



## ELECTRICAL WIRE CROSSING/ENCROACHMENT APPLICATION FORM

A non-refundable application fee of **\$1,675 (+GST)** will be invoiced to you upon receipt of your application.

**Regular Applications** are a minimum of 6-8 weeks for initial review

**Rush Applications** are a minimum of 1-2 weeks for initial review

**NOTE:** Application review times are for applications only, they do not include field reviews, construction or installation of actual crossing.

The timeline provided are dependent on workload, work force and material availability therefore they are not guaranteed

DATE:	APPLICANT FILE#:	DRAWING #:
<b>1. Owner /Applicant Information:</b>		
Full Legal Company Name: _____		
Address: _____		
Contact Name: _____ Title _____		
Phone Number: _____ Email: _____		
Billing Email: _____		
<b>2. Consultant / Land Agent Information:</b>		
Name: _____		
Address: _____		
Contact Name: _____ Title _____		
Phone Number: _____ Email: _____		
<b>3. Location Of Wire:</b>		<b>4. Existing Agreement:</b>
CN Mile Post (or nearest Mile Post): _____		If this is a change to an existing crossing, please indicate the CN File Number here:
Legal Land Description: _____		<hr/>
At or Near _____ (Name of City, Town, Village)		<b>5. Please provide a brief description of proposed work</b> (i.e.: OH Wire 65,000 Volts, UG Water Pipeline):
GPS Coordinates: Latitude: _____		_____
Longitude: _____		_____
<b>6. Wire Data Checklist:</b>		<b>Underground:</b>
<b>Overhead:</b>		<input type="checkbox"/> Warning markers placed on edge of Right of Way indicated
<input type="checkbox"/> Min. Clearance under Max. Sag above rails		<input type="checkbox"/> Outside Diameter of pipe (carrier and casing)
<input type="checkbox"/> Horizontal Separation Distance between Wire and Cables		<input type="checkbox"/> Wall Thickness of pipe (carrier and casing)
<input type="checkbox"/> Vertical Separation Distance between Wire and Cables		<input type="checkbox"/> Pipe Material (carrier and casing)
<input type="checkbox"/> Number of Poles on CN Right of Way		<input type="checkbox"/> Specification / Grade or Class (carrier and casing)
<input type="checkbox"/> Number of Anchors / Guys / Crossarms on CN Right of Way		<input type="checkbox"/> Length of Steel Casing Pipe (must extend full width of CNROW)
<input type="checkbox"/> Number of Insulators		<input type="checkbox"/> Crossing Angle (must be min. 90 degrees)
<input type="checkbox"/> Number of Wires / Cables to be Installed		<input type="checkbox"/> Burial Depth below track and Right of Way
<input type="checkbox"/> Plan Number and Date		<input type="checkbox"/> Method of Installation
<input type="checkbox"/> Legal Land Description		<input type="checkbox"/> Plan Number and Date
<input type="checkbox"/> Width of CN Right of Way		<input type="checkbox"/> Legal Land Description
<input type="checkbox"/> Number of Tracks		<input type="checkbox"/> Width of CN Right of Way
<input type="checkbox"/> Crossing angle to be a minimum of 45 degrees		<input type="checkbox"/> Number of Tracks
<input type="checkbox"/> Signed and stamped by Professional Engineer		<input type="checkbox"/> Signed and stamped by Professional Engineer
<input type="checkbox"/> "For Construction" drawing only (not for construction / preliminary drawings will be declined)		<input type="checkbox"/> "For Construction" drawing only (not for construction / preliminary drawings will be declined)
<input type="checkbox"/> Include note "Construction, maintenance and operation of the line shall be in accordance with Transport Canada General Orders E-11 and E-12 and the latest version of CAN/CSA-C22.3 No. 1 and CAN/CSA-C22.3 No. 7 as applicable"		<input type="checkbox"/> Include note "Construction, maintenance and operation of the line shall be in accordance with Transport Canada General Orders E-11 and E-12 and the latest version of CAN/CSA-C22.3 No. 1 and CAN/CSA-C22.3 No. 7 as applicable"
		<input type="checkbox"/> Completion of GEO-FORM 1, or GEO-FORM 2 if applicable (included) & add appropriate Geotechnical note to your plan if required (5" or greater outside diameter.)



**ELECTRICAL WIRE CROSSING/ENCROACHMENT APPLICATION FORM**

**7. Geotechnical Information:**

Is the pipe outside diameter between 127mm-250mm (5-10 inches): \_\_\_\_\_

Completed the attached GEO-FORM1: \_\_\_\_\_

Add following note to your plan: "Geotechnical Engineer evaluation has been completed and the Geotechnical Engineer has determined that based on the soil conditions, there will be no adverse effects to CN operation and property."

Is the pipe outside diameter greater than 250mm (10 inches): \_\_\_\_\_

Completed the attached GEO-FORM2: \_\_\_\_\_

Add following note to your plan: "Geotechnical Engineer evaluation has been completed and the Geotechnical Engineer has determined that based on the soil conditions, there will be no adverse effects to CN operation and property. Engineer must be on site during construction."

**8. Date of Construction:**

What is the anticipated start date of this project: \_\_\_\_\_

*Applications must have this completed form, one copy of an acceptable Engineer designed plan printable on 11 x 17 paper, and a cover letter. Plans must provide sufficient information to determine that installation will meet Railway Standards, General Order requirements and CSA Standards. They must be to scale or have all dimensions shown. **They must clearly and accurately show Railway property lines.***

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



Applicants must submit one (1) copy of an acceptable plan, cover letter and completed application form. Plans and Installation shall conform to Railway Standards, Transport Canada General Order requirements and CSA Standards.

The Non-refundable, Application Fee, in the amount of \$1,675.00 (+GST) to cover the cost of reviewing the application and plan(s), will be invoiced to you upon receipt of your application. An additional fee of \$500 (+GST) for each review after the initial review due to inadequate or missing information will be charged.

CN GST/HST Registration Number 10076 8779 RT0001, EFT Payable to "Canadian National Railway Co."

Engineering Application* - <b>will be invoiced to you</b> • <b>Rush Application</b>	\$1,675.00 (plus GST) • <b>Add \$5,000.00 (plus GST)</b>
Agreement* (applies to 3m wide x 30m long)	\$2,200.00 (plus GST)
Additional Review*	\$500.00 (plus GST) per review
Railway Engineer Review*	\$5,000.00 (plus GST) per detailed CN Engineer Review

\* The Railway reserves the right to charge for additional costs incurred by the Railway as a result of specific applications. Without limiting the generality, this includes items such as open-cut installations, inductive coordination, charges for train delays and slow orders, consulting and inspection costs. All fees and charges that may be imposed under this Agreement are subject to annual review and adjustment by the Railway.

The Applicant shall indicate the duration of construction on / above / below the CN Right of Way, provide an estimated construction schedule and provide a field contact name and phone number

The following information is required on the drawing:

- Drawings must be to scale or have all dimensions shown
- A site plan showing the location of crossing in relation to a legal description, road allowance or Railway mileage and subdivision
- Dimension width of CN Right of Way, the number of tracks and the angle of crossing
- Profile showing the depth of burial from the base of rail and ditch bottom to top of pipe
- Profile showing the minimum overhead clearances under maximum sag above rails (CSA-C22.3 No. 1)  
\* Allowing for 0.3m to clearance listed in CSA-C22.3 No.1 to allow for future track lifts
- Warning Markers required on each side of the CN Right of Way (underground installations)
- Cathodic protection indicated (if applicable)
- Circuit Voltage must be shown – HIGH VOLTAGE APPLICATIONS See "High Voltage" Section
- Cables must be protected for the entire Right of Way at right angles to track by STEEL pipe. (Underground installations)

**Minimum Depth of Burial**

Below Track	Mainline	Cased 1.68m	
	Other Tracks	Cased 1.37m	
Below Road Surface Below Ditch Bottom		Cased 1.00m	0.75m

- Method of Installation **\*Open trenching is not permitted\***
- Overhead Wire – If joint facilities are used, drawing must show information pertaining to both users and approval of other user denoted on drawing
- Location and information pertaining to the following must be shown:
  - \* poles and adjacent structures or towers
  - \* anchors, guys, cross arms
  - \* insulators
  - \* power and communication cables
- Horizontal and vertical separation distance between wires and cables





If structure is less than or equal to 4' in height	Horizontal clearance must be 6' minimum to centerline of any track
If structure is greater than or equal to 4' in height	Horizontal clearance must be 8' minimum to centerline of any track

- NOTE: "Construction, maintenance and operation of the line shall be in accordance with Transport Canada General Orders E-11 and E-12 and the latest version of CAN/CSA-C22.3 No. 1 and CAN3-C22.3 No. 7 as applicable".
- Professional Engineer Stamp and signature. "Not for Construction" or "Preliminary" drawing are not acceptable.
- Contact Name, Mailing Address, Phone Number, and Email Address
- Revised Drawings must be marked as revised and state reason for revision and date revised
- 11 x 17 paper size ONLY. Applications received on larger or small paper are classified as inadequate and will be declined

**Geotechnical Requirements:**

- Outside Diameter 5"-10", Completion of GEO-FORM 1 & include note on drawing "Geotechnical Engineer evaluation has been completed and the Geotechnical Engineer has determined that based on the soil conditions, there will be no adverse effects to CN operation and property".
- Outside Diameter 10" or greater, Completion of GEO-FORM 2 & include note on drawing: "Geotechnical Engineer evaluation has been completed and the Geotechnical Engineer has determined that based on the soil conditions, there will be no adverse effects to CN operation and property. Engineer must be on site during installation".

**High Voltage Applications:**

- In addition to the above requirements, all High Voltage Applications must have a High Voltage Study done and submitted with the application.
- If the line is in parallel with the railway, an induction study with simulations in normal and fault conditions must also be submitted

**Government of Canada – Justice Laws Website where you can review the Wire Crossings and Proximities Regulations can be found at:**

<http://laws-lois.justice.gc.ca/eng/regulations/C.R.C., c. 1195/>

Applications should emailed to:

<b>NORTHERN ONTARIO, MANITOBA AND SASKATCHEWAN</b> CN Public Works Prairie Division Building B, Floor 2 10229-127 <sup>th</sup> Avenue Edmonton, Alberta T5E 0B9	Attention: Rogerio Neto  Email: <a href="mailto:praengsvc@cn.ca">praengsvc@cn.ca</a>
<b>ALBERTA AND BRITISH COLUMBIA</b> CN Public Works Pacific Division Building B, Floor 2 10229-127 <sup>th</sup> Avenue Edmonton, Alberta T5E 0B9	Attention: Adele Ammar  Email: <a href="mailto:wcengsvc@cn.ca">wcengsvc@cn.ca</a>
<b>BC RAIL TERRITORY</b> CN Public Works Prairie Division Building B, Floor 2 10229-127 <sup>th</sup> Avenue Edmonton, Alberta T5E 0B9	Attention: Rogerio Neto  Email: <a href="mailto:praengsvc@cn.ca">praengsvc@cn.ca</a>



**APPLICATION CHECKLIST** – ensure the below required items are present when applying. Should something be missing, your application will be rejected and you will be required to re-apply accordingly. “WE DO NOT CONDUCT PRELIMINARY REVIEWS”

Cover Letter

Completed Application Form

Completed GEO-Form 1 / GEO-Form 2 (if applicable)

1 copy of Signed and Stamped Drawing to Scale – 11x17 paper size

If High Voltage – Completed High Voltage Study

CONSTRUCTION, OPERATION AND MAINTENANCE OF CROSSINGS

1. The Company shall give the Railway at least ten (10) days' prior notice of its intention to do any construction or maintenance work. The determination of this notice period shall not include Saturdays, Sundays and statutory holidays. Should an emergency situation arise, the Company shall contact the Railway to make special arrangements. The Railway agrees to act reasonably in these situations.
2. Construction and maintenance by the Company of any crossing shall be subject to the supervision of the Railway or the Railway's appointed representatives.
3. Should any work be required to support or repair the tracks or facilities of the Railway or to protect train movements due to the construction, operation, maintenance or removal of crossings, such work shall be performed by the Railway and the Company shall reimburse the Railway for all reasonable costs associated with such work upon receipt of the Railway's account.
4. The Company shall maintain all Crossings under this Agreement in good order and condition in accordance with the applicable rules, requirements and specifications issued from time to time by the Canadian Standards Association and approved by Transport Canada. If at any time during the term of this Agreement, the Company neglects to do any restoration and Maintenance work required to keep any crossing free from hazard, the Railway, after giving reasonable prior written notice to the Company specifying the nature of the work required, may itself carry out such work. The Company shall reimburse the Railway for all reasonable costs associated with this work upon receipt of the Railway's account.
5. The construction, operation and Maintenance of Crossings shall be carried out in a manner so as to minimize interference with Railway Property, facilities and operations. When any such work has been completed, Railway Property shall be restored by the Company to its former condition so far as practicable. The Company shall, at its expense, expeditiously and effectively, remedy any interference that does occur, or, should no appropriate remedy be found, remove such crossing and restore the Railway Property to good order and condition. Should the Company fail to correct such interference, the Railway reserves the right to do so at the Company's expense and the Company will reimburse the Railway upon receipt of the Railway's account therefore.
5. The Railway may impose other construction conditions at time of application.



GEO FORM 1

THE APPLICANT MUST COMPLETE THIS FORM, AND SUBMIT WITH UTILITY APPLICATIONS FOR PIPES WITH AN OUTSIDE DIAMETER BETWEEN 5" TO 10".

ONCE COMPLETED, PRINT, AND SIGN THIS FORM.

Note must be added to all plans for pipes between 5 to 10" in outside diameter:

*"Geotechnical Engineer evaluation has been completed and the Geotechnical Engineer has determined that based on the soil conditions, there will be no adverse effects to CN operation and property."*

**Installations between 5" to 10" in outside diameter:**

1. During construction the following must be monitored:
  - a. Ground surface and subsurface movements or settlements
    - Core Main Line
      - i. ANY SETTLEMENTS OF 5MM IS TO BE REPORTED TO CN IMMEDIATELY
      - ii. ANY SETTLEMENTS OF 10MM OR GREATER, WORK IS TO STOP IMMEDIATELY
    - Branch Line
      - i. ANY SETTLEMENTS OF 8MM IS TO BE REPORTED TO CN IMMEDIATELY
      - ii. ANY SETTLEMENTS OF 16MM OR GREATER, WORK IS TO STOP IMMEDIATELY
  - b. Ensure sufficient measures are taken to preserve the safety of rail operations and structural integrity of the track grade.

Please initial here if you understand the above requirements. **Initial** \_\_\_\_\_

**\*Please submit a copy of your Geotechnical Report with your application\***

Applicant: \_\_\_\_\_ Signature: \_\_\_\_\_

Date Signed: \_\_\_\_\_ Title: \_\_\_\_\_



---

## GEO FORM 2

THE APPLICANT MUST COMPLETE THIS FORM, AND SUBMIT WITH UTILITY APPLICATIONS FOR PIPES WITH AN OUTSIDE DIAMETER OF 10" OR GREATER. ONCE COMPLETED, PRINT, AND SIGN THIS FORM.

Note must be added to all plans for installations 10" or greater in outside diameter:

*"Geotechnical Engineer evaluation has been completed and the Geotechnical Engineer has determined that based on the soil conditions, there will be no adverse effects to CN operation and property. Engineer must be on site during construction."*

**Installations 10" or greater in outside diameter:**

1. A Geotechnical study must be conducted to ensure there are no known or suspected problems with the installation due to soil conditions at the location. Please provide confirmation that a monitoring and mitigation plan is in place to mitigate potential stability issues with the proposed installation. Review the below requirements and initial indicating compliance and acceptance.
  - a. Construction Methodology relative to soil conditions will be reviewed and identified by the Geotechnical Engineer as a safe and appropriate method of installation.
  - b. Communicate & Rectify potential adverse effects to CN Operations and property.
  - c. The expected extent and magnitude of ground movement over time is expected to be less than the critical threshold in the monitoring plan.
  - d. Set up a contingency plan in the event problems arise during construction at the site and communicate this plan to all parties involved in construction.
  - e. Ground surface and subsurface monitoring in place.
  - f. Vibration limits for communication cables will be considered and will be protected as necessary. If applicable.
  - g. Placed required "note" on application drawing along with stamp and signature.
  
2. A Geotechnical Engineer must be onsite during installation. Please provide the following:

Firm name: **Name of Geotechnical Firm**

Name of Engineer assigned to project: **Name of Geotechnical Engineer**

Contact number of Engineer assigned to project: **Contact phone number**

Email address of Engineer assigned to project: **Email address of Engineer**



## Geotechnical Requirements

CN Design & Construction

---

3. During construction Engineer must monitor 24hrs a day, 7days a week:
  - a. Ground surface and subsurface movements or settlements
    - Core Main Line
      - i. ANY SETTLEMENTS OF 5MM IS TO BE REPORTED TO CN IMMEDIATELY
      - ii. ANY SETTLEMENTS OF 10MM OR GREATER, WORK IS TO STOP IMMEDIATELY
    - Branch Line
      - i. ANY SETTLEMENTS OF 8MM IS TO BE REPORTED TO CN IMMEDIATELY
      - ii. ANY SETTLEMENTS OF 16MM OR GREATER, WORK IS TO STOP IMMEDIATELY
  - b. Ensure sufficient measures are taken to preserve the safety of rail operations and structural integrity of the track grade.
  
4. Post Installation the following is to be done:
  - a. Engineer to provide confirmation in writing that the work was conducted in accordance with the detailed plans accepted by CN. This will include the submission of as-constructed plans with an engineer's stamp.
  - b. Engineer to report on the results of the ground monitoring and confirm that there are no expected problems due to installation

Please initial here as understanding of the above requirements. Initial \_\_\_\_\_

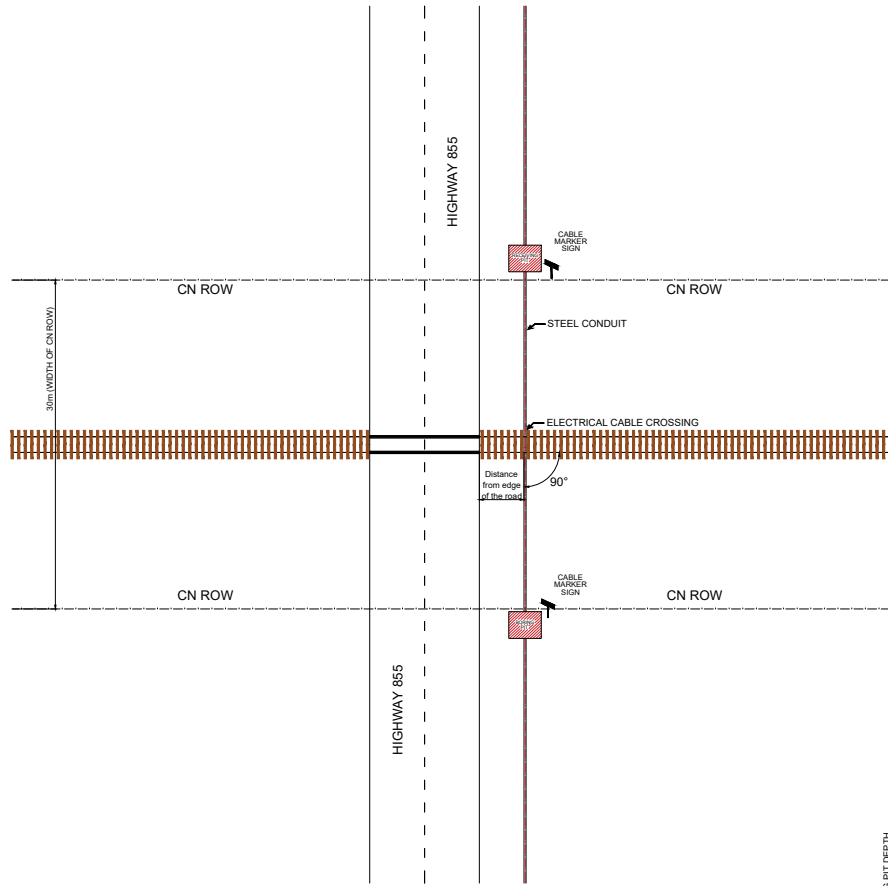
**\*Please submit a copy of your Geotechnical Report with your application\***

Applicant: \_\_\_\_\_ Signature: \_\_\_\_\_

Date Signed: \_\_\_\_\_ Title: \_\_\_\_\_



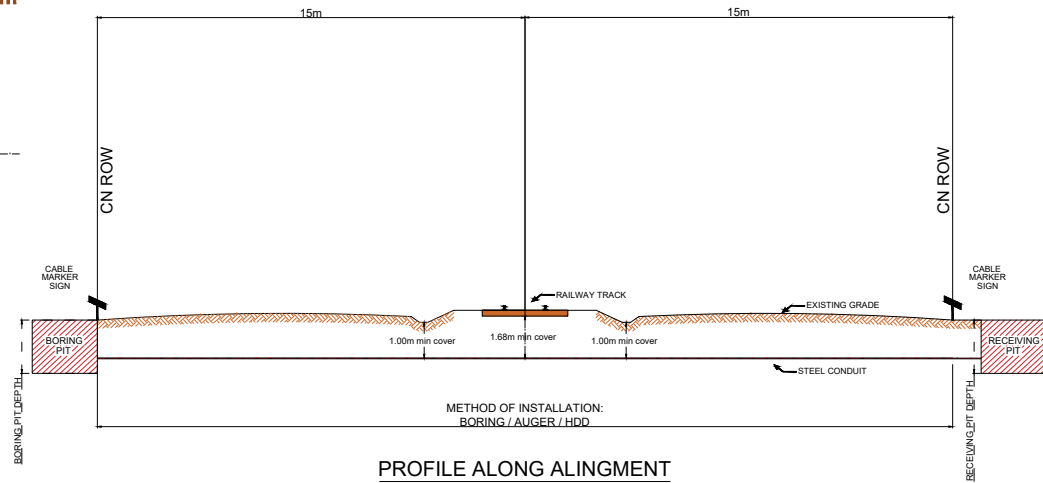
# U/G ELECTRICAL



**PLAN VIEW**  
SCALE 1mm : XXm



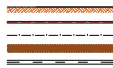
**PROJECT LOCATION**  
GPS Coordinates: XXX Latitude  
XXX Longitude



**PROFILE ALONG ALIGNMENT**  
SCALE 1mm : XXm

**LEGEND:**

EXISTING GRADE  
ELECTRICAL CABLE  
RIGHT OF WAY  
RAILWAY TRACK  
EXISTING ROAD



**Note:**

1. Contractor to arrange CNR S&C locates and flagging prior to construction
2. Boring and Receiving pit should be located outside CN Right of Way
3. Warning Cable Marker post are to be placed outside CN ROW
4. Method of Installation: Boring pit to receiving pit in a manner that the railway grade is not disturbed
5. Construction, Maintenance and Operation of the line shall be in accordance with Transport Canada General Orders no. E-11, E-12 and CSA Standards CAN/CSA C22.3 No.1 and CAN 3-C22.3 No.7 as applicable
7. A Geo-technical Engineer has reviewed the proposed installation work and verified that there are no stability issue with the proposed installation. A Geo-technical Engineer should be on site during construction. (If applicable)

**Conductor Data:**

No.	Phase to GRD	Material	Size	Weight	Method of Construction
C1	Xxx kV	Xxx	x mm	x kg/m	Pull cable through casing

**Conduit Data:**

No.	Material	Size	Length of Conduit	Method of Construction
D1	Steel cased	x mm	must extend full width of CN ROW	Boring / Auger / HDD

**REVISIONS**

DATE	BY

**APPROVALS**

--

SHEET  
X OF X



OPERATING RAILROAD  
XXX SUBDIVISION  
XXX MILEAGE  
LOCATION

METHOD OF INSTALLATION  
FOR  
PROPOSED UNDERGROUND UTILITY

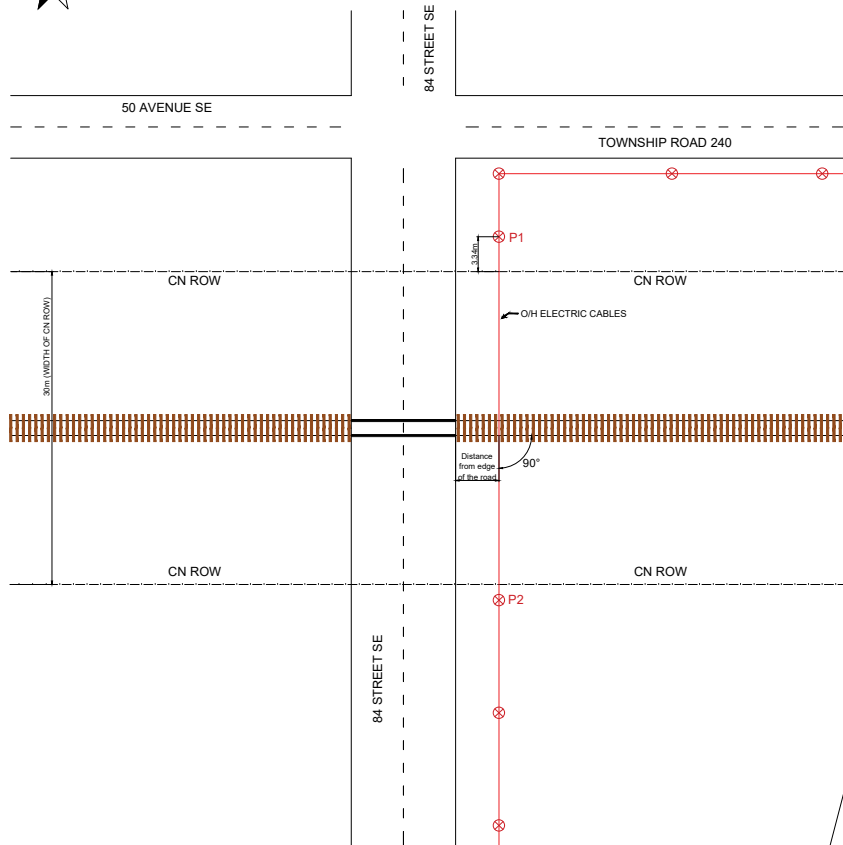
OFFICE OF THE PUBLIC WORKS

DRAWN BY: XXX SCALE: 1mm to XXm DWG NO:  
CHECKED BY: XXX DATE: DD MM YY FILE:

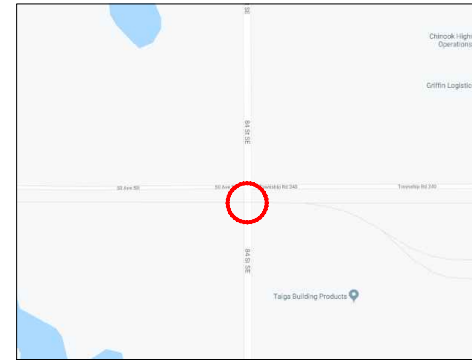
P. ENG. STAMP

DATE  
P. ENG. SIGNATURE

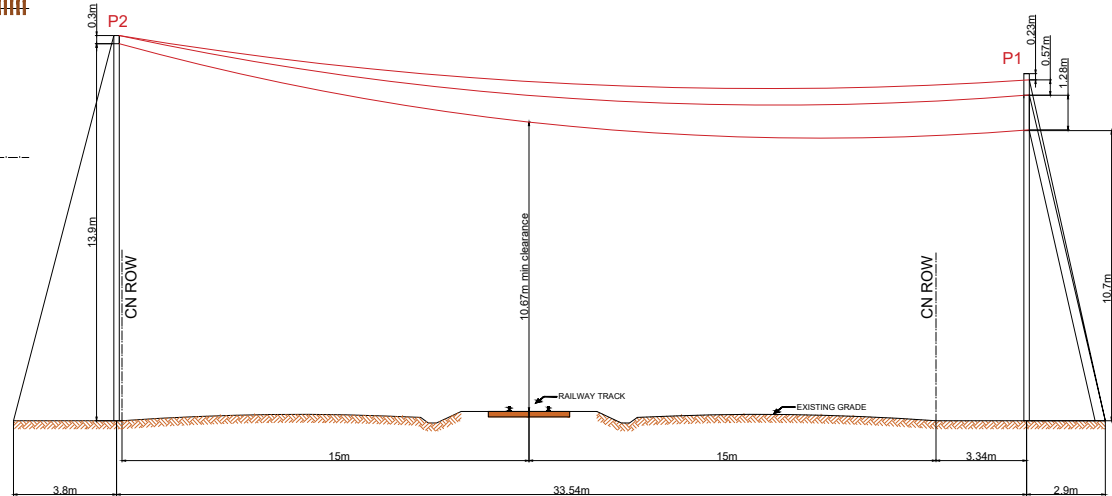
# O/H ELECTRICAL



**PLAN VIEW**  
SCALE 1mm : XXm



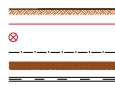
**PROJECT LOCATION**  
GPS Coordinates: XXX Latitude  
XXX Longitude



**PROFILE ALONG ALIGNMENT**  
SCALE 1mm : XXm

**LEGEND:**

EXISTING GRADE  
ELECTRIC CABLES  
ELECTRIC POLE  
RIGHT OF WAY  
RAILWAY TRACK  
EXISTING ROAD



**Note:**

- Contractor to arrange CNR S&C locates and flagging prior to construction
- Minimum tension and clearance over track should be = 10.67m, calculated at -20oc with 18mm Radial Ice Load and 400pa of wind.
- Pole must be installed outside of CN Right of Way
- Construction, Maintenance and Operation of the line shall be in accordance with Transport Canada General Orders no. E-11, E-12 and CSA Standards CAN/CSA C22.3 No.1 and CAN 3-C22.3 No.7 as applicable.

**Conductor Data:**

No.	Cond./Volt	Size & Material	Max. Ten.	U.T.S.	Phase to GRD
X	Xxx kV	Xxx	Xxx N	Xxx N	Xxx kV

**Pole Data:**

No.	Length	Class	Material	Set	Treated
P1	Xxx m	X	X	Xxx m	Xxx N

**Guy Data:**

No.	Size	Grade	Type	BR'K. Str	Str.
G1	Xx mm	X	X	Xxx N	Xxx

**REVISIONS**

DATE	BY

**APPROVALS**

SHEET  
X OF X



OPERATING RAILROAD  
XXX SUBDIVISION  
XXX MILEAGE  
LOCATION

METHOD OF INSTALLATION  
FOR  
PROPOSED OVERHEAD UTILITY

OFFICE OF THE PUBLIC WORKS

DRAWN BY: XXX SCALE: 1mm to XXm DWG NO:  
CHECKED BY: XXX DATE: DD MM YY FILE:

P. ENG.  
STAMP

DATE  
P. ENG. SIGNATURE