

**1. GENERAL PROVISION**

- SUPPLY AND INSTALL A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED AND/OR SPECIFIED DRAWINGS ARE NOT TO BE SCALED AND ARE INTENDED AS SCHEMATIC ONLY. VISIT SITE PRIOR TO SUBMISSION OF BID AND EXAMINE ALL EXISTING CONDITIONS. NOTIFY ENGINEER OF DISCREPANCIES, CONFLICTS AND AREAS OF CONCERN.
- ALL WORK SHALL CONFORM TO THE LATEST CODE REQUIREMENTS OF THE ONTARIO BUILDING CODE, FIRE MARSHALS ACT, MUNICIPAL BYLAWS AND AUTHORITIES HAVING JURISDICTION. THE INSTALLATION SHALL BE IN ACCORDANCE TO THE STANDARDS OF THE C.S.A., C.G.A. AND U.L.C.. FOLLOW ALL RECOMMENDATIONS OUTLINED BY THE MANUFACTURER. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE AFOREMENTIONED CODES AND STANDARDS WITH THE INSTALLATION PERFORMED ONLY BY CONTRACTORS LICENSED AND FAMILIAR WITH THE ABOVE REQUIREMENTS.
- PAY AND OBTAIN ALL REQUIRED PERMITS, FEES, INSPECTIONS AND LICENSES. SUBMIT DRAWINGS TO AUTHORITIES AS REQUIRED.
- ALL MATERIALS AND EQUIPMENT TO BE NEW AND FREE FROM DEFECTS. GUARANTEE IN WRITING, INCLUDING THE MANUFACTURER'S WARRANTY, THE MATERIAL AND WORKMANSHIP, FOR A PERIOD OF ONE YEAR AFTER BUILDING ACCEPTANCE BY THE ENGINEER AND THE OWNER.
- MECHANICAL CONTRACTOR SHALL PROVIDE TO THE OWNER, 5 BOUND SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL MECHANICAL EQUIPMENT..
- THE MECHANICAL TRADE SHALL SUPPLY ALL ACCESS DOORS AND COVERS FOR INSTALLATION BY GENERAL TRADES FOR CONCEALED VALVES, CLEANOUTS, AIR VENTS, FIRE DAMPERS, BALANCING DAMPERS AND EQUIPMENT, REQUIRING PERIODIC MAINTENANCE OR ADJUSTMENT. OBTAIN APPROVAL FROM THE ARCHITECT AND ENGINEER FOR ALL LOCATIONS AND SIZES.
- KEEP SITE CLEAN AT ALL TIMES AND PHASE WORK WITH PROJECT CO-ORDINATOR. CLEAN ALL EQUIPMENT, PROVIDE INITIAL MAINTENANCE, START-UP AND FILTER REPLACEMENT PRIOR TO FINAL INSPECTION.
- SUBMIT SIX(6) COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT PRIOR TO ORDERING. PROVIDE 3 MAINTENANCE MANUALS C/W APPROVED COPY OF ALL SHOP DRAWINGS, MARKED UP WHITE PRINT SHOWING AS-BUILT RECORD LIST.
- VISIT AND INSPECT THE SITE. NO ALLOWANCE WILL BE MADE FOR FAILURE TO DO SO.
- COOPERATE WITH ALL OTHER TRADES. CO-ORDINATE ALL WORK.
- IDENTIFY ALL EQUIPMENT WITH LAMACOID NAMEPLATES SECURELY FASTENED.
- MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH DRAWINGS. THE MECHANICAL CONTRACTOR SHALL BE DEEMED RESPONSIBLE FOR CO-ORDINATION OF ALL TRADES TO ENSURE AN ORDERLY AND COMPLETE INSTALLATION.
- 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.
- NOTHING CONTAINED HEREIN SHALL BE CONSTRUED TO RELIEVE THIS CONTRACTOR FROM MAKING GOOD AND PERFECT IN ALL USUAL DETAILS OF CONSTRUCTION AND HE WILL BE HELD RESPONSIBLE TO PROVIDE AND FURNISH MATERIAL TO DO ALL WORK AND LABOUR, AND BEAR EXPENSES INCIDENTAL TO THE SATISFACTORY COMPLETION OF THE WORK EMBRACED IN THESE SPECIFICATIONS.
- VERIFY VOLTAGE WITH DIVISION 16 CONTRACTOR ON SITE, FOR ALL EQUIPMENT, BEFORE PLACEMENT OF ORDER.
- MECHANICAL CONTRACTOR SHALL CONFIRM EXACT LOCATION OF ALL EXISTING MECHANICAL SERVICES & EQUIPMENT.

**2. 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. DO NOT USE PERFORATED BAND, WIRE CHAIN, OR SOLID RING TYPE HANGERS. 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 GROUUPS, 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 ENSURE THAT ALL WORK AND INSPECTIONS ARE COMPLETE.
- WATER HAMMER ARRESTOR SHALL BE PROVIDED.
- CPVC AND PVC CAN BE DAMAGED BY CONTACT WITH CHEMICALS FOUND IN SOME CONSTRUCTION PRODUCTS (AND SITE PREPARATIONS). REASONABLE CARE NEEDS TO BE TAKEN TO INSURE THAT PRODUCTS COMING INTO CONTACT WITH CPVC SYSTEMS ARE CHEMICALLY COMPATIBLE. CONFIRM CHEMICAL COMPATIBILITY WITH CPVC WITH THE MANUFACTURER OF THE PRODUCT IN CONTACT WITH CPVC PIPING SYSTEMS. IF CHEMICAL COMPATIBILITY WITH CPVC IS IN QUESTION, ISOLATE THE SUSPECT PRODUCT FROM CONTACT WITH CPVC PIPE OR FITTINGS.

PIPING SCHEDULE		
SERVICE	MATERIAL	LOCATION TO BE USED
DCW & DHW BELOW GROUND	COPPER TYPE 'K'	3" & SMALLER
DCW & DHW ABOVE GROUND	COPPER	
SANITARY, STORM & VENT ABOVE GROUND	COPPER, PVC, CAST IRON	EXPOSED & CONCEALED, PVC NOT IN RETURN AIR PLENUM
SANITARY, STORM & VENT ABOVE GROUND	ABS	CONCEALED IN WALLS IN COMBUSTIBLE BUILDING ONLY
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.
- INSULATE ALL HOT AND COLD WATER PIPING WITH 1" (25mm) FLEXIBLE PREFORMED FIBERGLASS PIPE INSULATION WITH VAPOUR BARRIER. TAPE ALL JOINTS. PROVIDE CANVAS FINISH C/W 2 COATS SIZING ON ALL EXPOSED PIPING. ALL WORK TO BE PERFORMED BY INSULATION JOURNEYMEN.
- CONCEAL ALL PIPING WHERE POSSIBLE. INSTALL CHROME PLATED ESCUTCHEON PLATES IN ALL FINISHED AREAS. PROVIDE UNIONS AND VALVES AT ALL DOMESTIC HOT WATER TANKS 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 WATERTIGHT.

**3. NATURAL GAS DISTRIBUTION SYSTEM**

- MECHANICAL CONTROL 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 **B149.1-10** - 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 ALKYD YELLOW PAINT.
- VALVES: SHALL BE CODE APPROVED.
- FLEXIBLE PIPING IS ALLOWED ONLY WHEN INDICATED ON THE DRAWINGS.

**4. FIRE PROTECTION**

- FIRE EXTINGUISHERS:
  - 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.
- STANDARD OF ACCEPTANCE: WILSON & COUSINS OR CANADIAN FIRE HOSE CORPORATION.
- INSTALL IN ELECTRICAL/MECHANICAL ROOM AND AT EVERY EXIT DOOR.

**5. INSULATION**

**a) 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.
- INSULATION JACKET OR ADHESIVES NOT TO HAVE A FLAME SPREAD RATING OVER 25, SMOKE DEVELOPED, AND FUEL CONTRIBUTED RATING NOT OVER 50, IN ACCORDANCE WITH ULC STANDARDS AND THE ONTARIO FIRE MARSHALL.
- 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 OR CHILLED WATER PIPES WITH 1" (25MM) PREFORMED FIBREGLASS INSULATION WITH VAPOUR BARRIER. NO INSULATION IS REQUIRED ON DOMESTIC HOT OR COLD WATER EXPOSED IN SUITES.

MECHANICAL (PIPING) CONTRACTOR SHALL PROVIDE THE FOLLOWING: (PROVIDE MEANS; SUPPLY & INSTALL UNLESS SPECIFICALLY NOTED OTHERWISE).

PROVIDE:

- MECHANICAL (PIPING) COORDINATION AND INTERFERENCE DRAWING.
- ALL NECESSARY SLEEVING FOR PIPING.
- MECHANICAL (PIPING) COMMISSIONING, AS BUILT DRAWINGS AND OPERATION AND MAINTENANCE DRAWINGS AS SPECIFIED.
- COMPLY WITH CODES AS SPECIFIED.
- HANGERS AND SUPPORTS FOR PLUMBING, PIPING.
- TRADE CLEAN UP -- SEE OCA RECOMMENDED DAY TO DAY CLEAN UP STANDARD OF PRACTICE.
- PROTECTION OF OTHER TRADES' WORK FROM DAMAGE BY THIS TRADE.
- HOISTING FOR MECHANICAL (PIPING) MATERIALS AND EQUIPMENT.
- ARRANGE INSPECTION FOR PLUMBING WORK.
- SCAFFOLDING AS REQUIRED FOR MECHANICAL (PIPING) WORK.
- DESIGN, SUPPLY AND INSTALLATION OF VIBRATION ISOLATION AND SEISMIC RESTRAINT FOR MECHANICAL SYSTEMS.
- IDENTIFICATION.
- ALL STEEL BASES AND STEEL SUPPORTS FOR MECHANICAL (PIPING) EQUIPMENT WHEN SPECIFIED OR DETAILED ONLY ON MECHANICAL.
- SUPPLY ACCESS DOOR(S) WHEN REQUIRED BY MECHANICAL (PIPING).
- FIRE-STOPPING FOR MECHANICAL (PIPING) SYSTEMS.
- MECHANICAL (PIPING) PERMITS AND INSPECTION FEES WHEN AND WHERE REQUIRED.
- MECHANICAL (PIPING) CONNECTIONS TO SPECIALTY EQUIPMENT WHICH IS SUPPLIED AND INSTALLED BY OTHERS.
- CAST IRON CATCH BASIN AND MANHOLE COVERS, TRENCH GRATINGS, SUMP FRAMES AND COVERS.
- PREFAB SHOWER CABINETS OR SURROUNDS COMPLETE WITH MANUFACTURED BASES.
- MANUFACTURED SUMPS, PITS AND COVERS COMPLETE WITH PUMPS INSIDE BUILDING WALLS.
- ALL PLUMBING SYSTEMS.
- NATURAL GAS PIPING SYSTEMS WITHIN BUILDINGS.
- ALL HOT WATER HEATERS AND STORAGE TANKS.
- ALL HEAT EXCHANGERS AND CONVERTERS.
- MECHANICAL INSULATION FOR PIPING.

MECHANICAL LEGEND	
— DCW —	DOMESTIC COLD WATER
— DHW —	DOMESTIC HOT WATER
— HW —	HEATING, HOT WATER SUPPLY
— HWR —	HEATING, HOT WATER RETURN
— SAN —	SANITARY LINE, BELOW FLOOR
	GATE VALVE
	PLUG VALVE
	FLOOR DRAIN
	FIRE EXTINGUISHER MATCH WITH EXISTING

**GENERAL NOTES:**

- CONTRACTOR TO PROVIDE FIRE STOP AT ALL PENETRATION IN FIRE RATED WALLS, CEILING, & FLOOR.
- PROVIDE FIRE EXTINGUISHERS AS PER REQUIREMENT OF THE CODE & FIRE MARSHALL.

PLUMBING FIXTURES SHALL BE PROVIDED AS INDICATED

**TOILET - FLOOR MOUNTED PRESSURE-ASSIST TANK (BARRIER FREE DESIGN)**

**American Standard "CADET ELONGATED 16-1/2" (420mm) HIGH #2377.100 "Pressure-Assist Low Consumption" Tank Toilet**, floor mounted, vitreous china, elongated syphon jet flush action bowl, fully glazed 2" (50mm) ball pass internal trapway, 10" x 12" (254mm x 304mm) large water surface, "Spaced Connect" P.A. tank complete, 1.3 gal. (6L) flush, with cast sanitary guard on bowl for china to china tank assembly, bolt caps. Provide floor flange, flange bolts, and gasket. **Centocco #220STS 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**

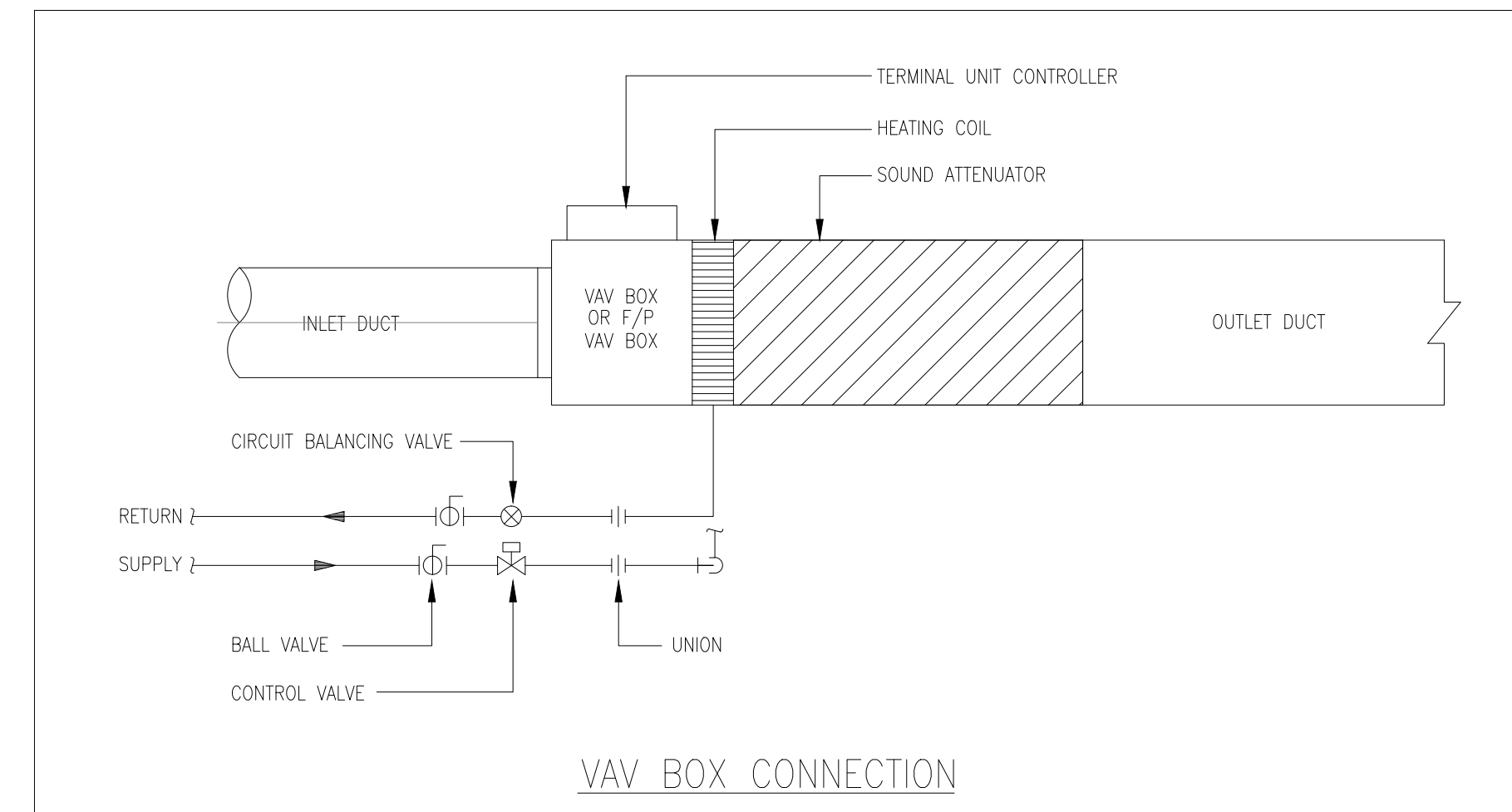
**American Standard "MURRO" #0954.000 Basin**, 4" (102mm) centres, 22" x 21" x 5" - 7-1/2" (559mm x 533mm x 127-191mm) deep, wall hung, vitreous china, rear overflow, for concealed arm support. **Chicago Faucets #802-V-XK Faucet**, C.P. 4" (102mm) C.C., solid cast brass lead-free body, 1/4 turn ceramic 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 #H170VBR 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-177 '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.

**ONE COMPARTMENT S.S. SINK**

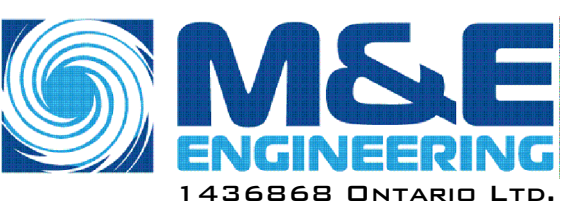
**Kindred "STEEL QUEEN" #QSL-2020-8 S.S. Sink**, 3 hole, 8" (203mm) centres, 20-1/2" x 20" x 8" (521mm x 508mm x 203mm) deep, counter mounted, back ledge, grade 18-8 type 302 stainless steel, single compartment, mirror finished rim, satin finished bowl, self-rimming, with crumb cup-strainer and sound deadening. **Chicago Faucets #1100-V-L9-XK Faucet**, C.P. 8" (203mm) C.C., deck mounted, solid cast brass lead-free body, 1/4 turn ceramic disc valve cartridges, swing spout with vandal-resistant 1.84 GPM (8L) flow aerator outlet and cast brass lever handles. **Supplies** with angle stops, escutcheons and flexible metal risers. **Cast Brass 'p' Trap**, 1-1/2" (38mm) with cleanout, union and escutcheon.

**JANITOR MOP SINK - FLOOR MOUNTED**

**Mop Sink**, 24" x 24" x 10" (610mm x 610mm x 254mm) deep, floor mounted, molded stone, Integral Drain with strainer and 'BP' S.S. Back Splash Panels. **Faucet**, C.P. 8" (203mm) C.C., wall mounted, solid cast brass body, with cast metal handles, vacuum breaker, integral stops. **Bracket**, 36" (915mm) hose with coupling. **Mop (triple) Hanger**, 'p' Trap, 3" (75mm).

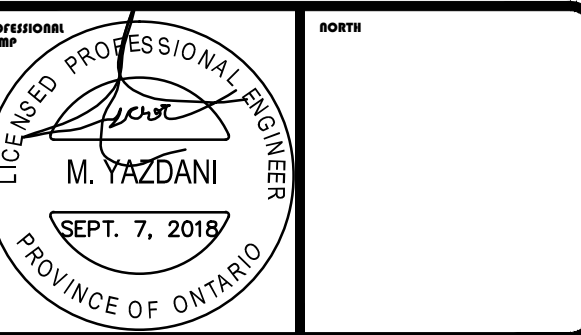


2	SEP. 20, 2018	PRICE	MY
1	SEPT. 7, 2018	BUILDING PERMIT	MY
NO.	DATE	REVISION	NAME



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PROJECT  
NORTRAX OTTAWA  
UPPER LEVEL FIT-UP  
190 DAVID MANCHESTER RD., OTTAWA, ON

DRAWING  
**PLUMBING SPECIFICATIONS**

PROJECT NUMBER	
CHECKED BY	MY
DESIGNED BY	MY
DRAWN BY	SY
DATE	
REVISION	
	M-3