

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

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

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.

9. OBTAIN ALL REQUIRED PERMITS, ARRANGE FOR INSPECTION OF THE WORK BY THE INSPECTION AUTHORITY. PROVIDE

FINAL CERTIFICATE.

PAY ALL REQUIRED FEES 11. SUBMIT 5 COPIES OF SHOP DRAWINGS FOR APPROVAL OF ALL EQUIPMENT AND FIXTURES.

12. PROVIDE A CERTIFICATE OF GUARANTEE OF WORKMANSHIP AND MATERIAL FOR ONE YEAR FROM DATE OF ACCEPTANCE. 13. CONNECT NEW PLUMBING VENT PIPE TO THE EXISTING VENT PIPE(S) THROUGH THE ROOF. APPROXIMATE LOCATIONS

14. ALL SERVICES PENETRATING THE FLOORS MUST BE SEALED TO ENSURE WATER PROOFING AND A 1 HOUR FIRE-RATING. 15. 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

16. $\,$ THE PLUMBING CONTRACTOR SHALL COORDINATE ALL CONNECTIONS WITH THE NEW LOCATION OF SINKS. 17. THE PLUMBING CONTRACTOR TO PROVIDE 1/2" HOT & COLD WATER SUPPLY AND 1 1/2" TRAPPED AND VENTED DRAIN TO

ALL DOMESTIC SINKS. 18. INSTALL A SANITARY VENT SYSTEM TO COMPLY WITH ALL APPLICABLE CODES, AND ALL AUTHORITIES HAVING

JURISDICTION. 19. INSTALL ONE PIECE CHROME PLATED ESCUTCHEON PLATES AT ALL EXPOSED PIPE PENETRATIONS THROUGH WALLS,

CEILINGS, AND FLOORS.

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.

1 DUCTWORK (THERMAL INSULATE ALL A/C DUCTWORK WHERE SHOWN WITH 1" FIBREGLASS INSULATION AND ANTI-SWEAT VAPOUR BARRIER INSULATE ALL EXTERIOR DUCT WORK WITH 1-1/2" FIBREGLASS INSULATION AND "RFFRK" VAPOUR BARRIER C/W 2 LAYERS OF WATERPROOFING. INSULATE ALL EXHAUST OR FRESH AIR DUCTWORK PASSING THROUGH AN EXTERIOR WALL OR ROOF 6'-0" BACK FROM WALL WITH 2" FIBREGLASS INSULATION AND ANTI-SWEAT VAPOUR BARRIER.

DIVISION 15 SHALL INCLUDE FOR ALL BALANCING WORK AND RELATED ACTIVITIES. .2 ALL INLETS, OUTLETS, GRILLES, DIFFUSERS AND REGISTERS SHALL BE ADJUSTED AND A REPORT PREPARED AND

SUBMITTED (3 COPIES; RING BINDER; SCHEMATICS) TO ENGINEER / PROJECT MANAGER.

THE HVAC CONTRACTOR SHALL INCLUDE FOR ALL RELATED ACTIVITIES FOR VERIFICATION OF THE HEATING/COOLING SYSTEM, INCLUDING SUPPLY, RETURN AND FRESH AIR VOLUMES.

4 THE HVAC CONTRACTOR SHALL INCLUDE FOR ALL RELATED ACTIVITIES FOR VERIFICATION OF ALL EXHAUST FANS AND

RELATED GRILLES. 5 BALANCE TO ACHIEVE MINIMUM STATIC PRESSURE DROPS COMPATIBLE WITH THE SYSTEM. .2 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. .3 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

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

.5 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 .6 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

.8 INSTALL ONE PIECE CHROME PLATED ESCUTCHEON PLATES AT ALL EXPOSED PIPE PENETRATIONS THROUGH WALLS,

.9 INSTALL PIPE SLEEVES AT ALL PIPE PENETRATIONS THROUGH FLOOR SLABS. MAKE PENETRATIONS WATERTIGHT. .10 INSTALL DONUT FIRE STOP ON NON-METALIC PIPING WHERE PASSES THROUGH THE FIRE RATED WALLS OR CEILINGS.

NATURAL GAS DISTRIBUTION SYSTEM

AND INSPECTIONS ARE COMPLETE.

.1 MECHANICAL TRADE SHALL ARRANGE FOR THE INSTALLATION OF THE NATURAL GAS SERVICE. THE OWNER SHALL PAY

FOR NATURAL GAS BURNING APPLIANCES AND EQUIPMENT AND THE ONTARIO REGULATION 862-LATEST EDITION OF

ENERGY ACT. .3 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 ALKYD

YELLOW PAINT. .4 VALVES: ALL VALVES ARE TO BE CODE APPROVED.

INSULATION, PIPING

APPLY THE INSULATION WHEN THE REQUIRED HYDROSTATIC TESTS HAVE BEEN COMPLETED. 2. 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.

3. COVER ALL PIPE FITTINGS USING FABRICATED SECTION FROM THE PIPE COVERING.

.11 PROVIDE PRESSURE REDUCING VALVE FOR MAIN DOMESTIC COLD WATER SERVICE

APPLY AN APPROVED VAPOUR BARRIER OVER ALL PIPES HAVING COLD SURFACES AND ENSURE A SUITABLE SEAL

WORK SHALL BE PERFORMED BY LICENSED JOURNEY-MAN.

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.

.1 TYPE FE: MULTI-PURPOSE DRY CHEMICAL EXTINGUISHER, STORED PRESSURE, RECHARGEABLE TYPE WITH HOSE AND SHUTT-OFF NOZZLE, ULC LABELED FOR A, B, AND C CLASS PROTECTION. SIZE 4.5 Kg. PROVIDE COMPLETE WITH WALL BRACKET AND MAINTENANCE TAGS. .2 STANDARD OF ACCEPTANCE: WILSON & COUSINS OR CANADIAN FIRE HOSE CORPORATION.

1. 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. 2. DESIGN TO BE BY PROFESSIONAL ENGINEER SPECIALIZING IN DESIGN AND REGISTERED IN THE

PROVINCE.

REMOVE FROM THE SITE ALL REDUNDANT MECHANICAL EQUIPMENT EXCEPT AS SHOWN, OTHERWISE REUSE ONLY INDICATED EQUIPMENT. ALL OTHER DUCTWORK AND EQUIPMENT TO BE NEW. COORDINATE MECHANICAL SHUTDOWN WITH CLIENT AND CORRECT ANY UNSCHEDULED SHUTDOWNS IMMEDIATELY. DISPOSE OF REMOVED MATERIALS IN ACCORDANCE WITH CODES, STANDARDS AND REGULATIONS.

3. MAINTAIN EXISTING SERVICES WHICH PASS THROUGH THE RENOVATION AREA. 4. CORRECT ANY UNSCHEDULED SERVICE DISRUPTIONS IMMEDIATELY.

5. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF DEMOLITION OF WALLS AND CEILINGS.

PLUMBING FIXTURES

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. Centoco #820STS Seat, elongated heavy duty solid plastic open front with cover, reinforced stainless steel check hinge, posts, washers and nuts. McGuire #H172BV Supply, C.P., polished, rigid horizontal integral sweat tube with V.P. combination wheel handle/loose 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-V-XK 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 (8L) 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/loose key ball valve angle stops, escutcheons and braided flexible risers. McGuire #8872C-17T 'p' Trap, C.P. 17 gauge (1.5mm), 1-1/4" (32mm) and escutcheon. Smith Series #0700-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 'B' - 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 .2 ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE TO CGA-149.1 - LATEST EDITION OF THE INSTALLATION CODE 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 9340-WSH-3591, with movement compensator and vibration isolator. (If seepage holes not required, remove suffix 'WSH' 2. PROVIDE RIGID SUPPORT FOR DUCT WITHIN 1' OF FLEX CONNECTION from model number). (Where required by local code provide trap primer connection 'P').

NON-FREEZE WALL HYDRANT - EXTERIOR

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

OATEY, 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.

SUPPLY AND INSTALL A 20 GALLON ELECTRIC HOT WATER TANK, 240V. WATER HEATER TO BE COMPLETE WITH ALL SAFETIES AND CONTROLS. PIPE PRV TO FLOOR DRAIN. INSTALL AS PER THE MANUFACTURERS RECOMMENDATIONS AND LISTING REQUIREMENTS.

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

SUPPLY AND INSTALL A CEILING MOUNTED EXHAUST FAN EQUAL TO REVERSOMATIC # QCF-110 HAVING AN EXHAUST CAPACITY OF 110 CFM @ 0.15" ESP, 120/1/60, 0.6A, 1.5 SONES. PROVIDE A 6" RIGID EXHAUST DUCT C/W TAPED JOINTS.EXHAUST FAN TO BE WIRED TO

SUPPLY AND INSTALL AN IN-LINE CEILING MOUNTED EXHAUST FAN HAVING AN EXHAUST CAPACITY OF 500 CFM @ 0.25" ESP , 120/1/60, 0.6A. PROVIDE A 12"X10" EXHAUST DUCT C/W TAPED JOINTS. EXHAUST FAN TO BE WIRED TO A COOLING THERMOSTAT AND BE INTERLOCKED WITH MOTORIZED DAMPER. INSTALL A STEEL FRAMED WIRE MESH AT THE INTAKE OF THE EXHAUST FAN.

GRILLES & DIFFUSERS SCHEDULE			
TYPE	MODEL	DESCRIPTION	
Α	E.H. PRICE # SCDA	ADJUSTABLE SQUARE CEILING DIFFUSER (24"X24")	
В	EH PRICE # 80DAL	FACE RETURN	
С	VENTEX # 2450	WALL EXHAUST/INTAKE LOUVER	
D		STEEL FRAMED WIRE MESH 1"X1"	

1. PROVIDE FLEX CONNECTION BETWEEN FANS, FURNACE AND DUCTS.

1. PROVIDE ROUGH-IN FOR SANITARY, DCW, DHW & VENT FOR ALL PLUMBING FIXTURES

WHICH ARE SHOWN ON ARCHITECTURAL DRAWINGS. 2. LOCATE NEAREST COLD AND HOT WATER SERVICE AND TAP 1/2" COPPER PIPE TO FEED THE WASHROOMS. PIPES SHALL BE INSULATED.

3. PROVIDE FIRE STOP ON SANITARY PIPING WHERE PASSES THROUGH FIRE SEPARATION.

4. FOR PLUMBING FIXTURES HEIGHTS SEE ARCHITECTURAL DRAWINGS.

5. 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.

HVAC LEGEND NEW DUCT - EXISTING DUCT ---- DUCT TO BE REMOVED RECT. SUPPLY AIR

RECT. RETURN OF EXHAUST AIR

CEILING DIFFUSER RETURN AIR GRILLE A = TYPE (SEE DWGS OR SPECS)

C = CAPACITY FOR EACH (CFM) THERMOSTAT

BRANCH CONNECTION WITH BALANCING DAMPER DUCT TRANSITION CEILING MOUNTED EXHAUST FAN

B = SIZE OF GRILLE REGISTER OR

DIFFUSER NECK CONNECTION

DENOTES EXISTING TO REMAIN DENOTES RELOCATE TO NEW LOCATION RLD DENOTES RELOCATED ITEM

PLUMBING LEGEND

— DCW — DOMESTIC COLD WATER — DHW — DOMESTIC HOT WATER — GAS — GAS LINE ── ∨ ── SANITARY VENT

----- ++ --- SANITARY LINE UNDERGROUND MATERIAL: ABS ------ SAN ------ SANITARY/VENT LINE ABOVE GROUN MATERIAL: PVC XRF

——₩—— GATE VALVE PLUG VALVE FE FIRE EXTINGUISHER

C⊗ FD FLOOR DRAIN

REVIEW OF SHOP DRAWINGS

SHOP DRAWINGS MUST BE REVIEWED AND STAMPED BY BOTH SUB-CONTRACTOR AND GENERAL CONTRACTOR. REVIEW BY ENGINEER IS ONLY FOR THE VERIFICATION OF GENERAL QUALITY AND DESIGN

AND DOES NOT RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY FOR ENSURING THAT ALL SPACES, CAPACITIES, SPECIFICATION COORDINATION, INSTALLATION AND CONTRACTUA REQUIREMENTS ARE MET.



REVISION

DATE

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PETAWAWA CENTENNIAL FAMILY HEALTH CENTRE

MECHANICAL

154 CIVIC CENTRE RD., PETAWAWA, ON

OVERALL PLAN AND SPECIFICATIONS