

	SUPPORT STRUCTURE	HVAC DUCT		TUBE TRACK	CABLE TRAY		TUBING Ø				** CONDUIT Ø				* PIPE Ø	
		SIDE	TOP/BOT		SIDE	TOP/BOT	1	1/2	3/8	1/4	6	5	4	1/2-3	4-42	1/8-3
* PIPE Ø	1/8-3	3/4	1/2	3/8	1/2	1/2	1	1/2	3/4	1/4	2	1 1/2	1 1/2	2 1/2	1 1/4	1
** CONDUIT Ø	1/2-3	7/8	3/4	1/2	3/4	5/8	1 1/8	3/4	1	1 1/2	2 1/4	1 1/2	1 3/4	2 3/8	1 1/4	
	4	3/4	1 1/4	5/8	1 1/4	1 1/4	1 1/2	1 1/4	1 3/8	1 7/8	2 1/2	1	1 1/8	1 1/2		
	5	3/4	1 1/4	5/8	1 1/4	1 1/4	1 1/2	1 1/4	1 3/8	1 7/8	2 1/2	1	1			
	6	3/4	1	5/8	1	1	1 1/4	1	1 1/8	1 5/8	2 1/4	1				
TUBING Ø	1/4	1 3/4	1 1/2	1 1/2	1 1/2	1	3/4	1	1 1/2	2 1/4						
	3/8	1 1/8	1	3/8	1	7/8	3/4	1	1 1/2	1						
	1/2	3/8	1/4	3/8	3/8	1/8	3/4	1/8	1/4							
	1	3/8	1/8	1/8	1/8	1/8	1/2	1/8								
CABLE TRAY	TOP/BOT	5/8	1/2	1/2	1/2	1										
	SIDE	3/8	1/8	1/8	1/8	1/8										
TUBE TRACK	TOP/BOT	3/8	1/8	1/8	1/8											
	SIDE	3/8	1/4	1/4												
HVAC DUCT	TOP/BOT	3/8	1/4	1/4												
	SIDE	3/8	1/4													
SUPPORT STRUCTURE		1/2														

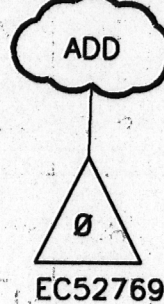
* PIPE TEMPERATURES < 200 °F (SEE NOTE 3)
PIPE CLEARANCES DO NOT INCLUDE INSULATION THICKNESS. IF INSULATION THICKNESS IS NOT KNOWN MAINTAIN 6" CLEAR OF PIPE 4" AND SMALLER. FOR PIPE LARGER THAN 4" MAINTAIN 7" CLEAR
** SEE NOTE #6.

SEISMIC CLEARANCE DIMENSIONS

TABLE I

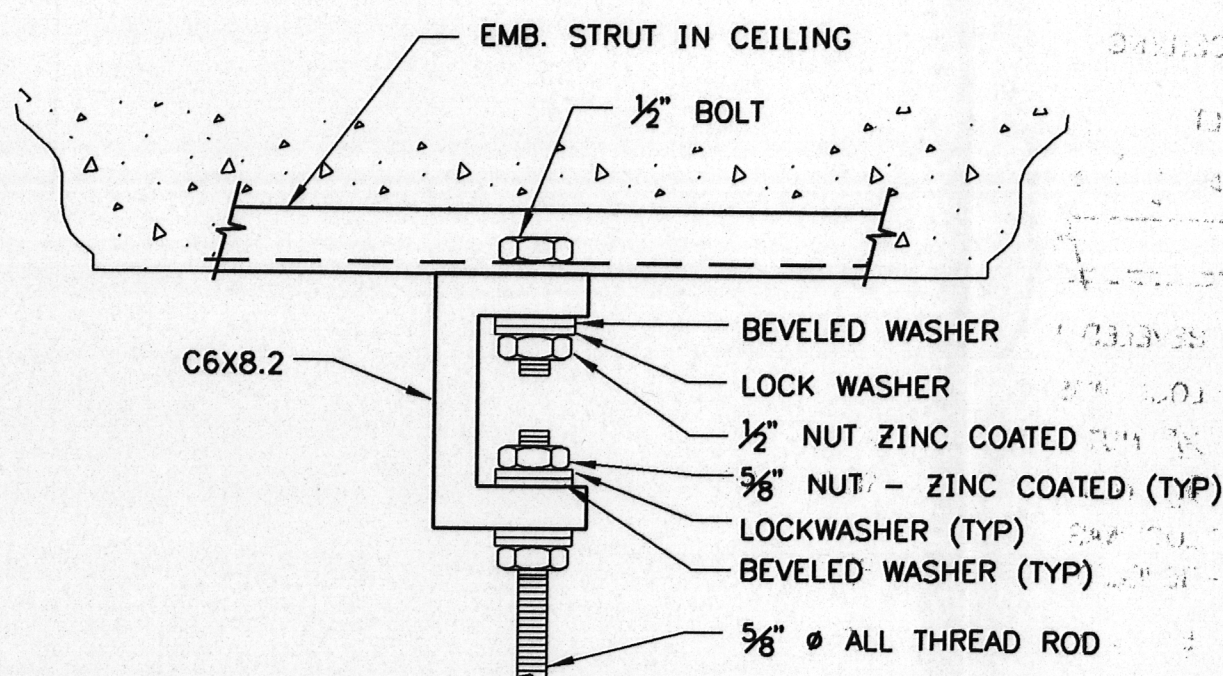
NOTES:

- THIS CRITERIA DOES NOT APPLY TO NON-SEISMIC TRAPEZE TYPE CONDUIT AND TRAY HANGERS. THE REQUIRED HORIZONTAL CLEARANCE IS 4 1/2" FOR TRAPEZE WITH A THREADED ROD CLEAR LENGTH OF 60" OR LESS AND 3" FOR ROD CLEAR LENGTH GREATER THAN 60".
- ALL DIMENSIONS ARE IN INCHES.
- THE CLEARANCE DIMENSIONS INDICATED ON TABLE I ARE MINIMUM REQUIREMENTS DUE TO SEISMIC CONSIDERATIONS ONLY. THE TRUE CLEARANCE REQUIRED MAY BE GREATER THAN THE CLEARANCE IN TABLE I DUE TO TRAIN SEPARATION, THERMAL GROWTH, ETC. THE LARGEST CLEARANCE CONTROLS. REFERENCE DRAWING NO. 2165-G-107501, NOTE 11. WHERE THE ABOVE TABLE CONFLICTS WITH THE TABULATION GIVEN IN CAR 2165-G-107501, THE LARGER OF THE TWO REQUIRED CLEARANCES WILL GOVERN.
- CLEARANCE IS DEFINED AS THE MEASURED DISTANCE BETWEEN THE APPLICABLE COMPONENT AND THE SURFACE OF PIPING, TUBING, TUBE TRACK, DUCT, CONDUIT, OR SUPPORT, WHERE COMPONENTS ARE INSULATED, CLEARANCE SHALL BE MEASURED TO THE SURFACE OF THE INSULATION.*
- THIS SEISMIC CLEARANCE CRITERIA IS NOT APPLICABLE BETWEEN A SUPPORTING STRUCTURE AND ITS SUPPORTED COMPONENTS.
- THE SEISMIC CLEARANCE REQUIREMENT FOR FLEX CONDUIT 1" DIA AND SMALLER TO ALL COMPONENTS LISTED IN TABLE I IS ZERO INCHES. FOR FLEX CONDUIT LARGER THAN 1" DIA CONTACT ENGINEERING FOR AN EVALUATION.
- THE SEISMIC CLEARANCE REQUIREMENTS FOR 3 AND 1 HOUR FIRE RATED CABLE ROUTING IS 1/2" MINIMUM FROM THE OUTSIDE OF THE CABLE JACKET TO THE EDGE OF THE OTHER SUPPORT STRUCTURE OR COMPONENT.



GUIDELINES FOR INSTALLATION OF NON-SEISMIC COMPONENTS PER REGULATORY GUIDE 1.29

- REVIEW THE INSTALLATION AREA TO IDENTIFY ANY SAFETY RELATED COMPONENTS LOCATED IN THE AREA.
 - NON-SEISMIC COMPONENTS SHOULD BE LOCATED AT LEAST ONE FOOT AWAY FROM OR BELOW SAFETY RELATED COMPONENTS. THIS APPLIES ONLY IF THE SAFETY RELATED TARGET IS SMALLER (SMALLER DIA, MASS, OR WALL THICKNESS) THAN THE NON-SEISMIC, NONSAFETY SOURCE COMPONENT.
 - NON-SEISMIC PIPING AND SUPPORTS LOCATED IN THE VICINITY OF SAFETY-RELATED COMPONENTS SHOULD BE INSTALLED USING U-BOLTS TO STABILIZE THE PIPING TO THE MAXIMUM EXTENT POSSIBLE.
 - WHEN USING CANTILEVERED STRUCTURAL SHAPES, THE NON-SEISMIC PIPE SHOULD REST ON THE STRUCTURAL MEMBER AND BE U-BOLTED TO IT RATHER THAN HUNG BENEATH THE MEMBER WITH A U-BOLT.
 - CLEVIS TYPE HANGERS SHOULD ONLY BE USED IN NONSAFETY AREAS. FOR INSTALLATIONS IN SAFETY-RELATED AREAS PIPE CLAMP AND EYE-ROD TYPE HANGERS SHOULD BE USED INSTEAD OF CLEVIS HANGERS SINCE THEY HAVE A LARGER LOAD CAPACITY AND ALLOW LATERAL MOVEMENT.
 - SAFETY-RELATED TUBING ROUTED TO TUBE TRACK SHOULD BE INSTALLED SUCH THAT THE TRACK ACTS AS A SHIELD FOR THE TUBE FROM GRAVITY MISSILES.
 - SPECIAL CARE SHOULD BE TAKEN IN AREAS WHERE SAFETY-RELATED TUBE LEAVES TUBE TRACK TO AVOID ROUTING THE TUBE UNDER NONSAFETY AND NON-SEISMIC COMPONENTS.
 - NON-SEISMIC COMPONENTS SUCH AS LIGHTING TRANSFORMERS, SPACE HEATERS AND HEAVY LIGHTING FIXTURES SHOULD BE LOCATED AWAY FROM SAFETY-RELATED COMPONENTS TO THE MAXIMUM EXTENT PRACTICABLE. LIGHTING TRANSFORMERS SHOULD ALSO BE LOCATED AS CLOSE TO THE FLOOR AS POSSIBLE.
 - IN ORDER TO BE CONSIDERED SEISMICALLY QUALIFIED PER REGULATORY GUIDE 1.29 THE MAXIMUM LOADING FOR ALL NON-SAFETY CONDUIT SUPPORTS, USING THREADED ROD HANGER WITH B-LINE (B22 AND OR B11) HORIZONTAL, AS DETAILED IN DWG SD/B-B-0533 SHT #2,3,4,6 & 16 SHALL BE LIMITED TO THE VALUES INDICATED BELOW WHERE L IS THE LENGTH OF THREADED ROD BETWEEN THE B-LINE OF CONCERN AND THE B-LINE OR CHANNEL ABOVE.
 - FOR SUPPORT ATTACHED BY MEANS OTHER THAN EXPANSION ANCHORS, THE MAXIMUM B-LINE STRUT LOADS ARE:
 - $L \leq 12"$ $W=612$ LBS
 - $12" < L \leq 24"$ $W=1224 \times L/24$ LBS
 - $L > 24"$ $W=1224$ LBS
 - FOR DOUBLE AND TRIPLE TRAPEZE SUPPORTS, THE MAXIMUM TOTAL LOAD ON THE SUPPORT IS 1289 LBS WITH THE ABOVE VALUES APPLICABLE TO THE INDIVIDUAL STRUTS
 - FOR SUPPORTS ATTACHED TO THE CEILING WITH 5/8" NON-Q PHILLIPS EXPANSION ANCHORS, THE MAXIMUM B-LINE STRUT LOADS ARE:
 - $L \leq 12"$ $W=361$ LBS
 - $12" < L \leq 24"$ $W=722 \times L/24$ LBS
 - $L > 24"$ $W=722$ LBS
- FOR DOUBLE AND TRIPLE TRAPEZE SUPPORTS THE MAXIMUM TOTAL LOAD ON THE SUPPORT IS 760 LBS WITH THE ABOVE VALUES APPLICABLE TO THE INDIVIDUAL STRUTS.
- IF THE ABOVE GUIDE CANNOT BE FOLLOWED NED SHALL BE CONTACTED FOR REVIEW OF THE PROPOSED INSTALLATION.

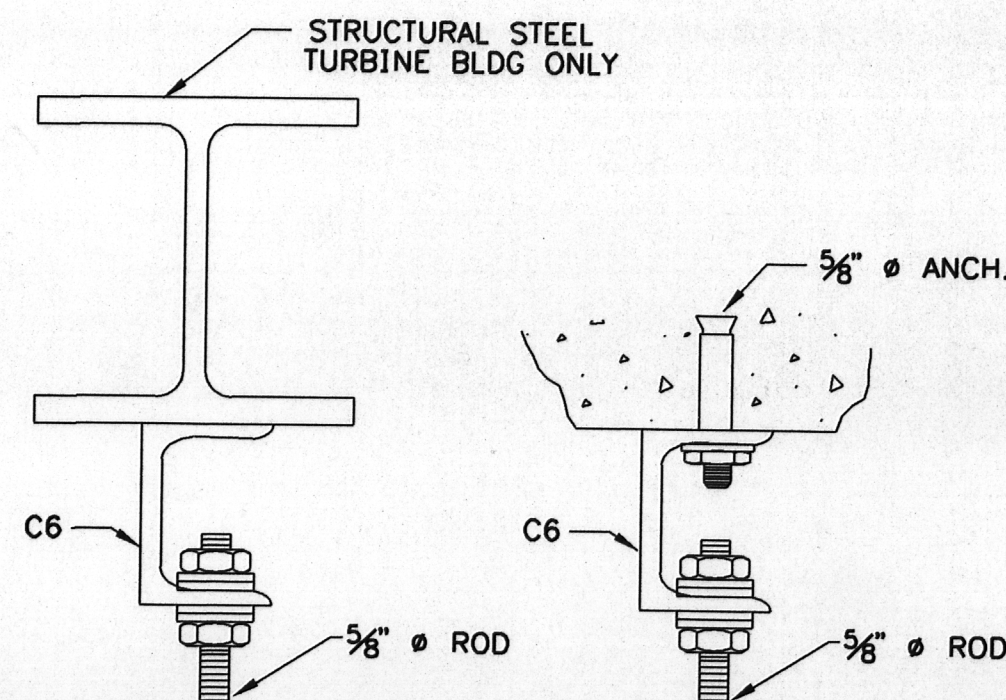
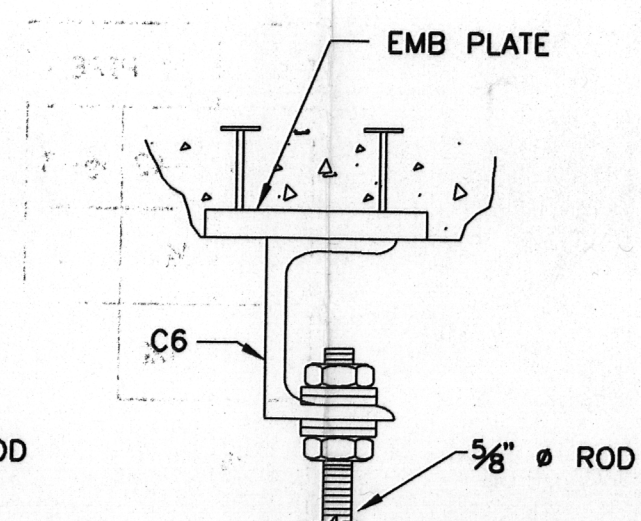
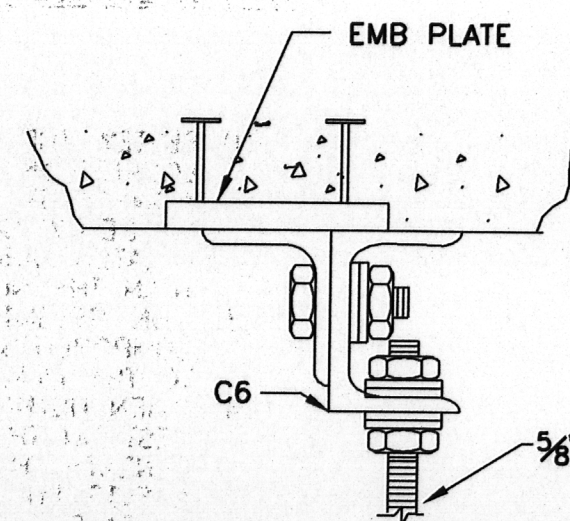


ELEVATION VIEW

NOTES:

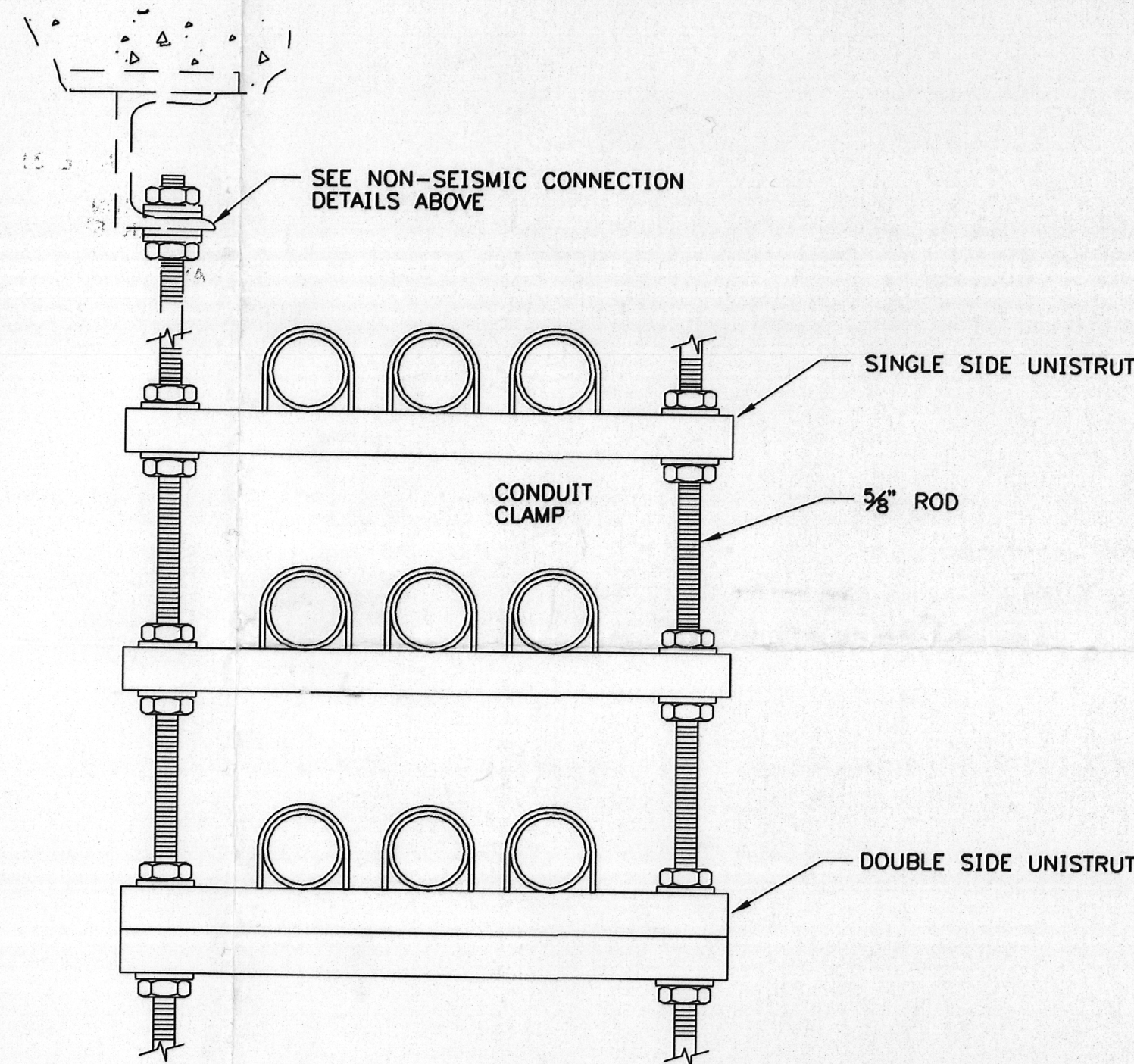
- CONNECTION MAY BE USED IN CONJUNCTION WITH SD/B-B-0533 SHTS 2,3, OR 4 TO BUILD TRAPEZE SUPPORT.
- CHANNEL MAY BE INSTALLED TO EMBEDDED STRUT AS SHOWN OR ROTATED UP TO 180°.
- MAX. UNISTRUT LOAD 225#/FT IF BEYOND 6" FROM A LIGHT HANGER, AND 160#/FT OTHERWISE.

TYP SEISMICALLY QUALIFIED CONN DET (COMMON BLDG EL 305.00')



NOTE:
FOR ADDITIONAL INFORMATION NOT SHOWN SEE DWG SD/B-B-0533 SHT 2, 3, 4, 6, AND 16.

TYPICAL NON-SEISMIC CONNECTION DETAILS



TYPICAL NON-SEISMIC TRAPEZE CONDUIT SUPPORT ELEVATION VIEW

7	REVISED AND REDRAW IN CAD WITH THE FOLLOWING DESIGN CHANGES INCORPORATED: EC 52769	ELECTRONICALLY SIGNED		
REV	DESCRIPTION	DWN	CHK	APPR'D
QUALITY LEVEL: SAFETY RELATED IN PART				
PLANT: HARRIS PROJECT - UNIT 1		SCALE: N/A		
TITLE: SAFETY AND NON-SAFETY INSTALLATION CONSIDERATIONS				
PLANT DWG NO.:		CPL-2168-S-9459		