Dufferin-Peel
Catholic District
School Board

8/16/2021

ADDENDUM 1

T-2021-78 CEC - BAS, VAV, Reheat Coils & Exhaust Fans Replacement Project

Revised CLOSING date: August 23, 2021 @2:00PM

To follow are:

- Questions & Answers
- Addendum ME-01

Question 1:

The tender document states a cash allowance of $15,000.00 is to be carried for air balancing while the form of tender states a total cash allowance of $10,000.00. Please advise.

Answer 1: *A CASH ALLOWANCE OF $15,000.00 SHALL BE CARRIED FOR AIR BALANCING, OWNER/CONSULTANT WILL PICK THE AIR BALANCING COMPANY AND PROVIDE DIRECTIONS TO THE AIR BALANCER DIRECTLY.*

Question 2:

As per PART 2 – SCOPE OF WORK: Contractor to follow instructions provided by the Board’s Asbestos Abatement Consultant attached with the tender documents, BUT there is no DSS report attached. Please advise if the Asbestos Abatement is to be included in the base bid price.

Answer 2: *ASBESTOS ABATEMENT SHALL BE INCLUDED IN THE BASE BID PRICE.*

August 13, 2021

CEC – BAS, VAV, Reheat Coils &
Exhaust Fans Replacement Project

REGAL CONSULTING ENGINEERS INC.
2359 Royal Windsor Drive, Suite 201
Mississauga, ON L5J 4S9
Phone: 905-855-3010

This addendum forms part of the contract documents and amends the original bidding requirements, drawings and specifications, as noted below.

ARCHITECTURAL

1. **Phasing of the project:**

a**) Phase 1 – Third Floor**

General Contractor shall start demolition and new work at the third floor as phase 1 of the project, General Contractor shall provide a construction schedule for the phase to get approval from the owner/consultants before starting of any work at CEC.
Refer to the mechanical drawings for the details for each floor.

b) **Phase 2 – Second Floor**

General Contractor shall proceed to phase 2 upon completion of phase 1, a detailed construction schedule shall be provided for phase 2 and submitted to get approval from the owner/consultants before starting of any work at the second floor of CEC.

c) **Phase 3 – Main Floor**

General Contractor shall proceed to phase 3 upon completion of phase 2, a detailed construction schedule shall be provided for phase 3 and submitted to get approval from the owner/consultants before starting any work at the main floor of CEC.

d) **Phase 4 – Lower-Level Floor**

General Contractor shall proceed to phase 4 upon completion of phase 3, a detailed construction schedule shall be provided for phase 4 and submitted to get approval from the owner/consultants before starting any work at the lower level of CEC.

MECHANICAL:

MECHANICAL SPECIFICATIONS:

Specs section 15510 Hydronic Piping:
Sub section 2.2: Hydronic piping shall be strictly based on the specifications provided,
Any rubber coupling or slip-on fittings will not be allowed.
Mechanical contractor shall allow for providing and installing balancing dampers model (Nailor 1890) steel butterfly round duct dampers for 12” diameter round duct.
Allow for providing and installation of 80 each of Nailor 1890 manual 12” round duct balancing dampers.

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> **Existing balancing dampers not in good condition shall be replaced with the new Nailor 1890 steel butterfly manual balancing dampers, exact location and size of the manual balancing damper will be determined on site.**

BAS VENDOR FOR CEC PROJECT:
BAS Vendor is Reliable/Set point Automation ONLY.

VAV BOXES WITH REHEAT COILS: METALAIRE VAV BOXES WITH REHEAT COILS SHALL BE TREATED AS EQUAL TO E.H. PRICE. (BASIS OF DESIGN).

MECHANICAL

1. Find attached mechanical sketches M1.0-A-1 with changes as shown clouded.
2. Find attached mechanical sketch M2.0D-A-1 with changes as shown clouded.
3. Find attached mechanical sketch M2.3D-A-1 with changes as shown clouded.

ELECTRICAL

4. Find attached electrical drawings E1.0.
5. Find attached electrical drawings E2.0.
6. Find attached electrical drawings E3.0.

END OF ADDENDUM ME-1

DRAWING LIST

M1.0	MECHANICAL LEAD SHEET AND SEQUENCE OF OPERATION, DETAILS
M1.1	MECHANICAL SCHEDULES
M2.0D	DEMOLITION HVAC LOWER LEVEL FLOOR PLAN
M2.1D	DEMOLITION HVAC MAIN FLOOR PLAN
M2.2D	DEMOLITION HVAC SECOND FLOOR PLAN
M2.3D	DEMOLITION HVAC THIRD FLOOR PLAN
M3.0D	DEMOLITION BAS DATA CENTER FLOOR PLANS
M3.1D	DEMOLITION CONTROL SCHEMATICS – 1
M3.2D	DEMOLITION CONTROL SCHEMATICS – 2
M3.3D	DEMOLITION CONTROL SCHEMATICS – 3
M3.4D	EXISTING BAS NETWORK AND POINT LISTS
M2.0	PROPOSED HVAC LOWER LEVEL FLOOR PLAN
M2.1	PROPOSED HVAC MAIN FLOOR PLAN
M2.2	PROPOSED HVAC SECOND FLOOR PLAN
M2.3	PROPOSED HVAC THIRD FLOOR PLAN
M3.0	PROPOSED BAS DATA CENTER FLOOR PLANS
M3.1	PROPOSED CONTROL SCHEMATICS – 1
M3.2	PROPOSED CONTROL SCHEMATICS – 2
M3.3	PROPOSED CONTROL SCHEMATICS – 3
M4.0	PROPOSED HEATING LOWER LEVEL FLOOR PLAN
M4.1	PROPOSED HEATING MAIN FLOOR PLAN
M4.2	PROPOSED HEATING SECOND FLOOR PLAN
M4.3	PROPOSED HEATING THIRD FLOOR PLAN

GENERAL NOTES

1. CONTRACTOR TO VERIFY THE EXACT LOCATIONS OF EXISTING EQUIPMENT.
2. CONTRACTOR TO VERIFY THE TYPES OF INPUT AND OUTPUT ON THE EXISTING EQUIPMENT TO REMAIN PRIOR TO COMMENCING OF WORK.
3. MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL LOW VOLTAGE TRANSFORMERS AS REQUIRED FOR NEW BAS SYSTEM. CO–ORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER REQUIREMENTS.

LEGEND – HVAC

ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.

REFER	DESCRIPTION
—— RS ——	REFRIGERANT SUCTION
—— RL ——	REFRIGERANT LIQUID
——○	PIPING RISER UP
——⊃	PIPING DROP
——●	PIPING RISER UP & DOWN
Ⓣ	THERMOSTAT
Ⓢ	TEMPERATURE SENSOR
CV	CONTROL VALVE
⋈	3–WAY CONTROL VALVE
⋈	2–WAY CONTROL VALVE
—▶—	PUMP
—⊬—	STRAINER
MD	MOTORIZED DAMPER
—⋈—	ISOLATION VALVE
—⋈—	CIRCUIT BALANCING VALVE
—N—	CHECK VALVE
—⊬—	STRAINER
REM	REMOVED
Ⓗ	HUMIDITY SENSOR
(MS)	MOTION SENSOR
(PC)	PHOTOCELL SENSOR

MECHANICAL CONTRACTOR TO ALLOW FOR CLEANING OF ALL THE STRAINERS CONNECTED TO THE HVAC SYSTEM AT THE SCHOOL.

ALLOW FOR COLLECTING GLYCOL FROM THE SYSTEM AND STORE IN AN APPLICABLE CONTAINER TO RE–FILL BACK INTO THE HEATING LOOP AFTER CLEANING THE STRAINERS.

ISOLATION VALVES IN THE VICINITY OF THE STRAINER SHALL BE CLOSED IN ORDER TO REMOVE THE STRAINER FOR CLEANING.

MECHANICAL CONTRACTOR TO ALLOW FOR PIPE FREEZING TO FACILITATE REPLACING THE SHUT–VALVES FOR REHEAT COILS, WALL FINS, CONVECTORS, CABINET UNIT HEATERS AND UNIT HEATERS.

SEQUENCE OF OPERATIONS

BOILER CONTROL

- BOILER SUPPLY WATER TEMPERATURE SET POINT SHALL BE RESET BASED ON THE OAT.

OAT	SW T SET POINT
10°C	62°C.
-5°C	82°C

- BOILERS AND PUMP SHALL BE LEAD/LAGGED ON A WEEKLY BASIS.

LEAD BOILER

- LEAD BOILER SHALL MODULATE TO ACHIEVE THE BOILER PLANT SUPPLY WATER TEMPERATURE.
- IF THE DISCHARGE TEMPERATURE OF THE LEAD BOILER EXCEEDS 82°C THE BOILER MODULATE COMMAND SHALL START RAMPING DOWN TO ENSURE THAT THE BOILER SUPPLY TEMPERATURE DOES NOT EXCEED 82°C. THIS FUNCTION SHALL BE IRRESPECTIVE OF THE TEMPERATURE OF THE SUPPLY WATER TEMPERATURE OF THE BOILER PLANT.
- IF THE LEAD BOILER SUPPLY TEMPERATURE EXCEED 92°C THE BOILER SHALL BE DISABLED AND THE MODULATION SHALL GO TO 0%
- MINIMUM OFF TIME OF THE BOILER SHALL BE 5 MIN.

LAG BOILER

- LAG BOILER SHALL BE ENABLED ONLY IF THE LEAD BOILER HAS WORKED CONTINUOUSLY FOR A MINIMUM OF 10MIN AND THE BOILER PLANT SUPPLY WATER TEMPERATURE IS 3°C BELOW THE SET TEMPERATURE.
- IF THE DISCHARGE TEMPERATURE OF THE LAG BOILER EXCEEDS 82°C THE BOILER MODULATE COMMAND SHALL START RAMPING DOWN TO ENSURE THAT THE BOILER SUPPLY TEMPERATURE DOES NOT EXCEED 82°C. THIS FUNCTION SHALL BE IRRESPECTIVE OF THE TEMPERATURE OF THE SUPPLY TEMPERATURE OF THE BOILER PLANT.
- IF THE LAG BOILER SUPPLY TEMPERATURE EXCEED 92°C THE BOILER SHALL BE DISABLED AND THE MODULATION SHALL GO TO 0%
- MINIMUM OFF TIME OF THE BOILER SHALL BE 5 MIN.

TREND

FOLLOWING POINTS SHALL BE TRENDED

1. BOILER PLANT SUPPLY WATER TEMPERATURE
2. BOILER PLANT RETURN WATER TEMPERATURE
3. BOILER 1 SUPPLY WATER TEMPERATURE
4. BOILER 2 SUPPLY WATER TEMPERATURE
5. BOILER SUPPLY HEADER PRESSURE

ALARM

FOLLOWING SHALL BE ALARM POINTS

1. BOILER PLANT SUPPLY WATER TEMPERATURE HI AND LO LIMITS
2. BOILER PLANT RETURN WATER TEMPERATURE HI AND LO LIMITS
3. BOILER 1 SUPPLY WATER TEMPERATURE HI AND LO LIMITS
4. BOILER 2 SUPPLY WATER TEMPERATURE HI AND LO LIMITS
5. BOILER RETURN WATER TEMPERATURE HI AND LO LIMITS
6. BOILER PLANT PRESSURE HI AND LO LIMIT ALARM
7. BOILER FAILURE ALARM
8. ALL HOT WATER PUMP FAILURE ALARMS

REFER TO THE SPECIFICATIONS FOR DETAILS ON TRENDING AND ALARMING.

HOT WATER WALL FIN/ REHEAT COIL CONTROL

ROOM TEMPERATURE SENSORS OPERATING THROUGH BAS TO MODULATE THE TWO-WAY CONTROL VALVE TO MAINTAIN ROOM TEMPERATURE AT SET POINT. IF THE OUTSIDE TEMPERATURE DROPS BELOW -2°C, THE CONTROL VALVE SHALL MAINTAIN A MINIMUM OPENING OF 30% EVEN IF THE ROOM TEMPERATURE IS SATISFIED. DAY/ NIGHT SET POINT CHANGE SHALL BE ACTIVATED BY BAS.

DOMESTIC H.W. PUMP

CONTROLLED BY SCHEDULE ON BAS.

EXHAUST FAN CONTROL

EACH EXHAUST FAN NOT PART OF A S.A. SYSTEM OR CONTROLLED FROM ROOM LIGHT SWITCH SHALL BE CONTROLLED FROM BAS BY SCHEDULE.

HOT WATER MIXING VALVE CONTROL

HOT WATER MIXING VALVE TO BE MODULATED BASED ON RETURN WATER TEMPERATURE OF THE SECONDARY LOOP.

HOT WATER BYPASS VALVE CONTROL

HOT WATER BYPASS VALVE TO BE MODULATED BASED ON DIFFERENTIAL PRESSURE AS READ BY THE DIFFERENTIAL PRESSURE SENSOR.

SA-1, SA-2, SA-5 AND SA-6 CONTROL (VARIABLE VOLUME UNITS)

THE AIR HANDLING UNIT CONSISTS OF A MIXED AIR SECTION WITH OUTDOOR AIR, RETURN AIR DAMPERS, FILTER, CHILLED WATER COOLING COIL, HOT WATER HEATING COIL, AND SUPPLY FAN WITH REMOTE VARIABLE FREQUENCY DRIVE. THE REMOTE RETURN FAN WITH REMOTE VARIABLE FREQUENCY DRIVE IS INTER LOCKED THROUGH BAS CONTROL. THE REMOTE EXHAUST DAMPER IS CONTROLLED THROUGH THE BAS SYSTEM.

THE AIR HANDLING UNIT AND RETURN FAN IS SCHEDULED FOR AUTOMATIC OPERATION ON A TIME OF DAY BASIS FOR OCCUPIED AND UNOCCUPIED MODES. WITHIN THE OCCUPIED MODE, THE SYSTEM CAN ENTER THE WARM-UP MODE WHEN THE SPACE TEMPERATURE IS BELOW SET POINT OR THE COOL-DOWN MODE WHEN THE SPACE TEMPERATURE IS ABOVE SET POINT. THE SYSTEM STAYS IN THE WARM-UP OR COOL-DOWN MODE UNTIL THE MODE SET POINT IS SATISFIED. THE LATEST START TIME IS THE SCHEDULED OCCUPANCY FOR THE SPACE.

THE AIR HANDLING UNIT OPERATES IN WARM-UP, COOL-DOWN, OCCUPIED, UNOCCUPIED, NIGHT HEATING AND SAFETY MODES AS FOLLOWS (ALL SUGGESTED SET POINTS AND SETTINGS ARE ADJUSTABLE.

WARM-UP

THE SUPPLY FAN STARTS. THE MIXING DAMPERS ARE POSITIONED FOR 100% RETURN AIR. THE 3-WAY HEATING VALVE MODULATES TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT. IF TIME REACHES THE LATEST START TIME DURING THE WARM-UP MODE, THE OUTDOOR AIR DAMPER OPENS TO ITS MINIMUM POSITION. THE SYSTEM IS PREVENTED FROM ENTERING THE WARM-UP MODE MORE THAN ONCE PER DAY.

COOL-DOWN

THE SUPPLY AND RETURN FANS START. THE 3 WAY COOLING COIL VALVES AND THE MIXING DAMPERS MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT. WHEN THE OUTSIDE AIR-DRY BULB TEMPERATURE IS ABOVE THE ECONOMIZER CHANGEOVER VALUE, THE MIXING DAMPERS ARE POSITIONED FOR 100% RETURN AIR. IF TIME REACHES THE LATEST START TIME DURING THE COOL-DOWN MODE, THE OUTDOOR AIR DAMPER OPENS TO ITS MINIMUM POSITION OR IS CONTROLLED IN ECONOMIZER OPERATION. THE SYSTEM IS PREVENTED FROM ENTERING THE COOL-DOWN MODE MORE THAN ONCE PER DAY.

UNOCCUPIED MODE

THE SUPPLY AND RETURN FANS ARE OFF, MIXING DAMPERS ARE IN THE 100% RECIRCULATION POSITION AND THE CHILLED WATER VALVES ARE CLOSED.

OCCUPIED MODE

AN OPTIMIZED START ROUTINE IS PROVIDED. DURING MORNING COOL-DOWN THE OUTSIDE AIR MINIMUM POSITION IS SET TO ZERO. SUPPLY AND RETURN FANS RUN CONTINUOUSLY. SUPPLY AIR TEMPERATURE SENSOR OPERATES THE MIXING DAMPERS (FOR FREE COOLING) AND THE 3 WAY CHILLED WATER VALVE AND 3 WAY HEATING VALVE IN SEQUENCE TO MAINTAIN SETPOINT WHICH IS RESET FROM OUTSIDE AIR TEMPERATURE AS FOLLOWS: OAT SAT

> 10°C 12 (ADJ USTABLE).

<17°C 10 (ADJUSTABLE)

SUPPLY AIR STATIC PRESSURE SENSOR CONTROLS SUPPLY FAN SPEED TO MAINTAIN SETPOINT (INITIALLY 250 PA (T'WC) THROUGH THE VFD CONTROLLER. RETURN FLOW STATION CONTROLS RETURN FAN .SPEED THROUGH THE VFD CONTROLLER TO MAINTAIN SETPOINT (WHICH IS CALCULATED FROM SUPPLY AIR FLOW MINUS EXHAUST AIR QUANTITY).

SAFETY

DISCHARGE SMOKE DETECTORS IN THE SUPPLY AIR STREAMS DE-ENERGIZE THE SUPPLY FAN UPON ACTIVATION. WHEN THE OAT IS LESS THAN 50 DEGREES F (10 DEGREES C ADJUSTABLE), THE 3- WAY HEATING VALVE AND DAMPERS MODULATES TO MAINTAIN THE MIXED AIR TEMPERATURE AT 50 DEGREES F (10 DEGREES C ADJUSTABLE). WHEN THE OAT IS 50 DEGREES F (10 DEGREES C ADJUSTABLE) OR ABOVE, THE 3-WAY HEATING VALVE CLOSES. ALL OTHER DAMPERS AND VALVES POSITION TO THEIR NORMAL POSITION AFTER THE FANS ARE DE-ENERGIZED. A HARD-WIRED LOW TEMPERATURE DETECTOR IN THE DISCHARGE DUCT DE-ENERGIZES THE SUPPLY FAN WHEN TEMPERATURES BELOW 38 DEGREES F (3 DEGREES C ADJUSTABLE) ARE SENSED.

FREE COOLING ECONOMIZER CONTROL

WHEN THE SUPPLY AIR DISCHARGE TEMPERATURE SETPOINT IS GREATER THAN MIXED AIR TEMPERATURE, OBTAINED WHEN OPERATING A MINIMUM OUTSIDE AIR ONLY, CALCULATIONS SHALL BE MADE TO DETERMINE IF THE USE OF 100% OUTSIDE AIR OR MINIMUM OUTSIDE AIR PROVIDES THE SMALLEST CHANGE ACROSS THE COOLING COIL.

ON CO (CARBON MONOXIDE) LEVEL RISE ABOVE 3PPM (ADJUSTABLE) ALL FANS WILL SHUT DOWN. ONCE CO LEVEL HAS DROPPED BELOW SETPOINT (ADJUSTABLE) THEN AFTER 30 MINUTE DELAY FANS WILL BE ALLOWED TO START UP AGAIN.

SA-3 AND SA-4 CONTROL (CONSTANT VOLUME UNITS)

THE AIR HANDLING UNIT CONSISTS OF A MIXED AIR SECTION WITH OUTDOOR AIR, AND RETURN, AIR DAMPERS, FILTER, HOT WATER HEATING COIL, CHILLED WATER COIL, AND SUPPLY FAN WITH VARIABLE FREQUENCY DRIVE, AND REMOTE RETURN FAN WITH VARIABLE FREQUENCY DRIVE. THE UNIT IS DDC CONTROLLED USING ELECTRONIC ACTUATION. THE RETURN FAN IS INTERLOCKED THROUGH THE BAS CONTROL. THE REMOTE EXHAUST DAMPER IS CONTROLLED THROUGH THE BAS SYSTEM.

THE AIR HANDLING UNIT AND RETURN FAN IS SCHEDULED FOR AUTOMATIC OPERATION ON A TIME OF DAY BASIS FOR OCCUPIED AND UNOCCUPIED MODES. WITHIN THE OCCUPIED MODE, THE SYSTEM CAN ENTER THE WARM-UP MODE WHEN THE SPACE TEMPERATURE IS BELOW SET POINT OR THE COOL-DOWN MODE WHEN THE SPACE TEMPERATURE IS ABOVE SET POINT. THE SYSTEM STAYS IN THE WARM-UP OR COOL-DOWN MODE UNTIL THE MODE SET POINT IS SATISFIED. WITHIN THE UNOCCUPIED MODE, NIGHT HEATING IS AVAILABLE WHEN THE SPACE TEMPERATURE DROPS BELOW 65 DEGREES F (18 DEGREES C). THE LATEST START TIME IS THE SCHEDULED OCCUPANCY FOR THE SPACE.

THE AIR HANDLING UNIT OPERATES IN WARM-UP, COOL-DOWN, OCCUPIED, UNOCCUPIED, NIGHT HEATING AND SAFETY MODES AS FOLLOWS (ALL SUGGESTED SET POINTS AND SETTINGS ARE ADJUSTABLE.

WARM-UP

THE SUPPLY FAN STARTS. THE MIXING DAMPERS ARE POSITIONED FOR 100% RETURN AIR. THE 3-WAY HEATING VALVE MODULATES TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT. IF TIME REACHES THE LATEST START TIME DURING THE WARM-UP MODE, THE OUTDOOR AIR DAMPER OPENS TO ITS MINIMUM POSITION. THE SYSTEM IS PREVENTED FROM ENTERING THE WARM-UP MODE MORE THAN ONCE PER DAY.

COOL-DOWN

THE SUPPLY FAN STARTS. THE 3-WAY HEATING VALVE REMAINS CLOSED TO THE COIL. THE MIXING DAMPERS AND 3 WAY CHILLED WATER VALVE MODULATES TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT. WHEN THE OUTSIDE AIR-DRY BULB TEMPERATURE IS ABOVE THE ECONOMIZER CHANGEOVER VALUE, THE MIXING DAMPERS ARE POSITIONED FOR 100% RETURN AIR. IF TIME REACHES THE LATEST START TIME DURING THE COOL-DOWN MODE, THE OUTDOOR AIR DAMPER OPENS TO ITS MINIMUM POSITION OR IS CONTROLLED IN ECONOMIZER OPERATION. THE SYSTEM IS PREVENTED FROM ENTERING THE COOL-DOWN MODE MORE THAN ONCE PER DAY.

UNOCCUPIED MODE

THE SUPPLY AND RETURN FANS ARE OFF AND THE MIXING DAMPERS ARE IN THE 100% RECIRCULATION POSITION AND THE CHILLED WATER VALVE IS CLOSED.

OCCUPIED MODE

AN OPTIMIZED START ROUTINE IS PROVIDED. DURING MORNING WARM-UP OR COOL-DOWN THE OUTSIDE AIR MINIMUM POSITION IS SET TO ZERO. SUPPLY AND RETURN FANS RUN CONTINUOUSLY. SUPPLY AIR TEMPERATURE DISCHARGE SENSOR OPERATES THE 3-WAY HEATING VALVE, THE 3 WAY CHILLED WATER VALVE, AND THE MIXING DAMPERS (FOR FREE COOLING) IN SEQUENCE TO MAINTAIN SETPOINT WHICH IS RESET FROM OUTSIDE AIR TEMPERATURE AS FOLLOWS:

OAT	SAT
22°C	13°C (ADJUSTABLE)
10°C	18°C (ADJUSTABLE)

ROOM SENSOR

A ROOM SENSOR OVERRIDES THE DISCHARGE CONTROL SENSOR TO PROVIDE SPACE TEMPERATURES. THE REMOTE RADIATION VALVES, WHERE INSTALLED, ARE MODULATED FROM THE ROOM SENSOR ON A CALL FOR HEAT.

SAFETY

DISCHARGE SMOKE DETECTORS IN THE SUPPLY AIR STREAMS DE-ENERGIZE THE SUPPLY FAN UPON ACTIVATION. WHEN THE OAT IS LESS THAN 50 DEGREES F (10 DEGREES C), THE 3- WAY HEATING VALVE AND DAMPERS MODULATES TO MAINTAIN THE MIXED AIR TEMPERATURE AT 50 DEGREES F (10 DEGREES C). 'VVHEN THE OAT IS 50 DEGREES F (10 DEGREES C) OR ABOVE, THE 3-WAY HEATING VALVE CLOSES. ALL OTHER DAMPERS AND VALVES POSITION TO THEIR NORMAL POSITION AFTER THE FANS ARE DE-ENERGIZED. A HARD-WIRED LOW TEMPERATURE DETECTOR IN THE DISCHARGE DUCT DE- ENERGIZES THE SUPPLY FAN WHEN TEMPERATURES BELOW 38 DEGREES F (3 DEGREES C) ARE SENSED.

FREE COOLING ECONOMIZER CONTROL

WHEN THE SUPPLY AIR DISCHARGE TEMPERATURE SETPOINT IS GREATER THAN MIXED AIR TEMPERATURE, OBTAINED WHEN OPERATING A MINIMUM OUTSIDE AIR ONLY, CALCULATIONS SHALL BE MADE TO DETERMINE IF THE USE OF 100% OUTSIDE AIR OR MINIMUM OUTSIDE AIR PROVIDES THE SMALLEST CHANGE ACROSS THE COOLING COIL.

ON CO (CARBON MONOXIDE) LEVEL RISE ABOVE 3PPM (ADJUSTABLE) ALL FANS WILL SHUT DOWN. ONCE CO LEVEL HAS DROPPED BELOW SETPOINT (ADJUSTABLE) THEN AFTER 30 MINUTE DELAY FANS WILL BE ALLOWED TO START UP AGAIN .

HOT WATER DUCT HEATING COIL CONTROL

A TYPICAL ROOM TEMPERATURE SENSOR WITH TIME OVERRIDE SWITCH AND SLIDE SETPOINT ADJUST MODULATED HOT WATER VALVE ON THE DUCT REHEAT COIL TO MAINTAIN EITHER DAY OR NIGHT SETPONT.

HOT WATER DUCT HEATING COIL CONTROL WITH PERIMETER RADIATION

A TYPICAL ROOM TEMPERATURE SENSOR WITH TIME OVERRIDE SWITCH AND SLIDE SETPOINT ADJUST MODULATES HOT WATER VALVE ON THE DUCT REHEAT COIL AND RAD VALVE IN SEQUENCE TO MAINTAIN EITHER DAY OR NIGHT SETPOINT. RAD VALVE IS MODULATED TO OPEN WHEN REHEAT DUCT SOIL IS OPEN MORE THAN 50% (ADJUSTABLE).

BOARD ROOM RADIATION CONTROL

THE SPACE TEMPERATURE SENSOR OPERATING THROUGH A DOC ASC MODULATES THE INCREMENTAL HEATING VALVES TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

ROOM VAV CONTROL

THE SPACE TEMPERATURE MODULATES THE VAV BOX IN SEQUENCE WITH THE HEATING COIL AND RADIATION (IF APPLICABLE) TO MAINTAIN SETPOINT. MAINTAIN 80% MINIMUM AIR FLOW WHEN OA TEMP IS LESS THAN 10° (ADI). A VELOCITY SENSOR CONTROLS THE AIR VOLUMES BETWEEN MAXIMUM AND MINIMUM.

COOLING TOWER CONTROL

EXISTING COOLING TOWER WILL BE DISCONNECTED FROM EXISTING CONTROLS. NEW COOLING TOWER WILL BE CONNECTED TO NEW DDC CONTROLS. COOLING TOWER CONTROLLED BY BAS. ON SIGNAL TO START COOLING TOWER, FAN WILL BE ENABLED. FAN WILL MODULATE SPEED TO MAINTAIN RETURN WATER TEMPERATURE SETPOINT. IN WINTER MODE FAN WILL BE DISABLED.

EXHAUST FAN CONTROL

WASHROOM AND CHANGE ROOM EXHAUST FANS ARE OPERATED CONTINUOUSLY DURING OCCUPIED HOURS OF THE ASSOCIATED AHU_1 AND AHU_2 SYSTEM. THEY ARE CYCLED ON CLEANING AND LOW OCCUPANCY PERIODS TO PREVENT THE BUILD-UP OF ODORS.

LUNCH ROOM EXHAUST FAN OPERATES AS ABOVE.

SCHEDULING:

BOARDS STANDARD SCHEDULING OF HVAC EQUIPMENT TO BE FOLLOWED. CONTACT BOARD BAS TEAM PRIOR TO THE PROGRAMMING OF THE SYSTEM.

BACNET ADDRESSING:

BOARD'S STANDARD BACNET ADDRESSING SCHEME TO BE FOLLOWED. BAS CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING BACNET INSTANCE NUMBER TO ALL THIRD PARTY VENDORS BEING INTEGRATED INTO THE SYSTEM.

REFER TO SPECS FOR BAS SCHEDULING AND SPACE TEMPERATURE CONTROL.

BAS CONTRACTOR TO PROVIDE AND INSTALL A NEW BAS SYSTEM WHICH CAN BE PROGRAMMED AND OPERATED FROM ONE PLATFORM.

ALL NEW BAS PANELS TO BE INSTALLED IN ACCESSIBLE AREAS. CO-ORDINATE WITH OWNER/ CONSULTANT BEFORE FINALIZING THE LOCATION OF NEW BAS PANELS.

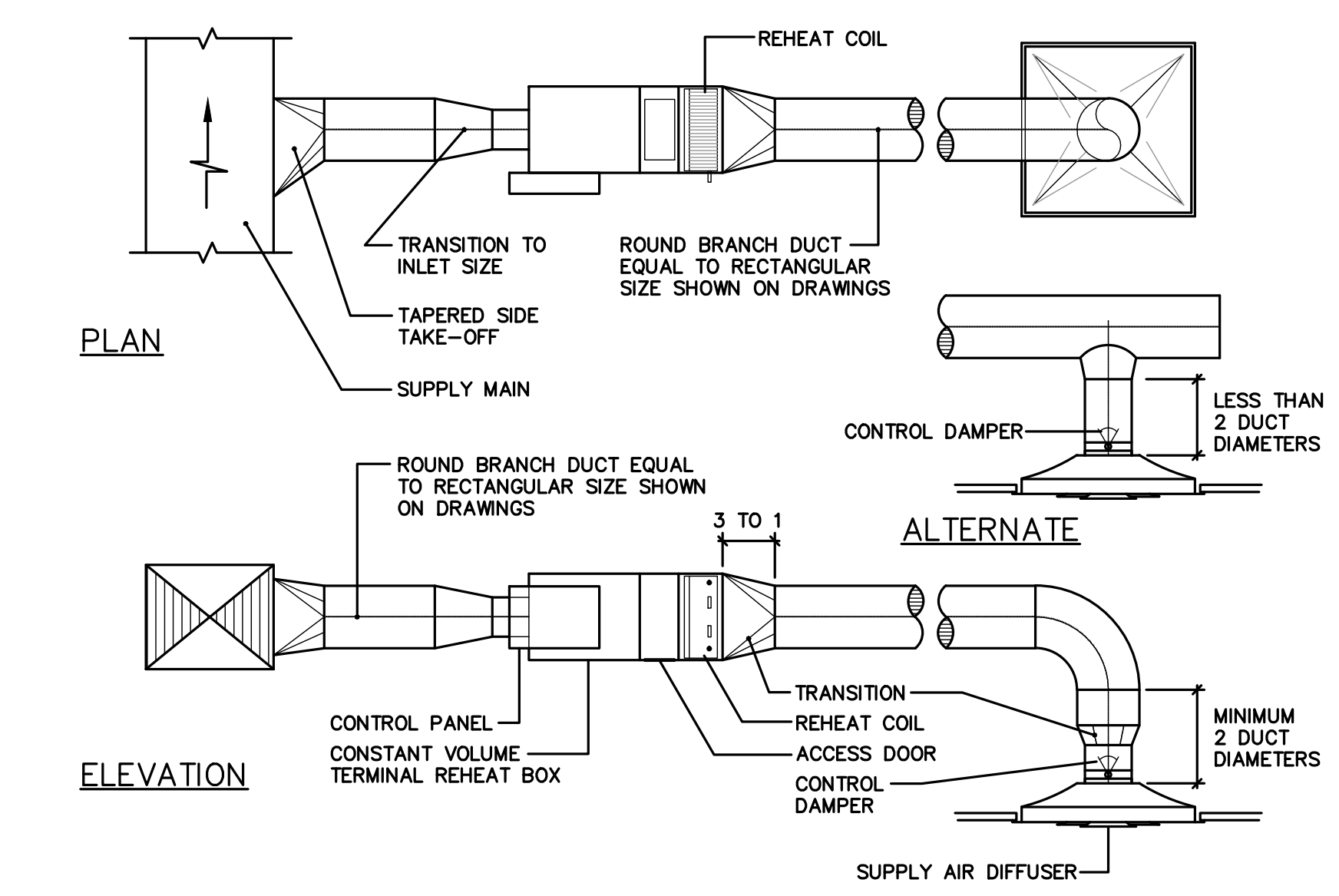
EXISTING SUPPLY/EXHAUST FAN SCHEDULE

TAG	FAN TYPE	SERVICE	LOCATION	EXISTING CURB SIZE	AIRFLOW (L/S)	S.P. (Pa)	VOLTAGE	WATTS	REMARK
EXEF–1	UTILITY FAN	–	SUSPENDED IN MECH. RM	–	1387	155.4	575/3/60	746	
EXEF–2	UTILITY FAN	–	SUSPENDED IN MECH. RM	–	660	186.5	575/3/60	373	
EXEF–5	UTILITY FAN	–	SUSPENDED IN CEILING SPACE	–	160	155.4	120/1/60	93	
EXEF–6	UTILITY FAN	–	SUSPENDED IN CEILING SPACE	–	600	93.2	120/1/60	186	
EXEF–7	INLINE EXHAUST FAN	–	SUSPENDED IN CEILING SPACE	–	1279	93.2	208/1/60	746	
EXEF–15	ROOF EXH. FAN ON ROOF	–	ROOF	21"X21"	57	93.2	120/1/60	62	
EXEF–16	ROOF EXH. FAN ON ROOF	–	ROOF	22"X22"	236	93.2	120/1/60	124	
EXEF–19	ROOF EXH. FAN ON ROOF	–	ROOF	42.5"X42.5"	1916	124.3	575/3/60	560	
EXEF–23	INLINE FAN	–	SUSPENDED IN MECH. RM	–	2360	93.2	575/3/60	1119	

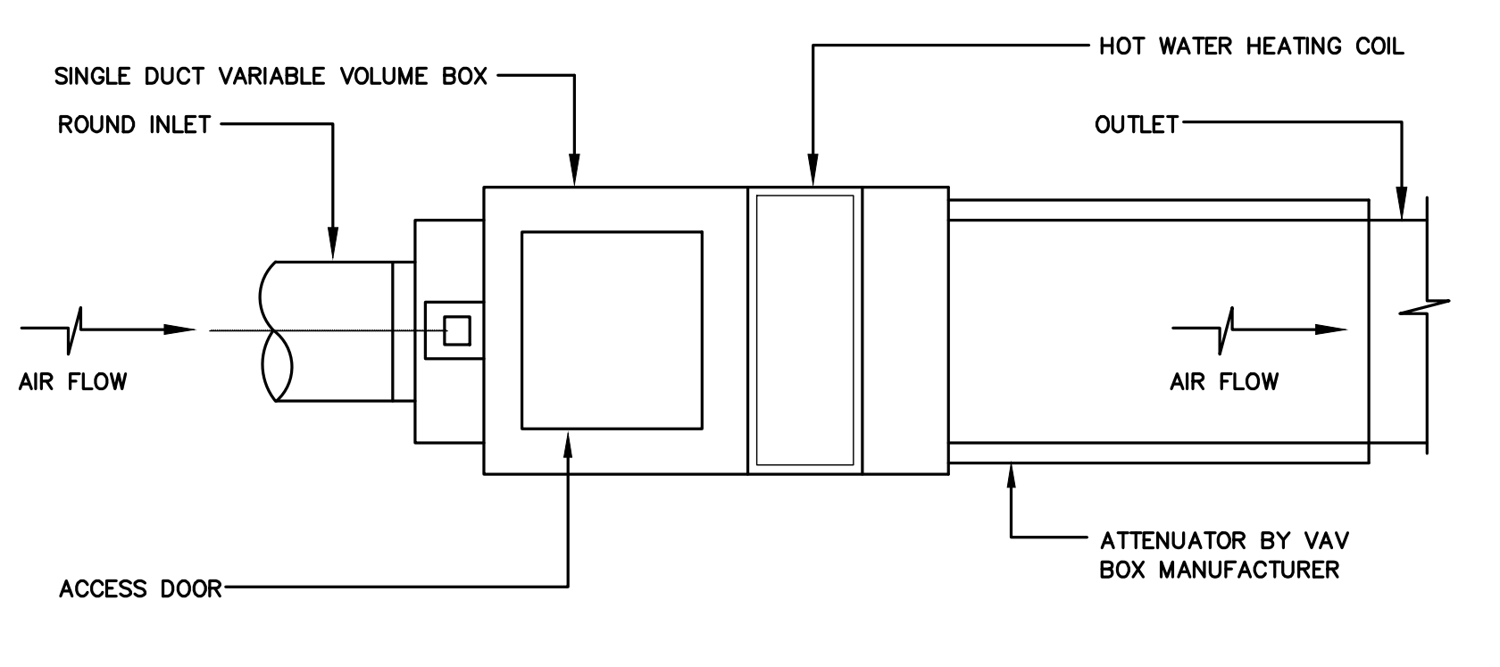
NEW EXHAUST FAN SCHEDULE

TAG	FAN TYPE	SERVICE	LOCATION	EXISTING CURB SIZE	AIRFLOW	S.P.	DRIVE	FAN SPEED	UNIT WEIGHT	MOTOR	VLOTAGE	SONES	CONTROLS	RMARK
					CFM	IN. W.C.		RPM	LBS	HP				
EF–1	UTILITY FAN	–	SUSPENDED IN MECH. RM	–	2940	0.625	BELT	1386	172	1	575/3/60	INLET 68dBA, OUTLET 69dBA	–	COOK 165 CPA, COMPLETE WITH PREMIUM EFFICIENCY MOTOR (MIN. 85.5%), DRIVES (1.5SF) @ 1386 RPM, DISCONNECT NEMA 1, OSHA BG/WEATHERCOVER–STL, RF–55 SET (6) – ISOLATORS.
EF–2	UTILITY FAN	–	SUSPENDED IN MECH. RM	–	1400	0.75	BELT	1805	111	1/2	575/3/60	INLET 65dBA, OUTLET 66dBA	–	COOK 120 CPA, COMPLETE WITH DRIVES (1.5SF) @ 1805 RPM, DISCONNECT NEMA 1, OSHA BG/WEATHERCOVER–STL, RF–55 SET (6) – ISOLATORS.
EF–5	UTILITY FAN	–	SUSPENDED IN CEILING SPACE	–	340	0.625	DIRECT	1348	78	1/8	120/1/60	INLET 50dBA, OUTLET 54dBA	–	COOK 80 CPV (VF), COMPLETE WITH FAN MOUNTED SPEED CONTROL, DISCONNECT NEMA 1, RF–55 SET (6) – ISOLATORS.
EF–6	UTILITY FAN	–	SUSPENDED IN CEILING SPACE	–	1270	0.375	DIRECT	1448	90	1/4	120/1/60	INLET 60dBA, OUTLET 61dBA	–	COOK 120 CPV (VF), COMPLETE WITH FAN MOUNTED SPEED CONTROL, DISCONNECT NEMA 1, RF–55 SET (6) – ISOLATORS.
EF–7	INLINE EXHAUST FAN	–	SUSPENDED IN CEILING SPACE	–	2710	0.375	DIRECT	1043	125	1	208/1/60	7.5	–	COOK GEMINI GN2000/1PH; COMPLETE WITH DISCONNECT NEMA 1 PRE–WIRED, FAN SPEED CONTROLLER 10AMP 240VOLT, RC–75 SET(4) – ISOLATORS.
EF–15	ROOF EXH. FAN ON ROOF	–	ROOF	21"X21"	120	0.375	DIRECT	1714	16	1/20	120/1/60	4.1	–	COOK ACED–EC, 70C17DEC; COMPLETE WITH EC MOTOR, FAN MOUNTED SPEED CONTROL, ROOF CURB ADAPTOR, DISCONNECT, BACKDRAFT DAMPER.
EF–16	ROOF EXH. FAN ON ROOF	–	ROOF	22"X22"	500	0.375	DIRECT	1634	22	1/6	120/1/60	7.1	–	COOK ACED–EC, 90C17DEC; COMPLETE WITH EC MOTOR, FAN MOUNTED SPEED CONTROL, ROOF CURB ADAPTOR, DISCONNECT, BACKDRAFT DAMPER.
EF–19	ROOF EXH. FAN ON ROOF	–	ROOF	42.5"X42.5"	4060	0.5	DIRECT	1725	82	2	575/3/60	28.0	–	COOK ACE–D 165C17D; COMPLETE WITH FAN SPEED CONTROL, PREMIUM EFFICIENCY MOTOR (MIN. 86.5%), REINFORCED WHEEL, ROOF CURB ADAPTOR, DISCONNECT, BACKDRAFT DAMPER
EF–23	INLINE FAN	–	SUSPENDED IN MECH. RM	–	5000	0.375	BELT	1141	167	1 1/2	575/3/60	INLET 18.0 OUTLET 18.2	–	COOK 195SQN–B, COMPLETE WITH PREMIUM EFFICIENCY MOTOR (MIN. 86.5%), DRIVES (1.5SF) @ 1141 RPM, DISCONNECT NEMA 1, OSHA BG/WEATHERCOVER–STL, INLET GUARD, RC–125 SET (4) – ISOLATORS.

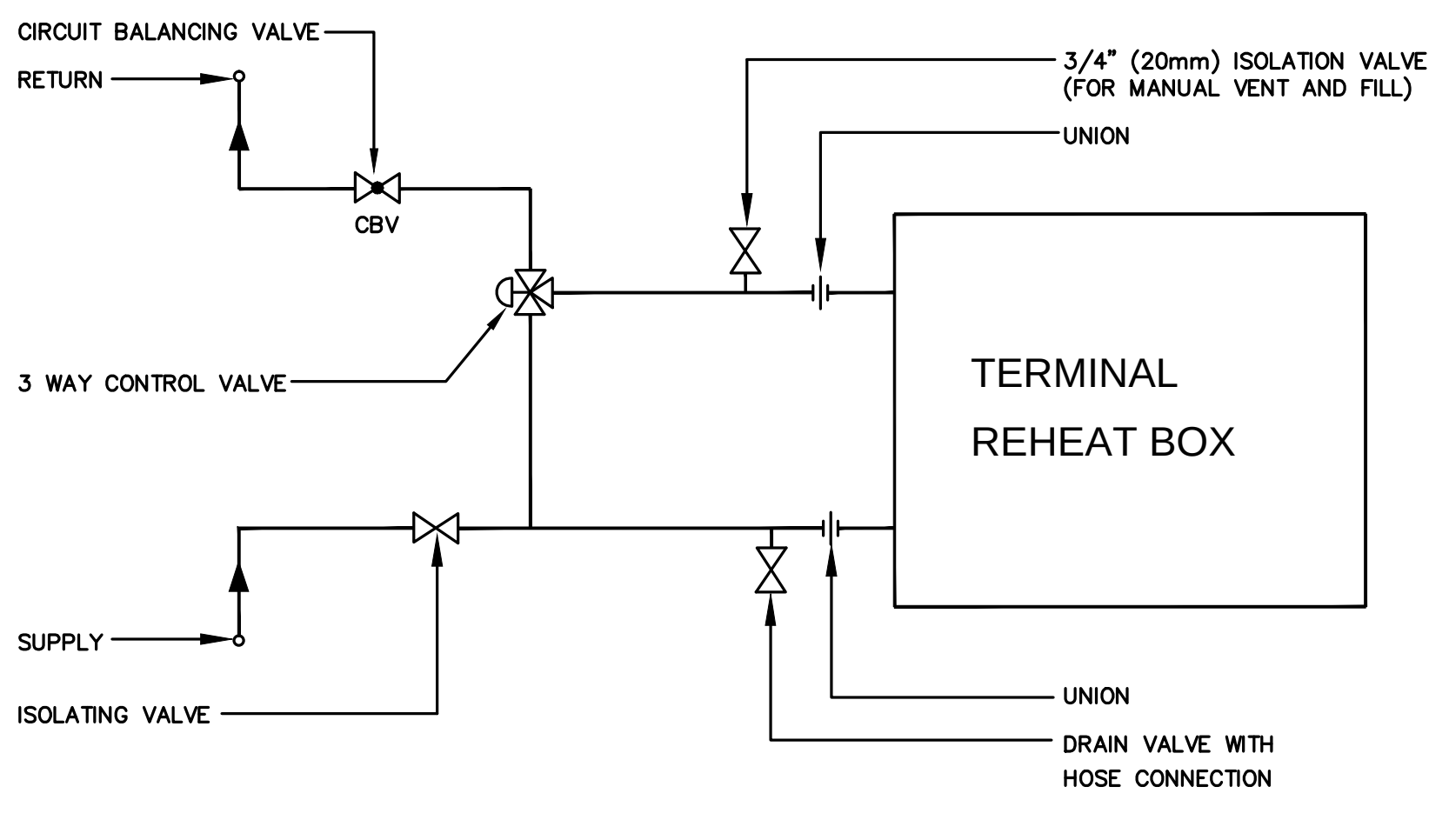
1. CONTRACTOR TO MEASURE THE AIR FLOW AND STATIC PRESSURE OF EXISTING EXHAUST FANS AND REPORT TO ENGINEER PRIOR TO DEMOLITION OF THE EXHAUST FANS.
2. CONTRACTOR TO SITE MEASURE THE EXISTING FAN AND ROOF CURB DIMENSIONS, SITE VERIFY THE FAN CONFIGURATIONS AND SUBMIT THE REPORT PRIOR TO SUMBITTING SHOP DRAWINGS. CONTRACTOR TO ENSURE THE EXHAUST FANS SUBMITTED ON SHOP DRAWINGS TO SUIT THE EXISTING SITE CONDITIONS.
3. CONTRACTOR TO VERIFY THE VOLTAGE OF THE FANS AND REPORT TO ENGINEER PRIOR TO SUBMIT THE SHOP DRAWINGS.



DETAIL OF TERMINAL REHEAT BOX (ROUND DUCTWORK ALTERNATE)
NOT TO SCALE



DETAIL OF TERMINAL REHEAT BOX
NOT TO SCALE



NOTE:
PROVIDE 3–WAY VALVE ON 25% OF REHEAT COILS

DETAIL OF PIPING TO TERMINAL REHEAT BOX
(3 WAY CONTROL VALVE)
NOT TO SCALE

The Contractor shall verify all dimensions prior to commencement of the work.
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ISSUE OR REVISION

No.	Description	Date

PROJECT :
CATHOLIC EDUCATION CENTRE BAS, VAV, REHEAT COILS & EXHAUST FANS REPLACEMENT PROJECT
40 MATHESON BOULEVARD W., MISSISSAUGA ON

PROFESSIONAL SEAL :

DWG TITLE :
MECHANICAL LEAD SHEET, SEQUENCE OF OPERATION, DETAILS

REGAL CONSULTING ENGINEERS INC.
CONSULTING MECHANICAL & ELECTRICAL ENGINEERS
2359 Royal Windsor Drive, Suite 201, Mississauga, Ontario L5J 4S9
PHONE: (905)855–3010
www.regal–eng.com

DATE : JUNE 2021
SCALE : 1:75
DRAWN BY: DH
CHECKED BY : MA
DWG STATUS : DESIGN
PROJECT No. : 2021-348
DRAWING No. : M1.0-A-1
REVISION

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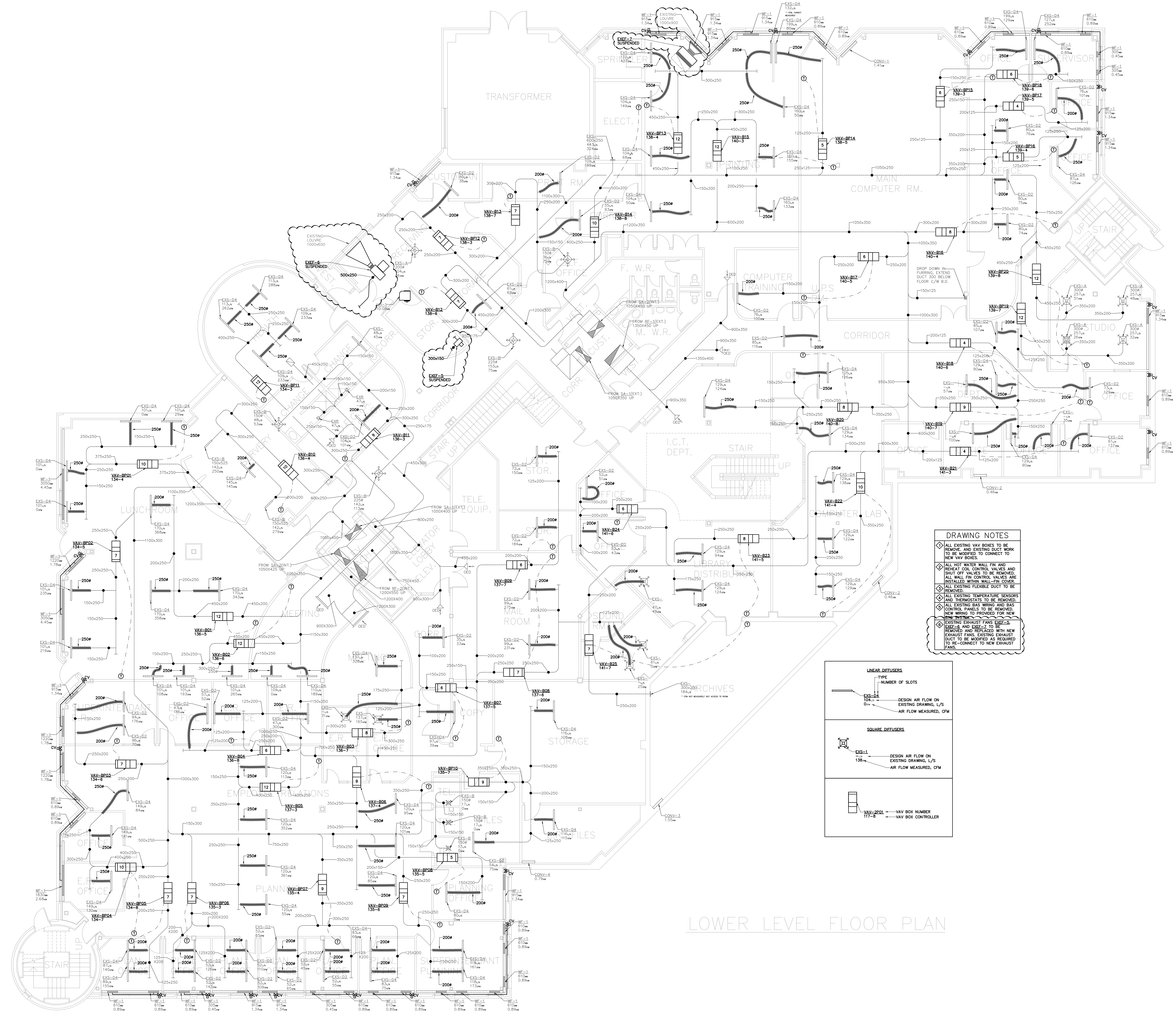

LOWER LEVEL FLOOR PLAN

DRAWING NOTES

◇1	ALL EXISTING VAV BOXES TO BE REMOVE. AND EXISTING DUCT WORK TO BE MODIFIED TO CONNECT TO NEW VAV BOXES.
◇2	ALL HOT WATER WALL FIN AND REHEAT COIL CONTROL VALVES AND SHUT OFF VALVES TO BE REMOVED. ALL WALL FIN CONTROL VALVES ARE INSTALLED WITHIN WALL-FIN COVER.
◇3	ALL EXISTING FLEXIBLE DUCT TO BE REMOVED.
◇4	ALL EXISTING TEMPERATURE SENSORS AND THERMOSTATS TO BE REMOVED.
◇5	ALL EXISTING BAS WIRING AND BAS CONTROL PANELS TO BE REMOVED. NEW WIRING TO PROVIDED FOR NEW BAS SYSTEM.
◇6	EXISTING EXHAUST FANS EXEF-5, EXEF-6 AND EXEF-7 TO BE REMOVED AND REPLACED WITH NEW EXHAUST FANS. EXISTING EXHAUST DUCT TO BE MODIFIED AS REQUIRED TO RE-CONNECT TO NEW EXHAUST FANS.

LINEAR DIFFUSERS

EXS-D4 — TYPE, NUMBER OF SLOTS
104 L/S — DESIGN AIR FLOW ON EXISTING DRAWING, L/S
0 CFM — AIR FLOW MEASURED, CFM

SQUARE DIFFUSERS

EXS-1
– L/S — DESIGN AIR FLOW ON EXISTING DRAWING, L/S
138 CFM — AIR FLOW MEASURED, CFM

VAV-2P01 — VAV BOX NUMBER
117-8 — VAV BOX CONTROLLER

The Contractor shall verify all dimensions prior to commencement of the work.
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ISSUE OR REVISION

No.	Description	Date
1	ISSUED FOR ADDENDUM ME-1	AUG 13, 2021

PROJECT :
CATHOLIC EDUCATION CENTRE BAS, VAV, REHEAT COILS & EXHAUST FANS REPLACEMENT PROJECT
40 MATHESON BOULEVARD W., MISSISSAUGA ON

PROFESSIONAL SEAL :

DWG TITLE :
DEMOLITION HVAC
LOWER LEVEL
FLOOR PLAN

REGAL CONSULTING ENGINEERS INC.
CONSULTING MECHANICAL & ELECTRICAL ENGINEERS
2359 Royal Windsor Drive, Suite 201, Mississauga, Ontario L5J 4S9
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DATE : JUNE 2021
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PROJECT No. : 2021-348
DRAWING No. : M2.0D-A-1
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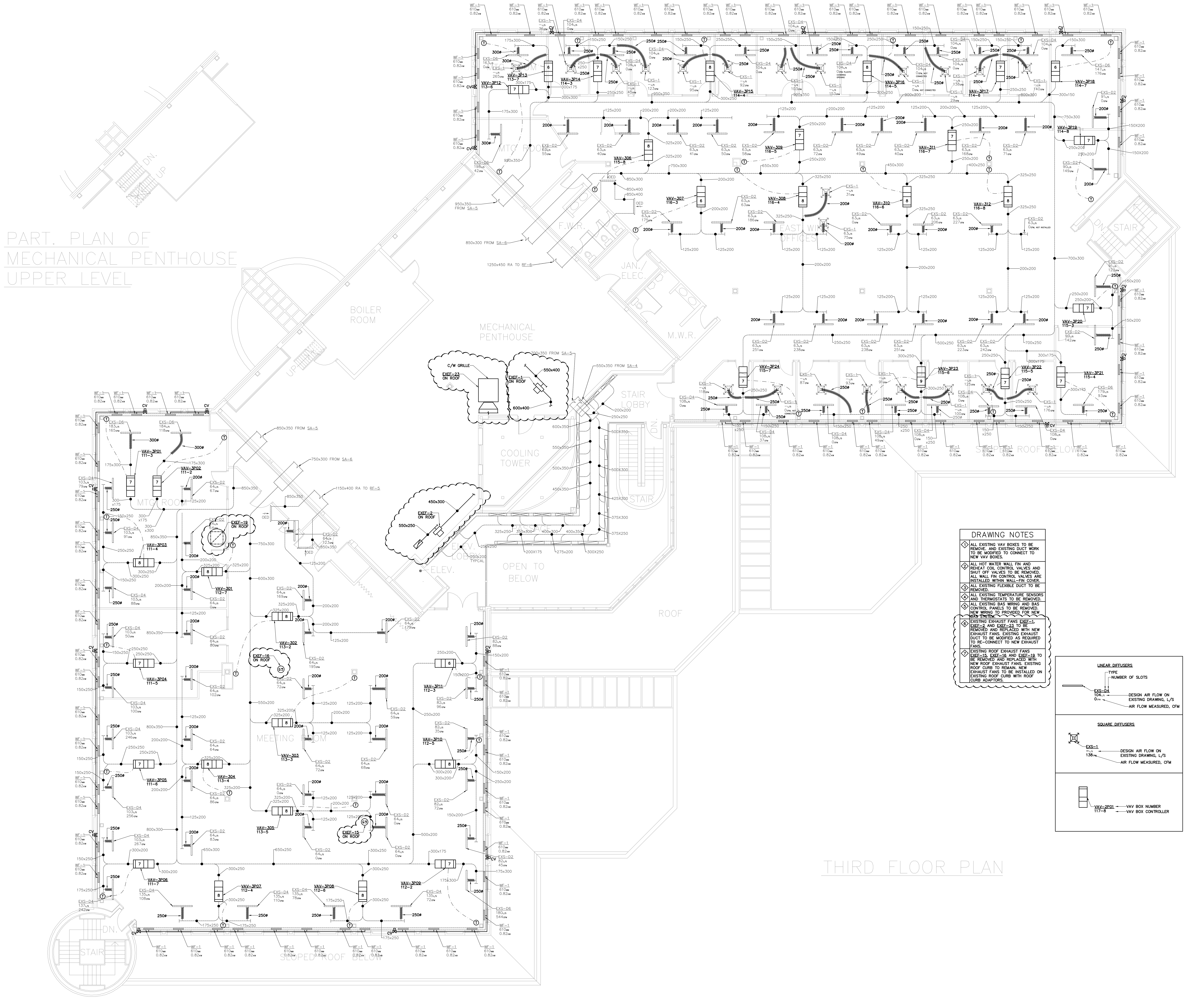

PART. PLAN OF MECHANICAL PENTHOUSE UPPER LEVEL

THIRD FLOOR PLAN

DRAWING NOTES

1	ALL EXISTING VAV BOXES TO BE REMOVE. AND EXISTING DUCT WORK TO BE MODIFIED TO CONNECT TO NEW VAV BOXES.
2	ALL HOT WATER WALL FIN AND REHEAT COIL CONTROL VALVES AND SHUT OFF VALVES TO BE REMOVED. ALL WALL FIN CONTROL VALVES ARE INSTALLED WITHIN WALL-FIN COVER.
3	ALL EXISTING FLEXIBLE DUCT TO BE REMOVED.
4	ALL EXISTING TEMPERATURE SENSORS AND THERMOSTATS TO BE REMOVED.
5	ALL EXISTING BAS WIRING AND BAS CONTROL PANELS TO BE REMOVED. NEW WIRING TO PROVIDED FOR NEW BAS SYSTEM.
6	EXISTING EXHAUST FANS EXEF-1, EXEF-2 AND EXEF-23 TO BE REMOVED AND REPLACED WITH NEW EXHAUST FANS. EXISTING EXHAUST DUCT TO BE MODIFIED AS REQUIRED TO RE-CONNECT TO NEW EXHAUST FANS.
7	EXISTING ROOF EXHAUST FANS EXEF-15, EXEF-16 AND EXEF-19 TO BE REMOVED AND REPLACED WITH NEW ROOF EXHAUST FANS. EXISTING ROOF CURB TO REMAIN. NEW EXHAUST FANS TO BE INSTALLED ON EXISTING ROOF CURB WITH ROOF CURB ADAPTORS.

LINEAR DIFFUSERS

EXS-D4 — TYPE; NUMBER OF SLOTS
104 L/S — DESIGN AIR FLOW ON EXISTING DRAWING, L/S
0 CFM — AIR FLOW MEASURED, CFM

SQUARE DIFFUSERS

EXS-1
— L/S — DESIGN AIR FLOW ON EXISTING DRAWING, L/S
138 CFM — AIR FLOW MEASURED, CFM

VAV-2P01 — VAV BOX NUMBER
117-8 — VAV BOX CONTROLLER

The Contractor shall verify all dimensions prior to commencement of the work.
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ISSUE OR REVISION

No.	Description	Date
1	ISSUED FOR TENDER	JULY 21, 2021

PROJECT :

CATHOLIC EDUCATION CENTRE BAS, VAV, REHEAT COILS & EXHAUST FANS REPLACEMENT PROJECT

40 MATHESON BOULEVARD W., MISSISSAUGA ON

PROFESSIONAL SEAL :

DWG TITLE :
DEMOLITION HVAC
THIRD FLOOR PLAN

REGAL CONSULTING ENGINEERS INC.
CONSULTING MECHANICAL & ELECTRICAL ENGINEERS
2359 Royal Windsor Drive, Suite 201, Mississauga, Ontario L5J 4S9
PHONE: (905)855-3010
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DATE : JUNE 2021
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DRAWING No. : M2.3D-A-1
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ELECTRICAL SPECIFICATION

SCOPE OF WORK

1. SUPPLY LABOUR, TOOLS, SERVICES, EQUIPMENT AND PROVIDE MATERIALS REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH THIS SPECIFICATION AND DRAWINGS. COMPLY WITH LAWS, REGULATIONS AND CODES OF AUTHORITIES HAVING JURISDICTION. CONFORM TO REQUIREMENTS OF BIDDING DOCUMENTS AND DIVISION 1.

EXAMINATION OF SITE AND DOCUMENTS

1. PROVIDE TO SUBMITTING BID, CAREFULLY EXAMINE CONDITIONS AT SITE WHICH WILL OR MAY AFFECT WORK, DRAWINGS AND SPECIFICATION AND BECOME FAMILIAR WITH BUILDING CONSTRUCTION, FINISHES AND OTHER WORK ASSOCIATED WITH WORK IN ORDER THAT BID INCLUDES FOR EVERYTHING NECESSARY FOR COMPLETION OF WORK.

PERMITS, CERTIFICATES AND FEES

1. PAY FOR AND OBTAIN PERMITS TO COMPLETE WORK. WHEN WORK IS COMPLETE, SUPPLY AND TURN OVER INSPECTION CERTIFICATES FROM GOVERNING AUTHORITIES TO CONSULTANT. PAY FEES AND CHARGES LEVIED BY MUNICIPALITY AND OTHER GOVERNING AUTHORITIES FOR PERMITS. INSPECTIONS AND CERTIFICATES. KEEP COPY OF SUCH PERMITS AND CERTIFICATES, ETC. ON JOB SITE.

CO-ORDINATION AND CO-OPERATION

1. ELECTRICAL CONTRACTOR TO CO–ORDINATE HIS WORK WITH WORK OF ALL TRADES TO ENSURE A PROPER AND COMPLETE INSTALLATION. NOTIFY ALL TRADES CONCERNED OF REQUIREMENT FOR OPENINGS, SLEEVES, INSERTS AND OTHER HARDWARE NECESSARY IN THEIR WORK FOR INSTALLATION OF HIS WORK AND WHERE HIS WORK IS TO BE INTEGRATED WITH WORK OF OTHER TRADES OR IS TO BE INSTALLED IN CLOSE PROXIMITY WITH WORK OF OTHER TRADES. CAREFULLY CO–ORDINATE WORK PRIOR TO AND DRIVING INSTALLATION.
2. EXACT LOCATIONS AND ROUTING OF SERVICES MUST BE PROPERLY PLANNED CO–ORDIANTED AND ESTABLISHED WITH ALL AFFECTED TRADES PRIOR TO INSTALLATION SUCH THAT THEY WILL CLEAR EACH OTHER AS WILL AS ANY OBSTRUCTIONS. GENERALLY, PIPING REQUIRING UNIFORM PITCH SHALL BE GIVEN RIGHT OF WAY WITH OTHER SERVICE LOCATED AND ARRANGED TO SUIT.

NOISE CONTROL

1. WORK WHICH MAY CAUSE NOISE DISTURBANCES MUST BE SCHEDULED AT TIMES APPROVED BY CONSULTANT. CO–ORDINATE WORK WITH TPADES TO MINIMIZE NOISE DISTURBANCES.

CLEAN UP

1. DURING CONSTRUCTION, KEEP SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIAL RESULTING FORM WORK ON DAILY BASIS. AFTER COMPLETION OF WORK, REMOVE RUBBISH AND DEBRIS, ARRANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER.

PROTECTION OF EQUIPMENT

1. PROPERLY PROTECT AND STORE ALL EQUIPMENT AND MATERIAL ON SITE FROM DAMAGE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE STORAGE OF ALL EQUIPMENT AND GOODS TO BE RELOCATED AND SHALL REPAIR OR REPLACE DAMAGED EQUIPMENT AND GOODS AT DISCRETION OF OWNER..

INSPECTION OF WORK

1. CONSULTANT SHALL AT ALL TIMES HAVE ACCESS TO WORK AND SHALL BE NOTIFIED AT AGREED UPON TIMES OF STAGES OF WORK.
2. CONTRACTOR SHALL GIVE CONSULTANT TIMELY NOTICE OF DATE (WITHIN 48 HOURS AFTER PERFORMANCE) WHEN FOLLOW STAGES OF WORK HAVE BEEN PERFORMED:
   WHEN 33% OF WORK HAS BEEN COMPLETED:
   WHEN 66% OF WORK HAS BEEN COMPLETED:
   WHEN 95% OF WORK HAS BEEN COMPLETED:
   UPON SUBSTANTIAL PERFORMANCE OF WORK.
3. WHERE STANDARDS OF WORK ARE SPECIFIED OR IMPLIED AND WORK DOES NOT COMPLY WITH PERFORMANCE SPECIFIED OR IMPLIED . SUCH DEFICIENCY SHALL BE CORRECTED AS DIRECTED BY CONSULTANT. ANY SUBSEQUENT TESTING TO VERIFY PERFORMANCE SHALL BE DOWN AT CONTRACTORS/ EXPENSE. AND CHARGE FOR OWNER'S STAFF CONSULTANT OR OTHER PERSONNEL RELATED TO SUCH RE–TESTING SUCH ALSO BE AT EXPENSE OF CONTRACTOR.

PRODUCTS

1. PRODUCTS LISTED AND/OR SPECIFIED ON CONTRACT DOCUMENTS ARE SELECTED TO ESTABLISH DESIGN STANDARDS. IN MOST CASES, ACCEPTABLE MANUFACTURERS ARE LISTED. BASE YOUR BID PRICE ON BASE SPECIFIED PRODUCTS OR PRODUCTS SUPPLIED FROM ACCEPTABLE MANUFACTURERS. ENSURE PRODUCTS SUPPLIED FROM MANUFACTURERS OTHER THAN BASE SPECIFIED MANUFACTURERS ARE EQUIVALENT TO SPECIFIED PRODUCTS. PROPOSED SUBSTITUTIONS OF MANUFACTURERS OF PRODUCTS MAY BE PROPOSED TO CONSULTANT FOR ACCEPTANCE, LISTING IN EACH CASE CORRESPONDING CREDIT. CONSULTANT HAS SOLE DISCRETION IN ACCEPTING ANY PROPOSED SUBSTITUTION. INCLUDE IN BID PRICE ANY ADDITIONAL PRODUCTS SUPPLY BY MANUFACTURER OTHER THAN BASE SPECIFIED MANUFACTURER.

WARRANTY

1. WARRANT WORK TO BE IN STRICT ACCORDANCE WITH CONTRACT DOCUMENTS AND FREE FROM DEFECTS FOR 1 YEAR PERIOD FROM DATE OF WRITTEN ACCEPTANCE BY CONSULTANT. REFER AND/OR REPLACE ANY SUCH DEFECTS WHICH APPEAR IN WORK WITHIN WARRANTY PERIOD, ORDINARY WEAR AND EAR AND WILFUL DAMAGE BY, OR CARELESSNESS OF OWNER'S STAFF OR AGENTS EXCEPTED, WITHOUT ADDITIONAL COSTS INCURRED IN MAKING DEFECTIVE WORK GOOD, INCLUDES REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT OR REPAIRS.

INTERRUPTIONS TO AND SHUTDOWNS OF EXISTING SERVICES AND SYSTEMS

1. CO–ORDINATE AND PERFORM SHUTDOWNS AND INTERRUPTIONS TO EXISTING SYSTEMS AND SERVICES AT TIMES ACCEPTABLE TO OWNER. OBTAIN WRITTEN APPROVAL IN ADVANCE OF SHUTDOWN OR INTERRUPTION. INCLUDE FOR COSTS OF PREMIUM TIME TO PERFORM WORK DURING NIGHTS, WEEKENDS OR OTHER TIME OUTSIDE OF NORMAL WORKING HOURS, AS NECESSARY TO MAINTAIN SERVICES IN OPERATION OR WITH MINIMUM INTERRUPTIONS AND TO INTERRUPTION WILL BE CARRIED OUT AS CONTINUOUS OPERATION TO MINIMIZE SHUTDOWN TIME AND TO REINSTATE SYSTEMS AS SOON AS POSSIBLE AND PRIOR TO SHUTDOWN, ENSURE MATERIALS AND LABOUR REQUIRED TO COMPLETE WORK FOR WHICH SHUTDOWN IS REQUIRED ARE AVAILABLE AT SITE.

CUTTING, PATCHING AND CORE DRILLING

1. DO CUTTING, PATCHING AND CORE DRILLING OF EXISTING BUILDING REQUIRED FOR INSTALL OF WORK. PERFORM CUTTING TO NEAT AND TRUE FASHION, WITH PROPER TOOLS AND EQUIPMENT TO OWNER'S APPROVAL.
2. IN FIRE RATED CONSTRUCTION PACK AND SEAL VOID BETWEEN OPENING AND CONDUIT FOR LENGTH OF OPENING WITH ASBESTOS–FREE ELASTOMERIC ULC LISTED AND LABELED MATERIALS. INSTALL FIRE–STOP AND SMOKE SEAL MATERIALS IN ACCORDANCE TO ULC CERTIFICATION AND MANUFACTURER'S REQUIREMENTS TO PROVIDE FIRE–STOP RATINGS OF OPENINGS IN ACCORDANCE WITH GOVERNING BUILDING CODE REQUIREMENTS.
3. DO NOT CUT OR DRILL EXITING WORK WITHOUT PRIOR OWNER'S APPROVAL. IN CONSULTATION WITH OWNER AND BY USE OF X–RAY WITH OWNER'S APPROVAL, DETERMINE PRESENCE OF EXISTING SERVICES AND PERFORMING ROD CONCEALED BEHIND SURFACE TO BE CUT, NOTE: ELECTRICAL CONTRACTOR WILL BE HELD RESPONSIBLE FOR DAMAGE DONE TO EXISTING BUILDING AND SERVICES CAUSED BY CUTTING OR DRILLING.

DISCONNECTION, REMOVAL AND RELOCATION

1. WHERE INDICATED ON DRAWINGS AND DETERMINED BY SITE VISIT, DISCONNECT AND REMOVE ITEMS OF EXISTING OBSOLETE ELECTRICAL WORK AND RELOCATE DEVICES, WHERE FIXTURES, SWITCHES, RECEPTACLES AND OTHER DEVICES AND/OR EQUIPMENT IS REMOVED. DISCONNECT AT POINT OF ELECTRICAL SUPPLY, REMOVE OBSOLETE WRING AND MAKE SYSTEM SAFE. WHERE EXISTING OBSOLETE CONDUIT AND SIMILAR RACEWAY MATERIAL CANNOT BE REMOVE. CUT BACK AND CAP OBSOLETE CONDUITS OR RACEWAYS. REVISE PANELBOARD DIRECTORIES ACCORDINGLY, IF AFFECTED BY WORK.
2. UNLESS OTHERWISE NOTED, OBSOLETE MATERIALS WHICH ARE DISCONNECTED AND ARE NOT TO BE RELOCATED OR REUSED WILL BECOME THE PROPERTY OF THE ELECTRICAL CONTRACTOR, REMOVE FROM SITE AND DISPOSE. OBTAIN FROM OWNER, LIST OF EXISTING ITEMS TO BE CAREFULLY REMOVED AND TURNED OVER TO OWNER. SAID ITEMS WILL REMAIN PROPERTY OF OWNER.
3. PROVIDE JUNCTION BOXES, OUTLET BOXES, WIRING, PLATES, ETC., AS NECESSARY FOR COMPLETE RELOCATION OF DEVICES. CLEAN AND RE–LAMP RELOCATED LUMINARIES. REPLACE FAULTY BALLASTS. WHEN RELOCATION WORK IS COMPLETE, CONFIRM RELOCATED DEVICES ARE IN PROPER ORDER.
4. WHERE EXISTING SERVICES PASS THROUGH OR ARE IN AN AREA TO SERVE ITEMS WHICH ARE TO REMAIN, MAINTAIN SERVICES. INCLUDE FOR RE–ROUTING EXISTING SERVICES CONCEALED BEHIND FINISHES AND WHICH BECOME EXPOSED DURING RENOVATION WORK, SO AS TO BE CONCEALED BEHIND FINISHES.
5. IN AREAS WHICH ARE NOT BEING RENOVATED AND WHICH DIVISION 16 MUST RUN SERVICES THROUGH, BE RESPONSIBLE FOR REMOVAL AND REINSTALLATION OF ARCHITECTURAL CEILINGS, MECHANICAL EQUIPMENT, SPRINKLERS, ETC., AS REQUIRED FOR INSTALLING OF ELECTRICAL CONTRACTOR'S WORK. PATCH AND MAKE GOOD (INCLUDING PAINTING) SURFACES TO MATCH EXITING.

HAZARDOUS MATERIALS

1. AT ANY TIME DURING COURSE OF WORK ASBESTOS MATERIALS ARE ENCOUNTERED OR SUSPECTED, CEASE WORK IN AREA IN QUESTION AND IMMEDIATELY REPORT IN ACCORDANCE WITH ONTARIO REGULATION 654/85 (SECTION 7) TO CONSULTANT. DO NOT RESUME WORK IN AFFECTED AREA WITOUT APPROVAL FROM CONSULTANT.

RECORD DRAWINGS (AS-BUILTS)

1. I DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED ON A CAD SYSTEM. THE SOFTWARE USED IS AUTOCAD RELEASE 2014. COPIES OF DRAWINGS ON DISKS FOR USE IN PREPARING AS–BUILTS, MAY BE REQUESTED FROM THE CONSULTANT.
2. WHEN WORK BEGINS AT SITE, CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS ON A DAILY BASIS ALL CHANGES AND DEVIATION FROM ROUTING OF AND LOCATIONS OF EQUIPMENT SHOWN ON CONTRACT DRAWINGS CHANGE AND DEVIATION INCLUDING THOSE MADE BY ADDENDA, CHANGE ORDERS AND SITE INSTRUCTION, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDA, CHANCE ORDERS AND SITE INSTRUCTIONS. MAINTAIN "AS–BUILT" WITH PRINTS AT SITE FOR PERIODIC INSPECTION BY CONSULTANT THROUGHOUT DURATION OF WORK. PAY PARTICULAR ATTENTION TO ACCURATELY DIMENSIONING LOCATION OF ALL CONCEALED SERVICES TERMINATED FOR FUTURE EXTENSION, ALL BURIED WORK AND SERVICES AND WORK CONCEALED WITHIN BUILDING IN INACCESSIBLE LOCATIONS.
3. WHEN WORK ENDS AT SITE, UPDATE A COPY OF CONTRACT DOCUMENT DRAWING DISC SET SO THAT IT REFLECTS ALL DEVIATIONS FROM ORIGINAL CONTRACT DOCUMENT DRAWIGNS,THUS FORMING A TRUE "AS–BUILT" DRAWING DISC SET. PROVIDE A SET OF REPRODUCIBLE MYLAR PRINTS OF CONTRACT DRAWINGS PRODUCED FROM TRUE "AS–BUILT" MYLAR PRINTS TO CONSULTANT. ALL SUBMITTED DRAWINGS SHALL BE OF THE SAME QUALITY AS ORIGINAL CONTRACT DOCUMENT DRAWINGS.
4. UPDATE OWNER'S DISTRIBUTION RISER DIAGRAMS POSTED IN ELECTRICAL ROOM.

GENERAL CONDUIT AND CONDUCTOR INSTALLATION REQUIREMENTS

1. INSTALL CONDUIT AND CONDUCTORS CONCEALED TO DEGREE MADE POSSIBLE BY FINISHES AND PROVED INSTALLATIONS IN ACCORDANCE WITH ELECTRICAL SAFETY CODE AND LOCAL GOVERNING AUTHORITIES. PLAN AND CO–ORDINATE LOCATIONS AND ROUTING OF SERVICES WITH TRADES PRIOR TO INSTALLATION. IN AREAS WHERE A MULTIPLICITY OF SERVICES OCCURS, PREPARE DETAIL DRAWINGS AND SUBMIT TO CONSULTANT FOR REVIEW PRIOR TO START OF AFFECTED WORK.
2. WHERE CONDUIT AND/OR CONDUCTORS ARE EXPOSED, ARRANGE SAME TO AVOID INTERFERENCE WITH OTHER WORK AND PARALLEL TO BUILDING LINES. WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALL AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUIT AND/OR CONDUCTORS WITHIN 6" (150MM) OF 'HOT' PIPES OR EQUIPMENT UNLESS CONDUIT AND/OR CONDUCTORS ARE ASSOCIATED WITH EQUIPMENT. INDEPENDENTLY RUN CONDUIT AND CONDUCTORS MUST BE SUPPORTED FROM THE CEILING OR WALL STRUCTURE, NOT FROM CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS ETC.
3. IDENTIFY CONDUIT RUNS (IE. TAG BOTH ENDS OF CONDUIT RUNS)

CONDUITS

1. I PROVIDE CONDUIT FOR CONDUCTORS. CONDUIT TO BE EMT (THIN WALL) GALVANIZED,ELECTICAL METALLIC TUBING TO CSA C222 NO. 83, COMPLETE WITH FACTORY MADE BENDS WHERE SITE BENDING IS NOT POSSIBLE AND JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS, FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND TRANSFORMERS (MINIMUM LENGTH 18" (450MM), MAXIMUM LENGTH 24" (600MM) WITH 180 DEGREE LOOP WERE POSSIBLE)–GALVANIZED STEEL FLEXIBLE FLUID – TIGHT METALLIC CONDUIT TO CSA C222 NOT. 56, COMPLETE WITH IDEAL 'STEEL TOUGH' LIQUID TIGHT FLEXIBLE CONDUIT CONNECTORS AT TERMINATIONS. FOR CONDUIT GREATER THAN 2" (1200MM), PROVIDE RIGID GALVANIZED STEEL TO CSA C222 NO. 45 COMPLETE WITH FITTINGS, CONNECTORS AND RIGID COUPLINGS.)
2. SUPPORT AND SECURE CONDUIT AT SPACING IN ACCORDANCE WITH CODE REQUIREMENTS BY MEANS OF GALVANIZED PIPE STRAPS, CONDUIT CLIPS, RING BOLT TYPE HANGERS OR BY OTHER PROPER MANUFACTURER DEVICES. PROVIDE CONDUIT FITTINGS CONSTRUCTED OF SAME MATERIALS AS CONDUIT AND SUITABLE FOR APPLICATION. SQUARE AND PROPERLY REAM ENDS OF SITE CUT CONDUIT. GENERALLY CONDUIT IS SIZED ON DRAWINGS. SIZE CONDUIT NOT SIZED ON DRAWING IN ACCORDANCE WITH CODE. BEND CONDUIT AT FULL CONDUIT DIAMETER WITH NO KINKS AND N OOFLAKING R CRACKING OF FINISHES.

CONDUCTORS

1. ALL CONDUCTORS SHALL BE COPPER UNLESS INDICATED OTHERWISE.
2. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AND LARGER SHALL BE STRANDED.
3. CONDUCTORS SHALL BE SIZED #12 AWG MINIMUM, EXCEPT FOR CONTROL CIRCUITS WHERE #14 AWG MINIMUM SIZE IS PERMITTED. FEEDER SIZES AS INDICATED.
4. SIZE CONDUCTORS FOR A 2% MAXIMUM VOLTAGE DROP FROM OVERCURRENT DEVICE TO FARTHEST OUTLET.
5. CONDUCTOR INSULATION RATED FOR 600V MINIMUM UNLESS STATED OTHERWISE.
6. CONDUCTOR TYPES:
   6.1 TW75, TWU TO C.S.A. #C22.2 NO. 75
   6.2 RW90, RWU90 (XLPE) TO C.S.A. #C22.2 NO. 38
   6.3 TW75, RW90 (XLPE) – INSIDE BUILDING.
   6.4 TWU, RWU90 (XLPE) – CONDUCTORS DIRECT BURIED OR IN CONDUIT OUTSIDE BUILDING.
   6.5 BX (ARMOURED CABLE) IS ONLY PERMITTED FOR LIGHT FIXTURE DROPS IN ACCOUSTIC CEILINGS (MAX LENGTH 5'–0")

OUTLET BOXES, PULL BOXES AND JUNCTION BOXES

1. PROVIDE CSA APPROVED STAMPED GALVANIZED STEEL OUTLET BOX FOR EACH LUMINARIES, FIRE ALARM DEVICE, ETC. REFER TO DRAWINGS FOR LOCATIONS OF OUTLETS. CONFIRM EXACT LOCATIONS PRIOR TO ROUGH–IN.
2. PROVIDE PULL BOXES AND JUNCTION BOXES WHEREVER NECESSARY TO FACILITATE CONDUCTOR & CONDUIT INSTALLATIONS. GENERALLY, PROVIDE CONDUIT RUNS EXCEEDING 100' (30M) IN LENGTH OR WITH MORE THAN 3, 90 DEGREE BENDS WITH PULL BOX INSTALLED AT CONVENIENT AND SUITABLE INTERMEDIATE ACCESSIBLE LOCATION. PROVIDE JUNCTION BOXES AND PULL BOXES SIZED IN ACCORDANCE WITH CODE TO SUIT NUMBER AND SIZE OF CONDUITS AND CONDUCTORS. BOXES TO BE GALVANIZED OR PRIME COATED PLATED STEEL COMPLETE WITH SCREW–ONN OR HINGED COVERS AND KNOCKOUTS. BOXES MUST BE ACCESSIBLE AFTER WORK IS COMPLETE.
3. .SIZE, ARRANGEMENT AND TYPE OF BOXES MUST BE SUITABLE FOR APPLICATION. PROVIDE BLANK COVER PLATES ON EXISTING OBSOLETE BOXES WHICH ARE TO REMAIN. CLEARLY IDENTIFY MAIN PULL OR JUNCTION BOXES BY SPRAY PAINTING COVERS IN ACCORDANCE WITH FOLLOWING COLOUR SCHEDULE:
   3.1 LIGHTING – YELLOW
   3.2 NORMAL POWER – BLUE
   3.3 ESSENTIAL POWER – ORANGE
   3.4 FIRE ALARM – RED
4. WHERE REQUIRED, SUPPLY ACCESS DOORS OF MINIMUM NO. 23 GAUGE. PRIME COATED STEEL COMPLETE WITH HINGES AND FRAMES TO GIVE ACCESS TO BOXES AND CONDUCTOR JOINTS AND OTHER SIMILAR ELECTRICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR, BUT WHICH IS CONCEALED IN IN ACCESSIBLE CONSTRUCTION. CONFIRM FINISHES WITH OWNER.

FASTENING AND SECURING HARDWARE

1. PROVIDE PROPER FASTENERS AND SIMILAR HARDWARE REQUIRED FOR CONDUIT CONDUCTORS AND FOR EQUIPMENT HANGER AND/OR SUPPORT MATERIAL UNLESS OTHERWISE NOTED. EXPLOSIVE POWER ACTUATED FASTENERS WILL NOT BE PERMITTED UNLESS SPECIFIC WRITTEN APPROVAL FOR US AND TYPE HAS BEEN OBTAINED FROM CONSULTANT. UNDER NO CIRCUMSTANCES US CEILING SUSPENSION HANGERS OR GRIDS FOR SUSPENSION OF CONDUIT AND CONDUCTORS.

IDENTIFICATION NAMEPLATES

1. FOR EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT FROM ELECTRICAL SOURCE OF SUPPLY UP TO AND INCLUDING PLANELOADS, PROVIDE ENGRAVED LAMACOID IDENTIFICATION NAMEPLATES SECURED TO APPARATUS WITH.

ELECTRICAL CONNECTIONS FOR MECHANICALS, OWNER'S ETC., EQUIPMENT

1. PROVIDE REQUIRED ELECTRICAL CONNECTIONS TO APPARATUS SUPPLIED BY DIVISION 15, OWNER AND AS PART OF OTHER DIVISIONS. DO REQUIRED ELECTRICAL WORK FOR EQUIPMENT SCHEDULED ON DRAWINGS. DIVISION 15 WILL SUPPLY STARTERS FOR MOTORIZED APPARATUS SUPPLIED BY THEM AND WILL PROVIDE LAMACOID IDENTIFICATION THROUGHOUT.
2. BE RESPONSIBLE FOR:
   2.1 COMPLETE INSTALLATION AND CONNECTION OF STARTERS AND PROVIDE 'LINE' AND 'LOAD' POWER CONNECTIONS AND INTERLOCKING AS REQUIRED.
   2.2 PROVIDE MOTOR STARTER PANELS CONSISTING OF NO. 14 GAUGE STEEL BOLTED PANELS SIZED TO ACCOMMODATE STARTERS AS REQUIRED AND SUITABLE SPLITTER.
   2.3 UNLESS OTHERWISE NOTED OR SHOWN ON DRAWINGS, MOUNT 1–PHASE STARTERS ADJACENT TO EQUIPMENT THEY SERVE AND CONNECT COMPLETE.
   2.4 CO–ORDINATE FEEDER ENTRIES TO STARTERS AND STARTER ASSEMBLIES WITH DIVISION 15.
   2.5 PROVIDE ADDITIONAL DISCONNECT SWITCHES (COMPLETE WITH IDENTIFICATION DETAILED ON DRAWINGS, REQUIRED BY CODE, OR FOR APPARATUS WHICH CANNOT BE SEEN FROM ITS STARTER OR IS IN EXCESS OF 30' (9M) FROM IT STARTER).
   2.6 DO INTERLOCK WIRING INDICATED ON DRAWINGS AND /OR SCHEDULES.
   2.7 CONNECT REQUIRED CIRCUITS TO MOTOR STARTER PANEL SO AS TO BALANCE ACTUAL LOADS (WATTAGE).

GENERAL ELECTICAL WORK TESTING

1. IN ADDITION TO TESTS REQUIRED BY GOVERNING AUTHORITIES AND REGULATIONS, TEST WORK TO ENSURE THERE ARE NO LEAKS, GROUNDS OR CROSSES. ENSURE DEVICES ARE COMMISSIONED AND OPERABLE. COONECT CIRCUITS TO PANEL BOARDS SO AS TO BALANCE ACTUAL LOADS (WATTAGE) WITHIN 5%. IF REQUIRED TRANSPOSE CIRCUITS WHEN WORK IS COMPLETE TO MEET THIS REQUIREMENT.

CODES AND STANDARDS:

1. DO COMPLETE INSTALLATION IN ACCORDANCE WITH C.S.A C22.1 EXCEPT WHERE SPECIFIED OTHERWISE.
   1.2 COMPLY WITH C.S.A. ELECTRICAL BULLETINS IN FORCE AT TIME OF TENDER SUBMISSION, WHILE NOT IDENTIFIED AND SPECIFIED BY NUMBER IN THIS DIVISION, ARE TO BE CONSIDERED AS FORMING PART OF RELATED C.S.A. PART II STANDARD.
   1.3 DO OVERHEAD AND UNDERGROUND SYSTEMS IN ACCORDANCE WITH C.S.A. C22.3 NO. 1 EXCEPT WHERE SPECIFIED OTHERWISE.
   1.4 ABBREVIATIONS FOR ELECTRICAL TERMS: TO C.S.A. Z85.
   1.5 COMPLY ALSO WITH THE FOLLOWING CODES:
      .1 ONTARIO ELECTRICAL SAFETY CODE
      .2 NATIONAL BUILDING CODE
      .4 ONTARIO BUILDING CODE

The Contractor shall verify all dimensions prior to commencement of the work.
All print and specifications are the property of the Architect and must be returned upon completion of the work.

ISSUE OR REVISION

No.	Description	Date
1.	Issued For Addendum ME-1	13/08/2021

PROJECT :
CATHOLIC EDUCATION CENTRE BAS, VAV, REHEAT COILS & EXHAUST
FANS REPLACEMENT PROJECT
400 MATHESON BOULEVARD W, MISSISSAUGA

PROFESSIONAL SEAL :

DWG TITLE :
SPECS

REGAL CONSULTING ENGINEERS INC.
CONSULTING MECHANICAL & ELECTRICAL ENGINEERS
2359 Royal Windsor Drive, Suite 201, Mississauga, Ontario L5J 4S9
PHONE: (905)855-3010
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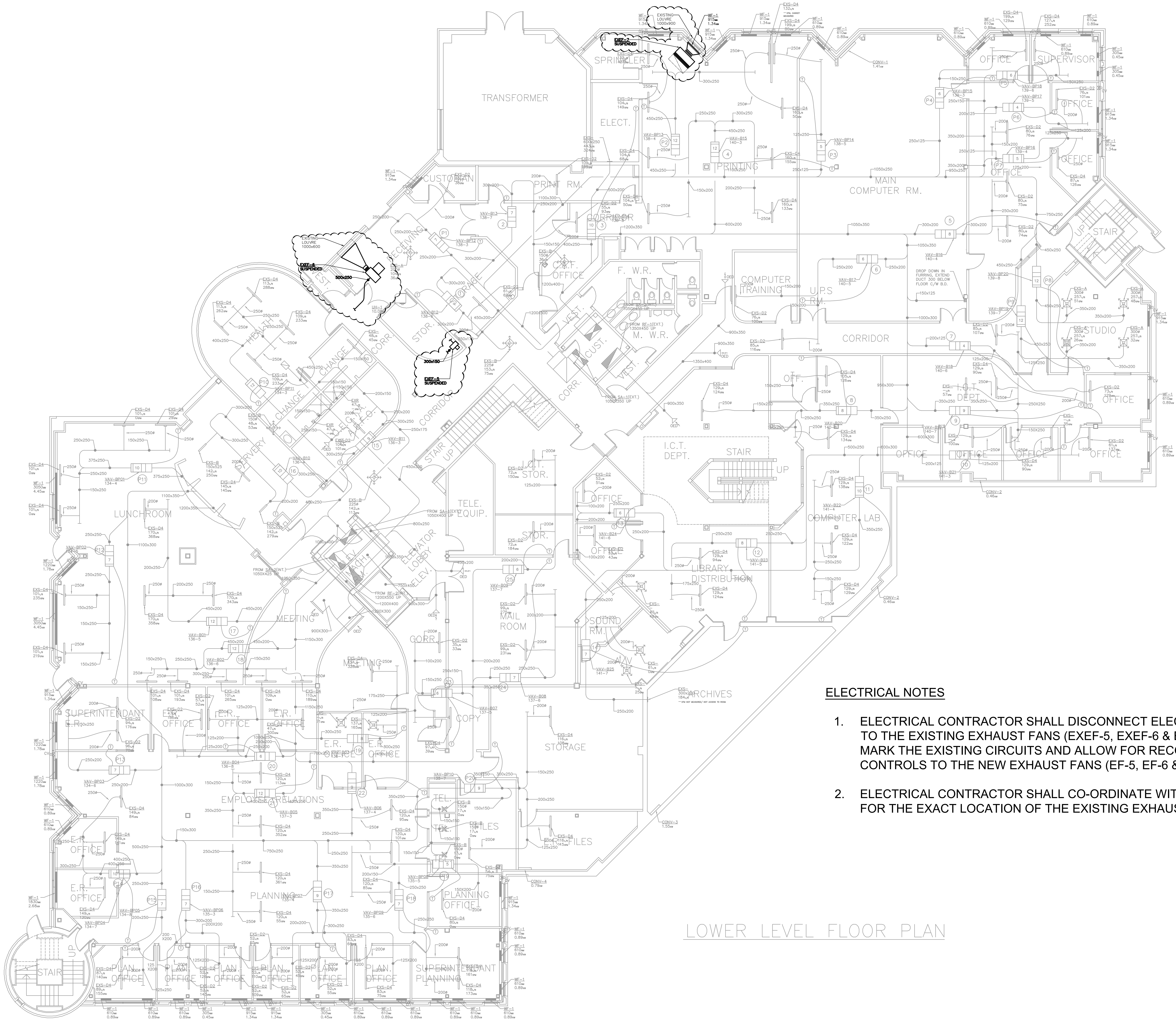
DATE : AUG 2021
SCALE :
DRAWN BY: HH
CHECKED BY : MA
DWG STATUS : REVIEW
PROJECT No. : 2021-348
DRAWING No. : E1.0
REVISION



LOWER LEVEL FLOOR PLAN

ELECTRICAL NOTES

1. ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL POWER & CONTROLS TO THE EXISTING EXHAUST FANS (EXEF-5, EXEF-6 & EXEF-7) BEING REPLACED. MARK THE EXISTING CIRCUITS AND ALLOW FOR RECONNECTION POWER & CONTROLS TO THE NEW EXHAUST FANS (EF-5, EF-6 & EF-7).
2. ELECTRICAL CONTRACTOR SHALL CO-ORDINATE WITH THE MECHANICAL TRADE FOR THE EXACT LOCATION OF THE EXISTING EXHAUST FANS ONSITE.

The Contractor shall verify all dimensions prior to commencement of the work.
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ISSUE OR REVISION

No.	Description	Date
1.	Issued For Addendum ME-1	13/08/2021

PROJECT :
CATHOLIC EDUCATION CENTRE BAS, VAV, REHEAT COILS & EXHAUST FANS REPLACEMENT PROJECT
400 MATHESON BOULEVARD W, MISSISSAUGA

PROFESSIONAL SEAL :

DWG TITLE :
DEMOLITION HVAC
LOWER LEVEL FLOOR PLAN

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DATE : AUG 2021
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DWG STATUS : DESIGN
PROJECT No. : 2021-348
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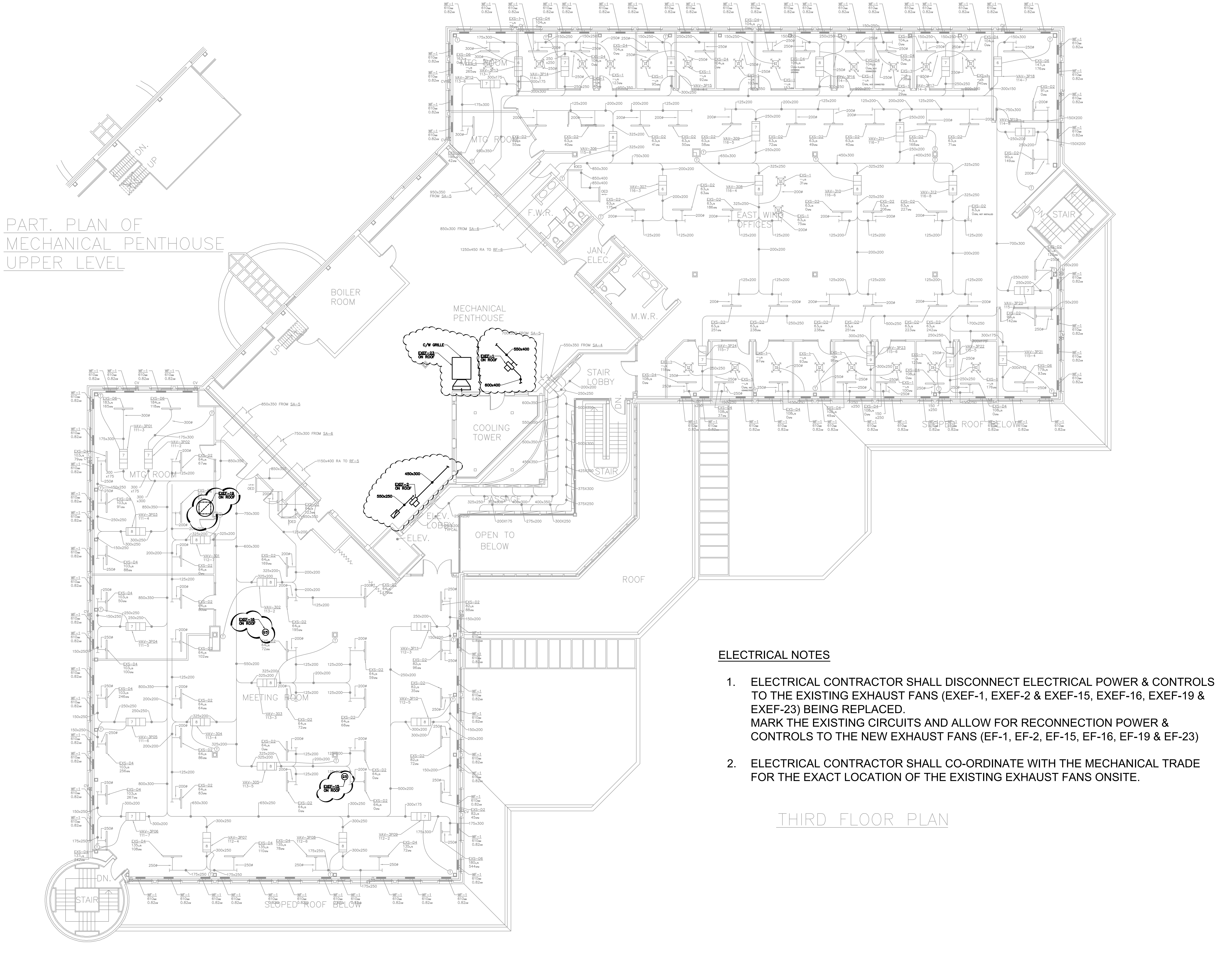

THIRD FLOOR PLAN

ELECTRICAL NOTES

1. ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL POWER & CONTROLS TO THE EXISTING EXHAUST FANS (EXEF-1, EXEF-2 & EXEF-15, EXEF-16, EXEF-19 & EXEF-23) BEING REPLACED.
MARK THE EXISTING CIRCUITS AND ALLOW FOR RECONNECTION POWER & CONTROLS TO THE NEW EXHAUST FANS (EF-1, EF-2, EF-15, EF-16, EF-19 & EF-23)
2. ELECTRICAL CONTRACTOR SHALL CO-ORDINATE WITH THE MECHANICAL TRADE FOR THE EXACT LOCATION OF THE EXISTING EXHAUST FANS ONSITE.

The Contractor shall verify all dimensions prior to commencement of the work.
All print and specifications are the property of the Architect and must be returned upon completion of the work.

ISSUE OR REVISION

No.	Description	Date
1.	Issued For Addendum ME-1	13/08/2021

PROJECT :

CATHOLIC EDUCATION CENTRE BAS, VAV, REHEAT COILS & EXHAUST FANS REPLACEMENT PROJECT

400 MATHESON BOULEVARD W, MISSISSAUGA

PROFESSIONAL SEAL :

DWG TITLE :

DEMOLITION HVAC
THIRD FLOOR PLAN

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