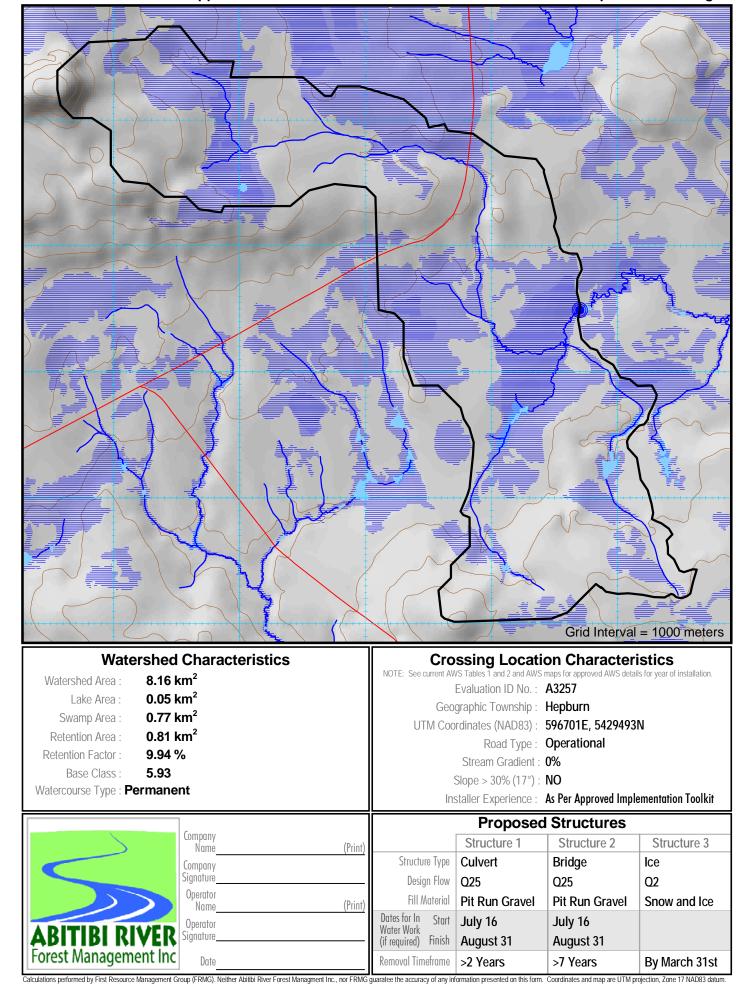
Abitibi River Forest Appendix 1: Form for Submission of Information on a Proposed Crossing



Shaded Area for Office Use Only	ARFMI Road Network No.	546			
Publication Date: February 26, 2024					
Abitibi River F	orest - S.F.L.	# 551832			
	land Falls Forestry				

c/o P.O. Box 867 New Liskeard, Ontario P0J 1P0 (705) 680-0033 Plan Term: 2022-2032 AWS Year: 2024-25

Culvert I	Design Options	Q ₂₅	Q ₁₀	Q_5	Q _{2.33}
	Design Flow	4.230 m ³ /sec	3.553 m ³ /sec	2.961 m ³ /sec	2.284 m ³ /sec
	1 Round	1800mm	1600mm	1500mm	1400mm
	2 Round	1400mm	1400mm	1200mm	1200mm
	3 Round	1200mm	1200mm	1000mm	900mm
	1 Arch (BxD)	2060x1520mm MP	2130x1400mm	1880x1260mm	1880x1260mm
	2 Arch (BxD)	1630x1120mm	1630x1120mm	1390x970mm	1390x970mm
	3 Arch (BxD)	1390x970mm	1390x970mm	1390x970mm	1390x970mm
	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 stand . For 40% fill, use a round culvert diameter of the Base distance of the corresponding Arch style c

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 distur footprint required for construction, maintenance and decommissioning of the water crossing. · Install erosion and sediment control measures prior to commencement of construction or decommission
- 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 • Direct storm water runoff from bridge decks, side slopes, road approaches and ditches away from the
- and into a retention pond or vegetated area. Ensure erosion and siltation in ditch lines adjacent to the watercourse crossing approaches are control 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/decommiss • 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 mus · Complete all in-water construction and decommissioning activities in an uninterrupted fashion and in a
- timeframe to minimize potential for site disturbance. · If installation requires inwater work, do not locate within 100m of spawning or sensitive fish habitat
- eq. rapids, riffles, known overwintering areas.
- Maintain machinery free of fluid and fuel leaks. Wash, refuel and service machinery at least 30m from 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 manne 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
- If machinery fording is required, limit to a one-time event (over and back) per piece of equipment esser implementating the project, and only if using an existing crossing at another location is not available o If minor rutting is likely, watercourse bank and bed protection methods (e.g., swamp mats, pads) are 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 materia
- and erosion or degradation is likely, use a temporary crossing structure or other practice to protect th
- . The one-time fording must adhere to the appropriate in-water timing windows; Fording must occur u conditions and not when flows are elevated due to local rain events or seasonal flooding.

Reviewed by MNRF. Follow standard(s) as well as any Appendix 2 conditions.

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

Structure 1: — Culvert installation is not approved outside the normal cold water timing restriction. A winter installation is not approved. A summer installation outside the timing restriction, and meeting all other standards, would be LOW.

Structure 2: — Portable bridge must be installed to meet Q25 design flow if installed during non-frozen conditions or has a multiyear service life.

Structure 3:

	Structure 1	Structure
Risk Evaluation:	HIGH	LOW
Site Inspection Required:	NO	NO

Crossing Evaluation Reference Number

A3257

Fisheries Opera	tional Management Zor	ne (OMZ):	
	assessed Water Crossing Conditions of standard no	onstruction, Removal and/or ot met for first structure. See red text.	
Previous Assess	sment Year (incl. SA):	2024	
SAR species likely to be impacted: NO			
Preconstruction photos available: NO			
Within 500m of	Brook Trout stream:	YES	
Q ₁₀	Q ₅	Q ₂₃₃	
10	5	2.00	

lard diameter. 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)
	Standards for Single, Small Closed-Bottom Round Culverts
bance	 This standard applies to single, round, corrugated, dosed-bottom steel, aluminum, or plastic culverts less than or equal to 1200mm in diameter that do not require site-specific engineering approval per MNRF's Crown Land Bridge Manual. This standard only applies if the project does not:
oning to	- Replace an existing open-bottom crossing (e.g., clear span bridge, arch culvert); - Replace an existing dosed-bottom culvert larger in diameter than that being installed; or
erosion.	 Involve the installation of more than one closed-bottom culvert at the crossing location.
watercourse	 Locate, design and construct to minimize likelihood of ongoing outlet scour, culvert undermining or erosion of fill in order to provide stable, non-perched culverts that provide for fish passage.
lled using	 Do not locate on meander bends, braided streams, or any other area inherently unstable that may result in alteration of natural stream functions or erosion and scouring of the structure.
	 Size to a minimum Q25 design flow. If an unmapped stream is encountered and proper analysis cannot be
sioning activities.	completed to determine Q25, size to ensure it spans from bank to bank.
	 Do not install where channel slope at crossing location is of a gradient greater than 2.0%.
t be used.	 Do not install where slope of road approaches or either bank approach is greater than 30% (17°).
n appropriate	 Locate where culvert can be embedded below grade of stream bed.
	 Use site-specific mitigation measures to ensure no ongoing erosion of fill. As a minimum:
	- Stabilize both inlet and outlet ends with appropriately sized non-erodible material;
	- Rock used is clean, free of fine materials and of sufficient size to resist peak flood events;
watercourse.	- Place rock at original bank grade to ensure no infilling or narrowing of watercourse;
er that avoids	- Fill material placed below normal high water mark must be erosion resistant and/or protected from erosion. The Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales refers to the normal high-water mark as the edge of vegetation communities capable of providing an effective barrier to the movement of sediment.
he undertaking.	 Do not locate within 100 metres of fisheries spawning or sensitive habitat.
ntial to	 Do not locate within 100 metres of any brook trout spawning or upwelling areas.
r practical.	 Do not locate on watercourses that flow into, and are within 500m of, known naturally reproducing brook trout lakes.
e to	 Mixed size, length, slope & drainage area must not increase flows to consistently & predictably impede fish passage. Install under low-flow conditions and not when flows are elevated due to local rain events or seasonal floading.
	 Both interior and exterior of culverts must be corrugated to ensure structural stability and facilitate fish passage.
ls and silts)	 The grade of the culvert must reflect the grade of the natural watercourse bed.
hem;	 Compact backfill adequately around the culvert. Use only clean sand or gravel and compact around the culvert in layers.
inder low-flow	 Length of culverts must permit banks to be sloped at an angle of 2:1 or a stable angle of repose for the materials used.

Watershed Thermal Code : UF



- Snow and ice crossing must be notched, and compacted snow removed, to prevent ice jamming and flooding prior to freshet. Snow and ice crossings must not block water flow or fish at any time.

e 2	Structure 3
	LOW
	NO

		J		pleted for each crossing location)			nstallation Measuremer (meters)	nts
Shareholder:			Block ID:		F	Installed Diameter :		
Contractor:			Pood Name		CULVERT	Structure Length :		
ontractor.						Road Width :		
TE CONDITIO	NS ENCOUNTEREI	D	1		O	Depth of Cover:		U
ossing Located By:			Date Measurements Taken:			Water Depth in Pipe :		
						Number of Culverts :		
Stream A	easurements			Foundation Soil Description :		Spacing Between Pipes :		
	neters)	Å 1	<u>k</u> k	Sand Muck				
Flood Plain Width :	Α			Silt Rubble		* 'As Built' Bridge I	nstallation Measuremer	nts
Bankful Width :	В		B	Clay Gravel			(meters)	
Channel width :	С	F E		Channel Type:		Bridge length :	G	
Depth - 25% of Channel :	D (I)	D (I)	T T D(c) D(r)	Ephemeral		Clear Opening Width :	Н	
Depth - 50% of Channel :	D (c)	Notes:		Intermittent		Freeboard (min 0.5m) :	I	
lepth - 75% of Channel :	D (r)			Permanent	BRIDGE	Flood Rise :	J	
Depth - Bankful Flow :	E			ARFMI Notification Provided :		Fill Height :	К	
Depth — Floodplain :	F			(ARFMI Advised- 'Change to Operation' made)		Left Slope Length :	L	
Stream Velocity :	m /sec			FRI Incorrect		Left Slope Rise :	M	
				Unmapped		Right Slope Length :	N	
						Right Slope Rise :	0	<u>.</u>
STALLATION	CONDITIONS		1			Crib Width :	Р	
stallation Supervised By:			Date of installation:			Crib Height :	R	
зилилил элнеглгед рд:					V	cation :		Water Crossing Activity (
ossing Permanency : Refer to	Structure Removal Timeframe specified i	Monin/ Tear		Erosion Prevention and Control (X): (Indicate applicable measures taken)	veriti	I have confirmed that the final cr satisfies the mandatory water cro	ssing standards and	Water crossing locat
Descing Permanency : Refer to Permanent	Temporary Decommission	monin/ tear		Erosion Prevention and Control (X): (Indicate applicable measures taken) tream banks and drainage ditch banks		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing locat Installation of culve No sediments or wo
Permanent Permanent with the in Permanent with the in uctures which remain in place beyo	Temporary Decommission duded for all nd date of inspection Scheduled Remov	wonin/ tear ned Date:	Stable slopes on s	(Indicate applicable measures taken)		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing locat Installation of culve No sediments or wo Construction materic Embankment sloped
Permanent Permanent with the in Permanent with the in uctures which remain in place beyo	Temporary Decommission duded for all nd date of inspection Scheduled Remov	womin/ tear ned Date:	Stable slopes on s	(Indicate applicable measures taken) tream banks and drainage ditch banks		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing locat Installation of culve No sediments or wo Construction materic Embankment sloped Timing restriction m Culvert properly inst
Permanent Permanent te: Measurements (*) must be in uctures which remain in place beyo	Temporary Decommission duded for all nd date of inspection Scheduled Remov NAD 83 (Record Actual Cross	ossing Location on Stream Segment):	Stable slopes on s	(Indicate applicable measures taken) tream banks and drainage ditch banks Course, clean rock to high water mark slopes (stream banks and ditch banks)		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing local Installation of culve No sediments or wo Construction materic Embankment sloper Timing restriction m Culvert properly inst Sediment Control Pl
Dessing Permanency : Refer to Permanent ote: Measurements (*) must be in ructures which remain in place beyo rown Land Bridge Bridge Record Form subr (i.e. MNR /ARFMI)	Temporary Decommission Cluded for all nd date of inspection NAD 83 (Record Actual Cross nitted	ned Date:	Stable slopes on s	(Indicate applicable measures taken) tream banks and drainage ditch banks Course, clean rock to high water mark slopes (stream banks and ditch banks) Divert drainage ditches to green belt		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing locat Installation of culve No sediments or wo Construction materia Embankment sloped Timing restriction m Culvert properly inst Sediment Control PI No Erosion or Sedim No signs of equipme
Desing Permanency : Refer to Permanent	Temporary Decommission Cluded for all Ad date of inspection NAD 83 (Record Actual Cross nitted Structure Description:	ned Date:	Stable slopes on s	(Indicate applicable measures taken) tream banks and drainage ditch banks Course, clean rock to high water mark slopes (stream banks and ditch banks) Divert drainage ditches to green belt Line drainage ditches with rock		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing locat Installation of culve No sediments or wo Construction materia Embankment sloped Timing restriction m Culvert properly inst Sediment Control PI No Erosion or Sedin No signs of equipmed Coarse clean rock us Natural vegetation
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Desing Permanency : Refer to Permanent	Temporary Decommission Cluded for all nd date of inspection NAD 83 (Record Actual Cro nitted Structure Description: Steel Plastic	ned Date:	Stable slopes on s Re-vegetate or seed s Use rock weirs in Use t	(Indicate applicable measures taken) tream banks and drainage ditch banks Course, clean rock to high water mark slopes (stream banks and ditch banks) Divert drainage ditches to green belt Line drainage ditches with rock drainage ditches to impede water flow filter cloth on upstream side of culverts		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing locat Installation of culve No sediments or wo Construction materic Embankment sloped Timing restriction m Culvert properly inst Sediment Control PI No Erosion or Sedim No signs of equipmed Coarse clean rock us Natural vegetation p Additional measures Drainage ditches proc
ossing Permanency : Refer to Permanent	Temporary Decommission Cluded for all nd date of inspection NAD 83 (Record Actual Cross nitted Structure Description: Steel Plastic Wood	womin/ rear ned Date:	Stable slopes on s Re-vegetate or seed s Use rock weirs in Use t No grub	(Indicate applicable measures taken) tream banks and drainage ditch banks Course, clean rock to high water mark slopes (stream banks and ditch banks) Divert drainage ditches to green belt Line drainage ditches with rock drainage ditches to impede water flow filter cloth on upstream side of culverts bing or stripping of ground vegetation		I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and	Water crossing locati Installation of culver No sediments or woo Construction materia Embankment sloped Timing restriction materia Sediment Control Plo No Erosion or Sedim No signs of equipme Coarse clean rock us Natural vegetation p Additional measures Drainage ditches pro Crossing removed be Road right of way w
cossing Permanency : Refer to Permanent New Crossing Type: Box Culvert Arch Culvert	Temporary Decommission Cluded for all nd date of inspection NAD 83 (Record Actual Cro nitted Structure Description: Steel Plastic	ned Date:	Stable slopes on s Re-vegetate or seed s Use rock weirs in Use t No grub	(Indicate applicable measures taken) tream banks and drainage ditch banks Course, clean rock to high water mark slopes (stream banks and ditch banks) Divert drainage ditches to green belt Line drainage ditches with rock drainage ditches to impede water flow filter cloth on upstream side of culverts	Note	I have confirmed that the final cr satisfies the mandatory water cro will not impede future transfer of	ssing standards and responsibility	Water crossing locat Installation of culve No sediments or wo Construction materic Embankment sloped Timing restriction m Culvert properly inst Sediment Control PI No Erosion or Sedim No signs of equipmed Coarse clean rock us Natural vegetation p Additional measures Drainage ditches pro Crossing removed bo Road right of way w

