

PLUMBING SPECIFICATIONS

- 1. PROVIDE ALL PLUMBING ITEMS INDICATED ON THE DRAWINGS, DESCRIBED HEREIN OR OTHERWISE REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, INCLUDING: PLUMBING FIXTURES, FITTINGS AND EQUIPMENT. HOT AND COLD WATER SYSTEMS.
- DRAIN WASTE AND VENT PIPING SYSTEMS. INDIRECT WASTE PIPING, INCLUDING ALL VALVES, TRAPS, PIPING AND ACCESSORIES FOR ALL KITCHEN EQUIPMENT. SIZE PER EQUIPMENT REQUIREMENTS. (ROOF DRAINAGE IS SHOWN ON ARCHITECTURAL DRAWINGS.)
- 2. COMPLY WITH ALL APPLICABLE CODES, STANDARDS AND ORDINANCES, INCLUDING REQUIREMENTS OF THE UNIFORM PLUMBING CODE (UPC), CURRENT EDITION.
- 3. THESE DRAWINGS AND SPECIFICATIONS REFLECT A STANDARD DESIGN WHICH MUST BE VERIFIED OR MODIFIED FOR EACH APPLICATION. AS A MINIMUM, VERIFY ALL EQUIPMENT LOADS AND REQUIREMENTS, PIPE AND SERVICE SIZES, SITE CONDITIONS, LOCAL ORDINANCES AND CODES ETC.
- 4. THE SUBMISSION OF A BID OR PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS FAMILIARIZED HIMSELF WITH THE PLANS AND BUILDING SITE. CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND/OR LABOR DUE TO DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED UNLESS THESE DIFFICULTIES COULD NOT HAVE BEEN FORESEEN, EVEN THOUGH PROPER EXAMINATION HAD BEEN MADE.
- 5. COORDINATE WITH ALL TRADES AND VERIFY ALL EQUIPMENT ROUGH-IN ITEMS AND LOCATIONS WITH THE EQUIPMENT SUPPLIER OR CONTRACTOR. ALL RE-WORK AND CORRECTIONS REQUIRED DUE TO LACK OF COORDINATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY, AND DONE AT NO COST TO THE OWNER.
- 6. SUBMIT SIX COPIES OF SHOP DRAWINGS AND MATERIAL DATA SUBMITTALS TO THE ENGINEER FOR APPROVAL BEFORE INSTALLATION. NO SUBSTITUTIONS SHALL BE ALLOWED WITH PRIOR APPROVAL BY THE ENGINEER.

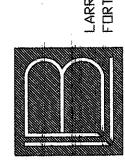
- SANITARY AND STORM DRAIN, WASTE AND VENTS SHALL BE STANDARD WEIGHT CAST IRON NO-HUB PER CISPI STANDARDS 301 AND 310, WITH STAINLESS STEEL ONE—PIECE NEOPRENE GASKETS. UNDER SLAB PIPING SHALL BE CAST IRON BELL AND SPIGOT PIPING WITH NEOPRENE GASKETS, OR A.B.I. "BEST" COUPLING. WHERE PERMITTED BY LOCAL AUTHORITY, APPROVED PVC OR ABS PLASTIC PIPE AND FITTINGS, PER ASTM D2661-89 OR D2665-89, MAY BE USED.
- HOT AND GOLD WATER AND INDIRECT WASTE PIPING: HARD-DRAWN COPPER TUBE, TYPE "L", PER ASTM B88-88A, MADE UP WITH WROUGHT OR FORGED COPPER SWEAT FITTINGS. UNDER SLABS: TYPE "K" SOFT TEMPER COPPER TUBE WITHOUT JOINTS. SOLDER: LEAD-FREE, CANFIELD "100% WATERSAFE".
- VALVES: USE PIPE SIZE VALVES, AS SHOWN BELOW: A. GATE: MILWAUKEE 148 OR 149 B. CHECK: MILWAUKEE 509T OR 1509T
- PRESSURE AND TEMPERATURE RELIEF VALVES: WATTS TYPE 100XL.
- TUBING, SEMI-CAST, OR CAST IRON; ALL BRASS TUBING SHALL BE 17 GAGE, CHROME PLATED.

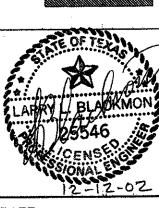
10. FIXTURE TAILPIECES AND TRAPS FOR LAVATORIES AND SINKS SHALL BE BRASS

- 11. ALL PIPE HANGERS, CLAMPS AND CHANNELS SHALL BE ADEQUATELY SIZED TO 17. EXTEND ALL PLUMBING VENTS ABOVE ROOF TO PARAPET HEIGHT.
 CARRY PIPE LOADS AND PREVENT SAGGING.
- 12. INSULATE ALL HOT WATER PIPING WITH OWENS CORNING TYPE ASJ/SSL-II HEAVY DENSITY FIBER GLASS WITH ALL SERVICE JACKET; 1/2" FOR RUNOUTS UP TO 12'; 1" FOR OTHER PIPING 2" OR LESS IN DIAMETER. INSULATION SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH U.B.C. STANDARD 42-1.

- 13. ALL OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION OF THE WORK OF THIS SECTION, SHALL BE NEW, FIRST QUALITY OF THEIR RESPECTIVE KINDS, AND AS SELECTED BY THE CONTRACTOR SUBJECT TO ACCEPTANCE BY THE ENGINEER.
- 14. LAY OUT THE PLUMBING SYSTEM IN CAREFUL COORDINATION WITH THE DRAWINGS, DETERMINING PROPER ELEVATIONS FOR ALL COMPONENTS OF THE SYSTEM AND USING ONLY THE MINIMUM NUMBER OF BENDS TO PRODUCE A SATISFACTORILY FUNCTIONING SYSTEM. FOLLOW THE GENERAL LAYOUT SHOWN ON THE DRAWINGS IN ALL CASES EXCEPT WHERE OTHER WORK MAY INTERFERE. UNLESS SHOWN OTHERWISE, LAY OUT ALL PIPES TO FALL WITHIN PARTITION, WALL, FLOOR, OR ROOF CAVITIES, AND TO NOT REQUIRE FURRING OTHER THAN AS SHOWN ON THE DRAWINGS.
- 15. DO NOT CUT INTO OR REDUCE THE SIZE OF ANY LOAD-CARRYING MEMBER WITHOUT THE PRIOR APPROVAL OF THE ARCHITECT. INSTALL ALL PIPES TO CLEAR ALL BEAMS AND OBSTRUCTIONS.
- 16. UNLESS SHOWN OTHERWISE, PROVIDE UNIFORM PITCH OF AT LEAST 1/4 INCH PER FOOT FOR ALL HORIZONTAL DRAINAGE PIPING WITHIN THE BUILDING.
- 18. PROVIDE PRESSURE REDUCING VALVE IF WATER SERVICE PRESSURE EXCEEDS 80 PSI. PROVIDE PRESSURE BOOSTING SYSTEM IF PRESSURE IS BELOW 35 PSI.
- PROVIDE SHUT-OFF GATE VALVES AND UNIONS AT ALL WATER CONNECTIONS TO EQUIPMENT AND AFPLIANCES. PROVIDE STOPS AND CHROME PLATED BRASS SUPPLIES AT ALL FIXTURES.

- 20. ISOLATE ALL DISSIMILAR METALS WITH "EPCO" DIELECTRIC UNIONS, EXCEPT FOR BRASS OR BRONZE VALVES WITH STEEL PIPE.
- 21. PROTECT THE POTABLE WATER SUPPLY AGAINST BACKFLOW AND SIPHONAGE FROM EQUIPMENT, FIXTURES, ETC., USING APPROVED BACKFLOW AND ANTI-SIPHON DEVICES.
- 22. THOROUGHLY CLEAN ALL PIPING AND EQUIPMENT, REMOVING ALL DIRT, RUST, OIL AND PLASTER.
- 23. TEST SANITARY, PROCESS, AND STORM DRAINAGE PIPING BY PLUGGING ALL OPENINGS AND FILLING WITH WATER TO A HEIGHT EQUAL TO A 10 FOOT HEAD. ALLOW TO STAND ONE HOUR OR LONGER AS REQUIRED. REPAIR LEAKING JOINTS AND THEN RE-TEST.
- 24. NO WORK SHALL BE COVERED UNTIL IT HAS BEEN INSPECTED AND ACCEPTED BY THE LOCAL AUTHORITY AND THE ENGINEER.
- 25. TEST WATER LINES AT 100 PSIG. RETAIN FOR 24 HOURS; REPAIR ALL LEAKS AND RETEST.
- 26. THE ENTIRE SYSTEM SHALL BE WARRANTED FOR A PERIOD OF ONE (1) YEAR BEGINNING WITH OWNER'S ACCEPTANCE OF THE WORK. ALL LABOR AND MATERIALS NECESSARY TO REPAIR OR REPLACE THE SYSTEM, OR PORTIONS THEREOF, DURING THAT TIME SHALL BE WARRANTED FOR A PERIOD OF ONE (1) YEAR FROM THE REPAIR OR REPLACEMENT.
- 27. PROVIDE ONE REPRODUCIBLE (SEPIA) AS-BUILT DRAWING.





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