DOMESTIC WATER

A. ALL DOMESTIC WATER PIPING SHALL BE TYPE 'L' COPPER WITH CAST BRASS OR WROUGHT COPPER FITTINGS, PEX OR CPVC CONFORMING TO THE ONTARIO BUILDING CODE. WATER PIPE SIZING SHOWN ON THIS PLAN IS BASED ON COPPER PIPING. FOR PEX OR CPVC, SIZES MUST BE ADJUSTED TO MEET REQUIRED MINIMUM INSIDE DIAMETER, REFERRING TO MANUFACTURER'S DATA AS NECESSARY. EXPANSION LOOPS FOR CPVC HOT WATER AND HOT WATER RECIRCULATION MAINS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATION.
B. ALL PEX PIPING FITTINGS SHALL COLD-EXPANSION TYPE, CONFORMING TO ASTM F1960. THE CONTRACTOR SHALL ENSURE THAT ALL FITTINGS MAINTAIN A FULL-FLOW INTERNAL DIAMETER CONSISTENT WITH THE PIPING SYSTEM DESIGN TO PREVENT FLOW RESTRICTION AND EXCESSIVE PRESSURE DROP. THE USE OF INSERT-TYPE CRIMP FITTINGS (ASTM F1807/F2159) SHALL NOT BE USED UNLESS APPROVED BY ENGINEER FOR UNIQUE TRANSITION POINTS. ALL CONNECTIONS SHALL BE MADE USING THE PIPE MANUFACTURER'S SPECIALIZED EXPANSION TOOLS TO ENSURE A PERMANENT, LEAK-PROOF, AND UNRESTRICTED JOINT.
C. PROVIDE ISOLATING VALVES ON MAIN AND/OR BRANCHES, AND FOR ALL EQUIPMENT SERVICED BY HOT AND COLD WATER LINES. ALL VALVES SHALL BE RATED FOR USE UNDER THE OPERATING PRESSURE OF THE SYSTEM IN WHICH THEY ARE INSTALLED.
D. PROVIDE BALL VALVE AT LOWEST POINT OF INSTALLATION TO ALLOW DRAINING AND PURGING OF SYSTEM. DRAIN VALVES ON MAINS AND RISERS SHALL BE PROVIDED WITH HOSE THREAD ADAPTER, CAP, AND CHAIN. MINIMUM DRAIN VALVE SIZE SHALL BE NPS 3/4 FOR MAINS NPS 4 AND UNDER, AND NPS 1 FOR MAINS NPS 5 AND OVER.
E. ALL CLEANING AND FLUSHING OF THE DOMESTIC WATER SITE SERVICE PIPING SHALL BE BY THE SITE SERVICE CONTRACTOR. ALL ISOLATING VALVES SHALL BE MAINTAINED IN THE OPEN POSITION DURING FLUSHING AND CLEANING OPERATION.
F. SINKS AND LAVATORIES WITH ELECTRONIC FAUCETS SHALL BE PROVIDED WITH RECESSED CONTROL BOX WITH ACCESS PANEL AS APPLICABLE OR AS SPECIFIED.
G. WHERE NEW FIXTURES OR EQUIPMENT ARE CONNECTED TO THE DOMESTIC WATER SYSTEM, ALL NEW AND EXISTING BACKFLOW PREVENTERS SERVING THE AFFECTED SYSTEM SHALL BE TESTED OR RE-TESTED TO CONFIRM PERFORMANCE, OR AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
H. ONGOING ANNUAL TESTING OF TESTABLE BACKFLOW PREVENTERS SHALL BE THE RESPONSIBILITY OF THE OWNER IN ACCORDANCE WITH MUNICIPAL BACKFLOW PREVENTION PROGRAMS WHERE APPLICABLE.
I. ALL NON-POTABLE WATER PIPING SHALL BE IDENTIFIED BY MARKINGS THAT ARE PERMANENT, DISTINCT AND EASILY RECOGNIZED. NON-POTABLE WATER PIPING AND OUTLETS SHALL BE IDENTIFIED AND MARKED IN ACCORDANCE WITH CAN/CSA-B128.1. A SIGN CONTAINING THE WORDS "NON-POTABLE WATER, DO NOT DRINK" SHALL BE IN LETTERS AT LEAST 25 MM HIGH WITH A 5 MM STROKE AND POSTED IMMEDIATELY ABOVE A FIXTURE THAT IS PERMITTED TO RECEIVE NON-POTABLE WATER.

SANITARY DRAIN & VENT

A. INSTALL PLUMBING VENT LINES IN COMPLIANCE WITH OBC PART 7. DISTRIBUTION AND SIZING SHALL BE BY PLUMBING CONTRACTOR.
B. FOR BELOW GROUND PIPING:
   a. FOR ALL SIZES INSIDE THE BUILDING: ABS DWV OR PVC SDR-35 PIPE WITH INJECTION-MOLDED SOCKET FITTINGS (OR AS ACCEPTED BY AHJ), OR
   b. FOR PIPES 50 MM OR SMALLER: TYPE "L" HARD COPPER WITH CAST BRASS OR WROUGHT COPPER FITTINGS, OR
   c. FOR PIPES LARGER THAN 50 MM: CAST IRON WITH "MJ" FITTINGS, OR
   d. FOR PIPES OUTSIDE THE BUILDING: PVC SDR-28 FOR PIPES 150 MM OR SMALLER, COMPLETE WITH INJECTION-MOLDED GASKETED FITTINGS.
C. FOR ABOVE GROUND PIPING:
   a. FOR PIPES 50 MM OR SMALLER: TYPE DWV HARD DRAWN COPPER TUBE WITH CAST BRASS ALLOY DRAINAGE FITTINGS, OR
   b. FOR PIPES LARGER THAN 50 MM: CAST IRON PIPE WITH "MJ" FITTINGS OR DWV COPPER TUBING WITH CAST ALLOY DRAINAGE FITTINGS, OR
   c. FOR ALL SIZES: PVC DWV WITH INJECTION-MOLDED SOCKET FITTINGS. PIPE SHALL BE SUITABLE FOR USE IN NON-COMBUSTIBLE BUILDING CONSTRUCTION (IPEX SYSTEM 15 OR APPROVED EQUAL). FOR PIPING RUNNING THROUGH RETURN AIR CEILING PLENUMS, PIPING SHALL HAVE MAXIMUM SMOKE DEVELOPMENT RATING OF 50 (IPEX SYSTEM XFR 15-50 OR APPROVED EQUAL).
D. DISCONNECT AND TERMINATE ALL EXISTING DRAIN PIPES NOT USED IN THIS SET OF DRAWINGS AND SPECIFICATIONS AT CEILING, FLOOR, OR WALL. FLOOR CLEANOUTS & FLOOR DRAINS SHALL BE REWORKED SO THAT EXPOSED SURFACE IS MADE FLUSH TO NEW FFL. DEMOLISH ALL REDUNDANT PIPING TO THE FIRST TAKE OFF POINT.
E. TRAPS SHALL BE PROVIDED FOR ALL FIXTURE DRAINS. NO FIXTURE SHALL BE DOUBLE TRAPPED.
F. TRAPS COMPLETE WITH TRAP SEAL PRIMING SYSTEM SHALL BE PROVIDED FOR ALL FLOOR DRAINS AND HUB DRAINS SHOWN IN THIS SET OF DRAWINGS ACCORDING TO THE REQUIREMENTS OF THE OBC.
G. WATER HAMMER ARRESTERS SHALL BE PROVIDED ON BRANCH SUPPLIES TO FIXTURES AND EQUIPMENT WITH QUICK-CLOSING VALVES (INCLUDING SOLENOID VALVES ON DISHWASHERS, WASHING MACHINES, ICE MAKERS, AND ELECTRONIC FAUCETS). ARRESTERS SHALL BE STAINLESS STEEL CONSTRUCTION WITH PRECHARGED SEALED AIR CHAMBER, SELECTED AND INSTALLED IN ACCORDANCE WITH PDI-WH201.
H. ALL EQUIPMENT PRIMARY DRAIN LINES AND DRAIN PANS SHALL INDIRECTLY TERMINATE TO THE DRAINAGE SYSTEM.
I. I. FLOOR CLEANOUTS SHALL BE ADJUSTABLE HEIGHT TO MATCH NEW FFL.
J. PROVIDE CLEANOUTS WHERE NEW SANITARY AND VENT PIPES CONNECT TO EXISTING PIPING.
K. COORDINATE TO ENSURE SUMP PUMPS ARE POWERED UP (OR CONNECTED TO EMERGENCY POWER IF NO PERMANENT POWER IS AVAILABLE) PRIOR TO ANY FINISHINGS WITHIN LOWEST LEVEL TO PREVENT FLOODING.
L. 90-DEGREE ELBOWS SHALL ONLY BE PERMITTED (1) TO CHANGE THE DIRECTION OF PIPING FROM HORIZONTAL TO VERTICAL, IN THE DIRECTION OF FLOW; (2) WHERE A TRAP ARM ENTERS A WALL, OR (3) TO CONNECT TRAP ARMS AS PERMITTED BY OBC 7.5.6.3.(2). OTHERWISE, USE 45-DEGREE ELBOWS AND WYES FOR CHANGES IN PIPING DIRECTION.
M. FOR WALL MOUNTED SINKS AND LAVATORIES WITH SHROUDS, ENSURE THAT PLUMBING ROUGH-IN ALLOWS FOR ALL PIPING AND ACCESSORIES TO BE CONCEALED WITHIN SHROUD.

TESTING & INSPECTION

A. ALL PLUMBING SYSTEMS SHALL BE TESTED AND INSPECTED FOR THE ACCEPTANCE OF ALL GOVERNING AUTHORITIES.
B. DRAINAGE, VENT, AND DOMESTIC WATER PIPING SHALL BE TESTED TO PLUMBING CODE REQUIREMENTS. ALL LEAKS AND OTHER DEFICIENCIES SHALL BE REPAIRED TO THE SATISFACTION OF THE INSPECTING AUTHORITY AND/OR THE CONSULTANT. TESTING REPORT SHALL BE PROVIDED PRIOR TO COVERING, SUCH AS INSULATION, DRYWALL, AND/OR BURYING, OF PIPE SECTIONS.
C. ALL EQUIPMENT/DEVICES PRONE TO DAMAGE FROM TEST PRESSURES SHALL BE ISOLATED DURING TESTING PROCEDURES.
D. AFTER COMPLETION OF PRESSURE TESTS, ALL PIPING SYSTEMS SHALL BE CLEANED AND FLUSHED PRIOR TO START-UP AND COMMISSIONING. CLEANING AND FLUSHING SHALL COMPLY WITH OBC REQUIREMENTS.
E. WHERE REQUIRED BY AHJ OR OWNER, POTABLE WATER PIPING SHALL BE DISINFECTED AND/OR CHLORINATED PRIOR TO COMMISSIONING IN ACCORDANCE WITH APPLICABLE MUNICIPAL REQUIREMENTS. DISINFECTION REPORT SHALL BE PROVIDED WHERE PERFORMED.

BARRIER FREE REQUIREMENTS

A. ALL FIXTURES NOTED FOR BARRIER-FREE USE SHALL BE INSTALLED ACCORDING TO OBC SECTION 3.8.
B. WATER CLOSETS:
   a. OBC 3.8.3.8.(2): WATER CLOSETS SHALL BE LOCATED SO THAT THE CENTER LINE IS 460-480MM FROM ONE SIDE WALL AND A CLEAR TRANSFER SPACE OF AT LEAST 900MM WIDE & 1500MM DEEP IS PROVIDED ON THE OTHER SIDE; OR A CLEAR TRANSFER SPACE OF AT LEAST 900MM WIDE & 1500MM DEEP IS PROVIDED ON EACH SIDE.
   b. OBC 3.7.4.14.: EXCEPT IN A DWELLING UNIT AND EXCEPT AS REQUIRED BY OBC SECTION 3.8, A MINIMUM CLEARANCE OF 380MM SHALL BE PROVIDED IN FRONT OF A WATER CLOSET.
   c. OBC 3.8.3.9.(1)(a): WATER CLOSETS SHALL BE EQUIPPED WITH A SEAT LOCATED 430 MM TO 485 MM ABOVE FINISHED FLOOR.
   d. OBC 3.8.3.9.(1)(b): WATER CLOSETS SHALL BE FLUSHED AUTOMATICALLY OR BE EQUIPPED WITH A FLUSHING CONTROL THAT IS LOCATED 500 MM TO 900 MM ABOVE FINISHED FLOOR, AND OPERABLE FROM THE TRANSFER SIDE.
   e. OBC 3.8.3.9.(1)(c): WATER CLOSETS SHALL BE EQUIPPED WITH A BACK SUPPORT WHERE THERE IS NO SEAT LID OR TANK.
C. LAVATORIES:
   a. OBC 3.8.3.11.(C): CLEARANCE BENEATH A LAVATORY SHALL NOT BE LESS THAN 920MM WIDE, 735MM HIGH AT THE FRONT EDGE, 685MM HIGH AT A POINT 200MM BACK FROM THE FRONT EDGE, AND 350MM HIGH OVER THE DISTANCE FROM A POINT 280MM TO A POINT 430MM BACK FROM THE FRONT EDGE.
D. URINALS:
   a. OBC 3.8.3.10.(1): WHEN MORE THAN ONE URINAL IS PROVIDED IN A WASHROOM REQUIRED TO BE BARRIER-FREE, AT LEAST ONE URINAL SHALL BE MOUNTED WITH THE RIM LOCATED NOT MORE THAN 430 MM ABOVE FFL; HAVE A CLEAR FLOOR SPACE OF AT LEAST 800 MM WIDE THAT IS PERPENDICULAR TO, AND CENTERED ON, THE URINAL AND IS UNOBSTRUCTED BY PRIVACY SCREENS; AND HAVE NO STEP IN FRONT OF IT.

HEATING, VENTILATING & AIR CONDITIONING

GENERAL CONDITIONS

A. ALL HVAC SYSTEMS AND THEIR COMPONENTS SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS OF THE APPLICABLE EDITION OF THE OBC, APPLICABLE EDITIONS OF ASHRAE STANDARDS (INCLUDING ASHRAE 90.1, ASHRAE 62.1, AND ASHRAE HANDBOOKS), AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS — METAL AND FLEXIBLE, AS ADOPTED BY GOVERNING AUTHORITIES FOR THE PERMIT APPLICATION.
B. BALL DUCTWORK, HANGERS, AND OTHER RELATED WORK SHALL BE CARRIED OUT AND FABRICATED IN ACCORDANCE WITH THE APPLICABLE ASHRAE AND SMACNA STANDARDS. ALL WORK SHALL BE CARRIED OUT IN THE BEST WORKMANSHIP AND MANNER IN ACCORDANCE WITH THE BEST PRACTICES OF THE INDUSTRY.
C. RECTIFY ALL EXISTING INSULATION AS NEEDED AT ALL CONNECTION POINTS TO EXISTING UTILITIES.
D. OUTDOOR AIR INTAKES SHALL BE LOCATED SO THEY ARE SEPARATED FROM SOURCES OF CONTAMINANTS AS FOLLOWS:
   a. 1.5 M FROM DRIVEWAY, PARKING SPACE, LANE, ROAD AND SIMILAR LOCATIONS.
   b. 3 M FROM KITCHEN EXHAUST OUTLETS AND VENTS FOR COMBUSTION.
   c. 4.5 M FROM GARAGE ENTRY FOR 5 OR MORE VEHICLES, AUTOMOBILE LOADING AREA AND DRIVE-IN QUEUE, AND GARAGE STORAGE/PICKUP AREA AND DUMPSTERS.
   d. 7.6 M FROM TRUCK LOADING AREA OR DOCK, BUS PARKING, THOROUGHFARE, HIGHWAYS AND SIMILAR LOCATIONS.
E. HVAC EQUIPMENT SHALL BE PROVIDED WITH TEMPORARY AIR FILTERS AND COVER TO PREVENT DUST ACCUMULATION INSIDE THE UNIT. TEMPORARY FILTERS SHALL BE REPLACED WITH NEW PROPER AIR FILTERS PRIOR TO OCCUPANCY.
F. AIR CURTAINS INSTALLED AT EXTERIOR ENTRANCES THAT ARE USED TO COMPLY AS VESTIBULE ALTERNATIVE SHALL BE TESTED IN ACCORDANCE WITH AMCA 220 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO ENSURE PROPER AIR SEPARATION.
G. CONTRACTOR SHALL COMMISSION ALL RELOCATED VRF CONTROLS FOR APPROXIMATELY 20 EXISTING VRF INDOOR UNITS. COMMISSIONING SHALL INCLUDE:
   1. VERIFICATION OF CONTROL WIRING POLARITY AND CONTINUITY TO EACH INDOOR UNIT.
   2. CONFIRMATION THAT EACH INDOOR UNIT ADDRESS IS CORRECTLY REGISTERED ON THE COMMUNICATION BUS.
   3. THERMOSTAT/SENSOR OPERATION VERIFIED AT EACH RELOCATED CONTROL POINT.
   4. EACH INDOOR UNIT CONFIRMED OPERATIONAL IN BOTH HEATING AND COOLING MODES WITH RECORDED SUPPLY AIR TEMPERATURES.
   5. ERROR CODE CHECK — NO ACTIVE FAULTS ON ANY INDOOR UNIT.
   6. CENTRAL CONTROLLER / BMS COMMUNICATION VERIFIED FOR ALL UNITS (WHERE APPLICABLE).

DUCTWORK

A. ALL DUCTWORK SHALL BE G-60 GALVANIZED STEEL UNLESS OTHERWISE SPECIFIED, IN ACCORDANCE WITH ASTM A-653. THICKNESS AND FABRICATION SHALL BE IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
B. DUCTWORK SHALL BE CONSTRUCTED TO 1 IN. W.G. PRESSURE CLASS UNLESS OTHERWISE NOTED ON DRAWINGS. DUCT CONSTRUCTION, SEALING, AND REINFORCEMENT SHALL CONFORM TO SMACNA STANDARDS FOR THE APPLICABLE PRESSURE CLASS.
C. EXTERIOR EXPOSED DUCTWORK AND DUCTWORK EXPOSED TO WEATHER SHALL BE MADE WATERPROOF. ALL SEAMS, JOINTS AND CONNECTIONS SHALL BE MADE WATERTIGHT WITH SEALING COMPOUND.
D. ALL FINISHES OF AIR TERMINALS SHALL BE COORDINATED WITH AND APPROVED BY THE ARCHITECT. FINAL FINISH SELECTION BY ARCHITECT DURING SHOP DRAWING REVIEW.
E. VOLUME DAMPERS, OR VOLUME CONTROL DEVICES SHALL BE PROVIDED AS SHOWN ON PLANS.
F. PROVIDE BALANCING DAMPERS, COMPLETE WITH APPROVED MEANS OF ACCESS, AS SHOWN ON PLANS.
G. ALL AIR TERMINALS SHALL BE EQUIPPED WITH CLOSE-OFF DAMPERS AND ADJUSTABLE DEFLECTION VANES WHERE INDICATED ON PLANS.
H. MINIMUM OF MERV-8 FILTER SHALL BE PROVIDED AT THE RETURN SIDE OF EACH AIR HANDLING EQUIPMENT.
I. DUCT DIMENSIONS MAY BE ADJUSTED TO SUIT SITE CONDITIONS, PROVIDED THE EFFECTIVE CROSS-SECTIONAL AREA IS MAINTAINED AND DUCT ASPECT RATIO DOES NOT EXCEED 4:1.
J. RIGID DUCTS WITH TRIM RINGS SHALL BE USED AT PENETRATIONS THROUGH CEILINGS AND WALLS. FLEXIBLE DUCTWORK SHALL NOT BE USED FOR MAIN DISTRIBUTION RUNS. SHORT FLEXIBLE DUCT CONNECTIONS AT TERMINAL UNITS MAY BE USED WHERE PERMITTED BY THE DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS, AND SHALL NOT EXCEED 1800 MM (6 FT) IN LENGTH.
K. HIGH WALL REGISTERS SHALL BE INSTALLED BETWEEN 150 MM TO 305 MM (6 IN TO 12 IN) FROM THE CEILING.
L. ALL UNUSED DUCT OPENINGS SHALL BE SEALED.

CONDENSATE DRAIN PIPING

A. CONDENSATE DRAIN LINE SHALL BE PROVIDED FOR EACH EQUIPMENT REQUIRING IT, ACCORDING TO EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS. DRAINS SHALL BE COPPER, PVC, CPVC, OR NON-KINKING PLASTIC AS APPROPRIATE FOR THE APPLICATION, INSULATED IF FROM COOLING-TYPE EQUIPMENT, AND PUMPED OR GRAVITY DRAINED. TRAPS SHALL BE PROVIDED WHERE REQUIRED BY EQUIPMENT MANUFACTURER OR WHERE EQUIPMENT OPERATES UNDER NEGATIVE PRESSURE. POSITIVE-PRESSURE EQUIPMENT WITHOUT MANUFACTURER-REQUIRED TRAPS SHALL HAVE CONDENSATE LINES PITCHED TO DRAIN FREELY. DRAINS SHALL RUN AT MINIMUM OF 1:50 SLOPE, OR AS RECOMMENDED BY MANUFACTURER, WHICHEVER IS GREATER. PIPING SHALL BE SUITABLY SIZED FOR EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATION AND SHALL NOT BE LESS THAN 20 MM, AND SHALL NOT DECREASE IN SIZE FROM THE DRAIN PAN CONNECTION TO THE TERMINATION. THE CONDENSATE DRAIN SHALL BE INDIRECTLY CONNECTED TO THE SANITARY DRAIN BY MEANS OF AN AIR GAP.
B. CEILING-MOUNTED EQUIPMENT WITH CONDENSATE POTENTIAL (FAN COILS, CASSETTES, AIR HANDLERS) SHALL BE PROVIDED WITH A SECONDARY DRAIN PAN. SECONDARY DRAIN PAN SHALL BE PIPED TO A VISIBLE LOCATION OR PROVIDED WITH A CONDENSATE OVERFLOW ALARM SWITCH TO SHUT DOWN EQUIPMENT ON HIGH WATER LEVEL.
C. VAFTER CONSTRUCTION, ALL INSTALLED CONDENSATE DRAINAGE PIPING SYSTEMS SHALL BE INSPECTED UNDER NORMAL OPERATING CONDITIONS FOR ANY WATER STAGNATION OR WATER DAMAGE POTENTIAL.

EXHAUST TERMINATION

A. EXHAUST THROUGH ROOF SHALL BE MINIMUM OF 300 MM (12 IN) ABOVE ROOF, SHALL DISCHARGE STRAIGHT UPWARDS, AND SHALL BE PROVIDED WITH 13 MM (0.5 IN) GRILLE OR VERMIN GUARD. EXHAUST TERMINALS SHALL BE LOCATED IN ACCORDANCE WITH OBC 6.3.2.9 AND 6.3.2.10, AND AS FOLLOWS:
   a. MINIMUM OF 3000 MM (10 FT) ABOVE GRADE.
   b. MINIMUM OF 3000 MM (10 FT) HORIZONTALLY AWAY OR 600 MM (2 FT) VERTICALLY ABOVE FROM ANY OPENINGS INTO THE BUILDING OR AIR INTAKE TERMINALS.
   c. MINIMUM OF 3000 MM (10 FT) AWAY FROM ANY VERTICAL WALLS EXTENDING ABOVE THE ROOF.
   d. MINIMUM OF 3000 MM (10 FT) AWAY FROM ANY OPENINGS INTO AN ADJACENT BUILDING.

FIRE PROTECTION (DELEGATED DESIGN)

GENERAL REQUIREMENTS

A. ALL FIRE PROTECTION SYSTEMS AND THEIR COMPONENTS SHALL COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE STANDARDS AS ADOPTED BY THE OBC AND GOVERNING AUTHORITIES, INCLUDING NFPA 13 (SPRINKLER SYSTEMS), NFPA 14 (STANDPIPE AND HOSE SYSTEMS), NFPA 20 (STATIONARY PUMPS FOR FIRE PROTECTION), AND NFPA 72 (FIRE ALARM AND SIGNALING CODE), AS APPLICABLE TO THE PROJECT SCOPE.

PORTABLE FIRE EXTINGUISHERS

A. ALL WORK SHALL BE INSTALLED IN COMPLIANCE WITH THE REQUIREMENTS OF NFPA 10, ONTARIO BUILDING CODE, AND TO THE SATISFACTION OF LOCAL AUTHORITIES HAVING JURISDICTION.
B. THE PORTABLE FIRE EXTINGUISHER CONTRACTOR SHALL BE RETAINED BY THE MECHANICAL CONTRACTOR AND SHALL BE PART OF THE MECHANICAL CONSTRUCTION SCOPE OF WORK.
C. PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND NFPA 10 GUIDELINES.
D. PORTABLE FIRE EXTINGUISHERS HAVING GROSS WEIGHT OF 18 KG (40 LBS) OR LESS SHALL BE INSTALLED SO THAT THE TOP OF THE UNIT IS NOT MORE THAN 1500 MM (59 IN) ABOVE FINISHED FLOOR LEVEL.
E. CONTRACTOR SHALL REVIEW AND PROVIDE INVENTORY OF ALL EXISTING FIRE EXTINGUISHERS ON SITE. ALL EXTINGUISHERS THAT ARE OBSOLETE, DAMAGED, NON-SERVICEABLE, UNLISTED, OR NON-COMPLIANT WITH CURRENT NFPA 10 REQUIREMENTS SHALL BE REPLACED WITH NEW. PROPOSED REPLACEMENT UNIT SUBMITTALS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW.
F. PORTABLE FIRE EXTINGUISHER FE SHALL HAVE MINIMUM RATING OF 3A-10BC, 5 LBS FOR ORDINARY HAZARD, OR AS REQUIRED BY NFPA 10 FOR THE APPLICABLE HAZARD CLASSIFICATION.
G. FIRE EXTINGUISHERS IN FINISHED AND PUBLIC AREAS SHALL BE PROVIDED WITH SEMI-RECESSED CABINET. CABINET SHALL BE STEEL CASING, WHITE ENAMEL FINISH, INSIDE DIMENSIONS APPROXIMATELY 230 MM X 125 MM X 460 MM (9 IN X 5 IN X 18 IN), OR APPROVED EQUAL C/W MOUNTING HARDWARE. IN SERVICE ROOMS, STORAGE ROOMS, AND MECHANICAL ROOMS, SURFACE-MOUNTED CABINETS OR MOUNTING BRACKETS ARE ACCEPTABLE.
H. FIRE EXTINGUISHER LOCATIONS SHOWN ON THIS PLAN CAN BE REVISED ACCORDING TO ACTUAL SITE CONDITIONS AS LONG AS TRAVEL DISTANCE FROM ANY POINT WITHIN THE SPACE TO ANY FIRE EXTINGUISHER DOES NOT EXCEED 15 METERS.

RENOVATION

A. ALL AFFECTED EXISTING SPRINKLER HEADS AND PIPING SHALL BE RELOCATED AND/OR ADJUSTED TO ACCOMMODATE NEW PARTITIONING AND CEILINGS. NEW MATERIALS SHALL BE PROVIDED AS NECESSARY.
B. CONTRACTOR SHALL PROVIDE CERTIFIED AND STAMPED DRAWINGS AND SPECIFICATIONS, INCLUDING CALCULATIONS AND OTHER REPRESENTATION AS REQUIRED BY GOVERNING AUTHORITIES FOR ACCEPTANCE.
C. CONTRACTOR SHALL PROVIDE NEW AND/OR ADDITIONAL FIRE EXTINGUISHERS AS REQUIRED BY CHANGE OF OCCUPANCY OR NEW PARTITIONING AND BY ALL GOVERNING AUTHORITIES.

SPRINKLER PLAN NOTES

A. ALL WORK SHALL BE INSTALLED IN COMPLIANCE WITH THE REQUIREMENTS OF NFPA 13, ONTARIO BUILDING CODE, AND TO THE SATISFACTION OF LOCAL AUTHORITIES HAVING JURISDICTION.
B. A SEPARATE BUILDING PERMIT WITH FIRE PROTECTION ENGINEER IS TO BE OBTAINED FOR THE RELATED FIRE PROTECTION WORK.
C. DRAWINGS INDICATE PROPOSED EXTENT OF SPRINKLER MODIFICATIONS AND PROPOSED SPRINKLER HEAD LOCATIONS FOR PERMIT, COORDINATION, AND REFLECTED CEILING PLAN PURPOSES ONLY. FINAL SPRINKLER SYSTEM DESIGN, HYDRAULIC CALCULATIONS, OBSTRUCTION REVIEW, SPRINKLER HEAD SELECTION AND SPACING, AND CODE COMPLIANCE SHALL BE BY THE SPRINKLER CONTRACTOR'S DELEGATED FIRE PROTECTION ENGINEER.
D. SEISMIC BRACING OF SPRINKLER PIPING SHALL BE BY THE SPRINKLER CONTRACTOR’S DELEGATED FIRE PROTECTION ENGINEER IN ACCORDANCE WITH NFPA 13.
E. SPRINKLER CONTRACTOR SHALL PREPARE AND SUBMIT STAMPED DRAWINGS, CALCULATIONS, AND DOCUMENTS REQUIRED FOR PERMIT AND CONSTRUCTION. SPRINKLER CONTRACTOR SHALL PROVIDE FINAL FIRE PROTECTION ENGINEER SIGN-OFF CONFIRMING INSTALLATION CONFORMS TO THE DELEGATED DESIGN AND APPLICABLE CODE REQUIREMENTS.
F. SPRINKLER CONTRACTOR TO VERIFY ACTUAL EXISTING SPRINKLER HEADS ON SITE AND PROVIDE NEW MATERIALS TO SUIT NEW CONSTRUCTION AS SHOWN ON PLANS.
G. SPRINKLER CONTRACTOR SHALL REWORK EXISTING SPRINKLER HEADS AND PIPING AS NECESSARY TO ACCOMMODATE NEW PARTITIONING AND CEILINGS. ALL NEW AND ADDITIONAL MATERIALS REQUIRED TO SUIT NEW CONSTRUCTION SHALL BE PROVIDED BY THE SPRINKLER CONTRACTOR. ALL WORK, INCLUDING FINAL LOCATION OF SPRINKLER HEADS, SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO EXECUTION.
H. GUARDS SHALL BE PROVIDED TO PENDENT SPRINKLER HEADS WHERE SUBJECT TO PHYSICAL DAMAGE.

HYDRONIC SYSTEMS

GENERAL REQUIREMENTS

A. ALL HYDRONIC SYSTEMS AND THEIR COMPONENTS SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS OF CSA B214 INSTALLATION CODE FOR HYDRONIC HEATING SYSTEMS.
B. SYSTEM SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS INCLUDING INSTALLATION DETAIL AND RECOMMENDED PIPING SYSTEM ARRANGEMENT, AND SHALL COMPLY WITH ASME/ANSI B31.9 ASME CODE FOR PRESSURE PIPING. ALL PIPING, FITTINGS, BALANCING, AND ADJUSTMENT SHALL COMPLY WITH ASHRAE STANDARDS.
C. ALL EQUIPMENT SHALL BE PROVIDED WITH ALL NECESSARY ACCESSORIES FOR A COMPLETE AND FUNCTIONAL SYSTEM ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
D. CONTRACTOR SHALL PROVIDE CHEMICAL TREATMENT, INCLUDING BUT NOT LIMITED TO FLUSHING WITH SYSTEM RESTORER, TO SUPPLY FEED TO SUIT MANUFACTURER’S WATER REQUIREMENTS.
E. DRAIN VALVE SHALL BE PROVIDED AT SYSTEM LOWEST POINT. DRAIN VALVES SHALL BE BALL VALVES WITH HOSE THREAD ADAPTER, CAP, AND CHAIN. MINIMUM DRAIN VALVE SIZE SHALL BE NPS 3/4 FOR MAINS NPS 4 AND UNDER, AND NPS 1 FOR MAINS NPS 5 AND OVER.
F. WHERE HYDRONIC PIPING OR EQUIPMENT IS EXPOSED TO FREEZING CONDITIONS, PROVIDE GLYCOL/ANTIFREEZE SOLUTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURER’S REQUIREMENTS. GLYCOL CONCENTRATION SHALL BE SUITABLE FOR THE MINIMUM DESIGN OUTDOOR TEMPERATURE. GLYCOL TYPE AND CONCENTRATION SHALL BE NOTED ON RECORD DRAWINGS.
G. HYDRONIC SYSTEM PIPING SHALL BE:
   a. SCHEDULE 40 STEEL PIPE TO ASTM A53, GRADE A OR B. FITTINGS SHALL BE GROOVED MECHANICAL COUPLINGS OR THREADED FITTINGS. GASKETS SHALL BE EPDM MATERIAL RATED FOR MAXIMUM OF 110 DEG C FOR HEATING SYSTEMS APPLICATION.
   b. TYPE "L" HARD COPPER TUBE TO ASTM B88. FITTINGS SHALL BE WROUGHT COPPER OR CAST BRONZE, 95-5 SOLDER OR BRAZED.
H. PROVIDE CIRCUIT BALANCING VALVES TO ALL RETURN PIPING.
I. REFER TO APPENDIX 'M' FOR APPLICABLE HYDRONIC HEATING TESTING REPORT TEMPLATES.

VALVE SPECIFICATIONS

J. ISOLATION VALVES SHALL BE:
   a. BALL VALVES, FULL PORT, FOR NPS 2 AND UNDER.
   b. BUTTERFLY VALVES, LOCKING HANDLE OR GEAR OPERATED, FOR NPS 2-1/2 AND OVER.
K. BALANCING VALVES SHALL BE CALIBRATED BALANCING TYPE WITH INTEGRAL READOUT PORTS AND MEMORY STOP. WHERE SHOWN ON DRAWINGS, PRESSURE-INDEPENDENT BALANCING VALVES (PICV) SHALL BE PROVIDED IN LIEU OF STANDARD BALANCING VALVES.
L. CONTROL VALVES SHALL BE AS SPECIFIED ON DRAWINGS OR EQUIPMENT SCHEDULES. WHERE NOT SPECIFIED, CONTROL VALVES SHALL BE TWO-WAY OR THREE-WAY AS REQUIRED BY THE CONTROL SEQUENCE, WITH CHARACTERIZED DISC/BALL FOR EQUAL-PERCENTAGE FLOW CHARACTERISTIC.
M. WHERE SHOWN ON DRAWINGS OR REQUIRED FOR INDIVIDUAL ROOM TEMPERATURE CONTROL, THERMOSTATIC RADIATOR VALVES (TRVs) SHALL BE PROVIDED AT EACH RADIATOR OR HEATING TERMINAL. TRVs SHALL BE SELF-ACTUATING THERMOSTATIC TYPE WITH INTEGRAL OR REMOTE SENSOR, ADJUSTABLE SETPOINT RANGE, AND TAMPER-RESISTANT SETTING WHERE REQUIRED. TRVs SHALL BE SIZED FOR THE DESIGN FLOW RATE AND PRESSURE DROP OF THE CIRCUIT SERVED. WHERE TRVs ARE USED AS THE PRIMARY MEANS OF ROOM TEMPERATURE CONTROL, A SYSTEM BYPASS OR DIFFERENTIAL PRESSURE BYPASS VALVE SHALL BE PROVIDED TO PREVENT DEAD-HEADING THE CIRCULATING PUMP WHEN ALL TRVs ARE CLOSED.

SYSTEM TESTING & FLUSHING

N. HYDRONIC PIPING SHALL BE PRESSURE TESTED BEFORE INSULATION IS APPLIED. TEST PRESSURE SHALL BE 1.5 TIMES THE SYSTEM DESIGN WORKING PRESSURE, OR AS REQUIRED BY TSSA WHERE THE SYSTEM IS REGISTERED. MAINTAIN TEST PRESSURE FOR A MINIMUM OF 2 HOURS WITH NO DROP IN PRESSURE. REPAIR ALL LEAKS AND RETEST.
O. AFTER SUCCESSFUL PRESSURE TEST, THE SYSTEM SHALL BE FLUSHED WITH CLEAN WATER AT A MINIMUM VELOCITY OF 1.0 M/S THROUGH ALL PIPING CIRCUITS UNTIL DISCHARGE WATER RUNS CLEAR. FLUSH THROUGH STRAINER BLOWDOWNS AND DRAIN VALVES. CLEAN ALL STRAINER BASKETS AFTER FLUSHING. WHERE REQUIRED BY BOILER OR EQUIPMENT MANUFACTURER, CHEMICAL CLEANING SHALL BE PERFORMED PRIOR TO SYSTEM FILL.
P. AFTER FLUSHING, FILL THE SYSTEM WITH TREATED WATER OR GLYCOL SOLUTION AS APPLICABLE, VENT ALL AIR, AND VERIFY SYSTEM OPERATING PRESSURE MATCHES DESIGN. SUBMIT FLUSH REPORT AND PRESSURE TEST REPORT AS PART OF CLOSE-OUT DOCUMENTS.

HYDRONIC RENOVATION

Q. PRIOR TO DISCONNECTING ANY EQUIPMENT OR PIPING, THE CONTRACTOR SHALL VERIFY THAT THE SECTION TO BE WORKED ON IS PROPERLY ISOLATED AND DRAINED. EXISTING ISOLATION VALVES SHALL BE TESTED FOR TIGHT SHUT-OFF BEFORE DRAINING. WHERE EXISTING VALVES DO NOT HOLD, THE CONTRACTOR SHALL INCLUDE FOR DRAINING A LARGER SECTION OF THE SYSTEM AS NECESSARY AND SHALL COORDINATE SHUTDOWN DURATION WITH THE OWNER.
R. CONNECTIONS TO EXISTING PIPING SHALL BE MADE USING COMPATIBLE MATERIALS AND METHODS. WHERE NEW COPPER PIPING CONNECTS TO EXISTING STEEL PIPING, DIELECTRIC UNIONS OR DIELECTRIC FLANGES SHALL BE PROVIDED. TRANSITION FITTINGS SHALL BE ACCESSIBLE FOR FUTURE MAINTENANCE.
S. AFTER INSTALLATION OF NEW EQUIPMENT AND PIPING, THE CONTRACTOR SHALL REFILL THE SYSTEM IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:
   a. OPEN ALL ISOLATION VALVES AND AIR VENTS IN THE AFFECTED SECTION.
   b. FILL SLOWLY FROM THE LOWEST POINT IN THE SYSTEM TO MINIMIZE AIR ENTRAINMENT.
   c. PURGE AIR FROM ALL HIGH POINTS, EQUIPMENT, AND RADIATORS USING MANUAL AND AUTOMATIC AIR VENTS UNTIL FLOW IS FREE OF AIR BUBBLES.
   d. VERIFY SYSTEM PRESSURE MATCHES DESIGN OPERATING PRESSURE.
   e. CHECK ALL NEW CONNECTIONS, VALVES, AND FITTINGS FOR LEAKS UNDER OPERATING PRESSURE.
   f. WHERE GLYCOL IS PRESENT IN THE EXISTING SYSTEM, VERIFY GLYCOL CONCENTRATION AFTER REFILL AND ADJUST AS NECESSARY. RECORD CONCENTRATION IN COMMISSIONING REPORT.
T. WHERE NEW RADIATORS, TERMINAL UNITS, OR PIPING REPLACE EXISTING EQUIPMENT WITH DIFFERENT FLOW CHARACTERISTICS, THE SYSTEM SHALL BE REBALANCED AFTER INSTALLATION. THE CONTRACTOR SHALL RECORD FLOW SETTINGS AT ALL AFFECTED CIRCUIT BALANCING VALVES PRIOR TO DEMOLITION. AFTER INSTALLATION AND SYSTEM REFILL, REBALANCE ALL AFFECTED CIRCUITS TO ACHIEVE DESIGN FLOW RATES. SUBMIT PRE- AND POST-RENOVATION BALANCING READINGS AS PART OF CLOSE-OUT DOCUMENTS.

REFERENCED STANDARDS

BUILDING CODES & REGULATIONS
OBC — ONTARIO BUILDING CODE, 2024
OESC — ONTARIO ELECTRICAL SAFETY CODE, 2024 (29TH EDITION)
OFC — ONTARIO FIRE CODE, O. REG. 213/07

ASHRAE
ASHRAE 62.1-2016 — VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY
ASHRAE 90.1-2013 (INCL. AMENDMENTS TO JUNE 26, 2015) — ENERGY STANDARD FOR BUILDINGS
ASHRAE 111, LATEST EDITION — TESTING, ADJUSTING, AND BALANCING OF BUILDING HVAC SYSTEMS
ASHRAE HANDBOOK — FUNDAMENTALS, 2021
ASHRAE HANDBOOK — HVAC SYSTEMS & EQUIPMENT, 2020
ASHRAE HANDBOOK — HVAC APPLICATIONS, 2023

NFPA
NFPA 80-2013 — FIRE DOORS AND OTHER OPENING PROTECTIVES
NFPA 90A, LATEST EDITION OR AS ADOPTED BY AHJ — INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS
NFPA 13-2019 — STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
NFPA 14-2013 — STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
NFPA 20-2016 — STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
NFPA 72-2019 — NATIONAL FIRE ALARM AND SIGNALING CODE
NFPA 10, LATEST EDITION OR AS ADOPTED BY AHJ — PORTABLE FIRE EXTINGUISHERS

CSA
CSA B64 SERIES-2017 / CSA B64.10/B64.10.1-2017 — BACKFLOW PREVENTION
CSA B125.1-2018 / ASME A112.18.1-2018 — PLUMBING SUPPLY FITTINGS
CAN/CSA-B128.1-2006 (R2016) — NON-POTABLE WATER SYSTEMS
CSA B137 SERIES-2017 — THERMOPLASTIC PRESSURE PIPING
CSA-B149.1-2020 — NATURAL GAS AND PROPANE INSTALLATION CODE
CSA B214-2016 — INSTALLATION CODE FOR HYDRONIC HEATING SYSTEMS

SMACNA
ANSI/SMACNA 006-2006 — HVAC DUCT CONSTRUCTION STANDARDS — METAL AND FLEXIBLE

ASME / ANSI
ASME A13.1, LATEST EDITION — IDENTIFICATION OF PIPING SYSTEMS
ANSI/MSS SP-58, LATEST EDITION — PIPE HANGERS AND SUPPORTS
ASME/ANSI B31.9, LATEST EDITION — BUILDING SERVICES PIPING

ASTM
ASTM A-653, LATEST EDITION — STEEL SHEET, ZINC-COATED (GALVANIZED)
ASTM F1960, LATEST EDITION — PEX COLD-EXPANSION FITTINGS
ASTM A53, LATEST EDITION — PIPE, STEEL, BLACK AND HOT-DIPPED, ZINC-COATED
ASTM B88, LATEST EDITION — SEAMLESS COPPER WATER TUBE

OTHER
AMCA 220, LATEST EDITION — AIR CURTAIN TESTING
ICC-ES AC193 / AC308, LATEST EDITION — POST-INSTALLED ANCHORS IN CONCRETE
TIAC, LATEST EDITION — NATIONAL INSULATION STANDARDS MANUAL

PROJECT NOTES

BAS (EXISTING) INTERFACING REQUIREMENTS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A SUBCONTRACTOR ANY WORK INVOLVING BAS CONTROLS. THE EXISTING BAS CONTROLS OPERATE ON A RELIABLE CONTROLS SYSTEM AND MUST BE MODIFIED BY A RELIABLE CONTROLS AUTHORIZED DEALER. THE CONTRACTOR MAY USE THE BAS CONTROLS BASE-BUILDING VENDOR SETPOINT BUILDING AUTOMATION INC. OR ANOTHER QUALIFIED CONTRACTOR.
B. NEW WALL MOUNTED THERMOSTATS (MITSUBISHI PAR-40MAU, OR APPROVED EQUAL) FOR EXISTING FAN COIL UNITS AND NEW WALL FIN PERIMETER HEATER ZONE THERMOSTATS (CONTEMPORARY CONTROLS BASSTAT BAST-121C-B2, OR APPROVED EQUAL), SHALL BE MADE TO INTERFACE PROPERLY WITH EXISTING BUILDING BAS SYSTEM (RELIABLE CONTROLS).
C. CONTROLS CONTRACTOR SHALL VERIFY EXISTING BUILDING BAS INFRASTRUCTURE (BACNET DEVICE INSTANCE ASSIGNMENT, RS-485 TRUNK BAUD RATE, AVAILABLE MAC ADDRESSES) PRIOR TO ANY RELATED WORK. EXISTING BACNET SYSTEM SHALL BE RECONFIGURED AS REQUIRED TO ACCOMMODATE ALL NEW THERMOSTATS FOR THE FLOOR. VERIFY AND COORDINATE ACTUAL REQUIREMENTS WITH BASE BUILDING CONTROLS/BAS SYSTEM CONTRACTOR AND MANAGEMENT FORCES. CONTROLS CONTRACTOR TO COORDINATE COORDINATION LOGIC WITH EXISTING BAS SYSTEM INCLUDING, BUT NOT LIMITED TO: HEATING PRIORITY, COOLING LOCKOUT, OCCUPIED/UNOCCUPIED SETPOINTS.
D. UNLESS OTHERWISE CONFIRMED BY BASE BUILDING CONTROLS/BAS SYSTEM CONTRACTOR AND MANAGEMENT, DEFAULT RECOMMENDATIONS FOR TEMPERATURE SETPOINTS SHALL BE:
   a. 21°C FOR OCCUPIED HEATING SETPOINT
   b. 16°C FOR UNOCCUPIED NIGHT SETBACK HEATING SETPOINT
   c. 14°C FOR FREEZE ALARM
E. CONTROLS SYSTEM SHALL BE CONFIGURED SO THAT EXISTING BUILDING BAS SYSTEM SIMULTANEOUSLY WRITES ROOM TEMPERATURE, OCCUPANCY MODE, ANALOG OUTPUT OVERRIDE, OCCUPIED/UNOCCUPIED TEMPERATURE SETPOINTS TO BOTH THE NEW WALL MOUNTED THERMOSTATS (MITSUBISHI PAR-40MAU, OR APPROVED EQUAL) FOR EXISTING FAN COIL UNITS AND THE NEW WALL FIN PERIMETER HEATER ZONE THERMOSTATS (CONTEMPORARY CONTROLS BASSTAT BAST-121C-B2, OR APPROVED EQUAL), AND TO LOCKOUT WALL FIN PERIMETER HEATING VALVES DURING FCU COOLING.
F. CONTROLS CONTRACTOR SHALL ENSURE THAT: ALL THERMOSTATS ARE COMMISSIONED AND FUNCTIONAL, INCLUDING SETBACK VERIFICATION AND ACTUATOR STROKE TEST, AND BACNET OBJECTS ARE VERIFIED, COORDINATION LOGIC ARE PROGRAMMED AND TESTED IN BAS, AND BAS GRAPHICS ARE UPDATED. CONTRACTOR TO SUBMIT FORMAL COMMISSIONING REPORT AND AS-BUILT POINT LIST WITH DEVICE INSTANCES AND MAC ADDRESSES. EACH THERMOSTAT SHALL BE TAGGED WITH LAINATED SCHEDULE MARK LABEL.
G. SEQUENCE OF OPERATIONS:
   a. NORMAL OCCUPIED HEATING MODE: WHEN THE FLOOR IS OCCUPIED (AS DETERMINED BY THE BAS SCHEDULE OR OCCUPANCY OVERRIDE), THE WALL FIN THERMOSTAT MEASURES ROOM TEMPERATURE VIA ITS INTEGRAL SENSOR. IF THE MEASURED TEMPERATURE FALLS BELOW THE OCCUPIED HEATING SETPOINT (DEFAULT 21°C), THE PID CONTROL ALGORITHM INCREASES THE 0–10 VDC ANALOG OUTPUT SIGNAL TO THE BELIMO CQKB214-SR-LL ACTUATOR, PROPORTIONALLY OPENING THE Z2050Q-F VALVE TO ADMIT HOT WATER TO THE ROSEMAX WALL FIN. AS THE SPACE TEMPERATURE RISES TOWARD SETPOINT, THE OUTPUT SIGNAL MODULATES TOWARD 2 VDC (MINIMUM/CLOSED), MAINTAINING COMFORT WITHOUT OVERSHOOT.
   b. UNOCCUPIED / NIGHTTIME SETBACK MODE: DURING UNOCCUPIED HOURS (NIGHTS AND WEEKENDS PER THE BAS SCHEDULE), THE RELIABLE CONTROLS BAS WRITES THE UNOCCUPIED COMMAND TO THE WALL FIN THERMOSTAT VIA BACNET (OBJECT: OCCUPANCY/BINARY VALUE). THE THERMOSTAT SWITCHES TO THE UNOCCUPIED HEATING SETPOINT (DEFAULT 16°C SETBACK). THE WALL FIN CONTINUES TO MODULATE — BUT ONLY ACTIVATES IF SPACE TEMPERATURE DROPS BELOW THE REDUCED SETBACK SETPOINT, SUBSTANTIALLY REDUCING ENERGY USE. THIS SETBACK IS COORDINATED SIMULTANEOUSLY WITH THE PAR-140MAU FAN COIL THERMOSTAT: THE BAS ALSO WRITES UNOCCUPIED MODE TO THE FCU THERMOSTAT, ENSURING BOTH HEATING SYSTEMS RESPOND TO THE SAME SCHEDULE WITHOUT CONFLICT.
   c. FAN COIL UNIT AND WALL FIN COORDINATION LOGIC (VIA BAS): THE RELIABLE CONTROLS BAS ACTS AS THE COORDINATING INTELLIGENCE BETWEEN THE FCU (PAR-140MAU VIA M-NET GATEWAY) AND THE WALL FIN THERMOSTAT. THE FOLLOWING COORDINATION LOGIC IS RECOMMENDED FOR PROGRAMMING IN THE RELIABLE CONTROLS FIELD CONTROLLER:
   d. ZONE TEMPERATURE SOURCE: THE WALL FIN THERMOSTAT PROVIDES ITS ZONE TEMPERATURE READING AS A BACNET AV OBJECT. THIS VALUE CAN BE AVERAGED WITH THE PAR-140MAU TEMPERATURE READING (FROM THE M-NET GATEWAY) IN THE BAS CONTROLLER FOR A COMPOSITE ZONE TEMPERATURE TO IMPROVE CONTROL ACCURACY.
   e. HEATING PRIORITY: THE WALL FIN HEATER OPERATES AS THE PRIMARY PERIMETER HEATING SOURCE. THE FCU HEATING MODE IS PERMITTED TO ACTIVATE ONLY AFTER THE WALL FIN VALVE HAS BEEN AT OR NEAR FULL OPEN (AO ≥ 9.0 VDC) FOR MORE THAN 10 MINUTES AND THE ZONE TEMPERATURE IS STILL BELOW SETPOINT – THIS PREVENTS SIMULTANEOUS OVER-HEATING FROM BOTH SYSTEMS.
   f. COOLING LOCKOUT OF WALL FIN: IF THE PAR-140MAU (VIA BAS) IS COMMANDING FCU COOLING MODE, THE BAS WRITES A MAXIMUM SETPOINT OVERRIDE TO THE WALL FIN THERMOSTAT (SETPOINT RAISED TO 30°C OR THE AO OUTPUT CLAMPED TO 2 VDC) TO PREVENT SIMULTANEOUS HEATING AND COOLING.
   g. DEMAND RESPONSE / BAS OVERRIDE: THE BAS OPERATOR WORKSTATION CAN REMOTELY WRITE SETPOINTS, OCCUPANCY MODE, AND OUTPUT OVERRIDES TO BOTH THE WALL FIN THERMOSTAT AND THE FAN COIL THERMOSTATS (MITSUBISHI PAR-40MAU, OR APPROVED EQUAL) AT ANY TIME, OVERRIDING LOCAL CONTROL FOR ENERGY MANAGEMENT OR FAULT RESPONSE.
   h. ALARM MONITORING: THE BAS MONITORS THE WALL FIN THERMOSTAT'S ZONE TEMPERATURE. IF TEMPERATURE DROPS BELOW 14°C DURING AN OCCUPIED OR UNOCCUPIED PERIOD (POTENTIAL FREEZE OR HEATING FAILURE), A BAS ALARM IS GENERATED AND THE ACTUATOR IS RELEASED TO FAIL-SAFE OPEN POSITION.
   i. FAIL-SAFE AND ALARM CONDITIONS: ON LOSS OF 24 VAC POWER TO THE BELIMO CQKB214-SR-LL ACTUATOR, THE SPRING-RETURN MECHANISM DRIVES THE VALVE TO THE FULLY OPEN (N.O.) POSITION, ENSURING HOT WATER FLOW TO THE WALL FIN CONTINUES UNINTERRUPTED. THIS PROVIDES INHERENT FREEZE PROTECTION. ON LOSS OF CONTROL SIGNAL (OPEN CIRCUIT), THE ACTUATOR HOLDS LAST POSITION UNTIL SIGNAL IS RESTORED OR POWER CYCLES. THE RELIABLE CONTROLS BAS SHOULD BE PROGRAMMED TO ALARM ON COMMUNICATION LOSS TO ANY WALL FIN THERMOSTAT NODE, AND A PHYSICAL OVERRIDE CAPABILITY SHOULD BE CONFIRMED AT EACH BELIMO ACTUATOR (MANUAL PUSH-BUTTON OVERRIDE PER BELIMO STANDARD).

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LICENSED PROFESSIONAL ENGINEER
S. HOLDITCH
100108001
Oct 30, 2026
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
14	Issued for Addendum #10	Oct 30, 2026
13	Issued for Addendum #8	Sep 29, 2026
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11	Issued for Mechanical Tender Addendum #2	Aug 13, 2026

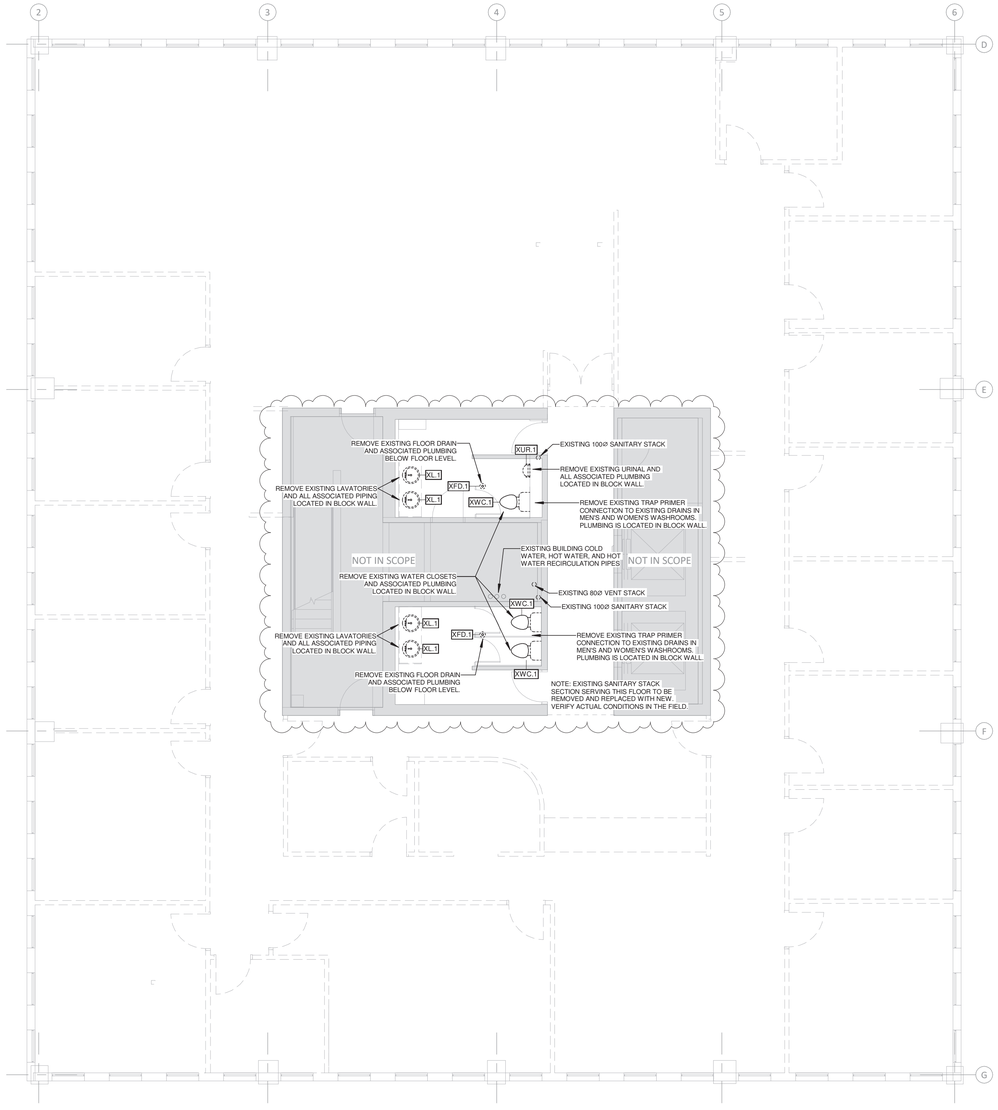
REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
Barrie City Hall - 4th Floor
70 Collier St.
Barrie, ON

DRAWING TITLE
Mechanical Specification

SCALE: 1 : 1
SHEET SIZE: 24"x36"
PROJECT NUMBER: 24143
DRAWING NUMBER: **M2.2**
DESIGNER: RA



1 Demolition - Plumbing Plan
1 : 75

Removed Plumbing Fixture Schedule

CURRENT PHASE: Tender CURRENT ITEMS: Show Demo Only

Mark	QTY	Description	Remarks	Phase Added	Phase Removed
XFD.1	3	FLOOR DRAIN		EXISTING	Tender
XL.1	4	LAVATORY - VANITY		EXISTING	Tender
XUR.1	1	URINAL - WALL HUNG		EXISTING	Tender
XWC.1	3	WATER CLOSET (TANK)		EXISTING	Tender

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S. HOLDITCH
100108001
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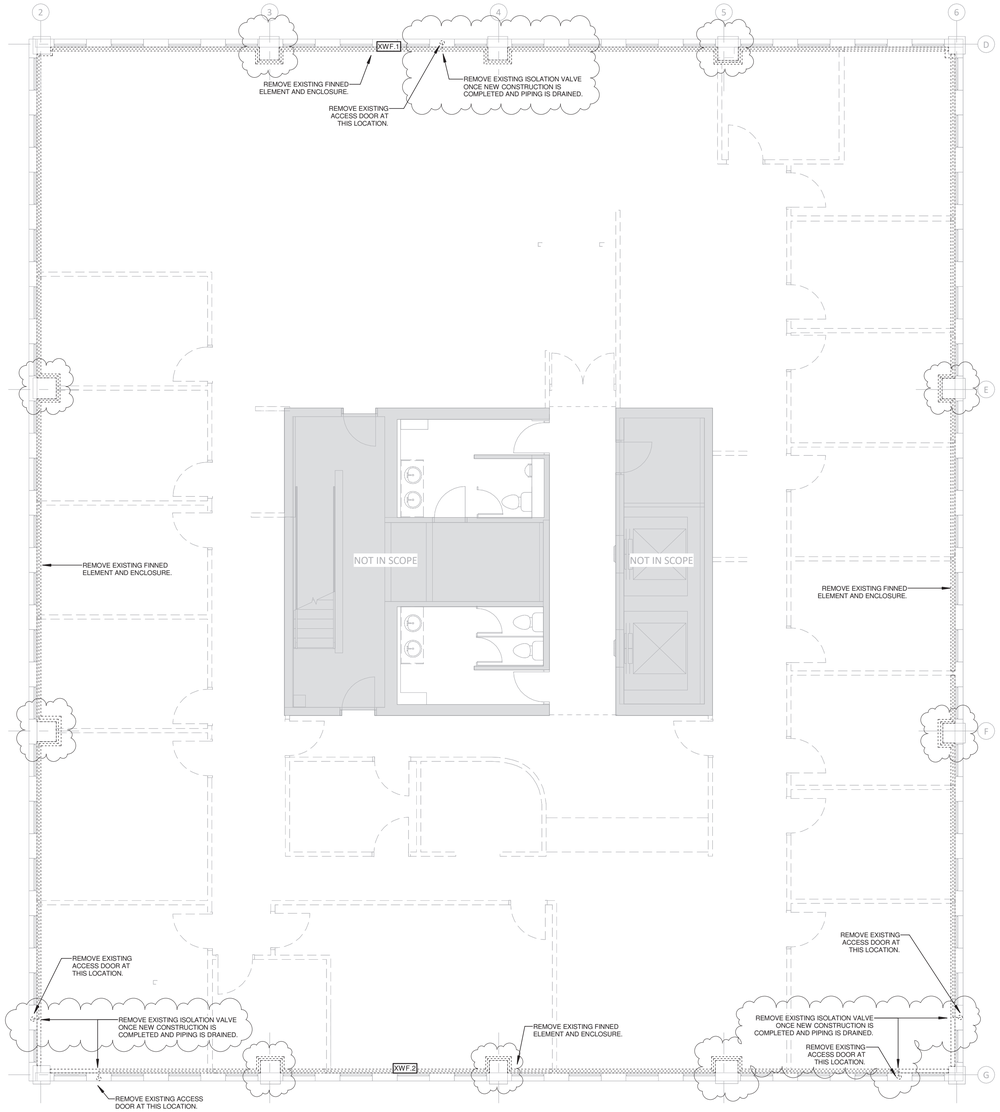
REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
Barrie City Hall - 4th Floor
70 Collier St.
Barrie, ON

DRAWING TITLE
Demolition Plumbing Plan

SCALE 1 : 75
SHEET SIZE 24"x36"
PROJECT NUMBER 24143
DRAWING NUMBER **M3.1**
DESIGNER RA



1 Demolition - Perimeter Heating Plan

1 : 75

Removed Mechanical Equipment Schedule

CURRENT PHASE: Tender CURRENT ITEMS: Show Demo Only

Mark	QTY	Description	Remarks	Phase Added	Phase Removed
XWF.1	1	HYDRONIC WALL FIN HEATER		EXISTING	Tender
XWF.2	1	HYDRONIC WALL FIN HEATER		EXISTING	Tender

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REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME

Barrie City Hall - 4th Floor

70 Collier St.
Barrie, ON

DRAWING TITLE

Demolition Perimeter Heating Plan

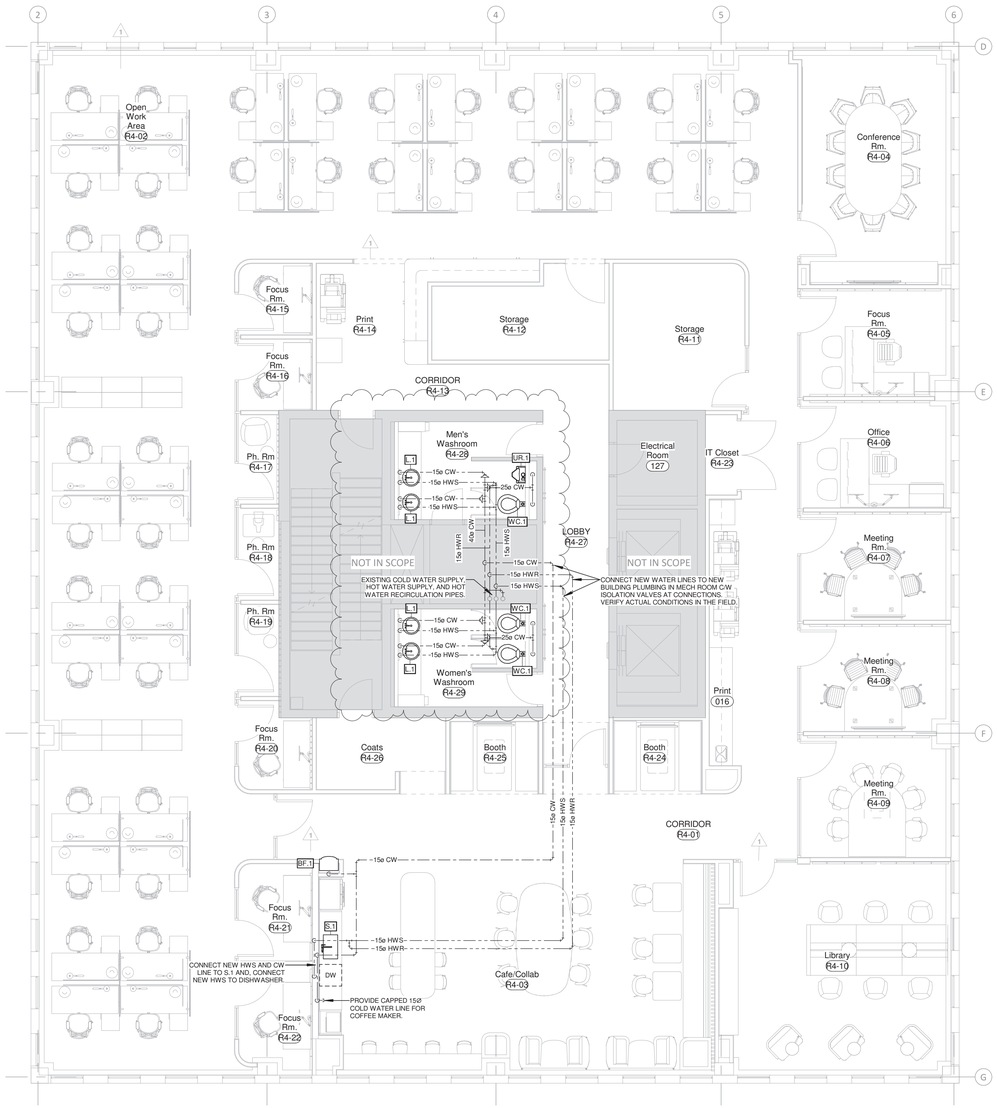
SCALE 1 : 75

SHEET SIZE 24"x36"

PROJECT NUMBER 24143

DRAWING NUMBER **M3.3**

DESIGNER RA



1 Proposed - Domestic Water Plan
1 : 75

New Plumbing Fixture Schedule

CURRENT PHASE: Tender — CURRENT ITEMS: Show New Only

Mark	QTY	Description (Model # or approved equal)	Connections (mm) CW	HW	D	V	Remarks	Phase Added
BF.1	1	BOTTLE FILLER Model: Elkay LZWS8PK EZH2O electronic in-wall bottle filling station, filtered 8 GPH, stainless Elec Data: 120V/1Ph/60Hz, 370W, 1 FLA	15	0	32	32	Fully recessed type, bottle filler only.	Tender
FD.1	2	FLOOR DRAIN Model: Zurn ZN415-4NH-6BZ1 DURA-CO CI Round Floor/Shower Drain with Nickel Top 6 Type B STR, Polished Nickel Bronze	0	0	50	32	C/W trap primer connection, vandal proof screws, 6" round nickel bronze strainer	Tender
L.1	4	LAVATORY - UNDERCOUNTER Model: American Standard 0495.221 Ovalyn undercounter sink, undrilled rim, white Faucet: Sloan Optima EBF-615-4-BAT battery-powered deck-mounted sensor faucet	15	15	32	32	Maximum 1.9 Liters/minute (0.5 GPM). C/W undercounter mounting kit & template, insulated HW supply and trap, thermostatic mixing valve, open grid P.O. plug, cast body p-trap with cleanout, flow restrictor supplies with stops, escutcheons.	Tender
S.1	1	SINK - UNDERMOUNT - BARRIER FREE Model: Kohler Vault K-3894 24" undermount single-bowl kitchen sink, stainless steel finish Faucet: Kohler Simplice K-596 pull-down kitchen sink faucet with three-function sprayhead, polished chrome finish	15	15	40	32	Maximum 5.7 Liters/minute (1.5 GPM). C/W mounting assembly & hardware, sink drain and strainer with tailpiece, cast body p-trap with cleanout, thermostatic mixing valve, flow restrictor supplies with stops, escutcheons, dishwasher connection drain fitting. Install according to barrier free requirements and manufacturer's instructions.	Tender
UR.1	1	URINAL - WALL HUNG Model: American Standard 6590 001 Washbrook FloWise Universal Urinal Top Spud, white Flushometer: Sloan Regal 186 ESS Hardwired-0.5-HW Sensor Flushometer, polished chrome	20	0	50	32	Maximum 3.8 Liters/flush (1 GPF). C/W Sloan EL-154 120 VAC/24 VAC 50VA transformer, Watts CA-321 floor mounted urinal carrier with bearing plate, Watts CO-440-RD expandable line cleanout with wall access cover, heavy duty no hub coupling, chrome plated p-trap, supplies with stops, escutcheons.	Tender
WC.1	3	WATER CLOSET (FLUSHOMETER) Model: American Standard 3351 101 Afwall Millenium FloWise Elongated Flushometer Toilet, top spud, white Flushometer: Sloan Regal XL Optima 111-1.6XLESS Sensor Activated Flushometer, polished chrome	25	0	100	50	Maximum 6 Liters/flush (1.6 GPF). C/W Centoco 500TSCC heavy duty open front seat less cover, Watts ISCA-101-L/R Industry Standard single horizontal adjustable water closet wall carrier, Sloan EL-154 120 VAC/24 VAC 50VA transformer, heavy duty no hub coupling. Coordinate orientation of wall carrier model to actual application.	Tender

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S. HOLDITCH
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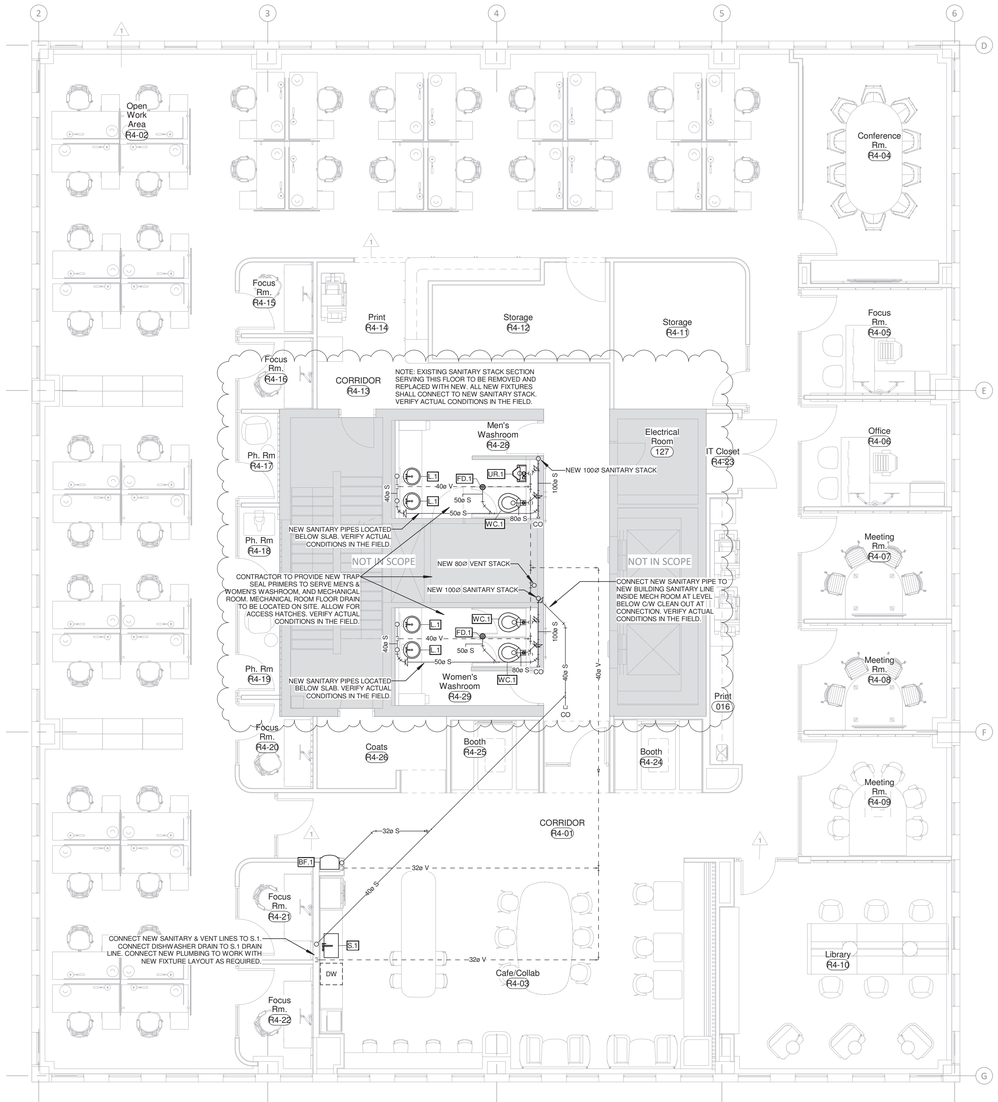
REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
Barrie City Hall - 4th Floor
70 Collier St.
Barrie, ON

DRAWING TITLE
Domestic Water Plan

SCALE 1 : 75
SHEET SIZE 24"x36"
PROJECT NUMBER 24143
DRAWING NUMBER **M4.1**
DESIGNER RA



1 Proposed - Sanitary & Vent Plan

1 : 75

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ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME

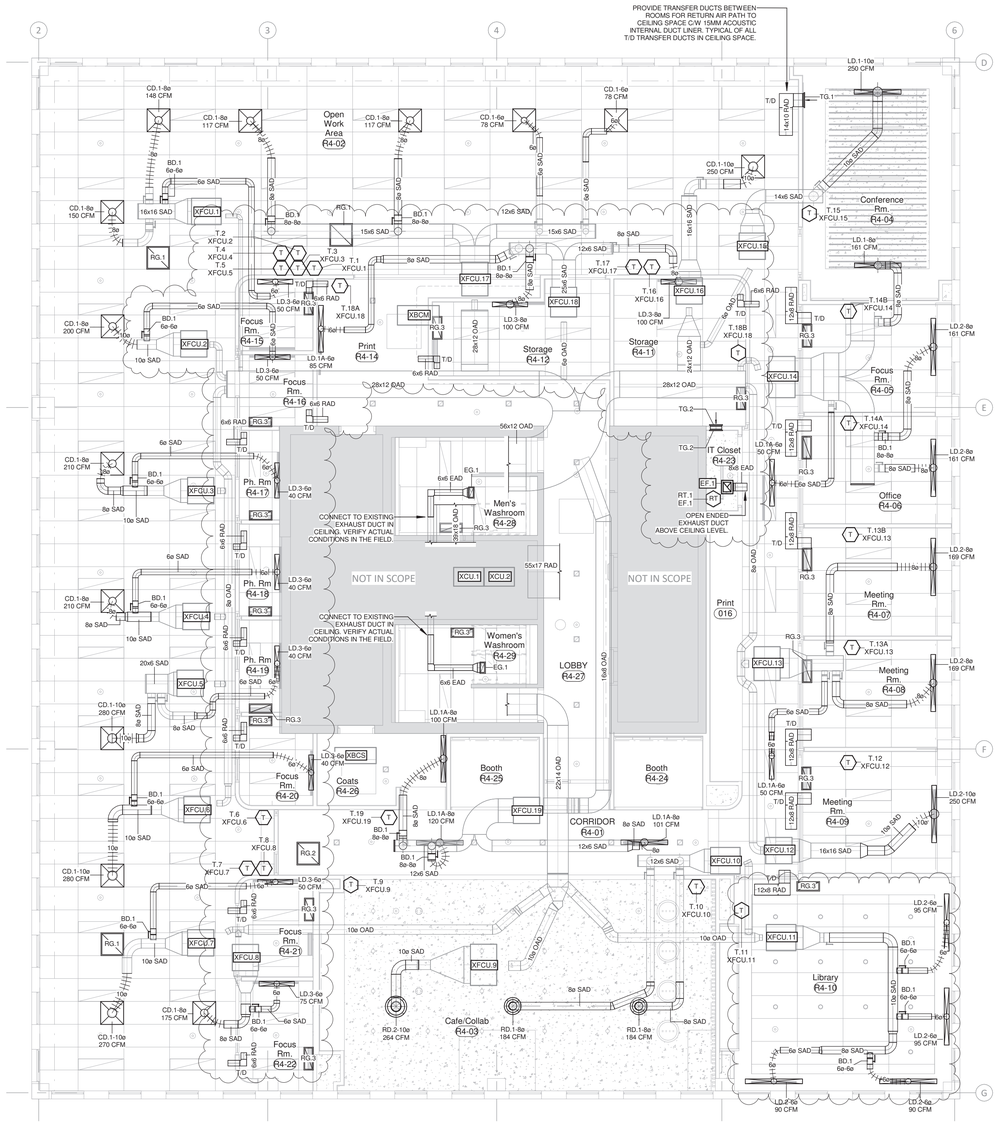
Barrie City Hall - 4th Floor

70 Collier St.
Barrie, ON

DRAWING TITLE

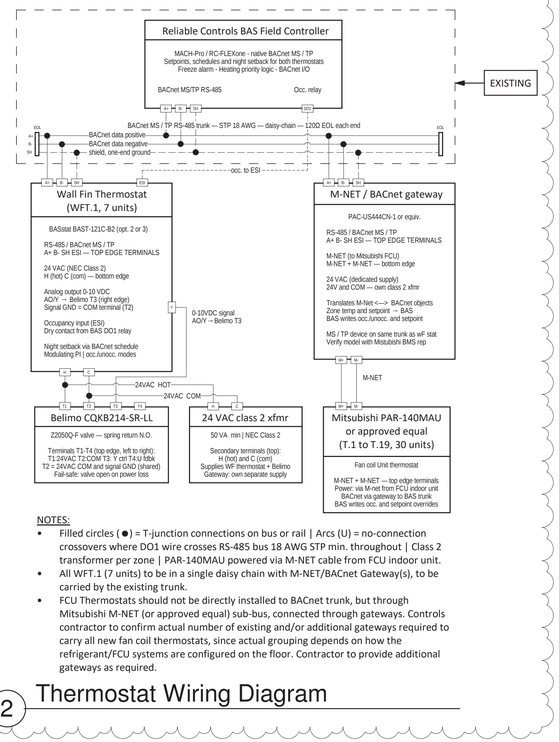
Sanitary & Vent Plan

SCALE	1 : 75
SHEET SIZE	24"x36"
PROJECT NUMBER	24143
DRAWING NUMBER	M4.2
DESIGNER	RA



1 Proposed - HVAC Plan

1 : 75



NOTES:

- Filled circles (●) = T-junction connections on bus or rail | Arcs (U) = no-connection crossovers where DO1 wire crosses RS-485 bus 18 AWG STP min. throughout | Class 2 transformer per zone | PAR-140MAU powered via M-NET cable from FCU indoor unit.
- All WFT.1 (7 units) to be in a single daisy chain with M-NET/BACnet Gateway(s), to be carried by the existing trunk.
- FCU Thermostats should not be directly installed to BACnet trunk, but through Mitsubishi M-NET (or approved equal) sub-bus, connected through gateways. Controls contractor to confirm actual number of existing and/or additional gateways required to carry all new fan coil thermostats, since actual grouping depends on how the refrigerant/FCU systems are configured on the floor. Contractor to provide additional gateways as required.

2 Thermostat Wiring Diagram

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NO.	DESCRIPTION	DATE
14	Issued for Addendum #10	Oct 30, 2026
13	Issued for Addendum #8	Sep 29, 2026
12	Issued for Addendum #1	Sep 04, 2026
11	Issued for Mechanical Tender Addendum #2	Aug 13, 2026

REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME

Barrie City Hall - 4th Floor

70 Collier St.
Barrie, ON

DRAWING TITLE

HVAC Plan

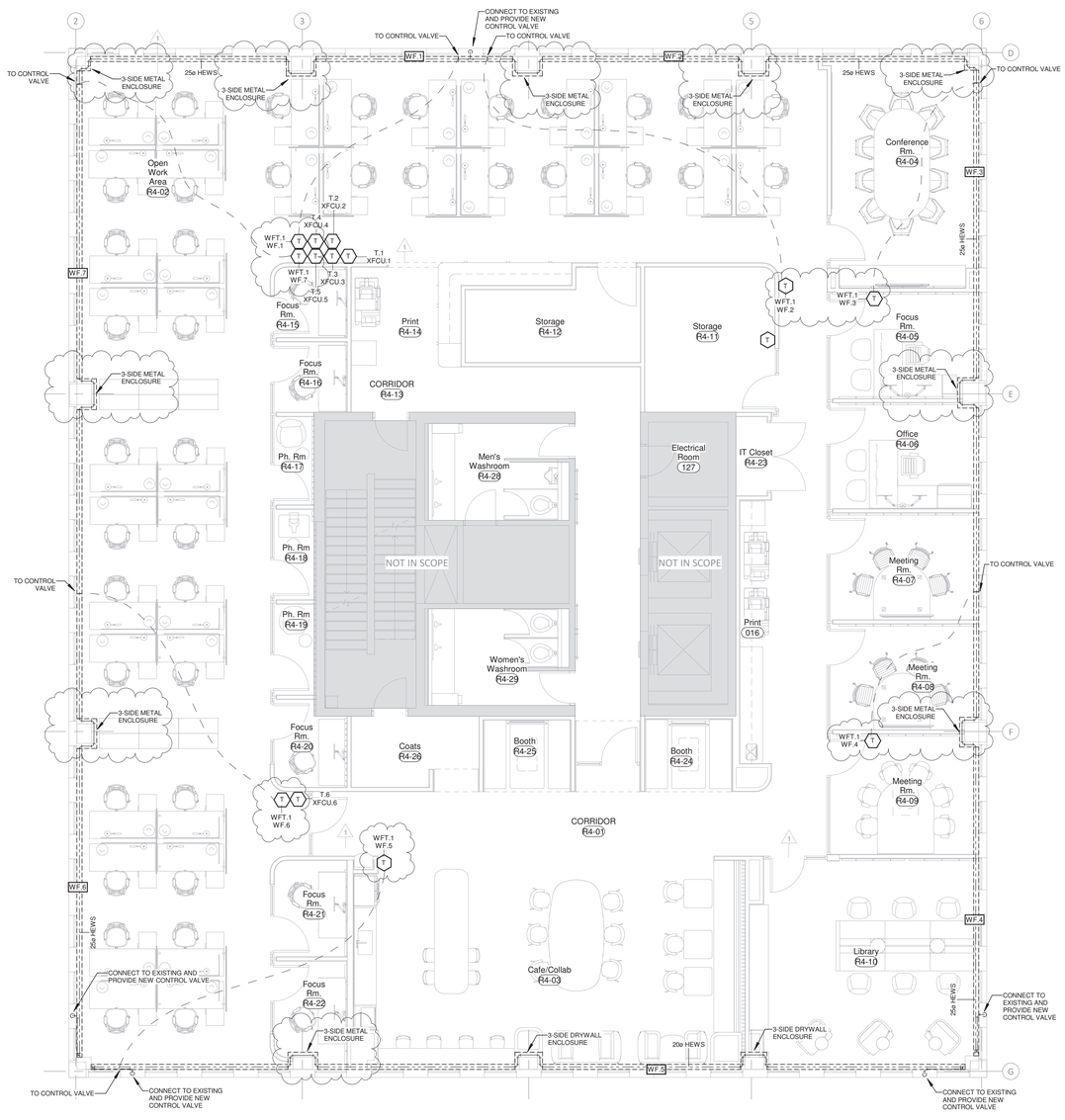
SCALE: As indicated

SHEET SIZE: 24"x36"

PROJECT NUMBER: 24143

DRAWING NUMBER: **M5.1**

DESIGNER: RA



1 Proposed - Perimeter Heating Plan

1 : 75

New Perimeter Heating Equipment Schedule

CURRENT PHASE: Tender — CURRENT ITEMS: Show New Only

Mark	QTY	Description (Model # or approved equal)	Remarks	Phase Added	Phase Demolished	Electrical Coordination
WF.1	1	HYDRONIC WALL FIN HEATER Model: Rosemex Ray Vector Wall Fin Enclosure, arrangement 'J' Enclosure: 24" H x 5.25" W x 408" L Heating Capacity: 672 BTU/hr/ft @ < 60°C EWT Control Valve: Belimo Z20500-F, 2-way, 20 mm pipe size, 12 mm valve size, 0.07 Ips Valve Actuator: Belimo CQKB24-SR-LL	C/W isolation valves, control valve with actuator, wall-mounted thermostat interfaced with control valve, enclosure made of 16 ga galvanized steel, end caps, access doors, end pieces, wall trims, corners, pure white finish.	Tender	None	Yes
WF.2	1	HYDRONIC WALL FIN HEATER Model: Rosemex Ray Vector Wall Fin Enclosure, arrangement 'J' Enclosure: 24" H x 5.25" W x 408" L Heating Capacity: 672 BTU/hr/ft @ < 60°C EWT Control Valve: Belimo Z20500-F, 2-way, 20 mm pipe size, 12 mm valve size, 0.08 Ips Valve Actuator: Belimo CQKB24-SR-LL	C/W isolation valves, control valve with actuator, wall-mounted thermostat interfaced with control valve, enclosure made of 16 ga galvanized steel, end caps, access doors, end pieces, wall trims, corners, pure white finish.	Tender	None	Yes
WF.3	1	HYDRONIC WALL FIN HEATER Model: Rosemex Ray Vector Wall Fin Enclosure, arrangement 'J' Enclosure: 24" H x 5.25" W x 468" L Heating Capacity: 672 BTU/hr/ft @ < 60°C EWT Control Valve: Belimo Z20750-J, 2-way, 20 mm pipe size, 20 mm valve size, 0.10 Ips Valve Actuator: Belimo CQKB24-SR-LL	C/W isolation valves, control valve with actuator, wall-mounted thermostat interfaced with control valve, enclosure made of 16 ga galvanized steel, end caps, access doors, end pieces, wall trims, corners, pure white finish.	Tender	None	Yes
WF.4	1	HYDRONIC WALL FIN HEATER Model: Rosemex Ray Vector Wall Fin Enclosure, arrangement 'J' Enclosure: 24" H x 5.25" W x 468" L Heating Capacity: 672 BTU/hr/ft @ < 60°C EWT Control Valve: Belimo Z20750-J, 2-way, 20 mm pipe size, 20 mm valve size, 0.10 Ips Valve Actuator: Belimo CQKB24-SR-LL	C/W isolation valves, control valve with actuator, wall-mounted thermostat interfaced with control valve, enclosure made of 16 ga galvanized steel, end caps, access doors, end pieces, wall trims, corners, pure white finish.	Tender	None	Yes
WF.5	1	HYDRONIC WALL FIN HEATER Model: Rosemex Ray Vector Wall Fin Enclosure, arrangement 'J' Enclosure: 24" H x 5.25" W x 817" L Heating Capacity: 672 BTU/hr/ft @ < 60°C EWT Control Valve: Belimo Z20750-J, 2-way, 20 mm pipe size, 20 mm valve size, 0.16 Ips Valve Actuator: Belimo CQKB24-SR-LL	C/W isolation valves, control valve with actuator, wall-mounted thermostat interfaced with control valve, enclosure made of 16 ga galvanized steel, end caps, access doors, end pieces, wall trims, corners, pure white finish.	Tender	None	Yes
WF.6	1	HYDRONIC WALL FIN HEATER Model: Rosemex Ray Vector Wall Fin Enclosure, arrangement 'J' Enclosure: 24" H x 5.25" W x 408" L Heating Capacity: 672 BTU/hr/ft @ < 60°C EWT Control Valve: Belimo Z20750-J, 2-way, 20 mm pipe size, 20 mm valve size, 0.10 Ips Valve Actuator: Belimo CQKB24-SR-LL	C/W isolation valves, control valve with actuator, wall-mounted thermostat interfaced with control valve, enclosure made of 16 ga galvanized steel, end caps, access doors, end pieces, wall trims, corners, pure white finish.	Tender	None	Yes
WF.7	1	HYDRONIC WALL FIN HEATER Model: Rosemex Ray Vector Wall Fin Enclosure, arrangement 'J' Enclosure: 24" H x 5.25" W x 408" L Heating Capacity: 672 BTU/hr/ft @ < 60°C EWT Control Valve: Belimo Z20750-J, 2-way, 20 mm pipe size, 20 mm valve size, 0.10 Ips Valve Actuator: Belimo CQKB24-SR-LL	C/W isolation valves, control valve with actuator, wall-mounted thermostat interfaced with control valve, enclosure made of 16 ga galvanized steel, end caps, access doors, end pieces, wall trims, corners, pure white finish.	Tender	None	Yes

New Wall Fin Control Schedule

CURRENT PHASE: Tender — CURRENT ITEMS: Show New Only

Mark	Serves	QTY	Description	Remarks	Phase Added	Phase Demolished	Electrical Coordination
WFT.1	WF.1	1	Wall Fin Perimeter Heater Zone Thermostat Model: Contemporary Controls BAStat BAST-121C-B2, Communicating digital thermostat, single-mode heating, modulating output	Johnson Controls TEC3610-00-000, Distech Controls ECB-STAT-FC, or approved equivalent. C/W 24 VAC transformer, mounting box.	Tender	None	Yes
WFT.1	WF.2	1	Wall Fin Perimeter Heater Zone Thermostat Model: Contemporary Controls BAStat BAST-121C-B2, Communicating digital thermostat, single-mode heating, modulating output	Johnson Controls TEC3610-00-000, Distech Controls ECB-STAT-FC, or approved equivalent. C/W 24 VAC transformer, mounting box.	Tender	None	Yes
WFT.1	WF.3	1	Wall Fin Perimeter Heater Zone Thermostat Model: Contemporary Controls BAStat BAST-121C-B2, Communicating digital thermostat, single-mode heating, modulating output	Johnson Controls TEC3610-00-000, Distech Controls ECB-STAT-FC, or approved equivalent. C/W 24 VAC transformer, mounting box.	Tender	None	Yes
WFT.1	WF.4	1	Wall Fin Perimeter Heater Zone Thermostat Model: Contemporary Controls BAStat BAST-121C-B2, Communicating digital thermostat, single-mode heating, modulating output	Johnson Controls TEC3610-00-000, Distech Controls ECB-STAT-FC, or approved equivalent. C/W 24 VAC transformer, mounting box.	Tender	None	Yes
WFT.1	WF.5	1	Wall Fin Perimeter Heater Zone Thermostat Model: Contemporary Controls BAStat BAST-121C-B2, Communicating digital thermostat, single-mode heating, modulating output	Johnson Controls TEC3610-00-000, Distech Controls ECB-STAT-FC, or approved equivalent. C/W 24 VAC transformer, mounting box.	Tender	None	Yes
WFT.1	WF.6	1	Wall Fin Perimeter Heater Zone Thermostat Model: Contemporary Controls BAStat BAST-121C-B2, Communicating digital thermostat, single-mode heating, modulating output	Johnson Controls TEC3610-00-000, Distech Controls ECB-STAT-FC, or approved equivalent. C/W 24 VAC transformer, mounting box.	Tender	None	Yes
WFT.1	WF.7	1	Wall Fin Perimeter Heater Zone Thermostat Model: Contemporary Controls BAStat BAST-121C-B2, Communicating digital thermostat, single-mode heating, modulating output	Johnson Controls TEC3610-00-000, Distech Controls ECB-STAT-FC, or approved equivalent. C/W 24 VAC transformer, mounting box.	Tender	None	Yes

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LICENSED PROFESSIONAL ENGINEER
S. HOLDITCH
100108001
Oct 30, 2026
PROVINCE OF ONTARIO

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REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
Barrie City Hall - 4th Floor
70 Collier St.
Barrie, ON

DRAWING TITLE
Perimeter Heating Plan

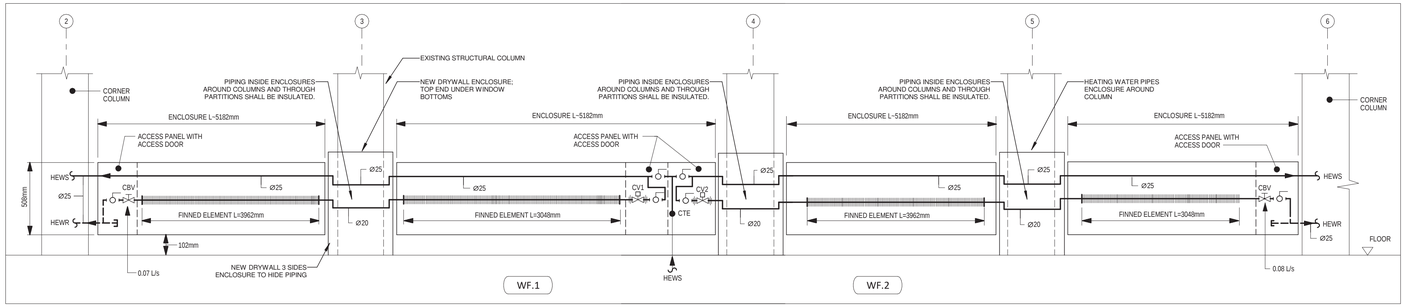
SCALE 1 : 75
SHEET SIZE 24"x36"
PROJECT NUMBER 24143
DRAWING NUMBER **M5.2**
DESIGNER RA

NOTE: THE HOT WATER SUPPLY AND RETURN ARE BASED ON LOCATIONS DERIVED FROM THE 3RD FLOOR RENOVATION PLANS. THE ACTUAL SITE CONDITIONS FOR THE 4TH FLOOR ARE TO BE INVESTIGATED AND CONFIRMED DURING DEMOLITION OF THE EXISTING SYSTEM. THE LOCATIONS OF THE HEWS AND HEWR RISERS WILL BE UPDATED TO REFLECT SITE CONDITIONS IF NEEDED.

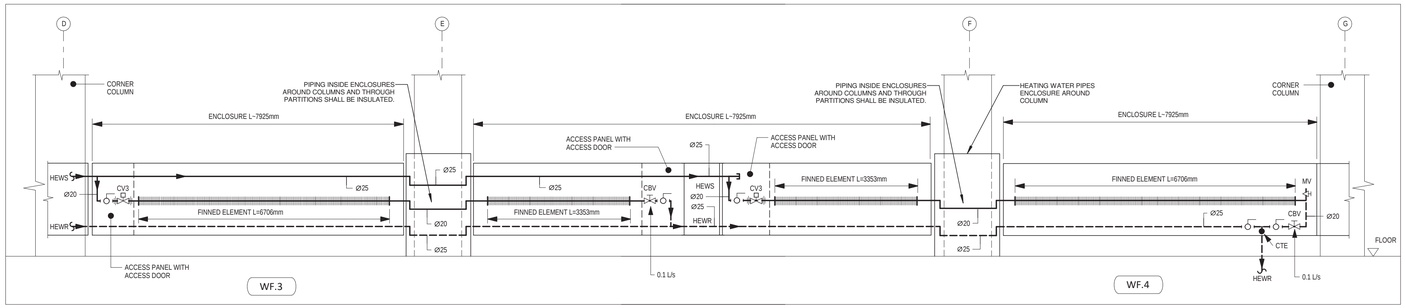
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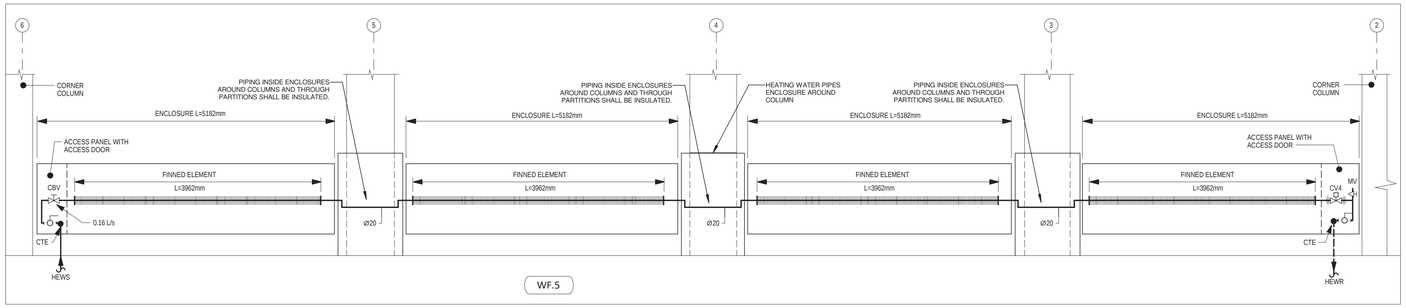
DRAWINGS ARE NOT TO BE SCALED.



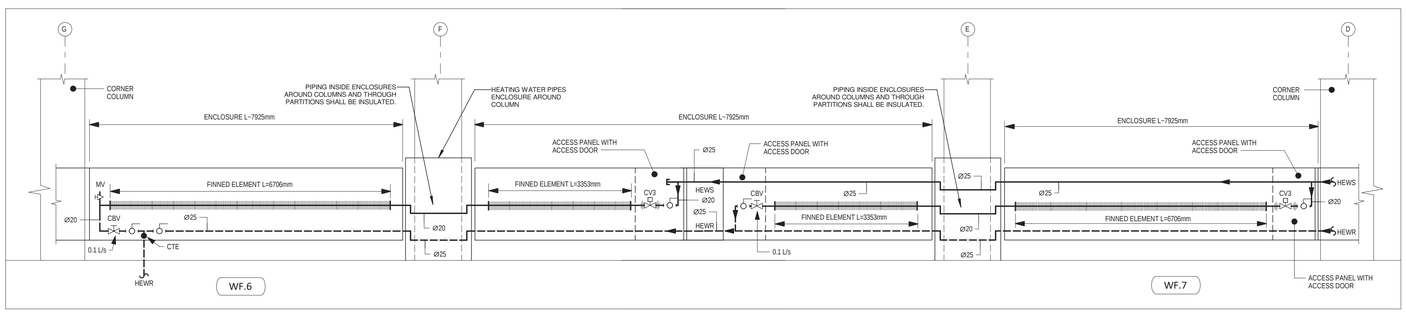
2 Perimeter Wall Fin Heater Detail (North Wall)



3 Perimeter Wall Fin Heater Detail (East Wall)



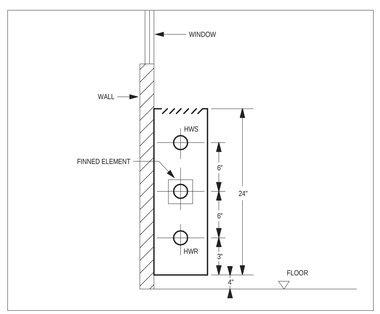
4 Perimeter Wall Fin Heater Detail (South Wall)



5 Perimeter Wall Fin Heater Detail (West Wall)

LEGEND

HEWS	HOT WATER HEATING SUPPLY
HEWR	HOT WATER HEATING RETURN
CTE	CONNECT TO EXISTING LINE IN LOCATION SHOWN
CBV	CIRCUIT BALANCING VALVE
	BALL VALVE
CV2	2-WAY CONTROL VALVE
	UNION
	CAP
MV	MANUAL VENT



1 Perimeter Heating Wall Fin Enclosure Piping

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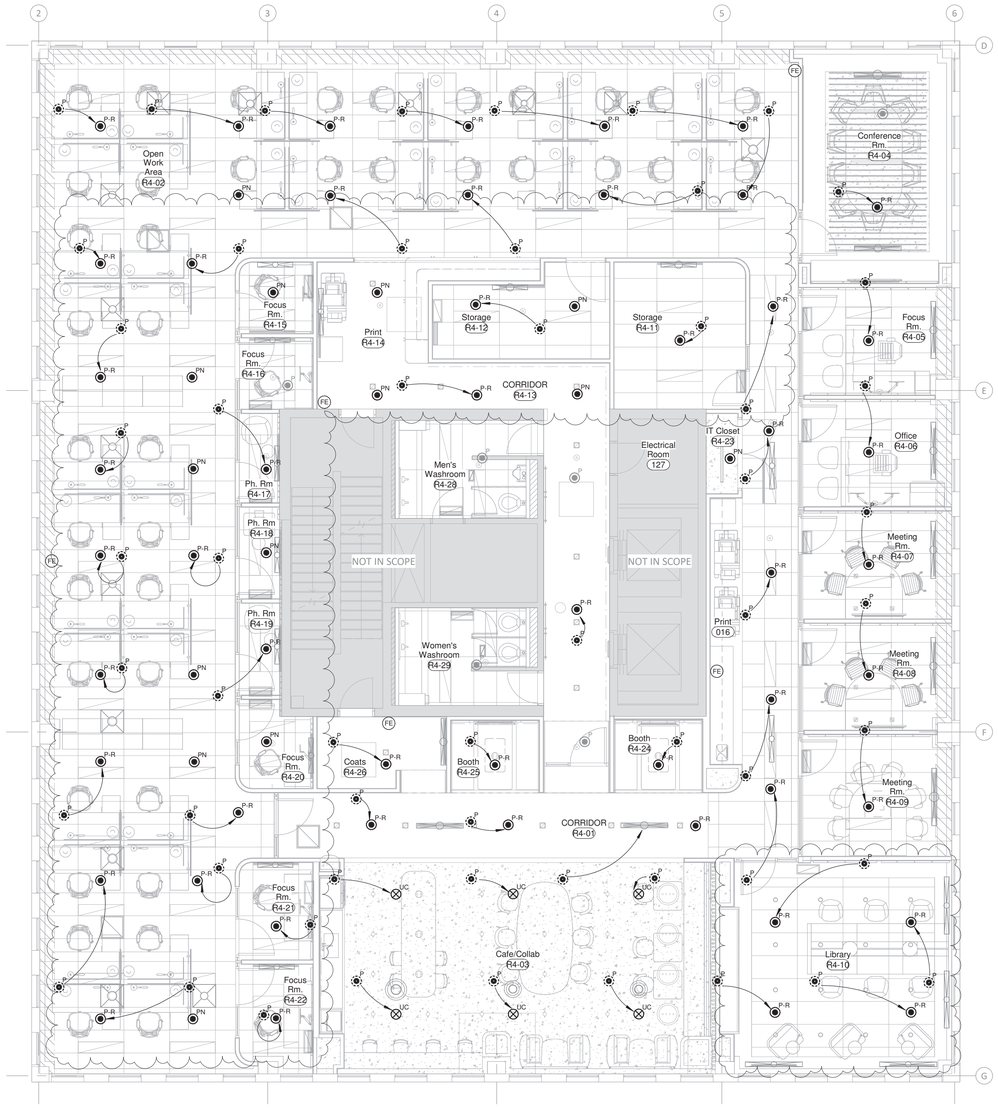
REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
Barrie City Hall - 4th Floor
70 Collier St.
Barrie, ON

DRAWING TITLE
Perimeter Heating Plan Details

SCALE	1 : 1
SHEET SIZE	24"x36"
PROJECT NUMBER	24143
DRAWING NUMBER	M5.3
DESIGNER	RA



1 Proposed - Sprinkler Plan
1 : 75

FIRE PROTECTION

SPRINKLER PLAN NOTES

1. ALL WORK SHALL BE INSTALLED IN COMPLIANCE WITH THE REQUIREMENTS OF NFPA 13, ONTARIO BUILDING CODE, AND TO THE SATISFACTION OF LOCAL AUTHORITIES HAVING JURISDICTION. DESIGN CRITERIA SHALL BE LIGHT HAZARD.
2. SPRINKLER CONTRACTOR TO VERIFY ACTUAL EXISTING SPRINKLER HEADS ON SITE AND PROVIDE NEW MATERIALS TO SUIT NEW CONSTRUCTION AS SHOWN ON PLANS.
3. SPRINKLER CONTRACTOR SHALL REWORK EXISTING SPRINKLER HEADS AND PIPING AS NECESSARY TO ACCOMMODATE NEW PARTITIONING AND CEILINGS. ALL NEW AND ADDITIONAL MATERIALS REQUIRED TO SUIT NEW CONSTRUCTION SHALL BE PROVIDED BY THE SPRINKLER CONTRACTOR. ALL WORK, INCLUDING FINAL LOCATION OF SPRINKLER HEADS, SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO EXECUTION.
4. SPRINKLER CONTRACTOR SHALL SUBMIT STAMPED ENGINEERING DRAWINGS, CALCULATIONS, DOCUMENTATIONS, AMONG OTHERS AS REQUIRED BY LOCAL BUILDING DEPARTMENT.
5. GUARDS SHALL BE PROVIDED TO ALL PENDENT SPRINKLER HEADS IN SERVICE ROOMS.
6. SPRINKLER CONTRACTOR SHALL SUBMIT SPRINKLER ENGINEER SIGN OFF LETTER CONFIRMING INSTALLATION AS PER NFPA 13.

PORTABLE FIRE EXTINGUISHER PLAN NOTES

1. ALL WORK SHALL BE INSTALLED IN COMPLIANCE WITH THE REQUIREMENTS OF NFPA 10, ONTARIO BUILDING CODE, AND TO THE SATISFACTION OF LOCAL AUTHORITIES HAVING JURISDICTION. DESIGN CRITERIA SHALL BE LIGHT HAZARD.
2. THE PORTABLE FIRE EXTINGUISHER CONTRACTOR SHALL BE RETAINED BY THE MECHANICAL CONTRACTOR AND SHALL BE PART OF THE MECHANICAL CONSTRUCTION SCOPE OF WORK.
3. PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND NFPA 10 GUIDELINES.
4. PORTABLE FIRE EXTINGUISHERS HAVING GROSS WEIGHT OF 40 LBS OR LESS SHALL BE INSTALLED SO THAT THE TOP OF THE UNIT IS NOT MORE THAN 59 INCHES ABOVE FINISHED FLOOR LEVEL.
5. PORTABLE FIRE EXTINGUISHER FE SHALL HAVE RATING OF 3A-10BC, 5LBS.
6. FIRE EXTINGUISHER LOCATIONS SHOWN ON THIS PLAN CAN BE REVISED ACCORDING TO ACTUAL SITE CONDITIONS AS LONG AS TRAVEL DISTANCE FROM ANY POINT WITHIN THE SPACE TO ANY FIRE EXTINGUISHER DOES NOT EXCEED 15 METERS.

Sprinkler Head Schedule

CURRENT PHASE: Tender CURRENT ITEMS: Show All

Mark	Type	QTY	Remarks	Phase Added	Phase Removed
P	Pendent-Demo	57	To be removed and relocated to nearby new pendent locations as shown. Verify in the field.	EXISTING	Tender
P	Pendent-Existing	6	Existing to remain.	EXISTING	None
PN	Pendent-New	14	Provide additional sprinkler head as shown.	Tender	None
P-R	Pendent-Relocated	51	Relocate removed sprinkler heads as shown on drawings.	Tender	None
UC	Upright-Converted	6	Convert pendent head to upright head. Install at same elevation as existing upright sprinkler heads in the open area.	Tender	None

Fire Extinguisher Schedule

CURRENT PHASE Tender

Type	Count	Phase Created	Phase Removed
3A-10BC, 5LBS	5	Tender	None

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LICENSED PROFESSIONAL ENGINEER
S. HOLDITCH
100108001
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REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
Barrie City Hall - 4th Floor
70 Collier St.
Barrie, ON

DRAWING TITLE
Sprinkler Plan

SCALE: As indicated
SHEET SIZE: 24"x36"
PROJECT NUMBER: 24143
DRAWING NUMBER: **M6**
DESIGNER: RA

Existing Mechanical Equipment Schedule

CURRENT PHASE: Tender | CURRENT ITEMS: Show Previous Phase

Mark	QTY	Description	Remarks	Phase Added
XBCM	1	VRF BC CONTROLLER Model: Mitsubishi City Multi CMB-P1013NU-GA BC Controller-Main Electrical Data: 208V/3Ph/60Hz Current (Heating/Cooling): 0.86A/0.41A		EXISTING
XBCS	1	VRF BC CONTROLLER Model: Mitsubishi City Multi CMB-P1016NU-HB BC Controller-Single Electrical Data: 208V/3Ph/60Hz Current (Heating/Cooling): 1.37A/0.69A		EXISTING
XCU.1	1	WATER COOLED CONDENSING UNIT Model: Mitsubishi City Multi PQRY-P96ZKMU-A Capacity (Cooling/Heating): 28.2kW/31.7kW Electrical Data: 575V/3Ph/60Hz, 8.5 MCA		EXISTING
XCU.2	1	WATER COOLED CONDENSING UNIT Model: Mitsubishi City Multi PQRY-P72ZKMU-A Capacity (Cooling/Heating): 21.3kW/23.4kW Electrical Data: 575V/3Ph/60Hz, 5.5 MCA		EXISTING
XFCU.1	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P12NMSU-E Capacity (Cooling/Heating): 3.5kW/4.0kW Airflow: 370 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.74 MCA		EXISTING
XFCU.2	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P06NMSU-E Capacity (Cooling/Heating): 1.8kW/2.0kW Airflow: 247 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.3	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P06NMSU-E Capacity (Cooling/Heating): 1.8kW/2.0kW Airflow: 247 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.4	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P06NMSU-E Capacity (Cooling/Heating): 1.8kW/2.0kW Airflow: 247 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.5	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P08NMSU-E Capacity (Cooling/Heating): 2.3kW/2.6kW Airflow: 317 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.6	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P08NMSU-E Capacity (Cooling/Heating): 2.3kW/2.6kW Airflow: 317 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.7	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P08NMSU-E Capacity (Cooling/Heating): 2.3kW/2.6kW Airflow: 317 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.8	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P06NMSU-E Capacity (Cooling/Heating): 1.8kW/2.0kW Airflow: 247 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.9	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P18NMSU-E Capacity (Cooling/Heating): 5.3kW/5.9kW Airflow: 529 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 1.33 MCA		EXISTING
XFCU.10	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P12NMSU-E Capacity (Cooling/Heating): 3.5kW/4.0kW Airflow: 370 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.74 MCA		EXISTING
XFCU.11	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P12NMSU-E Capacity (Cooling/Heating): 3.5kW/4.0kW Airflow: 370 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.74 MCA		EXISTING
XFCU.12	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P06NMSU-E Capacity (Cooling/Heating): 1.8kW/2.0kW Airflow: 247 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.13	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P15NMSU-E Capacity (Cooling/Heating): 4.4kW/5.0kW Airflow: 387 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 1.33 MCA		EXISTING
XFCU.14	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P18NMSU-E Capacity (Cooling/Heating): 5.3kW/5.9kW Airflow: 529 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 1.33 MCA		EXISTING
XFCU.15	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P06NMSU-E Capacity (Cooling/Heating): 1.8kW/2.0kW Airflow: 247 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.16	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P06NMSU-E Capacity (Cooling/Heating): 1.8kW/2.0kW Airflow: 247 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING
XFCU.17	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P15NMSU-E Capacity (Cooling/Heating): 4.4kW/5.0kW Airflow: 387 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 1.33 MCA		EXISTING
XFCU.18	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P12NMSU-E Capacity (Cooling/Heating): 3.5kW/4.0kW Airflow: 370 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.74 MCA		EXISTING
XFCU.19	1	VRF INDOOR FAN COIL UNIT Model: Mitsubishi City Multi PEFY-P08NMSU-E Capacity (Cooling/Heating): 2.3kW/2.6kW Airflow: 317 CFM, 0.20" w.g. ESP Electrical Data: 208V/1Ph/60Hz, 0.5 MCA		EXISTING

New Mechanical Control Schedule

CURRENT PHASE: Tender | CURRENT ITEMS: Show New Only

Mark	Serves	QTY	Description (Model # or approved equal)	Remarks	Phase Added	Phase Demolished	Electrical Coordination
RT.1	EF.1	1	WALL-MOUNTED REVERSE-ACTING THERMOSTAT	To be provided by Mechanical and installed by Electrical. Coordinate in the field.	Tender	None	Yes
T.1	XFCU.1	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.2	XFCU.2	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.3	XFCU.3	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.4	XFCU.4	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.5	XFCU.5	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.6	XFCU.6	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.7	XFCU.7	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.8	XFCU.8	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.9	XFCU.9	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.10	XFCU.10	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.11	XFCU.11	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.12	XFCU.12	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.13A	XFCU.13	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field. Configure to ensure that peak demand across all thermostats connected to the existing fan coil governs control setting.	Tender	None	No
T.13B	XFCU.13	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field. Configure to ensure that peak demand across all thermostats connected to the existing fan coil governs control setting.	Tender	None	No
T.14A	XFCU.14	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field. Configure to ensure that peak demand across all thermostats connected to the existing fan coil governs control setting.	Tender	None	No
T.14B	XFCU.14	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field. Configure to ensure that peak demand across all thermostats connected to the existing fan coil governs control setting.	Tender	None	No
T.15	XFCU.15	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.16	XFCU.16	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.17	XFCU.17	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No
T.18A	XFCU.18	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field. Configure to ensure that peak demand across all thermostats connected to the existing fan coil governs control setting.	Tender	None	No
T.18B	XFCU.18	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field. Configure to ensure that peak demand across all thermostats connected to the existing fan coil governs control setting.	Tender	None	No
T.19	XFCU.19	1	WALL-MOUNTED THERMOSTAT Model: Mitsubishi PAR-40MAU City Multi 24/7 programmable thermostat with night setback	Connect to corresponding existing fan coil unit and to existing BAS system. Provide new control wiring to suit new installation. Control wiring shall be rated for ceiling plenum use. Verify actual requirements in the field.	Tender	None	No

New Mechanical Equipment Schedule

CURRENT PHASE: Tender | CURRENT ITEMS: Show New Only

Mark	QTY	Description (Model # or approved equal)	Remarks	Phase Added	Phase Demolished	Electrical Coordination
EF.1	1	CEILING EXHAUST FAN Model: Greenheck CSP-A390 Capacity: 300 CFM at 0.25" W.G. ESP Elec Data: 120V/1Ph/60Hz, 53W	C/W reverse-acting thermostat, mounting accessories. Shall be activated by wall-mounted reverse-acting thermostat. Coordinate with Electrical.	Tender	None	Yes

New Air Terminal Schedule

CURRENT PHASE: Tender | CURRENT ITEMS: Show New Only

Mark	Face	Size	QTY	Type	Model (Model # or approved equal)	Remarks	Phase Added
CD.1	24"x24"	6ø	2	Ceiling Supply Square Diffuser	Price SPD	White. Order to mount to fit to T-bar grid.	Tender
CD.1	24"x24"	8ø	8	Ceiling Supply Square Diffuser	Price SPD	White. Order to mount to fit to T-bar grid.	Tender
CD.1	24"x24"	10ø	4	Ceiling Supply Square Diffuser	Price SPD	White. Order to mount to fit to T-bar grid.	Tender
EG.1	8"x4"	4x10	2	Ceiling Exhaust Grille	Price 80	White, C/W balancing damper.	Tender
LD.1	49"x5"	8ø	1	Supply Linear Diffuser	Price SDS100	White, 2-slot 1" slot linear diffuser. C/W aluminum pattern controllers, plenum box. Order for flush mounting to bottom level of ceiling feature.	Tender
LD.1	49"x5"	10ø	1	Supply Linear Diffuser	Price SDS100	White, 2-slot 1" slot linear diffuser. C/W aluminum pattern controllers, plenum box. Order for flush mounting to bottom level of ceiling feature.	Tender
LD.1A	49"x5"	6ø	3	Supply Linear Diffuser	Price SDS100	White, 2-slot 1" slot linear diffuser. C/W aluminum pattern controllers, plenum box. Order for gypsum board ceiling surface mounting.	Tender
LD.1A	49"x5"	8ø	3	Supply Linear Diffuser	Price SDS100	White, 2-slot 1" slot linear diffuser. C/W aluminum pattern controllers, plenum box. Order for gypsum board ceiling surface mounting.	Tender
LD.2	60"x5"	6ø	4	Supply Linear Diffuser	Price SDS100	White, 2-slot 1" slot linear diffuser. C/W aluminum pattern controllers, plenum box. Order for T-bar grid mounting.	Tender
LD.2	60"x5"	8ø	4	Supply Linear Diffuser	Price SDS100	White, 2-slot 1" slot linear diffuser. C/W aluminum pattern controllers, plenum box. Order for T-bar grid mounting.	Tender
LD.2	60"x5"	10ø	1	Supply Linear Diffuser	Price SDS100	White, 2-slot 1" slot linear diffuser. C/W aluminum pattern controllers, plenum box. Order for T-bar grid mounting.	Tender
LD.3	37"x5"	6ø	8	Supply Linear Diffuser	Price SDS100	White, 2-slot linear diffuser. C/W aluminum pattern controllers, SDA plenum box. Order for T-bar grid mounting.	Tender
LD.3	37"x5"	8ø	2	Supply Linear Diffuser	Price SDS100	White, 2-slot linear diffuser. C/W aluminum pattern controllers, SDA plenum box. Order for T-bar grid mounting.	Tender
RD.1	18"	8ø	2	Round Ceiling Diffuser	Price RCD	White. Order for ceiling suspension installation.	Tender
RD.2	22"	10ø	1	Round Ceiling Diffuser	Price RCD	White. Order for ceiling suspension installation.	Tender
RG.1	24"x24"		3	Ceiling Return Grille	Price 80	Core only, white. Order to mount to fit T-Bar grid. To be provided with E.H. Price Return Air Canopy C/W mounting assembly.	Tender
RG.2	24"x24"		1	Ceiling Return Grille	Price 80	Core only, white. Order to mount to gypsum board ceiling. To be provided with E.H. Price Return Air Canopy C/W mounting assembly.	Tender
RG.3	24"x10"		18	Ceiling Return Grille	Price 80	White, order to mount to fit T-Bar grid. To be provided with E.H. Price Return Air Canopy C/W mounting assembly.	Tender
TG.1	16"x12"	14x10	1	Transfer Grille	Price 510Z	Zero degree blade deflection, type A countersunk screw mounting, blades parallel to long dimension.Note: Transfer ducts T/D including transfer grilles tg.1 (all instances) shall be considered removed from the project scope in relation to Alternative PRICE K. Should Alternative PRICE K be exercised, these transfer ducts are to be re-instated and installed in accordance with the original design intent shown on the mechanical drawings issued.	Tender
TG.2	14"x18"	12x16	2	Transfer Grille	Price 510Z	Zero degree blade deflection, type A countersunk screw mounting, blades parallel to shorter dimension.	Tender

New Duct Accessory Schedule

CURRENT PHASE: Tender | CURRENT ITEMS: Show New Only

Mark	Size	QTY	Type	Remarks	Phase Added	Phase Demolished
BD.1	6ø-6ø	10	Balancing Damper - Round		Tender	None
BD.1	8ø-8ø	6	Balancing Damper - Round		Tender	None

NOTE: TRANSFER DUCTS T/D INCLUDING TRANSFER GRILLES TG.1 (ALL INSTANCES) SHALL BE CONSIDERED REMOVED FROM THE PROJECT SCOPE IN RELATION TO ALTERNATIVE PRICE K. SHOULD ALTERNATIVE PRICE K BE EXERCISED, THESE TRANSFER DUCTS ARE TO BE RE-INSTATED AND INSTALLED IN ACCORDANCE WITH THE ORIGINAL DESIGN INTENT SHOWN ON THE MECHANICAL DRAWINGS ISSUED.

New Transfer Duct Schedule

CURRENT PHASE: Tender | CURRENT ITEMS: Show New Only

Mark	Type	Size	QTY	Remarks	Phase Added
T/D	Transfer Duct-Rectangular (REFER TO ALTERNATIVE PRICE K)	6x6-6x6	10	C/W internal acoustic insulation, mitered elbow, and transfer grille at wall surface termination.	Tender
T/D	Transfer Duct-Rectangular (REFER TO ALTERNATIVE PRICE K)	12x8-12x8	6	C/W internal acoustic insulation, mitered elbow, and transfer grille at wall surface termination.	Tender
T/D	Transfer Duct-Rectangular (REFER TO ALTERNATIVE PRICE K)	14x10-14x10	1	C/W internal acoustic insulation, mitered elbow, and transfer grille at wall surface termination.	Tender

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DRAWINGS ARE NOT TO BE SCALED.

LICENSED PROFESSIONAL ENGINEER
S. HOLDITCH
100108001
Oct 30, 2026
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
14	Issued for Addendum #10	Oct 30, 2026
13	Issued for Addendum #8	Sep 29, 2026
12	Issued for Addendum #1	Sep 04, 2026
11	Issued for Mechanical Tender Addendum #2	Aug 13, 2026

REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
Barrie City Hall - 4th Floor
70 Collier St.
Barrie, ON

DRAWING TITLE
HVAC Schedules

SCALE

SHEET SIZE
24"x36"

PROJECT NUMBER
24143

DRAWING NUMBER
M7

DESIGNER RA