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

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:

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.

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:

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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VAUGHAN WILLARD P.S.
- AHU REPLACEMENT

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

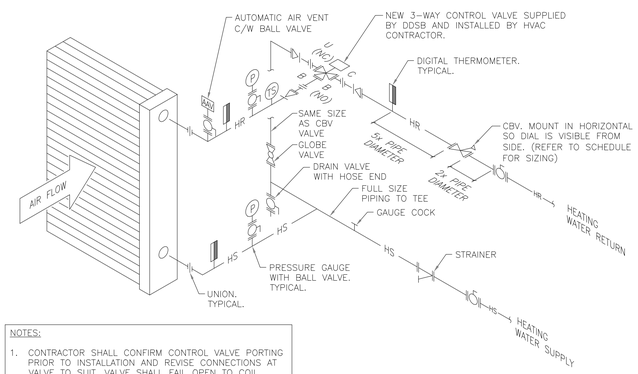
TITLE:

SCHEDULES

DDSB Ignite Learning

DRAWING No:

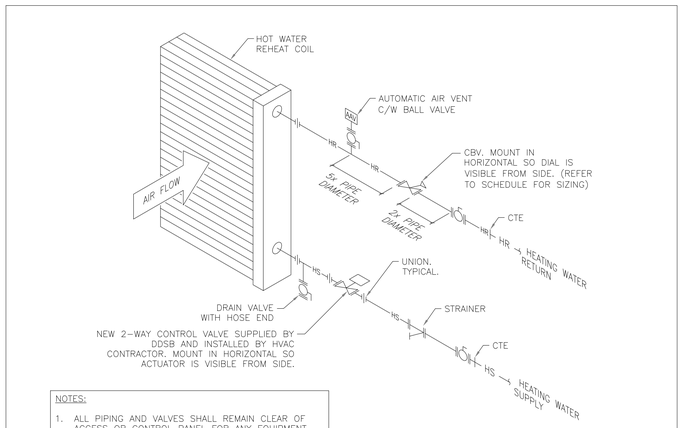
M-102



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.

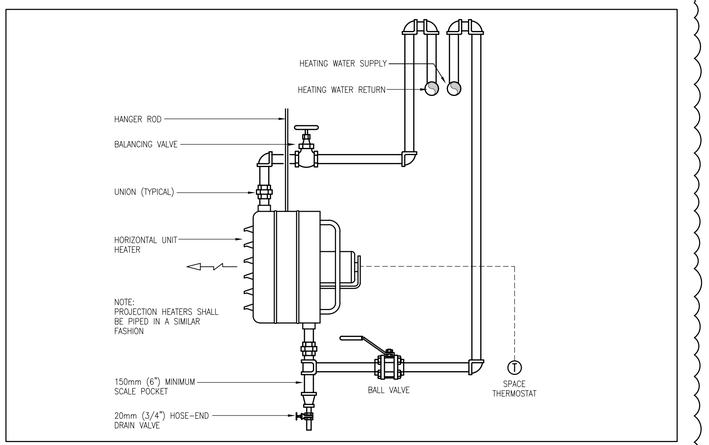
1 / M-103 AIR HANDLING UNIT HOT WATER HEATING COIL DETAIL C/W 3-WAY VALVE
N.T.S.



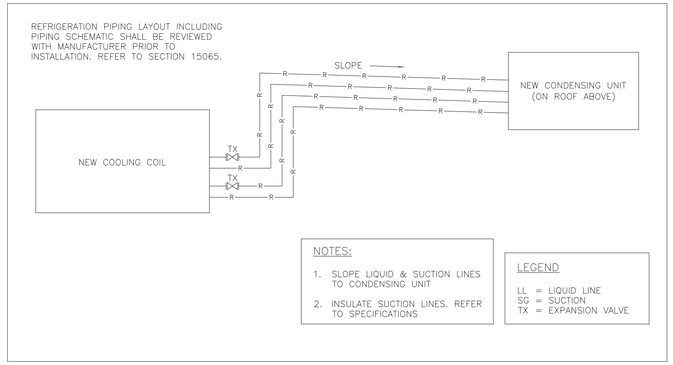
NOTES:

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



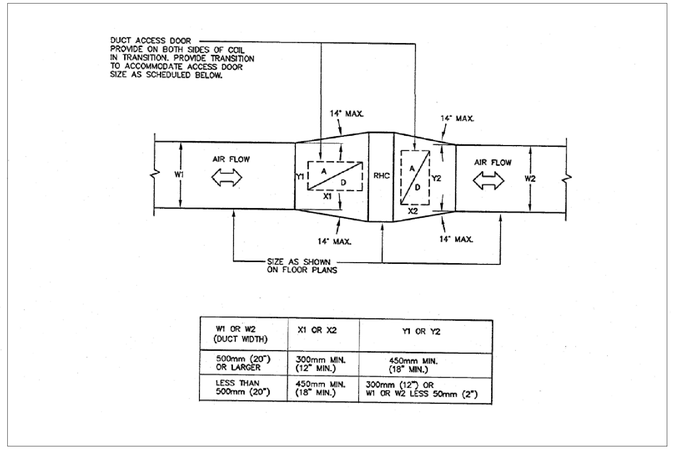
NOTES:

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

LEGEND

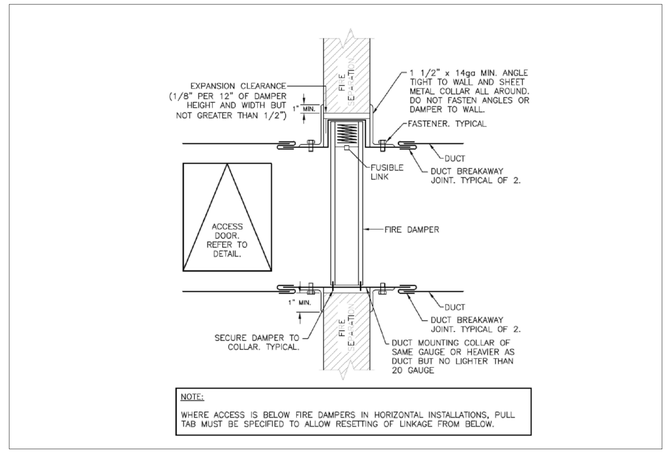
LL = LIQUID LINE
SG = SUCTION
TX = EXPANSION VALVE

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")

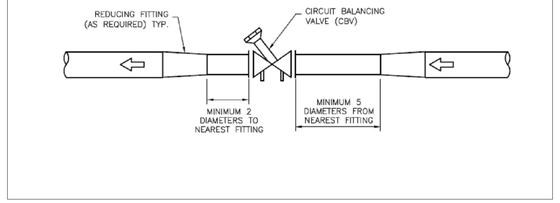
4 / M-103 REHEAT COIL MOUNTING DETAIL (PLAN VIEW)
N.T.S.



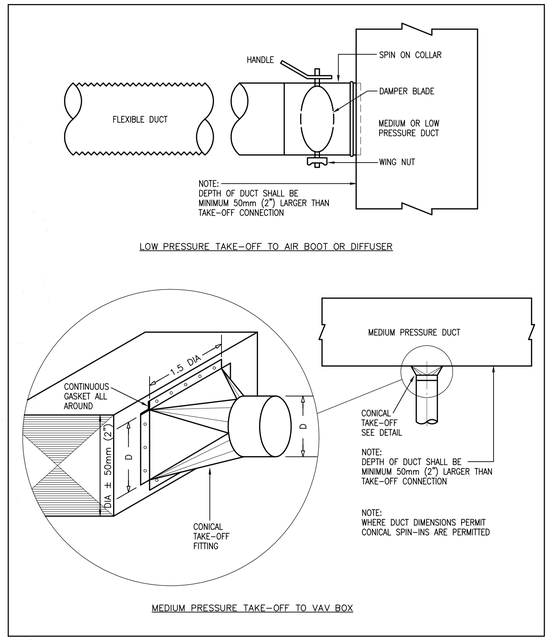
NOTE:

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

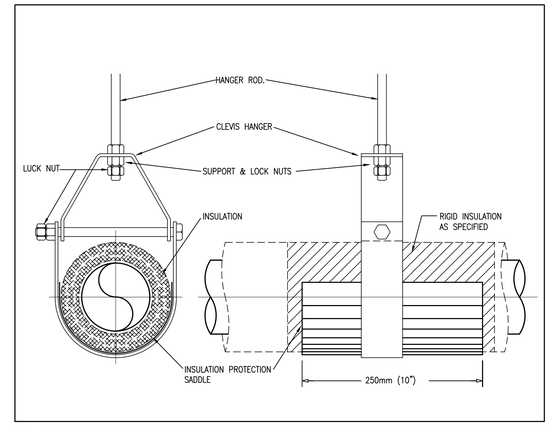
6 / M-103 FIRE DAMPER DETAIL
N.T.S.



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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TITLE:

DETAILS

DDSB Ignite Learning

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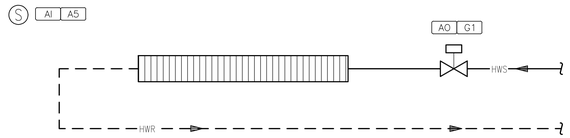
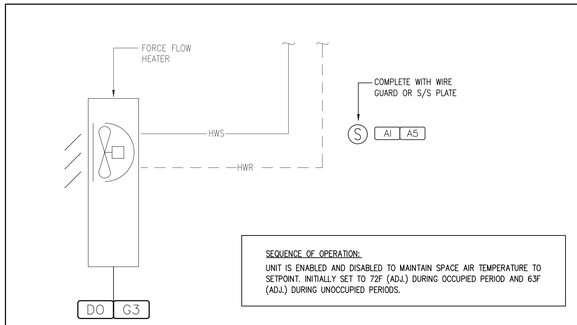
M-103



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

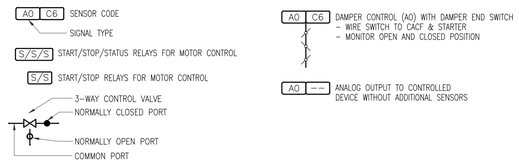
D1 MOTOR CONTROL RELAYS, START/STOP/STATUS TYPE
D2 CURRENT TRANSFORMERS AND RELAYS
D3 MOTOR STATUS CONTACTS
D4 DIFFERENTIAL PRESSURE SWITCH
D5 LEVEL SWITCH, TANK MOUNTED
D6 LEVEL SWITCH, FLOAT TYPE
D7 DIFFERENTIAL PRESSURE TRANSMITTER
D8 CURRENT SENSITIVE RELAY
D9 LEVEL TRANSMITTER
K1 WATERFLOW TRANSMITTER, 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

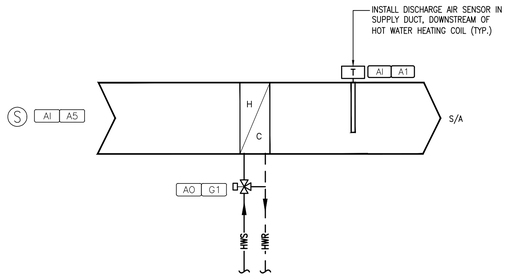
F1 INTERFACE CONTACT TO CACF
F2 VIBRATION DETECTOR
F3 INTERFACE CONTACT
F4 INTERFACE TO HOOD SUPPRESSION

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

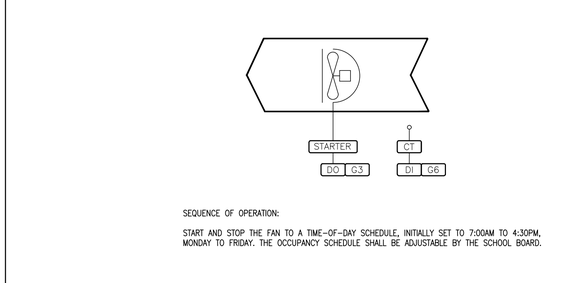
ABBREVIATIONS

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

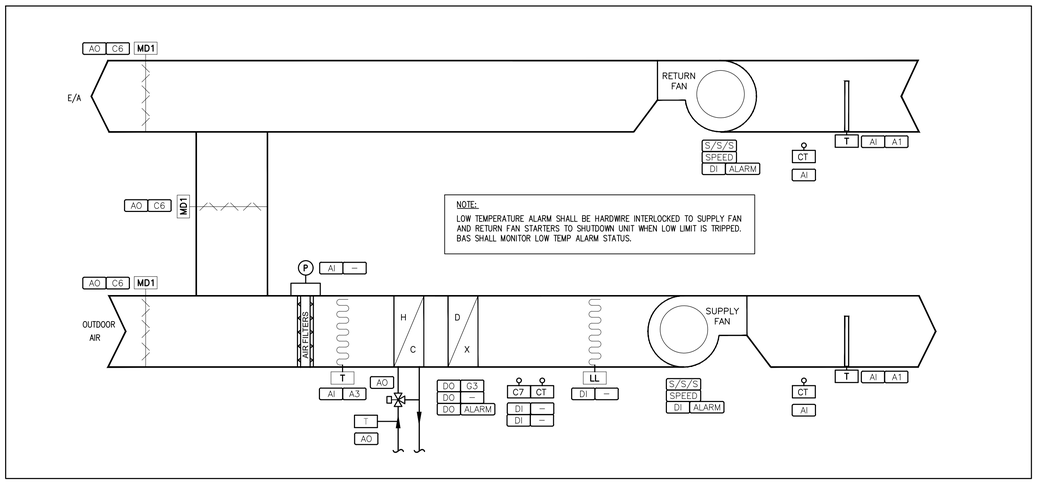




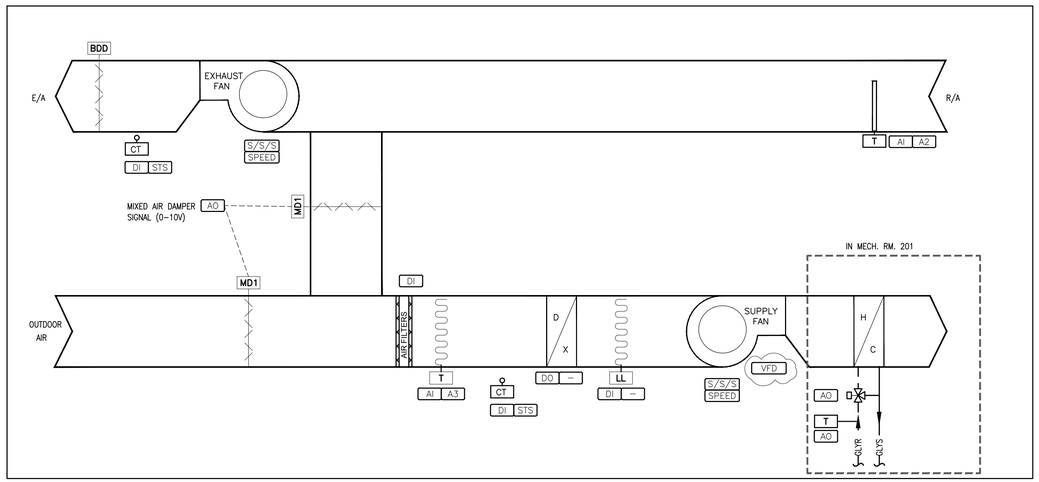
2 M-104 REHEAT CONTROL SCHEMATIC
NTS



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
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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

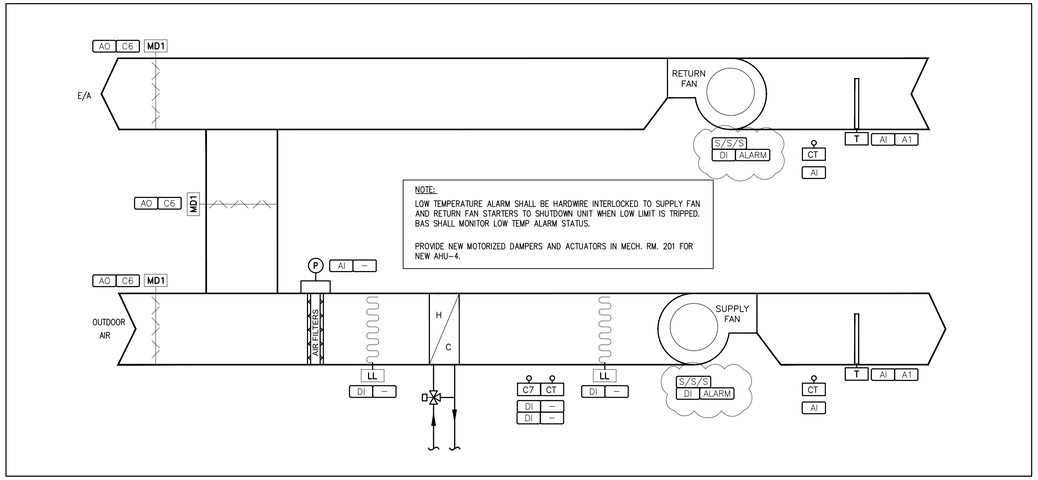
TITLE:

CONTROLS & CONTROL DETAILS

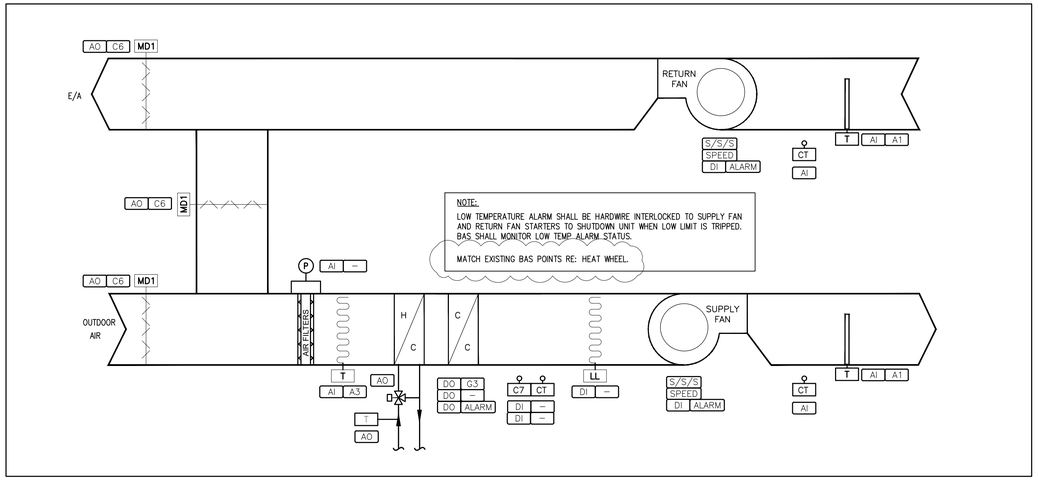
DDSB Ignite Learning

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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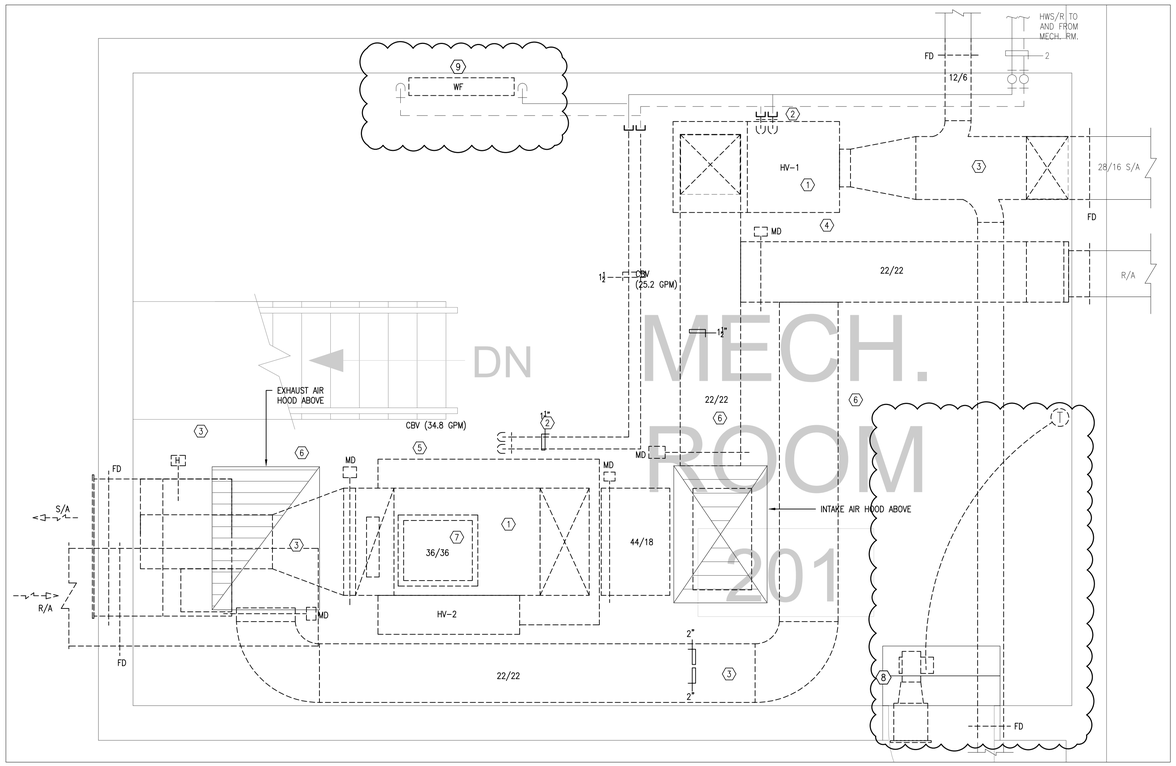
TITLE:

CONTROLS & CONTROL DETAILS

DDSB Ignite Learning

DRAWING No:

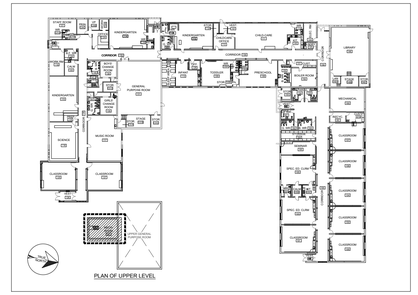
M-105



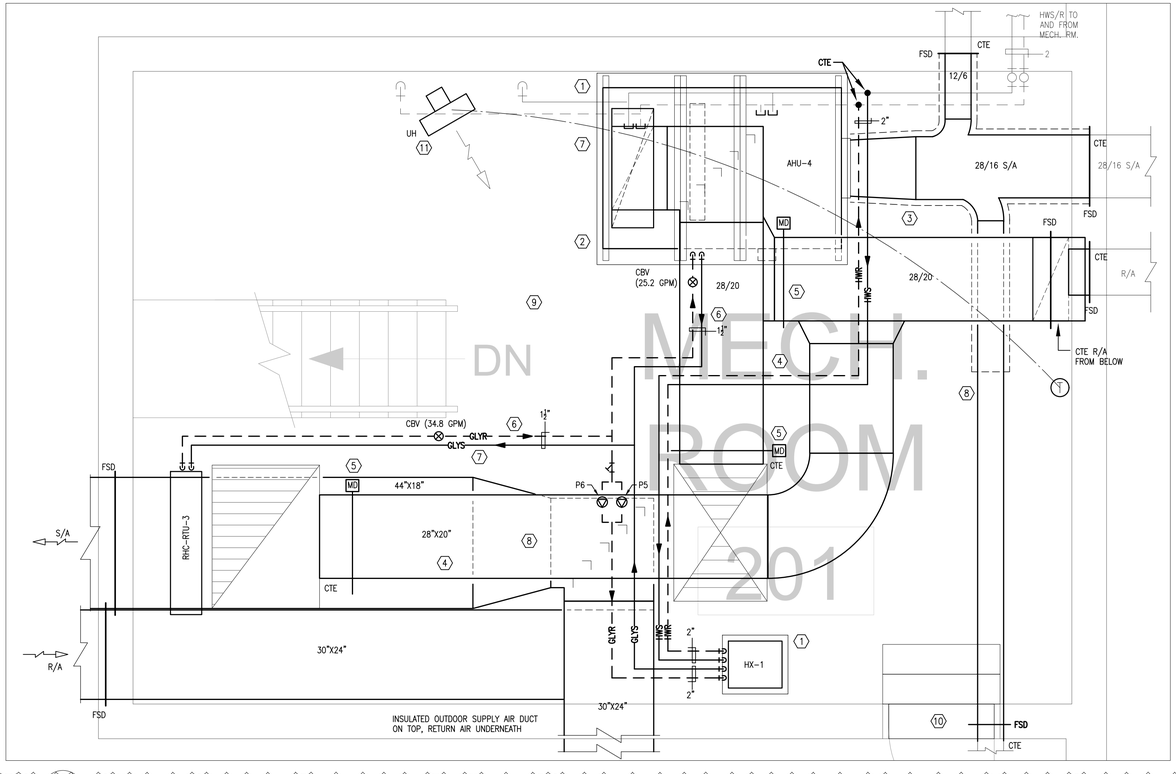
1 MECH. RM. 201 - DEMO
M-200 SCALE: 1/2"=1'-0"

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.

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Checked by:	ME
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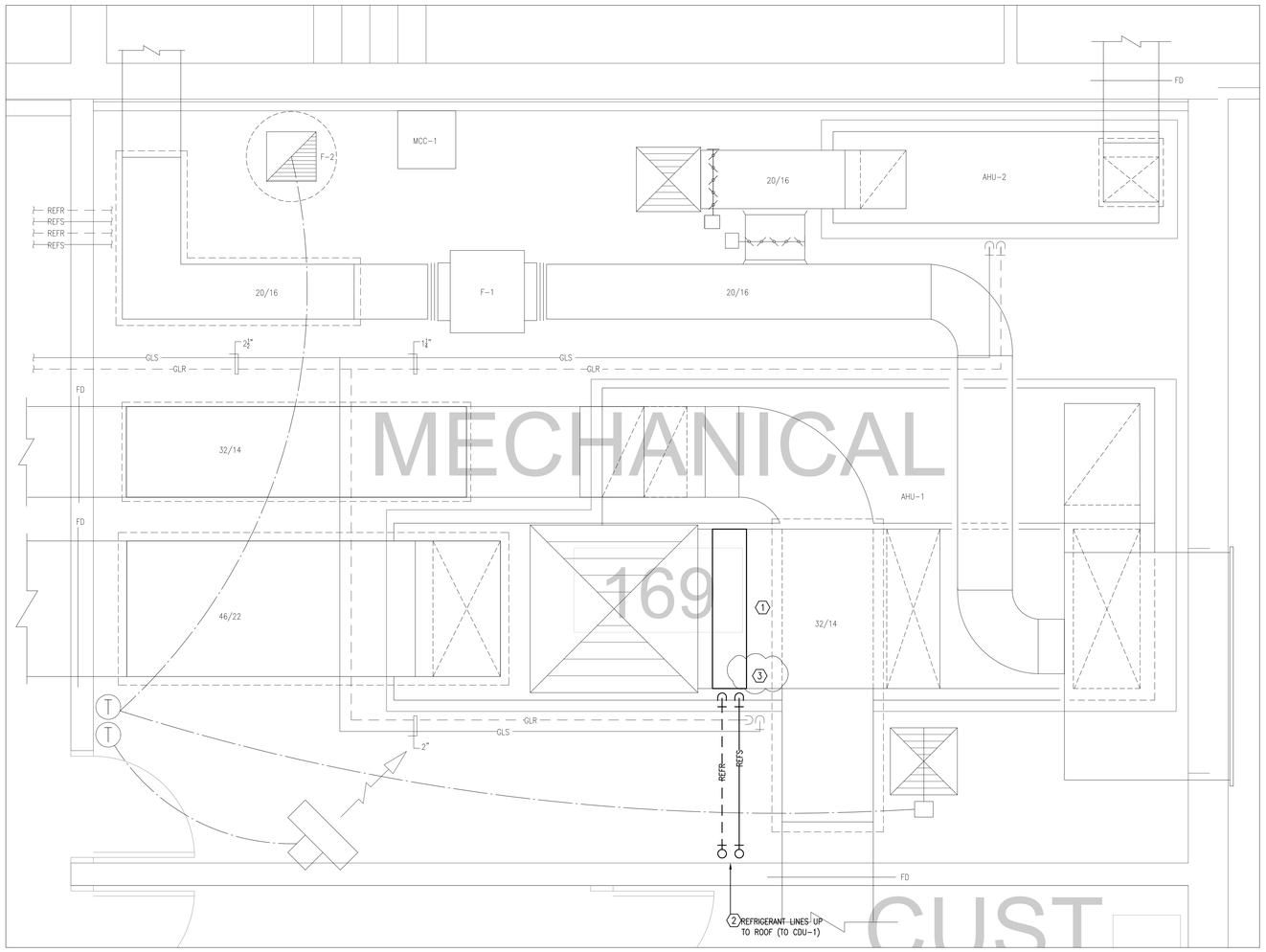
TITLE:

MECHANICAL ROOM 201 - DEMO/NEW

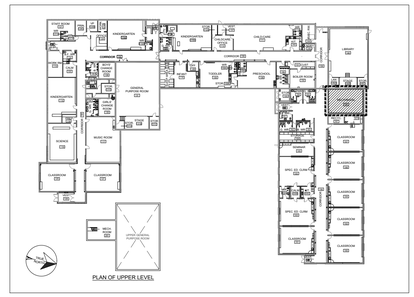
DDSB Ignite Learning

DRAWING No:

M-200



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.

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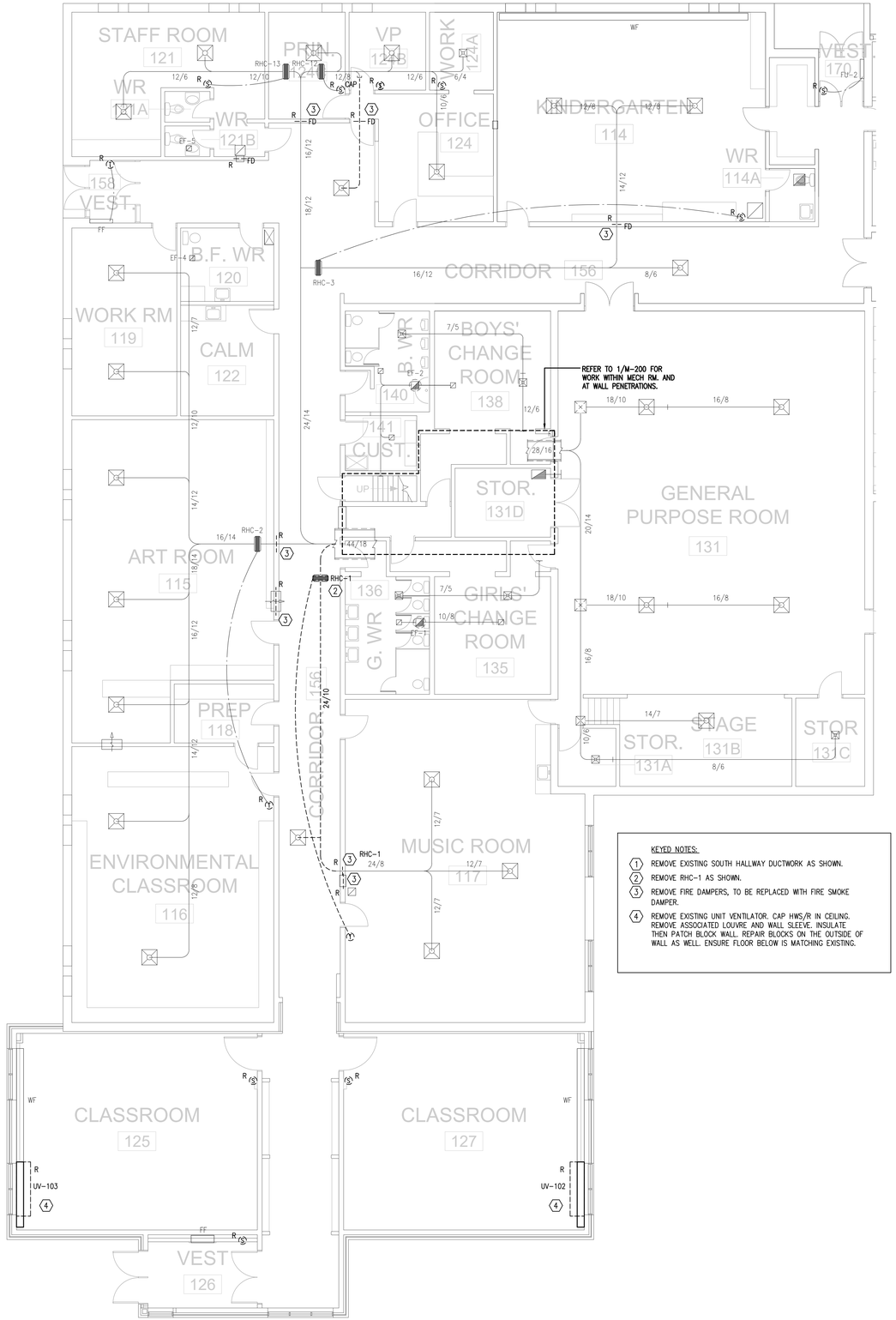
TITLE:

MECHANICAL ROOM 169 - DEMO/NEW

DDSB Ignite Learning

DRAWING No:

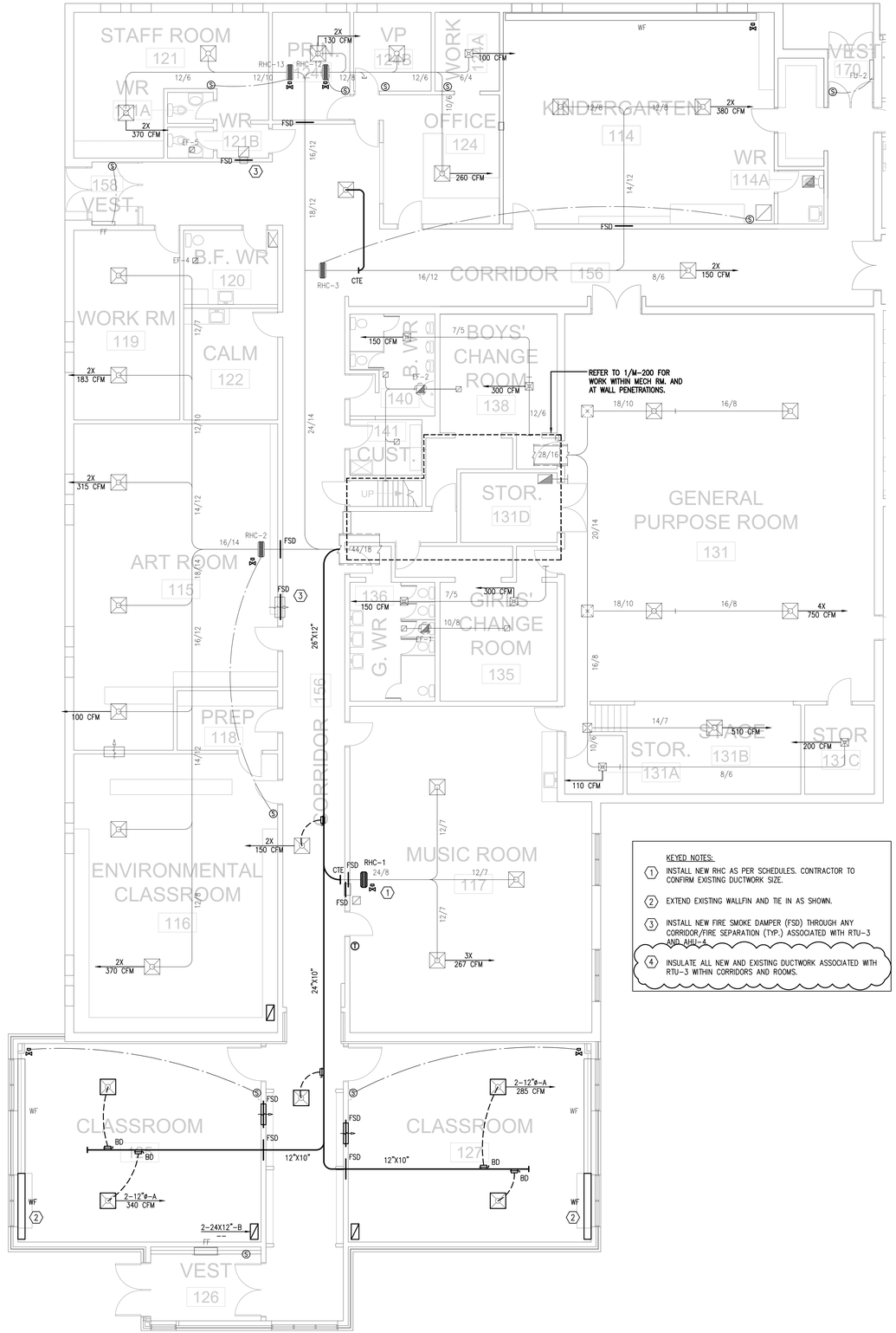
M-201



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"

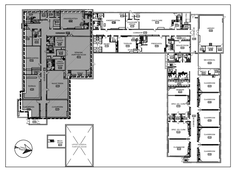


KEYED NOTES:

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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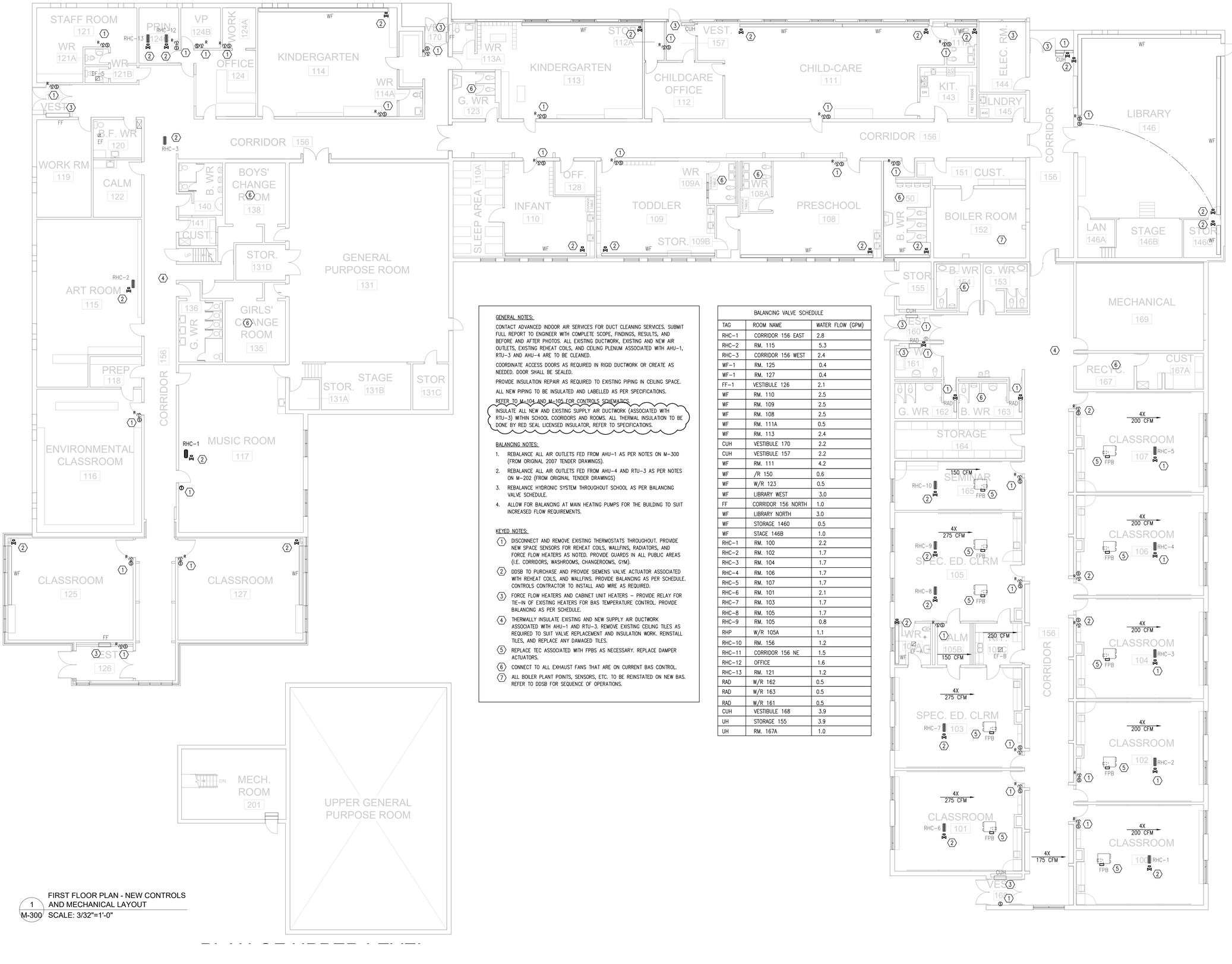
TITLE:

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"

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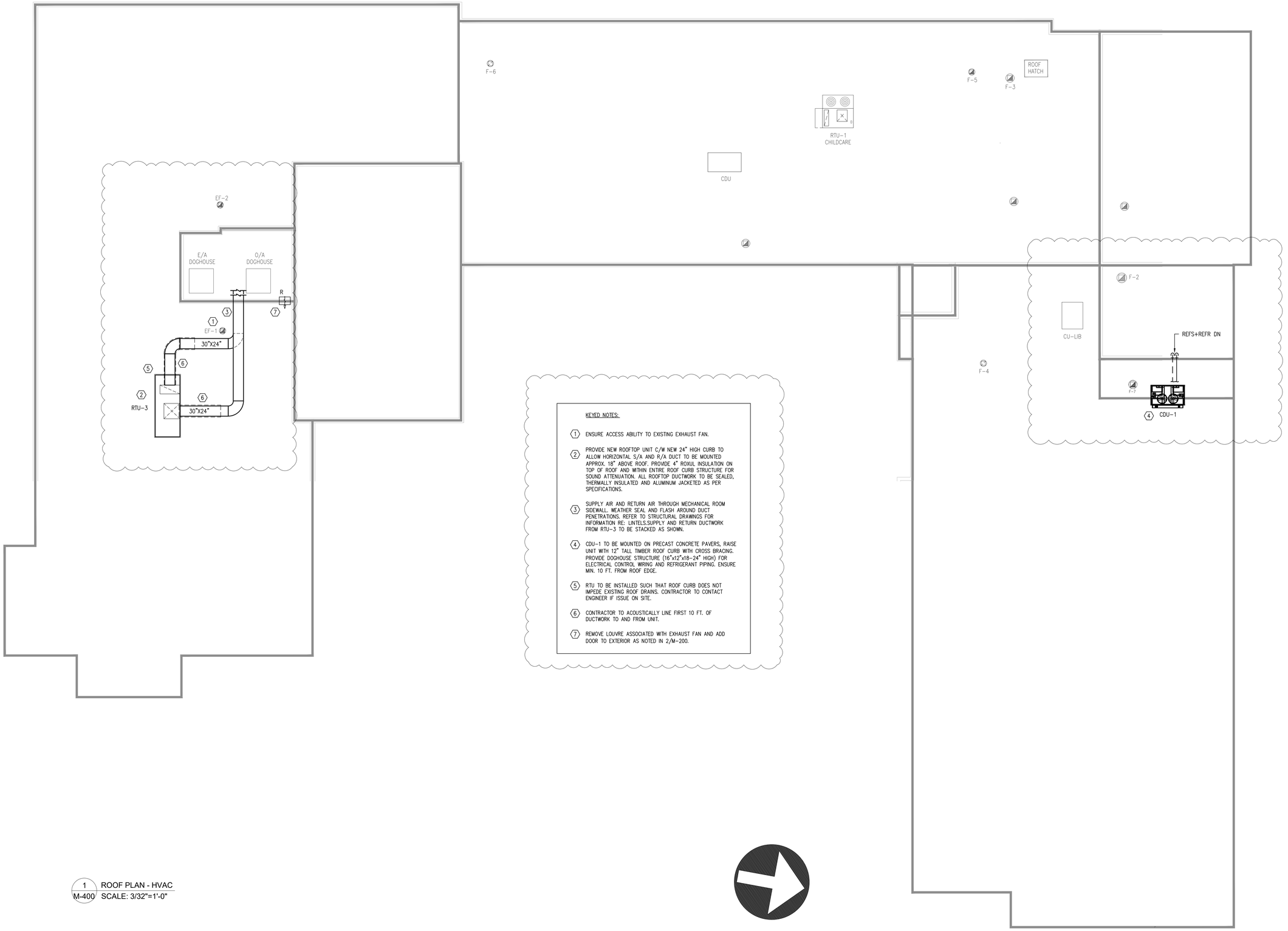
TITLE:

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"

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

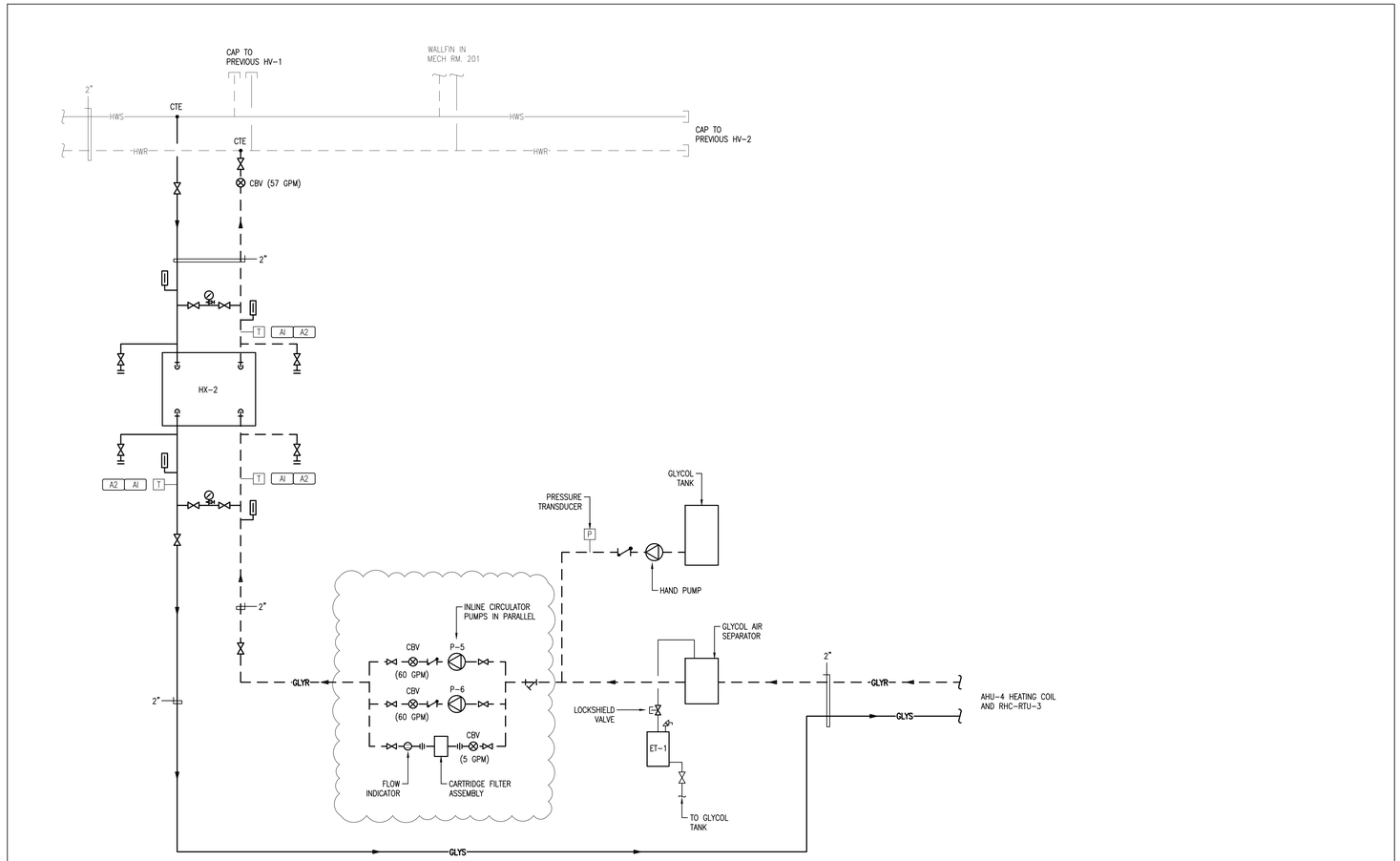
TITLE:

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