

**BELL SYSTEM PRACTICES**  
**Outside Plant Construction**  
**and Maintenance**

**SECTION G44.120**  
**Issue 1, October, 1931**  
**Standard**

# **UNDERGROUND CONDUIT FOR SERVICE CONNECTIONS**

## **LOCATING CONDUIT RUN**

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### **1. ASSIGNMENT OF POLE**

1.01 Before doing any work, obtain from the Telephone Company the designation of the pole from which the underground connection should be run.

### **2. LOCATION OF CONDUIT ENTRANCE**

2.01 The location of the conduit entrance into the building shall be selected with reference to the location of the protector, which the company generally installs for each pair of wires to be brought in. The National Electrical Code requires that the point of entrance and the protector shall be located as close to each other as possible. The conduit shall therefore enter the building at a point suitable for the location of the protector. In selecting this location, observe the following rules:

- (a) The entrance shall be located in a clean, dry and ventilated place. Otherwise the presence of moisture will lower the insulation of the protector equipment and detract from satisfactory service.
- (b) The entrance shall be at a point where the protector and wiring will not be subject to injury and where the protector will be accessible at all times. Coal or wood bins, storage rooms, or rooms to which access is difficult, shall not be selected for the point of entrance. Locations shall be selected where workmen will not be

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exposed to danger from open pits, running machinery or belts, or other causes.

- (c) The entrance shall not be in a transformer vault nor in locations where the telephone installers or repairmen or the telephone system will be subject to contact with the live parts of electric light or power circuits or apparatus.

2.02 If there is any doubt concerning the location of the conduit entrance, consult the Telephone Company.

### 3. WALL SPACE FOR PROTECTORS

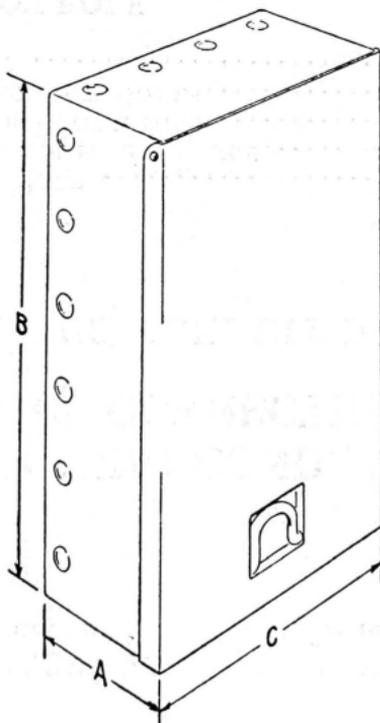
3.01 One protector is required for each pair of telephone wires entering the building.

3.02 Provide wall space for the protectors or protector cabinet as indicated in the following table:

SIZE OF PROTECTOR CABINETS

*Number of Protectors	A (in Inches)	B (in Inches)	C (in Inches)
1	4	12	8
2	4	12	12
3	4	12	16
4	4	12	20

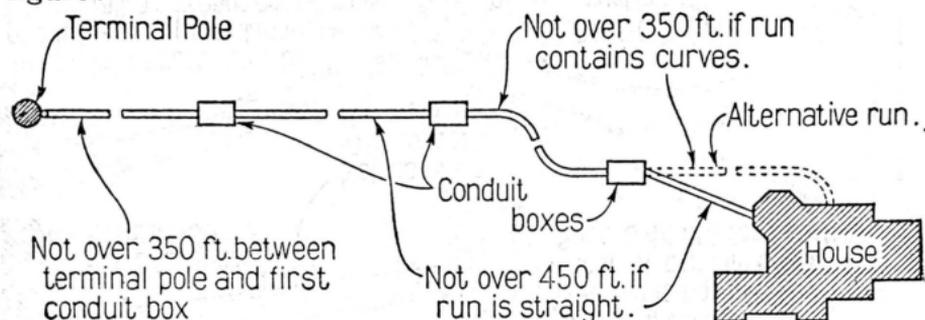
\*If more than 4 lines are required the Telephone Company should be consulted in regard to size of cabinet.



#### 4. LOCATION OF CONDUIT BOXES

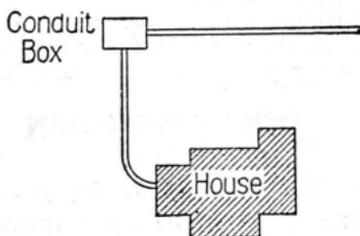
4.01 Where the run from pole to house will be 350 feet or less, conduit boxes will generally not be required. For exceptions see Paragraph 4.03.

4.02 Where the run from pole to house is over 350 feet, conduit boxes shall be located as shown in the following figure:



4.03 The sum of the bends in any section from conduit box to conduit box or from conduit box to pole or house (the bend at the base of the terminal pole included), shall not be greater than 2 right angles ( $180^\circ$ ).

4.04 No curves or bends sharper than a right angle will be allowed. Where necessary to make a bend sharper than a right angle, a conduit box must be used as shown in the following figure:



#### 5. DRAINAGE

5.01 Water will gradually accumulate in the conduit unless good drainage is provided. If drainage is not provided, and water accumulates in the duct, the water may freeze in the winter in territories subject to low temperatures and damage the cable to such an extent that a complete failure of the cable will result. In addition to loss of service the replacing of the cable may be expensive because of the difficulty of thawing the pipe in order to remove the damaged cable and place the new one.

5.02 It may be found necessary to place a conduit box or a drainage pocket at a point where, either on account of

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the nature of the soil or because of the contour of the ground, water accumulating in the conduit box or pocket will not drain easily. Such conduit box or drainage pocket will not be accepted by the Telephone Company unless proper drainage from the box or pocket is provided. Before building a conduit box or drainage pocket at such a point, the contractor should submit to the Telephone Company in writing, plans covering the proposed method of drainage and should not proceed with that part of the work until written approval on the part of the Telephone Company has been obtained.

- 5.03 Drainage pockets are unnecessary in districts where freezing at conduit depth will not occur.
- 5.04 Drainage should be provided as shown in the following typical cases.

### METHODS OF DRAINING

