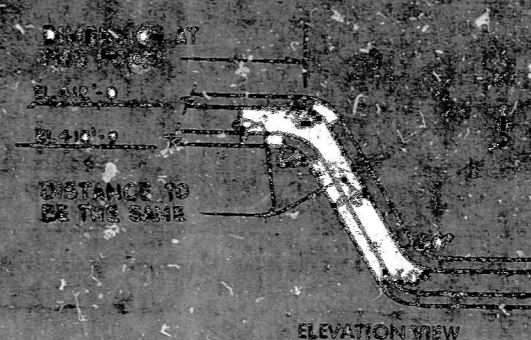


4.0. CABLE TRAY INSTALLATION NOTES

THE TRAY SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING NOTES, AND INSTALLATION SPEC. #3240-501

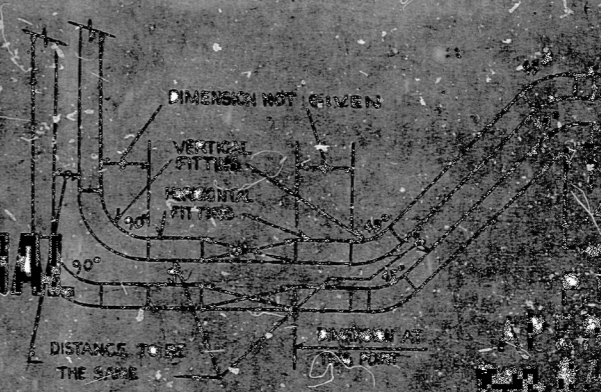
- 4.01 CABLE TRAY ELEVATIONS ARE TO THE EXTREME BOTTOM OF TRAY.
- 4.02 DIMENSIONS LOCATING CABLE TRAYS HORIZONTALLY ARE TO THE EDGE OF THE TRAY, EXCEPT AS NOTED ON DWG.
- 4.03 THE VERTICAL SPACING OF CABLE TRAYS IS DEFINED AS THE DISTANCE MEASURED BETWEEN EXTREME BOTTOMS OF THE CABLE TRAYS UNLESS OTHERWISE NOTED. IF FOR ANY REASON THIS SPACING CANNOT BE MAINTAINED, A MINIMUM CLEARANCE (2) INCHES IS ACCEPTABLE. HOWEVER, APPROVAL SHALL BE OBTAINED FROM THE ENGINEER FOR THIS CHANGE.
- 4.04 UNLESS OTHERWISE SHOWN ON THE DRAWINGS A VERTICAL CLEARANCE OF SIX (6) INCHES BETWEEN THE TOP OF A TRAY AND BEAMS, PIPING, ETC. SHALL BE MAINTAINED.
- 4.05 (A) ALL TRAYS SHOWN ON DRAWINGS ARE TWENTY FOUR (24) INCHES (NOMINAL WIDTH) WIDE UNLESS OTHERWISE NOTED.  
(B) ALL TRAY FITTINGS SHALL HAVE A TWENTY FOUR (24) INCH RADIUS UNLESS OTHERWISE NOTED.
- 4.06 FOR SEPARATION AND IDENTIFICATION, REFER TO SECTIONS 5 & 6 OF GENERAL NOTES.
- 4.07 TRAY COVER FASTENING DEVICES SHALL BE USED FOR SECURING COVERS ON TRAYS.
- 4.08 SOLID TRAY COVERS SHALL BE INSTALLED ON ALL LOW LEVEL TRAYS. THE TOP TRAY IN A STACK OF TRAYS UNDER OPEN GRATINGS, AND TRAYS SUBJECT TO FALLING DEBRIS OR HOT WELD MATERIAL, SHALL HAVE A LOUVERED COVER WHERE SHOWN ON THE DRAWINGS.
- 4.09 VERTICAL POWER & CONTROL CABLE TRAYS PENETRATING A FLOOR SHALL BE PROTECTED WITH VENTILATED COVERS ON BOTH SIDES FOR A MINIMUM DISTANCE OF SIX (6) FEET ABOVE THE FLOOR ELEVATION.
- 4.10 TRAYS SHALL BE SECURED TO ALL SUPPORTS AND BRACKET ARMS BY MEANS OF BOLTED CONNECTION. IN THE EVENT THAT THE BOLTED CONNECTION PROVIDED IS WITHIN THE TRAY, ROUND HEAD BOLTS SHALL BE USED TO PRECLUDE DAMAGE TO CABLE DURING INSTALLATION. ACCESSORIES SUCH AS NUTS, BOLTS, CLIPS OR OTHER FASTENING OR HOLD-DOWN DEVICES FOR STEEL TRAYS SHALL BE ELECTRO-GALVANIZED IN ACCORDANCE WITH THE PROPER STANDARDS.
- 4.11 ALL CABLE TRAYS SHALL BE INSTALLED AS AN ELECTRICALLY CONTINUOUS SYSTEM. THE TRAY SYSTEM SHALL BE EFFECTIVELY GROUNDED THROUGH BRACKETS TO SUPPORTS AND STRUCTURAL STEEL. WHENEVER A TRAY SYSTEM IS DISCONTINUOUS A #2 AWG JUMPER SHALL BE USED TO MAINTAIN A CONTINUOUS GROUNDING SYSTEM. IN AREAS WHERE THE TRAY SUPPORT CANNOT UTILIZE BUILDING STEEL, THE TRAY SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH GROUNDING NOTES, DRAWING D-5027.
- 4.12 WHERE SOLID TRAYS & CONDUITS HAVE GAPS CONTAINING LOW LEVEL SIGNAL CABLES, A POSITIVE MEANS SHALL BE USED TO SHIELD THESE CABLES BETWEEN THE GAPS. THE ZIPPERTUBING COMPANY CATALOG #5MM-3 ZIPPER-TUBE OR AN ENGINEER APPROVED EQUAL IS ACCEPTABLE.
- 4.13 SELECTED NON-SAFETY RELATED CABLE TRAYS & FITTINGS RUNNING NEAR SAFETY RELATED EQUIPMENT SHALL BE SEISMICALLY SUPPORTED IN ACCORDANCE WITH ELECTRICAL DRAWING WPPS G3240-3477. FOR CROSS REFERENCES BETWEEN TRAYS AND SUPPORTS SEE DWG G-3476.
- 4.14 NON-SAFETY RELATED CABLE TRAY & FITTING SUPPORTS, NOT INCLUDED IN PARAGRAPH 4.13 SHALL BE SUPPORTED IN ACCORDANCE WITH PROJECT SPECIFICATION 4.5.8 AND SPECIFICATION 3240-501. CONTRACTOR SHALL DESIGN NON-SEISMIC SUPPORTS AND SUBMIT FOR ENGINEERS REVIEW & APPROVAL.
- 4.15 CABLE TRAYS SHALL BE INSTALLED AT THE ELEVATIONS AND LOCATIONS INDICATED ON THE DRAWINGS WITH AN ACCEPTABLE CUMULATIVE TOLERANCE NOT TO EXCEED ± ONE INCH, FOR CABLE TRAY STACK.
- 4.16 A. LADDER AND SOLID TYPE TRAYS MUST BE PROVIDED WITH FIRE STOPS AT ALL CONCRETE FLOOR AND WALL PENETRATIONS.  
B. IN ADDITION, FOR VERTICAL TRAY RUNS, FIRE STOPS SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED TWENTY (20) FEET FOR ALL TYPES OF TRAYS.  
C. WHERE CABLE TRAYS PENETRATE BETWEEN "CLEAN" AND "RADIO ACTIVE" AREAS A COMBINATION FIRE STOP, RADIATION STOP, AND AIR SEAL SHALL BE USED.  
D. ALL CABLE TRAY ENTRANCES TO SWITCHGAL, MOTOR CONTROL CENTERS, PANELS AND OTHER ENCLOSURES SHALL BE SEALED TO WITHSTAND A DIFFERENTIAL PRESSURE OF 1" H<sub>2</sub>O.  
E. WHERE CABLE TRAYS PENETRATE A NEGATIVE PRESSURE ROOM (AIRLOCK) A COMBINATION FIRE STOP AND NEGATIVE PRESSURE AIR SEAL SHALL BE USED.  
F. ALL SOLID BOTTOM CABLE TRAYS SHALL BE PROVIDED WITH FIRE STOPS AT ALL 90° FITTINGS.
- 4.17 CABLE TRAYS ENTERING SAFETY RELATED EQUIPMENT ENCLOSURES SHALL HAVE A MINIMUM CLEARANCE OF SIX (6) FEET FROM SEISMIC MOTION. SEE FIG. 7.3.1.1 FOR DETAILS.

VERTICAL SPACING LOCATIONS FOR ALL CABLE TRAYS SHALL BE AT THE START OF THE VERTICAL RUN, EXCEPT FOR A FITTING. THE VERTICAL SPACING BETWEEN TRAYS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED. THE VERTICAL SPACING BELOW THE TOP TRAY SHALL BE DETERMINED BY MAINTAINING THE SAME SPACING BETWEEN TRAYS.



ELEVATION VIEW

4.19 NO DIMENSIONS ARE GIVEN WHEN A VERTICAL FITTING JOINS A HORIZONTAL FITTING. WHEN A GROUP OF TRAYS ARE CHANGING ELEVATION IN AN UPWARD DIRECTION, THE VERTICAL FITTING TURNING UP AT THE TOP TRAY SHALL CONNECT DIRECTLY TO THE HORIZONTAL FITTING. WHEN A GROUP OF TRAYS ARE CHANGING ELEVATION IN A DOWNWARD DIRECTION, THE VERTICAL FITTING TURNING DOWN AT THE BOTTOM TRAY SHALL CONNECT DIRECTLY TO THE HORIZONTAL FITTING. UNLESS OTHERWISE NOTED, THE LOCATION FOR THE START OF THE VERTICAL FLOWS OF THE REMAINING TRAYS WILL BE DETERMINED BY MAINTAINING THE SAME SPACING BETWEEN TRAYS.



ELEVATION VIEW

POOR ORIGINAL

- 4.20 NON-SAFETY RELATED CABLE TRAYS SHALL HAVE MARKERS ATTACHED AT INTERVALS NOT TO EXCEED 50 FEET AT POINTS OF ENTRY AND EXIT FROM ENCLOSED AREAS. (SEE PAR. 4.21)
- 4.21 SAFETY RELATED CABLE TRAYS SHALL HAVE MARKERS AT INTERVALS NOT TO EXCEED 15 FEET AT POINTS OF ENTRY TO AND EXIT FROM ENCLOSED AREAS, AND AT THE END OF THE TRAY (SEE PAR. 4.22)
- 4.22 CABLE TRAY MARKERS SHALL BE ATTACHED ON EITHER SIDE OF THE TRAY IN THE MOST VISIBLY ACCESSIBLE LOCATION AS VIEWED FROM THE FLOOR.
- 4.23 SEISMICALLY SUPPORTED CABLE TRAYS & FITTINGS SHALL BE SUPPORTED IN ACCORDANCE WITH ELECTRICAL DRAWING WPPS G3240-3477.
- 4.24 SEISMIC RESTRAINTS, FOR OTHER THAN THE REACTOR BUILDING, SHALL BE IDENTIFIED WITH ELECTRICAL SUPPORT NUMBERS AS SHOWN ON DWGS 3240-3477. RB STRUCTURAL RESTRAINTS SHALL BE IDENTIFIED AS SHOWN ON DWG 3240-3477. STENCILED ON STRUCTURAL MEMBERS OR OTHER SUPPORTS. SUPPORT NUMBERS SHALL BE IDENTIFIED WHERE VIEWED FROM THE REACTOR BUILDING.
- 4.25 ALL CABLE TRAYS DESIGNATED (X) (Y) (Z) SHALL BE LADDER TYPE TRAY UNLESS OTHERWISE NOTED. ALL OTHER CABLE TRAYS SHALL BE SOLID TYPE TRAY UNLESS OTHERWISE NOTED.

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8.5"

11"

17"

**RIDS**

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