RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

RoMar Engineering Ltd.
20 Denbury Court
Whitby, ON L1M0H5

www.romarengineering.com

MECHANICAL ADDENDUM NO. MADD-001

Project: Vaughan Willard P.S. – HVAC Upgrades

Date: December 31, 2025

THIS ADDENDUM SHALL FORM AN INTEGRAL PART OF THE TENDER DOCUMENTS. THE CONTENTS OF THIS ADDENDUM SHALL BE BROUGHT TO THE ATTENTION OF ALL CONCERNED.

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1. **Refer to M-102 (Rev. 2) for highlighted changes.**
    a. Updated equipment schedules.
        i. Added wallfin schedule and unit heater schedule.
        ii. Revised schedules throughout – most notably RTU schedule and AHU schedule voltage to 575/3/60.

2. **Refer to M-103 (Rev. 2) for highlighted changes.**
    a. Added 9/M-103 detail re: unit heater piping.

3. **Refer to M-104 (Rev. 2) for highlighted changes.**
    a. Refer to 6/M-104: added VFD on RTU-3 supply fan.

4. **Refer to M-105 (Rev. 2) for highlighted changes.**
    a. 1/M-105: revised supply and return fan BAS points.
    b. 2/M-105: revised notes – BAS contractor to match existing BAS points re: existing AHU-1 heat wheel.

5. **Refer to M-200 (Rev. 2) for highlighted changes.**
    a. 1/M-200: removed existing exhaust fan and wallfin within mechanical room.
    b. 2/M-200: updated keyed notes.
    c. Glycol pumps to be in-line circulator pumps.
    d. Added unit heater in replacement of removed wallfin.
    e. Revised location of RHC-RTU-3 and associated supply and return ductwork.
    f. Added custom door and indoor steps at NE corner of mechanical room to allow for easy roof access.

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6. **Refer to M-201 (Rev. 2) for highlighted changes.**
    a. Revised keyed notes – added keyed note 3.

7. **Refer to M-202 (Rev. 2) for highlighted changes.**
    a. 2/M-202: revised keyed notes – added keyed note 4.

8. **Refer to M-300 (Rev. 2) for highlighted changes.**
    a. Revised general notes – ductwork associated with existing AHU-1 is already insulated as required. All new and existing ductwork associated with RTU-3 to be insulated. Refer to general notes on drawing.

9. **Refer to M-400 (Rev. 2) for highlighted changes.**
    a. RTU-3 ductwork location revised, acoustically lined for first 10 ft. from unit.
    b. CDU-1 location moved South (minimum of 10ft. from roof edge).
    c. Revised keyed notes.

10. **Refer to M-500 (Rev. 2) for highlighted changes.**
    a. Revised pumps in schematic – to have single strainer that serves both inline circulator pumps in parallel. Check valve after each individual pump.

11. **Electrical and Structural drawings issued for tender – see attached.**

End of Mechanical Addendum MADD-001

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GENERAL

PERFORM ALL MECHANICAL WORK DETAILED ON THESE DRAWINGS TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL OPERATING SYSTEM TO THE SATISFACTION OF THE MECHANICAL CONSULTANT.

EQUIPMENT SUBSTITUTIONS AFTER AWARD OF CONTRACT WILL NOT BE CONSIDERED WITHOUT WRITTEN EXPLANATION AND CONSULTANT'S WRITTEN AUTHORIZATION. THE QUALITY AND PERFORMANCE CHARACTERISTICS OF SUBSTITUTED PRODUCT SHALL BE EQUIVALENT TO THE SPECIFIED PRODUCT. ALL SUBSTITUTE PRODUCTS SHALL BE APPROVED BY CONSULTANTS. ANY ADDITIONAL COSTS INCURRED BY ALL TRADES FOR SUBSTITUTED EQUIPMENT INSTALLATION MUST BE INCURRED BY THIS CONTRACT.

SCHOOL BOARD STANDARDS SHALL FORM THE BASIS FOR THIS CONSTRUCTION. COMPLY WITH SCHOOL BOARDS' REQUIREMENTS FOR SYSTEM SHUTDOWN AND CONNECTION.

CODES AND BYLAWS SHALL BE STRICTLY ADHERED TO. OBTAIN NECESSARY PERMITS, APPROVALS AND INSPECTIONS FROM THE AUTHORITIES HAVING JURISDICTION.

PERMITS AND FEES REQUIRED BY THE AUTHORITIES HAVING JURISDICTION SHALL BE OBTAINED AND PAID FOR BY THIS CONTRACTOR. INCLUDE ALL APPLICABLE TAXES.

EXISTING SITE CONDITIONS AFFECTING THE WORK OF THIS TRADE SHALL BE REVIEWED PRIOR TO TENDER SUBMISSION. FAILURE TO DO SO SHALL NOT RELIEVE CONTRACTOR OF FULL CONTRACT RESPONSIBILITY.

CUTTING, PATCHING AND CORE DRILLING REQUIRED BY THIS TRADE SHALL BE PAID FOR BY THIS CONTRACTOR. X-RAY CONCRETE STRUCTURE IN ACCORDANCE WITH OWNER/LANDLORD STRUCTURAL ENGINEER'S REQUIREMENTS. PROVIDE DETAILS OF NEW OPENING THROUGH STRUCTURAL COMPONENTS FOR ENGINEER'S APPROVAL. INCUR ALL COSTS RELATED FOR STRUCTURAL APPROVAL.

FIRE STOP SHALL BE ULC LISTED FOR THE REQUIRED SEPARATION AND PROVIDED AT ALL PIPE PENETRATIONS THROUGH RATED ASSEMBLIES.

PREMIUM TIME COSTS SHALL BE INCLUDED FOR WORK OUTSIDE OF NORMAL WORKING HOURS.

SHOP DRAWINGS SHALL BE COMPLETE WITH CONTRACTORS REVIEWED STAMP. SUBMIT ONE ELECTRONIC COPY. ALLOW ONE (1) WEEK FOR ENGINEERS REVIEW.

CONTROL WIRING AND DEVICES SHALL BE PROVIDED UNDER THIS CONTRACT, UNLESS NOTED OTHERWISE. WHEN REQUIRED, CONTROLS WORK SHALL BE COMPLETED BY SCHOOL BOARD'S APPROVED CONTRACTOR AND PAID FOR UNDER THIS CONTRACT.

ELECTRICAL DEVICES SHALL BE PROVIDED FOR ALL LOAD SIDES INCLUDING WIRING, STARTERS, DISCONNECT, ETC. VERIFY AND COORDINATE VOLTAGE AND PHASE WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.

ACCESS DOORS SHALL BE PROVIDED FOR ALL INACCESSIBLE MECHANICAL EQUIPMENT AND SERVICES REQUIRING INSPECTION OR SERVICE. FINISH SHALL SUIT DESIGNERS' REQUIREMENTS. ACCESS DOORS SHALL BE RECESSED AS REQUIRED TO SUIT WALL FINISH (EG. TILE.)

ENGINEERS FINAL INSPECTION IS IMPERATIVE. PRIOR TO INSTALLATION OF ALL CEILINGS, THIS CONTRACTOR SHALL CONTACT MARGARET EDWARDS (ROMAR) AT MEDWARDS@ROMARENGINEERING.COM TO PERFORM A FINAL INSPECTION. WHEN CEILING TILES HAVE BEEN INSTALLED IT WILL BE NECESSARY FOR THE CONTRACTOR TO REMOVE PORTIONS FOR INSPECTION.

ONE YEAR WRITTEN WARRANTY SHALL BE PROVIDED FOR THE COMPLETE MECHANICAL INSTALLATION FROM DATE OF ACCEPTANCE.

CAD AS-BUILT DRAWINGS SHALL BE COMPLETED UTILIZING AUTOCAD. OBTAIN DRAWINGS FROM ENGINEER. RECORD ACCURATELY INSTALLED WORK ON WHITE PRINTS TRANSFERRING TO AUTOCAD. SUBMIT BOTH COPIES.

OPERATING AND MAINTENANCE MANUALS CONTAINING APPROVED SHOP DRAWINGS, AIR AND WATER BALANCING REPORTS, EQUIPMENT DATA SHEETS, WRITTEN WARRANTY, OPERATING INSTRUCTIONS AND MAINTENANCE PROCEDURES SHALL BE SUBMITTED TO CONSULTANT FOR REVIEW. MANUALS SHALL BE SEPARATED WITH DIVIDERS IN APPROPRIATE SECTIONS. MAKE ALL CORRECTIONS REQUESTED BY CONSULTANT AND RESUBMIT FOR REVIEW.

CHANGE NOTICE QUOTATIONS SHALL BE SUBMITTED COMPLETE WITH COST BREAKDOWN OF LABOUR AND MATERIALS. FAILURE TO PROVIDE WILL RESULT IN REJECTION. ALL MECHANICAL CHANGE NOTICES SHALL BE PRICED IN ACCORDANCE WITH "MECHANICAL CONTRACTORS ASSOCIATION" (MCA). LABOUR UNITS STRICTLY FOR LABOUR AND FOR MATERIAL COST USE "ALL PRICER" LESS DISCOUNT, TYPICALLY 25% FOR VALVES AND OTHER MATERIALS.

TEMPORARY FILTERS 25MM (1 IN.) SHALL BE PROVIDED AT ALL BASE BUILDING RETURN AIR OPENINGS WHICH REMAIN OPERATIONAL DURING CONSTRUCTION. FILTERS TO BE REPLACED WEEKLY. REMOVE UPON CONSTRUCTION COMPLETION.

MECHANICAL DEMOLITION

PROVIDE LABOUR, MATERIALS, PRODUCTS, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE THE DEMOLITION WORK SPECIFIED HEREIN.

REFER TO DRAWINGS FOR EXTENT OF DEMOLITION WORK. THE DRAWINGS INDICATE THE APPROXIMATE LOCATIONS OF SERVICES AS FAR AS THESE ARE KNOWN.

DISPOSE, OFF SITE, OF ALL DEBRIS IN ACCORDANCE WITH THE JURISDICTIONAL AUTHORITIES.

REMOVAL AND STORAGE OF SALVAGEABLE ITEMS AS DIRECTED BY THIS SPECIFICATION SECTION UND THE OWNER OF THEIR REPRESENTATIVE.

MEET THE REQUIREMENTS AND RECOMMENDATIONS OF ALL MUNICIPAL, PROVINCIAL AND FEDERAL BYLAWS AND ORDINANCES. EXECUTE THIS WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS. CAN/CSA-S350-M1980 CODE OF PRACTICE FOR SAFETY IN DEMOLITION OF STRUCTURES. ONTARIO BUILDING CODE. OCCUPATIONAL HEALTH AND SAFETY ACT. REGULATIONS FOR CONSTRUCTION PROJECTS.

ONTARIO FIRE CODE. REGULATIONS UNDER FIRE MARSHALS ACT.

REMOVAL FROM SITE AND DISPOSAL OF DEBRIS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL JURISDICTIONAL AUTHORITIES. ARRANGE AND PAY FOR ALL PERMITS, NOTICES AND INSPECTIONS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE DEMOLITION WORK. ALL MATERIALS WHICH HAVE NOT BEEN DESIGNATED FOR SALVAGE FROM THE DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. REMOVE ALL MATERIAL AND DEBRIS FROM THE SITE AS QUICKLY AS POSSIBLE AND DISPOSE OF LEGALLY. BURNING OF DEBRIS OR SELLING OF MATERIALS ON THE SITE WILL NOT BE PERMITTED. CONFORM TO REQUIREMENTS OF MUNICIPALITY'S WORKS DEPARTMENT REGARDING DISPOSAL OF WASTE MATERIALS. MATERIALS PROHIBITED FROM MUNICIPALITY WASTE MANAGEMENT FACILITIES SHALL BE REMOVED FROM SITE AND DISPOSED OF THROUGH RECYCLING COMPANIES SPECIALIZING IN RECYCLABLE MATERIALS. AT THE END OF EACH WORK SHIFT, LEAVE WORK IN A SAFE CONDITION. PATCH FIRE RATED PARTITIONS AND FLOORS TO MAINTAIN RATING UPON REMOVAL OF MECHANICAL SERVICES ORIGINALLY SPANNING FIRE RATED ASSEMBLIES. DEMOLISH WORK INTO SECTIONS OF PRACTICAL SIZE FOR REMOVAL WITHOUT ALTERATION OR DAMAGE TO EXISTING BUILDING. STORE MATERIALS ONLY IN AREAS DESIGNATED BY THE OWNER AND AS PERMITTED BY THE LOCAL JURISDICTIONAL AUTHORITIES. MATERIALS AND DEBRIS SHALL NOT BE STACKED IN BUILDING TO THE EXTENT THAT OVERLOADING OF ANY PART OF THE STRUCTURE WILL OCCUR.

CONFER WITH THE OWNER CONCERNING SCHEDULE, DUST AND NOISE CONTROL PRIOR TO COMMENCING WORK IN OR ADJACENT TO EXISTING FACILITIES WHERE SUCH WORK MIGHT AFFECT EITHER THOSE FACILITIES OR THEIR OCCUPANTS. EXECUTE WORK WITH LEAST POSSIBLE INTERFERENCE OR DISTURBANCE TO OCCUPANTS, PUBLIC AND NORMAL USE OF PREMISES. PROVIDE TEMPORARY MEANS TO MAINTAIN SECURITY WHEN SECURITY HAS BEEN REDUCED BY DIVISION 15.

PROVIDE TEMPORARY DUST SCREENS, BARRIERS, WARNING SIGNS IN LOCATIONS WHERE RENOVATIONS AND ALTERNATION WORK IS ADJACENT TO AREAS WHICH WILL BE OPERATIVE DURING WORK.

PROTECT ALL MECHANICAL SYSTEMS, INDICATED TO REMAIN, FROM DAMAGE. PROVIDE AND MAINTAIN READY ACCESS TO FIREFIGHTING EQUIPMENT AT ALL TIMES. PROVIDE AND MAINTAIN PROPER AND SUITABLE FIRE EXTINGUISHERS THROUGHOUT THE DURATION OF THE WORK.

THE DRAWINGS INDICATE THE APPROXIMATE LOCATIONS OF SERVICES AS FAR AS THESE ARE KNOWN. SHOULD ANY MECHANICAL, CONTROLS, OR ELECTRICAL SERVICE LINE BE BROKEN, OR DISRUPTED BY OPERATIONS SPECIFIED UNDER THIS CONTRACT, REPAIR SERVICE LINES, AND MAKE GOOD ALL DAMAGE DUE TO THE DISRUPTION OR BREAK, AT NO EXPENSE TO THE BOARD. NOTIFY THE BOARD IMMEDIATELY WHENEVER ANY SERVICE LINE IS BROKEN OR DAMAGED.

ACCEPT LIABILITY FOR COSTS INCURRED BY THE BOARD IN REPAIRING AND CLEANING EQUIPMENT, ETC., RESULTING FROM FAILURE TO COMPLY WITH THE ABOVE REQUIREMENTS.

CLEAN UP

DURING THE PROCESS OF WORK EACH CONTRACTOR SHALL KEEP HIS WORK TIDY. THE PREMISES SHALL AT ALL TIMES BE FREE FROM RUBBISH AND SURPLUS MATERIALS, CLEAN DAILY.

PROTECTING-TRADES

DIVISION 15 IS ENTIRELY FINANCIALLY RESPONSIBLE FOR ALL DAMAGE TO PROPERTY OR ADJACENT PROPERTY, ARISING OF THE WORK OF THIS CONTRACTOR, WHETHER CAUSED BY HIMSELF OR ANY PERSONS ENGAGED ON HIS WORK.

DIVISION 15 CONTRACTORS ARE RESPONSIBLE TO ENSURE THAT THEIR EMPLOYEES AND SUB-TRADES USE ONLY SAFE PRACTICES AND CONDITIONS, OBSERVE ALL SAFETY REGULATIONS, SECURITY REGULATIONS AND FIRE SAFETY RULES.

DUCTWORK

NEW MATERIAL AND EQUIPMENT SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH BASE BUILDING STANDARDS.

DUCTWORK AND HANGERS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS.

FLEXIBLE DUCTWORK SHALL BE FLEXMASTER TRIPLE LOC OR EQUAL, SPIRAL WOUND ALUMINUM. SECURE TO RIGID DUCT USING GEAR CLAMPS. AT THE INLET OF EACH VAV TERMINAL CONTROL UNIT, PROVIDE A MINIMUM OF 3 DIAMETERS OF STRAIGHT FLEX DUCT. MAXIMUM LENGTH 1200 MM [4 FT.-0 IN.]. FLEXIBLE DUCTS SERVING DIFFUSERS SHALL BE INSTALLED AS ONE CONTINUOUS PEICE AND SHALL NOT EXCEED 10'-0" LENGTHS.

FIRE SMOKE DAMPER SHALL BE OUT OF STREAM ULC LABELED. PROVIDE FIRE SMOKE DAMPERS AS REQUIRED IN NEW AND EXISTING DUCTWORK C/W ACCESS DOORS.

ACOUSTIC DUCT LINING 25MM [1 IN.] SHALL BE PROVIDED WHERE SHOWN ON DRAWINGS. SECURE WITH MECHANICAL FASTENERS AND ADHESIVE. SEAL RAW EDGES. NOTE DUCT DIMENSIONS ARE CLEAR INSIDE.

THERMAL INSULATION WITH VAPOUR BARRIER SHALL BE PROVIDED ON ALL NEW SUPPLY AIR DUCTWORK TO MATCH BASE BUILDING STANDARDS OR REFER TO INSULATION SECTION. ALL THERMAL INSULATION IS TO BE INSTALLED BY A RED SEAL LICENSED INSULATOR AS PER DDSB REQUIREMENTS.

FLEXIBLE DUCT CONNECTIONS SHALL BE DURODYNE NEOPRENE AND INSTALLED BETWEEN ALL AIR HANDLING EQUIPMENT AND SYSTEM DUCTWORK.

AIR TRANSFER OPENINGS INDICATED WITHOUT DUCT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO ADVISE AND CONFIRM PROVISION BY GENERAL TRADES.

BALANCING AND VOLUME CONTROL DAMPERS SHALL BE PROVIDED IN NEW OR EXISTING DUCTWORK TO PROVIDE A COMPLETE AND BALANCED SYSTEM. BALANCING WORK SHALL BE COMPLETED BY DDSB APPROVED CONTRACTOR AND PAID FOR UNDER THIS CONTRACT. CONTRACTORS TO CONTACT ARE: QUALITY AIR DISTRIBUTION INC. AT 289-892-7168 OR AIRFLOW TESTING AND BALANCING AT 613-876-9314.

FAN SHEAVES SHALL BE ADJUSTED OR REPLACED AS REQUIRED TO OBTAIN DESIGN AIR QUANTITIES. COORDINATE THIS WORK WITH OWNER/LANDLORD.

HVAC PIPING SYSTEMS

PIPING MATERIAL FOR HEATING, CHILLED AND HEAT PUMP CIRCUITS SHALL BE ASTM A53 BLACK STEEL SCHEDULE 40, ELECTRIC RESISTANCE WELDED. PIPING UNDER 65MM (2-1/2") SHALL BE THREADED FOR 1035 KPA (150 PSI) BEADED MALLEABLE IRON LINE JOINT COUPLINGS AND 860 KPA (125 PSI) THREADED CAST IRON FITTINGS.

PIPING 65MM (2-1/2") AND LARGER SHALL HAVE WELDED LINE JOINTS WITH ENDS BEVELED FOR WELDING AND STANDARD WALL SEAMLESS STEEL, GRINNEL, TUBETURN OR LADISH FITTINGS AND 1035 KPA (150 PSI) SLIP-ON FLANGES.

CONDENSATE DRAINS SHALL BE DWV COPPER DRAINAGE TUBE WITH CAST BRASS FITTINGS AND 50/50 SOLDERED JOINTS.

VALVES CRANE OR JENKINS (JENKINS FIGURE NUMBER LISTED BELOW):

.1 TO 1379 KPA [200 PSI] WORKING PRESSURE:

	GATE	GLOBE	BALL
50 MM [2 IN.] AND SMALLER			
SOLDERED	813	106-BP	34
SCREWED	810	106-B	33
65 MM [2-1/2 IN.] AND LARGER			
FLANGED	454	2342	NOT APPLICABLE

.2 TO 2068 KPA [300 PSI] WORKING PRESSURE:

	GATE	GLOBE	BALL
50 MM [2 IN.] AND SMALLER			
SOLDERED	902A	106-BP	34
SCREWED	2810	106-B	33
65 MM [2-1/2 IN.] AND LARGER			
FLANGED	204	162	NOT APPLICABLE

CHECK VALVE: CRANE 37

.3 PROVIDE BALL OR BUTTERFLY VALVES FOR ALL SHUT-OFF REQUIREMENTS. GATE VALVES WILL NOT BE APPROVED.

.4 PROVIDE 20 MM [3/4" IN.] HOSE END DRAIN VALVES WITH CAP AND CHAIN AT ALL SYSTEM LOW POINTS.

.5 PROVIDE DI-ELECTRIC COUPLINGS FOR CONNECTION OF DISSIMILAR PIPING MATERIALS.

PROVIDE CIRCUIT BALANCING VALVES AS REQUIRED TO BALANCE WATER FLOW. CIRCUIT BALANCING VALVES SHALL BE ARMSTRONG MODEL CBVI - Y PATTERN STYLE, ALL METAL, WITH SOLDERED OR SCREWED CONNECTIONS, BUILT-IN DRAIN CONNECTION WITH SHUT OFF VALVE AND PROTECTIVE CAPS AND INTEGRAL VALVE INSULATION. PROVIDE FOR EACH VALVE:

.1 VERNIER TYPE HANDWHEEL SETTINGS FOR PRECISION FLOW BALANCING.

.2 POSITIVE SHUT OFF VALVE WITH NO DRIP SEAT AND PLUG TYPE STEM WITH TEFLON DISC.

.3 TAMPER PROOF HIDDEN MEMORY.

.4 POSITIVE SHUT OFF METERING VALVES WITH CONNECTIONS FOR PORTABLE METER.

SELECT CIRCUIT BALANCING VALVE SIZE TO GIVE A PRESSURE DROP AT 100% OPEN BETWEEN 3.0 KPA [1 FT.] AND 21 KPA [7 FT.]. SELECT VALVES LOCATION REMOTE FROM THE PUMPS IN THE CIRCUIT NEAR MINIMUM PRESSURE DROP AND THOSE LOCATED NEAR THE PUMPS AT HIGHER PRESSURE DROPS.

PROVIDE SAFETY AND RELIEF VALVES FOR ALL CLOSED WATER SYSTEMS. PIPE RELIEF TO NEAREST FLOOR DRAIN. PROVIDE WATTS 174A VALVES RATED AT 1035 KPA [150 PSIG] AT 99°C [210°F] ASTM RATED, CAST IRON BODY BRONZE DISC AND SEAT, STEEL SPINDLE ASSEMBLY, CARBON STEEL SPRING.

PROVIDE STRAINERS UPSTREAM OF EACH PUMP AND WHERE INDICATED ON DRAWINGS. STRAINERS SHALL BE BRONZE BODY TYPE WITH SCREWED CONNECTIONS, STAINLESS STEEL SCREENS WITH 1.6 MM [1/16 IN.] PERFORATIONS AND CAPABLE OF SYSTEM PRESSURE OF 860 KPA [125 PSI].

AUTOMATIC AIR VENTS AND COLLECTING CHAMBERS SPIRAX 13W SHALL BE PROVIDED AT ALL HIGH POINTS OF PIPING SYSTEM. ENSURE RATINGS ARE COMPATIBLE WITH SYSTEM PRESSURE.

INSULATION SHALL BE PROVIDED TO MATCH BASE BUILDING STANDARDS OR REFER TO INSULATION SECTION.

FLUSH CLEAN AND PRESSURE TEST ALL HVAC PIPING SYSTEMS. CHEMICALLY CLEAN ALL PIPING SYSTEMS UTILIZING LOW FOAMING CHEMICAL DETERGENTS WHICH SHALL NOT ADVERSELY AFFECT SYSTEM COMPONENTS.

WATER BALANCING SHALL BE PROVIDED FOR ALL WATER SYSTEMS AND SHALL INCLUDE A WRITTEN REPORT INDICATING TEMPERATURE, FLOW RATES, OPERATING PRESSURES AND PRESSURE DIFFERENTIAL BETWEEN THE SUPPLY AND RETURN AT EACH PIECE OF EQUIPMENT.

PERFORM PRESSURE TESTING ON ALL NEW AND MODIFIED PIPES TO ENSURE TIGHTNESS OF ALL NEW JOINTS USING HYDROSTATIC TEST AT 150% OF DESIGN WORKING PRESSURE BUT NOT LESS THAN 700KPA (100 PSI). TEST WITHOUT PRESSURE DROP FOR MIN. 4 HOURS AND REMOVE AND REPLACE DEFECTIVE PARTS AND COMPONENTS THAT WILL NOT WITHSTAND PRESSURE.

CHEMICAL TREATMENT

MK SERVICES AND CONSULTING TO SUPPLY AND INSTALL ALL COMPONENTS, FLUIDS, ACCESSORIES, ETC. ASSOCIATED WITH CHEMICAL TREATMENT FOR THE PROJECT. CONTACT KRISTEN RILEY (KRISTENRILEY@MKSERVICESANDCONSULTING.COM).

AFTER COMPLETION OF FLUSH CLEANING AND PRESSURE TESTING, CHEMICALLY CLEAN ALL PIPING SYSTEMS UTILIZING LOW FOAMING CHEMICAL DETERGENTS WHICH SHALL NOT ADVERSELY AFFECT SYSTEM COMPONENTS.

PROVIDE EACH CLOSED SYSTEM WITH A 7.6 LITRE [2 US GAL.] CAPACITY BY-PASS CHEMICAL FEEDER. PIPE ACROSS PUMPING SYSTEM AND LOCATE NOT MORE THAN (1M) [3 FT.] ABOVE FLOOR. PIPE TO FLOOR DRAIN, USING 20MM [3/4"] PIPE C/W BALL VALVES. PROVIDE FEEDERS WITH PRESSURE RATING SUITABLE FOR THE SYSTEM WORKING PRESSURE.

TO COMPENSATE FOR INITIAL LOSSES OF CHEMICALS AND WATER DURING STARTUP OF SYSTEM, PROVIDE TWICE AS MUCH CORROSION INHIBITOR AND BIOCIDE AS ARE NECESSARY TO TREAT SYSTEMS.

MAINTAIN CHEMICAL LEVELS FROM THE TIME THE SYSTEM IS FILLED AFTER CLEANING, UP TO SUBSTANTIAL PERFORMANCE OF THE CONTRACT.

THE WATER TREATMENT SPECIALIST SHALL SUPPLY ALL NECESSARY SUPERVISION DURING INSTALLATION AND SHALL CHECK THE SYSTEMS DURING CONSTRUCTION.

PROVIDE A SERVICE PROGRAM FROM A SPECIALIST WITH THE WATER TREATMENT SUPPLIER/CONTRACTOR FOR A PERIOD OF ONE YEAR FROM SUBSTANTIAL COMPLETION. INCLUDE INITIAL WATER ANALYSIS AND RECOMMENDATIONS, SERVICE STARTUP TRAINING OF OPERATING PERSONNEL AND LABORATORY AND TECHNICAL ASSISTANCE.

PROVIDE SERVICE VISITS AS REQUIRED TO STABILIZE AND COMMISSION THE SYSTEMS AND A MINIMUM OF ONE VISIT PER MONTH BY THE WATER TREATMENT SPECIALIST FOR THE YEAR FOLLOWING SUBSTANTIAL COMPLETION TO ENSURE THAT A PROPER TREATMENT PROGRAM IS MAINTAINED. PERFORM CORROSION TESTS TO VERIFY PERFORMANCE REQUIREMENTS ARE BEING ACHIEVED. DOCUMENT RECOMMENDATIONS AND SUBMIT A WRITTEN REPORT TO THE OWNER'S REPRESENTATIVE AFTER EACH VISIT.

REFRIGERANT PIPING

REFRIGERANT PIPING SHALL BE FACTORY-CLEANED AND SEALED, TYPE ACR SEAMLESS COPPER PIPING. USE ONLY SILVER BRAZED JOINTS.

REFRIGERANT PIPING DESIGN AND INSTALLATION SHALL CONFORM TO THE RECOMMENDATIONS AND REQUIREMENTS OF CSA STANDARD B52 – MECHANICAL REFRIGERANT CODE, ONTARIO BUILDING CODE, AIR CONDITIONING AND REFRIGERANT INSTITUTE AND AIR CONDITIONING EQUIPMENT MANUFACTURER.

SELECT PIPE, FITTINGS AND COMPONENTS TO SUIT SYSTEM TEST AND OPERATING PRESSURES.

USE ONLY LONG RADIUS ELBOWS.

SIZE REFRIGERANT PIPING TO ATTAIN AIR CONDITIONING EQUIPMENT MANUFACTURERS LISTED COOLING CAPACITIES.

PROTECT REFRIGERANT PIPING ADEQUATELY. PROVIDE PERMANENT GUARDS AS REQUIRED TO PROTECT PIPING AND FITTINGS FROM DAMAGE.

INSTALL REFRIGERANT PIPING IN A NEAT WORKMANLIKE MANNER WITH HORIZONTAL RUNS SLOPED TOWARDS THE COMPRESSOR AT A RATE OF 1/2" PER FOOT. SUPPORT LINES AT INTERVALS OF NOT MORE THAN 6'-0" WITH SUITABLE ANCHORS. USE RUBBER GROMMETS BETWEEN TUBING AND CLAMPS TO PREVENT LINE CHAFING.

WHERE VERTICAL RUNS OF MORE THAN 5'-0" OCCUR IN A SUCTION LINE, IT SHALL ENTER AT THE TOP OF THE NEXT HORIZONTAL SECTION. ARRANGE PIPING SO REFRIGERANT OR OIL CANNOT DRAIN FROM SUCTION LINE INTO COIL.

KEEP PIPING RUNS AND NUMBER OF ELBOWS AND FITTINGS TO A MINIMUM.

REDUCE THE EFFECT OF PIPING VIBRATION WITH THE USE OF FLEXIBLE METAL HOSE.

PIPING TO REMOTE CONDENSING UNIT SHALL INCLUDE SHUT OFF VALVES AND UNIONS.

ENSURE REFRIGERATION PIPING IS DEHYDRATED, TESTED AND ADEQUATELY CHARGED. REFRIGERANT PIPING WILL NOT BE ACCEPTED UNLESS IT IS GAS TIGHT.

REFRIGERANT PIPING INSULATION

COVER ALL REFRIGERANT PIPING INSTALLED INDOOR WITH 3/4" ARMAFLEX (OR EQUIVALENT ELASTOMERIC INSULATION). COVER ALL REFRIGERANT PIPING INSTALLED OUTDOORS WITH 1" ARMAFLEX (OR EQUIVALENT ELASTOMERIC INSULATION), COMPLETE WITH UV-RESISTANT JACKET OR COATING. ENSURE ALL SEAMS ARE SEALED, NO GAPS OR COMPRESSION – CONTINUOUS INSULATION.

INSULATION

PIPING INSULATION

PROVIDE ALL LABOUR, MATERIALS, PRODUCTS, EQUIPMENT AND SERVICES TO SUPPLY AND INSTALL THERMAL INSULATION, VAPOUR BARRIERS AND FINISHES FOR MECHANICAL WORK AS INDICATED ON THE DRAWINGS AND SPECIFIED IN THIS SECTION OF THESE SPECIFICATIONS.

MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURERS OF ADHESIVES, MASTICS AND INSULATING CEMENTS.

INSULATION MATERIALS MUST BE MANUFACTURED AT FACILITIES CERTIFIED AND REGISTERED WITH AN APPROVED REGISTRAR TO CONFORM TO ISO 9000 QUALITY STANDARD.

ALL INSULATION PERTAINING TO DIVISION 15 SHALL BE CARRIED OUT BY ONE FIRM SPECIALIZING IN INSULATION WORK. DO NOT MIX SIMILAR PRODUCTS OF MULTIPLE MANUFACTURERS.

MECHANICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING DUCTS, PIPES & EQUIPMENT TO REMAIN	FD-	NEW FLOOR DRAIN
R	DUCTS, PIPES & EQUIPMENT TO BE REMOVED	RD-	NEW ROOF DRAIN
	NEW DUCT OR PIPE		NEW ISOLATION VALVE
	NEW DUCT OR EQUIPMENT		EXISTING BALL VALVE TO REMAIN
	NEW FLEXIBLE DUCT		NEW BALL VALVE
	NEW CAP ON EXISTING DUCT OR PIPE		EXISTING CONTROL VALVE TO REMAIN
	NEW CAP ON EXISTING DUCT		NEW CONTROL VALVE
	EXISTING VAV BOX TO REMAIN		NEW PRESSURE REDUCING VALVE
T	EXISTING THERMOSTAT		NEW CIRCUIT BALANCING VALVE
TR	REMOVE OR RE-USE WHERE SHOWN AS NEW		NEW THREE WAY AUTOMATIC CONTROL VALVE
T	NEW THERMOSTAT	VTR	VENT THROUGH ROOF
S	FAN SWITCH	DTF	DOWN THROUGH FLOOR
	EXISTING SPRINKLER HEAD TO REMAIN		PIPE UP
R	REMOVE OR RELOCATE EXISTING SPRINKLER HEAD		PIPE DOWN
FD	NEW FIRE DAMPER	M	NEW METER
SD	NEW SMOKE DAMPER		NEW UNION
BD	NEW MANUAL BALANCING DAMPER		NEW STRAINER
VD	NEW VOLUME DAMPER	BFP	NEW BACKFLOW PREVENTER
FSD	NEW MOTORIZED COMBINATION FIRE AND SMOKE DAMPER	SAN	EXISTING SANITARY DRAIN TO REMAIN
V	NEW SANITARY VENT PIPE	SAN	EXISTING SANITARY DRAIN UNDER FLOOR TO REMAIN
V	EXISTING SANITARY VENT PIPE TO REMAIN	ST	EXISTING STORM DRAIN TO REMAIN
G	NEW NATURAL GAS PIPE	ST	EXISTING STORM DRAIN UNDER FLOOR TO REMAIN
G	EXISTING NATURAL GAS PIPE TO REMAIN	SAN	NEW SANITARY DRAIN
CD	NEW CONDENSATE DRAIN	SAN	NEW SANITARY DRAIN UNDER FLOOR
CD	EXISTING CONDENSATE DRAIN TO REMAIN		P-TRAP
HWS	HEATED WATER SUPPLY		EXISTING DOMESTIC COLD WATER TO REMAIN
HWS	EXISTING HEATED WATER SUPPLY TO REMAIN		EXISTING DOMESTIC HOT WATER TO REMAIN
HWR	NEW HEATED WATER RETURN		EXISTING DOMESTIC HOT WATER RECIRCULATION TO REMAIN
HWR	EXISTING HEATED WATER RETURN TO REMAIN		NEW DOMESTIC COLD WATER
CHWS	NEW CHILLED WATER SUPPLY		NEW DOMESTIC HOT WATER
F	EXISTING FIRE LINE TO REMAIN		NEW DOMESTIC HOT WATER RECIRCULATION
SP	EXISTING SPRINKLER LINE TO REMAIN		CIRCULATING PUMP
12/12-E 150	GRILLE OR REGISTER SIZE TYPE EXHAUST OR RETURN AIR CFM	12B-A 100	DIFF NECK SIZE DIFF TYPE SUPPLY AIR L/S

DRAWING SCHEDULE

DWG NO	DRAWING TITLE
M-100	MECHANICAL LEGEND, SPECIFICATIONS & DRAWING LIST
M-101	SPECIFICATIONS
M-102	SCHEDULES
M-103	DETAILS
M-104	CONTROLS & CONTROLS DETAILS
M-105	CONTROLS & CONTROLS DETAILS
M-200	MECHANICAL ROOM 201 – DEMO/NEW
M-201	MECHANICAL ROOM 169 – DEMO/NEW
M-202	SOUTH CLASSROOMS – DEMO/NEW
M-300	FIRST FLOOR PLAN – NEW CONTROLS AND MECHANICAL LAYOUT
M-400	ROOF PLAN – HVAC
M-500	SCHEMATICS

RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

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01	ISSUED FOR TENDER	ME	12/17/25

REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

Project No: 25-14

Scale:	AS NOTED
Drawn by:	GPC
Checked by:	ME
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

TITLE:

MECHANICAL LEGEND, SPECIFICATIONS, SCHEDULES & DRAWING LIST

DDSB Ignite Learning

DRAWING No:

M-100

ACCEPTABLE INSULATION MANUFACTURERS ARE OWENS CORNING CANADA, JOHNS MANVILLE, MANSON INSULATION INC. KNAUF FIBER GLASS AND CERTAINTEED.

PROVIDE INSULATION AND COVERS IN STRICT ACCORDANCE WITH AUTHORITIES GOVERNING COMBUSTIBILITY AND FIREPROOFING OF MATERIALS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

PROVIDE NON-COMBUSTIBLE INSULATION, JACKETS AND FINISHES HAVING A FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 OR LESS, MEETING CAN/ULC S-102 REQUIREMENTS.

ATTAIN A COMPLETE AND CONTINUOUS VAPOUR BARRIER OVER INSULATION APPLIED TO COLD AND DUAL TEMPERATURE PIPING, SHEET METAL AND EQUIPMENT. USE EITHER FACTORY APPLIED VAPOUR BARRIER JACKET OF FIELD APPLIED REINFORCED FOIL FLAME RESISTANT KRAFT VAPOUR BARRIER JACKET. APPLY TO PIPING,FITTINGS, VALVES AND INLINE COMPONENTS, SHEET METAL AND FITTINGS AND EQUIPMENT. SEAL LONGITUDINAL AND CIRCUMFERENTIAL LAPS WITH CHILDERS CP82 OR BAKOR 230-39 ADHESIVE. IF VAPOUR BARRIER JACKET IS NOT LAPPED, SEAL JOINTS WITH SELF-ADHERING 4" WIDE PLAIN ALUMINIUM FOIL TAPE, OR ADHERE 4" WIDE ALUMINIUM FOIL TAPE WITH CHILDERS CP82 OR BAKOR 230-39 ADHESIVE. JACKETING WITH SELF-ADHESIVE LAPS AND SELF-ADHESIVE BARRIER TAPE WILL BE AN ACCEPTABLE ALTERNATIVE CLOSURE SYSTEM.

PROVIDE INSULATION MATERIALS WITH A MINIMUM THERMAL CONDUCTIVITY OF 0.24BTU.IN/(HR. SQ.FT'F) AT 100'F MEAN TEMPERATURE.

ON HOT PIPING APPLICATIONS, HOLD INSULATION IN PLACE WITH FLARE TYPE STAPLES (OUTWARD CLINCH).

ON COLD PIPING APPLICATIONS, APPLY VAPOUR BARRIER JACKET OVER INSULATION AND SEAL LONGITUDINAL AND CIRCUMFERENTIAL LAPS WITH CHILDERS CP82 OR BAKELITE 230-39 ADHESIVE. SEAL ALL PIPE TERMINATIONS, INCLUDING FITTINGS, WALL PENETRATIONS AND PIPE SUPPORTS WITH VAPOUR BARRIER MASTIC. FOR CHILLED WATER SYSTEMS PROVIDE VAPOUR SEAL PIPE TERMINATIONS EVERY FOUR PIPE SECTIONS.

APPLY PIPE INSULATION OVER 1-1/2" THICKNESS IN TWO LAYERS WITH JOINTS STAGGERED.

INSULATE FITTINGS WITH FABRICATED MITERED OR PREFORMED SECTIONS OF SPECIFIED INSULATION.

INSULATE OVER FLANGES AND MECHANICAL COUPLINGS WITH SPECIFIED INSULATION AND THICKNESS, SIZED TO SUIT FLANGE DIAMETERS. FILL SPACES BETWEEN INSULATION AND ADJOINING PIPE INSULATION WITH SIMILAR MATERIAL.

INSULATE VALVES AND INLINE COMPONENTS WITH FLEXIBLE INSULATION DENSITY (3/4 LBS./CU.FT.) COMPRESSED NOT MORE THAN 50% OF ORIGINAL THICKNESS. BUILD UP TO SPECIFIED THICKNESS WITH APPROVED ASBESTOS FREE FINISHING CEMENT.

DO NOT INSULATE TERMINAL UNIT AUTOMATIC CONTROL VALVES INSTALLED IN HOT PIPING. DO NOT INSULATE TERMINAL UNIT AUTOMATIC CONTROL VALVES WHICH ARE INSTALLED IN COLD PIPING AND WHICH ARE LOCATED OVER CONDENSATE DRAIN PANS.

UNDER ALL HANGERS USED ON CHILLED WATER AND DOMESTIC COLD WATER, PROVIDE AN INSERT BETWEEN SUPPORT SHIELD AND PIPING FOR PIPING 1-1/2"Ø OR LARGER.

PROVIDE THE FOLLOWING PIPE INSULATION TYPE AS INDICATED IN THE PIPE INSULATION TABLE BELOW.

'TYPE P1' OWENS CORNING 850 PIPE INSULATION, JOHNS MANVILLE MICRO-LOK AP-T PLUS FIBERGLAS PIPE INSULATION, MANSON FIBERGLAS PIPE INSULATION OR KNAUF PIPE INSULATION WITH FACTORY APPLIED ALL PURPOSE VAPOUR BARRIER JACKET WHERE SCHEDULED.

DUTY	INSULATION TYPE	THICKNESS	VAPOUR BARRIER
BUILDING HOT WATER			
2" AND LESS	P-1	1"	NO
2-1/2" AND LARGER	P-1	1-1/2"	NO
HORIZONTAL CONDENSATE DRAINS			
ALL PIPE SIZES	P-1	1/2"	YES
REFRIGERANT SUCTION PIPE			
ALL SIZES	P-1	1"	YES

SHEET METAL INSULATION

PROVIDE INSULATION WITH A MINIMUM THERMAL RESISTANCE OF 0.25 BTU.IN/HR. SQ.FT 'F AT 75'F MEAN TEMPERATURE.

APPLY VAPOUR BARRIER OVER INSULATION ON COLD TEMPERATURE DUCTWORK – FOR NEW AND EXISTING DUCTWORK.

CIRCULAR SILENCERS AND ACOUSTIC PLENUMS NEED NOT BE EXTERNALLY INSULATED.

DUCTWORK AND CASINGS LINED WITH ACOUSTIC INSULATION 1" OR MORE IN THICKNESS NEED NOT BE EXTERNALLY INSULATED.

PROVIDE THE FOLLOWING DUCTWORK INSULATION TYPE AS INDICATED IN THE DUCTWORK INSULATION TABLE BELOW.

'TYPE D1' OWENS CORNING RIGID VAPOUR SEAL DUCT INSULATION, JOHN MANSVILLE 814 SPIN-GLAS WITH FSK FACING, MANSON SPIN-GLAS RIGID INSULATING BOARD WITH REINFORCED FOIL FACING, OR KNAUF RIGID INSULATION BOARD WITH FSK FACING. DENSITY SHALL BE NOT LESS THAN 3LBS./CU.FT. IMPALE ON MECHANICALLY FASTENED PINS LOCATED AT NOT GREATER THAN 12" CENTERS. SECURE WITH SPEED WASHERS. BUTT JOINTS TIGHTLY TOGETHER AND SEAL WASHERS, BREAKS AND JOINTS WITH SELF-ADHERING 4" WIDE PLAIN ALUMINUM TAPE, OR ADHERE FOIL WITH CHILDERS CP82 OR BAKELITE 230-39 ADHESIVE.

'TYPE D2' OWENS CORNING FLEXIBLE DUCT INSULATION, JOHNS MANVILLE MICROLITE TYPE 75 DUCT WRAP, MANSON MICROLITE INSULATION OR KRAFT DUCT WRAP, (3/4LB./CU.FT.) DENSITY WITH FACTORY APPLIED REINFORCED FOIL FACING. ADHERE INSULATION TO DUCT SURFACE WITH CHILDERS CP82 OR BAKELITE 230-39 ADHESIVE, WHICH SHALL BE APPLIED IN STRIPS 6" WIDE AT NOT GREATER THAN 12" CENTERS. BUTT EDGES OF INSULATION TIGHTLY TOGETHER, AND SEAL BREAKS AND JOINTS OF FACING WITH SELF-ADHERING 4" WIDE ALUMINUM TAPE OR ADHERE FOIL WITH CHILDER CP82 OR BAKELITE 230-39 ADHESIVE.

DUTY	INSULATION TYPE	THICKNESS	VAPOUR BARRIER
PANELS BEHIND UNUSED PORTION OF LOUVRES	D-1	2"	YES
FINAL 10' OF EXHAUST DUCT BEFORE EXITING BUILDING	D-1	1"	YES
EXPOSED DUCTWORK	D-1	1"	YES
DUCTWORK OUTSIDE OF BUILDING OR EXPOSED TO WEATHER	D-1	2"	YES
CONCEALED DUCTWORK UP TO TERMINAL CONTROL UNITS	D-2	1"	YES
CONCEALED DUCTWORK FROM AIR TERMINAL CONTROL UNIT DISCHARGE TO AIR TERMINALS EXCLUDING FLEXIBLE DUCTWORK.	D-2	1"	YES

PROTECT THE WORK OF THIS TRADE FROM BEING DEFACED BY OTHER TRADES. MAKE GOOD ANY DAMAGE AND LEAVE IN PERFECT CONDITION, READY FOR FINAL PAINTING.

APPLY INSULATION OVER CLEAN DRY SURFACES, FIRMLY BUTTING ALL SECTIONS TOGETHER.

FIRE PROTECTION SYSTEM

SYSTEM SHALL BE IN COMPLIANCE WITH NFPA, GOVERNING AUTHORITIES, AODA AND OWNER'S/LANDLORD'S INSURANCE UNDERWRITER. ALL COMPONENTS SHALL BE ULC LISTED.

CONTROLS

EXISTING CONTROLS WITHIN SCHOOL IS RELIABLE CONTROLS. CONTACT ADRIAN CECCHETTO (ADRIANC@SETPOINT.CA) AT SETPOINT BUILDING AUTOMATION INC. RE: CONTROLS WORK.

MOUNTING HEIGHT SHALL BE 1200 MM [4 FT. 0 IN.] FROM FINISHED FLOOR. COORDINATE LOCATION WITH DDSB. DO NOT INSTALL IN VISCINITY OF ELECTRICAL LIGHTING DIMMERS.

COORDINATE FINAL LOCATION OF THERMOSTATS WITH DDSB WITHIN 1000MM (40 IN) OF LOCATION SHOWN. ALL RELOCATIONS OUTSIDE OF THIS RANGE SHALL BE REVIEWED WITH THE CONSULTANT.

CLEAN AND RECALIBRATE ALL EXISTING THERMOSTATS UPON COMPLETION OF CONSTRUCTION. SUBMIT REPORT THAT THIS WORK WAS COMPLETED.

PROVIDE ALL NECESSARY EMT CONDUIT, FITTINGS AND WIRE TO PROVIDE A COMPLETE AND OPERATING CONTROL SYSTEM. HARD WIRE ALL ELECTRICAL CONTROL DEVICES INTO THE ASSOCIATED SYSTEM MAGNETIC STARTER. PROVIDE POWER TO CONTROL PANEL FROM THE NEAREST NORMAL POWER ELECTRICAL DISTRIBUTION PANEL.

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TITLE:

SPECIFICATIONS

DDSB Ignite Learning

DRAWING No:

M-101

HEAT EXCHANGER SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	COLD SIDE					HOT SIDE						WEIGHT	CAPACITY	NUMBER OF PLATES	REMARKS
				FLUID	EFT	LFT	FLOW	PRESS. DROP	FLUID	EWT	LWT	FLOW	PRESS. DROP					
					°F	°F	GPM	PSI		°F	°F	GPM	PSI		LBS	MBH		
HX-2	BELL & GOSSETT	AP19	PLATE & FRAME	35% P.G.	140	160	60	3.6	WATER	170	150	57	3.5		510	561,758	30	PLATE MATERIAL TO BE 304 S/S

BASIS OF DESIGN: XYLEM-BELL GOSSETT. ACCEPTABLE ALTERNATES: ARMSTRONG, ALFA LAVAL

CONDENSER UNIT SCHEDULE

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	REFRIGERANT TYPE	REFRIGERANT CHARGE	TOTAL REFRIGERATION EFFECT	ELECTRICAL	FLA	MCA	MOCP	WEIGHT	REMARKS
						LBS	BTU/HR	V/PH/HZ	AMPS	AMPS	AMPS	LBS	
CDU-1	ROOF	AHU-1	DAIKIN	RCS020D	R410A	18.5	263,672	208/3/60		93.5	125	1,895	

COOLING COIL SCHEDULE

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	AIRFLOW	EXTERNAL STATIC PRESSURE	FAN MOTOR	MIN. OUTSIDE AIR	COOLING					ELECTRICAL	FLA	MCA	MOCP	REMARKS
									TYPE	TOTAL	SENSIBLE	EAT (DB/WB)	LAT (DB/WB)					
					CFM	IN. WC.	HP	CFM		°F	°F	DEG. F	DEG. F	V/PH/HZ	AMPS	AMPS	AMPS	
AHU-1 (EXISTING)	MECH RM. 169	NORTH CLASSROOMS	ENG. AIR	EXISTING	8,500	EXISTING		4,250	PACKAGED DX HEAT PUMP	263,000	196,000	77.5/65	56.4/54.8	EXISTING				AHU-1 IS AN EXISTING UNIT WITH PROVISION FOR FUTURE DX COOLING COIL WHICH IS TO BE INSTALLED DURING THIS PROJECT SCOPE.

AHU SCHEDULE

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	AIRFLOW	EXTERNAL STATIC PRESSURE	FAN MOTOR	MIN. OUTSIDE AIR	HEATING							ELECTRICAL	FLA	MCA	MOCP	WEIGHT	REMARKS
									HOT WATER HEAT CAPACITY	FLUID	FLOW RATE	PRESS. DROP	EAT	LAT	EWT	LWT						
					CFM	IN. WC.	HP	CFM	BTU/HR		GPM	FT. H2O	DEG. F	DEG. F	DEG. F	DEG. F	V/PH/HZ	AMPS	AMPS	AMPS	LBS	
AHU-4	MECH RM. 201	GYM	DAIKIN	CAH008GHDM	4,500	1	3	2,200	224,600	35% P.G.	24.1	5	34	81.7	160	140	575/3/60	3.4			1,300	

RTU SCHEDULE

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	DISCHARGE	RETURN	AIRFLOW	EXTERNAL STATIC PRESSURE	SUPPLY FAN MOTOR	VFD	MIN. OUTSIDE AIR	EXTERNAL STATIC PRESSURE	EXHAUST FAN MOTOR	COOLING						HEATING (FROM HEAT PUMP)					REHEAT COIL (IN MECH. RM.)									ELECTRICAL	FLA	MCA	MOCP	WEIGHT	REMARKS
														TYPE	TOTAL	SENSIBLE	EAT (DB/WB)	LAT (DB/WB)	AMBIENT AIR TEMP	TOTAL CAPACITY	REFRIGERANT	EAT	LAT	AMBIENT AIR TEMP	TAG	HOT WATER HEAT CAPACITY	FLUID	FLOW RATE	PRESS. DROP	EAT	LAT	EWT	LWT						
							CFM	IN. WC.	HP		CFM	IN. WC.	HP		BTU/HR	BTU/HR	DEG. F	DEG. F	DEG. F	BTU/HR		DEG. F	DEG. F	DEG. F		BTU/HR		GPM	FT. H2O	DEG. F	DEG. F	DEG. F	DEG. F	V/PH/HZ	AMPS	AMPS	AMPS	LBS	
RTU-3	ROOF	SOUTH CLASSROOMS	DAIKIN	DPSH20B	HORIZONTAL	HORIZONTAL	6,800	1.5	7.5	YES	2,800	0.5	4.3	PACKAGED DX HEAT PUMP	234,141	179,115	81.2/67.7	55.3/55.3	95	233,000	R32	70	100.6	47	RHC-RTU-3	337,450	35% P.G.	34.8	13.4	41	86.4	160	140	575/3/60	47.3	51.4	60	3,870	24" ROOF CURB FOR RTU. HOT WATER REHEAT COIL TO BE LOCATED IN MECH. RM. 201

EXPANSION TANK SCHEDULE

TAG	DUTY	MODEL	TANL VOLUME	ACCEPTANCE VOLUME	FACTORY PRE-CHARGE	MAX. WORKING PRESSURE	DIAMETER	HEIGHT	REMARKS
			US GAL.	US GAL.	PSI	PSI	IN.	IN.	
ET-1	GLYCOL LOOP	D-15	7.8	6.3	12	125	12	19	VERTICAL

BASIS OF DESIGN: BELL AND GOSSET. ACCEPTABLE ALTERNATES: AMTROL, EXPANFLEX , WATTS

PUMP SCHEDULE

TAG	DUTY	OPERATION	MODEL	CAPACITY	HEAD	MOTOR	ELECTRICAL	RPM	REMARKS
				GPM	FT	PSI	V/PH/HZ		
P-5	GLYCOL CIRCULATOR	DUTY/STANDBY	ECM XL	60	30	2	208/1/60		COMPLETE WITH ECM MOTOR
P-6	GLYCOL CIRCULATOR	DUTY/STANDBY	ECM XL	60	30	2	208/1/60		COMPLETE WITH ECM MOTOR

BASIS OF DESIGN: XYLEM - BELL AND GOSSETT. ACCEPTABLE ALTERNATES: ARMSTRONG

REHEAT COIL SCHEDULE

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	FLUID	TOTAL CAPACITY	AIRFLOW	FLOW RATE	PRESS. DROP	EAT	LAT	EWT	LWT	REMARKS
						BTU/HR	CFM	GPM	FT.H2O	DEG. F	DEG. F	DEG. F	DEG. F	
RHC-1	RM. 117	RM. 117	DAIKIN	5BS0801B	WATER	22,500	800	2.2	1.7	65	80	180	160	TO FIT EXISTING 24"x28" DUCT - CONTRACTOR TO CONFIRM SIZE ON SITE
RHC-RTU-3	MECH. RM. 201	RTU-3	REFER TO RTU SCHEDULE											

AIR TERMINAL SCHEDULE

TAG	SIZE	MANUFACTURER	TYPE	DESCRIPTION	FINISH	OPTIONS/ ACCESSORIES
A	24" x 24"	EH PRICE	SCD	SQUARE CONE DIFFUSER	B12	T-BAR MOUNTED
B	24" x 12"	EH PRICE	80	EGG CRATE RETURN	B12	CEILING MODULE FOR TBAR MOUNTING

ACCEPTABLE ALTERNATES: NAILOR, TITUS, METAL AIRE

WALLFIN SCHEDULE

TAG	LOCATION	MANUFACTURER	MODEL	ENCLOSURE TYPE	ENCLOSURE HEIGHT	FIN LENGTH	ROWS	HEATING CAPACITY	FLUID	EWT	LWT	REMARKS
					IN	IN	QTY	BTU/HR		DEG. F	DEG. F	
WF	SEE PLANS	SIGMA	SWE-24S	44C075*	24	84	1	800	WATER	180	160	ENCLOSURE TYPE, COLOUR, QUANTITY OF ROWS, ETC. TO MATCH EXISTING ONSITE. CONTYRACTOR TO CONFIRM PRIOR TO PLACING ORDER.

UH SCHEDULE

TAG	LOCATION	MANUFACTURER	MODEL	HEAT CAPACITY	AIRFLOW	EWT	LWT	POWER	AMPS	MOTOR	LWT	REMARKS
				MBH	CFM	F	F	V/PH/HZ		HP	DEG. F	
UH	RM. 201	SIGMA	015H	12.5	400	180	160	120/1/60	0.68	1/20	160	ENCLOSURE TYPE, COLOUR, QUANTITY OF ROWS, ETC. TO MATCH EXISTING ONSITE. CONTYRACTOR TO CONFIRM PRIOR TO PLACING ORDER.

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- AHU REPLACEMENT

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Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

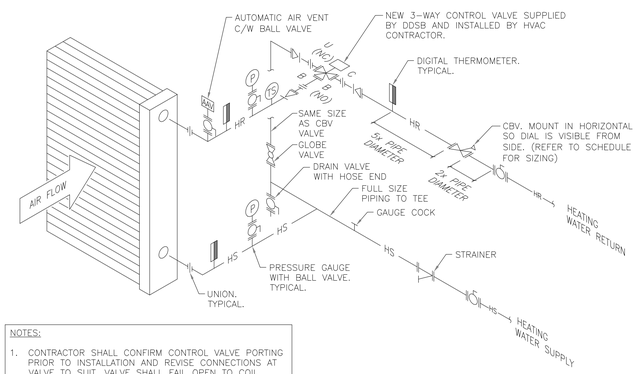
TITLE:

SCHEDULES

DDSB Ignite Learning

DRAWING No:

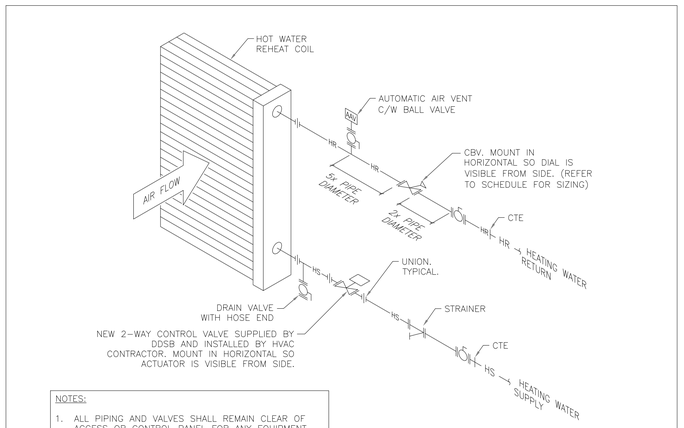
M-102



NOTES:

1. CONTRACTOR SHALL CONFIRM CONTROL VALVE PORTING PRIOR TO INSTALLATION AND REVISE CONNECTIONS AT VALVE TO SUIT. VALVE SHALL FAIL OPEN TO COIL.
2. ALL PIPING AND VALVES SHALL REMAIN CLEAR OF ACCESS TO ANY EQUIPMENT.

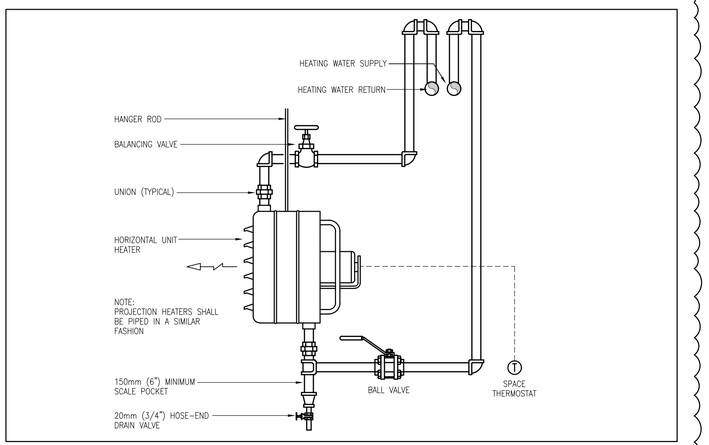
1 / M-103 AIR HANDLING UNIT HOT WATER HEATING COIL DETAIL C/W 3-WAY VALVE
N.T.S.



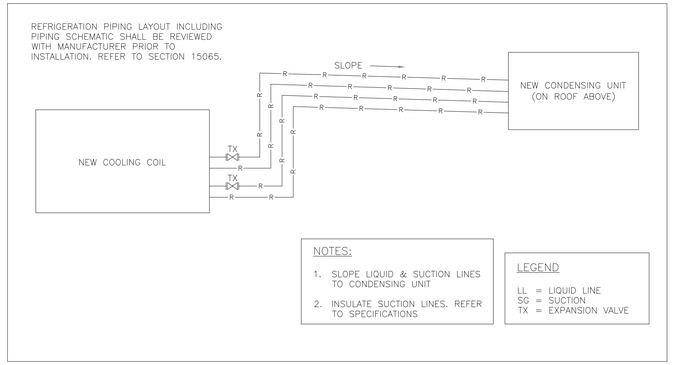
NOTES:

1. ALL PIPING AND VALVES SHALL REMAIN CLEAR OF ACCESS OR CONTROL PANEL FOR ANY EQUIPMENT.
2. ALLOW FOR THE RE-INSULATION OF ALL REHEAT COIL PIPING UP TO 5" AWAY FROM THE COIL

2 / M-103 HOT WATER REHEAT COIL DETAIL C/W 2-WAY VALVE
N.T.S.



9 / M-103 UNIT HEATER PIPING
NTS



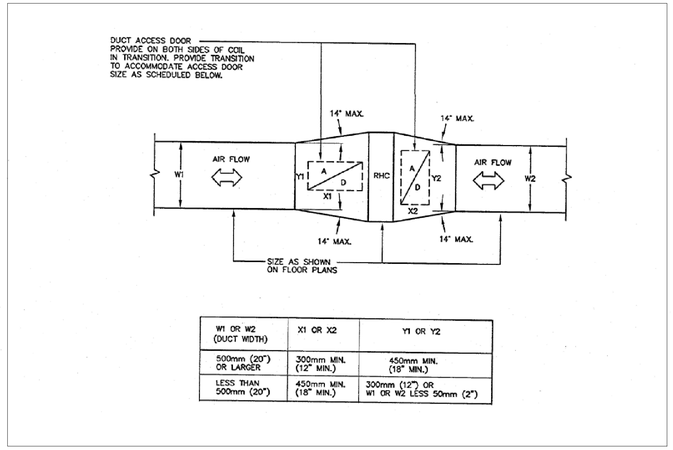
NOTES:

1. SLOPE LIQUID & SUCTION LINES TO CONDENSING UNIT
2. INSULATE SUCTION LINES. REFER TO SPECIFICATIONS

LEGEND

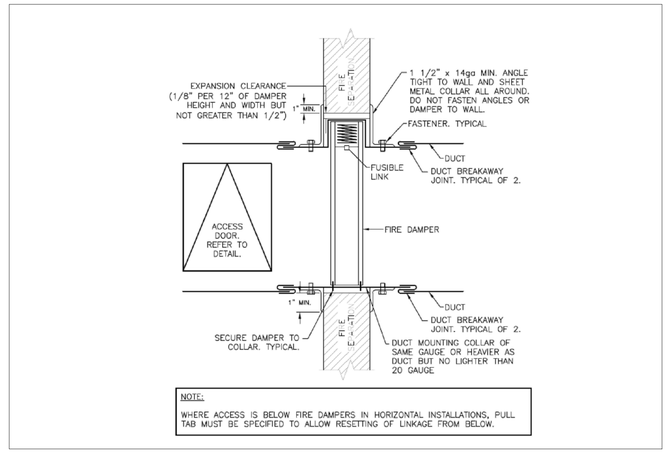
LL = LIQUID LINE
SG = SUCTION
TX = EXPANSION VALVE

3 / M-103 REFRIGERATION PIPING DETAIL
N.T.S.



W1 OR W2 (DUCT WIDTH)	X1 OR X2	Y1 OR Y2
500mm (20") OR LARGER	300mm MIN. (12" MIN.)	450mm MIN. (18" MIN.)
LESS THAN 500mm (20")	450mm MIN. (18" MIN.)	300mm (12") OR W1 OR W2 LESS 50mm (2")

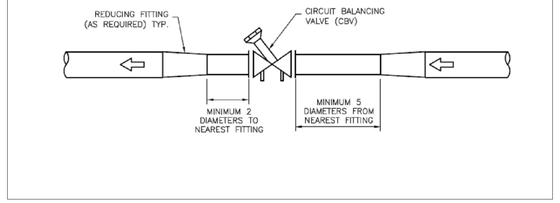
4 / M-103 REHEAT COIL MOUNTING DETAIL (PLAN VIEW)
N.T.S.



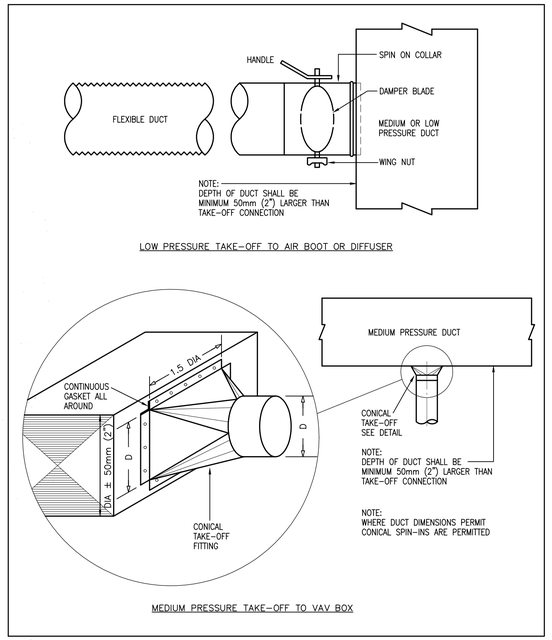
NOTE:

WHERE ACCESS IS BELOW FIRE DAMPERS IN HORIZONTAL INSTALLATIONS, PULL TAB MUST BE SPECIFIED TO ALLOW RESETTING OF LINKAGE FROM BELOW.

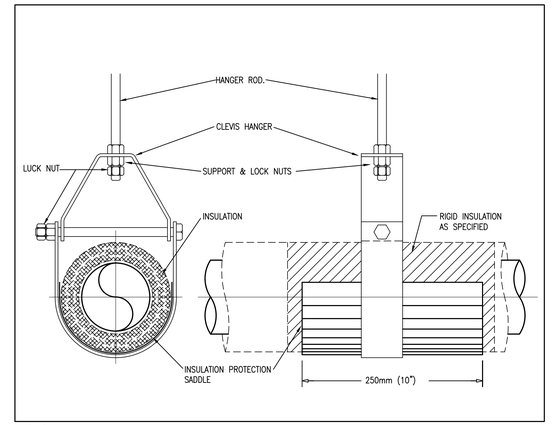
6 / M-103 FIRE DAMPER DETAIL
N.T.S.



5 / M-103 CIRCUIT BALANCING VALVE INSTALLATION DETAIL
N.T.S.



7 / M-103 DUCT TAKE-OFF
NTS



8 / M-103 PIPE HANGER
NTS

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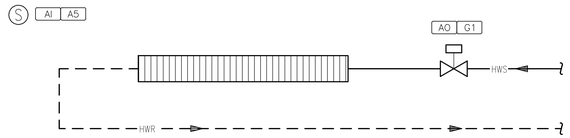
DETAILS

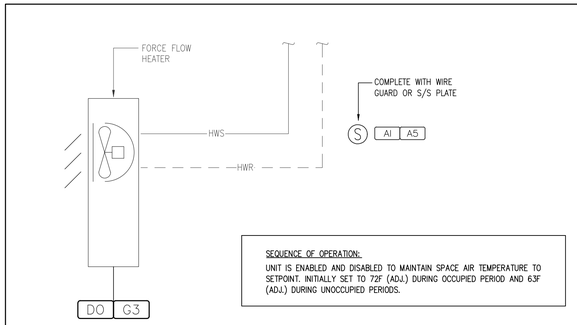
DDSB Ignite Learning

DRAWING No:

M-103



1 M-104 WALLFIN/CONVECTOR – CONTROL SCHEMATIC
NTS



3 M-104 CUH/FFH – CONTROL SCHEMATIC
NTS

CONTROL LEGEND

SENSOR AND INSTRUMENT CODES

A1 TEMPERATURE SENSOR, DUCT MOUNTED
A2 TEMPERATURE SENSOR, PIPE MOUNTED
A3 TEMPERATURE SENSOR, AVERAGING ELEMENT
A4 TEMPERATURE SENSOR, OUTSIDE AIR TYPE
A5 TEMPERATURE SENSOR, ROOM TYPE
A6 TEMPERATURE SENSOR, LOW LIMIT
A7 TEMPERATURE SENSOR, HIGH LIMIT

B1 HUMIDITY SENSOR, DUCT MOUNTED
B2 HUMIDITY SENSOR, ROOM TYPE
B3 HUMIDITY SENSOR, OUTSIDE AIR TYPE
B5 HUMIDITY SENSOR, HIGH LIMIT TYPE

C1 DIFFERENTIAL PRESSURE
C2 PRESSURE SENSOR
C3 STATIC PRESSURE SENSOR
C4 PRESSURE SWITCH
C5 WATERFLOW SWITCH
C6 DAMPER STATUS SWITCH
C7 AIR VOLUME
C8 PULSED OUTPUT FROM POWER METER
C9 PULSED OUTPUT FROM WATER METER
C10 EMMERSION HEATER ON/OFF
C11 CURRENT SENSOR
C12 Co2 SENSOR

CO2 CARBON DIOXIDE SENSOR
CO CARBON MONOXIDE SENSOR

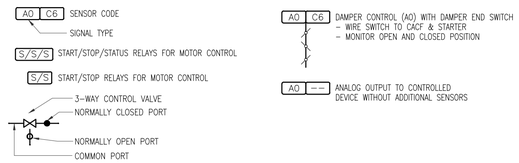
D1 MOTOR CONTROL RELAYS, START/STOP/STATUS TYPE
D2 CURRENT TRANSFORMERS AND RELAYS
D3 MOTOR STATUS CONTACTS
D4 DIFFERENTIAL PRESSURE SWITCH
D5 LEVEL SWITCH, TANK MOUNTED
D6 LEVEL SWITCH, FLOAT TYPE
D7 DIFFERENTIAL PRESSURE TRANSMITTER
D8 CURRENT SENSITIVE RELAY
D9 LEVEL TRANSMITTER
K1 WATERFLOW TRANSMITTER, ANNUBAR TYPE
K2 WATERFLOW TRANSMITTER, TURBINE TYPE
K3 AIRFLOW TRANSMITTER, DIGITRON TYPE
K4 AIRFLOW TRANSMITTER, ANNUBAR AIRBAR
K5 ENERGY METER, DELTA T AND FLOW
K6 GAS DETECTOR

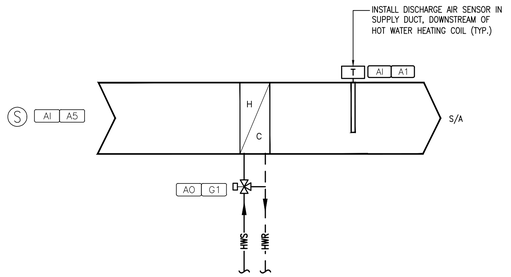
F1 INTERFACE CONTACT TO CACF
F2 VIBRATION DETECTOR
F3 INTERFACE CONTACT
F4 INTERFACE TO HOOD SUPPRESSION

G1 OUTPUT TO VALVE
G2 OUTPUT TO DAMPER
G3 START/STOP
G4 OUTPUT TO VSD
G5 FAULT INPUT
G6 STATUS
G7 VIBRATION CUT-OUT
G8 ELECTRICAL POWER CONSUMPTION

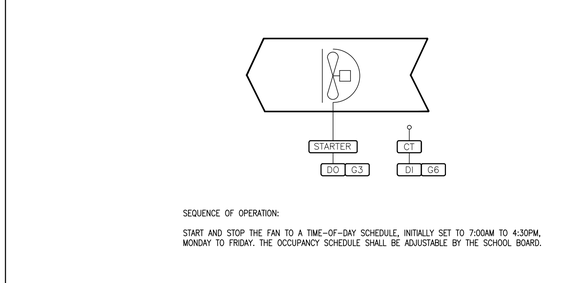
ABBREVIATIONS

ADJ – ADJUSTABLE
AI – ANALOG INPUT
AO – ANALOG OUTPUT
BAS – BUILDING AUTOMATION SYSTEM
CACF – CENTRAL ALARM & CONTROL FACILITY
CHWS – CHILLED WATER SUPPLY
CHWR – CHILLED WATER RETURN
CLG – COOLING
CWS – CONDENSER WATER SUPPLY
CWR – CONDENSER WATER RETURN
DI – DIGITAL INPUT
DO – DIGITAL OUTPUT
DP – DIFFERENTIAL PRESSURE
DS – DAMPER END SWITCH
EAT – EXHAUST AIR TEMPERATURE
EF – EXHAUST FAN
EWT – ENTERING WATER TEMPERATURE
FPVAV – FAN POWERED VAV TERMINAL
FCS – FAN COIL SUPPLY
FCR – FAN COIL RETURN
FCU – FAN COIL UNIT
FS – FLOW SENSOR
HL – HIGH LIMIT
HWS – HEATED WATER SUPPLY
HWR – HEATED WATER RETURN
HTG – HEATING
LL – LOW LIMIT
LWT – LEAVING WATER TEMPERATURE
MAT – MIXED AIR TEMPERATURE
OARH – OUTSIDE AIR RELATIVE HUMIDITY
OAT – OUTSIDE AIR TEMPERATURE
RA – RETURN AIR
RARH – RETURN AIR RELATIVE HUMIDITY
RAT – RETURN AIR TEMPERATURE
RF – RETURN FAN
RTT – RUN TIME TOTALIZATION
SA – SUPPLY AIR
SARH – SUPPLY AIR RELATIVE HUMIDITY
SAT – SUPPLY AIR TEMPERATURE
SF – SUPPLY FAN
SP – STATIC PRESSURE
ST – SPACE TEMPERATURE
STP – SETPOINT
STS – SPACE TEMPERATURE SENSOR
TUC – TERMINAL UNIT CONTROLLER
VAV – VARIABLE AIR VOLUME

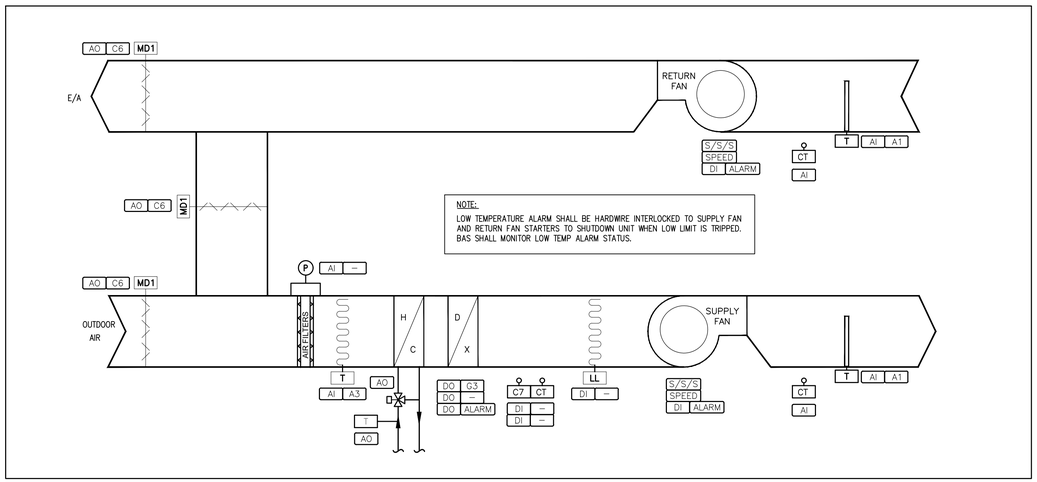




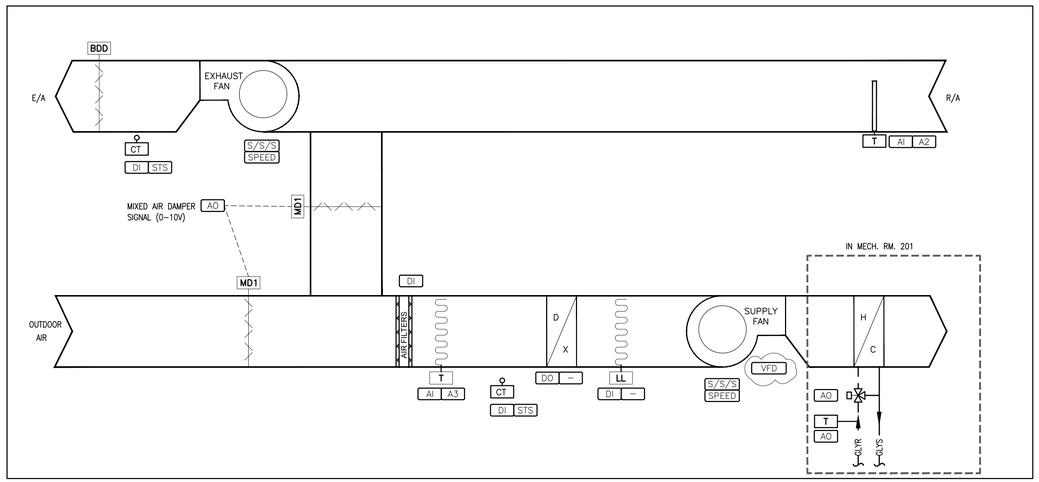
2 M-104 REHEAT CONTROL SCHEMATIC
NTS



4 M-104 EXHAUST FAN CONTROL SCHEMATIC
NTS



5 M-104 AHU-2 (LIBRARY) SYSTEM CONTROL SCHEMATIC
N.T.S.



6 M-104 RTU-3 SYSTEM CONTROL SCHEMATIC
N.T.S.

RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

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02	ISSUED FOR MECH ADD-001	ME	12/23/25
01	ISSUED FOR TENDER	ME	12/17/25

REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S. - AHU REPLACEMENT

Project No: 25-14

Scale:	AS NOTED
Drawn by:	GPC
Checked by:	ME
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

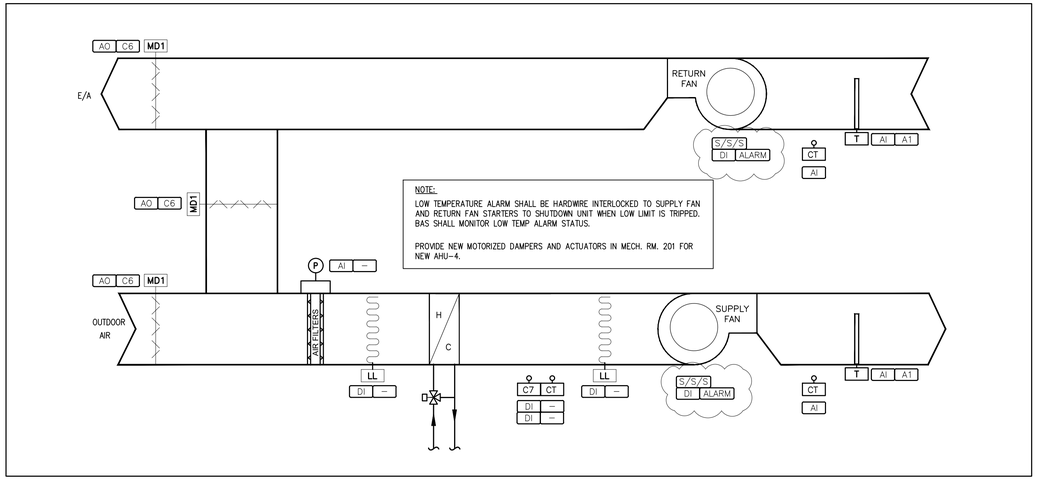
TITLE:

CONTROLS & CONTROL DETAILS

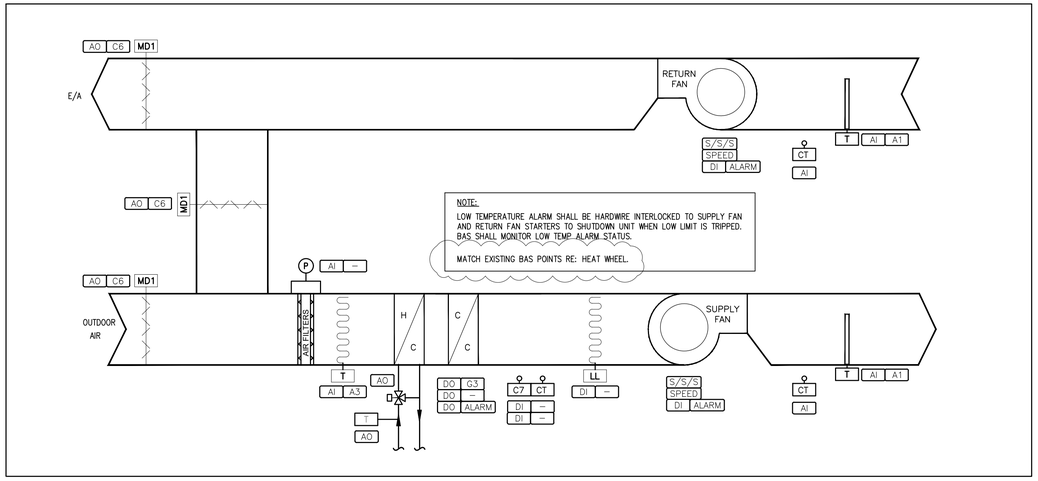
DDSB Ignite Learning

DRAWING No:

M-104



1 / M-105 AHU-4 (GYM) CONTROL SCHEMATIC
N.T.S.



2 / M-105 AHU-1 (LIBRARY) SYSTEM CONTROL SCHEMATIC
N.T.S.

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MECHANICAL BUILDING SERVICES

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- AHU REPLACEMENT

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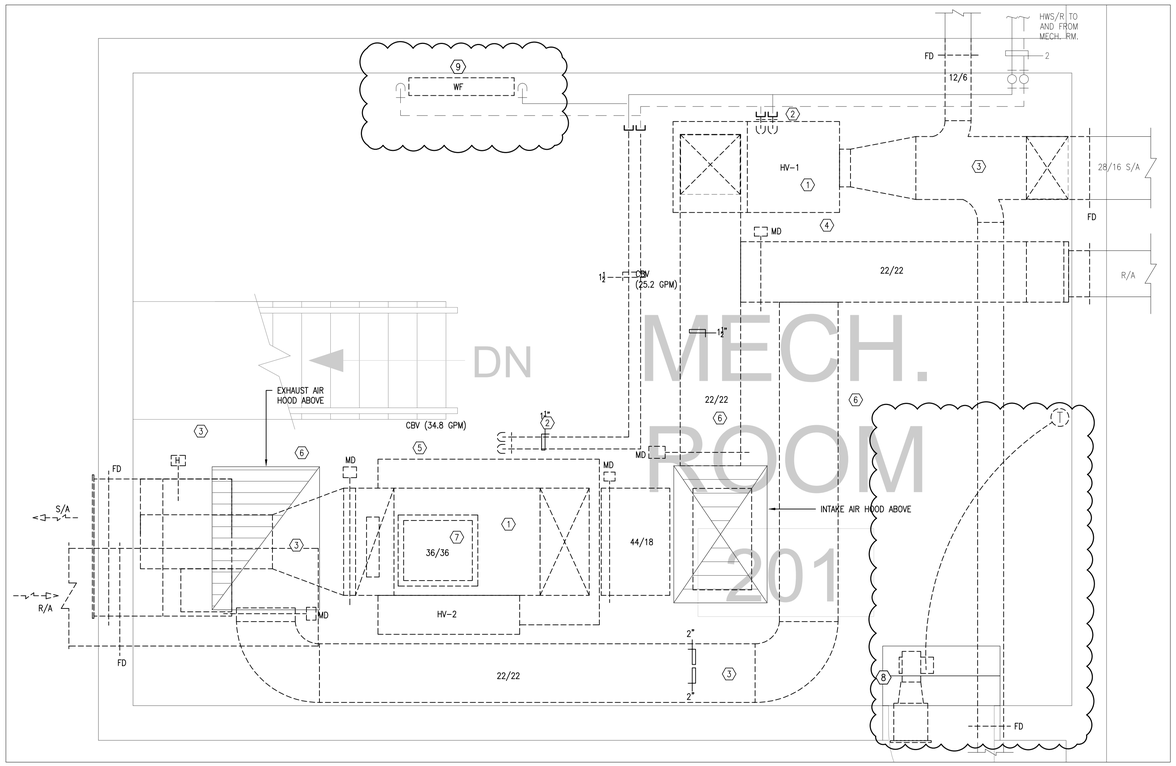
TITLE:

CONTROLS & CONTROL DETAILS

DDSB Ignite Learning

DRAWING No:

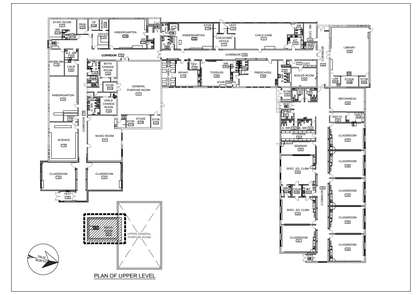
M-105



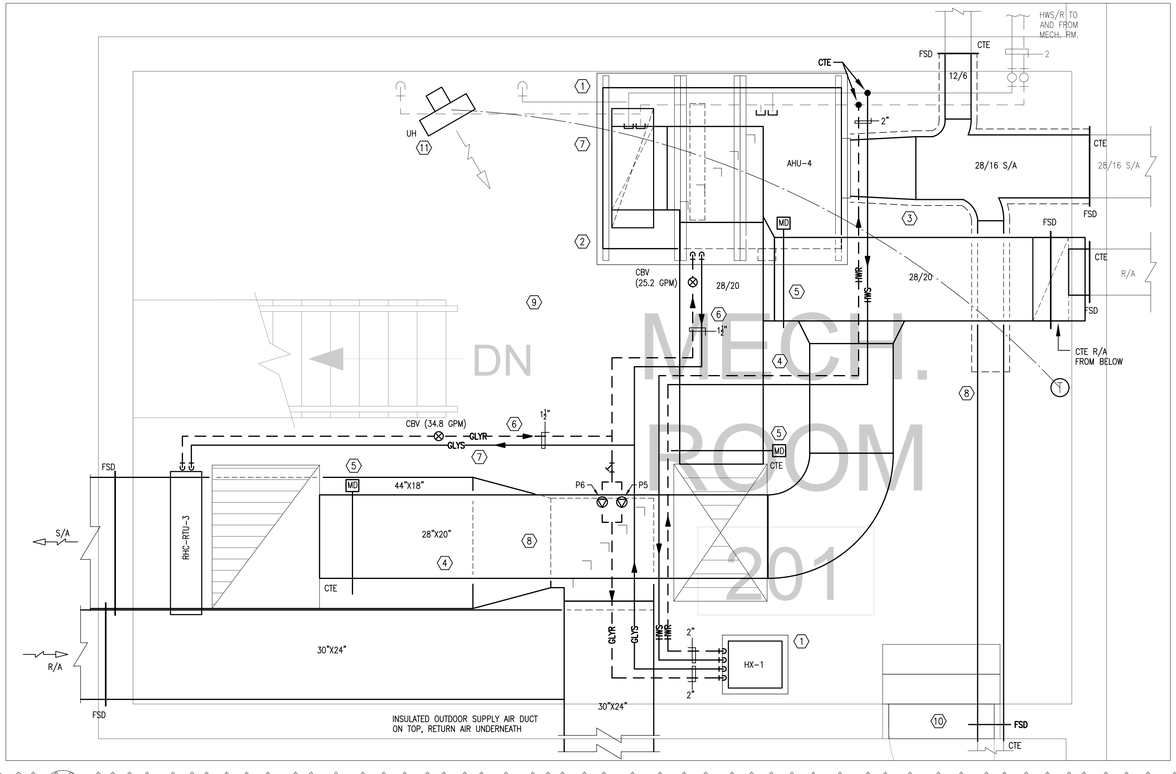
1 MECH. RM. 201 - DEMO
M-200 SCALE: 1/2"=1'-0"

KEYED NOTES:

1. REMOVE EXISTING AIR HANDLING UNIT COMPLETE WITH DUCT CONNECTIONS, HANGERS, SUPPORTS, AND ALL ACCESSORIES. REMOVE EXISTING CONTROLS AND CONTROL WIRING ASSOCIATED.
2. REMOVE EXISTING HEATING PIPING TO AHU, INCLUDING ALL VALVES AND ACCESSORIES AS SHOWN ON DRAWINGS. TURN CONTROL VALVES AND ACTUATORS OVER TO DDSB.
3. REMOVE SUPPLY AIR AND RETURN AIR DUCTWORK (AS SHOWN) UP TO FIRE DAMPERS AT PENETRATION OF MECHANICAL ROOM WALLS. REMOVE MOTORIZED DAMPERS, REMOVE FIRE DAMPERS.
4. REMOVE EXISTING HOUSEKEEPING PAD FOR HV-1. MAKE FLOOR LEVEL AS REQUIRED TO SUIT NEW HOUSEKEEPING PAD.
5. REMOVE EXISTING HOUSEKEEPING PAD FOR HV-2. PATCH FLOOR AND MAKE LEVEL.
6. REMOVE EXISTING OUTSIDE AIR AND EXHAUST AIR DUCTWORK UP FROM AHU, THROUGH MECHANICAL ROOM, AND UP TO PENETRATION AT ROOF COMPLETE WITH DAMPERS, ACTUATORS, AND CONTROL WIRING. EXISTING ROOF HOODS AND INITIAL DUCTWORK PLENUM BEFORE DAMPERS TO REMAIN AND BE REUSED.
7. REMOVE ANY REMAINING HUMIDIFIER COILS, COMPONENTS, PIPING, WIRING, ETC. FROM ABANDONED HUMIDIFIER.
8. REMOVE EXISTING FLOOR MOUNT EXHAUST FAN AND ASSOCIATED DUCTWORK & CONTROLS.
9. REMOVE EXISTING WALLFIN HEATER.



KEY PLAN



2 MECH. RM. 201 - NEW
M-200 SCALE: 1/2"=1'-0"

KEYED NOTES:

1. PROVIDE NEW 4" CONCRETE HOUSEKEEPING PAD FOR HEAT EXCHANGER. PAINT ALL CONCRETE PADS WITH YELLOW PAINT ON SIDES AND TOP EDGE (MIN. 12"). EXTEND 4" HOUSEKEEPING PAD AS REUIRED TO ACCOMODATE NEW AHU-4.
2. SUPPLY AND INSTALL NEW AHU-4 TO SERVE THE MULTI-PURPOSE ROOM AND ADJACENT AREAS. CONTRACTOR TO TRANSPORT ALL SECTIONS TO MECHANICAL ROOM AND ASSEMBLE/INSTALL ON HOUSKEEPING PAD. CONTRACTOR IS RESPONSIBLE FOR PROTECTING FLOORS AND PATH TO MECHANICAL ROOM.
3. NEW 28" X 16" SUPPLY AIR DUCTWORK FROM AHU-4 AND SMALLER TAKEOFFS TO FSDS AT MECHANICAL ROOM WALLS. ACCOUSTICALLY LINE FIRST 10 FT. OF SUPPLY AND RETURN AIR DUCTWORK FROM UNIT.
4. OUTSIDE AIR AND EXHAUST AIR DUCTS TO BE THERMALLY INSULATED FROM OUTDOORS TO UNIT.
5. PROVIDE NEW MOTORIZED DAMPERS AND ACTUATORS (AS REQUIRED) FOR OUTSIDE AIR AND EXHAUST AIR RISERS FROM NEW AHU.
6. NEW 1-1/2" GLYCOL SUPPLY AND RETURN LINES FROM NEW HEAT EXCHANGER TO AHU-4 HEATING COIL, AND RTU-3 RHC, COMPLETE WITH NEW VALVES AND ACCESSORIES AS PER DETAIL. ENSURE LINES ARE RUN SUCH THAT ALL UNIT ACCESS DOORS CAN STILL BE OPENED. PROVIDE CBVS AS SHOWN FOR INDIVIDUAL UNIT TAKEOFFS.
7. REMOVE AND RE-USE ANY SENSORS FROM EXISTING TWO AIR HANDLING UNITS, TURN OVER ANY REMAINING SENSORS TO DDSB.
8. LABEL ALL NEW DUCTWORK WITH AIR TYPE AND DIRECTION OF FLOW ARROWS. BLACK SPRAY PAINTED STENCILS ARE ACCEPTABLE
9. REPAIR AND MAKE SMOOTH EXISTING MECHANICAL ROOM FLOOR AS REQUIRED. INCLUDE INFILL AND REPAIRS. PROVIDE WATERPROOF FINISH TO ENTIRE FLOOR AREA BY STONHARD. STONHARD WORK SHALL NOT BE DONE DURING SCHOOL HOURS.
10. PROVIDE NEW INSULATED METAL DOOR, CUSTOM SIZE OF APPROXIMATELY 36" WIDHT AND 36"-48" HEIGHT,DOOR TO HAVE METAL STAIRS WITH RAIL AND NON-SLIP TREADS FROM MECHANICAL ROOM FLOOR. STYROFOAM WITH PATIO STONES TO ACT AS LANDING OUTSIDE DOOR ON ROOF. PROVIDE DEADBOLT ON INSIDE OF DOOR FOR LOCKING PURPOSES.
11. ADD UH IN PLACE OF PREVIOUS WALLFIN. TO BE CONTROLLED BY LOCAL THERMOSTAT.

RoMar ENGINEERING
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REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

Project No: 25-14

Scale:	AS NOTED
Drawn by:	GPC
Checked by:	ME
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

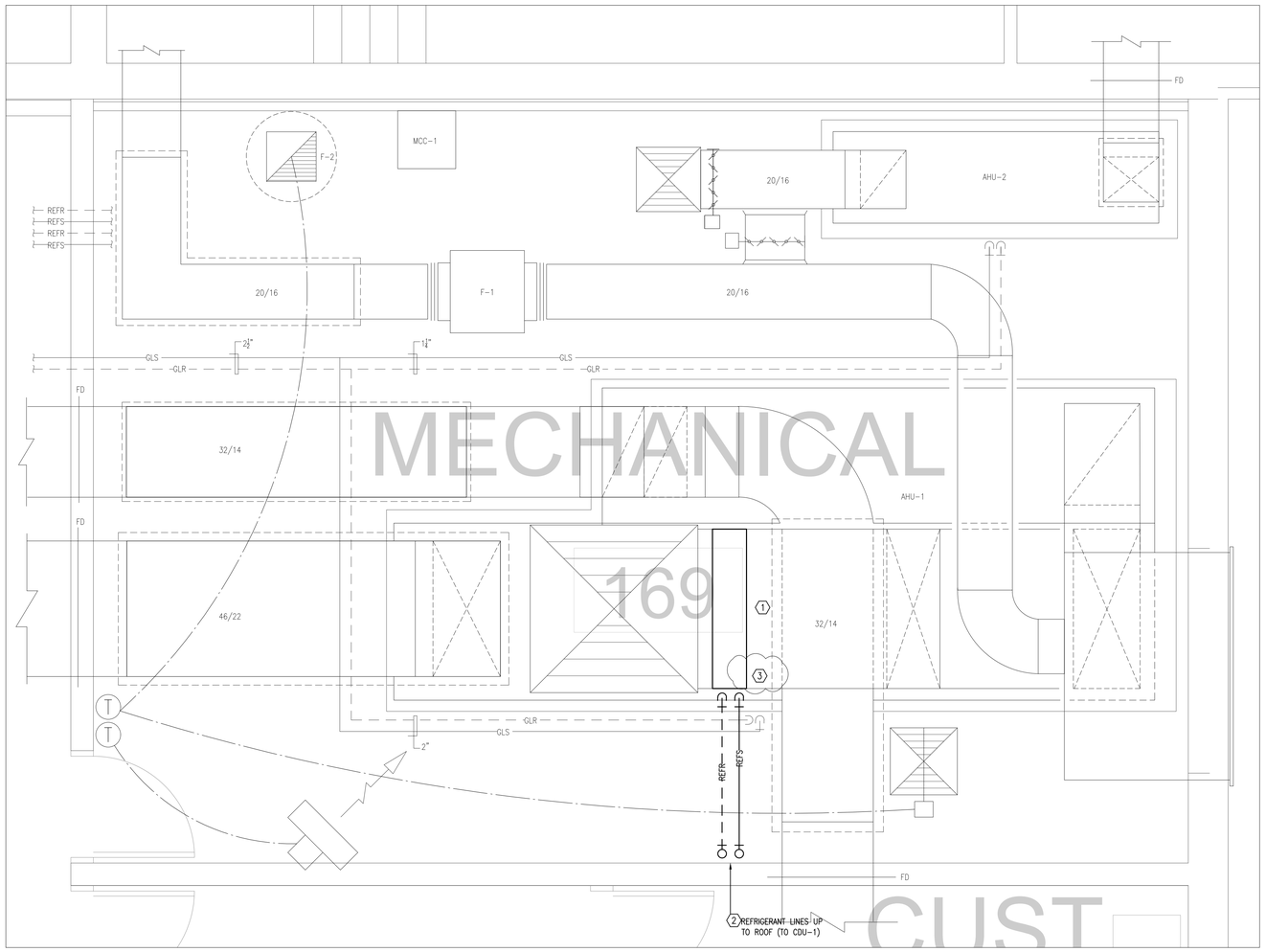
TITLE:

MECHANICAL ROOM 201 - DEMO/NEW

DDSB Ignite Learning

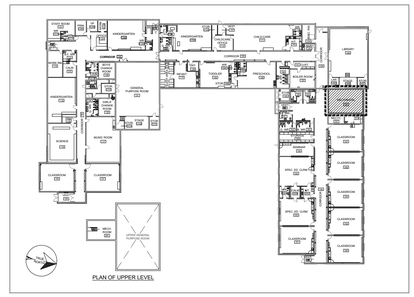
DRAWING No:

M-200



MECHANICAL
169
CUST

1 / M-201 MECH. RM. 169 - DEMO/NEW
SCALE: 1/2"=1'-0"



KEY PLAN

KEYED NOTES:

1. INSTALL NEW DX COOLING COIL AS PER SCHEDULE WITHIN EXISTING AHU-1.
2. REFRIGERANT LINES FROM NEW DX COOLING COIL TO NEW CDU-1 ON ROOF PROVIDE DOGHOUSE STRUCTURE ON ROOF. REFER TO ROOF PLAN M-400 FOR FURTHER DETAILS.
3. CONTRACTOR TO ENSURE DRAIN AND P-TRAP ARE IN GOOD WORKING ORDER PRIOR TO COIL START UP.

RoMar ENGINEERING
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- AHU REPLACEMENT

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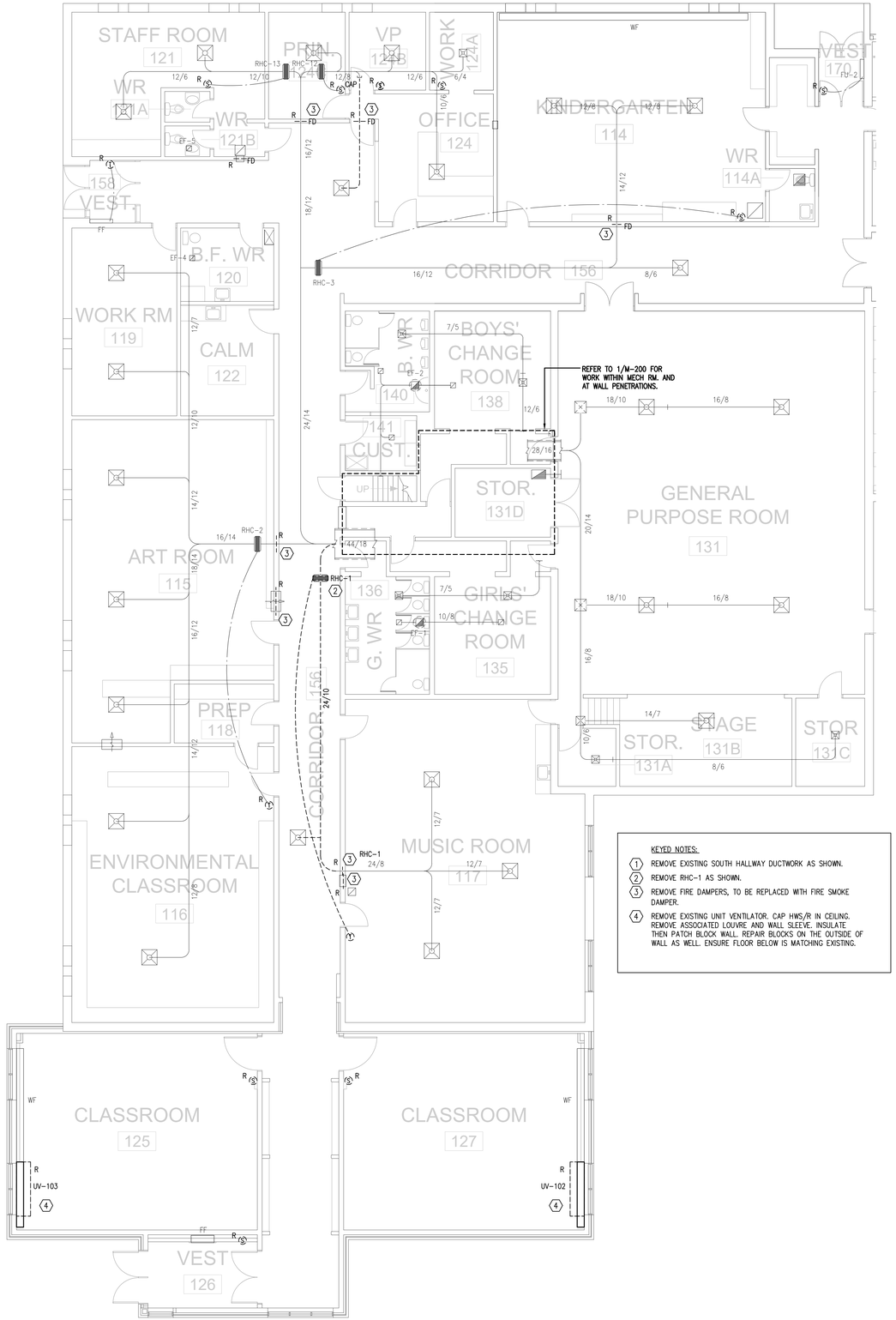
TITLE:

MECHANICAL ROOM 169 - DEMO/NEW

DDSB Ignite Learning

DRAWING No:

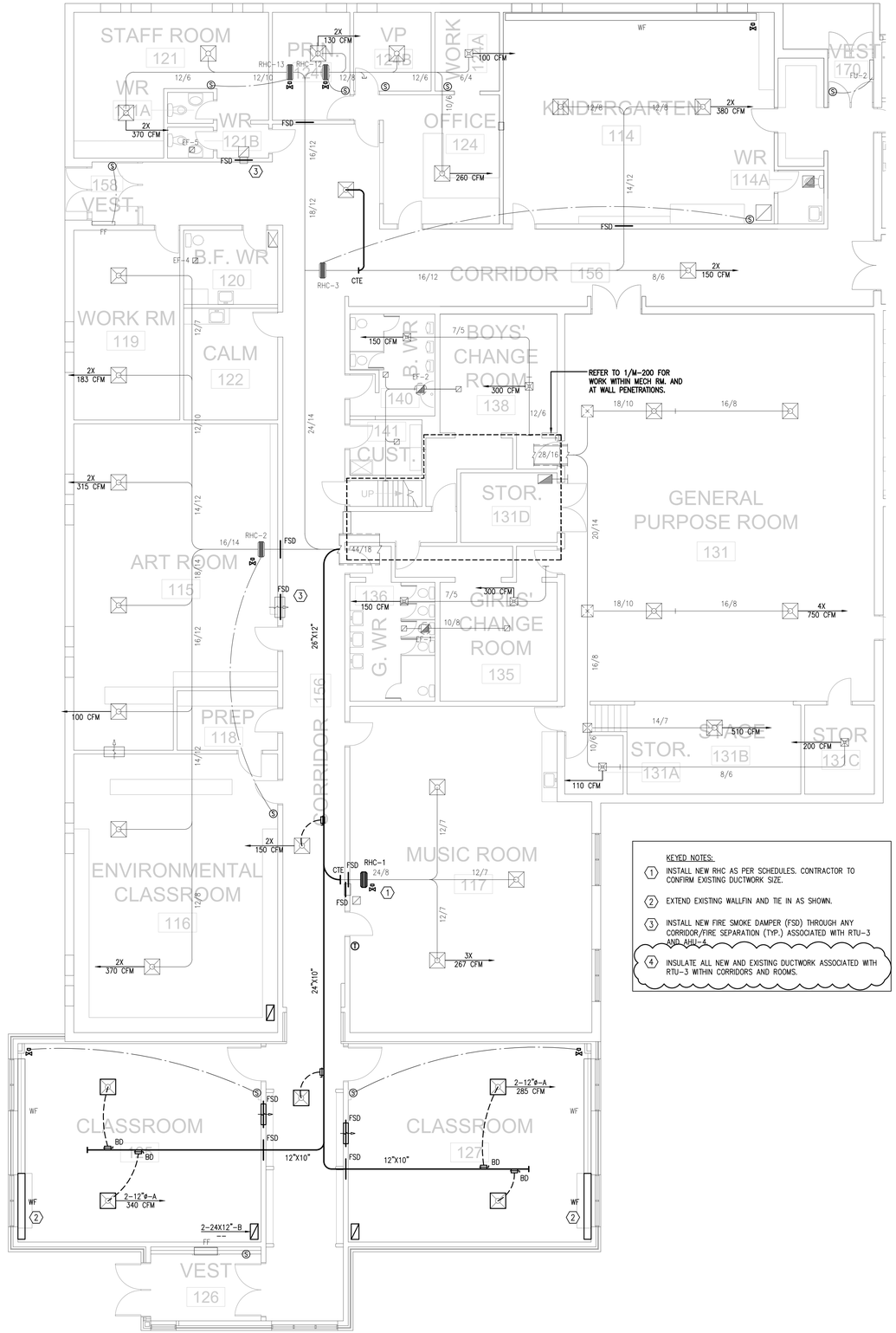
M-201



KEYED NOTES:

1. REMOVE EXISTING SOUTH HALLWAY DUCTWORK AS SHOWN.
2. REMOVE RHC-1 AS SHOWN.
3. REMOVE FIRE DAMPERS, TO BE REPLACED WITH FIRE SMOKE DAMPER.
4. REMOVE EXISTING UNIT VENTILATOR. CAP HWS/R IN CEILING. REMOVE ASSOCIATED LOUVRE AND WALL SLEEVE. INSULATE THEN PATCH BLOCK WALL. REPAIR BLOCKS ON THE OUTSIDE OF WALL AS WELL. ENSURE FLOOR BELOW IS MATCHING EXISTING.

1 SOUTH CLASSROOMS - DEMO
M-202 SCALE: 1/8"=1'-0"

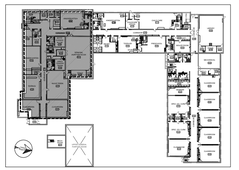


KEYED NOTES:

1. INSTALL NEW RHC AS PER SCHEDULES. CONTRACTOR TO CONFIRM EXISTING DUCTWORK SIZE.
2. EXTEND EXISTING WALLFIN AND TIE IN AS SHOWN.
3. INSTALL NEW FIRE SMOKE DAMPER (FSD) THROUGH ANY CORRIDOR/FIRE SEPARATION (TYP.) ASSOCIATED WITH RTU-3 AND AHU-4.
4. INSULATE ALL NEW AND EXISTING DUCTWORK ASSOCIATED WITH RTU-3 WITHIN CORRIDORS AND ROOMS.

2 SOUTH CLASSROOMS - NEW
M-202 SCALE: 1/8"=1'-0"

RoMar ENGINEERING
MECHANICAL BUILDING SERVICES



KEY PLAN

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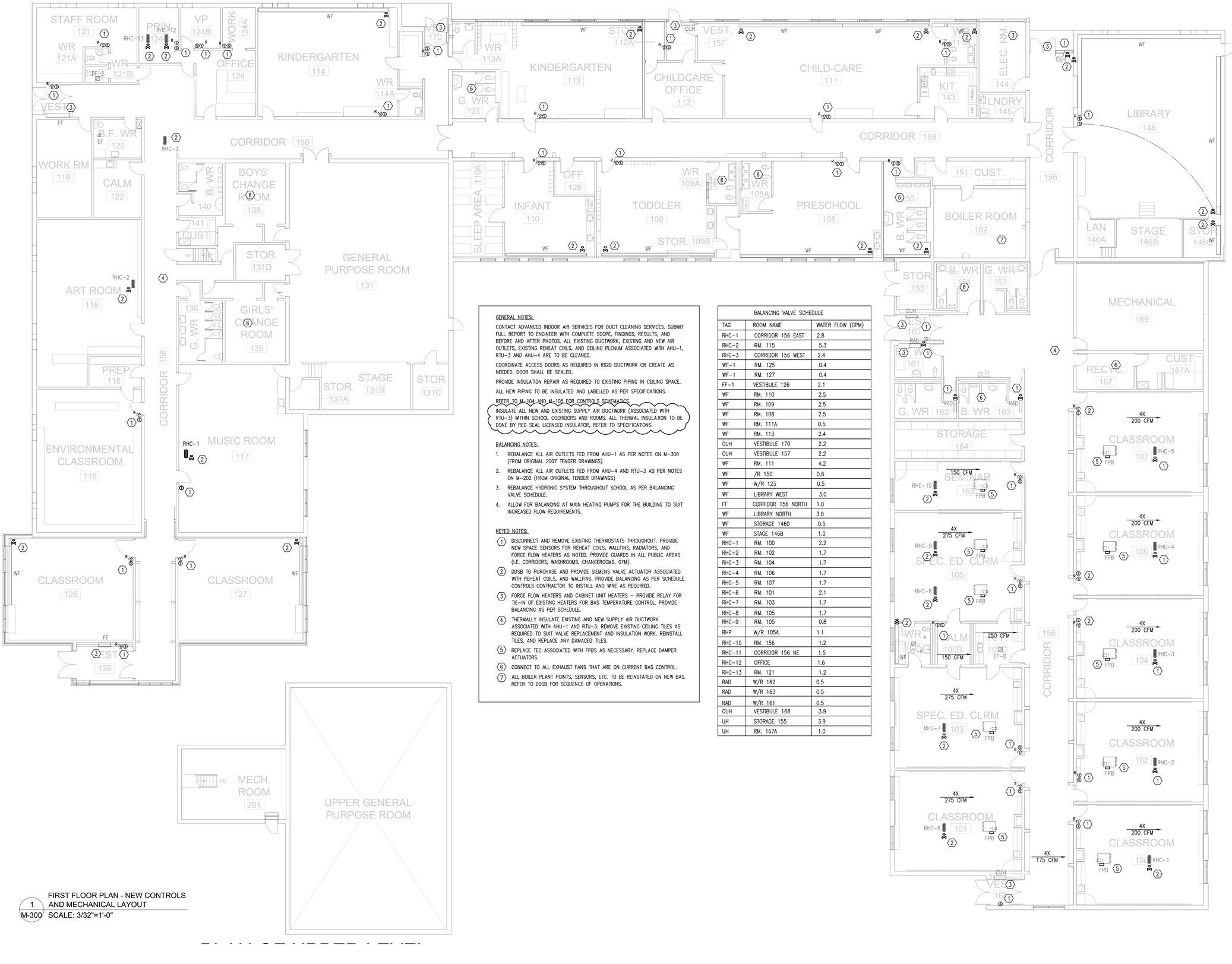
TITLE:

SOUTH CLASSROOMS - DEMO/NEW

DDSB Ignite Learning

DRAWING No:

M-202



GENERAL NOTES:

CONTACT ADVANCED INDOOR AIR SERVICES FOR DUCT CLEANING SERVICES. SUBMIT FULL REPORT TO ENGINEER WITH COMPLETE SCOPE, FINDINGS, RESULTS, AND BEFORE AND AFTER PHOTOS. ALL EXISTING DUCTWORK, EXISTING AND NEW AIR OUTLETS, EXISTING REHEAT COILS, AND CEILING PLENUM ASSOCIATED WITH AHU-1, RTU-3 AND AHU-4 ARE TO BE CLEANED.

COORDINATE ACCESS DOORS AS REQUIRED IN RIGID DUCTWORK OR CREATE AS NEEDED. DOOR SHALL BE SEALED.

PROVIDE INSULATION REPAIR AS REQUIRED TO EXISTING PIPING IN CEILING SPACE.

ALL NEW PIPING TO BE INSULATED AND LABELLED AS PER SPECIFICATIONS.

REFER TO M-104 AND M-105 FOR CONTROLS SCHEMATICS.

INSULATE ALL NEW AND EXISTING SUPPLY AIR DUCTWORK (ASSOCIATED WITH RTU-3) WITHIN SCHOOL COORIDORS AND ROOMS. ALL THERMAL INSULATION TO BE DONE BY RED SEAL LICENSED INSULATOR, REFER TO SPECIFICATIONS.

BALANCING NOTES:

1. REBALANCE ALL AIR OUTLETS FED FROM AHU-1 AS PER NOTES ON M-300 (FROM ORIGINAL 2007 TENDER DRAWINGS).
2. REBALANCE ALL AIR OUTLETS FED FROM AHU-4 AND RTU-3 AS PER NOTES ON M-202 (FROM ORIGINAL TENDER DRAWINGS)
3. REBALANCE HYDRONIC SYSTEM THROUGHOUT SCHOOL AS PER BALANCING VALVE SCHEDULE.
4. ALLOW FOR BALANCING AT MAIN HEATING PUMPS FOR THE BUILDING TO SUIT INCREASED FLOW REQUIREMENTS.

KEYED NOTES:

1. DISCONNECT AND REMOVE EXISTING THERMOSTATS THROUGHOUT. PROVIDE NEW SPACE SENSORS FOR REHEAT COILS, WALLFINS, RADIATORS, AND FORCE FLOW HEATERS AS NOTED. PROVIDE GUARDS IN ALL PUBLIC AREAS (I.E. CORRIDORS, WASHROOMS, CHANGEROOMS, GYM).
2. DDSB TO PURCHASE AND PROVIDE SIEMENS VALVE ACTUATOR ASSOCIATED WITH REHEAT COILS, AND WALLFINS. PROVIDE BALANCING AS PER SCHEDULE. CONTROLS CONTRACTOR TO INSTALL AND WIRE AS REQUIRED.
3. FORCE FLOW HEATERS AND CABINET UNIT HEATERS – PROVIDE RELAY FOR TIE-IN OF EXISTING HEATERS FOR BAS TEMPERATURE CONTROL. PROVIDE BALANCING AS PER SCHEDULE.
4. THERMALLY INSULATE EXISTING AND NEW SUPPLY AIR DUCTWORK ASSOCIATED WITH AHU-1 AND RTU-3. REMOVE EXISTING CEILING TILES AS REQUIRED TO SUIT VALVE REPLACEMENT AND INSULATION WORK. REINSTALL TILES, AND REPLACE ANY DAMAGED TILES.
5. REPLACE TEC ASSOCIATED WITH FPBS AS NECESSARY. REPLACE DAMPER ACTUATORS.
6. CONNECT TO ALL EXHAUST FANS THAT ARE ON CURRENT BAS CONTROL.
7. ALL BOILER PLANT POINTS, SENSORS, ETC. TO BE REINSTATED ON NEW BAS. REFER TO DDSB FOR SEQUENCE OF OPERATIONS.

BALANCING VALVE SCHEDULE

TAG	ROOM NAME	WATER FLOW (GPM)
RHC-1	CORRIDOR 156 EAST	2.8
RHC-2	RM. 115	5.3
RHC-3	CORRIDOR 156 WEST	2.4
WF-1	RM. 125	0.4
WF-1	RM. 127	0.4
FF-1	VESTIBULE 126	2.1
WF	RM. 110	2.5
WF	RM. 109	2.5
WF	RM. 108	2.5
WF	RM. 111A	0.5
WF	RM. 113	2.4
CUH	VESTIBULE 170	2.2
CUH	VESTIBULE 157	2.2
WF	RM. 111	4.2
WF	/R 150	0.6
WF	W/R 123	0.5
WF	LIBRARY WEST	3.0
FF	CORRIDOR 156 NORTH	1.0
WF	LIBRARY NORTH	3.0
WF	STORAGE 1460	0.5
WF	STAGE 146B	1.0
RHC-1	RM. 100	2.2
RHC-2	RM. 102	1.7
RHC-3	RM. 104	1.7
RHC-4	RM. 106	1.7
RHC-5	RM. 107	1.7
RHC-6	RM. 101	2.1
RHC-7	RM. 103	1.7
RHC-8	RM. 105	1.7
RHC-9	RM. 105	0.8
RHP	W/R 105A	1.1
RHC-10	RM. 156	1.2
RHC-11	CORRIDOR 156 NE	1.5
RHC-12	OFFICE	1.6
RHC-13	RM. 121	1.2
RAD	W/R 162	0.5
RAD	W/R 163	0.5
RAD	W/R 161	0.5
CUH	VESTIBULE 168	3.9
UH	STORAGE 155	3.9
UH	RM. 167A	1.0

1 / M-300 FIRST FLOOR PLAN - NEW CONTROLS AND MECHANICAL LAYOUT
SCALE: 3/32"=1'-0"

RoMar ENGINEERING
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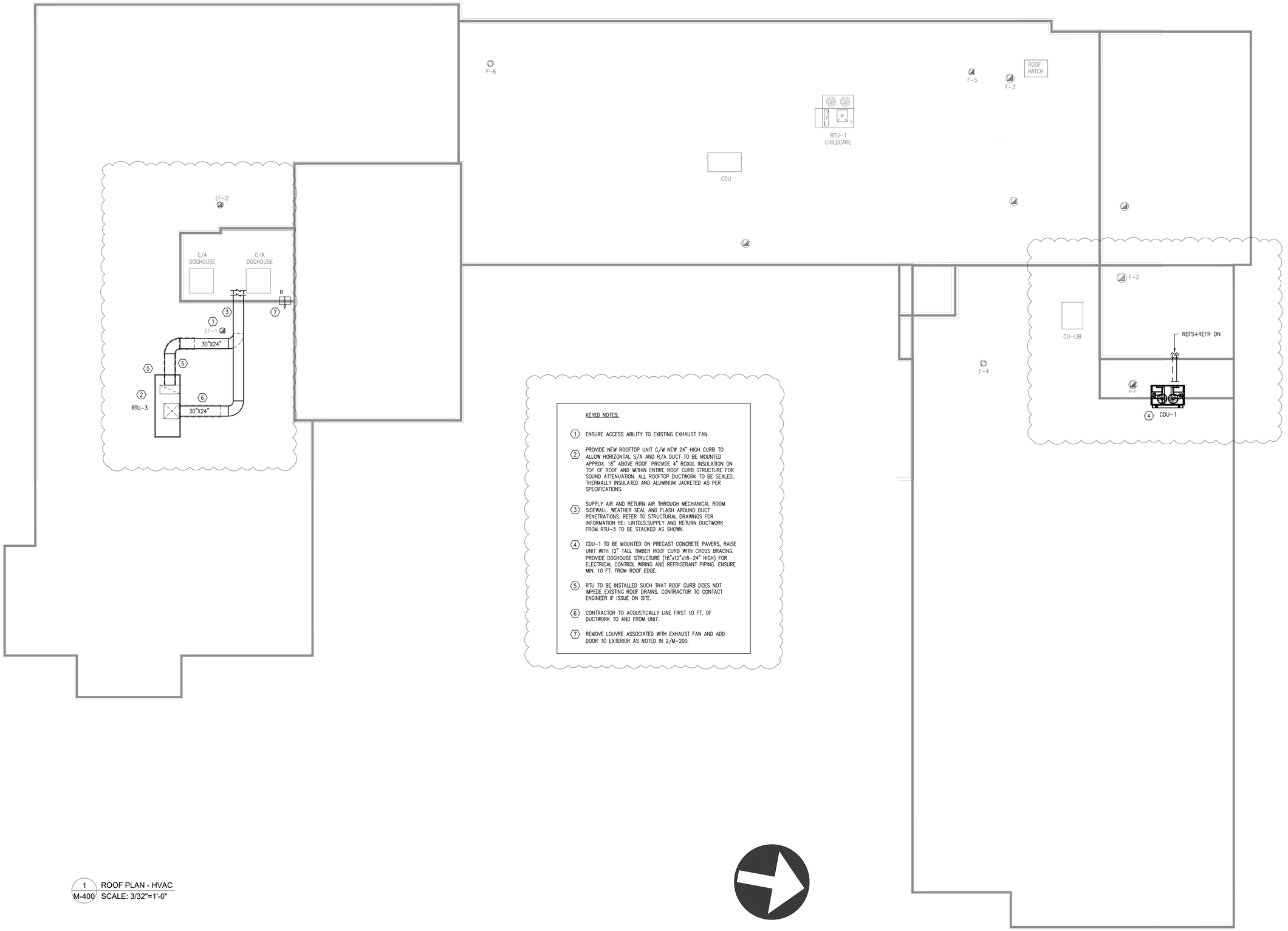
TITLE:

FIRST FLOOR PLAN - NEW CONTROLS AND MECHANICAL LAYOUT

DDSB Ignite Learning

DRAWING No:

M-300



KEYED NOTES:

1. ENSURE ACCESS ABILITY TO EXISTING EXHAUST FAN.
2. PROVIDE NEW ROOFTOP UNIT C/W NEW 24" HIGH CURB TO ALLOW HORIZONTAL S/A AND R/A DUCT TO BE MOUNTED APPROX. 18" ABOVE ROOF. PROVIDE 4" ROXUL INSULATION ON TOP OF ROOF AND WITHIN ENTIRE ROOF CURB STRUCTURE FOR SOUND ATTENUATION. ALL ROOFTOP DUCTWORK TO BE SEALED, THERMALLY INSULATED AND ALUMINUM JACKETED AS PER SPECIFICATIONS.
3. SUPPLY AIR AND RETURN AIR THROUGH MECHANICAL ROOM SIDEWALL. WEATHER SEAL AND FLASH AROUND DUCT PENETRATIONS. REFER TO STRUCTURAL DRAWINGS FOR INFORMATION RE: LINTELS.SUPPLY AND RETURN DUCTWORK FROM RTU-3 TO BE STACKED AS SHOWN.
4. CDU-1 TO BE MOUNTED ON PRECAST CONCRETE PAVERS, RAISE UNIT WITH 12" TALL TIMBER ROOF CURB WITH CROSS BRACING. PROVIDE DOGHOUSE STRUCTURE (16"x12"x18-24" HIGH) FOR ELECTRICAL CONTROL WIRING AND REFRIGERANT PIPING. ENSURE MIN. 10 FT. FROM ROOF EDGE.
5. RTU TO BE INSTALLED SUCH THAT ROOF CURB DOES NOT IMPEDE EXISTING ROOF DRAINS. CONTRACTOR TO CONTACT ENGINEER IF ISSUE ON SITE.
6. CONTRACTOR TO ACOUSTICALLY LINE FIRST 10 FT. OF DUCTWORK TO AND FROM UNIT.
7. REMOVE LOUVRE ASSOCIATED WITH EXHAUST FAN AND ADD DOOR TO EXTERIOR AS NOTED IN 2/M-200.

1 / M-400 ROOF PLAN - HVAC
SCALE: 3/32"=1'-0"

RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

No.	DESCRIPTION	BY	DATE
02	ISSUED FOR MECH ADD-001	ME	12/23/25
01	ISSUED FOR TENDER	ME	12/17/25

REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

Project No: 25-14

Scale:	AS NOTED
Drawn by:	GPC
Checked by:	ME
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

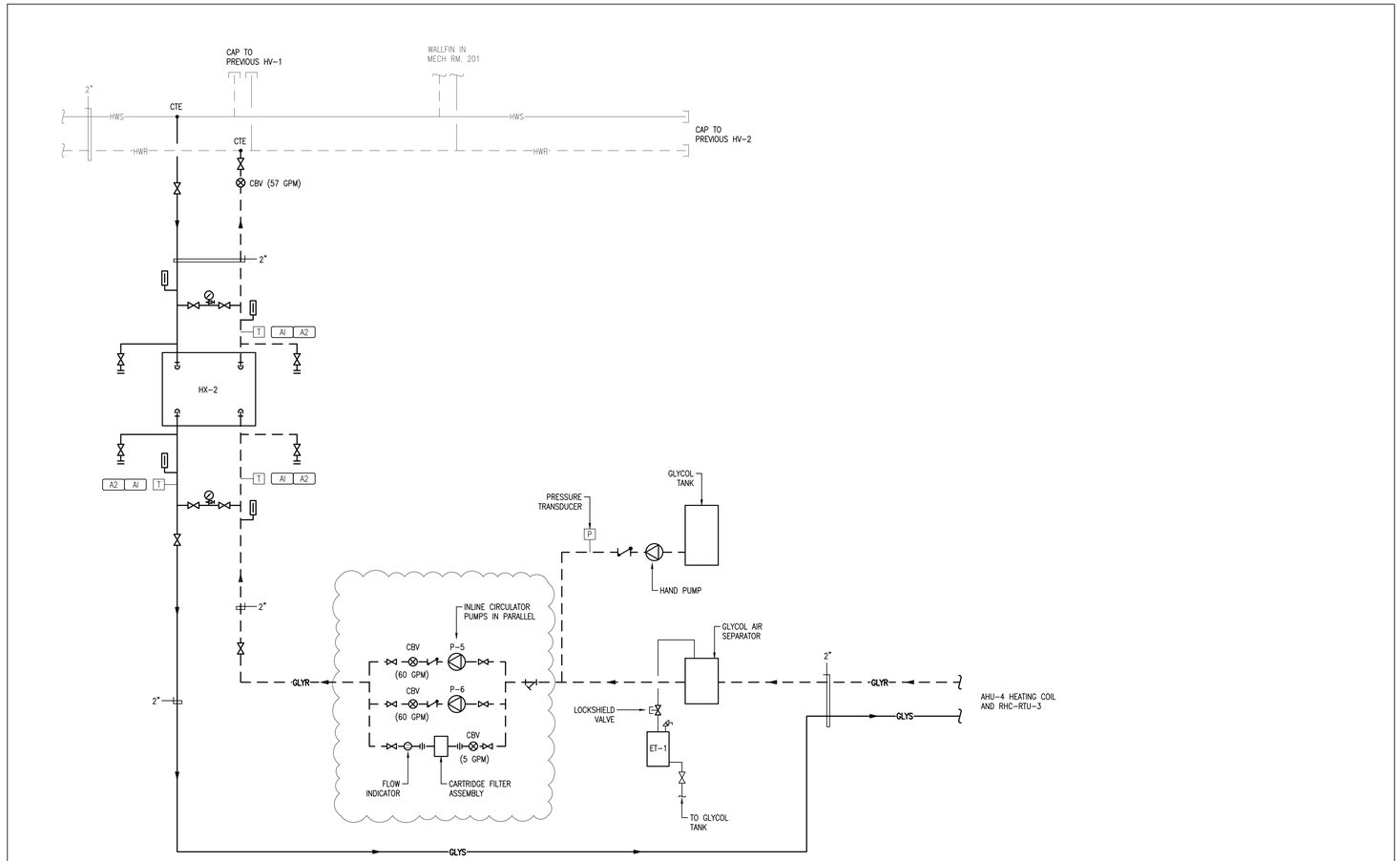
TITLE:

ROOF PLAN - HVAC

DDSB Ignite Learning

DRAWING No:

M-400



1 / M-500 GLYCOL SCHEMATIC FLOW DIAGRAM – RM. 201

No.	DESCRIPTION	BY	DATE
02	ISSUED FOR MECH ADD-001	ME	12/23/25
01	ISSUED FOR TENDER	ME	12/17/25

REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

Project No: 25-14

Scale:	AS NOTED
Drawn by:	GPC
Checked by:	ME
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

TITLE:

SCHEMATICS

DRAWING No:

M-500

SPECIFICATION NOTES:

DRAWINGS ARE PERFORMANCE IN INTENT AND DIAGRAMMATIC IN NATURE.

PROVIDE ALL PRODUCTS AND LABOUR TO PERFORM COMPLETELY THE WORK AS SHOWN OR REQUIRED TO MEET THE DESIGN INTENT, AT NO EXTRA COST.

PERFORM ALL WORK IN CONFORMANCE TO BUILDING CODE, ELECTRICAL SAFETY CODE, LOCAL ELECTRICAL INSPECTOR'S REQUIREMENTS AND ALL MUNICIPAL BY-LAWS.

DO NOT REDUCE STANDARDS SET BY THESE DRAWINGS BY APPLYING CODES.

EXAMINE SITE FOR CONDITIONS AFFECTING WORK. NO EXTRA COST SHALL BE ALLOWED FOR CONSIDERATIONS OVERLOOKED.

APPLY FOR ALL PERMITS, SERVICES AND INSPECTIONS AND PAY ALL RELATED FEES.

SUBMIT SHOP DRAWINGS TO CONSULTANT FOR ALL ELECTRICAL EQUIPMENT FOR REVIEW AND COMMENTS.

CARRY OUT WORK IN CONFORMANCE TO BASE BUILDING STANDARDS.

MAKE ANY ADJUSTMENTS, REROUTINGS OR RELOCATIONS TO EXISTING ELECTRICAL PRODUCTS AS REQUIRED. PROVIDE SUCH ADJUSTMENTS AT NOT EXTRA COST.

BECOME FULLY FAMILIAR WITH EXISTING BUILDING SYSTEMS & EQUIPMENT OPERATIONS. PROVIDE ALL REQUIRED PRODUCTS TO MAKE NEW WORK FULLY OPERATIONAL TO MEET DESIGN INTENT.

INCLUDE IN QUOTED PRICE FOR ALL ALTERATIONS TO EXISTING BUILDING SYSTEMS AND ANY INSTALLED PRODUCTS AFFECTED IN INTERFACING NEW WORK.

MAINTAIN ALL BUILDING SERVICE IN OPERATION. PROVIDE ALL TEMPORARY WIRING AND CONNECTIONS. SHUTDOWN SERVICES ONLY AS AUTHORIZED IN WRITING.

INCLUDE IN QUOTED PRICE FOR PREMIUM TIME WORK REQUIRED.

COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION. NOTIFY CONSULTANT OF ANY DISCREPANCIES.

TEST NEW AND EXISTING INTERFACED SYSTEMS TO ENSURE PROPER OPERATION. CORRECT ALL DEFICIENCIES.

REPAIR ANY SYSTEM DAMAGED DURING EXECUTION OF WORK.

PRODUCTS SHALL BE OF MANUFACTURE SPECIFIED. WHERE MANUFACTURE IS NOT SPECIFIED, PRODUCTS SHALL BE OF HIGH COMMERCIAL QUALITY AND SHALL BE CSA APPROVED FOR THE APPLICATION.

VERIFY LOADING OF EXISTING CIRCUITS TO BE REUSED. DO NOT EXCEED CODE REQUIREMENTS. VERIFY ON SITE EXISTING CIRCUITS USED, SPARE AND SPACES AVAILABLE WHERE EXISTING PANELS ARE TO BE REUSED. PROVIDE ADDITIONAL BREAKERS AND CIRCUITS AS NECESSARY.

ADJUST PANEL SCHEDULES TO REFLECT ANY CHANGES PERFORMED TO THE CIRCUITS.

ALL NEW BREAKERS SHALL BE BOLT-ON TYPE, 'SWD' RATED TO MATCH EXISTING.

ALL NEW DISCONNECT SWITCHES SHALL BE HEAVY DUTY QUICK-MAKE, QUICK BREAK ENCLOSED SAFETY SWITCHES.

PACK AND SEAL ALL PENETRATIONS THROUGH FLOORS AND FIRE RATED WALLS WITH APPROVED MATERIAL TO RETAIN FIRE RATING.

PROVIDE ALL CUTTING AND PATCHING REQUIRED TO EFFECT WORK WITH THE PRIOR APPROVAL AND INSTRUCTION OF THE OWNER'S REPRESENTATIVE.

WIRE NEW POWER OUTLETS IN EMT CONDUIT.

DO ALL REQUIRED WORK RELATED TO LIFE SAFETY SYSTEMS AT NO EXTRA COST. RETAIN THE SYSTEM MANUFACTURER'S FORCES TO PERFORM FINAL CONNECTIONS, MODIFICATIONS AND PROVISION OF NEW INTERFACING DEVICES IN THE SYSTEM PANELS.

ENSURE FULL COMPATIBILITY OF ALL NEW DEVICES WITH EXISTING LIFE SAFETY SYSTEMS.

HAVE SYSTEM MANUFACTURER TEST AND CERTIFY LIFE SAFETY SYSTEMS FOR PROPER OPERATION AT COMPLETION OF WORK. PROVICE COMPLETE SYSTEM VERIFICATION TO SUIT LOCAL AUTHORITIES.

DO NOT SCALE DRAWINGS. FOR EXACT LOCATIONS REFER TO ARCHITECTURAL DRAWINGS AND VERIFY ON SITE ALL DIMENSIONS PRIOR TO INSTALLING PRODUCTS.

ADJUST LOCATION OF PRODUCTS UP TO 3m (10 FT) IN ANY DIRECTION AS DIRECTED AT NO EXTRA COST, PROVIDED THE CHANGES ARE REQUESTED PRIOR TO INSTALLATION.

INCLUDE FOR ANY ADDITIONAL COSTS INCURRED BY OTHER TRADES RESULT-ING FROM SUBSTITUTING ANY ALTERNATIVE EQUIPMENT.

PROVIDE RECORD DRAWINGS OF THE AS-CONSTRUCTED WORK. OBTAIN AND PAY FOR ONE (1) SET OF MYLAR SEPIAS. SUBMIT SEPIAS AND ONE (1) SET OF PRINTS FOR APPROVAL.

PROVIDE A FULLY ITEMIZED BREAKDOWN OF LABOUR AND MATERIAL FOR EXTRA OR DELETED WORK.

ARRANGE FOR INSPECTION OF WORK BY INSPECTION AUTHORITY. PROVIDE A FINAL UNCONDITIONAL CERTIFICATE OF APPROVAL.

PROVIDE A WRITTEN GUARANTEE FOR ONE (1) YEAR COVERING MATERIAL AND WORKMANSHIP. RECTIFY ANY DEFECTS PROMPTLY.

REFER TO DIVISION 15 DOCUMENTS AND PROVIDE ALL POWER WIRING AND DISCONNECT SWITCHES REQUIRED.

ENSURE RECEPTACLES ARE INSTALLED WHICH MATCH EQUIPMENT PLUG CON-FIGURATION. MAKE CHANGES TO SUIT AT NO EXTRA COST. TEST EACH RECEPTACLE FOR PROPER POLARITY AND GROUND.

SUPPORT ALL NEW CONDUIT INSTALLATION FROM STRUCTURE. SECURE ALL PRODUCTS IN APPROVED MANNER.

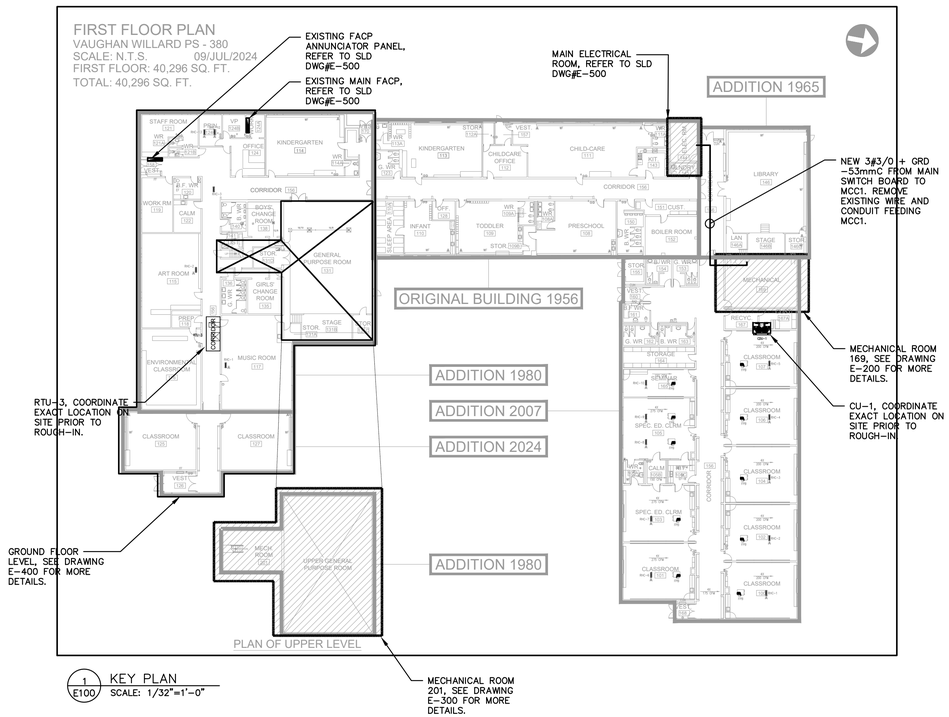
CIRCUIT NUMBERS INDICATED ON DRAWINGS ARE FOR LOAD GROUPING PURPOSES ONLY. BALANCE LOADS ON PANELS TO WITHIN 10% ACROSS PHASES.

PROVIDE ALL WIRING DEVICES AS SPECIFICATION GRADE UNLESS NOTED OTHERWISE.

/ ALL EQUIPMENT PROVIDED WITH LAMICOID PLATES WITH 7mm (1/4") HIGH
ED LETTERS.

PROVIDE ALL WIRING AS COPPER T90 FOR OVERHEAD INSTALLATION AND RWU90 FOR UNDER GROUND INSTALLATION. ALL WIRING SHALL BE DONE IN CONDUIT UNLESS OTHERWISE NOTED. 8x CABLE MAY BE USED IN PARTITION WALLS AND CEILING SPACE FOR RUNS NOT EXCEEDING 10 FT. HORIZONTALLY.

MINIMUM WIRE SIZE IS #12 AWG. INCREASE SIZE AS REQUIRED TO LIMIT BRANCH CIRCUIT VOLTAGE DROP TO 3% AND FEEDER VOLTAGE DROPS TO 2% AT FULL LOAD AS PER OESC AND OBC SB-10 REQUIREMENTS. USE SOLID CONDUCTORS FOR SIZES #10 AWG AND SMALLER AND STRANDED CONDUCTORS FOR SIZES # 8 AWG AND LARGER.



1 / E100 KEY PLAN
SCALE: 1/32"=1'-0"

LEGEND OF SYMBOLS

- LIGHT FIXTURES AS DESCRIBED ON DRAWINGS.
- SELF-CONTAINED COMBINATION 'RUNNING MAN' PICTOGRAM LED EXIT LIGHT C/W EMERGENCY LED HEADS EMERGILITE 'ESC SERIES', SEE FLOOR PLAN.
- SELF-CONTAINED CEILING OR WALL MOUNTED 'RUNNING MAN' PICTOGRAM LED SERIES EXIT LIGHT. SHADED AREA DENOTES REQUIRED FACE. BEGHELLI 'VE2 COMBORM'.
- EMERGENCY BATTERY UNIT AS NOTED ON DRAWINGS C/W 7W LED LAMPHEADS, UNLESS NOTED OTHERWISE. BEGHELLI 'NOVA' SERIES C/W 1/2 HOUR WATTAGE CAPACITY AS NOTED ON DRAWINGS. CONTRACTOR MUST NOT EXCEED 5% VOLTAGE DROP.
- SINGLE OR DOUBLE REMOTE EMERGENCY LED LAMPHEADS WALL MOUNTED C/W 6W LED 12V DC LAMPS, UNLESS NOTED OTHERWISE BEGHELLI 'SR' SERIES.
- 20A 120V SINGLE POLE LIGHT SWITCH. TOGGLE TYPE SPECIFICATION GRADE, WHITE IN COLOR. PROVIDE SINGLE GANG UTILITY BOX C/W GALVANIZED STEEL COVER PLATE.
- 20A 120V DUPLEX U-GROUND RECEPTACLE (5-20R) SPECIFICATION GRADE WHITE IN COLOR, C/W GALVANIZED STEEL COVERPLATE. MH 12" AFF UNLESS OTHERWISE NOTED.
- CONNECTION TO 120V MOTOR OR POWER OUTLET AS INDICATED ON DRAWINGS.
- MD 15A 120V CONNECTION TO MOTORIZED DAMPER
- CONNECTION TO 208V 1 PHASE MOTOR OR POWER OUTLET AS INDICATED ON DRAWINGS.
- CONNECTION TO 208V 3 PHASE MOTOR OR POWER OUTLET AS INDICATED ON DRAWINGS.
- DISCONNECT SWITCH SIZE AS INDICATED ON DRAWINGS OR TO SUIT.
- MOTOR STARTER AS NOTED ON DRAWINGS SUPPLIED, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR.
- COMBINATION MOTOR STARTER SUPPLIED, INSTALLED AND WIRED BY THIS ELECTRICAL CONTRACTOR.
- EPO EMERGENCY POWER OFF PUSHBUTTON.
- JUNCTION BOX, CEILING OR WALL MOUNTED C/W CIRCUIT AS NOTED
- FIRE ALARM MANUAL PULL STATION.
- SURFACE WALL MOUNTED FIRE ALARM HORN
- COMBINATION FIRE ALARM HORN AND STROBE LIGHT.
- FIRE ALARM HEAT DETECTOR
- WP DENOTES WEATHER PROOF
- GFI DENOTES GROUND FAULT INTERRUPTER TYPE.
- ER DENOTES EXISTING TO BE RELOCATED. EXTEND WIRING, RECONNECT & MAKE GOOD.
- RL DENOTES RELOCATED POSITION
- EX DENOTES EXISTING TO REMAIN
- N DENOTES NEW TO MATCH EXISTING
- R DENOTES EXISTING TO BE REMOVED.

MAGNETIC COMBINATION STARTERS

INTEGRAL FUSED QUICK-MAKE QUICK-BREAK SWITCHING MECHANISM. (FUSED SIZE AS INDICATED)

INTEGRAL 120V SINGLE PHASE CONTROL TRANSFORMER WITH FUSED SECONDARY SIZED FOR THE CONTROL CIRCUIT REQUIREMENTS & 25% SPARE CAPACITY.

EEMAC 1 ENCLOSURE.

CONTACTOR SOLENOID OPERATED, RAPID ACTION TYPE, EEMAC STANDARD SIZES ONLY.

MOTOR OVERLOAD PROTECTIVE DEVICE IN EACH PHASE, MANUALLY RESET FROM OUTSIDE ENCLOSURE. OVERLOAD HEATERS SHALL MATCH NAMEPLATE CURRENT RATING OF MOTORS FINALLY SELECTED & INSTALLED, TO FULLY PROTECT THE MOTOR FOR ALL STARTING & LOCKED ROTOR CONDITIONS WITH THE ROTOR CONDITIONS WITH THE OVERLOADS REMAINING ACTIVE AT ALL TIMES.

POWER & CONTROL TERMINALS. (SEPARATE TERMINALS FOR EACH REMOTE CONNECTION TO ALLOW FOR TESTING ISOLATION OF INTERLOCK OR DEVICE)

WIRING & SCHEMATIC DIAGRAM INSIDE STARTER ENCLOSURE IN VISIBLE LOCATION.

HAND-OFF AUTO & SPEED SELECTOR SWITCHES.

LOW VOLTAGE PILOT LIGHTS.

AUXILIARY CONTACTS. (NORMALLY OPEN & NORMALLY CLOSED)

AUXILIARY & TIME DELAY RELAYS.

MAGNETIC STARTERS

1. SIMILAR TO MAGNETIC COMBINATION STARTER NOTED ABOVE EXCEPT WITHOUT INTEGRAL FUSED SWITCH.

MANUAL STARTERS

1. POWER SINGLE PHASE MANUAL MOTOR STARTERS OF APPROPRIATE SIZE & TYPE INCLUDING:
   - QUICK MAKE AND BREAK SWITCHING MECHANISM
   - OVERLOAD HEATER WITH MANUAL RESET & TRIP, INDICATION SIZED TO MATCH NAMEPLATE FULL LOAD.
   - AUXILIARY CONTACTS (2-NORMALLY OPEN & 2-NORMALLY CLOSED) FOR REMOTE ON/OFF CONTROL FROM BAS SYSTEM.
   - NEON PILOT LIGHT.

WIRING FOR MECHANICAL EQUIPMENT

'MECHANICAL' SHALL DEFINE THAT EQUIPMENT WHICH IS SERVING AS PART OF THE PLUMBING, DRAINAGE, HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS AS PROVIDED AND/OR INSTALLED BY DIVISION 26.

MOTORS 1/2 HP AND LARGER SHALL BE 3 PHASE. THIS DIVISION SHALL WIRE FOR AND CONNECT MOTORS AS SUPPLIED BY DIVISION 26.

MOTORS UNDER 1/2 HP SHALL BE 120V. THIS DIVISION SHALL WIRE FOR AND CONNECT MOTORS & THERMOSTATS, ETC., AS SUPPLIED BY DIVISION 15 AND AS SHOWN ON DRAWINGS.

ISOLATING SWITCHES FOR ROOF MOUNTED EQUIPMENT SHALL BE WEATHERPROOF TYPE, SUPPLIED AND INSTALLED BY THIS DIVISION.

ALL STARTERS REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR, REFER TO DRAWINGS FOR DETAILS.

ALL FUSED & UNFUSED DISCONNECT SWITCHES SHOWN REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.

DRAWING LIST

NO.	DATE	REVISION	BY
1	DEC.24/25	ISSUED FOR TENDER	M.A

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ELECTRICAL CONSULTANT:
MJA ENGINEERING LTD.
ELECTRICAL ENGINEERS
556 EDWARD AVENUE, UNIT 82
RICHMOND HILL, ONTARIO
L4C 9Y5, CANADA
PHONE: (905) 780-8590 FAX: (905) 780-8591
EMAIL: engineering@mjaeng.com
WEB SITE: www.mjaeng.com

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MECHANICAL CONSULTANT:
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MECHANICAL BUILDING SERVICES

PROJECT/LOCATION

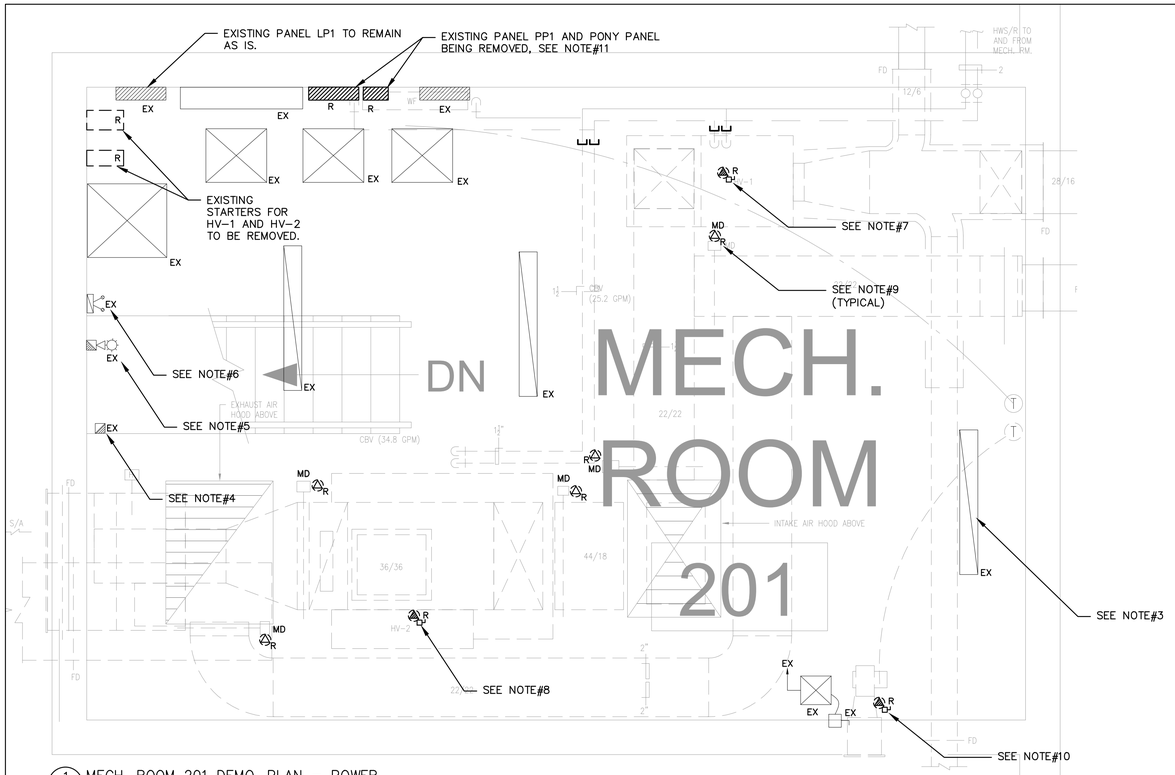
VAUGHAN WILLARD P.S - AHU REPLACEMENT

1911 Dixie Rd N, Pickering, ON L1V 1V4

DRAWING NAME

ELECTRICAL LEGEND, SPECIFICATION AND DETAILS

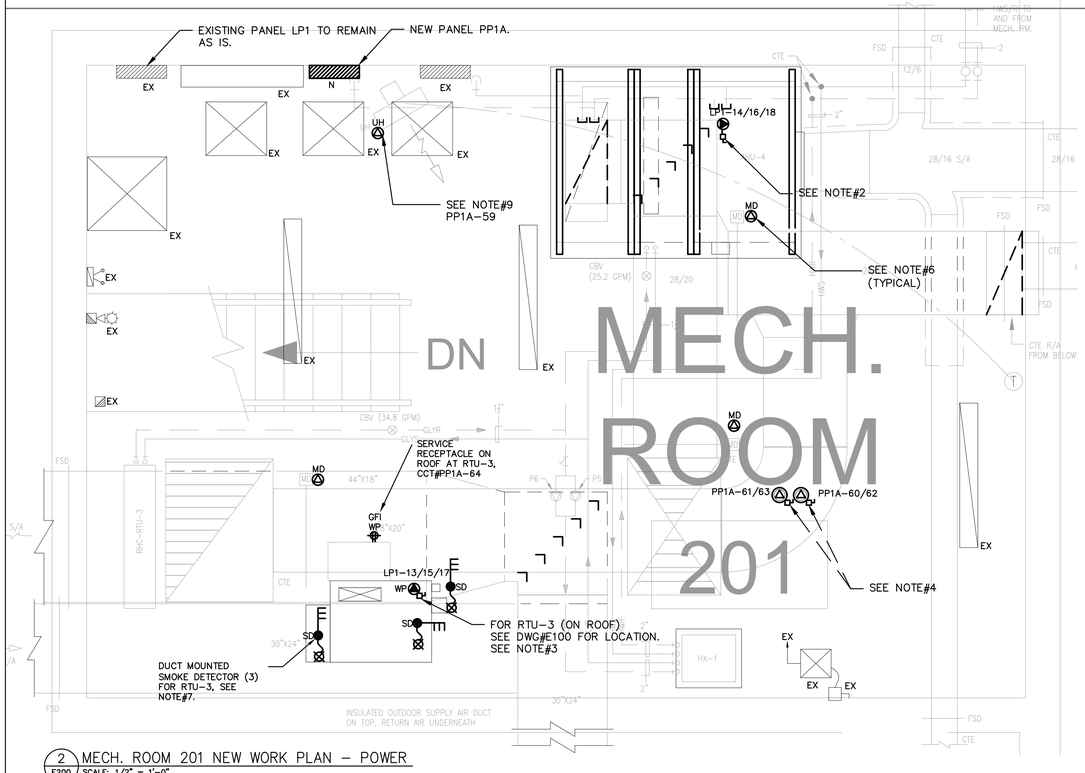
DRAWN	SCALE	DRAWING NO.
M.A	N.T.S.	E-100
CHECKED	DATE	
M.A	DEC. 2025	
PROJECT NO. 2025-189		



1 E200 MECH. ROOM 201 DEMO. PLAN – POWER
SCALE: 1/2" = 1'-0"

DEMOLITION NOTES

1. UNLESS OTHERWISE NOTED ALL ELECTRICAL EQUIPMENT SHOWN SHALL BE REMOVED AND DISPOSED OF OFF SITE IN AN APPROVED MANNER.
2. ELECTRICAL CONTRACTOR SHALL ALSO REMOVE ALL ASSOCIATED CONDUIT AND WIRE FOR REMOVED EQUIPMENT UNLESS OTHERWISE NOTED.
3. EXISTING LIGHT TO REMAIN.
4. EXISTING MANUAL PULL STATION TO REMAIN.
5. EXISTING HORN/STROBE TO REMAIN.
6. EXISTING EMERGENCY BATTERY TO REMAIN.
7. EXISTING 600V CONNECTION TO HV-1 TO BE REMOVED TO FEEDING SOURCE (PANEL LP1) REMOVE ASSOCIATED CONDUIT AND WIRE TO FEEDING SOURCE.
8. EXISTING 600V CONNECTION TO HV-2 TO BE REMOVED TO FEEDING SOURCE (PANEL LP1) REMOVE ASSOCIATED CONDUIT AND WIRE TO FEEDING SOURCE.
9. 15A, 120V CONNECTION TO MOTORIZED DAMPER BEING REMOVED.
10. EXISTING CONNECTION TO FLOOR MOUNTED EXHAUST FAN TO BE REMOVED, REMOVE ASSOCIATED CONDUIT AND WIRE TO FEEDING SOURCE.
11. EXISTING PANEL PP1 AND PONY PANEL BEING REMOVED TO ALLOW FOR NEW PANEL PP1A INSTALLATION. ADD EXISTING CIRCUITS TO NEW PANEL AND ADJUST ACCORDINGLY.



2 E200 MECH. ROOM 201 NEW WORK PLAN – POWER
SCALE: 1/2" = 1'-0"

NEW WORK NOTES

1. UNLESS OTHERWISE INDICATED/ OR NOTED ALL EQUIPMENT SHOWN IS NEW TO BE PROVIDED BY THIS ELECTRICAL CONTRACTOR.
2. 15A, 600V 3Ø CONNECTION TO FEED AHU-4, RUN WIRES AND CONDUIT FROM PANEL LP1 TO AHU-4 DISCONNECT SWITCH.
3. 60A, 600V 3Ø CONNECTION TO FEED RTU-3 ON THE ROOF, RUN WIRES AND CONDUIT FROM PANEL LP1 TO RTU-3 WEATHER PROOF DISCONNECT SWITCH.
4. 10A, 208V 1Ø CONNECTIONS TO PUMPS P1&P2 FED FROM PANEL PP1A.
5. CIRCUIT SHOWN ARE FOR GROUPING PURPOSES ONLY, PLEASE VISIT THE SITE PRIOR TO TENDER AND ADD FOR ANY ADDITIONAL REQUIREMENTS AND ACCESSORIES TO COMPLETE THE WORK.
6. NEW 15A, 120V CONNECTION TO MOTORIZED DAMPER. RE-USE EXISTING CIRCUITS MADE SPARE BY THIS RENOVATION.
7. PROVIDE SEPARATE ZONE FOR DUCT MOUNTED SMOKE DETECTORS, CO-ORDINATE INSTALLATION WITH MECHANICAL CONTRACTOR.
8. 15A, 120V CONNECTION TO NEW UNIT HEATER.

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MJA ENGINEERING LTD.
ELECTRICAL ENGINEERS
556 EDWARD AVENUE, UNIT 82
RICHMOND HILL, ONTARIO
L4C 9Y5, CANADA
PHONE: (905) 780-8590 FAX: (905) 780-8591
EMAIL: engineering@mjaeng.com
WEB SITE: www.mjaeng.com

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MECHANICAL BUILDING SERVICES

PROJECT/LOCATION

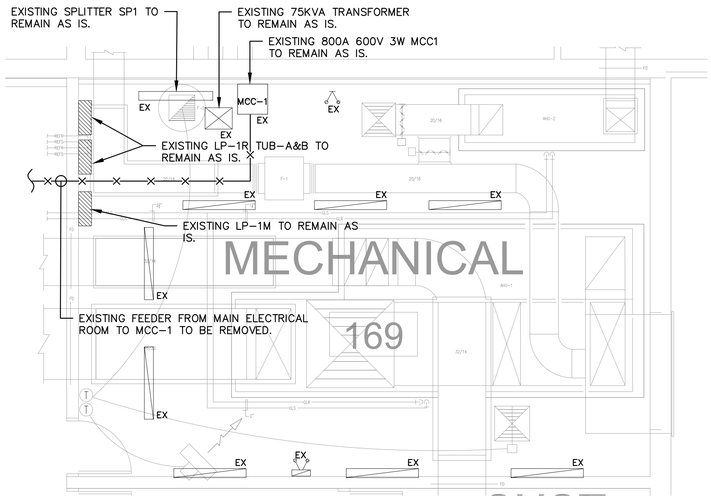
VAUGHAN WILLARD P.S - AHU REPLACEMENT

1911 Dixie Rd N, Pickering, ON L1V 1V4

DRAWING NAME

MECH. ROOM 201 DEMO AND NEW WORK – POWER

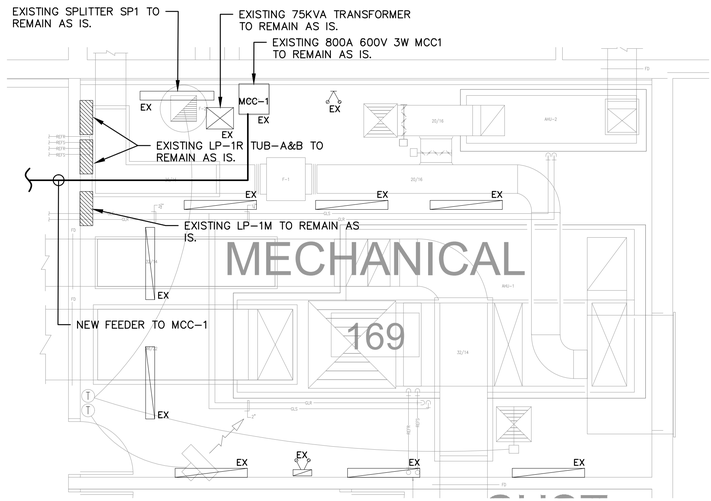
DRAWN	SCALE	DRAWING NO.
M.A	AS SHOWN	E-200
CHECKED	DATE	
M.A	DEC. 2025	
PROJECT NO. 2025-189		



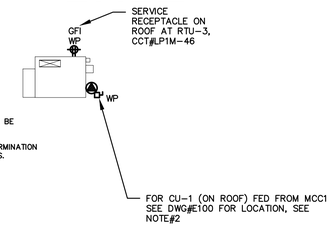
1 E300 MECH. ROOM 169 DEMO – POWER
SCALE: 1/4" = 1'-0"

DEMOLITION NOTES

1. UNLESS OTHERWISE NOTED ALL ELECTRICAL EQUIPMENT SHOWN SHALL BE REMOVED AND DISPOSED OF OFF SITE IN AN APPROVED MANNER.
2. ELECTRICAL CONTRACTOR SHALL ALSO REMOVE ALL ASSOCIATED CONDUIT AND WIRE FOR REMOVED EQUIPMENT UNLESS OTHERWISE NOTED.
3. EXISTING LIGHT TO REMAIN.
4. EXISTING MANUAL PULL STATION TO REMAIN.
5. EXISTING HORN/STROBE TO REMAIN.
6. EXISTING EMERGENCY BATTERY TO REMAIN.
7. EXISTING 600V CONNECTION TO HV-1 TO BE REMOVED TO FEEDING SOURCE (PANEL LP1) REMOVE ASSOCIATED CONDUIT AND WIRE TO FEEDING SOURCE.
8. EXISTING 600V CONNECTION TO HV-2 TO BE REMOVED TO FEEDING SOURCE (PANEL LP1) REMOVE ASSOCIATED CONDUIT AND WIRE TO FEEDING SOURCE.



2 E300 MECH. ROOM 169 NEW WORK PLAN – POWER
SCALE: 1/4" = 1'-0"



NEW WORK NOTES

1. UNLESS OTHERWISE INDICATED/ OR NOTED ALL EQUIPMENT SHOWN IS NEW TO BE PROVIDED BY THIS ELECTRICAL CONTRACTOR.
2. 45A, 600V 3Ø CONNECTION TO CONDENSING UNIT -1, COORDINATE EXACT TERMINATION POINT ON SITE AND ADJUST ACCORDINGLY. SEE DWG#E500 FOR MORE DETAILS.

NO.	DATE	REVISION	BY
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ELECTRICAL CONSULTANT:

MJA ENGINEERING LTD.
ELECTRICAL ENGINEERS

556 EDWARD AVENUE, UNIT 82
RICHMOND HILL, ONTARIO
L4C 9Y5, CANADA
PHONE: (905) 780-8590 FAX: (905) 780-8591
EMAIL: engineering@mjaeng.com
WEB SITE: www.mjaeng.com

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PROJECT/LOCATION

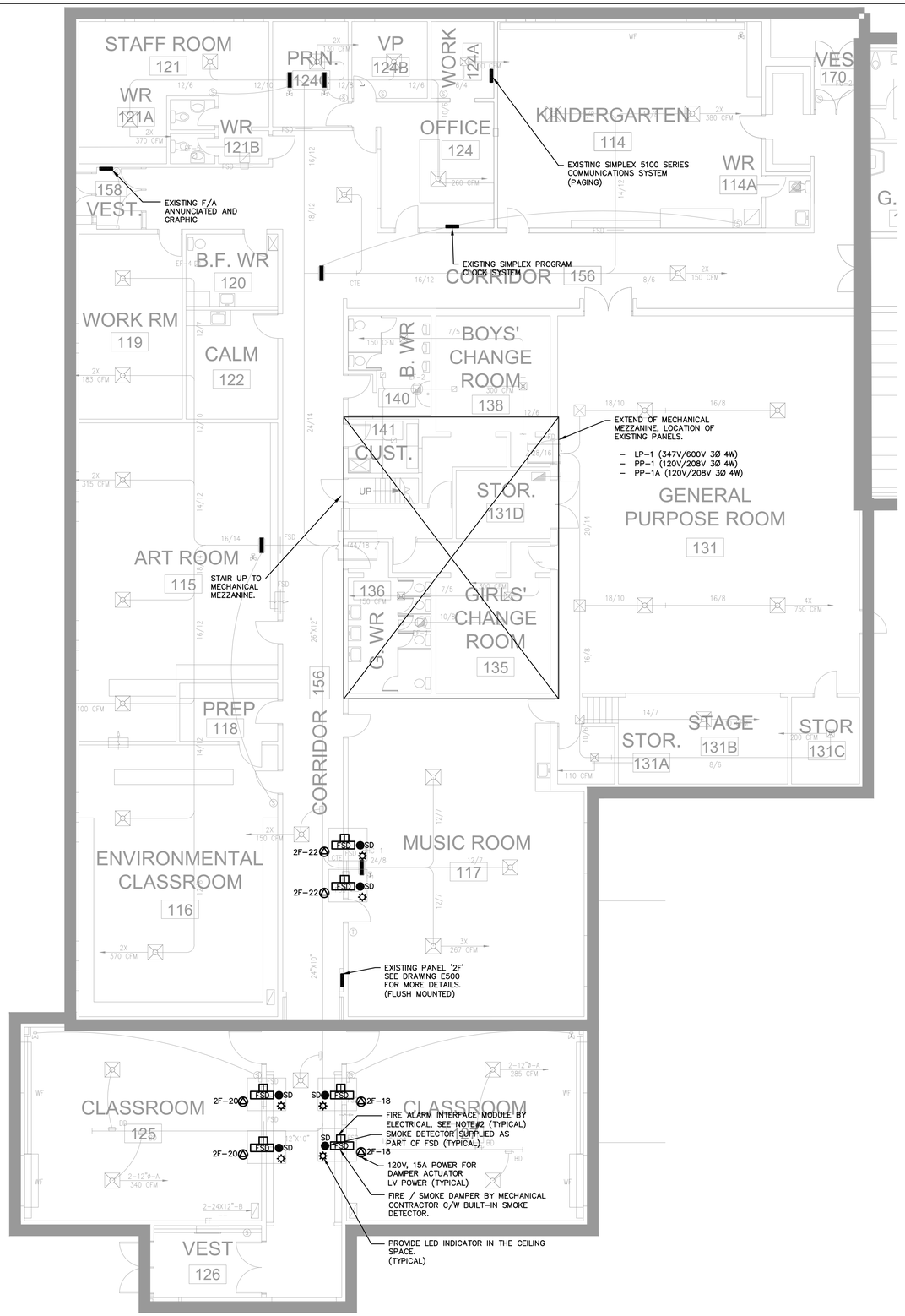
VAUGHAN WILLARD P.S - AHU REPLACEMENT

1911 Dixie Rd N, Pickering, ON L1V 1V4

DRAWING NAME

MEC. ROOM 169 – DEMO AND NEW WORK POWER

DRAWN	SCALE	DRAWING NO.
M.A	AS SHOWN	E-300
CHECKED	DATE	
M.A	DEC. 2025	
PROJECT NO. 2025-189		



1 E400 GROUND FLOOR PLAN – POWER
SCALE: 1/8"=1'–0"

NOTES: (RE NEW WORK PLAN)

1. UNLESS OTHERWISE NOTED ALL WORK SHOWN IS NEW TO BE PROVIDED BY THIS ELECTRICAL CONTRACTOR.
2. **PROVIDE SUITABLE SIMPLEX INTERFACE MODULE AT EACH FSD LOCATION C/W CONNECTION TO FSD BUILT–IN SMOKE DETECTOR AND TO SEPARATE ALARM ZONE IN FIRE ALARM CONTROL PANEL.**
3. ALL CIRCUIT INDICATED IS FOR GROUPING PURPOSE ONLY, ELECTRICAL CONTRACTOR TO CONFIRM ON SITE CIRCUIT BEEN USED AND RE–USE EXISTING CIRCUITS TO FEED NEW ELECTRICAL SERVICES ACCORDINGLY. SHOW CIRCUITS USED ON AS–BUILT DRAWINGS.

NO.	DATE	REVISION	BY
1	DEC.24/25	ISSUED FOR TENDER	M.A

DDSB Ignite Learning

ELECTRICAL CONSULTANT:
MJA ENGINEERING LTD.
ELECTRICAL ENGINEERS
556 EDWARD AVENUE, UNIT 82
RICHMOND HILL, ONTARIO
L4C 9Y5, CANADA
PHONE: (905) 780–8590 FAX: (905) 780–8591
EMAIL: engineering@mjaeng.com
WEB SITE: www.mjaeng.com

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2. DO NOT SCALE DRAWINGS.
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MECHANICAL CONSULTANT:
RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

PROJECT/LOCATION

VAUGHAN WILLARD P.S - AHU REPLACEMENT

1911 Dixie Rd N, Pickering, ON L1V 1V4

DRAWING NAME

GROUND FLOOR LAYOUT – POWER.

DRAWN	SCALE	DRAWING NO.
M.A	AS SHOWN	E-400
CHECKED	DATE	
M.A	DEC. 2025	
PROJECT NO. 2025–189		

S/N

DENOTES EXISTING CIRCUITS TO REMAIN AS IS.

EXISTING SERVICE	(15A–1P)	1	2	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	3	4	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	5	6	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	7	8	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	9	10	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	11	12	(15A–1P)	EXISTING SERVICE	
✱ RTU–3 3#4+GRD –27mmC	(60A–3P)	13 15 17	14 16 18	(15A–3P)	AHU–04 3#12+GRD –21mmC ✱	
		19	20	SPACE		
		21	22	SPACE		
		23	24	SPACE		
		25	26	SPACE		
		27	28	SPACE		
		29	30	SPACE		
✱✱ EXISTING HV1	(15A–3P)	31 33 35	32 34 36	(15A–3P)	EXISTING SERVICE	
		37	38	SPACE		
✱✱ EXISTING HV1	(15A–3P)	39 41	40	SPACE		
			42	SPACE		

EXISTING PANEL 'LP1'
225A, 347/600V 3ø, 4W

NOTES:

1. ✱–DENOTES NEW BREAKER TO MATCH EXISTING IN TYPE AND MANUFACTURER TO FEED NEW SERVICE FROM EXISTING PANEL.
2. ✱✱ –DENOTES EXISTING BREAKERS MARKED AS SPARE.
3. UPDATE PANEL DIRECTORY WITH NEW COMPUTER TYPED DIRECTORY TO REFLECT NEW CIRCUITS ADDED.

S/N

✱✱✱ EXISTING SERVICE	(15A–1P)	1	2	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	3	4	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	5	6	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	7	8	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	9	10	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	11	12	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	13	14	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	15	16	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	17	18	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	19	20	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	21	22	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	23	24	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	25	26	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	27	28	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	29	30	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	31	32	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	33	34	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	35	36	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(30A–2P)	37	38	(40A–2P)	EXISTING SERVICE	✱✱✱
		39	40			
✱✱✱ EXISTING SERVICE	(15A–1P)	41	42	(40A–2P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(15A–1P)	43	44	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(20A–1P)	45	46	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(20A–1P)	47	48	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(20A–1P)	49	50	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(20A–1P)	51	52	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(20A–1P)	53	54	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(20A–1P)	55	56	(15A–1P)	EXISTING SERVICE	✱✱✱
✱✱✱ EXISTING SERVICE	(20A–1P)	57	58	(15A–1P)	EXISTING SERVICE	✱✱✱
UNIT HEATER UH–1	(15A–1P)	59	60			
P2 3#12+GRD –21mmC	(15A–2P)	61 63	62 64	(15A–2P)	P1 3#12+GRD –21mmC	
SPARE	(20A–1P)	65	66	(15A–1P)	(20A–1P)ROOF TOP RECEPTACLES. UNIT HEATER	
SPARE	(20A–1P)	67	68		SPACE	
SPARE	(20A–1P)	69	70		SPACE	
SPARE	(20A–1P)	71	72		SPACE	

NEW PANEL 'PP1A'
225A, 120/240V 3ø, 4W

NOTES:

1. ✱✱✱ DENOTES EXISTING CIRCUITS TO BE MOVED FROM EXISTING PANELS PP1 AND PONY PANEL TO NEW PANEL PP1A, VERIFY EXACT QUANTITIES AND AMPERAGE ON SITE PRIOR TO ORDER.
2. UPDATE PANEL DIRECTORY WITH NEW COMPUTER TYPED DIRECTORY TO REFLECT NEW CIRCUITS ADDED.

S/N

EXISTING SERVICE	(15A–1P)	1	2	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	3	4	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	5	6	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	7	8	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	9	10	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	11	12	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	13	14	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	15	16	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	17	18	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	19	20	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	21	22	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	23	24	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	25	26	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	27	28	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	29	30	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	31	32	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	33	34	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	35	36	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	37	38	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	39	40	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	41	42	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	43	44	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(20A–1P)	45	46	(20A–1P)	ROOF GFI	
SPACE		47	48		SPACE	
SPACE		49	50		SPACE	
SPACE		51	52		SPACE	
SPACE		53	54		SPACE	
SPACE		55	56		SPACE	
SPACE		57	58		SPACE	
SPACE		59	60		SPACE	

EXISTING PANEL 'LP1M'
225A, 120/240V 3ø, 4W

NOTES:

1. ✱ – DENOTES NEW BREAKER TO MATCH EXISTING IN TYPE AND MANUFACTURER TO FEED NEW SERVICE FROM EXISTING PANEL.
2. UPDATE PANEL DIRECTORY WITH NEW COMPUTER TYPED DIRECTORY TO REFLECT NEW CIRCUITS ADDED.

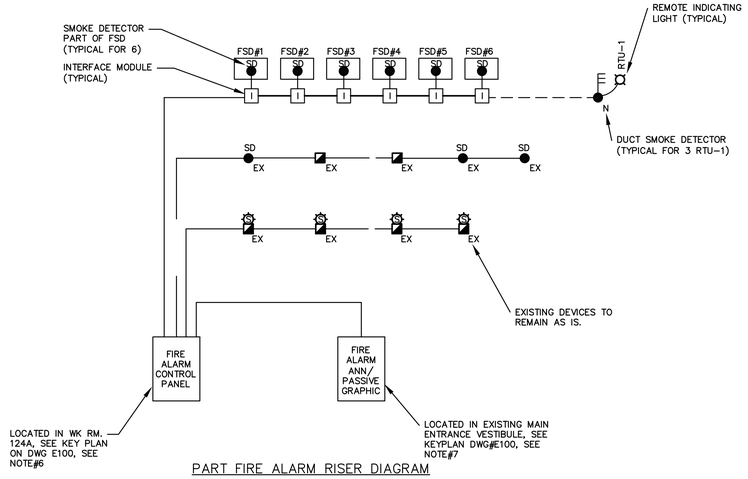
S/N

EXISTING SERVICE	(15A–1P)	1	2	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	3	4	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	5	6	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	7	8	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	9	10	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	11	12	(15A–1P)	EXISTING SERVICE	
EXISTING SERVICE	(15A–1P)	13	14	(15A–1P)	EXISTING SERVICE	
SPACE		15	16	(15A–1P)	EXISTING SERVICE	
SPACE		17	18	(15A–1P)	FIRE SMOKE DAMPER	
SPACE		19	20	(15A–1P)	FIRE SMOKE DAMPER	
SPACE		21	22	(15A–1P)	FIRE SMOKE DAMPER	
SPACE		23	24	SPACE		
SPACE		25	26	SPACE		
SPACE		27	28	SPACE		
SPACE		29	30	SPACE		

EXISTING PANEL '2F'
225A, 120/240V 3ø, 4W

NOTES:

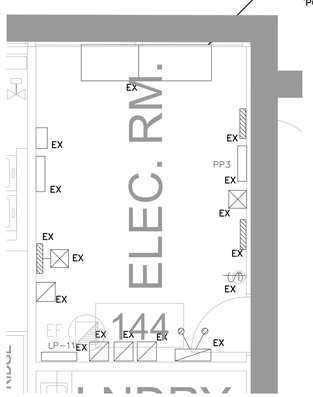
1. ✱ – DENOTES NEW BREAKER TO MATCH EXISTING IN TYPE AND MANUFACTURER TO FEED NEW SERVICE FROM EXISTING PANEL.
2. UPDATE PANEL DIRECTORY WITH NEW COMPUTER TYPED DIRECTORY TO REFLECT NEW CIRCUITS ADDED.



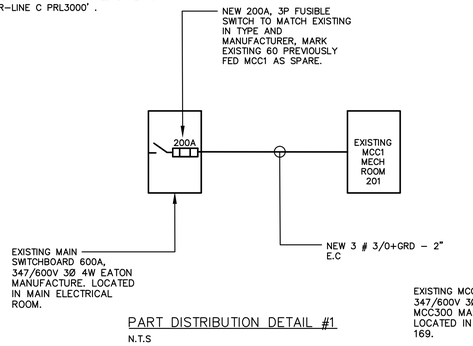
PART FIRE ALARM RISER DIAGRAM
N.T.S.

FIRE ALARM NOTES

1. THE EXISTING FIRE ALARM SYSTEM IS A SIMPLEX 5100.
2. ALL NEW DEVICES SHALL MATCH EXISTING IN TYPE & MANUFACTURE.
3. ALL WIRING SHALL BE RUN IN CONDUIT AND BE AS PER SYSTEM MANUFACTURES RECOMMENDATIONS.
4. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT & DEVICES.
5. INCLUDE FOR ALL COSTS FOR TESTING & VERIFICATION BY SYSTEM MANUFACTURE & SUBMITTAL OF VERIFICATION REPORT AND CERTIFICATE.
6. INCLUDE FOR ALL COSTS (INCLUDING PROGRAMMING) ASSOCIATED WITH UPGRADING OF CONTROL PANEL TO INCLUDE ALL NEW ZONES.
7. EXISTING PASSIVE GRAPHIC TO BE REPLACED WITH NEW SIMILAR TO EXISTING TO SHOW EXISTING ZONES AND ALL NEW ZONES.
8. PROVIDE ALL MISCELLANEOUS COMPONENTS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.



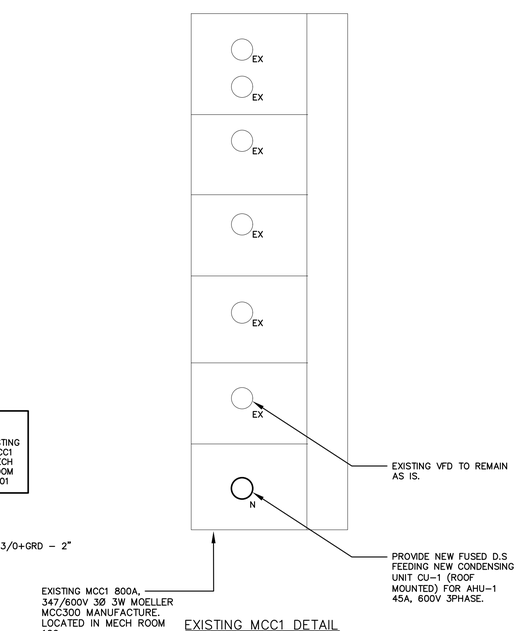
1 E500 MAIN ELECTRICAL ROOM
SCALE: 1/4"=1'–0"



PART DISTRIBUTION DETAIL #1
N.T.S

NOTES:

1. UNLESS OTHERWISE NOTED ALL ELECTRICAL EQUIPMENT SHOWN IS NEW TO BE PROVIDED BY THIS ELECTRICAL CONTRACTOR.
2. PROVIDE LAMACOID NAMEPLATES FOR ALL DISTRIBUTION EQUIPMENT.



EXISTING MCC1 DETAIL
N.T.S

NOTES:

1. UNLESS OTHERWISE NOTED ALL ELECTRICAL EQUIPMENT SHOWN IS NEW TO BE PROVIDED BY THIS ELECTRICAL CONTRACTOR.
2. PROVIDE LAMACOID NAMEPLATES FOR ALL DISTRIBUTION EQUIPMENT.

NO.	DATE	REVISION	BY
1	DEC.24/25	ISSUED FOR TENDER	M.A

DDSB Ignite Learning

ELECTRICAL CONSULTANT:
MJA ENGINEERING LTD.
ELECTRICAL ENGINEERS
556 EDWARD AVENUE, UNIT 82
RICHMOND HILL, ONTARIO
L4C 9Y5, CANADA
PHONE: (905) 780–8590 FAX: (905) 780–8591
EMAIL: engineering@mjaeng.com
WEB SITE: www.mjaeng.com

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MECHANICAL CONSULTANT:
RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

PROJECT/LOCATION
VAUGHAN WILLARD P.S - AHU REPLACEMENT
1911 Dixie Rd N, Pickering, ON L1V 1V4

DRAWING NAME
SLD & PANEL LOAD SCHEDULES.

DRAWN M.A	SCALE AS SHOWN	DRAWING NO.	E-500
CHECKED M.A	DATE DEC. 2025		
PROJECT NO. 2025–189			

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 A23.1	CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
b)	CAN/CSA A23.2	METHODS OF TEST FOR CONCRETE
c)	CAN/CSA A23.3	DESIGN OF CONCRETE STRUCTURES
d)	CAN/CSA-S16	LIMIT STATES DESIGN OF STEEL STRUCTURES
e)	CAN/CSA G40.20/G40.21	STRUCTURAL QUALITY STEEL
f)	RSIC	REINFORCING STEEL INSTITUTE OF CANADA, MANUAL OF STANDARD PRACTICE
g)	CAN/CSA-A370	CONNECTORS FOR MASONRY
h)	CSA-A371	MASONRY CONSTRUCTION FOR BUILDINGS
i)	S304.1	DESIGN OF MASONRY STRUCTURES
j)	CSA G30.18	CARBON STEEL BARS FOR CONCRETE REINFORCING

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
CONCRETE MIX DESIGN	NO	
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. CONCRETE:

1.1.1. CONCRETE STRENGTHS FOR STRUCTURAL ELEMENTS SHALL BE AS PER TABLE BELOW, UNLESS NOTED OTHERWISE ON PLANS, SCHEDULES, AND/OR SECTIONS.

TABLE D.1: CONCRETE STRENGTHS

STRUCTURAL ELEMENT	CONCRETE STRENGTH (f'c) @ 28 DAYS, MPa	EXPOSURE CLASS	AIR CONTENT	COMMENTS
HOUSEKEEPING PADS	20	N		

NOTES

1. CONCRETE STRENGTHS FOR STRUCTURAL ELEMENTS SHALL BE AS PER THIS TABLE UNLESS OTHERWISE NOTED ON PLANS, SCHEDULES, OR SECTIONS.
2. CONTRACTOR SHALL REVIEW PROPOSED CONCRETE SLUMP BY THE CONCRETE MIX DESIGNER, REINFORCEMENT CONGESTION, AND WORKABILITY PRIOR TO AND DURING POUR TO AVOID HONEYCOMBING OR VOIDS.
3. NOTIFY ENGLINK IN WRITING IF CONDITIONS MAY PREVENT PROPER CONSOLIDATION. CORRECTIVE WORK DUE TO INADEQUATE PLACEMENT SHALL BE AT CONTRACTOR'S COST.

1.2. REINFORCING STEEL: CONFORM TO CSA G30 SERIES, GRADE 400.

1.3. WELDED WIRE FABRIC: CONFORM TO CSA G30 SERIES, GRADE 386, IN FLAT SHEETS.

1.4. STRUCTURAL STEEL:

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

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

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

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

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

1.8. ANCHOR RODS: CONFORM TO THE REQUIREMENTS OF ASTM F1554 GRADE 36.

1.9. NON-SHRINK GROUT = COMPRESSIVE STRENGTH OF 35 MPa AT 24 HOURS.

1.10. BLOCK: CONFORM TO CAN3-A165 SERIES, MINIMUM COMPRESSIVE STRENGTH, fm = 15 MPa BASED ON NET AREA.

1.11. MORTAR: CONFORM TO CSA A179 TYPE S FOR LOAD-BEARING WALLS UNLESS NOTED.

1.12. MASONRY GROUT: CONFORM TO CSA A179, 12.5 MPa MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, 250 mm (10") SLUMP, MAXIMUM AGGREGATE SIZE 10 mm (3/8").

1.13. POST-INSTALLED ANCHORS: PROVIDED BY HILTI (CANADA) CORPORATION. CONTACT HILTI AT (800) 363-4458 FOR PRODUCT RELATED QUESTIONS.

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. UNLESS A REINFORCED MASONRY OR CONCRETE LINTEL IS SHOWN IN MASONRY WALLS OR MASONRY PARTITIONS, PROVIDE LOOSE STEEL LINTELS IN ACCORDANCE WITH REQUIREMENTS OF DOCUMENTS OVER ALL DOORWAYS, OTHER OPENINGS, AND RECESSES, INCLUDING THOSE FOR MECHANICAL OR ELECTRICAL SERVICES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE LOCATION, SIZE, AND NUMBER OF OPENINGS REQUIRED BY THE MECHANICAL AND ELECTRICAL CONSULTANT.

1.7. 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. MASONRY

2.1. PROVIDE A MINIMUM LENGTH OF 200 mm (8") OF 100% SOLID MASONRY UNITS FOR BEARING OF STEEL, CONCRETE OR REINFORCED MASONRY LINTELS.

2.2. SUPPLY AND PLACE REINFORCEMENT AND CONCRETE FOR REINFORCED MASONRY LINTELS IN ACCORDANCE WITH TYPICAL DETAILS SHOWN.

3. POST-INSTALLED ANCHORS

3.1. MATERIALS

3.1.1. EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI (CANADA) CORPORATION. CONTACT HILTI AT (800) 363-4458 FOR PRODUCT RELATED QUESTIONS.

3.1.2. ALL POST-INSTALLED ANCHORS SHALL ONLY BE INSTALLED IN A DRY CONDITION FOR INTERIOR EXPOSURE, AND A DRY OR WATER-SATURATED CONDITION FOR EXTERIOR EXPOSURE. WATER-FILLED INSTALLATION IS NOT PERMITTED UNLESS APPROVED BY THE CONSULTANT.

3.1.3. ALL ANCHORS EXPOSED TO WEATHER SHALL BE GALVANIZED IN ACCORDANCE WITH CSA G164.

3.2. QUALITY ASSURANCE

3.2.1. POST-INSTALLED ANCHORS SHALL ONLY BE EXECUTED BY TRAINED PERSONNEL. INSTALLATION OF ALL POST-INSTALLED ANCHORS SHALL BE PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII) AND THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. A RECORD OF TRAINING SHALL BE KEPT ON SITE AND MADE AVAILABLE TO THE STRUCTURAL CONSULTANT OR THE INDEPENDENT TESTING AND INSPECTION COMPANY UPON REQUEST.

3.3. DESIGN

3.3.1. ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS THAT HAVE BEEN SEALED BY ANOTHER LICENSED ENGINEER DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF MEETING THE PERFORMANCE OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEM HAVING AN ICC-ES ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, MOISTURE CONDITION OF CONCRETE, AND DRILLING METHODS.

3.3.2. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

4. ALTERATIONS AND/OR CONNECTIONS TO EXISTING STRUCTURE

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

4.2. 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.

4.3. SHORE EXISTING WORK AS REQUIRED UNTIL ALL NEW WORK HAS BEEN COMPLETED AND REVIEWED BY THE CONSULTANT.

4.4. SHORE FLOORS AS REQUIRED TO SUPPORT CRANES, HOISTS AND OTHER CONSTRUCTION EQUIPMENT.

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

4.6. WHERE REQUIRED TO AVOID CUTTING EXISTING REINFORCEMENT, MODIFY THE LAYOUT OF NEW THROUGH BOLTS, EXPANSION ANCHORS AND OTHER ANCHORING DEVICES.

4.7. MAKE GOOD THE EXISTING WORK.

5. CUTTING AND CORING OF EXISTING STRUCTURE

5.1. PRIOR TO CUTTING AND CORING ANY OPENINGS IN THE EXISTING BUILDING, PROVIDE THE CONSULTANT WITH A SLEEVING DRAWING INDICATING THE SIZE AND LOCATION OF OPENINGS RELATIVE TO BUILDING GRID LINES. EXISTING OPENINGS IN THE VICINITY OF THE NEW OPENING MUST ALSO BE SHOWN.

5.2. ALL DIMENSIONS PROVIDED TO THE CONSULTANT ARE TO BE CONFIRMED WITH THE APPROPRIATE CONTRACTOR (MECHANICAL OR ELECTRICAL) PRIOR TO CUTTING / CORING.

5.3. ANY REVISIONS TO THE DIMENSIONS BY THE CONSULTANT MUST BE REVIEWED BY THE APPROPRIATE CONTRACTOR PRIOR TO CUTTING / CORING.

5.4. FOR ANY OPENINGS WHICH ARE TO BE SAW-CUT INTO THE EXISTING STRUCTURE, PRE-DRILL THE CORNERS USING A 100 mm (4") Ø CORE DRILL. DO NOT OVER-CUT CORNERS OF OPENING.

5.5. ALL PRICES FOR CUTTING / CORING ARE TO INCLUDE ANY COSTS ASSOCIATED WITH X-RAYING, SCANNING, ETC.

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. DEFECTIVE MATERIALS AND WORK

3.1. 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.

3.2. 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 THE REJECTED MATERIAL IN PLACE. IN THIS CASE, THE TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE STANDARDS GIVEN BY THE CONSULTANT.

3.3. 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.

LIST OF STRUCTURAL DRAWINGS

RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

engineeringlink
building envelope & structure

375 University Ave., Suite 901
Toronto, ON M5G 2J5
416-599-(LINK) 5465
Project No. 26-2502 www.engineeringlink.ca

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Professional Seal

LICENSED PROFESSIONAL ENGINEER
M.G.C. HAYMAN
100200502
DEC 22, 2025
PROVINCE OF ONTARIO

No.	DESCRIPTION	BY	DATE
01	ISSUED FOR TENDER	MH	12/22/2025

REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

Project No: 25-14

Scale:	N/A
Drawn by:	AQV
Checked by:	MH / STB
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

TITLE:

GENERAL NOTES

DDSB Ignite Learning

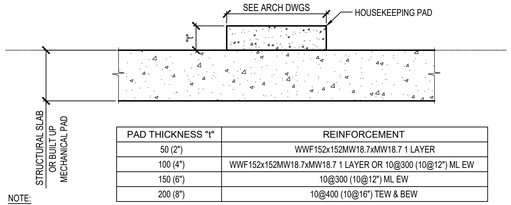
DRAWING No:

S-101

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	R/W	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	INCH(ES)	SPDD	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	U/N	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			W	WIDE FLANGE BEAM
E-W	EAST-WEST	Myf	FACTORED BENDING MOMENT ALONG y-y AXIS	WP	WORKING POINT
EW	EACH WAY			WT	WEIGHT, STRUCTURAL TEE
EXT	EXTERIOR	NIC	NOT IN CONTRACT	WWF	WELDED WIRE FABRIC, WELDED WIDE FLANGE
f'c	28 DAYS CONCRETE COMPRESSIVE STRENGTH	N-S	NORTH-SOUTH		
		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		

DETAILS FOR HOUSEKEEPING PADS — TD-CS11A

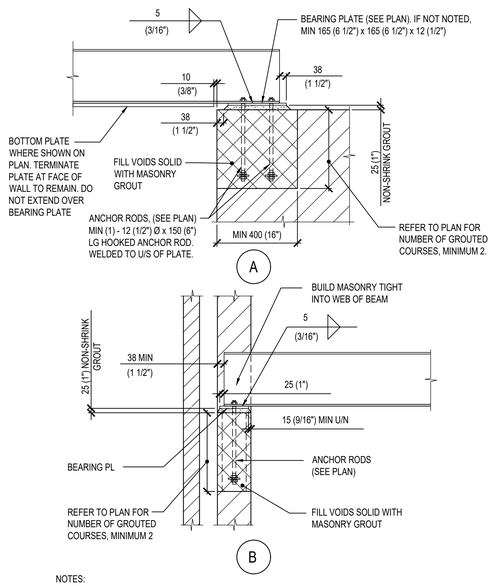


PAD THICKNESS "t"	REINFORCEMENT
50 (2")	WWF152x152MW18.7xMW18.7 1 LAYER
100 (4")	WWF152x152MW18.7xMW18.7 1 LAYER OR 10@300 (10@12") ML EW
150 (6")	10@300 (10@12") ML EW
200 (8")	10@400 (10@16") TEW & BEW

NOTE:

1. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, DRAWINGS FOR LOCATION, THICKNESS AND SIZE OF HOUSEKEEPING PADS.
1. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, GROUT ALL CRACKS IN THE HOUSEKEEPING PADS AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT OR AS NOTED IN SPECIFICATIONS.

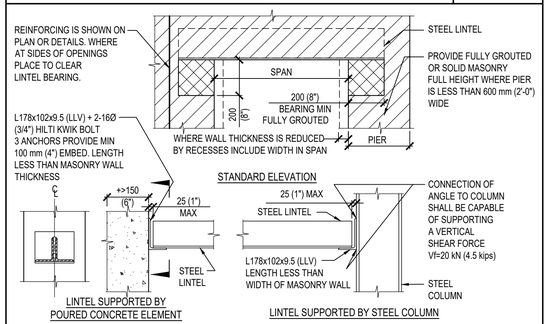
BEARING OF BEAM ON END OF MASONRY WALL — TD-M08



NOTES:

1. REFER TO GENERAL NOTES FOR EXTENT OF MASONRY GROUT.
2. REFER TO PLANS FOR SIZE OF BEARING PLATE AND SIZE/NUMBER OF ANCHOR RODS.

STEEL LINTELS FOR NON-LOAD BEARING MASONRY WALLS — TD-S01



CLEAR SPAN	WALL THICKNESS				
	90 (3 1/2") VENEER	140 (5 1/2")	190 (7 1/2")	240 (9 1/2")	290 (11 1/2")
UP TO 1200 (4'-0")	L89x89x6.4	2-L64x64x6.4	2-L76x89x6.4 (LLH)	L76x102x6.4 + L76x127x6.4 (LLH)	3-L76x89x6.4 (LLH)
1200 (4'-0") TO 1800 (6'-0")	L127x89x6.4 (LLV)	2-L89x64x6.4 (LLV)	2-L89x89x6.4	L102x102x6.4 + L76x127x6.4 (LLH)	3-L89x89x6.4
1800 (6'-0") TO 2400 (8'-0")	L127x89x6.4 (LLV)	2-L89x64x7.9 (LLV)	2-L102x89x7.9 (LLV)	L102x102x9.5 + L89x127x7.9 (LLH)	3-L102x89x6.4 (LLV)
2400 (8'-0") TO 3000 (10'-0")	L127x89x9.5 (LLV)	2-L89x64x9.5 (LLV)	2-L152x89x7.9 (LLV)	L152x102x7.9 (LLV) + L127x127x7.9	3-L127x89x6.4 (LLV)
DETAIL					

NOTES:

1. CONNECT BACK TO BACK DOUBLE ANGLE LINTELS USING 16 mm (5/8") Ø BOLTS AT 450 mm (18") c/c MAX OR BY WELDING AT TOP AND BOTTOM USING 6 mm (1/4") WELDS x 50 mm (2") LONG AT 450 mm (18") c/c MAX. FIRST BOLT OR WELD TO BE A MAX OF 75 mm (3") FROM END OF LINTEL
2. FULLY PACK LINTEL ENDS WITH STEEL SHIMS TO ENSURE EVEN BEARING.
3. LINTELS AS COVERED UNDER THIS DETAIL ARE NOT NECESSARILY SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENING LOCATIONS AND SIZES.

RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

engineeringlink
building envelope & structure
375 University Ave., Suite 901
Toronto, ON M5G 2J5
416-599-(LINK) 5465
Project No. 26-2502
www.engineeringlink.ca

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LICENSED PROFESSIONAL ENGINEER
M.G.C. HAYMAN
100200502
DEC 22, 2025
PROVINCE OF ONTARIO

No.	DESCRIPTION	BY	DATE
01	ISSUED FOR TENDER	MH	12/22/2025

REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

Project No: 25-14

Scale:	NTS
Drawn by:	AQV
Checked by:	MH / STB
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

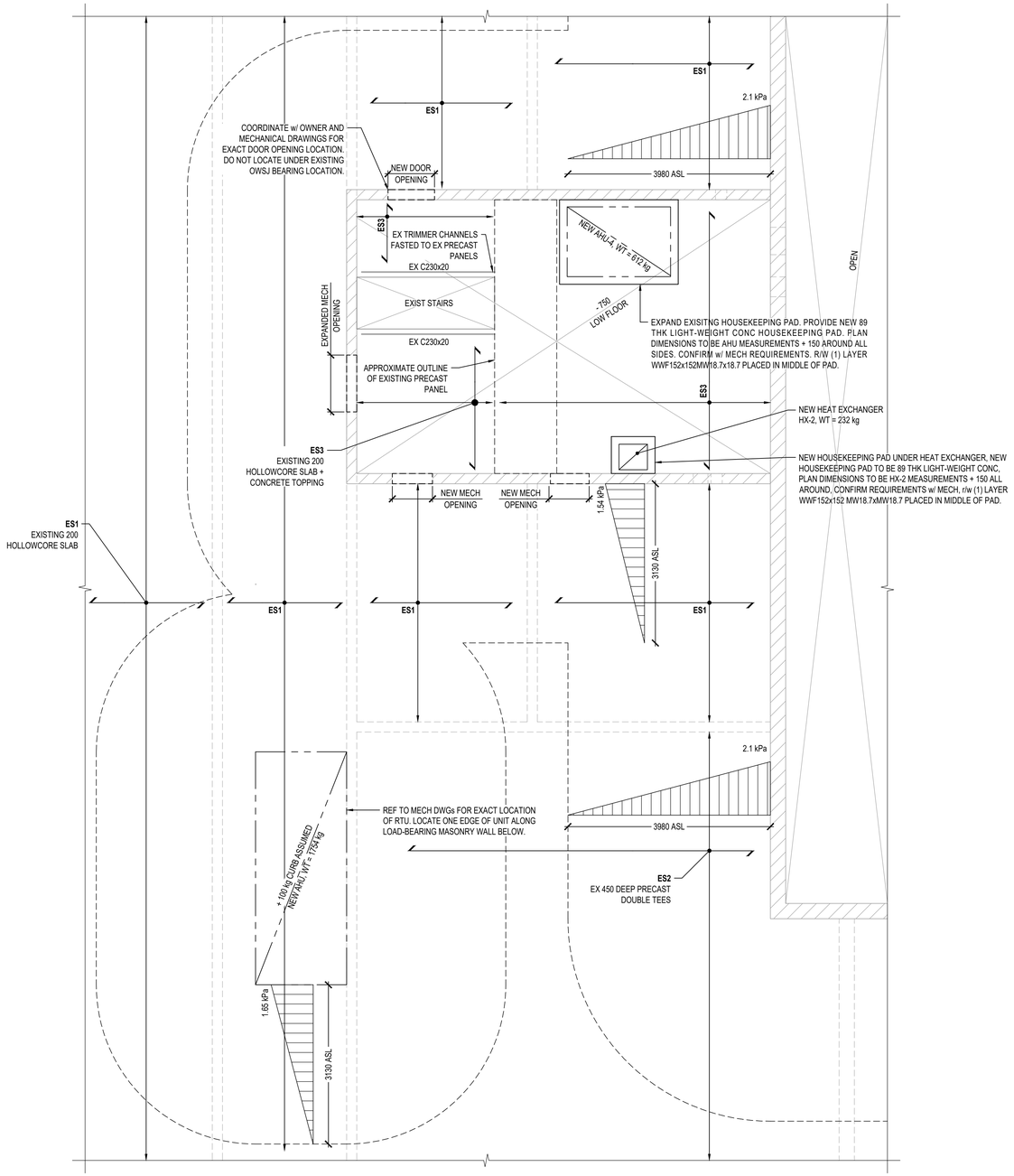
TITLE:

TYPICAL DETAILS

DDSB Ignite Learning

DRAWING No:

S-102



B S-201 — SECOND FLOOR AND LOW ROOF FRAMING PART PLAN
1 : 50

SECOND FLOOR AND LOW ROOF FRAMING NOTES

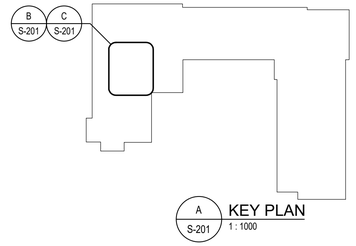
1. TOP OF EXISTING HOLLOW-CORE SLABS IS AT ELEVATION + 3600 ABOVE EXISTING SLAB ON GRADE UNLESS CROSSED AND NOTED, CONTRACTOR TO SITE VERIFY. ELEVATIONS NOTED ARE REFERENCED FROM TOP OF EXISTING HOLLOW-CORE SLAB ELEVATION + 3600.
2. SECOND FLOOR (INTERIOR) DESIGN LOADS ARE:

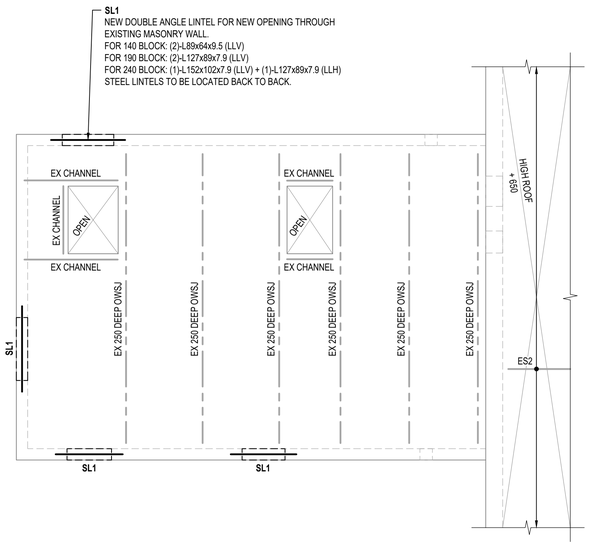
SUPER-IMPOSED DEAD LOAD	1.4 kPa	
LIVE LOAD	3.6 kPa	INTERIOR

3. ROOF (EXTERIOR) DESIGN LOADS ARE:

SUPER-IMPOSED DEAD LOAD	1.0 kPa	
SNOW LOAD	1.2 kPa	+ ASL
MULTIPLIED BY HIGH IMPORTANCE	*IULS = 1.15, ISLS = 0.9*	

4. REFER TO MECHANICAL DRAWINGS FOR ELEVATION OF ALL NEW LINTELS.
5. PROVIDE CLEAN SAW CUT AND CORING LINES AT ALL NEW MECHANICAL OPENINGS. MAKE GOOD ALL DAMAGED BLOCK / BRICK ADJACENT TO OPENINGS. UNLESS NOTED OTHERWISE ON PLAN PROVIDE STEEL LINTELS ABOVE ALL SUCH OPENINGS IN ACCORDANCE WITH TYPICAL DETAIL **TD-S01**. REFER TO MECHANICAL FOR NUMBER OF OPENINGS AND LOCATIONS.
6. REMOVE EXISTING CEILING FINISHES, MECHANICAL SERVICES, AND THE LIKE TO COMPLETE THE STRUCTURAL WORK. PATCH AND MAKE GOOD.
7. CONNECT NEW RTU TO ITS ROOF CURB AND THE ROOF CURB TO THE STRUCTURE PER MANUFACTURER'S REQUIREMENTS.
8. WE HAVE REVIEWED THE LOADS IMPOSED BY THE PROPOSED RTU ON THE EXISTING STRUCTURE AND IN OUR OPINION THE STRUCTURE CAN SAFELY SUPPORT THE LOAD WITHOUT REINFORCING.





C S-201 — HIGH ROOF FRAMING PART PLAN
1 : 50

HIGH ROOF FRAMING NOTES

1. TOP OF EXISTING HOLLOW-CORE SLABS IS AT ELEVATION + 5400 ABOVE EXISTING SLAB ON GRADE UNLESS CROSSED AND NOTED, CONTRACTOR TO SITE VERIFY. ELEVATIONS NOTED ARE REFERENCED FROM TOP OF EXISTING HOLLOW-CORE SLAB ELEVATION + 5400.
2. ROOF (EXTERIOR) DESIGN LOADS ARE:

SUPER-IMPOSED DEAD LOAD	1.0 kPa	
SNOW LOAD	1.2 kPa	+ ASL
MULTIPLIED BY HIGH IMPORTANCE	*IULS = 1.15, ISLS = 0.9*	

3. REFER TO MECHANICAL DRAWINGS FOR ELEVATION OF ALL NEW LINTELS.
4. CONTRACTOR TO RETAIN A PROFESSIONAL ENGINEER, LICENSED IN THE PROVINCE OF ONTARIO, TO PREPARE ENGINEERED DRAWINGS FOR ALL TEMPORARY SHORING AS INDICATED ON PLAN. THE ENGINEER MUST HAVE A MINIMUM OF 5-YEARS EXPERIENCE IN THE DESIGN OF TEMPORARY SHORING SYSTEMS AND WILL BE RESPONSIBLE FOR REVIEWING THE SHORING INSTALLATION TO ENSURE IT MEETS THEIR DESIGN REQUIREMENTS.
5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING NEW WORK WITH TEMPORARY SHORING REQUIREMENTS.
6. PROVIDE CLEAN SAW CUT AND CORING LINES AT ALL NEW MECHANICAL OPENINGS. MAKE GOOD ALL DAMAGED BLOCK/ BRICK ADJACENT TO OPENINGS. UNLESS NOTED OTHERWISE ON PLAN PROVIDE STEEL LINTELS ABOVE ALL SUCH OPENINGS IN ACCORDANCE WITH TYPICAL DETAIL **TD-S01**. REFER TO MECHANICAL FOR NUMBER OF OPENINGS AND LOCATIONS.
7. REMOVE EXISTING CEILING FINISHES, MECHANICAL SERVICES, AND THE LIKE TO COMPLETE THE STRUCTURAL WORK. PATCH AND MAKE GOOD.

RoMar ENGINEERING
MECHANICAL BUILDING SERVICES

engineeringlink
building envelope & structure
375 University Ave., Suite 901
Toronto, ON M5G 2J5
416-599-(LINK) 5465
Project No. 26-2502 www.engineeringlink.ca

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Professional Seal

LICENSED PROFESSIONAL ENGINEER
M.G.C. HAYMAN
100200502
DEC 22, 2025
PROVINCE OF ONTARIO

No.	DESCRIPTION	BY	DATE
01	ISSUED FOR TENDER	MH	12/22/2025

REVISIONS / STATUS

PROJECT:

VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

Project No: 25-14

Scale:	AS NOTED
Drawn by:	AQV
Checked by:	MH / STB
Address:	1911 Dixie Rd N, Pickering, ON L1V 1V4

TITLE:

FRAMING PLANS

DDSB Ignite Learning

DRAWING No:

S-201