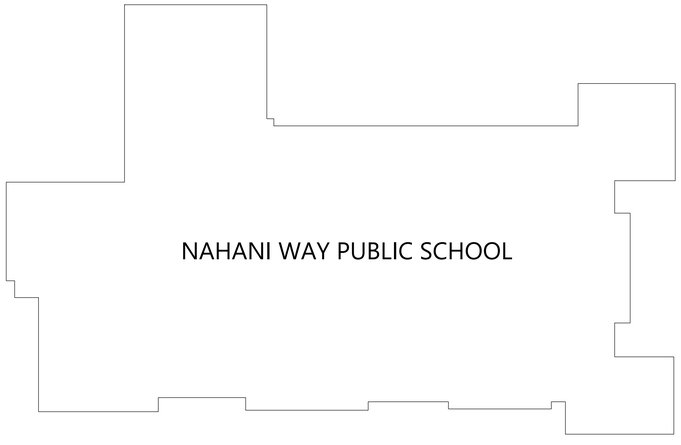
PDSB
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

235 NAHANI WAY
MISSISSAUGA,
ON L4Z 3J6

ISSUED FOR BID
OCTOBER. 2025



NAHANI WAY

NO.	DRAWING TITLE
M–1	KEY PLAN, SYMBOLS, EQUIPMENT SCHEDULES & DETAILS – MECHANICAL
M–2	PENTHOUSE MECH ROOM LAYOUT – EXISTING & DEMOLITION WORKS – MECHANICAL
M–3	PENTHOUSE MECHANICAL ROOM – NEW WORKS – MECHANICAL
M–4	ADDITION MECH ROOM LAYOUT – DEMOLITION & NEW WORKS – MECHANICAL
M–5	OFFICES & KINDERGARTEN ROOM HVAC LAYOUT – EXISTING & DEMOLITION WORKS – MECHANICAL
M–6	OFFICES & KINDERGARTEN ROOM HVAC LAYOUT – NEW WORKS – MECHANICAL
M–7	CONTROL DIAGRAM – SHEET 1 OF 3
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E–1	LEGENDS, EQUIPMENT WIRING SCHEDULES & NOTES – ELECTRICAL
E–2	PENTHOUSE, PART OF ROOF & ADDITION MECHANICAL ROOMS – POWER PLAN – ELECTRICAL
E–3	POWER DISTRIBUTION DETAILS – ELECTRICAL
S–101	GENERAL NOTES
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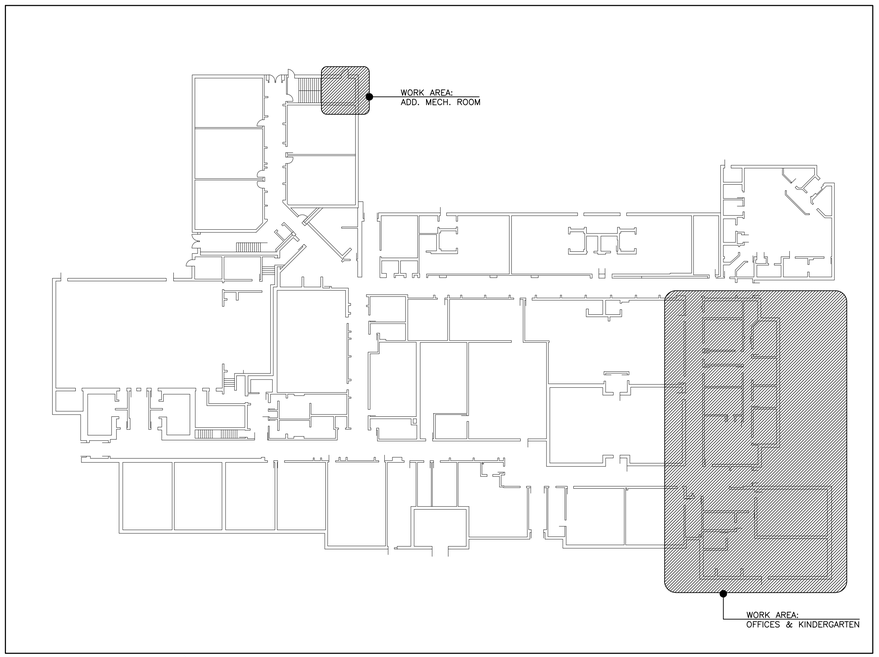
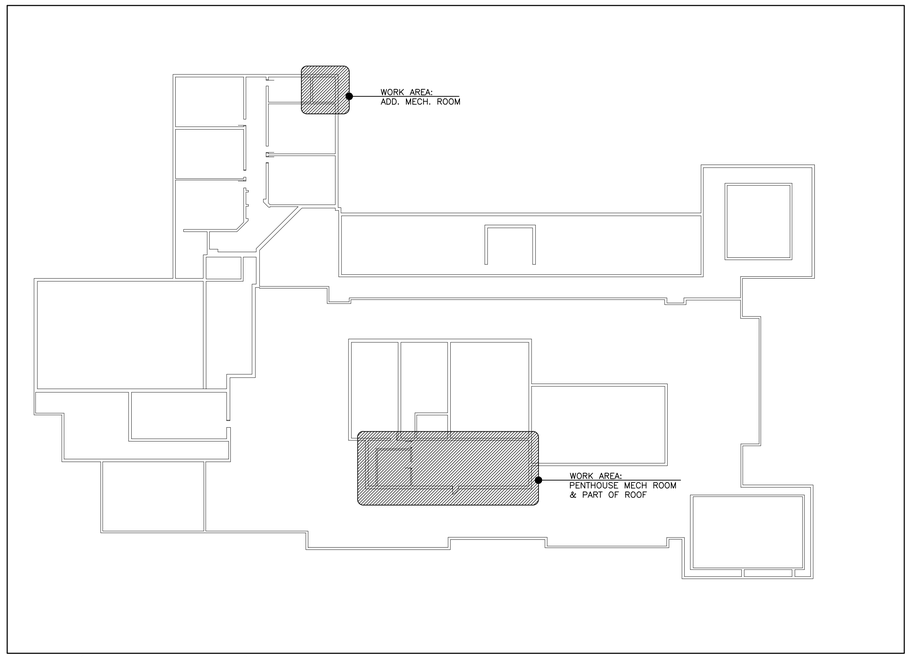
SAB ENGINEERING Inc.



KEY PLAN (GROUND FLOOR)
N.T.S.



KEY PLAN (SECOND FLOOR & ROOF)
N.T.S.

	SYMBOLS
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
	DOMESTIC COLD WATER SUPPLY
	DOMESTIC HOT WATER SUPPLY
	DOMESTIC HOT WATER RECIRC.
G	GAS PIPE
RG	REFRIGERANT GAS
RL	REFRIGERANT LIQUID
D	CONDENSATE DRAIN PIPE
RHR	REHEAT WATER RETURN
RHS	REHEAT WATER SUPPLY
F	STANDPIPE SYSTEM (FIRE LINE)
	PLUMBING TRAP
	PIPE TURNING DOWN
	PIPE TURNING UP
FD	FLOOR DRAIN
CTE	DENOTES: CONNECT TO EXISTING
CUT	DENOTES: CUT POINT OF EXISTING SERVICE
H	HUMIDISTAT/HUMIDITY SENSOR
T	ROOM THERMOSTAT
	DENOTES: EQUIPMENT OR PIPING TO BE REMOVED
	UNION
	MANUAL AIR VENT
	PUMP
	AUTOMATIC CONTROL VALVE – TWO WAY
	MIXING OR DIVERTER VALVE (3–WAY)
	VALVE
	BALANCING VALVE
	CHECK VALVE
	STRAINER – OVER 50mm PROVIDE WITH VALVED FLUSHING DRAIN
300x150	SHEET METAL DUCT – FIRST FIGURE INDICATES DIMENSION SHOWN
A.D.	ACCESS DOOR
	SHEET METAL RISER UP – SUPPLY
	SHEET METAL RISER UP – RETURN AND EXHAUST
	SHEET METAL RISER DOWN – SUPPLY
	SHEET METAL RISER DOWN – RETURN AND EXHAUST
	SQUARE ELBOW WITH AIR TURNING VANES
F/D	FUSIBLE LINK FIRE DAMPER WITH ACCESS DOOR IN DUCT
MD	MOTORIZED DAMPER
BD	BALANCING DAMPER
	FLEXIBLE CONNECTION
HC#24	HEATING COIL#24
AV	DENOTES: AIR VENT
N.O.	NORMALLY OPEN
N.C.	NORMALLY CLOSED
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
PG	PRESSURE GAUGE
TG	THERMOMETER
U/S 2000	DENOTES: UNDER SIDE OF DUCT 2000mm
S/A; R/A;	DENOTES: SUPPLY AIR; RETURN AIR
E/A; F/A;	DENOTES: EXHAUST AIR; FRESH AIR

GENERAL NOTES :

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

SCHEDULE OF OUTDOOR CONDENSER (DESIGN BASED ON ENGINEERED AIR)

TAG	COOLING CAP. kW [MBH]	CONDENSER FANS (# x FLA)	REFRIGERANT	REFRIGERANT SIZES			WEIGHT [KG]	POWER SUPPLY (V/PH/MCA/MOCP)	DIMENSIONS (LxDxH)	REMARKS
				SUCTION GAS	LIQUID	HOT GAS				
CDU–2	34.3 [117]	2 x 1.2	R–454B	2 x 29	2 x 12.7	N/A	454	208/3/62.4/80	2007x1041x1295	
CDU–3	58.6 [200]	2 x 1.2	R–454B	2 x 29	2 x 16	N/A	454	208/3/74.7/100	2032x1041x1550	

SCHEDULE OF PUMPS (DESIGN BASED ON ARMSTRONG)

TAG	SYSTEM	TYPE	CAPACITY L/S [GPM]	HEAD kPa [FT]	RPM	MOTOR HP	ELECTRICAL (V/PH/Hz)	REMARKS
HP–3	CIRCULATOR FOR AHU–1	IN–LINE CIRCULATOR	2.84 [45]	75 [25]	1750	1.0	208/3/60	
HP–4	CIRCULATOR FOR AHU–2	IN–LINE CIRCULATOR	0.72 [11.3]	75 [25]	1750	0.5	208/1/60	
HP–5	CIRCULATOR FOR AHU–3	IN–LINE CIRCULATOR	0.67 [10.6]	75 [25]	1750	0.5	208/1/60	
HP–6	CIRCULATOR FOR AHU–4	IN–LINE CIRCULATOR	2.0 [31.7]	75 [25]	1750	0.75	208/3/60	

SCHEDULE OF UNIT HEATER (DESIGN BASED ON ENGINEERED AIR)

TAG	LOCATION	HEATING CAPACITY kW [MBH]	HEATING AGENT			POWER SUPPLY		DIMENSIONS (HxWxD) MM	WEIGHT KG [LBS]	REMARKS
			SUPPLY °C [°F]	RETURN °C [°F]	FLOW L/S [GPM]	VOLTAGE	MOTOR HP			
UH–4	ADD. MECH RM.	10.2 [34.9]	82 [180]	71 [160]	0.22 [3.5]	120	1/12	550x600x487	45 [98]	CONNECTED TO BAS

SCHEDULE OF VAV BOXES (DESIGN BASED ON E.H. PRICE)

TAG	UNIT SIZE	SYSTEM	LOCATION	AREA SERVE	AIR FLOW (CFM)			INLET SIZE MM [IN]	OUTLET SIZE MM [IN]	REMARKS
					MIN	MAX	RATED			
VAV–3–1	12	AHU–3	CORRIDOR	KINDERGARTEN	942	1570	1600	300 [12"]	450X800 [18"X32"]	C/W SILENCER
VAV–3–2	12		CORRIDOR	KINDERGARTEN	877	1462	1600	300 [12"]	450X800 [18"X32"]	C/W SILENCER
VAV–3–3	8		GEN. OFFICE	ADMIN. OFFICES	396	660	700	200 [8"]	250X300 [10"X12"]	C/W SILENCER
VAV–3–4	5		GEN. OFFICE	PRINCIPAL OFFICE	192	232	250	125 [5"]	200X300 [8"X12"]	C/W SILENCER
VAV–3–5	6		WORKROOM STG.	VICE–PRINCIPAL	229	382	400	150 [6"]	200X300 [8"X12"]	C/W SILENCER
VAV–3–6	9		CORRIDOR	SEMINARS & KITCHEN	502	837	900	225 [9"]	300X350 [12"X14"]	C/W SILENCER

SCHEDULE OF AIR HANDLING UNITS (DESIGN BASED ON ENGINEERED AIR)

TAG	SERVING	LOCATION	SUPPLY FAN PERFORMANCE				RETURN FAN PERFORMANCE				MIN. OUTSIDE AIR (CFM)	HEATING PERFORMANCE						DX COIL PERFORMANCE						WEIGHT KG [LBS]	POWER SUPPLY (V/PH/Hz)	MCA (AMPS)	MOCP (AMPS)	REMARKS
			AIR FLOW (CFM)	E.S.P. Pa [IN]	SPEED RPM	HP	AIR FLOW (CFM)	E.S.P. Pa [IN]	SPEED RPM	HP		CAPACITY kW [MBH]	TEMP °C [°F] EAT	TEMP °C [°F] LAT	WATER FLOW (L/S) [GPM]	WATER P.D. kPa [FT WC]	WATER TEMP °C [°F] EAT	WATER TEMP °C [°F] LAT	TOTAL CAPACITY kW [MBH]	SENSIBLE CAPACITY kW [MBH]	AIR EDBT/EWBT °C [°F]	AIR LDBT/LWBT °C [°F]	FLUID	COIL P.D. Pa [IN.WG]					
AHU–1	CLASSROOMS	PH MECH. RM.	10,700	375 [1.5]	625	10	5,800	187 [0.75]	981	5	4,900	136 [463]	1.5 [34.7]	23.8 [74.8]	2.84 [45.0]	14 [4.7]	82.2 [180]	70.5 [158.9]	N/A						2676 [5900]	208/3/60	59.1	90	C/W VFDs
AHU–2	LIBRARY	PH MECH. RM.	3250	250 [1]	1711	5	3250	187 [0.75]	1370	3	900	34.5 [118]	9.2 [48.5]	27.8 [82]	0.72 [11.3]	5.1 [1.7]	82.2 [180]	70.4 [158.7]	34.3 [117]	23.2 [79]	25.8[78.5]/19.4[67]	13.3[55.9]/13.1[55.6]	R–454B	242.4 [0.98]	2336 [5150]	208/3/60	35.1	50	C/W VFDs
AHU–3	OFFICES	PH MECH. RM.	6,850	374 [1.5]	1530	10	5,800	187 [0.75]	758	5	1,050	42.2 [144]	14.4 [58]	25.2 [77.4]	0.67 [10.6]	7.8 [2.6]	82.2 [180]	66.8 [152.3]	58.6 [200]	44.5 [152]	25[77]/18.6[65.4]	13.6[56.4]/13.3[56]	R–454B	191.7 [0.77]	2065 [4552]	208/3/60	59.1	90	C/W VFDs ACOUSTICALLY INSULATED SUPPLY AIR PLENUM BOX
AHU–4	ADD. BLDG.	ADD. MECH. RM.	10000	375 [1.5]	790	10	10000	175 [0.7]	836	7.5	4,300	98.2 [335]	2.4 [36.4]	19.7 [67.4]	2 [31.7]	5.6 [1.9]	82.2 [180]	70.2 [158.3]	N/A						2721 [6000]	208/3/60	66.4	90	C/W VFDs

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Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER
AUG. 202
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PROVINCE OF ONTARIO

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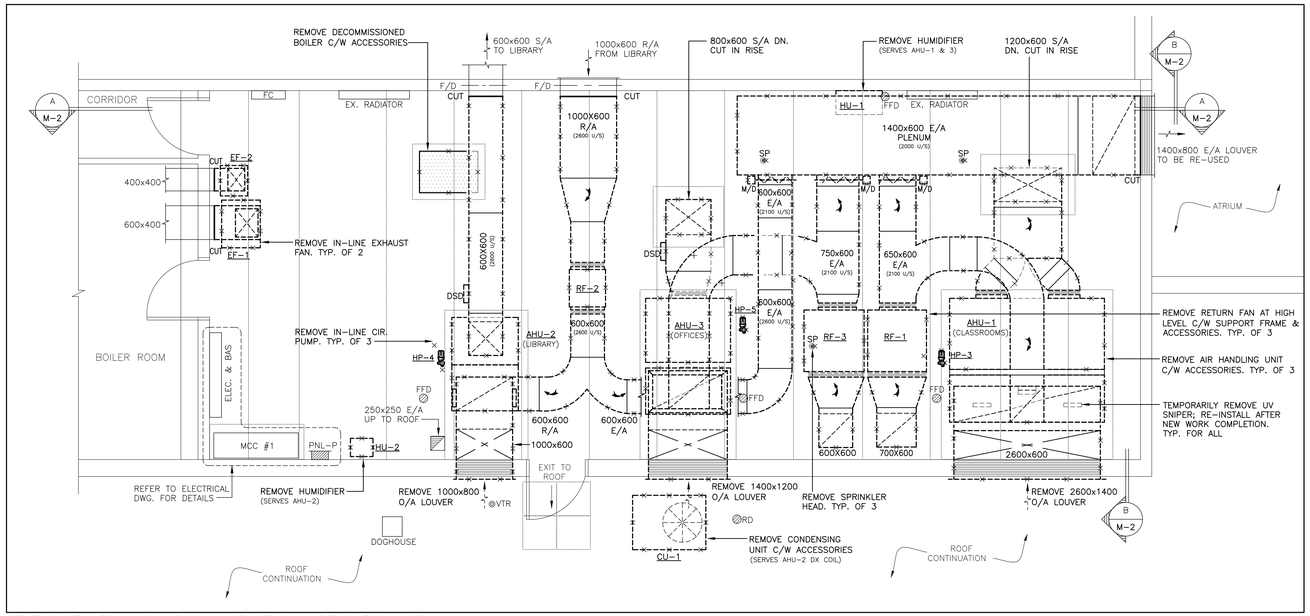
Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

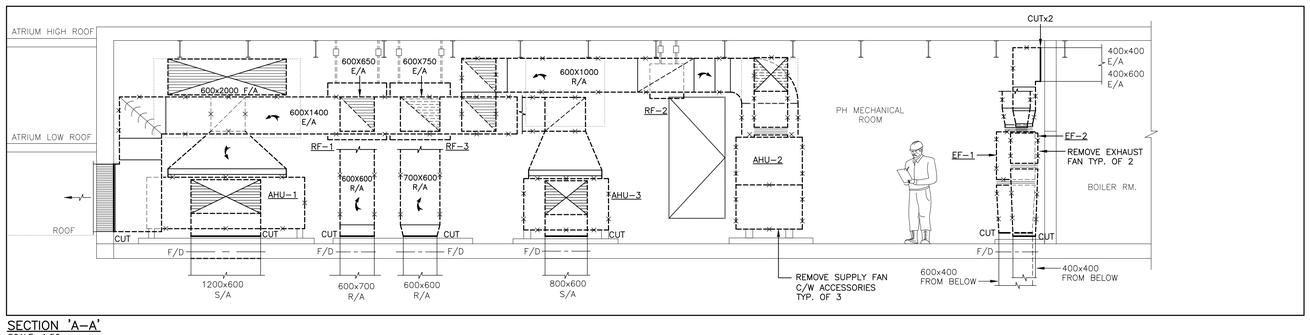
Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
KEY PLAN, SYMBOLS, EQUIPMENT SCHEDULES & DETAILS - MECHANICAL

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: N.T.S.
File Number: 2025–63	Dwg Number: M-1



PENTHOUSE MECHANICAL ROOM – EXISTING & DEMOLITION WORK
SCALE: 1:50



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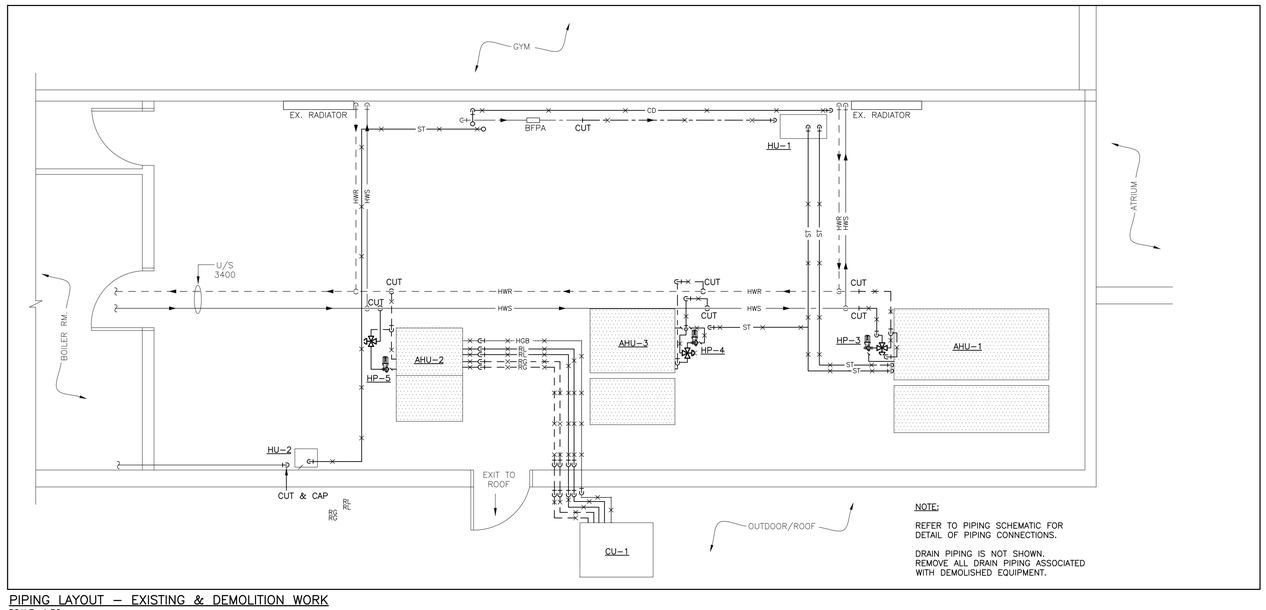
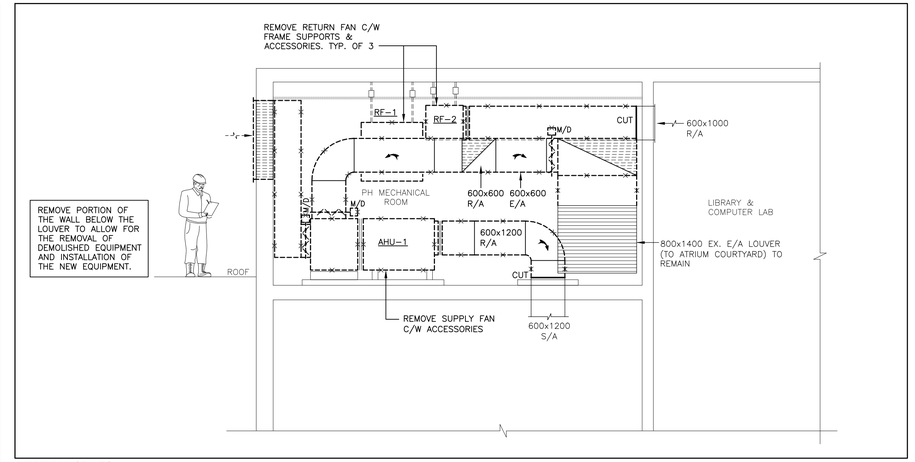


NOTE:

REFER TO PIPING SCHEMATIC FOR DETAIL OF PIPING CONNECTIONS.

DRAIN PIPING IS NOT SHOWN. REMOVE ALL DRAIN PIPING ASSOCIATED WITH DEMOLISHED EQUIPMENT.

PIPING LAYOUT – EXISTING & DEMOLITION WORK
SCALE: 1:50



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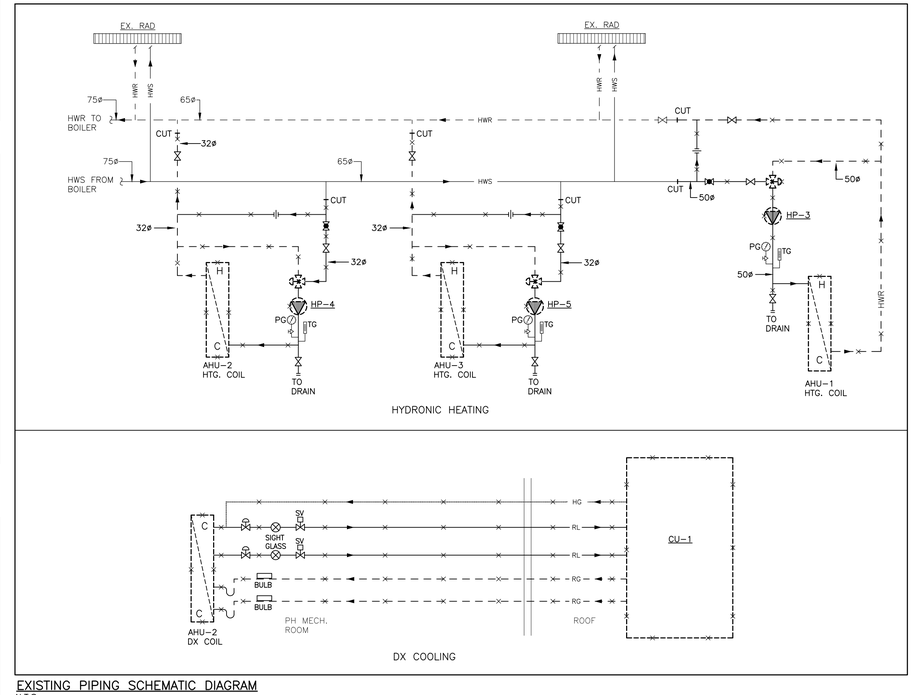

EXISTING PIPING SCHEMATIC DIAGRAM
N.T.S.

GENERAL DEMOLITION NOTES:

THESE NOTES SHALL BE READ IN CONJUNCTION WITH, AND SHALL FORM AN INTEGRAL PART OF THE SPECIFICATIONS.

PRIOR TO COMMENCING THE DEMOLITION WORK, EXAMINE CAREFULLY THE ELEMENTS OF THE EXISTING SYSTEMS TO BE REMOVED. FOR REASONS OF CLARITY, THE DRAWINGS DO NOT SHOW ALL BUILDING SERVICES LOCATED IN THE MECHANICAL ROOM OR ALL STRUCTURAL ELEMENTS. ALL BUILDING SERVICES AND OTHER UTILITIES NOT AFFECTED BY THIS WORK SHALL REMAIN OPERATIONAL. ANY DAMAGE TO BUILDING SERVICES AND UTILITIES NOT AFFECTED BY THE WORK SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR, AT NO COST TO THE OWNER.

THE SIZES AND LOCATION OF PIPING, DUCTWORK, EQUIPMENT AND OTHER UTILITIES INDICATED ON THE DRAWINGS WERE SITE MEASURED OR TAKEN FROM EXISTING DRAWINGS. MAKE ANY CHANGES REQUIRED TO SUIT THE ACTUAL SITE CONDITIONS AT NO COST TO THE OWNER.

REMOVE EXISTING SUPPLY AND RETURN AIR FANS AS INDICATED. REMOVE SECTIONS OF DUCTWORK AS INDICATED ON THE DRAWING AND AS REQUIRED FOR THE INSTALLATION OF THE NEW EQUIPMENT. DISCONNECT FROM POWER SUPPLY AND CONTROLS. REMOVE ALL ELECTRICAL POWER SUPPLY WIRING, CONDUITS AND DEVICES SUCH AS DISCONNECTS (REFER TO ELECTRICAL DRAWINGS FOR FULL SCOPE); MAKE SAFE ALL REMAINING WIRING.

ENSURE THAT DURING THE DEMOLITION WORK, THE FLOOR DRAINS ARE PROTECTED AGAINST CLOGGING WITH DEBRIS. REMOVE ALL REDUNDANT PIPE HANGERS AND SUPPORTS.

REMOVE EXISTING HUMIDIFIERS C/W ASSOCIATED COLD WATER & STEAM PIPING AND DRAINS. DISCONNECT FROM POWER SUPPLY AND CONTROLS.

REMOVE REDUNDANT BOILER AND ASSOCIATED PIPING AND ACCESSORIES.

THE CONTROL CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION OF ALL THE CONTROLS ASSOCIATED WITH THE EQUIPMENT TO BE REMOVED, INCLUDING SENSORS, DEVICES, (PRESSURE SENSORS, HUMIDITY AND TEMPERATURE SENSORS). TUBING AND WIRING. CONTRACTOR TO IDENTIFY ALL EXISTING TUBING PRIOR TO DEMOLITION TO ENSURE THAT ALL EXISTING EQUIPMENT THAT IS TO REMAIN WILL NOT BE AFFECTED BY THIS WORK AND SHALL REMAIN OPERATIONAL AND UNCONTAMINATED BY OIL OR DEBRIS. REMOVE ALL EXITING CONTROL PANELS THAT ARE REDUNDANT.

REMOVAL OF EXISTING SMOKE DETECTORS AND SUBSEQUENT INSTALLATION OF NEW DETECTORS, AS WELL AS CONNECTING NEW AHUs TO FIRE ALARM SHALL BE DONE BY A BOARD APPROVED FIRE PROTECTION SUB–CONTRACTOR.

ALLOW FOR DRAINING OF THE EXISTING HEATING SYSTEM, AS NECESSARY TO PERFORM THE WORK.

REMOVE THE EXISTING FRESH AIR INTAKE LOUVERS. TEMPORARY REMOVE PORTION OF THE WALL BELOW THE O/A LOUVER FOR AHU–1 AS REQUIRED IN ORDER TO DELIVER AHU SECTIONS INSIDE THE MECHANICAL ROOM. PROVIDE NEW LOUVER & REINSTATE THE WALL AT COMPLETION OF WORK. REPAIR TO MATCH EXISTING FINISHES

CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL REMOVED EQUIPMENT AND MATERIALS.

REMOVE EXISTING CONCRETE PADS AND PREPARE THE FLOOR FOR POURING OF NEW CONCRETE PAD EXTENSIONS. ENSURE THAT DURING THE DEMOLITION WORK, THE FLOOR DRAINS ARE PROTECTED AGAINST CLOGGING WITH DEBRIS. REMOVE ALL REDUNDANT PIPE HANGERS AND SUPPORTS. POUR NEW PAD EXTENSIONS AS NECESSARY FOR THE FOOTPRINT OF NEW EQUIPMENT

GENERAL NOTES :

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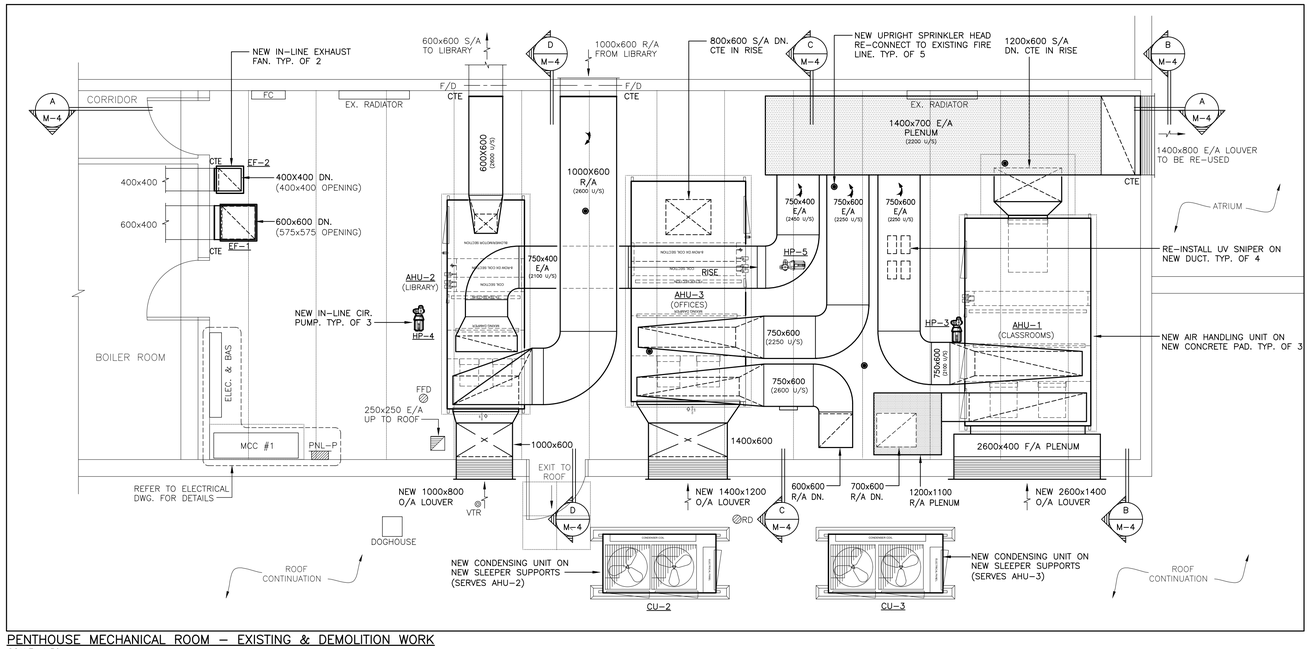
Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
PENTHOUSE MECHANICAL ROOM - EXISTING & DEMOLITION WORKS - MECHANICAL

Checked:	Date:
G.S.	JUNE 2025
Drawn: T.N.	Scale: 1:50
File Number: 2025–63	Dwg Number: M-2



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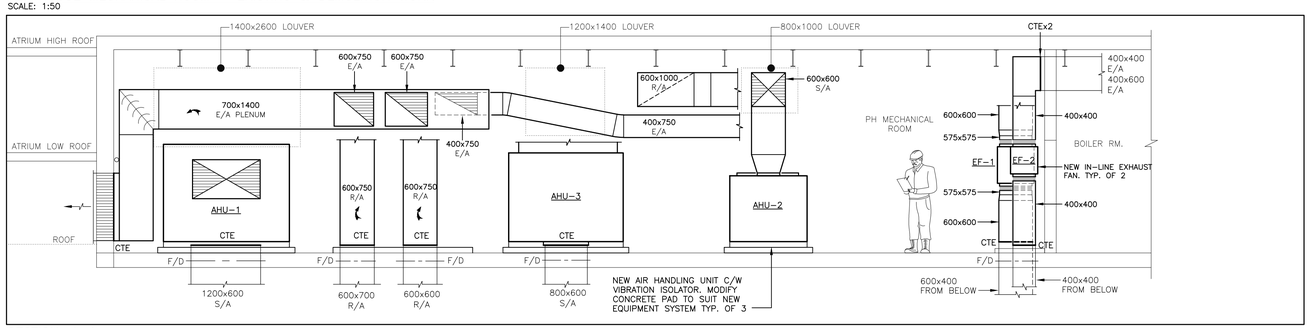

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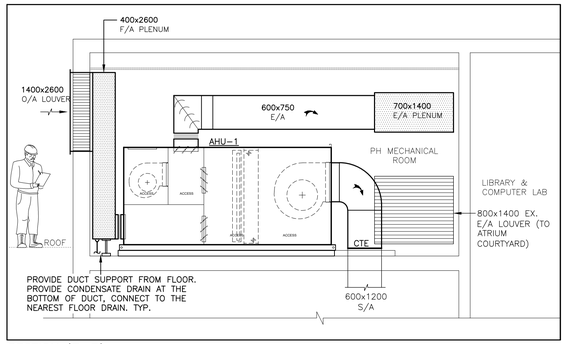

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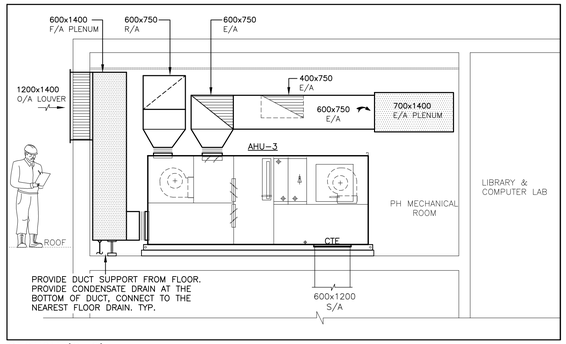

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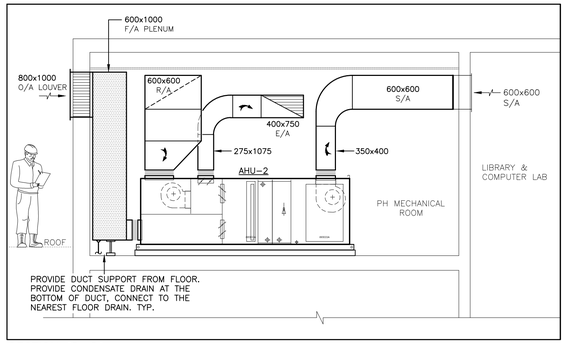

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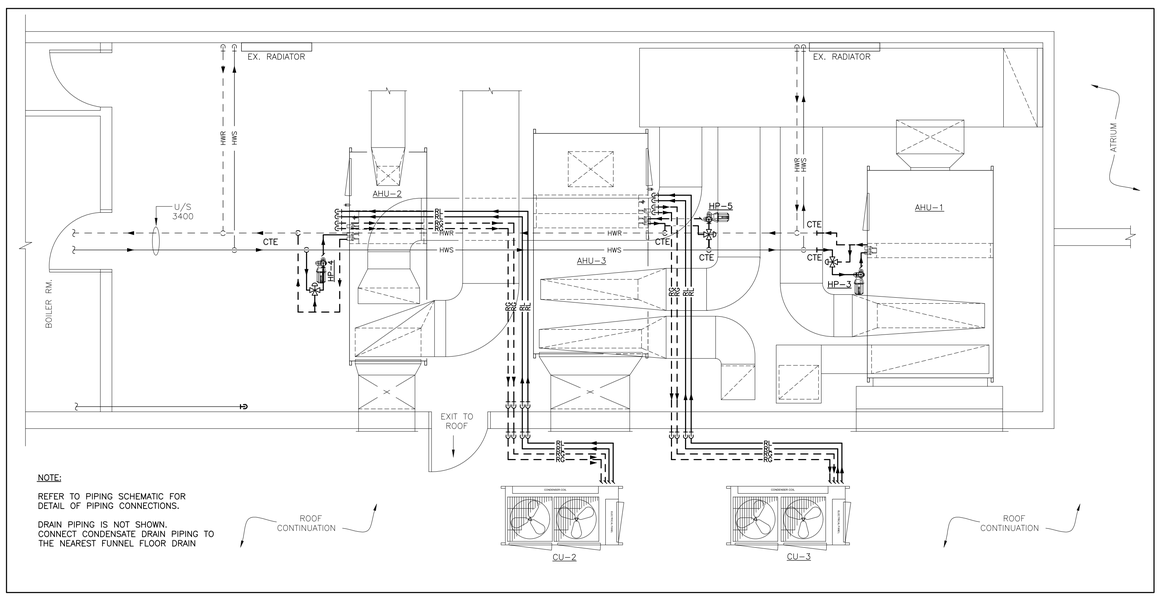
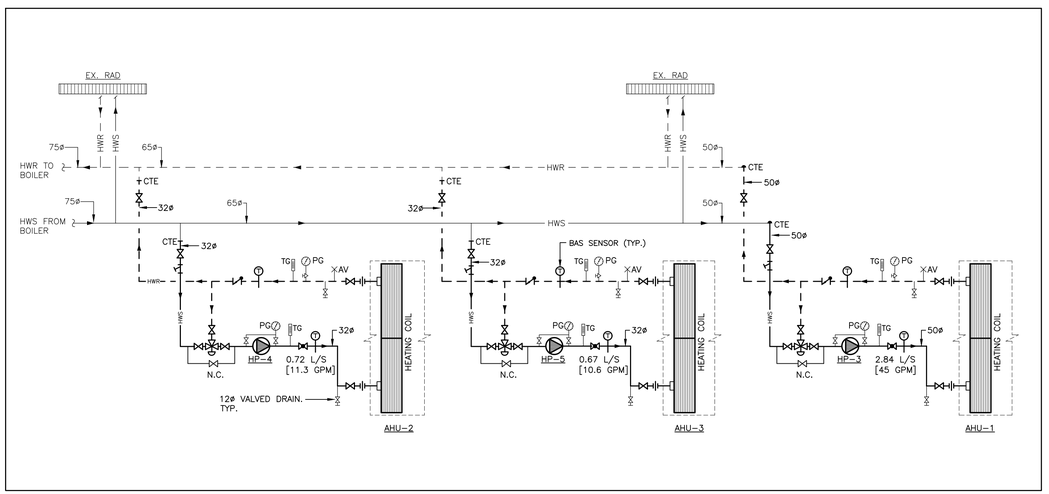


PIPING LAYOUT – NEW WORK
SCALE: 1:50



NEW PIPING SCHEMATIC (HYDRONIC HEATING) DIAGRAM
N.T.S.

NEW WORK NOTES:

FOR REASONS OF CLARITY, THE ROOM LAYOUT DOES NOT SHOW ALL VALVES, FITTINGS AND SENSORS/GAUGES. FOR FULL EXTENT OF FITTINGS AND INSTRUMENTATION, REFER TO THE NEW PIPING SCHEMATIC AND CONTROL DIAGRAMS.

THE DRAWINGS DO NOT SHOW ALL STRUCTURAL ELEMENTS AND BUILDING SERVICES.

ALL TEMPORARY INTERRUPTION OF SERVICES SHALL BE COORDINATED WITH THE OWNER.

PRIOR TO SHEET METAL FABRICATION, ALL EXISTING DIMENSIONS SHALL BE SITE VERIFIED. CONTRACTOR IS RESPONSIBLE FOR ALL SITE COORDINATION IN ORDER TO ENSURE EQUIPMENT, PIPING, DUCTWORK CAN BE INSTALLED WHILE MAINTAINING ALL REQUIRED CLEARANCES, SOME NEW DUCT DIMENSIONS AND NEW LAYOUT MAY NEED TO BE ADJUSTED FROM WHAT IS SHOWN ON THE DESIGN DRAWINGS. CONTRACTOR SHALL CARRY ALL COSTS ASSOCIATED WITH MODIFICATION/ADJUSTMENT OF NEW DUCTWORK AND PIPING LAYOUTS TO EXISTING DESIGN.

BALANCE THE WATER AND AIR FLOWS TO THE VALUES INDICATED ON THE EQUIPMENT SCHEDULE, PIPING SCHEMATIC DIAGRAM.

THE AHU SHALL BE SUPPLIED IN SECTIONS IN ORDER TO FIT INTO THE MECHANICAL ROOM THRU TEMPORARY REMOVED O/A GOOSENECK AND PART OF BLOCK WALL. THE AIR HANDLING EQUIPMENT SHALL BE ASSEMBLED ON SITE UNDER THE SUPERVISION OF THE MANUFACTURER'S TRAINED TECHNICIANS. AT THE CONCLUSION OF THE RE-ASSEMBLY WORK, THE MANUFACTURER'S TECHNICIANS SHALL ISSUE A REPORT CONFIRMING THAT THE EQUIPMENT HAS BEEN ASSEMBLED IN ACCORDANCE WITH THE FACTORY STANDARDS.

THE CONTRACTOR SHALL TEMPORARILY REMOVE ANY OTHER BUILDING SERVICES THAT INTERFERE WITH THE DELIVERY AND RE-ASSEMBLY OF THE NEW EQUIPMENT. AT THE CONCLUSION OF THE RE-ASSEMBLY WORK, ALL BUILDING SERVICES AND EQUIPMENT SHALL BE REINSTATED. ALL TEMPORARY SERVICES REMOVAL AND RE-INSTALLATION ARE PART OF THE SCOPE OF WORK.

RE-CONNECT THE NEW AIR HANDLING UNITS TO EXISTING SUPPLY, RETURN, EXHAUST & OUTSIDE AIR DUCTWORK; MANUFACTURE SHEET METAL TRANSITIONS AS REQUIRED BY THE NEW SIZE AND LOCATION OF UNITS' OPENINGS AND NEW DUCTWORK LOCATION.

CONNECT NEW EQUIPMENT TO POWER SOURCE (REFER TO ELECTRICAL DRAWINGS).

EXTEND CONCRETE PADS AS REQUIRED TO MATCH THE SIZE OF THE NEW EQUIPMENT.

PROVIDE ALL REQUIRED SUPPORTS FOR THE NEW DUCTWORK AND PIPES, INCLUDING HANGERS. NEW PIPING INSTALLED INSIDE THE MECHANICAL ROOM SHALL BE SUPPORTED FROM THE FLOOR. PROVIDE CUSTOM SUPPORT BEAMS ANCHORED TO FLOOR.

INSULATE ALL SUPPLY AIR AND OUTSIDE AIR DUCTWORK (EXISTING AND NEW) INSIDE THE MECHANICAL ROOM HOUSING NEW AHU. INSULATE THE EXISTING EXHAUST AIR PLENUM.

INSULATE ALL NEW AND EXISTING HEATING PIPING IN THE MECHANICAL ROOM.

INSTALL NEW SENSORS AS SHOWN ON THE PIPING AND CONTROL SCHEMATIC. CONNECT TO THE EXISTING BAS.

INSTALL NEW SMOKE SENSORS IN THE DUCT AND CONNECT TO POWER AND FIRE ALARM.

ALL INTERNAL WIRING OF THE NEW AIR UNIT BY THE MANUFACTURER. ALL EXTERNAL WIRING BETWEEN THE AIR HANDLING UNIT AND EXTERNAL COMPONENTS BY THE CONTRACTOR.

MAKE GOOD ALL SURFACES AFFECTED BY THE WORK.

ALLOW FOR PARTIAL DRAINAGE AND COMPLETE REFILL OF THE HEATING SYSTEM AT COMPLETION OF WORK. ENGAGE THE SERVICES OF THE CURRENT BOARD'S CHEMICAL TREATMENT CONTRACTOR TO TREAT THE WATER FOLLOWING SYSTEM RE-FILL. PROVIDE A WATER TREATMENT CERTIFICATE CONFIRMING THAT TREATMENT WAS COMPLETED.

CLEAN, PREPARE AND PAINT THE ENTIRE MECHANICAL ROOM FLOOR (INCLUDING CONCRETE PADS) WITH TWO COATS OF URETHANE-BASED PAINT (BATTLESHIP GREY COLOUR).

PERFORM DUCT CLEANING FOR THE ENTIRE BUILDING HVAC SYSTEM. REFER TO SPECIFICATIONS.

GENERAL NOTES :

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

No.	ISSUED	DATE
1.	ISSUED FOR BID	OCT. 2025

Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER
AUG. 2025
G. STRASHUN
PROVINCE OF ONTARIO

SAB ENGINEERING Inc.
588 EDWARD AVE., UNIT 25, RICHMOND HILL, ONT., L4C 9Y6
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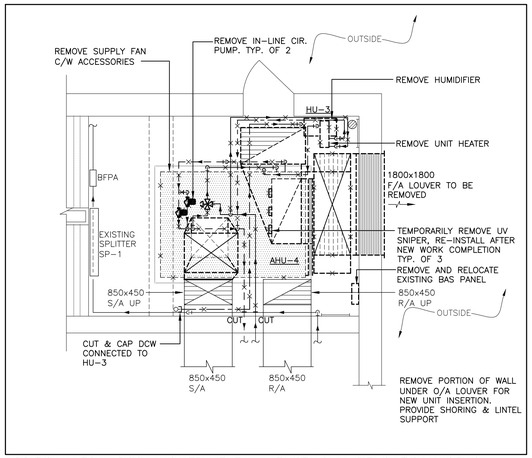
5650 Hurontario Street, Mississauga, Ont., L5R 1C6
Tel: (905) 890-1099, Fax: (905) 890-9453

Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

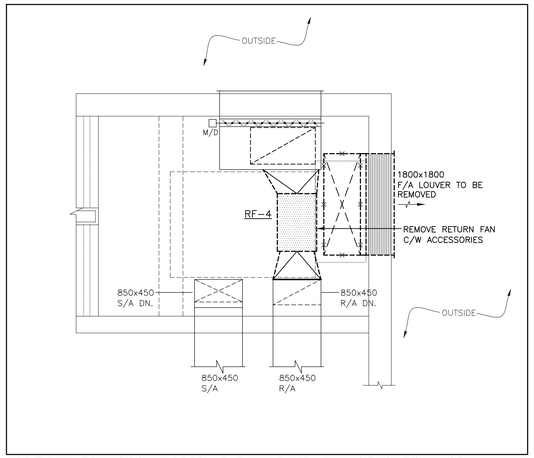
Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
PENTHOUSE MECHANICAL ROOM - NEW WORKS - MECHANICAL

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: 1:50
File Number: 2025-63	Dwg Number: M-3



ADDITION MECH. ROOM LOWER LEVEL – EXISTING & DEMOLITION WORKS
SCALE: 1:50



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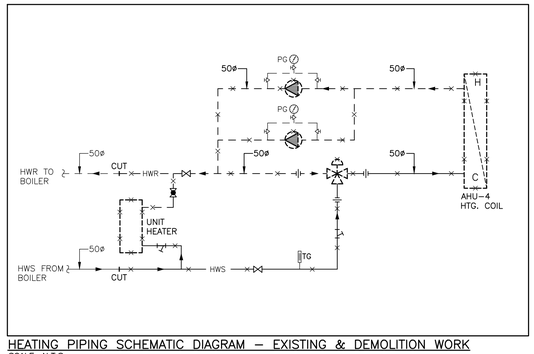
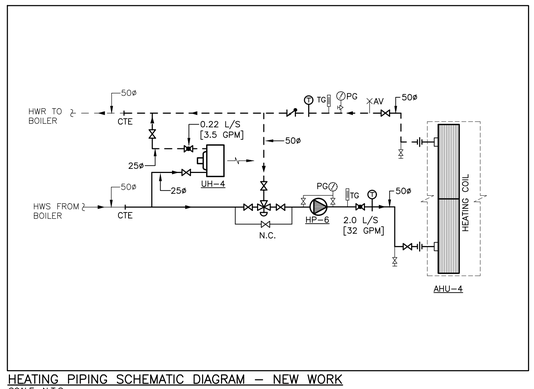
SCALE: 1:50



HEATING PIPING SCHEMATIC DIAGRAM – EXISTING & DEMOLITION WORK
SCALE: N.T.S.



HEATING PIPING SCHEMATIC DIAGRAM – NEW WORK
SCALE: N.T.S.

DEMOLITION WORK NOTES:

THESE NOTES SHALL BE READ IN CONJUNCTION WITH, AND SHALL FORM AN INTEGRAL PART OF THE SPECIFICATIONS.

PRIOR TO COMMENCING THE DEMOLITION WORK, EXAMINE CAREFULLY THE ELEMENTS OF THE EXISTING SYSTEMS TO BE REMOVED. FOR REASONS OF CLARITY, THE DRAWINGS DO NOT SHOW ALL BUILDING SERVICES LOCATED IN THE MECHANICAL ROOM OR ALL STRUCTURAL ELEMENTS. ALL BUILDING SERVICES AND OTHER UTILITIES NOT AFFECTED BY THIS WORK SHALL REMAIN OPERATIONAL. ANY DAMAGE TO BUILDING SERVICES AND UTILITIES NOT AFFECTED BY THE WORK SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR, AT NO COST TO THE OWNER.

THE SIZES AND LOCATION OF PIPING, DUCTWORK, EQUIPMENT AND OTHER UTILITIES INDICATED ON THE DRAWINGS WERE SITE MEASURED OR TAKEN FROM EXISTING DRAWINGS. MAKE ANY CHANGES REQUIRED TO SUIT THE ACTUAL SITE CONDITIONS AT NO COST TO THE OWNER.

EXACT LOCATION OF CUT AND RECONNECT TO THE EXISTING DUCT TO BE DETERMINED ON SITE TO FACILITATE CONNECTION TO THE NEW EQUIPMENT.

REMOVE EXISTING SUPPLY FAN AND RETURN FAN AS INDICATED. REMOVE SECTIONS OF DUCTWORK AS REQUIRED FOR THE INSTALLATION OF THE NEW EQUIPMENT. REMOVE ALL SUPPORTS, VIBRATION ISOLATORS. DISCONNECT FROM POWER SUPPLY AND CONTROLS. REMOVE ALL ELECTRICAL POWER SUPPLY WIRING, CONDUITS AND DEVICES SUCH AS DISCONNECTS (REFER TO ELECTRICAL DRAWINGS FOR FULL SCOPE); MAKE SAFE ALL REMAINING WIRING.

ENSURE THAT DURING THE DEMOLITION WORK, THE FLOOR DRAINS ARE PROTECTED AGAINST CLOGGING WITH DEBRIS. RELOCATE FLOOR DRAINS THAT WILL FALL UNDER THE NEW EQUIPMENT. RE-CONNECT TO SANITARY PIPE BELOW.

REMOVE ALL REDUNDANT PIPE HANGERS AND SUPPORTS.

REMOVE ALL REMAINING EXISTING EXTERNAL DUCT INSULATION AND RE-INSULATE AS PER SPECIFICATIONS. ALL EXISTING AND NEW DUCTS INSIDE THE MECH. ROOM SHALL BE INSULATED INCLUDING SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTWORK AND PLENUMS.

REMOVE ALL CONDUITS ATTACHED TO THE EQUIPMENT AND DUCTS TO BE DEMOLISHED. REMOVE BACK TO SOURCE AND MAKE SAFE ALL REDUNDANT CONDUITS AND WIRING. REINSTATE THE ONES THAT ARE TO BE REUSED.

THE CONTROL CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION OF ALL THE CONTROLS ASSOCIATED WITH THE EQUIPMENT TO BE REMOVED, INCLUDING SENSORS, DEVICES, (PRESSURE SENSORS, HUMIDITY AND TEMPERATURE SENSORS). TUBING AND WIRING. REMOVE ALL EXISTING CONTROL PANELS THAT ARE REDUNDANT.

CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL REMOVED EQUIPMENT AND MATERIALS.

REMOVE ALL MOTORIZED DAMPERS & ACTUATORS.

PROVIDE TEMPORARY SHORING FOR WALL OPENINGS AS REQUIRED.

PROVIDE DRAWINGS STAMPED BY A STRUCTURAL ENGINEER FOR THE SHORING WORK REQUIRED. REMOVE THE EXISTING F/A LOUVER AND PORTION OF THE WALL BELOW THE LOUVER TO ALLOW FOR THE REMOVAL AND INSTALLATION OF THE NEW UNIT.

THE UNIT SHALL BE SUPPLIED IN SECTIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND MANUFACTURER TO MEASURE THE SITE CONDITION PRIOR OF ORDERING THE UNIT.

REMOVE SMOKE DETECTORS FROM DEMOLISHED DUCTS. TEMPORARY REMOVE ANY EXISTING CONDUITS AND PIPING THAT INTERFERE WITH DEMOLITION WORK. REINSTATE AT COMPLETION OF WORK.

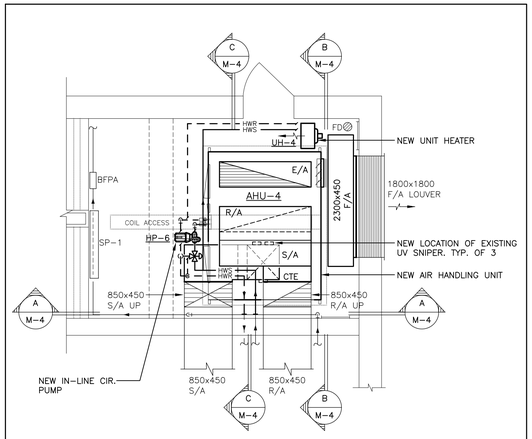
TEMPORARY REMOVE THE UV LIGHTS SANITIZE SYSTEM. FOR PROPERLY DISCONNECTION AND INSTALLATION CALL BLADE FILTERS INC. CONTRACTOR (416-701-0201).

PATCH AND REPAIR TO MATCH EXISTING ALL THE OPENINGS THROUGH THE EXISTING WALLS AND CEILING THAT ARE REDUNDANT AS A RESULT OF THE WORK.

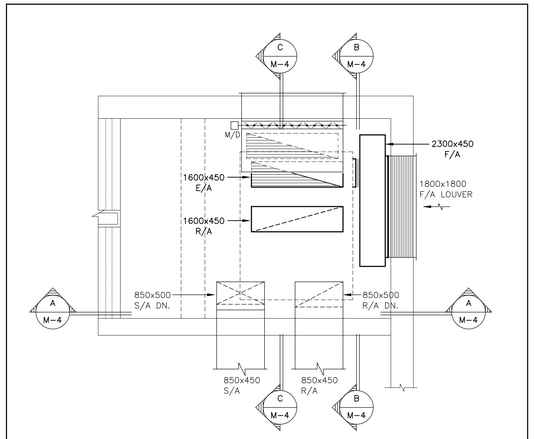
REMOVE ALL THE HEATING PIPES AND ASSOCIATED FITTINGS AND EQUIPMENT SERVING THE UNIT TO BE REMOVED.

REMOVE THE DCW SUPPLY TO THE HUMIDIFIER, THE HUMIDIFIER AND THE STEAM PIPES CONNECTED TO THE UNIT.

REMOVE EXISTING CONCRETE PAD AND PREPARE THE FLOOR FOR THE INSTALLATION OF NEW PAD. REMOVE ALL REDUNDANT HANGERS AND SUPPORTS.



ADDITION MECH. ROOM LOWER LEVEL – NEW WORKS
SCALE: 1:50



ADDITION MECH. ROOM UPPER LEVEL – NEW WORKS
SCALE: 1:50

NEW WORK NOTES:

FOR REASONS OF CLARITY, THE ROOM LAYOUT DOES NOT SHOW ALL VALVES, FITTINGS AND SENSORS/GAUGES. FOR FULL EXTENT OF FITTINGS AND INSTRUMENTATION, REFER TO THE NEW PIPING SCHEMATIC AND CONTROL DIAGRAMS.

THE DRAWINGS DO NOT SHOW ALL STRUCTURAL ELEMENTS AND BUILDING SERVICES LOCATED IN THE FAN ROOM.

ALL TEMPORARY INTERRUPTION OF SERVICES SHALL BE COORDINATED WITH THE OWNER.

DELIVER THE UNIT IN SECTION THROUGH THE F/A LOUVER AND WALL UNDER THE LOUVER.THE CONTRACTOR SHALL TEMPORARILY REMOVE ANY OTHER BUILDING SERVICES THAT INTERFERE WITH THE INSERTION OF THE EQUIPMENT. ALL EQUIPMENT TO BE DELIVERED IN SECTIONS AND RE-ASSEMBLED ON SITE. AT THE CONCLUSION OF THE RE-ASSEMBLY WORK, ALL BUILDING SERVICES AND EQUIPMENT THAT HAVE BEEN TEMPORARY REMOVED, SHALL BE REINSTATED. ALL TEMPORARY SERVICES REMOVAL AND RE-INSTALLATION ARE PART OF THE SCOPE OF WORK.

THE SUPPLY AIR UNIT TO BE SUPPLIED IN SECTIONS IN ORDER TO FIT INTO THE FAN ROOM BY THE INSERTION LOCATIONS NOTED ABOVE. THE AIR HANDLING EQUIPMENT SHALL BE ASSEMBLED ON SITE UNDER THE SUPERVISION OF THE MANUFACTURER'S TRAINED TECHNICIANS. AT THE CONCLUSION OF THE RE-ASSEMBLY WORK, THE MANUFACTURER'S TECHNICIANS SHALL ISSUE A REPORT CONFIRMING THAT THE EQUIPMENT HAS BEEN ASSEMBLED IN ACCORDANCE WITH THE FACTORY STANDARDS.

ALL INTERNAL WIRING OF THE NEW AIR HANDLING UNITS BY THE MANUFACTURER. ALL EXTERNAL WIRING BETWEEN THE UNIT AND EXTERNAL COMPONENTS BY THE CONTRACTOR.

RE-CONNECT THE NEW AIR HANDLING UNIT TO EXISTING SUPPLY, RETURN, EXHAUST & OUTSIDE AIR DUCTWORK; MANUFACTURE SHEET METAL TRANSITIONS AS REQUIRED BY THE NEW SIZE AND LOCATION OF UNIT'S OPENINGS AND NEW DUCTWORK LOCATION.

CONNECT NEW EQUIPMENT TO POWER SOURCE (REFER TO ELECTRICAL DRAWINGS).

PROVIDE ALL REQUIRED SUPPORTS FOR THE NEW DUCTWORK AND PIPES, INCLUDING HANGERS, FLOOR OR WALL SUPPORTS.

RE-INSULATE ALL THE DUCTWORK IN THE FAN ROOM (EXISTING AND NEW).

INSTALL NEW SENSORS AS SHOWN ON THE PIPING AND CONTROL SCHEMATIC. CONNECT TO THE EXISTING BAS.

INSTALL NEW SMOKE SENSORS IN THE SUPPLY AND RETURN DUCTS, CONNECT TO POWER AND FIRE ALARM IN ACCORDANCE WITH THE ONTARIO FIRE CODE. ALL WIRING AND DEVICES, INCLUDING PROGRAMMING OF THE SYSTEM IS PART OF THE CONTRACT. TEST THE FIRE ALARM AFTER UNIT IS CONNECTED AND DUCT SMOKE SENSORS HAVE BEEN INSTALLED. DUCT SENSORS TO BE INSTALLED ON EACH SUPPLY/ RETURN ZONE

MAKE GOOD ALL SURFACES AFFECTED BY THE WORK. PAINT THE FLOOR AS PER THE SPECIFICATIONS.

ALLOW FOR LOCAL DRAINAGE OF THE HEATING WATER SYSTEM IN THE SCHOOL. FLUSH, CLEAN AND REFILL.

CLEAN THE ENTIRE DUCTWORK SYSTEM CONNECTED TO THE EQUIPMENT THAT IS REPLACED.

REINSTALL THE EXISTING AIR SNIPERS. FOR PROPERLY DISCONNECTION AND INSTALLATION CALL "BLADE FILTERS INC." CONTRACTOR (416-701-0201)

MODIFY EXISTING CONCRETE PADS TO MATCH THE SIZE OF THE NEW UNIT.

LOCATE THE UNITS TO PROVIDE UNOBSTRUCTED ACCESS TO ALL THE COMPONENTS AND ACCESS DOORS. KEEP REQUIRED CODE CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT. IT IS THE CONTRACTOR RESPONSIBILITY TO CHECK PRIOR TO ORDERING THE EQUIPMENT THAT ACCESS TO THE UNIT IS NOT OBSTRUCTED.

CONNECT TO EXISTING MAIN HWS/HWR PIPES AND PROVIDE ALL REQUIRED FITTINGS

F/A PLENUM TO BE NEW, INSULATED AND C/W DRAIN AT THE LOWEST POINT. ROUTE DRAINS TO THE NEAREST FLOOR DRAIN.

REPAIR THE BLOCK WALL TO MATCH EXISTING.

INSTALL NEW SENSORS AS SHOWN ON THE PIPING AND CONTROL SCHEMATIC. CONNECT ALL NEW EQUIPMENT TO EXISTING BAS SYSTEM. PROVIDE NEW CONTROLLERS, POWER SUPPLY, WIRING AND CONDUITS AS REQUIRED. REVISE THE GRAPHIC INTERFACE AS NOTED ON THE CONTROL DIAGRAMS (REFER TO CONTROLS DRAWINGS AND SPECIFICATIONS).

MAKE GOOD ALL SURFACES AFFECTED BY THE WORK.

ALLOW FOR COMPLETE DRAINAGE OF THE HEATING WATER SYSTEM IN THE SCHOOL. FLUSH AND CLEAN THE ENTIRE SYSTEM.

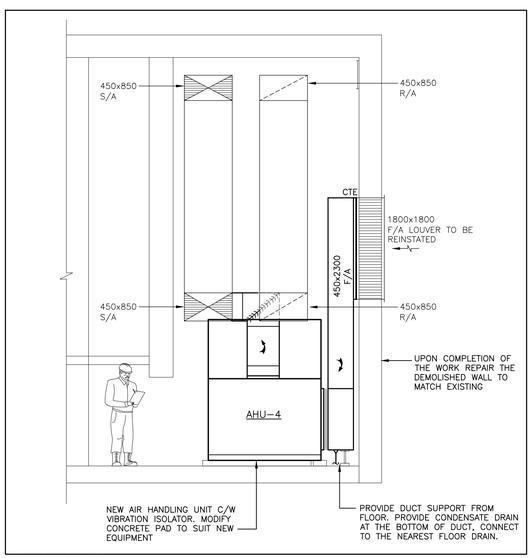
ELIMINATE AIR FROM THE HEATING WATER PIPING AFTER REFILL. INSTALL NEW AUTOMATIC AIR VENT AND DRAIN TO NEAREST FLOOR DRAIN. PROVIDE NEW AIR VENTS INSIDE THE MECHANICAL ROOM TO ELIMINATE AIR POCKETS AS REQUIRED BY THE NEW PIPING LAYOUT.

CLEAN & VACUUM THE ENTIRE DUCTWORK SYSTEM CONNECTED TO THE EQUIPMENT THAT IS REPLACED.

RE-INSTALL ALL THE FIRE DEVICES OR OTHER ELECTRICAL DEVICES THAT HAVE BEEN TEMPORALLY DISCONNECTED OR REMOVED TO ALLOW FOR THE INSTALLATION. INSTALL ALL THE NEW LIGHTS. DO NOT SUPPORT LIGHTS FROM DUCTS OR EQUIPMENT; SUPPORT FROM STRUCTURE ELEMENT. TEST ALL FIRE DEVICES THAT HAVE BEEN AFFECTED BY THIS WORK.

FOR PIPING SIZE, FITTINGS AND CONTROL VALVES REFER TO PIPING SCHEMATICS.

INSTALL THE UV LIGHTS ONE THE NEW DUCTWORK. EXACT LOCATION AND NUMBER TO BE CONFIRMED WITH THE MANUFACTURER. PROVIDE ALL THE POWER WIRING AND BAS CONTROL.



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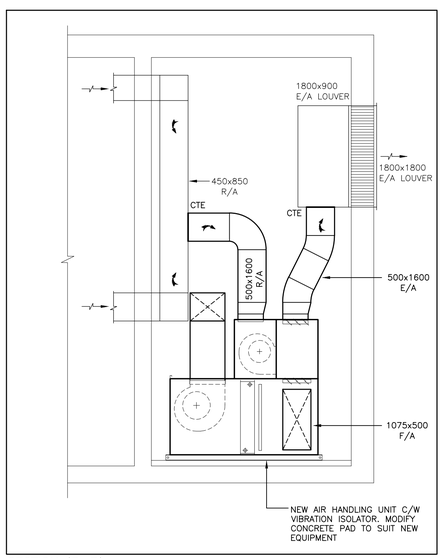

SECTION 'B-B'
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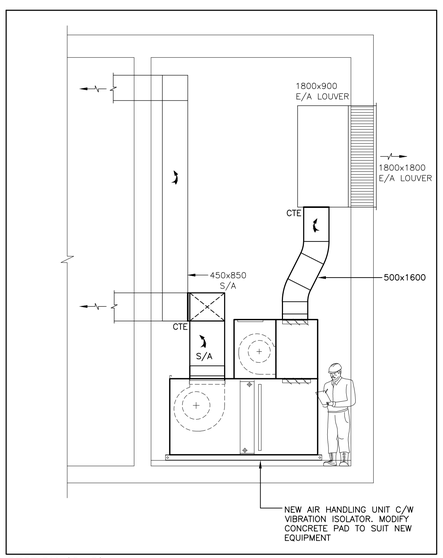

SECTION 'C-C'
SCALE: 1:50

GENERAL NOTES :

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No.		DATE
1.	ISSUED FOR BID	OCT. 2025
No.	ISSUED	DATE

Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER
AUG. 2025
G. STRASHUN
PROVINCE OF ONTARIO

SAB ENGINEERING Inc.
588 EDWARD AVE., UNIT 25, RICHMOND HILL, ONT., L4C 9Y6
TEL. (905)-787 8885 FAX (905)-787 8771

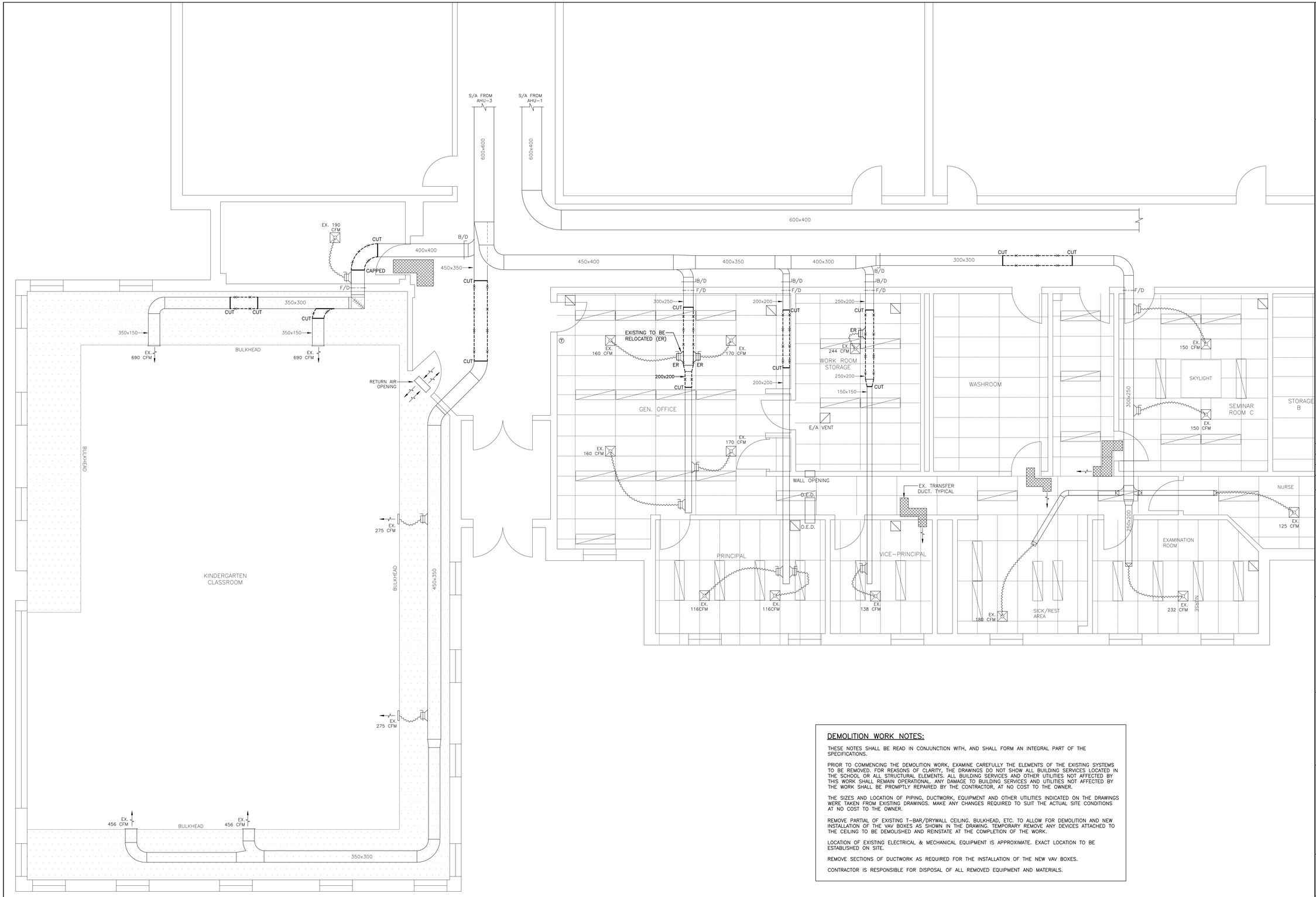
peel District School Board
5650 Hurontario Street, Mississauga, Ont., L5R 1C6
Tel: (905) 890-1099, Fax: (905) 890-9453

Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
ADDITION MECH. ROOM LAYOUT - DEMOLITION & NEW WORKS - MECHANICAL

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: AS SHOWN
File Number: 2025-63	Dwg Number: M-4



DEMOLITION WORK NOTES:

THESE NOTES SHALL BE READ IN CONJUNCTION WITH, AND SHALL FORM AN INTEGRAL PART OF THE SPECIFICATIONS.

PRIOR TO COMMENCING THE DEMOLITION WORK, EXAMINE CAREFULLY THE ELEMENTS OF THE EXISTING SYSTEMS TO BE REMOVED. FOR REASONS OF CLARITY, THE DRAWINGS DO NOT SHOW ALL BUILDING SERVICES LOCATED IN THE SCHOOL OR ALL STRUCTURAL ELEMENTS. ALL BUILDING SERVICES AND OTHER UTILITIES NOT AFFECTED BY THIS WORK SHALL REMAIN OPERATIONAL. ANY DAMAGE TO BUILDING SERVICES AND UTILITIES NOT AFFECTED BY THE WORK SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR, AT NO COST TO THE OWNER.

THE SIZES AND LOCATION OF PIPING, DUCTWORK, EQUIPMENT AND OTHER UTILITIES INDICATED ON THE DRAWINGS WERE TAKEN FROM EXISTING DRAWINGS. MAKE ANY CHANGES REQUIRED TO SUIT THE ACTUAL SITE CONDITIONS AT NO COST TO THE OWNER.

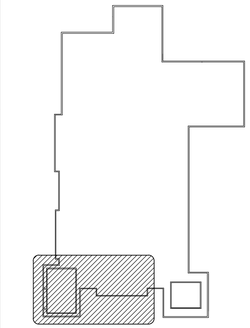
REMOVE PARTIAL OF EXISTING T-BAR/DRYWALL CEILING. BULKHEAD, ETC. TO ALLOW FOR DEMOLITION AND NEW INSTALLATION OF THE VAV BOXES AS SHOWN IN THE DRAWING. TEMPORARY REMOVE ANY DEVICES ATTACHED TO THE CEILING TO BE DEMOLISHED AND REINSTATE AT THE COMPLETION OF THE WORK.

LOCATION OF EXISTING ELECTRICAL & MECHANICAL EQUIPMENT IS APPROXIMATE. EXACT LOCATION TO BE ESTABLISHED ON SITE.

REMOVE SECTIONS OF DUCTWORK AS REQUIRED FOR THE INSTALLATION OF THE NEW VAV BOXES.

CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL REMOVED EQUIPMENT AND MATERIALS.

GENERAL NOTES :



KEY PLAN – OFFICES & KINDERGARTEN CLASSROOM

No.	ISSUED	DATE
1.	ISSUED FOR BID	OCT. 2025

Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER
AUG. 202
G. STRASHUN
PROVINCE OF ONTARIO

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Project

NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

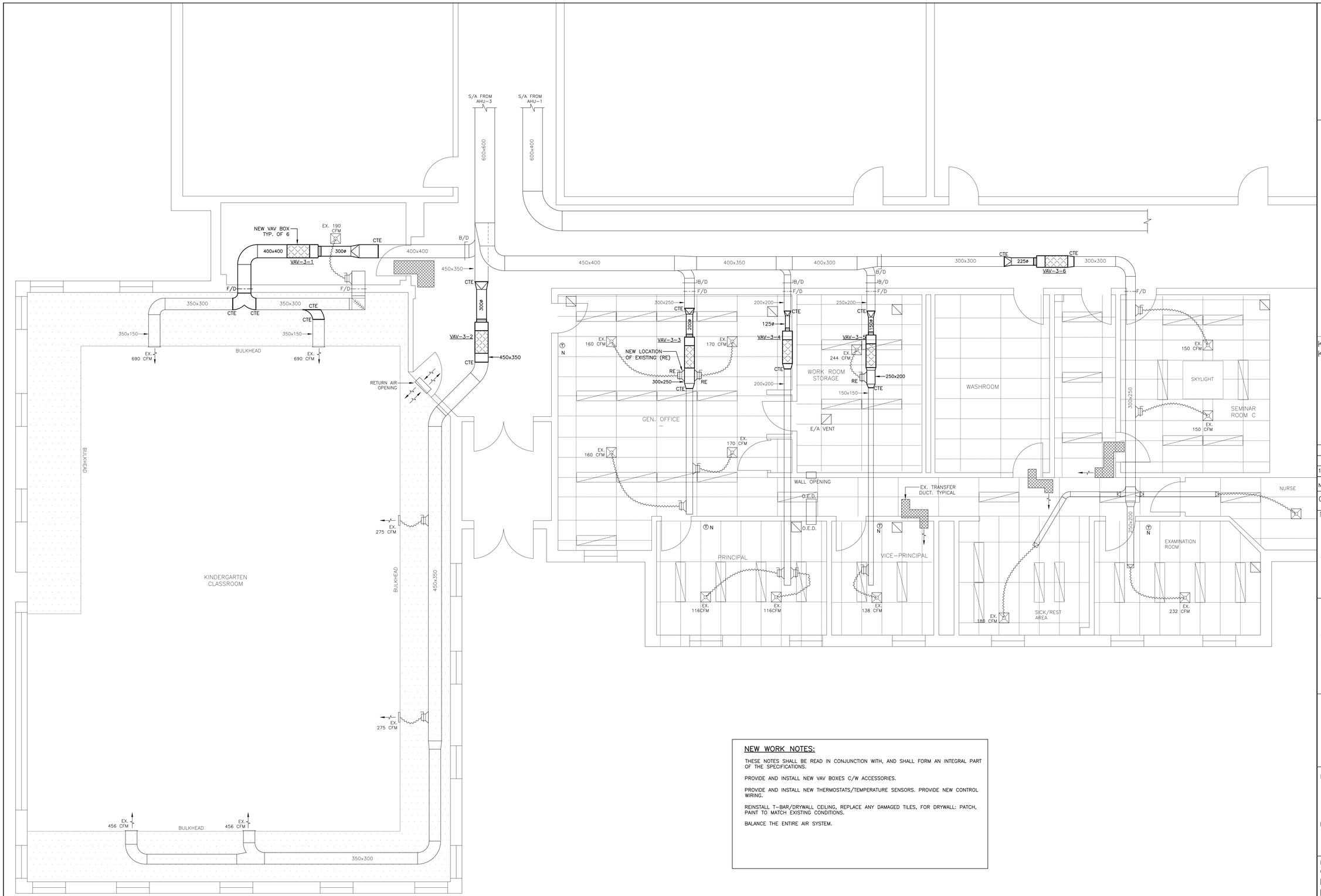
Location

235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title

OFFICES & KINDERGARTEN ROOM HVAC LAYOUT - EXISTING & DEMOLITION WORKS - MECHANICAL

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: 1:50
File Number: 2025-63	Dwg Number: M-5



NEW WORK NOTES:

THESE NOTES SHALL BE READ IN CONJUNCTION WITH, AND SHALL FORM AN INTEGRAL PART OF THE SPECIFICATIONS.

PROVIDE AND INSTALL NEW VAV BOXES C/W ACCESSORIES.

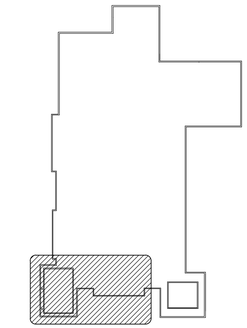
PROVIDE AND INSTALL NEW THERMOSTATS/TEMPERATURE SENSORS. PROVIDE NEW CONTROL WIRING.

REINSTALL T-BAR/DRYWALL CEILING, REPLACE ANY DAMAGED TILES, FOR DRYWALL: PATCH, PAINT TO MATCH EXISTING CONDITIONS.

BALANCE THE ENTIRE AIR SYSTEM.

GENERAL NOTES :

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION.



KEY PLAN – OFFICES & KINDERGARTEN CLASSROOM

No.		DATE
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Location
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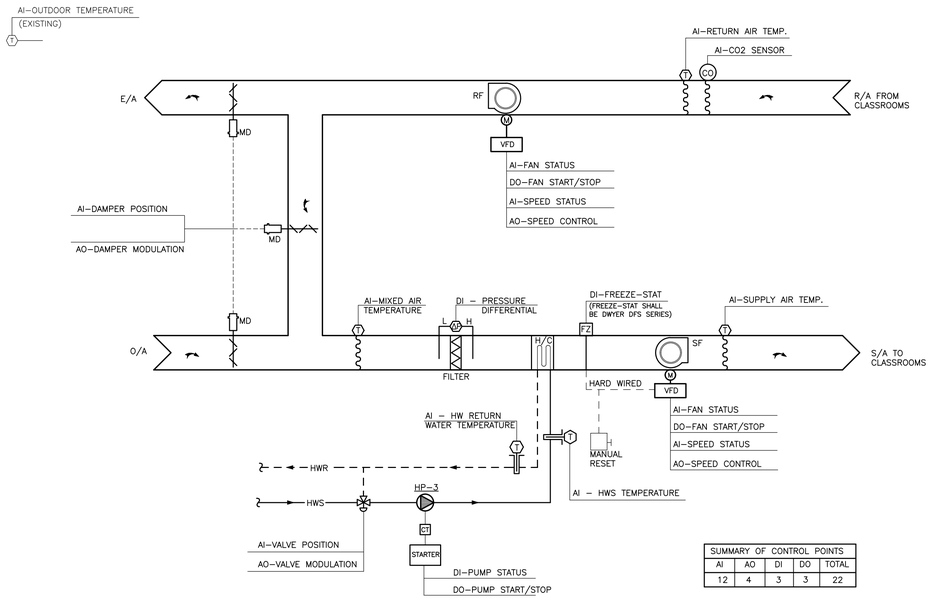
Drawing Title
OFFICES & KINDERGARTEN ROOM HVAC LAYOUT - NEW WORKS - MECHANICAL

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: 1:50
File Number: 2025-63	Dwg Number: M-6



SUMMARY OF CONTROL POINTS				
AI	AO	DI	DO	TOTAL
12	4	3	3	22

NOTE 1:

ALL VALUES TO BE MADE ADJUSTABLE BY THE OPERATOR.

ALL SENSORS AND DEVICES TO BE NEW.

ALL SENSORS TO BE SUPPLIED AND INSTALLED BY THE CONTROLS CONTRACTOR

PROVIDE NEW WIRING IN CONDUIT AS REQUIRED.

SEQUENCE OF OPERATION:

HEATING/VENTILATION MODE SWITCHOVER

THE SYSTEM SHALL BE CONSIDERED IN HEATING MODE WHEN THE HEATING PLANT IS ENABLED, AT ALL OTHER TIMES, THE SYSTEM SHALL BE IN VENTILATION MODE.

OCCUPIED/UNOCCUPIED SCHEDULE SHALL REMAIN AS PER THE CURRENT BAS STRATEGY.

ENABLE/DISABLE:

THE AHU SHALL BE ENABLED/DISABLED BY BAS IN ACCORDANCE WITH THE SCHOOL'S OCCUPANCY SCHEDULE. THE SUPPLY AND RETURN FANS SHALL START, RAMP UP TO PRE–SET RPM VALUES AND RUN CONTINUOUSLY. THE FINAL FAN RPM SETTINGS SHALL BE DETERMINED DURING THE AIR BALANCING STAGE, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING BETWEEN BALANCER AND CONTROLS TO ENSURE PROPER FAN RPM SETTINGS.

VENTILATION MODE – OCCUPIED HOURS

THE 3–WAY HOT WATER COIL CONTROL VALVE SHALL BE FULLY OPEN TO THE COIL. ASSOCIATED COIL CIRCULATOR PUMP SHALL BE OFF.

THE FRESH AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION (AS PER SCHEDULE). THE EXHAUST AND RETURN AIR DAMPERS SHALL BE POSITIONED AS REQUIRED TO MAINTAIN THE TOTAL AIR FLOW OF THE UNIT. CO_2 SENSOR SHALL BE ENABLED. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE EXHAUST AND RETURN AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW REQUIREMENT OF THE UNIT.

AT OUTDOOR TEMPERATURES BETWEEN (16°C TO 20°C) (ADJUSTABLE), THE FRESH AIR DAMPER SHALL MODULATE BEYOND THE MINIMUM POSITION TO MAINTAIN THE MIXED AIR TEMPERATURE AT 23°C. THE EXHAUST AND MIXED AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM. DURING ECONOMIZER MODE OF OPERATION, THE CO_2 SENSOR IS DISABLED.

AT OUTDOOR AIR TEMPERATURES ABOVE 20°C, THE OUTDOOR DAMPER SHALL MODULATE BACK TO THE MINIMUM POSITION. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE EXHAUST AND MIXED AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE AIR FLOW REQUIREMENT OF THE SYSTEM. THE OPENING OF THE OUTDOOR AIR DAMPER SHALL BE LIMITED BY A MIXED AIR TEMPERATURE OF 26°C.

VENTILATION MODE – UNOCCUPIED HOURS:

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

HEATING MODE – OCCUPIED HOURS

THE FRESH AIR DAMPER SHALL OPEN TO ALLOW AN OUTDOOR AIR FLOW EQUAL TO THE MINIMUM VALUE NOTED IN THE SCHEDULE. THE MIXED AIR AND EXHAUST DAMPER SHALL BE POSITIONED TO MAINTAIN THE TOTAL AIRFLOW OF THE UNIT. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE BEYOND THE MINIMUM POSITION AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE OPENING OF THE FRESH AIR DAMPER SHALL BE SUBJECT TO A MINIMUM MIXED AIR TEMPERATURE OF 5°C.

THE EXHAUST AIR AND RETURN DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE AIR FLOW REQUIREMENTS OF THE SYSTEM. SHOULD THE MIXED AIR TEMPERATURE DROP BELOW 10°C, THE FRESH AIR DAMPER SHALL GRADUALLY CLOSE TO THE MINIMUM POSITION TO PREVENT A FURTHER DROP IN TEMPERATURE, REGARDLESS OF THE CO_2 SENSOR READING. AS THE OUTDOOR TEMPERATURE RISES, AND THE MIXED AIR TEMPERATURE RISES ABOVE 12°C, THE FRESH AIR DAMPER SHALL RETURN UNDER CO_2 SENSOR CONTROL. THE RETURN AND EXHAUST AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM.

THE ASSOCIATED HEATING COIL CIRCULATION PUMP OPERATES CONTINUOUSLY. THE 3–WAY CONTROL VALVE MODULATES AS REQUIRED TO MAINTAIN THE RETURN AIR TEMPERATURE AT THE SETPOINT (23°C, ADJUSTABLE).

EQUIPMENT ON, HEATING MODE, UNOCCUPIED HOURS

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

OCCUPANCY OVERRIDE:

INCLUDE AN OCCUPANCY OVERRIDE BUTTON AND THE OVERRIDE TIME DURATION SELECT, ON THE AHU GRAPHICAL USER INTERFACE. WHEN ENABLED, THE OCCUPANCY SHALL SWITCH TO "OCCUPIED MODE" FOR THE AMOUNT OF TIME SET BY THE OVERRIDE TIME DURATION SELECT. DEFAULT SHALL BE 1 HOUR WITH 1 HOUR INCREMENTS. THE OCCUPANCY OVERRIDE SHALL EXPIRE AT THE END OF THE TIME DURATION PERIOD AND AHU SHALL RETURN TO CURRENT SCHEDULE.

FREEZE–STAT OPERATION

IF THE FREEZE–STAT SENSES A SUPPLY AIR TEMPERATURE OF LESS THAN 5°C, IT SHALL:

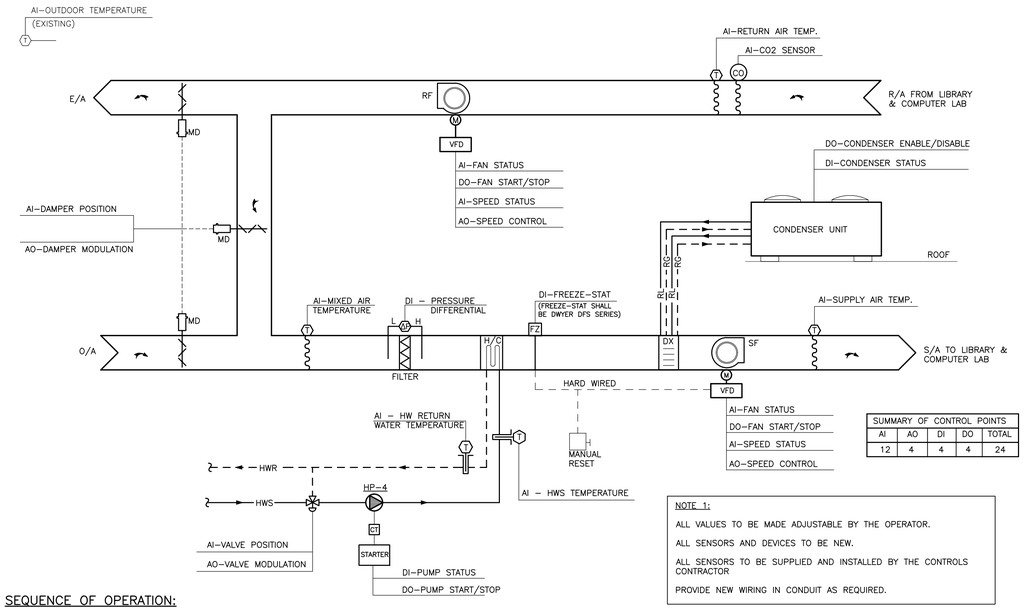
- CLOSE THE FRESH AIR AND EXHAUST AIR DAMPERS AND FULLY OPEN THE RETURN DAMPER;
- FULLY OPEN THE 3–WAY CONTROL VALVES TO HOT WATER COIL;
- STOP THE SUPPLY AND RETURN AIR FANS;
- ALARM THE BAS.

ALARMS:

THE BAS SHALL GENERATE ALARMS IN CASE OF:

- ANY FAN FAILURE (AHU SHALL BE DISABLED BY BAS)
- CIRCULATOR PUMP FAILURE (AHU SHALL BE DISABLED BY BAS IF OCCURS IN HEATING MODE; THE OUTSIDE AIR DAMPER SHALL CLOSE.)
- ANY DAMPER FAILURE;
- DIRTY FILTER;
- RETURN AIR TEMPERATURE VARIANCE OF ±3°C FROM THE SETPOINT;
- MIXED AIR TEMPERATURE LOWER THAN 2°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPERS SHALL CLOSE AND UNIT SHALL BE TURN OFF);
- DISCHARGED AIR LOWER THAN 12°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPER SHALL CLOSE);
- RETURN AIR CO_2 CONCENTRATION IS ABOVE 900 PPM

AHU–1 CONTROL DIAGRAM AND SEQUENCE OF OPERATION
N.T.S.



SUMMARY OF CONTROL POINTS				
AI	AO	DI	DO	TOTAL
12	4	4	4	24

NOTE 1:

ALL VALUES TO BE MADE ADJUSTABLE BY THE OPERATOR.

ALL SENSORS AND DEVICES TO BE NEW.

ALL SENSORS TO BE SUPPLIED AND INSTALLED BY THE CONTROLS CONTRACTOR

PROVIDE NEW WIRING IN CONDUIT AS REQUIRED.

SEQUENCE OF OPERATION:

*NOTES: THE REQUIRED MINIMUM POSITION OF THE OUTDOOR AIR INTAKE DAMPER SHALL BE DETERMINED DURING THE AIR BALANCING STAGE, BASED ON THE MINIMUM OUTSIDE AIR FLOW REQUIREMENT SHOWN ON THE EQUIPMENT SCHEDULE. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING THE MINIMUM POSITION OF THE OUTDOOR INTAKE AIR DAMPER DURING THE EQUIPMENT BALANCING STAGE AND RELAYING THE INFORMATION TO THE BAS CONTRACTOR. FAILURE TO DO SO WILL RESULT IN ADDITIONAL AIR BALANCING AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

THIS IS A CONSTANT VOLUME UNIT. SUPPLY FAN VFD SHALL BE USED FOR BALANCING PURPOSES ONLY, IN ORDER TO ACHIEVE THE DESIGN AIR FLOW. AFTER AIR BALANCING, THE SUPPLY FAN VFD SHALL BE LOCKED FOR THE RPM/FREQUENCY DETERMINED DURING THE AIR BALANCING STAGE. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING BETWEEN BALANCER AND CONTROLS TO ENSURE PROPER FAN RPM SETTINGS.

COOLING AND VENTILATION MODES

THE AIR HANDLER SHALL BE IN HEATING MODE WHEN THE HEATING PLANT IS ENABLED. AT ALL OTHER TIMES, THE AIR HANDLER SHALL BE IN COOLING MODE.

EQUIPMENT ON/OFF

THE SUPPLY AND RETURN FANS SHALL BE ENABLED/DISABLED ACCORDING TO THE CURRENT SCHEDULE. WHEN DISABLED, THE SUPPLY AND RETURN FANS WILL STOP, THE FRESH AIR AND EXHAUST DAMPERS SHALL BE FULLY CLOSED, THE RETURN DAMPER SHALL BE FULLY OPEN. THE 3–WAY CONTROL VALVE SHALL TURN TO ITS DEFAULT POSITION.

NOTE: AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE RETURN FAN SHALL START AT 20% OF NOMINAL RPM. UPON PROOF OF FLOW, THE SUPPLY FAN SHALL START AT 20% OF NOMINAL RPM. AFTER THE BAS CONFIRMED THAT BOTH FANS ARE RUNNING, THE FANS SHALL RAMP UP TO THEIR REQUIRED RPM OVER A PERIOD OF NO LESS THAN 2 MINUTES.

HEATING MODE – OCCUPIED HOURS

THE FRESH AIR DAMPER SHALL OPEN TO ALLOW AN OUTDOOR AIR FLOW EQUAL TO THE MINIMUM VALUE NOTED IN THE SCHEDULE. THE MIXED AIR AND EXHAUST DAMPER SHALL BE POSITIONED TO MAINTAIN THE TOTAL AIRFLOW OF THE UNIT. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE BEYOND THE MINIMUM POSITION AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE OPENING OF THE FRESH AIR DAMPER SHALL BE SUBJECT TO A MINIMUM MIXED AIR TEMPERATURE OF 8°C.

THE EXHAUST AIR AND RETURN DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE AIR FLOW REQUIREMENTS OF THE SYSTEM. SHOULD THE MIXED AIR TEMPERATURE DROP BELOW 10°C, THE FRESH AIR DAMPER SHALL GRADUALLY CLOSE TO THE MINIMUM POSITION TO PREVENT A FURTHER DROP IN TEMPERATURE, REGARDLESS OF THE CO_2 SENSOR READING. AS THE OUTDOOR TEMPERATURE RISES, AND THE MIXED AIR TEMPERATURE RISES ABOVE 12°C, THE FRESH AIR DAMPER SHALL RETURN UNDER CO_2 SENSOR CONTROL. THE RETURN AND EXHAUST AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM.

THE ASSOCIATED HEATING COIL CIRCULATION PUMP OPERATES CONTINUOUSLY. THE 3–WAY CONTROL VALVE MODULATES AS REQUIRED TO MAINTAIN THE RETURN AIR TEMPERATURE AT THE SETPOINT (23°C, ADJUSTABLE).

EQUIPMENT ON, HEATING MODE, UNOCCUPIED HOURS

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

COOLING MODE, OCCUPIED HOURS,

THE SUPPLY AND RETURN FANS SHALL RUN CONTINUOUSLY.

NOTE: AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE RETURN FAN SHALL START 20% OF ITS NOMINAL RPM. UPON PROOF OF FLOW, THE SUPPLY FAN SHALL START AT 20% OF NOMINAL RPM. AFTER THE BAS CONFIRMED THAT BOTH FANS ARE RUNNING, THE FANS SHALL RAMP UP TO THEIR REQUIRED OPERATIONAL RPM OVER A PERIOD OF NO LESS THAN 2 MINUTES.

THE FANS SHALL RUN CONTINUOUSLY. WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 18°C, THE FRESH AIR DAMPER SHALL MODULATE BEYOND THE MINIMUM POSITION TO MAINTAIN THE MIXED AIR TEMPERATURE AT 18°C. THE EXHAUST AND MIXED AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM. DURING ECONOMIZER MODE OF OPERATION, THE CO_2 SENSOR IS DISABLED.

AT OUTDOOR AIR TEMPERATURES ABOVE 18°C, THE OUTDOOR DAMPER SHALL MODULATE BACK TO THE MINIMUM POSITION. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE EXHAUST AND MIXED AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE AIR FLOW REQUIREMENT OF THE SYSTEM. THE OPENING OF THE OUTDOOR AIR DAMPER SHALL BE LIMITED BY A MIXED AIR TEMPERATURE OF 26°C.

THE DX COOLING SECTION OF THE UNIT WILL MODULATE ITS STAGES AS REQUIRED TO MAINTAIN THE RETURN AIR AT SETPOINT (DEFAULT VALUE: 24°C) SUBJECT TO A LOW LIMIT DISCHARGE TEMPERATURE OF 10°C.)

COOLING MODE – UNOCCUPIED HOURS

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

MORNING WARM–UP:

TWO HOURS (ADJUSTABLE) PRIOR TO OCCUPIED MODE, UNIT WILL OPERATE IN MORNING WARM–UP MODE. FRESH DAMPER WILL BE CLOSED AND RETURN DAMPER WILL BE OPEN. BOTH FANS WILL BE ON, THE CO_2 SENSOR WILL BE OFF. THE CIRCULATION PUMP WILL BE ON. THE 3–WAY CONTROL VALVE WILL MODULATE AS REQUIRED TO BRING THE HOT DECK TEMPERATURE AT 38°C (ADJUSTABLE). THE DAMPERS FOR EACH ZONE WILL MODULATE A REQUIRED TO MAINTAIN THE SPACE AT OCCUPIED SET POINT TEMPERATURE.

OCCUPANCY OVERRIDE:

INCLUDE AN OCCUPANCY OVERRIDE BUTTON AND THE OVERRIDE TIME DURATION SELECT, ON THE AHU GRAPHICAL USER INTERFACE. WHEN ENABLED, THE OCCUPANCY SHALL SWITCH TO "OCCUPIED MODE" FOR THE AMOUNT OF TIME SET BY THE OVERRIDE TIME DURATION SELECT. DEFAULT SHALL BE 1 HOUR WITH 1 HOUR INCREMENTS. THE OCCUPANCY OVERRIDE SHALL EXPIRE AT THE END OF THE TIME DURATION PERIOD AND AHU SHALL RETURN TO CURRENT SCHEDULE.

FREEZE–STAT OPERATION

IF THE FREEZE–STAT SENSES A SUPPLY AIR TEMPERATURE OF LESS THAN 5°C, IT SHALL:

- CLOSE THE FRESH AIR AND EXHAUST AIR DAMPERS AND FULLY OPEN THE RETURN DAMPER;
- FULLY OPEN THE 3–WAY CONTROL VALVES TO HOT WATER COIL;
- STOP THE SUPPLY AND RETURN AIR FANS;
- ALARM THE BAS.

ALARMS:

THE BAS SHALL GENERATE ALARMS IN CASE OF:

- ANY FAN FAILURE (AHU SHALL BE DISABLED BY BAS)
- CIRCULATOR PUMP FAILURE (AHU SHALL BE DISABLED BY BAS IF OCCURS IN HEATING MODE; THE OUTSIDE AIR DAMPER SHALL CLOSE.)
- ANY DAMPER FAILURE;
- DIRTY FILTER;
- RETURN AIR TEMPERATURE VARIANCE OF ±3°C FROM THE SETPOINT;
- MIXED AIR TEMPERATURE LOWER THAN 2°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPERS SHALL CLOSE AND UNIT SHALL BE TURN OFF);
- DISCHARGED AIR LOWER THAN 12°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPER SHALL CLOSE);
- RETURN AIR CO_2 CONCENTRATION IS ABOVE 900 PPM
- COMPRESSOR FAILURE

AHU–2 CONTROL DIAGRAM AND SEQUENCE OF OPERATION
N.T.S.

GENERAL NOTES :

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

No.	ISSUED	DATE
1.	ISSUED FOR BID	OCT. 2025

Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER
AUG. 2025
G. STRASHUN
PROVINCE OF ONTARIO

SAB ENGINEERING Inc.
588 EDWARD AVE., UNIT 25, RICHMOND HILL, ONT., L4C 9Y6
TEL. (905)-787 8885 FAX (905)-787 8771

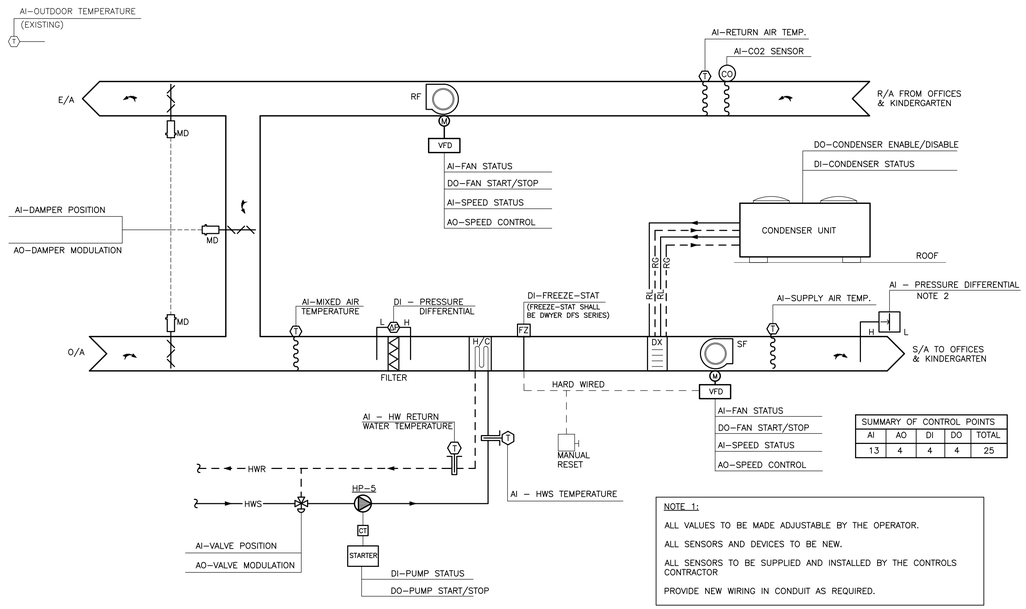
peel District School Board
5650 Hurontario Street, Mississauga, Ont., L5R 1C6
Tel: (905) 890–1099, Fax: (905) 890–9453

Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
CONTROL DIAGRAMS FOR AHU-1 & AHU-2
(SHEET 1 OF 3)

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: N.T.S.
File Number: 2025–63	Dwg Number: M-7



SUMMARY OF CONTROL POINTS				
AI	AO	DI	DO	TOTAL
13	4	4	4	25

NOTE 1:

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HEATING/VENTILATION MODE SWITCHOVER

THE SYSTEM SHALL BE CONSIDERED IN HEATING MODE WHEN THE HEATING PLANT IS ENABLED, AT ALL OTHER TIMES, THE SYSTEM SHALL BE IN VENTILATION MODE.

OCCUPIED/UNOCCUPIED SCHEDULE SHALL REMAIN AS PER THE CURRENT BAS STRATEGY.

ENABLE/DISABLE:

THE AHU SHALL BE ENABLED/DISABLED BY BAS IN ACCORDANCE WITH THE SCHOOL'S OCCUPANCY SCHEDULE. THE SUPPLY AND RETURN FANS SHALL START, RAMP UP TO PRE–SET RPM VALUES AND RUN CONTINUOUSLY. THE FINAL FAN RPM SETTINGS SHALL BE DETERMINED DURING THE AIR BALANCING STAGE, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING BETWEEN BALANCER AND CONTROLS TO ENSURE PROPER FAN RPM SETTINGS.

THE SUPPLY AND RETURN FANS SHALL RUN CONTINUOUSLY. THE SUPPLY FAN VFD SHALL MODULATE AS REQUIRED TO MAINTAIN THE STATIC PRESSURE IN THE DISCHARGE DUCTWORK AT 256 PA (TO BE DETERMINED AT BALANCING). THE RETURN FAN VFD SHALL MODULATE AS REQUIRED TO MAINTAIN AN AIR FLOW DIFFERENCE RELATIVE TO THE SUPPLY AS INDICATED ON THE DRAWINGS. THE CORRELATION BETWEEN THE VARIABLE AIR FLOW AND RPM FOR EACH FAN SHALL BE DERIVED FROM THE FAN LAWS AND FAN CURVES.

NOTE: AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE RETURN FAN SHALL START AT 20% OF NOMINAL RPM. UPON PROOF OF FLOW, THE SUPPLY FAN SHALL START AT 20% OF NOMINAL RPM. AFTER THE BAS CONFIRMED THAT BOTH FANS ARE RUNNING, THE FANS SHALL RAMP UP TO THEIR REQUIRED RPM OVER A PERIOD OF NO LESS THAN 2 MINUTES.

HEATING MODE – OCCUPIED HOURS

THE FRESH AIR DAMPER SHALL OPEN TO ALLOW AN OUTDOOR AIR FLOW EQUAL TO THE MINIMUM VALUE NOTED IN THE SCHEDULE. THE MIXED AIR AND EXHAUST DAMPER SHALL BE POSITIONED TO MAINTAIN THE TOTAL AIRFLOW OF THE UNIT. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE BEYOND THE MINIMUM POSITION AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE OPENING OF THE FRESH AIR DAMPER SHALL BE SUBJECT TO A MINIMUM MIXED AIR TEMPERATURE OF 8°C.

THE EXHAUST AIR AND RETURN DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE AIR FLOW REQUIREMENTS OF THE SYSTEM. SHOULD THE MIXED AIR TEMPERATURE DROP BELOW 10°C, THE FRESH AIR DAMPER SHALL GRADUALLY CLOSE TO THE MINIMUM POSITION TO PREVENT A FURTHER DROP IN TEMPERATURE, REGARDLESS OF THE CO_2 SENSOR READING. AS THE OUTDOOR TEMPERATURE RISES, AND THE MIXED AIR TEMPERATURE RISES ABOVE 12°C, THE FRESH AIR DAMPER SHALL RETURN UNDER CO_2 SENSOR CONTROL. THE RETURN AND EXHAUST AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM.

THE ASSOCIATED HEATING COIL CIRCULATION PUMP OPERATES CONTINUOUSLY. THE 3–WAY CONTROL VALVE MODULATES AS REQUIRED TO MAINTAIN THE RETURN AIR TEMPERATURE AT THE SETPOINT (23°C, ADJUSTABLE).

EQUIPMENT ON, HEATING MODE, UNOCCUPIED HOURS

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

COOLING MODE, OCCUPIED HOURS.

THE SUPPLY AND RETURN FANS SHALL RUN CONTINUOUSLY.

NOTE: AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE RETURN FAN SHALL START 20% OF ITS NOMINAL RPM. UPON PROOF OF FLOW, THE SUPPLY FAN SHALL START AT 20% OF NOMINAL RPM. AFTER THE BAS CONFIRMED THAT BOTH FANS ARE RUNNING, THE FANS SHALL RAMP UP TO THEIR REQUIRED OPERATIONAL RPM OVER A PERIOD OF NO LESS THAN 2 MINUTES.

THE FANS SHALL RUN CONTINUOUSLY. WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 18°C, THE FRESH AIR DAMPER SHALL MODULATE BEYOND THE MINIMUM POSITION TO MAINTAIN THE MIXED AIR TEMPERATURE AT 18°C. THE EXHAUST AND MIXED AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM. DURING ECONOMIZER MODE OF OPERATION, THE CO_2 SENSOR IS DISABLED.

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THE DX COOLING SECTION OF THE UNIT WILL MODULATE ITS STAGES AS REQUIRED TO MAINTAIN THE RETURN AIR AT SETPOINT (DEFAULT VALUE: 24°C) SUBJECT TO A LOW LIMIT DISCHARGE TEMPERATURE OF 10°C.)

COOLING MODE – UNOCCUPIED HOURS

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

MORNING WARM–UP:

TWO HOURS (ADJUSTABLE) PRIOR TO OCCUPIED MODE, UNIT WILL OPERATE IN MORNING WARM–UP MODE. FRESH DAMPER WILL BE CLOSED AND RETURN DAMPER WILL BE OPEN. BOTH FANS WILL BE ON, THE CO_2 SENSOR WILL BE OFF THE CIRCULATION PUMP WILL BE ON. THE 3–WAY CONTROL VALVE WILL MODULATE AS REQUIRED TO BRING THE HOT DECK TEMPERATURE AT 38°C (ADJUSTABLE). THE DAMPERS FOR EACH ZONE WILL MODULATE A REQUIRED TO MAINTAIN THE SPACE AT OCCUPIED SET POINT TEMPERATURE.

OCCUPANCY OVERRIDE:

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FREEZE–STAT OPERATION

IF THE FREEZE–STAT SENSES A SUPPLY AIR TEMPERATURE OF LESS THAN 5°C, IT SHALL:

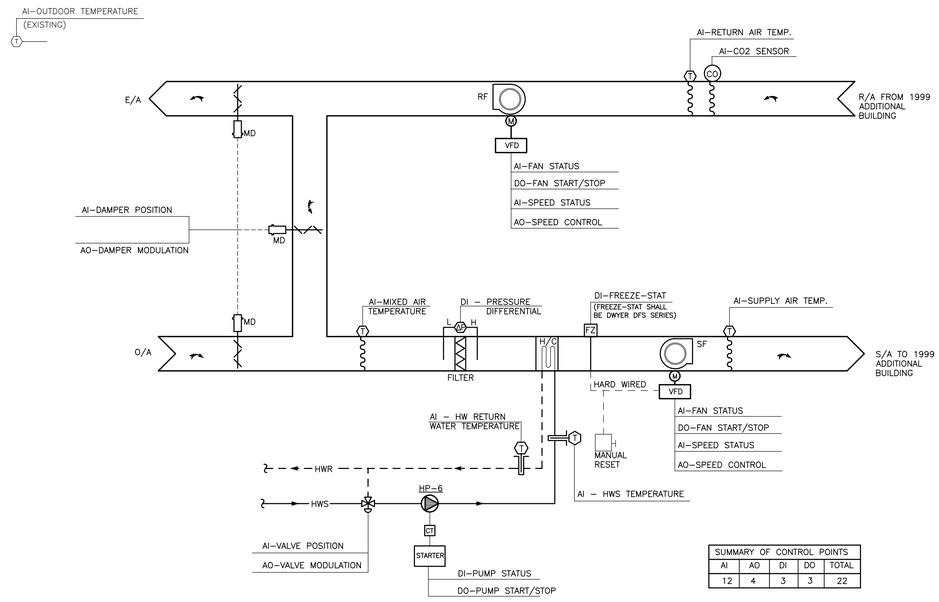
- CLOSE THE FRESH AIR AND EXHAUST AIR DAMPERS AND FULLY OPEN THE RETURN DAMPER;
- FULLY OPEN THE 3–WAY CONTROL VALVES TO HOT WATER COIL;
- STOP THE SUPPLY AND RETURN AIR FANS;
- ALARM THE BAS.

ALARMS:

THE BAS SHALL GENERATE ALARMS IN CASE OF:

- ANY FAN FAILURE (AHU SHALL BE DISABLED BY BAS)
- CIRCULATOR PUMP FAILURE (AHU SHALL BE DISABLED BY BAS IF OCCURS IN HEATING MODE; THE OUTSIDE AIR DAMPER SHALL CLOSE.)
- ANY DAMPER FAILURE;
- DIRTY FILTER;
- RETURN AIR TEMPERATURE VARIANCE OF ±3°C FROM THE SETPOINT;
- MIXED AIR TEMPERATURE LOWER THAN 2°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPERS SHALL CLOSE AND UNIT SHALL BE TURN OFF);
- DISCHARGED AIR LOWER THAN 12°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPER SHALL CLOSE);
- RETURN AIR CO_2 CONCENTRATION IS ABOVE 900 PPM
- COMPRESSOR FAILURE

AHU–3 CONTROL DIAGRAM AND SEQUENCE OF OPERATION
N.T.S.



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ALL SENSORS AND DEVICES TO BE NEW.

ALL SENSORS TO BE SUPPLIED AND INSTALLED BY THE CONTROLS CONTRACTOR

PROVIDE NEW WIRING IN CONDUIT AS REQUIRED.

SEQUENCE OF OPERATION:

HEATING/VENTILATION MODE SWITCHOVER

THE SYSTEM SHALL BE CONSIDERED IN HEATING MODE WHEN THE HEATING PLANT IS ENABLED, AT ALL OTHER TIMES, THE SYSTEM SHALL BE IN VENTILATION MODE.

OCCUPIED/UNOCCUPIED SCHEDULE SHALL REMAIN AS PER THE CURRENT BAS STRATEGY.

ENABLE/DISABLE:

THE AHU SHALL BE ENABLED/DISABLED BY BAS IN ACCORDANCE WITH THE SCHOOL'S OCCUPANCY SCHEDULE. THE SUPPLY AND RETURN FANS SHALL START, RAMP UP TO PRE–SET RPM VALUES AND RUN CONTINUOUSLY. THE FINAL FAN RPM SETTINGS SHALL BE DETERMINED DURING THE AIR BALANCING STAGE, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING BETWEEN BALANCER AND CONTROLS TO ENSURE PROPER FAN RPM SETTINGS.

VENTILATION MODE – OCCUPIED HOURS

THE 3–WAY HOT WATER COIL CONTROL VALVE SHALL BE FULLY OPEN TO THE COIL. ASSOCIATED COIL CIRCULATOR PUMP SHALL BE OFF.

THE FRESH AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION (AS PER SCHEDULE). THE EXHAUST AND RETURN AIR DAMPERS SHALL BE POSITIONED AS REQUIRED TO MAINTAIN THE TOTAL AIR FLOW OF THE UNIT. CO_2 SENSOR SHALL BE ENABLED. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE EXHAUST AND RETURN AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW REQUIREMENT OF THE UNIT.

AT OUTDOOR TEMPERATURES BETWEEN (16°C TO 20°C) (ADJUSTABLE), THE FRESH AIR DAMPER SHALL MODULATE BEYOND THE MINIMUM POSITION TO MAINTAIN THE MIXED AIR TEMPERATURE AT 23°C. THE EXHAUST AND MIXED AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM. DURING ECONOMIZER MODE OF OPERATION, THE CO_2 SENSOR IS DISABLED.

AT OUTDOOR AIR TEMPERATURES ABOVE 20°C, THE OUTDOOR DAMPER SHALL MODULATE BACK TO THE MINIMUM POSITION. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE EXHAUST AND MIXED AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE AIR FLOW REQUIREMENT OF THE SYSTEM. THE OPENING OF THE OUTDOOR AIR DAMPER SHALL BE LIMITED BY A MIXED AIR TEMPERATURE OF 26°C.

VENTILATION MODE – UNOCCUPIED HOURS:

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

HEATING MODE – OCCUPIED HOURS

THE FRESH AIR DAMPER SHALL OPEN TO ALLOW AN OUTDOOR AIR FLOW EQUAL TO THE MINIMUM VALUE NOTED IN THE SCHEDULE. THE MIXED AIR AND EXHAUST DAMPER SHALL BE POSITIONED TO MAINTAIN THE TOTAL AIRFLOW OF THE UNIT. AFTER A TIME DELAY OF 5 MINUTES, THE FRESH AIR DAMPER SHALL COME UNDER THE CONTROL OF THE CO_2 SENSOR AND SHALL MODULATE BEYOND THE MINIMUM POSITION AS REQUIRED TO MAINTAIN A RETURN AIR CONCENTRATION OF MAX. 800 PPM. THE OPENING OF THE FRESH AIR DAMPER SHALL BE SUBJECT TO A MINIMUM MIXED AIR TEMPERATURE OF 5°C.

THE EXHAUST AIR AND RETURN DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE AIR FLOW REQUIREMENTS OF THE SYSTEM. SHOULD THE MIXED AIR TEMPERATURE DROP BELOW 10°C, THE FRESH AIR DAMPER SHALL GRADUALLY CLOSE TO THE MINIMUM POSITION TO PREVENT A FURTHER DROP IN TEMPERATURE, REGARDLESS OF THE CO_2 SENSOR READING. AS THE OUTDOOR TEMPERATURE RISES, AND THE MIXED AIR TEMPERATURE RISES ABOVE 12°C, THE FRESH AIR DAMPER SHALL RETURN UNDER CO_2 SENSOR CONTROL. THE RETURN AND EXHAUST AIR DAMPERS SHALL MODULATE ACCORDINGLY, TO MAINTAIN THE TOTAL AIR FLOW OF THE SYSTEM.

THE ASSOCIATED HEATING COIL CIRCULATION PUMP OPERATES CONTINUOUSLY. THE 3–WAY CONTROL VALVE MODULATES AS REQUIRED TO MAINTAIN THE RETURN AIR TEMPERATURE AT THE SETPOINT (23°C, ADJUSTABLE).

EQUIPMENT ON, HEATING MODE, UNOCCUPIED HOURS

THE UNIT SHALL BE DE–ENERGIZED; THE FANS WILL STOP, EXHAUST AND FRESH AIR DAMPERS WILL CLOSE, THE RETURN AIR DAMPER SHALL OPEN.

OCCUPANCY OVERRIDE:

INCLUDE AN OCCUPANCY OVERRIDE BUTTON AND THE OVERRIDE TIME DURATION SELECT, ON THE AHU GRAPHICAL USER INTERFACE. WHEN ENABLED, THE OCCUPANCY SHALL SWITCH TO "OCCUPIED MODE" FOR THE AMOUNT OF TIME SET BY THE OVERRIDE TIME DURATION SELECT. DEFAULT SHALL BE 1 HOUR WITH 1 HOUR INCREMENTS. THE OCCUPANCY OVERRIDE SHALL EXPIRE AT THE END OF THE TIME DURATION PERIOD AND AHU SHALL RETURN TO CURRENT SCHEDULE.

FREEZE–STAT OPERATION

IF THE FREEZE–STAT SENSES A SUPPLY AIR TEMPERATURE OF LESS THAN 5°C, IT SHALL:

- CLOSE THE FRESH AIR AND EXHAUST AIR DAMPERS AND FULLY OPEN THE RETURN DAMPER;
- FULLY OPEN THE 3–WAY CONTROL VALVES TO HOT WATER COIL;
- STOP THE SUPPLY AND RETURN AIR FANS;
- ALARM THE BAS.

ALARMS:

THE BAS SHALL GENERATE ALARMS IN CASE OF:

- ANY FAN FAILURE (AHU SHALL BE DISABLED BY BAS)
- CIRCULATOR PUMP FAILURE (AHU SHALL BE DISABLED BY BAS IF OCCURS IN HEATING MODE; THE OUTSIDE AIR DAMPER SHALL CLOSE.)
- ANY DAMPER FAILURE;
- DIRTY FILTER;
- RETURN AIR TEMPERATURE VARIANCE OF ±3°C FROM THE SETPOINT;
- MIXED AIR TEMPERATURE LOWER THAN 2°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPERS SHALL CLOSE AND UNIT SHALL BE TURN OFF);
- DISCHARGED AIR LOWER THAN 12°C (IN ADDITION TO ALARM, THE FRESH AIR DAMPER SHALL CLOSE);
- RETURN AIR CO_2 CONCENTRATION IS ABOVE 900 PPM

AHU–4 CONTROL DIAGRAM AND SEQUENCE OF OPERATION
N.T.S.

GENERAL NOTES :

No.		
1.	ISSUED FOR BID	OCT. 2025
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North Arrow

Professional Seal

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Project

NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

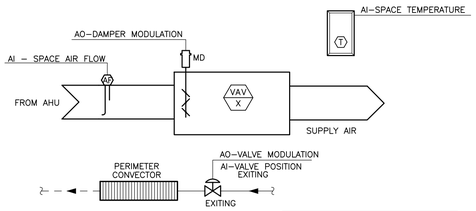
Location

235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title

CONTROL DIAGRAMS FOR AHU-3 & AHU-4
(SHEET 2 OF 3)

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: N.T.S.
File Number: 2025–63	Dwg Number: M-8



SUMMARY OF CONTROL POINTS				
AI	AO	DI	DO	TOTAL
3	2	0	0	5

SEQUENCE OF OPERATION

HEATING/COOLING MODES

THE VAV BOXES WITH AUXILIARY HEATING SHALL OPERATE IN HEATING MODE WHEN THE BOILER PLANT IS ENABLED. AT ALL OTHER TIMES, THE BOXES SHALL OPERATE IN COOLING MODE.

HEATING MODE – OCCUPIED PERIODS

AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE VAV BOXES SHALL OPEN TO ALLOW A MINIMUM OF 50% OF THEIR MAXIMUM RATED AIR FLOW. THE AUXILIARY HEATING VALVES SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPACE AT THE HEATING OCCUPIED TEMPERATURE.

IF ANY OF THE AUXILIARY HEATING VALVES IS FULLY CLOSED OR FULLY OPEN TO THE AUXILIARY HEATING DEVICE AND THE RESPECTIVE SPACE TEMPERATURE DEVIATES FROM THE SETPOINT BY MORE THAN 2°C, THE RESPECTIVE VAV BOX SHALL INCREASE THE AIR SUPPLY BEYOND THE 50% LIMIT AS REQUIRED TO MAINTAIN THE OCCUPIED HEATING SETPOINT IN THE RESPECTIVE SPACE.

HEATING MODE – UNOCCUPIED PERIODS

THE VAV BOXES SHALL CLOSE TO 50% OF THEIR MAXIMUM RATED AIR FLOW. THE AUXILIARY HEATING VALVES SHALL MODULATE AS REQUIRED TO MAINTAIN THE HEATING UNOCCUPIED SETPOINT

COOLING MODE – OCCUPIED PERIODS

AT THE BEGINNING OF EACH OCCUPIED PERIOD, THE VAV BOXES SHALL OPEN TO ALLOW A MINIMUM OF 50% OF THEIR MAXIMUM RATED AIR FLOW.

THE VAV BOXES SHALL INCREASE THE AIR SUPPLY BEYOND THE 50% LIMIT AS REQUIRED TO MAINTAIN THE OCCUPIED COOLING SETPOINT IN EACH SPACE.

COOLING MODE – UNOCCUPIED PERIODS

THE VAV BOXES SHALL CLOSE TO 10% OF THEIR MAXIMUM RATED AIR FLOW.

ALARMS

THE BAS SHALL GENERATE ALARMS IN CASE OF:

ANY SPACE TEMPERATURE VARIANCE OF ±3°C FROM THE SETPOINT;
ANY VAV BOX FAILURE.

TYPICAL VAV BOX WITH PERIMETER RADIATION CONTROL DIAGRAM
N.T.S.

GENERAL NOTES :

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Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
CONTROL DIAGRAMS FOR AHU-3 & AHU-4
(SHEET 3 OF 3)

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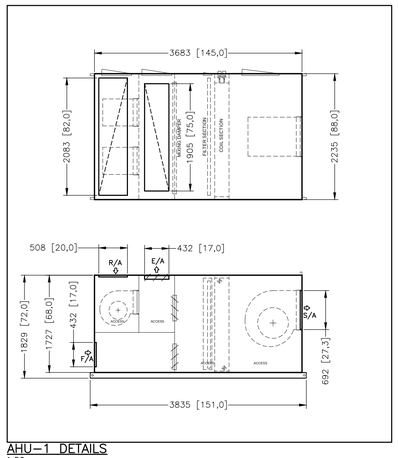

AHU–1 DETAILS
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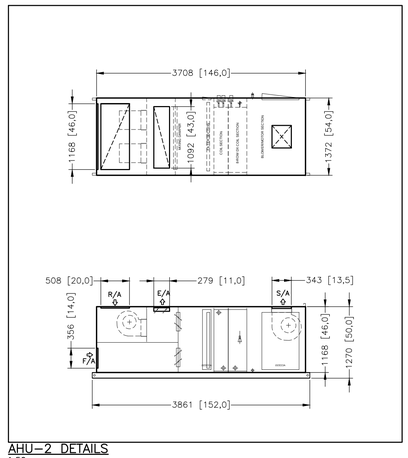

AHU–2 DETAILS
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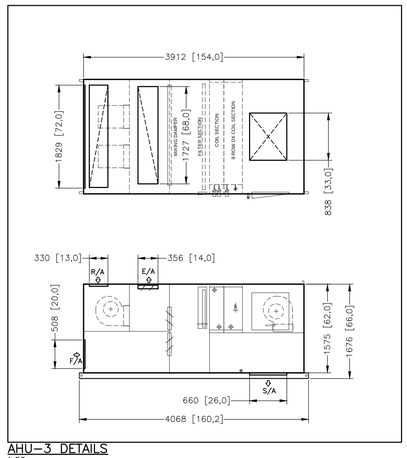
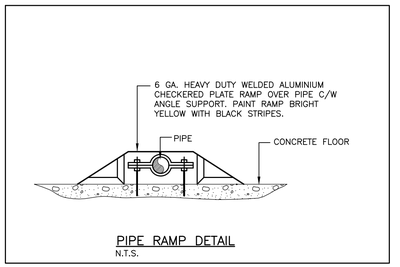
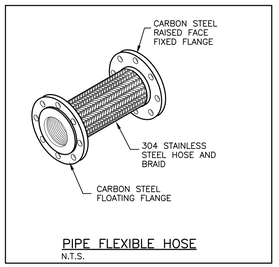


AHU–3 DETAILS
1:50



PIPE RAMP DETAIL
N.T.S.



PIPE FLEXIBLE HOSE
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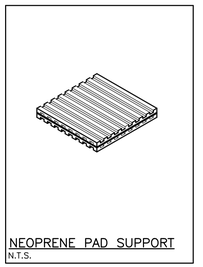
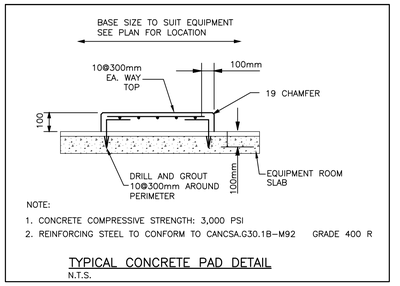
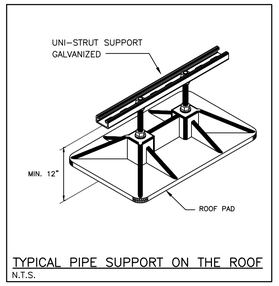


NEOPRENE PAD SUPPORT
N.T.S.

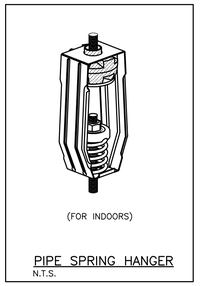


NOTE:
1. CONCRETE COMPRESSIVE STRENGTH: 3,000 PSI
2. REINFORCING STEEL TO CONFORM TO CANCSA.G30.1B–M92 GRADE 400 R

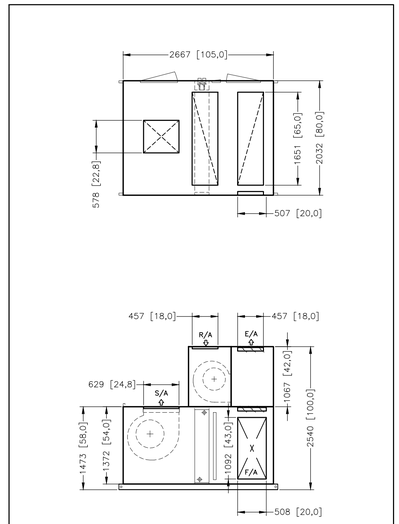
TYPICAL CONCRETE PAD DETAIL
N.T.S.



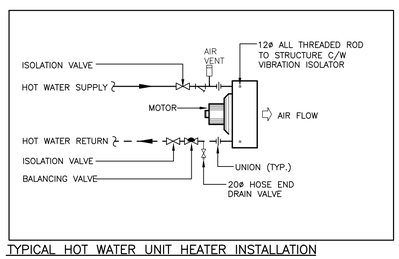
TYPICAL PIPE SUPPORT ON THE ROOF
N.T.S.



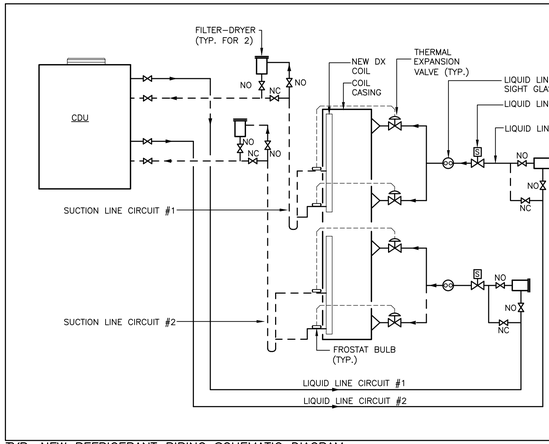
PIPE SPRING HANGER
N.T.S.



AHU–4 DETAILS
1:50



TYPICAL HOT WATER UNIT HEATER INSTALLATION



TYP. NEW REFRIGERANT PIPING SCHEMATIC DIAGRAM
N.T.S.

NOTES:

PROVIDE ALL NECESSARY CONTROL'S WIRING, REFRIGERANT ACCESSORIES AND POWER TO THE SOLENOID VALVES, INCLUDING STEP–DOWN TRANSFORMERS.

INSTALL THE REFRIGERANT PIPING OIL TRAPS, REFRIGERANT DISTRIBUTORS, TX VALVES, SOLENOID VALVES, ISOLATION VALVES, SENSING BULBS, FILTERS/DRYERS, SIGHT GLASSES AND OTHER ACCESSORIES IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

PITCH THE LIQUID LINES SLIGHTLY (1:300) TOWARDS THE COILS, SO THAT THE REFRIGERANT DRAINS TOWARDS THE EVAPORATOR. PITCH THE SUCTION LINES SLIGHTLY (1:300) TOWARDS THE COILS, SO THAT ANY LIQUID ENTRAINED DRAINS BACK TOWARDS THE EVAPORATOR.

SLIGHTLY PITCH (1:300) THE OUTLET LINE FROM THE SUCTION HEADER TOWARDS THE SUCTION RISER IN THE DIRECTION OF FLOW. USE TUBE DIAMETER THAT MATCHES THE SUCTION–HEADER CONNECTION.

ARRANGE THE SUCTION LINE SO THAT THE REFRIGERANT GAS LEAVING THE COIL FLOWS DOWNWARDS PAST THE LOWEST SUCTION HEADER OUTLET, BEFORE TURNING UPWARDS. USE A DOUBLE ELBOW CONFIGURATION TO ISOLATE THE FROSTAT BULB FROM OTHER SUCTION HEADERS.

ENSURE THAT THE TOP OF THE SUCTION RISERS ARE ABOVE THE EVAPORATOR SECTIONS THEY SERVE.

SIZE ALL REFRIGERANT LINES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, BASED ON THE FINAL ROUTING AND LENGTH OF PIPING. ALL LINES TO BE SUPPORTED AND INSULATED AS INDICATED IN THE SPECIFICATIONS AND ON DETAILS ON DWG. M–1.

ALL SUCTION LINES TO BE INSULATED AS SPECIFIED; ON THE ROOF, PROVIDE JACKETING AND SADDLE SUPPORTS AS SPECIFIED.

GENERAL NOTES :

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Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

Location
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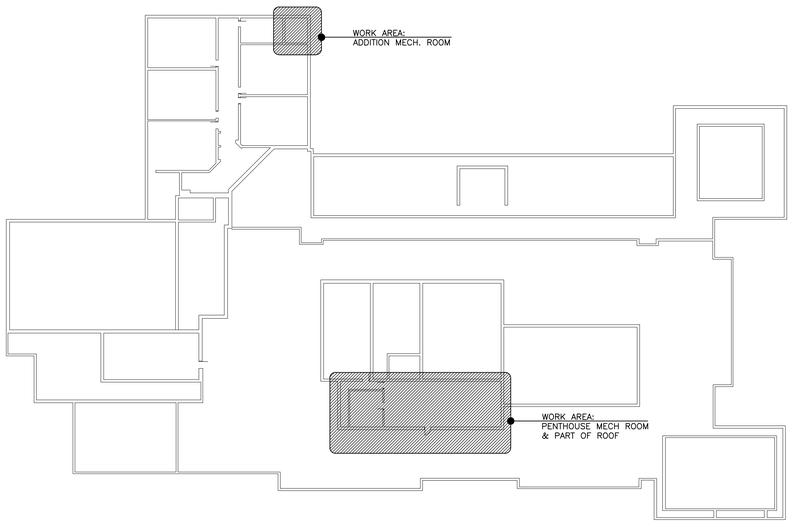
MISSISSAUGA ON., L4Z 3J6

Drawing Title
MECHANICAL DETAILS

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: N.T.S.
File Number: 2025–63	Dwg Number: M-10



KEY PLAN
N.T.S.

ELECTRICAL GENERAL NOTES

GENERAL

EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL CONDITIONS AND AVAILABLE DRAWINGS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS MUST BE REFERRED TO THE PRIME CONSULTANT BEFORE ANY AFFECTED WORK IS COMMENCED.

ALL MATERIALS USED THROUGHOUT SHALL BE NEW, OF BEST QUALITY CSA APPROVED AND OF ONE MANUFACTURER.

OBTAIN AND PAY FOR APPROVALS AND PERMITS FROM AUTHORITIES HAVING JURISDICTION.

PROVIDE ALL CONDUIT, WIRING, BOXES, SWITCHES, OUTLETS, DEVICES, ETC, AS REQUIRED. MAKE UP TO THE LAST 3 FT OF FINAL CONNECTIONS TO ROTATING EQUIPMENT WITH LIQUID TIGHT FLEXIBLE CONDUIT.

CONTRACTORS SHALL NOTE THAT THIS CONTRACT IS AN ALTERATION TO AN EXISTING BUILDING AND SHALL THOROUGHLY INVESTIGATE THE EXISTING ELECTRICAL INSTALLATION AND CONDITIONS. DEMOLITION. REMOVE POWER CONNECTIONS AS SHOWN ON DRAWINGS C/W CONDUIT AND WIRING TO SOURCE.

CONDUCTORS AND CABLES

CONDUCTORS AND CABLES SHALL BE IN ACCORDANCE WITH NEMA WC-70 AND AS SPECIFIED HEREIN.

CONDUCTORS SHALL BE ANNEALED COPPER, STRANDED FOR SIZES NO. 8 AWG AND LARGER, SOLID FOR SIZES NO. 10 AWG AND SMALLER. CONDUCTORS SHALL BE MINIMUM SIZE NO. 12 AWG, EXCEPT WHERE SMALLER SIZES ARE SPECIFICALLY SHOWN ON THE DRAWINGS. MINIMUM SIZE WIRING FOR DC WIRING SHALL BE #10 GAUGE.

ALL WIRING SHALL BE 600 VOLT TYPE RW90 AND RUN IN METALLIC CONDUIT EXCEPT WHERE ALLOWED IN FLEXIBLE LIQUID-TIGHT FLEXIBLE ENCLOSURE (SEE SECTION 15241). MAXIMUM VOLTAGE DROP SHALL NOT EXCEED 2%. PROVIDE GROUND WIRES WITH ALL FEEDERS AND BRANCH CIRCUITS IN ACCORDANCE WITH APPLICABLE CODES AND ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS. PROVIDE MAIN GROUND TO ESA APPROVAL.

INSULATION:

THHN-THWN SHALL BE IN ACCORDANCE WITH NEMA WC-70, UL 44, AND UL 83.

CONDUITS

ALL CONDUIT SHALL BE RIGID ALUMINUM (OUTDOORS) OR EMT THINWALL (INDOORS) WITH STEEL SET SCREW COUPLINGS AND CONNECTORS WITH INSULATED THROATS UNLESS OTHERWISE NOTED. RUN CONDUITS PARALLEL TO BUILDING LINES AND CONCENTRIC RIGHT ANGLE BENDS ONLY SHALL BE USED.

SEAL ALL PENETRATIONS THROUGH FLOOR WALLS OR SLABS WITH AN APPROVED NON-SHRINK, WATERPROOF AND FIREPROOF SEALANT.

NEW CONDUIT HANGERS SHALL BE SUPPORTED FROM BUILDING STRUCTURE AND INDEPENDENTLY FROM OTHER EXISTING ELEMENTS SUCH AS DUCTWORK, CONDUITS, PIPING ETC.

POWER DISTRIBUTION SYSTEM

THE POWER DISTRIBUTION SYSTEM SHALL BE MODIFIED AS SHOWN ON THE PLANS AND AS HEREINAFTER SPECIFIED. BREAKERS RATING SHALL MATCH EXISTING EQUIPMENT TO WHICH THEY ARE INSTALLED.

SPLICES AND JOINTS

IN ACCORDANCE WITH UL 486A, C, D, E, AND NEC.

CONNECTORS: SOLDERLESS, SCREW ON, REUSABLE PRESSURE CABLE TYPE, RATED 600 V, 220° F [105° C], WITH INTEGRAL INSULATION, APPROVED FOR COPPER CONDUCTORS. THE INTEGRAL INSULATOR SHALL HAVE A SKIRT TO COMPLETELY COVER THE STRIPPED WIRES. THE NUMBER, SIZE, AND COMBINATION OF CONDUCTORS, AS LISTED ON THE MANUFACTURER'S PACKAGING, SHALL BE STRICTLY FOLLOWED.

CONNECTORS SHALL BE INDENT, HEX SCREW, OR BOLT CLAMP TYPE OF HIGH CONDUCTIVITY AND CORROSION RESISTANT MATERIAL, LISTED FOR USE WITH COPPER AND ALUMINUM CONDUCTORS. FIELD-INSTALLED COMPRESSION CONNECTORS FOR CABLE SIZES 250 MCM AND LARGER SHALL HAVE NOT FEWER THAN TWO CLAMPING ELEMENTS OR COMPRESSION INDENTS PER WIRE.

INSULATE SPLICES AND JOINTS WITH MATERIALS APPROVED FOR THE PARTICULAR USE, LOCATION, VOLTAGE, AND TEMPERATURE. SPLICE AND JOINT INSULATION LEVEL SHALL BE NOT LESS THAN THE INSULATION LEVEL OF THE CONDUCTORS BEING JOINED. PLASTIC ELECTRICAL INSULATING TAPE: PER ASTM D2304, FLAME-RETARDANT, COLD AND WEATHER RESISTANT.

LOW VOLTAGE FUSED AND NON-FUSED DISCONNECT SWITCHES RATED 600 AMPERES AND LESS

IN ACCORDANCE WITH UL 98, NEMA KS1, AND NEC. SHALL HAVE NEMA CLASSIFICATION GENERAL DUTY (GD) FOR 240 V SWITCHES AND NEMA CLASSIFICATION HEAVY DUTY (HD) FOR 600 V SWITCHES. SHALL BE HP RATED.

LOCATE IN THE PROXIMITY OF THE EQUIPMENT SERVED, IN ACCORDANCE WITH NEC REQUIREMENTS.

SHALL HAVE THE FOLLOWING FEATURES:

- SWITCH MECHANISM SHALL BE THE QUICK-MAKE, QUICK-BREAK TYPE.
- COPPER BLADES, VISIBLE IN THE OFF POSITION.
- AN ARC CHUTE FOR EACH POLE.
- EXTERNAL OPERATING HANDLE SHALL INDICATE ON AND OFF POSITION AND HAVE LOCK OPEN PADLOCKING PROVISIONS.
- MECHANICAL INTERLOCK SHALL PERMIT OPENING OF THE DOOR ONLY WHEN THE SWITCH IS IN THE OFF POSITION, DEFEATABLE TO PERMIT INSPECTION.
- FUSE HOLDERS FOR THE SIZES AND TYPES OF FUSES SPECIFIED (WHERE APPLICABLE).
- WHERE APPLICABLE, FUSIBLE DISCONNECT SWITCHES SHALL BE FURNISHED COMPLETE WITH FUSES. ARRANGE FUSES SUCH THAT RATING INFORMATION IS READABLE WITHOUT REMOVING THE FUSE.
- SOLID NEUTRAL FOR EACH SWITCH BEING INSTALLED IN A CIRCUIT WHICH INCLUDES A NEUTRAL CONDUCTOR.
- GROUND LUGS FOR EACH GROUND CONDUCTOR.

ENCLOSURES:

SHALL BE THE NEMA TYPES SHOWN ON THE DRAWINGS FOR THE SWITCHES. WHERE THE TYPES OF SWITCH ENCLOSURES ARE NOT SHOWN, THEY SHALL BE THE NEMA TYPES MOST SUITABLE FOR THE AMBIENT ENVIRONMENTAL CONDITIONS. UNLESS OTHERWISE INDICATED ON THE PLANS, ALL OUTDOOR SWITCHES SHALL BE NEMA 3R. SHALL BE FINISHED WITH MANUFACTURER'S STANDARD GRAY BAKED ENAMEL PAINT OVER PRE-TREATED STEEL (FOR THE TYPE OF ENCLOSURE REQUIRED).

ELECTRICAL LEGEND

	DIRECT POWER OUTLET FOR USE AS NOTED INCLUDING FINAL CONNECTION.
	ELECTRICAL PANEL
	DISCONNECT SWITCH
	DISCONNECT SWITCH WITH OVER-CURRENT PROTECTION
	MAGNETIC MOTOR STARTER
	COMBINATION MAGNETIC MOTOR STARTER WITH DISCONNECT SWITCH
	COMBINATION MAGNETIC MOTOR STARTER WITH DISCONNECT SWITCH & OVERCURRENT PROTECTION
D50	DUCT-MOUNTED SMOKE DETECTOR
VFD	VARIABLE FREQUENCY DRIVE
EX	DENOTES EXISTING TO REMAIN
R	DENOTES EXISTING TO BE REMOVED ENTIRELY U.N.O.
N	DENOTES NEW

GENERAL NOTES

1. IT IS MANDATORY FOR THE ELECTRICAL CONTRACTOR TO VISIT SITE AND REVIEW EXISTING CONDITIONS AND DEMOLITION SCOPE OF WORK TO SUIT EXISTING ARCHITECTURAL AND STRUCTURAL CONDITIONS AND MECHANICAL DRAWINGS.
2. CAREFULLY EXAMINE OTHER EXISTING UTILITY LINES SUCH AS GAS, WATER ETC. PRIOR TO START THE ELECTRICAL CONSTRICTION WORKS AND COORDINATE WITH OTHER TRADES AND REPORT OF ANY DISCREPANCY PRIOR TO PROCEEDING.
3. REFER TO ELECTRICAL AND MECHANICAL LAYOUTS FOR EXACT LOCATION OF ALL EQUIPMENT.
4. LOCATIONS OF ALL NEW ELECTRICAL EQUIPMENT SHALL BE CONFIRMED WITH DIVISION 15 PRIOR TO INSTALLATION.

GENERAL NOTES :

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

MECHANICAL EQUIPMENT WIRING SCHEDULE

EQUIPMENT DESCRIPTION	POWER SOURCE	STARTER TYPE	MCA/FLA/HP	VOLTS/PH./ FREQUENCY	BREAKER SIZE OR FUSE SIZE	FEEDER SIZE	REMARKS	CONNECT TO FIRE ALARM	CONNECT TO BAS
AHU-1	NEW SPLITTER (PH MECH ROOM)	VFDs	59.1 MCA	208/3/60	90A-3P	3xAWG#3+G-35mmC	PROVIDE POWER FROM NEW SPLITTER IN PH MECHANICAL ROOM. SUPPLY AND INSTALL NEW FUSED DISCONNECT SWITCH. PROVIDE NEW WIRING BETWEEN SPLITTER, LOCAL NON-FUSED DISCONNECT, VFD AND AIR HANDLING UNIT. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	YES	YES
AHU-2	MCC-1 (PH MECH ROOM)	VFDs	35.1 MCA	208/3/60	50A-3P	3xAWG#8+G-27mmC	PROVIDE POWER FROM MCC-1 IN PH MECHANICAL ROOM. SUPPLY AND INSTALL NEW FUSED DISCONNECT SWITCH. PROVIDE NEW WIRING BETWEEN MCC-1, VFD AND AIR HANDLING UNIT. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	YES	YES
AHU-3	NEW SPLITTER (PH MECH ROOM)	VFDs	59.1 MCA	208/3/60	90A-3P	3xAWG#3+G-35mmC	PROVIDE POWER FROM NEW SPLITTER IN PH MECHANICAL ROOM. SUPPLY AND INSTALL NEW FUSED DISCONNECT SWITCH. PROVIDE NEW WIRING BETWEEN SPLITTER, LOCAL NON-FUSED DISCONNECT, VFD AND AIR HANDLING UNIT. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	YES	YES
AHU-4	EXISTING SPLITTER SP-1 (ADDITION MECH. ROOM)	VFDs	66.4 MCA	208/3/60	90A-3P	3xAWG#3+G-35mmC	PROVIDE POWER FROM EXISTING SPLITTER SP-1 IN ADDITION MECHANICAL ROOM. SUPPLY AND INSTALL NEW FUSED DISCONNECT SWITCH. PROVIDE NEW WIRING BETWEEN SPLITTER SP-1, VFD AND AIR HANDLING UNIT. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	YES	YES
CDU-2	EXISTING PANEL P (PH MECH. ROOM)	INTEGRAL	62.4 MCA	208/3/60	80A-3P	3xAWG#4+G-35mmC	PROVIDE POWER FROM NEW PANEL P IN PH MECHANICAL ROOM. SUPPLY AND INSTALL BREAKER. PROVIDE NEW WIRING BETWEEN PANEL, LOCAL NON-FUSED WP DISCONNECT SWITCH AND CONDENSING UNIT. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	YES	YES
CDU-3	NEW MCC-1 (PH MECH ROOM)	INTEGRAL	74. MCA	208/3/60	100A-3P	3xAWG#3+G-35mmC	PROVIDE POWER FROM MCC-1 IN PH MECHANICAL ROOM. SUPPLY AND INSTALL NEW FUSED DISCONNECT SWITCH. PROVIDE NEW WIRING BETWEEN MCC-1, LOCAL NON-FUSED WP DISCONNECT SWITCH AND CONDENSING UNIT. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	NO	NO
HP-3	EXISTING PANEL P (PH MECH ROOM)	MAGNETIC	4.6 FLA 5.75 MCA 1.0 HP	208/3/60	15A-3P	3xAWG#12+G-21mmC	PROVIDE POWER FROM PANEL P IN PH MECHANICAL ROOM. SUPPLY AND INSTALL NEW BREAKER. PROVIDE NEW WIRING BETWEEN BREAKER, LOCAL NON-FUSED STARTER/DISCONNECT SWITCH AND PUMP. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	NO	NO
HP-4	EXISTING PANEL P (PH MECH ROOM)	MAGNETIC	5.4 FLA 6.75 MCA 0.5 HP	208/1/60	15A-2P	2xAWG#12+G-16mmC	PROVIDE POWER FROM PANEL P IN PH MECHANICAL ROOM. SUPPLY AND INSTALL NEW BREAKER. PROVIDE NEW WIRING BETWEEN BREAKER, LOCAL NON-FUSED STARTER/DISCONNECT SWITCH AND PUMP. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	NO	NO
HP-5	EXISTING PANEL P (PH MECH ROOM)	MAGNETIC	5.4 FLA 6.75 MCA 0.5 HP	208/1/60	15A-2P	2xAWG#12+G-16mmC	PROVIDE POWER FROM PANEL P IN PH MECHANICAL ROOM. SUPPLY AND INSTALL NEW BREAKER. PROVIDE NEW WIRING BETWEEN BREAKER, LOCAL NON-FUSED STARTER/DISCONNECT SWITCH AND PUMP. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	NO	NO
HP-6	EXISTING SPLITTER SP-1 (ADDITION MECH. ROOM)	MAGNETIC	3.1 FLA 3.9 MCA 0.75 HP	208/3/60	15A-3P	3xAWG#12+G-21mmC	PROVIDE POWER FROM EXISTING SPLITTER SP-1 IN ADDITION MECHANICAL ROOM. SUPPLY AND INSTALL NEW STARTER FUSED DISCONNECT SWITCH. PROVIDE NEW WIRING BETWEEN SPLITTER SP-1, AND THE PUMP. ALL WIRING TO BE IN RIGID METAL CONDUIT. PROVIDE FLEXIBLE LIQUID TIGHT CONDUIT FOR THE LAST 900 MM. REFER TO SPECIFICATIONS	NO	NO
UH-4	RECONNECT TO EXISTING POWER SOURCE, RE-USED WIRE & CONDUIT							YES	YES

NOTES:

PROVIDE CONNECTION TO MECHANICAL EQUIPMENT TO ENSURE THAT FULL OPERATIONAL SYSTEMS ARE DELIVERED TO THE BOARD.

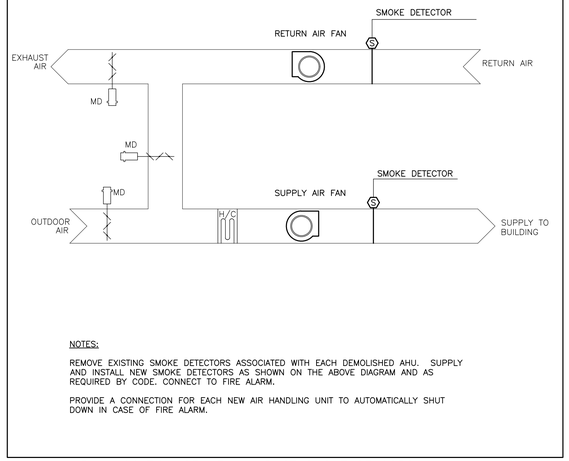
PROVIDE POWER CONNECTION TO ALL EQUIPMENT LISTED IN THE SCHEDULE. REFER TO ELECTRICAL AND MECHANICAL LAYOUTS FOR EXACT LOCATION OF EQUIPMENT.

PROVIDE SEPARATE DISCONNECTS FOR INDIVIDUAL MECHANICAL EQUIPMENT. SIZE AS INDICATED IN THE SCHEDULE.

DISCONNECTS LOCATIONS SHALL BE VERIFIED AND CO-ORDINATED ON SITE. ALL MAGNETIC STARTERS (WHERE REQUIRED) SHALL BE C/W OVERLOAD PROTECTION, H/O/A SWITCH AND GREEN-RUN AND RED-STOP PILOT LAMPS.

PROVIDE POWER FOR CONTROLS AND STEPDOWN TRANSFORMER AS REQUIRED.

PROVIDE ALL REQUIRED WIRING AND DEVICE FOR CONNECTION TO THE FIRE ALARM. INCLUDE FOR FIRE ALARM TESTING AS REQUIRED.



NOTES:

REMOVE EXISTING SMOKE DETECTORS ASSOCIATED WITH EACH DEMOLISHED AHU. SUPPLY AND INSTALL NEW SMOKE DETECTORS AS SHOWN ON THE ABOVE DIAGRAM AND AS REQUIRED BY CODE. CONNECT TO FIRE ALARM.

PROVIDE A CONNECTION FOR EACH NEW AIR HANDLING UNIT TO AUTOMATICALLY SHUT DOWN IN CASE OF FIRE ALARM.

AHU-1 & 3 - LOCATION OF NEW IN-DUCT SMOKE SENSORS
N.T.S.

NEW LIGHTING FIXTURE SCHEDULE

TAG	MANUFACTURER	CATALOGUE	DESCRIPTION	
-	SIGNIFY	FSI-4-30L-840-UNV-DIM	DAY-BRITE CFI, LINEAR, FLUXSTREAM INDUSTRIAL, FSI 4', UNV 120-277V	

NOTE: CONTRACTOR TO CONFIRM EXISTING POWER PRIOR TO SUBMITTING NEW FIXTURE SHOP DRAWINGS.

No.	ISSUED	DATE
1.	ISSUED FOR BID	OCT. 2025

Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER
AUG. 2025
G. STRASHUN
PROVINCE OF ONTARIO

SAB ENGINEERING Inc.
588 EDWARD AVE., UNIT 25, RICHMOND HILL, ONT., L4C 9Y6
TEL. (905)-787 8885 FAX (905)-787 8771

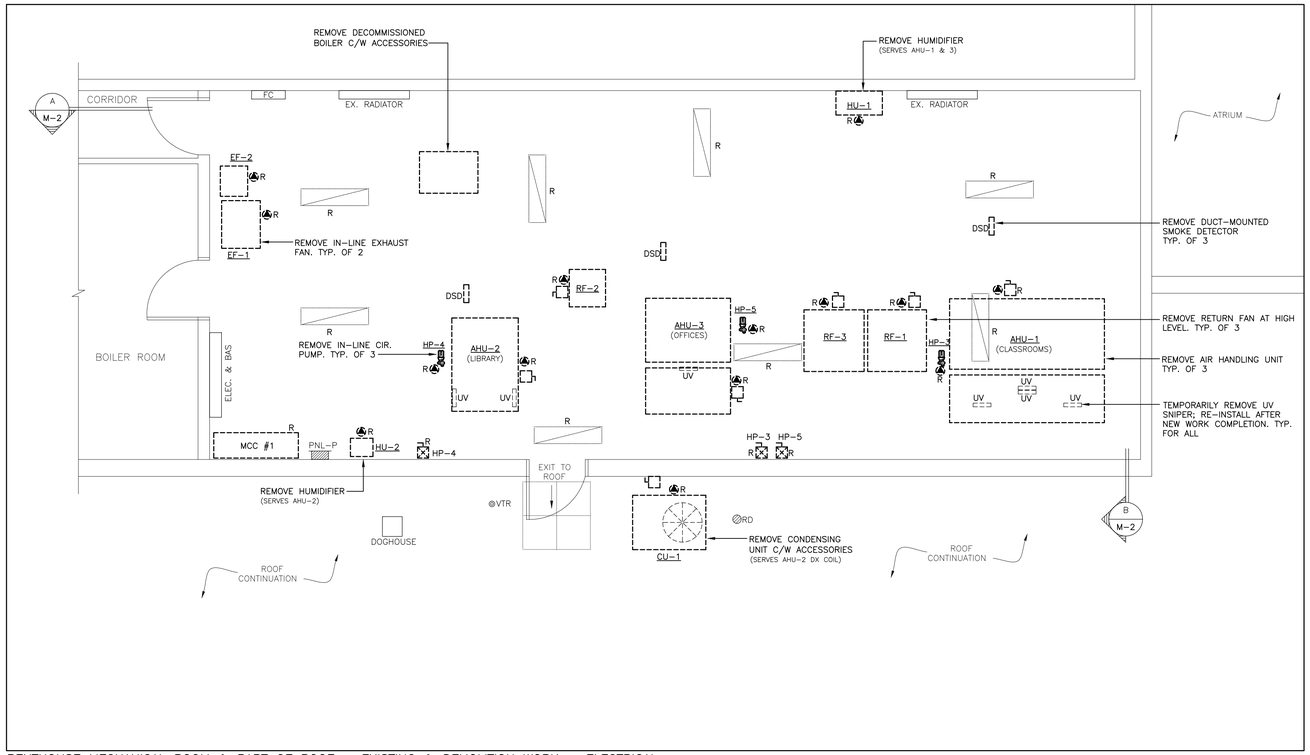
peel District School Board
5650 Hurontario Street, Mississauga, Ont., L5R 1C6
Tel: (905) 890-1099, Fax: (905) 890-9453

Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

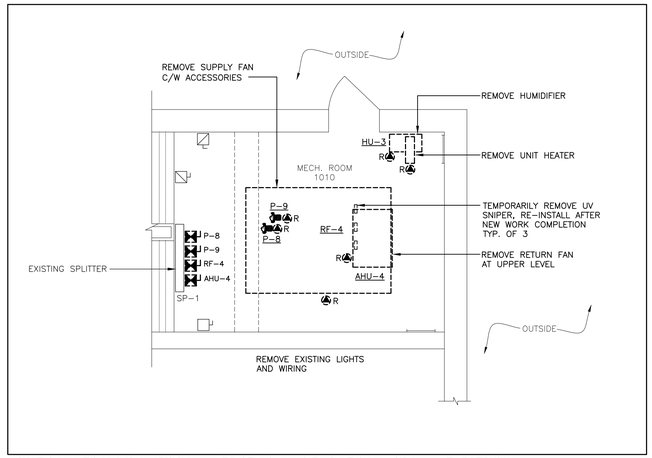
Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
LEGENDS, EQUIPMENT WIRING SCHEDULES & NOTES - ELECTRICAL

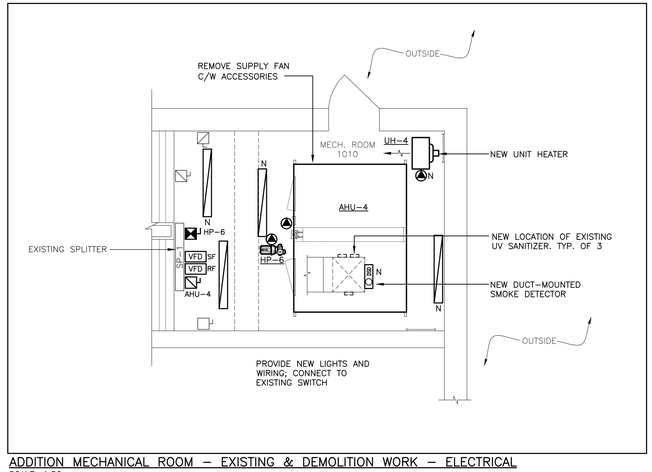
Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: 1:50
File Number: 2025-63	Dwg Number: E-1



PENTHOUSE MECHANICAL ROOM & PART OF ROOF – EXISTING & DEMOLITION WORK – ELECTRICAL
SCALE: 1:50



ADDITION MECHANICAL ROOM – EXISTING & DEMOLITION WORK – ELECTRICAL
SCALE: 1:50



ADDITION MECHANICAL ROOM – EXISTING & DEMOLITION WORK – ELECTRICAL
SCALE: 1:50

NOTES:

REMOVE THE LIGHTS IN THE MECHANICAL ROOM AND ASSOCIATED WIRING AND SUPPORT

IDENTIFY AND REMOVE ALL CONDUITS, JUNCTION BOXES AND OTHER ELECTRICAL DEVICES ATTACHED TO THE DUCTS AND EQUIPMENT TO BE DEMOLISHED.

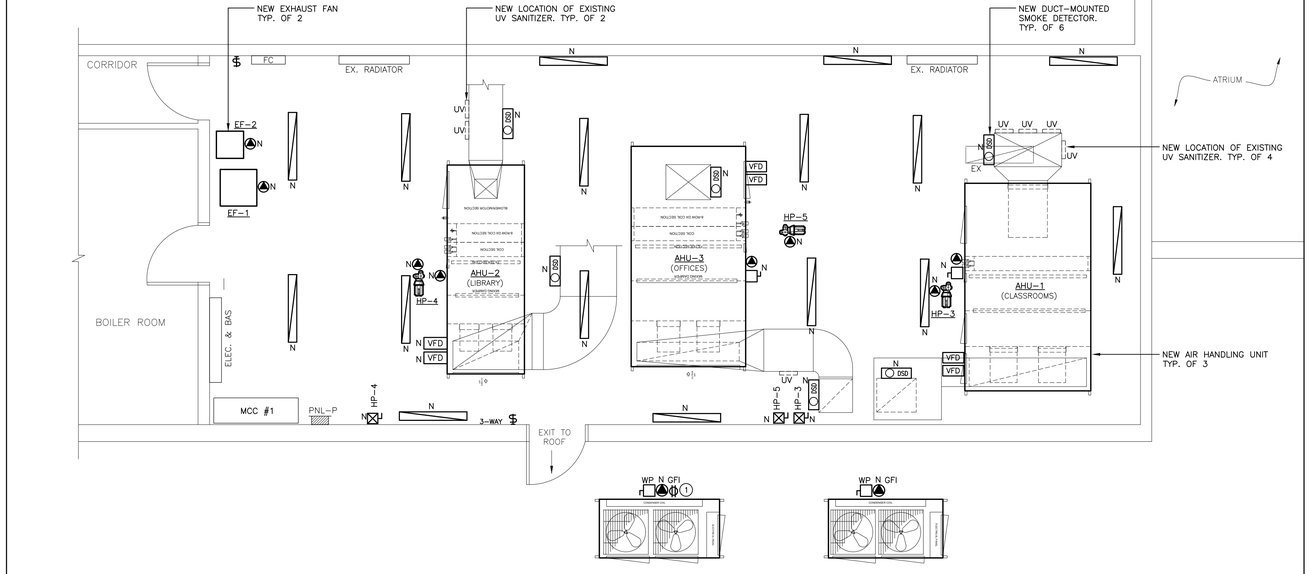
THE ELECTRICAL CONTRACTOR SHALL REVIEW THE SITE PRIOR TO SUBMITTING A BID TO EVALUATE THE EXTEND OF THE DEMOLITION WORK.

REMOVE ALL CONDUITS AND WIRING THAT ARE NO LONGER IN USE BACK TO THE SOURCE AND MAKE SAFE.

ANY PENETRATION THROUGH MECHANICAL ROOM WALLS OR FLOOR TO BE FIRE SEALED.

PROVIDE ALL REQUIRED HANGERS AND SUPPORT FOR THE ELECTRICAL CONDUITS.

PROVIDE NEW LIGHTS C/W SUPPORT AND NEW WIRING. SUPPORT LIGHTS FROM STRUCTURE ABOVE OR WALL.



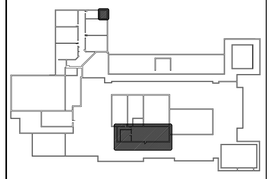
DRAWING NOTE:

(1) PROVIDE 115V/1PH POWER TO NEW GFI RECEPTACLE FROM NEAREST POWER SOURCE. POWER SOURCE TO BE SEPARATE FROM THE ONE POWERING THE UNIT

PENTHOUSE MECHANICAL ROOM & PART OF ROOF – NEW WORK – ELECTRICAL
SCALE: 1:50

GENERAL NOTES :

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.



KEY PLAN – PH MECH. ROOM, PART OF ROOF & ADD. MECH. ROOM

No.		
1.	ISSUED FOR BID	OCT. 2025
No.	ISSUED	DATE

Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO AUG. 2025 G. STRASHUN

SAB ENGINEERING Inc.
588 EDWARD AVE., UNIT 25, RICHMOND HILL, ONT., L4C 9Y6
TEL. (905)-787 8885 FAX (905)-787 8771

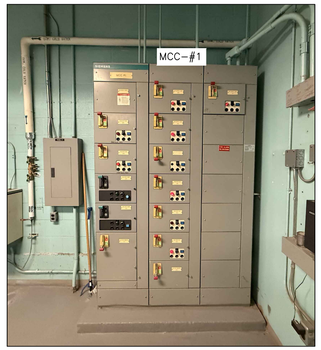
peel District School Board
5650 Hurontario Street, Mississauga, Ont., L5R 1C6
Tel: (905) 890-1099, Fax: (905) 890-9453

Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
PENTHOUSE, PART OF ROOF & ADDITION MECHANICAL ROOMS - POWER PLAN - ELECTRICAL

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: 1:50
File Number: 2025-63	Dwg Number: E-2

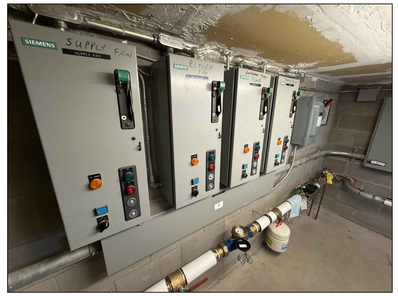


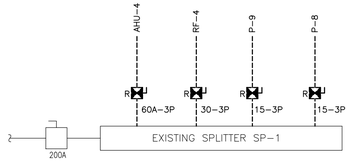
	MCC–#1	
INCOMING CABLE	AHU–3 30A–3P	AHU–1 45A–3P
EF–1 15A–3P	AHU–2 20A–3P	SPACE
EF–2 15A–3P	SPACE	SPACE
HP–1 (EX. HTG PUMP) 15A–3P	RF–1 20A–3P	SPACE
HP–2 (EX. HTG PUMP) 15A–3P	RF–2 15A–3P	SPACE
HU–1 150A–3P	RF–3 20A–3P	SPACE
	HU–2 40A–3P	SPACE

PANEL – 'P' 120/208V, 3PH, 4W | TYPE: EXISTING MAINS BKR: 225A | MOUNTING: SURFACE LOCATION: MECH. ROOM

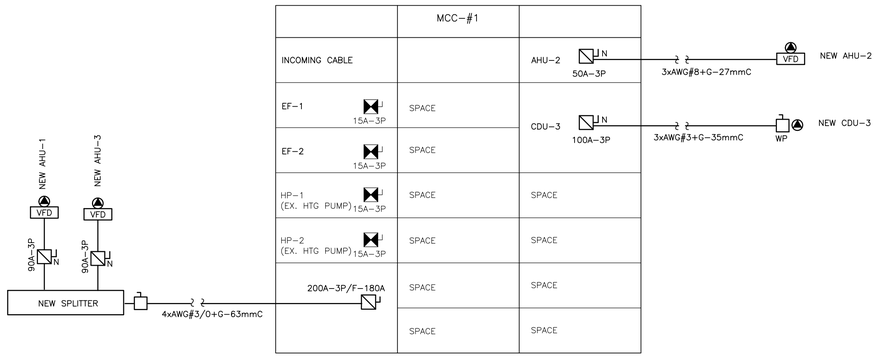
WATTS	DESCRIPTION	PROT.	CIRCUITS		PROT.	DESCRIPTION	WATTS
	BOILER #1	15A	1	2	15A	DP 1	
	BOILER #2	15A	3	4	15A	DP 2	
	HOT WATER TANK	15A	5	6	15A	HP–3	R
	EXIT SIGN	15A	7	8	15A	HP–4	
	UNIT HEATER	15A	9	10	15A	HP–5	
	LIGHT IN MECH RM.	15A	11	12	15A	MECH RM. RECEP	
	HOT WTR. FURNACE	15A	13	14	15A	MECH RM. RECEP	
R	AHU–2 CONDENSER UNIT (CU–1)	70A/3P	15	16	15A	UV FILTERS	
			17	18	15A	SPACE	
			19	20	15A	SPACE	
	SPARE		21	22	15A	SPACE	
	SPARE		23	24	15A	SPACE	

TURN OFF THE UN–USED BREAKERS & RE–LABEL AS 'SPARE'

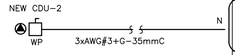




POWER DISTRIBUTION – EXISTING & DEMOLITION WORK
N.T.S.



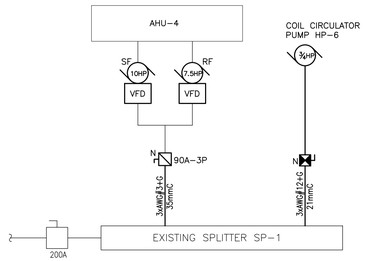
REMOVE EXISTING MCC–1, TRANSFER EXISTING EQUIPMENT (HP–1, HP–2) TO THE NEW MCC, REFER TO NEW DWG. LAYOUT)



PANEL – 'P' 120/208V, 3PH, 4W | TYPE: EXISTING MAINS BKR: 225A | MOUNTING: SURFACE LOCATION: MECH. ROOM

WATTS	DESCRIPTION	PROT.	CIRCUITS		PROT.	DESCRIPTION	WATTS
	BOILER #1	15A	1	2	15A	DP 1	
	BOILER #2	15A	3	4	15A	DP 2	
	HOT WATER TANK	15A	5	6	15A/3P	NEW PUMP HP–3	N
	EXIT SIGN	15A	7	8			
	UNIT HEATER	15A	9	10			
	LIGHT IN MECH RM.	15A	11	12	15A	MECH RM. RECEP	
	HOT WTR. FURNACE	15A	13	14	15A	MECH RM. RECEP	
	AHU–2 CONDENSER UNIT (CU–1)	80A/3P	15	16	15A	UV FILTERS	
			17	18	15A/2P	NEW PUMP HP–4	N
			19	20			
	SPARE		21	22	15A/2P	NEW PUMP HP–5	
	SPARE		23	24			

TURN OFF THE UN–USED BREAKERS & RE–LABEL AS 'SPARE'



POWER DISTRIBUTION – NEW WORK
N.T.S.

GENERAL NOTES :

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

No.	ISSUED	DATE
1.	ISSUED FOR BID	OCT. 2025

Contractors shall verify all dimensions at the job.

North Arrow

Professional Seal

LICENSED PROFESSIONAL ENGINEER
AUG. 20
G. STRASHUN
PROVINCE OF ONTARIO

SAB ENGINEERING Inc.
588 EDWARD AVE., UNIT 25, RICHMOND HILL, ONT., L4C 9Y6
TEL. (905)-787 8885 FAX (905)-787 8771

peel District School Board
5650 Hurontario Street, Mississauga, Ont., L5R 1C6
Tel: (905) 890–1099, Fax: (905) 890–9453

Project
NAHANI WAY PUBLIC SCHOOL
AHU REPLACEMENT

Location
235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

Drawing Title
POWER DISTRIBUTION DETAILS - ELECTRICAL

Checked: G.S.	Date: JUNE 2025
Drawn: T.N.	Scale: 1:100
File Number: 2025–63	Dwg Number: E-3

GENERAL NOTES

A. GENERAL INFORMATION

1. READ STRUCTURAL DOCUMENTS IN CONJUNCTION WITH CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DOCUMENTS.

2. CONTRACTOR TO BE RESPONSIBLE FOR CHECKING SITE CONDITIONS AGAINST DOCUMENTS BEFORE PROCEEDING WITH THE WORK, AND REPORT DISCREPANCIES TO THE CONSULTANT.

3. CONTRACTOR TO PROVIDE LABOUR, MATERIALS, AND EQUIPMENT TO COMPLETE ALL STRUCTURAL WORK INDICATED.

4. CARRY OUT CONSTRUCTION OPERATIONS, INCLUDING THE INSTALLATION OF TEMPORARY GUYING AND SHORING REQUIRED, ENSURING THAT THE EXISTING STRUCTURE OR MEMBERS ALREADY ERECTED ARE NOT LOADED IN EXCESS OF THEIR SAFE LOAD CARRYING CAPACITY.

5. STRUCTURAL DOCUMENTS DO NOT NECESSARILY SHOW ALL OPENINGS AND SLAB VARIATIONS REQUIRED. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR THE EXACT LOCATION, NUMBER, AND SIZE OF OPENINGS, TRENCHES, PITS, SUMPS, SLEEVES, AND DEPRESSIONS. PROVIDE STRUCTURAL FRAMING AT THESE LOCATIONS IN ACCORDANCE WITH THE APPLICABLE TYPICAL DETAIL.

B. REFERENCE STANDARDS / CODES AND ACTS

1. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH AND SHALL BE CONSTRUCTED TO CONFORM WITH THE 2024 ONTARIO BUILDING CODE, ONTARIO REGULATION 203/24 (REFERRED TO AS "THE BUILDING CODE"), ANY APPLICABLE ACTS OF ANY AUTHORITY HAVING JURISDICTION, AND THE FOLLOWING:

TABLE B.1: REFERENCE STANDARDS

REF	CODE	TITLE
a)	CAN/CSA-S16	LIMIT STATES DESIGN OF STEEL STRUCTURES

2. ALL STANDARDS AND PUBLICATIONS REFERENCED BY THE STANDARDS NOTED ABOVE ARE TO APPLY.

3. WHERE THERE ARE DIFFERENCES BETWEEN THE DOCUMENTS AND THE STANDARDS, CODES AND ACTS, THE MOST STRINGENT SHALL GOVERN.

C. SUBMITTALS

1. SUBMIT FOR REVIEW BY THE VARIOUS CONSULTANTS, DETAILED INFORMATION FOR ALL TEMPORARY AND PERMANENT STRUCTURAL WORK. THIS INCLUDES, BUT IS NOT LIMITED TO:

TABLE C.1: REQUIRED SUBMITTALS

ITEM	SUBMISSION TO BE SEALED BY PROFESSIONAL ENGINEER	COMMENTS
STRUCTURAL STEEL SHOP DRAWINGS	YES	

2. CONTRACTOR SHALL ALLOW FOR A TURN AROUND TIME OF FIVE WORKING DAYS FOR THE REVIEW OF THESE SUBMISSIONS.

3. OUR REVIEW OF THE SHOP DRAWINGS IS ONLY FOR GENERAL CONFORMITY WITH STRUCTURAL CONTRACT DOCUMENTS AND SPECIFICATIONS. COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE STRUCTURAL CONTRACT DOCUMENTS AND SPECIFICATIONS, NOR DO THEY AUTHORIZE ANY CHANGES TO THE CONTRACT. REVIEW OF A SPECIFIC ITEM SHALL NOT INCLUDE REVIEW OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. THE CONTRACTOR'S RESPONSIBILITIES INCLUDE ALL QUANTITIES, DETAIL DIMENSIONS, FIELD MEASUREMENTS, FABRICATION PROCESS, MEANS, METHODS, SEQUENCES, AND PROCEDURES OF CONSTRUCTION, COORDINATION OF WORK WITH ALL TRADES AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER. THE REVIEW OF SHOP DRAWINGS DOES NOT IMPLY ANY CHANGE IN ANY OTHER CONSULTANTS' OR PROFESSIONALS' RESPONSIBILITY RELATED TO DESIGN OF SPECIFIC ITEMS AS OUTLINED BY THE SPECIFICATIONS (SUCH AS STRUCTURAL STEEL CONNECTIONS, STEEL JOISTS, PRECAST ELEMENTS, ETC.). AFTER REVIEW, THE DRAWINGS WILL BE STAMPED AND RETURNED TO SHOW ONE OF THE FOLLOWING:

NOT REVIEWED — SHOWS WORK WHICH IS NOT WITHIN THE SCOPE OF STRUCTURAL CONSULTING SERVICES.

REVIEWED — NO DEVIATIONS FROM THE CONTRACT DOCUMENTS NOTED.

NOTED — WE HAVE MADE COMMENTS TO BE REVIEWED / INCORPORATED. SUBMIT RECORD PRINT.

RESUBMIT — REVISE AND RE-SUBMIT FOR REVIEW.

D. MATERIALS

1. PROVIDE ONLY NEW STRUCTURAL MATERIALS IN ACCORDANCE WITH THE REFERENCE STANDARDS AND THE FOLLOWING, UNLESS OTHERWISE NOTED.

1.1. STRUCTURAL STEEL:

1.1.1. STRUCTURAL WIDE FLANGE (W) AND WELDED WIDE FLANGE SHAPES (WWF) TO CONFORM TO CAN/CSA G40.20/G40.21 GRADE 350W.

1.1.2. ANGLES (L), CHANNELS (C), AND PLATES TO CONFORM TO CAN/CSA-G40.20/G40.21 GRADE 300W.

1.1.3. HOLLOW STRUCTURAL SECTIONS (HSS) TO CONFORM TO ASTM A500 GRADE C.

1.2. PRIME PAINT: CONFORM TO CISC/CPMA STANDARD 2-75.

1.3. HOT DIP GALVANIZING: CONFORM TO CSA-G164, MINIMUM ZINC COATING OF 600 g/m^2.

1.4. STRUCTURAL BOLTS, NUTS, AND WASHERS: CONFORM TO ASTM A325M.

E. EXECUTION

1. STRUCTURAL STEEL

1.1. PAINT ALL STRUCTURAL STEEL TO REQUIREMENTS OF CISC/CPMA 2-75. TOUCH UP ALL FIELD WELDS.

1.2. ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED IN ACCORDANCE WITH CSA G164.

1.3. ALL WELDS SHALL CONFORM TO CSA STANDARD W59.

1.4. ALL WELDS EXPOSED TO VIEW SHALL BE GROUND SMOOTH.

1.5. ANY ORGANIZATION UNDERTAKING TO WELD UNDER THIS CONTRACT SHALL BE CERTIFIED BY THE CANADIAN WELDING BUREAU UNDER REQUIREMENTS OF DIVISION 1 OR DIVISION 2.1 OF W47.1.

1.6. DO NOT SPLICE STRUCTURAL STEEL SECTIONS WITHOUT PRIOR APPROVAL OF THE CONSULTANT. ALL SPLICES SHALL DEVELOP THE FULL CAPACITY OF THE SECTION AND ARE TO BE TESTED BY NON DESTRUCTIVE METHODS, BY AN INDEPENDENT INSPECTION AND TESTING COMPANY, AT THE CONTRACTOR'S EXPENSE.

2. ALTERATIONS AND/OR CONNECTIONS TO EXISTING STRUCTURE

2.1. INSPECT THE EXISTING BUILDING AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS.

2.2. PRIOR TO FABRICATION OF STRUCTURAL STEEL, OPEN UP ALL AREAS WHERE CONNECTIONS ARE TO BE MADE TO EXISTING WORK AND TAKE FIELD MEASUREMENTS. MODIFY METHODS FOR CONNECTING TO SUIT SITE CONDITIONS FOUND AND TO THE APPROVAL OF THE CONSULTANT. CARRY OUT LOCAL REPAIRS TO THE EXISTING WORK AS NECESSARY AND AS DIRECTED BY THE CONSULTANT.

2.3. DO NOT CUT CONCRETE REINFORCEMENT UNLESS REVIEWED AND APPROVED BY THE CONSULTANT.

2.4. MAKE GOOD THE EXISTING WORK.

F. QUALITY CONTROL

1. GENERAL

1.1. IMPLEMENT A SYSTEM OF QUALITY CONTROL TO ENSURE THAT THE MINIMUM STANDARDS SPECIFIED HEREIN ARE ATTAINED.

1.2. BRING TO THE ATTENTION OF THE CONSULTANT ANY DEFECTS IN THE WORK OR DEPARTURES FROM THE CONTRACT DOCUMENTS, WHICH MAY OCCUR DURING CONSTRUCTION. THE CONSULTANT WILL DECIDE UPON CORRECTIVE ACTION AND GIVE RECOMMENDATIONS IN WRITING.

1.3. THE CONSULTANT'S GENERAL REVIEW DURING CONSTRUCTION AND INSPECTION AND TESTING BY INDEPENDENT INSPECTION AND TESTING AGENCIES REPORTING TO THE CONSULTANT ARE BOTH UNDERTAKEN TO INFORM THE OWNER / CLIENT OF THE CONTRACTOR'S PERFORMANCE AND SHALL IN NO WAY AUGMENT THE CONTRACTOR'S QUALITY CONTROL OR RELIEVE THE CONTRACTOR OF CONTRACTUAL RESPONSIBILITY.

2. NOTIFICATION

2.1. PRIOR TO COMMENCING SIGNIFICANT SEGMENTS OF THE WORK, GIVE THE CONSULTANT AND INDEPENDENT INSPECTION AND TESTING COMPANIES APPROPRIATE NOTIFICATION (MINIMUM 24 HOURS) SO AS TO AFFORD THEM REASONABLE OPPORTUNITY TO REVIEW THE WORK. FAILURE TO MEET THIS REQUIREMENT MAY BE CAUSE FOR THE CONSULTANT TO CLASSIFY THE WORK AS DEFECTIVE.

3. INSPECTION AND TESTING

3.1. AN INDEPENDENT INSPECTION AND TESTING COMPANY SHALL MAKE INSPECTIONS OR PERFORM TESTS AS THE CONSULTANT DIRECTS. THE INDEPENDENT INSPECTION AND TESTING COMPANIES SHALL BE RESPONSIBLE ONLY TO THE CONSULTANT AND SHALL MAKE ONLY SUCH INSPECTIONS OR TESTS AS THE CONSULTANT MAY DIRECT.

3.2. THE FOLLOWING ITEMS REQUIRE TESTING AND/OR INSPECTION BY A CERTIFIED, INDEPENDENT INSPECTION AND TESTING COMPANY UNLESS OTHERWISE NOTED. THE TESTING FIRM SHALL SUBMIT COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS TO THE CONSULTANT FOR REVIEW:

TABLE F.1: INSPECTION AND TESTING REQUIREMENTS

ITEM	COMMENTS
STRUCTURAL STEEL WELDING	VISUALLY INSPECT ALL FIELD WELDING.

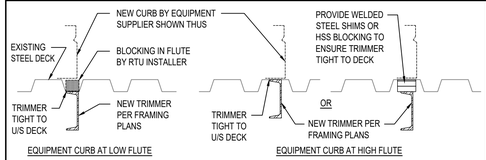
4. DEFECTIVE MATERIALS AND WORK

4.1. WHERE EVIDENCE EXISTS THAT DEFECTIVE WORK HAS OCCURRED OR THAT WORK HAS BEEN CARRIED OUT INCORPORATING DEFECTIVE MATERIALS, THE CONSULTANT MAY HAVE TESTS, INSPECTIONS OR SURVEYS PERFORMED, ANALYTICAL CALCULATIONS OF STRUCTURAL STRENGTH MADE, AND THE LIKE, IN ORDER TO HELP DETERMINE WHETHER THE WORK MUST BE CORRECTED OR REPLACED. TESTS, INSPECTIONS OR SURVEYS, OR CALCULATIONS CARRIED OUT UNDER THESE CIRCUMSTANCES WILL BE MADE AT THE CONTRACTOR'S EXPENSE, REGARDLESS OF THEIR RESULTS, WHICH MAY BE SUCH THAT, IN THE CONSULTANT'S OPINION, THE WORK MAY BE ACCEPTABLE.

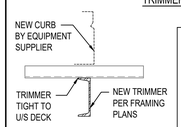
4.2. ALL TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE, EXCEPT WHERE THIS WOULD, IN THE CONSULTANT'S OPINION, CAUSE UNDUE DELAY OR GIVE RESULTS NOT REPRESENTATIVE OF THEIR RESULTS, WHICH MAY BE SUCH THAT, IN THE CONSULTANT'S OPINION, THE WORK MAY BE ACCEPTABLE.

4.3. MATERIALS OR WORK, WHICH FAIL TO MEET SPECIFIED REQUIREMENTS, MAY BE REJECTED BY THE CONSULTANT WHENEVER FOUND AT ANY TIME PRIOR TO FINAL ACCEPTANCE OF THE WORK REGARDLESS OF PREVIOUS INSPECTION. IF REJECTED, DEFECTIVE MATERIALS OR WORK SHALL BE PROMPTLY REMOVED AND REPLACED OR REPAIRED TO THE SATISFACTION OF THE CONSULTANT, AT NO EXPENSE TO THE OWNER.

NEW STEEL TRIMMER FRAMING BELOW STEEL DECK AND BELOW EQUIPMENT CURBS — TD-S37



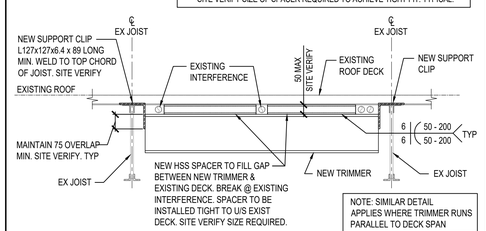
TRIMMERS PARALLEL TO DIRECTION OF DECK



TRIMMERS PERPENDICULAR TO DIRECTION OF DECK

TYPICAL NOTE:

1. PRIOR TO FABRICATION OF STEEL AND PREPARATION OF STEEL SHOP DRAWING, THE STEEL FABRICATOR SHALL VISIT THE SITE AND VERIFY CONDITIONS AT THE UNDERSIDE OF ROOF DECK WHERE NEW TRIMMER MEMBERS ARE TO BE INSTALLED. IF SMALL ELECTRICAL CONDUITS OR MECH PIPING ARE INSTALLED TIGHT TO DECK WHICH INTERFERE WITH TRIMMER INSTALL, LOWER TRIMMER MEMBERS IN ORDER TO CLEAR INTERFERENCE. PROVIDE FULL LENGTH WELDED HSS STEEL SPACER ALONG TOP OF MEMBER TO FILL GAP ENSURING TIGHT FIT OF NEW MEMBER TO UNDERSIDE OF DECK. BREAK HSS ONLY AT INTERFERENCE LOCATIONS. SITE VERIFY SIZE OF SPACER REQUIRED TO ACHIEVE TIGHT FIT. TYPICAL.

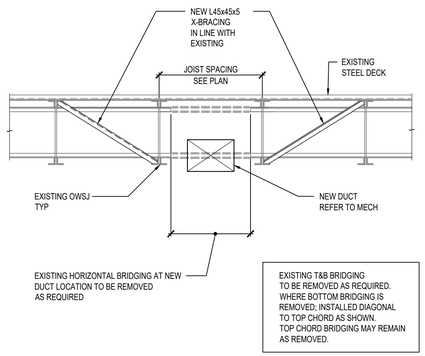


TRIMMERS WHERE EXISTING SURFACE MOUNTED SERVICES PRESENT

STRUCTURAL ABBREVIATIONS — TD-G01

A.BOLT(s)	ANCHOR BOLT(S)	Fy	YIELD STRENGTH	PL	PLATE
AFF	ABOVE FINISHED FLOOR	GA	GAUGE	PLF	POUNDS PER LINEAR FOOT
ALT	ALTERNATIVE	GALV	GALVANIZED	psf	POUNDS PER SQUARE FOOT
ARCH	ARCHITECTURAL	GEN	GENERAL	PT	PRESSURE TREATED
ASL	ADDITIONAL ACCUMULATED SNOW LOAD	H, HORZ	HORIZONTAL	RD	ROOF DRAIN
		H1E	HOOK ONE END	REINF	REINFORCEMENT, REINFORCED
B, BOTT	BOTTOM	HEF	HORIZONTAL EACH FACE	REF	REFER
B/B	BACK TO BACK	HF	FACTORED HORIZONTAL FORCE	RE	RIGHT END
BEW	BOTTOM EACH WAY	HH	HOOK EACH END	REQ'D	REQUIRED
BLL	BOTTOM LOWER LAYER	HIF	HORIZONTAL INSIDE FACE	REV	REVISION, REVISED
BLDG	BUILDING	HOF	HORIZONTAL OUTSIDE FACE	RW	REINFORCED WITH
BM	BEAM	HP	HIGH POINT	SAD	SEE ARCHITECTURAL DRAWINGS
BPL	BASE PLATE, BEARING PLATE	HSC	HORIZONTALLY SLOTTED CONNECTION	SCHED	SHEDULE
BRDG	BRIDGING			SDF	STEP DOWN FOOTING
BUL	BOTTOM UPPER LAYER	HSS	HOLLOW STEEL SECTION	SIM	SIMILAR
c	CAMBER	H&V	HORIZONTAL AND VERTICAL	SL	SNOW LOAD
C	EPOXY COATED	IF	INSIDE FACE	SOG	SLAB ON GRADE
c/c	CENTRE TO CENTRE	IN	INCHE(S)	SPD	STANDARD PROCTOR DRY DENSITY
CA	COLUMN ABOVE	INT	INTERIOR		
CANT	CANTILEVER(ED)	JT	JOINT	ST	STRAIGHT
CB	COL BELOW	K, kip	KILO-POUND, 1000 lbf	STRUCT	STRUCTURAL
CDL	COMPRESSION DEVELOPMENT LENGTH	kg	KILOGRAM(S)	STD	STANDARD
		kip-ft	KIP FOOT, KIP FEET	SW	SHORT WAY
Cf	FACTORED COMPRESSIVE FORCE	kips/ft	KIPS PER LINEAR FOOT	T	TOP
CJ	CONTROL JOINT	kN	KILONEWTON	TDL	TENSION DEVELOPMENT LENGTH
CLS	COMPRESSION LAP SPLICE	kN m	KILONEWTON METRE	TEMP	TEMPORARY, TEMPERATURE
COL(s)	COLUMN(S)	kN/m	KILONEWTON PER METRE	TEW	TOP EACH WAY
COMP	COMPOSITE	kPa	KILOPASCAL	Tf	FACTORED TENSILE FORCE
CONC	CONCRETE	ksf	KIPS PER SQUARE FOOT	THK	THICK
CONT	CONTINUOUS	ksi	KIPS PER SQUARE INCH	TJ	TIE JOIST
c/w	COMPLETE WITH	L	SINGLE ANGLE	TLL	TOP LOWER LAYER
DEMO	DEMOLITION, DEMOLISH(ED)	lbf	POUND-FORCE	TLS	TENSION LAP SPLICE
DIAG	DIAGONAL	lbs	POUNDS	TMf	FACTORED TORSIONAL MOMENT
DIM	DIMENSION	LE	LEFT END	T/O	TOP OF
DL	DEAD LOAD	LG	LONG	TRANS	TRANSVERSE
DP	DEEP	LL	LIVE LOAD, LOWER LAYER	TUL	TOP UPPER LAYER
DWG(s)	DRAWING(S)	LLH	LONG LEG HORIZONTAL	TYP	TYPICAL
DWL(s)	DOWEL(S)	LLV	LONG LEG VERTICAL	T&B	TOP AND BOTTOM
DN	DOWN	LP	LOW POINT	UL	UPPER LAYER
EA	EACH	LSH	LONG SIDE HORIZONTAL	UIN	UNLESS NOTED OTHERWISE
EE	EACH END	LSV	LONG SIDE VERTICAL	U/S	UNDERSIDE OF
EF	EACH FACE	LW	LONG WAY	V, VERT	VERTICAL
ELEC	ELECTRICAL	m	METRE	Vf	FACTORED VERTICAL SHEAR FORCE
EL	ELEVATION	MECH	MECHANICAL		
ELEV	ELEVATOR	Mf	FACTORED MOMENT	VBF	VERTICAL BRACED FRAME
EMBED	EMBEDMENT	ML	MIDDLE LAYER	VEF	VERTICAL EACH FACE
EQ	EQUAL	mm	MILLIMETRE	VIF	VERTICAL INSIDE FACE
ES	EACH SIDE	MPa	MEGAPASCAL	VOF	VERTICAL OUTSIDE FACE
EX, EXIST	EXISTING	Mxf	FACTORED BENDING MOMENT ALONG x-x AXIS	VSC	VERTICALLY SLOTTED CONNECTION
EJ, EXP JT	EXPANSION JOINT				
E-W	EAST-WEST	Myf	FACTORED BENDING MOMENT ALONG y-y AXIS	W	WIDE FLANGE BEAM
EW	EACH WAY			WP	WORKING POINT
EXT	EXTERIOR	NIC	NOT IN CONTRACT	WT	WEIGHT, STRUCTURAL TEE
f'c	28 DAYS CONCRETE COMPRESSIVE STRENGTH	N-S	NORTH-SOUTH	WWF	WELDED WIRE FABRIC, WELDED WIDE FLANGE
		NTS	NOT TO SCALE		
FDN	FOUNDATION	OF	OUTSIDE FACE	@	AT
FIN	FINISHED	OPEN	OPENING	℄	CENTRE LINE
FL	FLOOR	OWSJ	OPEN WEB STEEL JOIST	Ø	DIAMETER
ft	LINEAR FOOT, LINEAR FEET	Pf	FACTORED AXIAL FORCE	▶	MOMENT CONNECTION
FTG	FOOTING	PC	PRE-CAST		

MODIFICATION OF EXISTING HORIZONTAL BRIDGING AT NEW MECHANICAL DUCT LOCATION TYPICAL DETAIL — TD-S26

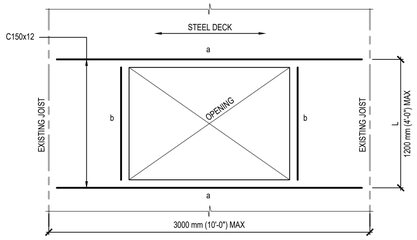


NOTE:

1. SITE VERIFY NUMBER OF AFFECTED BRIDGING LINES.

FRAMING AT OPENINGS IN STEEL ROOF DECK — TD-S02

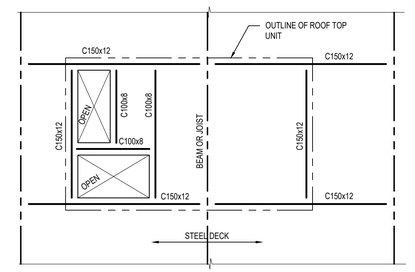
	SPAN L	a	b
EXISTING ROOF DECK	150 mm (6") < L ≤ 450 mm (18")	C150x12	L65x65x6
	450 mm (18") < L ≤ 1200 mm (4'-0")	C150x12	C100x8
NEW ROOF DECK	150 mm (6") < L ≤ 450 mm (18")	BY DECK SUPPLIER	BY DECK SUPPLIER
	450 mm (18") < L ≤ 1200 mm (4'-0")	C150x12	C100x8



NOTES:

1. REINFORCING IS NOT REQUIRED AT OPENING LESS THAN 150 mm (6") SQUARE OR IN DIAMETER.
2. TOP OF OPENING TRIMMING STEEL TO BE TIGHT TO U/S OF STEEL DECK.
3. STANDARD OPENING TRIMMING STEEL IS NOT NECESSARILY SHOWN ON STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENING SIZES AND LOCATIONS, AS WELL AS EXACT NUMBER OF OPENINGS.
4. IF OPENING DIMENSIONS "L" EXCEEDS 1200 mm (4'-0") SEE PLAN FOR TRIMMER FRAMING.

FRAMING FOR ROOF TOP UNITS AND OPENINGS IN STEEL ROOF DECK — TD-S28



FRAMING FOR ROOF TOP MECHANICAL UNITS

NOTES:

1. UNLESS SHOWN OTHERWISE ON PLAN, PROVIDE C150x12 SPANNING BETWEEN BEAMS OR JOISTS EACH SIDE OF ROOF TOP UNIT, AS WELL AS AT EACH END, IN THE MANNER INDICATED ABOVE. CHANNELS TO BE LOCATED DIRECTLY UNDER CURBS SUPPORTING UNIT. OMIT CHANNEL IF CURB IS DIRECTLY OVER A BEAM OR JOIST.
2. PROVIDE C100x8 TO SUPPORT EDGES OF DECK AT OPENINGS IN THE MANNER INDICATED ABOVE. IF THE DECK UNDER THE ENTIRE UNIT IS TO BE OMITTED, THE C100x8 FRAMING CAN BE DELETED.
3. CONNECT C150x12 TO SUPPORTING BEAMS OR JOISTS FOR A MINIMUM WORKING LOAD OF 9 kN OR 1/4 OF THE WEIGHT OF THE UNIT PLUS 5 kN, WHICHEVER IS MORE. CONNECT WITHOUT DAMAGING THE SUPPORTING STEEL.
4. CONNECT C100x8 TO SUPPORTS FOR A MINIMUM WORKING LOAD OF 5 kN.
5. COORDINATE LOCATION AND SIZE OF UNIT AND OPENINGS, AND LOCATION OF STEEL FRAMING WITH THE MECHANICAL CONSULTANT AND/OR MECHANICAL CONTRACTOR AND THE STRUCTURAL CONSULTANT.
6. THIS DETAIL APPLIES TO NEW CONSTRUCTION ONLY.

LIST OF STRUCTURAL DRAWINGS

SHEET No.	SHEET TITLE
S101	GENERAL NOTES AND TYPICAL DETAILS
S201	MAIN ROOF FRAMING PART PLAN

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Professional Seal

LICENSED PROFESSIONAL ENGINEER
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NOV 18 2025
PROVINCE OF ONTARIO

No.	ISSUED	DATE
2.	ISSUED FOR BIDS	2025.11.18
1.	ISSUED FOR REVIEW	2025.11.14

Contractors shall verify all dimensions at the job.

North Arrow

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Project

NAHANI WAY PUBLIC SCHOOL
H.V.A.C. UPGRADES

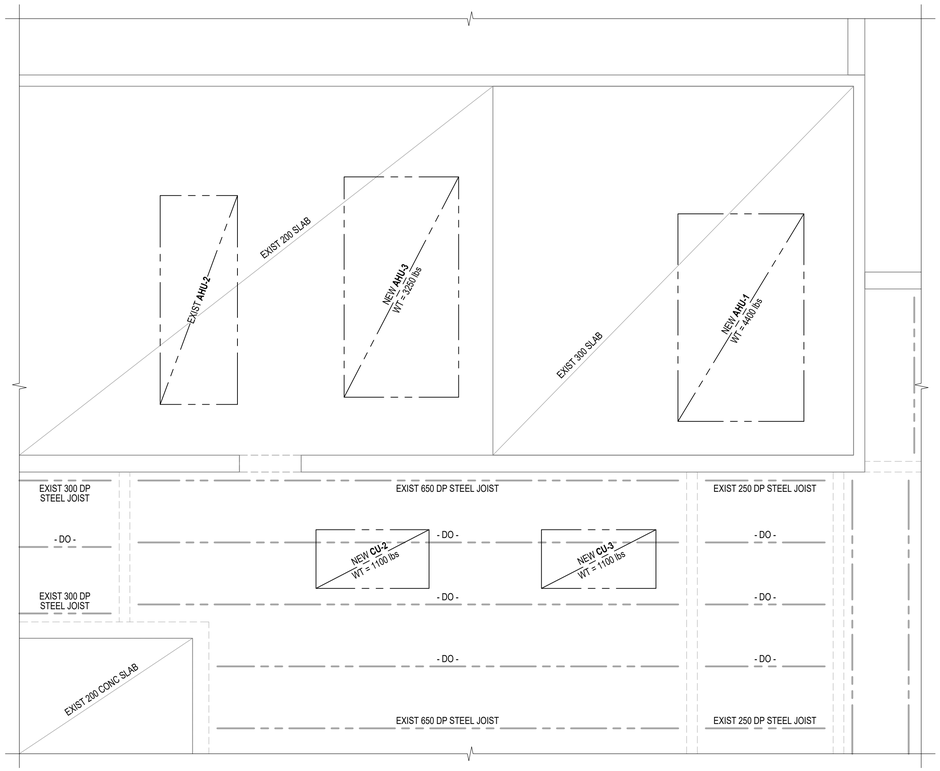
Location

235 NAHANI WAY.
MISSISSAUGA ON., L4Z 3J6

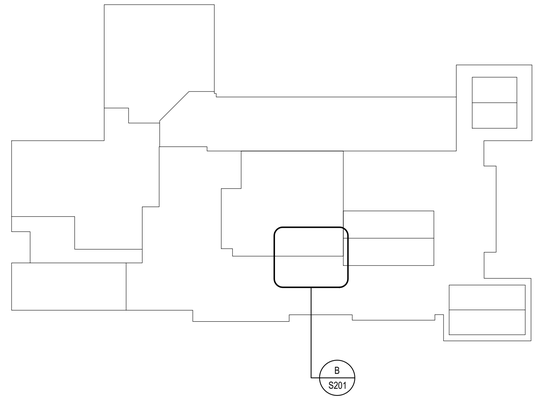
Drawing Title

GENERAL NOTES AND TYPICAL DETAILS

Checked: FRI / MAM	Date: NOV 12, 2025
Drawn: AQV	Scale: NTS
File Number: 2025-63	Dwg Number: S101



B / S201 MAIN ROOF FRAMING PART PLAN
1 : 50



A / S201 KEY PLAN
NTS

GROUND FLOOR FRAMING NOTES

1. READ DRAWING IN COMBINATION WITH GENERAL NOTES AND TYPICAL DETAILS.
2. EXISTING STRUCTURE HAS BEEN CHECKED FOR NEW LOADS AND WAS FOUND TO BE ACCEPTABLE.
3. LIVE LOADS ARE, UNLESS NOTED OTHERWISE ON PLAN:

MECHANICAL AREAS	3.6 kPa

4. SNOW LOADS ARE 1.28 kPa + ASL
   MULTIPLIED BY HIGH IMPORTANCE
   IULS = 1.15, ISLS = 0.9
5. SUPERIMPOSED DEAD LOADS ARE:

4-PLY ROOF + INSULATION	0.35 kPa
STEEL FRAMING	0.15 kPa
MISC M&E	0.50 kPa
SUSPENDED CEILING	0.25 kPa
GRAVEL	0.17 kPa

6. BASED ON THE DIMENSIONS OF THE NEW CONDENSER AND USE OF FIGURE G8 OF THE "USERS GUIDE – NBCC 2022 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B)" AND CLAUSE 4.1.6.7(3) OF ONTARIO REGULATION 88/19, NO SNOW ACCUMULATION IS DIRECTLY CAUSED BY THE NEW UNIT.
7. EXISTING STRUCTURAL HAS BEEN CHECK FOR NEW LOADS IMPOSED BY PROPOSED AHU AND CU, AND WAS FOUND TO HAVE SUFFICIENT CAPACITY TO SUPPORT THESE LOADS WITHOUT REINFORCING, EXCEPT WHERE SHOWN OTHERWISE ON PLAN.
8. CONNECT NEW CU TO ITS ROOF CURB AND THE ROOF CURB TO THE STRUCTURE PER MANUFACTURER'S REQUIREMENTS.
9. ALL FIELD WELDS MUST BE REVIEWED BY AN INDEPENDENT INSPECTION AND TESTING COMPANY SUBMIT COPIES OF ALL TESTING REPORTS TO THE CONSULTANT.
10. EXISTING BRIDGING AND BRACING WHICH INTERFERES WITH NEW STRUCTURAL TO BE REMOVED AND REINSTATED AFTER INSTALLATION OF NEW RTU UNIT IS COMPLETE. THE CONTRACTOR SHALL INCLUDE NOTED WORK INTO PRICE. REFER TO **TD-S26** FOR NEW BRIDGING AND REPLACEMENT BRIDGING.
11. REMOVE EXISTING CEILING FINISHES, MECHANICAL SERVICES AND THE LIKE TO COMPLETE THE STRUCTURAL WORK. PATCH AND MAKE GOOD.

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MAIN ROOF
FRAMING PART PLAN

Checked: FRI / MAM	Date: NOV 12, 2025
Drawn: AQV	Scale: AS NOTED
File Number: 2025-63	Dwg Number: S201