MAP SHEET FULLY WITHIN THE S2-AQUA-200 FEATURE

S2-Aqua-200

Tower 145
E-611258, N-5496792

S2-Aqua_109

S2-S09

75RT

S2-Aqua-110

S2-S08

305

PARKER DRAIN

TWP008
RGE01
E1M

TWP007
RGE01
E1M

TWP008
RGE01
W1M

TWP007
RGE01
W1M

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

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
- 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
Water
- Water Crossing

Water
- Groundwater

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

Map 315

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-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 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
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.

MAP SHEET FULLY WITHIN THE S2-AQUA-200 FEATURE

S2-Aqua-200

S2-S10

S2-Aqua-112

S2-Aqua-111

S2-S09

Tower 146
E-611392, N-5490219

GARBER DRAIN

TWP007
RGE01
W1M

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

Water
- Groundwater

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

Draft: For Discussion Purposes Only

Map 316

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-S10	S2-Aqua-111	Garber Drain	611387	5490553	14N	N/A	7m	Low	Marginal
S2-S10	S2-Aqua-112	Garber Drain	611558	5490222	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-S09	S2-Aqua-200	Saline artesian areas	Site: 9 to 10	E-611257 N-5496792	E-611391 N-5490218	14N	6574m
S2-S10	S2-Aqua-200	Saline artesian areas	Site: 11 to 12	E-611391 N-5490218	E-619944 N-5490397	14N	8554m

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

S2-S10

TWP 007
RGE 01
E1M

Y51L

N

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

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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
- 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
Water
- Groundwater

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

Map 317

Draft: For Discussion Purposes Only

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S10	S2-Aqua-200	Saline artesian areas	Site: 11 to 12	E-611391 N-5490218	E-619944 N-5490397	14N	8554m

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

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Version: Draft

0 125 250 500
Metres
1:10,000

Land Base
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- Railway (Discontinued)
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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

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ESS Features
Water
- Water Crossing

Water
- Groundwater

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

Draft: For Discussion Purposes Only

Map 318

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-S10	S2-Aqua-113	Unnamed Drain	616907	5490335	14N	N/A	3m	Low	Marginal
S2-S10	S2-Aqua-114	Manness Drain	618051	5490359	14N	N/A	7m	Low	Marginal
S2-S10	S2-Aqua-115	Roberts Drain	620518	5490417	14N	N/A	7m	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

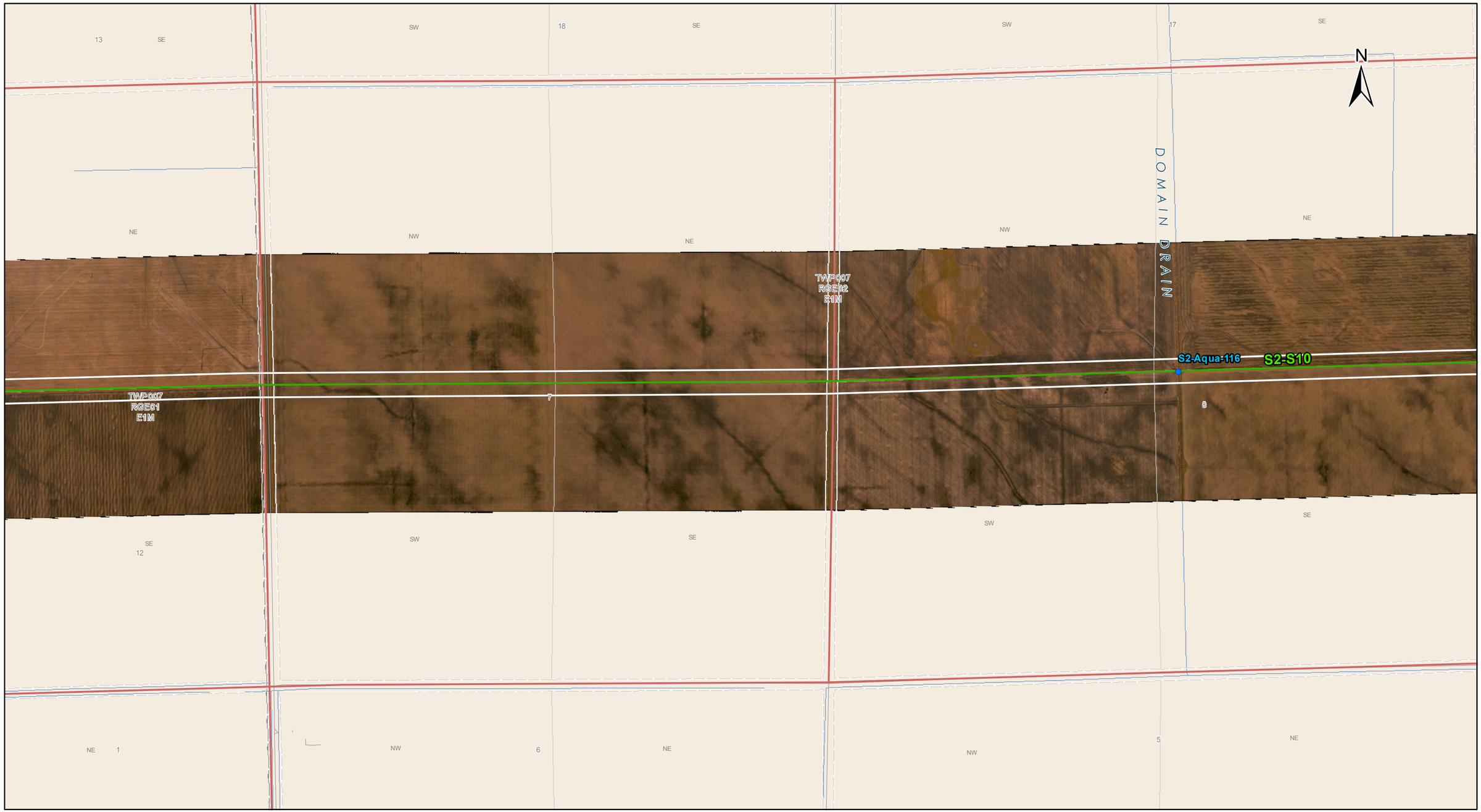
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S10	S2-Aqua-200	Saline artesian areas	Site: 11 to 12	E-611391 N-5490218	E-619944 N-5490397	14N	8554m

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

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Version: Draft

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Metres

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Land Base
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- 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*
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- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

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

Map 319

Draft: For Discussion Purposes Only

ESS Group: Water Crossing

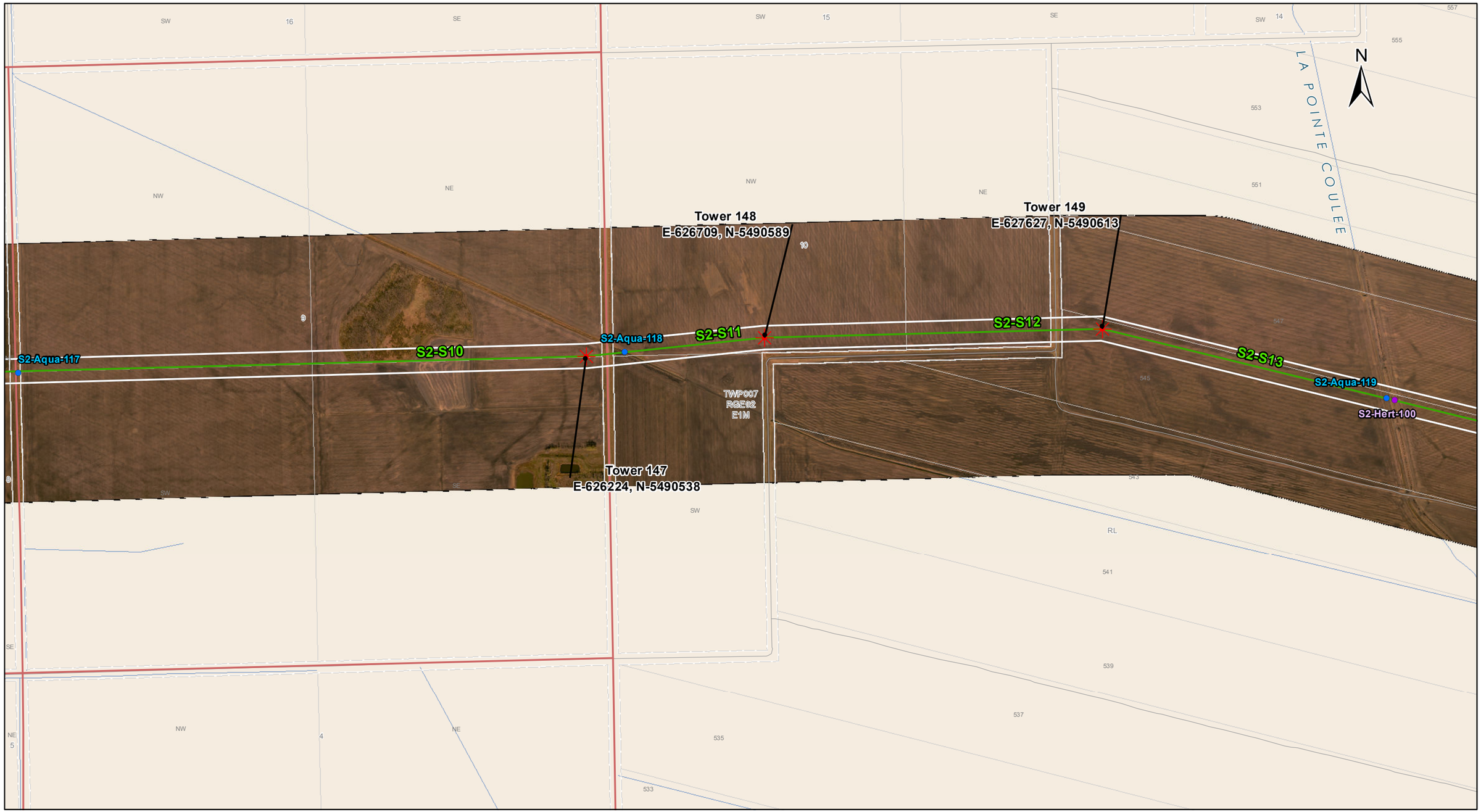
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S11	S2-Aqua-116	Domain Drain	623839	5490470	14N	N/A	2m	Low	Marginal

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 Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream work or fording from April 1 to June 30



Manitoba Hydro

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Metres

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Land Base
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Points of Access*
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- Rail Crossing
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- Proposed Access Route

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ESS Features
Heritage
- Archaeological

Water
- Water Crossing

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

Map 320

Draft: For Discussion Purposes Only

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S14	S2-Hert-100	Old creek bed east of current drain	628452	5490429	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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S14	S2-Aqua-117	Unnamed Drain	624682	5490494	14N	N/A	N/A	None	None
S2-S14	S2-Aqua-118	Unnamed Drain	626330	5490549	14N	N/A	N/A	Low	Marginal
S2-S14	S2-Aqua-119	La Pointe Coulee	628394	5490443	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

Manitoba Hydro

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0 125 250 500
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Land Base
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- Ground Electrode Line
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Points of Access*
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- Major Stream Crossing
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- Rail Crossing
- Transmission Line Crossing
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Heritage
- Archaeological
- Cultural or Historic

Water
- Water Crossing

Wildlife
- Birds and Habitat

Water
- Groundwater

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

Map 321

Draft: For Discussion Purposes Only

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S15	S2-Hert-101	Potential Archaeological Site - Red River west shore	630003	5489915	14N
S2-S15	S2-Hert-102	Registered Archaeological Site	630019	5489897	14N
S2-S15	S2-Hert-103	Potential Archaeological Site - Red River east shore	630119	5489790	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: Historic

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S15	S2-Hert-300	Heritage River (Red River)	630075	5489837	14N

Potential Effects:

Potential aesthetic concerns with presence to canoe route traffic; disruption from operational activities

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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S15	S2-Aqua-120	Red River	630071	5489841	14N	50m	N/A	High	Important

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 Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream work or fording from September 15 to June 30

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S15	S2-Wild-100	Red River crossing	Site: L1 to L2	E-630036 N-5489875	E-630115 N-5489792	14N	113m

Potential Effects:

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

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: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S15	S2-Aqua-201	Saline artesian areas	Site: 13 to 14	E-632182 N-5489241	E-633123 N-5489008	14N	970m

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.