

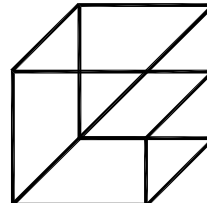
DRAWING LIST	
DWG. NO.	DRAWING NAME
M-1.1	MECHANICAL SPECIFICATIONS I
M-1.2	MECHANICAL SPECIFICATIONS II AND LEGEND
M-2.1	PART GROUND FLOOR PLAN – HYDRONIC DEMOLITION AND NEW
M-3.1	PART GROUND FLOOR PLAN – PLUMBING DEMOLITION

GENERAL SPECIFICATIONS	
1. GENERAL	
1.1.	ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE ONTARIO BUILDING CODE, CSA, ASHRAE, NFPA, ETC. WHERE CODES/STANDARD ARE PRESENT FORM MULTIPLE SOURCES, THE MOST STRINGENT SHALL BE UTILIZED.
1.2.	THE FOLLOWING SPECIFICATIONS FORM AN ESSENTIAL PART OF THE CONTRACT DOCUMENTS. REFER AND COORDINATE WITH ALL OTHER DIVISIONS, SECTIONS AND SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERATIONAL INSTALLATION.
1.3.	FOR THE PURPOSE OF THESE SPECIFICATIONS, DRAWINGS AND CONTRACT DOCUMENTS, THE WORD "PROVIDE" REFERS TO THE SUPPLY, INSTALLATION AND TESTING OF THE RESPECTIVE EQUIPMENT/COMPONENTS.
1.4.	CONTRACTOR IS TO REPORT ALL APPARENT DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS OF ALL DIVISIONS PRIOR TO TENDER SUBMISSION. NO EXCEPTIONS WILL BE GIVEN TO CONTRACTORS WHO DO NOT COMPLETELY UNDERSTAND THE SCOPE OF WORK.
1.5.	ALL DIV.23 WORK SHALL BE COORDINATED AND SCHEDULED WITH ALL OTHER DIVISIONS.
1.6.	THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDERANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION. AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.
1.7.	PROVIDE NEW MATERIALS AND EQUIPMENT OF ACCEPTABLE QUALITY THAT ARE MANUFACTURED IN CANADA OR THE UNITED STATES AND BEAR THE APPROVAL OF RECOGNIZED NORTH AMERICAN STANDARD ASSOCIATIONS SUCH AS CSA, ASME, ETC. THE CONTRACTOR SHALL MAXIMIZE THE UTILIZATION OF CANADIAN EQUIPMENT, MATERIALS, ETC.
1.8.	ALL EQUIPMENT, MATERIALS, ETC. SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.
1.9.	THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
1.10.	THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISIONS' DRAWINGS FOR CLARIFICATION.
1.11.	IN NO CASE SHALL THESE DRAWINGS BE SCALED. ALL ROUGH-IN'S SHALL BE COORDINATED WITH OTHER DIVISIONS.
1.12.	DO NOT PROCEED WITH WORK OUTSIDE THE SCOPE OF THE DESIGN DRAWINGS AND SPECIFICATIONS WITHOUT WRITTEN CONSENT FROM THE OWNER. THIS APPLIES TO ALL DIV.23 CHANGE NOTICES AS ISSUED BY THE CONSULTANT.
1.13.	IN REGARDS TO DIV.23 CHANGE NOTICES, CONTRACTOR SHALL PROVIDE A BREAKDOWN INCLUDING, BUT NOT LIMITED TO, MATERIALS, LABOR, MAKE-UP, ETC. QUOTATIONS SHALL BE BASED ON ALL PRISER FOR EQUIPMENT AND THE MECHANICAL CONTRACTORS OF AMERICA, SMACNA, AND NATIONAL ELECTRICAL CONTRACTORS FOR LABOUR RATES.
1.14.	WHERE EQUIPMENT HAS BEEN PRE-PURCHASED, DIV.23 SHALL ACCEPT ALL RESPONSIBILITY FOR EQUIPMENT DELIVERY, INSTALLATION, TESTING AND WARRANTY, SIMILAR TO AS IF THE EQUIPMENT WAS PURCHASED BY DIV.23.
1.15.	THE CONTRACTOR SHALL WARRANTY ALL MATERIALS, EQUIPMENT, INSTALLATION AND QUALITY OF WORKMANSHIP FOR A MINIMUM OF ONE (1) YEAR UNLESS OTHERWISE NOTED.
1.16.	IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO PAY FOR ALL CHARGES AND DAMAGES ASSOCIATED WITH EQUIPMENT THAT IS NOT PROVIDED AS SPECIFIED AND INCLUDES NOT MEETING THE MANUFACTURER'S RATINGS, PUBLISHED DATA AND/OR THE APPLICABLE GOVERNING STANDARDS.
1.17.	THE CONTRACTOR MAY SUBMIT FOR ALTERNATE MATERIALS AND EQUIPMENT ONLY WHEN THE SPECIFIED ARE NOT AVAILABLE OR WILL ADVERSELY IMPACT THE COMPLETION SCHEDULE. THE CONTRACTOR SHALL COMPENSATE THE CONSULTANT FOR THEIR TIME REQUIRED TO REVIEW THE ALTERNATE SUBMITTALS.
2. SUBMITTALS	
2.1.	THE CONTRACTOR SHALL SUBMIT THREE (3) HARD COPIES OF MECHANICAL SHOP DRAWINGS TO THE CONSULTANTS FOR REVIEW. ELECTRONIC SUBMISSION OF SHOP DRAWINGS SHALL BE DEEMED ACCEPTABLE UPON APPROVAL FROM CONSULTANT. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH THE DOCUMENT SUBMITTAL PROCESS.
2.2.	ALL SHOP DRAWINGS SUBMITTED FOR REVIEW MUST BEAR THE REVIEW STAMP OF THE MECHANICAL CONTRACTOR. SHOP DRAWINGS THAT DO NOT BEAR THE CONTRACTOR'S STAMP WILL, WITHOUT QUESTION, BE REJECTED BY THE CONSULTANT.
2.3.	SHOP DRAWINGS SHALL INCLUDE ALL INFORMATION REQUIRED FOR THE CONSULTANT TO PERFORM A REASONABLE REVIEW OF THE SUBMITTALS AS THEY PERTAIN TO THE MECHANICAL DESIGN DRAWINGS AND SPECIFICATIONS.
2.4.	SHOP DRAWINGS SHALL HAVE THE SAME IDENTIFYING NUMBER AS NOTED IN THE MECHANICAL DRAWINGS.
2.5.	PROVIDE SHOP DRAWINGS WITH TECHNICAL SUBMITTALS ON ALL TYPES OF INSULATION TO BE INSTALLED.
2.6.	THE CONTRACTOR SHALL MAINTAIN ON SITE ONE (1) RECORD OF MECHANICAL DRAWINGS THAT SHALL INDICATE WITH RED LINES ALL PROJECT CONDITIONS, LOCATIONS, CONFIGURATIONS AND ANY OTHER CHANGES OR DEVIATIONS WHICH MAY VARY FROM THE ORIGINAL CONTRACT DOCUMENTS AND DRAWINGS. IN ADDITION, THIS SET SHALL INCLUDE REVISIONS AS A RESULT OF ALL ADDENDAS, CHANGE NOTICES, SITE INSTRUCTIONS, ETC. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND ENGINEER ONE (1) COPY EACH OF A HARDCOPY AND ELECTRONIC COPY (PDF) FOR REVIEW. ONE (1) SET OF BOTH COPIES SHALL ALSO BE INCLUDED IN THE CLOSEOUT DOCUMENT PACKAGE.
2.7.	TWO (2) COPIES OF OPERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW UPON PROJECT COMPLETION. THE MANUALS SHALL CONTAIN THE FOLLOWING WHERE APPLICABLE: <ul style="list-style-type: none">DESCRIPTION OF EACH SYSTEMALL SHOP DRAWINGS WITH APPROVAL STAMPSEQUIPMENT MANUFACTURER'S INSTALLATION AND OPERATION MANUALS AND SPARE PARTS LISTWIRING DIAGRAMSLUBRICATION SCHEDULEEQUIPMENT IDENTIFICATION LIST WITH SERIAL NUMBERSVALVE TAG SCHEDULES AND FLOW DIAGRAMSFINAL AND REVIEWED BALANCING REPORTS (AIR AND WATER)WATER TREATMENT PROCEDURE AND TESTSCONTROL DRAWINGS AND SEQUENCES OF OPERATIONAS-BUILT DRAWINGS (HARDCOPY AND ELECTRONIC)WARRANTY DOCUMENTATION
3. EXECUTION	
3.1.	PERIODIC INSPECTIONS OF THE WORK WILL BE CONDUCTED OVER THE COURSE OF THE PROJECT. ALL REPORTED DEFICIENCIES SHALL BE RECTIFIED BY THE CONTRACTOR IN A TIMELY FASHION. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR NOT MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3.2.	IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL INSPECTIONS WITH CITY AND/OR MUNICIPAL OFFICIALS AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
3.3.	IN REGARDS TO TEMPORARY SERVICES, PROVIDE, AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION, TEMPORARY FIRE PROTECTION SYSTEMS. REFRAIN FROM USING INSTALLED SYSTEMS FROM THE CONTRACT DOCUMENTS AS A TEMPORARY SERVICES. THIS SHALL APPLY TO ALL MECHANICAL SYSTEMS INCLUDING HVAC, PLUMBING AND DRAINAGE, ETC.

GENERAL SPECIFICATIONS	
3.4.	THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND RESTORATION, WHERE REQUESTED, THE CONTRACTOR SHALL CONTRACT THE SERVICES OF THE BASE BUILDING TRADES AT DIV.23 EXPENSE.
3.5.	PROVISIONS SHALL BE MADE FOR THE PROTECTION OF DIV.23 WORK UNTIL THE COMPLETION OF THE PROJECT. THIS MAY INCLUDE, BUT NOT LIMITED TO, COVERING OF EQUIPMENT OPENINGS AND DUCTWORK, PLUMBING FIXTURES, FLOOR DRAINS, ETC.
3.6.	UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL MAKE ALL FINAL ADJUSTMENTS TO EQUIPMENT AS WELL AS REMOVE ALL PROTECTION. ALL INSTALLATIONS SHALL BE CLEANED THOROUGHLY AND TESTED FOR PROPER OPERATION. CHANGE ALL AIR AND WATER FILTERS AS REQUIRED.
3.7.	IN REGARDS TO INTERRUPTION OF SERVICES, THE CONTRACTOR SHALL CARRY OUT THEIR WORK IN A MANNER THAT CAUSES THE LEAST DISTURBANCE TO THE OWNER. PROVIDE NOTIFICATION TO THE OWNER IN WRITING WITH AT LEAST 72 HOURS OF THE SCHEDULED INTERRUPTION.
3.8.	ARRANGE AND PAY FOR THE SAFE DISPOSAL OF REMOVED ITEMS AS SPECIFIED. PROVIDE PROOF OF SAFE DISPOSAL FOR ITEMS SUCH AS HVAC REFRIGERANT. COORDINATE THE TIME AND METHOD OF DISPOSAL WITH THE OWNER. FOR EXAMPLE, CLEARLY INDICATE THE ROUTE THAT WILL BE TAKEN FROM THE INSIDE OF THE BUILDING TO THE OUTDOORS, AS WELL AS THE STORAGE LOCATION OUTDOORS IF APPLICABLE.
3.9.	WHERE COMPONENTS ARE TO BE REUSED, THE CONTRACTOR SHALL CLEAN AND TEST THE COMPONENT TO ENSURE PROPER OPERATION. THE CONSULTANT SHALL BE NOTIFIED IN THE EVENT THERE IS A DEFICIENCY WITH THE COMPONENT.
3.10.	PERFORM WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL INSTALLATION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.
3.11.	WHERE CUTTING OR CORE DRILLING OF THE EXISTING CONCRETE STRUCTURE IS REQUIRED, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF AN EXPERIENCED AND REPUTABLE COMPANY TO CARRY OUT X-RAYING. THE RESULTS SHALL BE SUBMITTED TO THE BASE BUILDING STRUCTURAL ENGINEER AND NOT CUTTING OR CORING SHALL TAKE PLACE UNTIL WRITTEN APPROVAL IS RECEIVED. THE CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST TO PERFORM X-RAYING WITH AT LEAST 72 HOURS IN ADVANCE.
4. IDENTIFICATION OF MECHANICAL SERVICES	
4.1.	PROVIDE SMS WRAP-MARK ON ALL PIPE COVERINGS WITH FLOW ARROW AND ALTERNATING WORKING COLOURS. PIPE SHALL MATCH BASE BUILDING. IN THE CASE WHERE THERE IS NO EXISTING STANDARD, INDUSTRY STANDARDS SHALL BE FOLLOWED.
4.2.	USE STENCILS AND STENCIL PAINT ON DUCTWORK AND DUCTWORK INSULATION WITH BLACK CAPITALIZED LETTERS 2" (50 MM) HIGH AND SOLID BLACK FLOW ARROWS.
4.3.	IDENTIFICATION OF PIPING AND DUCTWORK SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS: <ul style="list-style-type: none">AT LEAST ONCE IN EACH ROOMAT EACH PIECE OF EQUIPMENTAT EACH BRANCH CLOSE TO THE CONNECTION POINT AT MAINAT NOT GREATER INTERVALS OF 50 FT. (15 M) ON STRAIGHT RUNS OF EXPOSED PIPING AND DUCTWORK.AT ENTRY AND LEAVING POINT TO PIPE AND DUCT CHASES, OR OTHER CONCEALED SPACESBOTH SIDES WHERE PIPING AND DUCTWORK PASSES THROUGH WALL, PARTITIONS AND FLOORSON VERTICAL PIPES AND DUCTS APPROXIMATELY 6 FT. (1800 MM) A.F.F.BEHIND EACH ACCESS DOOR AND PANEL
4.4.	PROVIDE IDENTIFICATION FOR PIPING CONTAINING ELECTRICAL HEAT TRACING.
4.5.	TAG ALL VALVES, EXCEPT SMALL VALVES ISOLATING EQUIPMENT, WITH BRASS TAGS AND HIGH DIE-STAMPED BLACK LETTERS ATTACHED TO VALVES WITH 4" BRASS CHAINS.
4.6.	PROVIDE IDENTIFICATION FOR ALL NEW EQUIPMENT, STARTERS AND REMOTE CONTROL DEVICES WITH LAMACOID LABELS ENGRAVED WITH WHITE LETTERING AND A BLACK BACKGROUND. THE MINIMUM LETTERING SIZE SHALL BE 3/8" (10 MM).
5. ACCESS DOORS AND PANELS	
5.1.	PROVIDE ADEQUATE ACCESS TO CONCEALED EQUIPMENT AND COMPONENTS THAT REQUIRE ACCESS FOR MAINTENANCE, ADJUSTMENT AND INSPECTION. PROVIDE MARKING TO THE OWNER'S SATISFACTION THE LOCATIONS WHERE CONCEALED EQUIPMENT IS LOCATED.
5.2.	ENSURE THAT THE SIZE OF THE DOOR COMPLIES WITH THE MANUFACTURER'S SUGGESTED ACCESS REQUIREMENTS.
5.3.	COORDINATE ALL ACCESS DOOR AND PANEL SIZES AND LOCATIONS WITH ARCHITECT/INTERIOR DESIGNER.
6. FLASHING, CURBS AND CONCRETE	
6.1.	FLASHING SHALL BE CARRIED OUT AS SHOWN ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS AT THE EXPENSE OF DIV.23.
6.2.	ALL CURBS REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE CARRIED OUT AS SHOWN ON ARCHITECTURAL AND/OR MECHANICAL DRAWINGS AT THE EXPENSE OF DIV.23. CURBS SHALL BE INSTALLED AT LEAST 14" ABOVE THE ROOF LEVEL.
6.3.	PREMANUFACTURED EQUIPMENT CURBS SHALL BE SUPPLIED BY THE EQUIPMENT MANUFACTURER.
6.4.	PROVIDE 4" (100 MM) THICK CONCRETE HOUSEKEEPING PADS WHERE INDICATED ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.
7. FIRESTOPPING	
7.1.	PROVIDE FIRE STOPPING SYSTEMS AND PRODUCTS FOR ALL DUCTS, PIPING, ETC. PENETRATING FIRE SEPARATIONS THAT ARE ULC LISTED AND COMPLY WITH CAN4-S1155 AND THE AUTHORITIES HAVING JURISDICTION.
7.2.	MAINTAIN ALL FLOOR AND WALL FIRE RATINGS TO COMPLY WITH BASE BUILDING STANDARDS AND THE AUTHORITIES HAVING JURISDICTION.
8. PIPE, DUCT AND EQUIPMENT INSTALLATION	
8.1.	INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT TO PROVIDE ADEQUATE CLEARANCES FOR SERVICING AS WELL AS MAXIMUM USABLE SPACE FOR ALL OTHER DIVISIONS.
8.2.	INSTALL PIPING AND DUCTWORK STRAIGHT, IN A NEAT AND CLEAN FASHION AND TIGHT TO STRUCTURES ABOVE (UNLESS OTHERWISE NOTED).
8.3.	TAKE MEASURES TO PROTECT COPPER PIPING CORROSION FROM CONTACT WITH DISSIMILAR METALS.
9. HANGERS AND SUPPORTS	
9.1.	PROVIDE HANGER SYSTEMS FOR ALL DUCTWORK, PIPING AND EQUIPMENT TO RENDER A SAFE AND FUNCTIONAL INSTALLATION. HANGER RODS SHALL BE ATTACHED DIRECTLY TO THE STRUCTURE AND IN NO WAY SHALL BE ATTACHED TO OTHER MECHANICAL COMPONENTS OR CEILING SYSTEMS, WHERE COMPONENTS ARE TO BE SUSPENDED BETWEEN JOISTS OR BEAMS, PROVIDE AUXILIARY STEEL CHANNELS TO SUIT.
9.2.	FOR GENERAL CONDITIONS, PROVIDE ROUND STEEL THREADED RODS CONFORMING TO ASTM A-36. WHERE SPECIAL CONDITIONS EXIST, SUCH AS HIGH HUMIDITY OR EXPOSURE TO ELEMENTS, PROVIDE HANGER COMPONENTS TO SUIT.
9.3.	IN REGARDS TO ALL PIPING, PROVIDE SUPPORTS AT CONNECTION (SUCH AS HUB) AND AT EVERY CHANGE IN DIRECTION.
10. STRUCTURAL AND SEISMIC	
10.1.	WHERE THERE IS NO STRUCTURAL DIVISION AS PART OF THE PROJECT, IT SHALL

GENERAL SPECIFICATIONS	
BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO PROVIDE STRUCTURAL REINFORCING FOR ALL DIV.23 INSTALLATIONS. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER WHO IS TO PROVIDE A DESIGN BEARING THEIR PROFESSIONAL SEAL. THE CONTRACTOR SHALL APPLY FOR BUILDING PERMIT AND ASSUME ALL RESPONSIBILITY AND COST FOR THE PERMIT PROCESS. UPON COMPLETION OF WORK, CONTRACTOR SHALL SUBMIT A LETTER FROM THE STRUCTURAL ENGINEER COMPLETE WITH PROFESSIONAL SEAL TO INDICATE THAT THE WORK HAS BEEN COMPLETED TO THE ONTARIO BUILDING CODE, ALL OTHER RELEVANT CODES AND STANDARDS AND TO THE AUTHORITIES HAVING JURISDICTION.	
10.2.	IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE REQUIREMENTS FOR SEISMIC BRACING AND SUPPORTS WITH STRUCTURAL DRAWINGS. DIV.23 SHALL CONTRACT THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER TO DESIGN SUPPORTS AND BRACING IN ACCORDANCE WITH ALL CURRENT CODES AND THAT MATCHES THE REQUIREMENT OF THE LOCATION IN WHICH THE SYSTEMS ARE BEING INSTALLED. UPON COMPLETION OF THE PROJECT, SEISMIC ENGINEER SHALL PROVIDE A LETTER BEARING THEIR PROFESSIONAL SEAL INDICATING THAT THE INSTALLATION MEETS THE SEISMIC DESIGN DOCUMENT AND CONFORMS TO THE BUILDING CODE AND THE AUTHORITIES HAVING JURISDICTION.
11. ELECTRICAL	
11.1.	ALL ELECTRICAL MOTORS, STARTERS, CONTACTORS, DISCONNECT SWITCHES AND CONTROL DEVICES FOR DIV.23 WORK SHALL BE PROVIDED BY DIV.23.
11.2.	DIV.26 SHALL BE RESPONSIBLE FOR POWERING LOAD SIDE OF STARTERS AND CONTACTORS, POWER FOR ELECTRICAL HEAT TRACING AND CONTROLS, LINE SIDE POWER TO LOOSE STARTERS AND DISCONNECTS.
11.3.	ALL LOW VOLTAGE WIRING AND CONNECTION IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR.
11.4.	WHERE THERE IS NO DIV.26 (ELECTRICIAN) AS PART OF THE PROJECT, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF A LICENSED ELECTRICAL CONTRACTOR AND OBTAIN THE APPROPRIATE INSPECTIONS AND APPROVALS FOR THE INSTALLATION OF ALL ELECTRICAL WORK REQUIRED FOR MECHANICAL SYSTEMS.
12. PROJECT CLOSEOUT	
12.1.	PRIOR TO THE ISSUING OF A PROJECT COMPLETION NOTICE OR A SIGN-OFF LETTER, THE FOLLOWING DOCUMENTS, AT A MINIMUM, MUST BE PROVIDED TO THE ENGINEER FOR REVIEW: <ul style="list-style-type: none">AIR BALANCING REPORTNFPA-13 LETTERAPPLICABLE SYSTEM/EQUIPMENT TESTING REPORT

HYDRONIC SYSTEMS SPECIFICATIONS	
1. PRODUCTS	
1.1. PIPE	
1.1.1.	PROVIDE SCHDULE 40 (NPS) STEEL PIPE CONFORMING TO ASTM-A53/A53M, GRADE B
1.2. PIPE JOINTS	
1.2.1.	FOR NPS 2" AND SMALLER, USE SCREWED FITTING WITH PTFE TAPE OR LEAD-FREE PIPE DOPE.
1.2.2.	FOR NPS 2-1/2" AND OVER: WELDED FITTINGS AND FLANGES TO CAN/CSA-W48.
1.2.3.	ROLL GROOVED, RIGID COUPLINGS TO CSA B242.
1.2.4.	FLANGES: PLAIN ASME B16.1, RAISED FACE, SLIP-ON OR WELD NECK TO ASME B16.5.
1.2.5.	ORIFICE FLANGES: SLIP-ON RAISED FACE, 2100 KPa.
1.2.6.	FLANGE GASKETS TO ASME B1.1
1.2.7.	PIPE THREAD SHALL BE TAPERED.
1.2.8.	BOLTS AND NUTS TO ASME B18.2.1 AND ASME B18.2.2.
1.2.9.	ROLL GROOVED COUPLING GASKETS: NPS 2" TO 8", TYPE EHP, EPDM HIGH PERFORMANCE, -40°C TO 120°C FOR CONTINUOUS OPERATION.
1.3. FITTINGS	
1.3.1.	SCREWED FITTINGS SHALL BE MALLEABLE IRON CONFORMING TO ASME B16.3, CLASS 150.
1.3.2.	PIPE FLANGES AND FLANGED FITTINGS: <ul style="list-style-type: none">1.3.2.1. CAST IRON TO ASME B16.1, CLASS 1251.3.2.2. STEEL TO ASME B16.5
1.3.3.	BUTT-WELDED FITTINGS, STEEL, TO ASME B16.9.
1.3.4.	UNIONS SHALL BE MALLEABLE IRON CONFORMING TO ASTM-A47/A47M AND ASME B16.3.
1.3.5.	FITTINGS FOR ROLL GROOVED PIPING, MALLEABLE IRON TO ASTM-A47/A47M, DUCTILE IRON TO ASTM-A536.
1.4. VALVES	
1.4.1. CONNECTIONS:	
1.4.1.1.	NPS 2" AND SMALLER: SCREWED ENDS.
1.4.1.2.	NPS 2-1/2" AND LARGER: FLANGED OR GROOVED ENDS.
1.4.2. GATE VALVES TO MSS-SP-70 AND MSS-SP-80 FOR ISOLATING EQUIPMENT, CONTROL VALVES, ETC.	
1.4.2.1.	NPS 2" AND SMALLER: BRONZE, CLASS 125 RISING STEM, SOLID WEDGE DISC.
1.4.2.2.	NPS 2-1/2" AND OVER: CAST IRON, RISING STEM, SOLID WEDGE DISC, LEAD FREE BRONZE TRIM.
1.4.3. BUTTERFLY VALVES TO MSS-SP-67 FOR ISOLATING CELLS OR SECTIONS OF MULTIPLE COMPONENT EQUIPMENT. FOR NPS 2-1/2" AND OVER: LUG TYPE OR GROOVED ENDS.	
1.4.4. GLOBE VALVES TO MSS-SP-80 AND 85 FOR THROTTLING, FLOW CONTROL AND EMERGENCY BYPASS.	
1.4.4.1.	NPS 2" AND SMALLER: BRONZE, WITH PLUG DISC.
1.4.4.2.	NPS 2-1/2" AND OVER: CAST IRON, COMPOSITION BRONZE DISC AND BRONZE TRIM.
1.4.5. BALANCING FOR TAB	
1.4.5.1.	NPS 2" AND SMALLER: COPPER ALLOY BODY THREADED, 2.1 MPa RATING, GLOBE STYLE, SELF SEALING MEASURING PORTS FOR TEMPERATURE AND PRESSURE PROBES, LOCKING TAMPER PROOF SETTING, WITH PLUG DISC. COMBINATION BALANCING VALVE, STRAINER AND DRAIN BALL VALVE MAY ALSO BE USED IN LIEU OF STANDARD VALVE.
1.4.5.2.	NPS 2-1/2" AND OVER: DUCTILE IRON BODY, FLANGED OR GROOVED CONNECTIONS, 1700 KPa RATING MINIMUM, GLOBE STYLE, SELF-SEALING MEASUREMENT PARTS FOR TEMPERATURE OR PRESSURE PROBES, LOCKING TAMPER PROOF SETTING.
1.4.6. DRAIN VALVES: BRONZE, GATE, CLASS 125 NON-RISING STEM, SOLID WEDGE DISC.	
1.4.7. SWING CHECK VALVES TO MSS-SP-71	
1.4.7.1.	NPS 2" AND SMALLER: BRONZE, CLASS 125 SWING WITH COMPOSITION DISC.
1.4.7.2.	NPS 2-1/2" AND OVER: CAST IRON, FLANGED OR GROOVED ENDS.
1.4.8. BALL VALVES: FOR NPS 2" AND SMALLER, USE SCREWED END BALL VALVES CONSTRUCTED OF CAST HIGH TENSILE BRONZE CONFORMING TO ASTM-B16 OR ASTM-B62. SCREWED ENDS SHALL CONFORM TO ANSI-B1.20.1 WITH HEX SHOULDERS. BALL SHALL BE REPLACEABLE AND CONSTRUCTED OF EITHER STAINLESS STEEL OR HARD CHROME.	
2. INSTALLATION OF PIPEWORK	
2.1. EXECUTION	
2.1.1.	MAKE ALL CONNECTIONS TO EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2.1.2.	PROVIDE VALVES AND UNIONS AT CONNECTION FOR MAINTENANCE/REPLACEMENT PURPOSES.
2.1.3.	PROVIDE DRAINS AT SYSTEM LOW POINTS, EQUIPMENT AND ISOLATING SECTIONS. INSTALL NPS 3/4" GATE OR GLOBE VALVE WITH HOSE END MALE THREAD, CAP AND CHAIN.
2.1.4.	PROVIDE AUTOMATIC AIR VENTS AT SYSTEM HIGH POINTS COMPLETE WITH ISOLATING VALVE.
2.2. CLEARANCES:	PROVIDE THE REQUIRED CLEARANCES AROUND EQUIPMENT, PIPING, SYSTEMS, ETC. TO RENDER THE NECESSARY SPACE REQUIREMENTS FOR SERVICE, INSPECTION, OPERATION, REPLACEMENT AND MAINTENANCE. REFER TO ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR REQUIRED AND RECOMMENDED CLEARANCES.
2.3. DIELECTRIC FITTINGS:	WHERE DISSIMILAR METALS ARE JOINED, PROVIDE DIELECTRIC ISOLATING FITTINGS (COMPLETE WITH THERMOPLASTIC LINER), UNIONS OR BRONZE VALVES.
2.4. PIPEWORK INSTALLATION	
2.4.1.	SCREWED FITTING CONNECTIONS SHALL BE COMPLETE WITH PIPE DOPE OR TEFLON TAPE.
2.4.2.	PROTECT ALL SYSTEM OPENINGS DURING CONSTRUCTION TO PREVENT THE ENTRY OF FOREIGN MATERIAL.
2.4.3.	INSTALL ALL PIPING, EQUIPMENT, ETC. TO BE PARALLEL OR PERPENDICULAR WITH BUILDING LINES.
2.4.4.	PROPERLY REAM AND REMOVE SCALE AND FOREIGN MATERIAL PRIOR TO ASSEMBLY.



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This drawing shall be read in conjunction with the architectural,
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proceeding with the work. Do not scale the drawings.

The contractor is to verify and accept responsibility for all
dimensions and conditions on site and must notify
GIALLONARDO ENGINEERING INC. of any variations from the
drawings.

NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	MAR. 25 2025	GG
2	ISSUED FOR PERMIT AND TENDER	MAR. 27 2025	GG
NO.	REVISIONS	DATE	BY

PROJECT:

EASTSIDE SECONDARY
SCHOOL GREENHOUSE
DEMOLITION

275 FARLEY AVE
BELLEVILLE, ONTARIO

HASTINGS AND PRINCE EDWARD DSB

DRAWING:

MECHANICAL
SPECIFICATIONS I



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DESIGN BY: JH	DOC. CONTROL: DATE:
DRAWN BY: GG	% COMPLETE:
CHECKED BY: RG	INITIAL:
DATE: DECEMBER 2024	
SCALE: AS SHOWN	
FILE:	

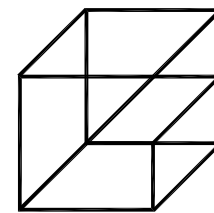
PROJECT NO:

25-120

DRAWING NO:

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MECHANICAL SPECIFICATIONS	PLUMBING SPECIFICATIONS	PLUMBING SPECIFICATIONS
<p>2.4.5. <u>VALVES</u></p> <p>2.4.5.1. INSTALL ALL VALVES IN ACCESSIBLE LOCATIONS FOR MAINTENANCE WITHOUT REMOVING ADJACENT PIPING.</p> <p>2.4.5.2. USE BALL OR BUTTERFLY VALVES AT BRANCH TAKE-OFFS FOR ISOLATING PURPOSES EXCEPT WHERE OTHERWISE SPECIFIED.</p> <p>2.4.5.3. INSTALL BUTTERFLY VALVES ON CHILLED WATER AND RELATED CONDENSER WATER SYSTEMS ONLY.</p> <p>2.4.5.4. INSTALL BALL VALVES FOR GLYCOL SERVICE.</p> <p>2.4.5.5. USE CHAIN OPERATORS ON VALVES NPS 2-1/2" AND LARGER WHERE INSTALLED MORE THAN 2400 MM ABOVE FLOOR IN MECHANICAL ROOMS.</p> <p>2.4.6. <u>CHECK VALVES</u></p> <p>2.4.6.1. INSTALL SILENT CHECK VALVES ON DISCHARGE OF PUMPS AND IN VERTICAL PIPES WITH DOWNWARD FLOW AND ELSEWHERE INDICATED.</p> <p>2.4.6.2. INSTALL SWING CHECK VALVES IN HORIZONTAL LINES ON DISCHARGE OF PUMPS AND ELSEWHERE AS INDICATED.</p> <p>2.4.7. WHERE PIPING PASSES THROUGH MASONRY, FIRE-RATED ASSEMBLIES, FOUNDATION WALLS, POURED WALLS, ETC., PROVIDE PIPE SLEEVES CONSTRUCTED OF SCHEDULE 40 BLACK STEEL PIPE, ALLOW FOR 0.25" OF CLEARANCE BETWEEN INSIDE OF SLEEVE AND OUTSIDE OF PIPE/INSULATION. SEAL WITH A FIRE RETARDANT AND WATERPROOF NON HARDENING MASTIC. WHERE SLEEVE IS INSTALLED IN A FIRE RATED ASSEMBLY, PROVIDE FIRESTOPPING CONFORMING TO ULC.</p> <p>2.4.8. PROVIDE ESCUTCHEON PLATES ON PIPING PASSING THROUGH FINISHED WALLS, FLOOR AND CEILINGS.</p> <p>2.4.9. PROPERLY FLUSH AND CLEAN SYSTEM AND REMOVE ALL FOREIGN MATTER PRIOR TO SYSTEM STARTUP. PREPARATORY TO ACCEPTANCE, CLEAN AND REFURBISH EQUIPMENT AND LEAVE IN OPERATING CONDITION, INCLUDING REPLACEMENT OF FILTERS IN PIPING SYSTEMS.</p> <p>2.4.10. PRESSURE TEST SYSTEM AND MONITOR FOR PRESSURE LOSS FOR A MINIMUM OF 4 HOURS, UNLESS OTHERWISE SPECIFIED.</p> <p>2.5. <u>HANGERS AND SUPPORTS</u></p> <p>2.5.1. UTILIZE PIPE HANGERS AND SUPPORTS CONSTRUCTED OF GALVANIZED STEEL.</p> <p>2.5.2. INSTALL HANGERS SO THAT RODS ARE VERTICAL. ENSURE LOAD EQUALIZATION WITH ROD ADJUSTMENT.</p> <p>2.5.3. FOR RISER CLAMPS, PROVIDE GALVANIZED BLACK CARBON STEEL, ULC LISTED OR FM APPROVED WHERE REQUIRED. BOLTS AND NUTS SHALL CONFORM TO ASTM-A307 AND ASTM-A563, RESPECTIVELY.</p> <p>2.5.4. FOR BASE-MOUNTED EQUIPMENT, PROVIDE CONCRETE HOUSE-KEEPING PADS 4" TALL AND 6" OF SPACE AROUND EQUIPMENT AND CHAMFERED EDGES.</p> <p>2.5.5. <u>HANGER SPACING</u></p> <p>2.5.5.1. PROVIDE HANGERS AT SPACING INDICATED BELOW AND AT EVERY JOINT AND CHANGE OF DIRECTION.</p> <p>2.5.5.2. PROVIDE HANGERS FOR VARIOUS PIPE SIZES AT THE FOLLOWING SPACING: 1-1/4" - 1.8 m, 1-1/2" - 2.4 m AND 2" - 2.7 m.</p> <p>2.6. <u>PIPING INSULATION</u></p> <p>2.6.1. PROVIDE PIPING INSULATION FOR THE HYDRONIC SYSTEMS AS FOLLOWS:</p> <p>2.6.1.1. HEATING WATER (HWS/HWR): TYPE 'A', UP TO 1" - 1" THICK, 1-1/4" AND LARGER - 1-1/2" THICK.</p> <p>2.6.1.2. CHILLED WATER (CHWS/CHWR): TYPE 'A', UP TO 1" - 1" THICK, 1-1/4" AND LARGER - 1-1/2" THICK. RECOVER WITH PVC JACKETING AS SPECIFIED BELOW.</p> <p>2.6.1.3. CONDENSER WATER (INDOOR CWS/CWR): NOT REQUIRED</p> <p>2.6.1.3. CONDENSER WATER (OUTDOOR, CWS/CWR): TYPE 'A', ALL SIZES - 1" THICK. RECOVER WITH PVC JACKETING AS SPECIFIED BELOW.</p> <p>2.6.2. TYPE 'A': JOHNS MANVILLE MICRO-LOK FIBRE GLASS PIPE INSULATION COMPLETE WITH JACKET AND VAPOUR RETARDER. CONNECT SECTIONS OF INSULATION WITH SELF-ADHESIVE BUTT STRIPS SUPPLIED BY THE INSULATION MANUFACTURER.</p> <p>2.6.3. WHERE NOTED, RECOVER INSULATION WITH HEAVY-GAUGE UV-RESISTANT PVC FITTINGS, COVER AND JACKETING EQUAL TO JOHNS MANVILLE ZESTON 300 SERIES.</p> <p>2.6.4. PROVIDE PRE-FORMED INSULATION FOR FITTINGS AND VALVES.</p> <p>3. <u>SYSTEM CHEMICAL TREATMENT</u></p> <p>3.1. PROVIDE SYSTEM CHEMICAL TREATMENT AFTER THE SYSTEM HAS BEEN CLEANED AND STARTED UP IN ACCORDANCE WITH THE MECHANICAL SPECIFICATIONS. THIS CONTRACTOR SHALL PAY FOR AND CONTRACT THE SERVICES OF THE BASE BUILDING CHEMICAL TREATMENT CONTRACTOR TO CARRY OUT THE CHEMICAL TREATMENT PROCESS.</p>	<p>1. PROVIDE PLUMBING SYSTEMS AS PER DRAWINGS, SPECIFICATIONS, THE LATEST EDITION OF THE ONTARIO BUILDING CODE, MUNICIPAL BY-LAWS AND THE AUTHORITY HAVING JURISDICTION. THE TERM "SYSTEMS" REFERS TO ALL PIPING, FITTINGS, SUPPORTS, CURBS, ACCESSORIES, ETC.</p> <p>2. ALL ITEMS REQUIRED FOR PLUMBING SYSTEMS SHALL BE CSA APPROVED UNLESS OTHERWISE NOTED.</p> <p>3. <u>CLEANING, FLUSHING AND DISINFECTING OF DOMESTIC WATER PIPING</u></p> <p>3.1. FOLLOW PROCEDURES AS OUTLINED IN THE LATEST EDITION OF STANDARD AWWA C651. ENSURE THAT THE METHODS COMPLY WITH LOCAL BY-LAWS.</p> <p>3.2. PREVENT CONTAMINATING MATERIAL FROM ENTERING THE SYSTEM DURING STORAGE, CONSTRUCTION AND REPAIR.</p> <p>3.3. REMOVE AND FLUSH ALL FOREIGN MATTER THAT HAS ENTERED THE PIPING.</p> <p>3.4. PROTECT THE EXISTING DISTRIBUTION SYSTEM FROM BACKFLOW DUE TO HYDROSTATIC PRESSURE AND DISINFECTION PROCEDURES.</p> <p>3.5. CHLORINATE RESIDUAL CONTAMINATION THAT MAY REMAIN AND FLUSH THE CHLORINATED WATER WHEN COMPLETE. FOLLOWING THIS, DETERMINE THE BACTERIOLOGICAL QUALITY OF THE WATER BY LABORATORY TESTING. CONNECT THE WATER SYSTEM ONLY WHEN TEST RESULTS INDICATE AN APPROVED AND DISINFECTED SYSTEM.</p> <p>4. <u>PIPING INSULATION</u></p> <p>4.1. PROVIDE PIPING INSULATION FOR PLUMBING SYSTEMS AS FOLLOWS:</p> <p>- DOW: TYPE 'A', FOR ALL PIPE SIZES 1" THICK</p> <p>- DHW(R): TYPE 'A', UP TO 2" - 1" THICK, 2-1/2" AND UP - 1-1/2" THICK</p> <p>- CD (HORIZONTAL): TYPE 'A', 1/2" THROUGHOUT</p> <p>4.2. TYPE 'A': JOHNS MANVILLE MICRO-LOK FIBER GLASS PIPE INSULATION COMPLETE WITH JACKET AND VAPOUR RETARDER. CONNECT SECTIONS OF INSULATION WITH BUTT STRIPS SUPPLIED BY THE INSULATION MANUFACTURER.</p> <p>4.3. FOR NEW EXPOSED PIPING INSTALLED INDOORS AND/OR IN MECHANICAL ROOMS, RECOVER INSULATION WITH HEAVY-GAUGE PVC FITTINGS, COVER AND JACKETING EQUAL TO JOHNS MANVILLE ZESTON 300 SERIES.</p> <p>4.4. PROVIDE INSULATION ON PIPES GOING THROUGH FIRE RATED FLOORS AND WALLS AND FIT TIGHT TO THE FIRE STOP MATERIAL.</p> <p>4.5. HEATING WATER PIPING SHALL HAVE GLASS FIBRE PIPE INSULATION.</p> <p>5. MAKE ALL PIPING AND ELECTRICAL CONNECTION TO PUMPS AND MOTOR ASSEMBLIES AS SPECIFIED. REFER TO PUMP SCHEDULE (WHERE APPLICABLE).</p> <p>6. <u>PIPING MATERIALS (SEE BELOW FOR MATERIALS SPECIFICATIONS)</u></p> <p>6.1. DOW AND DHW(R)</p> <p>6.1.1. ABOVE GROUND: TYPE 1</p> <p>6.1.2. UNDERGROUND: TYPE 2</p> <p>6.2. <u>SANITARY & STORM DRAINAGE PIPING</u></p> <p>6.2.1. ABOVE GROUND: TYPE 3, TYPE 4, TYPE 6 (WHERE PERMITTED)</p> <p>6.2.2. UNDERGROUND: TYPE 4 (2" MIN.), TYPE 5, TYPE 7</p> <p>6.3. <u>VENT PIPING</u></p> <p>6.3.1. ABOVE GROUND: TYPE 3, TYPE 4, TYPE 6 (WHERE PERMITTED)</p> <p>6.3.2. UNDERGROUND: TYPE 4, TYPE 5, TYPE 7</p> <p>TYPE 1: TYPE L HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS AND LEAD-FREE SOLDER, CONTAINING LESS THAN .02 PERCENT LEAD, CONFORMING TO ASTM B32.</p> <p>TYPE 2: TYPE K SOFT ANNEALED COPPER TUBING WITH NO JOINTS.</p> <p>TYPE 3: TYPE DWV COPPER TUBE AND FITTINGS WITH 95:5 TIN/ANTIMONY SOLDER JOINTS.</p> <p>TYPE 4: CAST IRON PIPING AND FITTINGS COMPLYING WITH CAN/CSA-B70. FOR MECHANICAL JOINTS ABOVE GRADE, USE NEOPRENE OR BUTYL RUBBER COMPRESSION GASKETS TO CAN/CSA-B70 WITH STAINLESS STEEL CLAMPS. FOR MECHANICAL JOINTS BELOW GRADE, USE MESSON HEAVYWEIGHT COUPLINGS FOR HUB AND SPIGOT CONNECTIONS, PROVIDE NEOPRENE GASKET TO CAN/CSA-B70 AND COLD CAULKING COMPOUNDS. DO NOT USE HUB AND SPIGOT FOR ABOVE GROUND APPLICATIONS.</p> <p>TYPE 5: IPEX RING-TITE PVC SDR 35 SEWER PIPE IN COMPLIANCE WITH CSA B182.2 AND CSA B182.7. LATERALS WILL BE IPEX RING-TITE PVC SDR 28 IN COMPLIANCE WITH CSA B182.2.</p> <p>TYPE 6: IPEX XFR PIPING AND FITTINGS COMPLYING WITH CSA B181.2, SCHEDULE 40 WITH A FLAME SPREAD RATING OF NOT GREATER THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION OF LESS THAN 50.</p> <p>TYPE 7: ROYAL ABS-DWV PIPING AND FITTINGS CERTIFIED TO CSA B181.1.</p> <p>7. <u>VALVES</u></p> <p>7.1. PROVIDE ASTM DOMESTIC WATER VALVES TO THE FOLLOWING KITZ FIGURE NUMBERS:</p> <p>7.1.1. <u>GATE VALVES</u></p> <p>7.1.1.1. 2" AND SMALLER: SOLDERED, 1400 kPa [200psi] W.O.G. FIG. 44</p> <p>7.1.1.2. 2-1/2" AND LARGER: FLANGED, 1400 kPa [200psi] W.O.G. FIG. 44</p> <p>7.1.2. <u>GLOBE VALVES</u></p> <p>7.1.1.1. 2" AND SMALLER: SOLDERED, 2070 kPa [300 psi], W.O.G. FIG. 10 WITH SUITABLE COMPOSITION DISC</p> <p>7.1.1.2. 2-1/2" AND LARGER: FLANGED, 1400 kPa [200 psi], W.O.G. FIG. 76</p> <p>7.1.2. <u>STANDARD CHECK VALVES</u></p> <p>7.1.1.1. 2" AND SMALLER: SOLDERED, 2070 kPa [300 psi], W.O.G. FIG. 23</p> <p>7.1.1.2. 2-1/2" AND LARGER: FLANGED, 1400 kPa [200 psi], W.O.G. FIG. 78</p> <p>7.1.2. <u>BALL VALVES</u></p> <p>7.1.1.1. 2" AND SMALLER: BALL VALVES MAY BE PROVIDED AS A SUBSTITUTE FOR GATE AND GLOBE VALVES. PROVIDE BALL VALVES WITH BRASS OR BRONZE BODY, CHROME PLATED SOLID BALL, PTFE SEATS AND SEALS AND FULL PORT, KITZ FIG. 59</p> <p>7.2. PROVIDE ISOLATION VALVES FOR DOMESTIC HOT AND COLD WATER SYSTEMS AT MAIN PIPING, BRANCH PIPING AND AT FIXTURES AND EQUIPMENT.</p> <p>8. VERIFY ALL SITE CONDITIONS AFTER CONTRACT AWARD TO ENSURE THAT PIPING INVERTS ARE SUFFICIENT FOR THE RUNS SHOWN ON MECHANICAL DRAWINGS. REPORT DISCREPANCIES TO ENGINEER IMMEDIATELY.</p> <p>9. CARRY OUT TESTING ON ALL SYSTEMS INCLUDING SANITARY DRAINAGE SYSTEMS, STORM DRAINAGE SYSTEMS AND DOMESTIC WATER SYSTEMS AS PER PART 7.3.8 OF THE ONTARIO BUILDING CODE AND THE AUTHORITIES HAVING JURISDICTION. TESTS MAY INCLUDE, BUT ARE NOT LIMITED TO, A WATER TEST, BACKFLOW TEST, PRESSURE TEST, BALL TEST AND FINAL TEST.</p> <p>10. MAKE PROVISIONS FOR MAINTAINING THE SEAL OF ALL HUB DRAINS, FLOOR DRAINS, ETC. IN ACCORDANCE WITH THE ONTARIO BUILDING CODE. WHERE MECHANICAL OR ELECTRICAL DEVICES ARE USED, THE MINIMUM TUBING SIZE SHALL BE 3/8".</p> <p>11. PROVIDE FIRESTOPPING AT ALL FIRE-RATED WALL AND FLOOR ASSEMBLIES AS PER THE 'GENERAL SPECIFICATIONS'.</p> <p>12. COORDINATE EXACT LOCATIONS OF ALL PLUMBING FIXTURES WITH ALL TRADES AND ARCHITECTURAL/INTERIOR DESIGN DRAWINGS. DO NOT SCALE MECHANICAL DRAWINGS.</p> <p>13. WHERE PLUMBING FIXTURES ARE SPECIFIED, THE CONTRACTOR SHALL PROVIDE ALL ACCESSORIES AND APPURTENANCES TO PROVIDE A FULL AND COMPLETE INSTALLATION OF THE RESPECTIVE FIXTURE. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, STOP VALVES, RISER PIPING, ESCUTCHEON PLATES, ETC.</p> <p>14. PROVIDE VENTING SYSTEMS IN ACCORDANCE WITH PART 7 OF THE ONTARIO BUILDING CODE.</p>	<p>15. A BURIED WATER SERVICE PIPE SHALL BE SEPARATED FROM THE BUILDING DRAIN, BUILDING SEWER OR A PRIVATE SEWAGE DISPOSAL SYSTEM, BY NOT LESS THAN 2440 MM.</p> <p>15.1. A WATER SERVICE PIPE MAY BE CLOSER THAN 2440 MM OR BE PLACED IN THE SAME TRENCH WITH THE BUILDING DRAIN OR BUILDING SEWER IF:</p> <p>15.1.1. THE BOTTOM OF THE WATER SERVICE PIPE AT ALL POINTS IS AT LEAST 500 MM ABOVE THE TOP OF THE BUILDING DRAIN OR BUILDING SEWER, AND WHEN IN A COMMON TRENCH WITH THE BUILDING DRAIN OR BUILDING SEWER, THE WATER SERVICE PIPE IS PLACED ON A SHELF AT ONE SIDE OF THE COMMON TRENCH,</p> <p>15.1.2. THE WATER SERVICE PIPE IS CONSTRUCTED OF A SINGLE RUN OF PIPE WITH NO JOINTS OR FITTINGS BETWEEN THE STREET LINE OR SOURCE OF SUPPLY ON THE PROPERTY AND THE INSIDE FACE OF THE BUILDING, OR</p> <p>15.1.3. THE BUILDING DRAIN OR BUILDING SEWER IS CONSTRUCTED OF PIPING WHICH IS PRESSURE TESTED IN ACCORDANCE WITH SUBSECTION 7</p>

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1	ISSUED FOR REVIEW	MAR. 25 2025	GC
2	ISSUED FOR PERMIT AND TENDER	MAR. 27 2025	GC
NO.	REVISIONS	DATE	BY

PROJECT:

EASTSIDE SECONDARY SCHOOL GREENHOUSE DEMOLITION

275 FARLEY AVE
BELLEVILLE, ONTARIO

HASTINGS AND PRINCE EDWARD DSB

DRAWING:

MECHANICAL SPECIFICATIONS II AND LEGEND

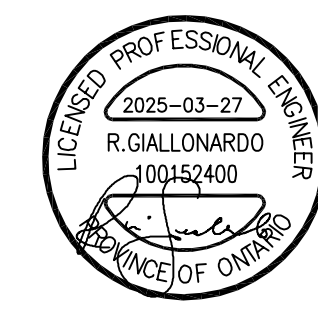


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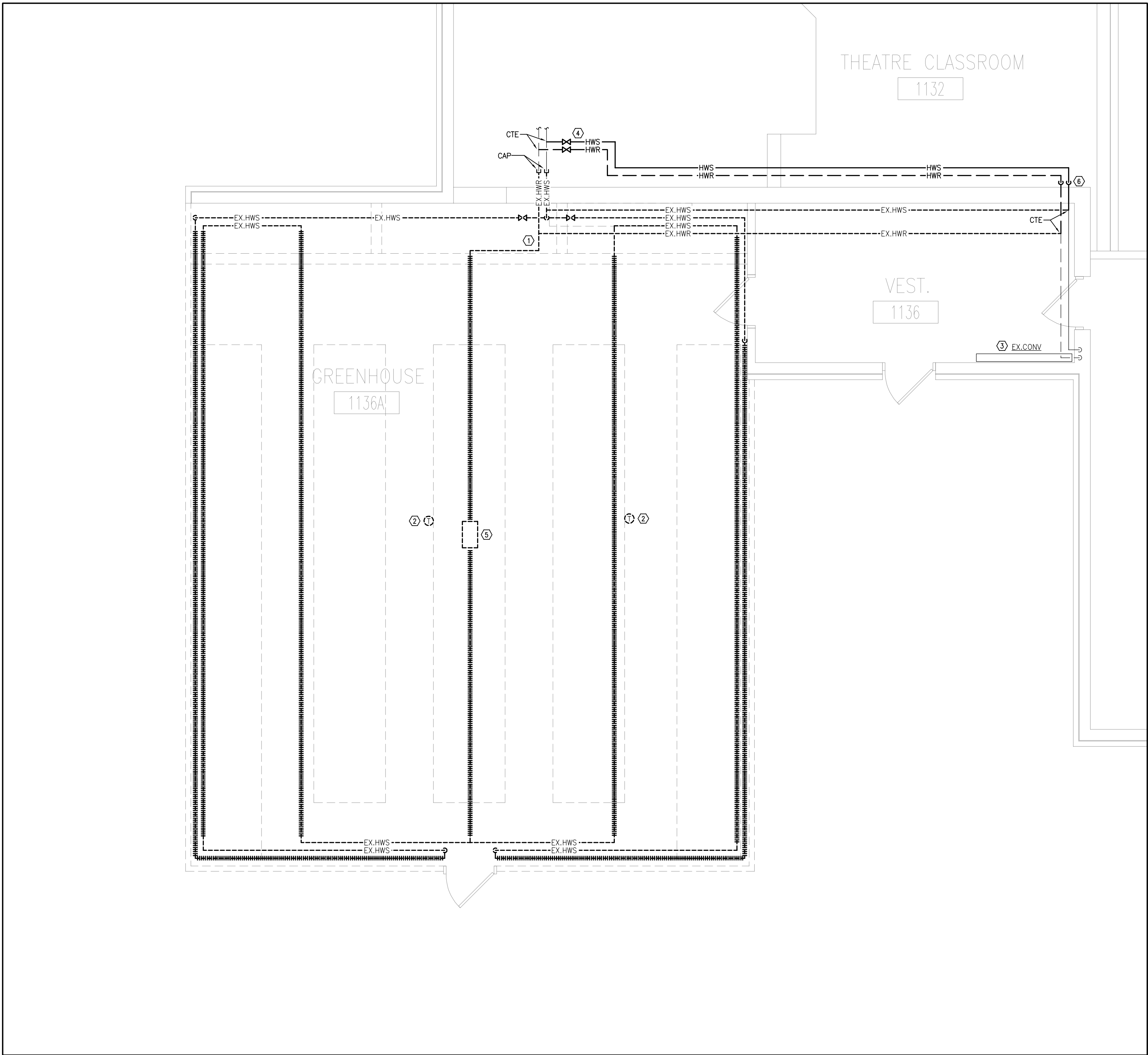
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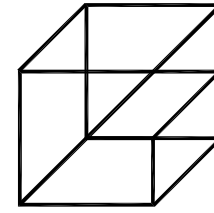
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- DRAWING NOTES
- ① REMOVE AND DISPOSE OF ALL EXISTING HYDRONIC PIPING IN GREENHOUSE SPACE. CAP ON INTERIOR OF THEATER CLASSROOM WHERE SHOWN. PATCH ALL PENETRATIONS TO BASE BUILDING STANDARDS. REMOVE AND DISPOSE OF EXISTING CONTROL VALVE ACTUATOR AND ASSOCIATED CONTROL WIRING.
 - ② EXISTING THERMOSTAT AND ASSOCIATED CONTROL WIRING SERVING GREENHOUSE SPACE TO BE REMOVED AND DISPOSED OF.
 - ③ EXISTING CONVECTOR TO REMAIN.
 - ④ PROVIDE NEW HYDRONIC PIPING SERVING EXISTING CONVECTOR. CONNECT TO EXISTING IN CEILING SPACE WHERE SHOWN. CONTRACTOR TO CONFIRM EXACT PIPE SIZE ON SITE TO MATCH EXISTING SUPPLY AND RETURN LINES SERVING EXISTING CONVECTOR.
 - ⑤ EXISTING VENTILATION ACTUATOR AND ALL ASSOCIATED CONTROL WIRING TO BE REMOVED AND DISPOSED OF.
 - ⑥ WHERE HYDRONIC PIPING DROPS BELOW T-BAR CEILING IN THEATRE CLASSROOM, RECOVER INSULATION WITH PVC JACKETING AS SPECIFIED IN BLACK FINISH.

- GENERAL NOTES
- 1. PERFORM DEMOLITION WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL DEMOLITION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.
 - 2. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, IF REQUIRED, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
 - 3. THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.
 - 4. THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDRANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION. AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.

1
M-2.1
PART GROUND FLOOR PLAN - HYDRONIC DEMOLITION AND NEW
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DEMOLITION**
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DRAWING:
**PART GROUND FLOOR
PLAN - HYDRONIC
DEMOLITION AND NEW**



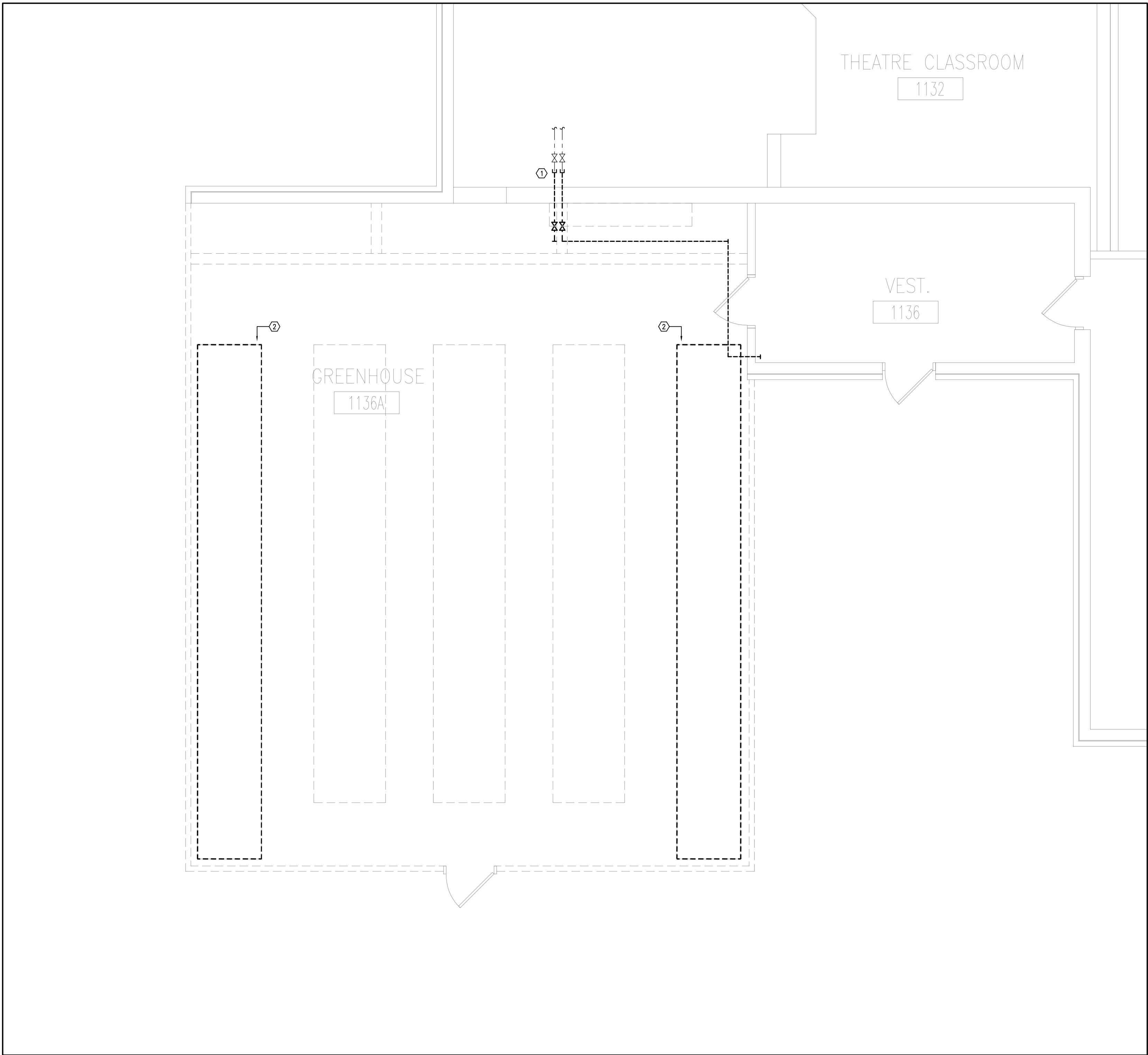
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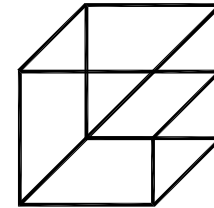
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- DRAWING NOTES
- ① REMOVE AND DISPOSE OF ALL EXISTING DOW PIPING IN GREENHOUSE SPACE. CLOSE EXISTING VALVES ON INTERIOR OF SPACE AND CAP. PATCH ALL PENETRATIONS TO BASE BUILDING STANDARDS.
 - ② REMOVE AND DISPOSE OF EXISTING IRRIGATION SYSTEM SERVING PLANTER BOX.

- GENERAL NOTES
1. PERFORM DEMOLITION WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL DEMOLITION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.
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 3. THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.
 4. THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDRANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION. AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.

1 PART GROUND FLOOR PLAN - PLUMBING DEMOLITION
M-2.2 1:50



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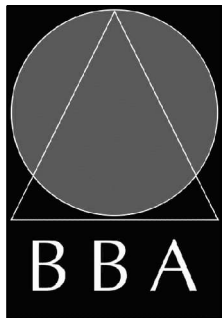
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SCHOOL GREENHOUSE
DEMOLITION**

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DRAWING:
**PART GROUND FLOOR
PLAN - PLUMBING
DEMOLITION**



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