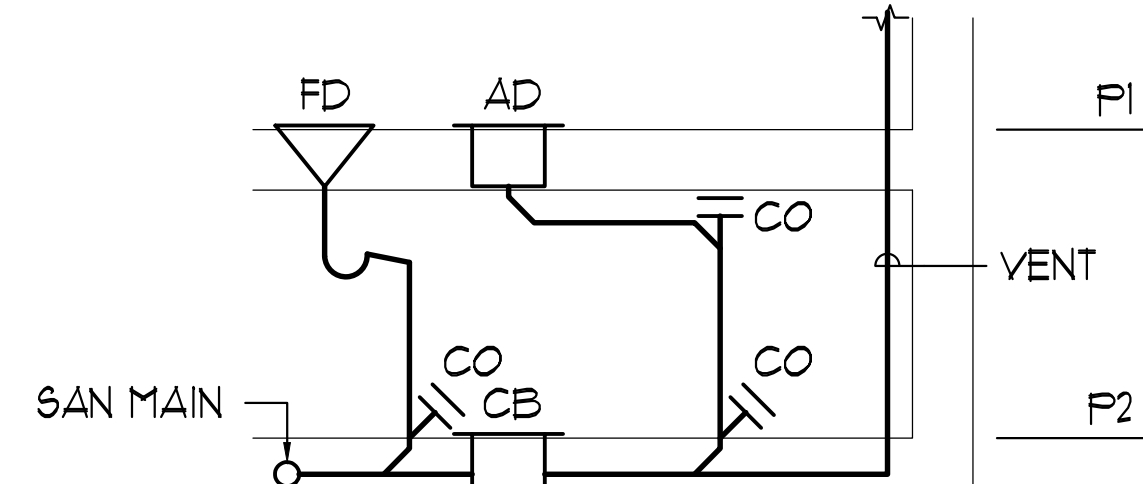
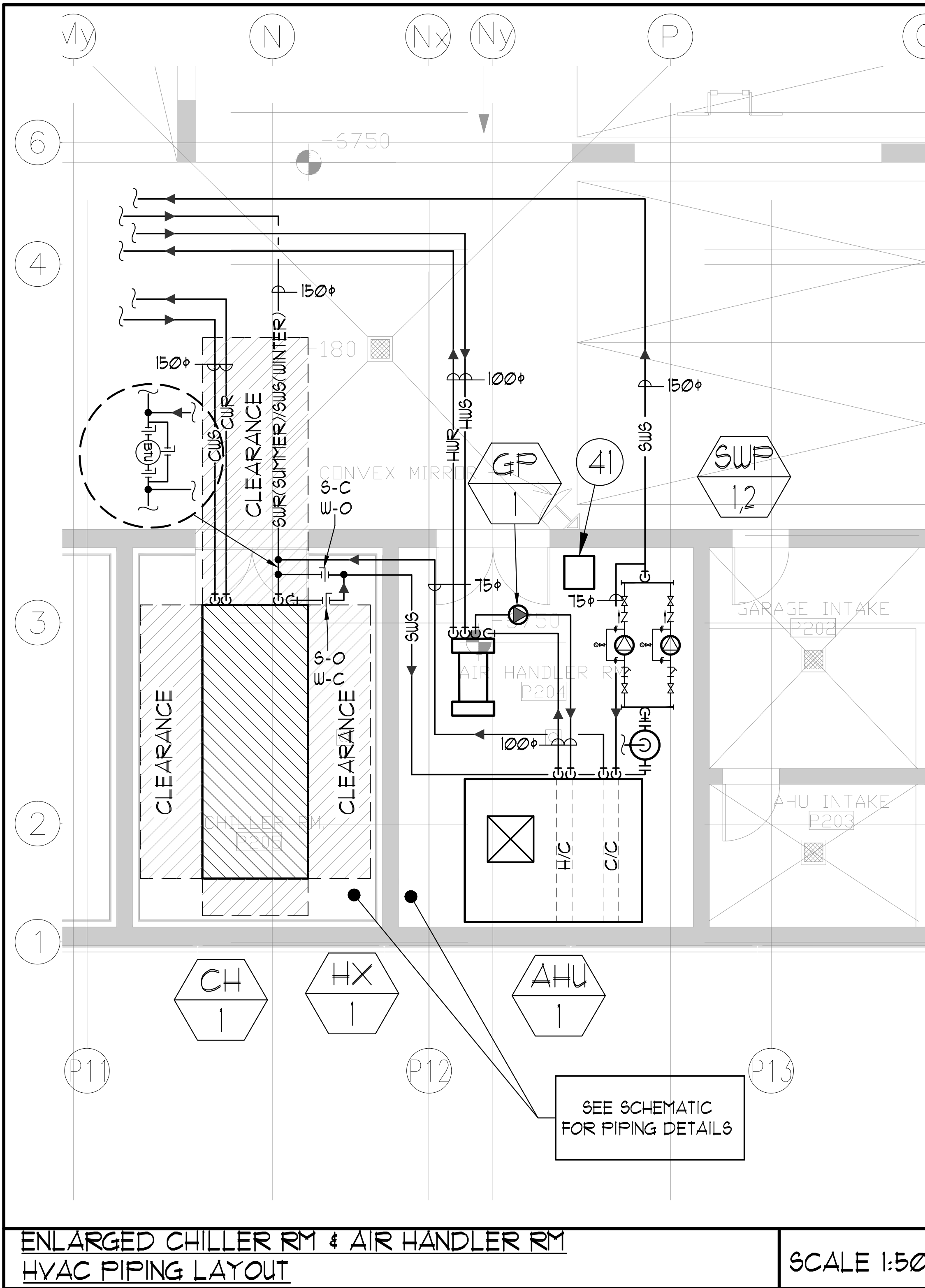


QTY.	DESCRIPTION
2	BARNES 2SE-554L SUBMERSIBLE PUMPS INSIDE A 300MMØ PUMP PIT, EACH C/W 1/2 HP, 575 VOLT, 3 PHASE, 60 CYCLE MOTOR WITH 30 FT POWER CORD, 2" N.P.T. DISCHARGE, HANDLES 2" DIAMETER SOLIDS AND DELIVERS 35 U.S. GPM. AT 22 FT TOTAL HEAD.
1	LDP 515 DUPLEX ELECTRICAL ALTERNATOR, STARTER AND CONTROL PANEL, WITH LOCKABLE DEAD-FRONT, 575 VOLT, 3 PHASE, 60 CYCLE C/W H.O.A. SELECTOR SWITCHES, RUN LIGHTS, THERMAL OVERLOAD HEATERS TO SUIT PUMP MOTORS WITH RESET BUTTON, AND CIRCUIT BREAKERS IN EEMAC 3R ENCLOSURE.
4	LS 20 MECHANICAL LEVEL SENSORS, 1 FOR PUMP "ON", 1 FOR PUMP "OFF", 1 FOR BOTH PUMPS "ON", AND 1 FOR ALARM LEVEL.
1	LHW 115 HIGH WATER ALARM PANEL, 115 VOLT, 1 PHASE WITH PILOT LIGHT, ON-OFF-TEST SWITCH, BUZZER AND EXTRA RELAY FOR REMOTE SIGNALING, IN EEMAC 1 ENCLOSURE.
1	TRIM BAR CURB FRAME C/W CHECKERED COVER PLATE IN 2 SECTIONS, FOR INSPECTION AND ACCESS.

QTY.	DESCRIPTION
2	BARNES SGVF-2052L SUBMERSIBLE GRINDER PUMPS INSIDE A 300MM ϕ SUMP PIT, EACH C/W 2 HP, 515 VOLT, 3 PHASE, 60 CYCLE MOTOR WITH 30 FT POWER CORD, 125" N.P.T. DISCHARGE, AND DELIVERS 50 U.S. G.P.M. AT 30 FT TOTAL HEAD.
1	LDP 515 DUPLEX ELECTRICAL ALTERNATOR, STARTER AND CONTROL PANEL, WITH LOCKABLE DEAD-FRONT, 515 VOLT, 3 PHASE, 60 CYCLE C/W H.O.A. SELECTOR SWITCHES, RUN LIGHTS, THERMAL OVERLOAD HEATERS TO SUIT PUMP MOTORS WITH RESET BUTTON, AND CIRCUIT BREAKERS IN EEMAC 3R ENCLOSURE.
4	LS 20 MECHANICAL LEVEL SENSORS, 1 FOR PUMP "ON", 1 FOR PUMP "OFF", 1 FOR BOTH PUMPS "ON", AND 1 FOR ALARM LEVEL.
1	LHW 115 HIGH WATER ALARM PANEL, 115 VOLT, 1 PHASE WITH PILOT LIGHT, ON-OFF-TEST SWITCH, BUZZER AND EXTRA RELAY FOR REMOTE SIGNALING, IN EEMAC 1 ENCLOSURE.
1	TRIM BAR CURB FRAME C/W CHECKERED COVER PLATE IN 2 SECTIONS, FOR INSPECTION AND ACCESS.



NOTE:
PRIME AND VENT TRAP OF
FD/CB PER OBC PART 7
SECTION 15 (TYPICAL).

- (31) F/A DUCT SHALL BE C/W 25MM EXTERNAL INSULATION & JACKET IN ANY UNHEATED AREAS.
- (32) 750x500 EXHAUST DUCT BELOW RAMP AND ENTER RESIDENTIAL STORAGE ROOM AT HIGH LEVEL IN F-1 FOR CONTINUATION SEE DRAWING M-4.
- (33) WIRING SHALL BE CONNECTED TO UH-A AT HIGH LEVEL.
- (34) WIRING SHALL BE CONNECTED TO EF-10 LOCATED IN 2/F (LOADING).
- (35) 150ø CWS & R FROM ABOVE.
- (36) SEE ENLARGED CHILLER ROOM & AIR HANDLER ROOM FOR PIPING CONNECTION ON THIS DRAWING.
- (37) 100ø HWS & R UP FROM ABOVE.
- (38) 150ø SWS (WINTER) / SUR (SUMMER) FROM ABOVE.
- (39) 150ø SWS UP.
- (40) 1,750x1,000 FRESH AIR DUCT FROM ABOVE. DUCT SHALL BE INSULATED WITH 25MM EXTERNAL INSULATION.
- (41) CHEMICAL TREATMENT FOR CLOSET RE-CIRCULATING SYSTEM. SEE SCHEMATIC FOR DETAILS.
- (42) 1,800x500 FRESH AIR INTAKE DUCT FROM AHU TRANSITION TO 1,000x1,750 C/W INSULATION & JACKET.
- (43) DUCT 1,000x1,750
- (44) 75ø PUMPED PIPE FROM BELOW C/W HEAT TRACING. HEAT TRACING DONE BY DIV. 16. INSULATION AND JACKET DONE BY THIS CONTRACTOR.

- 1) ALL PIPEFES 50 MM AND LARGER SHALL BE ISOLATED USING 12 MM RUBBER PADS IN THE SADDLES OF CLEVIS HANGERS.
- 2) ALL MAIN VERTICAL PIPE RISERS REQUIRE VIBRATION ISOLATION. NONE OF THESE PIPEFES MAY TOUCH THE SLAB OR ANY PENETRATED PARTITION. ALL RISER ANCHORS MUST INCLUDE 1-INCH THICK NBN ISOLATION PADS, TO BE HELD IN PLACE WITH HORIZONTAL STEEL PLATES ATTACHED TO BRACKETS THAT ARE IN TURN WELDED TO THE RISER. BOLTING THROUGH THE PADS IS NOT ACCEPTABLE.
- 3) FOR THE MAIN RISERS, ANY PIPE GUIDES USED IN CONNECTION WITH EXPANSION JOINTS OR LOOPS MUST BE ISOLATED WITH RUBBER PADS AND SLEEVES WHERE FASTENED TO THE BUILDING STRUCTURE.
- 4) IN-LINE AND CABINET FANS SHOULD BE ISOLATED WITH SPRINGS OR NEOPRENE AND RUBBER PADS. SPECIAL FANS SHOULD BE ISOLATED USING NEOPRENE MOUNTS, PADS OR GROMMETS. ALL FANS SUSPENDED ON PI-LEVEL SHALL BE WELL ISOLATED USING ISOLATORS INCORPORATING BOTH A SPRING ELEMENT AND A SECONDARY NEOPRENE-IN-SHEAR ELEMENT IN SERIES. DUCTWORK SHALL BE DE-COUPLED FROM FAN BY FLEXIBLE CONNECTORS.
- 5) ALL RUBBER PADS OR MOUNTS USED TO ISOLATE PIPEFES SHOULD BE 45 DUROMETER OR LOWER.
- 6) ACOUSTICS PANELS ARE REQUIRED TO BE OF NONCOMBUSTIBLE MATERIAL OR MEET FLAME-SPREAD RATINGS TESTED IN ACCORDANCE WITH CANULC-9102 "TESTING FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS AND ASSEMBLIES."

- 1) CONTRACTOR SHALL CO-ORDINATE ARCHITECTURAL, STRUCTURAL, LIGHTING, HVAC, SPRINKLER DRAWINGS TO AVOID AREAS OF CONFLICT AND TO MAINTAIN CEILING HEIGHTS.
- 2) CONTRACTOR SHALL REPORT ALL DISCREPANCIES AND AREAS OF CONFLICT TO THE ENGINEER PRIOR TO BEGINNING WORK.
- 3) MINIMUM HEAD ROOM IS 2100 mm ABOVE FINISH FLOOR LEVEL.
- 4) WHERE THERE IS A DROPPED CEILING, GAS PIPING SHALL BE HUNG BELOW AND TIGHT TO CEILING.
- 5) ALL EQUIPMENT TO BE INSTALLED PER SPECIFICATION AND MANUFACTURER'S INSTALLATION MANUAL. PROVIDE ACCESS PANEL FOR CONCEALED EQUIPMENT VALVES, ETC.
- 6) ALLOW 3M SEPARATION BETWEEN THE CONNECTION OF THE MAIN SANITARY RISER AND ITS AUXILIARY RISER.
- 7) ALL SANITARY PIPE OUTSIDE OF HEATED CEILING SPACE SHALL BE INSULATED, CANVASSED AND PAINTED.
- 8) ALL VENTS SHALL COMPLY WITH O.B.C. AND PLUMBING CODE.
- 9) FOR STORAGE ROOM VENTILATION SYSTEM, DIV.16 TO PROVIDE CONDUIT, WIRING AND SWITCH TO START / STOP FAN & DAMPER. FAN AND 110V ACTUATOR TO BE SUPPLIED AND INSTALLED BY DIV. 15.
- 10) FOR UTILITY ROOM VENTILATION SYSTEM, DIV.15 WILL PROVIDE LINE VOLTAGE THERMOSTAT TO DIV.16. DIV.16 TO PROVIDE CONDUIT & WIRING TO START/STOP FAN & DAMPER VIA THERMOSTAT. FAN AND 110V ACTUATOR TO BE SUPPLIED AND INSTALLED BY DIV. 15.
- 11) FOR UNIT HEATER, DIV. 15 TO PROVIDE LINE VOLTAGE THERMOSTAT TO DIV. 16. DIV. 16 TO PROVIDE CONDUIT & WIRING TO START/STOP UNIT HEATER.
- 12) FIRE DAMPERS ARE REQUIRED TO BE LISTED, AND ARE TO HAVE FIRE-PROTECTION RATING OF THE PENETRATED FIRE SEPARATION.
- 13) THE PIPING PENETRATING THE VARIOUS FIRE SEPARATION IS REQUIRED TO BE FIRESTOPPED WITH A LISTED FIRESTOPPING MATERIAL IN ACCORDANCE WITH OBC ARTICLE 3.1.3.1.
- 14) DIV. 16 TO PROVIDE START/STOP FOR ALL THE MAIN GARAGE EXHAUST FANS INSIDE GAGE ROOM.
- 15) ALL TRAPS & PRIMERS TO BE HEAT TRACED BY DIV.16, INSULATED & JACKETED BY THIS CONTRACTOR.

- (1) 3300x3600 (1226 M², 132 FT²) FRESH AIR INTAKE SHAFT FOR P-2 LEVEL.
- (2) 3300x2300 (18 M², 84 FT²) FRESH AIR INTAKE SHAFT FOR MAU.
- (3) 2250x300 (2.93 M², 315 FT²) FRESH AIR SHAFT FOR P-2 LEVEL.
- (4) 5300x2000 (1161 M², 125 FT²) EXHAUST AIR SHAFT FOR P-1 & P-2 LEVEL.
- (5) 3100x1000 WEATHERPROOF INTAKE LOUVRE C/W BIRDSCREEN. (16,500 CFM)
- (6) 2000x1500 WEATHERPROOF INTAKE LOUVRE C/W BIRDSCREEN. (16,000 CFM)
- (7) 200x200 FRESH AIR DUCT FROM ABOVE C/W FIRE DAMPER AT SLAB.
- (8) 400x200 INTAKE LOUVRE C/W MOTORIZED DAMPER, FIRE DAMPER & WIRE MESH.
- (9) 800x400 INTAKE LOUVRE C/W MOTORIZED DAMPER, FIRE DAMPER & WIRE MESH.
- (10) 800x800 INTAKE LOUVRE C/W MOTORIZED DAMPER, FIRE DAMPER & WIRE MESH.
- (11) 800x400 INTAKE LOUVRE C/W FIRE DAMPER & WIRE MESH.
- (12) 600x400 EXHAUST LOUVRE C/W FIRE DAMPER & WIRE MESH.
- (13) 1200x800 INTAKE LOUVRE C/W MOTORIZED DAMPER, FIRE DAMPER & WIRE MESH.
- (14) 700x350 STAIR PRESSURIZATION DUCT FROM ABOVE C/W FIRE RATED ENCLOSURE, FIRE RATED ENCLOSURE BY OTHERS.
- (15) 750x400 DUCT DOWN TO 450 mm AFFL C/W OPEN END AND WIRE MESH.
- (16) REFRIGERANT MONITORING MASTER & SLAVE PANELS AND SENSOR. SLAVE PANEL SHOWING STATUS OF REFRIGERATION MONITORING SYSTEM TO BE MOUNTED OUTSIDE OF CHILLER ROOM UPON SENSING OF REFRIGERANT LEAKAGE CHILLER WILL BE SHUT DOWN AND EF-10 LOCATED IN 2/F (LOADING) TO BE ACTIVATED TO RIN IN HIGH SPEED.
- (17) ALARM STROBE LIGHT SUPPLIED AND WIRED TO THE REFRIGERANT MONITORING SYSTEM BY MECHANICAL CONTRACTOR.
- (18) 150x100 FRESH AIR DUCT FROM ABOVE C/W FIRE DAMPER AT SLAB.
- (19) 100ø SAN FROM ABOVE AND DOWN C/W CLEANOUT AT BASE.
- (20) 100ø SAN ø 1ø.
- (21) 150ø SAN ø 1ø.
- (22) SANITARY SUMP PIT. SEE DETAIL ON THIS DRAWING.
- (23) 75ø PUMPED SAN UP C/W HEAT TRACING, HEAT TRACING BY DIV. 16. INSULATION AND JACKET BY THIS CONTRACTOR.
- (24) SCUFFER DRAIN.
- (25) BACKWATER VALVE AND CLEANOUT PRIMED & VENTED INSIDE 900ø MANHOLE C/W COVER. SEE DETAIL ON THIS DRAWING.
- (26) ELEVATOR SUMP PIT. SEE DETAIL ON DRAWING M-40.
- (27) 100ø SAN DOWN C/W CLEANOUT AT BASE.
- (28) DRAIN TRAP TO BE HEAT TRACED BY DIV. 16. THIS CONTRACTOR TO INSULATE & JACKET (TYPICAL).
- (29) 75øx750 F/A DUCT FROM AHJ AND TRANSITION TO 2,000øx650 F/A DUCT IN VERTICAL RUN & UP.
- (30) 2000øx650 DUCT BELOW RAMP AND ENTER RESIDENTIAL STORAGE ROOM AT HIGH LEVEL IN P-1 C/W FIRE DAMPER FOR CONTINUATION SEE DRAWING M-4.

LEGEND MECHANICAL		
SYMBOL	DESCRIPTION	
	SUPPLY AIR DIFFUSER	
	RETURN AIR DIFFUSER	
	LINEAR SUPPLY DIFFUSER	
	RETURN VENT	
	FAN BATCH	
	RETURN AIR GRILLE	
	EXHAUST AIR GRILLE	
	SUPPLY DUCT UP	
	SUPPLY DUCT DOWN	
	RETURN DUCT UP	
	RETURN DUCT DOWN	
	EXHAUST DUCT UP	
	EXHAUST DUCT DOWN	
	FIRE DAMPER	
	BALANCING DAMPER	
	MOTORIZED DAMPER	
	MOTORIZED FIRE DAMPER	
	BACKDRAFT DAMPER	
	APPROVED BLADE VALVE CONTROL DAMPER LOCKING SOLENOID	
	TURNING VANES	
	FLEXIBLE CONNECTION	
	ACOUSTIC INSULATION	
	TYPE OF EQUIPMENT	
	EQUIPMENT IDENTIFICATION	
	TYPE OF DAMPER OR GRILLE	
	GRILLE SIZE OR DAMPER NECK SIZE	
	STARTERS / 3 PHASE / PHASE 1	
	IN-ROUTE BATCHER BUTTON	
	FAN BATCH IN-ROUTE BATCHER BUTTON	
	CO SENSOR	
	GAS LINE	
	GAS FITTER	
	GAS COOK	
	PRESSURE REDUCING VALVE	
	BANTARY ABOVE GRADE	
	BANTARY BELOW GRADE	
	STOMACH ABOVE GRADE	
	STOMACH BELOW GRADE	
	DOMESTIC COLD WATER	
	DOMESTIC HOT WATER	
	DOMESTIC HOT WATER REFRIGERATION	
	BANTARY VENT	
	WATER FILTER	
	FLOOR DRAIN	
	FENCE FLOOR DRAIN	
	HUB DRAIN	
	ROOFTOP DRAIN	
	BLIND DRAIN	
	AREA DRAIN	
	BLIND LEVEL AREA DRAIN	
	CATCH BASIN	
	BANTARY TRAP	
	BLOW UP	
	BLOW DOWN	
	BLOW CLEANOUT	
	FLOOR CLEANOUT	
	HUB BBS	
	NOUN BBS	
	NOUN BBS	
	GATE VALVE	
	BALL VALVE	
	BUTTERFLY VALVE	
	PRESSURE REDUCING VALVE	
	CHECK VALVE	
	CAP	
	COMPRESSED AIR OUTLET	
	CIRCUIT BREAKER	
	MULTIPLE PIPES	
	DIAGONAL NOTCH ON PIPES	
	THERMOMETER	
	2-WAY ISOLATING VALVE	
	3-WAY ISOLATING VALVE	
	1/4\"/>	
	1/2\"/>	
	1\"/>	
	2\"/>	
	3\"/>	
	4\"/>	
	6\"/>	
	8\"/>	
	10\"/>	
	12\"/>	
	14\"/>	
	16\"/>	
	18\"/>	
	20\"/>	
	22\"/>	
	24\"/>	
	26\"/>	
	28\"/>	
	30\"/>	
	32\"/>	
	34\"/>	
	36\"/>	
	38\"/>	
	40\"/>	
	42\"/>	
	44\"/>	
	46\"/>	
	48\"/>	
	50\"/>	
	52\"/>	
	54\"/>	
	56\"/>	
	58\"/>	
	60\"/>	
	62\"/>	
	64\"/>	
	66\"/>	
	68\"/>	
	70\"/>	
	72\"/>	
	74\"/>	
	76\"/>	