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

± 1:10,000

0 120 240 480 Metres

1:10,000

Map 32

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

DOCUMENT PATH: G:\_GIS_PROJECT_FOLDER\00_HYDRO\111440054_BPIII_EPP\ARCMAP\ESS_N1\BPIII_CENVPP_N1N2N3N4C1SECTIONBASEMAP_MAPBOOK_BTB_STANTEC_20131207.MXD
MAP NUMBER : 32

ESS Group : Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S15</td>
<td>N1-137</td>
<td>Unnamed tributary of Stephens Lake</td>
<td>706978</td>
<td>6254165</td>
<td>14N</td>
<td>N/A</td>
<td>N/A</td>
<td>Moderate</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

Potential Effects:
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; 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 works or fording from April 15 - July 15

ESS Group : Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S15</td>
<td>N1-Soils-167</td>
<td>Permafrost</td>
<td>Site: 230b to 231</td>
<td>E-711282 N-6256124</td>
<td>E-711282 N-6256124</td>
<td>14N</td>
<td>2718 m</td>
</tr>
</tbody>
</table>

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
- Avoid organic soils containing permafrost to the extent possible
- 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
MAP NUMBER : 33

No E55 Features Identified on this map segment
Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: December 09, 2013

Bipole III Transmission Project
Construction Section N1
Environmentally Sensitive Site Locations

Map 34
MAP NUMBER : 34

ESS Group : Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S16</td>
<td>N1-Soils-168</td>
<td>Permafrost</td>
<td>Site: 232 to 233</td>
<td>E-699110 N-6252298</td>
<td>E-698183 N-6252728</td>
<td>14N</td>
<td>1022 m</td>
</tr>
</tbody>
</table>

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
- Avoid organic soils containing permafrost to the extent possible
- Maintain shrub and herbaceous vegetation to the extent possible
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- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan
### 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
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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

---

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S16</td>
<td>N1-Soils-169</td>
<td>Permafrost</td>
<td>Site: 234 to 235</td>
<td>E-697840 N-6252886</td>
<td>E-697760 N-6252924</td>
<td>14N</td>
<td>88 m</td>
</tr>
<tr>
<td>N1-S16</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 236 to 237</td>
<td>E-697319 N-6253128</td>
<td>E-697212 N-6253178</td>
<td>14N</td>
<td>117 m</td>
</tr>
<tr>
<td>N1-S16</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 238 to 239</td>
<td>E-697175 N-6253195</td>
<td>E-697107 N-6253226</td>
<td>14N</td>
<td>75 m</td>
</tr>
<tr>
<td>N1-S16</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 240 to 241</td>
<td>E-696222 N-6253636</td>
<td>E-695936 N-6253769</td>
<td>14N</td>
<td>314 m</td>
</tr>
<tr>
<td>N1-S16</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 242 to 243</td>
<td>E-695864 N-6253802</td>
<td>E-695788 N-6253837</td>
<td>14N</td>
<td>83 m</td>
</tr>
</tbody>
</table>
Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N1
Environmentally Sensitive Site Locations

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

±1:10,000

0 120 240 480 Metres

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

Project Infrastructure
- Angle Tower Locations
- BPIII Final Preferred Route
- All in Right of Way

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

ESS Features
- Soils and Terrain
- Forest

Map 36
MAP NUMBER: 36

ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start GPS</th>
<th>Stop GPS</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S16</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 244 to 245</td>
<td>E-695733 N-6253863</td>
<td>E-694445 N-6254460</td>
<td>14N</td>
<td>1419 m</td>
</tr>
<tr>
<td>N1-S16</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 246 to 246a</td>
<td>E-694333 N-6254512</td>
<td>E-694290 N-6254532</td>
<td>14N</td>
<td>48 m</td>
</tr>
<tr>
<td>N1-S17</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 246b to 247</td>
<td>E-694290 N-6254532</td>
<td>E-694242 N-6254507</td>
<td>14N</td>
<td>54 m</td>
</tr>
<tr>
<td>N1-S17</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 248 to 249</td>
<td>E-694114 N-6254443</td>
<td>E-692987 N-6253873</td>
<td>14N</td>
<td>1263 m</td>
</tr>
<tr>
<td>N1-S17</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 250 to 251</td>
<td>E-692443 N-6253597</td>
<td>E-692377 N-6253564</td>
<td>14N</td>
<td>73 m</td>
</tr>
<tr>
<td>N1-S17</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 252 to 253</td>
<td>E-692315 N-6253533</td>
<td>E-692270 N-6253510</td>
<td>14N</td>
<td>50 m</td>
</tr>
<tr>
<td>N1-S17</td>
<td>N1-Soils-170</td>
<td>Permafrost</td>
<td>Site: 254 to 255</td>
<td>E-691964 N-6253355</td>
<td>E-691924 N-6253335</td>
<td>14N</td>
<td>44 m</td>
</tr>
<tr>
<td>N1-S17</td>
<td>N1-Soils-171</td>
<td>Permafrost</td>
<td>Site: 256 to 257</td>
<td>E-691299 N-6253019</td>
<td>E-691213 N-6252976</td>
<td>14N</td>
<td>96 m</td>
</tr>
</tbody>
</table>

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
- Avoid organic soils containing permafrost to the extent possible
- 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
Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N1
Environmentally Sensitive Site Locations

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

Map 37
MAP NUMBER: 37

ESS Group: Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S18</td>
<td>N1-Aqua-138</td>
<td>Unnamed tributary of Assan River</td>
<td>690229</td>
<td>6252642</td>
<td>14N</td>
<td>N/A</td>
<td>N/A</td>
<td>Moderate</td>
<td>Marginal</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-Aqua-139</td>
<td>Unnamed tributary of Assan River</td>
<td>688782</td>
<td>6252727</td>
<td>14N</td>
<td>N/A</td>
<td>N/A</td>
<td>Moderate</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

Potential Effects:

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; rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
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- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream works or fording from April 15 - July 15

ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S18</td>
<td>N1-Soils-172</td>
<td>Permafrost</td>
<td>Site: 258 to 259</td>
<td>E-690164 N-6252645</td>
<td>E-689397 N-6252690</td>
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<td>767 m</td>
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<tr>
<td>N1-S18</td>
<td>N1-Soils-172</td>
<td>Permafrost</td>
<td>Site: 260 to 261</td>
<td>E-689372 N-6252691</td>
<td>E-689347 N-6252693</td>
<td>14N</td>
<td>25 m</td>
</tr>
</tbody>
</table>

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
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- Implement erosion protection before commencing construction in accordance Erosion/Sediment Control Plan
### ESS Group: Water Crossing

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

**Potential Effects:**
- 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; rutting of floodplain

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
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- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream works or fording from April 15 - July 15

### ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S18</td>
<td>N1-Soils-173</td>
<td>Permafrost</td>
<td>Site: 262 to 263</td>
<td>E-685180 N-6252938</td>
<td>E-685169 N-6252939</td>
<td>14N</td>
<td>11 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-Soils-173</td>
<td>Permafrost</td>
<td>Site: 264 to 265</td>
<td>E-685052 N-6252946</td>
<td>E-684970 N-6252951</td>
<td>14N</td>
<td>82 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-Soils-173</td>
<td>Permafrost</td>
<td>Site: 266 to 267</td>
<td>E-684314 N-6252827</td>
<td>E-684246 N-6252785</td>
<td>14N</td>
<td>79 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-Soils-173</td>
<td>Permafrost</td>
<td>Site: 268 to 269</td>
<td>E-683940 N-6252595</td>
<td>E-683906 N-6252574</td>
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<td>39 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-Soils-173</td>
<td>Permafrost</td>
<td>Site: 270 to 271</td>
<td>E-683894 N-6252566</td>
<td>E-683851 N-6252540</td>
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<td>49 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-Soils-173</td>
<td>Permafrost</td>
<td>Site: 272 to 273</td>
<td>E-683769 N-6252488</td>
<td>E-683578 N-6252369</td>
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<td>225 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-Soils-173</td>
<td>Permafrost</td>
<td>Site: 274 to 275</td>
<td>E-683236 N-6252157</td>
<td>E-682599 N-6251761</td>
<td>14N</td>
<td>749 m</td>
</tr>
</tbody>
</table>

**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
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- Confine vehicle traffic to established trails to the extent possible
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Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: December 09, 2013

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

ESS Features
- Ecosystem
- Species of Concern
- Heritage
- Archaeological
- Water
- Water Crossing
- Soils and Terrain
- Permafrost

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

Land Use
- Transmission Line
- Highway
- Major Road
- Local Road
- Water Road
- Railway (Operational)
- Railway (Discontinued)
- Mining

Angle Tower Locations
B110 Final Preferred Route
All in Right of Way

Map 39
DOCUMENT PATH: G:\_GIS_PROJECT_FOLDER\00_HYDRO\111440054_BPIII_EPP\ARCMAP\ESS_N1\BPIII_CENVPP_N1N2N3N4C1SECTIONBASEMAP_MAPBOOK_BTB_STANTEC_20131207.MXD
### ESS Group: Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S19</td>
<td>N1-S19</td>
<td>Unnamed Tributary of Apetowachakamasik Lake</td>
<td>682424</td>
<td>6251649</td>
<td>14N</td>
<td>N/A</td>
<td>N/A</td>
<td>Low</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

Potential Effects:

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:**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
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- No instream works or fording from April 15 - July 15

### ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1-S18</td>
<td>N1-S18</td>
<td>Permafrost</td>
<td>Site: 274 to 275</td>
<td>E-683236 N-62521157</td>
<td>E-682599 N-6251761</td>
<td>14N</td>
<td>749 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-S18</td>
<td>Permafrost</td>
<td>Site: 276 to 277</td>
<td>E-682521 N-6251713</td>
<td>E-682363 N-6251614</td>
<td>14N</td>
<td>186 m</td>
</tr>
<tr>
<td>N1-S18</td>
<td>N1-S18</td>
<td>Permafrost</td>
<td>Site: 278 to 279</td>
<td>E-681820 N-6251277</td>
<td>E-681244 N-6250919</td>
<td>14N</td>
<td>678 m</td>
</tr>
</tbody>
</table>

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
- Avoid organic soils containing permafrost to the extent possible
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan