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1. GENERAL

1.1 APPLICATION

In addition to the instructions to Contractor, General Conditions of the Contract and Special Requirements this section applies to and governs each mechanical section.

1.2 WORK EXCLUDED FROM MECHANICAL DIVISION

- .1 Painting and Color Coding – to Contract Administrator’s approval and as required by applicable codes.
- .2 Electrical wiring and connections (including between motors, equipment and controls and motor starting switches and alarm devices) by Electrical Section.
- .3 The Mechanical Contractor shall lay out all locations of proposed openings with GC. The GC shall perform all cutting and patching required to accommodate mechanical equipment, piping, or ductwork. The GC shall confirm the location of existing precast floor reinforcement strands prior to coring openings through the existing floor system. All curbs and counter flashing for mechanical equipment to be provided by the GC.

1.3 DOCUMENTS

- .1 Examine all drawings and specifications, General Conditions of Contract and Special Requirements for information affecting this section.

1.4 EXAMINATION

- .1 Examine Work done under other sections. Notify Contract Administrator in writing of defects that would affect this section.

1.5 PERMITS, INSPECTION AND TESTING

- .1 File all necessary notices and approved layouts obtained and pay for all local authority inspections, approvals and permits applicable to Mechanical Section. Make changes required to secure local authorities’ approval, without extra cost. Where conflicting requirements occur, comply with most stringent regulation. Note that requirements shown or specified may exceed minimum standards set by local authorities.

1.6 DELIVERY AND STORAGE

- .1 Check and do not deliver finished equipment to job until weatherproof dry storage is available, location as determined by Contract Administrator.

1.7 GUARANTEES

- .1 Provide written guarantee that materials, Work and operation of all equipment provided under Mechanical Sections are first class in every respect, subject only to improper usage by The City, and make good forthwith when reported all defects which develop within one year from date of acceptance of building by The City.

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1.8 FABRICATION AND WORKMANSHIP

- .1 Employ skilled mechanics in their respective trades, under competent supervision, and where required by provincial or local regulations holders of acceptable qualification certificates.

1.9 INSTALLATION AND ERECTION

- .1 Mechanical Contractor shall perform all Work in accordance with the Manitoba Building Code, 1998, the Manitoba Plumbing Code, 1998, and all authorities having jurisdiction. Mechanical drawings do not show all architectural, structural and electrical features. Take information involving dimensions of building from figured dimensions of architectural drawings and check same by Site measurement.
- .2 Drawings show general location and route to be followed by pipes, ducts, etc. Make necessary changes or additions to runs to accommodate structural conditions as built. Location of pipes and other equipment shall be altered without charge, provided change is made before installation, and does not necessitate change in quantity of materials.
- .3 Assume full responsibility for layout of own Work and for any damage caused to property of others through improper location or poor workmanship.
- .4 Become familiar with Work required of other sections, and progress schedule. Cooperate with others whose Work adjoins, to minimize delays and avoid conflicts.
- .5 Locate all openings in walls, partitions, beams, etc. required for installation of pipes and equipment, etc. specified in this section of the specifications.
- .6 Mechanical division shall be responsible for fire stopping with ULC approved materials for all openings around ducts, pipes, etc. to maintain integrity of fire rated assemblies. Mechanical division shall be responsible for sealing all other duct, pipe, etc. openings in all other assemblies to create airtight installation. Utilize non-combustible sealants.

1.10 SHOP DRAWINGS

- .1 Within two weeks after award of contract provide and submit shop drawings which are clearly identified with references to recognized design standards used, and indicating layouts, quantity, details of equipment, sized, capacities and roughing in and exact requirements for concrete pits, bases and other supporting members, and receive approval before fabrication.
- .2 Each shop drawing must be certified by manufacturer and as such shall indicate that all product engineering has been performed to ensure the project will meet the requirements of the intended installation.
- .3 Secure and verify all field dimensions and where fabrication must proceed before these are available ensure that field dimensions are followed to suite.
- .4 Each shop drawing shall include name of job, mechanical subcontractor, equipment supplier and clause under which equipment is specified.

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.5 Checking of shop drawings by the Contract Administrator does not constitute acceptance of responsibility. Such checking constitutes an assistance only to the Mechanical Division in the proper execution of his Work.

.6 Prior to submittal of shop drawings the Mechanical Contractor shall check and verify that all details have been included and then indicate so by signing each drawing to this effect.

1.11 MAINTENANCE AND OPERATING INSTRUCTIONS

- .1 Obtain from each Mechanical Section prior to take-over date two sets of all brochures or literature supplied by manufacturers of each piece of equipment, bind into two sets with hardback covers, and deliver to Contract Administrator. The information provided should include:
- A complete list of mechanical equipment supplied and installed under each section including description, make, type, size, capacity, serial number and list of repair and replacement parts, with names and addresses of suppliers.
 - The correct installation procedure.
 - The manufacturer's recommended operating and maintenance instructions.
- .2 Instruct The City's designated employees in proper care, operation, use and maintenance of all systems and equipment, and provide general explanatory literature required and start up supervision and instructions. Upon completion of instructions forward to Contract Administrator with a copy to the The City, a letter indicating person instructed and dates that the instruction took place, complete with the Contract Administrator's signature upon completion. If in Contract Administrator's opinion, this is not done satisfactorily, Contract Administrator may direct such instruction, and charge all costs involved to relevant section.

1.12 AS-BUILT DRAWINGS

- .1 An extra set of clean prints will be issued to Mechanical Section. Mark up job progresses, and provide to Contract Administrator a complete and accurate record "As-Built" of all mechanical Work.

2. PLUMBING MATERIAL AND METHODS

- 2.1 All drainage piping shall be sloped at 1/50 unless otherwise shown.
- 2.2 The top of floor drains shall be located to suit the slope of the floor.
- 2.3 All plumbing piping shall be anchored at maximum 5' (1500 mm) intervals.
- 2.4 Piping shall have adequate clearance through each wall opening to permit unrestricted expansion.
- 2.5 When penetrating a fire separation, the separation must be returned to its original rating with a ULC listed fire-stop system in compliance with CAN-4S115-M.
- 2.6 Unless otherwise shown, the water supply to every group of fixtures in the same room shall be 3/4" (19mm) with a 1/2" (12mm) water supply and shut off to each fixture.

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- 2.7 Where a vent pipe passes through the roof, it shall be insulated according to the insulation schedule, to a distance of 10' into the heated space.
- 2.8 All piping exposed to public view shall be cleaned of all excess joining material. Piping shall be primed and painted to the Contract Administrator's specifications.
- 2.9 All piping within ceiling return-air plenums to conform to the flame and smoke spread requirements of the Manitoba Plumbing Code.
- 2.10 SCHEDULE OF PIPE AND FITTINGS
- .1 Interior drain and vent piping below ground:
- IPEX System 15 PVC DWV pipe in accordance with CSA B181.2, solvent weld, or:
 - Bibby-St. Croix class 4000 cast iron mechanical joint or pipe fittings.
- .2 Interior drain and vent piping below ground:
- IPEX System 15 PVC DWV pipe in accordance with CSA B181.1, or IPEX System XFR where necessary to meet the Code requirements for piping in non-combustible construction, or:
 - Up to 2½" diameter: Type DWV copper tube with cast solder fittings and joints, drainage pattern, or 2" Bibby-St. Croix class 4000 cast iron M.J.
 - 3" diameter and over – Bibby-St. Croix class 4000 cast iron mechanical joint soil pipe and fittings with stainless steel M.J. clamps as required to meet latest CSA B70 specifications in sizes up to and including 10". Bibby-St. Croix class 4000 hub and spigot soil pipe and fittings in 12" and 15" sizes.
- .3 Interior water piping (cold and hot):
- Type "L" hard temper copper tube with wrought or cast solder fittings. Solder with type 95-5 solder.
- .4 Drain and overflow piping:
- Hot water heater T&P drain – copper type "L".
 - DX coil condensate – ½" clear polyethylene hose, or copper type "L" where necessary to meet the Code requirements for piping in non-combustible construction.
- .5 Pipe hangers and supports:
- All piping shall be suspended with clevis type hangers with hanger rods as required.
- .6 Frost- Free Wall Hydrant
- 12" - 32W183 c/w vacuum breaker

3. PLUMBING FIXTURES AND EQUIPMENT

3.1 WATER CLOSETS

- Equal to Tasman 270 1.6/0.8 gpf.
- Water saving – dual flush high efficiency toilet.

As manufactured by Caroma International PTY Ltd. c/w Caravelle 2000 open seat, front colour: white

3.2 WASHROOM LAVATORIES

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- 1- OV1721A-3
3-H oval S.S. basin, handicap approved
 - 1- DELT500WFTP
Chrome S/L 4"cc lavatory faucet l/pop-up
 - 1- 33W540
1-1/4" mechanical pop-up drain
- 3.3 STAFF ROOM SINK
- 1- QSL2020/8-3
3-hole single S.S. kitchen sink, 8" deep
 - 1- DELT135WFTP
Chrome S/L 8"cc kitchen faucet W/1/2"FTG
- 3.4 STAFF ROOM SHOWER
- 1- USS3232WH
White shower stall L/dome, 32x32
 - 1- SD35
2" OS&B chrome abs hub shower drain
 - 1- DELTR10000UN
Rough-in valve
 - 1- 22-1315
5' steel shower rod only
 - 1- OSB43
#43 OS&B regular trim kit f/shower rod
- 3.5 HOT WATER TANK
- 1- PRO425TM
PRO425TM 37.5IG electric W/H 3000/240 W/T&P
 - 1- HOT WATER TANK DRAIN PAN WHP-26 Oatey
- 3.6 URINAL
- 1- 7-397WW
Cromwell warm white W/H urinal, 3/4"TS
 - 1- C4004
Crane S.S. urinal strainer
 - 1- 86T505
#Teck lever handle metering urinal valve
- 3.7 POTABLE WATER CISTERN
- 1 - 2000 , 1 gallon, 6'-0" (1800mm) diameter FDA approved fiberglass water cistern storage tank equal to EQUINOX INDUSTRIES LTD. 6-2000-67-5 c/w 1 1/4" suction line fitting, tank to be suitable for deep burial and supplied with 24" (600mm) diameter man hole extension sleeves to suit minimum
 - 6'-0" burial c/w lockable lid. Install underground deep burial Potable Water Cistern tank, in strict accordance to manufacturer's instructions.
 - 1 - Pill 'low level' alarm kit c/w level sensor, audible alarm c/w silencing switch. Also include all required, fittings, drainage pipe, couplings and wiring to install a complete and operational potable water cistern tank system.
- 3.8 DOMESTIC WATER PRESSURE SYSTEM
- 1- MONMSS10E50
1/2HP-230V D/W SS submersible pump 10GPM
 - 1- CB12230
Control box 1/2HP-230V

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- 1- WX202
WX-202-P well x-trol tank 10.0 gal, with disconnect fittings on both sides
- Also include all necessary fittings, valves, couplings, power and control wire splice fit.
- 1 - SP13 adjustable pump stand
- 1 shut off valve located in building crawlspace prior to pressure tank

3.9 SEWAGE HOLDING TANK

- 1 - 2500 gallon 1 piece fibreglass CSA approved wastewater holding tank, approved for deep burial equal to Equinox 6-2500-H7. Tank to be supplied with 4" inlet fitting, sealable fitting for level alarm wiring conduit run and 24" diameter man hole extension sleeves to suit minimum
- 6'-0" burial c/w lockable lid assembly. Install underground deep burial sewage holding tank, in strict accordance to manufacturer's instructions.
- 1 - Pill 'high level' alarm kit c/w level sensor, audible alarm c/w silencing switch. Also include all required, fittings, drainage pipe, couplings and wiring to install a complete and operational sewage holding tank system
- 1 backflow preventer is to be installed in the building crawlspace

END OF SECTION