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Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 12, 2015
Version: Final 4.0

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

- Project Infrastructure**
- Angle Tower Locations*
 - Towers (Preliminary)*
 - BPIII Final Preferred Route
 - 66 m Right of Way
- *Towers are subject to change, and are only used as a rough guide
- Sensitive Sites***
- Point Features
 - Linear Features
 - Area Features
- *Currently outside the Project footprint

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

- ESS Features**
- Water**
- Water Crossing
- Soils and Terrain**
- Permafrost

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N1
Environmentally Sensitive Site Locations
Map 30

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S14	N1-Aqua-135	Unnamed tributary of South Moswakot River	713868	6259787	14N	6m	N/A	Moderate	Marginal
N1-S14	N1-Aqua-136	Unnamed tributary of South Moswakot River	712815	6258295	14N	N/A	N/A	Moderate	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
- No instream works or fording from April 1 - July 15

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S14	N1-Soils-164	Permafrost	Site: 223 to 224	E-714183 N-6260232	E-714068 N-6260069	14N	199 m
N1-S14	N1-Soils-164	Permafrost	Site: 225 to 226	E-714032 N-6260018	E-713943 N-6259895	14N	151 m
N1-S14	N1-Soils-164	Permafrost	Site: 227 to 228	E-713882 N-6259810	E-713763 N-6259642	14N	205 m
N1-S14	N1-Soils-165	Permafrost	Site: 229 to 230	E-713335 N-6259031	E-713277 N-6258949	14N	100 m
N1-S14	N1-Soils-166	Permafrost	Site: 232 to 233	E-712825 N-6258309	E-712796 N-6258268	14N	847 m
N1-S14	N1-Soils-166	Permafrost	Site: 234 to 231	E-712307 N-6257576	E-712982 N-6258531	14N	271 m

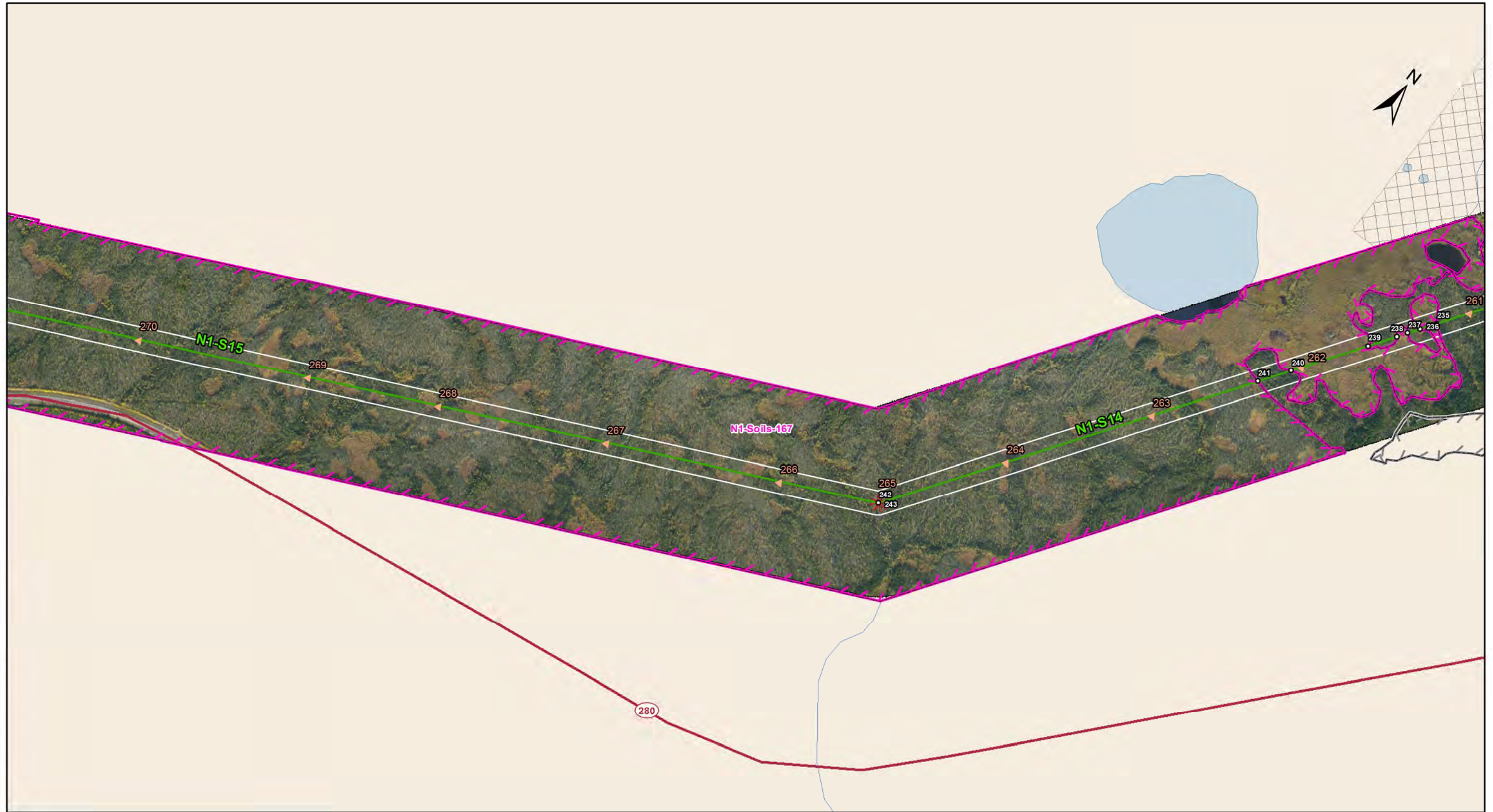
Potential Effects:

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

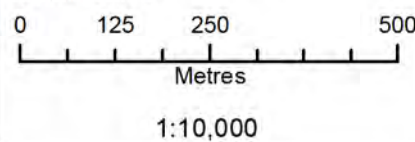
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- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

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Land Base

- Transmission Line
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- Railway (Operational)
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- Mining

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

ESS Features Soils and Terrain

- Permafrost

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

Map 31

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S14	N1-Soils-167	Permafrost	Site: 235 to 236	E-712197 N-6257419	E-712170 N-6257381	14N	46m
N1-S14	N1-Soils-167	Permafrost	Site: 237 to 238	E-712150 N-6257353	E-712132 N-6257327	14N	31m
N1-S14	N1-Soils-167	Permafrost	Site: 239 to 240	E-712084 N-6257260	E-711959 N-6257082	14N	217m
N1-S14	N1-Soils-167	Permafrost	Site: 241 to 242	E-711903 N-6257004	E-711282 N-6256123	14N	1078m
N1-S15	N1-Soils-167	Permafrost	Site: 243 to 244	E-711282 N-6256123	E-701896 N-6251852	14N	10312m

Potential Effects:

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

Specific Mitigation:

- 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
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S15	N1-Aqua-137	Unnamed tributary of Stephens Lake	706978	6254165	14N	N/A	N/A	Moderate	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
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- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- No instream works or fording from April 1 - July 15

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S15	N1-Soils-167	Permafrost	Site: 243 to 244	E-711282 N-6256123	E-701896 N-6251852	14N	10312m

Potential Effects:

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

Specific Mitigation:

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- Use existing trails, roads or cut lines whenever possible as access routes
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ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S15	N1-Soils-167	Permafrost	Site: 243 to 244	E-711282 N-6256123	E-701896 N-6251852	14N	10312m

Potential Effects:

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

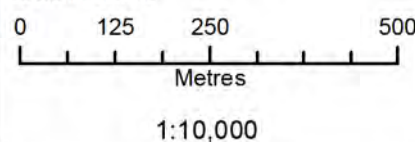
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Land Base

- Transmission Line
- Highway
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- Local Road
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- Railway (Operational)
- Railway (Discontinued)
- Mining

Project Infrastructure

- Angle Tower Locations*
- Towers (Preliminary)*
- BP/III Final Preferred Route
- 66 m Right of Way
- *Towers are subject to change, and are only used as a rough guide
- Sensitive Sites***
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Points of Access

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

ESS Features

- Ecosystems**
- Species of Concern
- RecUse**
- Intersection
- Soils and Terrain**
- Permafrost

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

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
N1-S15	N1-Eco-302	Species of Concern (plant)	701322	6251562	14N

Potential Effects:

Loss of plants of conservation concern from clearing and construction activities.

Specific Mitigation:

- Identify and flag prior to start of work
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Provide 5m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible

ESS Group: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
N1-S16	N1-RecUse-104	C8	Winter Trail	E-700117 N-6251832	14N

Potential Effects:

Potential disturbance of access

Specific Mitigation:

- Identify and flag prior to start of work
- Notify Manitoba Infrastructure and Transportation (MIT)/winter road operator and local authorities regarding construction activities and schedule, and address concerns prior to construction
- Avoid surface damage to and obstruction of access route
- Ensure that access road/trail are visible from RoW
- Provide warning signage for vehicle traffic and public safety

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S15	N1-Soils-167	Permafrost	Site: 243 to 244	E-711282 N-6256123	E-701896 N-6251852	14N	10312 m
N1-S16	N1-Soils-168	Permafrost	Site: 245 to 246	E-699110 N-6252298	E-698183 N-6252728	14N	1022 m

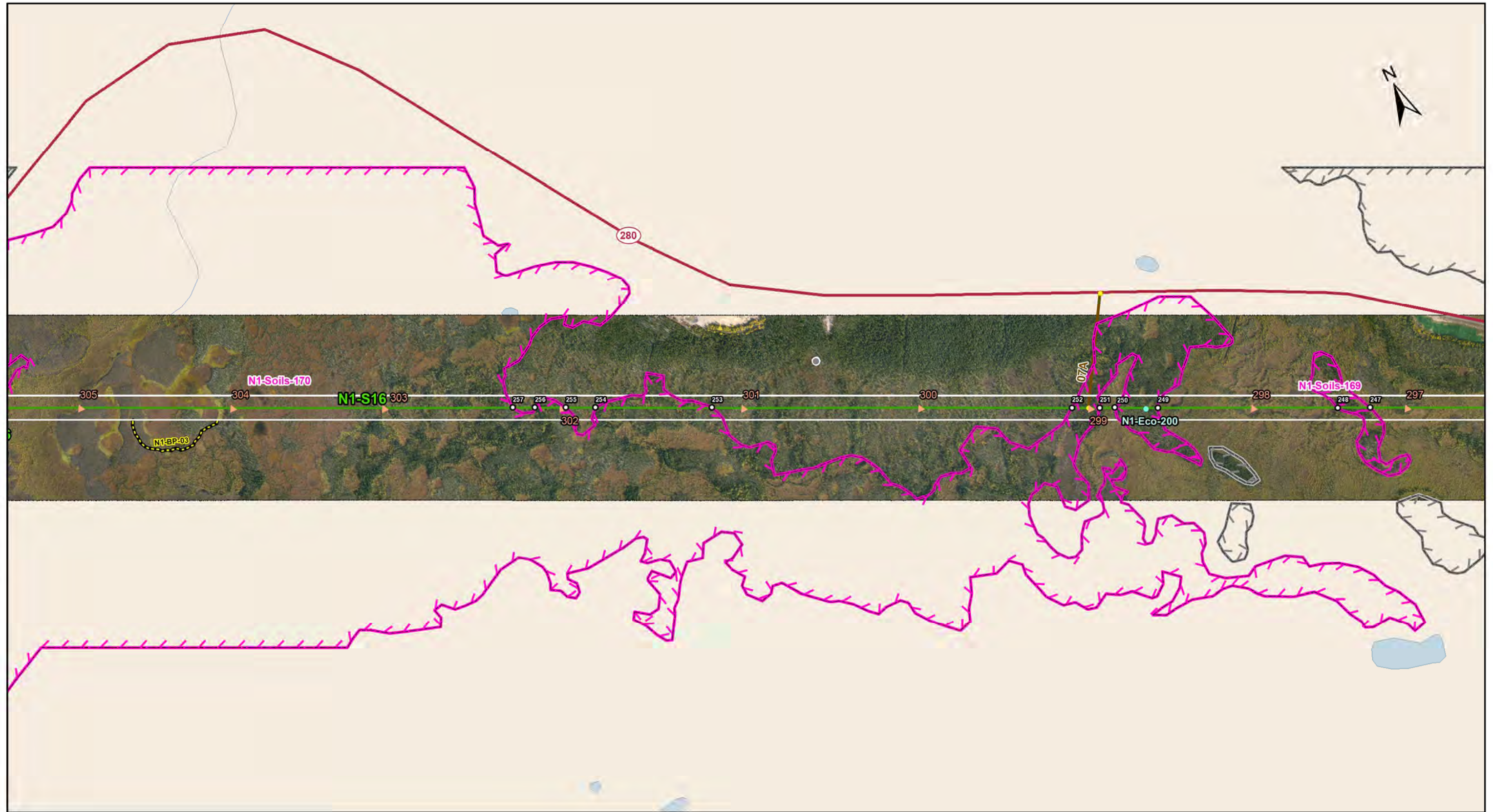
Potential Effects:

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

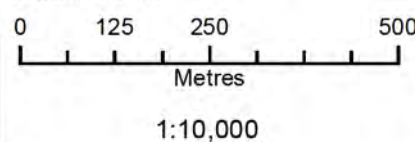
Specific Mitigation:

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Land Base

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ESS Features

- Ecosystems**
- Permafrost Sampling Site
- Soils and Terrain**
- Permafrost

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

Map 35

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S16	N1-Soils-169	Permafrost	Site: 247 to 248	E-697840 N-6252886	E-697760 N-6252924	14N	88 m
N1-S16	N1-Soils-170	Permafrost	Site: 249 to 250	E-697319 N-6253128	E-697212 N-6253178	14N	117 m
N1-S16	N1-Soils-170	Permafrost	Site: 251 to 252	E-697175 N-6253195	E-697107 N-6253226	14N	75 m
N1-S16	N1-Soils-170	Permafrost	Site: 253 to 254	E-696222 N-6253636	E-695936 N-6253769	14N	314 m
N1-S16	N1-Soils-170	Permafrost	Site: 255 to 256	E-695864 N-6253802	E-695788 N-6253837	14N	83 m
N1-S16	N1-Soils-170	Permafrost	Site: 257 to 258	E-695733 N-6253863	E-694445 N-6254460	14N	1419 m

Potential Effects:

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

Specific Mitigation:

- 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
- Maintain shrub and herbaceous vegetation to the extent possible
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ESS Group: Research

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
N1-S16	N1-Eco-200	Permafrost Monitoring Site	616252	6206823	14N

Potential Effects:

Permafrost monitoring site, buried thermistor is exposed 5-10cm at the surface and is susceptible to damage

Specific Mitigation:

- Identify and flag sensor's location to protect it damage
- Notify construction crews of sensor location

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S16	N1-Soils-170	Permafrost	Site: 257 to 258	E-695733 N-6253863	E-694445 N-6254460	14N	1419 m
N1-S16	N1-Soils-170	Permafrost	Site: 259 to 260	E-694333 N-6254512	E-694290 N-6254532	14N	47 m
N1-S17	N1-Soils-170	Permafrost	Site: 261 to 262	E-694290 N-6254532	E-694242 N-6254507	14N	53 m
N1-S17	N1-Soils-170	Permafrost	Site: 263 to 264	E-694114 N-6254443	E-692987 N-6253873	14N	1263 m
N1-S17	N1-Soils-170	Permafrost	Site: 265 to 266	E-692443 N-6253597	E-692377 N-6253564	14N	73 m
N1-S17	N1-Soils-170	Permafrost	Site: 267 to 268	E-692315 N-6253533	E-692270 N-6253510	14N	50 m
N1-S17	N1-Soils-170	Permafrost	Site: 269 to 270	E-691964 N-6253355	E-691924 N-6253335	14N	44 m
N1-S17	N1-Soils-171	Permafrost	Site: 271 to 272	E-691299 N-6253019	E-691213 N-6252976	14N	96 m

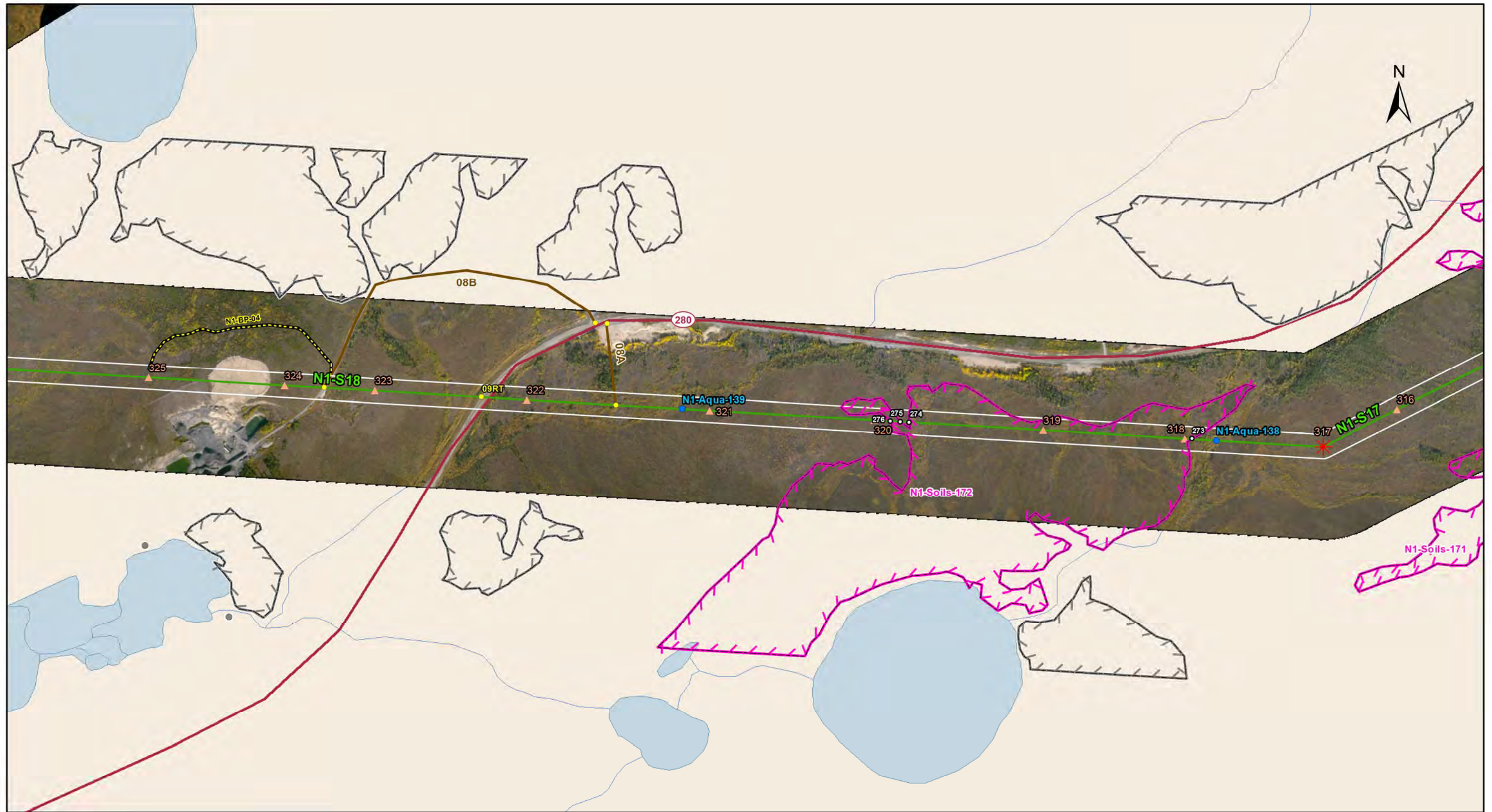
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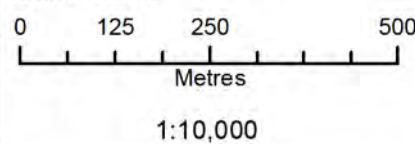
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ESS Features

- Water
- Water Crossing
- Soils and Terrain
- Permafrost

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

Map 37

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S18	N1-Aqua-138	Unnamed tributary of Assean River	690229	6252642	14N	N/A	N/A	Moderate	Marginal
N1-S18	N1-Aqua-139	Unnamed tributary of Assean River	688782	6252727	14N	N/A	N/A	Moderate	Marginal

Potential Effects:

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ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S18	N1-Soils-172	Permafrost	Site: 274 to 275	E-689397 N-6252690	E-689372 N-6252691	14N	25m
N1-S18	N1-Soils-172	Permafrost	Site: 276 to 273	E-689347 N-6252693	E-690164 N-6252645	14N	767m

Potential Effects:

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

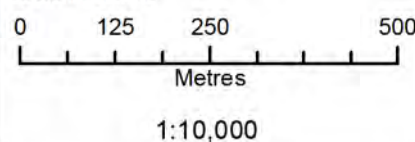
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ESS Features

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

Map 38

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S19	N1-Aqua-140	Unnamed tributary of Apetowachakamasik Lake	685045	6252947	14N	N/A	N/A	Moderate	Marginal
N1-S19	N1-Aqua-141	Unnamed Tributary of Apetowachakamasik Lake	684276	6252804	14N	N/A	N/A	Low	Marginal

Potential Effects:

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

Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
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ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S18	N1-Soils-173	Permafrost	Site: 277 to 278	E-685180 N-6252938	E-685169 N-6252939	14N	11m
N1-S18	N1-Soils-173	Permafrost	Site: 279 to 280	E-685052 N-6252946	E-684970 N-6252951	14N	82m
N1-S19	N1-Soils-173	Permafrost	Site: 281 to 282	E-684314 N-6252827	E-684246 N-6252785	14N	79m
N1-S19	N1-Soils-173	Permafrost	Site: 283 to 284	E-683940 N-6252595	E-683906 N-6252574	14N	39m
N1-S19	N1-Soils-173	Permafrost	Site: 285 to 286	E-683894 N-6252566	E-683851 N-6252540	14N	49m
N1-S19	N1-Soils-173	Permafrost	Site: 287 to 288	E-683769 N-6252488	E-683578 N-6252369	14N	225m
N1-S19	N1-Soils-173	Permafrost	Site: 289 to 290	E-683236 N-6252157	E-682599 N-6251761	14N	749m

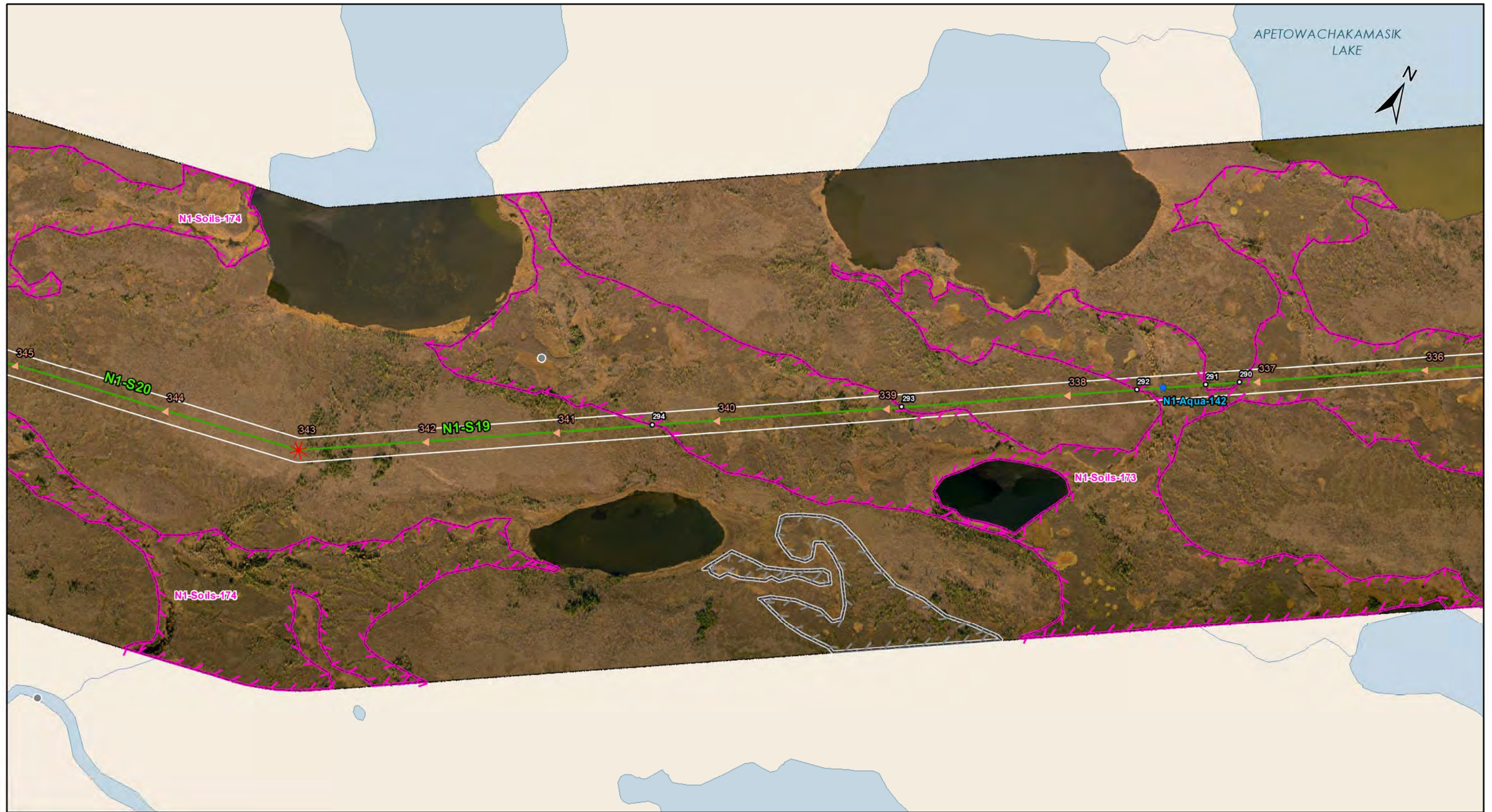
Potential Effects:

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

Specific Mitigation:

- 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
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

DOCUMENT PATH: G:\GIS\PROJECT_FOLDER00_HYDRO\111440054_BPIII_EPP\ARCMAP\ESS_N1\BPIII_CENVPP_NISECTION_MAPBOOK_FORHYDRO_20151112.MXD



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 12, 2015
Version: Final 4.0

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*
 - Towers (Preliminary)*
 - BPIII Final Preferred Route
 - 66 m Right of Way
 - *Towers are subject to change, and are only used as a rough guide
- Sensitive Sites***
- Point Features
 - Linear Features
 - Area Features
 - *Currently outside the Project footprint

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

- ESS Features**
- Water**
- Water Crossing
- Soils and Terrain**
- Permafrost

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N1
Environmentally Sensitive Site Locations
Map 39

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S19	N1-Aqua-142	Unnamed Tributary of Apetowachakamasik Lake	682424	6251649	14N	N/A	N/A	Low	Marginal

Potential Effects:

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

Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- No instream works or fording from April 1 - July 15

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S19	N1-Soils-173	Permafrost	Site: 289 to 290	E-683236 N-6252157	E-682599 N-6251761	14N	749m
N1-S19	N1-Soils-173	Permafrost	Site: 291 to 292	E-682521 N-6251713	E-682363 N-6251614	14N	186m
N1-S19	N1-Soils-173	Permafrost	Site: 293 to 294	E-681820 N-6251277	E-681244 N-6250919	14N	678m

Potential Effects:

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

Specific Mitigation:

- 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
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan