

PLUMBING SPECIFICATIONS

A. GENERAL CONDITIONS:

- WORK UNDER THIS CONTRACT SHALL CONSIST OF, BUT IS NOT LIMITED TO, FURNISHINGS, INSTALLATION, TESTING, AND WARRANTY OF PLUMBING AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
- THE WORD "PROVIDE" SHALL BE DEFINED TO MEAN "FURNISH AND INSTALL, COMPLETE, AND OPERATING."
- WHERE THE WORD "EQUAL TO" IS USED THE CONTRACTOR SHALL HAVE THE OPTION OF SELECTING BETWEEN ONE OF THE ADDITIONAL NAMES OR MANUFACTURERS LISTED AND MAY SUBMIT PRODUCTS SUBJECT TO ENGINEER'S APPROVAL.
- PROVIDE THE OWNER CERTIFICATES OF APPROVAL FROM INSPECTION AGENCIES.
- WORK MUST CONFORM TO ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS, ORDINANCES, AND REGULATIONS.

B. INSTALLATIONS:

- INSPECT THE EXISTING FACILITY AND VERIFY LOCATIONS OF ALL EXISTING FACILITIES.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEM; HOWEVER, MAKE FIELD ADJUSTMENTS TO INSURE CORRECT FIT.
- PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL EQUIPMENT OR ABOVE ACCESS TO SAME PER "NEC" GUIDELINES.
- WORK SHALL BE PLANNED AND EXECUTED TO PROVIDE REASONABLY CONTINUOUS SERVICE OF EXISTING FACILITY. DISRUPTION OF EXISTING SERVICES SHALL BE COORDINATED AND SCHEDULED WITH THE OWNER.
- PROVIDE WALL OR CEILING ACCESS PANELS WHERE REQUIRED FOR ACCESS TO CONCEALED VALVES, EQUIPMENT, ETC. PANELS SHALL BE MINIMUM 18"x18" OR LARGER AS REQUIRED AND SHALL BE COMPATIBLE WITH THE AREA IN WHICH THEY ARE INSTALLED. PANELS IN FIRE RATED BUILDING ELEMENTS SHALL BE LABELED IN COMPLIANCE WITH THE RATING OF THE BUILDING ELEMENT.
- PROVIDE ALL CUTTING AND PATCHING NECESSARY TO INSTALL THE WORK. SAW CUT OR DRILL OPENINGS.
- ALL FERROUS METAL WHICH IS NOT FACTORY OR SHOP PAINTED OR GALVANIZED WHICH WILL BE EXPOSED IN FINISHED AREAS SHALL BE PRIME COATED.
- PROVIDE PIPE SLEEVES AT PENETRATIONS OF BUILDING ELEMENTS. SLEEVES MAY BE GALVANIZED SHEET METAL OR STEEL PIPE. FIRE STOPPING SHALL BE PROVIDED AT ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES. FIRE STOPPING SHALL BE UL LISTED AND PROVIDE A FIRE RATING EQUAL TO THAT OF THE CONSTRUCTION BEING PENETRATED.
- ALL WELDERS SHALL BE FULLY CERTIFIED IN ACCORDANCE WITH ASME QUALIFICATIONS.
- PROVIDE PIPE LABELING AND VALVE TAGGING USING MANUFACTURED LABELS, TAGS IN COMPLIANCE WITH ANSI A13.1.
- FLUSH NEW PIPING SYSTEM PRIOR TO OPERATION. PROVIDE SERVICES OF A FIRM REGULARLY ENGAGED IN DISINFECTION SERVICES TO DISINFECT THE DOMESTIC WATER SYSTEM IN ACCORDANCE WITH AWWA GUIDELINES.
- BALANCE DOMESTIC HOT WATER RECIRCULATION SYSTEM TO FLOW RATES INDICATED ON THE DRAWINGS.
- PREPARE TEST AND INSPECTION REPORTS.
- TEST AND CERTIFY BACKFLOW PREVENTERS, PRESSURE VACUUM BREAKERS ACCORDING TO CODE AND STANDARD PER AUTHORITY HAVING JURISDICTION.
- REPLACE DEFECTIVE PRODUCTS AND/OR MATERIALS WITH NEW.
- PROVIDE ATMOSPHERIC VENT DRAIN CONNECTION OF BACKFLOW PREVENTERS AND EXTEND PIPING TO FLOOR DRAIN FOR INDIRECT DISCHARGE WITH MINIMUM OF 2" AIR GAP.

C. SUBMITTALS:

- BEFORE CONSTRUCTION OR INSTALLATION OF MATERIALS OR EQUIPMENT, CONTRACTOR SHALL SUBMIT ELECTRONIC SETS OF SHOP DRAWINGS.
- SHOP DRAWINGS SHALL INDICATE INDIVIDUAL COMPONENTS, MODEL NUMBERS, AND ELECTRICAL INFORMATION.
- SHOP DRAWINGS FOR THE FOLLOWING SHALL BE SUBMITTED:
 - PIPING, FITTINGS
 - VALVES
 - HEATERS
 - PLUMBING FIXTURES
 - INSULATION
 - DRAINS, CLEANOUTS AND CARRIERS

D. TESTING:

- ALL PIPING PROVIDED SHALL BE PRESSURE TESTED.
 - DOMESTIC WATER: HYDROSTATIC AT 125 PSI FOR 1.5 TIMES MAXIMUM OPERATING PRESSURE FOR 6 HOURS.
 - UNDERGROUND WATER: HYDROSTATIC AT 125 PSI FOR 6 HOURS AND/OR IN CONFORMANCE WITH AWWA PROCEDURES.
 - SOL. WASTE, VENT, AND STORM: IN CONFORMANCE WITH PLUMBING CODE.

E. EXCAVATION:

EXCAVATE FOR ALL UNDERGROUND PIPING. BACKFILL AND COMPACT TO FINISH GRADE OR TO LEVELS CONSISTENT WITH THE GENERAL CONTRACTOR'S ACTIVITIES. PROVIDE COMPACTED BACKFILL OF GRADED PEA GRAVEL, GRADED COURSE SAND, OR CRUSHED LIMESTONE (MAXIMUM 0.75" SIZE) UNDER ANY PAVED OR OTHER HARD SURFACED AREAS. EXCAVATION, TRENCH WALL SUPPORTING AND OPEN TRENCH BARRICADING, AND SIGNAGE SHALL BE PER OSHA AND LOCAL REQUIREMENTS. A UTILITY LOCATOR SERVICE SHALL BE PROVIDED TO IDENTIFY AND/OR VERIFY THE LOCATION OF EXISTING PRIVATE UTILITIES WITHIN THE EXCAVATION AREA.

F. HANGERS:

ALL INTERIOR ABOVE GRADE PIPING SHALL BE SUPPORTED BY ATTACHMENT TO THE BUILDING STRUCTURAL ELEMENTS. HANGER ROD SIZES AND HANGER/SUPPORT SPACING SHALL BE PER THE FOLLOWING SCHEDULES.

PIPE SIZE	MINIMUM HANGER ROD DIAMETER	
≤ 2"	3/8"	
2-1/2" - 4"	1/2"	
6"	5/8"	
8" - 12"	3/4"	
PIPE MATERIAL	MAXIMUM HANGER/SUPPORT SPACING	
	VERTICAL	HORIZONTAL
STEEL ≤ 1"	BASE AND 8'	7'
STEEL 1-1/4" - 2"	BASE AND 8'	10'
STEEL 2-1/2" - 3"	BASE AND 8'	12'
STEEL ≥ 4"	BASE AND 8'	14'
COPPER ≤ 1"	BASE AND 8'	5'
COPPER 1-1/4" - 2"	BASE AND 8'	8'
COPPER 2-1/2" - 3"	BASE AND 8'	9'
COPPER ≥ 4"	BASE AND 8'	
CAST IRON	BASE AND EQUAL TO FLOOR LEVEL	1' AND EACH HANGING JOINT
PLASTIC	PER MANUFACTURER	PER MANUFACTURER

G. INSULATION:

INSULATION: PROVIDE INSULATION ON ALL NEW DOMESTIC WATER AND INTERIOR HORIZONTAL STORM DRAINAGE PIPING (INCLUDING HORIZONTAL OVERFLOW DRAINAGE PIPING AND THE UNDERSIDE OF ALL ROOF DRAIN SUMP) WITH FIBERGLASS TUBULAR CLOSED CELL PIPE INSULATION IN COMPLIANCE WITH ASHRAE 90.1. FIBERGLASS INSULATION SHALL BE FACTORY MOLDED TUBULAR FIBERGLASS WITH ALL SERVICE JACKET, INTEGRAL VAPOR BARRIER, AND FACTORY ADHESIVE OVERLAPPING JOINTS. PROVIDE FACTORY MOLDED PVC COVERS AND INSULATION FOR FITTINGS, VALVES, AND DEVICES. TUBULAR CLOSED CELL INSULATION SHALL BE FOAM PLASTIC TYPE WITH PRESSURE-SENSITIVE ADHESIVE TAPE CLOSURE SYSTEM AND/OR VAPOR SEALING ADHESIVE. COMPOSITE INSULATING SYSTEMS SHALL NOT EXCEED A MAXIMUM FLAME SPREAD OF 25 AND SMOKE DEVELOPMENT OF 50 AS ESTABLISHED BY NFPA TEST METHODS. FIBERGLASS INSULATION MANUFACTURERS: OWENS-CORNING, JOHNS MANVILLE, MASON, OR KNAUFF. TUBULAR CLOSED CELL INSULATION SHALL BE EQUAL TO ARMSTRONG ARMACELL ARMAFLEX 2000. INSULATION THICKNESS SHALL COMPLY WITH THE FOLLOWING SCHEDULE:

PIPE SYSTEM	RUNOUTS < 12'	≤ 1"	1-1/4" - 2"
DOMESTIC COLD WATER	1/2"	1/2"	1/2"
DOMESTIC HOT WATER	1"	1"	1"

H. PLUMBING FIXTURES:

PROVIDE PLUMBING FIXTURES COMPLETE WITH SUPPORTS, CARRIERS, AND SUPPLY AND WASTE TRIM. SUPPLIES TO EACH FIXTURE SHALL BE INDIVIDUALLY VALVED. ALL WASTE AND SUPPLY TRIM SHALL BE CHROME PLATED BRASS. FIXTURES SHALL BE WHITE UNLESS OTHERWISE SPECIFIED. SEAL JOINTS AROUND EACH FIXTURE AT THE WALL, FLOOR, AND ANY ADJACENT CONSTRUCTION. JOINT SEALANT SHALL BE ONE PART MILDEW RESISTANT SILICONE, ASTM C920, TYPE S, GRADE NS, CLASS 25 WITH FUNGICIDE, EQUAL TO PECORA 898.

I. VALVES:

VALVES SHALL BE TWO-PIECE, BRONZE BODY, BALL TYPE, 150 WSP. CHECK VALVES SHALL BE BRONZE BODY, SWING TYPE, 125 WSP. BALANCING-SHUTOFF VALVES SHALL BE GLOBE TYPE, POSITIVE SHUTOFF DESIGN, 125 PSI, WITH MEMORY STOP, GAUGE PORTS, AND PORTABLE GAUGE KIT.

J. PIPING:

- EXTERIOR WATER SERVICE: PIPING SHALL BE TYPE K SOFT COPPER CONFORMING TO ASTM B88. JOINTS SHALL BE SILVER BRAZED. UNDERGROUND VALVES SHALL BE 300 LB. NON-SHOCK BALL VALVE, EQUAL TO FORD SERIES 822 (0.75" FLARED COPPER) AND IN CONFORMANCE WITH AWWA AND WATER DEPARTMENT STANDARDS. PROVIDE A CAST IRON SCREW TYPE VALVE BOX AND COVER FOR EACH UNDERGROUND VALVE. PROVIDE METER SETTING AND VALVING ARRANGEMENT TO MEET WATER DEPARTMENT REQUIREMENTS.
- INTERIOR DOMESTIC WATER: PIPING SHALL BE TYPE L SEAMLESS HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST BRONZE FITTINGS AND SOLDERED JOINTS. SOLDER SHALL BE LEAD-FREE TIN ALLOW, 95.5 TIN, ANTIMONY, OR SILVER BEARING TIN. UNDER FLOOR BURIED PIPING SHALL BE TYPE K SOFT COPPER TUBING WITH SILVER BRAZED JOINTS. PIPE NIPPLES EXTENDING OUT OF THE WALL TO SERVE FIXTURES SHALL BE CHROME PLATED BRASS WITH SCREWED ENDS.
- EXTERIOR SEWER PIPING: PIPING SHALL BE PVC WITH BELL AND SPIGOT JOINTS HAVING ELASTOMERIC SEAL BONDED IN THE BELL. ASTM D3034 SDR 35. WORK SHALL CONFORM TO ALL APPLICABLE LOCAL AND STATE GUIDELINES.
- INTERIOR SOIL, WASTE, AND VENT PIPING: PIPING SHALL BE CENTRIFUGALLY CAST COATED CAST IRON WITH HUBLESS ENDS. ASTM A888. FITTINGS SHALL BE DRAINAGE TYPE. JOINTS SHALL CONSIST OF A NEOPRENE GASKET, ASTM C564. STAINLESS STEEL SHIELD AND STAINLESS STEEL BAND. INTERIOR SOIL, WASTE, AND VENT PIPING IN GRADE BELOW THE FLOOR SLAB, SHALL BE SCHEDULE 40 PVC, ASTM D2665. FITTINGS SHALL BE DRAINAGE TYPE. JOINTS SHALL BE SOLVENT WELDED. FLOOR DRAIN TRAPS SHALL BE THE SAME MATERIAL AS THE CONNECTING PIPING. PROVIDE CLEANOUTS WHERE SHOWN ON THE DRAWINGS AND WHERE REQUIRED BY THE GOVERNING PLUMBING CODE. INTERIOR STORM DRAINAGE PIPING SHALL BE EQUIVALENT TO THAT SPECIFIED FOR SOIL, WASTE, AND VENT PIPING. ABOVE GRADE CAST IRON PIPING, IN SIZES 5" AND LARGER, SHALL BE PROVIDED WITH JOINT AND BRANCH FITTING RESTRAINTS AS RECOMMENDED BY THE CISPI HANDBOOK AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.

GENERAL NOTES

GENERAL PLUMBING NOTES:

- WORK PLANS TO BE CONSIDERED AS DIAGRAMATIC AND ALONG WITH THE SPECIFICATIONS, REFLECT A MINIMUM ACCEPTABLE STANDARD. ALL WORK SHALL CONFORM TO THE SOUTH CAROLINA PLUMBING CODE, AND THE AMERICANS WITH DISABILITIES ACT GUIDELINES.
- THIS CONTRACTOR SHALL SECURE AND PAY FOR ALL FEES AND PERMITS ASSOCIATED WITH THIS PORTION OF THE WORK.
- EQUIPMENT AND WORKMANSHIP TO BE WARRANTED FOR ONE YEAR MIN. FROM DATE OF SUBSTANTIAL COMPLETION, EXCEPT WHERE NOTED AS MORE STRINGENT IN PROJECT MANUAL.
- THIS CONTRACTOR SHALL COORDINATE ALL ASPECTS OF WORK WITH OTHER TRADES PRIOR TO AND DURING CONSTRUCTION INSTALLATION.
- FIELD LOCATIONS OF UNDERGROUND UTILITIES SHALL BE OBTAINED BY CONTACTING THE LOCAL UTILITY OR AN INDEPENDENT UTILITY LOCATOR SERVICE. PROVIDE 48 HOURS ADVANCE NOTICE FOR UTILITY INFORMATION.
- WHEN A CONFLICT BETWEEN PLANS AND SPECIFICATIONS OR NOTES OCCURS, THE ENGINEER SHALL DECIDE WHICH GOVERNS. GENERALLY, THE MORE RESTRICTIVE, MORE SPECIFIC, OR STRICTER PROVISION SHALL GOVERN. IF ANY DISCREPANCIES ARE DISCOVERED ON THE PLANS OR BETWEEN THE PLANS AND THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OBTAIN CLARIFICATION OF THE INTENT FROM THE ENGINEER PRIOR TO CONSTRUCTION OR INSTALLATION OF THE PROPOSED IMPROVEMENTS.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL FIXTURES, PIPING, SPECIAL TIES AND APPURTENANCES AS INDICATED ON THE PLUMBING DRAWINGS, SCHEDULES AND IN THE SPECIFICATIONS.
- SEE ARCHITECTURAL DRAWINGS FOR FIXTURE HEIGHTS AND ACCESSIBILITY REQUIREMENTS.

PIPING NOTES:

- WHEN LAYING AND BACKFILLING PVC PIPE, THE TRENCH BOTTOM SHALL BE CONTINUOUS, RELATIVELY SMOOTH AND FREE OF ROCKS, WHERE LEDGE ROCK, HARD PAN OR BOULDERS ARE ENCOUNTERED, PAD THE TRENCH BOTTOM USING A MAXIMUM OF FOUR (4) INCHES OF TAMPED EARTH OR SAND BENEATH THE PIPE AS A CUSHION AND FOR PROTECTION OF THE PIPE FROM DAMAGE. BACKFILL MATERIALS SHALL BE FREE OF ROCKS WITH PARTICLE SIZE OF 1/2" OR LESS SURROUNDING THE PIPE WITH A MINIMUM OF 6" - 8" OF COVER. PIPING SHALL BE PROPERLY SUPPORTED ALONG ITS HORIZONTAL RUN (MIN. OF EVERY 4'-0") PRIOR TO BACKFILLING. BACKFILL SHALL BE PLACED IN LAYERS TO A MAXIMUM FILL OF TWO TIMES PIPE O.D. DIAMETER EACH SOIL LAYER SHALL BE SUFFICIENTLY COMPACTED TO DEVELOP A DENSITY DEVELOP LATERAL PASSIVE SOIL FORCES DURING THE BACKFILL OPERATION. WHERE POSSIBLE, IT IS RECOMMENDED THAT THE CONTRACTOR PLACE THE PIPE UNDER PRESSURE (15 TO 20 PSI) DURING THE BACKFILLING. SEE ASTM D2321 AND MANUFACTURER'S SPECIFIC RECOMMENDATIONS FOR BACKFILLING.
- ALL UNDERGROUND SANITARY PIPING ROUTED NEAR COLUMN FOOTINGS SHALL BE LOCATED OUTSIDE OF THE ZONE OF INFLUENCE.
- PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SLEEVES TO THE GENERAL CONTRACTOR'S COORDINATING ALL PIPE SLEEVE LOCATIONS (ABOVE AND BELOW FLOOR LEVEL).
- WASTE AND VENT PIPING SHALL BE STANDARD CODE APPROVED DWV PATTERN FITTINGS WITH THE MINIMUM SIZE DRAINAGE BEING BELOW FLOOR LEVEL. DIRECTIONAL CHANGES IN DRAINAGE PIPING SYSTEM SHALL NOT INCLUDE THE USE OF QUARTER BENDS OR SHORT SWEEP QUARTER BENDS AND UNLESS ACCOMPANIED BY AN APPROPRIATE CLEANOUT SHALL NOT EXCEED 45 DEGREE BEND, SLOPE HORIZONTAL SANITARY SEWER PIPE SHALL BE AS NOTED: 2-1/2" OR LESS = 1/4" PER FOOT AND 3" AND GREATER = 1/8" PER FOOT. FOR SIZES SEE PLANS, DETAILS AND ISOMETRICS / SCHEDULES.
- CONTRACTOR SHALL SCHEDULE ALL WORK OF THIS TRADE TO AVOID INTERFERENCE WITH OTHER TRADES WORK.
- PIPING THROUGH ROOFS SHALL MEET THE REQUIREMENTS OF THE ROOFING MANUFACTURER'S ROOFING WARRANTY.
- VENT TERMINATIONS SHALL BE A MINIMUM OF 12" FROM ANY HVAC OUTDOOR AIR OPENINGS OR EXHAUSTS.
- CONTRACTOR SHALL INSTALL PIPING FREE OF SAGS AND BENDS. OVERHEAD PIPING SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO COLUMN LINES. CONTRACTOR SHALL PROVIDE HANGERS, CLAMPS, OFFSETS, EXPANSION LOOPS/JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
- INSTALLED PLUMBING PIPE, FITTINGS, VALVES, TRIM AND ETC. IN CONTACT WITH POTABLE WATER SHALL BE MADE OF LEAD-FREE MATERIALS IN COMPLIANCE WITH NSF/ANSI 61, SECTION 8 AND NSF/ANSI 372, IN CONFORMANCE WITH PUBLIC LAW 111-380 (S387M) ALSO KNOWN AS THE "REDUCTION IN LEAD IN DRINKING WATER ACT" EFFECTIVE JANUARY 4, 2014.
- ALL PIPING, VALVES AND APPURTENANCES SHALL BE INSTALLED SUCH AS NOT TO OBSTRUCT ANY PORTION OF WINDOWS, DOORWAYS, STAIRS, PASSAGEWAYS, OR ACCESS TO VARIOUS MECHANICAL EQUIPMENT (INCLUDING BUT NOT LIMITED TO, VAV BOXES, CONTROLS, FANS, DAMPERS, FILTERS, AND ANY OTHER MAINTENANCE ACCESS POINTS) OR LIGHTING, ETC.
- PIPING SHALL NOT BE ROUTED ABOVE ELECTRICAL PANELS NOR WITHIN 36" OF THE FRONT OF THE PANELS. COORDINATE INSTALLATION WITH ELECTRICAL TRADE.
- DWV AND SUPPLY PIPING ROUTED THROUGH FINISHED AREAS SHALL BE CONCEALED ABOVE CEILING OR IN FURFLOUT WALL.
- ACCESSIBLE SHUTOFF VALVES TO BE PROVIDED ON ALL BRANCH PIPING, AT EACH TOILET ROOM, EQUIPMENT CONNECTIONS, EACH EXTERIOR WALL, HYDRANT AND HOSE BIB. PLUMBING CONTRACTOR TO PROVIDE 6"x8" (MIN.) ACCESS PANELS FOR SHUTOFF VALVES WHERE REQUIRED. COORDINATE TYPE AND FINISH WITH ARCHITECT.
- ALL ABOVE CEILING SOLATION/SHUTOFF VALVES SHALL BE INSTALLED SUCH THAT THEY MAY BE EASILY SEEN & REACHED FROM FLOOR OR STEP LADDER.
- FIXTURES AND ROUGHED IN FIXTURES SHALL BE COMPLETE WITH SUPPLY PIPES WITH STOPS, SUPPLIES AND STOPS TO BE CHROME PLATE ESCUTCHEONS, WHERE EXPOSED TO VIEW ESCUTCHEONS SHALL BE SET SCREW TYPE.
- FOR STAND ALONE TOILET MAKERS, EACH RESTROOM FIXTURE GROUP AND LOCATIONS WHERE THE USE OF QUICK CLOSING VALVES ARE INVOLVED, PROVIDE WATER HAMMER ARRESTORS PER THE RECOMMENDED METHODS OUTLINED BY THE PDI INSTITUTE AND APPLICABLE MANUFACTURERS. THIS CONTRACTOR SHALL PROVIDE ALL DRAINAGE LINES FROM EQUIPMENT TO FLOOR DRAINS, FLOOR SINKS AND/OR HUB DRAINS. INSTALL DRAINAGE LINES WITH AN AIR GAP, A MINIMUM OF 2 TIMES THE DRAINAGE PIPE DIAMETER.
- ROUTE PIPING AS HIGH AS POSSIBLE, COORDINATE WITH OTHER TRADES AND OFFSET WHERE IN CONFLICT WITH HVAC, ELECTRICAL AND FIRE PROTECTION TRADES.

EQUIPMENT NOTES:

- PROVIDE 4" HIGH, POURED IN PLACE, SMOOTH FINISH, CONCRETE HOUSEKEEPING PADS UNDER ALL FLOOR MOUNTED WATER HEATERS AND EQUIPMENT REQUIRING HOUSEKEEPING PADS. PAD SHALL BE 4" LARGER THAN THE EQUIPMENT BASE, IN EACH DIRECTION. USE 3000 PSIG, 28 DAY COMPRESSIVE STRENGTH CONCRETE. ROUND OR CHAMFER ALL EDGES AND CORNERS OF THE CONCRETE PAD.
- REDUCED PRESSURE BACKFLOW PREVENTERS SHALL BE PROVIDED WITH NECESSARY WALL REINFORCEMENT, WALL BRACKETS AND SUPPORTS, AN AIR GAP FITTING AND DRAIN LINE TO NEARBY FLOOR SINK OR FLOOR DRAIN. LOCATE BACKFLOW PREVENTER 24" - 48" ABOVE FINISHED FLOOR OR PER LOCAL UTILITY COMPANY WHERE MORE STRINGENT.
- INSTALL THERMOMETERS IN ACCESSIBLE AND READABLE POSITIONS.

FINISH NOTES:

- THIS CONTRACTOR SHALL PROVIDE ALL FIRESTOPPING AND/OR ACOUSTICAL SEALANTS FOR PLUMBING PIPE PENETRATIONS THAT PENETRATE ACOUSTICALLY RATED AND SMOKE AND FIRE RATED ASSEMBLIES. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL RATED ASSEMBLIES. ALL RATED PENETRATIONS SHALL BE ACOUSTICALLY SEALED AND/OR FIRESTOPPED TO ORIGINAL ASSEMBLY RATING. ALL NON-RATED FLOOR PENETRATIONS SHALL BE SEALED WATER TIGHT WITH A FLEXIBLE SEALANT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AND SLEEVES REQUIRED FOR HIS TRADE. FLOORS, WALLS AND SURFACES SHALL BE RETURNED TO ORIGINAL CONDITION WHERE PENETRATED OR DAMAGED. FINAL FINISHES SHALL BE THE RESPONSIBILITY OF GENERAL CONTRACTOR.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ROOF PATCHING AND FLASHING FOR ANY PLUMBING ROOF PENETRATIONS NOT SPECIFICALLY IDENTIFIED ON THE ARCHITECTURAL DRAWINGS. ALL PATCHING AND FLASHING SHALL BE PERFORMED IN A MANNER CONSISTENT WITH THE ROOF SYSTEM WARRANTY REQUIREMENTS.
- PAINT ALL UNPAINTED FERROUS FLOOR MOUNTED PLUMBING SUPPORTS, WITH A RUST INHIBITIVE PRIMER AND TWO COATS OF GRAY/BLACK ENAMEL OR ACRYLIC PAINT.
- PLUMBING VENT THRU ROOF SHALL BE PAINTED WITH 1 COAT OF WATER BASED LATEX EXTERIOR PAINT, AND SHALL MATCH ROOF COLOR. EXCEPTION: WHERE ROOF IS BLACK IN COLOR, VENT PIPING SHALL BE PAINTED GREY.
- PROVIDE CEILING TILE MARKERS INDICATING THE LOCATION OF ABOVE CEILING PLUMBING VALVES.

PLUMBING LEGEND

SYMBOL	DESCRIPTION
---	VENT PIPING
SS---	SANITARY SEWER PIPING
GW---	GREASE WASTE PIPING
CW---	DOMESTIC COLD WATER PIPING
HW---	DOMESTIC HOT WATER PIPING
HWR---	DOMESTIC HOT WATER RECIRCULATION PIPING
○	BALL VALVE
□	PIPE CAP
○	PIPE UP
○	PIPE DOWN
→	FLOW ARROW
⊗	POINT OF NEW CONNECTION
⊙	KEYNOTE DESIGNATION
⊙	FIXTURE/EQUIPMENT DESIGNATION OF FLOOR ABOVE
⊙	DETAIL DESIGNATION
ADA	AMERICAN WITH DISABILITIES ACT
FF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
CO	CLEANOUT
CW	DOMESTIC COLD WATER
DF	DRINKING FOUNTAIN
DWV	DRAIN WASTE VENT
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
GI	GREASE INTERCEPTOR
HB	HOSE BIB
HW	DOMESTIC HOT WATER
LV	LAVATORY
MB	MOP BASIN
NTS	NOT TO SCALE
SK	SINK
TP	TRAP PRIMER
TYP	TYPICAL
UR	URINAL
VTR	VENT THRU ROOF
WB	WALL BOX
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WS	WATER SERVICE
YCO	YARD CLEANOUT



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