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Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: November 10, 2016
Version: Final 4.0

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

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
RecUse
- Intersection

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 163

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- Point Features
- Linear Features
- Area Features

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- Approved Access Route

ESS Features
RecUse
- Intersection

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 164

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Land Base
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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
Ecosystems
- Species of Concern

RecUse
- Intersection

Ecosystem
- Habitat

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 165

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
N4-S02	N4-Eco-300	Species of Concern (plant)	359413	5928279	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: Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S02	N4-Eco-101	Patterned Fen	Site: 13 to 14	E-359359 N-5928610	E-359447 N-5927998	14N	618m

Potential Effects:

Potential loss of plants of conservation concern and habitat disturbance 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
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Install erosion protection and sediment control measures in accordance with Erosion/Sediment Control Plan

Manitoba Hydro

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Land Base
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Project Infrastructure
- Angle Tower Locations*
- Towers (Preliminary)*
- BPIII Final Preferred Route
- 66 m Right of Way

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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
Ecosystems
- Species of Concern

Water
- Water Crossing

RecUse
- Intersection

Ecosystem
- Habitat

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 166

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ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
N4-S02	N4-Eco-301	Species of Concern (plant)	359730	5926199	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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N4-S02	N4-Aqua-106	Unnamed tributary of Cedar Lake	359836	5925289	14N	N/A	31m	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: Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S02	N4-Eco-101	Patterned Fen	Site: 13 to 14	E-359359 N-5928610	E-359447 N-5927998	14N	618 m
N4-S02	N4-Eco-102	Patterned Fen	Site: 15 to 16	E-359659 N-5926525	E-359761 N-5925809	14N	723 m

Potential Effects:

Potential loss of plants of conservation concern and habitat disturbance 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
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Install erosion protection and sediment control measures in accordance with Erosion/Sediment Control Plan

Manitoba Hydro

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Land Base
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Project Infrastructure
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- Towers (Preliminary)*
- BPIII Final Preferred Route
- 66 m Right of Way

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Sensitive Sites*
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- Linear Features
- Area Features

*Currently outside the Project footprint

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

ESS Features
RecUse
- Intersection

Wildlife
- Mammals and Habitat

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 167

DOCUMENT PATH: G:_GIS_PROJECT_FOLDER\00_HYDRO\11142004\5\ARCMAP\SOIL PRODUCTIVITY\BPIII_CENVPP_N4SECTION_MAPBOOK_20161110.MXD

ESS Group: Mammals and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S02	N4-Wild-201	MCWS Caribou Sensitive Area	Site: 17 to 18	E-360104 N-5923420	E-361228 N-5915591	14N	7909m

Potential Effects:

Disruption of Caribou Crossing areas

Specific Mitigation:

- For mitigation for this area refer to the "Moose and Woodland Caribou Sensitive Range Delineation and Mitigation Plans" document

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
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Land Base
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Project Infrastructure
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- Towers (Preliminary)*
- BPIII Final Preferred Route
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Sensitive Sites*
- Point Features
- Linear Features
- Area Features

*Currently outside the Project footprint

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

ESS Features
RecUse
- Intersection

Wildlife
- Mammals and Habitat

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 168

DOCUMENT PATH: G:\ GIS PROJECT FOLDER\00 HYDRO\11142004\5\ARCMAP\SOIL PRODUCTIVITY\BPIII CENVPP N4SECTION MAPBOOK 20161110.MXD

ESS Group: Mammals and Habitat

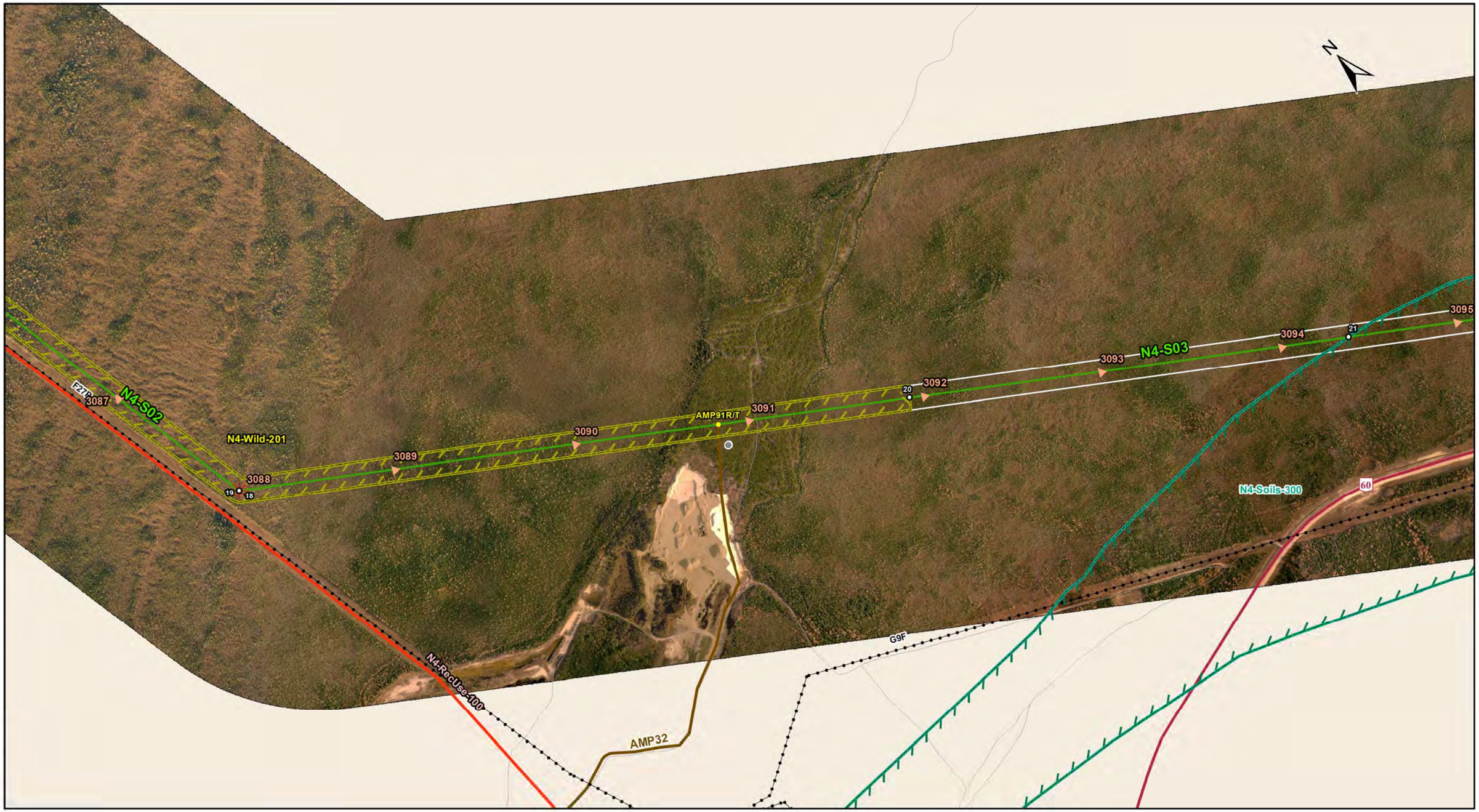
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S02	N4-Wild-201	MCWS Caribou Sensitive Area	Site: 17 to 18	E-360104 N-5923420	E-361228 N-5915591	14N	7909m

Potential Effects:

Disruption of Caribou Crossing areas

Specific Mitigation:

- For mitigation for this area refer to the "Moose and Woodland Caribou Sensitive Range Delineation and Mitigation Plans" document



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Manitoba Hydro

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Land Base
- Transmission Line
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Project Infrastructure
- Angle Tower Locations*
- Towers (Preliminary)*
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Sensitive Sites*
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- Area Features

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Points of Access*
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- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Approved Access Route

ESS Features
RecUse
- Intersection
Soils and Terrain
- Erosion
Wildlife
- Mammals and Habitat

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 169

ESS Group: Erosion

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S03	N4-Soils-300	Eolian (i.e. wind-modified) Deposits	Site: 21 to 22	E-363672 N-5913767	E-365058 N-5912733	14N	1729m

Potential Effects:

Loss of topsoil due to wind erosion (e.g. creep, saltation, suspension) on disturbed surfaces.

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
- Avoid dry soil conditions with high and severe wind erosion risk 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

ESS Group: Mammals and Habitat

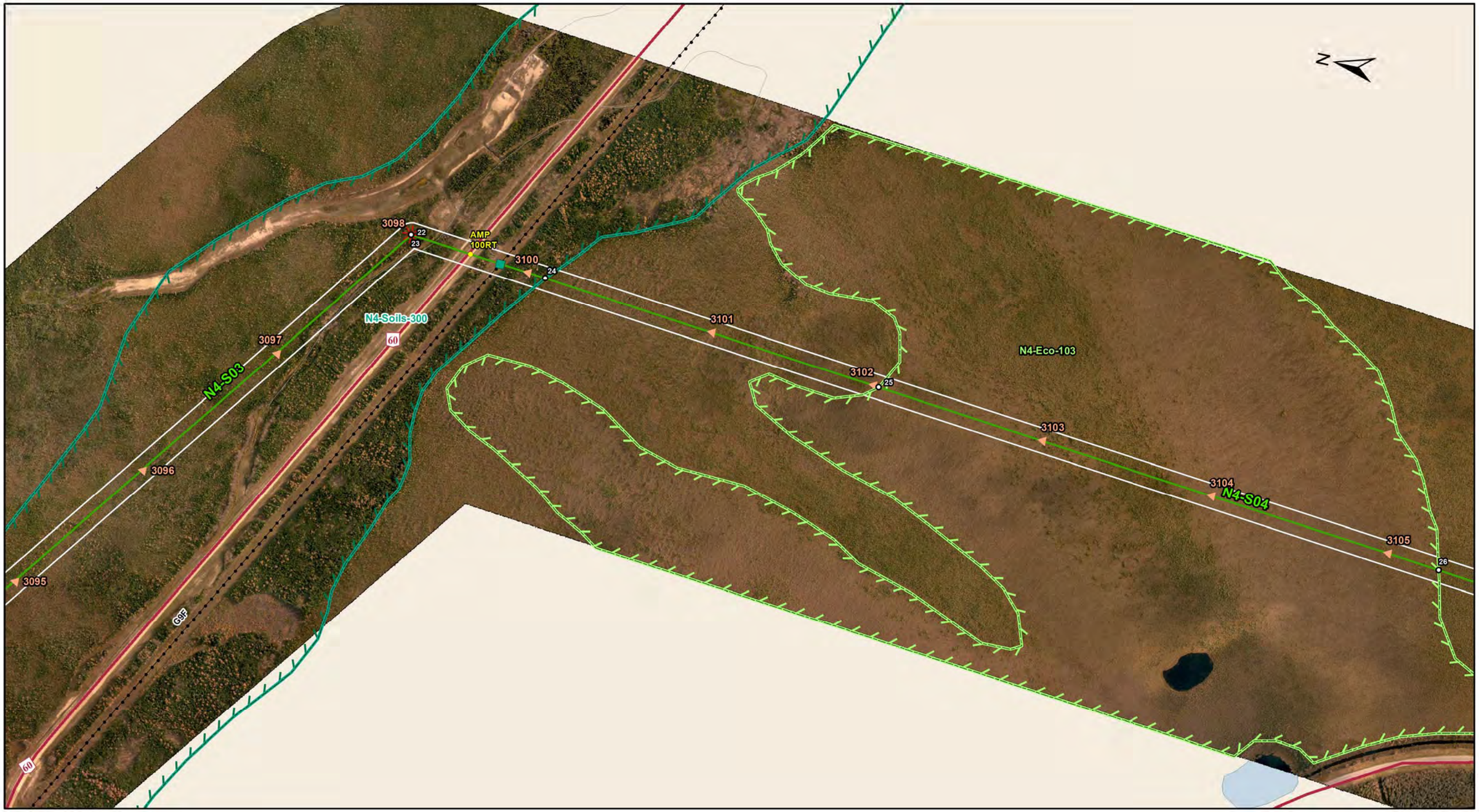
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S02	N4-Wild-201	MCWS Caribou Sensitive Area	Site: 17 to 18	E-360104 N-5923420	E-361228 N-5915591	14N	7909 m
N4-S03	N4-Wild-201	MCWS Caribou Sensitive Area	Site: 19 to 20	E-361228 N-5915591	E-362704 N-5914489	14N	1842 m

Potential Effects:

Disruption of Caribou Crossing areas

Specific Mitigation:

- For mitigation for this area refer to the "Moose and Woodland Caribou Sensitive Range Delineation and Mitigation Plans" document



Manitoba Hydro

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Data Source: MB Hydro, ProvMB, NRCAN
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Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Winter Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Mining
- Provincial Forest

Project Infrastructure
- Angle Tower Locations*
- Towers (Preliminary)*
- BPIII Final Preferred Route
- 66 m Right of Way

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Sensitive Sites*
- Point Features
- Linear Features
- Area Features

*Currently outside the Project footprint

Points of Access*
- Proposed Access Point
- Major Stream Crossing
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- Rail Crossing
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- Approved Access Route

ESS Features
Ecosystem
- Habitat

Soils and Terrain
- Erosion

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 170

DOCUMENT PATH: G:_GIS_PROJECT_FOLDER\00_HYDRO\11142004S\ARCMAP\SOIL_PRODUCTIVITY\BPIII_CENVPP_N4SECTION_MAPBOOK_20161110.MXD

ESS Group: Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S04	N4-Eco-103	Patterned Fen	Site: 25 to 26	E-364921 N-5911402	E-364756 N-5909807	14N	1603m

Potential Effects:

Potential loss of plants of conservation concern and habitat disturbance 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
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Install erosion protection and sediment control measures in accordance with Erosion/Sediment Control Plan

ESS Group: Erosion

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S03	N4-Soils-300	Eolian (i.e. wind-modified) Deposits	Site: 21 to 22	E-363672 N-5913767	E-365058 N-5912733	14N	1729 m
N4-S04	N4-Soils-300	Eolian (i.e. wind-modified) Deposits	Site: 23 to 24	E-365058 N-5912733	E-365019 N-5912352	14N	383 m

Potential Effects:

Loss of topsoil due to wind erosion (e.g. creep, saltation, suspension) on disturbed surfaces.

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
- Avoid dry soil conditions with high and severe wind erosion risk 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

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Project Infrastructure
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- Towers (Preliminary)*
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- 66 m Right of Way

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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
Ecosystem
- Habitat

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 171

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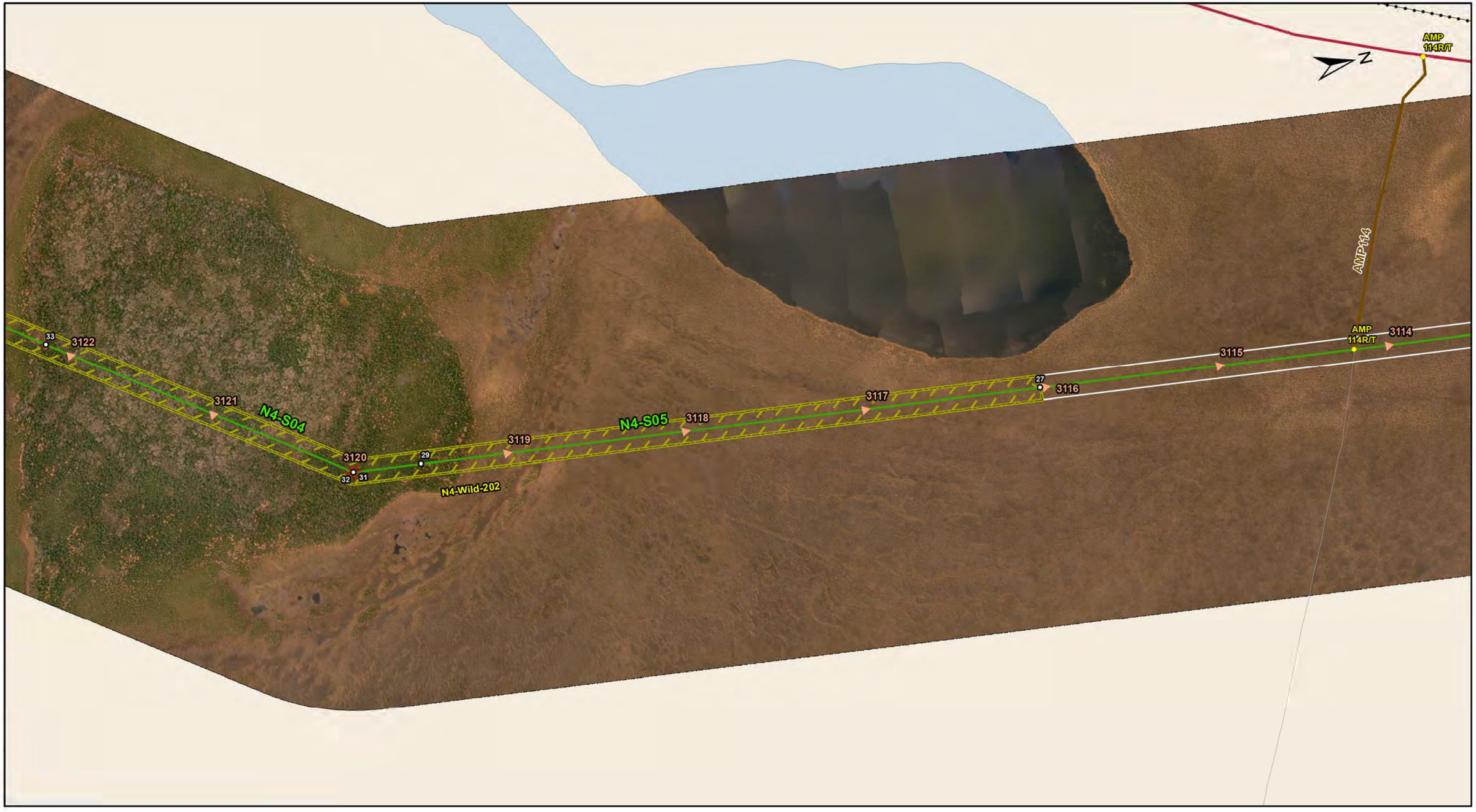

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Sensitive Sites*
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- Linear Features
- Area Features

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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
Wildlife
- Mammals and Habitat

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section N4
Environmentally Sensitive Site Locations

Map 172

ESS Group: Mammals and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S04	N4-Wild-202	MCWS Caribou Sensitive Area	Site: 27 to 28	E-364225 N-5904674	E-364031 N-5902798	14N	1885 m
N4-S05	N4-Wild-202	MCWS Caribou Sensitive Area	Site: 32 to 34	E-364031 N-5902798	E-361066 N-5898625	14N	5118 m

Potential Effects:

Disruption of Caribou Crossing areas

Specific Mitigation:

- For mitigation for this area refer to the "Moose and Woodland Caribou Sensitive Range Delineation and Mitigation Plans" document