

Grid Interval = 1000 meters

Watershed Area :	8.16 km²
Lake Area :	0.05 km²
Swamp Area :	0.77 km²
Retention Area :	0.81 km²
Retention Factor :	9.94 %
Base Class :	5.93
Watercourse Type :	Permanent

Evaluation ID No. : **A3257**
 Geographic Township : **Hepburn**
 UTM Coordinates (NAD83) : **596701E, 5429493N**
 Road Type : **Operational**
 Stream Gradient : **0%**
 Slope > 30% (17°) : **NO**
 Installer Experience : **As Per Approved Implemen**

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



Company Name _____ (Print)

Company Signature _____

Operator Name _____ (Print)

Operator Signature _____

Date _____

Shaded Area for Office Use Only	ARFMI Road Network No. 546	Previously Used Crossing ID	Crossing Evaluation Reference Number A3257
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Within 500m of Brook Trout stream: **YES**

- Size to a minimum Q25 design flow. If an unmapped stream is encountered and proper analysis cannot be 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%.
- Do not install where slope of road approaches or either bank approach is greater than 30% (17°).
- 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;
 - Place rock at original bank grade to ensure no infilling or narrowing of watercourse;
 - 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.

- Do not locate within 100 metres of fisheries spawning or sensitive habitat.
- Do not locate within 500 metres of any brook trout spawning or upwelling areas.
- Do not locate on watercourses that flow into, and are within 500m of, known naturally reproducing brook trout lakes.
- Mix of 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 flooding.
- Both interior and exterior of culverts must be configured to ensure structural stability and facilitate fish passage.
- The grade of the culvert must reflect the grade of the natural watercourse bed.
- Compact backfill adequately around the culvert. Use only clean sand or gravel and compact around the culvert in layers.
- 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.

UF

Structure 3:
— 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.

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

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 ☐

Notes:

INSTALLATION CONDITIONS

Installation Supervised By:

Date of installation:

Crossing Permanency : Refer to Structure Removal Timeframe specified in AWS 4 and 5

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

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

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

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

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

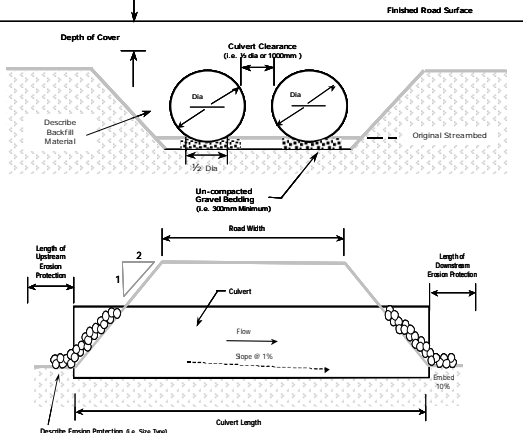
Inspector Name: _____

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

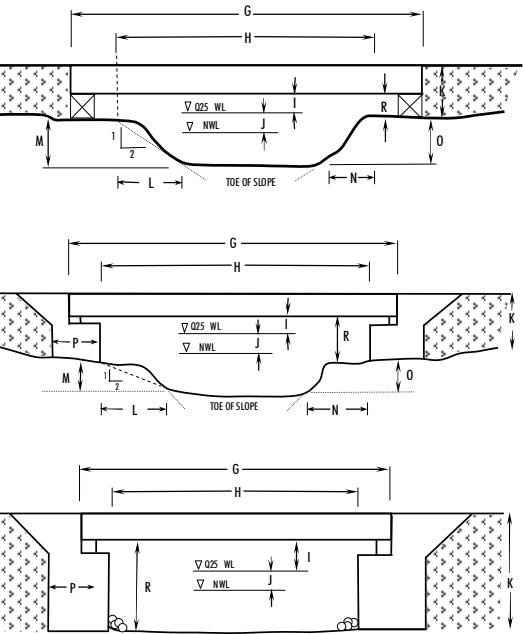
() Inside Pipe

☐ 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:

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

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

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

Signature: _____ Date: _____