BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G61.120.1
Issue 1, March, 1959
AT&TCo Standard

GFELLER LINE CONCENTRATOR
INSTALLATION OF OUTDOOR UNIT

Contents **Page**

1. GENERAL

1.01 This section provides instructions for locating and placing the Outdoor Housings used with the remote unit of the Gfeller Line Concentrator. Instructions covering the installation of the Gfeller Unit in the housing and the placing of the stub cable between the unit and the cross-connecting terminal are also covered.

1.02 The Gfeller Line Concentrator consists of a central office unit and a remote unit. It has a capacity of 49 subscribers served by 9 trunks and 2 control pairs.

1.03 Detailed plans or other instructions will be provided for each installation which will specify the position of the housing and any other information which is required.

2. DESCRIPTION OF HOUSING

2.01 Size — 45-3/4 inches high, 24-3/4 inches wide and 10-1/4 inches deep. The housing is 42-1/2 inches wide with the doors open.

2.02 Weight — 110 pounds. The Gfeller equipment placed in the housing weighs approximately 150 pounds.

2.03 The housing is constructed of 14 gauge cold rolled steel and assembled by welding. The doors are attached to the cabinet with stainless steel hinges.

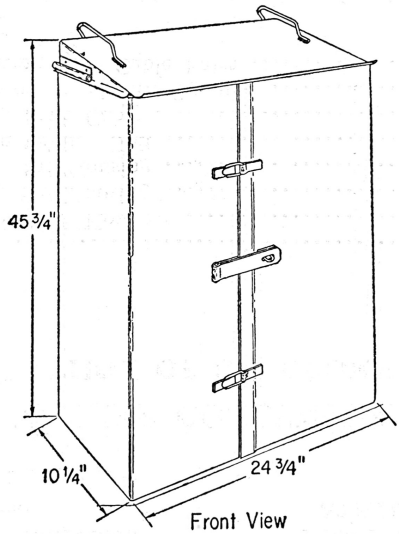
2.04 Neoprene gaskets are provided at the top and bottom of the housing to furnish weather protection. Drain holes equipped with insect guards are located in the bottom of the housing to drain any condensation which might occur.

2.05 Two exterior handles are provided at the top of the housing to facilitate climbing and the placing of the housing.

2.06 Mounting brackets are riveted to the rear surface and in addition to supporting the housing they are also used to support the Gfeller unit.

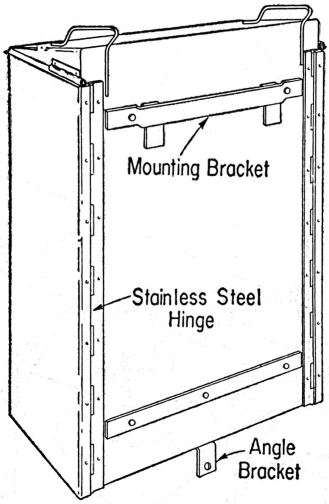
2.07 The following illustrations describe the housing.

GFELLER CONCENTRATOR HOUSING



Front View

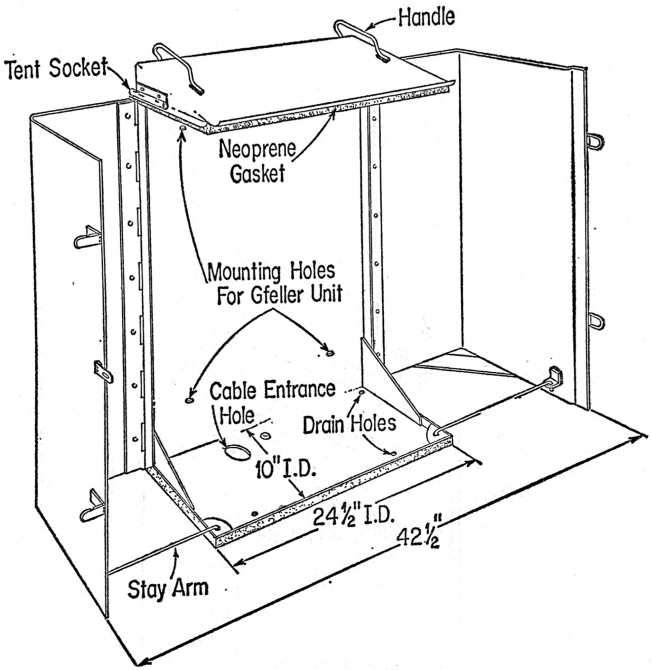
GFELLER CONCENTRATOR HOUSING



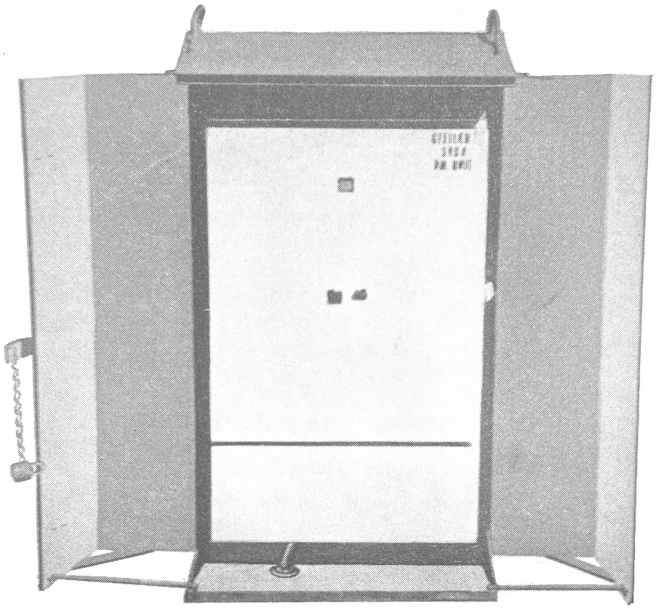
Rear View

GFELLER CONCENTRATOR HOUSING

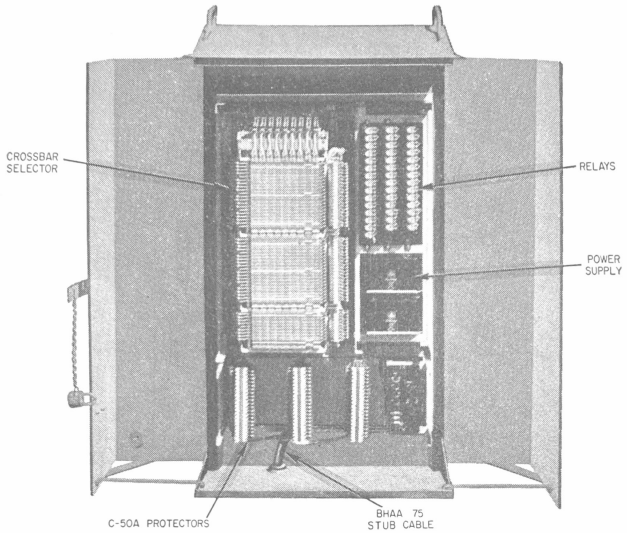
Doors Opened



2.08 The followng photographs show the Gfeller unit mounted in the housing.



Gfeller Concentrator Remote Unit—With Equipment Covers in Place



Gfeller Concentrator Interior View—Remote Unit—With Equipment Covers Removed

3. LOCATING THE HOUSING

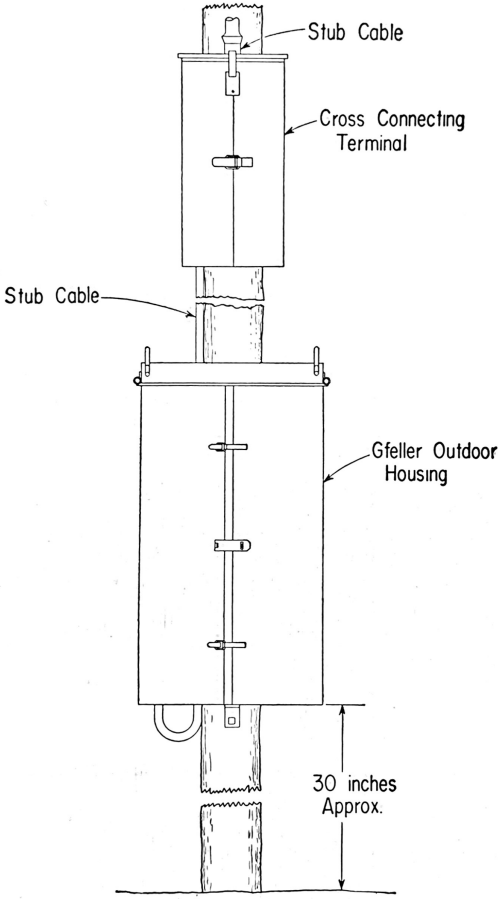
On Poles

3.01 The housing may be placed on poles at either ground working levels or it may be mounted at higher levels as specified in the detailed plans.

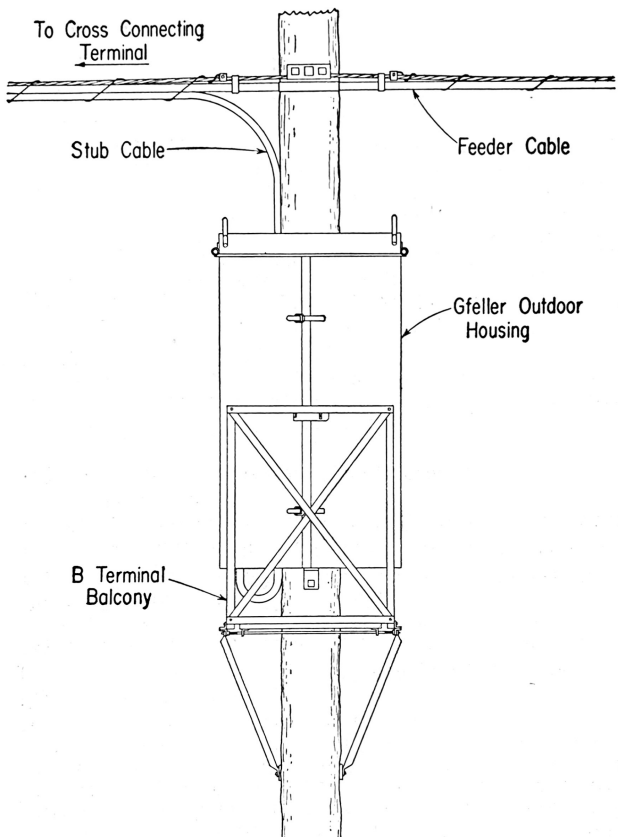
3.02 It is desirable to place the unit on the same pole as the cross-connecting terminal when adequate climbing space, clearance, and protection can be provided. If it cannot be located on the same pole it may be located on an adjacent stub or the nearest line pole.

3.03 If placed at a low level, mount the housing where it will not interfere with pedestrian traffic and where it will not be vulnerable to damage by motor vehicles. If placed at a high level, the bottom of the terminal shall not be less than 10 feet above a sidewalk or 12 feet above a driveway to a residence garage.

3.04 The following illustration covers a typical low level installation.



3.05 The following illustration covers a typical high level installation.



Note: When placing the terminal balcony, place it low enough so that the door of the Gfeller unit will clear the railing of the balcony.

On Walls

3.06 Where the housing is to be mounted on a building wall, locate it in accordance with the detailed plans, complying with the following points in so far as practicable:

(a) Where it will be accessible and where it will be possible to work in the housing without the use of a ladder. Satisfactory working conditions are generally obtained by locating the upper mounting bracket of the housing approximately 5 feet above the ground. This height may be increased if by so doing the possibility of accidents is reduced or damage to the housing can be avoided.

(b) To clear stairways.

(c) So as to avoid electric light and power circuits.

(d) Where it will not be subjected to damage such as may occur near driveways, loading platforms, moving machinery, hoists, doors, shutters, etc.

(e) So as to avoid leaders, drains, waste and exhaust pipes.

(f) Not less than 20 inches from the corner of a building.

(g) So as to provide sufficient space for opening both doors of the housing.

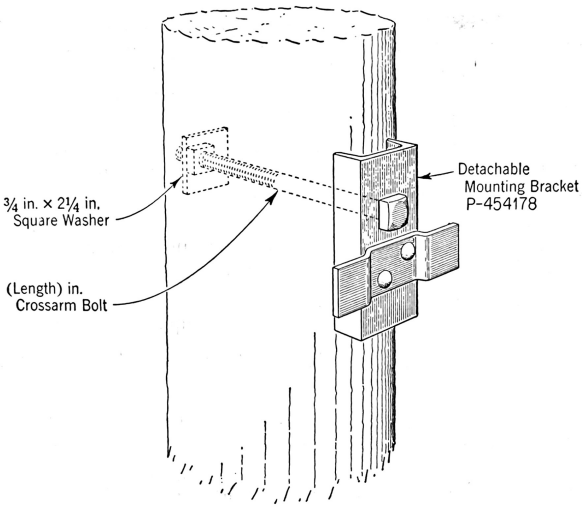
(h) On a firm and even mounting surface.

4. INSTALLING THE HOUSING

4.01 The housing is designed for mounting on poles, stubs, walls, etc., by using the top mounting bracket (P-454178) of the BD Terminal.

4.02 Mount the housing as follows:

(a) Secure the detachable mounting bracket to a pole as shown in the following illustration, exercising care to level the cross member. Where the housing is to be mounted on a masonry wall, attach this bracket to the wall by means of a 1/2-in. machine bolt anchor with a 4-in. galvanized machine bolt or a 1/2-in. by 3-1/2-in. hammer drive anchor. Place a 9/16-in. by 1-3/8-in. round washer under the head of the machine bolt or under the collar of the hammer drive anchor.



(b) Secure a rope sling to the handles at the top of the housing. Raise the housing by means of block and tackle, or a winch line passed through a snatch block secured to the pole, and engage the housing hangers with the installed mounting bracket. Guide the housing during hoisting by means of a handline secured to the handles.

(c) Attach the adjustable mounting bracket so that the vertical portion extends below the bottom of the housing.

(d) Level the housing, viewing it from the front, and fasten the bracket to the pole with a 3/8-in. by 4-in. drive screw. Where the housing is mounted on a masonry wall, attach this mounting bracket to the wall by means of a 3/8-in. by 2-in. hammer drive anchor.

(e) Level the housing, viewing it from the side, and tighten the nut of the adjustable mounting bracket with a wrench.

5. INSTALLING GFELLER UNIT

5.01 At ground level installations the Gfeller unit can either be placed in the housing before it is installed or it can be added to the housing after it has been installed. At high

level installations it is recommended that the unit be added to the housing before it has been installed.

5.02 The equipment is fastened to the upper mounting bracket and the lower by means of four 3/8-inch by 1-inch galvanized hexagon machine bolts which must be ordered separately.

5.03 At high level installations it is desirable to lower the equipment cover to the ground with a rope sling when working on the unit.

6. INSTALLING STUB CABLE

6.01 A 75 pair PIC cable is required to connect the Gfeller unit to the cross-connecting terminal. The cable can be placed in a flexible steel tubing or pipe for protection if required.

6.02 Locate the cable in accordance with the detailed plans and provide sufficient slack at both the Gfeller unit and cross-connecting terminal to terminate the pairs as covered in Part 8.

6.03 The cable is placed through the 2-inch hole in the bottom of the Gfeller Housing and through the knock-out plug in the bottom of the cross-connecting terminal. The sheath is prepared at the entrance holes in the same manner as outlined in Part 7.

6.04 Place B Sealing Tape around the cable at the entrance holes in the housing and terminal to close any remaining opening.

7. PREPARATION OF SHEATH OPENING

7.01 Mark the cable where it enters the housing or terminal with two B Paper Tape markers 3 inches apart.

7.02 Remove the cable sheath and aluminum wrapper from the upper marker to the end of the cable. Remove the upper marker.

7.03 Sealing clamps together with inner clamps are used to maintain continuity of the aluminum wrapper of the cable between the housing and the terminal.

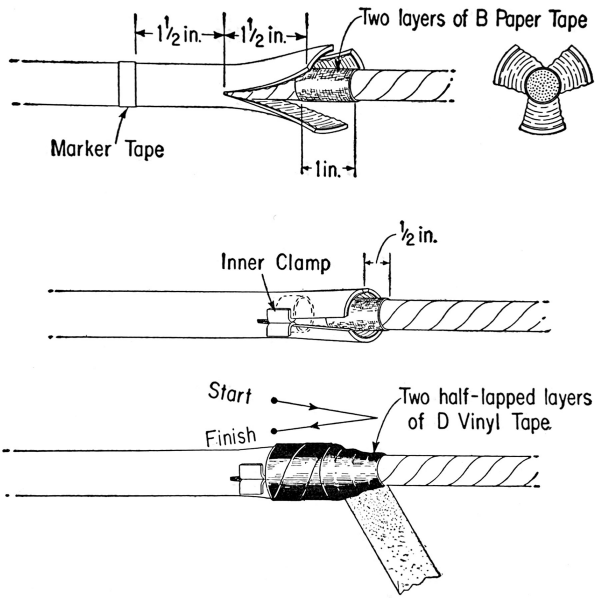
7.04 Ground the cable to the metal of the housing and terminal as follows:

(a) Prepare tabs of approximately equal width by making longitudinal cuts through the polyethylene and metal layers to within 1-1/2 inches of the tape marker.

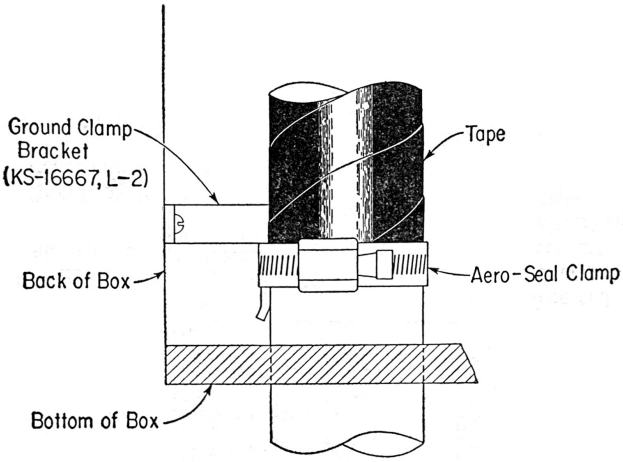
Cable Diameter	Number of Tabs Required
0 — 1″	3
1″ — 1.6″	4
over 1.6″	8

(b) Slip the inner sheath clamp under the tabs and tape the cable as indicated in the following illustration.

Cable Diameter	Clamp Number
0 — 1″	P18A727
1″ — 1.6″	P46A911
over 1.6″	P10C093



7.05 Install the KS-16667, L2 Ground Clamp Bracket in the housing or terminal and fasten with two screws as illustrated below. All surfaces should be carefully cleaned of paint and dirt to insure that a good ground is obtained.



7.06 Place the sealing clamp around the cable and projecting end of the ground clamp and position these two posts so that the inner clamp over the cable core is directly under the sealing clamp. Tighten the clamp.

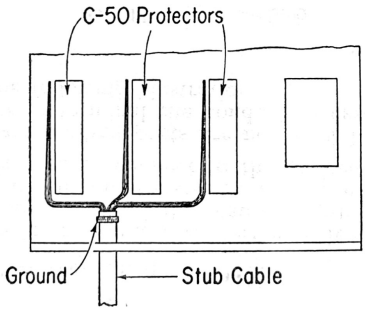
7.07 Remove the inner core wrapper of the cable and terminate as outlined in Part 8.

7.08 Binder groups should be individually marked with either colored identification rings or insulated wire as outlined in Section G50.699.1.

8. TERMINATING STUB CABLE PAIRS

Gfeller Unit

8.01 The cable is arranged on the C50 protectors of the Gfeller unit as shown in the following illustration. The pairs are formed and terminated in accordance with Section G71.136 and Addendum.

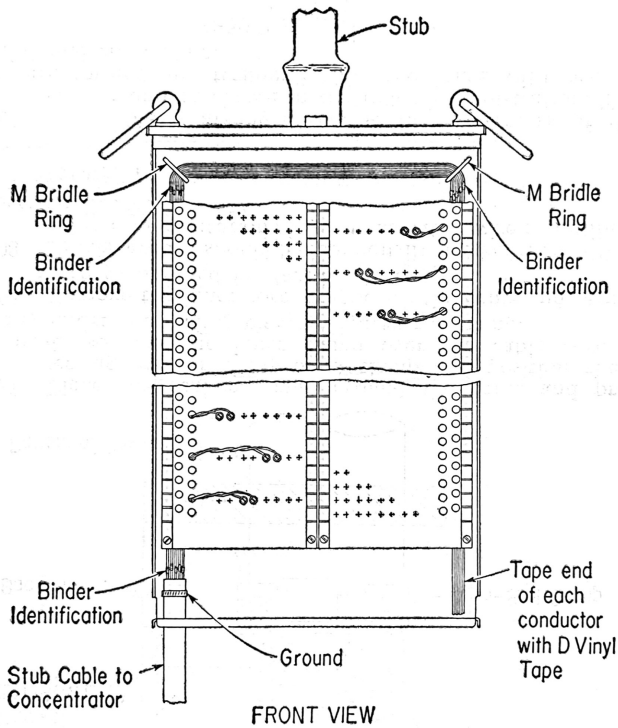


FRONT VIEW

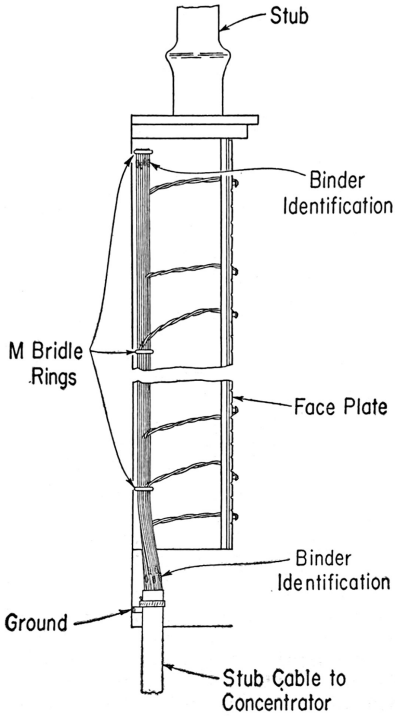
Cross-Connecting Terminal

8.02 At the cross-connecting terminal it is desirable to terminate the stub cable pairs directly on any vacant binding posts which might exist in the terminal. Cross-connecting wire is used to connect to the desired cable pairs.

8.03 If vacant binding posts are not available in the cross-connecting terminal the conductors can be terminated as shown in the following illustrations.



FRONT VIEW



(a) The pairs are formed behind the faceplate to the top of the box, across the top, and then down the other side to the bottom of the box. Six rings, three on each side of the box, are used to form and hold the pairs.

(b) The ends of the conductors are then terminated on the proper binding posts without removing any of the slack wire. The slack wire is formed in the rings. In this manner the conductors are of sufficient length to be reterminated on any binding post in the terminal.

(c) The ends of the conductors not terminated are protected with D Vinyl Tape.

(d) The binder groups should be individually marked with either colored identification rings or insulated wire as outlined in Section G50.699.1.