

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

**SECTION G42.130.1**  
**Issue 1, December, 1946**  
**AT&T Co Standard**

**SUBSIDIARY CONDUIT**  
**TERMINATING**

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LOCATED ON STEELS AND HOUMVAG  
TERMINATING SUBSIDIARY BENDS ON POLES

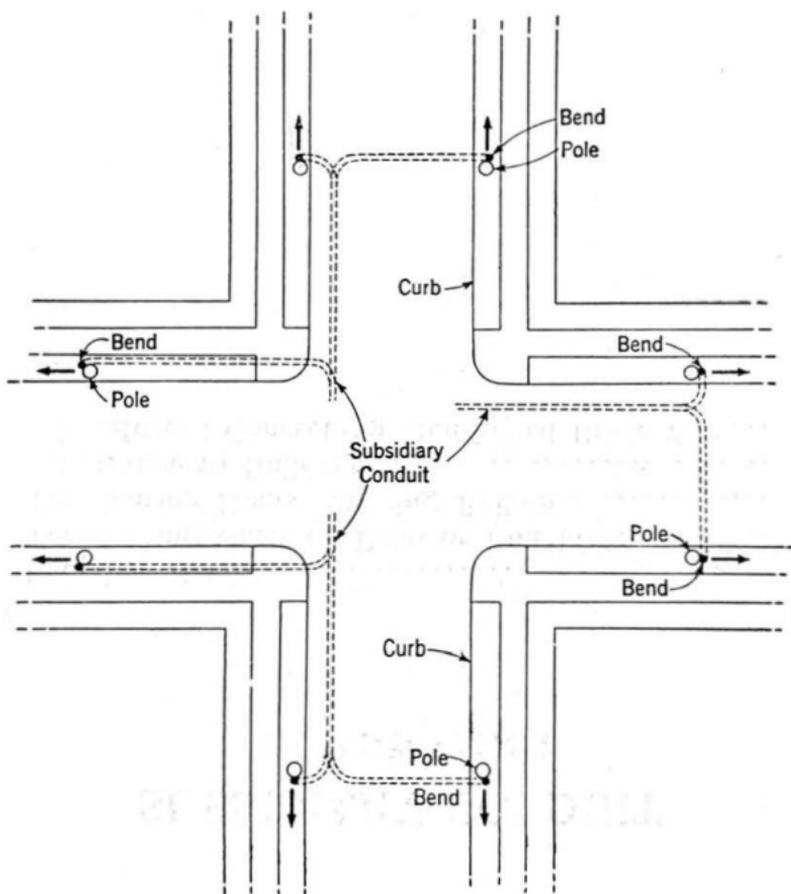
distance between the other ends of the conduit  
If a second pole is required, locate it at least 4 feet  
if possible, a second pole can be placed on the ground  
along the side of the building as shown in the  
and entrance to building shown the pole on the  
for terminating subsidiary conduit on poles located on streets

**LOCATING BENDS**

## 1. LOCATING BENDS

1.01 Terminate subsidiary bends on poles located on streets and highways as shown below. Locate the bend as far around on the field quarter of the pole as practicable so that, if necessary, a second bend can also be placed on the field side. Where a second bend is required, provide at least 3/4-inch clearance between the upper ends of the bends.

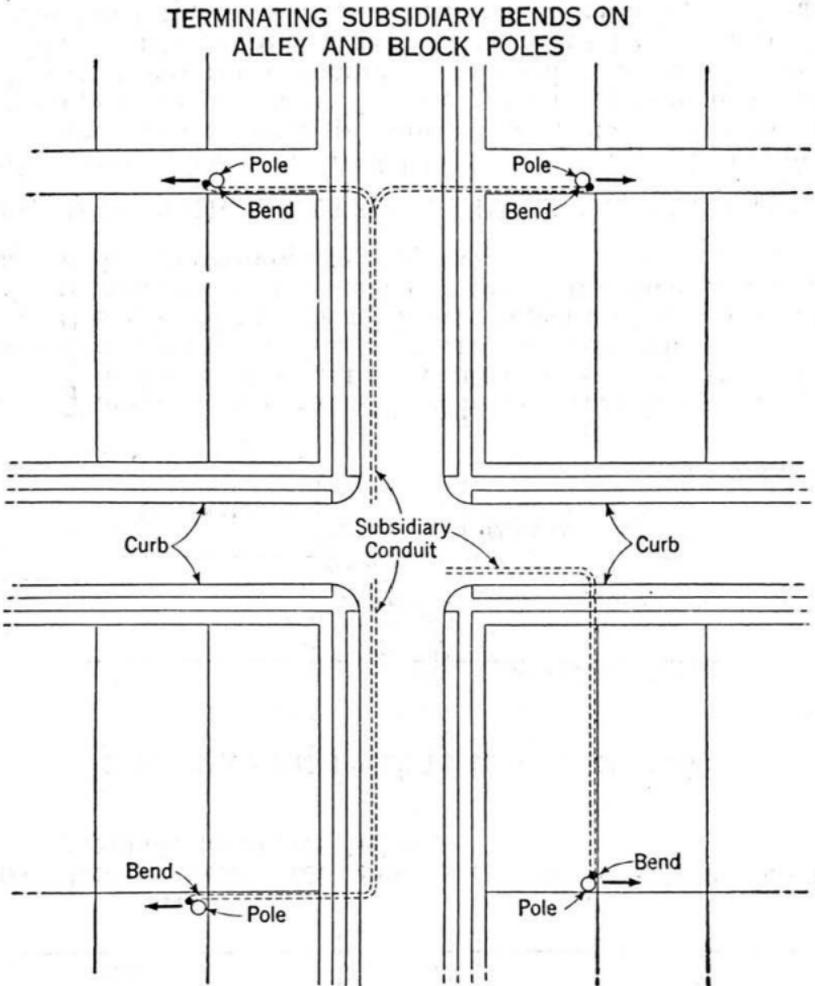
### TERMINATING SUBSIDIARY BENDS ON POLES LOCATED ON STREETS AND HIGHWAYS



Note:

Heavy arrows indicate direction of Aerial Cable lead.

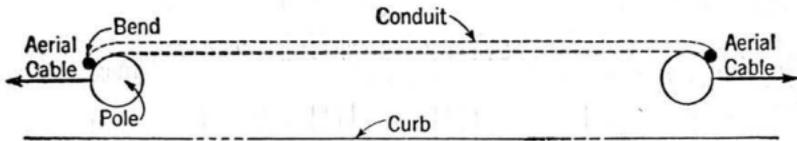
1.02 Terminate subsidiary bends on poles located in blocks or alleys as shown below:



Note:  
Heavy arrows indicate direction of Aerial Cable lead.

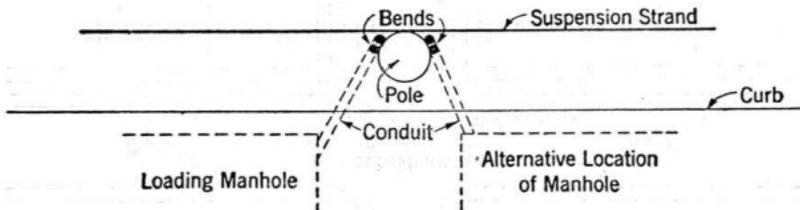
- 1.03 Locate bends at an underground dip in an aerial cable as shown below:

#### UNDERGROUND DIP IN AERIAL CABLE



- 1.04 Locate bends for connections from pole to loading manhole as shown below:

#### CONNECTION FROM POLE TO LOADING MANHOLE



- 1.05 The construction described in the foregoing paragraphs is designed to permit the cable to rise to the strand from a point directly below. If a cable crossing the field side of the pole at the level of the strand is not objectionable, the conduit can be terminated on the field quarter of the face of the pole toward which the conduit approaches.

## 2. TERMINATING DUCTS ON POLES OR BUILDINGS

- 2.01 Sewer Pipe bends or CI bends may be used to connect the various sizes of subsidiary ducts to the vertical risers on poles or buildings. The use of Fibre or Cement Conduit bends for this purpose should be avoided. The installation of U Cable Guards or steel pipes and associated Cast Iron Caps and Conduit Couplings, as required, will be done in accordance with the instructions of the Underground Cable Placing Practices. The following table lists the types and sizes of bends and associated materials used in terminating various types of subsidiary ducts on poles or buildings.

**MATERIALS REQUIRED FOR TERMINATING  
SUBSIDIARY DUCTS TO POLES**

Subsidiary Conduit		Type and Size of Bend	Strap for Bend	Type of Conduit Coupling	Strap for Coupling at Ground Line
Size	Type				
2 in.	C Cement C Fibre	2L CI	No. 2 S	None	None
	Pine	2L CI	No. 2 S	* None	None
3 in.	C Cement C Fibre	3R or 3L CI	No. 3 S	None	None
	Pine	3R or 3L CI	No. 3 S	† None	None
		3½L CI	No. 3½ S	A	None
		4 in. ⅛ Sew. P.	None	M	None
			D	No. 3 S	
3½ in.	C Cement C Fibre	3½L CI	No. 3½ S	None	None
	Pine	3½L CI	No. 3½ S	† None	None
		4 in. ⅛ Sew. P.	None	M	None
			D	No. 3 S	
3¼ in.	Single Clay	3R or 3L CI	No. 3 S	A	None
				U and S	None
		3½L CI	No. 3½ S	A	None
				U	None
3 in.	Sewer Pipe	2L CI	No. 2 S	V	None
		3R or 3L CI	No. 3 S	None	None
		3 in. ⅛ Sew. P.	None	W	No. 3 S
4 in.	Sewer Pipe	3R or 3L CI	No. 3 S	R and S	None
		3½L CI	No. 3½ S	R	None
		4 in. ⅛ Sew. P.	None	D	No. 3 S

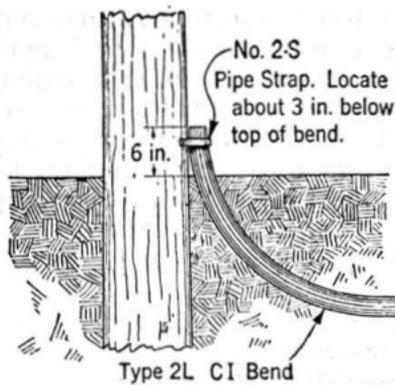
\* Use Type N Conduit Coupling if mortised end of Pine Conduit is cut off.

† Use Type A Conduit Coupling if mortised end of Pine Conduit is cut off.

Note: For attaching CI Bends and Conduit Couplings  
to masonry walls use Type F Pipe Straps.

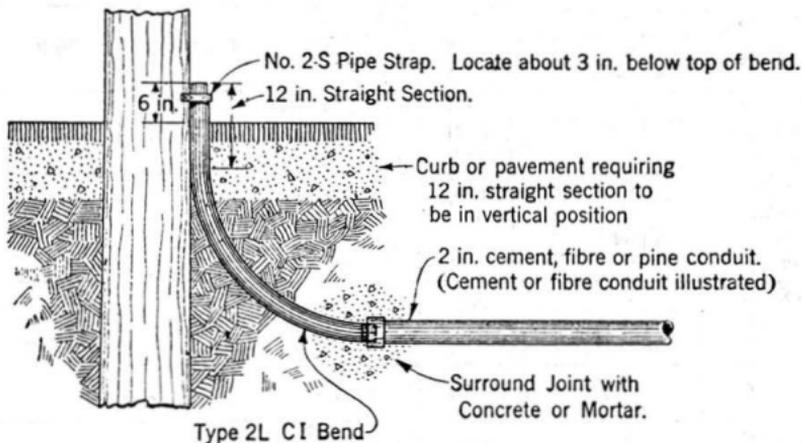
2.02 The following illustrations show installations of terminal bends made in accordance with the foregoing table. The illustrations show the preferred position of the bend or coupling with respect to the ground line or pavement. It is important, however, that a fall in the grade of the subsidiary toward the manhole be provided. If proper drainage toward the manhole cannot be obtained with the arrangements shown, the height of the termination on the pole should be adjusted until the required grade is obtained.

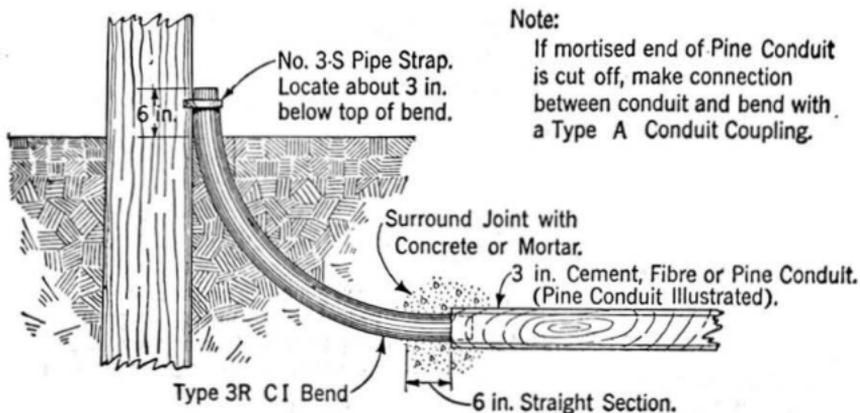
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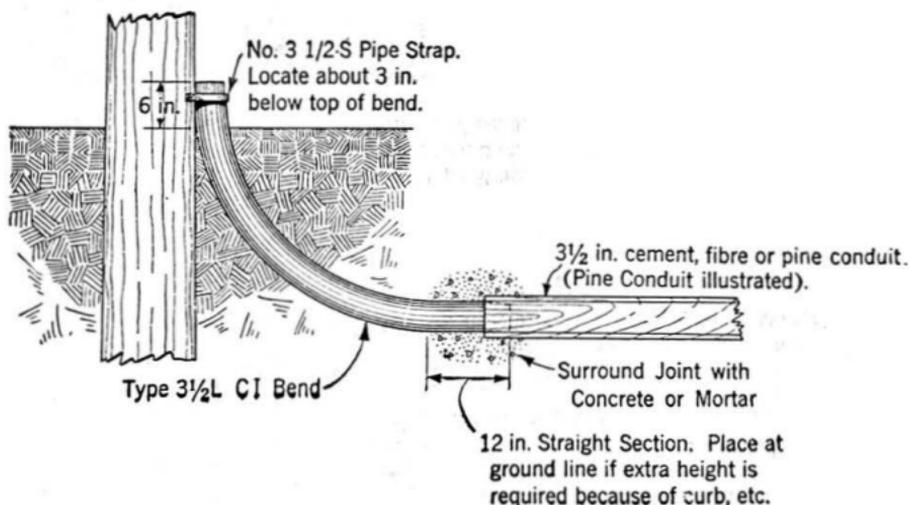
Note:  
 When additional depth is required on account of curb, etc., place 12 in. straight section of bend in vertical position at ground line.

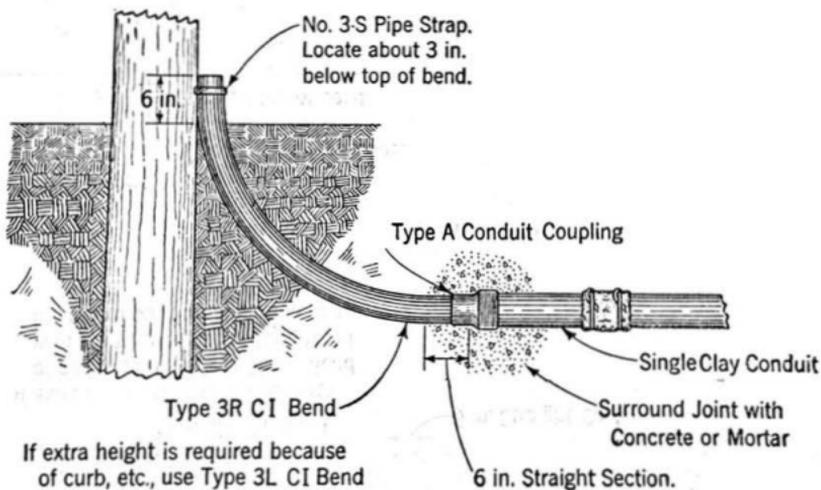
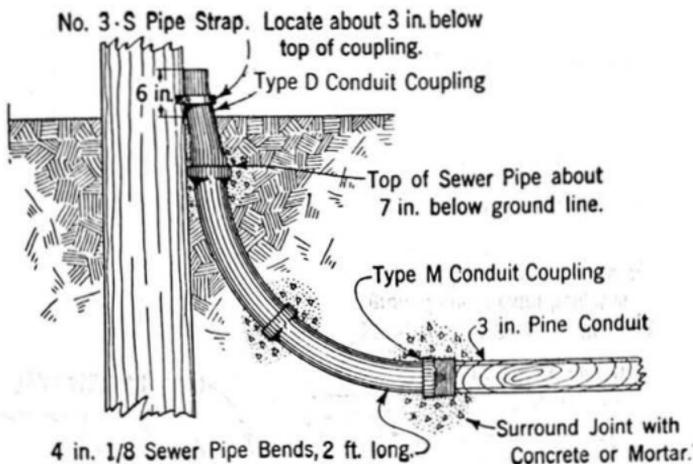
2 in. cement, fibre or pine conduit.  
 (Pine conduit illustrated. If mortised end of pine conduit is cut off, make the connection between the conduit and bend with Type N conduit coupling).  
 Surround Joint with Concrete or Mortar.



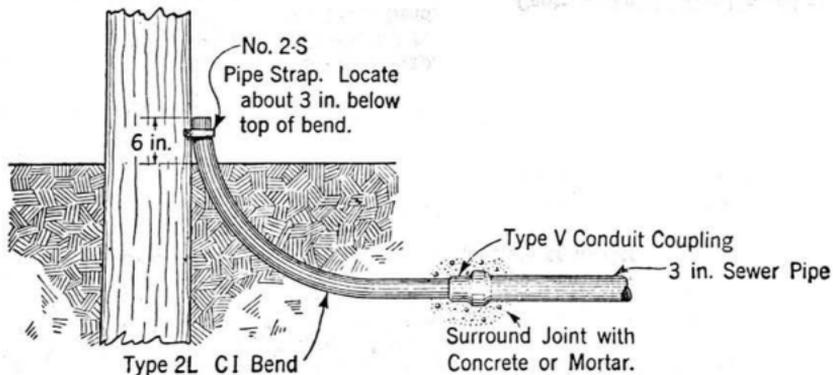
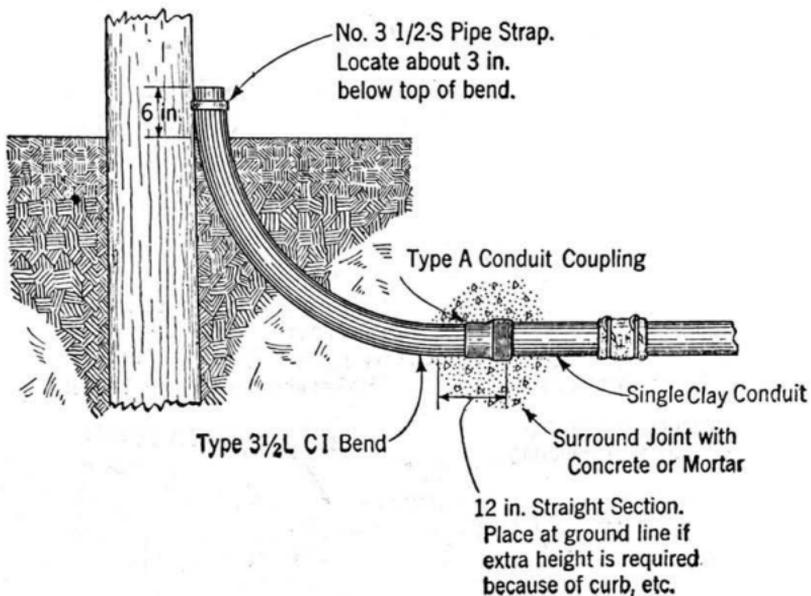


If extra height is required because of curb, etc., use Type 3L CI Bend with 12 in. straight section placed in vertical position at ground line.

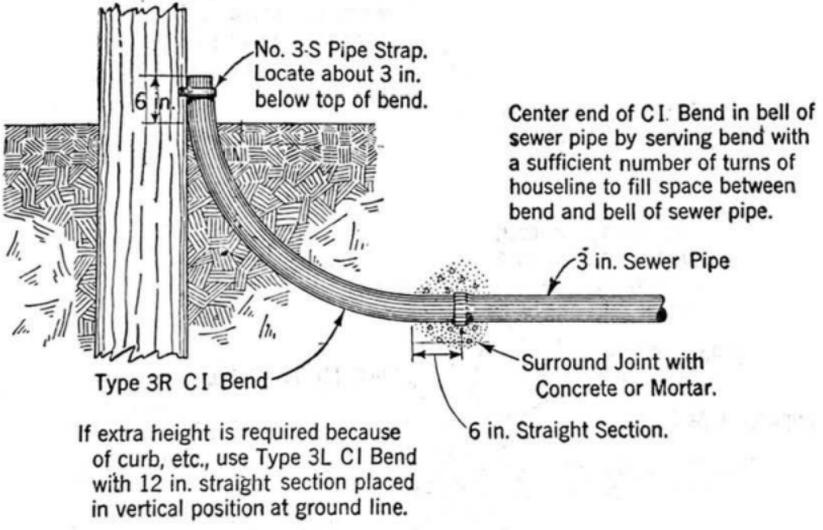
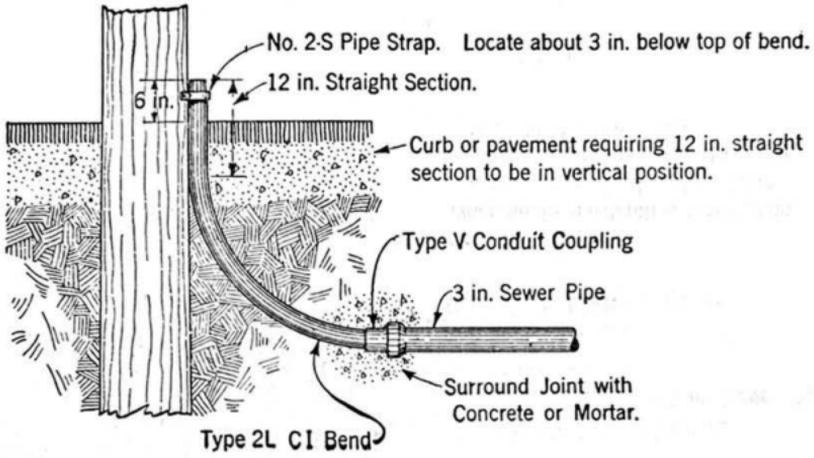


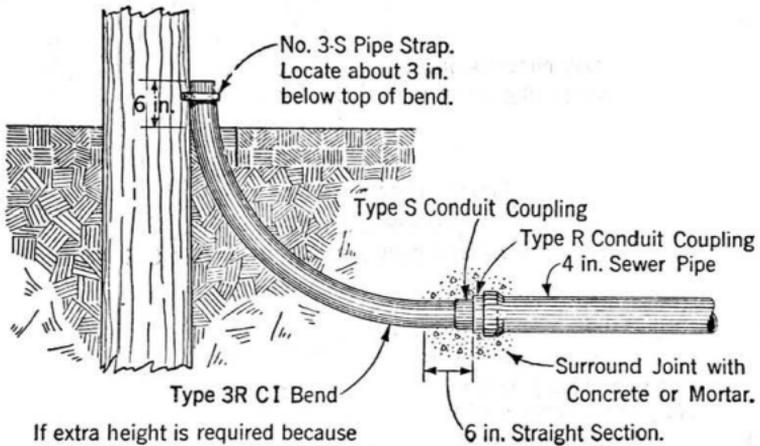
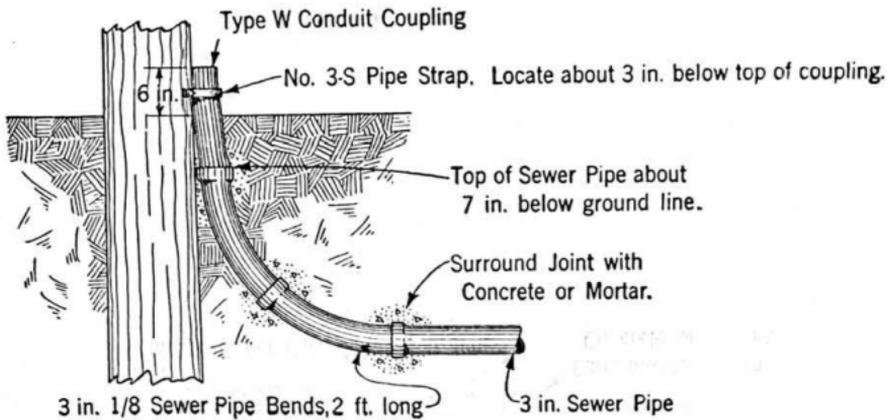


If extra height is required because of curb, etc., use Type 3L CI Bend with 12 in. straight section placed in vertical position at ground line.



Note:-  
When additional depth is required on account of curb, etc., place 12 in. straight section of bend in vertical position at ground line.

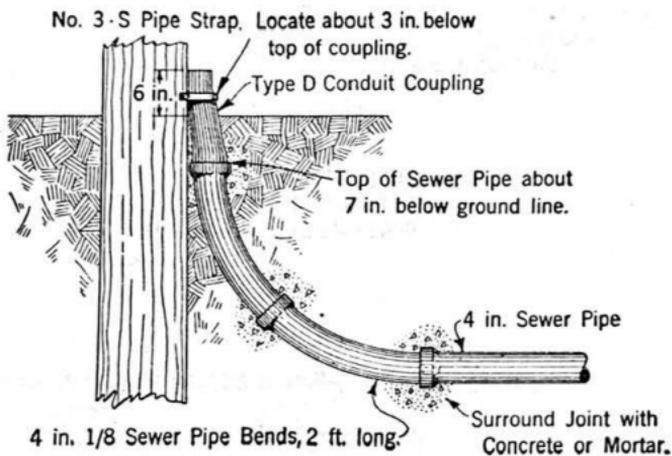
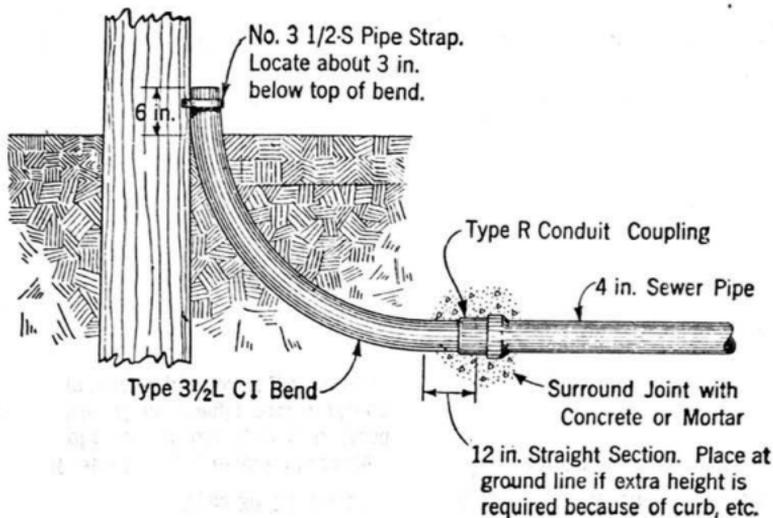




If extra height is required because of curb, etc., use Type 3L CI Bend with 12 in. straight section placed in vertical position at ground line.

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21 1/2 IN. DIA. 10 FT. LONG  
TYPE R CONDUIT COUPLING



2.03 Attachment of pipe straps used in connection with CI bends and Conduit Couplings shall be made as follows:

- (a) To poles with 3/8-inch x 4-inch Galvanized Drive Screws.
- (b) To masonry walls with 3/8-inch x 2-inch Hammer Drive Anchors or 1/4-inch x 4-inch Toggle Bolts.

2.04 The open end of the CI bend or Conduit Coupling should be closed in accordance with the provisions of G55.150.

### 3. TERMINATING DUCTS ENTERING BUILDINGS

#### Entrance to Building

3.01 If practicable, provisions for entering a building should be made at the time the building wall is erected. This may be done by one of the methods listed below. If the building wall is to be reinforced with steel, special provisions as shown in 3.05 may be required.

(a) Arrange to have a length of conduit of the type to be used for the subsidiary placed in the proper position in the wall at the time it is erected or poured.

(b) Have an opening formed in the wall which will be large enough to accommodate the subsidiary duct or ducts. When the subsidiary is constructed, it should be placed and the opening sealed as outlined in 3.04.

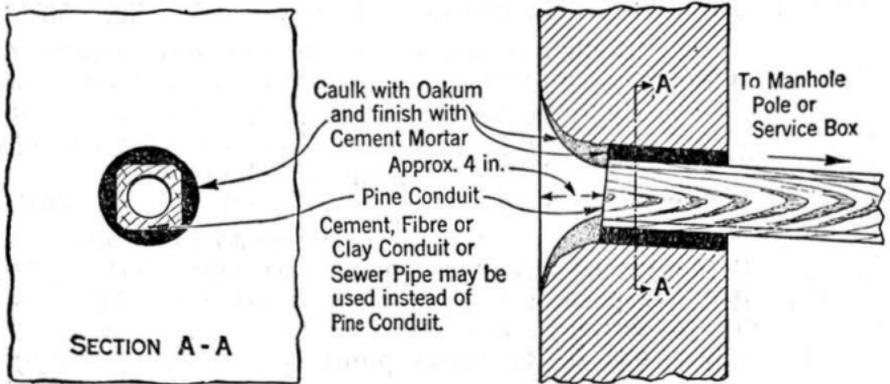
(c) Have a sleeve placed in the wall which will be either large enough to accommodate the subsidiary duct or which may be connected directly to the duct.

3.02 If the underground entrance to the building is cut through subsequent to the erection of the wall it should be made through a section not used primarily for supporting the structure and only with the consent of the building superintendent or other authority.

3.03 When the entrance is made after the wall has been completed, subsidiaries constructed of Cement, Fibre, Pine or Clay Conduit or Sewer Pipe may enter the building directly. If steel pipe is used and the building wall is reinforced with steel, special precautions as outlined in 3.05 are required to insulate the pipe from the reinforcement.

3.04 The face of the duct should be set back 4 inches from the inside surface of the finished wall in order to form a recess that will provide an easy turn for the cable. The space between the duct and the opening in the wall should be caulked.

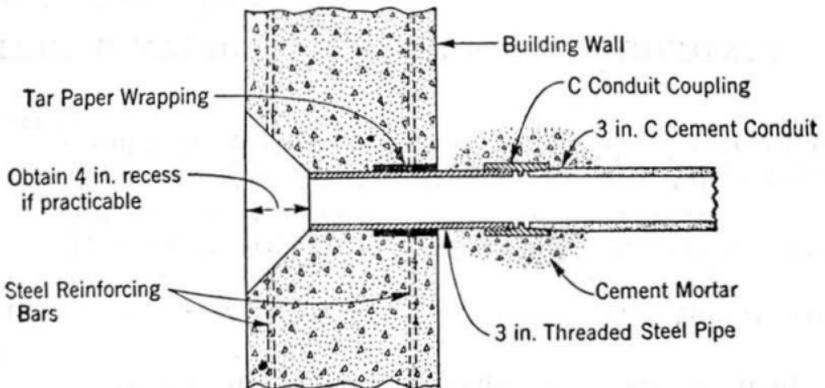
with oakum and finished off with cement mortar, as shown<sup>47</sup> below.



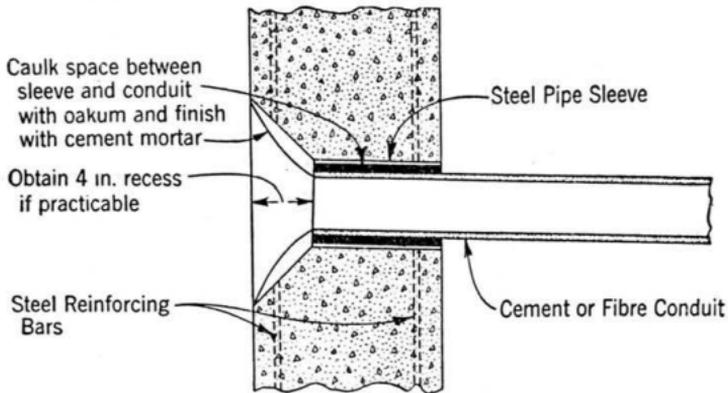
### Reinforced Concrete or Reinforced Brick Walls

3.05 If the building wall is constructed of reinforced concrete or reinforced brick and steel pipe is to be used either as sleeving or as the conduit material, provisions must be made to prevent the possibility of a metallic contact between the reinforcement of the wall and the cable to be placed in the subsidiary conduit. This may be accomplished as follows:

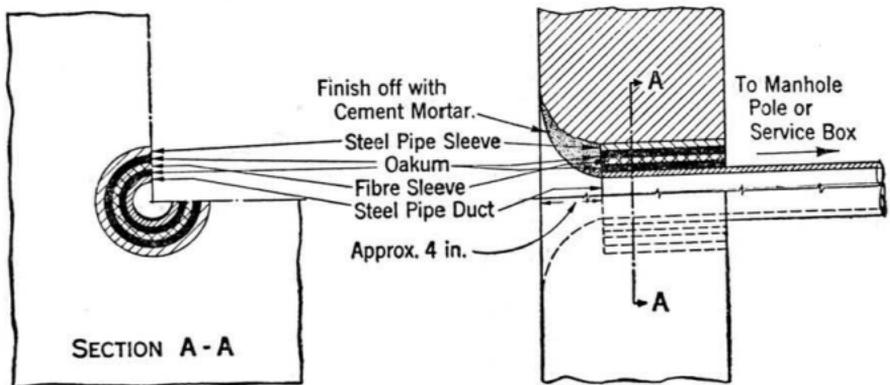
- (a) If the steel pipe placed through the wall is to be connected directly to the subsidiary conduit, it should be wrapped with tar paper or other non-metallic material to provide a separation between the pipe and the steel reinforcement. Exercise care, however, to ensure a watertight seal around the pipe.



(b) If steel pipe placed through the wall is to be used as a sleeve through which conduit other than steel pipe is to be installed, no additional protection is required.



(c) If steel pipe conduit is to be placed through the steel sleeve, the sleeve should either be insulated as in (a) above or the conduit insulated from the sleeve as shown below:



3.06 Where steel pipe is used as the conduit material between the building and the curb, or as in some cases, between the building and the pole or manhole it is important that the pipe be kept clear of water, gas, steam or sewer pipes and all other metallic underground structures.

3.07 In cases where the steel pipe is to be extended for some distance inside the building, a gap of not less than 48 inches shall be left in the pipe at the building wall, to provide space for an insulating joint.

3.08 All subsidiary ducts entering buildings shall be sealed in accordance with the provisions of G55.150.