

PART 1 GENERAL**1.1 RELATED DOCUMENTS**

- A. The requirements of the General Conditions, Supplementary Conditions and the following Specification sections apply to all Work herein:
1. Section 22 00 10 - General Requirements
 2. Section 22 00 20 - Plumbing Scope of Work
 3. Section 22 05 07 - Design Conditions
 4. Section 22 05 93 - Testing, Balancing and Adjusting
 5. Section 22 10 00 - Domestic Water Systems
 6. Section 22 13 00 - Sewage and Drainage System
 7. Section 22 30 00 - Plumbing Equipment

1.2 SUMMARY

- A. Furnish and install the clean-outs, drains and plumbing fixtures herein specified and as indicated on the Drawings.

1.3 REFERENCE STANDARDS

- A. All clean-outs, drains, and plumbing fixtures shall be designed, manufactured and tested in accordance with the latest applicable industry standards including the following:
1. Americans with Disabilities Act (ADA).
- B. All equipment and material to be furnished and installed on this Project shall be UL listed, in accordance with the requirements of the authorities having jurisdiction and suitable for its intended use on this Project.

1.4 SUBMITTALS

- A. The following submittal data shall be furnished according to the General Conditions and Section 22 00 10 and shall include, but not be limited to:
1. Clean-outs, Drains and Plumbing Fixtures complete with all materials, equipment, fixtures, trim, electric water coolers and electric drinking fountains.
 2. Factory Testing
 3. Field Testing
- B. All items or equipment listed above with asterisks (*) shall be certified by the manufacturer using Manufacturer Certification "MCA" as set forth in Section 22 00 10. See Section 22 00 10 for certification requirements.

1.5 WARRANTY

- A. Comply with the requirements of the General Conditions and Section 22 00 10.

PART 2 PRODUCTS**2.1 ACCEPTABLE MANUFACTURERS**

- A. If it complies with these Specifications, clean-outs manufactured by one of the following manufacturers will be acceptable:
1. Josam
 2. J. R. Smith
 3. Tyler
 4. Wade
 5. Zurn

- B. If it complies with these Specifications, drains manufactured by one of the following manufacturers will be acceptable:
1. Josam
 2. J. R. Smith
 3. Wade
 4. Zurn
- C. If it complies with these Specifications, plumbing fixtures manufactured by one of the following manufacturers will be acceptable:
1. American Standard
 2. Crane
 3. Eljer
 4. Kohler
 5. Toto
- D. If it complies with these Specifications, electric drinking fountains manufactured by one of the following manufacturers will be acceptable:
1. Elkay
 2. Filtrine
 3. Halsey-Taylor
 4. Haws
 5. Oasis
- E. If it complies with these Specifications, electric drinking fountain carriers manufactured by one of the following manufacturers will be acceptable:
1. Josam
 2. J. R. Smith
 3. Wade
 4. Zurn
- F. If it complies with these Specifications, flush valves manufactured by one of the following manufacturers will be acceptable:
1. American Standard
 2. Sloan
 3. Zurn
- G. If it complies with these Specifications, factory package drinking water chillers manufactured by one of the following manufacturers will be acceptable:
1. Filtrine
 2. Haws
 3. Oasis

2.2 CLEAN-OUTS

- A. Clean-outs shall be furnished for various locations as specified in Section 22 13 00 titled "Sewage and Drainage System" and as noted below and shall be similar and approved equal to the following J. R. Smith catalog numbers. Coordinate exact location of clean-outs with the Architect.
1. Unfinished Areas: J. R. Smith Fig. #4420 clean-out with no-hub outlet and bronze plug.
 2. Finished Areas:
 - a. Walls: J. R. Smith Fig. #4436 clean-out with no-hub outlet and nickel bronze frame and round nickel bronze cover secured with screws and bronze plug. Where DWV plastic piping is used, J. R. Smith Fig. #4720 with round nickel bronze cover and frame shall be provided.
 - b. Floor: J. R. Smith Fig. #4020 clean-out with round nickel bronze frame and cover, and sealed ABS plug. Provide clamping collar when installed in floors having waterproof membrane flashing (J. R. Smith Fig. #4020-FC).
 3. Outside Building and in Garages: J. R. Smith Fig. #4220 clean-out with sealed ABS plug, non-located in pavement, these clean-outs shall be set in concrete pad 6" thick, flush with finished grade, 24" square and concrete shall be broom finished on top.

2.3 DRAINS

- A. Drains shall be complete in every detail and shall be similar and approved equal to J. R. Smith catalog numbers.
1. Floor Drains:
 - a. F.D. No. 1: J. R. Smith #2005-AO6NB, painted cast iron body, no hub outlet, clamping collar and nickel bronze 6" Type "A" strainer.
 - b. F.D. No. 2: J. R. Smith #2140, heavy duty tractor grate, strainer type: 12" round cover.
 - c. FSK No.1: J. R. Smith #2630-12, 12" x 12" painted cast iron floor sink with sediment bucket and half-grate strainer. In floors with waterproofing membrane, J. R. Smith #2630-FC-12 12" x 12" dura-coated cast iron floor sink with sediment bucket, half-grate strainer and combination membrane flashing clamp.
 2. Roof Drains:
 - a. R.D. No. 1 and OFD No. 1: J. R. Smith #1015-A-R-C painted cast iron body, with extension, sump receiver and underdeck clamp as required for the roof construction and aluminum dome strainer.
 - b. R.D. No. 2: J. R. Smith #1410-NB-E-C painted cast iron body, extension, and underdeck clamp as required for roof construction and nickel bronze strainer.
 - c. R.R. No. 1: J. R. Smith #3960-E-R-UVG, roof receptor drain, dome strainer, 2½" high solid water dam, underdeck clamp, sump receiver, and stainless steel perforated grate.
 3. Planter Drains PD-1: Cast iron body, bronze flashing clamp similar to "Series 1900 Y-NB" by J.R. Smith.
 4. Manhole frames and covers – heavy duty similar to model R-1687 as manufactured by Neenah Foundry.
 - a. Trench Drains: TD-1 Channels shall be 5.10" wide Precast polyester of interlocking design with a built-in slope of .6%. Channel should have an integral metal rail and radiused bottom and shall be supplied with secured grate. The grating shall be extra heavy duty Class E for commercial solid tyre traffic similar to 9870-435-GHDE- 3 174 x 3/8 slotted galvanized steel grate by J.R.Smith
 - b. Trench Drains: TD-2 Channels shall be 48 inches long, 4 inch wide and have a 4 inch throat. Modular channel sections shall be made of 16 ga. fabricated Stainless Steel conforming to ASTM A-240 (type 304). Channels have feet for patty pour or leveling studs standard to secure trench in its final location. Channels shall be provided with standard FS grates that lock down to frame. Stainless Steel Grate should have an open area of 12.00 sq. in per ft similar to Zurn Z 890-SWG-VP.
 - c. Trench Drain: TD-3 The surface drainage system shall be ACO Drain Brickslot, as manufactured by ACO Polymer Products, Inc or approved equal. The grating and angle shall be manufactured from Grade 304 Stainless Steel. Grating shall be secured by Quick lock boltless locking system.
- B. Plastic dome strainers are unacceptable. Provide outlet connections on drains as required by type of piping system used. See Section 22 13 00 titled "Sewage and Drainage Systems".

2.4 PLUMBING FIXTURES

- A. Plumbing fixtures shall be complete in every detail. Fixtures manufactured by one of the manufacturers listed hereinbefore that are of equal weight and quality and meet the requirements as to space and connections will be acceptable.
- B. Fixtures are not scheduled on Drawings but are indicated by symbols. Carefully check Drawings and furnish everything indicated and/or required for a complete installation. No additional cost to the Owner shall be allowed for omission or misinterpretation.
- C. Plumbing fixtures shall be furnished with individual stop valves and chrome-plated metallic supply pipes unless otherwise specified. Fixtures not specified with carriers shall be securely fastened to walls and floors with suitable inserts or other approved fastenings. Wooden plugs shall not be used. Refer to Section 22 13 00 titled "Sewage and Drainage System" for fixture connections between traps and soil pipes.
- D. The fixture schedule is as follows:
1. Water Closet "WC-1":
 - a. Bowl (1.28 GPF High Efficiency Toilet – HET): Wall mounted vitreous china elongated rim, siphon jet action, 1-1/2" top spud, bolt caps and shall be:
 - 1) American Standard #3351.001 (Everclean)

- 2) Toto #CT708EG (SanaGloss)
- b. Seat: White, solid plastic, elongated open front less cover, integrally molded bumpers, antimicrobial protection with self-sustaining heavy duty check hinge and shall be:
- 1) American Standard #5905.110
 - 2) Bemis #3155SSCT
 - 3) Beneke #527 SSPC
 - 4) Church #3155SSCT
 - 5) Kohler #K-4670-SA
- c. Automatic Flush Valve: Selectronic Flowise Sensor operated with manual over ride DC powered Dual flush exposed water closet flush valve 6065.721.002 or equal, polished chrome finish with 1-1/2" top spud, 1.28 / 1.1 GPF.
- d. Carrier: Shall be suitable for the service intended and shall be as manufactured by Josam, J. R. Smith, Wade or Zurn. The carrier shall have anchoring provisions for lateral stability and support.
2. Water Closet "HWC-1": Same as "WC-1", except mounting height of water closet and flush valve shall be suitable for the handicapped. Mount flush valve toward "wide" side of handicapped stall. Coordinate mounting height with grab bar.
3. Lavatory "L-1":
- a. Lavatory: White rectangular, vitreous china, undercounter type, nominal dimensions (outside – 21 1/4" x 15 1/4", basin – 21 1/8" x 14" x 6" deep) and shall be:
 - 1) American Standard #0614.300
 - 2) Lacava 4252 UN
 - 3) Kohler Ladena #K2214
 - b. Trim: Polished chrome-plated brass AC powered sensor operated lavatory faucets, 8" valve centers, 4-3/4" spout, 0.5 GPM at 12 seconds per cycle, aerator, adjustable orifice or flow restricting aerator, and tee or lever handle as required to comply with city and/or state handicap code and the ADA. Refer to the Architectural Drawings for thickness of the stone counter top and coordinate requirements. Lavatory faucets shall be similar to
 - 1) Kohler K-13462
 - c. Supply Pipe: 1/2" Polished chrome-plated pipe with angle stops, riser, C.P. nipple to wall with chrome-plated escutcheon and shall be Chicago #1006, McGuire #H2165, or T & S Brass #B-1305. Piping from valve stems to spout shall be Type "L" copper. Flex hoses or plastic pipe will not be acceptable.
 - d. Trap: 1-1/4" adjustable chrome-plated cast brass with clean-out plug, outlet and shall be:
 - 1) Dearborn #706, 1-1/4" x 1-1/2"
 - 2) Kohler #K-9000, 1-1/4" x 1-1/2"
 - 3) McGuire #8902, 1-1/4" x 1-1/2"
 - 4) Traps shall be equipped with a Schuller Zeston "Snap-Trap" system or Truebro Lav Guard for handicap drain protection where required by ADA or local codes
 - e. Strainer and Tailpiece: Polished chrome plated cast brass with open grip strainer and 1-1/4" O.D. 17 gauge tail-piece and shall be:
 - 1) American Standard #2411.015
 - 2) Chicago #327
 - 3) McGuire #155-A
 - 4) T & S Brass B-0899
4. Lavatory "L-2":
- a. Lavatory: White, wall hung, 20" x 18", vitreous china, concealed carrier arms and shall be with extra right hand hole for soap dispenser installation similar to:
 - 1) American Standard #0356.0137
 - b. Trim: Polished chrome-plated brass AC powered sensor operated lavatory faucets, 8" valve centers, 4-3/4" spout, 0.5 GPM at 12 seconds per cycle, aerator, adjustable orifice or flow restricting aerator, and tee or lever handle as required to comply with city and/or state handicap code and the ADA. Refer to the Architectural Drawings for thickness of the stone counter top and coordinate requirements. Lavatory faucets shall be similar to
 - 1) Kohler K-13462
 - c. Trim: Same as "L-1"
 - d. Supply Pipes: Same as "L-1".
 - e. Trap: Same as "L-1".
 - f. Carrier: Shall be suitable for the service intended and shall be as manufactured by Josam, J. R. Smith, Wade or Zurn.



5. Urinal "UR-1" and "HUR-1":
- a. Urinal: 0.125 GPF Everclean Wall hung, white vitreous china, siphon jet action, 3/4" top spud and shall be:
 - 1) American Standard # 6590.001
 - 2) Crane #7-197
 - 3) Eljer #161-2030
 - 4) Kohler #K-4960-ET
 - b. Automatic Flush Valve: Selectronic Sensor operated with manual over ride Exposed DC Powered flush valve 0.125 GPF, polished chrome finish with 3/4" top spud.
 - c. Carrier: Shall be suitable for the service intended and shall be as manufactured by Josam, J. R. Smith, Wade or Zurn. The carrier shall have anchoring provisions for lateral stability and support.
6. Service Sink "MS-1":
- a. Sink: 24" x 24" x 10" "Molded Stone" service basin, cast brass 3" drain body, removable stainless steel combination dome strainer and lint basket and shall be:
 - 1) Fiat Model MSB-2424
 - 2) Stern-Williams Model MTB-2424
 - b. Trim: Mount faucet at 2'-6" above floor. Rough chrome-plated brass, 6" rigid spout, wall brace, integral stops, pail hook, hose end, vacuum breaker, ADA approved lever handles, vandal resistant locking screws and shall be:
 - 1) American Standard # 8344.112-CP
 - 2) Chicago #897-CP
 - 3) Eljer #749-1365-22
 - 4) T & S Brass #B-0665-BSTP
 - c. Trap: Below floor 3" service weight cast iron P-trap with No-hub or spigot outlet.
 - d. Accessories:
 - 1) 30" minimum hose and stainless steel bracket shall be:
 - a) Fiat #832-AA
 - b) Stern-Williams #T-35
 - 2) Stainless steel mop hanger shall be:
 - a) Fiat #889-CC
 - b) Stern-Williams #T-40
 - 3) Vinyl bumper guard shall be:
 - a) Fiat #E-77-AA
 - b) Stern-Williams #V-70-24
7. Shower "SH-1" & HSH-1: Water mixing valves shall be of the temperature and pressure balancing type and shall be suitable for potable water supply systems 1.5 GPM and shall be American Standard, Chicago Shower Set with integral stops, #239 handle, #620FC-A shower head or Eljer shower set with #V3964BG handle, with chrome-plated shower arm and wall flange.
8. Emergency Shower and Eyewash "SH-2": Bradley Model S19-310 assembly with 1-1/4" galvanized pipe with flanged floor support, corrosion resistant shower head, eyewash basin, and stay open drench shower ball valve. Combination shower and eye wash unit shall be compliant with American National Standard Z358.1-1998. If they comply with these Specifications, emergency shower and eyewash as manufactured by Haws Corporation, Guardian, Speakman, or Lab Enterprises will be acceptable.
9. Hose Bibb "HB-1": Chicago #387, 3/4", T & S Brass #B-0736-RGH or approved equal with No. E-27 vacuum breaker, rough chromium plated finish.
10. Wall Hydrant "WH-1": J. R. Smith #5509-QT-SAP-N, 3/4" wall hydrant with nickel bronze box with vacuum breaker and 1/8" NPT drain hole in the box. Equal hydrants as manufactured by Josam, Wade, Woodford or Zurn will be acceptable.
- Ground Hydrant "GH-1" Hydrant shall be similar to Jay R. Smith Fig. 5830 freeze resistant box hydrant. Unit to be installed with top of unit flush with surrounding surface and shall be furnished with hinged, locking lid. Valve shall be located underground at specified depth of bury to ensure freeze resistant capability. Hydrant box and lid shall be fabricated of heavy-duty, grey iron castings. Box and lid shall be finished with a heavy coat of oil-base black enamel. Valve, stirrup and hose outlet shall be fabricated of solidbrass castings. All solid-brass castings shall conform to ASTM standards B61 and B62. Lead-free castings shall be used in all waterways. Outer casing and internal water supply line shall be fabricated of steel pipe. Cast-aluminum key shall be furnished loose. Key shall be used to lock and unlock lid and to operate hydrant. Unit shall be furnished with 3/4" (19) union water supply connection. Contractor shall ensure that hydrant is installed properly.
11. Drinking Fountain "DF-1": Bi-level oval or round shape bowls, barrier-free ADA compliant stainless steel satin finish drinking fountain complete with mounting bracket, back plate, adjustable



type automatic stream regulator and shut off service valve, and 1-1/4" 17-gauge P-trap. The manufacturer's name or logo shall not appear on the visible surface of the cabinet. The manufacturer shall certify that no potable water is in contact with any lead. Drinking water fountains shall be:

- a. Filtrine Model 107-14-HL
 - b. Halsey-Taylor Model OVL-II SEBP
 - c. Haws Model 1011
 - d. Oasis Model MMRSL
12. Trap Primer "TP-1": Trap primer shall be similar to Mifab M-500 which will activate at 3 psi pressure differential. Trap primer shall be cast bronze or brass body, 1/2" connection; primer shall automatically maintain a constant water seal in trap; primer shall be accessible and shall not be concealed in building construction. Trap primer shall be manufactured by: Mifab, Josam, J. R. Smith, PPP, Inc. of Portland, Oregon, Sloan or Zurn.
13. Trap Primer "TP-2": Battery operated trap primer shall be similar to Precision Plumbing Products Model MPB-500-12V.
14. Ground Hydrant "GH-1": Smith #5810-NB-N, bronze non-freeze hydrant with T handle, nickel bronze hydrant box with 1/8" drain hole in the box.
15. Downspout Nozzle: Cast bronze body and flange equal to J. R. Smith #1770. Anchor wall flange to panel with stainless steel bolt through stainless steel sleeve. Provide a large washer on inside of panel and tighten nut against washer. Size bolt and sleeve to allow tightening the bolt without damaging panel.



PART 3 EXECUTION

3.1 INSTALLATION

- A. All clean-outs, drains, and plumbing fixtures shall be installed in accordance with the latest applicable industry standards, per the manufacturer's recommendations, and as indicated on the Drawings. Fixture carriers shall be permanently and securely anchored to the floor with at least 2-1/2" long, 1/2" diameter anchor bolts and shields.

3.2 DRAINS AND CLEAN-OUT FLASHING

- A. All floor drains, roof drains, and clean-outs installed in floors or roof having waterproof membrane flashing shall be flashed with lead not less than three pounds per square foot built 6" into the water-proof membrane. Include underdeck clamp and extension neck with drain if required by the roof and waterproofing furnished.

3.3 FACTORY TESTING

- A. All clean-outs, drains, and plumbing fixtures shall be tested in accordance with the latest applicable industry standards.

3.4 FIELD TESTING

- A. Refer to Section 22 05 93 for additional testing requirements for clean-outs, drains and plumbing fixtures.

3.5 PROHIBITED LABELS AND IDENTIFICATIONS

- A. Prohibited Markings: In all public areas, tenant areas and similar locations within the Project, the inclusion or installation of any item, element or assembly which bears on any exposed surface any name, trademark or other insignia which is intended to identify the manufacturer, the vendor or other source(s) from which such object has been obtained, is prohibited. Also prohibited is the inclusion or installation of any article, which bears visible evidence that an insignia, name, label or other device has been removed.
- B. Exception: Required labels for Underwriters Laboratories, ETL, FM or any other required testing laboratory shall not be removed nor shall identifications specifically required under the various technical sections of the specifications be removed. Labels or logos required by the authorities having jurisdiction shall not be removed.

END OF SECTION