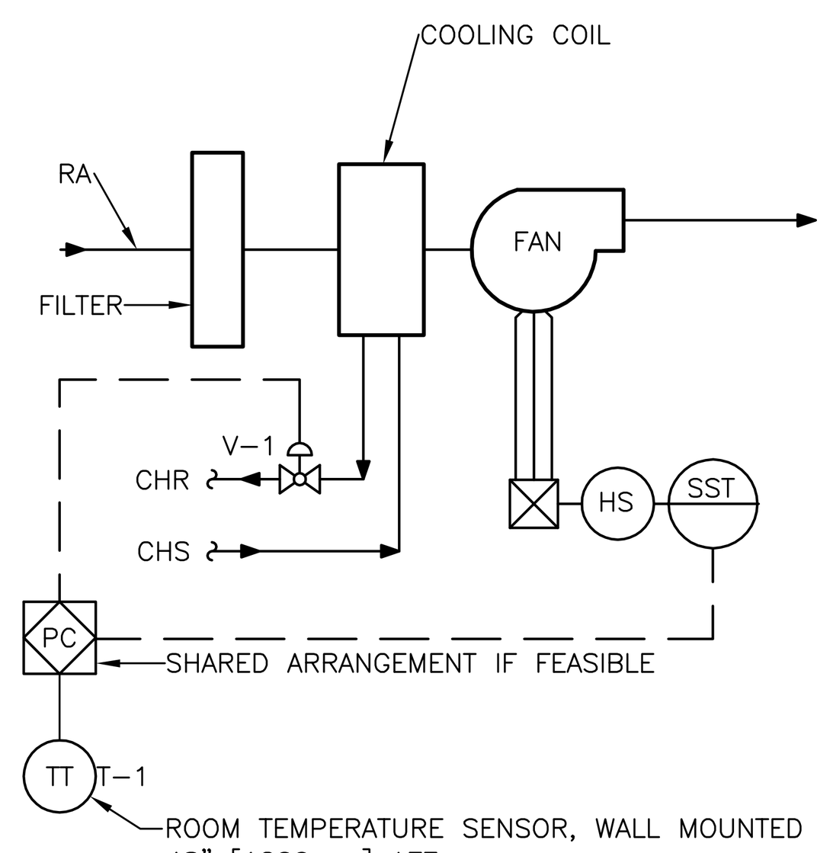
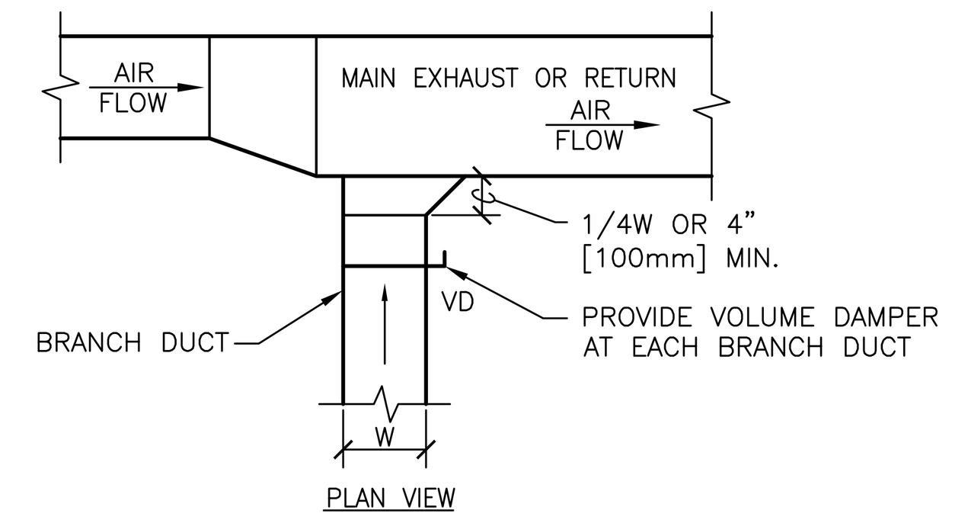
FAN COIL SEQUENCE OF OPERATION (COOLING ONLY)

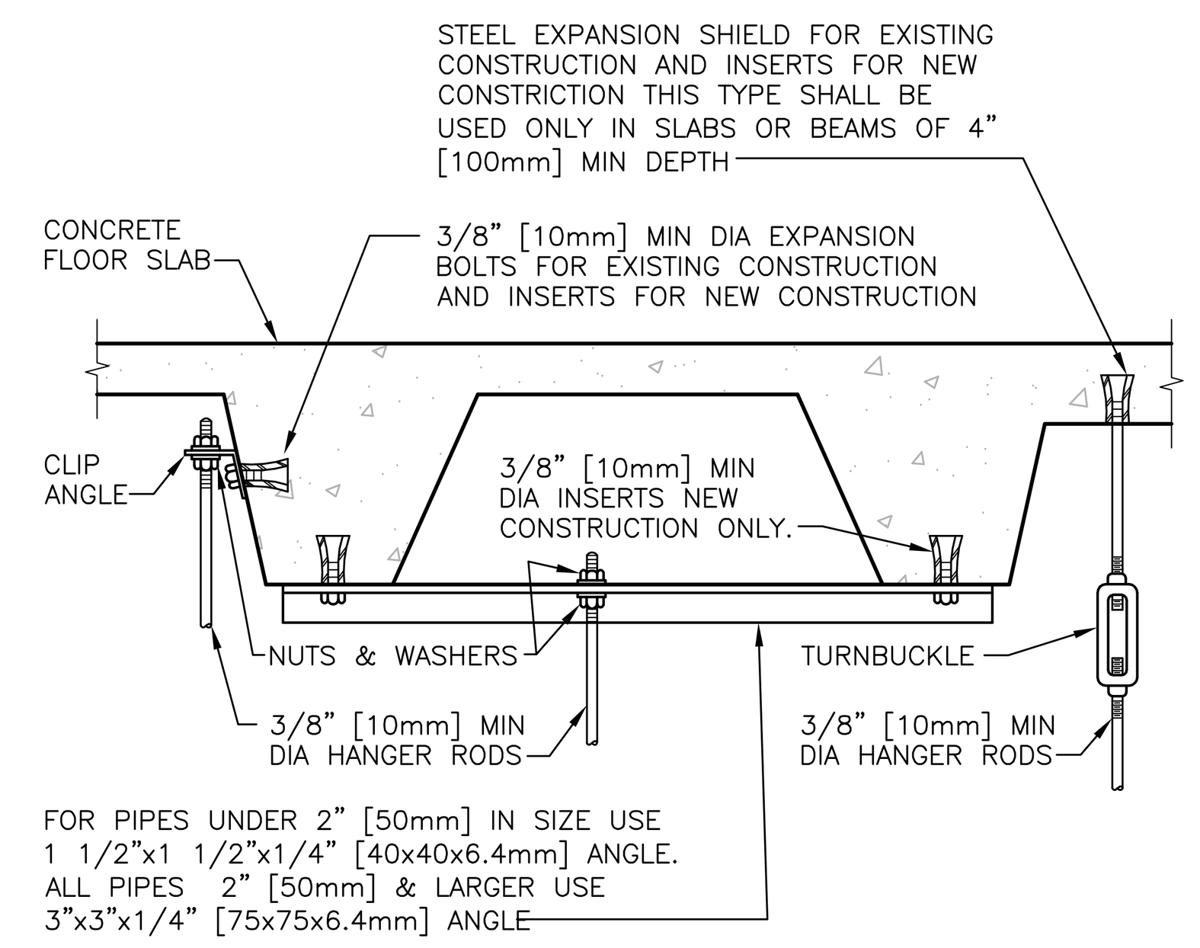
1. FAN COIL UNIT SHALL OPERATE ON A SCHEDULE AS SET BY THE DCC.
2. MODULATE V–1 TO MAINTAIN SPACE SET POINT AND FAN SHALL CYCLE W/TEMPERATURE.
3. ALARM IF SPACE TEMPERATURE OUTSIDE OF RANGES.



13 MS-501 COOLING ONLY FAN COIL UNIT CONTROLS
NO SCALE

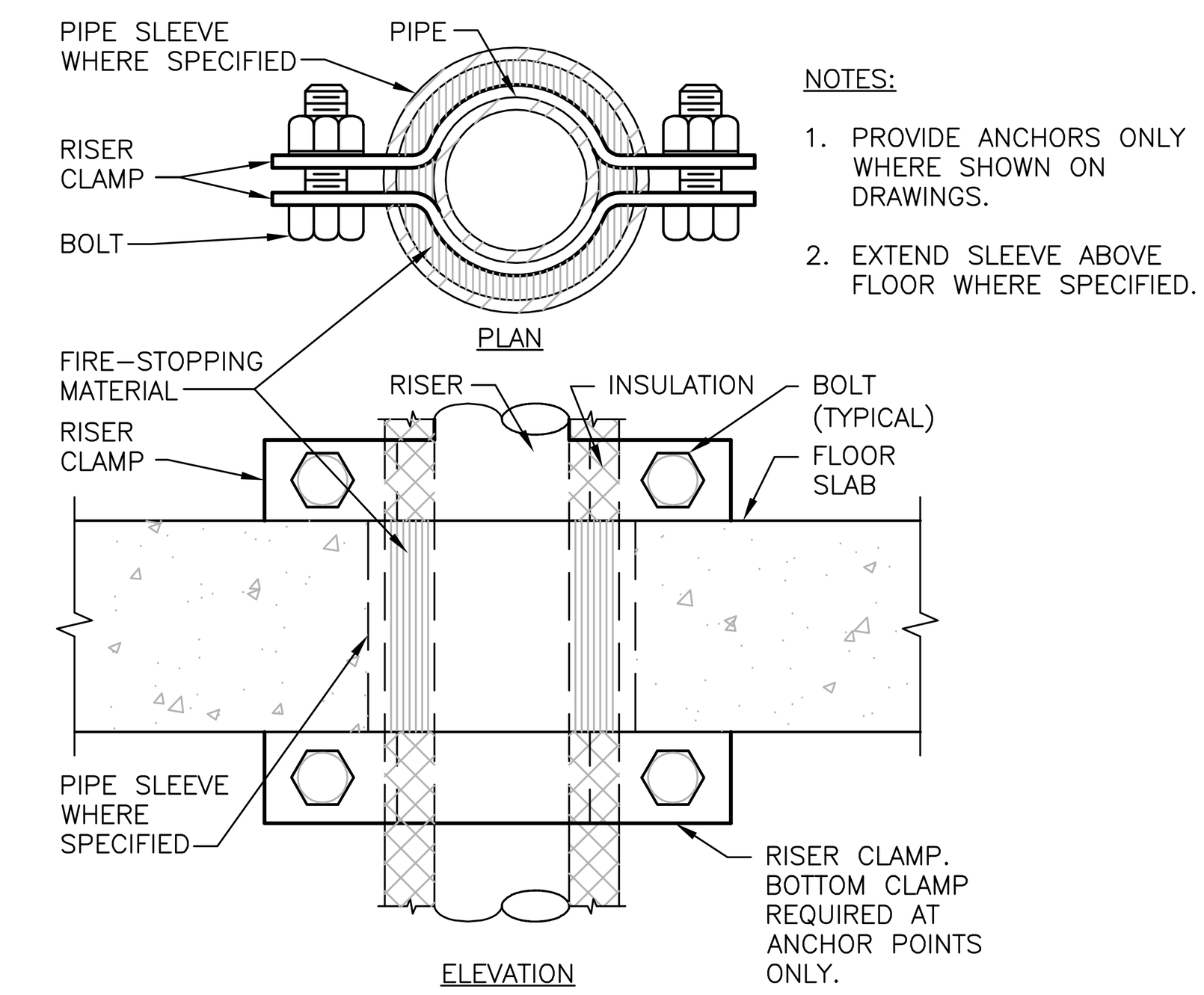


10 MS-501 EXHAUST OR RETURN BRANCH DUCTWORK
NO SCALE



FOR PIPES UNDER 2" [50mm] IN SIZE USE 1 1/2"x1 1/2"x1/4" [40x40x6.4mm] ANGLE. ALL PIPES 2" [50mm] & LARGER USE 3"x3"x1/4" [75x75x6.4mm] ANGLE

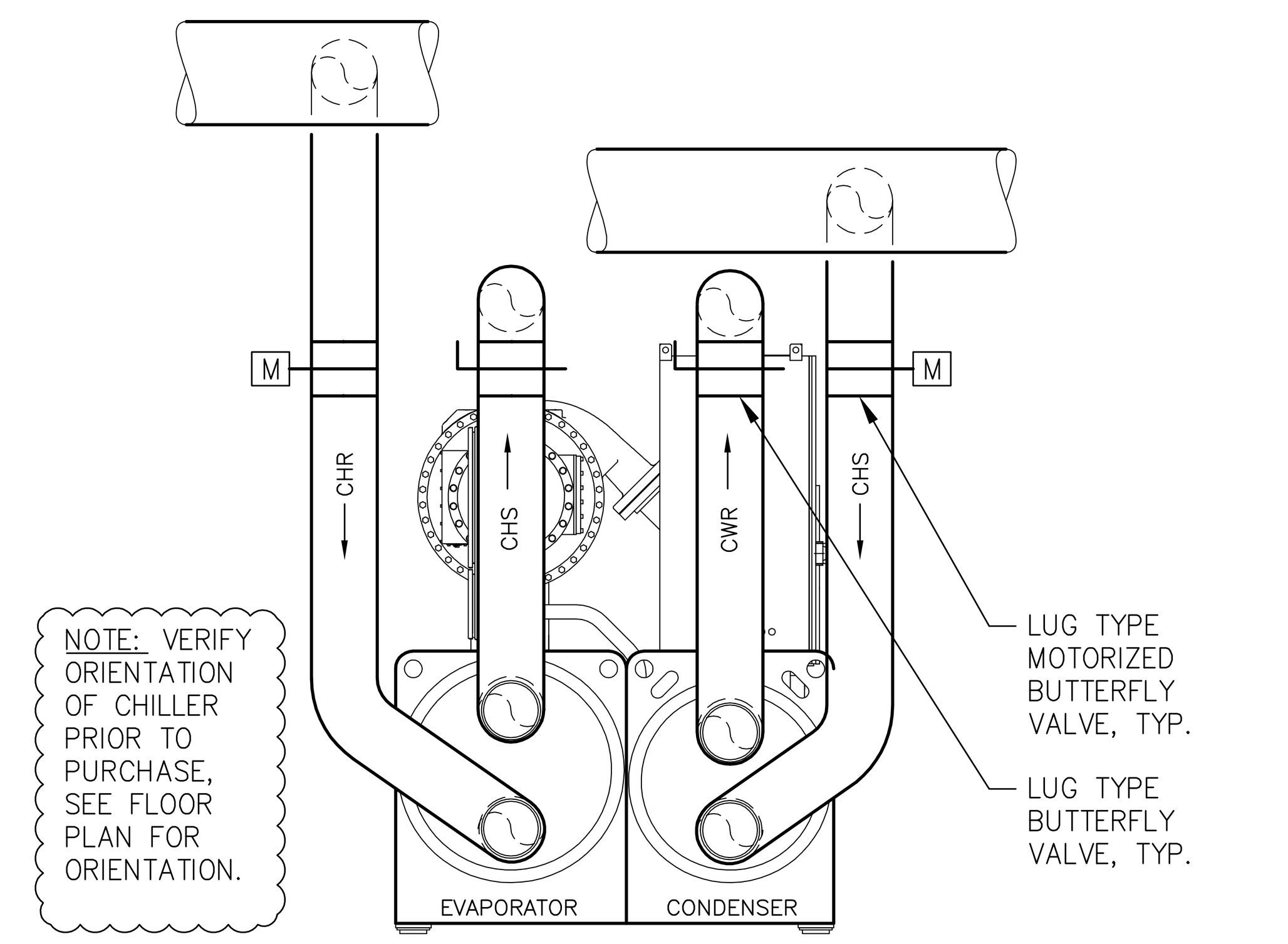
7 MS-501 SECURING HANGER RODS IN CONCRETE
NO SCALE



NOTES:

1. PROVIDE ANCHORS ONLY WHERE SHOWN ON DRAWINGS.
2. EXTEND SLEEVE ABOVE FLOOR WHERE SPECIFIED.

4 MS-501 SUPPORT/ANCHOR FOR PIPE RISERS
NO SCALE



1 MS-501 CHILLER PIPE ELEVATION
NO SCALE

REFRIGERANT LEAK DETECTION SYSTEM (R–134A)

1. PROVIDE "BREAK–GLASS" TYPE SWITCH IMMEDIATELY ADJACENT TO AND OUTSIDE OF PRINCIPAL CHILLER ROOM EXIT. EF–1 SHALL RESPOND AUTOMATICALLY TO REFRIGERATION DETECTION SYSTEM SET TO ACTIVATE THE VENTILATION SYSTEM WHEN REFRIGERANT (R–134A) LEVEL REACHES 25,000 PPM. THE VENTILATION SYSTEM INCLUDES THE ENABLING OF EF–1 AND OPENING THE MOTORIZED BACKDRAFT DAMPERS ON THE MAKE UP AIR LOUVERS.

2. PROVIDE TWO COLORED AND LABELED INDICATOR LAMPS THAT INDICATE WHETHER OR NOT THERE IS AIRFLOW THROUGH EF–1.

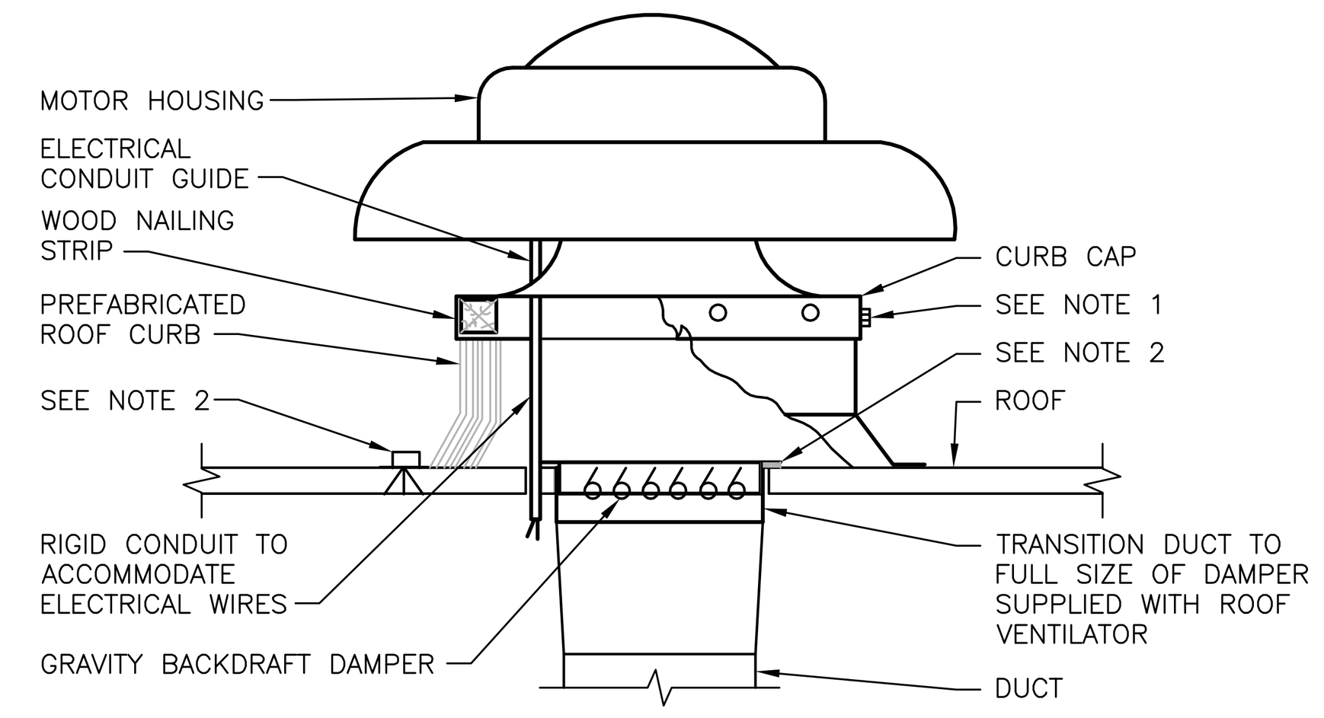
3. LOCATE AND INSTALL SYSTEM COMPONENTS PER 2013 CMC CHAPTER 11.

EMERGENCY EQUIPMENT CONTROL (UPON LEAK DETECTION)

1. ACTIVATE THE "OFF–ONLY" SWITCH ADJACENT TO THE INSIDE AND OUTSIDE THE PRINCIPAL EXIT DOOR. THIS SWITCH SHALL PROVIDE OFF–ONLY CONTROL OF COMPRESSORS, NORMALLY CLOSED VALVES, AND ANY AUTOMATIC REFRIGERANT VALVES.

2. INSTALL REFRIGERANT DETECTORS IN SPACE PER MANUFACTURER'S RECOMMENDATIONS

14 MS-501 REFRIGERANT LEAK DETECTION
NO SCALE



NOTE:

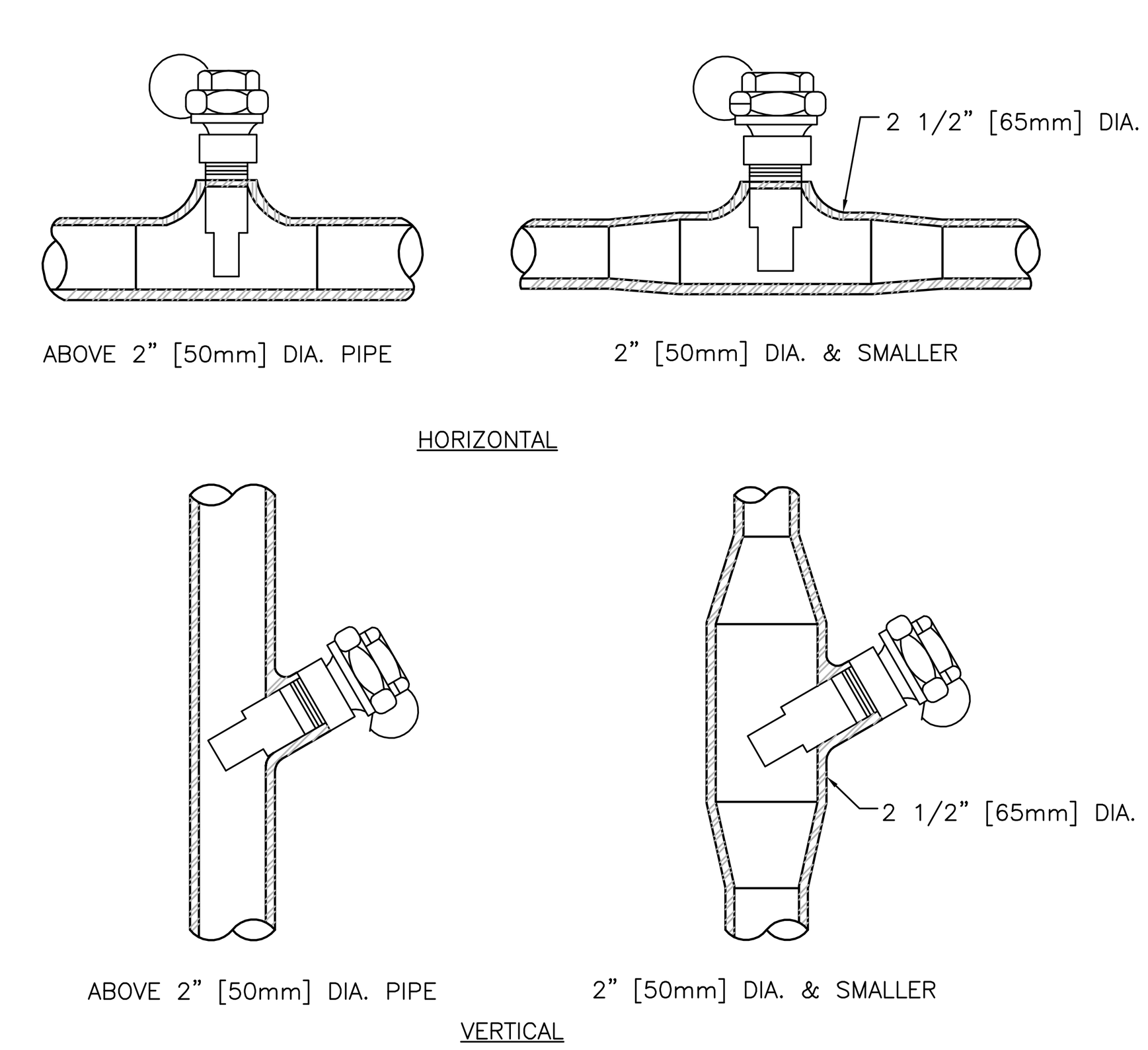
1. SECURE CURB CAP TO WOOD NAILING STRIP WITH 3/8" [10mm] CADMIUM PLATED LAG BOLTS NOT OVER 12" [300mm] ON CENTER.
2. SECURE ROOF CURB, DUCTWORK AND DAMPER TO ROOF WITH EXPANSION BOLTS (CONCRETE ROOF) OR RUST RESISTANT BOLTS (METAL DECK AND BAR JOIST ROOF).
3. RUN ELECTRICAL LINES THROUGH CLEARANCE HOLE PROVIDED IN GRAVITY DAMPER, THEN THROUGH VENTILATOR ELECTRICAL CONDUIT GUIDE.

DESIGNERS NOTES:
1.PROVIDE A MOTORIZED DAMPER, IF APPLICABLE.

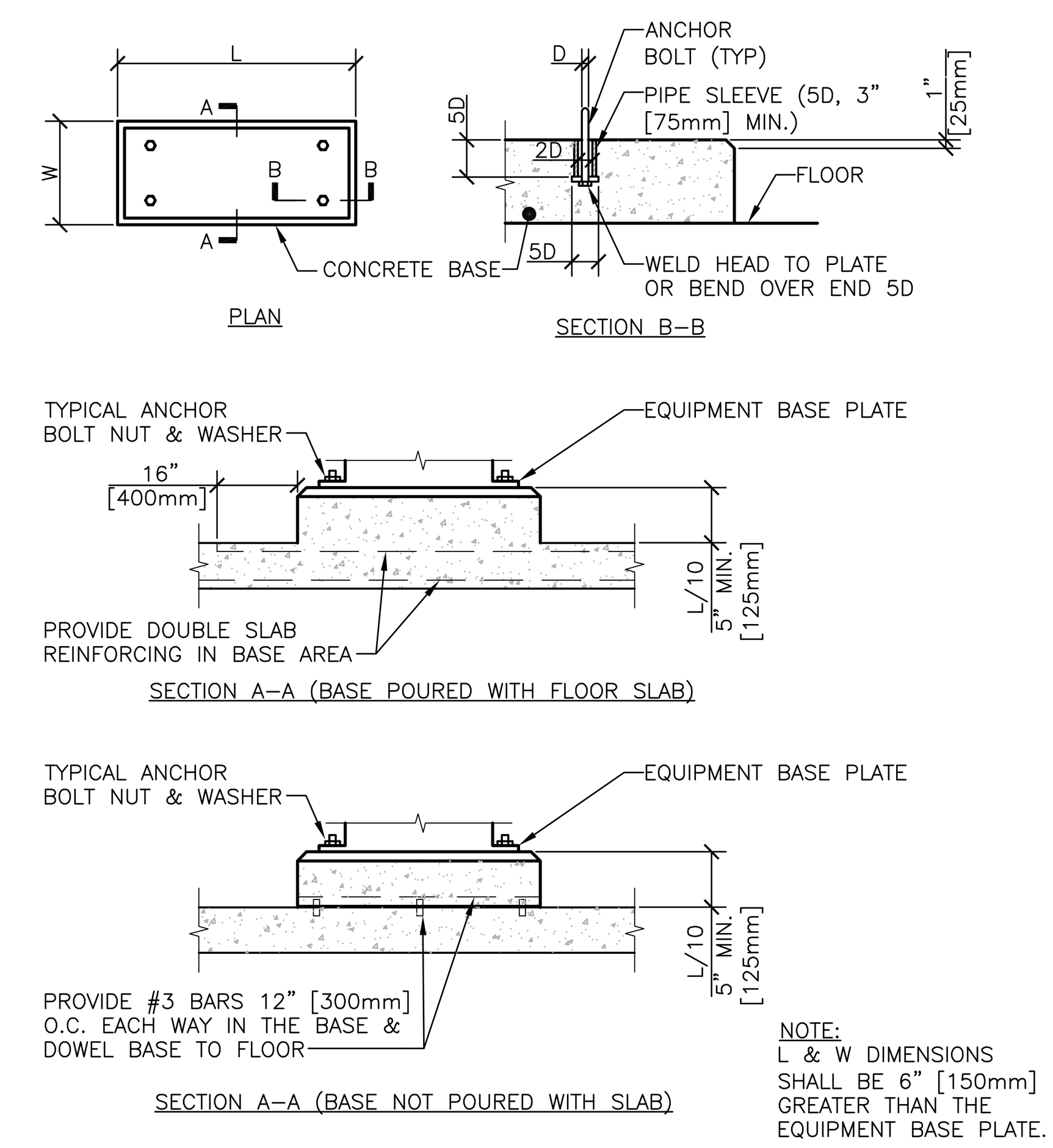
2.PROVIDE DIRECT DRIVE FANS FOR LOCATIONS NOT EASILY ACCESSIBLE. AS ATTIC OR PIPE BASEMENT AND LESS THAN 2 HP.

3.MINIMUM CURB HEIGHT SHALL BE 12 INCHES [300 mm]. INCREASE HEIGHT, IF REQUIRED, TO OVERCOME SNOW DRIFT.

11 MS-501 POWER ROOF VENTILATOR
NO SCALE

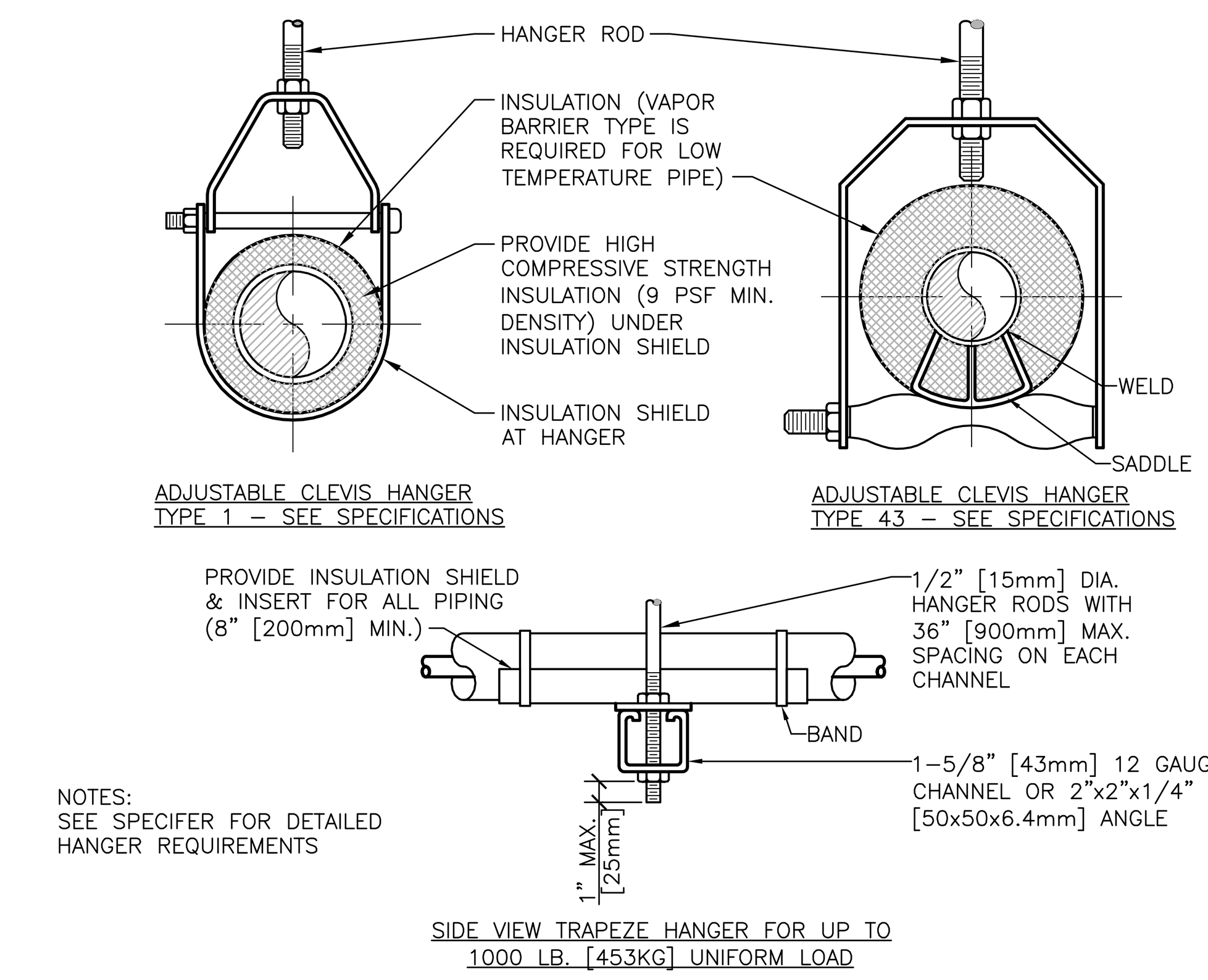


8 MS-501 INSTALLATION OF THERMOMETER WELLS
NO SCALE



NOTE: L & W DIMENSIONS SHALL BE 6" [150mm] GREATER THAN THE EQUIPMENT BASE PLATE.

5 MS-501 CONCRETE EQUIPMENT BASES
NO SCALE

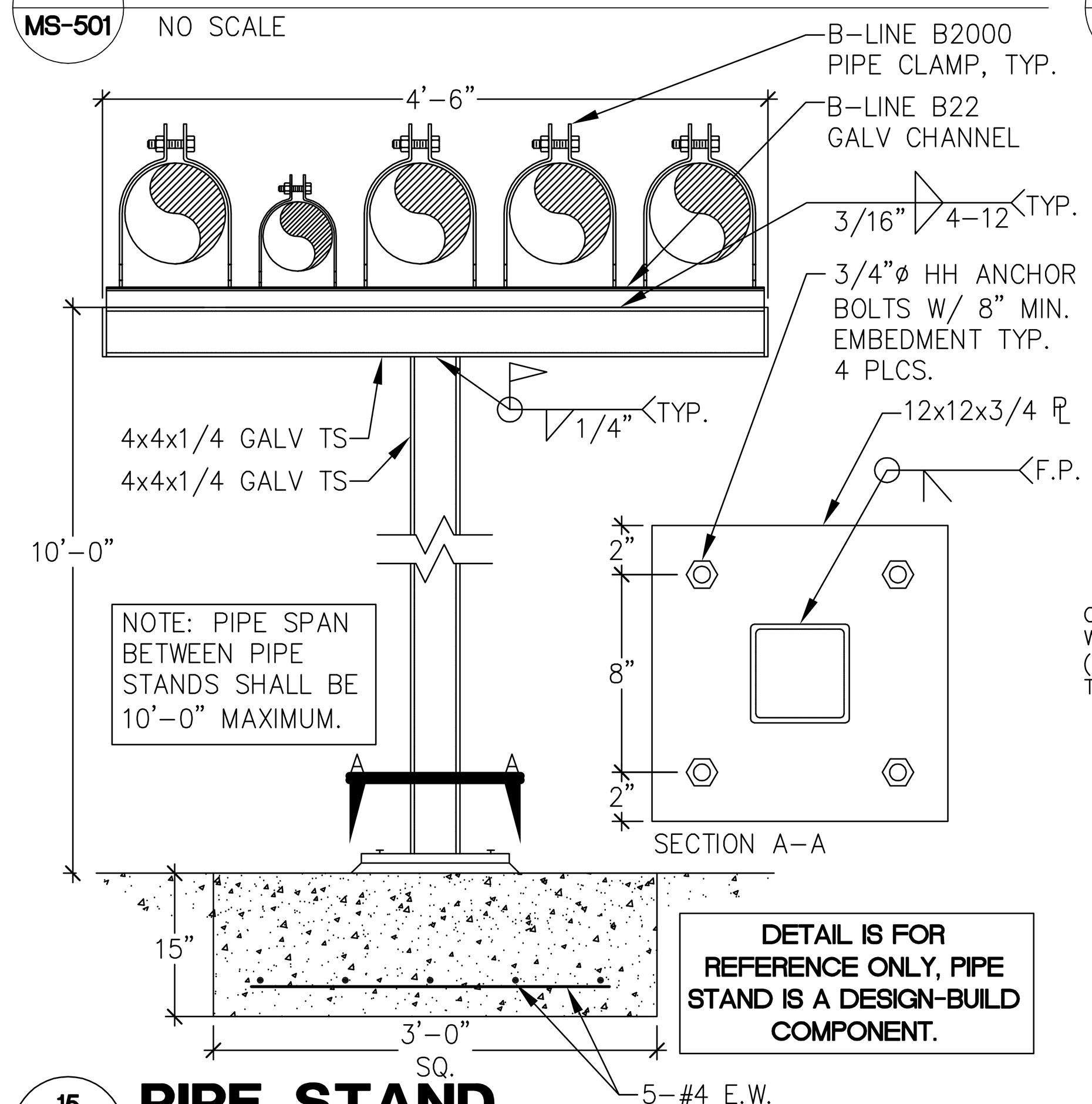


NOTES:
SEE SPECIFER FOR DETAILED HANGER REQUIREMENTS

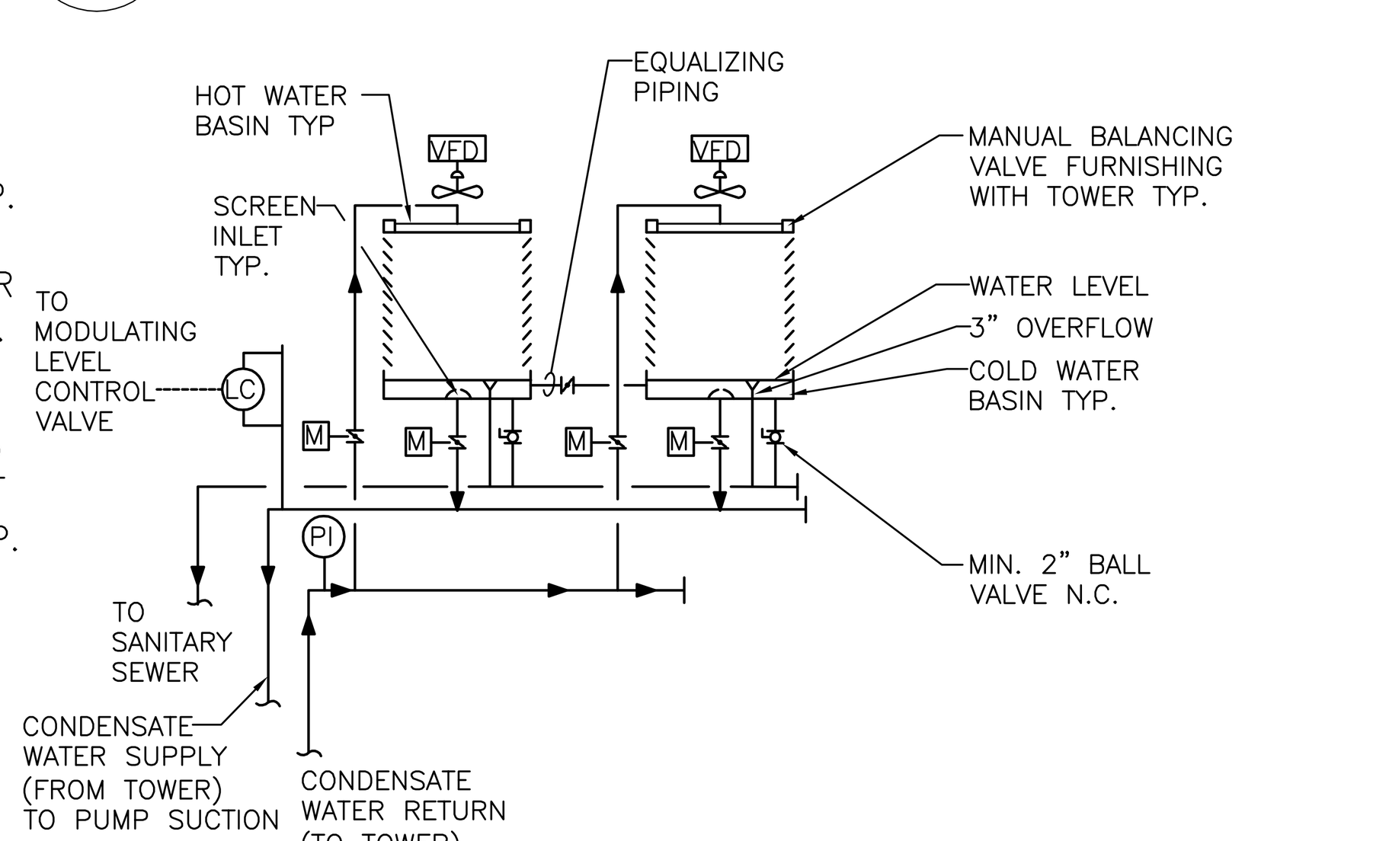
MAXIMUM PIPE/TUBING SUPPORT SPACING																		
NOM. SIZE IN. [mm]	THRU 3/4 THRU [20]	1 [25]	1 1/4 [32]	1 1/2 [40]	2 [50]	2 1/2 [65]	3 [75]	4 [100]	5 [125]	6 [150]	8 [200]	10 [250]	12 [300]	14 [350]	16 [400]	18 [450]	20 [500]	24 [600]
PIPE FT. [mm]	7 [2100]	7 [2100]	7 [2100]	9 [2700]	10 [3000]	11 [3400]	12 [3700]	14 [4100]	16 [4900]	17 [5200]	19 [5800]	22 [6700]	23 [7000]	25 [7600]	27 [8200]	28 [8500]	30 [9100]	32 [9600]
TUBING FT. [mm]	5 FT [1500]	6 [1800]	7 [2100]	8 [2400]	8 [2400]	9 [2700]	10 [3000]	12 [3700]	13 [4000]	14 [4100]	16 [4900]	– –	– –	– –	– –	– –	– –	– –
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.																		

DESIGNER'S NOTE:
SHOW ON THE DRAWINGS OTHER SPECIFIED AND SPECIAL PIPE SUPPORTS WHERE REQUIRED.

2 MS-501 PIPE HANGERS
NO SCALE



15 MS-501 PIPE STAND
NO SCALE



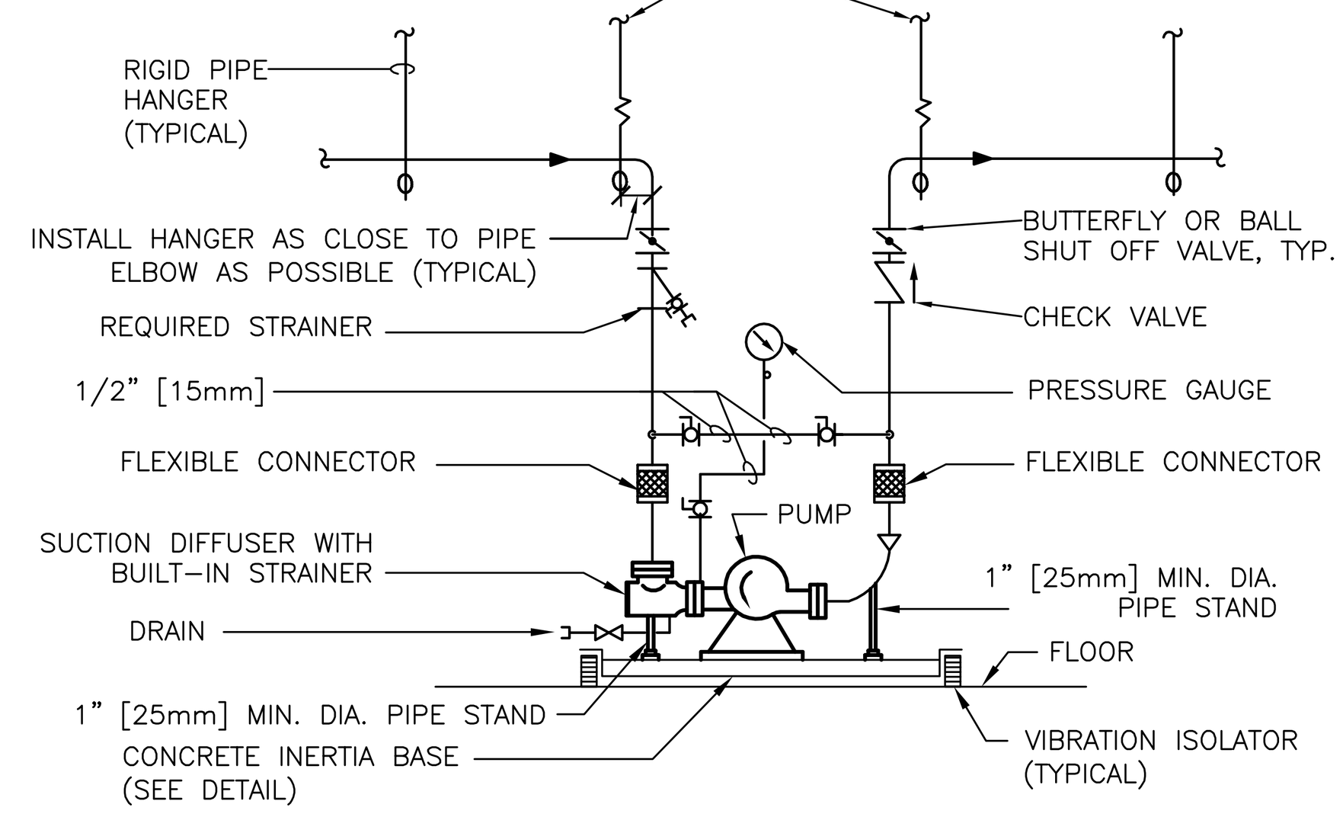
NOTE:

1. THE BASINS SHALL BE INTERCONNECTED BY FLUMES. EACH CELL SHALL BE PROVIDED WITH ITS OWN SUMP AND ANTI–CAVITATION PLATE.

DESIGNERS NOTES:
1.IF TOWER IS INSTALLED MORE THAN 5 FT [1500 MM] ABOVE THE ROOF OR GRADE PROVIDE A PLATFORM AROUND THE PERIMETER.
2.PROVIDE ACCESS FOR ALL ELEVATED VALVES AND CONTROL DEVICES AND TO EACH FAN MOTOR.
3.SEE HVAC DESIGN MANUAL.
4.COORDINATE WITH ELECTRICAL ON BASIN HEATER.

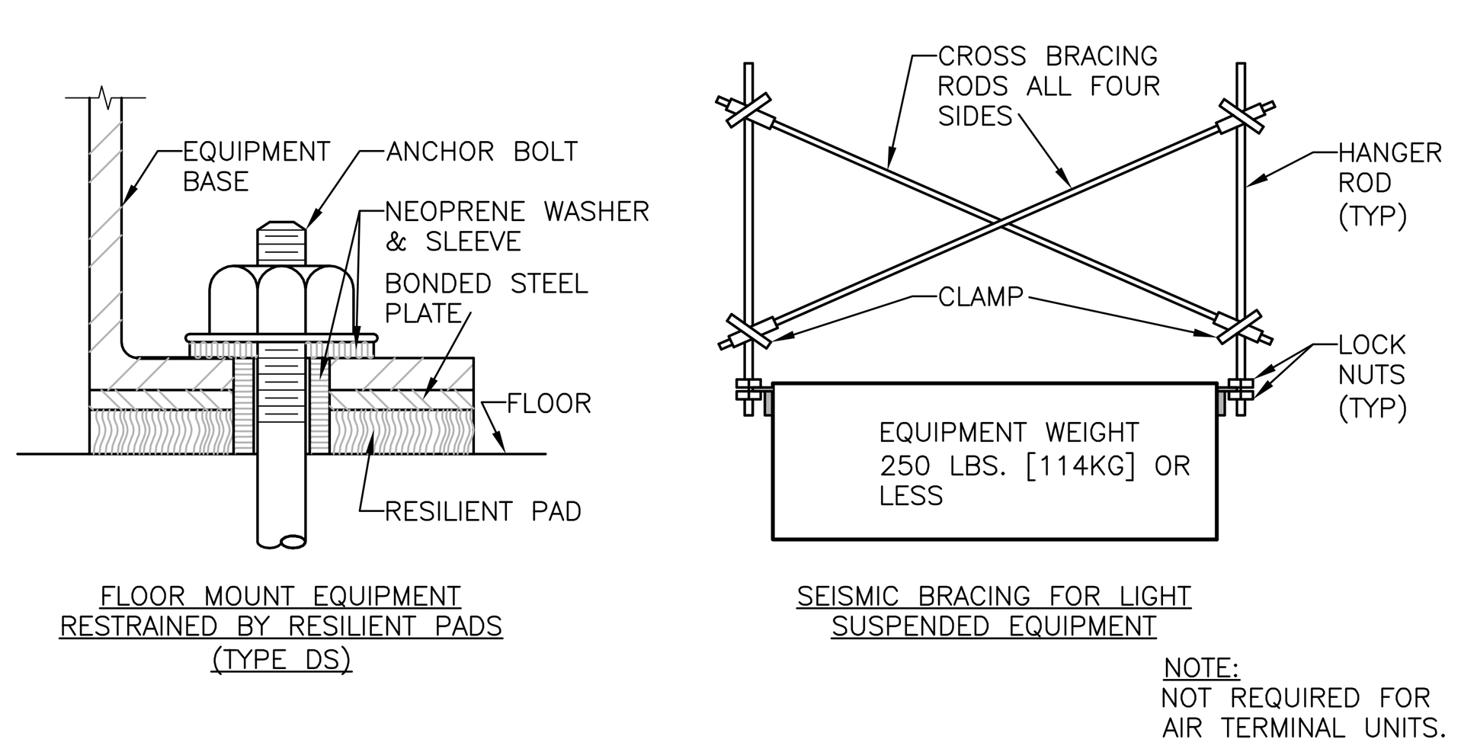
12 MS-501 MULTIPLE CELL COOLING TOWER - PIPING CONNECTIONS
NO SCALE

FIRST 3 HANGERS FOR EACH PIPE AND BRANCH SHALL BE SPRING & NEOPRENE TYPE. TYPE "H" FOR 4" [100mm] DIA. PIPE AND SMALLER. TYPE "H–P" FOR 5" [125mm] DIA. PIPE AND LARGER.



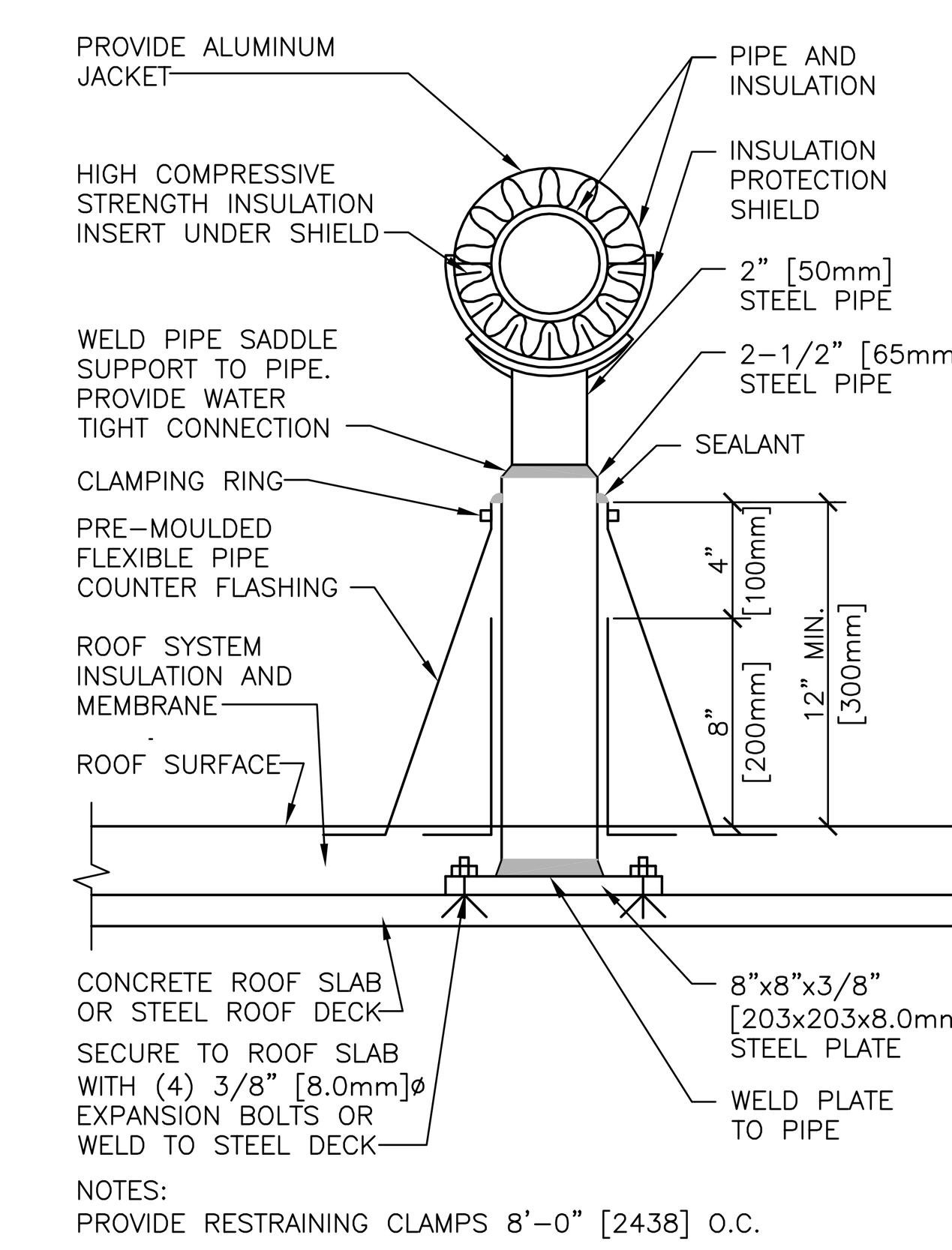
NOTE:
SEE SPECIFICATION SECTION "PUMPS" FOR Y STRAINER OPTION.
DESIGNER'S NOTE:
CHECK VALVE IS REQUIRED FOR SINGLE PUMPS, EXCEPT FOR COOLING TOWER PUMP.

9 MS-501 DOUBLE SUCTION FLOOR-MOUNTED PUMPS, CONNECTIONS WITH FLEXIBLE COUPLINGS
NO SCALE



NOTE:
NOT REQUIRED FOR AIR TERMINAL UNITS.

6 MS-501 SEISMIC BRACING EQUIPMENT
NO SCALE



NOTES:
PROVIDE RESTRAINING CLAMPS 8'–0" [2438] O.C.

3 MS-501 SUPPORTING PIPE ON ROOF
NO SCALE

100% CONSTRUCTION DOCUMENT SUBMITTAL

Revisions	Date

CONSULTANTS:

AXIOM ENGINEERS LEE & ASSOCIATES CONSULTING ENGINEERS
email: mail@axiomengineers.com
22 Lower Ragsdale Dr., Suite A Monterey, California 93940–5788
AE Project #: 2013013

REGISTERED PROFESSIONAL ENGINEER No. M24908 EXP. SEPT 30, 2015 MECHANICAL STATE OF CALIFORNIA

ARCHITECT/ENGINEERS:

hfp architects
745 distel drive, suite a
los altos, ca 94022
650·964·4514 fax: 650·967·5148

Drawing Title	Project Title	Project Number
DETAILS - NEW	VA CENTRAL CALIFORNIA HEALTH CARE SYSTEM NEW BUILDING 22A + CHILLER INFRASTRUCTURE	570-13-300
		Building Number: 22A
Approved: Project Director	Location: FRESNO, CA.	Drawing Number: 22A-MS-501
	Date: 5/08/2015; Checked: WME; Drawn: CADD	Dwg. 61 of 86

Office of Construction and Facilities Management

Department of Veterans Affairs