

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



MCNICOLL AVENUE PUBLIC SCHOOL

155 MCNICOLL AVENUE
NORTH YORK, ONTARIO

HEATER CONTROL AND ISOLATION VALVES

ENTRUST ENGINEERING PROJECT #: 25097

DRAWING LIST	
DWG NO.	DESCRIPTION
M-000	COVER PAGE
M-100	SPECIFICATIONS (1 OF 3)
M-101	SPECIFICATIONS (2 OF 3)
M-102	SPECIFICATIONS (3 OF 3)
M-110	DETAILS, LEGEND, AND ABBREVIATIONS
M-300	GROUND FLOOR HVAC DEMOLITION
M-301	GROUND FLOOR HVAC MODIFICATION
M-302	SECOND FLOOR HVAC DEMOLITION
M-303	SECOND FLOOR HVAC MODIFICATION

DISCIPLINE	ISSUED FOR	DATE	FILE No.
MECHANICAL DRAWINGS	TENDER	2026-01-30	25097 - MECH

5		
4		
3		
2	2026/01/30	ISSUED FOR TENDER
1	2026/01/14	ISSUED FOR 99% CLIENT REVIEW
No.	Date	Action



Orientation Stamp
Project Name and Address:
HEATER CONTROL AND ISOLATION VALVES
155 MCNICOLL AVENUE
NORTH YORK, ONTARIO

Drawing title
COVER PAGE

Scale: N/A	Project No. 25097
Designer: D.N	Date: 2026-01-14
Drawn by: M.D.	Checked by: D.N
Drawing file: 25097 - MECH	Client Approval
Revision No. 0	Drawing No. M-000

GENERAL NOTES:

- 1. GENERAL SCOPE OF WORK
1.1. FURNISH ALL LABOUR, MATERIALS, EQUIPMENT, TOOLS AND SUPPORTS AS WELL AS SUPERVISION TO PROVIDE A COMPLETE INSTALLATION, TESTED AND IN WORKING ORDER, AS SHOWN ON THE DRAWINGS.
1.2. THE CONTRACTOR SHALL PERFORM THE WORK STIPULATED IN THE CONTRACT AND ANY OR ALL CONTRACT CHANGES AND CHANGE DIRECTIVES, AND SHALL FURNISH, UNLESS OTHERWISE PROVIDED IN THE CONTRACT, EVERYTHING NECESSARY FOR THE PROPER PERFORMANCE AND COMPLETION OF THE WORK.
1.3. ALL WORK SHALL BE FULLY TESTED, COMMISSIONED AND IN GOOD WORKING ORDER AT TIME OF HAND-OVER TO OWNER.
1.4. MAKE GOOD ANY DAMAGES TO EXISTING EQUIPMENT AND/OR SYSTEM(S). COORDINATE WORK AND WORKING HOURS WITH THE OWNER AND OTHER TRADES TO MINIMIZE DISRUPTION.
2. CODES AND STANDARDS
2.1. ALL WORK SHALL CONFORM TO THE MOST RECENT ISSUES OF:
2.1.1. THE ONTARIO BUILDING CODE
2.1.2. THE ONTARIO ELECTRICAL SAFETY CODE
2.1.3. THE MINISTRY OF THE ENVIRONMENT
2.1.4. THE NATIONAL ELECTRICAL CODE
2.1.5. BYLAWS AND REGULATIONS ISSUED BY THE BUILDING AUTHORITY HAVING JURISDICTION
2.1.6. ASHRAE
2.1.7. ASME
2.1.8. SMACNA
2.1.9. NFPA
2.1.10. TSSA
2.1.11. CSA
2.1.12. CGA
3. COORDINATE AND PAY FOR ALL TSSA INSPECTIONS, CRANING, STREET PERMITS, PARKING, ETC... REQUIRED TO COMPLETE THE INTENDED DESIGN AS OUTLINED IN THE CONTRACT DOCUMENTS.
4. SPECIFICATIONS
4.1. COMPLY WITH THE GENERAL SECTIONS AND APPLICABLE SECTIONS OF THE GENERAL CONTRACT SPECIFICATIONS.
5. WARRANTY
5.1. WARRANT ALL LABOUR AND MATERIALS INCLUDED IN THIS CONTRACT FOR A PERIOD OF TWO YEARS FROM DATE OF FINAL ACCEPTANCE. ASSUME FULL RESPONSIBILITY FOR LAYOUT OF ALL WORK AND FOR ANY DAMAGE CAUSED TO OWNER OR OTHERS BY IMPROPER CARRYING OUT OF THE WORK.
6. DRAWINGS
6.1. DRAWINGS SHOW GENERAL INTENT OF THE WORK AND PROPOSED ROUTING ONLY.
6.2. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL CONFIRM ALL DIMENSIONS BY FIELD MEASURE BEFORE PROCEEDING WITH THE WORK.
6.3. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING POSSIBLE INTERFERENCES AND INFORMING THE ENGINEER PRIOR TO STARTING ANY WORK.
7. IDENTIFICATION
7.1. MANUFACTURER'S EQUIPMENT NAMEPLATES
7.1.1. METAL OR PLASTIC LAMINATE NAMEPLATE MECHANICALLY FASTENED TO EACH PIECE OF EQUIPMENT BY MANUFACTURER.
7.1.2. LETTERING AND NUMBERS RAISED OR RECESSED.
7.1.3. INFORMATION TO INCLUDE, AS APPROPRIATE:
7.1.4. EQUIPMENT: MANUFACTURER'S NAME, MODEL, SIZE, SERIAL NUMBER, CAPACITY.
7.1.5. MOTOR: VOLTAGE, HZ, PHASE, POWER FACTOR, DUTY, FRAME SIZE.
7.2. SYSTEM NAMEPLATES:
7.2.1. PROVIDE LAMINATED PLASTIC PLATES WITH BLACK FACE AND WHITE CENTER OF MINIMUM SIZE 3 1/2" X 1 1/2" X 1/10" (90 X 40 X 2.5 MM) NOMINAL THICKNESS, ENGRAVED WITH 1/4" (6 MM) HIGH LETTERING. USE 1" (25 MM) LETTERING FOR MAJOR EQUIPMENT.
7.2.2. FASTEN NAMEPLATES SECURELY IN CONSPICUOUS PLACE. WHERE NAMEPLATES CAN NOT BE MOUNTED ON COOL SURFACE, PROVIDE STANDOFFS.
7.2.3. IDENTIFY EQUIPMENT TYPE AND NUMBER (E.G. PUMP NO. 2) AND SERVICE OR AREAS OR ZONE OF BUILDING SERVED E.G. " OUTER LOBBY AHU NO. 3 "
7.2.4. ALL PLATES SHALL BE POP RIVETED IN PLACE.
7.2.5. SUBMIT LIST OF NAMEPLATES FOR REVIEW PRIOR TO ENGRAVING.
7.3. PIPING
7.3.1. IDENTIFY MEDIUM IN PIPING WITH MARKERS SHOWING NAME AND SERVICE INCLUDING TEMPERATURE, PRESSURE AND DIRECTIONAL FLOW ARROWS IN ACCORDANCE WITH CGSB 24_GP_3A.
7.3.2. ALL FIRE PROTECTION STAND PIPING SHALL BE PAINTED RED
7.3.3. ALL NATURAL GAS PIPING SHALL BE PAINTED YELLOW
7.3.4. MANUFACTURED PIPE MARKERS AND COLOR BANDS:
7.3.4.1. ALL IDENTIFICATION SHALL INCORPORATE DIRECTION OF FLOW ARROWS.
7.3.4.2. MARKERS SHALL BE MANUFACTURED FROM SEMI RIGID PLASTIC VINYL, WITH SUBSURFACE PRINTING USING QUALITY INDOOR/OUTDOOR VINYL INKS AND A UV VINYL INHIBITOR.
7.3.4.3. FOR OUTSIDE DIAMETERS UP TO 6" THE MARKERS SHALL BE COILED AND WRAP COMPLETELY AROUND THE PIPE WITH SIX ROWS OF WORDING IN ALTERNATE DIRECTIONS.
7.3.4.4. FOR OUTSIDE DIAMETERS GREATER THAN 6" THE MARKERS SHALL BE SADDLE STYLE WITH TWO (2) ROWS OF WORDING AND SHALL BE INSTALLED UTILIZING NYLON CABLE TIES PROVIDED WITH THE MARKER.
7.4. DUCTWORK
7.4.1. USE 2" (50 MM) HIGH BLACK STENCILED LETTERS, E.G. "SUPPLY AHU-1", "RETURN AHU-1", "SANITARY EXHAUST EF-1" WITH DIRECTIONAL FLOW ARROW. LETTERING MUST IDENTIFY THE SYSTEM THAT THE DUCTWORK SERVES.
7.4.2. MAINTAIN MAXIMUM 50 FT (15 M) DISTANCE BETWEEN MARKINGS.
7.4.3. IDENTIFY DUCTS EACH SIDE OF DIVIDING WALLS OR PARTITIONS AND BESIDE EACH ACCESS DOOR.
8. SITE CONDITIONS
8.1. EXAMINE SITE CONDITIONS TO ENSURE THAT WORK CAN BE SATISFACTORILY CARRIED OUT AS SHOWN. IF SITE EXAMINATION REVEALS ANY DIFFICULTIES THAT WILL PREVENT THE WORK FROM BEING CARRIED OUT AS DESIGNED THESE MUST BE INDICATED IN THE TENDER PRICE, AND BROUGHT TO THE ATTENTION OF THE ENGINEER.
8.2. PROVIDE PIPE (SANITARY, STORM, ETC..) INVERT VERIFICATION TESTS; UTILIZING CAMERA SCOPING, INVERT TESTS, ETC...TO VERIFY CONNECTION LOCATION AND SIZE.
8.3. PROVIDE MAIN PIPE (DCW, DHW, DHWR) FREEZING TO ALLOW FOR ISOLATION VALVE INSTALLATION. UNLESS PREVIOUSLY CONFIRMED, INCLUDE AFTER HOURS WORK TO ENSURE FACILITY OPERATIONS ARE NOT INTERRUPTED. DO NOT ASSUME THE EXISTING ISOLATION VALVES WILL HOLD.
8.4. THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY ADDITIONAL DIFFICULTIES, INTERFERENCES AND SITE CONSTRAINTS THAT MAY BE IDENTIFIED DURING THE CONSTRUCTION PERIOD.
8.5. ALL NOISY WORK SHALL BE PERFORMED AFTER NORMAL BUSINESS HOURS: BETWEEN 8PM AND 6AM, MONDAY THROUGH FRIDAY; AND ON WEEKENDS, FRIDAY 8PM THROUGH MONDAY 6AM.
8.6. COORDINATE SITE ACCESS AND DELIVERIES WITH LANDLORD AND/OR GENERAL CONTRACTOR.
8.7. PRIOR TO BEGINNING ANY WORK, CONTRACTOR SHALL VERIFY
9. CLEANING
9.1. CLEAN PREMISES DAILY AT THE END OF EACH WORK DAY.
9.2. DO NOT ACCUMULATE EQUIPMENT, TOOLS, DEBRIS AND WASTE MATERIALS ON SITE. REMOVE FROM SITE DAILY.
9.3. COMPLETELY REMOVE ALL DEBRIS AND RUBBISH FROM SPACE ONCE WORK IS COMPLETE.
9.4. ALL MATERIALS TO BE DISPOSED OF CONSTRUCTION SITE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
10. SOUND CRITERIA
10.1. CONTRACTOR TO ENSURE EQUIPMENT SELECTIONS, SERVICE DISTRIBUTION AND INSTALLATION METHODS SHALL BE UNDERTAKEN IN ORDER TO MAINTAIN A NOISE DESIGN LEVEL OF NC 35 IN ALL SPACES EXCEPT THE HUB WHICH REQUIRES NC 30. DESIGN CRITERIA IS AS PER ASHRAE APPLICATIONS HANDBOOK.
11. EXISTING EQUIPMENT AND SYSTEMS
11.1. DISCONNECT, RECONNECT OR RELOCATE EXISTING EQUIPMENT OR SERVICES WHERE SHOWN OR AS REQUIRED TO PERMIT NEW WORK TO BE INSTALLED WITHOUT INTERFERENCES. ENSURE THAT REQUIRED SERVICES ARE MAINTAINED.
11.2. COORDINATE WITH THE OWNER BEFORE INTERRUPTING ANY ESSENTIAL SERVICES.
11.3. ROUTING OF NEW SERVICES MAY BE ADJUSTED TO ACCOMMODATE EXISTING SERVICES AND CONDITIONS PROVIDED THAT THE INTENT OF THE DRAWINGS IS MET AND THE ORIGINAL STANDARDS ARE MAINTAINED.
11.4. PROVIDE DRAWINGS OF PROPOSED REVISIONS TO ENGINEER FOR APPROVAL BEFORE BEGINNING ANY WORK. INCORPORATE ALL CHANGES IN AS BUILT DRAWINGS.
11.5. COORDINATE ALL ROUTING CHANGES WITH OTHER TRADES THAT MAY BE AFFECTED.
11.6. ENGINEER TO BE ADVISED PRIOR TO CHANGES WHERE CHANGES COULD BE SIGNIFICANT.
11.7. THE CONTRACTOR IS TO TAKE EXTRA CARE DURING THIS INSTALLATION NOT TO DISTURB THE OPERATIONS OF THE COMPLEX. IT IS CRITICAL THAT THERE WILL BE NO UNSCHEDULED SHUTDOWNS OR INTERRUPTIONS OF ANY OPERATIONS.
11.8. ALL ASSOCIATED COSTS OF SUCH WILL BE PASSED TO THE CONTRACTOR.
11.9. PLUMBING SYSTEM SHALL BE
12. OPEN FLAMES AND WELDING
12.1. NO OPEN FLAMES OR WELDING IS PERMITTED WITHIN THE BUILDING WITHOUT WRITTEN PERMISSION BY THE OWNER AND/OR THE ENGINEER.
12.2. HOT WORK PERMIT MUST BE VISIBLE AT ALL TIMES.
12.3. ADEQUATE NUMBER OF FIRE EXTINGUISHERS MUST BE PROVIDED DURING THE OPEN FLAME PROCESS.

- 13. FIRE EXTINGUISHERS
13.1. PROVIDE IN ACCORDANCE WITH NFPA 10 AND AUTHORITY HAVING JURISDICTION.
13.2. PROVIDE FIRE EXTINGUISHER AT EACH EXIT DOOR WAY OR AS INDICATED ON DRAWINGS.
13.3. MAXIMUM TRAVEL DISTANCE TO EXTINGUISHER SHALL BE 75FT
13.4. EXTINGUISHER SHALL BE 10LB (OR AS INDICATED), MULTI-PURPOSE DRY CHEMICAL, STORED PRESSURE RECHARGEABLE TYPE, ULC LABELED FOR A, B AND C CLASS PROTECTION WITH SHUT-OFF NOZZLE AND WALL MOUNTING KIT.
13.5. CLEAN AGENT EXTINGUISHER SHALL BE CLEANGUARD (DUPONT FE-36) [5LB][10LB][14LB] (OR AS INDICATED). (for telecom)
14. MATERIALS
14.1. USE ONLY NEW CSA AND ULC CERTIFIED EQUIPMENT AND MATERIALS UNLESS OTHERWISE INDICATED.
14.2. ONLY FIRST CLASS WORKMANSHIP WILL BE ACCEPTED WITH RESPECT TO STANDARD PRACTICES, SAFETY, ACCESSIBILITY, DURABILITY AND NEATNESS OF INSTALLATION WORK.
15. SHOP DRAWINGS
15.1. SUBMIT 4 COPIES OF SHOP DRAWINGS, UNLESS OTHERWISE INDICATED, FOR ENGINEER'S REVIEW.
15.2. SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR ENGINEER'S REVIEW COVERING ALL RELEVANT DETAILS, DIMENSIONS AND PERFORMANCE.
15.3. SHOP DRAWINGS MUST BE REVIEWED, STAMPED AND SIGNED BY THE CONTRACTOR AND THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO CONSULTANT / ENGINEER FOR REVIEW.
16. CUTTING, PATCHING AND PAINTING REQUIREMENTS
16.1. PROVIDE CUTTING, PATCHING AND PAINTING FOR ALL OPENINGS. USE QUALIFIED TRADES FOR THIS WORK. RESTORE FINISHES TO MATCH EXISTING SURROUNDINGS.
16.2. SUPPLY AND INSTALL APPROVED FIRESTOPS AS REQUIRED TO MAINTAIN FIRE RATING.
16.3. PIPING AND VENTS THROUGH WALL AND ROOF SHALL BE BY THE MECHANICAL DIVISION CONTRACTOR, INCLUDING ALL PATCHING.
16.4. PROVIDE SAW CUTTING/REMOVAL OF CONCRETE, SOIL EXCAVATION, GRADING (WITH ENGINEERED FILL AS REQUIRED FOR SLOPING) AND CONCRETE REPAIR TO ALLOW FOR THE TIE-IN OF NEW AND EXISTING SYSTEMS (I.E. SANITARY PIPING, ETC..)
17. CORING/TRENCHING REQUIREMENTS
17.1. PROVIDE LOCATING SERVICES, AFTERHOURS, PRIOR TO CORING OR TRENCHING THROUGH WALLS AND FLOORS.
17.2. SERVICES SHALL INCLUDE GROUND PENETRATING RADAR (GPR/SCANNING) AND X-RAY
17.3. USE CASE GPR (SCANNING) X-RAY
17.4. SPEED/COVERAGE FAST, LARGE AREAS SLOW, SMALL AREAS
17.5. ACCESS REQUIRED ONLY ONE SIDE BOTH SIDES
17.6. MATERIALS DETECTED METAL & NON-METAL (WITH CAVEATS) PRIMARILY METALLIC
17.7. SAFETY NO RADIATION, SAFE FOR PUBLIC SPACES RADIATION, SAFETY PRECAUTIONS
17.8. IMAGE DETAIL GOOD, DEPENDS ON TECHNICIAN HIGH, PRECISE FOR METAL
17.9. WHEN TO PICK MAPPING & GENERAL UTILITY LOCATION EXACT MEASUREMENTS, METAL FOCUS
18. CORING/TRENCHING REQUIREMENTS
18.1. FOR ALL CORING LESS THEN 3" DIA. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SCANNING AREA PRIOR TO CORING THROUGH FLOORS/CEILING.
18.2. FOR ALL CORING GREATER THEN 3" DIA. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING X-RAYING AREA PRIOR TO CORING THROUGH FLOORS/CEILING.
18.3. FOR ALL TRENCHING, AS REQUIRED TO ALLOW PIPING/DUCTWORK MODIFICATION, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SCANNING & X-RAYING OF THE AREA PRIOR TO TRENCHING THROUGH THE FLOORS/CEILING.
19. PENETRATIONS THROUGH FLOORS AND WALLS
19.1. UNLESS OTHERWISE SPECIFIED ON DRAWINGS, GLASS FIBRE FIRE RETARDANT INSULATION AND FIRESTOP CAULKING SHALL BE PACKED AROUND PIPE OPENINGS IN FLOORS AND WALLS AT TIME OF PIPE INSTALLATION. FIRESTOP CAULKING SHALL BE "3M FIRE BARRIER" FIRETEMP CAULK OR EQUIVALENT.
19.2. APPLY FIRESTOP SYSTEMS IN ACCORDANCE WITH 3M'S INSTRUCTIONS. ALL SYSTEMS SHALL MEET CSA F-SYSTEM RATINGS FOR THE PARTICULAR FIRE RATING OF THE PENETRATED SURFACE.
19.3. FIRESTOPPING CONTRACTOR MUST BE A LICENSED 3M CERTIFIED INSTALLER (REFER TO LIST IN SPECIFICATION PACKAGE).
19.4. MATERIALS SHALL BE ASBESTOS-FREE ELASTOMERIC MATERIALS, TESTED, LISTED AND LABELED BY ULC IN ACCORDANCE WITH CAN 4-5115-M85, AND CAN/ULC-S101-M FOR INSTALLATION IN ULC DESIGNATED FIRE STOPPING AND SMOKE SEAL SYSTEMS TO PROVIDE A POSITIVE FIRE, WATER AND SMOKE SEAL AND A FIRE RESISTANCE RATING (FLAME, HOSE STREAM AND TEMPERATURE) NOT LESS THAN THE FIRE RATING FOR SURROUNDING CONSTRUCTION. MATERIALS SHALL BE COMPATIBLE WITH ABUTTING DISSIMILAR MATERIALS AND FINISHES.
20. FIRE PROOFING
20.1. THE EXISTING CEILING SPACE CONTAINS FIRE PROOFING SPRAY ON THE STRUCTURAL ELEMENTS. REPAIR/RE-INSTALL ANY FIRE PROOFING IN THE CEILING SPACE THAT IS DISTURBED AS A RESULT OF THIS DIVISION'S
21. DIELECTRIC ISOLATION
21.1. PROVIDE ISOLATION WHEN USING DISSIMILAR MATERIALS, TO PREVENT GALVANIC ACTION.
22. VIBRATION ISOLATION
22.1. PROVIDE AND INSTALL MINIMUM 3/4" THICK MSN ELASTOMERIC PADS W/MOUNTS UNDER FLOOR MOUNTED HVAC EQUIPMENT AS PER MANUFACTURER RECOMMENDATIONS.
23. ELECTRICAL
23.1. ALL LOW VOLTAGE CONTROL WIRING (<50V) SHALL BE BY THIS DIVISION, TO ELECTRICAL DIVISION STANDARDS.
24. PRESSURE TESTING
24.1. ALL PIPING SYSTEMS SHALL BE PRESSURE TESTED TO 860 kPa OR 1.5 TIMES SYSTEM OPERATING PRESSURE FOR A DURATION OF 24 HRS UNLESS OTHERWISE INDICATE.
25. AS BUILT DRAWINGS
25.1. MAINTAIN A RECORD OF ALL REVISIONS. PREPARE RECORD DRAWINGS IN A NEAT MANNER SHOWING ALL DEVIATIONS IN WORK. ON COMPLETION OF WORK, SUBMIT TO THE ENGINEER ONE HARD COPY OF AS BUILT DRAWINGS AND ELECTRONIC FORMAT DRAWINGS (IN AUTOCAD).
26. OPERATION AND MAINTENANCE MANUALS
26.1. SUBMIT 5 COPIES OF O&M MANUALS TO ENGINEER FOR REVIEW. ALSO INCLUDE 1 COPY IN PDF FORMAT CONTRACTOR RED LINES AND O&M MANUAL. MANUALS SHALL INCLUDE SHOP DRAWINGS OF ALL NEW EQUIPMENT, TEST AND BALANCING REPORTS, COMMISSIONING REPORTS, WARRANTIES, AND OPERATION, MAINTENANCE PROCEDURES AND AS BUILT DRAWINGS.
27. TESTING, ADJUSTING AND BALANCING (T.A.B.)
27.1. PROVIDE T.A.B. FOR EACH CONSTRUCTION PHASE OF THE PROJECT.
27.2. PROVIDE EXISTING AIRFLOW AUDIT FOR ALL EXISTING GRILLES/DIFFUSER/LOUVERS, FANS, EQUIPMENT AND SYSTEMS (IN/DIRECTLY RELATED TO THE SUCCESSFUL COMPLETION OF THIS PROJECT, PRIOR TO BEGINNING DEMOLITION
27.3. PROVIDE ALL TESTING, ADJUSTING AND BALANCING FOR AIR AND HYDRONIC SYSTEMS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
27.3.1. ALL NEW XXXX UNITS
27.4. REPORT TO INCLUDE FLOWS, PRESSURES, VELOCITIES AND OTHER PERTINENT PERFORMANCE DATA FOR AIR AND HYDRONICS. REPORT SHALL ALSO INCLUDE POWER, AMPS, VOLTAGES, PERFORMANCE CURVES, SETTINGS OF ALL SETPOINTS AND SAFETIES; AND ALL OTHER INFORMATION THAT MAY BE REQUESTED BY THE OWM START-UP FORMS, THE ENGINEER OR THE COMMISSIONING AGENT.
27.5. INCLUDE REPORT IN OPERATION AND MAINTENANCE MANUALS
27.6. NOTIFY ENGINEER OF ANY DISCREPANCIES GREATER THAN 45% OF DESIGN VALUES PRIOR OF SUBMISSION OF REPORT.
27.7. BALANCING SHALL BE PERFORMED BY AN AABC OR NEBB CERTIFIED BALANCER
28. REMOVE ALL ABANDONED PIPES, HANGERS, INSERTS, CONDUITS, DUCTS AND SERVICES. FIRESTOP AND SEAL ALL AFFECTED AREAS.
29. SEAL AND FIRESTOP ALL WALL, FLOOR AND ROOF PENETRATIONS THROUGH FIRE RATED ASSEMBLIES.
30. ALL NEW EQUIPMENT CONTROL PANELS MUST BE OPEN PROTOCOL INTERFACE TO ACCOMMODATE BACNET. ALL NEW EQUIPMENT CONTROLS TO BE OPEN PROTOCOL TYPE, BACNet CERTIFIED)
31. DUCT FLEXIBLE CONNECTIONS MUST BE INSTALLED AT INLETS AND OUTLETS OF SUPPLY AND EXHAUST AIR UNITS.
32. CO-ORDINATE ALL DIMENSIONS WITH EQUIPMENT SHOP DRAWINGS.
33. THOROUGHLY INSPECT EXISTING STRUCTURE AND CHECK SITE CONDITIONS WITH CONDITION SHOWN ON CONTRACT DRAWINGS BEFORE PROCEEDING WITH WORK. MAKE ADJUSTMENTS TO WORK TO SUIT EXISTING CONDITION AND IN CONFORMANCE WITH DESIGN INTENT. REPORT ANY DISCREPANCIES TO THE ENGINEER.
34. WELDING SHALL BE UNDERTAKEN BY A COMPANY CERTIFIED BY CANADIAN WELDING BUREAU UNDER REQUIREMENTS OF DIVISION 1 OR DIVISION 2.1 OR W47.1.
35. MATERIALS AND WORK WHICH FAILS TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED BY THE ENGINEER WHENEVER FOUND AT ANY TIME PRIOR TO FINAL ACCEPTANCE AND REGARDLESS OF PREVIOUS INSPECTIONS. WHEN

- REJECTED, DEFECTIVE MATERIALS OR WORK SHALL BE PROMPTLY REMOVED, REPLACED OR REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO EXPENSE TO THE OWNER.
36. CONTROLS
36.1. CONTROLS CONTRACTOR, ALSO REFERRED TO AS BAS CONTRACTOR SHALL INCLUDE THE FOLLOWING SCOPE:
36.2. SUPPLY AND INSTALL OF:
36.2.1. CONTROL PANELS (BUILDING AND EQUIPMENT LEVEL)
36.2.2. PROTOCOL CONVERTERS (AS REQUIRED)
36.2.3. DEVICES (CONTROL VALVES, DAMPER ACTUATORS, ETC...)
36.2.4. SENSORS (WALL TEMPERATURE, PRESSURE, HYDRONIC WATER LOOP TEMPERATURE, ETC...)
36.2.5. WIRING/TUBING (C/W CONDUIT AS PER BASE BUILDING STANDARD)
36.3. CONTROLS CONTRACTOR SHALL PROPERLY TERMINATE ANY ABANDONED CONNECTIONS DUE TO DEMOLITION.
36.4. CONTROLS UPGRADE SHALL CONFORM TO CLIENT SPECIFIC BAS STANDARDS
36.5. PROVIDE NEW COMPONENTS TO MATCH BASE BUILDING STANDARD.
36.6. PROVIDE ASSISTANCE TO GENERAL/MECHANICAL CONTRACTOR.
36.7. CONTROLS CONTRACTOR SHALL PROVIDE SHOP DRAWING SPECIFY ALL COMPONENTS, WIRING, CONTROLLERS, SENSORS AND RECOMMENDED SEQUENCE OF OPERATIONS AS PER ASHREA, ETC...
36.8. CONTROLS SHALL INCLUDE DEVICE CONTROL, STATUS AND ALARMING FOR EACH DEVICE.
36.9. ALL WIRING AND CONDUIT SHALL BE TO ELECTRICAL DIVISION STANDARDS
36.9.1. ALL WIRING SHALL BE PLENUM RATED (FT6/CMP) C/W WIRE CLAMPS.
36.9.2. ALL WIRE RUNS (LONGER THAN 10FT) IN EXPOSED CEILING/WALL AREAS SHALL BE INSTALLED WITHIN CONDUIT PAINTED TO MATCH EXISTING SURFACE COLOUR.
36.9.3. ALL WIRING RUNS (LONGER THAN 10FT) IN NON-EXPOSED CEILING (T-BAR, DRYWALL, ETC...) SHALL BE INSTALL WITH J-HOOKS (UL 2043) FOR SUPPORT AND ORGANIZATION.
36.9.4. WIREMOLD (COLOR TO MATCH EXISTING WALL) MAY BE USED TO COVER WIRING EXTENDING FROM A CEILING TO A CONTROL DEVICE (THERMOSTAT, CONTROL VALVE, ETC...) LOCATED IN AN EXPOSED AREA.

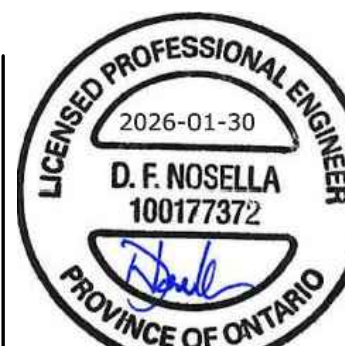
PIPING, PLUMBING, FIXTURES AND ACCESSORIES:

- 1. GENERAL
1.1. MATERIAL AS INDICATED ON DRAWINGS. IF MATERIALS HAVE NOT BEEN INDICATED ON DRAWINGS, THEN INSTALLATION SHALL ADHERE TO THIS SECTION.
1.2. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING EXACT LOCATIONS OF EXISTING PIPING. APPROXIMATE DISTANCES ARE INDICATED ON DRAWINGS AS REQUIRED.
1.3. PROVIDE MATERIALS IN ACCORDANCE WITH THIS SECTION UNLESS OTHERWISE SPECIFIED.
1.4. PROVIDE ALL MATERIALS AS REQUIRED INCLUDING PIPING, VALVES, FITTINGS, TRAPS, HANGERS, SUPPORTS AND THERMAL INSULATION FOR COMPLETE SYSTEM INSTALLATION AND OPERATION.
1.5. PROVIDE MINIMUM PIPE INSULATION THICKNESSES IN ACCORDANCE WITH LATEST EDITION OF ASHRAE STANDARD 90.1 UNLESS OTHERWISE INDICATED.
1.6. PROVIDE ALL PLUMBING SYSTEMS, FIXTURES AND ACCESSORIES IN ACCORDANCE WITH OBC AND LOCAL AUTHORITIES HAVING JURISDICTION.
2. THERMAL INSULATION
2.1. REPAIR AND/OR REPLACE MISSING OR DAMAGED INSULATION ON BASE BUILDING PIPING SYSTEMS TO BASE BUILDING STANDARDS.
2.2. DIRECT EXPANSION REFRIGERANT PIPING SHALL BE INSULATED WITH 3/8" FLEXIBLE ELASTOMERIC THERMAL INSULATION. C/W FLEXIBLE ELASTOMERIC THERMAL INSULATION MESH COATING (FOR UV PROTECTION) FOR LOCATIONS WITH UV EXPOSURE.
2.3. FOR ALL OTHER PROCESSES AND PLUMBING PIPES: UNLESS OTHERWISE INDICATED, PROVIDE AND INSTALL FIBERGLASS INSULATION WITH REINFORCED VAPOUR RETARDER FACING AND FACTORY APPLIED ADHESIVE CLOSURE SYSTEM. INSULATION SHALL BE JOHNS MANVILLE MICRO-LOK AP-T PLUS OR EQUIVALENT.
2.4. MINIMUM PIPE THICKNESSES SHALL BE IN ACCORDANCE WITH LATEST EDITION OF ASHRAE STD. 90.1.
2.5. MINIMUM PIPE INSULATION SHALL BE 1" FOR ALL HYDRONIC (CHILLED/HOT/GLYCOL) WATER PIPES, CONDENSATE LINE, DOMESTIC HOT AND COLD WATER PIPES, AND RAIN WATER LEADERS UNLESS OTHERWISE INDICATED.
2.6. DOMESTIC HOT WATER PIPES GREATER THAN 2" SHALL HAVE 1-1/2" THICK INSULATION.
2.7. HEAT PUMP LOOP PIPING NEED NOT BE INSULATED.
2.8. INSULATION FOR STEAM PIPES AND CONDENSATE SHALL BE RIGID MOULDED MINERAL FIBRE WITHOUT FACTORY APPLIED VAPOUR RETARDER.
2.9. THICKNESS FOR STEAM PIPES (UP TO 175°C) SHALL BE AS FOLLOWS:
2.9.1. RUN OUTS (<13FT LONG): 1-1/2";
2.9.2. PIPE UP TO: 1" : 2"
1-1/4" TO 2"Ø : 2-1/2"
2-1/2" TO 4"Ø : 3"
5"Ø AND OVER : 3-1/2".
2.10. THICKNESS FOR CONDENSATE SHALL BE AS FOLLOWS:
2.10.1. RUN OUTS (<13FT LONG): 1";
2.10.2. ALL OTHER PIPE SIZES: 1-1/2"
2.11. PROVIDE AND INSTALL PVC JACKET AND VAPOUR RETARDER (IF NOT PROVIDED ELSEWHERE) FOR INDOOR INSULATED PIPE APPLICATIONS. JACKETING SHALL BE JOHNS MANVILLE ZESTON 300 SERIES OR EQUIVALENT. (NOT NECESSARY FOR USE WITH MICRO-LOK AP-T PLUS)
2.12. PROVIDE AND INSTALL ALUMINUM JACKET WITH A LAMINATED MOISTURE RETARDER FOR OUTDOOR INSULATED PIPE APPLICATIONS. SECURE JACKET USING METAL BANDS AT BUTT JOINT OVERLAPS AND BETWEEN JOINTS.
2.13. INSTALL ALL INSULATION AND JACKETS AS PER MANUFACTURER RECOMMENDATIONS.
2.14. PROVIDE CANVAS JACKET WITH LAGGING ADHESIVE ON ALL STEAM AND CONDENSATE PIPE APPLICATIONS.
2.15. MAINTAIN UNINTERRUPTED CONTINUITY AND INTEGRITY OF VAPOUR RETARDER AND FINISHES. HANGERS AND SUPPORTS TO BE OUTSIDE VAPOUR OF RETARDER.
2.16. APPLY HIGH COMPRESSIVE STRENGTH INSULATION, SUITABLE FOR SERVICE, AT OVERSIZED SADDLES AND SHOES WHERE INSULATION SADDLES HAVE NOT BEEN PROVIDED.
2.17. INSULATION SHALL BE FOIL FACED.
2.18. INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT CLASSIFICATION OF 50 OR LESS.
3. PIPE HANGERS AND SUPPORTS
3.1. PIPING HANGERS AND SUPPORTS SHALL BE SPACED IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.
3.2. PIPE HANGERS SHALL BE GRINNELL ADJUSTABLE CLEVIS TYPE OR EQUIVALENT.
3.3. EXTERIOR SUPPORTS SHALL BE S.S. GRINNELL OR EQUIVALENT
4. PIPING SYSTEM
4.1. SCHEDULE 40, A 53 GRADE B.
4.2. ONLY LONG RADIUS TO BE USED.
4.3. PROVIDE ISOLATION VALVES, DRAIN VALVES, STAINLESS STEEL BRAIDED FLEXIBLE HOSES AT THE SUPPLY AND RETURN LINES AS INDICATED ON DRAWINGS.
4.4. PROVIDE AND INSTALL OTHER COMPONENTS RECOMMENDED BY SUPPLIER / SUPPLIED LOOSE TO MANUFACTURER RECOMMENDATIONS.
4.5. ALL VALVES AND COUPLINGS 2"Ø OR LESS SHALL BE RATED FOR 600 CWP.
4.6. ALL PIPING, VALVES AND CONNECTION LESS THAN 2-1/2"Ø SHALL HAVE SCREWED FITTINGS.
4.7. ALL PIPING 2-1/2"Ø OR GREATER SHALL BE WELDED AND FLANGED.
5. HYDRONIC SYSTEM ACCESSORIES
5.1. PIPE LINE STRAINERS: SHALL BE CAST STEEL W/ FLANGED CONNECTIONS, AND NPS 1" BLOW-DOWN CONNECTION.
5.2. AUTOMATIC AIR VENTS: INSTALL AIR VENTS AT HIGH POINTS IN EACH GLYCOL PIPE IN EACH GLYCOL CIRCUIT. STANDARD FLOAT VENT W/ BRASS BODY RATED FOR 690KPA WORKING PRESSURE. SHALL BE COMPLETE WITH BALL-TYPE ISOLATION VALVE.
5.3. THERMOMETER: PROVIDE DIRECT-READ THERMOMETER ON SUPPLY AND RETURN CONNECTION FOR GENERATOR JACKET WATER AND RCC PIPES.
5.4. FLEXIBLE CONNECTIONS: BRAIDED STAINLESS STEEL HOSES SUITABLE FOR SERVICE OF 212°F OPERATING WATER TEMPERATURE. CONNECTIONS TO MATCH CONNECTIONS OF EQUIPMENT.
6. GLYCOL SOLUTION
6.1. PROVIDE CHEMICALLY TREATED 50/50 POLYPROPYLENE SOLUTION FOR INITIAL SYSTEM FILL. "SYSTEM" INCLUDES ALL PIPING, REMOTE RADIATOR VOLUME AND ENGINE JACKET VOLUME.
6.2. CONTRACTOR SHALL CONFIRM EXACT SOLUTION REQUIREMENTS WITH GENERATOR SUPPLIER PRIOR TO SYSTEM FILL AND PRIOR TO ORDERING OF GLYCOL.
7. VALVES (WATER/GLYCOL)
7.1. NEW VALVES 2"Ø OR LESS SHALL BE BRASS BALL VALVES WITH THREADED ENDS, FULL PORT, 600 CWP, ULC LISTED AND FM APPROVED. VALVE SHALL BE JENKINS OR APPROVED EQUAL.
7.2. BUTTERFLY VALVES: SHALL BE LEVER OPERATED W/ S.S. STEM, CAST IRON BODY, AND DUCTILE IRON CHROME PLATED DISC. VALVE SHALL BE JENKINS OR APPROVED EQUAL.
7.3. GATE VALVES: SHALL BE HAND WHEEL OPERATED W/ MANGANESE/BRONZE STEM, CAST IRON BODY, AND CAST IRON DISC W/ BRONZE DISC RINGS. VALVE SHALL BE JENKINS OR APPROVED EQUAL.
7.4. GLOBE VALVES: SHALL BE HAND WHEEL OPERATED W/ BRONZE STEM, CAST IRON BODY, AND BRONZE DISC. VALVE SHALL BE JENKINS OR APPROVED EQUAL.
7.5. CHECK VALVES: SWING CHECK W/ CAST IRON BODY, AND ROTATING DISC. VALVE SHALL BE JENKINS OR APPROVED EQUAL.
7.6. BALANCING VALVES: SHALL BE Y-PATTERN, EQUAL PERCENTAGE GLOBE-STYLE W/ MULTI-TURN LOCKABLE HAND WHEEL AND MICROMETER TYPE INDICATORS. VALVE SHALL BE CAST IRON WITH FLANGE ENDS. VALVE SHALL BE ARMSTRONG OR APPROVED EQUAL.

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



Table with 3 columns: No., Date, Action. Row 1: 2, 2026/01/30, ISSUED FOR TENDER. Row 2: 1, 2026/01/14, ISSUED FOR 99% CLIENT REVIEW.



Orientation: Stamp

Project Name and Address: HEATER CONTROL AND ISOLATION VALVES, 155 MCNICOLL AVENUE NORTH YORK, ONTARIO

Drawing title: SPECIFICATIONS (1 OF 3)

Table with 2 columns: Designer/Drawn by, Date/Checked by. Designer: D.N, Date: 2025-11-05, Drawn by: M.D., Checked by: D.N.

Table with 2 columns: Revision No., Drawing No. Revision No: 0, Drawing No: M-100

8. PRESSURE TESTING

- 8.1. ALL PIPING SYSTEMS SHALL BE HYDROSTATICALLY PRESSURE TESTED TO A MINIMUM OF 860 kPa OR 1-1/2 TIMES SYSTEM OPERATING PRESSURE (WHICHEVER IS GREATER) FOR A PERIOD OF 24 HOURS UNLESS OTHERWISE INDICATED.
9. SYSTEM FLUSH AND REFILL (HYDRONIC)
9.1. FLUSH AND CLEAN ALL NEW HYDRONIC SYSTEM PIPING AFTER PRESSURE TEST. FILL W/ NON-FOAMING PHOPHATE-FREE 3% DETERGENT SOLUTION. CIRCULATE FOR MIN. 8 HOURS.
9.2. DRAIN AND REFILL SYSTEM W/ WATER AND CIRCULATE FOR 4 HOURS AND REPEAT FOR AND ADDITIONAL 2 HOURS. ENSURE STRAINERS ARE CLEANED WITH EACH CYCLE.
9.3. REFILL THE WHOLE PIPING SYSTEM AFTER FLUSH, INCLUDING CHEMICAL TREATMENT. ALL RADIATORS AND HIGH POINTS NEED BLEED. MAKE SURE THERE IS NO AIR IN THE SYSTEM

10. POTABLE SYSTEM FLUSH AND DISINFECTION (DOMESTIC):

- 10.1. THOROUGHLY FLUSH AND DISINFECT (CHLORINATE) WATER SUPPLY SYSTEMS IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
11. DRAINAGE WASTE AND VENT PIPING
11.1. ABOVE GROUND SANITARY, STORM AND VENT LINES LESS THAN 3" SHALL BE TYPE DWV TO ASTM B306 WITH CAST BRASS OR WROUGHT COPPER FITTINGS TO CAN/CSA B125.
11.2. JOINTS FOR COPPER TUBE/ PIPE SHALL BE TIN/ANTIMONY (95%/5%) SOLDER.
11.3. PROVIDE TRAP PRIMERS WHERE REQUIRED.
11.4. ABOVE GROUND SANITARY, STORM AND VENT LINES 3" AND LARGER SHALL BE CAST IRON HUB AND SPIGOT PIPE IN ACCORDANCE WITH THE LATEST EDITION OF THE OBC FOR SOIL AND WASTE. JOINTS SHALL BE CAULKED WITH WHITE OAKUM AND SECURED WITH MOLTEN LEAD NOT LESS THEN 1" DEEP.
11.5. BURIED SANITARY, STORM AND VENT SHALL BE MINIMUM 3" CAST IRON TO CAN/CSA-B70, JOINTS FOR CAST IRON SHALL BE HUB AND SPIGOT.
11.6. BURIED SANITARY, STORM AND VENT SHALL BE MINIMUM 3" PVC OR ABS PIPE AND FITTINGS TO CSA CAN 3-B181.1-M85 (ABS), CAN 3-B181.2-M85 (PVC) B182.1-M1983, B182.2-M1983, (LARGE DIAMETER PSM PVC), B182.3-M1983 (LARGE DIAMETER IPS PVC).
11.7. PROVIDE AND INSTALL BACK WATER VALVE ON ALL FLOOR DRAIN.

12. DOMESTIC COLD AND HOT WATER PIPE

- 12.1. TYPE L COPPER TO ASTM B88M.
12.2. JOINTS SHALL BE TIN/SILVER OR TIN/ANTIMONY (95%/5%) SOLDER AND NON-CORROSIVE FLUX. ALL SOLDER SHALL BE LEAD FREE.
12.3. PROVIDE ISOLATION VALVES FOR EACH NEW FIXTURE. VALVES SHALL BE BY-PASS BALL VALVES WITH THREADED/SOLDERED ENDS, RATED FOR 400 CWP.
12.4. TYPE K COPPER PIPE TO ASTM B88M SHALL BE USED FOR BURIED DCW PIPE.
12.5. CONTRACTOR SHALL ENSURE THAT BACKFLOW PREVENTER IS INSTALLED AND PIPING ARE CLEARLY MARKED AS NON-POTABLE WATER.

13. CLEAN-OUTS AND VENTING

- 13.1. PROVIDE IN ACCORDANCE WITH OBC CHAPTER 7 AND AS INDICATED ON DRAWINGS.

PERMITS AND FEES:

- 1. THE CONTRACTOR SHALL APPLY FOR AND OBTAIN IN ITS OWN NAME, PERMITS, LICENSES, APPROVALS AND SHALL PAY FEES AND GIVE NOTICES NECESSARY PRIOR TO COMMENCING WORK AND INCIDENTAL TO THE DUE AND LAWFUL PERFORMANCE OF THE WORK, IN ACCORDANCE WITH THE SPECIFICATIONS.
2. THE CONTRACTOR SHALL ENSURE THAT THE JURISDICTIONAL AUTHORITIES ARE NOTIFIED OF THE DATE FOR THE COMMENCEMENT OF THE WORK AND THE DATES OF ACTING OF THE WORK FOR WHICH MUNICIPAL INSPECTORS ARE REQUIRED TO BE PRESENT. THE CONTRACTOR SHALL SEND A COPY OF ALL CORRESPONDENCES TO THE ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE SHOULD FAILURE OCCUR.

PROTECTION OF THE WORK AND ADJACENT PROPERTY:

- 1. THE CONTRACTOR SHALL PROTECT THE WORK, THE SITE, AND ANY OTHER PROPERTY ADJACENT TO THE SITE FROM DAMAGE WHICH MAY ARISE AS A RESULT OF ITS OPERATIONS UNDER THE CONTRACT AND SHALL BE LIABLE FOR ANY DAMAGES WHICH MAY BE ACCESSED; AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING GOOD SUCH DAMAGES AT ITS EXPENSE IN THE MANNER DIRECTED BY AND TO SATISFACTION OF ENGINEER.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE FOR AND BEAR THE COSTS OF PREVENTATIVE MEASURES TO ACCOMMODATE THE WORK AND THE NATURE, WHICH CAN RESULT IN FREEZING, FLOODING, OVERHEATING, OR SIMILAR CIRCUMSTANCES, WHICH OCCUR UNTIL CONTRACT COMPLETION.

SCOPE OF WORK & PROJECT DESCRIPTION:

- 1. ALL WORK AS INDICATED IN DRAWINGS AND SPECIFICATIONS.
2. THE INTENT OF THIS PROJECT IS TO REPLACE THE RADIATOR CONTROL SYSTEM (INCLUDING MINOR PIPE REVISIONS/REPAIRS, NEW DDC CONTROL VALVES AND THERMOSTATS).
3. CONTROL SYSTEM SHALL BE BTL LISTED BACNET PROTOCOL ALLOWING FOR FUTURE INTEGRATION WITH A BAS FRONT END.
4. CONTRACTOR SHALL RETAIN ALL SUB-CONTRACTORS REQUIRED TO COMPLETE THE INTENT OF THIS PROJECT (INCLUDING MECHANICAL, ELECTRICAL, ENVIRONMENTAL (ABATEMENT), CONTROLS AND GENERAL TRADES).
5. CONTRACTOR SHALL PROVIDE, PRIOR TO CONSTRUCTION, CONSTRUCTION WORK PLAN INCLUDING PHASING ~2 ROOMS AT A TIME, THIS SHOULD ALLOW DAY TIME WORK.

TEMPORARY WORK:

- 1. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF A PROFESSIONAL ENGINEER, REGISTERED IN THE PROVINCE OF ONTARIO, AS NEEDED, TO FULFIL THE REQUIREMENTS OF THE STATUTES, REGULATIONS, BY-LAWS AND THE CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY, ERECTION, OPERATION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURAL AND OTHER TEMPORARY WORKS AND THE DESIGN AND EXECUTION OF CONSTRUCTION METHODS REQUIRED FOR SAME.
2.1. TEMPORARY WORKS ARE:
2.1.1. INSTALLATIONS PROVIDING ACCESS, PROTECTION, SUPPORT OR SERVICES FOR WORKERS, EQUIPMENT AND MATERIALS DURING CONSTRUCTION, RENOVATION, MAINTENANCE OR DEMOLITION OF PERMANENT WORKS; AND
2.1.2. TEMPORARY SERVICE OR SUPPORT FOR ANY PART OF PERMANENT WORKS UNTIL THE PERMANENT WORKS HAVE ACHIEVED A STATE OF COMPLETION ALLOWING THE TEMPORARY WORKS TO BE REMOVED.
3. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY WORK, CONSTRUCTION MATERIALS AND MACHINERY AS WELL AS RUBBISH ACCUMULATED ON ACCOUNT OF CONSTRUCTION OPERATIONS AND SHALL HAVE THE SITE IN A CONDITION SATISFACTORY TO THE ENGINEER.

INDEMNIFICATION:

- 1. THE CONTRACTOR SHALL HEREBY ASSUME THE DEFENSE OF, FULLY INDEMNIFY AND HOLD HARMLESS THE OWNER, ITS ENGINEER, AGENTS AND EMPLOYEES IN RESPECT OF THE AMOUNT OF ANY CLAIM, DEMAND, LOSS, COST, EXPENSE (INCLUDING REASONABLE LEGAL EXPENSES), ACTION, SUIT, PROCEEDING, LIABILITY, FINE, PENALTY, INTEREST, PAYMENT OR DAMAGE (COLLECTIVELY REFERRED AS "CLAIMS") BY WHOMSOEVER (INCLUDING, WITHOUT LIMITATION, THE OWNER) WHICH IS MADE, SUSTAINED, BROUGHT OR PROSECUTED IN ANY MANNER BASED UPON, OCCASIONED BY OR ATTRIBUTABLE TO ANY BREACH OF THE CONTRACT BY THE CONTRACTOR, OR TO ANY WILLFUL MISCONDUCT, FAULT, OR NEGLIGENT ACT OR OMISSION OF THE CONTRACTOR OR ANY PERSON, AGENT, CONSULTANT, FIRM OR CORPORATION FOR WHOMSE ACTS THE CONTRACTOR IS LIABLE AT LAW. FURTHER, THE CONTRACTOR SHALL PAY ANY AMOUNT OF CLAIMS INCURRED BY THE OWNER ON ACCOUNT OF ANY INJURIES, INCLUDING DEATH OR DAMAGES, RECEIVED OR SUSTAINED BY ANY PERSONS OR PROPERTY AND IF IT FAILS TO DO SO, THE OWNER MAY PAY SUCH CLAIMS AND DEDUCT THE AMOUNT THEREOF FROM ANY MONIES DUE, OR TO BECOME DUE, TO THE CONTRACTOR, OR OTHERWISE RECOVER SUCH AMOUNTS OR ANY BALANCE THEREOF FROM THE CONTRACTOR.
2. SUBJECT TO ANY SUPPLEMENTARY CONDITION WITH RESPECT TO THE PAYMENT OF LIQUIDATED DAMAGES, IF APPLICABLE, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR ANY CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, CLAIMS FOR LOSS OF PROFIT OR REPUTATION.

ELECTRICAL - GENERAL

1. CODES & STANDARDS

- 1.1. COMPLETE THE INSTALLATION OF THE WORK IN ACCORDANCE WITH LATEST EDITIONS OF THE ONTARIO BUILDING CODE, PROVINCIAL ELECTRICAL SAFETY CODE, C.S.A. STANDARDS, U.L.C., N.F.P.A., AND OTHER CODES, AS REQUIRED. ALL ELECTRICAL WORK SHALL BE PERFORMED IN COMPLIANCE WITH BASE BUILDING STANDARDS AND LANDLORD'S REQUIREMENTS.

2. INTENT

- 2.1. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS THAT THE CONTRACTOR PROVIDE COMPLETE AND OPERATIONAL SYSTEMS AS REQUIRED.
2.2. WHERE DIFFERENCES OCCUR, BETWEEN DRAWINGS AND SPECIFICATIONS, THE MAXIMUM CONDITION SHALL GOVERN.
2.3. ANY MISCELLANEOUS ITEMS, HARDWARE, DEVICES, WIRING, ETC., NOT SPECIFICALLY DESCRIBED, BUT REQUIRED FOR THE OPERATION OF THE SYSTEM, MUST BE PROVIDED AND INCLUDED AS PART OF THE BID.

3. DEFINITIONS

- 3.1. WHEREVER THE WORDS "PROVIDE" OR "SUPPLY AND INSTALL", ARE USED, IT SHALL BE UNDERSTOOD TO MEAN "PROVIDE AND INSTALL, INCLUSIVE OF ALL LABOUR, MATERIALS, INSTALLATION, TESTING, AND CONNECTIONS" FOR THE ITEM TO WHICH IT REFERENCE.

4. PERMITS AND FEES

- 4.1. SUBMIT TO THE LOCAL ELECTRICAL SAFETY AUTHORITY, THE NECESSARY NUMBER OF DOCUMENTS FOR EXAMINATION, SPECIAL INSPECTION AND APPROVAL, PRIOR TO THE COMMENCEMENT OF THE WORK, AND PAY ALL COSTS AND ASSOCIATED FEES.
4.2. PROVIDE CERTIFICATE(S) OF ACCEPTANCE FROM THE ELECTRICAL SAFETY AUTHORITIES, UPON COMPLETION OF WORK.

5. INSURANCE

- 5.1. PROVIDE AND MAINTAIN INSURANCE TO PROTECT THE LANDLORD, TENANT AND TRADES FROM ALL POSSIBLE CLAIMS. SUBMIT WITH BID PROOF OF INSURANCE FOR AN AMOUNT ACCEPTABLE TO THE LANDLORD AND THE TENANT.

6. EXISTING CONDITIONS

- 6.1. PROVIDE AND MAINTAIN INSURANCE TO PROTECT THE LANDLORD, TENANT AND TRADES FROM ALL POSSIBLE CLAIMS. SUBMIT WITH BID PROOF OF INSURANCE FOR AN AMOUNT ACCEPTABLE TO THE LANDLORD AND THE TENANT.

7. CONTRACT DOCUMENTS

- 7.1. THE DRAWINGS FOR THE ELECTRICAL WORK ARE DIAGRAMMATIC PERFORMANCE DRAWINGS ONLY, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF ELECTRICAL EQUIPMENT. THE DRAWINGS DO NOT INTEND TO SHOW ARCHITECTURAL, INTERIOR DESIGN, MECHANICAL, STRUCTURAL OR BASE BUILDING DETAILS. BE RESPONSIBLE FOR A THOROUGH KNOWLEDGE OF SAME BEFORE PROCEEDING WITH THE WORK.
7.2. DO NOT SCALE OR MEASURE DRAWINGS. OBTAIN INFORMATION REGARDING ACCURATE DIMENSIONS FROM DESIGNER/ARCHITECT'S DRAWINGS.
7.3. REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND EXISTING CONDITIONS OR DESIGNER'S DRAWINGS PRIOR TO INSTALLATION.
7.4. COOPERATE AND COORDINATE WITH OTHER TRADES IN LAYING OUT OF WORK SO AS NOT TO CONFLICT WITH THE WORK OF OTHER TRADES. CARRY OUT WORK PROMPTLY AS PER CONSTRUCTION SCHEDULE AND COORDINATE WITH WORK OF OTHER TRADES.
7.5. MAKE, AT NO ADDITIONAL COST, ANY CHANGES OR ADDITIONS TO MATERIALS AND EQUIPMENT NECESSARY TO ACCOMMODATE STRUCTURAL CONDITIONS (OFFSETS AROUND BEAMS, COLUMN, ETC.)

8. SHOP DRAWINGS

- 8.1. SUBMIT FOUR (4) COPIES OF SHOP DRAWINGS OF ALL SPECIFIED EQUIPMENT FOR REVIEW AND RECORDS BEFORE COMMENCEMENT OF WORK.
8.2. EACH SHOP DRAWING SHALL BE CHECKED AND STAMPED BY ELECTRICAL AND GENERAL CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER FOR REVIEW.

9. IDENTIFICATION

- 9.1. PROVIDE LAMACOD NAMEPLATES ON ALL PANELS, DISCONNECT SWITCHES, SPLITTERS, ETC., TO MATCH BASE BUILDING. NAMEPLATES SHALL IDENTIFY EQUIPMENT NAME, VOLTAGE, PHASE, CURRENT RATING, AND USE. NAMEPLATES SHALL BE WHITE, WITH 1/4" BLACK LETTERS, MECHANICALLY ATTACHED TO EQUIPMENT.
9.2. PROVIDE TYPEWRITTEN DIRECTORIES FOR NEW AND EXISTING PANELS. CONFIRM EXISTING IDENTIFICATION AND CORRECT WHERE NECESSARY.
9.3. CLEARLY MARK ALL EXPOSED CONDUIT, PULLBOXES, JUNCTION BOXES, ETC., TO INDICATE THE NATURE OF THE SERVICE TO MATCH BASE BUILDING STANDARDS.

10. MATERIALS AND EQUIPMENT

- 10.1. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, C.S.A. CERTIFIED AND MANUFACTURED TO THE STANDARDS SPECIFIED.
10.2. WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT WHICH IS NOT C.S.A. CERTIFIED, OBTAIN SPECIAL APPROVAL FROM THE LOCAL ELECTRICAL SAFETY AUTHORITY.

11. LOCATION OF OUTLETS

- 11.1. REFER TO DESIGNER/ARCHITECT'S DRAWINGS FOR EXACT LOCATIONS OF ALL OUTLETS.
11.2. ALTER LOCATION OF OUTLETS AT NO COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 3M (10'-0") AND INFORMATION IS GIVEN BEFORE ROUGH-IN.
11.3. ALL OUTLETS TO BE MARKED ON JOB SITE FOR APPROVAL BY CONSULTANT PRIOR TO INSTALLATION.

12. PLYWOOD

- 12.1. ALL OUTLETS TO BE MARKED ON JOB SITE FOR APPROVAL BY CONSULTANT PRIOR TO INSTALLATION.

13. INSERTS, HANGERS AND SLEEVES

- 13.1. PROVIDE HANGERS, INSERTS, SLEEVES AND SUPPORTS AS REQUIRED.
13.2. INSERTS ARE TO BE OF A LEAD SHIELD TYPE.
13.3. HANGERS MUST NOT BE WELDED TO STRUCTURAL STEEL MEMBERS AND BURNING OF HOLES IN STRUCTURAL STEEL IS PROHIBITED.
13.4. DO NOT USE ANY BASE BUILDING SUPPORTS OR EQUIPMENT, INCLUDING CEILING SUPPORT SYSTEM.

14. CUTTING AND PATCHING

- 14.1. ALL CUTTING AND PATCHING REQUIRED TO THE EXISTING BUILDING STRUCTURE FOR THE WORK SHALL BE INCLUDED UNDER THIS CONTRACT AND BE ACCEPTABLE TO THE LANDLORD. OBTAIN WRITTEN APPROVAL FROM LANDLORD BEFORE ANY CUTTING IS CARRIED OUT.
14.2. WHERE CONDUITS PASS THROUGH FIRE RATED WALLS OR FLOORS, PROVIDE CSA APPROVED OR ULC LISTED FIRE STOPPING MATERIAL AND MAINTAIN SAME FIRE RATING OF BUILDING ELEMENTS.

15. ACCESS DOORS

- 15.1. WHEREVER ANY BASE BUILDING EQUIPMENT REQUIRES ACCESSIBILITY, MAINTENANCE OR ADJUSTMENT, PROVIDE ACCESS DOORS APPROVED BY DESIGN CONSULTANT/ARCHITECT AND LANDLORD.

16. CORE DRILLING

- 16.1. BEFORE CORE DRILLING FLOOR SLAB OR STRUCTURAL WALLS, X-RAY SLAB OR WALLS AND HAVE THE LOCATIONS ACCEPTED BY THE LANDLORD IN WRITING.
16.2. ANY EXISTING BUILDING SERVICE DAMAGED BY CORE DRILLING MUST BE REPAIRED IMMEDIATELY AT NO COST TO LANDLORD OR TENANT.
16.3. FLOOR DRILLING TO BE CARRIED OUT AFTER NORMAL WORKING HOURS AND AT A TIME ACCEPTABLE TO LANDLORD AND ALLOWANCES FOR THIS WORK SHALL BE INCLUDED IN BID PRICE SUBMITTED..

17. NOISE AND VIBRATION

- 17.1. ELECTRICAL EQUIPMENT IS TO OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION. IF, IN THE OPINION OF THE CONSULTANT, THE EQUIPMENT OPERATES WITH EXCESSIVE NOISE OR VIBRATION, THEN THE EQUIPMENT MUST BE REPLACED OR NOISE OR VIBRATION ELIMINATED.
17.2. CONNECTIONS TO NOISE-PRODUCING AND VIBRATING EQUIPMENT MUST BE MADE WITH FLEXIBLE CONDUIT. THIS INCLUDES TRANSFORMERS, DIMMING EQUIPMENT RACKS, AND MOTORS. USE A MINIMUM OF 1M (3 FT) OF FLEXIBLE CABLE WITH SLACK AT EACH DEVICE.
17.3. VIBRATION ISOLATORS ARE TO BE PROVIDED WHERE INDICATED OR REQUIRED. TRANSFORMERS TO BE ISOLATED FROM THE STRUCTURE, WITH SPRING AND RUBBER ISOLATORS WHEN WALL MOUNTED OR SUSPENDED AND 12MM (1/2") HIGH DENSITY NEOPRENE SANDWICH PADS (TYPE MWP) WHEN FLOOR MOUNTED.

18. TENANT'S EQUIPMENT

- 18.1. WHERE SPECIFIED, INSTALL ALL EQUIPMENT PROVIDED BY THE TENANT. RECEIVE, STORE AND INSTALL EQUIPMENT AND ACCEPT FULL RESPONSIBILITY FOR ITS CORRECT OPERATION. PROVIDE CONDUIT, WIRE, BOXES, SWITCHES, OUTLETS, DEVICES, FLEX CONNECTIONS, ETC., AS REQUIRED.
18.2. CONFIRM POWER REQUIREMENTS OF ALL EQUIPMENT SUPPLIED AND ALSO ENSURE THAT ALL ELECTRICAL EQUIPMENT SUPPLIED BY OTHER TRADES IS SUITABLE FOR THE RESPECTIVE VOLTAGE.

19. WORK IN NEW AND RENOVATED AREAS

- 19.1. WHEN DELETING AND/OR MAKING SAFE EXISTING ELECTRICAL WORK, ENSURE THAT IT INCLUDES REMOVAL OF ALL DISCONNECTED WIRING BACK TO THE ASSOCIATED PANELBOARD.
19.2. DISCONNECT AND REMOVE EXISTING LUMINAIRES, DEVICES, OUTLETS, ETC., WHICH ARE NOT TO BE REUSED. SUCH ITEMS SHALL BE CARTONED AND TURNED OVER TO THE LANDLORD AT A PLACE DESIGNATED BY THE LANDLORD.

CUT BACK AND CAP UNUSED RACEWAY AND OUTLETS AND REMOVE UNUSED WIRING BACK TO PANELBOARD IN AN APPROVED MANNER. REMOVE ALL REDUNDANT COMMUNICATIONS CABLES BACK TO HUB ROOMS AND/OR TELEPHONE RISER ROOMS. ENSURE THAT ALL EXISTING EQUIPMENT WHICH IS TO BE REUSED AND/OR RELOCATED IS THOROUGHLY INSPECTED AND REFURBISHED TO ENSURE CORRECT OPERATION WHEN PUT BACK INTO SERVICE AND TO MEET ONTARIO HYDRO APPROVAL. ALL EXISTING ELECTRICAL EQUIPMENT WHICH IS NO LONGER REQUIRED SHALL BE REMOVED AND DISPOSED OF, OFF SITE.

- 19.5. WHERE EXISTING OUTLET BOXES OR CONDUITS ARE REMOVED FROM EXISTING UNDERFLOOR DUCTS, PLUG AND CAP EXISTING HOLES FLUSH WITH FLOOR USING APPROVED FITTINGS.
19.6. BE RESPONSIBLE AND PAY FOR ANY DAMAGE TO THE BASE BUILDING INCURRED BY WORK OF THIS DIVISION, OR REPAIR TO THE SATISFACTION OF THE CONSULTANT.
19.7. CARRY OUT THE WORK WITH A MINIMUM OF NOISE, DUST AND DISTURBANCE.
19.8. PROVIDE TOOLS AND CLEAN UP EQUIPMENT. OBTAIN THE LANDLORD'S PERMISSION FOR THE USE OF ELECTRICAL, ELEVATOR, PLUMBING OR DRAINAGE OUTLETS.
19.9. PROVIDE DAILY CLEAN UP AND PROPER DISPOSAL OF DEBRIS GENERATED BY DAILY OPERATIONS. ON COMPLETION OF THE WORK, ALL TOOLS, SURPLUS MATERIALS AND WASTE MATERIALS SHALL BE REMOVED AND THE PREMISES LEFT IN A CLEAN AND PERFECT CONDITION.
20. INTERRUPTION OF SERVICES
20.1. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY INTERRUPTIONS OR DISRUPTIONS TO THE EXISTING SERVICES. ALL EXISTING BUILDING SERVICES MUST BE KEPT OPERATIONAL AT ALL TIMES.
20.2. INTERRUPTIONS SHALL BE PERFORMED ONLY AFTER REGULAR OFFICE HOURS. INCLUDE IN THE BID PRICE ALL COST ASSOCIATED WITH THIS WORK.
20.3. ARRANGE WORK SUCH THAT INTERRUPTIONS IN SERVICES OCCUR ONLY AT SCHEDULED TIMES SUITABLE TO THE LANDLORD.
20.4. INTERRUPTIONS SHALL BE SCHEDULED AT LEAST 48 HOURS IN ADVANCE WITH THE LANDLORD.

21. VALUATION OF CHANGES

- 21.1. PROVIDE COMPLETE BREAKDOWN OF MATERIAL, LABOUR, OVERHEAD, PROFIT, ETC., WHEN SUBMITTING QUOTATIONS FOR CHANGE NOTICES ON THIS PROJECT.
21.2. THE HOURLY LABOUR RATE SHALL BE INCLUSIVE OF ALL CHARGES FOR SUPERVISION, VARIABLE LABOUR FACTORS, HAND TOOLS, PAYROLL BURDENS, HEIGHT FACTORS, WARRANTIES, STORAGE, RENTALS, ADDITIONAL BONDING, PARKING, CLEAN-UP, AS-BUILT DRAWINGS, HOISTING, FREIGHT AND DELIVERY, BUT EXCLUSIVE OF OVERHEAD AND PROFIT.
21.3. THE LABOUR HOURS SHALL BE BASED ON THE LATEST ISSUE OF THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA) LABOUR UNITS.
21.4. THE MATERIAL PRICES SHALL BE BASED ON THE CURRENT NATIONAL PRICES SYSTEM (NPS) CATALOGUE LESS APPLICABLE TRADE DISCOUNTS.

22. COMPLETION OF CONTRACT

- 22.1. ALL EQUIPMENT MUST BE CLEANED AND TESTED BEFORE FINAL ACCEPTANCE BY CONSULTANT.
22.2. PRIOR TO CONTACTING THE CONSULTANT FOR FINAL INSPECTION, THE CONTRACTOR MUST CORRECT ALL DEFICIENCIES AS SPECIFIED ON THE DEFICIENCY LIST.
22.3. AFTER COMPLETION OF WORK PROVIDE A COPY OF FINAL HYDRO INSPECTION CERTIFICATE. FIRE ALARM VERIFICATION CERTIFICATE (AS PER STANDARD ULC 537) MUST BE PROVIDED WHEN THE FIRE ALARM SYSTEM WAS MODIFIED UNDER THE CONTRACT.
22.4. PROVIDE A WRITTEN GUARANTEE FOR ONE YEAR COVERING ALL EQUIPMENT, MATERIALS AND WORKMANSHIP FROM THE DATE OF ACCEPTANCE OF THE INSTALLATION BY THE OWNER. INCLUDE IN THE OPERATIONS AND MAINTENANCE MANUAL.
22.5. WHERE REQUIRED BY MUNICIPAL AUTHORITIES HAVING JURISDICTION PROVIDE EMERGENCY LIGHTING LEVEL TEST RESULTS. SUBMIT TEST REPORT TO CONSULTANT AND AUTHORITIES FOR REVIEW. WHERE BATTERY UNIT SYSTEM IS USED FOR EMERGENCY LIGHTING THE CONTRACTOR SHALL PROVIDE A WRITTEN STATEMENT FROM THE MANUFACTURER INDICATING THAT THE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND THE READINGS OF THE EMERGENCY LIGHTING LEVEL COMPLY WITH THE ONTARIO BUILDING CODE. READING REPORT AND MANUFACTURER STATEMENT AS SHOWN ABOVE SHALL OCCUR PRIOR OCCUPANCY.
22.6. ANY DEFECTS OR DEFICIENCIES WHICH ORIGINATE OR BECOME EVIDENT DURING THE WARRANTY PERIOD MUST BE REPAIRED OR CORRECTED AT NO EXTRA COST TO THE OWNER.
22.7. REPLACE, AT NO COST, ALL INCANDESCENT LAMPS BURNED-OUT DURING A THIRTY (30) DAY PERIOD AND ALL BURNED-OUT FLUORESCENT AND HID LAMPS FOR A PERIOD OF NINETY (90) DAYS AFTER DATE OF ISSUANCE OF CERTIFICATE OF "SUBSTANTIAL PERFORMANCE" FOR THE CONTRACT FOR THE WORK.
22.8. IF, DURING THE WARRANTY PERIOD, TRANSFORMERS, BALLASTS OR OTHER NOISE AND VIBRATION PRODUCING EQUIPMENT ARE CONSIDERED BY THE CONSULTANT TO EXCEED ACCEPTABLE STANDARDS, THEN THESE MUST BE REPLACED WITHOUT DELAY OR ADDITIONAL COST TO THE OWNER. ALL WORK RELATING TO THE REPLACEMENT OF DEFECTIVE ITEMS, MUST BE CARRIED OUT AFTER NORMAL WORKING HOURS AND AT A TIME WHICH IS ACCEPTABLE TO THE TENANT.

23. AS-BUILT DRAWINGS

- 23.1. AT THE COMPLETION OF WORK AND BEFORE FINAL ACCEPTANCE, PROVIDE AS-BUILT DRAWINGS OF THE INSTALLATION (HARD COPIES RED LINE FORMAT). CONSULTANT WILL PREPARE THE AUTOCAD AS-BUILTS AS PER IO STANDARDS.
23.2. INCORPORATE ALL CHANGES AND DEVIATIONS FROM TENDER DRAWINGS, UTILIZING NORMAL RECOGNIZED DRAFTING PROCEDURES THAT MATCH THE ORIGINAL DRAFTING METHODOLOGY.
23.3. ALL MAIN BRANCH CONDUIT RUNS, JUNCTION BOX LOCATIONS, CONDUIT RUNS FOR ALL FLOOR OUTLETS, ETC., MUST BE REFLECTED ON THE DRAWINGS.
23.4. REMOVE THE ELECTRICAL ENGINEER'S STAMP AND COMPANY NAME FROM ALL DRAWINGS.
23.5. CLEARLY INDICATE THE WORDS "AS-BUILT" IN THE TITLE BLOCK COLUMN OF THE DRAWINGS AS WELL AS THE ELECTRICAL CONTRACTOR'S NAME AND ADDRESS.
23.6. SUBMIT A PRINT TO CONSULTANT FOR REVIEW. WHEN FOUND ACCEPTABLE BY THE CONSULTANT, SUBMIT THREE (3) SETS OF PRINTS TOGETHER WITH AUTOCAD DISKS FOR PRESENTATION TO LANDLORD AND TENANT.

24. OPERATION AND MAINTENANCE MANUALS

- 24.1. PROVIDE 2 (TWO) SETS OF OPERATION AND MAINTENANCE MANUALS. INCLUDE THE FOLLOWING INFORMATION IN THE OPERATIONS AND MAINTENANCE MANUALS:
24.1.1. TECHNICAL DATA, PRODUCT DATA, SUPPLEMENTED BY BULLETINS, COMPONENT ILLUSTRATIONS, EXPLODED VIEWS, TECHNICAL DESCRIPTIONS OF ITEMS, AND PARTS LISTS. ADVERTISING OR SALES LITERATURE IS NOT ACCEPTABLE.
24.1.2. THE CONSULTANTS REVIEWED SHOP DRAWINGS.
24.1.3. CERTIFICATE(S) OF ACCEPTANCE FROM AUTHORITIES HAVING JURISDICTION
24.1.4. VERIFICATION REPORTS AND CERTIFICATE(S) FOR ANY NEW FIRE ALARM COMPONENTS OR TIE-INS AND ANY BASE BUILDING TIE-INS FOR MISCELLANEOUS SYSTEMS (I.E. SECURITY, LIGHTING CONTROL, DIGITAL METERING).
24.1.5. LOAD BALANCE REPORT
24.1.6. DATA/COMMUNICATION DRAWINGS, TEST REPORTS, AND INSTALLATION DETAILS.
24.1.7. WRITTEN WARRANTY - 2 YEARS FOR LABOUR AND MATERIALS.
24.1.8. AS-BUILT DRAWINGS.
24.2. REVIEW INFORMATION PROVIDED IN THE MAINTENANCE INSTRUCTIONS AND MANUALS WITH THE TENANT'S OPERATING PERSONNEL AND LANDLORD'S OPERATING PERSONNEL WHERE BASE BUILDING SYSTEMS ARE REVISED, TO ENSURE A COMPLETE UNDERSTANDING OF THE ELECTRICAL EQUIPMENT AND SYSTEMS AND THEIR OPERATION.

ELECTRICAL - MATERIALS AND INSTALLATION:

1. CONDUITS AND CONDUIT FITTINGS

- 1.1. PROVIDE ALL CONDUIT UP TO AND INCLUDING 100MM (4") SIZE, AS EMT THIN WALL WITH STEEL SET SCREW COUPLINGS AND CONNECTORS.
1.2. PROVIDE FLEXIBLE METAL CONDUIT FOR CONNECTION TO MOTORS AND TRANSFORMERS.
1.3. INSTALL CONDUITS TO CONSERVE HEADROOM, PARALLEL AND PERPENDICULAR TO BUILDING LINES. DO NOT CADDE CLIP CONDUITS TO CEILING HANGERS.
1.4. ALL EMPTY CONDUITS SHALL BE COMPLETE WITH NYLON FISH WIRE.
1.5. ALL DATA/COMMUNICATION CONDUITS SHALL BE INSTALLED COMPLETE WITH PLASTIC BUSHINGS AT EACH END.
1.6. CONDUITS FOR COMMUNICATION SHALL BE EMT, MIN 20MM(3/4").
1.7. NO MORE THAN TWO (2) - 90 DEG. BENDS SHALL BE INSTALLED BETWEEN ANY TWO ADJACENT PULL BOXES. SIZE ALL CONDUITS BASED ON RW 90XLPE WIRING ONLY SIZE ALL CONDUITS FOR MAX. 40% FILL, TO INCLUDE DEDICATED INSULATED GROUND WIRE.

2. JUNCTION BOXES AND PULL BOXES

- 2.1. JUNCTION BOXES AND PULL BOXES SHALL BE SUITABLE FOR SURFACE MOUNTING AND BE OF WELDED STEEL CONSTRUCTION WITH SCREW-ON FLAT COVERS.
2.2. FOR FLUSH-MOUNTED PULL AND JUNCTION BOXES, PROVIDE COVERS WITH 25MM (1") MINIMUM EXTENSION ALL AROUND.
2.3. INSTALL JUNCTION AND PULL BOXES IN INCONSPICUOUS BUT ACCESSIBLE LOCATIONS.
2.4. A MINIMUM OF ONE PULL BOX SHALL BE INSTALLED FOR EVERY 100 FT.(30M) OF CONDUIT. (NOTE: EACH 90 DEG. BEND SHALL EQUATE TO A 30 FT. (9M) LENGTH OF CONDUIT).

3. WIRE AND CABLE

- 3.1. ALL WIRE AND CABLE SHALL BE COPPER, MINIMUM 12 AWG, WITH RW 90XLPE INSULATION. WIRES #12AWG AND #10 SHALL BE SOLID. WIRES #8 AND LARGER SHALL BE STRANDED TYPE.
3.2. SIZE ALL WIRES FOR MAXIMUM 2% VOLTAGE DROP TO CODE REQUIREMENTS.
3.3. ALL HOME RUNS TO BE IN EMT CONDUIT.
3.4. DO NOT RUN CABLES OR CONDUITS HORIZONTALLY IN PARTITION WALLS.

4. SERVICE EQUIPMENT

- 4.1. INSTALL NEW MOLDED CASE CIRCUIT BREAKERS IN EXISTING PANELBOARD AS INDICATED ON DRAWINGS.

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



Table with 3 columns: No., Date, Action. Row 1: 2, 2026/01/30, ISSUED FOR TENDER. Row 2: 1, 2026/01/14, ISSUED FOR 99% CLIENT REVIEW.



Orientation: Stamp
Project Name and Address: HEATER CONTROL AND ISOLATION VALVES, 155 MCNICOLL AVENUE, NORTH YORK, ONTARIO

Drawing title: SPECIFICATIONS (2 OF 3)

Table with 2 columns: Scale, Designer, Drawn by, Drawing file, Revision No., Project No., Date, Checked by, Client Approval.

Revision No.: 0, Drawing No.: M-101

MOULDED CASE CIRCUIT BREAKERS TO BE BOLT-ON AND SAME MANUFACTURER AND TYPE AS EXISTING PANEL'S BREAKERS. IF UNABLE TO MATCH BASE BUILDING EQUIPMENT, ONE OF THE FOLLOWING MANUFACTURER'S EQUIPMENT MUST BE PROVIDED:

- 4.1.1. FPL
 - 4.1.2. CUTTLER-HAMMER
 - 4.1.3. SQUARE D
 - 4.1.4. SIEMENS
5. GROUNDING
- 5.1. GROUND ALL EQUIPMENT IN ACCORDANCE WITH LATEST EDITION OF THE ELECTRICAL SAFETY CODE. PROVIDE SEPARATE GREEN INSULATED GROUND CONDUCTOR IN EVERY CONDUIT TO ALL FEEDERS (PANELBOARDS, DISCONNECT SWITCHES, EQUIPMENT, ETC.).
6. MECHANICAL TRADES WIRING
- 6.1. ALL STARTERS AND CONTROL WIRING ARE PROVIDED BY DIVISION 15. DIVISION 16 SHALL RECEIVE ALL STARTERS AND INSTALL ALL STARTERS AND THERMOSTATS SUPPLIED BY MECHANICAL TRADE AND PROVIDE ALL POWER WIRING.
 - 6.2. SUPPLY, INSTALL AND CONNECT ALL REQUIRED DISCONNECT SWITCHES.
 - 6.3. CONFIRM ELECTRICAL REQUIREMENTS AND EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH DIVISION 15 PRIOR TO INSTALLATION. COORDINATE WITH MECHANICAL DRAWINGS, AS REQUIRED.
7. MEGGERING AND BALANCING
- 7.1. MEGGER ALL POWER CIRCUIT FEEDERS. IF GROUND RESISTANCE ON ANY CIRCUIT IS LESS THAN THAT REQUIRED BY CSA OR OTHER GOVERNING REGULATIONS, SUCH CIRCUITS ARE TO BE CONSIDERED DEFECTIVE AND MUST BE REPLACED.
 - 7.2. MEASURE PHASE CURRENT TO PANELBOARDS WITH NORMAL LOADS OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES AND SUBMIT A REPORT FOR INSERTION INTO MANUALS.
8. AUTOMATIC CONTROLLERS
- 8.1. MAGNETIC MOTOR CONTROLLERS: CSA C22.2 NO. 14, AC GENERAL-PURPOSE CLASS A MAGNETIC CONTROLLER FOR INDUCTION MOTORS RATED IN HORSEPOWER.
 - 8.2. REVERSING CONTROLLERS: INCLUDE ELECTRICAL INTERLOCK BETWEEN FORWARD AND REVERSE ROTATION.
 - 8.3. TWO SPEED CONTROLLERS: INCLUDE INTEGRAL TIME DELAY TRANSITION BETWEEN FAST AND SLOW SPEEDS.
 - 8.4. COIL OPERATING VOLTAGE: 120VOLTS, 60 HERTZ
 - 8.5. OVERLOAD RELAY: CSA C22.2 NO. 14; BIMETAL
 - 8.6. ENCLOSURE: CSA TYPE 1 FOR INDOOR, DRY LOCATION; TYPE 4 FOR OUTDOOR LOCATION.
9. PRODUCT OPTIONS AND FEATURES
- 9.1. AUXILIARY CONTACTS: CSA C22.2 NO. 14, 2 EACH NORMALLY OPEN/CLOSED CONTACTS (NO/NC) IN ADDITION TO SEAL-IN CONTACT.
 - 9.2. COVER MOUNTED PILOT DEVICES: CSA C22.2 NO. 14, OIL-TIGHT.
 - 9.3. PILOT DEVICE CONTACTS: CSA C22.2 NO. 14, FORM Z, RATED A150
 - 9.4. PUSHBUTTONS: RECESSED TYPE.
 - 9.5. INDICATING LIGHTS: LED TYPE.
 - 9.6. SELECTOR SWITCHES: ROTARY TYPE.
 - 9.7. RELAYS: CSA C22.2 NO. 14, AS REQUIRED
 - 9.8. CONTROL POWER TRANSFORMERS: 120VOLT SECONDARY, 250VA MINIMUM, IN EACH MOTOR STARTER. PROVIDE FUSED SECONDARY, AND BOND UNFUSED LEG OF SECONDARY TO ENCLOSURE.
10. DISCONNECTS
- 10.1. COMBINATION CONTROLLERS: COMBINE MOTOR CONTROLLERS WITH NON-FUSIBLE SWITCH DISCONNECT IN COMMON ENCLOSURE WITH STARTER. SELECT ONE OF THE FOLLOWING BASED ON EDITING CHOICES MADE IN ABOVE PARAGRAPH. PART 2 EXECUTION
11. INSTALLATION
- 11.1. INSTALL ENCLOSED CONTROLLERS WHERE INDICATED, TO MANUFACTURER'S INSTRUCTIONS.
 - 11.2. INSTALL ENCLOSED CONTROLLERS PLUMB. PROVIDE FIRE-RATED PLYWOOD BACKBOARD PANEL FOR GROUP-MOUNTING CONTROLLERS OR PROVIDE RIGID STRUCTURAL SUPPORTS FOR MOUNTING MOTOR CONTROLLERS
 - 11.3. HEIGHT: 1.6 M. TO OPERATING HANDLE.
 - 11.4. INSTALL FUSES IN FUSIBLE SWITCHES, WHERE APPLICABLE.
 - 11.5. SELECT AND INSTALL OVERLOAD HEATER ELEMENTS IN MOTOR CONTROLLERS TO MATCH INSTALLED MOTOR CHARACTERISTICS, BASED ON MOTOR NAMEPLATE DATA.
 - 11.6. PROVIDE ENGRAVED PLASTIC NAMEPLATES.
 - 11.7. PROVIDE NEATLY TYPED LABEL INSIDE EACH MOTOR CONTROLLER DOOR IDENTIFYING MOTOR SERVED, NAMEPLATE HORSEPOWER, FULL LOAD AMPERES, CODE LETTER, SERVICE FACTOR, AND VOLTAGE/PHASE RATING.

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



5		
4		
3		
2	2026/01/30	ISSUED FOR TENDER
1	2026/01/14	ISSUED FOR 99% CLIENT REVIEW
No.	Date	Action



Orientation Stamp

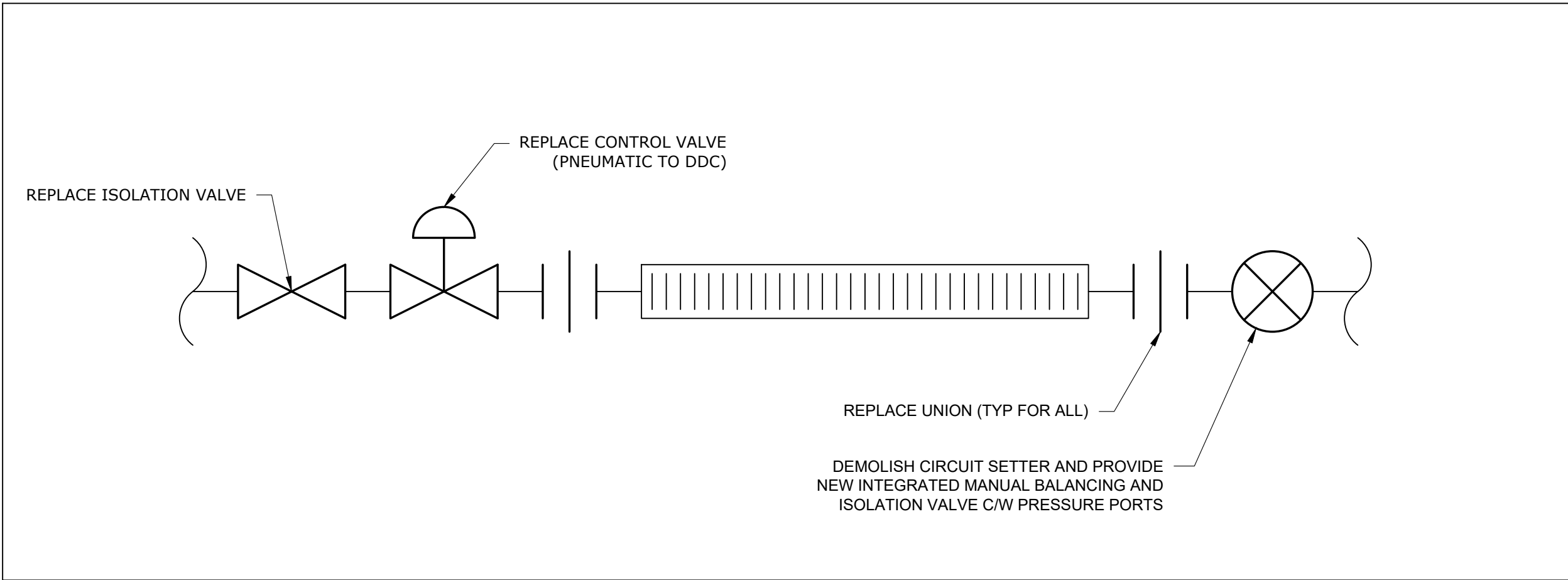
Project Name and Address:
HEATER CONTROL AND ISOLATION VALVES
 155 MCNICOLL AVENUE
 NORTH YORK, ONTARIO

Drawing title
SPECIFICATIONS (3 OF 3)

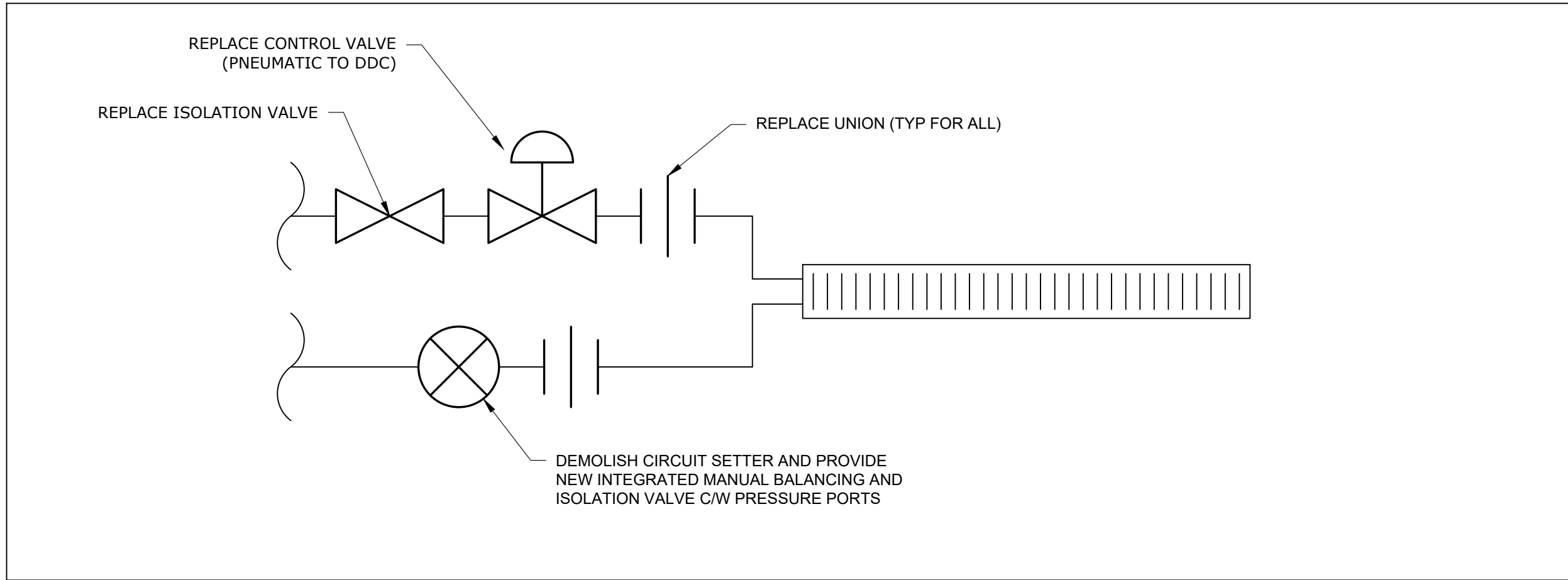
Scale: N/A	Project No. 25097
Designer: D.N	Date: 2025-11-05
Drawn by: M.D.	Checked by: D.N
Drawing file: 25097 - MECH	Client Approval

Revision No. 0	Drawing No. M-102
-------------------	----------------------

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



1 RADIATOR DETAIL
SCALE: N.T.S.



2 RADIATOR (ONE-SIDED) DETAIL
SCALE: N.T.S.

LEGEND	
SYMBOL	DESCRIPTION
—	NEW WORK
---	EXISTING TO REMAIN
-X-X-	EXISTING TO BE DEMOLISHED
~	FLEX DUCT
~	CONTROL WIRE
---	DOMESTIC COLD WATER
---	DOMESTIC HOT WATER
---	DOMESTIC HOT WATER RETURN
---CHWS---	CHILLED WATER SUPPLY
---CHWR---	CHILLED WATER RETURN
---CA---	COMPRESSED AIR
---CD---	CONDENSATE DRAIN
---C---	CONDENSATE LINE
---CWS---	CONDENSER WATER SUPPLY
---CWR---	CONDENSER WATER RETURN
---F---	FIRE LINE
---FOS---	FUEL OIL SUPPLY
---FOR---	FUEL OIL RETURN
---FOV---	FUEL OIL VENT
---G---	GAS LINE
---GLS---	GLYCOL SUPPLY
---GLR---	GLYCOL RETURN
---HS---	HEAT PUMP SUPPLY
---HR---	HEAT PUMP RETURN
---HG---	HIGH PRESSURE GAS LINE
---HWS---	HOT WATER SUPPLY
---HWR---	HOT WATER RETURN
---HPS---	HIGH PRESSURE STEAM
---MPS---	MEDIUM PRESSURE STEAM
---LPS---	LOW PRESSURE STEAM
---LG---	LOW PRESSURE GAS LINE
---RD---	REFRIGERANT DISCHARGE
---RL---	REFRIGERANT LIQUID
---RS---	REFRIGERANT SUCTION
---RO---	REVERSE OSMOSIS
---SAN---	SANITARY
---SAN---	SANITARY - BELOW
---SP---	SPRINKLER
---ST---	STORM
---ST---	STORM - BELOW
---	VENT
---	PIPE RISE
---	PIPE DROP
---	TEE DROP
---	PIPE BREAK
---	CAP
---	UNION
▶	PUMP
▶	FLOW ARROW
⊗	GATE VALVE
⊕	BALL VALVE
⊙	THERMOSTAT
⊙	THERMOSTAT WITH GUARD
⊙	TEMPERATURE SENSOR
⊙	HUMIDISTAT

⊙	HUMIDITY SENSOR
⊙	CARBON MONOXIDE SENSOR
⊙	CARBON DIOXIDE SENSOR
⊙	OCCUPANCY SENSOR
⊙	REFRIGERANT SENSOR
⊙	PRESSURE SENSOR
⊙	BALANCING VALVE
⊙	BUTTERFLY VALVE
⊙	CHECK VALVE
⊙	BACK WATER PREVENTION VALVE ASSEMBLY
⊙	Y-STRAINER
⊙	GLOBE VALVE
⊙	SOLENOID VALVE
⊙	FLOOR DRAIN
⊙	FUNNEL FLOOR DRAIN
⊙	P-TRAP
⊙	CLEANOUT
⊙	CLEANOUT - UPRIGHT
⊙	WATER METER
⊙	GAS METER
⊙	PLUG VALVE COCK
⊙	FUNNEL FLOOR DRAIN
⊙	TEMPERATURE GAUGE
⊙	PRESSURE REDUCING VALVE
⊙	PRESSURE RELIEF VALVE
⊙	2-WAY CONTROL VALVE - DDC
⊙	3-WAY CONTROL VALVE - DDC
⊙	3-WAY MIXING VALVE
⊙	2-WAY CONTROL VALVE - PNEUMATIC
⊙	3-WAY CONTROL VALVE - PNEUMATIC
⊙	THERMOSTATIC MIXING VALVE
⊙	AUTOMATIC AIR VENT
⊙	MANUAL AIR VENT
⊙	PRESSURE GAUGE
⊙	VENTURI FLOW MEASURING DEVICE
⊙	STEAM TRAP
⊙	FLEXIBLE PIPE CONNECTOR
⊙	ROOF DRAIN
⊙	FIRE EXTINGUISHER
⊙	SIAMESE WATER CONNECTION
⊙	SIAMESE WATER CONNECTION - FREE STANDING
⊙	SPRINKLER - PENDANT HANGING
⊙	SPRINKLER - UPRIGHT EXPOSED
⊙	SPRINKLER - SIDEWALL
⊙	SPRINKLER - OUTSIDE
⊙	RADIATOR

▬	BASEBOARD HEATER
↔	AIR FLOW ARROW
⊗	SUPPLY DUCT - UP
⊙	SUPPLY DUCT - DOWN
⊗	RETURN DUCT - UP
⊙	RETURN DUCT - DOWN
~	FLEX CONNECTION
▬	THERMALLY LINED DUCTWORK
▬	ACOUSTICALLY LINED DUCTWORK
▬	ACOUSTICALLY LINED DUCTWORK - SINGLE LINE
▬	DUCT DROP
▬	DUCT RISE
▬	DUCT REDUCER
▬	BALANCING DAMPER
▬	BACK DRAFT DAMPER
▬	FIRE DAMPER
▬	SMOKE DAMPER
▬	SMOKE & FIRE DAMPER
▬	SPLITTER DAMPER
▬	MOTORIZED DAMPER
▬	EQUIPMENT TAG
▬	AIR TERMINAL TAG X = TYPE, A, B, C, ETC. (REFER TO SPECIFICATIONS FOR MORE DETAIL) Y = AIR FLOW (CFM) Z = FLEX DUCT SIZE (IN)
▬	CONTINUATION TAG X = DETAIL NUMBER/LETTER Y = DRAWING NUMBER
▬	DETAIL CALLOUT X = DETAIL NUMBER/LETTER Y = DRAWING NUMBER
⊙	TEMPERATURE SENSOR
⊙	FLOW SWITCH
⊙	RELATIVE HUMIDITY SENSOR
⊙	LOW WATER CUT OUT
⊙	HIGH TEMPERATURE CUT OUT
⊙	SUCTION DIFFUSER
⊙	VARIABLE FREQUENCY DRIVE
⊙	STATIC PRESSURE SENSOR
⊙	CARBON DIOXIDE SENSOR

ABBREVIATIONS	
ABB.	DESCRIPTION
ABV	AUTOMATIC BALANCING VALVE
AFF	ABOVE FINISHED FLOOR
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACK DRAFT DAMPER
BFP	BACK FLOW PREVENTOR
CBV	CIRCUIT BALANCING VALVE
CTE	CONNECT TO EXISTING
CO	CLEANOUT
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
FD	FLOOR DRAIN
FF	FINISHED FLOOR
FFD	FUNNEL FLOOR DRAIN
HUM	HUMIDIFIER
NO / NC	NORMALLY OPEN / NORMALLY CLOSED
SD	SCUPPER DRAIN
SFI	SIGHT FLOW INDICATOR
TDV	TRIPLE DUTY VALVE
TYP	TYPICAL
VFD	VARIABLE FREQUENCY DRIVE
PROVIDE	SUPPLY AND INSTALL
DEMOLISH	REMOVE AND DISPOSE
REPLACE	PROVIDE AND DEMOLISH

5		
4		
3		
2	2026/01/30	ISSUED FOR TENDER
1	2026/01/14	ISSUED FOR 99% CLIENT REVIEW
No.	Date	Action



Orientation: _____ Stamp: _____
Project Name and Address:
HEATER CONTROL AND ISOLATION VALVES
155 MCNICOLL AVENUE
NORTH YORK, ONTARIO

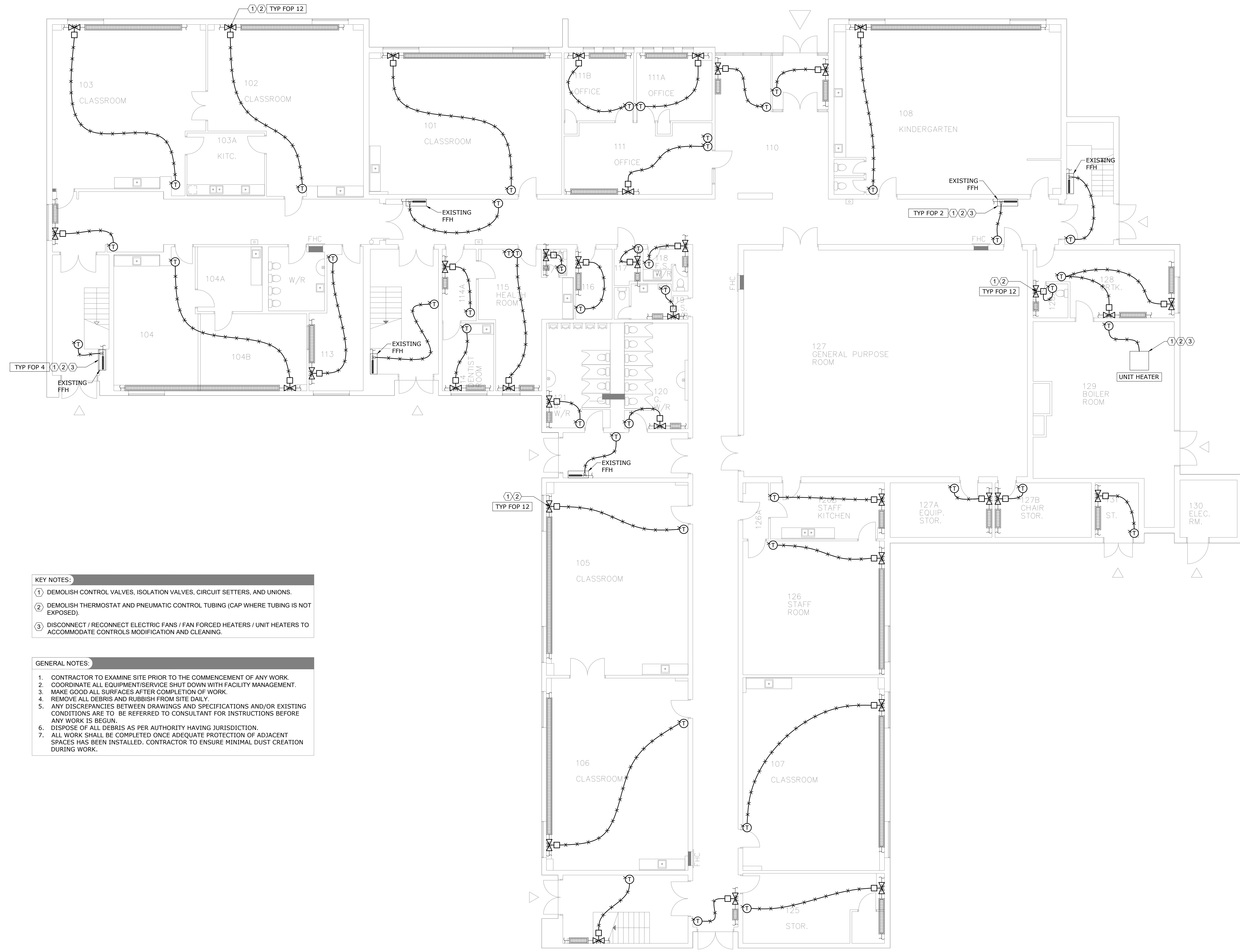
Drawing title:
DETAILS, LEGEND, AND ABBREVIATIONS

Scale: AS INDICATED	Project No. 25097
Designer: D.N	Date: 2025-11-05
Drawn by: M.D.	Checked by: D.N
Drawing file: 25097 - MECH	Client Approval
Revision No. 0	Drawing No. M-110

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



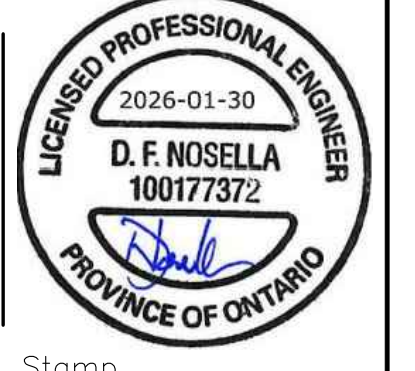
140 THE EAST MALL, SUITE 305, TORONTO, ON, M9B 6J7



- KEY NOTES:**
- ① DEMOLISH CONTROL VALVES, ISOLATION VALVES, CIRCUIT SETTERS, AND UNIONS.
 - ② DEMOLISH THERMOSTAT AND PNEUMATIC CONTROL TUBING (CAP WHERE TUBING IS NOT EXPOSED).
 - ③ DISCONNECT / RECONNECT ELECTRIC FANS / FAN FORCED HEATERS / UNIT HEATERS TO ACCOMMODATE CONTROLS MODIFICATION AND CLEANING.

- GENERAL NOTES:**
- 1. CONTRACTOR TO EXAMINE SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
 - 2. COORDINATE ALL EQUIPMENT/SERVICE SHUT DOWN WITH FACILITY MANAGEMENT.
 - 3. MAKE GOOD ALL SURFACES AFTER COMPLETION OF WORK.
 - 4. REMOVE ALL DEBRIS AND RUBBISH FROM SITE DAILY.
 - 5. ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS AND/OR EXISTING CONDITIONS ARE TO BE REFERRED TO CONSULTANT FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
 - 6. DISPOSE OF ALL DEBRIS AS PER AUTHORITY HAVING JURISDICTION.
 - 7. ALL WORK SHALL BE COMPLETED ONCE ADEQUATE PROTECTION OF ADJACENT SPACES HAS BEEN INSTALLED. CONTRACTOR TO ENSURE MINIMAL DUST CREATION DURING WORK.

5		
4		
3		
2	2026/01/30 ISSUED FOR TENDER	
1	2026/01/14 ISSUED FOR 99% CLIENT REVIEW	
No.	Date	Action



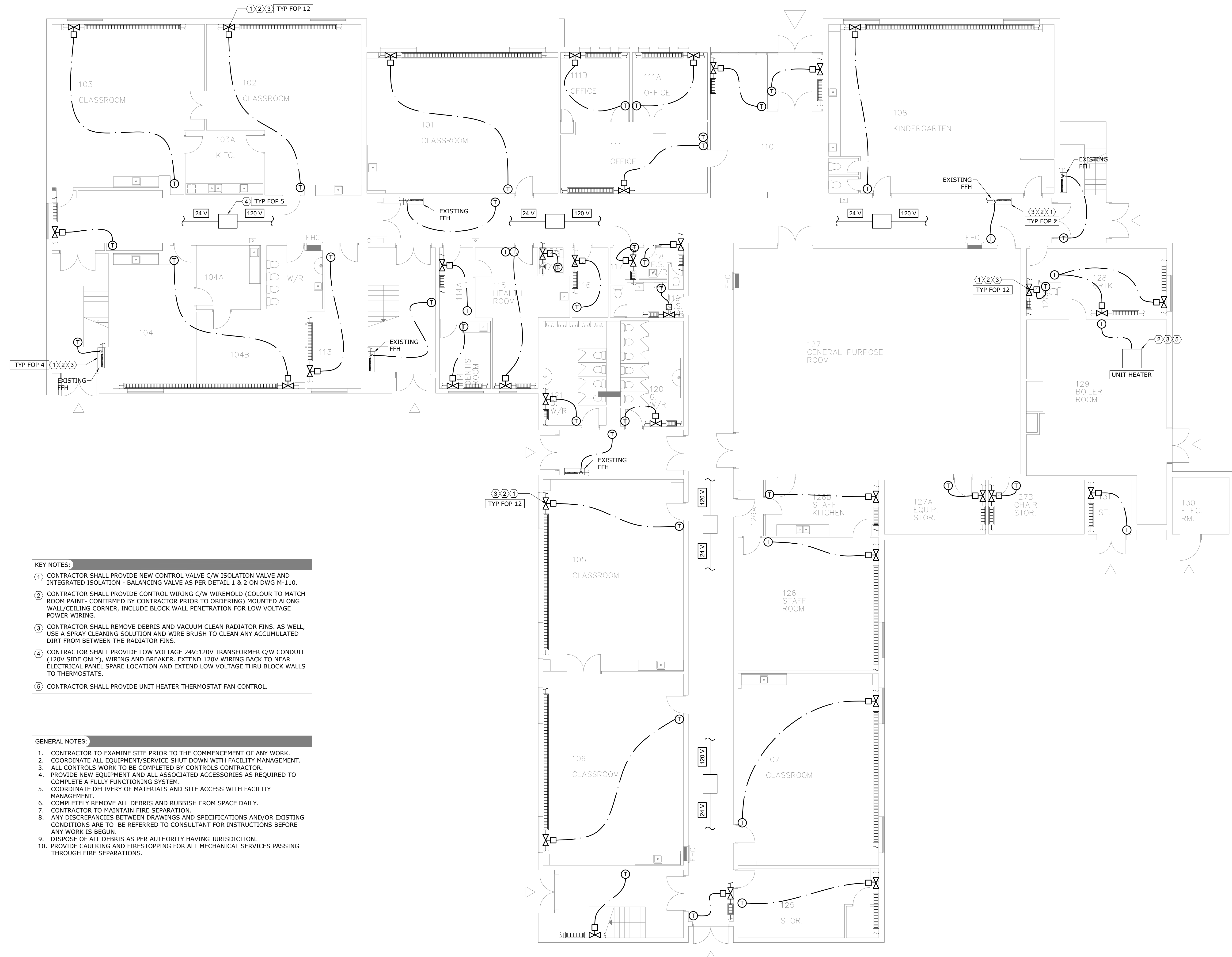
Orientation Stamp
 Project Name and Address:
HEATER CONTROL AND ISOLATION VALVES
 155 MCNICOLL AVENUE
 NORTH YORK, ONTARIO

Drawing title
GROUND FLOOR HVAC DEMOLITION

Scale: 1/8" = 1'	Project No. 25097
Designer: D.N	Date: 2025-11-05
Drawn by: M.D.	Checked by: D.N
Drawing file: 25097 - MECH	Client Approval

Revision No. 0	Drawing No. M-300
-------------------	----------------------

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



- KEY NOTES:**
- CONTRACTOR SHALL PROVIDE NEW CONTROL VALVE C/W ISOLATION VALVE AND INTEGRATED ISOLATION - BALANCING VALVE AS PER DETAIL 1 & 2 ON DWG M-110.
 - CONTRACTOR SHALL PROVIDE CONTROL WIRING C/W WIREMOLD (COLOUR TO MATCH ROOM PAINT- CONFIRMED BY CONTRACTOR PRIOR TO ORDERING) MOUNTED ALONG WALL/CEILING CORNER, INCLUDE BLOCK WALL PENETRATION FOR LOW VOLTAGE POWER WIRING.
 - CONTRACTOR SHALL REMOVE DEBRIS AND VACUUM CLEAN RADIATOR FINS. AS WELL, USE A SPRAY CLEANING SOLUTION AND WIRE BRUSH TO CLEAN ANY ACCUMULATED DIRT FROM BETWEEN THE RADIATOR FINS.
 - CONTRACTOR SHALL PROVIDE LOW VOLTAGE 24V:120V TRANSFORMER C/W CONDUIT (120V SIDE ONLY), WIRING AND BREAKER. EXTEND 120V WIRING BACK TO NEAR ELECTRICAL PANEL SPARE LOCATION AND EXTEND LOW VOLTAGE THRU BLOCK WALLS TO THERMOSTATS.
 - CONTRACTOR SHALL PROVIDE UNIT HEATER THERMOSTAT FAN CONTROL.

- GENERAL NOTES:**
- CONTRACTOR TO EXAMINE SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
 - COORDINATE ALL EQUIPMENT/SERVICE SHUT DOWN WITH FACILITY MANAGEMENT.
 - ALL CONTROLS WORK TO BE COMPLETED BY CONTROLS CONTRACTOR.
 - PROVIDE NEW EQUIPMENT AND ALL ASSOCIATED ACCESSORIES AS REQUIRED TO COMPLETE A FULLY FUNCTIONING SYSTEM.
 - COORDINATE DELIVERY OF MATERIALS AND SITE ACCESS WITH FACILITY MANAGEMENT.
 - COMPLETELY REMOVE ALL DEBRIS AND RUBBISH FROM SPACE DAILY.
 - CONTRACTOR TO MAINTAIN FIRE SEPARATION.
 - ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS AND/OR EXISTING CONDITIONS ARE TO BE REFERRED TO CONSULTANT FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
 - DISPOSE OF ALL DEBRIS AS PER AUTHORITY HAVING JURISDICTION.
 - PROVIDE CAULKING AND FIRESTOPPING FOR ALL MECHANICAL SERVICES PASSING THROUGH FIRE SEPARATIONS.

No.	Date	Action
5		
4		
3		
2	2026/01/30	ISSUED FOR TENDER
1	2026/01/14	ISSUED FOR 99% CLIENT REVIEW



Orientation Stamp
 Project Name and Address:
HEATER CONTROL AND ISOLATION VALVES
 155 MCNICOLL AVENUE
 NORTH YORK, ONTARIO

Drawing title
GROUND FLOOR HVAC MODIFICATION

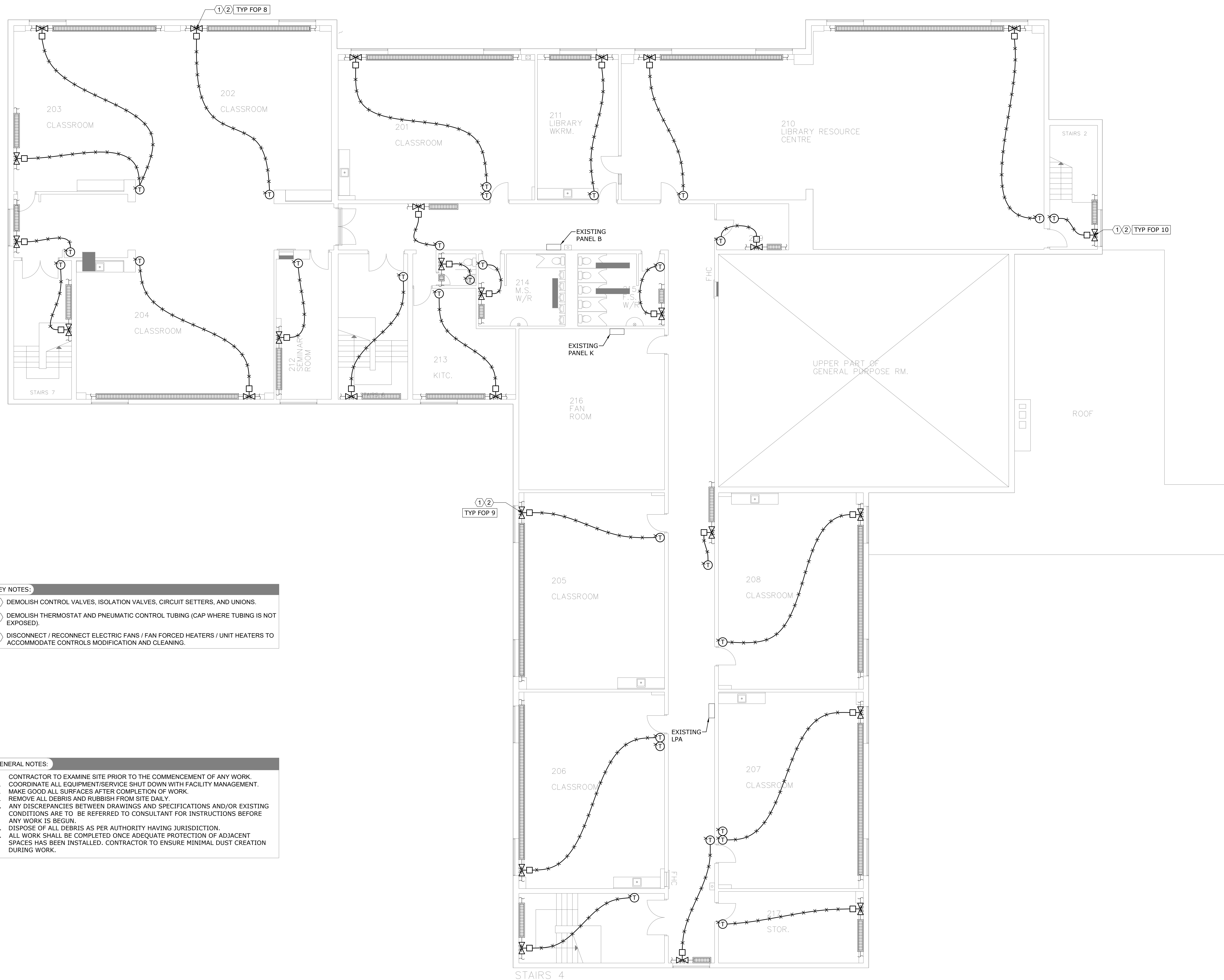
Scale: 1/8" = 1'	Project No. 25097
Designer: D.N.	Date: 2025-11-05
Drawn by: M.D.	Checked by: D.N.
Drawing file: 25097 - MECH	Client Approval

Revision No. 0	Drawing No. M-301
-------------------	----------------------

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



140 THE EAST MALL SUITE 300, TORONTO, ON, M9B 6J7



- KEY NOTES:**
1. DEMOLISH CONTROL VALVES, ISOLATION VALVES, CIRCUIT SETTERS, AND UNIONS.
 2. DEMOLISH THERMOSTAT AND PNEUMATIC CONTROL TUBING (CAP WHERE TUBING IS NOT EXPOSED).
 3. DISCONNECT / RECONNECT ELECTRIC FANS / FAN FORCED HEATERS / UNIT HEATERS TO ACCOMMODATE CONTROLS MODIFICATION AND CLEANING.

- GENERAL NOTES:**
1. CONTRACTOR TO EXAMINE SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
 2. COORDINATE ALL EQUIPMENT/SERVICE SHUT DOWN WITH FACILITY MANAGEMENT.
 3. MAKE GOOD ALL SURFACES AFTER COMPLETION OF WORK.
 4. REMOVE ALL DEBRIS AND RUBBISH FROM SITE DAILY.
 5. ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS AND/OR EXISTING CONDITIONS ARE TO BE REFERRED TO CONSULTANT FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
 6. DISPOSE OF ALL DEBRIS AS PER AUTHORITY HAVING JURISDICTION.
 7. ALL WORK SHALL BE COMPLETED ONCE ADEQUATE PROTECTION OF ADJACENT SPACES HAS BEEN INSTALLED. CONTRACTOR TO ENSURE MINIMAL DUST CREATION DURING WORK.

5		
4		
3		
2	2026/01/30 ISSUED FOR TENDER	
1	2026/01/14 ISSUED FOR 99% CLIENT REVIEW	
No.	Date	Action



Orientation Stamp
 Project Name and Address:
HEATER CONTROL AND ISOLATION VALVES
 155 MCNICOLL AVENUE
 NORTH YORK, ONTARIO

Drawing title
SECOND FLOOR HVAC DEMOLITION

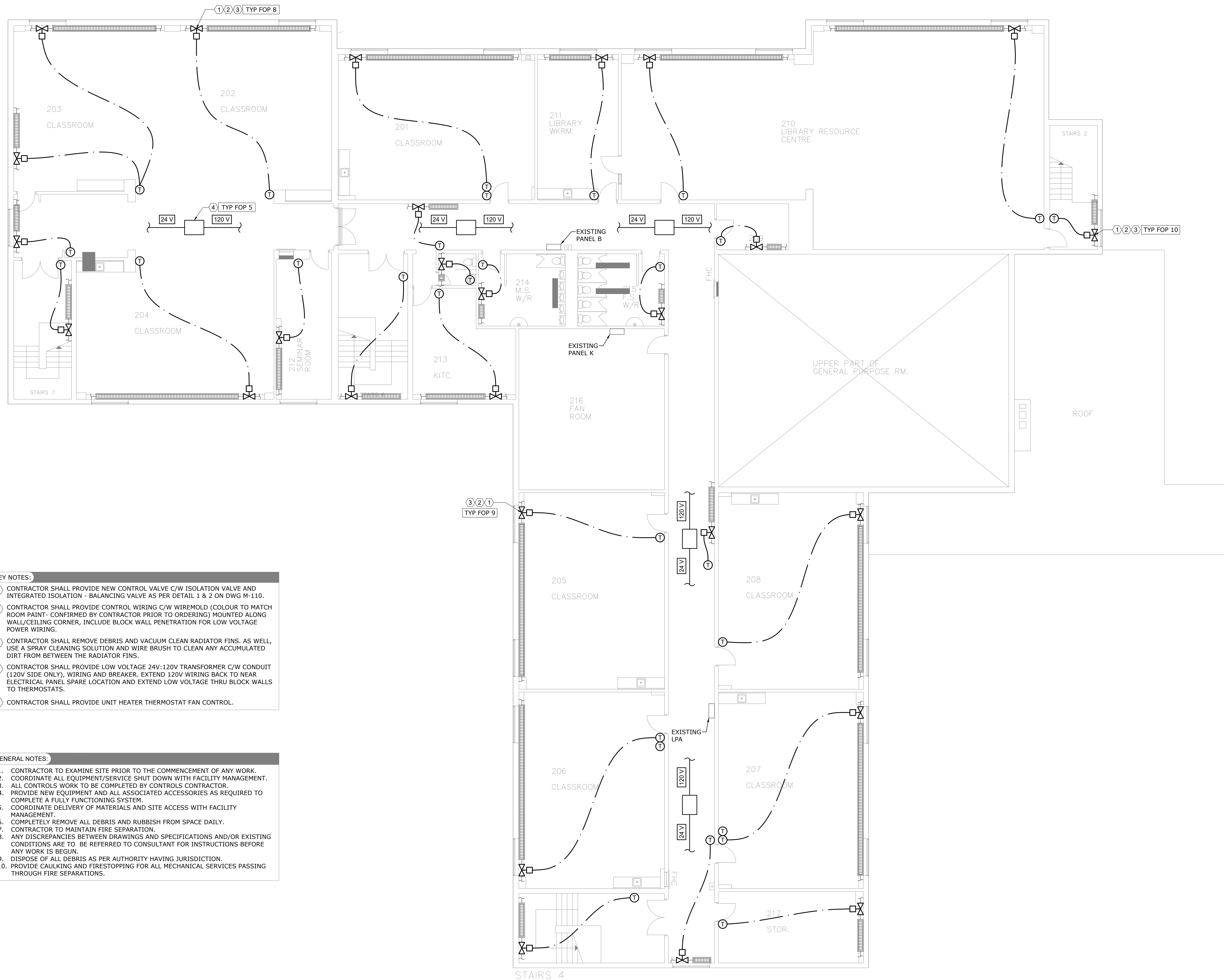
Scale: 1/8" = 1'	Project No. 25097
Designer: D.N.	Date: 2025-11-05
Drawn by: M.D.	Checked by: D.N.
Drawing file: 25097 - MECH	Client Approval

Revision No. 0	Drawing No. M-302
-------------------	----------------------

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF ENTRUST ENGINEERING INC.



140 THE EAST MALL SUITE 300, TORONTO, ON, M9B 6J7



KEY NOTES:

- ① CONTRACTOR SHALL PROVIDE NEW CONTROL VALVE C/W ISOLATION VALVE AND INTEGRATED ISOLATION - BALANCING VALVE AS PER DETAIL 1 & 2 ON DWG M-110.
- ② CONTRACTOR SHALL PROVIDE CONTROL WIRING C/W WIREMOLD (COLOUR TO MATCH ROOM PAINT- CONFIRMED BY CONTRACTOR PRIOR TO ORDERING) MOUNTED ALONG WALL/CEILING CORNER, INCLUDE BLOCK WALL PENETRATION FOR LOW VOLTAGE POWER WIRING.
- ③ CONTRACTOR SHALL REMOVE DEBRIS AND VACUUM CLEAN RADIATOR FINS. AS WELL, USE A SPRAY CLEANING SOLUTION AND WIRE BRUSH TO CLEAN ANY ACCUMULATED DIRT FROM BETWEEN THE RADIATOR FINS.
- ④ CONTRACTOR SHALL PROVIDE LOW VOLTAGE 24V:120V TRANSFORMER C/W CONDUIT (120V SIDE ONLY), WIRING AND BREAKER. EXTEND 120V WIRING BACK TO NEAR ELECTRICAL PANEL SPARE LOCATION AND EXTEND LOW VOLTAGE THRU BLOCK WALLS TO THERMOSTATS.
- ⑤ CONTRACTOR SHALL PROVIDE UNIT HEATER THERMOSTAT FAN CONTROL.

GENERAL NOTES:

1. CONTRACTOR TO EXAMINE SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. COORDINATE ALL EQUIPMENT/SERVICE SHUT DOWN WITH FACILITY MANAGEMENT.
3. ALL CONTROLS WORK TO BE COMPLETED BY CONTROLS CONTRACTOR.
4. PROVIDE NEW EQUIPMENT AND ALL ASSOCIATED ACCESSORIES AS REQUIRED TO COMPLETE A FULLY FUNCTIONING SYSTEM.
5. COORDINATE DELIVERY OF MATERIALS AND SITE ACCESS WITH FACILITY MANAGEMENT.
6. COMPLETELY REMOVE ALL DEBRIS AND RUBBISH FROM SPACE DAILY.
7. CONTRACTOR TO MAINTAIN FIRE SEPARATION.
8. ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS AND/OR EXISTING CONDITIONS ARE TO BE REFERRED TO CONSULTANT FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
9. DISPOSE OF ALL DEBRIS AS PER AUTHORITY HAVING JURISDICTION.
10. PROVIDE CAULKING AND FIRESTOPPING FOR ALL MECHANICAL SERVICES PASSING THROUGH FIRE SEPARATIONS.

5		
4		
3		
2	2026/01/30 ISSUED FOR TENDER	
1	2026/01/14 ISSUED FOR 99% CLIENT REVIEW	
No.	Date	Action



Orientation Stamp

Project Name and Address:
HEATER CONTROL AND ISOLATION VALVES
 155 MCNICOLL AVENUE
 NORTH YORK, ONTARIO

Drawing title
SECOND FLOOR HVAC MODIFICATION

Scale: 1/8" = 1'	Project No. 25097
Designer: D.N.	Date: 2025-11-05
Drawn by: M.D.	Checked by: D.N.
Drawing file: 25097 - MECH	Client Approval

Revision No. 0	Drawing No. M-303
-------------------	----------------------