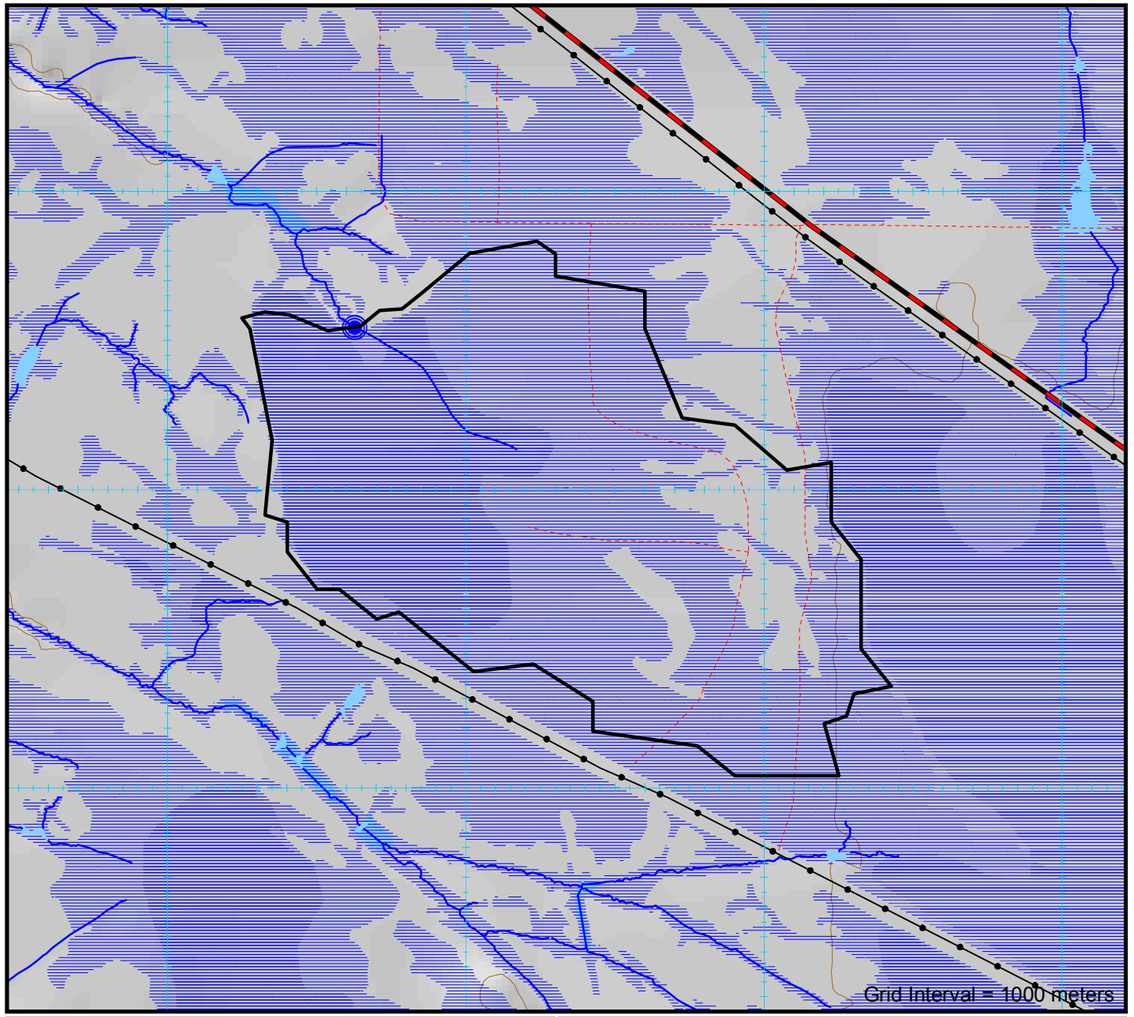
Abitibi River Forest Appendix 1: Form for Submission of Information on a Proposed Crossing



Shaded Area for Office Use Only	ARFMI Road Network No. 0	Previously Used Crossing ID 5536	Crossing Evaluation Reference Number **A4443**

Publication Date: December 12, 2023

Abitibi River Forest - S.F.L. # 551832

Proponent: GreenFirst Forest Products (QC) Inc.
c/o P.O. Box 867
New Liskeard, Ontario
P0J 1P0
(705) 680-0033

Plan Term: 2022-2032

AWS Year: 2024-25

Fisheries Operational Management Zone (OMZ):

Standard for Self-assessed Water Crossing Construction, Removal and/or Decommissioning: **Snow Fill and Ice Bridge Crossing**

Previous Assessment Year (incl. SA): **2024**

SAR species likely to be impacted: **NO**

Preconstruction photos available: **NO**

Within 500m of Brook Trout stream: **NO**

Culvert Design Options	Q_{25}	Q_{10}	Q_5	$Q_{2.33}$
Design Flow	0.640 m^3/sec	0.538 m^3/sec	0.448 m^3/sec	0.346 m^3/sec
1 Round	800mm	800mm	800mm	800mm
2 Round	800mm	600mm	600mm	500mm
3 Round	600mm	500mm	450mm	450mm
1 Arch (BxD)	1030x740mm	910x660mm	910x660mm	800x580mm
2 Arch (BxD)	800x580mm	680x500mm	680x500mm	680x500mm
3 Arch (BxD)	680x500mm	680x500mm	560x420mm	560x420mm

• Required Opening for bridges is calculated as per the Crown Land Bridge Management Guidelines.

Conditions on Culvert Design Options

- Initial Fisheries Review based on one pipe. Two or more pipes requires a re-assessment.
- Round culvert calculations assume 10% fill. For 20% fill, increase diameter to next highest standard diameter.
- For 40% fill, use a round culvert diameter of the Base distance of the corresponding Arch style culvert.
- All calculations are for projecting ends. Total pipe length normally not to exceed 20m.
- All calculations assume a Headwater Depth of 1.0.
- MP = Multi-Plate (i.e. SPCSP)

General Standards

- No watercourse realignment, nor use of explosives is permitted.
- Minimize loss or disturbance to riparian vegetation. Restrict removal of riparian vegetation to the disturbance footprint required for construction, maintenance and decommissioning of the water crossing.
- Install erosion and sediment control measures prior to commencement of construction or decommissioning to prevent release of sediment or other deleterious substances into watercourse.
- Fill material placed below the normal high water mark must be erosion-resistant and/or protected from erosion.
- Direct storm water runoff from bridge decks, side slopes, road approaches and ditches away from the watercourse and into a retention pond or vegetated area.
- Ensure erosion and siltation in ditch lines adjacent to the watercourse crossing approaches are controlled using sediment traps such as rock/soil dams or log jams as site conditions warrant.
- Do not block or impede the free passage of water and fish at any time of year up and down stream, with the exception of potential and temporary blockage due to water crossing construction/decommissioning activities.
- Abide by fisheries in-water timing windows in the approved FMP and/or forest management guides. Where fishery communities are not well documented, the most restrictive in-water timing window must be used.
- Complete all in-water construction and decommissioning activities in an uninterrupted fashion and in an appropriate timeframe to minimize potential for site disturbance.
- If installation requires inwater work, do not locate within 100m of spawning or sensitive fish habitat eg. rapids, riffles, known overwintering areas.
- Maintain machinery free of fluid and fuel leaks. Wash, refuel and service machinery at least 30m from watercourse. Store fuel and other materials for machinery a minimum of 30m from the watercourse.
- Operate machinery on land with tracks/wheels above the normal high water mark, or on ice in a manner that avoids disturbance to the banks of the watercourse and adjacent riparian vegetation areas.
- Remove all debris from construction and decommissioning work from the site following completion of the undertaking.
- If machinery fording is required, limit to a one-time event (over and back) per piece of equipment essential to implementating the project, and only if using an existing crossing at another location is not available or practical.
  - If minor rutting is likely, watercourse bank and bed protection methods (e.g., swamp mats, pads) are to be used provided they do not constrict flows or block fish passage;
  - Grading of the watercourse banks for the approaches is not permitted;
  - If the watercourse bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion or degradation is likely, use a temporary crossing structure or other practice to protect them;
  - The one-time fording must adhere to the appropriate in-water timing windows; Fording must occur under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.

Standards for Snow Fill and Ice Bridge Crossings

- Do not dredge, place fill on, grade or excavate the bed or banks of the watercourse.
- Do not use earth fill or aggregate below the normal high water mark. Crossings must be constructed of clean water, ice and snow free of dirt and debris
- Snow fills and ice crossings must not restrict water flow within the watercourse where it occurs naturally during winter conditions, or otherwise completely obstruct fish passage at any time.
- Do not locate within 100 metres of fisheries spawning or sensitive habitat.
- Appropriate seasonal conditions must be present (e.g., adequate depth of snow and ice, winter temperatures) to provide certainty that construction and removal standards can be satisfactorily implemented.
- No aggregate or loose woody material used to top the crossing.
- If logs or corduroy are used to stabilize the approaches:
  - The logs must be clean;
  - The logs may be bound together to facilitate removal and minimize site disturbance;
  - No logs or woody debris are to be left within the watercourse;
  - Corduroy (if used) adjacent to the watercourse banks must be removed and placed outside the floodplain to help prevent a damming effect on site. Corduroy that is frozen or embedded into the road approaches or watercourse banks must be left in place so as to not expose mineral soil adjacent to the watercourse. The remaining snow and ice can be left to melt in the spring. If required, remedial work will be carried out on the site after the crossing is removed to ensure that no logs or woody debris can wash back into the watercourse.
  - Logs may be placed on road approaches to assist in diverting runoff away from the watercourse; however, they must be placed outside of the floodplain and in such a manner as to ensure that they do wash back into the watercourse.
- Sanding of snow and ice crossings must be kept to a minimum and within the bounds of operational health and safety considerations.
- Corduroy logs or brush mats must be installed on the approaches when conditions are soft in order to avoid disturbing the banks and crossing approaches.
- If water is being pumped from a watercourse to reinforce the crossing, the intakes must be sized and adequately screened to prevent debris blockage and fish entrainment.

Watershed Characteristics

Watershed Area :	**2.29 km^2**
Lake Area :	**0.00 km^2**
Swamp Area :	**0.68 km^2**
Retention Area :	**0.68 km^2**
Retention Factor :	**29.84 %**
Base Class :	**3.30**
Watercourse Type :	**Permanent**

Crossing Location Characteristics

NOTE: See current AWS Tables 1 and 2 and AWS maps for approved AWS details for year of installation.

Evaluation ID No. :	**A4443**
Geographic Township :	**Kendrey**
UTM Coordinates (NAD83) :	**456629E, 5455545N**
Road Type :	**Operational**
Stream Gradient :	**0%**
Slope > 30% (17°) :	**NO**
Installer Experience :	**As Per Approved Implementation Toolkit**

ABITIBI RIVER Forest Management Inc

Company Name _____ (Print)

Company Signature _____

Operator Name _____ (Print)

Operator Signature _____

Date _____

Proposed Structures

	Structure 1	Structure 2	Structure 3
Structure Type	**Ice**	**Portable Bridge**	
Design Flow	**Q2**	**Q25**	
Fill Material	**Snow and Ice**	**Pit Run Gravel**	
Dates for In Water Work (if required) Start		**July 16**	
Dates for In Water Work (if required) Finish		**August 31**	
Removal Timeframe	**By March 31st**	**<7 Years**	

Calculations performed by First Resource Management Group (FRMG). Neither Abitibi River Forest Managment Inc., nor FRMG guarantee the accuracy of any information presented on this form. Coordinates and map are UTM projection, Zone 17 NAD83 datum.

Self-assessed. Follow conditions of appropriate standard(s).

MNRF Appendix 2: Biologist Risk Evaluation
Concerns and Conditions on Construction

Watershed Thermal Code : UF

MNRF Assigned Thermal Code at Crossing **UF**

The crossing is a portable bridge spanning the high water mark and/or a winter crossing; no in-water work is proposed and is low risk following standards and guidelines. This ranking does not authorize any undertaking that results in serious harm to fish, but suggests a low risk of causing serious harm to fish in compliance with the Fisheries Act following best practices such as those described in the DFO measures to avoid causing harm to fish and fish habitat and the standard mitigation techniques outlined in the FMP.

	Structure 1	Structure 2	Structure 3
Risk Evaluation:	**LOW**	**LOW**	
Site Inspection Required:	**NO**	**NO**	

ARFMI Crossing Installation Report (Must be completed for each crossing location)

Shareholder: _____ **Block ID:** _____

Contractor: _____ **Road Name:** _____

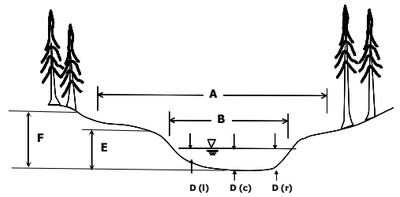
SITE CONDITIONS ENCOUNTERED

Crossing Located By:

Date Measurements Taken:

Stream Measurements (meters)

Flood Plain Width :	A
Bankful Width :	B
Channel width :	C
Depth - 25% of Channel :	D (l)
Depth - 50% of Channel :	D (c)
Depth - 75% of Channel :	D (r)
Depth - Bankful Flow :	E
Depth – Floodplain :	F
Stream Velocity :	m /sec



Notes:

Foundation Soil Description :

Sand ☐ Muck ☐
Silt ☐ Rubble ☐
Clay ☐ Gravel ☐

Channel Type:

Ephemeral ☐
Intermittent ☐
Permanent ☐

ARFMI Notification Provided :
(ARFMI Advised- 'Change to Operation' made)

FRI Incorrect ☐
Unmapped ☐

INSTALLATION CONDITIONS

Installation Supervised By:

Date of installation:

Crossing Permanency : Refer to Structure Removal Timeframe specified in AWS 4 and 5 (Month / Year)

Permanent ☐ Temporary ☐ Decommissioned Date: .....

Note: Measurements (*) must be included for all structures which remain in place beyond date of inspection

Scheduled Removal Date: .....

Crown Land Bridge

☐ Bridge Record Form submitted (i.e. MNR /ARFMI)

NAD 83 (Record Actual Crossing Location on Stream Segment):

E .....

N .....

New Crossing Type:

Box Culvert ☐
Arch Culvert ☐
Round Culvert ☐
Portable Bridge ☐
Steel Stringer Bridge ☐
Winter Snow Pack ☐

Structure Description:

Steel ☐
Plastic ☐
Wood ☐
Concrete ☐
Ford (Engineered) ☐

Type of Fill:

Sand ☐
Gravel ☐
Rock Rubble ☐
Other ☐

Erosion Prevention and Control (X):
(Indicate applicable measures taken)

Stable slopes on stream banks and drainage ditch banks ☐
Course, clean rock to high water mark ☐
Re-vegetate or seed slopes (stream banks and ditch banks) ☐
Divert drainage ditches to green belt ☐
Line drainage ditches with rock ☐
Use rock weirs in drainage ditches to impede water flow ☐
Use filter cloth on upstream side of culverts ☐
No grubbing or stripping of ground vegetation ☐
Use filter cloth (On top of ice if fill is used for Winter Crossings) ☐
Other: ☐

WATER CROSSING OPERATIONS CHECKLIST

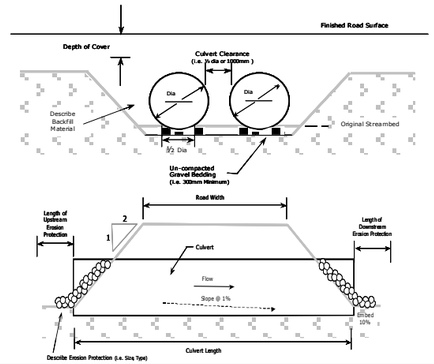
Inspector Name: _____

Only certified inspectors are allowed to conduct Forest Operations Inspections for submission to the FOIP database

FOIP Report Number :

CULVERT

* 'As Built' Culvert Installation Measurements (meters)	
Installed Diameter :	
Structure Length :	
Road Width :	
Depth of Cover:	
Water Depth in Pipe :	
Number of Culverts :	
Spacing Between Pipes :	



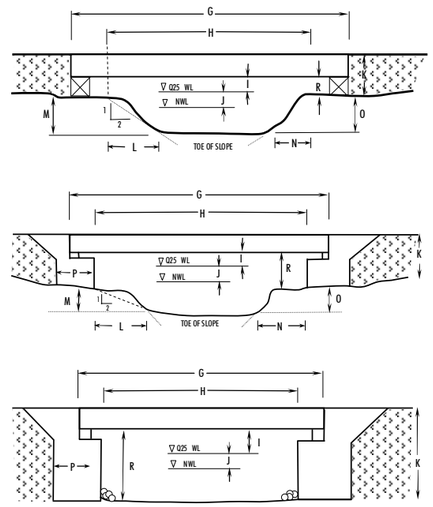
4 Photos must be Attached

( ) Approaches
( ) Inlet
( ) Outlet
( ) Inside Pipe

☐ Remedial action required

BRIDGE

* 'As Built' Bridge Installation Measurements (meters)	
Bridge length :	G
Clear Opening Width :	H
Freeboard (min 0.5m) :	I
Flood Rise :	J
Fill Height :	K
Left Slope Length :	L
Left Slope Rise :	M
Right Slope Length :	N
Right Slope Rise :	O
Crib Width :	P
Crib Height :	R



Bridge Used (Identification #) :

5 Photos must be Attached

( ) Approaches
( ) Deck
( ) Underside
( ) Upstream (Inlet)
( ) Downstream (Outlet)

☐ Remedial action required

☐ Verified 'As Built 'measurements consistent with proposed bridge dimensions on 'Bridge Site Data Form'

Verification :

☐ I have confirmed that the final crossing condition satisfies the mandatory water crossing standards and will not impede future transfer of responsibility

Notes:

Water Crossing Activity (X):

☐ Water crossing location same as AWS submission
☐ Installation of culvert and size same as described in AWS water shed calculations.
☐ No sediments or woody debris left in water body or streams
☐ Construction materials removed from site
☐ Embankment sloped properly (e.g. 2:1) with no possibility of slumping
☐ Timing restriction met
☐ Culvert properly installed (i.e. refer to FMP Standards)
☐ Sediment Control Plan in AWS followed
☐ No Erosion or Sedimentation present (e.g. filter cloth used to prevent material from entering waterway)
☐ No signs of equipment or machinery in stream (i.e. culvert installed before equipment progresses past crossing)
☐ Coarse clean rock used on all culvert crossings
☐ Natural vegetation protected
☐ Additional measures used to prevent erosion (e.g. seed, filter cloth, rip rap etc.)
☐ Drainage ditches properly installed
☐ Crossing removed before March 31 unless left for silviculture activities
☐ Road right of way width through unallocated stands , no larger than FMP requirement
☐ Road right of way width through AOC's (reserves), no larger than FMP requirement

Note: All of the above activities must be checked. ✓ - Verified to be within acceptable limits ✗ - Outside of acceptable limits. Refer to comments for additional details **N/A** – Not applicable

I certify that the activities inspected are fully compliant based on an inspection appropriate to support this decision.

Signature: _____ Date: _____