#### 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

January 29, 2025

Attention: Shane Baker Project #: CE-5977

Address: George Robb Architect Project: Whitehern House Kitchenette

4800 Dundas St. W, Cc. Don Scott

Toronto, ON

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

Date:

- 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

T 613 900 0845

W www.callidus.ca

KITCHENER

210-137 GLASGOW STREET KITCHENER, ON. N2G 4X8

T 519 340-1885

PIPING LEGEND				
ITEM	DESCRIPTION			
	NEW ITEM			
	EXISTING ITEM TO REMAIN			
	BELOW FLOOR PIPING			
	POTABLE (DOMESTIC) COLD WATER (DCW)			
	POTABLE (DOMESTIC) HOT WATER (DHW)			
—SAN—	SANITARY DRAIN			
—⋈—	GATE VALVE			
—ф—	BALL VALVE			
	BACKFLOW PREVENTER			
DCVA	DOUBLE CHECK VALVE ASSEMBLY			
RP	REDUCED PRESSURE ASSEMBLY			
<b>O</b> —	ELBOW TURNED UP			
c	ELBOW TURNED DOWN			
<del></del>	PIPE SINGLE LINE CUTOFF			
<b>—</b> co	FLOOR CLEAN OUT			
—IIco	WALL CLEAN OUT			
FD <b>②</b> C	FLOOR DRAIN; FFD: FUNNEL FLOOR DRAIN; HD: HUB DRAIN			
<b>€</b> FEX	FIRE EXTINGUISHER			
<b>\( \begin{array}{c} \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ </b>	NEW CONNECTION TO EXISTING			



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

### 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):

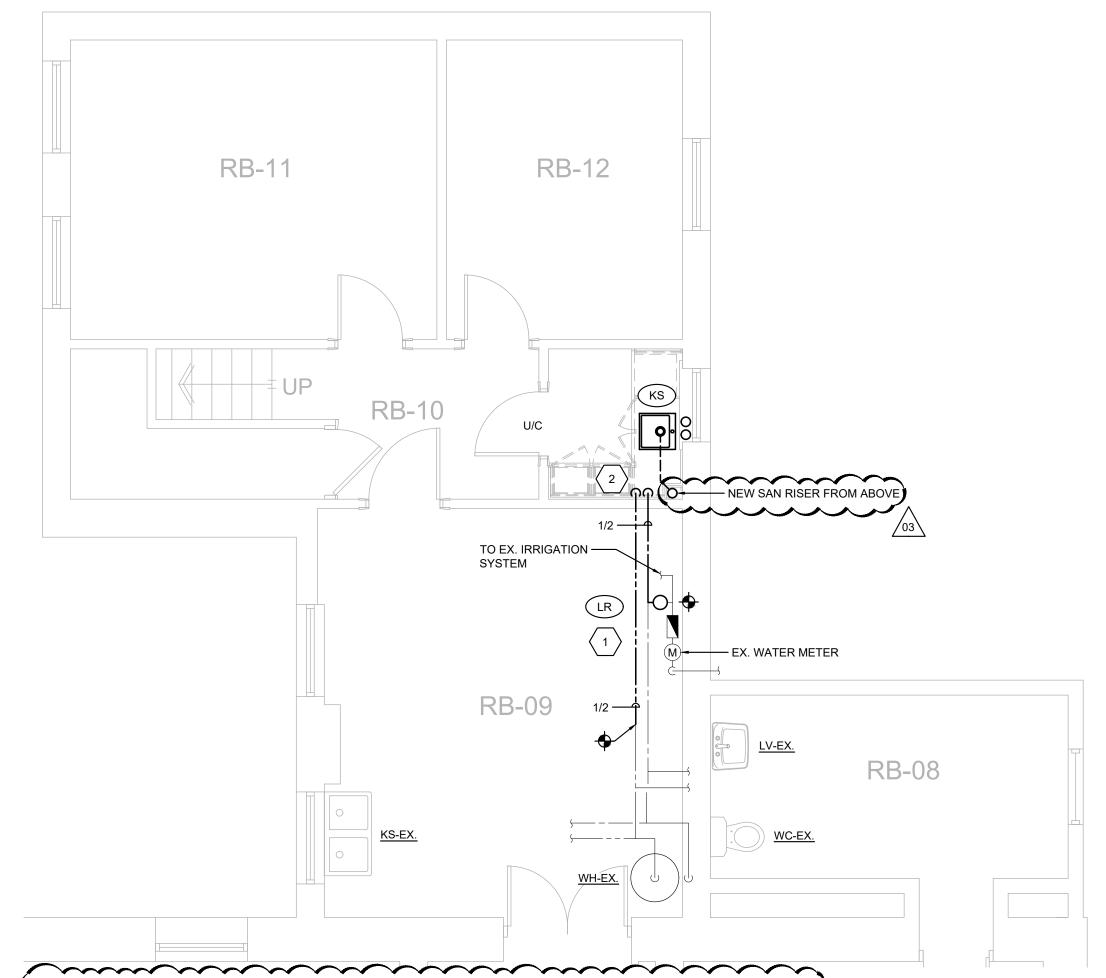
NOT USED.

- 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.

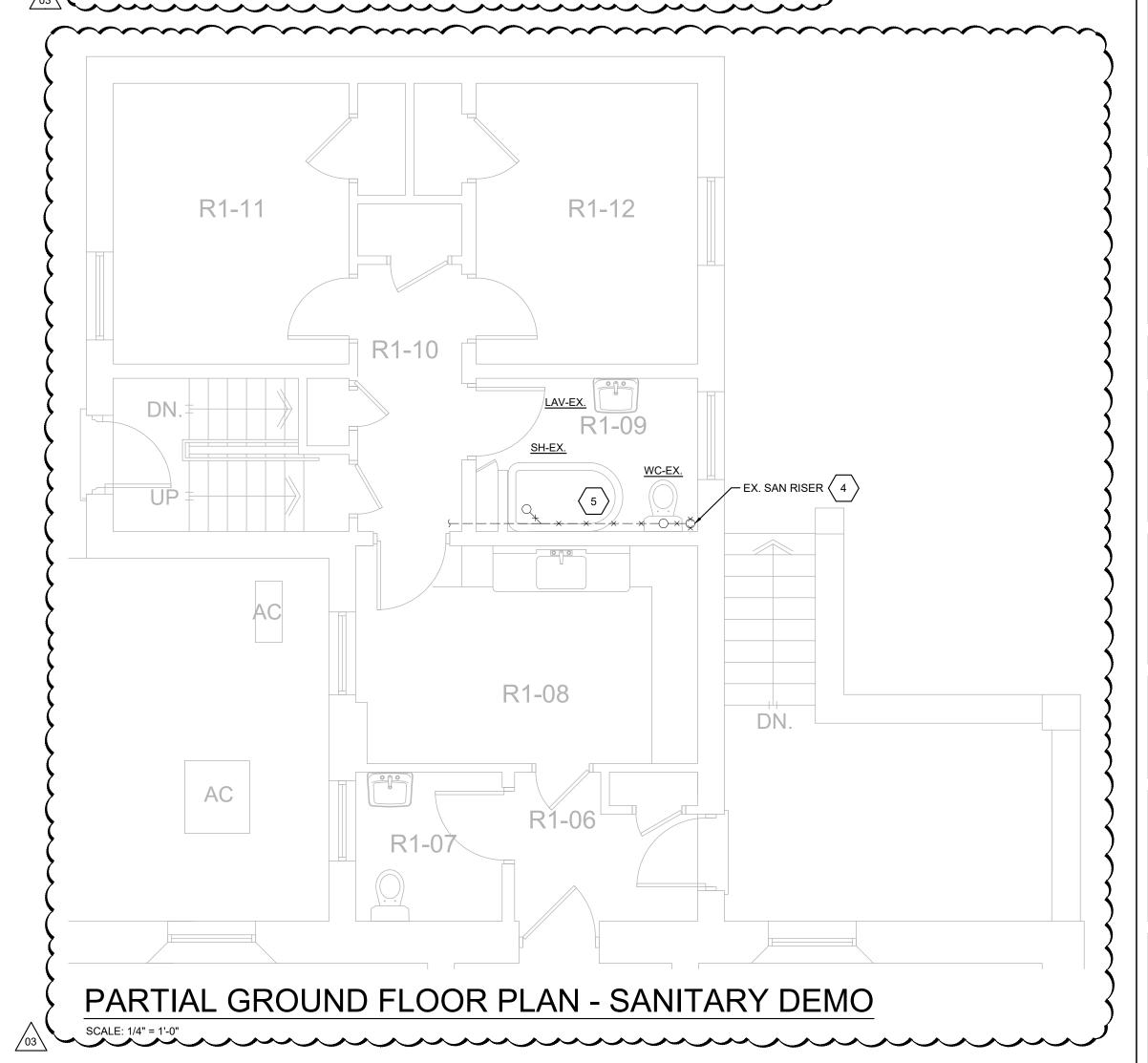
4. REMOVE AND REPLACE EXISTING SANITARY RISER TO BASEMENT FLOOR BELOW. PREPARE PIPING FOR RECONNECTION TO GROUND FLOOR SANITARY PIPING AND TO NEW FIXTURES ON BASEMENT FLOOR

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.

PLUMBING FIXTURE SCHEDULE						
DWG REF	DESCRIPTION			COLD	DRAIN	
KS	SINK:  FAUCET:  DRAIN:	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.  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.  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-BB50 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"

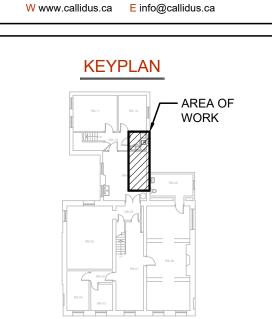


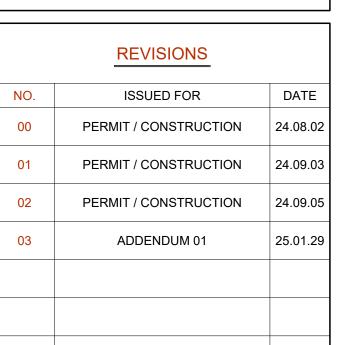


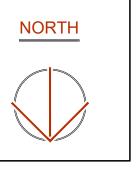
LONDON: 1385 North Routledge Park, Unit 9
London, ON N6H 5N5 P 519.472.7640

KINGSTON: 1471 John Counter Blvd. Unit 301
Kingston, ON K7M 8S8 P 613.900.0845

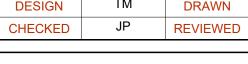
KITCHENER: 210-137 Glasgow Street, Office #141
Kitchener, ON N2G 4X8 P 519.472.7640











WHITEHERN HOUSE KITCHENETTE DESIGN

PROJECT

ADDRESS

41 JACKSON STREET, HAMILTON, ON

PROJECT NO.

CE-5977

DRAWING TITLE

MECHANICAL NOTES, SCHEDULES, DETAILS, PLUMBING & FIRE PROTECTION

DRAWING NUMBER

M1 of 2

#### 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. MAKE ALLOWANCE FOR ANY NEW OR EXISTING SERVICE AND EQUIPMENT RELOCATIONS NECESSARY TO COMPLETE THE WORK AND INCLUDE IN THE BID PRICE. EXTRAS WILL NOT BE ALLOWED FOR FAILURE TO PROPERLY EVALUATE
- 1.1.2. THE DRAWINGS SHOW THE GENERAL INTENT OF THE WORK, NOT THE DETAILS OF INSTALLATION. CO-ORDINATE THE ROUTING AND INSTALLATION OF ALL MECHANICAL SERVICES WITH ALL EXISTING CONDITIONS, STRUCTURE AND THE WORK OF ALL OTHER TRADES. PROVIDE INSTALLATION DRAWINGS AS REQUIRED.
- 1.1.3. DO NOT SCALE MECHANICAL DRAWINGS. TAKE FIELD DIMENSIONS PRIOR TO ANY
- DESCRIPTION: PROVIDE WORK IN ACCORDANCE WITH FULL INTENT AND MEANING OF DRAWINGS ND SPECIFICATIONS. THE WORD "PROVIDE" WHERE USED IN THE CONTRACT DOCUMENTS, IS TO BE INTERPRETED AS "SUPPLY AND INSTALL" ALONG WITH ALL ASSOCIATED HARDWARE AND
- 1.3. WORKMANSHIP: PROVIDE ALL NEW MATERIALS AND EQUIPMENT WITH THE APPROPRIATE LISTING (I.E. CSA, ULC, CETL, ETC.) ALL WORKMANSHIP BY THIS TRADE SHALL BE FIRST CLASS, CONFORMING TO INDUSTRY STANDARD PRACTICES FOR SAFETY, ACCESSIBILITY, DURABILITY AND NEATNESS FOR ACCEPTANCE BY THE OWNER'S REPRESENTATIVES.
- 1.4. <u>SLEEVES, HANGERS, INSERTS:</u> PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE MECHANICAL WORK/ TREAT ALL SLEEVES OR HOLES PIERCING ACOUSTICAL SEPARATIONS FOR INSTALLATIONS OF THE 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.
- 1.5. <u>INTERPRETATION:</u> DIVISION OF THE WORK AMONG SUPPLIERS OR VENDORS AND SUBCONTRACTORS IS SOLELY THE CONTRACTOR'S RESPONSIBILITY. NEITHER THE OWNER NOR CONSULTANT ASSUMES ANY RESPONSIBILITY TO ACT AS AN ARBITER TO ESTABLISH SUBCONTRACT TERMS BETWEEN SECTORS OR DISCIPLINES OF WORK.
- COORDINATION BETWEEN TRADES: CO-ORDINATE THE WORK OF THIS TRADE WITH ALL OTHER TRADES ON THE JOB SO THAT THE WORK MAY PROGRESS WITHOUT ANY DELAY. SCHEDULE AND PHASE DEMOLITION AND NEW WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH
- DISCREPANCY: IF A DISCREPANCY IS FOUND IN THE SPECIFICATION OR ON THE DRAWINGS, REQUEST CLARIFICATION PRIOR TO THE END OF THE QUESTION PERIOD SO THAT CLARIFICATION CAN BE PROVIDED IN WRITING.
- 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, NCLUDING THE OCCUPATIONAL HEALTH AND SAFETY ACT. IN ADDITION, COMPLY WITH ALL OF THE OWNER'S HEALTH AND SAFETY REQUIREMENTS.
- 1.11. PERMITS AND FEES: OBTAIN ALL PERMITS REQUIRED FOR INSTALLATION OF MECHANICAL TRADES WORK, ARRANGE FOR INSPECTIONS TESTS THEREWITH AND PAY ALL COSTS FOR PERMITS, INSPECTIONS, AND ASSOCIATED FEES. THIS INCLUDES ANY TSSA INSPECTION AND/OR CERTIFICATION. OBTAIN PERMITS IMMEDIATELY AFTER NOTIFICATION OF AWARD OF CONTRACT.
- 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. COMPLETE ALL WARRANTY REGISTRATION DOCUMENTATION ON BEHALF OF THE BUILDING OWNER. INCLUDE COPIES OF COMPLETED DOCUMENTATION IN OPERATIONS AND MAINTENANCE MANUALS.
- 1.14. <u>CERTIFICATION:</u> PROVIDE MANUFACTURER'S WRITTEN CERTIFICATION OF THE INSTALLATION AND OPERATION OF ALL SYSTEMS AND MAJOR EQUIPMENT.

- 1.15.1. DO NOT SHUT DOWN OR MAKE CONNECTIONS TO ANY EXISTING SERVICE WITHOUT
- 1.15.2. BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF MECHANICAL EQUIPMENT AND SERVICES DESIGNATED FOR REMOVAL ON DRAWINGS.
- 1.16. <u>SITE PROTECTION AND CLEANLINESS:</u> PROTECT ALL WORK AND MATERIALS, BEFORE AND AFTER ERECTION, FROM WEATHER AND OTHER HAZARDS, AND KEEP IN A CLEAN AND ORDERLY MANNER. AVOID ACCUMULATION OF DEBRIS AS THE WORK PROGRESSES. ON COMPLETION OF THE CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, CLEAN UP AND REMOVE FROM THE SITE ALL SCRAP MATERIALS RESULTING FROM THE WORK OF
- 1.17. ADJUSTMENT AND OPERATION OF SYSTEMS: WHEN WORK IS COMPLETE, ADJUST ALL EQUIPMENT ITEMS, OF VARIOUS SYSTEMS, FOR PROPER OPERATION WITHIN FRAMEWORK OF DESIGN INTENT, AND OPERATING CHARACTERISTICS AS PUBLISHED BY EQUIPMENT MANUFACTURER.
- 1.18. MISCELLANEOUS STEEL: SUPPLY AND INSTALL MISCELLANEOUS STRUCTURAL SUPPORTS, PLATFORMS, AND BRACES, AS REQUIRED TO HANG OR SUPPORT ALL EQUIPMENT, PIPING AND
- 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, CONTRACTOR IS RESPONSIBLE FOR ASCERTAINING MANUFACTURERS INSTALLATION GLIDFLINES AND RECOMMENDATIONS. TOUCH-UP ALL SHOP PAINTED EQUIPMENT DAMAGED IN TRANSIT OR DURING INSTALLATION TO MATCH ORIGINAL SHOP FINISH.
- 1.20. <u>CUTTING AND PATCHING:</u> PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS TRADE. ALL CUTTING AND PATCHING SHALL BE PERFORMED BY TRADE SPECIALIZING IN THE MATERIAL TO BE PATCHED. INCLUDE ALL COSTS FOR CUTTING AND PATCHING RELATED TO THE WORK OF THIS TRADE IN THE BID PRICE. WHERE PIPES AND DUCTS ARE SHOWN PASSING. THROUGH EXISTING WALLS, ELOORS, AND ROOF, CLIT AND PATCH THE NECESSARY OPENINGS. SHOULD CUTTING. REPAIRING. AND PATCHING OF PREVIOUSLY FINISHED WORK. OF OTHER TRADES, BE REQUIRED TO ALLOW INSTALLATION OF MECHANICAL WORK, PAY ALL COSTS FOR TRADE SECTION CONCERNED TO PERFORM WORK.
- 1.21. SPARE PARTS / TOOLS TO BE FURNISHED:
- 1.21.1. ALL SPECIALITY TOOLS NECESSARY FOR EQUIPMENT INSTALLED IN THIS PROJECT.
- 1.22. CHANGES IN THE WORK: CHANGES TO THE CONTRACT REQUIRING ADDITIONS TO OR DELETIONS FROM THE WORK OF THIS DIVISION SHALL BE CARRIED OUT UPON WRITTEN REQUEST OF THE CONSULTANT. EXTRAS TO THE CONTRACT OR CREDITS SHALL BE SUBMITTED WITH A COMPLETE COST BREAKDOWN AS FOLLOWS:
- MATERIALS, QUANTITIES AND UNIT PRICES FOR ALL EQUIPMENT REQUIRED OR DELETED
- UNIT HOURS
- TOTAL MATERIAL COST
- TOTAL HOURS
- HOURLY RATE (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT) - TOTAL OVERHEAD AND PROFIT (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL
- 1.23. COMPLETION: PRIOR TO THE FINAL INSPECTION, CLEAN ALL MECHANICAL EQUIPMENT. CLEAN ALL CONSTRUCTION DUST AND DIRT FROM INSTALLED EQUIPMENT AT THE END OF THE JOB. REPAIR ANY DAMAGE BY THE MECHANICAL TRADE TO EXISTING BUILDINGS OR EQUIPMENT, ETC

## 1.24. SUBMITTALS:

## 1.24.1. SHOP DRAWINGS:

TO THE CONSULTANTS SATISFACTION.

- 1.24.1.1. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT SUPPLIED BY MECHANICAL DIVISION. SUBMIT ELECTRONIC COPIES TO CONSULTANT FOR REVIEW.
- 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. FOR EACH SUBMISSION, AS EVIDENCE THAT DRAWING HAS BEEN CHECKED AGAINST REQUIREMENTS AS CALLED FOR IN SPECIFICATIONS AND DRAWINGS.

## 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

FINAL TESTING AND BALANCING REPORT

MANUFACTURERS' WARRANTIES AND GUARANTEES

INSTRUCTIONS FOR COMPONENTS OF EQUIPMENT

## 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. TRANSFER AS-BUILT MARK-UPS TO DIGITAL DRAWING FORMAT. THIS PROCESS SHOULD BE COMPLETED BEFORE TESTING, BALANCING AND/OR COMMISSIONING. SUBMIT TO THE CONSULTANT WITH THE O&M MANUALS AT COMPLETION OF PROJECT.
- 1.24.3.2. FORMAT FILES TO MATCH EXACTLY THE LAYERING SYSTEM AND SYMBOLOGY OF THE CONSULTANT. BIND ALL EXTERNAL REFERENCES.
- 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. ONCE AS-BUILT DRAWINGS HAVE BEEN COMPLETED, SUBMITTED AND REVIEWED, PAYMENT WILL BE RELEASED. THIS VALUE IS NOT INCLUDED IN THE AMOUNT REQUIRED BY THE CONSTRUCTION LIEN ACT.
- 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. INCLUDE EQUIPMENT NUMBER AND EQUIPMENT NAME GENERALLY AS LISTED ON DRAWING SCHEDULES. SUBMIT LIST OF NAMEPLATES TO CONSULTANT FOR REVIEW PRIOR TO FABRICATION. IF THE OWNER HAS SPECIFIC STANDARDS, FOLLOW THESE STANDARDS.

#### 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
- 1.26.2. SUBMIT DETAILED SHOP DRAWINGS TO THE CONSULTANT FOR REVIEW. INCLUDING:
  - MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION
    - -CERTIFICATION THAT PROPOSED FIRESTOPPING MATERIALS AND ASSEMBLIES COMPLY WITH CAN4-S115-M
    - -ULC LISTINGS WITH COPIES OF ULC DATA SHEETS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION

## 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:

#### - CONFIRMATION THAT FIRESTOPPING IS COMPLETE

## 2. TESTING AND BALANCING:

- 2.1.1. PROVIDE PRESSURE TESTS ON ALL PIPING INCLUDED IN THIS CONTRACT. FURNISH ALL PUMPS, COMPRESSORS, GAUGES AND CONNECTORS NECESSARY FOR TESTS.
- 2.1.2. CONDUCT HYDROSTATIC TESTS FOR A MINIMUM PERIOD OF 2 HOURS. DURING THIS TIME THE PRESSURE SHALL REMAIN CONSTANT.
- 2.1.3. FOR PNEUMATIC TESTS, FIRST PRESSURIZE SYSTEM WITH AIR TO APPROXIMATELY ONE-HALF SPECIFIED PRESSURE, BUT NOT TO EXCEED 345 KPA (50 PSIG), AND EXAMINE ALL JOINTS FOR LEAKS WITH A SOAPSUDS SOLUTION. REPAIR ANY LEAKS.
- 2.1.4. FORWARD COPIES OF ALL FINAL TESTS ON ALL PRESSURE AND DRAINAGE PIPING TO

## 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 CAN/ULC-S102.
- 3.3. PROVIDE A CONTINUOUS VAPOUR BARRIER ON ALL COLD SYSTEMS.

## 3.4. <u>DEFINITIONS:</u>

CONCEALED: INSULATED MECHANICAL SERVICES AND EQUIPMENT IN SUSPENDED CEILINGS AND NON ACCESSIBLE CHASES AND FURRED IN SPACES.

## EXPOSED: NOT CONCEALED

## 3.5. <u>INSULATION TYPES:</u>

- 3.5.1. PGF PREFORMED GLASS FIBRE: FIBROUS GLASS SPLIT SECTIONAL PIPE INSULATION CONFORMING TO CAN/ULC C-S702, WITH FACTORY APPLIED VAPOUR BARRIER JACKET TO ASTM C921 AND SELF-SEAL LAP JOINT.
- 3.5.2. FGF FLEXIBLE GLASS FIBRE: ASTM C553 FLEXIBLE NON-COMBUSTIBLE BLANKET, WITH FACTORY APPLIED VAPOUR BARRIER JACKET TO ASTM E96/E96M. THERMAL CONDUCTIVITY TO ASTM C518.
- RGF RIGID GLASS FIBRE: ASTM C612 RIGID NON-COMBUSTIBLE BLANKET, WITH FACTORY APPLIED VAPOUR BARRIER JACKET TO ASTM E96/E96M. THERMAL CONDUCTIVITY TO ASTM C518.
- CELLULAR FOAM: ASTM C534/C534M, FLEXIBLE, CELLULAR ELASTOMERIC, MOULDED OR SHEET WITH ANTIMICROBIAL COATING. USE WATERPROOF VAPOUR BARRIER ADHESIVE. EXPOSED INSULATION TO HAVE WHITE FINISH.

- 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. <u>PIPE INSULATION INSERTS AND SHIELDS:</u> PROVIDE RIGID INSERTS AND SHIELDS AT ALL HANGER SUPPORTS WHERE PIPING IS INSULATED. INSERT THICKNESS TO MATCH INSULATION THICKNESS. INSERT TO BE HYDROUS CALCIUM SILICATE RIGID PIPE INSULATION. INSERT AND SHIELD TO PROTECT BOTTOM HALF OF PIPE. SHIELD TO BE FABRICATED FROM GALVANIZED STEEL. SHIELD COLOUR TO MATCH COLOUR OF INSULATION FINISH. SHIELD AND INSERT LENGTH TO BE AS FOLLOWS:

#### NOMINAL PIPE SIZE INSERT LENGTH MM (IN) MM (IN) 40-65 (1-1/2 - 2-1/2) 250 (10)

- 3.6.4. PIPE INSULATION TYPE AND THICKNESS:
- 3.6.4.1. <u>PLUMBING:</u>

3.6.4.1.1. POTABLE (DOMESTIC) COLD WATER AND CITY WATER (PGF): 25 MM

### 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. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")

## 3.6.5. <u>APPLICATION:</u>

- 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.

### 3.7. SURFACE FINISHES:

## 3.7.1. <u>PIPING:</u>

- EXPOSED INTERIOR PIPING: FINISH EXPOSED INSULATED PIPING, VALVES AND FITTINGS WITH PVC JACKETING. PVC MUST HAVE ATTAINED 25/50 FIRE RATING, BASED ON CAN/ULC-S102-M88 TESTING.
- SANITARY PIPING: FINISH INSULATED SANITARY PIPING BELOW BARRIER FREE LAVATORY TRAPS WITH PVC JACKETING. PVC MUST HAVE ATTAINED 25/50 FIRE RATING, BASED ON CAN/ULC-S102-M88 TESTING.

### 4. PIPING SYSTEMS:

#### 4.1. GENERAL:

4.1.1. <u>EXPANSION AND CONTRACTION:</u> 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, EXCEPT AS HEREINAFTER MODIFIED. ALLOW FOR EXPANSION AND CONTRACTION BY OFFSETS, EXPANSION U-BENDS OR LOOPS. DO NOT USE EXPANSION JOINTS OF ANY TYPE UNLESS SPECIFICALLY INDICATED ON DRAWINGS.

#### 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, WITH VALVES OR TRAPS INSTALLED AS REQUIRED FOR DRAINAGE OF THE 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. <u>UNIONS OR FLANGES PROVIDE IN THE FOLLOWING LOCATIONS:</u>

QUADRANT OF LARGER PIPE

INSTALLED UNDER THIS DIVISION.

- 4.1.3.1. FOR BY-PASSES AROUND EQUIPMENT, CONTROL VALVES, DEVICES IN PIPING SYSTEMS, AND ELSEWHERE INDICATED ON DRAWINGS.
- 4.1.3.3. PROVIDE DIELECTRIC UNIONS, OR ISOLATING TYPE COMPANION FLANGES, AT ALL CONNECTIONS BETWEEN COPPER TUBING AND FERROUS PIPING.

4.1.3.2. AT CONNECTIONS TO EQUIPMENT (LOCATE BETWEEN SHUT-OFF VALVE AND

- 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, TO UPPER
- 4.1.4.2. MAKE DOWN FEED PIPING CONNECTIONS, TO HORIZONTAL SUPPLY AND RETURN WATER MAINS, ON BOTTOM QUADRANT OF MAINS.

- 4.1.5.1. INSTALL SLEEVES WHERE PIPING PASSES THROUGH FOUNDATIONS, ABOVE GRADE FLOORS, AND WALLS. FABRICATE SLEEVES OF SCHEDULE 40 BLACK
- STEEL PIPE OR TYPE "K" COPPER TUBING. 4.1.5.2. SLEEVES FOR PIPING PASSING THROUGH ROOFS WILL BE SUPPLIED AND
- 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. <u>ESCUTCHEON PLATES:</u> 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. INCLUDE OPERATING PRESSURE OR VACUUM, AS
- 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 FOR INSTALLATION ON INSULATED PIPE PROVIDE ADHESIVE SUITABLE FOR THIS APPLICATION. CONFORM WITH CAN/CGSB-24.3 AND/OR OWNER STANDARDS FOR PRIMARY LABEL COLOUR, AND WITH LEGEND AND OWS IN BLACK, PRINT LEGEND IN FULL WHEREVER FEASIBLE OR A RECOGNIZED ABBREVIATION OF SERVICE INVOLVED.
- 4.1.7.4. LOCATE LABELS AS FOLLOWS: AT EVERY END OF EVERY PIPE RUN, ADJACENT TO VALVE OR ITEM OF EQUIPMENT SERVICES. ON EACH EXPOSED PIPE PASSING THROUGH WALL PARTITION OR FLOOR AT INTERVALS OF 15 M (50'-0") ALONG EVERY EXPOSED PIPE RUN EXCEEDING 15 M (50'-0") IN LENGTH. AT EVERY ACCESS POINT ON CONCEALED PIPING.

## 4.2. HANGERS AND SUPPORTS:

## 4.2.1. <u>GENERAL:</u>

- 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, TO PREVENT SAGGING, WARPING
- 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

### 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. <u>HANGERS:</u> 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
  - 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
  - 4.2.2.4. FOR NON-INSULATED PIPING USE CLEVIS TYPE OF WROUGHT STEEL
  - CONSTRUCTION. 4.2.2.5. FOR COPPER TUBING PROVIDE COPPER COATED HANGERS.

SUPPORTS FOR ALL INSULATED PIPING.

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

## 4.2.4. VERTICAL PIPING SUPPORTS:

MANUFACTURER.

- 4.2.4.1. SUPPORT VERTICAL PLUMBING AND DRAINAGE PIPING AS REQUIRED BY THE BUILDING CODE, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED
- 4.2.4.2. PROVIDE LATERAL STABILITY, OF VERTICAL PIPING, BY FABRICATED BRACKETS OR MALLEABLE IRON EXTENSION TYPE SPLIT HANGERS. RUN VERTICAL PIPING AT COLUMNS IN THE COLUMN WEBS. ON EITHER OR BOTH SIDES OF THE COLUMN, UNLESS OTHERWISE DIRECTED BY THE CONSULTANT.

## 4.3. MATERIALS OF CONSTRUCTION:

## 4.3.1. SANITARY AND INDIRECT DRAIN (INCLUDING VENTING)

## 4.3.1.1. <u>REFERENCE STANDARDS:</u>

- 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
- NFORMING TO ASTM B 306 WITH WROUGHT COPPER OR CAST

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

- 4.3.1.1.3. <u>PVC, DWV:</u> 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 CAN/ULC 102.2 WITH CERTIFICATION LABEL.
- 4.3.1.1.5. PVC, XFR: TO CSA B182.2. FLAME SPREAD RATING NOT GREATER HAN 25 & SMOKE DEVELOPED CLASSIFICATION NOT GREATER THAN 50 PER CAN/ULC 102.2 WITH CERTIFICATION LABEL.
- 4.3.1.1.6. POLYETHELYNE: TO CSA B137.1. BUTT FUSION FITTINGS TO ASTM

### 4.3.1.1.7. GALVANIZED STEEL: TO ASTM A52/A52M.

#### 4.3.1.2.1. <u>ABOVE GRADE:</u>

- 4.3.1.2.1.1. PIPING 75 MM (3") AND SMALLER: DWV COPPER
- 4.3.1.2.1.2. <u>PIPING 150 MM (6") AND SMALLER:</u> PVC DWV

#### 4.3.2. POTABLE (DOMESTIC) HOT AND COLD WATER:

4.3.1.2. <u>APPLICATION:</u>

4.3.2.1. REFERENCE STANDARDS: 4.3.2.1.1. ALL MATERIALS TO BE NSF/ANSI 61 & 372 CERTIFIED.

B16.22 (WROUGHT) OR

AT 100 PSI (689 KPA).

- - 4.3.2.1.2.1. PIPING: SEAMLESS WATER TUBE TO ASTM B88
  - SOLDER JOINT FITTINGS TO ASME B16.18 (CAST) OR
  - COLD PRESS FITTINGS WITH EPDM SEALING ELEMENT TO ASME B16.18 OR ASME B16.22, INSTALLED USING PROPER TOOL, ACTUATOR, JAWS, AND RINGS AS

INSTRUCTED BY THE PRESS FITTING MANUFACTURER.

- 4.3.2.1.3.1. CROSSLINKED POLYETHYLENE PIPING TO CAN/CSA-B137.5. PRESSURE AND TEMPERATURE RATINGS: 93°C (200°F) AT 80 PSI (551 KPA), 82°C (180°F)
  - 50 MM (2") AND SMALLER: CAN/ULC-S102.2 LISTED TO A MAXIMUM OF 25 FLAME SPREAD / 50 SMOKE DEVELOPED WITH NO LIMITATIONS ON SPACING.

65 MM (2-1/2") AND LARGER: CAN/ULC-S102.2 LISTED TO

A MAXIMUM OF 25 FLAME SPREAD / 50 SMOKE DEVELOPED WITH RATED FIBERGLASS INSULATION.

4.3.2.1.3.2. SEAL PENETRATIONS AT FIRE SEPARATIONS PER

- CAN/ULC-S115. 4.3.2.1.3.3. PIPING WITHIN A FIRE SEPARATION PER CAN/ULC-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).

4.3.2.2.1. ABOVE GROUND PIPING 75 MM (3") AND SMALLER:

4.3.2.2.1.1. TYPE "L" HARD DRAWN COPPER TUBING. PROVIDE

SOLDER TO THREADED ADAPTERS AT SCREWED VALVES OR EQUIPMENT. 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. THE SYSTEM SHALL REMAIN AT THIS PRESSURE FOR A MINIMUM OF 24 HOURS TO ENSURE SYSTEM INTEGRITY). PROVIDE COPPER STUB-OUT FI BOWS AT FACH FIXTURE CONNECTION, STUB-OUT TO BE MANUFACTURED FROM SEAMLESS COPPER TUBING WITH A MACHINED ASTM

F-1807 PEX BARB CONNECTION AND SPIN SEALED

OUTLET. FOLLOW MANUFACTURERS INSTRUCTIONS FOR

INSTALLATION. 4.3.2.2.1.3. CPVC: BUILDINGS OF NON-COMBUSTIBLE CONSTRUCTION, HIGH-RISE BUILDINGS AND IN RETURN AIR PLENUMS. FIRESTOPPING SYSTEMS SHALL BE LISTED UNDER CAN/ULC S115 AND TESTED WITH A

PRESSURE DIFFERENTIAL OF 50 PA.

4.3.3. FIRE PROTECTION:

NOT USED.

FIRE PROTECTION SYSTEM:

NOT USED.

## PLUMBING SYSTEM:

- 6.1. <u>REFERENCES STANDARDS:</u>
- 6.1.1. CONFORM TO ALL APPLICABLE CODES INCLUDING, BUT NOT LIMITED TO, THE

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- 6.1.1.1. <u>CSA-B64.10:</u> SELECTION AND INSTALLATION OF BACKFLOW PREVENTERS
- 6.1.1.2. <u>CSA-B149.1:</u> NATURAL GAS AND PROPANE INSTALLATION CODE 6.2. <u>VENTING:</u> PLUMBING VENTING MAY NOT BE SHOWN ON DRAWINGS. PROVIDE A COMPLETE LUMBING VENTING SYSTEM FOR ALL PLUMBING FIXTURES SHOWN, IN ACCORDANCE WITH OBC

## 6.3. <u>STERILIZATION OF POTABLE (DOMESTIC) WATER SYSTEMS:</u>

6.3.1. FLUSH EACH SYSTEM, AFTER COMPLETION, BY ALLOWING FULL FLOW OF WATER THROUGH SYSTEM FOR A PERIOD OF FIFTEEN MINUTES, OR LONGER WHEN DIRECTED

6.4.2. PROVIDE PLUMBING FIXTURES AS INDICATED IN SCHEDULE ON DRAWINGS

- 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 AWWA SPECIFICATION C-651. AFTER STERILIZATION PERIOD HAS ELAPSED, FLUSH SYSTEM TO REDUCE CHLORINE CONTENT TO AN ACCEPTABLE LEVEL.
- 6.4. PLUMBING FIXTURES:

6.5. <u>VALVES:</u>

- 6.4.1. PROVIDE CSA COMPLIANT PLUMBING FIXTURES.
- 6.4.3. CAULK ALL AROUND BASES OF MOP SERVICE SINKS, BUILT-IN BATHTUBS, AND OTHER BUILT-IN FIXTURES.

## 6.5.1. SUBMIT SHOP DRAWINGS FOR ALL VALVES

6.5.2. POTABLE (DOMESTIC) WATER:

- 6.5.2.1. <u>REFERENCE STANDARDS:</u>
- 6.5.2.1.1. LEAD FREE, 0.25% CONTENT PER NSF-61/372 6.5.2.1.2. BRONZE TO ASTM C89530

BAR (150 PSI) WORKING PRESSURE.

- 6.5.2.1.3. BRASS TO ASTM C46750 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)

WITH INSULATION STEM EXTENSION. SOLDERED, THREADED OR PEX

6.5.2.1.7. ALL PRESSURE RATINGS, SIZES TO MSS SP-25 ISOLATION / SHUT-OFF: 2 PIECE BRASS OR BRONZE BODY, 1,034 KPA (150 PSI) 60 WOG RATING, FULL PORT, STAINLESS STEEL BALL, LOCKING LEVER HANDLE

CONNECTIONS. MANUFACTURED TO MSS SP-110.

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 82C (33F TO 180F) AND A MAXIMUM 10.6

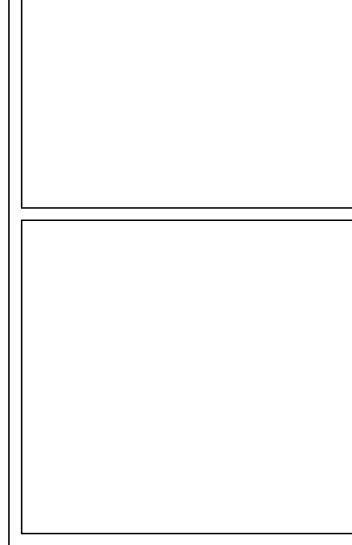


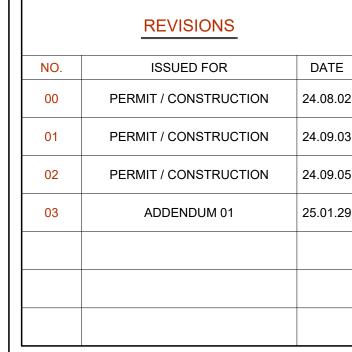
London, ON N6H 5N5 P 519.472.7640 KINGSTON: 1471 John Counter Blvd. Unit 301 Kingston, ON K7M 8S8 P 613.900.0845

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CHECKED

PROJECT WHITEHERN HOUSE

KITCHENETTE DESIGN

JP

DRAWN

REVIEWED

**ADDRESS** 

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PROJECT NO.

CE-5977

**MECHANICAL SPECIFICATIONS** 

DRAWING NUMBER

DRAWING TITLE