15B 2-4 PIPING INSTALLATION

GENERAL: CLEAN PIPE THOROUGHLY PRIOR TO INSTALLATION. REAM ENDS OF PIPE TO REMOVE BURRS. CUT PIPE ACCURATELY TO MEASUREMENTS TAKEN ON THE JOB. INSTALL WITH ADEQUATE CLEARANCE FOR INSTALLATION OF COVERINGS WHERE REQUIRED. PIPE SHALL NOT BE SPRUNG OR BENT. NEATLY ALIGN PIPE, CONNECT IT SECURELY, AND SUPPORT IT FROM THE BUILDING STRUCTURE WITH HANGERS AS SPECIFIED BELOW. PROVIDE CHROME-PLATED ESCUTCHEONS ON PIPES PASSING THROUGH CEILINGS, FLOORS OR WALLS OF FINISHED SPACES. RUN PIPES FREELY THROUGH FLOOR AND WALL PENETRATIONS USING PIPE SLEEVES. DO NOT GROUT IN PLACE UNLESS REQUIRED FOR STRUCTURAL FIRE INTEGRITY. INSTALL PIPE CONCEALED IN FINISHED SPACES WHEREVER POSSIBLE. USE A DIELECTRIC UNION WHERE FERROUS AND COPPER PIPE CONNECT. DIELECTRIC UNION SHALL HAVE A ZINC-PLATED STEEL BODY, A THREADED NYLON INSERT, AND INSULATING PRESSURE GASKET. NO FERROUS METAL-TO-COPPER CONNECTION MADE WITHOUT INSULATING UNIONS WILL BE ALLOWED.

HANGER & SUPPORTS: PIPE HANGERS SHALL BE AS DESCRIBED IN THE SPECIFICATIONS BY B-LINE OR EQUAL BY ANVIL, MICHIGAN, TRUSCON, OR UNISTRUT. CONNECT HANGERS TO THE STRUCTURE WITH SIDE BEAM CONNECTORS AND ALL THREAD HANGER RODS. PROVIDE ENGINEERED SUPPORT STRUTS BETWEEN JOISTS AND OTHER STRUCTURAL MEMBERS AS REQUIRED TO PROVIDE A RIGID HANGING INSTALLATION. DO NOT HANG PIPES FROM OTHER PIPES, CONDUIT OR DUCTWORK. PROVIDE HANGER RODS AND SPACE HANGERS AT INTERVALS AS SPECIFIED IN "HANGER SPACING". PROVIDE SUPPORT WITHIN 1" OF EACH ELBOW AND TEE. PROVIDE SUPPORTS WITHIN 1" OF EACH EQUIPMENT CONNECTION. INSTALL HANGER TYPES OR SUPPORTS FOR VARIOUS PIPING AS FOLLOWS:

COPPER TUBE: ADJUSTABLE BAND HANGERS FOR BARE COPPER TUBE 3" AND SMALLER SHALL BE B-LINE #B3170CT COPPER PLATED ADJUSTABLE BAND SWIVEL RING TYPE. ADJUSTABLE BAND HANGERS FOR INSULATED COPPER TUBE 3" AND SMALLER SHALL BE B-LINE #B3170 NF ADJUSTABLE BAND SWIVEL RING TYPE. CLEVIS HANGERS FOR INSULATED COPPER TUBE 4" AND LARGER SHALL BE B-LINE #B3100 GALVANIZED STEEL CLEVIS TYPE. SUPPORT EXPOSED COPPER TUBE 2" AND SMALLER TO WALLS OR IN CHASES WITH B-LINE #B3198RCT COPPER COATED EXTENSION SPLIT RING PIPE CLAMPS, 3/8" THREADED ROD AND B-LINE #B3199CT CEILING FLANGES. SUPPORT COPPER TUBE IN CHASES AND WALLS AT PLUMBING FIXTURES WITH PLASTIC OR COPPER BRACKETS SECURED TO STRUCTURE AND U-BOLTS SIZED TO BEAR ON THE PIPE. RISER CLAMPS TO SUPPORT VERTICAL COPPER TUBE SHALL BE B-LINE #B3373CT COPPER COATED STEEL, CUT INSULATION, SEAL VAPOR BARRIER, AND ATTACH TO BARE TUBE.

STEEL PIPE: ADJUSTABLE BAND HANGERS FOR 2" AND SMALLER SHALL BE B-LINE #B3170 NF ADJUSTABLE BAND SWIVEL RING TYPE. CLEVIS HANGERS FOR 2-1/2" AND LARGER SHALL BE B-LINE #B3100 GALVANIZED STEEL CLEVIS TYPE. RISER CLAMPS TO SUPPORT VERTICAL PIPE SHALL BE B-LINE #B3373 GALVANIZED STEEL.

CAST IRON PIPE: ADJUSTABLE BAND HANGERS FOR 2" AND SMALLER. CLEVIS HANGERS FOR 3" AND LARGER SHALL BE B-LINE B#3100 GALVANIZED STEEL CLEVIS TYPE. RISER CLAMPS TO SUPPORT VERTICAL PIPE SHALL BE B-LINE #B3373 GALVANIZED STEEL.

PVC PIPE: ADJUSTABLE BAND HANGERS FOR 3" AND SMALLER. CLEVIS HANGERS FOR 4" AND LARGER SHALL BE B-LINE #B3100 GALVANIZED STEEL CLEVIS TYPE. RISER CLAMPS TO SUPPORT VERTICAL PIPE SHALL BE B-LINE #B3373 GALVANIZED STEEL.

HANGER SPACING, ROD SIZES & CONNECTORS: CONNECT RODS TO STEEL BEAMS OR JOISTS WITH B-LINE #B3031 OR #B3033 BEAM CLAMPS AS REQUIRED. CONNECT RODS TO CONCRETE WITH B-LINE #3014 MALLEABLE IRON SINGLE TYPE INSERTS WITH MALLEABLE IRON NUT. CONNECT RODS IN WOOD CONSTRUCTION WITH B-LINE #B3058 SIDE BEAM CONNECTORS. HANG AND SUPPORT PIPING WITH SPACING AND ROD SIZES AS FOLLOWS:

COPPER TUBE: 1-1/2" AND SMALLER - EVERY 6' WITH 3/8" HANGER RODS; 2" - EVERY 10' WITH ½" HANGER RODS; 2-1/2" AND 3" - EVERY 10' WITH ½" HANGER RODS; 4" - EVERY 10' WITH 5/8" HANGER RODS. SUPPORT VERTICAL COPPER TUBE EVERY 10'.

STEEL PIPE: 1" AND SMALLER - EVERY 8' WITH 3/8" HANGER RODS; 1-1/4" TO 2" - EVERY 10' WITH 3/8" HANGER RODS; 2-1/2" AND 3" - EVERY 10' WITH ½" HANGER RODS; 4" - EVERY 10' WITH 5/8" HANGER RODS. SUPPORT VERTICAL STEEL PIPE EVERY 10'. CAST IRON PIPE: EVERY 10' AND WITHIN 1' OF EACH JOINT. 2" AND SMALLER WITH 3/8" HANGER RODS; 3" WITH ½" HANGER RODS; 4" WITH 5/8" HANGER RODS; 6" WITH 3/4" HANGER RODS; 8" AND LARGER WITH 7/8" HANGER RODS. SUPPORT VERTICAL CAST IRON PIPE EVERY 15'.

PVC PIPE: SUPPORT ALL PIPES SIZES EVERY 4'. 1-1/2" AND SMALLER WITH 3/8" HANGER RODS; 2" WITH 1/2 " HANGER RODS; 2-1/2" AND 3" WITH ½" HANGER RODS; 4" AND LARGER WITH 5/8" HANGER RODS. SUPPORT VERTICAL PVC PIPE EVERY 4'.

SOIL, WASTE AND STORM: GRADE SOIL AND WASTE PIPING TO A UNIFORM SLOPE OF NOT LESS THAN 1/8" PER FOOT FOR PIPING 4" OR LARGER, AND NOT LESS THAN ¼" PER FOOT FOR PIPING 3" OR SMALLER. SLOPE STORM PIPING AT 1/8" PER FOOT. LAY PIPE AT UNIFORM SLOPE, FREE FROM SAGS, WITH HUB END UPSTREAM. SUPPORT PIPE AT EACH JOINT. MAKE CHANGES IN DIRECTION FROM HORIZONTAL TO VERTICAL, AT FIXTURE BRANCHES AND OTHER BRANCH CONNECTIONS WITH SANITARY "TEES" OR SHORT SWEEP "ELLS". MAKE CHANGES IN DIRECTION FROM VERTICAL TO HORIZONTAL OR IN THE HORIZONTAL WITH LONG RADIUS FITTINGS, LONG SWEEPING "ELLS", COMBINATION "Y" FITTINGS, OR 45 DEGREE "ELLS" (1/8 BEND FITTINGS) AND "Y" FITTINGS. INSTALL UNDERGROUND PIPE WITH THE BARREL OF THE PIPES ON FIRM, SOLID EARTH FOR ITS ENTIRE LENGTH, AND EXCAVATE HOLES FOR THE PIPE BELLS. LAY PIPE IN A STRAIGHT LINE AND GRADE UNIFORMLY TO LINE WITH BATTEN BOARDS SET NOT OVER 24'-0" APART. CLOSE OPEN ENDS OF PIPE WITH A STOPPER WHEN PIPE LAYING IS NOT IN PROGRESS. CENTER SPIGOTS ACCURATELY IN BELLS FOR UNIFORM CAULKING. PROVIDE A SMOOTH AND UNIFORM INVERT IN THE SYSTEM. DRILLING OR TAPPING OF SOIL AND WASTE LINES, AND SADDLE HUBS AND BANDS ARE NOT PERMITTED. LOCATE SOIL AND WASTE LINES IN GENERAL AS SHOWN ON THE DRAWINGS. LOCATE AND INSTALL SOIL AND WASTE LINES AS INDICATED ON THE DRAWINGS. PRIOR TO INSTALLATION OF ANY BUILDING DRAIN PIPE, VERIFY ELEVATION OF CONNECTION POINT OF EXISTING SEWER, SERVICE LINE OR EXISTING TENANT CONNECTIONS INDICATED ON THE DRAWINGS. IF THE INSTALLATION WILL NOT TIE INTO THE INDICATED INVERT ELEVATION POINT WHILE MAINTAINING PROPER FALL, NOTIFY ARCHITECT SO THAN AN ALTERNATIVE MAY BE DETERMINED.

PLUMBING VENT: CONNECT PLUMBING VENT PIPES TO FIXTURE DRAINS PIPES AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE INSTALLATION PRACTICES ADOPTED AND ENFORCED BY LOCAL CODES OFFICIAL, AND EXTEND VENT PIPES FULL SIZE THROUGH THE ROOF LINE. GRADE PIPE TO A UNIFORM SLOPE SO AS TO DRAIN BACK BY GRAVITY TO THE DRAINAGE PIPING SYSTEM. VENTS PASSING THROUGH THE ROOF SHALL BE MINIMUM 3" SIZE EXCEPT IN TROPICAL CLIMATES PER LOCAL CODES. TURN FLASHING DOWN INTO STACK AT LEAST 2", AND EXTEND FLASHING 24" IN ALL DIRECTIONS FROM THE PIPE AT THE ROOF LINE. APPLY WHITE LEAD PIPE DOPE ON MALE STEEL PIPE THREADS. VENT LINES SHALL BE AIR AND WATER TIGHT. VENT FLOOR DRAINS INDIVIDUALLY OR CONNECT THEM TO A HORIZONTALLY VENTED LINE AS SHOWN ON THE DRAWINGS.

DOMESTIC WATER: ARRANGE COLD, HOT AND HOT WATER RECIRCULATION PIPING TO DRAIN AT THE LOWEST POINT IN EACH SYSTEM. INSTALL AT LEAST ONE PIPE UNION ADJACENT TO ALL SHUTOFF VALVES, AT CONNECTION POINT OF EACH PIECE OF EQUIPMENT, AND ELSEWHERE IN THE SYSTEM WHERE REQUIRED TO ALLOW PROPER MAINTENANCE. PROVIDE UNIONS OF THE GROUND JOINT TYPE. MAKE ALLOWANCE FOR EXPANSION AND CONTRACTION WHERE REQUIRED BY THE INSTALLATION. WHERE WATER PIPING OCCURS IN EXTERIOR WALLS, HOLD PIPE AS CLOSE AS POSSIBLE TO THE INTERIOR FACE OF WALL AND INSTALL INSULATION BATT OR OTHER INSULATION (MINUIMUM R8) BETWEEN PIPING AND THE EXTERIOR WALL FACE.

15B 2-5 PIPING SANITIZATION

SANITIZE THE ENTIRE DOMESTIC WATER PIPING SYSTEM (COLD, HOT, AND HOT WATER RETURN) WITH A SOLUTION CONTAINING NOT LESS THAN 50 PPM AVAILABLE CHLORINE. KEEP SOLUTION IN THE SYSTEM FOR A MINIMUM OF 24 HOURS, WITH EACH VALVE BEING OPERATED SEVERAL TIMES DURING THE PERIOD. AFTER COMPLETION, FLUSH SYSTEM WITH CITY WATER UNTIL CHLORINE RESIDUAL IS LOWERED TO INCOMING CITY WATER LEVEL.

15B 2-6 PIPE AND VALVE MARKERS

PROVIDE MANUFACTURER'S STANDARD PRE-PRINTED, SEMI-RIGID SNAP-ON OR PERMANENT ADHESIVE, PRESSURE-SENSITIVE VINYL PIPE MARKERS. PIPE MARKERS SHALL BE COLOR-CODED FOR COMPLYING WITH ANSI A13.1 INSTALL PIPE MARKERS ON EACH PLUMBING PIPING SYSTEM AND INCLUDE ARROWS TO SHOW NORMAL DIRECTION OF FLOW.

LOCATE PIPE MARKERS AND COLOR BANDS WHEREVER PIPING IS EXPOSED TO VIEW IN OCCUPIED SPACES, MACHINE ROOMS, ACCESSIBLE MAINTENANCE SPACES (SHAFTS, TUNNELS, PLENUMS) AND EXTERIOR NON-CONCEALED LOCATIONS.

PROVIDE PLASTIC LAMINATE OR BRASS VALVE TAG ON EVERY VALVE, COCK AND CONTROL DEVICE IN EACH PLUMBING PIPING SYSTEM; EXCLUDE CHECK VALVES, VALVES WITHIN FACTORY-FABRICATED EQUIPMENT UNITS, PLUMBING FIXTURE FAUCETS, CONVENIENCE AND LAWN-WATERING HOSE BIBBS, AND SHUT-OFF VALVES AT PLUMBING FIXTURES AND SIMILAR ROUGH-IN CONNECTIONS OF END-USE FIXTURES AND UNITS.

15B3 PLUMBING SPECIALTIES

15B 3-1 AIR CHAMBERS, WATER HAMMER ARRESTORS, AND TRAPS

PROVIDE AIR CHAMBERS, FULL SIZE OF THE SUPPLY PIPE AND MINIMUM 18" LONG OR PER LOCAL AUTHORITIES REQUIREMENTS, AT SUPPLY PIPES TERMINATING AT FIXTURES TO PREVENT WATER HAMMER. PROVIDE WATER HAMMER ARRESTORS AT VALVES OR BATTERIES OF FIXTURES AS INDICATED ON THE DRAWINGS TO PREVENT WATER HAMMER. ARRESTORS SHALL BE JOSAM, SMITH, PRECISION PLUMBING PRODUCTS, SIOUX CHIEF, WADE, WATTS, OR ZURN, STAINLESS STEEL BELLOWS TYPE, OR O-RING SEALED AND LUBRICATED ACETYL PISTON. INSTALL WATER HAMMER ARRESTORS PER THE PLUMBING AND DRAINAGE INSTITUTE PDI WH-201 INSTALLATION INSTRUCTIONS. INSTALLATION OF ARRESTORS AT BATTERIES OF FIXTURES PRECLUDES THE REQUIREMENT FOR INDIVIDUAL AIR CHAMBERS AT EACH BATTERY FIXTURE.

PROVIDE WATER-SEAL TRAPS ON FLOOR DRAINS, FIXTURES AND EQUIPMENT WITH DRAIN CONNECTIONS, INCLUDING TRAPS NOT FURNISHED IN COMBINATION WITH FIXTURES AND EQUIPMENT. PLACE TRAP AS CLOSE TO THE FIXTURE OR DRAIN AS POSSIBLE. EXPOSED TRAPS IN FINISHED SPACES SHALL BE CHROME-PLATED BRASS.

PROVIDE CONVENTIONAL "P" TYPE TRAP, WATER-SEALED SELF-CLEANING DESIGN. FULL "S" TRAPS OR TRAP STANDARDS SHALL BE USED ONLY WHERE SPECIFICALLY CALLED FOR ON THE DRAWINGS OR ELSEWHERE IN THIS SPECIFICATION. TRAP WATER SEALS SHALL NOT BE LESS THAN 2" AND DEEP SEAL TRAPS SHALL BE PROVIDED WHERE SPECIFIED OR INDICATED. EACH TRAP NOT INTEGRAL WITH THE FIXTURE OR FLOOR DRAIN OR INSTALLED BELOW THE BASE SLAB SHALL BE PROVIDED WITH AN ACCESSIBLE CLEANOUT OF ADEQUATE SIZE. PROVIDE TRAP PRIMERS WHERE REQUIRED BY CODE AND WHERE INDICATED ON THE DRAWINGS.

15B 3-2 CLEANOUTS AND FLOOR DRAINS

CLEANOUTS, FLOOR DRAINS AND ROOF DRAINS SHALL BE BY ONE MANUFACTURER IF POSSIBLE. ACCEPTABLE MANUFACTURERS ARE JOSAM, SMITH, WADE, WATTS, AND ZURN. PROVIDE LONG SWEEP FITTINGS FOR CLEANOUT EXTENSIONS; SHORT SWEEPS AT START OF RUNS OR CHANGE IN DIRECTION AND COMBINATION WYE AND EIGHTH BEND FITTINGS IN HORIZONTAL RUNS. INSTALL CLEANOUTS WITH A MINIMUM OF 18" CLEAR ALL AROUND, CONSULT LOCAL CODES FOR OTHER REQUIREMENTS, FOR EASY SYSTEM MAINTENANCE. INSTALL PLUG WITH TEFLON JOINT COMPOUND.

FLOOR DRAINS: SHALL BE AS SCHEDULED ON THE DRAWINGS. FLOOR CLEANOUTS: SHALL BE AS SCHEDULED ON THE DRAWINGS. INSTALL CLEANOUTS AT POINTS AS NOTED ON THE DRAWINGS, AT THE BUILDING EXIT; AT A MINIMUM OF EVERY 50 FEET IN HORIZONTAL SOIL AND WASTE LINES; AND AT TURNS OF PIPE GREATER THAN 45 DEGREES CLEANOUTS SHALL BE FULL SIZE OF THE PIPE UP TO 4", AND 4" SIZE FOR PIPES LARGER THAN 4". DETERMINE THE TYPE OF FLOOR COVERING TO BE USED AT EACH FLOOR CLEANOUT LOCATION AND PROVIDE TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKERS, RECESSED FOR TILE AND SCORIATED FOR UNFINISHED FLOOR). ROUGH-IN AND INSTALL EACH FLOOR CLEANOUT FLUSH WITH THE FINISHED FLOOR CONSTRUCTION.

EXTERIOR CLEANOUTS: SHALL BE AS SCHEDULED ON THE DRAWINGS. INSTALL CLEANOUTS AT POINTS AS NOTED ON THE DRAWINGS, AT THE BUILDING EXIT; AT A MINIMUM OF EVERY 100 FEET IN HORIZONTAL SOIL, WASTE AND STORM SERVICE LINES. EMBED EACH EXTERIOR CLEANOUT IN AN 16" X 16" X 6" BLOCK OF CONCRETE, FLUSH WITH FINISHED GRADE.

WALL CLEANOUTS: SHALL BE AS SCHEDULED ON THE DRAWINGS. INSTALL WALL CLEAN OUTS AT POINTS AS NOTED ON THE DRAWINGS; AT THE FOOT OF EACH SOIL, WASTE OR INTERIOR DOWNSPOUT STACK; AT HORIZONTAL SOIL AND WASTE BRANCHES LONGER THAN FIVE FEET NOT SERVED BY A FLOOR CLEANOUT; CONSULT LOCAL CODES FOR INSTALLATION AT SPECIFIC FIXTURE TYPES. INSTALL WALL CLEANOUTS ABOVE THE FLOOD RIM OF THE FIXTURE SERVED WITHIN FOUR FEET OF THE FLOOR AND INSTALL EXTENSIONS FROM THE CLEANOUT TEE TO THE WALL TO LOCATE THE PLUG WITHIN 2" OF THE WALL WHERE REQUIRED. INSTALL CLEANOUTS ON URINALS AND SINKS WHERE REQUIRED BY CODE.

ROOF DRAINS: SHALL BE AS SCHEDULED ON THE DRAWINGS. PROVIDE WITH ROOF SUMP RECEIVER, EXTENSION, SECONDARY FLASHING CLAMPS AND UNDERDECK CLAMP AS REQUIRED; PROVIDE EXPANSION JOINTS WHERE REQUIRED. PROVIDE OVERFLOW ROOF DRAINS WHERE INDICATED ON THE DRAWINGS WITH INLET FLOW LINE 2" ABOVE THE PRIMARY ROOF DRAIN INLET.

15B 3-3 VALVES, STRAINERS, HOSE BIBBS, AND UNIONS

PLUMBING SYSTEM VALVES SHALL BE CRANE COMPANY OR NIBCO OF MODELS HEREIN SPECIFIED, OR APPROVED EQUAL BY HAMMOND, WALWORTH, STOCKHAM, OR MUELLER VALVES. VALVES SHALL BE OF THE BEST QUALITY, DESIGNED FOR 125 PSI STEAM WORKING PRESSURE. INSTALL VALVES ON THE HOT AND COLD WATER LINES AT THE WATER HEATER CONNECTIONS AND OTHER ITEMS OF EQUIPMENT, AT BRANCHES FROM MAINS SERVING GROUPS OF FIXTURES, AND AT OTHER PLACES INDICATED OR REQUIRED BY THE INSTALLATION TO ALLOW EASE OF FUTURE MAINTENANCE.

GATE VALVES: CLASS 125, SIZE 2-1/2" AND SMALLER SHALL BE CRANE #1701 OR NIBCO T113, NON-RISING STEM, SCREWED BRASS BODY AND PARTS, WITH WEDGE DISC. GATE VALVES 3" AND LARGER SHALL BE CRANE #465-1/2 OR NIBCO #617-O, O.S. & Y., IRON BODY FLANGED WEDGE GATE WITH BRASS SEATS AND STEM.

BALL VALVES (MAY BE USED IN LIEU OF GATE VALVES UP TO 2"): 2" AND SMALLER NIBCO #T580; TWO PIECE BRONZE BODY, WITH SCREWED ENDS, CHROME PLATED BRONZE BALL WITH CONVENTIONAL PORT, 400 PSI, BLOW-OUT PROOF STEM.

GLOBE VALVES: GLOBE VALVES SHALL BE CLASS 125. GLOVE VALVES 2-1/2" AND SMALLER SHALL BE CRANE #1310 OR NIBCO #T-211, SCREWED BRASS BODY AND BRASS DISC. GLOBE VALVES 3" AND LARGER SHALL BE CRANE #351 IRON BODY FLANGED VALVE WITH BRASS TRIM. CHECK VALVES: CHECK VALVES SHALL BE CLASS 125. CHECK VALVES FOR INSTALLATION IN HORIZONTAL PIPE RUNS SHALL BE OF THE "SWING DISC" DESIGN. HORIZONTAL CHECK VALVES 2-1/2" AND SMALLER SHALL BE CRANE #137 OR NIBCO #T-413 WITH SCREWED BRONZE BODY AND BRONZE DISC. HORIZONTAL CHECK VALVES 3" AND LARGER SHALL BE CRANE #373 OR NIBCO F-918 IRON BODY FLANGED VALVE WITH BRASS TRIM. CHECK VALVES FOR INSTALLATION IN VERTICAL PIPE RUNS SHALL BE OF THE "VERTICAL LIFT" DESIGN. VERTICAL CHECK VALVES 2-1/2" AND SMALLER SHALL BE CRANE #29 OR NIBCO #T-480 WITH SCREWED BRONZE BODY AND BRONZE DISC. VERTICAL CHECK VALVES 3" AND LARGER SHALL BE CENTER GUIDED.

STRAINERS: STRAINERS 2-1/2" AND SMALLER SHALL BE WATTS #745 WITH SCREWED IRON BODY, BRASS CAP AND MODEL 40 MESH SCREEN. STRAINERS 3" AND LARGER SHALL BE WATTS #77F-D WITH FLANGED IRON BODY, BOLTED IRON CAP AND STAINLESS STEEL SCREEN WITH 1/16" PERFORATIONS. STRAINERS SIZE 3" AND LARGER SHALL HAVE A 1" BLOW-OFF LINE WITH A 1" GATE VALVE CONNECTED TO THE BLOW-OFF CONNECTION AND SHALL BE EXTENDED TO THE NEAREST FLOOR DRAIN.

DRAIN VALVES AND INTERIOR HOSE BIBBS: WOODFORD #24P, WATTS #SC8-6, OR ZURN #1341 WITH ROUGH BRASS BODY, 1/2" SCREWED INLET, WITH 3/4" HOSE THREAD OUTLET, SCREW-ON VACUUM BREAKER, WHEEL HANDLE AND COMPOSITION DISC.

EXPOSED INTERIOR HOSE BIBBS: CHICAGO #952, T&S BRASS #B720, OR ZURN #1341 WITH CHROME PLATED BRASS BODY, 3/4" SCREWED INLET, 3/4" HOSE THREAD OUTLET, INTEGRAL VACUUM BREAKER, WHEEL HANDLE AND COMPOSITION DISC.

HOT & COLD WATER MIXING HOSE BIBBS: CHICAGO #897-CP-HC OR EQUAL BY SPEAKMAN, T&S BRASS OR ZURN WITH VACUUM BREAKER, STOPS IN SHANKS WITH INTEGRAL CHECKS, AND 3/4" HOSE THREAD OUTLET. WALL HYDRANTS: ZURN #1321 "NON-FREEZE" WITH CAST BRONZE SATIN NICKEL PLATED FACE, WITH INTEGRAL VACUUM BREAKER, 3/4" HOSE CONNECTION, ADJUSTABLE WALL CLAMP, OR EQUAL BY WOODFORD, JOSAM, PRIER, WADE, WATTS OR SMITH. PROVIDE ACCESSIBLE STOP VALVE AND WATER HAMMER ARRESTOR INSIDE BUILDING. UNIONS: FERROUS UNIONS SHALL BE CRANE OR EQUAL, COMBINATION IRON AND BRASS, GROUND JOINT WITH SCREWED ENDS. COPPER UNIONS SHALL BE STREAMLINE OR EQUAL, CAST BRONZE SWEAT TYPE WITH GROUND JOINT. FERROUS TO COPPER UNIONS SHALL BE UNIVERSAL CONTROLS OR EQUAL, DIELECTRIC TYPE WITH THREADED NYLON INSERT.

15B 3-4 SYSTEM ACCESSORIES

THERMOMETERS SHALL BE AMERICAN 3" BI-METAL DIAL TYPE WITH SEPARABLE SOCKET, AND SHALL BE INSTALLED WHERE INDICATED OR REQUIRED.

PRESSURE GAUGES SHALL BE ASHCROFT 3" DIAL TYPE WITH SHUT-OFF COCK, AND SHALL BE INSTALLED WHERE INDICATED OR REQUIRED.

PROVIDE TRAP PRIMERS WHERE REQUIRED BY LOCAL AUTHORITIES. TRAP PRIMERS SHALL BE AS SPECIFIED ON THE DRAWINGS, PRECISION PLUMBING PRODUCTS "PRIME RITE" OR EQUAL BY MIFAB OR SIOUX CHIEF WITH BRASS BODY AND INTEGRAL VACUUM BREAKER. PROVIDE DISTRIBUTION BOX WHERE MORE THAN ONE TRAP IS INDICATED TO BE PRIMED ON THE DRAWINGS. PROVIDE ACCESS PANEL WHERE REQUIRED.

15B4 PLUMBING FIXTURES AND EQUIPMENT

15B 4-1 COMPRESSED AIR SYSTEMS

COMPRESSED AIR PIPING SHALL BE GALVANIZED STEEL PIPE WITH MALLEABLE IRON SCREWED FITTINGS. INSTALLATION SHALL BE IN CONFORMANCE WITH SECTION 15B2-4 PIPING INSTALLATION, OF THIS SPECIFICATION.

INSTALL AND PIPE THE AIR COMPRESSOR AS INDICATED ON THE DRAWINGS. INSTALL VALVES, FILTERS, REGULATORS, AND OTHER FITTINGS FURNISHED BY THE OWNER AS A PART OF THE COMPRESSED AIR SYSTEM. AT THE COMPLETION OF THE WORK, LEAVE A COMPLETE AND OPERATING SYSTEM, CONFORMING TO THE LATEST EDITION OF THE OSHA CODE. TERMINATE PIPING DROPS WITH BALL VALVES, QUICK DISCONNECT FITTINGS, AND DIRT LEG AS DETAILED ON THE DRAWINGS.

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