

SECTION 15050 – BASIC PLUMBING MATERIALS AND METHODS

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING:
1. PIPING INSTALLATION INSTRUCTIONS COMMON TO MOST PIPING SYSTEMS.

PART 2 – EXECUTION

2.1 PIPING SYSTEMS – COMMON REQUIREMENTS

- A. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS.
B. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL.
C. INSTALL PIPING AT INDICATED SLOPES.
D. INSTALL PIPING FREE OF SAGS AND BENDS.
E. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
F. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION.
G. INSTALL ESCUTCHEONS FOR PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.
H. INSTALL SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR AND ROOF SLABS.

2.2 PIPING CONNECTIONS

- A. MAKE CONNECTIONS ACCORDING TO THE FOLLOWING, UNLESS OTHERWISE INDICATED:
1. INSTALL UNIONS, IN PIPING NPS 2 AND SMALLER, ADJACENT TO EACH VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
2. INSTALL FLANGES, IN PIPING NPS 2-1/2 AND LARGER, ADJACENT TO FLANGED VALVES AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
3. WET PIPING SYSTEMS: INSTALL DIELECTRIC COUPLING AND NIPPLE FITTINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS.

SECTION 15060 – HANGERS AND SUPPORTS

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES HANGERS AND SUPPORTS FOR MECHANICAL SYSTEM PIPING AND EQUIPMENT.

PART 2 – EXECUTION

2.1 PIPING HANGERS

- A. PIPE HANGERS USED ARE TO BE MANUFACTURED AND INSTALLED ACCORDING TO SPECIFICATIONS SP-58-1975 (PIPE HANGERS AND SUPPORTS – MATERIALS, DESIGN AND MANUFACTURE) AND SP-89-1978 (PIPE HANGERS AND SUPPORTS – FABRICATION AND INSTALLATION PRACTICES) OF THE MANUFACTURERS STANDARDIZATION SOCIETY (MSS).
B. PIPE HANGER SELECTION AND APPLICATION WILL FOLLOW RECOMMENDATIONS OF MSS SP-69-1976 (PIPE HANGERS AND SUPPORTS – SELECTION AND APPLICATION).
C. HANGERS USED DIRECTLY ON COPPER PIPE WILL BE COPPER OR CADMIUM PLATED. ALL OTHER HANGERS AND CHANNELS, ANGLES, AND SUPPORTING STEEL SHALL BE CARBON STEEL WITH A BLACK FINISH.
D. HANGERS SHALL BE LOCATED AT WITHIN 2' OF EACH CHANGE OF DIRECTION.
E. WHERE INDIVIDUAL HANGERS ARE USED OUTSIDE OF INSULATION, APPLY A 9-INCH LENGTH OF 15 LB. DENSITY URETHANE INSULATION OR FOAMLESS TO PIPE AT POINT OF HANGING.
F. TRAPEZE HANGERS – SUSPEND PIPING INSTALLED ON TRAPEZE HANGERS FROM CONCRETE INSETS OR APPROVED STRUCTURAL CLIPS.
G. HANGERS IN GENERAL – INSTALL ALL PIPING SO THAT IT WILL BE FREE TO EXPAND AND CONTRACT WITHOUT CREATING UNDUCE STRESSES IN PIPING SYSTEM.

2.2 ADJUSTING

- A. HANGER ADJUSTMENT: ADJUST HANGERS TO DISTRIBUTE LOADS EQUALLY ON ATTACHMENTS AND TO ACHIEVE INDICATED SLOPE OF PIPE.

SECTION 15075 – PLUMBING IDENTIFICATION

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING MECHANICAL IDENTIFICATION MATERIALS AND THEIR INSTALLATION:

2.1 PIPING IDENTIFICATION DEVICES

- A. PROVIDE "OPTI-CODE" PIPE MARKERS AND BRASS VALVE TAGS AS MANUFACTURED BY SETON NAMEPLATE CORPORATION OR AN APPROVED EQUAL. PIPE MARKERS SHALL BE SPACED 20'-0" ON CENTER AND 10'-0" FROM ALL 90 DEGREE ELBOWS.

SECTION 15083 – PIPE INSULATION

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES SEMI-RIGID AND FLEXIBLE PIPING INSULATION, INSULATING CEMENTS, FIELD-APPLIED JACKETS, ACCESSORIES AND ATTACHMENTS, AND SEALING COMPOUNDS.

1.2 QUALITY ASSURANCE

- A. FIRE-TEST-RESPONSE CHARACTERISTICS: PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED CAPABILITIES OF 25 AND 50 FOR PVC PIPING IN RETURN AIR PLENUMS, RESPECTIVELY, ACCORDING TO ASTM E 84 BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

PART 2 – PRODUCTS

2.1 PIPE INSULATION MATERIALS

- A. PROVIDE PIPING INSULATION OF MOLDED FIBERGLASS. THE INSULATION WILL BE USED FOR WATER PIPING INCLUDING HOT WATER SUPPLY LINES SUBJECT TO FREEZING OR CONDENSATION, CONDENSATE DRAINS, AND HORIZONTAL PORTIONS OF WASTE LINES ABOVE GRADE WHICH RECEIVE CONDENSATE FROM AIR HANDLING UNITS.

PART 3 – EXECUTION

3.1 PIPES

- A. APPLY INSULATION TO CLEAN, DRY PIPE. BUTT SEGMENTS FIRMLY TOGETHER. WHERE PIPING IS INTERRUPTED BY FITTINGS, FLANGES, VALVES, OR HANGERS, AND AT INTERVALS NOT TO EXCEED 25 FEET ON STRAIGHT RUNS, FORM AN INSULATING SEAL BETWEEN INSULATION AND PIPE BY LIBERAL APPLICATION OF ADHESIVE TO EXPOSED JOINT FACES AND ALONG 4 INCHES OF PIPE. ALL TURNS AND BENDS SHALL BE FITTED WITH PREMOLDED FITTING COVERS. MITERING OF THESE COMPONENTS SHALL NOT BE ACCEPTABLE.

3.2 FLANGES

- A. AT FLANGES, SEAL OFF INSULATION WITH BF 30-35 VAPOR BARRIER MASTIC. APPLY ADDED LAYERS OF INSULATION AT LEAST 2 INCHES WIDE AND OF THE REQUIRED THICKNESS TO MAKE THE OUTSIDE DIAMETER OF THE INSULATION EQUAL TO THE OUTSIDE DIAMETER OF THE FLANGES. VAPOR SEAL EACH LAYER COMPLETELY AND INDEPENDENTLY WITH ADHESIVE. APPLY A FINAL RING OF INSULATION OF FULL THICKNESS AND LONG ENOUGH TO COVER THE BUILT-UP SECTION.

3.3 VALVES AND FITTINGS

- A. SEAL OFF THE PIPE INSULATION AT VALVES AND FITTINGS, WITH BF 30-35 VAPOR BARRIER MASTIC. COVER VALVES AND FITTINGS WITH MOLDED OR MITERED FITTING COVERS AND VAPOR SEAL AS SPECIFIED FOR FLANGES.
B. CARRY THE INSULATION ON THE VALVE BONNET FULL THICKNESS TO THE PACKING NUT OR TO THE STUFFING BOX. MAKE THE TOP OF THE INSULATION BOX PARALLEL TO THE VALVE WHEEL, TO FORM A SQUARE CORNER AT THE INTERSECTION WITH THE BONNET COVERING.
C. OMIT INSULATION AT SCREWED UNIONS AND AT VALVES SMALLER THAN 1".

3.4 PIPE INSULATION APPLICATION SCHEDULE

- A. INSULATING MATERIALS AND METHODS OF APPLICATION ARE BASED ON KNAUF ASI/SSL-11 PRODUCTS. OTHERS WILL BE ACCEPTABLE PROVIDED THEY ARE EQUAL IN INSULATING COEFFICIENTS AND HAVE SIMILAR PERMEABILITY OF VAPOR BARRIER JACKETS PROVIDE THICKNESS AS SHOWN IN THE FOLLOWING:

Table with 2 columns: PIPING and THICKNESS (INCHES). Rows include CONDENSATE DRAINS, COLD WATER PIPING, HOT WATER PIPING, ALL DROPS INSIDE INTERIOR STUDWALLS, ALL CW DROPS INSIDE EXTERIOR WALLS.

SECTION 15110 – VALVES

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES GENERAL-DUTY VALVES:

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF VALVE INDICATED, INCLUDE BODY, SEATING, AND TRIM MATERIALS, VALVE DESIGN, PRESSURE AND TEMPERATURE CLASSIFICATIONS, END CONNECTIONS, ARRANGEMENT, DIMENSIONS, AND REQUIRED CLEARANCES. INCLUDE LIST INDICATING VALVE AND ITS APPLICATION. INCLUDE RATED CAPACITIES, FURNISHED SPECIALTIES, AND ACCESSORIES.

PART 2 – EXECUTION

2.1 VALVE APPLICATIONS

- A. WATER PIPING CONTROL AND SERVICE VALVES SHALL BE PROVIDED BY THIS CONTRACTOR WHERE REQUIRED TO ADEQUATELY CONTROL AND ISOLATE THE VARIOUS WATER PIPING SYSTEMS. VALVES SHALL BE AS MANUFACTURED BY NIBCO, CRANE, STOCKHAM, JOMAR, JENKINS, KENNEDY, WALWORTH OR GRINNELL AND EQUAL TO NIBCO NUMBERS AS STATED BELOW:

- 1. THE MAIN SHUT-OFF VALVE, INSIDE THE BUILDING ON THE WATER SUPPLY WILL BE A GATE VALVE. PROVIDE THE VALVE EQUAL TO NIBCO SOLDER JOINT, 125 LB. BRONZE GATE WITH RISING STEM AND DOUBLE-DISC. THIS VALVE SHALL BE SELECTED AT ONE FULL PIPE SIZE LARGER THAN THAT SPECIFIED ON THE PLAN.
2. ALL OTHER VALVES THROUGHOUT THE WATER PIPING SHALL BE EQUAL TO NIBCO S-585-70 SOLDER JOINT, 125 LB., AND BRASS BALL VALVES WITH FULL PORT OPENINGS.
3. CHECK VALVES SHALL BE EQUAL TO NIBCO, 600 SERIES, SPRING CHECK WITH BRONZE BODY.
4. TEMPERATURE AND PRESSURE RELIEF VALVES SHALL BE ASME RATED WATTS VALVE OR APPROVED EQUAL.

SECTION 15140 – WATER PIPING

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES WATER PIPING INSIDE THE BUILDING.

PART 2 – PRODUCTS

2.1 PIPING MATERIALS

- A. WATER PIPING LOCATED BELOW THE BUILDING SLAB, SHALL BE ASTM B 88, TYPE "K" SOFT ANNEALED COPPER WATER PIPE. FITTINGS TO BE ASTM B 16.18, CAST BRONZE, ASTM B 16.22 WROUGHT COPPER ALLOY OR ASTM B 16.26 CAST BRONZE FOR FLARED FITTINGS. FITTINGS TO BE SWEAT SOLDERED OR FLARED. NO JOINTS SHALL BE PERMITTED IN PRESSURE WATER PIPE BELOW SLAB ON GRADE. ALL SUCH PIPING MUST BE BROUGHT UP ABOVE FINISHED FLOOR LINE A MINIMUM OF 12" BEFORE JOINING. EXCEPTION MAY BE TAKEN WHEN PIPE IS FULLY ENCLOSED IN PRESSURE RATED SLEEVE AND PRE-APPROVED BY THE ARCHITECT/ENGINEER.
B. WATER PIPING LOCATED ABOVE THE BUILDING SLAB, SHALL BE ASTM B 88 TYPE "L" HARD DRAWN COMMERCIAL COPPER WATER PIPE. FITTINGS TO BE ASME B 16.18, CAST BRONZE OR ASTM B 16.22 WROUGHT COPPER ALLOY. JOINTS TO BE ASTM B 32 SOLDER.
C. DIELECTRIC INSULATING COUPLINGS SHALL BE PROVIDED BETWEEN FERROUS AND COPPER PIPING SYSTEMS.

PART 3 – EXECUTION

3.1 EXCAVATION

- A. TRENCHES FOR ALL UNDERGROUND PIPING SYSTEMS SHALL BE EXCAVATED TO THE REQUIRED DEPTHS. IN THE CASE OF SEWER LINES, THE BOTTOM OF THE TRENCHES SHALL BE GRADED TO SECURE THE NECESSARY FALL. NEVER ALLOW THE SEWER LINES TO COME IN CONTACT WITH UNDERGROUND REFRIGERANT PIPING. SANITARY SEWER LINES OUTSIDE THE BUILDING SHOULD BE KEPT AS DEEP AS PRACTICABLE WITH A MINIMUM COVER OF 12". PROVIDE CLEAN WASHED SAND FILL 6" BELOW, ON TOP AND BOTH SIDES OF THE LINES, TAMPED TO MAXIMUM COMPACTION INSIDE THE TRENCH LOCATED INSIDE OR OUTSIDE THE BUILDING.

- B. ALL TRENCH EXCAVATION REQUIRED ON THIS PROJECT SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS AS PART 1926, SUBPART P-EXCAVATIONS, TRENCHING AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS STANDARD AND INTERPRETATIONS.

3.2 JOINT CONSTRUCTION

- A. SOLDERED JOINTS: USE ASTM B 813, WATER-FLUSHABLE, LEAD-FREE FLUX, ASTM B 32, LEAD-FREE-ALLOY SOLDER, AND ASTM B 828 PROCEDURE, UNLESS OTHERWISE INDICATED.

3.3 HANGER AND SUPPORT INSTALLATION

- A. PIPE HANGER AND SUPPORT DEVICES ARE SPECIFIED IN DIVISION 15 SECTION "HANGERS AND SUPPORTS."

3.4 FIELD QUALITY CONTROL

- A. INSPECT WATER PIPING AS FOLLOWS:

- 1. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.
2. REINSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TEST OR INSPECTION, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR REINSPECTION.

- B. TEST WATER PIPING AS FOLLOWS:

- 1. LEAVE NEW, ALTERED, EXTENDED, OR REPLACED WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.
2. WATER PIPING SYSTEMS: WATER PIPING SYSTEMS SHALL BE PROPERLY TESTED TO A HYDROSTATIC PRESSURE OF ONE HUNDRED AND FIFTY POUNDS (150 PSI) PER SQUARE INCH GAUGE FOR A PERIOD OF NOT LESS THAN EIGHT HOURS. DURING THIS TEST PERIOD, ALL LEAKS IN PIPE, FITTINGS AND ACCESSORIES, IN THE PARTICULAR PIPING SYSTEM, WHICH IS BEING TESTED, SHALL BE STOPPED AND THE HYDROSTATIC TEST SHALL AGAIN BE APPLIED. THIS PROCEDURE SHALL BE REPEATED FOR AN ENTIRE EIGHT-HOUR PERIOD AND NO LEAKS CAN BE FOUND WHILE THE SYSTEM BEING TESTED IS SUBJECTED TO THE PRESSURE MENTIONED ABOVE.
3. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.

3.5 CLEANING

- A. THE ENTIRE WATER PIPING SYSTEM UPON COMPLETION SHALL BE STERILIZED WITH A SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF CHLORINE. THE STERILIZATION SOLUTION SHALL BE ALLOWED TO REMAIN IN THE SYSTEM FOR A PERIOD OF TWENTY-FOUR (24) HOURS, DURING WHICH TIME ALL VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER STERILIZATION, THE SOLUTION SHALL BE FLUSHED FROM THE SYSTEM WITH CLEAN WATER UNTIL THE RESIDUAL CHLORINE CONTENT IS NOT GREATER THAN 0.2 PARTS PER MILLION.

SECTION 15150 – SANITARY WASTE AND VENT PIPING

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING SOIL AND WASTE, SANITARY DRAINAGE AND VENT PIPING DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION, INSIDE THE BUILDING:

- 1. PIPE, TUBE, AND FITTINGS.
2. SPECIAL PIPE FITTINGS.

PART 2 – PRODUCTS

2.1 PIPING MATERIALS

- A. SANITARY WASTE, GREASE WASTE, AND VENT PIPING WITHIN THE BUILDING BELOW GRADE TO BE:
1. PVC, ASTM D 1785/D 2729 SCHEDULE 40; INSTALLED PER ASTM D 2321; SOLVENT WELD WITH ASTM D 2564 SOLVENT CEMENT, INSTALLED PER THE REQUIREMENTS OF ASTM D 2855 JOINTS.
B. SANITARY WASTE, GREASE WASTE AND VENT PIPING WITHIN THE BUILDING ABOVE GRADE TO BE:
1. CAST IRON, ASTM A 888, HUBLESS, SERVICE WEIGHT DRAINAGE PATTERN; HUBLESS JOINTS, ASTM C 564 NEOPRENE GASKETS AND STANDARD STAINLESS STEEL CLAMP AND SOLID SHIELD ASSEMBLIES CONSTRUCTED OF TYPE 300 SERIES STAINLESS STEEL. CLAMP ASSEMBLIES SHALL CONFORM TO FM 1680 WHERE REQUIRED BY THE ADMINISTRATIVE AUTHORITY.

PART 3 – EXECUTION

3.1 PIPING INSTALLATION

- A. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST 24 HOURS BEFORE INSPECTION MUST BE MADE. PERFORM TESTS SPECIFIED BELOW IN PRESENCE OF AUTHORITIES HAVING JURISDICTION.

3.2 HANGER AND SUPPORT INSTALLATION

- A. PIPE HANGERS AND SUPPORTS ARE SPECIFIED IN DIVISION 15 SECTION "HANGERS AND SUPPORTS."

3.3 FIELD QUALITY CONTROL

- A. HORIZONTAL WASTE AND SOIL PIPE 2 1/2" AND SMALLER SHALL BE GIVEN A GRADE OF 1/4" PER FOOT AND PIPING 3" AND LARGER SHALL BE GRADED AT 1/8" PER FOOT.
B. REINSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TEST OR INSPECTION, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR REINSPECTION.
C. SANITARY DRAINS: PIPES SHALL HAVE ALL OUTLETS TEMPORARILY PLUGGED. THE PIPES SHALL BE FILLED WITH WATER TESTING THE SYSTEM IN SECTION SUCH THAT NO SECTION SHALL BE TESTED WITH LESS THAN 10-FOOT (10') HEAD OF WATER. IF AFTER TWENTY-FOUR (24) HOURS, THE LEVEL OF THE WATER HAS BEEN LOWERED BY LEAKAGE, THE LEAKS MUST BE FOUND AND STOPPED BY THIS CONTRACTOR, AND THE WATER LEVEL SHALL AGAIN BE RAISED AND THE TEST REPEATED UNTIL AFTER TWENTY-FOUR HOUR RETENTION PERIOD THERE SHALL BE NO PERCEPTIBLE LOWERING OF THE WATER LEVEL OF THE SYSTEM BEING TESTED.

3.4 CLEANING

- A. CLEAN INTERIOR OF PIPING. REMOVE DIRT AND DEBRIS AS WORK PROGRESSES.
B. PROTECT DRAINS DURING REMAINDER OF CONSTRUCTION PERIOD TO AVOID CLOGGING WITH DIRT AND DEBRIS AND TO PREVENT DAMAGE FROM TRAFFIC AND CONSTRUCTION WORK.
C. PLACE PLUGS IN ENDS OF UNCOMPLETED PIPING AT END OF DAY AND WHEN WORK STOPS.

SECTION 15430 – PLUMBING SPECIALTIES

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES PLUMBING SPECIALTIES:

1.2 SUBMITTALS

- A. PRODUCT DATA: INCLUDE RATED CAPACITIES AND INDICATE MATERIALS, FINISHES, DIMENSIONS, REQUIRED CLEARANCES, AND METHODS OF ASSEMBLY OF COMPONENTS, AND PIPING AND WIRING CONNECTIONS FOR THE FOLLOWING:

- 1. WATER HAMMER ARRESTERS, AIR VENTS, AND TRAP SEAL PRIMER VALVES AND SYSTEMS.
2. COMPLY WITH NSF 61, "DRINKING WATER SYSTEM COMPONENTS--HEALTH EFFECTS, SECTIONS 1 THROUGH 9," FOR POTABLE WATER PLUMBING SPECIALTIES.

SECTION 15440 – PLUMBING FIXTURES

PART 1 – GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES PLUMBING FIXTURES:

1.2 SUBMITTALS

- A. FIXTURES AND ASSOCIATED TRIM: MANUFACTURER'S PRODUCT DATA SHOWING DIMENSIONS, CERTIFICATIONS, MATERIALS AND INSTALLATION INSTRUCTIONS.

1.3 QUALITY ASSURANCE

- A. ALL PLUMBING FIXTURES AND TRIM SHALL BE MANUFACTURED IN THE UNITED STATES.

1.4 PLUMBING FIXTURES:

- A. REFER TO PLUMBING FIXTURE SCHEDULE.

PART 2 – EXECUTION

2.1 INSTALLATION

- A. REFER TO DIVISION 15 SECTION "BASIC MECHANICAL MATERIALS AND METHODS" FOR PIPING JOINING MATERIALS, JOINT CONSTRUCTION, AND BASIC INSTALLATION REQUIREMENTS.

- B. CLEAN-OUTS: THE SIZES OF CLEAN-OUTS SHALL BE IDENTICAL WITH THE SIZE OF THE SOIL OR WASTE LINES IN WHICH THEY ARE PLACED, EXCEPT WHERE CLEAN-OUTS LARGER THAN FOUR INCHES (4") IN DIAMETER WILL NOT BE REQUIRED. CLEAN-OUTS SHALL BE INSTALLED AS INDICATED ON PLANS. ALL CLEAN-OUTS LOCATED IN EXTERIOR LOCATIONS SHALL BE ENCASED IN 24" X 24" X 6" CONCRETE PAD UNLESS INSTALLED IN A CONCRETE WALK, DRIVE OR OTHER CONCRETE AREAS. ALL CLEAN-OUTS INSTALLED IN WALLS OR OTHER PAINTED SURFACES SHALL BE OF A TYPE FURNISHED IN PRIME COAT TO BE PAINTED ON THE JOB TO MATCH THE SURFACE IN WHICH THEY ARE INSTALLED. ALL COVER PLATES ON CLEAN-OUTS SHALL BE ATTACHED WITH VANDAL-PROOF SCREWS.
C. CLEAN-OUTS SHALL BE BY MIFAB OR APPROVED EQUAL.

- D. WHERE COPPER PIPE PASSES THROUGH SHEET METAL STUDS, USE PVC INSERTS FROM "PLASTIC ODDITIES" TO ISOLATE PIPE FROM THE STUDS. ALSO USE IPC APPROVED TYPE ISOLATION TAPE AROUND THE CIRCUMFERENCE OF ALL COPPER WATER TUBING, WHERE STEEL PIPE SUPPORTS AND STEEL PIPE DAMPS WOULD COME IN CONTACT WITH COPPER TUBING. INSTALL TWO TO THREE WRAPS AT EACH PIPE SUPPORT.
E. INSTALL ESCUTCHEONS AT WALL, FLOOR, AND CEILING PENETRATIONS IN EXPOSED FINISHED LOCATIONS AND WITHIN CABINETS AND MILLWORK. USE DEEP-PATTERN ESCUTCHEONS IF REQUIRED TO CONCEAL PROTRUDING PIPE FITTINGS.



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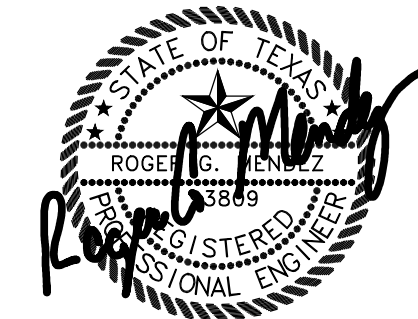
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PLUMBING SPECIFICATIONS

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Table with 2 columns: CAD, JH/RAW/HG, P, HN, E, MC, M, TP, RW, RCM