

PLUMBING SPECIFICATIONS

SCOPE OF WORK

1. PROVIDE ALL THE LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED FOR THE COMPLETE INSTALLATION OF THE PLUMBING SYSTEM AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
2. DOMESTIC WATER AND GAS PIPING INCLUDING VALVES AND FITTINGS.
3. STORM, SOIL, WASTE AND VENT PIPING.
4. HANGERS AND SUPPORTS.
5. CUTTING AND PATCHING.
6. STERILIZATION.
7. TESTING.
8. INSULATION.
9. PLUMBING FIXTURES AND TRIM.
10. MISCELLANEOUS (PUMPS,HOSE BIBBS, VACUUM BREAKERS, ETC.)
11. SHOP DRAWINGS.

CODES, RULES, PERMITS AND FEES

1. ALL WORK AND MATERIALS TO CONFORM TO THE N.Y. CITY BUILDING CODE AND ALL AUTHORITIES HAVING JURISDICTION.
2. GIVE NOTICES, OBTAIN PERMITS, PERFORM TESTS AND PAY ALL FEES OR COSTS IN CONNECTION WITH THIS WORK. FILE PLANS AND OBTAIN APPROVALS OF AUTHORITIES HAVING JURISDICTION OVER THIS WORK.
3. SUBMIT "CERTIFICATE OF COMPLIANCE" RESULTING FROM FINAL INSPECTION BY LOCAL GOVERNING BODY BEFORE REQUEST FOR FINAL PAYMENT OF CONTRACT.

INTERIOR PIPING MATERIAL

1. UNDERGROUND INTERIOR SOIL,WASTE, VENT AND STORM PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE, AND BELL AND SPIGOT FITTINGS, WITH OAKUM PACKING AND CAULKED MOLTEN LEAD IN ONE CONTINUOUS POUR. FITTINGS FOR CAST IRON SOIL PIPE BELOW GRADE SHALL BE SERVICE WEIGHT CAST IRON BELL AND SPIGOT, AND SHALL BE AS MANUFACTURED BY TYLER OR CENTRAL FOUNDRY COMPANY, OR APPROVED EQUAL.
2. HORIZONTAL INTERIOR SOIL, INDIRECT WASTE, WASTE, STORM, VENT, AND LEADER PIPING ABOVE GROUND SHALL BE NO-HUB, STANDARD WEIGHT, CAST IRON SOIL PIPE AND FITTINGS OR GALVANIZED STEEL SCREW PIPE WITH GALVANIZED CAST IRON RECESSED DRAINAGE FITTINGS, WITH GALVANIZED MALLEABLE BEADED FITTINGS FOR VENT PIPING.
3. UNDERGROUND (BELOW SLAB) DOMESTIC WATER PIPING SHALL BE TYPE "K" COPPER TUBING, SOFT TEMPER ASTM B-88 WITH WROUGHT COPPER BRAZED FITTINGS, MINIMUM 125 PSI WWP. BRAZED JOINTS SHALL BE AS SPECIFIED FOR DOMESTIC WATER PIPING. ALL UNDERGROUND PIPE AND FITTINGS SHALL BE ASPHALTUM COATED.
4. INTERIOR ABOVE-GROUND DOMESTIC WATER PIPING 5" AND SMALLER SHALL BE SEAMLESS DRAWN OR EXTRUDED COPPER TUBING TYPE "L" HARD TEMPER ASTM B-88. FITTINGS SHALL BE COPPER, BRAZING TYPE. JOINTS SHALL BE MADE WITH A BRAZING ALLOY (95/5) CONSISTING OF COPPER, SILVER AND PHOSPHORUS.
5. GAS PIPING SHALL BE BLACK STEEL, SCHEDULE 40, SEAMLESS. PIPING 3" AND LARGER SHALL BE PROVIDED WITH WELDING FITTINGS; 2-1/2" AND SMALLER, BLACK MALLEABLE IRON SCREWED FITTINGS.

VALVES

1. VALVES AS SHOWN AND/OR REQUIRED FOR THE PROPER CONTROL OF PIPING AND FUNCTIONS OF EQUIPMENT SHALL BE APPROVED EQUAL OF JENKINS, STOCKHAM AND CRANE. NUMBERS GIVEN ARE STOCKHAM IN ORDER TO DETERMINE TYPE REQUIRED UNLESS OTHERWISE NOTED.
2. SERVICE VALVES AND BALANCING VALVES UP TO 2": STOCKHAM BALL VALVE, BRONZE BODY, CHROME PLATED BRASS BALL, BRASS STEM, TEFLON SEAT, 600 PSI WWP FIGURE NUMBER 5216 BRSS WITH SOLDER OR THREADED ENDS.
3. VALVES 2-1/2" INCH AND LARGER SHALL BE IRON BODY, BRONZE MOUNTED, SOLID WEDGE, GATE VALVES, CLASS 125, FLANGED ENDS, FIGURE NUMBER G-623.
4. CHECK VALVES UP THROUGH 2 INCH SHALL BE BRONZE BODY SWING CHECKS, CLASS 125, SOLDER OR THREADED ENDS, FIGURE NUMBER B-309.
5. CHECK VALVES 2-1/2" INCH AND LARGER SHALL BE IRON BODY, BRONZE MOUNTED, SWING CHECKS, CLASS 125, FLANGED ENDS, FIGURE NUMBER G-931.
6. PRESSURE REDUCING VALVES -- WATTS NO. N2235 WITH STRAINER.
7. BACK FLOW PREVENTERS -- WATTS U909S COMPLETE WITH UNIONS, BRONZE STRAINER AND BALL VALVES.
8. MAIN SERVICE VALVES AT METER -- JENKINS FIG. 368, O.S. & Y. BRONZE GATE VALVE, THREADED, UP TO SIZE 2". ABOVE SIZE 2", JENKINS FIG. 651A, IRON BODY BRONZE FITTED, FLANGED.
9. GAS EQUIPMENT SERVICE VALVES -- CRANE FIG. 270 FLATHEAD STOVE COOK.
10. MAIN GAS VALVES AT METER -- ROCKWELL FIG. 142.

HANGERS AND SUPPORTS

1. ALL HORIZONTAL CAST IRON PIPE SHALL BE SUPPORTED EVERY FIVE (5) FEET AND AT EACH HUB AND/OR "NO-HUB" CLAMPING ASSEMBLY. WHEN A CONCENTRATION OF FITTINGS OCCUR, ADDITIONAL SUPPORT SHALL BE INSTALLED CONSISTENT WITH GOOD TRADE PRACTICES. "NO-HUB" SYSTEM MUST BE SUPPORTED IN ACCORDANCE WITH STANDARD CISPI-310-78.
2. ASSUME THE RESPONSIBILITY FOR THE PROPER TRANSFER OF THE LOADS OF THE PIPING SYSTEM TO THE STRUCTURE. NO ADDITIONAL COST TO THE OWNER SHOULD BE EXPECTED FOR ANY CORRECTIVE WORK DURING CONSTRUCTION.
3. ALL OTHER HORIZONTAL RUNS OF PIPING SHALL BE FIRMLY SUPPORTED IN PLACE WITH APPROVED CLEVIS OR TRAPEZE HANGERS AND SUPPORTED IN MAXIMUM INTERVALS AS FOLLOWS:

COPPER PIPE:
UP TO 1-1/4".....6'-0"
1-1/2" TO 2-1/2".....8'-0"
3" AND LARGER.....10'-0"

CUTTING AND PATCHING

1. THE CONTRACTOR SHALL, AS PART OF HIS CONTRACT, DO ALL CUTTING, PATCHING AND FITTING THAT MAY BE REQUIRED FOR THE INSTALLATION OF HIS WORK. CUTTING OF STRUCTURAL MEMBERS WILL NOT BE PERMITTED.
2. ALL CUTTING AND PATCHING SHALL BE DONE TO THE APPROVAL AND SATISFACTION OF THE ARCHITECT. ALL SURFACES DAMAGED BY THIS INSTALLATION SHALL BE REFRESHED OR REPAINTED TO RESTORE THEM TO THEIR ORIGINAL CONDITION.

INSULATION

1. INSULATION SHALL BE IN ACCORDANCE WITH NFPA FIRE AND SMOKE RATING OF 25/50.
2. FITTING AND VALVES: ZESTON 25/50 RATED -- 20 MIL. PVC COVERS OVER FIBERGLASS INSULATION.
3. COLD WATER PIPING:
 - A. COLD WATER -- ALL SIZES -- 1/2" INSULATION, A.S. JACKET.
 - B. STORM DRAINAGE PIPING AND DRAIN BODY -- MINIMUM 1/2" INSULATION, A.S. JACKET.
 - C. FROSTPROOFED PIPING -- 3" INSULATION, DUAL TEMPERATURE FIRE RETARDANT JACKET.
4. HOT WATER PIPING:
 - A. HOT WATER SUPPLY -- 1/2" TO 2" I.D. -- 1" INSULATION, A.S. JACKET.
 - B. HOT WATER SUPPLY -- 2-1/2" AND LARGER -- 1-1/2" INSULATION.
 - C. HOT WATER CIRCULATING -- ALL SIZES -- 1" INSULATION, A.S. JACKET.
5. MISCELLANEOUS EQUIPMENT:
 - A. INSULATE WATER METER WITH 4 POUND DENSITY 1" THICK VAPOR BARRIER GLASS INSULATION ANKLET, FITTED AND CONTOUR TO SHAPE AND SECURED IN PLACE WITH BANDS OF WIRE. APPLY TWO COATS OF MINERAL WOOL, CEMENT AND TROWEL TO A SMOOTH FINISH, AND FINISH WITH TWO APPLICATIONS OF BENJAMIN FOSTER 30-36 VAPOR BARRIER FINISH.

STERILIZATION

1. ISOLATE NEW WATER LINES FROM EXISTING AND STERILIZE WITH A MIXTURE OF 2 POUNDS OF CHLORINATED LIME TO EACH 1,000 GALLONS OF WATER (50 PPM OF AVAILABLE CHLORINE). RETAIN THE MIXTURE IN PIPES FOR 24 HOURS AND FLUSH IT THOROUGHLY WITH POTABLE WATER BEFORE PLACING IT IN SERVICE.

TESTING

1. FIXTURES, PIPING, AND EQUIPMENT SHALL BE GIVEN AN IN-SERVICE TEST AFTER COMPLETION OF THE INSTALLATION.
2. DOMESTIC WATER PIPING:

ISOLATE THE NEW HOT AND COLD WATER PIPING FROM THE EXISTING. UPON COMPLETION OF THE ROUGH-IN AND BEFORE SETTING FIXTURES, THE ENTIRE NEW HOT AND COLD WATER PIPING SYSTEMS SHALL BE TESTED AT A HYDROSTATIC PRESSURE OF NOT LESS THAN ONE HUNDRED-TWENTY-FIVE (125) POUNDS PER SQUARE INCH GAUGE, AND PROVED TIGHT AT THIS PRESSURE FOR NOT LESS THAN TWO (2) HOURS.

DRAINAGE AND VENT PIPING:

THE PIPING OF THE DRAINAGE AND VENTING SYSTEMS SHALL BE TESTED WITH WATER BEFORE INSTALLING FIXTURES.

4. ALL OPENINGS IN THE PIPING SHALL BE TIGHTLY CLOSED EXCEPT THE HIGHEST OPENING, AND THE SYSTEM SHALL BE FILLED WITH WATER TO THE POINT OF OVERFLOW. THE WATER SHALL BE KEPT IN THE SYSTEM, FOR AT LEAST THIRTY (30) MINUTES BEFORE THE INSPECTION STARTS; THE SYSTEM SHALL THEN BE TIGHT AT ALL JOINTS.

CLOSING IN UNINSPECTED WORK

1. DO NOT COVER UP OR ENCLOSE WORK UNTIL IT HAS BEEN PROPERLY AND COMPLETELY INSPECTED AND APPROVED. SHOULD ANY OF THE WORK BE COVERED UP OR ENCLOSED PRIOR TO ALL REQUIRED INSPECTIONS AND APPROVALS, UNCOVER THE WORK AS REQUIRED, AND AFTER IT HAS BEEN COMPLETELY INSPECTED AND APPROVED, MAKE ALL REPAIRS AND REPLACEMENTS WITH SUCH MATERIALS AND WORKMANSHIP AS ARE NECESSARY TO THE APPROVAL OF THE ARCHITECT AND AT NO ADDITIONAL COST TO THE OWNER.

PLUMBING FIXTURES

1. ALL EXPOSED BRASS TRIMMINGS, INCLUDING FAUCETS, FLUSH VALVES, TRAPS, WASTE, STRAINERS, STOP VALVES, ESCUTCHEONS, SUPPLIES, ETC., SHALL BE CHROME-PLATED. ALL FIXTURES INSTALLED BY THIS CONTRACTOR SHALL BE PROVIDED WITH INDIVIDUAL STOP VALVES ON HOT AND COLD WATER SUPPLIES. ALL COLD WATER VALVES SHALL BE TO THE RIGHT AND HOT WATER VALVES TO THE LEFT OF FIXTURES.
2. SCHEDULE: FIXTURES SHALL BE SPECIFIED ON ARCHITECTURAL DRAWINGS.

MISCELLANEOUS

1. DRAINS:

ALL DRAINS, EXCEPT AS NOTED, SHALL BE SIMILAR TO OR EQUAL TO ZURN MFG. CO. AND SHALL BE AS FOLLOWS:

- A. ROOF DRAINS R.D. TYPE A -- SIMILAR AND EQUAL TO NO. Z-100 DURACOATED CAST IRON BODY WITH COMBINATION FLASHING COLLAR AND GRAVEL STOP, CAST IRON DOME AND PERFORATED EXTENSION COLLAR TO ACCOMMODATE ROOF INSULATION.
- B. ROOF DRAINS R.D. TYPE B -- SIMILAR AND EQUAL TO NO. Z-100-ERC DURACOATED CAST IRON BODY WITH COMBINATION FLASHING COLLAR AND GRAVEL STOP, CAST IRON DOME, UNDERDECK CLAMP AND SUMP RECEIVER AND PERFORATED EXTENSION COLLAR TO ACCOMMODATE ROOF INSULATION.
- C. FLOOR DRAINS F.D. (MECHANICAL EQUIPMENT ROOMS) -- SIMILAR AND EQUAL TO NO. Z-505 CAST IRON BODY WITH FLASHING COLLAR WITH CAST IRON TRACTOR GRATE AND FLAT BOTTOM STRAINER. NO. Z-414 CAST IRON FUNNEL ATTACHED TO GRATE, WHERE INDICATED ON THE DRAWINGS.
- D. FLOOR DRAINS F.D. (FINISHED AREA, SHOWER, ETC.) -- SIMILAR AND EQUAL TO NO. ZN-415-B CAST IRON BODY, FLASHING COLLAR, SQUARE NICKEL BRONZE TOP AND ZN-414 FUNNEL ATTACHED TO GRATE WHERE INDICATED ON THE DRAWINGS.
- E. FLOOR SINK F.D. --SIMILAR AND EQUAL TO NO. Z-1900-1 CAST IRON ACID RESISTING ENAMELED, WITH DOME STRAINER, FLASHING FLANGE LESS GRATE.
- F. AREA DRAINS F.D. -- NO. Z-550 CAST IRON, DURACOATED, BOTTOM OUTLET, NONPUNCTURING FLASHING CLAMP DEVICE, EXTENSION, NON-TILTING GRATE.

2. ESCUTCHEONS:

- A. THIS CONTRACTOR SHALL PROVIDE ESCUTCHEONS ON ALL EXPOSED PIPE WHEREVER THEY PASS THROUGH FLOORS, CEILINGS, WALLS OR PARTITIONS.
- B. ESCUTCHEONS FOR PIPES PASSING THROUGH OUTSIDE WALLS AND FLOORS SHALL BE RITTER PATTERN AND CASTING CO., NO. 1, SOLID, CAST BRASS, FLAT TYPE SECURED TO PIPE WITH SET SCREWS.

C. ESCUTCHEONS FOR PIPES PASSING THROUGH INTERIOR WALLS, PARTITIONS, AND CEILINGS SHALL BE RITTER PATTERN AND CASTING CO., NO. 1, SOLID, CAST BRASS CHROMIUM PLATED TYPE, SECURED TO PIPE WITH SET SCREWS.

D. ESCUTCHEONS FOR PIPES IN UNFINISHED AREAS SHALL BE CAST IRON, SECURED WITH SET SCREWS

3. DISSIMILAR METALS:

A. CONNECTIONS BETWEEN PIPE, FITTINGS, HANGERS AND EQUIPMENT OF DISSIMILAR METALS SHALL BE AVOIDED.

B. DIELECTRIC UNIONS OR INSULATED COUPLINGS SHALL BE INSTALLED BETWEEN COPPER OR BRASS PIPING MATERIAL AND STEEL PIPING MATERIAL OR STEEL TANKS. UNIONS OR INSULATED COUPLINGS SHALL BE USED FOR PIPE SIZES 2" AND SMALLER, AND DIELECTRICALLY GASKETED FLANGES AND SLEEVES FOR PIPES 2-1/2" AND LARGER.

C. PIPES, FITTINGS, HANGER, ETC., OF DISSIMILAR METALS SHALL BE INSULATED AGAINST DIRECT CONTACT ONE WITH THE OTHER, BY USING A HIGH QUALITY OR GRADE OF DIELECTRIC INSULATING MATERIAL.

4. WALL HYDRANTS:

A. PROVIDE 3/4" NON-FREEZE WALL HYDRANTS WHERE INDICATED ON DRAWINGS. WALL HYDRANTS SHALL BE ZURN Z-1315 OR APPROVED EQUAL, ALL BRONZE WITH BRONZE WORKING PARTS THROUGHOUT, RENEWABLE NYLON SEAT, NICKEL BRONZE FACE.

5. THERMOMETERS:

A. THERMOMETERS SHALL BE ADJUSTABLE ANGLE, RED READING MERCURY TYPE WITH 7" BLACK BAKED ENAMEL CASE, BLACK ON WHITE SCALE, RANGE FROM 30 DEGREES F. TO 240 DEGREES F., AND SEPARABLE BRASS SOCKET. THERMOMETERS SHALL BE SO INSTALLED AND ADJUSTED THAT THEY ARE EASILY READABLE FROM A NORMAL STANDING POSITION ON THE FLOOR, U.S. GAUGE "MULT-ANGLE".

6. PRESSURE GAUGES:

A. PRESSURE GAUGE SHALL HAVE 3-1/2" DIAMETER BLACK ENAMEL CAST ALUMINUM CASE THREADED BRASS RING WITH HEAVY GLASS, PHOSPHOR BRONZE BRUSHED ROTARY PRECISION MOVEMENT AND DIAL RANGES OF 0 TO 200 PSI FOR WATER SERVICE; ITRERICE CO. NO. 500X OR APPROVED EQUAL, WITH BRASS TEE HANDLE COCK.

7. VACUUM BREAKERS:

A. PROVIDE VACUUM BREAKERS ON WATER SUPPLY PIPING TO EACH FIXTURE AND EQUIPMENT WITH SUBMERGED INLETS, AND ON FAUCETS AND OUTLETS, WITHIN THE BUILDING, TO WHICH HOSE CAN BE, OR IS ATTACHED, FORMING A SUBMERGED INLET. SET VACUUM BREAKERS IN EXPOSED, EASILY ACCESSIBLE LOCATIONS AND AT LEAST 6"-8" ABOVE FINISHED FLOOR. VACUUM BREAKERS SHALL BE CHROME PLATED BRASS, T&S BRASS NO. B-929-A OR APPROVED EQUAL.

8. FIXED AIR GAPS:

A. PROVIDE WHERE INDICATED ON THE DRAWINGS AND REQUIRED BY CODE A FIXED AIR GAP TO PREVENT CONTAMINATION DUE TO BACK FLOW IN THE STATIONARY DRAIN LINE. AIR GAP SHALL BE ZURN NO. Z-1025 TO SUIT PIPING INSTALLATION. FINISH SHALL MATCH PIPING CONNECTION.

9. HOSE BIBBS:

A. HOSE BIBBS SHALL BE CHICAGO FAUCETS #952 OR EQUAL WITH VACUUM BREAKER AND LOOSE KEY EXCEPT AS SPECIFIED HEREIN. COMBINATION HOT AND COLD HOSE BIBBS TO BE CHICAGO #305-VB-C.P. OR EQUAL; MODIFY THE PIPE MOUNTING LESS LOOSE FLANGE.

10. FRESH AIR INLET:

A. INSTALL FRESH AIR INLETS IMMEDIATELY ADJACENT TO THE HOUSE TRAPS ON THE HOUSE SIDE OF THE TRAP AND THE FRESH AIR INLET SHALL BE EXTENDED AND TERMINATED ABOVE GRADE IN THE EXTERIOR WALLS AT LEAST 18" ABOVE GRADE AND AS INDICATED.

B. PROVIDE J.R. SMITH MODEL 900S OR EQUAL FRESH AIR INLET WITH PIPE EXPANDER ANCHOR, PERFORATED POLISHED NICKEL BRONZE FACE WITH VANDAL-PROOF LOCKING DEVICE.

11. AIR CHAMBERS:

A. PROVIDE AIR CHAMBERS AT THE FAR ENDS OF EACH HOT AND COLD WATER SUPPLY BRANCH SERVING A GROUP OF FIXTURES AND AN INDIVIDUAL AIR CHAMBER FOR EACH SINGLE FIXTURE.

B. AIR CHAMBERS SHALL BE AT LEAST FULL SIZE OF EACH BRANCH CONNECTION BUT 1 INCH MINIMUM AND 36 INCHES LONG FOR MORE THAN ONE FIXTURE AND 1 INCH MINIMUM AND 18 INCHES LONG FOR SINGLE FIXTURE. DISTANCE TO TOP OF AIR CHAMBER SHALL BE MEASURED ABOVE THE HIGHEST FIXTURE FLOOR RIM.

C. PROVIDE AIR CHAMBERS 24 INCHES HIGH AT THE TOP OF ALL WATER RISERS, SAME SIZE AS RISERS BUT MINIMUM OF FULL SIZE OF RISER AT BASE.

12. SHOCK ABSORBERS:

A. PROVIDE J.R. SMITH #5000 OR APPROVED EQUAL SHOCK ABSORBERS WHERE INDICATED ON DRAWINGS. SHOCK ABSORBERS ARE TO BE OF SIZE AND LOCATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND WITH PDI STANDARD WH 201 AND SHALL BE PDI APPROVED. PROVIDE ACCESSIBILITY TO ALL SHOCK ABSORBERS.

EQUIPMENT:

1. DOMESTIC BOOSTER PUMP:

A. SIMILAR TO FEDERAL PUMP CO. MODEL SP-4030-2 WITH A CAPACITY OF 40 GPM AT 95 FEET OF HEAD. SYSTEM SHALL HAVE A 1-1/2 HP MAIN PUMP AND A 1-1/2 HP STAND-BY PUMP. SYSTEM SHALL HAVE CUSHION TANK, SAFETIES AND CONTROLS. SYSTEM WILL BE WRED TO 208V-3-60.

