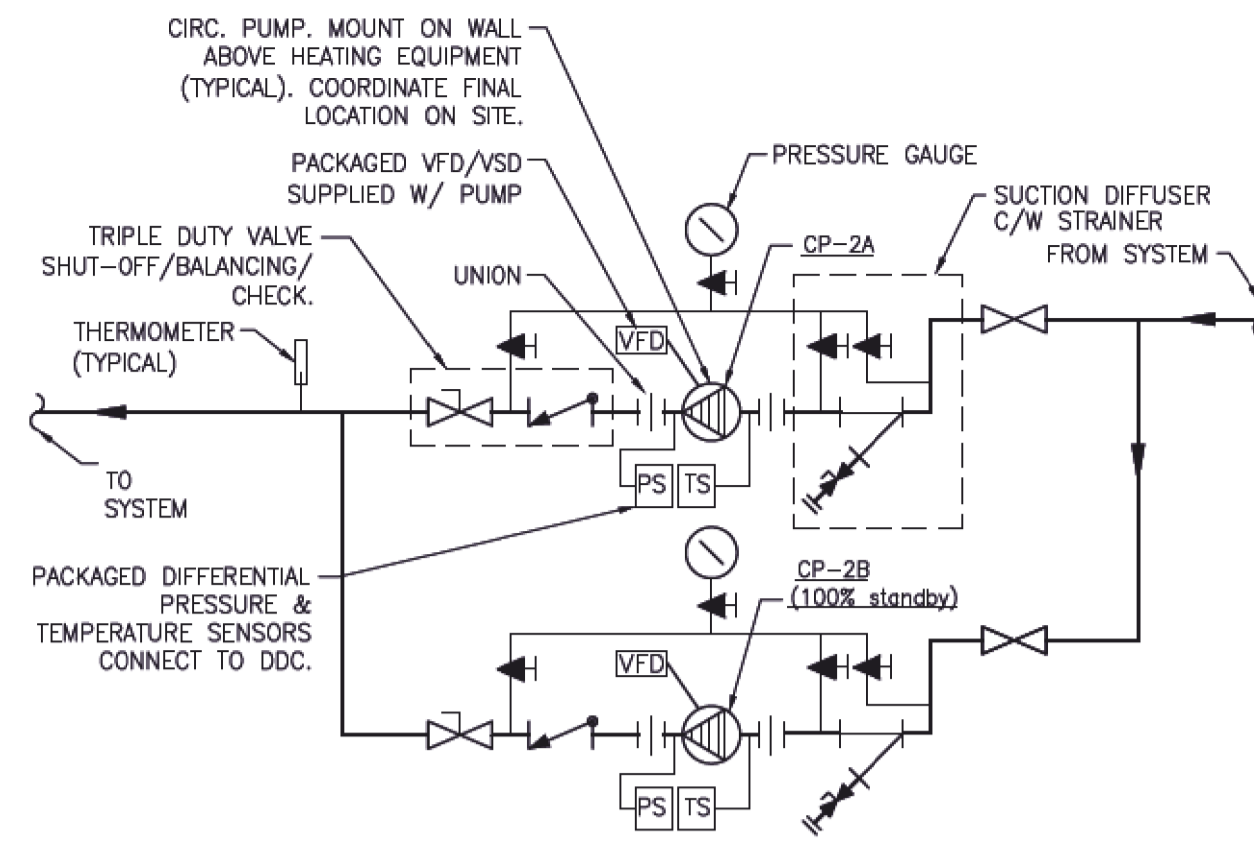
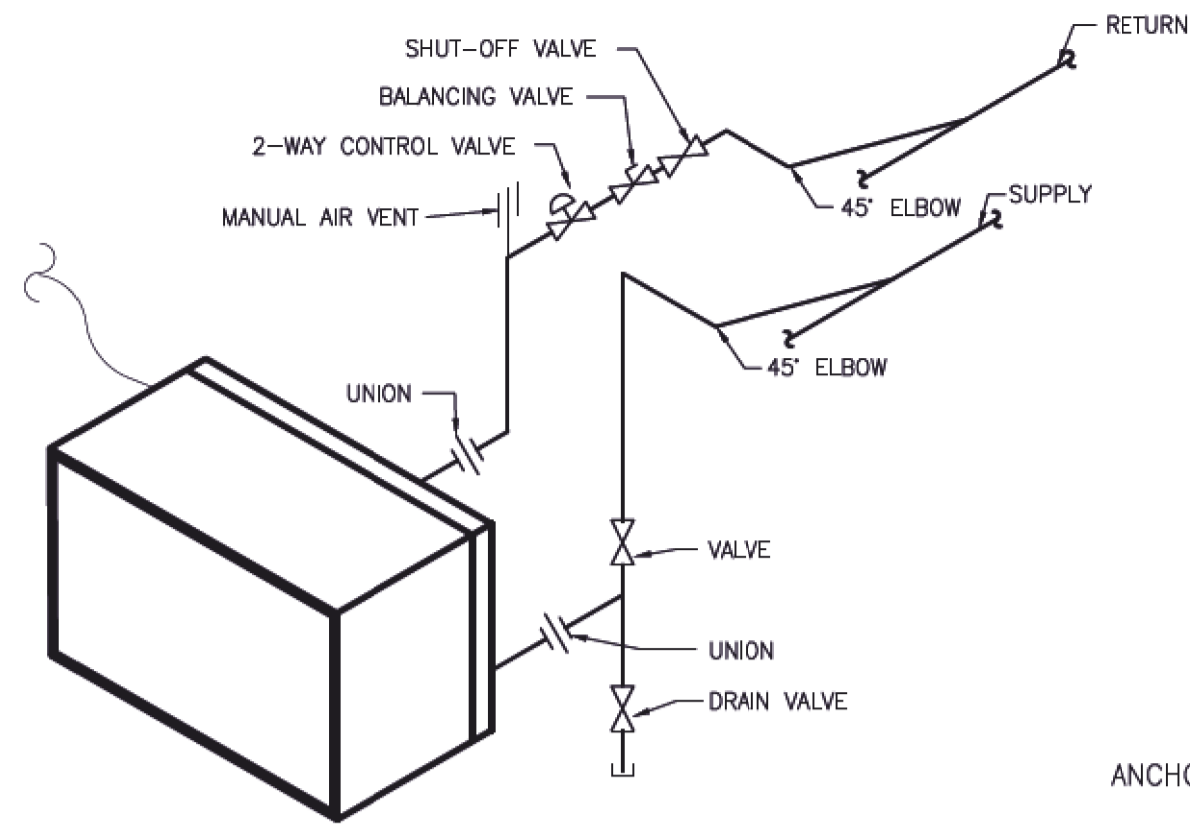


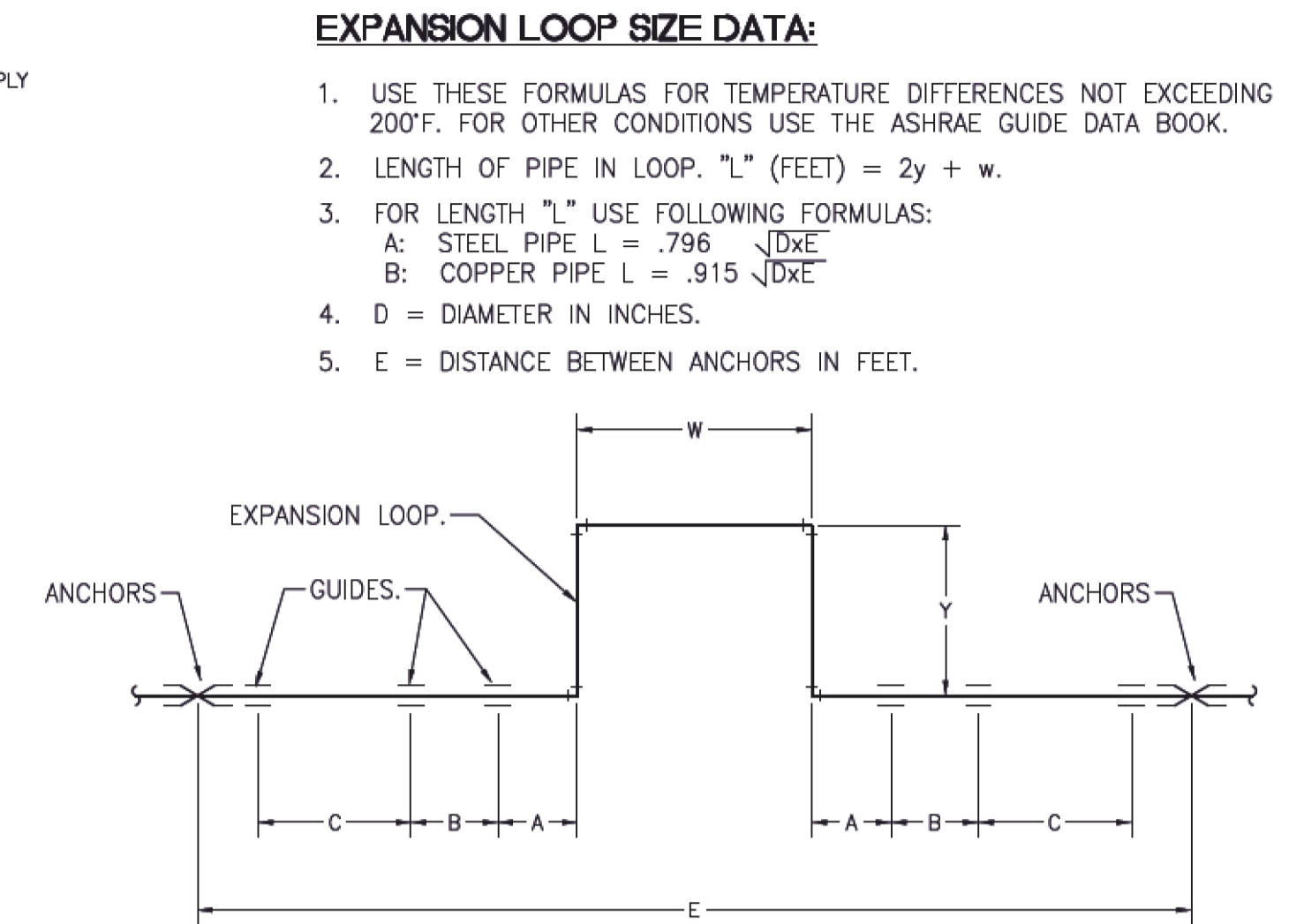
**DUPLEX CIRCULATION PUMPS (CP-1A and CP-1B) DETAIL**  
SCALE: N.T.S.



**DUPLEX CIRCULATION PUMPS (CP-2A/2B and CP-3A/3B) DETAIL**  
SCALE: N.T.S.

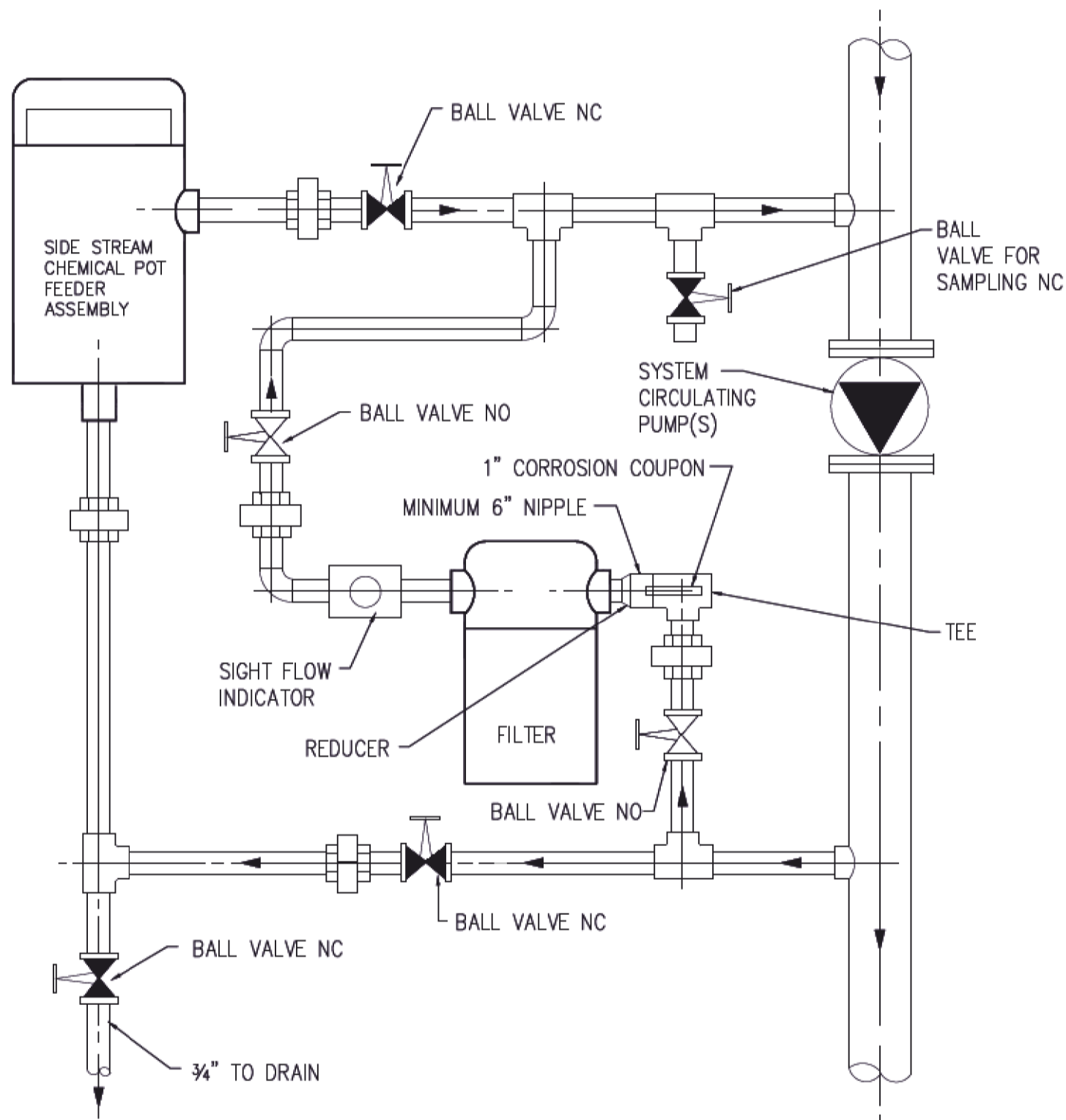


**TYPICAL UNIT HEATER DETAIL**  
SCALE: N.T.S.

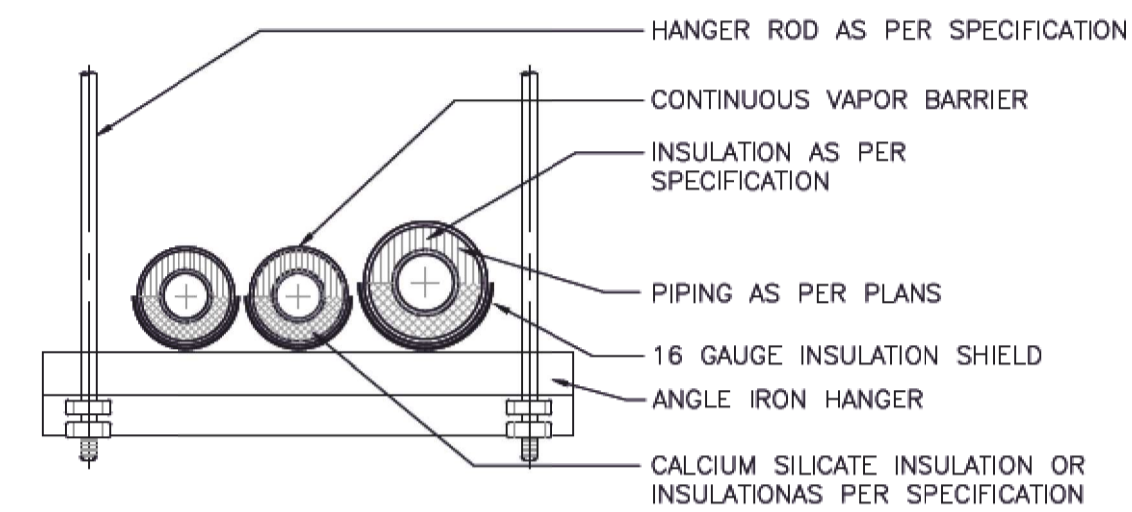


**EXPANSION LOOP SIZE DATA:**

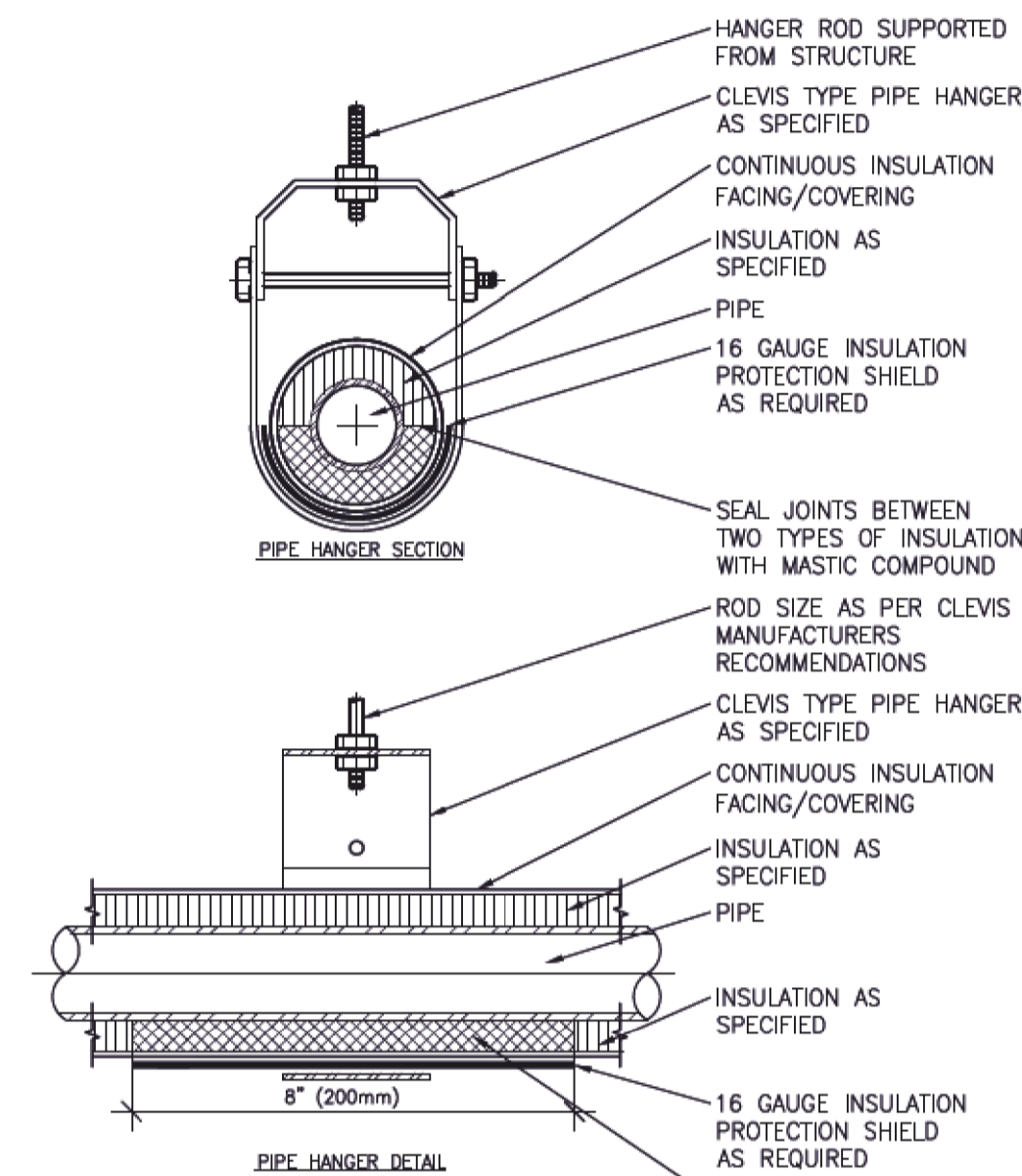
- USE THESE FORMULAS FOR TEMPERATURE DIFFERENCES NOT EXCEEDING 200°F. FOR OTHER CONDITIONS USE THE ASHRAE GUIDE DATA BOOK.
- LENGTH OF PIPE IN LOOP, "L" (FEET) =  $2y + w$ .
- FOR LENGTH "L" USE FOLLOWING FORMULAS:  
A: STEEL PIPE  $L = .796 \sqrt{DxE}$   
B: COPPER PIPE  $L = .915 \sqrt{DxE}$
- D = DIAMETER IN INCHES.
- E = DISTANCE BETWEEN ANCHORS IN FEET.



**CHEMICAL POT FEEDER and FILTER DETAIL**  
SCALE: N.T.S.



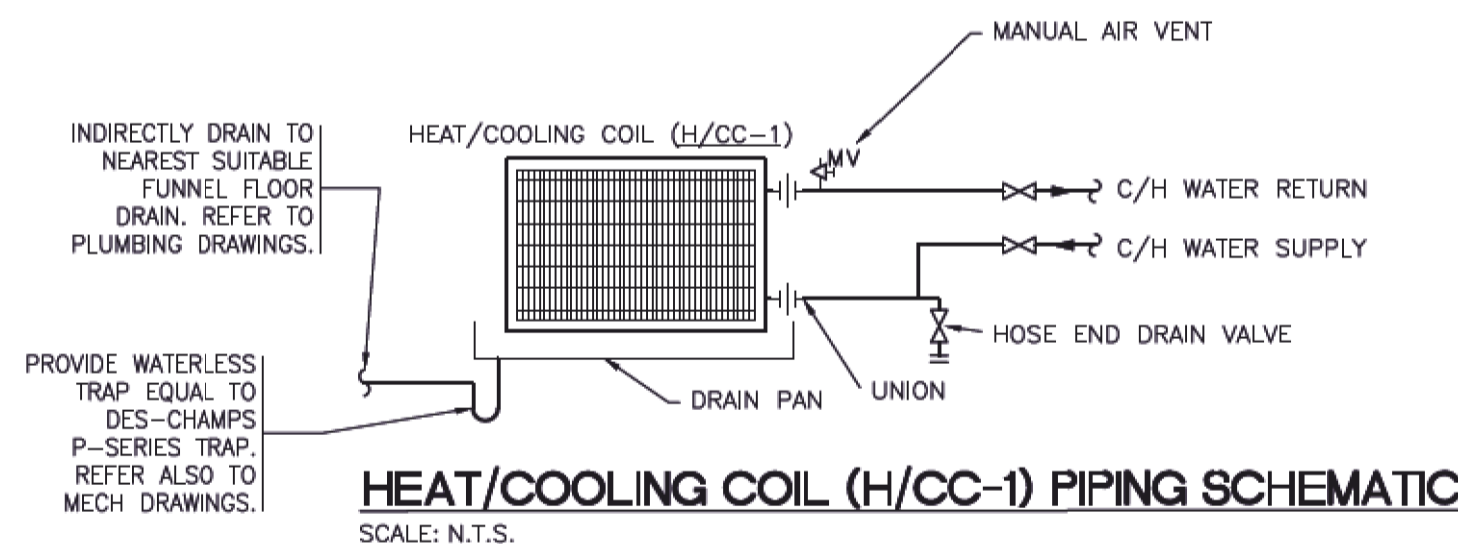
**TRAPEZE HANGER DETAIL**  
SCALE: N.T.S.



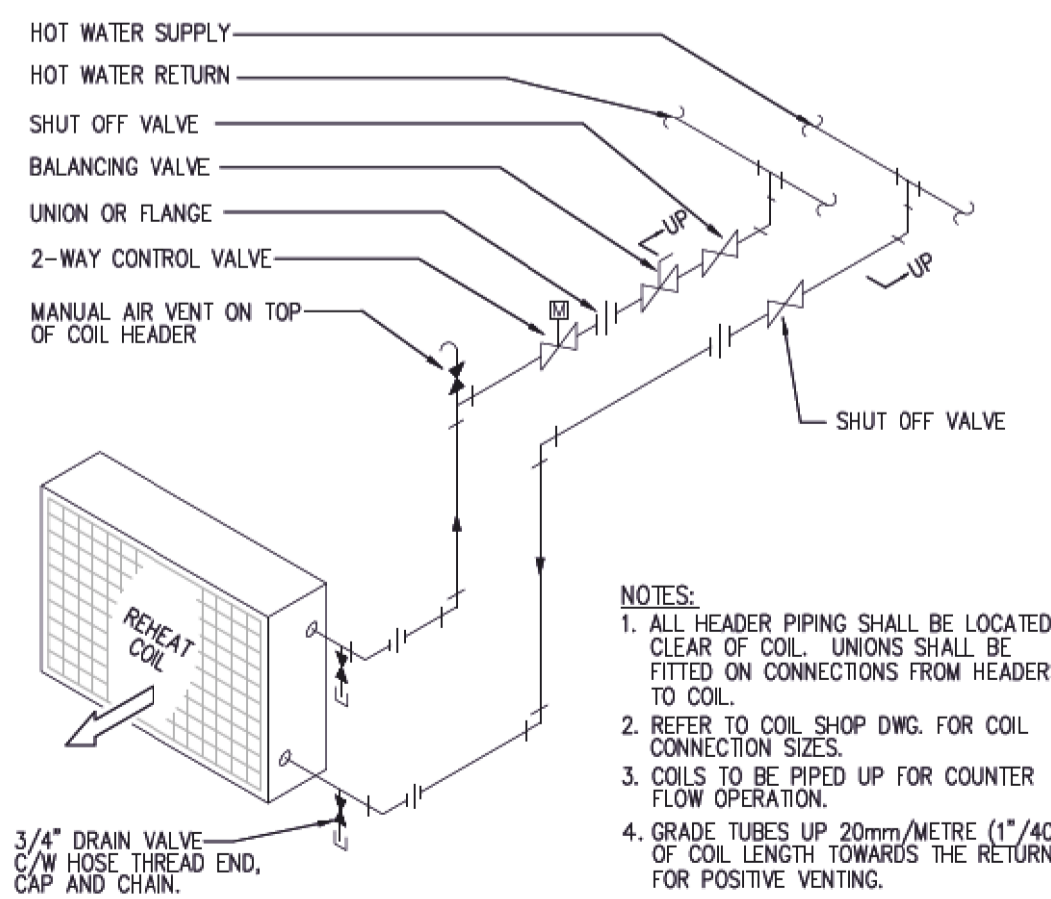
**INSULATED PIPE HANGER DETAIL**  
SCALE: N.T.S.

ACTUAL DIA. INCHES	PIPE SIZE (IN.) NOMINAL	MAXIMUM DISTANCE			MAX. SPACING BETWEEN GUIDES
		A	B	C	
1.3	1	0'-8"	2'	10'	
1.7	1 1/4	0'-8"	2'	10'	
1.9	1 1/2	0'-8"	3'	15'	
2.4	2	0'-8"	3'	15'	
2.9	2 1/2	0'-10"	4'	20'	
3.5	3	1'-0"	4'	20'	
4.5	4	1'-4"	5'	30'	
6.6	6	2'-0"	10'	35'	
8.6	8	2'-8"	10'	45'	
10.8	10	3'-4"	12'	60'	
12.8	12	4'-0"	12'	70'	
14.0	14	4'-8"	12'	70'	
16.0	16	5'-4"	15'	80'	
18.0	18	6'-0"	15'	85'	
20.0	20	6'-8"	20'	90'	
20.0	24	8'-0"	20'	105'	

**PIPE LOOP AND GUIDE DETAIL**  
SCALE: N.T.S.

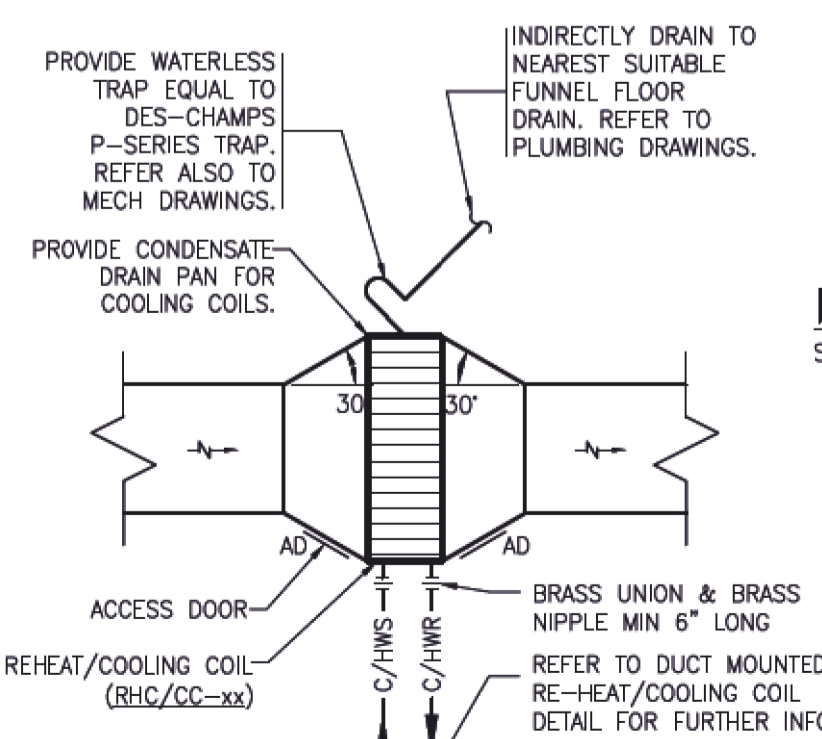


**HEAT/COOLING COIL (H/CC-1) PIPING SCHEMATIC**  
SCALE: N.T.S.

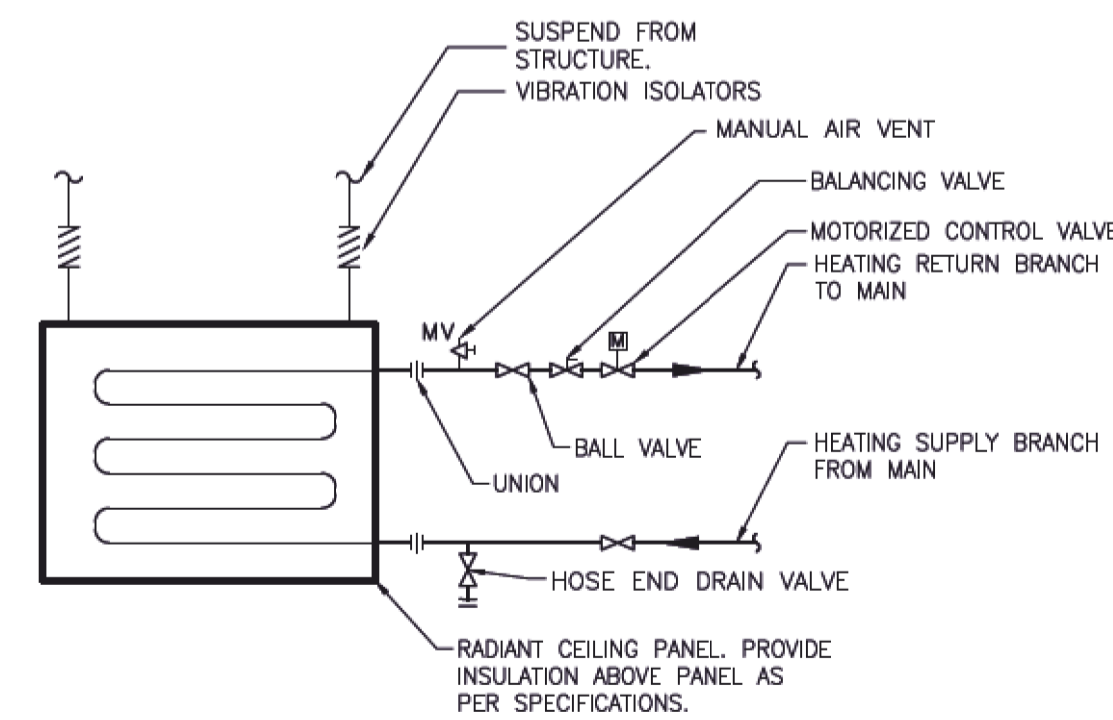


- NOTES:**
- ALL HEADER PIPING SHALL BE LOCATED CLEAR OF COIL. UNIONS SHALL BE FITTED ON CONNECTIONS FROM HEADERS TO COIL.
  - REFER TO COIL SHOP DWG. FOR COIL CONNECTION SIZES.
  - COILS TO BE PIPED UP FOR COUNTER FLOW OPERATION.
  - GRADE TUBES UP 20mm/METRE (1"/40") OF COIL LENGTH TOWARDS THE RETURN FOR POSITIVE VENTING.

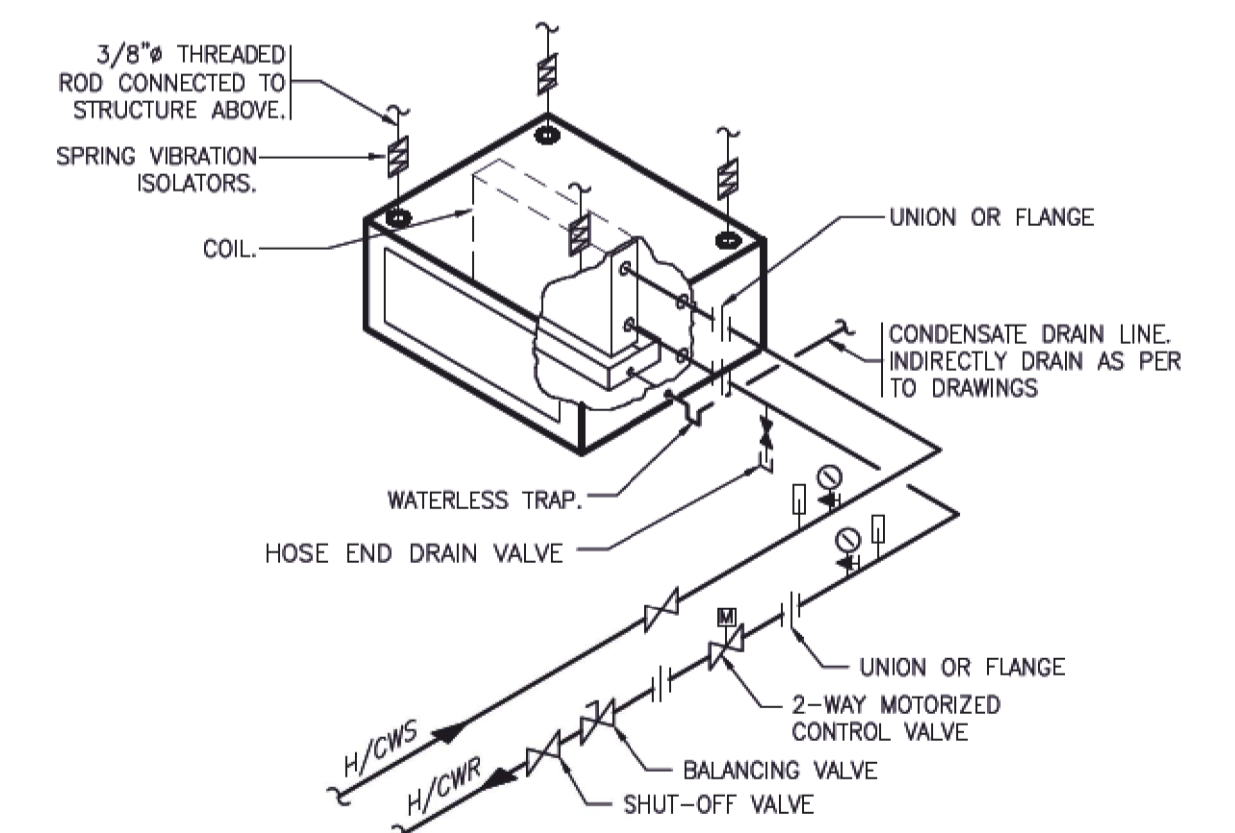
**DUCT MOUNTED HOT WATER RE-HEAT OR COOLING COIL AND 2-WAY CONTROL (TYPICAL)**  
SCALE: N.T.S.



**DUCT MOUNTED RE-HEAT OR COOLING COIL (TYPICAL)**  
SCALE: N.T.S.



**RADIANT HEATING CEILING PANEL DETAIL**  
SCALE: N.T.S.



**HORIZONTAL FANCOIL UNIT DETAIL**  
SCALE: N.T.S.

TOWER PROJECT NO.: 181335  
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**MECHANICAL HYDRONIC DETAILS & SCHEMATIC**  
Comm. No.: 1847  
Sheet: **M3.3**