

**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 MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
  - C. PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.
  - D. SUPPORT ALL PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
  - 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. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING.
  - H. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.
  - I. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.
  - J. 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.
  - K. SEAL OPENINGS AROUND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER APPROVED NONCOMBUSTIBLE MATERIAL.
  - L. 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 SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
  - M. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
  - N. 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.
  - O. 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.
  - P. 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.
  - Q. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
  - R. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, 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. 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 PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.
  - S. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
  - T. 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.
  - U. 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 AND EFFICIENCY OF SPECIFIED PRODUCT.

- E. INSTALLATION:
  - 1) BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.
  - 2) ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 IN. LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED. STAPLES NOT PERMITTED. REFRIGERANT PIPING INSULATION SHALL HAVE MITERED FITTINGS.
  - 3) ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION.
  - 4) INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

7. LOW TEMPERATURE WATER SYSTEMS, BELOW 100 PSIG, -20 TO 200 DEG F OPERATING TEMPERATURES.
  - A. COPPER, TYPE L, HARD DRAWN IN ACCORDANCE WITH ASTM B88, AND LEAD-FREE SOLDER JOINTS.
  - B. FITTINGS:
    - 1) 2 IN. AND SMALLER: 125 LB WSP CAST IRON THREADED FITTINGS SHALL BE IN ACCORDANCE WITH ANSI B16.4., CAST IRON FLANGED FITTINGS SHALL BE IN ACCORDANCE WITH ANSI B16.1.
    - 2) COPPER: WROUGHT COPPER, SOLDERED, 95/5TA, ANSI B16.22.
  - C. VALVES:
    - 1) BALL VALVES:
      - a. TWO-PIECE, BRONZE, END ENTRY, 600 PSI WWP, SIMILAR TO NIBCO T-585-70 (THREADED), S585-70 (SWEAT).
  - D. PROVIDE MANUAL AIR VENTS LINE SIZE AIR CHAMBER WITH 1/2 IN. GLOBE VALVE AT ALL HIGH POINTS AND WHERE FLOW DIRECTION CHANGES FROM HORIZONTAL TO DOWNWARD.
  - E. PITCH WATER PIPING EXCEPT AS NOTED:
    - 1) UP TO 1 IN.: 1 IN. IN 40 FT.
    - 2) 1-1/2 IN. AND LARGER: 1 IN. IN 100 FT.
8. PLUMBING FIXTURES
  - A. FIXTURES TO BE COMMERCIAL GRADE / INSTITUTIONAL TYPE LOW CONSUMPTION, AND ADA COMPLIANT WHERE INDICATED ON THE PLANS AND WHERE REQUIRED BY CODE.
  - B. REFER TO SCHEDULES FOR BASIS OF DESIGN.
  - C. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES.
  - D. PROVIDE ALL FIXTURES WITH STOP VALVES AND SUPPLIES AND FIXTURE TRAPS AS REQUIRED.
  - E. PROVIDE TAMPER RESISTANT SCREWS FOR ALL INSTALLATION APPLICATIONS.

5. PIPING - GENERAL REQUIREMENTS
  - A. COMPLETE WITH: PIPE, FITTINGS, VALVES, STRAINERS, MOTORIZED VALVE OPERATORS, STRAINERS, HANGERS, SUPPORTS, GUIDE, SLEEVES, AND ACCESSORIES.
  - B. ALL ITEMS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING CODES AND STANDARDS:
    - 1) AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
    - 2) AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
    - 3) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
    - 4) MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS).
  - C. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS (PROPANE SHALL BE 4 HOURS) WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE.

- D. DRAINAGE AND VENT PIPING SHALL BE TESTED AS FOLLOWS:
  - 1) CAP ALL OUTLETS AND FILL PIPING SYSTEM TO OVERFLOWING FROM A POINT AT LEAST 10 FT ABOVE THE FLOOR. WATER LEVEL SHALL REMAIN CONSTANT THROUGHOUT A 2 HOUR TEST DURATION.
- E. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.
- F. PROVIDE DIELECTRIC NIPPLES WHERE DISSIMILAR METALS ARE TO BE JOINED.

- G. PIPE SUPPORTS:
  - 1) PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
  - 2) FURNISH AND INSTALL EXPANSION COMPENSATORS FOR ALL LONG, STRAIGHT RUNS OF PIPING BETWEEN ANCHORED POINTS. SUBMIT TYPE AND PERFORMANCE TO ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
  - 3) HORIZONTAL PIPING TO BE SUPPORTED BY FORGED STEEL ADJUSTABLE CLEVIS TYPE HANGER. MAXIMUM SPACING AS FOLLOWS:
    - a. COPPER 3 IN. AND SMALLER: 7 FT.
    - b. ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION, RUNOUTS, AND CONCENTRATED LOADS DUE TO VALVES, ETC.
  - 4) VERTICAL PIPING:
    - a. BASE ELBOW SUPPORT WITH BEARING PLATE ON STRUCTURAL SUPPORT.
    - b. GUIDES AT EVERY SECOND FLOOR (SPACING NOT TO EXCEED 25 FT).
    - c. TOP SUPPORT HANGER OR SADDLE IN HORIZONTAL CONNECTION WITH PROVISIONS FOR EXPANSION.
    - d. INTERMEDIATE STEEL RISER CLAMP SUPPORT BOLTED AND WELDED TO PIPE BEARING ON STRUCTURAL STEEL OR BEARING PLATE AT FLOOR.
  - 5) 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.

6. SANITARY DRAINAGE AND VENT
  - A. HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH ANCON FOUNDRY HUSKIE SERIES 4000 EXTRA WIDE HEAVY DUTY GASKETED HUBLESS COUPLINGS.
    - 1) APPLICATION: ABOVE SLAB.
      - a. PITCH: 1/4"/FT. - SANITARY
      - b. PITCH 1/8"/FT. - VENT

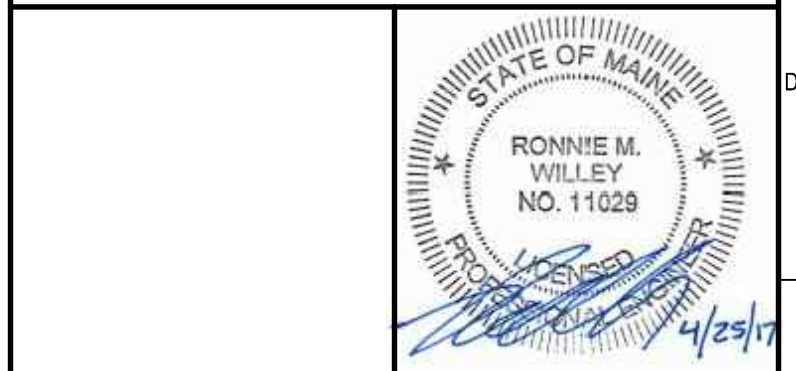
PLUMBING FIXTURE CONNECTION SCHEDULE						
FIXTURE	CW	HW	TW	WASTE	VENT	NOTES
SINK	1/2"	1/2"	-	1-1/2"	1-1/2"	1
NOTES: 1. PROVIDE AIR CHAMBERS ON HW & CW CONNECTIONS						

SHOCK ABSORBER SCHEDULE			
TYPE	FIXTURE UNIT RATING	BASIS OF DESIGN	
		MANUF.	FIGURE NO.
A'	1-10	ZURN	100
B'	12-32	ZURN	200
C'	33-60	ZURN	300
D'	61-113	ZURN	400
E'	114-154	ZURN	500
F'	155-330	ZURN	600

PLUMBING FIXTURE SCHEDULE						
TAG	DESCRIPTION	FIXTURE	FAUCET/DRAIN	TRIM	SUPPORT	NOTES
SK-A	COUNTER MOUNTED EXAM SINK -ADA	ELKAY #LRAD151765PD, 15"X17"X6-1/2" DEPTH, 18 GUAGE, 304 SS, (3) HOLES ON 4" CENTERS	CHICAGO FAUCETS #201-G8AE2805F317AB, WRISTBLADES, 0.5 GPM CHICAGO FAUCETS #327-XCP GRID DRAIN, OFFSET TAILPIECE, CHROME PLATED FINISHES	MCQUIRE LOOSE KEY ANGLE STOPS, ESCUTCHEONS AND RISERS-CHROME PLATED	-	1
SK-B	COUNTER MOUNTED MED ROOM SINK -ADA	ELKAY #LRAD221965PD, 22"X19"X6-1/2" DEPTH, 18 GUAGE, 304 SS, (3) HOLES ON 4" CENTERS	CHICAGO FAUCETS #786-G2AF-CB-CP, WRISTBLADES, 1.5 GPM CHICAGO FAUCETS #327-XCP GRID DRAIN, OFFSET TAILPIECE, CHROME PLATED FINISHES	MCQUIRE LOOSE KEY ANGLE STOPS, ESCUTCHEONS AND RISERS-CHROME PLATED	-	1,2
NOTES: 1. TRUEBRO #103 E-Z HANDI LAV-GUARD INSULATION KIT AND EXTENSIONS AS REQUIRED FOR ALL EXPOSED PIPING BENEATH SINK BASIN 2. PROVIDE OFFSET TAILPIECE FOR ADA ACCESSIBILITY.						

REV	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	4-25-17

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4-25-17

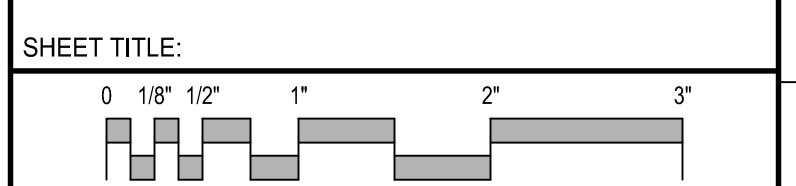


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**PLUMBING SPECIFICATIONS AND SCHEDULES**



SCALE: NOT TO SCALE  
PROJECT MANAGER: DJV PROJECT NO: 17027  
A/E OF RECORD: RMW  
JOB CAPTAIN: CAH  
DRAWN BY: CWF  
SMRT FILE: PL002-17027 SHEET No. PL002