

III. PLUMBING

A. SCOPE OF WORK:

1. PROVIDE ALL MATERIALS, EQUIPMENT, LABOR, FEES AND PERMITS, AND PAY ALL COSTS CONNECTED WITH THE INSTALLATION OF COMPLETE PLUMBING SYSTEMS AND AS SHOWN ON PLANS AND AS HEREINAFTER SPECIFIED.
2. IT IS THE INTENT OF THIS SPECIFICATION AND OF THE PLANS TO PROVIDE COMPLETE INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH ALL ITEMS OF MATERIAL AND LABOR AND ALL OTHER COSTS TO COMPLETE THE CONTRACT WITHIN THE INTENT OF THIS SPECIFICATION AND THE PLANS EVEN THOUGH EACH AND EVERY ITEM NECESSARY IS NOT SPECIFICALLY MENTIONED OR SHOWN.
3. SUBMIT MANUFACTURER'S BROCHURES ON PLUMBING FIXTURES TO THE ARCHITECT / ENGINEER FOR APPROVAL.
4. WORK INCLUDED BUT NOT INCLUSIVE:
THE PLUMBING SYSTEM REQUIRED FOR THIS WORK AS INDICATED ON THE DRAWINGS AND INCLUDES, BUT IS NOT LIMITED TO:
 - a. DOMESTIC COLD WATER SYSTEM, INCLUDING DISTRIBUTION AND BACKFLOW PREVENTION, AS REQUIRED BY CODE AND CONNECTION TO WATER MAIN.
 - b. DOMESTIC HOT WATER SYSTEM, INCLUDING WATER HEATER, CIRCULATING PUMPS AND DISTRIBUTION.
 - c. SANITARY SEWER SYSTEM, INCLUDING DISTRIBUTION AND CONNECT TO SANITARY SEWER MAIN AND GREASE TRAP.
 - d. NATURAL GAS SYSTEM, INCLUDING DISTRIBUTION, METER, AND CONNECTION TO GAS MAIN.
 - e. A COMPLETE SYSTEM OF COMPRESSED AIR DISTRIBUTION PIPING WITH ALL VALVES, QUICK CONNECTING DEVICES AND APPURTENANCES.
 - f. CORROSION PROTECTION FOR ALL PIPING SYSTEMS.
 - g. PLUMBING FIXTURES AND TRIM, INCLUDING FURNISHING, SETTING, AND FINAL CONNECTIONS.
 - h. GAS CONNECTIONS TO ALL AIR HEATING EQUIPMENT
 - i. THERMAL INSULATION OF PIPING.
 - j. ROUGH-IN FOR CONNECTION TO FUTURE PLUMBING FIXTURES.
 - k. ALL PERMITS AND FEES.
 - l. INSPECTION AND TESTING.

B. MATERIALS AND WORKMANSHIP

1. UTILITY CONNECTIONS:

- a. THIS CONTRACTOR SHALL, BEFORE COMMENCEMENT OF THE PROJECT, VERIFY THE LOCATION, DEPTH, SIZE, AND PRESSURE OR GRADE OF ALL UTILITY LINES TO WHICH HE IS TO MAKE CONNECTIONS FOR SERVICE. IF, FOR ANY REASON, CONDITIONS APPEAR THAT WILL ADVERSELY AFFECT THE PROPER INSTALLATION AND OPERATION OF THE SYSTEMS, SUCH CONDITIONS SHALL BE REPORTED TO THE ARCHITECT IN WRITING FOR HIS DECISION.
- b. ALL CHARGES FOR CONNECTIONS TO UTILITY SERVICES AND COST FOR CUTTING AND PATCHING OF PAVING, CURBS, WALKS, ETC., REQUIRED FOR THE SERVICES SHALL BE INCLUDED IN THE BID.

2. SANITARY SEWER SYSTEM AND CONDENSATE DRAIN

- a. FURNISH AND INSTALL A COMPLETE SANITARY SYSTEM OF SOIL, WASTE, AND VENT PIPING FOR ALL FIXTURES, DRAINS, EQUIPMENT DISCHARGES, ETC. AS SHOWN ON THE DRAWINGS AND/OR HEREINAFTER SPECIFIED. ALL PIPING SHALL RUN STRAIGHT AS POSSIBLE AND INSTALLED TO BE GRADE 1/4" PER FOOT MINIMUM.
- b. UNLESS OTHERWISE NOTED ON THE PLANS, ALL SANITARY SYSTEM SOIL, WASTE, AND VENT PIPING SHALL BE ASPHALTUM COATED SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS. JOINTS SHALL BE MADE WITH "TY-SEAL" DOUBLE SEAL NEOPRENE GASKETS AND "LUBRIFAST" COMPOUND. THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND SANITARY WITH LEAD AND OAKUM JOINTS. CAULKING LEAD DEPTH SHALL NOT BE LESS THAN 1". AT THE CONTRACTOR'S OPTION, AND WHERE ALLOWED BY LOCAL CODE, THE SANITARY SYSTEM MAY BE CONSTRUCTED OF PVC PIPING (DWV GRADE) AND "DRAINAGE WASTE" FITTINGS. INSTALL THE SYSTEM IN ACCORDANCE WITH THE LOCAL CODE.
- c. SANITARY VENTS SHALL EXTEND 15" ABOVE ROOF. FLASH SANITARY VENTS WITH A FABRICATED WATERPROOFING FLASHING CONSISTING OF A BASE AND A RISER SLEEVE ALL MADE OF 4-LB SHEET LEAD. JOINTS AND SEAMS OF FABRICATED FLASHINGS SHALL BE WELDED. FLASHING BASE SHALL EXTEND OVER THE ROOF 12" FROM THE STACK. DRESS THE FLASHING RISER OVER TOP OF AND DOWN INTO THE VENT STACK FOR A RAINTIGHT LEAKPROOF INSTALLATION. (FLASH WITH ROOFING MANUFACTURER ACCESSORIES TO MAINTAIN WARRANTY ON PENETRATIONS.)
- d. PROVIDE CLEANOUTS WHERE INDICATED ON THE PLANS AND AS REQUIRED FOR SNAKING OF THE SANITARY SYSTEM PIPING. ADJUST CLEANOUT BODIES TO HAVE THE ACCESS COVER TOP SURFACE FLUSH WITH FINISH FLOOR. CLEANOUT SPACING IN STRAIGHT PIPE LENGTHS SHALL NOT EXCEED 50' INSIDE AND 100' OUTSIDE.
- e. EXPOSED PIPE CONNECTIONS TO WASTE STACKS LOCATED IN TOILETS AND OTHER FINISHED SPACES SHALL BE CHROME PLATED.
- f. PROVIDE CONDENSATE DRAIN PIPING FOR THE AIR COMPRESSOR AS INDICATED ON THE PLANS AND AS REQUIRED. PIPING SHALL BE TYPE M HARD COPPER WITH CAST BRASS DRAINAGE FITTINGS. MAKE JOINTS WITH 50/50 SOLDER.

3. FLOOR DRAINS:

- a. INSTALL FLOOR DRAINS SO THAT THE TOP OF DRAIN IS FLUSH WITH FINISH FLOOR (QUARRY TILE OR CONCRETE). SLOPE TO DRAIN SHALL BE IN ACCORDANCE WITH THE FOUNDATION PLAN.
- b. SHALL BE OF CAPACITIES, CHARACTERISTICS, SIZES, ETC., AS INDICATED AND SCHEDULED ON THE DRAWINGS.