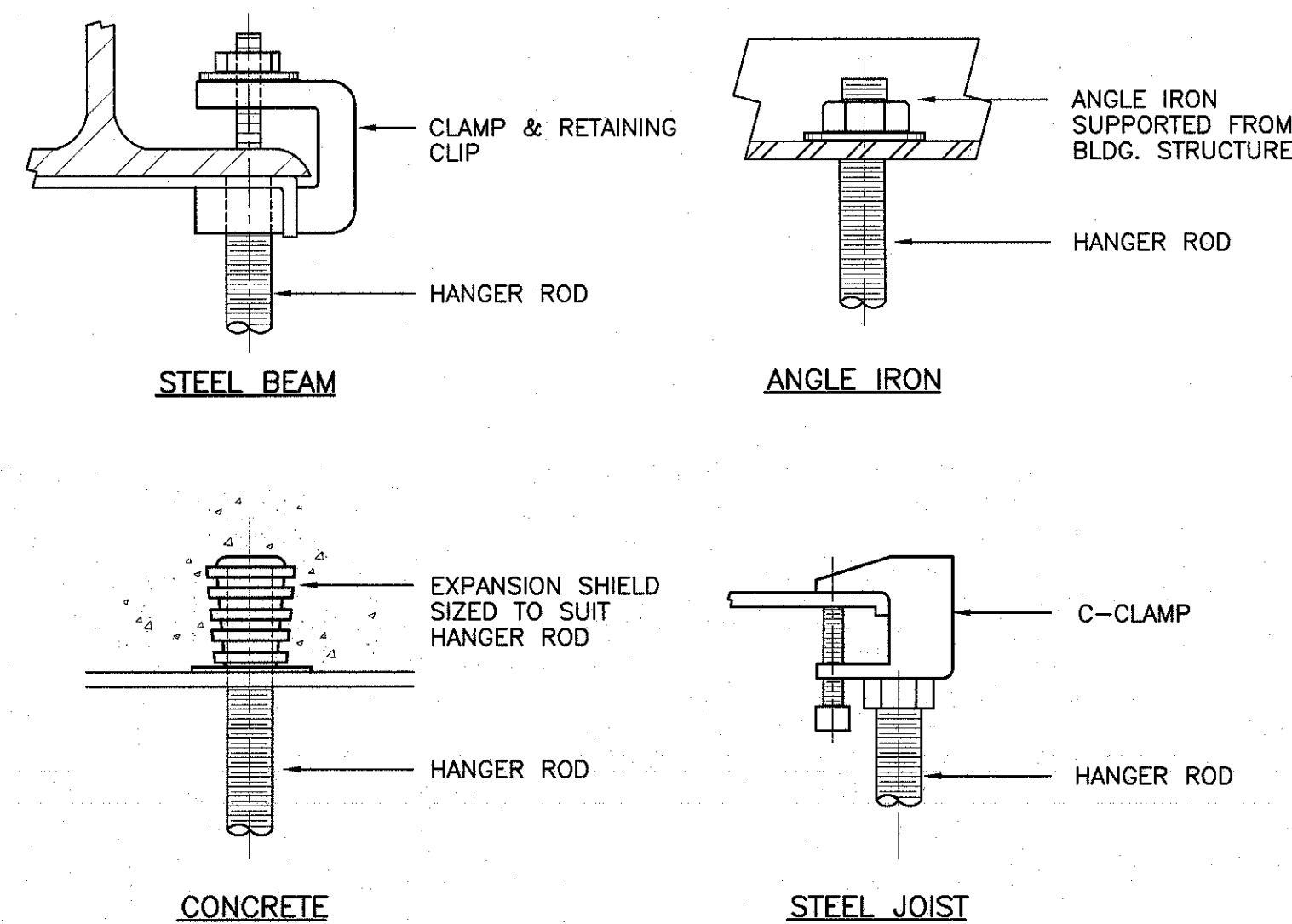
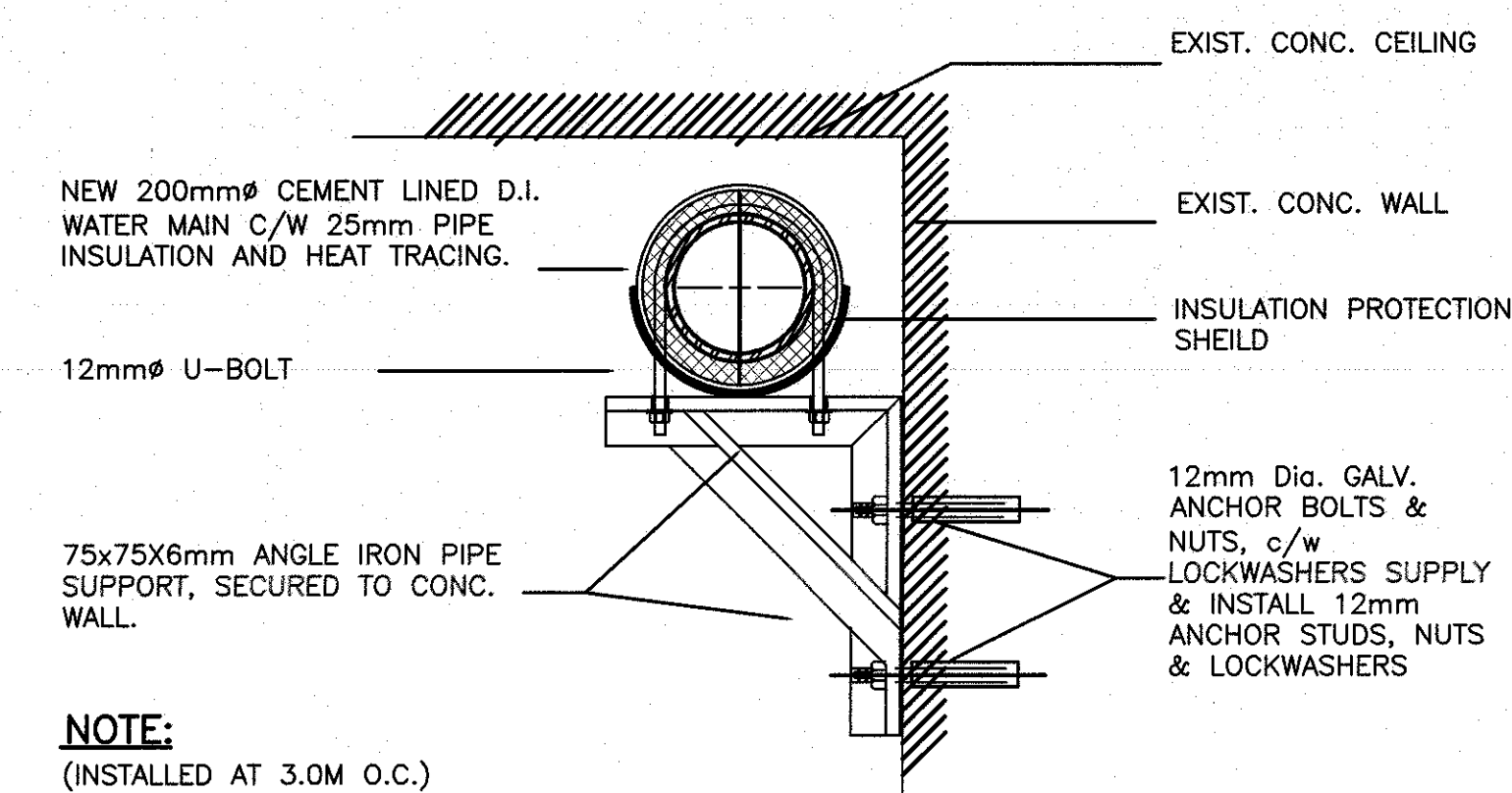


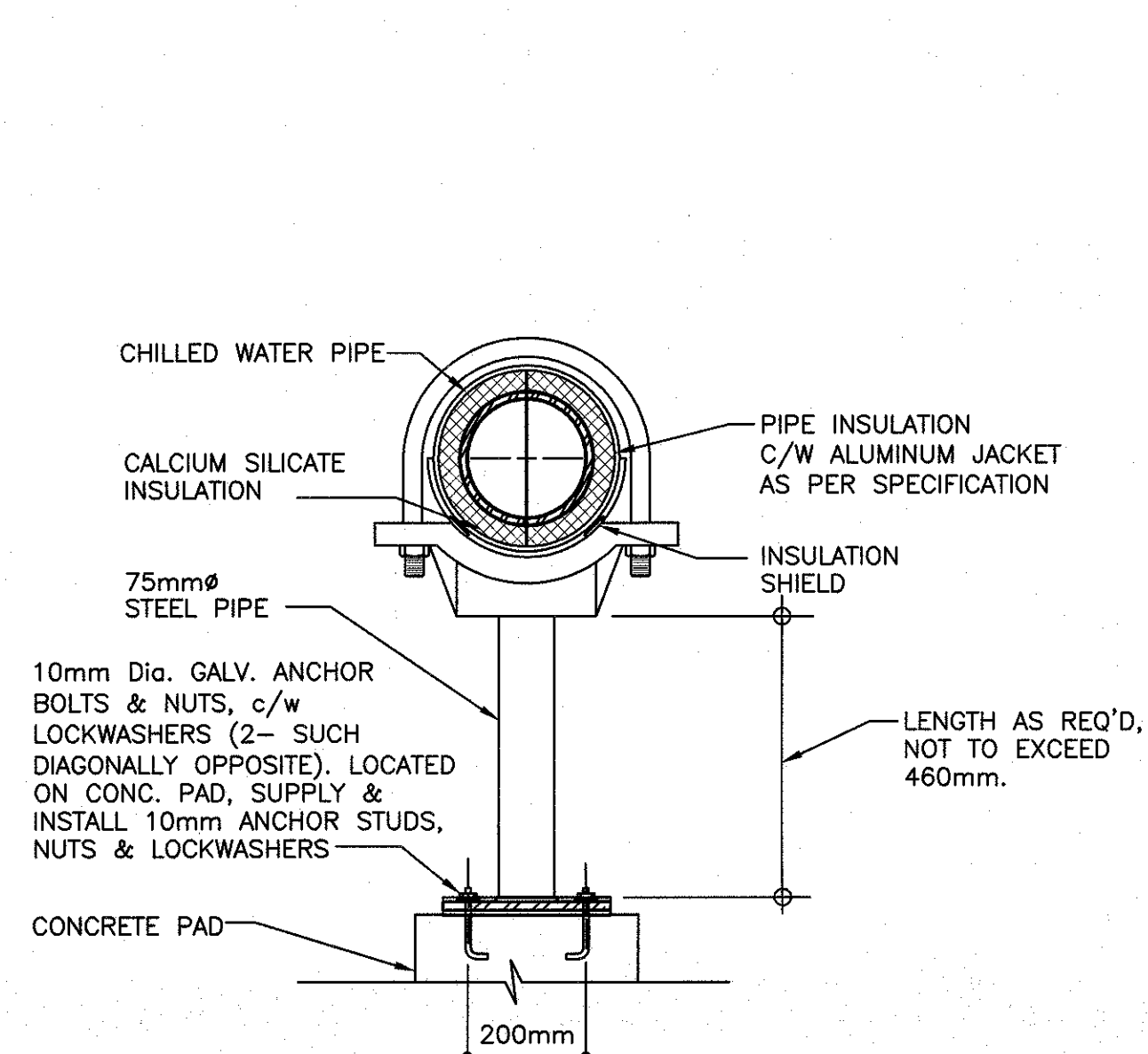
**PIPE SLEEVE THRU FIRE RATED WALL/FLOOR**  
SCALE: N.T.S.



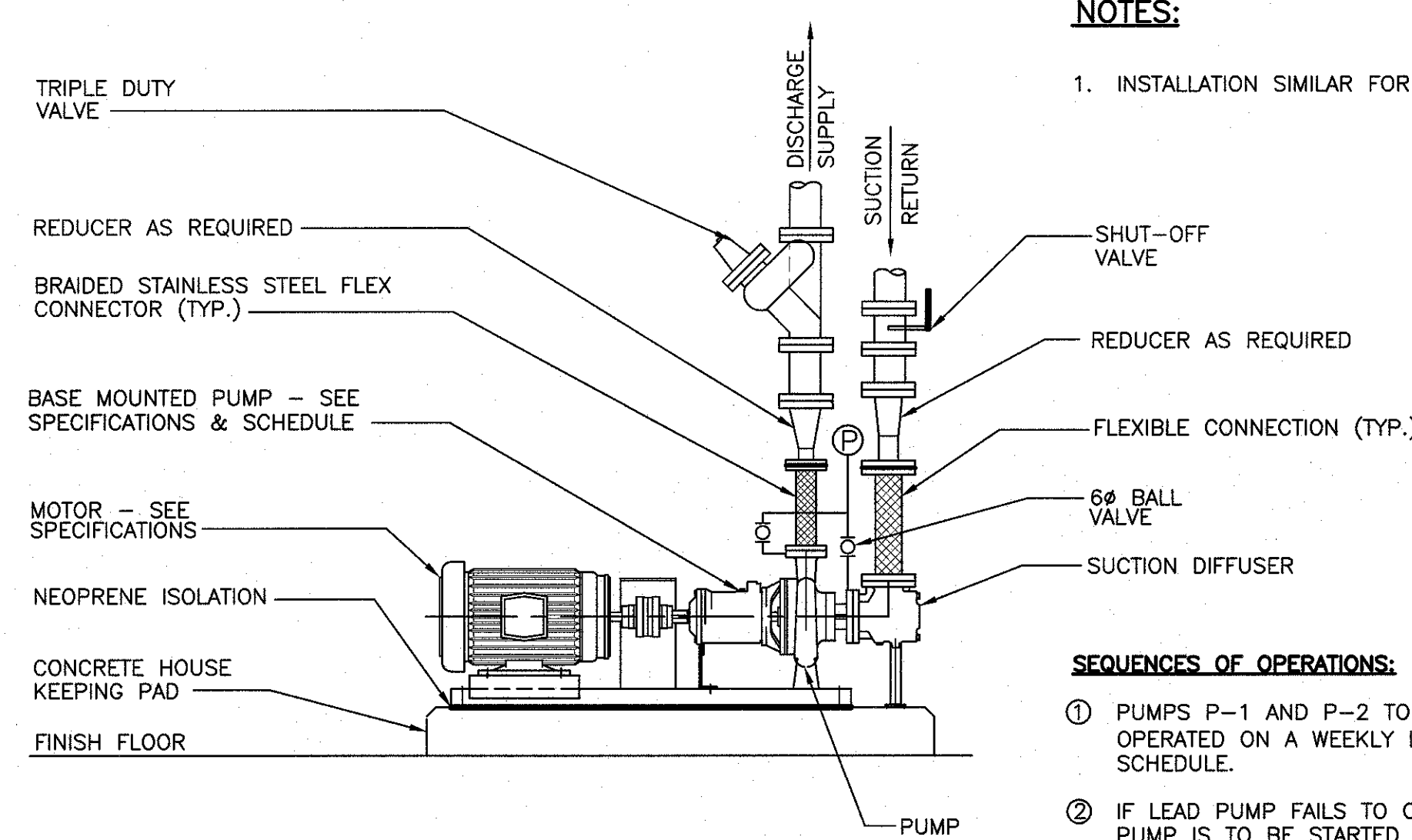
**DETAIL – TYPICAL HANGER ROD SUPPORTS**  
SCALE = N.T.S.



**DETAIL – WALL MOUNTED PIPE SUPPORT**  
SCALE: N.T.S.



**FLOOR MOUNTED PIPE SUPPORT DETAIL**  
N.T.S.

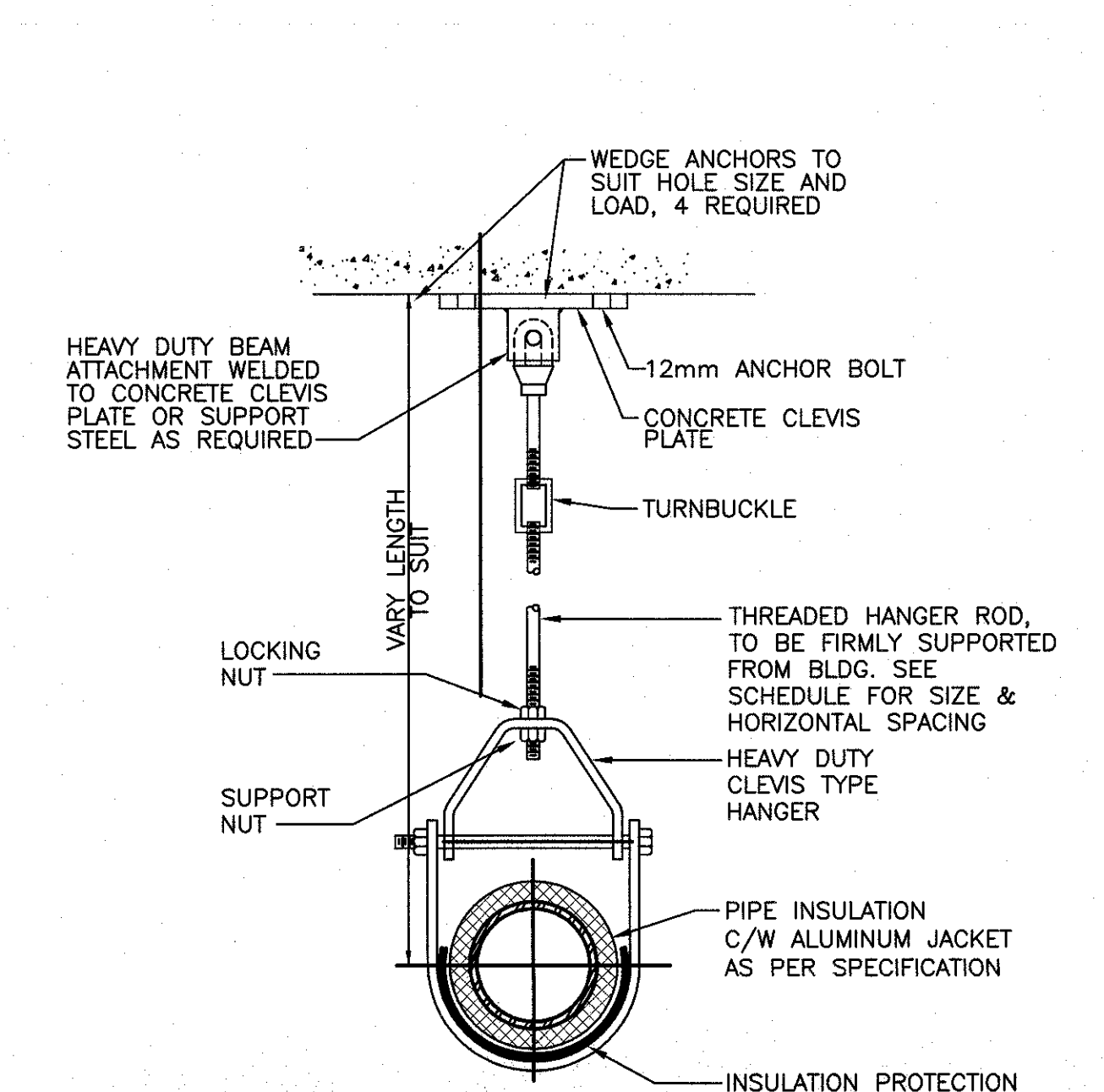


**TYPICAL BASE MOUNTED PUMP**  
SCALE: N.T.S.

PUMP SCHEDULE													
NO.	SERVICE	LOCATION	MANUFACTURER	MODEL NO.	FLUID	SIZE	HEAD (kPa)	FLOW RATE (L/s)	R.P.M.	MOTOR	ELECT.	SUPPLY	REMARKS
										CAPACITY (KW)	VOLTS	PHASE	
1	P-1	BOILER ROOM	ARMSTRONG	SERIES 4030	CHILLED WATER	6x4x10	179	31.55	1800	7.5	600	3	END SUCTION BASE MOUNTED PUMP C/W SUCTION DIFFUSER AND TRIPLE DUTY VALVE
2	P-2	BOILER ROOM	ARMSTRONG	SERIES 4030	CHILLED WATER	6x4x10	179	31.55	1800	7.5	600	3	END SUCTION BASE MOUNTED PUMP C/W SUCTION DIFFUSER AND TRIPLE DUTY VALVE

CHILLED WATER COIL SCHEDULE												
COOLING COIL												
TYPE AND SIZE	NO. OF ROWS	CIRCUITS	FACE AREA M <sup>2</sup>	FACE VEL. M/Min	ENT. AIR DB°C	WB°C	COOLING CAP. KW	ENT. WAT. °C	WATER FLOW L/S	AIR FRICT. Pa	WATER P.D. KPa	COMMENTS
CC-1	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410
CC-2	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410
CC-3	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410
CC-4	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410
CC-5	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410
CC-6	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410
CC-7	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410
CC-8	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED STEEL CASING, CERTIFICATION IN ACCORDANCE TO AHRI STANDARD 410

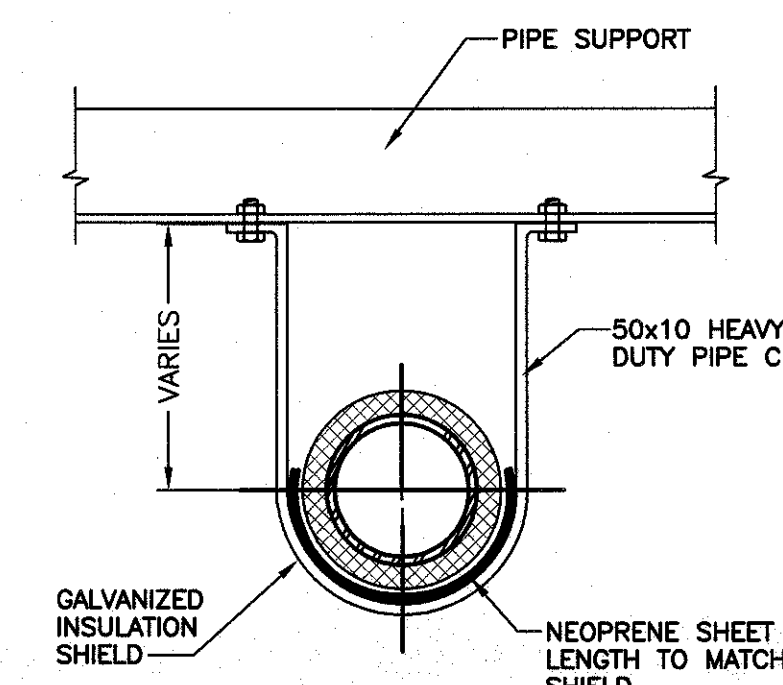
NOTE: CONTRACTOR TO REVIEW EXISTING DUCT SIZING AND CONFIGURATION PRIOR TO ORDERING COILS.



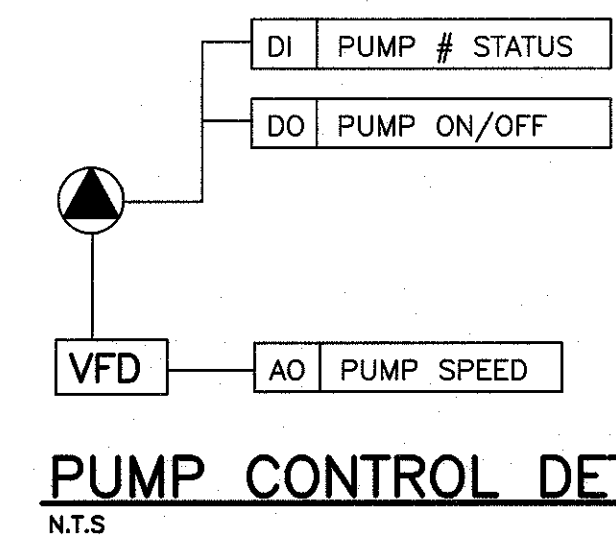
**TYP. – PIPE HANGER DETAIL**  
N.T.S.

HANGER SPACING & ROD SIZE SCHEDULE		
PIPE SIZE (mm)	HANGER SPACING (mm)	ROD SIZE (mm)
	STEEL PIPE WATER	
100 – 125	1830 – 1830	16
150 – 200	2138 – 2438	20
250 – 300	2138 – 2743	20

SCALE : 1:100



**DETAIL – PIPE SUPPORT**  
SCALE: N.T.S.

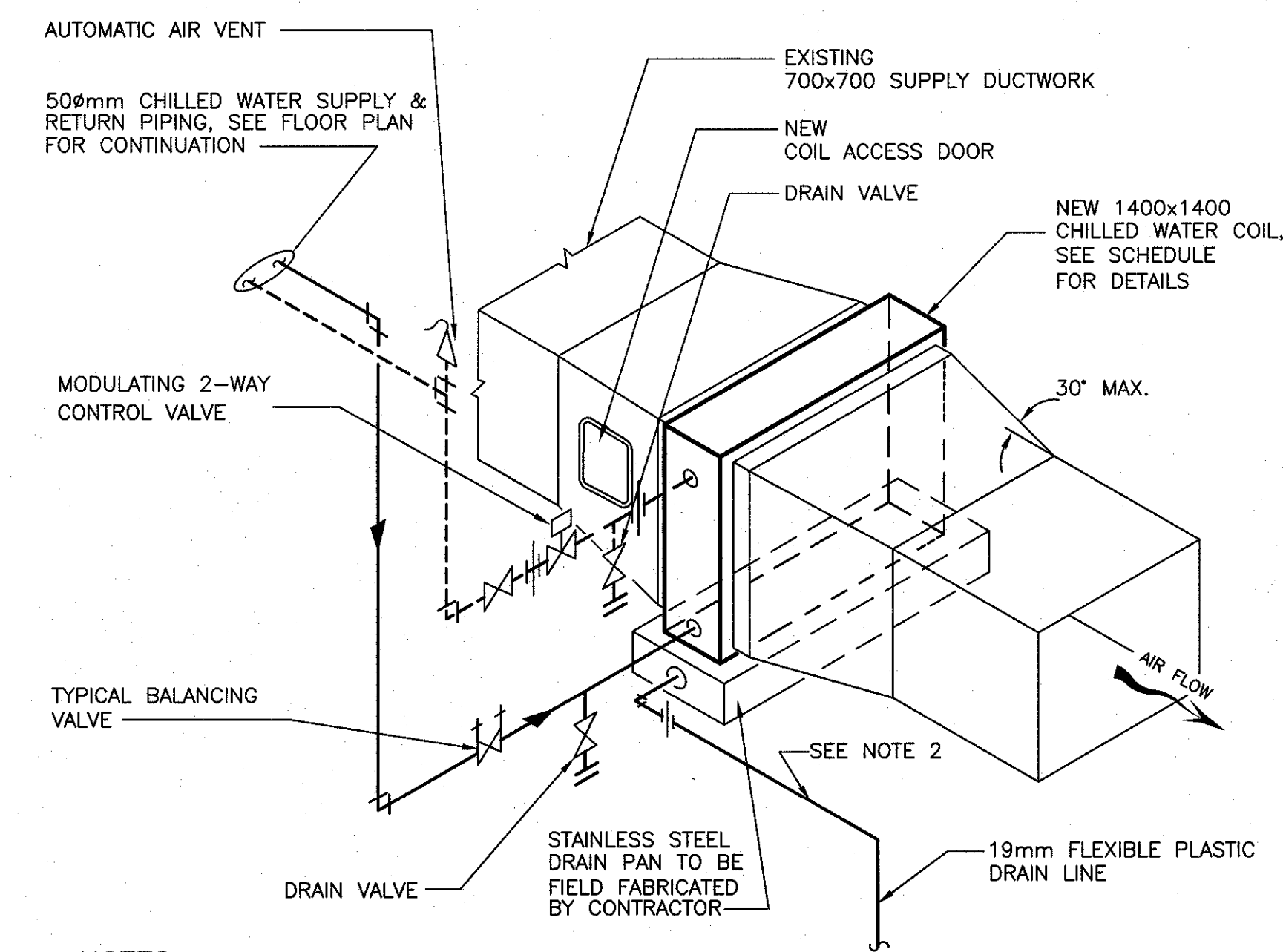


**SEQUENCES OF OPERATIONS:**

- PUMPS P-1 AND P-2 TO BE OPERATED ON A WEEKLY LEAD/LAG SCHEDULE.
- IF LEAD PUMP FAILS TO OPERATE LAG PUMP IS TO BE STARTED AND AN ALARM SENT TO O.W.S.
- LEAD PUMP VFD TO BE MODULATED TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT. PRESSURE SENSOR LOCATED IN MURRAY BLDG. PENTHOUSE.

**NOTES:**

- CONTROL TO BE TIED INTO EXISTING DDC SYSTEM AT BIO.
- OPERATOR WORKSTATION GRAPHIC DISPLAY TO BE UPDATED WITH NEW PUMP CONTROL.
- VFD TO MATCH EXISTING DRIVES SERVING, EXISTING PUMPS IN THE BOILER ROOM. CONTROLS CONTRACTOR TO SUPPLY AND INSTALL SPEED DRIVE.



**NOTES:**

- SUPPORTS FOR NEW COOLING COILS TO SMACNA STANDARDS.
- DRAIN FOR UNIT 1 TO BE RUN TO SERVICE SINK DRAIN FOR REMAINING UNITS TO TIE INTO RAIN WATER LEADERS AT THE PIPE CHASE. CONTRACTOR TO AVOID RUNNING DRAIN LINE ON THE FLOOR.

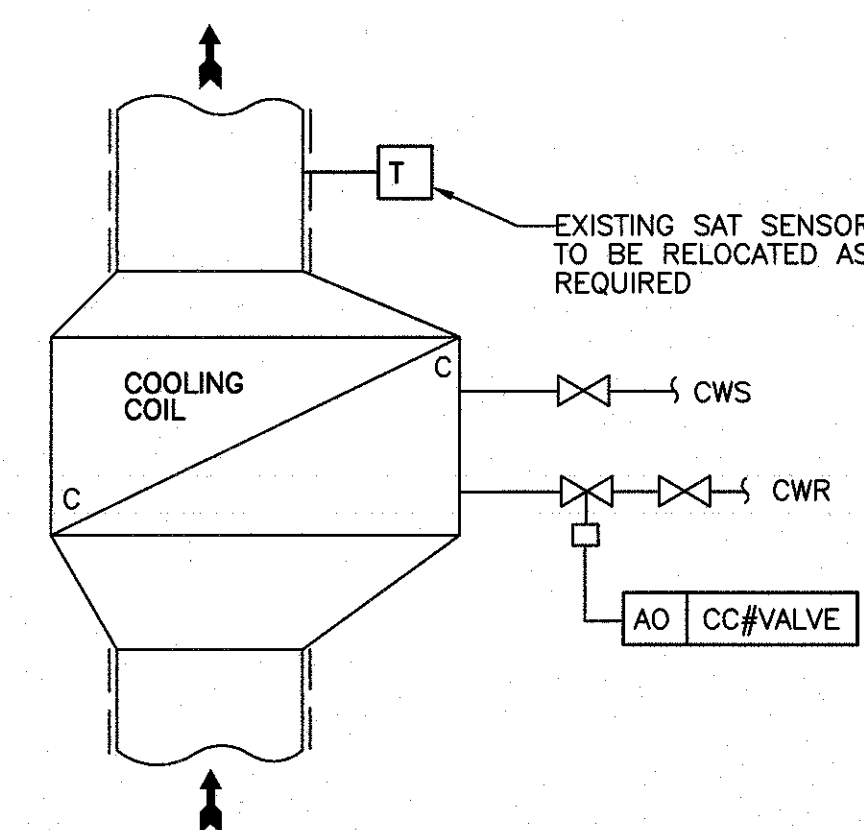
**TYPICAL CHILLED WATER COIL INSTALLATION AND PIPING DETAIL**  
N.T.S.

**NOTES:**

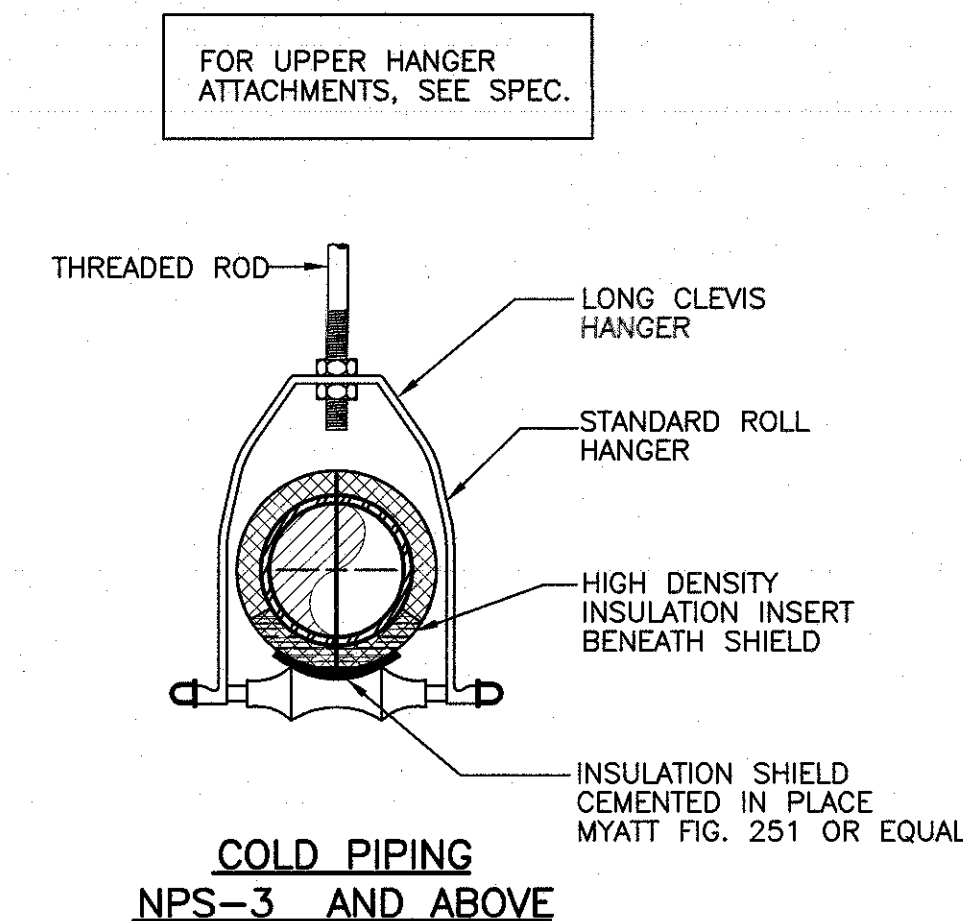
- CONTROL TO BE TIED INTO EXISTING DDC SYSTEM AT BIO.
- OPERATOR WORKSTATION GRAPHIC DISPLAY TO BE UPDATED WITH NEW COIL CONTROL.
- CONTROL VALVE SIZING; C<sub>v</sub>=28, MAX. FLOW RATE =25 L/s, VALVE SIZE = 38mm

**SEQUENCES OF OPERATIONS:**

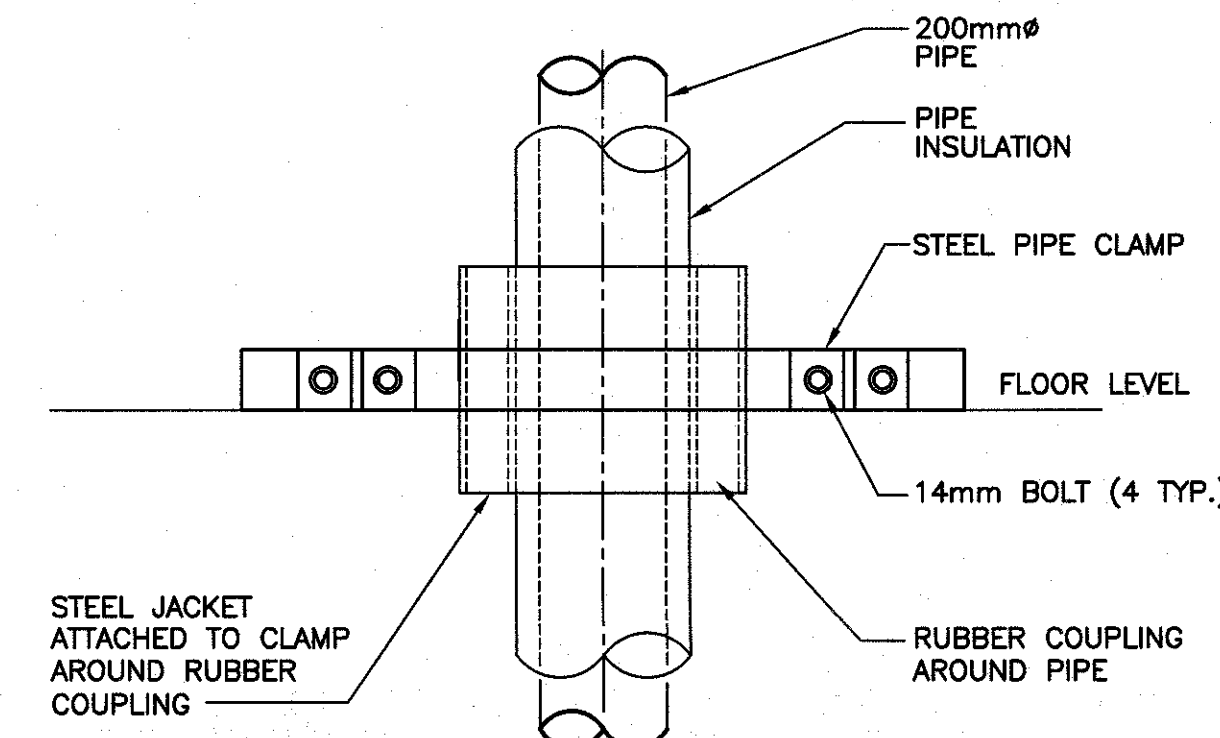
- CODING COIL CONTROL VALVE TO MAINTAIN SUPPLY AIR TEMPERATURE SET POINT. SAT SETPOINT TO BE DETERMINED BY AN OPERATOR ADJUSTABLE REST SCHEDULE.



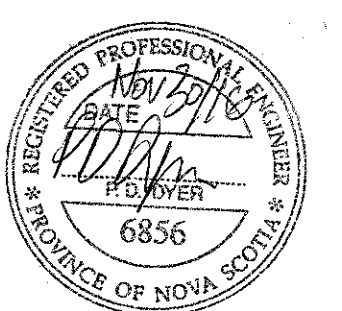
**TYPICAL COOLING COIL CONTROL DETAIL**  
N.T.S.



**SUPPORT HANGER PIPE ATTACHMENTS**  
N.T.S.



**DETAIL – FLOOR LEVEL PIPE SUPPORT**  
SCALE: N.T.S.



0	ISSUED FOR TENDER	DEC. 1 2016
revisions		date
project	BIO MURRAY BLDG CHILLED WATER UPGRADE DARTMOUTH NOVA SCOTIA	project
drawing		desain
designed F.A.M.	conqu	
date	2016-08	
drawn F.A.M.	desain	
date	2016-08	
approved	approuvé	
date		
Tender	Soumission	
PWSC Project Manager	Administrateur de projets TPSC	
project number	no. du projet	
	R.082149.001	
drawing no.	no. du dessin	
	H4 OF 4	