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Manitoba Hydro

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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 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 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

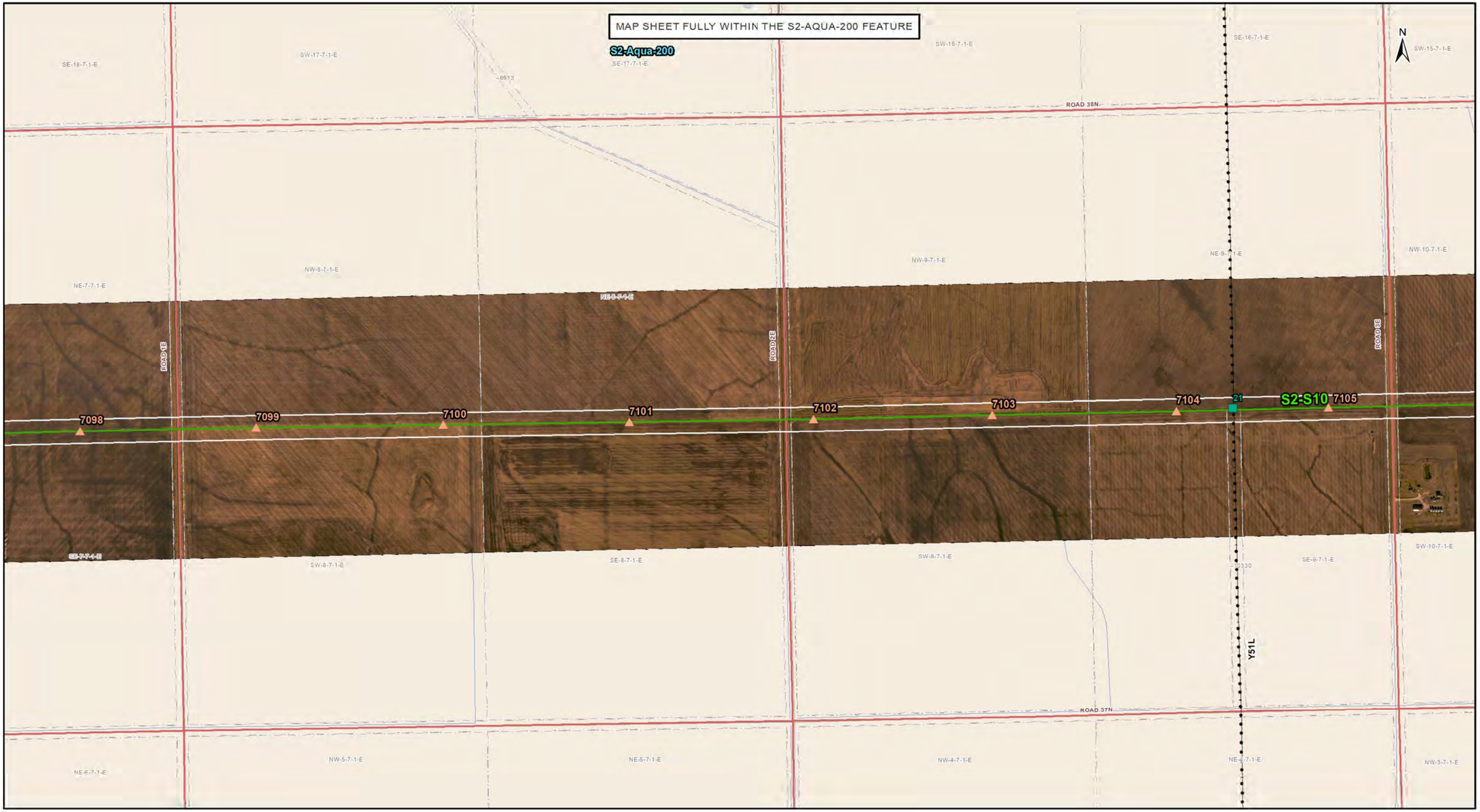
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S09	S2-Aqua-200	Saline artesian areas	Site: 9 to 10	E-611257 N-5496792	E-611391 N-5490218	14N	6574m
S2-S10	S2-Aqua-200	Saline artesian areas	Site: 11 to 12	E-611391 N-5490218	E-619944 N-5490397	14N	8554m

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.



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- First Nation
- Mining
- Provincial Forest
- Parcel Fabric

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

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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
- Groundwater

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

Map 317

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.

Manitoba Hydro

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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 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 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

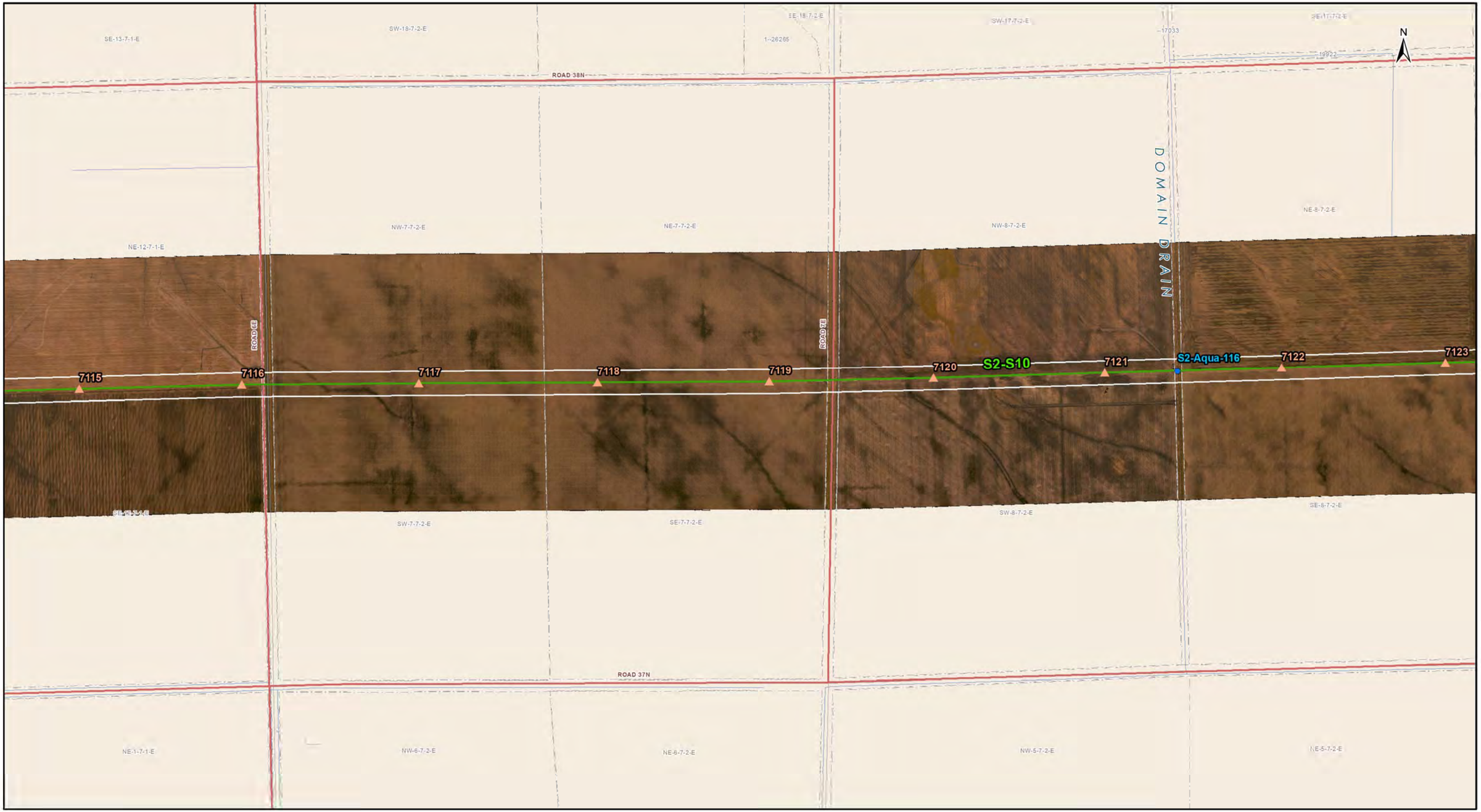
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S10	S2-Aqua-200	Saline artesian areas	Site: 11 to 12	E-611391 N-5490218	E-619944 N-5490397	14N	8554m

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.



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

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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 319

ESS Group: Water Crossing

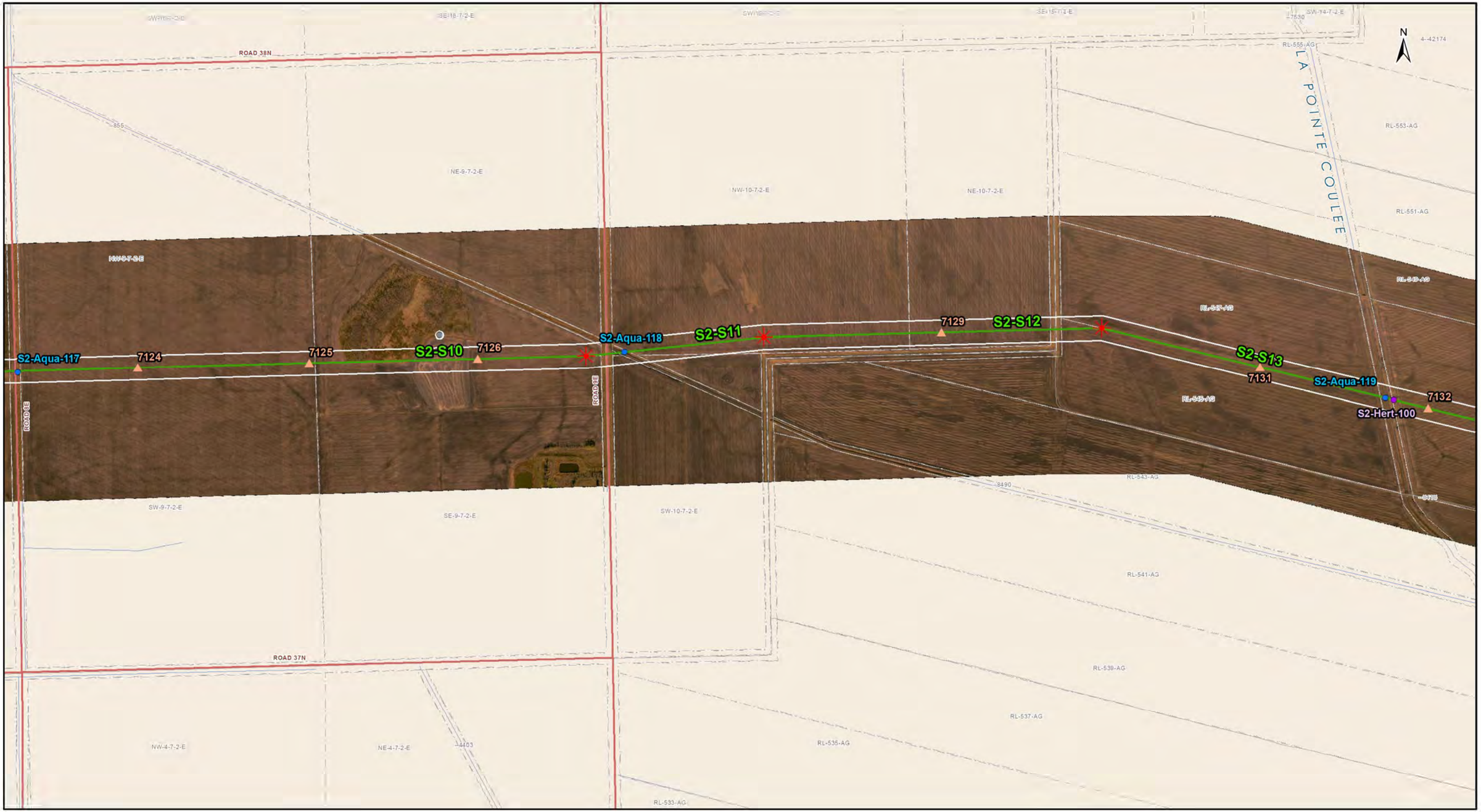
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S2-S10	S2-Aqua-116	Domain Drain	623839	5490470	14N	N/A	2m	Low	Marginal

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 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.



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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

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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

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S13	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-S10	S2-Aqua-117	Unnamed Drain	624682	5490494	14N	N/A	N/A	None	None
S2-S13	S2-Aqua-118	Unnamed Drain	626330	5490549	14N	N/A	N/A	Low	Marginal
S2-S13	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 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.

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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
Heritage
- Archaeological
- Cultural or Historic

Water
- Water Crossing

Heritage
- Archaeological

Water
- Groundwater

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

Map 321

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S14	S2-Hert-101	Potential Archaeological Site - Red River west shore	630003	5489915	14N
S2-S14	S2-Hert-102	Registered Archaeological Site	630019	5489897	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: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S14	S2-Hert-103	Potential Archaeological Site - Red River east shore	630119	5489790	14N

Potential Effects:

Potential disturbance to heritage resources

Specific Mitigation:

- Project Archaeologist is required to be on site during geotechnical investigations and/or foundation installation
- 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 as required by Project Archaeologist

ESS Group: Historic

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S14	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-S14	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.
- No instream work or fording from April 1 – July 15

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: 17 to 18	E-632182 N-5489240	E-632984 N-5489042	14N	825m

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: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S14	S2-Hert-104	Archaeological Site	Site: 13 to 14	E-630122 N-5489785	E-630167 N-5489738	14N	65 m
S2-S15	S2-Hert-104	Archaeological Site	Site: 15 to 16	E-630167 N-5489738	E-630335 N-5489697	14N	172 m

Potential Effects:

Potential disturbance to heritage resources

Specific Mitigation:

- Project Archaeologist is required to be on site during geotechnical investigations and/or foundation installation
- 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 as required by Project Archaeologist
- The presence of the Project Archaeologist is required to monitor the excavation of tower footings at tower # 7136

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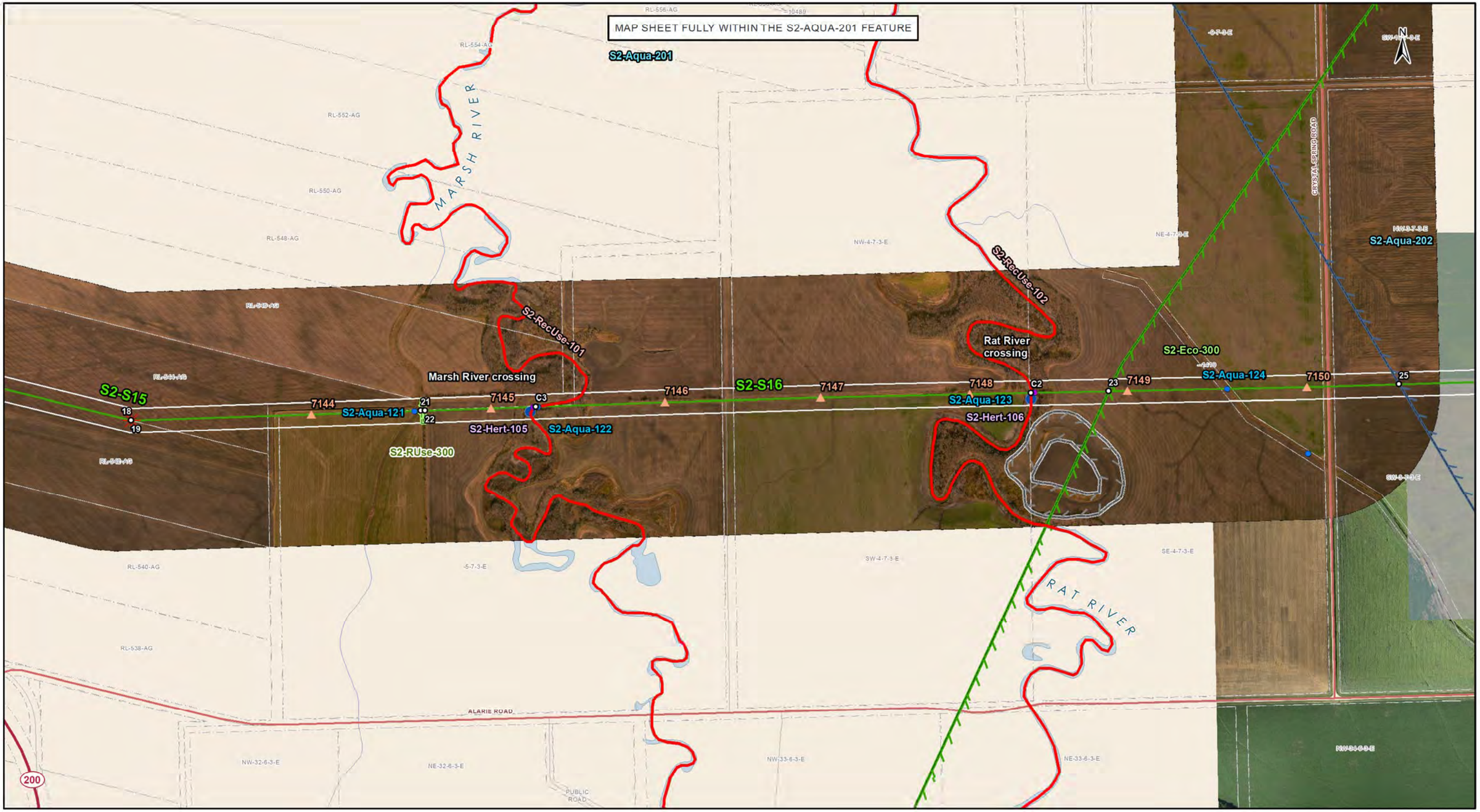

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- Linear Features
- Area Features

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- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Proposed Access Route

*Labels correspond to BPIII Access Mgmt Database

ESS Features
Heritage
- Archaeological

Water
- Water Crossing

Access
- Intersection

Ecosystem
- Species of Concern

Resource Use
- Forestry

Water
- Groundwater

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

Map 322

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
S2-S16	S2-Hert-105	Marsh River	634076	5489069	14N
S2-S16	S2-Hert-106	Rat River	635443	5489103	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: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
S2-S16	S2-RecUse-102	C2	Canoe Route	E-635431 N-5489117	14N
S2-S16	S2-RecUse-101	C3	Canoe Route	E-634083 N-5489080	14N

Potential Effects:

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

Specific Mitigation:

- Where possible carry out construction activities during frozen ice conditions to avoid conflict with canoe route traffic
- If construction is to take place during the summer months post warning markers and signs upstream and downstream of the crossing

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-S16	S2-Aqua-121	Unnamed tributary of Marsh River	633750	5489061	14N	N/A	N/A	Low	Marginal
S2-S16	S2-Aqua-122	Marsh River	634072	5489069	14N	10m	10m	Moderate	Important
S2-S16	S2-Aqua-123	Rat River	635432	5489103	14N	14m	12m	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.
- No instream work or fording from April 1 – July 15

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-S16	S2-Aqua-124	Unnamed Drain	635974	5489116	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 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-S16	S2-Aqua-202	Aquifers vulnerable to contamination	Site: 25 to 26	E-636431 N-5489140	E-638663 N-5489203	14N	2232 m

Potential Effects:

Potential groundwater contamination from a contingency event (e.g., spill).

Specific Mitigation:

- Marshaling yards will be located on upland sites where possible.
- An Emergency Preparedness and Spill Response Plan will be developed and an emergency response spill kit will be kept on-site at all times in case of fluid leaks or spills from machinery.
- 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.

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: 17 to 18	E-632182 N-5489240	E-632984 N-5489042	14N	825 m
S2-S16	S2-Aqua-201	Saline artesian areas	Site: 19 to 20	E-632984 N-5489042	E-638461 N-5489198	14N	5479 m

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: Forestry

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S16	S2-RUse-300	Shelterbelt	Site: 21 to 22	E-633771 N-5489069	E-633782 N-5489069	14N	11m

Potential Effects:

Removal in area of ROW intersect.

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
- If Burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- Notify landowner regarding construction activities and schedule, and address concerns prior to start of work
- Use existing access trails, roads or cut lines whenever possible as access routes
- Limit all equipment to project footprint only, where possible
- No damage to Vegetation on the edge of the Right of Way
- No pushing debris into adjacent timber

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S16	S2-Eco-300	Species of Concern (plant)	Site: 23 to 24	E-635641 N-5489121	E-638663 N-5489203	14N	3023 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

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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

Ecosystem
- Species of Concern

Water
- Groundwater

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

Map 323

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-S18	S2-Aqua-126	Tourond Creek	638936	5488411	14N	N/A	N/A	None	None
S2-S19	S2-Aqua-127	Unnamed Drain	640396	5488416	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.

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S16	S2-Aqua-202	Aquifers vulnerable to contamination	Site: 25 to 26	E-636431 N-5489140	E-638663 N-5489203	14N	2232 m
S2-S17	S2-Aqua-202	Aquifers vulnerable to contamination	Site: 28 to 30	E-638663 N-5489203	E-638860 N-5488411	14N	816 m
S2-S18	S2-Aqua-202	Aquifers vulnerable to contamination	Site: 32 to 33	E-638860 N-5488411	E-639571 N-5488410	14N	711 m
S2-S19	S2-Aqua-202	Aquifers vulnerable to contamination	Site: 35 to 38	E-639571 N-5488410	E-645717 N-5488578	14N	6147 m

Potential Effects:

Potential groundwater contamination from a contingency event (e.g., spill).

Specific Mitigation:

- Marshaling yards will be located on upland sites where possible.
- An Emergency Preparedness and Spill Response Plan will be developed and an emergency response spill kit will be kept on-site at all times in case of fluid leaks or spills from machinery.
- 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.

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S16	S2-Aqua-201	Saline artesian areas	Site: 19 to 20	E-632984 N-5489042	E-638461 N-5489198	14N	5479 m

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: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S16	S2-Eco-300	Species of Concern (plant)	Site: 23 to 24	E-635641 N-5489121	E-638663 N-5489203	14N	3023 m
S2-S17	S2-Eco-300	Species of Concern (plant)	Site: 27 to 29	E-638663 N-5489203	E-638860 N-5488411	14N	816 m
S2-S18	S2-Eco-300	Species of Concern (plant)	Site: 31 to 34	E-638860 N-5488411	E-639571 N-5488410	14N	711 m
S2-S19	S2-Eco-300	Species of Concern (plant)	Site: 36 to 37	E-639571 N-5488410	E-645717 N-5488578	14N	6147 m
S2-S19	S2-Eco-301	Species of Concern (plant)	Site: 39 to 40	E-640472 N-5488432	E-645717 N-5488578	14N	5246 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

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ESS Features
Ecosystem
- Species of Concern

Resource Use
- Forestry

Water
- Groundwater

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

Map 324

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S19	S2-RUse-301	Shelterbelt	Site: 41 to 42	E-641253 N-5488452	E-641867 N-5488472	14N	613m
S2-S19	S2-RUse-301	Shelterbelt	Site: 43 to 44	E-641952 N-5488475	E-641984 N-5488476	14N	31m

Potential Effects:

Removal in area of ROW intersect.

Specific Mitigation:

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ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S19	S2-Eco-300	Species of Concern (plant)	Site: 36 to 37	E-639571 N-5488410	E-645717 N-5488578	14N	6147 m
S2-S19	S2-Eco-301	Species of Concern (plant)	Site: 39 to 40	E-640472 N-5488432	E-645717 N-5488578	14N	5246 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
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ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S2-S19	S2-Aqua-202	Aquifers vulnerable to contamination	Site: 35 to 38	E-639571 N-5488410	E-645717 N-5488578	14N	6147 m

Potential Effects:

Potential groundwater contamination from a contingency event (e.g., spill).

Specific Mitigation:

- Marshaling yards will be located on upland sites where possible.
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