

PLUMBING SPECIFICATIONS:

1. GENERAL:

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED, WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. AS CERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITION.
- E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- G. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTTING OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.
- H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.
- I. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- J. THE LOCATIONS OF THE EXISTING SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
- K. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH A U.L.-LISTED FIRESTOPPING ASSEMBLY MATCHED TO THE RATING OF THE PENETRATED ELEMENT.
- L. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPING AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- M. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR, OR AS DIRECTED BY THE OWNER.
- N. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- O. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- P. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- Q. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- R. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- 1) ALL MATERIAL AND EQUIPMENT ON SITE SHALL BE PROPERLY STORED SUCH THAT IT IS PROTECTED FROM DAMAGE AND EXPOSURE TO THE OUTSIDE ELEMENTS.
- S. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, INCLUDING EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING PIPE SIZES, CLEARANCES, ETC. AND CONDITIONS.
- T. INSURANCE: PROVIDE IN ACCORDANCE WITH BUILDING REQUIREMENTS AND POLICY SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- U. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

2. SCOPE OF WORK:

- A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE MAINE STATE INTERNATIONAL PLUMBING CODE (UPC 2007) AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
- 1) OFFSET, RAISE, LOWER OR RE-ROUTE ANY EXISTING PLUMBING PIPING IN CONFLICT WITH OTHER TRADES. REMOVE EXISTING ABANDONED PIPING BACK TO ACTIVE MAINS AND CAP.
- 2) PROVIDE FIXTURES, FLOOR DRAIN, ETC. INSTALL PIPING CONNECTING TO EXISTING SOIL AND VENT STACKS AND C.W. RISER.
- 3) THE BASE BUILDING DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.
- B. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- C. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFOR. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY AND REQUIRED SIGN-OFFS AND APPROVALS FOR THE WORK INSTALLED.
3. SHOP DRAWINGS:
- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:
- 1) PROJECT NAME AND LOCATION.
- 2) NAME OF ARCHITECT AND ENGINEER.
- 3) ITEM IDENTIFICATION.
- 4) APPROVAL STAMP OF PRIME CONTRACTOR.
- C. SUBMISSIONS:
- 1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER. IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
- 2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- 1) PIPE AND FITTINGS.
- 2) VALVES.
- 3) PLUMBING FIXTURES AND TRIM.
- 4) PIPING LAYOUTS.
- 5) SUPPORTS, HANGERS AND GUIDES.
- 6) INSULATION.
- 7) WATER HEATERS.
4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS:
- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.
- D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.
- E. CONTRACTOR TO SUBMIT AS-BUILT DRAWING IN AUTOCAD FILE FORMAT R-10 OR LATEST.
5. GENERAL PROVISIONS FOR PLUMBING WORK:
- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
- B. DEFINITIONS:
- 1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- 6) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- 7) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN, PERFORMANCE AND EFFICIENCY OF SPECIFIED PRODUCT.
- C. QUALITY ASSURANCE:
- 1) QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, AND FREE FROM DEFECTS. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
- 2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF WORK.
- D. PRODUCT DELIVERY, STORAGE AND HANDLING:
- 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
- 2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW.
- E. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK THAT IS SOILED OR DAMAGED. CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.
- F. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL PLUMBING FIXTURES SHALL BE VERIFIED BY ARCHITECT.
- G. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
6. PIPE AND FITTINGS:
- A. SANITARY DRAINAGE AND VENT:
- 1) HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH ANCON FOUNDRY HUSKIE SERIES 4000 EXTRA WIDE HEAVY DUTY GASKETED HUBLESS COUPLINGS FOR ALL ABOVE GROUND PIPING.
- 2) HUB AND SPIGOT CAST IRON PIPE AND FITTINGS WITH NEOPRENE GASKETED JOINTS FOR ALL UNDERGROUND PIPING.
- 3) JIM CAPS AND FERGUSON FITTINGS COUPLINGS ARE NOT ACCEPTABLE.
- B. DOMESTIC WATER:
- 1) TYPE "L" HARD COPPER TUBING WITH CAST BRONZE OR WROUGHT COPPER FITTINGS AND LEAD-FREE SOLDER JOINTS.
- 2) STANDARD WEIGHT RED BRASS PIPE WITH STANDARD WEIGHT CAST BRONZE THREADED FITTINGS.
- C. INDIRECT WASTE:
- 1) TYPE "L" HARD COPPER TUBING WITH WROUGHT COPPER FITTINGS AND LEAD-FREE SOLDER JOINTS.
- D. ALL EXPOSED PIPE AND FITTINGS SHALL BE CHROME PLATED BRASS.
- E. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.
7. VALVES:
- A. GATE VALVES:
- 1) BRONZE RISING STEM, 200 PSI SIMILAR TO NIBCO T-111 (THREADED), 5-111 (SWEAT).
- B. BALL VALVES:
- 1) TWO-PIECE, BRONZE, END ENTRY, 600 PSI WWP, SIMILAR TO NIBCO T-555-10 (THREADED), 5555-10 (SWEAT).
- C. CHECK VALVES:
- 1) BRONZE, THREADED CAP, TEFLON DISC, SIMILAR TO NIBCO T-433 (THREADED), 5-433 (SWEAT).
- D. INSULATION:
- A. ALL INSULATION (INCLUDING JACKET, FACING AND ADHESIVE) SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURES LISTED IN ASTM E-84, NFPA 255 AND UL 213, NOT EXCEEDING A FLAME SPREAD OF 25 AND A SMOKE DEVELOPED OF 50.
- B. PROVIDE PVC SHIELDED PREMOLDED FIBERGLASS INSULATION FITTINGS ON ALL VALVES AND PIPE FITTINGS.
- 1) PROVIDE VAPOR BARRIER ON ALL COLD WATER VALVES AND FITTINGS.
- C. PIPE INSULATION SHALL BE SECTIONAL COVERED FIBERGLASS SECURED IN PLACE WITH ADHESIVE TAPE BANDS 1 INCH WIDE.
- 1) INSULATION SHALL NOT BE SECURED WITH STAPLES.
- D. PROVIDE 1/2 INCH THICK INSULATION WITH VAPOR BARRIER ON ALL COLD WATER PIPING.
- E. PROVIDE 1 INCH THICK INSULATION ON ALL HOT WATER PIPING.
9. PLUMBING FIXTURES:
- A. PROVIDE ALL FIXTURES WITH STOP VALVES AND SUPPLIES AND FIXTURE TRAPS AS REQUIRED.
- B. ALL FIXTURES SHALL BE AS INDICATED ON ARCHITECTURAL DRAWINGS.
- C. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES.

10. PIPING SUPPORTS:

- A. SUPPORT ALL PIPING FROM BUILDING CONSTRUCTION BY PROVIDING INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), AND ACCEPTABLE BRACKETS. SUBMIT ALL METHODS FOR REVIEW.
- B. PROVIDE TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS FOR GROUPED LINES AND SERVICES.
- C. PROVIDE ADDITIONAL FRAMING WHERE BUILDING CONSTRUCTION IS INADEQUATE. SUBMIT FOR REVIEW.
- D. SUSPENDED HORIZONTAL PIPING:
- 1) SUPPORT ALL PIPING INDEPENDENTLY FROM STRUCTURE USING HEAVY IRON-HINGED TYPE HANGERS, SIMILAR TO GRINNELL CLEVIS NO. 260.
- 2) PROVIDE ELECTROPLATED SOLID-BAND HANGERS SIMILAR TO AUTO-GRIP, FOR TWO-INCH AND SMALLER PIPE.
- 3) PROVIDE WALL BRACKETS FOR WALL-SUPPORTED PIPING, AND PROVIDE PIPE SADDLES FOR FLOOR-MOUNTED PIPING.
- 4) PROVIDE SUPPORTS WITH COPPER LINING FOR UNINSULATED COPPER PIPING.
- 5) SUSPEND PIPING FROM INSERTS, USING BEAM CLAMPS WITH RETAINING CLAMP OR LOCKNUT, STEEL FISH PLATES, CANTILEVER BRACKETS OR OTHER ACCEPTED MEANS. BEAM CLAMPS SHALL BE SIMILAR TO GRINNELL FIGURES 61, 67, 131, OR 225.
- 6) SUSPEND PIPING BY RODS WITH DOUBLE NUTS.
- 7) PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND ACCEPTED WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING HANGER RODS IN REQUIRED LOCATIONS.
- 8) SUPPORT BRANCH FIXTURE WATER PIPING IN CHASSES WITH COPPER-PLATED METAL BRACKETS, SECURED TO STUDS, SIMILAR TO HOLDRITE NOS. 102-10, 107-10, 102-26, OR 101-26.
- E. PROVIDE 180 DEGREE ARC GALVANIZED METAL COVERING SHIELDS ON HANGERS FOR INSULATED PIPING WITHOUT INCOMPRESSIBLE INSULATING BLOCK IN INSULATION AT HANGERS.
- F. MAXIMUM HANGER SPACING AS INDICATED:
- 1) PIPE 1 INCH AND SMALLER SHALL BE EVERY 8 FEET.
- 2) PIPE 1-1/4 INCH AND LARGER SHALL BE EVERY 10 FEET.
- 3) COPPER TUBING 1-1/4 INCH AND SMALLER SHALL BE EVERY 6 FEET.
- 4) COPPER TUBING 1-1/2 INCH AND LARGER SHALL BE EVERY 10 FEET.
- 5) CAST IRON: EVERY 5 FEET AND AT EVERY FITTING OR JOINT.
- G. VERTICAL PIPING:
- 1) PROVIDE EXTENSION PIPE CLAMPS BOLTED TO BARE PIPE ON EACH SIDE AND BEARING EQUALLY ON STRUCTURE OR WELDED TO BEAM.
- 2) PROVIDE SPACING AS INDICATED:
- a. THREADED PIPING SHALL BE EVERY OTHER FLOOR LEVEL, AT A MAXIMUM OF 25 FEET ON CENTERS.
- b. CAST IRON PIPING SHALL BE EVERY FLOOR LEVEL, MAXIMUM 20 FEET ON CENTERS; HUBLESS PIPE IS THE EXCEPTION, REQUIRING A MAXIMUM OF 10 FEET ON CENTERS.
- c. TUBING SHALL BE EVERY FLOOR LEVEL MAXIMUM 10 FEET ON CENTERS.
- H. EXPANSION ANCHORS:
- 1) PROVIDE SMOOTH WALL, NON-SELF-DRILLING INTERNAL FLUG EXPANSION TYPE ANCHORS CONSTRUCTED OF AISC 12L14 STEEL AND ZINC PLATED IN ACCORDANCE WITH FED. SPEC. QQ-A-325 TYPE 1, CLASS 3.
- 2) DO NOT EXCEED 1/4 OF AVERAGE VALVES FOR A SPECIFIC ANCHOR SIZE USING 2000 PSIG (13,800 KPA) CONCRETE ONLY, FOR MAXIMUM WORKING LOADS.
- 3) PROVIDE SPACING AND INSTALL ANCHORS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 4) EXPANSION ANCHORS SHALL BE UL LISTED AND SIMILAR TO HILTI HDI.
11. TESTS:
- A. ALL PLUMBING SYSTEMS SHALL BE TESTED FOR CONTINUITY AND PROPER OPERATION.
- B. DOMESTIC WATER PIPING:
- 1) TEST PIPING HYDROSTATICALLY AT A PRESSURE OF 125 PSI.
- 2) DURATION OF TEST SHALL BE 2 HOURS WITHOUT A LOSS IN PRESSURE.
- C. DRAINAGE AND VENT PIPING:
- 1) CAP ALL OUTLETS AND FILL PIPING SYSTEM TO OVERFLOWING FROM A POINT AT LEAST 10 FEET ABOVE THE FLOOR.
- 2) THE WATER LEVEL SHALL REMAIN CONSTANT THROUGHOUT THE TEST DURATION OF 2 HOURS.
- D. ARRANGE AND COORDINATE TESTS WITH OWNER 48 HOURS IN ADVANCE. NOTIFY ENGINEER AND ARCHITECT OF TEST DATE AND TIME.
- E. DEFECTS DISCLOSED BY THE TESTS SHALL BE REPAIRED OR REPLACED. TESTS SHALL BE REPEATED AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY.
- F. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO THE BUILDING AND ITS CONTENTS AS A RESULT OF SUCH TESTS. REPAIR ANY DAMAGE CAUSED.

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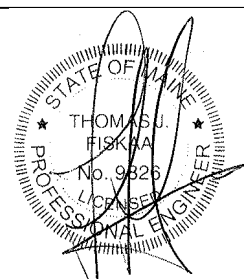
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Issue	Date	Issue	Date
A. ISSUE FOR LL REVIEW & HISTORIC REVIEW	07/10/2015		
B. ISSUE FOR DEMO PERMIT	07/20/2015		
C. ISSUE FOR PERMIT	07/24/2015		

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Drawing Title PLUMBING SPECIFICATIONS

Project No.	Drawn By	Date	Scale
15-102-00	JB	---	NONE
Seal		Floor(s)	



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