

ERECTING FRAMES
 VERIFICATION OUTLINE

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1. GENERAL**1.1 Scope of Section**

1.11 This section contains the verification items for the equipment installed by the operations covered in Sections 19C, 19D, 19E1, 19E2, 19E3, 19F and 19G.

1.12 Where practicable the essentials of the requirement are included in the verification item. Where this is not practicable a brief statement of the requirement appears as one or more

subparagraphs of the verification item. In each case a reference is made to the complete requirement.

1.2 Verification of Inaccessible Equipment

1.21 Verification items marked (P) are so designated to denote that the equipment should be verified before it become inaccessible or before a portion of the work becomes indiscernible due to additional installing operations. If a portion of the work is visible on the equipment that portion should be verified in the regular manner.

VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE		
	Sec.No.	Par.No.	Fig.No.
2. COMMON REQUIREMENTS			
2.1 Nuts, Bolts and Screws			
2.11 Bolts, nuts, cap screws, machine screws and similar threaded parts of the kind and size as specified and installed in all places requiring them.	1B	9.1 to 9.16	
3. INSTALLING PROCEDURES - AMA CABINETS			
3.1 Location of Cabinets			
3.11 Located in accordance with floor plan drawings	1B		
3.12 Plumb within 3/16" for relay cabinets; 1/8" for other cabinets.	19C	8.46(a) 9.5	10
3.13 Joined ends of cabinets as nearly flush as practicable.	19C	8.46(b)	
3.14 Difference in level between adjacent cabinets as small as practicable.	19C	8.46(c)	
3.15 Caulking compound between base of cabinets and floor where required.	19C	10.1	
3.2 Cabinet Doors			
3.21 Cabinet doors do not bind.	19C	8.45	
3.3 Mounting Parts			
3.31 Number and location of floor bolts correct.	19C	6.2(a), (b), (c)	

VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE		
	Sec.No.	Para.No.	Fig.No.
4. INSTALLING PROCEDURES - 1A CARD TRANSLATORS			
4.1 Location of Cabinets			
4.11 Cabinets located in accordance with information furnished the job.	19D	6.1.6.2 6.3	
4.2 Fastenings of Cabinets			
4.21 Two fastenings, located in diagonally opposite corners except where earthquake protection is specified in which four fastenings shall be used.	19D	8.1	
4.3 Alignment of Cabinets			
4.31 Spacing between front ends of alternate cabinets within limits.	19D	13.23	
4.32 End surfaces of alternate apparatus unit bed plates in parallel planes.	19D	13.26	
4.33 Overlapping sides of adjacent cabinets as nearly flush as practicable.	19D	13.281	
4.34 Top surfaces of cabinet level within 1/32".	19D	13.282	
4.35 Cabinets should be plum within 1/16".	19D	13.283	
4.36 Difference in level between the top surfaces of adjacent cabinets not greater than 1/32".	19D	13.284	
4.37 Spacing between rear uprights of adjacent cabinets as close to 8 1/2" as practicable. Variations not over 1/16".	19D	13.285	
4.38 Horizontal alignment not out more than 1/8" (in and out) from a straight line extending the full length of the lineup.	19D	13.286	
4.4 Caulking of Cabinets			
4.41 Caulking compound between base of cabinets and floor where required.	19D	16.1	
5. INSTALLING PROCEDURES - STEP-BY-STEP FRAMES			
5.1 Location of Frames			
5.11 Located in accordance with floor plan drawing.	19E1	5.1	
5.12 Base members of frames coincide with lines previously laid out on the floor.	19E1	9.3.9.4	
5.13 Frame channel top members located to coincide with lines previously marked on floor.	19E1	7.1	
5.2 Fastenings			
5.21 Number and location of floor fastenings correct.	19E1	9.3 11.11	3.4D
5.22 Correct fastenings at top of uprights on frames with channel top members.	19E1	7.2.7.3 7.31.7.32 10.12. 10.13	11B. 11C. 11K. 11L. 11M 11D. 11E. 11F. 11H
5.23 Correct fastenings at top of upright of frames without frame channel top members.	19E1	11.3 11.31	11. 11G 12 63
5.24 Correct fastening of frame channel top members to auxiliary framing.	19E1	7.3	11J
5.25 Correct splicing and staggering of splices of frame channel top member	19E1	7.2.7.3	9A
5.26 Isolated frames and frames which extend more than 2' - 6" beyond last fastening correctly supported.	19E1	7.3	15B. 15C

VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE		
	Sec.No.	Par.No.	Fig.No.
6. INSTALLING PROCEDURES - UNIVERSAL DUCT TYPE BAYS			
6.1 Location of Bays			
6.11 Properly located with respect to lines previously laid out on the floor.	19E2	5.1.5.2. 5.3	
6.2 Fastening of Bays			
6.21 One floor bolt provided for each hole in the base plate of floor supported bays except when otherwise specified on the framework assembly drawings.	19E2	7.1	
6.22 One floor bolt used in each 9'-0", 10'-6" or 11'-6" bay and properly tightened.	19E2	8.2	1.6A
6.23 At least two fastenings to junction pipe provided at the top of each 9'-0", 10'-6" or 11'-6" bay. (See framework drawings).	19E2		6J
6.24 9'-0", 10'-6" or 11'-6" frame at end of line-up provided with one point of top support other than V-bolt fastening shown in Figure 1A of Section 19K.	19E2	10.1	
6.25 Isolated 9'-0", 10'-6" or 11'-6" frames provided with two points of support.	19E2	10.2	
6.26 Supports to auxiliary framing in accordance with 6J, 6L, and 6M.	19E2	10.4. 10.5	6J, 6L, 6M
6.27 Supports to cable rack in accordance with Figures 62N and 62P.	19E2	10.2	62N, 62P
6.28 Short pieces of framing bars or channels used for support of frames cut off flush with the ends of clip.	19E2	10.3	
6.3 Junctioning Bays			
6.31 9'-0", 10'-6" or 11'-6" frame junctions in accordance with the following.			
6.311 Junction pipe run continuously throughout the length of the line-up.	19E2	9.22	
6.312 Junction pipe should not extend beyond the ends of groups of bays which are interrupted by a building column.	19E2	9.243	
6.313 Junctions of pipe made in the approximate center of bay.	19E2	9.241	6J
6.314 Ends of pipes do not extend into cross aisles.	19E2	9.242	
6.315 Unused portion of pipe over future bays properly aligned and secured to framing bars.	19E2	9.23 9.24 10.4	6F, 6L
6.316 Spacers used between top angle and junction pipe when required.	19E2	12.37	1A, 6J, 6M
6.317 Junctions between duct-type frames and other type frames in accordance with framework drawings.	19E2	9.26	

VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE		
	Sec.No.	Par.No.	Fig.No.
6.318 Where frames without top angles are used, they should be junctioned in accordance with specific arrangements.	19E2	9.25	
6.32 Junctioning for floor supported bays assembled in accordance with drawings furnished the job.	19E2	9.11	
6.4 Alignment of Bays			
6.41 Leveling screws on 9'-0", 10'-6" or 11'-6" frames directly against cement floor where linoleum has been previously laid.	19E2	6.3. 12.114	
6.42 Spacing between adjacent bays (width of cable ducts) in accordance with information on floor plan drawings.	19E2	12.26, 12.351	
6.43 Uprights plumb within permissible limits.	19E2	12.111	
6.44 Difference in level between adjacent bays measured at top surface of detachable guard rails does not exceed 1/16".	19E2	12.112	
6.45 Front faces of flanges on uprights of adjacent bays not more than 1/16" out of line (front-to-rear) with respect to each other.	19E2	12.113	
6.46 Horizontal alignment not more than 1/8" (in or out) from a straight line extending the full length of the line-up.	19E2	12.113	
6.47 Adjustable mouldings on detachable guard rails and rear skirts fit snugly against the floor.	19E2	13.611 13.612	

7. INSTALLING PROCEDURES - DISTRIBUTING AND PROTECTOR FRAMES

NOTE: See Section 27V for items on alignment.

7.1 Erecting, Placing and Fastening Frames			
7.11 Location of Frames			
7.111 Frames located to conform with dimensions on floor plan drawing specified for the particular job.	19E3	4.31	
7.112 Frames located to insure satisfactory functioning and workmanlike appearance where no limiting dimensions are specified.	19E3	4.32	
7.113 Floor angles of frames laid directly on linoleum when floor covering was laid prior to start of job.	19E3	4.33	
7.12 Arrangement of Auxiliary Framing Over Frames			
7.121 Frames more than 11' - 6" high installed in accordance with requirement for high-type auxiliary framing.	19E3	4.41	
7.122 Frames 11' - 6" high with service observing jack boxes supported by low-type auxiliary framing have auxiliary framing located to avoid jack boxes.	19E3	4.44	
7.123 SxS Offices - Auxiliary framing raised to extend over distributing frames.	19E3	4.42	13
7.124 Panel Offices - Low-type auxiliary framing extended without change in level in offices having 11' - 6" I.D.F. located in switchrooms.	19E3	4.43	
7.13 Auxiliary Framing Supported Frames			
7.131 Frames fastened to floor unless otherwise specified.	19E3	4.521	

VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE		
	Sec.No.	Par.No.	Fig.No.
7.132 Hold-down bolt placed at each hole provided in base unless otherwise specified.	19E3	4.521	3
7.133 Frame for No. 1 Crossbar office bolted to floor at each end unit and one at every third intermediate unit, approximately twelve bays apart.	19E3	4.5211	3
7.134 Top angles of frames with individual verticals secured to auxiliary framing as shown.	19E3	4.531	6,13
7.135 When top angle is welded to shop assembled units, V-bolts assembled on top angle as shown.	19E3	4.533	6.13
7.136 Frames with single top angles installed in SxS Offices having auxiliary framing at 11'-8" or 11'-9-1/2" level, attached to auxiliary framing with V-bolts, clips, etc.	19E3	4.534	7B,7D,7E
7.137 Frames with single top angles, such as LDF in No. 1 Crossbar offices, and having auxiliary framing at 11'-8" or 11'-9" level, attached to auxiliary framing with 1/2" V-bolts, clips and channel spaces.	19E3	4.535	7A,7C
7.138 Frames with single top angles installed in No. 5 Crossbar offices having auxiliary framing at 11' - 9-1/2" level, attached to auxiliary framing with V-bolts, clips, etc.	19E3	4.536	7B

7.14 Erection of Frames

7.141 Brace rods for M.D.F. frames supported directly from ceiling inserts not over 4' in length and evenly distributed on both sides of frame.	19E3	4.542	
7.142 Adjacent units of L.D.F. bolted through holes in guard rail gusset plates.	19E3	4.544	
7.143 Double sided protector frame supported only on high side. (Located farthest from associated M.D.F.)	19E3	4.545	

7.15 Assembly of Tie Bars

7.151 Correctly spaced.	19E3	4.551	
7.152 Offset ends to left (facing horizontal side).	19E3	4.551	
7.153 Mounting holes nearest top edge of strip.	19E3	4.552	

7.16 Floor Supported Frames

7.161 Located as shown on floor plan drawing.	19E3	4.61	
7.162 Secured with expansion bolts or lag screw - one in each hole in base unless otherwise specified.	19E3	4.61	
7.163 Plumb within limits. Shims of proper thickness used where required.	19E3	4.63	

7.17 Wall Supported Frames

7.171 In wood joist constructed building, uprights fastened to wood strips approximately 2" thick.	19E3	4.71	
7.172 In brick or concrete constructed building, uprights blocked out from wall to compensate for any irregularities in wall line.	19E3	4.73	

VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE		
	Sec.No.	Par.No.	Fig.No.
7.2 Mounting Associated Parts			
7.21 Cable Designation Boards			
7.211 Assembled in accordance with assembly drawing.	19E3	5.11	
7.212 Made of white pine or white wood 6" x 1/2".	19E3	5.111	
7.213 Board supported at 45° angle unless otherwise specified.	19E3	5.11	
7.22 Cord Hooks and Cord Number Plates			
7.221 Securely fastened so as not to loosen under strain caused by cords.	19E3	5.21	
7.222 145-type number plates attached by passing stay cord through ring of plate unless otherwise specified.	19E3	5.22	
7.23 Distributing Rings and Pins			
7.231 Proper code of ring or pin installed as specified.	19E3	5.31	3
7.232 Shoulder of ring well engaged with face of frame vertical.	19E3	5.32	
7.233 Rings installed for right end vertical facing vertical side of frame, only where this vertical is equipped.	19E3	5.37	
7.234 Insulation on ring portion free of breaks.	19E3	5.38	
7.235 Insulation not painted.	19E3	5.39	
7.24 Fanning Strips			
7.241 Assembled as shown in figure.	19E3	5.41	15
7.242 Cross-arms wrapped with fiber where necessary to prevent clamps from being drawn together.	19E3	5.41	
7.243 Clamps not tightened so wood screw is withdrawn from fanning strip.	19E3	5.41	
7.244 Insulators and spacing blocks clamped in place as shown on assembly drawing.	19E3	5.42	
7.26 Insulating Details and Distributing Rings			
7.261 Insulating details installed only when fanning rings are not furnished.	19E3	5.51	
7.27 Jack Boxes			
7.271 Securely fastened and accessible for maintenance.	19E3	5.61	
7.28 Protector Mountings and 444 Type Jacks			
7.281 Framework contact surface clean.	19E3	5.71, 5.712	
(P) 7.282 Paint and other material removed from tapped holes in protector mounting supports at the time protectors or jacks are mounted.	19E3	5.711	
7.283 Mounting screws seated on clean surface and tight.	19E3	5.71	

VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE		
	Sec.No.	Par.No.	Fig.No.
7.284 444-type jacks securely fastened and correctly aligned.	19E3	5.74. 5.76	
7.285 Protectors on old style riveted bar distributing frame mounted as shown in figure.	19E3	5.75	16
8. INSTALLING PROCEDURES - SHOP EQUIPPED UNIVERSAL TYPE BAYS			
8.1 <u>Location, Fastening, Junctioning and Alignment of Bays (Section 19F)</u>			
8.11 Verify as covered in this section under Paragraph 6.			
9. INSTALLING PROCEDURES - END GUARDS, GUARD RAILS, ETC.			
9.1 <u>Accessories (Bulb Angle and Channel</u>			
9.11 End Guards installed where specified.	19G	4.11 to 4.17	
9.12 Guard rails properly aligned and assembled in accordance with job drawings.	19G	4.21, 4.23	
9.13 Casings on Message Register Frames mounted in the cable slot to rear.	19G	4.31	
9.2 <u>Accessories - (Sheet Metal Box Type)</u>			
9.21 End guards furnished per ED-25769-70 and ED-27011-70.	19G	5.11	
9.22 Rear metal covers fit so that they can be inserted and removed without binding; P-40B805 cover clamps installed where required and turned into the cover holding position.	19G	5.422	

→ Arrowed lines indicate new or changed information.

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Reason for Reissue:
To renumber and rearrange Paragraph 4 references.