

KS-22677 CORRAL RAIL
PUBLIC TELEPHONE ENCLOSURE
IDENTIFICATION, INSTALLATION, MAINTENANCE, AND CONNECTIONS

1. GENERAL

1.01 This section provides information on the KS-22677 corral rail public telephone enclosure (Fig. 1).

1.02 Whenever this section is reissued, the reason(s) for reissue will be listed in this paragraph.

1.03 The corral rail is an indoor-outdoor, walk up, and vandal-resistant unit designed for multiple installations of 1- and 3-type coin telephone sets and 10-type coinless telephone sets.

1.04 The corral rail is available with two, three, or four positions side-by-side and four, six, or eight positions side-by-side and back-to-back.

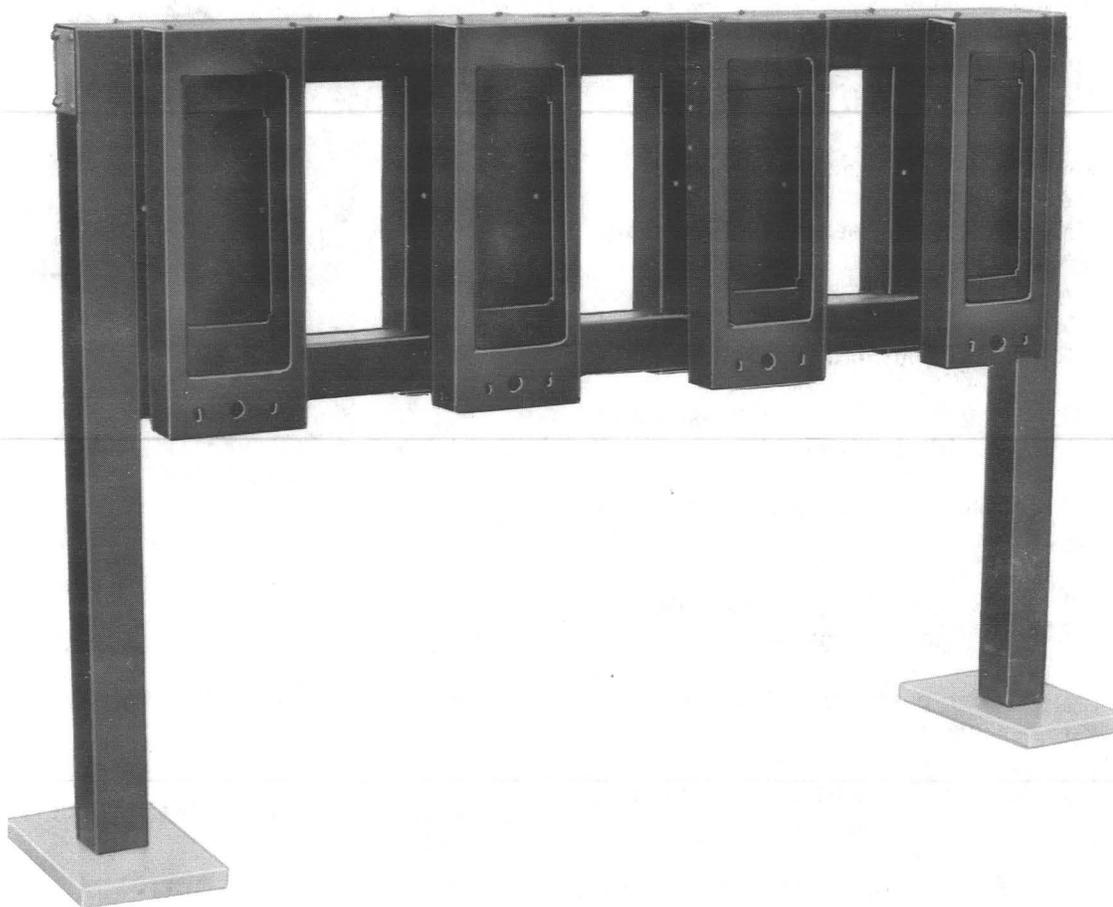


Fig. 1—KS-22677, List 1 Corral Rail

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

2. IDENTIFICATION

Note: For orientation purposes, the vertical leg that contains the circuit breaker will be considered the right side.

2.01 The corral rail consists of two vertical and two horizontal square tubular steel frames. The horizontal tubular frames are equipped with modified KS-20842, List 45 wall mountings.

2.02 The modified wall mounting will accept KS-20842, List 31 (Fig. 2), KS-20842, List 31A (Fig. 3), or KS-20842, List 35A (Fig. 4) housings.

2.03 The frame with wall mountings is available in black only.

2.04 Each vertical tube has a base containing four leveling screws and six 3/4-inch diameter mounting holes (Fig. 5). The hole pattern in this base is identical to the hole pattern in the SENTRY* mounting.

2.05 Aluminum covers enclose the two bases.

2.06 A variety of KS-22677 list numbers are available as follows:

- List 1 — Eight positions, side-by-side and back-to-back without light control
- List 1L — Eight positions, side-by-side and back-to-back with light control
- List 2 — Six positions, side-by-side and back-to-back without light control
- List 2L — Six positions, side-by-side and back-to-back with light control
- List 3 — Four positions, side-by-side and back-to-back without light control
- List 3L — Four positions, side-by-side and back-to-back with light control
- List 11 — Four positions, side-by-side without light control
- List 11L — Four positions, side-by-side with light control



Fig. 2—KS-20842, List 31 Housing

- List 12 — Three positions, side-by-side without light control
- List 12L — Three positions, side-by-side with light control
- List 13 — Two positions, side-by-side without light control
- List 13L — Two positions, side-by-side with light control.

*Trademark of Western Electric

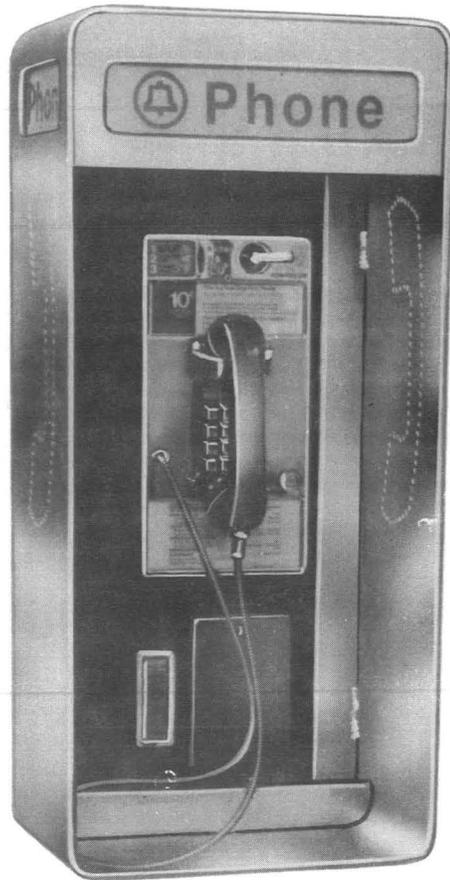


Fig. 3—KS-20842, List 31A Housing

2.07 All corral rails are prewired for electricity and equipped with a KS-19426, List 17 circuit breaker box and circuit breaker (Fig. 6). This circuit breaker is located in one of the vertical tube members near the base (Fig. 7) and is installed by the supplier.

2.08 Each modified KS-20842, List 45 mounting is equipped with an electrical outlet, located in the bottom cavity for connecting the lamps of the KS-20842, List 31, List 31A, or List 35A housings.

2.09 Telephone and electrical wiring can enter the rail from underground through the appropriate vertical legs, from the top of the right leg, or from the top of a mast.

2.10 The right leg contains a divider in the upper portion which allows for the separation of telephone and electrical wiring.

2.11 The top horizontal tubular frame is for the telephone wire run and the bottom horizontal tubular frame is for the electrical wire run.

2.12 A KS-22677, List 10 mast assembly is available for overhead wiring (Fig. 8). It extends 7-2/3 feet above the corral rail frame. Where it is necessary to run a drop wire across a street or parking lot, a KS-22677, List 20 mast extension is available to add another 7-2/3 feet to the List 10 mast (Fig. 9).

2.13 The KS-22677, List 10 mast will accept a KS-20031, List 1 illuminated sign (Fig. 10) or a KS-20135, List 4 or List 5 illuminated sign (Fig. 11). The KS-22677, List 20 mast extension has no provisions for a sign.

2.14 The KS-22677, List 30 mast is available for mounting nonilluminated signs. It also extends 7-2/3 feet above the frame but it is not designed for overhead wiring.

3. INSTALLATION

Note: All versions of the corral rail are installed using the same method.

3.01 Location of public telephone enclosures should be as follows:

- (a) Readily accessible, well lighted, and in full view of public
- (b) Free of such hazards as broken or uneven pavements or surfaces
- (c) Clear of wall switches, outlets, fuse boxes, vents, etc
- (d) In locations with adequate space to permit access for maintenance
- (e) In areas free of potential hazards (such as explosives)
- (f) Spaced with a minimum clearance of 6 inches from property lines.

3.02 Corral rails may be installed on the following:

- (a) Two KS-20842, List 152 buried bases (Fig. 12)
- (b) Masonry surface using two KS-20842, List 178 kits (Fig. 13)

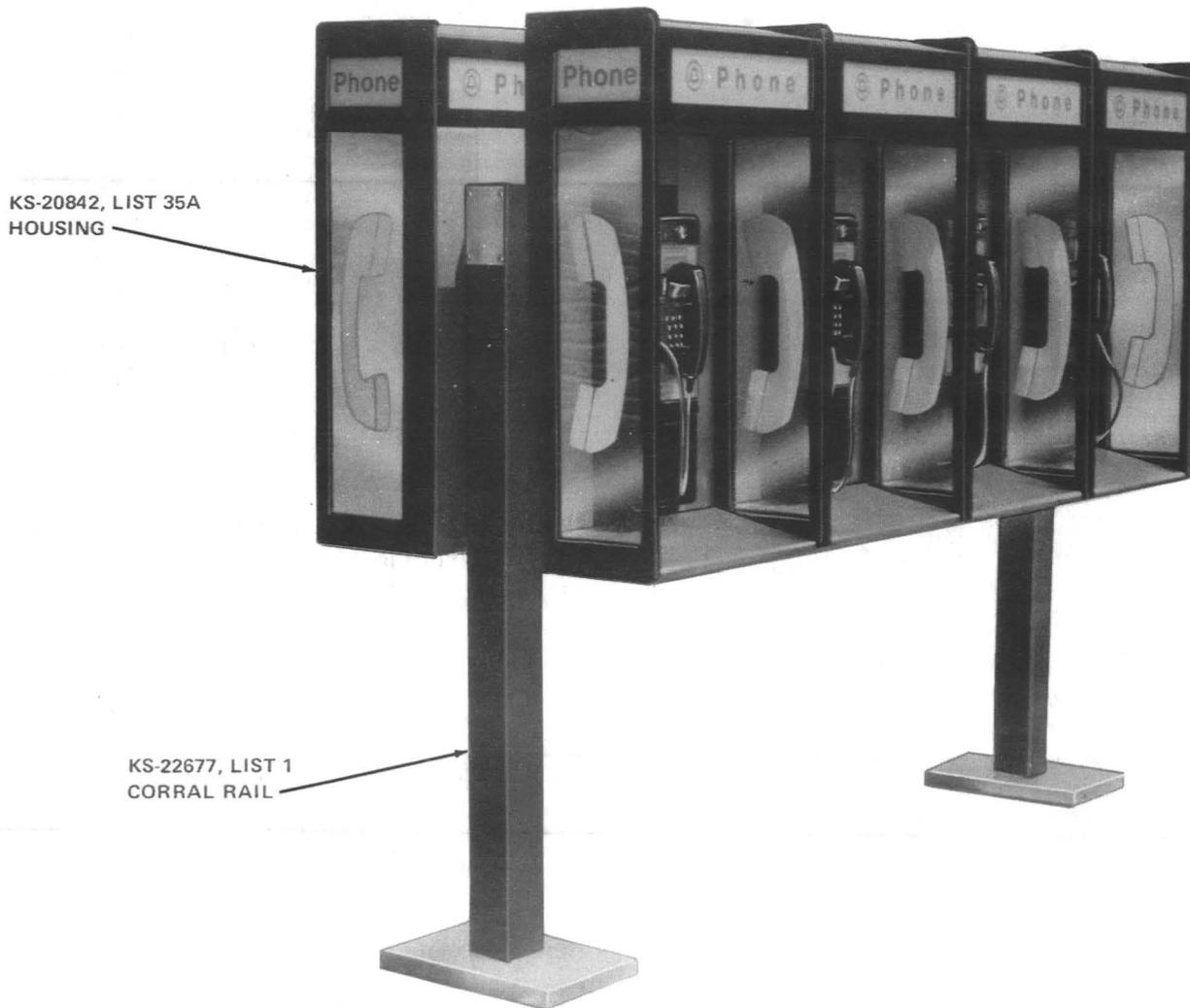


Fig. 4—KS-20842, List 35A Housings Installed on a KS-22677 Corral Rail

(c) Wood surface using lag bolts.

3.03 Ensure that all requirements set forth by local regulations are met.

3.04 It is recommended that all new concrete foundations utilize two KS-20842, List 152 buried bases (Fig. 12) where possible.

KS-20842, LIST 152 BURIED BASES

Note: A locating fixture can be fabricated locally to facilitate alignment of the List 152 buried bases. The fixture shown in Fig. 14 is recommended.

3.05 Install KS-20842, List 152 buried bases as follows:

(1) Refer to the dimensions in Fig. 15 and prepare two 24-inch cube positions to accept the KS-20842, List 152 buried bases. It may be necessary to build forms if the soil is too soft.

(2) Attach two KS-20842, List 152 buried bases to the locating fixture utilizing the positions on the fixture to correspond to the dimensions in Fig. 15. Use the hardware furnished with the bases.

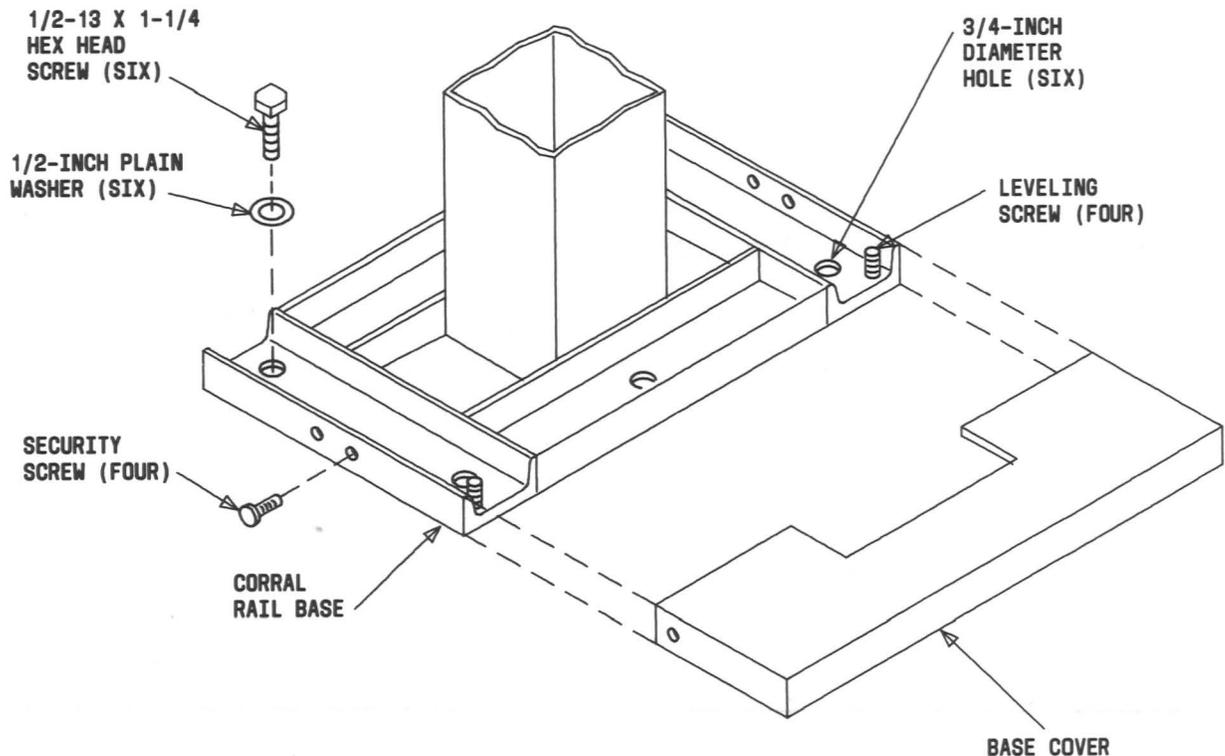


Fig. 5—Base of Corral Rail Leg

- (3) Insert plastic pugs (furnished with bases) in the remaining holes of the bases.
- (4) Place bases in the forms.
- (5) If underground power and telephone wires are to be used, provide conduit before pouring concrete. Power Wiring shall enter through the right leg and telephone wiring through the left leg.
- (6) When required, install ground rod in the right base before pouring concrete.
- (7) Ensure that conduits and ground rod are located properly to enter post opening. Leave ground rod 4 to 5 inches above the surface with a minimum of 8 feet in the soil.
- (8) Ensure that the bases are level. This can be accomplished by adding shims under the bases or under the fixture between the bases.
- (9) Pour concrete (including reinforcement rods when required) and ensure that concrete is flush with top of bases.

3.06 Install the corral rail on the buried bases as follows:

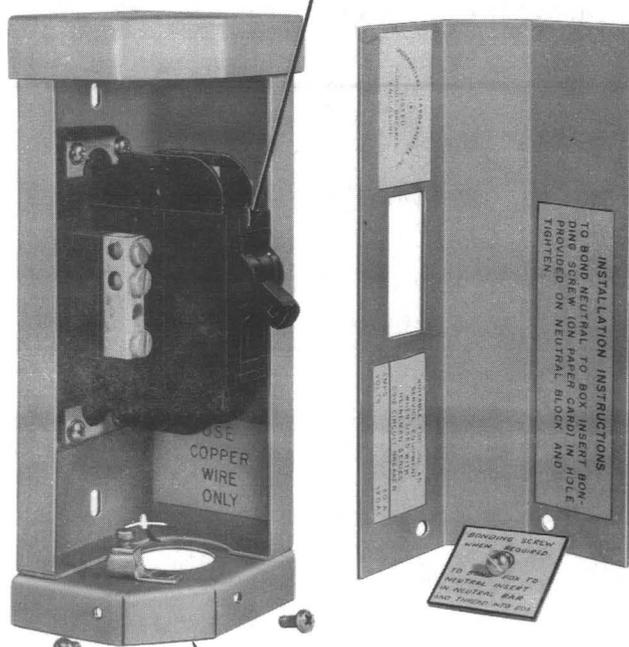
- (1) Using the six 1/2-13 by 1-1/4 hex head machine screws and six 1/2-inch plain washers furnished with each buried base, install the corral rail (Fig. 16). Make sure the corral rail leg containing wireways for power and telephone wires is positioned over the appropriate buried base.
- (2) Using the four leveling screws in each leg base, level the corral rail.

SURFACE MOUNTINGS

3.07 Before installing a corral rail on an existing surface, determine if the foundation is adequate as follows:

- (a) Surfaces are in good condition showing no visible evidence of deterioration such as chipping or cracking.
- (b) The minimum dimensions for an installation on masonry surfaces are as shown in Fig. 17.

CIRCUIT BREAKER:
HEINEMAN ELECTRIC CO.
NO. 0912, 120 VOLT AC,
15 AMP, CURVE 3,
SINGLE POLE (CAT NO. 91-106-1)



KS-19426, L17
CIRCUIT BREAKER
BOX ASSEMBLY

Fig. 6—Circuit Breaker Box With Circuit Breaker Installed

(c) Wooden surfaces are a minimum of 2 inches thick.

A. Masonry Surfaces, Using KS-20842, List 178 Mounting Kit

3.08 For new masonry surfaces, prepare a foundation as shown in Fig. 17.

3.09 Install the corral rail as follows:

- (1) Using the corral rail as a template, mark the location for 12 mounting holes. Set the rail aside.
- (2) **DANGER: Eye injury could occur when drilling.** Using a 5/8-inch concrete drill bit, drill the 12 marked holes to a depth of 2 inches.

(3) Use the KS-20842, List 178 mounting kits. Insert the 12 drop-in anchors using a Hilti HSD12 setting tool or equivalent.

(4) Secure the corral rail to the anchors using the twelve 1/2-13 by 1 hex head bolts and twelve 1/2-inch plain washers from the List 178 mounting kit.



The corral rail must be level to ensure proper coin telephone operation. Use the four leveling screws in each leg for this purpose.

B. Wooden Surfaces Using Lag Bolts

3.10 Install a corral rail on a wooden surface as follows:

- (1) Place the corral rail in the exact position of installation and mark the location for 12 mounting holes. Set the rail aside.
- (2) **DANGER: Eye injury could occur when drilling.** Using a 1/2-inch drill bit, drill the marked holes to a depth of 2 inches.
- (3) Secure the corral rail to the floor using twelve 5/8 by 3 hex head lag bolts and twelve 5/8-inch plain washers.



The corral rail must be level to ensure proper coin telephone operation. Use the four leveling screws in each leg for this purpose.

HOUSINGS

3.11 Three different housings can be used with the corral rail as follows:

- KS-20842, List 31
- KS-20842, List 31A
- KS-20842, List 35A.

Note: If a mast assembly is to be installed, install the mast before the housings (paragraph 3.15).

A. KS-20842, List 31 Housing (Fig. 18)

3.12 Install a KS-20842, List 31 housing as follows.

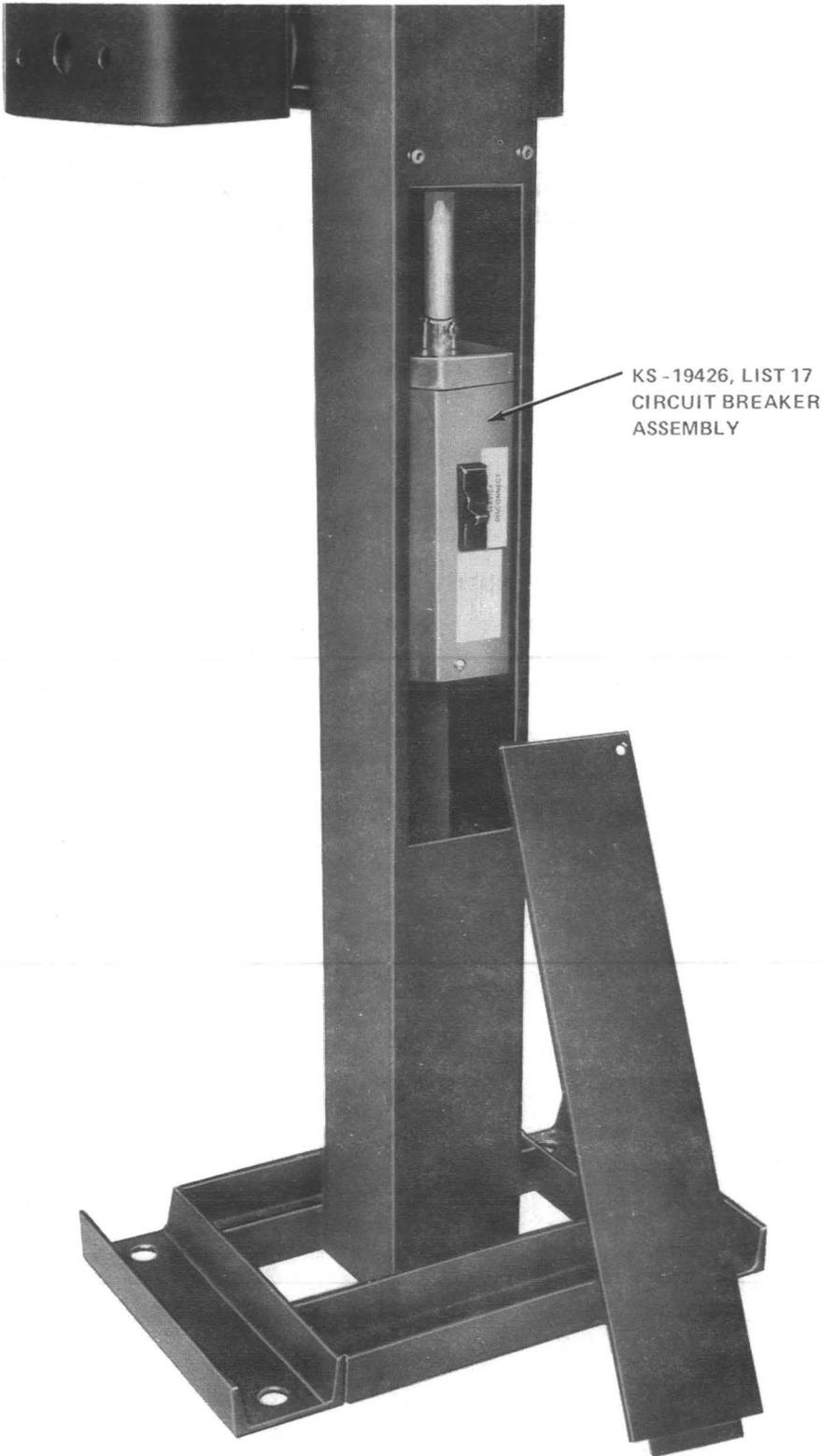


Fig. 7—Circuit Breaker Box Assembly Installed in Corral Rail

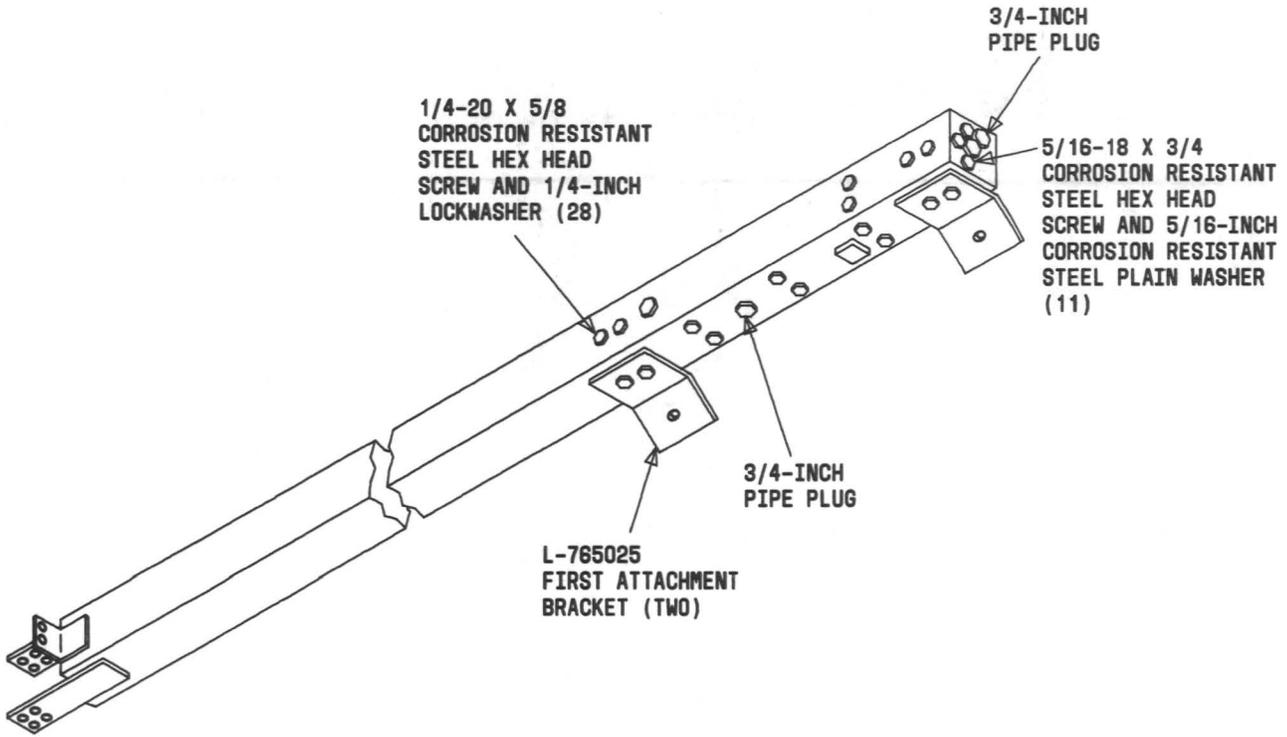


Fig. 8—KS-22677, List 10 Mast

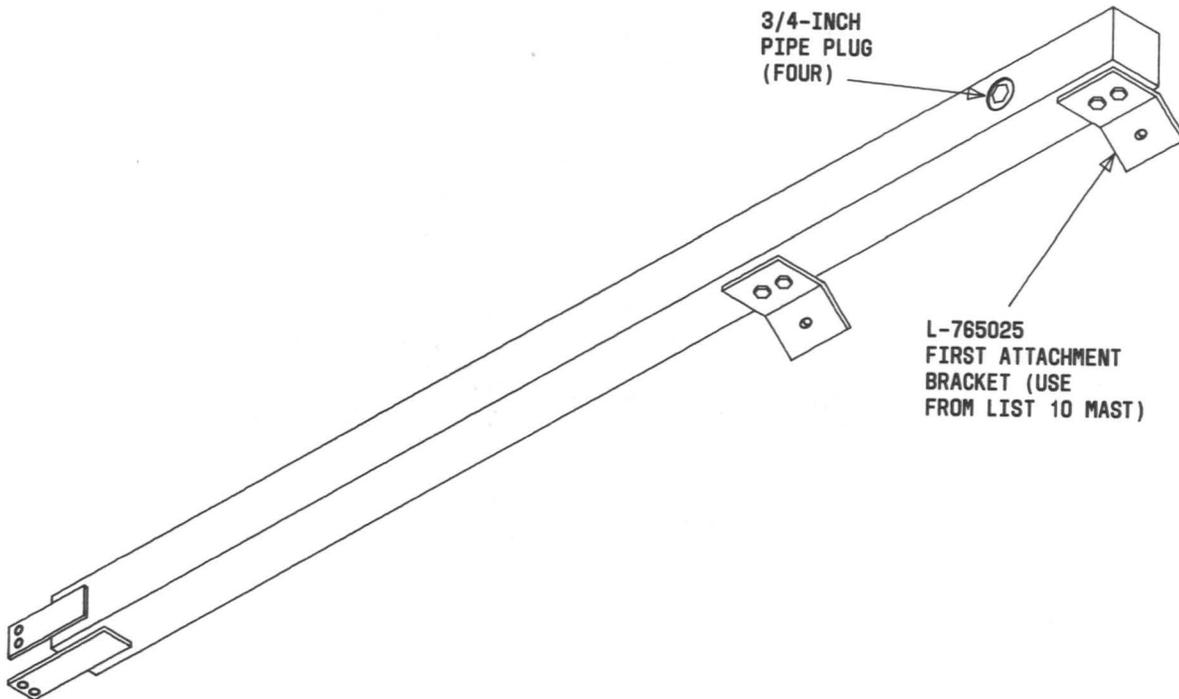


Fig. 9—KS-22677, List 20 Mast Extension

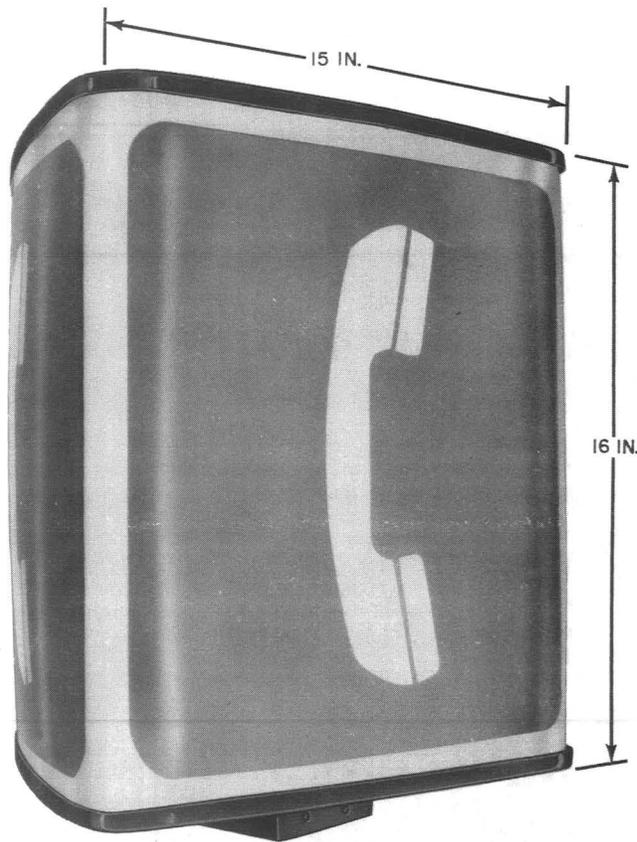


Fig. 10—KS-20031 Sign

- (1) Using a KS-19192, List 1 wrench, remove the two security screws from top of housing and loosen the two security screws at rear of diffuser. Remove diffuser.
- (2) **DANGER: Eye injury could occur if fluorescent lamp is broken.** Remove the two fluorescent lamps from the light fixture.
- (3) Remove the two 5/16-18 by 1 hex head screws and two 5/16-inch flat washers from lower rear of housing and remove the L-765034 cover.
- (4) Remove two 3/8-16 by 1-1/2 hex head screws and two 3/8-inch flat washers from top outside corners of the mounting.
- (5) Using a KS-19192, List 1 wrench, remove two flathead security screws from bottom access cover of the mounting. Remove the cover.

- (6) Position housing on mounting while carefully guiding the electrical cord through the cable hole in bottom of the mounting.
- (7) Secure top of housing to mounting using the two 3/8-16 by 1-1/2 hex head screws and two 3/8-inch flat washers removed in Step (4). Do not tighten the screws.
- (8) Secure lower part of housing to mounting using the two 5/16-18 by 1 hex head screws, two 5/16-inch flat washers, and L-765034 cover removed in Step (3).
- (9) Tighten the two screws installed in top of housing.
- (10) Plug the electrical cord into the receptacle provided in bottom of mounting.
- (11) Using a KS-19192, List 1 wrench, install bottom access cover on the mounting using the two security screws removed in Step (5).
- (12) Install the two fluorescent lamps in the light fixture.
- (13) Install diffuser in housing and tighten the two security screws at rear of diffuser. Install the two security screws removed in Step (1) and secure top of diffuser.

B. KS-20842, List 31A Housing (Fig. 19)

3.13 Install a KS-20842, List 31A housing as follows:

- (1) Using a KS-19192, List 1 wrench, remove two security screws from rear of diffuser. Slide the diffuser to the rear and remove.
- (2) **DANGER: Eye injury could occur if fluorescent lamp is broken.** Remove the two fluorescent lamps from the light fixture.
- (3) Repeat the procedures outlined in paragraph 3.12, Steps (3) through (12).
- (4) Install diffuser in housing and secure it with the two security screws removed in Step (1) using a KS-19192, List 1 wrench.

C. KS-20842, List 35A Housing (Fig. 20)

3.14 Install a KS-20842, List 35A housing as follows.

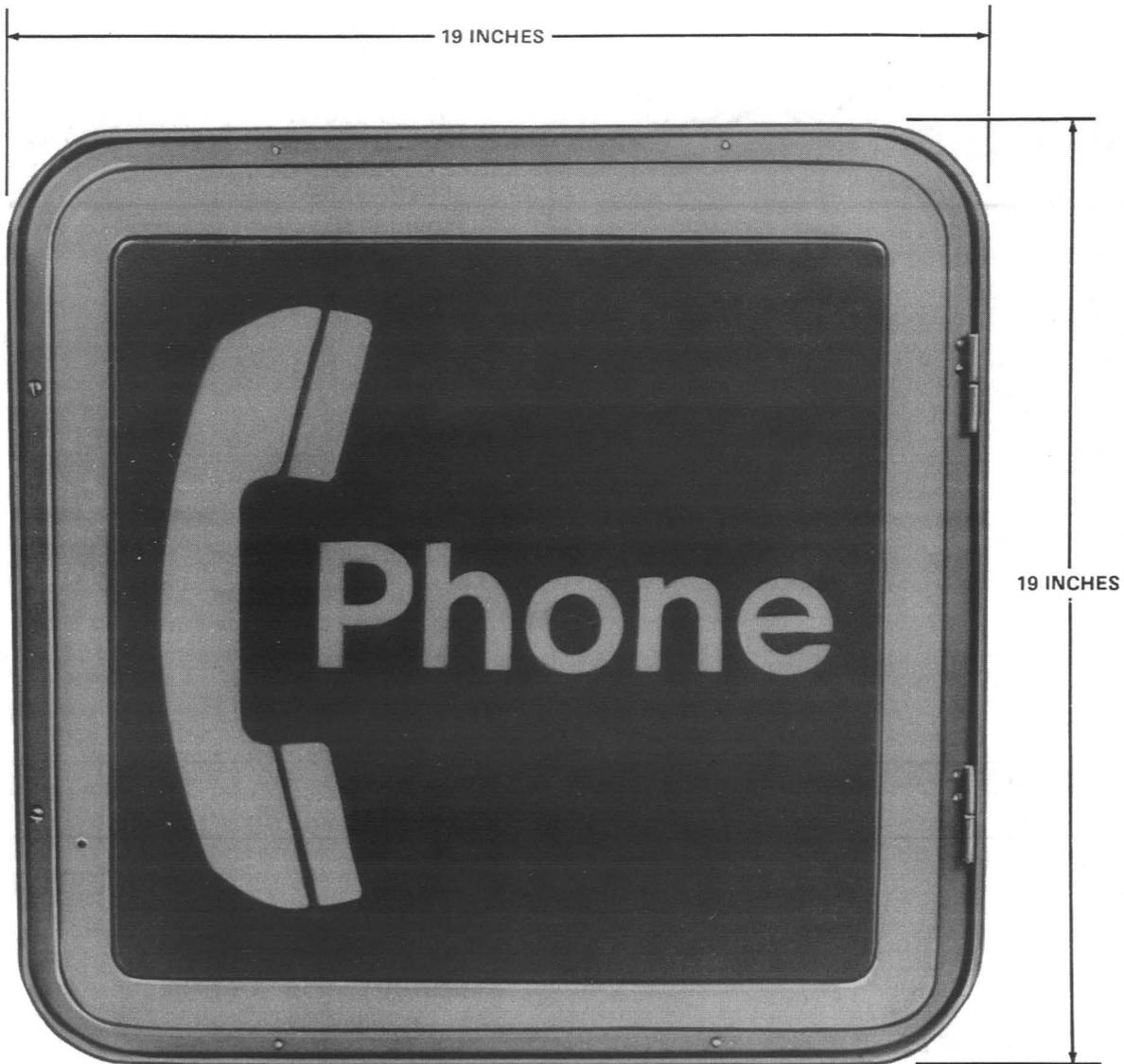


Fig. 11—KS-20135, List 4 or List 5 Sign

- (1) Using a KS-19192, List 1 wrench, loosen two fasteners and remove the front bezel assembly.
- (2) Slide the diffuser forward and remove.
- (3) **DANGER: Eye injury could occur if fluorescent lamp is broken.** Remove the two fluorescent lamps.
- (4) Remove two hex head screws and two flat washers from rear of housing at shelf level.
- (5) Remove the center front hex head screw and flat washer from top of mounting. Invert the screw and install it back in the same hole from the opposite side for use as a locating stud.
- (6) Remove the two outside front hex head screws and two flat washers from front top of mounting. Discard the screws.
- (7) Using a KS-19192, List 1 wrench, remove two flathead security screws from bottom access cover of the mounting. Remove the cover.

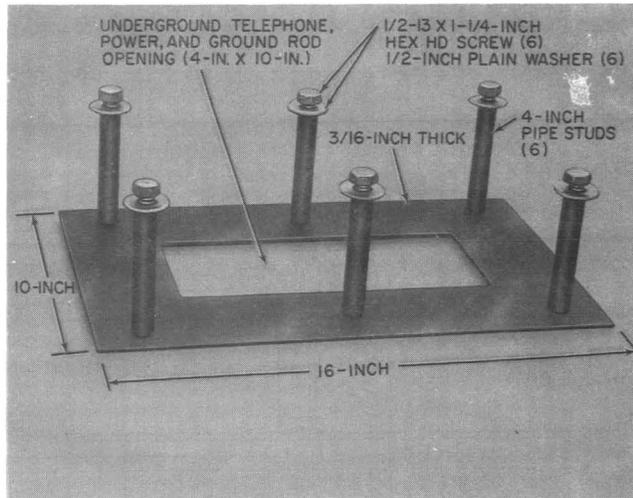


Fig. 12—KS-20842, List 152 Buried Base

(8) Utilizing the locating stud provided in Step (5), position housing on mounting while carefully guiding the electrical cord through the cable hole in bottom of the mounting.

(9) Secure top portion of housing to mounting using two 3/8-16 by 5-1/2 hex head screws (procured locally) and the two 3/8-inch flat washers removed in Step (6). Tighten screws only finger tight.

(10) Secure the lower portion of housing to mounting using the two 5/16-18 by 3/4 hex head screws and two 5/16-inch flat washers removed in Step (4).

(11) Using a deep 9/16-inch socket wrench, tighten the two 3/8-16 by 5-1/2 hex head screws installed in top of housing.

(12) Install the two fluorescent lamps.

(13) Plug the electrical cord into the electrical receptacle provided in lower portion of mounting.

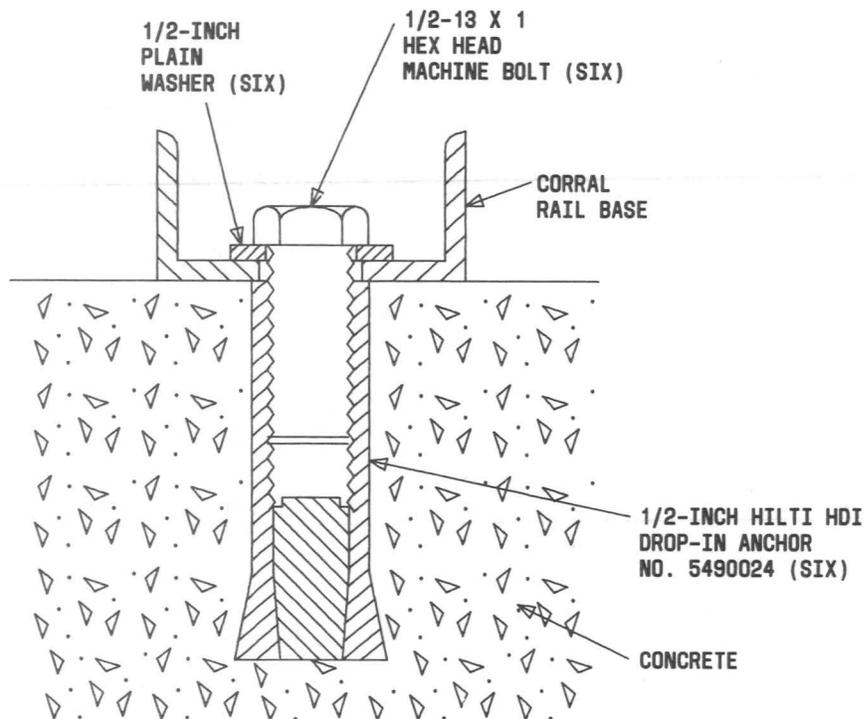
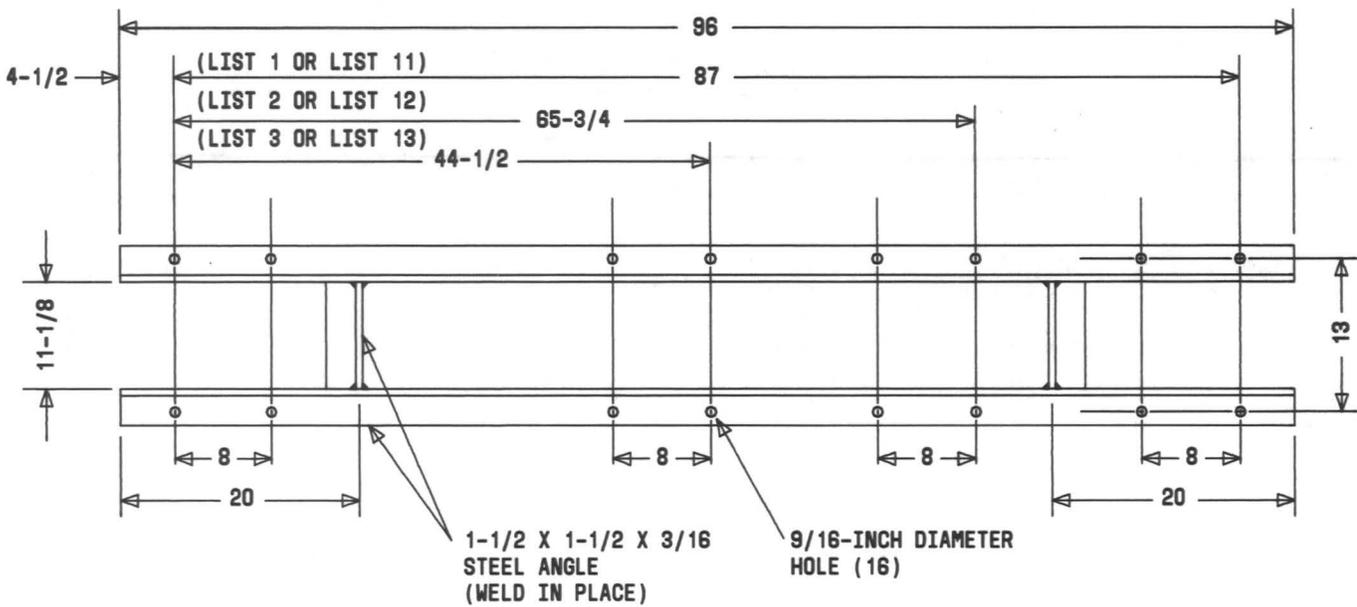


Fig. 13—KS-20842, List 178 Kit (Installed)



NOTE: ALL DIMENSIONS SHOWN
 ARE IN INCHES

Fig. 14—Locating Template

(14) Using a KS-19192, List 1 wrench, install bottom access cover on the mounting using the two security screws removed in Step (7).

(15) Install light diffuser and secure it with the front bezel assembly.

ASSOCIATED APPARATUS

A. KS-22677, List 10 Mast Assembly

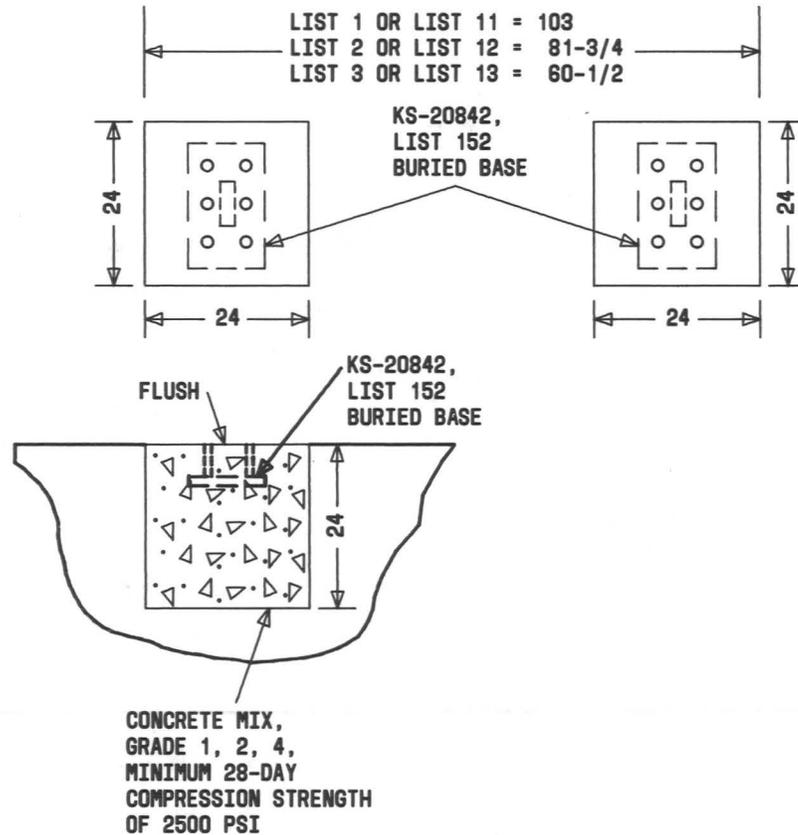
3.15 The mast assembly is installed on top of the right leg as follows:

- (1) Remove ten 5/16-18 by 3/4 hex head screws and ten 5/16-inch flat washers from corral rail (two from top and four from each side [Fig. 21]).
- (2) Remove two pipe plugs from top of corral rail.
- (3) Install telephone and electrical wiring in mast.
- (4) Install mast on corral rail and secure it with the ten 5/16-18 by 3/4 hex head screws and ten flat washers removed in Step (1) (Fig. 22).

B. KS-22677, List 20 Mast Extension

3.16 The KS-22677, List 20 mast extension should be used on top of the List 10 mast when electrical and telephone wires cross a road, parking lot, etc. Maximum span of wire should not exceed 100 feet. Install as follows:

- (1) Remove two pipe plugs from top of List 10 mast.
- (2) Remove eight 1/4-20 by 5/8 hex head screws, eight 1/4-inch lockwashers, eight 5/16-18 by 3/4 hex head screws, and eight 5/16-inch plain washers from the four sides of the List 10 mast at top (Fig. 23).
- (3) Install telephone and electrical wiring in List 20 mast extension and List 10 mast.
- (4) Orient the List 20 mast extension on the List 10 mast so the short bracket will align with a flange on the mast. Secure the mast extension using the eight 5/16-18 by 3/4 hex head screws and eight 5/16-inch plain washers removed in Step (2).



NOTE:
ALL DIMENSIONS SHOWN ARE IN INCHES.

Fig. 15—Installation of KS-20842, List 152 Buried Bases

C. KS-22677, List 30 Mast Assembly

3.17 Install the mast assembly on top of the electrical leg as follows:

- (1) Remove six 5/16-18 by 3/4 hex head screws and six 5/16-inch plain washers from corral rail (two from top and two from each side [Fig. 21]).

Note: The List 30 mast assembly mounts similar to the List 10 mast assembly (Fig. 22) except only two screws are used on each side.

- (2) Install the mast on the corral rail and secure it with the six 5/16-18 by 3/4 hex head screws and six 5/16-inch flat washers removed in Step (1).

D. Illuminated Signs

3.18 The KS-22677, List 10 mast will accept a KS-20031, List 1 sign (Fig. 10) on top or a KS-20135, List 4 or List 5 sign (Fig. 11) on the side. The KS-22677, List 20 mast extension will not accept either. When the extension is used, the KS-20135 sign can still be installed on the List 10 mast. Refer to Section 508-810-202 for complete information on the signs.

E. Nonilluminated Signs

3.19 The KS-22677, List 30 mast will accept a KS-20063, List 1 or List 2 sign on four sides of mast. Refer to Section 508-810-205 for complete information on the signs. Mounting hardware is furnished with the List 30 mast assembly.

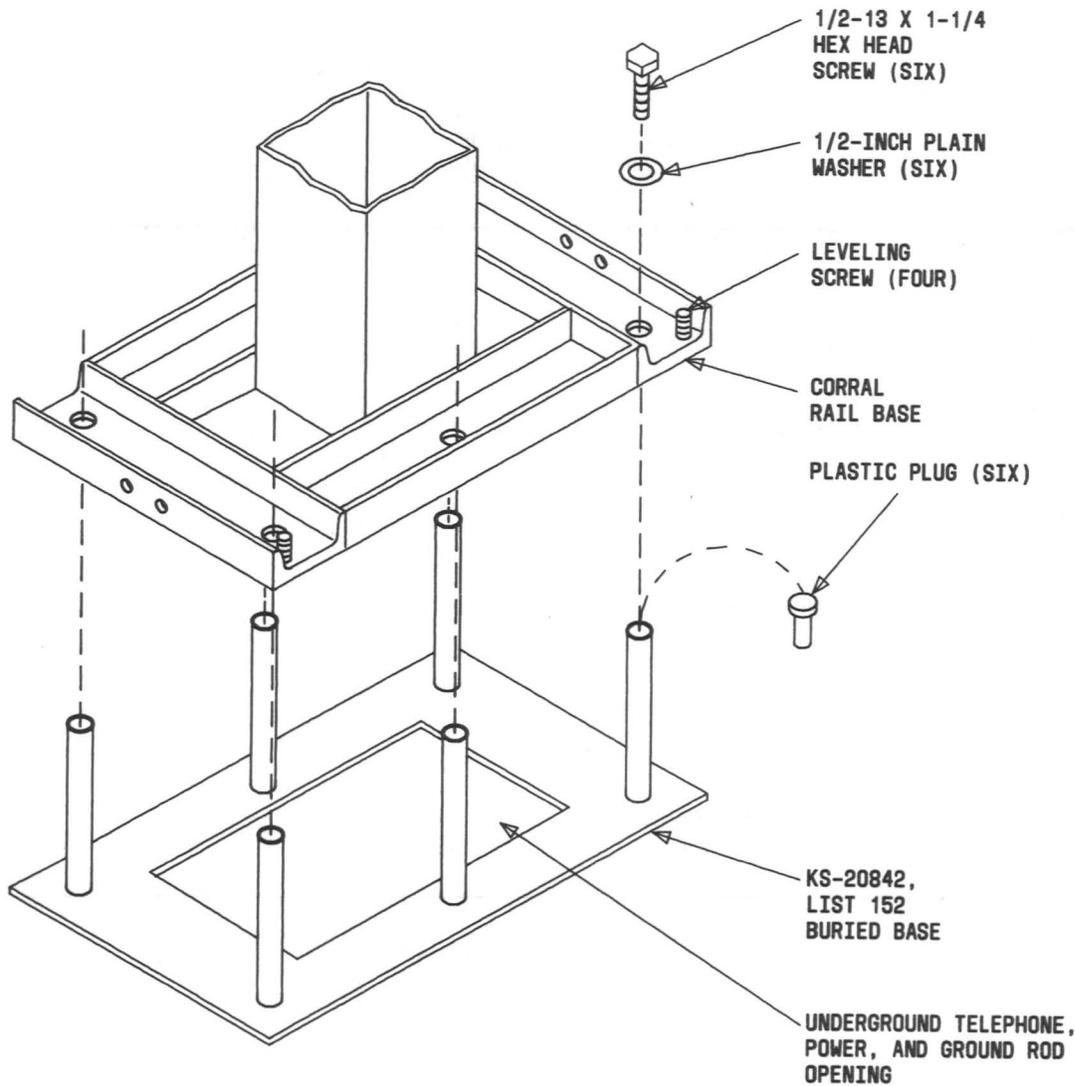


Fig. 16—Securing Corral Rail Leg to Buried Base

F. Directory Hangers/Facilities

3.20 A KS-21435, List 1 directory facility can be installed under a KS-20842, List 31 or List 31A housing (Fig. 24). Use four No. 10-32 by 3/8 flathead security screws furnished with the facility.

3.21 A KS-21435, List 2 directory facility can be installed under a KS-20842, List 35A housing (similar to Fig. 24). Use four No. 10-32 by 3/8 round-head security screws and four No. 10 lockwashers furnished with the facility.

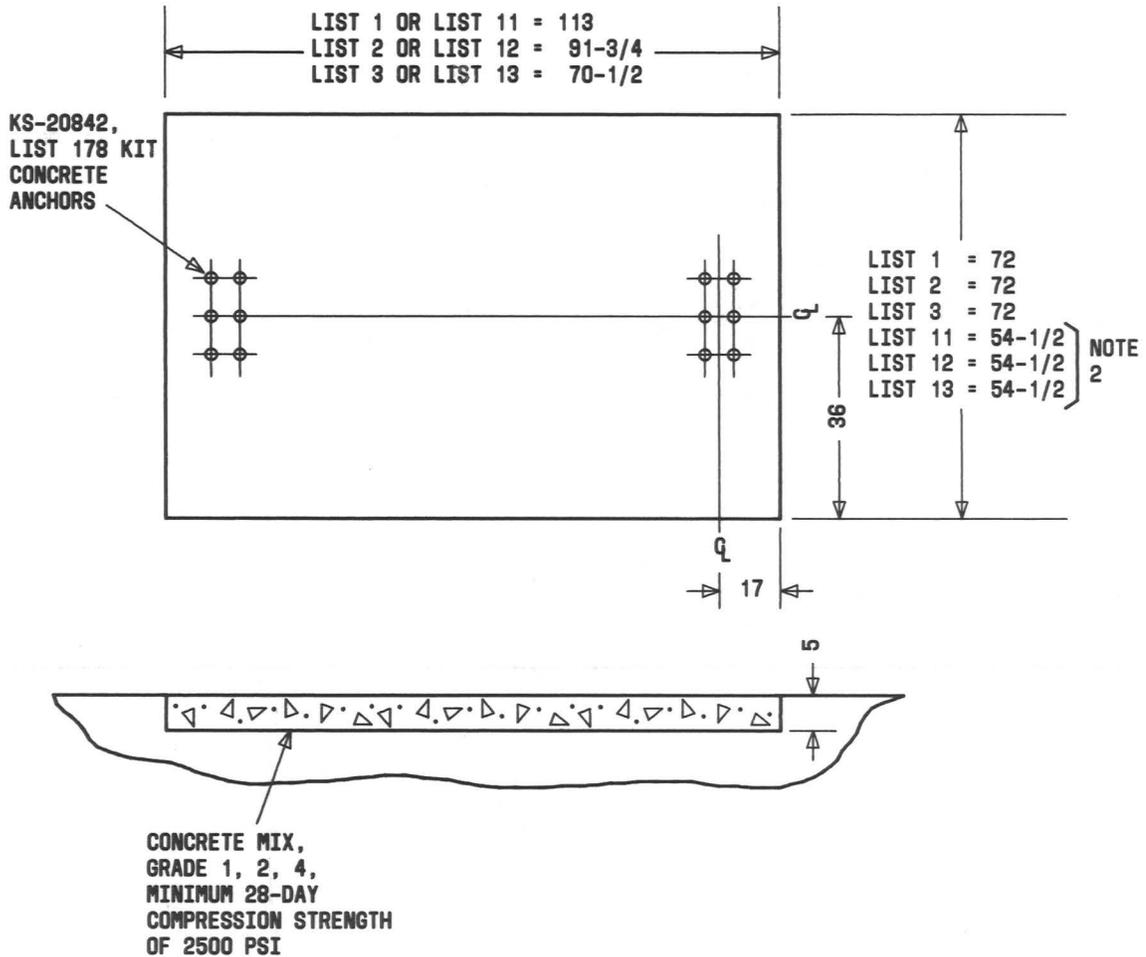
3.22 A KS-20030, List 10 directory hanger can be

installed on a KS-20842, List 31 or List 31A housing. Refer to Section 508-710-102 for complete information.

3.23 A KS-20030, List 11, List 12, or List 13 can be installed on a KS-20842, List 35A housing. Refer to Section 508-710-102 for complete information.

G. KS-20842, List 75 Cover Assembly

3.24 A KS-20842, List 75 cover assembly can be installed on a KS-20842, List 31 housing when



NOTES:

1. ALL DIMENSIONS SHOWN ARE IN INCHES.
2. IF THE CORRAL RAIL IS TO BE MOUNTED AGAINST A WALL, SHORTEN THIS DIMENSION BY 10 INCHES.

Fig. 17—Installation of KS-20842, List 178 Kit

it is out of service. Install as shown in Fig. 25. All components are furnished.

Note: The L-765095 shim is not used when a KS-20030, List 10 directory hanger exists. The List 75 cover assembly cannot be used if a KS-21435, List 13 directory facility exists.

WIRING AND GROUNDING

3.25 Ensure that the station protection in each KS-20842, List 45 mounting is properly bonded to the frame.. Refer to Section 508-100-100 for com-

plete grounding information. Refer to Fig. 26 for protection requirements.

3.26 Ensure that the electrical contractor installs electrical wiring to conform with current requirements of the National Electrical Code (NEC), Government Agencies, and company standards. Telephone wiring shall not be installed in a location where minimum separation from other wiring, as specified in Division 460, cannot be maintained.

Note: Under no circumstances shall any makeshift or temporary electrical connections

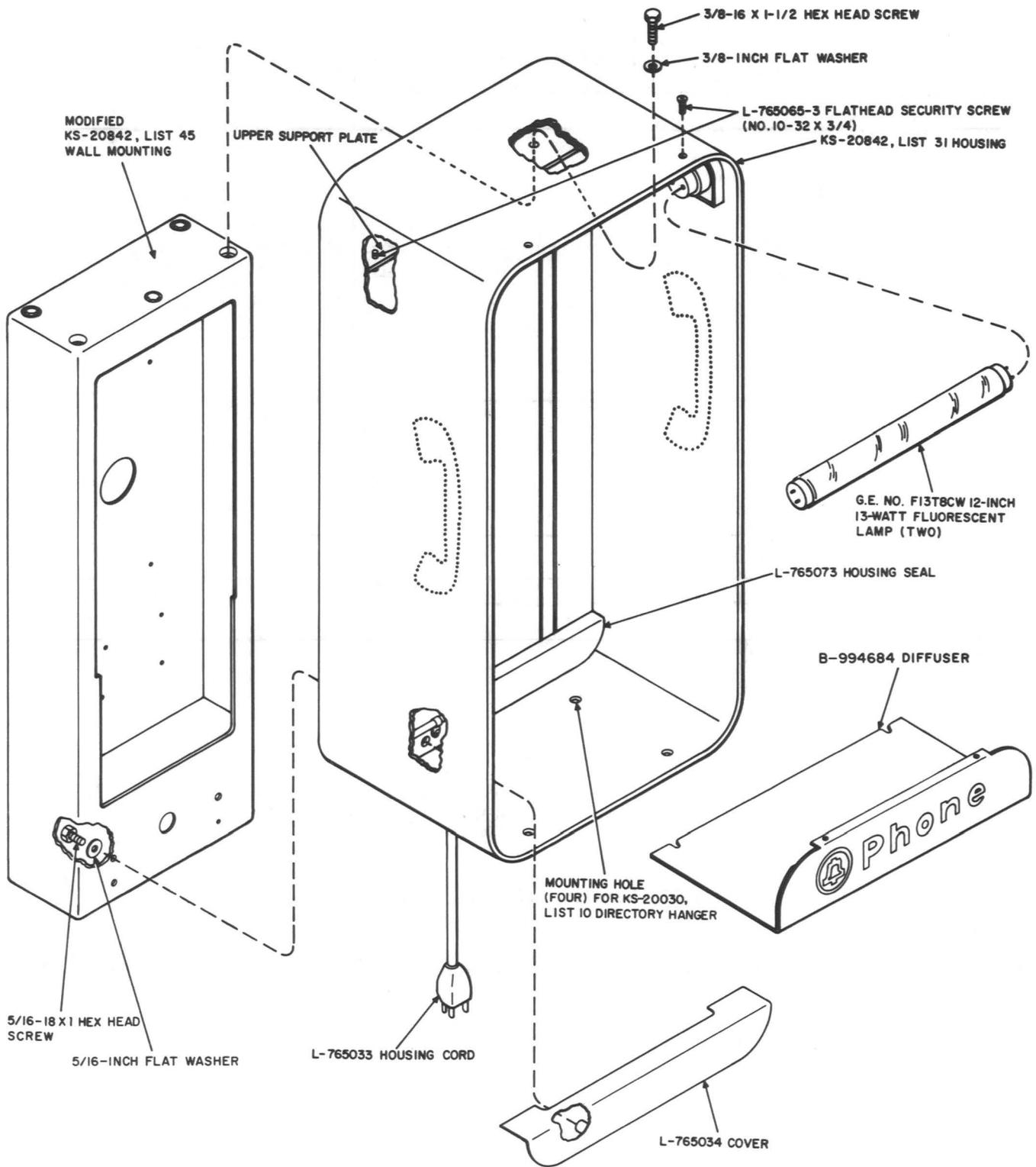


Fig. 18—Installation of KS-20842 List 31 Housing

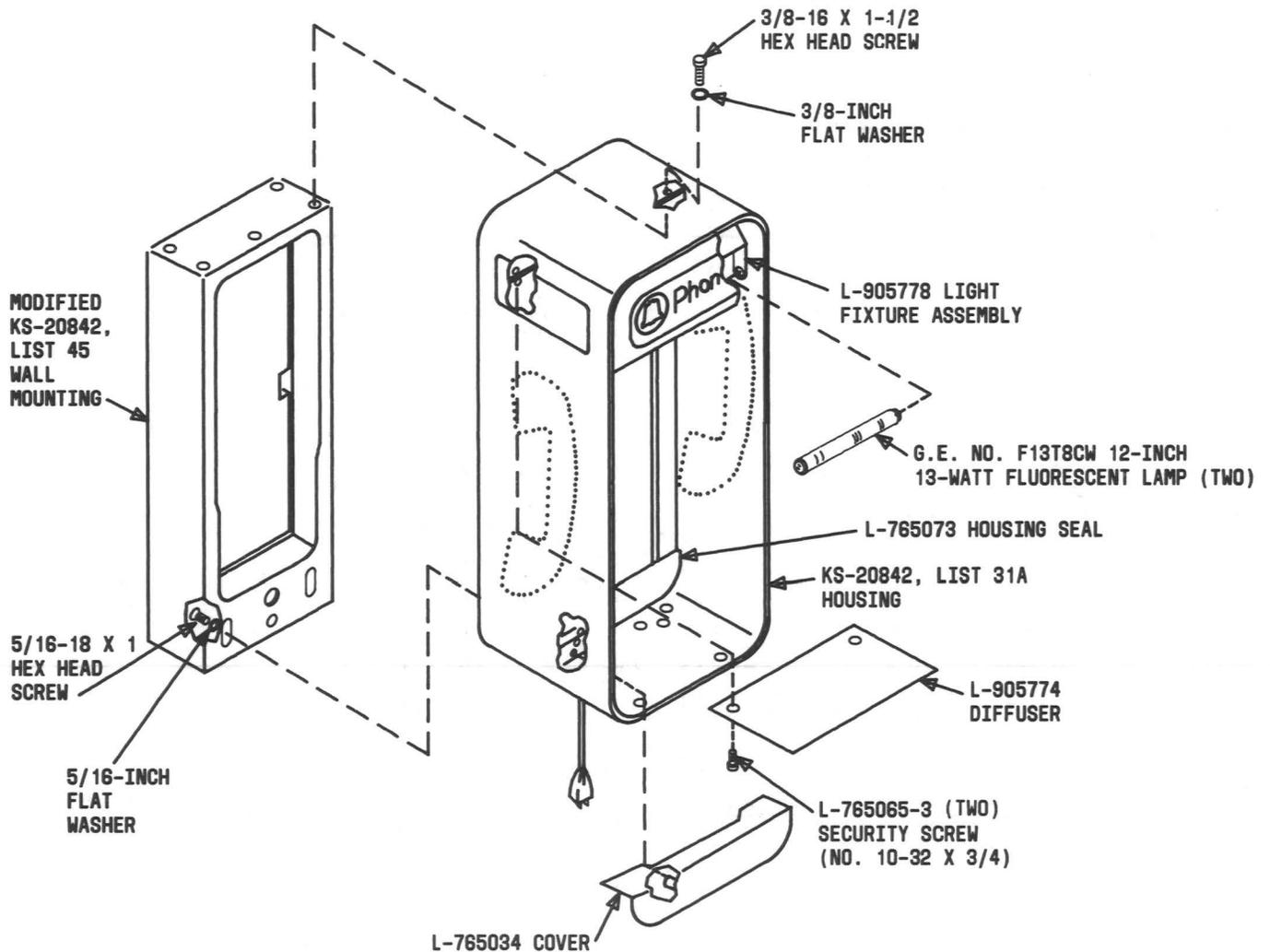


Fig. 19—Installation of KS-20842, List 31A Housing

be made on lighting equipment. Before making any repair or replacements in electrical equipment, make sure the circuit is dead. Wear eye protection when handling fluorescent lamps.

3.27 Telephone and electrical wiring for the corral rail can enter the rail from the top (Fig. 21), underground, or through a mast. An opening exists on the left end of the top horizontal rail for gaining access to the telephone wiring.

3.28 A KS-19426, List 17 service entrance box (Fig. 7) is provided in one vertical leg. The service box is equipped with a Heineman Electric Co., No. 0912 single-pole circuit breaker, 120-volt ac, 15 ampere, time delay curve No. 3, catalog No. 91-106-1

(Fig. 6). Ensure that the circuit breaker is properly tied to the ground rod (if applicable) with no less than No. 12 AWG wire.

3.29 For underground entrance, the telephone wiring shall enter the left leg and electrical wiring shall enter the right leg.

3.30 For above ground entrance, the upper right corner provides two openings and channels, the outside channel for electrical and the inside channel for telephone wiring.

3.31 The top horizontal rail provides the telephone wire run. The bottom horizontal rail provides the electrical wire run.

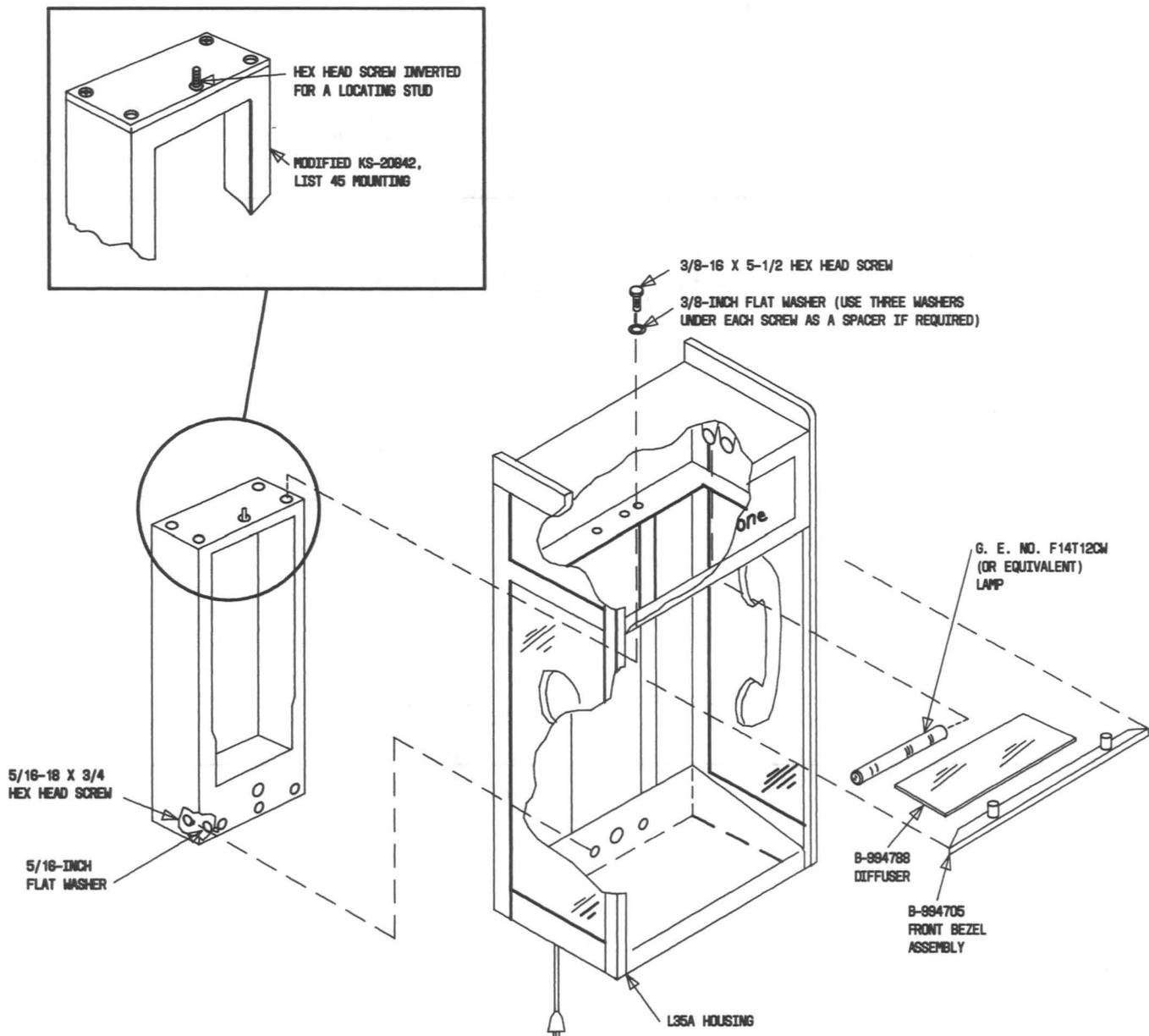


Fig. 20—Installation of KS-20842, List 35A Housing

3.32 The corral rail is prewired from the service entrance box to electrical connectors in each KS-20842, List 45 mounting. Incoming power must be provided locally to the service entrance box.

3.33 Install a 123-type protector (furnished locally) in the bottom of each KS-20842, List 45 mounting. If gas tubes are required, use 123E1A protector.

3.34 The KS-22677, List 10 mast is equipped with brackets for the first attachment; top bracket for electrical power and bottom bracket for telephone drop. When a KS-22677, List 20 mast extension is used, remove the first attachment brackets from the List 10 mast and install them on the List 20 extension.

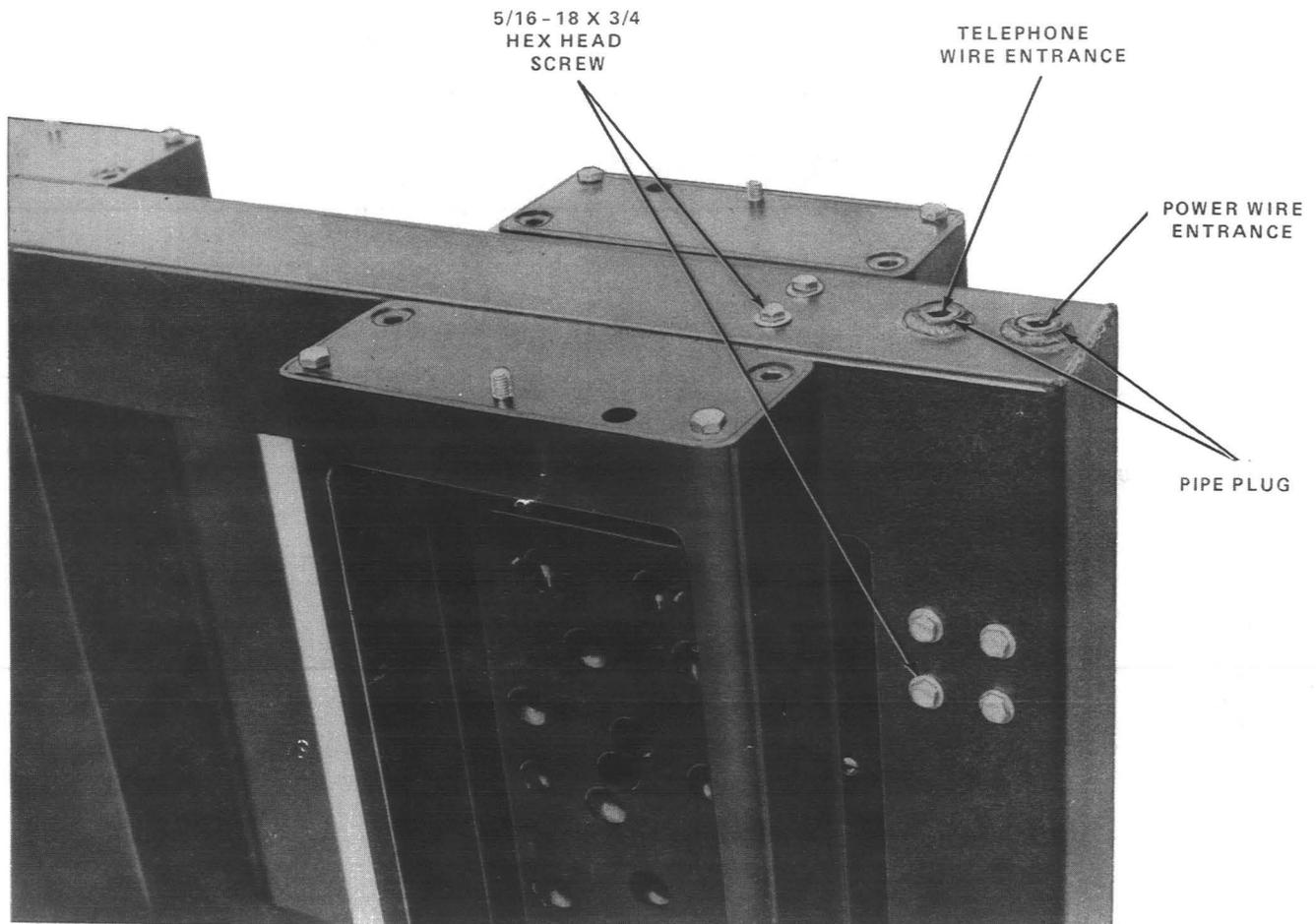


Fig. 21—Mounting Position of Mast

3.35 Each KS-22677, List 1L, 2L, 3L, 11L, 12L, and 13L corral rail is equipped with a prewired light control unit.

TELEPHONE SETS

3.36 Install 1A-, 1C-, or 1E-type coin telephone set in accordance with Section 506-410-400.

3.37 Install 1D-type coin telephone set in accordance with Task Oriented Practice (TOP) 506-410-402.

3.38 Install 3A2 coin telephone set in accordance with Section 506-410-403.

3.39 Install 10A or 10B coinless public telephone set in accordance with Section 506-500-100.

BOTTOM COVERS

3.40 After all components and associated items are installed, install the covers over the feet of the corral rail using the security screws and a KS-19192, List 1 wrench.

4. MAINTENANCE

4.01 Maintenance of the corral rail consists of replacing the bottom covers (paragraph 3.40), or mast(s) (paragraphs 3.15, 3.16, and 3.17).

4.02 Refer to Section 508-452-102 for maintenance on the KS-20842, List 31, List 31A, and List 35A housings.

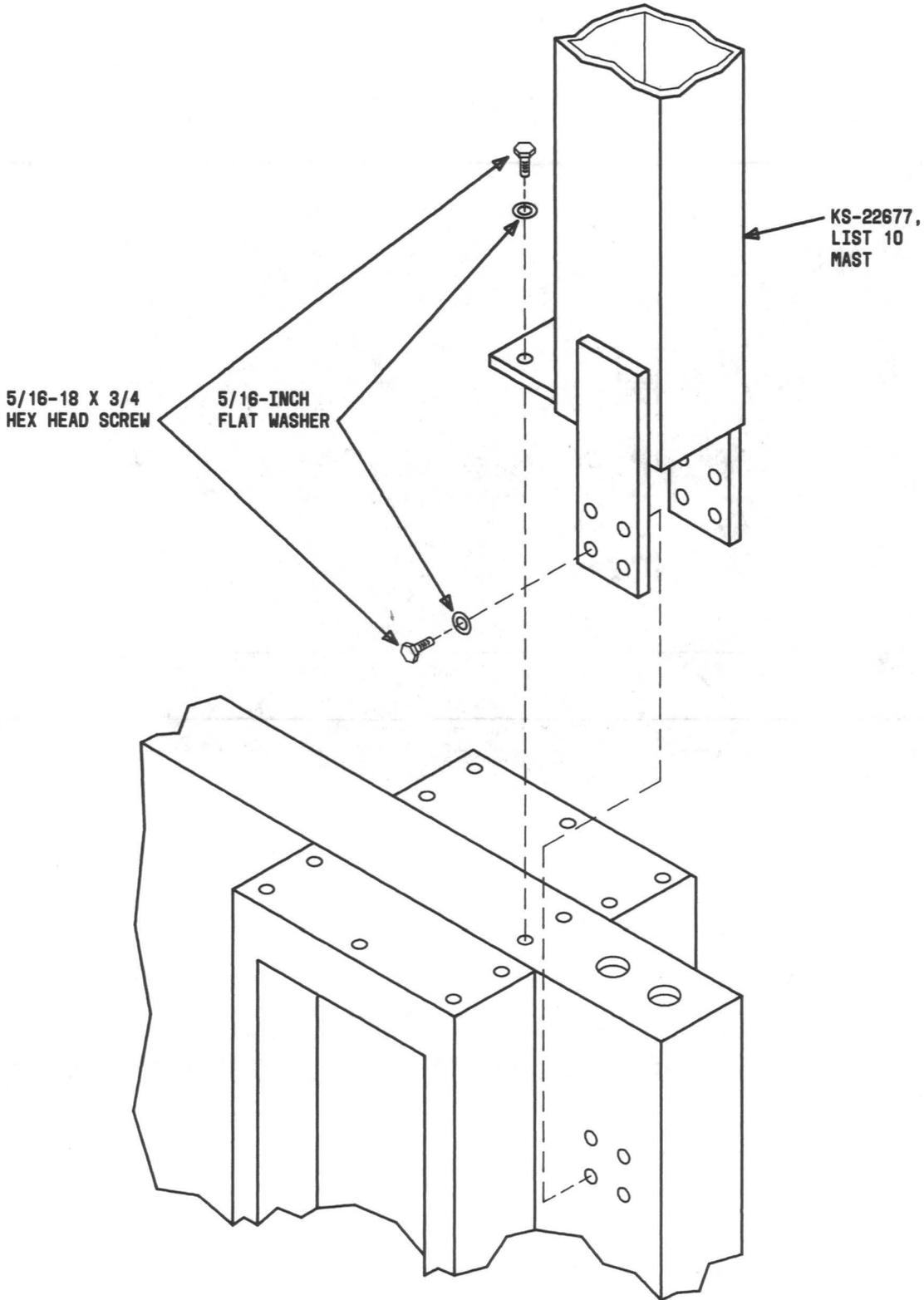


Fig. 22—Installation of KS-22677, List 10 Mast

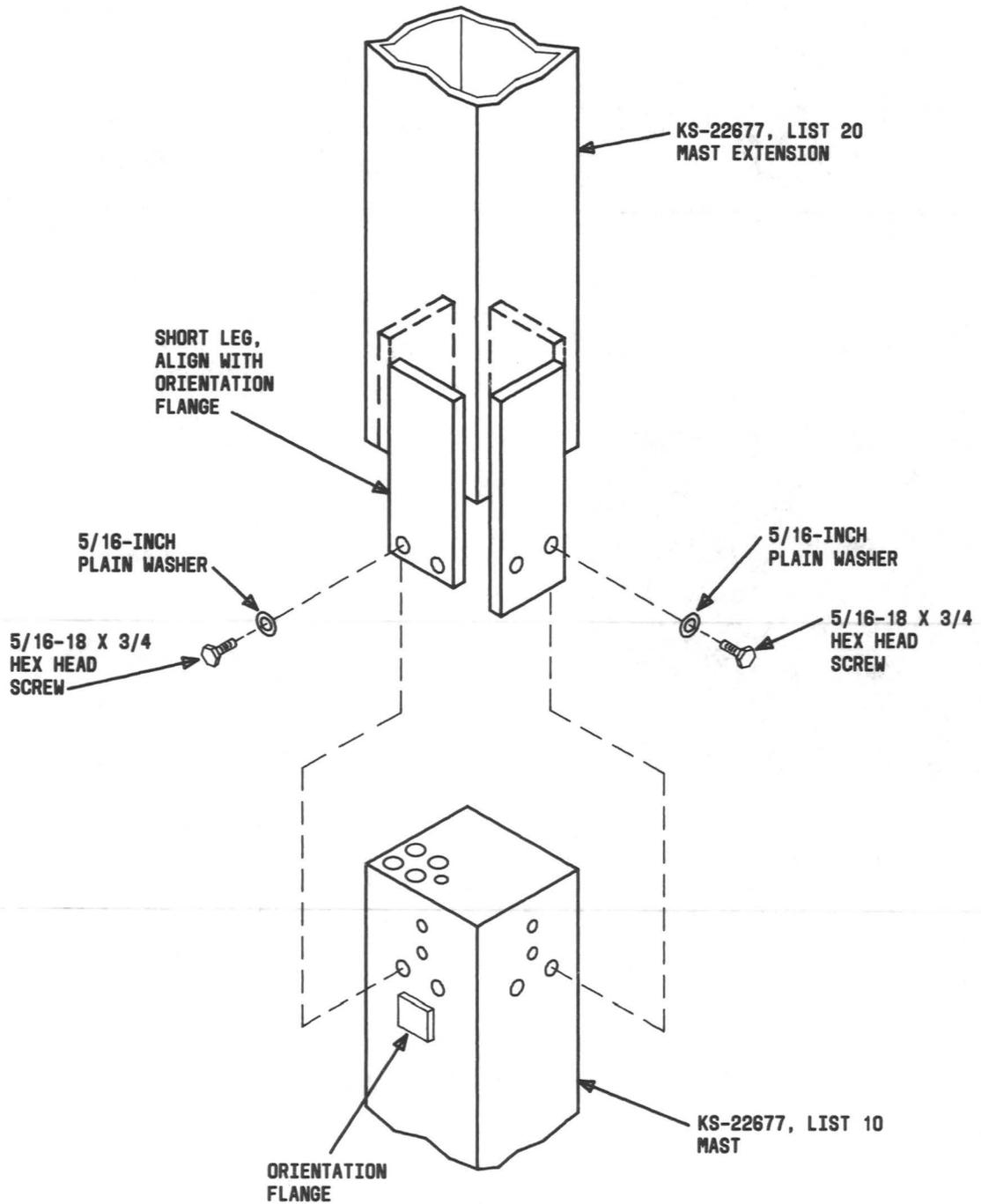
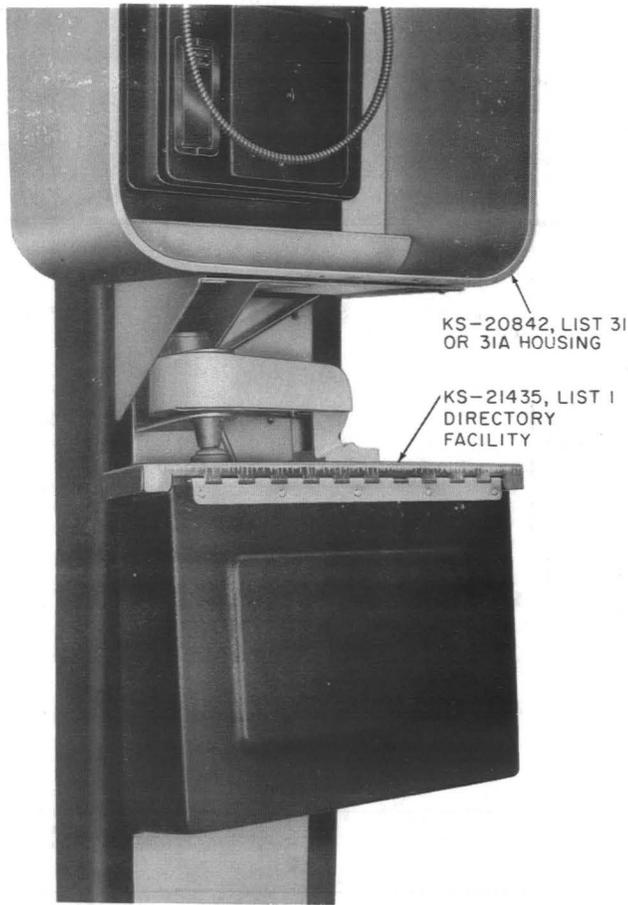


Fig. 23—Installation of KS-22677, List 20 Mast Extension



4.03 Refer to Section 508-810-202 for maintenance on the KS-20031 and KS-20135 illuminated signs.

4.04 Refer to Section 508-825-100 for maintenance on the KS-19261 light control unit.

**Fig. 24—KS-20842, List 31 or List 31A Housing With
KS-21435, List 1 Directory Facility**

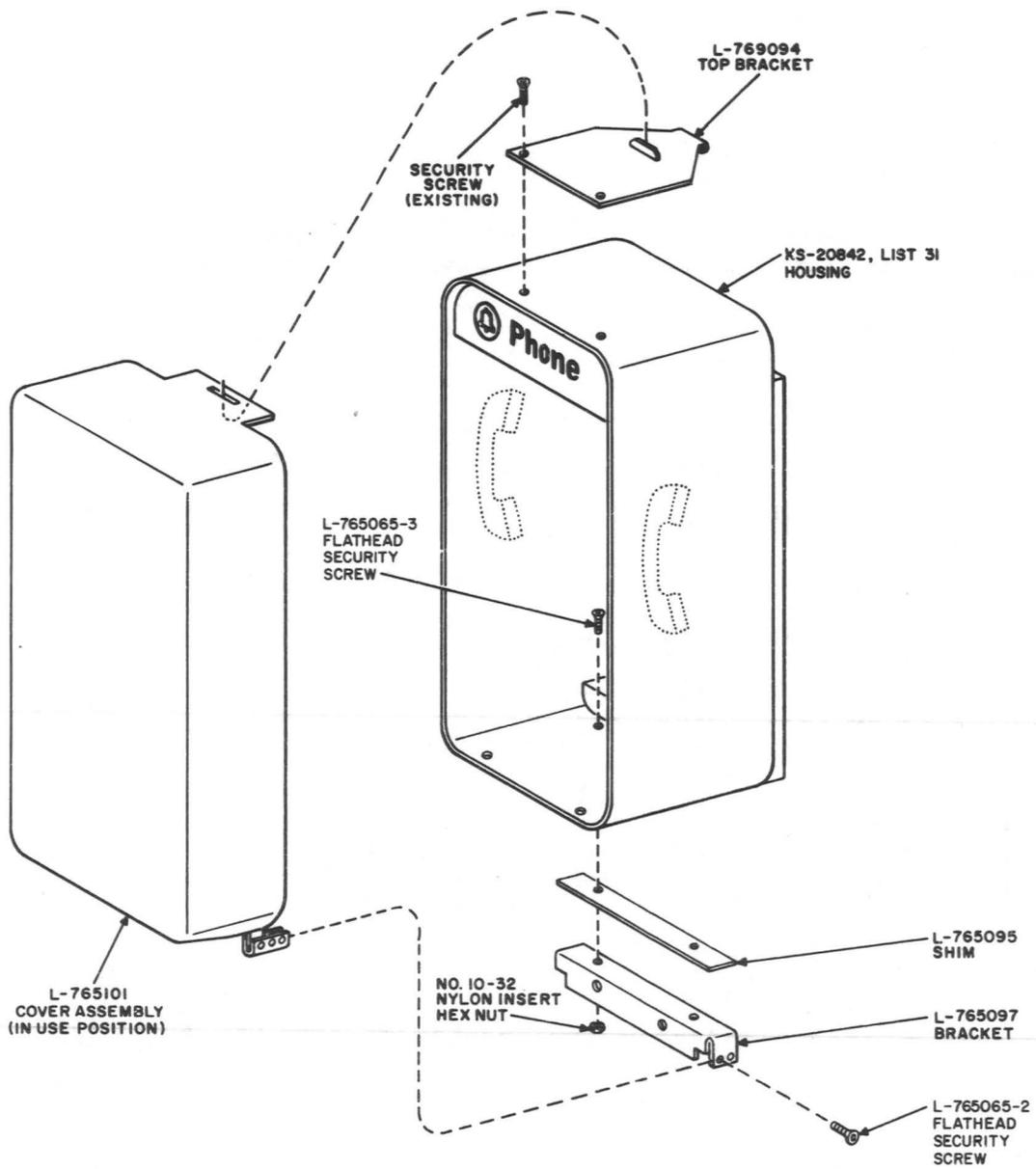
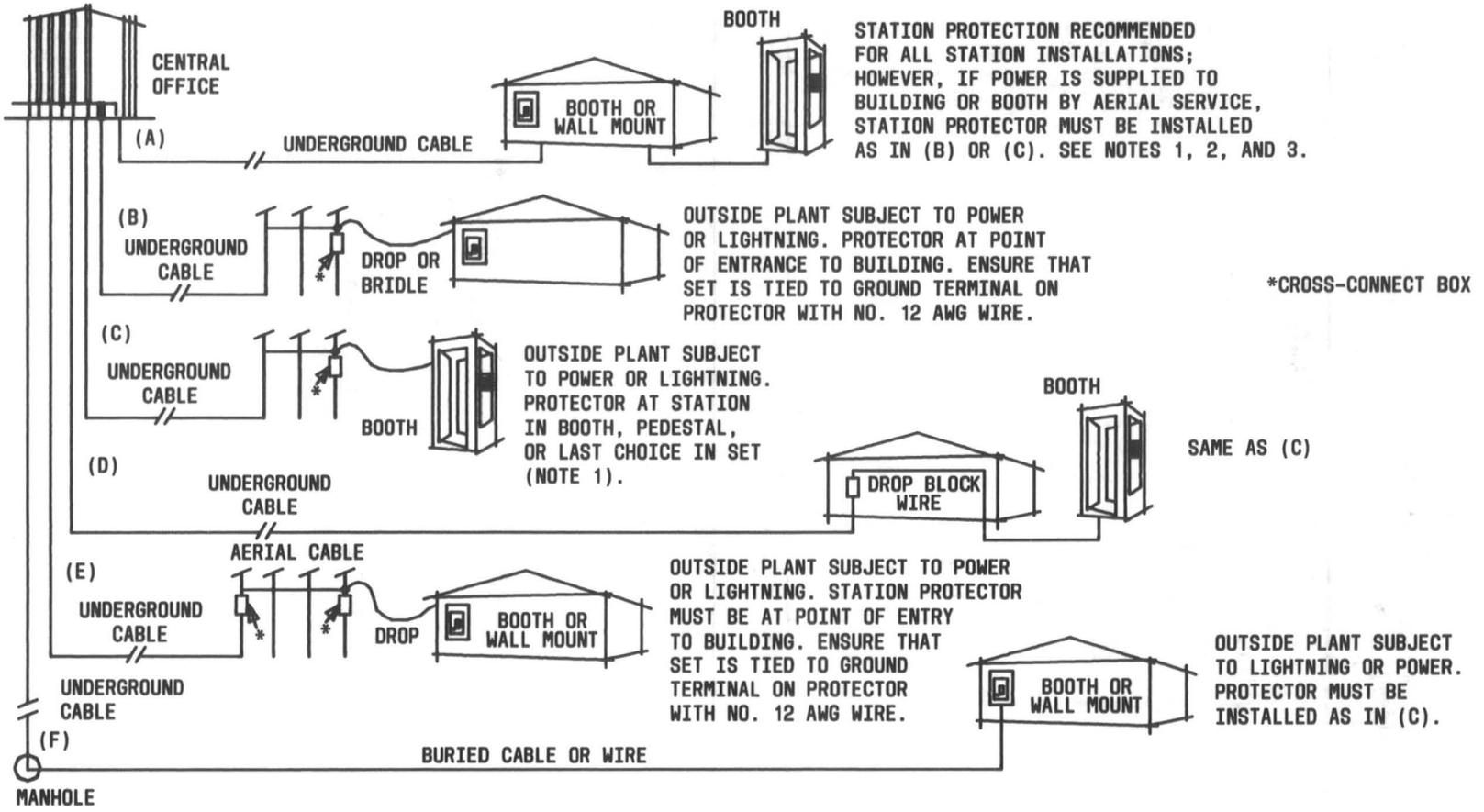


Fig. 25—KS-20842, List 75 Cover Assembly—Installation



NOTES:

1. THE PREFERRED LOCATION FOR A PROTECTOR IS AT THE POINT OF ENTRY INTO A BUILDING OR BOOTH. A PROTECTOR SHOULD BE INSTALLED IN A SET ONLY AS THE LAST RESORT. FOR ADDITIONAL INFORMATION ON STATION PROTECTOR AND SIGNALING PROTECTOR AND SIGNALING GROUNDS, SEE SECTIONS 460-100-400, 506-100-100, AND 508-100-100.
2. HOUSING OF ALL STATIONS MUST BE GROUNDED. IF SET IS NOT MOUNTED IN A GROUNDED ENCLOSURE, RUN A NO. 12 AWG WIRE FROM STATION TO NEAREST APPROVED GROUND.
3. CARBON BLOCKS THAT BREAK DOWN PREMATURELY CAN CAUSE FAILURES OF COIN COLLECT OR REFUND. CARBON BLOCKS SHOULD BE REPLACED BY GAS TUBE PROTECTORS (123E1A) OR 11B1A PROTECTOR UNITS IN 123-TYPE PROTECTOR BASE.

Fig. 26—Protection Requirements