



MECHANICAL SPECIFICATION

- ALL MECHANICAL/PLUMBING WORK, MATERIALS, AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE Ontario Building Code, AND ALL AUTHORITIES HAVING JURISDICTION, AND BASE BUILDING STANDARDS.
- SUPPLY AND INSTALL ALL ITEMS, ARTICLES, AND MATERIALS, INCLUDE ALL LABOUR, EQUIPMENT, MATERIALS, AND TOOLS NECESSARY AND REQUIRED FOR THE COMPLETE INSTALLATION. USE ONLY NEW MATERIALS AND EQUIPMENT.
- CONTRACTOR SHALL INSPECT THE PROJECT PRIOR TO TENDER TO REALIZE THE SCOPE OF WORK INVOLVED AND TO FAMILIARIZE YOURSELF WITH THE SITE CONDITIONS. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN THIS REGARD.
- ANY WORK NOT SHOWN ON THE DRAWINGS OR SPECIFICALLY MENTIONED IN THE SPECIFICATIONS, BUT CONSIDERED NECESSARY FOR THE COMPLETION OF THE WORK IN THE PROPER MANNER, SHALL BE PROVIDED BY THIS CONTRACTOR AT NO ADDITIONAL CHARGE.
- BE RESPONSIBLE FOR THE CARE OF THE BUILDING. DO ALL CUTTING, PATCHING, AND PAINTING REQUIRED FOR THE WORK OF THIS TRADE. WORK TO BE PERFORMED BY THE GENERAL TRADES AT THE EXPENSE OF THIS MECHANICAL CONTRACTOR. CO-ORDINATE RELEVANT COSTS AT TIME OF TENDER.
- CEILING SPACE IS RETURN AIR PLENUM. NO COMBUSTIBLE PIPING/MATERIAL IS ALLOWED. VENT PIPING IN THE CEILING MUST BE EITHER METAL OR SYSTEM XFR.
- CLEAN UP DEBRIS ON A DAILY BASIS AND UPON COMPLETION OF THE CONTRACT.
- COOPERATE WITH ALL OTHER TRADES. CO-ORDINATE ALL WORK.
- OBTAIN ALL REQUIRED PERMITS, ARRANGE FOR INSPECTION OF THE WORK BY THE INSPECTION AUTHORITY. PROVIDE FINAL CERTIFICATE.
- PAY ALL REQUIRED FEES.
- SUBMIT 5 COPIES OF SHOP DRAWINGS FOR APPROVAL OF ALL EQUIPMENT AND FIXTURES.
- PROVIDE A CERTIFICATE OF GUARANTEE OF WORKMANSHIP AND MATERIAL FOR ONE YEAR FROM DATE OF ACCEPTANCE.
- CONNECT NEW PLUMBING VENT PIPE TO THE EXISTING VENT PIPE(S) THROUGH THE ROOF. APPROXIMATE LOCATIONS ARE SHOWN.
- ALL SERVICES PENETRATING THE FLOORS MUST BE SEALED TO ENSURE WATER PROOFING AND A 1 HOUR FIRE-RATING.
- ALL PLUMBING WORK, MATERIALS, AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE Ontario Building Code, AND ALL AUTHORITIES HAVING JURISDICTION.
- THE PLUMBING CONTRACTOR SHALL COORDINATE ALL CONNECTIONS WITH THE NEW LOCATION OF SINKS.
- THE PLUMBING CONTRACTOR TO PROVIDE 1/2" HOT & COLD WATER SUPPLY AND 1 1/2" TRAPPED AND VENTED DRAIN TO ALL DOMESTIC SINKS.
- INSTALL A SANITARY VENT SYSTEM TO COMPLY WITH ALL APPLICABLE CODES, AND ALL AUTHORITIES HAVING JURISDICTION.
- INSTALL ONE PIECE CHROME PLATED ESCUTCHEON PLATES AT ALL EXPOSED PIPE PENETRATIONS THROUGH WALLS, CEILINGS, AND FLOORS.
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- FOLLOW INSTALLATION STANDARDS TO LATEST EDITION OF SMACNA AND ASHRAE, RECTANGULAR DUCTWORK TO BE FABRICATED FROM CROSSBROKEN GALVANIZED STEEL SHEETS WITH THICKNESS AS DETAILED IN SMACNA STANDARDS. FABRICATE DUCTWORK IN A WORKMANLIKE MANNER. ALL JOINTS TO BE SEALED WITH LIBERAL APPLICATION OF DURO-DYNE S-2 DUCT SEALER.
- BRACE DUCT IN MANNER SO THAT IT DOES NOT SAG OR VIBRATE WHEN FANS ARE OPERATING AT HIGH SPEED OR STOPPING AND STARTING.
- PRIOR TO FABRICATION, FIELD MEASURE DUCT FOR CONFLICT TO STRUCTURAL MEMBER, LIGHTING AND PLUMBING. REPORT DISCREPANCIES TO THE ENGINEER.
- INSTALL BALANCING DAMPERS AS SHOWN AND REQUIRED FOR BALANCING OF THE SYSTEM. INSTALL TURNING VANES IN SQUARE ELBOWS.

VENTILATION

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PLUMBING

- PLUMBING AND DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, PART 7.
- SUPPORT SUSPENDED PIPING FROM STRUCTURAL MEMBERS WITH CLEVIS HANGERS AT ADEQUATE SPACING TO ENSURE NO SAG OR FAILURE OF JOINTS. ISOLATE COPPER PIPE FROM HANGER OR OTHER PIPING WHERE ELECTROLYTIC ACTION CAN OCCUR. ADEQUATELY BRACE PIPING AND ALLOW FOR EXPANSION OR CONTRACTION. PROVIDE EXPANSION LOOPS OR JOINTS SIZED TO COMPENSATE CHANGES IN PIPE LENGTH CAUSED BY A TEMPERATURE DIFFERENTIAL OF 150°F (65.6 °C). PROVIDE WATER HAMMER ARRESTORS AT ALL FIXTURE GROUPS, PPP-SC SERIES.
- INSTALL ACCESS COVERS FOR ALL CLEANOUTS. PROVIDE BACKFLOW PREVENTERS AS REQUIRED BY CODE TO PROTECT THE POTABLE WATER SUPPLY.
- CO-ORDINATE START-UP OF EQUIPMENT WITH OTHER TRADES AND SITE SUPERVISOR AND ENSURE THAT ALL WORK AND INSPECTIONS ARE COMPLETE.

PIPING SCHEDULE		
SERVICE	MATERIAL	LOCATION TO BE USED
DCW & DHW BELOW GROUND	COPPER TYPE 'K'	3" & SMALLER
DCW & DHW ABOVE GROUND	COPPER TYPE 'L'	
DCW & DHW IN THE UNITS	PEX TUBING	
SANITARY, STORM & VENT ABOVE GROUND	ABS, PVC	AS PER CODE
SANITARY, STORM & VENT BELOW GROUND	PVC, ABS	

- ALL PIPING TO BE TESTED FOR A MINIMUM OF 24 HOURS IN ACCORDANCE TO THE CODE REQUIREMENTS. DO NOT BACKFILL OR CONCEAL ANY PIPE UNTIL TESTED AND SUBSEQUENTLY INSPECTED BY THE ENGINEER/CITY PLUMBING INSPECTOR.
- CONCEAL ALL PIPING WHERE POSSIBLE. INSTALL CHROME PLATED ESCUTCHEON PLATES IN ALL FINISHED AREAS. PROVIDE UNIONS AND VALVES AT ALL DOMESTIC HOT WATER HEATERS AND OTHER EQUIPMENT TO FACILITATE MAINTENANCE.
- INSTALL A SANITARY VENT SYSTEM TO COMPLY WITH ALL APPLICABLE CODES, AND ALL AUTHORITIES HAVING JURISDICTION.
- INSTALL ONE PIECE CHROME PLATED ESCUTCHEON PLATES AT ALL EXPOSED PIPE PENETRATIONS THROUGH WALLS, CEILINGS, AND FLOORS.
- INSTALL PIPE SLEEVES AT ALL PIPE PENETRATIONS THROUGH FLOOR SLABS. MAKE PENETRATIONS WATER TIGHT.
- INSTALL DONUT FIRE STOP ON NON-METALLIC PIPING WHERE PASSES THROUGH THE FIRE RATED WALLS OR CEILINGS.
- PROVIDE PRESSURE REDUCING VALVE FOR MAIN DOMESTIC COLD WATER SERVICE

NATURAL GAS DISTRIBUTION SYSTEM

- MECHANICAL TRADE SHALL ARRANGE FOR AND PAY ALL COSTS INVOLVED REGARDING THE INSTALLATION OF THE NATURAL GAS SERVICE.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE TO CGA-149.1 - LATEST EDITION OF THE INSTALLATION CODE FOR NATURAL GAS BURNING APPLIANCES AND EQUIPMENT AND THE ONTARIO REGULATION 862-LATEST EDITION OF ENERGY ACT.
- ALL PIPING SHALL BE SCHEDULE 40 STEEL, WITH SCREWED JOINTS OR WELDED JOINTS AS PERMITTED BY THE APPLICABLE CODES. ALL PIPING TO BE PAINTED BY THIS MECHANICAL CONTRACTOR. MINIMUM TWO COATS OF ALKYL DRY YIELD PAINT.
- VALVES: ALL VALVES ARE TO BE CODE APPROVED.

INSULATION, PIPING

- APPLY THE INSULATION WHEN THE REQUIRED HYDROSTATIC TESTS HAVE BEEN COMPLETED.
- INSULATION SHALL BE APPLIED TO CLEAN DRY PIPES AND DUCTS, ALL JOINTS BUTTED FIRMLY AND LAPPED WITH 4" WIDE STRIP OF APPROVED ADHESIVE BACKED VAPOUR PROOF TAPE.
- COVER ALL PIPE FITTINGS USING FABRICATED SECTION FROM THE PIPE COVERING.
- APPLY AN APPROVED VAPOUR BARRIER OVER ALL PIPES HAVING COLD SURFACES AND ENSURE A SUITABLE SEAL.
- WORK SHALL BE PERFORMED BY LICENSED JOURNEYMAN.
- INSULATE ALL DOMESTIC HOT WATER SUPPLY AND RETURN AND HEATING SUPPLY AND RETURN LINES WITH 1" (25MM) FIBREGLASS PIPE INSULATION. INSULATE COLD WATER PIPES WITH 1" (25MM) PREFORMED FIBREGLASS INSULATION WITH VAPOUR BARRIER. NO INSULATION IS REQUIRED ON DOMESTIC HOT OR COLD WATER EXPOSED IN SUITES.

FIRE PROTECTION

- FIRE EXTINGUISHERS:
1. TYPE FE MULTI-PURPOSE DRY CHEMICAL EXTINGUISHER, STORED PRESSURE, RECHARGEABLE TYPE WITH HOSE AND SHUT-OFF NOZZLE, ULC LABELED FOR A, B, AND C CLASS PROTECTION. SIZE 4.5 kg. PROVIDE COMPLETE WITH WALL BRACKET AND MAINTENANCE TAGS.
- STANDARD OF ACCEPTANCE: WILSON & COUSINS OR CANADIAN FIRE HOSE CORPORATION.

SEISMIC RESTRAINT SYSTEM

- EACH TRADE SHALL BE RESPONSIBLE FOR ALL APPLICABLE SEISMIC RESTRAINT SYSTEMS FOR ALL SYSTEMS AND EQUIPMENT FORMING PART OF THEIR RESPECTIVE CONTRACTS. ALL TRADES SHALL COORDINATE SRS DESIGN AND IMPLEMENTATION.
- DESIGN TO BE BY PROFESSIONAL ENGINEER SPECIALIZING IN DESIGN AND REGISTERED IN THE PROVINCE.

DESCRIPTION OF DEMOLITION WORKS

- DISPOSE OF REMOVED MATERIALS IN ACCORDANCE WITH CODES, STANDARDS AND REGULATIONS.
- MAINTAIN EXISTING SERVICES WHICH PASS THROUGH THE RENOVATION AREA.
- CORRECT ANY UNSCHEDULED SERVICE DISRUPTIONS IMMEDIATELY.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF DEMOLITION OF WALLS AND CEILINGS.

PLUMBING FIXTURES

TOILET - FLOOR MOUNTED (BARRIER FREE DESIGN)
American Standard "CADET 3 ELONGATED" #2386 012 Flush Right Flushing system, Tank Toilet, floor mounted, vitreous china, elongated syphon jet flush action bowl, fully glazed 2-1/8" ball pass internal trapway, 9" x 8" water surface, "Speed Connect" P.A. tank complete, 1.3 gal. (6L) flush, bolt caps. Provide floor flange, flange bolts and gasket. Provide floor flange, flange bolts, and gasket. Centocoo #820STS Seal, elongated heavy duty solid plastic open front with cover, reinforced stainless steel check hinge, seats, washers and nuts. McGuire #H172BV Supply, C.P., polished, rigid horizontal integral sweat tube with V.P. combination wheel handle/roose key ball valve angle stop, escutcheon and flexible riser.

BASIN - WALL HUNG (BARRIER FREE DESIGN & GENERAL USE) FOR TIGHT SPACE AREAS
American Standard "MURRO" #0954.000 Basin, 4" (102mm) centres, 22" x 21" x 5" - 7-1/2" (559mm x 533mm x 127-191mm) deep, wall hung, vitreous china, rear overflow, for concealed arm support. Chicago Faucets #802-XR Faucet, C.P. 4" (102mm) C.C. solid cast brass lead-free body, 1/4 turn ceramic disc valve cartridges, with vandal resistant 1.84 GPM (6L) flow aerator outlet and cast brass lever handles. McGuire #155A Drain, C.P. open grid. McGuire #H170BVRB Supplies, C.P., polished, short horizontal integral sweat tubes with V.P. combination wheel handle/roose key ball valve angle stops, escutcheons and braided flexible risers. McGuire #8872C-177 "y" Trap, C.P. 17 gauge (1.5mm), 1-1/4" (32mm) and escutcheon. Smith Series #700-M Carrier, with steel pipe legs, block base feet support, concealed arms and pedestal plate. (For narrow wall installation provide "Z" type sleeve for arms.) American Standard #0059.020 Semi-China Pedestal to cover exposed piping as per local codes.

FD - FLOOR DRAINS - FIN. AREAS (MED. DUTY STRAINER)
Smith Series 2005A Floor Drain, all duco coated cast iron body, reversible flashing clamp with seepage openings and adjustable 5" (127mm) diameter nickel bronze 1/4" (6.35mm) thick strainer, secured with S.S. screws, 4" (100mm) throat on strainer. In quarry or mosaic tiled areas, provide 8" x 5" x 5" (127mm x 127mm) square nickel bronze strainer. (Where required by local code provide trap primer connection "P").

FFD - FLOOR DRAINS WITH COMBINATION FUNNEL - MECHANICAL ROOMS & UNFINISHED AREAS
Smith Series 2320-3591 Funnel Floor Drain, all duco coated cast iron body, flashing clamp with seepage openings and adjustable 8 1/2" (216mm) diameter C.I. grate with 4" x 9" (101.6mm x 228.6mm) oval funnel. Floating floors provide #340-WSH-3591, with movement compensator and vibration isolator. (If seepage holes not required, remove suffix "WSH" from model number). (Where required by local code provide trap primer connection "P").

NON-FREEZE WALL HYDRANT - EXTERIOR
Smith Series 5609QDT Wall Hydrant, 1/4 turn non-drip, ceramic cartridge, 3/4" (19mm) non-freeze wall type with bronze face, adjustable wall-flange operating key and self-draining integral vacuum breaker. Length to suit wall thickness.

CLOTHES WASHER FITTINGS
OATHY, THE ELIMINATOR, 2" TRAP PLUS VENT C/W CONNECTIONS FOR CONDENSATE DRAIN. VALVED DCW AND DHW SUPPLY. PROVIDE PLASTIC DRAIN PAN FOR WASHER DRYER, CONNECT TO OPEN DRAIN.

MECHANICAL EQUIPMENT

SUPPLY AND INSTALL FURNACES, EQUAL TO LENNOX # EL296UH HIGH EFFICIENCY, NATURAL GAS HEATING, VARIABLE SPEED DC MOTOR, 2-STAGE GAS BURNER C/W COOLING COIL & REMOTE CONDENSING UNIT C/W ALL CONTROL WIRING. LOW VOLTAGE 7 DAY PROGRAMMABLE THERMOSTAT WITH AUTOMATIC CHANGEOVER FOR 2-STAGE HEATING. PIPE CONDENSATE WATER TO CLOSEST FLOOR DRAIN.

COOLING COIL:
F1: 3 TON, 1200 CFM AT 0.6" ESP
F2: 5 TON, 2000 CFM AT 0.6" ESP
F3: 2 TON, 800 CFM AT 0.6" ESP

GAS HEATING:
F1: INPUT: 75 MBH OUTPUT: 71 MBH
F2: INPUT: 90 MBH OUTPUT: 85 MBH
F3: INPUT: 50 MBH OUTPUT: 46 MBH

CONDENSING UNIT:
CU-1 3 TON COOLING, 13 SEER, 208V, SINGLE PHASE
CU-2 5 TON COOLING, 13 SEER, 208V, SINGLE PHASE
CU-3 2 TON COOLING, 13 SEER, 208V, SINGLE PHASE

EF
SUPPLY AND INSTALL A CEILING MOUNTED EXHAUST FAN EQUAL TO REVERSOMATIC # QCF-110 HAVING AN EXHAUST CAPACITY OF 110 CFM @ 0.15" ESP, 120/160, 0.6A, 1.5 SONES. PROVIDE A 8" RIGID EXHAUST DUCT C/W TAPED JOINTS EXHAUST FAN TO BE WIRED TO SWITCH.

EF-1
SUPPLY AND INSTALL A CEILING MOUNTED EXHAUST FAN HAVING AN EXHAUST CAPACITY OF 300 CFM @ 0.25" ESP, 120/160, 0.6A, 2.5 SONES. PROVIDE A 8" RIGID EXHAUST DUCT C/W TAPED JOINTS EXHAUST FAN TO BE WIRED TO SWITCH.

NOISE AND VIBRATION CONTROL

- PROVIDE FLEX CONNECTION BETWEEN FANS, FURNACE AND DUCTS.
- PROVIDE RIGID SUPPORT FOR DUCT WITHIN 1' OF FLEX CONNECTION.

PLUMBING NOTES:

- PROVIDE ROUGH-IN FOR SANITARY, DCW, DHW & VENT FOR ALL PLUMBING FIXTURES WHICH ARE SHOWN ON ARCHITECTURAL DRAWINGS.
- LOCATE NEAREST COLD AND HOT WATER SERVICE AND TAP 1/2" COPPER PIPE TO FEED THE WASHROOMS. PIPES SHALL BE INSULATED.
- PROVIDE FIRE STOP ON SANITARY PIPING WHERE PASSES THROUGH FIRE SEPARATION.
- FOR PLUMBING FIXTURES HEIGHTS SEE ARCHITECTURAL DRAWINGS.
- PLUMBING VENT PIPE UP TO ROOF. PROVIDE VENT CAP AND ROOF FLASHING. ABS PIPES CAN BE USED UNDERGROUND OR IN CONCEALED LOCATIONS. FOR ALL OTHER AREAS USE PVC XFR PIPE. CORRECT AND REPLACE ANY PORTION OF PIPES THAT DO NOT MEET THE CODE. OR, PROVIDE FIRE-WRAP ON ABS PIPES IN PLENUM, OR PROVIDE DRYWALL ENCLOSURE AROUND THE PIPES.

NO.	DATE	REVISION	NAME
1	SEPT. 26, 2018	BUILDING PERMIT	MY

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PETAWAWA CENTENNIAL FAMILY HEALTH CENTRE
154 CIVIC CENTRE RD., PETAWAWA, ON

MECHANICAL OVERALL PLAN AND SPECIFICATIONS

CREATED BY MY DELETED BY MY
DRAWN BY FH SCALE 1 : 100
DATE 09/26/2018 DRAWING NUMBER M-3