


ENGINEERING CHANGE NOTICE

Page 1 of 23

1. ECN 167424

Proj.
ECN

2. ECN Category (mark one)		Supplemental <input type="checkbox"/>	Change ECN <input type="checkbox"/>	Supersedure <input checked="" type="checkbox"/>
Cancel/Void <input type="checkbox"/>	Direct Revision <input type="checkbox"/>	Temporary <input type="checkbox"/>	Discovery <input type="checkbox"/>	
3. Originator's Name, Organization, MSIN, and Telephone No. Bob Egge, Decommissioning Support, R2-77, 3-2774. Org. 81440, Chrg. UA1BC			4. Date July 15, 1992	
5. Project Title/No./Work Order No. Electrical Upgrade of 105F		6. Bldg./Sys./Fac. No. 105F		7. Impact Level 4
8. Document Number Affected (include rev. and sheet no.) H-W-74569, Sht 1, Rev 12; H-W-71658, Sht 1, Rev 24; H-W-71659, Sht 1, Rev 7.		9. Related ECN No(s). 167412		10. Related PO No. N/A
11a. Modification Work <input checked="" type="checkbox"/> Yes (fill out Blk. 11b) <input type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	11b. Work Package Doc. No. LOI 9250975 Rev 1	11c. Complete Installation Work _____ Cog. Engineer Signature & Date		11d. Complete Restoration (Temp. ECN only) _____ Cog. Engineer Signature & Date
12. Description of Change This ECN 167424 replaces ECN 167412. Install new electrical lighting as outlined in ECN 167424.				
				
13a. Justification (mark one)		Criteria Change <input type="checkbox"/>	Environmental <input type="checkbox"/>	Facilitate Const. <input type="checkbox"/>
Design Error/Omission <input type="checkbox"/>	Design Improvement <input checked="" type="checkbox"/>	As-Found <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	
13b. Justification Details The lighting system in 105-F is out of code and presents a safety hazard. Due to the age of the wire and equipment presently there, new electrical equipment and wire will be installed to assure a safe system in accordance to National Electric Code.				
14. Distribution (include name, MSIN, and no. of copies)			RELEASE STAMP	
RG Egge	R2-77	1	OFFICIAL RELEASE BY WHC DATE JUL 21 1992 <i>He 4</i>	
MR Morton	R2-77	1		
JD Showman	T3-11	1		
BF Weaver	T3-11	1		

ENGINEERING CHANGE NOTICE

Page 2 of 23

1. ECN (use no. from pg. 1)
167424

15. Design Verification Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	16. Cost Impact <table style="width: 100%;"> <tr> <th style="width: 50%;">ENGINEERING</th> <th style="width: 50%;">CONSTRUCTION</th> </tr> <tr> <td>Additional <input type="checkbox"/> \$</td> <td>Additional <input type="checkbox"/> \$</td> </tr> <tr> <td>Savings <input type="checkbox"/> \$</td> <td>Savings <input type="checkbox"/> \$</td> </tr> </table>	ENGINEERING	CONSTRUCTION	Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$	17. Schedule Impact (days) Improvement <input type="checkbox"/> Delay <input type="checkbox"/>
ENGINEERING	CONSTRUCTION							
Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$							
Savings <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$							

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD <input type="checkbox"/>	Seismic/Stress Analysis <input type="checkbox"/>	Tank Calibration Manual <input type="checkbox"/>
Functional Design Criteria <input type="checkbox"/>	Stress/Design Report <input type="checkbox"/>	Health Physics Procedure <input type="checkbox"/>
Operating Specification <input type="checkbox"/>	Interface Control Drawing <input type="checkbox"/>	Spares Multiple Unit Listing <input type="checkbox"/>
Criticality Specification <input type="checkbox"/>	Calibration Procedure <input type="checkbox"/>	Test Procedures/Specification <input type="checkbox"/>
Conceptual Design Report <input type="checkbox"/>	Installation Procedure <input type="checkbox"/>	Component Index <input type="checkbox"/>
Equipment Spec. <input type="checkbox"/>	Maintenance Procedure <input type="checkbox"/>	ASME Coded Item <input type="checkbox"/>
Const. Spec. <input type="checkbox"/>	Engineering Procedure <input type="checkbox"/>	Human Factor Consideration <input type="checkbox"/>
Procurement Spec. <input type="checkbox"/>	Operating Instruction <input type="checkbox"/>	Computer Software <input type="checkbox"/>
Vendor Information <input type="checkbox"/>	Operating Procedure <input checked="" type="checkbox"/>	Electric Circuit Schedule <input type="checkbox"/>
OM Manual <input type="checkbox"/>	Operational Safety Requirement <input type="checkbox"/>	ICRS Procedure <input type="checkbox"/>
FSAR/SAR <input type="checkbox"/>	IEFD Drawing <input type="checkbox"/>	Process Control Manual/Plan <input type="checkbox"/>
Safety Equipment List <input type="checkbox"/>	Cell Arrangement Drawing <input type="checkbox"/>	Process Flow Chart <input type="checkbox"/>
Radiation Work Permit <input type="checkbox"/>	Essential Material Specification <input type="checkbox"/>	Purchase Requisition <input type="checkbox"/>
Environmental Impact Statement <input type="checkbox"/>	Fac. Proc. Samp. Schedule <input type="checkbox"/>	<input type="checkbox"/>
Environmental Report <input type="checkbox"/>	Inspection Plan <input type="checkbox"/>	<input type="checkbox"/>
Environmental Permit <input type="checkbox"/>	Inventory Adjustment Request <input type="checkbox"/>	<input type="checkbox"/>

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog./Project Engineer RG Egge <i>RG Egge</i>	<u>7-20-92</u>	PE	_____
Cog./Project Engr. Mgr. MR Horton <i>M.R. Horton</i>	<u>7-21-92</u>	QA	_____
QA	_____	Safety	_____
Safety	_____	Design	_____
Security	_____	Other	_____
Proj. Prog./Dept. Mgr.	_____		_____
Def. React. Div.	_____		_____
Chem. Proc. Div.	_____		_____
Def. Wst. Mgmt. Div.	_____	DEPARTMENT OF ENERGY	_____
Adv. React. Dev. Div.	_____		_____
Proj. Dept.	_____		_____
Environ. Div.	_____	ADDITIONAL	_____
IRM Dept.	_____		_____
Facility Rep. (Ops.) BF Weaver <i>BF Weaver</i>	<u>7-21-92</u>		_____
Other	_____		_____

Work Scope Outline:

1. Electrical equipment placement is general. Place all equipment as shown on the drawings within three (3) feet. Field run EMT or Flexible conduit where needed as outlined in drawings. Use existing conduit where possible to minimize the amount of new equipment needed. All conduit used (new and old) wherever possible shall have a two (2) inch spray painted florescent orange marking every twenty (20) linear feet. All mountings will be to typical industrial standards. All electrical equipment will be rain-tight configuration.

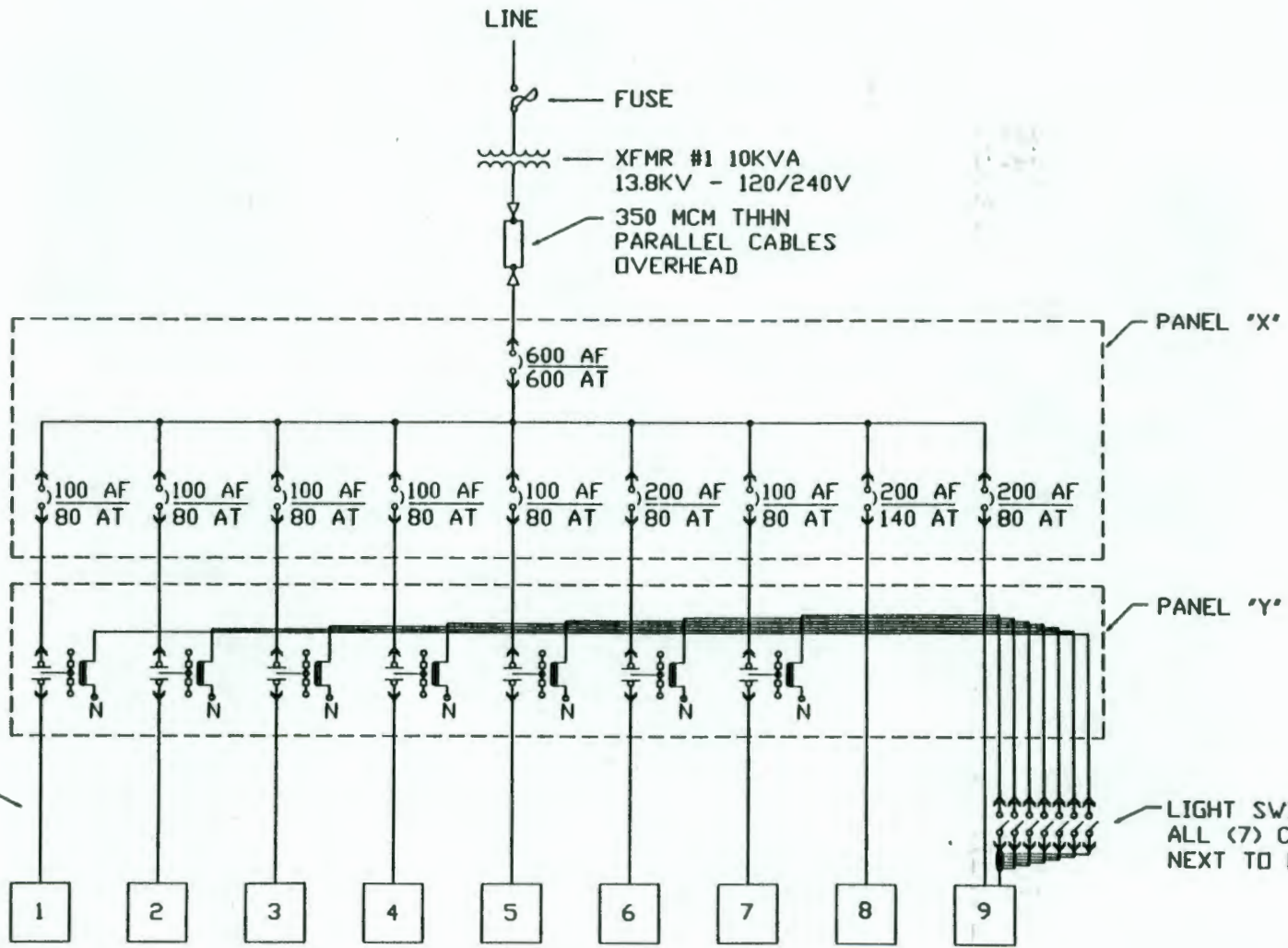
CAUTION: 480 VAC and 240 VAC electrical shock hazard is present.
Installation of Caution Tags will be necessary.

NOTE: Always perform a zero energy check after locking out the necessary system and before starting any work.

2. Relocate existing 240 VAC Service line to new weather head above the roof and field run using new three (3) inch conduit to the electrical equipment room. All electrical power shall be removed from circuits that are being modified per this ECN.
3. Field mount, using EMT and Flexible conduit, the lines for the distribution panel and lighting contactors on north wall of electrical equipment room. Label lighting contactors as to which areas they are serving.
4. Field run wires from the lighting contactors through existing conduit where possible to locations shown on drawings for the new lighting panel locations. All breakers in lighting panel boxes will be 20 amps with exception of stove (40 amps.)
5. Field run wires from the panel boxes to light locations as shown on drawings using existing conduit where possible. The lighting will consist of 500 watt capacity halogen floodlights with 350 watt miser bulbs and 150 watt caged incandescent lights, with not more than 2100 watts being utilized from each 20 amp breaker.
6. Mount all lights at least eight (8) feet high so to be out of the way of personnel. Adjust lights to obtain maximum illumination. See drawing on page 18. Note: Don't place lights within one (1) foot of any flammable materials.

SIMPLIFIED ONE-LINE ELECTRICAL DIAGRAM

A-7520-036.2 (11/88) (EF) GEF094
Engineering Change Notice Continuation Sheet



3-#6 THHN
TYPICAL
(9) PLACES

LIGHT SWITCHES
ALL (7) CONTACTORS
NEXT TO PANEL 9

LIGHTING PANELS
SEE PAGE 8 FOR LOCATIONS
TYPICAL (9) PLACES

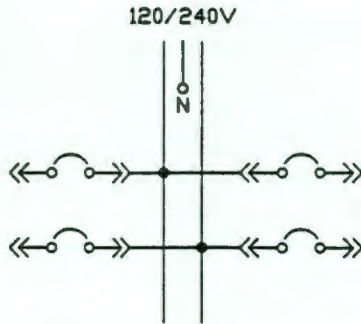
PANEL SCHEDULES

FOR PANELS 1-3

PANEL 1

LOCATION: FAN ROOM
SEE PAGE 10 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
(4) 500 WATT HALOGEN LIGHTS	2000W	20A
(4) 500 WATT HALOGEN LIGHTS	2000W	20A

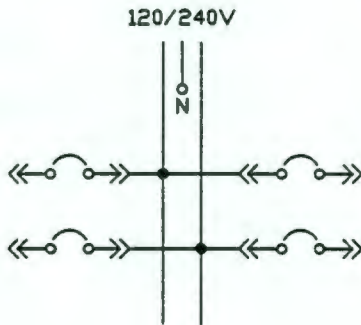


BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	1500W	(3) 500 WATT HALOGEN LIGHTS
20A GFI	2400W MAXIMUM	TO OUTLETS

PANEL 2

LOCATION: WALKWAY BY VALVE PIT
SEE PAGE 11 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
(4) 500 WATT HALOGEN LIGHTS	2000W	20A
(4) 500 WATT HALOGEN LIGHTS	2000W	20A

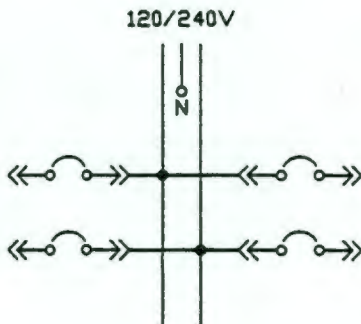


BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	1500W	(3) 500 WATT HALOGEN LIGHTS
20A GFI	2400W MAXIMUM	TO OUTLETS

PANEL 3

LOCATION: NEAR WORK AREA
SEE PAGE 12 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
(4) 500 WATT HALOGEN LIGHTS	2000W	20A
(4) 500 WATT HALOGEN LIGHTS	2000W	20A



BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	1500W	(3) 500 WATT HALOGEN LIGHTS
20A GFI	2400W MAXIMUM	TO OUTLETS

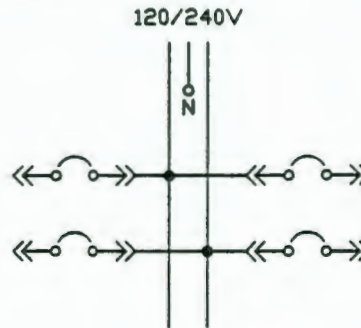
PANEL SCHEDULES

FOR PANELS 4-6

PANEL 4

LOCATION: NEAR WORK AREA
SEE PAGES 13 AND 14 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
(4) 500 WATT HALOGEN LIGHTS	2000W	20A
(4) 500 WATT HALOGEN LIGHTS	2000W	20A

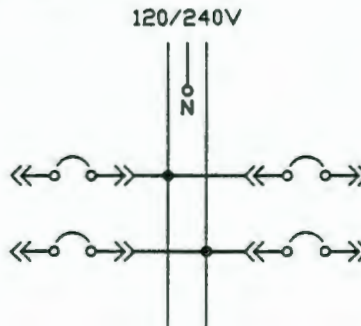


BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	1500W	(3) 500 WATT HALOGEN LIGHTS
20A GFI	2400W MAXIMUM	TD OUTLETS

PANEL 5

LOCATION: BY 'D' ELEVATOR
SEE PAGES 15 AND 16 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
(4) 500 WATT HALOGEN LIGHTS	2000W	20A
(4) 500 WATT HALOGEN LIGHTS	2000W	20A

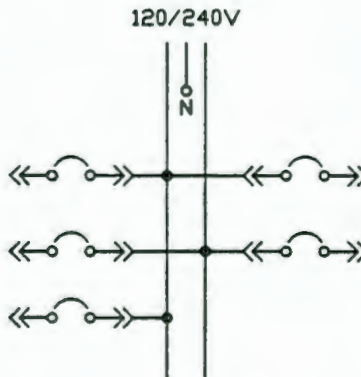


BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	1500W	(3) 500 WATT HALOGEN LIGHTS
20A GFI	2400W MAXIMUM	TD OUTLETS

PANEL 6

LOCATION: STORAGE AREA
SEE PAGE 17 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
(6) 350 WATT HALOGEN LIGHTS	2100W	20A
(6) 350 WATT HALOGEN LIGHTS	2100W	20A
(6) 350 WATT HALOGEN LIGHTS	2100W	20A



BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	1050W	(3) 350 WATT HALOGEN LIGHTS
20A GFI	2400W MAXIMUM	TD OUTLETS

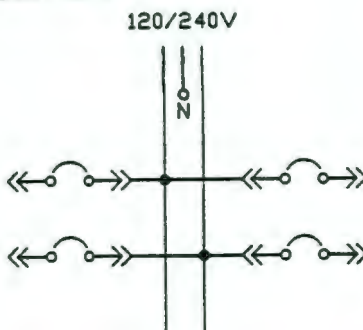
PANEL SCHEDULES

FOR PANELS 7-9

PANEL 7

LOCATION: HALLWAY TO 'D' ELEVATOR
SEE PAGES 19, 20 AND 21 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
(14) 150 WATT INCANDESCENT LIGHTS	2100W	20A
(14) 150 WATT INCANDESCENT LIGHTS	2100W	20A

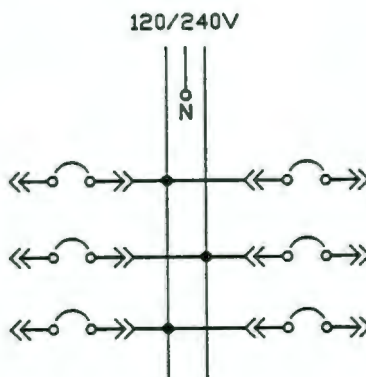


BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	1050W	(7) 150 WATT INCANDESCENT LIGHTS
20A GFI	2400W MAXIMUM	TO OUTLETS

PANEL 8

LOCATION: OUTSIDE MISC. STORAGE ROOM
SEE PAGE 22 FOR LIGHT LOCATIONS

DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
AIR CONDITIONER	2400W MAXIMUM	20A
REFRIDGERATOR	2400W MAXIMUM	20A
(14) 150 WATT INCANDESCENT LIGHTS	2100W	20A

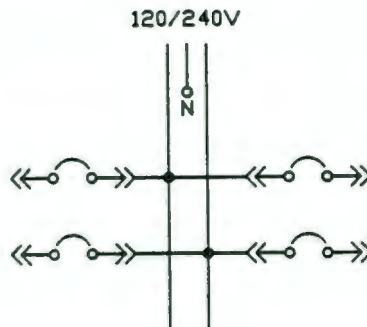


BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	2400W MAXIMUM	HOT WATER HEATER
40A	4800W MAXIMUM	STOVE
20A	2100W	(14) 150 WATT INCANDESCENT LIGHTS

PANEL 9

LOCATION: FRONT DOOR
SEE PAGE 23 FOR LIGHT LOCATIONS

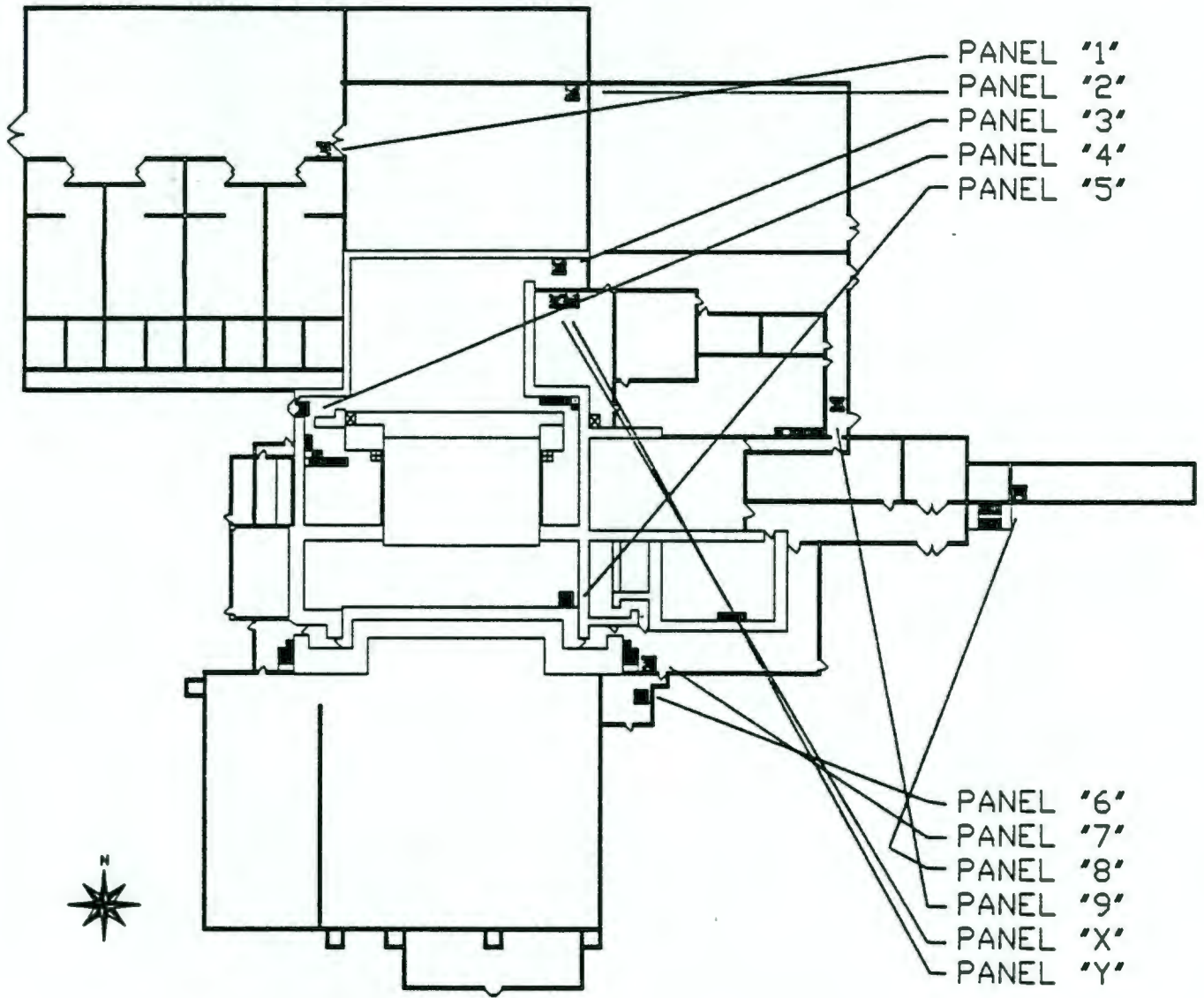
DESCRIPTION OF LOAD	LOAD WATTS	BRKR AMPS
FIRE ALARM	2400W MAXIMUM	20A
HEAT TAPE	2400W MAXIMUM	20A



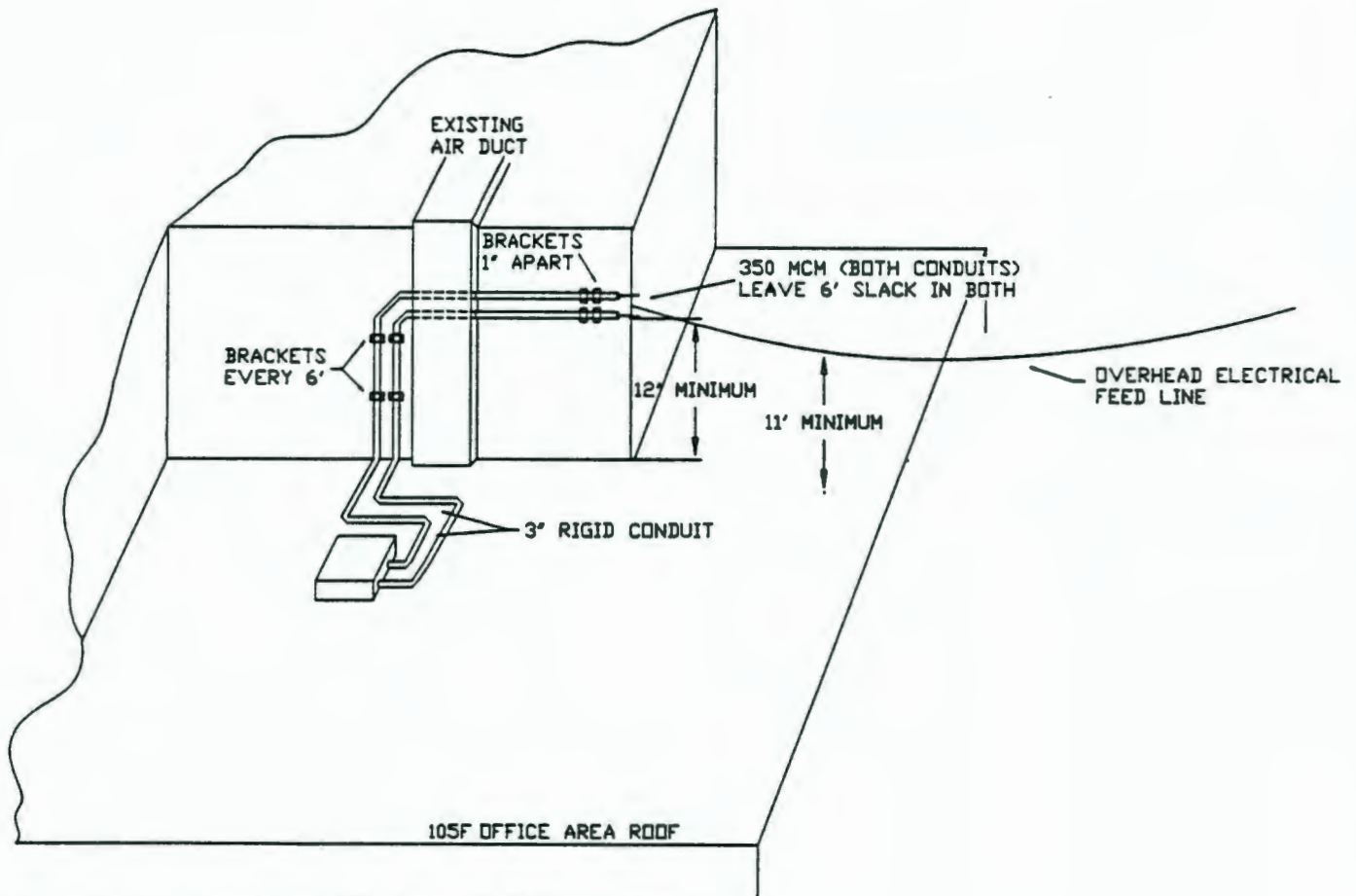
BRKR AMPS	LOAD WATTS	DESCRIPTION OF LOAD
20A	2100W	(14) 150 WATT INCANDESCENT LIGHTS
20A	2100W	(14) 150 WATT INCANDESCENT LIGHTS

PANEL BOX LOCATIONS

USE EXISTING CONDUITS PER H-W-74569

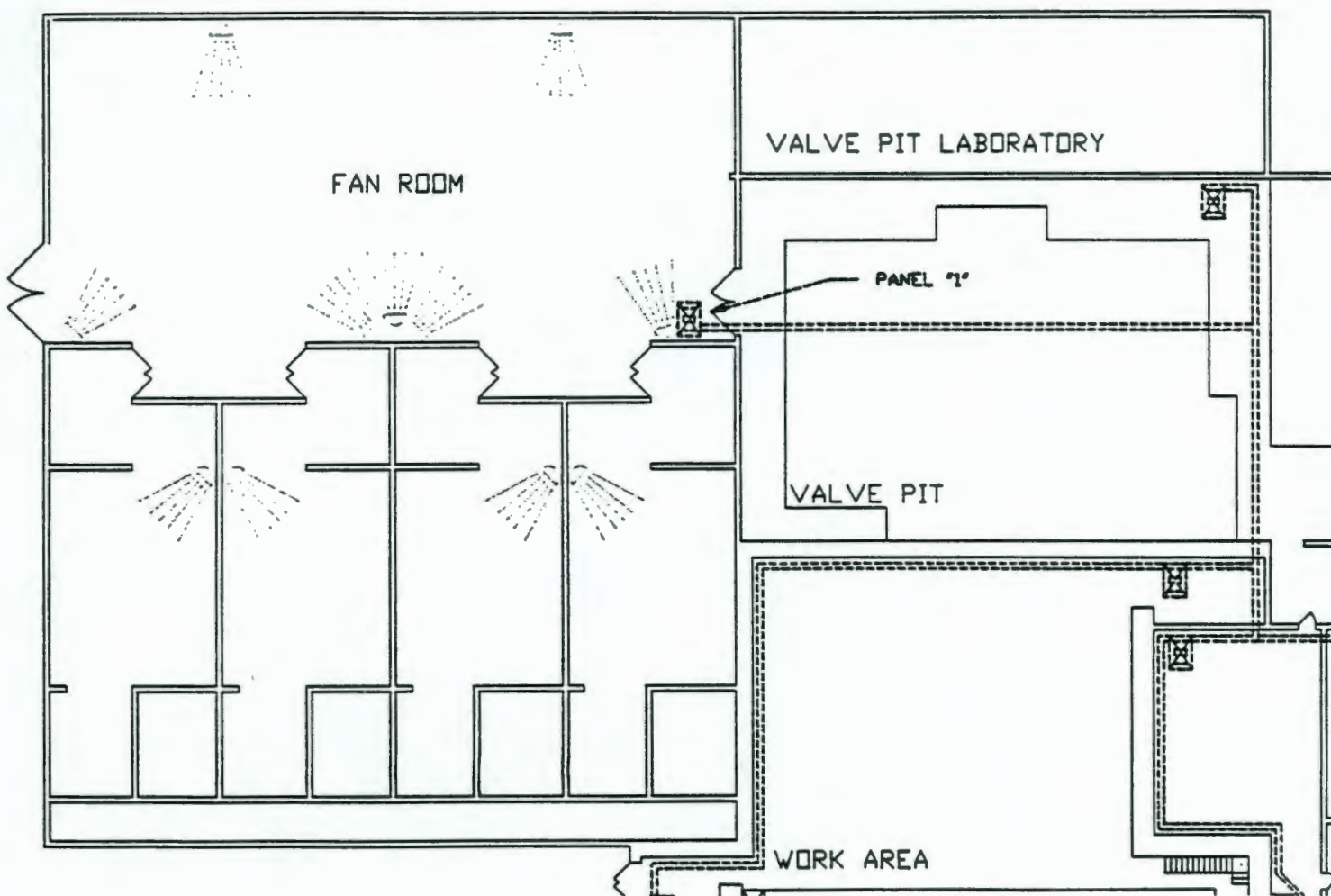


ELECTRICAL FEED TO 105F



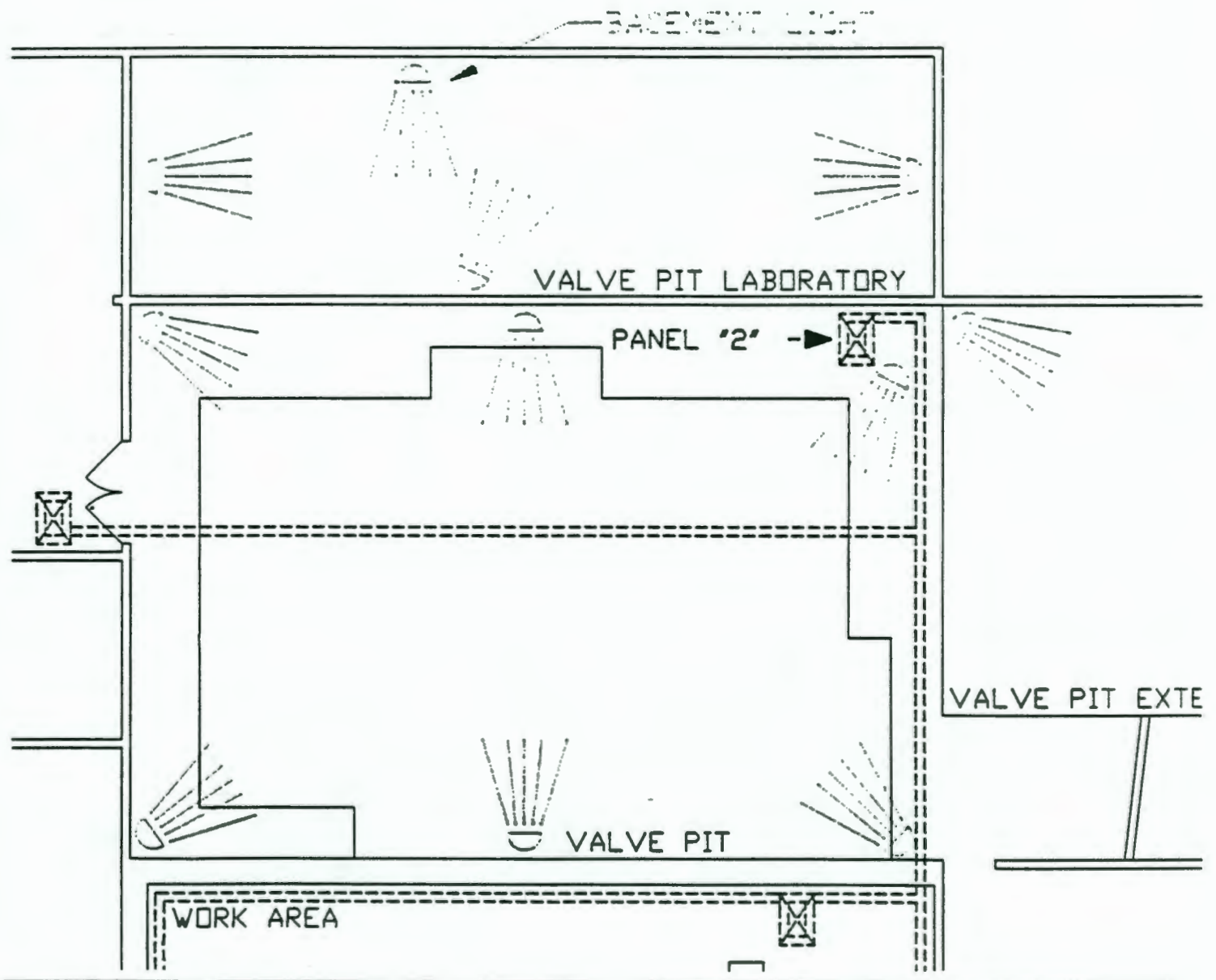
BRACKETS FASTENED BY 3/8" X 2 1/2" HILTI BOLTS

LIGHTING LOCATIONS FOR FAN HOUSE
ELEVEN (11) 500 WATT HALOGEN LIGHTS



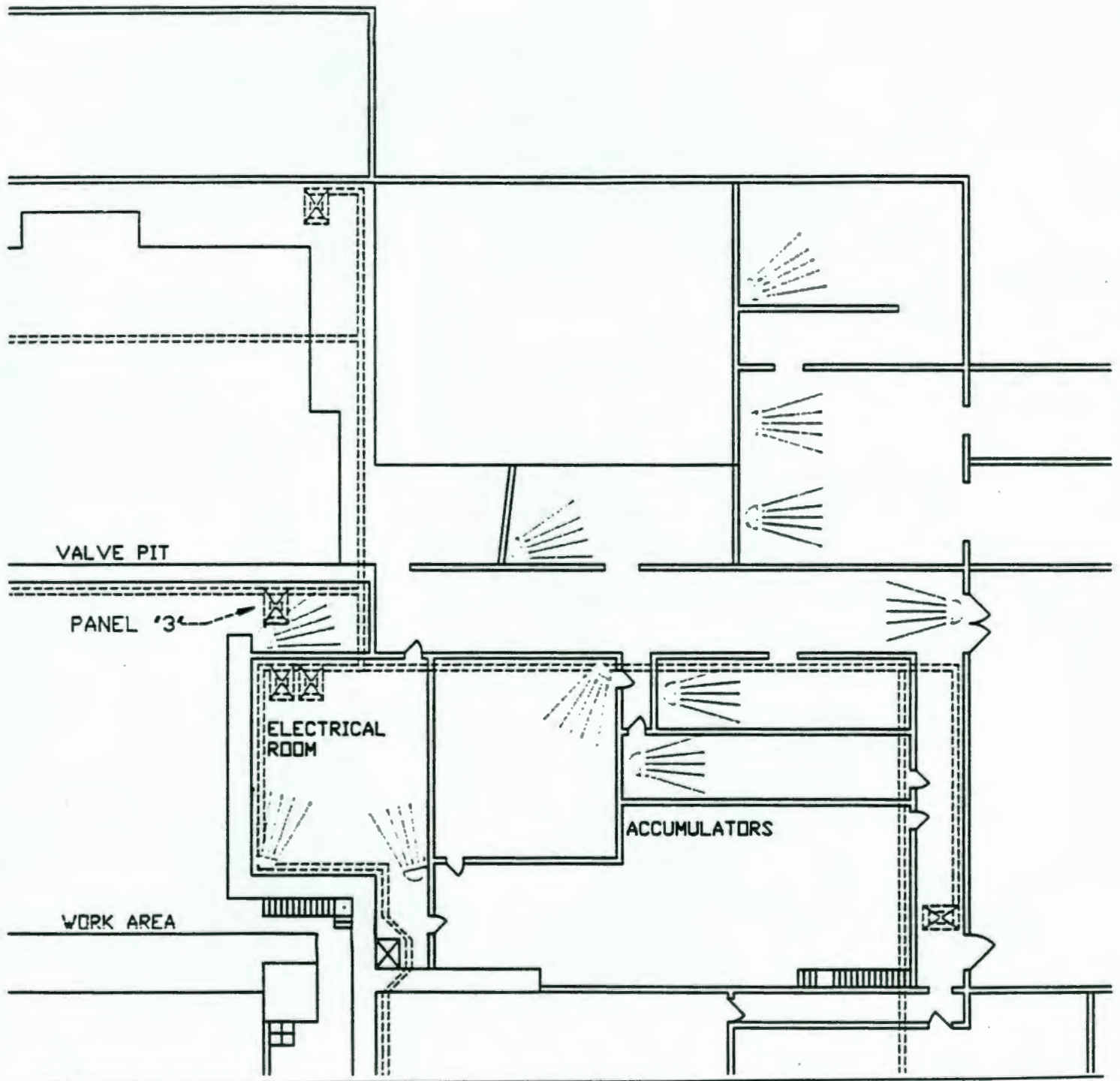
LIGHTING LOCATIONS FOR VALVE PIT AND LABORATORY

ELEVEN (11) 500 WATT HALOGEN LIGHTS



LIGHTING LOCATIONS FOR CHARGE PREP AND OFFICES

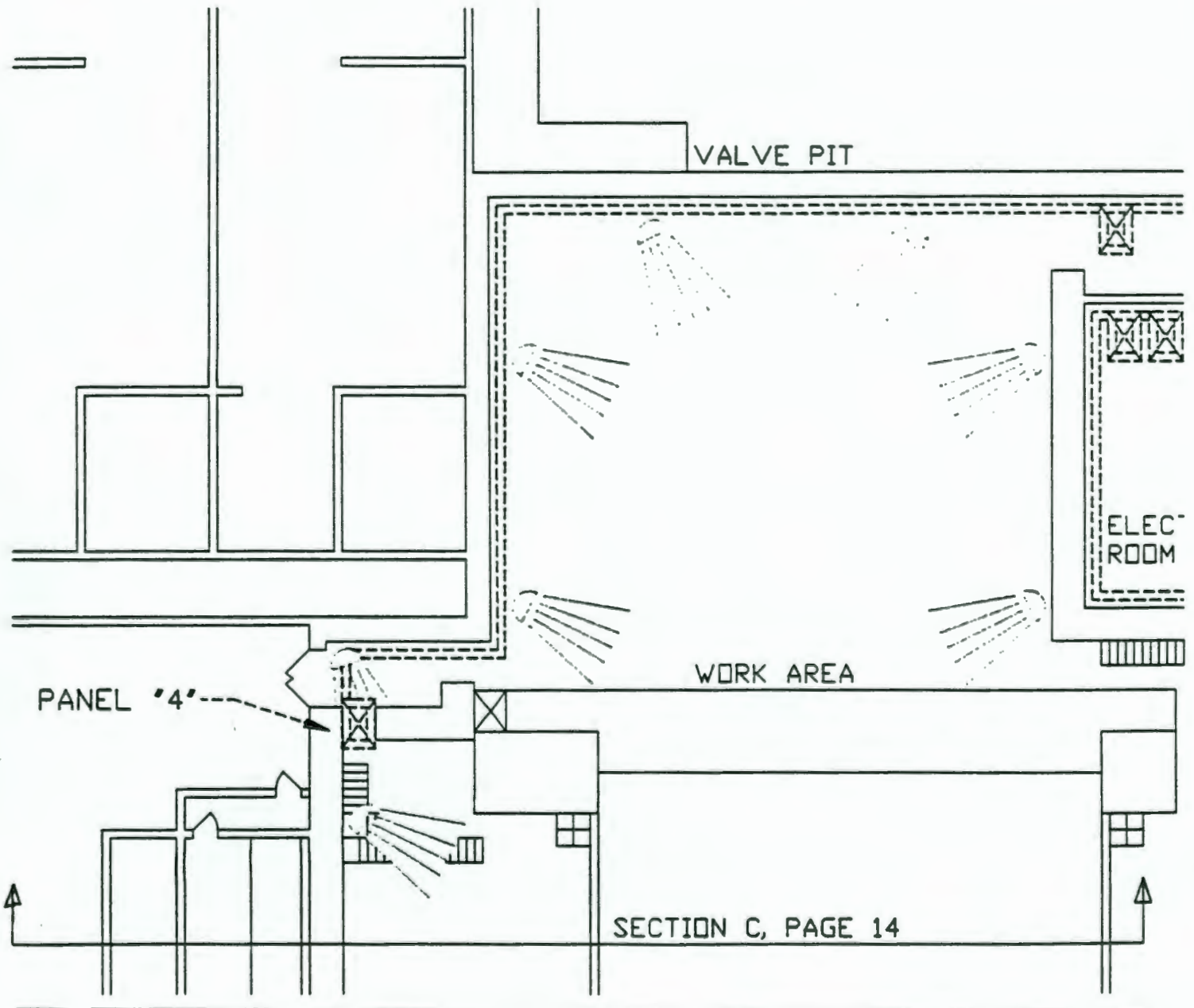
ELEVEN (11) 500 WATT HALOGEN LIGHTS



LIGHTING LOCATIONS FOR WORK AREA AND STAIRS GOING TO TOP OF UNIT

ELEVEN (11) 500 WATT HALOGEN LIGHTS

CONTINUED ON PAGE 14

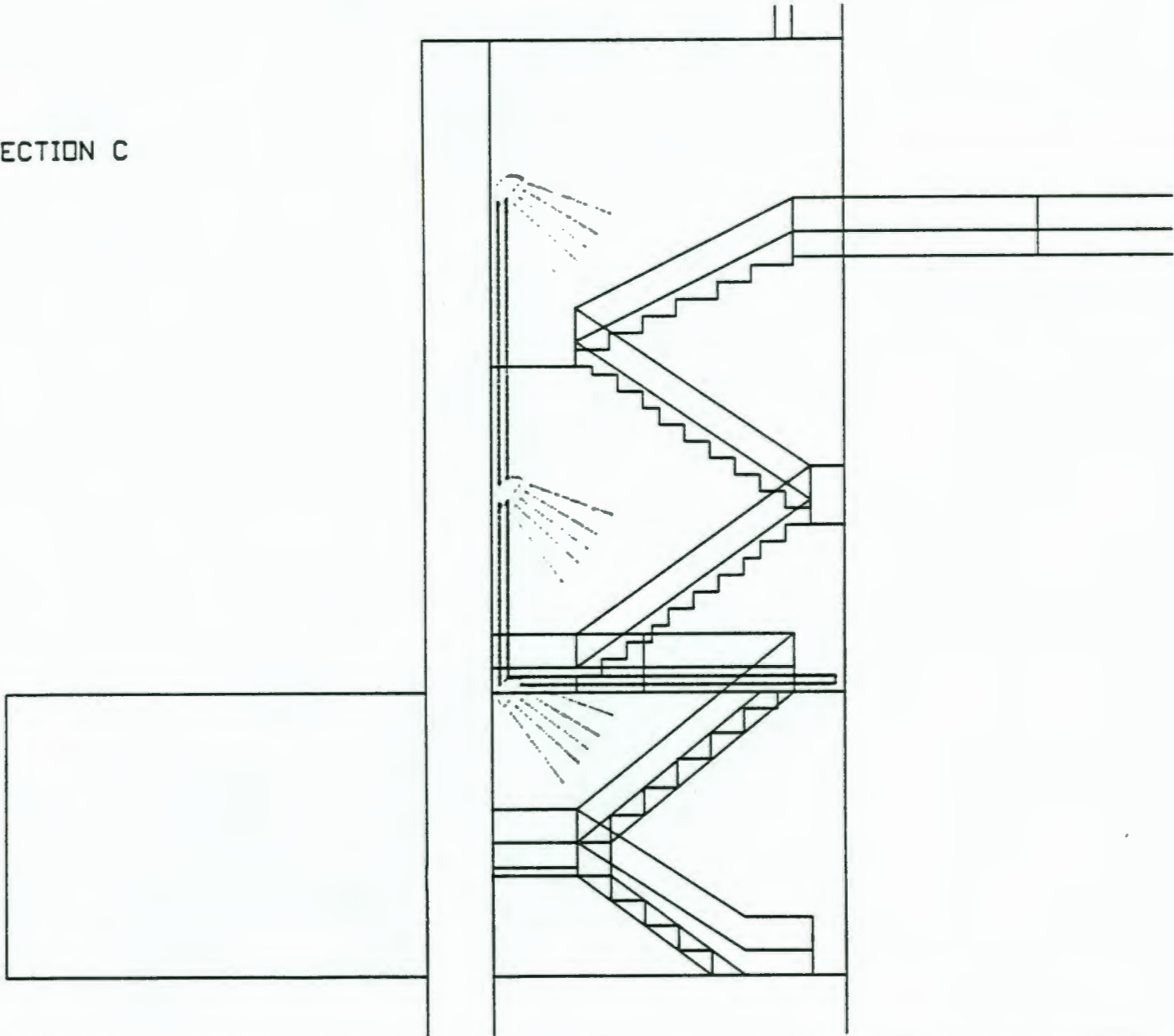


LIGHTING LOCATIONS FOR WORK AREA AND STAIRS GOING TO THE TOP OF UNIT

ELEVEN (11) 500 WATT HALOGEN LIGHTS

CONTINUED FROM PAGE 13

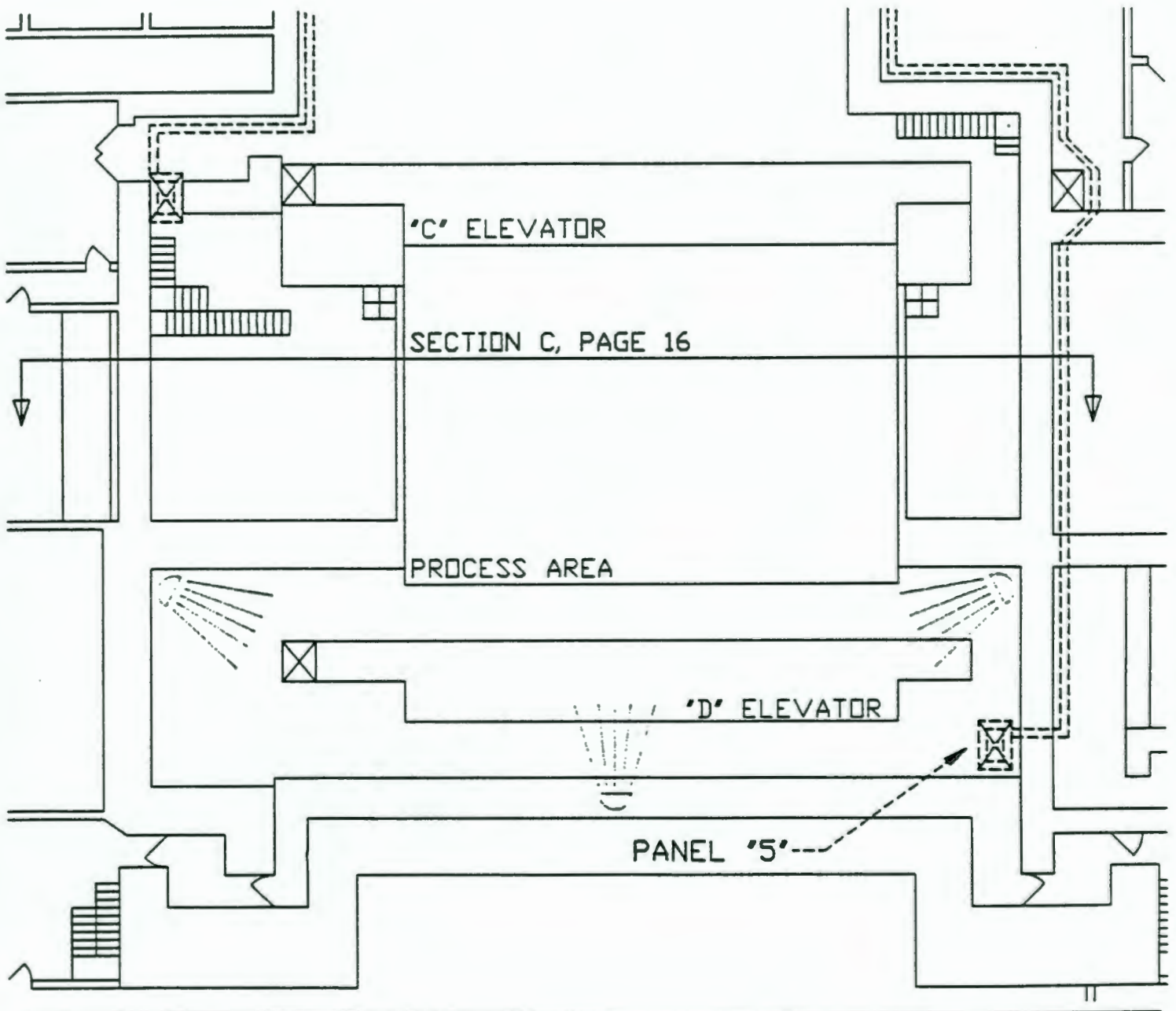
SECTION C



LIGHTING LOCATIONS FOR "D" ELEVATOR ROOM AND TOP OF UNIT

ELEVEN (11) 500 WATT HALOGEN LIGHTS

CONTINUED ON PAGE 16

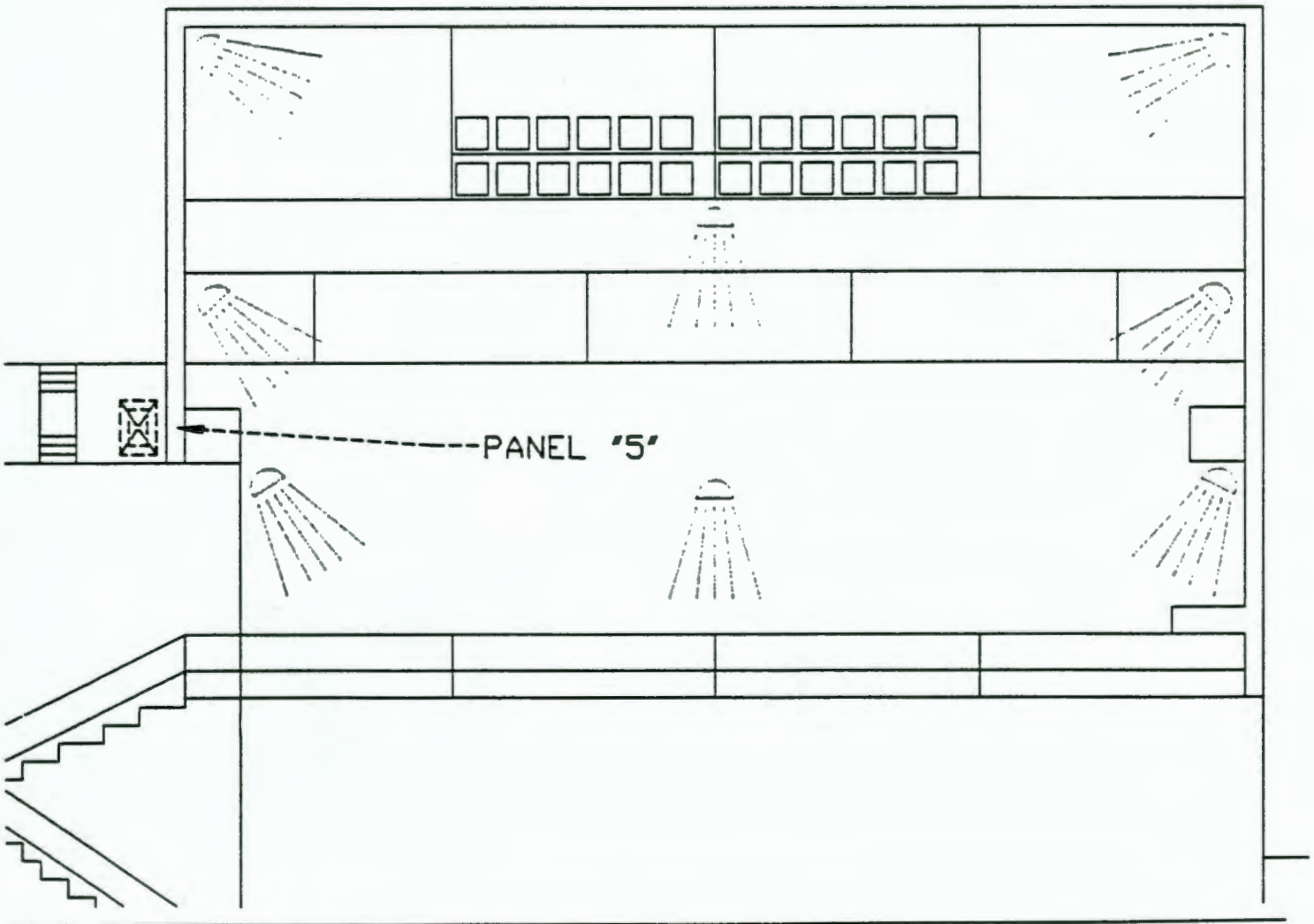


LIGHTING LOCATIONS FOR "D" ELEVATOR ROOM AND TOP OF UNIT

ELEVEN (11) 500 WATT HALOGEN LIGHTS

CONTINUED FROM PAGE 15

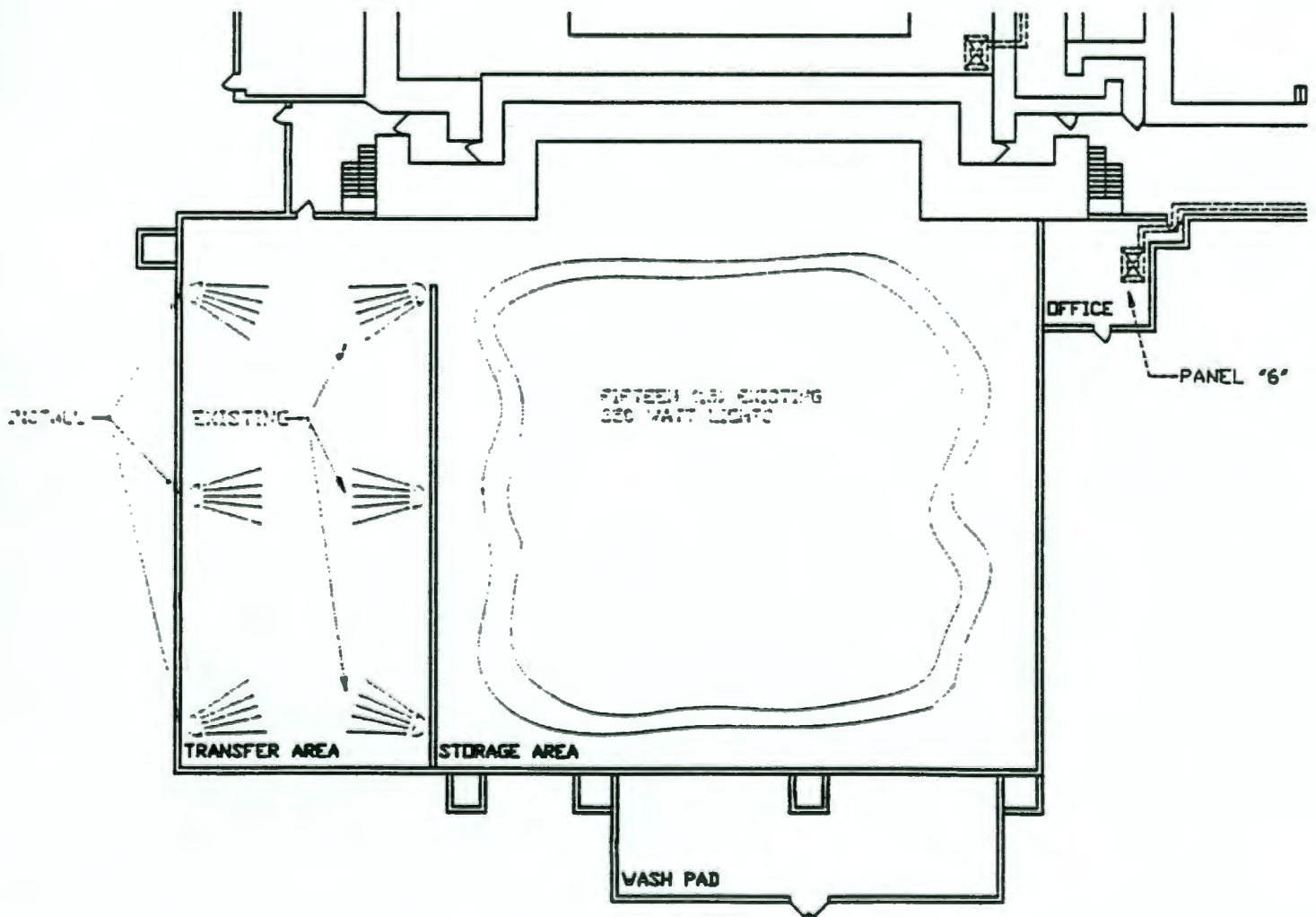
SECTION C



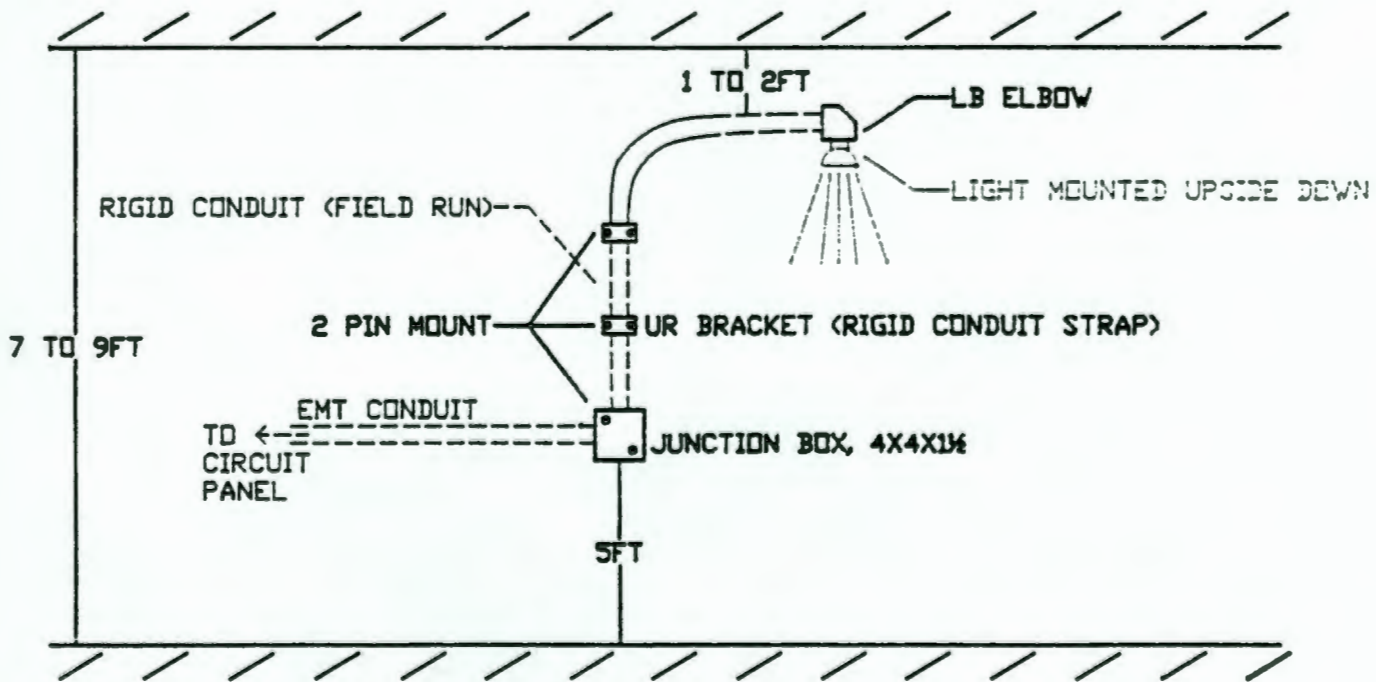
LIGHTING LOCATIONS FOR STORAGE AND TRANSFER AREA

TWENTY-ONE (21) 350 WATT MISER BULBS

INSTALLATION DIAGRAM ON PAGE 18



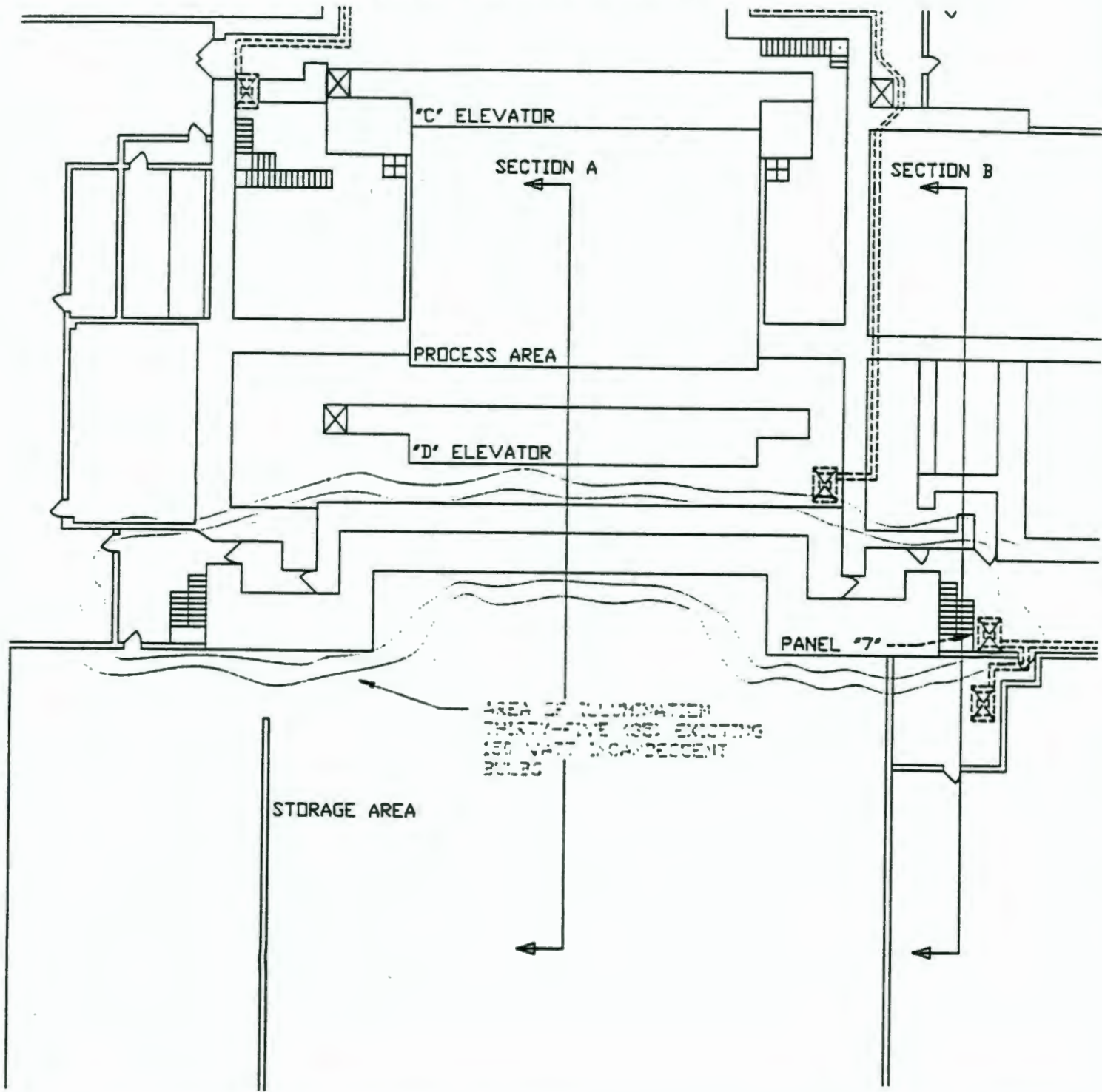
LIGHTING INSTALLATION DIAGRAM



LIGHTING LOCATIONS FOR STAIRS LEADING TO "D" ELEVATOR ROOM

THIRTY-FIVE (35) 150 WATT CAGED INCANDESCENT LIGHTS

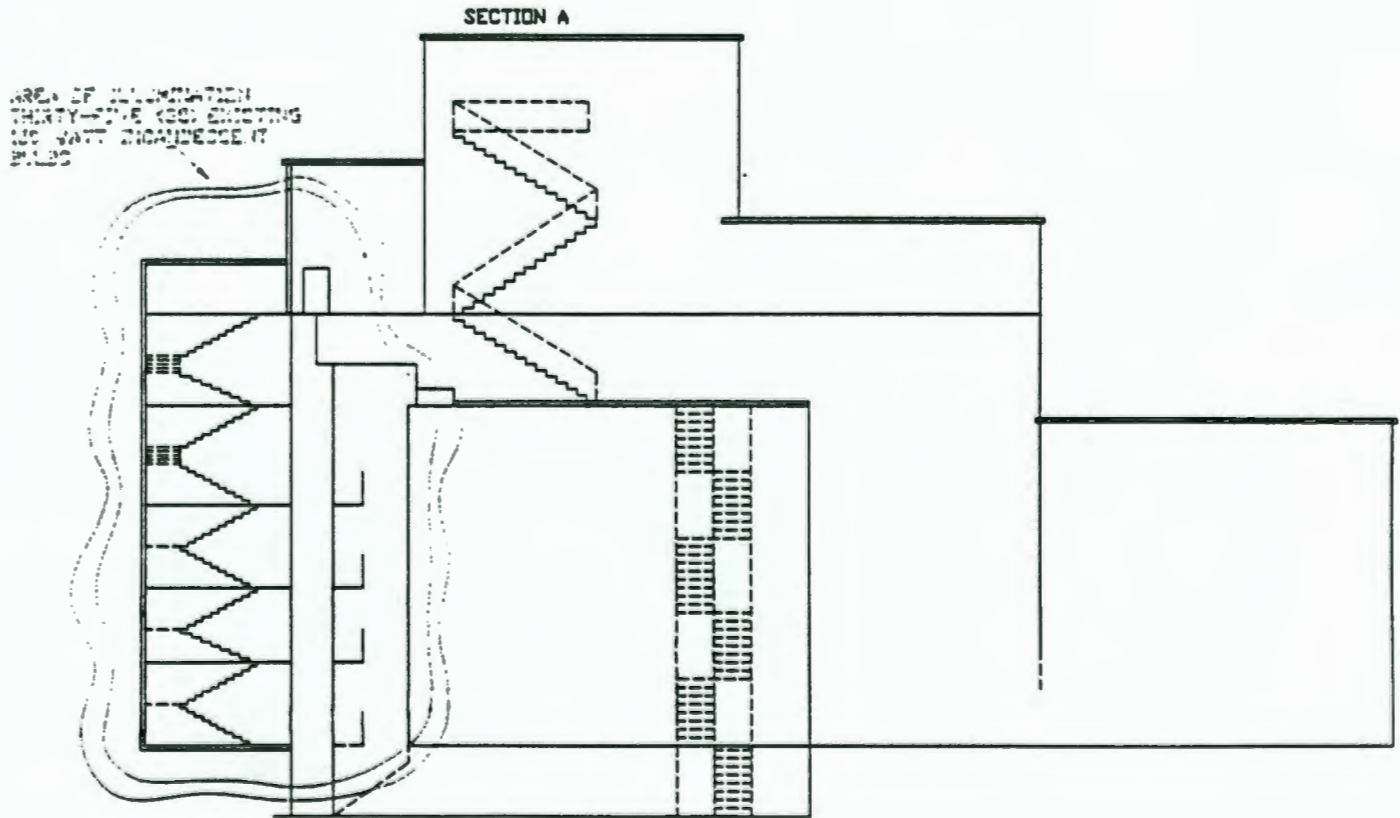
CONTINUED ON PAGES 20 AND 21



LIGHTING LOCATIONS FOR STAIRS LEADING TO "D" ELEVATOR ROOM

THIRTY-FIVE (35) 150 WATT CAGED INCANDESCENT LIGHTS

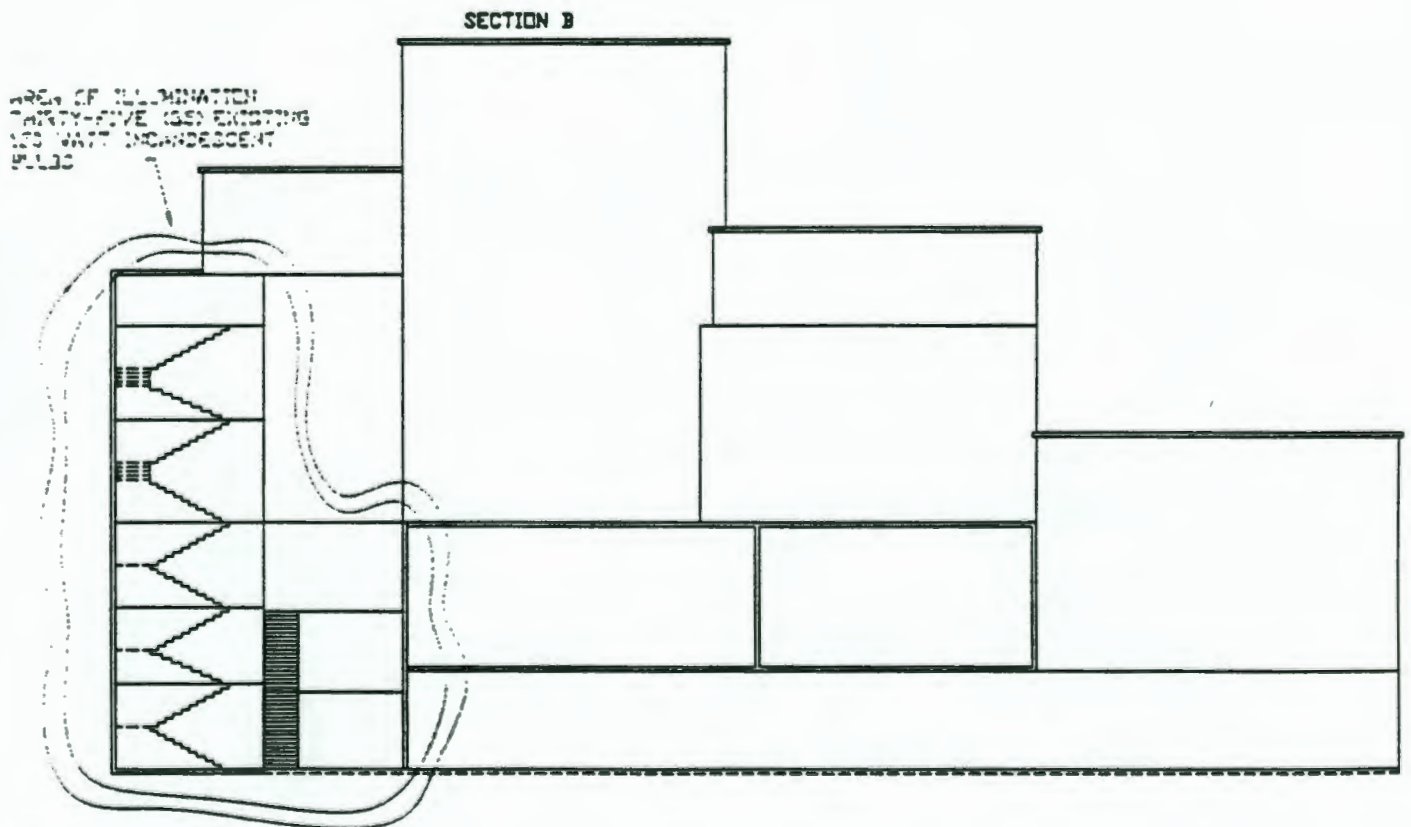
CONTINUED FROM PAGE 19



LIGHTING LOCATIONS FOR STAIRS LEADING TO "D" ELEVATOR ROOM

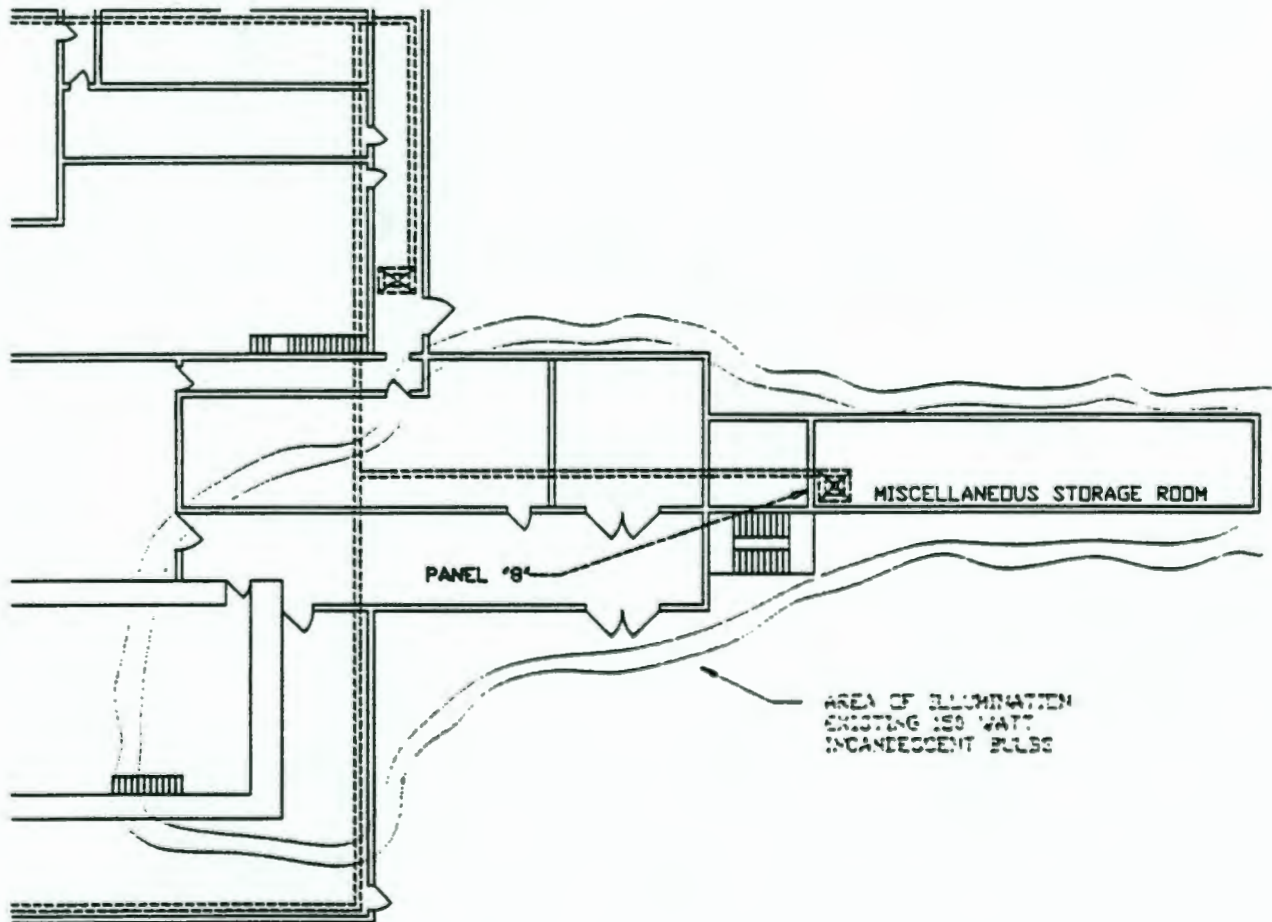
THIRTY-FIVE (35) 150 WATT CAGED INCANDESCENT LIGHTS

CONTINUED FROM PAGE 19



LIGHTING LOCATIONS FOR NEW LUNCH ROOM/CHANGE ROOMS

USE EXISTING LIGHTS AND NEW PANEL



LIGHTING LOCATIONS FOR CONTROL ROOM, HALLWAYS AND ACCUM. ROOM

USE EXISTING LIGHTS AND NEW PANEL

