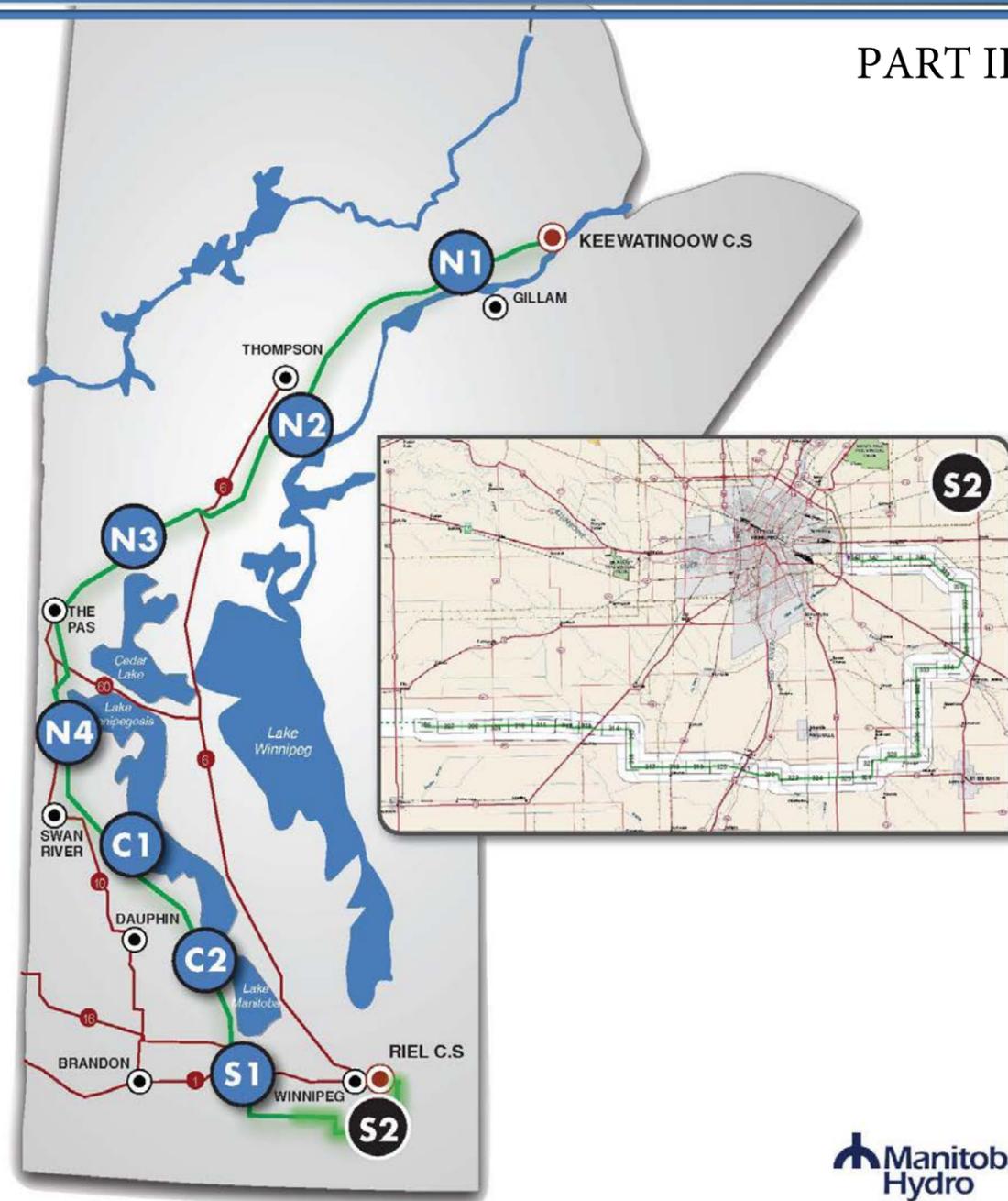


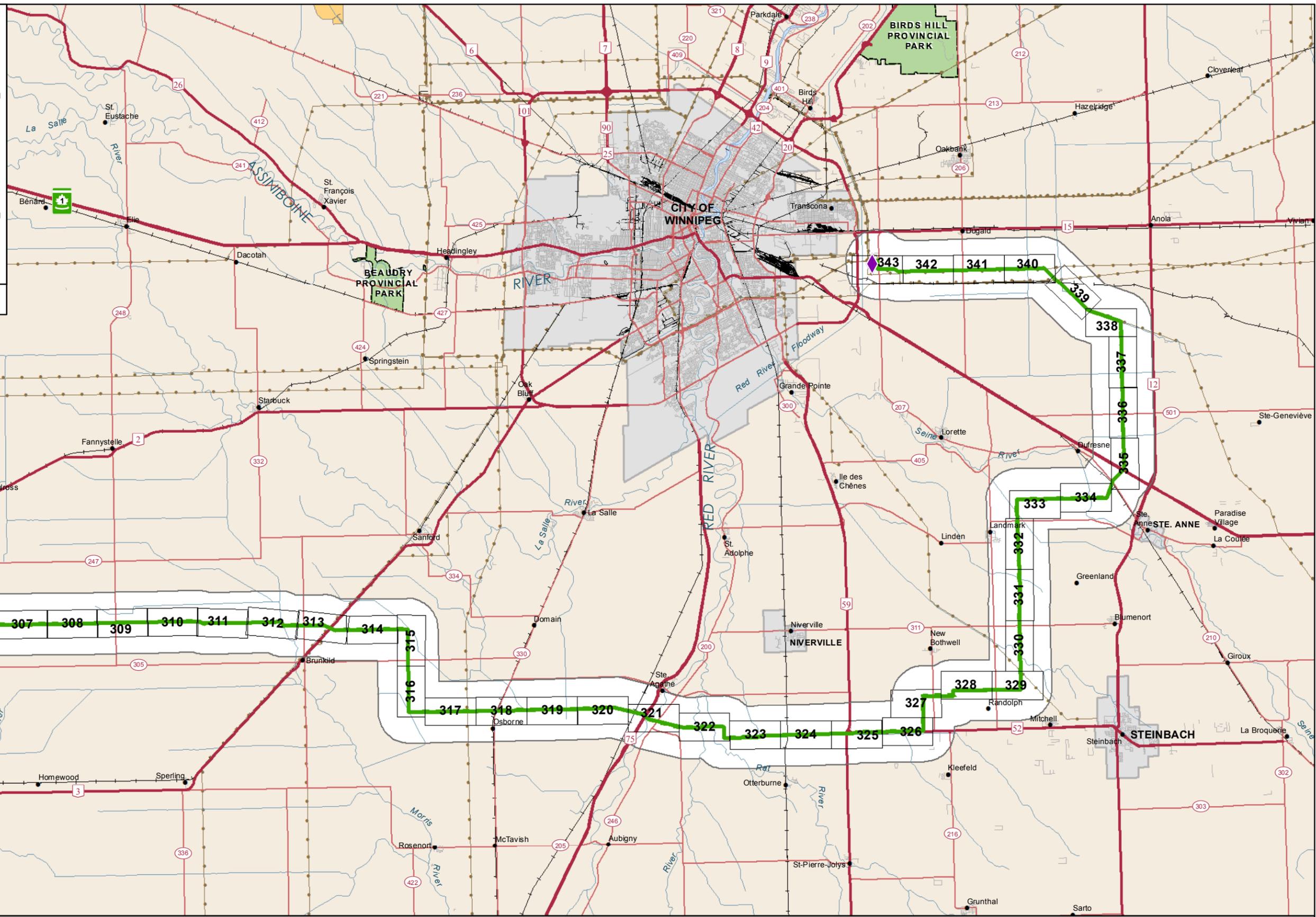
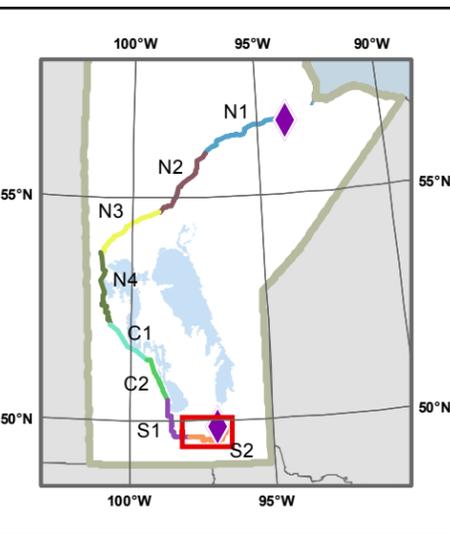
BIPOLE III TRANSMISSION PROJECT
CONSTRUCTION ENVIRONMENTAL PROTECTION PLAN
- SECTION S2

PART II



Aboriginal Traditional Knowledge

Manitoba Hydro recognizes the unique relationship Aboriginal communities have with their areas of use and is appreciative to all the communities who took time to share information about their history and culture as well as their valued knowledge and perspectives with regards to the Bipole III study area and Project. The ATK that has been shared assisted Manitoba Hydro in: developing a greater understanding of the study area; identifying potential Project effects; planning and designing the Project; developing potential mitigation measures, some of which can be found throughout this document.



Bipole III Transmission Project



Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, Stantec, ProvMB, NRCAN
 Date Created: April 15, 2014

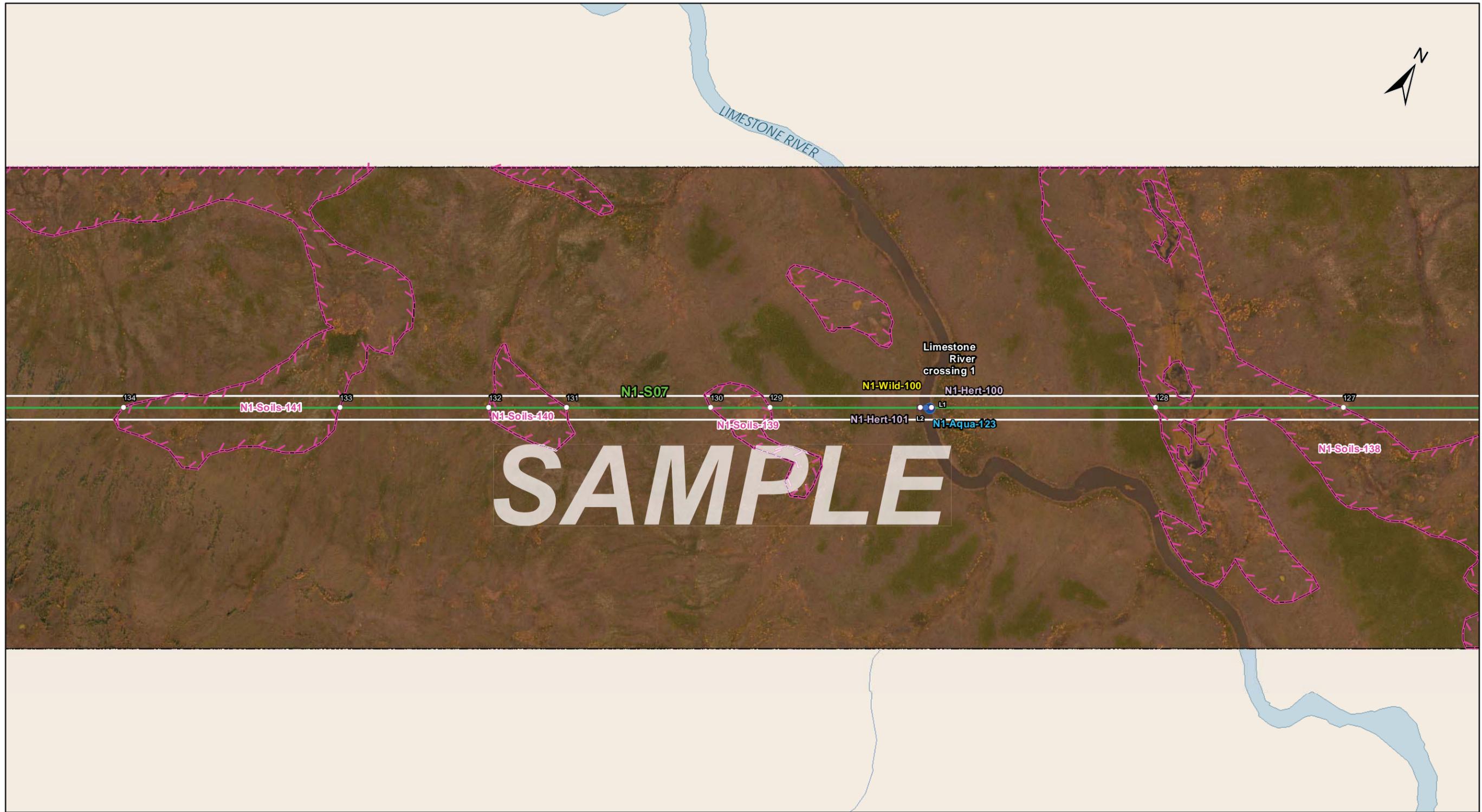


- Legend**
- ◆ Proposed Converter Station
 - S2
 - Final Preferred Route
 - Map Index Grid (1:10,000)
 - Local Study Area
 - Transmission Line
 - First Nation
 - National/Provincial Park
 - Wildlife Management Area

Bipole III Transmission Project
Construction Environmental Protection Plan
S2 Planning Section
Map Index

Draft: For Discussion Purposes Only

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Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: December 09, 2013

0 125 250 500
 Metres

1:10,000

- Land Base**
- Transmission Line
 - Highway
 - Major Road
 - Local Road
 - Winter Road
 - Railway (Operational)
 - Railway (Discontinued)
 - ☒ Mining

- Project Infrastructure**
- * Angle Tower Locations
 - BPIII Final Preferred Route
 - 66 m Right of Way

- Points of Access***
- Proposed Access Point
 - Major Stream Crossing
 - ▲ Abandoned Rail Crossing
 - ▲ Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPIII Access Management Database

- ESS Features**
- Heritage**
 - Archaeological
 - Water**
 - Water Crossing
 - Wildlife**
 - Birds and Habitat
 - Soils and Terrain**
 - Permafrost

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section N1
 Environmentally Sensitive Site Locations**

SAMPLE MITIGATION TABLE (see adjacent KEY for additional information)

MAP NUMBER : 17¹

ESS Group : Water Crossing²

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S07	N1-Aqua-123	Limestone River	754280	6280471	14N	12m	12m	Low	Important

3

Potential Effects:⁴

Habitat loss & contamination from structure foundations & installations; increased erosion & sedimentation of streams; damage to stream banks; loss of riparian vegetation; fish habitat disturbance & impeded fish movement

Specific Mitigation:⁵

- 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

ESS Group : Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S07	N1-Wild-100	Limestone River crossing; movement route for raptors and waterfowl	Site: L1 to L2	E- 754292 N- 6280478	E- 754267 N- 6280463	14N	29 m

3

Potential Effects:⁴

Higher risk of wire collision, risk of wire collision is localized to the right-of-way

Specific Mitigation:⁵

- Adhere to reduced risk timing windows for protection of birds (August 1- April 30)
- Maintain setback during timing window

ESS Group : Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S07	N1-Soils-138	Permafrost	Site: 127 to 128	E-755259 N-6281038	E-754819 N-6280783	14N	509 m

3

Potential Effects:⁴

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

Specific Mitigation:⁵

- 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
- Avoid organic soils containing permafrost to the extent possible
- Remove trees by low-disturbance methods

***ESS and 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**

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. N1) 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

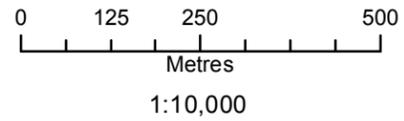
5 Mitigation measures identified for ESS listed in the ESS Location Summary table

ESS NAMING CONVENTION

CATEGORY	GROUP (Number Series Representing Group)	ESS ID (Section ID-Category-Group Number)	
Access	Intersection (100)	N1-Acss-100	
	Ecosystem	Habitat (100)	N1-Eco-100
		Research (200)	N1-Eco-200
Heritage	Species of Concern (300)	N1-Eco-300	
	Heritage	Archaeological (100)	N1-Hert-100
		Cultural (200)	N1-Hert-200
Land Use	Historic (300)	N1-Hert-300	
	Land Use	Conservation (100)	N1-LUse-100
		Crown Land Encumbrance (200)	N1-LUse-200
		Recreation (300)	N1-LUse-300
Residential (400)		N1-LUse-400	
Resource Use	Agriculture (100)	N1-RUse-100	
	Food/Medicinal (200)	N1-RUse-200	
	Forestry (300)	N1-RUse-300	
	Hunting/Fishing (400)	N1-RUse-400	
	Trapping (500)	N1-RUse-500	
	Soils and Terrain	Permafrost (100-200)	N1-Soils-100
Erosion (300)		N1-Soils-300	
Terrain (400)		N1-Soils-400	
Water	Water Crossing (100)	N1-Aqua-100	
	Groundwater (200)	N1-Aqua-200	
	Wetlands (300)	N1-Aqua-300	
Wildlife	Birds and Habitat (100)	N1-Wild-100	
	Mammal and Habitat (200)	N1-Wild-200	
	Reptiles/Amphibians and Habitat (300)	N1-Wild-300	



Coordinate System: UTM Zone 14N NAD83
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 Version: Draft



- Land Base**
- Transmission Line
 - Highway
 - Major Road
 - Local Road
 - Railway (Operational)
 - Railway (Discontinued)
 - First Nation
 - Mining
 - Provincial Forest
 - Township/Range

- Project Infrastructure**
- Angle Tower Locations
 - BPIII Final Preferred Route
 - 66 m Right of Way
 - Ground Electrode Line
 - Proposed Converter Station

- Points of Access***
- Proposed Access Point
 - Major Stream Crossing
 - Abandoned Rail Crossing
 - Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPIII Access Management Database

ESS Features

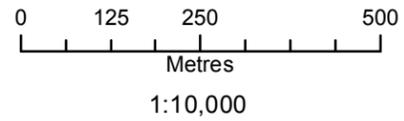
**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

Draft: For Discussion Purposes Only

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Coordinate System: UTM Zone 14N NAD83
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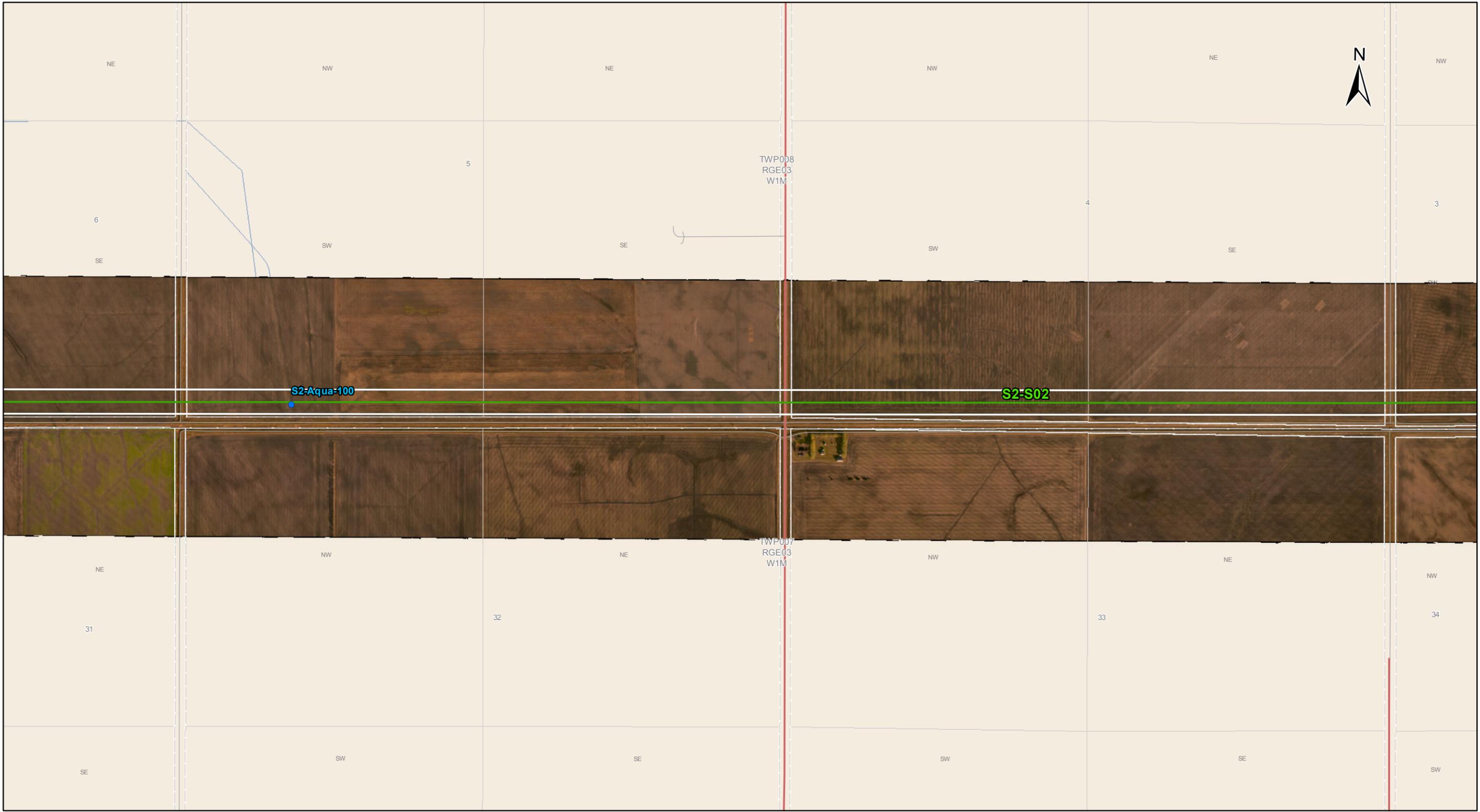
- Points of Access***
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ESS Features

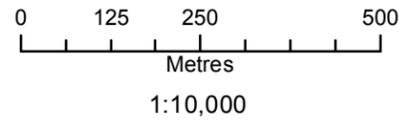
**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

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- ESS Features**
- Water**
- Water Crossing

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

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ESS Group: Water Crossing

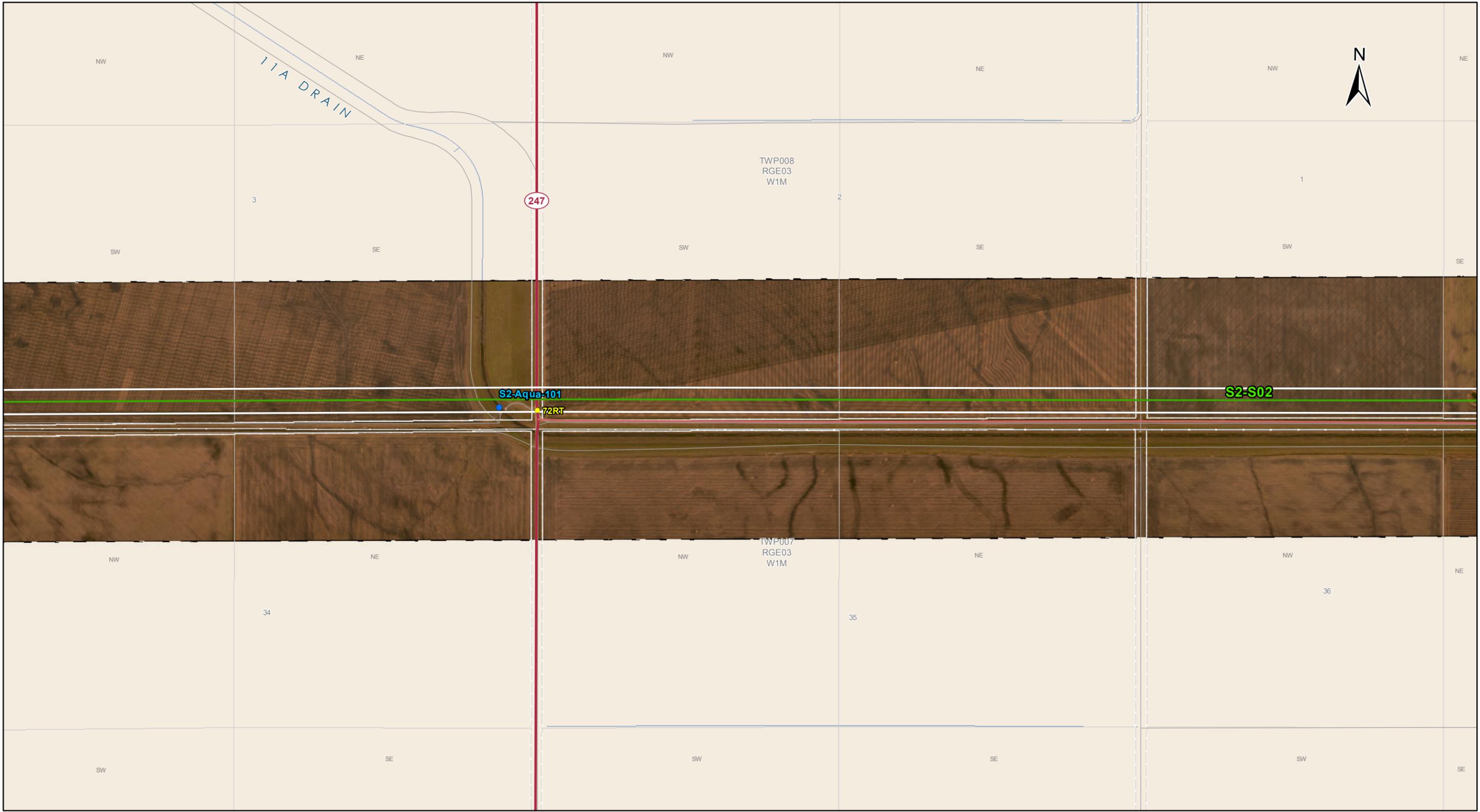
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S02	S2-Aqua-100	Unnamed Drain	583652	5497181	14N	N/A	N/A	Low	Marginal

Potential Effects:

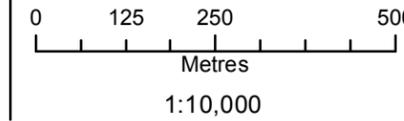
Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- 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 buffer areas prior to start of work
- 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Timing Windows, Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction



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- ★ Angle Tower Locations
 - BPIII Final Preferred Route
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 - Major Stream Crossing
 - ▲ Abandoned Rail Crossing
 - ▲ Rail Crossing
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 - Proposed Access Route
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- ESS Features**
- Water**
- Water Crossing

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

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ESS Group: Water Crossing

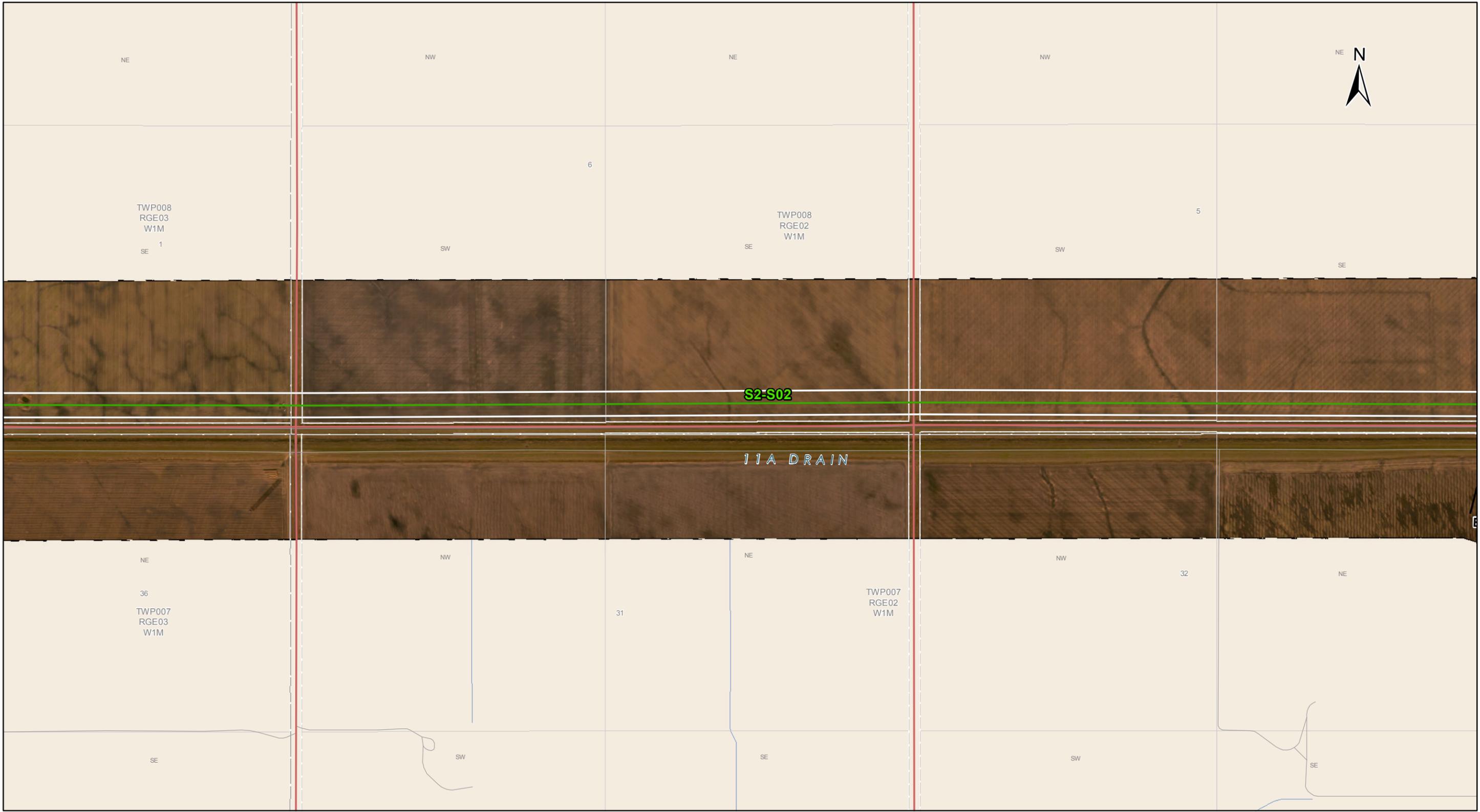
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S02	S2-Aqua-101	11-A Drain	588175	5497250	14N	8m	N/A	Low	Marginal

Potential Effects:

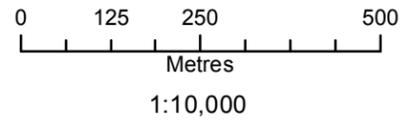
Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

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- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream work or fording from April 1 to June 30



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- Land Base**
- Transmission Line
 - Highway
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- Proposed Access Point
 - Major Stream Crossing
 - Abandoned Rail Crossing
 - Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPIII Access Management Database

ESS Features

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

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Coordinate System: UTM Zone 14N NAD83
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 Version: Draft

0 125 250 500
 Metres
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Land Base

- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Township/Range

Project Infrastructure

- Angle Tower Locations
- BP/III Final Preferred Route
- 66 m Right of Way
- Ground Electrode Line
- Proposed Converter Station

Points of Access*

- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Proposed Access Route

*Labels correspond to BP/III Access Management Database

ESS Features
Water

- Water Crossing

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

Draft: For Discussion Purposes Only

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S1-S03	S2-Aqua-102	11-A Drain	595065	5497290	14N	12m	N/A	Low	Marginal
S1-S03	S2-Aqua-103	11-A Drain	595065	5497290	14N	12m	N/A	Low	Marginal

Potential Effects:

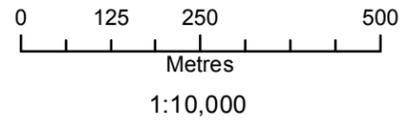
Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- 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
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- 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream work or fording from April 1 to June 30



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- Land Base**
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 - Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
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- ESS Features**
- Water
 - Water Crossing
 - Access
 - Intersection
 - Water
 - Groundwater

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

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ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S05	S2-Aqua-104	11-A Drain	601578	5497029	14N	9m	N/A	Low	Marginal

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- 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
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- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream work or fording from April 1 to June 30

ESS Group: Groundwater

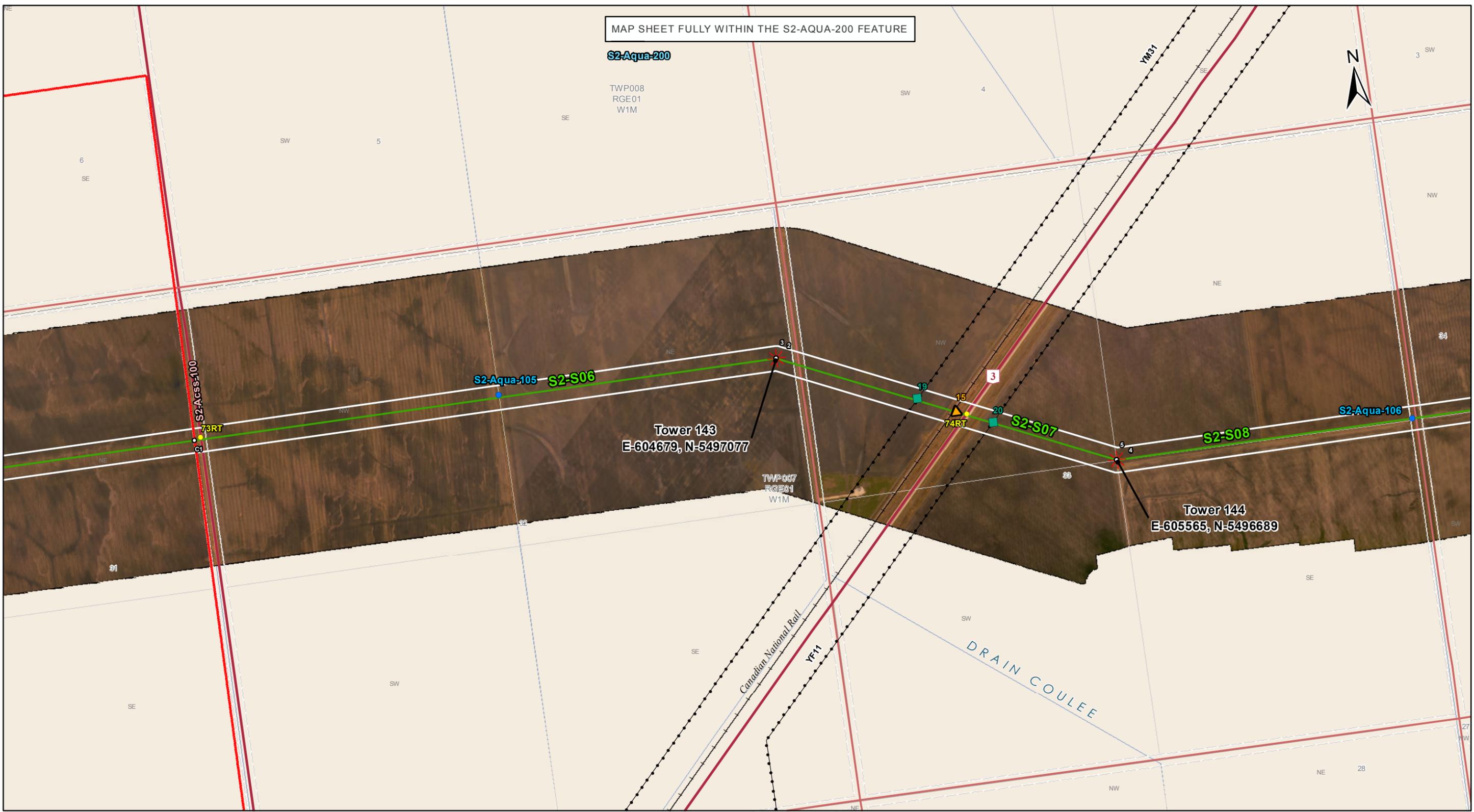
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S06	S2-Aqua-200	Saline artesian areas	Site: 1 to 2	E-602284 N-5497033	E-604678 N-5497077	14N	2394m

Potential Effects:

Increase in salinity of soils and surface water in case of potential groundwater discharge to the surface; wetting the surficial environment (ground saturation); effect on local vegetation.

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.



MAP SHEET FULLY WITHIN THE S2-AQUA-200 FEATURE

S2-Aqua-200

TWP008
RGE01
W1M

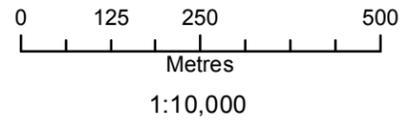
TWP007
RGE01
W1M

Tower 143
E-604679, N-5497077

Tower 144
E-605565, N-5496689



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: July 23, 2014
Version: Draft



- Land Base**
- Transmission Line
 - Highway
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 - Railway (Operational)
 - Railway (Discontinued)
 - First Nation
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 - Provincial Forest
 - Township/Range

- Project Infrastructure**
- Angle Tower Locations
 - BPIII Final Preferred Route
 - 66 m Right of Way
 - Ground Electrode Line
 - Proposed Converter Station

- Points of Access***
- Proposed Access Point
 - Major Stream Crossing
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 - Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPIII Access Management Database

- ESS Features**
- Water
 - Water Crossing
 - Access
 - Intersection
 - Water
 - Groundwater

**Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section S2
Environmentally Sensitive Site Locations**

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ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S08	S2-Aqua-105	Unnamed Drain	603915	5497072	14N	N/A	2m	Low	Marginal
S2-S08	S2-Aqua-106	Unnamed Drain	606377	5496705	14N	N/A	N/A	None	None

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- 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 buffer areas prior to start of work
- 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Timing Windows, Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction

ESS Group: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
S2-S06	S2-Acss-100	C1	Snowmobile Trail	E-603077 N-5497048	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- Identify and flag prior to start of work
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S06	S2-Aqua-200	Saline artesian areas	Site: 1 to 2	E-602284 N-5497033	E-604678 N-5497077	14N	2394m
S2-S07	S2-Aqua-200	Saline artesian areas	Site: 3 to 4	E-604678 N-5497077	E-605565 N-5496688	14N	967m
S2-S08	S2-Aqua-200	Saline artesian areas	Site: 5 to 6	E-605565 N-5496688	E-611257 N-5496792	14N	5693m

Potential Effects:

Increase in salinity of soils and surface water in case of potential groundwater discharge to the surface; wetting the surficial environment (ground saturation); effect on local vegetation.

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.

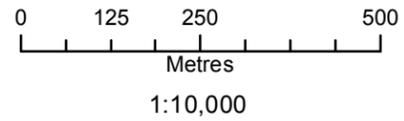


MAP SHEET FULLY WITHIN THE S2-AQUA-200 FEATURE

S2-Aqua-200



Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: July 23, 2014
 Version: Draft



- Land Base**
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 - Proposed Converter Station

- Points of Access***
- Proposed Access Point
 - Major Stream Crossing
 - Abandoned Rail Crossing
 - Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BP/II Access Management Database

- ESS Features**
- Water**
- Water Crossing
 - Groundwater
 - Water Crossing

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section S2
 Environmentally Sensitive Site Locations**

Draft: For Discussion Purposes Only

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S08	S2-Aqua-108	Parker Drain	610025	5496771	14N	N/A	4m	Low	Marginal

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- 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 buffer areas prior to start of work
- 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Timing Windows, Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S08	S2-Aqua-200	Saline artesian areas	Site: 5 to 6	E-605565 N-5496688	E-611257 N-5496792	14N	5693m

Potential Effects:

Increase in salinity of soils and surface water in case of potential groundwater discharge to the surface; wetting the surficial environment (ground saturation); effect on local vegetation.

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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S08	S2-Aqua-107	Unnamed pond	Site: 7 to 8	E-609713 N-5496764	E-609874 N-5496766	14N	161 m

Potential Effects:

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

Specific Mitigation:

- 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 buffer areas prior to start of work
- 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream work or fording from April 1 to June 30