



Coordinate System: UTM Zone 14N NAD83 Data Source: MB Hydro, ProvMB, NRCAN Date Created: December 01, 2013

125 Metres 1:10,000

← Transmission Line Highway Major Road Local Road

Winter Road

Mining
Provincial Park

- Railway (Operational)

Railway (Discontinued)

\* Angle Tower Locations BPIII Final Preferred Route = 66 m Right of Way

 Proposed Access Point Major Stream Crossing



Transmission Line Crossing Proposed Access Route \*Labels correspond to BPIII Access Management Database

Heritage

Archaeological Wildlife Birds and Habitat

Soils and Terrain
Permafrost Water Water Crossing

# **Bipole III Transmission Project Construction Environmental Protection Plan**

**Construction Section N2 Environmentally Sensitive Site Locations** 

# **SAMPLE MITIGATION TABLE** (see adjacent KEY for additional information)

## MAP NUMBER: 61 1

ESS Group: Permafrost <sup>2</sup>

Sec-Seg ID	ESS ID	<b>ESS Name</b>	Location	Start	Stop	UTM Zone	Distance	_
N2-S01	N2-Soils-100	Permafrost	Sito: 1 to )	E- 615921 N- 6206328		14N	95 m	
N2-S01	N2-Soils-102	Permafrost	Site: 13 to 14	E- 614820 N- 6203884	E- 614309 N- 6202749	14N	1244 m	

## Potential Effects: 4

Melting or loss of permafrost due to disturbance of the active layer

#### Specific Mitigation: <sup>5</sup>

- · Carry out construction activities on frozen ground to minimize surface damage and rutting
- Use existing trails, roads or cut lines whenever possible as access routes

#### ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Ston	UTM Zone	Distance
N2-S01		Unnamed tributary of Burntwood River	Sita: 15 to 16	E- 614778 N- 6203790	E- 614707 N- 6203634	14N	171 m

# Potential Effects: 4

Increased erosion and sedimentation, rutting of floodplains, loss of riparian vegetation

#### Specific Mitigation: <sup>5</sup>

• Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements. Use existing trails, roads or cut lines whenever possible as access routes

#### ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Ston	UTM Zone	Distance
N2-S01	N2-Wild-100	Waterfowl Sensitivity Area	Site: L1 to L2	E- 614763 N-6203757	E-614708 N-6203636	14N	132 m

# Potential Effects: 4

Higher risk of wire collision, disturbance during breeding and nesting, risk of wire collision is localized to the right-of-way while construction disturbance can effect colonies up to 400 meters away

# Specific Mitigation: 5

- Adhere to reduced risk timing windows for protection of birds (August 1- April 30)
- Maintain applicable setback during nesting and breeding timing window
- Conduct priority assessment for bird diverters and other measures prior to transmission line stringing
- Install bird diverters or other measures at high priority sites

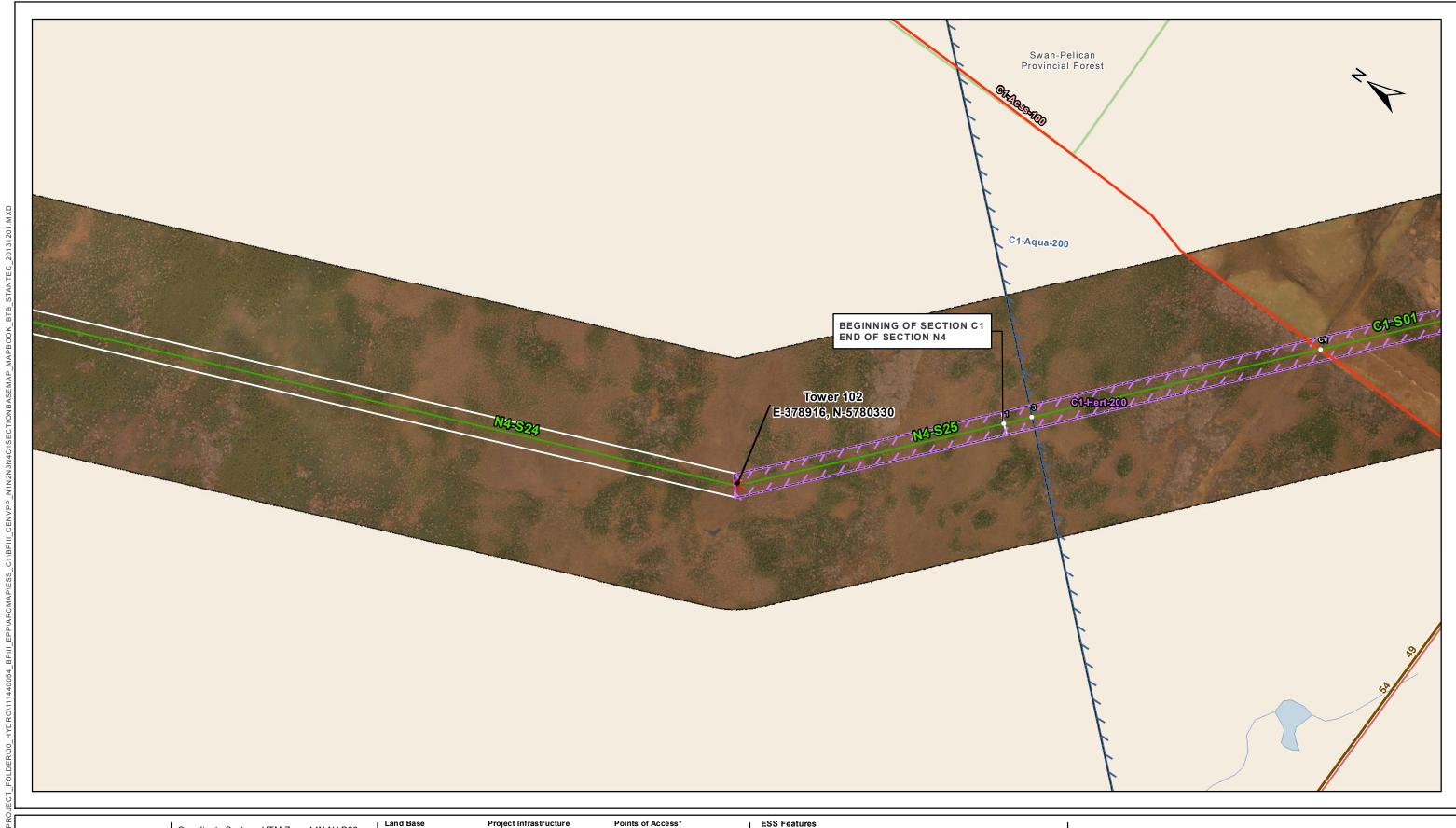
# **KEY to SAMPLE MITIGATION TABLE**

- 1 Map on which ESS listed in the ESS Location Summary tables are illustrated
- **2** ESS Group classification of ESS shown on the map
- **3** ESS location summary; includes the following fields:
  - Sec-Seg ID of the construction section (i.e. N2) and segment (i.e. S03) for ESS location
  - ESS ID Site specific ID assigned to each ESS according to naming convention listed below
  - ESS Name Brief name/description of ESS
  - Easting/Northing UTM coordinates of ESS location (for points only)
  - Location site identification numbers for the start and stop site points of ESS intersection with the ROW (lines and polygons only)
  - Start/Stop UTM coordinates of the start/stop identification numbers listed in the "Location" field (lines and polygons only)
  - Characteristics of stream crossings identified in the ESS Location Summary tables (where applicable and as information is available)
- 4 Potential effects identified for ESS listed in the ESS Location Summary table
- **5** Mitigation measures identified for ESS listed in the ESS Location Summary table

# **ESS NAMING CONVENTION**

CATEGORY	GROUP (Number Series Representing Group)	ESS ID (Section ID-Category-Group Number)		
Access	Intersection (100)	N2-Acss-100		
Ecosystem	Habitat (100)	N2-Eco-100		
	Research (200)	N2-Eco-200		
	Species of Concern (300)	N2-Eco-300		
Heritage	Archaeological (100)	N2-Hert-100		
	Cultural (200)	N2-Hert-200		
	Historic (300)	N2-Hert-300		
Land Use	Conservation (100)	N2-LUse-100		
	Crown Land Encumbrance (200)	N2-LUse-200		
	Recreation (300)	N2-LUse-300		
	Residential (400)	N2-LUse-400		
Resource Use	Agriculture (100)	N2-RUse-100		
	Food/Medicinal (200)	N2-RUse-200		
	Forestry (300)	N2-RUse-300		
	Hunting/Fishing (400)	N2-RUse-400		
	Trapping (500)	N2-RUse-500		
Soils and Terrain	Permafrost (100-200)	N2-Soils-100		
	Erosion (300)	N2-Soils-300		
	Terrain (400)	N2-Soils-400		
Water	Water Crossing (100)	N2-Aqua-100		
	Groundwater (200)	N2-Aqua-200		
	Wetlands (300)	N2-Aqua-300		
Wildlife	Birds and Habitat (100)	N2-Wild-100		
	Mammal and Habitat (200)	N2-Wild-200		
	Reptiles/Amphibians and Habitat (300)	N2-Wild-300		

<sup>\*</sup>Mitigation shown includes only a sample of actual mitigation for the ESS features listed; refer to the Construction Environmental Protection plan for all specific mitigation measures recommended





Coordinate System: UTM Zone 14N NAD83 Data Source: MB Hydro, ProvMB, NRCAN Date Created: December 03, 2013

125 250 500 Metres 1:10,000

■ Transmission Line Highway Major Road

Local Road -- Winter Road Railway (Operational)

+ Railway (Discontinued) Mining . Provincial Forest

\* Angle Tower Locations BPIII Final Preferred Route == 66 m Right of Way

Proposed Access Point

 Major Stream Crossing Abandoned Rail Crossing A Rail Crossing

Transmission Line Crossing Proposed Access Route
\*Labels correspond to BPIII
Access Management Database

Access Intersection Heritage, Cultural Water Groundwater

**Bipole III Transmission Project Construction Environmental Protection Plan Construction Section C1 Environmentally Sensitive Site Locations** 

ESS Group : Cultural

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Hert-200	Plant Gathering Area	Site: 1 to 2	E-379494 N-5779807	E-396683 N-5764303	14N	23149 m

#### **Potential Effects:**

Potential for presence of important architectural heritage resources

#### Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Minimize surface disturbance around the site to the extent possible
- Remove trees by low-disturbance methods
- No Herbicide to be applied during construction
- Confine vehicle traffic to established trails to the extent possible

ESS Group : Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01		Artesian areas with uncertain water quality	Site: 3 to 4		E-382245 N-5777326	14N	3624 m

# **Potential Effects:**

Potential increase in salinity of soils and surface water in case where aquifer is saline and groundwater discharges to the surface; also, wetting the surficial environment (ground saturation)

#### Specific Mitigation:

- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

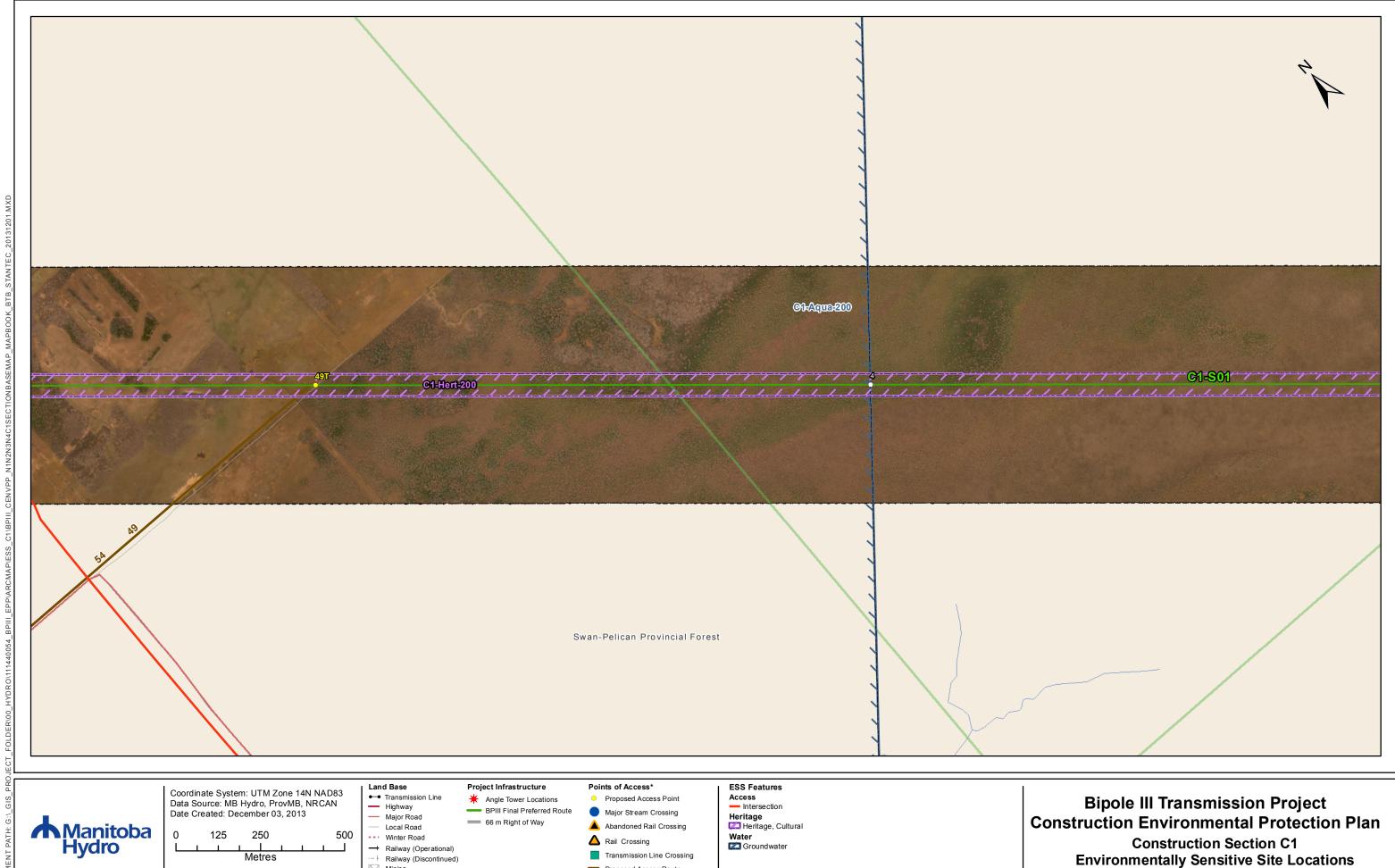
**ESS Group**: Intersection

Sec-Seg ID	ESS ID	ESS Name	Location	Easting	Northing	UTM Zone
C1-S01	C1-Acss-100	Access route to traplines	Site: C1	380179	5779190	14N

## **Potential Effects:**

Loss of historic road due to construction of access road to ROW and activities associated with the ROW Loss of cultural value associated with historic events

- · Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Avoid surface damage to and obstruction of access route
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- If any heritage resources are discovered, Archaeologist to conduct site investigation and recommend any additional mitigation measures



Proposed Access Route

\*Labels correspond to BPIII Access Management Database

Map 208

Mining

1:10,000

Provincial Forest

ESS Group : Cultural

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Hert-200	Plant Gathering Area	Site: 1 to 2	E-379494 N-5779807	E-396683 N-5764303	14N	23149 m

#### **Potential Effects:**

Potential for presence of important architectural heritage resources

## Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Minimize surface disturbance around the site to the extent possible
- Remove trees by low-disturbance methods
- No Herbicide to be applied during construction
- Confine vehicle traffic to established trails to the extent possible

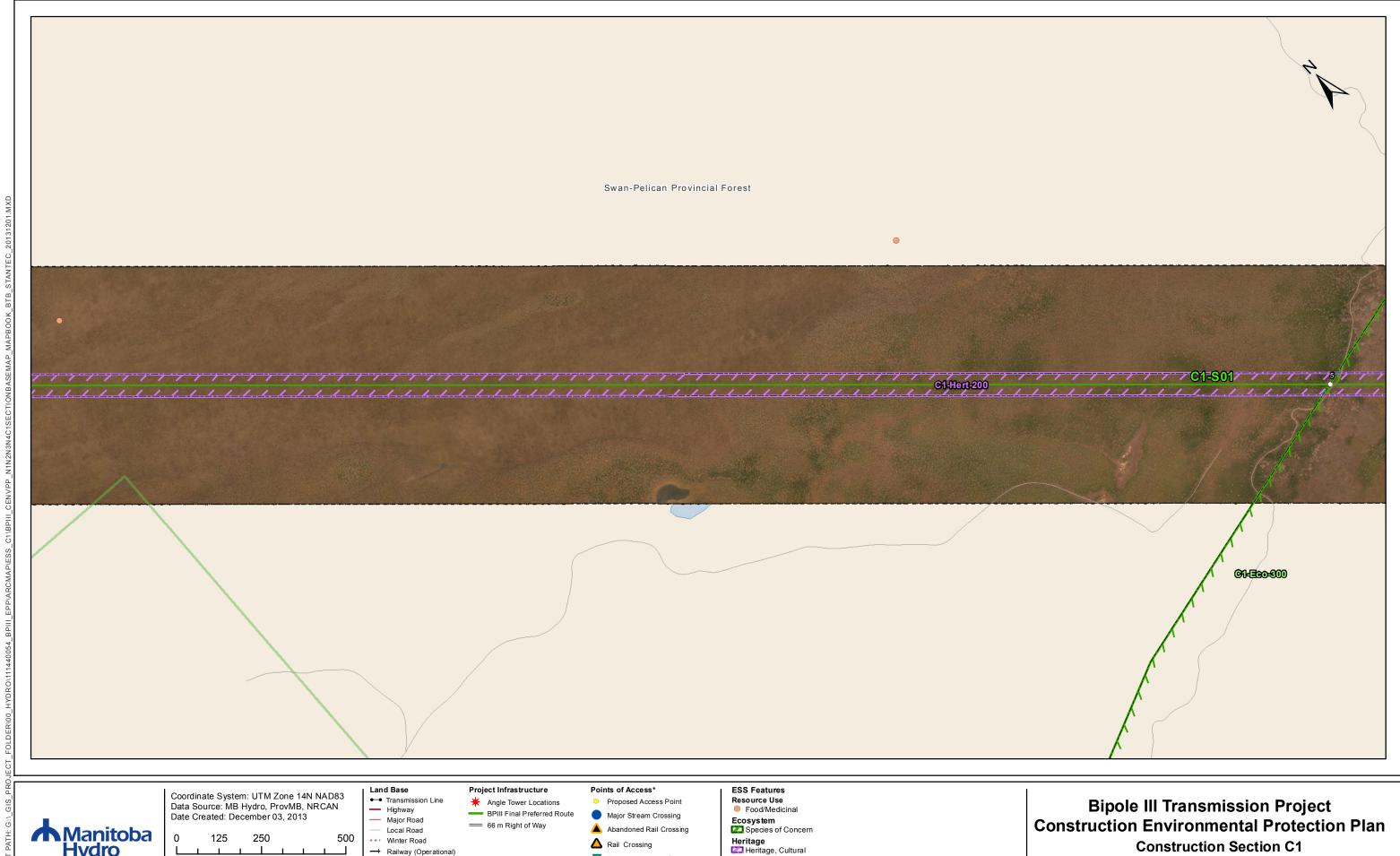
ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Aqua- 200	Artesian areas with uncertain water quality	Site: 3 to 4	E-379554 N-5779753	E-382245 N-5777326	14N	3624 m

#### **Potential Effects:**

Potential increase in salinity of soils and surface water in case where aquifer is saline and groundwater discharges to the surface; also, wetting the surficial environment (ground saturation)

- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture



Manitoba Hydro

Metres 1:10,000

-+ Railway (Discontinued)

Mining

Provincial Forest

A Rail Crossing

\*Labels correspond to BPIII Access Management Database

Transmission Line Crossing Proposed Access Route

Heritage
Heritage, Cultural

**Construction Section C1** 

**Environmentally Sensitive Site Locations** 

ESS Group : Cultural

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Hert-200	Plant Gathering Area	Site: 1 to 2	E-379494 N-5779807	E-396683 N-5764303	14N	23149 m

#### **Potential Effects:**

Potential for presence of important architectural heritage resources

## Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Minimize surface disturbance around the site to the extent possible
- Remove trees by low-disturbance methods
- No Herbicide to be applied during construction
- Confine vehicle traffic to established trails to the extent possible

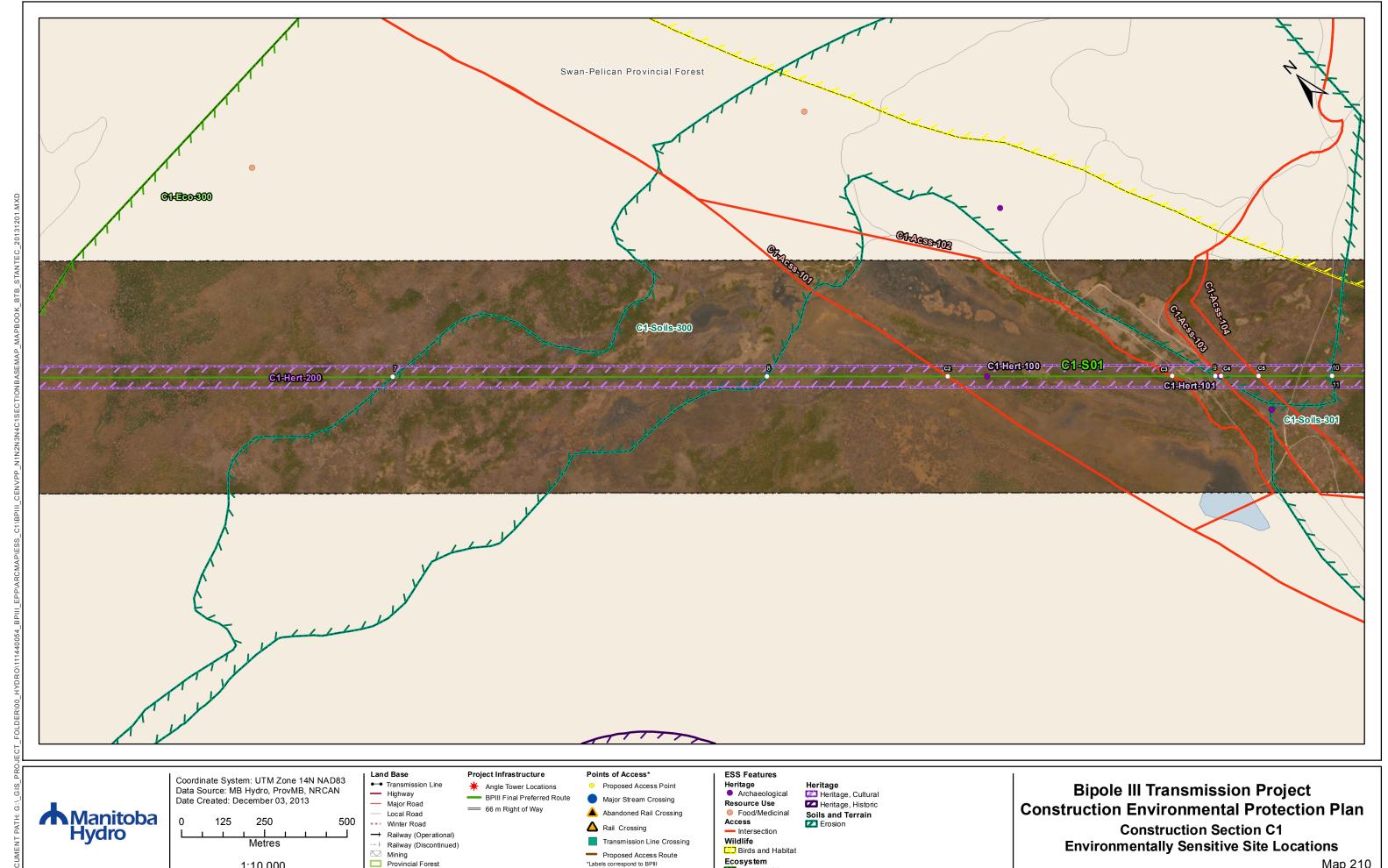
ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Eco-300	Species of Concern	Site: 5 to 6	E-386187 N-5773771	E-393457 N-5767213	14N	9791 m

## **Potential Effects:**

Potential loss of previously known plants of conservation concern from clearing, construction, maintenance and decommissioning activities

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Use existing access roads and trails to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Stabilize sites immediately after construction and re-vegetate disturbed areas in accordance with site Rehabilitation Plan



\*Labels correspond to BPIII Access Management Database

Species of Concern

1:10,000

**ESS Group** : Cultural

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Hert-200	Plant Gathering Area	Site: 1 to 2	E-379494 N-5779807	E-396683 N-5764303	14N	23149 m

#### **Potential Effects:**

Potential for presence of important architectural heritage resources

#### Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Minimize surface disturbance around the site to the extent possible
- Remove trees by low-disturbance methods
- No Herbicide to be applied during construction
- Confine vehicle traffic to established trails to the extent possible

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Location	Easting	Northing	UTM Zone
C1-S01	C1-Hert-100	Historical Trail	Site: C1	388314	5771855	14N

# **Potential Effects:**

Potential disturbance to heritage Resources

# **Specific Mitigation:**

- · Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Identify and flag prior to start of work
- Conduct site investigation with Archaeologist post clearing and prior to construction
- Minimize surface disturbance around the site to the extent possible
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Eco-300	Species of Concern	Site: 5 to 6	E-386187 N-5773771	E-393457 N-5767213	14N	9791 m

#### **Potential Effects:**

Potential loss of previously known plants of conservation concern from clearing, construction, maintenance and decommissioning activities

#### Specific Mitigation:

- · Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Use existing access roads and trails to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Stabilize sites immediately after construction and re-vegetate disturbed areas in accordance with site Rehabilitation Plan

ESS Group : Intersection

Sec-Seg ID	ESS ID	ESS Name	Location	Easting	Northing	UTM Zone
C1-S01	C1-Acss-101	Access Route	Site: C2	388316	5771850	14N
C1-S01	C1-Acss-102	Access Route	Site: C3	388819	5771396	14N
C1-S01	C1-Acss-103	Access Route	Site: C4	388928	5771298	14N
C1-S01	C1-Acss-104	Access Route	Site: C5	389012	5771223	14N

# **Potential Effects:**

Potential disturbance of access; disruption of social cohesion

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Avoid surface damage to and obstruction of access route
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- If any heritage resources are discovered, Archaeologist to conduct site investigation and recommend any additional mitigation measures

MAP NUMBER: 210 cont'd

ESS Group : Erosion

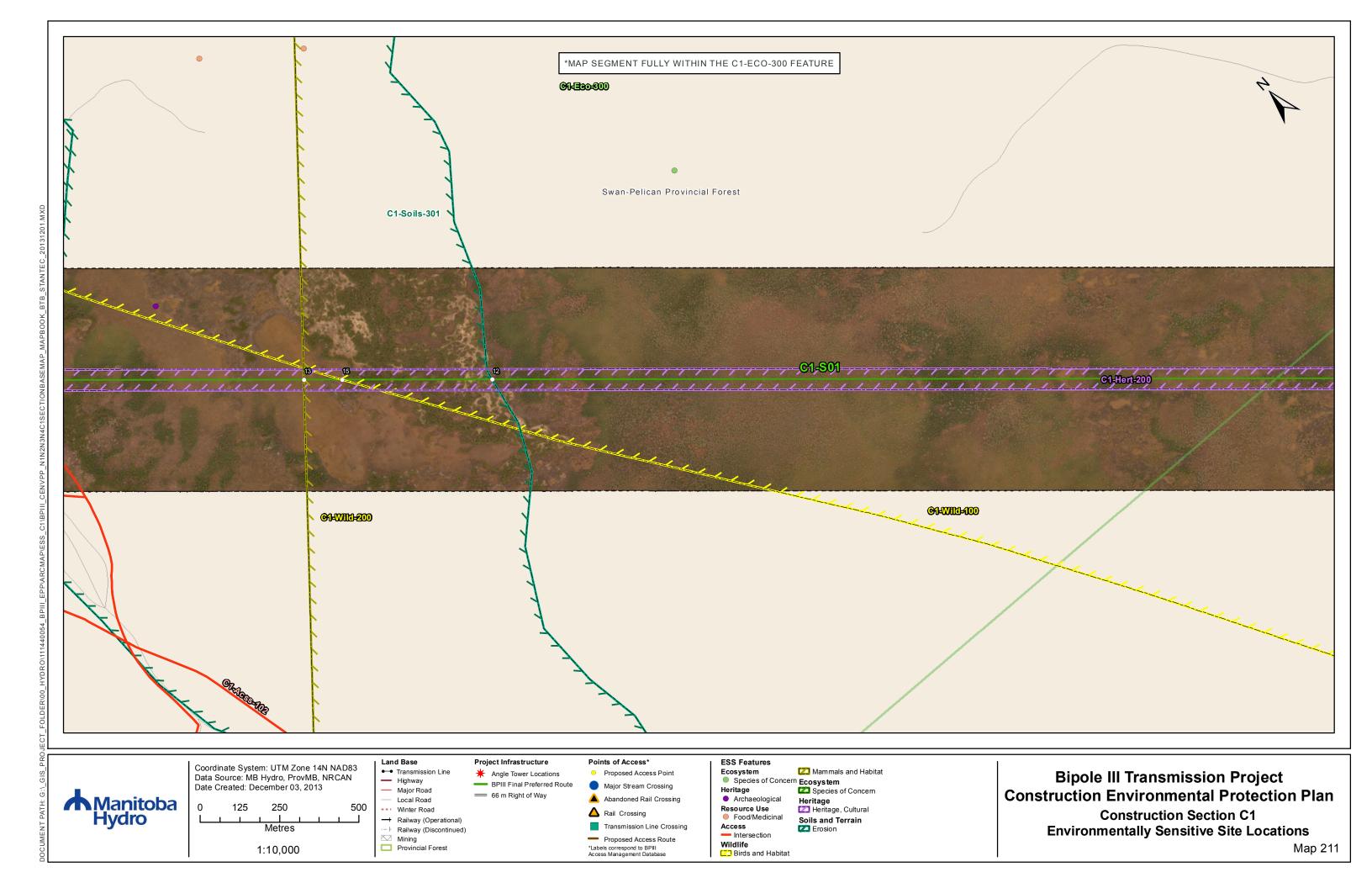
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Soils-300	Wind Erosion Risk	Site 7 to 8		E-387910 N-5772216	14N	1129 m
C1-S01	C1-Soils-300	Wind Erosion Risk	Sita. 0 to 10	E-388916 N-5771309	E-389177 N-5771073	14N	352 m
C1-S01	C1-Soils-301	Wind Erosion Risk	Site: 11 to 12	E-389177 N-5771073	E-390222 N-5770131	14N	1408 m

# **Potential Effects:**

Loss of topsoil due to wind erosion (eg creep, saltation, suspension) on disturbed surfaces

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag prior to start of work
- Avoid dry soil conditions with high and severe wind erosion risk to the extent possible
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by hand or other low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan





ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Ston	UTM Zone	Distance
C1-S01		Bird migration route identified by community		E-389871 N-5770447	E-395171 N-5765667	14N	7137 m

#### **Potential Effects:**

Change in bird migration route due to transmission line

#### **Specific Mitigation:**

- Adhere to reduced risk timing windows for protection of birds (August 1- April 30)
- Maintain applicable setback during nesting and breeding timing window
- · Conduct priority assessment for bird diverters and other measures prior to transmission line stringing
- Install bird diverters or other measures at high priority sites

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Eco-300	Species of Concern	Site: 5 to 6	E-386187 N-5773771	E-393457 N-5767213	14N	9791 m

#### **Potential Effects:**

Potential loss of previously known plants of conservation concern from clearing, construction, maintenance and decommissioning activities

# Specific Mitigation:

- · Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Use existing access roads and trails to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Stabilize sites immediately after construction and re-vegetate disturbed areas in accordance with site Rehabilitation Plan

# ESS Group : Cultural

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Hert-200	Plant Gathering Area	Site: 1 to 2	E-379494 N-5779807	E-396683 N-5764303	14N	23149 m

#### **Potential Effects:**

Potential for presence of important architectural heritage resources

#### Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Minimize surface disturbance around the site to the extent possible
- Remove trees by low-disturbance methods
- No Herbicide to be applied during construction
- Confine vehicle traffic to established trails to the extent possible

# ESS Group: Erosion

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C1-S01	C1-Soils-301	Wind Erosion Risk	Site: 11 to 12	E-389177 N-5771073	E-390222 N-5770131	14N	1408 m

#### **Potential Effects:**

Loss of topsoil due to wind erosion (eg creep, saltation, suspension) on disturbed surfaces

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag prior to start of work
- · Avoid dry soil conditions with high and severe wind erosion risk to the extent possible
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by hand or other low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

MAP NUMBER: 211 cont'd

ESS Group: Mammal and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Ston	UTM Zone	Distance
C1-S01	C1-Wild-200	Moose Sensitive Area	Site: 13 to 14	E-389782 N-5770528	E-395210 N-5765631	14N	7311 m

## **Potential Effects:**

Potential disturbance to and loss of sensitive moose habitat

- Manitoba Hydro will not support development of designated motorized recreational trail use within areas described above if requested
- No shear blading to clear the ROW in the sensitive range Selective cutting methods to be used leaving low shrub and herb plant communities on the ROW
- Slash piles will be stockpiled every 200m-400m during clearing, adjacent to centerline trail, these piles will be placed on centerline trail post construction
- Annual ground inspection of towers to occur late in winter season to avoid creating packed snow trails that facilitate predator use of the ROW
- Selective cutting to remove danger trees only on portions of the ROW to reduce line of site for hunters and predators and facilitate wildlife movement across the ROW
- Any access trails used to access the ROW for construction that will not be needed for future maintenance will be
  decommissioned on completion of construction Any culverts or road improvements will be removed and the first 100
  m from of the trail dug up to the extent possible Available slash < 1 m in height will also be evenly distributed over
  the access trail to reduce the possibility of use be ATV traffic</li>

