

# Dominion Energy Underground Transmission Encroachment Clearances

<u>ET UG Facilities</u>	<u>Encroachment Location</u>	<u>Type of Encroachment</u>		
		<u>Conduit or Pipe</u> ( <u>NO</u> pressure and <u>NO</u> heat source)	<u>Pipe</u> (pressurized and <u>NO</u> heat source) <u>NO</u> physical protection	<u>Pipe - Alternate</u> (pressurized and <u>NO</u> heat source) <u>physical protection required</u>
HPFF	Crossing Over	2 feet <u>above</u> thermal sand/FTB	5 feet <u>above</u> sand/FTB physical protection - NOT required.	2 feet <u>above</u> sand/FTB physical protection required
HPFF	Crossing Under	2 feet <u>below</u> thermal sand/FTB	10 feet <u>below</u> thermal sand physical protection - NOT required.	5 feet <u>below</u> thermal sand/FTB physical protection required
HPFF	Parallel	5 feet <u>away from</u> thermal sand/FTB	10 feet <u>away from</u> sand/FTB physical protection - NOT required.	5 feet <u>away from</u> sand/FTB physical protection required
XLPE	Crossing Over	2 feet <u>above</u> ductbank/FTB	5 feet <u>above</u> ductbank/FTB physical protection - NOT required.	2 feet <u>above</u> ductbank/FTB physical protection required
XLPE	Crossing Under	2 feet <u>below</u> ductbank/FTB	10 feet <u>below</u> ductbank/FTB physical protection - NOT required.	5 feet <u>below</u> ductbank/FTB physical protection required
XLPE	Parallel	5 feet <u>away from</u> ductbank/FTB	10 feet <u>away from</u> ductbank/FTB physical protection - NOT required.	5 feet <u>away from</u> ductbank/FTB physical protection required

## **Assumptions**    All dimensions are from the edge of the thermal sand or ductbank.

(actual dimensions will be greater if FTB (fluidized thermal backfill) is on top of thermal envelope surrounding pipes and conduits.)

1a. HPFF - At least 6.0 inches of thermal sand is above and below the edge of the pipe.

1b. XLPE - At least 3.5 inches of thermal concrete is above and below the edge of the conduit.

2a. HPFF - At least 6.0 inches of thermal sand is on the left side and right side of the pipe.

2b. XLPE - At least 3.5 inches of thermal concrete is on the left side and right edge of the conduit.

- Notes:
1. Additional Engineering Review is required if clearances shown above cannot be applied to encroachment in the field.
  2. Review with UG Engineering any metal material proposed for any crossing (or parallel) of UG Transmission facilities.
  3. Physical Protection shall be stainless steel plate (or approved equivalent) - 316 stainless steel (½ inch thick or greater)  
Approved physical protection sleeving pipe shall be Schedule 80 PVC.  
Width of protection shall be 2X diameter of conduit/pipe crossing the UG facilities.  
Length of protection shall be 2 feet wider than FTB or ductbank (1 foot on each side).

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<u>ET UG Facilities</u>	<u>Encroachment Location</u>	<u>Type of Encroachment</u>		
		<u>Conduit or Pipe</u> (no pressure and no heat source)	<u>Pipe (Includes Tie Backs)</u> (pressurized and heat source) <u>NO</u> physical protection	<u>Pipe - Alternate</u> (pressurized and heat source) <u>physical protection required</u>
HPFF	Crossing Over	2 feet <u>above</u> thermal sand/FTB	10 feet <u>above</u> thermal sand/FTB physical protection - NOT required.	Engineering Review Required
HPFF	Crossing Under	2 feet <u>below</u> thermal sand/FTB	20 feet <u>below</u> thermal sand/FTB physical protection - NOT required.	Engineering Review Required
HPFF	Parallel	5 feet <u>away from</u> thermal sand/FTB	20 feet <u>away from</u> sand/ FTB physical protection - NOT required.	Engineering Review Required
XLPE	Crossing Over	2 feet <u>above</u> ductbank/FTB	10 feet <u>above</u> ductbank/FTB physical protection – NOT required.	Engineering Review Required
XLPE	Crossing Under	2 feet <u>below</u> ductbank/FTB	20 feet <u>below</u> ductbank/FTB physical protection - NOT required.	Engineering Review Required
XLPE	Parallel	5 feet <u>away from</u> ductbank/FTB	20 feet <u>away from</u> ductbank/FTB physical protection - NOT required.	Engineering Review Required

**Assumptions**    All dimensions are from the edge of the thermal sand or ductbank.

(actual dimensions will be greater if FTB (fluidized thermal backfill) is on top of thermal envelope surrounding pipes and conduits.)

1a. HPFF - At least 6.0 inches of thermal sand is above and below the edge of the pipe.

1b. XLPE - At least 3.5 inches of thermal concrete is above and below the edge of the conduit.

2a. HPFF - At least 6.0 inches of thermal sand is on the left side and right side of the pipe.

2b. XLPE - At least 3.5 inches of thermal concrete is on the left side and right edge of the conduit.

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- Additional Engineering Review is required if clearances shown above cannot be applied to encroachment in the field.
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