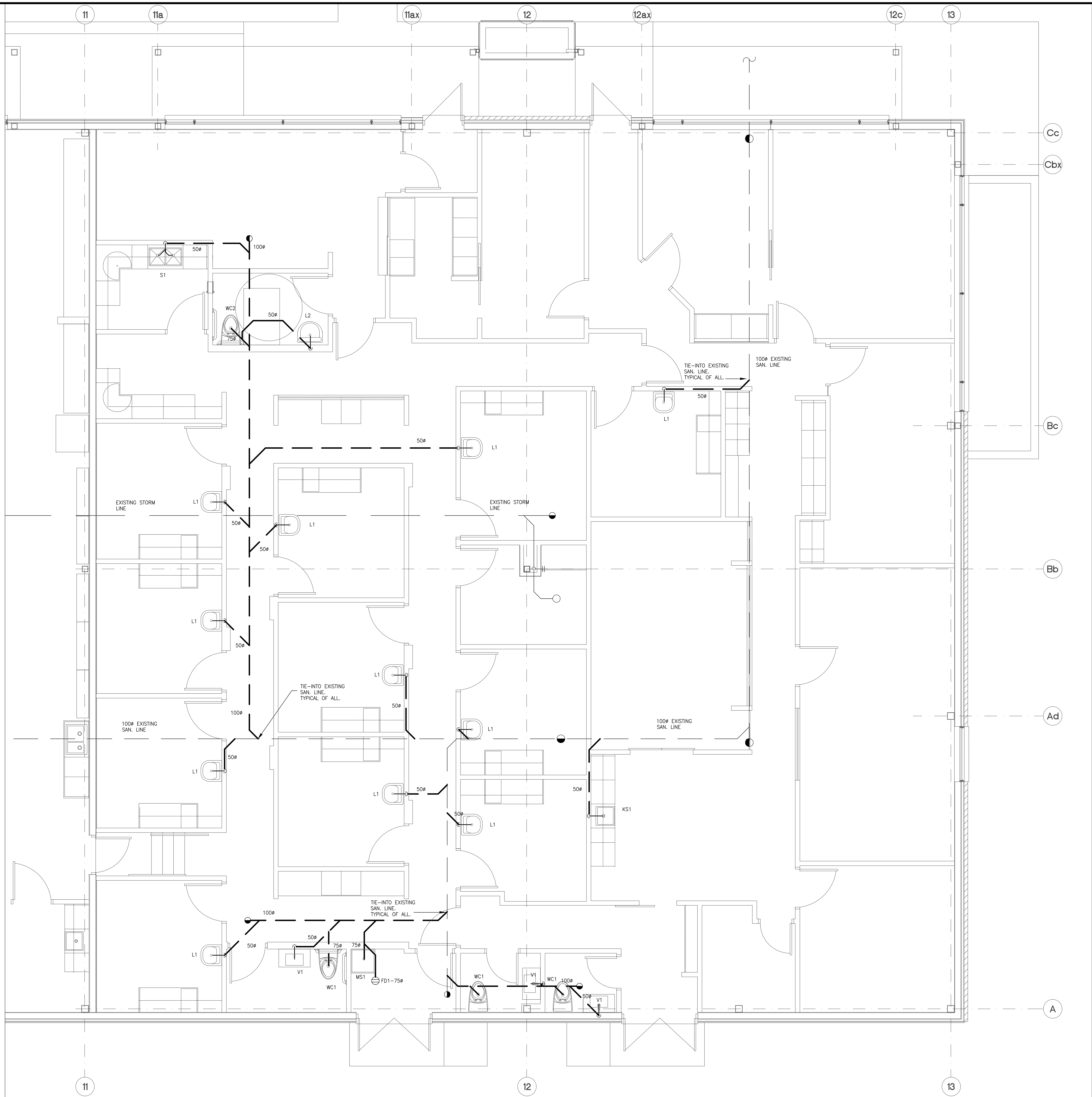




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M1-1
1:50
SANITARY LAYOUT

3	JULY13/26	ISSUED FOR TENDER
2	JULY 9/26	ISSUED FOR PERMIT
1	JUNE16/26	ISSUED FOR COORDINATION
NO.	DATE	REVISION

DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED BY CONTRACTOR DURING THE COURSE OF WORK.

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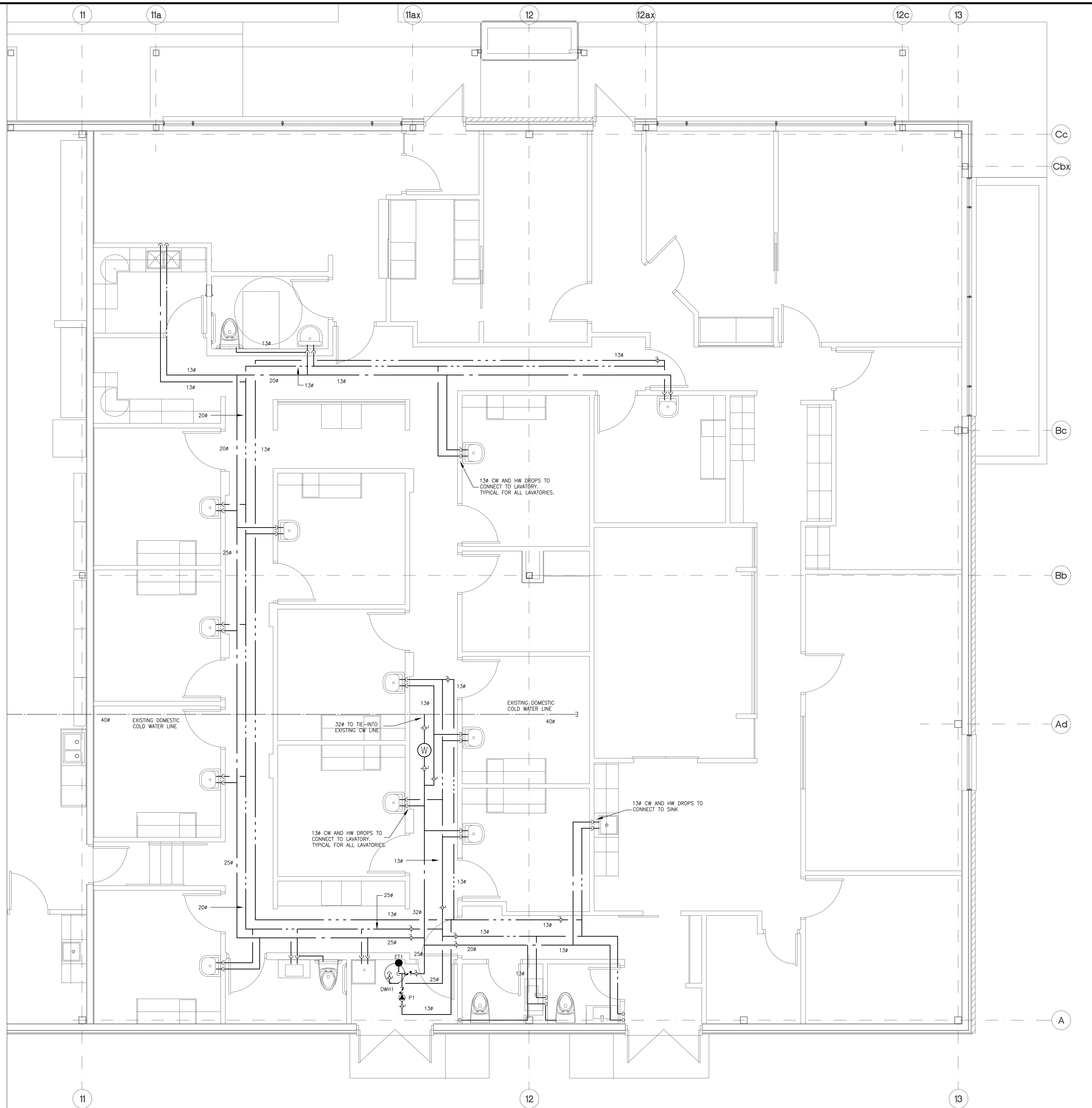

C.T. PASHARTIS
90327800
JULY 13/26
PROVINCE OF ONTARIO

29 ROLLING ACRES DR.
KITCHENER, ONTARIO
N2A 3W5
TEL. (519) 894-0022

PROJECT
**INGERSOLL NURSE
PRACTITIONERS
NORTHGATE PLAZA**
671 BROADWAY, UNITS 14 AND 15
TILLSONBURG ONTARIO

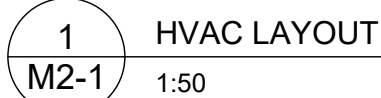
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DRAWN BY: C. P.	SCALE: 1:50
CHECKED BY: C. PASHARTIS	DATE: JUNE 16, 2026
PROJECT NO. 26CP006	DRAWING NO. M1-1



1 DOMESTIC WATER LAYOUT
M1-2 1:50

3 JULY13/26 ISSUED FOR TENDER		
2 JULY 9/26 ISSUED FOR PERMIT		
1 JUNE16/26 ISSUED FOR COORDINATION		
NO.	DATE	REVISION
DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED BY CONTRACTOR DURING THE COURSE OF WORK.		
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29 ROLLING ACRES DR. KITCHENER, ONTARIO N2A 3W5 TEL. (519) 894-0022		
PROJECT INGERSOLL NURSE PRACTITIONERS NORTHGATE PLAZA 671 BROADWAY, UNITS 14 AND 15 TILLSBURG ONTARIO		
DRAWING DOMESTIC WATER LAYOUT		
DRAWN BY: C. P.		SCALE: 1:50
CHECKED BY: C. PASHARTIS		DATE: JUNE 16, 2026
PROJECT NO. 26CP002		DRAWING NO. M1-2

DRAWING NO. M2-

GENERAL NOTES:

1. ANY COMBUSTIBLE MATERIALS INSTALLED IN THE CEILING SPACE USED AS A RETURN AIR PLENUM, SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50. PLUMBING AND HVAC CONTRACTORS SHALL COORDINATE WITH ALL OTHER TRADES.
2. WHERE CEILING SPACE IS TO BE USED AS A RETURN AIR PLENUM, ALL WIRING FOR CONTROL, TELEPHONE, DATA, SECURITY, SPEAKER WIRE ETC., SHALL BE F16, CMP, MPP OR PLENUM WIRING.
3. THE SPECIFIED MANUFACTURERS MEANS THAT THE ITEM NAMED AND SPECIFIED, FORMS PART OF SPECIFICATION AND SETS STANDARD REGARDING PERFORMANCE, QUALITY OF MATERIAL AND WORKSMANSHIP. ALTERNATE MANUFACTURERS WILL BE CONSIDERED AND ACCEPTED AS EQUAL PROVIDED THEY MEET THE STANDARD SPECIFIED.

MECHANICAL GENERAL REQUIREMENTS

1. DESCRIPTION OF WORK
 - 1.1 THE MECHANICAL CONTRACTOR SHALL FURNISH ALL LABOUR, MATERIAL, TOOLS, EQUIPMENT, SUPERVISION AND OTHER SERVICES AS MAY BE REQUIRED TO EXECUTE THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS.
2. SITE EXAMINATION
 - 2.1 BEFORE SUBMITTING TENDERS, CAREFULLY EXAMINE THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS HAVING A BEARING ON THE WORK. VISIT THE SITE OF THE EXISTING BUILDING AND THOROUGHLY ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE PERFORMANCE OF WORK.
3. CODES AND STANDARDS
 - 3.1 THE INSTALLATION SHALL COMPLY WITH THE LATEST EDITIONS AND ALL AMENDMENTS OF THE FOLLOWING CODES AND STANDARDS, WHERE CONFLICTS IN REQUIREMENTS OCCUR, THE HIGHER STANDARDS WILL APPLY: ONTARIO BUILDING CODE, ONTARIO FIRE CODE, N.F.P.A., ASHRAE, NATURAL GAS INSTALLATION STANDARD CSA-B149.1 AND LOCAL CODES, STANDARDS AND BY-LAWS.
 - 3.2 REGULATIONS, PERMITS, FEES, CONNECTION CHARGES AND CERTIFICATES
 - 3.3 ALL MATERIALS AND WORKSMANSHIP SHALL MEET ALL PROVINCIAL BUILDING, MUNICIPAL, N.F.P.A., AND FIRE MARSHALL REGULATIONS, CODES AND BYLAWS IN FORCE IN THE AREA OF THE PROJECT.
4. REMOVAL OF EXISTING EQUIPMENT
 - 4.1 EXAMINE THE EXISTING BUILDING AND INCLUDE IN TENDER PRICE ALL NECESSARY ALLOWANCES TO REMOVE EXISTING EQUIPMENT AS DETAILED ON DRAWINGS AND AS DIRECTED BY THE GENERAL CONTRACTOR.
 - 4.2 MATERIALS REMOVED BY THIS DIVISION SHALL BECOME CONTRACTOR'S PROPERTY AND BE REMOVED FROM WORK SITE, PROVIDED:
 - 4.2.1 THE ITEMS HAVE BEEN INSPECTED BY THE OWNER AND GENERAL CONTRACTOR AND RELEASED FOR REMOVAL.
 - 4.2.2 ITEMS HAVE NOT BEEN DESIGNATED FOR REUSE IN OTHER SECTIONS OF SPECIFICATIONS OR DRAWINGS.
5. ALTERATION TO EXISTING
 - 5.1 PRIOR TO REMOVAL AND ALTERATION OF THE EXISTING SYSTEMS, THE CONTRACTOR SHALL IDENTIFY TO THE ENGINEER AT WHICH SECTIONS OF THE EXISTING MECHANICAL EQUIPMENT, PIPING AND DUCTWORK SHALL BE CUT BACK AND REMOVED.
 - 5.2 RELOCATE EXISTING MECHANICAL EQUIPMENT AND APPURTENANCES AS SPECIFICALLY INDICATED ON DRAWINGS OR SPECIFIED AND AS REQUIRED TO SUIT ALTERATION WORK. CLEAN RELOCATED EQUIPMENT AND INSTALL IN NEW LOCATION IN A NEAT ORDERLY MANNER WITH SAME ATTENTION AS GIVEN TO NEW EQUIPMENT. WHERE EXISTING MATERIAL OR EQUIPMENT IS NO LONGER REQUIRED, SHALL BE CUT BACK AND MAKE GOOD TO SATISFACTION OF THE ENGINEER. WHEN EXISTING MATERIAL OR EQUIPMENT IS DISSECTED OR DISASSEMBLED TO FACILITATE ALTERATION, REINSTALL AS ORIGINAL, INCLUDING AUXILIARY WORK, INSULATION, ELECTRICAL WORK ETC.
 - 5.3 WHERE EXISTING MATERIAL OR EQUIPMENT IS DAMAGED, MAKE GOOD TO THE SATISFACTION OF ENGINEER. IF IT IS FOUND IN AN UNSUITABLE CONDITION, NOTIFY ENGINEER FOR INSTRUCTIONS.
 - 5.4 OBTAIN WRITTEN AUTHORIZATION FROM ENGINEER FOR ALTERATION WORK THAT IS NOT SPECIFICALLY CALLED FOR OR CLEARLY INDICATED ON DRAWINGS.
6. PROTECTION OF OPENINGS
 - 6.1 PROTECT EQUIPMENT AND SYSTEMS OPENINGS FROM DIRT, DUST, AND OTHER FOREIGN MATERIALS.
 - 6.2 THIS CONTRACTOR SHALL PROTECT FINISHED WORK OF HIS OWN AND OTHER SUBCONTRACTORS FROM DAMAGE DUE TO CARRYING OUT HIS WORK. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONDITION OF ALL MATERIALS AND EQUIPMENT SUPPLIED UNDER THIS CONTRACT OR REMOVED FROM EXISTING BUILDING FOR REUSE AND SHALL PROVIDE PROTECTION FOR SAME. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND MAINTENANCE OF THE WORK OF THIS SECTION, UNTIL THE BUILDING HAS BEEN COMPLETED AND ACCEPTED.
7. CUTTING AND PATCHING
 - 7.1 RESPONSIBILITY FOR CUTTING OF OPENINGS TO WALLS, FLOORS, ROOF AND ANY OTHER SURFACES IN THE STRUCTURE SHALL BE COORDINATED WITH GENERAL CONTRACTOR. IN ADDITION RESPONSIBILITY FOR THE PATCHING AND FINISHING OF THESE SURFACES AND ASSEMBLIES SHALL ALSO BE COORDINATED WITH GENERAL CONTRACTOR. WORK SHALL BE PERFORMED BY THE EXPERT TRADE WHO SPECIALIZE IN THEIR WORK. IN THE EVENT THE GENERAL CONTRACTOR WILL NOT BE RESPONSIBLE FOR THIS WORK, THIS SCOPE OF WORK SHALL BE INCLUDED UNDER THE MECHANICAL CONTRACTOR.
 - 7.2 BEFORE CUTTING OF OPENINGS IN THE STRUCTURE, THE CONTRACTOR SHALL IDENTIFY TO THE STRUCTURAL ENGINEER AND THE OWNER'S REPRESENTATIVE AT WHICH SECTIONS OF THE BUILDING STRUCTURE ARE TO BE CUT BACK. THE CUTTING, PATCHING AND FINISHING OF THE ASSEMBLIES RESTRICTED BY THE WORK OF THIS DIVISION SHALL BE PERFORMED BY THE AFFECTED/EXPERT TRADE.
 - 7.3 UNDER NO CIRCUMSTANCES SHALL ANY CUTTING OR BURNING OF THE STRUCTURAL PARTS OF THE BUILDING BE UNDERTAKEN WITHOUT THE WRITTEN AUTHORITY OF THE MECHANICAL CONTRACTOR.
8. EXCAVATING, BACKFILLING, COMPACTING AND FLOOR CEMENTING
 - 8.1 RESPONSIBILITY FOR EXCAVATING, BACKFILLING AND COMPACTING FOR PLUMBING PIPES AND DRAINS PROVIDED BY THIS DIVISION SHALL BE COORDINATED WITH GENERAL CONTRACTOR. WORK SHALL BE BACKFILLING SHALL BE BACKFILLING FULL BROWN CLAY GRANULAR FILL BROUGHT IN SPECIFICALLY FOR THE PURPOSE OF BACKFILLING. ALL BACKFILLING SHALL BE COMPACTED AT INTERVALS OF NOT MORE THAN 6" LAYERS TO THE SATISFACTION OF THE ENGINEER. RESPONSIBILITY FOR FLOOR CEMENTING SHALL BE COORDINATED WITH GENERAL CONTRACTOR. IN THE EVENT THE GENERAL CONTRACTOR WILL NOT BE RESPONSIBLE FOR THIS WORK, THIS SCOPE OF WORK SHALL BE INCLUDED UNDER THE MECHANICAL CONTRACTOR.
9. EQUIPMENT INSTALLATION
 - 9.1 ALL EQUIPMENT, FIXTURES, PIPES, INSULATION AND ASSOCIATED APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - 9.2 SPACE FOR SERVICE, DISASSEMBLY AND REMOVAL OF EQUIPMENT AND COMPONENTS: PROVIDE AS RECOMMENDED BY MANUFACTURER OR AS INDICATED.
 - 9.3 CONTROL PANELS, ELECTRICAL PANELS AND WIRING TERMINATION POINTS PROVIDE MINIMUM 40" CLEARANCE.
 - 9.4 EQUIPMENT DRAINS: PIPE TO FLOOR DRAINS
10. ROOF CONES AND FLASHING
 - 10.1 ROOF CONES FOR PIPES AND ROUND DUCTS PENETRATING ROOF SHALL BE SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR.
 - 10.2 IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO SEE THAT ACCEPTABLE FLASHING ARE INSTALLED WHERE NECESSARY FOR THE WORK OF HIS TRADE. COUNTER FLASHING IS BY ROOFING CONTRACTOR AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.
11. SLEEVES
 - 11.1 THIS CONTRACTOR SHALL SUPPLY AND INSTALL SUITABLE SLEEVES FOR PIPING AND DUCTWORK PENETRATIONS TO THE BUILDING STRUCTURE.
12. PREPARATION FOR FIRE STOPPING
 - 12.1 FIRE STOPPING MATERIALS AND INSTALLATION WITHIN ANNULAR SPACE BETWEEN PIPES, DUCTS, INSULATION AND ADJACENT FIRE SEPARATION: TO THE APPROVAL OF THE ENGINEER.
 - 12.2 UNSULPHATED UNHEATED PIPES NOT SUBJECT TO MOVEMENT: NO SPECIAL PREPARATION.
 - 12.3 UNSULPHATED HEATED PIPES SUBJECT TO MOVEMENT: WARP WITH NON-COMBUSTIBLE SMOOTH MATERIAL TO PERMIT PIPE TO MOVE WITHOUT DAMAGING FIRE STOPPING.
 - 12.4 INSULATED PIPES AND DUCTS: ENSURE INTEGRITY OF INSULATION AND VAPOUR BARRIER AT FIRE SEPARATION.
13. ESCUTCHIONS
 - 13.1 PROVIDE ON EXPOSED PIPES PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS ON FINISHED AREAS.
 - 13.2 CHROME OR NICKEL PLATED BRASS OR TYPE 302 STAINLESS STEEL, SPLIT PEECE TYPE WITH SET SCREWS.
 - 13.3 OUTSIDE DIAMETER TO COVER OPENING OR SLEEVE.
 - 13.4 INSIDE DIAMETER TO FIT AROUND FINISHED PIPE.
 - 13.5 SECURE TO PIPE OR FINISHED SURFACE BUT NOT INSULATION.
14. TESTS
 - 14.1 INSULATE OR CONCEAL WORK ONLY AFTER TESTING AND APPROVAL BY ENGINEER.
 - 14.2 BEAR ALL COSTS IN CONNECTION WITH ALL TESTS, INCLUDING REPAIRING LEAKS RETESTING AND MAKING GOOD.
 - 14.3 PRIOR TO TESTS, ISOLATE ALL EQUIPMENT AND OTHER PARTS WHICH ARE NOT DESIGNED TO WITHSTAND TEST PRESSURES OR TEST MEDIUM.
 - 14.4 PROVIDE CERTIFICATES INDICATING RESULTS OF ALL TESTS INCLUDING TEST LOGS.
 - 14.5 PIPING:
 - 14.5.1 PLUMBING LINES SHALL BE TESTED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.
 - 14.5.2 NATURAL GAS LINES SHALL BE TESTED IN ACCORDANCE WITH STANDARD CSA-B149.1
15. PIPE FLUSHING AND CLEANING
 - 15.1 AFTER PRESSURE TESTS ARE COMPLETED AND APPROVED, PRIOR TO START-UP AND PLACING INTO OPERATION, FLUSH AND CLEAN OUT ALL PIPING SYSTEMS.
 - 15.2 FOR DOMESTIC WATER SYSTEM, CLEAN AS PER ONTARIO BUILDING CODE AND LOCAL REQUIREMENTS.
16. ACCESS DOORS
 - 16.1 SUPPLY ACCESS DOORS TO CONCEALED MECHANICAL EQUIPMENT FOR OPERATING, INSPECTING, ADJUSTING AND SERVICING.
 - 16.2 ACCESS DOORS REQUIRED IN LISTED FIRE SEPARATION SHALL BEAR A ULC LABEL TO MATCH WALL CLASSIFICATION.
17. DIELECTRIC COUPLINGS
 - 17.1 PROVIDE WHERE PIPES OF DISSIMILAR METALS ARE JOINED. SHALL BE COMPATIBLE WITH AND TO SUIT PRESSURE RATING OF PIPING SYSTEM.
 - 17.2 PIPES NPS 2 AND UNDER SHALL BE WITH INSULATING UNION. PIPES NPS 2 1/2 AND OVER SHALL BE INSULATING FLANGES.
 - 17.3 PROVIDE FELT OR RUBBER GASKET TO PREVENT DISSIMILAR METALS CONTACT.
18. DRAIN VALVES
 - 18.1 LOCATE AT LOW POINTS AND AT SECTION ISOLATING VALVES UNLESS OTHERWISE SPECIFIED.
 - 18.2 MINIMUM NPS 3/4 UNLESS OTHERWISE SPECIFIED: BRONZE, WITH HOSE END MALE THREAD.
19. EQUIPMENT SUPPORTS
 - 19.1 EQUIPMENT SUPPORTS NOT SUPPLIED BY EQUIPMENT MANUFACTURER SHALL BE FABRICATED FROM STRUCTURAL GRADE STEEL.
 - 19.2 RESPONSIBILITY FOR ROOFING AND REINFORCING OF ROOF FOR MECHANICAL EQUIPMENT SUPPORT SHALL BE COORDINATED WITH GENERAL CONTRACTOR. IN THE EVENT THE GENERAL CONTRACTOR WILL NOT BE RESPONSIBLE FOR THIS WORK, THIS SCOPE OF WORK SHALL BE INCLUDED UNDER THE MECHANICAL CONTRACTOR.
20. PIPE HANGERS AND SUPPORTS
 - 20.1 PROVIDE UPON ATTACHMENTS, MIDDLE ATTACHMENT ROD, PIPE ATTACHMENT, RISER CLAMPS, SADDLES, SHIELDS AND OTHER DEVICES. RIGID, SWING OR ANY OTHER HANGER SYSTEM SHALL BE SUITABLE FOR THE APPLICATION AND TAKE INTO ACCOUNT ATTACHMENT IN AREAS MADE OF CONCRETE, SLAB, STEEL BEAM, WOOD JOISTS AND STEEL JOISTS AND FOR EXPANSION OF PIPING.
 - 20.2 HANGER SPACING AND MIDDLE ATTACHMENT (ROD) DIAMETER AS PER REGULATORY AUTHORITIES AND MANUFACTURER'S RECOMMENDATIONS.
 - 20.3 INSTALL HANGER SO THAT ROD IS VERTICAL UNDER OPERATING CONDITIONS. ADJUST HANGERS TO EQUALIZE LOAD, AND REPORT FROM STRUCTURAL MEMBERS. WHERE STRUCTURAL BEARING DOES NOT EXIST OR INSERTS ARE NOT IN SUITABLE LOCATIONS, PROVIDE SUPPLEMENTARY STRUCTURAL STEEL MEMBERS.
 - 20.4 WHERE SUPPORTING COPPER PIPE, IT SHALL BE ISOLATED FROM ANY NON-COPPER HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.
21. SHOP DRAWINGS AND PRODUCT DATA
 - 21.1 EQUIPMENT SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
 - 21.2 SHOP DRAWINGS AND PRODUCT DATA SHALL SHOW:
 - 21.2.1 MOUNTING ARRANGEMENTS.
 - 21.2.2 OPERATING AND MAINTENANCE CLEARANCES, E.G. ACCESS DOOR, SWING SPACES.
 - 21.2.3 TYPE, NAME, CATALOGUE NUMBERS, TECHNICAL PERFORMANCE DATA, WIRING DIAGRAMS ETC.
22. PAINTING
 - 22.1 APPLY AT LEAST ONE COAT OF CORROSION RESISTANT PRIMER PAINT TO FERROUS SUPPORTS AND SITE FABRICATED WORK.
 - 22.2 PRIME AND TOUCH UP MARRED FINISHED PAINT WORK TO MATCH ORIGINAL.
 - 22.3 RESTORE TO NEW CONDITION, FINISHES WHICH HAVE BEEN DAMAGED TO EXTENSIVELY TO BE MERELY PRIMED AND TOUCHED UP.
 - 22.4 AT AREAS WHERE CUTTING AND PATCHING HAS TAKEN PLACE, PAINTING OF THESE AREAS SHALL BE UNDERTAKEN BY THE AFFECTED (EXPERT) TRADE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.
23. IDENTIFICATION
 - 23.1 IDENTIFY AND LABEL EQUIPMENT AND PIPEWORK SERVICES ON COMPLETION OF THE PROJECT.
 - 23.2 DOMESTIC WATER LINES SHALL SHOW SERVICE AND DIRECTION OF FLOW.
 - 23.3 NATURAL GAS PIPE EXTERIOR TO THE BUILDING SHALL BE PAINTED ENTIRELY IN YELLOW AND INSIDE THE BUILDING SHALL BE IDENTIFIED WITH YELLOW IDENTIFICATION BANDS.
 - 23.4 EQUIPMENT, PANELS AND CABINETS, SYSTEM NAMEPLATES SHALL BE 1/8" THICK LAMINATED PLASTIC WITH LETTERS AND NUMBERS MACHINE ENGRAVED INTO CORE.
24. ELECTRICAL WORK
 - 24.1 ALL WIRING AND CONDUIT FOR POWER AND CONTROL SHALL BE BY ELECTRICAL DIVISION, EXCEPT FOR WIRING, CONDUIT AND CONNECTIONS BELOW 50V WHICH ARE RELATED TO AUTOMATIC CONTROL SYSTEMS SHALL BE BY MECHANICAL CONTRACTOR.
25. CLEANING
 - 25.1 UPON COMPLETION AND IN PREPARATION FOR FINAL ACCEPTANCE, CONTRACTOR SHALL REMOVE PROTECTIVE COVERINGS, CLEAN AND REFURISH ALL EQUIPMENT, FREE ALL OBSTRUCTIONS, REPLACE FILTERS, CLEAN STRAINERS AND LEAVE IN OPERATING CONDITION. ALL SURPLUS AND WASTE MATERIAL SHALL BE PROMPTLY REMOVED FROM THE PREMISES.
26. TRIAL USAGE
 - 26.1 OBTAIN WRITTEN PERMISSION FROM ENGINEER TO START AND TEST PERMANENT EQUIPMENT AND SYSTEMS TO ACCEPTANCE BY OWNER.
 - 26.2 ENGINEER AND OWNER MAY USE EQUIPMENT AND SYSTEMS FOR TEST PURPOSES PRIOR TO ACCEPTANCE. SUPPLY LABOUR, MATERIAL AND INSTRUMENTS REQUIRED FOR TESTING.
27. TESTING, ADJUSTING AND BALANCING (TAB)
 - 27.1 THIS OPERATION SHALL BE UNDERTAKEN BY A CONTRACTOR WHOSE PRINCIPAL BUSINESS IS THAT OF TESTING, ADJUSTING AND BALANCING. THIS CONTRACTOR IS TO CONDUCT ACCEPTANCE TESTS TO DEMONSTRATE THAT THE EQUIPMENT AND SYSTEMS ACTUALLY MEET THE SPECIFIED REQUIREMENTS. TESTS MAY BE CONDUCTED AS SOON AS CONDITIONS PERMIT. SUBMIT TAB REPORT TO ENGINEER FOR REVIEW.
 - 27.2 THE BALANCING CONTRACTOR SHALL BE AFFILIATED WITH AABC OR NEBB.
 - 27.3 AIR BALANCING SHALL BE CARRIED OUT ONLY FOR THE COMMERCIAL UNITS.
28. DEMONSTRATION, OPERATION AND MAINTENANCE INSTRUCTIONS
 - 28.1 SUPPLY TOOLS, EQUIPMENT AND PERSONNEL TO DEMONSTRATE AND INSTRUCT CLIENT'S REPRESENTATIVE DURING REGULAR WORK HOURS AND PRIOR TO ACCEPTANCE IN OPERATING, CONTROLLING AND ADJUSTING OF ALL SYSTEMS AND EQUIPMENT.
29. OPERATION AND MAINTENANCE MANUAL
 - 29.1 PROVIDE OPERATION AND MAINTENANCE DATA FOR INCORPORATION INTO MANUAL.
 - 29.2 OPERATION AND MAINTENANCE MANUAL TO BE APPROVED BY AND FINAL COPIES DEPOSITED WITH ENGINEER BEFORE FINAL INSPECTION.
30. RECORD DRAWINGS
 - 30.1 SITE RECORDS:
 - 30.1.1 ON ONE SET OF AUTOCAD MECHANICAL DRAWINGS, MARK ALL CHANGES AS WORK PROGRESSES AND AS CHANGES OCCUR.
 - 30.1.2 MAKE AVAILABLE FOR REFERENCE PURPOSES AND INSPECTION AT ALL TIMES.
 - 30.2 AS-BUILT DRAWINGS:
 - 30.2.1 IDENTIFY EACH DRAWING IN LOWER RIGHT HAND CORNER IN LETTERS AT LEAST 1/2" HIGH AS FOLLOWS: "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (SIGNATURE OF CONTRACTOR) (DATE).
 - 30.2.2 SUBMIT TO ENGINEER FOR APPROVAL AND MAKE CORRECTIONS AS DIRECTED.
 - 30.2.3 SUBMIT COMPLETED REPRODUCIBLE AS-BUILT DRAWINGS WITH OPERATING AND MAINTENANCE MANUALS.
31. GUARANTEE
 - 31.1 PROVIDE A WRITTEN GUARANTEE TO COVER ALL MATERIALS AND INSTALLATION OF THE COMPLETE MECHANICAL SYSTEMS. THIS GUARANTEE SHALL EXTEND FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE CERTIFICATE OF SUBSTANTIAL COMPLETION.
 - 31.2 SPECIFIC GUARANTEE OF MANUFACTURERS WHOSE WARRANTY NORMALLY EXTENDS OVER LONGER OR SHORTER PERIODS THAN ONE YEAR, SHALL IN NO WAY LIMIT THE GUARANTEE OF THE MECHANICAL WORK.
 - 31.3 ANY DEFECTS OCCURRING WITHIN THE GUARANTEE PERIOD SHALL BE REPAIRED/REPLACED AT NO COST TO THE OWNER.
 - 31.4 WHERE PERMANENT EQUIPMENT IS USED TO PROVIDE TEMPORARY SERVICES, THE WARRANTY SHALL BE EXTENDED SO THAT THE WARRANTY PERIOD DOES NOT COMMENCE UNTIL THE CERTIFICATE OF SUBSTANTIAL COMPLETION IS ISSUED.

PLUMBING GENERAL NOTES FOR INSTALLATION

1. DOMESTIC WATER PIPING WITHIN THE BUILDING:
 - 1.1 ABOVE GROUND SHALL BE SEAMLESS COPPER WATER TUBE, TYPE L WITH SOLDERED JOINTS. PEX PIPE OR CPVC PIPE CAN BE ACCEPTED AS ALTERNATE.
 - 1.2 BURIED PIPING SHALL BE SOFT ANNEALED COPPER TYPE K WITH NO JOINTS.
 - 1.3 GRAVITY SANITARY, STORM AND VENT PIPE AND FITTINGS:
 - 1.3.1 BELOW GRADE SHALL BE PVC-SOR35, ABS-DWV OR PVC-DWV WITH SOLVENT WELD FITTINGS.
 - 1.3.2 ABOVE GROUND UP TO 2-1/2" DIA. SHALL BE PVC-DWV ULC APPROVED WITH SOLVENT WELD FITTINGS OR COPPER DWV WITH WROUGHT COPPER FITTINGS.
 - 1.4 ABOVE GROUND FOR 3" AND OVER SHALL BE PVC-DWV, ULC APPROVED WITH SOLVENT WELD FITTINGS OR CAST IRON WITH MECHANICAL JOINTS, NEOPRENE OR BUTYL RUBBER COMPRESSION GASKETS AND STAINLESS STEEL CLAMPS.
 - 1.5 IN A RETURN AIR PLENUM USE FULLY CERTIFIED FIRE-RESISTANT PVC-DWV PIPE SUCH AS IPX SYSTEM XFR 15-50. COORDINATE WITH ARCHITECTURAL AND HVAC DRAWINGS TO CLARIFY AREAS WITH RETURN AIR PLENUM.
2. WHERE PLASTIC PIPE CROSSES A FIRE SEPARATION IT SHALL BE FITTED WITH APPROVED FIRE STOP DEVICES.
3. FOR ALL PIPE PENETRATIONS, VOIDS AROUND PIPES SHALL BE SEALED AND CAULKED TO KEEP REQUIRED INTEGRITY.
4. INSTALL PLUMBING VENT LINES AS PER OBC PART 7. DISTRIBUTION AND SIZING SHALL BE BY PLUMBING CONTRACTOR.
5. PIPING INSULATION
 - 5.1 EXPOSED SECTIONAL RIGID FIBREGLASS PIPE INSULATION WITH VAPOUR BARRIER JACKET AND FACING MATERIAL 0-850 DEG.F. SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50.
 - 5.2 APPLICATION:
 - 5.2.1 DOMESTIC COLD AND HOT WATER, HOT WATER RECIRCULATION LINES SHALL BE INSULATED THROUGHOUT IN ALL LOCATIONS.
 - 5.2.2 THICKNESS AND THERMAL CONDUCTIVITY AS PER FOLLOWING: ROUNDOUTS REFERS TO INDIVIDUAL PLUMBING FIXTURES OR TERMINAL UNITS NOT EXCEEDING 120".
 - 5.2.2.1 DOMESTIC COLD AND HOT WATER AND HOT WATER RECIRCULATION LINES: INSULATION THERMAL CONDUCTIVITY 0.24-0.28 BTU/IN.(H.F.T2") AT 100 DEG. F MEAN TEMP. RATING. NOMINAL PIPE DIAMETER UP TO 2 IN., INSULATION THICKNESS SHALL BE 1 IN. ROUNDOUTS UP TO 2 IN. NOMINAL PIPE SIZE, THICKNESS SHALL BE 1/2 IN.
 - 5.3 FASTENINGS:
 - 5.3.1 SELF ADHESIVE ALUMINUM TAPE ULC LABELED.
 - 5.3.2 LAP SEAL ADHESIVE, QUICK SETTING FOR JOINTS AND LAP SEALING OF VAPOUR BARRIERS.
 - 5.3.3 LAGGING ADHESIVE FIRE RETARDANT COATING.
 - 5.4 WHERE SUPPORTING COPPER PIPE, IT SHALL BE ISOLATED FROM ANY NON-COPPER HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.
6. INSTALL VALVED SUPPLIES AT ALL PLUMBING FIXTURES.
7. INSTALL TRAP SEAL PRIMER FOR FLOOR DRAINS AND HUB DRAINS ON COLD WATER SUPPLY TO NEAREST FREQUENTLY USED PLUMBING FIXTURE OR TO A TRAP SEAL PRIMER. INSTALL SOFT COPPER TUBING OR PEX PIPE TO FLOOR DRAIN AND HUB DRAIN.
8. FOR ACCESSIBLE LAVATORY INSULATE SANITARY AND HOT WATER PIPE WITH 1 IN. THICKNESS OF INSULATION. NOT REQUIRED IF KNEE CONTACT GUARD IS INSTALLED.
9. TEMPERATURE AND PRESSURE RELIEF VALVE FOR DOMESTIC WATER HEATER SHALL BE PIPED AND TERMINATED ABOVE THE HUB DRAIN, FLOOR DRAIN OR AS INDICATED ON DRAWINGS.
10. HEAT TRAPS SHALL BE INSTALLED TO ALL VERTICAL RISERS SERVING STORAGE WATER HEATERS AND STORAGE TANKS.
11. INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES TO EACH FIXTURE OR GROUP OF FIXTURES HAVING A QUICK CLOSING DEVICE OR SOLENOID OR HOSE BIB.

HVAC GENERAL NOTES FOR INSTALLATION

1. UNLESS OTHERWISE NOTED ALL DUCTWORK AND DUCTWORK ACCESSORIES SHALL BE GALVANIZED STEEL LOW PRESSURE. DUCTWORK CONSTRUCTION AND INSTALLATION SHALL BE AS PER THE REQUIREMENTS OF SMACNA.
 - 1.1 EXPOSED ROUND DUCT WORK INSIDE THE BUILDING SHALL BE SPIRAL.
2. ALL DUCTWORK TRANSVERSE JOINTS AND CONNECTIONS SHALL BE SEALED.
 - 2.1 EXHAUST DUCTWORK SERVING EXHAUST FANS, SHALL BE SEALED AT TRANSVERSE JOINTS AND CONNECTIONS.
 - 2.2 DUCTWORK EXPOSED TO THE EXTERIOR OF THE BUILDING, SHALL BE WATER TIGHT AND DUCT SEALANT SHALL BE WATERPROOF.
 - 2.3 FOR EXPOSED DUCTS INSIDE THE BUILDING, THE DUCT SEALANT SHALL BE APPLIED ON THE INSIDE OF THE DUCT JOINTS AND CONNECTIONS SUCH AS NOT TO BE VISIBLE ON THE OUTSIDE OF THE DUCT.
3. INTAKE AND EXHAUST DUCTWORK OPENINGS ON ROOF, SHALL BE INSTALLED WITH BIRDSCREEN.
4. FLEXIBLE DUCT LENGTH SHALL BE LIMITED TO 8FT. MAXIMUM AND SHALL BE FACTORY FABRICATED TO CAN/ULC S110 SHALL BE ALUMINUM FOIL REINFORCED FILM LAMINATE, PERMANENTLY BONDED TO A CORROSION RESISTANT COATED SPRING STEEL WIRE HELIX. WHERE IT IS REQUIRED TO BE INSULATED, IT SHALL BE INSULATED AS PER R-VALUE SPECIFIED BELOW.
5. DUCTWORK SHALL BE DEVELOPED AS FOLLOWS. ALL INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50.
 - 5.1 EXHAUST DUCT 8 FT. FROM EXTERIOR WALL AND ROOF, SHALL BE INSULATED WITH 2 IN. THICKNESS OF FIBREGLASS FLEXIBLE DUCT INSULATION WITH REINFORCED FOL/ARMT VAPOUR RETARDER FACING, DENSITY 0.75 PCF AND NOMINAL R-VALUE OF 6.7 H.F.T2"/BTU.
 - 5.2 SUPPLY AIR DUCTS LOCATED INSIDE THE BUILDING ENVELOPE IN CEILING SPACES AND BULKHEADS NOT USED AS RETURN AIR PLENUM OR IN UNHEATED OR NOT AIRCONDITIONED SPACES SHALL BE INSULATED WITH 1-1/2" IN. THICKNESS OF FIBREGLASS FLEXIBLE DUCTWRAP INSULATION WITH REINFORCED FOL/ARMT VAPOUR RETARDER FACING, DENSITY 0.75 PCF AND NOMINAL R-VALUE OF 5.0 H.F.T2"/BTU.
 - 5.3 WHERE SUPPLY AND RETURN AIR DUCTS RUN INSIDE THE BUILDING AND ARE NOT PROTECTED BY AN INSULATED EXTERIOR WALL OR ROOF OR WHERE THE DUCTS ARE EXPOSED TO AN UNHEATED SPACE, THEY SHALL BE INSULATED WITH A FLEXIBLE DUCTWRAP INSULATION WITH REINFORCED FOL/ARMT VAPOUR RETARDER FACING, DENSITY 0.75 PCF AND TO PROVIDE NOMINAL R-VALUE OF 12.0 H.F.T2"/BTU.
6. FASTENINGS:
 - 6.1 SELF ADHESIVE ALUMINUM TAPE ULC LABELED.
 - 6.2 LAP SEAL ADHESIVE, QUICK SETTING FOR JOINTS AND LAP SEALING OF VAPOUR BARRIERS.
 - 6.3 CONTACT ADHESIVE QUICK SETTING.
7. WHERE INDICATED ON THE DRAWINGS AND AS SPECIFIED BELOW, ACOUSTIC LINER FOR DUCTWORK SHALL BE 1" THICKNESS RIGID FIBREGLASS OF DENSITY 2.0 PCF. INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50. DUCT SIZE DIMENSION INDICATED ON DRAWING IS THE INTERNAL DIMENSION OF THE ASSEMBLED DUCT WITH ACOUSTIC LINER.
 - 7.1 INTERNALLY LINE THE RECTANGULAR SUPPLY AND RETURN DUCTS 10 FT. MINIMUM FROM PACKAGED HVAC UNIT AND AS PER LENGTH INDICATED ON DRAWINGS.
 - 7.2 TRANSFER AIR DUCTS.
8. WHERE DUCTS CROSS A FIRE SEPARATION, INSTALL FIRE DAMPERS TO SUIT APPLICATION AND BUILDING CONSTRUCTION OF WALL, FLOOR, CEILING AND ROOF. SHALL ALSO TAKE INTO CONSIDERATION THE THICKNESS OF BUILDING CONSTRUCTION. FIRE DAMPERS SHALL BE OF THE DYNAMIC CLOSURE TYPE WITH BLADE OUT OF AIRSTREAM, ULC LISTED AND FUSIBLE LINK WITH TEMPERATURE RATING TO SUIT APPLICATION. SHALL BE INSTALLED AS PER NFPA 80A WITH BREAKAWAY JOINTS, RETAINING ANGLES AND ACCESS DOOR ADJACENT TO FIRE DAMPER.
9. FOR DUCT PENETRATIONS AT WALL, VOIDS AROUND DUCT SHALL BE SEALED AND CAULKED TO MAINTAIN REQUIRED INTEGRITY.
10. FLEXIBLE CONNECTIONS SHALL BE GALVANIZED SHEET METAL FRAME 24 GAUGE WITH FABRIC CLINCHED BY MEANS OF DOUBLE LOCKED SEAMS. DIMENSIONS 3 IN. METAL, 3 IN. FABRIC, 3 IN. METAL. NEOPRENE DOUBLE COATED GLASS FIBRE, NON-COMBUSTIBLE, SELF-EXTINGUISHING, AIR TIGHT AND WATERPROOF, TEMPERATURE RATED AT -40 DEG.F TO PLUS 200 DEG. F AND DENSITY OF 39 OZ./YD2.
 - 10.1 INSTALL AT INLET/OUTLET OF IN-LINE EXHAUST FANS.
11. IN-LINE EXHAUST FANS SHALL BE INSTALLED WITH VIBRATION ISOLATORS.
12. INSTALL REFRIGERATION PIPING (SUCTION AND LIQUID LINES) FROM AIR CONDENSING UNITS/HEAT PUMPS TO THE RESPECTIVE COOLING COILS. REFRIGERANT COPPER TUBING AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH CSA-52. SUCTION LINE SHALL BE INSULATED WITH FLEXIBLE ELASTOMERIC THERMAL INSULATION 1/2" WALL THICKNESS. USE LONG RADIUS ELBOWS TO MINIMIZE EQUIVALENT LENGTH. INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50. ROUTING AND SIZING OF REFRIGERATION LINES SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
13. INSTALL HEAT PUMP ON EQUIPMENT MOUNTING PADS AS INDICATED ON DRAWINGS. INSTALL WITH VIBRATION ISOLATION PADS.
14. FAN COIL SHALL BE INSTALLED WITH CONDENSATE DRAIN P-PAP TRAP. HEIGHT OF TRAP SHALL AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUPPLY AND INSTALL CONDENSATE DRAIN LINE FROM FAN COIL TO TERMINATE ABOVE THE MOP SINK.

PLUMBING FIXTURES AND EQUIPMENT SCHEDULE

- WC1 WATER CLOSET BARRIER-FREE, FLOOR MOUNTED, FLUSH TANK TYPE, LOW CONSUMPTION 1.3 IMP. G. (4.8L), ELONGATED BOWL WHITE FINISH, AMERICAN STANDARD 215AA 054 CADET PRO RIGHT HEIGHT, WITH LINE TANK. OPEN FRONT SEAT LESS COVER, CENTOCO 5000CCS, WHITE FINISH. COMPLETE WITH FLEX SUPPLY WITH SCREWDRIVER LOCKSHIELD STRUCTURE.
- WC2 WATER CLOSET BARRIER-FREE, FLOOR MOUNTED, FLUSH TANK TYPE, LOW CONSUMPTION 1.07 IMP. G. (4.8L), ELONGATED BOWL WHITE FINISH, AMERICAN STANDARD 215AA 054 CADET PRO RIGHT HEIGHT, WITH LINE TANK. TOILET SEAT OPEN FRONT LESS COVER, CENTOCO 5000CCS, WHITE FINISH. COMPLETE WITH FLEX SUPPLY WITH SCREWDRIVER LOCKSHIELD STRUCTURE. SEAT SHALL BE LOCATED NOT LESS THAN 430 MM AND NOT MORE THAN 485MM ABOVE THE FLOOR.
- L1 LAVATORY WALL MOUNTED, VITREOUS CHINA, AMERICAN STANDARD 0355 012 LUCERNE, WITH FAUCET HOLES ON 4" CENTRES, FRONT OVERFLOW, WHITE FINISH. FAUCET SET, DELTA 516LF+HDF, 4" CENTRESET, 6" LEVER/ELBOW HANDLE, WITH OPEN GRID STRAINER. CHROME PLATED P-TRAP WITH CLEANOUT AND FLEX SUPPLIES WITH HANDLE LOCKSHIELD STRUCTURE. INSTALL WITH MECHANICAL MIXING VALVE AND WALL HANGER.
- L2 SEMI-COUNTER TOP SINK, BARRIER-FREE VITREOUS CHINA, AMERICAN STANDARD 9960.001 MEZZO ET EVERCLEAN, WITH CENTRE SINGLE HOLE, REAR OVERFLOW, WHITE FINISH. FAUCET SET, DELTA 2209S1 (1.9LPM), SINGLE LEVER, SINGLE HOLE MOUNT, LESS POP UP, OPEN GRID STRAINER. CHROME PLATED P-TRAP WITH CLEANOUT AND FLEX SUPPLIES WITH HANDLE LOCKSHIELD STRUCTURE. INSTALL WITH MECHANICAL MIXING VALVE. MOUNTING HEIGHT AND CLEARANCES BELOW THE BASIN SHALL COMPLY AS PER O.B.C. 3.8.3.11.
- V1 VANITY SINK, TOP MOUNTED, PORCELAIN, VIA VT-S0807, WITH SINGLE HOLE FAUCET HOLE, REAR OVERFLOW, WHITE FINISH. FAUCET SET, DELTA 2209S1 (1.9LPM), SINGLE LEVER, SINGLE HOLE MOUNT, LESS POP UP, OPEN GRID STRAINER. CHROME PLATED P-TRAP WITH CLEANOUT AND FLEX SUPPLIES WITH HANDLE LOCKSHIELD STRUCTURE. INSTALL WITH MECHANICAL MIXING VALVE.
- KS1 KITCHEN SINK, UNDER COUNTER TYPE, 1-BOWL, FINISH AS PER ARCHITECTURAL DRAWINGS, BLANCO PRECIS U1 SLAGRANT, OVERALL SIZE 18"x21"7", COMPLETE WITH STAINLESS STEEL STRAINER. FAUCET SET, KÖHLER K-30469 RIVAL SERIES. INSTALL WITH P-TRAP WITH CLEANOUT AND FLEX SUPPLIES WITH HANDLE LOCKSHIELD STRUCTURE.
- S1 LAB SINK, TOP MOUNT WITH LEDGE, 2-BOWL, FRANKLE LBD6408-316P-1, 316 STAINLESS STEEL, 18 GAUGE, OVERALL SIZE 20.5"x31.25"x8" DEEP, COMPLETE WITH STAINLESS STEEL STRAINER. FAUCET SET, KÖHLER K-22973 SINGLE LEVER WITH SPRAY HEAD, POLISHED CHROME, BRUSHED MODERNE BRASS. INSTALL WITH P-TRAP, CLEANOUT AND FLEX SUPPLIES WITH HANDLE LOCKSHIELD STRUCTURE.
- MS1 JANITOR MOP SINK FLOOR MOUNTED, FAT MSB-2424, WITH REMOVABLE STRAINER, VINYL BUMPER GUARDS ON 2 SIDES AND STAINLESS STEEL WALL GUARD ON TWO SIDES, MOP HANGER, HOSE AND HOSE BRACKET AND FAUCET PART #850-AA.
- DWH1 ELECTRIC DOMESTIC WATER HEATER, JOHN WOODS E801E-55208, 80 US.G STORAGE CAPACITY, WITH 5.5 KW UPPER AND LOWER HEATING ELEMENTS, ENERGY FACTOR 0.90. ELECTRICAL DATA: 115V/1/60.
- ET1 EXPANSION TANK FOR DOMESTIC POTABLE WATER SYSTEM, AMTROL MOD. ST-12 THERM-X-TROL, TANK VOLUME 4.5 US.G.
- FD1 FLOOR DRAIN FOR NON-MEMBRANE FINISHED FLOOR, WATTS FD-200-7, C/W TRAP PRIMER TAPPING, 1/2 IN. THK. x 5 IN. DIA. NICKEL BRONZE STRAINER.
- C1 CIRCULATION PUMP, BRONZE BODY SUITABLE FOR POTABLE HOT WATER, BELL & GOSSET NBF-10S, 1/2" SWEAT CONNECTION, FLOW 5 GPM AT 7 FT. OF HEAD, 2800 RPM. SHALL BE COMPLETE WITH:
 - AUTOMATIC TIMER KIT BELL & GOSSET TC-1, 115V/1/60, 16A MAXIMUM SWITCH CURRENT.
 - AQUASTAT COMBINATION BELL & GOSSET AGS-1/2, PUMP OFF AT 120 DEG.F/PUMP ON AT 100 DEG.F, 115V/1/60.
- HVAC EQUIPMENT SCHEDULE
- PU14 EXISTING PACKAGED ROOFTOP HVAC UNIT, DOWNFLOW CONFIGURATION, NATURAL GAS FIRED, ASHRAE 90.1 COMPLIANT, 7.5 TONS NOMINAL COOLING CAPACITY, 2-STAGE COOLING, HEATING INPUT CAPACITY 180/120 MBH AND 148/98 MBH HEATING OUTPUT CAPACITY. NOMINAL SUPPLY AIR 3000 CFM. -ECONOMIZER WITH BAROMETRIC RELIEF, SHALL BE ADJUSTED FOR 600 CFM FRESH AIR. ELECTRICAL DATA: 575V/3/60, 15 MCA, 20 MOP.
- PU15 EXISTING PACKAGED ROOFTOP HVAC UNIT, DOWNFLOW CONFIGURATION, NATURAL GAS FIRED, ASHRAE 90.1 COMPLIANT, 8.5 TONS NOMINAL COOLING CAPACITY, 2-STAGE COOLING, HEATING INPUT CAPACITY 180/120 MBH AND 148/98 MBH HEATING OUTPUT CAPACITY. NOMINAL SUPPLY AIR 3400 CFM. -ECONOMIZER WITH BAROMETRIC RELIEF, SHALL BE ADJUSTED FOR 600 CFM FRESH AIR. ELECTRICAL DATA: 575V/3/60, 15 MCA, 20 MOP.
- HP1 OUTDOOR HEAT PUMP, INVERTER DRIVEN, SINGLE ZONE, CARRIER 38MBR018AAS PERFORMANCE SERIES. COOLING OPERATING RANGE -22°F TO 122°F, HEATING OPERATING RANGE -22°F TO 86°F. TOTAL COOL. CAP. 18.5 MBH, S.H. CAP. 13.3 MBH, AT OUTDOOR AIR OF 86°F AND ROOM AIR OF 75.20B/62.6WB. COOLING PERFORMANCE: SEER 21.5, EER 12.5. HEATING CAPACITY 11.8 MBH AT OUTDOOR AIR OF 17.6°F AND ROOM AIR OF 71.6°F. HEATING PERFORMANCE: HSPF 7.2 (AT 47°F). SHALL BE INSTALLED COMPLETE WITH LIQUID LINE FILTER DRYER, CRANKCASE HEATER, BASE PAN HEATER, WIND BAFFLES AND SNOW STAND. ELECTRICAL DATA: 208-230V/1/60, 16 MCA, MOPC 25. SHALL POWER AND SERVE FAN COIL FC1.
- FC1 DUCTLESS HALL WALL MOUNTED, HEAT PUMP, CARRIER 40AMB09XK3, 18000 BTU/H NOMINAL COOLING CAPACITY, SELECTABLE FAN SPEED (AUTO, LOW, MED., HIGH), AIR SWEEP, AUTO RESTART, DIAGNOSTICS, DEHUMIDIFICATION MODE, CARBON FILTER. COMPLETE WITH:
 - WIRED REMOTE CONTROL, 7 DAY PROGRAMMABLE THERMOSTAT AND CONDENSATE PUMP.ELECTRICAL DATA: 208-230V/1/60, MCA 0.16. POWERED FROM HP1.
- EF1 TO EF4, EF6 EXHAUST FAN, CEILING MOUNTED, BROAN A110, 102 CFM AT 0.25" S.P., 0.3 SONES. ELECTRICAL DATA: 120V/1/60, 0.4 A. SHALL BE COMPLETE WITH MOTION SENSOR WITH TIME DELAY.
- EF5, EF7 EXHAUST FAN, CEILING MOUNTED, BROAN A110, 102 CFM AT 0.25" S.P., 0.3 SONES. ELECTRICAL DATA: 120V/1/60, 0.4 A. SHALL BE OPERATED BY ON/OFF ELECTRICAL SWITCH WITH INTEGRATED INDICATOR LIGHT. TO BE SUPPLIED AND INSTALLED BY ELECTRICAL DIVISION.
- TF1 TRANSFER FAN, CEILING MOUNTED, BROAN L100E, 132 CFM AT 0.125" S.P., 0.5 SONES. COMPLETE WITH VARIABLE SPEED CONTROLLER. ELECTRICAL DATA: 120V/1/60, 0.3A, 803 RPM.
- BP1 BY-PASS AIR TERMINAL UNIT, E.H. PRICE LGB SERIES, SIZE 8, RATED UP TO 700 CFM. SHALL BE COMPLETE WITH CONTROL PACKAGE FOR SEQUENCE 2502, FOR HEATING/COOLING WITH AUTOMATIC CHANGEOVER, BUILT-IN CONTROL TRANSFORMER 120 VAC/24 VAC AND ELECTRONIC WALL MOUNTED THERMOSTAT. TERMINAL UNIT SHALL BE ADJUSTED TO BY-PASS MODE OF DESIGN AIRFLOW. ELECTRICAL DATA: 120V/1/60.
- DIFFUSERS, GRILLES AND REGISTERS BY E.H. PRICE. COLOUR TO BE FINALIZED ON SITE BY OWNER.
 - REF. A: SQUARE CONE SUPPLY DIFFUSER, 24"x24"/SCD/31/3C, FOR T-BAR MOUNT
 - REF. B: SQUARE CONE SUPPLY DIFFUSER, 12"x12"/SCD/31/3C, WITH VOLUME DAMPER SURFACE MOUNT ADAPTOR FRAME FOR DRYWALL CEILING MOUNTING
 - REF. R: ROUND CONE SUPPLY DIFFUSER, 12" DIA. WITH VOLUME DAMPER SURFACE MOUNT ADAPTOR FRAME FOR DRYWALL CEILING MOUNTING
 - REF. SL1: SUPPLY LINEAR SLOT DIFFUSER, SDBI WITH INSULATED PLENUM, TYPE 2 FOR DRY WALL CEILING AND 1" SLOT WIDTH, WITH TYPE 2 FLUSH END CAPS
 - REF. SR1: SUPPLY REGISTER DOUBLE DEFLECTION, 5200/F/S/A, WITH VOLUME DAMPER
 - REF. R01: RETURN GRILLE, 82, 80/F/A
 - REF. TC1: TRANSFER GRILLE, 80/F/A
- FFH1 ELECTRIC FINISHED WALL HEATER, STELPRO WF SERIES, WALL RECESSED OR SURFACE MOUNTED AS INDICATED ON DRAWINGS, WITH BUILT-IN NON-TAMPERPROOF THERMOSTAT. FORCE TO BE SELECTED ON SITE. FOR SURFACE MOUNTED HEATERS, THEY SHALL BE INSTALLED WITH SURFACE ADAPTOR. ELECTRICAL DATA: 208V/1/60.
- BBH1 ELECTRIC BASEBOARD HEATER, STELPRO BRAVA SERIES, WITH BUILT-IN ELECTRONIC THERMOSTAT. WHITE FINISH. ELECTRICAL DATA: 120V/1/60.

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
	NEW LINES
	EXISTING LINES
	EQUIPMENT TO BE REMOVED
	EQUIPMENT TO BE RELOCATED
	EQUIPMENT TO BE REMOVED
	CAPPED LINE
	PIPE RISE
	PIPE DROP
	SANITARY LINE BELOW GRADE
	SANITARY LINE ABOVE GRADE
	STORM DRAIN LINE BELOW GRADE
	STORM DRAIN LINE ABOVE GRADE
	DOMESTIC COLD WATER CW
	DOMESTIC HOT WATER HW
	HOT WATER RECIRCULATION
	DOMESTIC WATER TEMPERED
	CONDENSATE DRAIN LINE
	CAPPED LINE
	FLOOR DRAIN
	HUB DRAIN
	FLOOR CLEANOUT
	LINE CLEANOUT
	GATE VALVE
	BALL VALVE
	BACKFLOW PREVENTOR
	HOSE BIB
	DRAIN VALVE WITH HOSE THREADED END
	SAFETY RELIEF VALVE
	WATER METER
	PUMP

HVAC LEGEND	
SYMBOL	DESCRIPTION
	NEW EQUIPMENT
	EQUIPMENT TO REMAIN
	EQUIPMENT TO BE REMOVED
	EQUIPMENT TO BE RELOCATED
	EQUIPMENT TO BE REMOVED
	DUCTING TO BE CAPPED
	SUPPLY DUCT
	EXHAUST/RETURN DUCT
	SUPPLY DIFFUSER
	SUPPLY REGISTER (WALL/SIDE DUCT MOUNTED)
	SUPPLY REGISTER
	ROUND DIFFUSER
	EXHAUST/RETURN GRILLE
	DIFFUSER/GRILLE DATA: A-REF, 2-L/S, 3-MM
	FLEXIBLE DUCT
	VOLUME CONTROL DAMPER
	SPLITTER DAMPER
	FIRE DAMPER
	EXHAUST FAN
	THERMOSTAT
	THERMOSTAT REVERSE ACTING 120V/1/60
	OPPOSED BLADE MOTORIZED DAMPER
	ACOUSTIC LINING
	DOOR GRILLE
	TRANSFER AIR ELBOW ACOUSTICALLY LINED
	CEILING CIRCULATING FAN
	GAS PRESSURE REGULATOR
	GAS PIPE
	PLUG VALVE
	GAS METER
	ELECTRIC FAN FORCED HEATER-BY MECH. DIV.
	ELECTRIC BASEBOARD HEATER-BY MECH. DIV.