

PLUMBING SPECIFICATION

PART 1: GENERAL

1.01 GENERAL DOCUMENTS

A. THE REQUIREMENTS OF THE GENERAL CONDITIONS & APPLICABLE SECTIONS SHALL APPLY TO ALL PLUMBING WORK. INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT FLORIDA BUILDING CODE - PLUMBING.

B. THE PLUMBING WORK SHALL INCLUDE FURNISHING ALL LABOR, EQUIPMENT, MATERIALS AND SERVICE NECESSARY FOR AND REASONABLY INCIDENTAL TO THE PROPER COMPLETION OF ALL PLUMBING WORK SHOWN ON THE DRAWINGS AND AS SPECIFIED. ALL MATERIAL SHALL BE NEW.

C. ALL MATERIALS AND EQUIPMENT SHALL BE THE STANDARD CATALOGED PRODUCT OF A REPUTABLE MANUFACTURER REGULARLY MANUFACTURING THE PARTICULAR ITEM, FREE FROM DEFECTS AND IN NEW CONDITION.

1.02 SUBMITTALS A. MATERIALS OR PRODUCTS SPECIFIED HEREIN AND/OR INDICATED ON DRAWINGS BY TRADE NAME, MANUFACTURER'S NAME OR CATALOG NUMBERS SHALL BE INTERPRETED AS ESTABLISHING A STANDARD OF QUALITY AND DESIGN. SUBSTITUTIONS SHALL NOT BE ALLOWED UNLESS THEY ARE SUBMITTED FOR REVIEW AND APPROVED BY BID DATE.

1.03 WORK BY OTHERS

A. THE FOLLOWING SYSTEMS AND/OR EQUIPMENT ARE NOT A PART OF THIS SECTION, BUT SHALL BE PROPERLY CONNECTED WITH ALL PLUMBING SERVICES:
 - ELECTRICAL POWER WIRING BY ELECTRICAL SUB-CONTRACTOR.
 - FIRE PROTECTION SYSTEM

1.04 SHOP DRAWINGS FURNISH SIX (6) COPIES OF SHOP DRAWINGS OF EQUIPMENT OR FIXTURES FOR APPROVAL PRIOR TO PURCHASING.

1.05 RECORD DRAWINGS

A. AFTER COMPLETION OF ALL WORK THE PLUMBING CONTRACTOR SHALL PROVIDE THE OWNER WITH AS BUILT RECORD DRAWINGS AS OUTLINED IN SPECIFICATIONS.

PART 2: PRODUCTS

2.01 PIPING

A. SOIL, WASTE, VENT PIPING & STORM DRAINAGE PIPING: ABOVE FLOOR AND BELOW SLAB: INTERIOR ABOVE FIRST FLOOR SLAB SHALL BE PVC-DWV SCHEDULE 40 PIPE AND FITTING BELOW AND ABOVE SLAB EXCEPT ANY PIPING LOCATED WITHIN PLENUM SPACES OR FIRE RATED WALLS SHALL BE SERVICE WEIGHT CAST IRON, NO HUB, WITH STAINLESS STEEL CLAMPS AND SHELDS WITH NEOPRENE SEALING SLEEVES.

B. DOMESTIC WATER PIPING: INTERIOR COLD, HOT AND HOT WATER RECIRCULATING PIPING ABOVE SLAB: DOMESTIC WATER PIPING SHALL BE TYPE L COPPER TUBING WITH LEAD FREE SOLDER JOINTS OR APPROVED PVC PIPING & FITTING. PVC PRESSURE TYPE PIPE & FITTINGS MAY BE USED ONLY IF APPROVED BY OWNER & LOCAL PLUMBING AUTHORITY.

C. PIPE INSULATION (COPPER TUBING): HOT WATER SUPPLY COPPER TUBING SHALL BE INSULATED WITH 1" THICK FIBERGLASS OR EQUAL, IN COMPLIANCE WITH APPLICABLE ENERGY CODES. ANY PIPING ABOVE SLAB RECEIVING COLD WATER DISCHARGE FROM A/C UNITS, ICE MACHINES, ETC. SHALL BE INSULATED WITH 1" THICK FIBERGLASS (OR EQUAL) INSULATION WITH VAPOR JACKET.

2.02 VALVES

A. EQUAL TO NIBCO, CRANE OR WALWORTH. ALL BRONZE 150 PSI. BALL OR GATE VALVES WITH RISING STEMS.

2.03 SPECIALTIES

A. PIPE PROTECTIVE COATING: FOR STEEL OR COPPER PIPE, PERMACEL OR SCOTCHWRAP VINYL TAPE APPLIED OVER PIPE TO A TOTAL MINIMUM THICKNESS OF 20 MILS. APPLY TO ALL WATER PIPE IN CONTACT WITH MASONRY OR CONCRETE.

B. PIPE HANGERS: HANGERS FOR BARE COPPER PIPE THROUGH 4 INCH (4") DIAMETER OR SMALLER SHALL BE ADJUSTABLE RING TYPE, PLASTIC COATED EQUAL TO MICHIGAN 102A, FOR STEEL PIPE MICHIGAN 100. ALL PIPE HANGERS IN AREA'S EXPOSED TO SALT ATMOSPHERE SHALL BE CORROSION RESISTANT. ALL WATER, SANITATION, STORM AND CONDENSATE STACKS SHALL HAVE A STACK CLAMP AT ALTERNATE FLOORS. HORIZONTAL & VERTICAL PIPE SUPPORT SHALL BE AS PER SCHEDULE BELOW:

PIPE HANGER SPACING TABLE			
PIPE MATERIAL	PIPE SIZES (INCHES)	HORIZONTAL PIPE MAX. HANGER DISTANCE (FEET)	VERTICAL PIPE MAX. HANGER DISTANCE (FEET)
COPPER & COPPER ALLOY TUBING	1" & SMALLER	6	10
COPPER & COPPER ALLOY TUBING	1" & LARGER	10	10
COPPER & COPPER ALLOY PIPE	ALL	12	10
CAST IRON PIPE	ALL	4 *	15
STEEL PIPE	ALL	12	15
STAINLESS STEEL DRAINAGE SYSTEM	ALL	10	10 **
CPVC & PVC PIPE	ALL	4	10 **

NOTES:
 * MAXIMUM HORIZONTAL SPACING OF CAST IRON PIPE HANGERS SHALL BE INCREASED TO TEN FEET WHERE 10' LENGTHS OF PIPE ARE USED.
 ** MIDSTORY GUIDE FOR SIZES 2" AND SMALLER
 *** NOT ALL PIPE MATERIALS ON THIS TABLE WILL PERTAIN TO THIS PROJECT

C. DRAINS AND CLEANOUTS: SEE SCHEDULE ON DRAWINGS.

D. DIELECTRIC UNIONS: EBCCO OR CAPITOL AT ALL POINTS OF CONNECTION BETWEEN DISSIMILAR PIPE METALS.

E. FLASHING AND VENT STACKS: ALL VENTS EXTENDING THROUGH THE ROOF SHALL BE PROVIDED WITH FOUR POUND SHEET LEAD FLASHING EXTENDING UPWARD AROUND THE PIPE AND TURNED DOWN INSIDE THE PIPE OR AS OTHERWISE SHOWN ON THE DRAWINGS. THE ROOF FLASHING SHALL BE INSTALLED BY LICENSED & INSURED ROOFING CONTRACTOR. ALL FLASHING IN METAL ROOF SHALL BE BY THE ROOF MANUFACTURER. MINIMUM DISTANCE FROM ANY FRESH AIR INTAKE SHALL BE 10'-0".

F. AIR CHAMBERS: AT EACH FIXTURE GROUP PROVIDE "SA" AS SPECIFIED IN SPECIALTIES SCHEDULE AND ELSEWHERE AS REQUIRED, AND IN ALL CONNECTIONS TO EQUIPMENT WITH SOLENOID VALVE INSTALLED ON WATER SUPPLY LINE PROVIDE ACCESS FOR WATER HAMMER ARRESTORS. THE WATER HAMMER ARRESTORS SHALL BE SIZED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

G. ESCUTCHEONS AND SLEEVES: WHERE PIPES PIERCE EXPOSED PARTITIONS, FLOORS, WALLS OR CEILINGS, PROVIDE CHROME PLATED ESCUTCHEONS TO COVER THE RAW EDGE.

H. SLEEVES SHALL BE PROVIDED AT RATED WALL ALL PIPE PENETRATIONS OF MASONRY, BAY WALL, CONCRETE WALLS AND FLOORS.

I. PROVIDE UL LISTED FIRE STOPPING PIPE PENETRATION ASSEMBLIES AT ALL PIPING THROUGH RATED WALLS AND ASSEMBLIES. SEE DETAILS ON THE DRAWING.

2.04 FIXTURES AND TRIM

A. ALL EXPOSED METAL TO BE CHROME PLATED. PROVIDE STOPS AND UNIONS AT ALL SUPPLIES AND CAST BRASS 1" TRAPS WITH CLEANOUT ON ALL WASTE.

B. FIXTURES BY AMERICAN STANDARD, KOHLER, ELJER, STERLING OR APPROVED EQUAL.

PART 3: EXECUTION

3.01. INSTALLATION

A. INSTALL PIPE ABOVE GROUND PLUMB AND SQUARE WITH BUILDING LINES, ADEQUATELY SUPPORTED WITHOUT SAGS OR HIGH POINTS. CONCEAL PIPING IN OCCUPIED AREAS AND MAINTAIN HEAD ROOM AND ACCESS SPACE IN UNFINISHED AREAS. SLEEVE PIPING THROUGH ALL WALLS, SLABS OR PARTITIONS WITH ESCUTCHEONS AT ALL FINISHED SURFACE. PROVIDE UNIONS AT ALL FINAL CONNECTIONS AND STOPS ON ALL SUPPLIES. ALL PIPE OPENINGS SHALL BE PLUGGED DURING INSTALLATION.

B. SANITARY DRAINAGE PIPING 3" & LARGER SHALL BE INSTALLED WITH A MINIMUM 1/8" PER FOOT SLOPE UNLESS NOTED OTHERWISE. ALL DRAINAGE PIPING 2 1/2" AND SMALLER SHALL BE INSTALLED WITH A MINIMUM OF 1/4" PITCH PER FOOT.

C. ALL FIXTURES AND TRIM FOR HANDICAPPED SHALL BE INSTALLED IN COMPLIANCE WITH ADA CODE.

D. INSTALL ALL PIPING TO ALLOW FOR EXPANSION.

E. SEE RISER DIAGRAMS FOR ALL DRAINAGE & VENT PIPE SIZING FOR THE PLUMBING SYSTEMS. REFER TO PLUMBING FLOOR PLAN (WATER SYSTEM) & SCHEDULES FOR ALL WATER PIPING SYSTEM SIZING.

F. ALL EXPOSED TO VIEW PIPING AND FITTINGS SHALL BE POLISHED CHROME FINISH.

G. ALL WORK HANDICAPPED TOILETS SHALL COMPLY WITH ADA REQUIREMENTS. & FLORIDA BUILDING CODE - CHAPTER 11 FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION.

H. FINAL CONNECTIONS TO DRAINAGE AND WATER SERVICE LINES TO EXISTING OR NEW AT 5'-0" FROM THE BUILDING WALLS SHALL BE BY THE PLUMBING CONTRACTOR.

3.02. DISINFECTING OF POTABLE WATER SYSTEM:

A. THE SYSTEM SHALL BE FILLED WITH A SOLUTION CONTAINING 50 PARTS PER MILLION OF AVAILABLE CHLORINE AND ALLOWED TO STAND SIX HOURS BEFORE FLUSHING AND RETURNING TO SERVICE. DISINFECTING PROCEDURE AND RESULT SHALL BE SUBJECT TO THE APPROVAL OF THE LOCAL PLUMBING INSPECTOR.

3.03. TESTS

A. ALL PLUMBING SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE-PLUMBING. ALL TESTS SHALL BE APPROVED BY THE LOCAL PLUMBING INSPECTOR AND SHALL BE OBSERVED BY A REPRESENTATIVE OF THE ARCHITECT.

3.04. SYSTEM IDENTIFICATION

A. THE PLUMBING CONTRACTOR SHALL PROVIDE IDENTIFICATION TIPS FOR ALL PIPING AND VALVES THE BUILDING AS PER OWNER ACCEPTED STANDARDS. THE PIPE MARKS SHALL INCLUDE PIPING SYSTEM IDENTIFICATION AND DIRECTIONS OF FLOW.

3.05. SPECIFICATIONS AND DRAWINGS

A. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE SANITARY, STORM AND DOMESTIC WATER PIPING SYSTEMS, INCLUDING ALL ASSOCIATED DEVICES, EQUIPMENT, CONTROLS AND CONNECTIONS TO NEW SERVICES. SUPPORTS SHALL BE PROVIDED FOR THE SATISFACTORY OPERATION OF THE SYSTEMS, SPECIFICALLY SHOWN OR NOT ON THE DRAWINGS.

B. THE PLANS SHOW THE LOCATION OF ALL FIXTURES AND EQUIPMENT AND ARE INTENDED TO DEPICT THE GENERAL INTENT OF THE WORK IN SCALE LAYOUT AND QUALITY OF WORKMANSHIP. THEY ARE NOT INTENDED TO SHOW IN MAJOR DETAIL EVERY AND ALL ACCESSORIES INTENDED FOR THE PURPOSE OF EXECUTION OF THE WORK, BUT IT SHALL BE UNDERSTOOD THAT SUCH DETAILS WILL BE PART OF THE WORK.

C. WHERE DRAWINGS AND SPECIFICATIONS CONFLICT, IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO BRING SUCH CONFLICT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.

D. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES.

E. CONTRACTOR SHALL KEEP A RECORD OF THE LOCATIONS OF ALL CONCEALED WORK AND, UPON COMPLETION OF THE JOB, SHALL SUPPLY AS-BUILT DRAWINGS SHOWING IN COLORED PENCIL ON BLACK LINE PRINTS ANY DEVIATION FROM THE ORIGINAL DRAWINGS. THESE DRAWINGS SHALL INDICATE DIMENSIONS OF BURIED UTILITY LINES FROM BUILDING WALLS.

F. ALL DOCUMENTS, TEST REPORTS & AS-BUILT DRAWINGS SHALL BE ATTACHED TO THE CLOSING DOCUMENT OF THE PROJECT.

3.06 WARRANTY:

A. THE PLUMBING CONTRACTOR SHALL WARRANT HIS WORK TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE OF ALL WORK.

3.07 COORDINATION

A. THE CONTRACTOR DOING THE SHEET METAL SHOP DRAWINGS AND THE PLUMBING, FIRE PROTECTION, AND HVAC FOREMAN AND GENERAL CONTRACTOR PROJECT MANAGER SHALL INSPECT & REVIEW THE CONDITIONS, AND SHALL COORDINATE THEIR WORK SO AS TO PROVIDE ADEQUATE SPACE ALLOWANCE ABOVE CEILING FOR ALL TRADES. ALL GRAVITY WASTE PIPING IN THE CEILING SPACE SHALL BE INSTALLED FIRST.

B. VERIFY LOCATIONS, SIZES, AND INVERT ELEVATIONS OF SANITARY DRAIN, AND DOMESTIC WATER PIPING CONNECTIONS WITH CIVIL ENGINEERING DRAWINGS PRIOR TO PROCEEDING WITH THE INSTALLATION OF ANY NEW WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED CONTRACTOR SHALL OBTAIN DIRECTION FROM THE ENGINEER BEFORE PROCEEDING.

C. COORDINATE WITH ARCHITECTURAL DRAWINGS WALL AND PARTITION CONSTRUCTION AND THICKNESS WHERE PLUMBING PIPING, FIXTURES CARRIERS OR EQUIPMENT IS INDICATED. BEFORE PLUMBING PIPING ROUGH-IN.

D. COORDINATE EXACT LOCATION, ELEVATIONS AND SIZES OF ALL SLEEVES IN NEW STRUCTURE WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.

3.08 PERMITS

A. PLUMBING CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AT HIS EXPENSE.



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SEAL

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SCALE: N.T.S.

PLUMBING SPECIFICATIONS

SHEET NUMBER

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