DROP WIRING

DROP WIRE RUNS TO BUILDINGS FASTENING AND EQUIPPING FIRST ATTACHMENTS

CONTENTS

1. GENERAL

1.01 This practice provides the rules to be followed for planning drop wire runs to buildings, and the methods of fastening and equipping first attachments. The fastener to be used on various type surfaces is also covered.

1.02 This practice replaces CTSP 475-300-401 and CTSP 475-300-415, all copies of which should be removed from the file and destroyed. For information on intermediate and last attachments of drop wire runs on buildings, see CTSP 475-302-405.

1.03 The attachments to be used in any installation depend on a number of factors, such as:

a. Loading areas.

b. Number of drops to be placed.

c. Angle at which drop approaches building.

d. Insulated or noninsulated attachments.

1.04 See CTSP 475-500-402, Station Protector Selection—Application, for information on the use of insulated or noninsulated attachments.

1.05 When galvanized attachments are fastened on buildings with aluminum siding in highly corrosive areas (industrial or marine), apply "C" rubber cement (CSS #66-52-003-7) to the siding at the point of contact.

CAUTION: It is possible for foreign voltage to be present on buildings covered with metal siding. Test siding with B voltage tester before starting any work.

2. PRECAUTIONS

NOTE: All precautions in CTSPs 490-050-104, 490-050-105, and 490-050-106 must be taken before climbing.

2.01 When planning an attachment to a customer owned clearance fixture, observe the following precautions:

a. Avoid climbing on roofs of customer premises.

b. Before making attachment, inspect fixtures, but do not make an attachment if there is any doubt as to the strength or firmness of the fixture.

c. On joint use fixtures, observe location of the power service drops to avoid body contact. **Wear insulating gloves when making attachment to the fixture.** Obtain a separation of at least 1 foot between telephone and power wires.

3. RULES

3.01 The following rules will be observed when planning drop wire runs to buildings:

a. Locate the first building attachment where the drop wire span will have the required clearance from light or power wires, other foreign wires, and metallic objects.

b. Locate the first building attachment where tree interference (including future growth of existing trees) will be avoided. It is preferable to make a longer wire run on the building if the trees can be cleared.

c. Locate the first building attachment so the drop wire span can be placed with adequate sag.

d. If possible, locate the first building attachment at the same point when two or more drop wires to a building are involved. The location of the initial and subsequent attachments should provide satisfactory wire runs in the span and on the building.

e. If possible, locate the first building attachment so the drop wire will make a direct vertical run to the last attachment, provided the drop wire in the span would have adequate clearance from trees; would not be objectionable to concerned parties if it crosses adjacent property; or would not cross portions

of vacant lots on which buildings are likely to be erected.

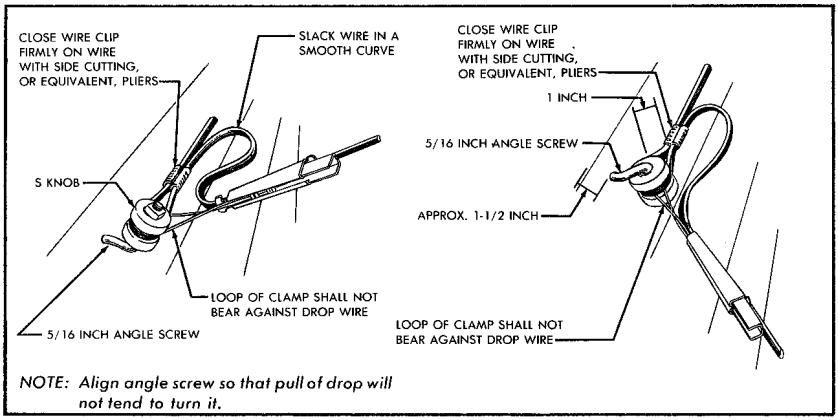
f. If possible, locate the first building attachment so ice and snow falling from the roof will not strike the drop wire. If the drop wire in the span must pass under the sloping part of a roof, make the first attachment as near the eaves as possible.

g. The first attachment should be located so the anchors will not be placed less than 10 inches to a corner or top of a wall, except in turning corners.

4. TYPICAL FIRST ATTACHMENTS TO BUILDINGS AND STEEL STRUCTURES (Figures 1 through 9)

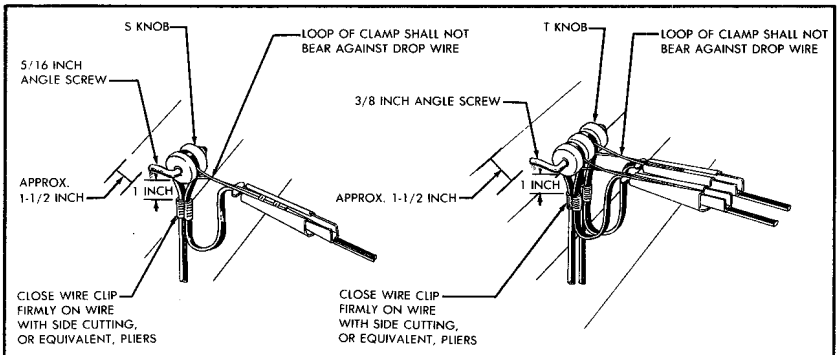
4.01 Tables A, B, C and D list anchoring devices of first attachments used on various surfaces.

4.02 Table E lists equipping information for first attachments.



NOTE: Align angle screw so that pull of drop will not tend to turn it.

FIGURE 1. First Attachment, Angle Screw (Drop Wire Run in Horizontal Direction On Building)



NOTE: Align angle screw so that pull of drop will not tend to turn it.

FIGURE 2. First Attachment, Angle Screw (Drop Wire Run in Vertical Direction On Building)

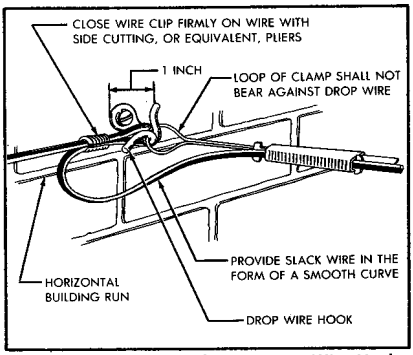


FIGURE 3. First Attachment, Drop Wire Hook

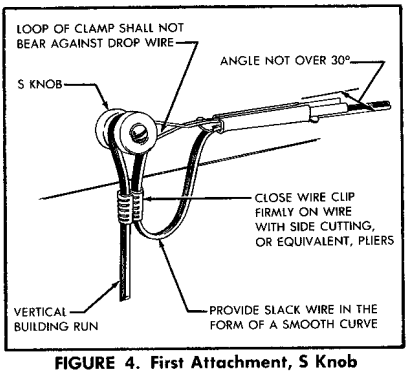


FIGURE 4. First Attachment, S Knob

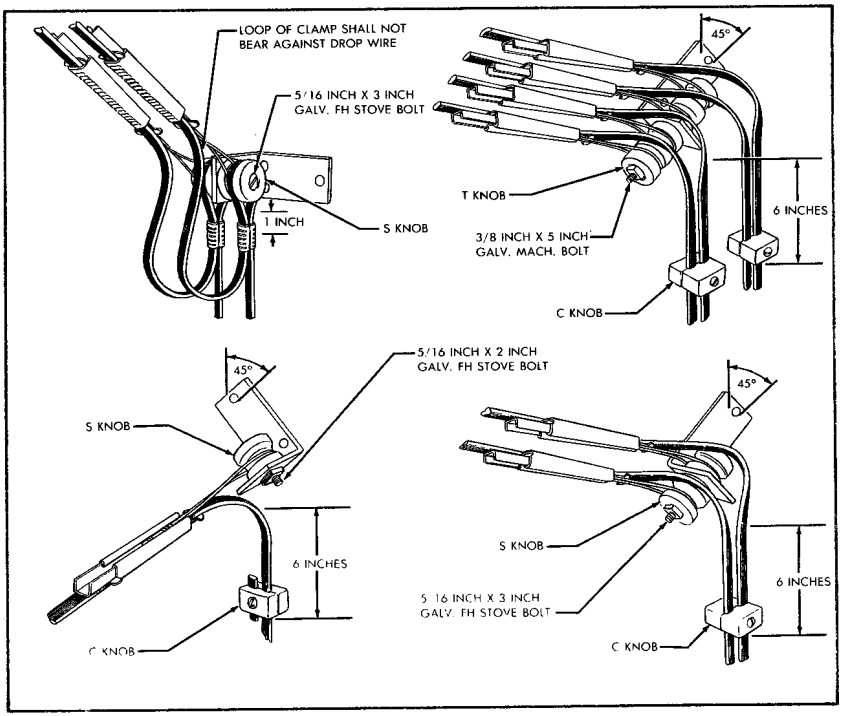


FIGURE 5. First Attachment, House Bracket (Drop Wire Run in Vertical Direction On Building)

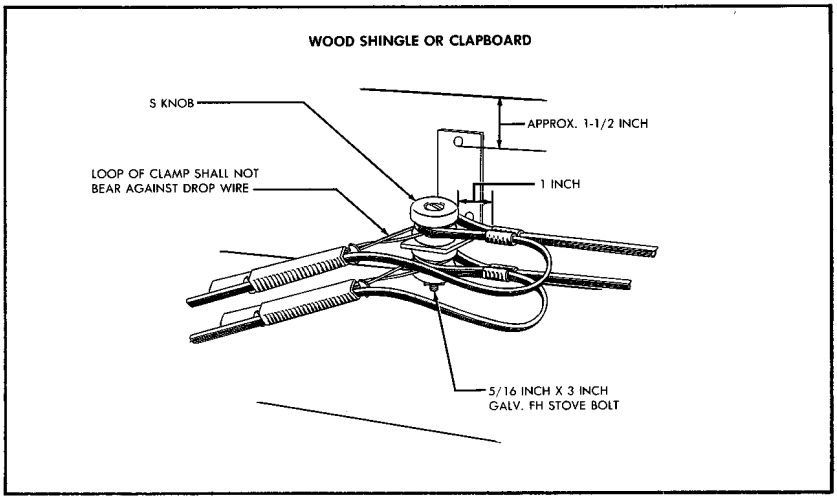


FIGURE 6. First Attachment, House Bracket (Drop Wire Run in Horizontal Direction On Building)

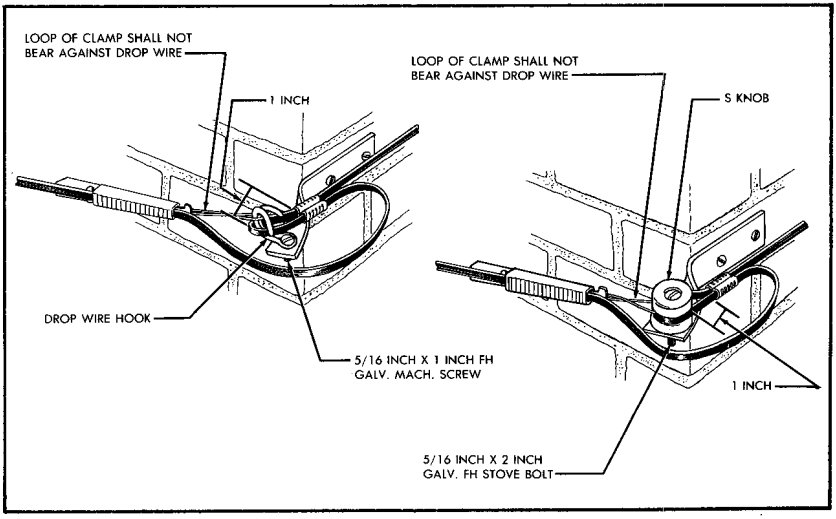
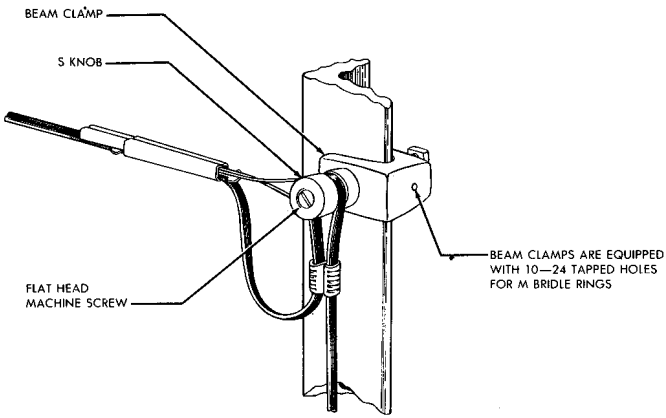
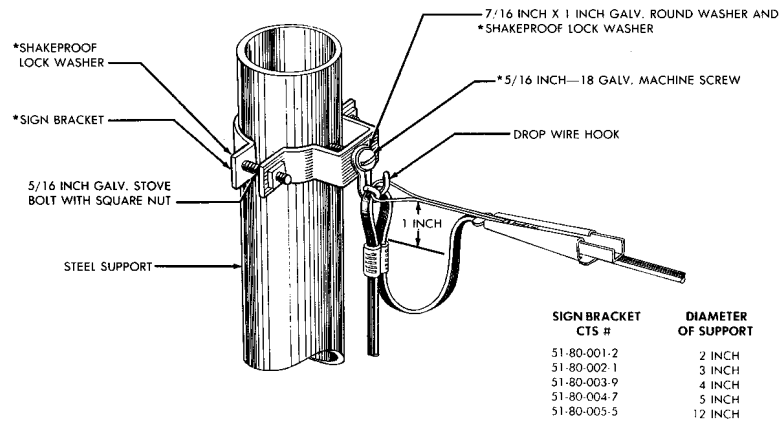


FIGURE 7. First Attachment, Corner Bracket



NOTE: Pull of drop wire must not tend to remove clamp from structure.

FIGURE 8. First Attachment, Beam Clamp



SIGN BRACKET CTS #	DIAMETER OF SUPPORT
51-80-001-2	2 INCH
51-80-002-1	3 INCH
51-80-003-9	4 INCH
51-80-004-7	5 INCH
51-80-005-5	12 INCH

**These items are furnished with sign bracket.*

FIGURE 9. First Attachment, Sign Bracket

TABLE A. Fasteners For Drop Wire Hook

WALL TYPE	FASTENERS		REMARKS
	QUANTITY	TYPE	
Wood Siding	1	2-in. No. 18 RH galvanized wood screw	Place screw in studding.
Stucco on Wood	1	2-in. No. 18 RH galvanized wood screw	Place screw in studding.
Rigid Composition Shingles	1	2-in. No. 18 RH galvanized wood screw	Drill Clearance hole to avoid splitting shingle.
Masonry or Substantial Brick Veneer*	1	5/16-in. by 1-3/4-in. drive anchor	Locate anchor in center of brick. Second drop wire hook should be located in separate brick.
Thin Wall Brick Veneer (Less Than 3-3/4 Inch Thickness)	1	6-in. No. 18 RH galvanized wood screw	Pass screw through the seam between bricks. Penetrate wood backing approximately 1 inch.
Hollow Tile	1	5/16-in. by 5-in. RH galvanized toggle bolt	Place 7/16 in. by 2-in. galvanized square washer between wall and drop wire hook.

**Do not use corner or top row of bricks.*

TABLE B. Fasteners For S and T Knobs

WALL TYPE	ATTACHMENT KNOB	FASTENERS		REMARKS	
		QUANTITY	TYPE		
Wood Siding	S	1	2-1/2 in. No. 18 FH galvanized wood screw	Place screw in studding.	
	T	1	3-1/2 in. No. 18 FH galvanized wood screw		
Stucco on Wood	S	1	3-in. No. 18 FH galvanized wood screw	Use 3-1/2 in.	If necessary to penetrate studding.
	T	1	3-1/2 in. No. 18 FH galvanized wood screw	Use 4-1/2 in.	
Rigid Composition Shingles	S	1	3-1/2 in. No. 18 FH galvanized wood screw	Drill clearance hole to avoid splitting shingle.	
	T	1	4-1/2 in. No. 18 FH galvanized wood screw		

TABLE B. Fasteners for S and T Knobs (Continued)

WALL TYPE	ATTACH-MENT KNOB	FASTENERS		REMARKS
		QUANTITY	TYPE	
Thin Wall Brick Veneer (Less Than 3-3/4 Inch Thickness)	S	1	7-in. No. 18 FH galvanized wood screw	Pass screw through the seam between bricks. Penetrate wood backing approximately 1 inch.
	T	1	7-in. No. 18 FH galvanized wood screw	
Hollow Wall	S	1	5/16 in. by 5 in. RH galvanized toggle bolt	Place flat side of S knob against bolt head.
	T	1	5/16 in. by 6 in. FH galvanized toggle bolt	

TABLE C. Fasteners For House Brackets

WALL TYPE	FASTENERS		REMARKS
	QUANTITY	TYPE	
Wood Siding	3	2-in. No. 14 RH galvanized wood screws	Place screw in studding.
Stucco on Wood	3	2-1/2 in. No. 14 RH galvanized wood screws	Place screw in studding
Rigid Composition Shingles	3	3-in. No. 14 RH galvanized wood screws	Drill clearance hole to avoid splitting shingle.
Masonry or Substantial Brick Veneer	2	5/16 in. by 1-1/4 in. B drive anchor	
Thin Wall Brick Veneer (Less Than 3-3/4 Inch Thickness)	2	6-in. No. 14 RH galvanized wood screws	Pass screw through the seam between bricks. Penetrate wood backing approximately 1 inch.
Hollow Wall	2	1/4 in. by 3 in. or 4 in. RH galvanized toggle bolt	

TABLE D. Fasteners For Corner Brackets

WALL TYPE	FASTENERS		REMARKS
	QUANTITY	TYPE	
Wood Siding	2	2-in. No. 14 RH galvanized wood screws	Place screw in studding.
Stucco on Wood	2	2-1/2 in. No. 14 RH galvanized wood screws	Place screw in studding.
Rigid Composition Shingles	2	3-In. No. 14 RH galvanized wood screws	Drill clearance hole to avoid splitting shingle.
Masonry or Substantial Brick Veneer	2	5/16 in. by 1-1/4 in. drive anchor	
Thin Wall Brick Veneer (Less Than 3-3/4 Inch Thickness)	2	6-in. No. 14 RH galvanized wood screws	Pass screw through the seam between bricks. Penetrate wood backing approximately 1 inch.
Hollow Wall	2	1/4 in. by 3 in. or 4 in. RH galvanized toggle bolt	

TABLE E. Equipping Drop Wire Attachments With S Knob, T Knob, Or Drop Wire Hook

ATTACHMENTS		EQUIPPED WITH			HARDWARE	REMARKS
		S KNOB	T KNOB	DROP WIRE HOOK		
Angle Screw	5/16 in.	1			Nut furnished	Place flat side of knob against beveled side of nut.
	3/8 in.		1			
House Bracket		1			5/16 in. by 2 in. FH galvanized stove bolt	Place flat side of first knob against house bracket.
		2*			5/16 in. by 3 in. FH galvanized stove bolt	Place flat side of second knob against beveled side of nut.
			1		3/8 in. by 3 in. galvanized stove bolt	Place flat side of first knob against bolt head.
			2*		3/8 in. by 5 in. galvanized machine bolt	Place flat side of second knob against nut.
				1	5/16 in. by 1 in. FH galvanized machine screw (obtain locally)	

TABLE E. Equipping Drop Wire Attachments With S Knob, T Knob, or Drop Wire Hook (Continued)

ATTACHMENTS		EQUIPPED WITH			HARDWARE	REMARKS
		S KNOB	T KNOB	DROP WIRE HOOK		
Corner Bracket		1			5/16 in. by 2 in. FH galvanized stove bolt	Place flat side of knob against corner bracket.
		2*			5/16 in. by 3 in. FH galvanized stove bolt	Place flat side of top knob against bolt head and place nut against flat side of lower knob.
			1		3/8 in. by 3 in. galvanized machine bolt	Place flat side of knob against bolt head.
				1	5/16 in. by 1 in. FH galvanized machine screw (obtain locally)	
Beam Clamps	D	1			5/16 in. by 2 in. FH galvanized stove bolt	Place flat side of knob against beveled side of nut.
	C		1		3/8 in. by 3 in. galvanized machine bolt	
	D			1	5/16 in. by 1 in. FH galvanized machine screw (obtain locally)	
	C					
Sign Bracket				1	5/16 in. by 3/4 in. RH galvanized machine screw	Machine screw and lock washers furnished. Obtain 7/16 in. by 1 in. galvanized round washer locally.

* *Locate one knob above and one knob below bracket.*

5. FIRST ATTACHMENTS ON LOW BUILDINGS

5.01 Paragraphs 4, 5 and 6 provide information on typical first attachments on low buildings using house fixtures provided by customers to obtain necessary ground clearance for drop wire.

5.02 Where house clearance fixtures are required but have not been provided, or where joint use of a fixture is impracticable, refer the matter to your supervisor.

5.03 Where clearance fixtures are provided but the required minimum ground clearance for drops cannot be obtained, refer the matter to your supervisor.

6. CLEARANCE FIXTURES AND METHODS OF ATTACHMENT

6.01 Figures 10 through 12 show typical clearance fixtures commonly provided by customers, and the recommended methods of making drop wire attachment. Where other types of fixtures are provided and different methods of making drop wire attachments are required, local instructions should be issued.

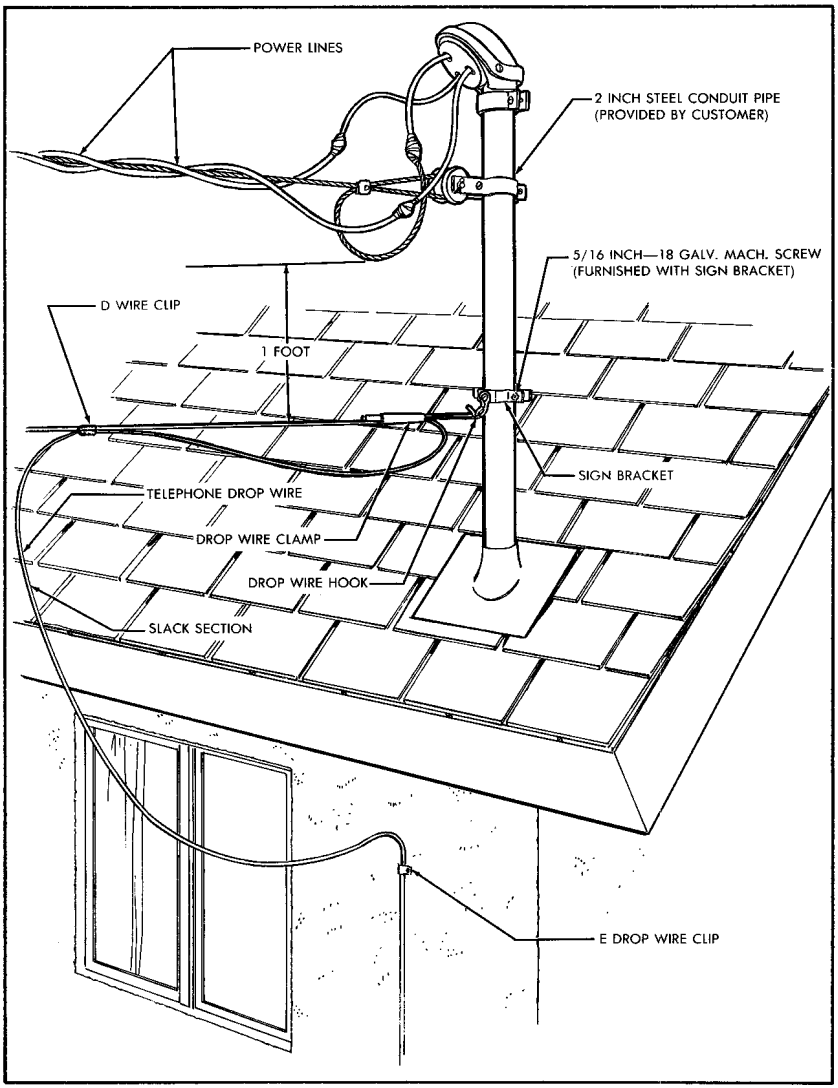


FIGURE 10. Drop Wire Attached To Power Fixture

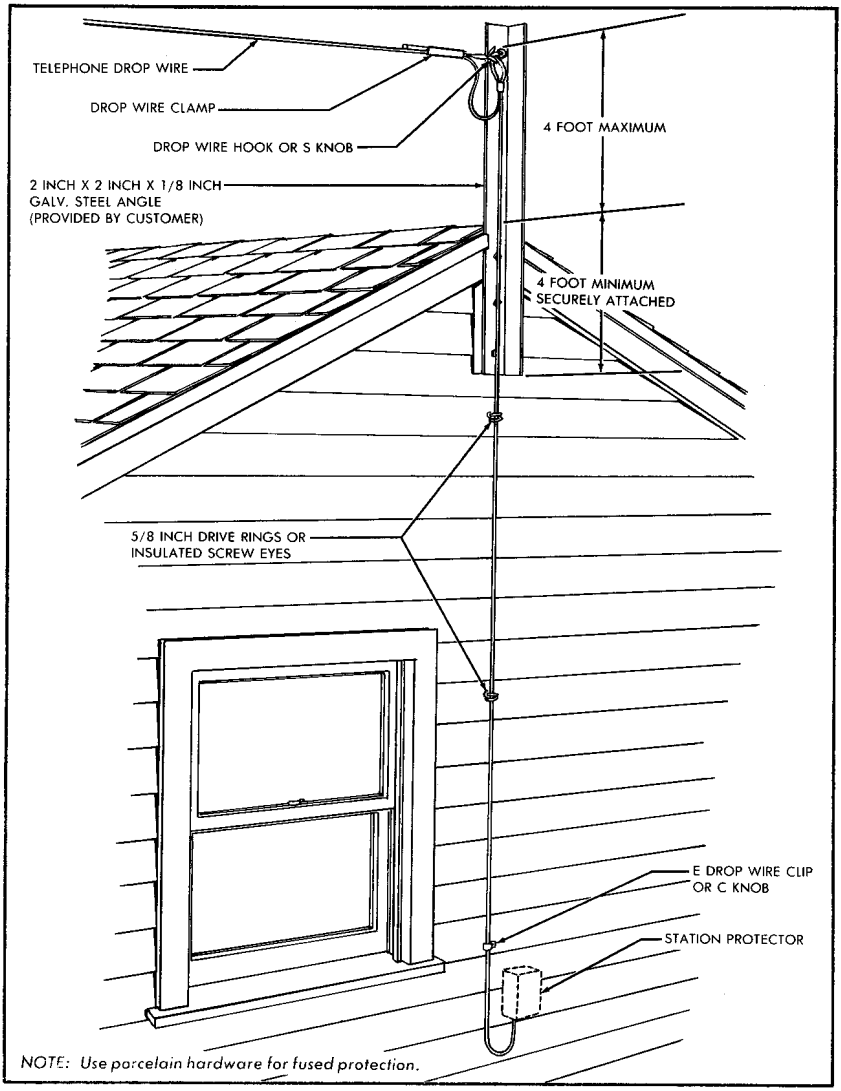


FIGURE 11. Drop Wire Attached To A 2-Inch Angle Iron

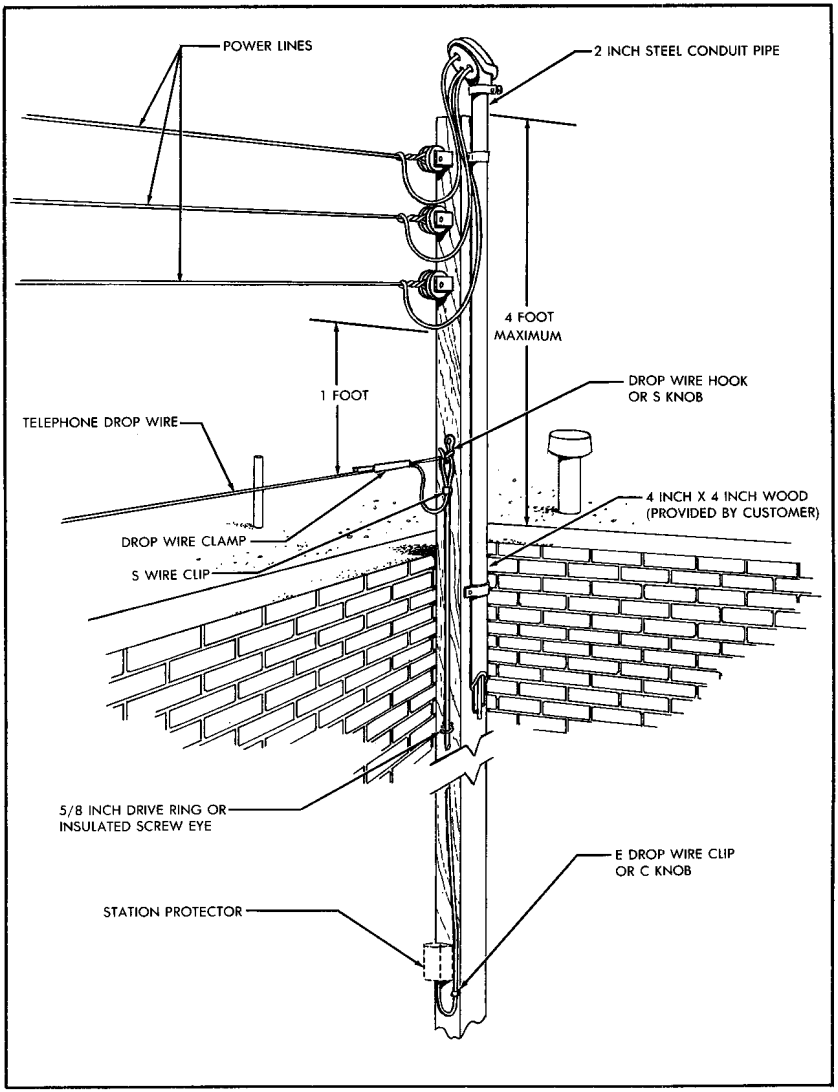


FIGURE 12. Drop Wire Attached To 1-Inch By 4-Inch Wood Beam