

GENERAL SPECIFICATION (PLUMBING)

GENERAL

REFER TO ALL OTHER DRAWINGS AND SPECIFICATIONS, AND BE RESPONSIBLE FOR ALL APPLICABLE PROVISIONS THEREIN. FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM. ANY APPLIANCES OR MATERIALS OBVIOUSLY A PART OF THE SYSTEM AND NECESSARY FOR ITS PROPER OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES, NFPA AND THE BUILDING REGULATIONS. ATTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES. EQUIPMENT AND MATERIALS SHALL BE NEW.

DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING, OFFSET, DROP AND RISE OF RUNS, AND DETAIL. INSTALL PIPING, EQUIPMENT AND CONTROLS IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD PRACTICE FOR A COMPLETE, WORKABLE INSTALLATION. AVOID CONFLICT WITH OTHER WORK, MAKE ADEQUATE PROVISIONS FOR PREVENTING NOISE AND VIBRATION. DRAWINGS INDICATE LOCATIONS OF FIXTURES, APPARATUS, AND PIPING; AND WHILE THESE ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS NECESSARY TO CHANGE THE LOCATION OF SAME TO ACCOMMODATE BUILDING CONDITIONS, MAKE CHANGES WITHOUT ADDITIONAL COST TO THE OWNER AND AS APPROVED BY THE ARCHITECT. PROVIDE ADEQUATE ACCESS TO THE EQUIPMENT AND APPARATUS REQUIRING OPERATION, SERVICE OR MAINTENANCE WITHIN THE LIFE OF THE SYSTEM. DO NOT RUN PIPING, OR LOCATE EQUIPMENT, (WITH RESPECT TO SWITCHBOARDS, PANEL BOARDS, POWER PANELS, MOTOR CONTROL CENTERS OR DRY TYPE TRANSFORMERS) WITHIN 42 INCHES IN FRONT OF EQUIPMENT, OVER EQUIPMENT, OR WITHIN 36 INCHES HORIZONTALLY OF SAME SPACE.

COORDINATION

COORDINATE ALL WORK UNDER THIS DIVISION WITH WORK UNDER OTHER DIVISIONS. PROVIDE ADJUSTMENTS AS NECESSARY. EQUIPMENT, APPARATUS, PIPING, ETC., INSTALLED WITHOUT REGARD FOR THE SPACE REQUIREMENTS OF OTHER TRADES WILL BE REWORKED AT THE EXPENSE OF THE INSTALLING CONTRACTOR IF IT CREATES AN UNNECESSARY HINDRANCE TO THE INSTALLATION OF ANOTHER TRADES WORK. ALL ITEMS MOUNTED AT OR BELOW THE CEILING, AND ANY ITEM PENETRATING THE CEILING, SHALL BE COORDINATED WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.

PROTECTION OF WORK DURING CONSTRUCTION

PROVIDE PROTECTIVE COVERS, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION.

CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OR DISRUPTING BUILDING SYSTEMS, WIRING OR CONTROL TUBING FOR ADJACENT TENANTS. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS COST.

PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE. ANY DAMAGE ITEM SHALL BE REPLACED USING THE SAME MATERIALS AT THE CONTRACTORS COST.

RECORD DRAWINGS

CONTRACTOR WILL PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS CLEARLY INDICATING LOCATION OF PIPING AND EQUIPMENT, INCLUDING DIMENSIONS, ARRANGEMENT, RATING AND CAPACITIES OF ALL NEW SYSTEMS.

SUBMITTALS

SUBMIT FOR REVIEW FIVE COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT.

SUBMIT ALL SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO PURCHASE, FABRICATION AND INSTALLATION.

TESTING

WATER PIPING SHALL BE HYDROSTATICALLY TESTED TO 1.5 TIMES THE OPERATING PRESSURE BUT NOT LESS THAN 150 PSI.

ALL LEAKS SHALL BE REPAIRED BY TIGHTENING, REWELDING OR REPLACING PIPE AND FITTINGS. CAULKING OF JOINTS WILL NOT BE PERMITTED.

CLEANING AND ADJUSTING

THE EXTERIOR SURFACES OF ALL EQUIPMENT, PIPING, ETC., SHALL BE CLEANED OF ALL GREASE, OIL, PAINT AND OTHER CONSTRUCTION DEBRIS. FLUSH WATER PIPING SYSTEMS UNTIL WATER RUNS CLEAN. REMOVE ALL STICKERS, RUST, STAINS, LABELS, AND TEMPORARY COVERS BEFORE FINAL ACCEPTANCE. REMOVE FOREIGN MATTER FROM EQUIPMENT, PIPING AND APPURTENANCES.

GUARANTEE

MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AGAINST DEFECTS FOR ONE YEAR.

EQUIPMENT, MATERIALS AND BID BASIS.

SPECIFIED MANUFACTURERS NAMES AND MODEL NUMBERS ARE FOR THE PURPOSE OF DESCRIBING TYPE, CAPACITY, FUNCTION AND QUALITY OF EQUIPMENT AND MATERIALS TO BE USED. UNLESS "OR EQUAL" IS SPECIFICALLY STATED, BIDS SHALL BE BASED ON EQUIPMENT NAMED. CAPACITIES INDICATED TAKE PRECEDENCE OVER MODEL NUMBERS.

EQUIPMENT SUPPORT

SUPPORT ALL CEILING MOUNTED EQUIPMENT AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS AND EQUIPMENT, PROVIDE ADDITIONAL STEEL FRAMING.

PIPE INSULATION

TYPE P1 ASTM C547, CLASS 1 (-20 DEGREE F TO 500 DEGREE F):

FIBERGLASS, MINIMUM 4 POUNDS PER CUBIC FOOT (P.C.F.) DENSITY, K FACTOR 0.23 MAXIMUM AT 75 DEGREE F MEAN, WITH FACTORY-APPLIED ALL-SERVICE JACKET (ASJ) COMPOSED OF REINFORCED KRAFT AND ALUMINUM FOIL LAMINATE. JACKET SHALL HAVE SELF-SEALING LAP TO FACILITATE CLOSING LONGITUDINAL AND END JOINTS.

APPROVED PRODUCTS:

CERTAINTED 500 DEGREE SNAP ON ASJ/SSL
SCHULLER PIPE INSULATION
OWENS/CORNING FIBERGLASS SSLII
KNAUF PIPE INSULATION ASJ/SSL

INSTALLATION OF PIPE INSULATION

INSTALL INSULATION ON PIPE SYSTEMS SUBSEQUENT TO TESTING AND ACCEPTANCE OF TEST.

MAINTAIN INTEGRITY OF VAPOR-BARRIER JACKETS ON PIPE INSULATION, AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE. SEAL OPEN ENDS OF INSULATION WITH MASTIC. SECTIONALLY SEAL ALL BUTT ENDS OF ALL COLD WATER PIPING INSULATION AT FITTINGS WITH WHITE VAPOR BARRIER COATING.

COVER VALVES, FLANGES, FITTINGS, AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN. INSTALL FACTORY MOLDED, PRECUT OR JOB FABRICATED UNITS (AT INSTALLERS OPTION). FINISH COLD PIPE FITTINGS WITH WHITE VAPOR BARRIER COATING AND HOT PIPING WITH WHITE VINYL ACRYLIC MASTIC, BOTH REINFORCED WITH GLASS CLOTH.

EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, HANGERS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.

INSTALL PROTECTIVE METAL SHIELDS AND FOAMGLASS INSERTS WHERE PIPE HANGERS BEAR ON OUTSIDE OF INSULATION.

INSULATION REQUIREMENTS:

DOMESTIC COLD WATER PIPING: HORIZONTAL STORM HOT WATER RECIRCULATION TYPE P1 FIBERGLASS 1/2 INCH THICKNESS	DOMESTIC HOT WATER PIPING: TYPE P1 FIBERGLASS 1 INCH THICKNESS
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PIPING

GENERAL: PIPING SHALL BE COMPLETE WITH PIPE FITTINGS, VALVES, COUPLING, STRAINERS, HANGER RODS, ANSI, ASTM AND MSS STANDARDS.

FOR PIPE SIZES NOT INDICATED ON PLANS, SEE MANUFACTURERS EQUIPMENT CONNECTION DETAILS.

PROVIDE FITTINGS FOR CHANGE IN PIPE SIZE AND FOR FINAL CONNECTION AT EQUIPMENT, AS REQUIRED.

PROVIDE UNION CONNECTIONS AT EACH PIECE OF EQUIPMENT AND ON EACH SIDE OF ALL VALVES AND IN-LINE EQUIPMENT.

PROVIDE VALVED AND CAPPED CONNECTIONS AT ALL POINTS IN PIPING SYSTEMS REQUIRED FOR DRAINING SYSTEMS.

HANGERS, SUPPORTS, GUIDES, SLEEVES AND ACCESSORIES IN CONFORMANCE WITH THE LATEST CODES AND ASME.

AVOID ENTRY OF FOREIGN MATTER INTO PIPING DURING CONSTRUCTION. AFTER COMPLETION OF PIPING, FLUSH WATER SYSTEM WITH WATER UNTIL CLEAR. REMOVE AND CLEAN STRAINERS, AND BLOW OFF ALL PIPING LOW POINTS AT THE END OF THE FLUSH PERIOD.

PROVIDE MINIMUM PITCH TO INSURE ADEQUATE VENTING AND DRAINAGE.

RUN ALL DRAINAGE AND VENT PIPING AS DIRECT AS POSSIBLE. SLOPE BRANCH WASTE PIPING AT 1/8" PER FOOT UNLESS OTHERWISE NOTED.

PROVIDE A CLEANOUT AT ALL CHANGES IN DIRECTION FOR SANITARY PIPING.

PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.

PIPING SUPPORTS:

HORIZONTAL PIPING AND PIPING HANGERS SHALL BE ADJUSTABLE CLEVIS TYPE "CARPENTER & PATTERSON" FIGURE NO. 100 OR 100SH OR APPROVED EQUAL. HANGER RODS SHALL BE OF THE FOLLOWING DIAMETER.

PIPE SIZE: 1-1/2 INCH & BELOW. ROD DIAMETER: 3/8 INCH. MAX SPACING: 6 FEET.

PROVIDE ADDITIONAL SUPPORTS AT CHANGE OF DIRECTION, RUNOUTS AND CONCENTRATED LOADS DUE TO VALVES, ETC.

PIPING MATERIAL:

PIPE AND FITTINGS SHALL CONFORM TO THE LATEST ASA, ASTM AND/OR FS STANDARDS.

SANITARY PIPING ABOVE GRADE

CART IRON, CISP 301, HUBLESS SERVICE WEIGHT, JOINTS TO BE CISPI 310, NEOPRENE GASKETS AND STAINLESS STEEL CLAMP AND SHIELD ASSEMBLIES.

SANITARY SEWER PIPING BURIED

PVC PIPE-ASTM D2685 OR ASTM D3035 PVC FITTINGS-AND POLYETH WELD-OR CEMENT JOINTS-PER ASTM D2685 OR CAST IRON ASTM A74 PIPE W/ CAST IRON FITTING AND HUB AND SPIGOT FITTING.

DOMESTIC WATER PIPING

ABOVE GROUND WATER PIPING: TYPE L COPPER TUBING, CONFORMING TO FEDERAL SPECIFICATION WW-T-799 HARD TEMPER. WROUGHT COPPER AND BRONZE SOLDER JOINTS. SOLDER JOINTS SHALL BE LEAD FREE SOLDER.

BELOW GROUND WATER PIPING 3 IN. AND SMALLER: TYPE K COPPER TUBING, SOFT TEMPER WITH BITUMINOUS COATING. NO JOINTS WHERE POSSIBLE, WROUGHT COPPER AND BRONZE WITH LEAD FREE SOLDER.

FITTINGS:

PROVIDE DIELECTRIC GASKETS FOR JOINTS OF DISSIMILAR METALS: ISOLATING GASKETS, SLEEVES AND WASHERS BETWEEN FLANGES, BOLTS AND NUTS.

PROVIDE WATER HAMMER ARRESTOR AS REQUIRED TO CONTROL PIPE VIBRATION AND NOISE CONTROL. IT SHALL BE SIZED PER FDI WH-201.

PROVIDE 1/2 INCH DRAIN VALVE AND CAPPED CONNECTIONS AT LOW POINTS. PROVIDE 3/4 INCH CAPPED CONNECTION FOR DRAINING CONNECTION AT THE LOWEST POINT IN THE SYSTEM.

FOR MANUAL AIR VENTS, PROVIDE LINE SIZE AIR CHAMBER WITH 1/2 INCH VALVE. PROVIDE VALVES AT ALL HIGH POINTS AND WHERE FLOW CHANGES FROM HORIZONTAL TO DOWNWARD.

WATER PIPING: 95-5 TIN-ANTIMONY SOLDER JOINT CONNECTIONS - NO LEAD

VALVES:

PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND AS INDICATED ON DRAWINGS.

VALVES FOR WATER PIPING SHALL BE SUITABLE FOR THE SERVICE PRESSURE AND TEMPERATURE.

GATE VALVE: STOCKHAM, MILWAUKEE OR GRINNELL

BALL VALVES ARE ACCEPTABLE FOR USE AS SHUT-OFF VALVE.

TRAP PRIMER

ACCEPTABLE MANUFACTURERS: PRECISION PLUMBING PRODUCTS, MODEL OREGON MODEL #1; SIOUX CHIEF, ZURN. PROVIDE TRAP SEAL PRIMER FOR ALL NEW FLOOR DRAINS. CONTRACTOR SHALL LOCATE PRIMER, CONNECT TO NEAREST COLD WATER SOURCE AND PROVIDE COMPLETE WITH COPPER DISTRIBUTION UNIT WITH CLEAR PLASTIC INSPECTION COVER.

PLUMBING FIXTURE SCHEDULE

FIXTURE NUMBER	SYMBOL		WASTE	VENT	COLD	HOT	REMARKS
P-1A		LAV/ TOILET COMBO WATER CLOSET	4"	2"	1"	1/2"	PROVIDE ACORN MODEL 1418-CT, STAINLESS STEEL LAV-TOILET COMBO FIXTURE. 1.6 GPF MECH. FLUSH VALVE, BUBBLER, AIR CONTROL H&C NON-METERING VALVE. COORDINATE INSTALLATION WITH MANUFACTURER.
P-1B P-1C		TANK TYPE WATER CLOSET	4"	2"	1/2"	-	P-1B : FLOOR MOUNTED, TANK TYPE, ADA COMPLIANT, ELONGATED BOWL WATER CLOSET. P-1C : FLOOR MOUNTED, TANK TYPE, ELONGATED BOWL WATER CLOSET, AMERICAN STANDARD CHAMPION 4
P-2		URINAL	2"	1 1/2"	3/4"		ELJER CORRECTO 161-1032, WALL HUNG SIPHON JET URINAL, LOW CONSUMPTION, FLUSH VALVE: SLOAN ROYAL 186-1 OR EQUAL
P-3A		WALL HUNG LAVATORY					P-3A: ADA COMPLIANT, WALL HUNG LAVATORY WITH 4 INCH HIGH BACK, DRILLINGS ON 4 INCH CENTERS, RECTANGULAR BASIN WITH SPLASH LIP, FRONT OVERFLOW AND CONCEALED ARMS SUPPORT.
P-3B		COUNTERTOP LAVATORY	1 1/2"	1 1/2"	1/2"	1/2"	P3B: AMERICAN STANDARD AQUALYN# 0476.028 OR EQUAL, ASME A112.19.2, VITREOUS CHINA SELF RIMMING COUNTER TOP LAVATORY, 20"x17" WITH DRILLINGS ON 4" CENTERS, FRONT OVERFLOW, 1 1/4" OUTLET AND A SEAL OF CAULKING.
P-4		SINK	1 1/2"	1 1/2"	1/2"	1/2"	ELKAY MANUFACTURING CO. MODEL LRAD 1517, 15" X 17 1/2" X 6 1/2" DEEP LEDGE, 18GAUGE, TYPE 302 18-8 STAINLESS STEEL
P-5A		SECURITY WALL SHOWER	3"	1 1/2"	1/2"	1/2"	ACORN PANEL WARE 1741FA FRONT ACCESS WALL SHOWER TIME-TROL HOT & COLD VALVE, CONICAL SHOWER HEAD, SOAP DISH.
P-5B		WALL SHOWER	3"	1 1/2"	1/2"		(BARRIER FREE) EQUAL TO SYMMONS 1-903-S-FSB HYDAPipe THRU CEILING SUPPLY PIPING SHOWER SYSTEM, STAINLESS STEEL (MIN. 18 GA.) VERTICAL COVERWITH CEILING FLANGE, PRESSURE BALANCING MIXING VALVE, ATTACHED SOAP DISH, 1.5 GPM SHOWER HEAD, FLEXIBLE METAL HOSE WALL CONNECTION AND FLANGE, 30" SLIDE BAR FOR HAND SHOWER MOUNTING. PROVIDE SHOWER FLOOR DRAIN
P-6		DRINKING WATER COOLER	2"	1 1/2"	1/2"		HALSEY TAYLOR BARRIER FREE COOLER MODEL "HYVGRNB" WITH WATER FILTER
SS-1		SERVICE SINK	3"	1 1/2"	1/2"	1/2"	FLOOR SERVICE SINK : MOP RECEPTOR EQUAL TO FIAT PRECAST TERRAZZO MOP BASIN MODEL TSB-3010, 24" X 24" X 12" WITH 6" DROP FRONT, STAINLESS STEEL THRESHOLD, FLANGE ON WALL SIDES. CHICAGO 897 WALL MOUNTED SERVICE SINK FAUCET W/ VACUUM BREAKER SPOUT, RUBBER HOSE, WALL HOOK, 24" LONG MOP HANGER WITH 3 SPRING CLIPS.
FD1 FD2		FLOOR DRAIN	3"	1 1/2"	3/8"		PROVIDE TRAP PRIMER

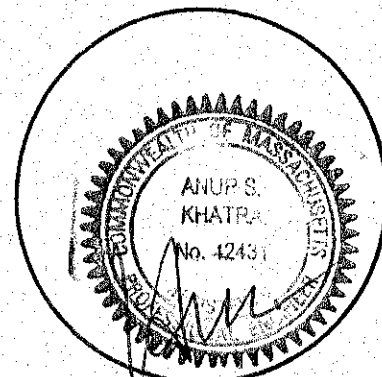
NOTE:

ALL PLUMBING FIXTURES MUST BE MASSACHUSETTS PLUMBING BOARD APPROVED PRODUCT.

COORDINATE PLUMBING FIXTURE SELECTION WITH THE OWNER

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DATE: 12/21/12

SCALE:

DRAWN BY: JP

CHECKED BY: AK

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