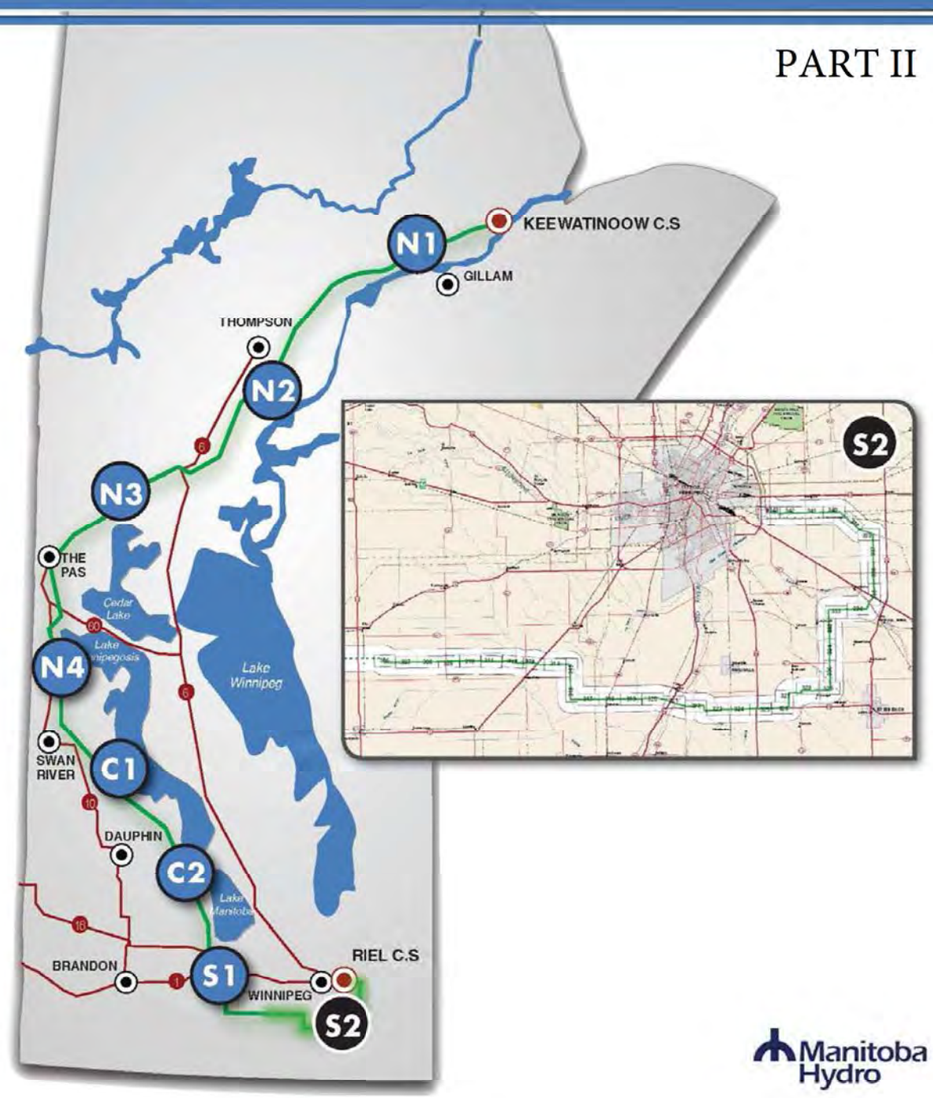
BIPOLE III TRANSMISSION PROJECT
CONSTRUCTION ENVIRONMENTAL PROTECTION PLAN - SECTION S2

PART II



Manitoba Hydro

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.

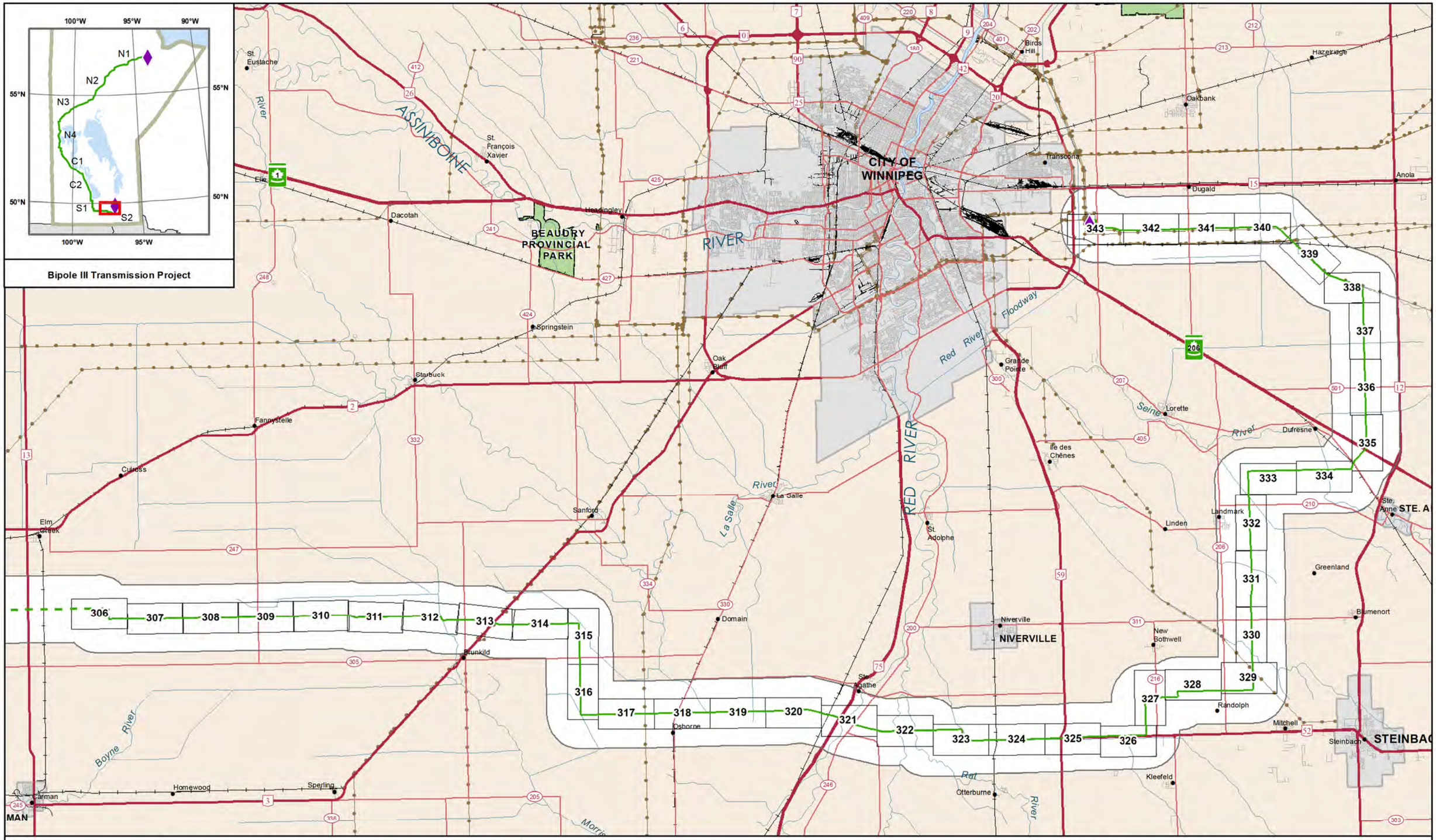
Document Owner:
Licensing and Environmental Assessment Department
Transmission Planning and Design Division
Transmission Business Unit
Manitoba Hydro

Final 2.01

List of Revisions

S2

Number	Nature of Revision	Page/Map #	Revised By	Date
1.01	Sensitive sites (Not ESS) are symbolized grey with white halos for visibility	Any Map that has SS	Stantec	20150911
1.02	To prevent confusion between what is an access trail and what is an ESS, all Accss ESS features will now be called RecUse eg "N4-Accss-100" will now be "N4-RecUse-100" to avoid confusion	Maps 291,296,29 and 304	Stantec	20150911
1.03	Removed the mitigation measure that indicates a timing window as this is observed throughout the project not just at that specific ESS and indicated in the appendix of the text CEnvPP document	Any map with ESS Group: Birds and Habitat on it	Manitoba Hydro	20150911
1.04	Updated drain crossing mitigation for select drains as wording restricted construction to winter work only	Drains that had low habitat sensitivity	Manitoba Hydro	20150911
1.05	Updated Bird Diverter sites based on fieldwork, extended S2-Wild-100,102, removed S2-Wild-101,103 and added S2-Wild-104	Maps 321,322,324 and 332	Stantec	20150911
1.06	Added new Archaeological site (S2-Hert-100) a polygon based on field investigation	Map 321	Manitoba Hydro	20150911
1.07	Removed labels from major stream crossings, rail crossing and transmission line crossings, and access route points. Labels for access routes remain.	Any associated Map	Manitoba Hydro	20151103
1.08	Tower Location updates received from Manitoba Hydro	Any associated maps	Stantec	20151105
2.0	Addition of Annotation of Rural Road Layer	Any associated maps	Stantec	20161031
2.01	Addition of text to clarify the need for the project archaeologist to be present during tower footing excavation for towers 7136, 7217 and 7218	Map 321, 330	Manitoba Hydro	20161123



Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, Stantec, ProvMB, NRCAN
Date Created: November 05, 2015
Version: 1.08

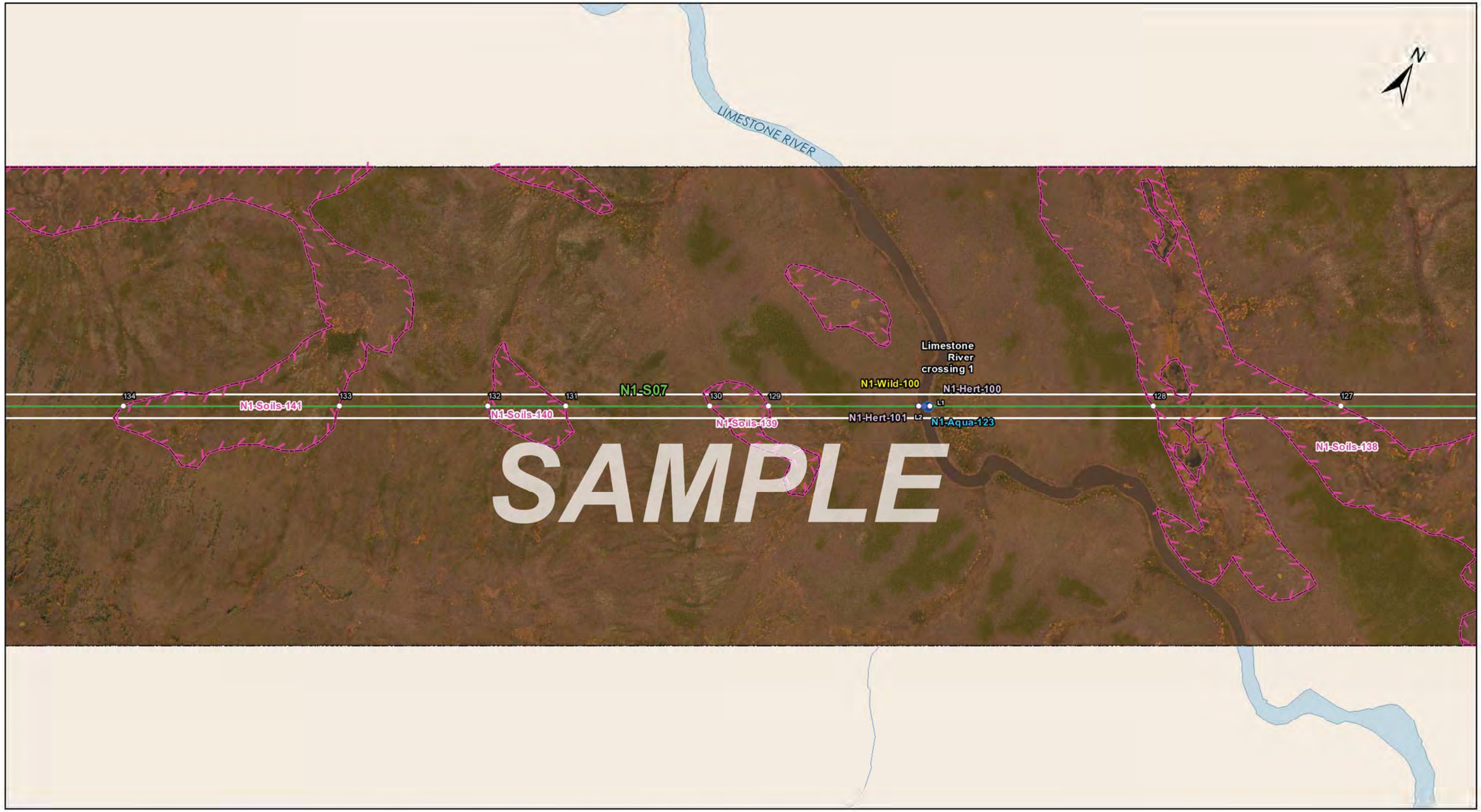
0 5 10 Kilometres
0 5 10 Miles
1:250,000

N

Legend

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

Bipole III Transmission Project
Construction Environmental Protection Plan
Region of Construction Section S2



DOCUMENT PATH: G:_GIS_PROJECT_FOLDER\00_HYDRO\111440054_BPIII_EPP\ARCMAP\ESS_N1\BPIII_CENVPP_N1N2N3N4C1SECTIONBASEMAP_MAPBOOK_BTB_S7ANTEC_20131207.MXD

Manitoba Hydro

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

Map 17

SAMPLE MITIGATION TABLE (see adjacent KEY for additional information)

MAP NUMBER : 17 [1]

ESS Group : Water Crossing [2]

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

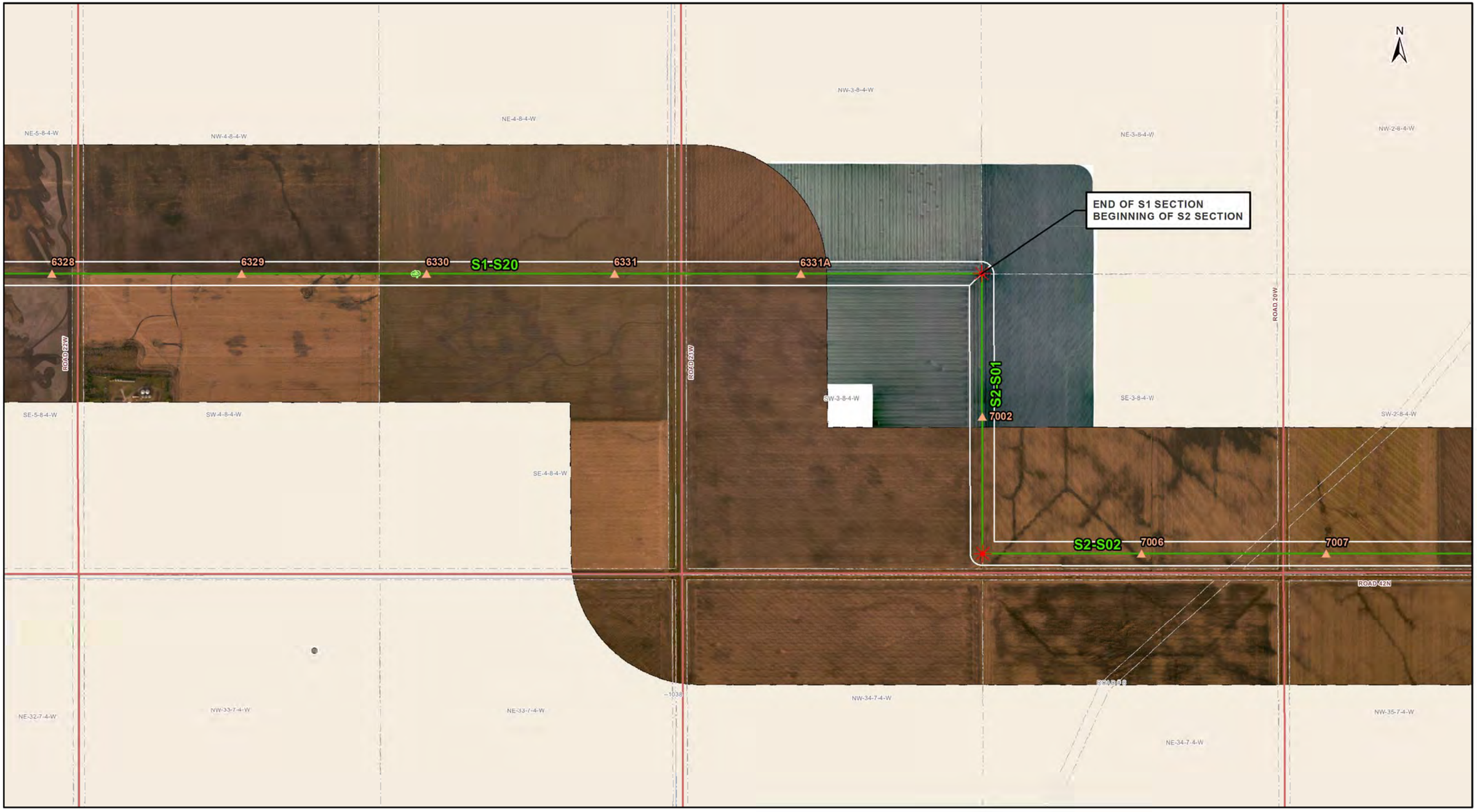
3 ESS location summary; includes the following fields:
- Sec-Seg - ID of the construction section (i.e. N1) and segment (i.e. S03) for ESS location
- ESS ID - Site specific ID assigned to each ESS according to **naming convention** listed below
- ESS Name - Brief name/description of ESS
- Easting/Northing - 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
	Species of Concern (300)	N1-Eco-300
Heritage	Archaeological (100)	N1-Hert-100
	Cultural (200)	N1-Hert-200
	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
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

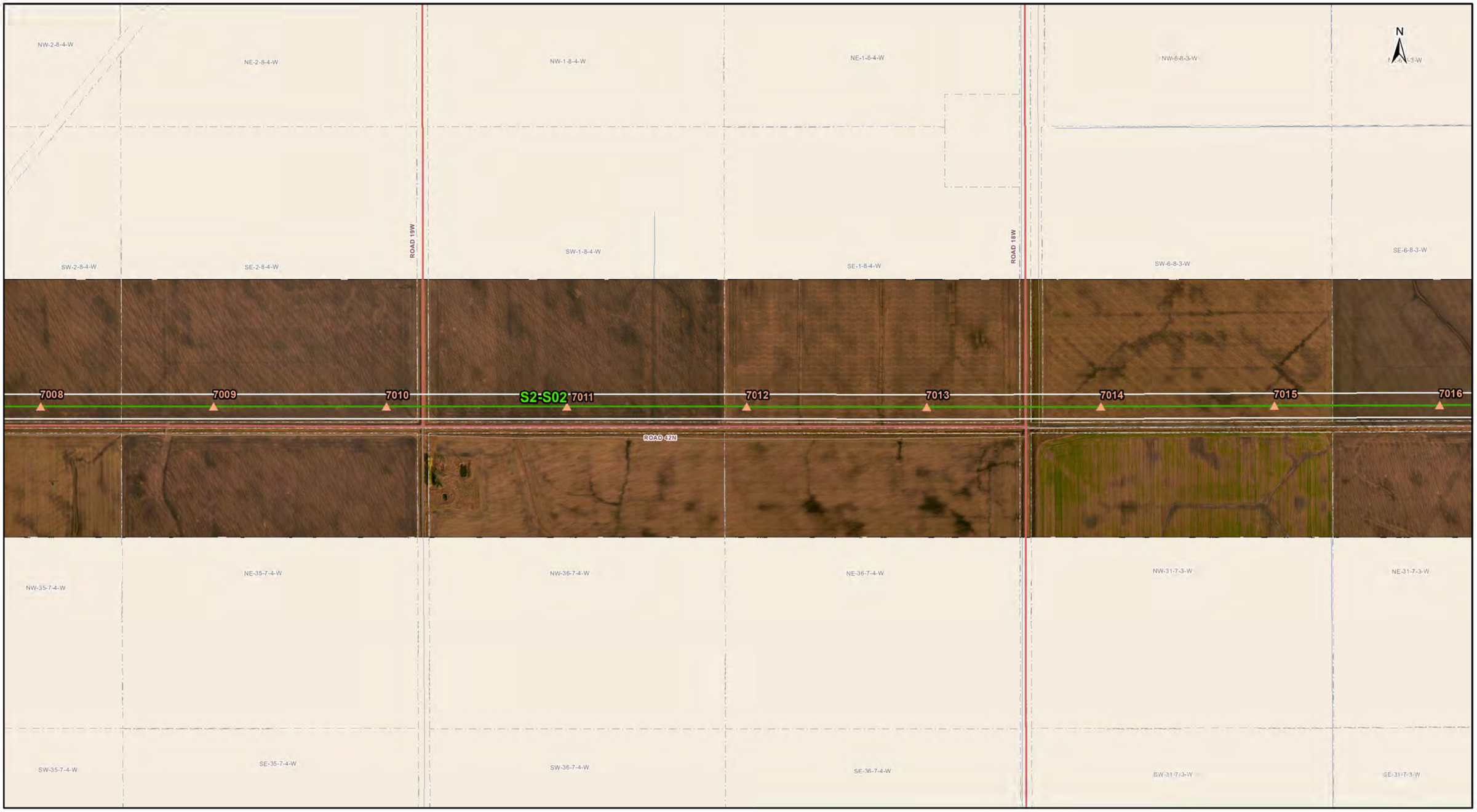
*Labels correspond to BPIII Access Mgmt Database

ESS Features
Resource Use
- Forestry

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

Map 306

This page is intentionally left blank.



Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

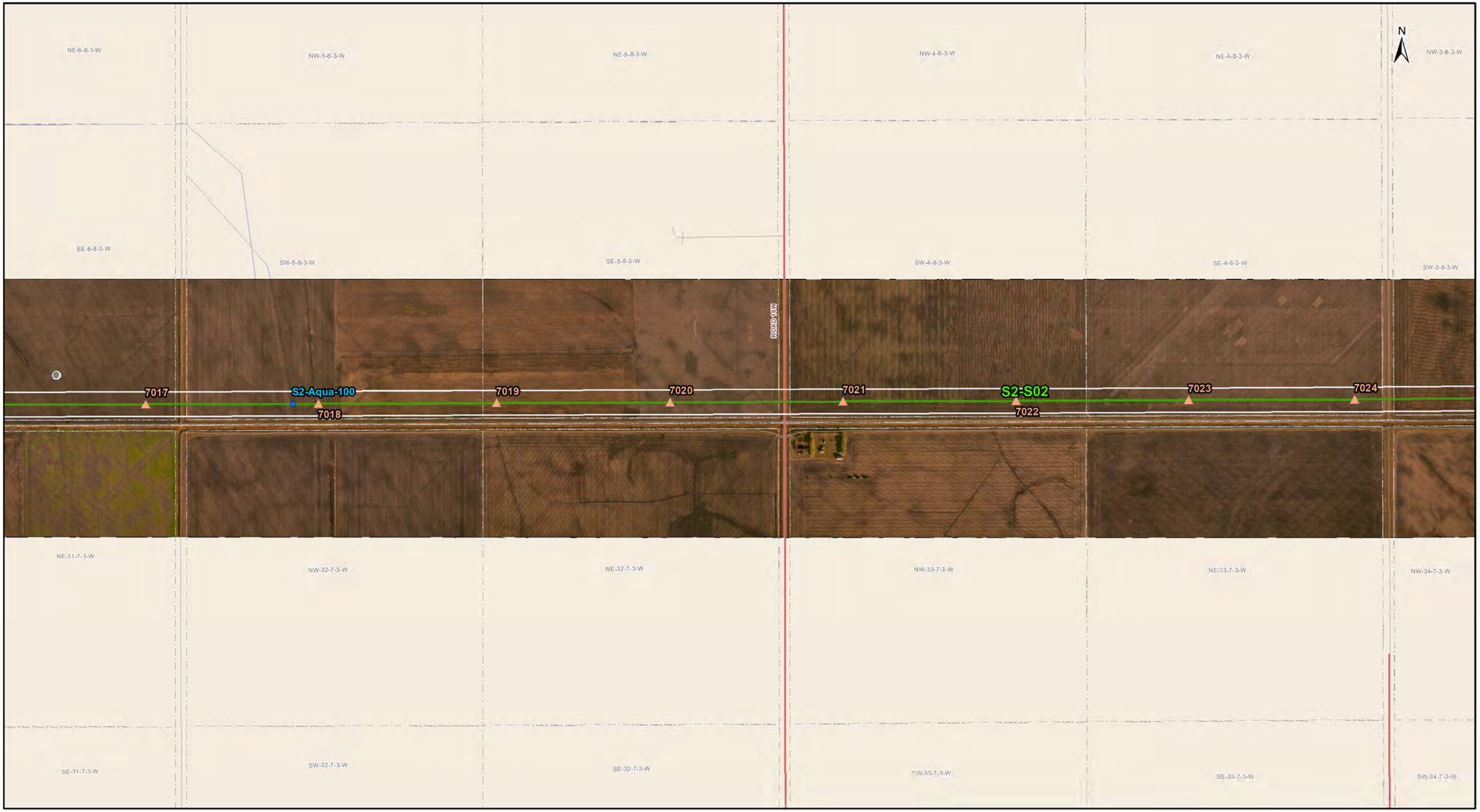
*Labels correspond to BPIII Access Mgmt Database

ESS Features

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

Map 307

This page is intentionally left blank.



Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt Database

ESS Features
Water
- Water Crossing

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

Map 308

ESS Group: Water Crossing

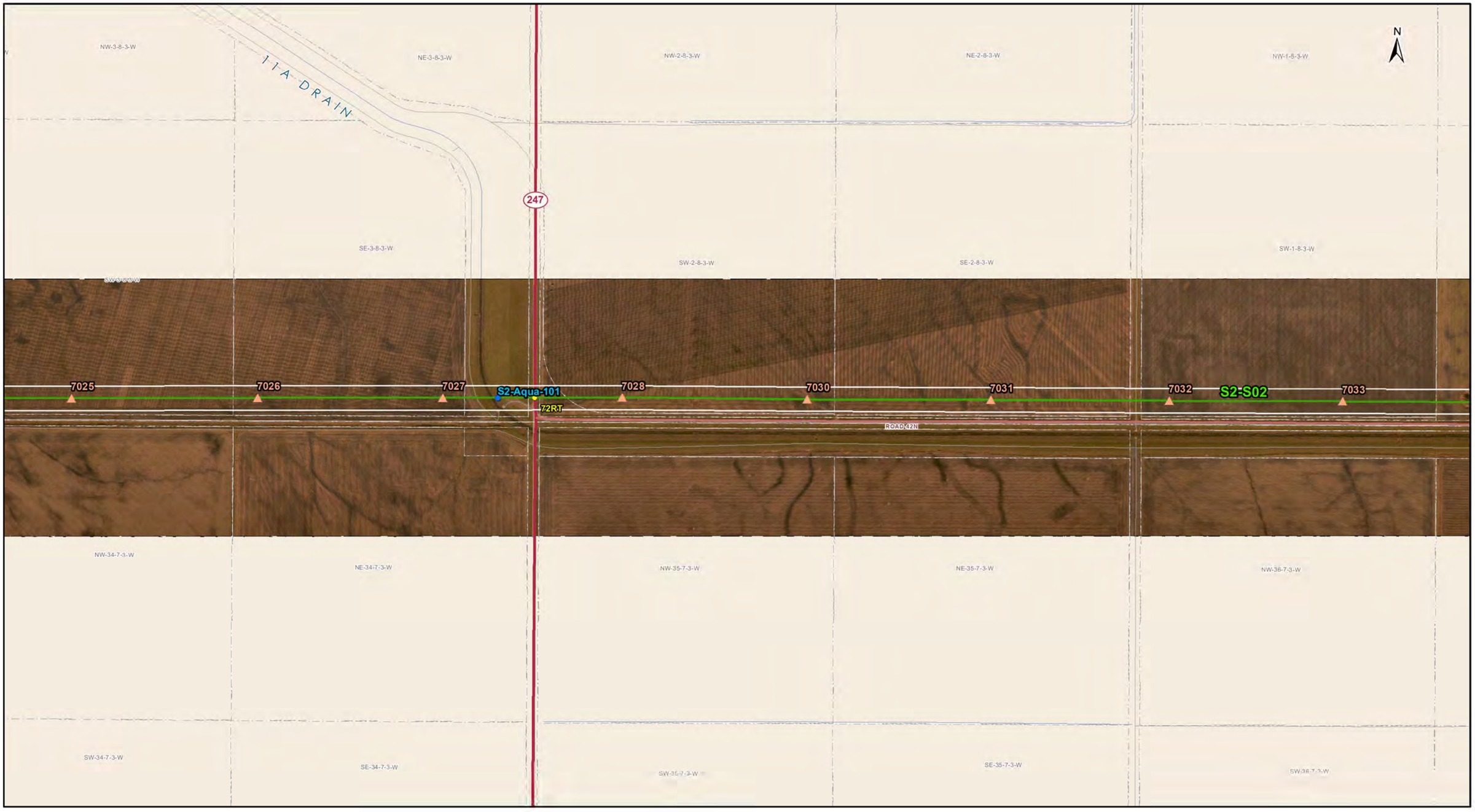
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S02	S2-Aqua-100	Unnamed Drain	583652	5497181	14N	N/A	N/A	Low	Marginal

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 or dry ground to minimize surface damage, rutting and erosion. If wet conditions, one time fording is permitted
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available. If repeated crossings of the watercourse are necessary prior approval from the MH Environmental Inspector is required
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.



Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt Database

ESS Features
Water
- Water Crossing

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

Map 309

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

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. If wet conditions, one time fording is permitted
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available. If repeated crossings of the watercourse are necessary prior approval from the MH Environmental Inspector is required
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt Database

ESS Features

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

Map 310

This page is intentionally left blank.

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt Database

ESS Features
Water
- Water Crossing

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

Map 311

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-S03	S2-Aqua-102	11-A Drain	595065	5497290	14N	12m	N/A	Low	Marginal
S2-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 or dry ground to minimize surface damage, rutting and erosion. If wet conditions, one time fording is permitted
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available. If repeated crossings of the watercourse are necessary prior approval from the MH Environmental Inspector is required
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt 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

Map 312

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-S06	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 or dry ground to minimize surface damage, rutting and erosion. If wet conditions, one time fording is permitted
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available. If repeated crossings of the watercourse are necessary prior approval from the MH Environmental Inspector is required
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.

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.

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt 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

Map 313

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-S06	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 or dry ground to minimize surface damage, rutting and erosion. If wet conditions, one time fording is permitted
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available. If repeated crossings of the watercourse are necessary prior approval from the MH Environmental Inspector is required
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.

ESS Group: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
S2-S06	S2-RecUse-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

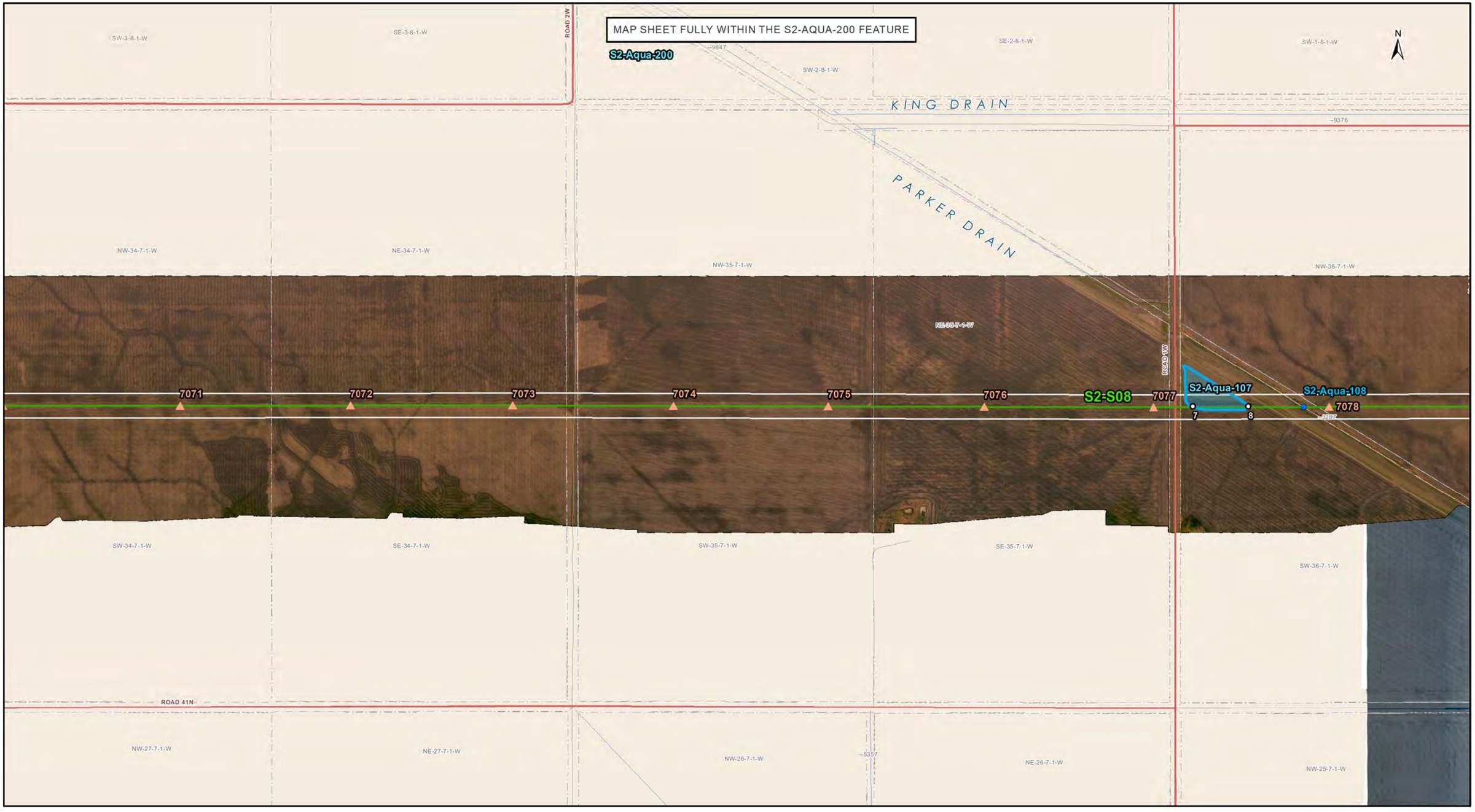
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S06	S2-Aqua-200	Saline artesian areas	Site: 1 to 2	E-602284 N-5497033	E-604678 N-5497077	14N	2394m
S2-S07	S2-Aqua-200	Saline artesian areas	Site: 3 to 4	E-604678 N-5497077	E-605565 N-5496688	14N	967m
S2-S08	S2-Aqua-200	Saline artesian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



Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 03, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt Database

ESS Features
Water
- Water Crossing

Water
- Water Crossing

Water
- Groundwater

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

Map 314

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 or dry ground to minimize surface damage, rutting and erosion. If wet conditions, one time fording is permitted
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available. If repeated crossings of the watercourse are necessary prior approval from the MH Environmental Inspector is required
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.

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-609723 N-5496759	E-609874 N-5496762	14N	151 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.
- No instream work or fording from April 1 to July 15

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 01, 2016
Version: Final 2.0

0 125 250 500
Metres 1:10,000

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

*Towers subject to change, only used as a rough guide

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt Database

ESS Features
Water
- Water Crossing

Water
- Groundwater

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

Map 315

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-S09	S2-Aqua-109	Parker Drain	611290	5495282	14N	N/A	4m	Low	Marginal
S2-S09	S2-Aqua-110	Unnamed Drain	611293	5495151	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 or dry ground to minimize surface damage, rutting and erosion. If wet conditions, one time fording is permitted
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available. If repeated crossings of the watercourse are necessary prior approval from the MH Environmental Inspector is required
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S09	S2-Aqua-200	Saline artesian areas	Site: 9 to 10	E-611257 N-5496792	E-611391 N-5490218	14N	6574m

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.