

March 31, 2017

Darrell Ouimet
Sustainable Development
Environmental Approvals Branch
Box 80 123 Main St.
Winnipeg, Mb R3C 4V9

RE: NOTICE OF ALTERATION: In-Water Work Request, Environment Act Licence No. 2929

Dear Darrell,

Manitoba Infrastructure - Remote Road Operations (MI-RRO) would like to request a temporary alteration of condition #20 of Environment Act Licence No. 2929.

MI-RRO and its contractors would like to proceed with in-water work on the Bradbury River Bridge until April 9, 2017, at which time environmental conditions and the work remaining can be re-evaluated for additional approval, if necessary.

The in water work to be carried out consists of the installation of five - 1219 mm caissons as a component of permanent bridge pier structure. The Caissons will be drilled using an auguring process which will insert the caissons into the underlying bedrock. Please see the attached document, *Bradbury River Bridge Construction - Proposal to Conduct In-Water Works During the Spring Restricted Activity Window*, for further details. Please note that other work outlined in the Construction Activity section of the *Bradbury River Bridge Construction- Proposal to Conduct In-Water Works During the Spring Restricted Activity Window*, has been completed prior to April 1st, 2017.

MI-RRO has been granted conditional and temporary permission from Fisheries and Oceans Canada (DFO) to proceed with the proposed work, as described in the Greenfield Construction proposal, *Bradbury River Bridge Construction - Proposal to Conduct In-Water Works During the Spring Restricted Activity Window*, submitted March 2, 2017. This approval has only been granted until the week of April 3rd through 7th of 2017, during which additional information will be obtained from Manitoba Regional Fisheries Biologists to enable DFO to make a decision regarding further approval of work beyond April 7, 2017.

Conditions of the current DFO approval are as follows:

- Ice thickness and quality is to be monitored and recorded **daily** in an attempt to estimate breakup and open water conditions.
- Water temperature is to be monitored and recorded **daily**. Temperature readings are to be taken from the center of the channel as well as open areas near the banks if safety and opportunity allows. This is done in attempt to estimate environmental triggers for a spawning run.
- Continue water quality monitoring (i.e. TSS readings) while in-water work takes place.

- During open-water conditions all in-water work is to proceed in an isolated environment. (i.e. enclosed in a silt/sediment curtain which is clear of fish)

If you have any questions, comments, or concerns please feel free to contact Chris McDermid telephone at 204-794-8625 or by e-mail at Christopher.McDermid@gov.mb.ca.

Sincerely,



Kimber Osiowy,
Environmental Services Manager
Manitoba Infrastructure

Cc:

Jaime Smith - Manitoba Infrastructure - Senior Environmental Coordinator
Chris McDermid - Manitoba Infrastructure - Environmental Coordinator

Attachments:

- Bradbury River Bridge Construction- Proposal to Conduct In-Water Works During the Spring Restricted Activity Window, submitted March 2, 2017.
- Fisheries and Oceans Canada - Letter of Advice for Bradbury River Bridge Construction.
- Fisheries and Oceans Canada - Letter of Advice for Bradbury River Temporary Bridge Construction.
- Fisheries and Oceans Canada – Species at Risk Permit for Bradbury River Bridge and Temporary Bridge Construction.
- E-mail from Tara Schweitzer - DFO Fisheries Biologist- Regarding approval to proceed with in-water work.
- E-mail from Tara Schweitzer - DFO Fisheries Biologist- to Extend LOA's to October 31, 2017.



BRADBURY RIVER BRIDGE CONSTRUCTION

Proposal to Conduct In-Water Works During the
Spring Restricted Activity Window

March 2, 2017

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Introduction

Greenfield Construction respectfully requests an extension to perform in-water work beyond April 1st 2017 at the Bradbury River Bridge site on the PR304 to Berens River All Season Road Project (Fisheries and Oceans Canada file: DA-09-0953). The extension is required to complete the temporary work bridge and caisson installation for the center pier of the Bradbury Bridge.

The request is a direct result of the following:

- The original temporary work bridge was designed based on borehole samples and drawing information which reported adequate soil or overburden on the bedrock to safely seat the pipe pile to support the work platform. This information proved inaccurate and therefore the original design was non-constructible and had to be abandoned.
- It took several weeks to find an appropriate solution so we could re-strategize, re-engineer, and prepare a mobilization plan.
- The new strategy for completing the work platform required proven expertise and specialty equipment not readily available. Construction Drilling Inc. (CDI) was selected to perform the work to install the piles and caissons as they were determined to be the only company in the country capable of executing the work (<http://condrill.ca>).
- Due to unexpected delays on a different project, CDI are not able to mobilize the specialized equipment to our site until March 15th, resulting in a ten week delay to the project.
- The bridge completion date is October 4th, 2017 which is now an unachievable date without the ability to perform the pile and caisson installation between April 1st and June 15th.

Construction Activity

Construction of the bridge pier will be conducted from a temporary work platform. The temporary work platform is an extension from the temporary bridge both of which will consist of a series of pipe pile bents with a finger pier (work platform) to allow access to the new center pier for its construction (*Appendix 1*). Each bent will consist of 3 – 610mm pipe piles augured to one meter of embedment into the solid rock riverbed using a 150 Ton Crane and a RT150 Rotator. Once the first pair of bents is completed the steel stringers and a wooden deck will be installed to allow the equipment to progress using the work bridge as its own work platform. This will allow the entire work bridge installation to be done without any equipment ever entering the water. When the temporary bridge is no longer required it will be removed using the reverse of the installation process.

Bridge pier construction will include the installation of the 5 caissons (*see Appendix 2 for details of the installation plan*). The caissons are 1219mm in diameter and 12m in length. The caissons will be equipped with cutting teeth and will be augured into the bedrock a minimum of 500mm using a RT150 rotator. The configuration of the caissons is outlined on the design drawings in *Appendix 3*. Work will commence from the temporary work platform outward.

The process will create a very small volume of material since the only material removed will be the socket width on the circumference of the pile or caisson. The total accumulated material is 0.034 m³ per

pile and 0.047m³ per caisson or a total of 0.612m³ for the temporary work bridge piles and 0.235m³ for the bridge pier caissons and a total volume of 0.847m³ generated for construction of the two components (Table 1). CDI will employ a reverse circulation drilling procedure which creates a negative pressure on the inside of the pipe pile or caisson resulting in the vast majority of the generated material outlined in Table 1 to be forced to the inside of the pipe pile or caisson, rather than into the water. The material inside each pipe pile or caisson will be pumped out and disposed of away from the river. Once in place and following the completion of steel works each caisson will be filled with concrete.

Table 1. Temporary work bridge pile and bridge pier construction dimensions and material generation during auguring.

Component	Number of Units	Diameter	Socket Width	Socket Depth	Volume Per Pile/Caisson	Total Volume
Temporary Work Bridge Pile	18	610mm	18mm	1000mm	0.034m ³	0.612m ³
Bridge Pier Caisson	5	1219mm	25mm	500mm	0.047m ³	0.235m ³

SCHEDULE

The temporary work bridge in-water work will begin March 20, 2017 and the last of the 3 pile bents will be completed May 3, 2017 with in-water drilling dispersed over a 46 day period (Appendix 4). Caisson installation will begin April 15, 2017 and be finished April 29, 2017 with each of five caissons requiring 3 days to complete. Concrete will be poured into the caissons over a 3-day period, May 16, 2017 to May 18, 2017. The temporary work platform finger pier will be removed mid-June. Greenfield will make every effort to accelerate the installations in a safe manner while minimizing disturbances and will work closely with a Qualified Aquatic Environment Specialist (QAES) to monitor the activities.

Fish and Fish Habitat

The Bradbury River is a low velocity, relatively shallow watercourse with substantial instream vegetation along the shoreline and along shallow silt/clay bars. Overall habitat at the crossing site is typical for the river in the general area and fish use is expected to include foraging and migration by species such as Northern Pike, Channel Catfish, Goldeye, Mooneye, Walleye and suckers. At approximately 250 m downstream and 300 m upstream of the all-season road crossing there are shallow vegetated inflows along the north shore suitable for Northern Pike spawning and rearing. Suitable spawning habitat for Walleye, suckers and Channel Catfish, such as coarse substrate is not found in the area of the crossing and the nearest location appears to be approximately 10 km upstream at a set of rapids. See Appendix 5 for further details.

Northern Pike spawning occurs in early spring as streams begin to flow with water temperatures below 10°C. Whereas, Walleye and suckers tend to spawn at slightly higher temperatures and Channel Catfish at considerably higher water temperatures in early summer. Spring spawning by pike and White Suckers in Eaglenest Creek, a smaller Lake Winnipeg tributary south of the Bradbury River, was found to

begin in late April with water temperature around 6°C (North/South Consultants 2016). Due to its larger size, the Bradbury River is expected to warm-up more slowly than Eaglenest Creek with spring spawning occurring in late April or early May.

Species at Risk

Mapleleaf mussel is the only species at risk known or expected to make use of the Bradbury River. Mapleleaf mussels reproduce in late spring with the onset of increasing water temperature (COSEWIC 2006). As a short-term brooder, Mapleleaf glochidia develop from approximately May through to summer at which time they are released into the water column. In 2016 a mussel relocation was completed at the Bradbury River bridge site with all mussels encountered within the right-of-way (RoW) relocated upstream of the site.

Potential Impacts to Fish and Fish Habitat and Species at Risk

The primary potential effects of the bridge pier construction during the spring restricted timing window are largely the same as the potential effects throughout the remainder of the year. However, during the spawning period fish, eggs and larvae are at increased vulnerability to these potential impacts.

Sedimentation of Streams

Increased suspended sediments, whether natural or man-made, can negatively impact fish and mussels by impairing water clarity and respiration. Short- and long-term increases in turbidity impair feeding success by visual feeders. Suspended sediment can also be harmful to fish by clogging gills, decreasing oxygen exchange and reducing growth rates and by smothering eggs inhibiting development. Although all Mapleleaf mussels were relocated from within the RoW, sediment transport may affect mussels downstream of the RoW.

MITIGATION MEASURES

Standard mitigation measures proposed for the project and implemented to date will continue to be executed. Specific mitigation to offset potential impacts to eggs and larvae will include the following.

In-water construction activities that will take place during the spring restricted timing window will be limited to installation of the temporary bridge and the bridge pier caissons. As detailed in the construction activity section above, the temporary bridge and work platform pipe pile bents will be augured into the river bottom. At sections of the temporary bridge that have been completed to date, water quality monitoring has shown that total suspended solids (TSS) did not increase beyond guidelines both inside and outside of the sediment curtain.

The temporary bridge piles and bridge pier caissons will be drilled into the river bed. Through the use of a reverse circulation drilling system little if any material will enter the river. As this will occur during spring freshet and over an extended period of 46 days, the small volume of material will dissipate rapidly and river TSS is expected to remain within the natural range of the river.

Material captured within the piles and caissons during the drilling process will be pumped out and disposed of away from the river. Material will be pumped to the flat area off the foreslope of the road where a settling pond will be excavated and fabric placed to retain the water and sediment. This method will prevent any sediment from entering the river.

The pile or pier site will not be isolated using a sediment curtain or other methods. Construction will be initiated during ice cover and extend through spring break-up and spring freshet. During this period deployment and maintenance of a sediment curtain is not feasible.

Although persistent elevated TSS levels are not expected to occur during construction, a contingency plan employing a sediment curtain is in place. In the unlikely event that TSS continually exceeds guidelines, once logistically feasible (i.e., the river is ice free), a sediment curtain will be deployed to isolate pipe pile bent auguring sites or the caisson drilling area. TSS/turbidity monitoring will continue as outlined below and include readings inside and outside of the curtain.

Water Quality Monitoring

To ensure that construction does not result in elevated total suspended solid (TSS) levels in the river, TSS/turbidity monitoring will be implemented similar to what has been conducted during construction to date. Monitoring will be conducted by a qualified aquatic environment specialist (QAES) and monitoring will focus on the area downstream of the pipe pile bent or caisson site during installation and removal works. Where TSS levels exceed Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOGs) for the protection of aquatic life, construction will cease until TSS returns to background levels and the source of the TSS will be determined and further mitigation implemented.

Water quality monitoring will employ an upstream-downstream approach. Monitoring will be conducted from the ice surface when safe and from a boat following break-up. During unsafe ice conditions, monitoring will be restricted to a stationary floating platform located downstream in close proximity of the construction activity.

Precise locations of water quality monitoring transects will be determined based on information regarding local conditions at the time of construction activities (e.g., stream discharge, ice safety, length of the mixing zone). However, the basic approach would entail sampling of relevant water quality parameters (i.e., TSS and turbidity) at:

- a transect upstream of all construction activities (Transect 1), as close as feasible but distant enough so as to avoid any potential effects of construction;
- a transect downstream of pipe pile or caisson auguring (Transect 2), as close a practical considering safety and other considerations, such as construction activities – i.e., within the mixing zone to the extent possible; and
- a transect located at the end of the mixing zone (Transect 3) - precise locations of transects will be subject to access and safety considerations.

Should it be logistically possible and where there is an indication of substantive increases in turbidity at the end of the mixing zone, an additional sampling site may be added downstream of Transect 3 to evaluate the spatial extent of increases in turbidity.

The MWQSOGs specify an increase of 25 mg/L TSS above background for 24 hours or less, and an increase of 5 mg/L for longer periods. If feasible, water samples will be collected a sufficient period prior to construction to permit development of a TSS/turbidity relationship such that increases of 5 mg/L and 25 mg/L could be identified using turbidity readings as a surrogate measure. If this is not feasible, then during the construction period, an increase of 8 NTU above background turbidity (or 10% if the background turbidity is greater than 80 NTUs) based on the CCME criteria will be used.

Fish and Fish Habitat and Species at Risk

Sensitive reproductive periods for Mapleleaf mussels occurs outside of the timing of construction and therefore the potential for effects is largely removed. In addition, spawning habitat for commercial, recreational or Aboriginal (CRA) fish species is not found within the immediate area of the construction works and construction activity largely occurs prior to spring spawning. A fish salvage will not be required because there will be no isolation of in-water areas.

Conclusion

The construction of the temporary bridge, work platform and five caissons in the Bradbury River within the spring restricted activity window is expected to have no effect on species at risk or fish because of: the previous relocation of Mapleleaf mussels; absence of suitable fish spawning habitat at and near the site; the small amount of sediment that may be introduced to the river; and in-water works largely occurring prior to the initiation of spring spawning by Mapleleaf mussels and fish.

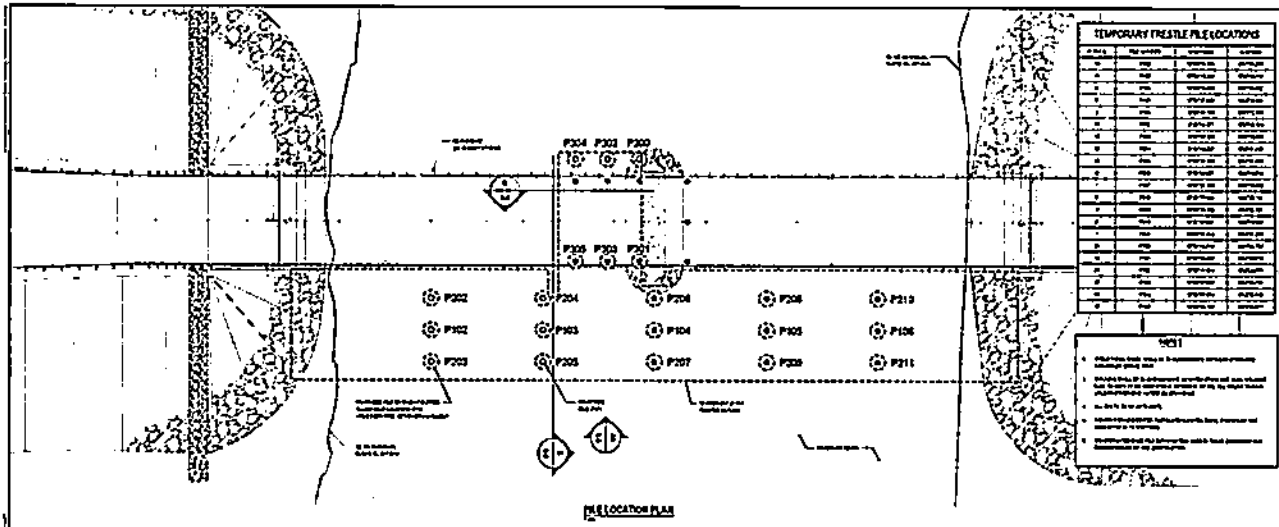
References

COMMITTEE ON THE STATUS OF ENDANGERED WILDLIFE IN CANADA (COSEWIC). 2006. COSEWIC assessment and status report on the Mapleleaf Mussel *Quadrula quadrula* (Saskatchewan-Nelson population and Great Lakes-Western St. Lawrence population) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 58 pp.

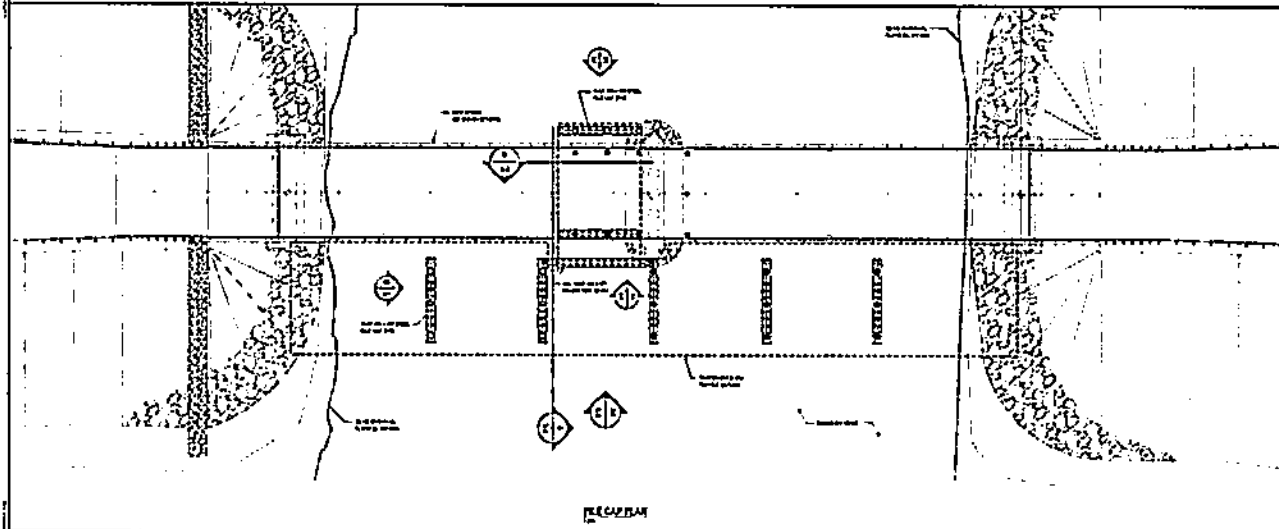
NORTH/SOUTH CONSULTANTS. 2016. East Side Road Authority All Season Road Provincial road 304 to Berens River First Nation Spring Spawning Investigations at Compensation Sites and Fish Passage Studies 2016. Prepared for East Side Road Authority by North/South Consultants Inc. 109 pp.

Appendix 1

Temporary Bridge and Work Platform Design Drawings



PILE LOCATION PLAN



PILE BENT LAYOUTS

TEMPORARY TRESTLE PILE LOCATIONS			
Station	Side	Location	Notes
1	Left	P201	
1	Right	P202	
2	Left	P203	
2	Right	P204	
3	Left	P205	
3	Right	P206	
4	Left	P207	
4	Right	P208	
5	Left	P209	
5	Right	P210	
6	Left	P211	
6	Right	P212	
7	Left	P213	
7	Right	P214	
8	Left	P215	
8	Right	P216	
9	Left	P217	
9	Right	P218	
10	Left	P219	
10	Right	P220	
11	Left	P221	
11	Right	P222	
12	Left	P223	
12	Right	P224	
13	Left	P225	
13	Right	P226	
14	Left	P227	
14	Right	P228	
15	Left	P229	
15	Right	P230	
16	Left	P231	
16	Right	P232	
17	Left	P233	
17	Right	P234	
18	Left	P235	
18	Right	P236	
19	Left	P237	
19	Right	P238	
20	Left	P239	
20	Right	P240	

NOTES

1. All pile locations are to be confirmed by field survey.
2. All pile locations are to be confirmed by field survey.
3. All pile locations are to be confirmed by field survey.
4. All pile locations are to be confirmed by field survey.
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18. All pile locations are to be confirmed by field survey.
19. All pile locations are to be confirmed by field survey.
20. All pile locations are to be confirmed by field survey.

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BRADBURY RIVER BRIDGE WORK TRESTLE

RELEASED FOR CONSTRUCTION

BRADBURY RIVER BRIDGE WORK TRESTLE

FILE AND PILE BENT LAYOUTS

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S-2 1

Appendix 2

Pile and Caisson Installation Plan



CONSTRUCTION DRILLING INC.

Title	Pier Pile Installation Plan
Revision	-
Project Name	Bradbury River Bridge
Location	Manitoba
Subcontractor	Greenfield Construction Ltd.

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1.0: Overview

PURPOSE

The purpose of this document is to provide a plan that outlines the construction methodology to be performed by Construction Drilling Inc. (CDI) during the installation of the Drilled Pier Piles for the Bradbury River Bridge Project in Manitoba. This plan defines the roles and responsibilities of CDI, Greenfield Construction Ltd., and various Subcontractors with respect to construction quality, safety, the environment, and performance.

The Drilled Shaft elements will be built with skilled craftworkers following approved drawings using proper materials and equipment. Inspections and tests will be performed as outlined in this Plan to document that the construction is proper and meets the Project requirements. Periodically, the process will be refined based on, but not limited to, management or worker-identified constructability issues, quality problems, test data, inspection results, and audits.

SCOPE

This plan applies to the installation of 5 ea. 1219mm diameter pier caissons embedded .5m minimum with a 3m rock socket into sound bedrock.

2.0: Installation Plan

PURPOSE

To outline the construction methodology proposed for the installation of the Project's Drilled Shafts. This Plan is intended to give an indication of CDI's approach to the work and methods that will be used.

SCOPE

This plan applies to the installation of 5 ea. 1219mm diameter pier caissons embedded .5m minimum with a 3m rock socket into sound bedrock.

RESPONSIBILITIES

CDI is responsible for ensuring that CDI personnel and equipment are ready when required and that the work is being performed according to this Plan and the Contract Documents.

Greenfield Construction Ltd. is responsible for providing all necessary support equipment, crew and materials, testing and providing their scope of work related to all the Drilled Shaft and Pile construction activities when required.

EQUIPMENT

CDI proposes to use the following equipment to install the Drilled Shafts:

- 1156 mm" DOWNHOLE HAMMER DRILL SYSTEM
- RT150 ROTATOR
- 1170 CFM COMPRESSORS x 4
- 54" HANGING LEADS SYSTEM
- MANIFOLD
- TOOLING & PARTS

PROCEDURE

Casing Fabrication (Outside of CDI's scope of work):

1. Casing will be provided by others.
2. Casing shoes / teeth to be welded on the bottom of each casing by others.

Drilled Shaft Installation Procedure

1. Survey in pile locations (provided by others).
2. Rotator frame to be installed over pile location by others.
3. Rotator will be set up over pile location.
4. Casing will be stood up by crane and placed into pile locations through rotator.
5. The leads and down hole hammer (DTH) will be stood and set into the casing.



Figure 1 - Example of casing teeth.

6. The downhole hammer (DHH) will be turned on and the reverse circulation cycle will begin as the rotator advances casing into bedrock. The DHH will remove overburden spoils through its circulation cycle. The casing and rock socket will be advanced into bedrock a minimum depth as per contract requirements.
7. Steps 2-6 will be repeated for each pile in the pier until all piles have been installed.

Monitoring and Inspection:

- During installation of the steel casings they will be monitored vertically with a hand level, horizontally by survey/template, and elevation of depth with a weighted tape measure.
- The shaft bearing surface, shaft cleanliness, and removal of overburden and tailings will be confirmed by sounding and shall be reconfirmed immediately prior to placing concrete.

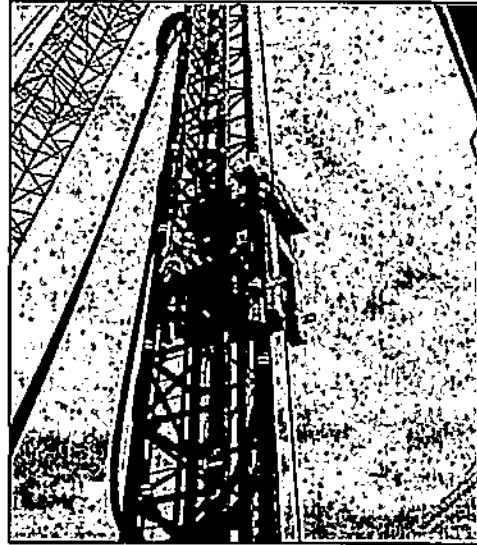


Figure 2 – Hanging Leads system.

4.0: Structural Concrete

PURPOSE

To assist Greenfield Construction Ltd. establish required construction procedures for performing, testing, and documenting Structural Concrete placement. CDI is not responsible for failed CSL test results or remediation of concreted shafts.

SCOPE

This procedure covers structural concrete placement or cast-in-place Portland cement concrete placed in structures per approved plans and the project documents.

RESPONSIBILITIES

Greenfield Construction Ltd. is responsible for the supply, placing, and testing of concrete.

CDI will assist in the placement of concrete where possible and recommends the following procedure.

PROCEDURE

1. Where tremie concrete is to be used, sufficient additional cement shall be added to the mix to compensate for dilution due to the depositing of concrete in the water.
2. Tremie concrete shall be deposited in a manner accepted by the Contract Administrator. Tremie concrete shall not be placed without the Contract Administrator's approval.
3. To prevent segregation, concrete deposited underwater shall be carefully deposited in a compact mass in its final position by means of a tremie pipe (see Figure 4) and shall not be disturbed after being deposited.
4. Continuous soundings shall be taken during the concrete pour and all irregularities in the concrete profile shall be noted. The tremie pipe shall be supported so as to permit:
 - a. Free movement of the discharge end over the entire top surface of the work.
 - b. Rapid lowering when necessary to retard or stop the flow of concrete.
5. The discharge end shall be closed at the start of the Work in order to prevent water from entering the tube and it shall be sealed at all times when not within the deposited concrete.
6. The tremie tube shall be kept full up to the bottom of the hopper. When a batch is dumped into the hopper, the flow of concrete shall be induced by slightly raising the discharge end, always keeping it within the deposited concrete.
7. Heating and hoarding to be done by others if required.
8. Concrete testing to be provided prior to placement.

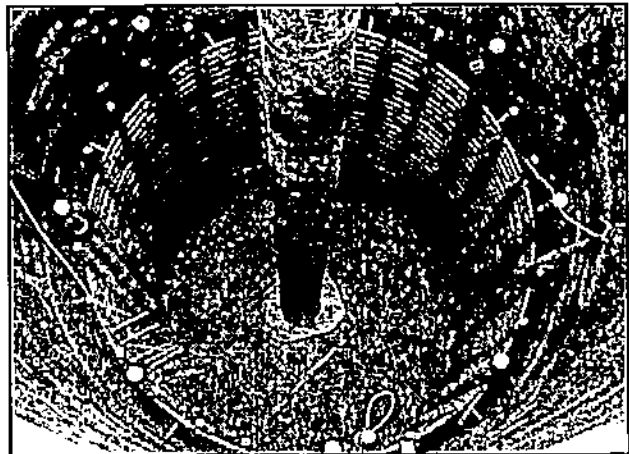


Figure 3 - Use of a tremie pipe in pouring a reinforced CIP pile.

9. Concrete will be poured to top of casing. Survey to be provided by Greenfield Construction Ltd.
10. Trash pumps will be placed in the pile 1m down, water will be displaced during the concrete pour over the pile. The displaced water will be monitored with test strips until it reaches a level deemed necessary to pump in to water tight bins for treatment and disposal.
11. Once concrete reaches within 1m of the top of pile cut off the tremie pour will be halted. The tremie pipe will be removed from the pile. Excess water and latent concrete will be pumped from the top of the pile using the trash pump, concrete will then be topped up

4.0: Reverse Circulation Drilling

OVERVIEW

Reverse Circulation, or RC Drilling is a clean and environmentally friendly method of deep foundation installation. The method employs dual wall drill rods, comprised of an outer drill rod with an inner tube located inside the drill rod – see Figure 4. As more pieces of drill steel are added together the inner tubes will overlap and seal with O rings as the drill rods are screwed together. It is these inner tubes that provide a continuous path for the drill tailings to be transported from the bit face to the surface, and eventually into a watertight containment bin.

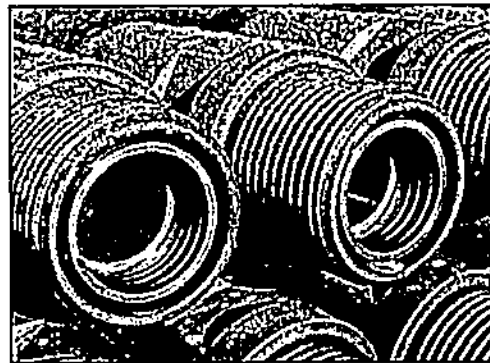


Figure 4 – example of RC Drill Steel showing the inner tube.

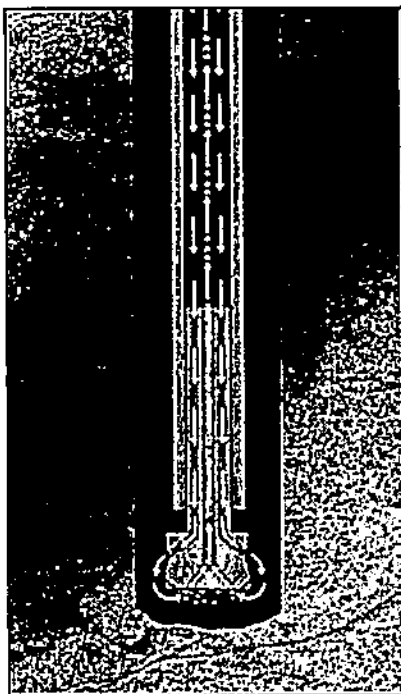


Figure 5 - Fluid flow of RC drill system.

High pressure air is used as a circulating medium which enters through the annulus between the inner tube and the outer rod. The air continues through the drill steel and powers the drill tool. As the air exhausts, it carries the cuttings (material inside the casing) with it back up through the inner tube – see Figure 5. The air is guided into a cyclone which slows the cutting samples, separates it from the air and collects it while the remainder of the waste fluids are captured in an isolated, watertight containment bin.

This transfer of material continues as the drilling process persists, with material moving from the surface of the bit directly through the inside of the drill steel, through the discharge line, and into the watertight containment bin. The material is stored in this bin until it can be scooped out and disposed of off-site.

5.0: Environmental

PURPOSE

To establish required environmental control procedures required for the drilling activities.

SCOPE

This procedure covers the handling of the drilling waste water, shaft soil tailings, and CDI's equipment that will be working in sensitive areas.

RESPONSIBILITIES

CDI is responsible for ensuring that all waste water and soil tailing produced by the installation of the drilled shafts is directed to be contained; material to be stored, treated, or disposed of by others.

Greenfield Construction Ltd. is responsible for any storage, testing & disposal of all drill tailings, and disposal of waste water and excess concrete.

All work will be conducted within the approved environmental work procedure.


PROCEDURE




1. All work performed by the contract will follow the policies and procedures in the Greenfield Construction Ltd. Environmental Management Plan.
2. will be temporarily stored in areas on the ground until it can be properly disposed of. The material will be disposed of by Greenfield Construction Ltd.
3. All equipment working in sensitive areas shall conform to applicable regulations in regards to operating, servicing, and fueling.

6.0: Sample Forms

Figures and Forms

- Drill Log
- Concrete Pre-pour checklist



DRILL LOG

DATE:	PROJECT LOCATION:	START DRILLING:	FINISH DRILLING:
LEARNING LENGTH:	CONCRETE CORE NO.:		

Top of casing II		Core No.	Description of soil conditions
Zone II			
Top of S4 II			
Top of Overburden II			
Top of Park II			
Top of Overburden Park II			
Bottom of casing II			

Prepared by: _____


CIX Verification: _____ Date: _____

C.A. Verification: _____ Date: _____

Duncan Office: 7, 2958 Boyd Street, Duncan, BC Canada V9L 6W4 | Tel: 250.746.4408

Nisku Office: 1711 9th Street, Nisku, AB T9E 0R3 | Tel: 780.955.9445

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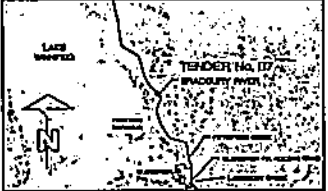
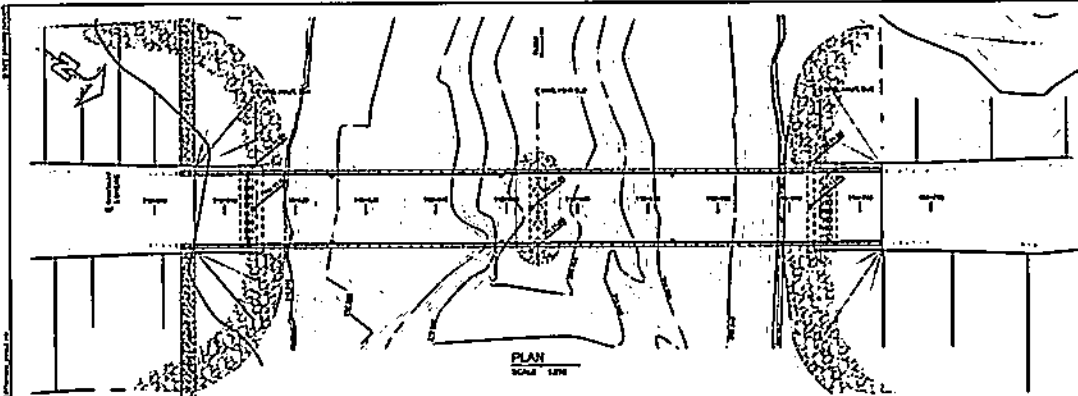


**Concrete Placement
Checklist**

CONCRETE PLACEMENT INSPECTION CHECKLIST		File No.	Page 8 of 8
<p>Project Name: _____</p> <p>Location: _____</p> <p>Contract No.: _____</p>			
Inspector Name	Exam Date	Exam Time	Working Hours
Weather and Site	Inspected Length	Inspected Location	Inspector's Signature
Estimated volume (Cubic metres per day)	Concrete	Water	
<p>Approved By: _____</p> <p>Date: _____</p>			
<p>(T) Initials _____ Control has had the application and for the project.</p> <p>(T) Initials _____ Permission has been granted from the Owner/Engineer to proceed with the concrete pour.</p> <p>(T) Initials _____ Concrete pump ordered.</p> <p>(T) Initials _____ Adequate labor, material and equipment ready.</p> <p>(T) Initials _____ Formwork are adequately secured.</p> <p>(T) Initials _____ Concrete mixing stopped.</p> <p>(T) Initials _____ Water inspection checked against.</p> <p>(T) Initials _____ Ready for tests, pump.</p> <p>(T) Initials _____ Proper brack to support in the surface.</p> <p>(T) Initials _____ The surface is level in accordance with project requirements.</p> <p>(T) Initials _____ Temporary concrete available (gravel, water, etc.).</p> <p>(T) Initials _____ Cold concrete volume has been estimated.</p> <p>(T) Initials _____ Concrete delivery truck has been scheduled.</p>			
<p>(T) Initials _____ All observed work has been completed in accordance with the Project Specifications, Special provisions, and approved plans, noted as noted below.</p>			
<p>Remarks:</p> <p>_____</p> <p>_____</p> <p>_____</p>			
CDI	_____	Date	_____
CA	_____	Date	_____

Appendix 3

Bradbury Bridge Detail Design Drawings



GEOTECHNICAL NOTES

1. All geotechnical information furnished by the contractor shall be checked and approved by the Engineer. The Contractor shall be responsible for the accuracy of the information furnished. The Engineer shall not be responsible for the accuracy of the information furnished by the Contractor.

2. It is the Contractor's responsibility to provide adequate drainage for the bridge deck and approach roads. The Contractor shall provide adequate drainage for the bridge deck and approach roads.

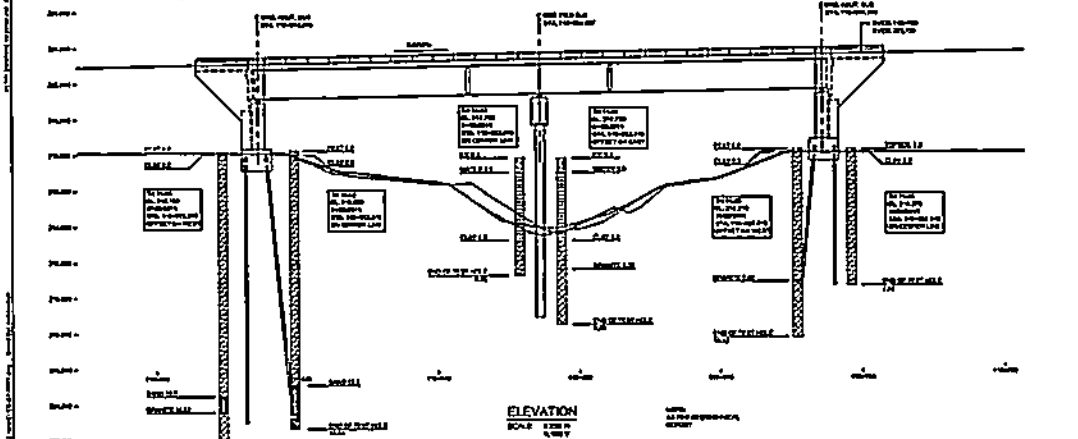
3. The Contractor shall provide adequate drainage for the bridge deck and approach roads. The Contractor shall provide adequate drainage for the bridge deck and approach roads.

NOTES

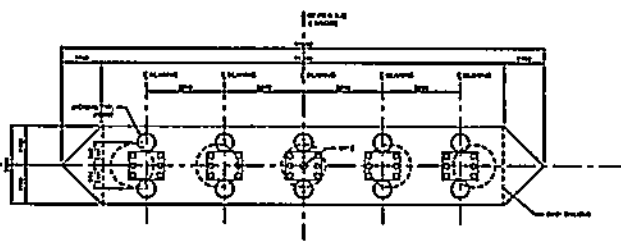
1. All work shall be done in accordance with the specifications and drawings. The Contractor shall be responsible for the accuracy of the information furnished.

2. The Contractor shall provide adequate drainage for the bridge deck and approach roads. The Contractor shall provide adequate drainage for the bridge deck and approach roads.

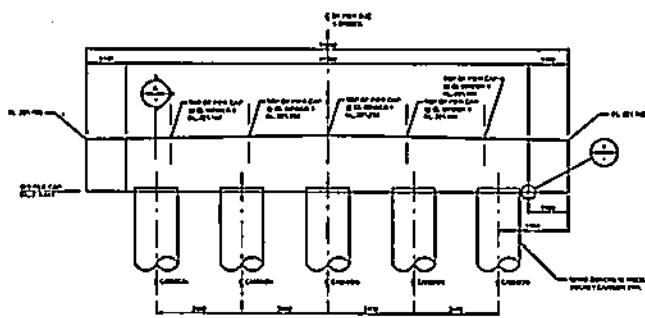
3. The Contractor shall provide adequate drainage for the bridge deck and approach roads. The Contractor shall provide adequate drainage for the bridge deck and approach roads.



	AECOM CONSULTING ENGINEERS 1000 SHEPPARD AVENUE EAST SUITE 1000 SCARBOROUGH, ONTARIO M1B 2Y4 CANADA TEL: (416) 291-4000 FAX: (416) 291-4001 WWW.AECOM.COM		TENDER NO. 17 CONSTRUCTION OF BRADDOCK RIVER BRIDGE SITUATION PLAN	East Side Road Authority PROJECT NO. 2014-01 ISSUED FOR CONSTRUCTION
	DATE: 2014-01-15 DRAWN BY: [Name] CHECKED BY: [Name] APPROVED BY: [Name]	SHEET NO. 07 OF 10	SCALE: 1:1000	PROJECT NO. 2014-01 SHEET NO. 07 OF 10



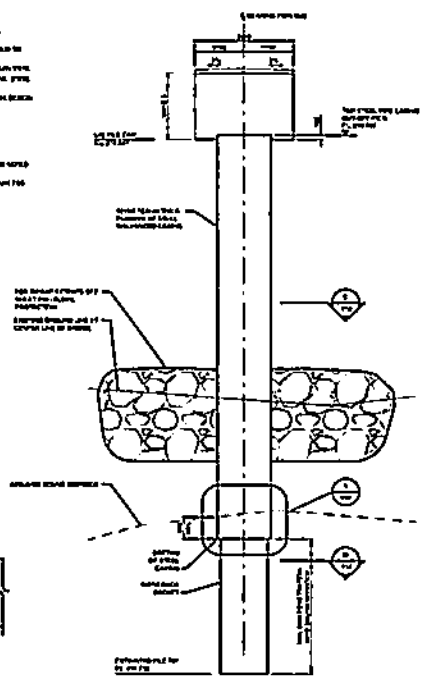
PIER PLAN
SCALE 1/8" = 1'-0"



PIER ELEVATION
SCALE 1/8" = 1'-0"

- NOTES:**
1. REFER TO THE SPECIFICATIONS FOR ALL MATERIALS AND FINISHES.
 2. REFER TO THE GENERAL NOTES AND THE SPECIFICATIONS FOR ALL MATERIALS AND FINISHES.
 3. LAYOUT THE REINFORCEMENT FOR ALL PILES AND PILE CAPS.
 4. PILES SHALL BE CAST IN PLACE CONCRETE. PILES SHALL BE CAST IN PLACE CONCRETE.
 5. USE 4" DIA. PILES UNLESS OTHERWISE SPECIFIED. SUBJECT TO DESIGNER'S APPROVAL.
 6. USE 4" DIA. PILES UNLESS OTHERWISE SPECIFIED. SUBJECT TO DESIGNER'S APPROVAL.
 7. REFER TO THE SPECIFICATIONS FOR ALL MATERIALS AND FINISHES.
 8. REFER TO THE SPECIFICATIONS FOR ALL MATERIALS AND FINISHES.
 9. REFER TO THE SPECIFICATIONS FOR ALL MATERIALS AND FINISHES.
 10. REFER TO THE SPECIFICATIONS FOR ALL MATERIALS AND FINISHES.

DETAIL
SCALE 1/4" = 1'-0"



SECTION
SCALE 1/8" = 1'-0"

UT/ENC
UNIVERSITY TECHNOLOGICAL CENTER
1000 UNIVERSITY AVENUE
ANN ARBOR, MI 48106-1500
TEL: 734/763-1000
FAX: 734/763-1001

NO. 1	DATE	DESCRIPTION

AECOM
1111 UNIVERSITY AVENUE
ANN ARBOR, MI 48106-1500
TEL: 734/763-1000
FAX: 734/763-1001

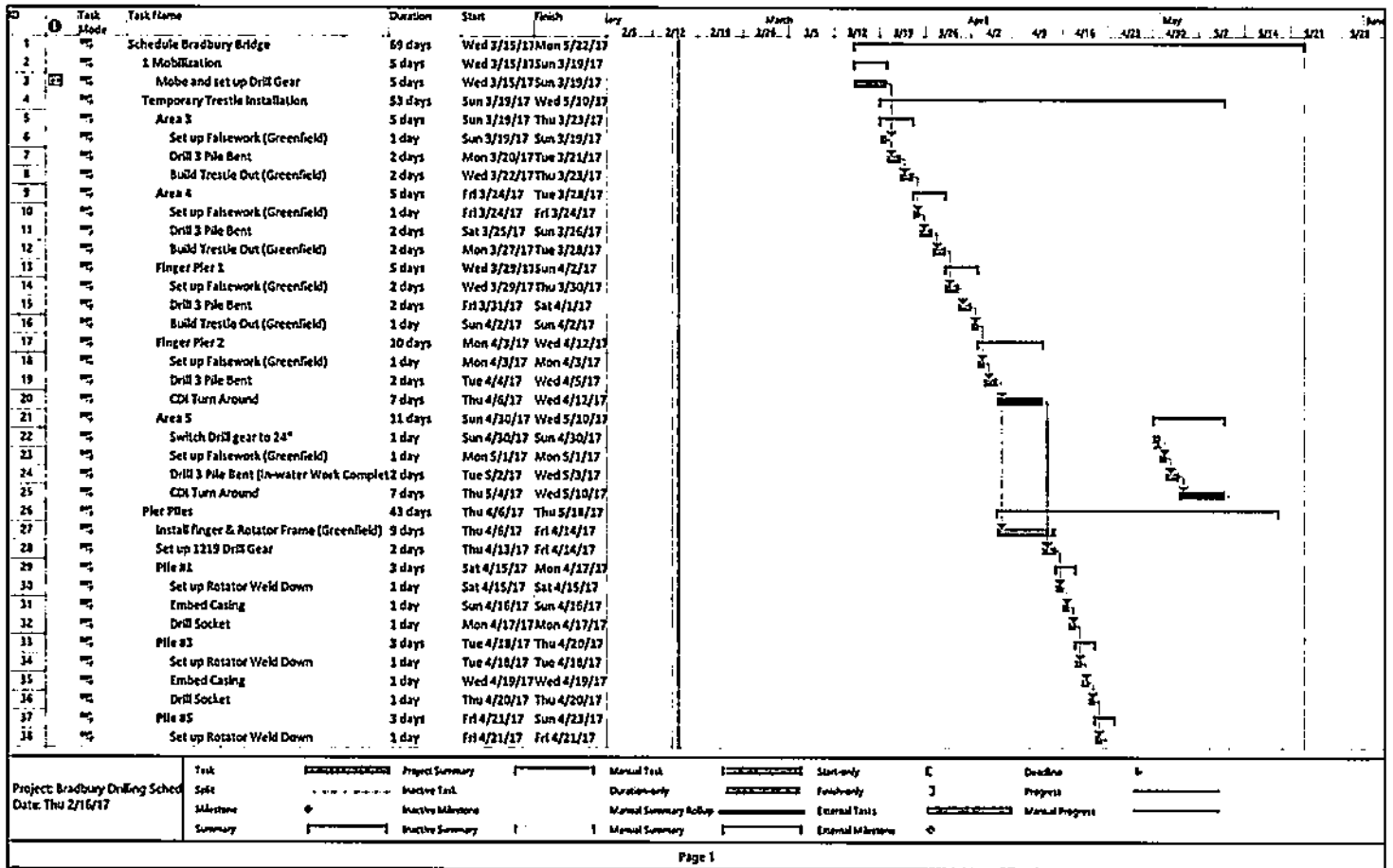
ENGINEER
[Signature]
[Stamp]

CONTRACTOR
[Signature]
[Stamp]

East Side Road Authority
1111 UNIVERSITY AVENUE
ANN ARBOR, MI 48106-1500
TEL: 734/763-1000
FAX: 734/763-1001

Appendix 4

Temporary Work Bridge and Caisson Construction Schedule



ID	Task Mode	Task Name	Duration	Start	Finish	Month	April	May	June
39		Embed Casing	1 day	Sat 4/22/17	Sat 4/22/17				
40		Drill Socket	1 day	Sun 4/23/17	Sun 4/23/17				
41		Pile #2	3 days	Mon 4/24/17	Wed 4/26/17				
42		Set up Rotator Weld Down	1 day	Mon 4/24/17	Mon 4/24/17				
43		Embed Casing	1 day	Tue 4/25/17	Tue 4/25/17				
44		Drill Socket	1 day	Wed 4/26/17	Wed 4/26/17				
45		Pile #4	3 days	Thu 4/27/17	Sat 4/29/17				
46		Set up Rotator Weld Down	1 day	Thu 4/27/17	Thu 4/27/17				
47		Embed Casing	1 day	Fri 4/28/17	Fri 4/28/17				
48		Drill Socket	1 day	Sat 4/29/17	Sat 4/29/17				
49		Clean Inspect Pour	8 days	Thu 5/11/17	Thu 5/18/17				
50		Clean Piles	2 days	Thu 5/11/17	Fri 5/12/17				
51		Inspect Piles	1 day	Sat 5/13/17	Sat 5/13/17				
52		Set Cages (Greenfield)	2 days	Sun 5/14/17	Mon 5/15/17				
53		Pour Piles (Greenfield)	3 days	Tue 5/16/17	Thu 5/18/17				
54		Demobilize	4 days	Fri 5/19/17	Mon 5/22/17				
55		Break Down Drill Gear Load Out	4 days	Fri 5/19/17	Mon 5/22/17				

Project: Bradbury Drilling Sched
Date: Thu 2/16/17

Task	Project Summary	Manual Task	Start-only	End	Deadline
Split	Inactive Task	Deferred-only	Task-only]	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Task	Manual Progress	
Summary	Inactive Summary	Manual Summary	External Milestone	⊕	

Page 2

Appendix 5

Bradbury River Fish Habitat Assessment

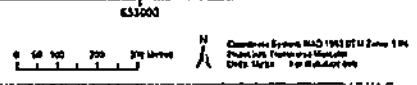
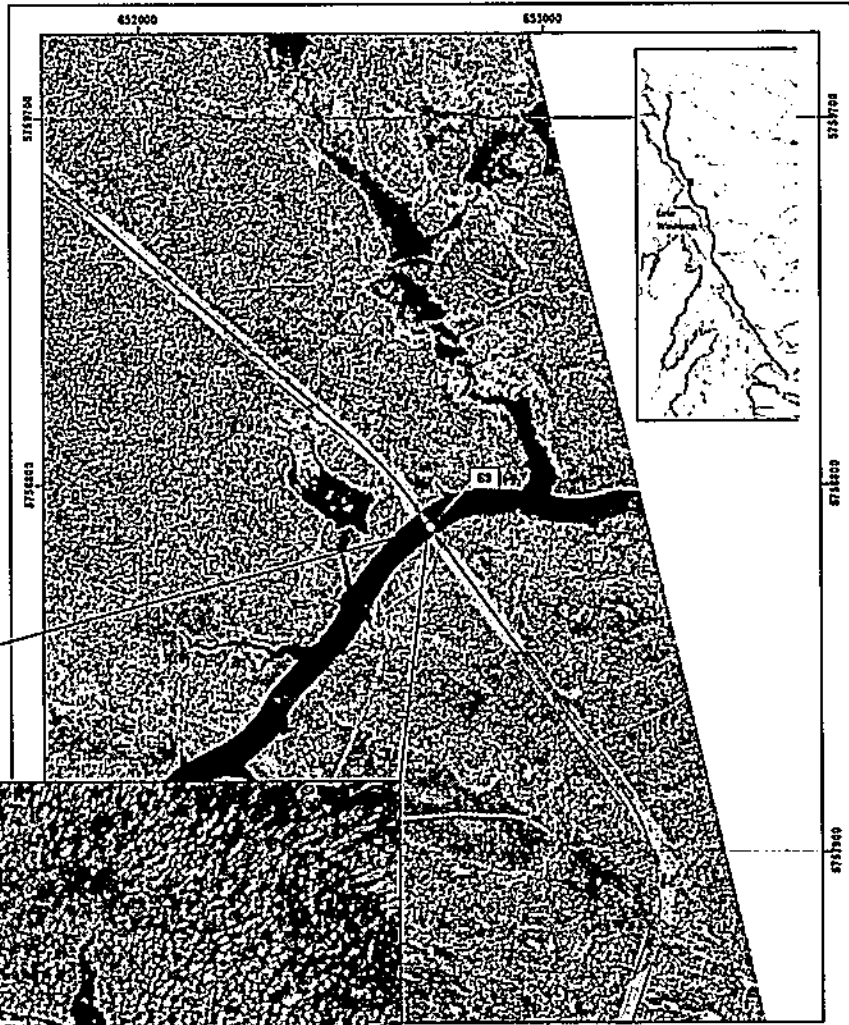
Site 69 Bradbury River

Location

Datum: NAD 83
UTM: 14U 652723 5758714

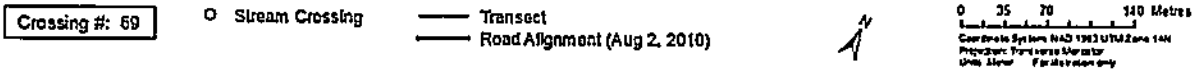
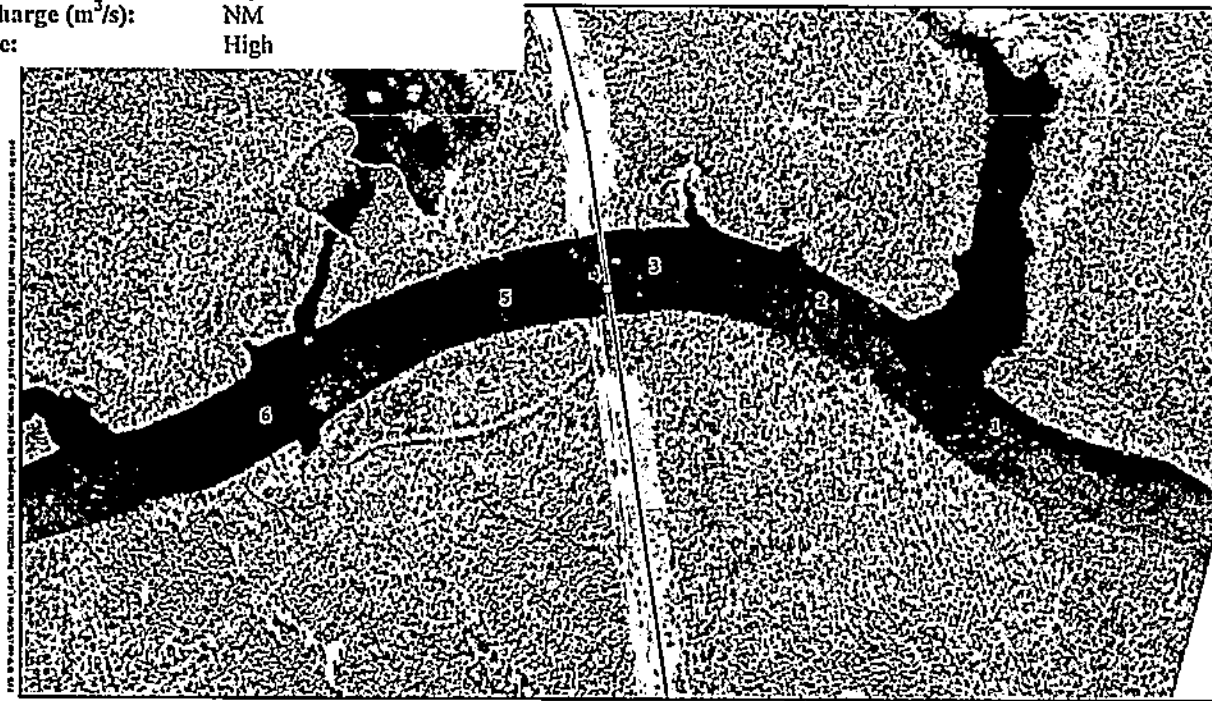
General Morphology

Pattern: Straight
Channel Profile: Irregular
Confinement: Unconfined
Flow Regime: Perennial



Site Conditions

Survey Date: September 22 2010 14:45
 Discharge (m³/s): NM
 Stage: High



+ Physical Channel Data

Transect	1	2	3	4	5	6
Distance from Crossing (m)	300 US	130 US	10 US	15 DS	100 DS	300 DS
Channel and Flow						
Channel Width (m)	64	65	69	69	65	66
Wetted Width (m)	64	65	69	69	65	66
Depth at 25% (m)	1.7	1.7	1.8	1.7	1.6	1.8
Depth at 50% (m)	3.0	4.1	4.4	3.8	4.9	4.9
Depth at 75% (m)	1.6	1.6	1.2	1.4	1.4	1.3
Maximum Depth (m)	5.0	4.8	4.4	4.4	5.0	5.0
Gradient (%)	-	-	-	-	-	-
Banks						
Left Bank Height (m)	0.2	-	-	-	0.2	-
Right Bank Height (m)	0.4	0.5	-	-	0.4	-
Left Bank Shape	Vertical	Sloping	-	-	Sloping	-
Right Bank Shape	Vertical	Vertical	-	-	Sloping	-
Left Bank Stability	Low	Moderate	Moderate	Moderate	Moderate	Moderate
Right Bank Stability	Low	Low	Moderate	Moderate	Moderate	Moderate
Substrate Type and Distribution (%)						
Fines	100	100	100	100	100	100
Small Gravel	-	-	-	-	-	-
Large Gravel	-	-	-	-	-	-
Cobble	-	-	-	-	-	-
Boulder	-	-	-	-	-	-



Site Conditions Continued

+ Riparian Area/Floodplain

Transect	1	2	3	4	5	6
Floodplain Distance (m)						
Left Bank	-	-	-	-	-	-
Right Bank	2	-	-	-	-	80
Riparian Distance (m)						
Left Bank	1	10	3	5	5	3
Right Bank	-	-	3	4	2	10
Riparian Vegetation Type (%)						
None	-	-	-	-	-	-
Grasses/sedges	-	-	50	50	33	50
Shrubs	50	-	50	50	33	50
Conifers	-	-	-	-	-	-
Deciduous	-	-	-	-	-	-
Mixed Forest	50	100	-	-	33	-
Canopy Cover (%)						
	<10	<5	<10	<5	<5	-

+ Habitat Type

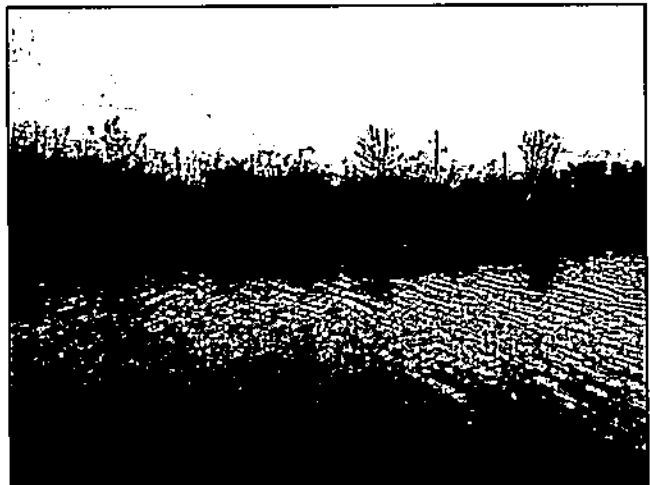
Transect	1	2	3	4	5	6
Flat	100	100	100	100	100	100
Pool	-	-	-	-	-	-
Rapid	-	-	-	-	-	-
Riffle	-	-	-	-	-	-
Run	-	-	-	-	-	-

+ Water Quality Data

Transect:	
Temperature (°C):	9.70
pH:	-
Turbidity (NTU):	18.5
Specific Conductance (µS/cm):	36
DO (mg/L):	8.31



Downstream view of Bradbury River at proposed crossing at Site 69.



Left bank view at Site 69 from transect 1.



Upstream view of Bradbury River at proposed crossing at Site 69.

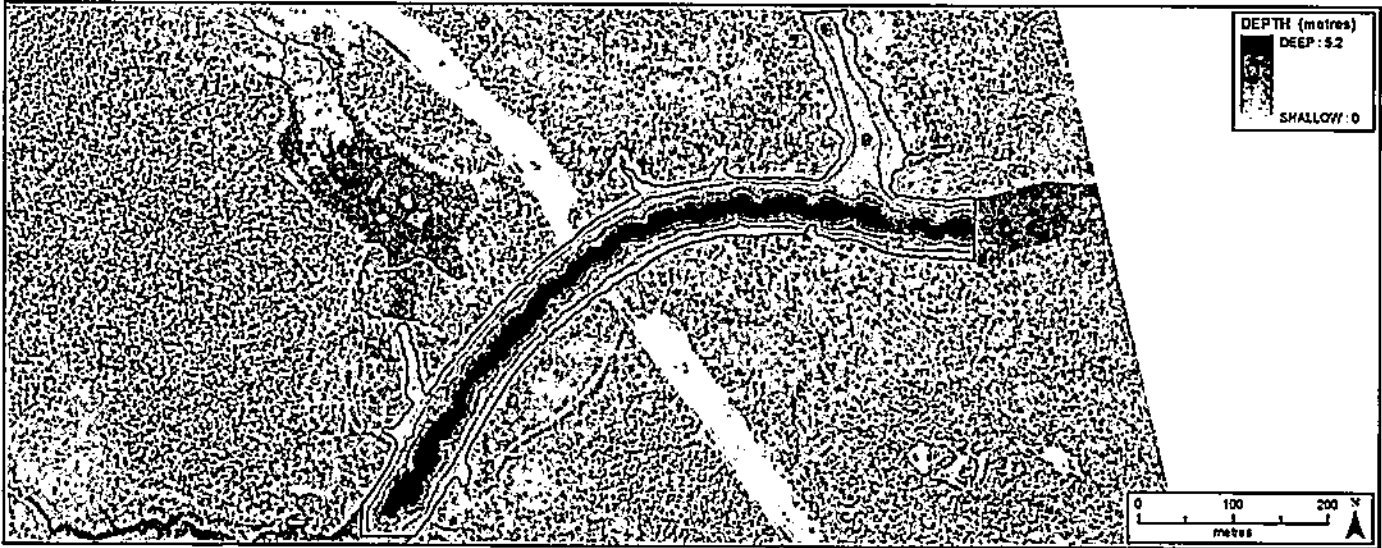


Right bank view at Site 69 from transect 3.



Ⓢ Site Conditions Continued

+ Bathymetric Map



+ Substrate Map



Site Conditions Continued

+ Cover

	US	DS
Total Cover Available (%)	35	25
Cover Composition (% of Total)		
Large Woody Debris	15	15
Overhanging Vegetation	5	5
Instream Vegetation	80	80
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-
Turbidity	-	-

Fish Presence

+ Fish Habitat Potential

	US	DS
Forage Fish		
Spawning	High	High
Rearing	High	High
Overwinter	High	High
Migration	High	High
Large Bodied Fish		
Spawning	High	High
Rearing	High	High
Overwinter	High	High
Migration	High	High

Comments

The Bradbury River is a low velocity, relatively shallow river with substantial instream vegetation along the shoreline and along shallow silt/clay bars. Upstream there is a shallow vegetated inflow suitable for Northern Pike spawning and rearing. Habitat at the crossing site is typical for the river in the general area and fish use is expected to include species such as Channel Catfish, Goldeye, Mooneye, Walleye and suckers.

+ Fish Sampling Data

Methods: Gillnetting

Fish Species Captured: Walleye

Existing Information: None

Regional Context

+ Habitat

Upstream Drainage Area (km²): 583.6
Distance to Major DS Waterbody (km): 1.8 (Lake Winnipeg)
Connectivity to Lake Winnipeg: Yes

Comments

Fish habitat at the crossing location consists of flat riverine habitat over fine sediments with areas of instream vegetation. This habitat type is common within river in the general area and there is an absence of riffle/rapid habitats in the lower 12 km of the river. Rapids are present at approximately 10 km upstream of the crossing.

+ Fishery

Fishery Area: Bradbury River, Lake Winnipeg

Fishery Users:

Commercial - Lake Winnipeg
Recreational - Yes, but limited due to poor access
Aboriginal - Bloodvein FN

Comments

There is no commercial fishery on the Bradbury River. The river may be utilized for recreational or aboriginal fishing. Habitat at the crossing location does not support fish that are part of the downstream commercial fishery in a notable way (i.e., no critical Walleye or Lake Whitefish habitat). Fish from Lake Winnipeg may make use of the crossing area for foraging or upstream migration.



Crossing Information

+ Existing Crossing

Existing Winter Road
Footprint width (m) 42

Existing Culvert
Diameter (mm) NA
Length (m) NA
Number of Barrels NA
Condition NA
Flap Gate NA
Shape NA
Material NA
US Pipe End Treatment NA
Pipe Condition NA
Blockage (%) NA
Blockage Material NA

+ Proposed Crossing

Type Multi-span bridge^{a,b}
Number of piers 1^a
Pier Size (m) 5 – 1,219 mm caissons^b
Width (m) 9.6^b
Length (m) 80^b
Bank Material
Left Mineral
Right Mineral

Information Sources:
a – Site Plan (AECOM 2013).

Risk Assessment

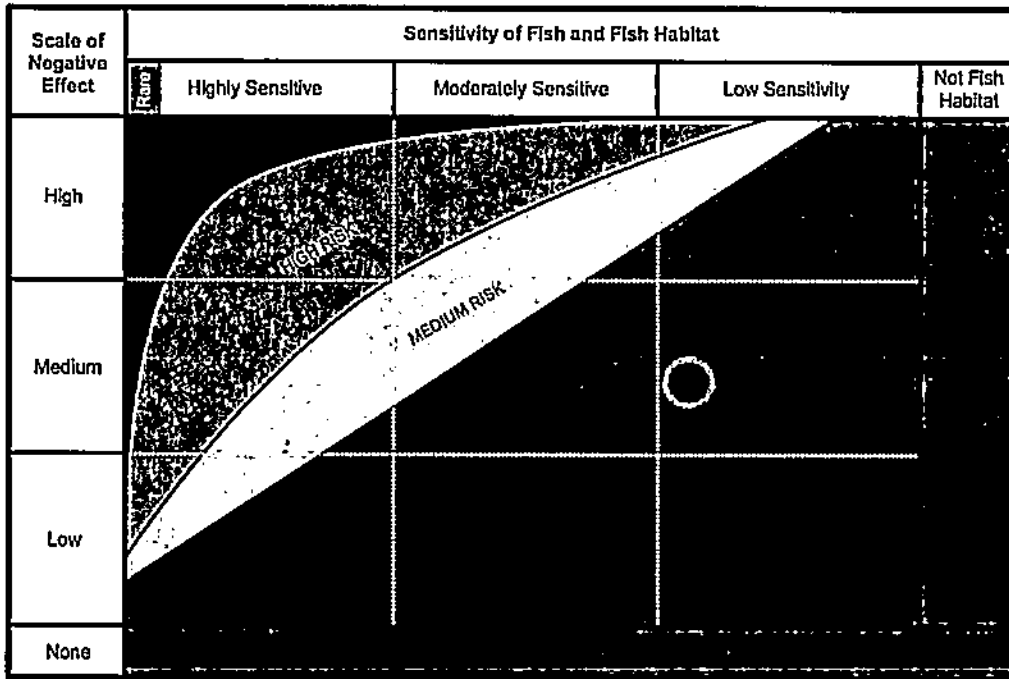
+ Sensitivity of Fish and Fish Habitat

Fish Habitat Present Attribute	YES Rating
Species Sensitivity	Moderate
Species Dependence on Habitat	Moderate
Rarity	Low
Habitat Resiliency	Low
Overall Rating	LOW

+ Scale of Negative Effects

Type Attribute	Multi-span Bridge Rating
Extent	Low
Duration	High
Intensity	Low
Overall Rating	MEDIUM

 **Risk Assessment Continued**



Risk: Low Risk

Qualification: This is a perennial watercourse that provides year round habitat for fish. The activity is Low Risk due to the abundance of the affected habitat, the small footprint of the pier, and the absence of sensitive or critical habitats. There is little development along the Bradbury River and the habitat remains intact. The loss and alteration of such a small area (0.009% of similar habitat within the study reach) is expected to have no measurable effect on productivity and therefore not result in serious harm to fish.

Net Habitat Change

Type of Structure: Multi-span Bridge					
Location	Type of Serious Harm	Pathway of Effect	Proposed Area Affected	Existing Area Affected	Loss/Gain
Instream	Alteration	Rip Rap Armour ¹	115.4 m ²	0 m	115.4 m ²
	Destruction	Footprint ²	5.84 m ²	0 m	-5.84 m ²

- 1 – Area calculated as the area rip rap armouring around the pier (does not include the area of the five caissons), all other rip rap is located above the 1:2 year flood level (based on AECOM design drawings provided in Plans PR 304 to Berens River All Season Road Alignment Tender No. B7 Bradbury River Bridge, issued for review Dec 2013).
- 2 – Area calculated as the area of five 1,219 mm diameter concrete rock socket caissons (based on AECOM design drawings provided in Plans PR 304 to Berens River All Season Road Alignment Tender No. B7 Bradbury River Bridge, issued for review Dec 2013).

Relative Habitat Change		
Available Habitat ¹ : 63,249 m ²		
Effect	Total Area of Impact ² (m ²)	Relative Area of Impact ³
Instream Alteration	115.4 m ²	0.18%
Instream Destruction	5.84 m ²	0.009%

- 1 – Refers to availability of similar habitat type within the study reach (i.e.; 300 m upstream and downstream of the crossing). Available habitat was identified through habitat mapping data.
- 2 – Area of destruction and alteration based on AECOM design drawings provided in Plans PR 304 to Berens River All Season Road Alignment Tender No. B7 Bradbury River Bridge, issued for review Dec 2013.
- 3 – Relative proportion of habitat altered or destroyed, based on the area of similar habitat that is available within the study reach.



Fisheries and Oceans Pêches et Océans
Canada Canada

1804 Victoria Avenue East
Regina, Saskatchewan S4N 7K3

December 21, 2015

Our file *Notre référence*
DA-09-0953

Manitoba East Side Road Authority
Attn: Leanne Shewchuk, Environmental Officer
Room 200, 155 Carlton Street
Winnipeg, MB R3C 3H8

Dear Ms. Shewchuk:

Subject: Implementation of mitigation measures to avoid and mitigate impacts to fish and fish habitat and aquatic species at risk – PR 304 to Berens River All-Season Road, Bradbury River Bridge Construction

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your proposal on January 27, 2015.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act*.

Your proposal has also been reviewed to determine whether it will adversely impact listed aquatic species at risk and contravene sections 32, 33 or 58 of the *Species at Risk Act* (SARA). The following aquatic species which is currently listed under the SARA is believed to use the area:

- Mapleleaf mussel listed as Endangered

Our review considered the following:

- Request for Review form dated January 27, 2015, prepared by Logan Queen, and supplemental *ROW Crossing Assessment Crossing 69 – Bradbury River*, prepared by North/South Consultants Inc.
- Meeting between Manitoba Floodway and East Side Road Authority and DFO on January 27, 2015.
- Telephone correspondence between Tara Schweitzer and Logan Queen on February 26, 2015, November 12, 2015 and December 15, 2015 and email correspondence from Logan Queen on February 26, 2015.
- Email correspondence between Ernie Watson (DFO – Species at Risk Program) and Logan Queen on November 9, 2015 and December 4, 2015, including the *Permit Issued Under Section 73 of the Species at Risk Act, 15-PCAA-00043*.

We understand that Manitoba Floodway and East Side Road Authority propose the construction of an 80 m long two span bridge crossing of the Bradbury River along the

Canada

.../2

All Season Road Project from PR 304 to Berens River. Works will include the following:

- Construct one instream pier, consisting of 5 piles inside steel caissons to be filled with concrete, which will be constructed within isolation from the rest of the river.
- Conduct a fish salvage within the isolated area prior to dewatering.
- Construct the concrete abutments on the north and south side of the river, above the high water level and place rock riprap around the instream pier on the riverbed.
- Instream pier construction may require an ice bridge as construction will commence during winter 2016 or through use of a barge in open water.
- Use of cranes to install the girders on the completed abutments and pier.
- Any water intakes will be screened following DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline* so that fish do not become impinged or entrained in the intakes.
- Fish passage will be maintained within the river channel at all times throughout construction.
- No instream work will be completed during the Restricted Activity Timing Window of April 1 - June 30 to protect spring spawning fish species.
- Adhere to all applicable mitigation measures (GR 130 – ENVIRONMENTAL PROTECTION SPECIFICATIONS) as outlined your submission.

To avoid affecting the above-identified aquatic species at risk, the mitigation measures listed below, in addition to those set out in your project plans, are to be followed:

- Any structure that is required to facilitate construction of the instream pier not described in this proposal (i.e., such as a temporary work platform or cofferdams) will require further review by DFO in order to assess potential impacts to the Mapleleaf Mussel and whether those works require an additional SARA permit.

To avoid the potential for serious harm to fish that is prohibited under the *Fisheries Act*, the mitigation measures listed below, in addition to those set out in your project plans, are to be followed:

- If works are expected to extend past September 15, 2016, DFO should be notified to determine if additional mitigation is required to avoid any impacts to lake whitefish during their fall spawning migration.
- Any structure that is required to facilitate construction of the instream pier not described in this proposal (i.e., temporary work platform or cofferdams, etc.) will require further review by DFO in order to assess serious harm to fish and fish habitat and whether a Fisheries Act s.35 Authorization will be required.
- Since project activities are to be conducted in the presence of an Environmental Monitor, DFO requests that a copy of the fish salvage results and any other environmental monitoring reports be sent to the attention of Tara Schweitzer at the Regina DFO Office (1804 Victoria Avenue East, Regina, SK, S4N 7K3) at the completion of the project.

Provided that you implement the required mitigation measures for your project, and follow the guidance available on the DFO website at <http://www.dfo-mpo.gc.ca/pnw-ppe/asures/index-eng.html>, the Program is of the view that your proposal should not result in serious harm to fish or contravene sections 32, 33 or 58 of the *Species at Risk Act*. No formal approval is required from the Program under the *Fisheries Act* in order to proceed with your proposal.

It remains your responsibility to ensure you avoid causing serious harm to fish in compliance with the *Fisheries Act*, and that you meet the requirements under the *Species at Risk Act* as it may apply to your project. If your plans have changed or if the description of your proposal is incomplete, or changes in the future, you should consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review is required by the Program.

Please be advised that it is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to <http://www.dfo-mpo.gc.ca/pnw-ppe/violation-infracion/index-eng.html>.

A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your project.

If you have any questions, please contact Tara Schweitzer at 306-780-8728, or by email at Tara.Schweitzer@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

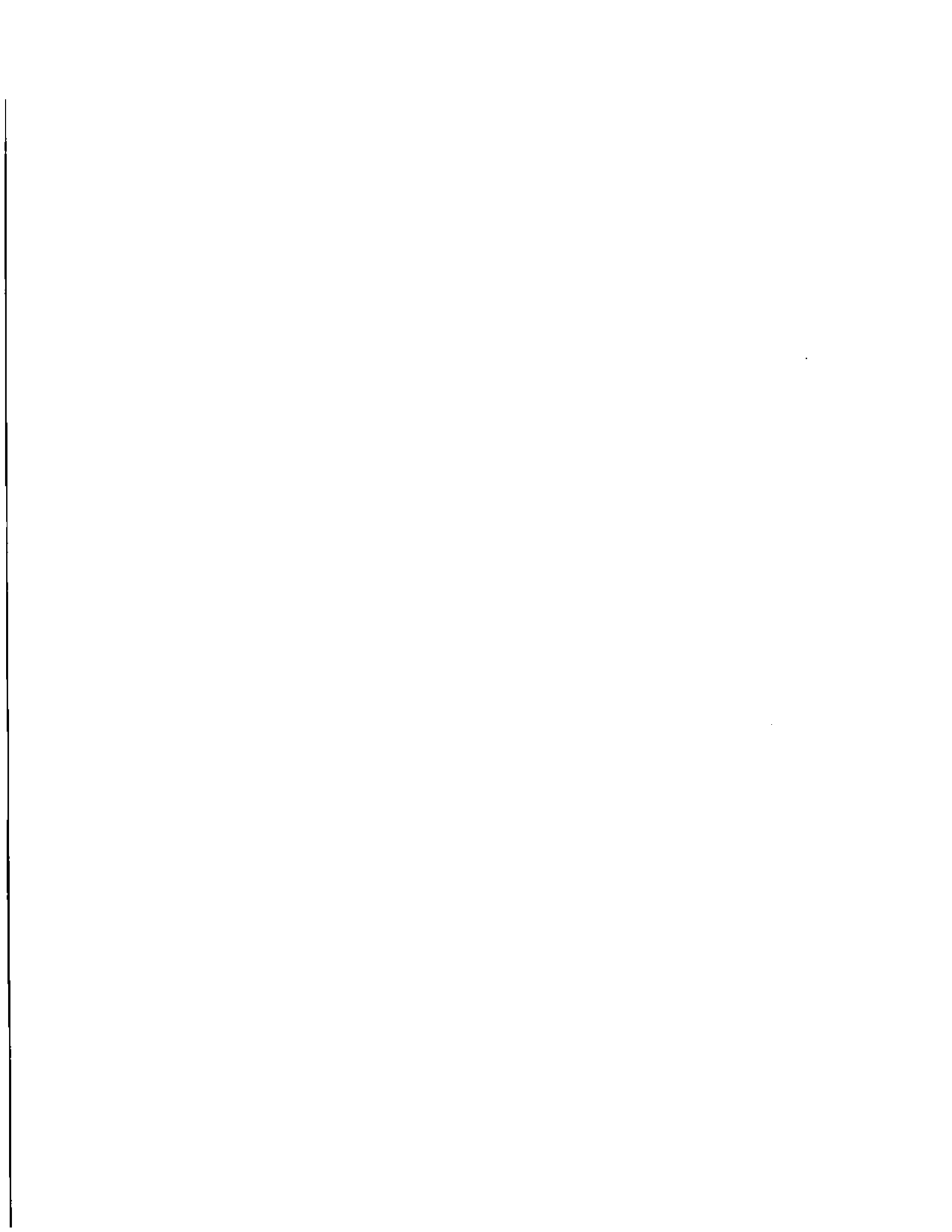
Yours sincerely,



Vincent Harper
Senior Fisheries Protection Biologist, Linear Development
Fisheries Protection Program

Cc.

Logan Queen, MB Floodway & East Side Road Authority
Chris McDermid, MB Floodway & East Side Road Authority
Jamie Clarke, MB Floodway & East Side Road Authority
Tara Schweitzer, DFO Regina
E. Watson, DFO Winnipeg





Fisheries and Oceans
Canada

Pêches et Océans
Canada

867 Lakeshore Rd.
Burlington, ON
L7S 1A1

867 chemin Lakeshore
Burlington, ON
L7S 1A1

June 29, 2016

Our file Notre référence
DA-09-00953 (Bradbury)

Manitoba East Side Road Authority
Attn: Leanne Shewchuk, Environmental Officer
Room 200, 155 Carlton Street
Winnipeg, MB
R3C 3H8

Dear Ms. Shewchuk:

Subject: Implementation of mitigation measures to avoid and mitigate impacts to fish & fish habitat and issuance of a permit under the *Species at Risk Act* - Bradbury River, MB - Temporary Trestle Bridge and Mapleleaf Mussel Salvage

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your proposal on May 9, 2016.

The proposal has been reviewed to determine whether it is likely to result in serious harm to fish, which is prohibited under subsection 35(1) of the *Fisheries Act*.

Your proposal has also been reviewed to determine whether it will adversely impact listed aquatic species at risk and contravene sections 32, 33 or 58 of the *Species at Risk Act (SARA)*. The following aquatic species, which are/is currently listed under the *SARA* is believed to use the area:

- Mapleleaf mussel listed as Endangered

Our review considered the following:

- *Request for Review*, dated May 9, 2016 and *Application for Species at Risk Permit*, dated May 4, 2016.
- *Bradbury River Mussel Salvage*, prepared for East Side Road Authority by AAE Tech Services Inc., dated October 15, 2016.
- *Bradbury River Mussel Salvage Phase II: Mussel Salvage*, prepared for Manitoba East Side Road Authority by AAE Tech Services Inc., dated December 3, 2015.

Canada

We understand that the contractor, Greenfield Construction Ltd., responsible for constructing the permanent bridge is proposing to construct a temporary trestle bridge in order to construct the 80 m long two span bridge over the Bradbury River. Works include the following:

- Mussel salvage in the area of the temporary trestle bridge.
- Mussel salvages will be conducted by AAE Tech Services Inc.
- Installation of an in-stream silt curtain around groupings of pipe piles during their installation.
- Installation and removal of 21- 600 mm diameter piles to support the temporary trestle bridge using a crane and pile hammer. All temporary bridge work will be done without any equipment entering the water except for the pile driving equipment. Machinery will work from shore and/or temporary bridge as it is being constructed.
- Removal of the temporary work bridge and pilings is likely in the fall of 2016 or at the latest, prior to March 31, 2016.
- No instream work will be completed during the Restricted Activity Timing Window of April 1 – June 30.
- Adherence to all applicable mitigation measures (GR 130 – ENVIRONMENTAL PROTECTION SPECIFICATIONS) as outlined in your submission.

To avoid the potential for serious harm to fish that is prohibited under the *Fisheries Act*, the mitigation measures set out in your project plans must be followed.

Provided that you implement these mitigation measures, and follow the guidance available on the DFO website at <http://www.dfo-mpo.gc.ca/pnw-ppc/measure/index-eng.html>, the Program is of the view that your proposal should not result in serious harm to fish.

Pursuant to Section 73 of the *Species at Risk Act* (SARA), the program has reviewed your proposal and determined that a SARA permit is required. The Minister of Fisheries and Oceans Canada hereby authorizes the carrying on of your proposed work, undertaking or activity that results in impacts to aquatic species listed under Schedule 1 of SARA, arising from the construction of the temporary trestle bridge. The SARA permit is attached.

It remains your responsibility to ensure you avoid causing serious harm to fish in compliance with the *Fisheries Act*, and that you meet the requirements under the *Species at Risk Act* as it may apply to your project. If your plans have changed or if the description of your proposal is incomplete, or changes in the future, you should consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppc/index-eng.html>) or consult with a qualified environmental consultant to determine if further review is required by the Program.

Please be advised that it is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to <http://www.dfo-mpo.gc.ca/pnw-ppc/violation-infraction/index-eng.html>.

A copy of this letter and permit should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your project.

If you have any questions, please contact Tara Schweitzer at 306-780-8728, or by email at Tara.Schweitzer@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

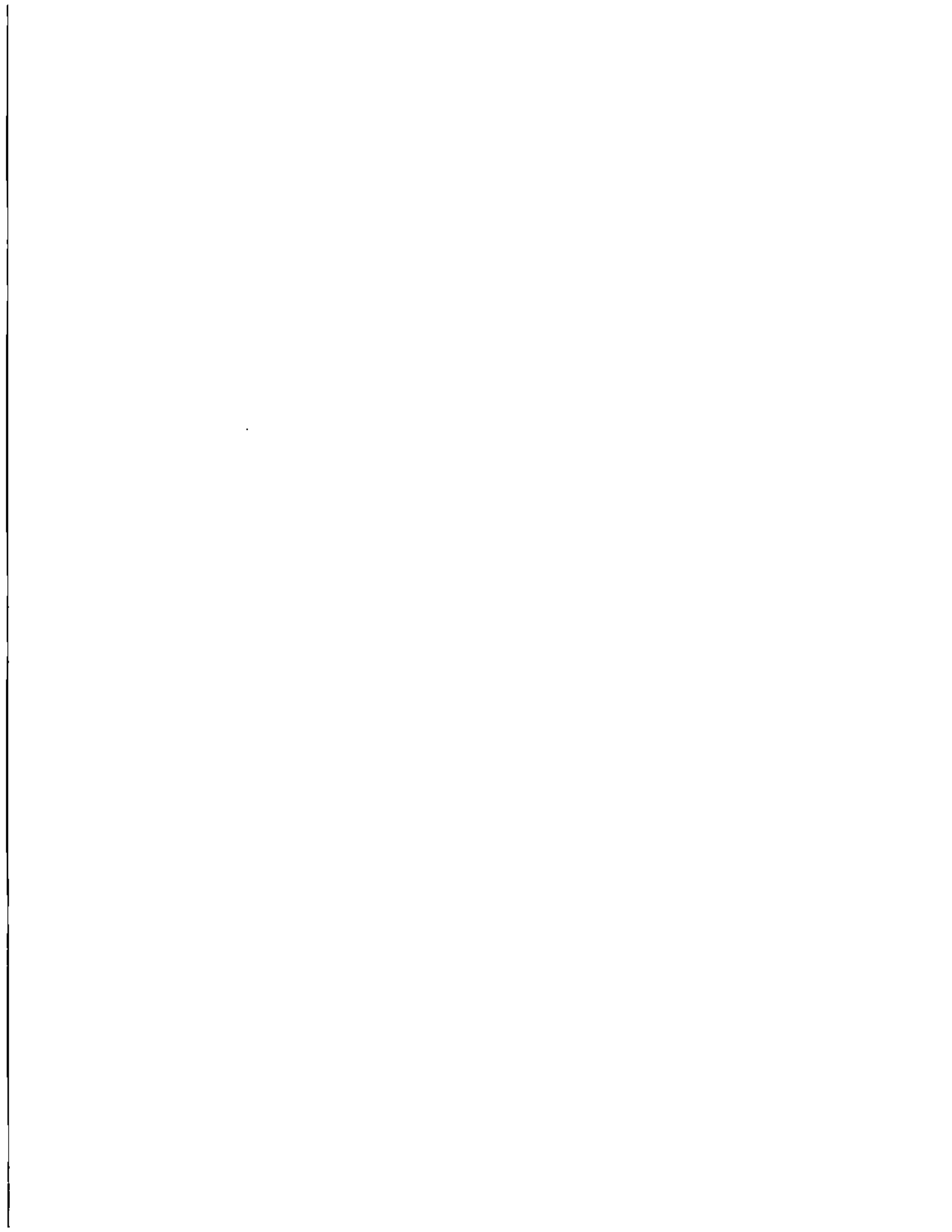
Yours sincerely,



Dale Nicholson
Regional Director, Ecosystems Management

Cc. Tara Schweitzer – DFO Linear Development
Vincent Harper – DFO Linear Development
Ernie Watson – DFO Species at Risk
Chris McDermid – ESRA

ATTACHMENT: SARA PERMIT





Fisheries and Oceans
Canada

Pêches et Océans
Canada

103 - 1800 11th Avenue
Regina, SK S4P 0H8

July 14, 2016

Our file *Notre référence*
DA-09-00953 (Bradbury)

Manitoba East Side Road Authority
Attn: Leanne Shewchuk, Environmental Officer
Room 200, 155 Carlton Street
Winnipeg, MB R3C 3H8

Dear Ms. Shewchuk:

**Subject: Amendment to Letter of Advice dated June 29, 2016
Bradbury River, MB - Temporary Trestle Bridge & Mapleleaf Mussel Salvage**

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada has been notified of an error in the original letter of advice dated June 29, 2016.

In DFO's understanding of the project, the original letter states:

- *Removal of the temporary work bridge and pilings is likely in the fall 2016 or at the latest, prior to March 31, 2016.*

Please note that the wording in this point should be changed to:

- *Removal of the temporary work bridge and pilings is likely in the fall 2016 or at the latest, prior to March 31, 2017.*

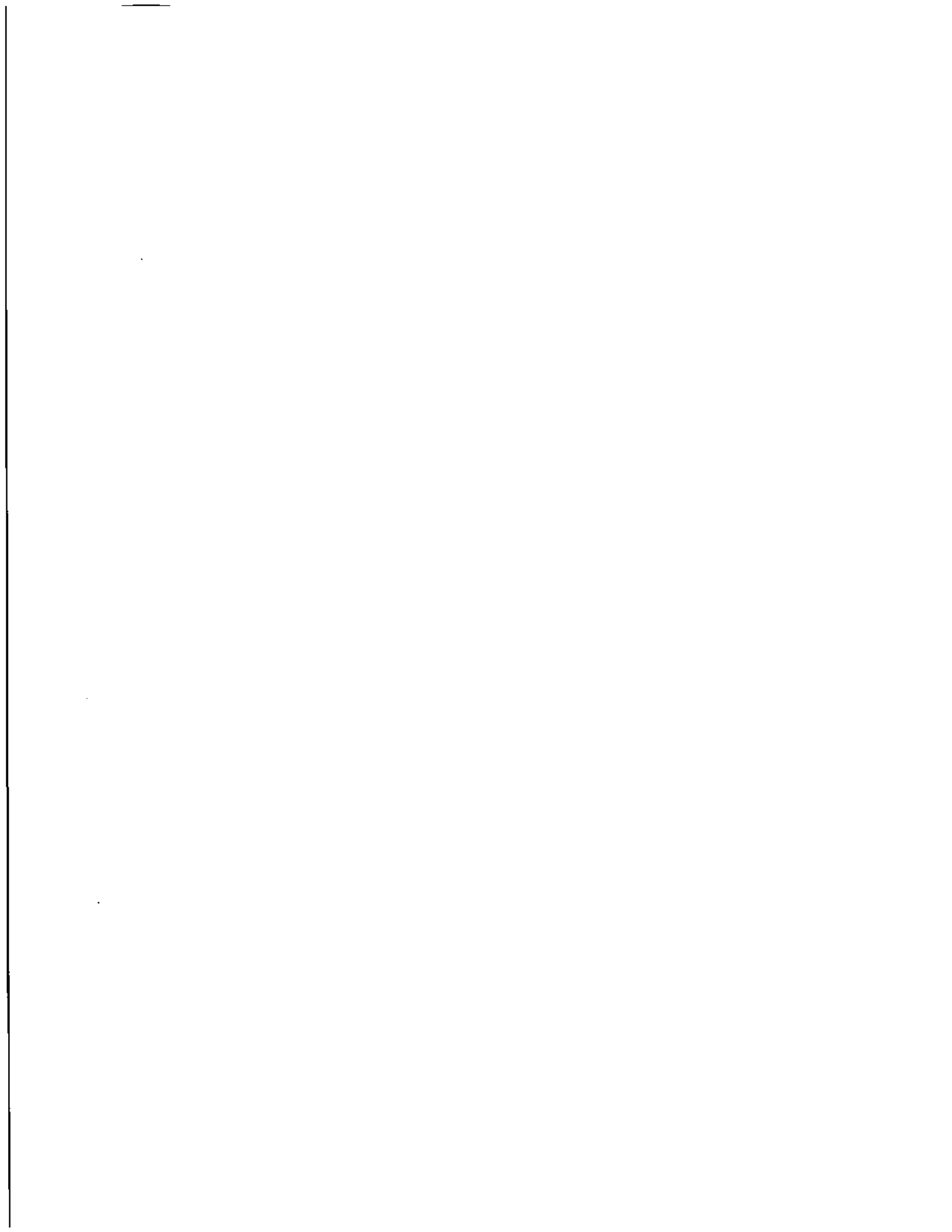
A copy of this letter should be kept with the original letter dated June 29, 2016 and the SAR permit. If you have any questions, please contact Tara Schweitzer at 306-780-8728, or by email at Tara.Schweitzer@dfo-mpo.gc.ca.

Yours sincerely,

Vincent Harper
A/Regional Manager, Regulatory Review

Cc. Tara Schweitzer – DFO Linear Development
Chris McDermid, Jamie Clarke – ESRA

Canada





PERMIT ISSUED UNDER SECTION 73 OF THE SPECIES AT RISK ACT

Subject to the conditions described in this permit, the holder of this permit ("Permit Holder"), or any qualified person acting under the authority of the Permit Holder, is authorized under the authority of subsection 73(1) of the *Species at Risk Act*, S.C. 2002, c.29 (SARA) to engage in activities (as described in this permit) that kill, harm, harass or capture individuals of the following threatened or endangered aquatic species listed on Schedule 1 of SARA:

Mapleleaf (*Quadrula quadrula*), Saskatchewan - Nelson population

Permit issued to:

Manitoba East Side Road Authority ("Permit Holder")
Attention to: Christopher McDermid
200 - 155 Carlton Street
Winnipeg, Manitoba R3C 3H8
204-945-4912
Christopher.McDermid@gov.mb.ca

Location of Proposed Activity

This permit is only valid at the following location:

Nearest community: Bloodvein First Nation
Province: Manitoba
Name of watercourse: Bradbury River
Specific location: UTM zone 14U, 652723 Easting and 5758714 Northing

Valid Permit Period

The valid period for activities affecting Mapleleaf are as follows:

- 1) The construction and removal of a temporary trestle bridge over the Bradbury River is authorized from date of issue until 2017-10-31.
- 2) The mussel relocation is authorized from date of issue until 2016-10-01.

If the Permit Holder cannot complete the activity during this period, Fisheries and Oceans Canada (DFO) must be notified in advance of the expiration of the time period, as soon as the Permit Holder is aware.

The period during which other conditions of this permit must be complied with are provided in their respective sections below. DFO may, where appropriate, amend this permit. In cases where the Valid Permit Period is extended, written notice and/or an amended permit will be provided to the Permit Holder.

Description of the Activity

The activities associated with the proposed project below are likely to result in the incidental harm to Mapleleaf, a contravention of section 32(1) of the *Species at Risk Act*, are:

- 1) The construction of a temporary trestle bridge over the Bradbury River resulting in the alteration of seven (7) square meters of potential Mapleleaf habitat.
- 2) The salvage and relocation of Mapleleaf from suitable habitats potentially impacted by construction activities from within a 684 square meter area surrounding the temporary piers.

The proposed project, of which the activities authorized are part of, involves the construction of a temporary work bridge.

Construction of a temporary trestle bridge

The construction of the temporary trestle work bridge will involve installing twenty-one (21) pipe piles into the stream bottom to support the temporary structure. The piles will be forced into the stream bottom using a 150 tonne crane and pile hammer. Upon completion of the permanent structure, the piles will be removed. The total foot print of the temporary piles will be approximately than seven (7) square meters.

Mussel Salvage and Relocation

A mussel survey and relocation will be undertaken to minimize impacts resulting from the construction of the temporary bridge to Mapleleaf. The survey and relocation plan is based on protocols set out in the *Protocol for detection and relocation of freshwater mussel Species At Risk* (Mackie et al. 2008). Mussels will be collected from the area that surrounds the construction activities, and relocated upstream of the construction site. Mussels will be relocated from within a total area of 684 square meters surrounding the temporary piers.

Reference:

Mackie G., T.J. Morris, and D. Ming. 2008. Protocol for the detection and relocation of freshwater mussel species at risk in Ontario-Great Lakes area (OGLA). Canadian Manuscript Report of Fisheries and Aquatic Sciences 2790. Fisheries and Oceans Canada. 50 pp.

The effects that the activity may cause to the listed wildlife species, its critical habitat or the residences of its individuals and the effects of those changes authorized by this permit are as follows:

The incidental harm, harassment or death of Mapleleaf (*Quadrula quadrula*), a listed aquatic species at risk, resulting from the capture, processing and relocation of mussels.

Terms and Conditions of Permit

The above described activities must be carried on in accordance with the following conditions:

1. General Conditions

- 1.1. A copy of this permit shall be kept on site at all times in the possession of the Permit Holder or a person acting under the Permit Holder's authority, and shall be made available to an enforcement officer upon request.
- 1.2. All persons undertaking the activity under the authority of the Permit Holder shall do so under the direction and oversight of the Permit Holder and shall be made familiar with the conditions of this permit.
- 1.3. The activity must comply with the conditions identified within this permit. Activities that affect individuals of

*Amendment to extend the end of the valid permit period 1) from 2017-03-31 to 2017-10-31.

species at risk, their residences, or their critical habitat, other than those specifically identified within this permit are not authorized under this permit.

1.4. The capture of mussels shall be undertaken by or under the direct supervision of an individual with experience and credentials in the identification of mussels and species at risk.

2. Conditions to avoid or minimize the impact of the activity on the species, its critical habitat and the residences of its individuals:

2.1. To the extent possible, activities shall be conducted in a manner whereby any individuals of the species shall be handled only in the circumstances authorized under this permit and with the least amount of harm.

2.2. The following measures shall be implemented to minimize the impact of the activity on the species, its critical habitat and the residences of its individuals:

2.2.1. Disturbance to aquatic habitat shall be minimized;

2.2.2. Shorelines or banks disturbed by any activity associated with the project shall be immediately stabilized to prevent erosion and sedimentation;

2.2.3. Material, equipment and machinery shall arrive at the site washed and clean of foreign materials;

2.2.4. An emergency spill kit shall be kept on site at all times. All spills shall be reported to the Manitoba Environmental Emergency Response Team at (204) 944-4888 upon occurrence;

2.2.5. All conditions and mitigation measures prescribed by the Fisheries Protection Program (FPP) shall be followed.

3. Conditions that relate to monitoring and reporting:

3.1. The Permit Holder shall monitor the effects of the activity and the avoidance and mitigation measures and standards referred to in this permit to determine whether they were conducted according to the conditions of this permit, and were successful at avoiding and mitigating the impacts of the permitted activities on the species listed above.

3.2. A report containing the following information shall be submitted to the Species at Risk Biologist identified in a form acceptable to DFO by December 1, 2016:

3.2.1. Summary of the monitoring conducted as per condition 3.1. demonstrating that measures and standards to avoid and mitigate the impacts of the permitted activities on the species were implemented according to the conditions of this permit;

3.2.2. An assessment of whether the measures and standards referred to in this permit were successful at avoiding and mitigating the impacts of the permitted activities on the species or residences of its individuals;

3.2.3. Details of any contingency measures that were followed to prevent impacts greater than those authorized by this permit;

3.2.4. Digital vouchers, with distinguishing characteristics clearly photographed (see photographic instructions for freshwater mussels in Mackie et al. 2008), for each mussel species (Species at Risk and non-Species at Risk) collected;

3.2.5. Using the spreadsheet provided, identify all individuals caught (including number caught, date of capture, latitude, longitude, length, height and the substrate they were collected on).

3.3. The death of any individual of the affected species identified above, resulting from activities authorized by this permit, shall be reported immediately to the Species at Risk Biologist identified below.

3.4. If species at risk are accidentally killed, they shall be preserved in 95% ethanol and forwarded to the Species at Risk Biologist identified below by December 1, 2016.

Species at Risk Biologist:
Ernest Watson
Species at Risk Biologist
Fisheries and Oceans Canada
Freshwater Institute
501 University Crescent
Winnipeg, MB R3T 2N6
Telephone: 204-983-0611
Email: ernest.watson@dfo-mpo.gc.ca

Authorization Limitations and Application Conditions

This permit cannot be transferred or assigned to another party. If the activity authorized under this permit is sold or transferred to another party, or if other circumstances arise that result in another party taking over the activity, the Permit Holder shall advise DFO in advance if the ownership or responsibility for the activity is expected to change.

The failure to comply with any condition of this permit is an offence under section 97 of SARA and might result in charges being laid under SARA.

This permit may be revoked or amended to ensure the survival or recovery of Mapleleaf. Without limiting the generality of the foregoing, DFO may:

- suspend any permitted activities to avoid or mitigate additional adverse direct or indirect effects to the species listed above;
- amend or revoke this permit; and
- direct the Permit Holder to carry out at the Permit Holder's expense any modifications or actions deemed necessary by DFO to avoid or mitigate existing impacts or to avoid further adverse direct and indirect impacts to Mapleleaf Mussel.

This permit is valid only with activities and species listed herein and for no other purposes. It does not authorize the Permit Holder to buy, sell, trade, damage the residence of, destroy the residence of, or destroy part of the critical habitat of an individual of a wildlife species that is listed as Extirpated, Endangered or Threatened, or any part of derivative of such an individual. It does not purport to release the Permit Holder from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

Date of Issue: December 2, 2016

Signature of authorizing officer: 

Martyn Curtis
A/Regional Manager / Gestionnaire régional
Fisheries Protection Program / Programme de Protection des Pêches
Fisheries and Oceans Canada / Pêches et Océans Canada
Central and Arctic Region / Région du Centre et de l'Arctique

Further information about this permit is available from Ernest Watson, Species At Risk Biologist at (204) 983-0611 or ernest.watson@dfo-mpo.gc.ca.



PERMIT ISSUED UNDER SECTION 73 OF THE SPECIES AT RISK ACT

Subject to the conditions described in this permit, the holder of this permit ("Permit Holder"), or any qualified person acting under the authority of the Permit Holder, is authorized under the authority of subsection 73(1) of the *Species at Risk Act*, S.C. 2002, c.29 (SARA) to engage in activities (as described in this permit) that kill, harm, harass or capture individuals of the following threatened or endangered aquatic species listed on Schedule 1 of SARA:

Mapleleaf (*Quadrula quadrula*), Saskatchewan - Nelson population

Permit issued to:

Manitoba East Side Road Authority ("Permit Holder")
Attention to: Christopher McDermid
200 – 165 Carlton Street
Winnipeg, Manitoba R3C 3H8
204-945-4912
Christopher.McDermid@gov.mb.ca

Location of Proposed Activity

This permit is only valid at the following location:

Nearest community: Bloodvein First Nation
Province: Manitoba
Name of watercourse: Bradbury River
Specific location: UTM zone 14U, 652723 Easting and 5758714 Northing

Valid Permit Period

The valid period for activities affecting Mapleleaf are as follows:

- 1) The construction and removal of a temporary trestle bridge over the Bradbury River is authorized from date of issue until 2017-10-31.
- 2) The mussel relocation is authorized from date of issue until 2016-10-01.

If the Permit Holder cannot complete the activity during this period, Fisheries and Oceans Canada (DFO) must be notified in advance of the expiration of the time period, as soon as the Permit Holder is aware.

The period during which other conditions of this permit must be complied with are provided in their respective sections below. DFO may, where appropriate, amend this permit. In cases where the Valid Permit Period is extended, written notice and/or an amended permit will be provided to the Permit Holder.

Description of the Activity

The activities associated with the proposed project below are likely to result in the incidental harm to Mapleleaf, a contravention of section 32(1) of the *Species at Risk Act*, are:

- 1) The construction of a temporary trestle bridge over the Bradbury River resulting in the alteration of seven (7) square meters of potential Mapleleaf habitat.
- 2) The salvage and relocation of Mapleleaf from suitable habitats potentially impacted by construction activities from within a 684 square meter area surrounding the temporary piers.

The proposed project, of which the activities authorized are part of, involves the construction of a temporary work bridge.

Construction of a temporary trestle bridge

The construction of the temporary trestle work bridge will involve installing twenty-one (21) pipe piles into the stream bottom to support the temporary structure. The piles will be forced into the stream bottom using a 150 tonne crane and pile hammer. Upon completion of the permanent structure, the piles will be removed. The total foot print of the temporary piles will be approximately than seven (7) square meters.

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- 1.2. All persons undertaking the activity under the authority of the Permit Holder shall do so under the direction and oversight of the Permit Holder and shall be made familiar with the conditions of this permit.
- 1.3. The activity must comply with the conditions identified within this permit. Activities that affect individuals of

*Amendment to extend the end of the valid permit period 1) from 2017-03-31 to 2017-10-31.

species at risk, their residences, or their critical habitat, other than those specifically identified within this permit are not authorized under this permit.

1.4. The capture of mussels shall be undertaken by or under the direct supervision of an individual with experience and credentials in the identification of mussels and species at risk.

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Species at Risk Biologist:
Ernest Watson
Species at Risk Biologist
Fisheries and Oceans Canada
Freshwater Institute
501 University Crescent
Winnipeg, MB R3T 2N6
Telephone: 204-983-0611
Email: ernest.watson@dfo-mpo.gc.ca

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This permit may be revoked or amended to ensure the survival or recovery of Mapleleaf. Without limiting the generality of the foregoing, DFO may:

- suspend any permitted activities to avoid or mitigate additional adverse direct or indirect effects to the species listed above;
- amend or revoke this permit; and
- direct the Permit Holder to carry out at the Permit Holder's expense any modifications or actions deemed necessary by DFO to avoid or mitigate existing impacts or to avoid further adverse direct and indirect impacts to Mapleleaf Mussel.

This permit is valid only with activities and species listed herein and for no other purposes. It does not authorize the Permit Holder to buy, sell, trade, damage the residence of, destroy the residence of, or destroy part of the critical habitat of an individual of a wildlife species that is listed as Extirpated, Endangered or Threatened, or any part of derivative of such an individual. It does not purport to release the Permit Holder from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

Date of Issue: December 2, 2016

Signature of authorizing officer: 

Martyn Curtis
A/Regional Manager / Gestionnaire régional
Fisheries Protection Program / Programme de Protection des Pêches
Fisheries and Oceans Canada / Pêches et Océans Canada
Central and Arctic Region / Région du Centre et de l'Arctique

Further information about this permit is available from Ernest Watson, Species At Risk Biologist at (204) 983-0611 or ernest.watson@dfo-mpo.gc.ca.

From: Schweitzer, Tara [mailto:Tara.Schweitzer@dfo-mpo.gc.ca]
Sent: March-30-17 4:22 PM
To: McDermid, Christopher (MI)
Subject: RE: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.
Importance: High

Hi Chris,

I have not heard back from MB fish bios so I'm going to say that given current conditions of ice cover, it's acceptable to continue the drilling work over the weekend.

We will discuss the proposed work in greater detail early next week (with provincial fish bios) to determine what is the best way to proceed. In the meantime, I would suggest beginning to take daily water temperatures, if possible, which will over the next few weeks give us an idea of when to expect pike and/or walleye beginning their spawning runs, as well as monitoring ice conditions and thaw. Both pike and walleye have been known to start spawning migrations under the ice to a certain degree.

Regards,

Tara Schweitzer

Fisheries and Oceans Canada
Linear Development
306.780.8728

From: McDermid, Christopher (MI)
Sent: March-28-17 3:52 PM
To: 'Schweitzer, Tara'
Subject: FW: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.

Hello Tara,

Correction to the e-mail below. The dates are supposed to be April 15 to April 20th.

Regards,

Chris McDermid
Environmental Coordinator
Highway Planning and Design Branch
Environmental Services Section
1420 - 215 Garry Street
Winnipeg MB, R3C 3P3
Cell : 204.794.8625 Fax: 204.945.0593
Christopher.McDermid@gov.mb.ca



 Please consider the environment before printing this email.

From: McDermid, Christopher (MI)
Sent: March-28-17 3:38 PM

To: 'Schweitzer, Tara'

Subject: RE: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.

Hello again,

I have just received an update on in-water work dates from the contractor. The contractor has made the following statement:

"The worst case scenario would be to have the caissons completed by somewhere between March 15 to 20. Hope to finish before that. We will also need a 2 day window in May to remove 9 @ 24" caissons for the finger pier which will cause very little disturbance in the water."

I will update you further if any other information comes in. Please let me know if your needing any specific information.

Thanks,

Chris McDermid

Environmental Coordinator

Highway Planning and Design Branch

Environmental Services Section

1420 - 215 Garry Street

Winnipeg MB, R3C 3P3

Cell : 204.794.8625 Fax: 204.945.0593

Christopher.McDermid@gov.mb.ca



Infrastructure

 Please consider the environment before printing this email.

From: Schweitzer, Tara [<mailto:Tara.Schweitzer@dfo-mpo.gc.ca>]

Sent: March-28-17 12:32 PM

To: McDermid, Christopher (MI)

Subject: RE: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.

Thanks. I was in contact with Geoff Klein but that isn't his region anymore so he is going to get the right contact, likely that is Derek.

Thanks Chris.

Tara Schweitzer

Fisheries and Oceans Canada

Linear Development

306.780.8728

From: McDermid, Christopher (MI) [<mailto:Christopher.McDermid@gov.mb.ca>]

Sent: 2017-March-28 11:13 AM

To: Schweitzer, Tara

Subject: RE: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.

Hello Tara,

There are a number of individuals who may be able to offer assistance.

Laureen Janusz- is a Fisheries Biologist out of the Central Office and has been issuing our Fish Handling Permits – Laureen.Janusz@gov.mb.ca or P: 204-945-7789

Derek Kroeker- is the Eastern Region Fisheries Biologist- Derek.Kroeker@gov.mb.ca or P: 204-345-1450

Darrell Ouimet- from Sustainable Development Licensing Branch has been issuing our Environmental Approvals- Darrell.Ouimet@gov.mb.ca or P:204-803-1389

I would imagine if you want specific advice on the region Derek Kroeker might be the best option. I reviewed my records and have not come across any correspondence with the Fisheries Biologist from our end. This may have been done by phone.

Hope this helps.

Regards,

Chris McDermid

Environmental Coordinator
Highway Planning and Design Branch
Environmental Services Section
1420 - 215 Garry Street
Winnipeg MB, R3C 3P3
Cell : 204.794.8625 Fax: 204.945.0593
Christopher.McDermid@gov.mb.ca

Manitoba 
Infrastructure

 Please consider the environment before printing this email.

From: Schweitzer, Tara [<mailto:Tara.Schweitzer@dfo-mpo.gc.ca>]

Sent: March-28-17 11:39 AM

To: McDermid, Christopher (MI)

Subject: RE: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.

Thanks Chris.

I know we mentioned this and just thought I would ask if you have contacted the Manitoba fisheries biologist. I know that he was involved with a similar issue a couple years ago, do you have his name on file?

Tara Schweitzer

Fisheries and Oceans Canada
Linear Development
306.780.8728

From: McDermid, Christopher (MI) [<mailto:Christopher.McDermid@gov.mb.ca>]

Sent: 2017-March-24 10:10 AM

To: Schweitzer, Tara

Cc: Harper, Vince

Subject: DA: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.

Hello Tara,

RE: DA:09-0953 Bradbury River Bridge and Temporary Bridge

As per our conversation yesterday, I have summarized the work to be done within the spring spawning window below. As I had mentioned, Greenfield Construction Ltd. are ahead of schedule in respect to the drilling required to install the Temporary work bridge and upcoming drilling of the five caissons for the main permanent pier structure. I have requested that they summarize the water quality sampling conducted to date, I can forward this to you if you would like?

The remaining drilling is as follows (as of March 24, 2017 morning)

- 6 temporary bridge piles (P208,P105,P209,P210,P106,P211) (likely installed prior to April 1)
- 3 small piles for the Rotator support, located on the North side of the permanent pier.
- 5 caissons to install for the center pier.

They are anticipating this work to be completed prior to April 14 2017, however I am **still waiting for written communication with firm dates from the contractor**. Greenfield plans on installing rebar and pouring concrete within the caissons soon after installation. The pouring work will be directly into the caisson and I had confirmed will be an isolated environment, which shouldn't be considered in water work.

They are also looking to submit a removal plan to disassemble the finger pier (6-piles total). I have been told that this will be a process that will likely take less than a day, however will involve additional work within the spring spawning window. I am currently awaiting additional details on this schedule and procedure.

They have been advised that water quality sampling will be a requirement for all in-water work, and that additional conditions may be applied if we are granted permission to work into the spawning window. I had also inquired about the intermittent drilling (i.e. ~10 hour breaks between drilling sessions daily) they had indicated this would be a necessity anyway because of set up time prior to drilling.

If you have any additional questions or concerns please contact me.

I'll be looking forward to talking next week.

Regards,

Chris McDermid

Environmental Coordinator

Highway Planning and Design Branch

Environmental Services Section

1420 - 215 Garry Street

Winnipeg MB, R3C 3P3

Cell : 204.794.8625 Fax: 204.945.0593

Christopher.McDermid@gov.mb.ca

From: McDermid, Christopher (MI)
Sent: March-02-17 4:11 PM
To: 'Schweitzer, Tara'
Cc: 'Watson, Ernest'; 'Harper, Vince'; Clarke, Jaime (MI)
Subject: DA: 09-0953 Bradbury River Bridge- In-water work timing restrictions extension request.

Hello Tara,

RE: DA:09-0953 Bradbury River Bridge and Temporary Bridge

We have received a request from our Bridge contractor working on the Bradbury River Crossing. They have included a proposal (see attached) with a request to conduct in-water work into the Southern Manitoba spring spawning fish window.

The scheduling for pipe pile installation begins April 15th and will be completed April 29th. Concrete will be poured into the submerged caissons from May 16, 2017 to May 18.

There proposal includes the following:

- Reasoning/justification for working into the Spring Spawning window
- Construction activity including schedule
- Biological and physical characteristics of the river
- Fish presence
- Potential Impacts to Fish and Fish habitat including Mapleleaf Mussel
- Mitigation measures to taken for the proposed work
- Design drawings
- Information on the drill equipment being used

Please review the proposal from the contractor, respond at your earliest convenience.

Thank you,

Chris McDermid
Environmental Coordinator
Highway Planning and Design Branch
Environmental Services Section
1420 - 215 Garry Street
Winnipeg MB, R3C 3P3
Cell : 204.794.8625 Fax: 204.945.0593
Christopher.McDermid@gov.mb.ca

McDermid, Christopher (MI)

From: Schweitzer, Tara [Tara.Schweitzer@dfo-mpo.gc.ca]
Sent: December-05-16 2:57 PM
To: McDermid, Christopher (FESRA); Watson, Ernest
Cc: Clarke, Jaime (FESRA)
Subject: RE: DA-09-00953 Bradbury River and SAR permit 16-PCAA-00021 - Temporary Trestle Bridge Permit Extension Request
Attachments: 16-PCAA-00021 SAR Permit Amendment Dec 2016 Bradbury trestle bridge.pdf
Importance: High

Dear Manitoba East Side Road Authority, on behalf of Greenfield Construction Ltd:

As requested, please find attached the amended SARA permit for your proposed extension to works on the Bradbury River, MB. The only change that was made is an extension date of the Valid Permit Period from March 31, 2017 until October 31, 2017.

DFO- Fisheries Protection Program also acknowledges the changes in timing of removal of the temporary trestle bridge. The original Letter of Advice issued on June 29, 2016 still remains in effect with the understanding that all mitigation and measures to avoid harm will be implemented.

Please contact me if you have any questions or concerns regarding the above.

Sincerely,

Tara Schweitzer

*Fisheries Protection Biologist
Linear Development - Central and Arctic Area*

*Fisheries and Oceans Canada
103 – 1800 11th Avenue
Regina, SK S4P 0H8
Telephone: 306-780-8728 Fax: 306-780-8722
Email: Tara.Schweitzer@dfo-mpo.gc.ca*

*FPP web site / site web : www.dfo-mpo.gc.ca/habitat
General inquiries: 1 855 852-8320
Project Referrals: fisheriesprotection@dfo-mpo.gc.ca*

From: McDermid, Christopher (FESRA) [<mailto:Christopher.McDermid@gov.mb.ca>]
Sent: 2016–November-09 4:32 PM
To: Schweitzer, Tara; Watson, Ernest
Cc: Clarke, Jaime (FESRA)
Subject: RE: DA-09-00953 Bradbury River and SAR permit 16-PCAA-00021 - Temporary Trestle Bridge Permit Extension Request

RE: DFO File: DA-09-00953
-and-
SAR permit: 16-PCAA-00021

Hello Tara and Ernie,

We have received a permit extension request from our Bradbury River Bridge contractors, Greenfield Construction Ltd. They have recently revised their work schedule which will require them to extend duration of use of the temporary trestle bridge. We would like to request an change from March 31, 2017 to October 31, 2017. ESRA will also ensure that removal of the temporary trestle bridge will fall outside the Fish Spawning timing window.

Please find the Permit extension request letter submitted from the contractor. This is relevant as a request for the LOA as well as the SAR permit.

Also, I have attached the revised schedule justifying the extension request.

Other attachments include the issues SAR permit, the LOA, and the Amendment to the LOA.

I would be happy to address any questions or concerns.

Thank you,

Chris McDermid



Environmental Officer

200 - 155 Carlton St.

Winnipeg, MB R3C 3H8

Christopher.McDermid@gov.mb.ca

Phone: (204) 794-8625



Please consider the environment before printing this email.

McDermid, Christopher (MI)

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Linear Development - Central and Arctic Area*

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