SECTION 22 40 00

PLUMBING FIXTURES

PART 1 - PART 1: GENERAL

1.1 PURPOSE

A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS

A. Waterless urinals are not allowed.

B. Coordinate how to adjust shower to achieve design temperatures and confirm what design temperatures are required.

C. Fiberglass shower bases require a mortar setting bed to ensure the base does not flex. Over time this can crack the base causing water damage along with breaking the connection between the drain pipes and drain hub.

D. ADA showers need floor drain in the middle of the room and in the shower area. Vinyl pan to cover entire area. Confirm slopes on all floor drains after light-weight Gypsum concrete floor material is placed and before tile installation has begun.

E. Verify that field measurements are either as indicated on shop drawings or as instructed by the manufacturer, and designate in the submittal both that it has been verified, and which measurements are the basis for construction.

F. Confirm that millwork is constructed with adequate provision for the installation of countertop lavatories and sinks.

PART 2 - PRODUCTS

2.1 GENERAL

A. This product section is intended to inform the PSP on the minimum standard of quality that should be incorporated in new designs. The PSP should evaluate these standards and incorporate or make additional requirements per project specific requirements. Where the PSP considers any requirement listed not to be applicable or incompatible with the project design intent should be discussed with UTA Office of Facilities Management.

B. The Contractor shall provide plumbing fixtures where indicated on the Drawings. These plumbing fixtures shall be standard products as manufactured by Kohler, Crane, American Standard or Eljer. The fixtures shall be free from mars or chips and shall be new, first quality and shall be furnished with sufficient supports in order to adequately hang each and every unit. The space between fixtures and masonry walls shall be grouted with White General Electric Silicone flexible grout. The space between fixtures and sheetrock or wood panel walls shall not be grouted but the fixture shall fit flat against the wall surface with no more than 1/16” gap.

C. All faucets, fittings, supply stops and similar devices shall be of one manufacturer unless otherwise specified. All water faucets and valve bodies shall be cast brass with a minimum copper content of 85%. They shall contain standardized interchangeable operating units constructed of a removable and

replaceable unit containing all parts subject to wear. All water faucets shall contain an adjustable internal volume control unit. All exposed parts shall be chromium plated.

D. All fixtures shall meet the requirements of ADA, ANSI A117.1, ANSI Z124.2 and the State of Texas Accessibility Standards (TAS).

E. See drawings for schedule of fixtures.

2.2 FITTINGS AND PIPES:

A. Fittings and piping shall be brass and, wherever exposed, shall be polished chrome-plated. Provide tight fitting wall or floor escutcheons of chrome-plated brass wherever pipes pass through floors, walls or ceilings.

B. Furnish and install all required water, waste, soil and vent connections to all plumbing fixtures, together with all fittings, supports, fastening devices, cocks, valves, traps, etc., leaving all in complete working order.

C. Supplies for all lavatories, sinks, tank type water closets and drinking fountains shall be loose key angle stops with ½" I.P.S. female inlets and shall include wall flanges, and ½" O.D. flexible risers with bull-nose or flared end outlets,. All components to be chrome-plated. In all cases, all piping, tubing, fittings, and faucets shall be installed using a mechanical non-slip connection, such as bull-nose, flared, flanged, ferrule or threaded fittings. Fittings requiring a friction fit using slip-on or gasketed connections are not acceptable.

2.3 LAVATORIES

A. American Standard "Ovalyn" No. 0495.221 (or equal as manufactured by Crane, Kohler or Eljer). ADA compliant, white vitreous china, undermount, countertop, oval lavatory. Lavatory fixture shall measure 20-inches wide by 17-inches deep, shall have faucet holes on 8-inch centers and shall be equipped with integral front-overflow ports.

B. Oval solid surface integral with countertop. Color as selected by designer.

C. Sloan ETF-600 with EL-154, deck mounted, single set, automatic infrared sensor activated faucet with gooseneck spout, anti-scald thermal mixing chamber, 0.17 GPM flow rate. Faucet shall meet the requirements of ADA, ANSI a117.1 and the State of Texas Accessibility Standards (TAS). Acceptable alternative manufacturers: by approval only. Manufacturer must equal specification.

D. McGuire No. 155WC, or approved equal, ADA compliant, chrome plated offset lavatory strainer, with heavy cast brass grid drain strainer, heavy cast base elbow and 1-1/4 inch 17-gauge tubular brass offset tailpiece. Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must be equal specification.

E. Chicago Faucet 1006/T&S Brass B1342M supplies, with loose key angle stops, lock shield caps, ½" I.P. female inlets 12" long, ½" O.D. flexible risers, wall flanges, and ½" O.D. flexible tube risers with bull-nose outlets. Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must be equal specification.

F. American Standard 7723.018/McGuire 8088 with 1127 nipple grid drain (or equal as manufactured by Crane, Kohler or Eljer), 1-1/4" inlet and 1-1/4" outlet adjustable cast brass P-traps with cleanout plug, brass threaded nipple from trap to tapped sanitary tee behind wall, chrome-plated cover tubing to wall and chrome plated wall escutcheon.

G. Insulate all exposed drain and supply piping with Plumberex Specialty Products "HANDY SHIELD,' or approved equal, drain line and supply line safety covers.

2.4 MOP SINKS

A. Stern-Williams “SERVICEPTOR” No. SB-702-BP2, or equal by C.I.T., Fiat or Oberon. 32-inch x 32-inch x 12-inch deep corner type terrazzo mop sink with continuous stainless steel cap on all four sides and tilting flange on two sides. Equip fixture complete with nickel bronze strainer and stainless steel splash catcher panels on two sides.

B. Chicago Faucet 897-245 RCF/T&S Brass B667-RC-LF rough chrome plated service sink faucet with vacuum breaker spout, ¾” hose thread on spout, adjustable wall brace, pail hook, integral stops in supply arms, and No. 245/LF integral flow control cartridges. Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must equal specification.

C. Stern-Williams No. T-35 or equal by C.I.T., Fiat or Oberon. 36-inch long hose with 3/4-inch polished chrome coupling and stainless steel wall bracket with rubber grip.

D. Stern-Williams No. T-40 or equal by C.I.T., Fiat or Oberon. 24-inch long stainless steel mop hanger with three rubber loaded grips.

2.5 SINKS – GENERAL USE – SINGLE COMPARTMENT

A. Elkay ADAR-2522-3, Just or approved equal. ADA compliant, 25-inch x 22-inch x 5-3/8 inch deep self-rimming, single compartment, 18-gauge type 302 stainless steel sink with 3-faucet holes, one 3-1/2 inch drain hole located in center rear and fully undercoated underside.

B. Chicago Faucet 201A-GN2A-E3-317-245/T&S Brass B2866-4-133X-ADA-LF ADA compliant, 8-inch center spread, concealed fitting lavatory faucet with No. GN2A/133X-ADA 5-3/8 inch by 9-3/4 inch tall rigid/swing convertible gooseneck spout, No. 317/BWH-4 4-inch blade handles, E3/B199-2 aerator and No. 245/LF integral flow control cartridges. The force required to activate the faucet controls shall be no greater than 5 lfb. Faucet shall meet the requirements of ADA, ANSI A117.1 and the State of Texas Accessibility Standards (TAS). Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must equal specification.

C. Chicago Faucet 1006/T&S Brass B1342M supplies with loose key angle stops, lock shield caps, 1/2" I.P.S. female inlets, wall flanges and 1/2" O.D. flexible risers with bull-nose outlets. Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must equal specification.

D. McGuire No. 1151AWC, or approved equal, ADA compliant, chrome plated offset sink strainer with stainless steel strainer fitting, stainless steel conical strainer basket, neoprene stopper and 1-1/2 inch 17-gauge tubular brass offset tailpiece.

E. Crane 8-5272, Kohler K-9010, or Eljer 804-1110, 1-1/2" inlet and 1-1/2" outlet adjustable cast brass p-trap with cleanout plug, Type "L" hard drawn copper pipe with IPS brass threaded adapters on both ends to connect from trap to tapped sanitary tee behind wall and CHROME PLATED escutcheon at wall.

F. Insinkerator food waste grinders, Evolution Essential, 3/4 HP, 120 V, anti-vibration and sound reduction features.

2.6 SINKS – GENERAL USE – DOUBLE COMPARTMENT

A. Elkay ADAR-3322-3, Just or approved equal. ADA compliant, 33-inch x 22-inch x 5-3/8 inch deep self-rimming, double compartment, 18-gauge type 302 stainless steel sink with 3-faucet holes, two 3-1/2 inch drain holes and fully undercoated underside.

B. Chicago Faucet 201A-GN8A-E3-317-245/T&S Brass B2866-4-135X-LF ADA compliant, 8-inch center spread, concealed fitting lavatory faucet with No. GN8A/135X 11-1/4 inch by 8-inch tall rigid/swing convertible gooseneck spout, No. 317/BWH-4 4-inch blade handles, E3/B199-2 aerator and No. 245/LF integral flow control cartridges. The force required to activate the faucet controls shall be no greater than

5 lb. Faucet shall meet the requirements of ADA, ANSI A117.1 and the State of Texas Accessibility Standards (TAS). Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must equal specification.

C. Chicago Faucet 1006/T&S Brass B1342M supplies with loose key angle stops, lock shield caps, 1/2" I.P.S. female inlets, wall flanges and 1/2" O.D. flexible risers with bull-nose outlets. Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must equal specification.

D. American Standard 4331.013, Crane 8-5240, Kohler K8801 or Eljer 803-0580 crumb cup strainer with tailpiece.

E. Elkay No. LK-53, or equal by Just or McGuire, 1-1/2 inch polished chrome plated, brass, continuous waste or drain connection tubing with end outlet for double compartment sink interconnection.

F. Crane 8-5272, Kohler K-9010, or Eljer 804-1110, 1-1/2" inlet and 1-1/2" outlet adjustable cast brass p-trap with cleanout plug, Type "L" hard drawn copper pipe with IPS brass threaded adapters on both ends to connect from trap to tapped sanitary tee behind wall and CHROME PLATED escutcheon at wall. Cast-iron shallow hub body and grate with end plates and gaskets, assembled in standard lengths for total length and width as required for application.

2.7 WATER CLOSETS – GENERAL TOILET ROOMS

A. Kohler, Kingston K-4325 (or equal as manufactured by Crane, Kohler, or Eljer). ADA compliant, 1.28-gpf, white vitreous china, direct-fed siphon jet flushing action, elongated-front bowl, wall-hung, flush valve water closet fixture with 1-1/2 inch top spud. Provide a wall hung bowl meeting the requirements of ADA, ANSI A117.1 and the State of Texas Accessibility Standards (TAS). Water closet fixture shall be designed to flush efficiently with a maximum 1.28-gallons of water total per flush. Fixture shall be listed in the State of Texas Water Commission List of Approved Plumbing Fixtures. No wax rings will be permitted on fixtures. Sealing rings shall be resilient rubber.

B. Sloan Royal 111-1.28 ES-S TMO with EL-154. ADA compliant, sensor activated, diaphragm operated, quiet flush, exposed water closet flush valve made of brass with, 1-inch IPS screw driver operated back check angle stop with protective cap, renewable main valve seat, adjustable threaded union tailpiece, vacuum breaker, 1-1/2 inch by 11-1/2 inch flush tube and connection with spud coupling for 1-1/2 inch top spud, spud securing nut, wall and spud flanges, 1.28 gallon flush regulator, solid ring pipe support all with polished chrome finish. Flush control shall be mounted on the wide side of the toilet area. Flush valve assembly shall meet the requirements of ADA, ANSI A117.1 and the State of Texas Accessibility Standards (TAS). Flush valve shall be designed to flush efficiently with a maximum 1.28-gallons of water total per flush. Flush valve shall be listed in the State of Texas Water Commission List of Approved Plumbing Fixtures.

C. Olsonite 95-CCSS, Church 5321.112 or Beneke 527-SSCH white open front seat with concealed stainless steel check.

D. Wade, Zurn, J.R. Smith or Josam adjustable carrier system, single or double, as required by waste line locations conforming to piping system used. Equip each carrier with a flush valve supply support for exposed flush valves, J.R. Smith Suffix-M12, Wade number AM1 or Josam Suffix-6.

2.8 URINALS – GENERAL TOILET ROOMS

A. All urinals shall be mounted with rim at 24" above finished floor. In toilet rooms designated to be accessible to the handicapped, and no water closets are provided within the same room, all urinals shall be installed with rim at 17" above finished floor. Submittal data shall show height of basin opening and rough-in height. Fixture size, design and mounting height shall meet the requirements of ADA, ANSI A117.1 and the State of Texas Accessibility Standards (TAS). Fixture-to-wall sealing rings shall be resilient rubber. Wax sealing rings will not be acceptable.

B. Kohler, Bardon 1/8th GPF #K-4904-ET (or equal as manufactured by Crane, Kohler, or Eljer). ADA compliant, 1/4-gallon per flush, white vitreous china, washdown flushing action, compact, space-saving, wall-hung, flush valve urinal fixture with 3/4 inch top spud. Provide a urinal fixture measuring a minimum of 14-inches from finished wall to front of flare. Fixture shall meet the requirements of ADA, ANSI A117.1 and the State of Texas Accessibility Standards (TAS). Urinal fixture shall be designed to flush efficiently with a maximum 1/4-gallon of water total per flush. Fixture shall be listed in the State of Texas Water Commission List of Approved Plumbing Fixtures.

C. Sloan ROYAL 186-0.25-ESS-TMO with EL-154. ADA compliant, sensor activated, diaphragm operated, quiet flush, exposed water closet flush valve made of brass with metal oscillating non-hold-open type handle, 1-inch IPS screw driver operated back check angle stop with protective cap, renewable main valve seat, adjustable threaded union tailpiece, vacuum breaker, 3/4-inch by 11-1/2 inch flush tube and connection with spud coupling for 3/4-inch top spud, spud securing nut, wall and spud flanges, 1-gallon flush regulator, solid ring pipe support all with polished chrome finish. Flush valve assembly shall meet the requirements of ADA, ANSI A117.1 and the State of Texas Accessibility Standards (TAS). Flush valve shall be designed to flush efficiently with a maximum 1/4-gallon of water total per flush. Flush valve shall be listed in the State of Texas Water Commission List of Approved Plumbing Fixtures.

D. Wade W-451, Zurn, J.R. Smith or Josam concealed carrier with bearing plate. Equip each carrier with a flush valve supply support for exposed flush valves, J.R. Smith Suffix-M12, Wade number AM1 or Josam Suffix-6.

2.9 ELECTRIC DRINKING FOUNTAINS – TWO LEVEL TYPE

A. Halsey Taylor HTHB-HAC8BLWF-SS and HTHB-HACDBLWF, or approved equal, ADA compliant, lead free, two level wheel chair access electric drinking fountain with bottle filler, Flexi-Guard safety bubbler, in-line flow regulator, water filter, louvered front grille enclosure, bottom cover plate, wall mounting box, self-closing front push bar and all stainless steel finish. Unit shall have a capacity characteristic of 8.0 GPH of 50 degrees F. water 90 degrees F. ambient and 80 degrees F. inlet water.

B. P-trap and supply stop same as specified for lavatory.

2.10 HOSE BIBBS

A. Chicago Faucet 952/T&S Brass B-720 hose bibb, with vacuum breaker, 3/4" hose thread outlet, 3/4" flanged female inlet and removable tee handle with lock shield cap. Acceptable alternative manufacturers: Water Saver, by approval only. Manufacturer must equal specification.

2.11 VACUUM BREAKERS

A. All outlets with hose threads shall be provided with vacuum breakers. Where vacuum breakers have not been specified with fixture trim and on all hose faucets not associated with plumbing fixtures both inside and outside of buildings, contractor shall furnish and install 3/4" hose thread vacuum breakers attached to the hose outlet threads with tamper proof set screw. Vacuum breaker shall be as manufactured by Chicago Faucet (E-27 or E-22), or by Watts.

PART 3 - EXECUTION

3.1 Pipe Applications - Above Ground, Within Building

A. Install hubless, service weight, cast-iron soil pipe and fittings for drainage and vent pipe.

3.2 Pipe Applications Below Ground, Within Building

A. Install hub-and-spigot, extra-heavy weight, cast-iron, soil pipe and fittings with gasketed joints for 15” and smaller drainage pipe.

3.3 Installation

A. Use fittings for all changes in direction and all branch connections.

B. Route exposed piping at right angles or parallel to building walls. Diagonal runs are not permitted, unless expressly indicated.

C. Conceal all pipe installations in walls, pipe chases, utility spaces, above ceilings, below grade or floors, unless indicated to be exposed to view.

D. Route piping tight to slabs, beams, joists, columns, walls, and other permanent elements of the building. Allow sufficient space above removable ceiling panels to remove panel.

E. Exterior Wall Penetrations: Seal pipe penetrations through exterior walls using sleeves and mechanical sleeve seals. Pipe sleeves smaller than 6” shall be steel; pipe sleeves 6” and larger shall be sheet metal.

F. Fire Barrier Penetrations: Provide where pipes pass through fire rated walls, partitions, ceilings, and floors, maintain the fire rated integrity.

G. Make changes in direction for drainage and vent piping using appropriate 45° wyes, half-wyes, or long sweep quarter, sixth, eighth, or sixteenth bends. Sanitary tees or short quarter bends may be used on vertical stacks of drainage lines where the change in direction of flow is from horizontal to vertical, except use long-turn tees where 2 fixtures are installed back to back and have a common drain. Straight tees, elbows, and crosses may be used on vent lines. No change in direction of flow greater than 90° shall be made. Where different sizes of drainage pipes and fittings are connected, use proper size, standard increasers and reducers. Reduction of the size of drainage piping in the direction of flow is prohibited.

H. Install underground building drains in accordance with the Cast-iron Soil Pipe Institute Engineering Manual.

I. Provide underground building drains beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Provide bell ends of piping facing upstream. Provide required gaskets in accordance with manufacturer's recommendations for use of lubricants, cements, and other special installation requirements.

J. Provide building drain piping pitched per code requirements.

K. Provide sleeve and mechanical sleeve seal through foundation wall for watertight installation.

L. Provide 1” thick extruded polystyrene over underground building drain piping not under building. Width of insulation shall extend a minimum of 12” beyond each side of pipe.

3.4 Installation of Piping Specialties

A. Do not install backwater valves in sanitary building drain piping.

B. Install expansion joints on vertical risers as indicated, and as required by the plumbing code.

C. Above Ground Cleanouts: Install in above ground piping and building drain piping as indicated, and:

1. as required by plumbing code;

2. at each change in direction of piping greater than 45°;

3. at minimum intervals of 50' for piping 4" and smaller and 75' for larger piping.

4. at the base of each vertical soil or waste stack.

3.5 Installation of Floor Drains

A. Set drain grate depressed below finished slab elevation as listed below:

DEPRESSION IN INCHES	RADIUS OF AREA DRAINED - FEET
½	5
¾	10
1	15
1¼	20
1½	25

END OF SECTION 22 40 00