ROLLING LADDERS, BRAKES AND LADDER TRACK

ROLLING LADDER STOPS AND LADDER TRACK PLUGS

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1. GENERAL

1.1 Scope of Section

1.11 This section covers the requirements, information and procedures concerning the location and installation of rolling ladder stops and ladder track plugs.

1.2 General Information Pertaining to Arrangement of Tools, Precautions, Verification, Specifications, Drawings and Figures, and Associated Information

1.21 Refer to Section 40A for information pertaining to the above subjects.

2. TOOLS REQUIRED

2.1 The tools and supplies required for operations covered in this section are general type tools normally available on the job.

3. LOCATION OF STOPS WHEN PLANNING INSTALLATION OF LADDER TRACK

3.1 The requirements contained in this section, in general, call for the extension of ladder track beyond the first and last frame in a lineup and, consequently, have a direct affect on such items as length of track and number and spacing of supports. Therefore, it is important to give thorough consideration to these requirements when planning for the installation of the ladder track in accordance with Section 40B.

4. GENERAL LOCATION OF STOPS

4.1 General

4.11 Ladder stops are located such that access can be had by a man standing on a ladder to all the equipment which cannot be reached from the floor in the last bay at the end of an equipment lineup. It is so placed that it will prevent a ladder from striking equipment or any part of the building. Consideration is also given to locating the stop so as to permit the entrance under the ladder of maintenance equipment into the frame aisle (at the end of the lineup away from that towards which the ladder slopes) and to prevent the foot of the ladder from blocking egress from the other end of the aisle. Refer to Section 40A for additional general information on length of ladder track runs and location of stops.

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4.12 The following paragraphs contain information pertaining to the general location of stops for a variety of equipment frame and ladder track conditions. After determining the general location, then the actual location can be determined in accordance with Paragraph 5.

4.2 Partial Lineups

4.21 When only sufficient ladder track, auxiliary framing, lighting fixtures, etc., is being installed to serve a partial lineup of equipment frames, the stops are located at the ends of the track run with respect to the first and last frames in that partial lineup.

4.3 Partial Lineups With Gaps

4.31 As covered in Section 40B, the ladder track is extended at the position of future frames where necessary to allow access to the distributing power terminal strips, power fuse cabinets, aisle pilots, etc., located at the ultimate end of a lineup. In these situations, the stops are located at the ends of the track run with respect to the first and last frames to allow this access.

4.4 Partial Lineups With Ultimate Ladder Track

4.41 When a partial lineup of equipment frames is installed and ladder track, auxiliary framing, etc., is installed for the ultimate capacity of the lineup, the stops are located at the ends of the track run with respect to the first and last frames (installed or future) of the ultimate lineup. The trend today is to provide the ultimate ladder track initially instead of just enough to serve the frames being installed.

4.5 Complete Lineups

4.51 It follows from the preceding paragraphs that when a complete lineup of equipment frames is installed, the stops are located with respect to the first and last frames in that lineup.

4.6 Use of Predrilled Hole in Ladder Track For Stop

4.61 The predrilled hole in the end of ladder track sections should be utilized wherever possible when locating a ladder stop.

5. SPECIFIC LOCATION OF STOPS

5.1 General

5.11 After determining the general location of a stop(s) in accordance with Paragraph 4, refer to the following paragraphs for specific information, considerations and requirements to determine the actual location of a stop(s).

5.2 For Straight-Type Rolling Ladders

5.21 The end of the track towards which the ladder is inclined shall, where practicable, extend sufficiently to permit placing a ladder stop 4'-2" beyond the end frame upright in order to provide access to all equipment. Where this is not practicable, the minimum distance shall be 2'-10". See Figure 27.

5.211 The 4'-2" in the preceding paragraph is not necessarily a maximum and may, in some cases, cause the foot of the ladder to block the end of the aisle. Where space permits and at the telephone company's request (it should be brought to their attention), the ladder track may be extended and the stop relocated so that the foot of the ladder will clear the end of the aisle far enough to permit entrance or exit of personnel or test equipment provided requirements governing the number and spacing of the track supports are met. In other words, 4'-2" is the "preferred minimum" with any increase resulting in increased benefits from an equipment and aisle access point of view. It follows that when the installed track already extends more than 4'-2" beyond the last frame, the stop is to be located at the end of the track providing the requirements governing the number and spacing of the track supports are met.

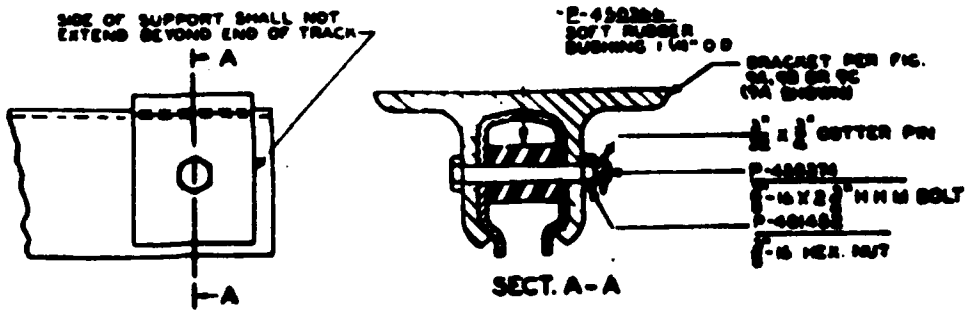
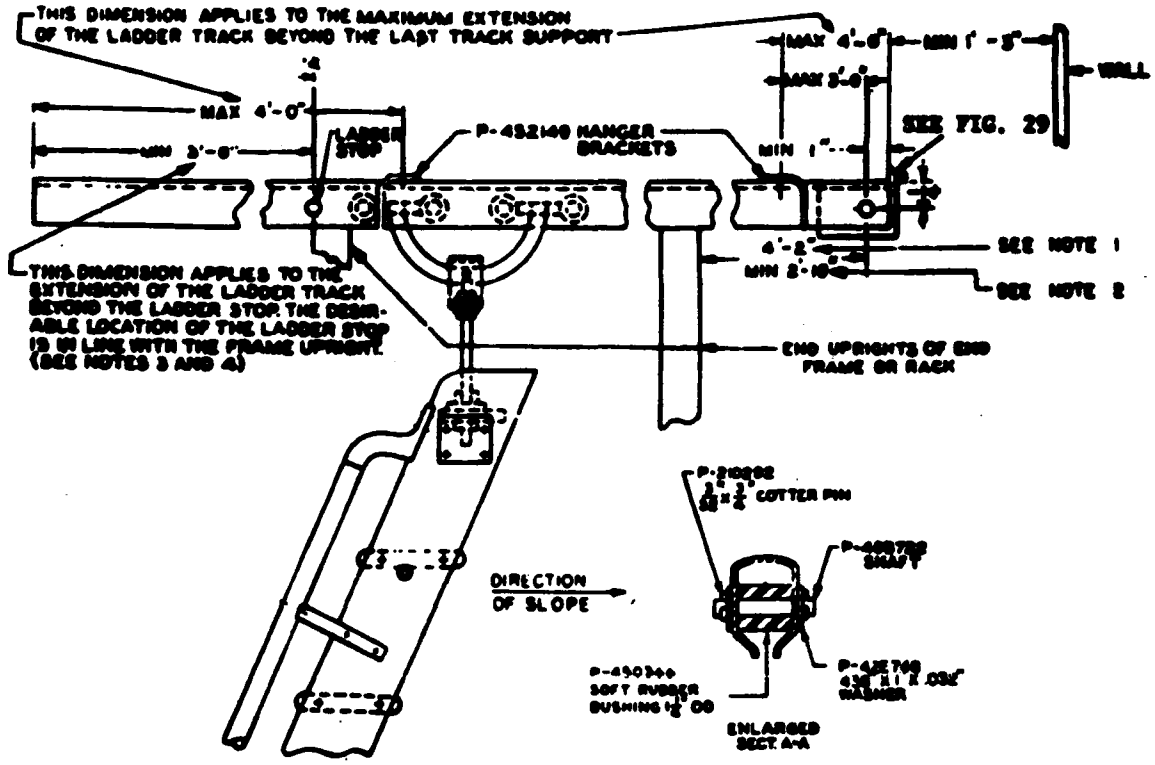


FIG. 26 LADDER STOP AT SUPPORT BRACKET (PAR. 6.1)



NOTES

1. PREFERRED LOCATION BUT NOT NECESSARILY A MAXIMUM. WHERE SPACE PERMITS AND IF REQUESTED BY THE TELEPHONE CO., THE END OF THE TRACK MAY BE EXTENDED TO PERMIT THE STOP TO BE LOCATED ANY DISTANCE BEYOND THE 4'-2" SHOWN, PROVIDING THE REQUIREMENTS GOVERNING THE NUMBER AND SPACING OF THE TRACK SUPPORTS ARE MET.
2. WHEN THE LADDER TRACK SERVES EQUIPMENT IN CLOSE PROXIMITY TO PARTITIONS OR WALLS SO THAT PLATFORM-TYPE ROLLING LADDERS HAVE TO BE USED TO REACH ALL THE EQUIPMENT THE MINIMUM SHALL BE 1'-0".
3. WHEN THE LADDER TRACK IS INSTALLED CLOSE TO AND BEYOND A COLUMN SO THAT THE ROLLING LADDER CAN NOT PASS THE COLUMN, A PLATFORM-TYPE ROLLING LADDER IS USED AND THE STOP LOCATED SO THE LADDER CAN APPROACH THE COLUMN WITHOUT TOUCHING IT.
4. WHEN ULTIMATE REQUIREMENTS FOR AN OFFICE ARE FURNISHED INITIALLY, THE LADDER STOPS SHALL BE LOCATED AT THE ENDS OF THE LADDER TRACK.

FIG. 27 LOCATION OF END SUPPORTS AND LADDER STOPS IN TRACK (PARS. 5.21, 5.22, 5.3 and 6.1)

CAUTION: WHEN SECTIONS OF TRACK ARE MODIFIED OR REMOVED AFTER LADDERS HAVE BEEN INSTALLED MAKE CERTAIN THAT THE TRACK IS RIGIDLY SUPPORTED AND LADDER STOPS PROVIDED AS COVERED IN SECTION 40A.

5.212 In cases where the frames extend close to the building wall such that the minimum 2'-10" requirement for locating the ladder stop cannot be met, and it is not desirable to use a platform type rolling ladder, the minimum requirement may be waived with the approval of the Telephone Company provided the track extends sufficient to allow access to all equipment on the last frame.

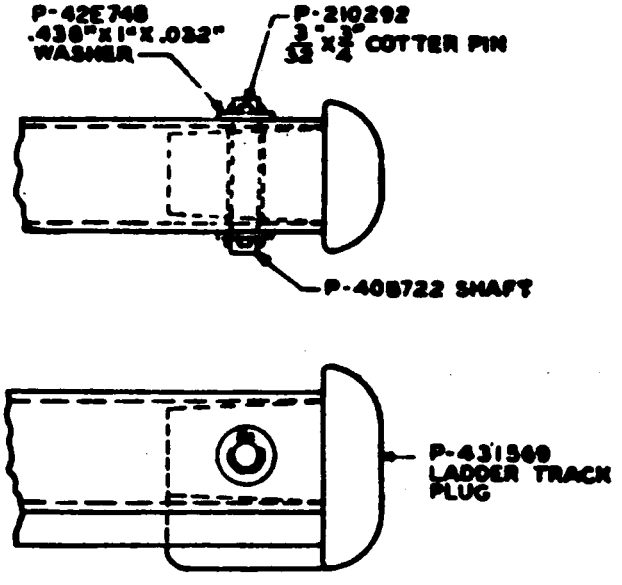


FIG. 29 LADDER TRACK PLUG (PARS. 6.2 and 7.2)

5.22 The end of the track away from that towards which the ladder slopes should extend a minimum of 3'-0" beyond a ladder stop. The stop shall be placed at a location which will permit the entrance under the ladder of maintenance equipment into the frame aisle. See Figure 27.

5.221 Ordinarily, the location of the ladder stop in line with the end frame upright as shown in Figure 27 will meet the latter requirement. The stop should not be located inside the end upright unless interference from the wall prevents sufficient extension (3 ft.) of the track beyond the last frame. If this occurs, the approval of the Telephone Company should be obtained before locating the stop inside the upright. Also, refer to Paragraph 7.1.

5.23 Where a ladder track extends close to a wall, column or equipment, the ladder stop shall be so placed that it will prevent the ladder striking the wall, column or equipment.

5.3 For Platform-Type Rolling Ladders

5.31 Where the ladder track is installed close to, and beyond a column so that the rolling ladder cannot pass the column, a platform-type rolling ladder is used. In these cases, the stops are located so that the ladder can approach the column without touching it. See Figure 27.

5.32 At the end of the track towards which the ladder is inclined and where the ladder track serves equipment in close proximity to partitions or walls so that platform-type ladders have to be used to reach all of the equipment, the minimum distance from the end of the last frame to the center of the ladder stop shall be 12". See Figure 27.

5.33 At the end of the track away from that towards which the ladder is inclined, the requirements in Paragraph 5.22 apply when the end of the track run is encountered.

5.34 Ladder stops shall be located so as to prevent the ladder from striking any part of the building or equipment.

6. INSTALLING STOPS

6.1 A ladder track stop shall be installed at each end of the track in accordance with Paragraphs 4 and 5, and as shown in Figures 26 and 27. Ladder stops shall be equipped with cotter pins.

6.2 Where a ladder track per Figure 29 is installed, the plug is used as a stop at the end of the track towards which the ladder slopes provided a stop is required at that location and the stop bushing P-450366 shall be omitted.

7. INSTALLING PLUGS

7.1 General

7.11 Ladder track plugs are installed as a protective measure for the ends of ladder track which are exposed and may result in a personnel INJURY HAZARD. Ordinarily, this condition exists where: (1) two levels of track are required in the same aisle and the ends of the track overlap, (2) where the 3'-0" overhang requirements specified in Paragraph 5.22 cannot be met due to interference from cable racks or other obstructions which are not to be relocated.

7.111 Where the ends of the track are more than 6 inches from a wall or other obstructions, track plugs shall be furnished.

7.112 Sufficient plugs may not always be provided due to unforeseen conditions during the engineering phase of the job. Therefore, all conditions should be reviewed by the Installer and additional plugs ordered as required to assure protection against the aforementioned INJURY HAZARD.

7.2 Installing Plugs

7.21 Ladder track plugs shall be installed as shown in Figure 29. Cotter pins are required.

7.3 Use of Plugs as Stops

7.31 As covered in Paragraph 6.2, a rubber plug may be used as a stop at the end of the track towards which the ladder slopes provided a stop is required at that location. The plug shall serve as a stop and the stop bushing P-450366 shall be omitted.

8. VERIFICATION ITEMS

	VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE PAR. NO.	REFERENCE FIG. NO.
8.1	General Location of Stops		
8.11	In partial lineups, stops located with respect to first and last installed frames.	4.21	
8.12	In partial lineups with gaps, stops located with respect to first and last frames.	4.31	
8.13	In partial lineups with ultimate ladder track, stops located at ends of track for access to ultimate lineup.	4.41	
8.14	In complete lineups, stops located with respect to first and last installed frames.	4.51	
8.2	Specific Location of Stops		
8.21	For Straight-Type Ladders		
8.211	At end towards which the ladder slopes, approximately 4'-2", but not less than 2'-10", from frame upright.	5.21	27
8.212	At other end of track, stop located to permit entrance under ladder into frame aisle; usually stop is in line with frame upright but shall not be inside frame upright.	5.22	27
8.2121	Ladder track extended 3' beyond this stop.		
8.213	So placed as to prevent ladder from striking wall, column or equipment.	5.23	

	VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE Par.No.	REFERENCE Fig.No.
8.22	<u>For Platform-Type Ladders</u>		
8.221	So placed as to prevent ladder from striking wall, column or equipment.	5.31	
8.222	At end of track and at end towards which the ladder slopes, a minimum of 12" from last frame upright.	5.32	27
8.223	Not less than 3' from other end of track and not inside last frame upright.	5.33	
8.3	<u>Installation Stops</u>		
8.31	Stops properly assembled and installed.	6.1	26,27
8.32	Stops equipped with cotter pins.	6.1	26,27
8.4	<u>Installation of Plugs</u>		
8.41	Ladder track plugs installed where two levels of track are in same aisle or where personal injury hazard exists.	7.11	
8.42	Plugs properly assembled and installed.	7.21	29
8.43	Plugs equipped with cotter pins.	7.21	29

→ Indicates new or changed information.

[Vertical line at side of paragraph indicates requirements.

Engineering Planning Manager
Common Installation and Services

Reason for Reissue:

To clarify application of ladder track plugs Paragraphs 6.2 and 7.111.