

# BLOCK AND HOUSE CABLE

## PLACING CABLE ON OUTSIDE BUILDING WALLS

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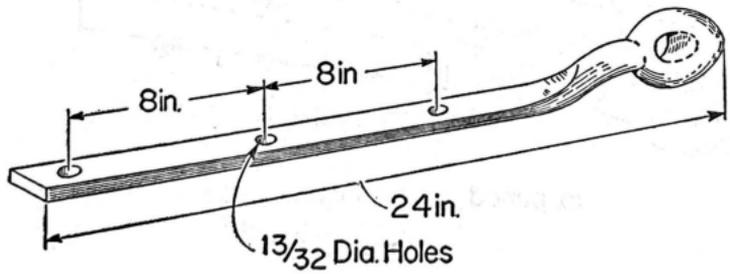
### 1. GENERAL

1.01 This section covers methods of running cable on outside building walls.

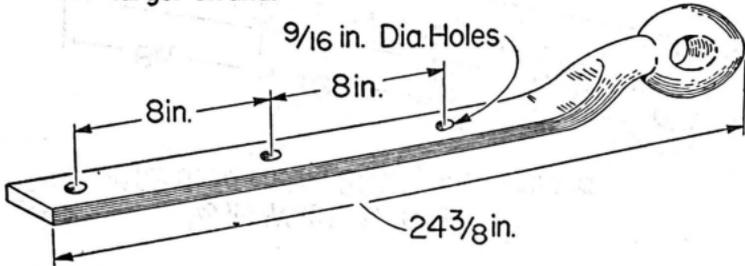
### 2. WALL STRAPS AND ANCHORING DEVICES

2.01 The names and uses of various types of Wall Straps and Anchoring Devices are covered below.

**1/2 IN. WALL STRAP**  
Used for dead ending 2200 pound strand.

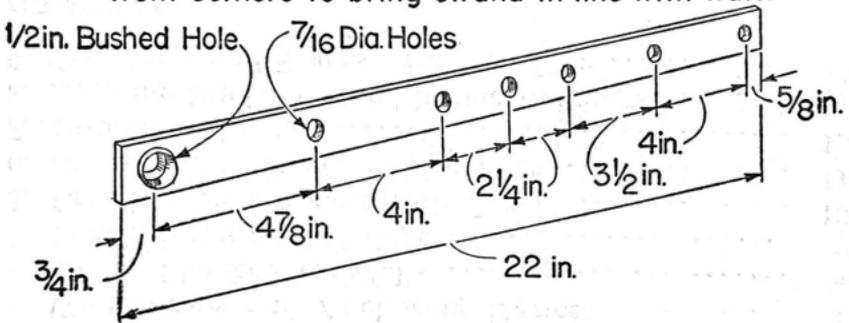


**5/8 IN. WALL STRAP**  
 Used for dead-ending 6000 pound or larger strand.

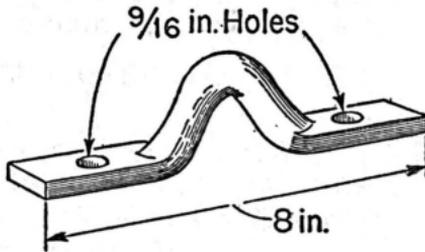


**CORNER WALL STRAP**

Used with 1/2 in. and 5/8 in. Wall Straps when spanning from corners to bring strand in line with wall.

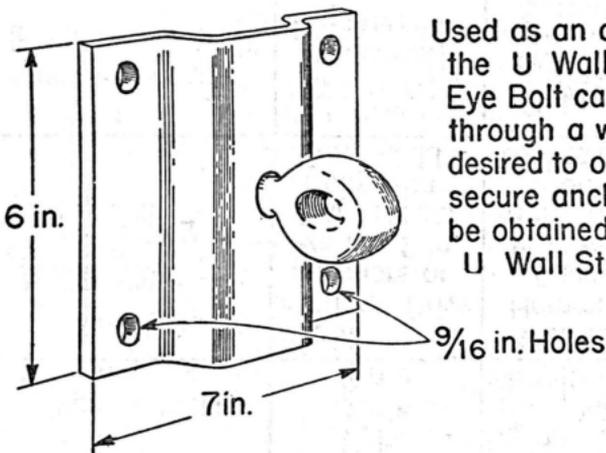


### U WALL STRAP



Used for dead-ending 2200 and 6000 pound strand where span is from face of wall and secure anchorage can be obtained by means of 2 anchors.

### PLATE WALL STRAP



Used as an alternative to the U Wall Strap where an Eye Bolt cannot be placed through a wall and it is desired to obtain a more secure anchorage than can be obtained with the U Wall Strap.

2.02 Attach Wall Straps to masonry and frame structures as specified below. The attachment to be used in any specific case should be determined by the condition of the wall, length of span and size of cable. On masonry walls hammer drive anchors are preferred. For 5/8-inch Wall Straps it may be advantageous in some cases to use Galv. Machine Bolts, with expansion shields provided the condition of the masonry will result in a satisfactory job.

### ANCHORING DEVICES FOR FASTENING WALL STRAPS

Type of Wall	1/2 in. Wall Strap	5/8 in. Wall Strap	U Wall Strap	Plate Wall Strap	Corner Wall Strap
MASONRY AND SUBSTANTIAL BRICK VENEER	3/8 in. x 2 in. Hammer Drive Anchors or 3/8 in. x 2 in. Galv. Mach. Bolts with Exp. Shield	1/2 in. x 3 1/2 in. Hammer Drive Anchors or 1/2 in. x 2 1/2 in. Galv. Machine Bolts with Expansion Shields			3/8 in. x 2 in. Hammer Drive Anchors
THIN WALL VENEER (FRAME CONSTRUCTION)	3/8 in. x 6 in. Galv. Lag Screws*	1/2 in. x 6 1/2 in. Drive Screws			3/8 in. x 6 in. Galv. Lag Screws*
CLAPBOARDS (FRAME CONSTRUCTION)	3/8 in. x 4 in. Drive Screws	1/2 in. x 6 1/2 in. Drive Screws			3/8 in. x 4 in. Drive Screws
SLAB VENEER, STUCCO, RIGID COMPOSITION SHINGLES—SEE NOTE—(FRAME CONSTRUCTION)	3/8 in. x 4 in. Drive Screws	1/2 in. x 4 1/2 in. Drive Screws			3/8 in. x 4 in. Drive Screws

\* To be obtained locally.

Note:- If the thickness of the slab veneer or stucco is such that the penetration of the drive screws in a stud is less than 2 1/2 inches, use longer screws.

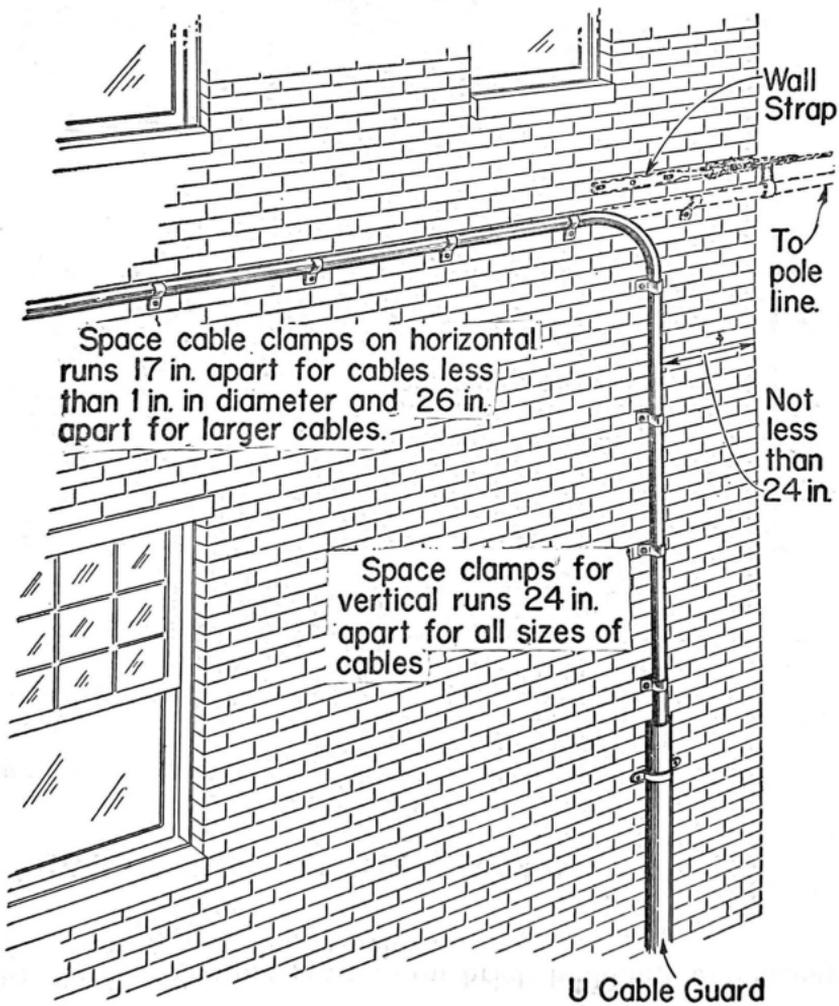
### 3. CABLES CLAMPED TO WALLS

3.01 Cable clamps are used to attach cables to masonry walls. However, where obstructions on building walls such as drain pipes, wall projections, etc., are encountered or

the type of building permits, cables may be supported by means of suspension strand and brackets as outlined in another section of Block and House Practices.

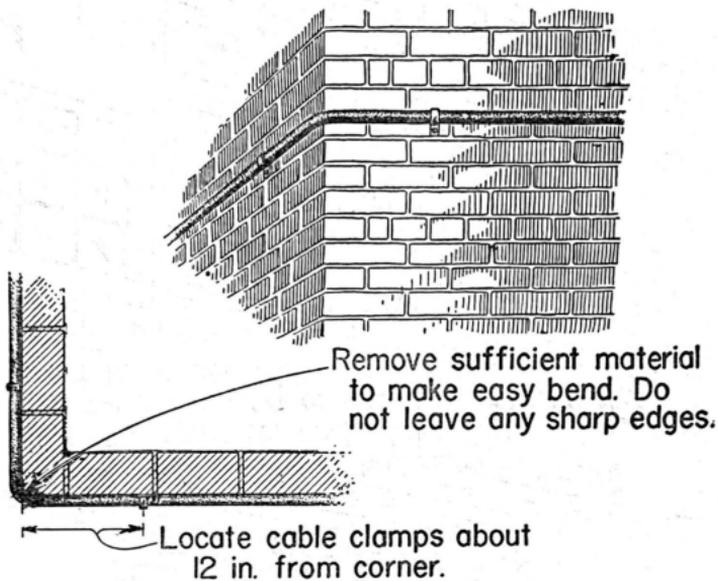
3.02 Typical installations of cable runs on walls supported by cable clamps are illustrated below. It is desirable to complete all drilling operations in a cable section before starting to place cable. On straight runs, either horizontal or vertical, stretch a chalk line and mark the wall to show where cable is to be placed. Select points close enough and be sure line is tight so as to avoid any appreciable sag in the cable run.

(a) A vertical and horizontal run of cable clamped to a masonry wall is shown below.

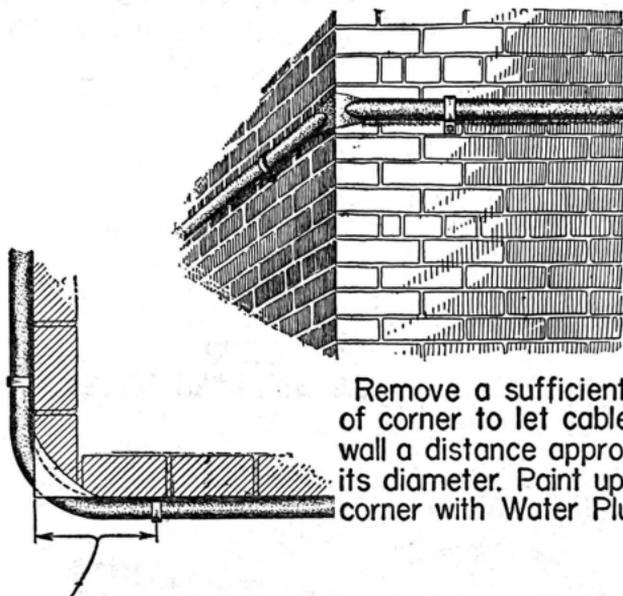


- (b) Turn projecting corners on brick buildings or masonry structures as shown below.

**CABLES SMALLER THAN 1 INCH O.D.  
OUTSIDE CORNER**



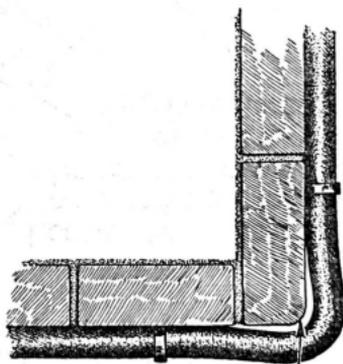
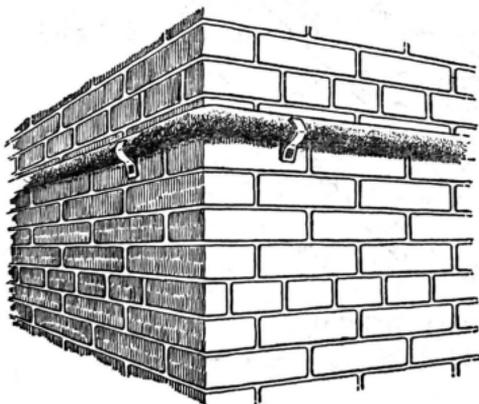
**CABLES LARGER THAN 1 INCH O.D.  
OUTSIDE CORNER**



Remove a sufficient amount of corner to let cable into the wall a distance approximating its diameter. Paint up the corner with Water Plug.

Locate cable clamps about 12 in. from corner.

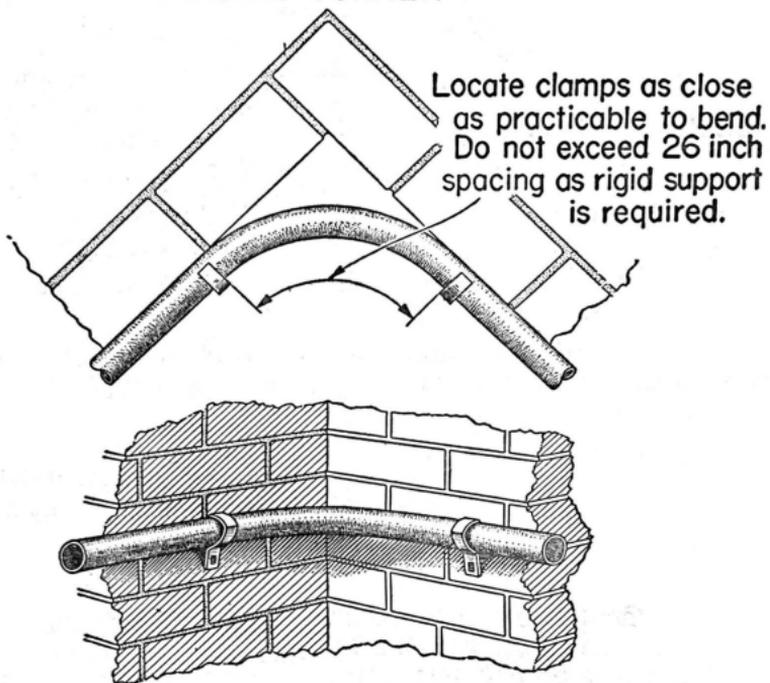
(c) Where the cable can not be let into the corner wall, bend the cable in an arc as shown below.



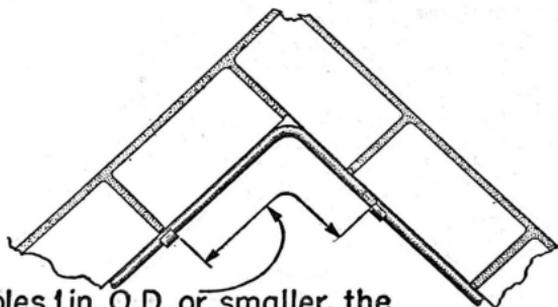
Remove sharp edge of brick, clear corner slightly.

- (d) Turn inside corners by bending cable in an arc between supports as shown below.

**CABLES LARGER THAN 1 INCH O.D.-  
INSIDE CORNER**



**CABLES SMALLER THAN 1 INCH O.D.-  
INSIDE CORNER**

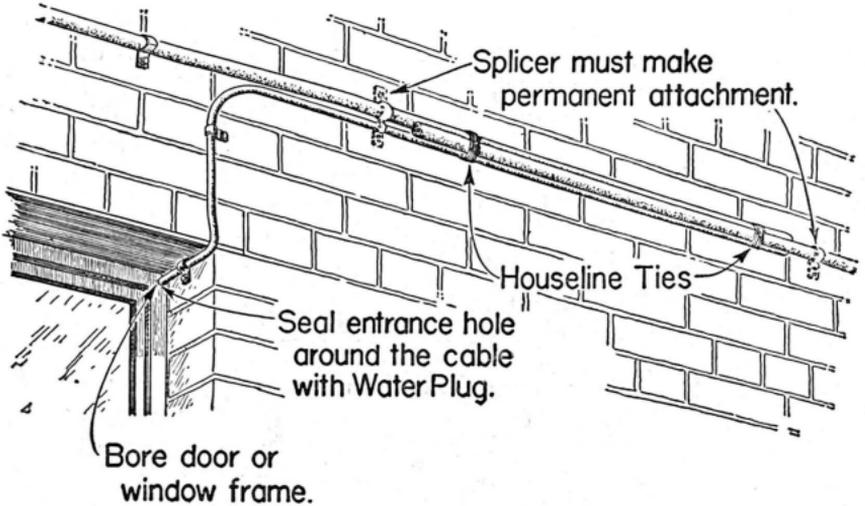


For Cables 1 in. O.D. or smaller, the 17 in. spacing should be approximated but not exceeded.

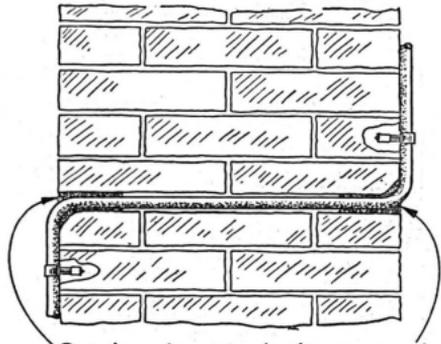
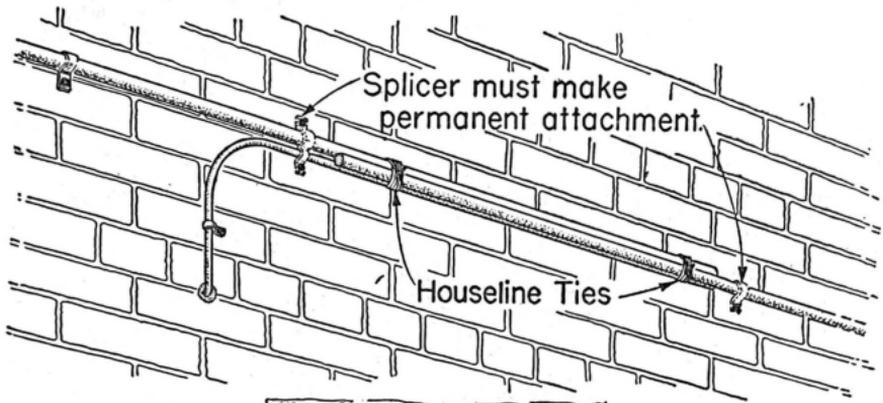
#### 4. CABLES ENTERING BUILDINGS

4.01

(a) When a cable or terminal stub on a wall is to enter a building, the entrance shall preferably be made through a doorway or window as shown below.



- (b) Where a window or door is not available, drill through wall and enter building as shown below.



Seal entrance hole around the cable with Water Plug.

## 5. CROSSING OPEN SPACES WITH STRAND

5.01 Spans between buildings shall be as short as practicable and shall not exceed 100 feet in length. In order to obtain a satisfactory job, it is important that care be exercised in selecting substantial masonry or frame structures on which to fasten the strand attachments. Use 2200-pound strand for cable weighing less than 1-1/2 pounds per foot and 6000-pound strand for heavier cables.

5.02 In erecting a span, remove the twists in the strand that result from uncoiling it. Attach the strand to the wall straps and pull tight with blocks and tackle or Chain Hoist. When the tension is being applied observe the walls or structure carefully for cracks or other failures indicating that the strain is too great for the supporting structure. The final tension in the strand should be approximately 400 pounds for 2200-pound strand and 600 pounds for 6000-pound strand. These

tensions may be approximated by stringing the strand with the following sags.

### Approx. Sag

Span in Feet	2200-Pound Strand	6000-Pound Strand
40	1/2 inch	1 inch
60	1 inch	2 inches
80	2 inches	4 inches
100	3 inches	6 inches

5.03 The following table shows the sags that would result for various weights of cable in place and spans up to 100 feet using 2200 and 6000-pound strand.

### APPROXIMATE SAGS WITH CABLE IN PLACE

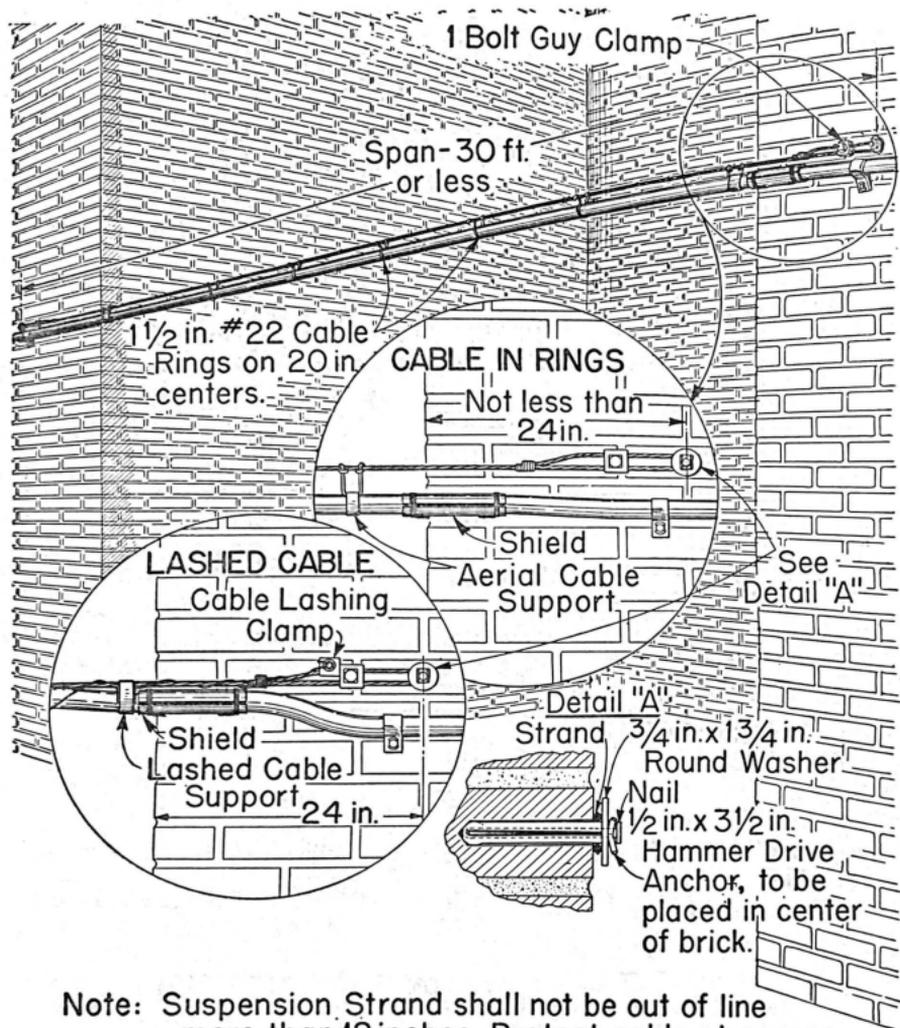
Size of Strand	Weight of Cable per Foot	Sag with Cable in Place Spans of			
		40 ft.	60 ft.	80 ft.	100 ft.
2200 pound	Up to .5 lb.	3 in.	7 in.	12 in.	17 in.
	.5 + to .75	4 in.	8 in.	14 in.	19 in.
	.75 + to 1.0	5 in.	9 in.	16 in.	21 in.
	1.0 + to 1.25	6 in.	11 in.	18 in.	24 in.
	1.25 + to 1.5	7 in.	12 in.	19 in.	26 in.
6000 pound	Up to .5 lb.	3 in.	5 in.	9 in.	13 in.
	.5 + to .75	3 in.	6 in.	10 in.	15 in.
	.75 + to 1.0	4 in.	8 in.	12 in.	17 in.
	1.0 + to 1.25	4 in.	9 in.	13 in.	18 in.
	1.25 + to 1.5	5 in.	10 in.	14 in.	19 in.
	1.5 + to 1.75	5 in.	10 in.	15 in.	20 in.
	1.75 + to 2.0	5 in.	10 in.	16 in.	21 in.
	2.0 + to 2.25	6 in.	11 in.	16 in.	22 in.
	2.25 + to 2.5	6 in.	11 in.	17 in.	23 in.
	2.5 + to 2.75	7 in.	12 in.	17 in.	24 in.
2.75 + to 3.0	7 in.	12 in.	18 in.	25 in.	

5.04 Cables may be lashed or ring supported. Use 1-1/2-inch No. 22 Cable Rings with 2200-pound strand and 1-1/2-inch No. 6 Cable Rings with 6000-pound strand. The maximum diameter cable that these rings will accommodate is 1-3/16 inches.

## 6. STRAND ATTACHMENTS TO BUILDINGS

6.01 In order to obtain secure attachments and to avoid damage to supporting structures, observe the following instructions.

6.02 On masonry walls, where the distance to be spanned is 30 feet or less and the weight of cable is less than 1.75 pound per foot, the cable may be supported on 2200-pound strand as shown.

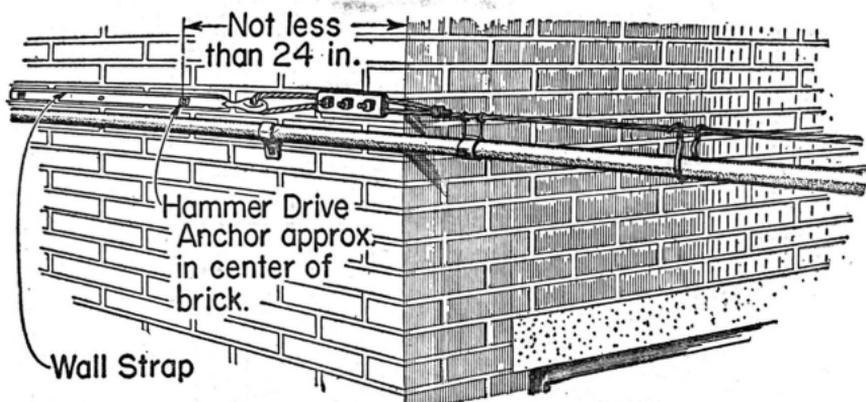


**Note:** Suspension Strand shall not be out of line more than 12 inches. Protect cable at corner with suspension clamp shield.

6.03 Where the span is in excess of 30 feet the following methods shall be used. Attachments to masonry or substantial brick veneer shall be made in the same manner. Veneering is considered substantial where its thickness is at least 3-3/4 inches (one brick wide) as observed at an outside corner and the bricks are firmly joined together with mortar. Should there be any question as to whether the veneer is sufficiently substantial, make attachment on substantial wood trim. Where this can not be done, use the method shown for thin

wall veneer. The holes in bricks shall be drilled near the center, and care must be taken to avoid damaging or loosening them. Holes for attachments on face bricks may be drilled in the seams or mortar joints to avoid marring their appearance, provided secure anchorage can be obtained.

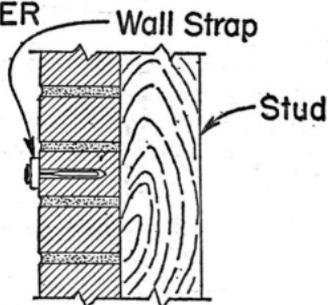
### MASONRY OR SUBSTANTIAL BRICK VENEER



### MASONRY OR SUBSTANTIAL BRICK VENEER

1/2 in. Wall Strap  
Use 3/8 in. x 2 in. Hammer Drive Anchors.

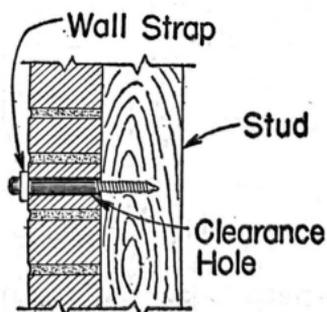
5/8 in. Wall Strap  
Use 1/2 in. x 3 1/2 in. Hammer Drive Anchors.



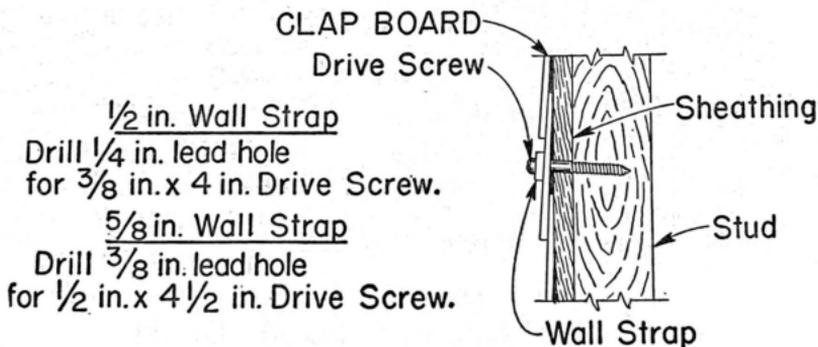
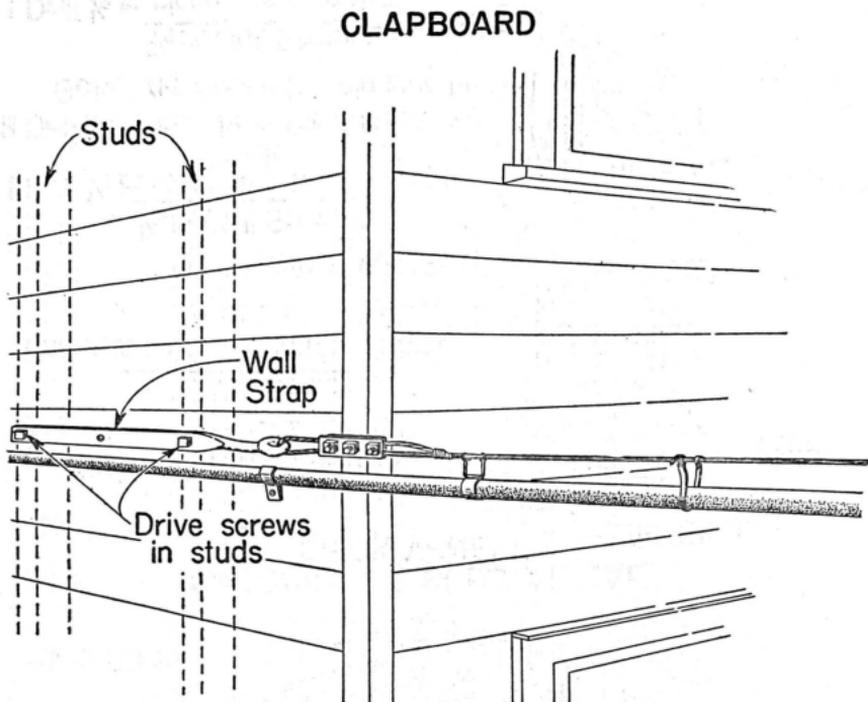
### THIN WALL VENEER

- 1/2 in. Wall Strap
- 1 Drill 1/2 in. clearance hole through brick.
  - 2 Drill 1/4 in. lead hole for 3/8 in. x 6 in. Galv. Lag Screw (obtain locally).

- 5/8 in. Wall Strap
- 1 Drill 1/2 in. clearance hole through brick.
  - 2 Drill 3/8 in. lead hole for 1/2 in. x 6 1/2 in. Drive Screw.

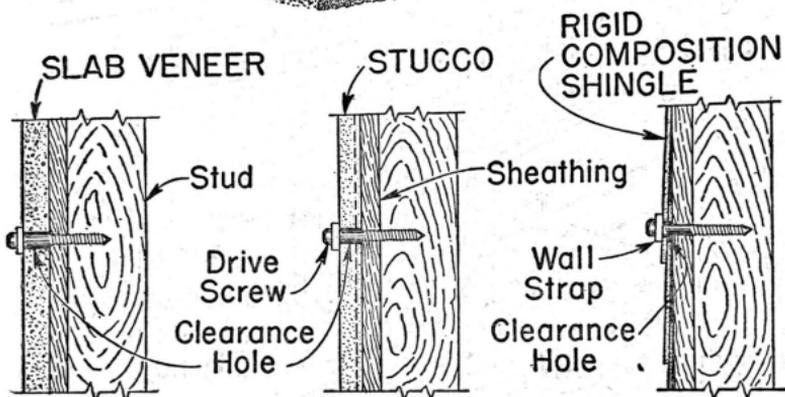
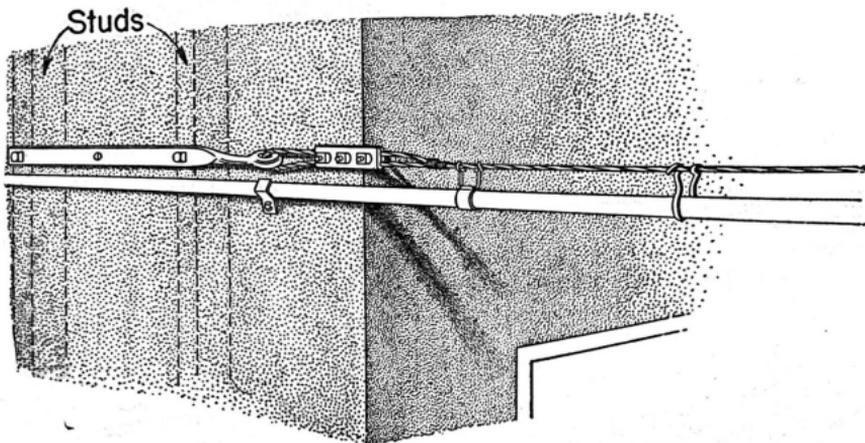


6.04 When attachment is made to frame buildings, dead-end the strand as shown below.



Note:  
Drive screws shall be driven three quarters of the way and then turned in with wrench.

## SLAB VENEER, STUCCO, RIGID COMPOSITION SHINGLES



### 1/2 in. Wall Strap

1. Drill 1/2 in. clearance hole
2. Drill 1/4 in. lead hole.  
for 3/8 in. x 4 in. Drive Screw.

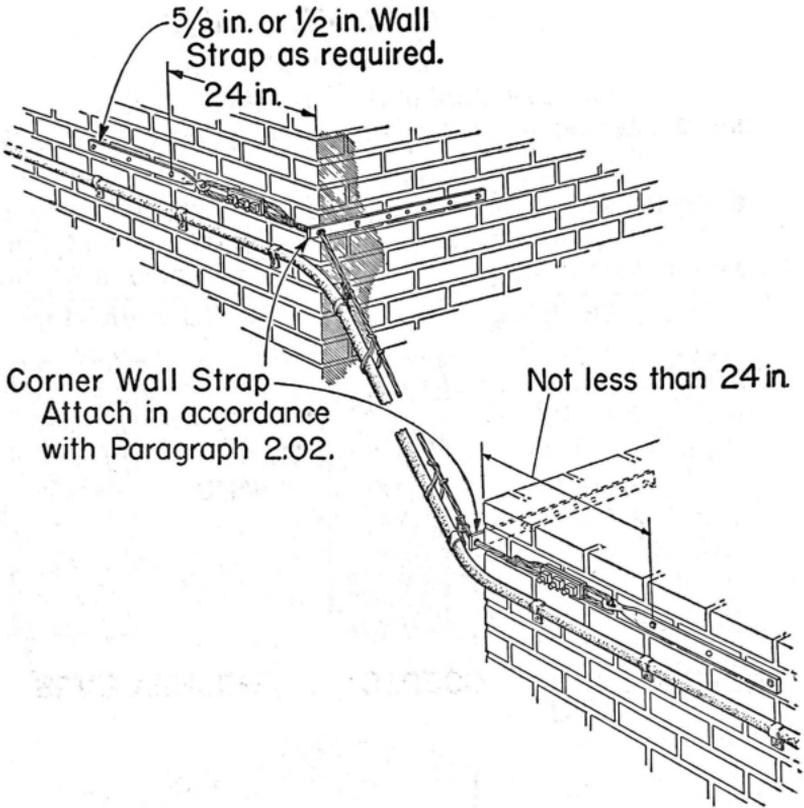
or

### 5/8 in. Wall Strap

1. Drill 1/2 in. clearance hole
2. Drill 3/8 in. lead hole  
for 1/2 in. x 4 1/2 in. Drive Screw.

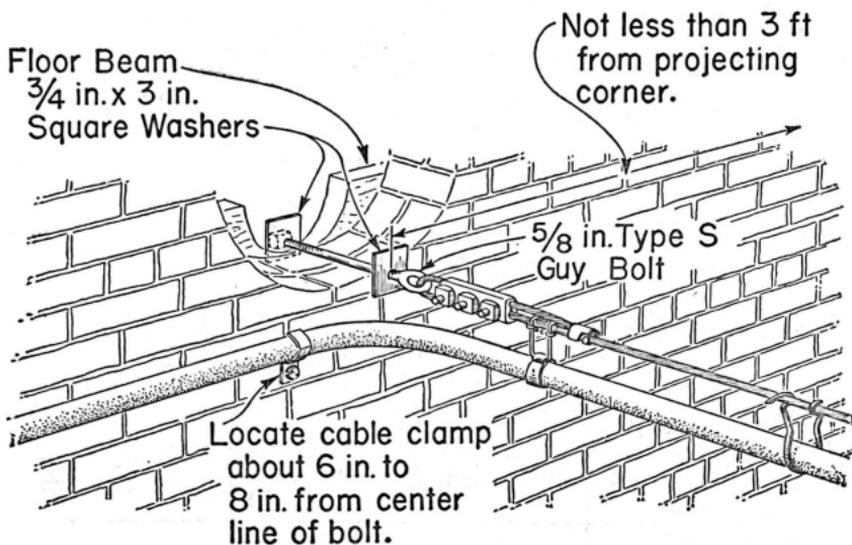
**Note:** Drive screws shall be driven three quarters of the way and then turned in with wrench.

6.05 In spans between corners, the suspension strand and cable shall be supported as shown below.



6.06 Building to building spans from face of walls shall be made as illustrated below. The preferred method is to place an S Guy Bolt through the wall. An S Guy Bolt must be

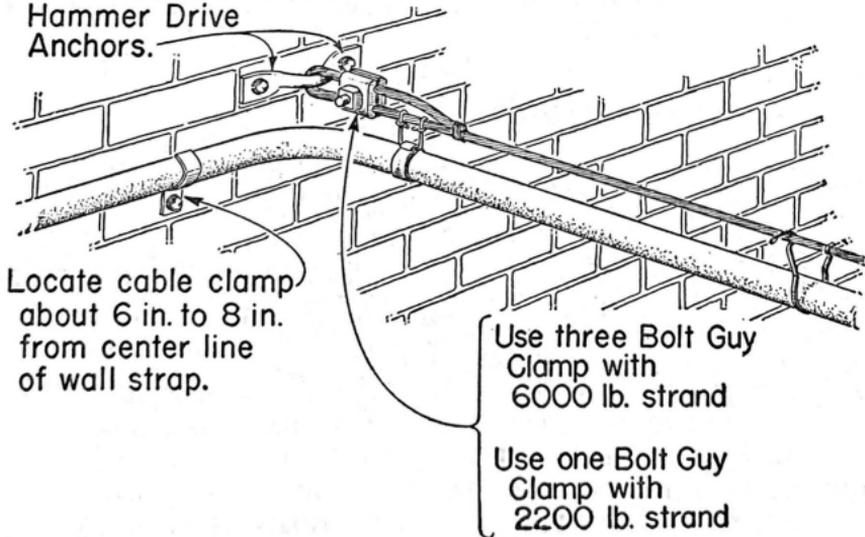
used if the strand will not be accessible by ladder or is fastened to a concrete block or cinder block wall.

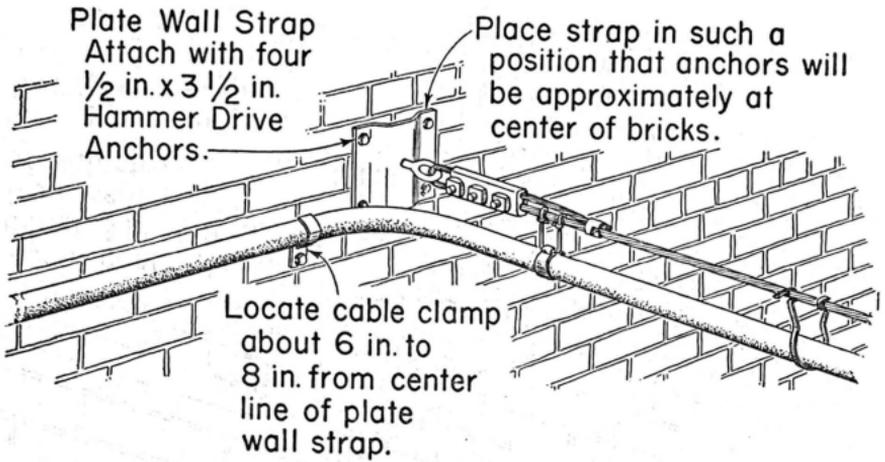


6.07 The U Wall Strap shall be used in preference to the Plate Wall Strap, provided secure anchorage can be obtained with two anchors. Spans from face of wall shall not be made with strand larger than 6000 pounds. This does not refer to spans from corner of buildings.

#### U Wall Strap

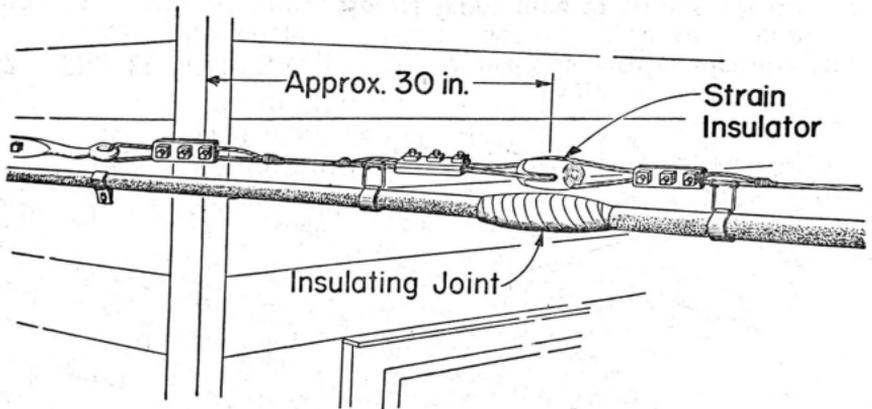
Use two 1/2 in. x 3 1/2 in.  
Hammer Drive  
Anchors.





## 7. INSULATING JOINTS

7.01 When an insulating joint is to be made in the cable entering a building, the strain insulator shall be located approximately 30 inches from the building as illustrated below.



## 8. LOCATING STUDS IN WOOD FRAME BUILDINGS

8.01 Studs in buildings of wood frame construction may usually be located by one of the following methods:

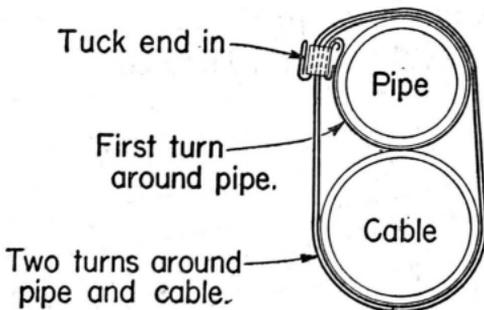
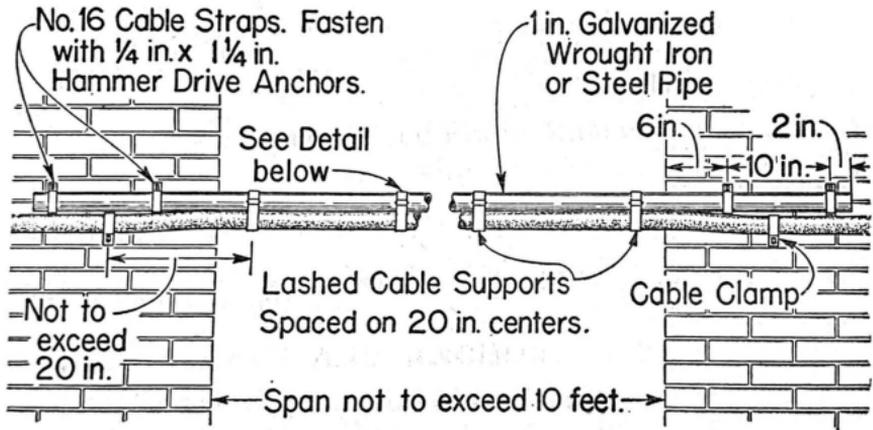
Clapboards surfacing—by locating heads of nails used in fastening clapboards to studding.

Shingles or stucco finish or similar surfaces —

- (a) By sounding.
- (b) By locating studs in cellar or attic.
- (c) By location of heads of nails used in fastening trim to studding.

## 9. CROSSING OPEN SPACES WITH IRON PIPE

9.01 The crossing of open spaces should be limited to spans not to exceed 10 feet. The construction details are illustrated below.



DETAIL  
Heavy line indicates  
Lashed Cable Support.