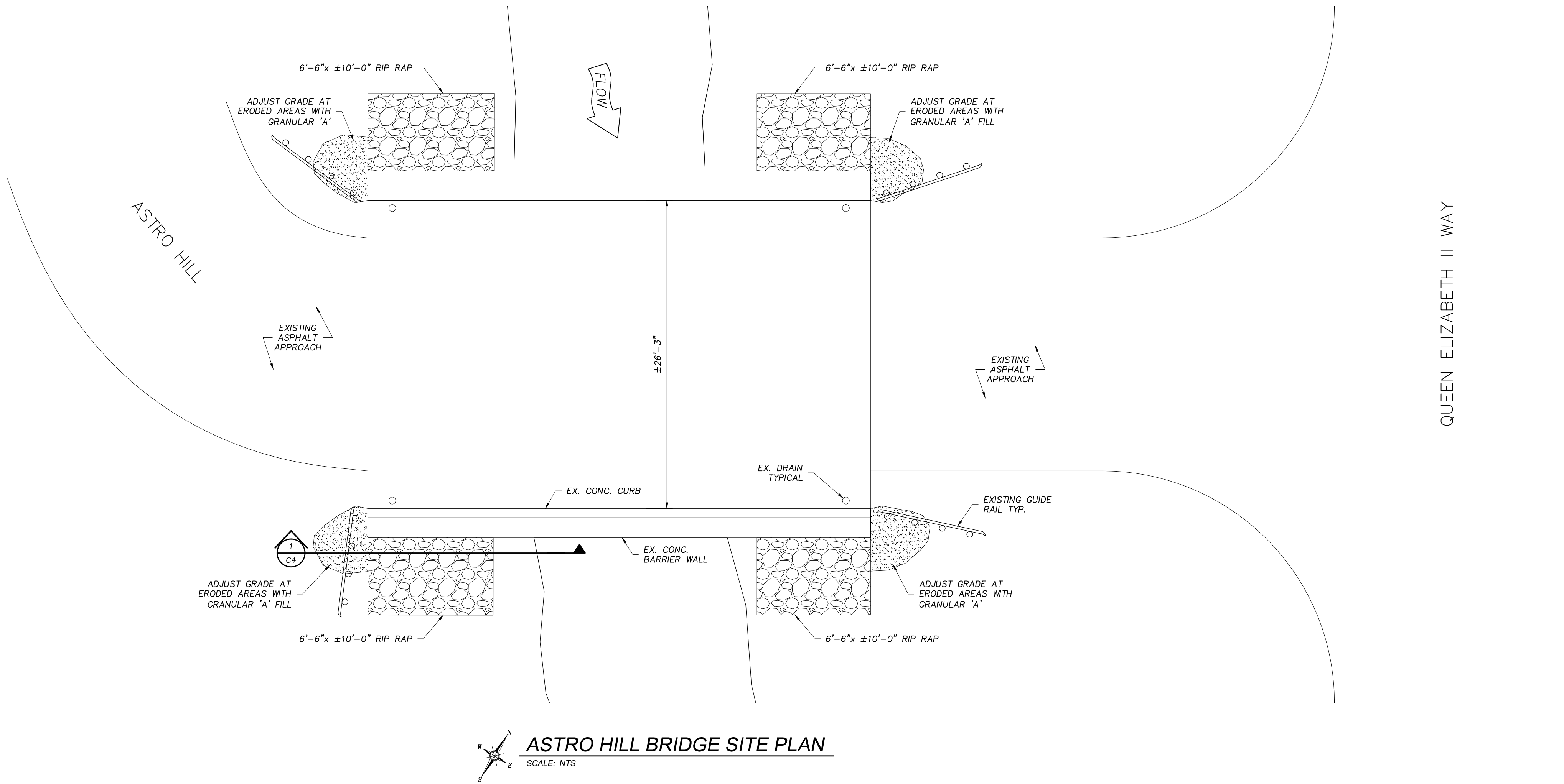
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ROAD TO NOWHERE BRIDGE  
ABUTMENT DETAILS

DESIGN: TJP  
DRAWN: JAVA  
APPVD: STP  
SCALE: NTS  
DATE: DEC/2017  
FILE No: 17-7519

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C3



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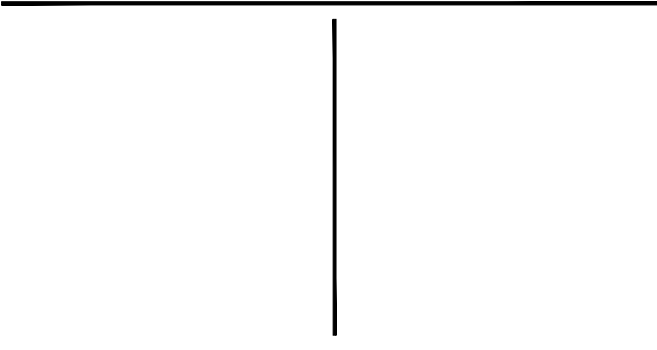
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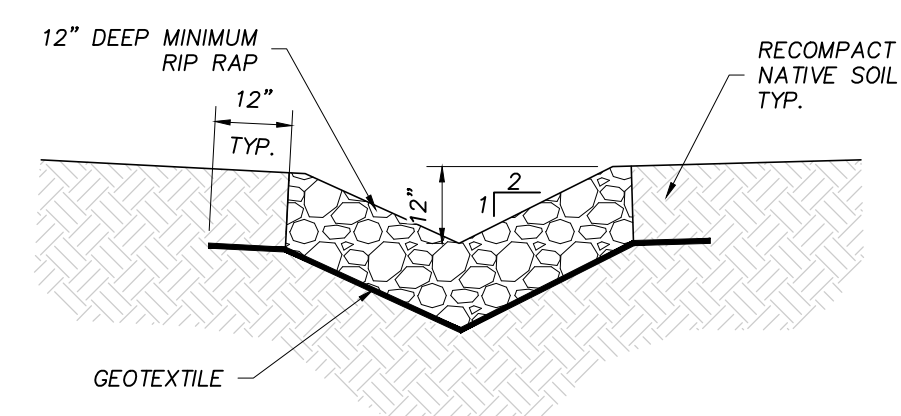
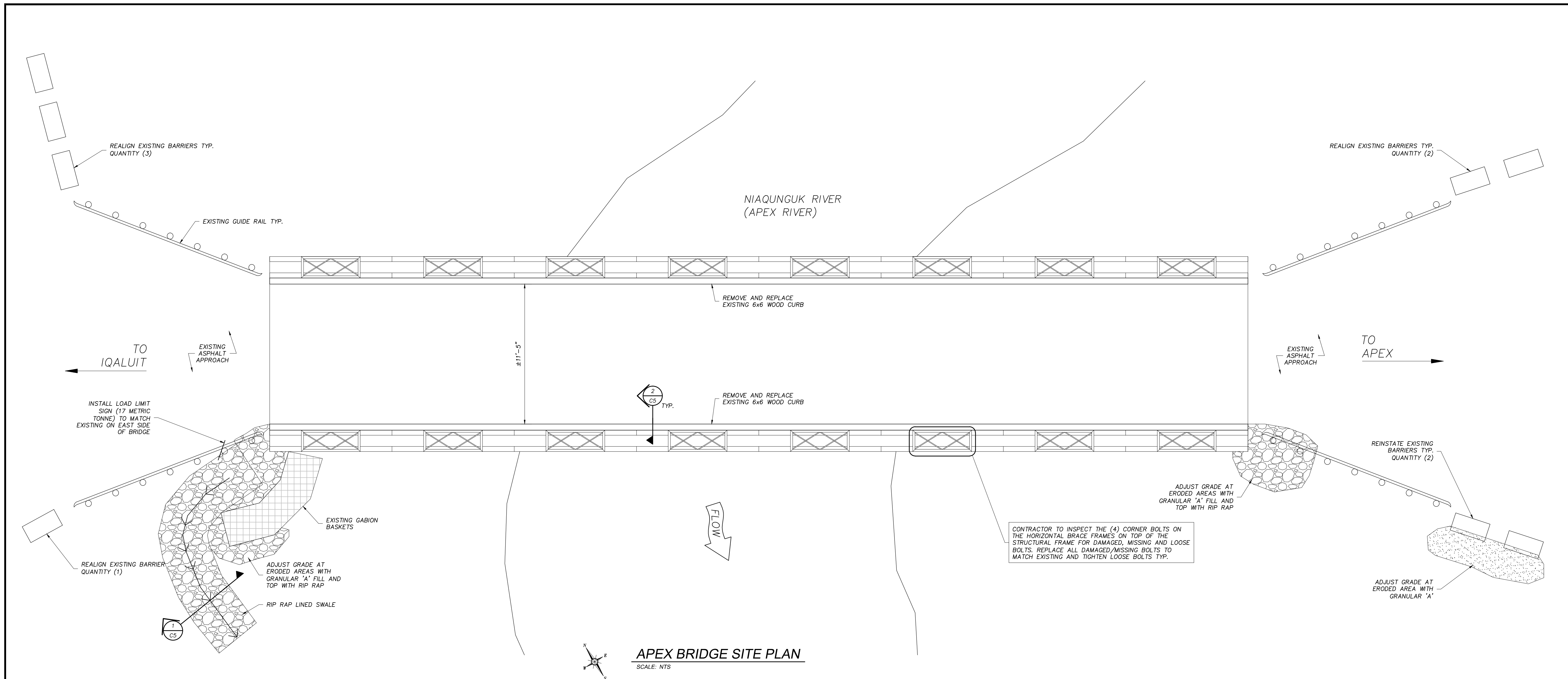
ASTRO HILL BRIDGE SITE PLAN & DETAIL

DESIGN:	TJP	SCALE:	NTS
DRAWN:	JAVA	DATE:	DEC /2017
APPV'D:	STP	FILE No:	17-7519

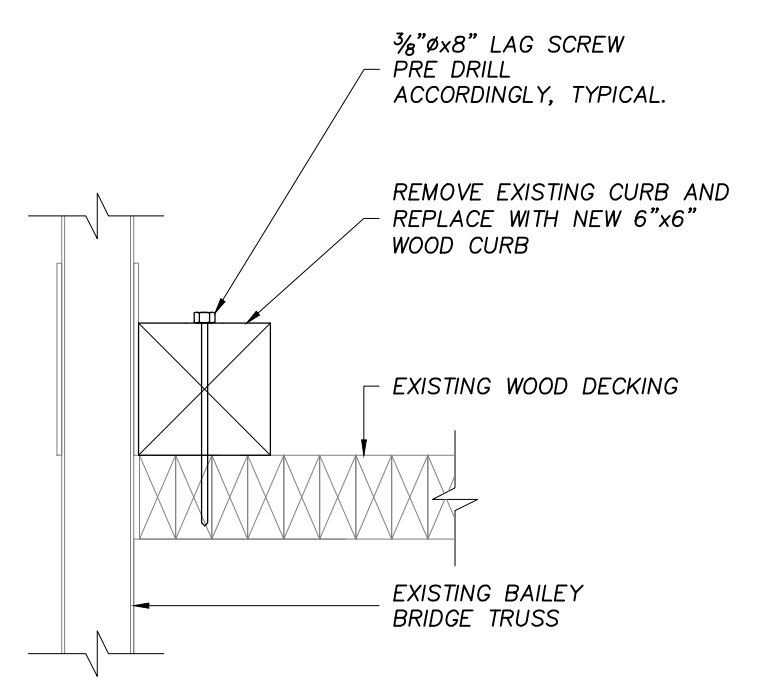
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C4





**1**  
C5  
**DETAIL**  
SCALE: NTS



**2**  
C5  
**CURB REPLACEMENT DETAIL**  
SCALE: NTS

NOTE: DETAIL APPLIES TO BOTH SIDES OF BRIDGE

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CLIENT NAME:

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PROJECT ADDRESS:

IQALUIT, NUNAVUT

PROJECT NAME:

BRIDGE REPAIRS

DRAWING TITLE:

APEX BRIDGE SITE PLANS & DETAILS

DESIGN:	TJP	SCALE:	NTS
DRAWN:	JAVA	DATE:	DEC /2017
APPVD:	STP	FILE No:	17-7519

SHEET No.

**C5**

## **APPENDIX II - PHOTOS**

Image 01





Image 02





Image 03





Image 04



Image 05





Image 06





## **SUPPLEMENTAL WATER SUPPLY STUDY**

## **INUKTITUT – BRIDGE STABILIZATION TRANSLATION**

Č<sup>a</sup> Δ ě ꞑ Ꝁ Δ σ<sup>b</sup> L<sup>c</sup> C ꞑ Δ Γ Δ<sup>b</sup>Δ<sup>c</sup> ꝁꝂꝃ C ꞑ C<sup>c</sup>σ C ꞑ ꝁꝂꝃΔΓ Δ ě<sup>b</sup>ꝼL<sup>c</sup> ꝁσσꝂꝃj  
j<sup>a</sup>Ꝃ.

[illegible]

4. የበላይ ጥያቄው ለሰነድ ማረጋገጫ ማስፈጸም የሚያስፈልጉትን ሰነዶች ለማቅረብ የሚፈልገውን ጊዜ ለማሳደግ ማስቻል ይቻላል፡፡  
 5. የሰነድ ማረጋገጫ ማስፈጸም የሚያስፈልጉትን ሰነዶች ለማቅረብ የሚፈልገውን ጊዜ ለማሳደግ ማስቻል ይቻላል፡፡  
 6. የሰነድ ማረጋገጫ ማስፈጸም የሚያስፈልጉትን ሰነዶች ለማቅረብ የሚፈልገውን ጊዜ ለማሳደግ ማስቻል ይቻላል፡፡  
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[illegible]