PLUMBING & DRAINAGE SYMBOLS

- ROOF DRAIN
- FLOOR DRAIN – ROUND
- HUB DRAIN
- FUNNEL FLOOR DRAIN
- FLOOR DRAIN – SQUARE
- CATCH BASIN
- FLOOR DRAIN FROM ABOVE
- FLOOR DRAIN FROM BELOW
- CLEAN OUT PLUG
- CLEAN OUT FLOOR
- P-TRAP
- 90 DEGREE ELBOW
- 45 DEGREE ELBOW
- ELBOW UP
- ELBOW DOWN
- UNION
- PIPE CAP
- TEE
- TEE UP
- TEE DOWN
- BOTTOM BRANCH
- TOP BRANCH
- GATE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CONTROL BALANCING VALVE
- GLOBE VALVE
- THREE-WAY VALVE
- TWO-WAY CONTROL VALVE
- THREE-WAY CONTROL VALVE
- GAS PRV
- RELIEF VALVE
- NON-FREEZE HOSE BIBB
- FLOW DIRECTION
- WATER METER
- PUMP
- SWING CHECK VALVE
- SOLENOID OPERATED VALVE
- BACK FLOW PREVENTOR (BFP)
- VERTICAL VALVE
- CONTINUATION
- HEAT TRACE

SPRINKLER SYMBOLS

- SEMI-RECESSED SPRINKLER HEAD
- UPRIGHT SPRINKLER HEAD
- PENDENT SPRINKLER HEAD
- SIDE WALL SPRINKLER HEAD
- CONCEALED SPRINKLER HEAD
- DRY PENDENT SPRINKLER HEAD
- PRE-ACTION
- WALL MOUNTED FIRE EXTINGUISHER (FE)
- SUPERVISED VALVE (SV)
- F — FIRE SUPPLY LINE
- FSP — FIRE STANDPIPE
- DSP — DRY SPRINKLER LINE
- WSP — WET SPRINKLER LINE
- FIRE DEPARTMENT CONNECTION
- FHC — FIRE HOSE CABINET

HVAC SYMBOLS

- RECTANGULAR SUPPLY DUCT UP
- RECTANGULAR SUPPLY DUCT DOWN
- RECTANGULAR RETURN DUCT UP
- RECTANGULAR RETURN DUCT DOWN
- RECTANGULAR EXHAUST DUCT UP
- RECTANGULAR EXHAUST DUCT DOWN
- ROUND SUPPLY DUCT UP
- ROUND SUPPLY DUCT DOWN
- ROUND RETURN DUCT UP
- ROUND RETURN DUCT DOWN
- ROUND EXHAUST DUCT UP
- ROUND EXHAUST DUCT DOWN
- SQUARE SUPPLY ELBOW WITH TURNING VANES
- SQUARE SUPPLY ELBOW
- 45 DEGREE RADIUS ELBOW
- 90 DEGREE RADIUS ELBOW
- 45 DEGREE RADIUS ROUND DUCT ELBOW
- 90 DEGREE RADIUS ROUND DUCT ELBOW
- AIR FLOW ARROW
- SQUARE SUPPLY AIR DIFFUSER
- ROUND SUPPLY AIR DIFFUSER
- S/A GRILLE WITH DAMPER
- RETURN AIR DIFFUSER
- LINEAR S/A GRILLE C/W AIR BOOT
- LINEAR RETURN AIR GRILLE
- RETURN AIR GRILLE
- TAKEOFF CONNECTION
- SPIN-ON CONNECTION
- EXTERNALLY INSULATED DUCTWORK
- INTERNALLY LINED DUCTWORK
- EXISTING DUCTWORK
- SQUARE TO ROUND TRANSITION
- FLEXIBLE DUCTWORK
- (S) SENSOR
- (T) THERMOSTAT
- (T) DIGITAL TIMER
- [T] REVERSE ACTING THERMOSTAT
- MANUAL DAMPER
- FIRE DAMPER
- (SD) SMOKE DETECTOR
- (CO) CARBON MONOXIDE DETECTOR
- CONTROL WIRING

MISCELLANEOUS EQUIPMENT SYMBOLS

- CEILING MOUNTED EXHAUST FAN
- IN-LINE EXHAUST FAN
- FORCE FLOW HEATER (F.F.H)
- BASEBOARD HEATER (B.B.H)
- VAV BOX
- UNIT HEATER
- ROOF MOUNTED UPBLAST EXHAUST FAN
- TRANSFER AIR (T/A) ELBOW (W, W, 1.5W)

PIPE DESIGNATIONS

Line	Designation
DCW	DOMESTIC COLD WATER
EX.DCW	EXISTING DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
EX.DHW	EXISTING DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRCULATION
EX.DHWR	EXISTING DOMESTIC HOT WATER RECIRCULATION
SAN	SANITARY DRAIN ABOVE
EX.SAN	EXISTING SANITARY DRAIN ABOVE GRADE OR SLAB
SAN	SANITARY DRAIN BELOW
EX.SAN	EXISTING SANITARY DRAIN BELOW GRADE OR SLAB
V	VENT
STM	STORM DRAIN ABOVE
EX.STM	EXISTING STORM DRAIN ABOVE GRADE OR SLAB
STM	STORM DRAIN BELOW
EX.STM	EXISTING STORM DRAIN BELOW GRADE OR SLAB
WT	WEEPING TILE
G	LOW PRESSURE GAS
MG	MEDIUM PRESSURE GAS
HG	HIGH PRESSURE GAS
NPW	NON-POTABLE WATER
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
GS	GLYCOL SUPPLY
GR	GLYCOL RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HPWR	HEAT PUMP WATER RETURN
PC	PUMPED CONDENSATE

PIPE FITTINGS DOUBLE LINE

- 90 DEGREE ELBOW
- 90 DEGREE ELBOW UP
- 90 DEGREE ELBOW DOWN
- PIPE CAP
- CONCENTRIC REDUCER
- TEE
- PIPE
- SLEEVE
- WYE BRANCH
- 45 DEGREE ELBOW
- CLEANOUT

DRAWING SYMBOLS

SECTION NUMBER — X
SHEET NUMBER — X

DETAIL NUMBER — X
SHEET NUMBER — X-X

DIFFUSER TAGGING NOMENCLATURE
A – SIZE – CFM
DIFFUSER TAG — AIRFLOW — NECK OR GRILLE SIZE

XX-1 — EQUIPMENT TAG

REFER TO NOTE ON THE SAME DRAWING

ABBREVIATIONS

Abbr.	Meaning
BD	BALANCING DAMPER
BDD	BACK DRAFT DAMPER
MD	MOTORIZED DAMPER
FD	FLOOR DRAIN
SD	SMOKE DAMPER
AP	ACCESS PANEL
CC	COOLING COIL
HC	HEATING COIL
PRV	PRESSURE REDUCING VALVE
RHC	REHEAT COIL
S/A	SUPPLY AIR
R/A	RETURN AIR
T/A	TRANSFER AIR
O/A	OUTDOOR (FRESH) AIR
E/A	EXHAUST AIR
F/A	FROM ABOVE
F/B	FROM BELOW
F/D	FIRE DAMPER
EX	EXISTING
EXR	EXISTING TO BE RELOCATED
R	REMOVE
RP	RELOCATED POSITION
N	NEW
H/L	HIGH LEVEL
L/L	LOW LEVEL
AFF	ABOVE FINISHED FLOOR
CTE	CONNECT TO EXISTING
U/C	UNDERCUT
NFHB	NON-FREEZE HOSE BIBB

EQUIPMENT TAGS

Tag	Equipment
AHU–	AIR HANDLING UNIT
AIC–	AIR CURTAIN
ET–	EXPANSION TANK
EF–	EXHAUST FAN
FCU–	FAN COIL UNIT
FPB–	FAN POWERED BOX
HWT–	HOT WATER TANK
HUH–	HYDRONIC UNIT HEATER
MAU–	MAKE-UP AIR UNIT
P–	PUMP
RTU–	ROOF TOP UNIT
SF–	SUPPLY FAN
UH–	UNIT HEATER
VAV–	VAV

IMPORTANT NOTE

GENERAL CONTRACTOR AND SUB-CONTRACTORS ARE RESPONSIBLE FOR READING ALL MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS AS A COMPLETE PACKAGE.

GENERAL CONTRACTOR AND SUB-CONTRACTORS ARE RESPONSIBLE FOR NOTIFYING THE ARCHITECT OF ANY DISCREPANCIES BETWEEN DISCIPLINES PRIOR TO TENDER CLOSING.

IF CONSULTANTS ARE NOT NOTIFIED, THEN THE GENERAL CONTRACTOR AND SUB-CONTRACTORS AGREE THAT ALL INFORMATION ON DRAWINGS HAVE BEEN CARRIED FOR AND ARE RESPONSIBLE FOR UNDERTAKING ANY WORK AND WORK WILL BE ASSUMED TO BE PART OF SCOPE OF WORK AND THEREFORE INCLUDED IN TENDER PROCESS.

MECHANICAL DRAWING LIST

DWG NO.	DRAWING NAME	SCALE	FORMAL ISSUANCES			
			2025-07-08 ISSUED FOR CLIENT REVIEW	2025-08-08 ISSUED FOR PERMIT & TENDER	2025-09-04 ISSUED FOR TENDER	
M0.00	MECHANICAL LEGEND & DRAWING LIST	N.T.S	✓	✓	✓	
M0.01	MECHANICAL SPECIFICATIONS (1 OF 2)	N.T.S	✓	✓	✓	
M0.02	MECHANICAL SPECIFICATIONS (2 OF 2)	N.T.S	✓	✓	✓	
M0.03	DELETED	N.T.S	✓	✓		
M0.04	MECHANICAL DETAILS & EQUIPMENT SCHEDULES	N.T.S	✓	✓	✓	
M0.05	PLUMBING EQUIPMENT SCHEDULES	N.T.S	✓	✓	✓	
M1.01	MECHANICAL DEMOLITION & EXISTING LAYOUT	1/2"=1'-0"	✓	✓	✓	
M2.01	MECHANICAL PROPOSED LAYOUT	1/2"=1'-0"	✓	✓	✓	

GENERAL NOTES

ALL EQUIPMENT AND MATERIALS LOCATED IN ANY CONCEALED SPACE USED AS A RETURN AIR PLENUM SHALL CONFORM TO THE REQUIREMENTS OF THE PROVINCIAL BUILDING CODE.

COORDINATE MOUNTING HEIGHT OF ALL THERMOSTATS & CONTROLS WITH ARCHITECTURAL DRAWINGS. MOUNTING HEIGHTS SHALL BE NO HIGHER THAN 1200mm AFF (MEASURED TO THE TOP OF THE CONTROL DEVICE).

THE POTABLE WATER SYSTEM SHALL BE PROTECTED AGAINST BACK SIPHONAGE FROM ANY MACHINERY OR EQUIPMENT BY A CERTIFIED CAN/CSA B64.10 BACKFLOW PREVENTER AS PER THE PROVINCIAL BUILDING CODE.

PROVIDE MOTORIZED DAMPERS ON ALL SUPPLY FAN O/A INTAKES AND EXHAUST FAN DISCHARGE LOCATIONS FOR FANS OF A CAPACITY OF OR EXCEEDING 300CFM (141 l/s). DAMPERS TO BE INSTALLED AS PER PROVINCIAL BUILDING CODE AND ASHRAE REQUIREMENTS.

ALL FIRE EXTINGUISHER TO BE TYPE 2A-10BC UNLESS NOTED OTHER WISE.

NOT ALL SYMBOLS SHOWN ON THIS LEGEND ARE NECESSARILY USED IN THIS PROJECT.

spline
Mechanical & Electrical Engineers

NORTH

STAMP
LICENCED PROFESSIONAL ENGINEER
A.S. BHOGAL
100079257
2025/08/08
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
3	ISSUED FOR TENDER	2025.09.04
2	ISSUED FOR PERMIT & TENDER	2025.08.08
1	ISSUED FOR COORDINATION	2025.06.26

MECHANICAL LEGENDS AND DRAWING LIST

WASHROOM RENOVATION

LAVAL COMMUNITY CENTRE
475 SALISBURY ST
OSHAWA ON L1J 6L9

SCALE	N.T.S
DATE	6/26/2025
DRAWN	SM
CHECKED	AB
PROJECT NUMBER	25-076
SHEET	M0.00

MECHANICAL WORK SPECIFICATIONS

GENERAL REQUIREMENTS FOR MECHANICAL WORK

REFERENCES
1. The General Conditions of the Contract, the Supplementary Conditions, and all Sections of Division 01 apply to and are a part of this Section of the Specification.

SUBMITTALS
1. Prior to supplying products to the site, submit for review, 8 copies of shop drawings and/or product data sheets indicating in detail the design, construction & performance of mechanical equipment, & all mechanical products except pipe & fittings, sleeves, escutcheon plates, ductwork, & similar items. Endorse shop drawings & product data sheets with "Certified to Be In Accordance With All Requirements".
2. Read the following in conjunction with the wording on the Consultant's review stamp applied to shop drawings for product data sheets submitted:
"This review is for the sole purpose of ascertaining conformance with the general design concept. This review does not approve the detail design inherent in the shop drawings, responsibility for which remains with the Contractor & such review does not relieve the Contractor of the responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. Be responsible for dimensions to be confirmed & correlated at the job site, for information that pertains solely to fabrication process or to techniques of construction & installation, and for coordination of the work of all sub-trades."
3. Submit the following to the Consultant:
3.1 project close-out documentation: O & M Manuals, record as-built drawings, and all associated data
3.2 progress payment breakdown: a detailed breakdown of the mechanical work cost suitable for evaluation of progress payments
3.3 extended warranties: copies of all extended warranties

DEFINITIONS
1. The following are definitions of words found in this mechanical work Specification and on associated drawings:
1.1 "provide" (and tenses of provide) – means supply and install complete
1.2 "install" (and tenses of install) – means install and connect complete
1.3 "supply" – means supply only
1.4 "Consultant" – means the Architect or Consulting Engineer who has prepared the Contract Documents on behalf of the Owner
1.5 "Equal to"– means that a product proposed for installation, other than the specified product, must be equal to the specified product in size, materials of construction, performance, durability, & warranty requirements, & the final decision in this matter rests with the Consultant.

CODES, REGULATIONS, AND STANDARDS
1. Abide by the latest edition all Codes, Regulations, and Standards referred to and/or applied by governing authorities.

EXAMINATION OF SITE
1. Prior to submitting a bid, visit the site & review & include for existing site conditions.

DRAWINGS AND SPECIFICATION
1. Mechanical drawings are performance drawings, diagrammatic, show approximate locations of equipment & services, are intended to convey scope of work, & do not show architectural and structural details. Provide offsets, fittings, transformations, & similar products required as a result of obstructions & other architectural & structural details but not shown on drawings. Provide all work for a complete and proper installation in accordance with the design intent, whether shown on the drawings or not.

PLANNING AND LAYOUT OF THE WORK
1. Properly plan, coordinate, & establish locations & routing of services with subcontractors such that services will clear each other as well as any obstructions.
2. Conceal work in partially finished or unfinished areas to the extent made possible by area construction. Install piping, to each other.

GENERAL RE: INSTALLATION OF EQUIPMENT
1. Unless otherwise specified install equipment in accordance with equipment manufacturers' recommendations & instructions. Governing Codes, Standards, & Regulations take precedence over manufacturer's instructions.

PERMITS, FEES, AND CERTIFICATES
1. Unless otherwise specified, apply for, obtain & pay for all permits required to complete the mechanical work.

WORKPLACE SAFETY
1. Comply with requirements of the Workplace Hazardous Materials Information System (WHMIS). Submit WHMIS MSDS (Material Safety Data Sheets) for products where required, & maintain 1 copy at the site.
2. Comply with requirements of Occupational Health & Safety Regulations & all other regulations pertaining to health and safety, including worker's compensation/ insurance board & fall protection regulations.
3. If, during the course of work, asbestos containing materials, black mould, lead paint, or any other such materials are encountered or suspected, immediately report the discovery to the Consultant & cease all work in the area in question. Do not resume work in affected areas until the situation has been properly corrected & without written approval from the Owner.

SCAFFOLDING, RIGGING, AND HOISTING
1. Erect and operate scaffolding, rigging, hoisting equipment & associated hardware required for your work.

CLOSEOUT SUBMITTALS
1. Prior to application for Substantial Performance, submit all required items & documentation specified, including Operating & Maintenance Manuals, as-built record drawings, extended warranties, test certificates, final commissioning report, & TAB report.
2. Operating and Maintenance Manuals: Submit 3 hard copies of operating & maintenance manuals in hardcover 3 "D" ring binders, & identified with Project name, & "MECHANICAL OPERATING AND MAINTENANCE MANUAL" wording. Manuals are to include an Introduction sheet listing the Consultant's, Contractor's, and Subcontractor names, street addresses, telephone & fax numbers, and e-mail addresses, a Table of Contents sheet & corresponding index tab sheets, a copy of each "Reviewed" or "Reviewed As Noted" shop drawing or product data sheet, with the email address for local source of parts & service, & all required operating & maintenance data.
3. Record "As-Built" Drawings: As work progresses, clearly mark on white prints of the Contract Drawings, significant changes from the routing of services & locations of equipment shown on the Contract Drawings. Keep the set up-to-date at all times, & available for periodic review. When work is complete, transfer as-built information from as-built drawings to a recordable and identified CAD disc with CAD work of equal quality to the Contract Drawings.

PHASING OF THE WORK
1. Phasing of the work is required to maintain the existing building in operation. Include all costs for phasing including "off hours" premium time labour costs.

EQUIPMENT AND SYSTEM MANUFACTURER'S CERTIFICATION
1. Prior to equipment & system start-up procedures, pay for equipment/system manufacturers' authorized representatives to examine the installation, & when any required corrective measures have been made, to certify in writing to the Consultant that the equipment/system installation is complete & in accordance with the equipment/system manufacturer's instructions.

EQUIPMENT AND SYSTEM START-UP
1. Prior to commissioning, & under supervision of equipment/system manufacturers' representatives, start-up equipment/systems, make required adjustments, document procedures, leave equipment/systems in proper operating condition, & submit start-up documentation sheets signed by the manufacturer/supplier & the Contractor.

EQUIPMENT AND SYSTEM COMMISSIONING
1. After successful start-up and prior to Substantial Performance, commission the mechanical work in accordance with requirements of CSA Z320, Building Commissioning. Use commissioning sheets included with the CSA Standard, & any supplemental commissioning sheets required.

O & M DEMONSTRATION & TRAINING
1. Train the Owner's designated personnel in all aspects of operation & maintenance of equipment & systems using technicians employed by the equipment/system manufacturer/supplier. The number of hours of training are to be sufficient for the Owner's personnel to completely understand operation & maintenance of the equipment/system.

INSTALLATION OF PIPE SLEEVES
1. Where pipes penetrate new concrete and/or masonry surfaces provide pipe sleeves, minimum #16 gauge flanged galvanized steel or, where permitted, factory fabricated plastic sleeves in poured concrete construction, & Schedule 40 galvanized steel pipe or Class 3000 cast iron pipe in concrete or masonry walls. Sleeves in waterproofed slabs or walls are to be c/w a water stop plate.
2. Size sleeves to leave 12 mm (½") clearance around the pipes, or where the pipe is insulated, a 12 mm (½") clearance around pipe insulation. Pack & seal the void between pipe sleeves & the pipe or pipe insulation in interior non-fire rated construction for the length of the sleeves with mineral wool & seal both ends of the sleeve with silicone base caulking. Pack seals in fire rated construction as above but use rock wool & leave space at sleeve ends for fireproofing. Seal sleeves in exterior walls below grade (& any other wall where water leakage may be a problem) with Thunderline Corp. (Power Plant Supply Co.) "LINK SEAL" Model S-316 or equal mechanical seals.
3. Terminate sleeves for exposed so that the sleeve is flush at both ends with the building surface concerned & provide chrome plated brass or brushed stainless steel escutcheon plates tight against the building surface to completely cover both ends.

DUCT OPENINGS
1. Duct openings, air inlet and outlet openings, fire damper & similar openings will be provided in new poured concrete work, masonry, drywall & other building surfaces by the trade responsible for the particular construction in which the opening is required.

FIRESTOPPING AND SMOKE SEALS
1. Unless otherwise specified, where mechanical work penetrates fire rated construction, provide ULC listed & labelled firestopping & smoke seal materials installed in accordance with requirements of CAN4-S115 (ratings F, FT, FH, & FTH as required), CAN/ULC-S101, & other governing authorities to seal the penetrations.

PIPE HANGERS AND SUPPORTS
1. Provide pipe hangers and supports. Provide additional structural steel channels, angles, inserts, beam champs & similar accessories required for hanging or supporting pipe. All ferrous hanger & support products are to be galvanized.
2. For Insulated Pipe: Size the hanger or support to suit the dia. of the insulated pipe & install the hanger or support on the outside of the insulation & insulation finish.
3. Horizontal Above Ground Piping: Hangers for suspended pipe to & including 25 mm (1") dia. are to be clevis type or adjustable ring type, & hangers for suspended pipe 40 mm (1½") diameter & larger are to be adjustable clevis type. Space hangers & supports in accordance with Code requirements.
4. Vertical Piping: Support vertical piping by means of steel offset pipe clamps or heavy-duty steel brackets or soil pipe brackets spaced at maximum 3 m (10') intervals or at least once for piping less than 3 m (10') in height.
5. Piping On The Roof: Support piping on the roof as follows:
5.1 on existing roof – provide Portable Pipe Hangers (Canada) Inc. "PP" Series support system components to suit the pipe, including bases, galvanized structural steel frames, & galvanized steel pipe hangers and/or supports conforming to MSS SP-58, & carefully scrape away the roofing gravel, bed the support in a heavy covering of roofing mastic, then scrape the gravel back up around the support.
5.2 on new roof – supply Lexcor "Flash-Tite" or Thaler Roofing Specialties Products Inc. "MERS" Series insulated aluminum support risers to suit the application, all required accessories, channel type aluminum cross members, & galvanized steel pipe hangers and/or supports conforming to MSS Type SP-58, & hand to the roofing trade for installation at required spacing
6. Fire protection piping – generally as above but ULC listed and/or FM approved, & in accordance with Chapter requirements of the NFPA Standard applicable to the piping system.
7. Isolation for Bare Copper Tubing: Isolate hangers, support or securements for horizontal copper tubing from the pipe by means of strips of flexible rubber inserts.
8. Insulation Protection Shields: For insulated horizontal piping to & including 40 mm (1½") dia., provide galvanized steel insulation protection shields between the insulation & the hanger or support. Install shields immediately after the pipe is insulated.
9. Pipe Support from Steel Deck: Do not support piping from steel deck without written consent from the Consultant.
10. Hanger Rods: Electro-galvanized carbon steel (unless otherwise specified), round, threaded, complete with captive machine nuts with washers at hangers, sized to suit the loading in accordance with Table 3 in MSS SP-58.

SUPPLY OF ACCESS DOORS
1. Supply prime coated steel access doors for mechanical work which may need maintenance or repair but which is concealed in inaccessible construction. Access doors are to be c/w mounting & finishing features to suit the construction in which they are to be installed, & sizes are to suit the concealed work. Access doors in fire rated construction are to be ULC listed and labelled and of a rating to maintain the fire separation integrity. Recessed door type access doors located in surfaces where special finishes are required are to be constructed of stainless steel with a #4 finish.

ELECTRIC MOTORS
1. Motors are to conform to EEMAC Standard MG1, applicable IEEE Standards, & applicable CSA C22.2 Standards, & meet NEMA standards for maximum sound level ratings under full load. The efficiency of 1 phase AC motors to 1 HP is to be in accordance with CAN/CSA C747. The efficiency of 3 phase motors 1 HP & larger is to be in accordance with CAN/CSA C390 or IEEE 112B.

ELECTRICAL POWER & CONTROL WIRING
1. Line and load side power wiring for mechanical work will be done as part of the electrical work.
2. Do all required low voltage control wiring in EMT.
3. All low voltage wiring is the responsibility of mechanical contractor.

MECHANICAL WORK IDENTIFICATION
1. Identify all new/relocated mechanical work in accordance with existing identification standards at the site, or, if all new work or no existing site standard, identify new exposed piping & ductwork such that it can be easily seen.
2. Piping: Paint gas piping with primer & 2 coats of yellow paint in accordance with Code requirements. For electrically traced mechanical work include "ELECTRICALLY TRACED". Pipe identification is to be equal to SMS Ltd. or Brady vinyl plastic with indoor/outdoor type vinyl ink lettering & directional arrows. For pipe to and including 150 mm (6") dia., use coiled type snap-on markers. For pipe larger than 150 mm (6") dia., use saddle type strap-on markers with 2 opposite identification locations & c/w nylon cable ties. Identification wording & colours, unless otherwise indicated, is to be in accordance with CAN/CGSB-24.3.
3. Ductwork: Custom made Mylar stencils with 50 mm (2") high lettering to accurately describe the duct service, i.e. "AHU-1 SUPPLY", c/w a directional arrow, & coloured ink with ink pads & roller applicators. Ink colour is generally to be black but must contrast with the lettering background.
4. Exposed Piping and Ductwork: Identify at every end, adjacent to valves, strainers, damper & similar accessory, at connecting equipment, on both sides of pipes & ducts penetrating floors, walls, or partitions, at 6 m (20') intervals on runs exceeding 6 m (20') in length, at least once in each room, & at least once on runs less than 6 m (20').
5. Concealed Piping & Ductwork: Identify at points where pipes or ducts enter & leave rooms, shafts, pipe chases, furred spaces, & similar areas, at maximum 6 m (20') intervals above suspended accessible ceilings, at least once in each room, at each access door location, & at each piece equipment, automatic valve, etc.
6. Equipment: Provide an identification nameplate for piece of equipment, including control valves, motorized dampers, instruments, & similar products. Nameplates are to be 2-ply laminated black/white plastic, minimum 12 mm x 50 mm (½" x 2") for smaller items, minimum 25 mm x 65 mm (1" x 2½") for equipment, & minimum 50 mm x 100 mm (2" x 4") for control panels & similar items. Secure nameplates with stainless steel screws unless prohibitive, in which case use epoxy cement. Equipment identification terminology is to be as per drawing identification.
7. Valve Tags & Chart: Attach a tag to each new valve, except valves located at the equipment they control. Tags are to be coloured, 40 mm (1½") square, 2-ply laminated plastic with bevelled edges, red-white, green-white, yellow-black, etc., to match the piping identification colour, c/w a 3.2 mm (1/8") dia. by 100 mm (4") long brass plated steel bead chain, and 4 lines of engraved identification wording to indicate the valve number, size, service, & NO or NC. Prepare a computer printed chart to list tagged valves. If an existing chart is available, valve tag numbering is to be an extension of existing numbering & the new valve tag chart is to incorporate the existing chart. Frame & glaze 1 copy of the chart & affix to a wall in each main Mechanical and/or Equipment Room.

FASTENING AND SECURING HARDWARE
1. Provide fastening & securing hardware to maintain installations attached to the structure or to finished floors, walls & ceilings in a secure & rigid manner capable of withstanding the dead loads, live loads, superimposed dead loads, & any vibration of the installed products. Where construction is not suitable to support the loads, provide additional framing or special fasteners to ensure proper securement to the structure. Do not attach fasteners to steel deck without written consent from the Consultant.

INSTALLATION OF VALVES
1. Generally, valve locations are indicated or specified, however, regardless of locations shown, provide shut-off valves to isolate all systems, at the base of vertical risers, in branch take-offs at mains & risers, to isolate equipment, to permit work phasing as required, & wherever else required for proper system operation & maintenance.

PIPE LEAKAGE TESTING
1. Before new piping has been insulated or concealed, & before equipment, fixtures and fittings have been connected, pressure test piping for leakage in accordance with requirements of applicable Codes and Standards. Have completed test report sheets dated & signed by those present to confirm proper test results. Ensure that piping has been properly flushed, cleaned & is clear of foreign matter prior to pressure testing.

CONCRETE WORK FOR MECHANICAL EQUIPMENT BASES/PADS
1. Unless otherwise specified, provide all poured concrete work, including reinforcing & formwork, required for mechanical work. Concrete is to be minimum 20,700 kPa ready-mix concrete in accordance with CAN/CSA-A23.1 & the Building Code.

EXCAVATION AND BACKFILL WORK
1. Unless otherwise specified, do excavation, backfill & related work required for your work. Grade trench excavations as required. Unless otherwise specified, backfill trenches within the building with clean sharp sand in individual layers of maximum 150 mm (6") thickness compacted to a density of 100% Standard Proctor. Hand compact the first layers up to a compacted level of minimum 300 mm (12") above the top of the pipe. Hand or machine compact the balance up to grade. Depth of exterior trenches or those in unheated interior areas must prevent pipes from freezing.
2. Unless otherwise specified, backfill trenches outside the building (not under roads, parking lots or traffic areas), up to a compacted level of 450 mm (18") thick above the pipe, hand compacted to a density of 95% Standard Proctor, using granular "A" gravel. Backfill the balance in 150 mm (6") layers with approved excavated material, compacted to 95% Standard Proctor density.
3. Prior to excavation, carefully check inverts and locations of existing services and report any serious discrepancy. Contact Utilities to accurately locate their services.

CUTTING, DRILLING, AND PATCHING FOR MECHANICAL WORK
1. Do all cutting, drilling and patching of the existing building for the installation of your work. Confirm exact locations prior to cutting and/or drilling work. Patch surfaces, where required, to exactly match existing finishes using tradesmen skilled in the particular trade or application worked on.
2. Where new pipes pass through existing construction, core drill an opening sized to leave 12 mm (½") clearance around pipes or pipe insulation. In poured concrete construction, determine the location, if any, of existing concealed services.
3. Pack and seal the void between pipe openings and the pipe or pipe insulation for the length of the opening in interior construction with rock wool & seal both ends of the opening with non-hardening silicone base caulking. Seal sleeves in exterior walls below grade (& any other wall where water leakage may be a problem) with link type mechanical seals.

WASTE MANAGEMENT AND DISPOSAL
1. Separate and recycle waste materials in accordance with requirements of Canadian Construction Association Standard Document CCA 81, A Best Practices Guide to Solid Waste Reduction. Do not let waste materials accumulate at the site.
2. Upon completion of work each contractor shall leave the premise in a clean condition.

DEMOLITION WORK
1. Where indicated on the drawings, disconnect & remove mechanical work, including hangers, supports, insulation, & similar items. Cut back obsolete piping behind finishes, identify, & cap water-tight. Estimate the extent & cost of the work at the site during bidding period scheduled site visit(s). Perform demolition work in accordance with requirements of CAN/CSA-S350, Code of Practice for Safety in Demolition of Structures.
2. If existing isolation valves are not available to isolate sections of piping to be removed, provide such valves.
3. Unless otherwise specified, remove & dispose of demolished materials which are not to be relocated or reused. Refrigeration Equipment: Remove & reclaim refrigerant from equipment to be decommissioned, removed and/or altered in accordance with Refrigerant Management Canada guidelines, & governing codes and regulations. Do not under any circumstances vent refrigerant from existing equipment to atmosphere. Dispose of reclaimed refrigerant by engaging the services of a licensed firm specializing in recycling of reclaimed refrigerant. Submit documentation to confirm that the refrigerant has been properly removed from the site & recycled or disposed of.

TESTING, ADJUSTING & BALANCING (TAB)
1. Perform TAB of mechanical systems which include, as applicable, domestic hot & tempered water systems, & HVAC & control systems in accordance with either the National Standards For A Total System Balance published by the Associated Air Balance Council, or the Procedural Standards for Testing, Adjusting & Balancing of Environmental Systems published by the National Environmental Balancing Bureau. Employ an agency certified by either the Associated Air Balance Council or the National Environmental Balancing Bureau.
2. Submit 2 copies of draft reports on AABC or NEBB forms. One draft report will be returned. Upon approval of draft reports, submit 2 copies of final reports with schematic system diagrams & other data in identified 3-ring binders.
3. Spot check final report results with the Consultant, &, if results do not, on a consistent basis, agree with the final report, rebalance the systems involved, resubmit the final report, & again perform spot checks with the Consultant.

MECHANICAL INSULATION
1. Provide all required mechanical work insulation. Insulation system materials inside the building must have a fire hazard rating of not more than 25 for flame spread & 50 for smoke developed when tested in accordance with CAN/ULC-S102. Thermal performance, i.e. conductivity, of insulation is to meet or exceed the values given in the National Energy Code of Canada for Buildings, & ASHRAE/IES Standard 90.1.
2. Submit product data sheets for insulation products.
3. As applicable, do not insulate heating piping within radiation unit enclosures, branch domestic water piping located under counters to serve counter mounted plumbing fixtures & fittings (except barrier-free lavatories), exposed chrome plated domestic water angle supplies from concealed piping to plumbing fixtures & fittings (except barrier-free lavatories), PEX piping within suites, heated liquid system pump casings, valves, strainers & similar accessories, domestic water & heating system expansion tanks, & flexible branch ductwork from sheet metal ducts to grilles or diffusers.
4. Install insulation directly over pipes & ducts and not over hangers & supports. Install piping insulation & jacket continuous through pipe openings & sleeves. Install duct insulation continuous through walls, partitions, & similar surfaces except at fire dampers.
5. Where existing insulation work is damaged as a result of a new mechanical work, repair the damaged insulation work to new work standards.
6. Insulation For Piping @ Hangers & Supports: At each hanger & support location for piping 50 mm (2") dia. & larger & scheduled to be insulated, supply a factory fabricated section of phenolic foam pipe insulation with integral vapour barrier jacket and captive galvanized steel shield equal to Belform Insulation Ltd. "Koolphen K-Block" insulated pipe support inserts. Supply the insulation sections to the piping installers for installation as the pipe is erected.
7. Piping Insulation-Mineral Fibre: Unless otherwise specified, insulate the following pipe inside the building & above ground to the thickness indicated with rigid, sectional, sleeve type insulation to ASTM Standard C 547, with a factory applied vapour barrier jacket, & blanket type roll insulation to ASTM C553, 24 kg/m^3 (1½ $lb./ft.^3$) density, with a factory applied vapour barrier facing:
7.1 domestic cold water piping to & including 100 mm (4") dia. – 25 mm (1") thick, & piping larger than 100 mm (4") dia. – 40 mm (1½") thick
7.2 domestic hot water piping to 40 mm (1½") dia. – 25 mm (1") thick, & piping larger than 40 mm (1½") dia. – 50 mm (2") thick
7.3 tempered domestic water piping – 25 mm (1") thick
7.4 condensate drainage piping from air conditioning system/unit drain pans to main vertical drain risers or to indirect drainage point – 25 mm (1") thick
8. Piping Insulation-Non-Combustible Insulation: Where pipe (inside the building & above ground) which is to be insulated as specified above penetrates fire rated construction, provide non-combustible, rigid, sectional, longitudinally split mineral fibre pipe insulation with a reinforced vapour barrier jacket in accordance with requirements of CAN/ULC-S114 & compatible with firestopping as per CAN/ULC-S101.
9. Piping Insulation-Flexible Elastomeric Insulation: Insulate refrigerant piping outside the building with 25 mm (1") thick closed cell, sleeve type, longitudinally split, self-seal, foamed plastic pipe insulation in accordance with requirements of ASTM C534 & equal to Armacell AP/Armaflex SS & installed in strict accordance with the manufacturer's published instruction to produce a water-tight installation.
10. Barrier-Free Lavatory Insulation Kits: Provide removable, flexible, reusable, white moulded plastic insulation kits equal to Zeston "SNAP-TRAP" for barrier-free lavatory drain piping & water supplies exposed under barrier-free lavatories.
11. Equipment Insulation-Blanket Mineral Fibre: Insulate equipment listed below with roll form mineral fibre blanket type insulation equal to Johns Manville Inc. Type 150 "Microlite" to ASTM Standard C553, 24 kg/m^3 (1½ $lb./ft.^3$) density, with a factory applied vapour barrier facing:
11.1 water meter(s) – 40 mm (1½") thick
12. Equipment Insulation-Removable & Reusable Type: Insulate the equipment listed below with custom designed & manufactured removable & reusable insulation covers equal to Crossby Dewar Inc. minimum 95 kg/m^3 (6 $lb./ft.^3$) density ceramic fibre insulation sewn between minimum 542.5 g/m2 (1.8 $oz./ft.^2$) weight silicone impregnated fibreglass fabric in a quilted pattern using double stitches made with Kelvar or Teflon coated fibreglass thread. Overlap flaps are to be secured using laces, snaps, or Velcro double stitched in place:
13.1 150 mm (6") diameter & larger piping strainers, backflow preventers, etc.
Provide "wrap type" removable and reusable insulation covers equal to Insufab Systems Inc. covers for "cold" circuit balancing valves, backflow preventers, & similar items in piping less than 150 mm (6") dia.
13. Mineral Fibre Insulation-Ductwork Inside Building: Equal to Johns Manville Inc. Type 814 "Spin-Glas" preformed board type insulation to ASTM C612, with a factory applied reinforced aluminum foil & kraft paper facing for exposed rectangular ductwork, roll form semi-rigid insulation equal to Multi-Glass Insulation Ltd. "Multi-Flex MKF" to ASTM C1393 with a factory applied vapour barrier facing for exposed round & oval ducts, & blanket type roll form insulation equal to Johns Manville Inc. Duct Wrap Type 13.0 "Microlite" to ASTM Standard C553, 24 kg/m^3 (1½ $lb./ft.^3$) density, 40 mm (1½") thick with a factory applied vapour barrier facing for concealed rectangular, round & oval ductwork. Insulate the following ductwork systems inside the building with mineral fibre insulation of the thickness indicated:
13.1 fresh air intake ductwork, casings & plenums to & including mixing plenums or sections, or, if mixing plenums or sections are not provided, to the 1st heating coil, or if both mixing plenums or sections & heating coil sections are not provided, & the fresh air is not tempered, then the fresh air ductwork system complete – 40 mm (1½") thick
13.2 exhaust discharge ductwork for a distance of 3 m (10') downstream (back) from exhaust openings to atmosphere, including exhaust plenums within the 3 m (10') distance – 25 mm (1") thick rigid board or 40 mm (1½") thick flexible blanket as required;
13.3 any other ductwork, casings, plenums or sections specified or detailed on the drawings to be insulated – thickness as specified.
14. Flexible Elastomeric Insulation-Ductwork Outside Building: Insulate all exposed exterior ductwork (except fresh air intake ductwork) & associated plenums and/or casings with 40 mm (1½") thick flexible elastomeric sheet insulation equal to Armacell "AP/Armaflex SA" closed cell, self-adhering elastomeric EDPM rubber insulation in accordance with ASTM C534, applied in two 20 mm (¾") thick layers with staggered tightly butted joints to produce a weather-tight installation.

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NORTH

STAMP

LICENCED PROFESSIONAL ENGINEER
A.S. BHOGAL
100079257
2025/08/08
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
3	ISSUED FOR TENDER	2025.09.04
2	ISSUED FOR PERMIT & TENDER	2025.08.08
1	ISSUED FOR COORDINATION	2025.06.26

MECHANICAL SPECIFICATION (1 OF 3)

WASHROOM RENOVATION

LAVAL COMMUNITY CENTRE
475 SALISBURY ST
OSHAWA ON L1J 6L9

SCALE	N.T.S.
DATE	6/26/2025
DRAWN	SM
CHECKED	AB
PROJECT NUMBER	25-076
SHEET	M0.01

MECHANICAL WORK SPECIFICATIONS

15. Insulation Coatings, Finishes & Jackets: Provide coatings, finishes or jackets as follows:
    15.1 Canvas: ULC listed and labelled, 25/50 rated, roll form, minimum 170g (6 oz.) canvas jacket material secured in place with a full 100% covering coat of lagging adhesive for, unless otherwise shown and/or specified, exposed mineral fibre insulation inside the building
    15.2 White PVC: Roll form sheet & fitting covers equal to Johns Manville Inc. "Zeston" 300. 25/50 rated, for exposed mineral fibre pipe insulation in wet or wash–down areas
    15.3 Rigid Aluminium: Equal to Childers Metals (ITW Insulation Systems Canada) "Lock–on embossed aluminum jacket material to ASTM B209, factory cut to size & c/w moisture barrier & continuous modified Pittsburgh Z–Lock, "Fabstraps" & butt straps to cover end to end joints, & 2–piece epoxy coated pressed aluminum with weather locking edges for exposed mineral fibre pipe insulation outside the building or in "wet" areas.
    15.4 Protective Coating – Flexible Foam Elastomeric Insulation: Equal to Armacell "WB Armaflex" weatherproof, water–based latex enamel finish. Apply 1 coat for interior insulation & 2 coats (with 24 hours between coats) for insulation outside the building.
16. Insulation Application Requirements: Unless otherwise specified apply insulation materials in accordance with requirements of the current edition of the Thermal Insulation Association of Canada National Installation Standard.

DOMESTIC WATER SYSTEMS

1. Provide domestic water piping systems. All products in contact with domestic water are to be NSF/ANSI 61 certified lead free.
2. Domestic Water Service: Make arrangements with the Municipality for installation of domestic water service from the Municipal main to the property line. Pay charges levied by the Municipality for the service connection work.
3. Piping Installation: Conform to the following requirements:
   3.1 if and where required, brace & secure u/g water service pipe entering the building in accordance with Municipal standards & details & paint metallic restraint devices with 2 coats of corrosion resistant black asphalt base coating prior to backfilling
   3.2 provide proper dielectric unions in connections between copper pipe & ferrous pipe or equipment
   3.3 secure trap seal primer tubing embedded in concrete to reinforcing steel & be present during the concrete pour to ensure that the tubing is not damaged or dislodged
   3.4 provide balancing valves in domestic hot water recirculation piping where shown or required
   3.5 flush new and/or reworked domestic water piping after leakage testing is complete, & when flushing is complete, disinfect the piping with a solution of sodium hypochlorite to AWWA B–300 in accordance with requirements of the Ministry of Environment document entitled Procedure for Disinfection of Drinking Water in Ontario, under supervision of a P. Eng. authorized by the Professional Engineers of Ontario to perform such work, & when disinfecting is complete, submit water samples to a certified laboratory for purity testing &, when testing indicates pure water in accordance with governing standards, submit a copy of the test results & fill the systems.

DRAINAGE & VENT SYSTEMS

1. Provide drainage & vent piping systems.
2. Drainage Service: Make arrangements with the Municipality for installation of drainage service from the Municipal main(s) to the property line. Pay charges levied by the Municipality for the service connection work.
3. Piping Installation: Conform to the following requirements:
   3.1 slope horizontal drainage piping a/g in sizes to & including 75 mm (3") dia. 25 mm (1") in 1.2 m (4'), & pipe 100 mm (4") diameter & larger 25 mm (1") in 2.4 m (8')
   3.2 install & slope u/g drainage piping to inverts or slopes indicated to facilitate straight & true gradients between the points shown, & verify available slopes before installing the pipes.
   3.3 slope horizontal branches of vent piping down to the fixture or pipe to which they connect with a minimum pitch of 25 mm (1") in 1.2 m (4').
   3.4 Extend vent stacks up through the roof generally where shown but with exact locations to suit site conditions & in any case a minimum of 3 m (10') from fresh air intakes. Terminate vent stacks a minimum of 330 mm (13") above the roof (including roof parapets) in vent stack covers.
   3.5 Provide proper dielectric unions at connections between copper pipe and ferrous pipe or equipment.
   3.6 Where existing vents are not available, provide new vents to roof as required.

PLUMBING FIXTURES & FITTINGS

1. Provide plumbing fixtures & fittings as shown & scheduled on the drawings. Water supply fittings are to be lead–free in accordance with NSF/ANSI 61 requirements.
2. Unless otherwise specified, vitreous china, porcelain enamelled, & acrylic finished fixtures are to be white. Unless otherwise specified, fittings & piping exposed to view are to be chrome plated & polished. Fittings located in areas other than private washrooms are to be vandal–resistant.
3. Fixture Exposed Traps: Exposed traps for fixtures not equipped with integral traps, such as lavatories, are to be adjustable chrome plated cast brass "P" traps with cleanouts, minimum #17 gauge chrome plated tubular extensions, & chrome plated escutcheons.
4. Fixture Concealed Traps: Concealed traps for fixtures not equipped with integral traps, such as counter sinks, are to adjustable cast brass with cleanout plugs.
5. Fixture Exposed Supplies: Exposed supplies for fixtures which do not have supply trim/fittings with integral stops, i.e. lavatories, are to be solid chrome plated brass angle vales with screwdriver stops for public areas, wheel handle stops for private areas, flexible stainless steel risers, & stainless steel or chrome plated steel escutcheons. Dahl Brothers Canada Ltd, NSF/ANSI 61 certified chrome plated "mini–ball" valve assemblies will be acceptable.
6. Fixture Concealed Supplies: Water piping as specified, c/w ball type shut–off valves as specified with the water piping or NST/ANSI 61 certified Dahl Bros. Canada Ltd. ¼ turn "mini ball" valves.
7. Barrier–Free Fixtures: Comply with mounting height & other requirements of the governing Code(s).
8. Caulking: Caulk around plumbing fixtures & fittings where they contact walls, floors, & any other building surface using gun applied caulking equal to General Electric Series SCS–1200 Silicone Construction Sealant or Dow Corning 780 silicone rubber sealant with primers as recommended by the sealant manufacturer. Caulking colour other than white, if any, will be selected by the Consultant.
9. Testing & Adjusting: When installation is complete, check & test the operation of each fixture & fitting. Adjust or repair as required.

DUCTWORK

1. Provide all required ductwork. Unless otherwise specified, ductwork is to be galvanized steel, rectangular and/or round and/or flat oval as shown. Note that where rectangular ductwork is shown, round or flat oval ductwork of equivalent cross–sectional area is acceptable.
2. Unless otherwise specified, construct & install ductwork in accordance with ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible to suit the duct pressure class designation of minimum 500 Pa (2" w.c.) positive or negative as applicable, a minimum velocity of 10 m/s (2000 fpm), & so that the ductwork does not "drum". All flat surfaces of rectangular ductwork are to be cross–broken. Duct system sealing is to meet ANSI/SMACNA Seal Class A requirements.
3. Duct Routing and Dimensions: Confirm the routing of ductwork at the site & site measure ductwork prior to fabrication. Duct dimensions may be revised to suit site routing & building element requirements, if dimension revisions are reviewed with & approved by the Consultant. Duct routing and/or dimension revisions to suit conditions at the site are not grounds for a claim for an extra cost.
4. Automatic Control Components: Install (but do not connect) duct system mounted automatic control components supplied as part of the automatic control work.
5. Heat Transfer Equipment Connections: Where indicated, provide duct connections to fan powered heat transfer equipment with integral coils.
6. Round & Flat Oval Duct Support Inside Building: Support round & flat oval ducts inside the building in accordance with ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible, but, unless otherwise specified, for both uninsulated and insulated ducts exposed in finished areas, use bands & secure at the top of the duct to a hanger rod, all similar to Ductmate Canada Ltd. type "BA". If the duct is insulated, size the strap to suit the diameter of the insulated duct.
7. Support of Roof Mounted Ducts: Support roof mounted duct on factory fabricated aluminium support assemblies to suit roof construction, sized & arranged to suit the duct, & properly spaced.
8. Watertight Ductwork: Where watertight horizontal ductwork is required, construct without bottom longitudinal seams. Solder or weld the joints of bottom and side sheets. Seal all other joints with duct sealer. Slope horizontal duct to hoods, risers, or drain points. Provide duct drain fittings at drain points. Provide watertight ductwork for, as applicable all galvanized steel ductwork outside the building or otherwise exposed to the elements, fresh air intakes, & wherever else shown
9. Flexible Ductwork: Provide maximum 1.5 m (5') long lengths of flexible ductwork for connections between galvanized steel ducts & necks of ceiling grilles & diffusers. Do not install flexible ductwork through walls, even if shown on the drawings. At rectangular galvanized steel duct, accurately cut holes & provide flanged or "Spin–in" round flexible duct connection collars. Seal joints with duct sealer. Install flexible ducts as straight as possible & secure at each end with nylon or stainless steel gear type clamps, & seal joints. Provide long radius duct bends where they are required.
10. Acoustic Lining: Provide acoustic lining in ductwork in locations as follows wherever shown and/or specified on the drawings, in ductwork downstream of air terminal boxes for a distance of 2.4 m (8') measured along the duct & outward from the box in all directions, & for all transfer air ducts. Install lining in accordance with requirements of ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible, however, regardless of velocity, at leading & trailing edges of duct liner sections, provide galvanized steel nosing channel as per the detail entitled Flexible Duct Liner Installation found in the ANSI/SMACNA manual referred to above.
11. Testing, Adjusting & Balancing: Include for a site walk–through with testing & balancing personnel following the route of duct systems to be tested, adjusted & balanced for the purpose of confirming the proper position & attitude of dampers, the location of pitot tube openings, & any other work affecting the testing & balancing procedures. Perform corrective work required as a result of this walk–through.

AUTOMATIC CONTROL SYSTEMS

1. Provide complete systems of control & instrumentation to control & supervise building equipment & systems. The control systems are to generally be as indicated on drawing control diagrams & are to have all the elements therein indicated or implied. The control diagrams show only the principal components controlling the equipment & systems. Supplement each control system with relays, transformers, sensors, etc., required to enable each system to perform as specified & to permit proper operation & supervision.
2. Shop Drawings/Product Data: Shop drawings/product data sheets are to include all control system components, identified schematic control diagrams with component identification, catalogue numbers, & sequence of operation for all systems, & certified wiring diagrams for all systems.
3. Installation Requirements: The control systems are to be installed by the control component manufacturer or by licensed personnel authorized by the control component manufacturer. The control system installation company is to have local parts & service availability on a 24/7 basis. Control wiring work is to be performed by licensed journeyman electricians, or under direct daily supervision of journeyman electricians.
4. Automatic Control Dampers: Dampers for modulating & mixing applications are to be parallel blade type. Dampers for open–shut service are to be opposed blade type. Maximum blade length is to be 1 m (4'). Dampers greater than 2 sections wide are to be c/w a jackshaft. Damper motors are to be sized to control the damper against maximum pressure or dynamic closing pressure, whichever is greater, to suit the sizes of dampers involved, & to provide sufficient force to maintain the damper rated leakage characteristics. Operators for dampers to be connected to the building fire alarm system or to freeze protection devices are to be equipped with additional relays to permit the dampers to respond and go to the required position in less than 15 seconds upon receipt of a signal. Operator enclosures are to be suitable for the environment in which they are located.
5. Temperature Sensor/Transmitter Input Devices: Sensor/transmitter input devices are to be resistance type devices, suitable in all respects for the application & mounting location, either 2–wire 1000 ohm nickel RTD or 2–wire 1000 ohm platinum RTD, equipped with type 316 stainless steel thermowells for pipe mounting applications, as follows:
   6.1 room temperature sensors: constructed for surface or recessed wall box mounting, c/w an adjustable set–point reset slide switch with a ± 1.66° C (±3° F) range, individual heating/cooling set–point slide switches as required, a momentary override request pushbutton for activation of after–hours operation, & an analogue thermometer
   6.2 outside air sensors: designed & constructed for ambient temperatures & to withstand the environmental conditions to which they are exposed, complete with a NEMA/EEMAC 3R enclosure, solar shield, & a perforated plate surrounding the sensor element where exposed to wind velocity pressure
   6.3 duct mounting sensors: insertion type with lock nut & mounting plate, & designed to mount in an electrical box (weather–proof with gasket & cover where outside) through a hole in the duct
6. Additional Control System Components: Provide all required control system components & related hardware. Refer to drawing control diagrams, points lists, & sequences. Where components are pipe, duct, or equipment mounted supply the components at the proper time, coordinate installation with the appropriate trade, & ensure that the components are properly located & mounted.
7. Control Wiring: Do all required control wiring from 15A–1P circuits terminated as part of the electrical work in junction boxes in equipment rooms/areas. Coordinate exact junction box locations at the site with the electrical trade. Except as specified below, install wiring in EMT. Unless otherwise specified the final 600 mm (2') connections to sensors & transmitters, & wherever conduit extends across flexible duct connections is to be liquid–tight flexible conduit. Control wiring in ceiling spaces & wall cavities may be plenum rated cable installed without conduit but neatly harnessed, secured, & identified.
8. Testing, Adjusting & Commissioning: When control work is complete, check the installation of components & all wiring connections, make any required adjustments, coordinate adjustments with personnel doing HVAC testing, adjusting & balancing work. & commission the control systems.
9. Demonstration & Training: Include for a full day of on–site operation demonstration & training sessions for 2 groups of 6 people.

COMMON MECHANICAL WORK SUPPLY

PLUMBING AND DRAINAGE

- Underground Sanitary Drainage Piping: Equal to Ipex "Ring–Tite" DR35 rigid PVC hub & spigot sewer pipe & fittings to CAN/CSA B182.2, with gasket joints assembled with pipe lubricant.
- Underground Vent Piping: As for underground drainage piping.
- Above Ground Sanitary Drainage Piping: For piping to 40 mm (1½") dia: Type DWV copper to ASTM B306, with forged copper solder type drainage fittings & 50% lead – 50% tin solder joints. For piping larger than 40 mm (1½") dia., Equal to Ipex "System XFR" 15–50 rigid IPS PVC drain, waste & vent pipe and fittings to CAN/CSA B181.2, c/w a flame spread rating less than 25 & a smoke developed rating less than 50 when tested to CAN/ULC–S102–2, solvent weld joints, &, for fire barrier penetration, approved firestop conforming to CAN4–S115.
- Condensate Drain: As for 40 mm (1½") dia. above ground sanitary drainage piping.
- Drainage Piping Pitch: % slope, mm/M, or in/ft
- Above Ground Vent Piping: As for above ground drainage piping.
- Water Meter: Equal to Neptune Technology Group (Canada) Ltd. proof, in line serviceable meter in accordance with requirements of AWWA C700 and NSF/ANSI 61, Drinking Water System Components, suitable for connection of a remote automatic reading & billing unit & c/w a sealed register & a positive displacement measuring chamber.
- Above Ground Domestic Cold Water Piping: Type "L" hard drawn seamless copper to ASTM B88, c/w copper solder type fittings to ASME/ANSI B16.18 & soldered joints using NSF/ANSI 61 certified silver alloy lead–free solder, or, at your option, Type "L" hard drawn seamless copper to ASTM B88 with Viega "ProPress" copper fittings with "Smart Connect" feature, EDPM seals, & pressure type crimped joints made by use of a Rigid Tool Co. Model 330–B or Model 330–C electro–hydraulic crimping tool. Note that: water piping within suites may be PEX non–barrier type cross–linked polyethylene piping in accordance with CAN/CSA–B137.5, NSF 372, and ASTM F876, & c/w brass inserts & crimp–ring joint fittings & couplings. Mains & risers may be Ipex "AquaRise" SDR 11 CPVC pipe & fittings to CAN/CSA B137.6, 25/50 flame spread & smoke developed rated in accordance with CAN/ULC S102.2, certified to NSF/ANSI 61, c/w primer/solvent weld joints, & a pressure rating of 690 kPa (100 psi) at 82.2° C (180° F)
- Above Ground Domestic Hot Water Piping: As for domestic cold water pipe but with, for soldered piping, 95%tin/5% Antimony lead free solder.
- Tempered Domestic Water Supply Piping: As for domestic hot water piping.
- Tempered Domestic Water Return Piping: As for domestic hot water piping.
- Domestic Cold Water Shut–Off Valves: Class 600, 4140 kPa (600 psi) WOG rated full port ball type valves, each equipped with an identifying tag, and c/w a forged brass body with solder ends, forged brass cap, & blowout–proof stem, solid forged brass chrome plated ball, "Teflon" or "PTFE" seat, & a removable lever handle. Valves in insulated piping are to be complete with stem extensions.
- Domestic Hot Water Shut–Off Valves: As for domestic cold water shut–off valves.
- Tempered Domestic Water Shut–Off Valves: As for domestic cold water shut–off valves.
- Domestic Hot Water Check Valves: For horizontal piping, Class 125, bronze, lead–free with identifying tag, 1380 kPa (200 psi) WOG rated horizontal swing type check valves with solder ends. For vertical piping, equal to Kitz Corp. Code 26, bronze, lead–free, 1725 kPa (250 psi) WOG rated vertical lift check valve with soldering ends.
- Domestic Hot Water Balancing Valve: Solder end, globe style, non–ferrous circuit balancing valves designed to facilitate precise flow measurement, precision flow balancing, & positive shut–off, c/w capped & valved drain connection, & valved ports for connection to a differential pressure meter.
- Trap Seal Primer: For priming 1 or 2 floor drains, Precision Plumbing Products Inc. Model P2–500 trap primer valve c/w "O" ring seals, 12 mm (½") dia. threaded inlet & outlet connections, &, for priming 2 traps from the same primer, a DU–2 dual outlet distribution unit. For priming from 3 to 6 floor drains, Precision Plumbing Products Inc. Model P1–500 trap primer valve c/w a Model DU–3 or DU–4, 3 or 4 outlet distribution unit for priming 3 or 4 traps, & a Model "YS–8" supply tube with combinations of Model DU–3 & DU–4 distribution units for priming from 5 to 6 traps.
- Water Hammer Arrestor: Piston type, sealed, pressurized water hammer arrestors suitable for either horizontal or vertical installation, each c/w a hard drawn copper body, "O"–ring piston seals, an air charge, & an inlet opening equal to the dia. of the pipe in which the arrestor is required.
- Backflow Preventer: Lead free reduced pressure zone dual check valve design backflow preventer in accordance with CAN/CSA B64, bronze or epoxy coated cast iron bronze fitted construction depending on size, & c/w inlet strainer, inlet & outlet shut–off valves, an intermediate relief valve, ball valve type test cocks, & a proper air gap fitting.
- Pressure Reducing Valve: For piping to & including 50 mm (2") diameter, equal to Watts Canada LF25AUB–Z3 lead free direct spring acting pressure reducing valves to CAN/CSA B356, factory set at 345 kPa (50 psi) unless otherwise specified or required. For piping 65 mm (2½") diameter & larger, equal to Watts Canada LF115 lead free pilot operated pressure reducing valve factory set at the required pressure. Provide pressure reducing valves where shown and/or specified. Whenever possible, provide pressure reducing valves factory pre–set to required pressures. Check & test operation & adjust as required.
- Underground or Concrete Encased Trap Primer Tubing: Equal to Versa Fittings and Mfg. Inc. 12 mm (½") diameter, high density, semi–rigid polyethylene tubing, 1380 kPa (200 psi) rated.
- Drainage Piping Cleanout Below Grade: For horizontal piping, TY pipe fitting with piping extended up to an extra heavy brass plug screwed into the fitting.
- Floor Cleanout Termination: Epoxy coated cast iron terminations, each adjustable & c/w neoprene sleeve, solid, gasketed, polished nickel–bronze scoriated top access cover to suit the floor finish, a seal plug, & captive, vandal–proof stainless steel securing hardware. Cleanout terminations in areas with a tile or sheet vinyl floor finish are to be as above but with a square top in lieu of a round top.
- Floor Drain: Unless otherwise specified or scheduled, vandal–proof drains in accordance with CSA B79 & the drawing schedule, each c/w an epoxy coated cast iron body & a trap seal primer connection. Floor drains in areas with a tile or sheet vinyl floor finish are to be as above but with a square grate in lieu of a round grate.
- Funnel Floor Drain: As for floor drains but c/w a funnel grate.
- Hub Drain: As for floor drains but c/w a hub grate.
- Other plumbing fixtures: See Specification.

H.V.A.C

- Sheet Metal Duct: First figure indicates top dimension, or, for round duct, the duct dia. Hot dip galvanized to ASTM A653, G60 for bare duct to be painted, G90 elsewhere. Minimum #26 gauge lock forming grade for rectangular duct, machine fabricated spiral, mechanically locked flat seam for round and oval duct & fittings. Construct & install in accordance with ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible to suit duct pressure class designation of minimum 500 Pa (2" wc) positive or negative, & minimum velocity of 10 m/s (200 fpm). All flat surfaces of rectangular duct to be cross–broken. Seal joints to ANSI/SMACNA Seal Class A requirements with water base non–flammable sealer with CAN/ULC–S102 maximum flame spread of 5 & smoke developed rating of 0.
- Duct Square Elbow: Complete with interconnected multiple radius turning vanes constructed of same material as the duct, reinforced to suit system pressure & velocity, & in accordance with ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible. Provide where shown and/or required.
- Bare Flexible Supply Air Duct: Spirally wound, semi–rigid, corrugated aluminium duct c/w continuous triple lock seams, ANSI/SMACNA Form "M–UN", ULC–S110 listed & labelled as a Class 1 air duct. Connect to rectangular duct using "Spin–In" fitting with damper. Seal rectangular duct around "Spin–IN". Provide where shown. Install as straight as possible & support per requirements of ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible. Secure at each end with gear type clamps.
- Insulated Flexible Supply Air Duct: Maximum 3m (10') lengths of spirally wound, semi–rigid, corrugated aluminium duct c/w continuous triple lock seams, ANSI/SMACNA Form "M–1", ULC–S110 listed & labelled as a Class 1 air duct, & factory covered with 40 mm (1½") thick, 12 kg/m³ (0.75 lb/ft³) density foil faced mineral wool blanket insulation meeting flame spread & smoke developed ratings of CAN/ULC–S102. Connect to rectangular duct using "Spin–In" fitting with damper. Seal rectangular duct around "Spin–IN".
- Acoustically Lined Duct: Sheet metal duct as above but lined with minimum 25 mm (1") thick mineral wool acoustic lining material coated on the airside face with black coating, meeting NFPA 90A requirements & flame spread & smoke developed ratings of CAN/ULC–S102, flexible for round ducts, board type for rectangular ducts. Provide for 1st 3.6 m (12') of supply & return ductwork from a/c supply fans, all transfer air ducts & wherever else shown/specified. Install as per ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible, including Flexible Duct Liner detail.
- Flexible Connection Material: A minimum of 100 mm (4") of Doro–Dyne Canada Inc. "DUROLON" or Dyn Air Inc. "HYPALON" where inside building, Duro–Dyne "THERMOFAB" or Dyn–Air "SILICON HI–T" where outside building, installed as per ANSI/SMACNA HVAC Duct Construction Standards Metal and Flexible details. Provide where ducts/plenums/casings connect to fans, & wherever else shown.
- Transfer air Duct: Galvanized sheet metal duct sized & shaped as shown, c/w acoustic lining.
- Transfer Air Duct With Grille: Galvanized sheet metal duct sized & shaped as shown, c/w acoustic lining & a grille of the type shown.
- Duct Volume Damper: Equal to Nailor Industries Models 1010 & 1020 single or parallel blade for rectangular dampers, Model 1090 single blade for round dampers, each c/w a locking hand quadrant operator, with standoff mounting for insulated ducts. Provide in open–end ducts, & wherever else shown.
- Duct Fire Damper: Curtain blade type, dynamic, galvanized steel fusible link damper, ULC classified to CAN/ULC–S112 & as per NFPA 90A requirements. 1½ or 3 hour rated as required, &, unless otherwise indicated, c/w a 74° C (165° F) fusible link. Provide where shown. Install in accordance with Code requirements, including expansion clearance between damper sleeve.
- Backdraft Damper: Equal to T. A. Morison & Co. Inc. "TAMCO" counterbalanced backdraft dampers, Series 7000 WT for vertical mounting, Series 7000 CW for horizontal mounting. Provide where shown.
- Splitter Damper: Minimum #20 gauge. Damper blade constructed of same material as duct, reinforced to suit blade size & system velocity, & c/w Dyn Air Inc. #Q–50 "DYN–A–QUAD S–S" quadrant regulator with RW–50 backup washers, square bearing pin, & side pin. Provide in supply ducts at branch connections off mains, & wherever else shown. Operators for dampers in insulated ducts to be c/w stand–off mounting brackets.
- Duct Access Door: Construct & install as per ANSI/SMACNA HVAC Duct Construction Standards Metal & Flexible, & size to suit the application. Provide for duct components requiring maintenance and/or repair, where ducts/plenums/casings connect to fans, & wherever else shown. Identify with "FLD" marker type red lettering.
- Louvre: Equal to Price Industries Inc. DE439 or DE63, extruded aluminium alloy 3003–H14, colour as selected from standard colour range, with drainable blades, thickness to suit wall thickness, 12mm (½") mesh aluminium bird screen, & all required mounting hardware. Provide where shown. Confirm size & finish prior to ordering. Provide matching insulated blank–off panel where required.
- Supply Air Diffuser: Refer to Drawing schedule.
- Supply Air Grille: Refer to Drawing schedule.
- Return Air Grille: Refer to Drawing schedule.
- Exhaust Air Grille: Refer to Drawing schedule.
- Linear Slot Diffuser: Refer to Drawing schedule.
- Baseboard Heater: Low profile wall mount as scheduled, approximately 150 mm (6") high, 65 mm (2½") deep, in accordance with requirements of CSA C22.2 No. 46, c/w steel body with steel connection box at both ends, 2 rows of mounting holes, single screw built–in wire holder, & steel removable front panel with rounded upper corners, standard watt density (900 W/m) tubular steel heating element with aluminium fins, noise free & floating on high temperature bushings, factory installed, tamperproof, adjustable bi–metal thermostat, factory supplied enclosure accessories as indicated, &, if required, factory installed contacts and hardware for site interlocking with air conditioning equipment as indicated on the drawings. Provide where shown. Confirm finish colour prior to ordering.

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NORTH

STAMP

LICENCED PROFESSIONAL ENGINEER
A.S. BHOGAL
100079257
2025/08/08
PROVINCE OF ONTARIO

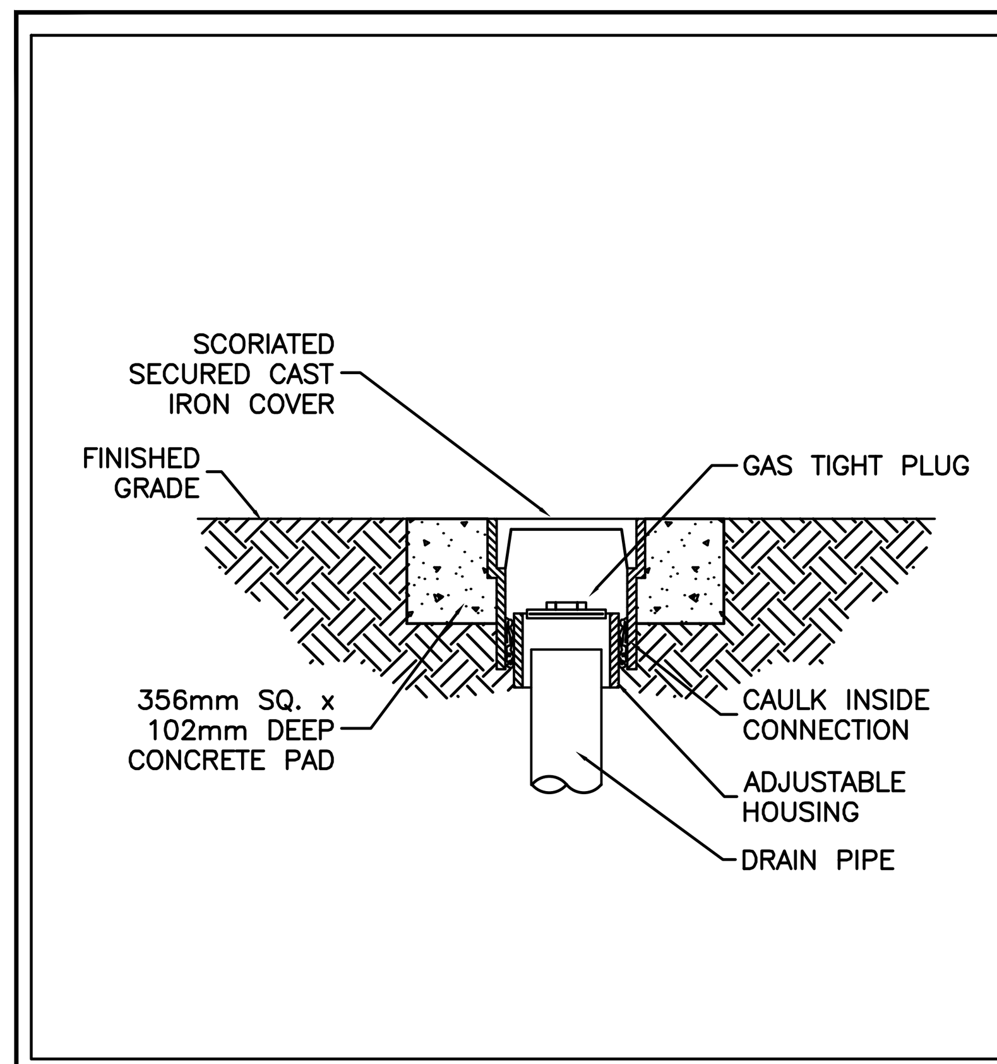
NO.	DESCRIPTION	DATE
3	ISSUED FOR TENDER	2025.09.04
2	ISSUED FOR PERMIT & TENDER	2025.08.08
1	ISSUED FOR COORDINATION	2025.06.26

MECHANICAL SPECIFICATION (2 OF 3)

WASHROOM RENOVATION

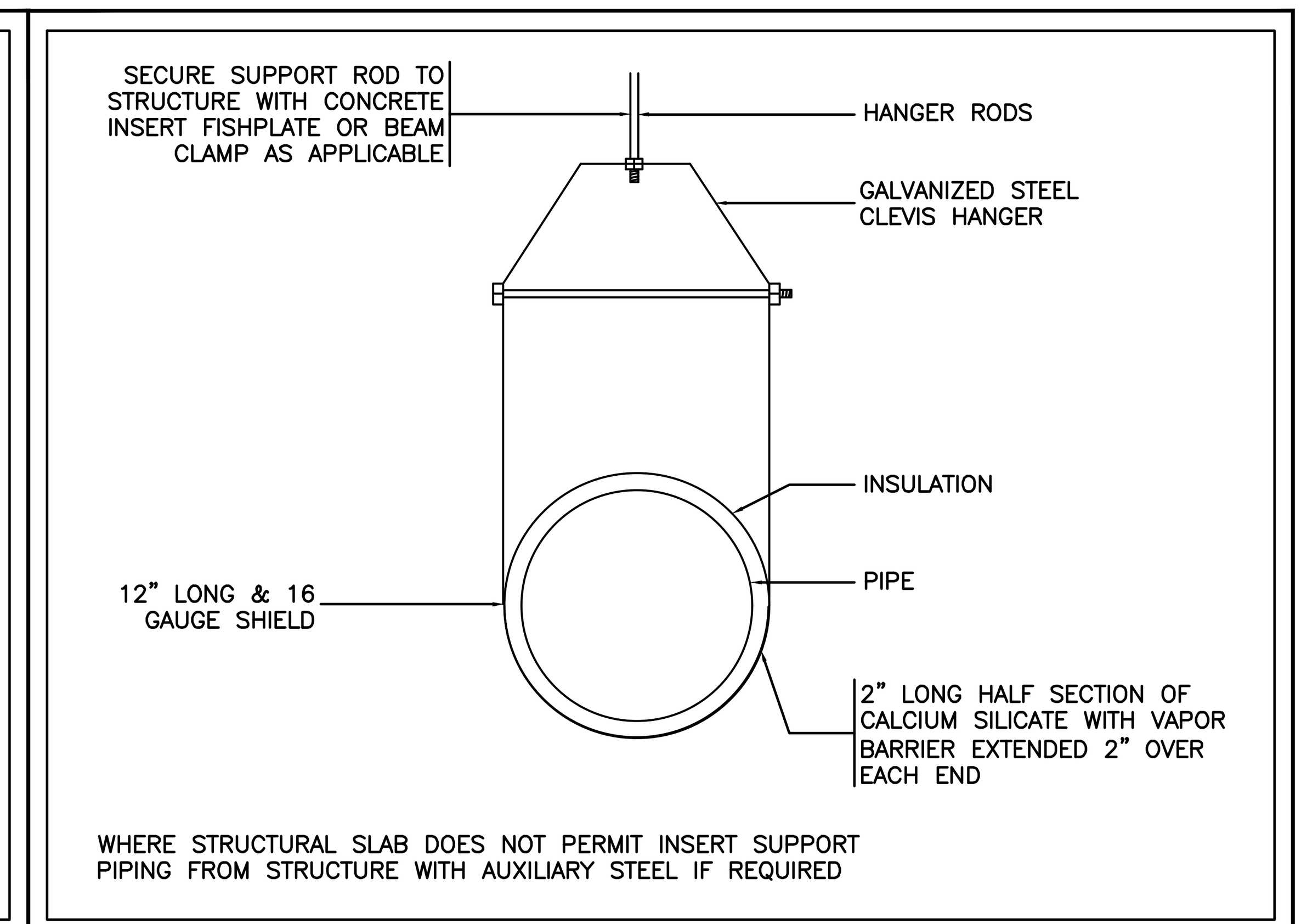
LAVAL COMMUNITY CENTRE
475 SALISBURY ST
OSHAWA ON L1J 6L9

SCALE	N.T.S
DATE	6/26/2025
DRAWN	SM
CHECKED	AB
PROJECT NUMBER	25-076
SHEET	M0.02



TYPICAL CLEANOUT TO GRADE

SCALE: NTS



TYPICAL WATER PIPE HANGER DETAIL

SCALE: NTS

EXHAUST FAN SCHEDULE (APPROVED OR EQUIVALENT)

REFERENCE	MANUFACTURER	MODEL NO.	LOCATION	SERVING	EXHAUST AIR	E.S.P.	SPEED	MOTOR	DRIVE	CONTROLS	ELECTRIC DATA			WEIGHT	REMARK
					(CFM)	(" W.G.)	(RPM)	(WATTS)			(MCA)	(MOP)	(V/PH/HZ)	(LBS.)	
EF-1	GREENHECK	CSP-A390-VG	CEILING	MECHANICAL ROOM	100	0.5	1239	175	DIRECT	REVERSE ACTING THERMOSTAT	1.5	15	115/1/60	35	INLINE EXHAUST FAN C/W GRILLE, BACKDRAFT DAMPER, SUPPORT HANGER, DISCONNECT, FLEXIBLE DUCT CONNECTION.
EF-2	GREENHECK	SP-LP0810W	CEILING	WASHROOM ROOM	100	0.25	894	46	DIRECT	OCCUPANCY SENSOR	0.4	15	115/1/60	12	CEILING MOUNTED EXHAUST FAN C/W GRILLE, BACKDRAFT DAMPER, SUPPORT HANGER, DISCONNECT, FLEXIBLE DUCT CONNECTION.
EF-3	GREENHECK	SP-LP0810W	CEILING	STORAGE ROOM	100	0.25	894	46	DIRECT	CONTINUOUSLY	0.4	15	115/1/60	12	CEILING MOUNTED EXHAUST FAN C/W GRILLE, BACKDRAFT DAMPER, SUPPORT HANGER, DISCONNECT, FLEXIBLE DUCT CONNECTION.

NOTES:
1. MOTORS SHALL HAVE FULL ONE (1) YEAR WARRANTY. ALL EXHAUST FANS WITH OUTLET OPENINGS LARGER THAN 11"x11" SHALL BE EQUIPPED WITH A MOTORIZED DAMPER.
2. HVAC CONTRACTOR SHALL INSULATE ALL EXHAUST DUCTS WITH 1" THERMAL INSULATION FOR THE LAST 10'-0" BEFORE LEAVING THE BUILDING (ie. FROM ROOF OR WALL BACK 10'-0". INSTALL BACK DRAFT DAMPERS AT WALL OR ROOF.
3. FLEXIBLE DUCT CONNECTIONS SHALL BE PROVIDED ON INTAKE AND DISCHARGE DUCTS AT FANS AND SHALL BE DURO-DYNE OR EQUAL, ULC APPROVED.
4. HVAC CONTRACTOR SHALL PROVIDE FANS WITH STARTERS, ROOF CURBS, SUPPORT HANGARS, VIBRATION ISOLATORS, FLEXIBLE DUCT CONNECTIONS, BACK DRAFT DAMPERS AND DUCTWORK AS REQUIRED.
5. FAN PLACEMENT MUST BE AT LEAST 10'-0" FROM RTU OUTSIDE AIR HOOD, 5'-0" MINIMUM FROM PARAPET WALL, TALLER THAN 3'-7" ABOVE ROOF AND 10'-0" MIN. FROM ROOF EDGE OR PARAPET SHORTER THAN 3'-7" ABOVE ROOF.
6. ALL FAN MOTORS THAT ARE ½ HP OR GREATER AND LESS THAN 1 HP SHALL BE ELECTRONICALLY-COMMUNICATED MOTORS.

EXISTING HOT WATER HEATER SCHEDULE

REFERENCE	DESCRIPTION	LOCATION	SERVING	MANUFACTURER	MODEL	GALLON CAPACITY	INPUT POWER (KW)	POWER SUPPLY	WEIGHT (LBS)	REMARKS:
								V/PH/HZ		
EX.HWH-1	TANKLESS HOT WATER HEATER	WALL MOUNTED	AS INDICATED	RHEEM	RTEX-24	-	24	240/1/60	-	EXISTING ELECTRIC TYPE HWH C/W SUPPORT KIT, EXPANSION TANK, SOLENOID VALVE ON THE INLET OF THE HOT WATER HEATER, RELIEF DRAIN TO NEAREST INDIRECT DRAIN, LEAK DETECTION WITH WATER SHUTOFF SHALL REMAIN AS IS. CONTRACTOR SHALL INVESTIGATE WORKING CONDITION ON SITE AND REPORT TO THE ENGINEER IF ANY ISSUES ARE FOUND.

REFER TO INTERIOR DESIGN DRAWINGS FOR ALL PLUMBING FIXTURERS SCHEDULE AND LOCATIONS, CONTRACTOR SHALL OBTAIN PLUMBING FIXTURE CUT SHEETS FROM THE ARCHITECT/INTERIOR DESIGNER FOR PRICING.

PLUMBING FIXTURE SCHEDULE (FOR REFERENCE ONLY AND SUBJECT TO OWNER APPROVAL)

TAG	FIXTURE	MANUFACTURER & MODEL NO.	SPECIFICATION
WC-1	WATER CLOSET	AMERICAN STANDARD-TOILET 3451001.020	TOILET, FLOOR MOUNTED WITH FLOOR OUTLET, TOILET OPERATES IN THE RANGE OF 4.2 TO 6.0 LPF (1.1 - 1.6 GPF), VITREOUS CHINA, WHITE FINISH, EVERCLEAN® ANTIMICROBIAL SURFACE, ELONGATED BOWL, 381 MM (15") RIM HEIGHT, 254 MM (10") TO 305 MM (12") ROUGH-IN FROM WALL TO THE CENTER OF WASTE OUTLET, DIRECT-FED SIPHON JET FLUSH ACTION, 38 MM (1-1/2") TOP SPUD, FLUSH VALVE BY OTHERS, FULLY-GLAZED 54 MM (2-1/8") TRAPWAY, CONDENSATION CHANNEL, TOILET SEAT NOT INCLUDED, TWO (2) COLOUR-MATCHED BOLT CAPS WITH RETAINERS (481310-100), CONSISTING OF: OVERALL DIMENSIONS: 356 MM (14") WIDE X 718 MM (28-1/4") FROM FINISHED WALL X WATER SURFACE: 254 X 305 MM (10" X 12") WATER SURFACE AREA MAP SCORE: >=1000 MAP® FLUSH SCORE COMPLIANCES AND CERTIFICATIONS: ASME A112.19.2 COMPLIANT, CSA B45.1 COMPLIANT.
		AMERICAN STANDARD-SEAT 5901100.020	COMMERCIAL HEAVY-DUTY OPEN FRONT TOILET SEAT WITHOUT COVER, FOR ELONGATED BOWL, WHITE, POLYPROPYLENE PLASTIC, EXTERNAL COLOR-MATCHED PLASTIC CHECK HINGES WITH STAINLESS STEEL POSTS, PREVENTING THE SEAT FROM EXCEEDING 11° BEYOND VERTICAL, INSTALLED FROM THE BOTTOM OF THE BOWL, LARGE MOLDED-IN BUMPERS, COMPLIANCES AND CERTIFICATIONS: DIMENSIONS: 471 MM (18-9/16") LONG X 365 MM (14-3/8") WIDE
		SLOAN - FLUSH VALVE ROYAL 111 ESS-1.28-YBC-OR-HW	ROYAL® AUTOMATIC NO-TOUCH EXPOSED WATER CLOSET FLUSHOMETER, 38 MM (1-1/2") SPUD COUPLING FOR TOP SPUD TOILET, HARDWIRED, CONSTRUCTED FROM SEMI-RED BRASS, POLISHED CHROME FINISH, HIGH EFFICIENCY 4.8 LPF (1.28 GPF), CHLORAMINE RESISTANT PERMEX® SYNTHETIC RUBBER DIAPHRAGM, OPTIMA® EL-1500 SELF-ADAPTIVE INFRARED SENSOR, SENSOR LOCATED ON DIE CAST SENSOR PLATE WITH NO VISIBLE FASTENERS (FOR 2-GANG ELECTRICAL BOX), COURTESY FLUSH® ELECTRICAL OVERRIDE BUTTON, FLUSH TUBE FOR 292 MM (11-1/2") ROUGH-IN, ADJUSTABLE TAILPIECE, 25 MM (1") I.P.S. SCREWDRIVER BAK-CHEK® ANGLE CONTROL STOP WITH FREE SPINNING VANDAL-RESISTANT STOP CAP, DUAL-FILTERED FIXED BYPASS, SWEAT SOLDER ADAPTER KIT WITH COVER TUBE, HIGH BACK PRESSURE VACUUM BREAKER, 25 MM (1") SUPPLY PIPE, CAST WALL FLANGE WITH SET SCREW, NON-HOLD-OPEN, NO EXTERNAL VOLUME ADJUSTMENT, FIXED VOLUME ACCURACY IS CONTROLLED BY CID™ TECHNOLOGY, 24 VAC INPUT/OUTPUT, WITH INDICATOR LIGHT, REQUIRES TRANSFORMERS 0345154 OR 0345999, PRESSURE RANGE: 103 - 552 KPA (15 - 80 PSI) OPERATING WATER PRESSURE COMPLIANCES AND CERTIFICATIONS: CUPC COMPLIANT.
		SLOAN - FAUCET & FLUSH VALVE POWER KIT - SL-EL-154	FOR FLUSH VALVE
WC-2 (BF)	BARRIER FREE WATER CLOSET	AMERICAN STANDARD-TOILET 3451001.020	TOILET, FLOOR MOUNTED WITH FLOOR OUTLET, TOILET OPERATES IN THE RANGE OF 4.2 TO 6.0 LPF (1.1 - 1.6 GPF), VITREOUS CHINA, WHITE FINISH, EVERCLEAN® ANTIMICROBIAL SURFACE, ELONGATED BOWL, 381 MM (15") RIM HEIGHT, 254 MM (10") TO 305 MM (12") ROUGH-IN FROM WALL TO THE CENTER OF WASTE OUTLET, DIRECT-FED SIPHON JET FLUSH ACTION, 38 MM (1-1/2") TOP SPUD, FLUSH VALVE BY OTHERS, FULLY-GLAZED 54 MM (2-1/8") TRAPWAY, CONDENSATION CHANNEL, TOILET SEAT NOT INCLUDED, TWO (2) COLOUR-MATCHED BOLT CAPS WITH RETAINERS (481310-100), CONSISTING OF: OVERALL DIMENSIONS: 356 MM (14") WIDE X 718 MM (28-1/4") FROM FINISHED WALL X WATER SURFACE: 254 X 305 MM (10" X 12") WATER SURFACE AREA MAP SCORE: >=1000 MAP® FLUSH SCORE COMPLIANCES AND CERTIFICATIONS: ASME A112.19.2 COMPLIANT, CSA B45.1 COMPLIANT.
		AMERICAN STANDARD-SEAT 5901100.020	COMMERCIAL HEAVY-DUTY OPEN FRONT TOILET SEAT WITHOUT COVER, FOR ELONGATED BOWL, WHITE, POLYPROPYLENE PLASTIC, EXTERNAL COLOR-MATCHED PLASTIC CHECK HINGES WITH STAINLESS STEEL POSTS, PREVENTING THE SEAT FROM EXCEEDING 11° BEYOND VERTICAL, INSTALLED FROM THE BOTTOM OF THE BOWL, LARGE MOLDED-IN BUMPERS, COMPLIANCES AND CERTIFICATIONS: DIMENSIONS: 471 MM (18-9/16") LONG X 365 MM (14-3/8") WIDE
		SLOAN - FLUSH VALVE ROYAL 111 ESS-1.28-YBC-OR-HW	ROYAL® AUTOMATIC NO-TOUCH EXPOSED WATER CLOSET FLUSHOMETER, 38 MM (1-1/2") SPUD COUPLING FOR TOP SPUD TOILET, HARDWIRED, CONSTRUCTED FROM SEMI-RED BRASS, POLISHED CHROME FINISH, HIGH EFFICIENCY 4.8 LPF (1.28 GPF), CHLORAMINE RESISTANT PERMEX® SYNTHETIC RUBBER DIAPHRAGM, OPTIMA® EL-1500 SELF-ADAPTIVE INFRARED SENSOR, SENSOR LOCATED ON DIE CAST SENSOR PLATE WITH NO VISIBLE FASTENERS (FOR 2-GANG ELECTRICAL BOX), COURTESY FLUSH® ELECTRICAL OVERRIDE BUTTON, FLUSH TUBE FOR 292 MM (11-1/2") ROUGH-IN, ADJUSTABLE TAILPIECE, 25 MM (1") I.P.S. SCREWDRIVER BAK-CHEK® ANGLE CONTROL STOP WITH FREE SPINNING VANDAL-RESISTANT STOP CAP, DUAL-FILTERED FIXED BYPASS, SWEAT SOLDER ADAPTER KIT WITH COVER TUBE, HIGH BACK PRESSURE VACUUM BREAKER, 25 MM (1") SUPPLY PIPE, CAST WALL FLANGE WITH SET SCREW, NON-HOLD-OPEN, NO EXTERNAL VOLUME ADJUSTMENT, FIXED VOLUME ACCURACY IS CONTROLLED BY CID™ TECHNOLOGY, 24 VAC INPUT/OUTPUT, WITH INDICATOR LIGHT, REQUIRES TRANSFORMERS 0345154 OR 0345999, PRESSURE RANGE: 103 - 552 KPA (15 - 80 PSI) OPERATING WATER PRESSURE COMPLIANCES AND CERTIFICATIONS: CUPC COMPLIANT.
		SLOAN - FAUCET & FLUSH VALVE POWER KIT - SL-EL-154	FOR FLUSH VALVE
		FRANKE COMMERCIAL - BACKREST CM-16104	WALL MOUNTING, BACK REST, SOLID CORE PLASTIC LAMINATE PANEL BACK, ANTIQUE WHITE, 305 MM (12") WIDE, 102 MM (4") HIGH, 8" (204 MM), 18 GAUGE STAINLESS STEEL BAR WITH #4 GLOSS WITH FLANGES AND COVERS, CONCEALED SNAP FLANGES AND MOUNTING HARDWARE INCLUDED, PROVIDE ADEQUATE BACKING IN WALL FOR SUPPORT AND COMPLY TO LOCAL CODES FOR BARRIER FREE REQUIREMENTS

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NORTH

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LICENCED PROFESSIONAL ENGINEER
A.S. BHOGAL
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2025/08/08
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
3	ISSUED FOR TENDER	2025.09.04
2	ISSUED FOR PERMIT & TENDER	2025.08.08
1	ISSUED FOR COORDINATION	2025.06.26

MECHANICAL DETAILS & EQUIPMENT SCHEDULE

WASHROOM RENOVATION

LAVAL COMMUNITY CENTRE
475 SALISBURY ST
OSHAWA ON L1J 6L9

SCALE N.T.S
DATE 6/26/2025
DRAWN SM
CHECKED AB
PROJECT NUMBER 25-076
SHEET M0.04

REFER TO INTERIOR DESIGN DRAWINGS FOR ALL PLUMBING FIXTURERS SCHEDULE AND LOCATIONS, CONTRACTOR SHALL OBTAIN PLUMBING FIXTURE CUT SHEETS FROM THE ARCHITECT/INTERIOR DESIGNER FOR PRICING.

PLUMBING FIXTURE SCHEDULE (FOR REFERENCE ONLY AND SUBJECT TO OWNER APPROVAL)

TAG	FIXTURE	MANUFACTURER & MODEL NO.	SPECIFICATION
LAV-1	LAVATORY	AMERICAN STANDARD-BASIN 0356421.020	WALL-HUNG LAVATORY, VITREOUS CHINA, WHITE FINISH, SINGLE HOLE CENTERSET, FRONT OVERFLOW, WITH FAUCET LEDGE, 102 MM (4") HIGH BACKSPLASH, FOR WALL HANGER (INCLUDED) OR CONCEALED ARMS (BY OTHERS), OVERALL DIMENSIONS: 540 MM (21-1/4") LONG, 464 MM (18-1/4") WIDE, BOWL DIMENSIONS: 254 MM (10") LONG, 381 MM (15") WIDE, 165 MM (6-1/2") DEEP,
		MOEN - FAUCET 8554	TOUCH FREE OPERATION FOR IMPROVED HYGIENE • ADJUSTABLE SENSOR ACTIVATION DISTANCE FROM 3" TO 12" (DEFAULT 5-1/2") • VANDAL MODE: 30 SECOND TIME-OUT FEATURE • MAINTENANCE / CLEANING MODE: ALLOWS FOR A 30 SECOND DEACTIVATION FOR MAINTENANCE OR CLEANING • SENTINEL FLOW: ELIMINATES STAGNANT WATER SUPPLY LINES EVERY 24 HOURS (FACTORY SETTING = OFF) • METERING MODE FEATURE: ADJUSTABLE RUN TIME FROM 10 TO 180 SECONDS (FACTORY SETTING = OFF) • AC POWERED * FOR AC CONNECTION: TRANSFORMER 104630 REQUIRED FOR UP TO 8 DEVICES • BUILT-IN MIXING-MANUAL ON/OFF HANDLE (8554/8554AC MODELS) • IN-LINE FILTERS INCLUDED FLOW • 0.5 GPM (1.9 L/MIN) VANDAL-RESISTANT MULTI-STREAM LAMINAR FLOW STANDARDS • THIRD PARTY CERTIFIED TO MEET ASME A112.18.1/CSA B-125.1, AND ALL APPLICABLE REQUIREMENTS REFERENCED THEREIN INCLUDING NSF 61/9 & 372 • COMPLIES WITH CALIFORNIA PROPOSITION 65 AND WITH THE FEDERAL SAFE DRINKING WATER ACT • ADA COMPLIANT • MEETS THE CURRENT REQUIREMENTS OF THE BUY AMERICAN ACT (BAA)
		SLAON - FAUCET & FLUSH VALVE POWER KIT SL-EAF-70-A	FOR FAUCET
		LAWLER -MIXING VALVE 570-86820	POINT OF USE AND MASTER CONTROLLED FIXTURES, THERMOSTATIC MASTER WATER MIXING CONTROL VALVE, THE TEMPERATURE IS ADJUSTED WITH THE HELP OF SPINDLE.
		MCGUIRE - FIXTURE DRAIN 155A	STRAIGHT DRAIN, CAST BRASS, CHROME-PLATED FINISH, OPEN GRID PO PLUG, 7/32" (5.5 MM) Ø HOLES SIZE, 17 GAUGE 32 MM (1-1/4") Ø TAILPIECE, 17 GAUGE 152 MM (6") LONG
		MCGUIRE - SUPPLY LFBV170	CONVERTIBLE™ COMMERCIAL FAUCET SUPPLY KIT, CONSISTING OF (2) STOP VALVES, (2) RISERS, (2) FLANGES (STANDARD), LEAD FREE BRASS BODY, CHROME PLATED FINISH, 138 - 862 KPA (20 - 125 PSI) OPERATING PRESSURE, 4 TO 60 °C (40 TO 140 °F) OPERATING TEMPERATURE, CONVERTIBLE LOOSE KEY/TRIANGLE HANDLE, QUARTER TURN BALL VALVE, ANGLE STOP, BRASS BALL VALVE, C.P. WROUGHT STEEL DEEP BELL WALL FLANGE (STANDARD), C.P. PREFABRICATED 127 MM (5") COPPER SWEAT TUBE EXTENSION NIPPLE, 305 MM (12") C.P. LAVATORY FLEXIBLE COPPER RISER TUBES (STANDARD), 13 MM (1/2") SWEAT INLET X 10 MM (3/8") O.D. OUTLET, 82 °C (180 °F) MAXIMUM DURING HIGH TEMPERATURE SYSTEM FLUSH, COMPLIANCES AND CERTIFICATIONS: AB 100 COMPLIANT, ASME A112.18.1 COMPLIANT, ASME A112.18.2-2 (RISERS), CSA B125.2 COMPLIANT (RISERS), CERTIFIED TO NSF/ANSI 372, CERTIFIED TO NSF/ANSI 61, UPC COMPLIANT.
		MCGUIRE - P-TRAP 8872C	ADJUSTABLE P-TRAP, HEAVY CAST BRASS, 32 MM (1-1/4") X 32 MM (1-1/4") SIZE, WITH CLEANOUT PLUG, 292 MM (11-1/2") DISTANCE, 17 GAUGE SEAMLESS TUBULAR WALL BEND, SLIPNUTS, CODES AND COMPLIANCES: ASME A112.18.2 CSA B125.2, CSA COMPLIANT.
		WATTS - CARRIER WCA-411	WCA-411/WCA-411-WC, SINGLE FLOOR-MOUNTED LAVATORY CARRIER WITH CONCEALED ARMS, FOR CONCEALED ARM CARRIER, ADJUSTABLE ARMS, EPOXY COATED CAST IRON, INTEGRAL WELDED FEET, UPPER TIE ROD, HEAVY GAUGE STEEL OFFSET UPRIGHTS, BASIN LOCKING DEVICE, PLATED HARDWARE, LEVELLING SCREWS.
LAV-2 (BF)	BARRIER FREE LAVATORY	AMERICAN STANDARD-BASIN 0356421.020	WALL-HUNG LAVATORY, VITREOUS CHINA, WHITE FINISH, SINGLE HOLE CENTERSET, FRONT OVERFLOW, WITH FAUCET LEDGE, 102 MM (4") HIGH BACKSPLASH, FOR WALL HANGER (INCLUDED) OR CONCEALED ARMS (BY OTHERS), OVERALL DIMENSIONS: 540 MM (21-1/4") LONG, 464 MM (18-1/4") WIDE, BOWL DIMENSIONS: 254 MM (10") LONG, 381 MM (15") WIDE, 165 MM (6-1/2") DEEP,
		MOEN - FAUCET 8554	TOUCH FREE OPERATION FOR IMPROVED HYGIENE • ADJUSTABLE SENSOR ACTIVATION DISTANCE FROM 3" TO 12" (DEFAULT 5-1/2") • VANDAL MODE: 30 SECOND TIME-OUT FEATURE • MAINTENANCE / CLEANING MODE: ALLOWS FOR A 30 SECOND DEACTIVATION FOR MAINTENANCE OR CLEANING • SENTINEL FLOW: ELIMINATES STAGNANT WATER SUPPLY LINES EVERY 24 HOURS (FACTORY SETTING = OFF) • METERING MODE FEATURE: ADJUSTABLE RUN TIME FROM 10 TO 180 SECONDS (FACTORY SETTING = OFF) • AC POWERED * FOR AC CONNECTION: TRANSFORMER 104630 REQUIRED FOR UP TO 8 DEVICES • BUILT-IN MIXING-MANUAL ON/OFF HANDLE (8554/8554AC MODELS) • IN-LINE FILTERS INCLUDED FLOW • 0.5 GPM (1.9 L/MIN) VANDAL-RESISTANT MULTI-STREAM LAMINAR FLOW STANDARDS • THIRD PARTY CERTIFIED TO MEET ASME A112.18.1/CSA B-125.1, AND ALL APPLICABLE REQUIREMENTS REFERENCED THEREIN INCLUDING NSF 61/9 & 372 • COMPLIES WITH CALIFORNIA PROPOSITION 65 AND WITH THE FEDERAL SAFE DRINKING WATER ACT • ADA COMPLIANT • MEETS THE CURRENT REQUIREMENTS OF THE BUY AMERICAN ACT (BAA)
		SLAON - FAUCET & FLUSH VALVE POWER KIT SL-EAF-70-A	FOR FAUCET
		LAWLER -MIXING VALVE 570-86820	POINT OF USE AND MASTER CONTROLLED FIXTURES, THERMOSTATIC MASTER WATER MIXING CONTROL VALVE, THE TEMPERATURE IS ADJUSTED WITH THE HELP OF SPINDLE.
		MCGUIRE - FIXTURE DRAIN 155A	STRAIGHT DRAIN, CAST BRASS, CHROME-PLATED FINISH, OPEN GRID PO PLUG, 7/32" (5.5 MM) Ø HOLES SIZE, 17 GAUGE 32 MM (1-1/4") Ø TAILPIECE, 17 GAUGE 152 MM (6") LONG
		MCGUIRE - SUPPLY LFBV170	CONVERTIBLE™ COMMERCIAL FAUCET SUPPLY KIT, CONSISTING OF (2) STOP VALVES, (2) RISERS, (2) FLANGES (STANDARD), LEAD FREE BRASS BODY, CHROME PLATED FINISH, 138 - 862 KPA (20 - 125 PSI) OPERATING PRESSURE, 4 TO 60 °C (40 TO 140 °F) OPERATING TEMPERATURE, CONVERTIBLE LOOSE KEY/TRIANGLE HANDLE, QUARTER TURN BALL VALVE, ANGLE STOP, BRASS BALL VALVE, C.P. WROUGHT STEEL DEEP BELL WALL FLANGE (STANDARD), C.P. PREFABRICATED 127 MM (5") COPPER SWEAT TUBE EXTENSION NIPPLE, 305 MM (12") C.P. LAVATORY FLEXIBLE COPPER RISER TUBES (STANDARD), 13 MM (1/2") SWEAT INLET X 10 MM (3/8") O.D. OUTLET, 82 °C (180 °F) MAXIMUM DURING HIGH TEMPERATURE SYSTEM FLUSH, COMPLIANCES AND CERTIFICATIONS: AB 100 COMPLIANT, ASME A112.18.1 COMPLIANT, ASME A112.18.2-2 (RISERS), CSA B125.2 COMPLIANT (RISERS), CERTIFIED TO NSF/ANSI 372, CERTIFIED TO NSF/ANSI 61, UPC COMPLIANT.
		MCGUIRE - P-TRAP PW2125WC	LAVATORY, 17 GAUGE MOLDED CLOSED CELL VINYL (ANTI-MICROBIAL) WRAPPED CAST BRASS, 32 MM X 38 MM (1-1/4" X 1-1/2") SIZE, OFFEST GRID DRAIN, WITH CLEANOUT, SEAMLESS SUPPLY RISER TUBE COVERS, SUPPLY ANGLE STOP COVERS, SEAMLESS DRAIN TAILPIECE COVER AND ANGLE STOP WHEEL HANDLE COVERS AND CHROME-PLATED BOX FLANGE, CODES AND COMPLIANCES: ANSI A117.1 COMPLIANT, ASTM D 635, ASTM C 177, ASTM G-21, ASTM G-22.
		WATTS - CARRIER WCA-411	WCA-411/WCA-411-WC, SINGLE FLOOR-MOUNTED LAVATORY CARRIER WITH CONCEALED ARMS, FOR CONCEALED ARM CARRIER, ADJUSTABLE ARMS, EPOXY COATED CAST IRON, INTEGRAL WELDED FEET, UPPER TIE ROD, HEAVY GAUGE STEEL OFFSET UPRIGHTS, BASIN LOCKING DEVICE, PLATED HARDWARE, LEVELLING SCREWS.
FD	FLOOR DRAIN	WATTS FD-100NH-C-A-7	EPOXY COATED CAST IRON, FLOOR DRAIN, ADJUSTABLE ROUND 6 MM (1/4") THICK TOP, NO HUB OUTLET, ANCHOR FLANGE, TRAP PRIMER TAPPING, REVERSIBLE MEMBRANE CLAMP, COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, 52 CM^2 (8 SQ. IN.) FREE AREA (FOR 127 MM (5") DIAMETER STRAINER), 58 CM^2 (9 SQ. IN.) FREE AREA (FOR 152 MM (6") DIAMETER STRAINER), 77 CM^2 (12 SQ. IN.) FREE AREA (FOR 178 MM (7") DIAMETER STRAINER), 116 CM^2 (18 SQ. IN.) FREE AREA (FOR 203 MM (8") DIAMETER STRAINER), TRAP PRIMER TAPPING, COMPLIANCES AND CERTIFICATIONS: ASME A112.21.1M COMPLIANT.
MS-1	MOP SINK	FIAT-MSBIDTG2424	MOLDED STONE® INTEGRAL DRAIN MOP SERVICE BASIN TO GO MSBIDTG2424 • MOLDING DONE IN MATCHED METAL DIES UNDER HEAT AND PRESSURE RESULTING IN A ONE-PIECE HOMOGENEOUS PRODUCT • THE UNIT HAS 10" HIGH WALLS WITH NO LESS THAN 1" WIDE SHOULDERS • INTEGRAL DRAIN IS MOLDED INTO A ONE PIECE UNIT AND DESIGNED TO CONNECT TO A 3" (76MM) DRAIN PIPE WITH A QIC3XH GASKET • STAINLESS STEEL STRAINER INCLUDED • INCLUDES 830AA FAUCET, 832AA HOSE AND BRACKET, 889CC MOP HANGER BRACKET. QIC3XH 3" QUICK DRAIN CONNECTOR. NOMINAL DIMENSIONS: 24" X 24" X 10" (610 X 610 X 254MM), SHIPPING WEIGHT: 35LBS. (15.9 KG) COMPLIANCE CERTIFICATIONS - MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS: • IAPMO / ANSI Z124.6-2007 • ASME A112.18.2 / CSA B125.2 • CSA B45.5
		FIAT-FAUCET 830AA000	SERVICE-SINK FAUCET • CHROME PLATED WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD ON SPOUT. • BODY INLETS 8" CENTER TO CENTER, FOUR ARM HANDLES. • VALVES CONTAIN RENEWABLE HUB, RENEWABLE SEATS, SWIVEL DISCS, ENCASED WASHERS AND BRASS WASHER SCREWS. • COMMERCIAL RED BRASS ALLOY CASTING-ROUGH FINISH. • CHROME PLATING EXCEEDING REQUIREMENTS OF ANSI/ASTM B-456-71. • INDICATORS COLD (BLUE) AND HOT (RED) ARE INCLUDED. SPECIFICATIONS AND CODES: • MEETS OR EXCEEDS REQUIREMENTS OF: ANME A112.18.1-2018/CSA B125.1 PLUMBING FIXTURE FITTINGS. • ASSE 1001 / CSA B64.1.1 ATMOSPHERIC TYPE VACUUM BREAKERS.
		FIAT-889CC MOP HANGER	WALL MOUNTED STAINLESS STEEL MOP HANGER IS 24" LONG X 3" WIDE, WITH THREE (3) RUBBER TOOL GRIPS THAT CAN HOLD ONTO A VARIETY OF HANDLE SIZE
		FIAT-832AA HOSE & HOSE BRACKET	A 30" LONG FLEXIBLE, HEAVY DUTY 5/8" RUBBER HOSE. CLOTH REINFORCED WITH 3/4" BRASS COUPLING AT ONE END. BRACKET IS 5" LONG 3" WIDE, STAINLESS STEEL WITH RUBBER GRIP

REGISTERS, GRILLES AND DIFFUSERS SCHEDULE

REFERENCE	DESCRIPTION	MODEL NUMBER	REMARKS
A	EXHAUST AIR GRILLE	EH PRICE - 530D	STEEL FIXED SINGLE DEFLECTION WITH BORDER CW BACK DRAFT DAMPER COORDINATE WITH ARCHITECT FOR COLOUR.

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100079257
2025/08/08
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
3	ISSUED FOR TENDER	2025.09.04
2	ISSUED FOR PERMIT & TENDER	2025.08.08
1	ISSUED FOR COORDINATION	2025.06.26

PLUMBING EQUIPMENT SCHEDULE

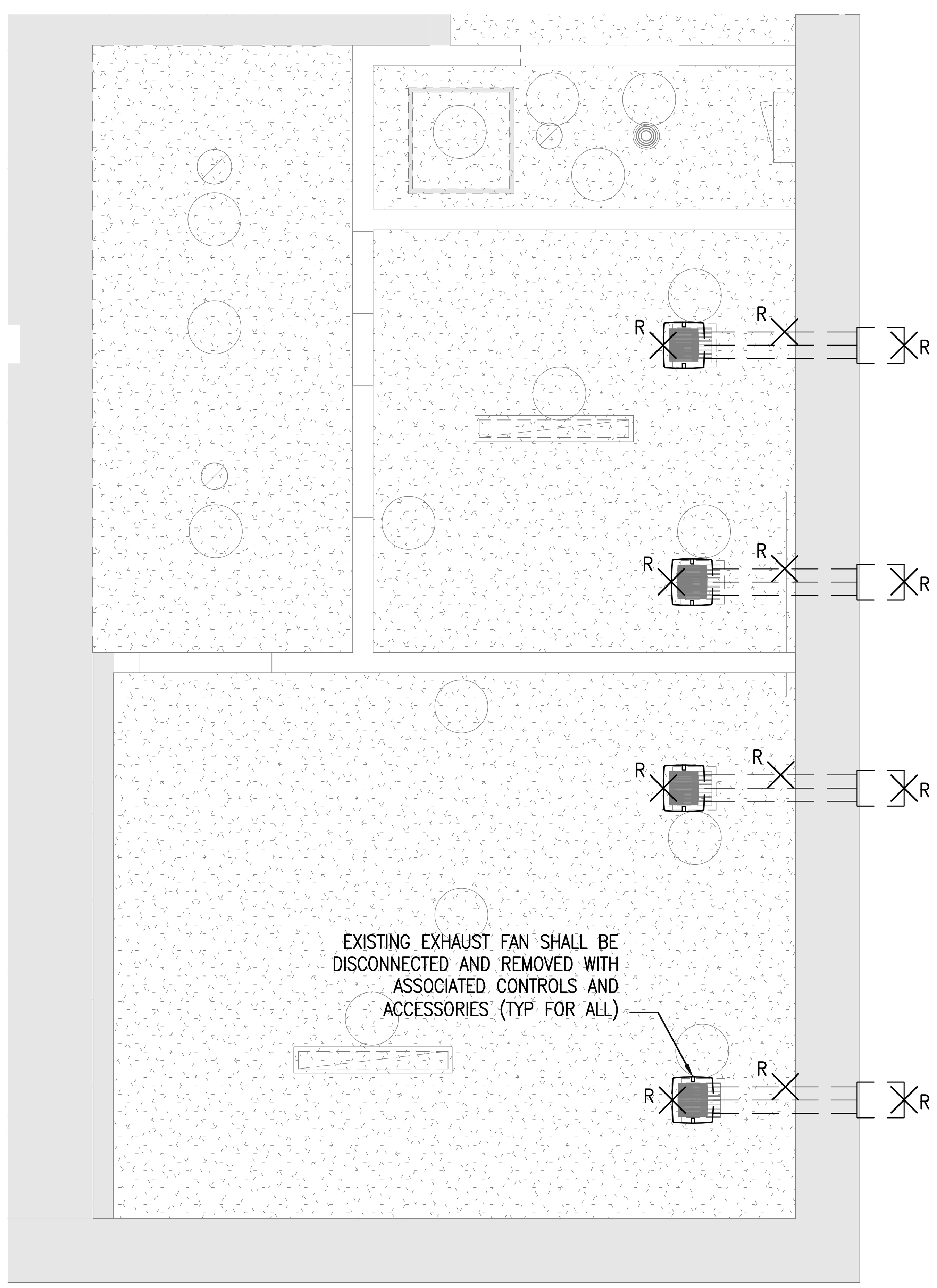
WASHROOM RENOVATION

LAVAL COMMUNITY CENTRE
475 SALISBURY ST
OSHAWA ON L1J 6L9

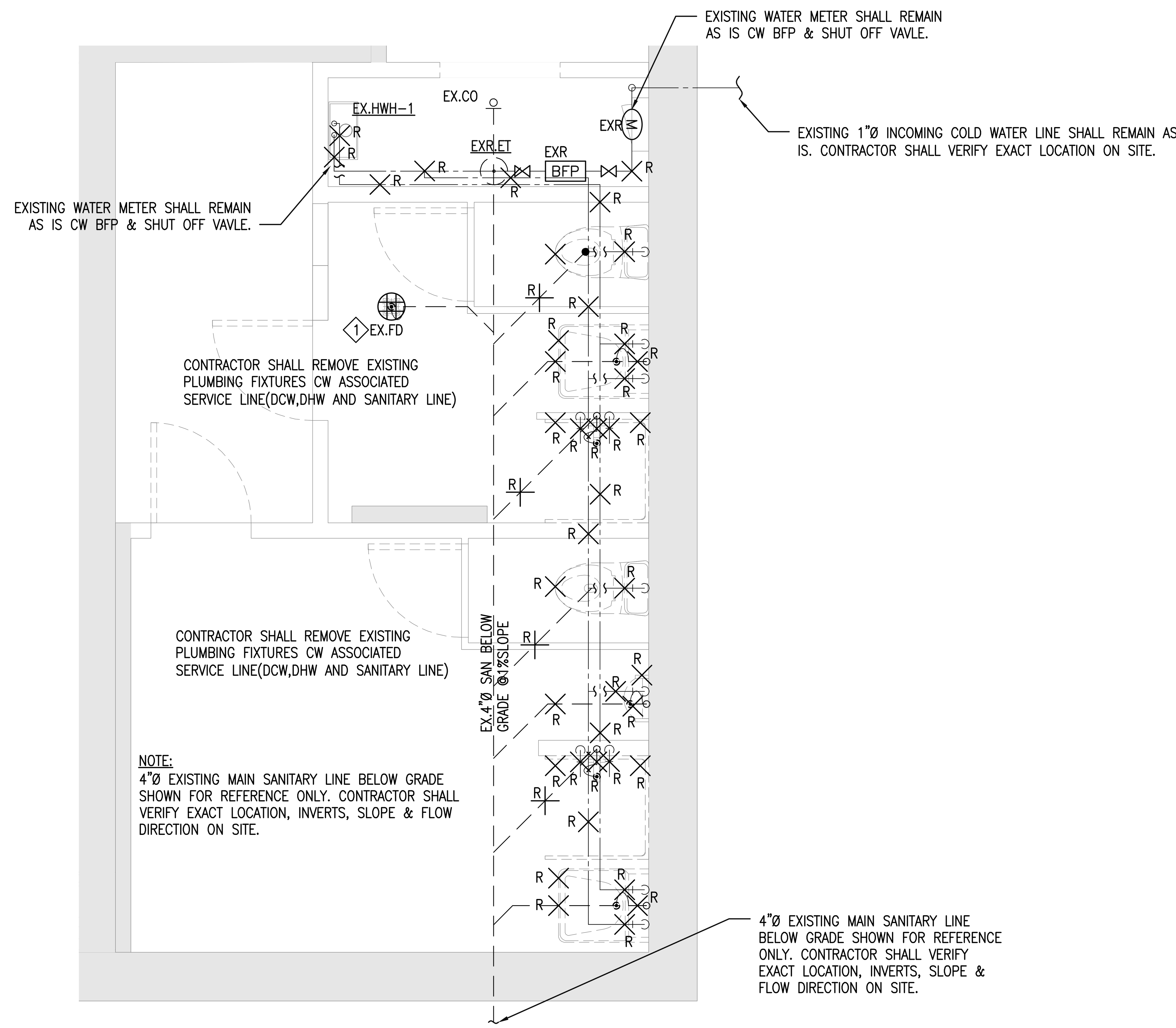
SCALE	N.T.S licated
DATE	6/26/2025
DRAWN	SM
CHECKED	AB
PROJECT NUMBER	25-076
SHEET	M0.05

◇	KEY NOTES
1	EXISTING FLOOR DRAIN SHALL REMAIN AS IS. CONTRACTOR SHALL VERIFY THE FLOW DIRECTION OF SANITARY DRAIN LINE ON SITE

MECHANICAL DEMOLITION NOTES:	
1	A SITE VISIT IS MANDATORY FOR CONTRACTORS BIDDING ON THIS PROJECT TO CONFIRM EXACT EXTENT OF DEMOLITION WORK REQUIRED. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OWNER & FIELD VERIFY ALL EXISTING EQUIPMENT AND DEVICES WITHIN THE DEMOLITION AREAS REQUIRING REMOVAL.
2	MECHANICAL DRAWINGS MUST BE READ IN CONJUNCTION WITH ELECTRICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS.
3	CONTRACTOR SHALL DISCONNECT & REMOVE ALL REDUNDANT MECHANICAL UNITS IN SPACE.
4	ALL REDUNDANT FLOOR OPENING TO BE CAPPED BY GENERAL CONTRACTOR.
5	CONTRACTOR MUST REMOVE ANY REDUNDANT OR ABANDONED BRANCHED DUCTWORK, PIPING, DRAINS AND ASSOCIATED FIXTURES BACK TO THE SOURCE AND MAKE SAFE.
6	THERMOSTAT LOCATION SHOWN FOR REFERENCE ONLY CONTRACTOR SHALL IDENTIFY EXACT LOCATION ON SITE
7	CONTRACTOR TO COORDINATE ALL PIPE RUNS ON SITE. ALL PIPES SHALL BE INSTALLED IN A NEAT AND CLEAN MANNER WITH COMPLETE ACCESS TO ALL SERVICE ABLE COMPONENTS AS REQUIRED.
8	ALL PIPING SHALL BE INSULATED WITH MIN ¾" INSULATION AND LABELED.
9	PROVIDE WATER LINES C/W SHUT-OFF VALVES AS REQUIRED (TYP.)
10	PIPING SHALL BE INSTALLED ABOVE THE BOTTOM CHORD OF JOISTS. (TYP.)
11	CONTRACTOR TO PROVIDE FIRE STOPS THROUGH ALL FIRE RATED PARTITIONS AND ASSEMBLIES AS REQUIRED.
12	COORDINATE ALL INSTALLATION & ROUGH-IN WITH ALL SUB-TRADE TO AVOID ANY INTERFERENCE.
13	ALL DISTRIBUTION SHOWN IS SCHEMATIC AND EXACT LOCATION TO BE COORDINATED ON SITE WITH SITE CONDITION.



1 DEMOLITION & EXISTING HVAC LAYOUT
Scale: 1/2"=1'-0"



2 DEMOLITION & EXISTING PLUMBING & SANITARY LAYOUT
Scale: 1/2"=1'-0"

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MECHANICAL DEMOLITION & EXISTING LAYOUT

WASHROOM RENOVATION

LAVAL COMMUNITY CENTRE
475 SALISBURY ST
OSHAWA ON L1J 6L9

SCALE	1/2"=1'-0"
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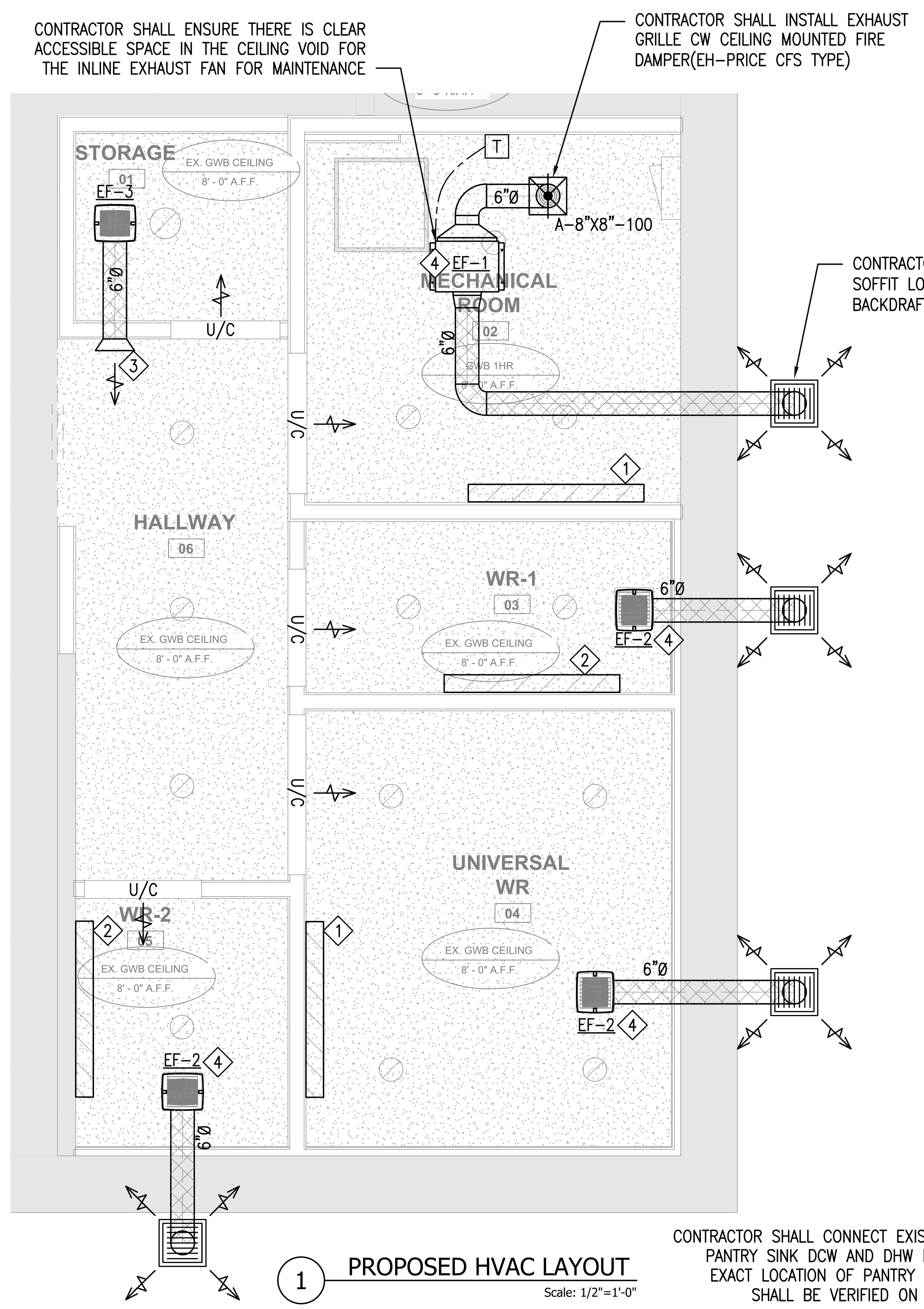
CHECKED	AB
PROJECT NUMBER	25-076
SHEET	M1.01

◇	KEY NOTES
1	1KW BASEBOARD HEATER @ L/L C/W BUILT-IN ADJUSTABLE THERMOSTAT TO BE SUPPLIED & INSTALLED BY DIVISION-26. CONTRACTOR SHALL ENSURE THE SELECTED BBH ARE MOISTURE RATED.
2	0.5KW BASEBOARD HEATER @ L/L C/W BUILT-IN ADJUSTABLE THERMOSTAT TO BE SUPPLIED & INSTALLED BY DIVISION-26. CONTRACTOR SHALL ENSURE THE SELECTED BBH ARE MOISTURE RATED.
3	CONTRACTOR SHALL PROVIDE 8"Ø MESH.
4	100 CFM EXHAUST FAN C/W GRILLE W/BACK DRAFT DAMPER 6"Ø DUCT. EXHAUST AIR DUCT SHALL TERMINATE THRU GRILLE TO BE FLUSH WITH SOFFIT. EXHAUST AIR DUCT SHALL BE INSULATED MIN. 10'(1" THICK).
5	1KW BASEBOARD HEATER @ L/L C/W BUILT-IN ADJUSTABLE THERMOSTAT TO BE SUPPLIED & INSTALLED BY DIVISION-26. CONTRACTOR SHALL ENSURE THE SELECTED BBH ARE MOISTURE RATED.
6	EXISTING FLOOR DRAIN SHALL REMAIN AS IS. CONTRACTOR SHALL VERIFY THE FLOW DIRECTION OF SANITARY DRAIN LINE ON SITE
7	FLOOR DRAIN (FD): 3"Ø DRAIN, 1"-1/2"Ø VENT.
8	LAVATORY (LAV): 1/2"Ø DCW, DHW, 2"Ø DRAIN & 1"-1/2"Ø VENT.
9	WATER CLOSET (WC): 1"Ø DCW, 3"Ø DRAIN & 1"-1/2"Ø VENT.
10	CONTRACTOR SHALL RUN NEW SAN VENT LINE AND CONNECT TO NEAREST EXISTING SANITARY VENT LINE AS PER SITE CONDITION.
11	MOP SINK (MS): 3/4"Ø DCW/DHW, 3"Ø DRAIN & 1"-1/2"Ø VENT.

PROPOSED MECHANICAL GENERAL NOTES:	
1	SITE VISIT IS MANDATORY FOR CONTRACTORS BIDDING ON THIS PROJECT TO CONFIRM EXACT EXTENT OF WORK REQUIRED. COORDINATE ALL WORK WITH GENERAL CONTRACTOR, AND FIELD.
2	MECHANICAL DRAWINGS MUST BE READ IN CONJUNCTION WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL, & CIVIL DRAWINGS. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND SPACE CONDITIONS AT ALL TIMES.
3	CONTRACTOR TO COORDINATE ALL DUCT & PIPE RUN ON SITE. ALL DUCT & PIPE SHALL BE INSTALLED IN A NEAT AND CLEAN MANNER WITH COMPLETE ACCESS TO ALL SERVICEABLE COMPONENTS. CONTRACTOR SHALL PROVIDE REQUIRED ACCESS PANELS AS PER MANUFACTURERS RECOMMENDATIONS.
4	ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE APPROVED WORKING INSTALLATION.
5	CONTRACTOR SHALL PROVIDE PROPER VENTING FOR ALL MECHANICAL EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATION.
6	CONTRACTOR TO ENSURE A MINIMUM OF 10'-0" CLEARANCE FROM ANY FRESH AIR OPENING TO ANY EXHAUST AIR OPENING.
7	ALL DUCTWORK THRU EXTERIOR WALLS SHALL BE INSULATED A MIN. 10'-0" FROM ANY OPENING.
8	CONTRACTOR SHALL VERIFY ALL POINT OF CONNECTION AT SITE. EXISTING TIE-IN SIZE, INVERTS, LOCATION & SLOPE TO BE VERIFIED ON SITE.
9	SUPPLY AND INSTALL FIRE DAMPERS AS REQUIRED AT ALL PENETRATION THROUGH A FIRE RATED ASSEMBLY.
10	ALL LOW VOLTAGE WIRING INCLUDING EMT CONDUITS SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
11	PROVIDE A MIN. 3/4" UNDERCUT FOR ALL WASHROOM DOORS.
12	ALL PIPING SHALL BE INSULATED WITH MIN 3/4" INSULATION AND LABELED.
13	PROVIDE WATER LINES C/W SHUT-OFF VALVES AS REQUIRED (TYP.)
14	PIPING SHALL BE INSTALLED ABOVE THE BOTTOM CHORD OF JOISTS. (TYP.)
15	CONTRACTOR TO PROVIDE FIRE STOPS THROUGH ALL FIRE RATED PARTITIONS AND ASSEMBLIES AS REQUIRED.
16	COORDINATE ALL INSTALLATION & ROUGH-IN WITH ALL SUB-TRADE TO AVOID ANY INTERFERENCE.
17	ALL DISTRIBUTION SHOWN IS SCHEMATIC AND EXACT LOCATION TO BE COORDINATED ON SITE WITH SITE CONDITION.
18	ALL DRAINAGE PIPE SIZED 3"ø OR LESS SHALL HAVE A DOWNWARD SLOPE IN THE DIRECTION OF FLOW OF AT LEAST 1 IN 50 (2%).
19	CONTRACTOR TO PROVIDE TRAP SEAL PRIMER LINES TO ALL FLOOR DRAINS AS REQUIRED BY LOCAL BUILDING CODES. (TYPICAL)
20	ALL PLUMBING VENT STACKS SHALL BE TERMINATED A MIN. OF 1'-0" ABOVE THE ROOF. PROVIDE PROPER VENTING AS PER NATIONAL PLUMBING CODE OF CANADA.



1 PROPOSED HVAC LAYOUT
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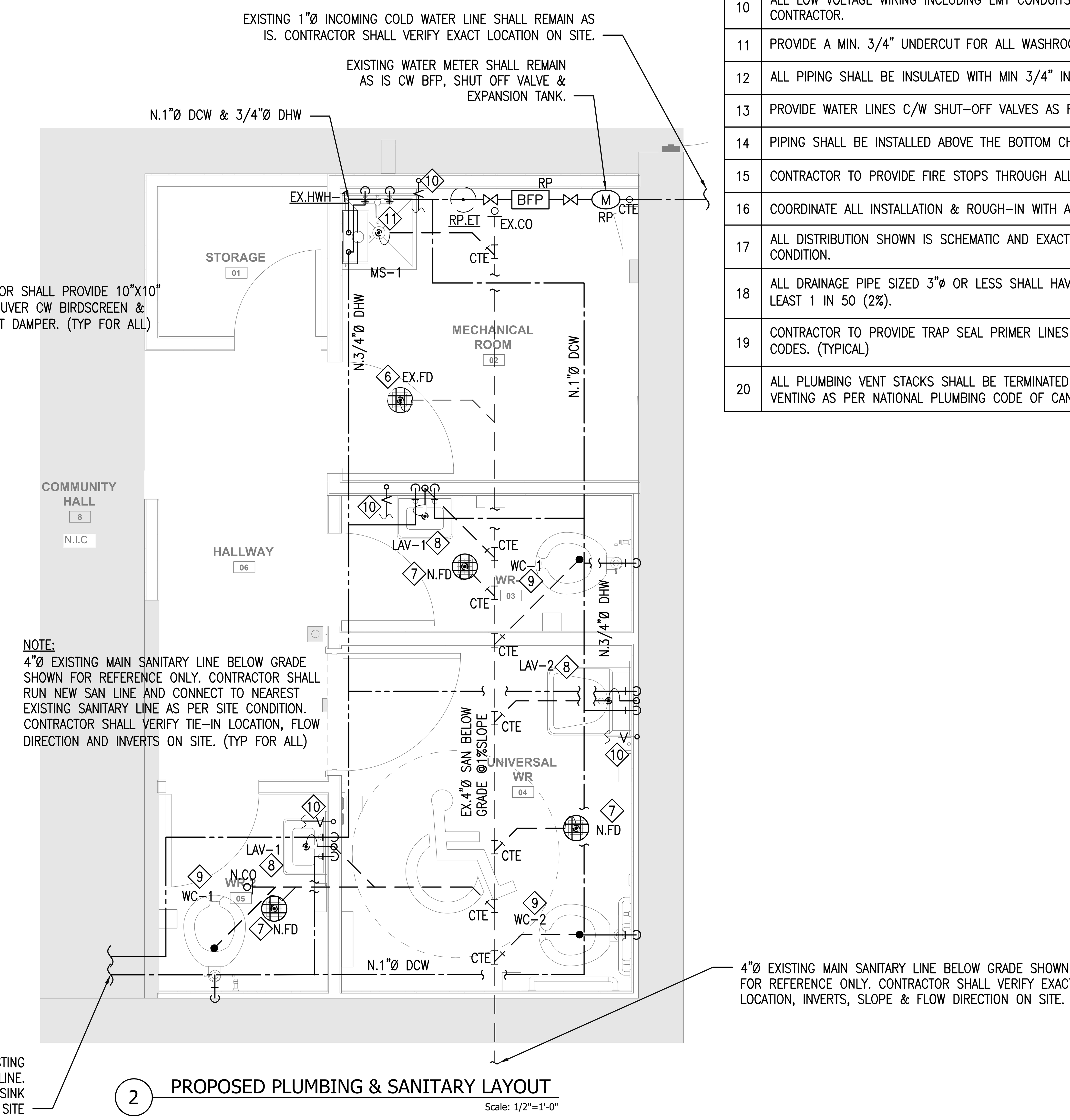

2 PROPOSED PLUMBING & SANITARY LAYOUT
Scale: 1/2"=1'-0"

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MECHANICAL PROPOSED LAYOUT

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