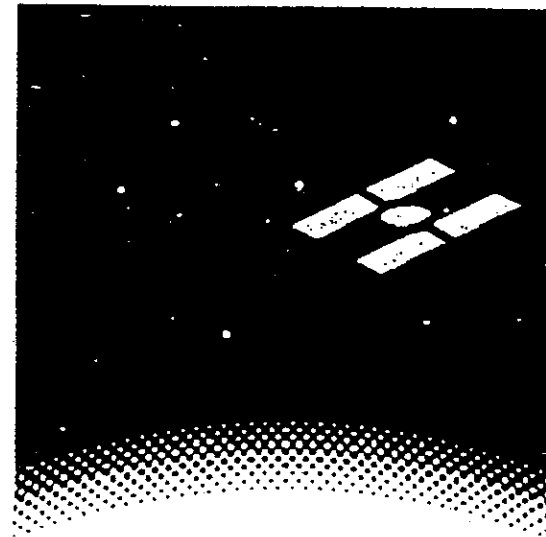


200-9 page is wrong. Left half of page shows proper way to attach a lightbox to tunnel.

200-13 original projector mount needs new instructions

300-2 is missing should be overall dimensions dwg



**HUBBLE SPACE TELESCOPE**  
NEW VIEWS OF THE UNIVERSE

Smithsonian Institution  
Traveling Exhibition Services  
1100 Jefferson Drive  
Washington, DC 20560  
(202) 357-3168

In cooperation with:  
Space Telescope Science Institute

Designed by:  
Lee H. Skolnick Architecture + Design Partnership



**ProtoVision, Inc.**

455 Whitney Street  
Northborough, MA 01532-2503  
(508) 393-7800

**SMALL VERSION EXHIBITION**  
INSTALLATION, DISASSEMBLY AND  
MAINTENANCE MANUAL

## IMPORTANT NOTES:

1. Always insure that hands are clean or gloves are worn when handling the exhibit components. Please remove all tool belts, tape measures and other protruding objects that will cause scratches and abrasions on the exhibit surfaces.
2. Before changing any light bulbs or gaining access to any electrical components, ensure that the power supply is disconnected to the exhibit.
3. All tools and hardware are provided for exhibit installation. Please ensure all tools and hardware are returned to their original locations or shipping positions when disassembling the exhibit, so it will be complete for the next venue.
4. Remove any laser discs and CD's from the exhibits before repacking for shipment.
5. All lock are keyed alike using # C415A key. This key will open any lock within the exhibit.

## INSTALLATION CONTENTS

SMALL VERSION	PAGE
FLOOR PLAN OVERVIEW	000-2
LEITNER SPARES LIST	000-2

100 INTRO AREA	PAGE
OVERVIEW AND PLANNER	100-1
OVERALL DIMENSIONS	100-2
ASSEMBLY INSTRUCTIONS	100-3
ATTACH WALL TO MONOLITH	100-4
ATTACH PENDENT LIGHTING	100-5
ELECTRONIC INTERCONNECTIONS	100-6
DISASSEMBLY INSTRUCTIONS	100-7
MAINTENANCE INSTRUCTIONS	

## INSTALLATION CONTENTS

200 ENTRY TUNNEL	PAGE
OVERVIEW AND PLANNER	200-1
OVERALL DIMENSIONS	200-2
ASSEMBLE PLATFORMS AND RAMPS	200-3
ASSEMBLE TROUGHS	200-4
ASSEMBLE TRUSS SECTIONS	200-5
TRUSS AND LIGHT BOX LAYOUTS	200-6
INSTALL TRUSS BRACES	200-7
INSTALL WIRING HARNESSSES	200-8
INSTALL LIGHT BOXES	200-9
INSTALL ARMS ON LIGHT BOXES	200-11
INSTALL SPEAKERS	200-12
INSTALL PROJECTOR	200-13
INSTALL POWER AND AV CABINET	200-14
DISASSEMBLY INSTRUCTIONS	200-15
MAINTENANCE INSTRUCTIONS	

300 1:15 HUBBLE SCALE MODEL	PAGE
OVERVIEW AND PLANNER	300-1
OVERALL DIMENSIONS	300-2
ASSEMBLY INSTRUCTIONS	300-3
INSTALL PENDENT LIGHTS	300-4
INSTALL BLACK DOME	300-5
ASSEMBLY INSTRUCTIONS	300-6
ATTACH HAND RAILS	300-7
ELECTRONIC INTERCONNECTIONS	300-12
INSTALL LIGHT BOXES	300-13
ELECTRONIC INTERCONNECTIONS	300-15
PLATFORM ELECTRICAL	300-16
CONNECT ELECTRICAL	300-17
INSTALL EARTH DOME	300-18
INSTALL 1:15 MODEL	300-19
INSTALL LAST LIGHT BOX	300-20
INSTALL PANEL AND 1:50 MODEL	300-21
DISASSEMBLY INSTRUCTIONS	300-22
MAINTENANCE INSTRUCTIONS	

## INSTALLATION CONTENTS

400 PLANETS	PAGE
OVERVIEW AND PLANNER	400-1
OVERALL DIMENSIONS	400-2
ASSEMBLE ICON BASES AND WALLS	400-3
ASSEMBLE SPACE TIME MARKER	400-4
ASSEMBLE LEITNER	400-5
ICON READER RAIL AND MONITOR BOX	400-8
ATTACH BLUE ACRYLIC GRAPHIC	400-9
INSTALL PENDENT LIGHTING	400-10
INSTALL AV CABINET	400-11
ATTACH LIGHT BOX WITH IMAGES	400-13
CONNECT ELECTRICAL	400-15
INSTALL ICON LEXAN AND DURATRANS	400-19
DISASSEMBLY INSTRUCTIONS	400-20
MAINTENANCE INSTRUCTIONS	

500 STARS	PAGE
OVERVIEW AND PLANNER	500-1
OVERALL DIMENSIONS	500-2
ASSEMBLE ICON BASES AND WALLS	500-3
ASSEMBLE SPACE TIME MARKER	500-4
ASSEMBLE LEITNER	500-5
ICON READER RAIL AND MONITOR BOX	500-8
ATTACH BLUE ACRYLIC GRAPHIC	500-9
INSTALL NICMOS	500-10
ATTACH LIGHT BOX WITH IMAGE	500-15
ATTACH READER RAIL	500-17
INSTALL PENDENT LIGHTING	500-18
CONNECT ELECTRICAL	500-19
INSTALL ICON LEXAN AND DURATRANS	500-22
DISASSEMBLY INSTRUCTIONS	500-23
MAINTENANCE INSTRUCTIONS	

## INSTALLATION CONTENTS

600 GALAXIES	PAGE
OVERVIEW AND PLANNER	600-1
OVERALL DIMENSIONS	600-2
ASSEMBLE ICON BASES AND WALLS	600-3
ASSEMBLE SPACE TIME MARKER	600-4
ASSEMBLE LEITNER	600-5
ICON READER RAIL AND MONITOR BOX	600-8
ATTACH BLUE ACRYLIC GRAPHIC	600-9
INSTALL PENDENT LIGHTING	600-10
INSTALL AV CABINET	600-11
CONNECT ELECTRICAL	600-13
INSTALL ICON LEXAN AND DURATRANS	600-17
DISASSEMBLY INSTRUCTIONS	600-18
MAINTENANCE INSTRUCTIONS	

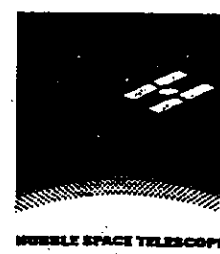
700 UNIVERSE	PAGE
OVERVIEW AND PLANNER	700-1
OVERALL DIMENSIONS	700-2
ASSEMBLE ICON BASES AND WALLS	700-3
ASSEMBLE SPACE TIME MARKER	700-4
ASSEMBLE LEITNER	700-5
ICON READER RAIL AND MONITOR BOX	700-8
ATTACH BLUE ACRYLIC GRAPHIC	700-9
INSTALL PENDENT LIGHTING	700-10
INSTALL EPOCH	700-11
CONNECT ELECTRICAL	700-14
INSTALL ICON LEXAN AND DURATRANS	700-18
DISASSEMBLY INSTRUCTIONS	700-19
MAINTENANCE INSTRUCTIONS	

800 CURRENT AND FUTURE	PAGE
OVERVIEW AND PLANNER	800-1
OVERALL DIMENSIONS	800-2
ASSEMBLY INSTRUCTIONS	800-3
INSTALL LIGHT BAR	800-4
INSTALL 43" TV	800-5
INSTALL PENDENT LIGHTING	800-6
INSTALL MAC G4 COMPUTER	800-7
DISASSEMBLY INSTRUCTIONS	800-8
MAINTENANCE INSTRUCTIONS	



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**HUBBLE SPACE TELESCOPE**  
**NEW VIEWS OF THE UNIVERSE**

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— Part Number

— Crate Number

Page Number: **000-1**

# SMALL VERSION

## FLOOR PLAN OVERVIEW

### Space Planning:

The standard layout for the Small Version Exhibition is designed to fit a **45' x 45' gallery space, or 2025 square feet**. When beginning the installation process, it is advisable to mark the gallery floor with tape to indicate placement of each Exhibit. Many of the Exhibits are heavy, so moving them after they are assembled is not advisable and may result in damage to the Exhibit or the Gallery floor.

### Spare Leitner Sections:

Six additional Leitner Sections ship with the Exhibition to provide Exhibitors with some flexibility when accommodating various galleries. These sizes include:

- (2) 76" long sections
- (2) 54" long sections
- (2) 38" long sections

Each venue may choose to use these parts in place of standard configuration parts when accommodating alternate layouts. At Disassembly, the correct configuration parts must be packed back in the correct Crate, and the (6) Spare Leitner Sections in their designated packing location in Crate \_\_\_\_.

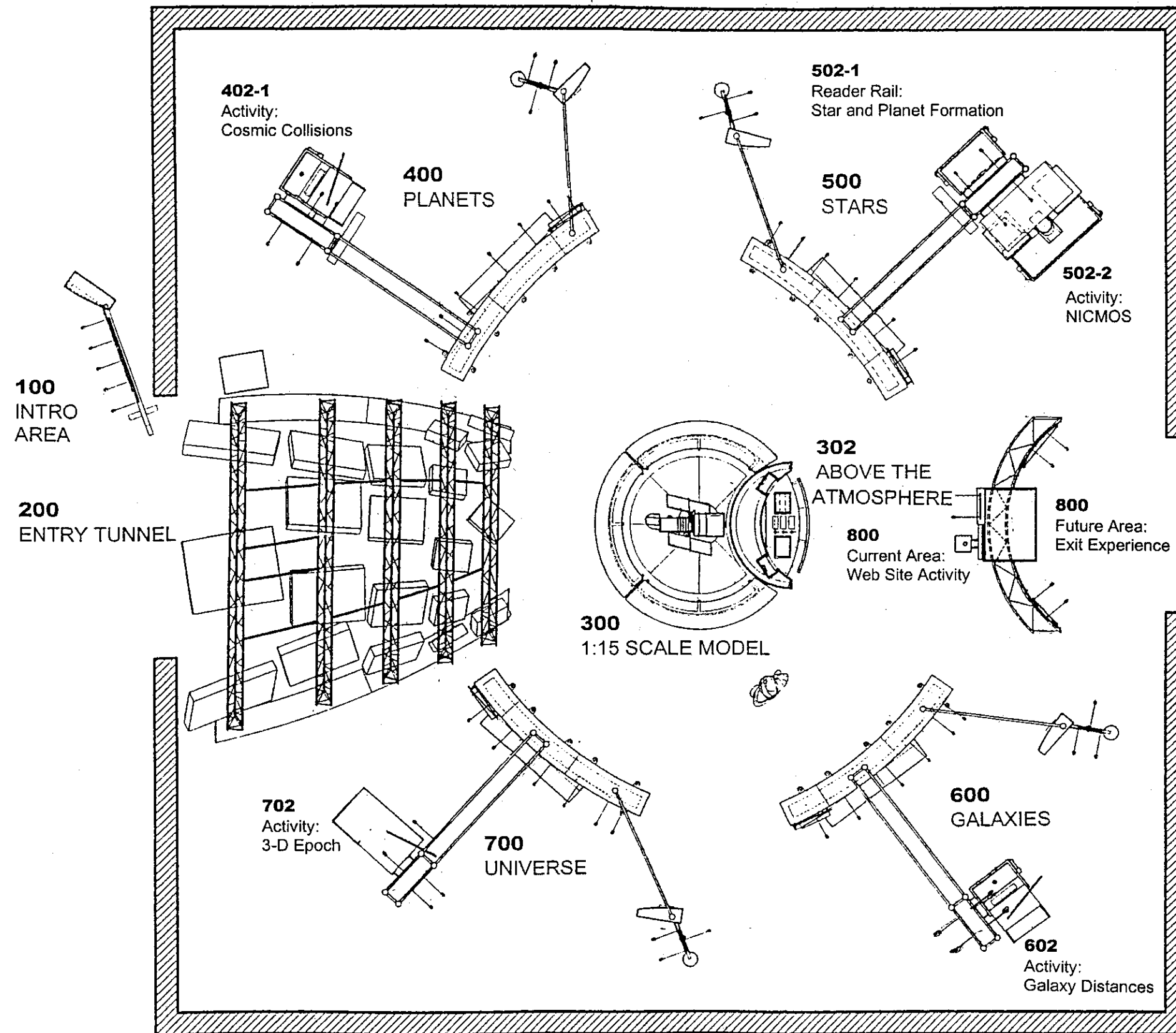
### Installation Tools

Each venue should have on hand the following tools to be used in addition to the tools in the Gray Tool Box:

- (3) 6' ladders
- (3) or more cordless screw guns
- (1) or more pallet jacks
- A few furniture dollies
- A dozen or so shipping pads to lay parts on the floor

### Cleaning Instructions

Only soft lint-free rags and **Windex** (or similar glass cleaner) are to be used to clean exhibits. **No solvents** are to be used, as they can easily damage exhibits.



SQUARE FOOTAGE:

45'-0" x 45'-0" ; 2025 S.F.



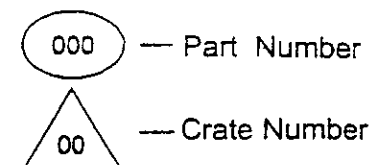
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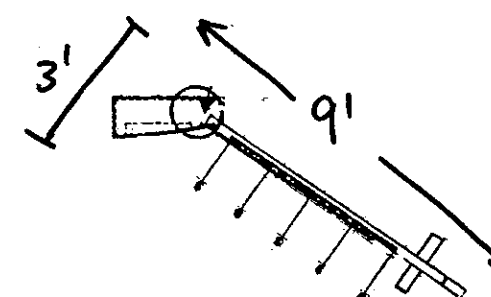
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**OVERVIEW AND PLANNER**

**Exhibit Overview:**

This area acts as an introduction to the Exhibition and lists the credits for those who have brought this Exhibition from idea to reality.



**100**  
Intro and Credits

SCALE: 1/4" = 1'-0"



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— Crate Number



## OVERALL DIMENSIONS

### Space Planning:

This exhibit occupies a 9' x 3' area, 8' high, **approx. 27 square feet of space.**

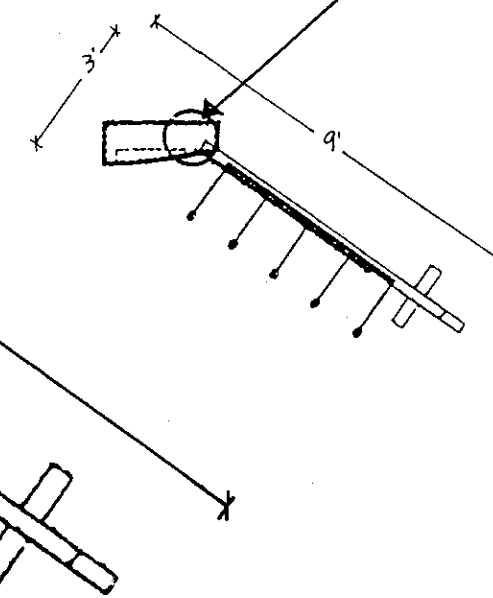
### Electrical Planning:

This exhibit requires (1) 15 amp feed, either from the floor or ceiling. A NEMA 5-15R receptacle is required.

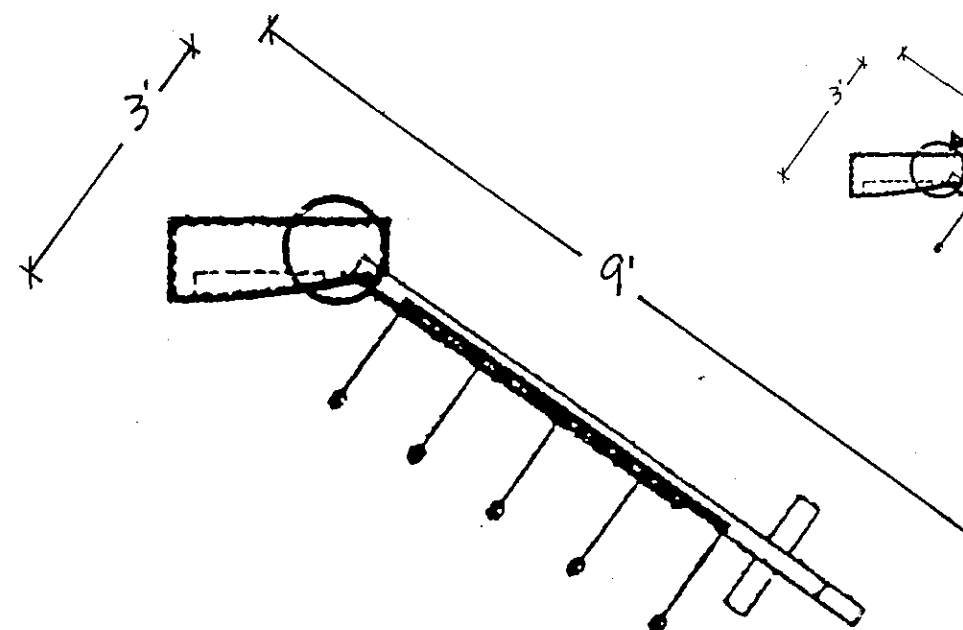
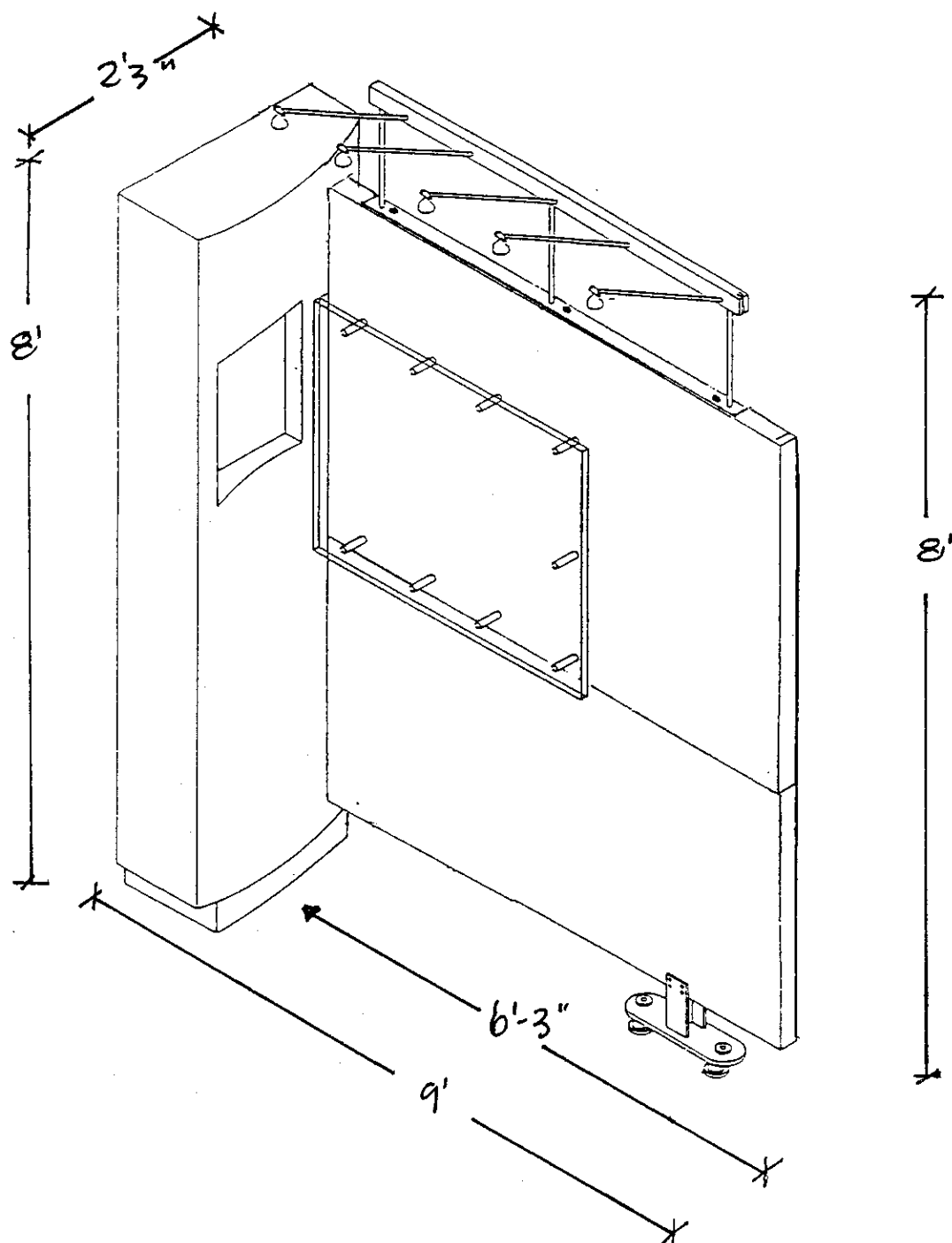
A minimum line voltage of 120 volts nominal is required at receptacle.

One cord with **15 amp plug** is included to connect to house power.

### FLOOR OR CEILING POWER LOCATION



SCALE: 1/4" = 1'-0"



SCALE: 1/2" = 1'-0"



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00 — Crate Number

# ASSEMBLY INSTRUCTIONS

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

## Locate parts required for set-up of Intro Area, including:

- 100 Area Hardware Box (Crate 20)
- (2) Graphic Wall Sections (100B-1, 100B-2, Crate 1)
- (1) Metal Foot (100B-3, Crate 1)
- (1) Wooden Set-up Foot (100B-5, Crate 20)
- (1) Monolith (100A, Crate 2)
- (1) Light Bar (100B-4, Crate 1)
- (10) Angled Chrome Rods (Crate 49)
- (5) 20 watt Halogen Bulbs with Chrome Sockets (Crate 49)
- Tools and Cleaning Kit are packed in Green Star Crate 51.

## Locate position of Intro Area on gallery floor

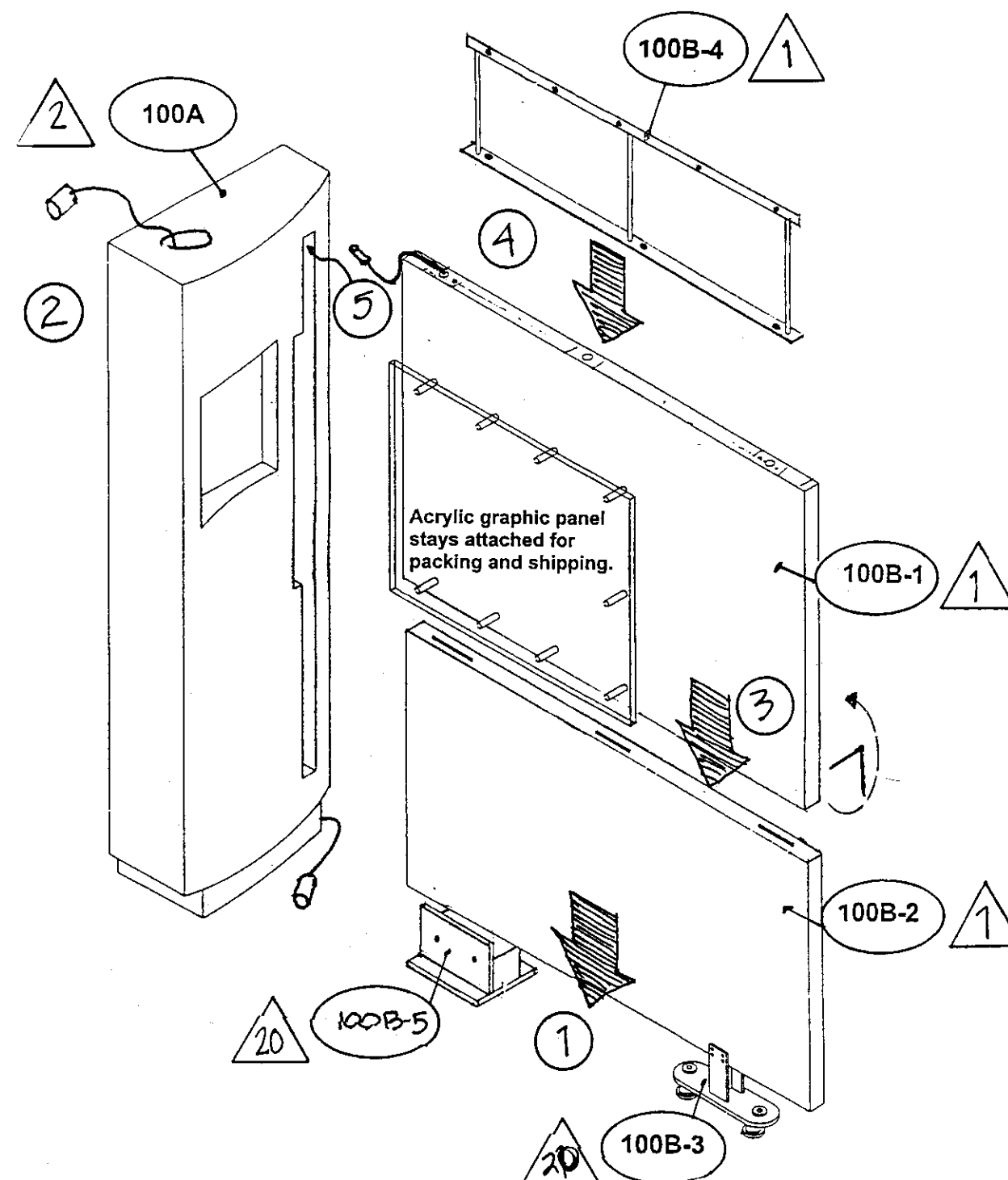
Locate positioning of exhibit on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

## Assemble the Graphic Wall Panels

- 1** Locate Graphic Wall Panel 100B-2 and Metal Foot 100B-3 and Wooden Foot Support 100B-5. Drop Wall into Wooden Foot and place onto Metal Foot. Attach Metal Foot to Wall using (8) 1/4-20 x 1" black flathead screws.
- 2** Locate Monolith 100A and stand in position **Note: Do not open the Monolith door without supporting it or having it attached to the Graphic Wall Panels, as the weight of the door makes the Monolith fall over.** Locate (4) 3/8-16 x 2 1/2" cap screws with flat washers in Hardware Box and push screws into holes marked #1, #2, #3, and #4 inside Monolith.
- 3** Locate Graphic Wall Panel 100B-1 (with acrylic graphic) and connect with (3) roto-locks to Wall 100B-2 using a 5/16 allen in the roto-lock. **Note:** Clean acrylic graphic at this point if needed.

## Attach Light Bar

- 4** Locate Light Bar 100B-4 and place into slot in top of Graphic Wall. Tap into place with rubber mallet if needed. Attach Light Bar using (3) sets 1/4-20 x 1" round head cap screw and a single flat washer into the top of Graphic Wall.
- 5** Feed cord from Light Bar into Monolith and plug into power-con, matching markings. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.



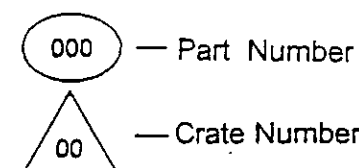
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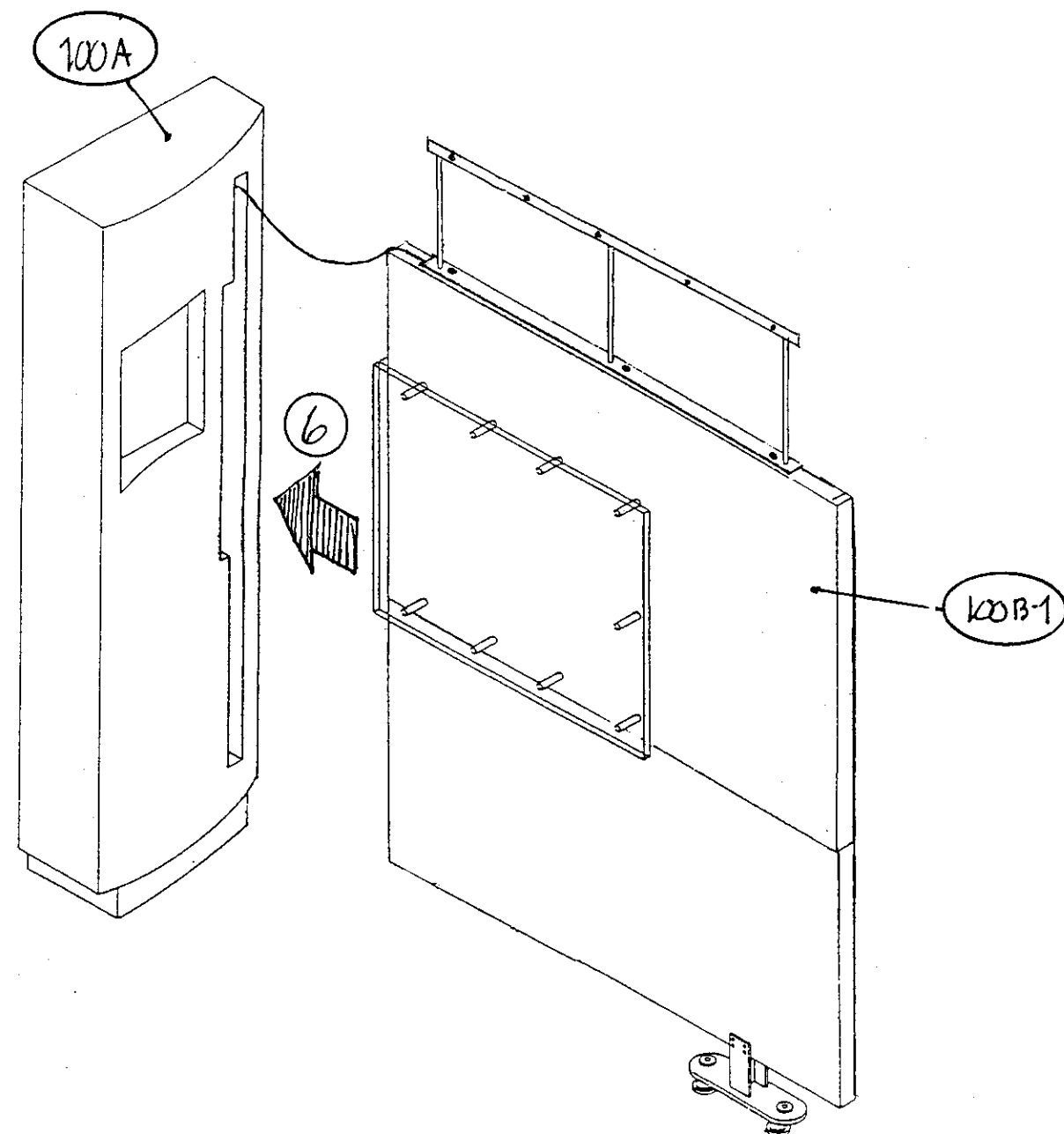


**ATTACH WALL TO MONOLITH**

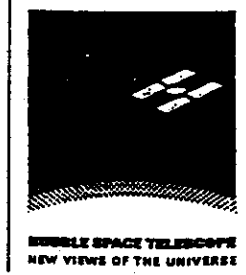
**Attach Graphic Wall to Monolith**

6 Slide Graphic Wall assembly into the slot in the Monolith while supporting both and being careful not to scratch acrylic. Look through the bolt holes to be sure the Wall is all the way into the slot.

Attach Graphic Wall to inside of Monolith using (4) 3/8-16 cap screws previously positioned.



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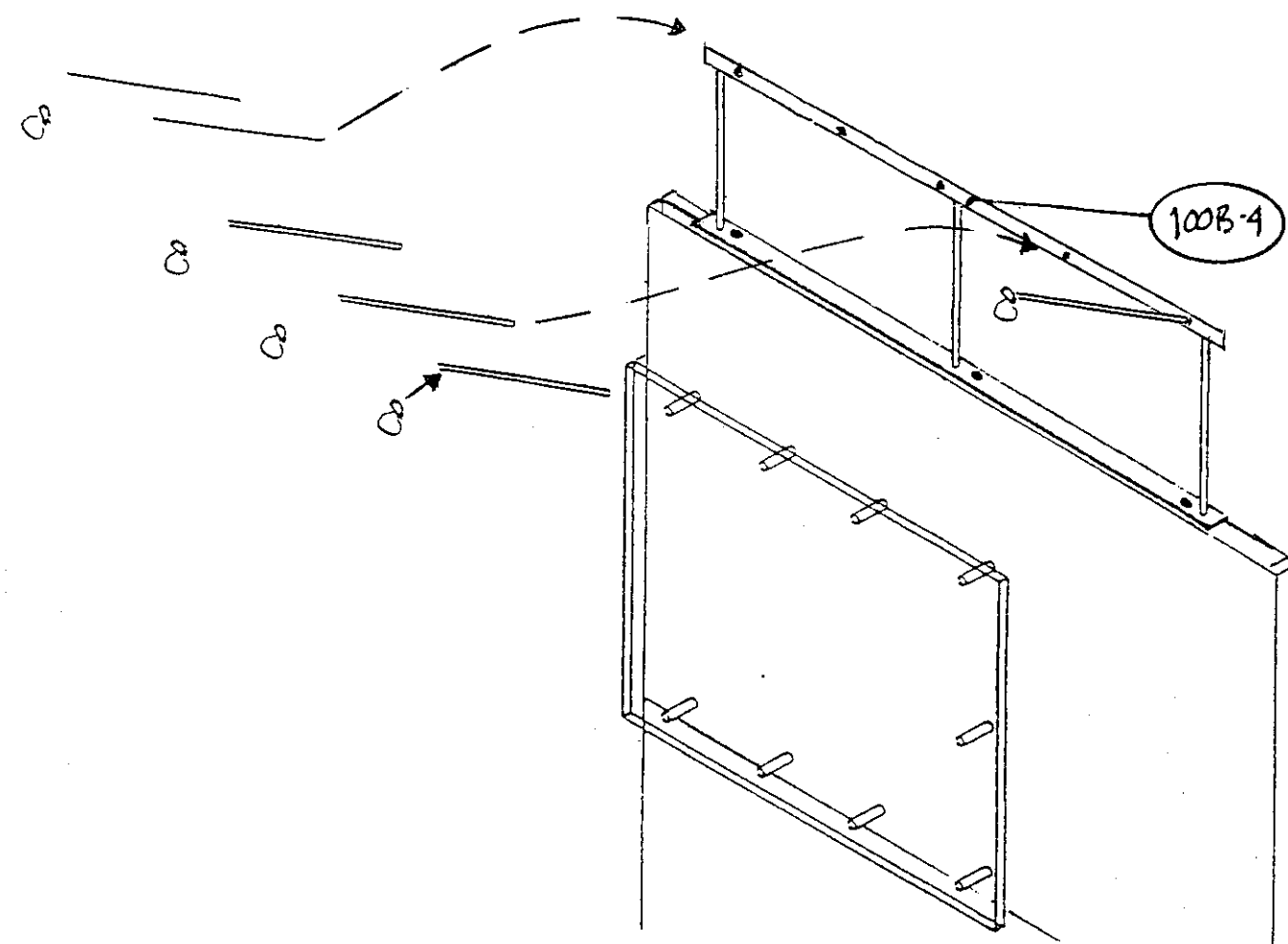


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00 — Crate Number

**ATTACH PENDENT LIGHTING**



**7 Install Pendant Lighting**  
**Note:** To avoid shock, disconnect or turn off power when installing pendant lighting.

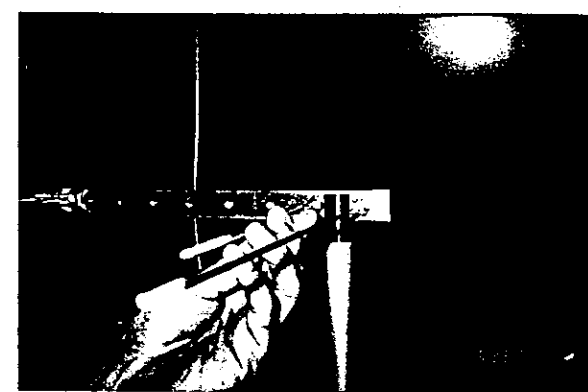
- Assemble (5) Pendant Lights into Light Bar by:
- a).** Locating (10) Angled Chrome rods, (5) sockets with (5) 20 watt halogen bulbs attached.
  - b).** Screw (10) Angled Chrome Rods into the (10) knurled knobs on the Light Bar.
  - c).** To install Sockets, loosen thumb screws on each end of socket, slide onto chrome rods and retighten thumb screws.
  - d).** To change or install bulbs, loosen (2) 3mm set screws in socket, insert prongs of halogen bulb into matching holes in socket, and retighten set screws.

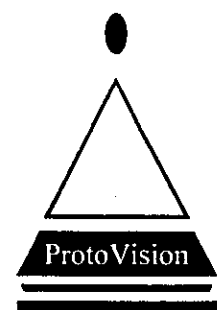
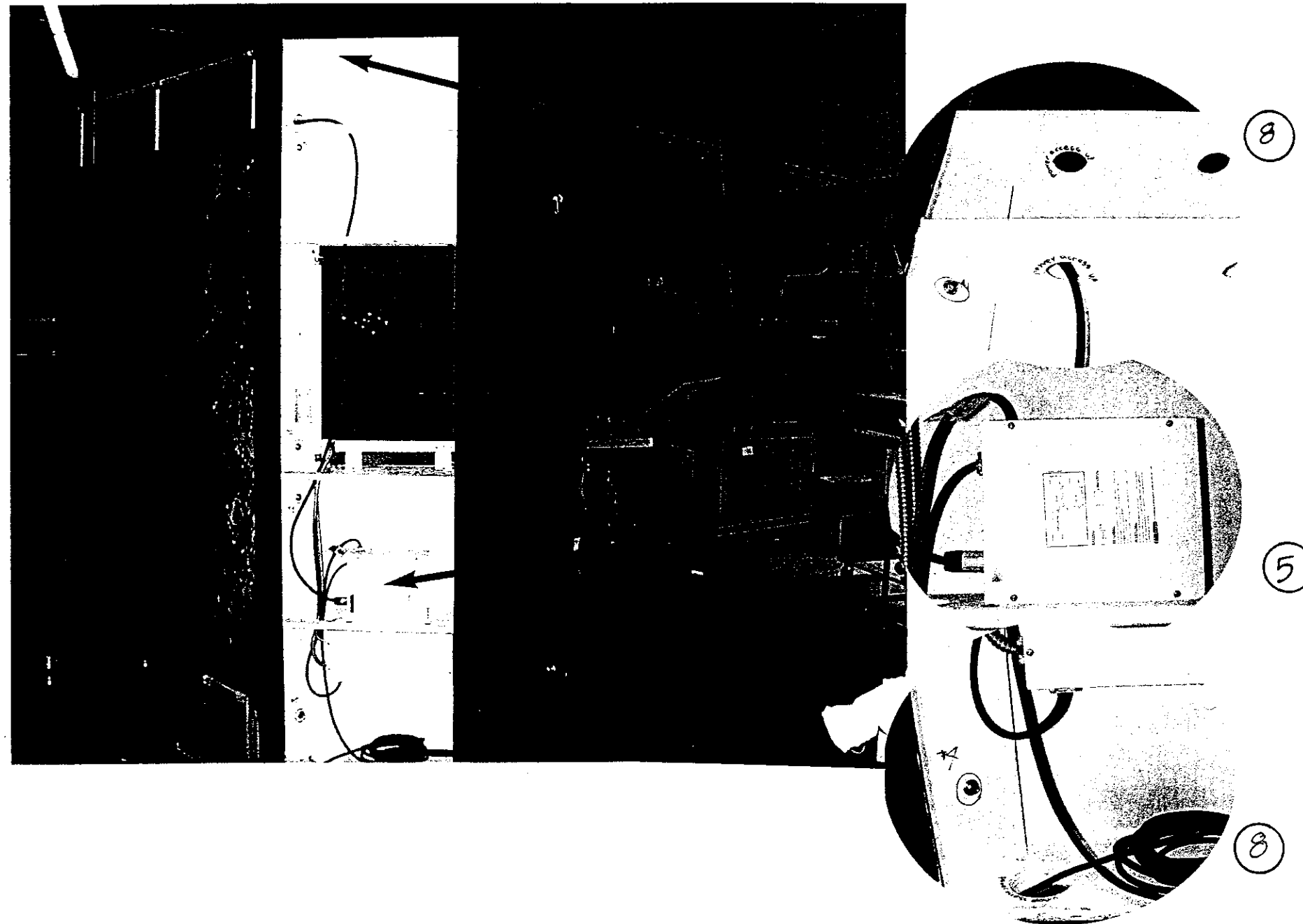
**8 Connect to House Power**  
 Feed main power cord out the top or out the bottom side of the Monolith, following notations on inside of Monolith.

Connect to house power. Check that Pendant Lights and Edge Lights are working.

**Clean laminates and acrylics as needed.**

**Repack any packing materials in Crate.**





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# DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling the Intro Area.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 1, 2, 30, 51 and AV Crate 49.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**Pendent Lighting** - Remove Pendent Lighting, **leaving knurled nuts in place** to maintain placement locations. Repack lighting parts in Crate 49.

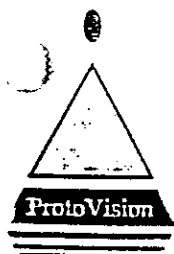
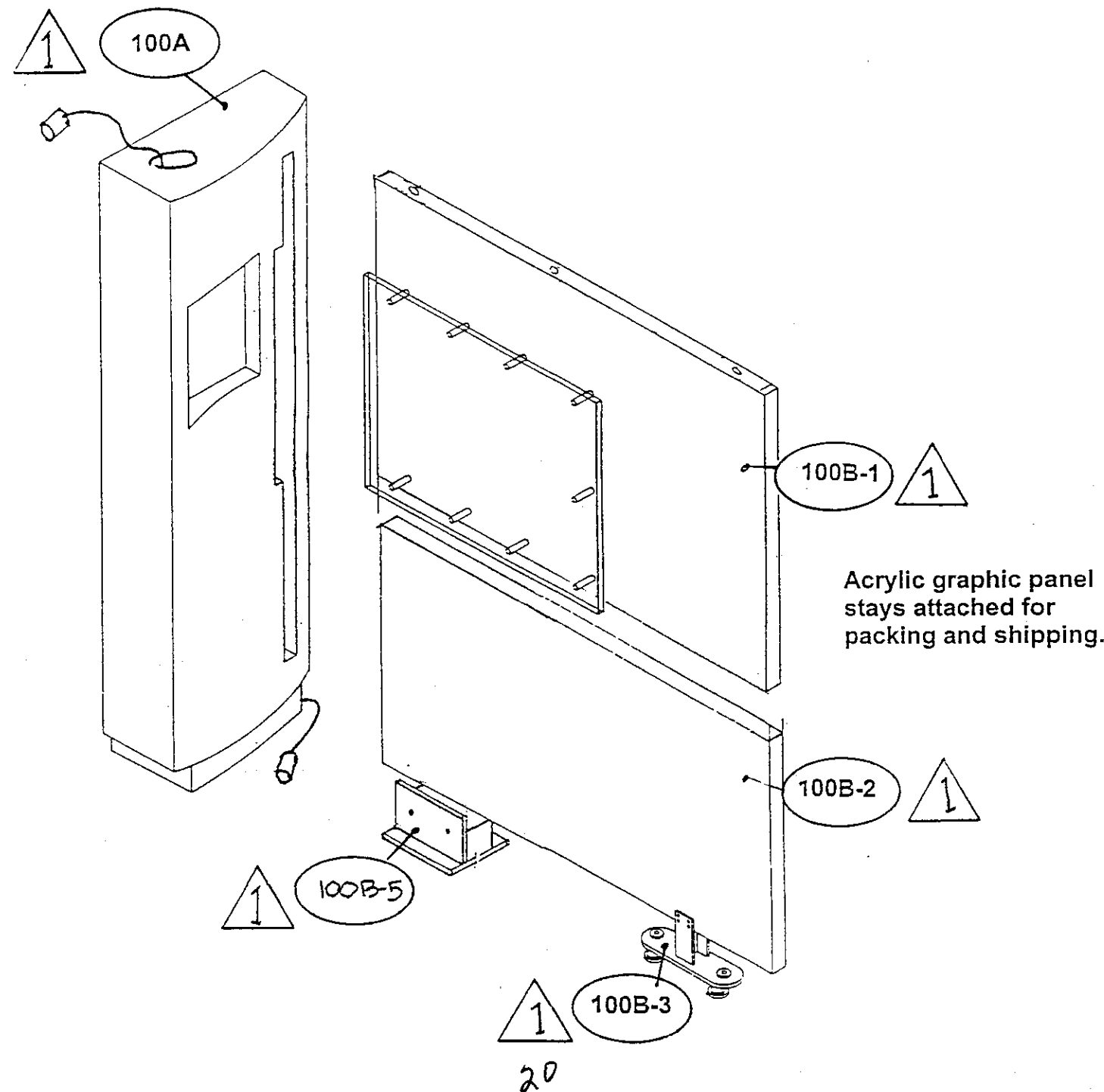
**Wooden Support Foot** - Reinstall Wooden Foot using screws in the side of it to adjust side height. Pack in Crate 20.

**Graphic Wall** - **Keep closet door closed to prevent Monolith from being unbalanced and falling over!**

- Use care when withdrawing Graphic Wing Panels from Monolith so as not to damage the engraved plexi graphic.
- Detach using L-shaped 5/16" rotolock wrench. Engraved plexi graphic stays attached to Wall 100B-1 for packing and shipment. Pack in Crate 1.

**Remove Light Bar** - To detach power-con, slide chrome tab back and twist counterclockwise to release. Pack in Crate 1.

**Insure that all components are packed back into their assigned locations in each crate.**



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000 — Part Number  
00 — Crate Number

### To replace halogen Pendent Light bulbs:

Before changing halogen Pendent Light bulbs, mark the bulbs to be changed and **disconnect power to the exhibit.**

**Caution:** Working bulbs in the area will remain hot for several minutes after being powered down.

Remove socket of burned out bulb from metal rods by loosening thumb screws on both outer ends.

Loosen (2) tiny slotted set screws in socket to release prongs on bulb.

Replace bulb with identical 20 watt bulb:

GE Q20MR16/FL/CG/CD(BAB) halogen bulb

Order Code: 19370

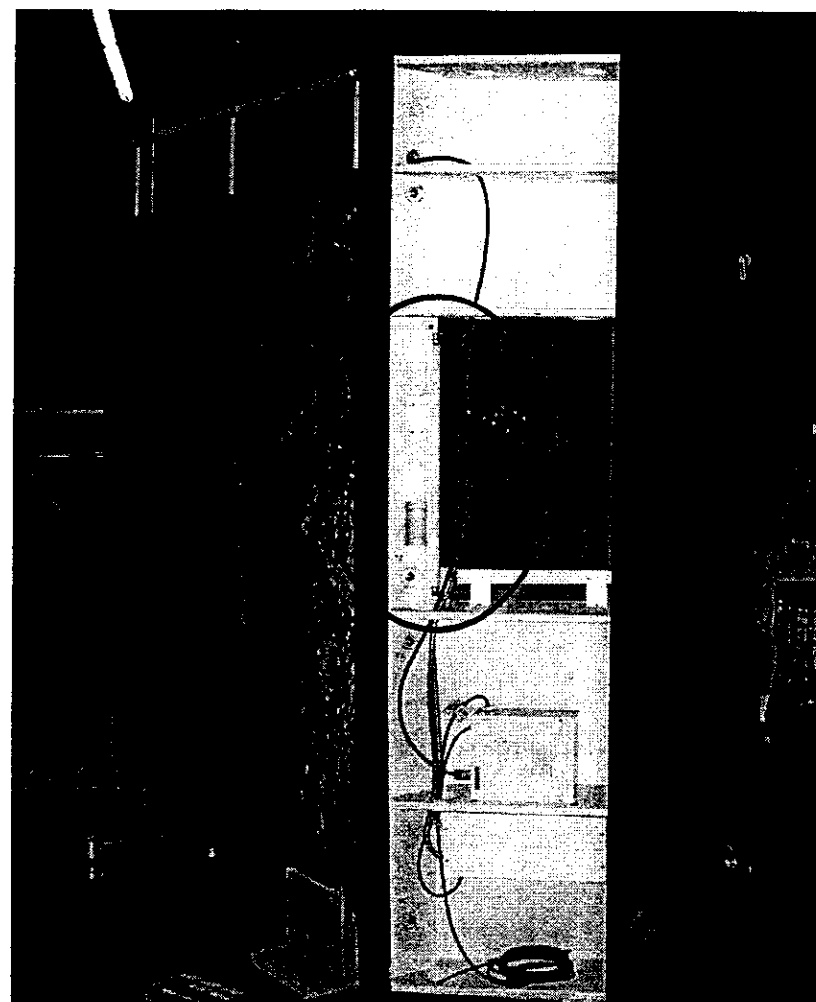
Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

Replace by plugging into socket and tightening set screws on socket.

Reattach socket and tighten onto rods with thumb screws on outer ends.

Reconnect power to the exhibit.

See photos in Installation Section.



## Sm INTRO AREA 100 MAINTENANCE INSTRUCTIONS

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

### To replace 24" fluorescent bulb inside Monolith 100A:

Unlock both locks on the access door on the back of the Monolith 100A. The C415A key works all door locks in the exhibition.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

**If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.**

Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

**If silicone bead is not present** continue bulb replacement.

Twist the burned out fluorescent bulb out of its socket

Replace bulb using identical fluorescent:

F17/SP41, a 17 watt 24" trim line fluorescent bulb

Available at most hardware stores.

(Silicone is not to be replaced.)

Relock both locks on door.



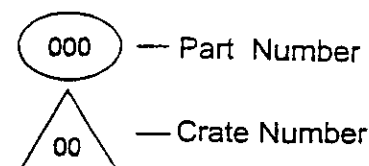
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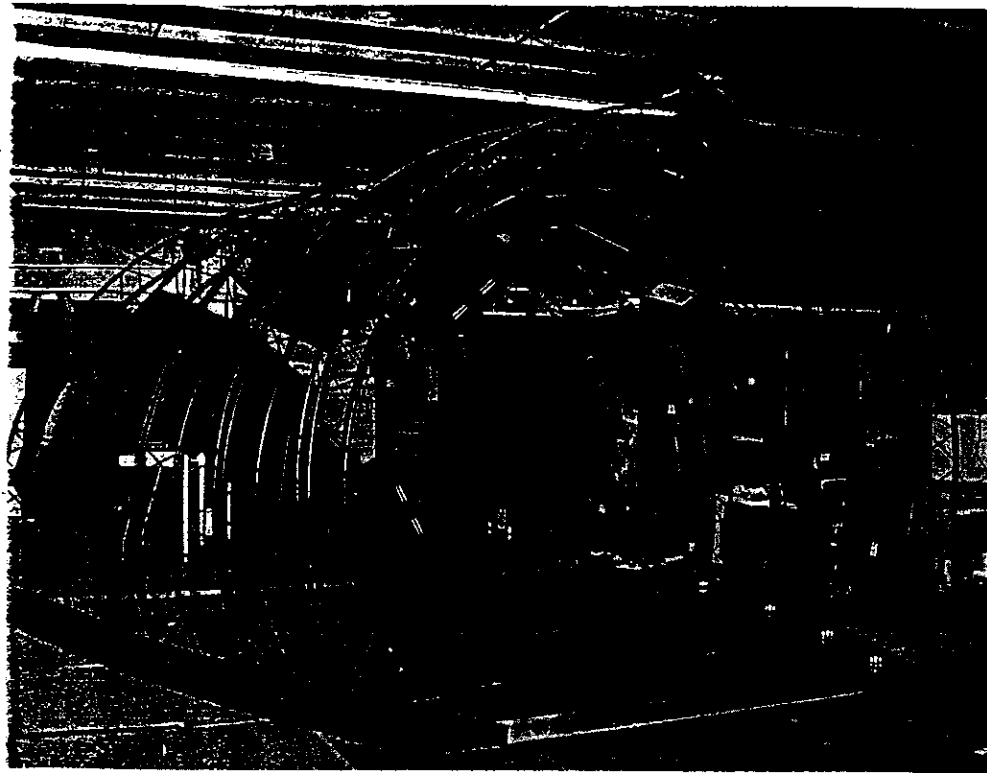


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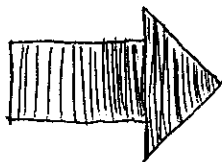
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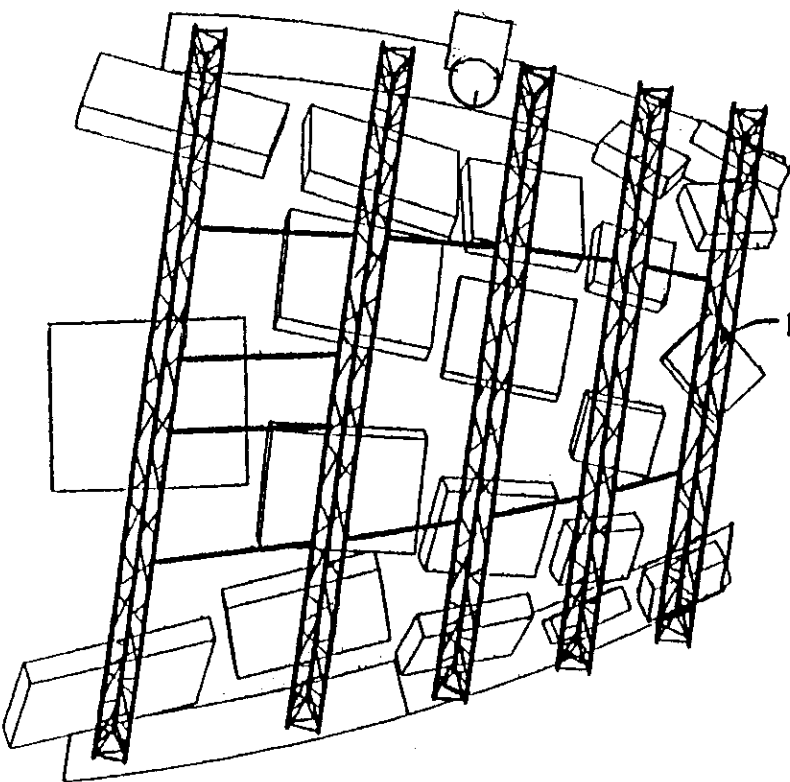
Page Number. **100-8**



TUNNEL EXIT INTO GALLERY

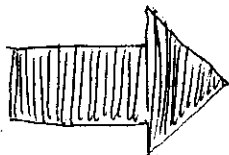


MAIN  
TRAFFIC  
FLOW



Projector mounts on this end

ENTRANCE  
INTO  
GALLERY



SCALE: 1/4"=1'0"

OVERVIEW AND PLANNER

Exhibit Overview:

The Entry Tunnel consists of five repeating HST images, hurling from the "interior" of the exhibition out to the entranceway. The hurling effect is created using a series of sequenced light boxes (19 in total). In addition, as the images move towards the visitor, the four "questions" are video projected onto the floor, moving towards the exhibition. Ambient "space" sounds fill the tunnel, immersing the visitor in the experience. The sounds are timed to be sequenced with the light boxes.

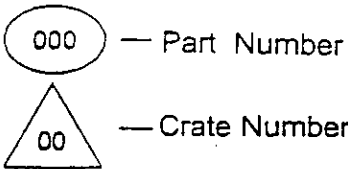


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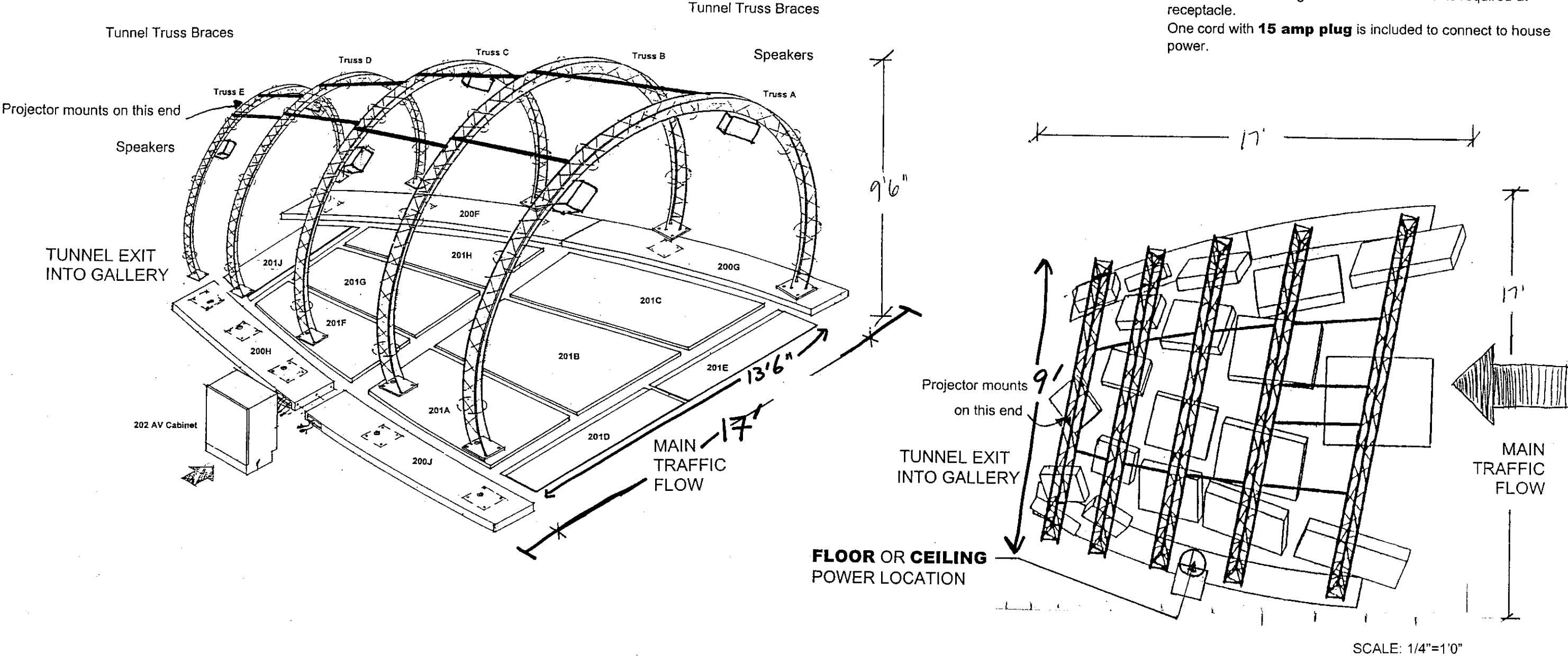




OVERALL DIMENSIONS

**Space Planning:**  
This exhibit occupies a 17' x 17' area, 9' -6" high, **approx. 290 square feet of space.**

**Electrical Planning:**  
This exhibit requires (1) 15 amp feed, either from the floor or ceiling. A NEMA 5-15R receptacle is required. A minimum line voltage of 120 volts nominal is required at receptacle. One cord with **15 amp plug** is included to connect to house power.



**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**Locate parts required for set-up of this area, including:**

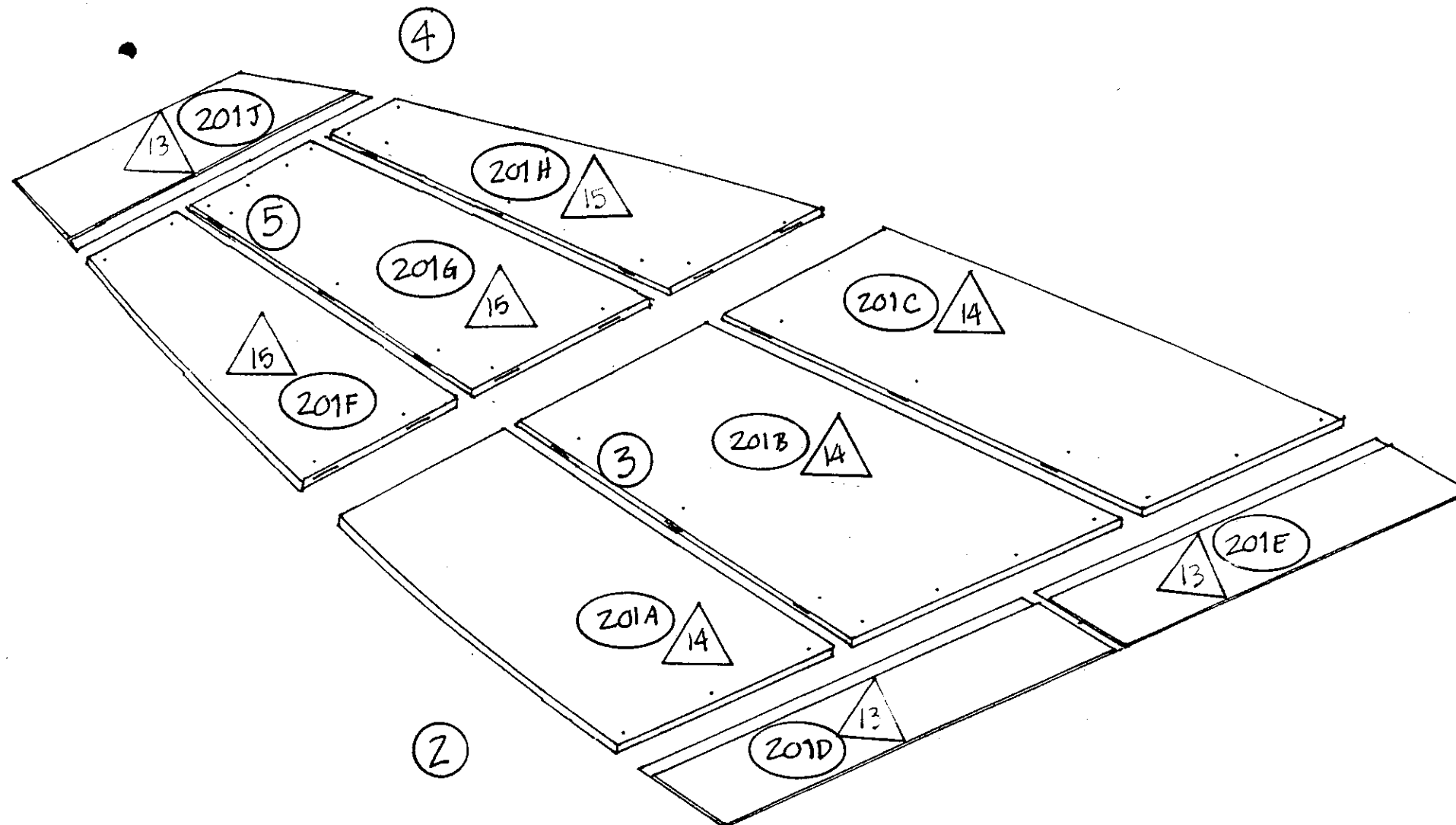
- 200 Area Hardware Box and Tools (Crate 20)
- (6) Floor Platform Sections (201A,B,C,F,G and H, Crates 14 & 15)
- (3) Platform Ramps (201D, E and J, Crate 13)
- (4) Trough Sections (200F, G, H and J, Crates 16 & 17)
- (30) Truss Sections (Crates 6, 7, 8, 9, 10, 11, & 12)
- (3) 40 x 50 Light Boxes (Crate 5)
- (4) 30 x 40 Light Boxes (Crate 4)
- (4) 24 x 30 Light Boxes (Crate 3)
- (8) 16 x 20 Light Boxes (Crate 3)
- (6) TOA Speakers (Crate 49)
- (1) Adtech Drive # \_\_\_\_ (Crate 49)
- (5) Wiring Harnesses (200A-10 through 200E-10, Crate 5)
- (1) NEC Projector with Mounting pole (203 and 203-1, Crate 5)
- (1) Tunnel AV Cabinet (202, Crate 18)
- Cleaning Kit is packed in Green Star Crate 51.

**Locate position of Entry Tunnel on gallery floor**

Locate positioning of exhibit on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

**Assemble the Floor Platform**

- 1 Locate metal Platform Ramps 201-D, -E and -J and position on the floor where Entry Tunnel will be located.
- 2 Locate Platform Floor Sections 201-A, -B, and -C and place over lip on metal ramps 201D and E. Line up holes in metal ramps and attach Floor Platforms to Ramps using (10) 1/4-20 x 3/4" stainless steel flat head allen screws in bolt box.
- 3 Connect roto-locks in side joints of (3) Platform Floor Sections using roto-lock wrench (5/16 allen wrench) provided.
- 4 Position Ramp J and then Floor Platform Sections 201-F, -G and -H, aligning locator pins with platforms that are already installed, and positioning so that they cover the metal lip on Ramp 201-J. Fit joints between Platform Floor Sections before connecting to Metal Ramps. Line up holes in metal ramps and attach Floor Platforms to Ramps using (8) 1/4-20 x 3/4" stainless steel flat head allen screws.
- 5 Connect remaining roto-locks in joints of Platform Floor Sections. Cover roto-lock holes using (12) 1/4-20 x 5/8" black flat head machine screws with nylon tub covering. Covers only drop into holes; threads are covered by nylon.

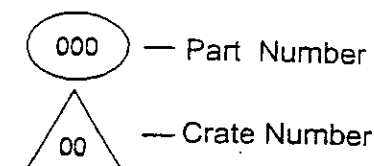


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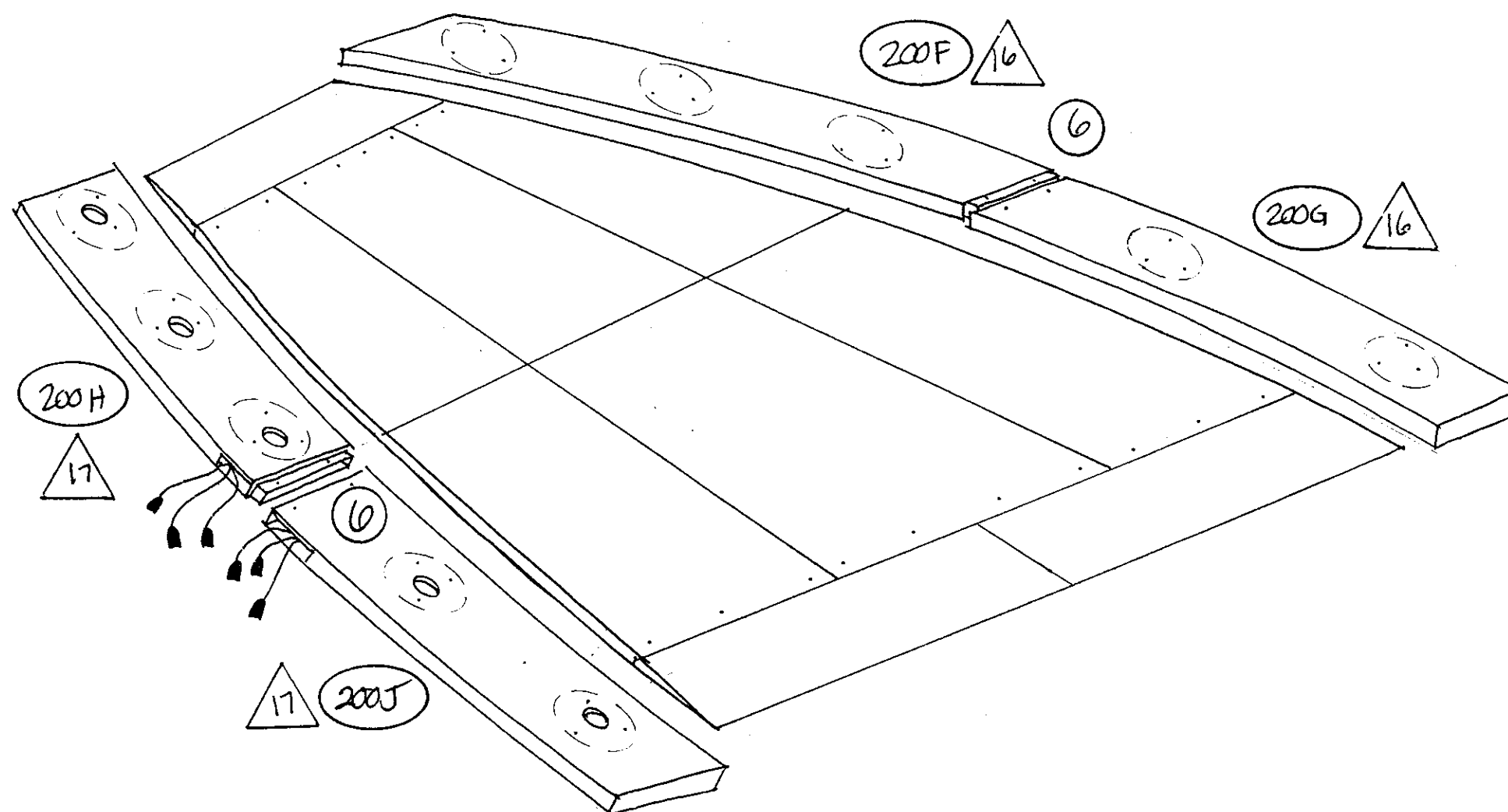
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**ASSEMBLE TROUGHS****Assemble the Trough Sections**

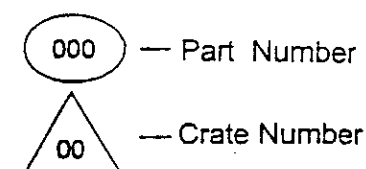
- ⑥ Locate Trough Sections 200F, G, H and J and place on floor next to assembled Floor Platform. Connect Trough sections together using 5/16-18 x 1 1/2" black flat head allen screws, (2) screws per joint.

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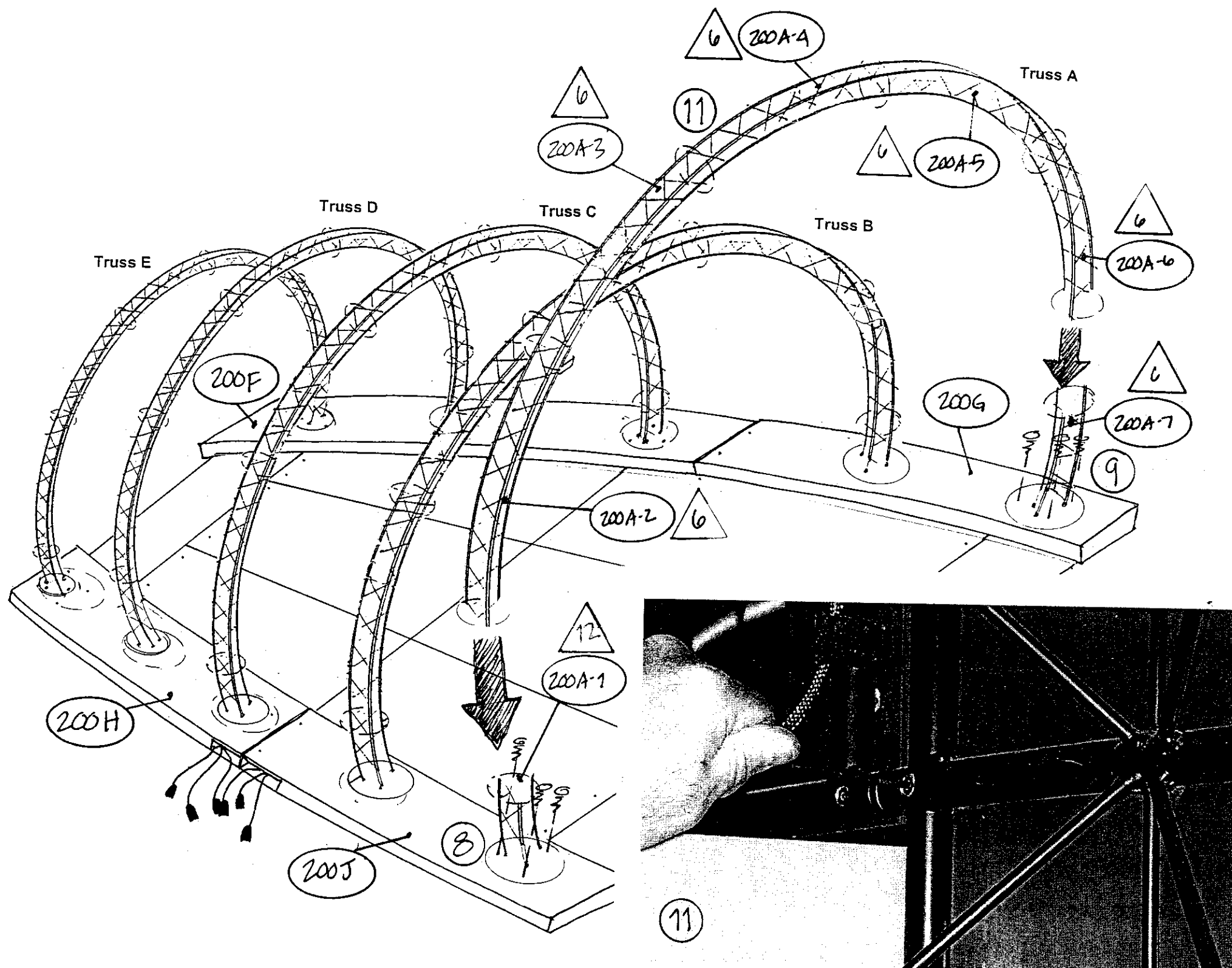


## ASSEMBLE TRUSS SECTIONS

## Assemble the Truss Sections

- 7 Locate Truss A Sections: 200A-1 through 200A-7 and place on floor in the order that they appear from the front entrance to the Tunnel (200A-1 on the left, 200A-7 on the right as you face the front of the Tunnel).
- 8 Place Truss A Section 200A-1 with the round base on Trough 200J over the cable connector and install using (3) 5/16-18 x 1 1/2" flat head allen screws with black heads. Screws may need to be loosened later to adjust Truss fit.
- 9 Place Truss 200A-7 with the round base on Trough 200G, only **loosely threading in** the (3) 5/16-18 x 1 1/2" black flat head allen screws. Again, do not tighten screws in 200G, just fit in place and thread in a few turns.
- 10 Lay Trusses 200A-2, -3, -4, -5, and -6 on the floor to assemble joints between Truss Sections. To assemble, first loosen (2) M6 x 10mm s.s. low allen head cap screws with black painted heads in each expansion joints to enable joints to fit. When fitted, tighten the (2) M6 screws on both sides of expansion joints between Truss Sections.
- 11 To install Truss A, begin with minimum of (4) installers, stand the assembled Truss Sections and attach to Truss Section 200A-1 (already attached to Trough). Loosen, fit and then tighten the (2) black low head cap screws on either side of the expansion joints.
- 12 On the other end, line up assembled Trusses with Truss Section 200A-7 on Trough 200G, moving Trough to fit if needed. Once fitted, tighten screws in expansion joints. **Then go back and tighten** the (3) 5/16-18 x 1 1/2" flat head allen screws that were loosely installed in the round Truss bases on Trough 200G.
- 13 Repeat steps 7 through 12 with Truss Sections 200B-1 through 200B-6.

**Note:** Refer to TRUSS AND LIGHT BOX LAYOUT DIAGRAMS on following page for Truss piece locations.

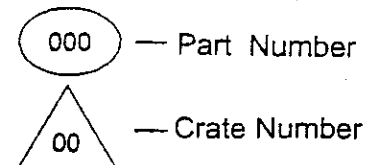
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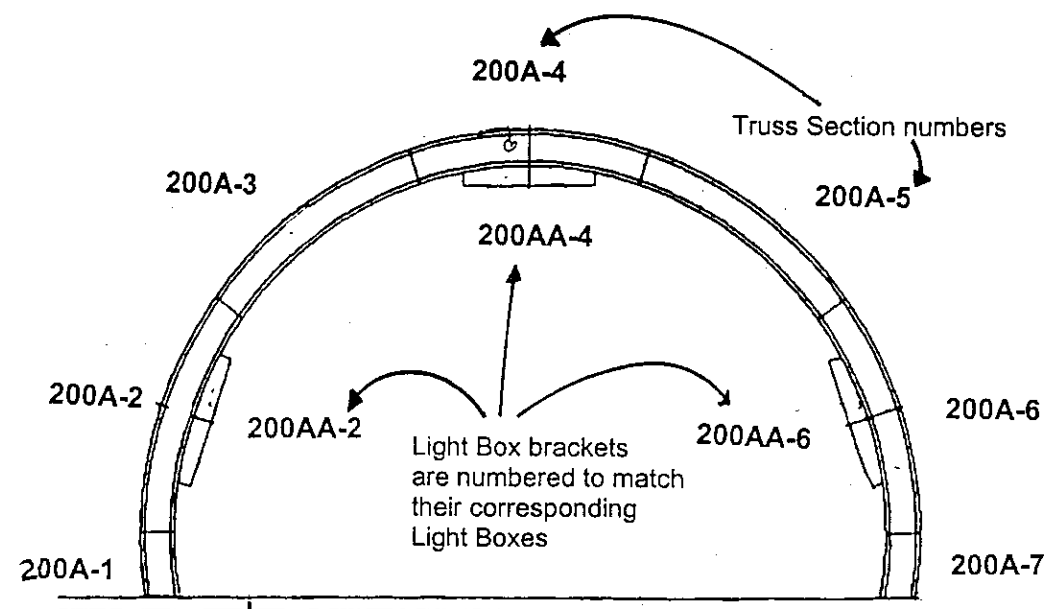


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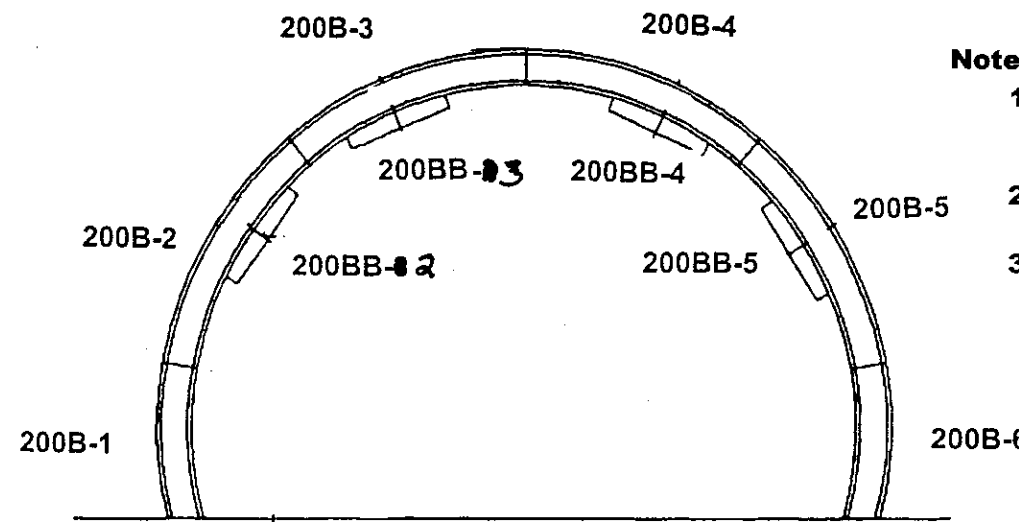
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## TRUSS AND LIGHT BOX LAYOUTS



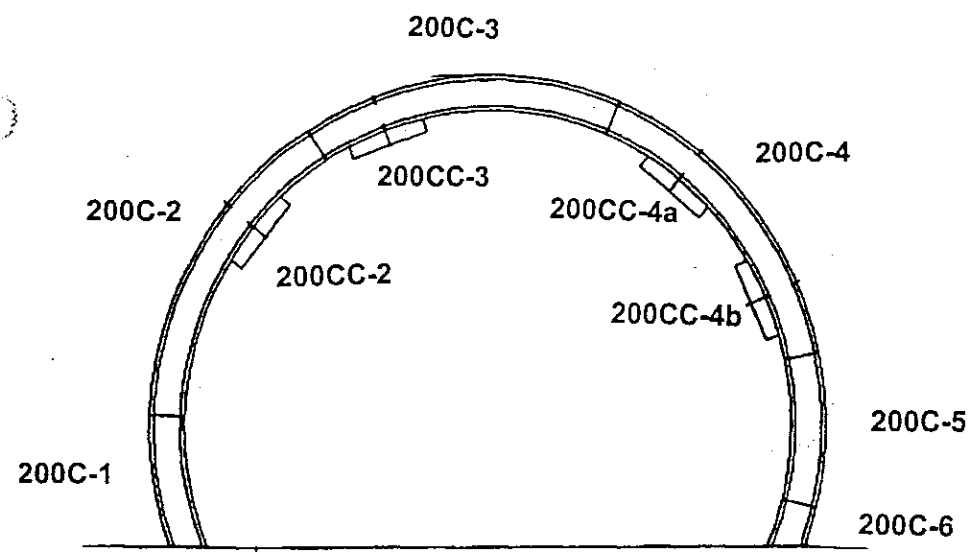
TRUSS A



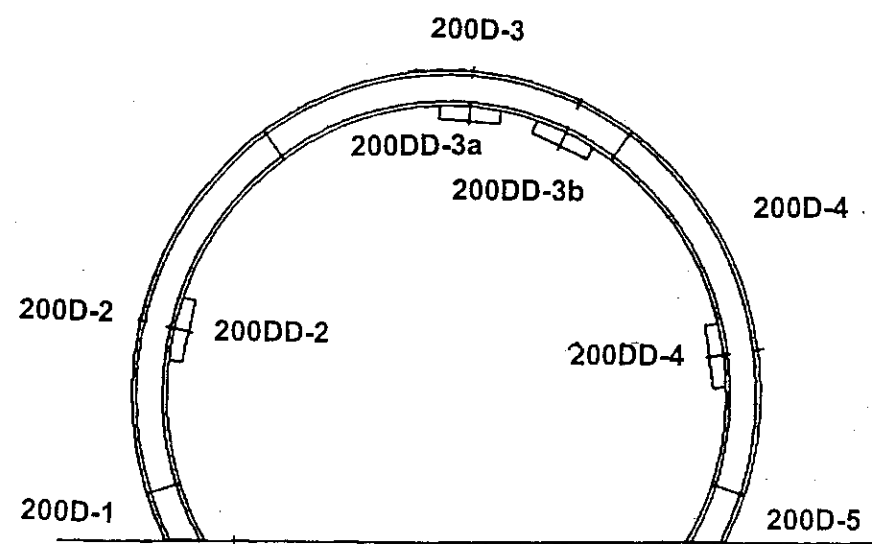
TRUSS B

## Notes:

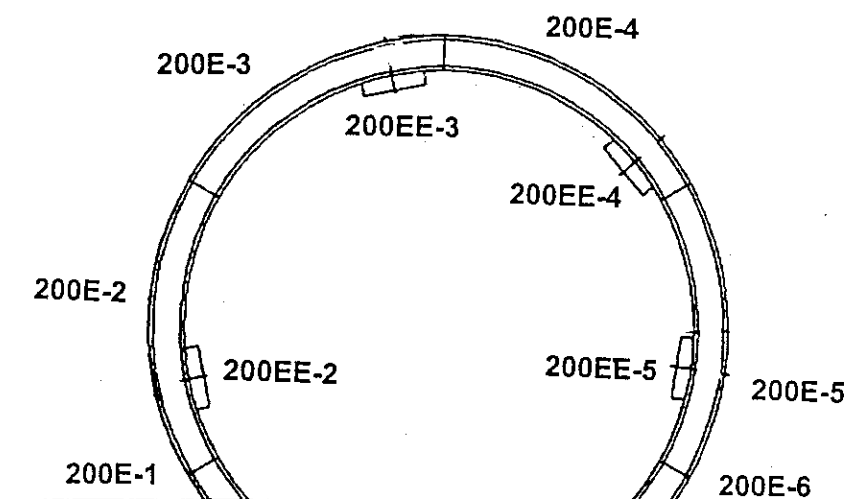
1. Light Box brackets are numbered to match their corresponding Light Boxes.
2. All Truss Sections have single letter designations.
3. All Light Boxes have double letter designations.



TRUSS C



TRUSS D



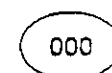
TRUSS E

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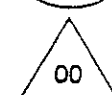
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— Crate Number

INSTALL TRUSS BRACES

Install Truss Braces between Trusses

Remove gray tubular foam padding from the larger diameter Truss Braces at top of Truss. **Note:** the smaller diameter braces are Light Box stabilizer arms. Save packing materials for reshipment.

- 14 Attach Truss A to Truss B with (2) **Truss Braces (attached at top of Truss Sections)** numbered XA-XB and A-B. Place Braces at scribed lines on tops of Trusses. To attach, using a 1/2" open end wrench, loosen hex nuts in the unattached end of the claw-clamps on the Truss Braces (a 1/4-20 x 1 3/8" hex head bolt is on the nut in each end of the claw clamps), fit claw over truss member at scribed lines, and re-tighten hex nut.

Continue Installing Trusses and Braces

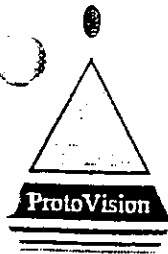
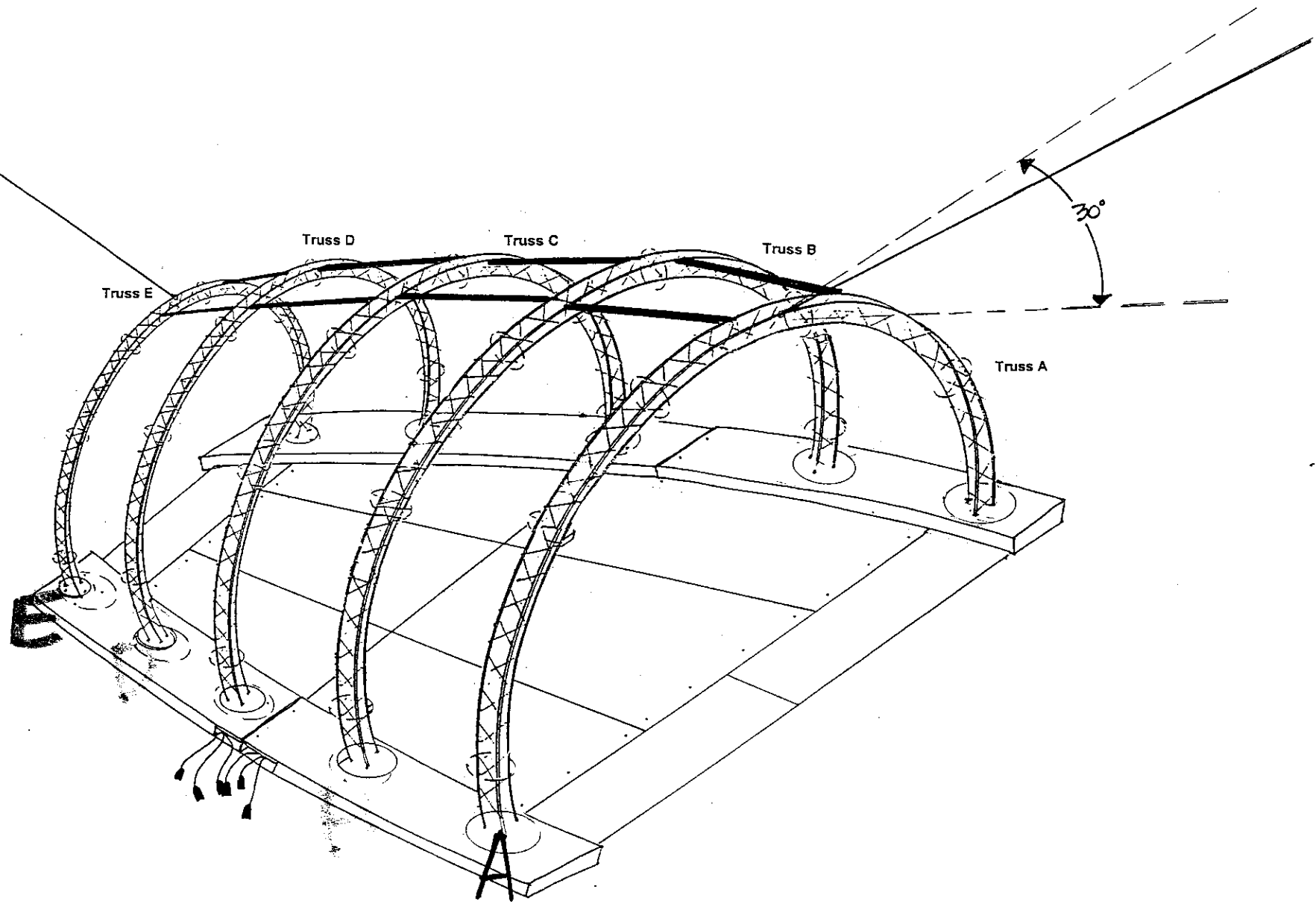
- 15 Repeat steps 7 through 12 with Truss Sections 200C-1 through 200C-6, and install Truss Braces XB-XC and B-C between Trusses B and C.

Repeat steps 7 through 12 with Trusses D and E, installing Truss Braces between each Truss as you go.

Guy Wires

- 16 Once all five Trusses and all the Truss Braces are installed, the guy wires are installed. Two guy wires are required for the Tunnel Truss, to be supplied and installed by the venue at each end of the Tunnel to prevent sway. No sway can be tolerated by the truss structure. These wires should be installed at a maximum of 30 degrees from horizontal in opposite directions at each end of Truss. Minimum 920 pound breaking strength wire rope should be used, fastened with two wire rope clips at each connection. Wire rope can be vinyl or nylon coated, but manufactures' guide lines for removing the coating from the area of the clips must be followed. Venue will be responsible for protecting the powdercoat paint finish from being scratched by the wire rope on the Truss.

No light Boxes can be mounted to Truss installed until the guy wires are installed.

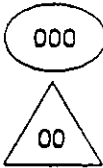


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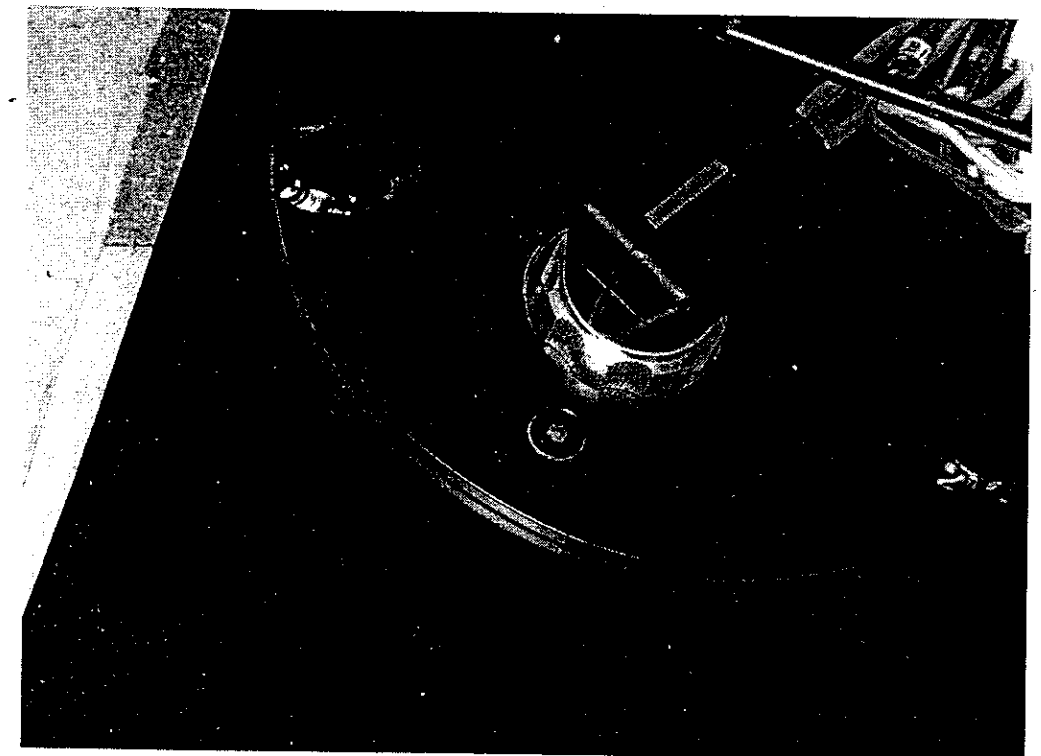
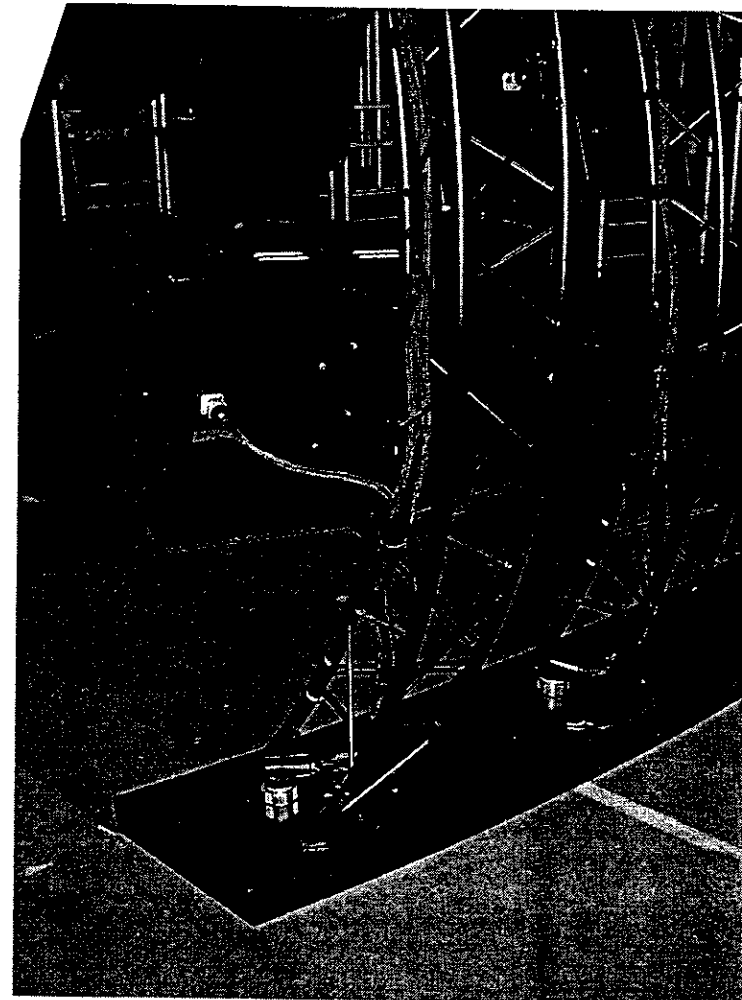
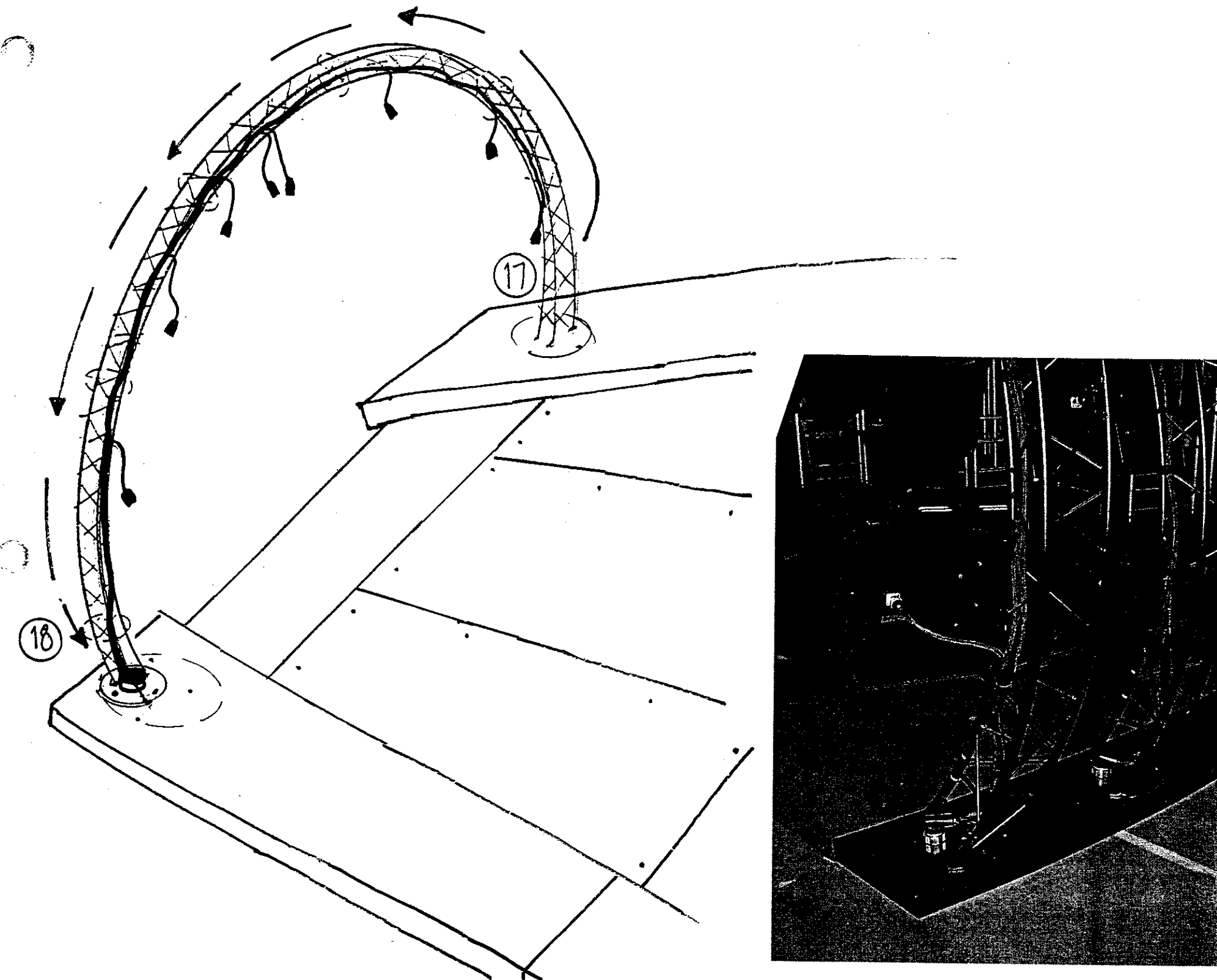
**INSTALL WIRING HARNESSES****Install the Wiring Harness through the Trusses**

①⑦ Locate Wiring Harness 200A-10.

①⑧ Begin with the end of the Harness that has the large black and silver plug attached, and feed it to the inside of Truss A nearest the bracket for Light Box 200AA-6. Continue to thread the Wiring Harness back towards Trough 200J. Fit the Wiring Harness connector onto the connector on Trough 200J, **hand tightening only**. Attach Wiring Harness to Truss Sections using the velcro strips attached to the Wiring Harness.

①⑨ Repeat using Wiring Harnesses 200B-10 through 200E-10.

②⑦ Remove any debris between Troughs and Floor Platforms and push Troughs to meet Platform edges for final fit.



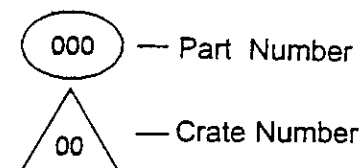
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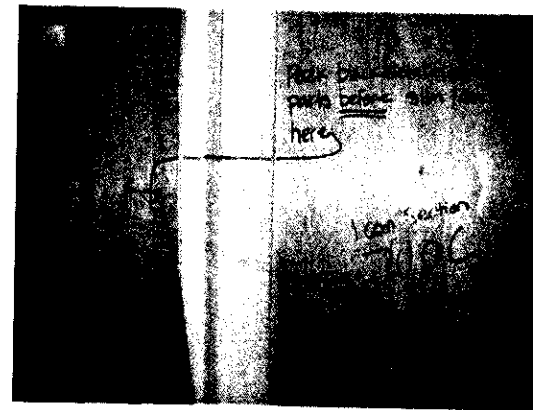
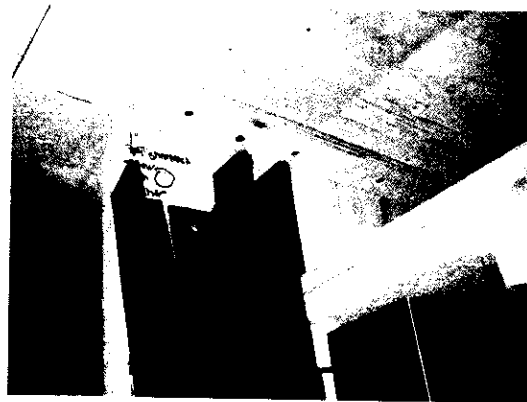
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## Crate 29 Contents Card

Exhibit Area:      Crate Contents:

400 & 500 Areas:      (1) Icon Wall slim sections (600C, 700C)  
                                  (2) Monitor Boxes (603, 703)  
                                  (2) Icon reader rails (600G, 700G)

### Packing Photos:



### INSTALL LIGHT BOXES

#### Install the Light Boxes onto the Truss Sections

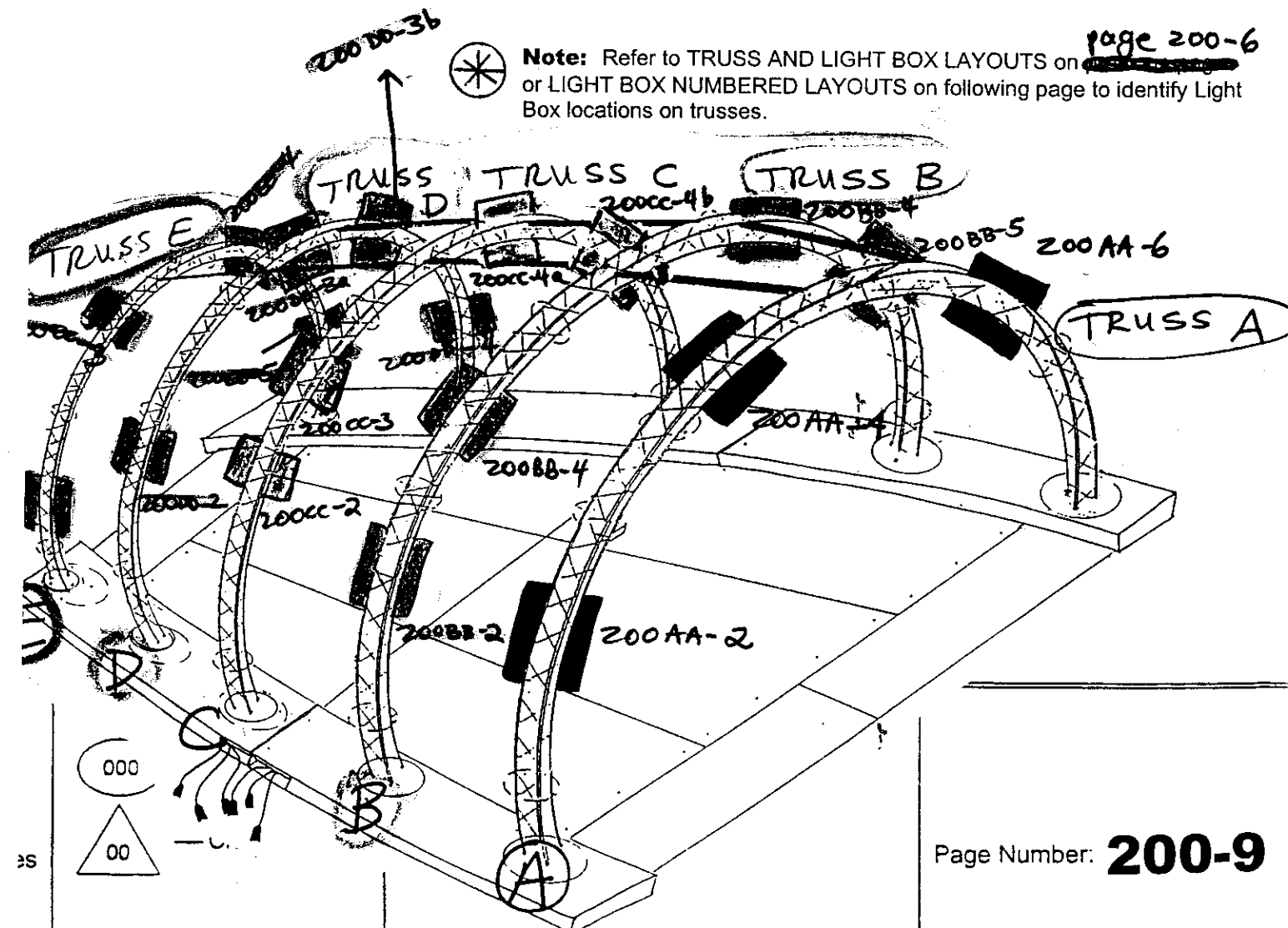
(21) Begin with Truss E. Locate Light Boxes 200EE-2, -3, -4 and -5. Identify the bracket on Truss Section 200E-2 that is numbered for Light Box 200EE-2, and so on. **Note:** Numbering on the truss brackets is on the side of the bracket that faces the **exit** of the Tunnel. Numbering on the Light Boxes is on the upper left corner of the back of the Light Boxes.

(22) **With the Light Box angled to face the Tunnel entrance** lift Light Box 200EE-2 into position, placing the bracket on the Truss **inside** the bracket on Light Box.

(23) Slide into locked position on bracket, and install the 5/16-18 x 1" black socket head cap screw with black washer in center hole of bracket on the Truss to secure Light Box to bracket. **(Note: None of the other visible screws on the Light Box or brackets are involved with the installation or disassembly of the Light Boxes).**

(24) Connect power-con plug from the Wiring Harness into back of the Light Box and gently twist clockwise until it clicks into place. **Note:** To remove power-con, slide chrome tab back and twist counterclockwise to release.

**Note:** Refer to TRUSS AND LIGHT BOX LAYOUTS on page 200-6 or LIGHT BOX NUMBERED LAYOUTS on following page to identify Light Box locations on trusses.

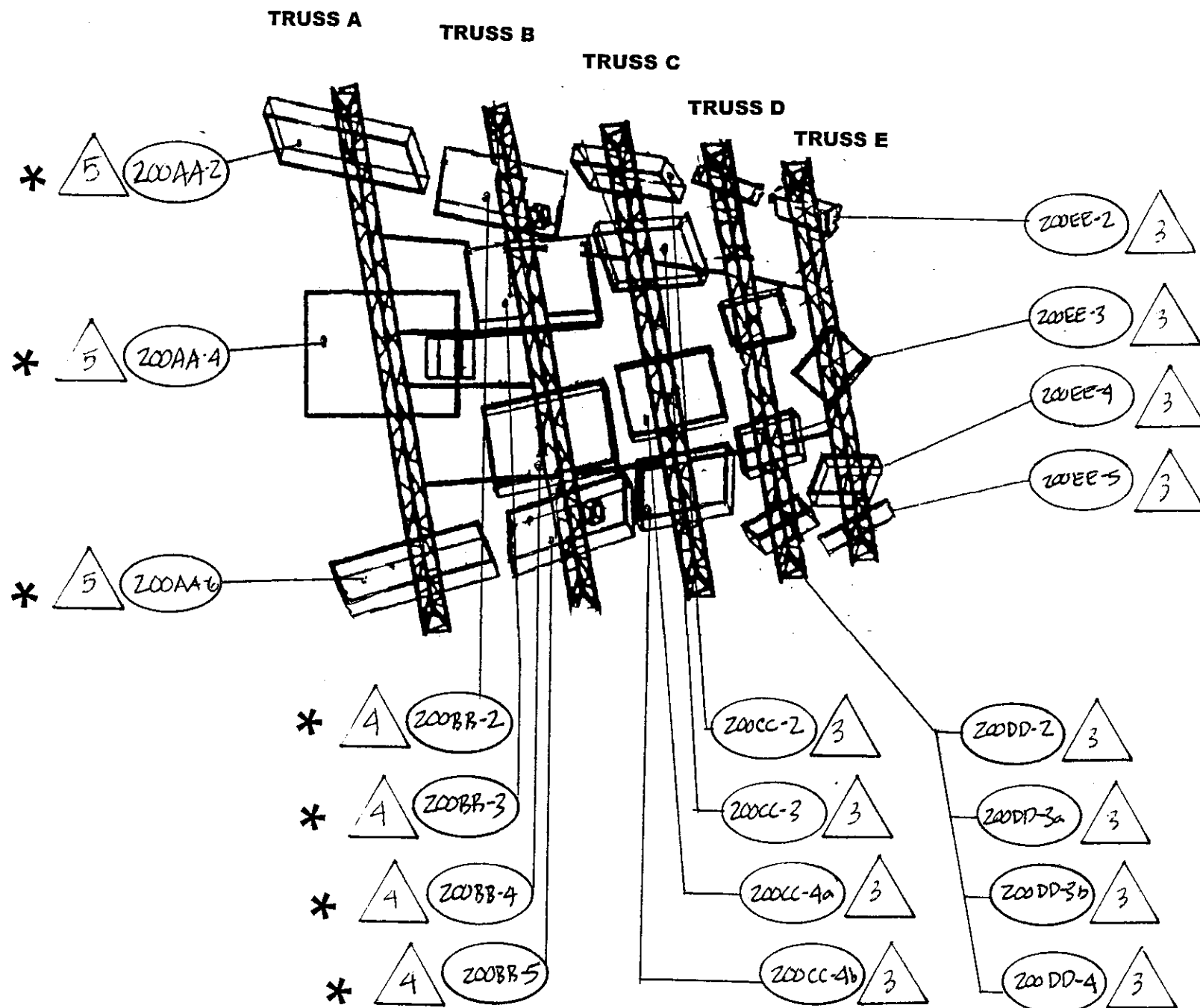




# LIGHT BOX NUMBERED LAYOUTS

## Light Box Stabilizer Arms locations

\* Asteriks below indicate which Light Boxes have Stabilizer Arms.



## INSTALL LIGHT BOXES

### Continue Installing Light Boxes

- 25 Repeat steps 21 through 24 with Light Boxes 200EE-3, -4, and -5, installing cap screws in center hole and connecting power-cons as you go.
- 26 Repeat steps 21 through 24 with Light Boxes 200DD-2, -3a, -3b, and -4 on Truss D, installing cap screws and connecting power-cons as you go.
- 27 For Trusses B and C, repeat Light Box installation steps 21 through 24 with Light Boxes 200CC-2, -3a -4a, and -4b. Reinstall the socket head cap screws in the center hole of the brackets and connect power-cons as you go. **(Note: Light Boxes on Truss C and B weigh approximately 150 pounds each, so it will require a minimum of TWO installers to hold them in place while another installer positions the brackets and installs the cap screws in the center holes in the brackets.)**



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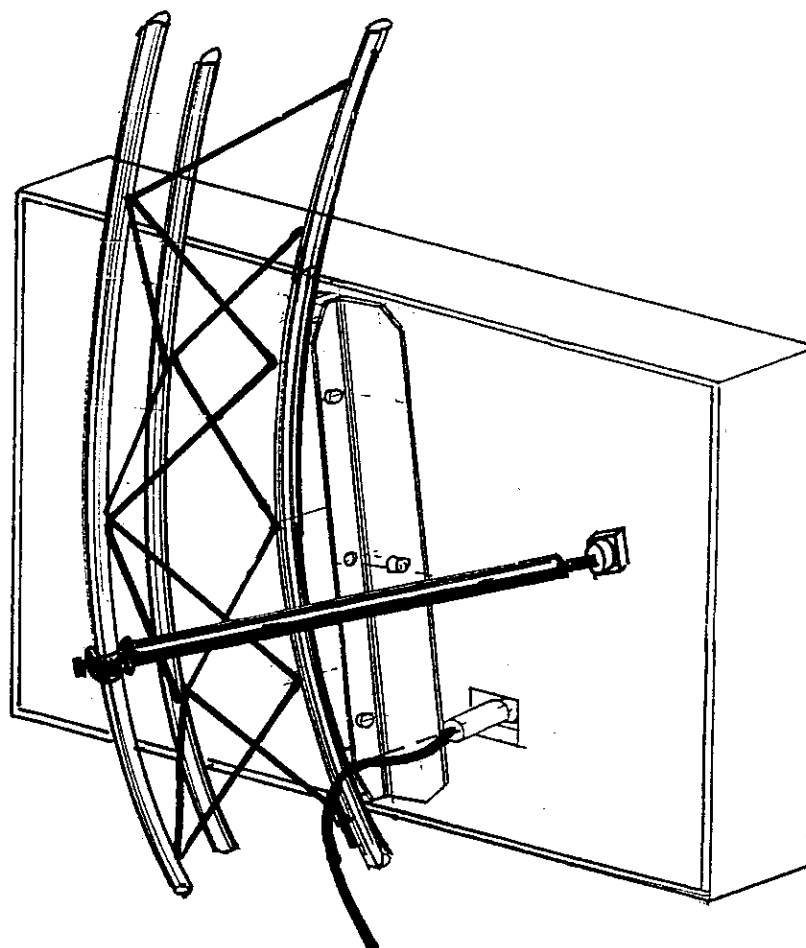
**INSTALL ARMS ON LIGHT BOXES****Install Stabilizer Arms on larger Light Boxes**

- 28 Attach **Stabilizer Arms (attached to Truss Sections)** to Light Boxes also. Stabilizer Arms are intended to prevent Light Boxes from rocking or moving on the Truss. Light Boxes requiring support arms are located on Trusses A, B and C, and are fitted with hardware to receive arms (see diagram at right), and **arms ship attached to Truss Sections.**

To attach arms to Light Boxes, using a 1/2" open end wrench, loosen hex nuts in the claw-clamps attached to the Truss (a 1/4-20 x 1 3/8" hex head bolt is on the nut in each end of the claw clamps), and remove claw from Truss. Holding vertically, thread the post on the light box into the threaded end of the rod until the rod is short enough to reach the truss at the scribed marking. Fit claw back over truss member at scribed line, and re-tighten hex nut.

- 29 For Truss A, repeat steps 21 through 24 with Light boxes 200AA-2, -4, and -6 as above, attaching Stabilizer Arms, reinstalling cap screws in center holes in brackets and connecting power-con as you go.

**(Note: These three Light Boxes weigh approximately 200 pounds each and will require a minimum of THREE installers to hold them in place while a FOURTH installer positions the brackets and reinstalls the cap screws in the brackets.)**

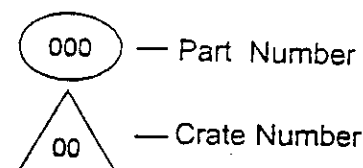


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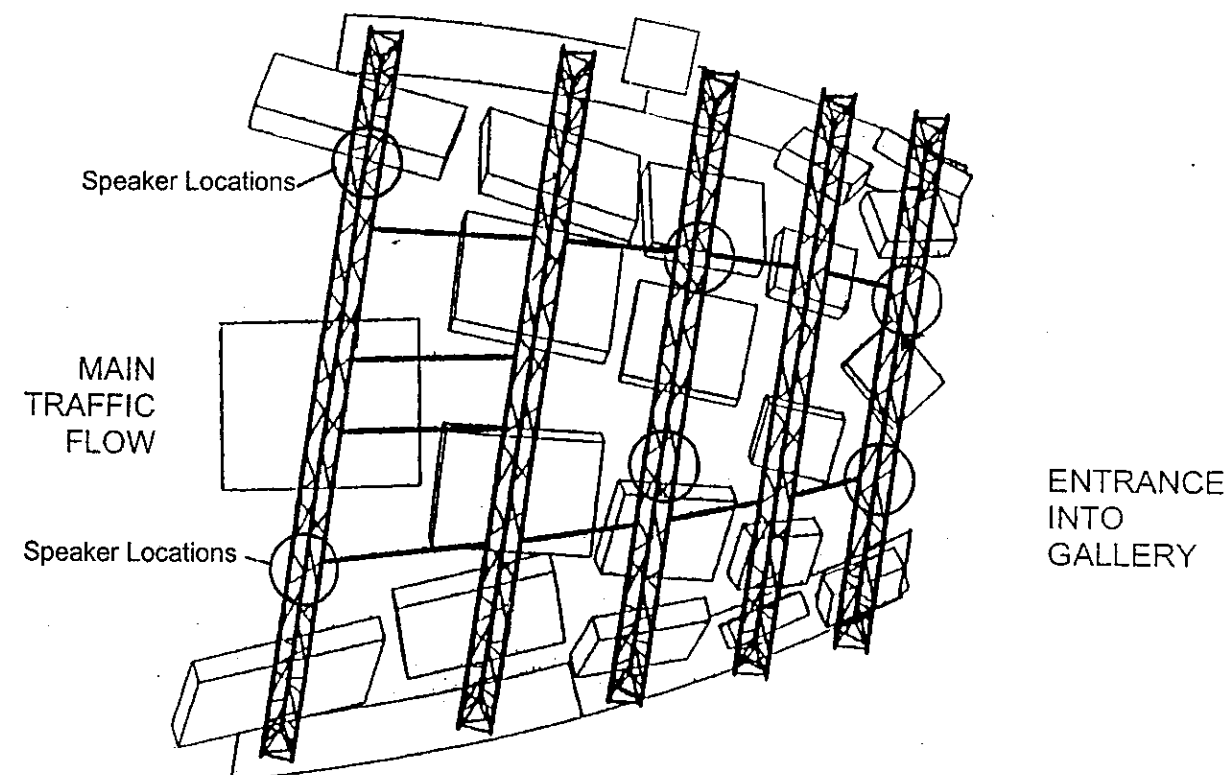
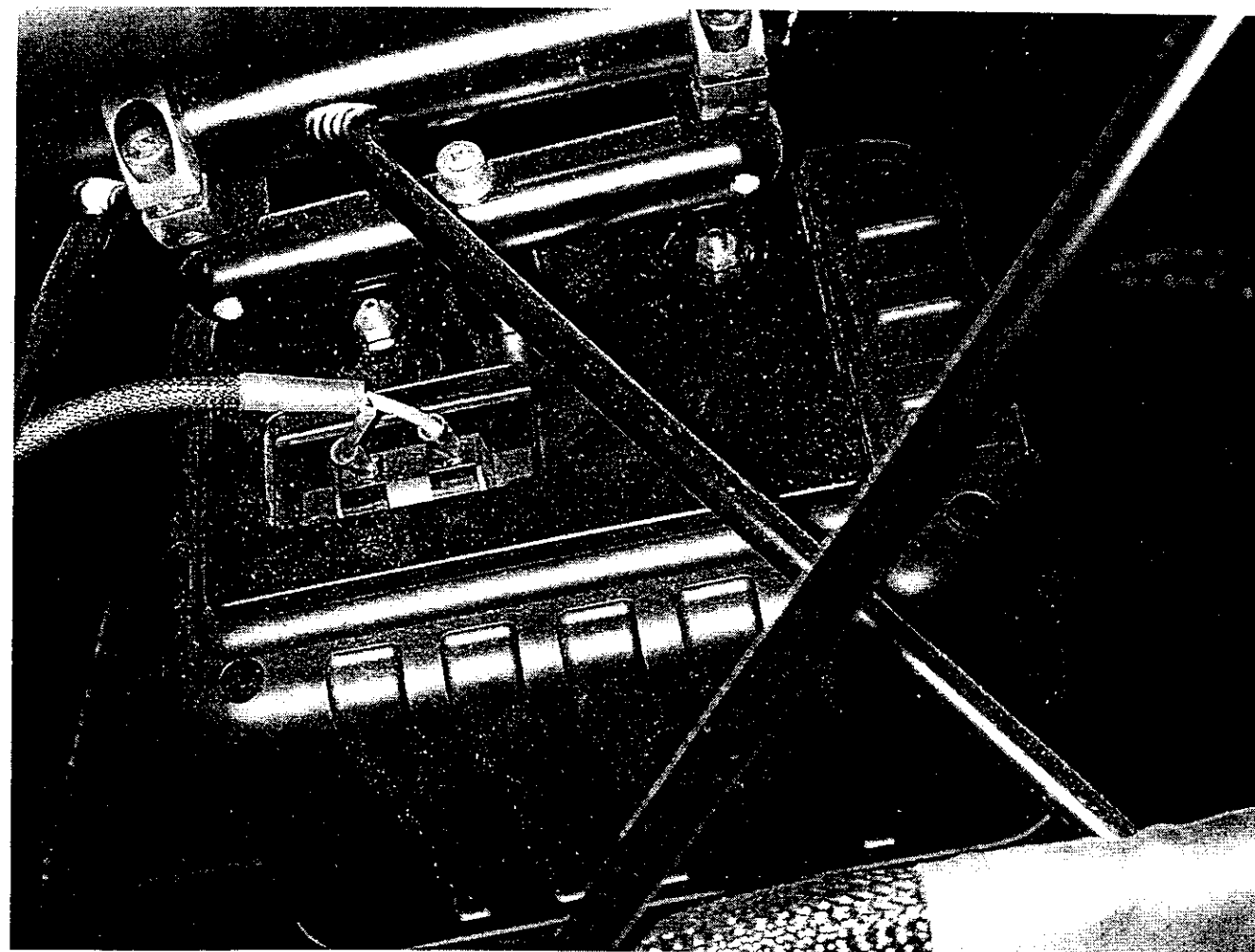
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**INSTALL SPEAKERS****Attach Speakers to Truss**

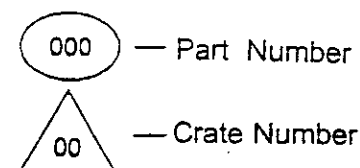
- 30 Locate (6) TOA Speakers; **brackets ship attached to the Truss Sections.** Do not remove bracket clamps from truss; they locate correct speaker position.
- 31 Attach Speakers to brackets by removing the 8/32 hex nuts on the backs of the speakers, inserting the threaded posts into brackets and re-attaching hex nuts on posts. **Note:** Hex nuts ship attached to Truss clamps.
- 32 Connect thin black speaker wires from Wiring Harness to speakers, matching black to black, red to red.

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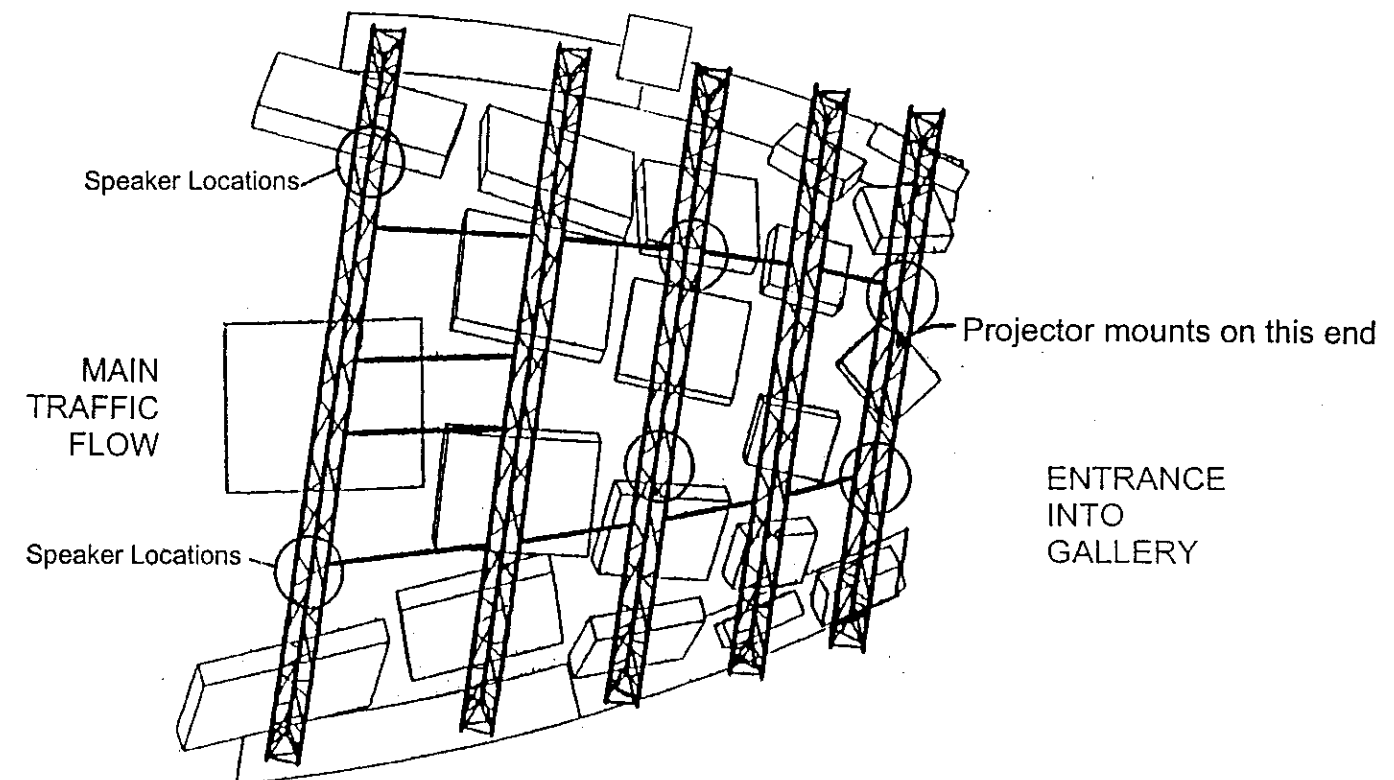
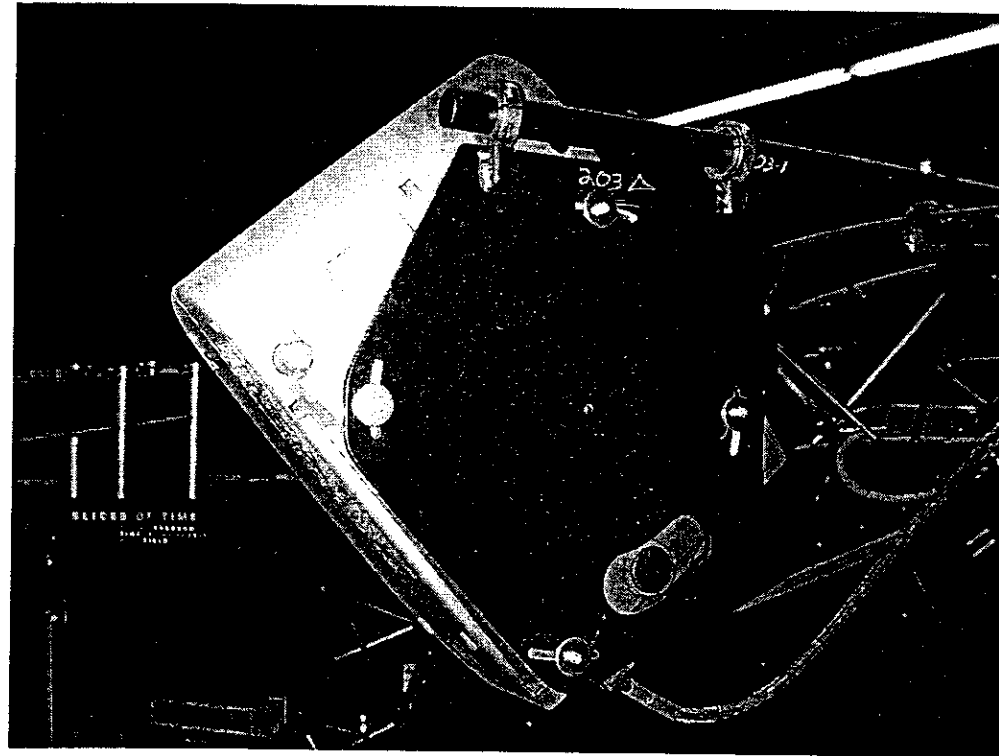
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**INSTALL PROJECTOR****Install NEC Projector to Truss**

- 33 Locate NEC Projector (203) and Mounting Pole (203-1). Do not remove the pole clamps from the Truss; they locate the correct projector position. Connect pole to the Truss by first removing the hex nuts that come installed on the clamps on the Truss. Insert threaded posts through holes in Mounting Pole, keeping flat washer under Pole, and reattach hex nuts. **Note:** Hex nuts ship attached to Truss clamps.
- 34 Fit the ring clamps on the Projector Mount onto the Mounting Pole and tighten the washer and nut on top. Remove lens cover and store in Projector Box in Crate \_\_\_\_.
- 35 Connect yellow video cord from Wiring Harness to VIDEO INPUT located above the lens, and connect power cord into socket located below the lens.

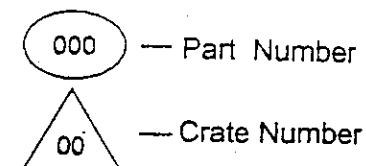


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**INSTALL POWER AND AV CABINET****Connect to House Power**

**36** To connect from floor or ceiling, position AV Cabinet over house power installed in venue floor.

To connect from ceiling, feed house power through access hole in side of Cabinet and connect to main power cord inside.

**Install AV Cabinet**

**37** Locate AV Cabinet at the joint between Troughs 200H and J, feeding power connectors from Troughs into the open base inside the AV Cabinet. Make connections, matching markings on cables and on power-cons. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise. See individual connections next page.

Connections include:

Video to Video

Tunnel Projector into power strip.

Speaker to Speaker connections: 1, 2, and 3.

(19) labeled power-cons for Light Boxes

Main Power to house power supply.

**Adtech Mirage Player**

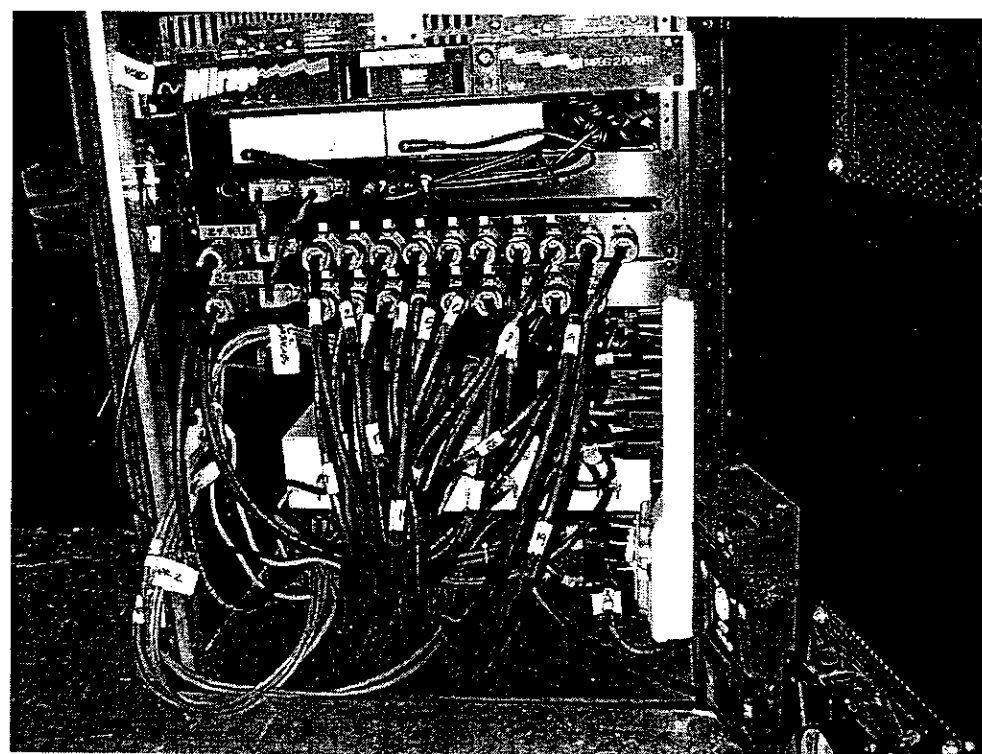
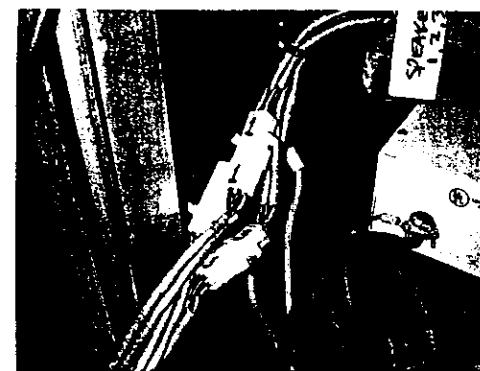
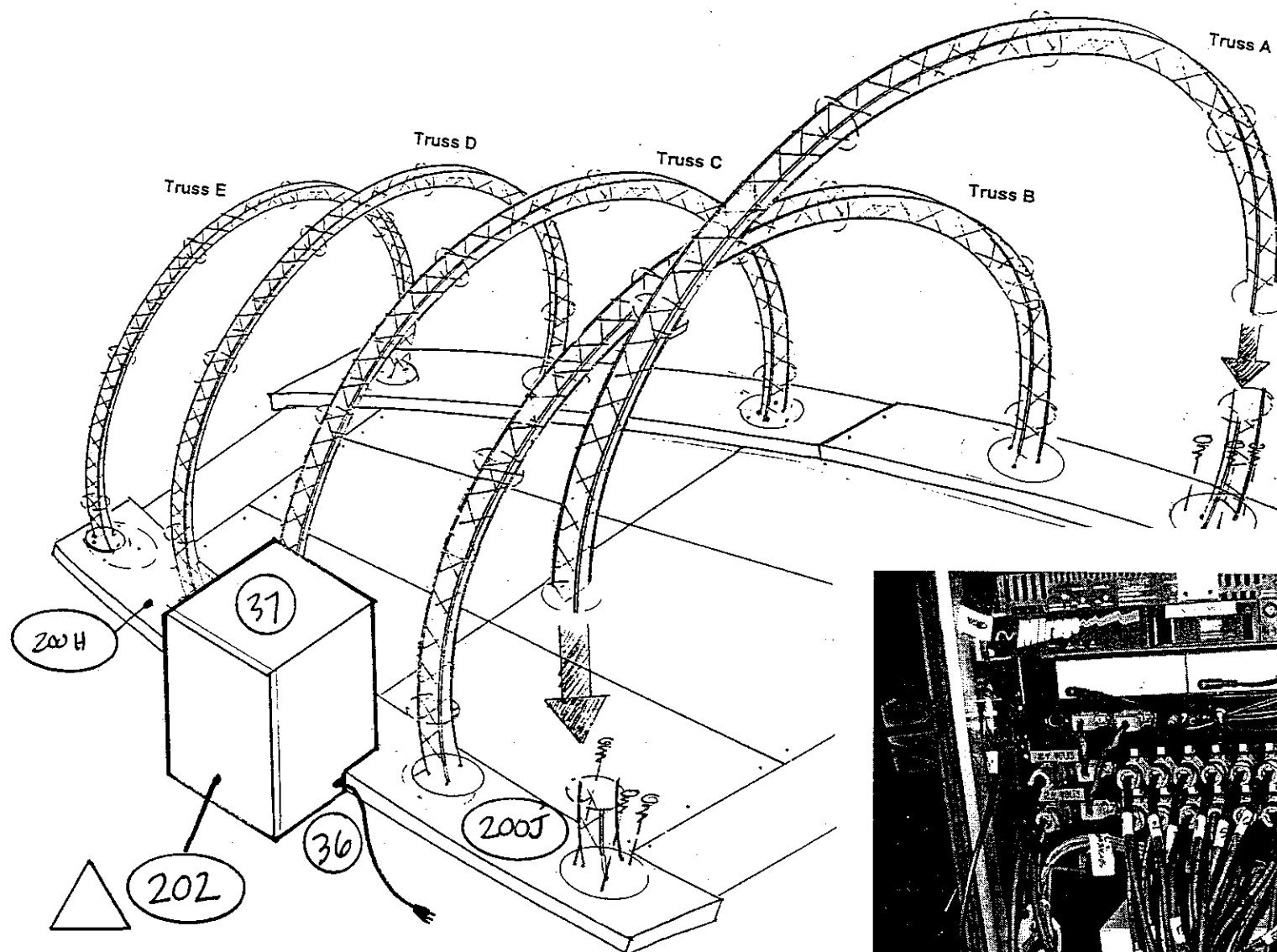
**38** Locate Adtech Drive "ENTRY TUNNEL", #C and use key to install and lock in place. (**Note: Adtech Mirage will not play unless drive is locked in place.**)

Test Tunnel program by \_\_\_\_\_

Clean exhibit as needed.

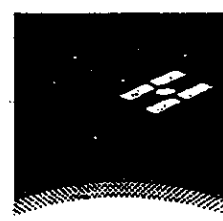
Repack any packing materials in Crate.

AV Cabinet 202



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# Sm ENTRY TUNNEL 200 DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling the Entry Tunnel.**

**Unlock and remove Adtech Drive(s) from exhibit prior to disassembly and pack in Crate 49.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 3-18, 20 and AV Crate 49.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**Adtech Drive** - Pack (1) Adtech Drive in Crate 49.

**AV Cabinet** - Disconnect cables in AV Cabinet, and be sure the remote control is velcroed to the inside of the cabinet door for shipment. Pack in Crate 18.

**Tunnel Projector** - Detach NEC Projector and pack with lens cap and mounting pole in original carton in Crate 5.

**Tunnel Speakers** - After removing speakers from brackets on Truss, reattach 10-32 hex nuts to studs on speakers and tighten for shipment. Nuts stay attached to speakers to prevent studs from becoming dislodged in shipment. Pack in Crate 49.

**Light Boxes** - Begin removing the **largest Light Boxes** on Truss A first. When detaching Light Boxes use caution to prevent damage. Pack in Crates 3, 4 and 5.

**Light Box Stabilizer Arms** - These ship attached to the **Truss sections they are connected to.** They do need to be detached from the truss in order to detach from the Light Boxes, but the Stabilizer Arms are intended **to ship attached to trusses** with gray tubular gray tubular foam sleeves marked for each piece. These pieces protect the Arms which stay attached to the Trusses, and prevent Arms from scratching the Trusses.

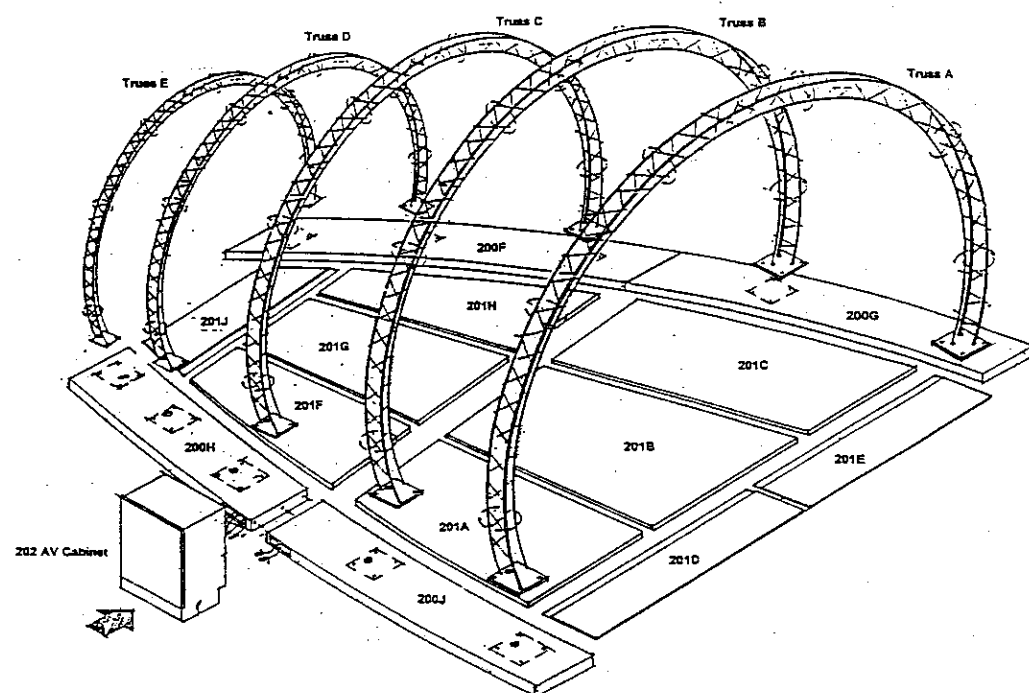
**Wiring Harnesses** - Repack wiring harnesses into cardboard boxes and pack into Crate 5.

# Sm ENTRY TUNNEL 200 DISASSEMBLY CONTINUED

**Truss Braces** - These ship attached to one of the Truss sections they are connected to. They do need to be detached from ONE truss, but are intended **to ship attached to trusses** with gray tubular gray tubular foam sleeves marked for each piece. These pieces protect the Braces which stay attached to the Trusses, and prevent Braces from scratching the Trusses.

**Floor Platform Sections** - Be careful to unlock all the rotolocks before trying to pull Sections apart, or rotolocks could be damaged. Repack rotolock hole plugs into hardware box for future use. Pack in Crates 14 and 15.

**Insure that all components are packed back into their assigned locations in each crate.**

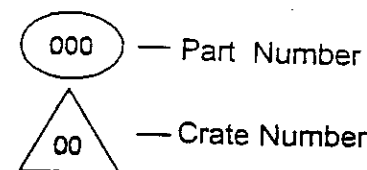


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Page Number: **200-15**

**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace Brite Strip (festoon) bulbs inside the Tunnel Light Boxes:**

These lights can be changed while they are running; they are low voltage.

Light Boxes are hinged at lower back corner. Larger 3 sizes of Light Boxes have (2) locks, smaller 16" x 24" Light Boxes have (1) lock to keep them closed. All Light Boxes have a security chain on the inside to hold the door while the bulbs are being changed.

On any of the larger 3 sizes, two installers will be required to open the Light Boxes. While both installers are supporting the front of the Light Box, one inserts 5/16 allen wrench into hex key hole on back of light box. Turn until the front of the box becomes unlocked from the back, and hold the Box while the other installer repeats the process on the other lock. Then, both installers **gently lower the door** until the security chain holds it open.

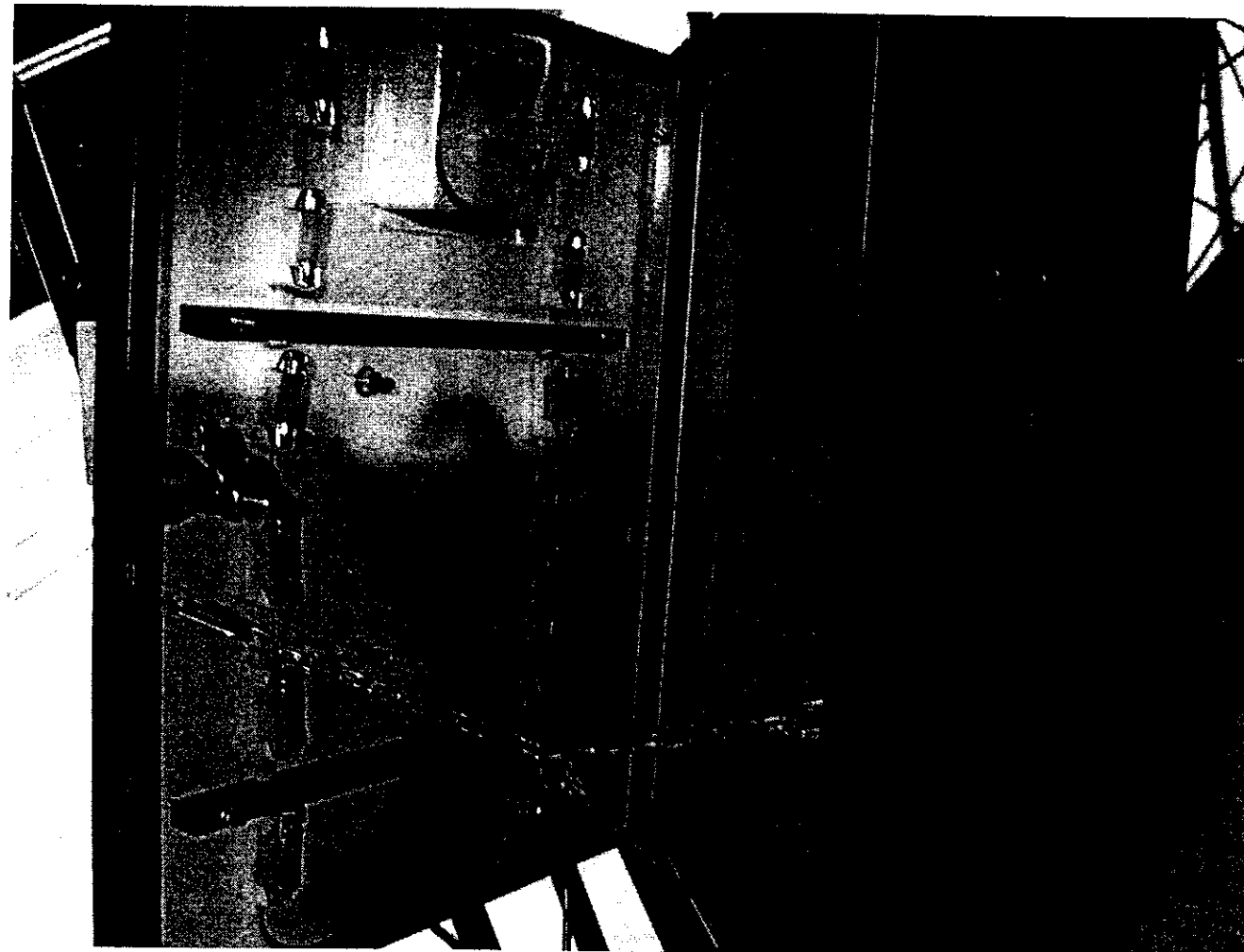
Pull on burned out bulb; it simply snaps into place.

Replace bulb using identical 5 watt bulb:

#BL-24-5W-F frosted Brite Strip (festoon) bulb

Available from National Specialty Lighting at 1-800-527-2923.

Both installers will be needed to close Light Box cover and lock using allen wrench.



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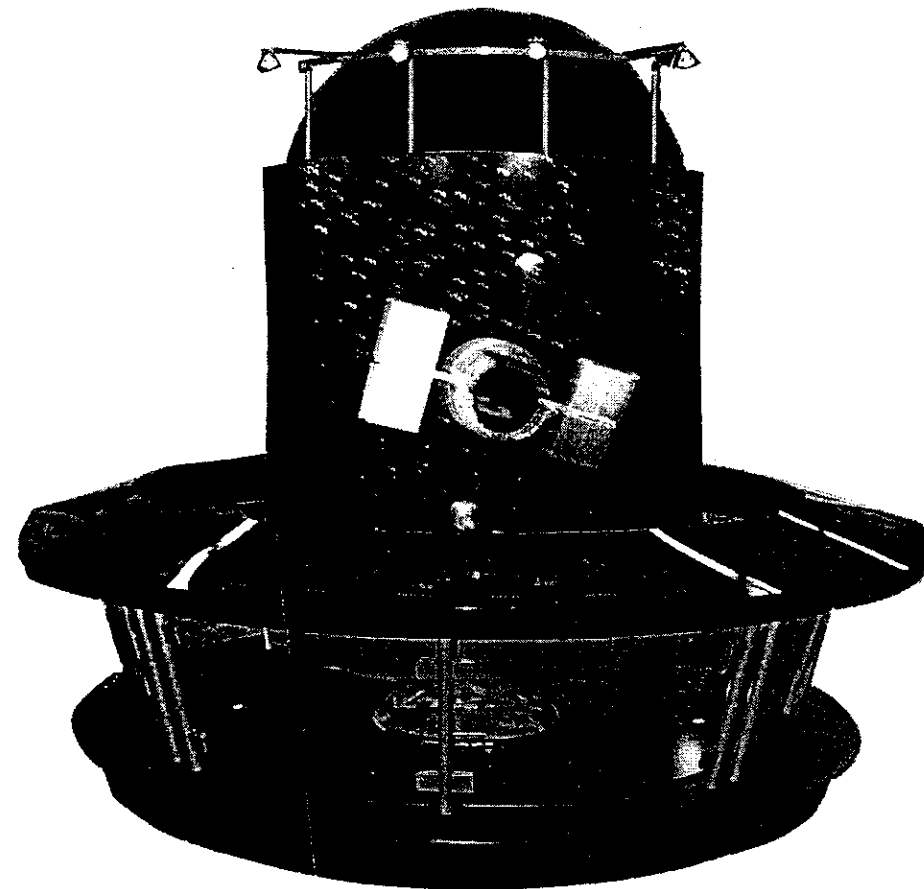
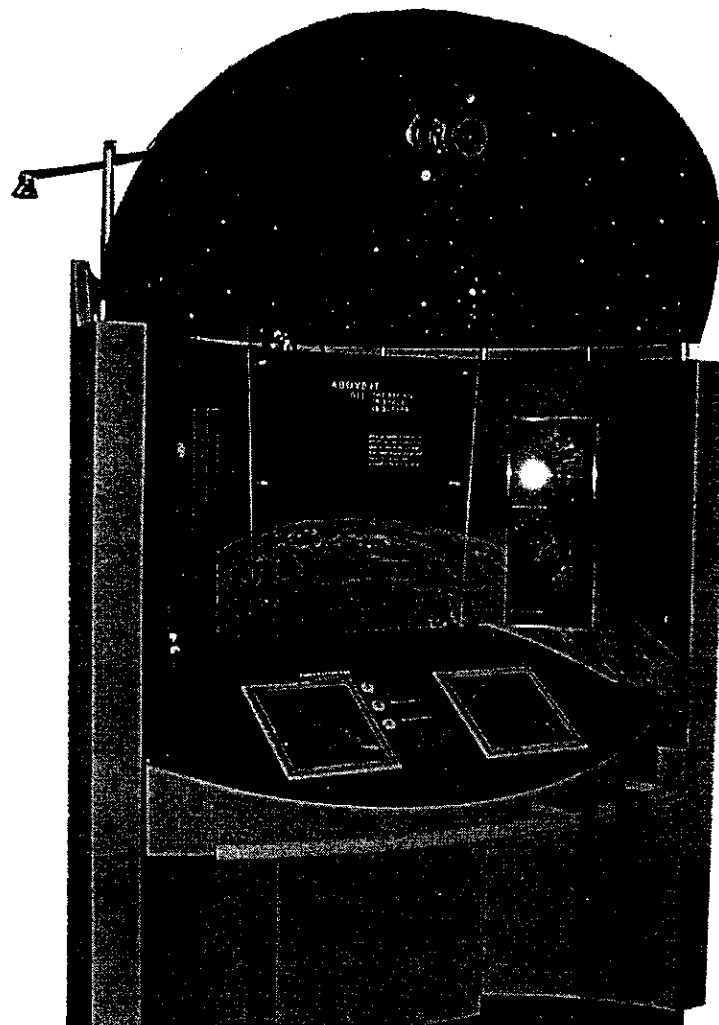
# 1:15 HUBBLE SCALE MODEL 300

## OVERVIEW AND PLANNER

### Exhibit Overview:

**1:15 Scale Model:** This model of the HST is shown hovering over the earth. Light box graphics surrounding the model discuss Basic Components of the HST, the Telescope, Analogies and Satellites, and a Timeline of the history of the HST.

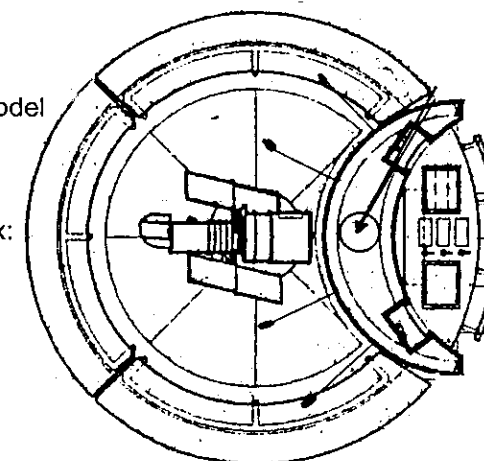
**Above the Atmosphere:** Visitors learn the benefit of having a telescope deployed about the atmosphere so that objects appear clearer. Visitors discover that HST sees objects more clearly because it is above the atmosphere.



**302**  
1:15 Scale Model

**300BB**  
Light Box:  
Timeline

**300CC**  
Light Box:  
Analogies  
Telescope



**302**  
Above the Atmosphere

**300AA**  
Light Box:  
Basic Components  
Satellite

SCALE: 1/4"=1'0"

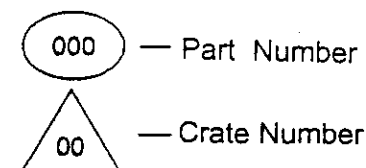


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Page Number: **300-1**



# 1:15 HUBBLE MODEL PLATFORM 300

## ASSEMBLY INSTRUCTIONS

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

### Locate parts required for set-up of 300 Area, including:

- 300/302 Area Hardware Box and Tools (Crate 20)
  - (1) Main Casework (302A, Crate 24)
  - (1) Black Dome (302B, Crate 23)
  - (1) Light Bar (302C, Crate 19)
  - (1) Atmosphere Panel (302D, Crate 27)
  - (1) 1:50 HST Model (302E, Crate 25)
  - (8) Straight Chrome Rods (Crate 49)
  - (4) 20 watt Halogen Bulbs with Chrome Sockets (Crate 49)
- Cleaning Kit is packed in Green Star Crate 51.

### Locate position of 300 Area on gallery floor

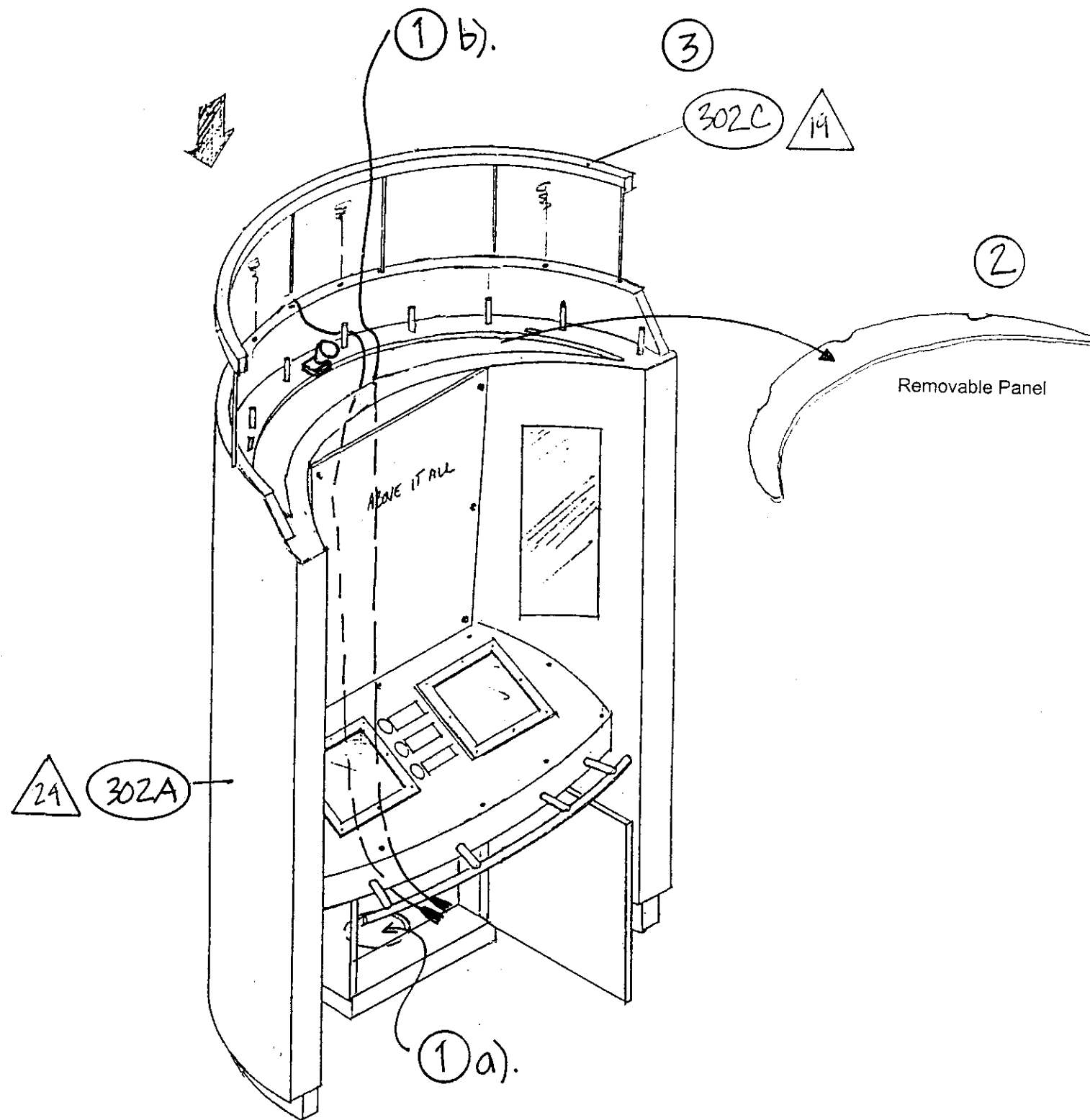
Locate positioning of Main Casework 302A on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

### Place Main Casework and position for house power

- ① Position Main Casework 302A on floor and identify if it will be connected to floor or ceiling power.
  - a). If power is in the floor, position hole in Main Casework directly over outlet installed in gallery floor.
  - b). If power is in ceiling, first remove panel at top of casework by twisting butterfly catches to release panel. **Note:** Do not damage the light fixture mounted just behind the removable panel. Feed house electrical cord inside Main Casework 302A down through Casework to main power cord inside Casework. When attaching black Dome, position cord at notch at center back of Dome.

### Install Light Bar

- ② If not already done, unlatch the butterfly catches to lift off the removable panel in the top of the Main Casework. **Note:** Do not damage the light fixture mounted just behind the removable panel. This fixture is to light the small 1:50 HST Model, which will be hung on the rod later on.
- ③ Locate Light Bar 302C. Walk Light Bar up ladders and place in position on top edge of Main Casework. Drop cord through opening in top of Main Casework and plug into transformer, matching markings. Attach Light Bar to Main Casework using (3) 1/4-20 x 3/4" s.s. button head allen screws into threaded inserts.



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# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL PENDENT LIGHTS

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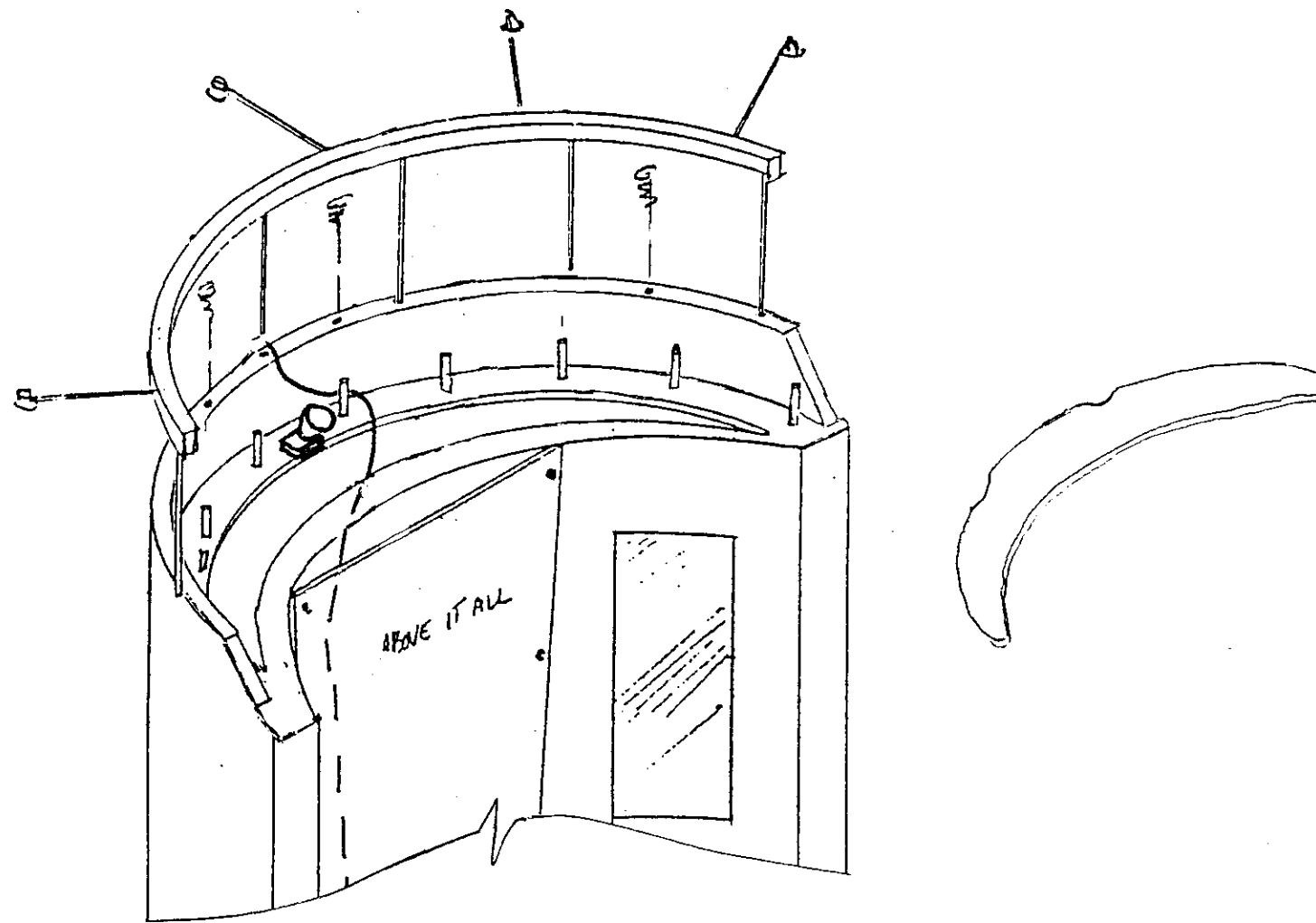
### Install Pendant Lighting

**Note:** To avoid shock, disconnect or turn off power when installing pendant lighting.

Assemble (4) Pendant Lights into Light Bar by:

- Locating (8) Straight Chrome rods, (4) sockets with (4) 20 watt halogen bulbs attached.
- Screw (8) Straight Chrome Rods into the (8) knurled knobs on the Light Bar.
- To install Sockets, loosen thumb screws on each end of socket, slide onto chrome rods and re-tighten thumb screws.
- To change or install bulbs, loosen (2) 3mm set screws in socket, insert prongs of halogen bulb into matching holes in socket, and retighten set screws.

**At this point, assemble the 300 Area 1:15 HST Model Platform, and resume assembly of 302 Area when Platform is nearly finished, per instructions that follow.**



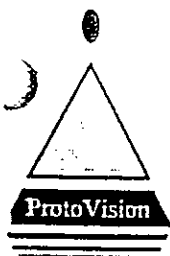
b).



c).



d).



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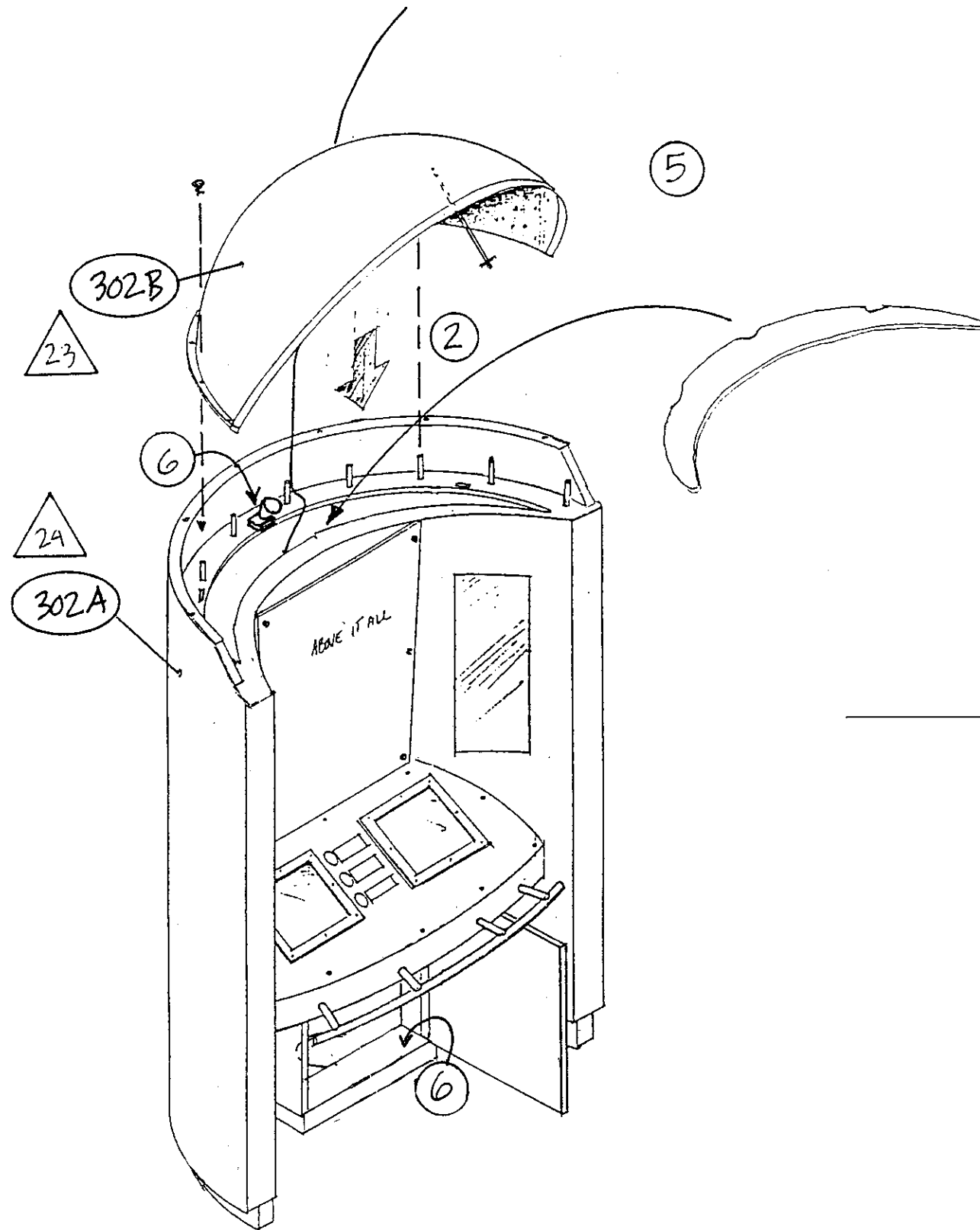
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Page Number: **300-4**

# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL BLACK DOME



### Install Black Dome

- ⑤ Locate large Black Dome 302B. Position (2) ladders so that the Dome can be walked up the ladders and placed onto metal stand-offs. Position Dome on stand-offs, keeping power cable(s) in notch. Attach using (7) 5/16-18 x 1" black button head allen screws into tops of stand-offs.

Replace removable panel and twist butterfly catches to secure.

**Note:** Rod inside Dome is for mounting 1:50 HST Model later on.

### Install bulb to light 1:50 Model

- ⑥ Remove the small bulb (12) volt 20 watt ESX narrow beam halogen) From inside the door to the cabinet under the console, and install bulb in fixture mounted to the top of the casework. To install bulb, loosen (2) 1/8" set screws in socket, insert prongs of halogen bulb into matching holes in socket, and retighten set screws.

Repack bulb back into the same foam compartment prior to shipping.



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# 1:15 HUBBLE MODEL PLATFORM 300 ASSEMBLY INSTRUCTIONS

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

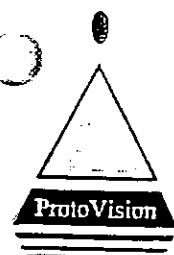
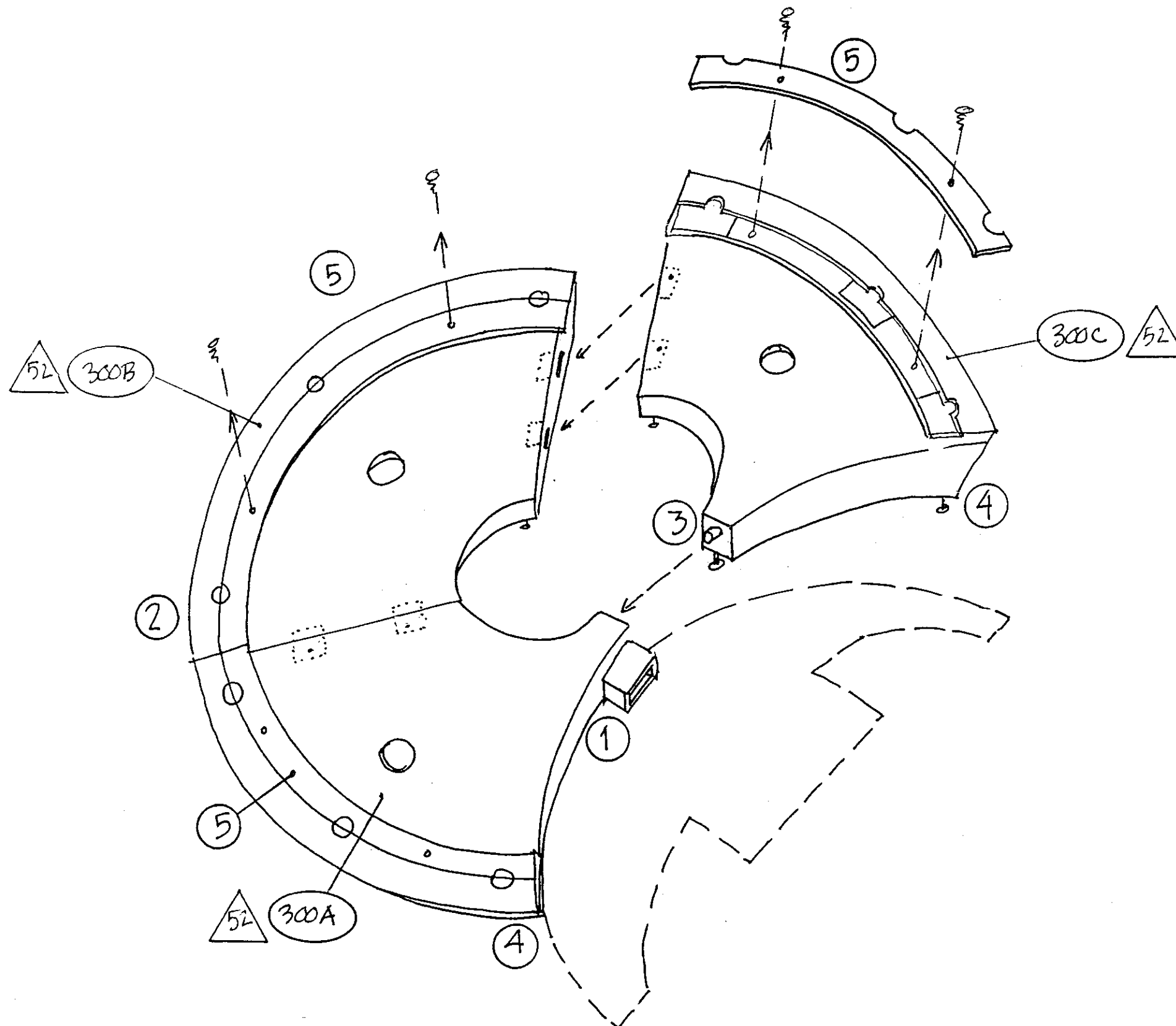
**Locate additional parts required for set-up of 300 Area, including:**

- (3) Platform Sections, each with 3 metal feet inside (300A, B and C, Crate 52)
- (3) Hand Rails (300D, E and F, Crate 19)
- (3) Light Boxes (300AA, BB and CC, Crate 21)
- (1) Light Platform (300G, Crate 20)
- (1) Metal Ring (300H, Crate 20)
- (1) Earth Dome (300J, Crate 20)
- (1) Junction Box (300L, Crate 20)
- (1) 1:15 HST Model (Crate 22)
- (2) 2 1/2" wooden Hand Rail Spacers (Crate 20)
- (2) 1/2" thick wooden Light Box spacers (Crate 20)

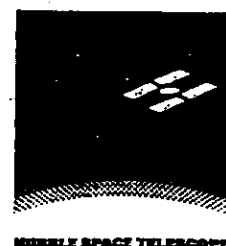
## Assemble Platform Sections

**Note:** The 300 Area Platform should not be assembled until **after** the 302 Area Above the Atmosphere Exhibit is assembled (without the HST models) and in position.

- 1 Set Platform Section 300A against the Main Casework for 302 Above the Atmosphere, so that electrical chase lines up with opening. Line up center seam on platform with center seam in laminate on back of Main Casework. Raise levelers at center seam and at outer corner on platform so that the top of electrical chase touches the underside of the kick space on Main Casework.
- 2 Place Platform Section 300B next to 300A and adjust levelers to align seams with 300A, and to make them flush. Connect rotolocks to attach Platform Sections 300A and 300B.
- 3 Position Platform Section 300C onto alignment dowel at centerline on Section 300A, and adjust levelers to tighten seams with 300A and 300B. When seams are tight connect rotolocks.
- 4 After all (3) Platform Sections are connected, raise levelers at outer corners of Platform Sections 300A and C until the platform seams are tight. Then, lower the levelers around the inside edge ring of platform until the levelers touch the floor.
- 5 Remove cover panels on inner portion of riser edge on each Platform Section by removing the (2) 1/4-20 x 1 1/4" black button head allen screws in each cover that attach them to the Platforms.



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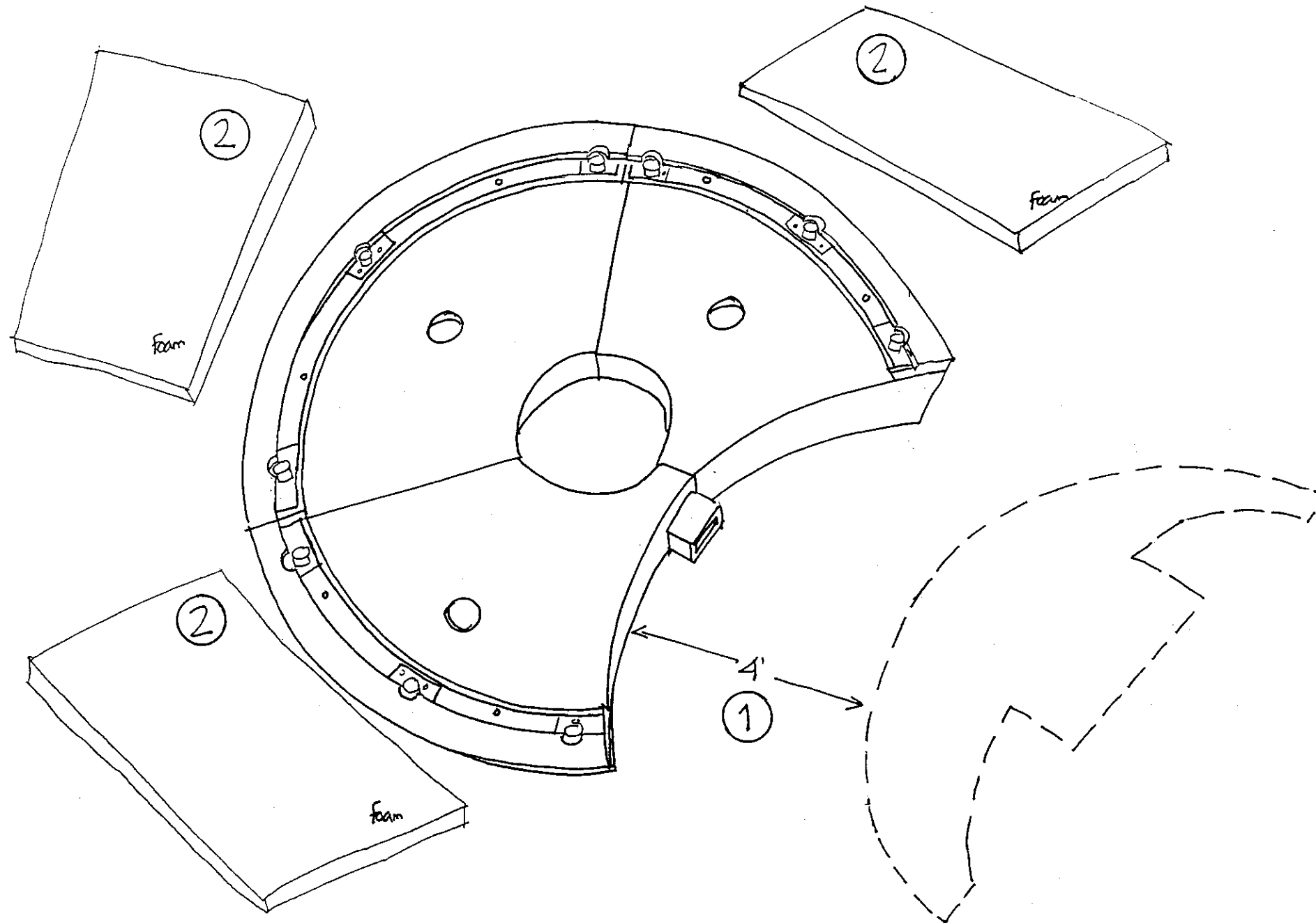
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# 1:15 HUBBLE MODEL PLATFORM 300

## ATTACH HAND RAILS

### Prepare to install Handrails

- ① Pull 302 Main Casework about 4 feet away from the Platform to provide room to install Hand Rails.
- ② Position protective foam on floor in front of each Platform Section, and lay Hand Rails 300D, E and F on foam in front of respective Platform Sections.



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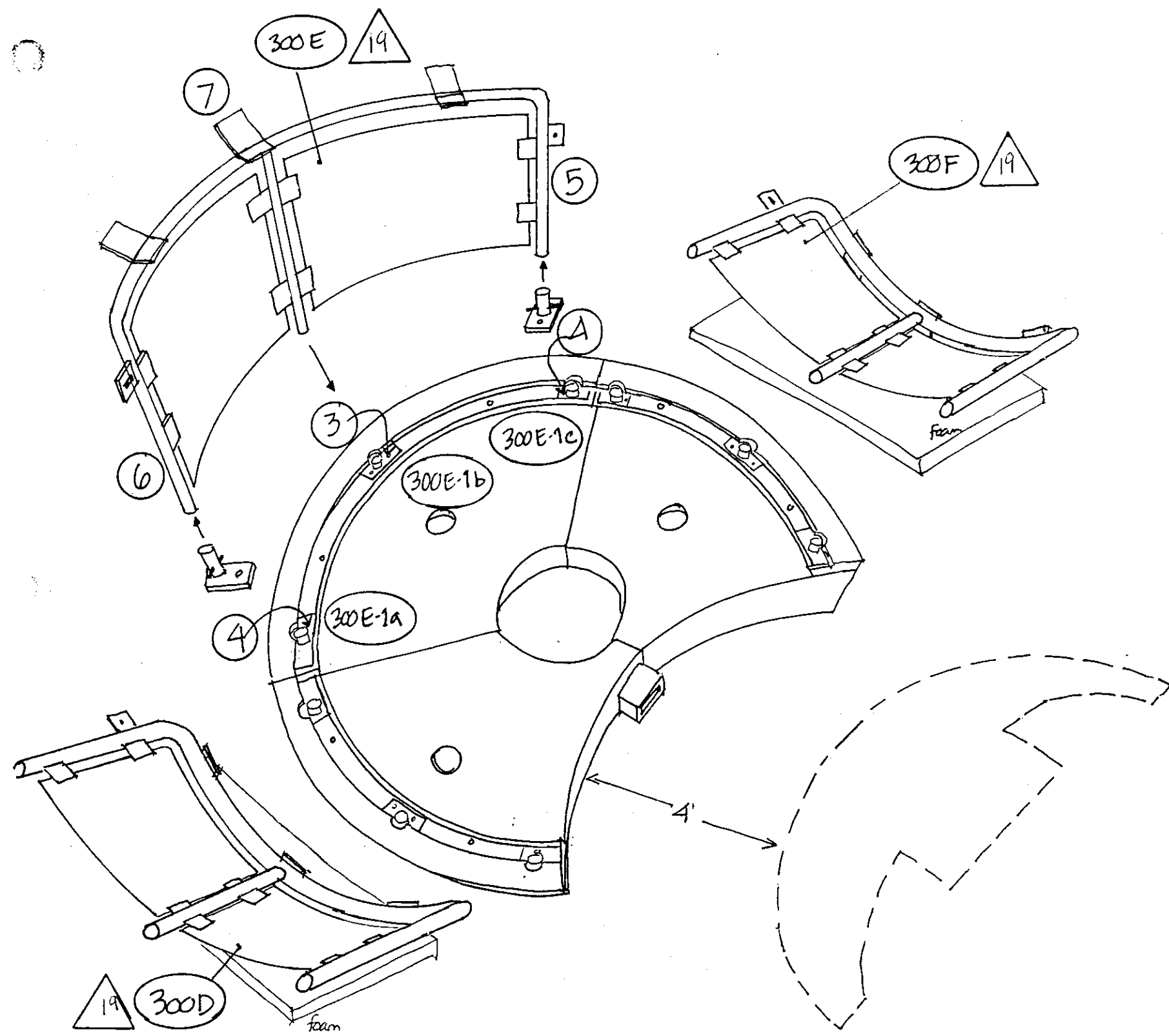


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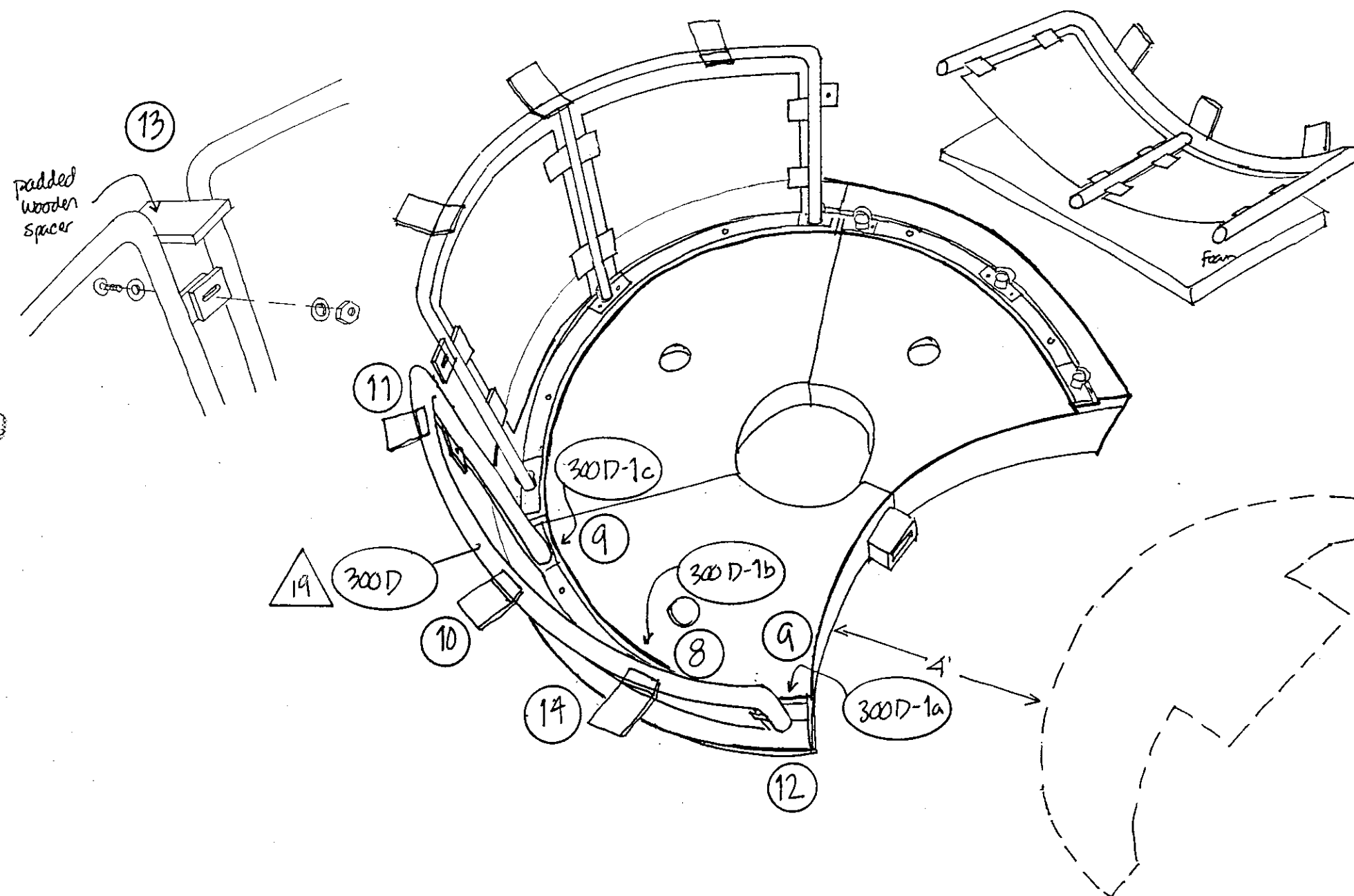
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Page Number: **300-7**

**ATTACH HAND RAILS**



- 3 Begin with center Hand Rail 300E**  
Loosen (2) 5/16-18 x 2 1/2" cap head socket screws that hold Center Metal Foot 300E-1b inside bottom of platform and leave foot loose.
- 4** Remove the 3/8-16 x 1" cap head socket screws with lock washers that hold each Metal Foot 300E-1a and 1c in place inside platform, and keep handy. Holding these (2) Metal Feet into bottom of rail legs, (2) installers lift Hand Rail 300E and raise into position **over Center Metal Foot** 300E-1b. Bring rail as far forward as possible and place on Center Foot.  
**Note:** Do not force Hand Rail all the way down on Foot at this time.
- 5** Rotate **left leg of Hand Rail** on an angle to align Metal Foot 300E-1c with its bolt hole and start the 3/8-16 x 1" black cap head allen screw with lock washer in hole, leaving it loose.  
  
Pull this same leg and Metal Foot fully into position inside platform, aligning Foot with marks on metal plate and tighten screw with washer.
- 6** Pull outward and down on **right leg** to align right side Metal Foot 300D-1a. Start 3/8-16 x 1" black cap head allen screw with lock washer in hole, leaving it loose.  
  
Again, pull this same right leg to align Metal Foot 300E-1a with marks on metal plate, and tighten 3/8 screw with lock washer.
- 7** Lift center Hand Rail at center point and pull center leg back to enable alignment of **Center Metal Foot** with holes in base of platform. Insert (2) 5/16-18 x 2 1/2" cap head socket screws with flat washers, and tighten.  
  
Using rubber mallet, tap Hand Rail by striking downward on Light Box brackets or top railing until bottom of legs touches side pins in Metal Feet. Be careful not to chip the Platform laminate when tapping rail with mallet.



### Attach right Hand Rail 300D

- 8 As previously described, loosen (2) 5/16-18 x 2 1/2" cap head socket screws that hold Center Metal Foot 300D-1b inside bottom of platform and leave foot loose.
- 9 Remove the 3/8-16 x 1" cap head socket screws with lock washers that hold each Metal Foot 300D-1a and 1c in place inside platform.
- 10 Insert Metal Feet 300D-1a and c into legs. With (2) installers lift Hand Rail 300D, holding Metal Feet in bottom of legs, and raise Hand Rail into position **over center Metal Foot** 300D-1b. Bring rail as far forward as possible and place on 300D-1b. **Note:** Again, do not force Hand Rail all the way down at this time. **Note:** As this railing is being installed, position side tabs so that the tab with the wide slot faces the inside of the ring.
- 11 Rotate **left leg of Hand Rail** on an angle to align Metal Foot 300D-1c with its bolt hole, watching that the side tab with the longer slot is facing the inside of the ring. Once aligned, start the 3/8-16 x 1" black cap head allen screw with lock washer in the hole, leaving it loose.  
  
Pull this same left leg and Metal Foot fully into position inside platform, aligning Foot with marks on metal plate and tighten 3/8-16 screw with washer.
- 12 Pull **right leg of Hand Rail** 300D down and over to the right, aligning Metal Foot with markings inside platform. Insert (1) 3/8-16 x 1" cap head allen screw, leaving it loose. **Note:** The alignment of the side tabs is done while left Metal Foot 300D-1a is tight and right Metal Foot 300D-1c is only loosely attached. This is to allow movement of the Hand Rail into the correct position for locating Light Boxes.
- 13 Place the 2-1/2" padded wooden spacer block just above the side tabs between Hand Rails 300D and E. Install (1) 1/4-20 x 1" s.s. button head allen screw with (2) flat washers and (1) s.s. hex nut through hole, leaving it loose.  
  
Pull Hand Rail 300D to meet padded wooden spacer block, and use platform levelers on outside corners of Platform Sections 300A and C to bring side tabs closer together if needed. Tighten the 1/4-20 x 1" s.s. screw with washers and nut to **connect Hand Rails 300D and E at side tabs.**  
Finish alignment of right leg by again pulling outward on leg to align Metal Foot 300D-1a with marks and assure correct position. Tighten screw with lock washer.
- 14 Lift center Hand Rail at center point and pull center leg back to enable alignment of **Center Metal Foot** with holes in base of platform. Insert (2) 5/16-18 x 2 1/2" cap head socket screws with flat washers, and tighten.  
  
Using rubber mallet, tap Hand Rail by striking downward on Light Box brackets or top railing until bottom of legs touches side pins in Metal Feet.



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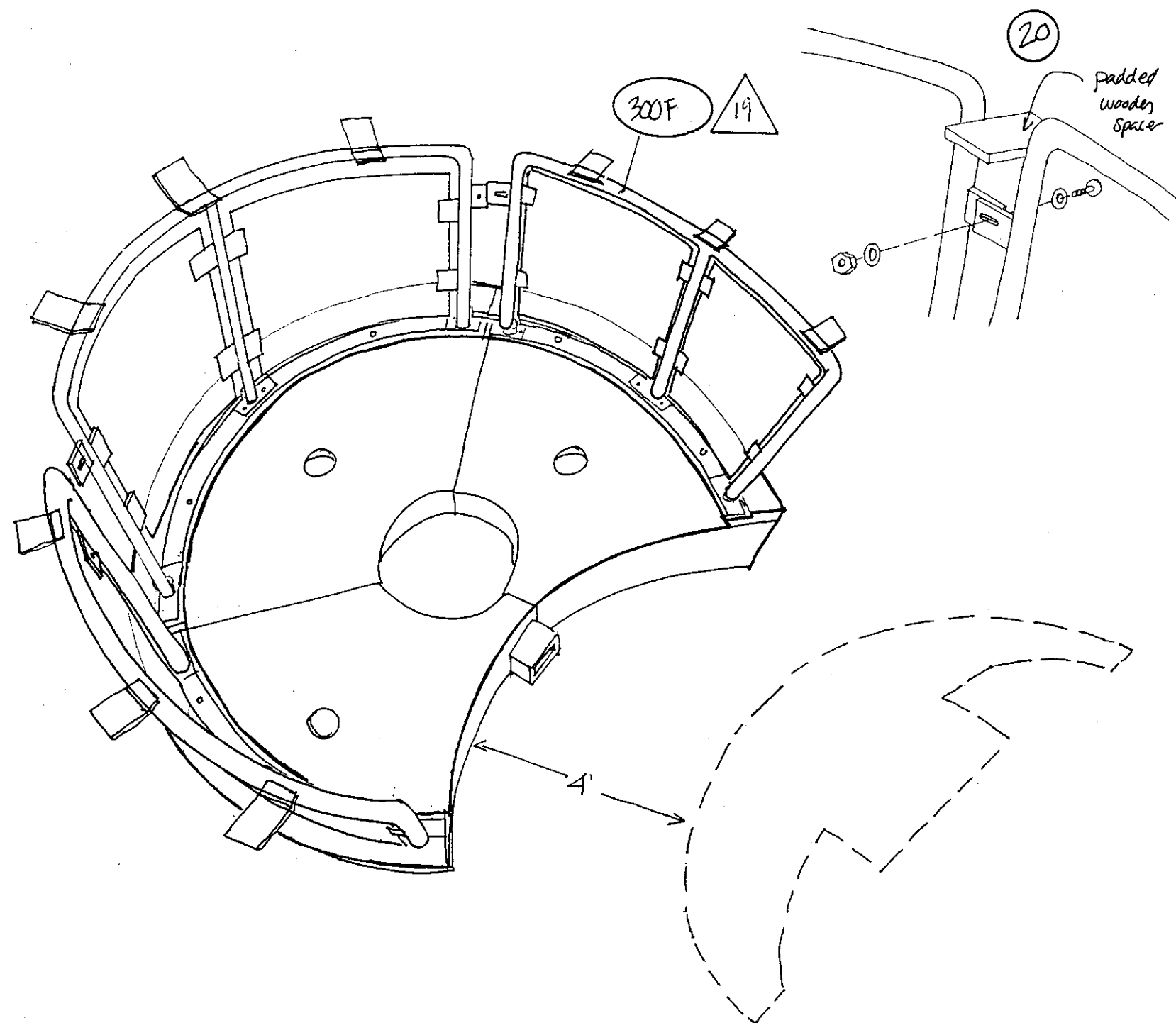


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# 1:15 HUBBLE MODEL PLATFORM 300

## ATTACH HAND RAILS

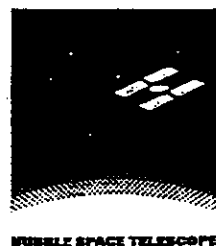


### Attach left Hand Rail 300F

- 15 As previously described, loosen (2) 5/16-18 x 2 1/2" cap head socket screws that hold Center Metal Foot 300F-1b inside bottom of platform and leave foot loose.
- 16 Remove the 3/8-16 x 1" cap head socket screws with lock washers that hold each Metal Foot 300F-1a and 1c in place inside platform.
- 17 Insert Metal Feet 300F-1a and c into legs. With (2) installers lift Hand Rail 300F, holding Metal Feet in bottom of legs, and raise Hand Rail into position over center Metal Foot 300F-1b. Bring rail as far forward as possible and place on 300F-1b. **Note:** Again, do not force Hand Rail all the way down at this time. **Note:** As this railing is also being installed, position side tabs so that the tab with the wide slot faces the inside of the ring.
- 18 Rotate **right leg of Hand Rail** on an angle to align Metal Foot 300F-1a with its bolt hole, watching that the side tab with the longer slot is facing the inside of the ring. Once aligned, start the 3/8-16 x 1" black cap head allen screw with lock washer into the hole in the metal plate inside the platform, leaving it loose.  
  
Pull this same right leg and Metal Foot 300F-1a fully into position inside platform, aligning Foot with marks on metal plate and tighten 3/8-16 screw with washer.
- 19 Pull **left leg of Hand Rail** 300F down and over to the left, aligning Metal Foot with markings inside platform. Insert (1) 3/8-16 x 1" cap head allen screw, leaving it loose. **Note:** The alignment of the side tabs is done while right Metal Foot 300F-1a is tight and left Metal Foot 300F-1c is only loosely attached. This is to allow movement of the Hand Rail into the correct position for locating Light Boxes.
- 20 Place the 2-1/2" padded wooden spacer block just above the side tabs between Hand Rails 300E and F. Install (1) 1/4-20 x 1" s.s. button head allen screw with (2) flat washers and (1) s.s. hex nut through hole, leaving it loose. Remember, this adjustment between tabs is being done while Metal Feet are only loosely bolted in place to allow movement of the Hand Rail into the correct position.  
  
Pull Hand Rail 300F to meet padded wooden spacer block, and use platform levelers on outside corners of Platform Sections 300A and C to bring side tabs closet together if needed. Tighten the 1/4-20 x 1" s.s. screw with washers and nut to connect Hand Rails 300E and F at side tabs.  
  
Finish alignment of left leg by again pulling outward on leg to align Metal Foot 300F-1c with marks and assure correct position. Tighten screw with lock washer.
- 21 Lift center Hand Rail at center point and pull center leg back to enable alignment of **Center Metal Foot** with holes in base of platform. Insert (2) 5/16-18 x 2 1/2" cap head socket screws with flat washers, and tighten.  
  
Using rubber mallet, tap Hand Rail by striking downward on Light Box brackets or top railing until bottom of legs touches side pins in Metal Feet.



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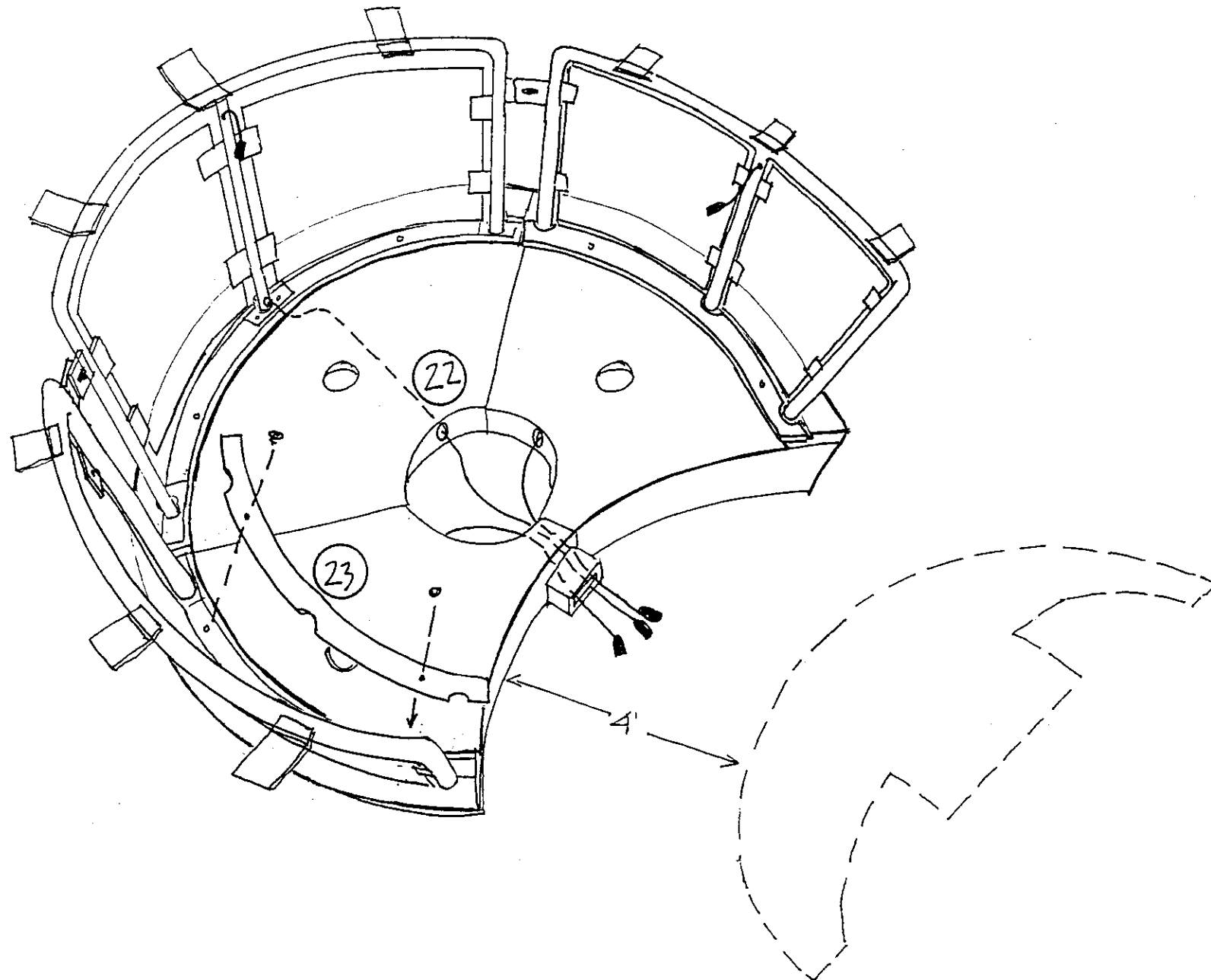
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**Finish Hand Rail Installation**

- (22) Snake power-cons and cables through PVC tube inside Platform to inner ring of Platform. These cables eventually pass through cable chase into inside of 302 Main Casework, later on. (See photos next page).
- (23) Replace laminated cover panels on inner portion of riser edge on each Platform Section using the (6) 1/4-20 x 1 1/4" black button head allen screws that were removed earlier.



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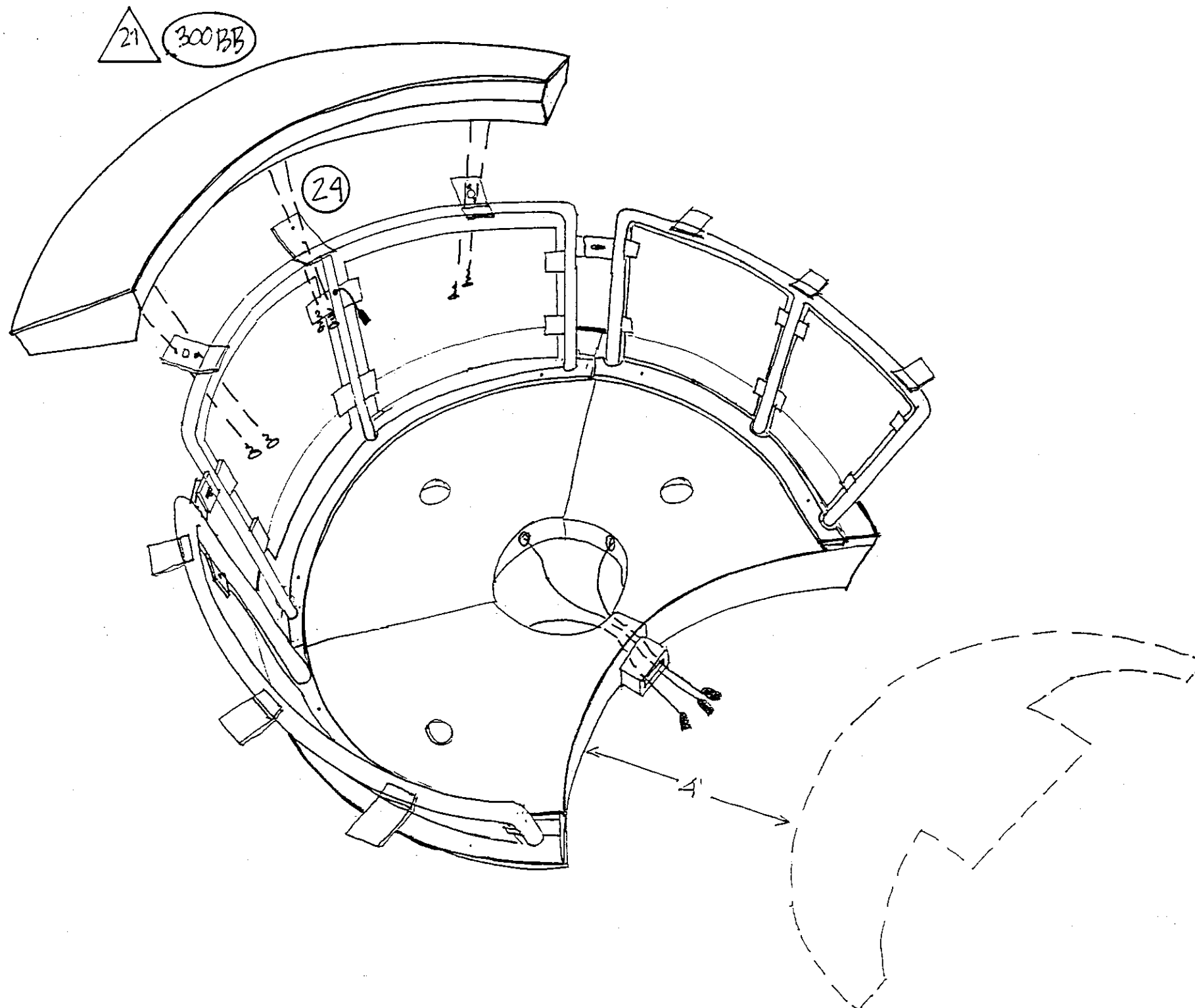
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# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL LIGHT BOXES



- (24) Install Light Box 300BB**  
Set center Light Box BB aligning pins in underside of Light Box into holes in brackets. Secure with (6) 5/16-18 x 1" s.s. button head allen screws and flat washers into bottom of Light Box.

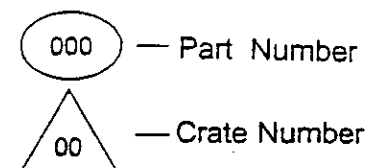


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# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL LIGHT BOXES

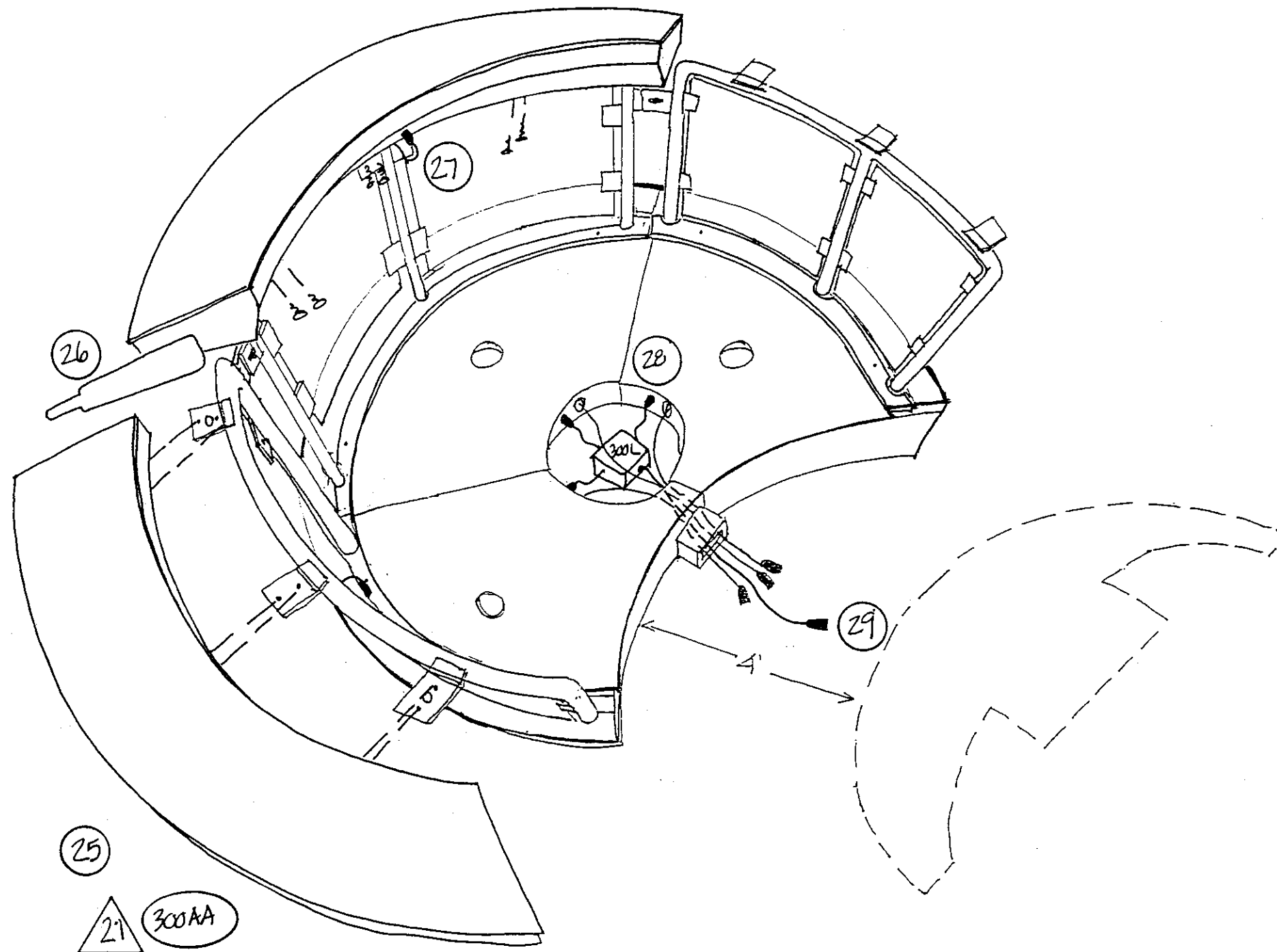
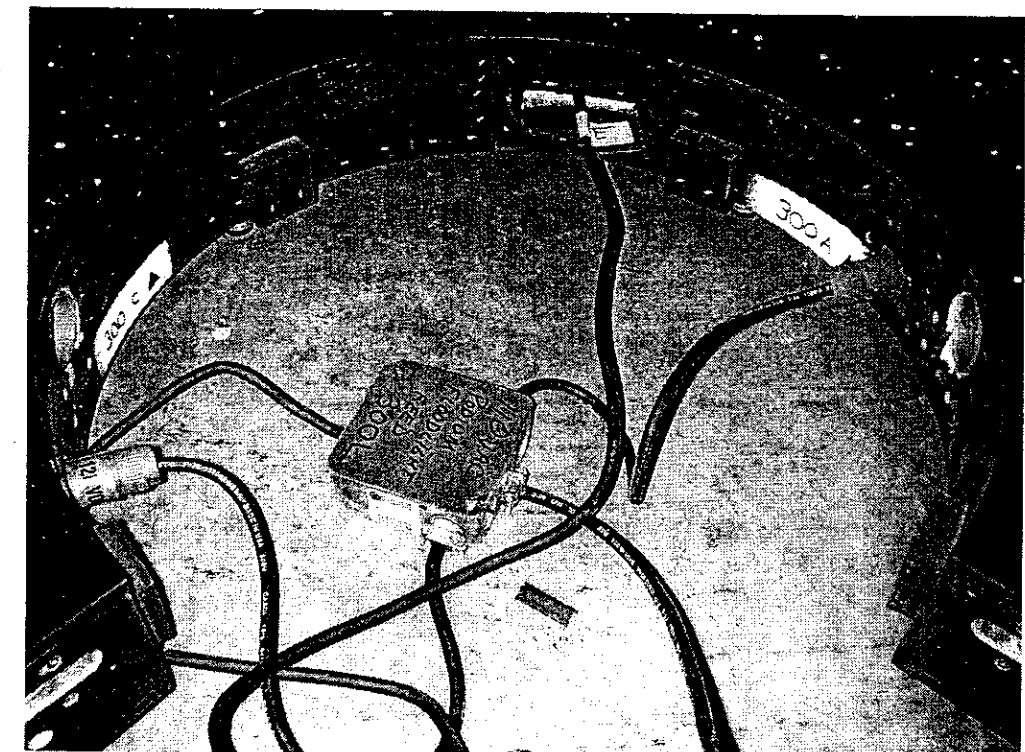
### Install Light Box 300AA

- (25) Set right Light Box 300AA on mounting bracket and start (6) 5/16-18 x 1" s.s. button head allen screws with flat washers, leaving them loose.
- (26) Slide 1/2" padded acrylic just below acrylic at joint between Light Boxes. Hold Light Boxes 300AA and BB together with wooden spacer between, aligning front and back edges, and tighten (6) 5/16-18 x 1" screws in underside of 300AA.
- (27) Connect power-cons in Hand Rails into sockets in Light Boxes. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.

**Note: The left Light Box 300CC will be installed after larger 1:15 HST Model is installed.**

### Install Junction Box

- (28) Install Junction Box 300L into the inside ring of the Platform. Connect power-cons into edge of ring, matching markings on connectors.
- (29) Feed cable from Junction Box through electrical cable passage between Platform Sections 300A and 300C, to inside of 302 Main Casework.



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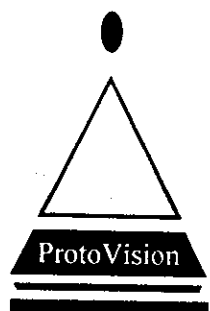
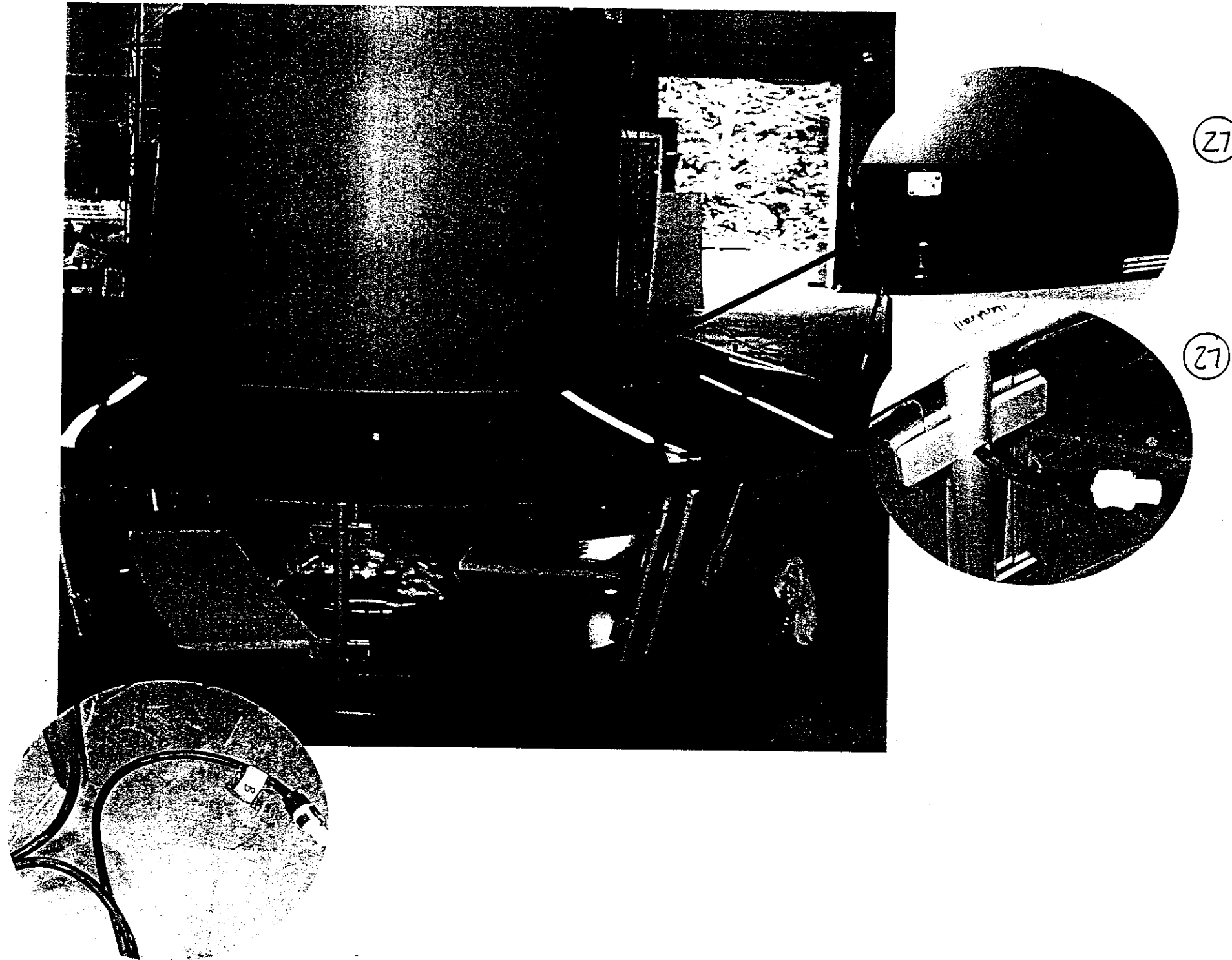


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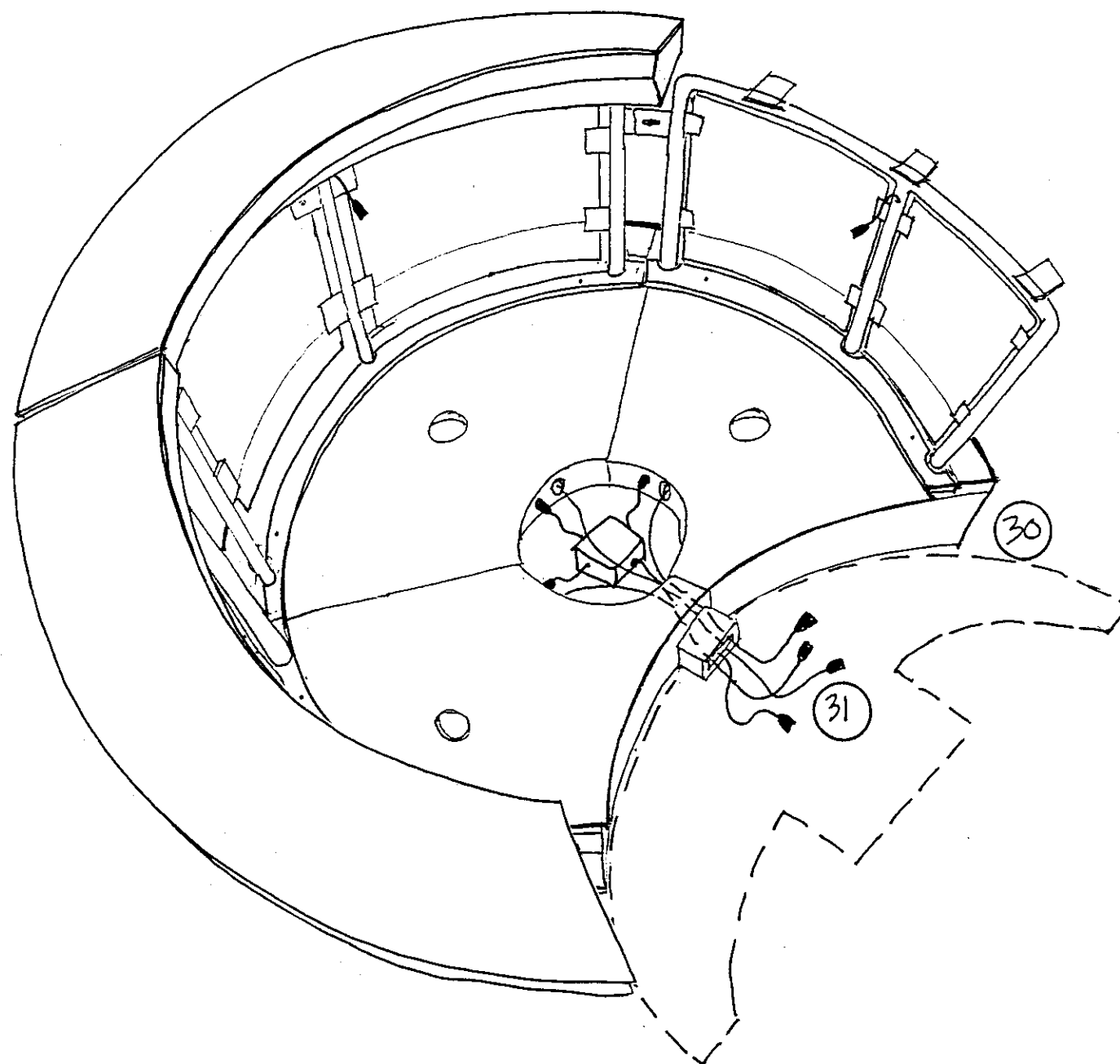


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- (30) With Area 300 Platform assembled, less one Light Box, move 302 Main Casework back into position**  
 Push 302 Main Casework back into position against Platform Sections, being careful to thread electrical correctly and not pinch cables. Exhibits do not mechanically connect. Platform center line should line up with center back seam in laminate.
- (31) Connect platform electrical**  
 Feed all (3) electrical lines from Hand Rails and (1) electrical cable from Junction Box 300L through access hole into inside of 302 Main Casework. Plug into transformers as indicated by markings on sockets.

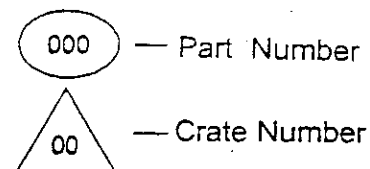


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# 1:15 HUBBLE MODEL PLATFORM 300

## CONNECT ELECTRICAL

### Connect internal electrical

- 32 Plug in electrical from both the 300 and 302 Areas inside the cabinet in the 302 Main Casework. Plug all power-cons and 3-prong plugs into receptacles, matching markings. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.

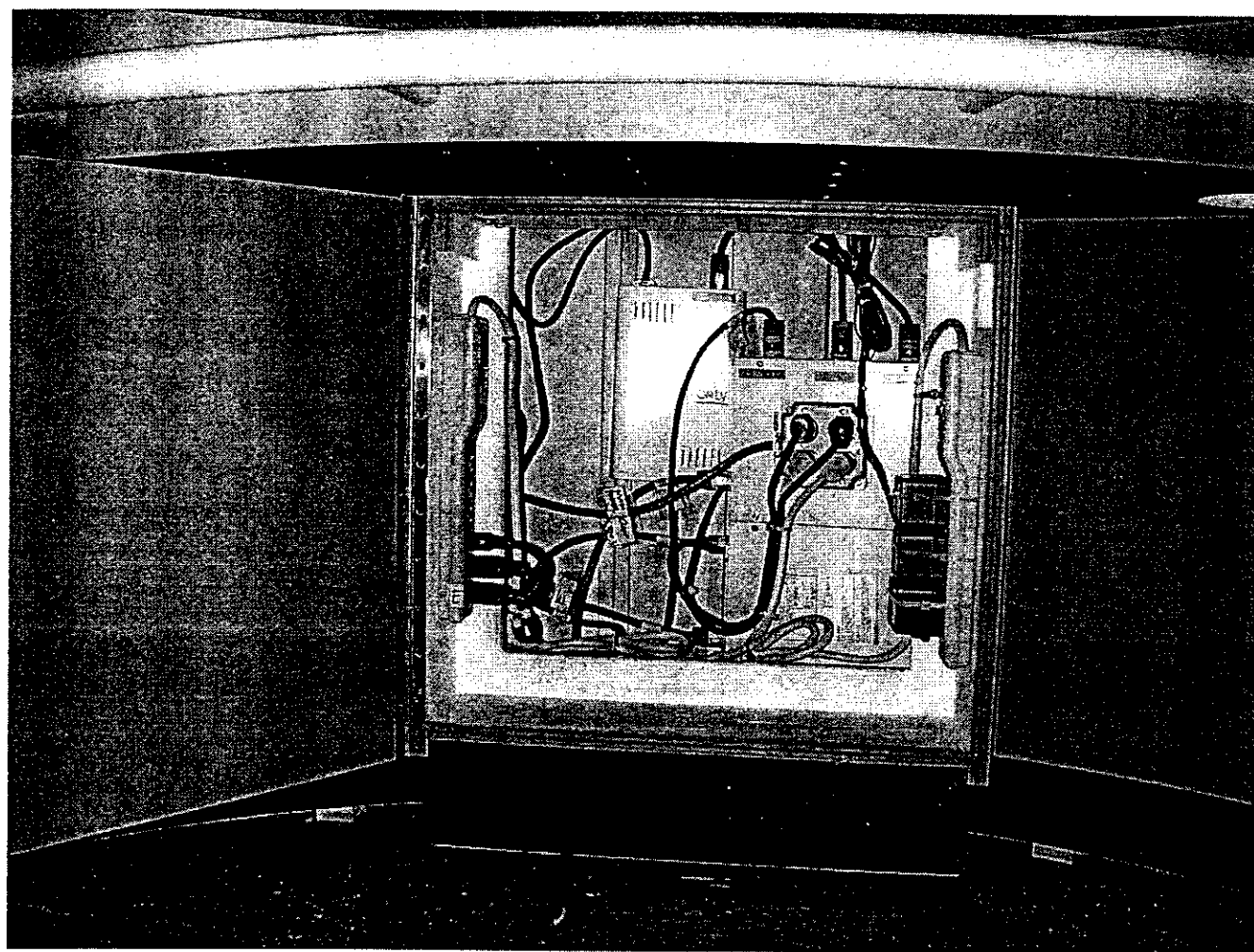
### Complete connection to House Power

- 33 **To connect from ceiling**, attach main power to house power already fed through notch in black Dome and down through casework.  
**To connect from floor**, plug main power feed into house outlet installed in floor directly under casework.

Check to be sure the 302 Area Pendent Lighting and all electronics on console are working  
Check to be sure the 300 Area Platform Light Boxes, Platform halogen lights and Globe lighting are working.

### Test activity

Once plugged in, the console activity will boot. As it resets itself, it will sound like several people talking at once. This lasts only a few seconds. When complete, test activity by following directions and pressing buttons on console.



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— Part Number

— Crate Number

Page Number: **300-17**

# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL EARTH DOME

### Install Earth Dome in center of Platform

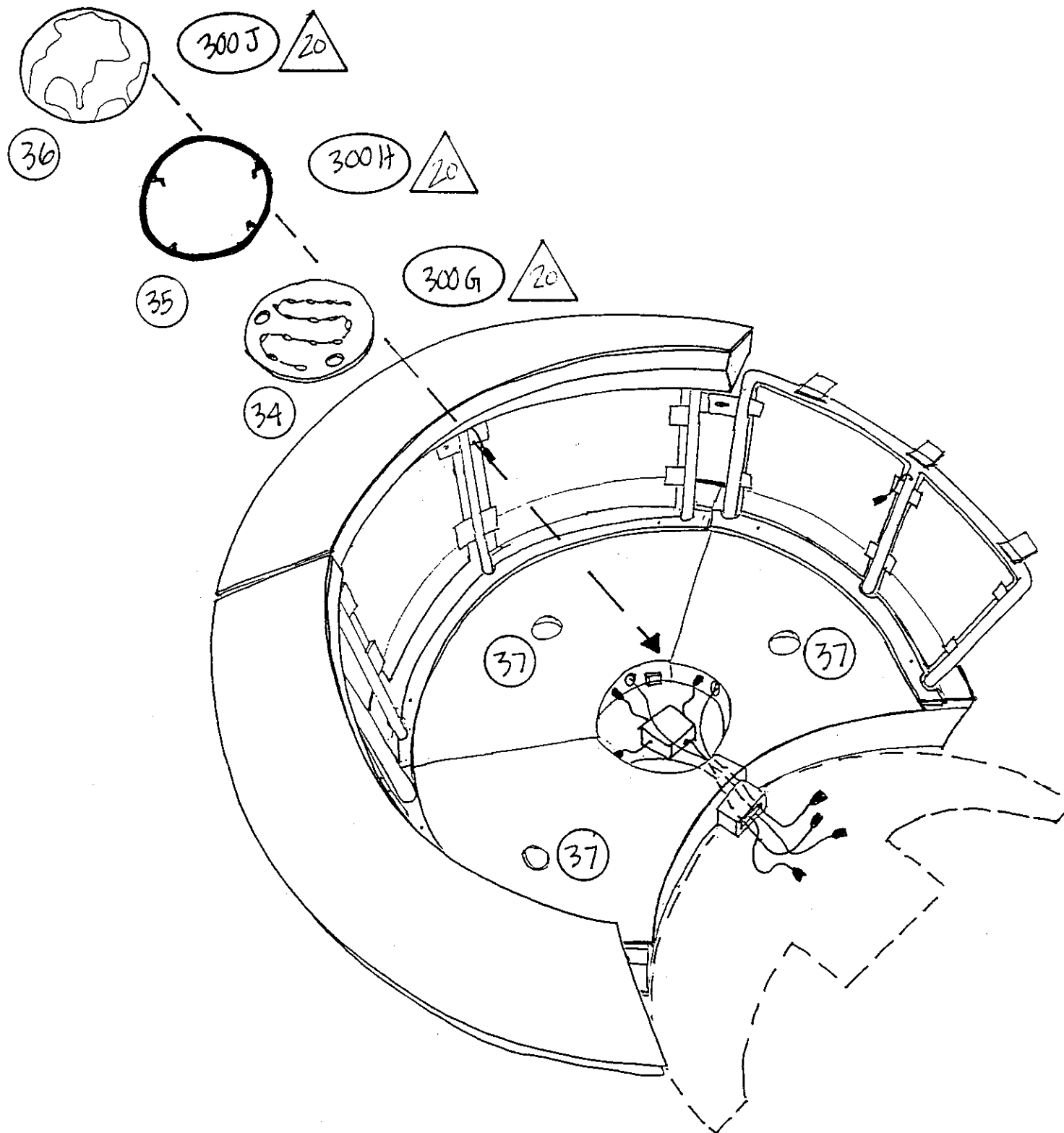
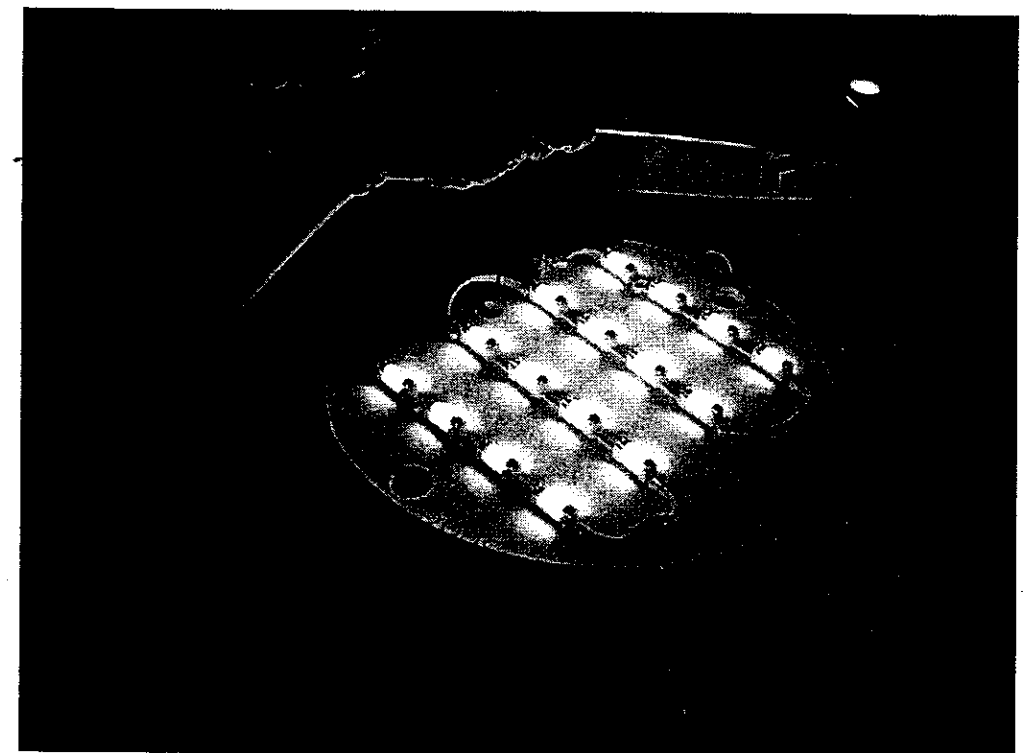
- 34 Locate Lighting Platform 300G and set on top of positioning blocks inside center ring of Platform. Feed cord through electrical chase into 302A Main Casework Plug power-con into transformer, matching markings.

**Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.

- 35 Locate Metal Ring 300H and position so that feet sit on edge of ring in center of Platform.

- 36 Locate Earth Dome 300J and place on Metal Ring.

- 37 Preliminarily focus halogen Platform lights, while they are turned off, aiming them up to where the HST Model will be. Final adjustments in focus can be done after Model is installed.



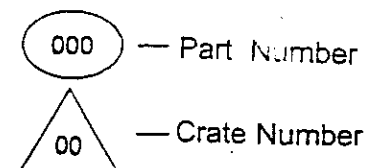
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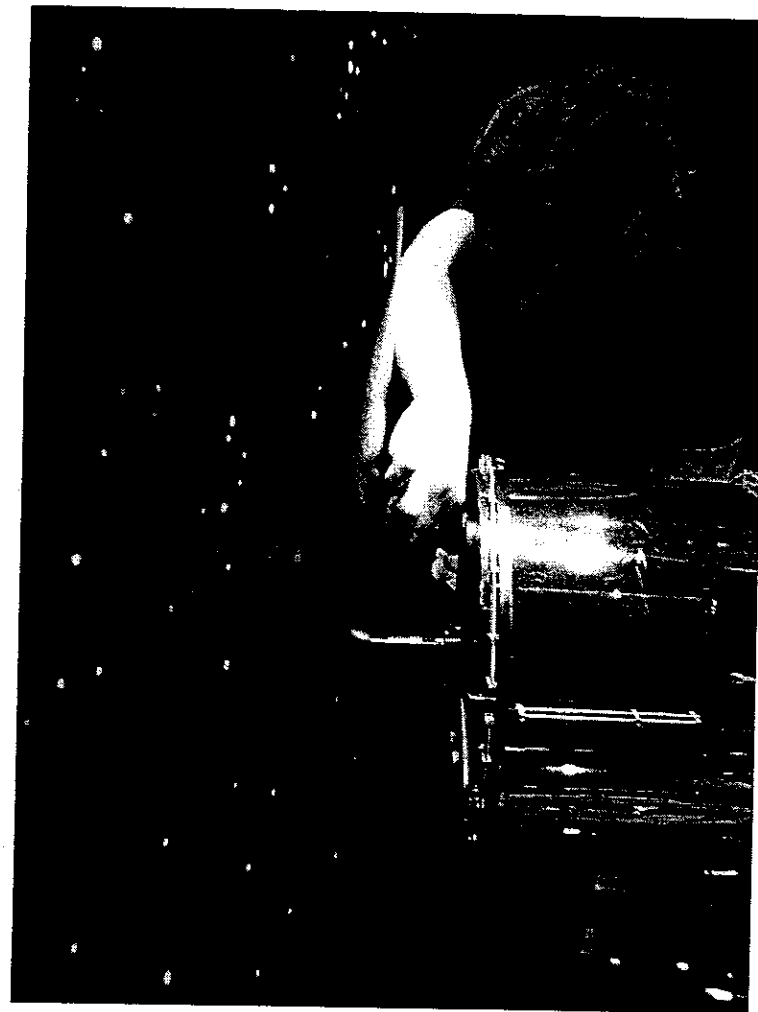
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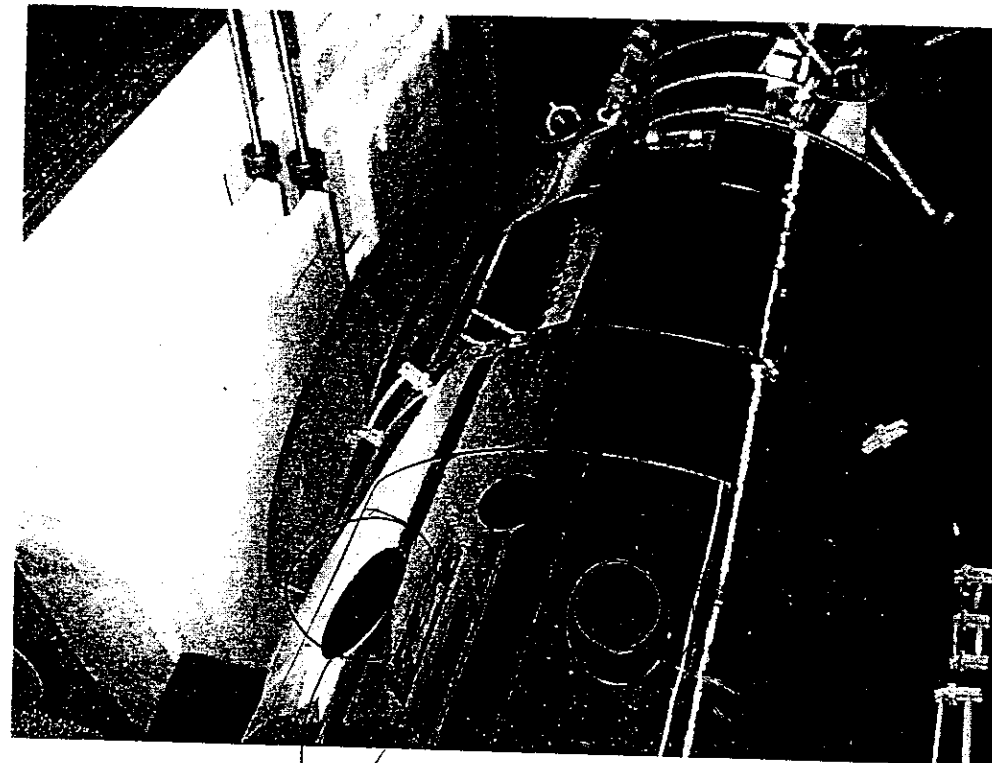


# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL 1:15 MODEL



2



2

Finger places where model can be held;  
also at top ring with lid open.

### Install larger 1:15 HST Scale Model

- 1 Disconnect Platform Lights from their connection inside the 302 Main Casework while installing model. Place masonite and felt pads over star field painted on Platform surface to protect it from wear. **Caution:** felt padding will burn if placed over halogen Platform lights while they are turned on.
- 2 Wearing white gloves and exhibiting EXTREME caution, lift the 1:15 HST Scale Model (approx. 30 pounds) from its crate and insert the attached 3/4" wide Model Mount rod over the post protruding from the center back of the model. Rotate to correct 4.5 degree angle and then tighten set screw in rod hold the angle on the post.
- 3 Attach Solar Array panels and Aperture Door **as indicated in photos on the following page.**
- 4 Reconnect Platform lights and direct onto model. Final focus adjustments in halogen Platform lights can be made after model is installed by reaching through the space between the railings. Use extreme caution as the sockets of these halogen lights get very hot.
- 5 **Clean Model and Platform as needed.**  
Clean Model using materials and instructions that come with Model. Clean star field on Platform with soft damp cloth. Remove masonite and felt pads and refocus lights if need after installation of model.



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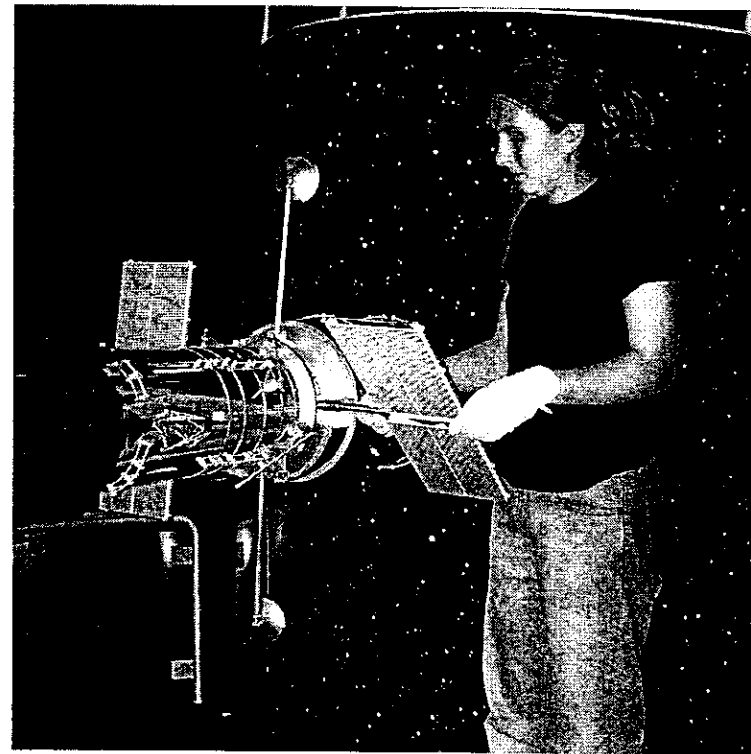
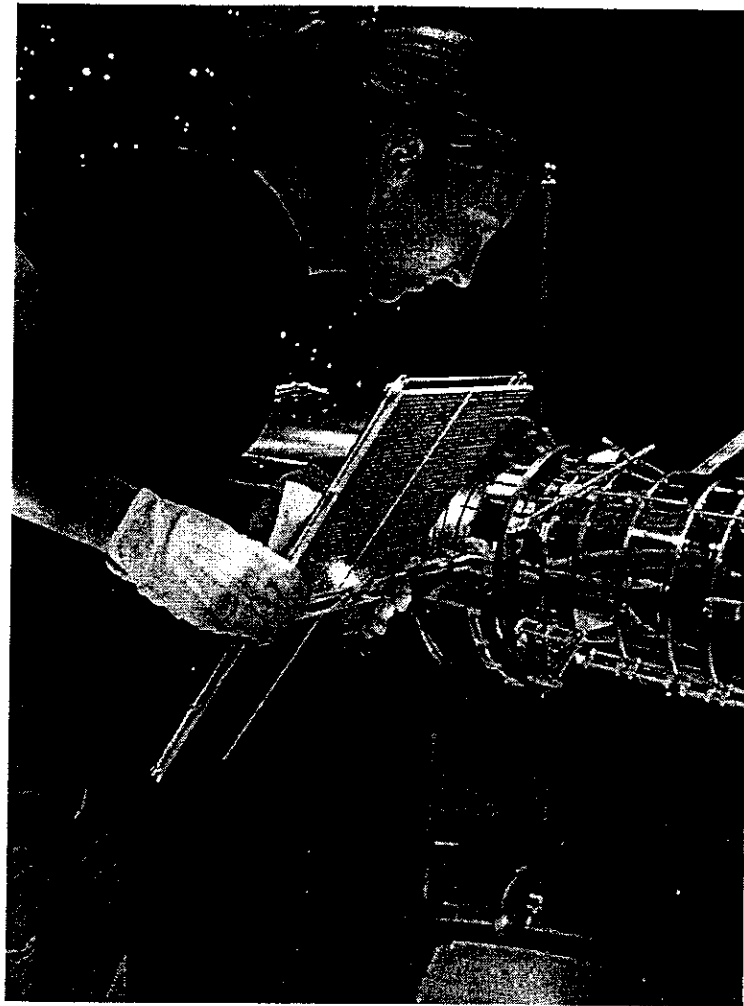
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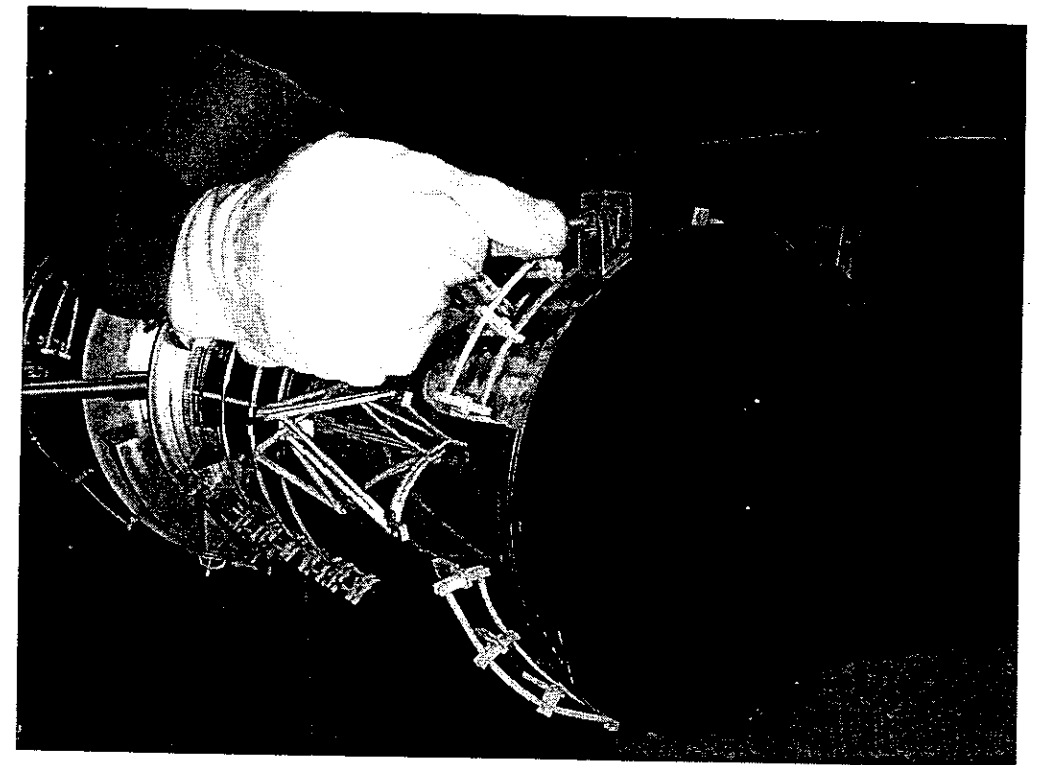
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Page Number: **300-19**



Attach Solar Array Panels.



Attach Aperture Door.



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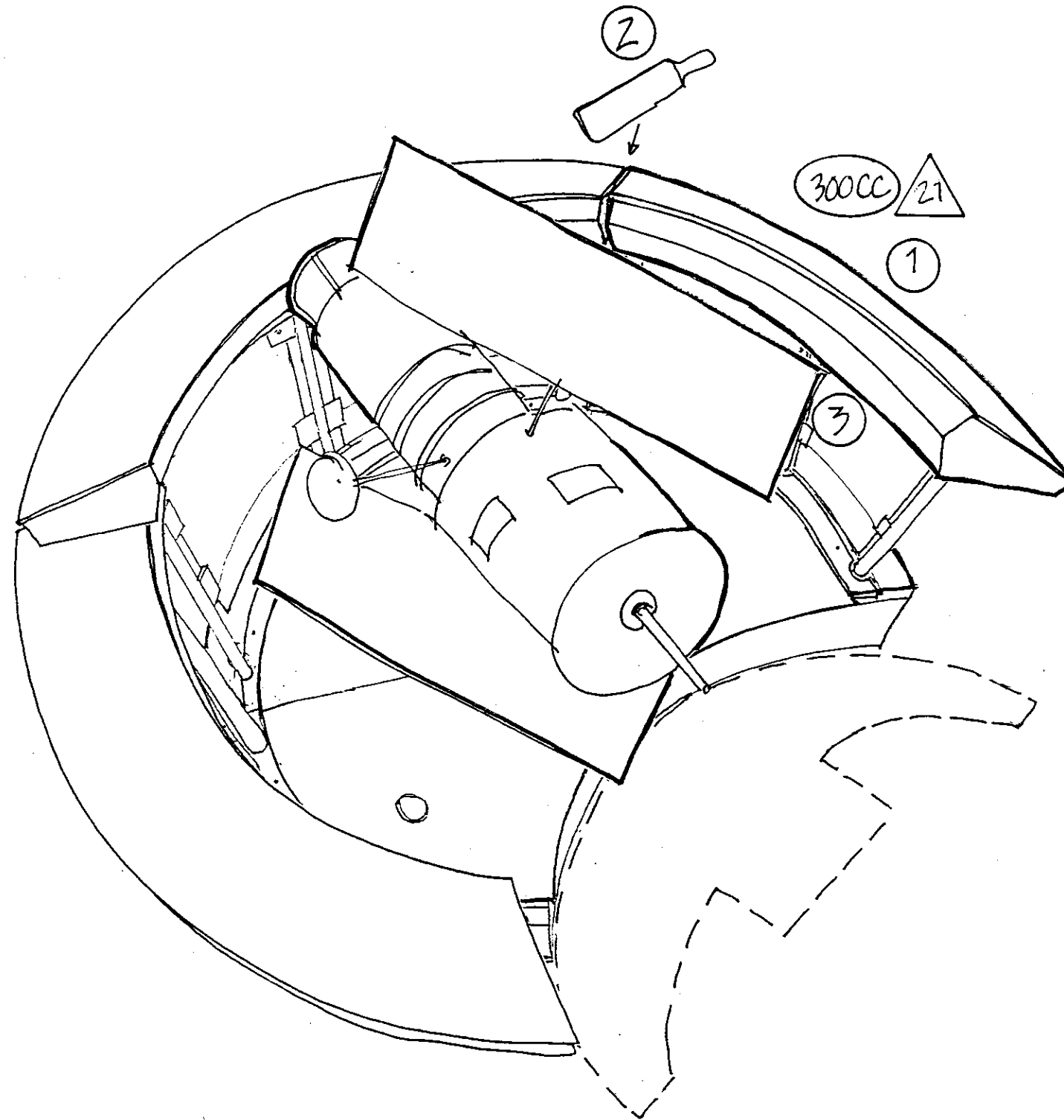


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# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL LAST LIGHT BOX



- ① **Install last Platform Light Box 300CC**  
Set left Light Box 300CC on mounting bracket and start (6) 5/16-18 x 1" button head allen screws, leaving them loose.
- ② Slide 1/2" padded wooden spacer boards below acrylic at joint between Light Boxes. Hold Light Boxes 300BB and CC together with wooden spacer between, and tighten (6) 5/16-18 x 1" button head allen screws in underside of 300CC.
- ③ Connect power-con in Hand Rail into socket in Light Box. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.



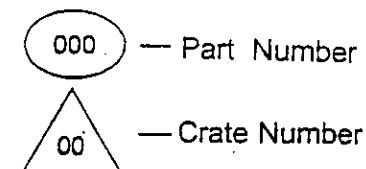
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Page Number: **300-20**

# 1:15 HUBBLE MODEL PLATFORM 300

## INSTALL PANEL AND 1:50 MODEL

### Install acrylic Atmosphere Panel

- ① Again, twist butterfly catches to remove cover on top of Casework, being careful of the halogen light fixture.
- ② Position Atmosphere Panel 302D in correct orientation, with metal bracket facing up. Slide panel down into casework and line up bolt holes in metal bracket with holes in casework. Attach using (2) 1/4-20 x 1" black flat head allen screws into inserts in casework.

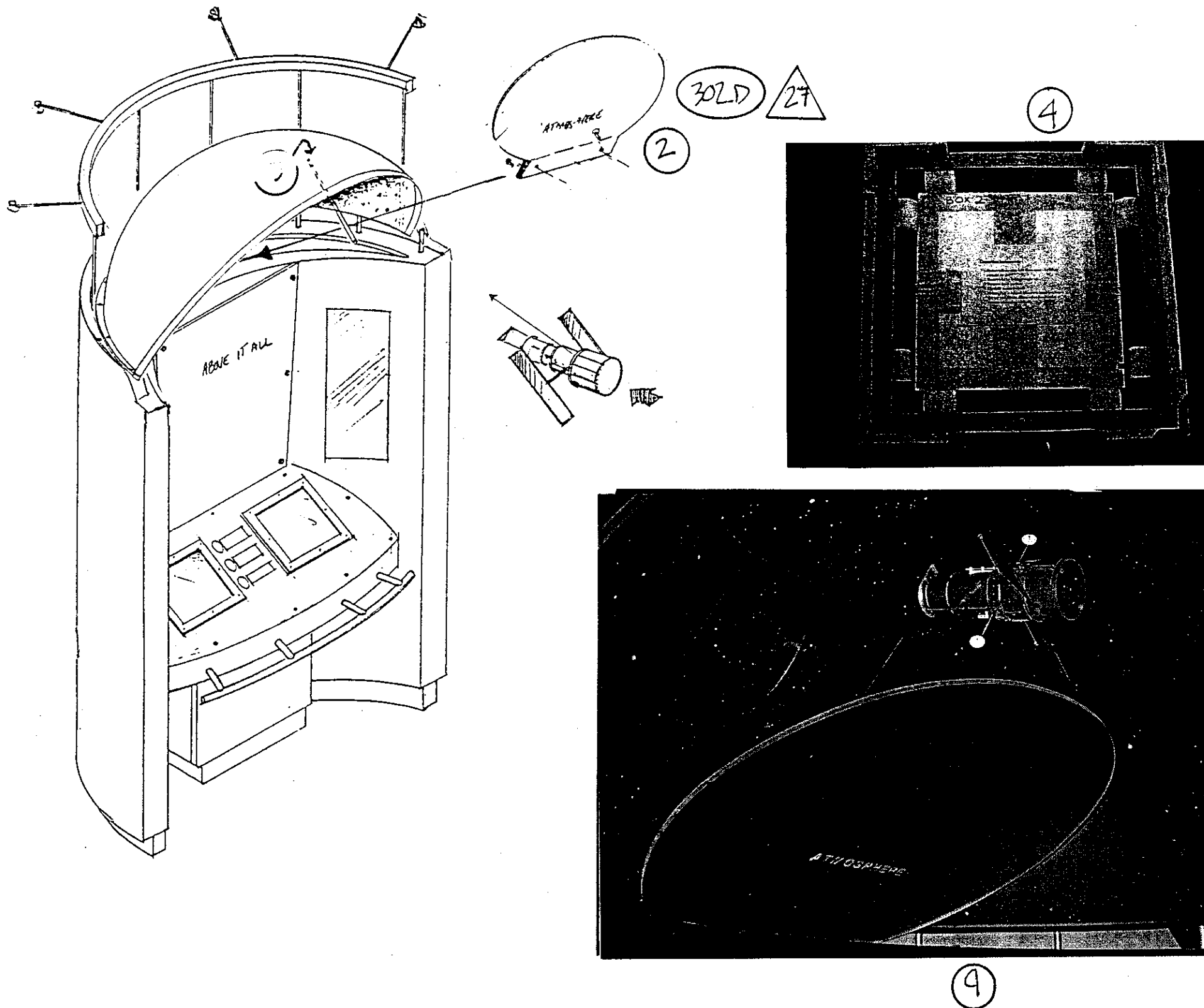
### Attach smaller 1:50 HST Scale Model inside Dome

- ③ Locate the rod and round rod cap inside the model box for the 1:50 HST Model. Install rod from inside through top of Dome, and fasten with on top with round cap.
- ④ Wearing white gloves and using EXTREME caution, remove small 1:50 HST Model 302E from case.
- ⑤ Using the 3/32 long handled allen wrench with long straight handle from the Tool Box, loosen cap screws in the mounting receptacle on the model.
- ⑥ Hold model with the "door" end facing the light box and the "aft" end facing out of the Dome. With the model just to the left of the rod, position Solar Array Panels facing up almost parallel to the model body. This will allow repositioning to the correct location after installation.
- ⑦ Insert the "T" end of the rod into the slot in the mounting receptacle on the model, supporting the model at all times.
- ⑧ Tighten the set screws until they cover the "T" bar. By tightening them the "T" end of the rod will be locked into the slot.
- ⑨ Reposition solar arrays to be nearly vertical.

### Cleaning Instructions

Only soft lint-free rags and **Windex** (or similar glass cleaner) are to be used to clean exhibits. **No solvents** are to be used, as they can easily damage exhibits.

**Repack any packing materials in Crates.**



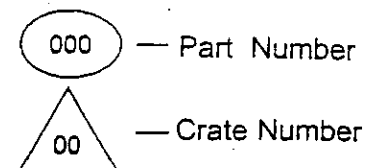
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# 1:15 HUBBLE MODEL PLATFORM 300 DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 20, 23, 24, 25 27 and AV Crate 49.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**1:50 HST Model** - Wearing white gloves and using EXTREME caution, remove model, rod and round cap and repack into Crate 25.

**Light Boxes** - Unplug Light Boxes from Power-con in Hand Rails before removing the screws from the underside. Pack in Crate 21.

**1:15 HST Model - Wearing white gloves and using EXTREME caution**, remove set screw in model mount and slide model off post. Pack in Crate 22 immediately.

**Connections in Main Casework** - disconnect the marked electrical connections in cabinet under console before disassembling platform. Remove Atmosphere Panel and pack in Crate 27.

**Platform** - Move 302 Main Casework away from platform before disassembly. Continue following directions in reverse, disconnecting platform electrical as you go. All metal feet ship installed inside Platform Sections, inside Crate 52.

**Lighting Platform, Metal Ring and Earth Dome** - all pack in Crate 20, and Junction Box packs in Crate \_\_\_\_.

# 1:15 HUBBLE MODEL PLATFORM 300 DISASSEMBLY INSTRUCTIONS

**Pendent Lighting** - Remove Pendent Lighting, **leaving knurled nuts in place** to maintain placement locations. Repack lighting parts in Crate 49.

**Remove Dome** - Unplug light box in Dome before attempting to lift Dome off posts. Pack in Crate 23.

**Remove Light Bar** - Lift off removable cover and detach power-con. To detach power-con, slide chrome tab back and twist counterclockwise to release. Pack in Crate 19.

**Insure that all components are packed back into their assigned locations in each crate.**



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— Part Number

— Crate Number

Page Number: **300-22**

# 1:15 HUBBLE MODEL PLATFORM 300

## MAINTENANCE INSTRUCTIONS

### To replace the Brite Strip (festoon) bulbs inside the Light Boxes above the console on Main Casework 302A:

These lights can be changed while they are running; they are low voltage.

While on a step stool, insert allen driver or screw driver into the hole in the top surface, and rotate the metal bar until it no longer obstructs the slot for the Duratrans.

From the front of the Casework, push the Duratrans up through the slot on the top until it is out of the way of the bulbs.

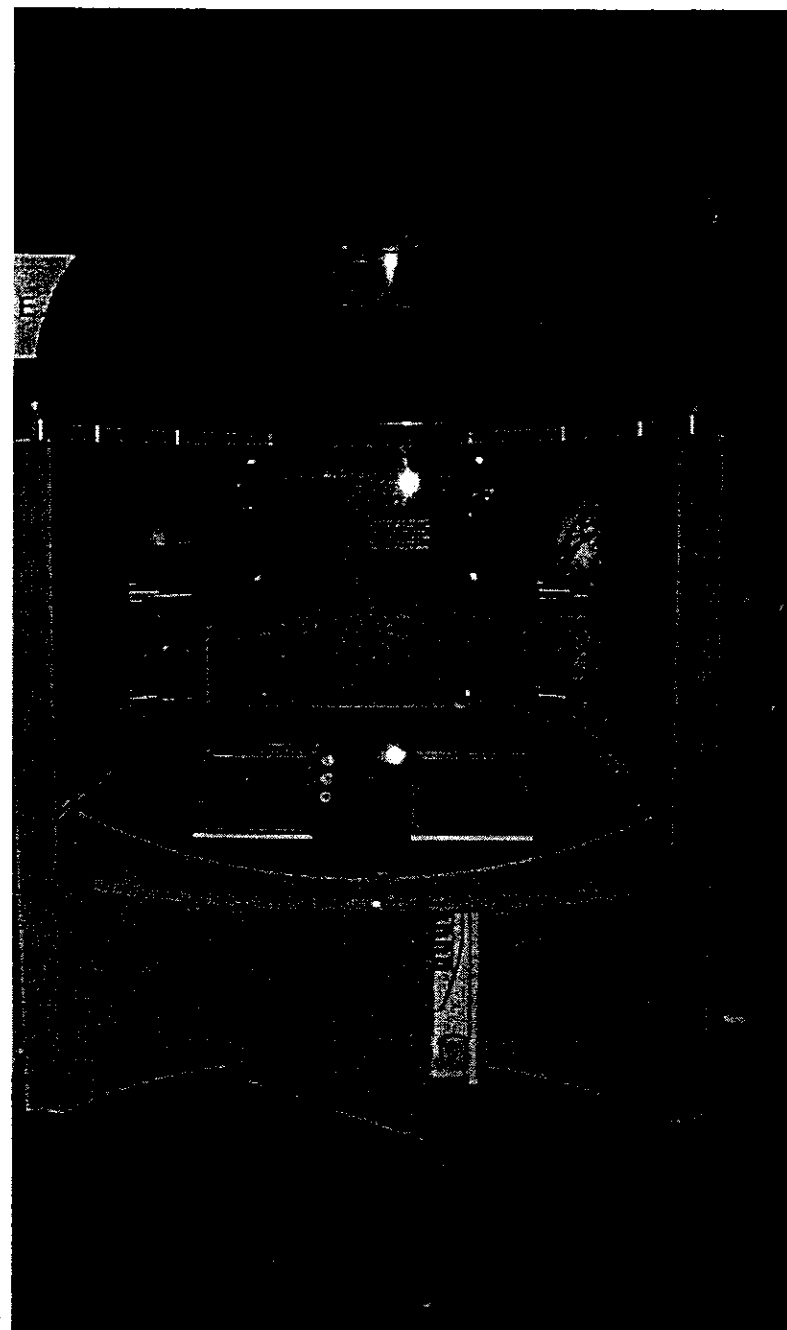
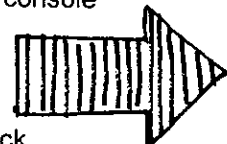
Pull on burned out bulb; it simply snaps into place.

Replace bulb using identical 5 watt bulb:  
#BL-24-5W-F frosted Brite Strip (festoon) bulb  
Available from National Specialty Lighting at 1-800-527-2923

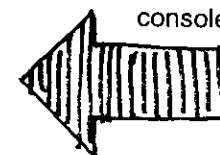
Slide the Duratrans back into position and rotate the metal bar back into position across the slot.

Clean clear acrylic surface of Duratrans to remove dust and finger prints. Use only a lint free cloth damp with Windex.

Above the console



On the console



**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

### To replace the Brite Strip (festoon) bulbs inside the Light Boxes on the console on Main Casework 302A:

These lights can be changed while they are running; they are low voltage.

Remove (8) stainless steel screws in the aluminum bezel around the duratrans on the console, and set aside.

Lift off bezel and lift out clear acrylic with attached Duratrans. Set both aside on a padded surface.

Pull on burned out bulb; it simply snaps into place.

Replace bulb using identical 5 watt bulb:  
#BL-24-5W-F frosted Brite Strip (festoon) bulb  
Available from National Specialty Lighting at 1-800-527-2923

Carefully replace the clear acrylic with attached Duratrans and clean top surface to remove dust and finger prints. Use only a lint free cloth damp with Windex.

Replace bezel using the original (8) stainless steel screws.

### Push Buttons Bulbs

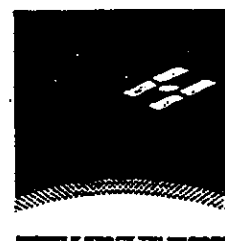
**Access to push buttons is most available before exhibits are assembled. Therefore, bulbs inside push buttons will be replaced during installations, before artifacts are installed, and while a ProtoVision supervisor is on-site.**

Replace bulb using identical miniature bulb:  
Type 658, T-3 1/4 wedge base bulb, 14 volt, .08 Amp  
Available from your local Grainger store, part # 2F580  
or [www.grainger.com](http://www.grainger.com)



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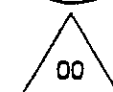


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— Crate Number

Page Number **300-23**

1:15 HUBBLE MODEL PLATFORM **300**  
**MAINTENANCE INSTRUCTIONS**

**To replace the halogen Pendent Light bulbs:**

Before changing halogen Pendent Light bulbs, mark the bulbs to be changed and **disconnect power to the exhibit.**

**Caution:** Working bulbs in the area will remain hot for several minutes after being powered down.

Remove socket of burned out bulb from metal rods by loosening thumb screws on both outer ends.

Loosen (2) tiny slotted set screws in socket to release prongs on bulb.

Replace bulb with identical 20 watt bulb:

GE Q20MR16/FL/CG/CD(BAB) halogen bulb

Order Code: 19370

Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

Replace by plugging into socket and tightening set screws on socket.

Reattach socket and tighten onto rods with thumb screws on outer ends.

Reconnect power to the exhibit.

See photos in Installation Section.

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace the halogen bulb on top of the Main Casework 302A that lights the 1:50 HST Model 302E:**

To avoid having to power down the entire 302 Area, allow console activity to finish its cycle so that the light is not turned on.

**Otherwise, disconnect power to the exhibit.**

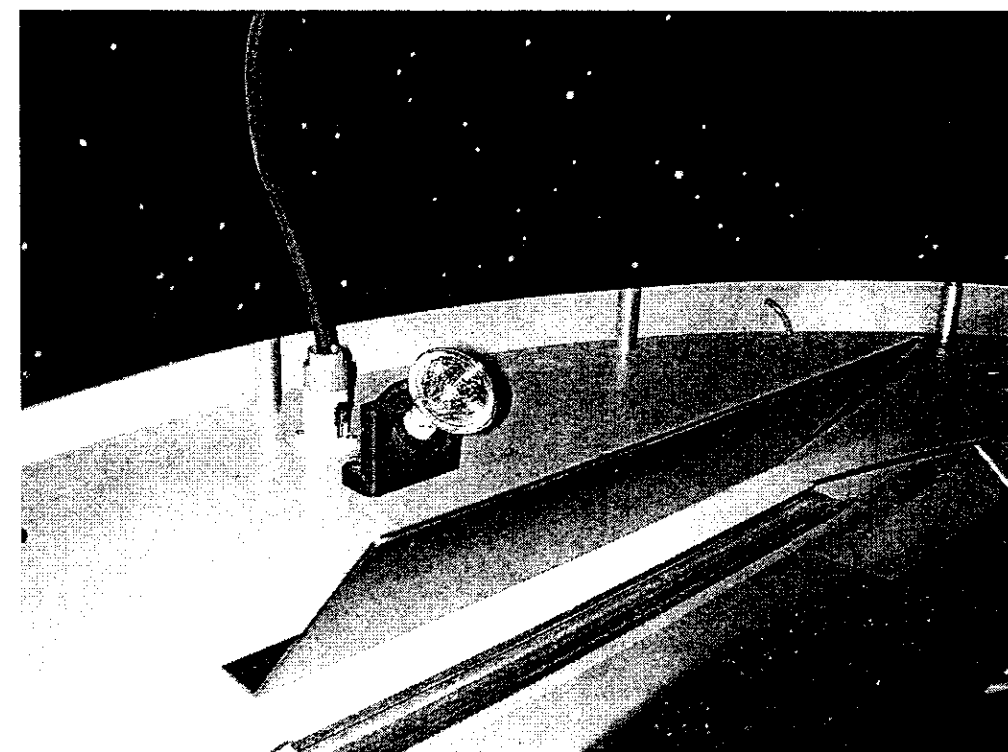
While on a step stool, simply pull burned out bulb out of socket.

Replace bulb with identical 20 watt narrow beam spot bulb:

#1465K1, a 12 volt 20 watt ESX Halogen Display Lamp

Available from McMaster at 732-329-3200, part # 1465K1

Insert replacement bulb, fitting prongs on bulb into matching holes on socket.



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— Part Number

— Crate Number

Page Num. **300-24**

**To replace the Brite Strip (festoon) bulbs inside Light Boxes 300AA - 300CC on the Hand Rails:**

These lights can be changed while they are running; they are low voltage.

Remove all black button head allen screws from the acrylic surface of the Light Box and set aside.

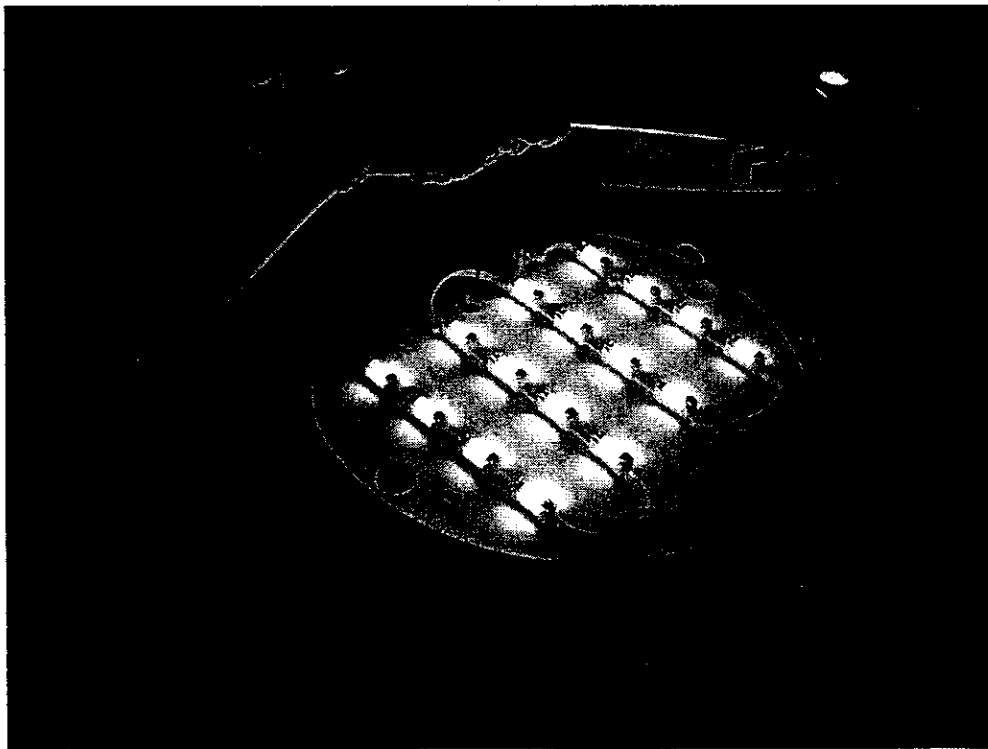
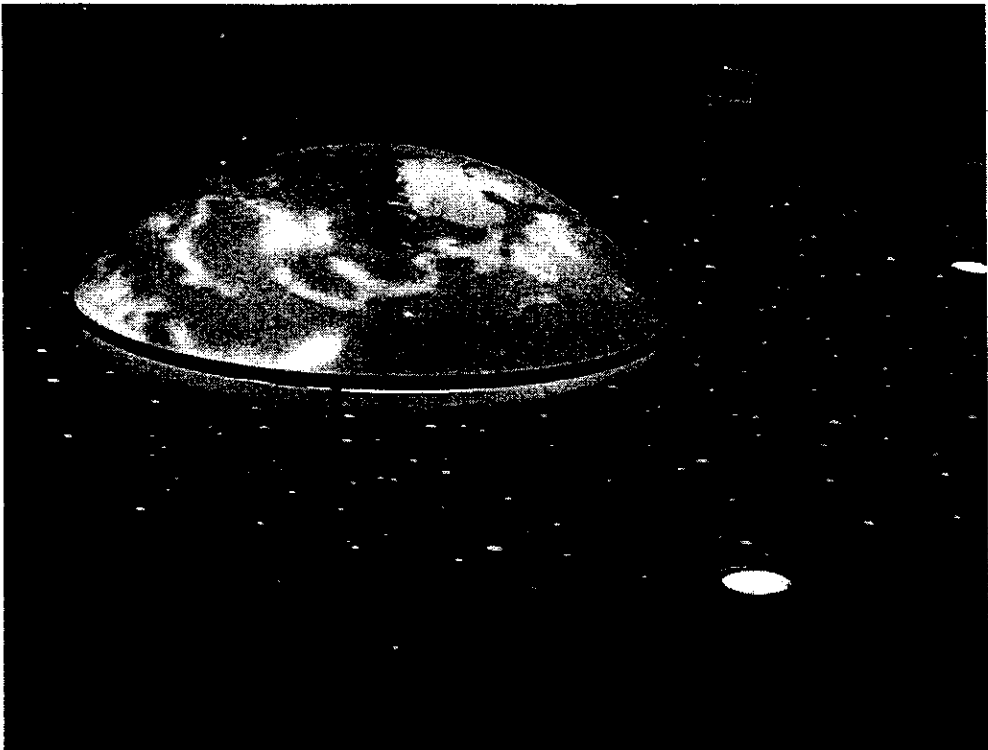
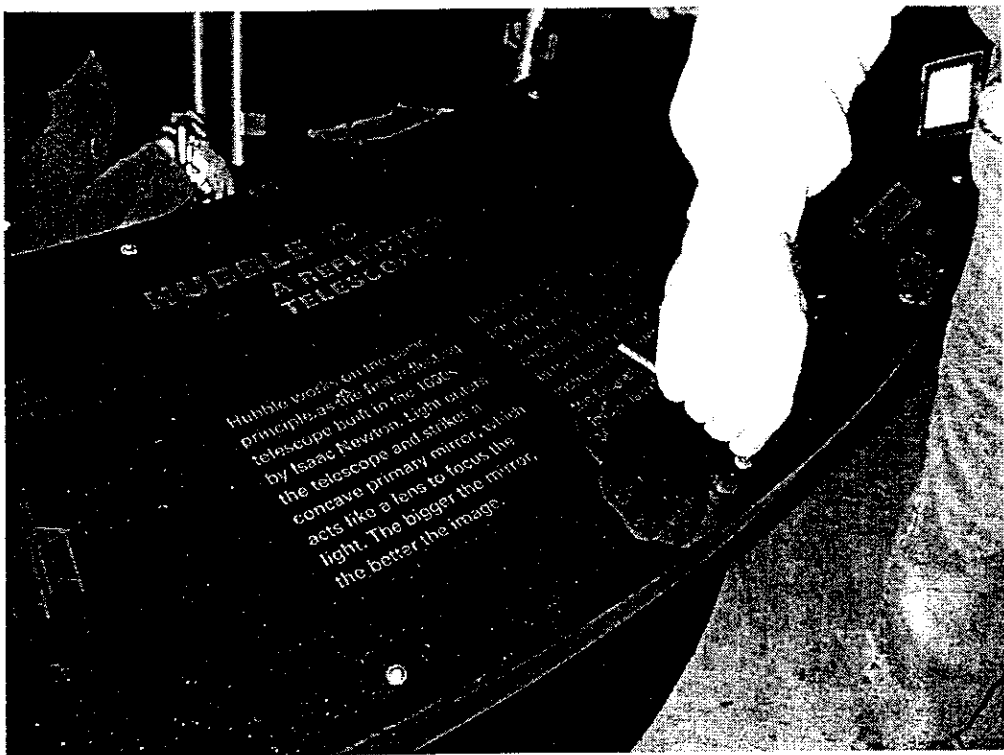
Carefully lift off bronze acrylic cover and clear acrylic with attached Duratrans, and set aside on a padded surface.

Pull on burned out bulb; it simply snaps into place.

Replace bulb using identical 5 watt bulb:  
#BL-24-5W-F frosted Brite Strip (festoon) bulb  
Available from National Specialty Lighting at 1-800-527-2923

Carefully replace the clear acrylic with attached Duratrans and clean top surface to remove dust and finger prints. Use only a lint free cloth damp with Windex.

Gently clean front and back of bronze acrylic using only a lint free cloth damp with Windex. Reattach using all the black button head allen screws. Do not over tighten screws as it will crack the acrylic.



**1:15 HUBBLE MODEL PLATFORM 300**  
**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace Brite Strip (festoon) bulbs under the Earth Dome 300J:**

**Disconnect power to exhibit** so the halogen lights on the surface of the Platform are not hot.

Allow lights to cool before padding the Platform to walk on its surface.

Two installers will be needed in order to safely change bulbs under the Earth Dome; one inside the Hand Rails, plus one more outside. One installer carefully step over railing onto pads. Avoid touching the lower satellite dish as you lift the acrylic Earth Dome in its Metal Ring and hand them to the installer on the outside of the Handrails.

Pull on burned out bulb; it simply snaps into place.

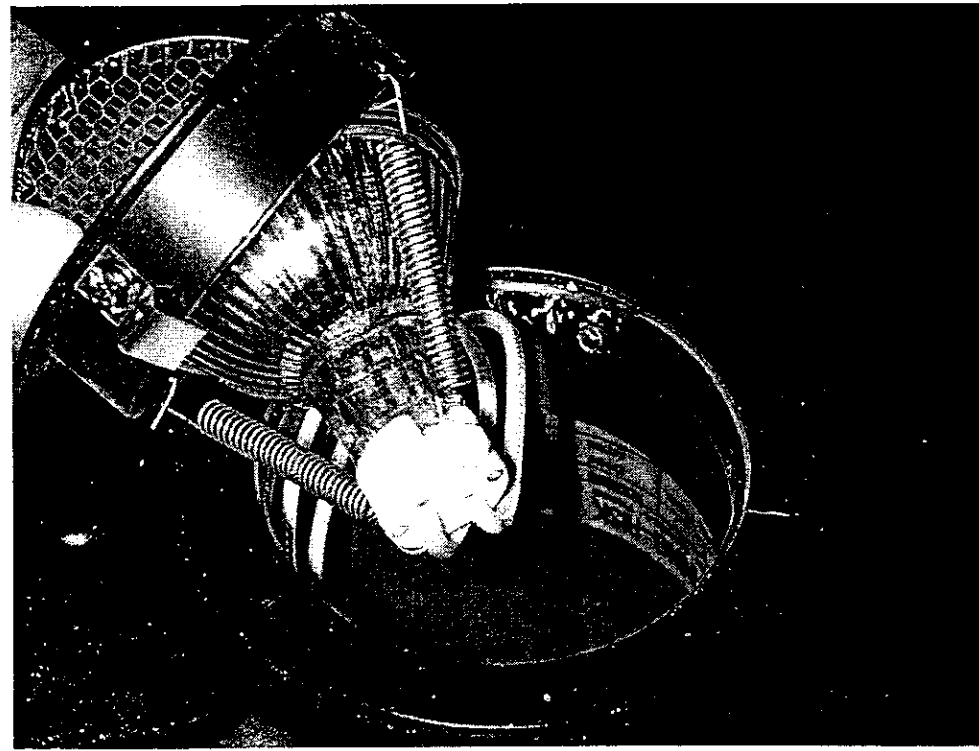
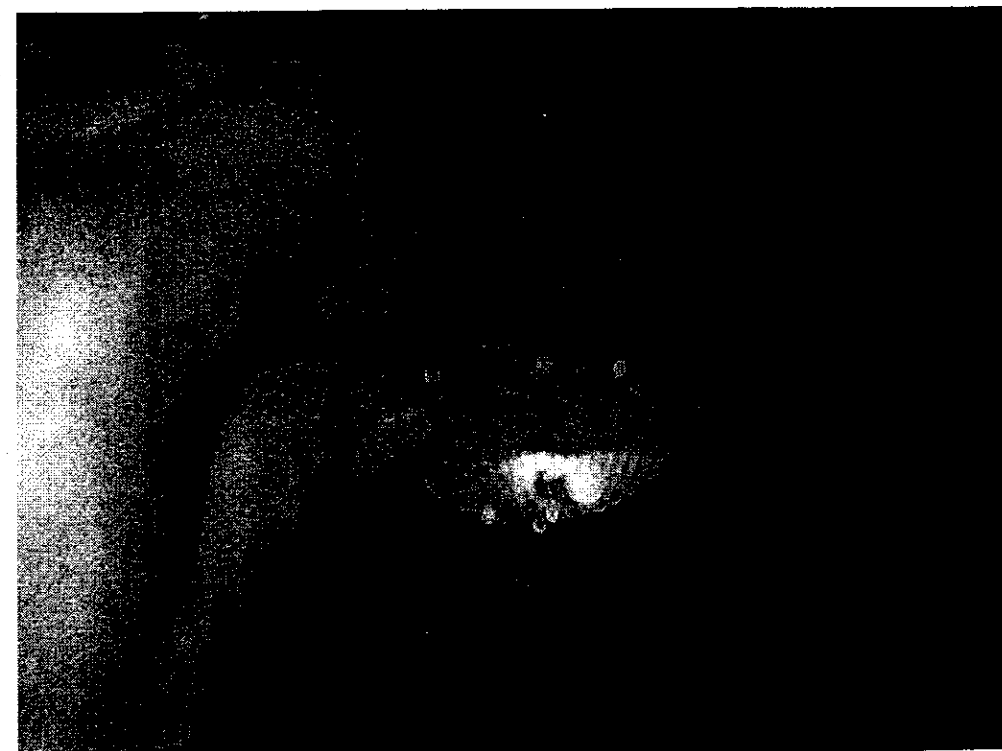
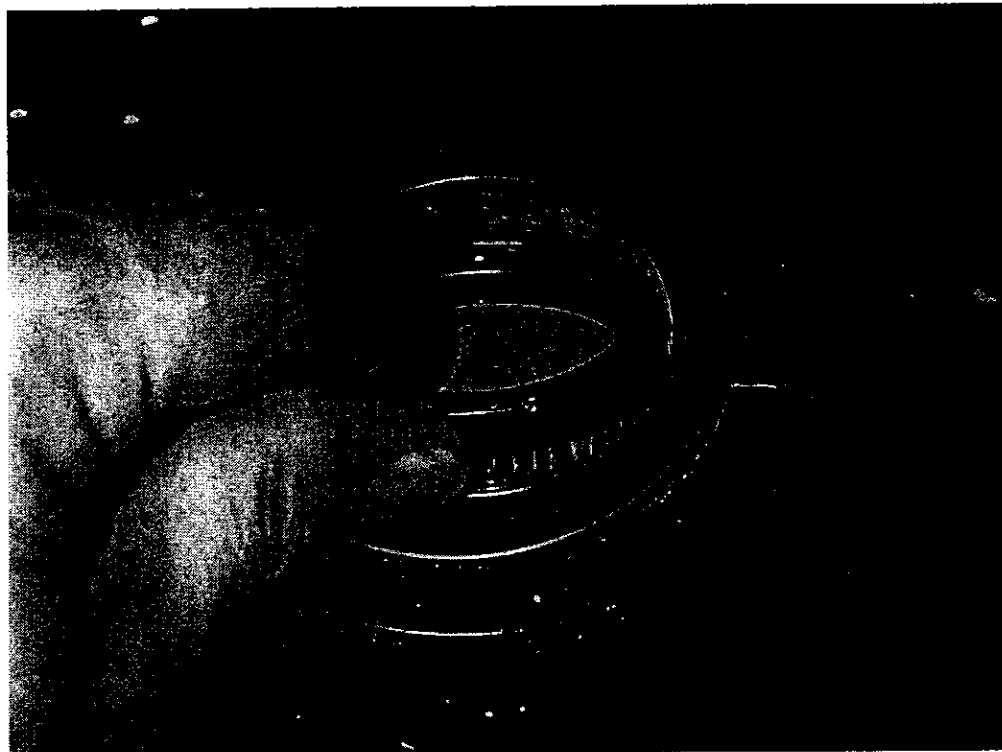
Replace bulb using identical 5 watt bulb:  
#BL-24-5W-F frosted Brite Strip (festoon) bulb  
Available from National Specialty Lighting at 1-800-527-2923.

Replace Earth Dome, again being careful to avoid toughing the satellite dish.

Remove pads and clean Platform surface with Windex if needed.

Reconnect power.





# 1:15 HUBBLE MODEL PLATFORM 300

## MAINTENANCE INSTRUCTIONS

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace the halogen bulbs in the inverted can fixtures in the Platform Sections 300A - 300C:**  
**Disconnect power to the exhibit.**

Allow lights to cool and pad Platform before attempting to walk on Platform surface. Using a step stool if needed, carefully step over Hand Rails and Light Boxes onto pads.

To remove burned out bulb, push mesh cover to the side so it can be grasped between thumb and forefinger. With a firm grip on the mesh cover, pull straight out of the metal can, bringing with it the inner metal ring and exposing the springs and socket. Grasp porcelain socket and pull to detach from bulb (there is no set screw; friction fit only).

Replace bulb with identical 50 watt bulb:  
 GE Q50MR16/FL/CG/CD(EXN) halogen bulb  
 Order Code: 19367  
 Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

With bulb fitted into inner metal ring, push ring back into the inverted can fixtures in the Platform. Aim mesh cover towards model.

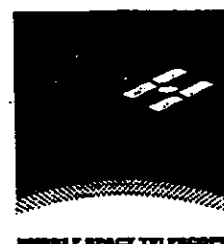
Remove pads and clean Platform surface with Windex if needed.

Reconnect power.



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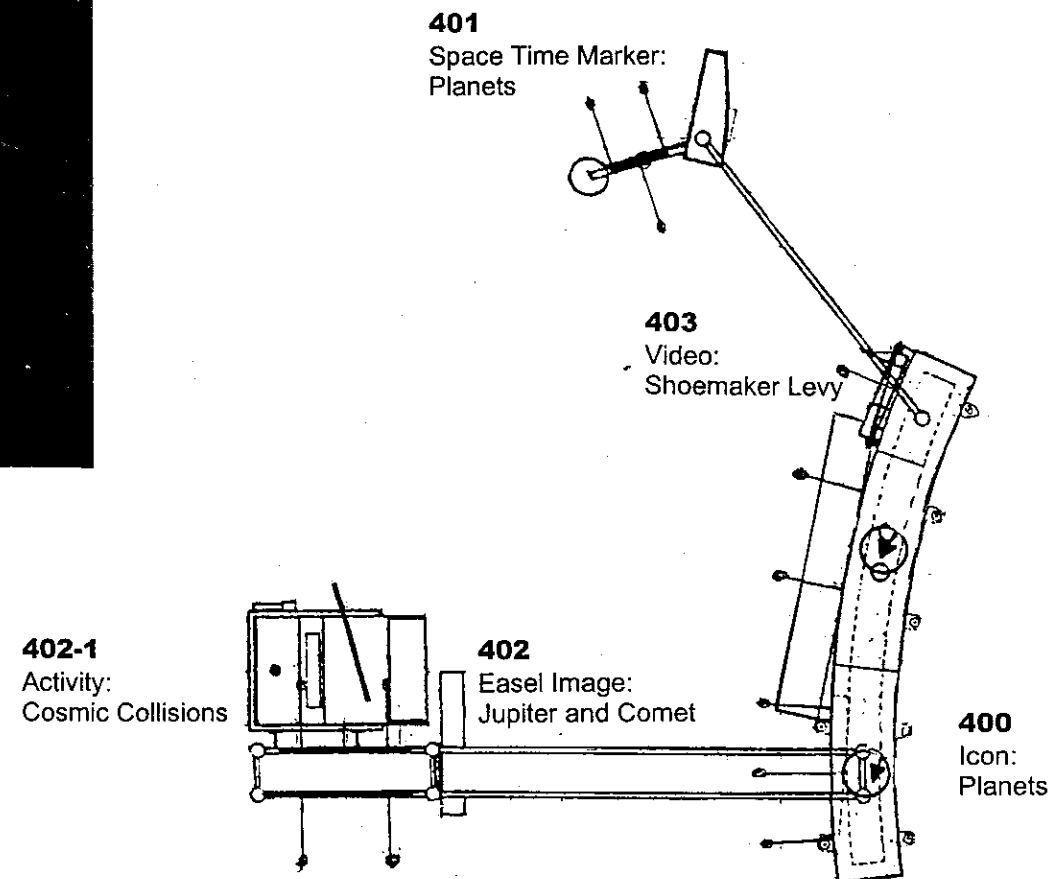
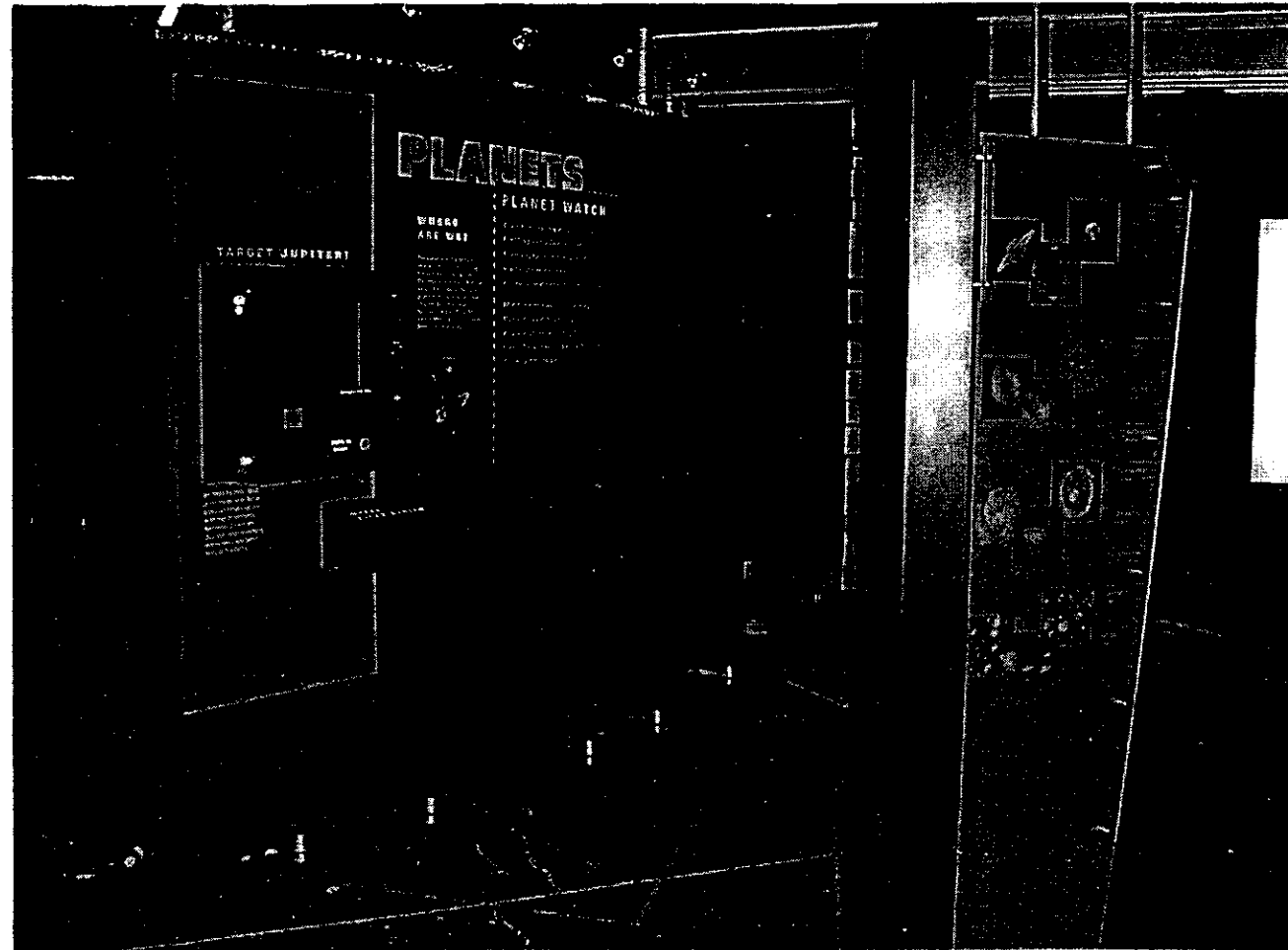
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OVERVIEW AND PLANNER

Exhibit Overview:

Shoemaker-Levy Video: Visitors learn that planets, such as Jupiter, have changed over time due to cometary collisions.  
Cometary Impact Activity: Visitors learn that cometary impacts have occurred ever since the beginning of our solar system and have changed the planets, including Jupiter in events like Shoemaker-Levy.

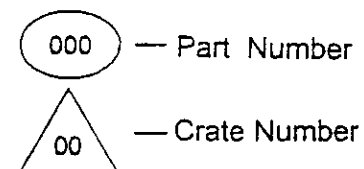


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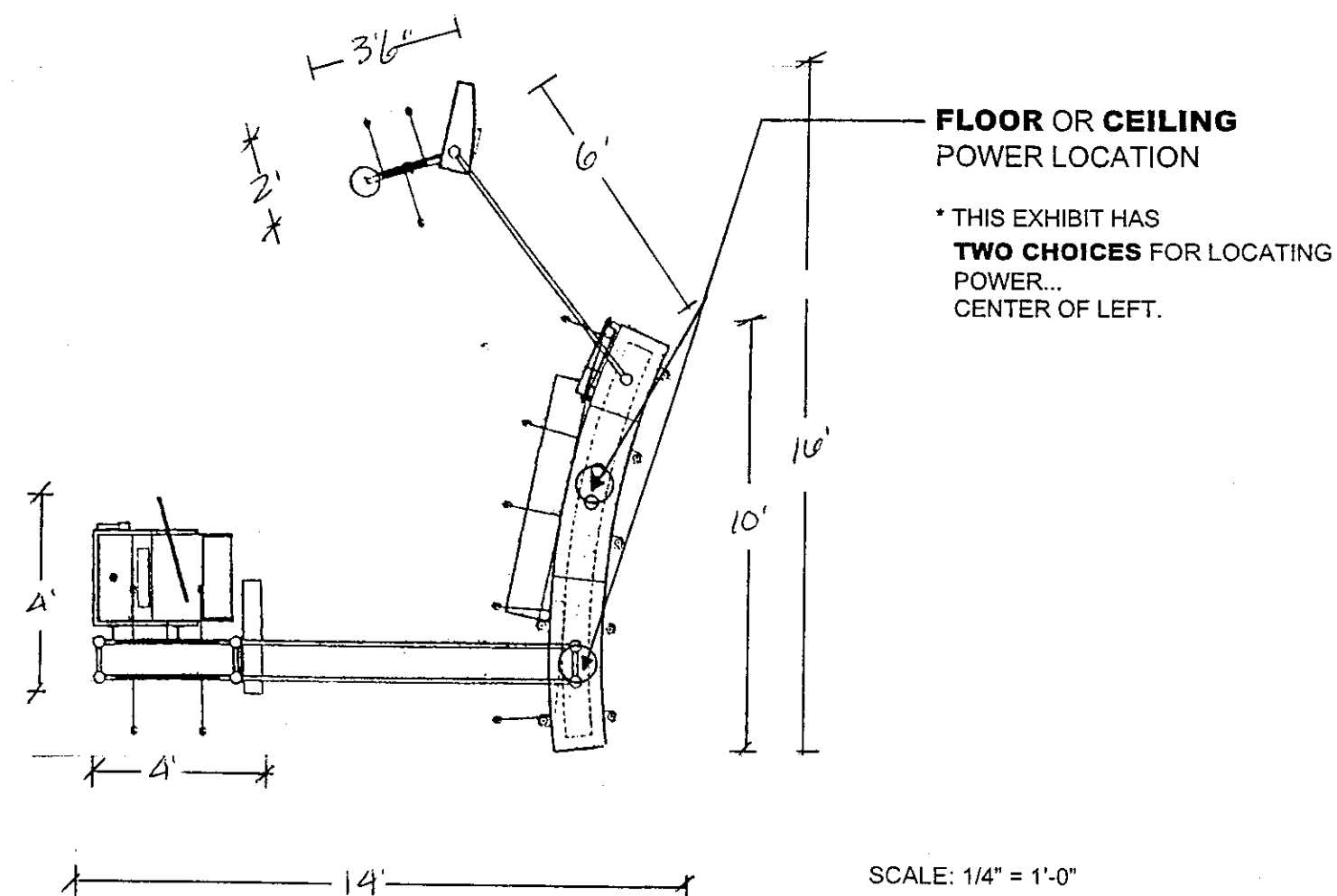
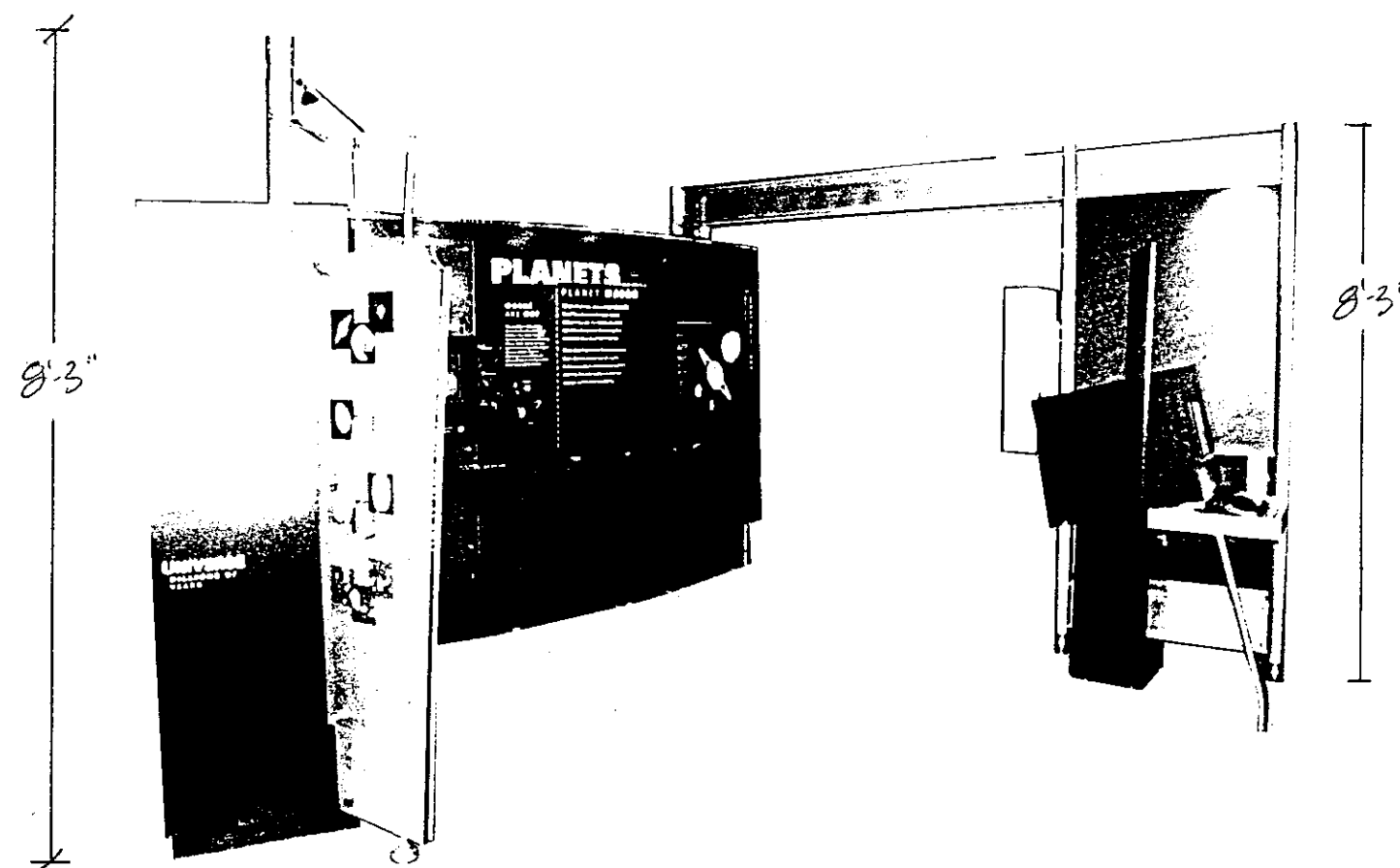
# OVERALL DIMENSIONS

## Space Planning:

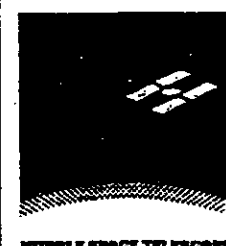
This exhibit occupies an 16' x 14' area, 8'-3" high, **approx. 224 square feet of space.**

## Electrical Planning:

This exhibit requires (1) 20 amp feed, either from the floor or ceiling.  
A NEMA 5-20R receptacle is required.  
A minimum line voltage of 120 volts nominal is required at receptacle.  
One cord with **20 amp plug** is included to connect to house power.



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# ASSEMBLE ICON BASES AND WALL

**Locate parts required for set-up of this area as listed in each section of instructions. Include:**

400 Area Hardware Box and Tools (Crate 20)  
Cleaning Kit is packed in Green Star Crate 51.

## Locate position of 500 Area on gallery floor

Locate positioning of exhibit on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

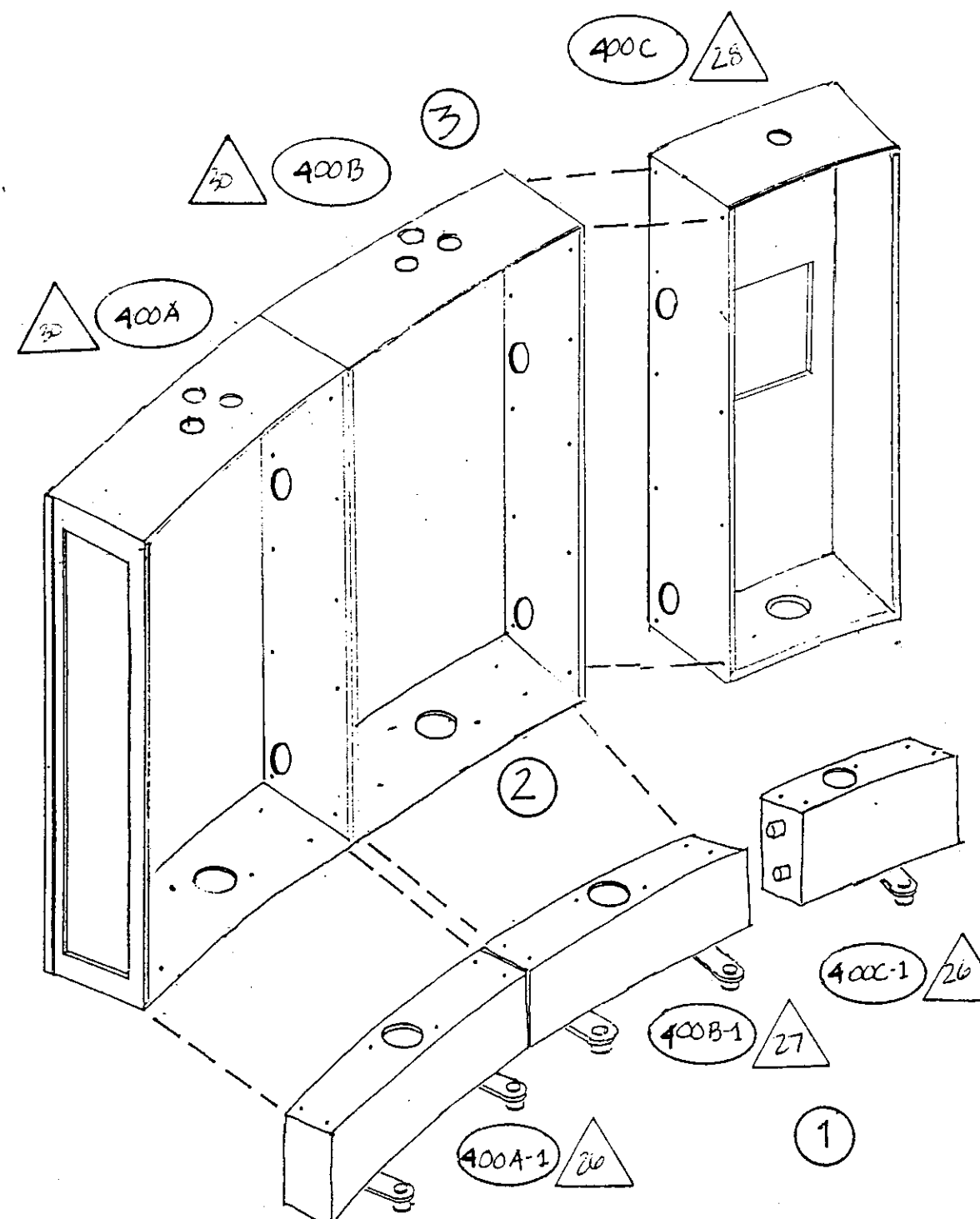
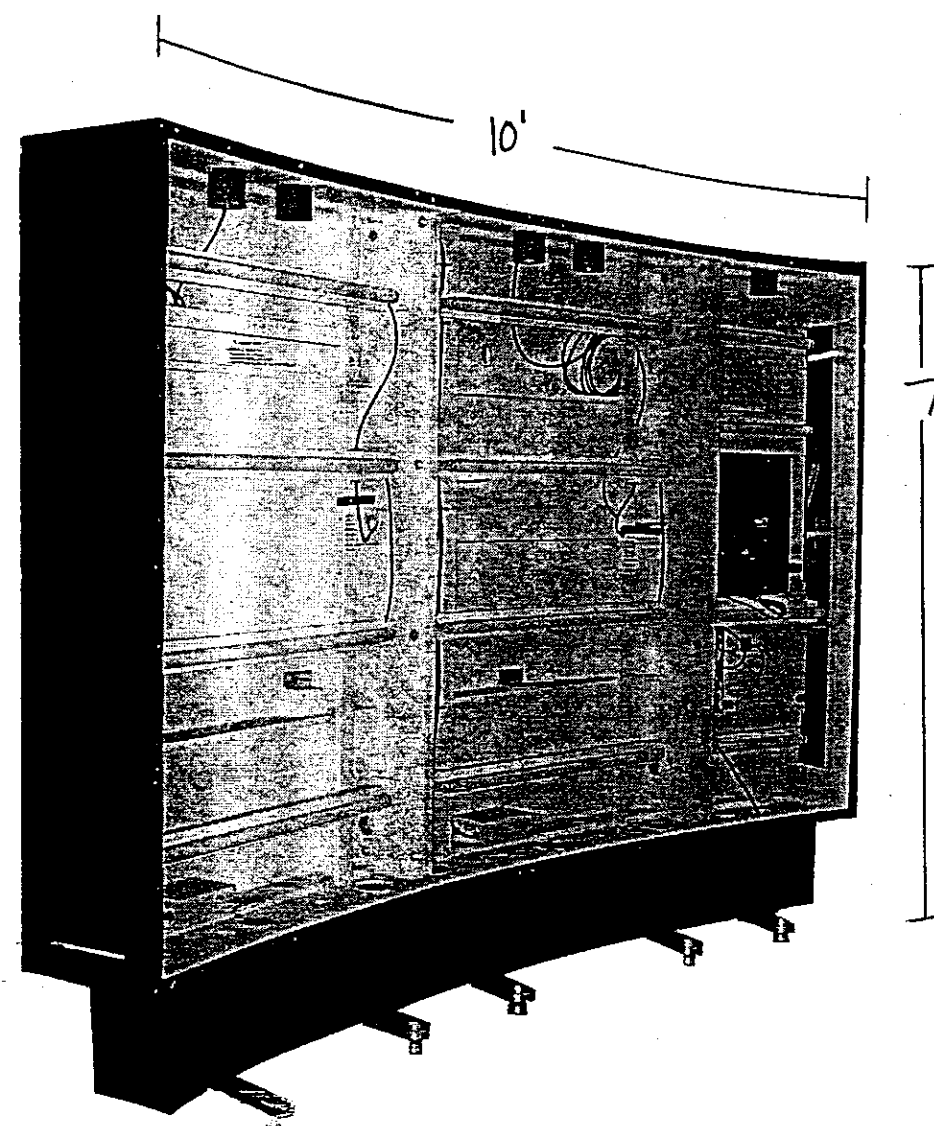
## Locate Icon Wall Parts:

- (3) Icon Base Sections with attached Metal Feet (400A-1, B-1 and C-1, Crates 26 and 27)
- (3) Icon Wall Sections (400A, B, C, Crates 28 and 30)

## Assemble the Icon Bases and Walls

- 1** Fit together the (3) Icon Bases with attached Metal Feet by aligning dowels, and position on the gallery floor in correct location for venue layout. Rotate the levelers on Metal Feet until the exposed bolt head is flush with the top of the Metal Foot and side seams are tight. Use a minimum 4' level to check level of assembled Bases, and adjust levelers if necessary.
- 2** Position Icon Wall Section 400B to Icon Base Section 400B-1 in the middle of the 3-section Icon Wall assembly. Connect Wall to Base using (6) 1/4-20 x 2" hex head bolts with flat and lock washers using 1/2" socket provided.
- 3** Repeat with Icon Wall 400A to Base 400A-1 and Wall 400C to Base 400C-1. Then attach Icon Wall A to Wall B, and Icon Wall B to Wall C using (20) 5/16-18 x 2" hex head bolts with large fender washers on both sides of the joint. Bolts may need to be tapped with a rubber mallet to get them through holes.

Icon Wall assembly is now complete until the rest of the Area is assembled, after which the balance of the Icon Wall will be finished.



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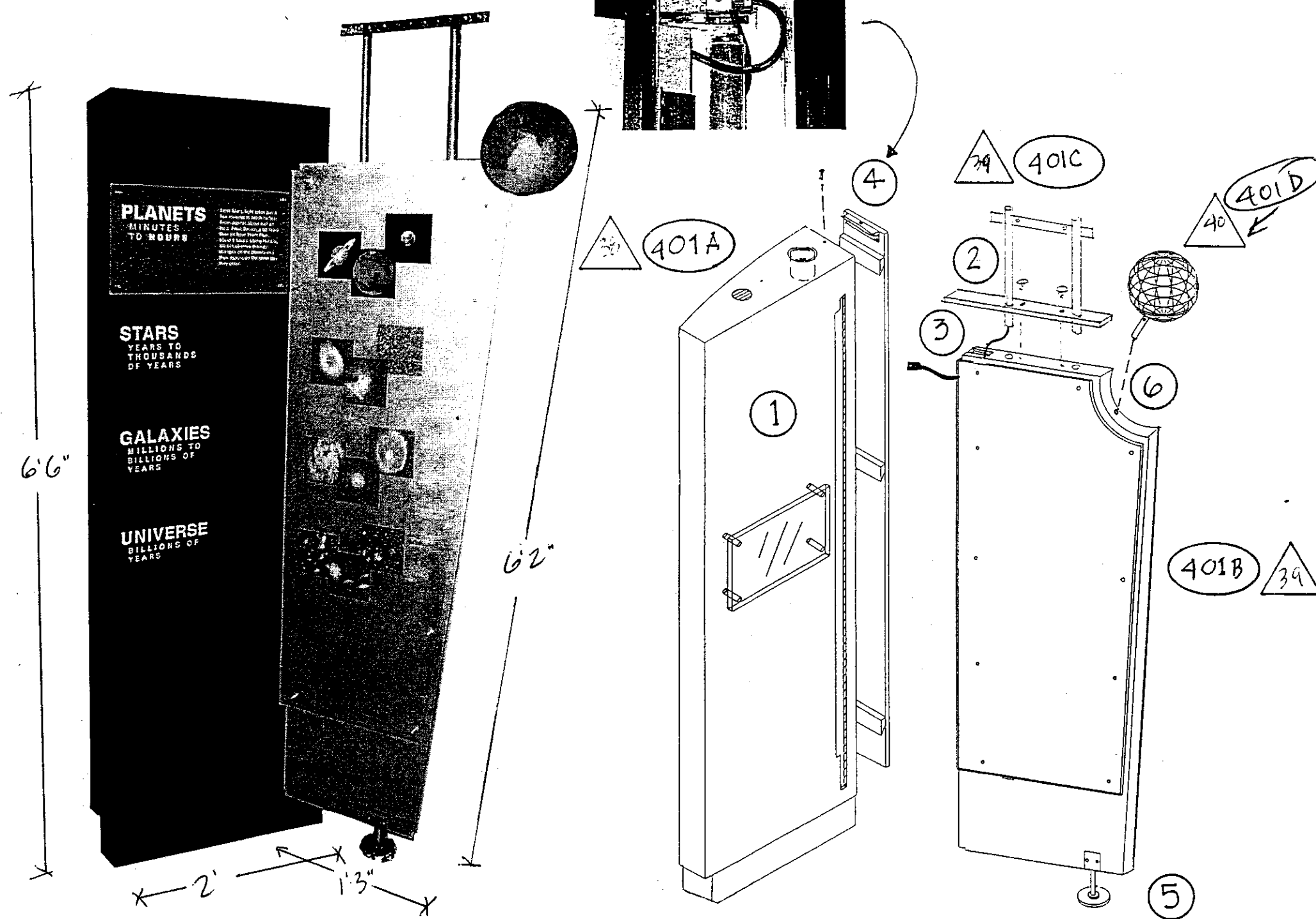
# ASSEMBLE SPACE TIME MARKER

## Locate Space Time Market Parts:

- (1) Monolith "PLANETS" (401A, Crate 38)
- (1) Graphic Wing Panel (401B, Crate 39)
- (1) Light Bar (401C, Crate 39)
- (1) Globe (Crate 40)

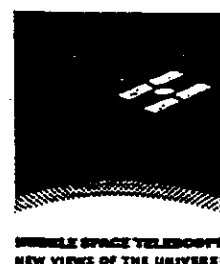
## Assemble Space Time Marker

- 1 Position Black Monolith 401A per venue layout. To access inside of monolith, remove screw at top of end panel and lift end panel up from bottom. **Note:** This Monolith is not very stable when left standing alone.
- 2 Attach Light Bar 401C to top of Graphic Wing Panel 401B using (2) 1/4-20 x 1" s.s. flat head allen screws.
- 3 Thread electrical cable from Light Bar into Monolith as Graphic Wing is inserted into slotted opening in Monolith. Attach Graphic Wing at inside of Monolith using (4) 1/4-20 x 1" socket head cap screws.
- 4 Plug power-con from Light Bar into transformer in Monolith. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.
- 5 Use leveler foot on Graphic Wing to level the Space Time Marker in position.
- 6 Insert Globe 401D into tube in curved corner of Graphic Panel. Align the hole in Globe post with set screw in receptacle tube and tighten Globe in position using the individual 5/64 allen wrench provided.



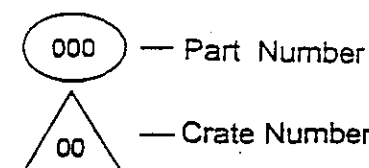
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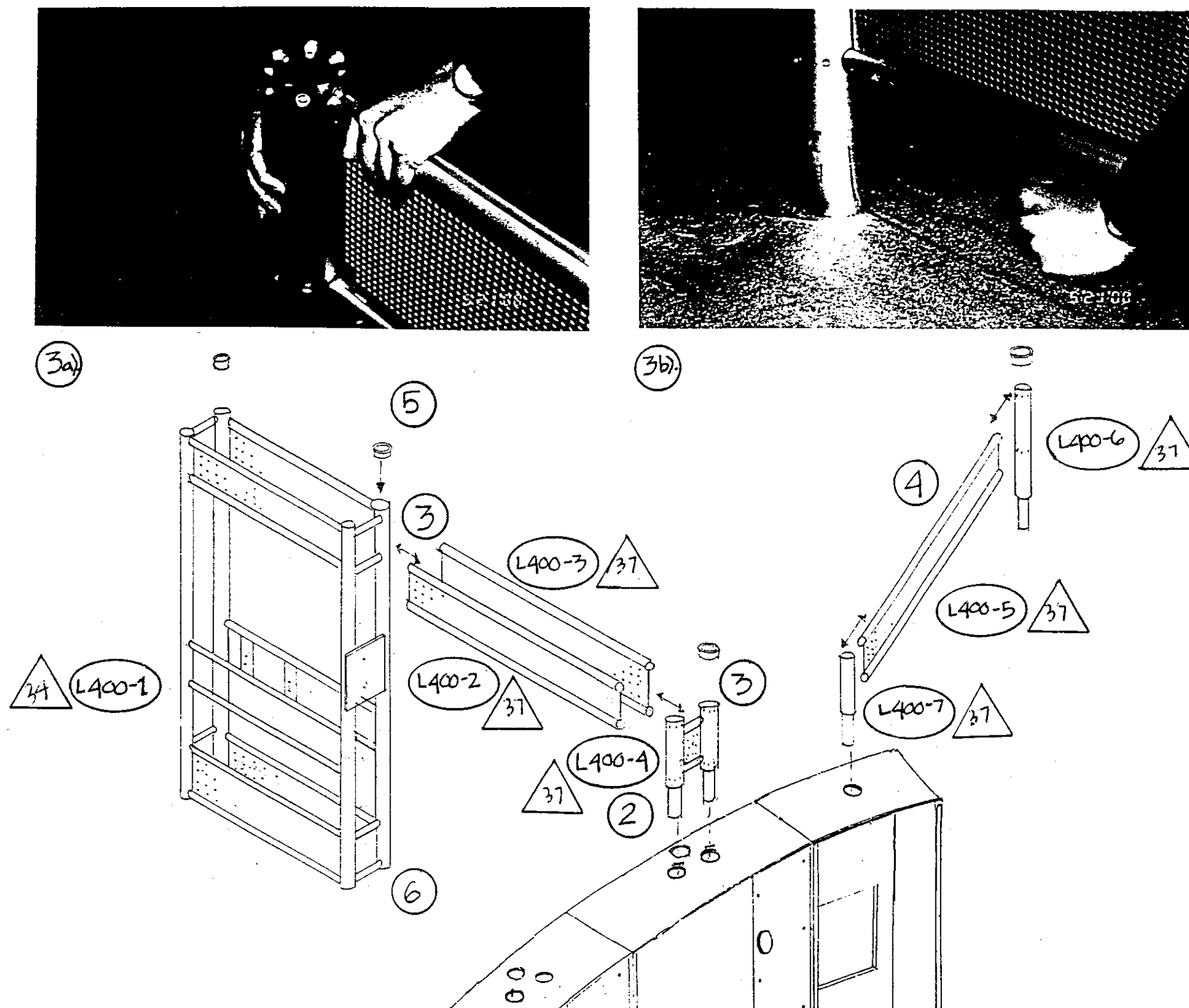
## ASSEMBLE LEITNER

### Locate Leitner Parts:

- (1) Leitner Box Assembly (L400-1, Crate 34)
- (2) Leitner 89" Straight Lengths (L400-2, -3, Crate 37)
- (1) Leitner Assembled End Section (L400-4, Crate 37)
- (3) Leitner pieces to connect Space Time Marker (L400-5, -6 and -7, Crate 37)
- (8) Leitner 1" Top Rings (Crate 37)

### Assemble Leitner and attach to Space Time Marker and Icon Wall for support

- ① Position Leitner L400-1 on floor roughly according to layout.
- ② Locate Leitner L400-4 and insert sleeves into holes in the top of the specific Icon Wall section as indicated by the venue layout. (Note: L400-4 will fit into either the A or B Wall Sections; choose the one indicated by the layout for this exhibition.)
- ③ Attach L400-2 and -3 to L400-4 and L400-1 using the long red handled Leitner tools provided. Assemble by:
  - a). aligning the joint and locating the bolt head inside the small diameter horizontal Leitner tube, then
  - b). inserting the red handled Leitner tool into the bolt head located inside the tube end. APPLY SOME PRESSURE TO COMPRESS SPRING BEHIND THE BOLT HEAD while screwing in the bolt.
- ④ Attach L400-5, -6 and -7 together again using red handled Leitner tool. Insert long L400-6 into the top of the Space Time Monolith (401A) and the short end L400-7 into the Icon Wall Section indicated in the venue layout. Insert at the same time at each end, keeping assembly level while inserting.
- ⑤ Install (8) 1" high Leitner Top Rings into vertical Leitner parts L400-1, -4, -6 and -7 to finish off tops of posts.
- ⑥ Level Leitner sections as needed using leveler feet attached.

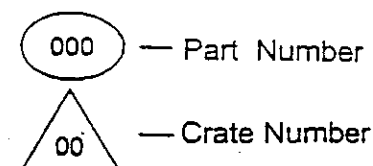


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**ASSEMBLE ADDITIONAL LEITNER**

**Locate additional Leitner Parts:**

- (1) Wire Tray (L400-8, Crate 37)
- (1) Junction Box and extension cord for STM (L400-9, Crate 37)
- (1) Metal Wire Tube (L400-10, Crate 37)

- ⑦ Position Wire Tray L400-8 on top of Leitner between L400-2 and -3.
- ⑧ Position Metal Wire Tube L400-10 through hole in end of Tray, extending down into top of icon.

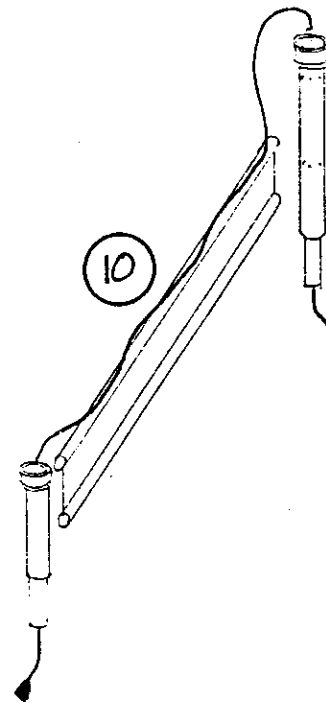
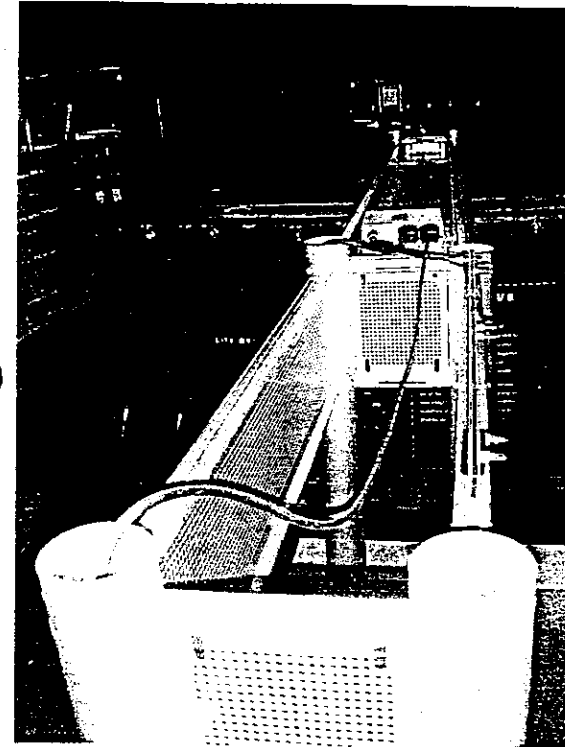
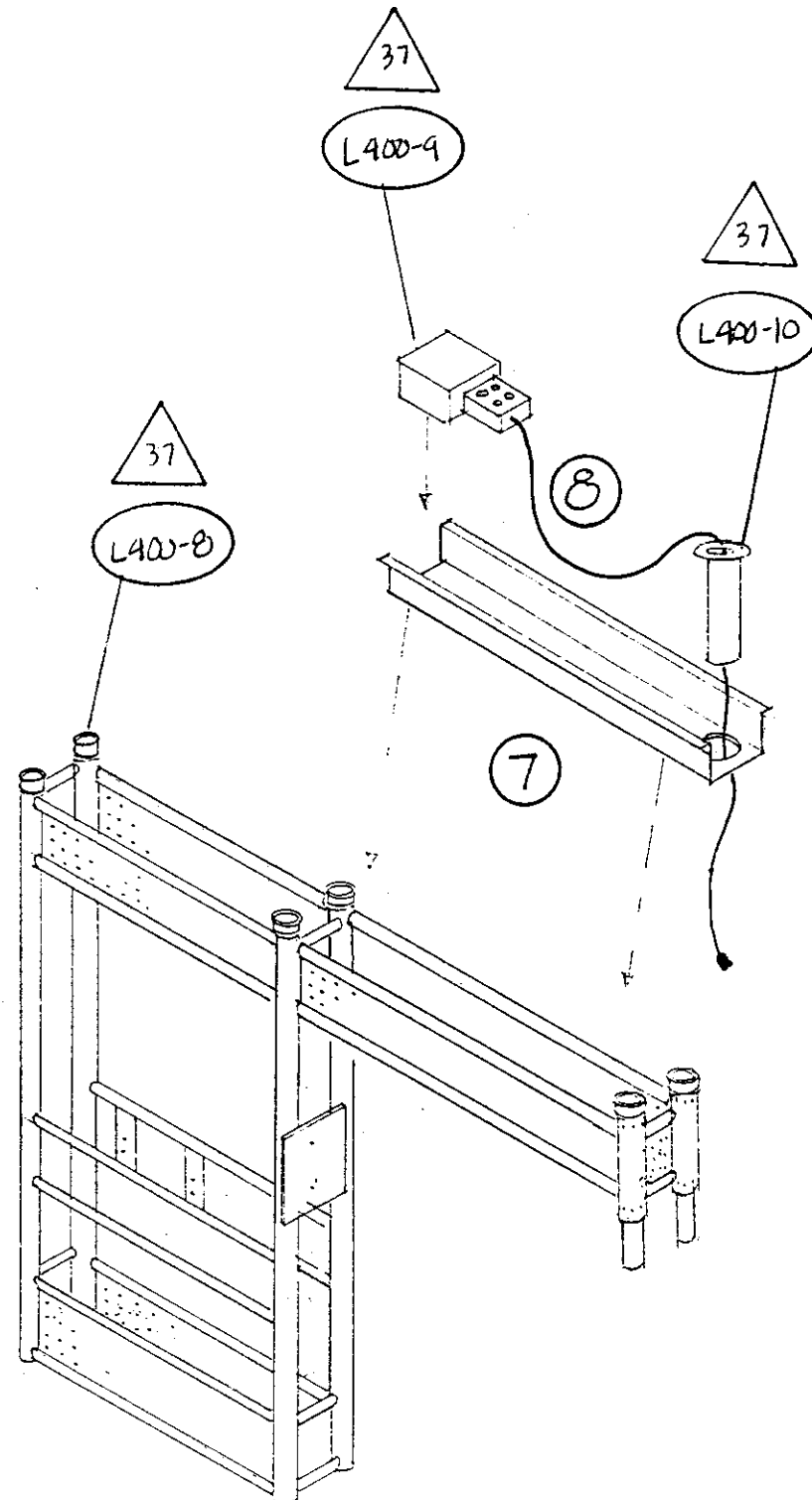
**Connect electrical across Leitner into Junction Box**

- ⑧ Place Junction Box L400-9 in Wire Tray, per position markings inside Tray. Thread wire from junction box across the Wire Tray, down through the Metal Wire Tube into the Icon Structure.
- ⑨ Plug in all electrical feeds from top of Leitner assembly into Junction Box in Wire Tray, matching color coded markings.

**Connect electrical for Space Time Marker into Icon**

- ⑩ Locate extension cord for Space Time Marker inside Icon Wall 400A, and connect inside Space Time Marker. Pass up through L400-6, across top of L400-5 and down through L400-7 into Icon. Plug in to the outlet closest to the point of entry.

**Clean any visible black abrasions** off Leitner using the Leitner pumice provided in tool box, following label instructions.



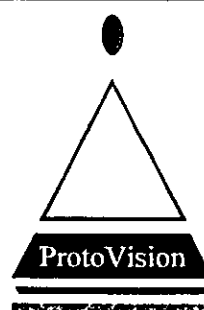
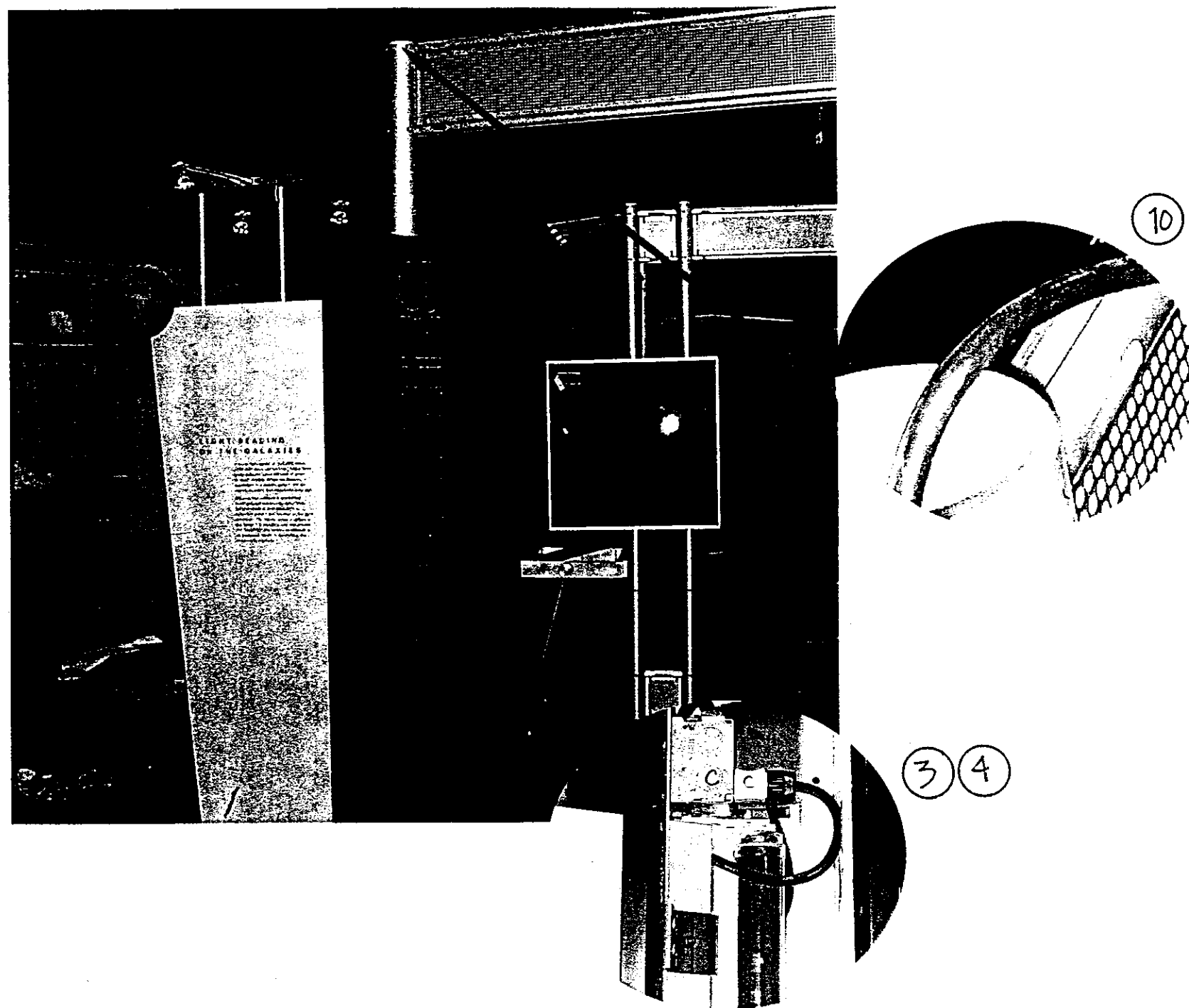
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ICON READER RAIL AND MONITOR BOX

Locate Icon Reader Rail and Monitor Box Parts:

- (1) Icon Reader Rail (400G, Crate 28)
- (1) Monitor Box (403, Crate 28)
- (1) 13" Sony Monitor (403, Crate 50)
- (1) Adtech Drive "SHOEMAKER/LEVY" (# \_\_, Crate 49)

Attach Icon Reader Rail to back of Icon

- 1 Align Icon Reader Rail 400G with cleat and inserts on back side of Icon Walls. Lower Icon Reader Rail over cleat and attach to metal angles (inside Icon) using (2) 1/4-20 x 1" hex head bolts at ends of cleat, and (1) longer 1/4-20 x 2 1/2" hex head bolt at center of cleat. Use 3" socket extension to enable access to bolt heads.

Install Monitor Enclosure and Monitor

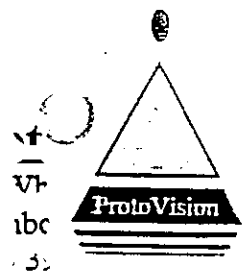
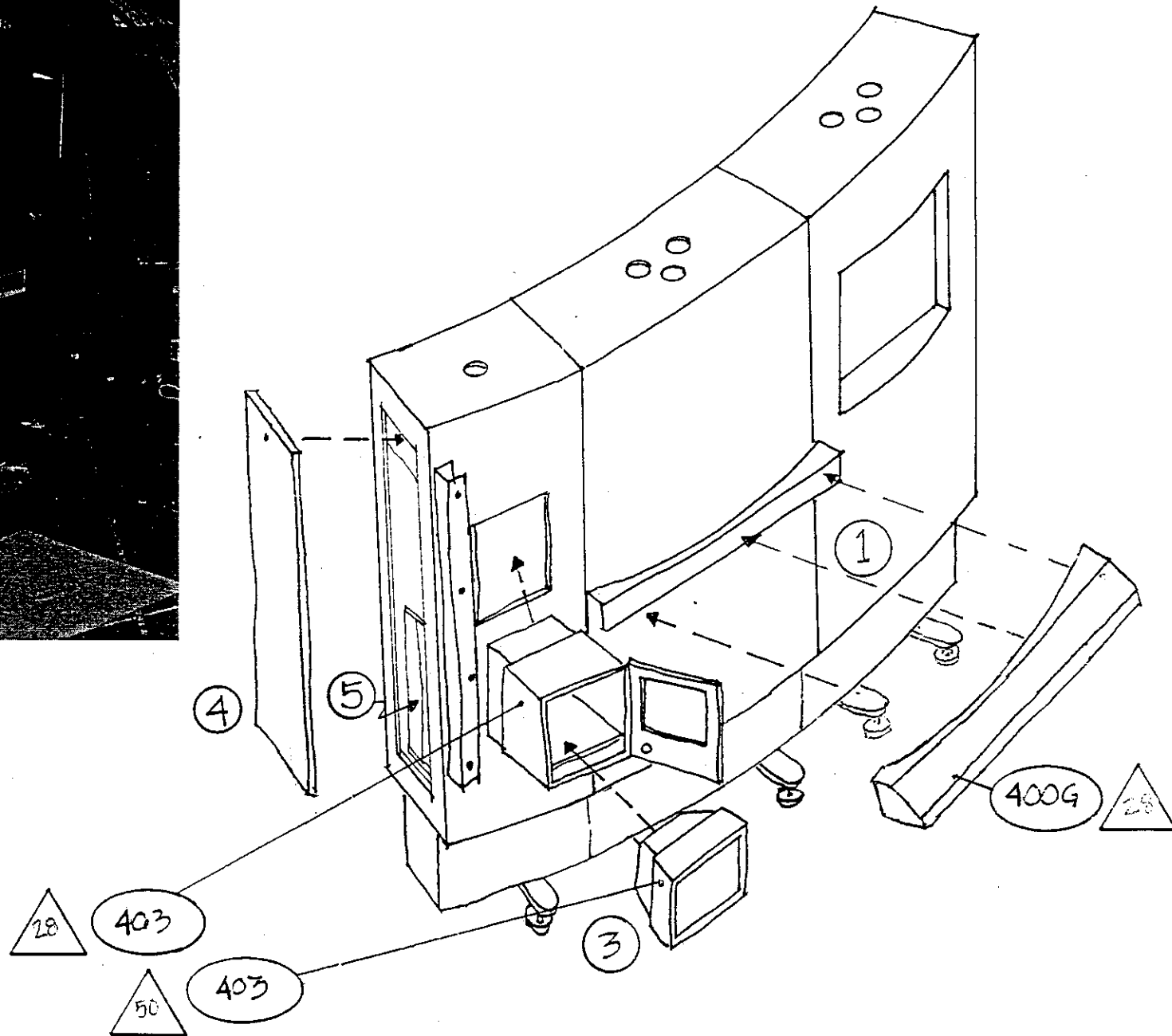
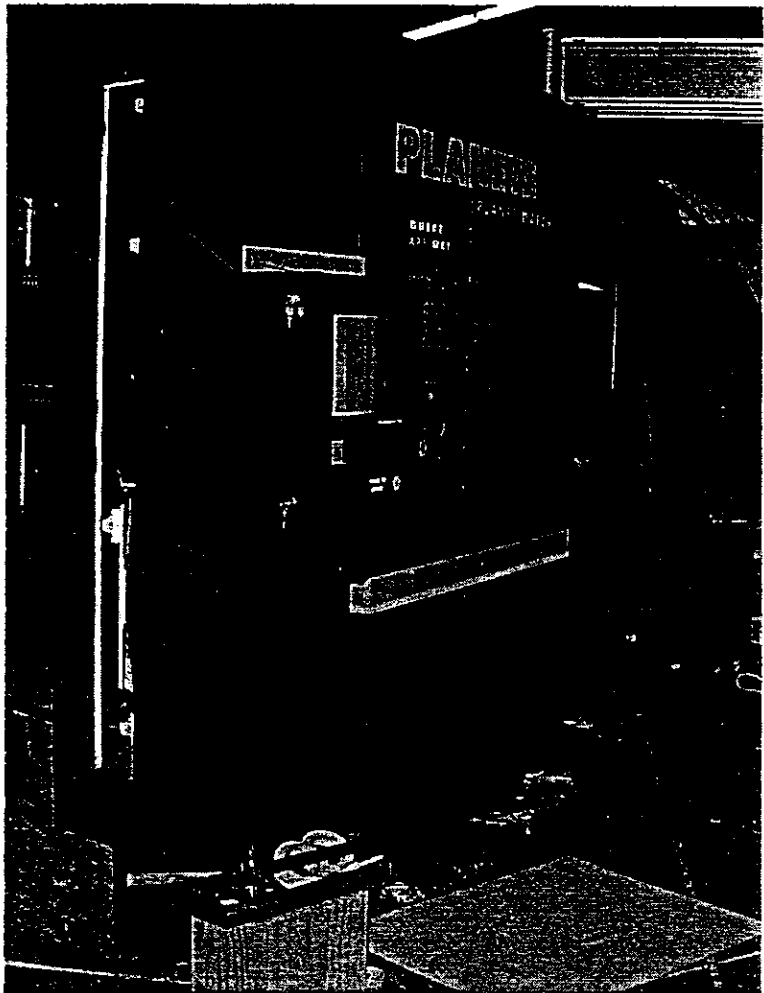
- 2 Slide Monitor Enclosure 403 into opening in Icon from the front, and bolt into place using (4) 1/4-20 x 2" hex head bolts with flat washer and hex nut.
- 3 Install 13" Sony Monitor 403 through front door of Monitor Enclosure. From inside the Icon, connect video and audio cables between Adtech Player and Monitor, matching colored markings. Plug Monitor into power strip. Check that Adtech is still plugged into power strip, and that power strip is still plugged into duplex outlet, and that the switch is turned on.

Adtech Mirage Player

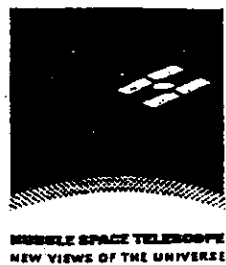
- 4 Access to Adtech players in Icon Wall is in the narrow end of Icon, nearest the Monitor Enclosure. To access the player, remove the (1) 1/4-20 x 1 1/2" black button head allen screw with black washer at top of access panel, and lift off access panel.
- 5 Locate Adtech Drive #\_\_ "SHOEMAKER/LEVY", and use key to install and lock in place. (Note: Adtech Mirage will not play unless drive is locked in place.)

Test Adtech drive before completing Icon Assembly.

- 6 Replace using same 1/4-20 x 1 1/2" black screw and washer.

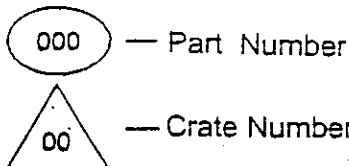


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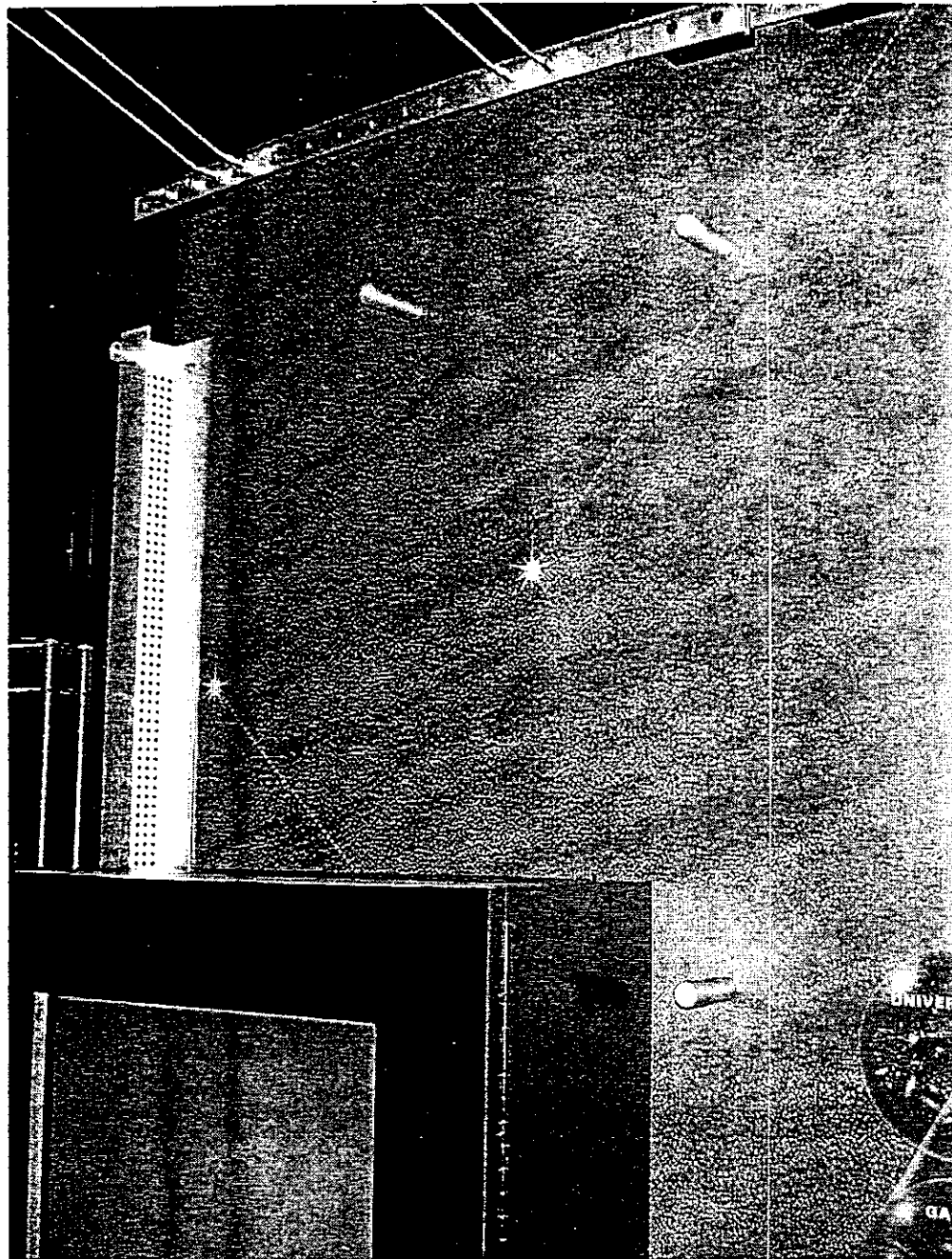
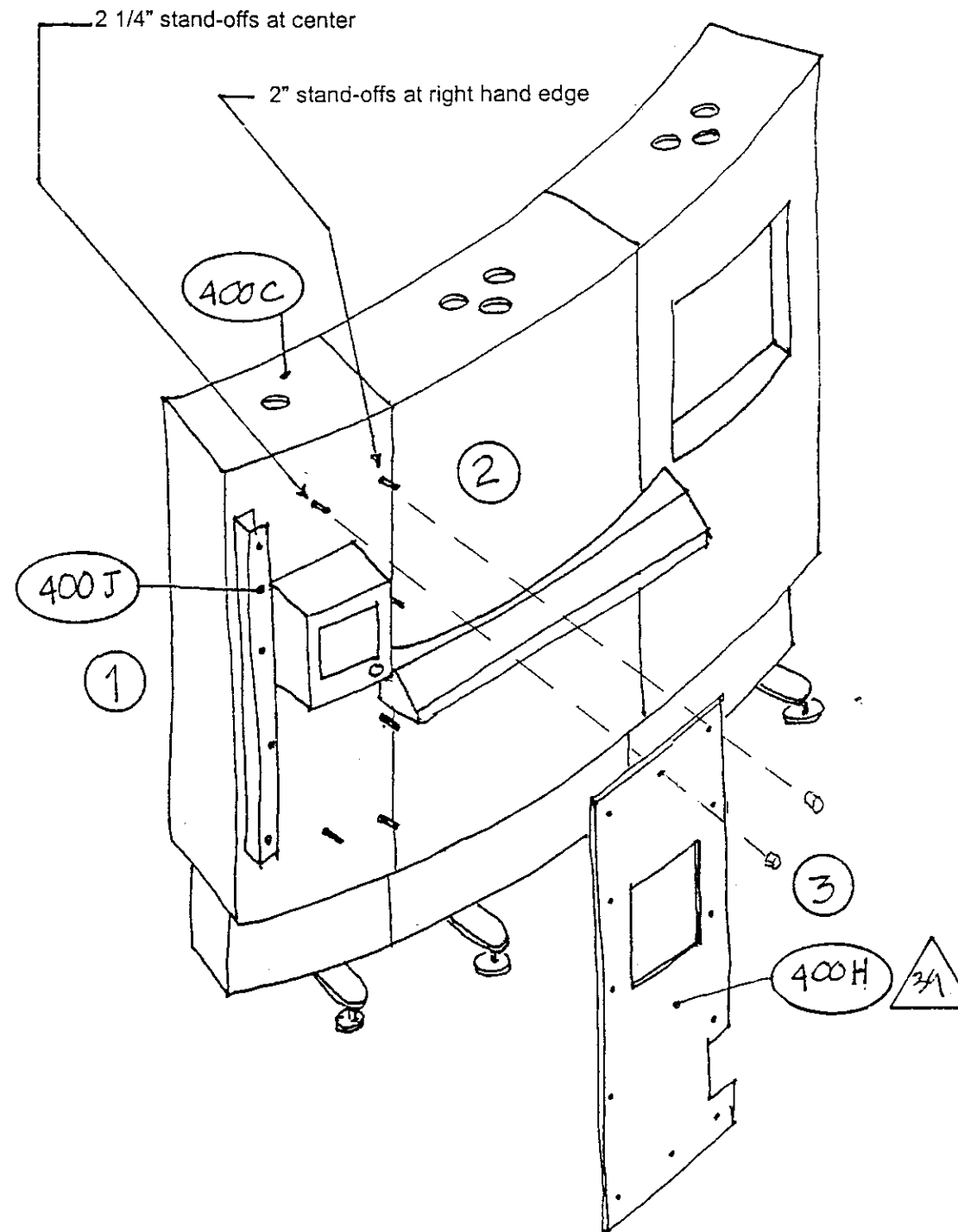
**ATTACH BLUE ACRYLIC GRAPHIC**

**Locate Blue Acrylic Graphic Parts:**

- (1) Blue Acrylic Panel: "TARGET JUPITER"  
(400H, Crate 39)

**Attach Blue Acrylic Panel**

- ① Perforated Metal Bracket 400J arrives attached at left hand edge of Icon Wall 400C. Stand-offs (with caps) on Bracket should be facing out.
- ② From Hardware Box, install (4) 2" and (2) 2 1/4" stand-offs (with caps) to hold Blue Acrylic Panel in position. Install the 2" stand-off along the right hand edge, and the 2 1/4" at center top and bottom. Install all from the inside of the Icon, using (6) 5/16-18 x 1" black button head allen screws with washer and lock-washer. Insert screw through Icon and into stand-offs on finish side.
- ③ Remove caps from all (10) stand-offs and position Blue Acrylic Graphic over protruding threaded posts. Replace caps on all (10) stand-offs to secure Blue Acrylic in position. **Note:** Caps ship attached to stand-offs in the Hardware Box, or attached inside Icon 400C.

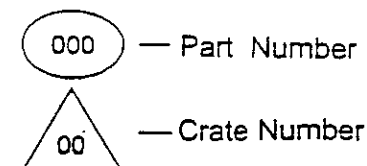


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INSTALL PENDENT LIGHTING

Locate Pendant Lighting Parts:

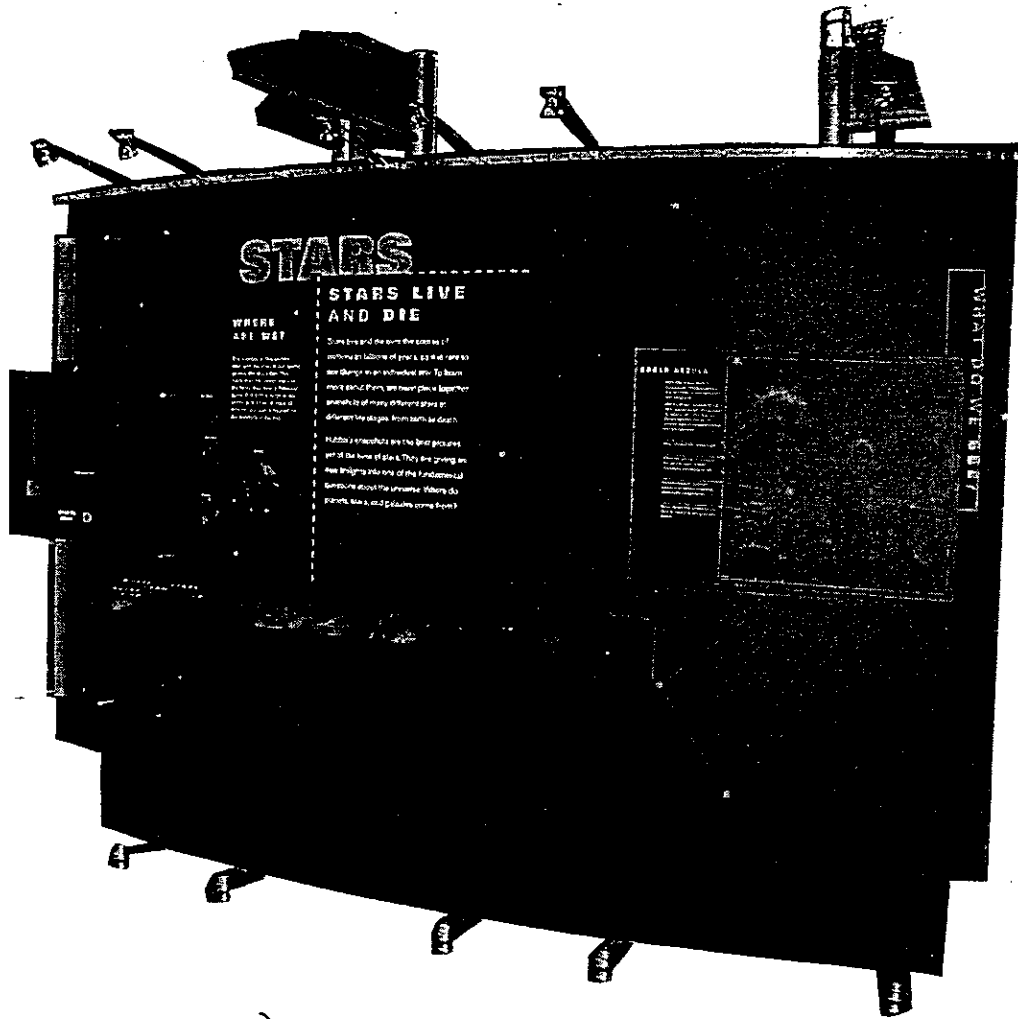
- (18) Angled Chrome Rods (Crate 49)
- (8) Straight Chrome Rods (Crate 49)
- (3) 20 watt Halogen Bulbs with Chrome Sockets (Crate 49)
- (10) 50 watt Halogen Bulbs with Chrome Sockets (Crate 49)

Install Pendant Lighting

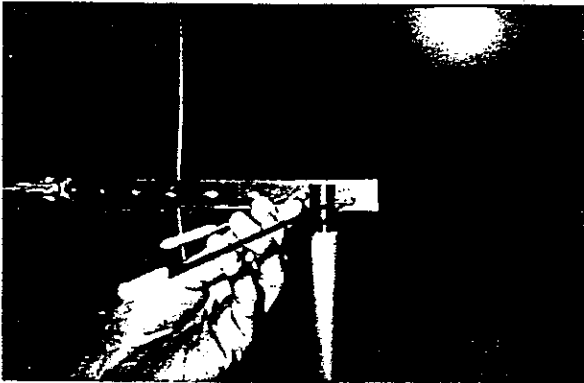
**Note:** To avoid shock, disconnect or turn off power when installing pendant lighting.

Assemble Pendant Lights:

- a).** Screw (12) Angled Chrome Rods into the (12) knurled knobs on the **Icon Wall**. To make angled rods parallel, insert smallest screw driver or thin allen wrench that fits the hole and rotate the knurled receptacle until the angled rods are parallel.
- b.)** Screw (6) Angled Chrome Rods into the (6) knurled knobs on the **Space Time Marker**. Make rods parallel by using the process described above.
- c.)** Screw (8) Straight Chrome Rods into the (8) knurled knobs on the **Leitner Structure**.
- d).** Install sockets with **20 watt bulbs** in Space Time Marker.  
Install sockets with **50 watt bulbs** in Icon Wall and Leitner Structure.  
To install Sockets, loosen thumb screws on each end of socket, slide onto chrome rods and retighten thumb screws.
- e).** To change or install bulbs, loosen (2) 1/8" set screws in socket, insert prongs of halogen bulb into matching holes in socket, and retighten set screws.



b).



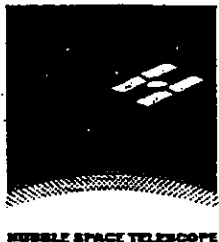
c).



d).

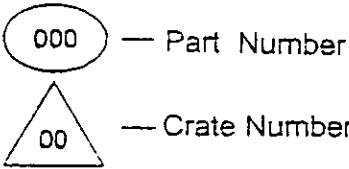


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# INSTALL AV CABINET

## Locate AV Cabinet Parts:

- (1) Reader Rail "CAUSE A COMETARY COLLISION" with (1) leg (402-1b, Crate 42)
- (1) AV Cabinet (402-1, Crate 42)
- (1) Graphic Panel (402-1a, Crate 42)
- (1) MAC G4 (402, Crate 49)
- (1) 17" Sony Monitor (402, Crate 50)

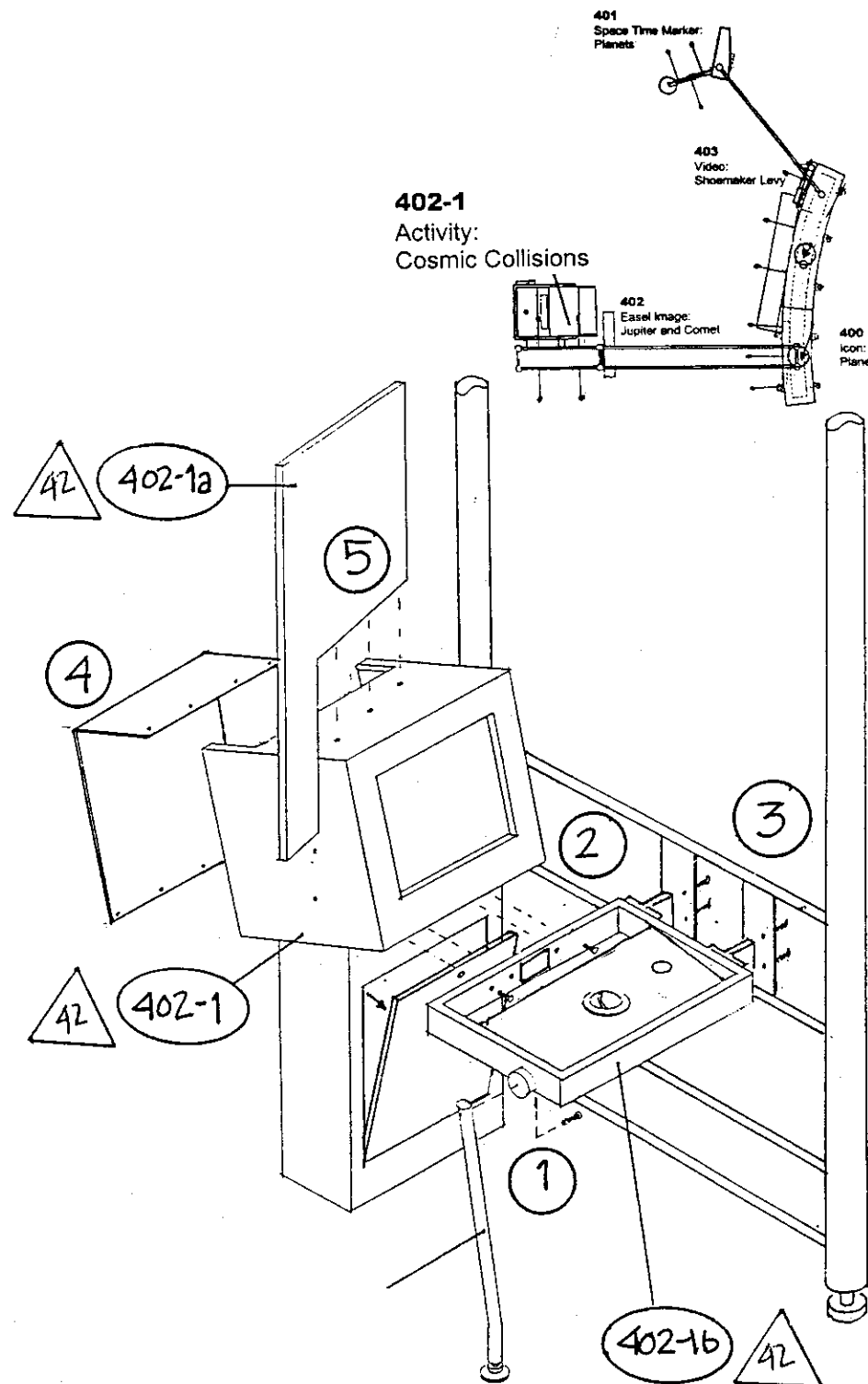
## Attach Reader Rail to AV Cabinet and to Leitner

- 1 Position Leg facing forward, insert into underside of cylindrical receptacle on side of Reader Rail and attach into receptacle using (1) 5/16-18 x 2" s.s. button head allen screw on each Leg.
- 2 Attach back of Reader Rail to AV Cabinet at outermost holes using (2) 1/4-20 x 2 1/2" s.s. button head socket screws.
- 3 Position AV Cabinet with Reader Rail next to the Leitner in its final location. Align preset holes in Leitner to holes in T-bracket assembly on the Reader Rail. Attach using (4) 1/4-20 x 1" s.s. flat head allen screws. **Note:** No other screws visible in the area are involved in this connection.

Adjust level of Reader Rail using leveler feet.

## Install Graphic Panel

- 4 Remove perforated metal back cover by removing (6) 10-32 x 1/2" s.s. button head allen screws.
- 5 Position Graphic Panel over AV Cabinet using locator pins to position top portion of Graphic correctly. Attach with (6) 1/4-20 x 1 1/2" flat head phillips screws installed from inside Cabinet.



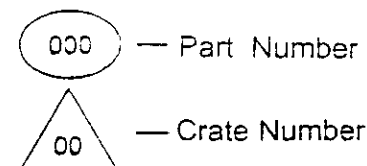
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# INSTALL EQUIPMENT

## Install MAC G4 and 17" Monitor

- 6 Unlock front of Cabinet base and CAREFULLY LIFT OFF DOOR, being watchful not to drop the door.
- 7 Place MAC G4 labeled for 402 inside Cabinet. Feed cables through passage hole into top of Cabinet to make connection to Monitor, speakers and power strip. Feed power cable from Leitner up through hole in floor of base to connect to power strip plug.
- 8 Remove (2) 10-32 x 1 1/2" socket head cap screws from inside Cabinet top to remove Monitor foot-brace. Place 17" Sony Monitor labeled for 402 in position against inside front of Cabinet, and replace foot-brace and cap screws. Connect cables, matching markings.

## Before power-up

- 9 Connect USB at back of Reader Rail by removing (2) 10-32 x 3/8" s.s. button head socket screws and plugging the 9-pin connector into receptacle in cabinet.

## Test Activity

- 10 Turn on the power strip. Program will automatically boot operating system and Activity Program.

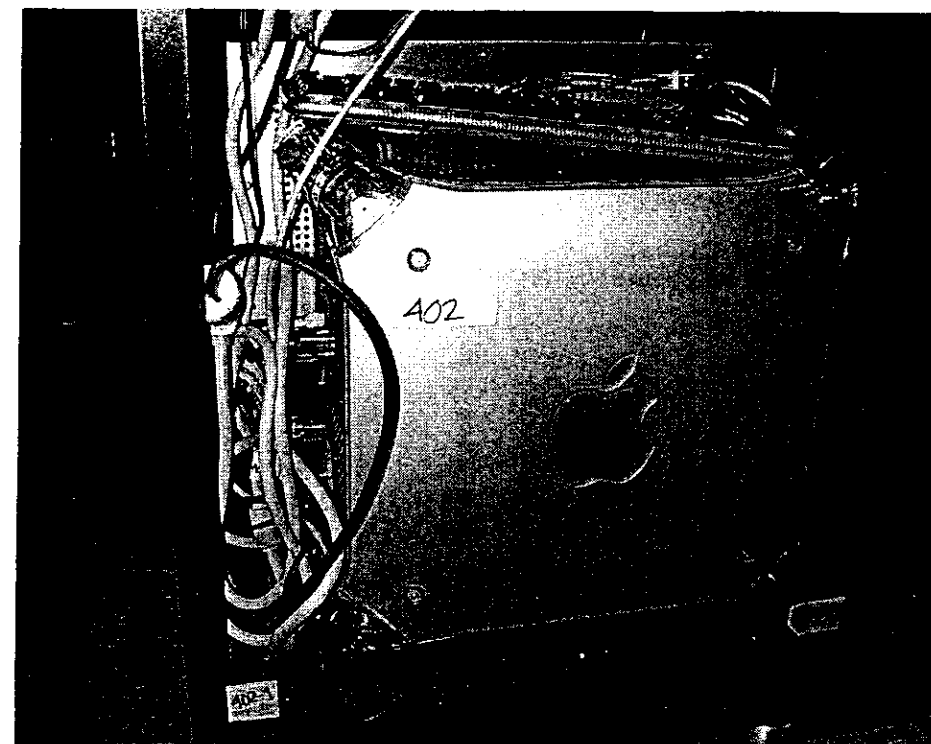
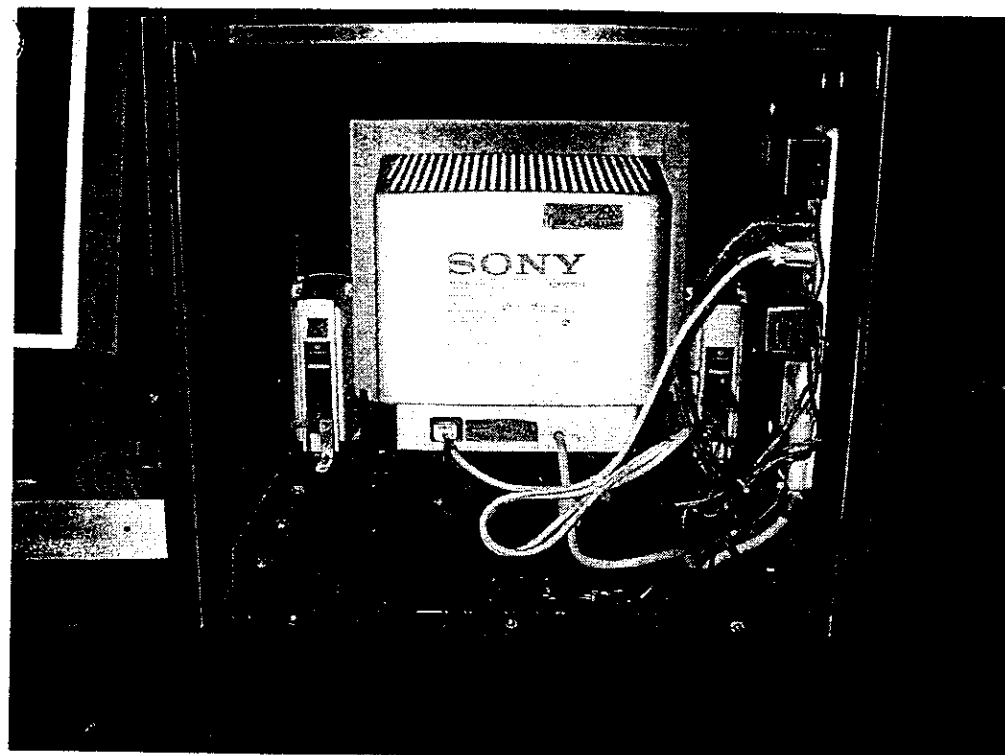
System takes roughly 2 minutes to boot up. Test by playing Activity, using track ball and push button.

Check USB connection under track ball by opening lock on casework under Reader Rail and confirming that USB connection has not come loose.

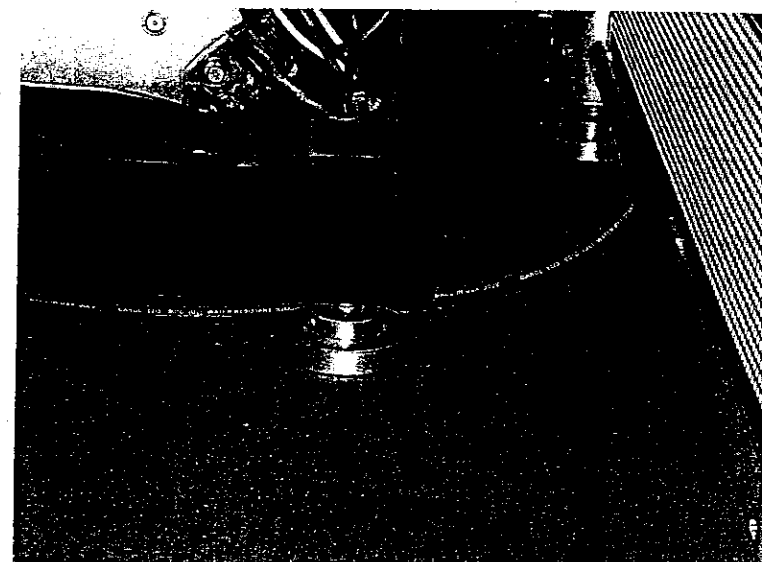
## Secure Cabinet

- 11 Replace (6) button head allen screws that attach perforated metal to back of Cabinet.

Close and lock doors in front of Cabinet.



7



7



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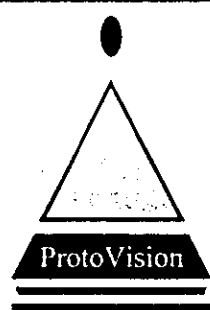
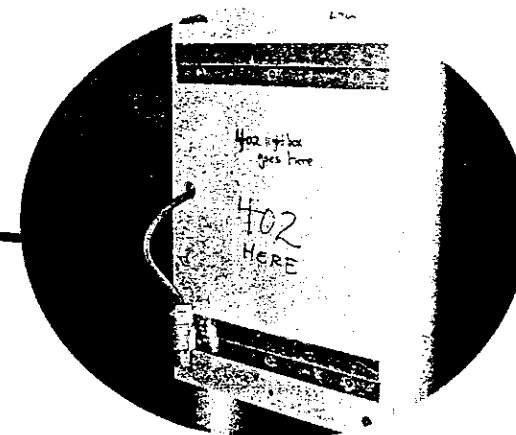
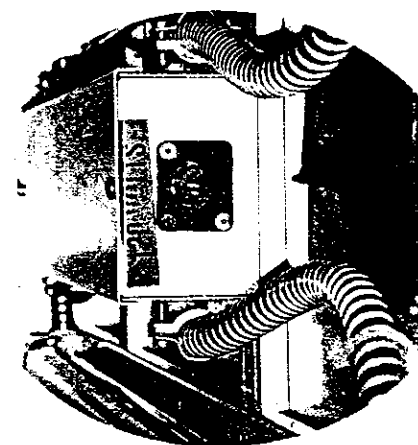
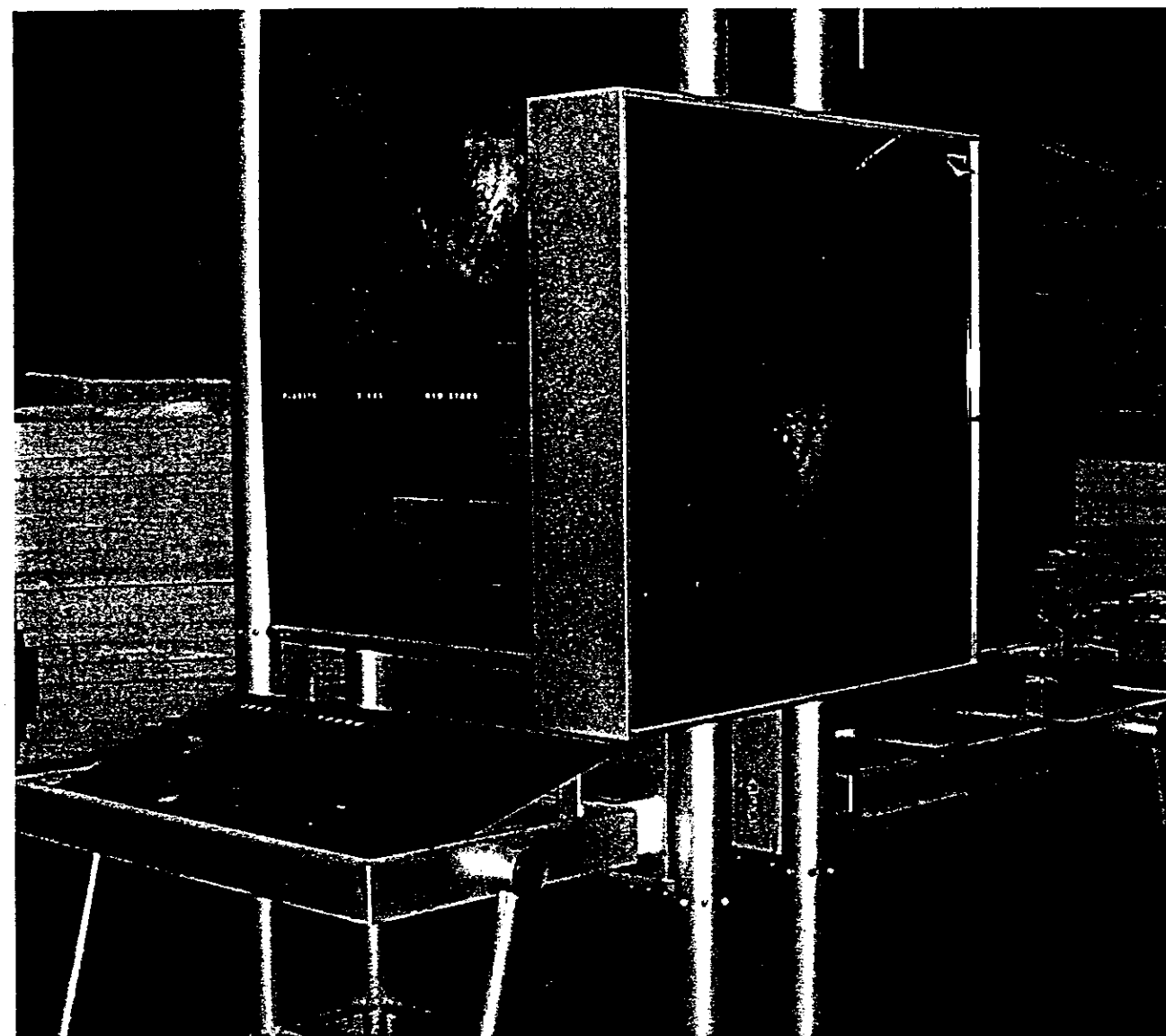


— Part Number

— Crate Number



ATTACH LIGHT BOX WITH IMAGE

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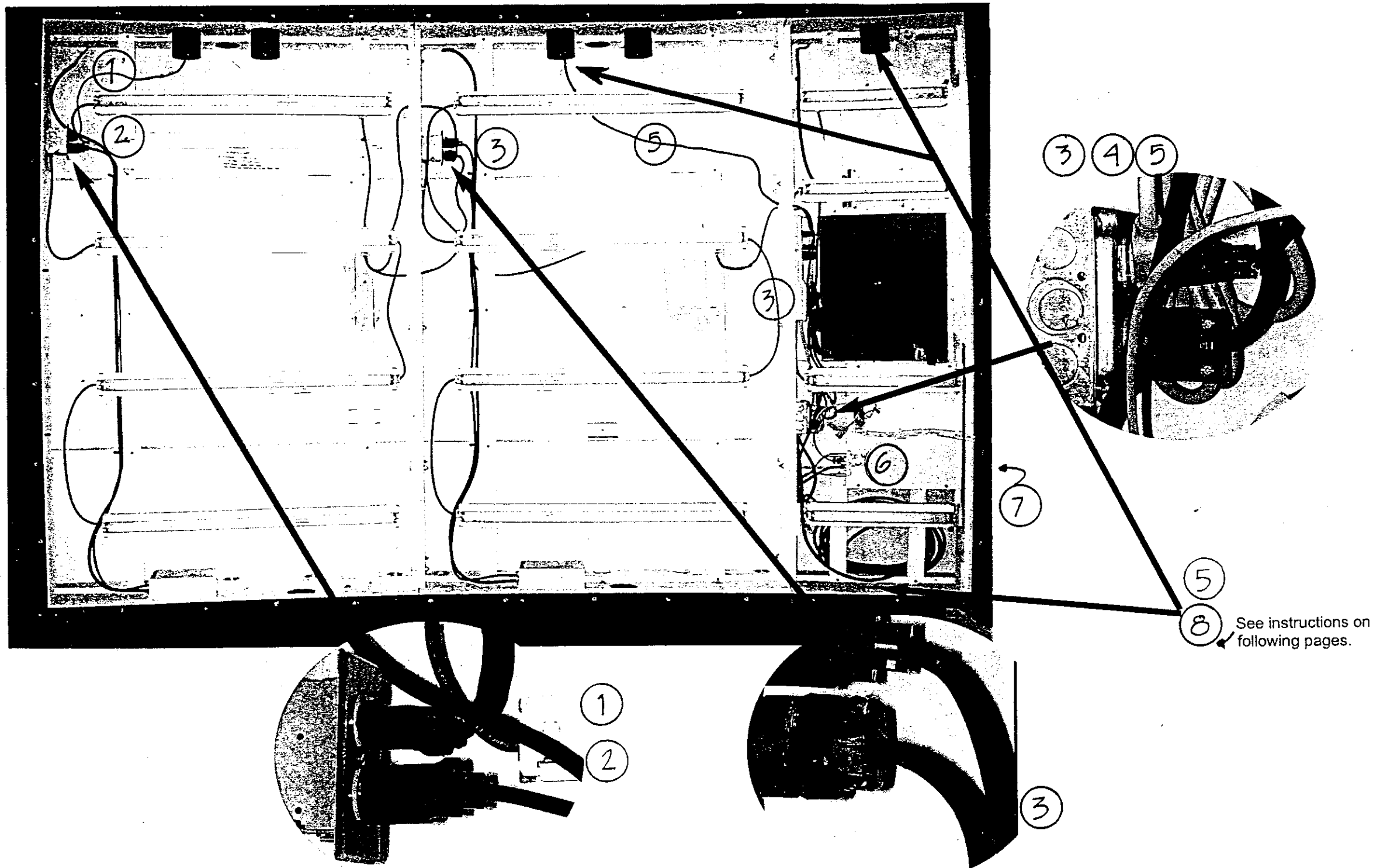
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CONNECT ELECTRICAL



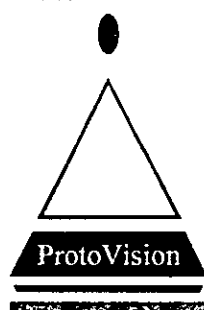
**Connect electrical before installing Lexan**

- 1 Locate electrical feed from Space Time Marker and plug into duplex outlet in Icon Wall A.
- 2 Locate plug for fluorescent fixture that lights the indented graphic on reverse side of Icon Wall A and make sure it is still plugged in.
- 3 Locate electrical feed from Icon Wall A and plug unto duplex outlet in Wall B as indicated. Repeat to connect Wall B to Wall C. Locate main power feed for Icon Wall in Wall C.
- 4 Locate cord from power strip for monitor in Icon Wall C and check that it is still plugged in to duplex and turned on.
- 5 Feed power feed from Junction Box in Wire Tray through wire tube and connect into junction box in Icon Wall C.
- 6 After the Lexan is installed there will be not easy access to the wiring inside the Icon. Therefore, make all electronic connections for inside Icon, including:
  - a). plug in 13" TV
  - b). plug audio and video cables from Adtech Mirage into TV
  - c). plug button plugs together
  - d). check that Adtech and button are still plugged into power strip

**Adtech Mirage Player**

If not already in place, locate Adtech Drive #\_\_\_ "SHOEMAKER/LEVY", and use key to install and lock in place. (**Note: Adtech Mirage will not play unless drive is locked in place.**) Test Mirage prior to installing Lexan.

- 7 See photo on following pages.

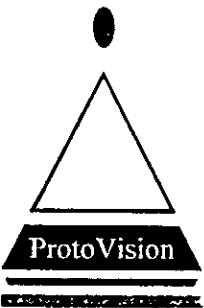
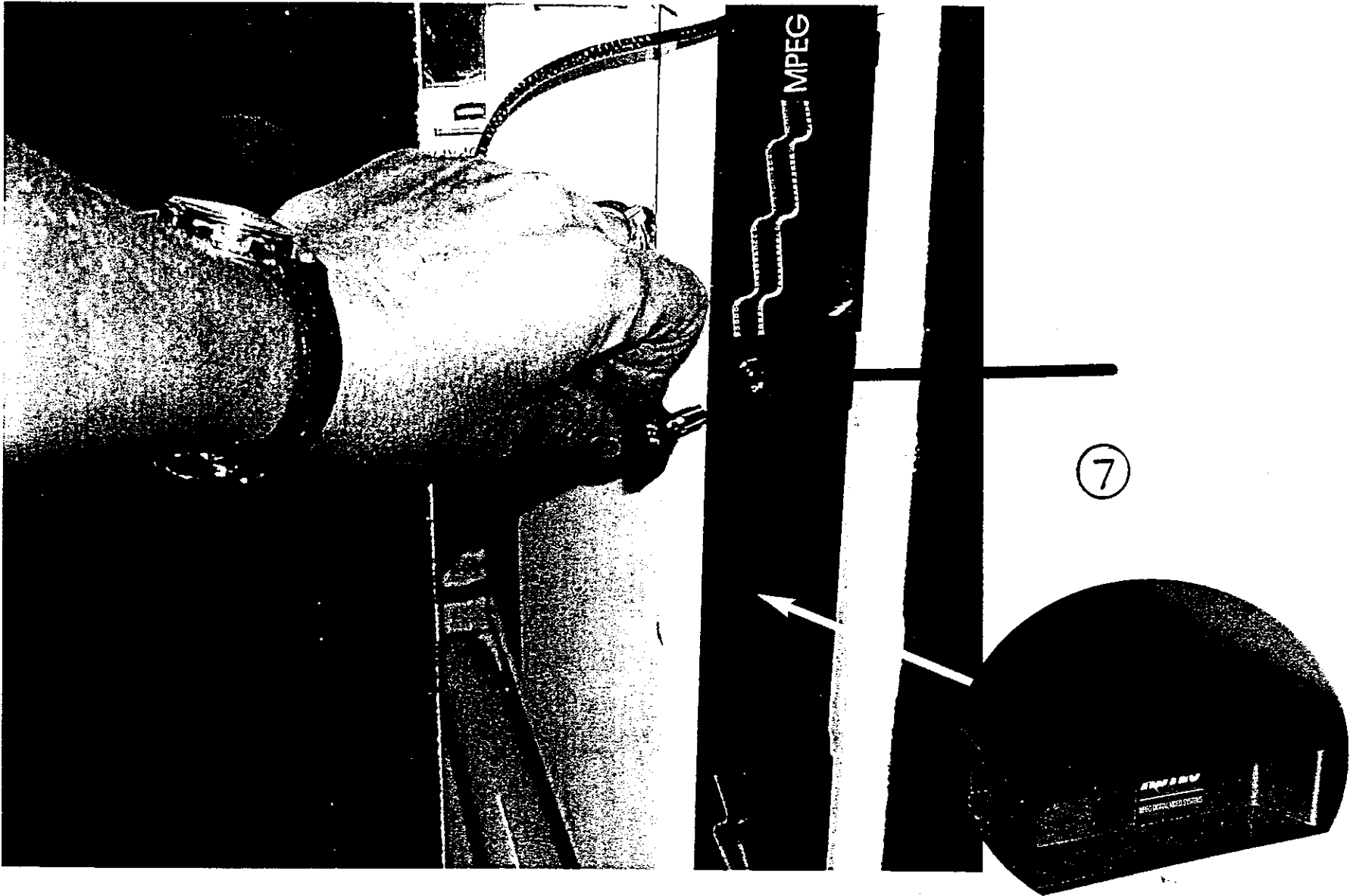


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CONNECT ELECTRICAL

Connect to house power

To power from ceiling...

8 Pass main power feed from inside Icon Wall C and thread up through Wire Tube into the Wire Tray. **Note:** Even if an Alternate Leitner layout is chosen for venue, route wire from Icon up through wire tube into wire tray. Connect (1) main power cord from Icon to 20 amp house power.

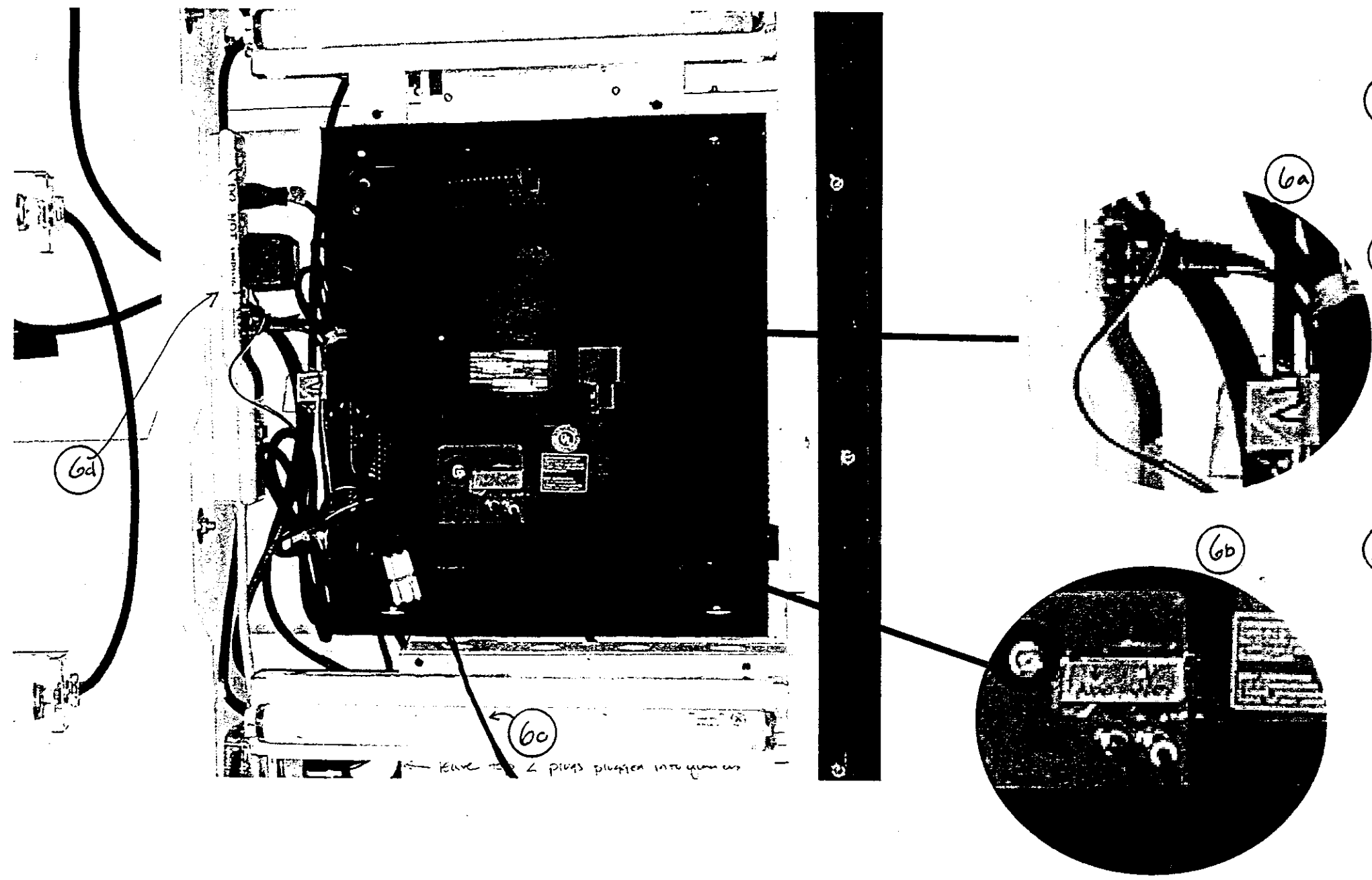
To power from floor...

8 Pass main power feed through inside Icon Wall C to bottom, then through holes along bottom of sections, and down into Base closest to house power in floor. Thread main power feed from junction box in wire tray down into Icon structure. Pass behind fluorescent bulb and along bottom of Wall sections and down into Base closest to house power.

Connect to house power. Video and Activities should boot and fluorescent and low voltage lighting should go on.

**Test power** for several hours if possible, connecting and disconnecting circuit several times to ensure ballasts and starters are working properly.

8 See photo on previous page.



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INSTALL ICON LEXAN AND DURATRANS

Locate Duratrans Parts:

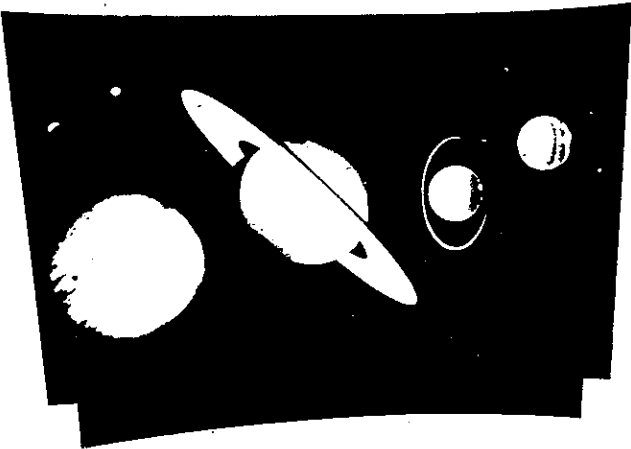
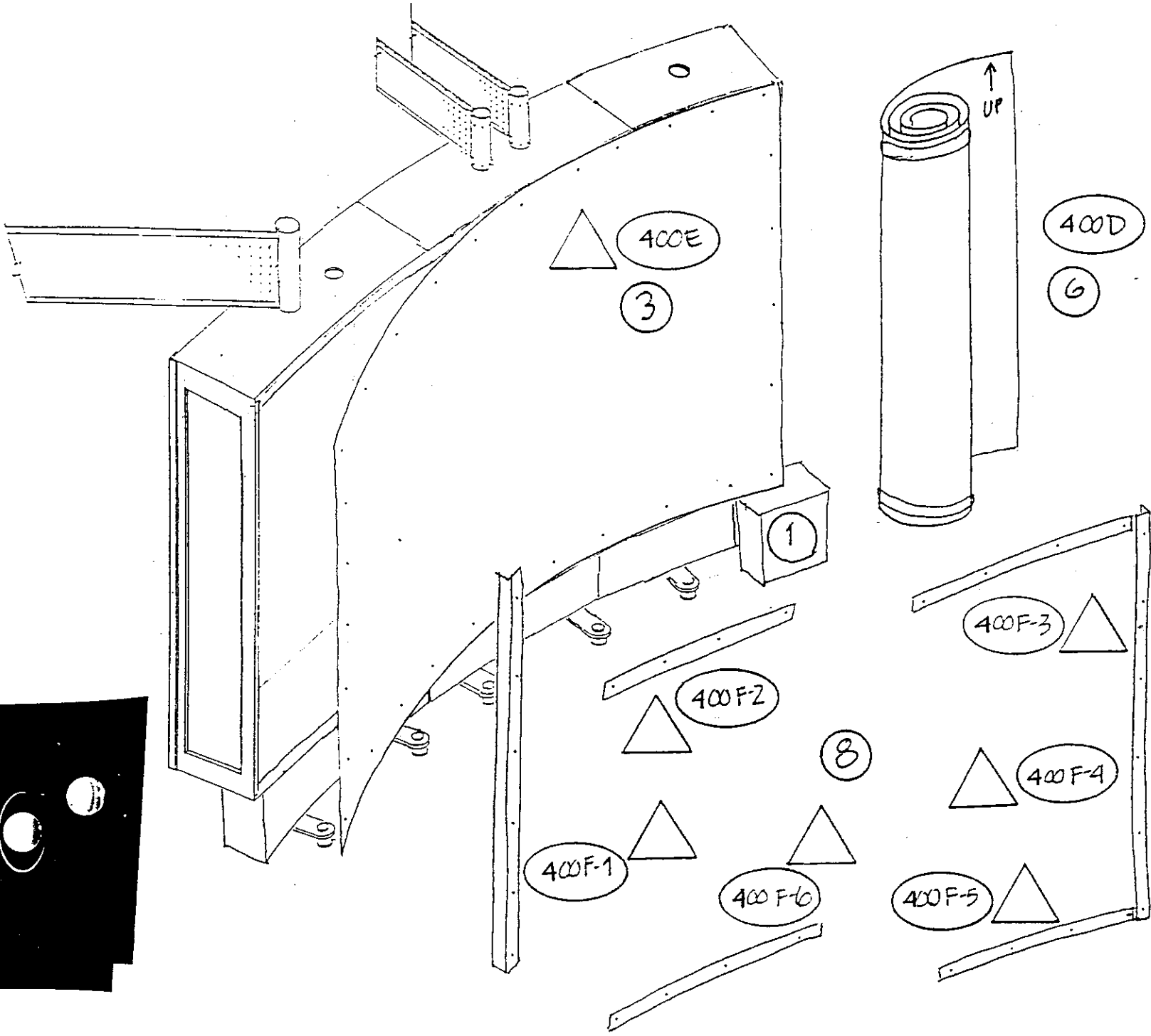
- (1) Lexan Sheet (400E, Crate 41)
- (1) Duratrans (400D, in long cardboard boxes, Crate 53)
- (6) Black Metal Frame Pieces (400F-1 thru -6, Crate 41)
- (2) plywood "dead men" (Crate 28)

Install Lexan

- Position a "dead man" under each outside corner of Icon where it can support the Lexan as it is positioned.
- Clean back of Lexan (the side without the velcro) using rag damp with Windex to remove dust.
- Using minimum of (3) people, carry Lexan into position with velcro side facing out, and place bottom on "dead men" for support. Lift Lexan into position to line up holes in Icon. Install all (20) 1/4-20 x 3/4" flat head phillips screws to secure Lexan to Icon.
- Clean front of Lexan using rag damp with Windex.

Install Duratrans

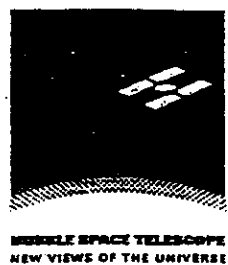
- Locate Duratrans BUT DO NOT UNROLL. Determine which end is up, and fit exposed edge (left or right) to velcro on Lexan, being sure to align top and bottom correctly.
- Using two installers, one at top and one at bottom, slowly begin to unroll the Duratrans across the Lexan. Bottom person should keep one hand checking the bottom alignment to feel how straight the Duratrans is unrolling. If alignment is off, re-roll transie, realign against side edge and begin to unroll again.
- Once Duratrans is positioned correctly, pat down velcro. Gently wipe down the front of the Duratrans using rag damp with Windex.
- Position Black Metal Frame pieces and begin attaching in numbered order using (26) 1/4-20 x 1" black button head screws.
- Clean exhibit using rag damp with Windex to remove dust and finger prints.



Icon Image on Duratrans 400D

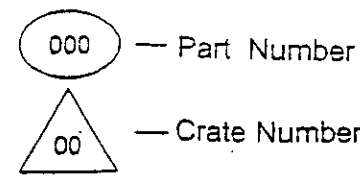


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## DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling.**

**Unlock and remove Adtech Drive from exhibit prior to disassembly and pack in Crate 49.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 20, 28, 34, 36, 37, 38, 39, 40, 41, 42, 51, 53 and AV Crates 49, and 50.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**Lexan and Duratrans** - The Black Metal Frame pieces along the back corners of Icon Walls 400A and C stay attached for shipment. The other (6) need to be removed to disassemble the Duratrans and Lexan, and then pack in Crate 41. As Duratrans is removed, roll carefully, avoiding making kinks in surface, then repack in long boxes in Crate 53. Lexan packs in Crate 41.

**Connections** - Disconnect electrical and other cables inside Icon Walls before removing any AV equipment.

**Pendent Lighting** - Remove Pendent Lighting, **leaving knurled nuts in place** to maintain placement locations. Pack lighting parts in Crate 49.

**Easel Image Light Box** - Follow directions in reverse, removing the end that has allen screws to disconnect the power-cons inside the Light Box. Remove screws that hold Light Boxes in from behind. Handle with care, as these are very heavy. Pack in Crate 36.

**AV Cabinet** - Remove all equipment in top and bottom cabinets (except speakers and cables which are attached to cabinets) and repack into AV Crates. Disconnect USB connection inside reader rail before removing. Pack in Crate 42.

## DISASSEMBLY CONTINUED

**Space Time Marker -**

- Disconnect electrical cord and ship inside Icon Wall A wrapped in velcro strap.
- Remove Globe using the 5/64 long handled allen tool to prevent scratching Globe. Treat Globe with extreme care, packing in back into the white flannel sock inside Crate 40.
- Disconnect power-con inside Monolith before removing Light Bar. To disconnect power-con pull back on chrome tab and twist counter clockwise.
- Disassemble Graphic Wing Panel before detaching from Leitner to prevent Monolith from being unstable.

**Blue Acrylic Graphics** - Perforated Metal that holds these panels in lace ships attached with thumb screws inside Icon Wall A. Stand-offs pack in Hardware Boxes. Pack in Crate 39.

**Icon Monitor Box** - Disconnect all cables before removing Monitor or Monitor Box. Adtech Drive ships in Crate 49.

**Icon Walls** - Detach Icons sections from each other and from black Icon Bases. Icon Bases ship with metal feet attached in Crates 26 and 27.

**Insure that all components are packed back into their assigned locations in each crate.**



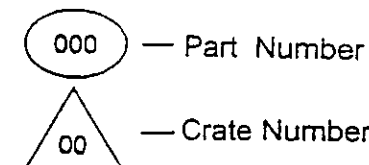
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# MAINTENANCE INSTRUCTIONS

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**Icon video remote** is to be used **ONLY** for **brightness** and **contrast**.  
Open front door to monitor enclosure to enable remote to activate sensor.

## To replace fluorescent bulbs inside Space Time Markers:

**A** Remove access panel in end of Space Time Marker Monolith by removing the screw in the bracket on top of the monolith.

Raise access panel from the bottom to release it from the cleat which holds it snug against the monolith.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

**If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.**

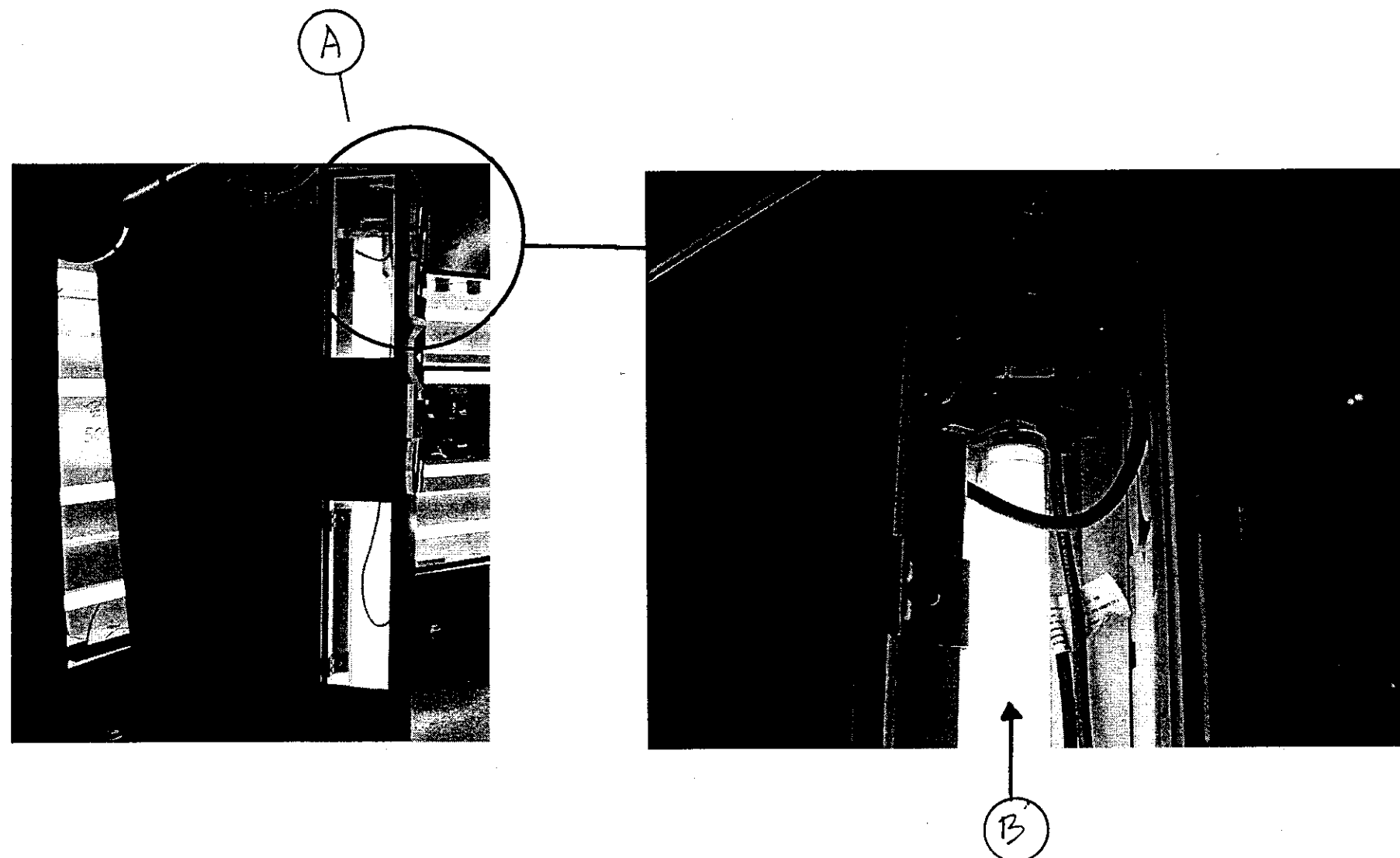
Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

**If silicone bead is not present** continue bulb replacement.

**B** Twist the burned out fluorescent bulb out of its socket

Replace bulb using identical fluorescent:  
F40CW/RS/WM, a 34 watt 48" cool white rapid start  
GE Watt-Meiser fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced.)

Reconnect power and replace access panel and screw at top.



MAINTENANCE INSTRUCTIONS

Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.

To replace fluorescent bulbs inside Icon Structures (this includes the fluorescent bulb above the indented graphic area on the back of the Icons):

Remove all the black button head allen screws, the (8) black metal pieces, and the duratrans.

Remove all the phillips head screws and the lexan sheet.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.

Once power is disconnected, cut silicone bead. (Silicone is not to be replaced.) Continue bulb replacement.

If silicone bead is not present continue bulb replacement.

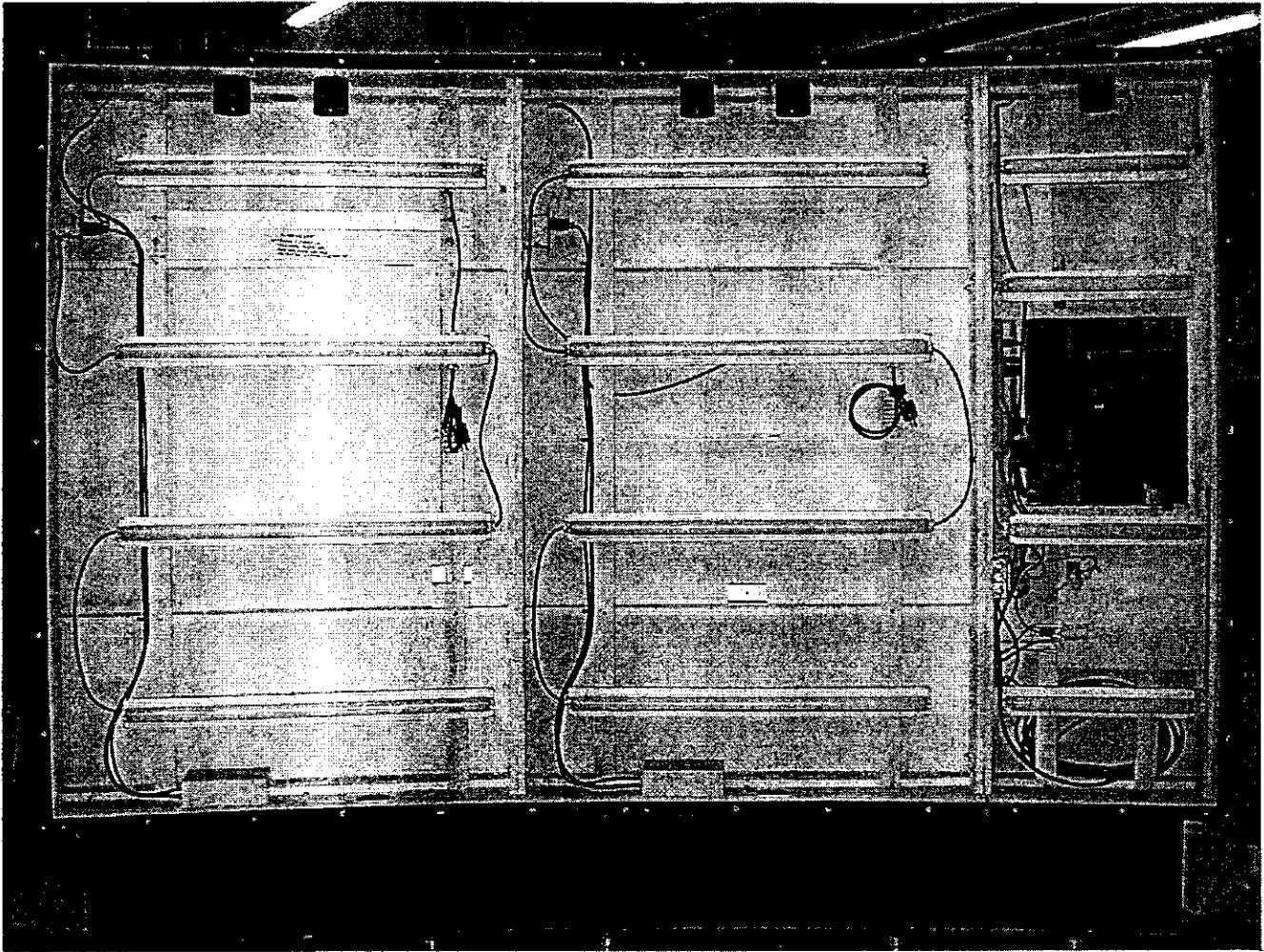
Twist the burned out fluorescent bulb out of its socket

Replace 30 watt bulb using identical bulb:  
F30T12/CW/RS, a 36" 30 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Replace 15 watt bulb using identical bulb:  
F15T12/CW/RS, an 18" 15 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Reconnect power and replace lexan, Duratrans and black metal pieces.

Adtecs will reboot automatically when powered up.



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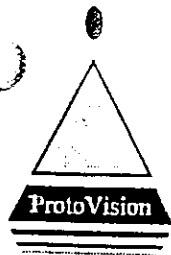
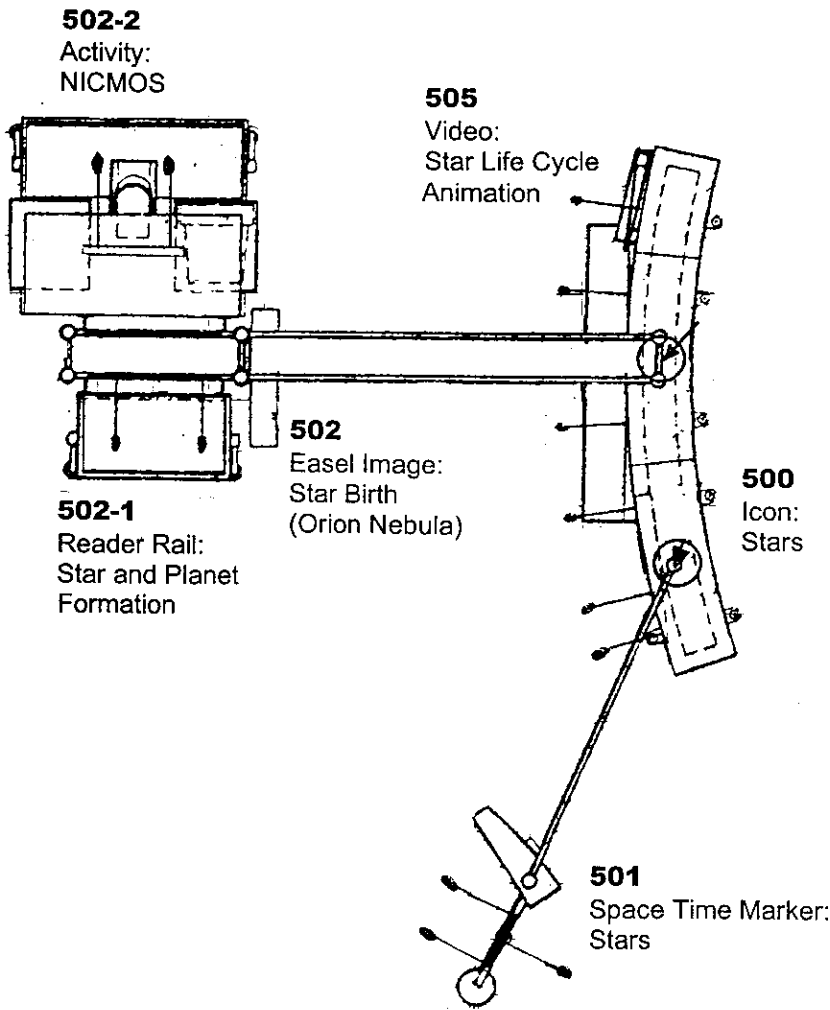
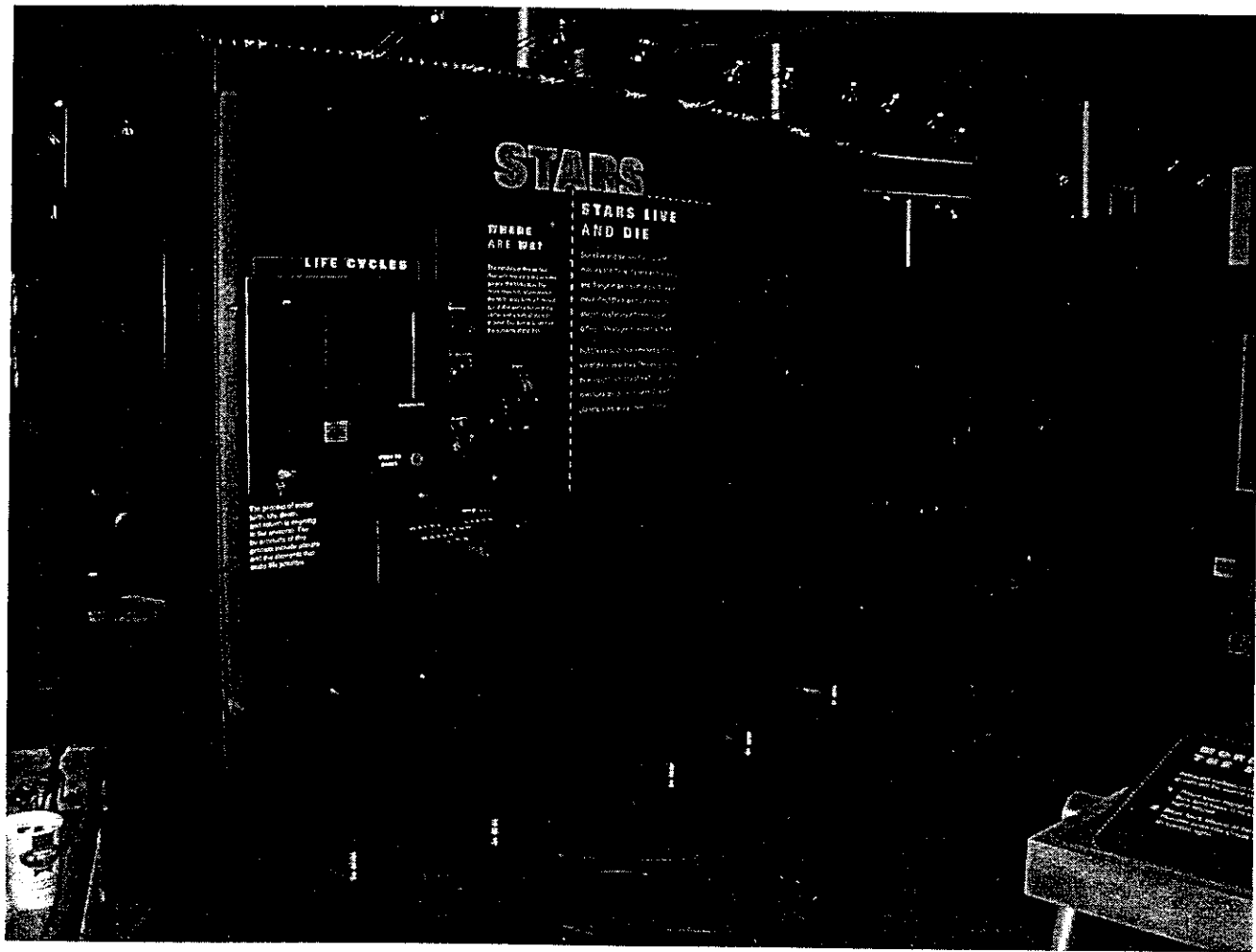
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OVERVIEW AND PLANNER

Exhibit Overview:

Star Life Cycle Animation Video: Visitors learn about the life cycle of a star from birth to death/recycling.  
NICMOS Activity: Visitors learn how NICMOS, using infrared cameras, can detect energy invisible to the eye, allowing us to see through gas to view protostars and disks of matter.

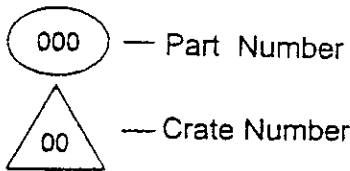


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## OVERALL DIMENSIONS

### Space Planning:

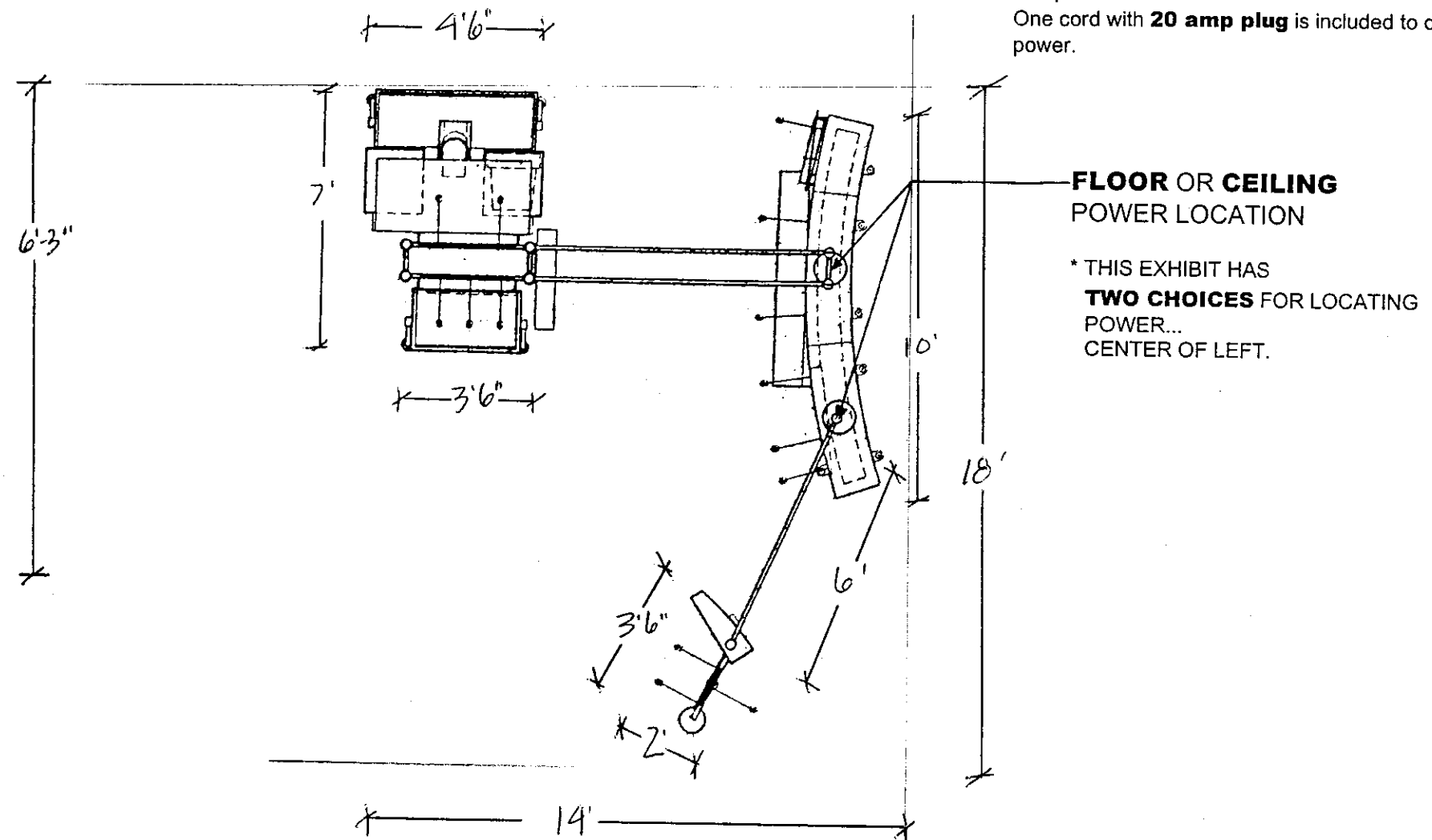
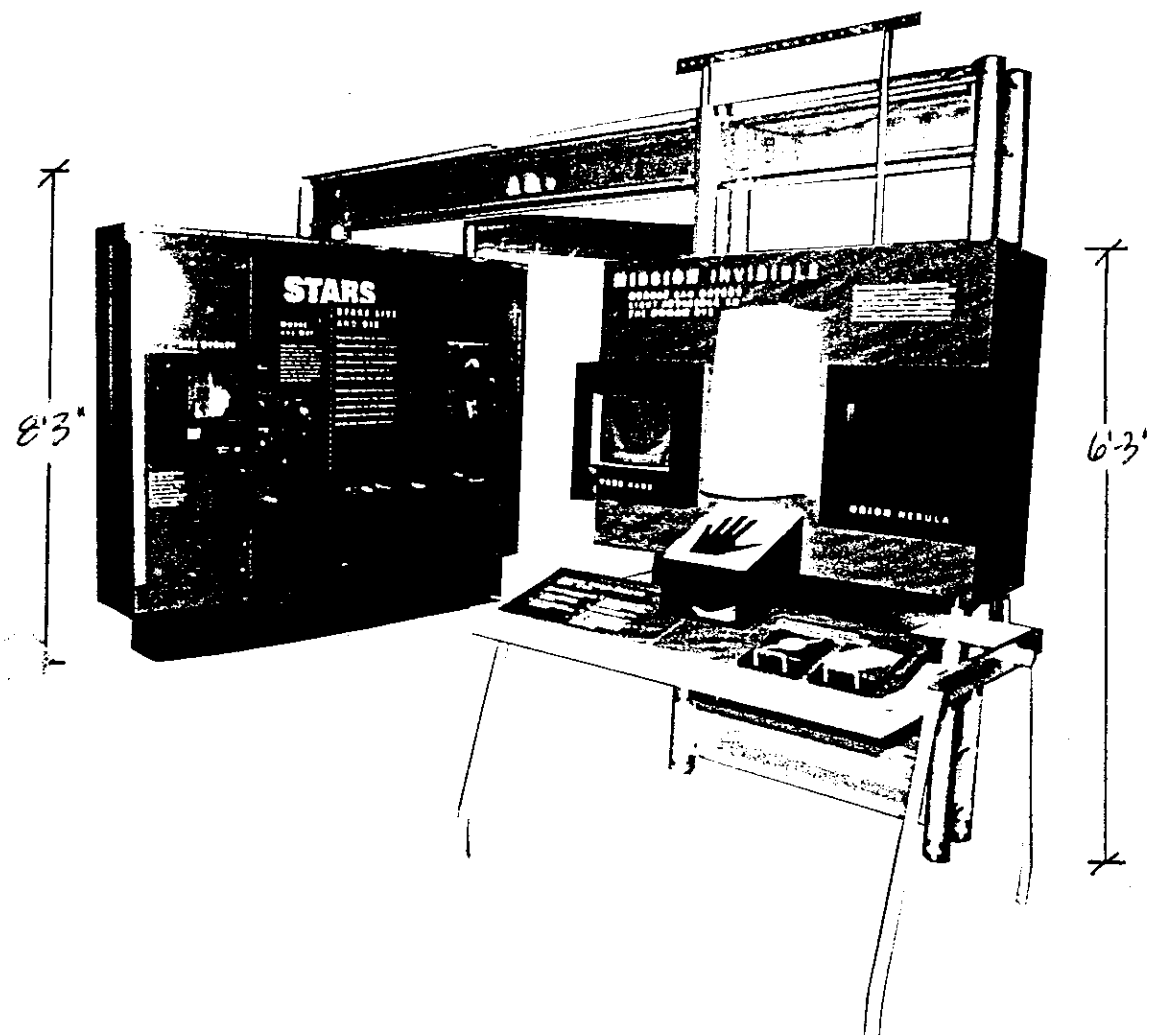
This exhibit occupies an 18' x 14' area, 8'-3" high, **approx. 252 square feet of space.**

### Electrical Planning:

This exhibit requires (1) 20 amp feed, either from the floor or ceiling. A NEMA 5-20R receptacle is required.

A minimum line voltage of 120 volts nominal is required at receptacle.

One cord with **20 amp plug** is included to connect to house power.



SCALE: 1/4" = 1'-0"



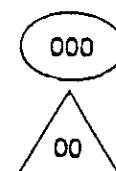
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—Crate Number



ASSEMBLE ICON BASES AND WALL

Locate parts required for set-up of this area as listed in each section of instructions. Include:

- 500 Area Hardware Box and Tools (Crate 20)
- Cleaning Kit is packed in Green Star Crate 51.

Locate position of 500 Area on gallery floor

Locate positioning of exhibit on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

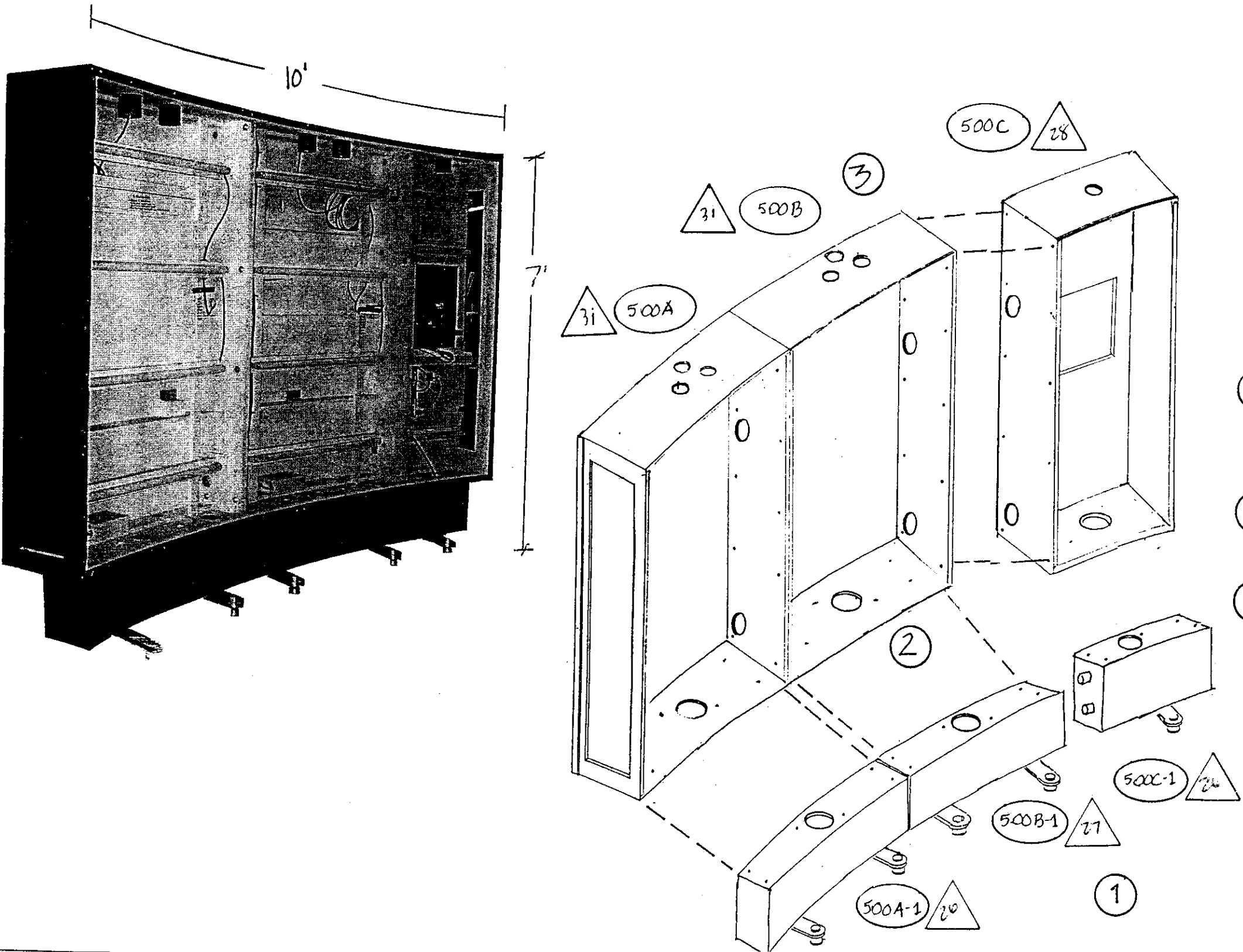
Locate Icon Wall Parts:

- (3) Icon Base Sections with attached Metal Feet (500A-1, B-1 and C-1, Crates 26 and 27)
- (3) Icon Wall Sections (500A, B, C, Crates 28 and 31)

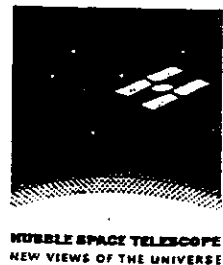
Assemble the Icon Bases and Walls

- Fit together the (3) Icon Bases with attached Metal Feet by aligning dowels, and position on the gallery floor in correct location for venue layout. Rotate the levelers on Metal Feet until the exposed bolt head is flush with the top of the Metal Foot and side seams are tight. Use a minimum 4' level to check level of assembled Bases, and adjust levelers if necessary.
- Position Icon Wall Section 500B to Icon Base Section 500B-1 in the middle of the 3-section Icon Wall assembly. Connect Wall to Base using (6) 1/4-20 x 2" hex head bolts with flat and lock washers using 1/2" socket provided.
- Repeat with Icon Wall 500A to Base 500A-1 and Wall 500C to Base 500C-1. Then attach Icon Wall A to Wall B, and Icon Wall B to Wall C using (20) 5/16-18 x 2" hex head bolts with large fender washers on both sides of the joint. Bolts may need to be tapped with a rubber mallet to get them through holes.

Icon Wall assembly is now complete until the rest of the Area is assembled, after which the balance of the Icon Wall will be finished.



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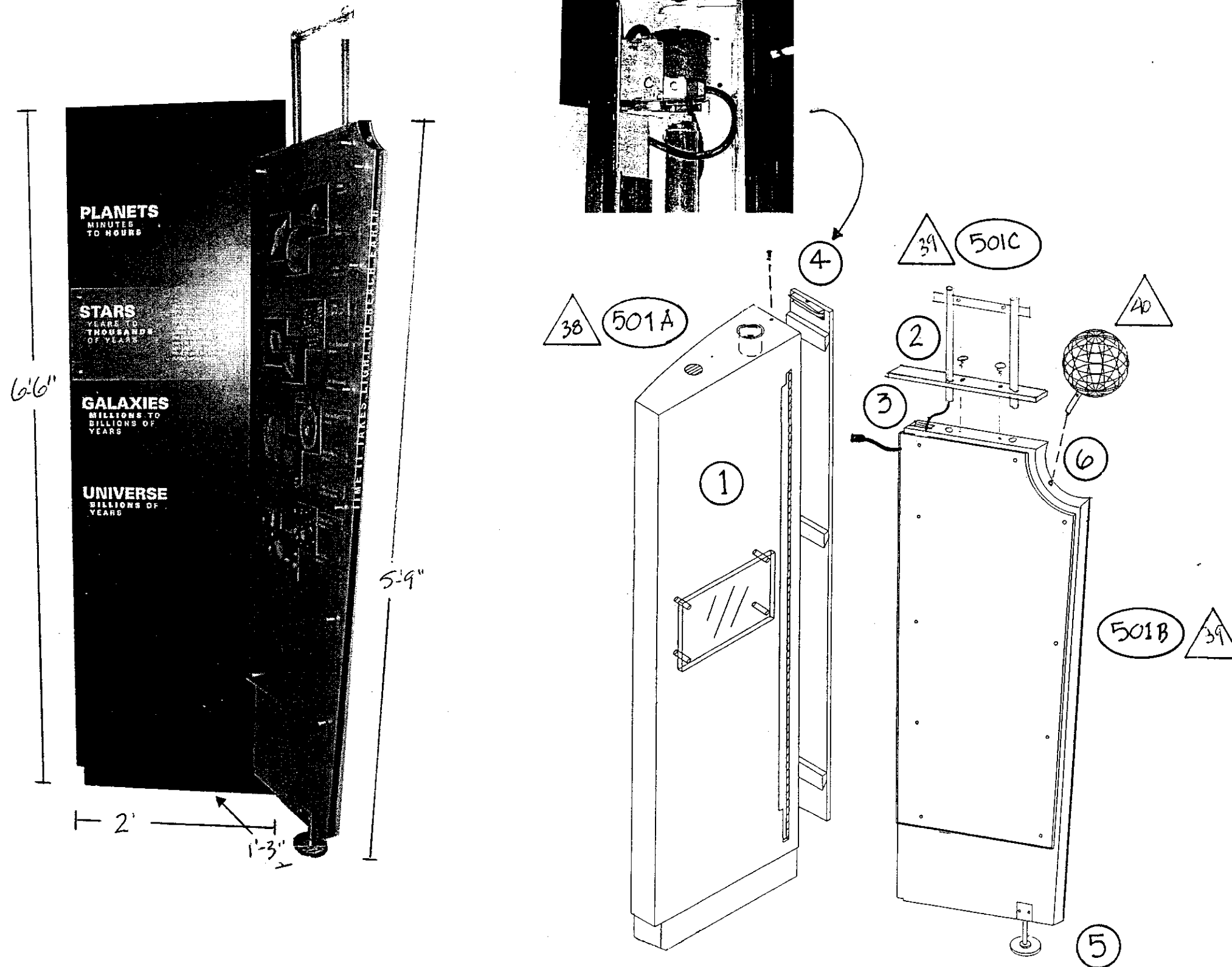
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**ASSEMBLE SPACE TIME MARKER****Locate Space Time Market Parts:**

- (1) Monolith "STARS" (501A, Crate 38)
- (1) Graphic Wing Panel (501B, Crate 39)
- (1) Light Bar (501C, Crate 39)
- (1) Globe (Crate 40)

**Assemble Space Time Marker**

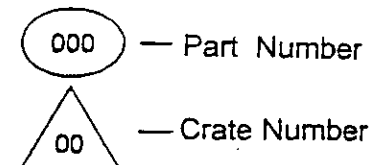
- ① Position Black Monolith 501A per venue layout. To access inside of monolith, remove screw at top of end panel and lift end panel up from bottom. Note: This Monolith is not very stable when left standing alone.
- ② Attach Light Bar 501C to top of Graphic Wing Panel 501B using (2) 1/4-20 x 1" s.s. flat head allen screws.
- ③ Thread electrical cable from Light Bar into Monolith as Graphic Wing is inserted into slotted opening in Monolith. Attach Graphic Wing at inside of Monolith using (4) 1/4-20 x 1" allen head cap screws.
- ④ Plug power-con from Light Bar into transformer in Monolith.  
**Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.
- ⑤ Use leveler foot on Graphic Wing to level the Space Time Marker in position.
- ⑥ Insert Globe 501D into tube in curved corner of Graphic Panel. Align the hole in Globe post with set screw in receptacle tube and tighten Globe in position using the individual 5/64 allen wrench provided.

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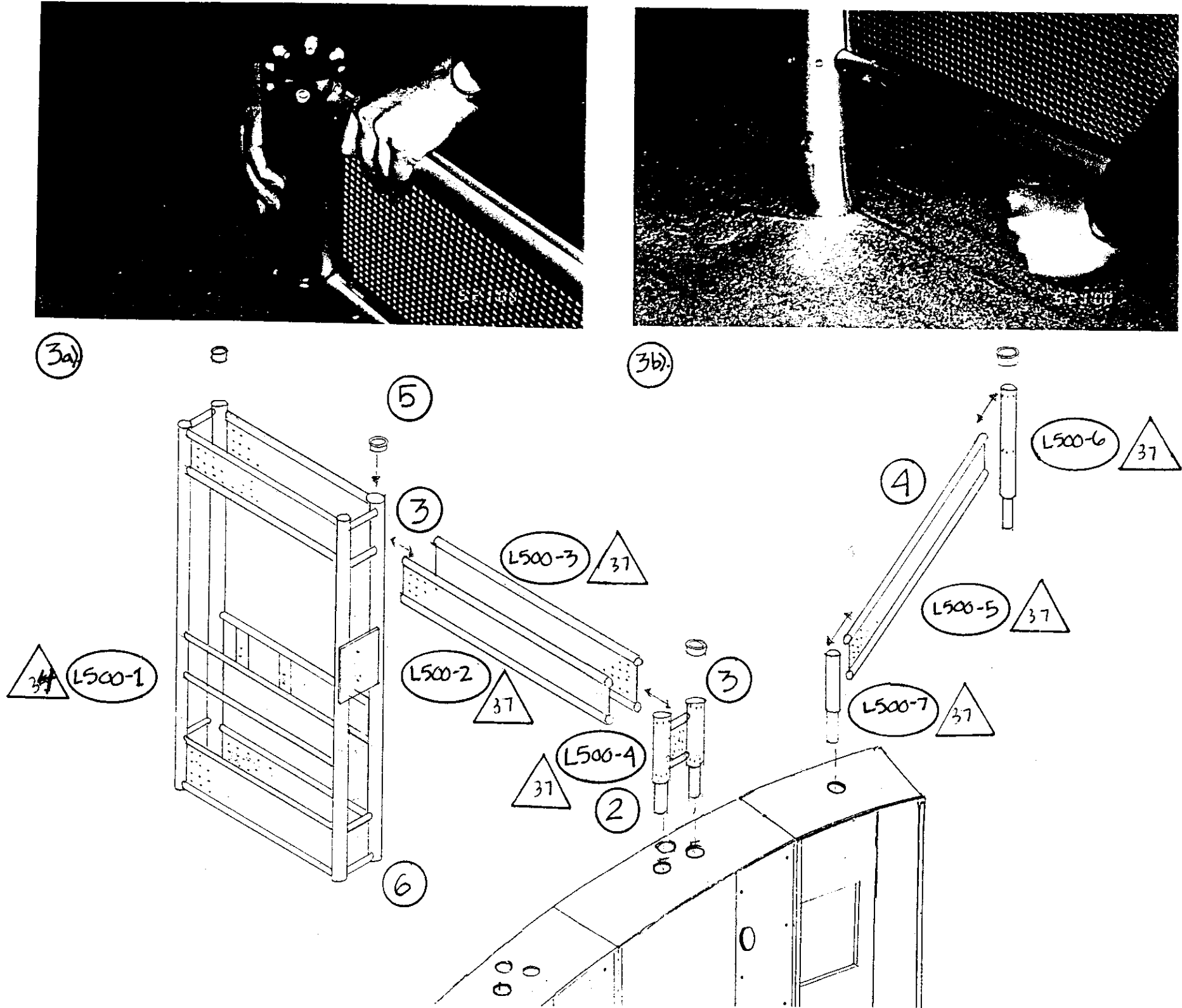
ASSEMBLE LEITNER

Locate Leitner Parts:

- (1) Leitner Box Assembly (L500-1, Crate 34)
- (2) Leitner 89" Straight Lengths (L500-2, -3, Crate 37)
- (1) Leitner Assembled End Section (L500-4, Crate 37)
- (3) Leitner pieces to connect Space Time Marker (L500-5, -6 and -7, Crate 37)
- (8) Leitner 1" Top Rings (Crate 37)

Assemble Leitner and attach to Space Time Marker and Icon Wall for support

- 1 Position Leitner L500-1 on floor roughly according to layout.
- 2 Locate Leitner L500-4 and insert sleeves into holes in the top of the specific Icon Wall section as indicated by the venue layout. (Note: L500-4 will fit into either the A or B Wall Sections; choose the one indicated by the layout for this exhibition.)
- 3 Attach L500-2 and -3 to L500-4 and L500-1 using the long red handled Leitner tools provided. Assemble by:
  - a). aligning the joint and locating the bolt head inside the small diameter horizontal Leitner tube, then
  - b). inserting the red handled Leitner tool into the bolt head located inside the tube end. APPLY SOME PRESSURE TO COMPRESS SPRING BEHIND THE BOLT HEAD while screwing in the bolt.
- 4 Attach L500-5, -6 and -7 together again using red handled Leitner tool. Insert long L500-6 into the top of the Space Time Monolith (501A) and the short end L500-7 into the Icon Wall Section indicated in the venue layout. Insert at the same time at each end, keeping assembly level while inserting.
- 5 Install (8) 1" high Leitner Top Rings into vertical Leitner parts L500-1, -4, -6 and -7 to finish off tops of posts.
- 6 Level Leitner sections as needed using leveler feet attached.



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ASSEMBLE ADDITIONAL LEITNER

Locate additional Leitner Parts:

- (1) Wire Tray (L500-8, Crate 37)
- (1) Junction Box and extension cord for STM (L500-9, Crate 37)
- (1) Metal Wire Tube (L500-10, Crate 37)

- 7 Position Wire Tray L500-8 on top of Leitner between L500-2 and -3.  
Position Metal Wire Tube L500-10 through hole in end of Tray, extending down into top of icon.

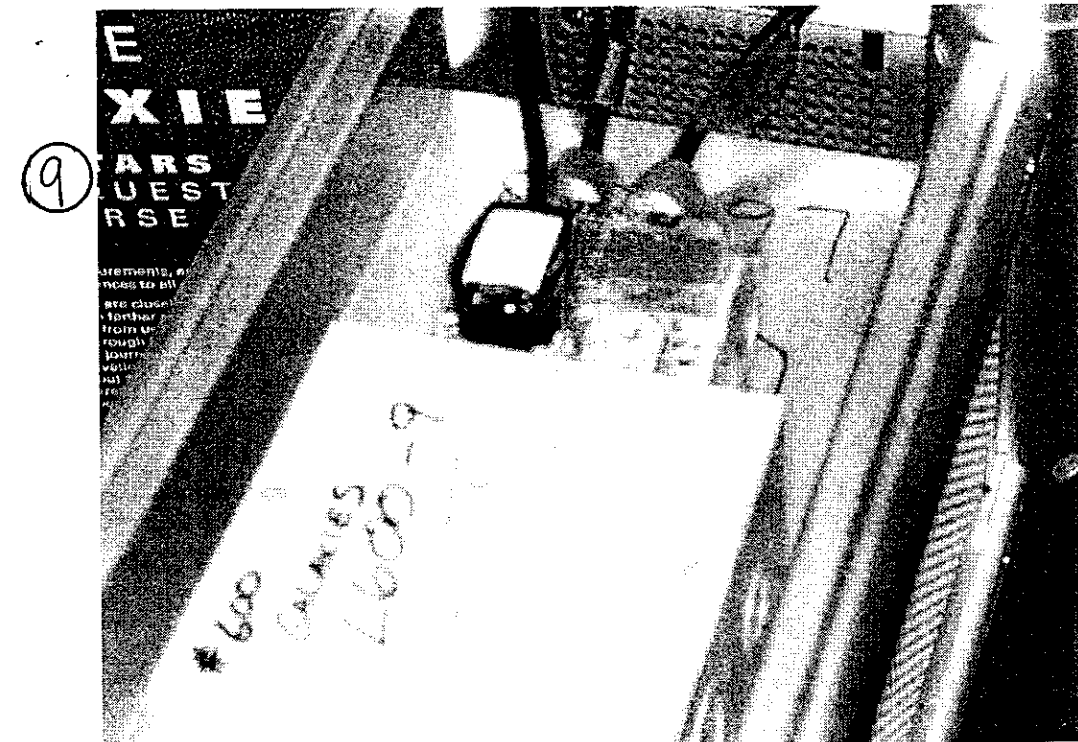
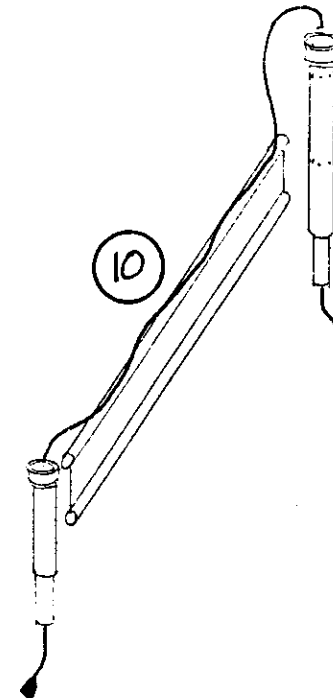
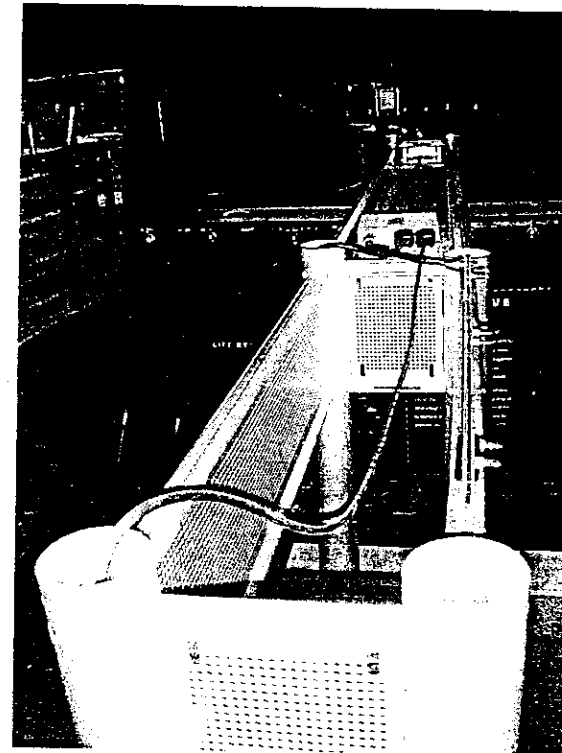
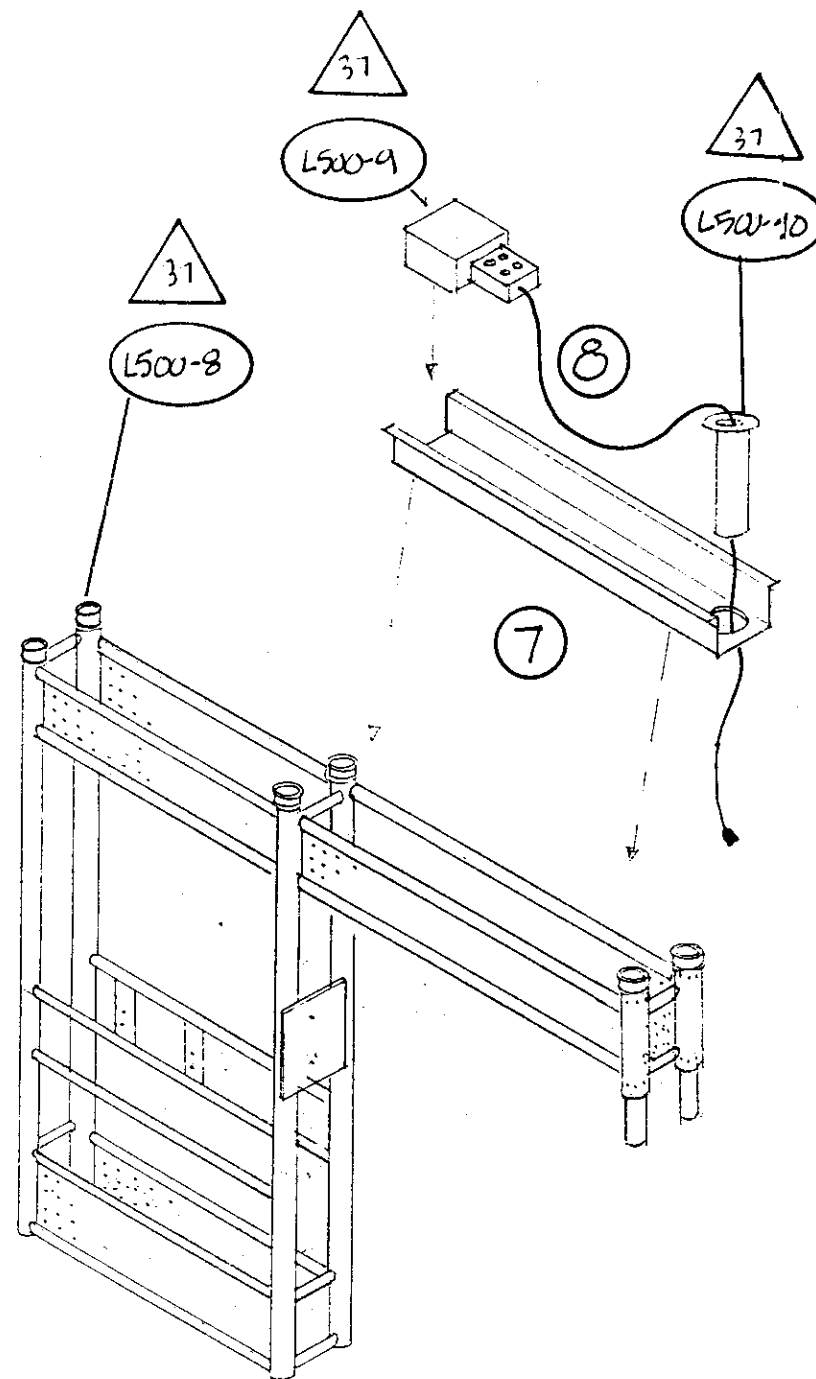
Connect electrical across Leitner into Junction Box

- 8 Place Junction Box L500-9 in Wire Tray, per position markings inside Tray. Thread wire from junction box across the Wire Tray, down through the Metal Wire Tube into the Icon Structure.
- 9 Plug in all electrical feeds from top of Leitner assembly into Junction Box in Wire Tray, matching color coded markings.

Connect electrical for Space Time Marker into Icon

- 10 Locate extension cord for Space Time Marker inside Icon Wall 500A, and connect inside Space Time Marker. Pass up through L500-6, across top of L500-5 and down through L500-7 into Icon. Plug in to the outlet closest to the point of entry.

Clean any visible black abrasions off Leitner using the Leitner pumice provided in tool box, following label instructions.



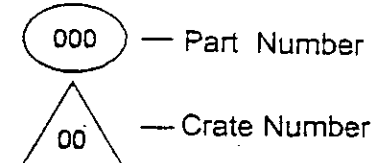
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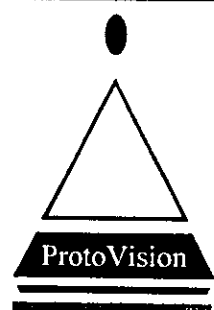
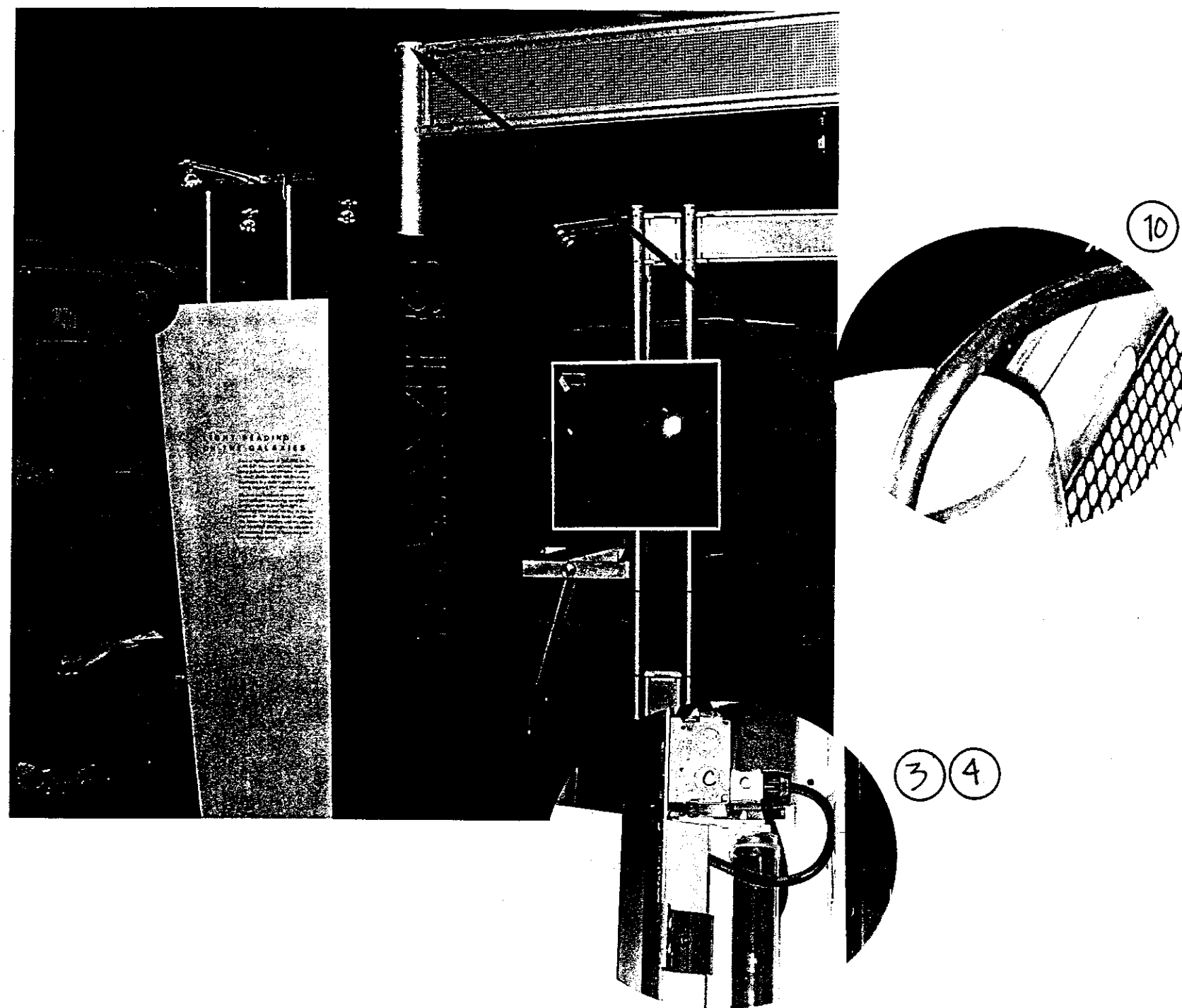
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## ICON READER RAIL AND MONITOR BOX

## Locate Icon Reader Rail and Monitor Box Parts:

- (1) Icon Reader Rail (500G, Crate 28)
- (1) Monitor Box (503, Crate 28)
- (1) 13" Sony Monitor (503, Crate 50)
- (1) Adtech Drive "STAR LIFE CYCLES" (#\_\_, Crate 49)

## Attach Icon Reader Rail to back of Icon

- ① Align Icon Reader Rail 500G with cleat and inserts on back side of Icon Walls. Lower Icon Reader Rail over cleat and attach to metal angles (inside Icon) using (2) 1/4-20 x 1" hex head bolts at ends of cleat, and (1) longer 1/4-20 x 2 1/2" hex head bolt at center of cleat. Use 3" socket extension to enable access to bolt heads.

## Install Monitor Enclosure and Monitor

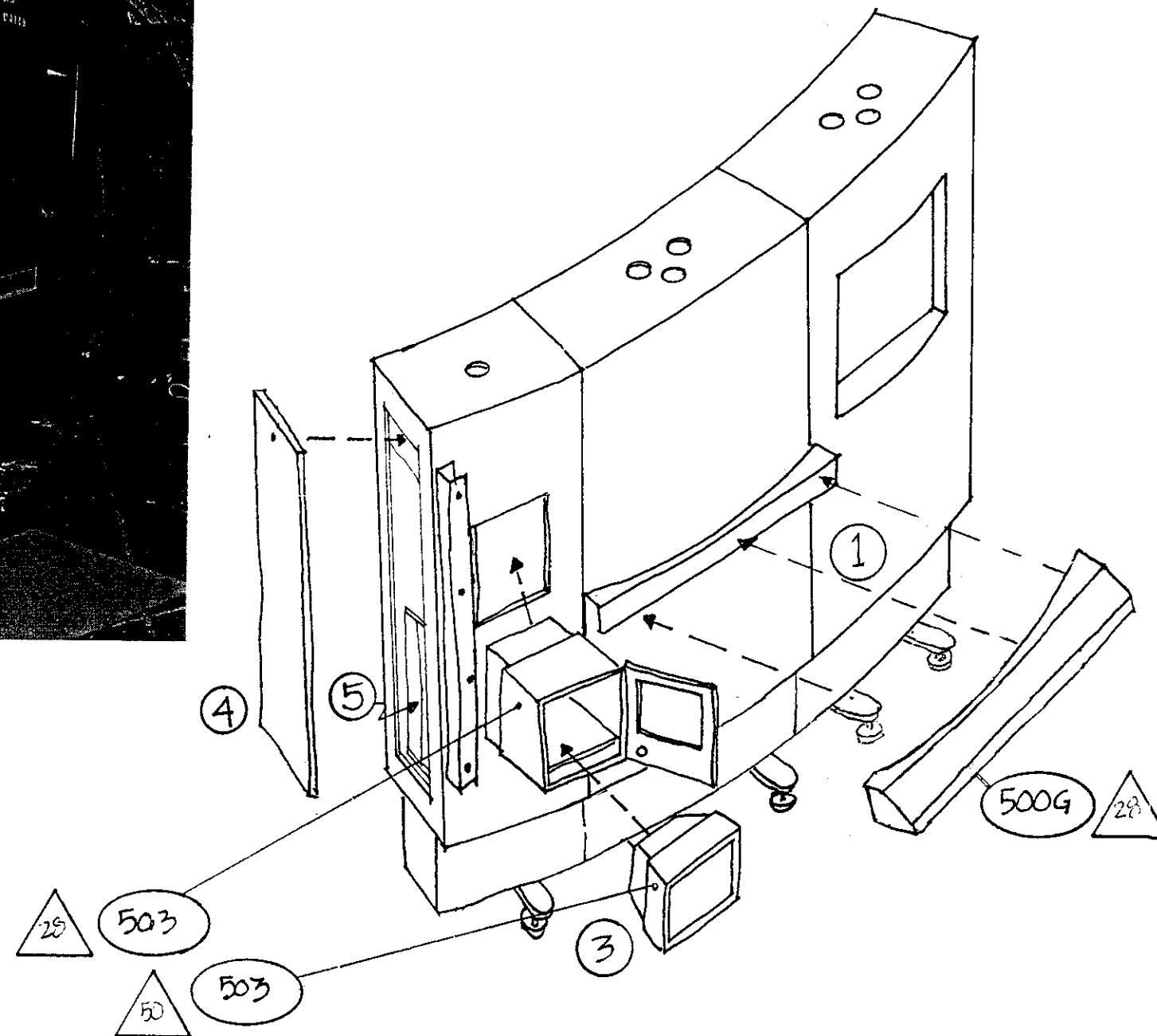
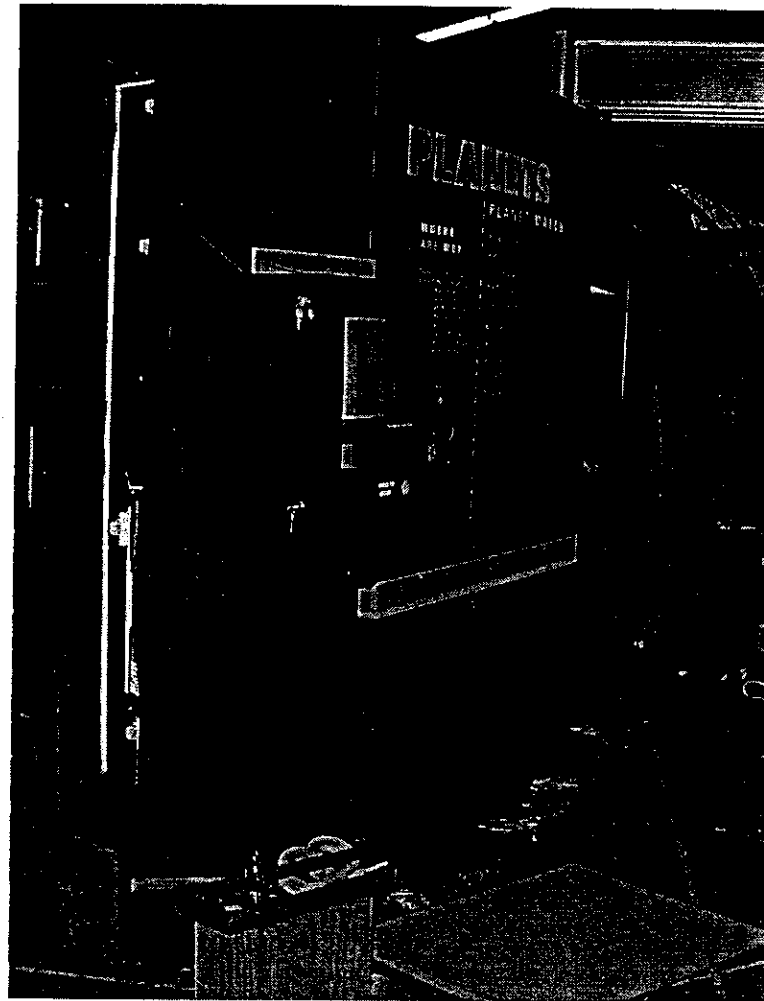
- ② Slide Monitor Enclosure 503 into opening in Icon from the front, and bolt into place using (4) 1/4-20 x 2" hex head bolts with flat washer and hex nut.
- ③ Install 13" Sony Monitor 503 through front door of Monitor Enclosure. From inside the Icon, connect video and audio cables between Adtech Player and Monitor, matching colored markings. Plug Monitor into power strip. Check that Adtech is still plugged into power strip, and that power strip is still plugged into duplex outlet, and that the switch is turned on.

## Adtech Drive

- ④ Access to Adtech players in Icon Wall is in the narrow end of Icon, nearest the Monitor Enclosure. To access the player, remove the (1) 1/4-20 x 1 1/2" black button head allen screw with black washer at top of access panel, and lift off access panel.
- ⑤ Locate Adtech Drive #Q "Star Life Cycle Animation", and use key to install and lock in place. (**Note: Adtech will not play unless drive is locked in place.**)

Test Adtech drive before completing Icon Assembly.

- ⑥ Replace using same 1/4-20 x 1 1/2" black screw and washer.

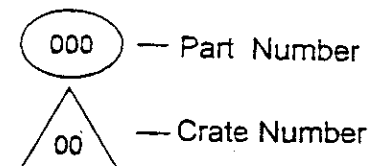


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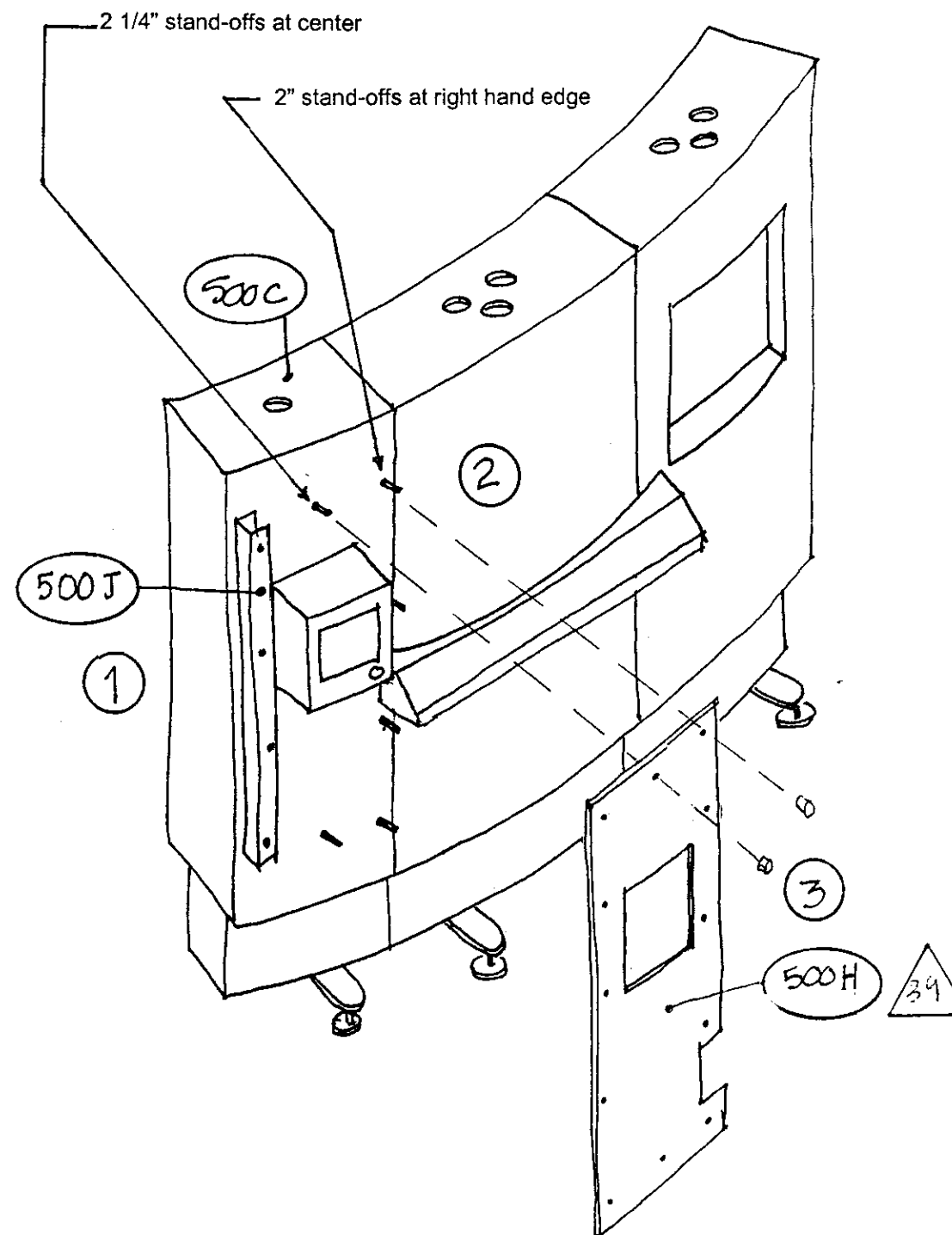
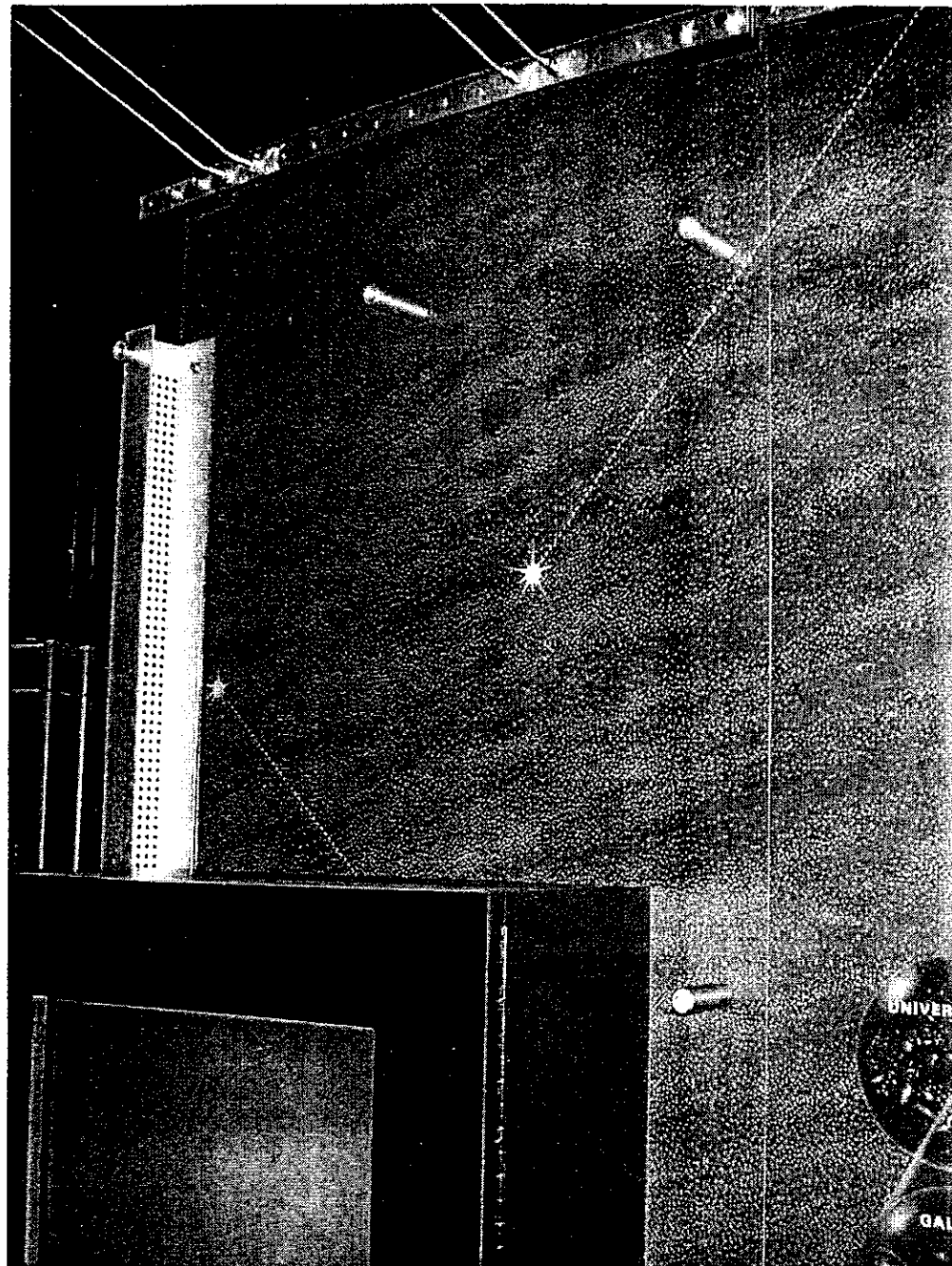
ATTACH BLUE ACRYLIC GRAPHIC

Locate Blue Acrylic Graphic Parts:

- (1) Blue Acrylic Panel: "LIFE CYCLES"  
(500H, Crate 39)

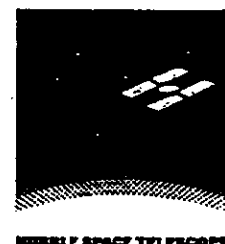
Attach Blue Acrylic Panel

- ① Perforated Metal Bracket 500J arrives attached at left hand edge of Icon Wall 500C. Stand-offs (with caps) on Bracket should be facing out.
- ② From Hardware Box, install (4) 2" and (2) 2 1/4" stand-offs (with caps) to hold Blue Acrylic Panel in position. Install the 2" stand-off along the right hand edge, and the 2 1/4" at center top and bottom. Install all from the inside of the Icon, using (6) 5/16-18 x 1" black button head allen screws with washer and lock-washer. Insert screw through Icon and into stand-offs on finish side.
- ③ Remove caps from all (10) stand-offs and position Blue Acrylic Graphic over protruding threaded posts. Replace caps on all (10) stand-offs to secure Blue Acrylic in position. **Note:** Caps ship attached to stand-offs in the Hardware Box, or attached inside Icon 500C.



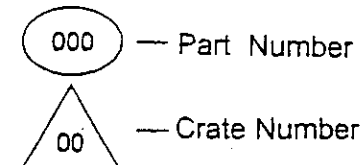
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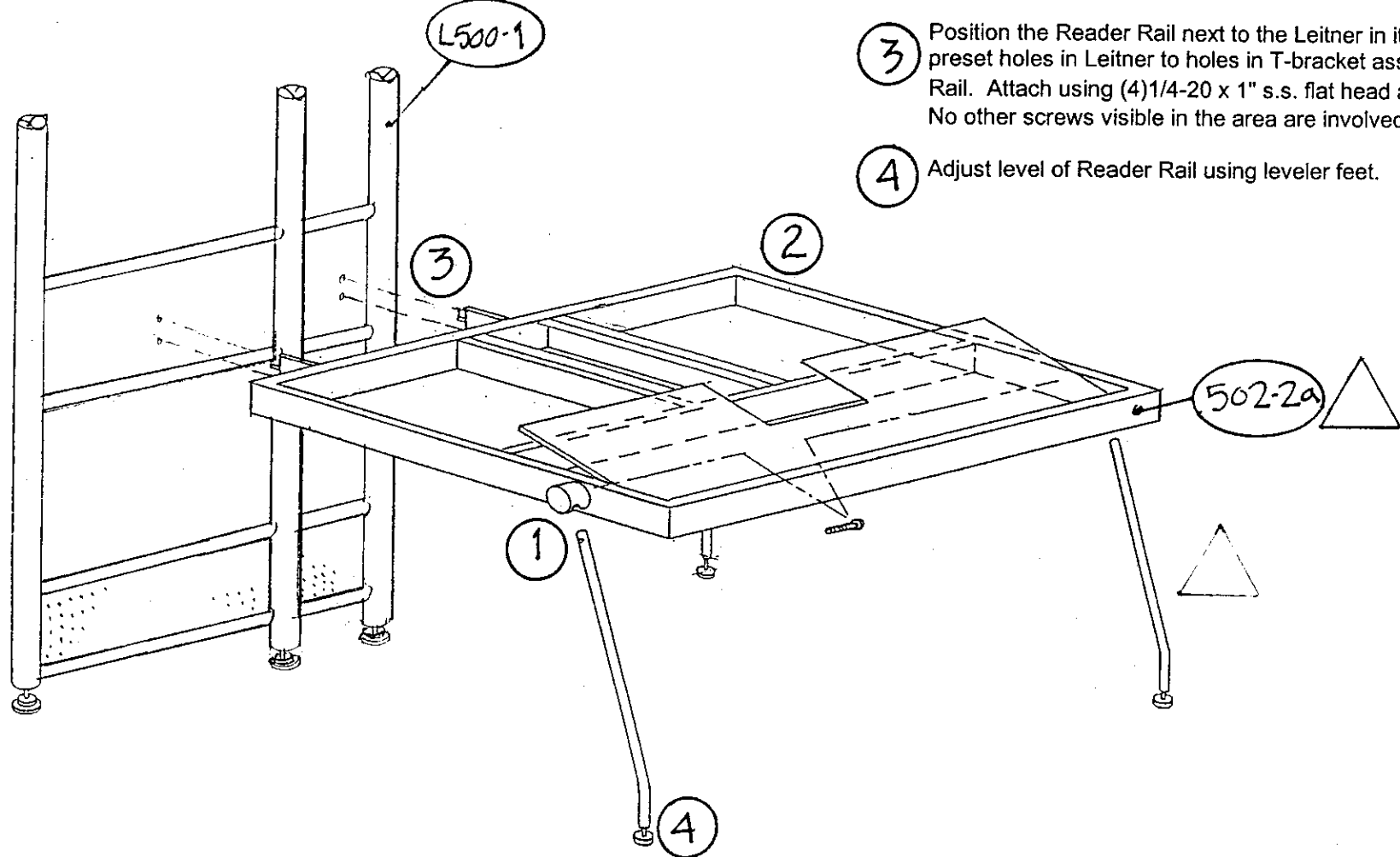
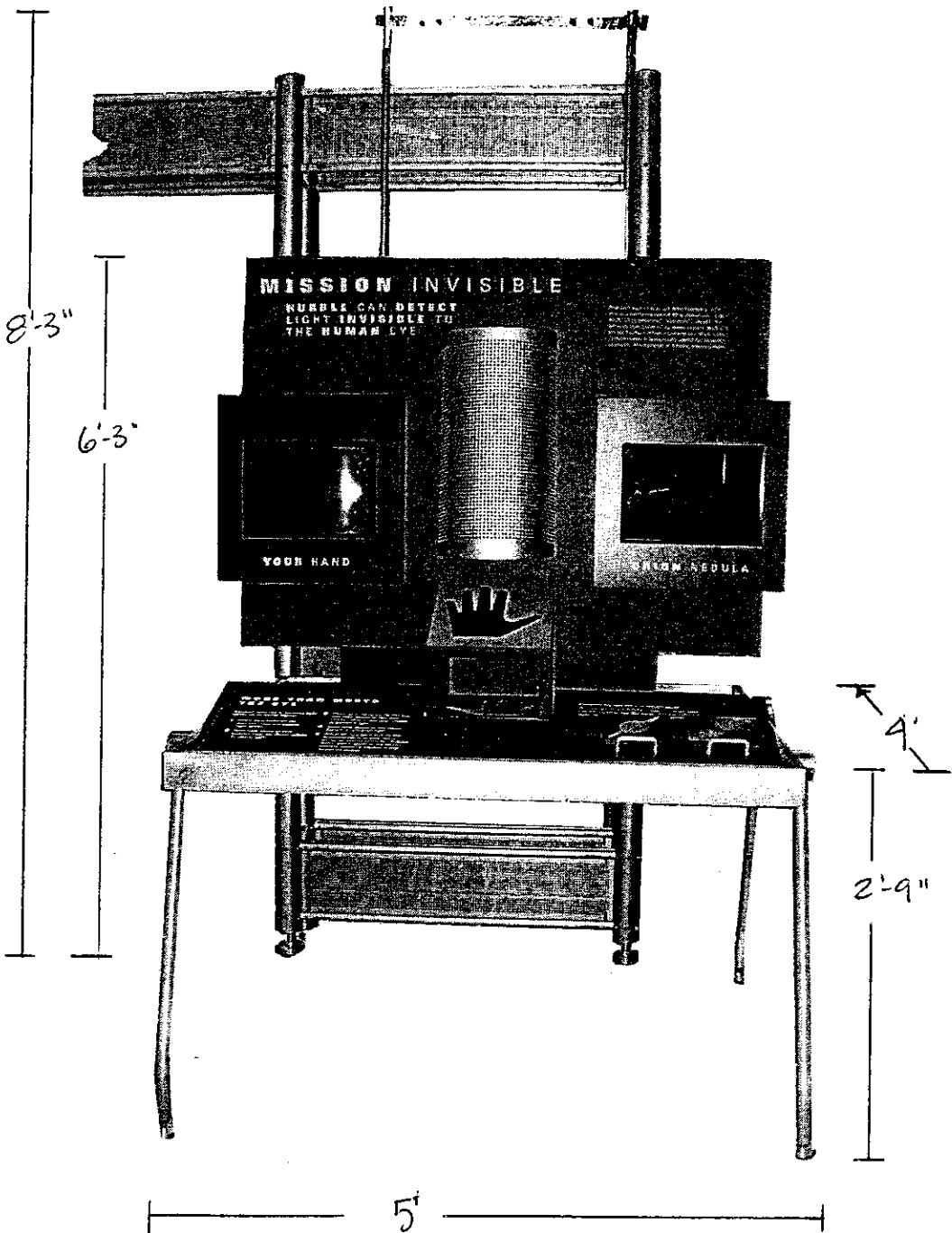
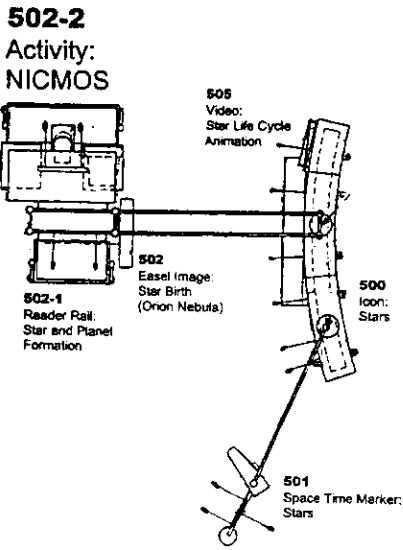
INSTALL NICMOS

Locate NICMOS Parts:

- (1) NICMOS Reader Rail with (3) Legs (502-2a, Crate 43)
- (1) NICMOS Casework (502-2, Crate 43)
- (1) NICMOS Light Bar (502-2b, Crate 43)
- (1) NICMOS IR Camera (502-2c, Crate 49)
- (1) NICMOS 14" Monitor (502-2d, Crate 50)

Install NICMOS Reader Rail

- Position the front two Legs facing forward, insert into underside of cylindrical receptacles on side of Reader Rail and attach into receptacle using (1) 5/16-18 x 2" s.s. button head allen screw on each Leg.
- Position the rear Leg facing backwards, insert into underside of cylindrical receptacle on side of Reader Rail and attach into receptacle using (1) 5/16-18 x 2" s.s. button head allen screw.
- Position the Reader Rail next to the Leitner in its final location. Align preset holes in Leitner to holes in T-bracket assembly on the Reader Rail. Attach using (4) 1/4-20 x 1" s.s. flat head allen screws. **Note:** No other screws visible in the area are involved in this connection.
- Adjust level of Reader Rail using leveler feet.

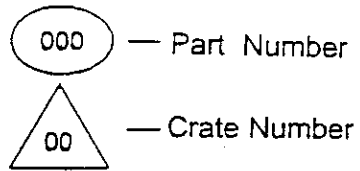


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INSTALL NICMOS

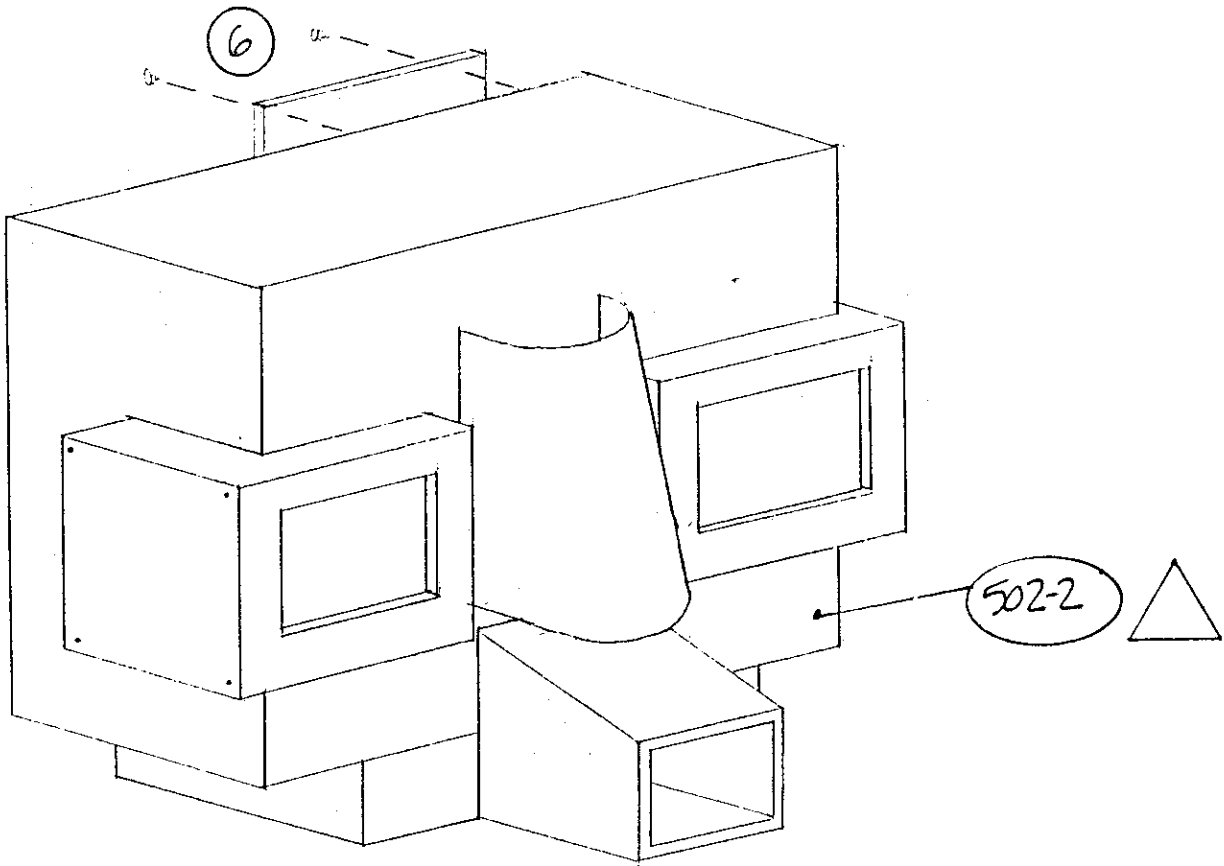
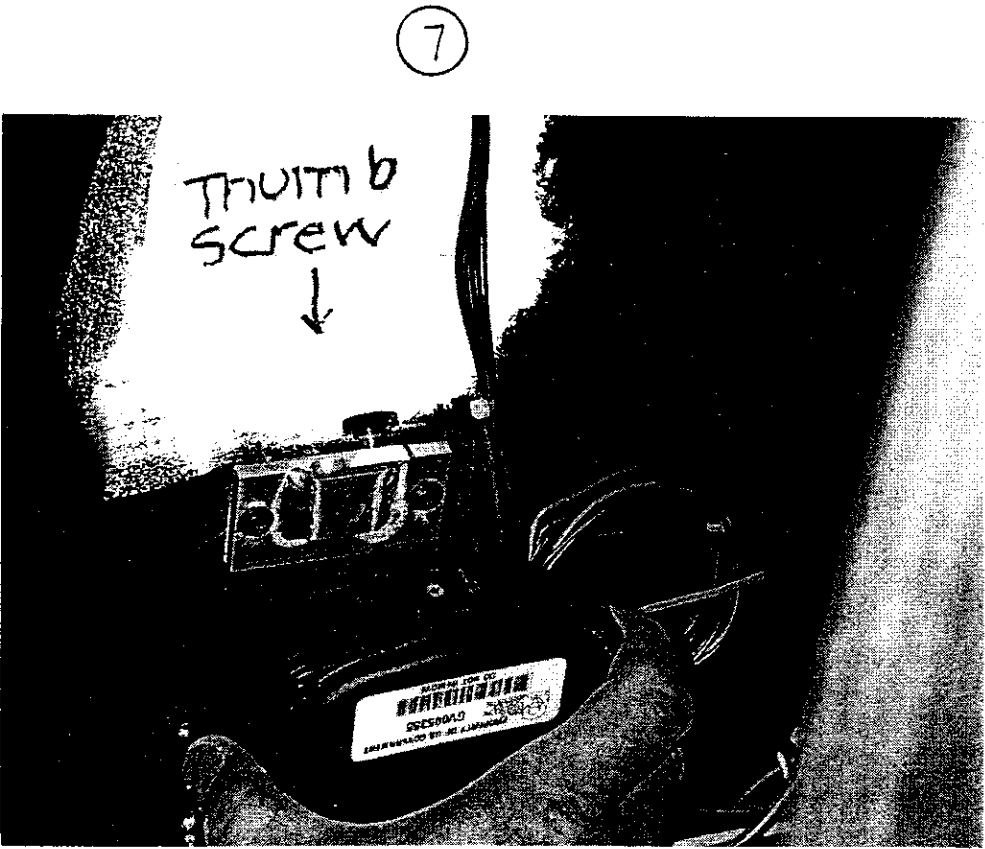
Remove NICMOS Casework from crate

5 **Note:** NICMOS Casework is very heavy. Using four installers, slide tray holding NICMOS out of the crate.

Install IR Camera

6 With Casework on sawhorses, remove (6) 1/4-20 x 1 1/2" black button head allen screws from back panel, and remove panel.

7 Inside the Casework, just above the round opening in the front, locate the black thumb screw in the aluminum mount for the IR Camera. Loosen the thumb screw, slide IR Camera 502-2c onto mount and tighten thumb screw. Connect white cable from IR Camera in to junction box to the right, matching markings.



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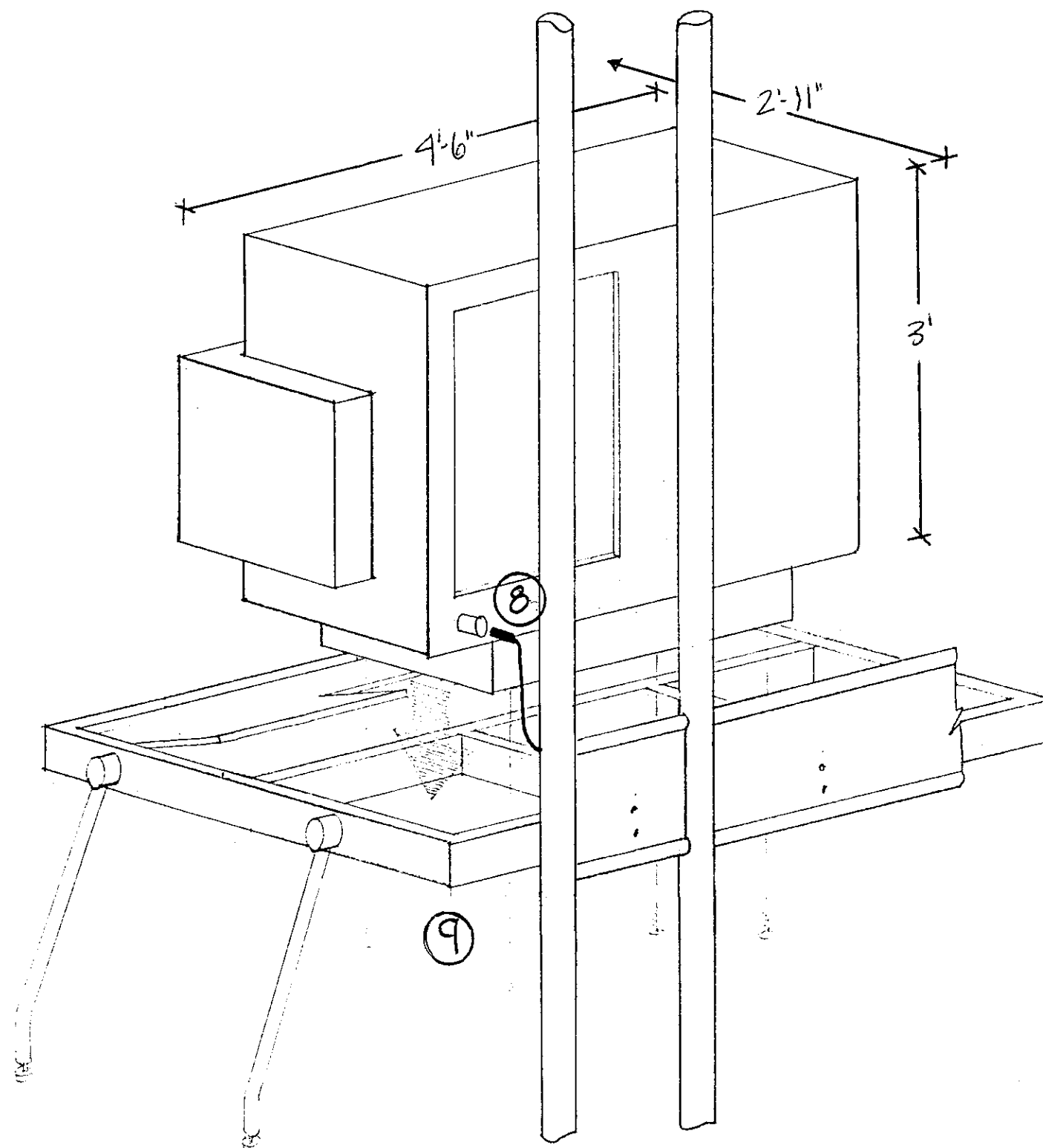
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**INSTALL NICMOS****Install NICMOS Casework**

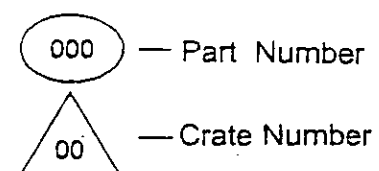
- ⑧ With a minimum of three installers, lift NICMOS and hold it about 4" or 5" over Reader Rail to allow access for fourth installer to feed power cord from Lietner. Feed power cord into metal wire tube and into casework while lowering Casework to be centered on Reader Rail.
- ⑨ Secure NICMOS Casework from underside of Reader Rail using (6) 1/4-20 x 1" s.s. socket head cap screws with lock washer.

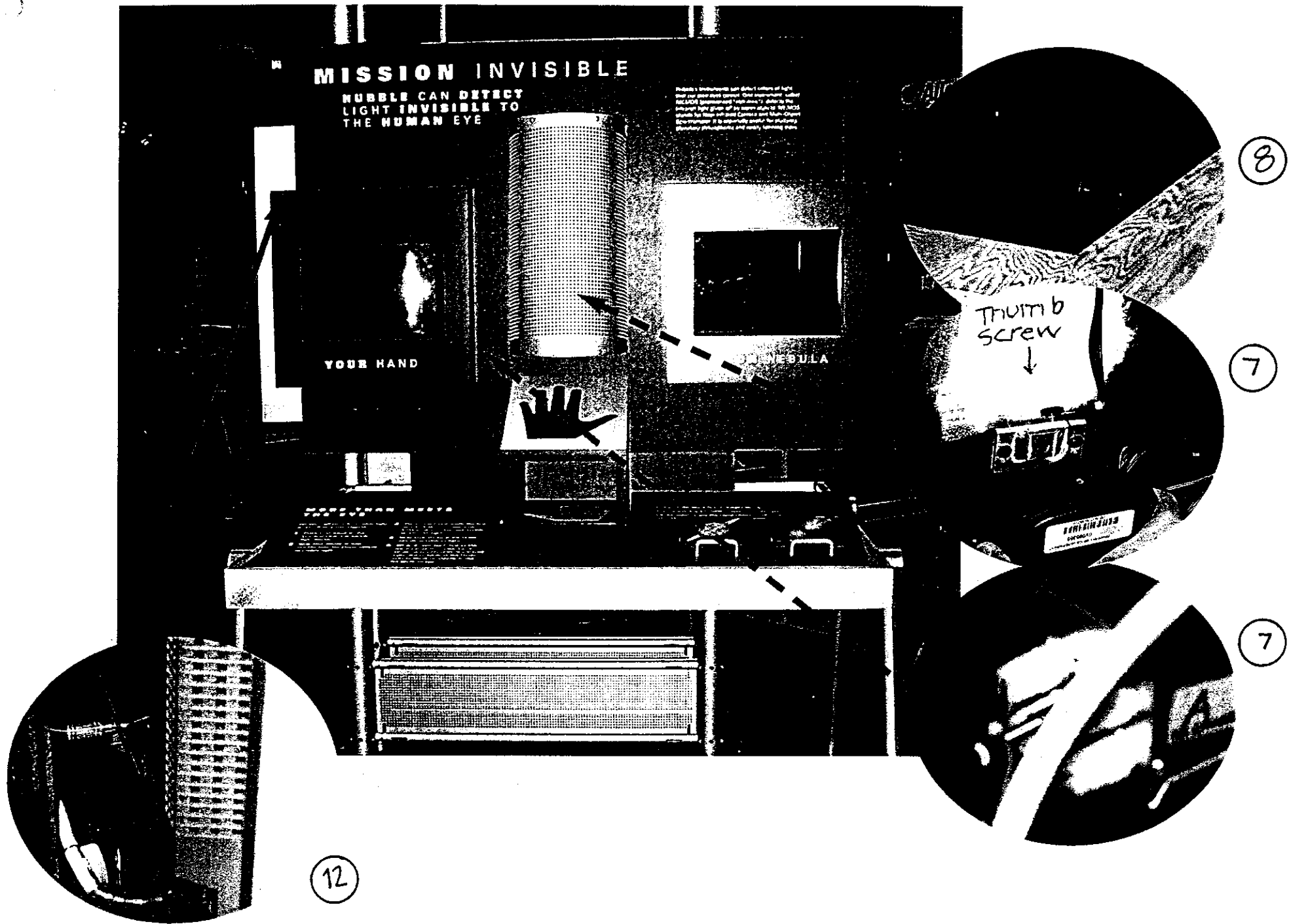
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**INSTALL NICMOS****Install 14" Sony Monitor into NICMOS**

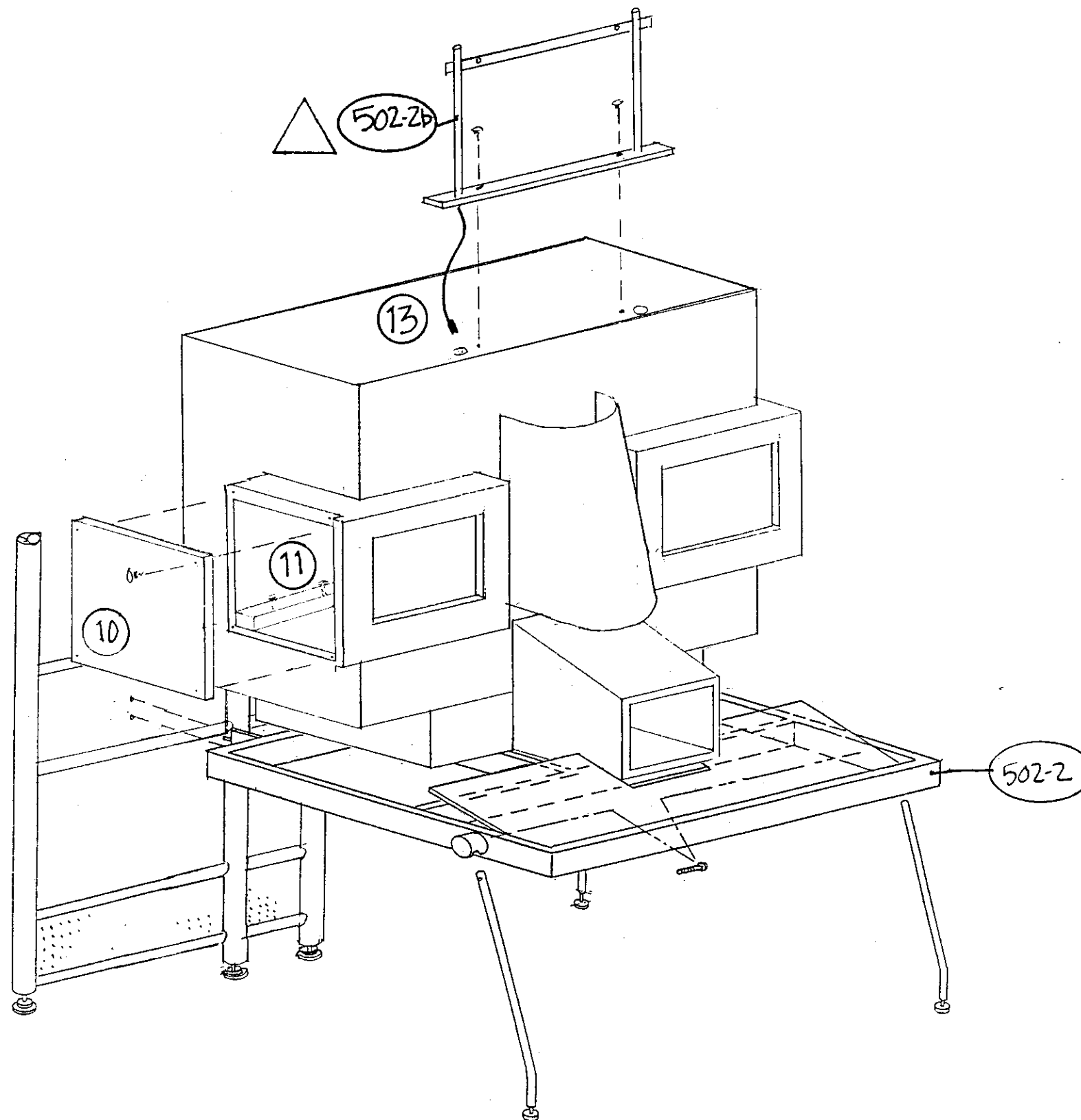
- (10) Remove (4) 1/4-20 x 1 1/2" black button head allen screws from left (monitor) side panel to access interior of Casework. **Note:** Right side access panel only needs to come off for cleaning.
- (11) Locate 14" Sony Monitor and install through side panel.
- (12) Attach Video and Power cords behind monitor, matching markings.

**Install NICMOS Light Bar**

- (13) Feed power cord from Light Bar through hole in top of Casework. Attach NICMOS Light Bar 502-2b to top of NICMOS cabinet using (2) 1/4-20 x 1" button head allen screws.

**Connect to house power**

- (14) Plug power-cons from Leitner and from Light Bar into the white transformer box, matching markings. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.

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# ATTACH LIGHT BOX WITH IMAGE

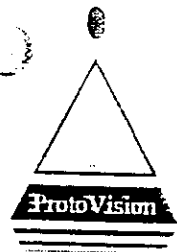
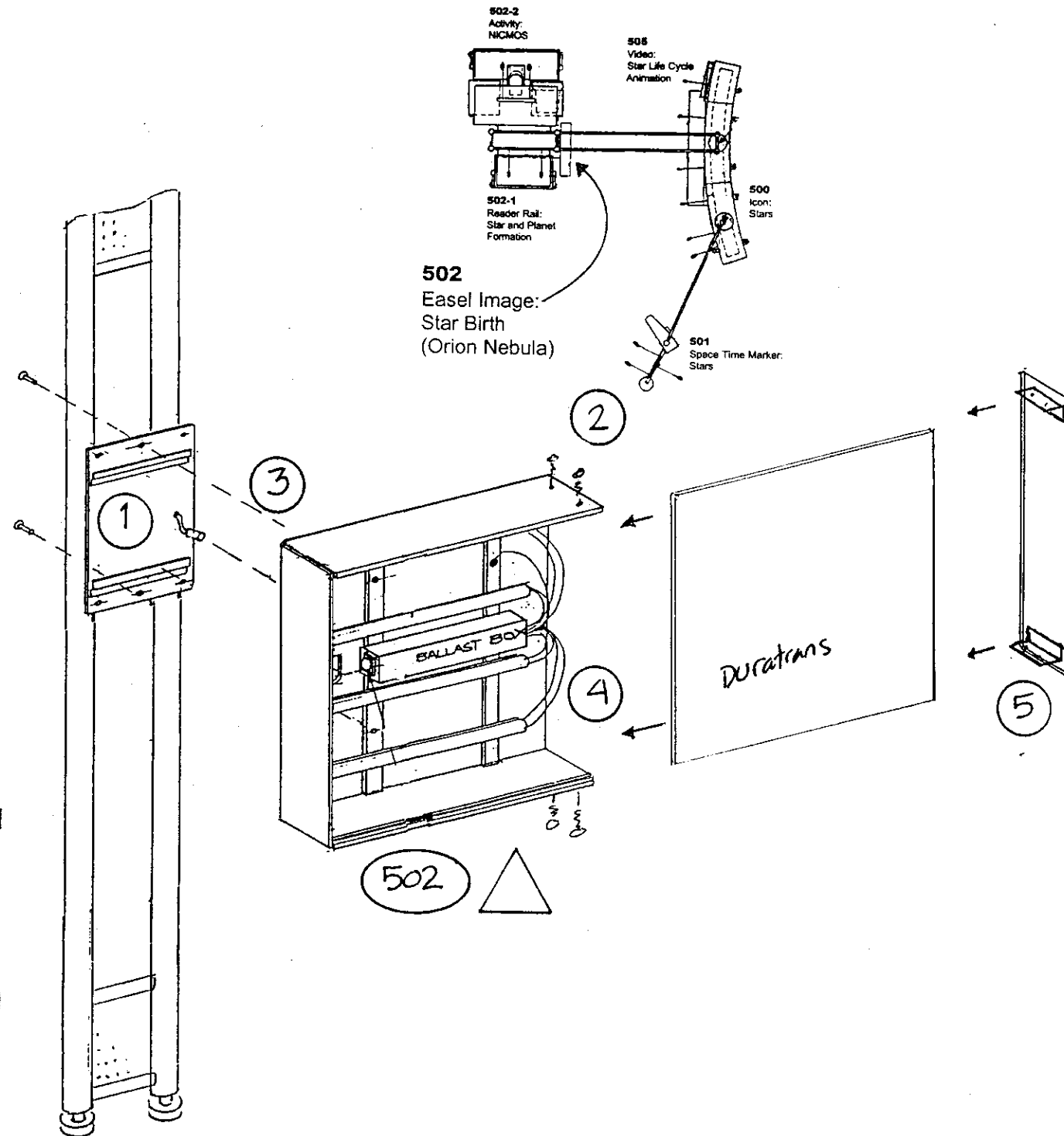
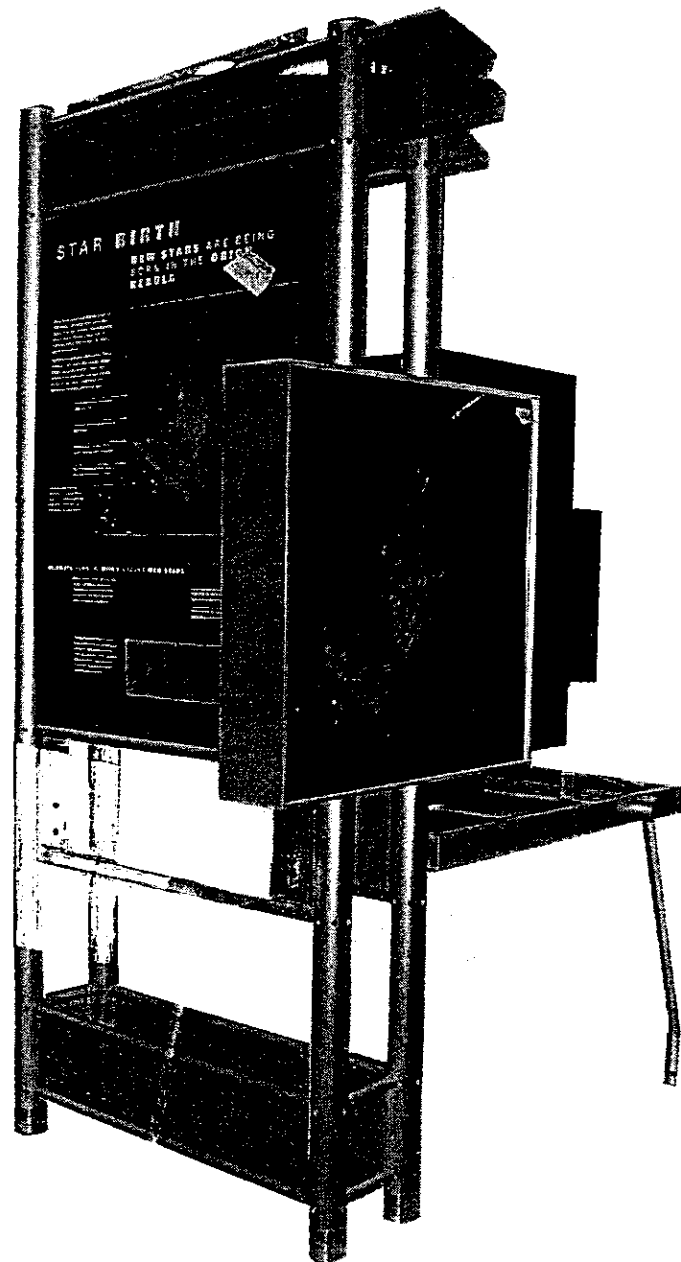
## Locate Easel Image Light Box:

- (1) Easel Image Light Box: "STAR BIRTH: ORION NEBULA" (502, Crate 36)

**Note:** These boxes are very heavy; two installers are recommended for lifting.

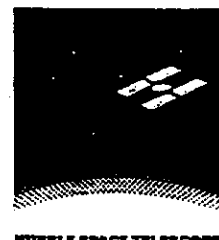
## Install Easel Image Light Box

- 1 Locate position of Light Box and check that numbers correspond to those on box.
- 2 Remove (4) 1/4-20 x 1" s.s. flat head allen screws in top and bottom of RIGHT end of Light Box. This will release side panel and access the inside (**Note:** All other screws in Light Boxes are security screws and are not to be removed). **The transparency does not need to be removed to install Light Boxes or connect power.**
- 3 Two installers lift Light Box into position slightly away from cleat, as one of them feeds cable from Leitner through hole in back of Light Box. Then lift box slightly higher so it is above cleats and lower Light Box onto cleats. Install (2) 1/4-20 x 1" s.s. button head screws from behind mounting plate to secure Light Box in place.
- 4 To connect power, reach in the open Light Box end and connect power-con into the socket on the white transformer box. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.
- 5 Once power has been connected, reinstall Light Box side panel by replacing the (4) flat head allen screws.



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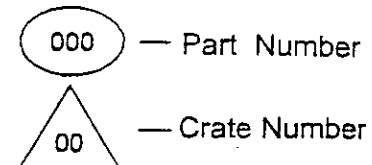
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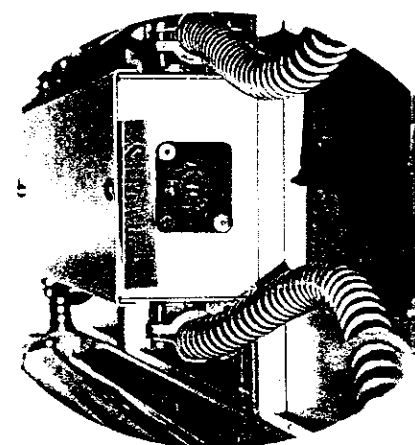
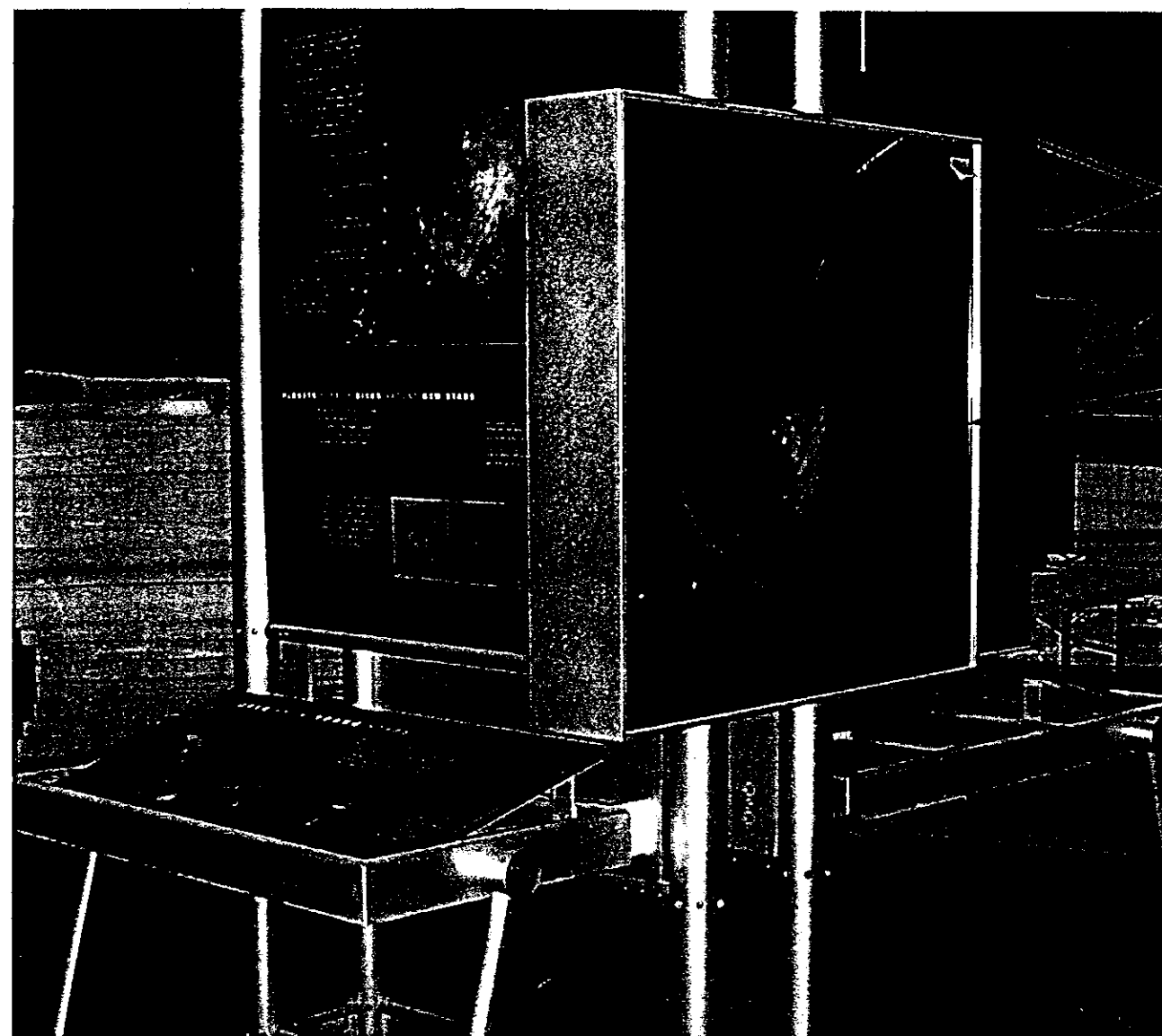


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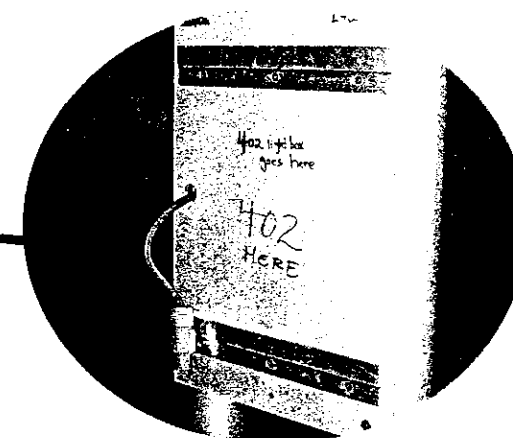
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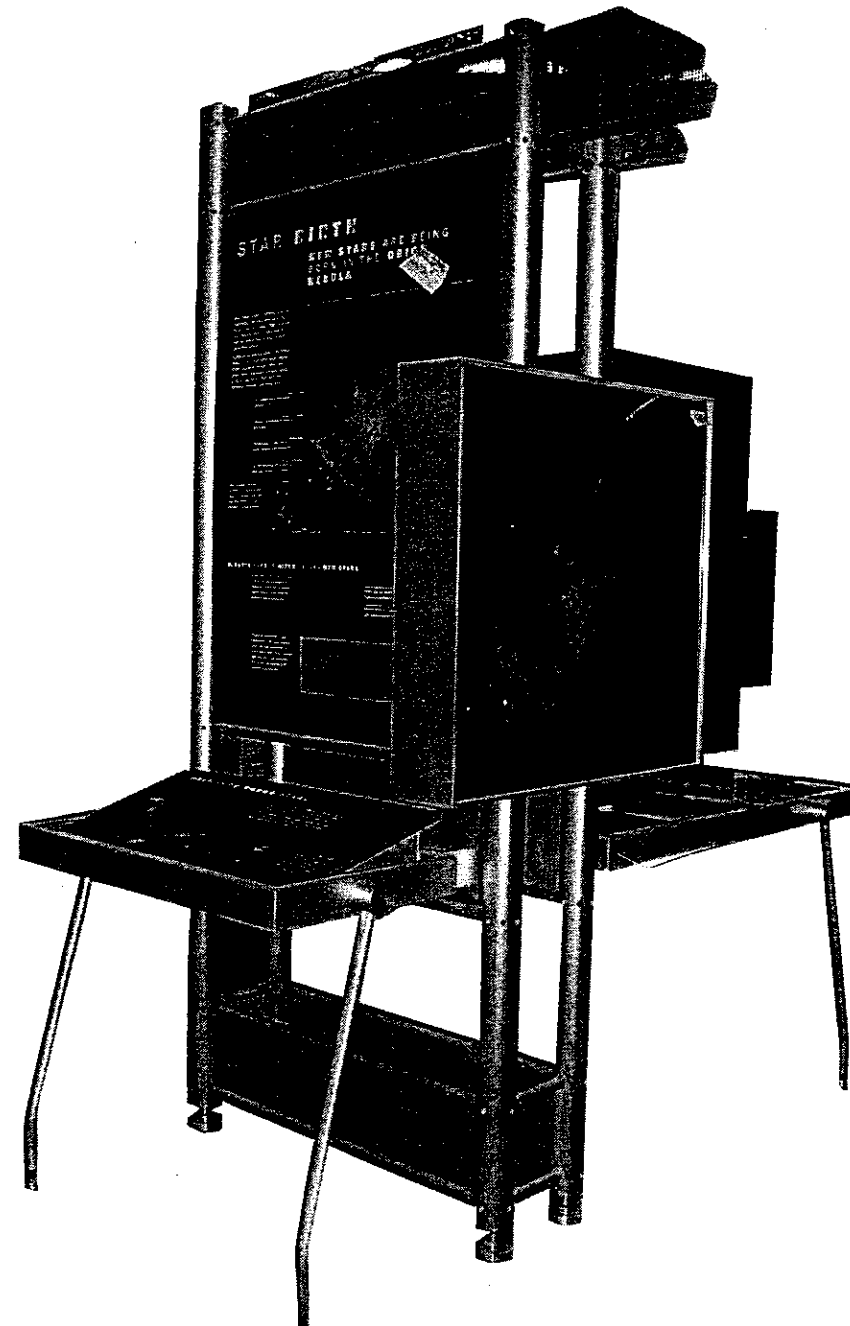
# ATTACH READER RAIL

## Locate Reader Rail Parts:

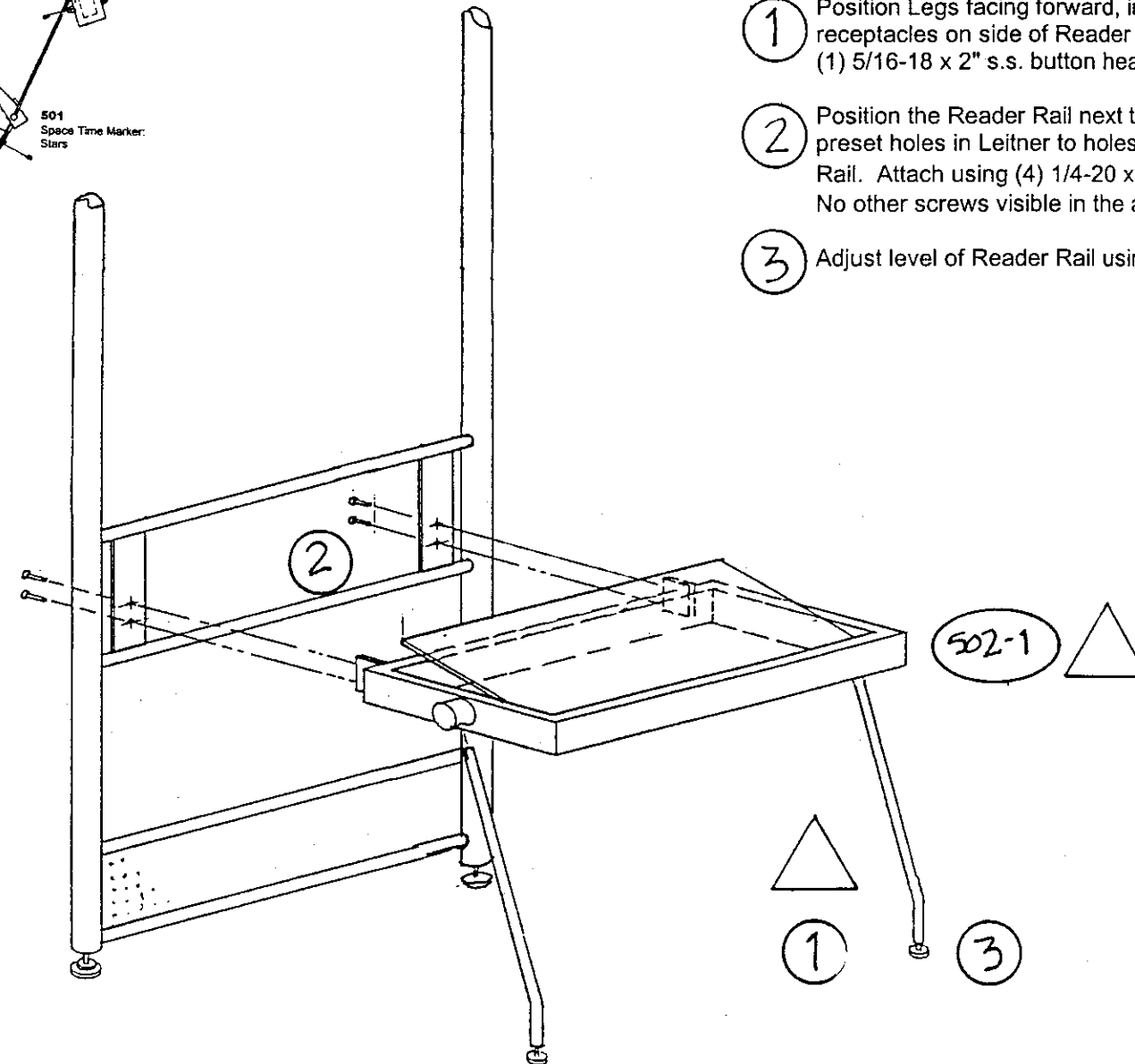
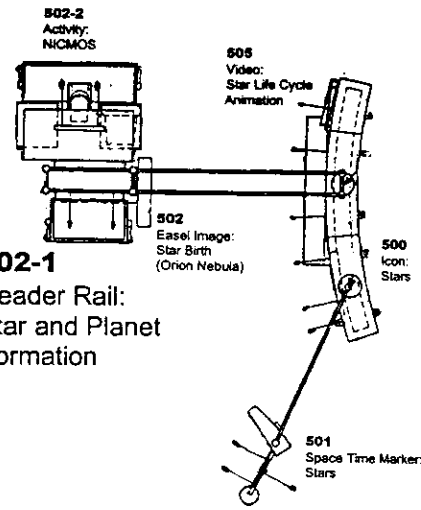
- (1) Reader Rail "JETS FROM YOUNG STARS" with (2) legs (502-1, Crate 43)

## Attach Reader Rail to Leitner Structure

- 1 Position Legs facing forward, insert into underside of cylindrical receptacles on side of Reader Rail and attach into receptacle using (1) 5/16-18 x 2" s.s. button head allen screw on each Leg.
- 2 Position the Reader Rail next to the Leitner in its final location. Align preset holes in Leitner to holes in T-bracket assembly on the Reader Rail. Attach using (4) 1/4-20 x 1" s.s. flat head allen screws. **Note:** No other screws visible in the area are involved in this connection.
- 3 Adjust level of Reader Rail using leveler feet.



**502-1**  
Reader Rail:  
Star and Planet  
Formation



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INSTALL PENDENT LIGHTING

Locate Pendant Lighting Parts:

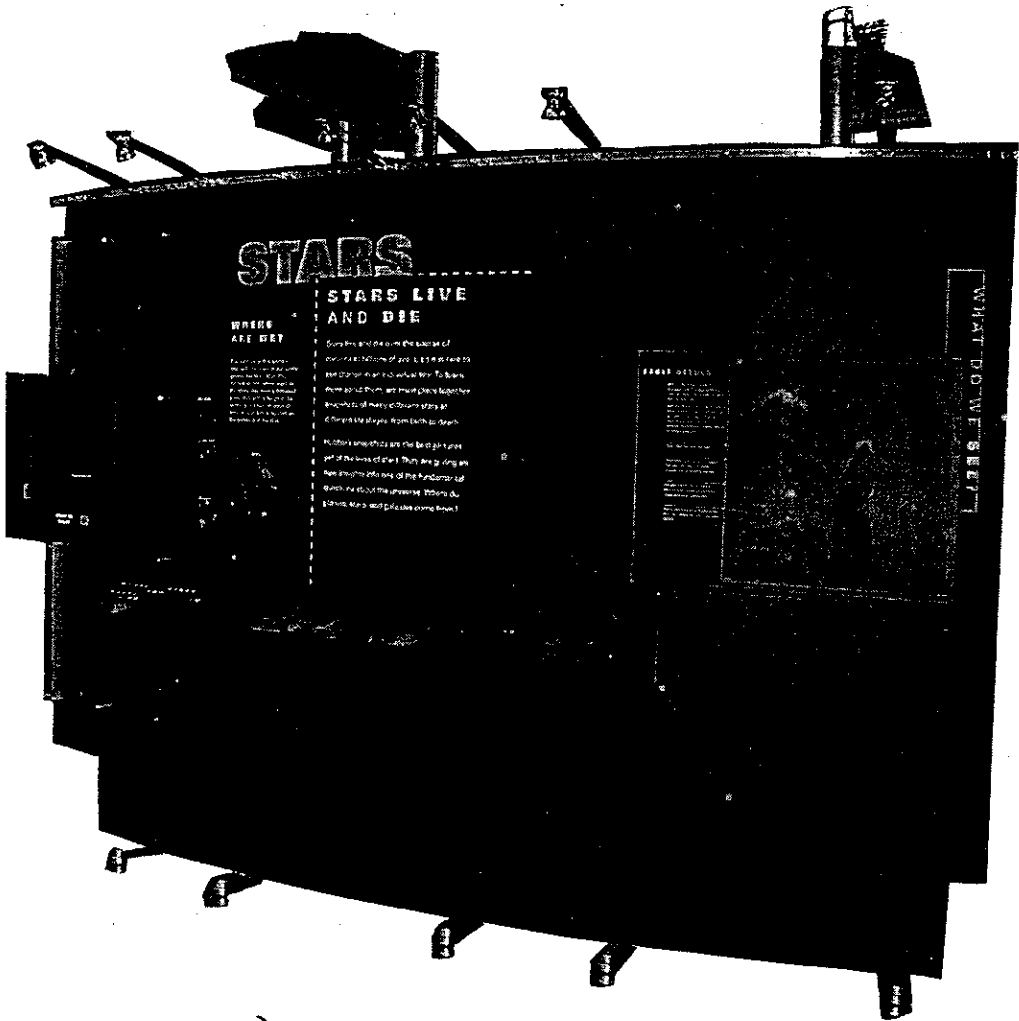
- (18) Angled Chrome Rods (Crate 49)
- (8) Straight Chrome Rods (Crate 49)
- (3) 20 watt Halogen Bulbs with Chrome Sockets (Crate 49)
- (10) 50 watt Halogen Bulbs with Chrome Sockets (Crate 49)

Install Pendant Lighting

**Note:** To avoid shock, disconnect or turn off power when installing pendant lighting.

Assemble Pendant Lights:

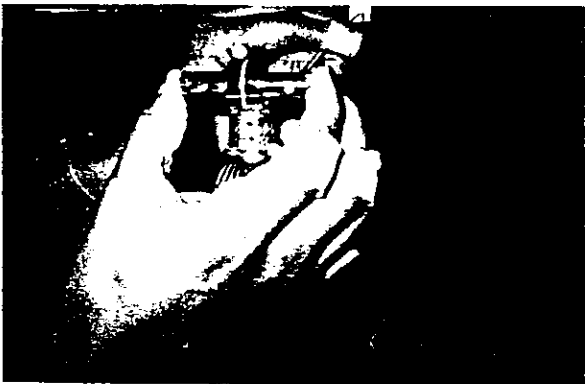
- a.)** Screw (12) Angled Chrome Rods into the (12) knurled knobs on the **Icon Wall**. To make angled rods parallel, insert smallest screw driver or thin allen wrench that fits the hole and rotate the knurled receptacle until the angled rods are parallel.
- b.)** Screw (6) Angled Chrome Rods into the (6) knurled knobs on the **Space Time Marker**. Make rods parallel by using the process described above.
- c.)** Screw (8) Straight Chrome Rods into the (8) knurled knobs on the **Leitner Structure and NICMOS Light Bar**.
- d.)** Install sockets with **20 watt bulbs** in Space Time Marker.  
Install sockets with **50 watt bulbs** in Icon Wall, NICMOS and Leitner Structures.  
To install Sockets, loosen thumb screws on each end of socket, slide onto chrome rods and retighten thumb screws.
- e.)** To change or install bulbs, loosen (2) 1/8" set screws in socket, insert prongs of halogen bulb into matching holes in socket, and retighten set screws.



b).



c).



d).

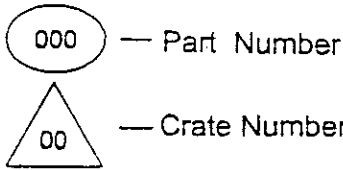


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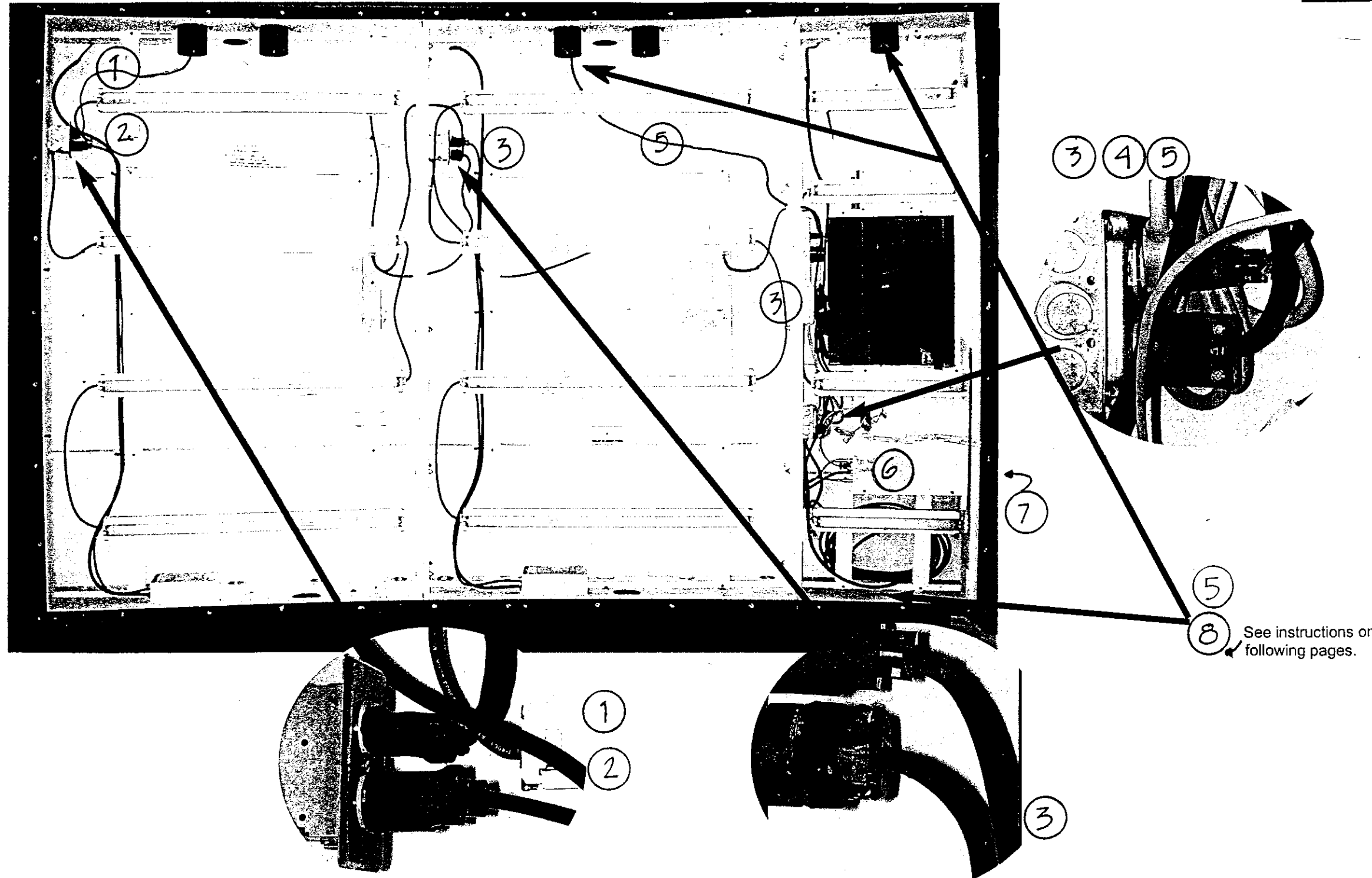
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CONNECT ELECTRICAL



**Connect electrical before installing Lexan**

- ① Locate electrical feed from Space Time Marker and plug into duplex outlet in Icon Wall A.
- ② Locate plug for fluorescent fixture that lights the indented graphic on reverse side of Icon Wall A and make sure it is still plugged in.
- ③ Locate electrical feed from Icon Wall A and plug unto duplex outlet in Wall B as indicated. Repeat to connect Wall B to Wall C. Locate main power feed for Icon Wall in Wall C.
- ④ Locate cord from power strip for monitor in Icon Wall C and check that it is still plugged in to duplex and turned on.
- ⑤ Feed power feed from Junction Box in Wire Tray through wire tube and connect into junction box in Icon Wall C.
- ⑥ After the Lexan is installed there will be not easy access to the wiring inside the Icon. Therefore, make all electronic connections for inside Icon, including:
  - a). plug in 13" TV
  - b). plug audio and video cables from Adtech Mirage into TV
  - c). plug button plugs together
  - d). check that Adtech and button are still plugged into power strip

**Adtech Mirage Player**

If not already in place, locate Adtech Drive "STAR LIFE CYCLES", #\_\_ and use key to install and lock in place. **(Note: Adtech Mirage will not play unless drive is locked in place.)** Test Mirage prior to installing Lexan.

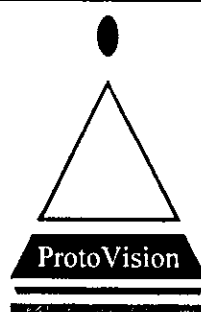
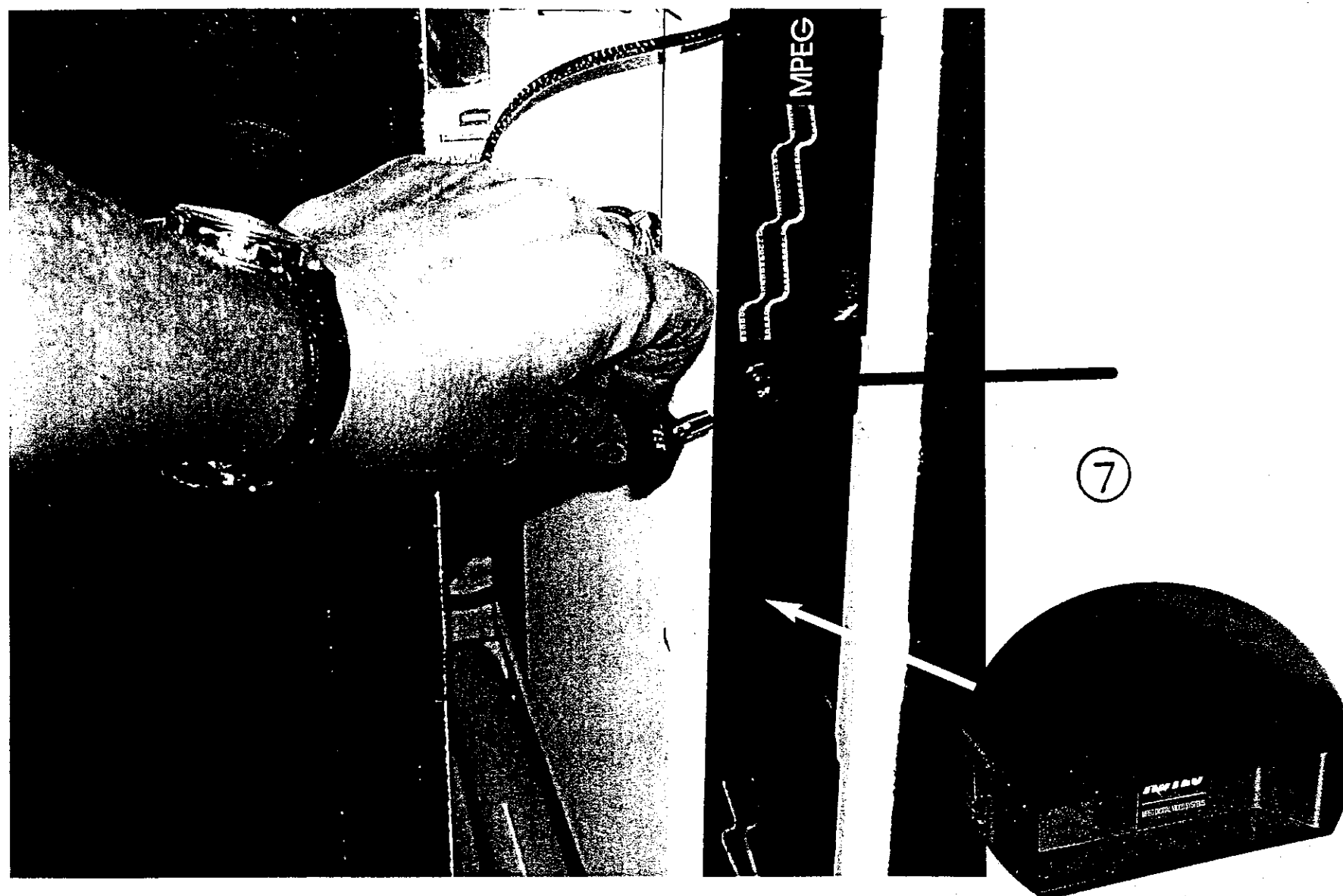
- ⑦ See photo on following pages.



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**CONNECT ELECTRICAL****Connect to house power****To power from ceiling...**

⑧ Pass main power feed from inside Icon Wall C and thread up through Wire Tube into the Wire Tray. **Note:** Even if an Alternate Leitner layout is chosen for venue, route wire from Icon up through wire tube into wire tray. Connect (1) main power cord from Icon to 20 amp house power.

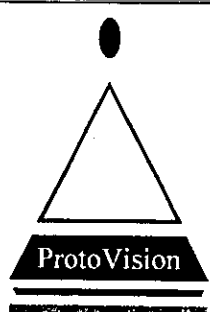
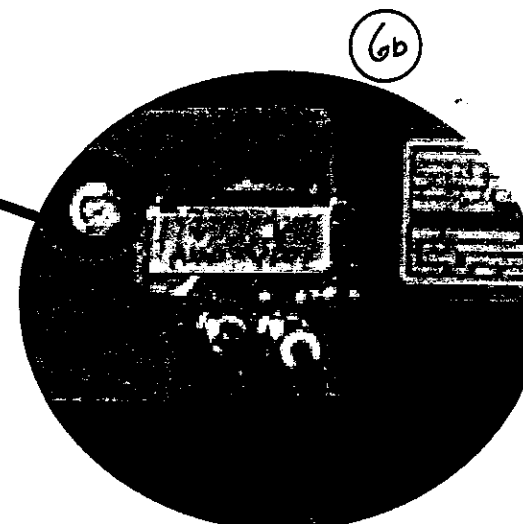
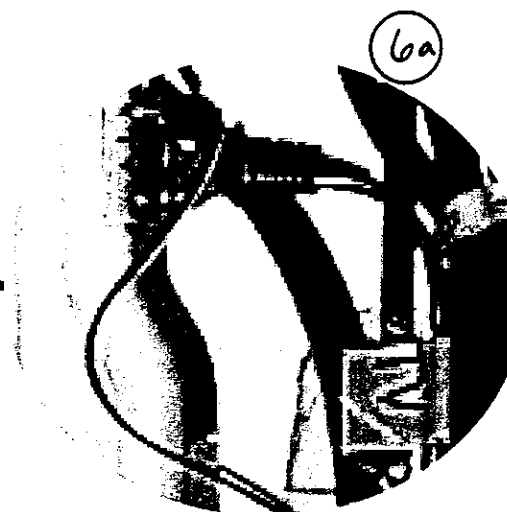
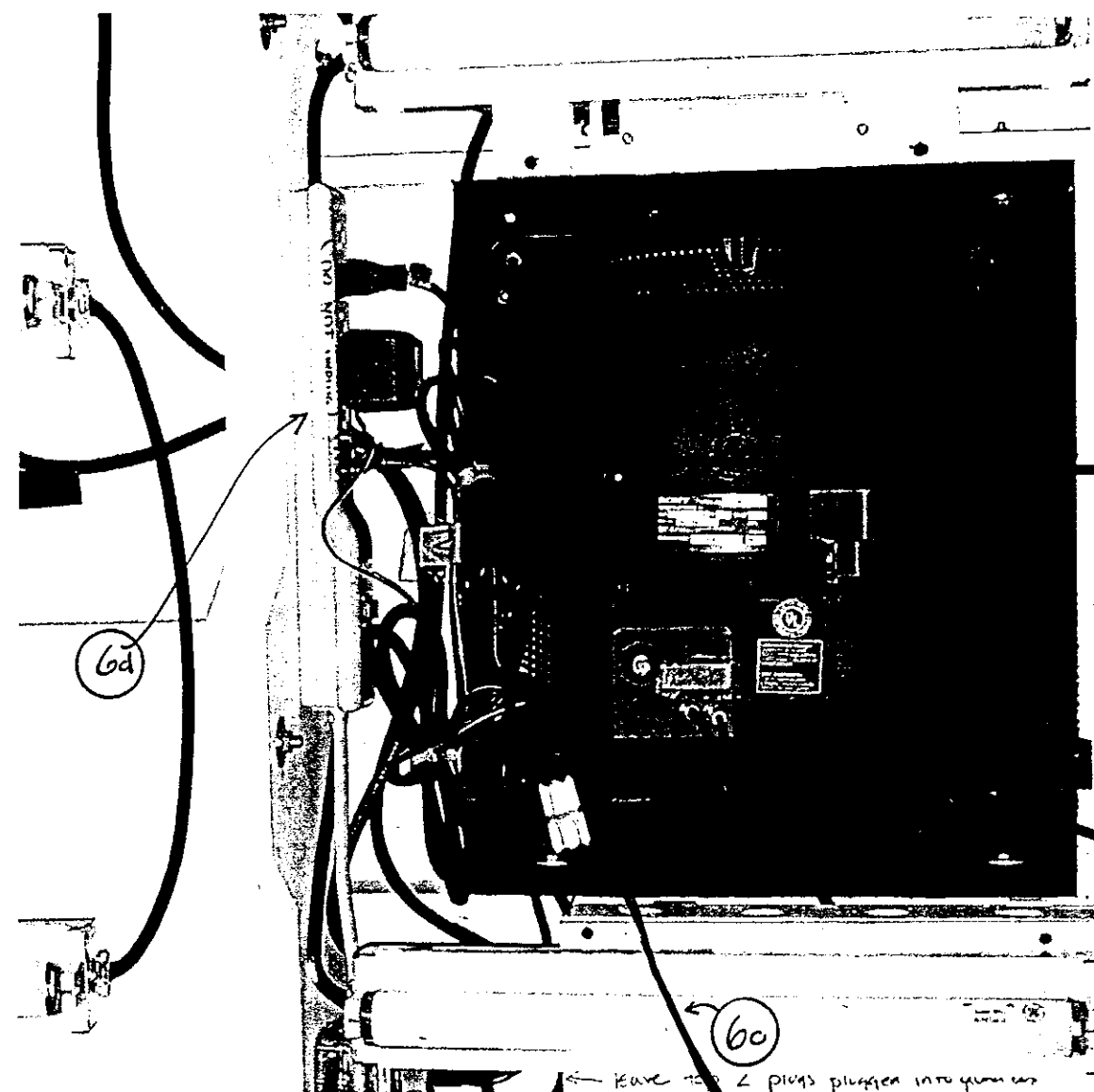
**To power from floor...**

⑧ Pass main power feed through inside Icon Wall C to bottom, then through holes along bottom of sections, and down into Base closest to house power in floor. Thread main power feed from junction box in wire tray down into Icon structure. Pass behind fluorescent bulb and along bottom of Wall sections and down into Base closest to house power.

Connect to house power. Video and Activities should boot and fluorescent and low voltage lighting should go on.

**Test power** for several hours if possible, connecting and disconnecting circuit several times to ensure ballasts and starters are working properly.

⑧ See photo on previous page.

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# INSTALL ICON LEXAN AND DURATRANS

## Locate Duratrans Parts:

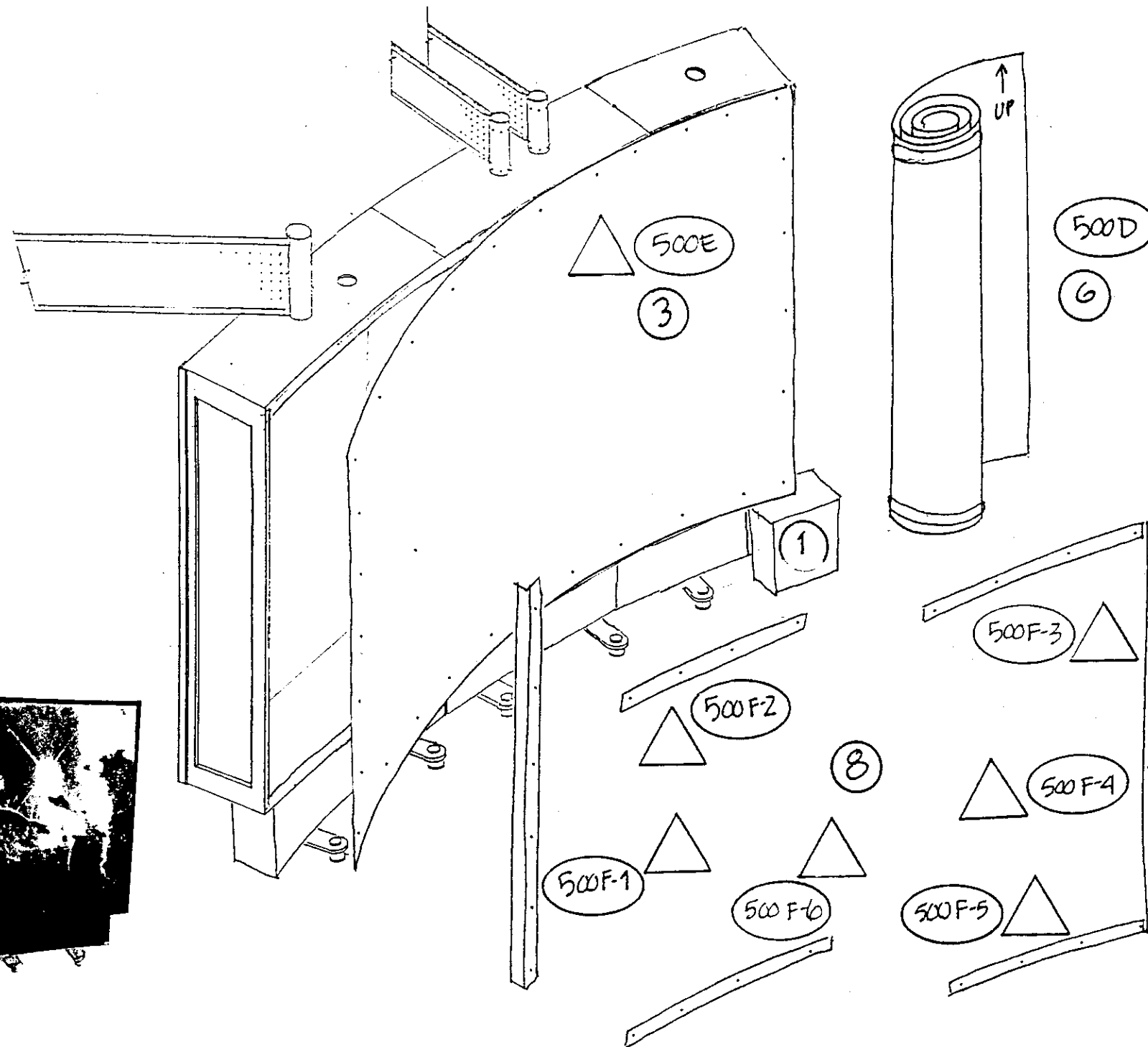
- (1) Lexan Sheet (500E, Crate 41)
- (1) Duratrans (500D, in long cardboard boxes, Crate 53)
- (6) Black Metal Frame Pieces (500F-1 thru -6, Crate 41)
- (2) plywood "dead men" (Crate 28)

## Install Lexan

- 1 Position a "dead man" under each outside corner of Icon where it can support the Lexan as it is positioned.
- 2 Clean back of Lexan (the side without the velcro) using rag damp with Windex to remove dust.
- 3 Using minimum of (3) people, carry Lexan into position with velcro side facing out, and place bottom on "dead men" for support. Lift Lexan into position to line up holes in Icon. Install all (20) 1/4-20 x 3/4" flat head phillips screws to secure Lexan to Icon.
- 4 Clean front of Lexan using rag damp with Windex.

## Install Duratrans

- 5 Locate Duratrans BUT DO NOT UNROLL. Determine which end is up, and fit exposed edge (left or right) to velcro on Lexan, being sure to align top and bottom correctly.
- 6 Using two installers, one at top and one at bottom, slowly begin to unroll the Duratrans across the Lexan. Bottom person should keep one hand checking the bottom alignment to feel how straight the Duratrans is unrolling. If alignment is off, re-roll transie, realign against side edge and begin to unroll again.
- 7 Once Duratrans is positioned correctly, pat down velcro. Gently wipe down the front of the Duratrans using rag damp with Windex.
- 8 Position Black Metal Frame pieces and begin attaching in numbered order using (26) 1/4-20 x 1" black button head screws.
- 9 Clean exhibit using rag damp with Windex to remove dust and finger prints.



Icon Image on Duratrans 500D



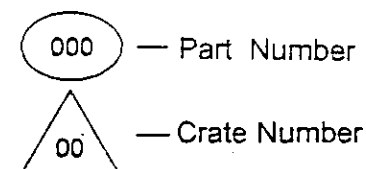
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DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling.**

**Unlock and remove Adtech Drive from exhibit prior to disassembly and pack in Crate 49.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 20, 26, 27, 28, 31, 34, 36, 37, 38, 39, 40, 41, 43, and AV Crates 49, and 50.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**Lexan and Duratrans** - The Black Metal Frame pieces along the back corners of Icon Walls 500A and C stay attached for shipment. The other (6) need to be removed to disassemble the Duratrans and Lexan, and then pack in Crate 41.  
As Duratrans is removed, roll carefully, avoiding making kinks in surface, then repack in long boxes in Crate 53.  
Lexan packs in Crate 41.

**Connections** - Disconnect electrical and other cables inside Icon Walls before removing any AV equipment.

**Pendent Lighting** - Remove Pendent Lighting, **leaving knurled nuts in place** to maintain placement locations. Repack lighting parts in Crate 49.

**Reader Rail** - Follow directions in reverse, repacking Reader Rail and Legs in Crate 43.

**Easel Image Light Box** - Follow directions in reverse, removing the end that has allen screws to disconnect the power-cons inside the Light Box. Remove screws that hold Light Boxes in from behind. Handle with care, as these are very heavy.  
Pack in Crate 36.

DISASSEMBLY CONTINUED

**NICMOS** -

- Inside casework, disconnect power-con to Leitner before removing from Reader Rail.
- Use extreme caution when removing casework from Reader Rail, as it is very heavy.
- IR Camera must be removed for shipment, and re-packed in Crate 60 with lens cap on.
- Disconnect power-con for Light Bar before removing it from the top of the casework.
- Disconnect 14" monitor and leave all cables inside casework for shipment.

**Space Time Marker** -

- Disconnect electrical cord and ship inside Icon Wall A wrapped in velcro strap.
- Remove Globe using the 5/64 long handled allen tool to prevent scratching Globe. Treat Globe with extreme care, packing in back into the white flannel sock inside Crate 40.
- Disconnect power-con inside Monolith before removing Light Bar. To disconnect power-con pull back on chrome tab and twist counter clockwise.
- Disassemble Graphic Wing Panel before detaching from Leitner to prevent Monolith from being unstable.

**Blue Acrylic Graphics** - Perforated Metal that holds these panels in lace ships attached with thumb screws inside Icon Wall A. Stand-offs pack in Hardware Boxes. Pack in Crate 39.

**Icon Monitor Box** - Disconnect all cables before removing Monitor or Monitor Box. Adtech Drive ships in Crate 49.

**Icon Walls** - Detach Icons sections from each other and from black Icon Bases. Icon Bases ship with metal feet attached in Crates 26 and 27.

**Insure that all components are packed back into their assigned locations in each crate.**

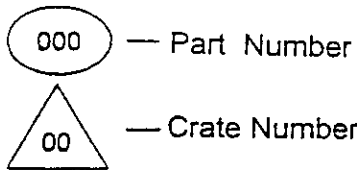


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**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**Icon video remote** is to be used **ONLY** for brightness and contrast.  
Open front door to monitor enclosure to enable remote to activate sensor.

**To replace fluorescent bulbs inside Space Time Markers:**

**A** Remove access panel in end of Space Time Marker Monolith by removing the screw in the bracket on top of the monolith.

Raise access panel from the bottom to release it from the cleat which holds it snug against the monolith.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

**If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.**

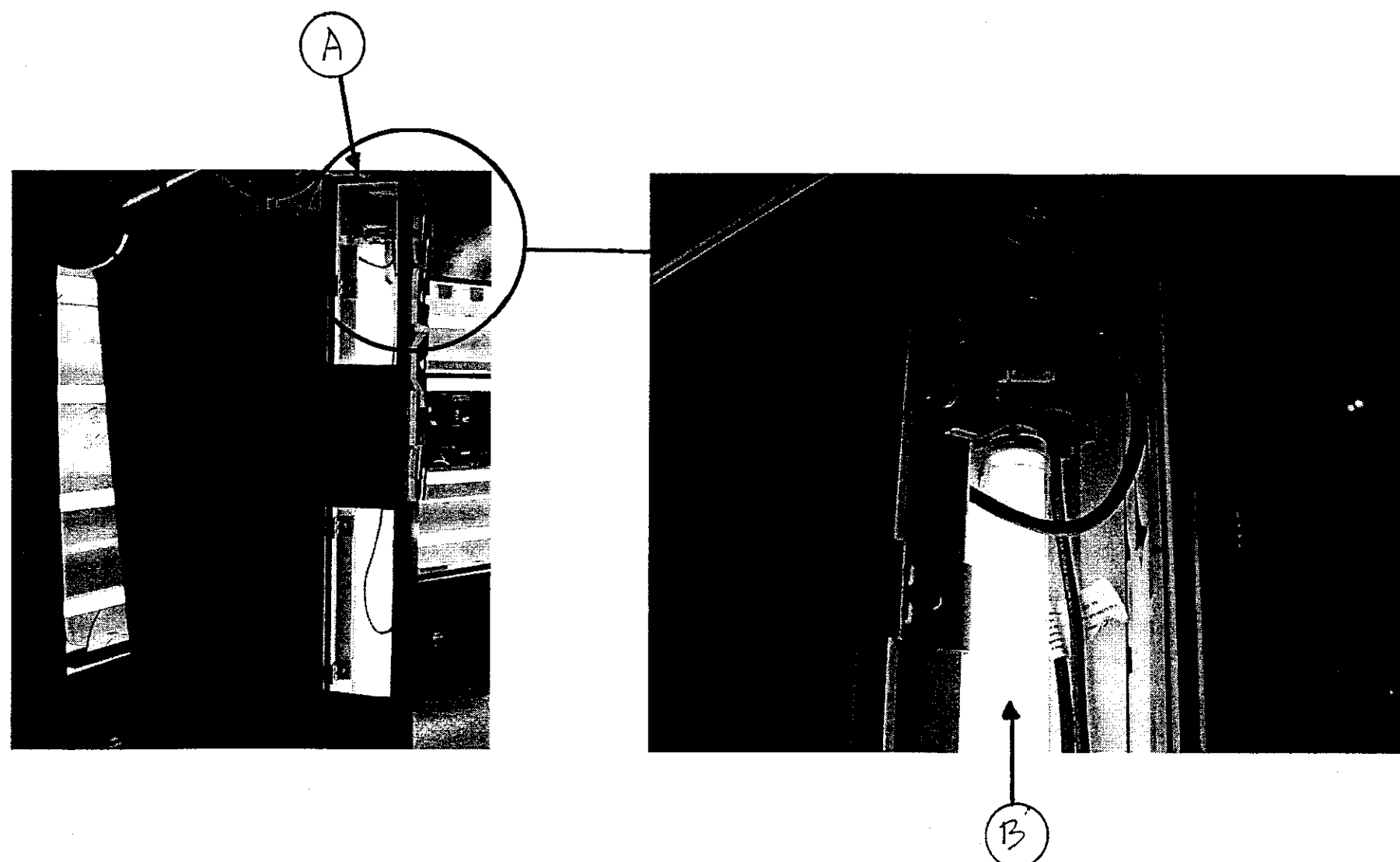
Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

**If silicone bead is not present** continue bulb replacement.

**B** Twist the burned out fluorescent bulb out of its socket

Replace bulb using identical fluorescent:  
F40CW/RS/WM, a 34 watt 48" cool white rapid start  
GE Watt-Meiser fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced.)

Reconnect power and replace access panel and screw at top.



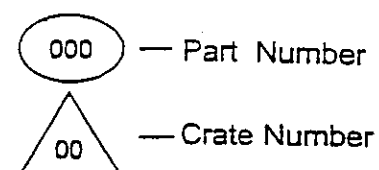
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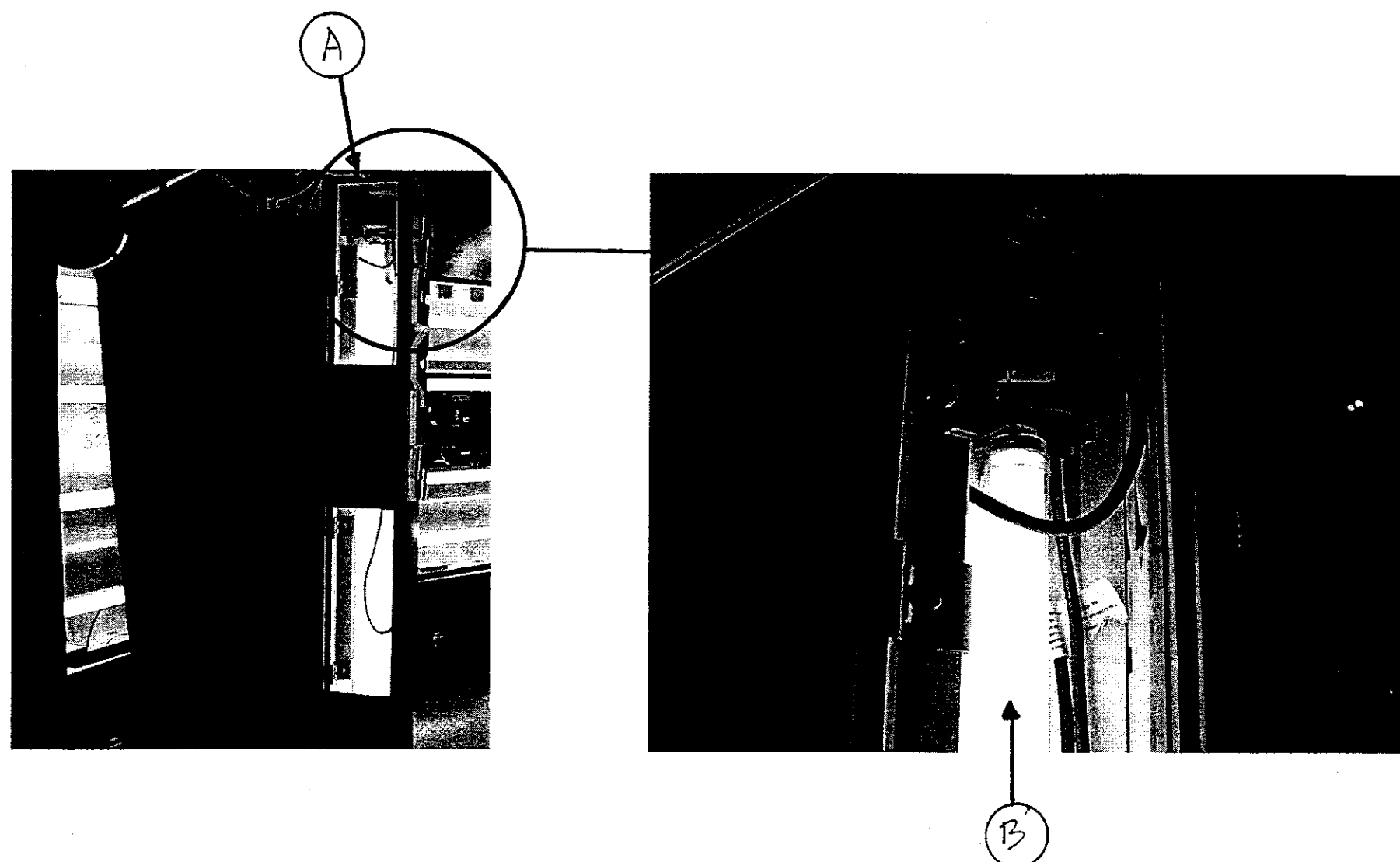
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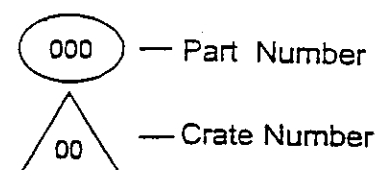
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MAINTENANCE INSTRUCTIONS

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To replace fluorescent bulbs inside Icon Structures (this includes the fluorescent bulb above the indented graphic area on the back of the Icons):

Remove all the black button head allen screws, the (8) black metal pieces, and the duratrans.

Remove all the phillips head screws and the lexan sheet.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.

Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

If silicone bead is not present continue bulb replacement.

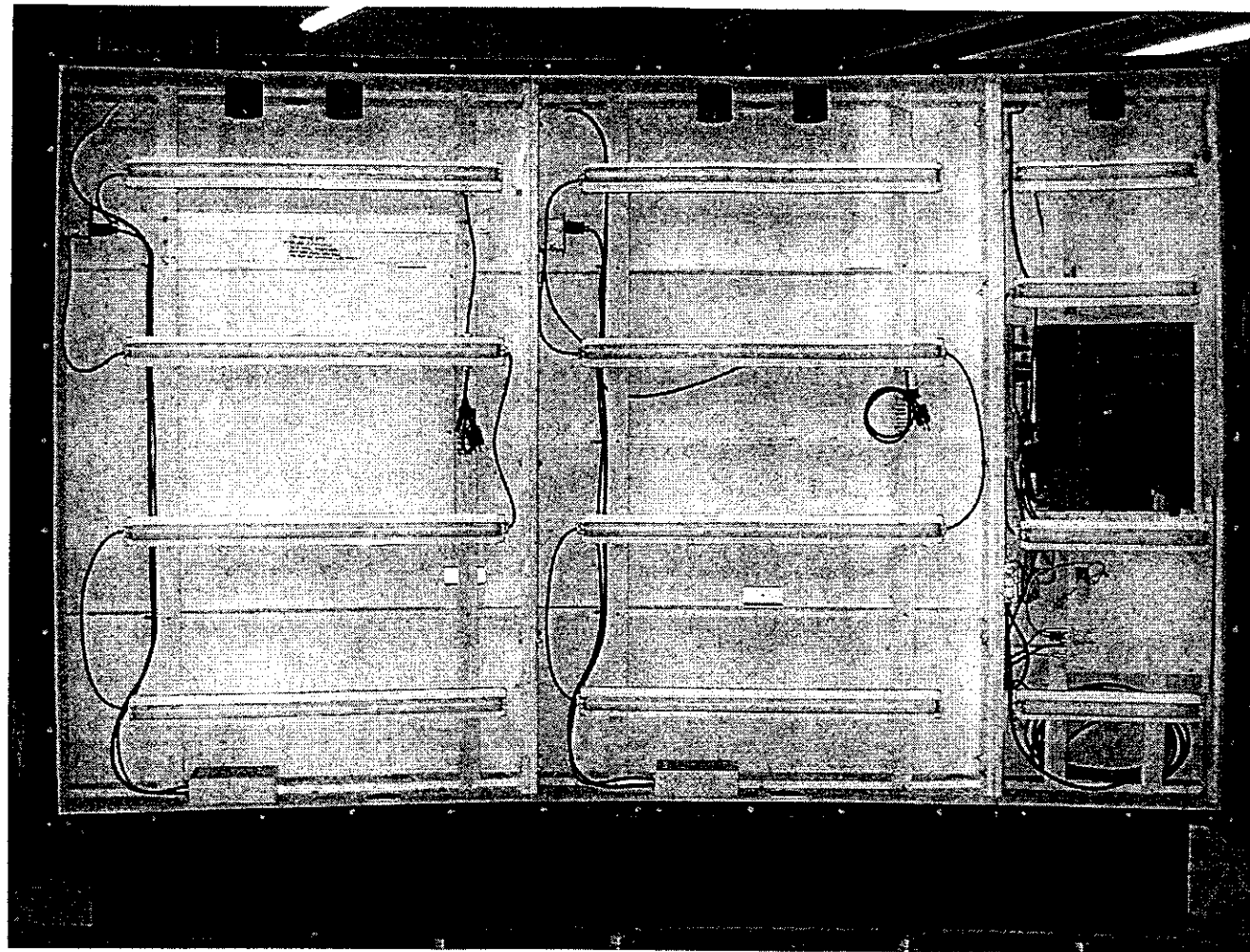
Twist the burned out fluorescent bulb out of its socket

Replace 30 watt bulb using identical bulb:  
F30T12/CW/RS, a 36" 30 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Replace 15 watt bulb using identical bulb:  
F15T12/CW/RS, an 18" 15 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Reconnect power and replace lexan, Duratrans and black metal pieces.

Adtecs will reboot automatically when powered up.



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MAINTENANCE INSTRUCTIONS

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To replace fluorescents inside Easel Light Boxes:

To access bulbs inside Easel Light Boxes, remove (4) 1/4-20 x 1" s.s. flat head allen screws in top and bottom of end of Light Box. This will release side panel and access the inside. (Note: All other screws in Light Boxes are security screws and are not to be removed).  
  
Slide Duratrans to the side and look fixture to see if silicone bead is present at juncture of bulb and socket.

If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead. Once power is disconnected, reach inside and cut silicone bead. (Silicone is not to be replaced.) Continue bulb replacement.

If silicone bead is not present continue bulb replacement.

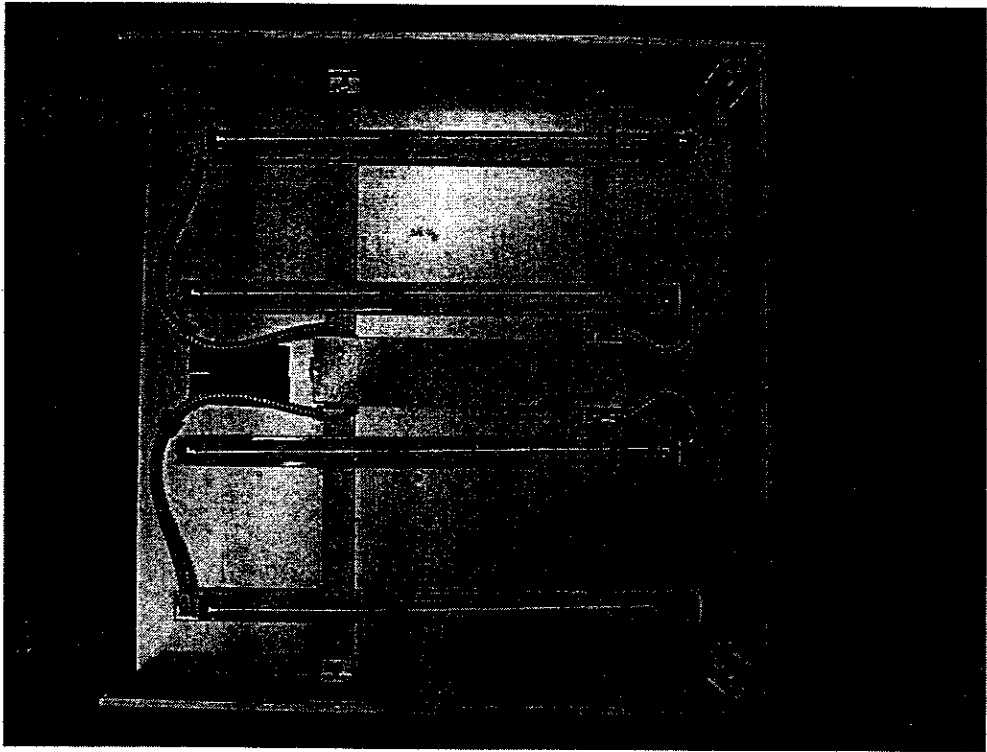
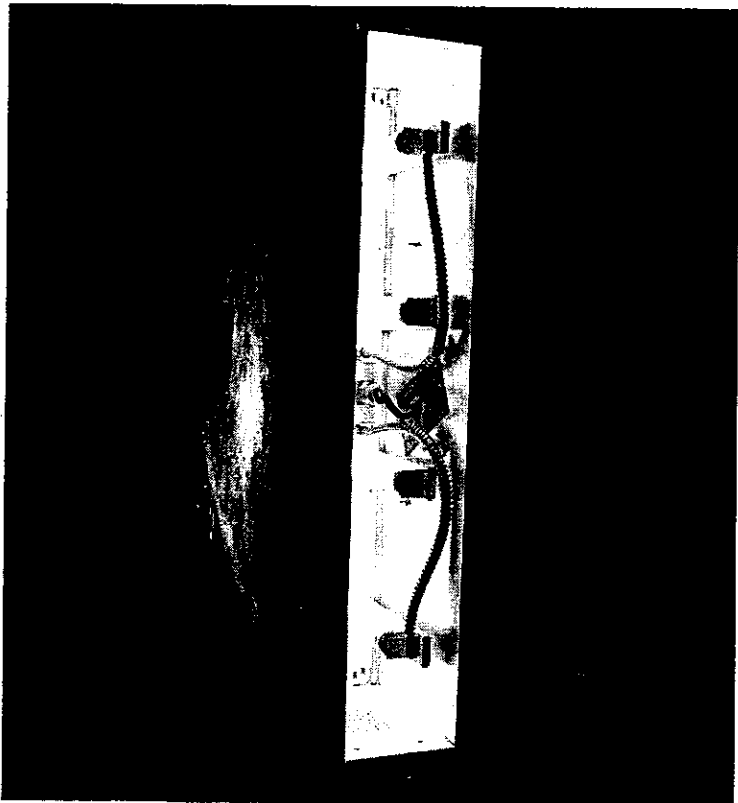
Replace bulbs in Easel Light Boxes with identical 17 watt bulbs: F17T8 SP41, a 24" 17 watt trim line fluorescent Available from your local Grainger store, part # 6VR60 or www.grainger.com

Reconnect power and slide Duratrans back into position, and fit side panel back into position and attach with s.s. flat head allen screws.

Push Buttons Bulbs  
Access to push buttons is most available before exhibits are assembled. Therefore, bulbs inside push buttons will be replaced during installations, before artifacts are installed, and while a ProtoVision supervisor is on-site.

Replace bulb using identical miniature bulb: Type 658, T-3 1/4 wedge base bulb, 14 volt, .08 Amp Available from your local Grainger store, part # 2F580 or www.grainger.com

To replace halogen Pendent Light bulbs:  
Before changing halogen Pendent Light bulbs, mark the bulbs to be changed and disconnect power to the exhibit.  
Caution: Working bulbs in the area will remain hot for several minutes after being powered down.  
  
Remove chrome socket with burned out bulb from metal rods by loosening thumb screws on both outer ends.  
  
Loosen (2) tiny slotted set screws in socket to release prongs on bulb.  
  
Replace bulbs on Space Time Markers with identical 20 watt bulbs: GE Q20MR16/FL/CG/CD(BAB) halogen bulb  
Order Code: 19370  
Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.  
  
Replace bulbs on Icon Structures and Leitner Parts with identical 50 watt bulbs: GE Q50MR16/FL/CG/CD(EXN) halogen bulb  
Order Code:19367  
Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.  
  
Replace by plugging into socket and retightening set screws on socket.  
  
Reattach socket and tighten onto rods with thumb screws on outer ends.  
  
Reconnect power to the exhibit.  
  
See photos in Installation Section.



MAINTENANCE INSTRUCTIONS

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To replace Brite Strip (festoon) bulbs inside NICMOS 502-2:

These lights can be changed while they are running; they are low voltage

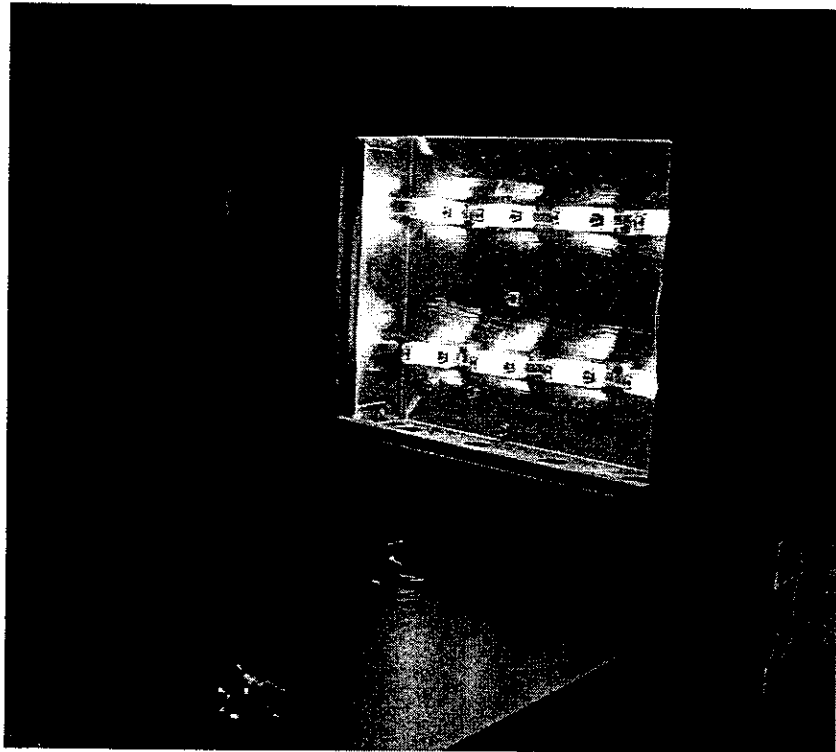
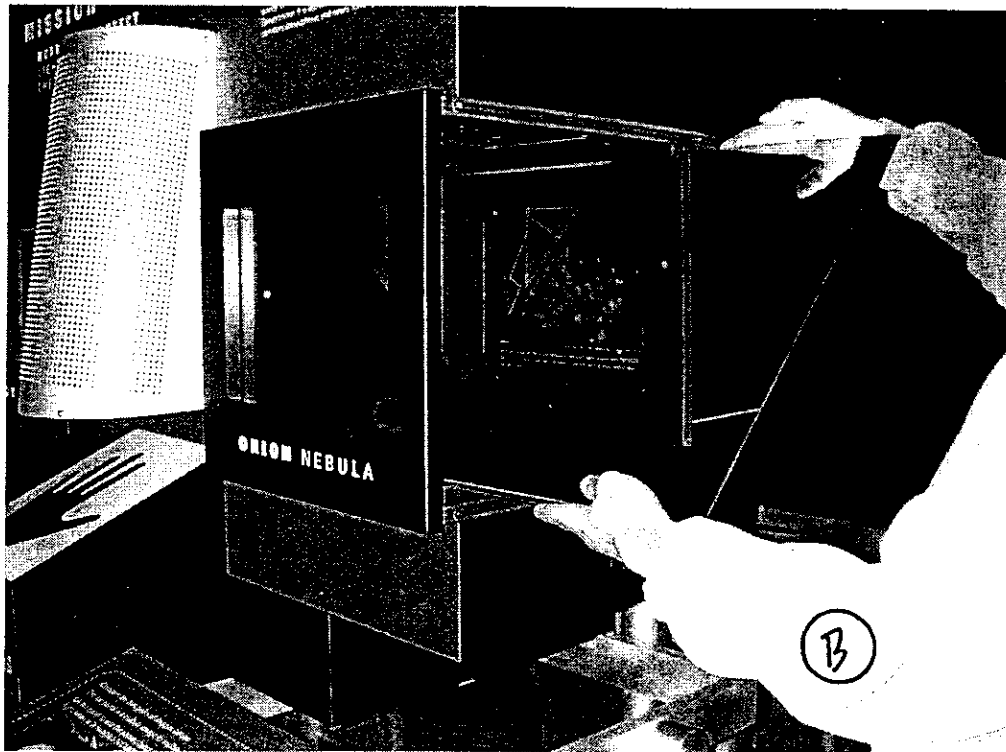
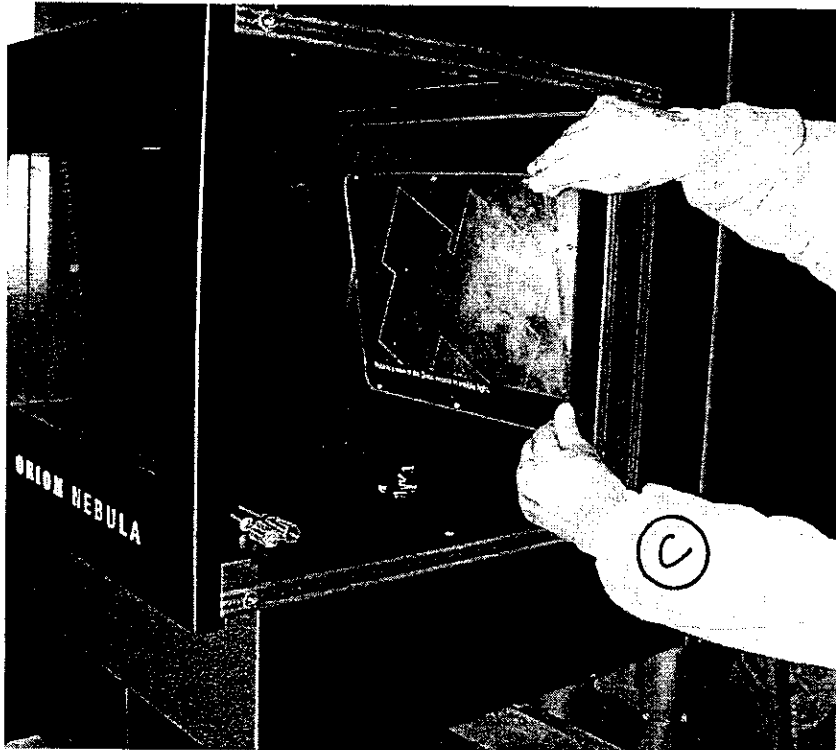
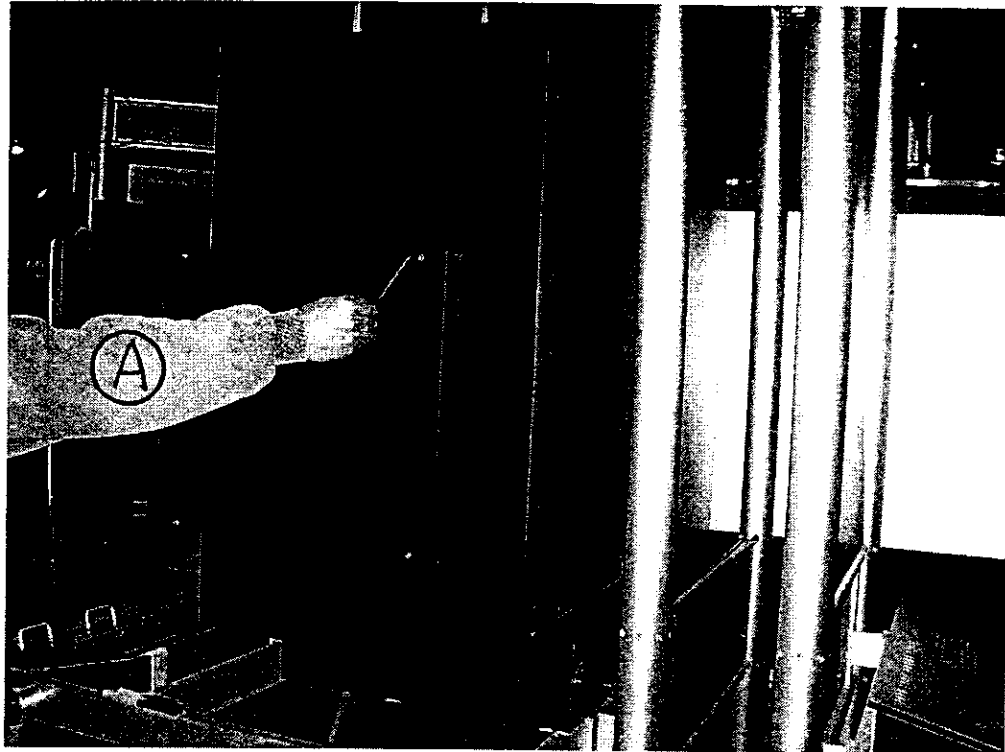
- (A) To access bulbs, remove (4) black button head screws that attach the access panel on right hand end of NICMOS casework.
- (B) Carefully slide the glass mirror towards you, noting that the laminate side faces up. Slide it out of its slot inside the casework.
- (C) Remove the (6) slotted screws that hold the Duratrans in place. Carefully remove it and set it aside.

Replace bulb using identical 5 watt bulb:  
#BL-24-5W-F frosted Brite Strip (festoon) bulb  
Available from National Specialty Lighting at 1-800-527-2923

Clean Duratrans and mirror using only a lint free rag damp with Windex.

Reinstall Duratrans using same slotted screws, then slide mirror into slot.

Replace access panel using same button head screws.

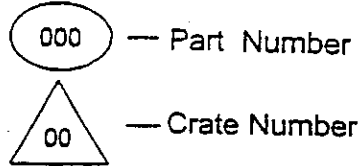


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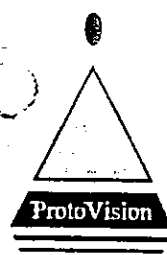
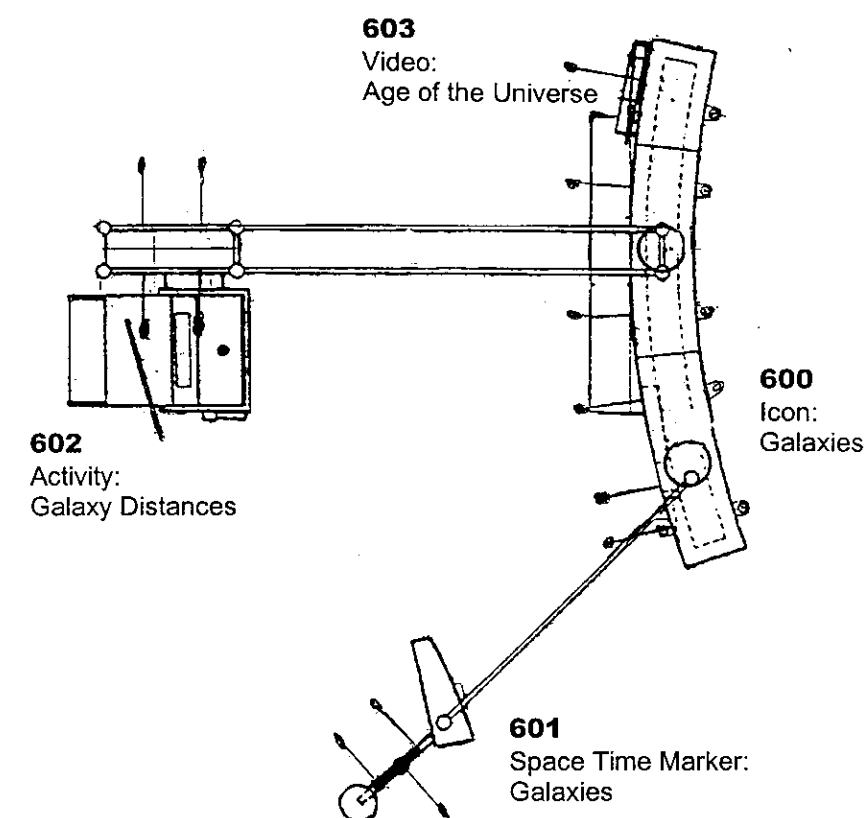
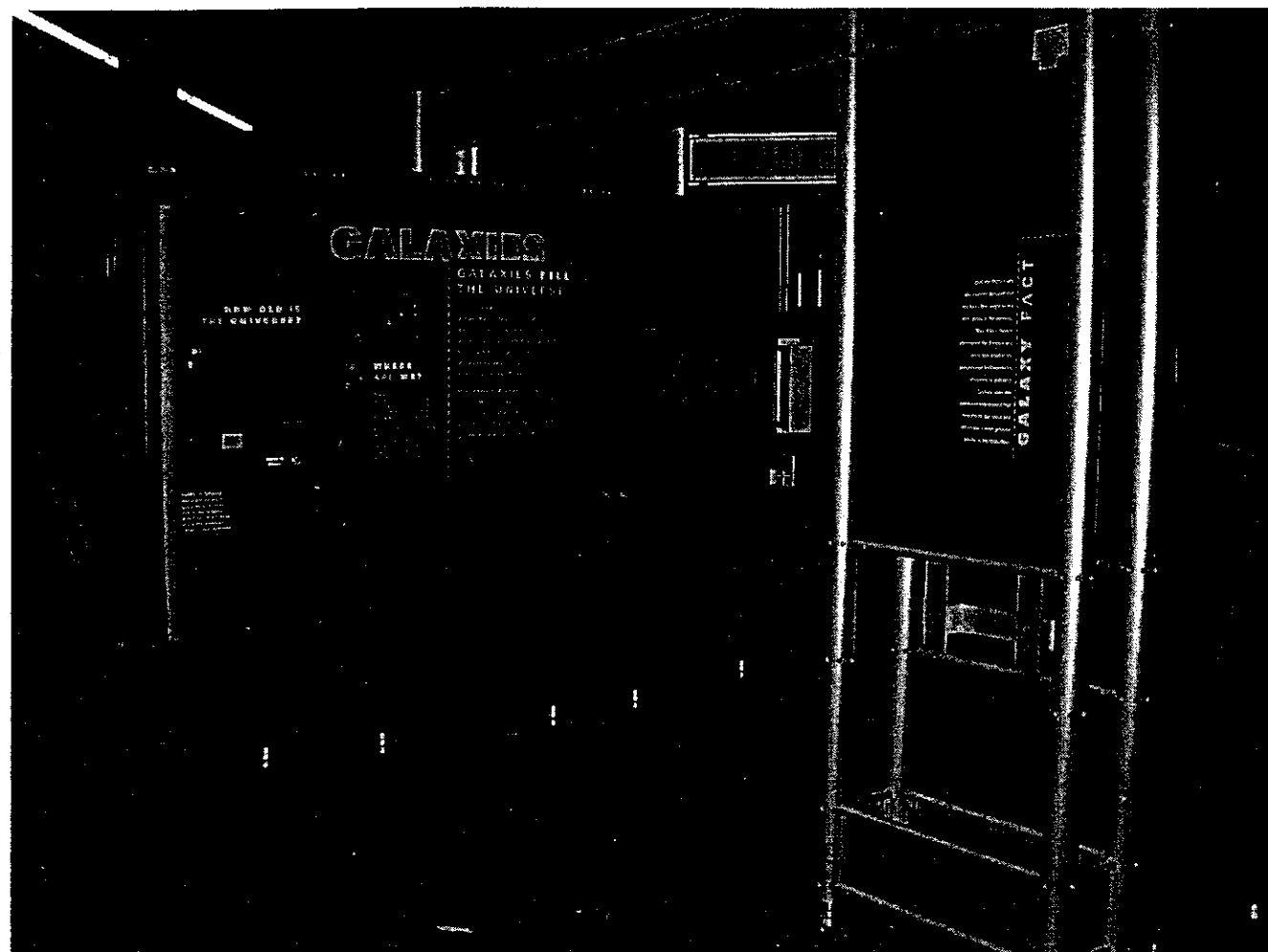


## OVERVIEW AND PLANNER

### Exhibit Overview:

Age of the Universe Video: Visitors learn about answers to the big question, "How old is the universe?"

Galaxy Distances Activity: Visitors learn how HST is helping to map the distances of galaxies from Earth; visitors learn how mapping distances of galaxies helps us to find the size and age of the universe.



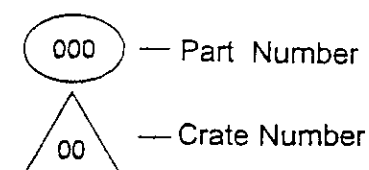
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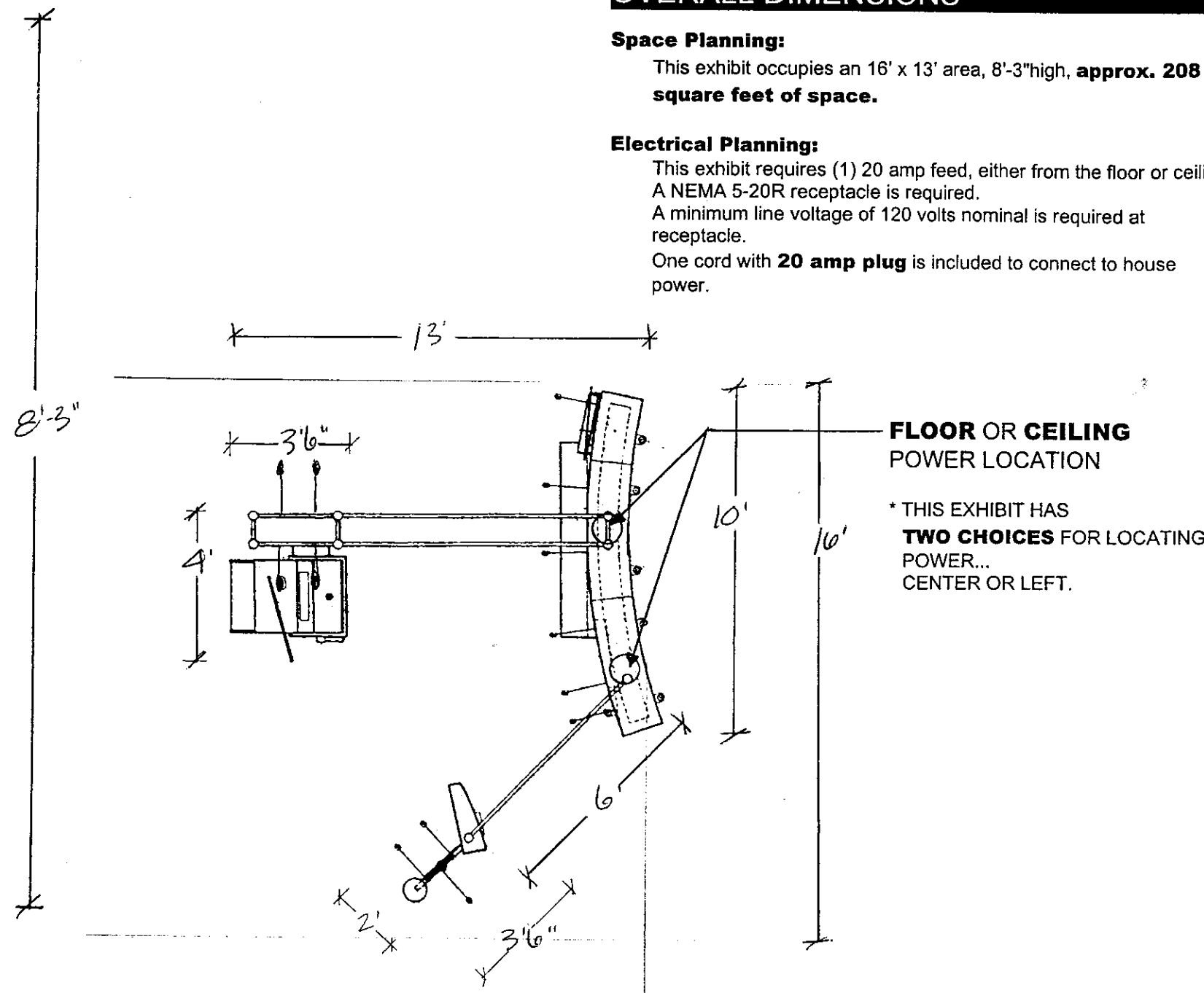
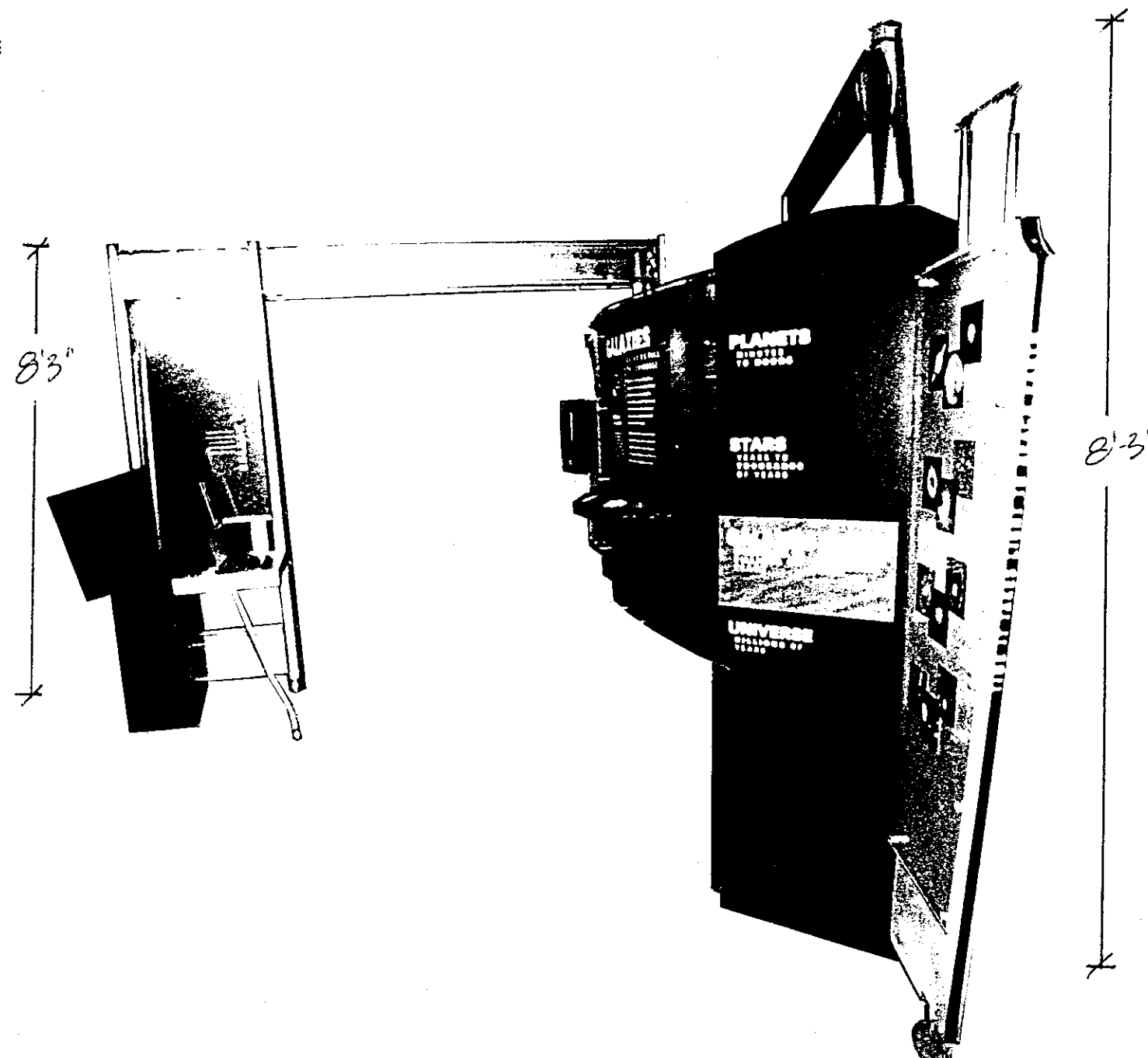
# OVERALL DIMENSIONS

## Space Planning:

This exhibit occupies an 16' x 13' area, 8'-3" high, **approx. 208 square feet of space.**

## Electrical Planning:

This exhibit requires (1) 20 amp feed, either from the floor or ceiling. A NEMA 5-20R receptacle is required. A minimum line voltage of 120 volts nominal is required at receptacle. One cord with **20 amp plug** is included to connect to house power.

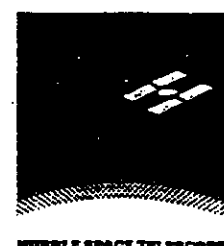


SCALE: 1/4" = 1'-0"



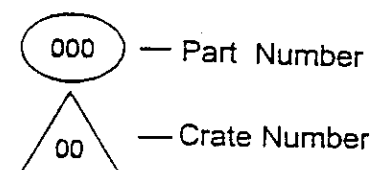
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# ASSEMBLE ICON BASES AND WALL

**Locate parts required for set-up of this area as listed in each section of instructions. Include:**

- 600 Area Hardware Box and Tools (Crate 20)
- Cleaning Kit is packed in Green Star Crate 51.

## Locate position of 500 Area on gallery floor

Locate positioning of exhibit on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

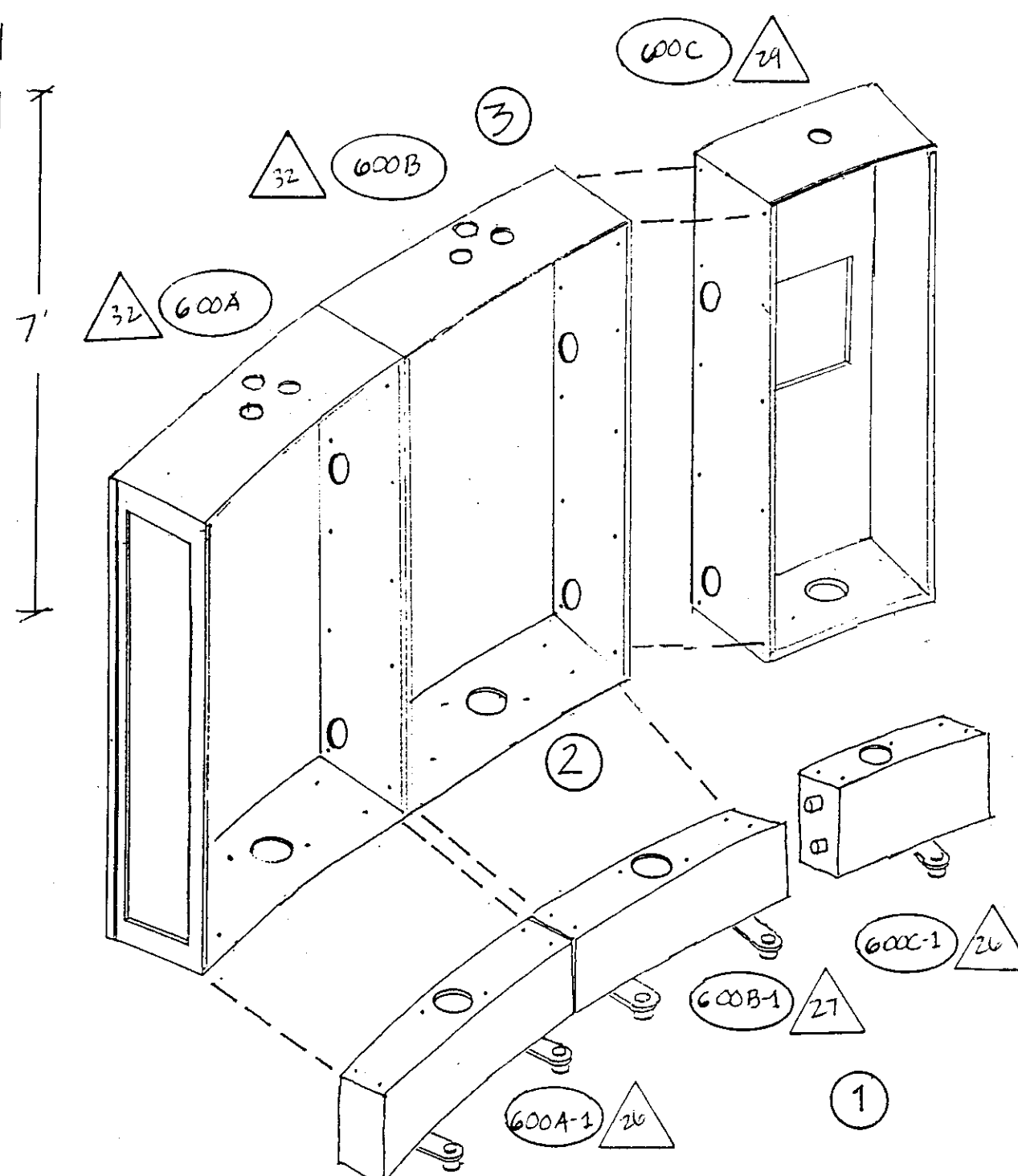
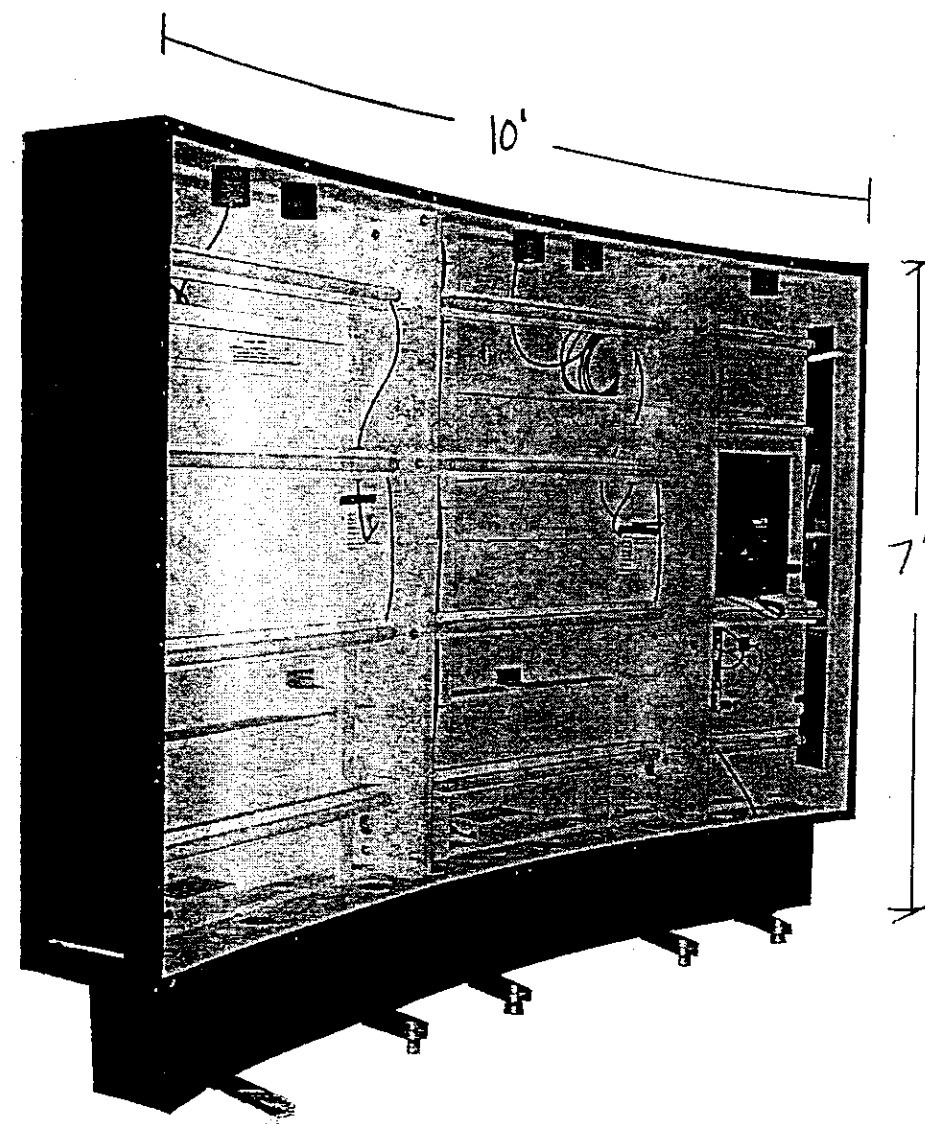
## Locate Icon Wall Parts:

- (3) Icon Base Sections with attached Metal Feet (600A-1, B-1 and C-1, Crates 26 and 27)
- (3) Icon Wall Sections (600A, B, C, Crates 29 and 32)

## Assemble the Icon Bases and Walls

- Fit together the (3) Icon Bases with attached Metal Feet by aligning dowels, and position on the gallery floor in correct location for venue layout. Rotate the levelers on Metal Feet until the exposed bolt head is flush with the top of the Metal Foot and side seams are tight. Use a minimum 4' level to check level of assembled Bases, and adjust levelers if necessary.
- Position Icon Wall Section 600B to Icon Base Section 600B-1 in the middle of the 3-section Icon Wall assembly. Connect Wall to Base using (6) 1/4-20 x 2" hex head bolts with flat and lock washers using 1/2" socket provided.
- Repeat with Icon Wall 500A to Base 600A-1 and Wall 600C to Base 600C-1. Then attach Icon Wall A to Wall B, and Icon Wall B to Wall C using (20) 5/16-18 x 2" hex head bolts with large fender washers on both sides of the joint. Bolts may need to be tapped with a rubber mallet to get them through holes.

Icon Wall assembly is now complete until the rest of the Area is assembled, after which the balance of the Icon Wall will be finished.



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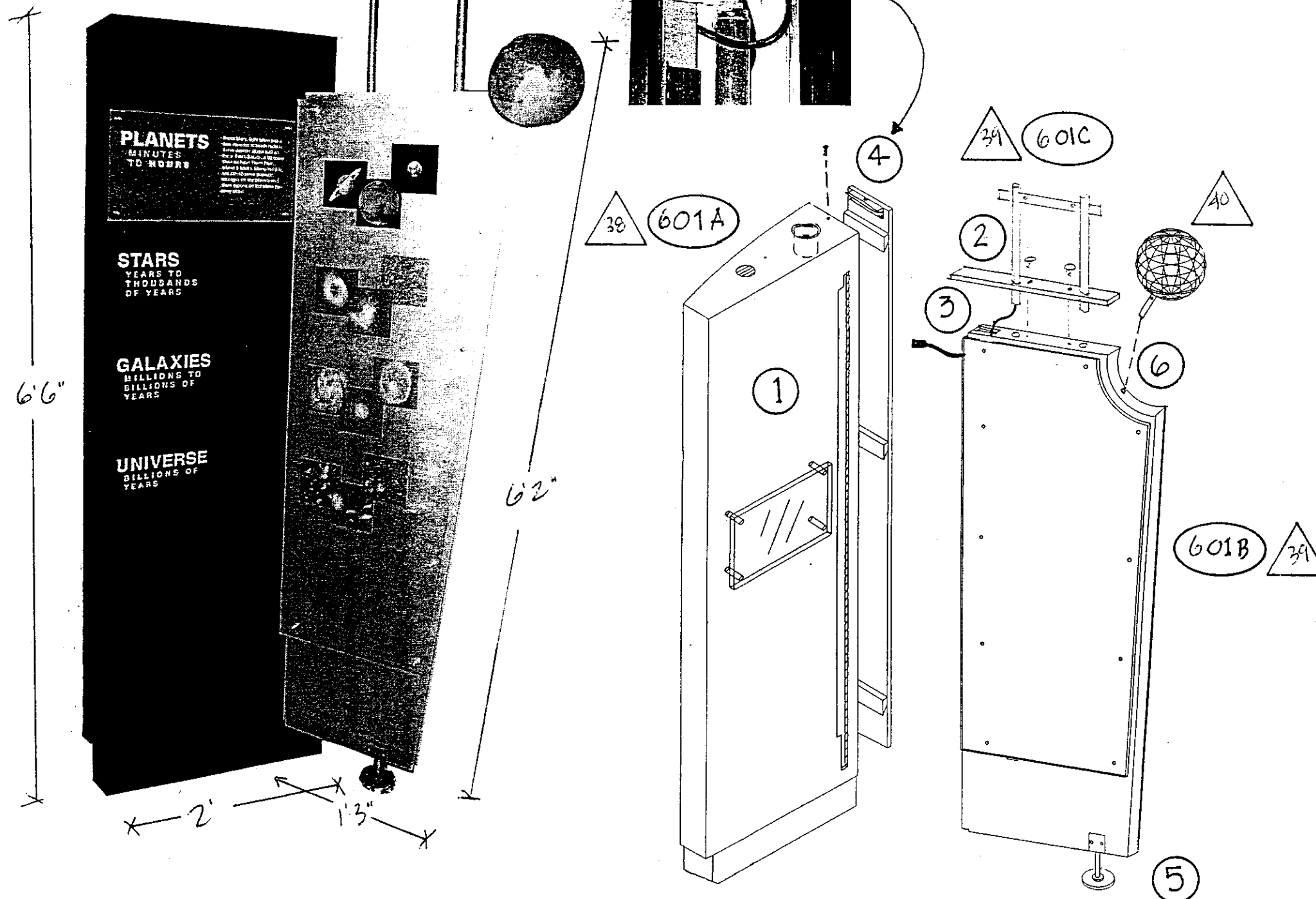
## ASSEMBLE SPACE TIME MARKER

### Locate Space Time Market Parts:

- (1) Monolith "GALAXIES" (601A, Crate 38)
- (1) Graphic Wing Panel (601B, Crate 39)
- (1) Light Bar (601C, Crate 39)
- (1) Globe (Crate 40)

### Assemble Space Time Marker

- 1 Position Black Monolith 601A per venue layout. To access inside of monolith, remove screw at top of end panel and lift end panel up from bottom. **Note:** This Monolith is not very stable when left standing alone.
- 2 Attach Light Bar 601C to top of Graphic Wing Panel 601B using (2) 1/4-20 x 1" s.s. flat head allen screws.
- 3 Thread electrical cable from Light Bar into Monolith as Graphic Wing is inserted into slotted opening in Monolith. Attach Graphic Wing at inside of Monolith using (4) 1/4-20 x 1" socket head cap screws.
- 4 Plug power-con from Light Bar into transformer in Monolith. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.
- 5 Use leveler foot on Graphic Wing to level the Space Time Marker in position.
- 6 Insert Globe 601D into tube in curved corner of Graphic Panel. Align the hole in Globe post with set screw in receptacle tube and tighten Globe in position using the individual 5/64 allen wrench provided.



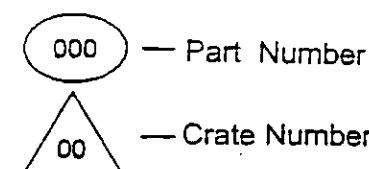
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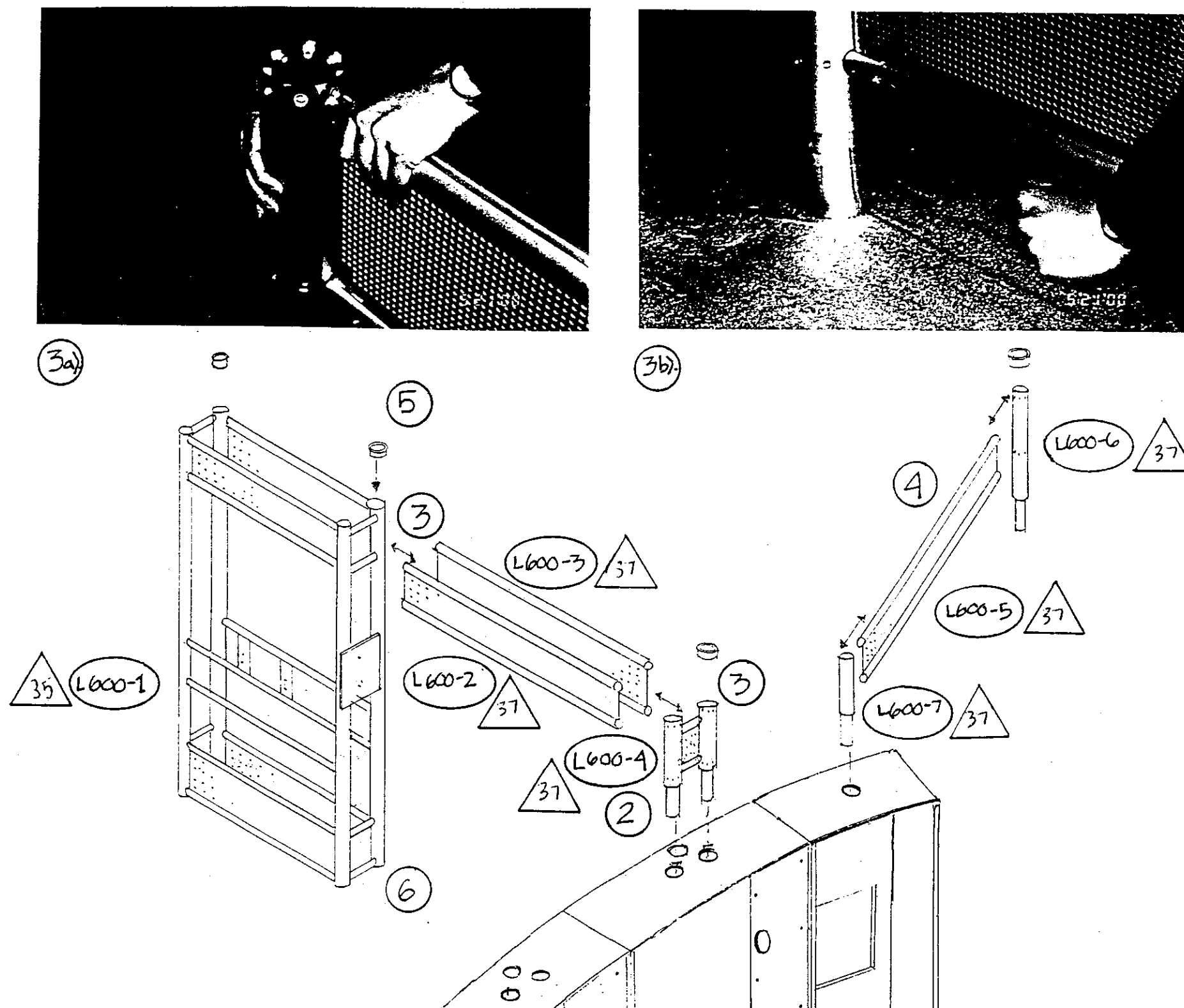
# ASSEMBLE LEITNER

## Locate Leitner Parts:

- (1) Leitner Box Assembly (L600-1, Crate 35)
- (2) Leitner 89" Straight Lengths (L600-2, -3, Crate 37)
- (1) Leitner Assembled End Section (L600-4, Crate 37)
- (3) Leitner pieces to connect Space Time Marker (L600-5, -6 and -7, Crate 37)
- (8) Leitner 1" Top Rings (Crate 37)

## Assemble Leitner and attach to Space Time Marker and Icon Wall for support

- ① Position Leitner L600-1 on floor roughly according to layout.
- ② Locate Leitner L600-4 and insert sleeves into holes in the top of the specific Icon Wall section as indicated by the venue layout. (Note: L600-4 will fit into either the A or B Wall Sections; choose the one indicated by the layout for this exhibition.)
- ③ Attach L600-2 and -3 to L600-4 and L600-1 using the long red handled Leitner tools provided. Assemble by:
  - a). aligning the joint and locating the bolt head inside the small diameter horizontal Leitner tube, then
  - b). inserting the red handled Leitner tool into the bolt head located inside the tube end. APPLY SOME PRESSURE TO COMPRESS SPRING BEHIND THE BOLT HEAD while screwing in the bolt.
- ④ Attach L600-5, -6 and -7 together again using red handled Leitner tool. Insert long L600-6 into the top of the Space Time Monolith (601A) and the short end L600-7 into the Icon Wall Section indicated in the venue layout. Insert at the same time at each end, keeping assembly level while inserting.
- ⑤ Install (8) 1" high Leitner Top Rings into vertical Leitner parts L600-1, -4, -6 and -7 to finish off tops of posts.
- ⑥ Level Leitner sections as needed using leveler feet attached.



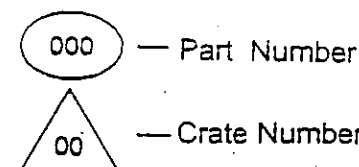
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ASSEMBLE ADDITIONAL LEITNER

Locate additional Leitner Parts:

- (1) Wire Tray (L600-8, Crate 37)
- (1) Junction Box and extension cord for STM (L600-9, Crate 37)
- (1) Metal Wire Tube (L600-10, Crate 37)

Position Wire Tray L600-8 on top of Leitner between L600-2 and -3.  
Position Metal Wire Tube L600-10 through hole in end of Tray, extending down into top of icon.

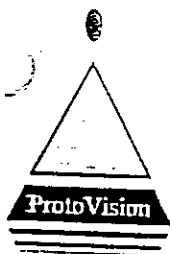
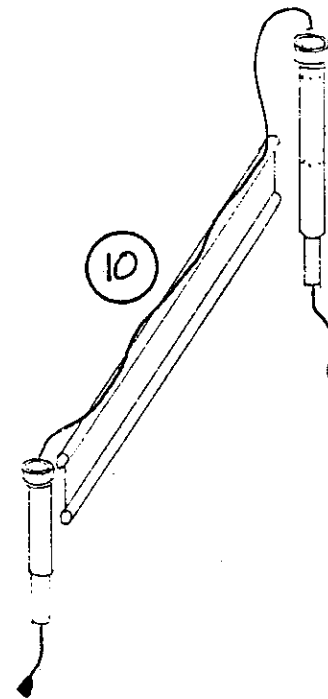
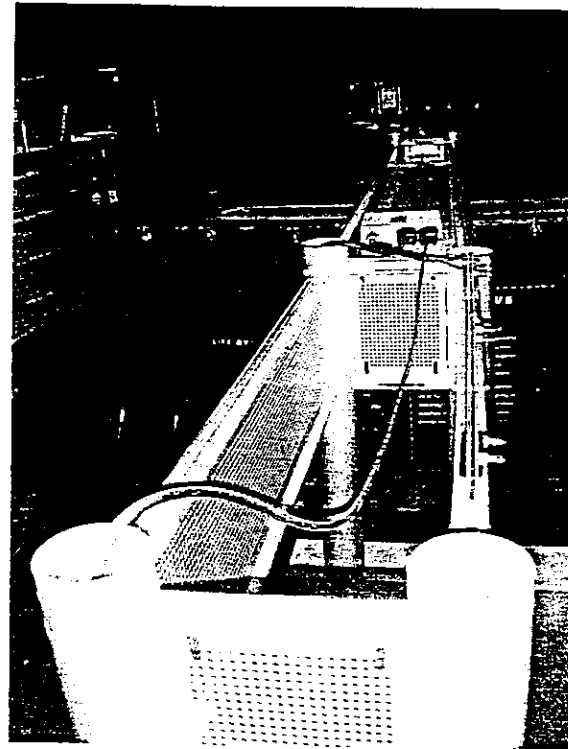
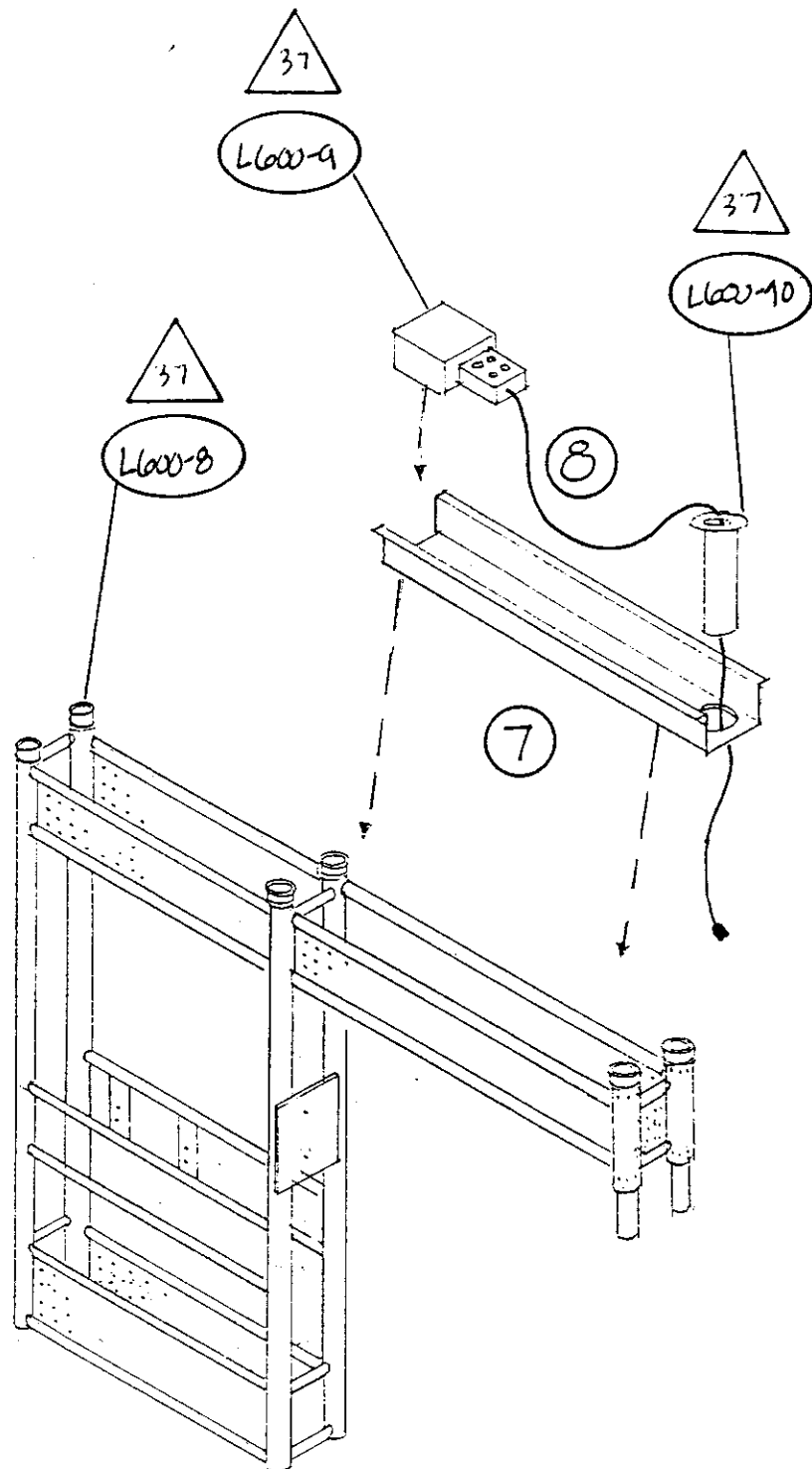
Connect electrical across Leitner into Junction Box

- 8 Place Junction Box L600-9 in Wire Tray, per position markings inside Tray. Thread wire from junction box across the Wire Tray, down through the Metal Wire Tube into the Icon Structure.
- 9 Plug in all electrical feeds from top of Leitner assembly into Junction Box in Wire Tray, matching color coded markings.

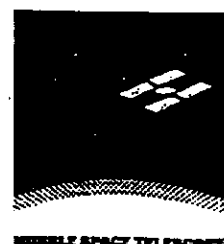
Connect electrical for Space Time Marker into Icon

- 10 Locate extension cord for Space Time Marker inside Icon Wall 600A, and connect inside Space Time Marker. Pass up through L600-6, across top of L600-5 and down through L600-7 into Icon. Plug in to the outlet closest to the point of entry.

Clean any visible black abrasions off Leitner using the Leitner pumice provided in tool box, following label instructions.



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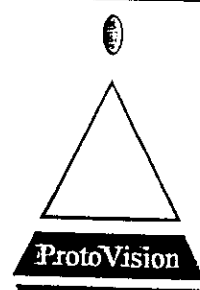
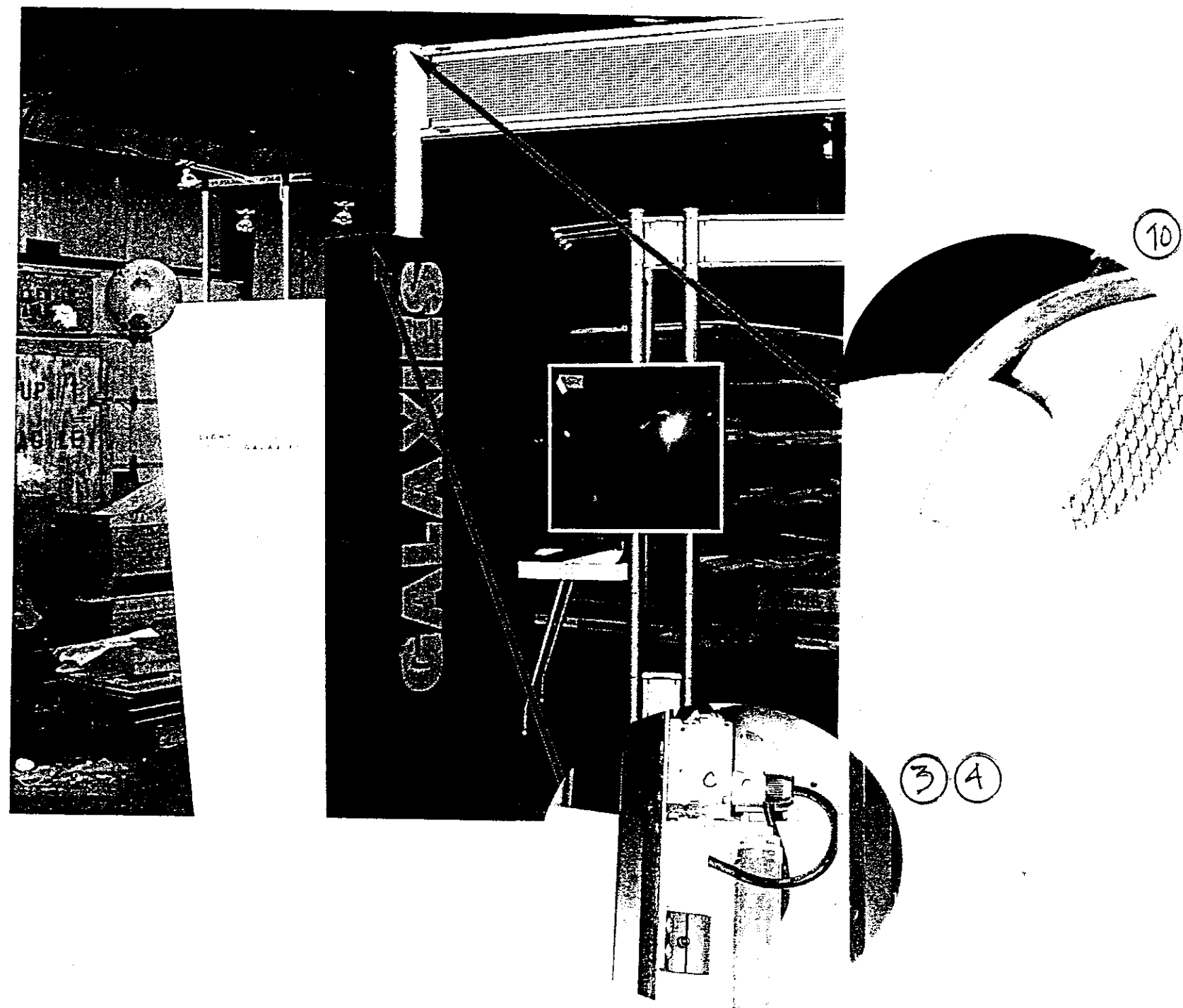
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ICON READER RAIL AND MONITOR BOX

Locate Icon Reader Rail and Monitor Box Parts:

- (1) Icon Reader Rail (600G, Crate 29)
- (1) Monitor Box (603, Crate 29)
- (1) 13" Sony Monitor (603, Crate 50)
- (1) Adtech Drive "AGE OF THE UNIVERSE" (#\_\_, Crate 49)

Attach Icon Reader Rail to back of Icon

- 1 Align Icon Reader Rail 600G with cleat and inserts on back side of Icon Walls. Lower Icon Reader Rail over cleat and attach to metal angles (inside Icon) using (2) 1/4-20 x 1" hex head bolts at ends of cleat, and (1) longer 1/4-20 x 2 1/2" hex head bolt at center of cleat. Use 3" socket extension to enable access to bolt heads.

Install Monitor Enclosure and Monitor

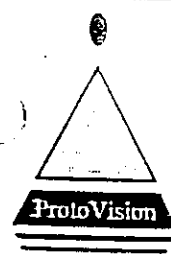
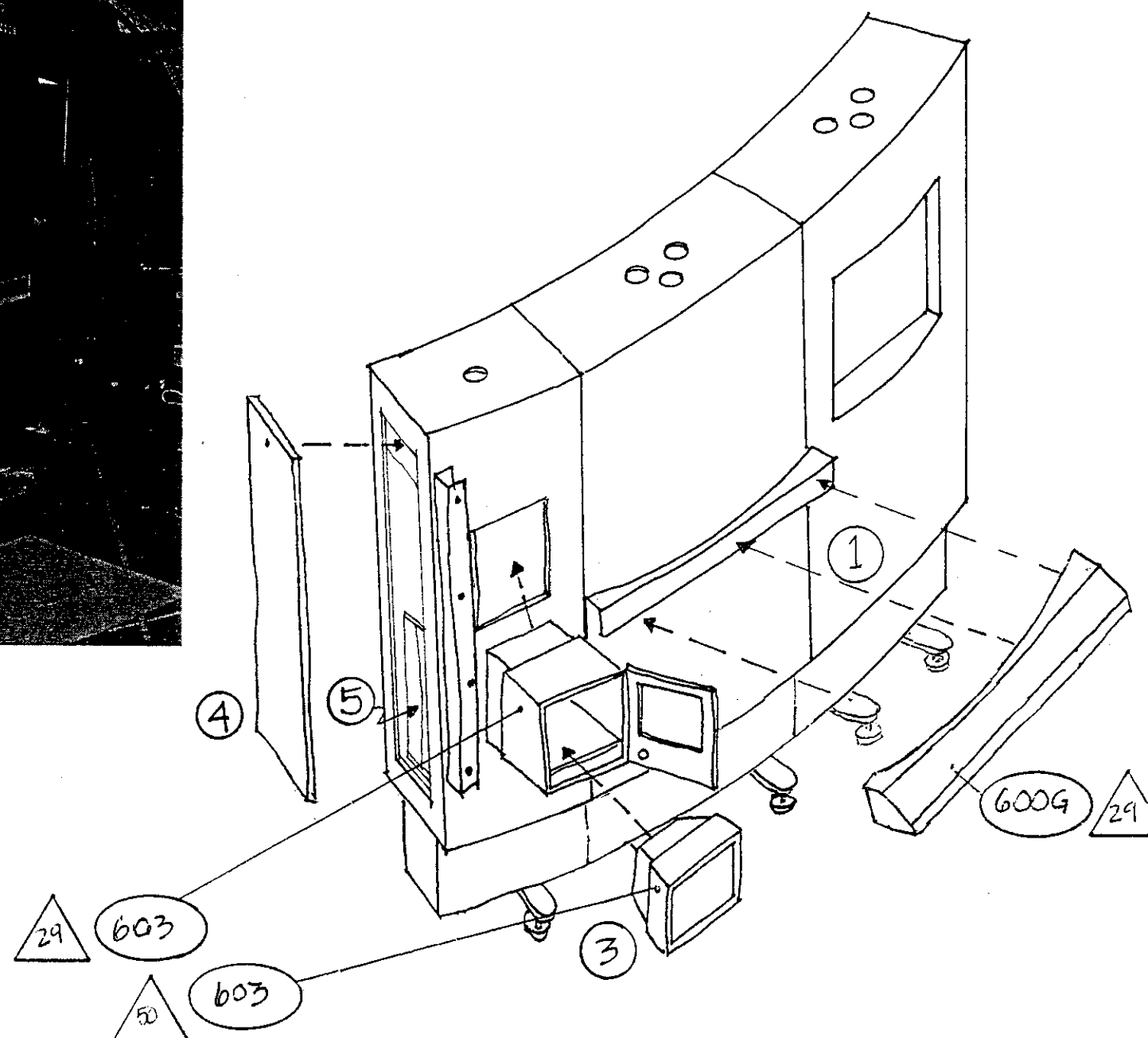
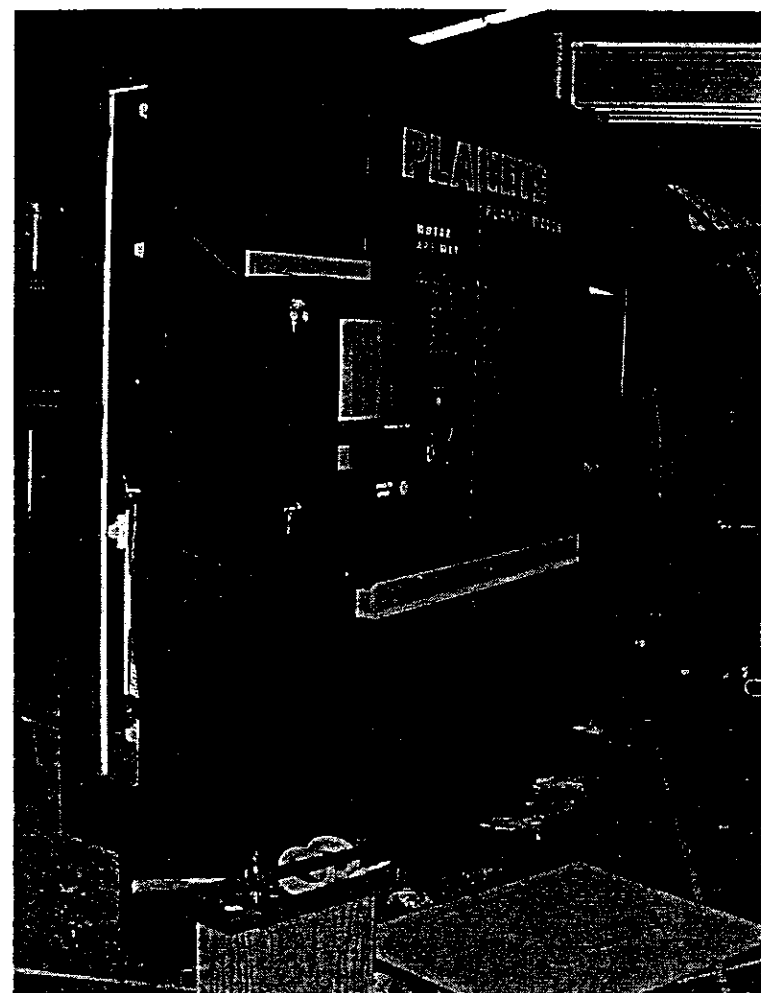
- 2 Slide Monitor Enclosure 603 into opening in Icon from the front, and bolt into place using (4) 1/4-20 x 2" hex head bolts with flat washer and hex nut.
- 3 Install 13" Sony Monitor 603 through front door of Monitor Enclosure. From inside the Icon, connect video and audio cables between Adtech Player and Monitor, matching colored markings. Plug Monitor into power strip. Check that Adtech is still plugged into power strip, and that power strip is still plugged into duplex outlet, and that the switch is turned on.

Adtech Mirage Player

- 4 Access to Adtech players in Icon Wall is in the narrow end of Icon, nearest the Monitor Enclosure. To access the player, remove the (1) 1/4-20 x 1 1/2" black button head allen screw with black washer at top of access panel, and lift off access panel.
- 5 Locate Adtech Drive #\_\_ "AGE OF THE UNIVERSE", and use key to install and lock in place. **(Note: Adtech Mirage will not play unless drive is locked in place.)**

Test Adtech drive before completing Icon Assembly.

- 6 Replace using same 1/4-20 x 1 1/2" black screw and washer.



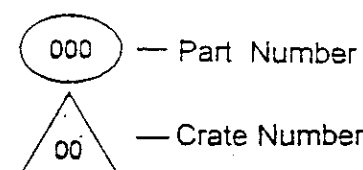
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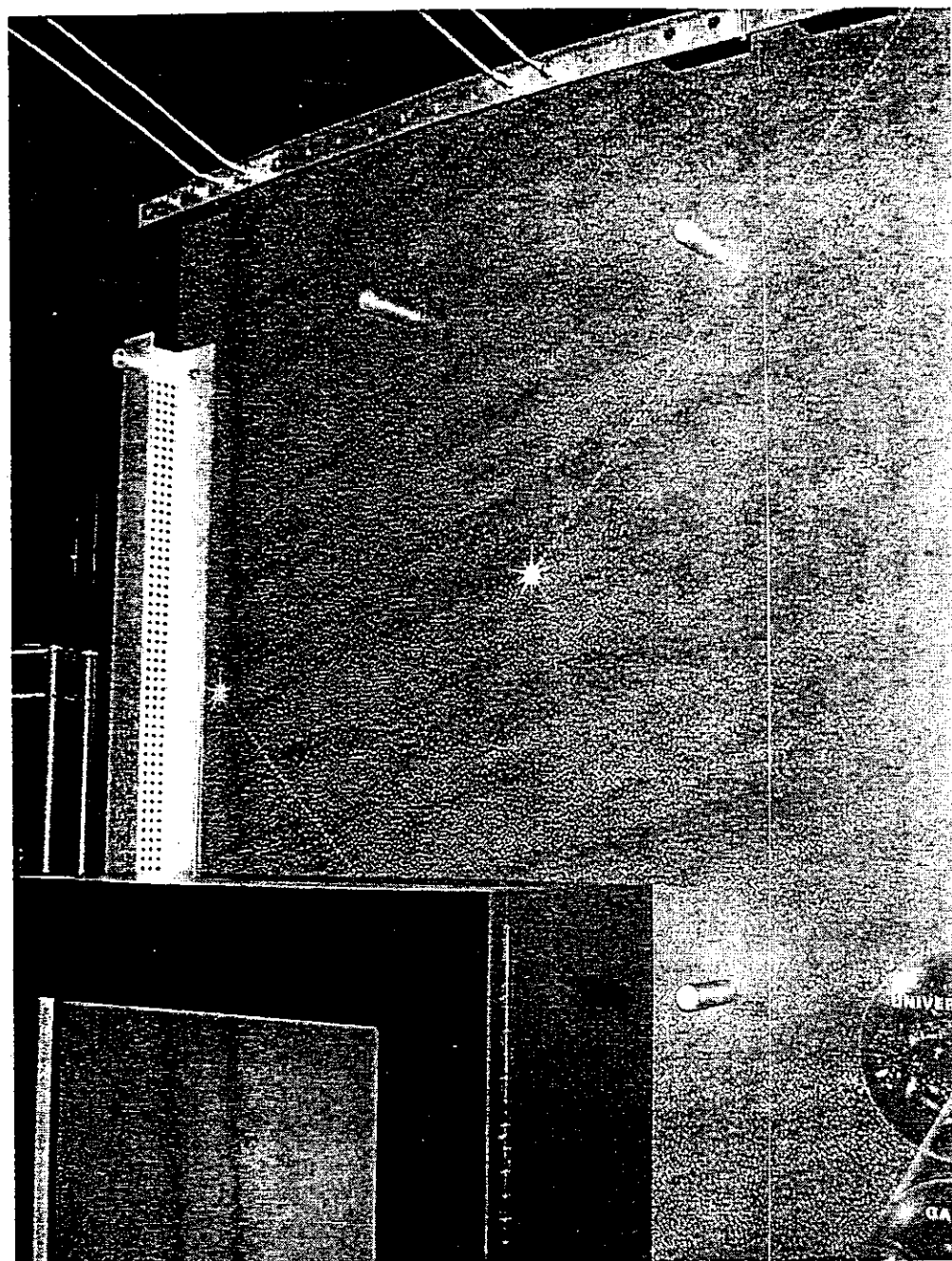
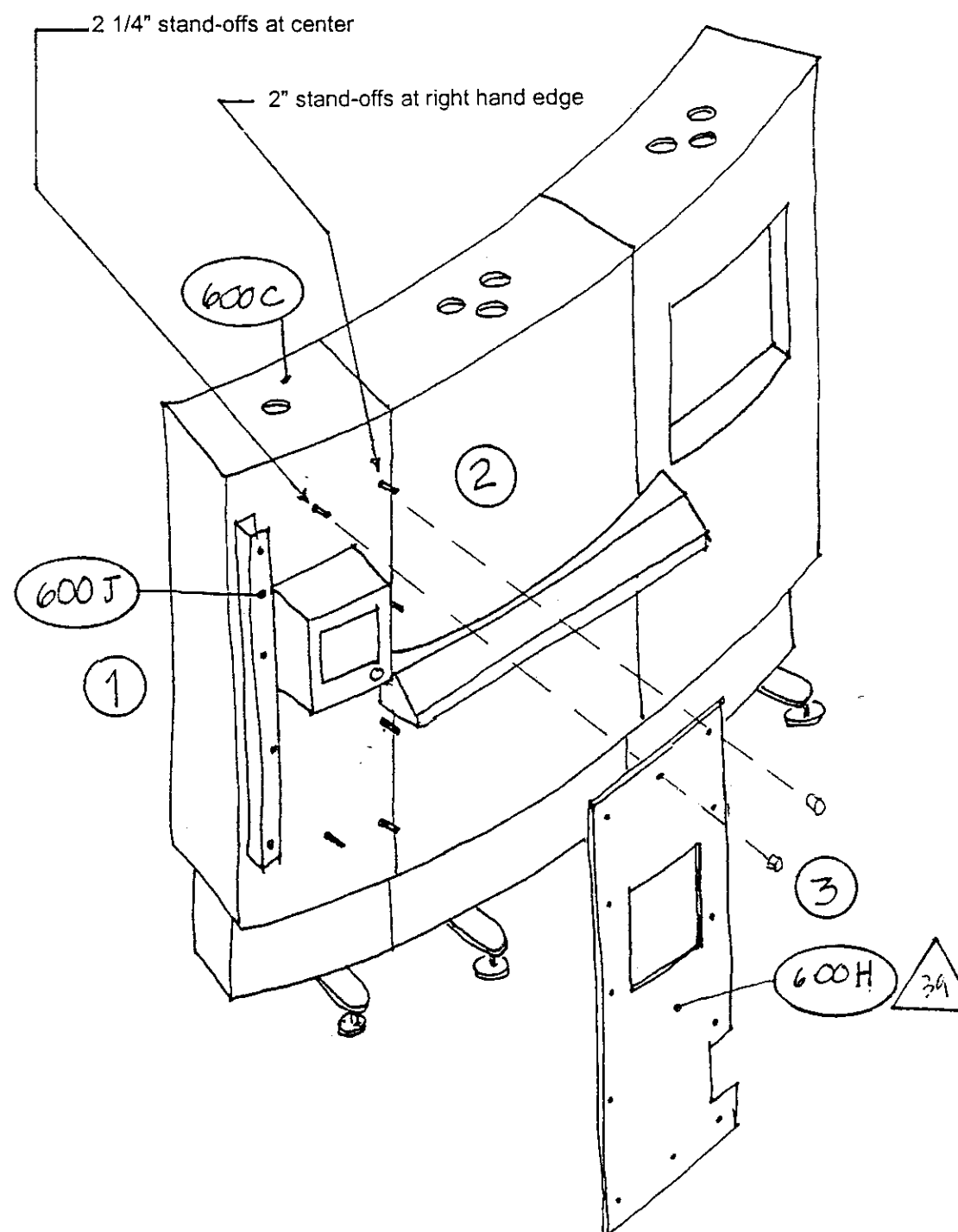
ATTACH BLUE ACRYLIC GRAPHIC

Locate Blue Acrylic Graphic Parts:

- (1) Blue Acrylic Panel: "HOW OLD IS THE UNIVERSE"  
(600H, Crate 39)

Attach Blue Acrylic Panel

- 1 Perforated Metal Bracket 600J arrives attached at left hand edge of Icon Wall 600C. Stand-offs (with caps) on Bracket should be facing out.
- 2 From Hardware Box, install (4) 2" and (2) 2 1/4" stand-offs (with caps) to hold Blue Acrylic Panel in position. Install the 2" stand-off along the right hand edge, and the 2 1/4" at center top and bottom. Install all from the inside of the Icon, using (6) 5/16-18 x 1" black button head allen screws with washer and lock-washer. Insert screw through Icon and into stand-offs on finish side.
- 3 Remove caps from all (10) stand-offs and position Blue Acrylic Graphic over protruding threaded posts. Replace caps on all (10) stand-offs to secure Blue Acrylic in position. **Note:** Caps ship attached to stand-offs in the Hardware Box, or attached inside Icon 600C.



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000 — Part Number  
00 — Crate Number

## INSTALL PENDENT LIGHTING

### Locate Pendant Lighting Parts:

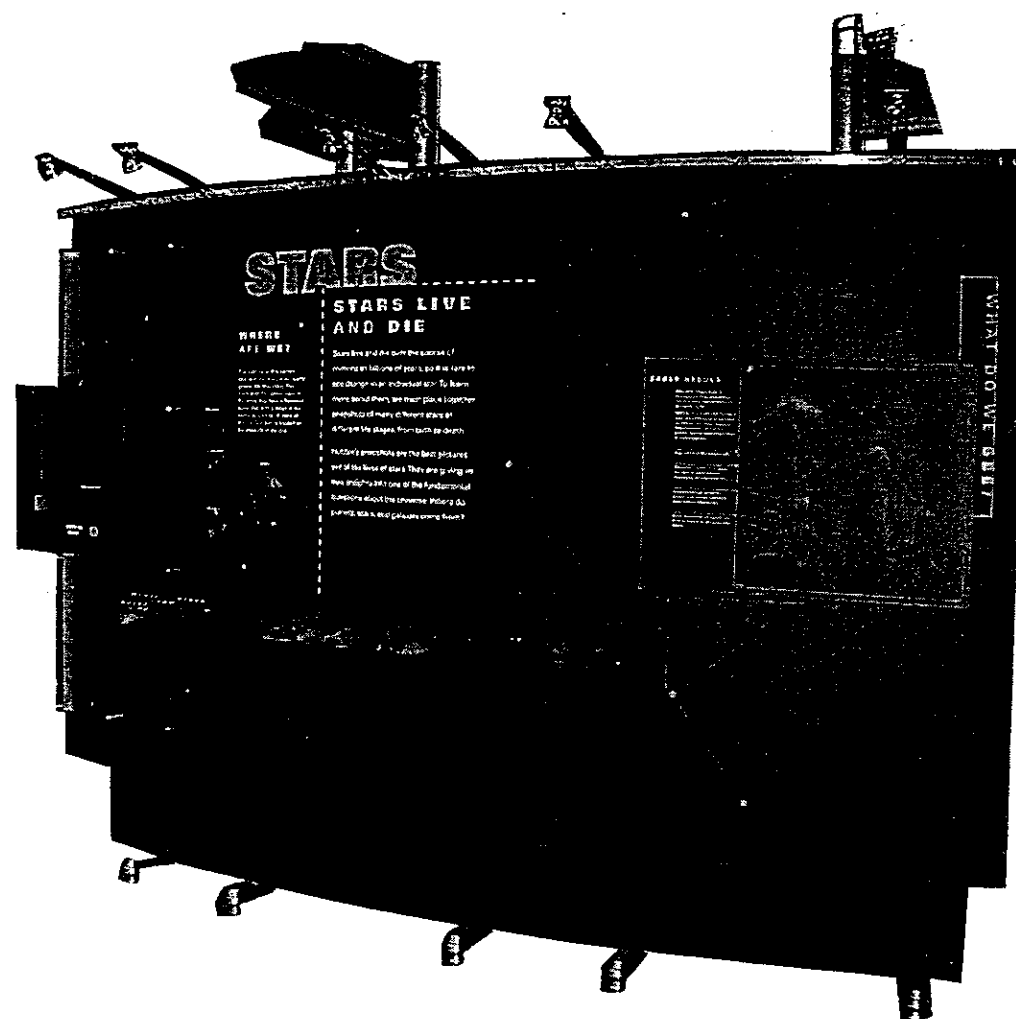
- (18) Angled Chrome Rods (Crate 49)
- (8) Straight Chrome Rods (Crate 49)
- (3) 20 watt Halogen Bulbs with Chrome Sockets (Crate 49)
- (10) 50 watt Halogen Bulbs with Chrome Sockets (Crate 49)

### Install Pendant Lighting

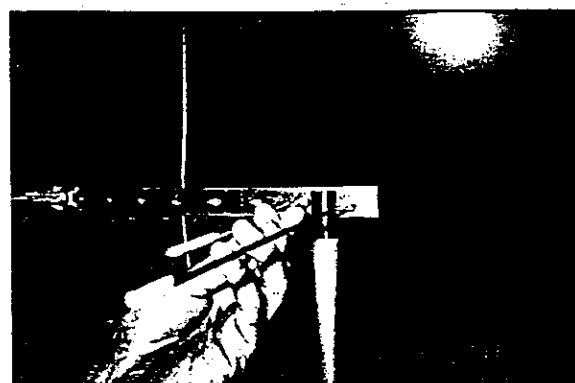
**Note:** To avoid shock, disconnect or turn off power when installing pendant lighting.

#### Assemble Pendant Lights:

- a.)** Screw (12) Angled Chrome Rods into the (12) knurled knobs on the **Icon Wall**. To make angled rods parallel, insert smallest screw driver or thin allen wrench that fits the hole and rotate the knurled receptacle until the angled rods are parallel.
- b.)** Screw (6) Angled Chrome Rods into the (6) knurled knobs on the **Space Time Marker**. Make rods parallel by using the process described above.
- c.)** Screw (8) Straight Chrome Rods into the (8) knurled knobs on the **Leitner Structure and NICMOS Light Bar**.
- d.)** Install sockets with **20 watt bulbs** in Space Time Marker. Install sockets with **50 watt bulbs** in Icon Wall and Leitner Structures. To install Sockets, loosen thumb screws on each end of socket, slide onto chrome rods and retighten thumb screws.
- e.)** To change or install bulbs, loosen (2) 1/8" set screws in socket, insert prongs of halogen bulb into matching holes in socket, and retighten set screws.



b).



c).



d).



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## INSTALL AV CABINET

### Locate AV Cabinet Parts:

- (1) Reader Rail "GALAXY DISTANCES" with (1) leg (602-1b, Crate 45)
- (1) AV Cabinet (602-1, Crate 45)
- (1) Graphic Panel (602-1a, Crate 45)
- (1) MAC G4 (602, Crate 49)
- (1) 17" Sony Monitor (602, Crate 50)

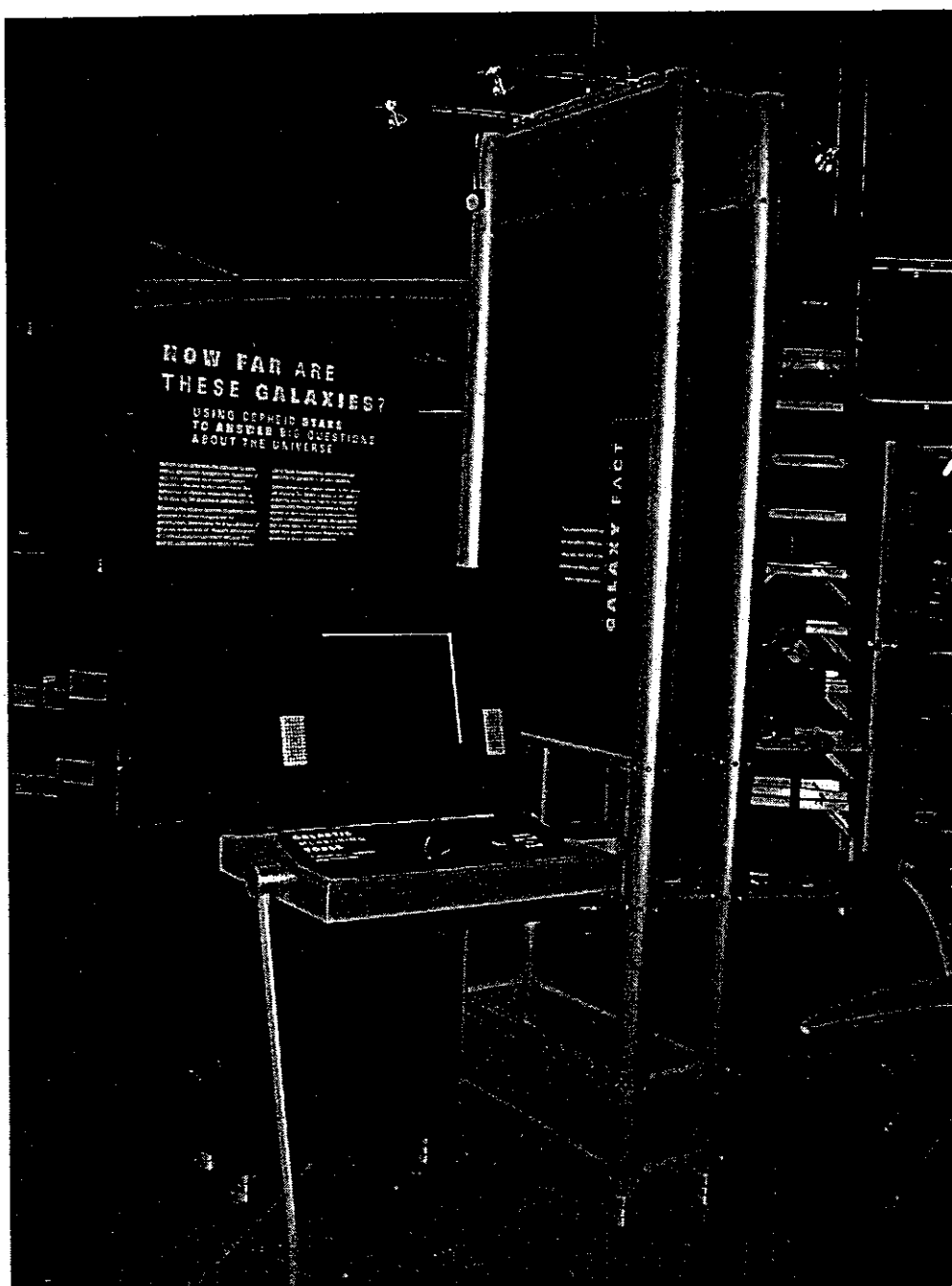
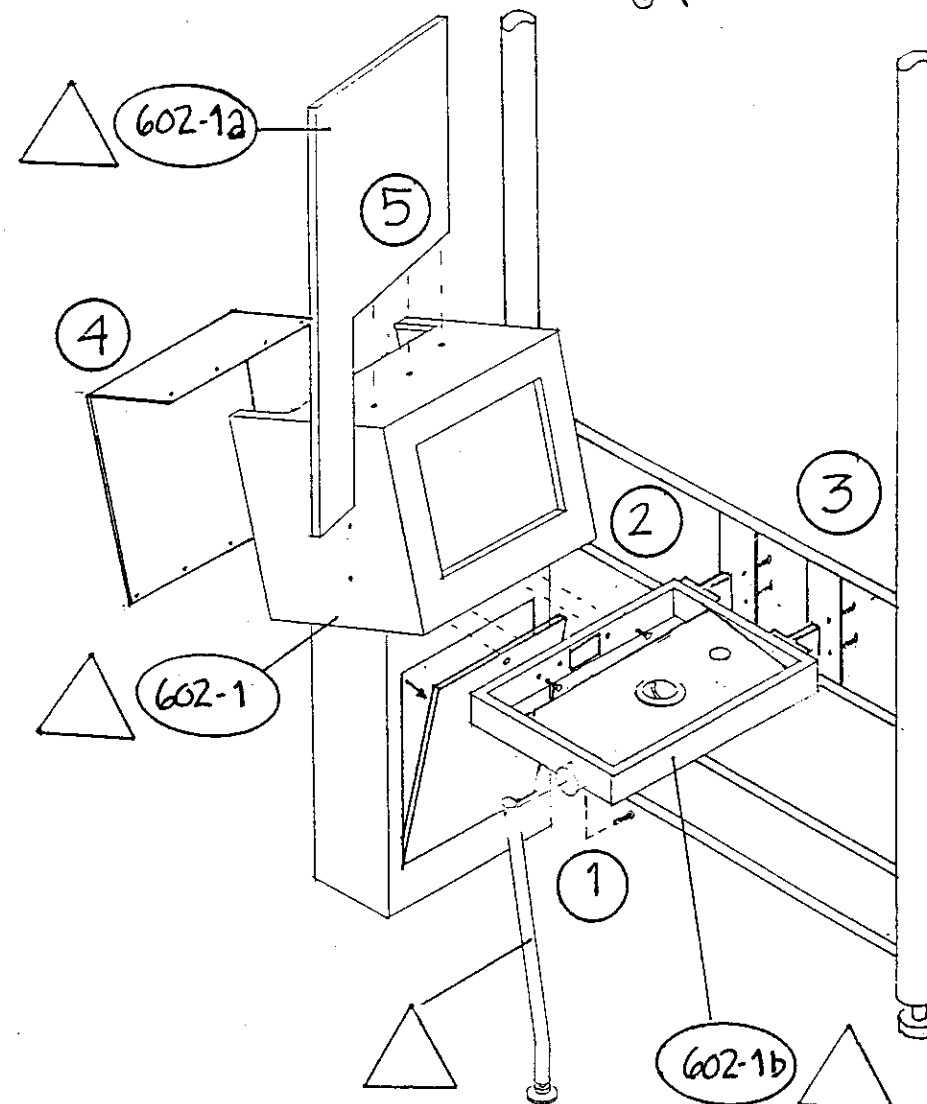
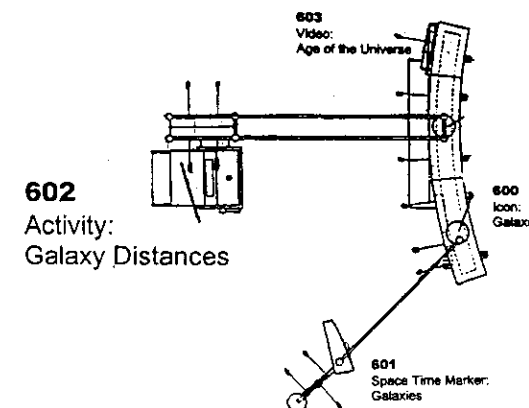
### Attach Reader Rail to AV Cabinet and to Leitner

- ① Position Leg facing forward, insert into underside of cylindrical receptacle on side of Reader Rail and attach into receptacle using (1) 5/16-18 x 2" s.s. button head allen screw on each Leg.
- ② Attach back of Reader Rail to AV Cabinet at outermost holes using (2) 1/4-20 x 2 1/2" s.s. button head socket screws.
- ③ Position AV Cabinet with Reader Rail next to the Leitner in its final location. Align preset holes in Leitner to holes in T-bracket assembly on the Reader Rail. Attach using (4) 1/4-20 x 1" s.s. flat head allen screws. **Note:** No other screws visible in the area are involved in this connection.

Adjust level of Reader Rail using leveler feet.

### Install Graphic Panel

- ④ Remove perforated metal back cover by removing (6) 10-32 x 1/2" s.s. button head allen screws.
- ⑤ Position Graphic Panel over AV Cabinet using locator pins to position top portion of Graphic correctly. Attach with (6) 1/4-20 x 1 1/2" flat head phillips screws installed from inside Cabinet.

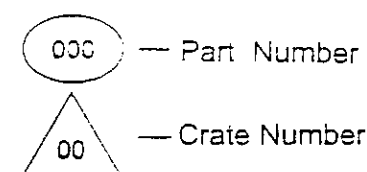


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## INSTALL EQUIPMENT

### Install MAC G4 and 17" Monitor

- ⑥ Unlock front of Cabinet base and CAREFULLY LIFT OFF DOOR, being watchful not to drop the door.
- ⑦ Place MAC G4 labeled for 602 inside Cabinet. Feed cables through passage hole into top of Cabinet to make connection to Monitor, speakers and power strip. Feed power cable from Leitner up through hole in floor of base to connect to power strip plug.
- ⑧ Remove (2) 10-32 x 1 1/2" socket head cap screws from inside Cabinet top to remove Monitor foot-brace. Place 17" Sony Monitor labeled for 602 in position against inside front of Cabinet, and replace foot-brace and cap screws. Connect cables, matching markings.

### Before power-up

- ⑨ Connect USB at back of Reader Rail by removing (2) 10-32 x 3/8" s.s. button head socket screws and plugging the 9-pin connector into receptacle in cabinet.

### Test Activity

- ⑩ Turn on the power strip. Program will automatically boot operating system and Activity Program.

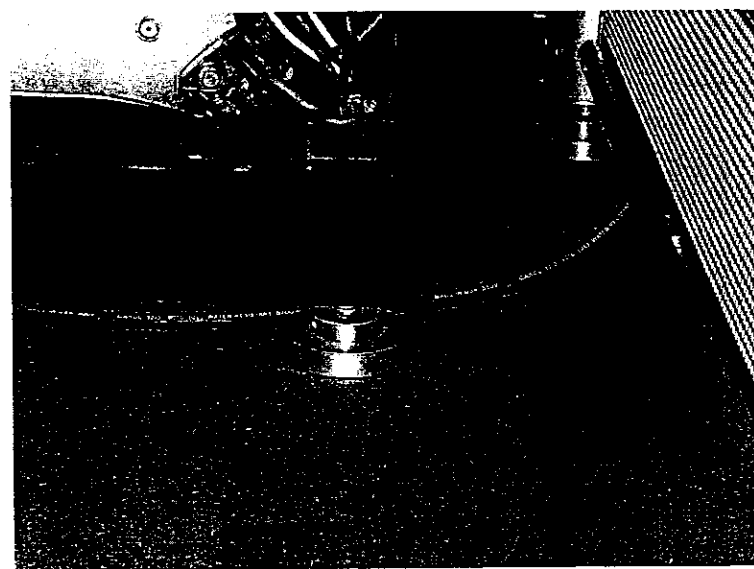
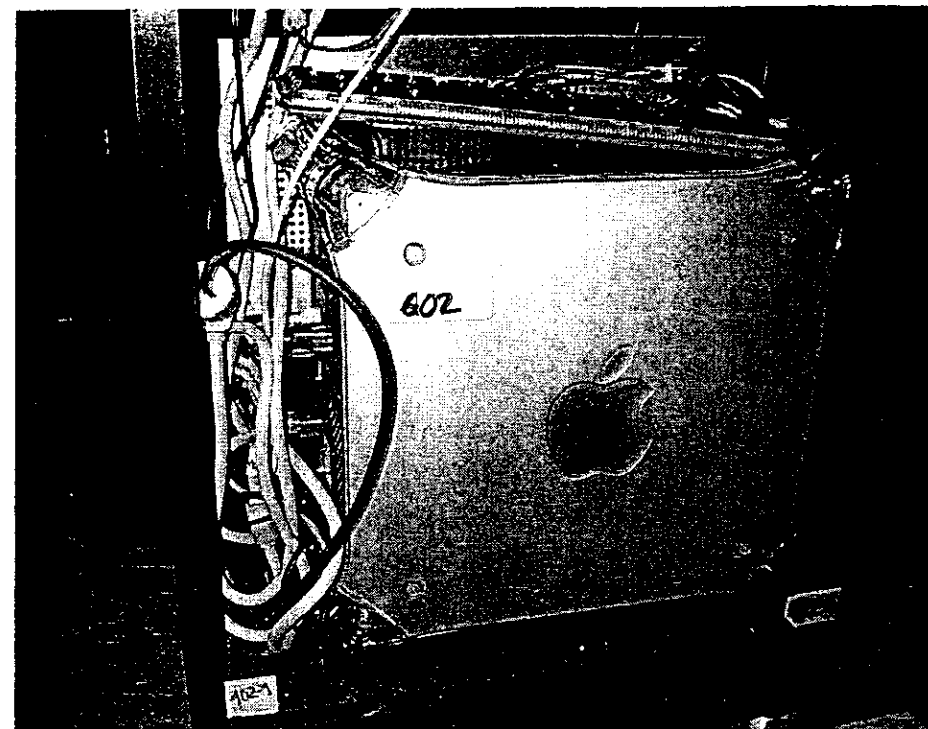
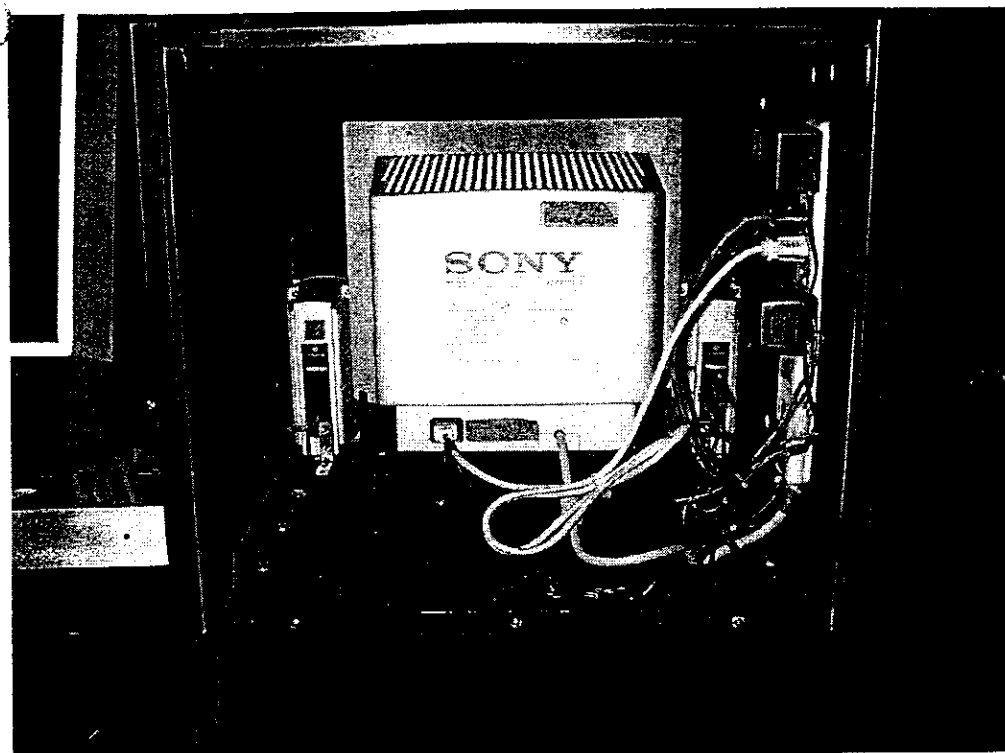
System takes roughly 2 minutes to boot up. Test by playing Activity, using track ball and push button.

Check USB connection under track ball by opening lock on casework under Reader Rail and confirming that USB connection has not come loose.

### Secure Cabinet

- ⑪ Replace (6) button head allen screws that attach perforated metal to back of Cabinet.

Close and lock doors in front of Cabinet.

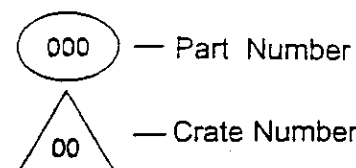


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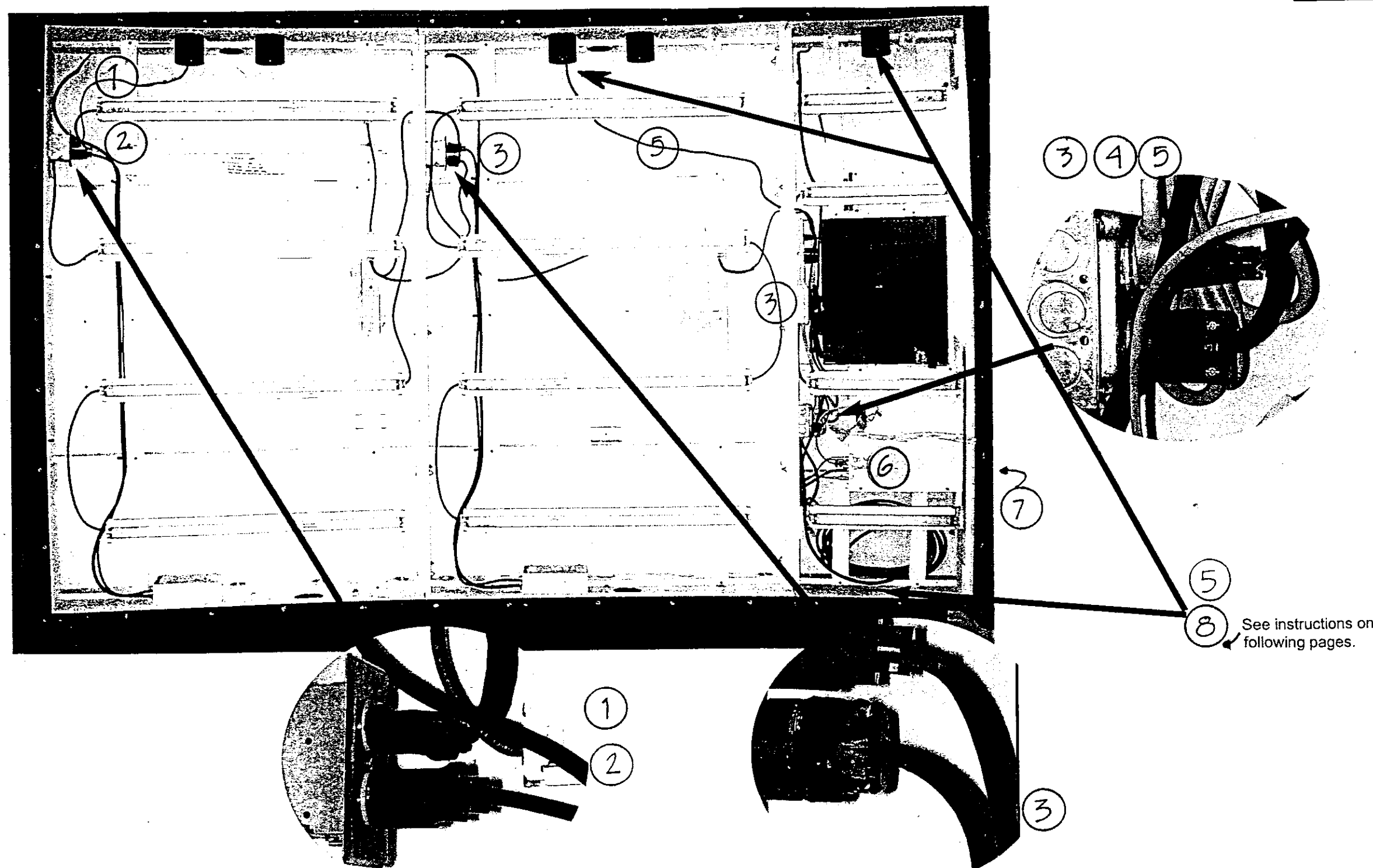


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CONNECT ELECTRICAL



Connect electrical before installing Lexan

- 1 Locate electrical feed from Space Time Marker and plug into duplex outlet in Icon Wall A.
- 2 Locate plug for fluorescent fixture that lights the indented graphic on reverse side of Icon Wall A and make sure it is still plugged in.
- 3 Locate electrical feed from Icon Wall A and plug into duplex outlet in Wall B as indicated. Repeat to connect Wall B to Wall C. Locate main power feed for Icon Wall in Wall C.
- 4 Locate cord from power strip for monitor in Icon Wall C and check that it is still plugged in to duplex and turned on.
- 5 Feed power feed from Junction Box in Wire Tray through wire tube and connect into junction box in Icon Wall C.
- 6 After the Lexan is installed there will be not easy access to the wiring inside the Icon. Therefore, make all electronic connections for inside Icon, including:
  - a). plug in 13" TV
  - b). plug audio and video cables from Adtech Mirage into TV
  - c). plug button plugs together
  - d). check that Adtech and button are still plugged into power strip

Adtech Mirage Player

If not already in place, locate Adtech Drive # "AGE OF THE UNIVERSE", and use key to install and lock in place. **(Note: Adtech Mirage will not play unless drive is locked in place.)** Test Mirage prior to installing Lexan.

- 7 See photo on following pages.

8 See instructions on following pages.

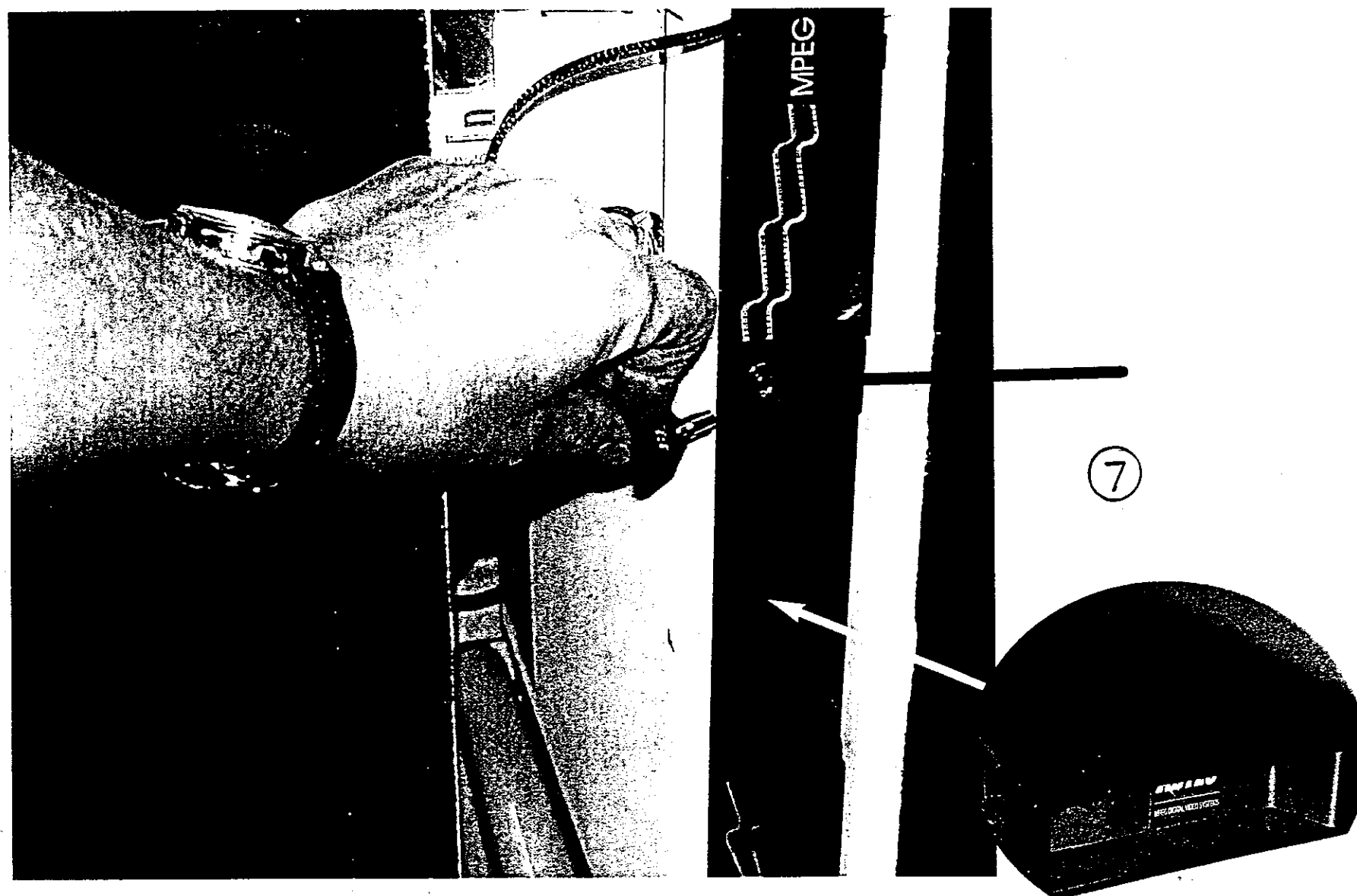


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# CONNECT ELECTRICAL

## Connect to house power

### To power from ceiling...

- 8 Pass main power feed from inside Icon Wall C and thread up through Wire Tube into the Wire Tray. **Note:** Even if an Alternate Leitner layout is chosen for venue, route wire from Icon up through wire tube into wire tray. Connect (1) main power cord from Icon to 20 amp house power.

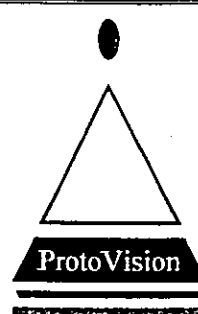
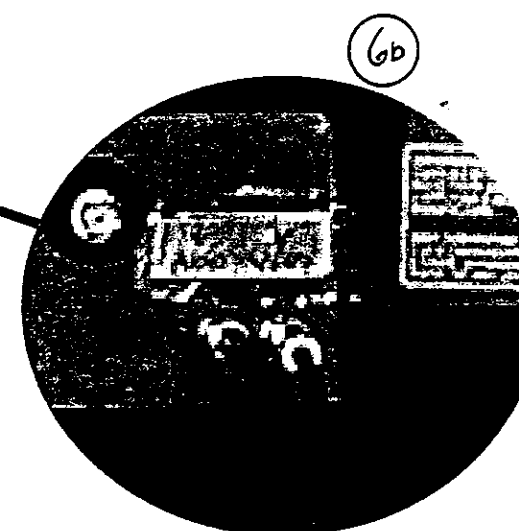
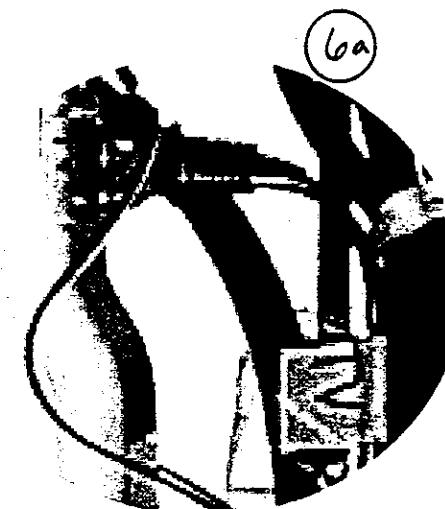
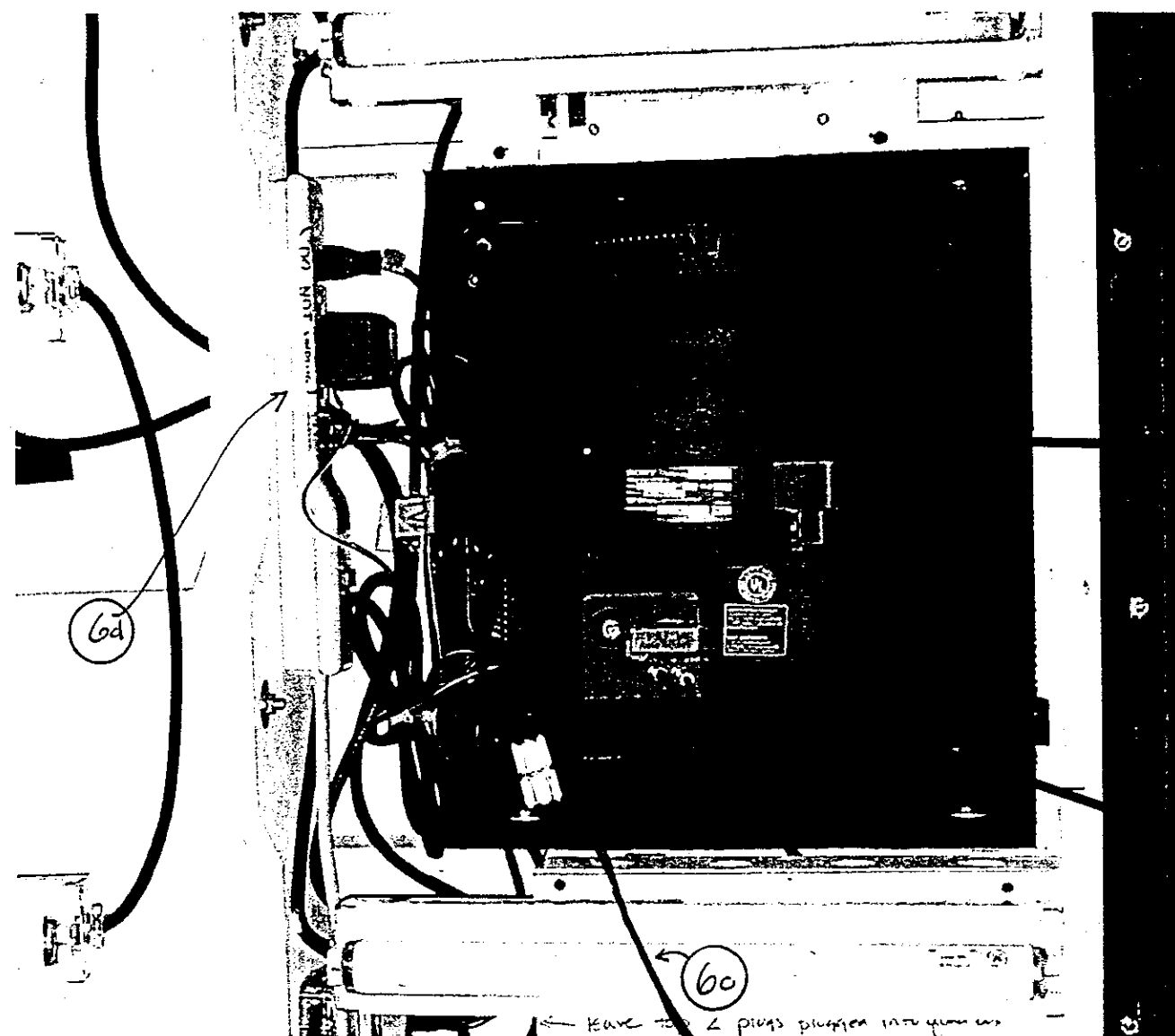
### To power from floor...

- 8 Pass main power feed through inside Icon Wall C to bottom, then through holes along bottom of sections, and down into Base closest to house power in floor. Thread main power feed from junction box in wire tray down into Icon structure. Pass behind fluorescent bulb and along bottom of Wall sections and down into Base closest to house power.

Connect to house power. Video and Activities should boot and fluorescent and low voltage lighting should go on.

**Test power** for several hours if possible, connecting and disconnecting circuit several times to ensure ballasts and starters are working properly.

- 8 See photo on previous page.



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# INSTALL ICON LEXAN AND DURATRANS

## Locate Duratrans Parts:

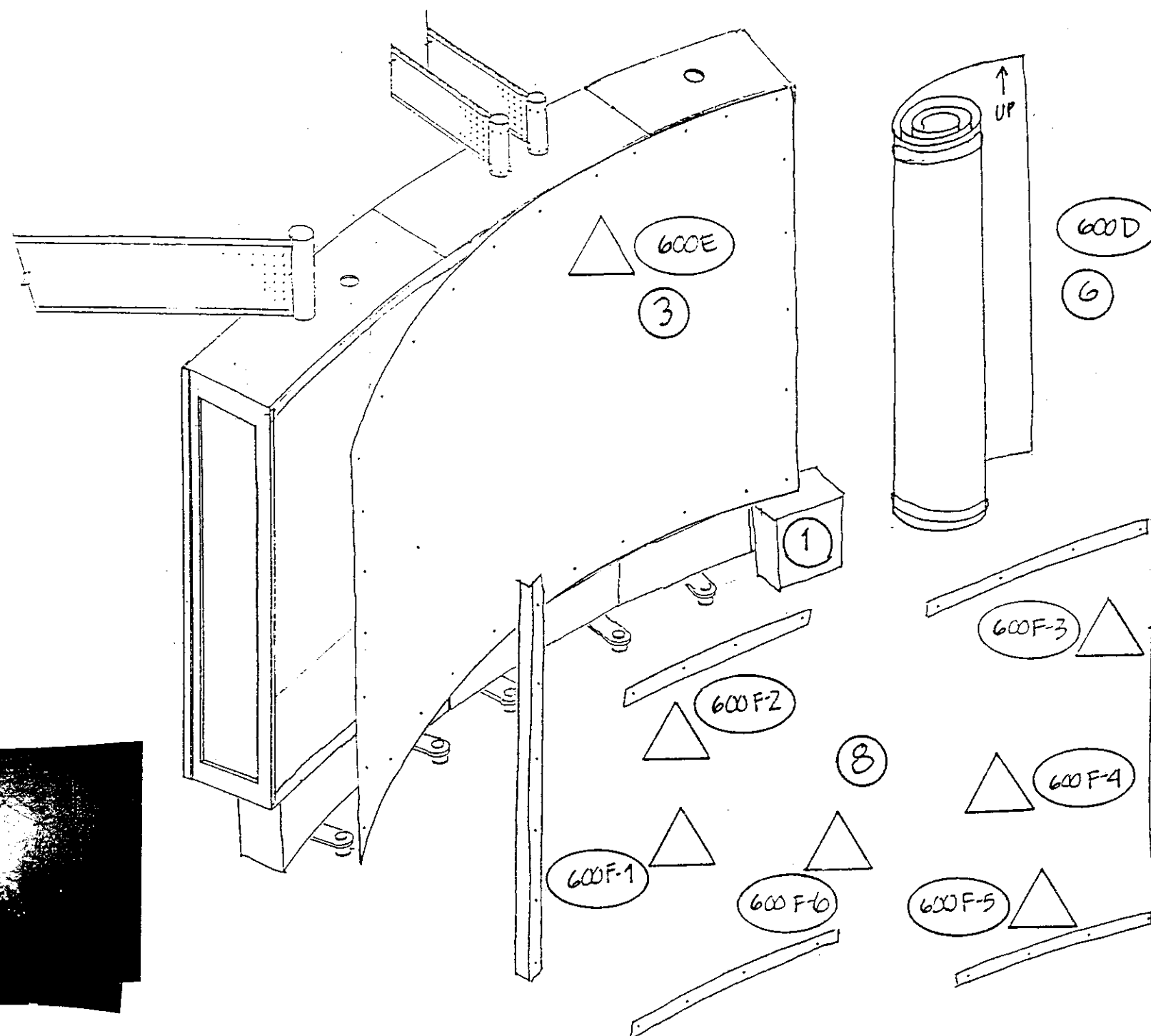
- (1) Lexan Sheet (600E, Crate 41)
- (1) Duratrans (600D, in long cardboard boxes, Crate 54)
- (6) Black Metal Frame Pieces (600F-1 thru -6, Crate 41)
- (2) plywood "dead men" (Crate 29)

## Install Lexan

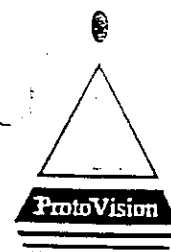
- 1 Position a "dead man" under each outside corner of Icon where it can support the Lexan as it is positioned.
- 2 Clean back of Lexan (the side without the velcro) using rag damp with Windex to remove dust.
- 3 Using minimum of (3) people, carry Lexan into position with velcro side facing out, and place bottom on "dead men" for support. Lift Lexan into position to line up holes in Icon. Install all (20) 1/4-20 x 3/4" flat head phillips screws to secure Lexan to Icon.
- 4 Clean front of Lexan using rag damp with Windex.

## Install Duratrans

- 5 Locate Duratrans BUT DO NOT UNROLL. Determine which end is up, and fit exposed edge (left or right) to velcro on Lexan, being sure to align top and bottom correctly.
- 6 Using two installers, one at top and one at bottom, slowly begin to unroll the Duratrans across the Lexan. Bottom person should keep one hand checking the bottom alignment to feel how straight the Duratrans is unrolling. If alignment is off, re-roll transie, realign against side edge and begin to unroll again.
- 7 Once Duratrans is positioned correctly, pat down velcro. Gently wipe down the front of the Duratrans using rag damp with Windex.
- 8 Position Black Metal Frame pieces and begin attaching in numbered order using (26) 1/4-20 x 1" black button head screws.
- 9 Clean exhibit using rag damp with Windex to remove dust and finger prints.



Icon Image on Duratrans 600D

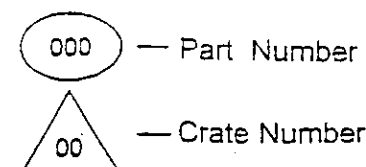


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## DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling.**

**Unlock and remove Adtech Drive from exhibit prior to disassembly and pack in Crate 49.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 26, 27, 29, 32, 35, 37, 38, 39, 40, 41, 45 and AV Crates 49 and 50.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**Lexan and Duratrans** - The Black Metal Frame pieces along the back corners of Icon Walls 500A and C stay attached for shipment. The other (6) need to be removed to disassemble the Duratrans and Lexan, and then pack in Crate 41. As Duratrans is removed, roll carefully, avoiding making kinks in surface, then repack in long boxes in Crate 53. Lexan packs in Crate 41.

**Connections** - Disconnect electrical and other cables inside Icon Walls before removing any AV equipment.

**Pendent Lighting** - Remove Pendent Lighting, **leaving knurled nuts in place** to maintain placement locations. Repack lighting parts in Crate 49.

**AV Cabinet** - Remove all equipment in top and bottom cabinets (except speakers and cables which are attached to cabinets) and repack into AV Crates. Disconnect USB connection inside reader rail before removing. Pack in Crate 45.

## DISASSEMBLY CONTINUED

**Space Time Marker -**

- Disconnect electrical cord and ship inside Icon Wall A wrapped in velcro strap.
- Remove Globe using the 5/64 long handled allen tool to prevent scratching Globe. Treat Globe with extreme care, packing in back into the white flannel sock inside Crate 40.
- Disconnect power-con inside Monolith before removing Light Bar. To disconnect power-con pull back on chrome tab and twist counter clockwise.
- Disassemble Graphic Wing Panel before detaching from Leitner to prevent Monolith from being unstable.

**Blue Acrylic Graphics** - Perforated Metal that holds these panels in lace ships attached with thumb screws inside Icon Wall A. Stand-offs pack in Hardware Boxes. Pack in Crate 39.

**Icon Monitor Box** - Disconnect all cables before removing Monitor or Monitor Box. Adtech Drive ships in Crate 49.

**Icon Walls** - Detach Icons sections from each other and from black Icon Bases. Icon Bases ship with metal feet attached in Crates 26 and 27.

**Insure that all components are packed back into their assigned locations in each crate.**



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— Part Number

— Crate Number

# MAINTENANCE INSTRUCTIONS

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**Icon video remote** is to be used **ONLY** for brightness and contrast.  
Open front door to monitor enclosure to enable remote to activate sensor.

## To replace fluorescent bulbs inside Space Time Markers:

**A** Remove access panel in end of Space Time Marker Monolith by removing the screw in the bracket on top of the monolith.

Raise access panel from the bottom to release it from the cleat which holds it snug against the monolith.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

**If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.**

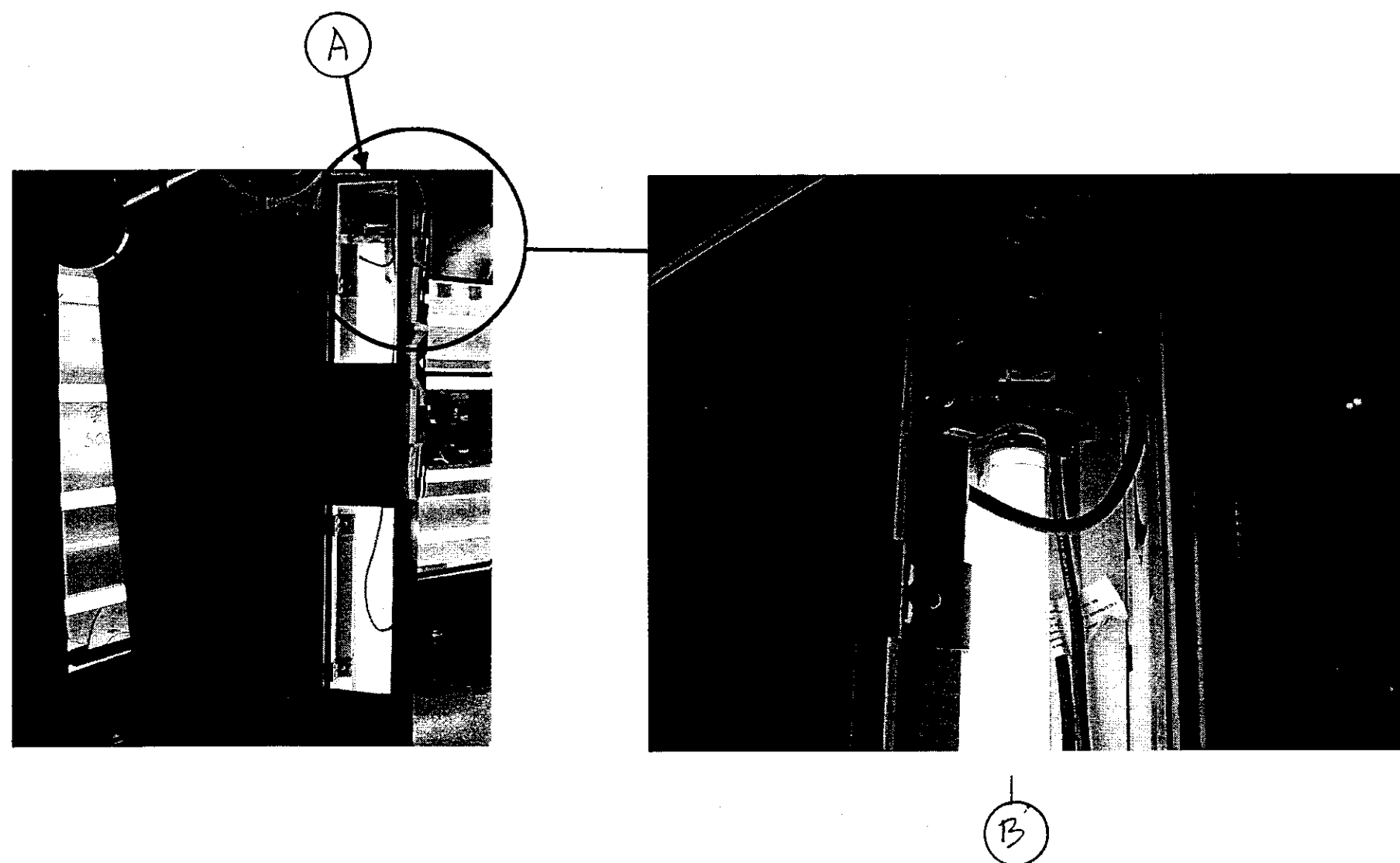
Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

**If silicone bead is not present** continue bulb replacement.

**B** Twist the burned out fluorescent bulb out of its socket

Replace bulb using identical fluorescent:  
F40CW/RS/WM, a 34 watt 48" cool white rapid start  
GE Watt-Meiser fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced.)

Reconnect power and replace access panel and screw at top.



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**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace fluorescent bulbs inside Icon Structures (this includes the fluorescent bulb above the indented graphic area on the back of the Icons):**

Remove all the black button head allen screws, the (8) black metal pieces, and the duratrans.

Remove all the phillips head screws and the lexan sheet.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

**If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.**

Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

**If silicone bead is not present** continue bulb replacement.

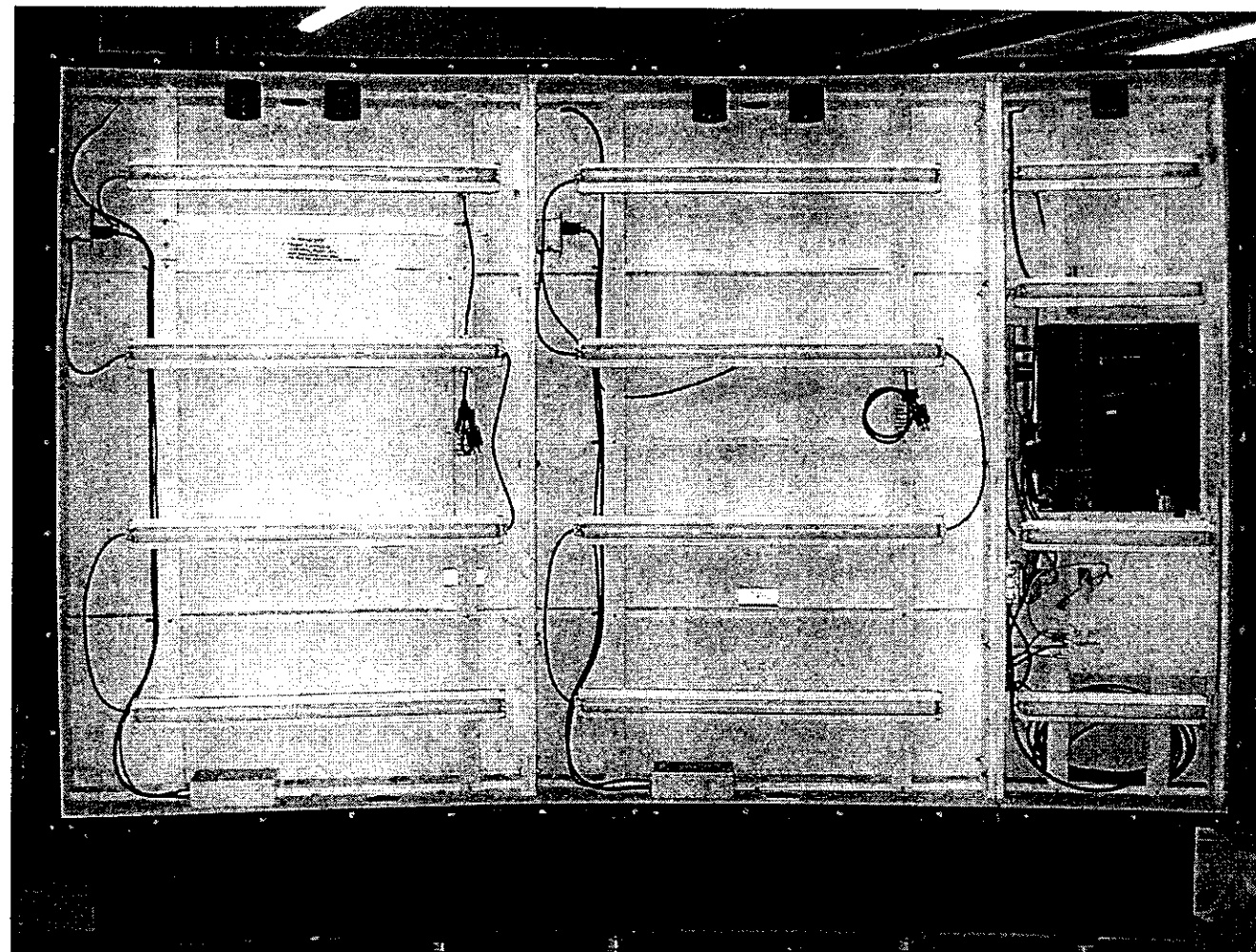
Twist the burned out fluorescent bulb out of its socket

Replace 30 watt bulb using identical bulb:  
F30T12/CW/RS, a 36" 30 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Replace 15 watt bulb using identical bulb:  
F15T12/CW/RS, an 18" 15 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Reconnect power and replace lexan, Duratrans and black metal pieces.

Adtecs will reboot automatically when powered up.

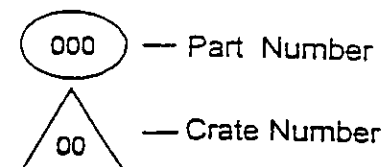


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MAINTENANCE INSTRUCTIONS

Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.

To replace halogen Pendent Light bulbs:

Before changing halogen Pendent Light bulbs, mark the bulbs to be changed and **disconnect power to the exhibit.**

**Caution:** Working bulbs in the area will remain hot for several minutes after being powered down.

Remove chrome socket with burned out bulb from metal rods by loosening thumb screws on both outer ends.

Loosen (2) tiny slotted set screws in socket to release prongs on bulb.

Replace bulbs on Space Time Markers with identical 20 watt bulbs:

GE Q20MR16/FL/CG/CD(BAB) halogen bulb

Order Code: 19370

Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

Replace bulbs on Icon Structures and Leitner Parts with identical 50 watt bulbs:

GE Q50MR16/FL/CG/CD(EXN) halogen bulb

Order Code:19367

Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

Replace by plugging into socket and retightening set screws on socket.

Reattach socket and tighten onto rods with thumb screws on outer ends.

Reconnect power to the exhibit.

See photos in Installation Section.



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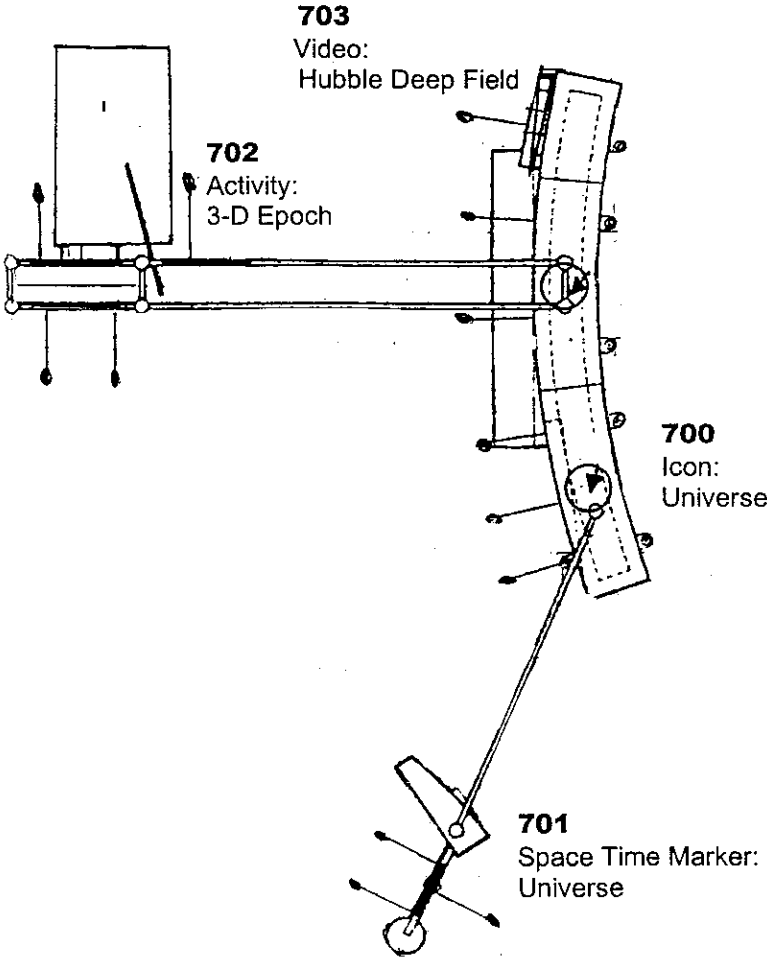
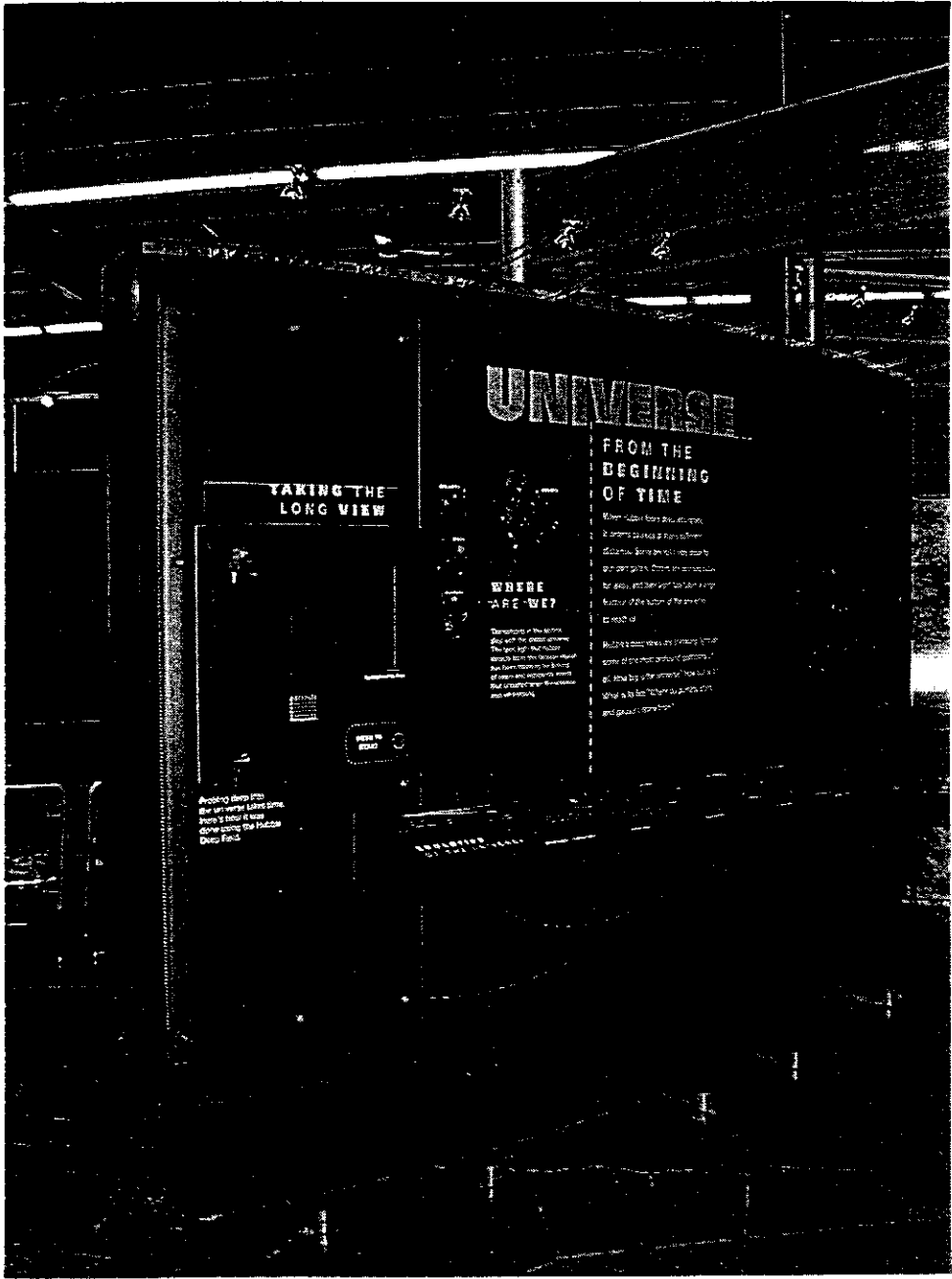


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— Crate Number

OVERVIEW AND PLANNER

**Exhibit Overview:**  
Hubble Deep Field Video: Visitors learn why HDF is important and why this section of the sky was chosen.  
3-D Epoch Hubble Deep Field Activity: Visitors can slide out any one of five layers of the 3-D HDF to look more closely at various epochs (layers); included on each panel is a close up view of an object from each epoch and information about each epoch.

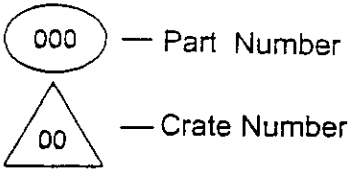


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## OVERALL DIMENSIONS

## Space Planning:

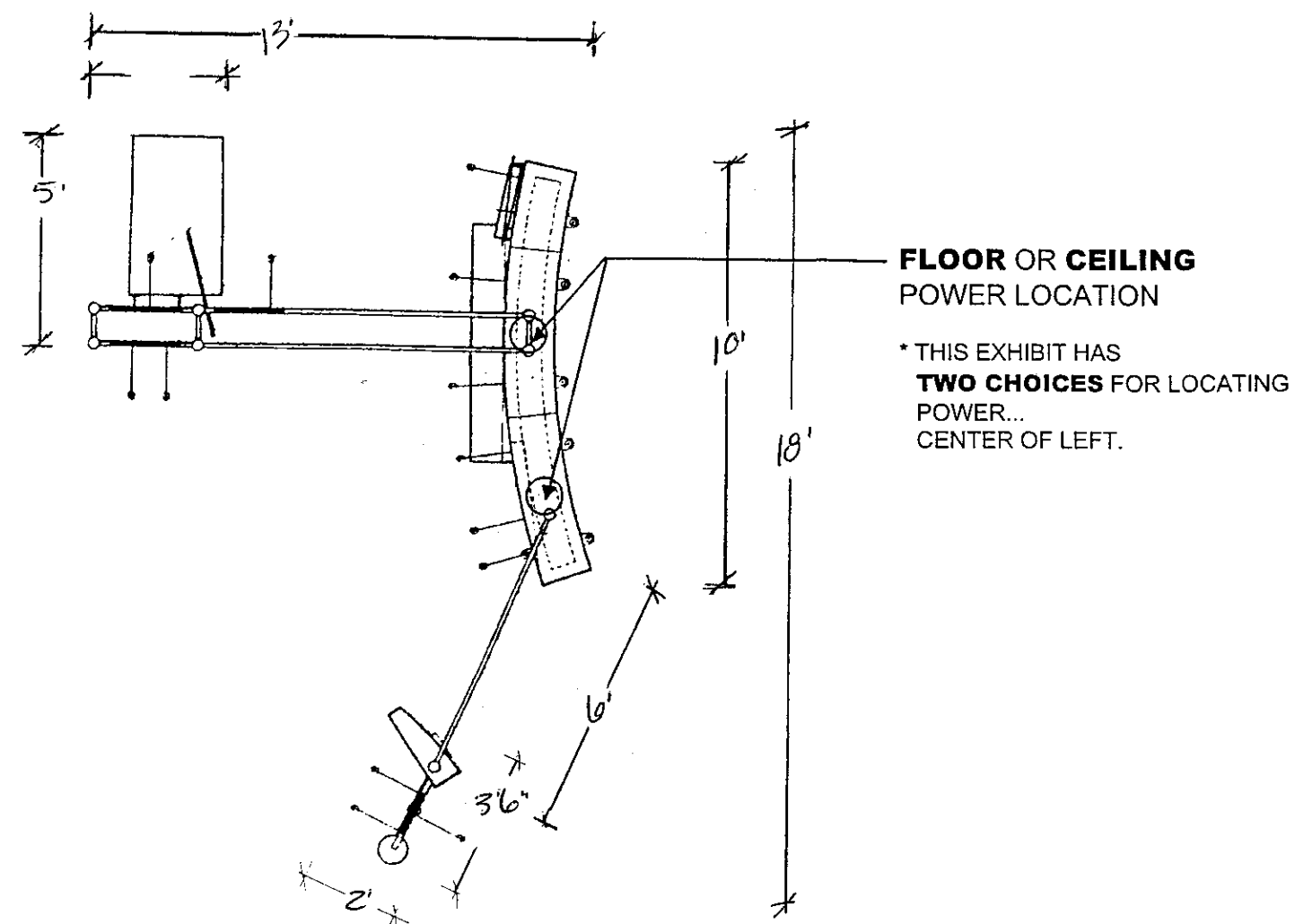
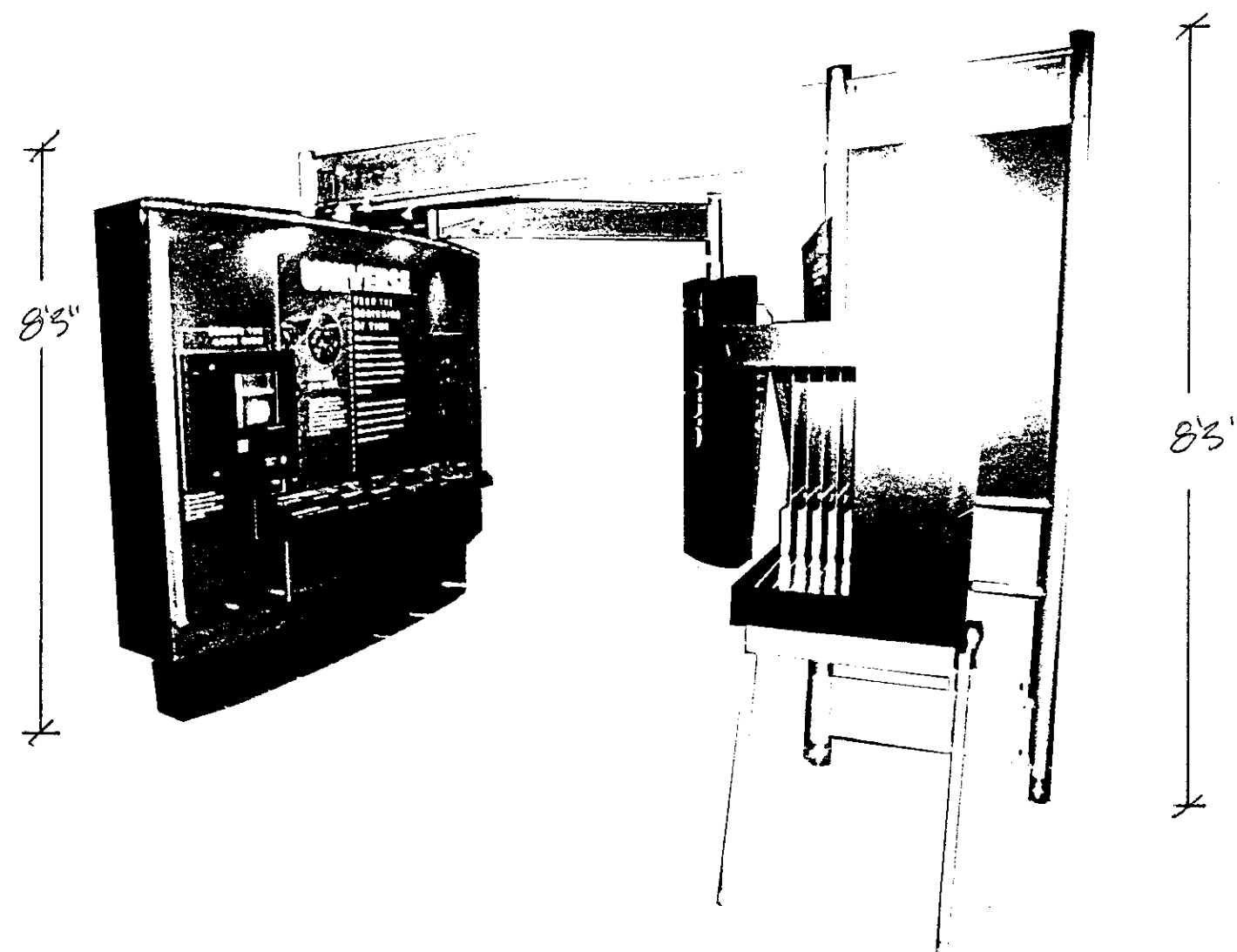
This exhibit occupies an 18' x 13' area, 8'-3" high, **approx. 234 square feet of space.**

## Electrical Planning:

This exhibit requires (1) 20 amp feed, either from the floor or ceiling. A NEMA 5-20R receptacle is required.

A minimum line voltage of 120 volts nominal is required at receptacle.

One cord with **20 amp plug** is included to connect to house power.

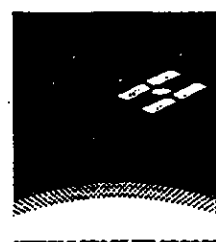


SCALE: 1/4" = 1'-0"



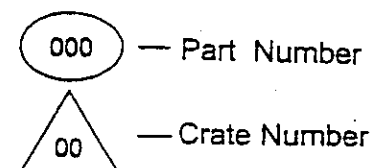
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Northborough, MA 01532  
(508) 393-7800



### HUBBLE SPACE TELESCOPE NEW VIEWS OF THE UNIVERSE

Smithsonian Institution Traveling Exhibition Services





**ASSEMBLE ICON BASES AND WALL**

**Locate parts required for set-up of this area as listed in each section of instructions. Include:**

700 Area Hardware Box and Tools (Crate 20)  
Cleaning Kit is packed in Green Star Crate 51.

**Locate position of 500 Area on gallery floor**

Locate positioning of exhibit on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

**Locate Icon Wall Parts:**

(3) Icon Base Sections with attached Metal Feet  
(700A-1, B-1 and C-1, Crates 26 and 27)  
(3) Icon Wall Sections (700A, B, C, Crates 29 and 33)

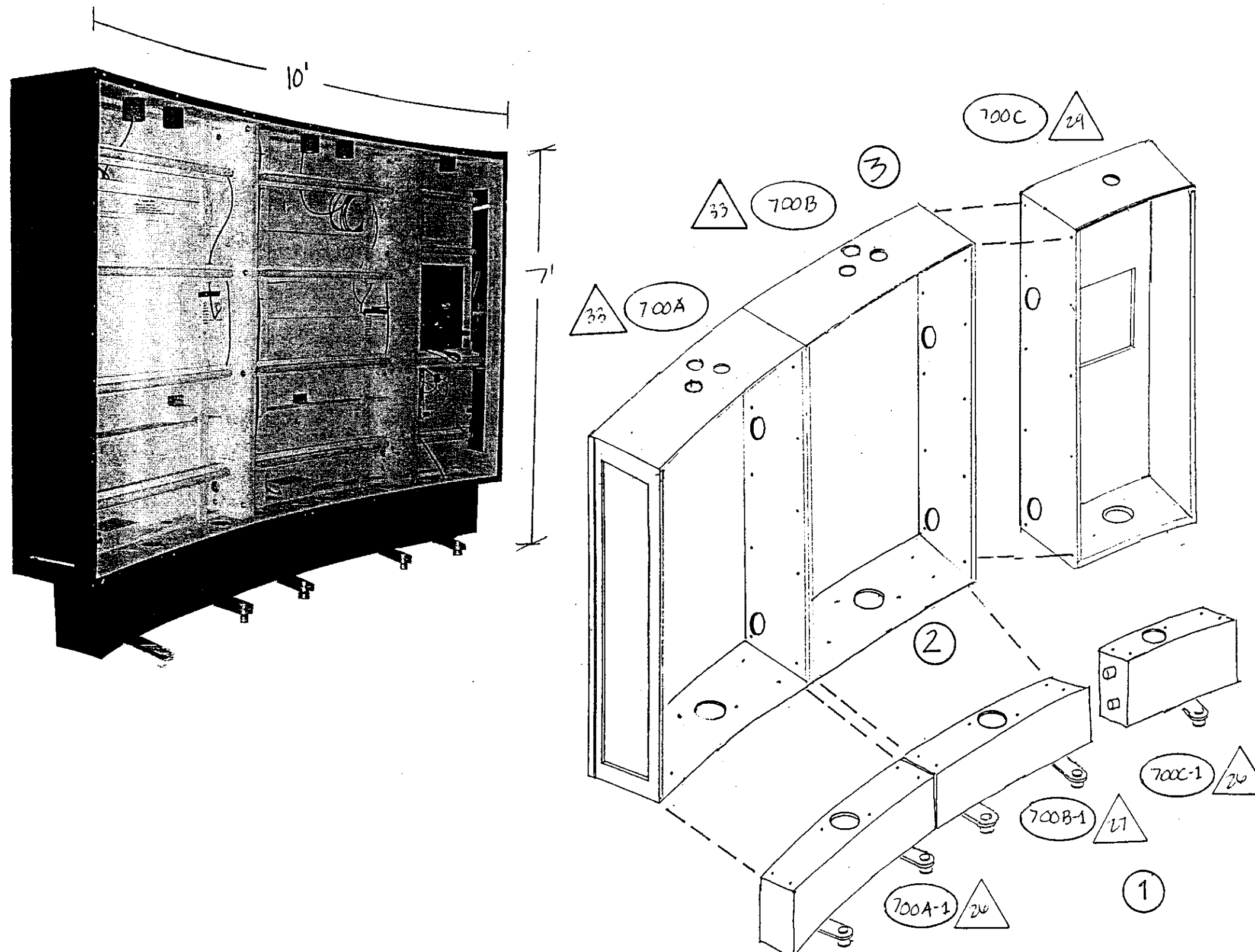
**Assemble the Icon Bases and Walls**

① Fit together the (3) Icon Bases with attached Metal Feet by aligning dowels, and position on the gallery floor in correct location for venue layout. Rotate the levelers on Metal Feet until the exposed bolt head is flush with the top of the Metal Foot and side seams are tight. Use a minimum 4' level to check level of assembled Bases, and adjust levelers if necessary.

② Position Icon Wall Section 700B to Icon Base Section 700B-1 in the middle of the 3-section Icon Wall assembly. Connect Wall to Base using (6) 1/4-20 x 2" hex head bolts with flat and lock washers using 1/2" socket provided.

③ Repeat with Icon Wall 700A to Base 700A-1 and Wall 700C to Base 700C-1. Then attach Icon Wall A to Wall B, and Icon Wall B to Wall C using (20) 5/16-18 x 2" hex head bolts with large fender washers on both sides of the joint. Bolts may need to be tapped with a rubber mallet to get them through holes.

Icon Wall assembly is now complete until the rest of the Area is assembled, after which the balance of the Icon Wall will be finished.

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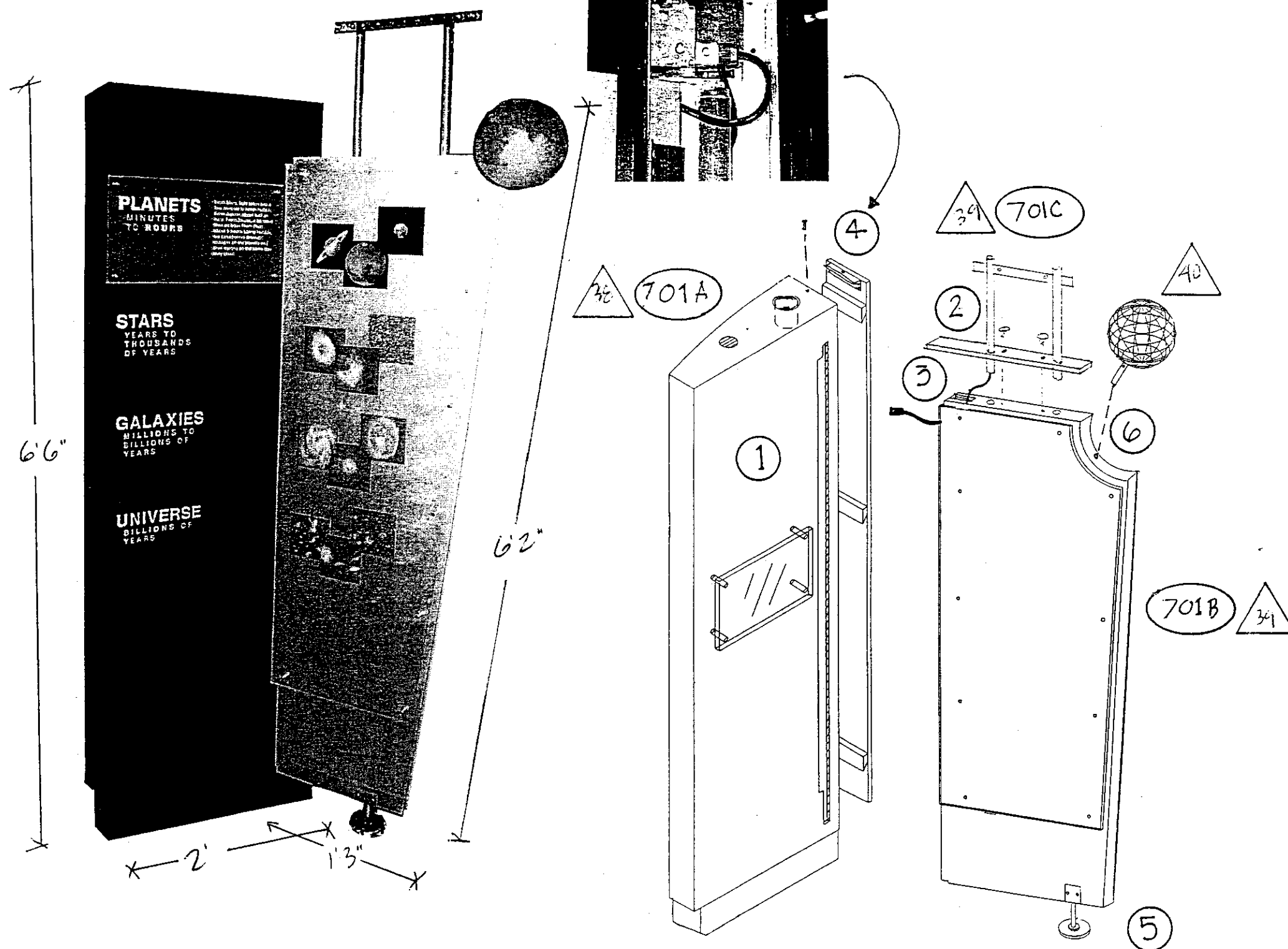
## ASSEMBLE SPACE TIME MARKER

## Locate Space Time Market Parts:

- (1) Monolith "UNIVERSE" (701A, Crate 38)
- (1) Graphic Wing Panel (701B, Crate 39)
- (1) Light Bar (701C, Crate 39)
- (1) Globe (Crate 40)

## Assemble Space Time Marker

- ① Position Black Monolith 701A per venue layout. To access inside of monolith, remove screw at top of end panel and lift end panel up from bottom. **Note:** This Monolith is not very stable when left standing alone.
- ② Attach Light Bar 701C to top of Graphic Wing Panel 701B using (2) 1/4-20 x 1" s.s. flat head allen screws.
- ③ Thread electrical cable from Light Bar into Monolith as Graphic Wing is inserted into slotted opening in Monolith. Attach Graphic Wing at inside of Monolith using (4) 1/4-20 x 1" socket head cap screws.
- ④ Plug power-con from Light Bar into transformer in Monolith. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.
- ⑤ Use leveler foot on Graphic Wing to level the Space Time Marker in position.
- ⑥ Insert Globe 701D into tube in curved corner of Graphic Panel. Align the hole in Globe post with set screw in receptacle tube and tighten Globe in position using the individual 5/64 allen wrench provided.

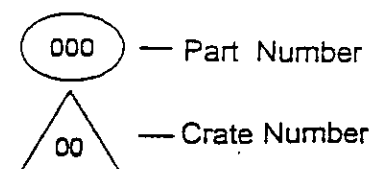


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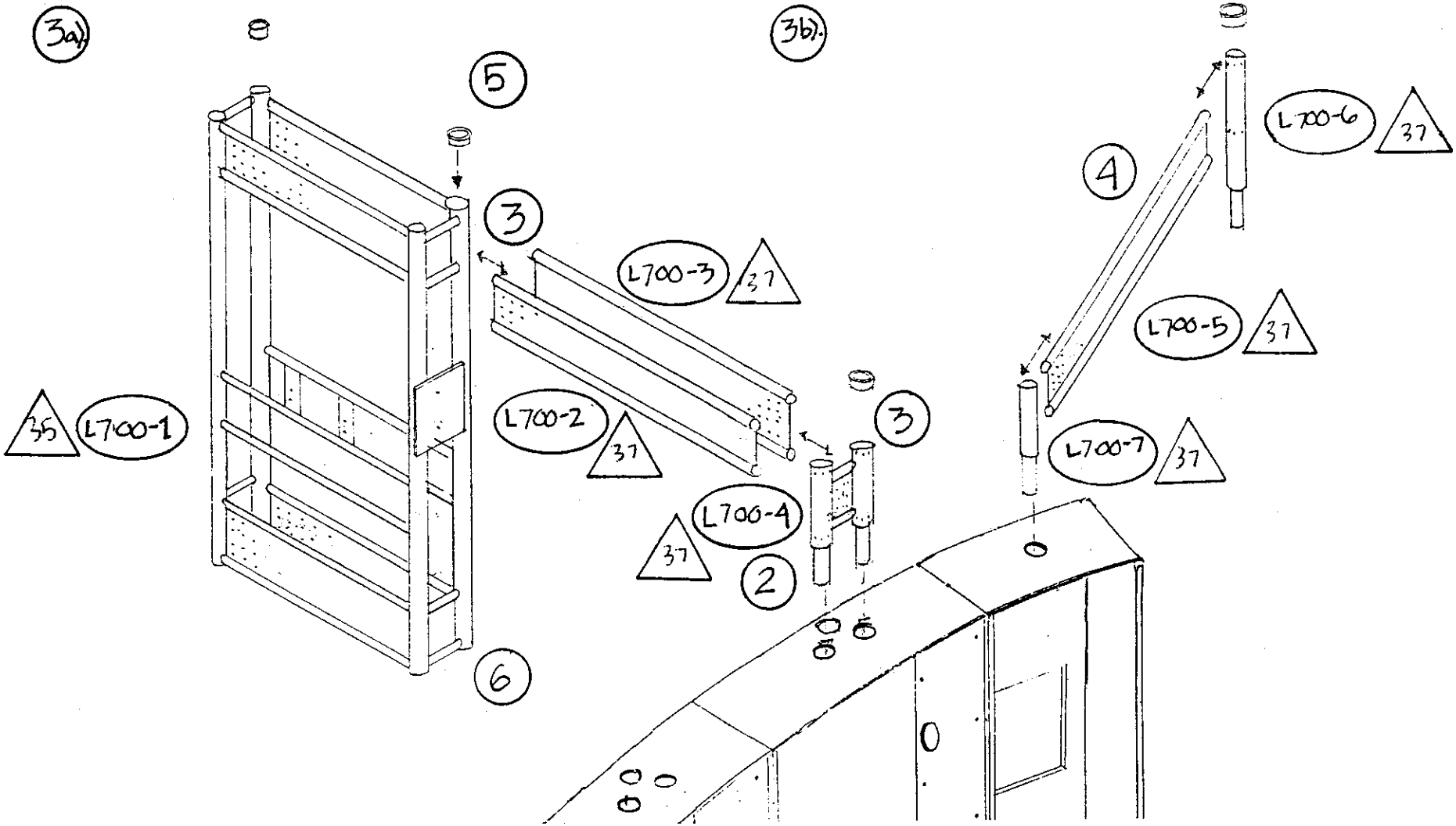
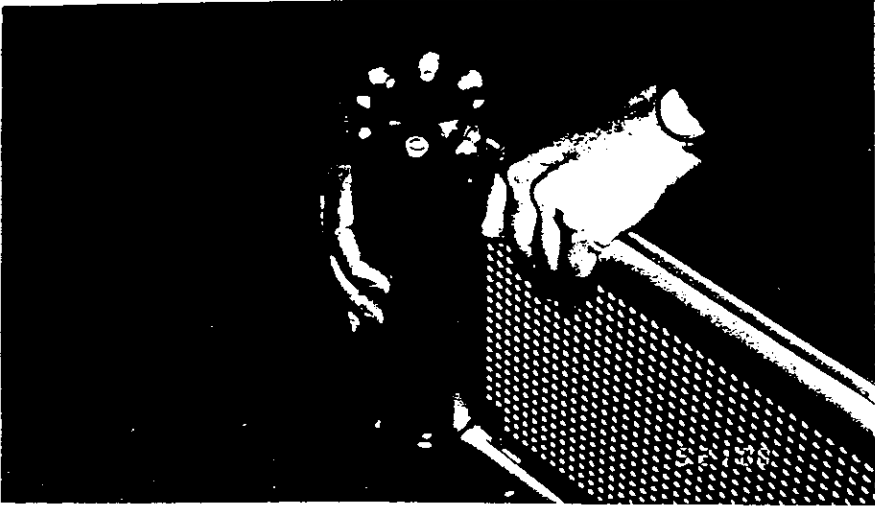
ASSEMBLE LEITNER

Locate Leitner Parts:

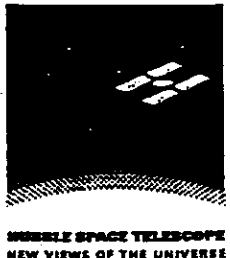
- (1) Leitner Box Assembly (L700-1, Crate 35)
- (2) Leitner 89" Straight Lengths (L700-2, -3, Crate 37)
- (1) Leitner Assembled End Section (L700-4, Crate 37)
- (3) Leitner pieces to connect Space Time Marker (L700-5, -6 and -7, Crate 37)
- (8) Leitner 1" Top Rings (Crate 37)

Assemble Leitner and attach to Space Time Marker and Icon Wall for support

- 1 Position Leitner L700-1 on floor roughly according to layout.
- 2 Locate Leitner L700-4 and insert sleeves into holes in the top of the specific Icon Wall section as indicted by the venue layout. (Note: L700-4 will fit into either the A or B Wall Sections; choose the one indicated by the layout for this exhibition.)
- 3 Attach L700-2 and -3 to L700-4 and L700-1 using the long red handled Leitner tools provided. Assemble by:
  - a). aligning the joint and locating the bolt head inside the small diameter horizontal Leitner tube, then
  - b). inserting the red handled Leitner tool into the bolt head located inside the tube end. APPLY SOME PRESSURE TO COMPRESS SPRING BEHIND THE BOLT HEAD while screwing in the bolt.
- 4 Attach L700-5, -6 and -7 together again using red handled Leitner tool. Insert long L700-6 into the top of the Space Time Monolith (701A) and the short end L700-7 into the Icon Wall Section indicated in the venue layout. Insert at the same time at each end, keeping assembly level while inserting.
- 5 Install (8) 1" high Leitner Top Rings into vertical Leitner parts L700-1, -4, -6 and -7 to finish off tops of posts.
- 6 Level Leitner sections as needed using leveler feet attached.

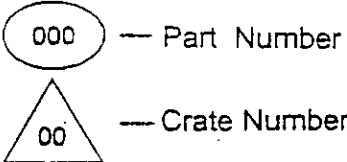


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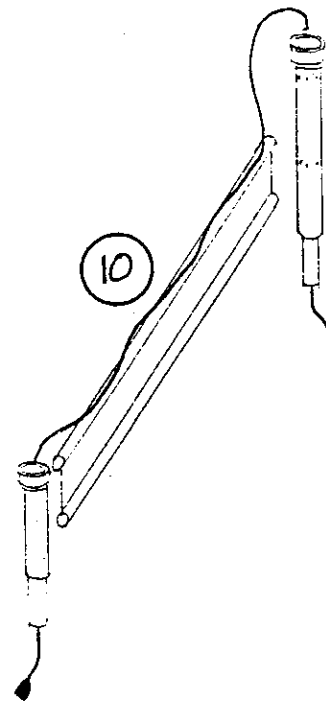
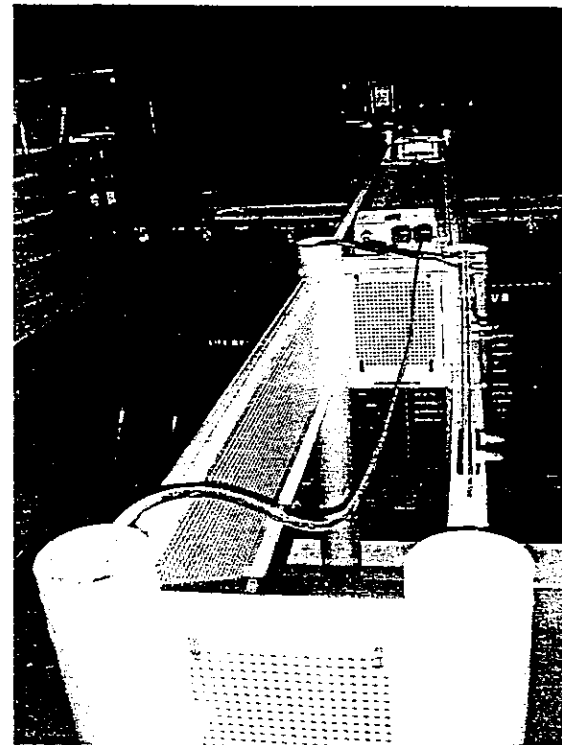
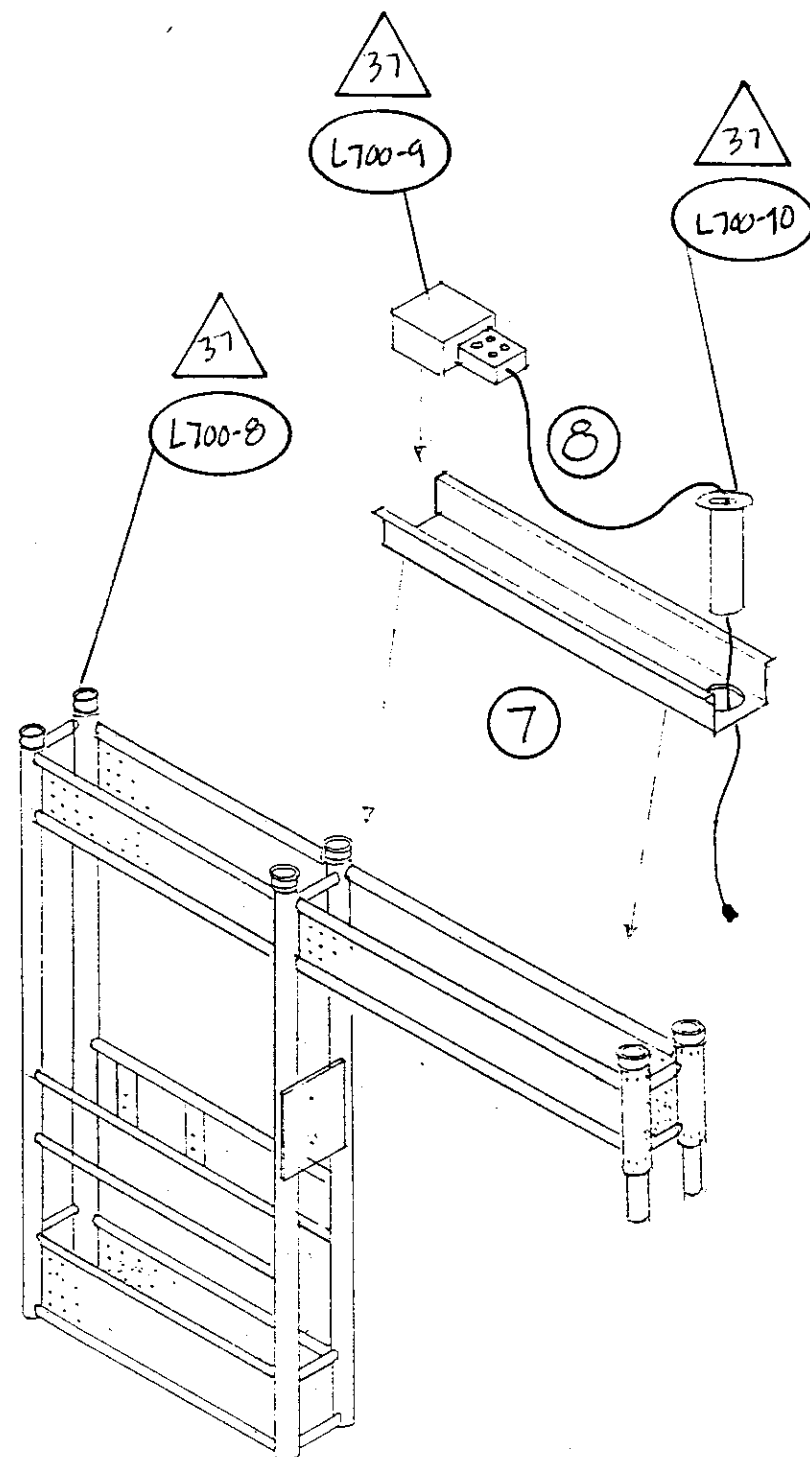
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## ASSEMBLE ADDITIONAL LEITNER

## Locate additional Leitner Parts:

- (1) Wire Tray (L700-8, Crate 37)
- (1) Junction Box and extension cord for STM (L700-9, Crate 37)
- (1) Metal Wire Tube (L700-10, Crate 37)



- (7) Position Wire Tray L700-8 on top of Leitner between L700-2 and -3.  
 Position Metal Wire Tube L700-10 through hole in end of Tray, extending down into top of icon.

## Connect electrical across Leitner into Junction Box

- (8) Place Junction Box L700-9 in Wire Tray, per position markings inside Tray. Thread wire from junction box across the Wire Tray, down through the Metal Wire Tube into the Icon Structure.
- (9) Plug in all electrical feeds from top of Leitner assembly into Junction Box in Wire Tray, matching color coded markings.

## Connect electrical for Space Time Marker into Icon

- (10) Locate extension cord for Space Time Marker inside Icon Wall 700A, and connect inside Space Time Marker. Pass up through L700-6, across top of L700-5 and down through L700-7 into Icon. Plug in to the outlet closest to the point of entry.

Clean any visible black abrasions off Leitner using the Leitner pumice provided in tool box, following label instructions.

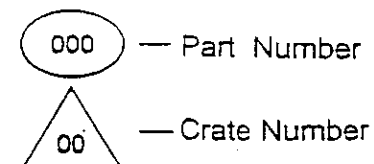


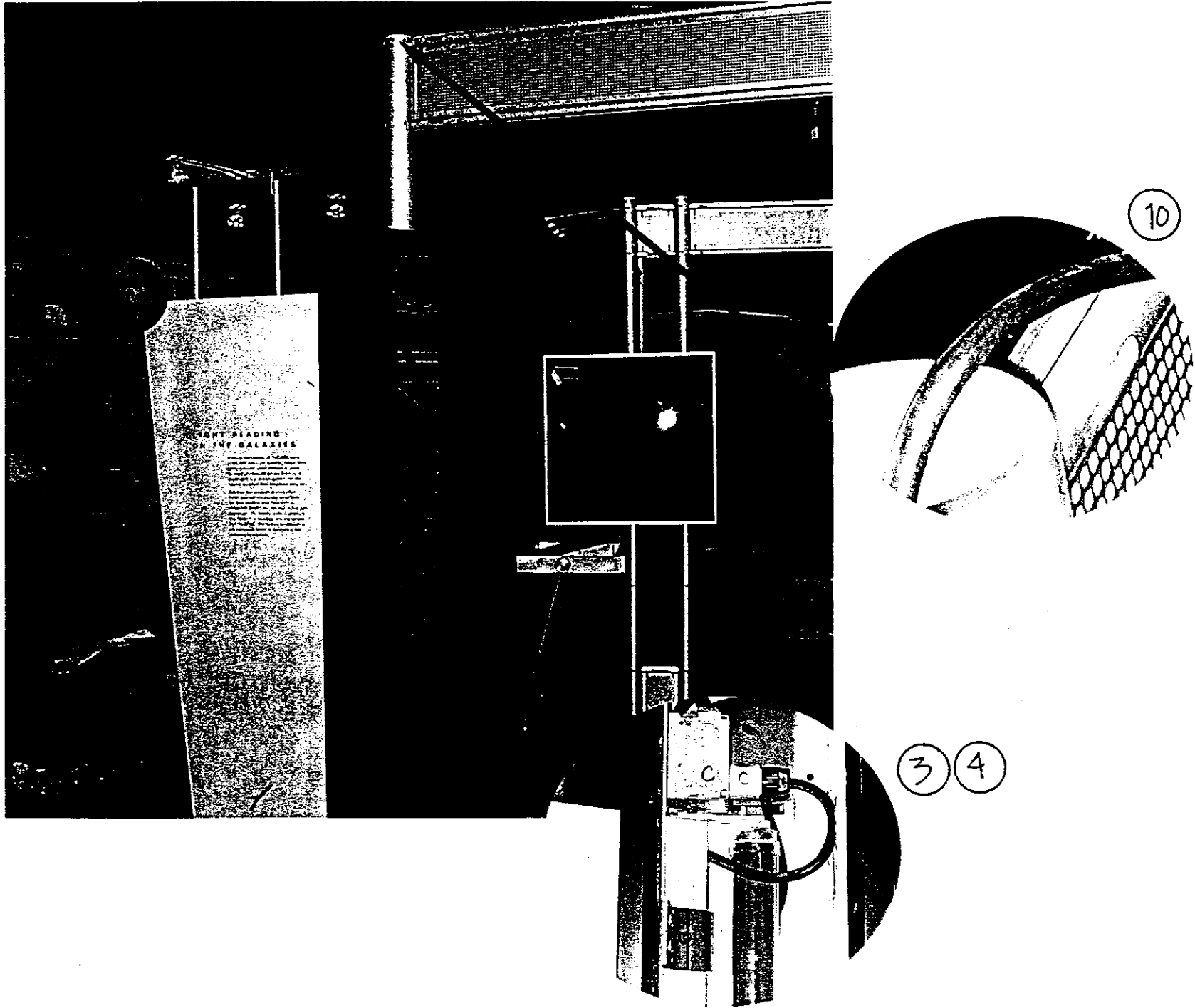
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## ICON READER RAIL AND MONITOR BOX

## Locate Icon Reader Rail and Monitor Box Parts:

- (1) Icon Reader Rail (700G, Crate 29)
- (1) Monitor Box (703, Crate 29)
- (1) 13" Sony Monitor (703, Crate 50)
- (1) Adtech Drive "HUBBLE DEEP FIELD" (#\_\_, Crate 49)

## Attach Icon Reader Rail to back of Icon

- 1 Align Icon Reader Rail 700G with cleat and inserts on back side of Icon Walls. Lower Icon Reader Rail over cleat and attach to metal angles (inside Icon) using (2) 1/4-20 x 1" hex head bolts at ends of cleat, and (1) longer 1/4-20 x 2 1/2" hex head bolt at center of cleat. Use 3" socket extension to enable access to bolt heads.

## Install Monitor Enclosure and Monitor

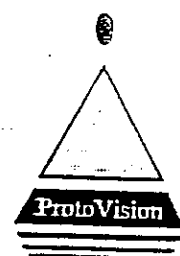
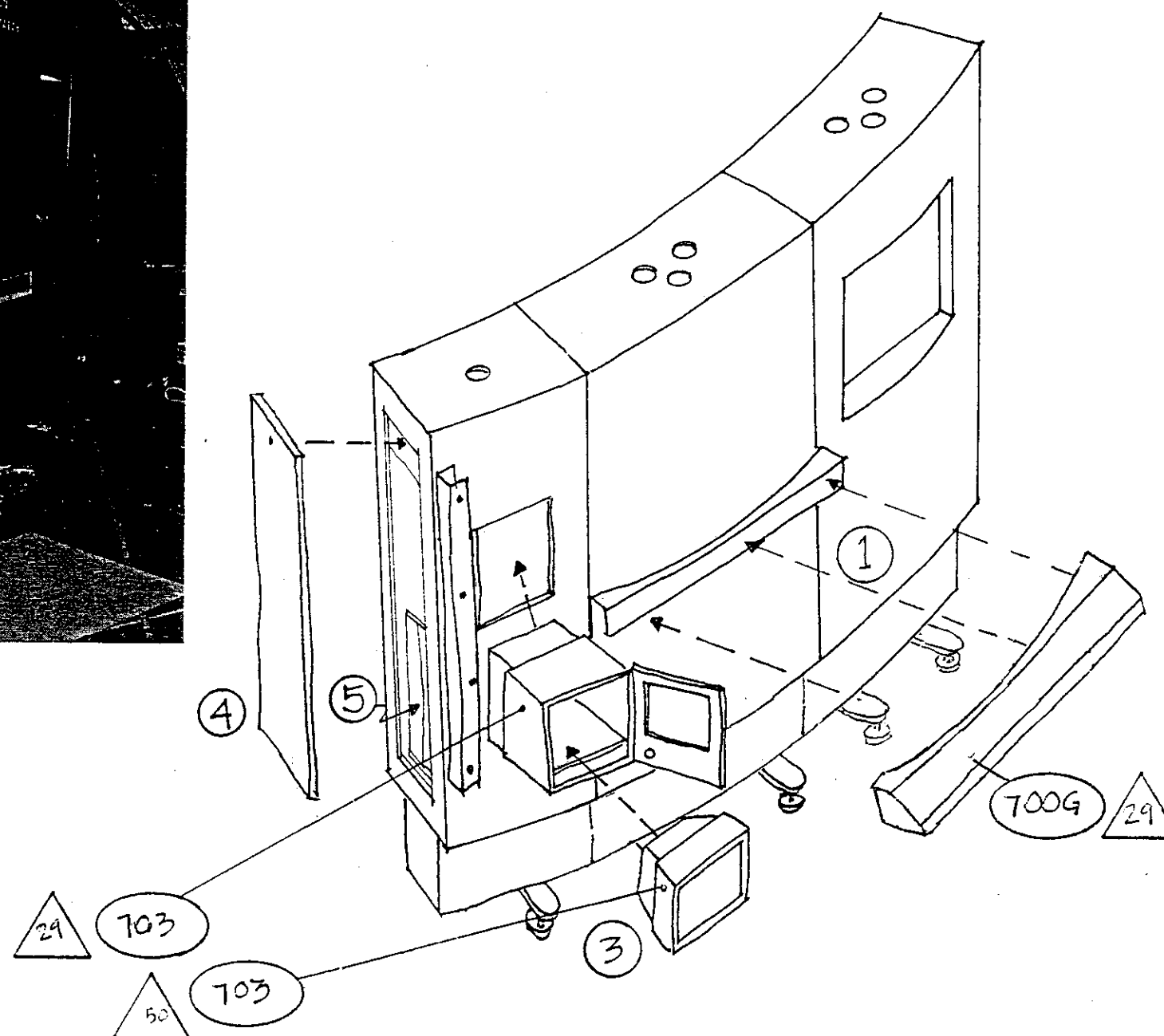
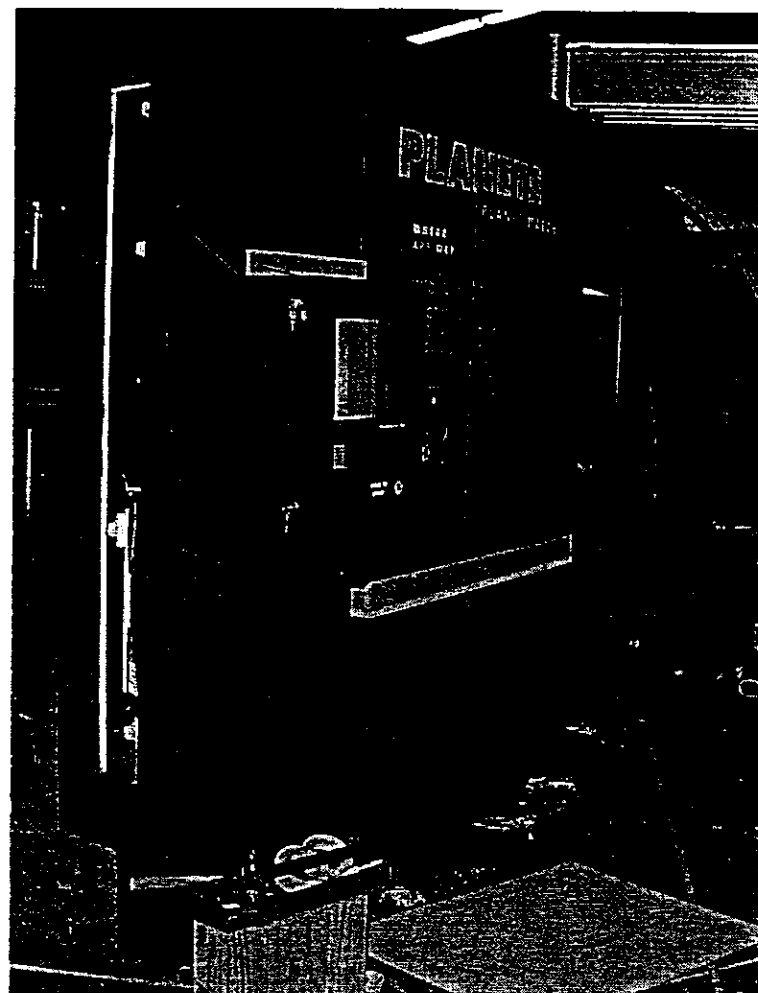
- 2 Slide Monitor Enclosure 703 into opening in Icon from the front, and bolt into place using (4) 1/4-20 x 2" hex head bolts with flat washer and hex nut.
- 3 Install 13" Sony Monitor 703 through front door of Monitor Enclosure. From inside the Icon, connect video and audio cables between Adtech Player and Monitor, matching colored markings. Plug Monitor into power strip. Check that Adtech is still plugged into power strip, and that power strip is still plugged into duplex outlet, and that the switch is turned on.

## Adtech Mirage Player

- 4 Access to Adtech players in Icon Wall is in the narrow end of Icon, nearest the Monitor Enclosure. To access the player, remove the (1) 1/4-20 x 1 1/2" black button head allen screw with black washer at top of access panel, and lift off access panel.
- 5 Locate Adtech Drive #\_\_ "HUBBLE DEEP FIELD", and use key to install and lock in place. (**Note: Adtech Mirage will not play unless drive is locked in place.**)

Test Adtech drive before completing Icon Assembly.

- 6 Replace using same 1/4-20 x 1 1/2" black screw and washer.

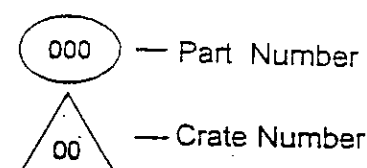


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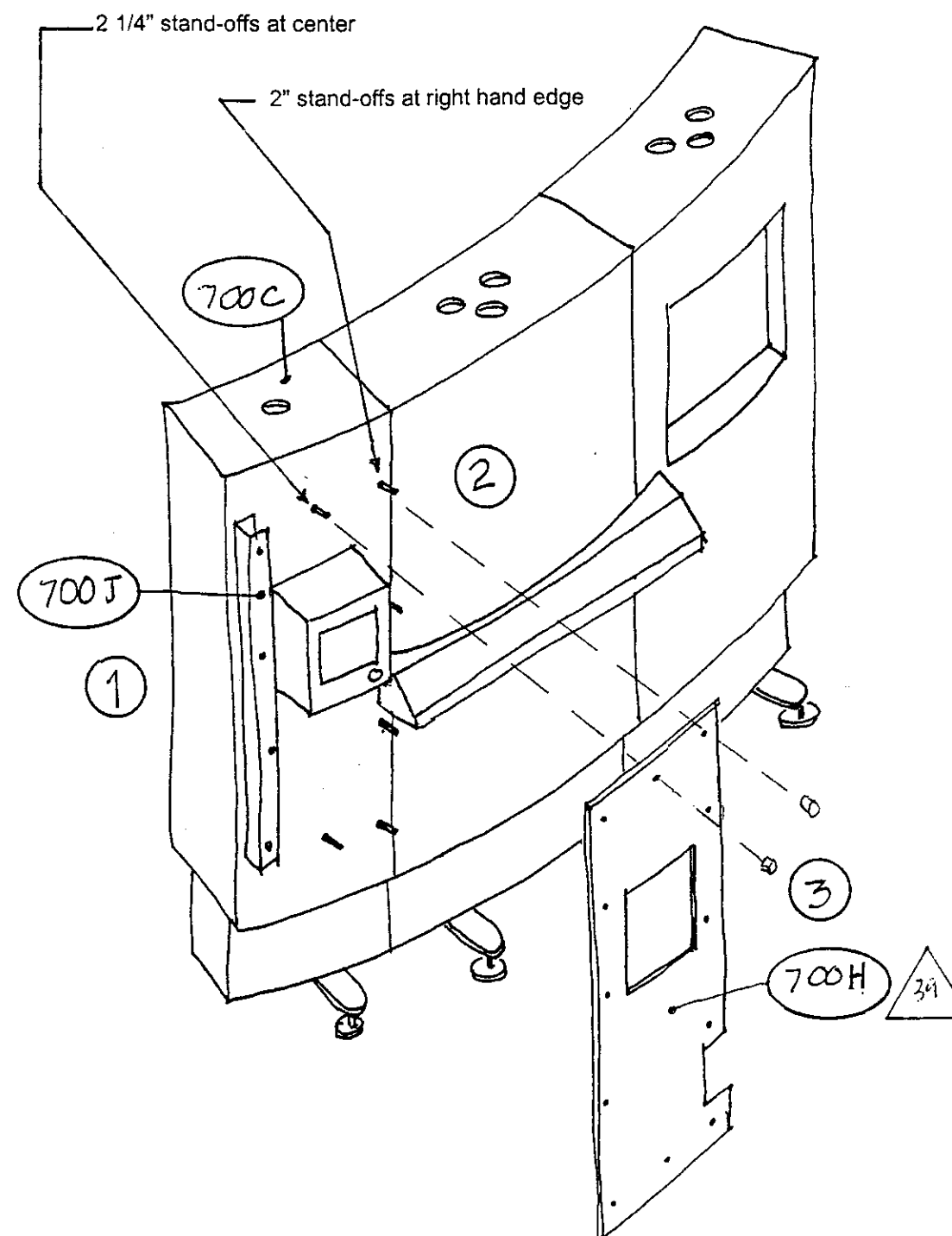
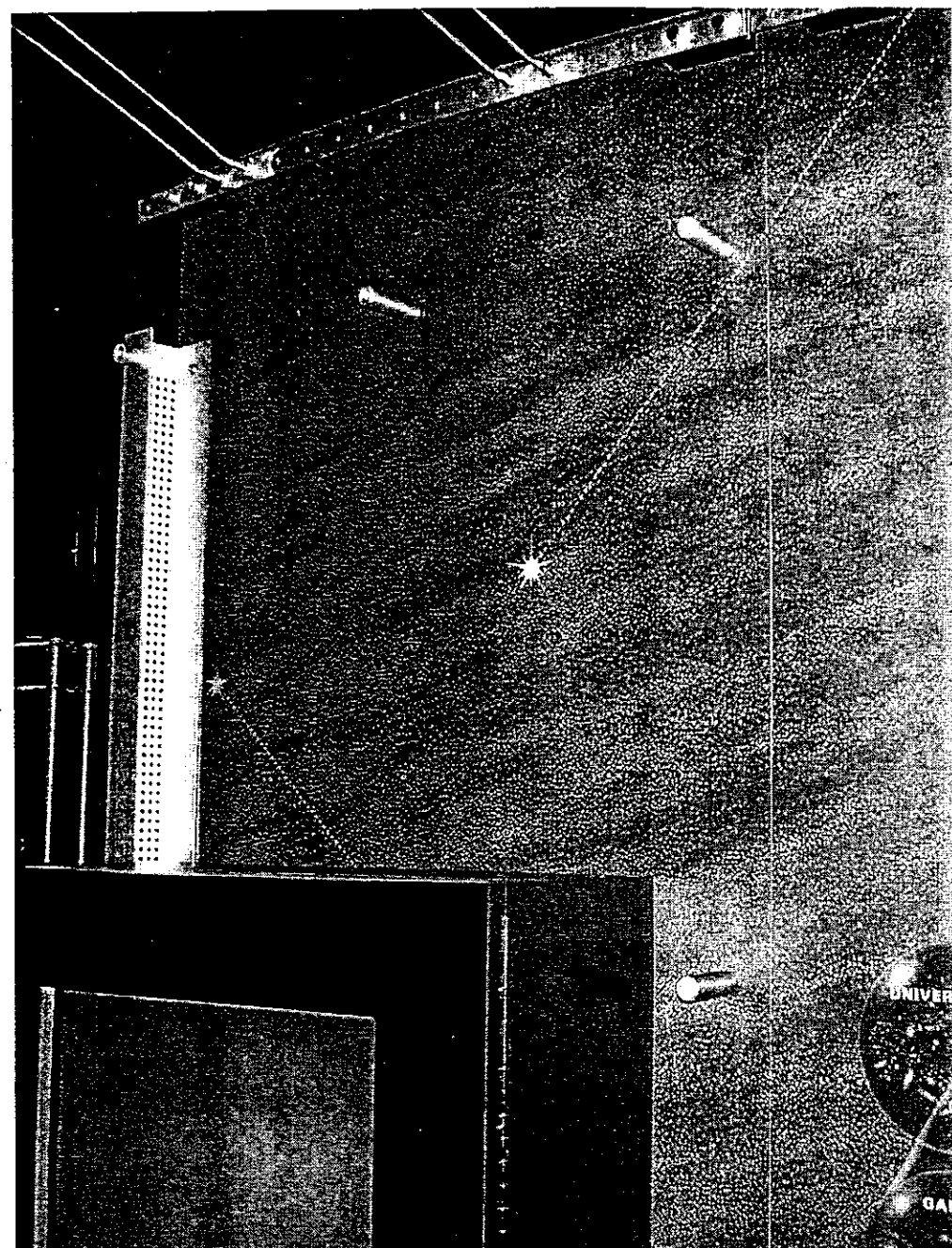
## ATTACH BLUE ACRYLIC GRAPHIC

**Locate Blue Acrylic Graphic Parts:**

- (1) Blue Acrylic Panel: "TAKING THE LONG VIEW"  
(700H, Crate 39)

**Attach Blue Acrylic Panel**

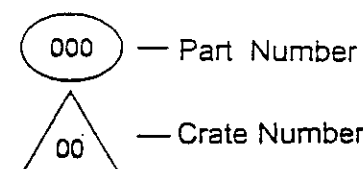
- ① Perforated Metal Bracket 700J arrives attached at left hand edge of Icon Wall 700C. Stand-offs (with caps) on Bracket should be facing out.
- ② From Hardware Box, install (4) 2" and (2) 2 1/4" stand-offs (with caps) to hold Blue Acrylic Panel in position. Install the 2" stand-off along the right hand edge, and the 2 1/4" at center top and bottom. Install all from the inside of the Icon, using (6) 5/16-18 x 1" black button head allen screws with washer and lock-washer. Insert screw through Icon and into stand-offs on finish side.
- ③ Remove caps from all (10) stand-offs and position Blue Acrylic Graphic over protruding threaded posts. Replace caps on all (10) stand-offs to secure Blue Acrylic in position. **Note:** Caps ship attached to stand-offs in the Hardware Box, or attached inside Icon 700C.

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**INSTALL PENDENT LIGHTING****Locate Pendant Lighting Parts:**

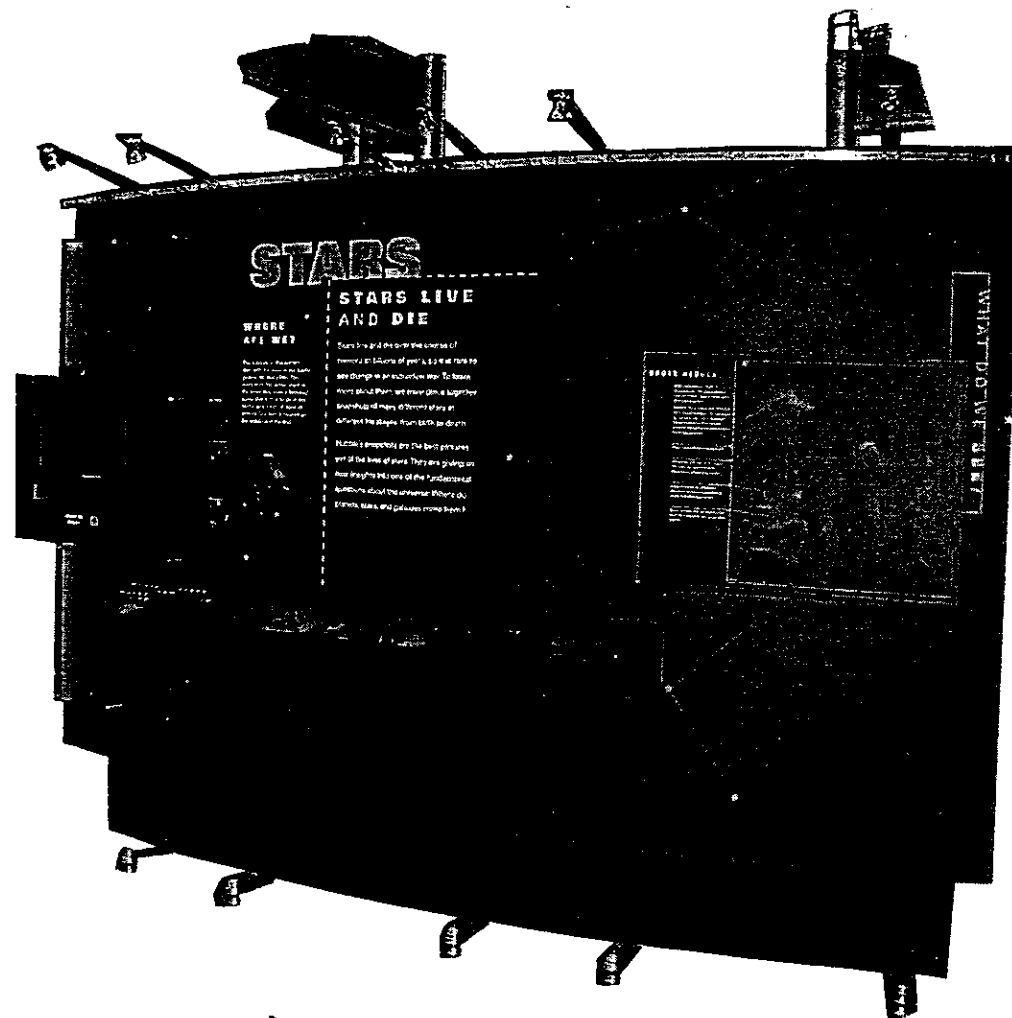
- (18) Angled Chrome Rods (Crate 49)
- (8) Straight Chrome Rods (Crate 49)
- (3) 20 watt Halogen Bulbs with Chrome Sockets (Crate 49)
- (10) 50 watt Halogen Bulbs with Chrome Sockets (Crate 49)

**Install Pendant Lighting**

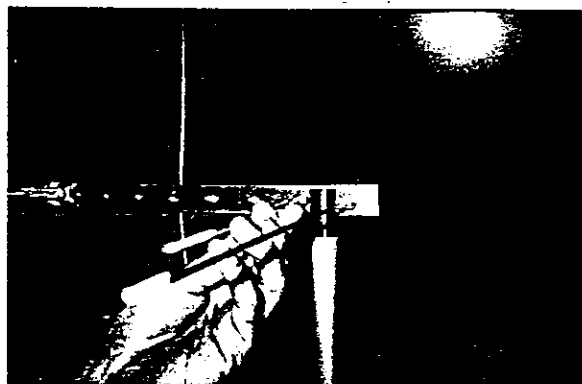
**Note:** To avoid shock, disconnect or turn off power when installing pendant lighting.

**Assemble Pendant Lights:**

- a.)** Screw (12) Angled Chrome Rods into the (12) knurled knobs on the **Icon Wall**. To make angled rods parallel, insert smallest screw driver or thin allen wrench that fits the hole and rotate the knurled receptacle until the angled rods are parallel.
- b.)** Screw (6) Angled Chrome Rods into the (6) knurled knobs on the **Space Time Marker**. Make rods parallel by using the process described above.
- c.)** Screw (8) Straight Chrome Rods into the (8) knurled knobs on the **Leitner Structure and NICMOS Light Bar**.
- d.)** Install sockets with **20 watt bulbs** in Space Time Marker.  
Install sockets with **50 watt bulbs** in Icon Wall and Leitner Structures.  
To install Sockets, loosen thumb screws on each end of socket, slide onto chrome rods and retighten thumb screws.
- e.)** To change or install bulbs, loosen (2) 1/8" set screws in socket, insert prongs of halogen bulb into matching holes in socket, and retighten set screws.



b).



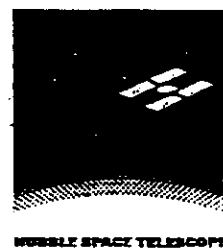
c).



d).

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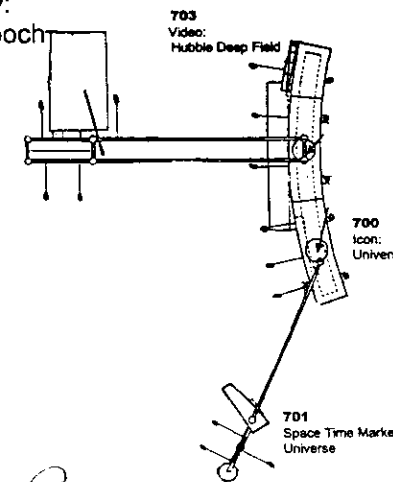
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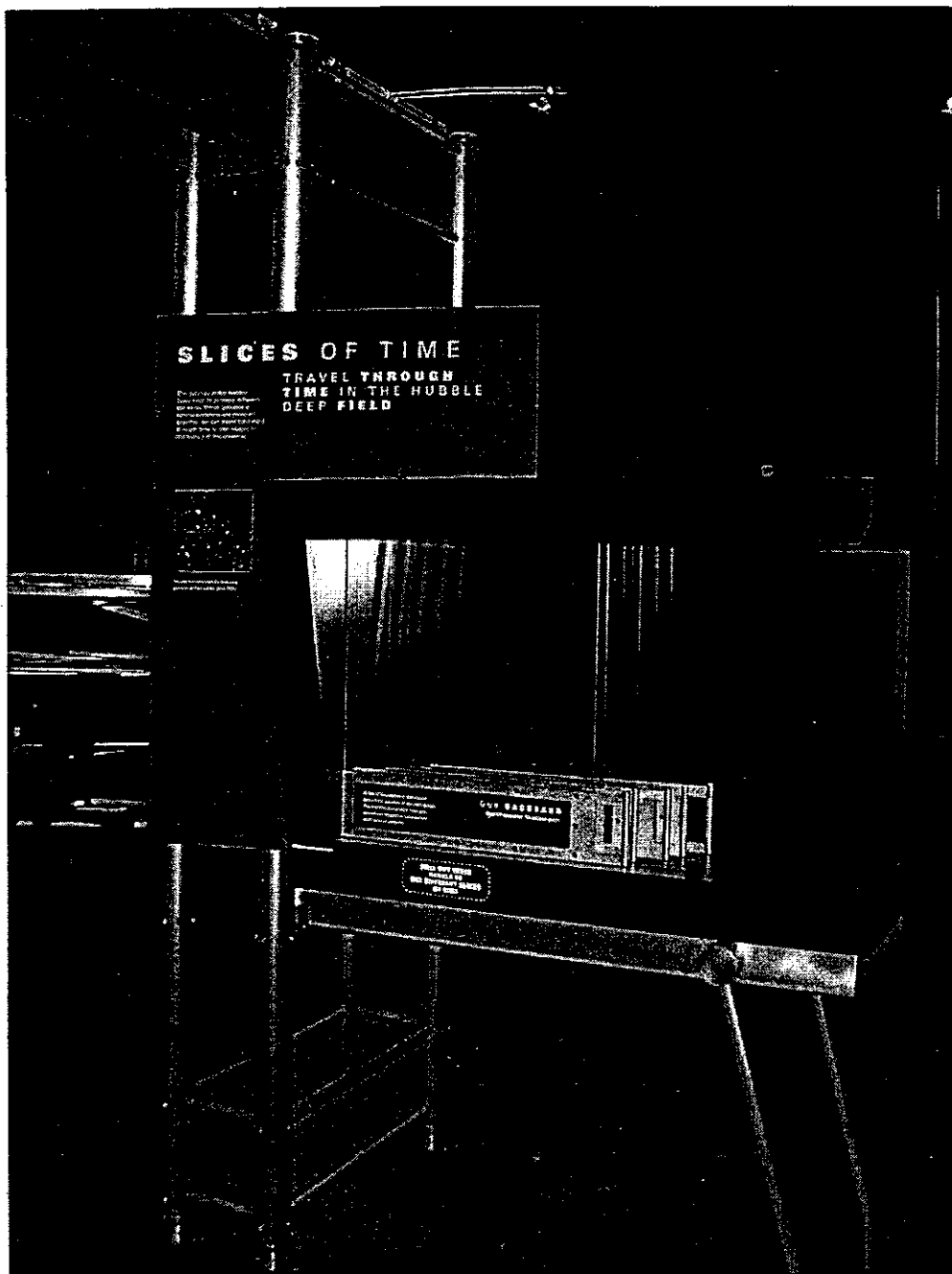
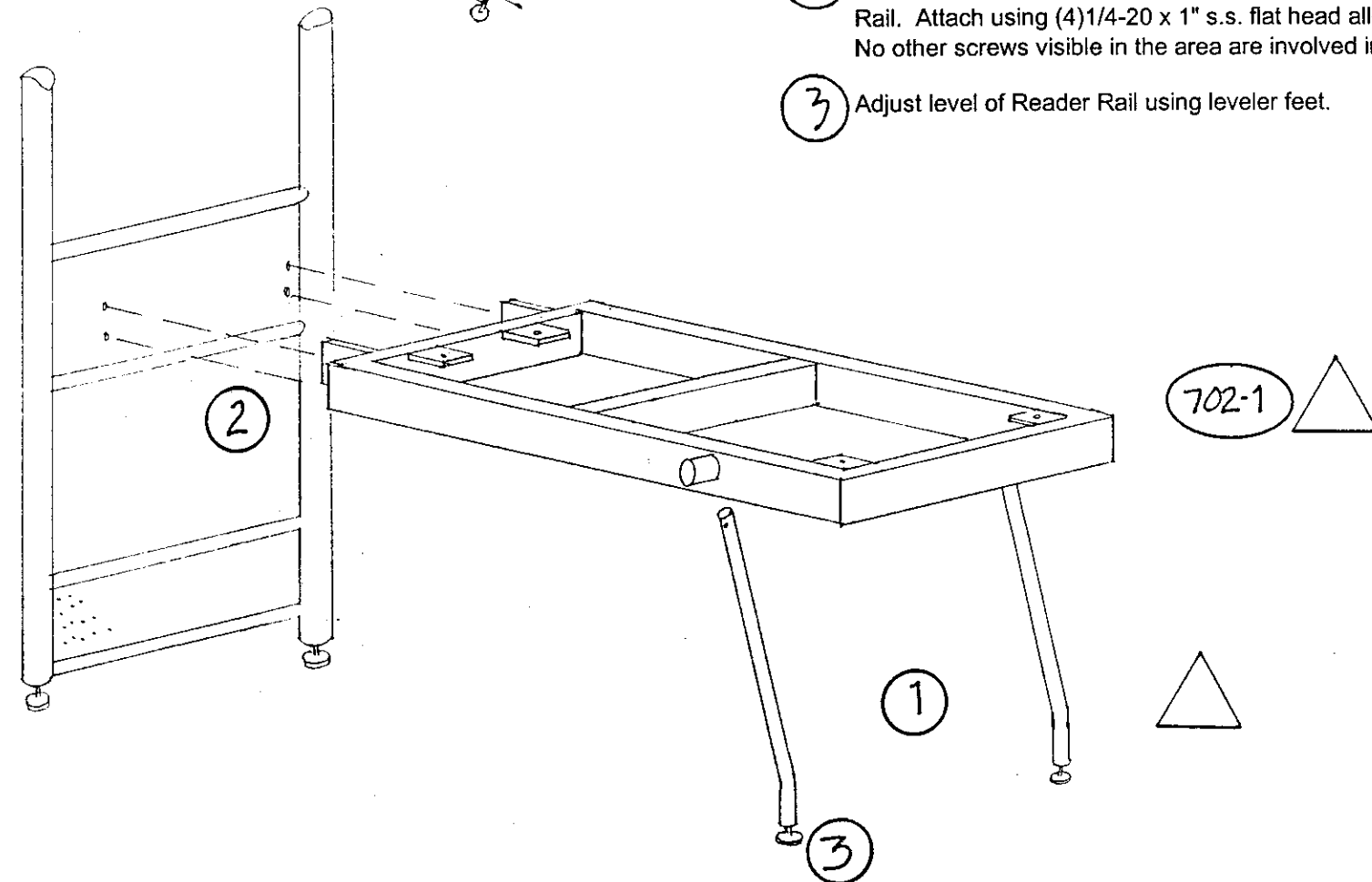


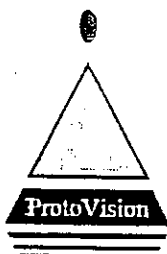
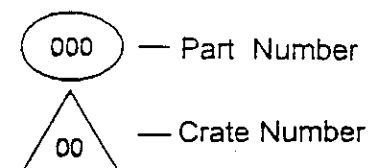
**702**  
 Activity:  
 3-D Epoch
**INSTALL EPOCH****Locate EPOCH Parts:**

- (1) EPOCH Reader Rail with (2) Legs (702-1, Crate 44)
- (1) EPOCH Casework (702, Crate 44)
- (1) EPOCH Graphic Panel (702-2, Crate 44)

**Install EPOCH Reader Rail**

- ① Position the front two Legs facing away from main Leitner structure. Insert Legs into underside of cylindrical receptacles on side of Reader Rail and attach into receptacle using (1) 5/16-18 x 2" s.s. button head allen screw on each Leg.
- ② Position the Reader Rail next to the Leitner in its final location. Align preset holes in Leitner to holes in T-bracket assembly on the Reader Rail. Attach using (4) 1/4-20 x 1" s.s. flat head allen screws. **Note:** No other screws visible in the area are involved in this connection.
- ③ Adjust level of Reader Rail using leveler feet.


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INSTALL EPOCH

Install EPOCH Casework

- ④ Lift EPOCH casework and place onto Reader Rail, placing it 3" or 4" off center to allow access to connect power.

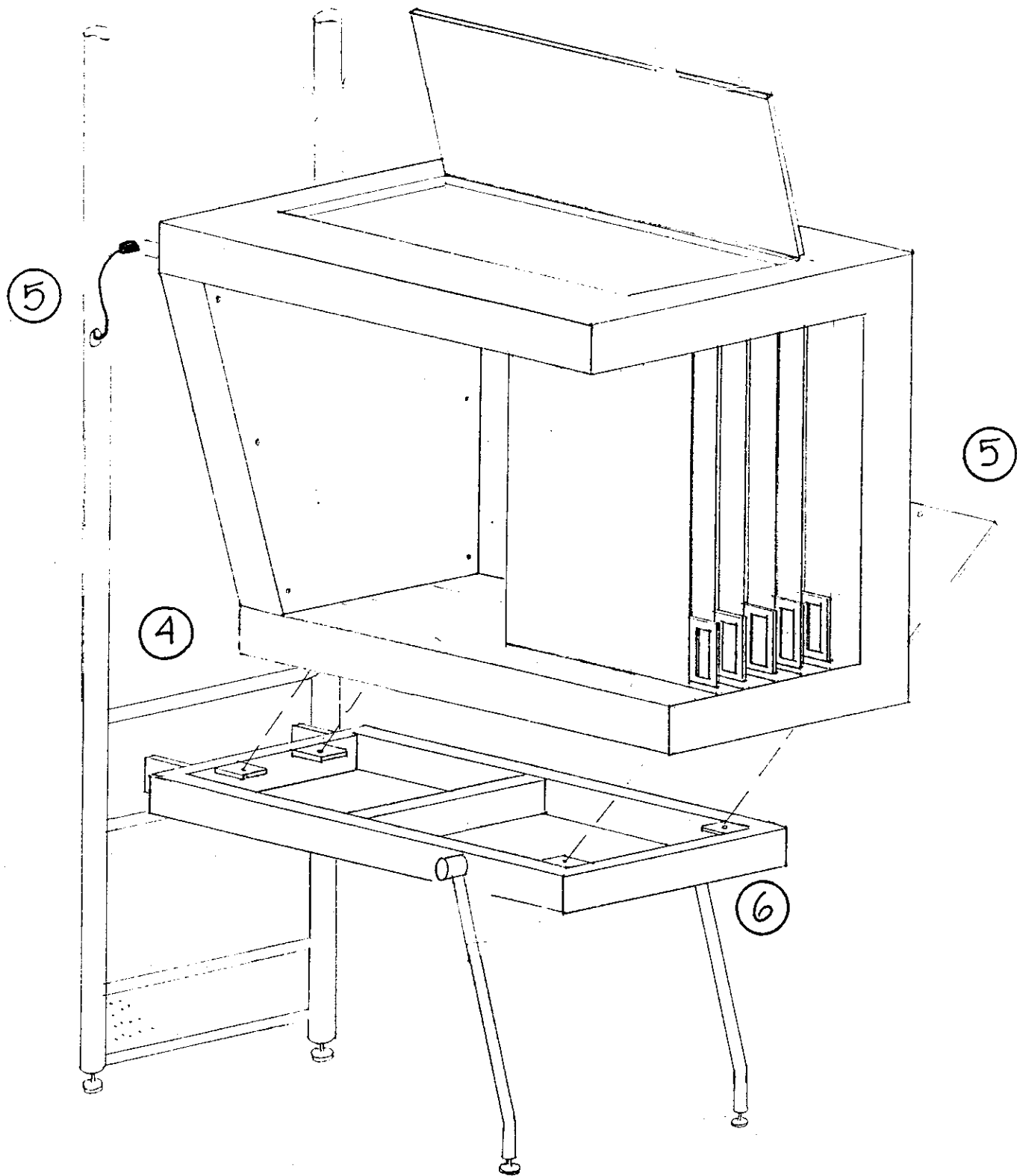
Connect to house power

- ⑤ Feed power from Leitner into metal tube and into casework. Unlock top door on Casework to continue to thread power towards back of casework. Unlock back door on casework to connect power con into white transformer, matching markings. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.

Position Casework

- ⑥ Slide Casework to be centered on Reader Rail, aligning holes in underside and threading power as you go.
- Secure EPOCH Casework to Reader Rail from underside using (4) 1/4-20 x 1" s.s. socket head cap screws with lock washers.

Test electrical prior to installing graphic panel., as the graphic will close off the access into the top door in the casework.



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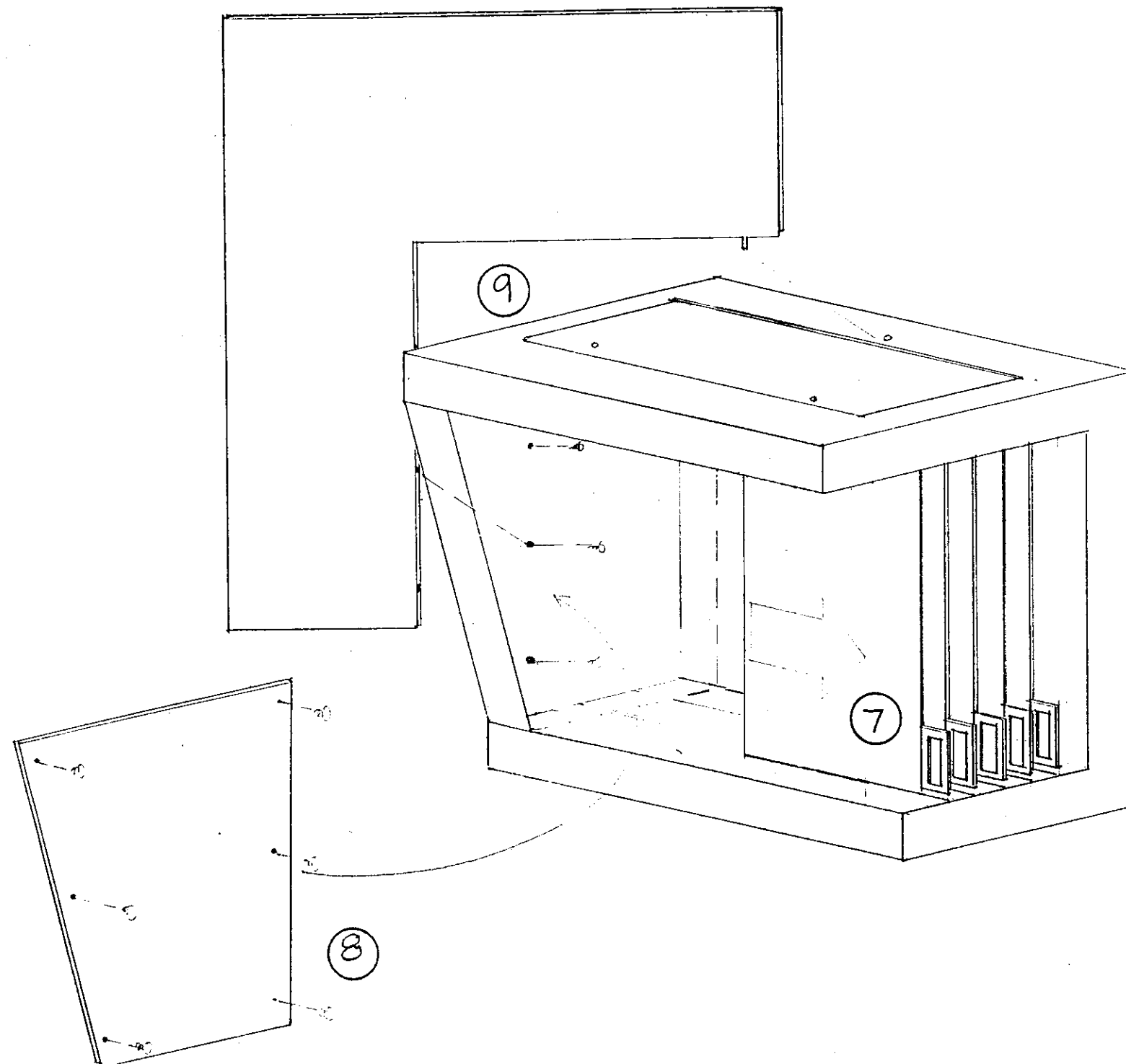
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**INSTALL EPOCH****Install Graphic Panel**

- ⑦ Slide all five sliding graphic panels to the right to provide access to install graphic.
- ⑧ Remove the (6) 1/4-20 x 1" black button head allen screws at the left hand end of the slotted area. These attach the graphic access cover. Remove graphic access cover.
- ⑨ Position EPOCH L-shaped graphic on top of casework, placing pin into alignment hole in top. Line up inserts in side edge of graphic with holes in casework, and attach with (3) 1/4-20 x 2" s.s. button head allen screws from the inside of the graphic access area.

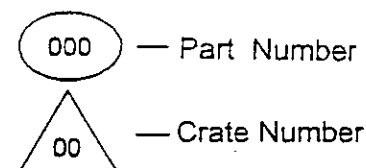
Replace access cover using (6) black screws removed.

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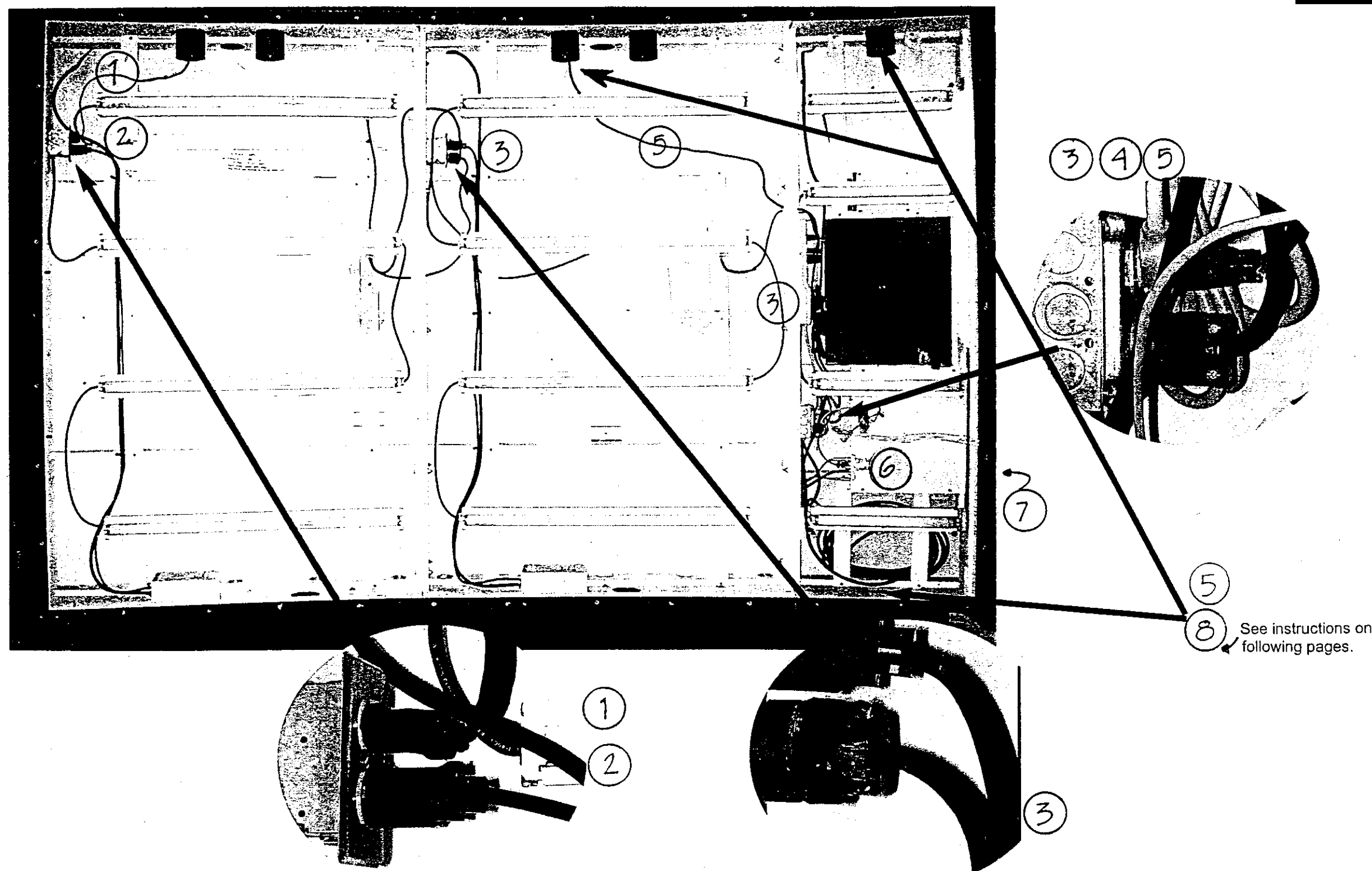
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## CONNECT ELECTRICAL

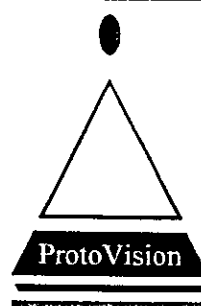
**Connect electrical before installing Lexan**

- ① Locate electrical feed from Space Time Marker and plug into duplex outlet in Icon Wall A.
- ② Locate plug for fluorescent fixture that lights the indented graphic on reverse side of Icon Wall A and make sure it is still plugged in.
- ③ Locate electrical feed from Icon Wall A and plug unto duplex outlet in Wall B as indicated. Repeat to connect Wall B to Wall C. Locate main power feed for Icon Wall in Wall C.
- ④ Locate cord from power strip for monitor in Icon Wall C and check that it is still plugged in to duplex and turned on.
- ⑤ Feed power feed from Junction Box in Wire Tray through wire tube and connect into junction box in Icon Wall C.
- ⑥ After the Lexan is installed there will be not easy access to the wiring inside the Icon. Therefore, make all electronic connections for inside Icon, including:
  - a). plug in 13" TV
  - b). plug audio and video cables from Adtech Mirage into TV
  - c). plug button plugs together
  - d). check that Adtech and button are still plugged into power strip

**Adtech Mirage Player**

If not already in place, locate Adtech Drive "HUBBLE DEEP FIELD", #\_\_ and use key to install and lock in place. **(Note: Adtech Mirage will not play unless drive is locked in place.)** Test Mirage prior to installing Lexan.

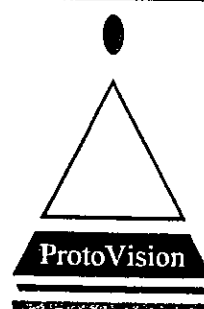
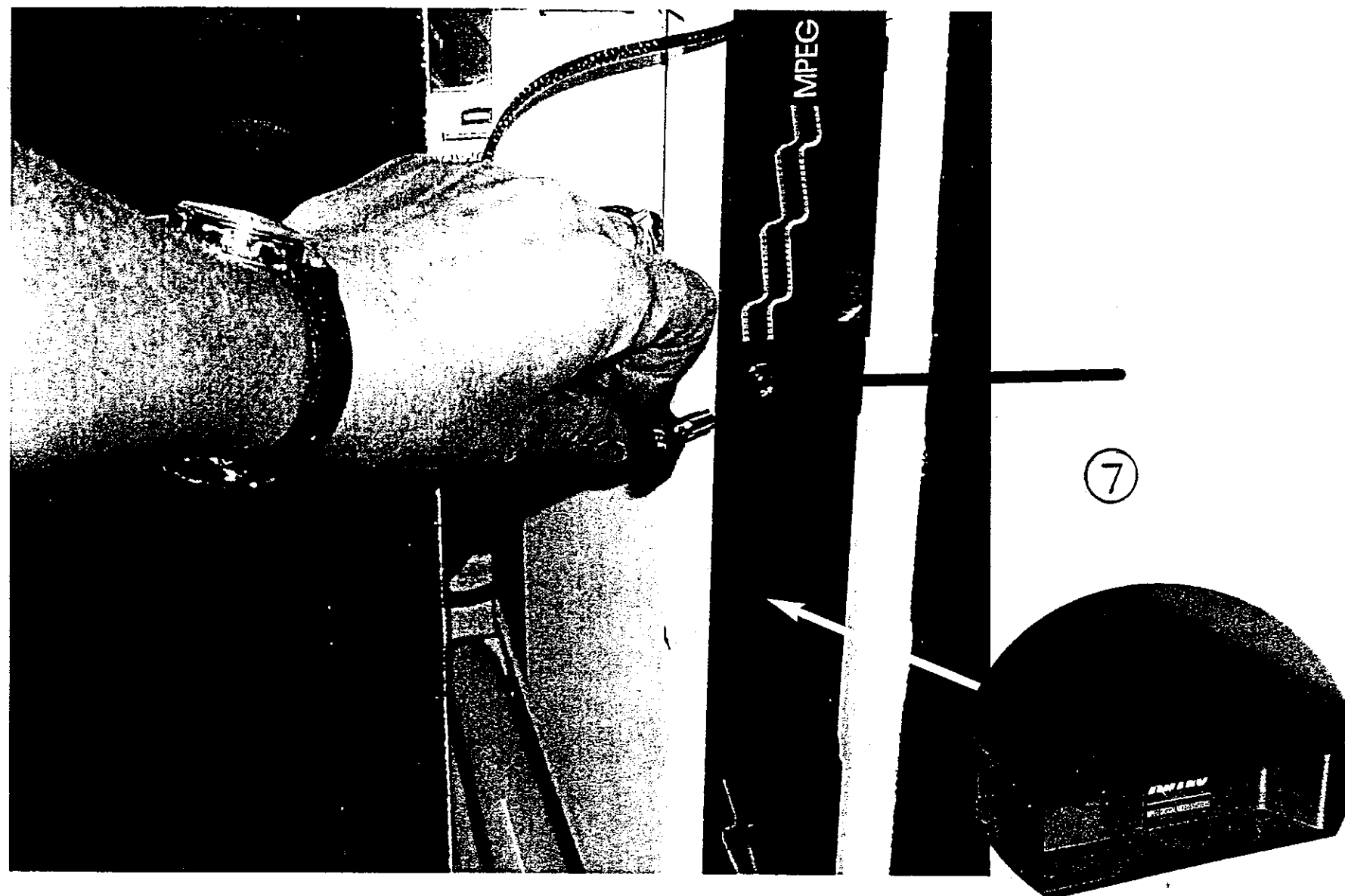
- ⑦ See photo on following pages.

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**CONNECT ELECTRICAL****Connect to house power****To power from ceiling...**

- ⑧ Pass main power feed from inside Icon Wall C and thread up through Wire Tube into the Wire Tray. **Note:** Even if an Alternate Leitner layout is chosen for venue, route wire from Icon up through wire tube into wire tray. Connect (1) main power cord from Icon to 20 amp house power.

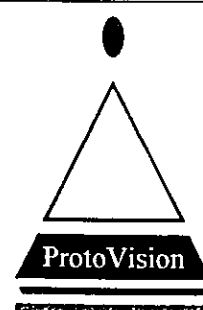
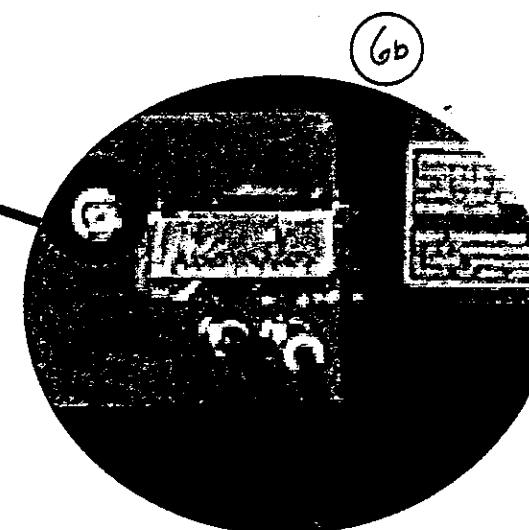
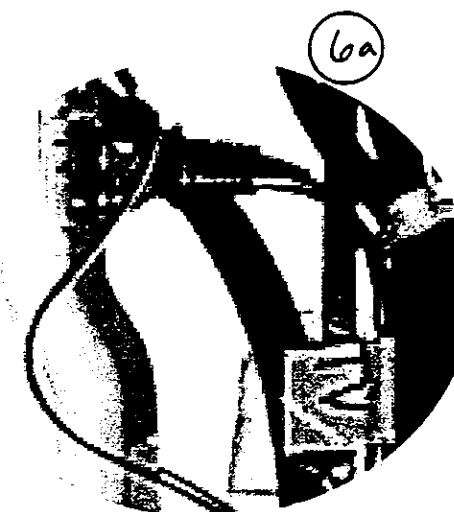
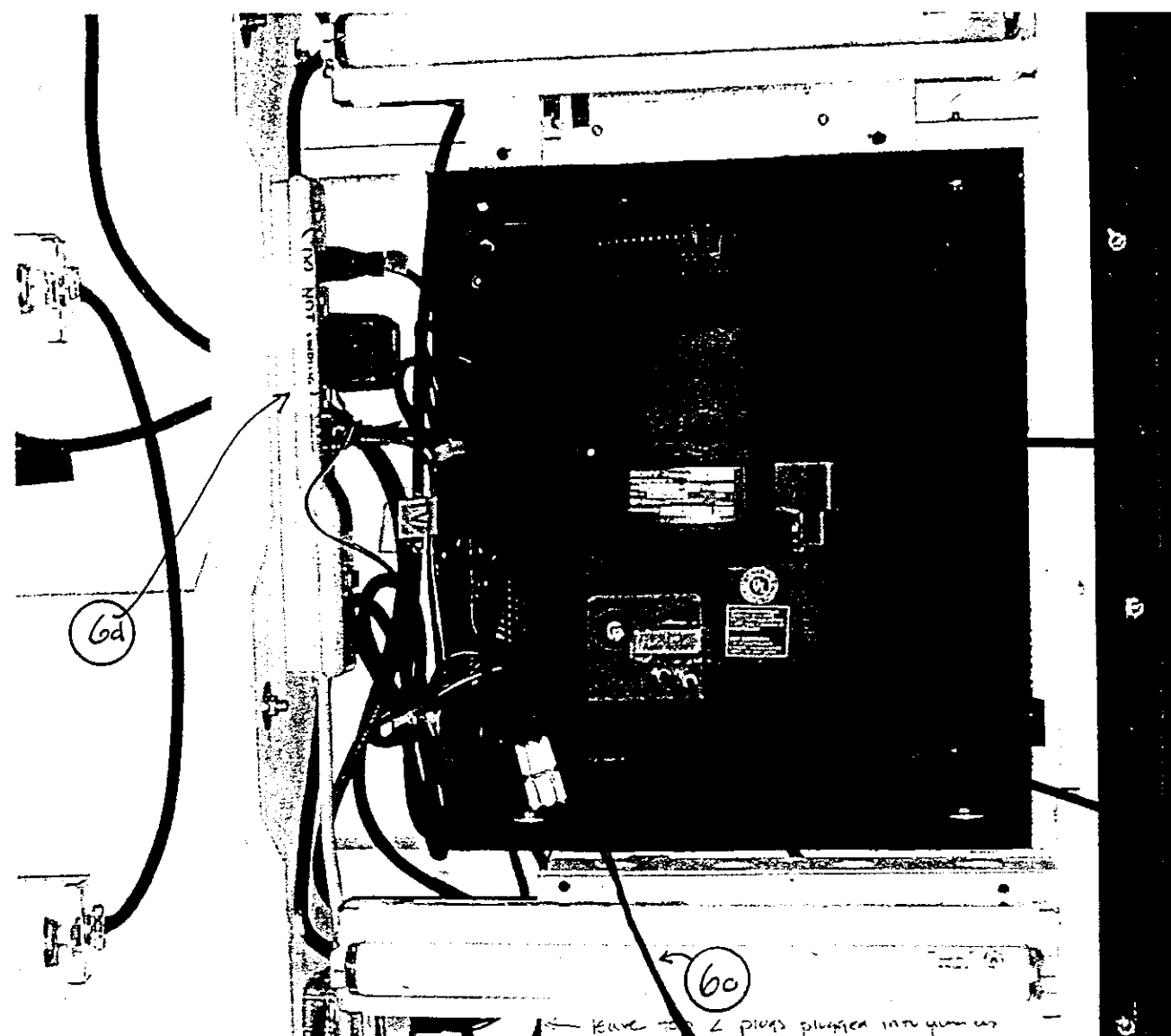
**To power from floor...**

- ⑧ Pass main power feed through inside Icon Wall C to bottom, then through holes along bottom of sections, and down into Base closest to house power in floor. Thread main power feed from junction box in wire tray down into Icon structure. Pass behind fluorescent bulb and along bottom of Wall sections and down into Base closest to house power.

Connect to house power. Video and Activities should boot and fluorescent and low voltage lighting should go on.

**Test power** for several hours if possible, connecting and disconnecting circuit several times to ensure ballasts and starters are working properly.

- ⑧ See photo on previous page.

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**INSTALL ICON LEXAN AND DURATRANS****Locate Duratrans Parts:**

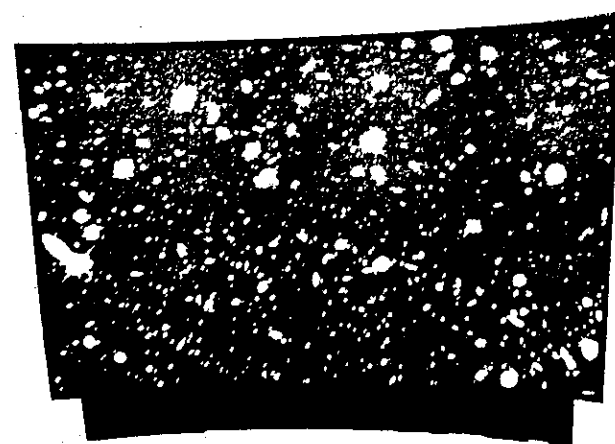
- (1) Lexan Sheet (700E, Crate 41)
- (1) Duratrans (700D, in long cardboard boxes, Crate 54)
- (6) Black Metal Frame Pieces (700F-1 thru -6, Crate 41)
- (2) plywood "dead men" (Crate 29)

**Install Lexan**

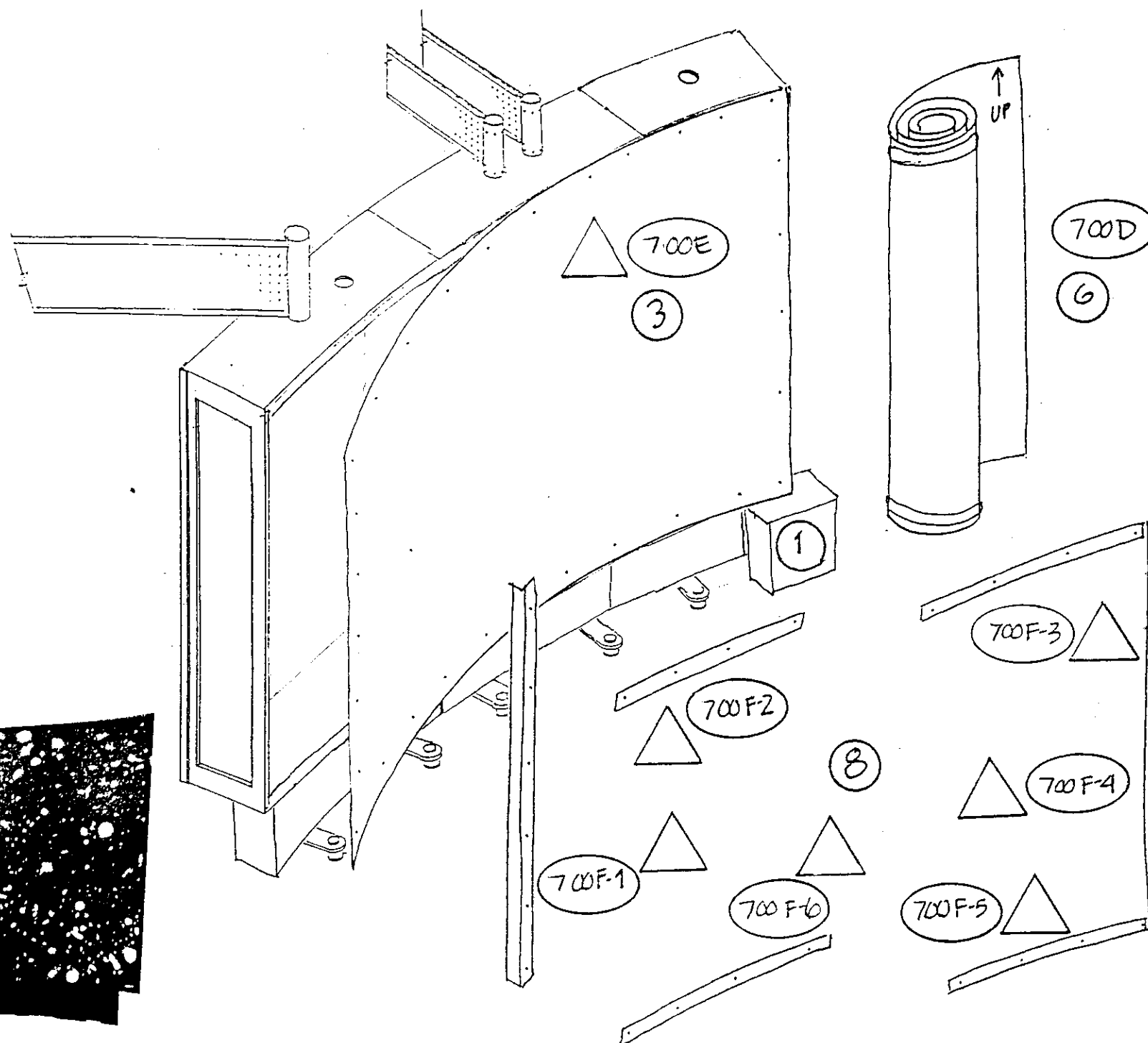
- 1 Position a "dead man" under each outside corner of Icon where it can support the Lexan as it is positioned.
- 2 Clean back of Lexan (the side without the velcro) using rag damp with Windex to remove dust.
- 3 Using minimum of (3) people, carry Lexan into position with velcro side facing out, and place bottom on "dead men" for support. Lift Lexan into position to line up holes in Icon. Install all (20) 1/4-20 x 3/4" flat head phillips screws to secure Lexan to Icon.
- 4 Clean front of Lexan using rag damp with Windex.

**Install Duratrans**

- 5 Locate Duratrans BUT DO NOT UNROLL. Determine which end is up, and fit exposed edge (left or right) to velcro on Lexan, being sure to align top and bottom correctly.
- 6 Using two installers, one at top and one at bottom, slowly begin to unroll the Duratrans across the Lexan. Bottom person should keep one hand checking the bottom alignment to feel how straight the Duratrans is unrolling. If alignment is off, re-roll transie, realign against side edge and begin to unroll again.
- 7 Once Duratrans is positioned correctly, pat down velcro. Gently wipe down the front of the Duratrans using rag damp with Windex.
- 8 Position Black Metal Frame pieces and begin attaching in numbered order using (26) 1/4-20 x 1" black button head screws.
- 9 Clean exhibit using rag damp with Windex to remove dust and finger prints.



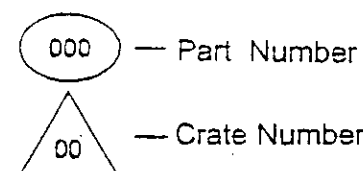
Icon Image on Duratrans 700D

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## DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling.**

**Unlock and remove Adtech Drive from exhibit prior to disassembly and pack in Crate 49.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 26, 27, 29, 33, 35, 37, 38, 39, 40, 41, 44 and AV Crates 49 and 50.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**Lexan and Duratrans** - The Black Metal Frame pieces along the back corners of Icon Walls 500A and C stay attached for shipment. The other (6) need to be removed to disassemble the Duratrans and Lexan, and then pack in Crate 41. As Duratrans is removed, roll carefully, avoiding making kinks in surface, then repack in long boxes in Crate 53. Lexan packs in Crate 41.

**Connections** - Disconnect electrical and other cables inside Icon Walls before removing any AV equipment.

**Pendent Lighting** - Remove Pendent Lighting, **leaving knurled nuts in place** to maintain placement locations. Repack lighting parts in Crate 49.

**EPOCH** - Remove graphic, then disconnect power cord and screws in underside before removing Casework from Reader Rail. Pack in Crate 44.

## DISASSEMBLY CONTINUED

**Space Time Marker -**

- Disconnect electrical cord and ship inside Icon Wall A wrapped in velcro strap.
- Remove Globe using the 5/64 long handled allen tool to prevent scratching Globe. Treat Globe with extreme care, packing in back into the white flannel sock inside Crate 40.
- Disconnect power-con inside Monolith before removing Light Bar. To disconnect power-con pull back on chrome tab and twist counter clockwise.
- Disassemble Graphic Wing Panel before detaching from Leitner to prevent Monolith from being unstable.

**Blue Acrylic Graphics** - Perforated Metal that holds these panels in lace ships attached with thumb screws inside Icon Wall A. Stand-offs pack in Hardware Boxes. Pack in Crate 39.

**Icon Monitor Box** - Disconnect all cables before removing Monitor or Monitor Box. Adtech Drive ships in Crate 49.

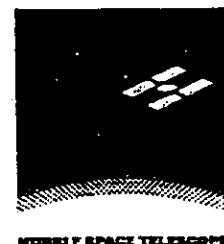
**Icon Walls** - Detach Icons sections from each other and from black Icon Bases. Icon Bases ship with metal feet attached in Crates 26 and 27.

**Insure that all components are packed back into their assigned locations in each crate.**



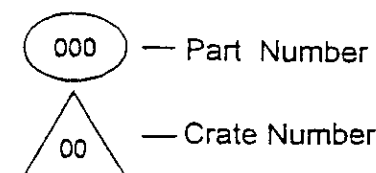
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**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**Icon video remote** is to be used ONLY for brightness and contrast.  
Open front door to monitor enclosure to enable remote to activate sensor.

**To replace fluorescent bulbs inside Space Time Markers:**

**(A)** Remove access panel in end of Space Time Marker Monolith by removing the screw in the bracket on top of the monolith.

Raise access panel from the bottom to release it from the cleat which holds it snug against the monolith.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

**If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.**

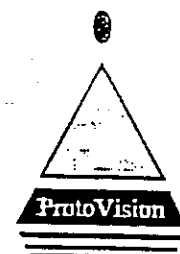
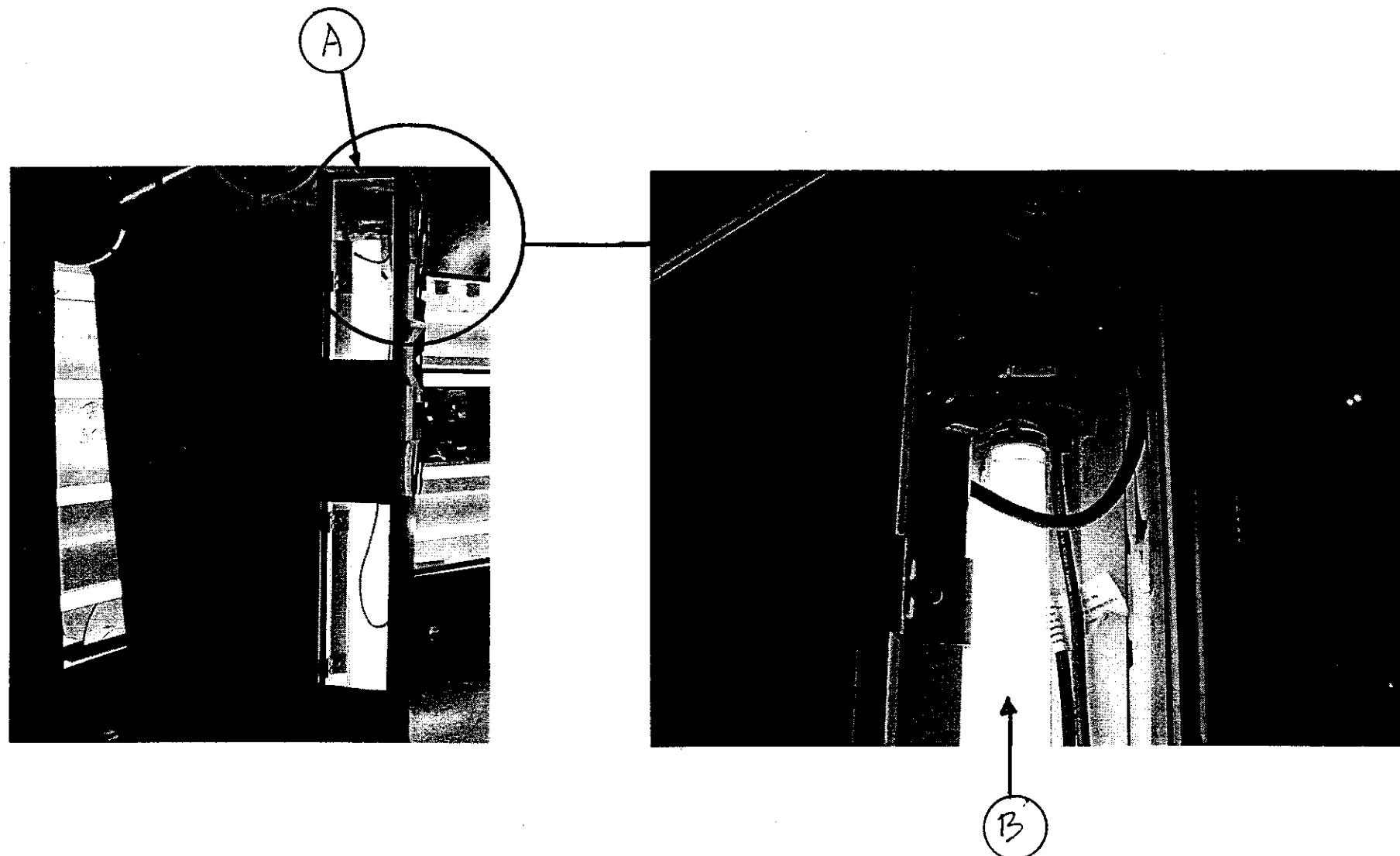
Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

**If silicone bead is not present** continue bulb replacement.

**(B)** Twist the burned out fluorescent bulb out of its socket

Replace bulb using identical fluorescent:  
F40CW/RS/WM, a 34 watt 48" cool white rapid start  
GE Watt-Meiser fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced.)

Reconnect power and replace access panel and screw at top.



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— Part Number

— Crate Number

**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace fluorescent bulbs inside Icon Structures (this includes the fluorescent bulb above the indented graphic area on the back of the Icons):**

Remove all the black button head allen screws, the (8) black metal pieces, and the duratrans.

Remove all the phillips head screws and the lexan sheet.

Look at fixture to see if silicone bead is present at juncture of bulb and socket.

**If silicone bead is present, disconnect main power to the exhibit before cutting the silicone bead.**

Once power is disconnected, cut silicone bead.  
(Silicone is not to be replaced.) Continue bulb replacement.

**If silicone bead is not present** continue bulb replacement.

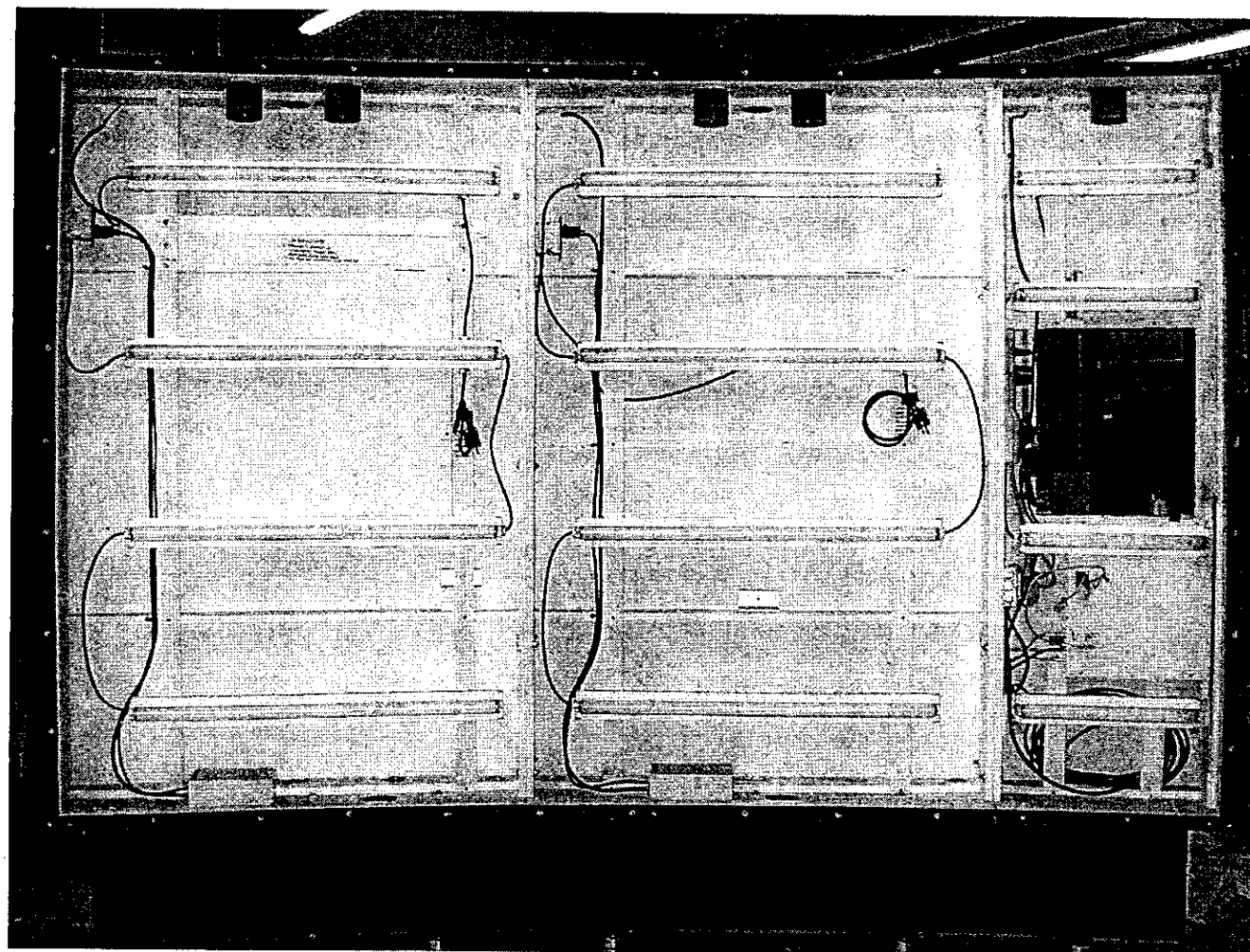
Twist the burned out fluorescent bulb out of its socket

Replace 30 watt bulb using identical bulb:  
F30T12/CW/RS, a 36" 30 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Replace 15 watt bulb using identical bulb:  
F15T12/CW/RS, an 18" 15 watt cool white rapid start fluorescent  
Available at most hardware stores.  
(Silicone is not to be replaced on any bulbs.)

Reconnect power and replace lexan, Duratrans and black metal pieces.

Adtecs will reboot automatically when powered up.



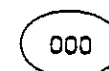
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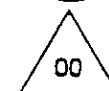


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— Crate Number

**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace halogen Pendent Light bulbs:**

Before changing halogen Pendent Light bulbs, mark the bulbs to be changed and **disconnect power to the exhibit.**

**Caution:** Working bulbs in the area will remain hot for several minutes after being powered down.

Remove chrome socket with burned out bulb from metal rods by loosening thumb screws on both outer ends.

Loosen (2) tiny slotted set screws in socket to release prongs on bulb.

Replace bulbs on Space Time Markers with identical 20 watt bulbs:

GE Q20MR16/FL/CG/CD(BAB) halogen bulb

Order Code: 19370

Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

Replace bulbs on Icon Structures and Leitner Parts with identical 50 watt bulbs:

GE Q50MR16/FL/CG/CD(EXN) halogen bulb

Order Code: 19367

Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

Replace by plugging into socket and retightening set screws on socket.

Reconnect power to the exhibit.

See photos in Installation Section.



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**MAINTENANCE INSTRUCTIONS**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace Brite Strip (festoon) bulbs inside EPOCH 704:**

To access bulbs, both the graphic and access panels must first be removed.

To remove the access panel, slide all five sliding graphic panels to the right to provide access to install graphic.

Remove the (6) 1/4-20 x 1" black button head allen screws at the left hand end of the slotted area. These attach the graphic access cover. Remove graphic access cover.

Remove (3) s.s. button head allen screws that attach the graphic. Carefully remove graphic panel and set aside.

These lights can be changed while they are running; they are low voltage.

The C415A key works all door locks in the exhibition. Unlock both locks on the door on top of the EPOCH casework, and open door to access bulbs.

Replace bulb using identical 5 watt bulb:

#BL-24-5W-F frosted Brite Strip (festoon) bulb

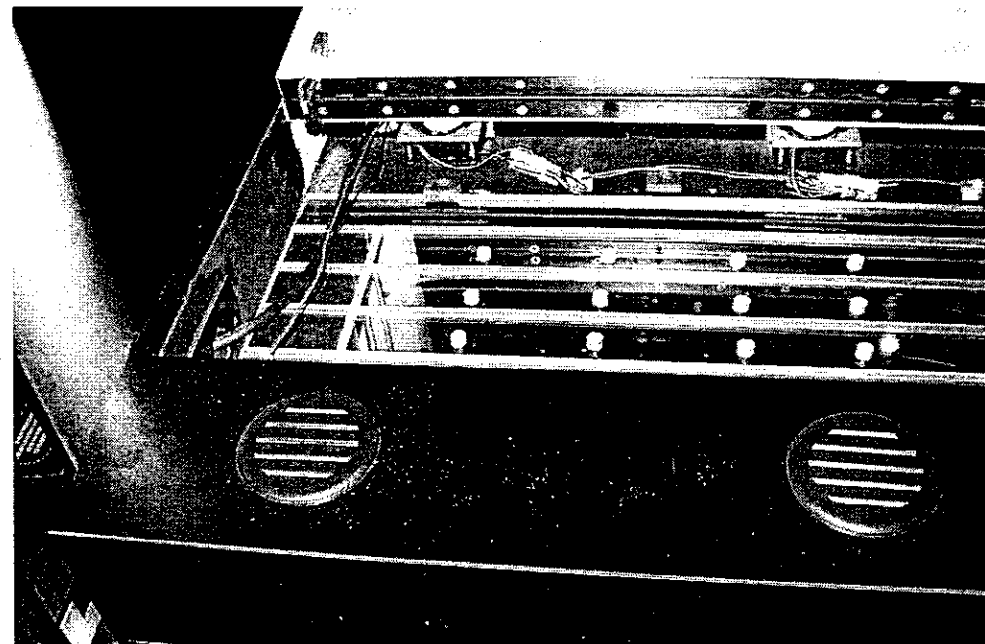
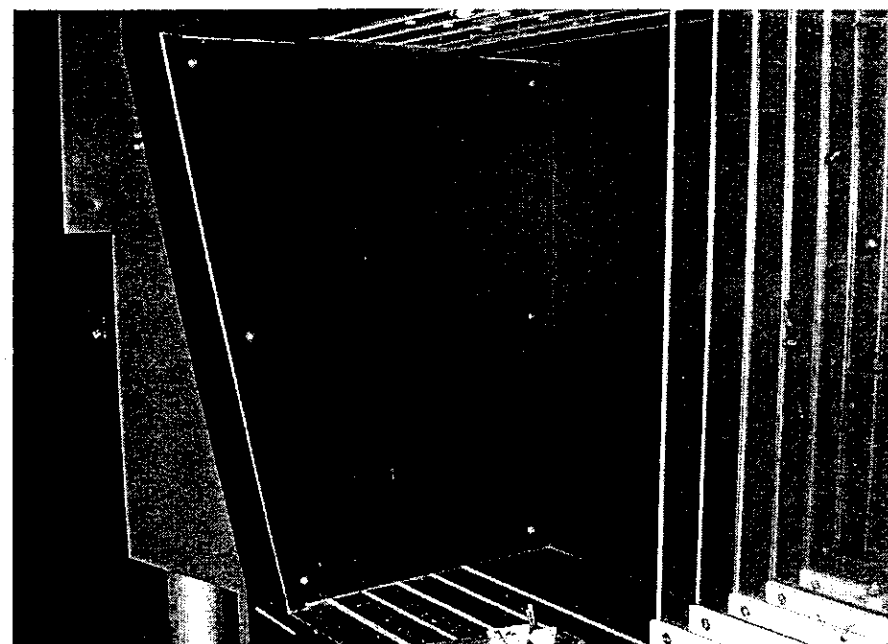
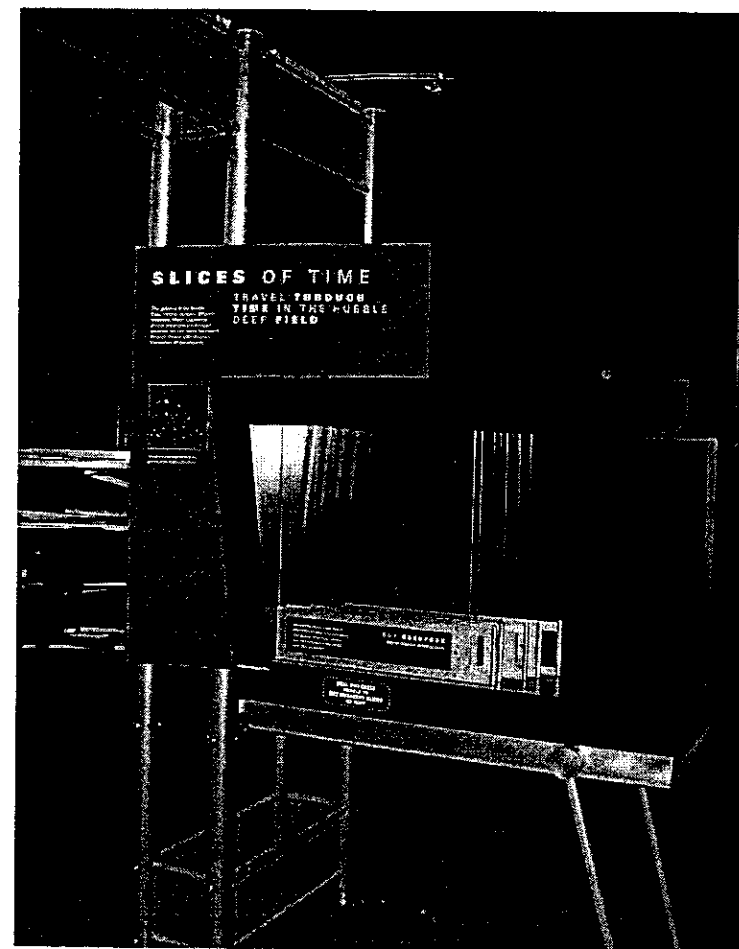
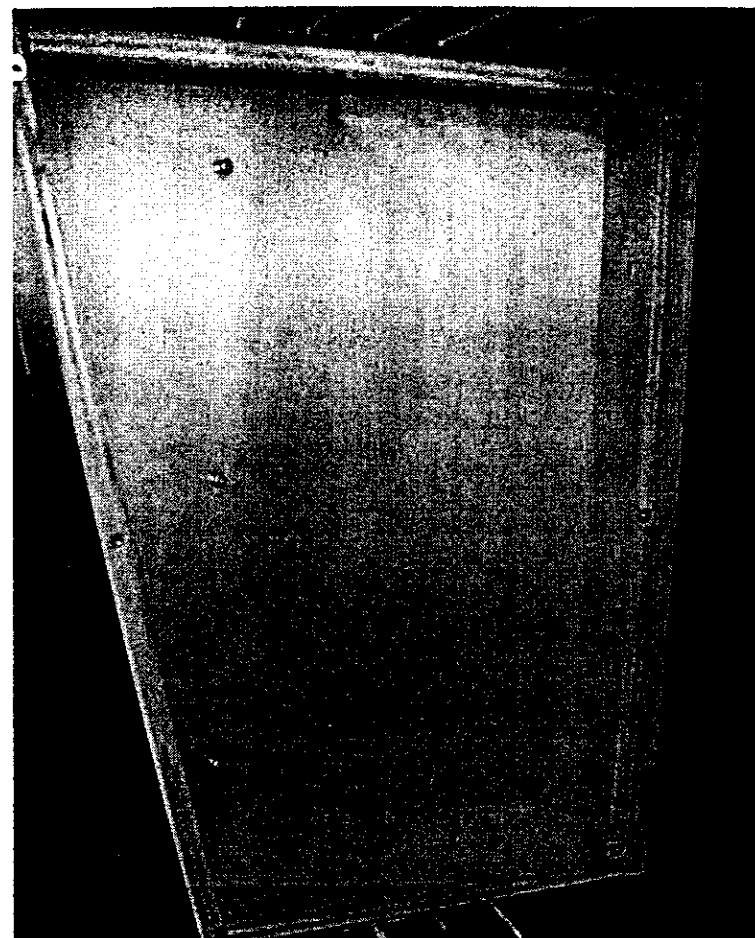
Available from National Specialty Lighting at 1-800-527-2923

Relock both locks on top door.

Position EPOCH L-shaped graphic on top of casework, placing pin into alignment hole in top. Line up inserts in side edge of graphic with holes in casework, and attach with (3) s.s. button head allen screws from the inside of the graphic access area.

Replace access cover using (6) black screws removed.

Slide graphic panels back to their original position on the left side of the slotted area.



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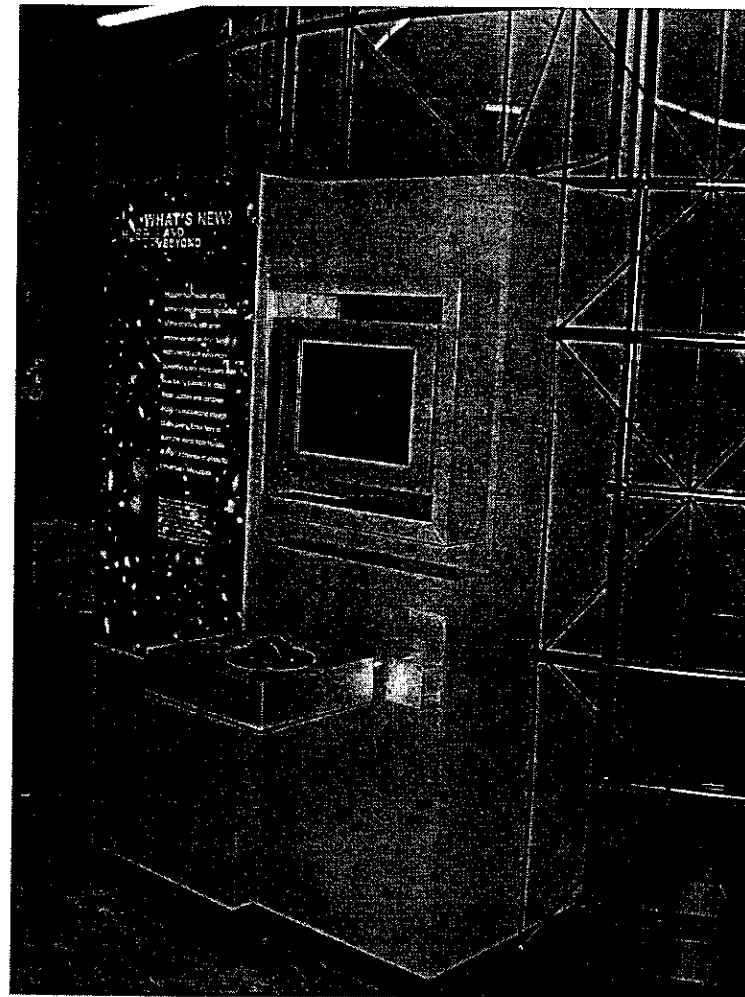
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— Crate Number

**Exhibit Overview:**

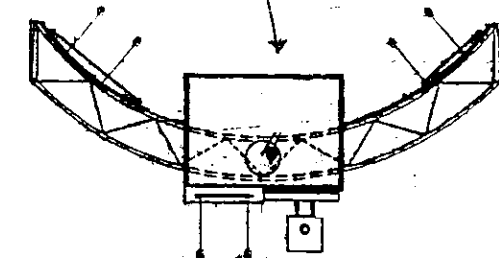
Current Area: Visitors learn about the continuing discoveries HST will make during the exhibition, the next phase of servicing missions, and the life of HST through 2005 and beyond.

Exit Experience: Visitors learn that science is a process; each new discovery leads astronomers to ask new questions and to build new telescopes to answer those questions; HST is one such tool and NGST, part of the Origins Program, is a look to the tools of the future.



**800**

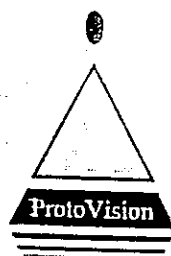
Future Area:  
Exit Experience



**800**

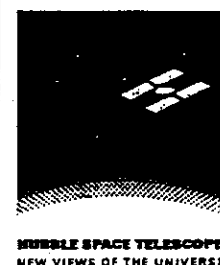
Current Area:  
Web Site Activity

SCALE: 1/4"=1'0"



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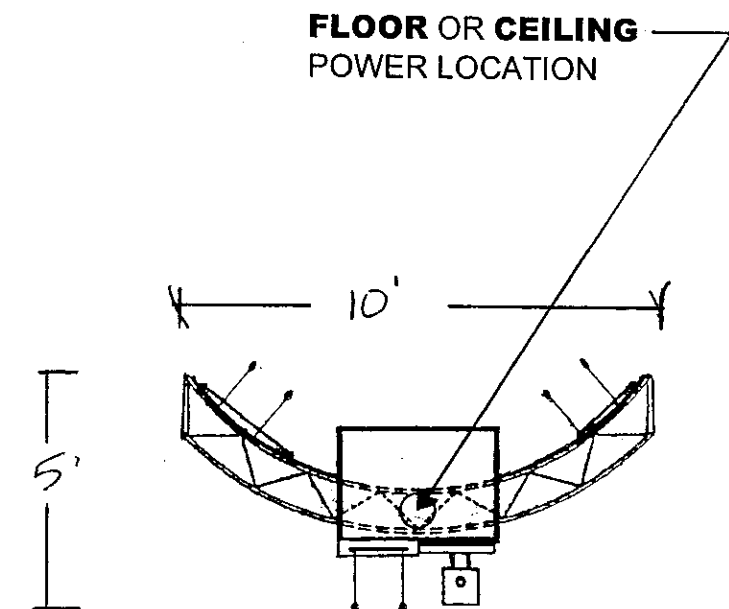
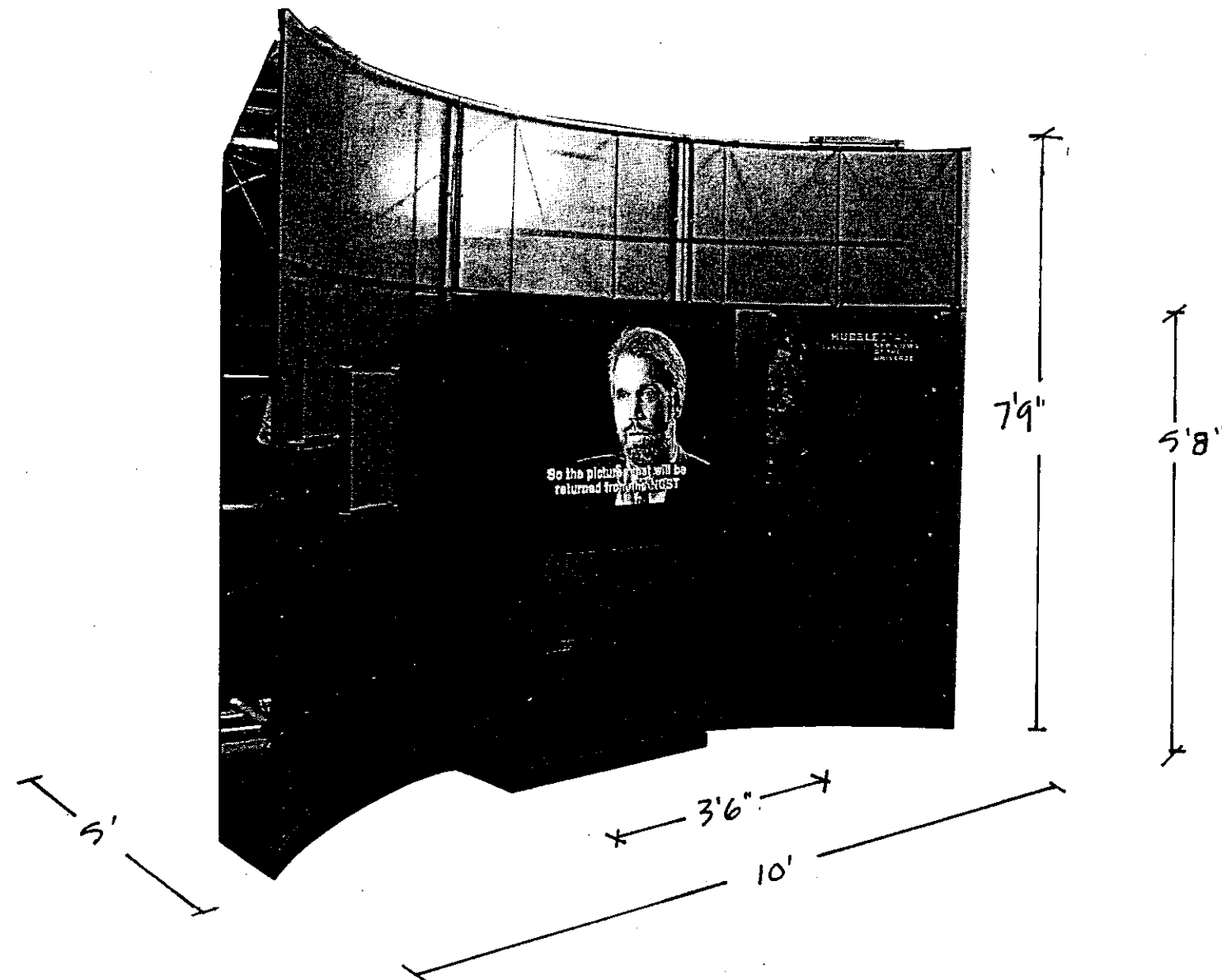
— Crate Number

**Space Planning:**

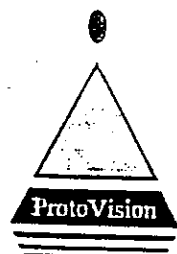
This exhibit occupies a 10' x 5' area, 7'9" high, **approx. 40 square feet of space.**

**Electrical Planning:**

This exhibit requires (1) 15 amp feed, either from the floor or ceiling.  
 A NEMA 5-15R receptacle is required.  
 A minimum line voltage of 120 volts nominal is required at receptacle.  
 One cord with **15 amp plug** is included to connect to house power.



SCALE: 1/4" = 1'-0"



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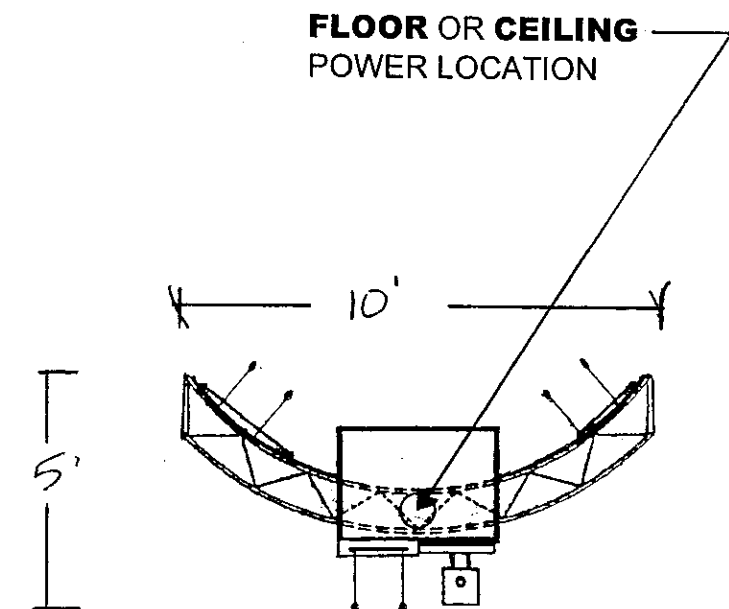
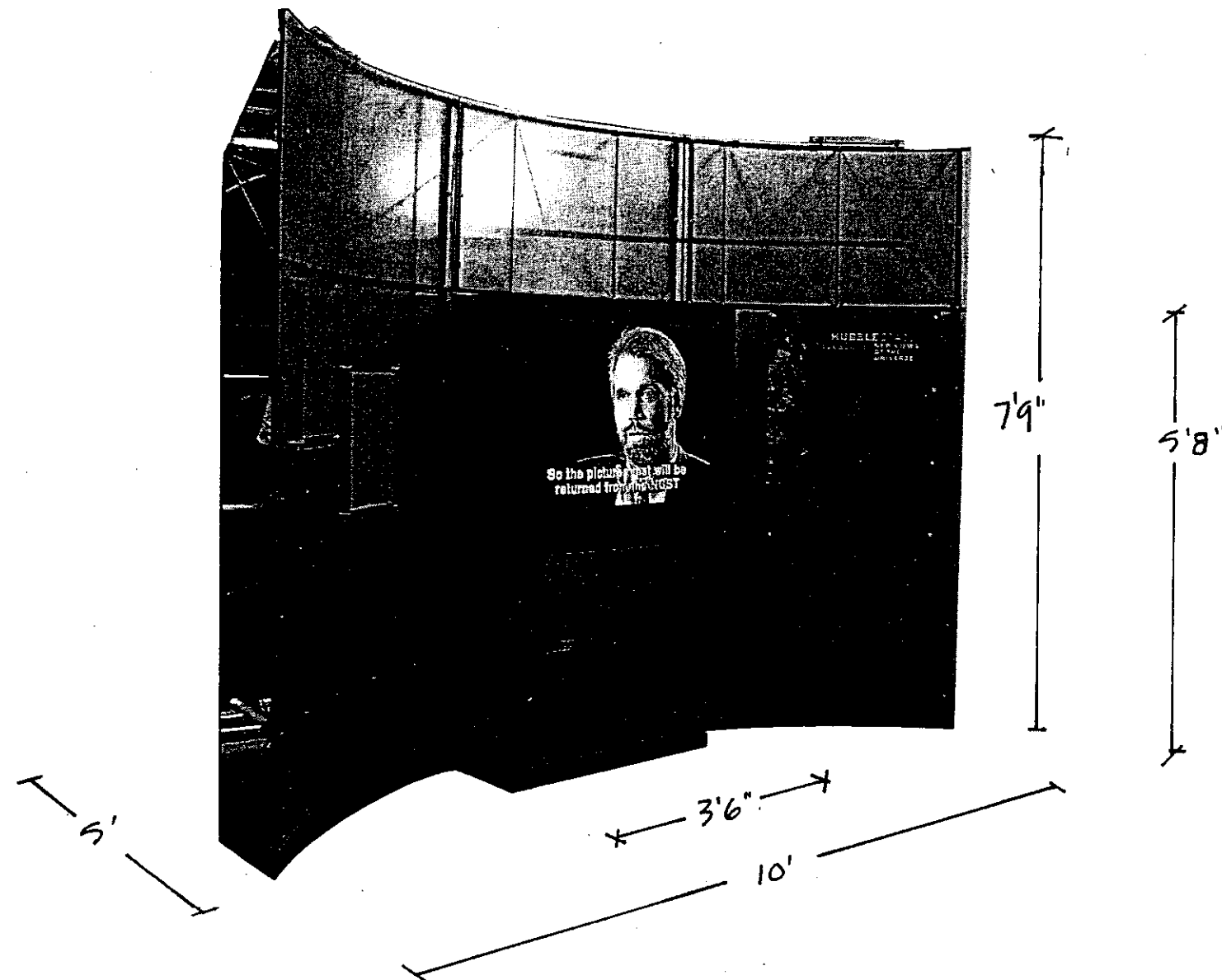
000 — Part Number  
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**Space Planning:**

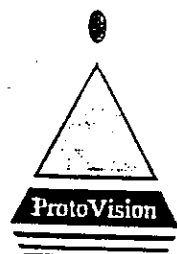
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Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.

**Locate parts required for set-up of this area, including:**

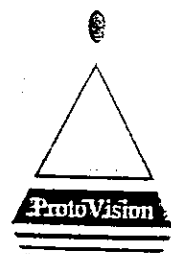
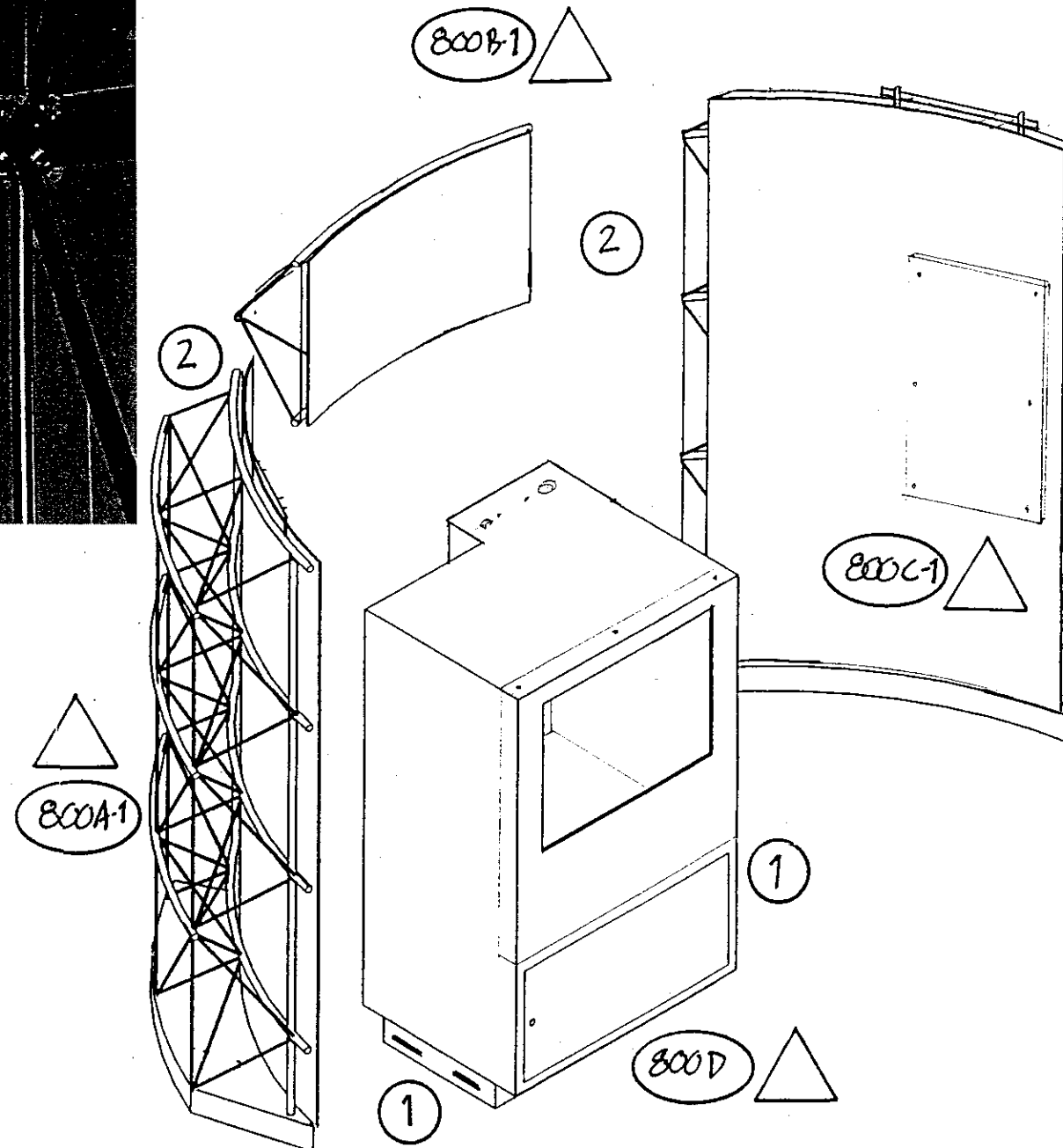
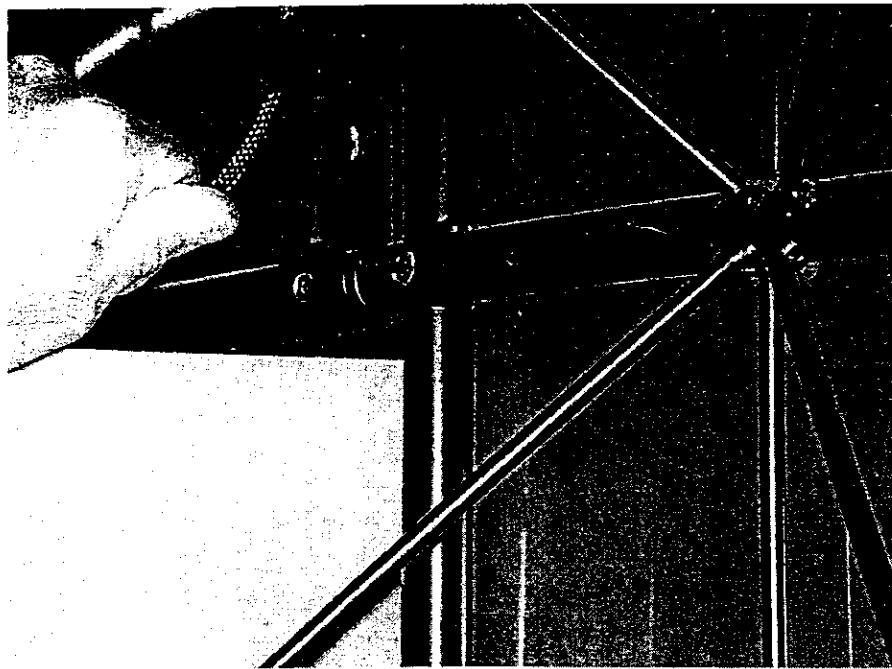
- 800 Area Hardware Box and Tools (Crate 20)
  - (2) Truss Wall Sections with Base Platforms and graphics attached (800A, and 800C, Crates 46 and 47)
  - (1) Center Truss Section (800B, Crate 19)
  - (1) Monitor Cabinet (800D, Crate 48)
  - (1) Light Bar (800D-1, Crate 48)
  - (12) Straight Chrome Rods (Crate 49)
  - (6) 50 watt Halogen Bulbs with Chrome Sockets (Crate 49)
  - (1) 43" Sony Projection TV (Crate 49)
  - (1) MAC G4 with Keyboard (Crate 50)
  - (1) Adtech Drive #A "BEYOND HUBBLE" (Crate 49)
- Cleaning Kit is packed in Green Star Crate 51.

**Locate position of Current and Future Area in gallery**

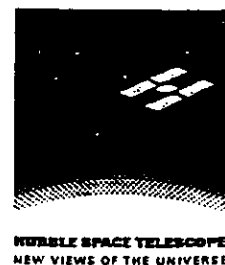
Locate positioning of exhibit on the floor and locate electrical in either the floor or ceiling. See previous page for electrical insertion point and approximate size of exhibit.

**Attach Monitor Cabinet and Trusses 800A and C.**

- 1** Place Monitor Cabinet 800D in location, and connect rotolocks from inside of cabinet to attach Truss Platforms 800A-1 and B-1 to either side. Position Truss 800B in place between 800A and C and line up the connectors in the expansion joints between trusses.
- 2** Loosen (4) M6 x 10mm s.s. low allen head cap screws with black painted heads in expansion joints to fit joints. Tighten to secure joints between trusses. **Note: At disassembly, the two screws in each expansion joint must stay installed during shipment, or the loose metal inside the joint will not stay in place during transit.**



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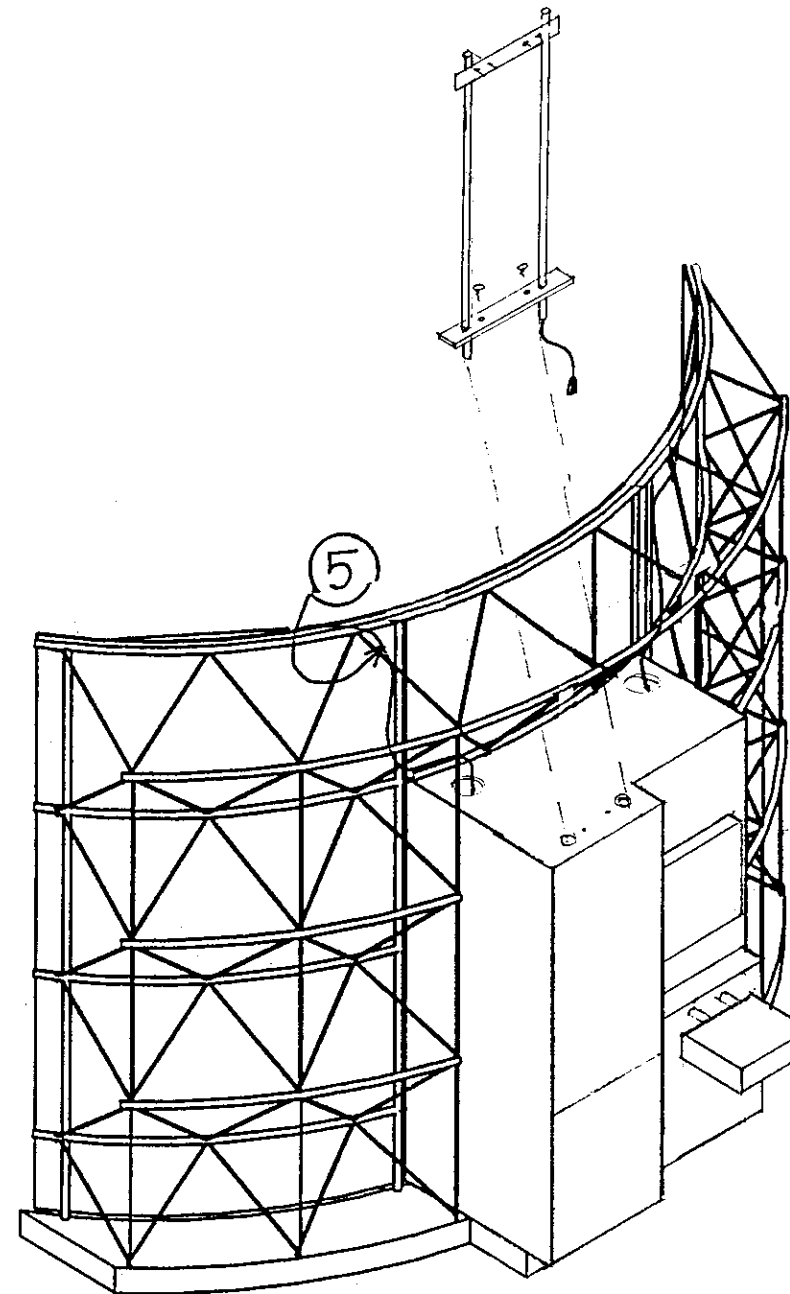
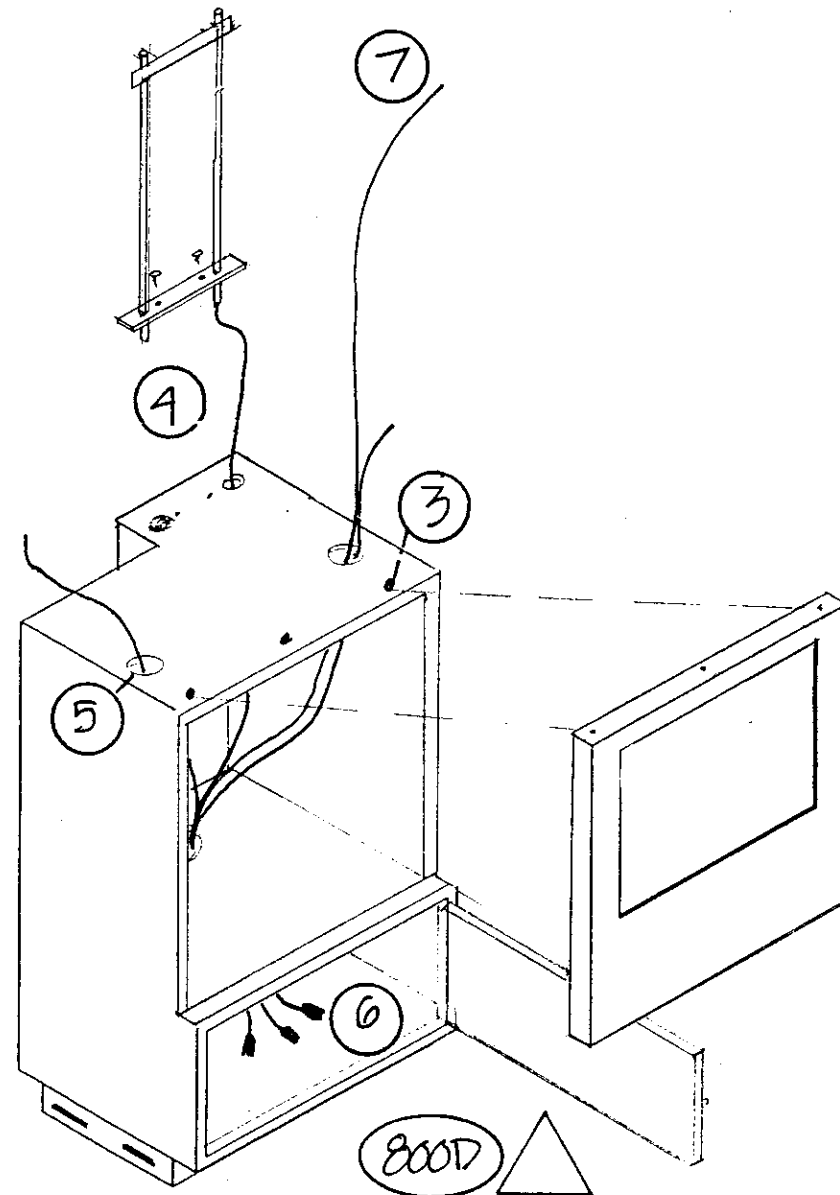


**INSTALL LIGHT BAR****Install Light Bar**

- 3** Remove the (3) 1/4-20 x 3/4" stainless steel button head allen screws on the top of the Monitor Cabinet that attach the front monitor cover.
- 4** Thread cable for Light Bar 800D-1 into top of Monitor Cabinet 800D where light bar attaches. Attach Light Bar to top using (2) 1/4-20 x 1" stainless steel button head allen screws.

**Run cables for Pendent Lighting**

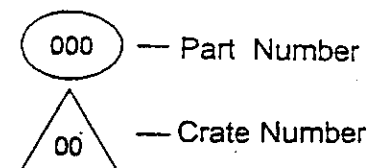
- 5** Lift off the (2) black plastic hole covers on top of 800D. Thread cables for Pendent Lighting from Trusses 800A and C across back of Trusses and into top of Monitor Cabinet (see photo). Attach to Trusses using the velcro cable ties that stay attached to Trusses.
- 6** Thread Light Bar and Pendent Light cables through upper part of Monitor Cabinet into lower part, and plug power-cons into transformer, matching markings. **Note:** To connect power-con, press in and turn clockwise until it clicks. To disconnect, pull back on chrome tab and twist counter clockwise.
- Run cables for access to CEILING power at this point**
- 7** If needed, run cables for ceiling access now to avoid having to remove 43" monitor to run cables later on. Feed house power cables thru one of the holes with black plastic covers in the top of 800D to make connection to house power.

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**INSTALL 43" TV****Install the 43" Sony TV in Monitor Cabinet 800D**

**Note:** Access to feed house power from venue CEILING into Monitor Cabinet must be done before 43" TV is installed, or access will be blocked.

**In upper cabinet**

⑧ Video cable ships attached to TV, and if not already plugged into the TV, do so. In upper part of Monitor Cabinet, two installers hold 43" TV while third installer threads TV power cord and video cable down through hole into base cabinet.

Move 43" TV into position while aligning it with placement guides on shelf. Replace the front monitor cover after until TV is running.

**In lower cabinet**

⑨ Plug audio and video cables from TV into Adtech Mirage Player.

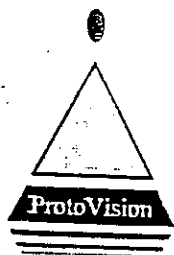
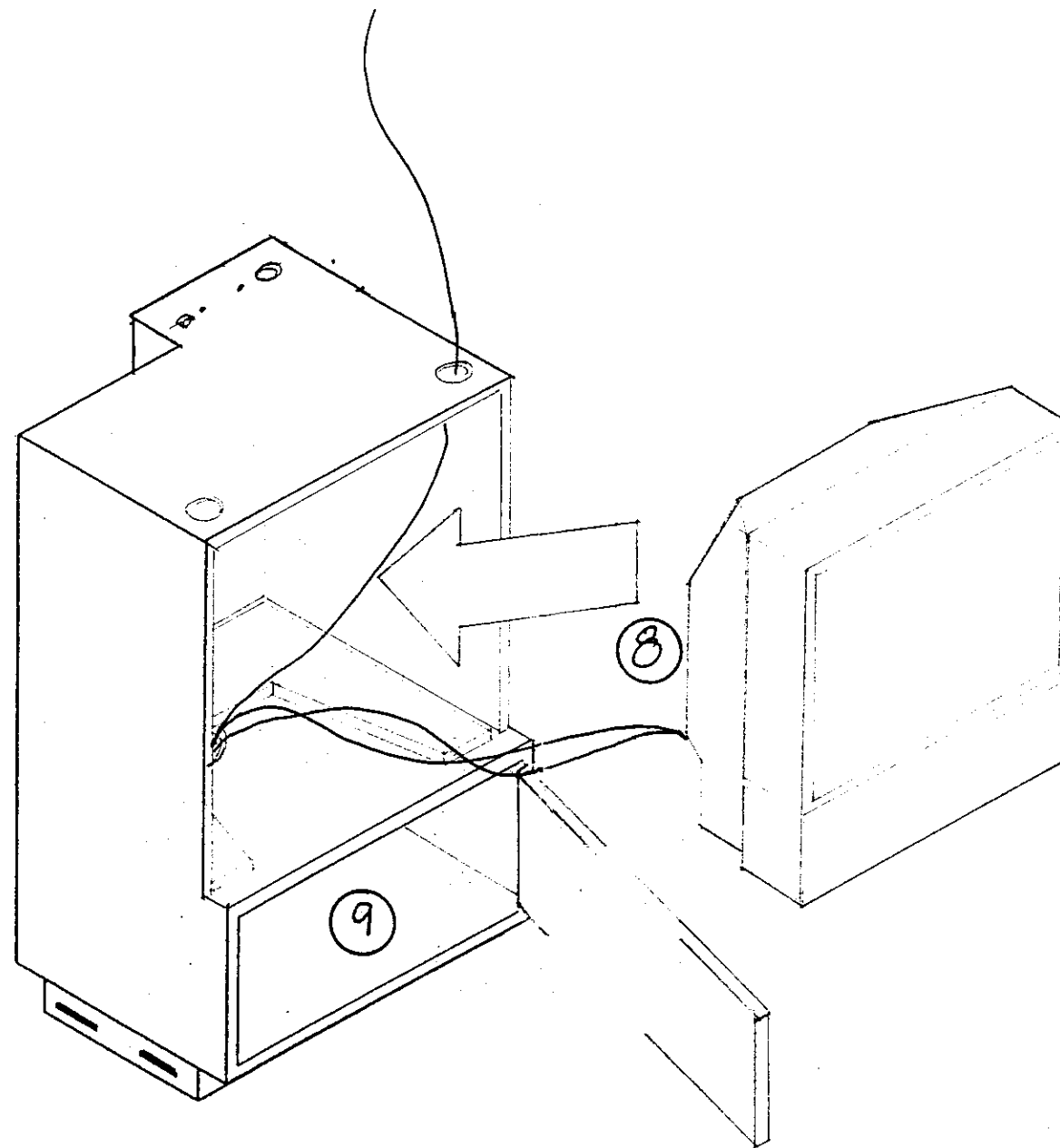
Locate TOA 900 Series amp (800D) in AV Crate 50, and plug amp into power strip.

Connect gray cable "D", matching markings.

**Adtech Mirage Player**

Locate Adtech Drive #A "BEYOND HUBBLE" and use key to install and lock in place. **(Note: Adtech Mirage will not play unless drive is locked in place.)**

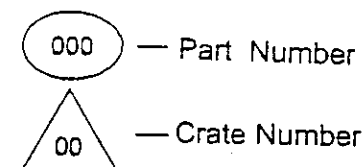
Test Adtech drive before reinstalling the front monitor cover.

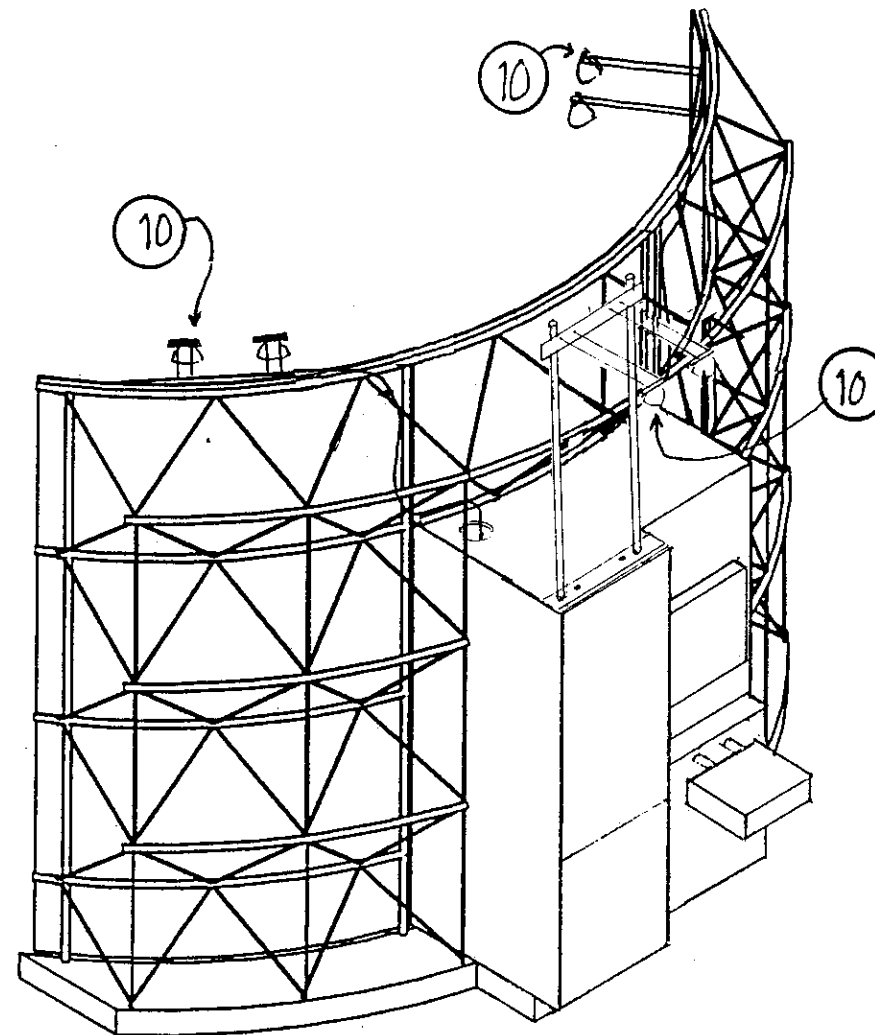
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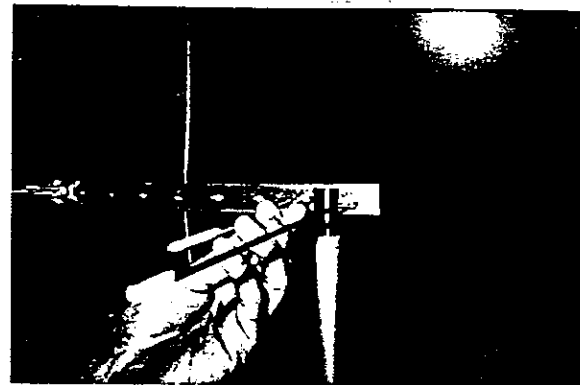
**Install Pendant Lighting**

**Note:** To avoid shock, disconnect or turn off power when installing pendant lighting.

Assemble (6) Pendant Lights into Light Bar and Trusses by:

- a).** Locating (12) Straight Chrome rods, (6) sockets with (6) 50 watt halogen bulbs attached.
- b).** Screw (12) Straight Chrome Rods into the (12) knurled knobs **on the Light Bar and Trusses.**
- c).** To install Sockets, loosen thumb screws on each end of socket, slide onto chrome rods and re-tighten thumb screws.
- d).** To change or install bulbs, loosen (2) 3mm set screws in socket, insert prongs of halogen bulb into matching holes in socket, and re-tighten set screws.

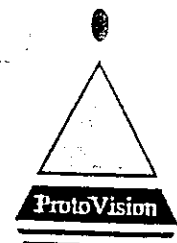
b).



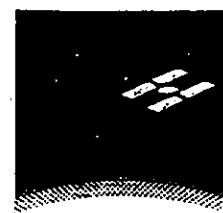
c).



d).



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### Connect to House Power

- 11 To connect from ceiling, house power should have already been run behind 43" TV, either feeding in from venue, or out from base cabinet.
- To connect from floor, feed main power cord through hole in floor and out from under cabinet.

### Install Computer and connect Cables

- 12 Locate (1) MAC G4 computer labeled for 800D and install in lower cabinet. Connect cables matching markings, plug into power.

#### For initial power-up during installation:

- Press button to turn MAC G4 on and wait about 2 minutes for system to boot.
- Press button on CD drawer, place CD on tray with label side facing, and press button to close drawer.
- On the flat screen, look along tool bar and click "special".
- On drop-down menu that appears, click "restart", and wait while the system reboots itself.
- On tool bar along top, click "home", which automatically opens the Web Site Activity.
- Test by using the track ball and mouse to move around the site.
- Close up the cabinet for the day.

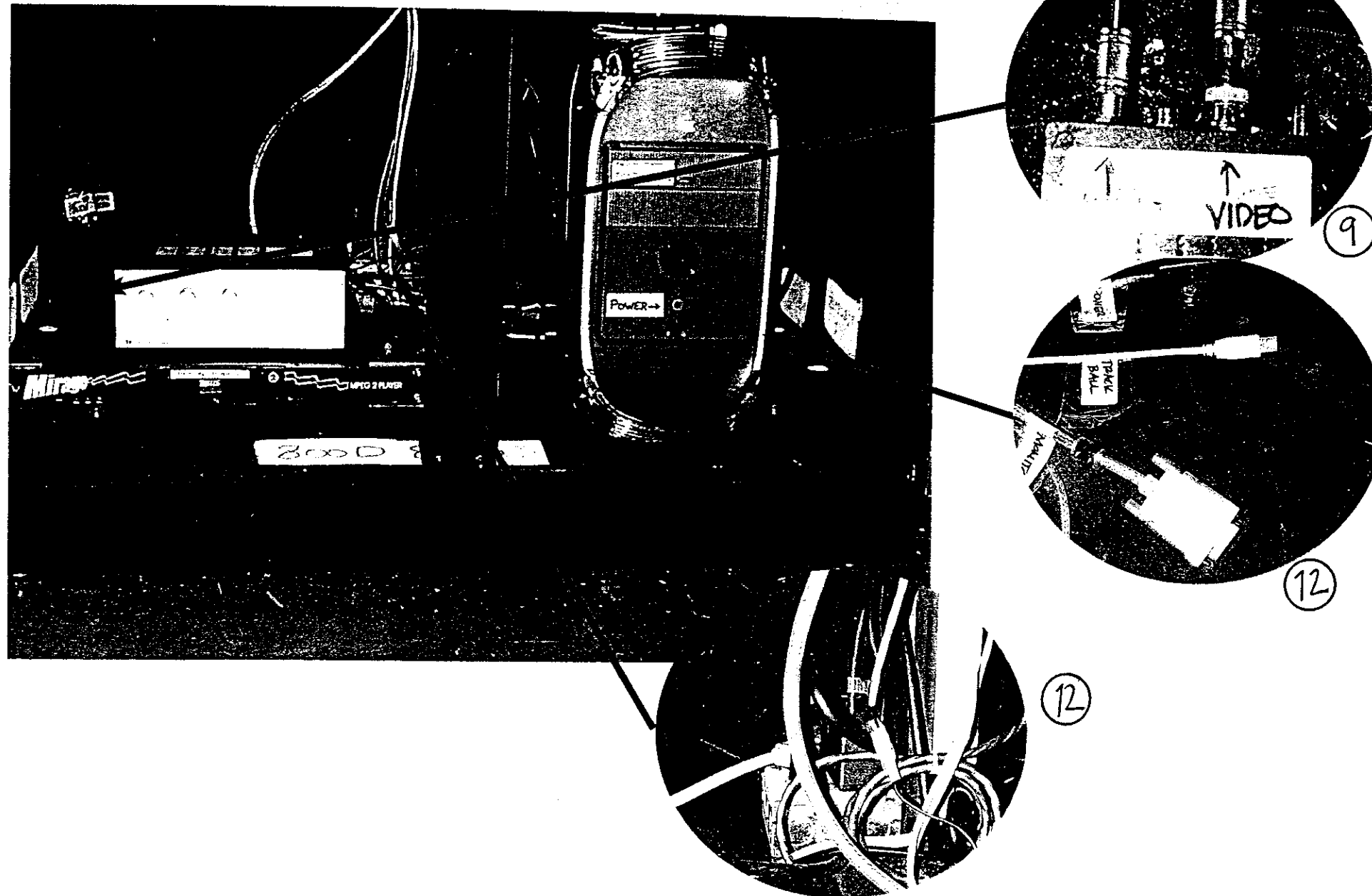
#### For daily startup:

- Press button to turn MAC G4 on and wait for system to boot.
- The system will display an error message about improper shut down. Click "done"
- System will complete reboot and will start the Web Site Activity.
- Click on "home" to start Activity, or wait 5 minutes and Web Page will automatically come up.
- When the system has rebooted, look on tool bar along top, click "home", which automatically opens the web site activity.
- Test by using the track ball and mouse to move around the
- Close up cabinet for the day.

Check electrical to be sure Pendent Lighting, TV, Flat Screen and Track Ball are working.

Clean laminates and acrylics as needed.

Repack any packing materials in Crates.



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## CURRENT AND FUTURE 800 DISASSEMBLY INSTRUCTIONS

**Disconnect from house power before disassembling the Intro Area.**

**Unlock and remove Adtech Drive from exhibit prior to disassembly and pack in Crate 49.**

**Insure that all screws, bolts and assembly hardware is in bolt box as indicated. Notify SITES immediately if any hardware is damaged or missing.**

**Parts for this Area repack into Crates 19, 20, 46, 47, 48, 51 and AV Crates 49 and 50.**

**Disassemble following Installation instructions in reverse order, paying careful attention to:**

**Adtech Drive** - Repack (1) Adtech Drive in Crate 49.

**Lower Cabinet** - Disconnect MAC and other electronics prior to disassembly. Web Site CD in the MAC G4 ships in the MAC Keyboard box, not in the CD drive in the MAC. Pack in Crate 50.

**Pendent Lighting** - Remove Pendent Lighting, **leaving knurled nuts in place** to maintain placement locations. Repack lighting parts in Crate 49.

**Upper cabinet** - Disconnect cables in lower cabinet before removing 43" TV. Audio and video cables ship attached to TV. Pack in Crate 49.

**Flat Screen** - Ships attached to 800D.

**Remove Light Bar** - To disconnect power-con pull back on chrome tab and twist counter clockwise. Pack in Crate 48.

## CURRENT AND FUTURE 800 DISASSEMBLY CONTINUED

**Expansion Joints between Truss Sections** - One of the two M6 low head cap screws must be removed from expansion joints to detach Truss Sections, **but these screws must be reinstalled** into joints prior to shipment. The joint parts are loose need the screws to prevent them from being lost in transit.

**Insure that all components are packed back into their assigned locations in each crate.**



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— Part Number

— Crate Number

Page Number: **800-8**

**Please wear white gloves and do not wear sharp objects to prevent damage to exhibits.**

**To replace halogen Pendent Light bulbs:**

Before changing halogen Pendent Light bulbs, mark the bulbs to be changed and **disconnect power to the exhibit.**

**Caution:** Working bulbs in the area will remain hot for several minutes after being powered down.

Remove chrome socket with burned out bulb from metal rods by loosening thumb screws on both outer ends.

Loosen (2) tiny slotted set screws in socket to release prongs on bulb.

Replace bulbs on Truss Sections with identical 50 watt bulbs:

GE Q50MR16/FL/CG/CD(EXN) halogen bulb

Order Code:19367

Available from Home Depot or many lighting stores, but bulb must be this particular GE bulb to match color and housing to existing bulbs.

Replace by plugging into socket and retightening set screws on socket.

Reattach socket and tighten onto rods with thumb screws on outer ends.

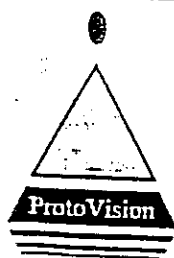
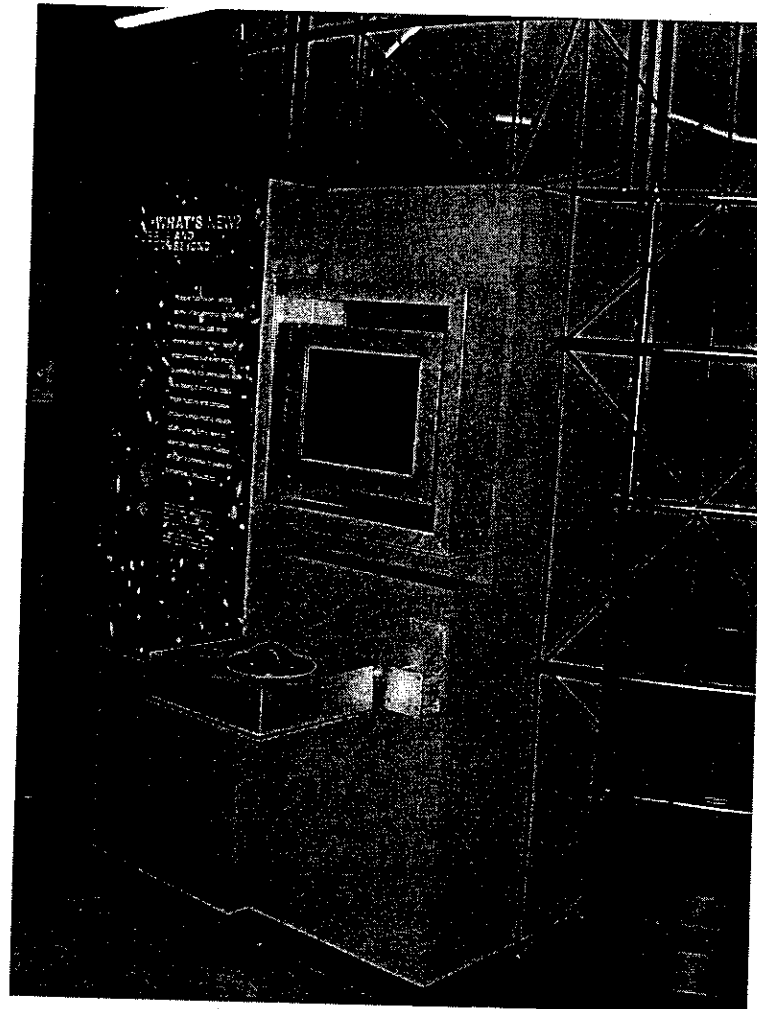
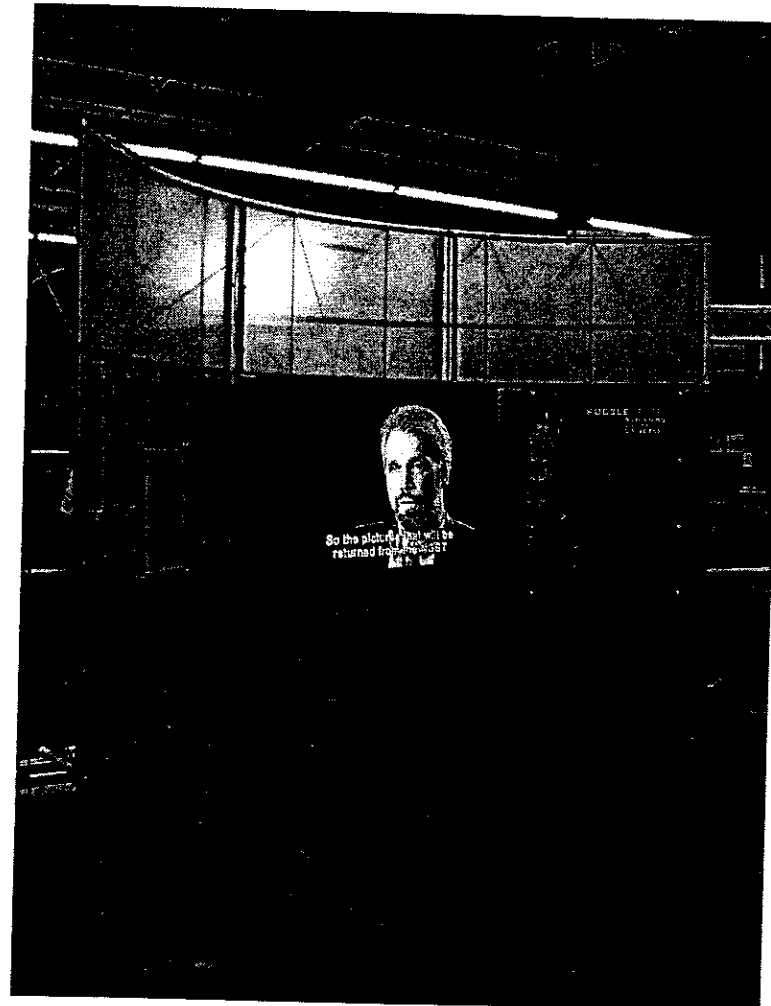
Reconnect power to the exhibit.

See photos in Installation Section.

**Push Buttons Bulbs**

**Access to push buttons is most available before exhibits are assembled. Therefore, bulbs inside push buttons will be replaced during installations, before artifacts are installed, and while a ProtoVision supervisor is on-site.**

Replace bulb using identical miniature bulb:  
 Type 658, T-3 1/4 wedge base bulb, 14 volt, .08 Amp  
 Available from your local Grainger store, part # 2F580  
 or [www.grainger.com](http://www.grainger.com)



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