Parks Canada Basic Impact Analysis Template

1. PROJECT TITLE & LOCATION

Stable Stabilisation and Roof Repair
Fort Walsh National Historic Site of Canada, Southwest Saskatchewan.

2. PROPONENT INFORMATION

3. PROPOSED PROJECT DATES

Planned commencement: 2017-10-31
Planned completion: 2018-06-15

4. INTERNAL PROJECT FILE # SSFU-2017-030-FW

5. PROJECT DESCRIPTION

Proposed Work and Rationale:

To replace the shingles on the roof of the stable, and to add log beams to the roof which will allow the removal of temporary supports currently in place. The existing shingles are over 40 years old. This work is needed as the shingles are deteriorated and the roof is sagging and will in time collapse.

The stable is a single- story log structure constructed in three sections - each approximately 26' x 29' in dimension. Each section is separated from the next by a log wall. Its overall size is approximately 80' x 30'. Three log purlins span longitudinally (the 26' dimension in each section): 1 at the ridge, and 2 at the mid slope of the roof. They support +/- 2" x 5" rafters at 24" o.c. and 3/4" roof boards. Placing additional log beams in the roof (see Figure 1) will allow for the removal of temporary shoring posts (installed in 2004), which will be more compatible with heritage values of the building

and the site. The stable has a FHBRO heritage designation for its historical associations, functional design, craftsmanship and environmental qualities, and is by far the largest building on the remount station and the most important from an operational standpoint. .

Project Area, Geographic and Temporal Scope of Analysis

The project area is limited to the stable, as well as areas for material storage and vehicle/equipment staging which will be limited to existing hardened surfaces in front country/operational areas as directed by PCA staff. Impacts to valued components in adjacent areas are not expected. Work is expected to take 6 weeks.

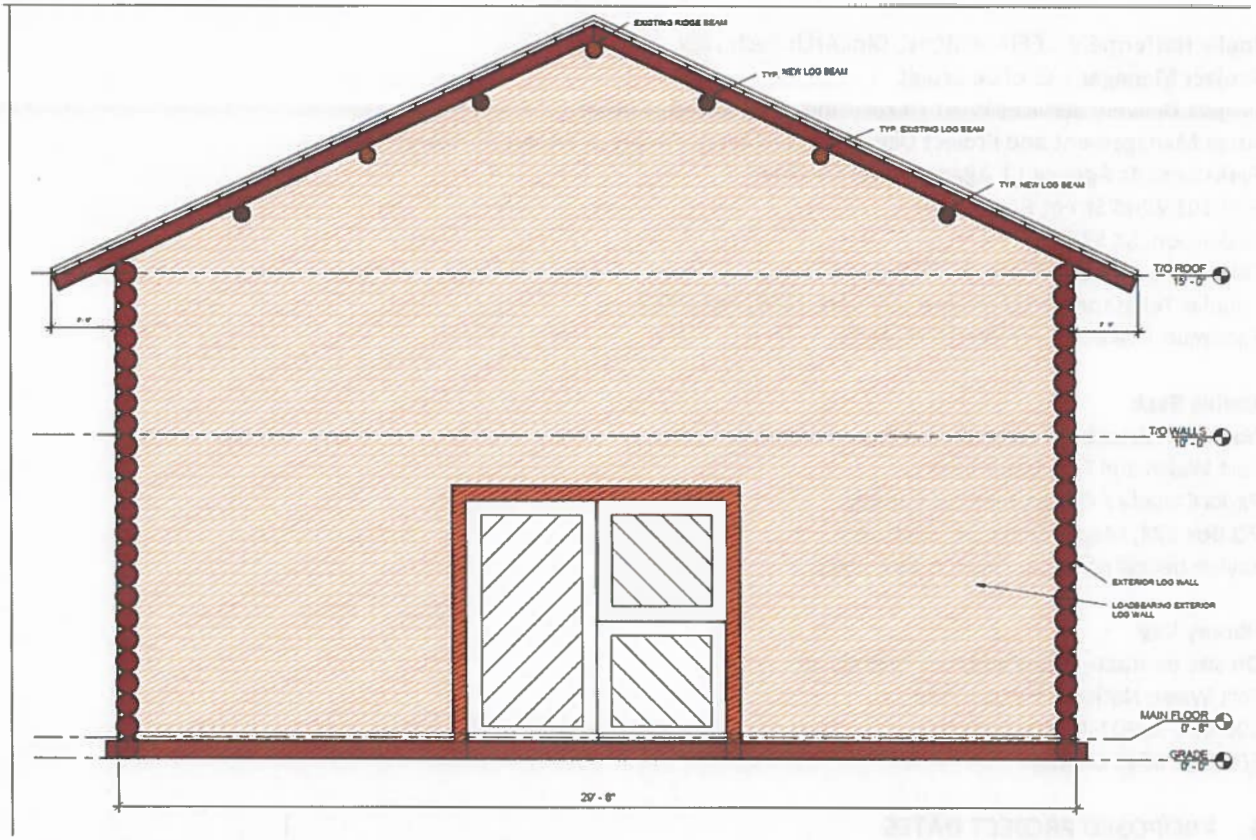

Figure 1: Diagram showing proposed work to stabilize the roof.

6. VALUED COMPONENTS LIKELY TO BE AFFECTED

Table 1: Identifies valued components potentially impacted and which will therefore be carried forward to the effects analysis section).

Valued Component	Potential Project Impacts
Air	• Decreased ambient air quality (i.e. from dust, emissions, etc.)
Soils and Landforms	• Soil compaction and rutting • Soil contamination
Wildlife	• Wildlife sensory disturbance • Damage to nests /disruption of nesting/non-compliance with the Migratory Birds Convention Act (MBCA) • Mortality from project activities
Cultural Resources	CRM has determined that the appropriate conservation approach for this cultural heritage resource is Rehabilitation. Relevant standards and mitigations were determined in a Cultural Resource Impact Analysis Request included in Appendix A, as well as recommendations by relevant expertise, included in section 11.
Visitor Access and Services	Work during the visitor season may result in disruption to visitor experience and program delivery
Public Safety	Work during the visitor season will increase potential hazards on site (work overhead, use of vehicles and machinery in the fort)

7. EFFECTS ANALYSIS

7.1. Air, Soil and Landforms

Dust and debris from work on the roof and ceiling beams may impact air quality in the immediate area for the duration of work. Soil compaction and rutting may occur where vehicles and machinery operate, or where materials are stored, off of existing hardened surfaces. Soil contamination may result from the use of vehicles, machinery or from storage of hazardous materials on site. Impacts of soil compaction and contamination are long-term and can impact adjacent areas.

7.2. Wildlife

Disturbance of wildlife is expected to be limited to only those wildlife occurring in the immediate area for the duration of work which is estimated to be 6 weeks. As work is occurring right in the fort, which already experiences anthropogenic disturbance through operations, visitor programming, etc. the additional disturbance of proposed work is not expected to have a significant impact on wildlife, with the potential exception of birds and bats.

Bats

Of the 5 species of bats recorded in the Cypress area[1], little brown myotis are the most likely to occupy buildings. Little brown myotis are listed as Endangered under Schedule 1 of the Species at Risk Act (SARA). Hibernacula and maternity roosts are both considered critical for the species' survival and recovery, and while none were identified in Saskatchewan at the time of posting, this was due to lack of information and the recovery strategy considers the currently identified critical habitat as insufficient to meet recovery objectives.

Projects timed within the estimated breeding window (May-July) may negatively impact bats if they are present in the building. The risk of bats using the building for maternity roosts or hibernacula seems low. There have been no recorded occurrences of bats occupying the stable since Parks Canada has operated the site, and staff did not report any sightings (Harvey Kaye, correspondence 2017). The stable ceiling is open, and roosting bats would be quite visible. However, the building will need to be checked 7 days prior to work, and if signs of bats are found then PCA will need to determine whether the building is likely a maternity roost or a hibernacula. Should bats be confirmed, follow Parks Canada's National Best Management Practices for Management of Bat Maternity Roosts in Built Assets.

Migratory Birds

The *Migratory Birds Convention Act (*MBCA) prohibits the disturbance, destruction, or taking of a nest, egg, or nest shelter of a migratory bird. The average nesting window for the 76 species known to nest in open habitats in this area is April 13 – August 24[2]. Impacts to migratory birds may occur if birds are nesting in/on the roof/ceiling during repairs. Certain species are more likely to use anthropogenic structures for nesting, including barn swallows, cliff swallows, which reduces the likelihood of nesting until mid-May.

If work is timed within the breeding window (April 13 – August 24) the building should be checked for signs of breeding migratory birds within 7 days of work starting. If breeding birds are found,

[1] Willis, C.K.R. and R.M. Brigham. 2003. New Records of the Eastern Red Bat, *Lasiurus borealis*, from Cypress Hills Provincial Park, Saskatchewan: A response to climate change? Can. Field-Nat. 117:651-654.

[2] Environment and Climate Change Canada Nesting Calendars in zone B, technical information for planning purposes covering Prairie, Boreal Taiga Plains and Northwestern Interior Forest, https://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4F39A78F-1#_fig01

additional mitigations will be required to ensure compliance with the MBCA. Parks Canada draft guidance and best management practices for managing migratory birds apply.

7.3. Cultural Resources

A Request for Cultural Resource Impact Analysis was completed, and the determination of this process is that intervention is required to restore and preserve the heritage resource:

> *Impacts to cultural resources are considered high if the work does not occur. Damage is occurring as the leaking and sagging roofs are causing internal and structural damage. The longer the delay, the more extensive the work will be to fix the buildings. Heavy snow loads in the winter exacerbate the sagging of the roof in the stage and could cause the eventual collapse if stabilization work is not carried out. Impacts to the cultural resource are considered minimal if cedar shingles are replaced as they are replacing like with like. The stable is a FHBRO Recognized building. No ROI is required. Log posts were introduced at the mid-span of the ridge beams and purlins in 2004 in an effort to control the sagging of the roof, but it has not been successful. By addressing these issues now, Parks Canada will avoid higher costs associated with deteriorating buildings and damage to artifacts, or in the worst case scenario, a collapsed roof.*

The proposed interventions have been assessed by Cultural Resource Management in Fort Walsh NHSC Stable Roof Investigation HCD Project #489570, 2005 and the Fort Walsh Long Term Maintenance Report PWGSC 2016. Recommendations for how to move forward with repairs to preserve heritage integrity and values are documented in the CRIA request.

7.4. Visitor Access, Services and Public Safety

Work will require closing the stable to visiting public and may impact visitor services if done during the operating season. Vehicle access along the main road in to the Fort could be blocked over short periods for the transportation of materials and equipment. Overhead work and the operation of vehicles and machinery present hazards to the public and mitigations will be required to ensure the work area is well marked and monitored. The noise and visual impacts of work will impact sense of place and may impact visitor programming. Work will be approximately 6 weeks to complete, and will be coordinated with the site to minimise disruptions to operations.

8. MITIGATION MEASURES

The following mitigations are taken from the Parks Canada National Best Management Practices for Common Activities (2017), National Best Management Practices for Management of Bat Maternity Roosts in Built Assets and the draft National Best Management Practices for Migratory Birds (2017).

8.1. Project Planning:

1) Key contacts and their respective roles and responsibilities must be identified prior to work starting and communicated to all on-site workers.
2) People working on the project must review the mitigation measures and any site specific considerations with Parks Canada Agency (PCA) Environmental Assessment (EA) Officer before work begins.

8.2. Work Site Conditions/Staging/Laydown:

3) Staging areas, material/equipment drop sites, and parking areas must be identified, including duration of use, within an existing roadway/parking area and approved by the PCA Site Manager.

4) Clearly mark the work site and restricted areas with stakes, biodegradable flagging tape or other means to minimize the disturbance footprint; remove when the project is completed.
5) Use existing roadways, trails, disturbed areas or other areas as approved by designated Parks Canada staff for site access, travel within the site and construction activities.

8.3. Equipment Operations:

6) Equipment must be properly tuned, clean and free of contaminants & dirt, in good operating order, free of leaks (e.g. fuel, oil or grease), and fitted with standard air emission control devices and spark arrestors prior to arrival on site.
7) Machinery must be stored, maintained and refuelled on a flat surface, outside the dripline[3] of trees and a minimum of 30m from waterbodies, as measured from the High Water Mark. Increase the buffer zone depending on level of risk and site specific conditions.
8) Refueling must take place on an impermeable surface or within a container. Leaks and spills during refueling must be cleaned up and contaminated materials must be disposed of appropriately. Fuel must never be dispelled or deposited into the environment or any water body.
9) Any required cleaning of tools and equipment should be done off-site. If it must be on-site, it must be in an appropriate area at least 30m from a waterbody.

8.4. Site Clean-up and Waste Management

10) All wildlife attractants must be secured (e.g., petroleum products, human food, recyclable drink containers and garbage) in wildlife-proof containers, a secure building or vehicle. When possible, keep food waste separate from construction waste and remove daily.
11) Contain and stabilize waste material (e.g., construction waste and materials, vegetation) at a minimum of 30m from a waterbody.
12) Contain wastes and transport to an approved waste landfill site outside the Parks Canada protected heritage place, unless otherwise directed; cover waste loads during transportation. All construction materials must be removed from the site on project completion.
13) Burning is not permitted within the protected heritage place unless approved by Parks Canada.

8.5. Spill Response and Hazardous Materials

14) A Spill Response Plan should be developed prior to work starting.
15) Ensure that all on-site workers receive a briefing about the Spill Response Plan and are aware of the location and use of spill kits and containment devices.
16) The Spill Response Plan will, at minimum, include the following information:
    a) List of products and materials considered or defined as hazardous or toxic to the environment. Such products include, but are not limited to, waterproofing agents, grout, cement, concrete finishing agents, hot poured rubber membrane materials, asphalt cement, sand blasting agents, paint, solvents and hydrocarbons.
    b) Required equipment on site.
    c) Size, type and location of spill kits.
    d) Fuelling procedures, fuel storage.

[3] The area defined by the outermost circumference of a tree canopy where water drips from and onto the ground.

e) Spill prevention procedures (i.e., containment and storage of materials, security, handling, use and disposal of empty containers, surplus product or waste generated in the application of these products in accordance with all applicable federal and provincial legislation).
f) Spill response (i.e., containment, clean-up, disposal of contaminated materials, etc.).
g) Spill reporting procedure.
h) Up-to-date emergency response contact list including contact information for reporting spills.

17) Follow all applicable regulations and codes for the management and handling of hazardous waste.
    a. Identify and handle all toxic/hazardous materials as required under the *Canadian Environmental Protection Act*, *Transportation of Dangerous Goods Act* and Workplace Hazardous Materials Information System.
    b. Dispose of contaminated materials at provincially or territorially certified disposal sites outside of Parks Canada land.
18) Spill containment equipment must be present on-site. A spill contingency response kit including sorbent material and berms to contain 110% of the largest possible spill related to the work must be available on site at each location of potential spills (sites where equipment is working and at re-fuelling, lubrication, and repair locations).
19) All spills must be contained and cleaned-up as soon as it is possible to safely do so. In the event of a major spill, all other work must stop until the spill has been adequately contained and cleaned up.
20) Notify the designated Parks Canada staff and the emergency contact immediately of any spill. In the event of a major spill, call the first contact authority (Saskatchewan Ministry of Environment, 1-800-667-7525).
21) Contaminants must be recovered at source and disposed of according to applicable laws, policies and regulations. The site will be inspected by Parks Canada staff to ensure completion to expected standards.
22) Petrochemical products, paints and chemicals must be stored a minimum of 30 meters away from waterbodies and, if left overnight, they must be secured.
23) All construction sites must be equipped with containers suitable for the secure, temporary storage of hazardous wastes, separated by type.

8.6. Wildlife

24) If active nests, dens or roosts are discovered, stop work and contact the PCA's site Maintenance Supervisor immediately who will contact the PCA environmental assessment officer assigned to project.
25) Never approach or harass wildlife (e.g., feeding, baiting, luring).
26) If wildlife is observed at or near the work site, allow the animal(s) the opportunity to leave the work area.
27) PCA's site Maintenance Supervisor must be alerted immediately to any potential wildlife conflict (e.g., aggressive behaviour, persistent intrusion), distress or mortality. In the case of aggressive behaviour or persistent intrusion, stop work and evacuate the area.

28) During breeding season (April 13 – August 23) and on the fringes of breeding season, the presence/absence of bats and migratory birds in the built asset must be confirmed within 7 days of commencing work.
    a. For Bats: Use of acoustic monitoring equipment is recommended. Presence/absence checks must be completed by qualified individuals familiar with bat ecology and bat roosts within the ecoregion of the built asset. If such an individual is not available in the field unit, an external specialist is required. Results must be documented and provided to the designated Parks Canada contact prior to work commencing.
    b. If evidence of bats is found, results must be provided promptly to the Site Manager, Project Manager and EA Officer. Further investigation may be required to determine what part of the building is being used, and how it is being used (maternity roost, hibernaculum, other). Follow Parks Canada's draft Guidelines on Bat Management, Parks Canada's National Best Management Practices for Management of Bat Maternity Roosts in Built Assets, and seek advice from Species Conservation Management.
    c. Should migratory bird breeding activity or a nest be identified during the survey or during work, work will stop and the area will be left undisturbed with a suitable buffer zone established and maintained until the young have permanently left the vicinity of the nest. The size of the buffer will be species dependent and determined by the appropriate Parks Canada staff in consultation with regulatory guidance. Follow Parks Canada's draft Guidelines on Managing Migratory Birds and draft National Best Management Practices for Migratory Birds.
29) As much as possible, schedule noisy activities to minimise impacts to visitors.
30) Close and mark the work site with appropriate signage while active construction, repair or maintenance is underway; consider temporary detours or reroutes as appropriate.
31) Secure and clearly mark unattended safety hazards (e.g., excavations, debris piles) with fencing, warning signs, area closures or combination thereof.
32) If closing the area is not possible, maintain a safe working distance between work activities and visitors. If traffic control is required, a flag person should manage traffic through the construction/hazard area.
33) Visitor access trails and roads outside the construction area must be free of construction materials, waste, machinery and equipment.

8.7. Cultural Resources

Guidelines and recommendations required for project approval are included in the Cultural Resource Impact Analysis (CRIA) Request, found in Appendix A. Mitigations from the CRIA request include:

34) All work and interventions will be documented. General Guidelines 1-9 for Preservation, Rehabilitation and Restoration will be considered, as well as Additional Guideline 15 (All Materials page 216).
35) For the Rehabilitation, Standards 14-15 will be considered as well. New work done to stabilize the stable will be visually compatible with, but subordinate to, and distinguishable from the historic place. The integrity of the historic structure will not be impaired. Balancing conservation principles and sustainability objectives will be key.
36) Repair of all roofing should always be executed with "in kind" materials.

37) When roofing requires replacement it should be based on available documentation.
38) The slopes and overhangs of the roofs contribute to the form and massing of the buildings and should not be altered in an effort to improve roof performance, without considering the impact these changes would have on the historic values and character of the resources and the site.
39) The stable stabilization will be done in consultation with engineers and built heritage specialists to ensure the minimal amount of intrusiveness to the heritage structure. Consideration will be given to finding the most appropriate solution with the least impact on the character-defining elements and overall heritage value of the historic building.
40) All work and interventions will be documented. General Guidelines 1-9 for Preservation, Rehabilitation and Restoration will be considered, as well as Additional Guideline 15 (All Materials page 216).
41) For the Rehabilitation, Standards 10-12 will be considered. New work done to stabilize the stable will be visually compatible with, but subordinate to, and distinguishable from the historic place. The integrity of the historic structure will not be impaired.

9. OTHER Considerations

Check all that apply

☐ Public/stakeholder engagement

☐ Aboriginal engagement or consultation

☒ Surveillance

☐ Follow-up monitoring, required to evaluate effectiveness of mitigation measures and/or assess restoration success

☐ Follow-up monitoring, required by legislation or policy (indicate basis of requirement e.g. required by the *Species at Risk Act)*

☐ SARA Notification

A site visit by a qualified individual(s) will be required within 7 days of work starting to identify whether there are any nests or bats roosting in/on the stable. If nesting birds or bats are confirmed, additional site surveillance and monitoring will be required to ensure mitigations are effective.

10. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

Proposed work is limited to the stable and required storage/staging area, with no significant residual effects expected to adjacent areas. After mitigations, no significant residual adverse effects are expected to valued components.

11. EXPERTS CONSULTED

Jim Wagner, MAA, FRAIC, LEED AP
Conservation Architect, Senior Built Heritage Advisor, Indigenous Affairs and Cultural Heritage Directorate
Parks Canada / Government of Canada
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CRM Review received from Jim Wagner August 15, 2017:

Building: Fort Walsh NHSC Stable

Heritage Designation: FHBRO Recognized

Heritage Value:
From the Heritage Character Statement:

- *The stable was designated Recognized mainly for its historical associations, functional design, craftsmanship, and environmental qualities.*
- *The stable, by far the largest building on the remount station and the most important from an operational standpoint, is one of only three buildings constructed in 1943.*
- *The stable, as constructed in 1943, despite the avowed intention of replicating an 1870's vernacular architecture, clearly borrowed from the rustic style popularized in Canada's National Parks. The regularity of the log diameters, the gable and purlin log construction, and the fully intersecting cross walls are all indicative of the style.*
- *The stable building is a valuable survivor of the earliest remount station building program. Any change to the building (architectural details, finishes or fittings) now would severely diminish its heritage value both intrinsically and as a resource associated with the RCMP in more recent decades and their efforts to preserve the traditions of the force.*

Building Description:
The stable is a one story log structure constructed in three sections - each approximately 26' x 29' in dimension. Each section is separated from the next by a log wall. Its overall size is approximately 80' x 30'.
Three log purlins span longitudinally (the 26' dimension in each section) - 1 at the ridge, and 2 at the mid slope of the roof. They support +/- 2" x 5" rafters at 24" o.c. and 3/4" roof boards.

Proposed Interventions:

1) *Replace cedar shingle roofing. The shingles have deteriorated to the point where replacement is necessary.*
2) *Reinforce roof structure to support snow loads in accordance with the current building code and to remove temporary shoring posts installed in 2004. The roof sags noticeably - the posts are deemed too visually intrusive and a detriment to visitor interpretation/experience.*

Standards and Guidelines:
The appropriate conservation approach is Rehabilitation. The relevant Standards are numbers 1-12, The Guidelines for Roofs, Interior Features and Structural Systems were also consulted.

Two options for structural reinforcement are proposed:

- *Option 1: Insert 4 new log purlins of the same size as the existing purlins at the midpoints between them to distribute the load. It will be necessary to cut holes in the end gable walls and the intermediate walls to feed the log purlins through and into place. No temporary shoring is needed.*
- *Option 2: Replace 3 purlins with steel beams concealed with cut out logs to resemble the existing purlins. The proposed size is unknown. It will be necessary to cut holes in the end gable walls and the intermediate walls to feed the steel beams through and into place. Temporary shoring will be needed during the work.*

Both options achieve the desired result - a stronger roof, and no interior post supports.

Assessment of Impacts on Heritage Value

Roofing:

1) *Shingles will be replaced like for like, the same size and same exposure.*
2) *Work is part of ongoing roofing work at the site.*
3) *The work and conditions are well understood and practiced.*
4) *Replacement conforms with Standard 8.*

Structural reinforcing:
Both options have relative merits and risks.
The impact of each option to the heritage resource, though not the same, is equivalent overall.
Both options:

- *are physically and visually compatible and identifiable on close inspection (Standards 9 and 11)*
- *are the minimum intervention (Standard 3)*
- *will not impair the heritage resource if they are removed at a later date (Standard 12)*

Purlins Option 1:

- *Since the new purlins need full bearing on the walls, they will be offset by their diameter in each of the three sections of the building. This will generally not be noticeable because it is not possible to see opposite sides of the interior walls at same time. The irregular purlin spacing might be noticed by the keenly observant.*
- *There is less risk in implementation because shoring walls are not needed.*
- *It is more clearly an intervention but only noticeable on "close inspection" as per Standard 9.*

Purlins Option 2:

- *The size of the steel beams, and hence the size of the imitation log covering, is not known - it is not yet designed.*
- *It is a more complex intervention, requiring the construction of two shoring walls the length of the building.*
- *The purlins are not offset between the sections of the building.*
- *The number and location of supports (purlins) remains unchanged.*

<u>Recommendations</u>:

1) *Overall, Option 1 is a more direct approach to intervening and conserves more original material.*
2) *Use matching species of wood for the new purlins.*
3) *Use matching size purlins.*
4) *Within each section of the building, ensure the new purlins on opposite sides of the ridge are placed symmetrically.*
5) *Conceal the new openings through the gable end walls.*
6) *Paint (whitewash) the new purlins white to match the remainder of the interior*

<u>Other options considered</u>:
Do nothing - This discarded option imposes greater risk to the building's integrity. In the short term, the poor condition of the shingles risks water infiltration into the building. In the long term, deferring roof reinforcing increases possible risk of roof failure.

12. DECISION

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

☒ not likely to cause significant adverse environmental effects.

☐ likely to cause significant adverse environmental effects.

NOTE: If the project is identified as likely to cause significant adverse effects, CEAA 2012 prohibits approval of the project unless the Governor in Council (Cabinet) determines that the effects are justified in the circumstances. A finding of significant effects therefore means the project CANNOT go ahead as proposed.

FOR SARA REQUIREMENTS:

☒ There are no residual adverse effects to species at risk and therefore the SARA-Compliant Authorization Decision Tool was not required

OR, the SARA-Compliant Authorization Decision Tool (Appendix 2) was used and determined:

☐ There is no contravention of SARA prohibitions

☐ Project activities contravene a SARA prohibition and CAN be authorized under SARA

☐ Project activities contravene a SARA prohibition and CANNOT be authorized

13. RECOMMENDATION AND APPROVAL

(Add additional blocks as required)

Prepared by: EIA author (name & position): Krista Cairns Environmental Assessment Officer, South Saskatchewan Field Unit Parks Canada / Government of Canada Box 150, Val Marie, SK S0N 2T0 krista.cairns@pc.gc.ca / Tel: 306-298-2166 ext 227 / Cel: 306-772-0058	Date: October 23, 2017
Recommended by: Functional manager of the project (name): Kaylee Beck National Historic Site and Visitor Experience Manager Fort Walsh and Fort Battleford Parks Canada / Government of Canada PO Box 278, Maple Creek, SK, S0N 1N0 kaylee.beck@pc.gc.ca, Tel: 306-662-5272	Date: October 23, 2017
Approval signature: Name & position (*Field Unit Superintendent, Director of a Waterway*): Kathy Grant Kathy Grant A/ South Saskatchewan Field Unit Superintendent Box 150, Val Marie, SK S0N 2T0 kathy.grant@pc.gc.ca / Tel: 306-298-2166 ext 232	Date: Oct. 24/17

14. BMPS

Parks Canada National Best Management Practices for Bat Maternity Roosts in Built Assets (2016)
Parks Canada draft National Best Management Practices for Migratory Birds (2017)

15. NATIONAL IMPACT ASSESSMENT TRACKING SYSTEM

☐ Project registered in tracking system

☒ Not yet registered *(CEAA 2012 requires PCA submit a report to Parliament annually. EIAs must be entered in the tracking system* ***by the end of April*** *to enable reporting.*

*****Ensure that all required mitigation measures and conditions (e.g. follow-up monitoring requirements) are included in project permits and authorizations*****

16. Appendix A

Request for Cultural Resource Impact Analysis (CRIA)

Will the project focus directly on a cultural resource? ☒Yes, please select type(s)
- ☒National Historic Site(s)
- ☒Building(s)
- ☐Engineering Work(s)
- ☐Archaeological Site(s)
- ☐Cultural Landscape(s)
- ☐In situ object(s)
- ☒Unknown

☐No
If there are any cultural resources within the immediate area of the project, please provide information on these resources.

FOR INTERNAL USE	
Project Number	

Project Title	**FWNHS Historic Bldg Roof**

Protected Heritage Place:	Fort Walsh NHS	**Management Unit:**	Saskatchewan South Field Unit
Street Address/Location:	On-site, SW Saskatchewan	**Date:**	March 8, 2017
Program Activity (%):	PA4	**Funding Source:**	Federal Infrastructure Investment (FII)
		Estimated Total Project Budget:	$2,450,000
Planned Schedule:			

Contact Information

Contact Person/Lead:	Joelle Haffermehl, Project Manager, (306) 975-4794 joelle.haffermehl@pc.gc.ca
Asset Manager:	Nicole Crerar, Asset Manager, (306) 975-6469 nicole.crerar@pc.gc.ca
Cultural Resource Management Advisor (Field Unit or HCDD):	Audra Norek, SSFU, Gerald, SK, 306-745-6234, audra.norek@pc.gc.ca Flo Miller, Cultural Heritage Policies Branch, Winnipeg, 204-983-8918, flo.miller@pc.gc.ca
A/Field Unit Superintendent:	Adriana Bacheschi, 306-423-6227 adriana.bacheschi@pc.gc.ca
Resource Conservation:	Krista Cairns, Environmental Assessment Officer, SSFU, krista.cairns@pc.gc.ca / Tel: 306-298-2166 ext 227 / Cel: 306-772-0058

Scope Statement

Objective of project

Provide a brief description of the issue that the project is trying to solve such as cultural resource deterioration, a change in use or functional requirements, the requirement to meet current codes or standards, technical problems, program development, etc. This information may be included in a separate document; insert a reference to the document's title (for example, the Request for Project Approval (RPA). Provide a clear description of the work.

Over the years, Fort Walsh has worked to replace the shingles on the historic buildings on site. Currently four roofs remain in need of roof replacement – Non-Commissioned Officer's Barracks, Granary/Courthouse, Bastion and the Stable. In addition, the stable requires stabilization (see additional CRIA request for stable consideration).

This deferred work is needed as the shingles are deteriorating and the roof is also sagging and will, in time, collapse on the one building. The existing roof is more than 40 years old.

The Long Term Maintenance Plan for Fort Walsh* also acknowledges the following with regard to the stable:

Immediate recommended work:

1. Plan for replacement of shingles on stable immediately, the current shingles are near the end of their life. (page 61) The life span of new shingles is 25-40 years.

	The stable requires stabilization. **The Long Term Maintenance Plan for Fort Walsh** also acknowledges the following with regard to the stable: **Long term maintenance**: Further to the discussion in 14.1 of this section and the structural report in appendix F, Parks Canada must decide if the current structural reinforcements, which may be incompatible with the stated heritage values of the building, should be upgraded (as recommended in the structural report) and maintained or if an alternate concept should be developed. One that would re-open the unimpeded nature of the drive aisle. (page 85) Use of wood or steel beams to reinforce the structure is being considered. *NOTE: Long Term Maintenance Plans were only completed on FHBRO designated buildings so while the other buildings have been evaluated by FHBRO, they did not receive designations.
CRIA Status and Format	**NOT REQUIRED** ☐ Project will not impact known cultural resources and the potential for archaeological resources has been determined to be low according to the appropriate archaeological assessment(s). (Please attach archaeological assessment). Close file.
	REQUIRED ☐ Emergency intervention in response to a natural emergency under the *Emergencies Act*; or where carrying out of the project without delay is in the interest of preventing damage to property or the environment or is in the interest of public health or safety (please contact your CRM advisor to inform them of the situation and determine the appropriate disaster response for conserving cultural resources) ☒ Proposed intervention has been previously assessed and there is no change in approach (attach review – **Fort Walsh** **NHSC Stable Roof Investigation HCD Project #: 489570, 2005); Fort Walsh Stable Long Term Maintenance** **Report PWGSC, (2016)** ☐ An Environmental Impact Analysis that includes CRM input will be undertaken or has been completed (*Basic or* *Detailed, please attach*). A checklist review will be undertaken. ☐ An Approved Best Management Practice (BMP) exists that will address some or all potential adverse impacts of this intervention (*please identify or attach*) ☐ Complete a Statement of Impacts to Cultural resources (includes as required a Classified Federal Heritage Building Review of Intervention, Archaeological Overview Assessment, Archaeological Impact Assessment)
Conservation Approach	*Provide a description of the proposed project, scope of work to be undertaken, including the proposed conservation work to be undertaken on each character-defining element when applicable. Provide precise information on the proposed conservation treatment, and identify referenced conservation principles, plans and precedents. Describe the impact (visual, structural, or other) on the existing features or character-defining elements. This information may be included in a separate document; insert a reference to the document's title.* **The type of intervention proposed for roof repair is rehabilitation.** The cedar shingle replacement is a continuation of an on-going program at the site.

42) All work and interventions will be documented. General Guidelines 1-9 for Preservation, Rehabilitation and Restoration will be considered, as well as Additional Guideline 15 (All Materials page 216).

43) For the Rehabilitation, Standards 14-15 will be considered as well. New work done to stabilize the stable will be visually compatible with, but subordinate to, and distinguishable from the historic place. The integrity of the historic structure will not be impaired. Balancing conservation principles and sustainability objectives will be key.

According to the Long Term Maintenance Report for the Stable (page51):
"Roofing and flashing are two of the most important components of a building as they protect the building and its contents from the weather. They are also among the most severely exposed components of a building and must withstand the stresses from significant and repeated temperature changes and buffeting from winds. Because of their severe exposure, roofing materials tend to have a finite and relatively short service life and must eventually be replaced. This is particularly the case for organic-based materials such as cedar shingles.

9.1.2 Heritage Values and Significant Fabric
To respect and protect these values and character defining elements, maintenance of the roofing should include the following considerations:

44) Repair of all roofing should always be executed with "in kind" materials.
45) When roofing requires replacement it should be based on available documentation.
46) The slopes and overhangs of the roofs contribute to the form and massing of the buildings and should not be altered in an effort to improve roof performance, without considering the impact these changes would have on the historic values and character of the resources and the site.

For the stable stablilzation, the type of intervention proposed is rehabilitation.

47) The stable stabilization will be done in consultation with engineers and built heritage specialists to ensure the minimal amount of intrusiveness to the heritage structure. Consideration will be given to finding the most appropriate solution with the least impact on the character-defining elements and overall heritage value of the historic building.

48) All work and interventions will be documented. General Guidelines 1-9 for Preservation, Rehabilitation and Restoration will be considered, as well as Additional Guideline 15 (All Materials page 216).

49) For the Rehabilitation, Standards 10-12 will be considered. New work done to stabilize the stable will be visually compatible with, but subordinate to, and distinguishable from the historic place. The integrity of the historic structure will not be impaired.

Project Impacts

If known, what aspects of the project could have a negative/adverse impact on the cultural resource or its heritage value? Explain. Identify proposed mitigation measures if already known. The alternatives and mitigation strategies that have been considered and proposed should be clearly described. This information may be included in a separate document; please insert a reference to the document's title.

Impacts to cultural resources are considered high if the work does not occur. Damage is occurring as the leaking and sagging roofs are causing internal and structural damage. The longer the delay, the more extensive the work will be to fix the buildings. Heavy snow loads in the winter exacerbate the sagging of the roof in the stage and could cause the eventual collapse if stabilization work is not carried out.

Impacts to the cultural resource are considered minimal if cedar shingles are replaced as they are replacing like with like.

The stable is a FHBRO Recognized building. No ROI is required. Log posts were introduced at the mid-span of the ridge beams and purlins in 2004 in an effort to control the sagging of the roof, but it has not been successful.

By addressing these issues now, Parks Canada will avoid higher costs associated with deteriorating buildings and damage to artifacts, or in the worst case scenario, a collapsed roof.

Options Considered

Identify alternatives / options considered in addition to the recommended option [as detailed above]. Identify why recommended option selected over other alternatives. This information may be included in a separate document; insert a reference to the document's title.

Options considered for roof repair include

A) Letting the shingles deteriorate on the buildings and bastion and continue to monitor.

Option A is not considered acceptable as they continue to pose a threat to the health and safety of the structures and then ultimately to our staff and visitors. If the buildings are in poor condition, their closure will have to be considered.

By addressing these issues now, Parks Canada will avoid higher costs associated with deteriorating buildings and damage to artifacts, or in the worst case scenario, like the stable, a collapsed roof.

Options considered for stable stalilization include

A) Option 1 (see attached documentation) would also use the same materials as the original building. Option 1 would be faster and less expensive.

ROUGH ORDER OF OPERATIONS:

1. MINIMAL SHORING WILL BE REQUIRED AS THE EXISTING RIDGE BEAM AND PURLINS WILL REMAIN & TEMPORARY POSTS ARE STILL IN PLACE PROVIDING ADDITIONAL SUPPORT
2. THE EXTERIOR AND INTERIOR SUPPORT WALLS WILL NEED TO HAVE NOTCHED HOLES SLIGHTLY LARGER THAN THE Ø OF THE NEW LOG BEAMS TO ENSURE THEY FIT SNUG
3. THE NEW LOG BEAMS WILL ONLY SPAN BETWEEN EACH LOADBEARING WALL & WILL BE OFFSET FROM EACH OTHER TO UTILIZE THE FULL WIDTH OF THE SUPPORTING LOG WALL
4. THE SHORING & SUPPORTING POSTS CAN BE REMOVED WITH CAUTION

B) Option 2 would have steel with a wood "cap" to give an appearance that it is traditional construction. Option 2 would maintain the current character.

ROUGH ORDER OF OPERATIONS:

1. TWO SHORING WALLS WILL BE REQUIRED, ONE ON BOTH SIDES OF THE RIDGE BEAM AS THE EXISTING RIDGE BEAM AND LOG BEAMS WILL BE REMOVED (ONE AT A TIME)
2. ONE BEAM IS TO BE REMOVED & REPLACED USING A STRUCUTRAL STEEL BEAM CAPPED WITH A LOG BEEM APPEARANCE

SUPPORTED BY THE EXTERIOR AND INTERIOR WALLS TO ENSURE THEY FIT SNUG & UTILIZE THE WHOLE SUPPORT SYSTEM.

3. THE NEW STRUCTURAL STEEL COMPLETE WITH A LOG BEAM APPEARANCE CAP WILL SPAN BETWEEN EACH LOADBEARING WALL TO UTILIZE HALF THE WIDTH OF THE SUPPORTING LOG LOADBEARING WALL

4. THE SHORING WALLS & SUPPORTING POSTS CAN BE REMOVED WITH CAUTION AFTER ALL THE NEW BEAMS ARE INSTALLED

C) Let the roof continue to sag on the FHBRO designated building and continue to monitor.

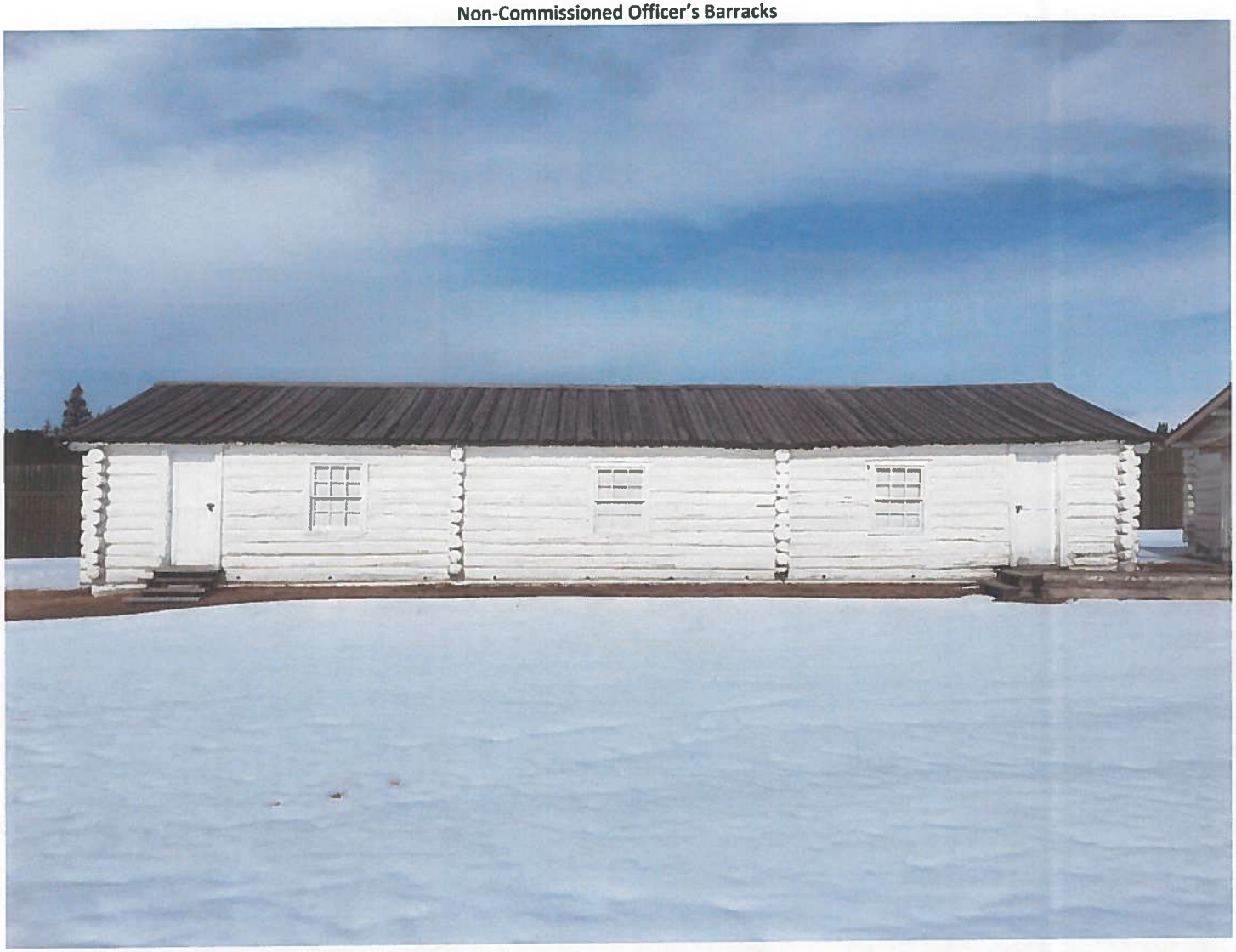
Option C is not considered acceptable as inaction continues to pose a threat to the health and safety of the structures and then ultimately to our staff and visitors. If the building is in poor condition, closure will eventually have to be considered.

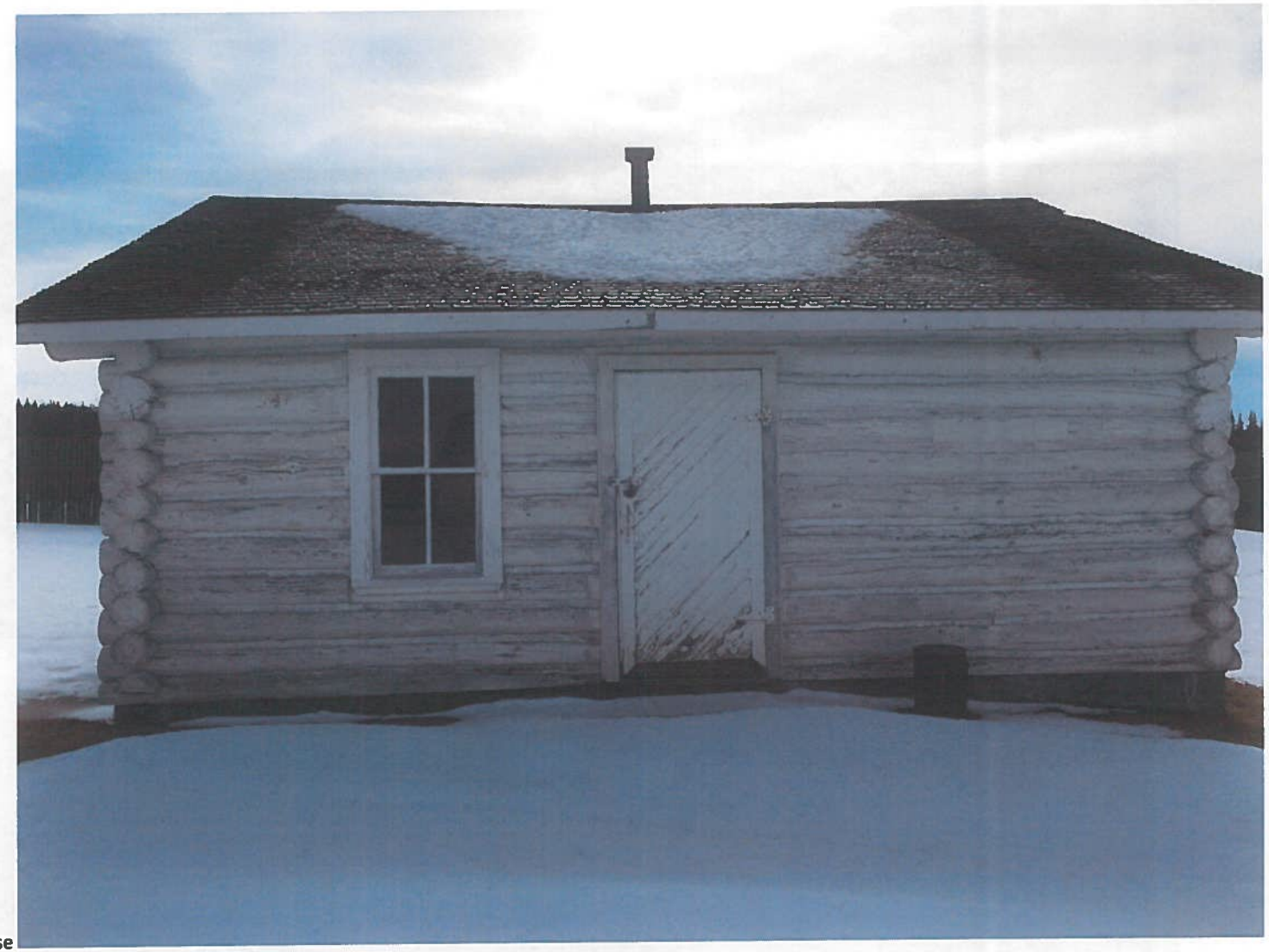
Background Information

Attachments	☒ **Photos of the existing condition where the project is to take place (see attached Long Term Maintenance Plan Photo Report Maple Creek, Saskatchewan The Stable, Building 6 - 2016 and images included at the bottom of this document were taken March 15, 2017 – Harvey Kay)** ☒ **Graphics illustrating the Proposal** (drawings/cut sheets/renderings/etc.) ☐ **Maps showing the overall project within the heritage place and detailed map showing location of all components of the project**

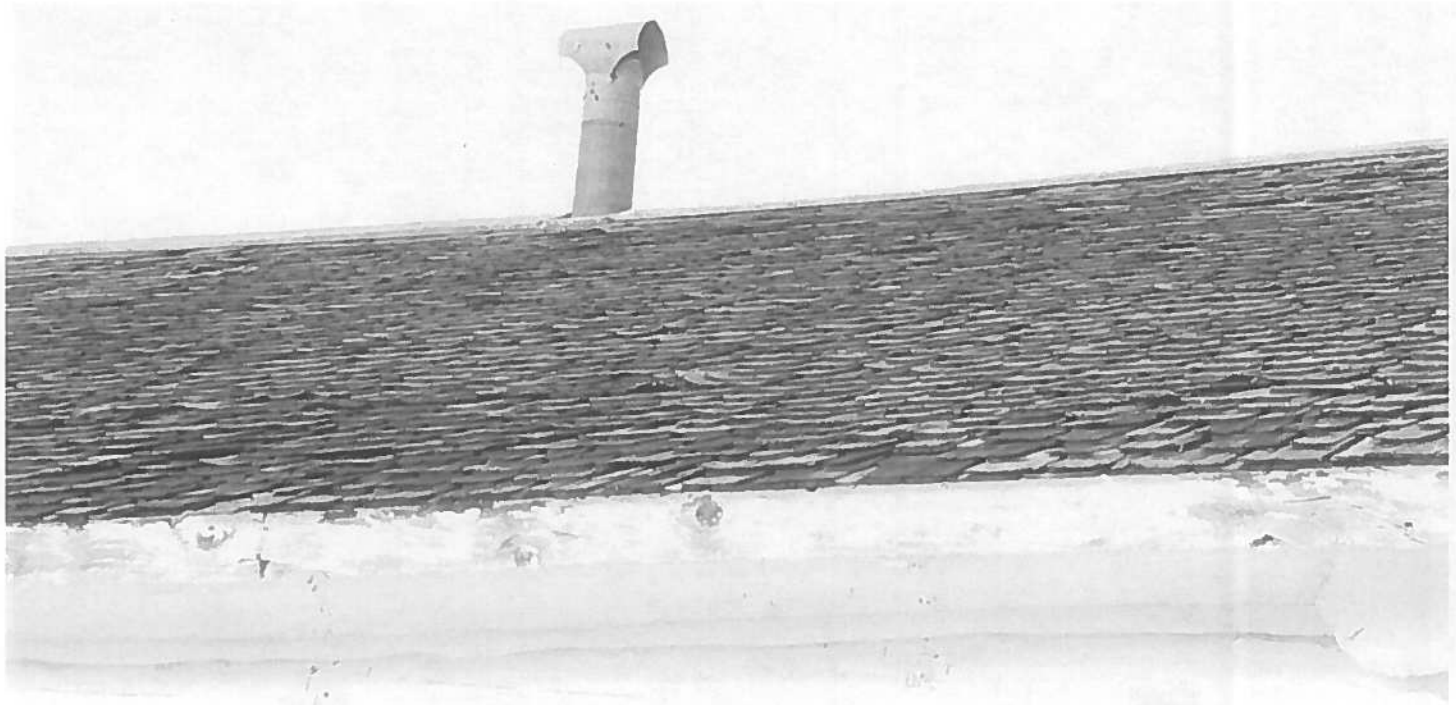
Please submit request form to: grc.crm@pc.gc.ca

Non-Commissioned Officer's Barracks

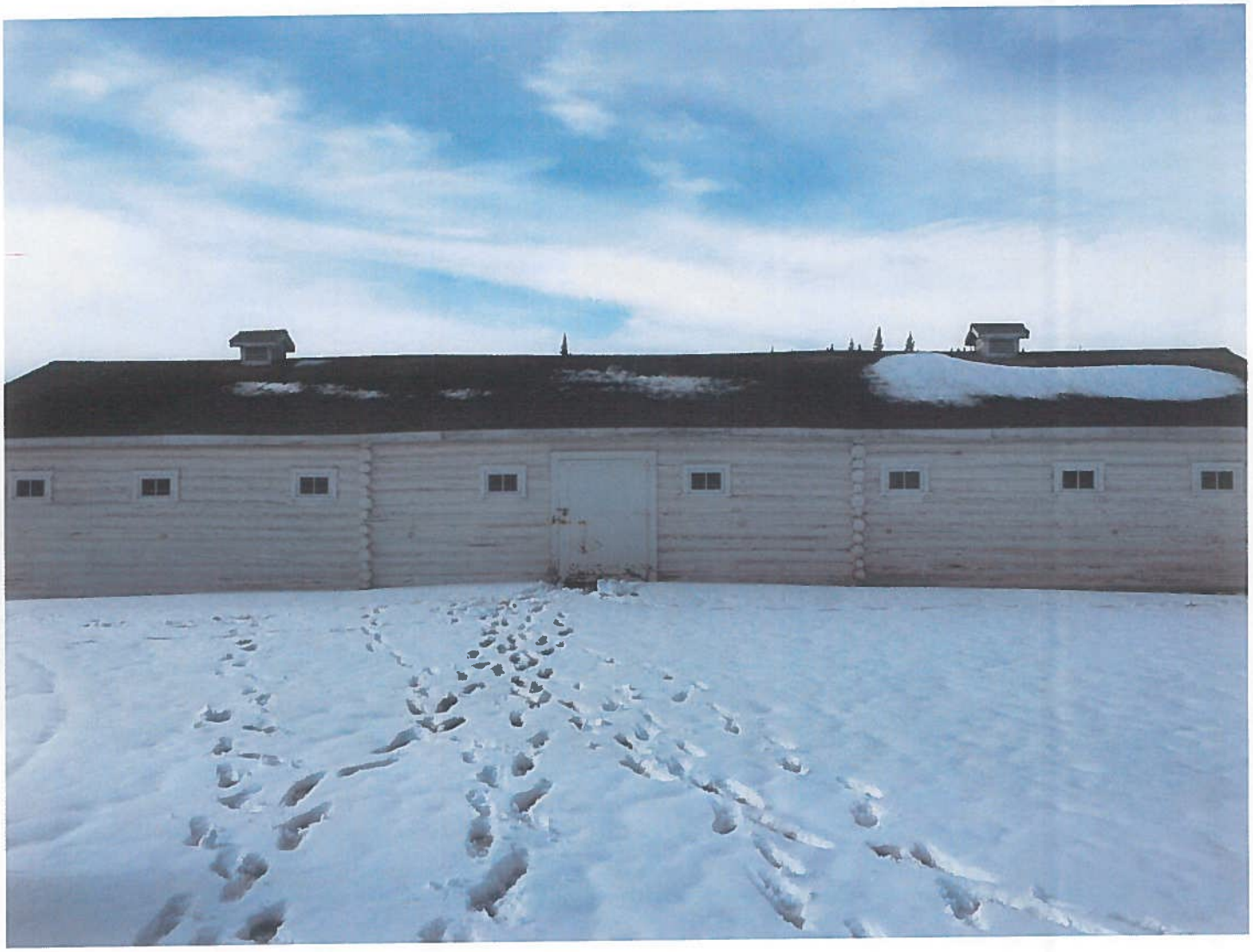




Granary/Courthouse



Stable



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