

ADDENDA

The following changes to the plans and specifications are to be incorporated in the tender documents:

- 1.1 Section 22 11 19 – DOMESTIC WATER PIPING SPECIALITIES
  - 1.1.1 Replace 22 11 19 – DOMESTIC WATER PIPING SPECIALITIES with new section 22 11 19 enclosed in this document.
- 1.2 Section 22 13 19 – SANITARY WASTER PIPING SPECIALITIES
  - 1.2.1 Replace Section 22 13 19 – SANITARY WASTER PIPING SPECIALITIES with new section 22 13 19 enclosed in this document.
- 1.3 Section 22 40 00 – PLUMBING FIXTURES
  - 1.3.1 Replace Section 22 40 00 – PLUMBING FIXTURES with new section 22 40 00 enclosed in this document.
- 1.4 Section 27 11 16 – COMMUNICATIONS CABINETS, RACKS, FRAMES AND ENCLOSURES
  - 1.4.1 Sub Section 2.2 – DATA RACK should not be highlighted.
- 1.5 Section 28 23 00 – VIDEO SURVEILLANCE
  - 1.5.1 Replace Sub Section 2.2.2.6 with the following: Monitor does not need to be rack mountable. Coordinate location of monitor with owner on site, supply and install necessary wiring for monitor as well as wall mount for the monitor if required.
- 1.6 Request for product equivalency: Welmar Forum Pro 900A dasher boards are an accepted equivalent
- 1.7 Request for product equivalency: Bleu Imp playground structure have not been approved because the structures selection have been pre-approved by community-based committee

END OF SECTION

## **Part 1           General**

### **1.1               REFERENCES**

- .1 American Society for Testing and Materials International (ASTM).
  - .1 ASTM A126-04(2014), Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
  - .2 ASTM B62-17, Specification for Composition Bronze or Ounce Metal Castings.
- .2 American Water Works Association (AWWA).
  - .1 AWWA C700-15, Cold Water Meters-Displacement Type, Bronze Main Case.
  - .2 AWWA C701-15, Cold Water Meters-Turbine Type for Customer Service.
  - .3 AWWA C702-15, Cold Water Meters-Compound Type.
- .3 Canadian Standards Association (CSA International).
  - .1 CSA-B64.10-17, Selection and installation of backflow preventers
  - .2 CSA-B64.10.1-17, Maintenance and field testing of backflow preventers
  - .3 CSA-B356-10(R2015), Water Pressure Reducing Valves for Domestic Water Supply Systems.
  - .4 CSA B51-14, Boiler, Pressure Vessel and Pressure Piping Code.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).
- .5 Plumbing and Drainage Institute (PDI).
  - .1 PDI-WH201-2010, Water Hammer Arresters Standard.
- .6 American National Standards Institute (ANSI)
  - .1 NSF/ANSI 372-2016, Drinking water system components – Lead content

### **1.2               SHOP DRAWINGS AND PRODUCT DATA**

- .1 Submit shop drawings and product data in accordance with Section 22 05 00 – Common Work Results for Plumbing.

## **Part 2           Products**

### **2.1               PRIOR APPROVAL OF PRODUCTS**

- .1 Manufacturers products that are not named in the specifications must receive approval from Architect/Consultant prior to the tender closing date.
- .2 Schedule found on drawings shall be considered as being integral part of these specifications. Model number in schedule is the basis of design. Any model number not found in schedules shall only be considered as equal if it meets quality and performance of numbered item.

- .3 Any and all extra work that may result from an approved equal that is of different dimensions or requirements than the basis of design shall be the responsibility of this contractor.
- .4 A product being named as “approved equal” does not relieve the manufacturer’s responsibility to ensure that his/her products are registered as per the requirements of CSA B51. Only products registered as a category H fitting under CSA B51 shall be allowed to be installed on hot water systems designed to be operated above 65°C.

## **2.2 WATER HAMMER ARRESTORS**

- .1 Stainless Steel construction, bellows type, PDI-WH 201 certified.
- .2 Basis of Design: Refer to Schedule on Drawings
- .3 Acceptable material: Jay R. Smith, Mifab, Zurn, Watts or approved equal.

## **2.3 BACK FLOW PREVENTERS**

- .1 To CAN/CSA-B64 Series.
- .2 Basis of Design: Refer to Schedule on drawings
- .3 Lead-Free Reduced Pressure principle type:
  - .1 Sizes up to 50 mm: Threaded.
    - .1 Bronze construction, CSA approved, supplied with quarter turn ball valves and test cocks as per CSA-B64, lead-free to NSF/ANSI-372.
    - .2 Install with strainer on inlet side and air gap on relief.
    - .3 Basis of Design: Refer to Schedule on drawings
    - .4 Acceptable manufacturers: Watts, Zurn, Apollo, Beeco or approved equal.
  - .1 Double check valve assembly:
    - .1 Sized up to 50mm: Threaded.
      - .1 Bronze construction, CSA approved, supplied with quarter turn ball valves and test cocks as per CSA-B64, lead-free to NSF/ANSI-372.
      - .2 Install with strainer on inlet.
      - .3 Basis of Design: Refer to Schedule on drawings
      - .4 Acceptable material: Watts, Zurn, Apollo, Beeco or approved equal.
- .2 Refer to schedules on drawing for sizes and accessories.

## **2.4 HOSE BIBS AND SEDIMENT FAUCETS**

- .1 Bronze construction complete with back flow preventer, hose thread spout, replaceable composition disc, and chrome plated in finished areas.
- .2 Basis of Design: Refer to Schedule on drawings

- .1 Acceptable material: Nibco, Crane Valves, Dalh valves, Acorn, Zurn, Mifab or approved equal.

## **2.5 TRAP SEAL PRIMERS**

- .1 Electronic Trap seal primer
  - .1 Hard-wired electric solenoid valve complete with air-gap fitting and multi-seal distribution unit.
  - .2 Supply with control timer.
  - .3 Distribution unit and supply voltage as indicated by model number.
  - .4 Acceptable material: PPP Inc., Zurn, MIFAB MI series or approved equal.
- .2 Refer to schedule for model numbers and accessories.
- .3 Install trap seal primers with air-gap fittings unless primer is installed on a dedicated non-potable water line.

## **2.6 STRAINERS**

- .1 Lead-free strainers:
  - .1 860 kPa, Y type with perforated stainless steel removable screen.
  - .2 50 mm and under, bronze body, screwed ends, with brass cap, 1.2 mm perforations, lead-free to NSF/ANSI-372.
    - .1 Acceptable material: Apollo, Wilkins, Watts or approved equal.

## **2.7 PRESSURE RELIEF VALVE**

- .1 Bronze body, ASME rated, safety relief valve.
- .2 Capacity as indicated.
- .3 Acceptable material: Watts series, Apollo Valves series, Zurn or approved equal.

## **2.8 POTABLE WATER THERMAL EXPANSION TANK**

- .1 Fixed bladder or diaphragm type thermal expansion tank for potable water systems.
- .2 Bladder or diaphragm: heavy-duty butyl rubber.
- .3 Capacity: as indicated in schedule.
- .4 Acceptable material: Watts PLT, Amtrol Therm-Ex-Trol ST, Bell & Gossett PTA, Wilkins XT or approved equal.

**Part 3 Execution**

**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

**3.2 INSTALLATION**

- .1 Install in accordance with Canadian Plumbing Code, and local authority having jurisdiction.
- .2 Install in accordance with manufacturer's instructions and as specified.

**3.3 WALL HYDRANTS**

- .1 Install 600 mm above finished grade unless otherwise indicated.

**3.4 WATER HAMMER ARRESTORS**

- .1 Install on branch supplies to each fixture or group of fixtures and where indicated.
- .2 If branch supply line to fixture group is longer than 6m, install two water hammer arrestors, one at end of line and one at mid-line, who combined will absorb the total amount of fixture units on the branch line.
- .3 Water hammer sizes shall be as follows:
  - .1 1-11 fixture units: Size A
  - .2 12-32 fixture units: Size B
  - .3 33-60 fixture units: Size C
  - .4 61-113 fixture units: Size D
  - .5 114-154 fixture units: Size E
  - .6 155-330 fixture units: Size F
  - .7 Size A through F to be as certified by PDI.
  - .8 Fixture units shall be as described in the National Plumbing Code – 2015, table 2.6.3.1.
- .4 Install B type water hammer arrestor at each flush valve water closet.

**3.5 BACK FLOW PREVENTERS**

- .1 Install in accordance with CAN/CSA-B64 Series, where indicated and elsewhere as required by code.
- .2 Install in an accessible location at a height of at least 750 mm and no more than 1500 mm.
- .3 Bypass pipe discharge on RP backflow preventers to terminate over nearest funnel drain, open drain or service sink, or as indicated.

**3.6 TRAP SEAL PRIMERS**

- .1 Install for all floor drains and elsewhere, as indicated.
- .2 Install on cold water supply to nearest frequently used plumbing fixture, in concealed space, to approval of Consultant.
- .3 Install soft copper tubing to floor drain.

**3.7 STRAINERS**

- .1 Install with sufficient room to remove basket.

**3.8 WATER METERS**

- .1 Install water meter provided by local water authority if applicable.
- .2 Install water meter as indicated.

**3.9 WATER MAKE-UP ASSEMBLY**

- .1 Pipe discharge from relief valve to nearest funnel floor drain.

**3.10 COMMISSIONING**

- .1 To section 22 08 00 – Commissioning for Plumbing.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1        CSA B79-08(R2013), Commercial and residential drains and cleanouts
- .2        PDI-G101-2015, Testing and Rating Procedure for Grease Interceptors.

**1.2                SHOP DRAWINGS AND PRODUCT DATA**

- .1        Submit shop drawings and product data in accordance with Section 22 05 00 – Common Work Results for Plumbing

**Part 2            Products**

**2.1                Prior Approval of Products**

- .1        Manufacturers products that are not named in the specifications must receive approval from Architect/Consultant prior to the tender closing date.
- .2        Schedule found on drawings shall be considered as being integral part of these specifications. Model number in schedule is the basis of design. Any model number not found in schedules shall only be considered as equal if it meets quality and performance of numbered item.
- .3        Any and all extra work that may result from an approved equal that is of different dimensions or requirements than the basis of design shall be the responsibility of this contractor.

**2.2                FLOOR DRAINS**

- .1        Floor drains: to CSA-B79.
- .2        FD-1: General Service Floor Drain.
  - .1        General service floor drain, to be used in bathrooms and other finished areas, with reversing flashing collar to permit adjustment of the strainer to meet finished floor level.
  - .2        Cast Iron construction with 150mmØ nickel bronze strainer head, no-hub outlet.
  - .3        Pipe size as indicated on drawing.
  - .4        Supply with sediment bucket, trap primer connection, vandal proof screws, p-trap.
  - .5        Acceptable Material:
    - .1        Basis of design: Refer to schedule on drawings:
    - .2        Other acceptable material: Jay R. Smith, Zurn, Watts, Mifab or approved equal.
- .3        FD-2: Mechanical Room Funnel Floor Drain

- .1 General service floor drain complete with funnel for indirect waste lines, with reversing flashing collar to permit adjustment of the strainer to meet finished floor level.
- .2 Cast Iron construction with 150mmØ nickel bronze strainer head and 160mm x 64mm x 25mm high oval funnel, no-hub outlet.
- .3 Pipe size as indicated on drawing.
- .4 Supply with sediment bucket, trap primer connection, vandal proof screws, p-trap.
- .5 Acceptable material:
  - .1 Basis of design: Refer to schedule on drawings.
  - .2 Other acceptable material: Jay R. Smith, Zurn c/w Funnel, Watts, Mifab or approved equal.
- .4 FD-3: Garage Floor Drain
  - .1 Heavy-duty drains with offset outlet, hinged grate and free-standing sediment bucket, cast iron body, with flange, threaded outlet, vandal proof grate. Grate dimensions: 355mm x 405mm.
  - .2 Acceptable material:
    - .1 Basis of design: Refer to schedule on drawings.
    - .2 Other acceptable material: Jay R. Smith, Zurn, Mifab or approved equal.

## 2.3 CLEANOUTS

- .1 Cleanouts to CSA B-79.
- .2 CO-1, Floor Cleanouts:
  - .1 Finished Floors:
    - .1 Application: For use in floors with light finish (paint, vinyl sheeting, epoxy finish, carpeted floors, etc.).
    - .2 Cast Iron cleanout with round adjustable scoriated secured 145mm diameter nickel bronze vandal-proof top, taper thread bronze plug. Complete with speedi-set gasketed outlet.
    - .3 Acceptable material: Jay R. Smith, Zurn, Watts, Mifab or approved equal.
    - .4 Use Flashing Flange and Flashing Clamp in floors with continuous waterproof membranes.
    - .5 Use carpet cleanout marker for carpeted floors.
  - .2 Tile Floors:
    - .1 Application: For use in floors and areas which are covered with a floor covering such as asphalt or vinyl tile, linoleum, etc.
    - .2 Cast Iron cleanout with round adjustable secured 145mm diameter nickel bronze vandal-proof top with 3mm tile recess, taper thread bronze plug. Complete with speedi-set gasketed outlet.
    - .3 Basis of design: Refer to schedule on drawings.
    - .4 Acceptable material: Jay R. Smith, Zurn, Watts, Mifab or approved equal.



- .5 Use Flashing Flange and Flashing Clamp in floors with continuous waterproof membranes.
- .6 Coordinate finish with architectural contractors.
- .3 Terrazzo/Ceramic Floors:
  - .1 Application: For use in floors and areas which are covered with a floor covering which requires a deep recess, such as Terrazzo floors and ceramic tiles.
  - .2 Cast Iron cleanout with round adjustable secured 145mm diameter nickel bronze vandal-proof top with 13mm Terrazzo recess, taper thread bronze plug. Complete with speedi-set gasketed outlet.
  - .3 Basis of design: Refer to schedule on drawings.
  - .4 Acceptable material: Jay R. Smith, Zurn, or approved equal.
  - .5 Use Flashing Flange and Flashing Clamp in floors with continuous waterproof membranes.
  - .6 Coordinate finish with architectural contractors.
- .4 Heavy-Duty:
  - .1 Application: For use in mechanical rooms, electrical rooms and/or unfinished floors.
  - .2 Cast Iron cleanouts with round adjustable scoritated secured 180mm diameter vandal-proof cast iron top, taper thread bronze plug, built for heavy-duty applications. Complete with speedi-set gasketed outlet.
  - .3 Basis of design: Refer to schedule on drawings.
  - .4 Acceptable material: Jay R. Smith, Zurn, Mifab or approved equal.
  - .5 Use Flashing Flange and Flashing Clamp in floors with continuous waterproof membranes.
- .3 CO-2, stack cleanout:
  - .1 Exposed – Unfinished areas:
    - .1 Application: On drainage side of grease interceptor.
    - .2 Cleanout tee and countersunk taper thread plug

## 2.4 GREASE INTERCEPTORS

- .1 Removable baffle type interceptor, tested and rated in accordance with PDI G101, complete with acid resistant interior enamel finish for mounting flush with floor with non-skid covers or on floor as indicated.
- .2 Interceptor supplied with appropriate flow control fitting suitably vented. Refer to drawings.
  - .1 Interceptor equipped with non-vented removable flow control orifice is NOT an acceptable means of flow control.
- .3 Capacity: as shown on drawings.
- .4 Inlet and outlet size: as indicated
- .5 Refer to mechanical and architectural drawings for type of cover.

- .6 Acceptable material:
  - .1 Basis of design: Refer to schedule on drawings.
  - .2 Other acceptable material: J.R. Smith Zurn, Watts WD, Mifab MI-G or approved equal.

### **Part 3 Execution**

#### **3.1 INSTALLATION**

- .1 Install in accordance with Canadian Plumbing Code, and local authority having jurisdiction.
- .2 Install in accordance with manufacturer's instructions and as specified.

#### **3.2 CLEANOUTS**

- .1 In addition to those required by code, and as indicated, install at base of all soil and waste stacks, and rainwater leaders.
- .2 Bring cleanouts to wall or finished floor unless serviceable from below floor.
- .3 Building drain cleanout and stack base cleanouts: line size to maximum 100 mm Ø.

#### **3.3 COMMISSIONING**

- .1 To section 22 08 00 – Commissioning for Plumbing.

**END OF SECTION**

**Part 1            General**

**1.1                PRODUCTS INSTALLED BUT NOT SUPPLIED UNDER THIS SECTION**

- .1        Install rough-in for equipment supplied by others, complete with valves on hot and cold water supplies, waste and vent.
- .2        Equipment installed by others.
  - .1        Connect with unions.
- .3        Equipment not installed.
  - .1        Capped for future connection by others.

**1.2                REFERENCES**

- .1        American National Standards Institute
  - .1        ANSI/ARI 1010-02, Drinking Fountains and Self-Contained, Mechanically Refrigerated Drinking Water Coolers.
- .2        CSA Group
  - .1        CAN/CSA-B45 Series-02(R2013), CSA Standards on Plumbing Fixtures.
  - .2        CAN/CSA-B125.3-12, Plumbing Fittings.
  - .3        CAN/CSA-B651-12(R2017), Accessible Design for the Built Environment.
- .3        South Coast Air Quality Management District (SCAQMD)
  - .1        SCAQMD Rule 1168-A2011, Adhesive and Sealant Applications.

**1.3                SHOP DRAWINGS AND PRODUCT DATA**

- .1        Submit shop drawings and product data in accordance with Section 22 05 00 – Common Work Results for Plumbing.
- .2        Indicate, for all fixtures and trim:
  - .1        Dimensions, construction details, roughing-in dimensions.
  - .2        Factory-set water consumption per flush at recommended pressure.
  - .3        (For water closets, urinals): minimum pressure required for flushing.

**Part 2            Products**

**2.1                PRIOR APPROVAL OF PRODUCTS**

- .1        Manufacturers products that are not named in the specifications must receive approval from Architect/Consultant prior to the tender closing date.
- .2        Schedule found on drawings shall be considered as being integral part of these specifications. Model number in schedule is the basis of design. Any model number not

found in schedules shall only be considered as equal if it meets quality and performance of numbered item.

- .3 Any and all extra work that may result from an approved equal that is of different dimensions or requirements than the basis of design shall be the responsibility of this contractor.

## 2.2 MANUFACTURED UNITS

- .1 Fixtures: manufacture in accordance with CAN/CSA-B45 series.
- .2 Trim, fittings: manufacture in accordance with CAN/CSA-B125.
- .3 Exposed plumbing brass to be chrome plated.
- .4 Number, locations: Architectural drawings to govern.
- .5 Fixtures in any one location to be product of one manufacturer and of same type.
- .6 Trim in any one location to be product of one manufacturer and of same type.
- .7 Water closets:
  - .1 WC-1: floor-mounted, vitreous china top spud bowl, hardwired automatic touch-free exposed flush valve, barrier-free.
    - .1 Basis of design: Refer to schedules on drawings.
    - .2 Other acceptable manufacturers: American Standard, Zurn, Kohler, Contrac, Delta, Sloan or approved equal.
  - .2 WC-2: floor-mounted, vitreous china bowl, insulated vitreous china manual flush tank.
    - .1 Basis of design: Refer to schedules on drawings.
    - .2 Other acceptable manufacturers: American Standard, Zurn, Kohler, Contrac, Delta, Sloan or approved equal.
- .8 Lavatories:
  - .1 LAV-1: Counter-top, vitreous china bowl, manual faucet, barrier-free:
    - .1 Basis of design: Refer to schedules on drawings.
    - .2 Other acceptable manufacturers: American Standard, Zurn, Contrac, Delta, Chicago Faucet, Krowne or approved equal.
- .9 Counter-top sinks:
  - .1 SK-1: single compartment, ledge-back, manual faucet.
    - .1 Basis of design: Refer to schedules on drawings.
    - .2 Other acceptable manufacturers: Franke Commercial, Novanni, Delta, American Standard, Zurn, Chicago Faucet or approved equal.
- .10 Service sinks:

- .1 JAN-1: Mop service sink, terrazzo mop basin, stainless steel splash guards, stainless steel mop bracket, stainless steel hose bracket, manual faucet with mop hook and testable pressure vacuum breaker.
  - .1 Basis of design: Refer to schedules on drawings.
  - .2 Other acceptable manufacturers: Fiat, Acorn, Chicago Faucet, T&S Brass, Stern-William or approved equal.
  - .3 Install with P-trap.
- .11 Fixture piping.
  - .1 Hot and cold water supplies to each fixture:
    - .1 Exposed:
      - .1 Heavy pattern, chrome plated finish, angle supplies, lockshield, screwdriver slot, stuffing box cartridge, 3/8 IPS brass inlet supply nipple, 9.5mm OD x 305mm long flexible riser tube, stainless steel wall flange.
      - .2 Hidden and/or within cabinets:
        - .1 Heavy pattern, chrome plated finish, angle supplies, lockshield, screwdriver slot, stuffing box cartridge, 3/8 IPS brass inlet supply nipple, 9.5mm OD x 305mm long flexible braided stainless steel riser, stainless steel wall flange.
    - .2 Waste:
      - .1 Brass P trap with cleanout on each fixture not having integral trap.
      - .2 Chrome plated in all exposed places (including within cabinets).
      - .3 Grid strainer, basket strainer or plugs: as indicated on drawings.

## 2.3 APPLICATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

## 2.4 INSTALLATION

- .1 Mounting heights:
  - .1 Standard: to comply with manufacturer's recommendations unless otherwise indicated or specified.
  - .2 Standard fixtures: as indicated, measured from finished floor:
    - .1 Lavatory: top of bowl @ 787mm AFF.
    - .2 Handwash sinks: top of bowl @ 865mm AFF.
    - .3 Kitchen sinks: top of bowl @ 914mm AFF.
  - .3 Physically handicapped: to comply with most stringent of either NBCC or CAN/CSA B651.
    - .1 Wall-mounted Lavatory: top of bowl @ 838mm AFF.
    - .2 Wall-mounted Drinking Fountain: spout opening @ 889mm AFF.
  - .4 In an event where the mounting heights shown on Architectural drawings differ from those mentioned herein, the Architectural drawings shall govern.

**2.5 COMMISSIONING**

- .1 To section 22 08 00 – Commissioning for Plumbing.

**END OF SECTION**