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Mechanical Trade Scope of Work

The following mechanical trade scope definition is comprised of 3 individual trade scopes - piping, ventilation (HVAC) and fire protection which combined are defined as the mechanical scope.

The desired benefit of developing Ottawa region trade scope definitions is to minimize dispute in the bidding and construction process as to what is included or excluded in a particular trade scope of work. Ensuring items to be included in a bid provides a common basis for which bidding becomes truly competitive, fair to all concerned and minimizes the potential for on-site dispute.

This Mechanical Trade Scope of Work builds on the 2009 Scope and includes all of the technologies and systems known of in 2021 and reflects the current conditions in the Ottawa area.

Any questions regarding the following Scope should be directed to MCA Ottawa.

Pipe Trade Scope

Items included and excluded

Mechanical (piping) Contractors shall provide the following: ("provide" means; supply & install unless specifically noted otherwise)

Provided:

Section 1: General Requirements

- 1 Cast iron catch basin and manhole covers, trench gratings, sump frames and covers when specified or detailed on mechanical (piping) drawings within the building.
- 2 Chimney-all plastic-pipe venting for fossil fuel combustion.
- 3 Connections, piping to specialty equipment which is supplied and installed by others including emergency shut off NG valves when supplied as part of a kitchen hood suppression system
- 4 Cut, cap, disconnect and make safe ALL mechanical (piping) items in renovated areas, as defined by the Scope.
- 5 Drains, traps and p-traps.
- 6 Fire extinguishers, only if there is no sprinkler system in the building.
- 7 Fire Standpipe system including fire pump and fire extinguishers when not part of a sprinkler system.

- 8 Fire-stopping for mechanical (piping) systems.
- 9 Fuel piping, water piping, exhaust piping, for generator units and supply of fuel oil when clearly specified. Muffler and flex installation only.
- 10 Hangers, saddles and supports for plumbing and piping including the SUPPLY ONLY of insulation shields (installed by insulator).
- 11 Hoisting for mechanical (piping) materials and equipment.
- 12 Insulation, thermal insulation for piping.
- 13 Scaffolding as required for mechanical (piping) work.
- 14 Seismic restraint and vibration isolation - design, execution and inspection/certification as specified for mechanical piping systems.
- 15 Sites services combine domestic potable & fire protection piping from 1 meter outside building foundation.
- 16 Sites services Domestic potable water piping from 1 meter outside building foundation
- 17 Sites services Sanitary and storm piping from 1 meter outside building foundation.
- 18 Sleeving, all necessary sleeving for piping.
- 19 Steel bases and steel supports for mechanical (piping) equipment when specified or detailed only on mechanical.
- 20 Supports for roof mounted piping.
- 21 X-rays of welded joints when required by code or specified.

Section 2: Systems

- 1 Air compressors and vacuum pumps systems.
- 2 Automotive hoists, piping and connections only to automotive hoists.
- 3 BAS (Building Automated Systems) and/or EMCS (Energy Management Control Systems) when specified in the Piping Scope of Work - mechanical controls.
- 4 Boilers and boiler controls supplied as part of a boiler manufacturer's package.
- 5 Chemical water treatment for mechanical (piping) systems.
- 6 Hydronic baseboard radiation, ceiling radiant panels, force flow units, hot water unit heaters.
- 7 Hydronic heating, chilled water, condenser water and steam piping systems.

- 8 Hydronic-Testing, adjusting and balancing of hydronic systems.
- 9 In-slab heating and snow melting piping systems.
- 10 Medical gas systems, piping and equipment as specified.
- 11 Natural gas and propane piping systems within buildings.
- 12 Plumbing systems.
- 13 Solar heating panel systems when water-based.
- 14 Variable frequency drives are supplied by mechanical (piping) where specified.

Section 3: Equipment

- 1 Chilled Beams, Passive
- 2 Chiller units.
- 3 Cooling towers.
- 4 Dry coolers.
- 5 Generator-initial fuel-tank fill-up excluding pre-packaged units that do not have external tank if clearly specified in contract documents.
- 6 Heat exchangers and converters.
- 7 Hot water heaters and storage tanks.
- 8 Humidifiers, stand-alone, those not utilizing duct distribution.
- 9 Sumps, pits and covers (premanufactured) complete with pumps inside building walls
- 10 Water treatment and all associated piping, meters, tanks, pumps, filters, softeners.

Section 4: Accessories

- 1 Access door(s) - SUPPLY ONLY, when required by mechanical (piping).
- 2 Baths-Whirlpool and therapeutic baths when specified in mechanical (piping) specifications.
- 3 Electronic flush valves and electronic faucets when specified.
- 4 Laboratory sinks, faucets and gas outlets where specified in piping specifications.
- 5 Shower cabinets or surrounds, prefabricated complete with manufactured bases.
- 6 Soap dispensing systems when specified in mechanical (piping).

Section 5: Admin and Other Inclusions

- 1 CAD Interference Drawing for own scope.
- 2 Clean-up – see OCA recommended day to day trade clean up Standard of Practice.
- 3 Code compliance as specified.
- 4 Commissioning, as-built drawings and operation and maintenance drawings and manuals as specified for Mechanical piping.
- 5 Contingency funds and cash allowances specifically called for in the mechanical (piping) tender documents.
- 6 Coordination and interference drawings, mechanical piping.
- 7 Identification & tagging.
- 8 Inspections for plumbing work.
- 9 Permits and inspection fees (piping) when and where required.
- 10 Protection of other trades' work from damage by this trade.
- 11 Warranty, beyond the specified contract full warranty (CCA), the extended warranty (ies) are limited to the terms of the manufacturers' warranty(ies).

Excluded:

- 1 Appliances, supply and installation of all appliances.
- 2 Cast-in-place concrete, including rebar and formwork.
- 3 Catwalks, ladders, gratings unless specified as part of mechanical (piping).
- 4 Caulking and grouting of all types except fire-stopping for mechanical (piping) systems
- 5 Chimney, metallic venting of gas fired equipment, unless specified.
- 6 Civil work hoarding and protection barriers, unless specific to your trade.
- 7 Electrical wiring above 50 volts.
- 8 Excavation, bedding and backfilling.
- 9 Generators, supply of flex connections and muffler for generator units.
- 10 Millwork, cutting of all holes for mechanical (piping) components into millwork items.
- 11 Municipal Building Permit fees and utility hook-up fees.
- 12 Roofing, flashing and counter flashing.
- 13 Roof-vent flashing.
- 14 Site services beyond 1 metre from building foundation.
- 15 Sites services water entry solely for fire protection uses; sprinkler and/or standpipe
- 16 Temporary heat, ventilation, light, power and sanitation.
- 17 Temporary water services or connections unless clearly specified.
- 18 Vapour barrier and insulation not applied to mechanical (piping) systems.
- 19 Washroom accessories; Shower curtains and doors unless specified.
- 20 Wood backing, Supply and installation of wood backing.
- 21 X-rays and/or scanning of concrete floors and walls, including cutting and coring.

Ventilation (HVAC) Trade Scope

Items included and excluded

Ventilation (HVAC) Contractors shall provide the following: ("provide" means; supply & install unless specifically noted otherwise)

Provided:

Section 1: General Requirements

- 1 Chimney, Pre-engineered metallic vent chimney systems for generator units.
- 2 Chimney, Pre-fabricated chimneys 16 gauge or lighter for all mechanical equipment.
- 3 Connections only to specialty mechanical (HVAC) equipment which is supplied and installed by others.
- 4 Cut, cap, disconnect and make safe ALL mechanical (HVAC) items in renovated areas, as defined by the Scope.
- 5 Dampers, air except where supplied by others.
- 6 Ductwork acoustic lining.
- 7 Ductwork, Flexible type air ducts.
- 8 Ductwork: sheet metal and non-metallic air handling ductwork, sheet metal plenums and casings including hangers and supports except concrete, masonry and drywall constructed shafts, tunnels or plenums.
- 9 Fire-stopping for mechanical (HVAC) systems.
- 10 Flashing, Counter flashing for HVAC equipment.
- 11 Garbage and linen chutes of metal construction.
- 12 Hangers and supports for ductwork systems.
- 13 Hoisting for mechanical (HVAC) materials and equipment.
- 14 Insulation, thermal for ductwork.
- 15 Refrigeration piping, associated insulation and refrigeration controls for equipment under mechanical (HVAC) scope.
- 16 Scaffolding and access equipment as required for mechanical (HVAC) work.
- 17 Seismic restraint and vibration isolation - design, execution and inspection/certification as specified for HVAC systems.
- 18 Silencers and other special types of sound insulated air ducts.
- 19 Sleeving for ductwork, equipment and related refrigeration piping. All necessary co-ordination, sizing and layout for large openings for ductwork, equipment and related refrigeration piping required to penetrate through new reinforced concrete walls and slabs
- 20 Steel bases and steel supports for mechanical (HVAC) equipment when specified or detailed only on mechanical (HVAC) drawings and specifications.
- 21 Supports for rooftop ductwork, equipment and related refrigeration piping
- 22 Terminal boxes and air valves including coils.
- 23 Testing, adjusting and air balancing (TAB) of mechanical (HVAC) system.

Section 2: Systems

- 1 BAS (Building Automated Systems) and/or EMCS (Energy Management Control Systems) when specified in the Prime Mechanical Scope of Work - mechanical controls
- 2 Carbon monoxide exhaust systems complete with all associated equipment and accessories
- 3 Dust or material collector systems complete with all associated equipment and accessories
- 4 Environment Chambers where specified in mechanical drawings and specifications.
- 5 Indirect fired self-contained heating and/or cooling units.

- 6 Induction units.
- 7 Kitchen exhaust hood systems complete with fire suppression if kitchen hood specified in the mechanical specifications. Otherwise both kitchen exhaust hood and suppression systems are by the kitchen equipment supplier or others.
- 8 Split chillers.
- 9 Split system air conditioning units
- 10 Variable frequency drives are supplied by mechanical (HVAC) where specified.

Section 3: Equipment

- 1 Air curtains.
- 2 Air moving equipment specified in mechanical drawings and specifications.
- 3 Chilled Beams, Active
- 4 Heat pumps of every type – water or air-cooled.
- 5 Heaters, in-duct electric and hydronic duct heaters.
- 6 Humidifiers which are part of the duct system or in ventilation equipment, or discharge into the duct systems or ventilation equipment.
- 7 Packaged and self-contained heating and cooling air conditioning units.
- 8 Prefabricated walk-in coolers and freezers and/or associated refrigeration equipment when specified in mechanical drawings and specifications.
- 9 Unit heaters, gas fired.
- 10 Window or wall type air conditioners and/or incremental units.

Section 4: Accessories

- 1 Access door(s) when required by mechanical (HVAC) - SUPPLY ONLY.
- 2 Door grilles, supply only and/or installation of door grilles where specified.
- 3
Fans, propeller ceiling fans ducted or non-ducted c/w guards and controllers if specified in HVAC.
- 4 Filters, All HVAC related filters.
- 5 Gravity relief vents and intakes and roof hoods when specified or detailed on mechanical drawings and specifications.
- 6 Linear grilles for wall fin radiation, induction units and cabinet heaters, installed in architectural cabinets including extension collars excluding wood manufactured grilles.
- 7 Louvres, Weather louvers complete with bird screen and blank-off panels, penthouses and vents where specified in mechanical drawings and specifications.
- 8 Range hood where specified.
- 9 Registers, grilles, diffusers.

Section 5: Admin and Other Inclusions

- 1 Clean-up – see OCA recommended day to day trade clean up Standard of Practice.
- 2 Code compliance as specified.
- 3 Commissioning, as-built drawings and operation and maintenance drawings and manuals as specified for Mechanical (HVAC) .
- 4 Contingency funds and cash allowances specifically called for in the mechanical (HVAC) tender documents.
- 5 Coordination and Interference Drawing, Mechanical (HVAC)
- 6 Identification and tagging for Mechanical (HVAC).
- 7 Permits and inspection fees, mechanical (HVAC) when applicable.

8 Warranty: Beyond the specified contract full warranty (CCA), the extended warranty(ies) are limited to the terms of the manufacturers warranty(ies).

Excluded:

- 1 All cast-in-place concrete, including rebar and formwork.
- 2 Architectural louvers when no duct connected to them unless specified in mechanical drawings and specifications.
- 3 Catwalks, ladders, gratings unless specified as part of mechanical (HVAC).
- 4 Caulking of louvers and wall grilles.
- 5 Civil work hoarding and protection barriers.
- 6 Cutting for openings for door grilles.
- 7 Cutting of all holes for mechanical (HVAC) components into millwork items.
- 8 Cutting, coring or patching.
- 9 Electrical wiring above 50 volts.
- 10 Humidifier piping for distribution or drainage.
- 11 Humidifiers, stand alone room humidifiers.
- 12 Low voltage wiring for equipment specific safety or end devices.
- 13 Motor starters, disconnects and motor control centres.
- 14 Municipal Building Permit fees and utility hook-up fees.
- 15 Plastic venting of gas fired equipment.
- 16 Roofing, flashing and counter flashing.
- 17 Roof-vent flashing.
- 18 Sleeving of Structural openings. All formwork required form large openings for mechanical sleeving in new reinforced concrete walls and slabs”.
- 19 Supply and installation of all appliances.
- 20 Supply and installation of wood backing.
- 21 Supply of flex connections and muffler for generator units.
- 22 Temporary heat, ventilation, light, power and sanitation.
- 23 Underground concrete duct or concrete for encasing of underground ductwork.
- 24 X-rays and/or scanning of concrete floors and walls.

Fire Protection Trade Scope

Items included and excluded

Sprinkler (piping) Contractor shall provide the following: (provide means; supply & install unless specifically noted otherwise.

Provided:

- 1 Deluge sprinkler systems.
- 2 Fire-stopping for fire protection (piping) systems.
- 3 Hangers and supports for fire protection piping.
- 4 All items specified as general mechanical requirements and general contract requirements (ie Division 01000) which are applicable to material and equipment supplied by the sprinkler sub section listed.
- 5 All necessary sleeving for piping.
- 6 All steel bases and steel supports for Fire Pumps (piping) equipment when specified or detailed only on mechanical.
- 7 Arrange inspection for Fire Protection work.
- 8 Beyond the specified contract full warranty, the extended warranty (ies) is limited to the terms of the manufacturer's warranty (ies).
- 9 Carbon Dioxide extinguishing piped systems.
- 10 Combination dry pipe and pre-action systems.
- 11 Combined sprinkler/standpipe hose systems including all fire extinguishers and associated cabinets.
- 12 Comply with codes as specified.
- 13 Coordinate with Fire Alarm contractor for testing of all fire equipment related to Fire alarm panel.
- 14 Design, supply and installation of Seismic Restraint for fire protection systems.
- 15 Dry Pipe sprinkler system.

Fire extinguishers and associated cabinets as per the following with exceptions to Paragraph 35 above. a) Where
16 buildings have separate standpipe systems, fire extinguishers and associated cabinets are to be excluded from sprinkler sub bid package, even if specified in sprinkler section. b) Where buildings has a sprinkler system only, the fire extinguishers and associated cabinets are to be included in the sprinkler sub bid package, whether under a separate sub section.
- 17 Fire Protection (piping) connections to specialty equipment which is supplied and installed by others.
- 18 Fire Protection (piping) permits and inspection fees.
- 19 Fire Protection. (piping) commissioning, as built drawings and operation and maintenance drawings as specified.
- 20 Fire pump related to sprinkler and combined standpipe-sprinkler system (if system is not combined we do not include the fire pump).
- 21 Foam extinguishing systems.
- 22 Halogen and other gas systems.
- 23 Hoisting for fire protection (piping) materials and equipment.
- 24 Identification.
- 25 In renovated areas, cut, cap, disconnect and make safe ALL Fire Protection (piping) items as defined by the Scope.
- 26 Mechanical Fire Protection piping coordination and interference drawing.
- 27 Pre-Action sprinkler system.
- 28 Protection of other trades' work from damage by this trade.
- 29 Scaffolding as required for Fire Protection (piping) work.
- 30 Sprinkler water piping, Fire hose Cabinets piping, Fire Pump piping when clearly specified.
- 31 Supply access door(s) when required by Fire Protection.
- 32 Testing, all Fire Protection Piping flow switches and fire pumps.
- 33 The fire protection (piping) contractor shall include contingency funds and cash allowances specifically called for in the tender documents.
- 34 Trade clean up. (see OCA's rules)
- 35 Water entry from 1m from foundation, when a separate water service from potable is dedicated to sprinkler service.
- 36 Wet Pipe sprinkler system.

Excluded:

- 1 All x-rays and/or scanning of concrete floors and walls.
- 2 Cutting, coring, excavation and bedding.
- 3 All electrical wiring above 50 volts.
- 4 Motor starters, disconnects and motor control centres.
- 5 Caulking and grouting of all types except fire-stopping for Fire Protection (piping) systems.
- 6 Temporary heat, ventilation, light, power and sanitation.
- 7 All civil work hoarding and protection barriers.
- 8 Temporary water services or connections.
- 9 Catwalks, ladders, gratings unless specified as part of fire protection (piping).
- 10 Municipal Building Permit fees and utility hook-up fees.
- 11 Cutting of all holes for fire protection (piping) components into millwork items.
- 12 All cast-in-place concrete, including rebar and formwork.
- 13 Site services
- 14 Kitchen hood and related exhaust ducting.
- 15 Dry Chemical extinguishing systems.