BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G53.110.1
Issue 1, May, 1952
AT&T Co Standard

BLOCK AND HOUSE CABLE
CABLES ON STRAND ON OUTSIDE BUILDING WALLS

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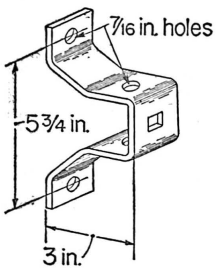
1. GENERAL

1.01 This section covers methods of placing and supporting cable on walls of buildings by means of suspension strand and wall brackets.

2. BRACKETS AND ANCHORING DEVICES

2.01 The names and uses of the various types of Brackets and Anchoring Devices covered herein are indicated below.

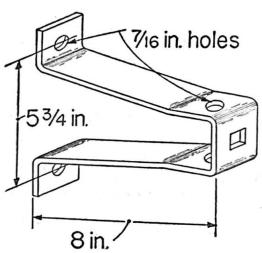


D WALL BRACKET

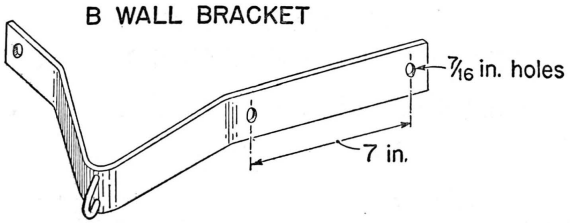
For use on frame and masonry walls where not more than 2 inches clearance between cable and wall is required.

E WALL BRACKET

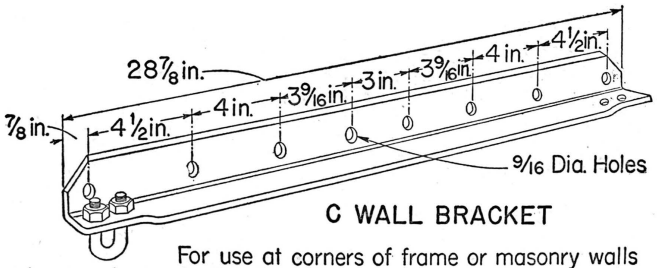
For use on frame and masonry walls where more than 2 inches clearance is required. The maximum clearance between cable and wall this bracket will provide is 7 inches.



B WALL BRACKET

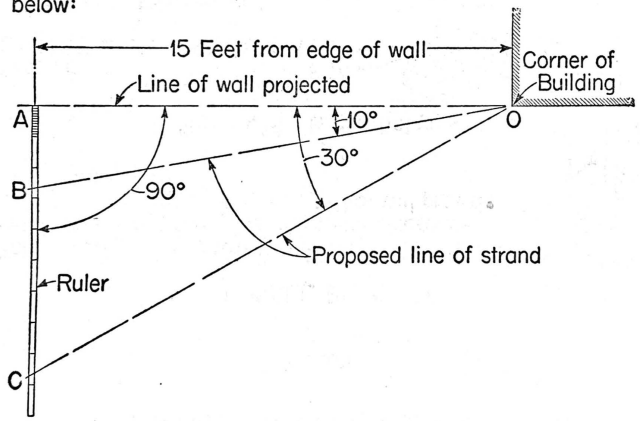


For use at outside corners of masonry buildings.



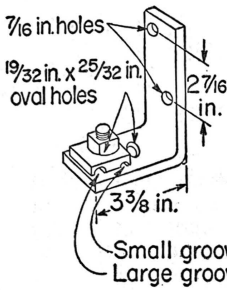
C WALL BRACKET

For use at corners of frame or masonry walls where a change in direction of suspension strand either horizontally or vertically is 10 degrees but not greater than 30 degrees. These angles can be determined, approximately, as shown below:



Lay rule at right angle (90°) to line AO at point A. If distance AB is greater than 30 inches, no bracket is required. If greater than 30 inches but not in excess of 90 inches, the C Wall Bracket shall be used. If over 90 inches, dead end strand.

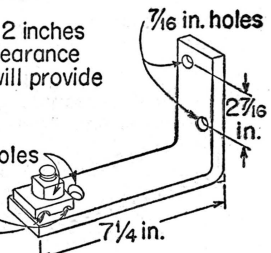
S WALL BRACKET



For use on masonry where not more than 2 inches clearance between cable and wall is required

L WALL BRACKET

For use on masonry where more than 2 inches clearance is required. The maximum clearance between cable and wall this bracket will provide is 5 inches.



Note: The groove location can be reversed by turning the clamp.

2.02 The anchoring devices for attaching brackets to masonry or frame structures, are specified below.

ANCHORING DEVICES FOR FASTENING WALL BRACKETS

Type of Wall	B Wall Bracket	C Wall Bracket	D Wall Bracket	E Wall Bracket	S and L Wall Brackets
MASONRY AND SUBSTANTIAL BRICK VENEER	3/8 in. x 2 in. Hammer Drive Anchors	1/2 in. x 3 1/2 in. Hammer Drive Anchors	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*		X
CLAPBOARDS (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		X
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		X

* 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 ON WALLS

3.01 The use of suspension strand and wall bracket construction is advantageous where obstructions on building walls such as drain pipes, wall projections, etc., make it difficult to attach cables with clamps or where the type of building construction makes the use of brackets more economical than cable clamps. This method may also be used where a property owner objects to the drilling of walls for cable clamps.

3.02 Use 2200-pound strand for supporting cables weighing 1-1/2 pounds per foot or less and 6000-pound strand for cables weighing more than 1-1/2 pounds per foot. Cables may be lashed or ring supported. The 1-1/2-inch No. 22 Cable Rings for 2200-pound strand and 1-1/2-inch No. 6 rings for 6000-pound strand accommodate cables up to 1-3/16 inches outside diameter. Larger sizes of rings to fit 6000-pound strand are obtainable on special order basis.

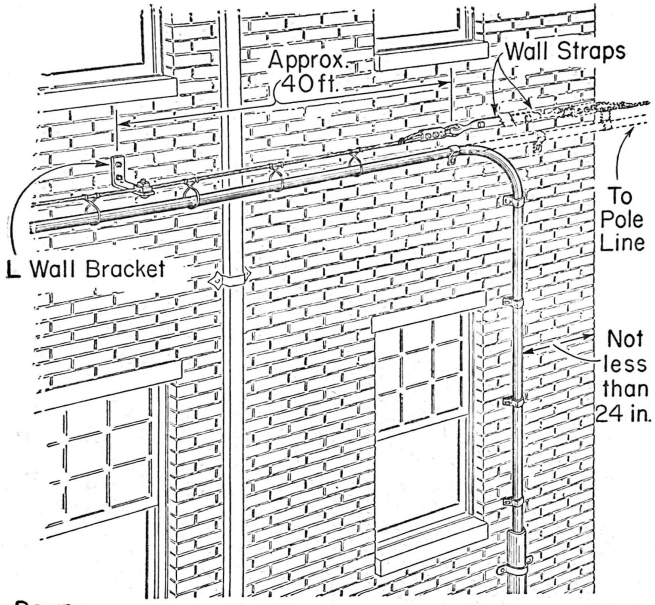
3.03 Place cables so that the sag will not be objectionable and will present a uniform appearance. String 2200-pound strand to a tension of about 400 pounds and 6000-pound strand to about 600 pounds. Select substantial walls for anchoring strand. As the strength of walls vary considerably, the tensions specified should be used as a guide. However, the strand may be placed with tensions up to 800 pounds maximum for clearing obstructions, building extensions, etc., provided the condition of the wall is satisfactory.

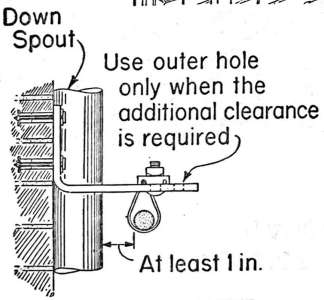
3.04 The tensions specified above may be approximated by placing the unloaded strand with the following sags.

	Approx. Sag	
Span in Feet	**2200-Pound Strand**	**6000-Pound Strand**
80	2 inches	4 inches
100	3 inches	6 inches
120	4 inches	8 inches
140	6 inches	11 inches

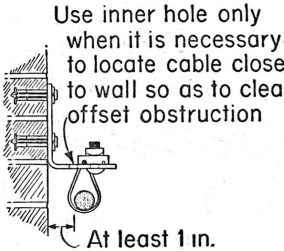
To obtain spans long enough to read the sag, it may be necessary to drop the strand from one or more intermediate supports during the tensioning operation.

3.05 A typical installation of cable supported on brackets, strand and rings on the side of masonry walls is illustrated below. Wall straps are used for dead-ending the strand and wall brackets for intermediate supports. They should be located approximately 40 feet apart. Use the proper type bracket to clear obstructions along the cable run.



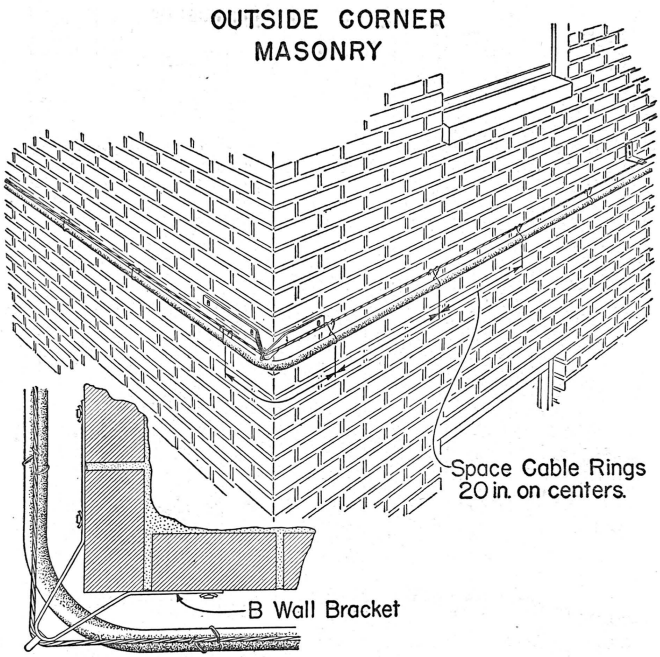


L WALL BRACKET



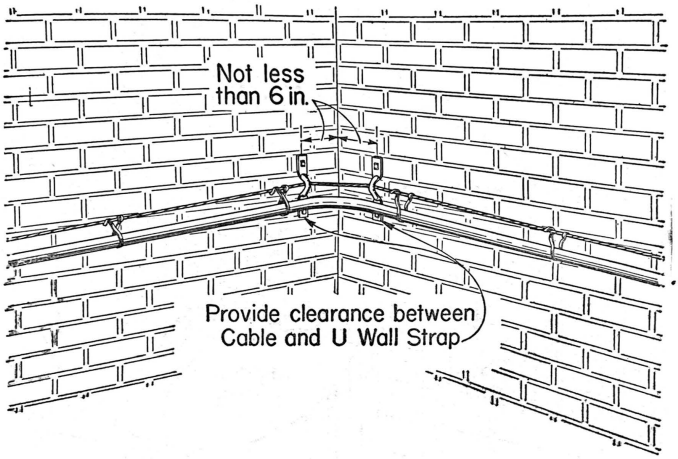
S WALL BRACKET

3.06 At projecting corners on brick or masonry, the strand and cable shall be supported as shown below. When frame construction is encountered, the strand shall be dead-ended in both directions using Wall Straps fastened to the studs of the building as shown in Paragraph 3.08.

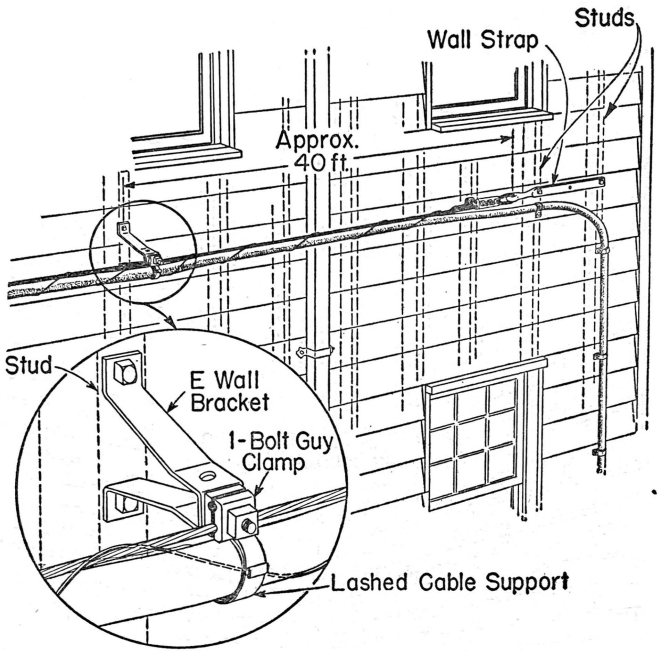


3.07 At inside corners on brick or masonry structures, the strand shall be supported as shown below. The same method may be used on frame structures. The U Wall Straps shall be fastened to the studs. Otherwise, the strand shall be dead-ended on Wall Straps, as shown in Paragraph 3.08.

INSIDE CORNER

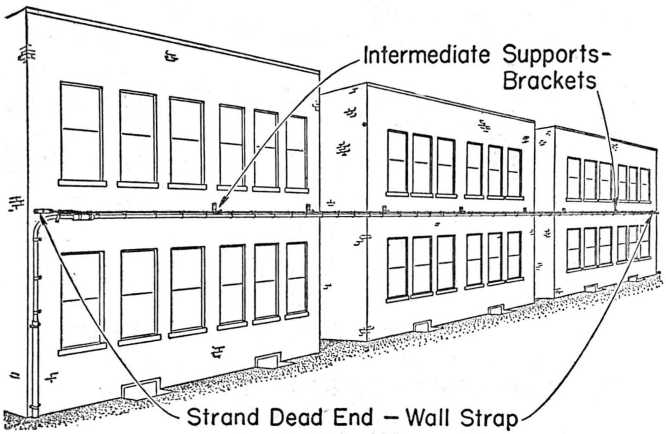


3.08 The following illustration shows the **cable lashed to** the strand placed on frame construction.



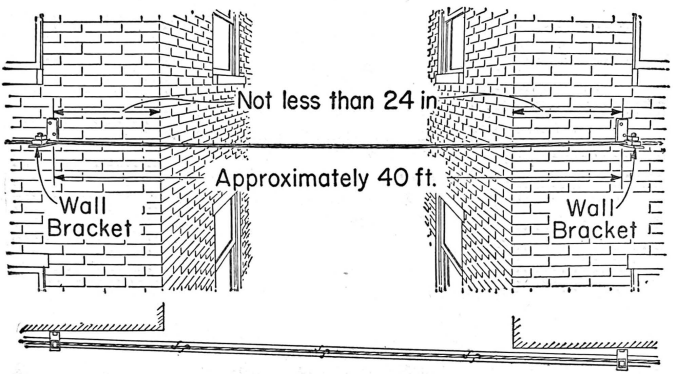
4. CROSSING OPEN SPACES

4.01 A typical strand and cable layout on the outside of semidetached houses, is illustrated below.

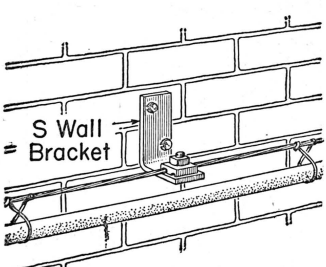


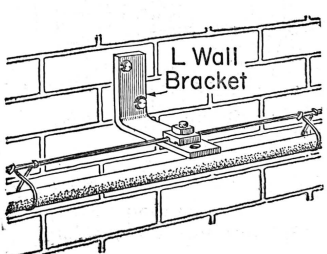
4.02 Spaces between buildings, shall be spanned as shown below.

MASONRY OR SUBSTANTIAL BRICK VENEER



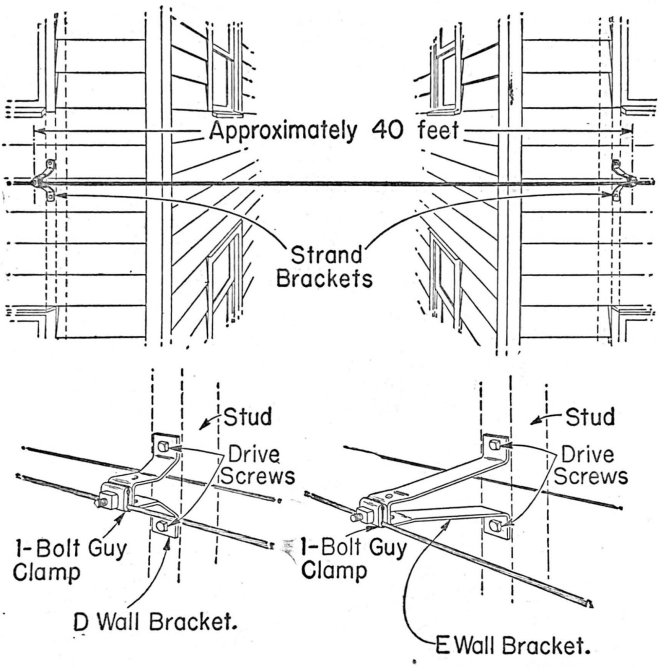
Where the attachments are out of line horizontally, the strand in the brackets shall be in such a position that cable when in place shall clear the building wall.



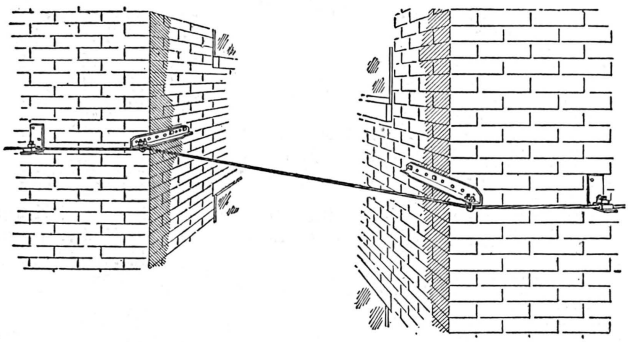


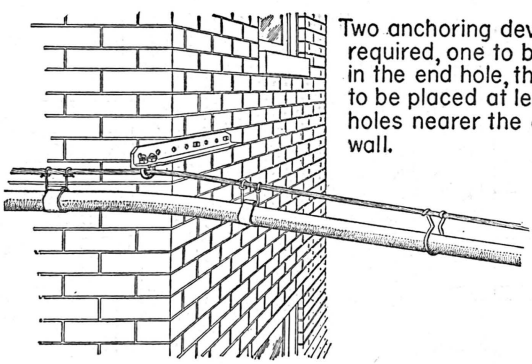
4.03 Where frame construction is encountered, the space between buildings shall be spanned as shown below.

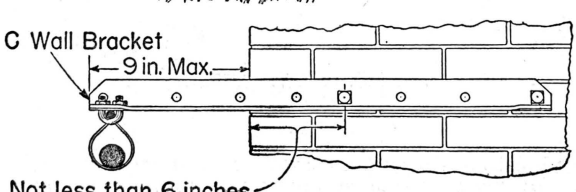
FRAME CONSTRUCTION



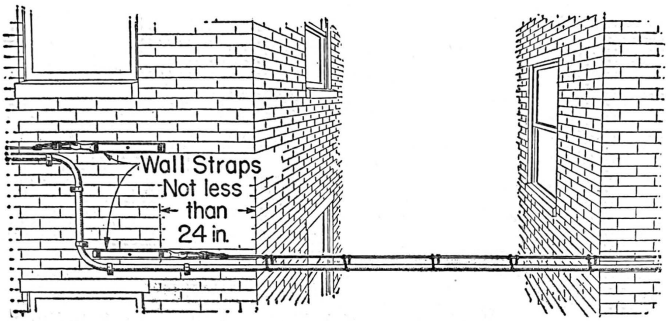
4.04 It is preferable to run cables across open spaces between buildings on a uniform grade. Where this is impractical because of differences in levels between structures, types of construction, etc., the strand may be placed as shown in the following illustration.





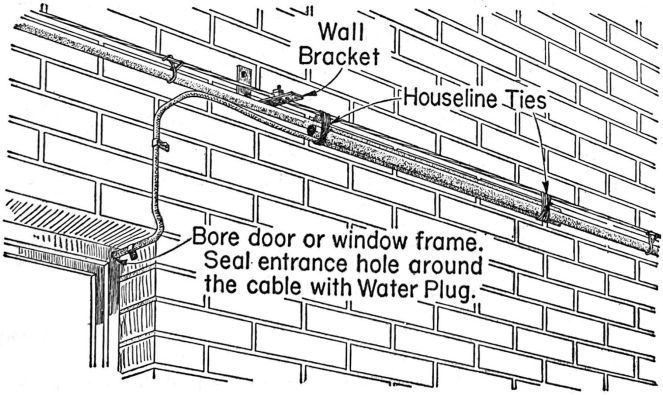


4.05 In order that cable may be run horizontally from building to building which may be at different levels dead-end the strand as shown below.

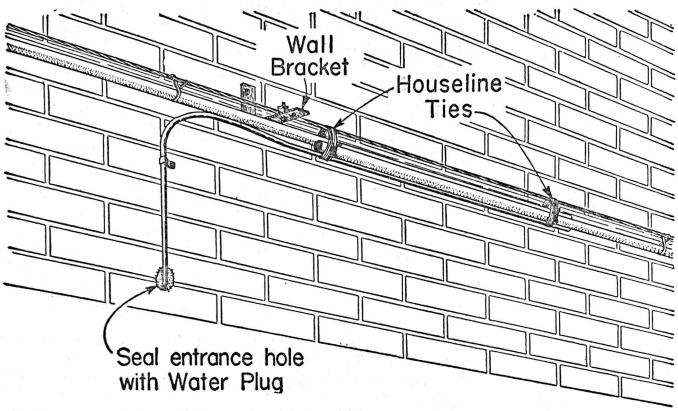


5. CABLES ENTERING BUILDINGS

5.01 A cable or terminal stub on a wall supported on strand and brackets shall preferably enter a building at a door or window as shown below.



5.02 Where a door or window is not conveniently located, drill through the wall and enter the building as shown below.



5.03 Terminals shall be placed on a wall in accordance with the section covering Installation of Terminals. Support terminal stub with houseline ties as shown above.