

ROLLING LADDER TRACK  
AND ROLLING LADDERS  
INSTALLATION

1. GENERAL

1.01 This section provides the prescribed method to be used when assembling and installing rolling ladder track and rolling ladders, with attachments, in Central Office (CO) switchrooms. When installing the ladder track, only use H-88347-1 or -2 ladder track as engineered by GTE AE.

1.02 This section is reissued to update the text and to combine it with Section 237-201-200, Rolling Ladder Track Assembly and Installation. Because of the extensive changes involved, change indicators are omitted. Remove the previous issue of this section from the binder or microfiche file and replace it with this issue.

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2. PRELIMINARY INFORMATION

2.01 To provide maximum safety standards, all equipment shall be ordered in accordance with drawing H-88347 and Table 1.

2.02 When adding ladder track to existing runs, place a 4-inch C clamp around the ladder track section on the opposite side of the last section of the secondary superstructure from the end of the ladder track to be lengthened, before removing the ladder stop. The C clamp will restrict the ladder from traveling past the last run of the secondary superstructure toward the end of the ladder track containing the removed ladder stop.

2.03 The ladder track should end at the wall aisles, approximately in alignment with the aisle end of the bays or frames when the direction of the ladder slope is away from that particular wall. In this case, the ladder stop should be located at least 5 feet from the wall to have the ladder wheels stop at Least 8 inches from the wall. The exception to this statement is where the aisle width

from the wall to the bay end guard is less than 3 feet.

2.04 All ladder stops at the end of the track in the direction of the ladder slope should be located a minimum of 4 feet beyond the last bay or vertical in the lineup. If the switchroom wall or other obstruction precludes the 4-foot spacing, place the ladder stop as far as possible beyond the last bay or vertical served.

2.05 The end of any ladder track run should not, in any case, extend more than 3 feet past the last supporting hanger bracket. If it is necessary to extend beyond the 3-foot limit to prevent cutting a full length of track, the track should then be supported from two 2-inch bars (2 bar) for earthquake bracing or from one 1-inch channel iron. The secondary superstructure is supported from the ceiling as shown in Figure 1, or it is floor supported as shown in H-440000-A and E, Figures 2 and 205, respectively. If the growth portion of the track extends beyond the 3-foot limit without any available support, the ladder stop can be moved back to the 3-foot limit as shown in Figure 2a.

2.06 The ladder track should be installed according to the cable runway plan as contained in the 237-050 subdivision of GTE Practices.

2.07 Figure 3 shows the typical dimensions between distributing frames and ladder track. One dimension in the figure shows a measurement from the heel of the top angle of the GTE AE standard 39-1/2 inch wide distribution frames to the center of the ladder track. Also shown is the minimum 9-1/4 inch dimension that is necessary to separate the side of the ladder from the guardrail. Figure 4 shows the typical dimensions between trunk boards and ladder track. The dimension in this figure indicates a measurement from the heel of the top angle of the trunk boards to the center of the ladder track. For standard front and rear aisle dimensions on electromechanical systems, see H-440000-A, Figure 41.

**WARNING:** Because the weight and shape of the ladders make them difficult and potentially dangerous to handle, caution should be exercised when assembling and installing the ladders to prevent bodily injury to yourself and damage to surrounding equipment.

2.08 Proper use of rolling ladders and their ability to remain in a safe, usable condition over the years depends largely on the proper methods and components used when first assembling the ladder.

### 3. INSTALLING LADDER TRACK

3.01 The method of assembling the H-88347 ladder track is shown in Figure 5. The track either may be preassembled on the floor prior to attaching it to the superstructure or it may be assembled by attaching sections to the superstructure, depending on the length of the run.

3.02 The track is to be supported directly from, and at right angles to, the secondary superstructure, channel (Figure 2b), or supporting bars (H-440000-J, Figure 604).

3.03 A ladder stop (Figure 6) should be located a minimum of 1 inch from each end of the ladder track runs. The installer should drill a 13/32-inch hole, in the side of each ladder track at both ends of the track run (Figure 2a) to install the ladder stops. For additional security, a 9/32-inch hole should also be drilled through the channel, hanger bracket, and ladder track as shown in Figure 2a, then the drilled portions should be bolted together

### 4. ROLLING LADDER ASSEMBLY

4.01 Before proceeding with assembling the ladder, closely inspect the wood for damage and for signs of splitting. Also, verify that each wooden part is not warped excessively.

4.02 When assembling the ladders, take care not to split the wood when attaching details with wood screws. If the holes are not predrilled, drill a hole in the wood about the same size as the root of the screw. To allow an easier insertion in the wood, coat the wood screws with soap before using them. Check that all component parts are securely attached with proper size bolts, washers, and cotter pins, and that the wheel assembly is properly lubricated.

4.03 The ladder shall be assembled as shown in Figures 7 through 12, and the ladder attachments shall be mounted as shown in Figures 13 through 17.

4.04 The 9-1/2 inch dimension shown in Figure 7 as the distance from the floor to the bottom of the fender assembly, is used where the top of the guardrail on the distributing frame is 11 inches from the floor. If the guardrail's height dimension is different, position the fender assembly on the ladder so that it will be approximately in the middle of, and opposite to, the guardrail.

4.05 All hole location measurements should be verified before holes are drilled. Whenever possible, hold mounting components in place over their specified locations to check for hole alignment.

4.06 When required, drill and tap the lower wheel assembly to mount the wheel guards (Figure 12).

4.07 The Communication Manufacturing Co. (CMC) soldering iron cage holder (CMC 5508) should be located on the eighth step of the ladder (the eighth step from the floor). The holder should be

positioned behind and installed beneath the step on the side nearest the frame (Figures 13 and 14).

4.08 A ladder electrification kit, CMC 5532, provides electrical power to the holder anywhere along the track.

NOTE: The ac cord from the electric trolley must come down the side of the ladder nearest the frame. If the electric trolley duct is on the opposite side of the frame, the ac cord must come down and cross over at the top step (Figure 14).

4.09 Attached to the underside of the soldering iron cage holder mounting are two ac receptacles to provide power. One ac receptacle is equipped with a twist-lock socket for the soldering iron, and the other, with a conventional socket for test equipment.

4.10 Figures 7 and 15 show two different brake release installation methods. Figure 7 shows that the rope guide brackets are attached to the underside of the top two ladder steps, and Figure 15 shows that the brake release rope is installed on the side of the ladder opposite the frame. The alternate method in Figure 15 requires the use of a pulley located just above the top ladder step, a rope guide bracket attached to the underside of the ninth step, and a rope tie bracket mounted on the outside of the ladder at the fifth step.

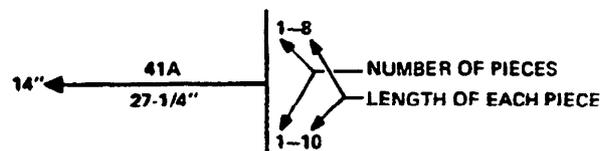
NOTE: The first method of installation is recommended when the CMC 5508 soldering iron cage holder is used. This method brings the rope out far enough to prevent it from being burned by the soldering iron.

4.11 After the rolling ladder assembly is complete, a thorough inspection of the ladder should be made to verify correct assembly, tightness, and proper location of all attached components.

### 5. INSTALLING LADDERS

5.07 Ladders shall be located as shown on the engineered Cable Runway (CR) drawing. A typical CR drawing is shown in Figure 78. This drawing gives information on the width of the ladders, the length-and number of pieces of ladder track, and the direction of the slope of the ladder.

5.02 Symbols similar to the following symbol denote rolling ladder equipment in Figure 18



5.03 The tip of the arrow points in the direction in which the ladder slopes upward. The number at the tip of the arrow gives the width of the ladder, while the numbers at the end of the arrow denote the number of pieces and length, in feet, of each piece of ladder track. The numbers above and below the length of the arrow denote the fig-

uses on drawing H-44000 or the dimensions to the nearest top angle. For further information on the rolling ladder track assembly and installation, refer to the appropriate section in the 237-201 subdivision of GTE Practices.

5.04 Ladders may be installed at either end of the ladder track, however, be certain to observe the designated slope of the ladder. When the ladder track extends to or near the wall, install the brake assembly in the ladder track first and then place a bolt in the top bracket of the ladder.

Warning: Never stand on the rolling ladders when removing or replacing ladder track. Use a platform or an A-type ladder and replace the ladder stop as soon as the related work operation has been completed (Figure 6).

5.05 Install ladders at the distributing frames as shown in Figure 3. Observe the designated slope of the ladders and make certain that the handrails are on the outside of the ladder (Figures 7 and 8).

## 6. BRAKE ADJUSTMENT

6.01 For adjustment information on the Western Electric Co. (WECO) Type 2A brake, refer to the appropriate section in the 237-200 subdivision of GTE Practices.

6.02 Ladders equipped with Putnam No. 231 top brakes must have the brake adjusted so that the ladder will not move unless the brake is released by pulling the release rope.

6.03 A C-Tap type compression clamp is the prescribed method to secure brake release ropes for both top and bottom ends of the release rope on ladders equipped with Putnam brakes. Depending on the rope size, MC 767655 (pink 2-4 ga.), MC 768947 (black 1-3 ga.), or MC 767577 (orange O-2 ga.) may be used. Heat shrink tubing or plastic tape may be used to cover the clamp as added protection against sharp edges.

## 7. MISCELLANEOUS

7.01 The location of the front and rear aisle assembly ladder track is shown in Figures 19a and 19b. For any additional information regarding the cable rack layout and rolling ladder maintenance, refer to the appropriate 237-050 and 237-200 subdivisions of GTE Practices.

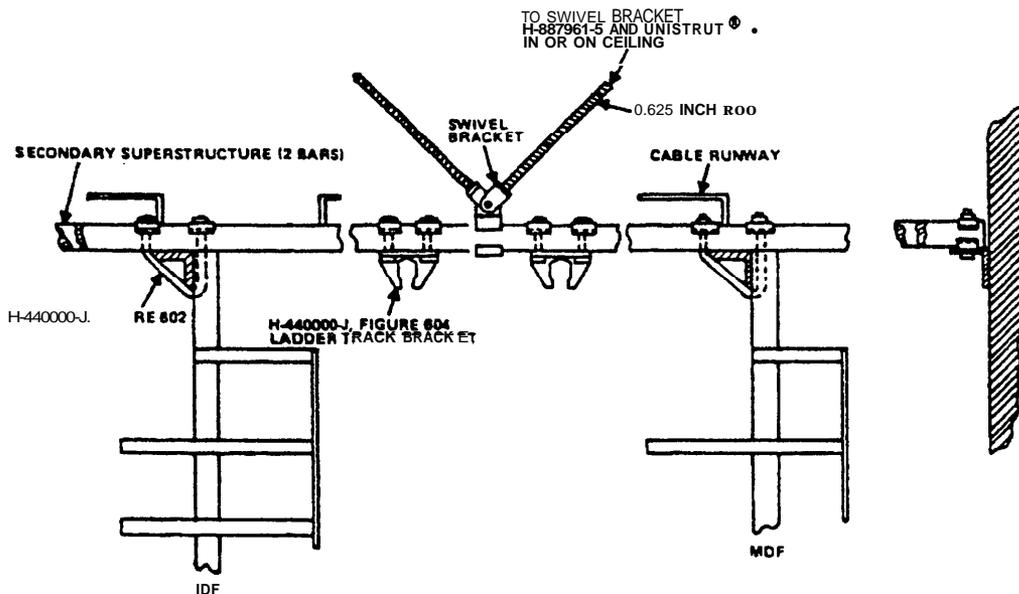
7.02 The prescribed method of connecting the ladder track to the wall angle is shown in Figure 20.

7.03 The prescribed method of clamping rolling ladder track hanger brackets to the channels is shown in Figures 2a and 2b.

TABLE 1. ASSEMBLY PARTS LIST FOR ROLLING LADDERS.

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
FD-1020-NJ1	Lot of hardware for equipping appliance outlets (arranged for for WECO Brake)	FD-1020-MP1	Fender Assembly, Left
FD-1020-NJ2	Lot of hardware for equipping appliance outlets (arranged for Putnam Brake)	FD-1020-MP2	Fender Assembly, Right
FD-1020-NH1	Trolley Duct, 4'-0"	FD-1020-MT1	Ladder Track 8'-0"
FD-1020-HN2	Trolley Duct, 1 0'-0"	FD-1020-MT2	Ladder Track 1 0'-0"
FD-1020-NG	Duct Hanger Bracket with Plate	FD-1020-MR	Track Splice
FD-1020-NF	Coupling (Duct to Duct)	FD-1020-MS	Track Hanger Bracket
FD-1020-NE	Entrance Coupling	FD-1020-MW	Wheel Guard
FD-1020ND	End Cap, Feed-In	FD-1020-NA	Ladder Seat (Putnam)
FD-1020-NC	End Cap, Plain	FD-1020-NB	Ladder Seat (WECO)
FD-1020-YF	Ladder, Type-A (Putnam No. 105) 6' (Catalog No. S-713475)	FD-1039-AS	Look-Up Sign with Hardware
FD-1020-MKXX*	Ladders, Rolling	S-580950	Scrap Wire Bag Cover 10"
FD-1020-ML	Top Brake (Putnam No. 231)	S-580951	Scrap Wire Bag Cover 12"
FD-1020-MM	Top Brake (WECO Type 2A)	FD-1020-MU1	Scrap Wire Bag Frame 10" With Hardware
FD-1020-MN	Ladder Stop	FD-1020-MU2	Scrap Wire Bag Frame 12" With Hardware
		FD-1020-MJ	Soldering Iron Cage Bracket

\* For specific requirement and its corresponding suffix (24 combinations), refer to FD drawing.



NOTE:  
 \*REGISTERED TRADEMARK OF UNISTRUT COWDRATION.

Figure 1. Method of Supporting Ladder Track Between Distributing Frames Using Earthquake Erection Hardware (2 Bar).

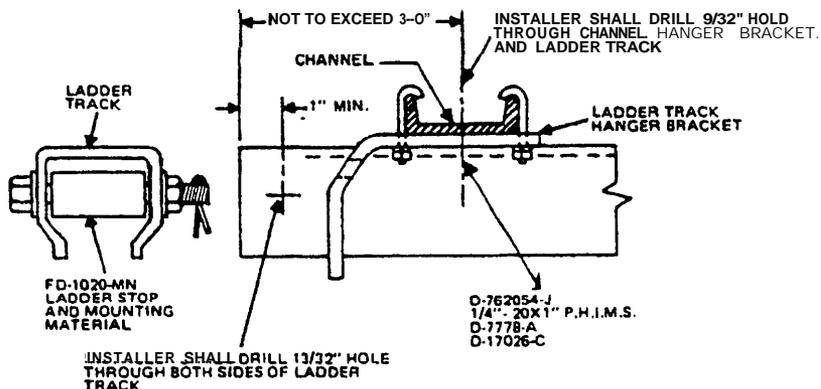


Figure 2a. Clamping of Rolling Ladder Track Hanger Bracket (Putnam Catalog No. 412) and Rolling Ladder Track to Channel (To Be Used on End Channels Only for Each Lineup of Track).

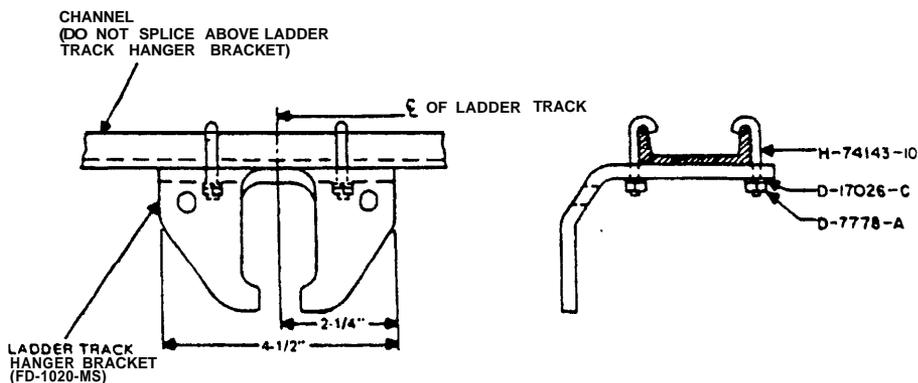


Figure 2b. Clamping of Rolling Ladder Track Hanger Bracket (Putnam Catalog No. 412) to Channel, Figure 2. Rolling Ladder Track Hanger Bracket Clamping When the Channel Method of Secondary Super Structure is Provided.

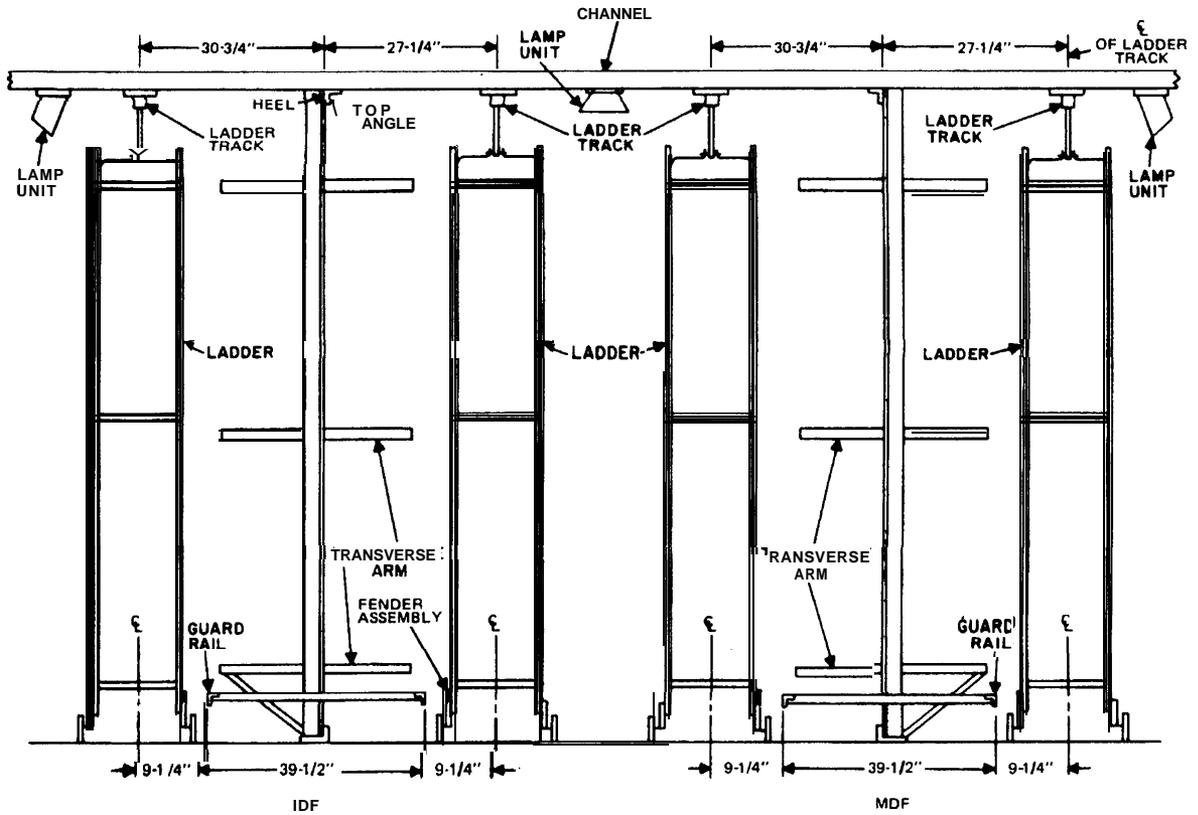


Figure 3. Typical Dimensions Between Distributing Frames and Ladder Track.

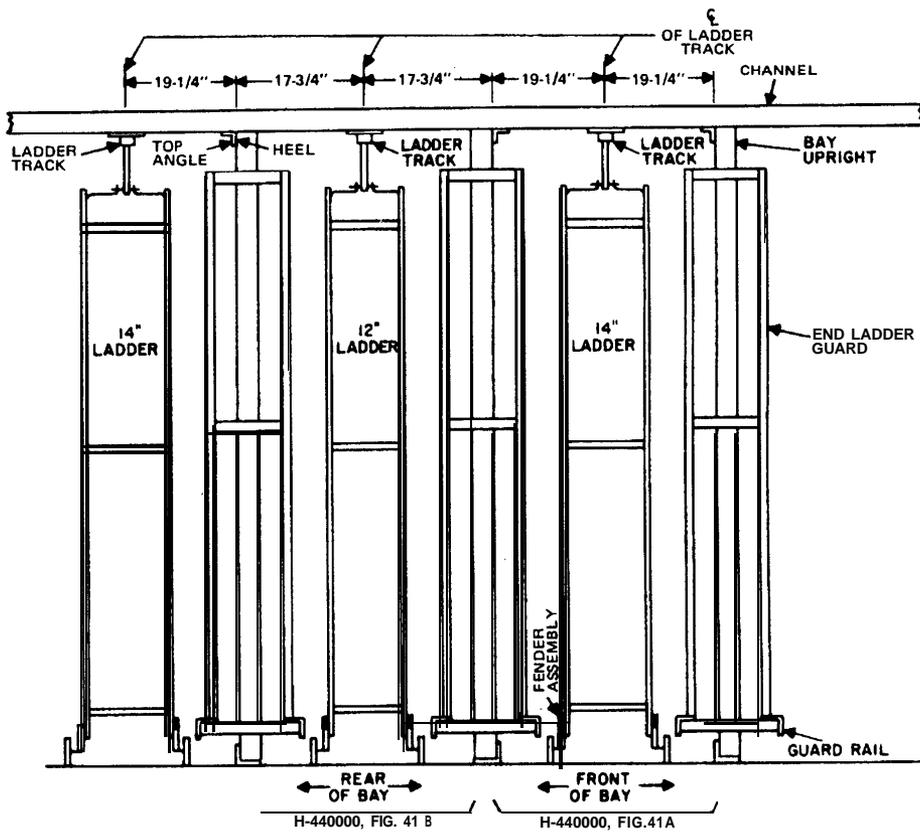


Figure 4. Typical Dimensions Between Trunk Boards and Ladder Track.

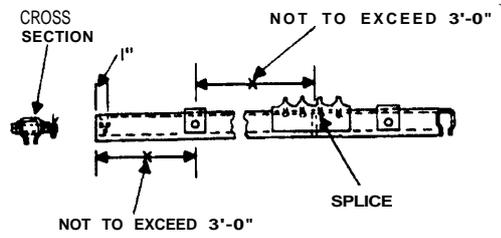


Figure 5. Method of Assembling H-88347 Ladder Track.

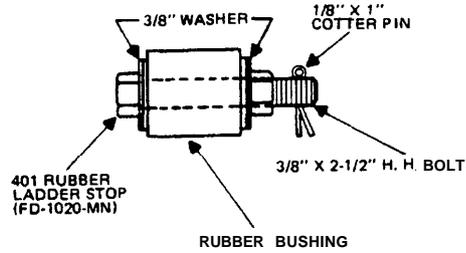


Figure 6. Ladder Stop.

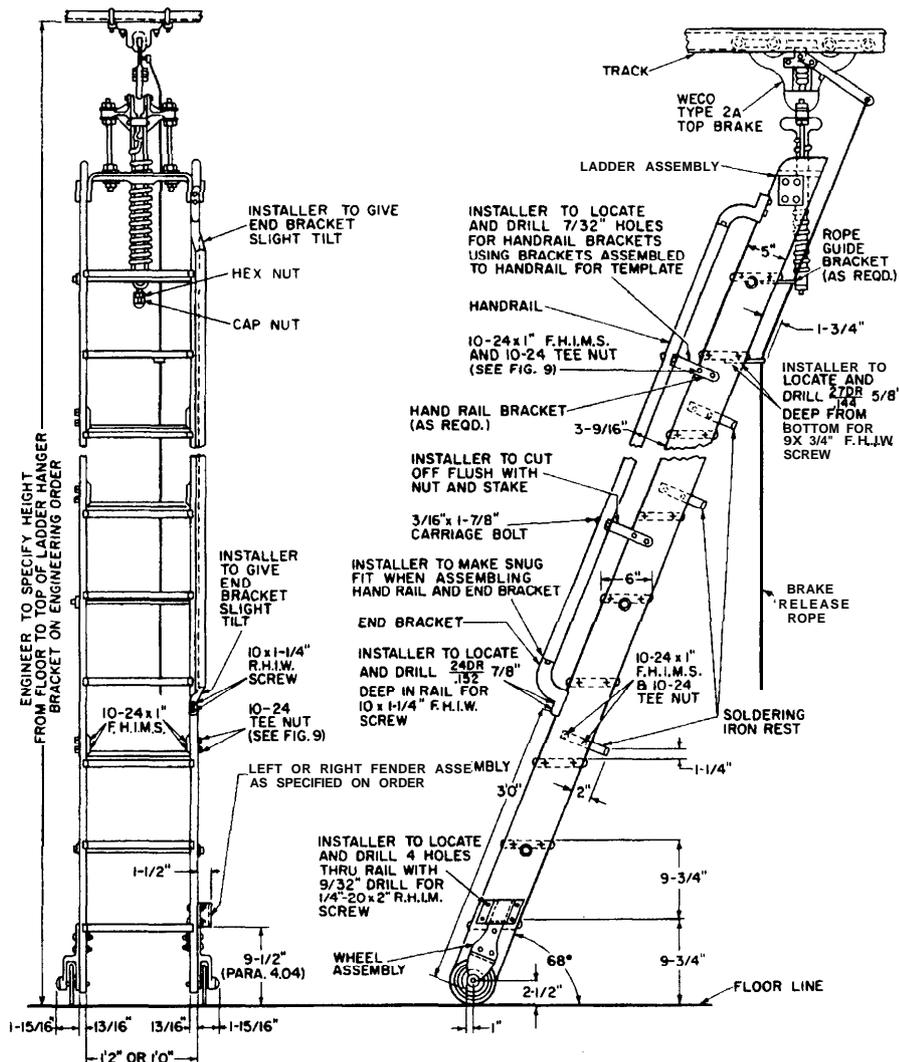


Figure 7. Ladder Assembly Showing Handrail on Right Side.

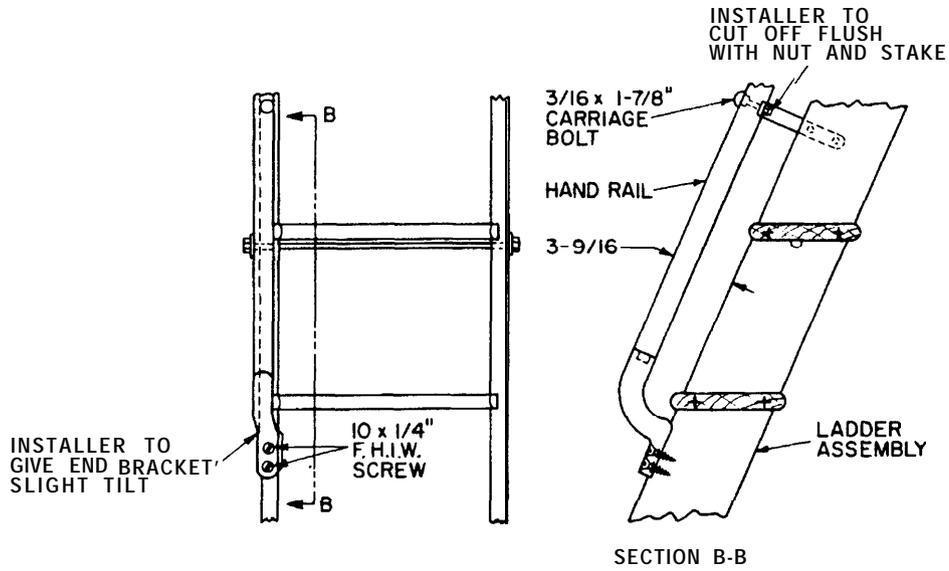


Figure 8. Handrail Installed on Left Side of Ladder.

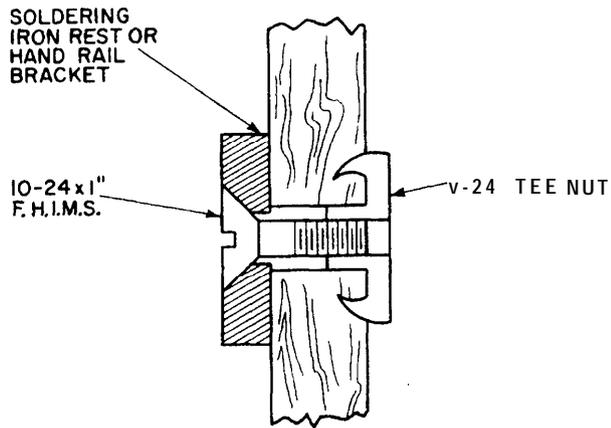
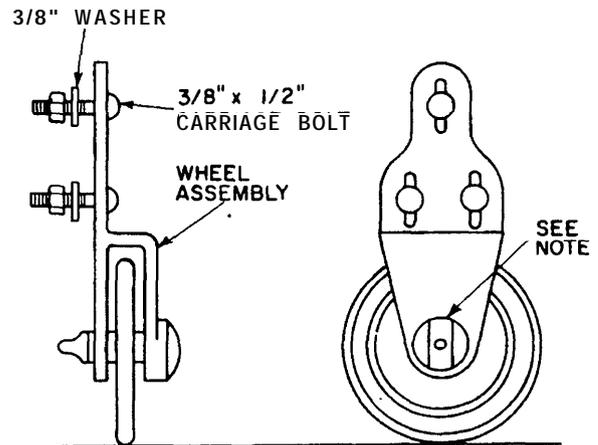


Figure 9. Fastening Soldering Iron Rest or Handrail Bracket.



NOTE:  
CHECK WHEEL BEARING CUP FOR LUBRICANT,  
(ANY GOOD BEARING GREASE WILL SUFFICE.)

Figure 10. Wheel Assembly.

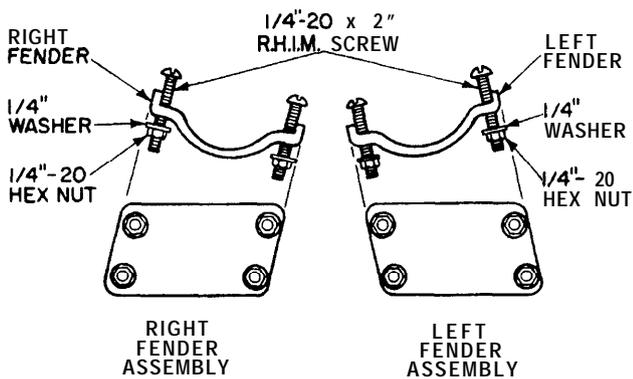


Figure 11. Fender Assemblies.

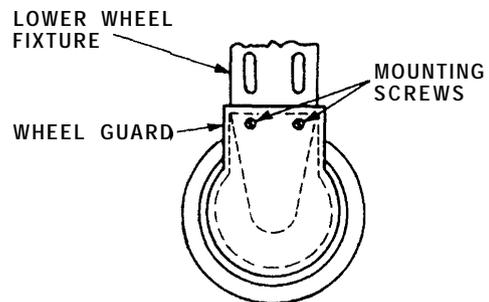


Figure 12. Mounting Wheel Guard to the Lower Wheel Fixture.

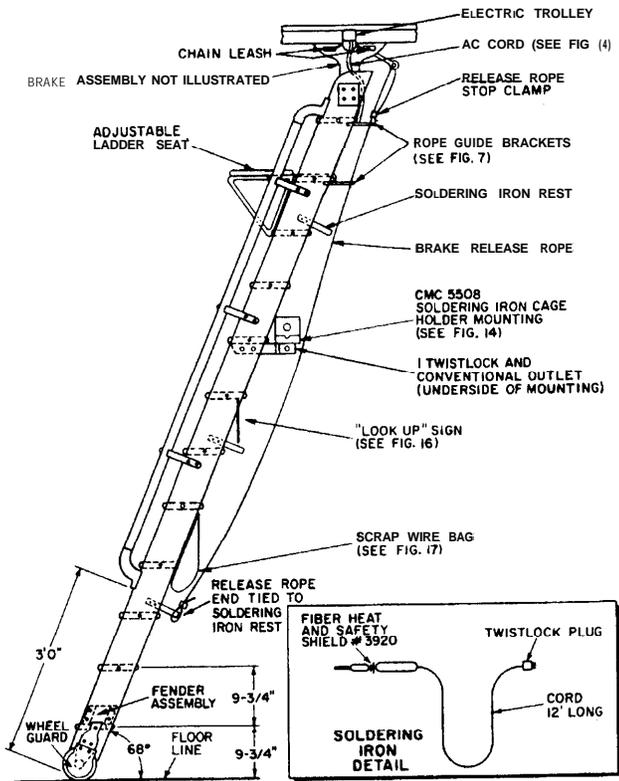
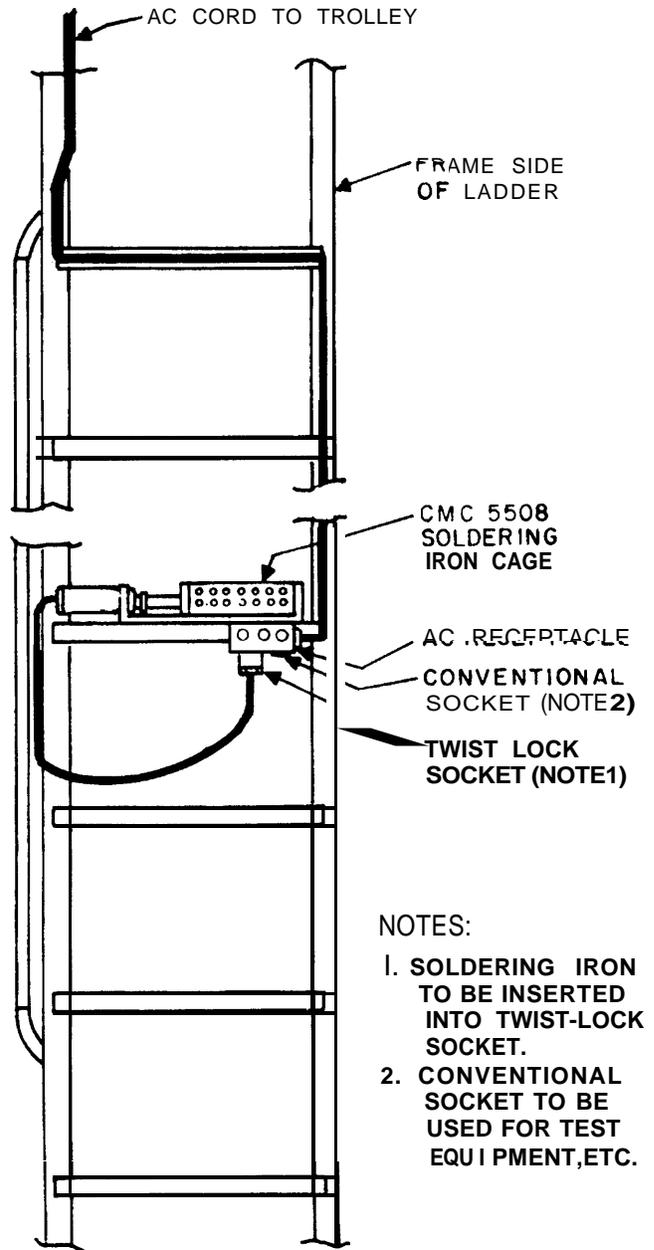


Figure 13. Mounting Ladder Attachments.



NOTES:

1. SOLDERING IRON TO BE INSERTED INTO TWIST-LOCK SOCKET.
2. CONVENTIONAL SOCKET TO BE USED FOR TEST EQUIPMENT, ETC.

Figure 14. Method of Attaching AC Power Cord and CMC 5508 Soldering Iron Cage Holder to Back of the Ladder.

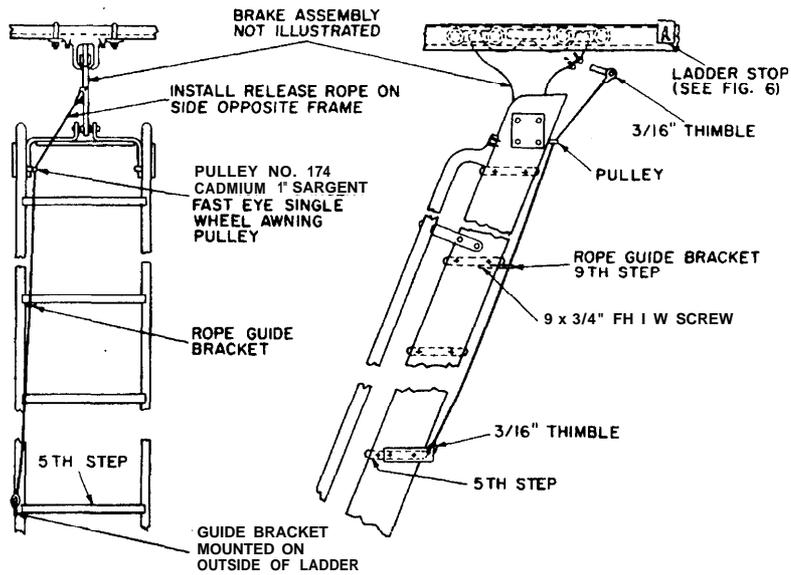


Figure 15. Alternate Method of Installing Release Rope on Frame Ladders.

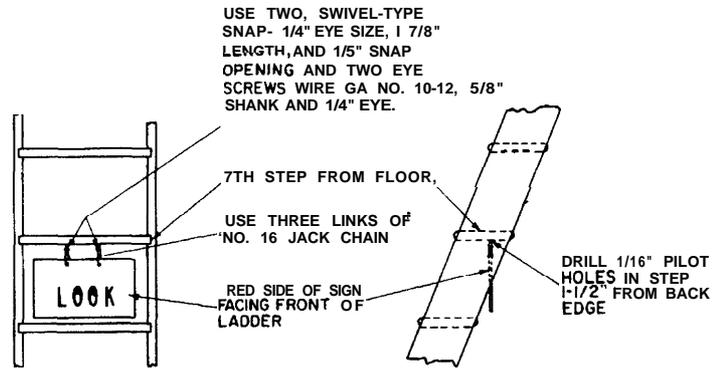


Figure 16. Method of Mounting Look-Up Signs (All Ladders).

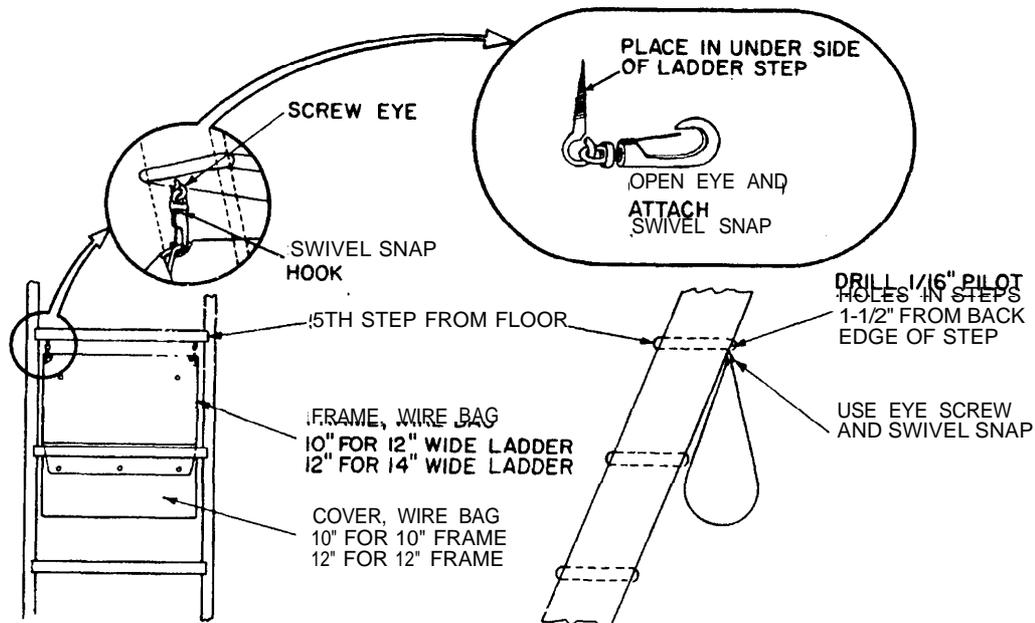


Figure 17. Method of Mounting Scrap Wire Bags on Frame (MDF and IDF) Ladders.

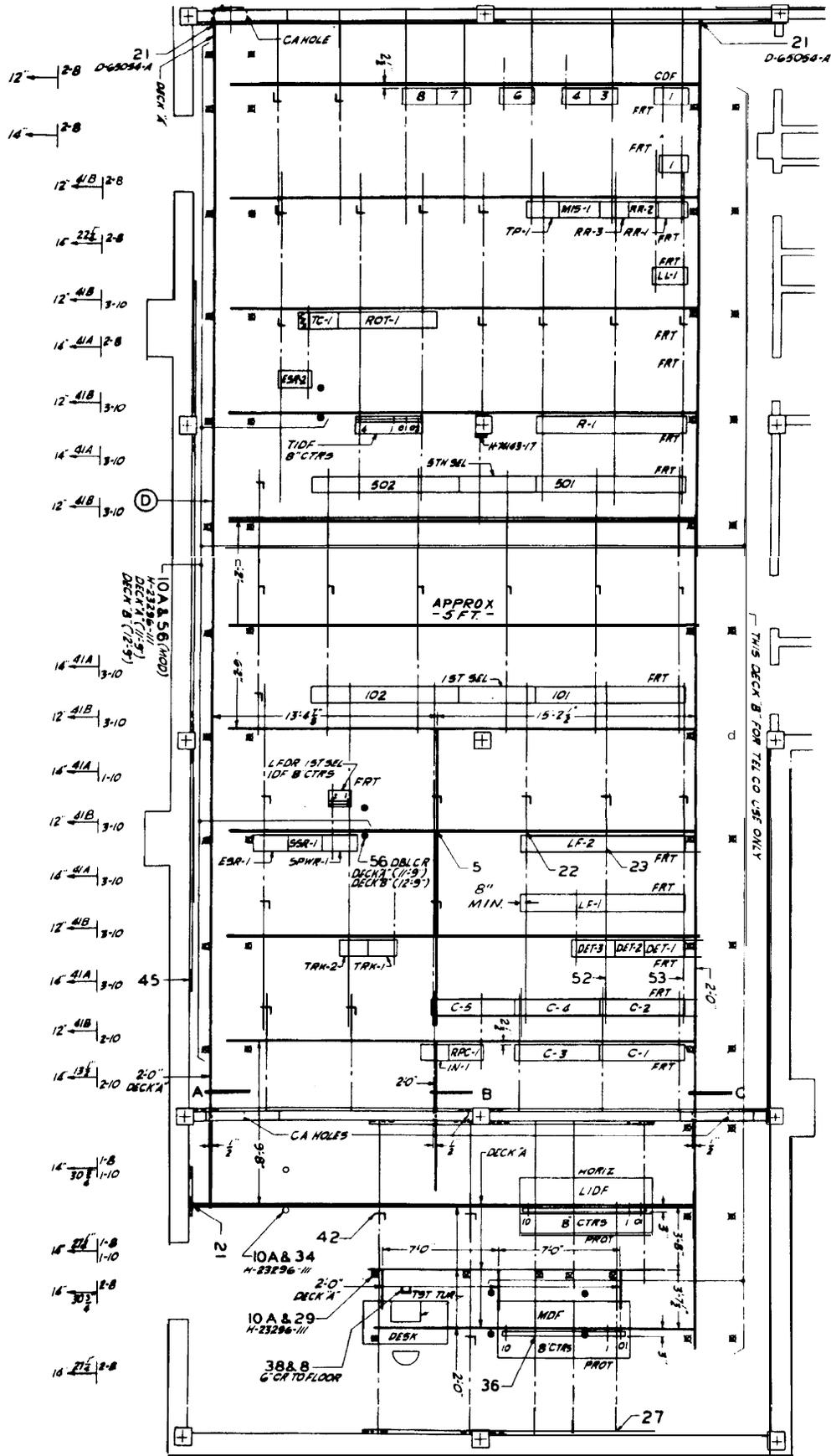


Figure 18. Typical Cable Runway Drawing.

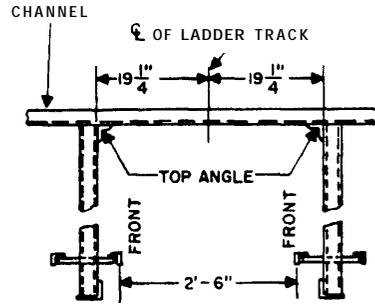


Figure 19a. Front Aisle.

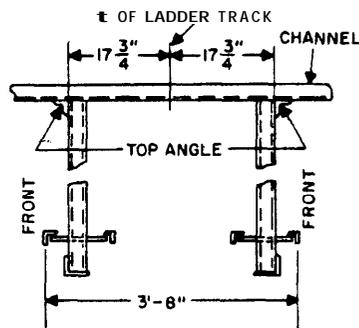


Figure 19b. Rear Aisle.

Figure 19. Location of Rolling Ladder Track,

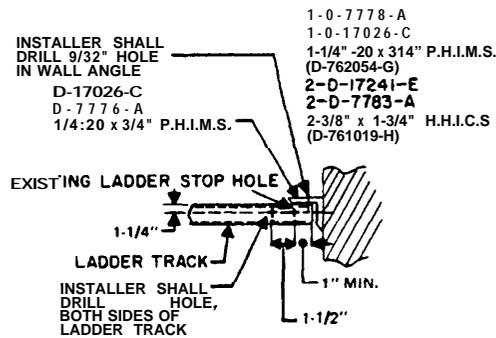


Figure 20. Connecting Ladder Track to Wall Angle.