

A. ADD PLUMBING REPLACEMENTS TO SCOPE OF WORK

See Mechanical Addendum #1 by Callidus Engineering, including revised drawings M1 & M2, dated January 29, 2025, attached to this addendum

B. MAKE GOOD ANY DAMAGE WHICH OCCURS TO EXISTING SURFACES WHERE SANITARY PIPING IS REPLACED

Match materials and finishes to those adjacent; refer to Specification Section 09210 Historic Plaster.

Paint entire ceiling of kitchenette; refer to Specification Section 09900 Painting.

Allow for painting of new sanitary piping.

C. Q: Are you open to a substitute for the undercabinet lighting?

A: As per Electrical General Requirements, Lighting #2 on drawing E1, products of equal quality by alternate manufacturers are also acceptable. Submit proposed data and photometric information of proposed substitute for review.

D. Q: For the electrical outlets, are they to be embedded in the current wall or surface mounted and the cabinet/backsplash built out to accommodate? With the panels and hydro meter there, it might be hard to run the wires through the wall.

A: New electrical outlets are to be recessed in the existing wall. Precise locations may vary to suit positions of existing electrical equipment on the reverse side of the wall.

END OF ARCHITECTURAL ADDENDUM ONE

ADDENDUM NO. 1

Attention: Shane Baker

Address: George Robb Architect
4800 Dundas St. W,
Toronto, ON

Date: January 29, 2025

Project #: CE-5977

Project: Whitehern House Kitchenette

Cc. *Don Scott*

Please amend the drawings and specifications for the above noted project as described below. Identify this addendum on the tender form to insure a complete tender form.

1. MECHANICAL

- 1.1. Removed fire protection from scope of work. Removed Partial Fire Protection Plan and note 3 on M1.
- 1.2. Removed fire protection specifications from drawing M2.
- 1.3. Added Partial Ground Level Sanitary Demo Plan to M1. Replace existing sanitary riser as shown on M1. Added note 4 and 5.
- 1.4. In room R1-09, replace sanitary piping on underside of ground floor slab as shown on M1.

2. ATTACHMENTS

- 2.1. M1, M2
-

END OF ADDENDUM No. 1

WE MAKE BUILDINGS WORK

LONDON
9-1385 NORTH ROUTLEDGE PARK
LONDON, ON N6H 5N5
T 519 472 7640

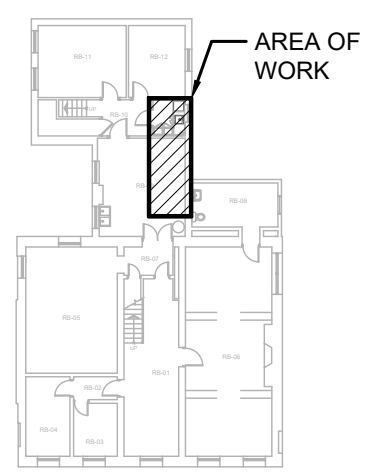
E info@callidus.ca

KINGSTON
4 CATARAQUI STREET., SUITE 100
KINGSTON, ON. K7K 1Z7
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KITCHENER
210-137 GLASGOW STREET
KITCHENER, ON. N2G 4X8
T 519 340-1885

KEYPLAN



PIPING LEGEND	
ITEM	DESCRIPTION
—	NEW ITEM
- - - -	EXISTING ITEM TO REMAIN
- - - -	BELOW FLOOR PIPING
- - - -	POTABLE (DOMESTIC) COLD WATER (DCW)
- - - -	POTABLE (DOMESTIC) HOT WATER (DHW)
- - - -	SANITARY DRAIN
— —	GATE VALVE
— —	BALL VALVE
— —	BACKFLOW PREVENTER
DCVA	DOUBLE CHECK VALVE ASSEMBLY
RP	REDUCED PRESSURE ASSEMBLY
— —	ELBOW TURNED UP
— —	ELBOW TURNED DOWN
— —	PIPE SINGLE LINE CUTOFF
— —	FLOOR CLEAN OUT
— —	WALL CLEAN OUT
FD	FLOOR DRAIN; FFD: FUNNEL FLOOR DRAIN; HD: HUB DRAIN
FE	FIRE EXTINGUISHER
— —	NEW CONNECTION TO EXISTING

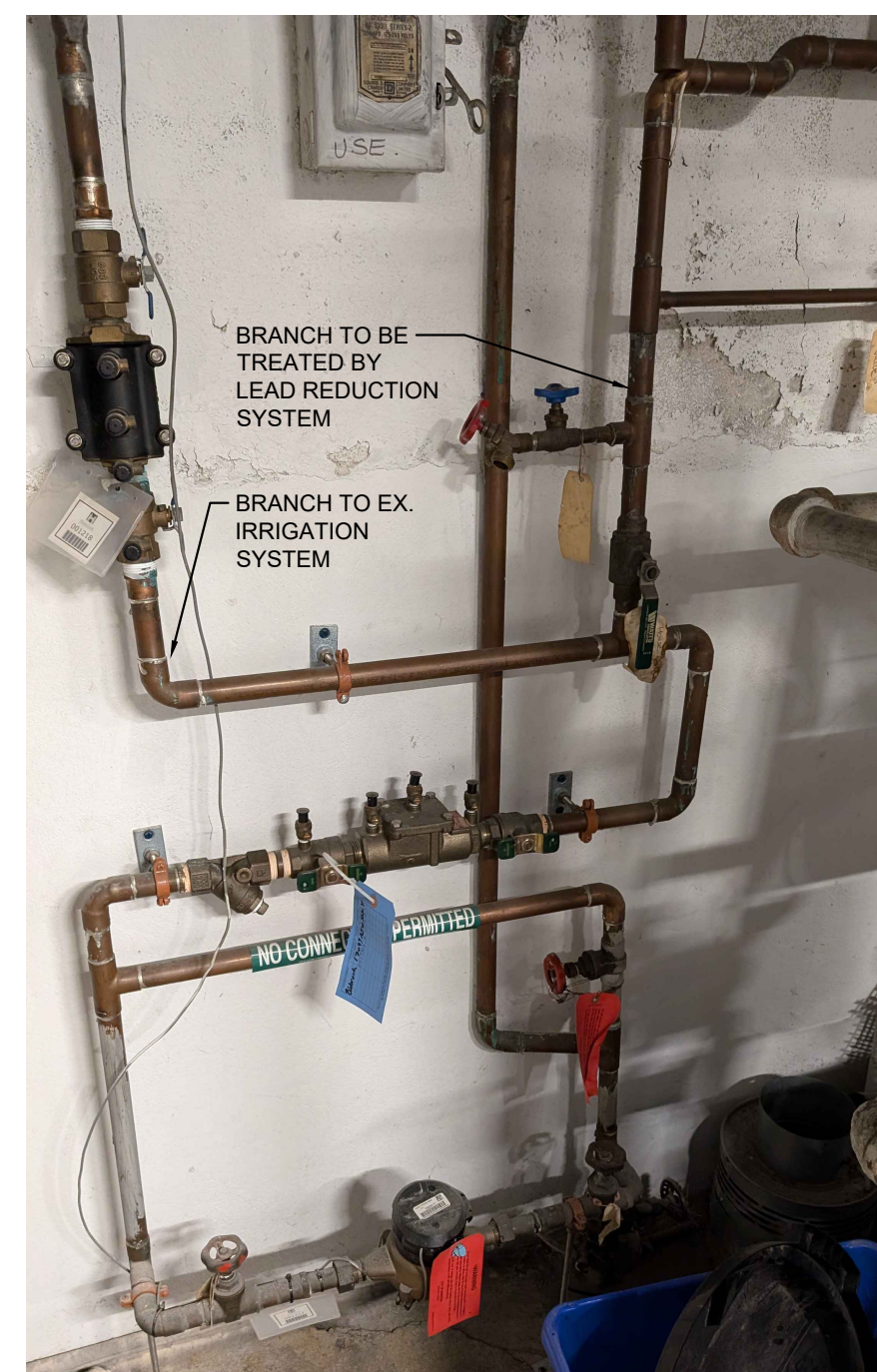
THIS IS A STANDARD LEGEND. ALL SYMBOLS MAY NOT NECESSARILY BE USED ON DRAWINGS.

GENERAL NOTES: (APPLICABLE TO ALL DRAWINGS)

- THESE DRAWINGS ARE AN INTEGRAL PART OF THE SPECIFICATIONS WHICH ACCOMPANY THEM.
- ALL MATERIALS AND WORKMANSHIP SHALL BE NEW UNLESS NOTED OTHERWISE. FREE OF DEFECTS, AND COMPLY WITH ALL APPLICABLE STANDARDS.
- ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.
- INSTALL PIPING TIGHT TO UNDERSIDE OF STRUCTURE UNLESS NOTED OTHERWISE.
- DO NOT SCALE DRAWINGS. OBTAIN ALL DIMENSIONS FROM EXISTING ARCHITECTURAL PLANS, SITE INSPECTIONS, AND MANUFACTURER'S SHOP DRAWINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED ASSEMBLIES.
- OPENINGS IN EXTERIOR WALLS AND ROOF ARE TO BE PROPERLY FLASHED AND MADE WEATHERPROOF.
- ALL NECESSARY CUTTING / PATCHING FOR MECHANICAL WORK SHALL BE PROVIDED BY APPROPRIATE TRADE(S) AT CONTRACTOR'S EXPENSE UNLESS NOTED OTHERWISE.
- MAKE GOOD ALL BUILDING COMPONENTS DAMAGED BY WORK OF THIS TRADE TO THE CONSULTANT SATISFACTION.
- PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE WORK. TREAT ALL SLEEVES OR HOLES PIERCING ACOUSTICAL SEPARATIONS FOR INSTALLATIONS OF THIS DIVISION TO MAINTAIN ACOUSTICAL RATING. ALL GAPS SHALL BE PACKED WITH ACOUSTICAL INSULATION AND SEALED AT BOTH ENDS WITH ACOUSTICAL CAULKING. PATCH ALL OPENINGS AROUND INSTALLATIONS OF THIS DIVISION PIERCING FIRE OR SMOKE SEPARATIONS WITH AN APPROVED WATERTIGHT SMOKE AND FIRE STOP SEALANT.
- INSTALL ALL EQUIPMENT & ASSOCIATED PIPING, APPURTENANCES TO PROVIDE MAINTENANCE ACCESS. ALLOW FOR ALL ACCESS DOORS REQUIRED FOR EQUIPMENT INSTALLATIONS & SERVICE. ENSURE PROPER ACCESS DOOR SIZE, TYPE AND FIRE RATING.
- COORDINATE ALL WORK WITH OTHER TRADES AND SUPPLIERS/MANUFACTURERS TO AVOID INTERFERENCES AND CONFLICTS BETWEEN SERVICES. PLAN WORK WELL IN ADVANCE TO ELIMINATE INSTALLATION AND COORDINATE DIFFICULTIES. COOPERATE WITH OTHER TRADES ON SITE TO RESOLVE INTERFERENCES TO SATISFACTORILY COMPLETE THE PROJECT.
- THIS TRADE IS RESPONSIBLE FOR ALL EXCAVATION / BACKFILL REQUIRED TO INSTALL SERVICES SHOWN ON THESE DRAWINGS.
- DEBRIS WILL BE KEPT TO A MINIMUM. ON COMPLETION OF CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, SITE SHALL BE CLEANED AND ALL SCRAP MATERIALS RESULTING FROM THE WORK SHALL BE REMOVED.
- PRIOR TO THE FINAL INSPECTION, ALL EQUIPMENT SHALL BE CLEANED. ALL CONSTRUCTION DUST AND DIRT SHALL BE REMOVED FROM INSTALLED EQUIPMENT AT THE END OF THE JOB.
- EXISTING INSTALLATIONS SHOWN FOR GENERAL REFERENCE ONLY. ATTEND SITE TO ASSESS WORK PRIOR TO BID SUBMISSION. INCLUDE ALL COSTS TO MODIFY AND / OR EXTEND NEW WORK AS REQUIRED TO MEET DESIGN INTENT. VERIFY ALL EXISTING DUCT / PIPE SIZES & CLEARANCES ON SITE.
- ALL EXISTING MECHANICAL EQUIPMENT TO REMAIN UNLESS NOTED OTHERWISE.
- SCHEDULE AND PHASE WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH WORK.
- ALLOW FOR SCOPING OF EXISTING CONCEALED DRAINAGE PIPING TO VERIFY LOCATION & ROUTING.

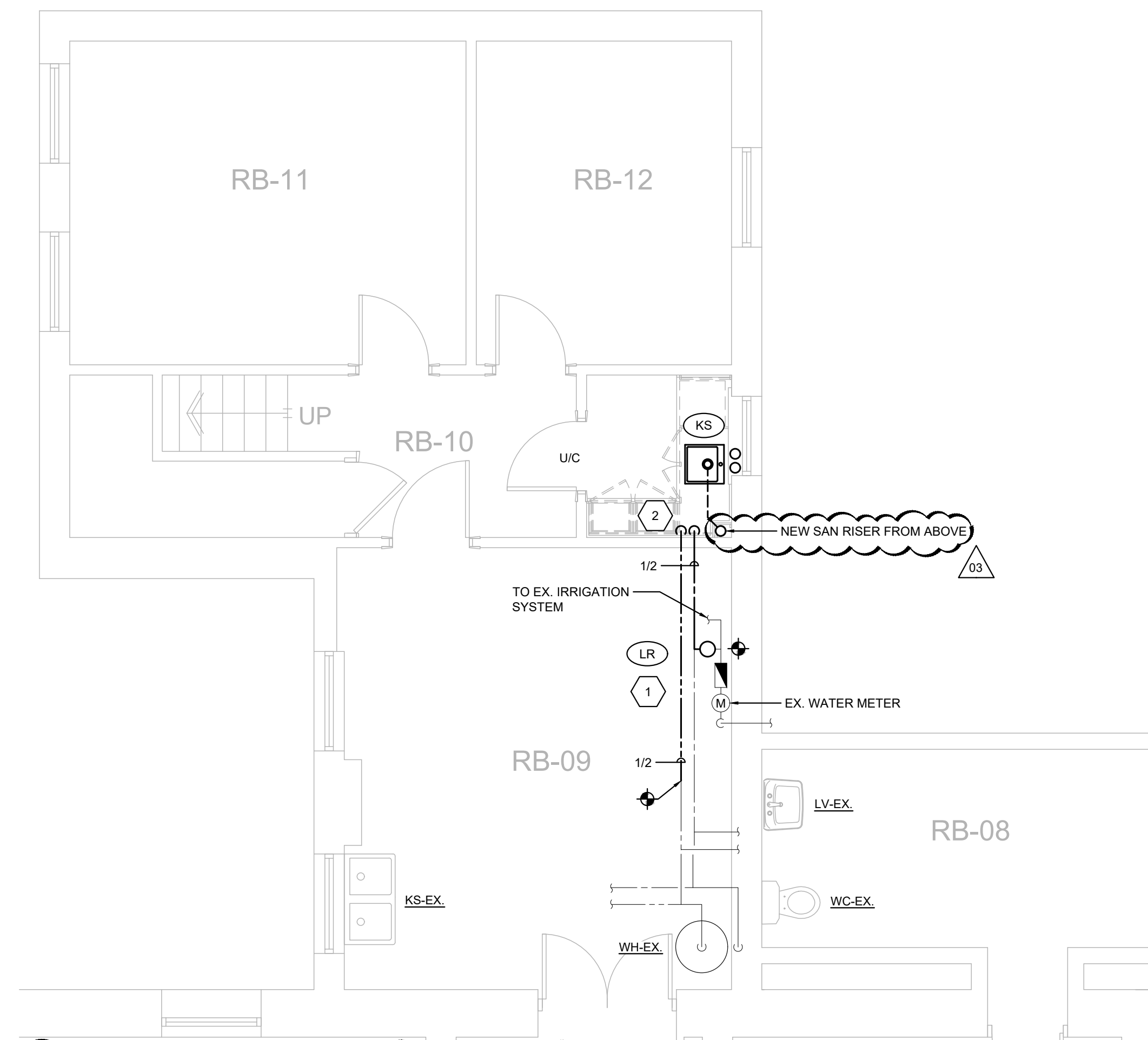
DRAWING NOTES (INDICATED WITH HEXAGONS):

1. FACILITATE INSTALLATION OF LEAD REDUCTION SYSTEM ON DOMESTIC COLD WATER PIPING UPSTREAM OF EXISTING WATER HEATER AND NEW & EXISTING FIXTURES, AND DOWNSTREAM OF EXISTING IRRIGATION SYSTEM. REFER TO INSTALLATION DETAIL FOR CLARIFICATION.
2. ROUTE DOMESTIC HOT & COLD WATER AND SANITARY PIPING THROUGH MILLWORK TO/FROM KITCHEN SINK.
3. NOT USED.
4. REMOVE AND REPLACE EXISTING SANITARY RISER TO BASEMENT FLOOR BELOW. PREPARE PIPING FOR RECONNECTION TO GROUND FLOOR SANITARY PIPING AND TO NEW FIXTURES ON BASEMENT FLOOR BELOW.
5. REMOVE AND REPLACE EXISTING SANITARY PIPING ON UNDERSIDE OF GROUND FLOOR SLAB IN THE REGION INDICATED. RESTORE SANITARY CONNECTIONS TO EXISTING FIXTURES IN ROOM R1-09 AS REQUIRED.



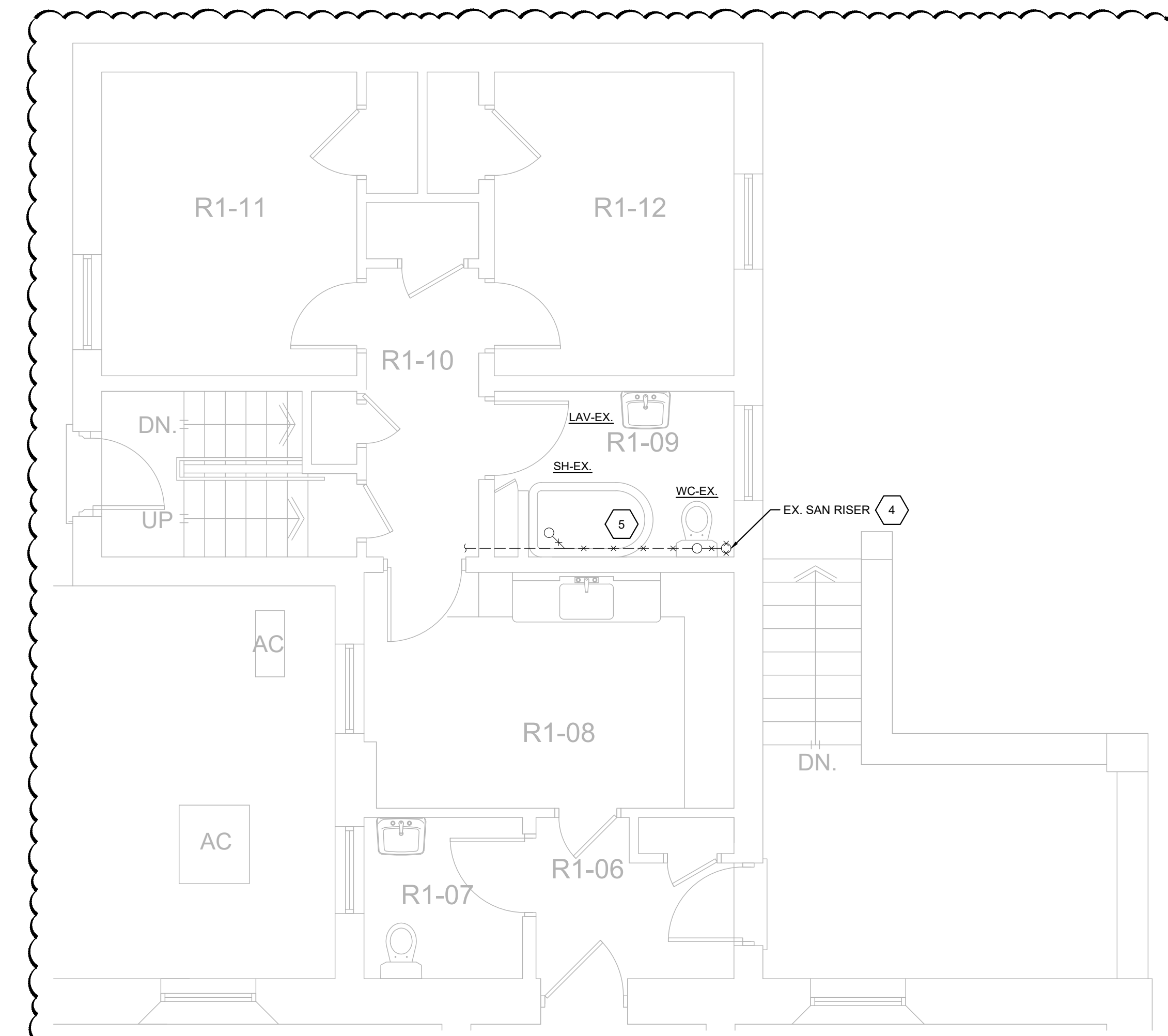
LEAD REDUCTION INSTALLATION REFERENCE DETAIL
SCALE: N.T.S.

PLUMBING FIXTURE SCHEDULE				
DWG REF	DESCRIPTION	HOT	COLD	DRAIN
KS	SINK: KRAUS MODEL KHT301-18 SINGLE BOWL, STAINLESS STEEL KITCHEN SINK. OVERALL DIMENSIONS 18"x18"x10" (450x450x250mm), SINGLE REAR CENTER SET DRAIN AND 35mm (1-3/8") TOP SPUD INLET. FAUCET: CHICAGO FAUCETS MODEL 434-ABCP SINGLE LEVER DECK MOUNTED SINK FAUCET WITH PULL DOWN SIDE SPRAY. CHROME PLATED. INTEGRAL TUBULAR BRASS SPOUT. DUAL PATTERN 1.5 USGPM OUTLET. DRAIN: BENEKE SOLID WHITE PLASTIC, OPEN FRONT WITH REMOVABLE BUMPERS, CONCEALED CHECK HINGE AND COVER.	13mm 1/2"	13mm 1/2"	32mm 1-1/4"
LR	AQUATELL PENTAIR LR-8850 HEAVY DUTY POLYPROPYLENE WHOLE-HOME LEAD REDUCTION SYSTEM, 40,000 GALLON CAPACITY & 10.0 GPM MAXIMUM FLOW RATE. C.W. MODEL 655210-43 REPLACEMENT CARTRIDGE	--	19mm 3/4"	--



PARTIAL BASEMENT FLOOR PLAN - PLUMBING

SCALE: 1/4" = 1'-0"



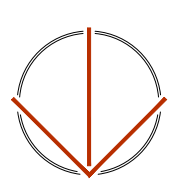
PARTIAL GROUND FLOOR PLAN - SANITARY DEMO

SCALE: 1/4" = 1'-0"

REVISIONS

NO.	ISSUED FOR	DATE
00	PERMIT / CONSTRUCTION	24.08.02
01	PERMIT / CONSTRUCTION	24.09.03
02	PERMIT / CONSTRUCTION	24.09.05
03	ADDENDUM 01	25.01.29

NORTH



DESIGN	TM	DRAWN	TM
CHECKED	JP	REVIEWED	JP

PROJECT

WHITEHERN HOUSE
KITCHENETTE DESIGN

ADDRESS

41 JACKSON STREET,
HAMILTON, ON

PROJECT NO.

CE-5977

DRAWING TITLE

MECHANICAL NOTES,
SCHEDULES, DETAILS,
PLUMBING & FIRE PROTECTION

DRAWING NUMBER

M1 OF 2

1. MECHANICAL GENERAL REQUIREMENTS:

- 1.1. GENERAL
1.1.1. MAKE SITE VISIT(S) AS NECESSARY BEFORE BID CLOSING TO ESTABLISH AND VERIFY ALL EXISTING CONDITIONS.
1.1.2. THE DRAWINGS SHOW THE GENERAL INTENT OF THE WORK, NOT THE DETAILS OF INSTALLATION.
1.1.3. DO NOT SCALE MECHANICAL DRAWINGS.
1.2. DESCRIPTION: PROVIDE WORK IN ACCORDANCE WITH FULL INTENT AND MEANING OF DRAWINGS AND SPECIFICATIONS.
1.3. WORKMANSHIP: PROVIDE ALL NEW MATERIALS AND EQUIPMENT WITH THE APPROPRIATE LISTING.
1.4. SLEEVES, HANGERS, INSERTS: PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE MECHANICAL WORK.
1.5. INTERPRETATION: DIVISION OF THE WORK AMONG SUPPLIERS OR VENDORS AND SUBCONTRACTORS IS SOLELY THE CONTRACTOR'S RESPONSIBILITY.
1.6. COORDINATION BETWEEN TRADES: CO-ORDINATE THE WORK OF THIS TRADE WITH ALL OTHER TRADES ON THE JOB.
1.7. DISCREPANCY: IF A DISCREPANCY IS FOUND IN THE SPECIFICATION OR ON THE DRAWINGS, REQUEST CLARIFICATION PRIOR TO THE END OF THE QUESTION PERIOD.
1.8. REGULATORY REQUIREMENTS: CONFORM TO GOVERNING MUNICIPAL AND PROVINCIAL CODES, RULES AND REGULATIONS AND/OR AUTHORITIES HAVING JURISDICTION.
1.9. CODES AND STANDARDS:
1.9.1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE, THE ONTARIO FIRE CODE AND ANY OTHER LOCAL REGULATIONS HAVING JURISDICTION OVER THE WORK OF THIS TRADE.
1.9.2. WHERE A CODE OR STANDARD IS REFERENCED, THE LATEST VERSION OF THE CODE OR STANDARD REFERENCED IN THE APPLICABLE BUILDING CODE IS TO BE APPLIED.
1.10. SAFETY: COMPLY WITH ALL PROVINCIAL, FEDERAL AND/OR LOCAL SAFETY REGULATIONS, INCLUDING THE OCCUPATIONAL HEALTH AND SAFETY ACT.
1.11. PERMITS AND FEES: OBTAIN ALL PERMITS REQUIRED FOR INSTALLATION OF MECHANICAL TRADES WORK.
1.12. TAXES: ENSURE THAT PROVINCIAL AND/OR FEDERAL TAXES ARE INCLUDED WHERE REQUIRED.
1.13. WARRANTY: PROVIDE A WRITTEN WARRANTY FOR ALL MATERIALS, EQUIPMENT AND LABOUR FOR A ONE-YEAR PERIOD TO BEGIN AT THE TIME OF SUBSTANTIAL COMPLETION.
1.14. CERTIFICATION: PROVIDE MANUFACTURER'S WRITTEN CERTIFICATION OF THE INSTALLATION AND OPERATION OF ALL SYSTEMS AND MAJOR EQUIPMENT.
1.15. EXISTING SERVICE:
1.15.1. DO NOT SHUT DOWN OR MAKE CONNECTIONS TO ANY EXISTING SERVICE WITHOUT WRITTEN PERMISSION OF THE OWNER.
1.15.2. BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF MECHANICAL EQUIPMENT AND SERVICES DESIGNATED FOR REMOVAL ON DRAWINGS.
1.16. SITE PROTECTION AND CLEANLINESS: PROTECT ALL WORK AND MATERIALS, BEFORE AND AFTER ERECTION, FROM WEATHER AND OTHER HAZARDS.
1.17. ADJUSTMENT AND OPERATION OF SYSTEMS: WHEN WORK IS COMPLETE, ADJUST ALL EQUIPMENT ITEMS OF VARIOUS SYSTEMS FOR PROPER OPERATION.
1.18. MISCELLANEOUS STEEL: SUPPLY AND INSTALL MISCELLANEOUS STRUCTURAL SUPPORTS, PLATFORMS, AND BRACES, AS REQUIRED TO HANG OR SUPPORT ALL EQUIPMENT, PIPING AND SIMILAR ITEMS.
1.19. EQUIPMENT INSTALLATION: INSTALL AND START UP ALL ITEMS OF EQUIPMENT, DEVICES AND SYSTEMS IN ACCORDANCE WITH MOST RECENT MANUFACTURER'S PUBLISHED GUIDELINES AND RECOMMENDATIONS.
1.20. CUTTING AND PATCHING: PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS TRADE.
1.21. SPARE PARTS / TOOLS TO BE FURNISHED:
1.21.1. ALL SPECIALTY TOOLS NECESSARY FOR EQUIPMENT INSTALLED IN THIS PROJECT.
1.22. CHANGES IN THE WORK: CHANGES TO THE CONTRACT REQUIRED ADDITIONS TO OR DELETIONS FROM THE WORK OF THIS DIVISION SHALL BE CARRIED OUT UPON WRITTEN REQUEST OF THE CONSULTANT.
1.24. SUBMITTALS:
1.24.1. SHOP DRAWINGS:
1.24.1.1. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT SUPPLIED BY MECHANICAL DIVISION.
1.24.1.2. SUBMIT UNITS OF MEASURE IN EITHER METRIC OR IMPERIAL THAT MATCH THOSE OF THE DRAWINGS.
1.24.1.3. PROVIDE TITLE SHEET INCLUDING PROJECT NAME, SHOP DRAWING NAME (INCLUDING SPECIFICATION CLAUSE REFERENCE).
1.24.1.4. EACH SHOP DRAWING MUST BEAR STAMP AND SIGNATURE OF RESPONSIBLE OFFICIAL IN CONTRACTOR'S AND SUBCONTRACTOR'S ORGANIZATION.
1.24.2. OPERATION AND MAINTENANCE INSTRUCTION MANUALS:
1.24.2.1. PROVIDE PDF COPIES OF COMPLETE OPERATION AND MAINTENANCE INSTRUCTIONS FOR EQUIPMENT FURNISHED UNDER THIS CONTRACT. MANUAL

TO BE ORGANIZED WITH BOOKMARKS IN A FORMAT TO MATCH THE SPECIFICATION SECTIONS. ONCE MANUAL IS REVIEWED AND ACCEPTED, PROVIDE PDF VERSION ON ELECTRONIC MEDIA.

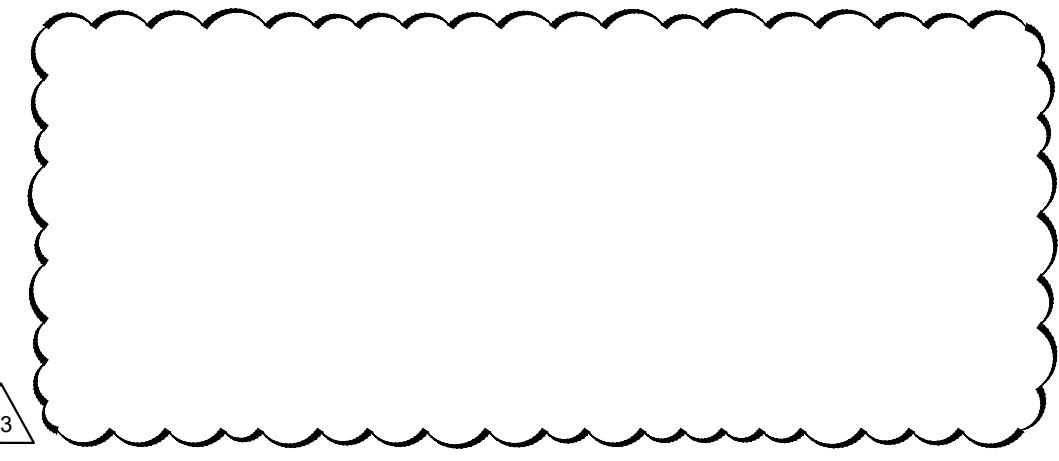
- 1.24.2.2. MANUALS SHALL INCLUDE THE FOLLOWING INFORMATION:
CONTACT INFORMATION OF CONSULTANTS AND CONTRACTORS
COMPLETE SET OF FINAL PROJECT SHOP DRAWINGS
MAINTENANCE INSTRUCTIONS, INCLUDING PREVENTIVE MAINTENANCE INSTRUCTIONS FOR COMPONENTS OF EQUIPMENT
FINAL TESTING AND BALANCING REPORT
MANUFACTURERS' WARRANTIES AND GUARANTEES
1.24.3. AS-BUILT DRAWINGS:
1.24.3.1. MAINTAIN AN ACCURATE RECORD OF DEVIATIONS AND CHANGES FROM CONTRACT DRAWINGS WITH RED LINE MARKINGS.
1.24.3.2. FORMAT FILES TO MATCH EXACTLY THE LAYERING SYSTEM AND SYMBOLOGY OF THE CONSULTANT.
1.24.3.3. THE AS-BUILT DRAWINGS SHALL HAVE A VALUE OF \$5,000 UNLESS THE MECHANICAL CONTRACT VALUE IS LESS THAN \$100,000 WHICH SHALL HAVE A \$3,000 VALUE.
1.24.3.4. THIS PROJECT UTILIZED THE FOLLOWING DIGITAL FORMAT(S): AUTOCAD
1.25. EQUIPMENT NAMEPLATES: PROVIDE LAMINATED WHITE PHENOLIC PLASTIC NAMEPLATES WITH 10 MM HIGH BLACK LETTERS FOR EQUIPMENT INSTALLED UNDER THIS DIVISION.
1.26. FIRESTOPPING AND SMOKE SEAL:
1.26.1. PROVIDE ULC LISTED FIRESTOP SYSTEM TO SEAL AROUND ALL MECHANICAL SERVICES WHICH PENETRATE PART OF A BUILDING ASSEMBLY REQUIRED TO HAVE A FIRE RESISTANCE RATING.
1.26.2. SUBMIT DETAILED SHOP DRAWINGS TO THE CONSULTANT FOR REVIEW.
1.27. MECHANICAL PROJECT COMPLIANCE:
1.27.1. THE FOLLOWING DOCUMENTS AND/OR CONFIRMATION IS REQUIRED TO ALLOW THE CONSULTANT TO ISSUE OUR LETTER OF GENERAL REVIEWS:
1.28. TESTING AND BALANCING:
2.1. PRESSURE TESTS:
2.1.1. PROVIDE PRESSURE TESTS ON ALL PIPING INCLUDED IN THIS CONTRACT.
2.1.2. CONDUCT HYDROSTATIC TESTS FOR A MINIMUM PERIOD OF 2 HOURS.
2.1.3. FOR PNEUMATIC TESTS, FIRST PRESSURIZE SYSTEM WITH AIR TO APPROXIMATELY ONE-HALF SPECIFIED PRESSURE.
2.1.4. FORWARD COPIES OF ALL FINAL TESTS ON ALL PRESSURE AND DRAINAGE PIPING TO CONSULTANT.
3. MECHANICAL INSULATION:
3.1. WHERE INSULATION THICKNESS IS NOT IDENTIFIED, COMPLY WITH ASHRAE 90.1 REQUIREMENTS.
3.2. ALL PRODUCTS TO HAVE FLAME SPREAD RATING LESS THAN 25 AND SMOKE DEVELOPED CLASSIFICATION LESS THAN 50 IN COMPLIANCE WITH CANULC-S102.
3.3. PROVIDE A CONTINUOUS VAPOUR BARRIER ON ALL COLD SYSTEMS.
3.4. DEFINITIONS:
CONCEALED: INSULATED MECHANICAL SERVICES AND EQUIPMENT IN SUSPENDED CEILING AND NON ACCESSIBLE CHASES AND FURRED IN SPACES.
EXPOSED: NOT CONCEALED
3.5. INSULATION TYPES:
3.5.1. PGF - PREFORMED GLASS FIBRE: FIBROUS GLASS SPLIT SECTIONAL PIPE INSULATION CONFORMING TO CANULC C-S102.
3.5.2. FGF - FLEXIBLE GLASS FIBRE: ASTM C553 FLEXIBLE NON-COMBUSTIBLE BLANKET.
3.5.3. RGF - RIGID GLASS FIBRE: ASTM C612 RIGID NON-COMBUSTIBLE BLANKET.
3.5.4. CF - CELLULAR FOAM: ASTM C534/C534M FLEXIBLE, CELLULAR ELASTOMERIC, MOULDED OR SHEET WITH ANTIMICROBIAL COATING.
3.6. PIPING:
3.6.1. DO NOT INSULATE FLANGES OR UNIONS AT CONNECTION TO EQUIPMENT.
3.6.2. VALVE OPERATORS AND BALANCING VALVE TEST PORTS TO BE ACCESSIBLE WITHOUT REMOVAL OF INSULATION.
3.6.3. PIPE INSULATION INSERTS AND SHIELDS: PROVIDE RIGID INSERTS AND SHIELDS AT ALL HANGER SUPPORTS WHERE PIPING IS INSULATED.
3.6.4. PIPE INSULATION TYPE AND THICKNESS:
3.6.4.1. PLUMBING:
3.6.4.1.1. POTABLE (DOMESTIC) COLD WATER AND CITY WATER (PGF): 25 MM (1")
3.6.4.1.2. POTABLE (DOMESTIC) HOT WATER (PGF):
<=32 MM (1-1/4") - 25 MM (1")
>=40 MM (1-1/2") - 40 MM (1-1/2")
3.6.4.1.3. SANITARY DRAIN (PGF): 25 MM (1")
3.6.5. APPLICATION:
3.6.5.1. COMPLETELY INSULATE THE FOLLOWING SYSTEMS:
-POTABLE (DOMESTIC) COLD WATER
-POTABLE (DOMESTIC) HOT WATER
3.6.5.2. SANITARY DRAIN:
3.6.5.2.1. INSULATE HORIZONTAL ABOVE FLOOR STORM AND SANITARY DRAIN PIPING WITHIN BUILDING.
3.6.5.2.2. INSULATE VERTICAL SECTIONS OF RAINWATER CONDUCTORS BETWEEN BODY OF ROOF DRAIN AND HORIZONTAL SECTION OF PIPE, ALSO ANY EXPOSED VERTICAL PIPING IN HIGH HUMIDITY AREAS SUCH AS LOCKER AND SHOWER ROOMS.

3. SURFACE FINISHES:

- 3.7.1. PIPING:
3.7.1.1. EXPOSED INTERIOR PIPING: FINISH EXPOSED INSULATED PIPING, VALVES AND FITTINGS WITH PVC JACKETING.
3.7.1.2. SANITARY PIPING: FINISH INSULATED SANITARY PIPING BELOW BARRIER FREE LAVATORY TRAPS WITH PVC JACKETING.
3.7.1.6. POLYETHYLENE: TO CSA B137.1. BUTT FUSION FITTINGS TO ASTM D3261.
3.7.1.7. GALVANIZED STEEL: TO ASTM A52/A52M.
4. PIPING SYSTEMS:
4.1. GENERAL:
4.1.1. EXPANSION AND CONTRACTION: INSTALL ALL PIPING SO AS TO BE FREE FROM STRAIN AND DISTORTION DUE TO EXPANSION AND CONTRACTION AS GOVERNED BY REQUIREMENTS OF ANSI B31.1.
4.1.2. LINES, GRADES AND SLOPES:
4.1.2.1. INSTALL LIQUID AND AIR PIPING FREE OF POCKETS AND PITCH TO DRAIN, AT LOW POINTS IN PIPING.
4.1.2.2. INSTALL PIPING TO FOLLOWING SLOPES:
DRAINAGE PIPING: 1:50 ON DRAINS OF NPS 3 SIZE AND LESS AND 1:100 ON DRAINS OF NPS 4 AND LARGER.
POTABLE (DOMESTIC) WATER PIPING: PITCH TO LOW POINTS SO THAT ALL PIPING MAY BE COMPLETELY DRAINED.
4.1.3. UNIONS OR FLANGES - PROVIDE IN THE FOLLOWING LOCATIONS:
4.1.3.1. FOR BY-PASSES AROUND EQUIPMENT, CONTROL VALVES, DEVICES IN PIPING SYSTEMS, AND ELSEWHERE INDICATED ON DRAWINGS.
4.1.3.2. AT CONNECTIONS TO EQUIPMENT (LOCATE BETWEEN SHUT-OFF VALVE AND EQUIPMENT).
4.1.3.3. PROVIDE DIELECTRIC UNIONS, OR INSULATING TYPE COMPANION FLANGES, AT ALL CONNECTIONS BETWEEN COPPER TUBING AND FERROUS PIPING.
4.1.4. PIPING CONNECTIONS TO MAINS:
4.1.4.1. MAKE BRANCH CONNECTIONS OF STEAM, GAS, AND COMPRESSED AIR PIPING, TO RESPECTIVE HORIZONTAL PIPING OF LARGER DIAMETER.
4.1.4.2. MAKE DOWN FEED PIPING CONNECTIONS, TO HORIZONTAL SUPPLY AND RETURN WATER MAINS, ON BOTTOM QUADRANT OF MAINS.
4.1.5. SLEEVES:
4.1.5.1. INSTALL SLEEVES WHERE PIPING PASSES THROUGH FOUNDATIONS, ABOVE GRADE FLOORS, AND WALLS.
4.1.5.2. SLEEVES FOR PIPING PASSING THROUGH ROOFS WILL BE SUPPLIED AND INSTALLED UNDER THIS DIVISION.
4.1.5.3. MAKE SLEEVES LARGE ENOUGH TO PASS FULL THICKNESS OF PIPE COVERING WHERE SAME IS USED, AND WITH SUFFICIENT CLEARANCE BETWEEN PIPE AND SLEEVE TO ALLOW FOR ANY LATERAL MOVEMENT OF PIPING DUE TO EXPANSION AND CONTRACTION.
4.1.5.4. FILL SLEEVES FOR FUTURE USE WITH LIME MORTAR.
4.1.6. ESCUTCHEON PLATES: PROVIDE ESCUTCHEON PLATES ON BARE PIPING PASSING THROUGH FINISHED WALLS OR FLOORS.
4.1.7. PIPE IDENTIFICATION:
4.1.7.1. LABEL PIPING INSTALLED UNDER THIS DIVISION TO INDICATE CONTENT AND DIRECTION OF FLOW.
4.1.7.2. ALL LABELS SHALL BE OF SUFFICIENT WIDTH TO OVERLAP ITSELF.
4.1.7.3. PROVIDE LABELS OF PLASTIC COATED TAPE, WITH SELF-ADHESIVE BACKING SURFACE.
4.1.7.4. LOCATE LABELS AS FOLLOWS: AT EVERY END OF EVERY PIPE RUN, ADJACENT TO VALVE OR ITEM OF EQUIPMENT SERVICES.
4.2. HANGERS AND SUPPORTS:
4.2.1. GENERAL:
4.2.1.1. PIPE HANGERS & SUPPORTS TO CSA B214 & MSS SP-58.
4.2.1.2. SUPPORT OR SUSPEND ALL PIPING WITH NECESSARY HANGERS, STRUCTURAL SUPPORTS AND/OR BRACKETS AS REQUIRED.
4.2.1.3. DO NOT ALLOW LOADS, OF ANY NATURE, TO BE TRANSMITTED THROUGH PIPING CONNECTIONS TO EQUIPMENT.
4.2.1.4. PROVIDE SUITABLY DAMPENED SPRING HANGERS FOR FIRST THREE SUPPORTS FROM EQUIPMENT CONNECTION ON PIPING SUBJECT TO EXCESSIVE MOVEMENT.
4.2.1.5. DO NOT HANG ANY PIPE, FROM ANOTHER PIPE OR FROM ROOF DECK, UNLESS SPECIFICALLY INDICATED ON DRAWINGS.
4.2.1.6. PROVIDE DIELECTRIC SEPARATION AS REQUIRED.
4.2.2. HANGERS:
4.2.2.1. FOR ALL INSULATED PIPING UP TO NPS 4, CARRYING LIQUIDS AT TEMPERATURES 10.5°C (51°F) AND HIGHER, USE STANDARD WEIGHT CLEVIS HANGERS.
4.2.2.2. FOR INSULATED PIPING CARRYING LIQUIDS AT A TEMPERATURE OF 10°C (50°F) OR LESS, USE ELONGATED CLEVIS TYPE HANGERS.
4.2.2.3. PROVIDE INSULATION PROTECTION BEARING PLATES AT ALL HANGERS AND SUPPORTS FOR ALL INSULATED PIPING.
4.2.2.4. FOR NON-INSULATED PIPING USE CLEVIS TYPE OR WROUGHT STEEL CONSTRUCTION.
4.2.2.5. FOR COPPER TUBING PROVIDE COPPER COATED HANGERS.
4.2.2.6. ATTACH HANGER RODS, TO BUILDING STRUCTURE, BY MEANS OF MALLEABLE IRON BEAM CLAMPS OR CONCRETE INSERTS.
4.2.3. HANGER SPACING:
4.2.3.1. FOR HORIZONTAL RUNS OF PLUMBING AND DRAINAGE PIPING COMPLY WITH HANGER SPACING REQUIREMENTS OF BUILDING CODE.
4.2.3.2. IN A HORIZONTAL RUN, PEX TUBING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 800 MM (32"), UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER.
4.2.4. VERTICAL PIPING SUPPORTS:
4.2.4.1. SUPPORT VERTICAL PLUMBING AND DRAINAGE PIPING AS REQUIRED BY THE BUILDING CODE, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED HEREIN.
4.2.4.2. PROVIDE LATERAL STABILITY, OF VERTICAL PIPING, BY FABRICATED BRACKETS OR MALLEABLE IRON EXTENSION TYPE SPLIT HANGERS.
4.3. MATERIALS OF CONSTRUCTION:
4.3.1. SANITARY AND INDIRECT DRAIN (INCLUDING VENTING):
4.3.1.1. REFERENCE STANDARDS:
4.3.1.1.1. CAST IRON: TO CSA B70. MECHANICAL FITTINGS TO CSA B602.
4.3.1.1.2. COPPER, DWV: HARD DRAWN COPPER DRAINAGE TUBE CONFORMING TO ASTM B 306 WITH WROUGHT COPPER OR CAST

BRASS SOLDER JOINT DRAINAGE FITTINGS TO ASME B16.29 OR ASME B16-29.

- 4.3.1.1.3. PVC, DWV: TO CAN/CSA-B182.1 OR B182.2. RUBBER RING GASKETS INTEGRAL WITH BELL OR SOLVENT WELD TO ASTM D2564.
4.3.1.1.4. PVC, SYSTEM 15: TO CSA B182.2. FLAME SPREAD RATING NOT GREATER THAN 25 PER CANULC 102.2 WITH CERTIFICATION LABEL.
4.3.1.1.5. PVC, XFR: TO CSA B182.2. FLAME SPREAD RATING NOT GREATER THAN 25 & SMOKE DEVELOPED CLASSIFICATION NOT GREATER THAN 50 PER CANULC 102.2 WITH CERTIFICATION LABEL.
4.3.1.1.6. POLYETHYLENE: TO CSA B137.1. BUTT FUSION FITTINGS TO ASTM D3261.
4.3.1.1.7. GALVANIZED STEEL: TO ASTM A52/A52M.
4.3.1.2. APPLICATION:
4.3.1.2.1. ABOVE GRADE:
4.3.1.2.1.1. PIPING 75 MM (3") AND SMALLER: DWV COPPER
4.3.1.2.1.2. PIPING 150 MM (6") AND SMALLER: PVC DWV
4.3.2. POTABLE (DOMESTIC) HOT AND COLD WATER:
4.3.2.1. REFERENCE STANDARDS:
4.3.2.1.1. ALL MATERIALS TO BE NSF/ANSI 61 & 372 CERTIFIED.
4.3.2.1.2. COPPER:
4.3.2.1.2.1. PIPING: SEAMLESS WATER TUBE TO ASTM B88
4.3.2.1.2.2. FITTINGS:
SOLDER JOINT FITTINGS TO ASME B16.18 (CAST) OR B16.22 (WROUGHT) OR
COLD PRESS FITTINGS WITH EPDM SEALING ELEMENT TO ASME B16.18 OR ASME B16.22.
4.3.2.1.3. PEX-A:
4.3.2.1.3.1. CROSSLINKED POLYETHYLENE PIPING TO CANULC-S115.
4.3.2.1.3.2. SEAL PENETRATIONS AT FIRE SEPARATIONS PER CANULC-S115.
4.3.2.1.3.3. PIPING WITHIN A FIRE SEPARATION PER CANULC-S101.
4.3.2.1.3.4. ALL FITTINGS BY TUBING MANUFACTURER.
4.3.2.1.3.5. 25 YEAR CSA SYSTEM WARRANTY (INCLUDING CONSEQUENTIAL) FROM INSTALLATION DATE.
4.3.2.1.4. PVC: TO CSA B137.3 OR CSA B137.2. MINIMUM PRESSURE RATING 1,100 KPA (160 PSi).
4.3.2.2. APPLICATION:
4.3.2.2.1. ABOVE GROUND PIPING 75 MM (3") AND SMALLER:
4.3.2.2.1.1. TYPE "L" HARD DRAWN COPPER TUBING.
4.3.2.2.1.2. PEX-A FOR 38 MM (1-1/2") AND SMALLER (ON COMPLETION OF INSTALLATION THE SYSTEM SHALL BE CHARGED WITH POTABLE WATER TO A PRESSURE WHICH MEETS LOCAL PLUMBING CODES.
4.3.2.2.1.3. CPVC: BUILDINGS OF NON-COMBUSTIBLE CONSTRUCTION, HIGH-RISE BUILDINGS AND IN RETURN AIR FLEXUMS.
4.3.2.2.2. FIRE PROTECTION:
NOT USED.
4.3.2.2.3. FIRE PROTECTION SYSTEM:
NOT USED.



6. PLUMBING SYSTEM:

- 6.1. REFERENCES STANDARDS:
6.1.1. CONFORM TO ALL APPLICABLE CODES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
6.1.1.1. CSA B64.10: SELECTION AND INSTALLATION OF BACKFLOW PREVENTERS
6.1.1.2. CSA B149.1: NATURAL GAS AND PROPANE INSTALLATION CODE
6.2. VENTING, PLUMBING VENTING MAY NOT BE SHOWN ON DRAWINGS.
6.3. STERILIZATION OF POTABLE (DOMESTIC) WATER SYSTEMS:
6.3.1. FLUSH EACH SYSTEM, AFTER COMPLETION, BY ALLOWING FULL FLOW OF WATER THROUGH SYSTEM FOR A PERIOD OF FIFTEEN MINUTES.
6.3.2. AFTER FLUSHING OF THE SYSTEM IS COMPLETED, PROVIDE A 24 HOUR CONTACT STERILIZATION TREATMENT BY TREATING THE WATER WITH 50 PPM OF CHLORINE AS RECOMMENDED IN ANWA SPECIFICATION C-651.
6.4. PLUMBING FIXTURES:
6.4.1. PROVIDE CSA COMPLIANT PLUMBING FIXTURES.
6.4.2. PROVIDE PLUMBING FIXTURES AS INDICATED IN SCHEDULE ON DRAWINGS.
6.4.3. CALLK ALL AROUND BASES OF MOP SERVICE SINKS, BUILT-IN BATHTUBS, AND OTHER BUILT-IN FIXTURES.
6.5. VALVES:
6.5.1. SUBMIT SHOP DRAWINGS FOR ALL VALVES.
6.5.2. POTABLE (DOMESTIC) WATER:
6.5.2.1. REFERENCE STANDARDS:
6.5.2.1.1. LEAD FREE, 0.25% CONTENT PER NSF-61/372
6.5.2.1.2. BRONZE TO ASTM C893/30
6.5.2.1.3. BRASS TO ASTM C467/50
6.5.2.1.4. CAST IRON TO ASTM A126
6.5.2.1.5. STAINLESS STEEL TO ASTM A351
6.5.2.1.6. CPVC RATED TO 1,600 KPA (232 PSi) AT 23°C (73°F)
6.5.2.1.7. ALL PRESSURE RATINGS, SIZES TO MSS SP-25
6.5.2.2. ISOLATION / SHUT-OFF: 2 PIECE BRASS OR BRONZE BODY, 1.034 KPA (150 PSi) 80 WOG RATING, FULL PORT, STAINLESS STEEL BALL, LOCKING LEVER HANDLE WITH INSULATION STEM EXTENSION, SOLDERED, THREADED OR PEX CONNECTIONS.
6.6. PLUMBING SPECIALTIES:
6.6.1. WATER HAMMER ARRESTORS: PROVIDE IN ACCORDANCE WITH THE PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH-201. ARRESTORS SHALL BE COPPER CONSTRUCTION WITH BELLOWS SIZED TO PDI WH-201 AND PRE-CHARGED FOR OPERATION IN TEMPERATURE RANGE -0.5C TO 62C (33F TO 160F) AND A MAXIMUM 10.6 BAR (150 PSi) WORKING PRESSURE.

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Table with 3 columns: NO., ISSUED FOR, DATE. Contains revision 03 for ADDENDUM 01 dated 25.01.29.

NORTH arrow and Professional Engineer stamp for J.J. PEPPER, License No. 100114890.

Table with 4 columns: DESIGN, TM, DRAWN, TM. Checked by JP, Drawn by JP.

PROJECT: WHITEHERN HOUSE KITCHENETTE DESIGN

ADDRESS: 41 JACKSON STREET, HAMILTON, ON

PROJECT NO.: CE-5977

DRAWING TITLE: MECHANICAL SPECIFICATIONS

DRAWING NUMBER: M2 OF 2