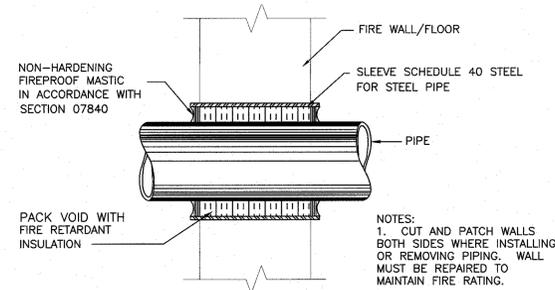
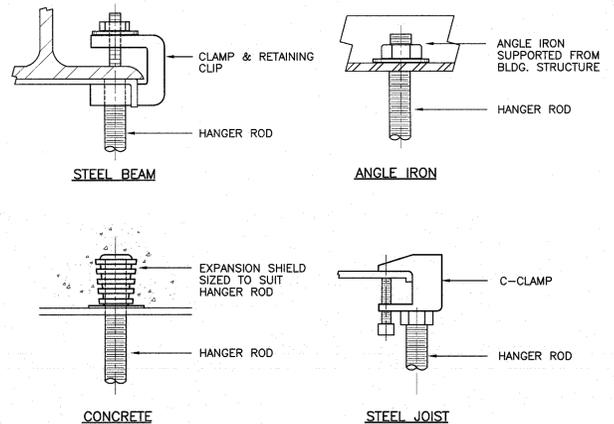


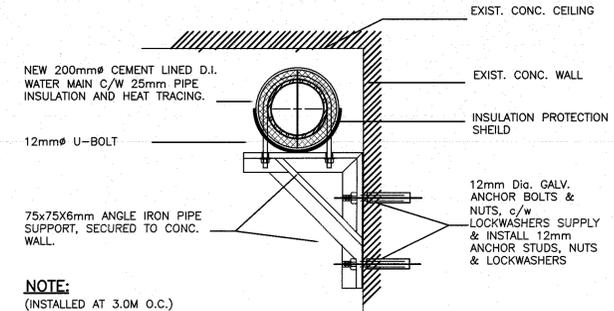
NOTES:
 1.) ALL HANGER STRAPS & HANGER RODS SHALL BE FIRMLY SUPPORTED FROM THE STRUCTURAL STEEL OR FLOOR ABOVE.



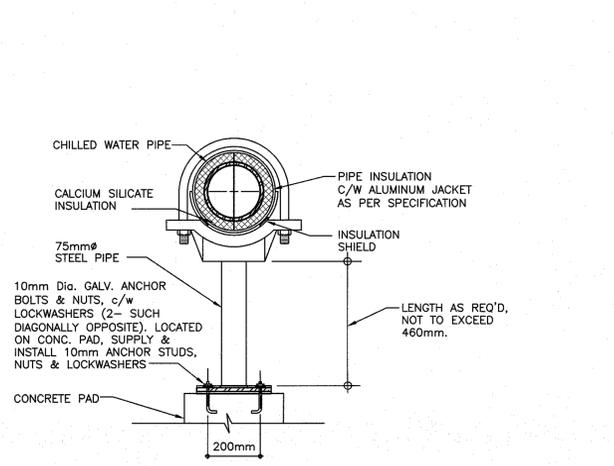
PIPE SLEEVE THRU FIRE RATED WALL/FLOOR
 SCALE: N.T.S.



DETAIL - TYPICAL HANGER ROD SUPPORTS
 SCALE = N.T.S.

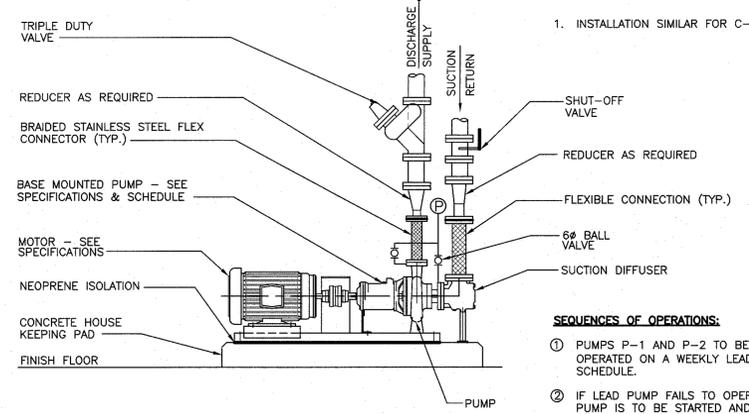


DETAIL - WALL MOUNTED PIPE SUPPORT
 SCALE: N.T.S.



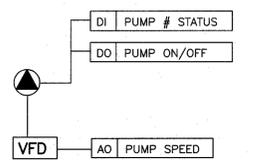
FLOOR MOUNTED PIPE SUPPORT DETAIL
 N.T.S.

NOTES:
 1. INSTALLATION SIMILAR FOR C-1 AND C-2.



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

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



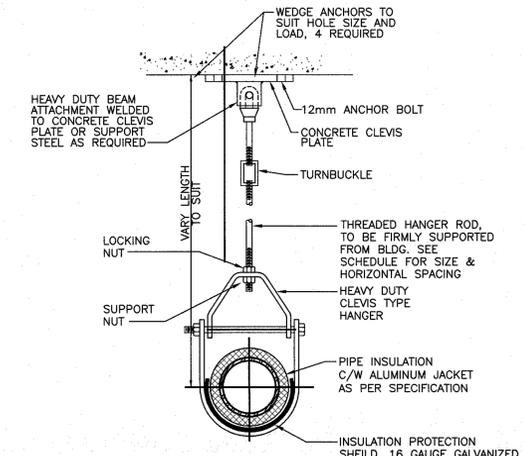
PUMP CONTROL DETAIL
 N.T.S.

NO.	SERVICE	LOCATION	MANUFACTURER	MODEL NO.	FLUID	SIZE	HEAD (kPa)	FLOW RATE (L/s)	R.P.M.	MOTOR CAPACITY (KW)	ELECT. SUPPLY VOLTS	PHASE	REMARKS
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

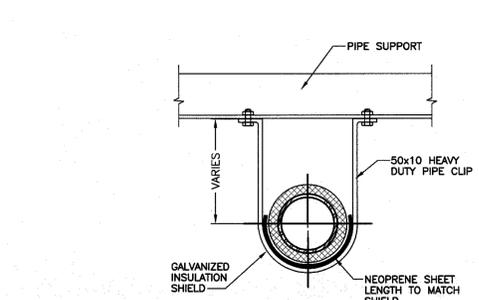
TYPE AND SIZE	NO. OF ROWS	CIRCUITS	COOLING COIL		ENT. AIR		COOLING CAP. KW	ENT. WAT. °C	WATER FLOW L/S	AIR FRICT. Pa	WATER P.D. KPa	COMMENTS
			FACE AREA M ²	FACE VEL. M/Min	DB°C	WB°C						
CC-1	3	1	1.4mx1.4m	116	26.7	19.0	60	7.2	2.5	47.3	5.1	C/W CORRUGATED ALUMINUM FINNS, MPT STEEL CONNECTIONS, GALVANIZED 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.

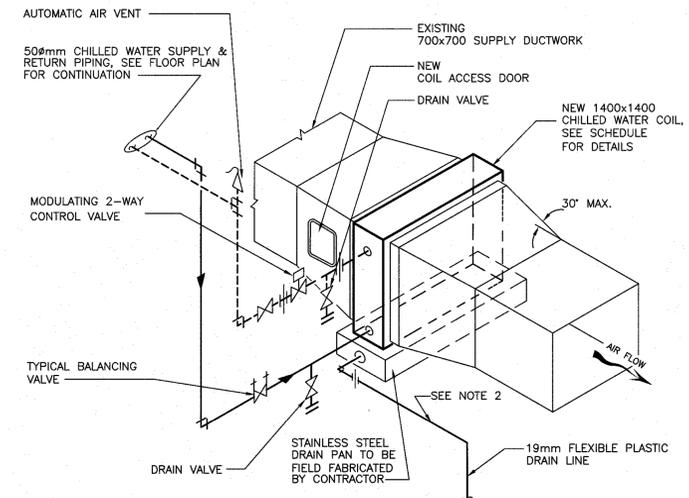
PIPE SIZE (mm)	HANGER SPACING (mm)		ROD SIZE (mm)
	STEEL PIPE	WATER	
100 - 125	1830 - 1830	16	
150 - 200	2138 - 2438	20	
250 - 300	2138 - 2743	20	



TYP. - PIPE HANGER DETAIL
 N.T.S.

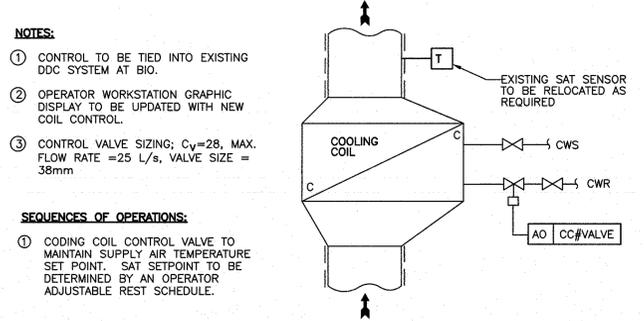


DETAIL - PIPE SUPPORT
 SCALE: N.T.S.



NOTES:
 1. SUPPORTS FOR NEW COOLING COILS TO SMACNA STANDARDS.
 2. 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.

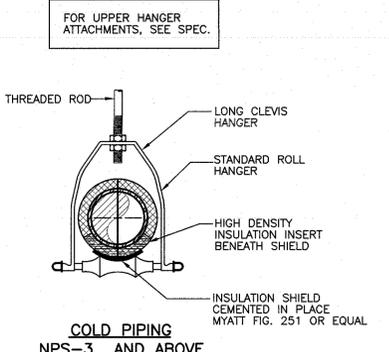
TYPICAL CHILLED WATER COIL INSTALLATION AND PIPING DETAIL
 N.T.S.



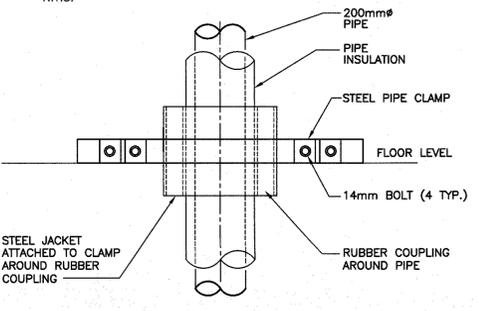
NOTES:
 1. CONTROL TO BE TIED INTO EXISTING DDC SYSTEM AT BIO.
 2. OPERATOR WORKSTATION GRAPHIC DISPLAY TO BE UPDATED WITH NEW COIL CONTROL.
 3. CONTROL VALVE SIZING; C_v=28, MAX. FLOW RATE = 25 L/s, VALVE SIZE = 38mm.

SEQUENCES OF OPERATIONS:
 1. COOLING 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.	conqpu
date	2016-08	
drawn	F.A.M.	desain
date	2016-08	
approved		approve
date		
Tender		Submission
PWSSC Project Manager	Administrateur de projets TPSSC	
project number		no. du projet
	R.082149.001	
drawing no.		no. du dessin
	H4 OF 4	