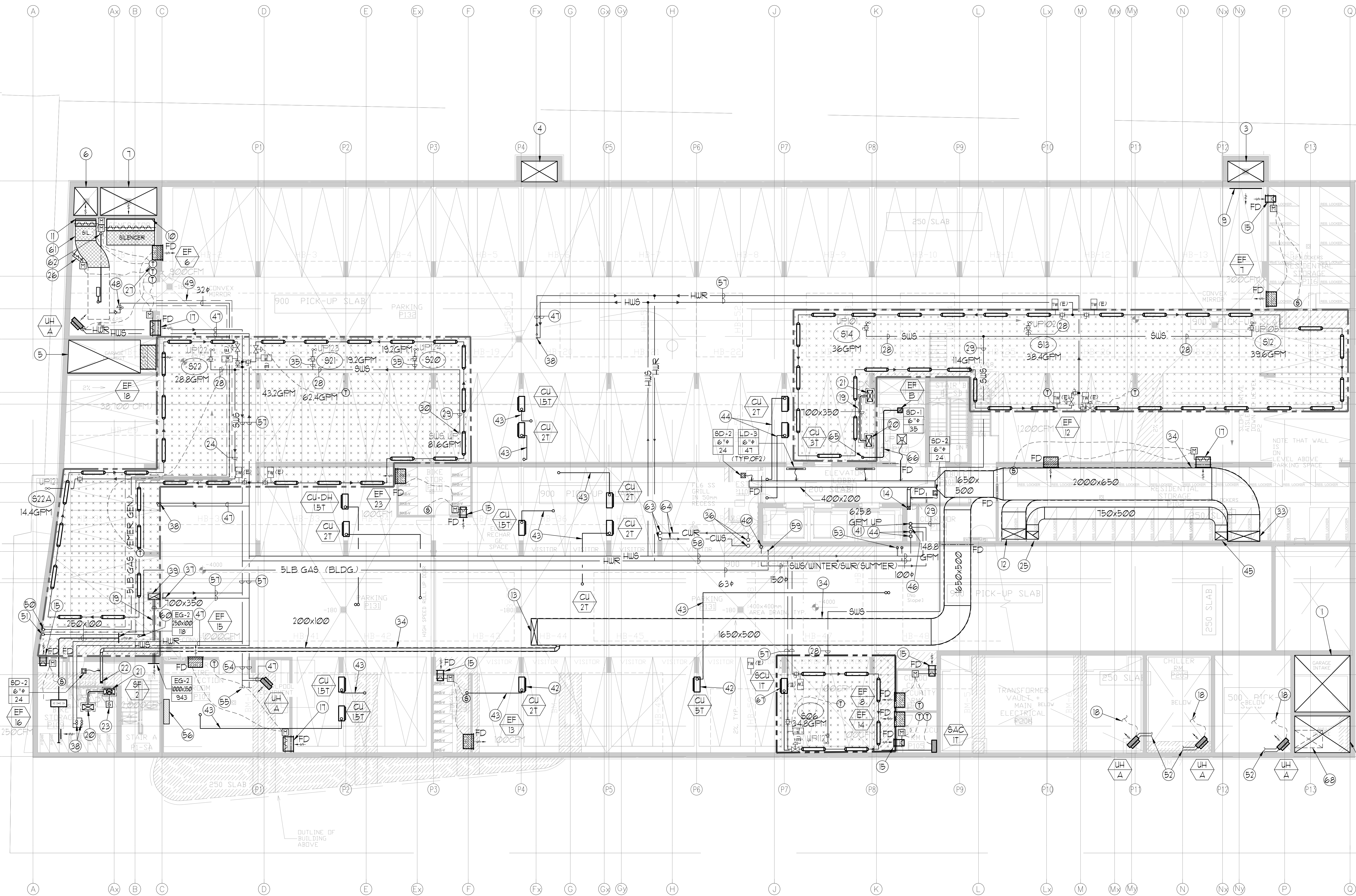




- (52) 19" HUS 4 R FROM LOWER LEVEL.
- (53) 100" HUS 4 R FROM ABOVE.
- (54) 32" HUS 4 R.
- (55) 25" HUS 4 R FOR RADIANT IN FLOOR HEATING.
- (56) HATCHED AREA DENOTES WALL SPACE FOR RADIANT IN FLOOR HEATING EQUIPMENT SEE DRAWING M-40 FOR DETAILS.
- (57) 32" HUS 4 R.
- (58) 38" HUS 4 R.
- (59) 63" 5LB GAS (BLDG.) UP.
- (60) 13" 5LB GAS UP.
- (61) PROVIDE ELBOW SILENCER PER ACOUSTIC REPORT.
- (62) 300" MUFFLER EXHAUST UP C/W 15mm HIGH TEMPERATURE INSULATION.
- (63) 150" CU6 4 R DOWN.
- (64) 150" CU5 4 R.
- (65) 150" EXHAUST DUCT UP.
- (66) 150" DUCT.
- (67) REFRIGERANT PIPES FROM SPLIT COOLING INDOOR UNIT (SAC-IT) TO CONDENSING UNIT (SCU-IT) PIPE SIZING AND INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS (TYPICAL).
- (68) 1750x1100 FRESH AIR DUCT FROM FRESH AIR PLENUM ABOVE AND DOWN TO AHU P-2. FRESH AIR DUCT SHALL BE INSULATED WITH 25MM EXTERNAL INSULATION.

ACOUSTIC NOTES:

- 1) ALL PIPES 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 PIPES MAY TOUCH THE SLAB OR ANY PENETRATED PARTITION. ALL RISER ANCHORS MUST INCLUDE 1-INCH THICK NSN ISOLATION PADS TO BE HELD IN PLACE WITH HORIZONTAL STEEL PLATES WELDED 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-IN-SHEAR MOUNTS. SIDEWALL 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 PIPES 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."
- 7) SPLIT HEAT PUMP OR SPLIT AC SYSTEM CONDENSERS SHOULD BE MOUNTED WITH RUBBER PADS. REFRIGERANT PIPING BETWEEN THE TWO SHOULD BE ISOLATED AT POINTS OF SUPPORT OUTSIDE OF THE ARM-FLEX WRAP AROUND THE PIPE, OR A SECTION OF SUCH WRAP SHOULD BE INCLUDED AT ANY POINT OF SUSPENSION.
- 8) DOMESTIC COLD WATER BOOSTER PUMP SHALL BE ISOLATED FROM THE SLAB WITH 2" THICK RUBBER PADS(NSN) AND A TWIN-SPHERE RUBBER EXPANSION JOINT, WITH HIGH PRESSURE RATING (MASON SPEC) HIGH PRESSURE OR EQUIVALENT) USED ON BOTH INLET AND DISCHARGE PIPING CONNECTIONS TO THE BOOSTER SET. RUBBER EXPANSION JOINT TO BE RATED FOR POTABLE/DINKING WATER USE. DCBWP VFD SHALL BE MOUNTED ON RUBBER PADS.
- 9) ALL PIPE HANGERS FOR THE MAIN DCW LINE SHALL BE ISOLATED USING NEOPRENE-IN-SHEAR HANGERS FOR THE FIRST 10 POINTS OF SUPPORT FROM THE PUMPS, AND USING 12 MM RUBBER PADS IN THE SADDLES OF CLEVIS HANGERS IN ALL OTHER POINTS OF SUPPORT TO THE MAIN VERTICAL RISER LOCATION.
- 10) ALL PIPES 50 MM AND BELOW SUPPORTED FROM WITHIN MECHANICAL ROOMS SHOULD BE ISOLATED WITH THICK RUBBER PADS, OR FOAM RUBBER SLEEVES IN PIPE CLAMPS, POT FEEDERS, FRVS AND OTHER ANCILLARY EQUIPMENT MUST BE SIMILARLY ISOLATED.
- 11) AT THE MECHANICAL ROOM, ALL PIPING PENETRATIONS THROUGH PARTITIONS SHOULD NOT HAVE DIRECT CONTACT WITH THE WALLS OR CEILING. PIPES SHALL BE WRAPPED IN MINERAL WOOL AND THE OPENING SHALL BE CAULKED.
- 12) AT THE MECHANICAL ROOM, IF ANY H/C PIPES MUST BE SUSPENDED FROM ABOVE, THE PIPES SHOULD BE SUSPENDED USING UPGRADED VIBRATION ISOLATION HANGERS INCLUDING SPRINGS WITH AT LEAST 38MM STATIC DEFLECTION, NEOPRENE-IN-SHEAR ELEMENTS IN SERIES (ADDITIONAL 6MM DEFLECTION), AND RUBBER PADS IN HANGER SADDLES (6MM THICK MINIMUM).
- 13) SUP SHALL BE DECOUPLED FROM THE ATTACHED PIPING USING TWIN-SPHERE RUBBER EXPANSION JOINTS ON BOTH THE SUCTON AND DISCHARGE SIDES. SECONDARY TWIN-SPHERE JOINTS SHOULD ALSO BE USED FOR SUP PIPING, WHERE THEY EXIT THE MECHANICAL ROOM. FOR VIL PUMPS, THESE EXPANSION JOINTS ARE TYPICALLY LOCATED IN THE VERTICAL SECTION ABOVE THE SUCTON STRAINER AND SHUT-OFF VALVE. THE PUMPS AND DIRECTLY ATTACHED PIPING (UP TO THE TWIN-SPHERE JOINT) SHALL BE MOUNTED ON CONCRETE INERTIA BASES, AND ISOLATED FROM THE STRUCTURAL SLAB BELOW USING SPRING ISOLATORS WITH MINIMUM 38 MM STATIC DEFLECTION AND 25 MM THICK NSN PADS UNDER THE SPRING BASE, PROPERLY LOADED.
- 14) SMALL PUMPS SHALL BE ISOLATED USING NEOPRENE-IN-SHEAR ISOLATORS FOR THE FIRST 3 POINTS OF SUPPORT ON EITHER SIDE OF THE PUMP.
- 15) ALL PUMPS (OTHER THAN THE DCBWP) SHALL BE MOUNTED ON ND MOUNTS FROM MASON INDUSTRIES OR EQUAL. STANDARD WAFFLE PADS WILL NOT BE SUFFICIENT.
- 16) ALL AHU/FAU/MAU SHALL BE MOUNTED ON DOUBLE LAYER (NSN) PADS BETWEEN UNIT CASING AND HOUSEKEEPING PAD. ALL UNIT DUCTWORK WITHIN THE MECHANICAL ROOM SHALL BE C/W 25MM INTERNAL ACOUSTIC LINING, 25MM INSULATION AND JACKETTING. ALL ASSOCIATED DUCTWORK SHALL BE HUNG BY HANGERS WITH NEOPRENE PADS.
- 17) MAIN FRESH AIR SHAFT TO BE C/W 25MM THICK ACOUSTIC DUCT LINER STARTING FROM THE AHU ROOM AND UP THREE FLOORS.
- 18) CHILLER ROOM IS TO BE CONSTRUCTED WITH A MINIMUM 100MM FLOATING CONCRETE FLOOR ON 50 MM THICK ISOLATORS, DESIGNED FOR A FUNDAMENTAL FREQUENCY OF 10 HZ OR LESS, WITH BATT INSULATION IN THE CAVITY.
- THE FLOATING FLOOR DESIGN SHALL INCLUDE SEPARATE CONCRETE PIERS WHICH PENETRATE THE FLOATING FLOOR TO SUPPORT THE CHILLER. THE PAD MATERIAL UNDER THE PIER SHALL BE CDM-42 OR EQUIVALENT.
- THE CHILLER BODY SHALL BE ISOLATED FROM THE PIERS USING MULTIPLE-COIL SPRING ISOLATORS HAVING A STATIC DEFLECTION OF APPROXIMATELY 2", PLUS A THICK NOISE PAD UNDER THE SPRING BASE. THE NOISE PAD SHALL CONSIST OF MULTIPLE LAYERS OF RUBBER, MAXIMUM 45 DUROMETER, SEPARATED BY STEEL SHIMS AND TOPPED BY A STEEL LOAD PLATE. THE NOISE PAD SHALL BE SIZED TO ACHIEVE A STATIC DEFLECTION OF APPROXIMATELY 0.3" AT A LOAD EQUAL TO 2/3 OF THE MAXIMUM EXPECTED POINT LOAD OF THE CHILLER.
- CHILLER SHALL BE COMPLETE WITH ACOUSTIC BLANKET.
- 19) ALL CONNECTIONS BETWEEN THE CHILLER AND THE ATTACHED PIPING SHALL INCLUDE TWIN-SPHERE RUBBER EXPANSION JOINTS.

REFER TO DWG. M-3 FOR GENERAL NOTES

Δ: 3800 mm CLEAR
FLOOR TO UNDERSLAB

NOTES:

- (1) 3300x3600 (1226 M², 132 FT²) FRESH AIR INTAKE SHAFT FOR P-2 LEVEL.
- (2) 3300x2300 (76 M², 84 FT²) FRESH AIR INTAKE SHAFT FOR MAU.
- (3) 2250x1300 (293 M², 315 FT²) FRESH AIR INTAKE SHAFT FOR P-1 LEVEL.
- (4) 2250x1300 (293 M², 315 FT²) FRESH AIR INTAKE SHAFT FOR P-2 LEVEL.
- (5) 5500x2000 (1161 M², 125 FT²) EXHAUST AIR SHAFT FOR P-1 & P-2 LEVEL.
- (6) 3500x1700 (63 M², 66.8 FT²) INTAKE AIR SHAFT FOR GENERATOR.
- (7) 1400x1700 (25 M², 21.6 FT²) EXHAUST AIR SHAFT FOR GENERATOR.
- (8) FOR FUTURE USE.
- (9) 2000x3200 WEATHERPROOF INTAKE LOUVRE C/W BIRDSCREEN. (17,000 CFM)
- (10) 3400x2500 WEATHERPROOF INTAKE LOUVRE C/W MOTORIZED DAMPER AND WIRE MESH. (34,000 CFM)
- (11) 1300x3200 WEATHERPROOF EXHAUST LOUVRE C/W MOTORIZED DAMPER AND WIRE MESH. (33,000 CFM)
- (12) 1500x650 F/A DUCT UP C/W FIRE DAMPER AT SLAB.
- (13) 1650x400 F/A DUCT UP C/W FIRE DAMPER AT SLAB.
- (14) 200x200 F/A DUCT DOWN C/W FIRE DAMPER AT SLAB.
- (15) 400x200 INTAKE LOUVRE C/W MOTORIZED DAMPER, FIRE DAMPER & WIRE MESH.
- (16) 400x400 INTAKE LOUVRE C/W MOTORIZED DAMPER, FIRE DAMPER & WIRE MESH.
- (17) 800x400 INTAKE LOUVRE C/W MOTORIZED DAMPER, FIRE DAMPER & WIRE MESH.
- (18) WIRING SHALL BE CONNECTED TO THERMOSTAT IN LOWER LEVEL.
- (19) DUCT INSIDE 2HR FIRE RATED ENCLOSURE, ENCLOSURE BY OTHERS.
- (20) 1000x350 STAIR PRESSURIZATION DUCT FROM ABOVE C/W FIRE RATED ENCLOSURE, FIRE RATED ENCLOSURE BY OTHERS.
- (21) 1000x350 STAIR PRESSURIZATION DUCT DOWN C/W FIRE RATED ENCLOSURE, FIRE RATED ENCLOSURE BY OTHERS.
- (22) 150x100 FRESH AIR DUCT DOWN C/W FIRE DAMPER AT SLAB.
- (23) EACH PRESSURIZATION SUPPLY FAN TO BE C/W INDIVIDUAL SMOKE DETECTOR AND FIRE RATED ENCLOSURE, SMOKE DETECTOR TO BE INSTALLED AT DOWNSTREAM OF SUPPLY FAN, SMOKE DETECTOR BY DIV.16 AND FIRE RATED ENCLOSURE BY OTHERS.
- (24) 32" SWS.
- (25) 150x500 EXHAUST DUCT UP C/W FIRE DAMPER AT SLAB.
- (26) 600x600 BY PAS8 MOTORIZED DAMPER CONNECTS TO THE TEMPERATURE CONTROLLER.
- (27) TEMPERATURE CONTROLLER TO BE INTERLOCKED TO GENERATOR INTAKE, RECIRCULATED AND EXHAUST MOTORIZED DAMPERS TO MAINTAIN ROOM TEMPERATURE 60 DEGREES F.
- (28) 50" SWS.
- (29) 63" SWS.
- (30) 63" SWS FROM ABOVE.
- (31) FOR FUTURE USE.
- (32) 150" SWS.
- (33) 2000x650 F/A DUCT ENTER THE RESIDENTIAL STORAGE ROOM FROM THE UNDERSIDE OF RAMP SLAB C/W FIRE DAMPER AND RISE TO HIGH LEVEL IN RESIDENTIAL STORAGE ROOM.
- (34) F/A DUCT SHALL BE C/W 25MM EXTERNAL INSULATION & JACKET IN ANY UNHEATED AREAS.
- (35) 38" SWS.
- (36) 150" CU5 4 R FROM ABOVE.
- (37) 32" HUS 4 R UP TO SERVE FIN TUBES.
- (38) 19" HUS 4 R UP TO SERVE FFH.
- (39) 1000x350 STAIR RELIEF DUCT UP C/W FIRE RATED ENCLOSURE, FIRE RATED ENCLOSURE BY OTHERS.
- (40) 150" SWS (WINTER) / SUR (SUMMER) FROM ABOVE.
- (41) 150" SWS FROM BELOW AND UP.
- (42) CONDENSING UNITS FOR AMENITY AREA FCU DX COIL TO BE MOUNTED AT HIGH LEVEL. (TYPICAL).
- (43) REFRIGERANT PIPES FROM CONDENSING UNIT AS PER MANUFACTURER'S RECOMMENDATIONS.
- (44) 100" HUS 4 R DOWN.
- (45) 150x500 EXHAUST DUCT ENTER RESIDENTIAL STORAGE ROOM FROM THE UNDERSIDE OF RAMP SLAB C/W FIRE DAMPER AND RISE TO HIGH LEVEL IN RESIDENTIAL STORAGE ROOM.
- (46) 150" SWS (WINTER) / SUR (SUMMER) DOWN.
- (47) 19" HUS 4 R.
- (48) 5 LB TO LOW PRESSURE (1" WC) GAS REGULATOR.
- (49) GAS PIPE FOR EMERGENCY GENERATOR TO BE WITHIN 2 HR FIRE RATED ENCLOSURE, FIRE RATED ENCLOSURE BY OTHERS.
- (50) 32" 5LB GAS PIPE FROM METER ASSEMBLY ABOVE, TO SERVE EMERGENCY GENERATOR.
- (51) 63" 5LB GAS PIPE FROM METER ASSEMBLY ABOVE, TO SERVE BUILDING.

LEGEND
MECHANICAL

SYMBOL	DESCRIPTION
	SUPPLY AIR DIFFUSER
	LINEAR SUPPLY DIFFUSER
	THERMOSTAT
	FAN SWITCH
	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
	OPPOSED BLADE VOLUME CONTROL DAMPER
	CSU LOCKING DAMPER
	TURNING VANES
	FLEXIBLE CONNECTION
	ACOUSTIC INSULATION
	TYPE OF EQUIPMENT
	EQUIPMENT CONFIGURATION
	TYPE OF DIFFUSER OR GRILLE
	SIZE OF DIFFUSER OR GRILLE
	FAN/BLOW/CFM OR L/S
	STARTER (3 PHASE 1 PHASE)
	IN-SUITE DRY MASTER SWITCH
	FAN SWITCH / IN-SUITE DRY OVERRIDE BUTTON
	CO SENSOR
	GAS LINE
	GAS METER
	GAS COOK
	PRESSURE REDUCING VALVE
	SANITARY ABOVE GRADE
	SANITARY BELOW GRADE
	STORM ABOVE GRADE
	STORM BELOW GRADE
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATION
	SANITARY VENT
	WATER PUMPER
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	HUB DRAIN
	ROOF DRAIN
	SLAB DRAIN
	AREA DRAIN
	BLAD DRAIN
	CATCH BASIN
	SANITARY TRAP
	ELBOW UP
	ELBOW DOWN
	WALL CLEANOUT
	FLOOR CLEANOUT
	HOSE BIBB
	NON-FREEZE HOSE BIBB
	GATE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	PRESSURE REDUCING VALVE
	CHECK VALVE
	CAP
	COMPRESSED AIR OUTLET
	BACKFLOW PREVENTER
	CIRCUIT BALANCING VALVE
	MULTIPLE PIPES
	DENOTES NO. OF PIPES

REVISIONS		
CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THIS DRAWING IS THE PROPERTY OF THE ENGINEER AND NOT BE REPRODUCED FOR COPIES OF THE WORK.		
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NOVA		
175 West Beaver Creek Road Unit 31 Richmond Hill, Ontario L4B 3M1 Tel: 905.882.5445 Fax: 905.882.5441		
DRAWING TITLE P-1 FLOOR PLAN HVAC LAYOUT		
PROJECT TITLE 60 ALEXANDRA PARK BLOCK II 38 CAMERON STREET TORONTO		
DRAWN BY G.S.	CHECKED BY E.P.	SCALE 1:100
DATE FEB. 13	PROJECT NUMBER 1313	DRAWING NUMBER M-4