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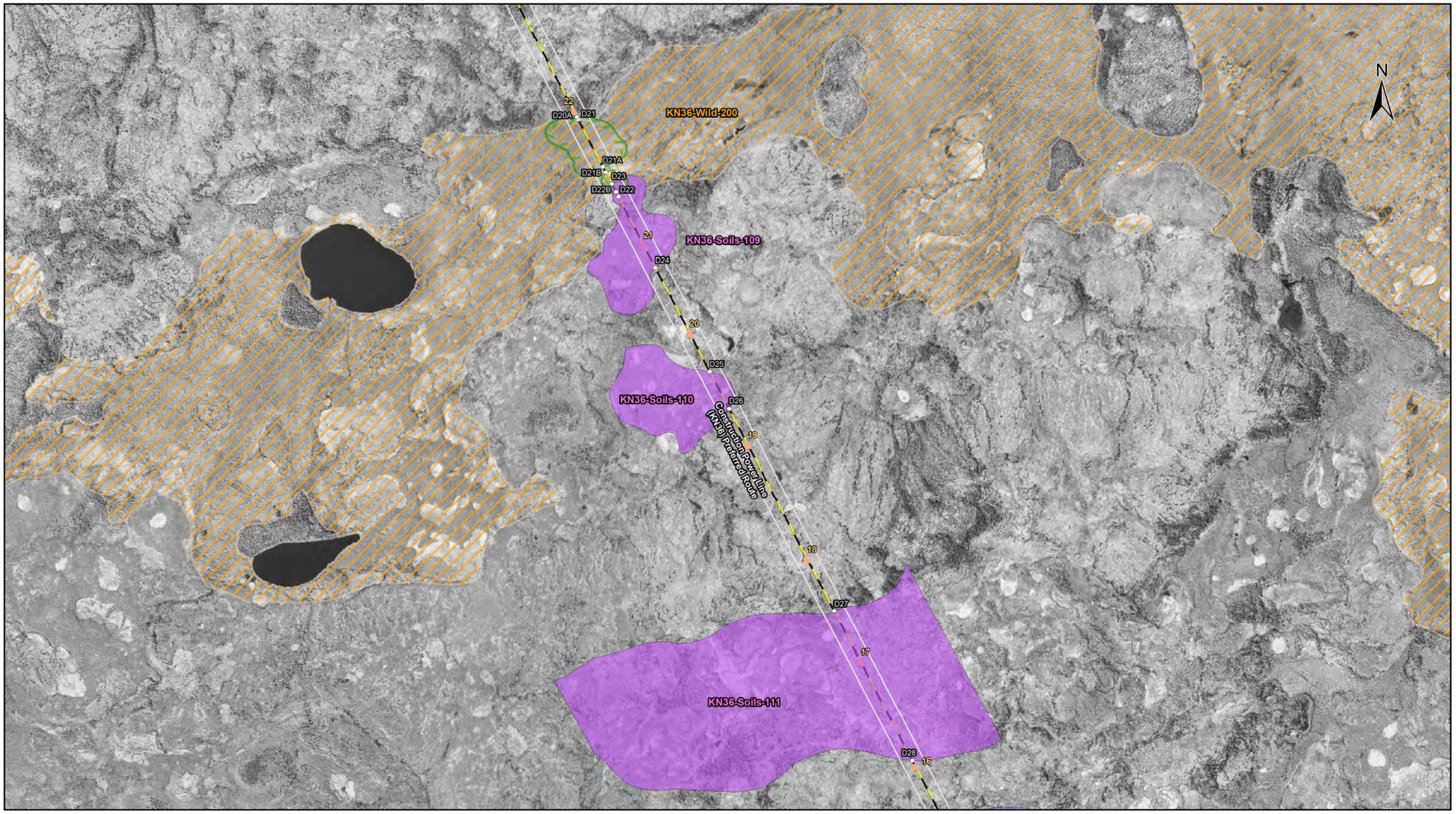

Manitoba Hydro

Coordinate System: UTM Zone 15N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: December 13, 2016
Version: Final 4.0

0 120 240 480
Metres

1:10,000

Land Base
- Bipole I and II
- Transmission Line
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- Active Railway
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Project Infrastructure
- Towers (Preliminary)*
- Construction Power Line (Kn36)
- Project Footprint (ROW)

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ESS Features
- Archaeological Site
- Historical
- Water Crossing
- Birds and Habitat
- Mammals and Habitat
- Marsh Habitat
- Water and Wetland Habitat
- Permafrost

Keeyask Transmission Project
Construction Environmental Protection Plan

Environmentally Sensitive Site Locations

KN36 and KR1T Lines

Map C

ESS Group: Mammals and Habitat

Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Wild-200	Caribou calving habitat	Site: D21 to D22	E-370428 N-6236999	E-370540 N-6236785	15N	241 m

Potential Effects:

Potential for sensory disturbance resulting the temporary abandonment of the calving area, some physical habitat loss in complex

Specific Mitigation:

- Other than the centerline cut, no shear blading will be used to to clear right of way (ROW). Only use selective cutting methods to remove danger trees, vegetation within tower footprint, access route, and helicopter access points, to maintain low tree, shrub and herb plant communities on the ROW
- Any Manitoba Hydro constructed or improved access routes used to access the ROW for construction that will not be needed for future maintenance will be decommissioned on completion of construction

  Construction activities within the Caribou calving habitat area will occur during reduced risk timing windows (Aug 1st to April 30th) to avoid impacting Caribou during the calving season

ESS Group: Permafrost

Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Soils-109	Permafrost-Extensive Discontinuous	Site: D23 to D24	E-370522 N-6236821	E-370642 N-6236589	15N	260 m
KN36	KN36-Soils-110	Permafrost-Extensive Discontinuous	Site: D25 to D26	E-370793 N-6236301	E-370847 N-6236198	15N	116 m
KN36	KN36-Soils-111	Permafrost-Extensive Discontinuous	Site: D27 to D28	E-371140 N-6235636	E-371357 N-6235222	15N	467 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
- Avoid disturbance to the organic layer
- 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

ESS Group: Species of Concern

Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Eco-300	Plant- Species of Concern	Site: D20A to D21A	E-370423 N-6237005	E-370498 N-6236866	15N	159 m

Potential Effects:

Potential loss of species of concern

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

ESS Group: Species of Concern

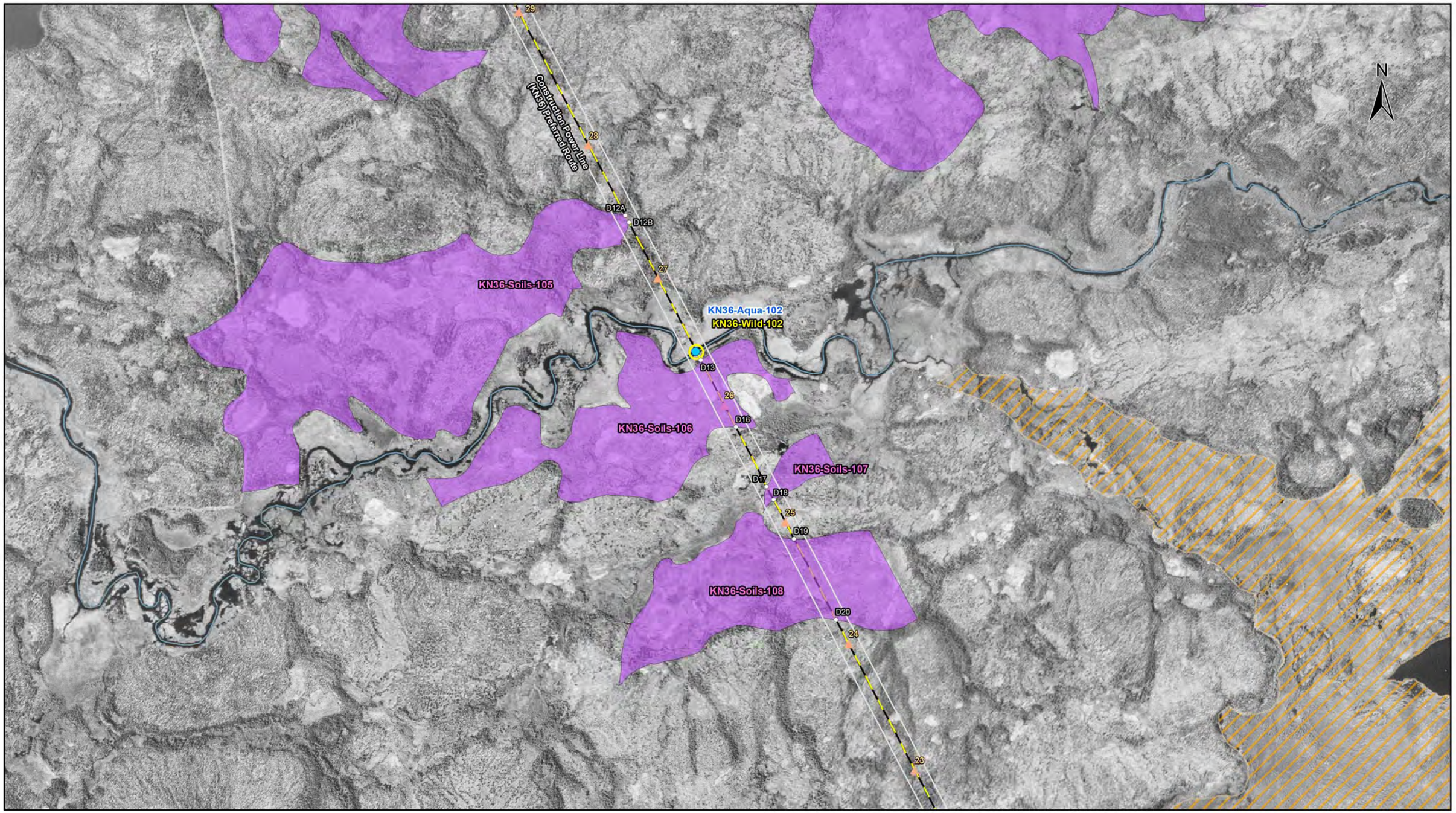
Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Eco-300	Plant- Species of Concern	Site: D21B to D22B	E-370505 N-6236851	E-370533 N-6236798	15N	61 m

Potential Effects:

Potential loss of species of concern

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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Keeyask Transmission Project
Construction Environmental Protection Plan

Environmentally Sensitive Site Locations

KN36 and KR1T Lines

Map D

ESS Group: Water Crossing

Sec-ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
KN36	KN36-Aqua-102	Unnamed Tributary	369620	6238548	15N	N/A	N/A	N/A	N/A

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

ESS Group: Permafrost

Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Soils-105	Permafrost-Extensive Discontinuous	Site: D12A to 12B	E-369424 N-6238924	E-369434 N-6238906	15N	22 m
KN36	KN36-Soils-106	Permafrost-Extensive Discontinuous	Site: D13 to D16	E-369632 N-6238524	E-369730 N-6238337	15N	205 m
KN36	KN36-Soils-107	Permafrost-Extensive Discontinuous	Site: D17 to D18	E-369816 N-6238173	E-369835 N-6238135	15N	42 m
KN36	KN36-Soils-108	Permafrost-Extensive Discontinuous	Site: D19 to D20	E-369892 N-6238027	E-370009 N-6237803	15N	252 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
- Avoid disturbance to the organic layer
- 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

ESS Group: Birds and Habitat

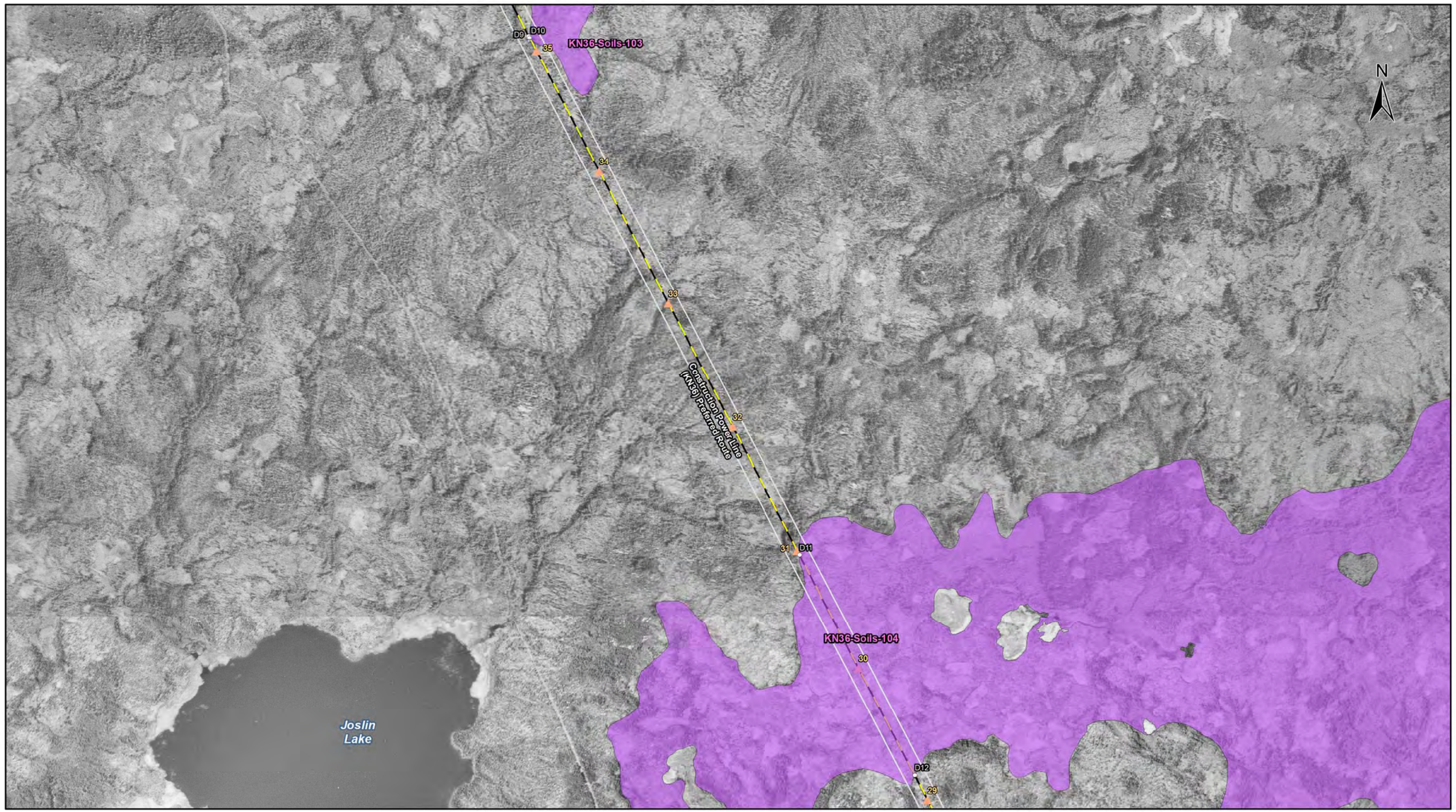
Sec-ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
KN36	KN36-Wild-102	Unnamed Tributary	369620	6238548	15N

Potential Effects:

Potential loss of Species at Risk habitat; Higher risk of wire collision within the ROW

Specific Mitigation:

- Adhere to reduced risk timing windows for protection of birds by conducting clearing activities between August 1st and April 30th
- Maintain applicable setback during nesting and breeding timing window (May 1st to July 31st)
- Conduct priority assessment for bird diverters and other measures prior to transmission line stringing
- Install bird diverters or other measures at high priority sites
- Where possible maintain a 100m buffer of shrub and herbaceous vegetation around lakes and off-system marsh locations.
- Where possible, maintain 15 metres of riparian area from the high water mark of 1st and 2nd order creeks, and 30 metres from the high water mark of 3rd order and higher streams and rivers



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Keeyask Transmission Project
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Environmentally Sensitive Site Locations

KN36 and KR1T Lines

Map E

ESS Group: Permafrost

Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Soils-103	Permafrost-Extensive Discontinuous	Site: D9 to D10	E-368019 N-6241613	E-368021 N-6241609	15N	4 m
KN36	KN36-Soils-104	Permafrost-Extensive Discontinuous	Site: D11 to D12	E-368773 N-6240170	E-369092 N-6239558	15N	690 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
- Avoid disturbance to the organic layer
- 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