

Wireline Installation

New Wireline Installation: Types and Definitions

Wireline installations may be considered encroachments, crossings, or both. If the installation is an encroachment, please see the “Procedures for Encroachments.” If the installation entails both an encroachment and crossing, you will need to follow both encroachment and crossing procedures.

Note: If the proposed wireline installation is both an encroachment and a crossing, only one application form need be filled out. It must be accompanied, however, by both the appropriate Exhibit “A” document (describing the crossing) and complete engineering plans (detailing and encroachment).

Definition of Encroachment:

A wireline that enters the railroad company’s right-of-way and either does not leave the right-of-way or follows along the right-of-way for some distance.

Definition of Crossing:

A wireline that crosses the railroad company’s trackage from one side of the right-of-way to the other side of the right-of-way in as near a straight line as possible.

When applying for a wireline crossing on railroad property, the following procedure must be followed:

1. An [application](#) and the appropriate Exhibit “A” document must be printed and completed in their entirety. Choose the appropriate Exhibit “A” to accompany your application from the following:
 - [Exhibit “A” – Overhead Wireline Crossing, 750 Volts or Less](#)
 - [Exhibit “A” – Overhead Wireline Crossing, Over 750 Volts](#)
 - [Exhibit “A” – Underground Wireline Crossing, 750 Volts or Less](#)
 - [Exhibit “A” – Underground Wireline Crossing, Over 750 Volts](#)
2. If possible, please provide a city, county or topographical map of the area, showing the proposed installation.
3. A non-refundable \$1,000 application and engineering review fee, per application, check, or money order, payable to the appropriate Watco Railroad must be accompanied with the application. A \$1,500 standard permit fee subject to increase due to scope of work requested will be due when sending in the signed agreement.
4. Engineering plans must be completed in accordance with the [Wireline/Pipeline Encroachment Planning Guide and Construction Procedures](#). If there is a valid reason why compliance is not possible, these reasons must be clearly explained or the application will be rejected and returned.
5. Once the engineering department has processed and approved your application, the paperwork will be forwarded to the Watco Property Manager. You will receive two copies of the original agreement for processing.

6. Railroad Protective Insurance will be required before any work will begin.
7. Agreement processing time will be approximately 30 to 45 days. Please allow sufficient lead-time for document handing prior to desired construction date.
8. If you require rush handling of your application, please print a copy of the [Rush Handling](#) form, complete and return the form in an envelope labeled "RUSH".

Wireline Installation Engineering Specifications

1. Underground

- a. Minimum of 4.5 feet below the base of all rail (BBR). Minimum of 5 feet below the base of rail (BBR) for fiber optic cable wirelines.
- b. Minimum of 3.0 feet below natural grade (BNG). Minimum of 5 feet below natural grade (BNG) for fiber optic cable wirelines.
- c. Casing must extend a minimum of 30 feet out from the centerline of the nearest track, when measured at right angles
- d. Casing Material: Steel, rigid metallic conduit, (No PVC).
- e. Minimum of 50 feet from the end of any railroad bridge, centerline of any culvert or switch area to the centerline of the wireline crossing.
- f. Signal representative must be present during installation if railroad signals are in the vicinity of wireline crossing.

2. Overhead

- a. Minimum 23.5 feet above top of rail (ATR) clearance required. Refer to Wireline Clearance Chart.
- b. Minimum 4 feet clearance required above signal and communication lines. (Note: TV and telephone lines must not cross over railroad's 2300 Volt signal lines, per NE.S.C., Section 24, Rule 241C3b).
- c. Poles must be located 50 feet out from the centerline of railroad main, branch and running tracks, CTC sidings, and heavy tonnage spurs.
- d. Regardless of the voltage, unguyed poles shall be located a minimum distance from the centerline of any track equal to the height of the pole above the groundline plus 10 feet.
- e. Poles (including steel poles) must be located a minimum distance from the railroad signal and communication line equal to the height of the pole above the groundline or else be guyed at right angles to the line.

- f. Pole location adjacent to industry tracks, other than those mentioned in 2c, must provide at least a 10 foot clearance from centerline of track, when measured at right angles. If located adjacent to curved track, then said clearance must be increased at a rate of 1 inches per degree of curved track.
- g. Power lines must be located a minimum of 500 feet from the end of any railroad bridge, and 300 feet from the centerline of any culvert or switch area.

Applicant's Utility Line Crossing Checklist: Lines Carrying More than 750 Volts

3. Overhead

- a. Must conform to Wireline Clearance Chart dated February 1, 1998 and the National Electricity Safety Code.
- b. Poles or other structures supporting power lines carrying more than 100 KV must be located a minimum of 200 feet from the centerline of main running tracks, CTC sidings and heavy tonnage spurs.
- c. For power lines having voltages less than 100KV, the supporting structures must be at least 50 feet from the centerline of the aforementioned tracks.
- d. High voltage towers must be located off railroad right-of-way.
- e. Minimum of 500 feet from the end of any railroad bridge, and 300 feet from the centerline of any culvert or switch area, to the centerline of the power line crossing.

4. Underground

- a. Minimum of 4.5 feet below the base of rail (BBR).
- b. Minimum of 4.0 feet below natural grade (BNG).
- c. Wireline must be encased completely across the railroad right-of-way with a rigid metallic conduit or non-metallic conduit (PVC) encased in a minimum of 3 inches of concrete.
- d. Install a 6-inch wide Warning Tape, 1-foot BNG directly over the underground power line where located on railroad right-of-way outside the track ballast sections.
- e. Minimum of 50 feet from the end of any railroad bridge, centerline of any culvert or switch area to the centerline of the power line crossing.
- f. Signal representative must be present during installation if railroad signals are in the vicinity of power line crossing.

Wireline Clearance Chart

In compliance with National Electrical Safety Code of 1990 for given temperature and wind load conditions.

Voltage (To Ground)	Minimum Clearance Required Above Top Of Rail	Minimum Clearance Required Above Communication Signal Line Including Static Wires
Insulated Communication Wirelines	23.5'	4.0'
Non-insulated Communication Wirelines	24.0'	4.0'
Shielded or Insulated Power Wirelines 1-750 Volts	24.0'	4.0'
Shielded or Insulated Power Wirelines (Lashed to bare ground messenger) 750 V-2.9 kV	24.5'	4.0'
Open Supply Conductors 0-750 Volts	24.5'	4.0'
Open Supply Conductors 751 V-22 kV	26.5'	6.0'
50 kV	27.5'	6.0'
100 kV	29.1'	7.5'
150 kV	30.8'	9.0'
200 kV	32.5'	11.0'

Formula:

.4" increase for every 1,000 volts in excess of 22 kv (4" increase for every 10,000 volts in excess of 22 kv)