INSTALLATION OF

"COSMIC" MDF FRAME

CONTENTS

1. GENERAL
1.1 Scope
1.2 General Information Pertaining to Verifications, Specifications, Drawings and Figures
2. REQUIRED FACILITIES
3. LAYING OUT AND DRILLING FLOORS
3.1 Laying Out Floors
3.2 Drilling Floors
4. INSTALLING SELF DRILL ANCHORS
5. HOISTING FRAMES
5.1 Hoisting Centers
5.2 Hoisting "Cosmic" Distributing Frame
6. TRANSPORTING COSMIC FRAMES TO LINEUPS
6.1 Attaching Hand Trucks
6.2 Transporting "Cosmic" Frames
7. COSMIC FRAME ASSEMBLY
7.1 Intermodular
8. LEVELING FRAMES
8.1 Leveling Shims
8.2 Leveling Frames
9. FASTENING FRAMES
9.1 To Floors
9.2 To Superstructure
10. GENERAL IRONWORK ASSEMBLY REQUIREMENTS

1. GENERAL

1.1 Scope

1.11 This section covers a method to be followed for floor lay-outs, drilling and setting anchors, hoisting, conveyance of frames to their positions in the equipment lineups, assembly of modules, leveling and anchoring the "cosmic" frames to the floor and auxiliary framing.

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

1.21 See Section 10 for information pertaining to the above subjects.

2. REQUIRED FACILITIES

2.1 In addition to tools normally available on job, the following items are required for operations covered in this section.

Kit 33	Vacuum Cleaner
Kit 66or66A	Masonry Drilling
Kit 102	General Tool
R-3964	Hoisting Fixture (TK 87)
R-4223	Hoisting Fixture
R-3626	(2) Electric Hoist
R-3662	Steel Strapping Cutter
R-4469	Hand Truck
TS 829	Alignment Plug (R-4470)
	Vise Grip Pliers (R-4479)

TK 69, Floor Supported Hoisting Center, may also be required if building conditions do not allow for construction of a ceiling supported hoisting center.

3. LAYING OUT AND DRILLING FLOORS

3.1 Laying Out Floors

3.11 In addition to general floor lay out information as covered in Series 6 of Handbook 30, see Figure 1 for specific floor layout pertaining to the "COSMIC" distributing frame.

3.2 Drilling Floors

3.21 To drill holes, a Roto-Hammer and a self-drill anchor is required. The anchor itself acts as a drill bit. Hammering action of the Roto-Hammer expands and sets the anchor. Use Roto-Hammers provided in Tool Kits 66 and 66A.

3.22 Refer to Section 9A of Handbook 30 for information pertaining to masonry drilling.

3.23 If during the drilling operation a reinforcement rod is hit, locate a new hole, one inch away on a 45° angle.

4. INSTALLING SELF DRILL ANCHORS

4.1 In Non Earthquake Areas

4.11 First and last frame in a line-up receives five (5) anchors, the remainder of frames receive four (4) anchors each.

4.12 Use 841 209 729 3/8" self-drill anchors and 841 213 697 3/8"-16 x 2-1/2" lg slotted studs.

4.2 In Earthquake Areas

4.21 Every frame receives eight (8) self-drill anchors.

4.22 Use 841 209 737 1/2" self-drill anchors and 841 213 721 1/2" - 13 x 3" LG slotted studs.

5. HOISTING FRAMES

5.1 Hoisting Centers

5.11 If the R-3447 Floor Supported Hoisting Center (Tool Kit 69) is to be used, assemble and erect it and attach the R-3626 Electric Hoists in accordance with Series 19 of Handbook 30.

5.12 If a ceiling supported hoisting center is to be used, construct it as covered in Series 19 of Handbook 30.

5.13 Protect the floor area under and around the hoisting center with masonite sheets.

5.2 Hoisting Frames

5.21 Locate the frame under the hoisting center.

5.22 Attach the R-3964 Hoisting Fixture to the frame top via the four slotted holes. (See Figure 3.)

5.23 Attach the R-4223 Hoisting Fixture to the frame bottom via the uppermost dolly truck holes on the front and rear (See Figure 4). If the frame has been shipped with a base cover in place, the cover will have to be removed first.

5.24 Attach a hoist hook to each of the fixtures (See Figure 5) and slowly take up the slack in the chains. Do not lift the frame.

5.25 Cut the steel banding which encircles the frame and plywood skid using the R-3662 Safety Steel Strapping Cutters.

5.26 Raise the frame horizontally about 12". Remove the skid.

5.27 Raise the upper end of the frame, and raise or lower the lower end of the frame as required, until the frame is vertical (the cords on the electric hoists are long enough to allow one operator to work both hoists).

5.28 Allow the frame to rest on the floor and remove the R-4223 Fixture.

6. TRANSPORTING COSMIC FRAMES TO LINEUPS

6.1 Attaching Hand Trucks - The R-4469 Hand Truck shall be used for transporting the "COSMIC" distributing frames to lineups.

6.12(a) Slide hand truck (Figure 6) under the module from the rear side.

(b) Secure module flanges to hand-truck with latches provided on the support arms.

(c) Disengage the hoist hook and remove the hoisting fixture on the frame top.

(d) Tilt hand-truck and module until all wheels are in contact with the floor.

(e) Transport module to lineup position.

6.2 Transporting Cosmic Frames

6.21 Moving frames with the R-4469 Hand-Truck should be done cautiously.

6.22 See Paragraph 8 of this section for frame leveling information prior to removal of the hand truck.

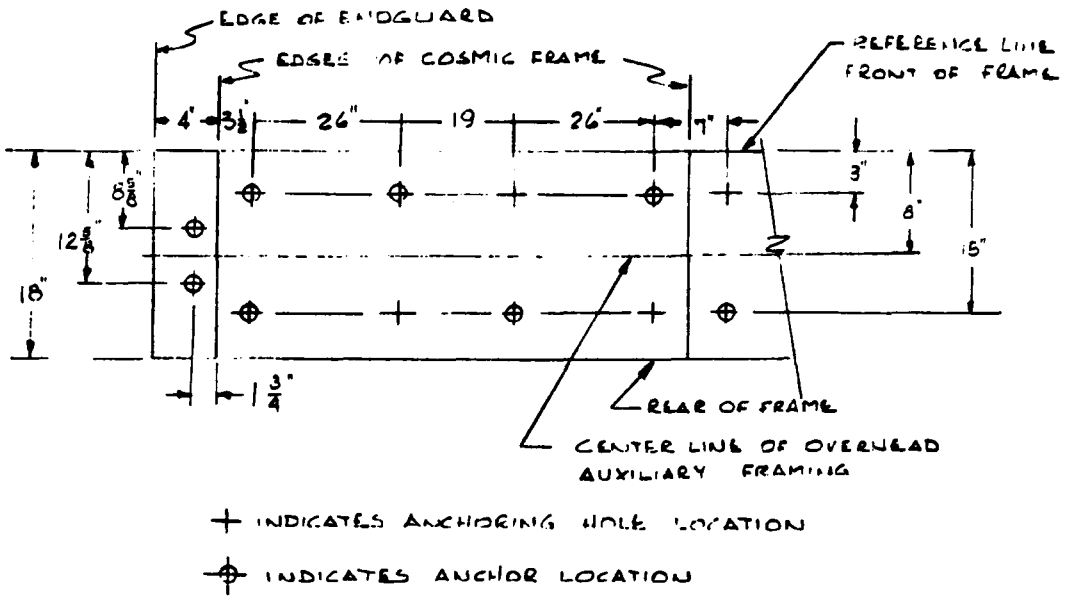

FIG. 1 ANCHORING PATTERN IN LINE UP

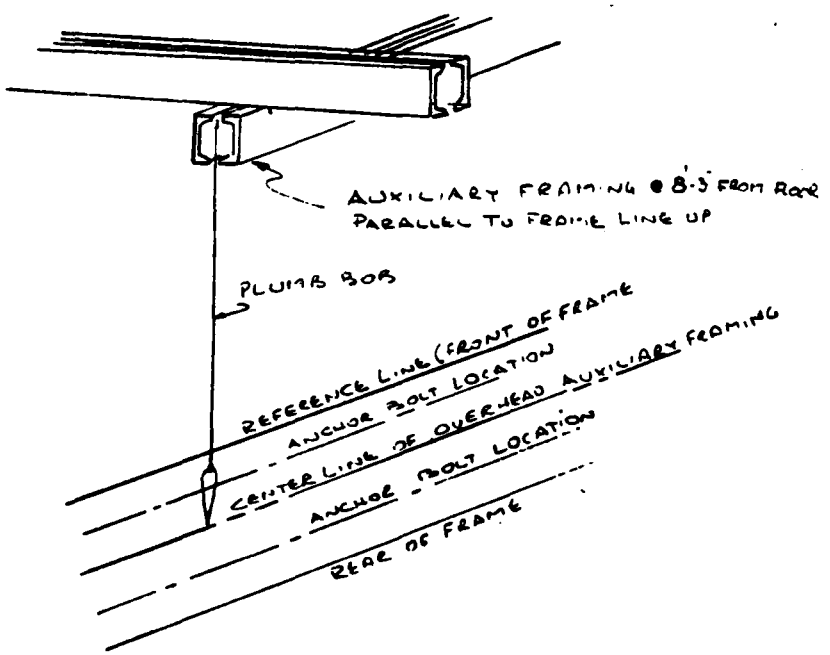

FIG. 2 LAY OUT VERIFICATION

7. COSMIC FRAME ASSEMBLY

7.1 Intermodular

7.11 One complete ordering group consists of one 840982276 Framework Assembly, one 840982276 Framework Assembly and one 84098219 Vertical Channel Assembly.

7.111(a) If possible, start at center of lineup work towards both ends. Such procedure will eliminate dimensional error accumulations.

(b) Start by bolting the right and left half-modules together using (3) R-4470 Alignment Plugs on the rear of the modules (see Figure 7) and vise-grip pliers R-4479 at bottom on the front of the adjoining modules.

NOTE: The alignment plugs should be installed and tapped in from the bottom up.

(c) Level and plumb assembled modules and anchor to floor.

Going Left or Right

(d) Bolt vertical trough assembly to half module - use 3 alignment plugs.

(e) Bolt next half module to vertical trough - use 3 alignment plugs.

(f) Shim as required but DO NOT ANCHOR TO FLOOR.

(g) Bolt next half module - use 3 alignment plugs and vise-grip pliers.

(h) Level and plumb the assembled modules and anchor to floor.

(i) Repeat steps to either direction if started at center.

7.12 For leveling of the entire module see Paragraphs 8 of this section.

8. LEVELING FRAMES

8.1 Leveling Shims

8.11 The leveling shims are made of steel 6" long by 1" wide.

841157506	.063" Thk
841157514	.125" Thk
841157522	.250" Thk

8.12 Any combination of the three leveling shims on top of each other shall be used under each corner of the left and right half module. (For module definition, see Paragraph 7.11.)

8.13 Under half module corners receiving anchors place two sets of shims. One set of shims on each side of the anchor.

8.2 Leveling Frames

8.21 To determine the overall level and the locations of high and low spots in floors follow procedure covered in Section 4 of Handbook 30.

8.22 For leveling Cosmic MDF Frames follow procedure covered in Section 103 of Handbook 261.

9. FASTENING FRAMES

9.1 To Floors

9.11 The beginning and end of each lineup will receive two anchors, the remainder to be staggered as shown in Figure 8.

9.12 In earthquake areas each module will receive four anchors.

9.13 Cosmic MDF Frames are to be fastened in accordance with ED-1A210-11 Drawings.

9.2 To Superstructure

9.21(a) Bolt the top support and the retaining bracket to top of frame at specified locations.

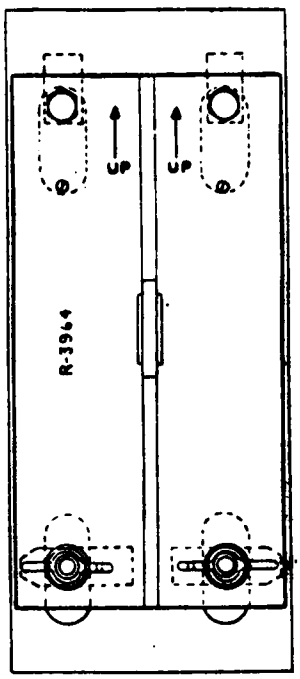

FIG. 3 ATTACHMENT OF R-3964 HOISTING FIXTURE (PAR. 5.22)

(b) Shim between top support bracket and the auxiliary framing bar as required using 5/8" washers.

(c) Place 5/8" - 11" x 4" Hex Bolt through auxiliary framing bars, washers and top support bracket. Tighten nut on bottom.

(d) Ground Frame.

(e) Install trim panels prior to the installation of cable racks over the maintenance aisles.

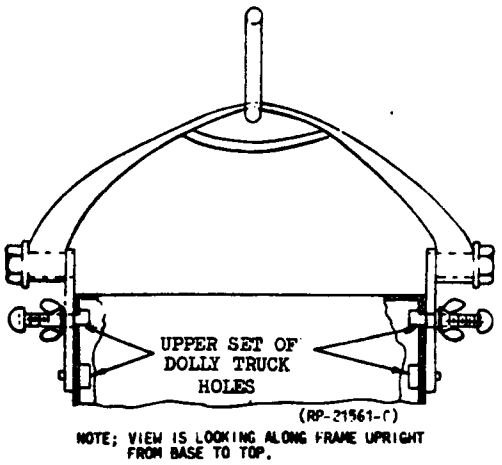

FIG. 4 ATTACHMENT OF R-4223 HOISTING FIXTURE (PAR. 5.23)

9.22 The requirements covered in the 11 Series of sections in Handbook 30 shall be followed except as modified by specifications and drawings furnished to the job.

10. GENERAL IRONWORK ASSEMBLY REQUIREMENTS

10.1 Installation of auxiliary framing and cable rack shall be followed as covered in the respective sections of Handbook 30 except as modified by specifications and drawings furnished to the job.

10.2 Verify the superstructure and cable rack layout by dropping a plumb bob from the center line of the auxiliary framing bar to the floor layout as shown in Figures 1 and 2.

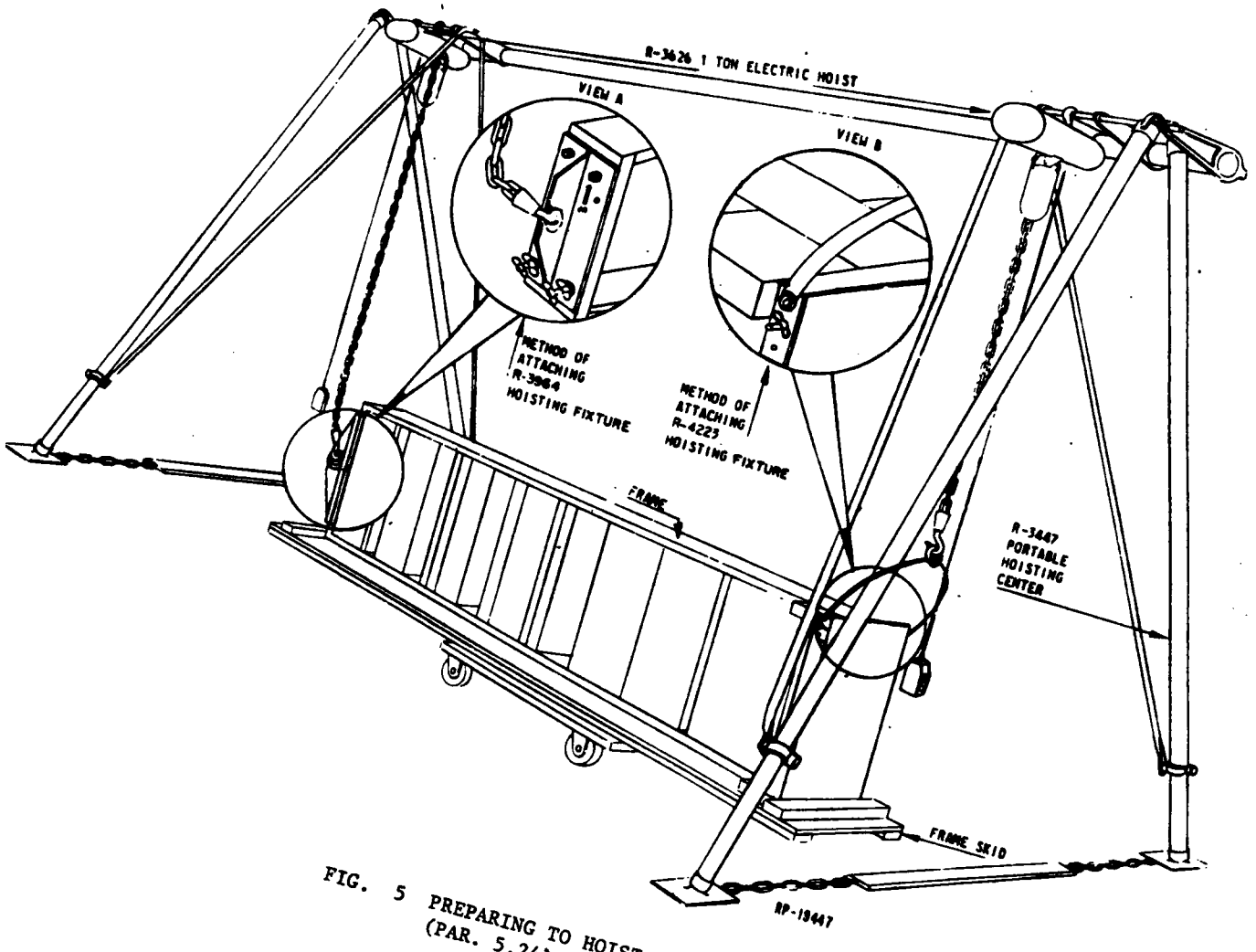

FIG. 5 PREPARING TO HOIST FRAME
(PAR. 5.24)

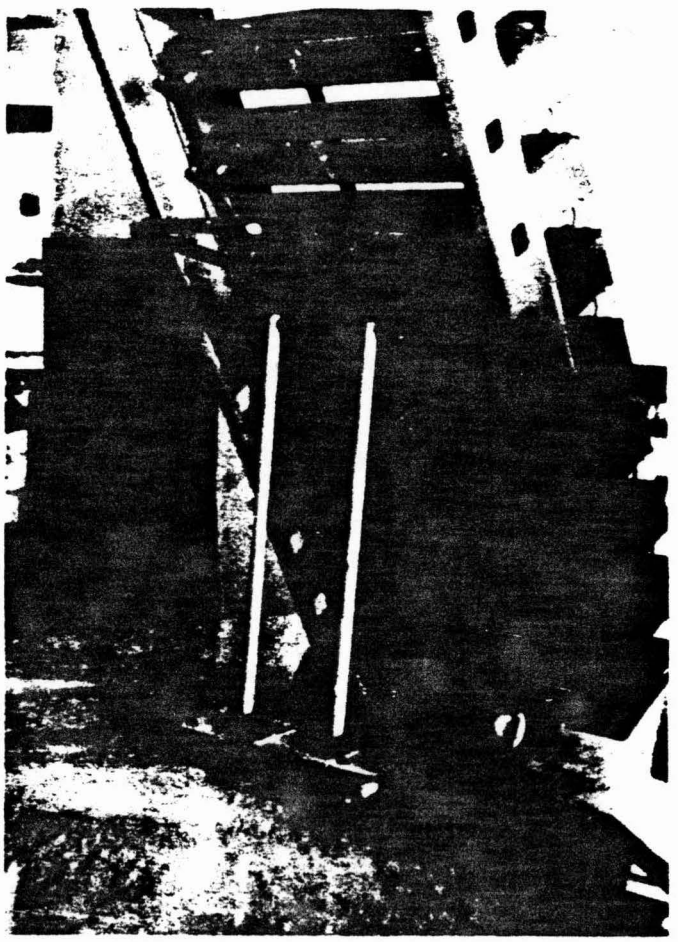

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FIG. 6 R-4469 HAND-TRUCK TO TRANSPORT "COSMIC" MODULES TO LINEUPS (PAR. 6.12)

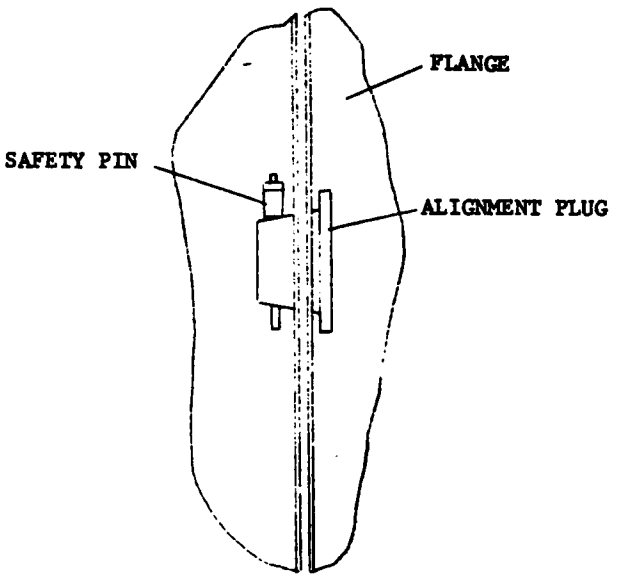

FIG. - 7 R-4470 MODULE ALIGNMENT PLUG
(PAR. 7.111)

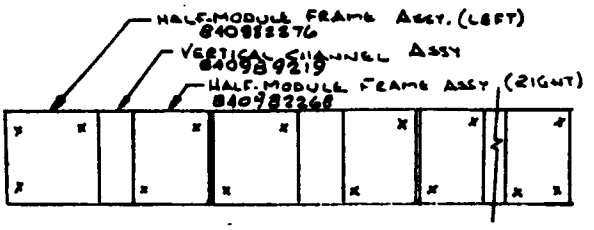

FIG. 8 ANCHORING PATTERN OF LINEUP
(PAR. 9.11)

→ Indicates new or changed information.

Engineering Planning Manager
Common Installation and Services

Reason for Reissue:
1) Replace all reference of "Expansion Shields" with "Self-Drill Anchors" Par. 3 & 4.
2) Add Note to Par. 9.21(e)