ATTACHMENT NOTES:

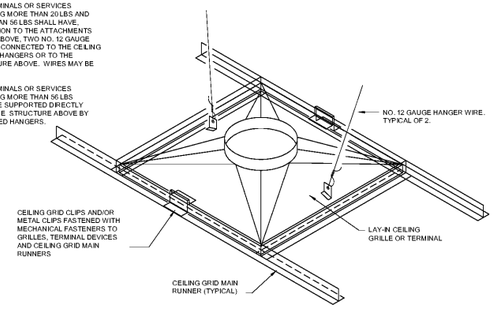
CEILING MOUNTED AIR TERMINALS OR SERVICES WEIGHING 20 LBS. OR LESS SHALL BE POSITIVELY ATTACHED TO THE CEILING SUSPENSION MAIN RUNNERS OR CROSS RUNNERS.

AIR TERMINALS OR SERVICES WEIGHING MORE THAN 20 LBS AND LESS THAN 56 LBS SHALL HAVE, IN ADDITION TO THE ATTACHMENTS NOTED ABOVE, TWO NO. 12 GAUGE HANGES CONNECTED TO THE CEILING SYSTEM HANGERS OR TO THE STRUCTURE ABOVE. WIRES MAY BE SLACK.

AIR TERMINALS OR SERVICES WEIGHING MORE THAN 56 LBS SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE ABOVE BY APPROVED HANGERS.

AIR TERMINAL / SERVICES SIESMIC RESTRAINT DETAIL

NO SCALE



SEISMIC REQUIREMENTS FOR CEILINGS 144 GSF OR GREATER

CATEGORY	REQUIREMENTS
CONNECTIONS/HANGERS	NOTE: USE HEAVY DUTY GRID
INTERSECTION STRENGTH	180 LBS
HANGERS	#12 @ 4' O.C./#10 @ 5' O.C.
PLUMB	NOT MORE THAN 1 IN 6 OR 10" FROM VERTICAL
CONNECTION DEVICES	MIN. 100LBS.
PERIMETER WIRES - ALL WALLS	MAXIMUM 8" FROM ALL WALLS
SPLAY BRACING	NOTE: USE HEAVY DUTY GRID
4 WIRE CLUSTERS	REQUIRED OVER 1000 SF.
FIRST POINT	MAX. 6' FROM PERIMETER WALLS
SPACING	12' O.C.
CONNECTION STRENGTH	MIN. 200LBS.
COMPRESSION POSTS	REQUIRED (CONDUIT/STEEL STUD)
MOLDING/PARTITIONS	NOTE: USE HEAVY DUTY GRID
MOLDING	MIN. 2"
ATTACHMENT (NO MOVEMENT)	REQUIRED @ 2 ADJACENT WALLS
CLEARANCE (FREE TO MOVE)	3/4" @ 2 ADJACENT WALLS
SPACER BARS	REQUIRED - IF CLIPS NOT USED
PARTITION ATTACHMENT	ALLOWED WITH BRACING, UNDER 2,500 SF.
LIGHTING/FIXTURES	NOTE: USE HEAVY DUTY GRID
RECESSED CAN LIGHTS	1 SLACK WIRE OR ATTACH TO GRID
LIGHTS LESS THAN 56LBS	2 CONNECTORS/2 SLACK WIRES
LIGHTS GREATER THAN 56LBS	SUSPEND FROM STRUCTURE, NOT GRID
MECHANICAL, LESS THAN 20LBS	ATTACHED TO GRID
MECH GREATER THAN 20LBS, LESS THAN 56LBS.	2 SLACK WIRES
MECHANICAL GREATER THAN 56LBS	SUSPEND FROM STRUCTURE, NOT GRID

USE OF PROPRIETARY MANUF SEISMIC DETAILS

REQUIRE APPROVAL FROM ARCHITECT

SEISMIC AND WIND LOAD DESIGN REQUIREMENTS FOR ELECTRICAL SYSTEMS

A. EQUIPMENT, APPLIANCES AND SUPPORTS (INCLUDING ROOF CURBS AND ROOF RAILS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. WHERE SEISMIC RESTRAINT IS REQUIRED, THE MORE DEMANDING FORCE OF WIND AND SEISMIC MUST BE USED.

B. SEE COMPONENT/SYSTEM SCHEDULE BELOW FOR SPECIFIC COMPONENT IMPORTANCE FACTOR DESIGNATIONS AND SEISMIC DESIGN CRITERIA.

C. USE SEISMIC DESIGN CATEGORY TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH MECHANICAL COMPONENT/SYSTEM.

D. FOR ALL COMPONENTS/SYSTEMS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED (CALCULATIONS AND INSTALLATION DETAILS) AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER (SEISMIC ENGINEER) THAT IS DIRECTLY EMPLOYED BY THE SEISMIC RESTRAINT MANUFACTURER (W-2 EMPLOYEE) WITH AT LEAST FIVE YEARS OF SEISMIC DESIGN EXPERIENCE, LICENSED IN THE STATE OF THE JOB LOCATION. ALL RESTRAINING DEVICES SHALL HAVE A PREAPPROVAL NUMBER FROM CALIFORNIA OSHPD OR SOME OTHER RECOGNIZED GOVERNMENT AGENCY SHOWING MAXIMUM RESTRAINT RATINGS.

E. SEISMIC RESTRAINTS FOR CONDUIT MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAIN LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS PER THE SEISMIC ENGINEER.

F. REFER TO ASCE 7-10 FOR SEISMIC INSTALLATION GUIDELINES

COMPONENT/SYSTEM IMPORTANCE FACTOR (Ip) SCHEDULE AND SEISMIC DESIGN INFORMATION

Ip = 1.0	ALL POWER SYSTEMS NORMAL POWER SYSTEMS	Ip = 1.5	EMERGENCY POWER SYSTEMS

SEISMIC DESIGN INFORMATION:

1. OCCUPANCY CATEGORY = II
2. SITE CLASSIFICATION = D
3. SHORT PERIOD DESIGN SPECTRAL ACCELERATION (Sd1) = 0.472 G
4. LONG PERIOD DESIGN SPECTRAL ACCELERATION (Sds) = 0.934 G

SEISMIC DESIGN CATEGORY TABLE - DESIGN CATEGORIES D, E, & F

		COMPONENT IMPORTANCE FACTOR (Ip)				
		Ip = 1.0			Ip = 1.5	
COMPONENT/SYSTEM IDENTIFICATION		COMPONENT/SYSTEM CERTIFICATION	NOTES	ASCE 7-10 REFERENCE	RESTRAINT REQUIREMENTS	ASCE 7-10 REFERENCE
ATTACHED TO BUILDING		REQUIRED	2	13.1.4.6	REQUIRED	13.6.4
SUPPORTED BUILDING		REQUIRED	2	13.1.4.6	REQUIRED	13.6.4
RACEWAY	<2.5"#	NOT REQUIRED	-	13.6.5.6.2	NOT REQUIRED	13.6.5.6.2
	2.5"+	RESTRAIN ALL (SEE NOTE 1)	5	13.6.5.6	REQUIRED	13.6.5.6
LUMINAIRES		6 SQFT AND LARGER (SEE NOTE 8)	4	-	REQUIRED	-
COMPONENT CERTIFICATION (SEE NOTE 1)		NOT REQUIRED	-	13.2.2	REQUIRED	13.2.2

1. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.
2. EXEMPT IF ALL OF THE FOLLOWING APPLY:
   - 2.1. IF COMPONENET IS POSITIVELY ATTACHED TO THE STRUCTURE.
   - 2.2. IF FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN COMPONENT AND ASSOCIATED CONDUIT AND EITHER COMPONENT WEIGHS 400 LBS OR LESS AND HAS A CENTER OF MASS LOCATED 4 FT OR LESS ABOVE ADJACENT FLOOR; OR COMPONENT WEIGHS 20 LBS OR LESS, OR IN THE CASE OF A DISTRIBUTED SYSTEM, 5 LB/FT OR LESS.
3. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT THE TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.
4. INSTALLATION SHALL COMPLY WITH ASTM E580/E580M-2014.
5. RESTRAINT SHALL NOT BE REQUIRED IF RACEWAY IS SUPPORTED BY EITHER:
   - 5.1. TRAPEZE ASSEMBLIES AND THE TOTAL WEIGHT OF THE RACEWAY SUPPORTED BY THE TRAPEZE ASSEMBLIES IS LESS THAN 10 LB/FT.
   - 5.2. HANGERS AND EACH HANGER IN THE RACEWAY RUN IS 12" OR LESS IN LENGETH FROM THE RACEWAY SUPPORT POINT TO THE SUPPORTING STRUCTURE. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD.

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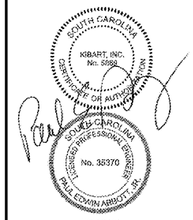

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