ALIGNMENT OF FRAMES

NO. 5 CROSSBAR FRAMES (SHEET METAL BOX TYPE)

CONTENTS

1. GENERAL
1.1 Scope
1.2 Associated Information
1.3 General Information Pertaining to Arrangement of Tools, Precautions, Verification, Specification, Drawings and Figures
2. INSTALLING EQUIPMENT
3. ALIGNING PROCEDURE
4. SECURING FRAMES
5. VERIFICATION ITEMS

1. GENERAL

1.1 Scope

1.11 This section covers the specific methods and requirements for the alignment of No. 5 Crossbar Frames having sheet metal box type members. It is assumed the frame will have been placed in the lineup and loosely fastened with all the necessary details before the aligning operations are begun.

1.12 The requirements covered in this section shall be followed except as modified by applicable specifications and drawings.

1.2 Associated Information

1.21 Refer to Table 1 for the location of information to which reference may be necessary when performing operations covered by this section.

1.3 General Information Pertaining to Arrangement of Tools, Precautions, Verification, Specification, Drawings and Figures

1.31 Refer to Section 27A for information pertaining to the above subjects.

2. INSTALLING EQUIPMENT

2.1 Tools

2.11 The tools listed below will be required for the operations covered by this section. Other tools available in the General Tool Kits also may be required.

No. 48 Kit, Erecting and Aligning
R-2792 Wrench Set, General Use

TABLE 1

ASSOCIATED HANDBOOK INFORMATION REFERENCE

Subject	Handbook	Section
Alignment of Frames - Common Requirements and Information	30	27A
Erecting and Fastening No. 5 Crossbar Frames	30	19B2
General Requirements Covering Bolts, Nuts and Screws	30	20A
Precautions, General, To Avoid	0	
Damage to Building and Equipment	0	
Personal Injury	0	
Service Interruptions	0	

This section includes material from BSP 800-614-154
Copyright 1956, by American Telephone and Telegraph Company
Printed in U.S.A.

2.2 Materials

R-2995 Shim, Frame, 1/8" x 1-1/2" x 6-1/4"
R-2996 Shim, Frame, 1/16" x 1-1/2" x 6-1/4"

NOTE: The number of shims actually required by a job will vary with the level of the floor where the bays are to be installed. Since there is no way of determining the number required prior to the start of the job, it is suggested that one R-2995 and two R-2996 Shims be requisitioned from Stockkeeping for each two bays being installed, in order that some shims be available on the job in the event they are needed. If additional shims are required, they should be requisitioned. Jobs having shims left should, if possible, send them to another No. 5 Crossbar job in the area rather than returning them to Stockkeeping. When necessary to shim spaces 3/8" or more, it will be permissible to use 6-1/4" lengths of auxiliary framing bar, if available on the job.

3. ALIGNING PROCEDURE

3.1 The aligning of the frame base with respect to scribed lines on the floor can be accomplished by using the R-4413 Frame Setting Tool. Insert the rod of the tool into dolly truck hole of the frame base all the way to the rubber pad. Adjust the leg to a vertical position and place foot flat on floor, then apply pressure on handle to move frame in, out, or sideward a small increment.

3.11 When working frames having an expansion shield in the dolly turck hole are to be moved, it is first necessary to remove the shield. Remove the front metal molding and insert a short piece of thin wall conduit or threaded rod into the hole and tap the other end with a hammer to remove the shield. The R-4413 Frame Setting Tool may then be used to shift the frame; however the use of the R-2842 Dolly Truck is required when relocating frames.

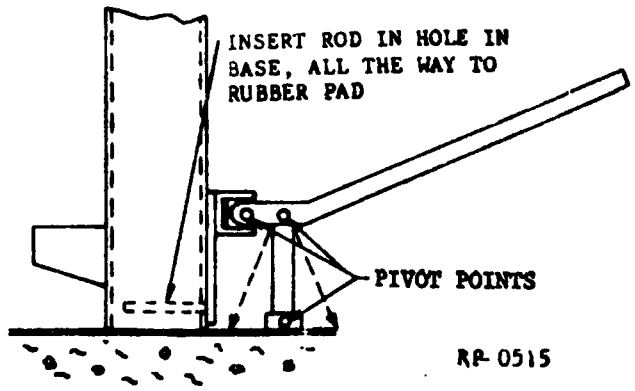

FIG. 1 USE OF R-4413 FRAME SETTING TOOL (PAR. 3.1 AND 3.272)

3.2 Align the frames using the R-2836 Plumbing Fixture as illustrated in Figure 2. When the limits of the plumbing fixture are met as outlined in the following paragraphs, the aligning requirements covered in Section 27A and the General Section of this handbook should be met.

3.21 Remove the top and bottom plastic cover from the front of the frame so that they will not interfere with the use of the plumbing fixture.

3.22 Attach the plumbing fixture to the upright of a frame at one end of the lineup, utilizing the cut-outs in which the plastic covers are fastened, as shown in Figure 2.

NOTE: R-2836, Det. 24, Clamp sometimes interferes with the hole in the framework (F-slot) for supporting the plumbing fixture. If this exists, enlarge hole (F-slot) by filing to fit the clamp.

3.23 Tie the end of the R-1313 Fish Line to Detail 1 after passing it through the locating hole of the detail and suspend the R-1314 Plumb Bob through the gauge hole in the lower fixture, Detail 2. The fish line with the attached plumb bob should hang freely in the gauge hole of the fixture, Detail 2. If the line does not clear the circumference of the gauge hole, shift the top of the frame or use shims under one end of the frame, as required. See Paragraph 3.27.

3.24 The procedure outlined in Paragraphs 3.22 and 3.23 should be repeated on the upright of the frame at the opposite end of the lineup.

3.25 Align the intermediate uprights on other frames in the lineup by means of the R-1313 Fish Line stretched tightly horizontally between the two top assemblies of the R-2836 Plumbing Fixture mounted on the end uprights, as indicated in Figure 2.

3.251 Shift the tops of the frames, if necessary, so that the space between the uprights of adjacent frames is approximately equal at top and bottom. The clearance between the tight line and the face of the uprights of all the frames should be approximately the same.

3.26 Where the uprights of two adjacent frames are bowed, they can be pulled together by means of screws placed through the holes which are provided for mounting the end guards.

NOTE: A .164-32 screw (3-1/8" or 3-1/4" LG), hex nut and two washers, for this purpose should be obtained locally.

3.27 Since no leveling screws are used on No. 5 Crossbar Frames, it will be necessary to shim the frames in cases of extreme unevenness of the floor, in order to maintain a satisfactory mutual alignment of the frames. Standard shims (see Paragraph 2.2) are available for this purpose.

3.271 Several adjacent lineups of frames, where practicable, should be simultaneously leveled prior to the final fastening of the frames. If this procedure is not followed, difficulty may be encountered when leveling the frames adjacent to a lineup which is at a low point in the floor. If the final fastenings have been made in the lineup having the low point, the auxiliary framing bearing on the lineup at the higher level is often in such a position that undue stress is placed on the frames when the frames adjacent to the fastened lineup are being leveled.

3.272 When shims are used, raise the frame by using the R-4413 Frame Setting Tool, as shown in Figure 1. Place the shim under the end upright of a frame, as required, with the 6-1/4" dimension perpendicular to the frame lineup.

3.28 No caulking between the base of the frame and the floor is necessary. The moulding strip provided on the front should be adjusted to fit the floor as snugly as practicable. This can be done by loosening the mounting screws and tapping the moulding strip downward. The mounting screws should then be retightened.

4. SECURING FRAMES

4.1 After each end frame of the lineup has been aligned, secure both frames at top and bottom to prevent movement.

4.2 Securely tighten the nuts on the bolts supporting the auxiliary framing and those on the screws securing the junction plates to the top channel of the frames immediately after each frame has been aligned to prevent any movement.

4.3 Insert the stud in the floor anchor and be certain that it is fully engaged. Securely tighten the nut on the stud with the R-2795 Combination Socket and the R-2806 Ratchet Handle.

NOTE: Where the column bracing is used, it should be checked for evidence of shifting after the frames have been aligned. If necessary, relocate the braces and securely tighten them against the columns taking care not to disturb the alignment of the frames.

4.4 It may be necessary to cut off the excess length of floor bolts where equipment is to be installed in the frame base.

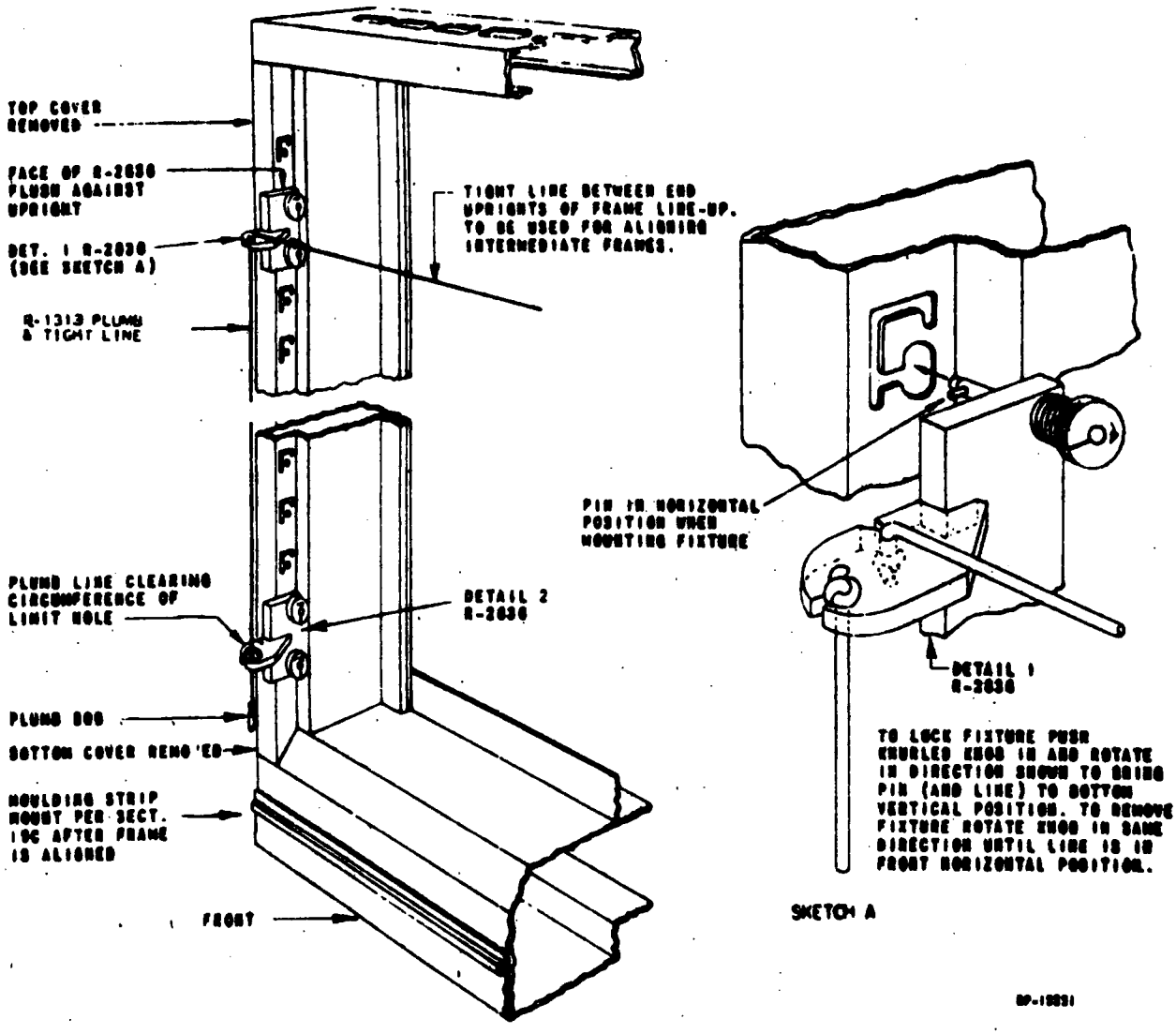

FIG. 2 USE OF R-2836 PLUMBING FIXTURE
(PARS. 3.2, 3.22 & 3.25)

5. VERIFICATION ITEMS

	VERIFICATION ITEMS AND BRIEF STATEMENT OF REQUIREMENTS	REFERENCE	
		PAR. NO.	FIG. NO.
5.1	Bays and Frames		
5.11	Alignment (levelness and plumb) requirements met.	Sec. 27A	
5.12	Shims used to level No. 5 Crossbar Frames due to unevenness of floor.	3.27	
5.13	Moulding strip on front of base of No. 5 Crossbar Frames adjusted to fit the floor as snugly as practicable. No caulking used.	3.28	

→ Indicates new or changed information.

Engineering Planning Manager
Common Installation Engineering

Reason for Reissue:
To update Paragraphs 3.1, 3.11 and 4.3.
To update Figure 1.