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SEISMIC DESIGN CATEGORIES D

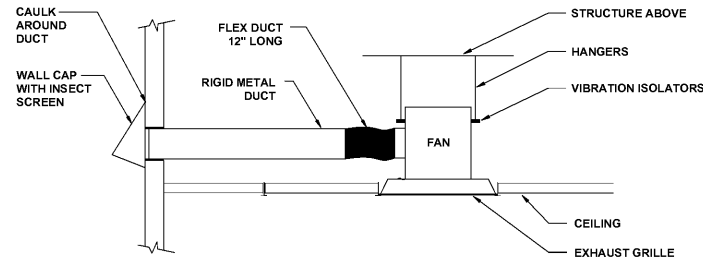
- GENERAL NOTES**
- PER THE 2015 SOUTH CAROLINA BUILDING CODE, MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND COMPONENTS, INCLUDING THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE 7-10.
 - EXTERIOR EQUIPMENT (INCLUDING ROOF CURBS, RAILS, SUPPORTS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH CHAPTERS 26 TO 29 OF ASCE 7-10.
 - WHERE DESIGN FOR SEISMIC AND WIND LOADS IS REQUIRED, THE MORE DEMANDING FORCE MUST BE USED.
 - REFERENCE THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY, WIND SPEEDS, ETC.
 - SEE DESIGN LOAD CRITERIA TABLE, THIS SHEET, FOR SPECIFIC COMPONENT IMPORTANCE FACTOR DESIGNATIONS.
 - USE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT.
 - FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL.
 - WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE RECEIPT OF THE APPROVED SEISMIC SUBMITTAL.
 - SEISMIC RESTRAINTS FOR DUCTWORK AND PIPING MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.

COMPONENT IDENTIFICATION	COMPONENT IMPORTANCE FACTOR (Ip)		
	SEISMIC RESTRAINT REQUIREMENT	ASCE 7-10 REFERENCE	
ROOF MOUNTED	RESTRAIN ALL (SEE NOTE 1)	13.1.4.6	
FLOOR MOUNTED	RESTRAIN ALL (SEE NOTES 1,2)	13.1.4.6	
WALL MOUNTED	RESTRAIN ALL (SEE NOTES 1,2)	13.1.4.6	
COMPONENT SUPPORTS	RESTRAIN ALL (SEE NOTE 1)	13.6.5	
SUSPENDED EQUIPMENT	INLINE W/ DUCT/PIPE	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN. (SEE NOTE 3)	13.6.7
	NOT INLINE W/ DUCT/PIPE	RESTRAIN ALL (SEE NOTE 1)	13.1.4.6
SUSPENDED DUCTILE PIPING (STEEL, ALUMINUM, COPPER, ETC.)	RESTRAIN IF > 3" (SEE NOTE 4)	13.6.8.3.3.c	
SUSPENDED NON DUCTILE PIPING (CAST IRON, PLASTIC, CERAMIC)	RESTRAIN ALL (SEE NOTE 4)	13.6.8.3.3	
SUSPENDED PIPE ON TRAPEZE	RESTRAIN IF ANY PIPE ON TRAPEZE > 3" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT (SEE NOTE 4)	13.6.8.3.1	
DUCTWORK	RESTRAIN IF > 6 SQ. FT. AND > 17 LBS/FT (SEE NOTE 4,5)	13.6.7	
MULTIPLE DUCTS ON TRAPEZE	RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT (SEE NOTE 4,5)	13.6.7	
SINGLE CONDUIT	RESTRAIN IF ≥ 2.5" (SEE NOTE 4)	13.6.5.6	
CABLE TRAY/BUS DUCT/ TRAPEZED CONDUIT	RESTRAIN IF TOTAL WEIGHT OF RACEWAY > 10 LBS/FT (SEE NOTE 4)	13.6.5.6	
PENDANT, LAY-IN, & CAN LIGHTS	REQUIRED (SEE NOTE 6)	13.5.6.2	
COMPONENT CERTIFICATION	NOT REQUIRED	13.2.2	

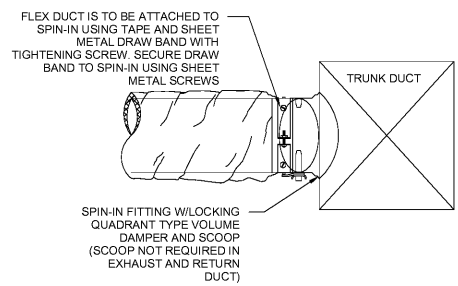
- TABLE NOTES**
- EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF THE COMPONENT IS POSITIVELY ATTACHED TO THE STRUCTURE, AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
 - RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHS 400 LBS. OR LESS, IS MOUNTED WITH THE CENTER OF MASS AT 4 FT. OR LESS ABOVE A FLOOR, IS POSITIVELY ATTACHED TO THE STRUCTURE, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
 - FLEXIBLE CONNECTIONS REQUIRED FOR PIPE CONNECTIONS ONLY.
 - RESTRAINT IS NOT REQUIRED IF THE PIPING/DUCTWORK/CONDUIT IS SUPPORTED BY HANGERS AND EACH HANGER IN THE PIPING RUN IS 12 IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
 - ALL DUCTWORK, REGARDLESS OF SIZE, DESIGNED TO CARRY TOXIC, HIGHLY TOXIC, OR EXPLOSIVE GASES OR USED FOR SMOKE CONTROL, MUST BE RESTRAINED.
 - THE RESTRAINT OF PENDANT, LAY-IN, & CAN LIGHTS IS ADDRESSED IN ASTM C636 & E580.
 - COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.

DESIGN LOAD CRITERIA

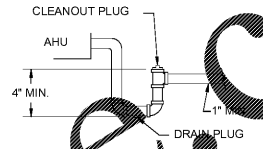
WIND RESTRAINT LOADING			SEISMIC RESTRAINT LOADING					
BASIC WIND SPEED	BUILDING CLASSIFICATION CATEGORY	SITE CLASS	BUILDING CATEGORY	IMPORTANCE FACTOR	RESPONSE MODIFICATION FACTOR	AMPLIFICATION FACTOR	SPECTRAL RESPONSE ACCELERATION (SHORT PERIODS) S ₀₃	SPECTRAL RESPONSE ACCELERATION (1-SEC PERIODS) S ₀₁
SEE STRUCTURAL							0.800G	0.408G



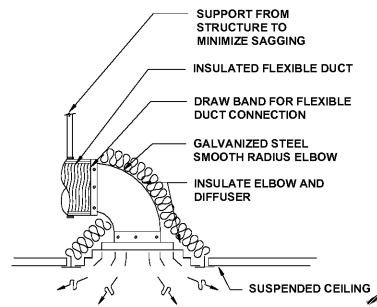
3 CEILING EXHAUST FAN DETAIL
NO SCALE



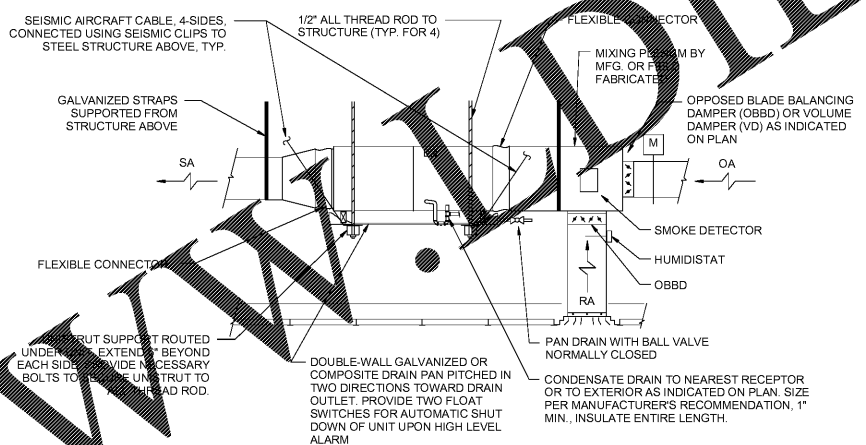
4 FLEXIBLE DUCT CONNECTION
NO SCALE



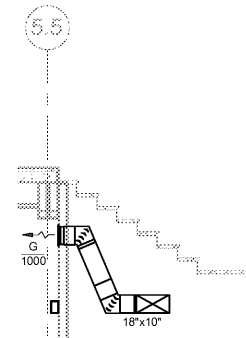
5 CONDENSATE DRAIN
NO SCALE



1 TYPICAL DIFFUSER DETAIL
NO SCALE



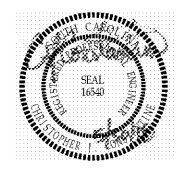
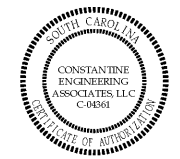
2 TYPICAL HORIZONTAL AHU
NO SCALE



6 MECHANICAL UNDER-STAIR SECTION
1/4\"/>

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THE MILITARY COLLEGE OF SOUTH CAROLINA

Revisions	
Rev. No.	Rev. Date

DRAWN BY: TJR
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DATE: 06.01.2018

COAST PROJECT NO: 17-069

MECHANICAL DETAILS

1.M301

BID DOCUMENTS