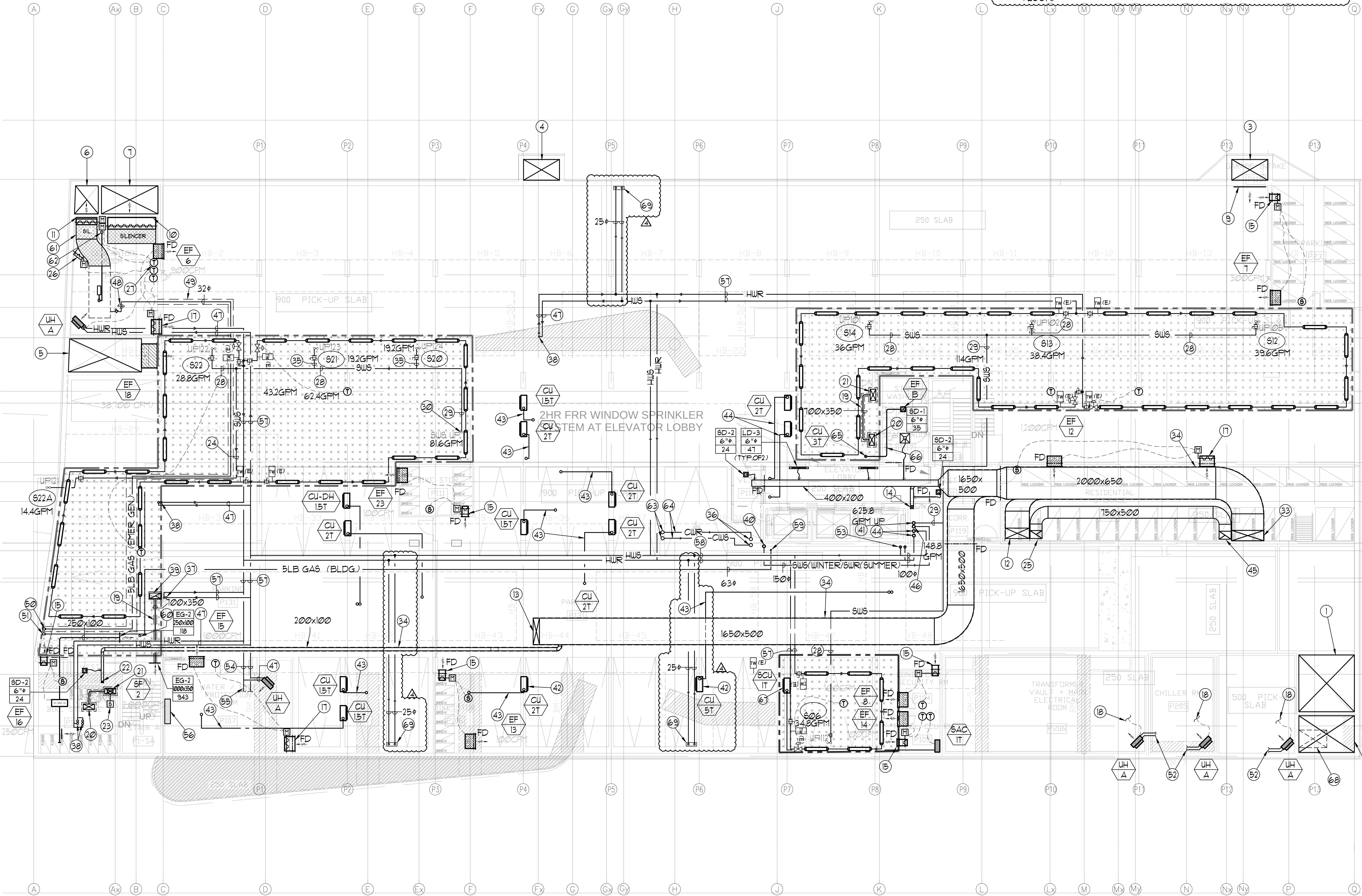
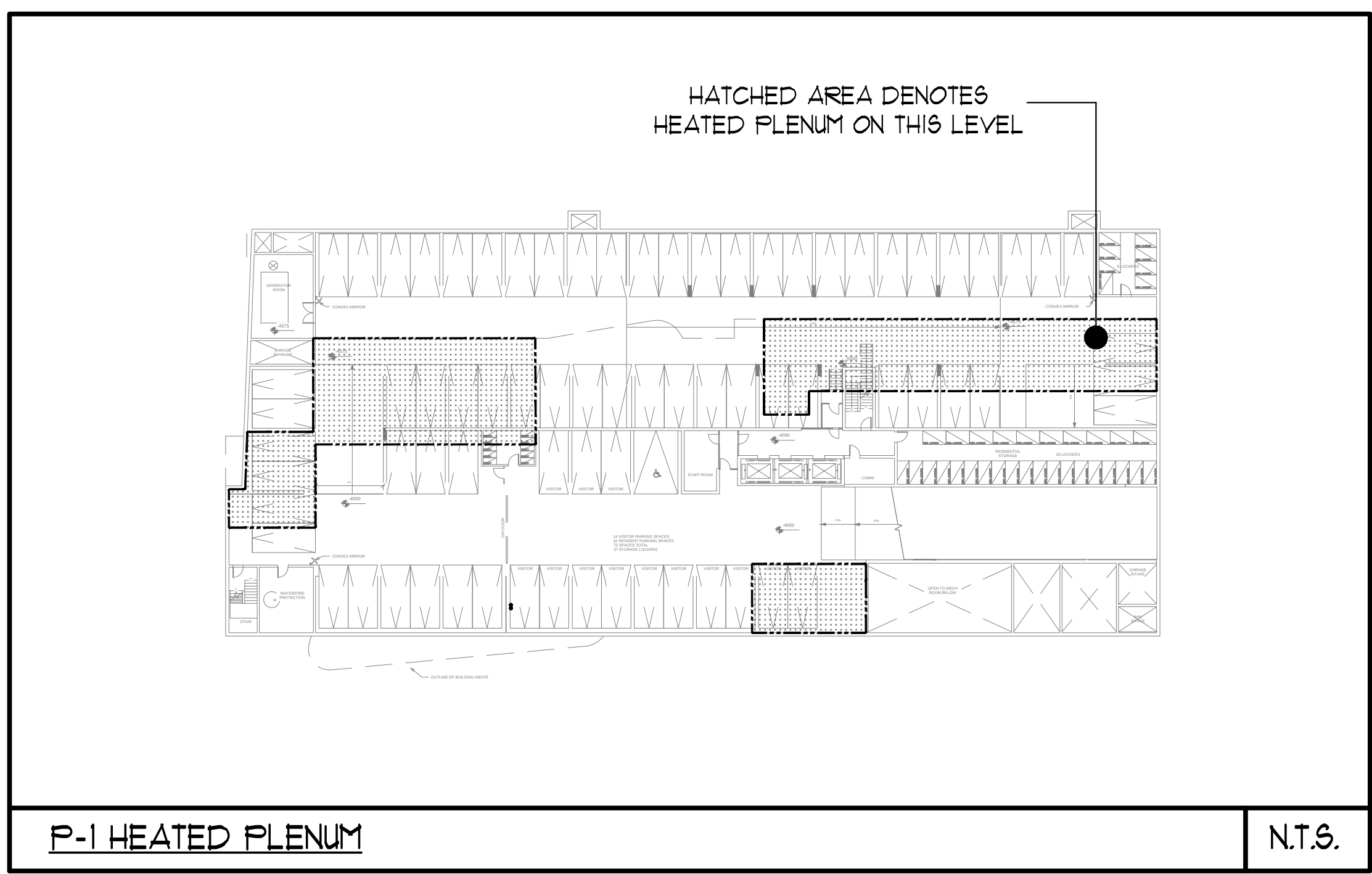




- 52) 19" HUS 4 R FROM LOWER LEVEL.
- 53) 100" HUS 4 R FROM ABOVE.
- 54) 32" HUS 4 R.
- 55) 25" HUS 4 R FOR RADIANT IN FLOOR HEATING.
- 56) HATCHED AREA DENOTES WALL SPACE FOR RADIANT IN FLOOR HEATING EQUIPMENT SEE DRAWING M-40 FOR DETAILS.
- 57) 32" HUS 4 R.
- 58) 38" HUS 4 R.
- 59) 63" 5LB GAS (BLDG.) 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" CUS 4 R DOWN.
- 64) 150" CUS 4 R.
- 65) 150" EXHAUST DUCT UP.
- 66) 150" DUCT.
- 67) REFRIGERANT PIPES FROM 6PLIT COOLING INDOOR UNIT (SAC-IT) TO CONDENSING UNIT (SCU-IT) PIPE SIZING AND INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS (TYPICAL).
- 68) 1750x1000 FRESH AIR DUCT FROM FRESH AIR PLENUM ABOVE AND DOWN TO AHU P-2 FRESH AIR DUCT SHALL BE INSULATED WITH 25MM EXTERNAL INSULATION.
- 69) 25" HUS 4 R REHAU MANIFOLD FOR RADIANT IN FLOOR HEATING ON GROUND FLOOR.

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 NBN 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 FI 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-9502 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 ARMARFLEX 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(NBN) AND A TWIN-SPHERE RUBBER EXPANSION JOINT, WITH HIGH PRESSURE RATING (MASON 5FDEJ HIGH PRESSURE OR EQUIVALENT) USED ON BOTH INLET AND DISCHARGE PIPING CONNECTIONS TO THE BOOSTER SET. RUBBER EXPANSION JOINT TO BE RATED FOR POTABLE/DRINKING WATER USE. DCUBP VFD SHALL BE MOUNTED ON RUBBER PADS.
- 9) ALL PIPE HANGERS FOR THE MAIN DCU 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 SUCTION 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 SUCTION STRAINER AND SHUT-OFF VALVE. THE PUMPS AND DIRECTLY ATTACHED PIPING (UP TO THE TWIN-SPHERE JOINT) SHALL BE MOUNTED ON CONCRETE INERTIAL ISOLATORS AND ISOLATED FROM THE STRUCTURAL SLAB BELOW USING SPRING ISOLATORS WITH MINIMUM 38 MM STATIC DEFLECTION AND 15 MM THICK NBN 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 DCUBP) 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 (NBN) 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 JACKETING. 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

± 3800 mm CLEAR FLOOR TO UNDERSLAB

NOTES:

- 1) 3300x3600 (1226 M², 132 FT²) FRESH AIR INTAKE SHAFT FOR P-2 LEVEL.
- 2) 3300x3300 (7.8 M², 84 FT²) FRESH AIR INTAKE SHAFT FOR MAU.
- 3) 2250x1300 (2.93 M², 315 FT²) FRESH AIR INTAKE SHAFT FOR P-1 LEVEL.
- 4) 2250x1300 (2.93 M², 315 FT²) FRESH AIR INTAKE SHAFT FOR P-2 LEVEL.
- 5) 5500x1000 (11.61 M², 125 FT²) EXHAUST AIR SHAFT FOR P-1 & P-2 LEVEL.
- 6) 3500x1700 (6.2 M², 66.8 FT²) INTAKE AIR SHAFT FOR GENERATOR.
- 7) 1400x1700 (2.5 M², 27.6 FT²) EXHAUST AIR SHAFT FOR GENERATOR.
- 8) FOR FUTURE USE.
- 9) 2000x3200 WEATHERPROOF INTAKE LOUVRE C/W BIRDSCREEN. (17,000 CFM)
- 10) 3400x3500 WEATHERPROOF INTAKE LOUVRE C/W MOTORIZED DAMPER AND WIRE MESH. (24,000 CFM)
- 11) 1300x3200 WEATHERPROOF EXHAUST LOUVRE C/W MOTORIZED DAMPER AND WIRE MESH. (15,000 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) 100x350 STAIR PRESSURIZATION DUCT FROM ABOVE C/W FIRE RATED ENCLOSURE. FIRE RATED ENCLOSURE BY OTHERS.
- 21) 100x350 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 DOWNSIDE 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 FASS 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 +10 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" CUS 4 R FROM ABOVE.
- 37) 32" HUS 4 R UP TO SERVE FFH.
- 38) 19" HUS 4 R UP TO SERVE FFH.
- 39) 100x350 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
[Symbol]	SUPPLY AIR DIFFUSER
[Symbol]	SUPPLY AIR TROOPER
[Symbol]	LINEAR AIR DIFFUSER
[Symbol]	THROAT
[Symbol]	FAN SWITCH
[Symbol]	RETURN AIR GRIFF
[Symbol]	EXHAUST AIR GRIFF
[Symbol]	SUPPLY DUCT UP
[Symbol]	SUPPLY DUCT DOWN
[Symbol]	RETURN DUCT DOWN
[Symbol]	RETURN DUCT UP
[Symbol]	EXHAUST DUCT UP
[Symbol]	EXHAUST DUCT DOWN
[Symbol]	FIRE DAMPER
[Symbol]	BALANCING DAMPER
[Symbol]	MOTORIZED DAMPER
[Symbol]	MOTORIZED FIRE DAMPER
[Symbol]	BACKDRAFT DAMPER
[Symbol]	OPPOSED BLADE VOLUME CONTROL DAMPER
[Symbol]	TURNING VANES
[Symbol]	FLEXIBLE CONNECTION
[Symbol]	ACOUSTIC ANULATION
[Symbol]	TYPE OF EQUIPMENT
[Symbol]	EQUIPMENT IDENTIFICATION
[Symbol]	TYPE OF DIFFUSER OR GRIFF
[Symbol]	GRIFF SIZE OR DIFFUSER NECK SIZE
[Symbol]	WIRE MESH (BY DIV. 16)
[Symbol]	STARTER (3 PHASE / 1 PHASE)
[Symbol]	FAN SWITCH / EXHAUST AIR GRIFF
[Symbol]	CO SENSOR
[Symbol]	GAS LINE
[Symbol]	GAS METER
[Symbol]	GAS COOK
[Symbol]	PRESSURE REDUCING VALVE
[Symbol]	BAISTARY ABOVE GRADE
[Symbol]	BAISTARY BELOW GRADE
[Symbol]	STORY ABOVE GRADE
[Symbol]	STORY BELOW GRADE
[Symbol]	DOMESTIC COLD WATER
[Symbol]	DOMESTIC HOT WATER
[Symbol]	DOMESTIC HOT WATER RECIRCULATION
[Symbol]	SAINTARY WENT
[Symbol]	WATER PETER
[Symbol]	FLOOR DRAIN
[Symbol]	PANEL FLOOR DRAIN
[Symbol]	HUB DRAIN
[Symbol]	ROOF DRAIN
[Symbol]	SLAB DRAIN
[Symbol]	AREA DRAIN
[Symbol]	BLAD B-L-LEVEL AREA DRAIN
[Symbol]	CATCH BASIN
[Symbol]	BAISTARY TRAP
[Symbol]	ELBOW UP
[Symbol]	ELBOW DOWN
[Symbol]	WALL CLEANOUT
[Symbol]	FLOOR CLEANOUT
[Symbol]	HOSE BIBB
[Symbol]	NON-FREEZE HOSE BIBB
[Symbol]	GLOBE VALVE
[Symbol]	GATE VALVE
[Symbol]	BALL VALVE
[Symbol]	BUTTERFLY VALVE
[Symbol]	PRESSURE REDUCING VALVE
[Symbol]	CHECK VALVE
[Symbol]	COP-PRESSURE AIR OUTLET
[Symbol]	BACKFLOW PREVENTER
[Symbol]	CIRCUIT BALANCING VALVE
[Symbol]	MULTIPLE PIPES
[Symbol]	TEMPERATURE SENSOR
[Symbol]	THERMISTOR
[Symbol]	2-WAY MODULATING VALVE
[Symbol]	3-WAY MODULATING VALVE
[Symbol]	1/2" MVD THERMOQUELL
[Symbol]	C/W 12" BRASS 1.5" FLUGS
[Symbol]	FLOOR ELEVATION ABOVE LEVEL
[Symbol]	HEADROOM (FLOOR TO US EIGHT)

NO.	DATE	DESCRIPTION	BY
1	2015-04-23	ISSUED FOR SITE INSPECTION	EP
2	2015-04-23	ISSUED FOR TENDER	EP
3	2015-04-23	RE-ISSUED FOR PERMIT	EP
4	2015-04-23	ISSUED FOR PERMIT	EP

MARK UP ALL PRINTS DATES PREVIOUS TO FINAL DATE ABOVE

REVISIONS

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT DISCREPANCIES TO THE ENGINEERS BEFORE PROCEEDING WITH THE WORK. THE DRAWING IS THE PROPERTY OF THE ENGINEERS AND IS NOT TO BE REPRODUCED OR COPIED IN ANY FORM.

DRAWINGS ARE NOT TO BE SCALED

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DRAWING TITLE: P-1 FLOOR PLAN HVAC LAYOUT

PROJECT FILE: 50 ALEXANDRA PARK BLOCK II 38 CAMERON STREET TORONTO

DATE	PROJECT NUMBER	DRAWING NUMBER	SCALE
FEB, 13	1313	M-4	1:100

DATE: FEB, 13 PROJECT NUMBER: 1313 DRAWING NUMBER: M-4 OF 43