

FIRE PROTECTION SPECIFICATIONS

FURNISH AND INSTALL A COMPLETE AUTOMATIC SFRINKLER SYSTEM WITH ALL REQUIRED PIPING, SFRINKLER HEADS AND ACCESSORIES FOR THE ENTIRE NEW BUILDING. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, CONNECTIONS AND ANY OTHER FEES ASSOCIATED WITH THE INSTALLATION OF THE FIRE PROTECTION SYSTEM.

CONTRACTOR SHALL COORDINATE THE PERFORMANCE OF A NEW WATER FLOW TEST FOR THE FLOW AND PRESSURE DATA TO BE USED IN HYDRAULIC CALCULATIONS.

ALL ELEMENTS OF THE FIRE PROTECTION SYSTEM SHALL BE U.L. LISTED. ALL ELEMENTS OF THE FIRE PROTECTION SYSTEM SHALL CONFORM TO ALL REQUIREMENTS OF THE FOLLOWING:
 NFPA 13, 14, 20 AND 24
 ALL LOCAL COUNTY AND STATE REGULATIONS
 LOCAL FIRE MARSHAL
 OWNER'S INSURANCE UNDERWRITER

LISTED WET TYPE PENDENT SFRINKLER SHALL BE INSTALLED IN ALL AREAS, UNLESS OTHERWISE NOTED. INSTALL UPRIGHT SFRINKLERS IN AREAS WITH UNFINISHED CEILINGS. PENDENT-TYPE SEMI-RECESSED OR CONCEALED SFRINKLERS SHALL BE INSTALLED IN FINISHED CEILINGS. INSTALL SIDEWALL SFRINKLERS AS NEEDED FOR FULL COVERAGE.

PROVIDE AN ALARM TEST CONNECTION FOR EACH SYSTEM NOT LESS THAN 1" DIA. IN ACCORDANCE WITH NFPA 13, 8, 17.4.1

THE CONTRACTOR SHALL FULLY COORDINATE ALL PHASES OF WORK WITH THE ARCHITECT AND ALL OTHER TRADES PRIOR TO AND DURING THE COURSE OF THE INSTALLATION IN ITS ENTIRETY. PIPING INSTALLATION AND THE PLACEMENT OF SFRINKLER HEADS AND SYSTEM DEVICES MUST BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLAN, MECHANICAL DUCTWORK AND EQUIPMENT, ELECTRICAL CONDUIT AND DEVICES, PLUMBING PIPING, AND THE STRUCTURAL CONSTRAINTS OF THE BUILDING.

ANY DISCREPANCIES ENCOUNTERED BY THE CONTRACTOR IN THE REPRESENTATION OF THESE DRAWINGS AND OR SPECIFICATIONS SHALL IMMEDIATELY BE COORDINATED WITH THE ARCHITECT.

AS APPLICABLE, COORDINATE WITH ELECTRICAL CONTRACTOR FOR WIRING OF DEVICES REQUIRING INTERLOCK TO THE FIRE ALARM SYSTEM, SUCH AS TAMPER SWITCHES AND FLOW SWITCHES.

REMOTE SYSTEM DRAIN TO BE INSTALLED & COORDINATED WITH ARCHITECT FOR EXACT LOCATION.

A CABINET SHALL BE PROVIDED CONTAINING A SUPPLY OF AT LEAST SIX SPARE SFRINKLERS (OF EACH INSTALLED TYPE) IN AN AREA THAT WILL AT NO TIME EXCEED 1000'. A LIST OF INSTALLED SFRINKLERS SHALL BE POSTED IN THE CABINET.

FIRE PROTECTION CONTRACTOR TO PROVIDE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS WITH ALL PIPE SIZES, SFRINKLER LOCATIONS, FLOW AND TAMPER SWITCHES, INSPECTOR TESTS, ETC. THE SHOP DRAWINGS SHALL BE SUBMITTED TO ALL AUTHORITIES HAVING JURISDICTION AND TO OWNERS INSURANCE UNDERWRITER FOR APPROVAL. AFTER APPROVAL HAS BEEN OBTAINED FROM THE ABOVE AGENCIES THE SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR FINAL REVIEW.

WHERE A DRY PIPE SFRINKLER SYSTEM IS PROVIDED, THE AIR COMPRESSOR SHALL BE BY VIKING CORPORATION OR GENERAL AIR PRODUCTS (OR EQUAL) AND LISTED FOR FIRE PROTECTION USE.

SUPERVISION OF REQUIRED SFRINKLER SYSTEM TO COMPLY WITH IBC 903.4.

SFRINKLER SYSTEM TO BE INSTALLED IN ACCORDANCE WITH IFC, SECTION 903. PLANS ARE TO BE SUBMITTED TO MONTGOMERY FIRE/RESCUE FOR REVIEW AND PERMITTING.

LEGEND

| | |
|--|----------------------------------------|
| | COLD WATER PIPE |
| | HOT WATER PIPE |
| | HOT WATER RETURN PIPE |
| | FILTERED WATER PIPE |
| | FIRE SFRINKLER PIPE |
| | NATURAL GAS PIPE |
| | SANITARY PIPE |
| | GREASE WASTE PIPE |
| | OIL WASTE PIPE |
| | EMERGENCY STORM PIPE |
| | STORM PIPE |
| | VENT PIPE |
| | PIPE UP / PIPE DOWN |
| | PIPE TEE FROM TOP / TEE FROM BOTTOM |
| | PIPE CAP / PIPE CONTINUATION |
| | DIRECTIONAL FLOW ARROW |
| | BALL VALVE / CHECK VALVE |
| | MIXING VALVE / PRESSURE REDUCING VALVE |
| | BACKFLOW PREVENTER ASSEMBLY |
| | WALL HYDRANT / HOSE BIBB |
| | FLOOR DRAIN / FLOOR SINK |
| | WATER HAMMER ARRESTOR |
| | GAS COCK / GAS SOLENOID VALVE |
| | P-TRAP |
| | HUB DRAIN |
| | TRAP PRIMER |
| | FLOOR CLEANOUT / GRADE CLEANOUT |
| | VENT THROUGH ROOF |
| | PIPE CLEANOUT / WALL CLEANOUT |
| | CONNECTION TO EXISTING |

ABBREVIATIONS

| | | | |
|---------|---------------------------|--------|-------------------------|
| AAV | AIR ADMITTANCE VALVE | HW | HOT WATER RETURN |
| AC | ABOVE CEILING | IMB | ICE MACHINE BOX |
| AF | ABOVE FLOOR | IE | INVERT ELEVATION |
| AF, AFG | ABOVE FINISHED FLOORGRADE | L LAV | LAVATORY |
| BF | BELOW FLOOR | MBH | 1000 BTUHR |
| BFP | BACKFLOW PREVENTER | MS | MOP SINK |
| BG | BELOW GRADE | MV | MIXING VALVE |
| CD | CONDENSATE DRAIN | OIH | OVERHEAD |
| CONT | CONTINUATION | G | NATURAL GAS |
| CW | COLD WATER | FRV | PRESSURE REDUCING VALVE |
| DN | DOWN | RP | RECIRCULATION PUMP |
| ET | EXPANSION TANK | S, SAN | SANITARY |
| EW | ELECTRIC WATER COOLER | SH | SHOWER |
| EX | EXISTING | SK | SINK |
| FCO | FLOOR CLEANOUT | TP | TRAP PRIMER |
| FD | FLOOR DRAIN | YP | TYPICAL |
| FHD | FREEZEPROOF HOSE BIBB | UR | URNAL |
| FS | FLOOR SINK | V | VENT |
| FWH | FREEZEPROOF WALL HYDRANT | VTR | VENT THROUGH ROOF |
| GCO | GRADE CLEANOUT | WC | WATER CLOSET |
| GI | GREASE INTERCEPTOR | W.C. | WATER COLUMN |
| HB | HOSE BIBB | WCO | WALL CLEANOUT |
| HD | HUB DRAIN | WHA | WATER HAMMER ARRESTOR |
| HW | HOT WATER | WMB | WASHING MACHINE BOX |

SPECIFICATIONS

GENERAL
 ALL WORK SHALL COMPLY WITH ALL STATE, CITY AND LOCAL CODES, RULES AND REGULATIONS. CONTRACTOR SHALL SECURE ALL REQUIRED PERMITS AND INSPECTIONS ASSOCIATED WITH THIS WORK, AND SHALL PAY ALL COSTS AND FEES INVOLVED.

ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE BEST RECOGNIZED PRACTICE IN THE FIELD CONCERNED. MANUFACTURED ITEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS PRINTED DIRECTIONS, SPECIFICATIONS AND RECOMMENDATIONS.

CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS AND SHALL BE FAMILIAR WITH THE SCOPE AND REQUIREMENTS OF THIS PROJECT. ANY DISCREPANCIES OR LACK OF CLARITY IN THE DOCUMENTS SHALL BE IDENTIFIED TO THE ARCHITECT OR ENGINEER PRIOR TO THE SUBMISSION OF PRICING BIDS. WITH A SUBMITTED BID, CONTRACTOR IS ACCEPTING THESE DOCUMENTS AS SUFFICIENT DEFINITION OF THE SCOPE OF WORK, AND ANY ADDITIONAL COSTS BASED ON UNCLARITY OF CONTRACT DOCUMENTS WILL NOT BE CONSIDERED.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS FOR EQUIPMENT INSTALLATION PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS. ALL EQUIPMENT AND DEVICES SHALL BE INSTALLED SUCH THAT THEY ARE EASILY ACCESSIBLE AND SERVICEABLE. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PLUMBING FIXTURES, WATER HEATERS, EXPANSION TANKS, PUMPS, BACKFLOW PREVENTERS, VALVES, MIXING VALVES, THERMOMETERS, GAUGES, TRAP PRIMERS AND CLEANOUTS.

THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE FULL SET OF CONSTRUCTION DOCUMENTS, INCLUDING ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL & ELECTRICAL DRAWINGS (AS APPLICABLE) TO ENSURE ALL PLUMBING WORK IS COORDINATED WITH PHYSICAL CONDITIONS AND ALL OTHER TRADES.

THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE ARCHITECTURAL DRAWINGS TO ENSURE THERE IS ADEQUATE WALL THICKNESS SUCH THAT ALL PIPING, FIXTURE CARRIERS, WALL CLEANOUTS, WALL BOXES, WALL HYDRANTS AND ACCESS PANELS WILL FIT IN THE WALL SPACE. CONTRACTOR SHALL NOTIFY THE ARCHITECT IF WALL SPACE IS INADEQUATE PRIOR TO COMMENCING WORK.

THE CONTRACTOR SHALL OBTAIN EXACT WALL, FIXTURE, AND LAYOUT DIMENSIONS FROM THE ARCHITECTURAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ROUGH-IN AND INSTALLATION DRAWINGS FOR ALL PLUMBING FIXTURES, KITCHEN EQUIPMENT AND OWNER FURNISHED EQUIPMENT (AS APPLICABLE), AND SHALL COORDINATE THE PLUMBING INSTALLATION PRIOR TO COMMENCING THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY VALVES, CONNECTIONS, TRAPS, ACCESS PANELS, UNIONS, EXCIMERHEADS, WATER HAMMER ARRESTORS, VACUUM BREAKERS, RELIEF VALVES, PIPE INSULATION, AND EQUIPMENT SPECIALLY DESIGNED AS REQUIRED TO FACILITATE COMPLETE AND OPERATIONAL CONDITIONS WHICH ARE IN STRICT COMPLIANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS.

THESE DRAWINGS ARE DIAGRAMMATIC AND DO NOT REFLECT ALL POSSIBLE PHYSICAL CONDITIONS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND EXACT LOCATIONS OF EQUIPMENT AND FIXTURES. PROVIDE NECESSARY PIPING OFFSETS TO COORDINATE WITH THE BUILDING STRUCTURE, WORK OF OTHER TRADES, AND CONNECTION TO SITE UTILITIES (AS APPLICABLE).

COORDINATE THE ELECTRICAL REQUIREMENTS AND CHARACTERISTICS OF ALL PLUMBING EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO ISSUING SUBMITTALS OR PURCHASING EQUIPMENT.

UNLESS NOTED OTHERWISE, ALL DRAINAGE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT. 2" SANITARY PIPING AND ALL GREASE WASTE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

DOMESTIC WATER PIPING SHALL BE PURGED OF DELETERIOUS MATTER AND DISINFECTED PRIOR TO UTILIZATION. PIPING TO BE FLUSHED AND STERILIZED IN ACCORDANCE WITH IFC 610.1 AND ALL APPLICABLE LOCAL AND STATE HEALTH DEPARTMENT STANDARDS.

ALL DOMESTIC WATER PIPING SUBJECT TO FREEZING SHALL BE PROTECTED FROM FREEZING WITH HEAT TRACE. CONDENSATE PIPING SUBJECT TO FREEZING WITHIN WALLS, CEILING, FLOORS, AND FROM THE INSIDE AND FROM THE OUTSIDE SHALL BE PROTECTED WITH HEAT TRACE. PIPING INSTALLED IN EXTERIOR WALLS SHALL BE WRAPPED WITH INSULATION LOCATED ON THE INTERIOR SIDE OF THE BUILDING ENVELOPE.

IN CONCEALED LOCATIONS WHERE PIPING, OTHER THAN IRON OR GALVANIZED STEEL, IS INSTALLED THROUGH HOLES OR NOTCHES IN STUDS, JOISTS, OR SIMILAR MEMBERS LESS THAN 1/2" FROM THE NEAREST EDGE OF MEMBER, PIPE SHALL BE PROTECTED BY STEEL SHEATHING INSTALLED IN ACCORDANCE WITH IFC 305.6.

PIPE PENETRATIONS THROUGH FIRE RATED WALLS OR FLOORS SHALL HAVE EQUIVALENTLY RATED SLEEVES AND SHALL BE SEALED AND FIRE CALKED WITH A U.L. LISTED FIRE RESISTANT SYSTEM INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS LISTED SPECIFICATIONS AND SPECIFICATIONS.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE REQUIREMENTS OF THE COUNTY HEALTH DEPARTMENT AND OTHER LOCAL AUTHORITIES HAVING JURISDICTION REGARDING CROSS CONNECTION CONTROL OR OBTAINING A FOOD SERVICE PERMIT (AS APPLICABLE). REPORT ANY OBSERVED DISCREPANCIES TO THE ARCHITECT OR ENGINEER PRIOR TO COMMENCING WITH THE WORK.

CONTRACTOR SHALL CONFIRM PLUMBING FIXTURE FINISHES WITH THE ARCHITECTURAL SCHEDULES & DETAILS (AS APPLICABLE).

PERMITS
 OBTAIN ALL NECESSARY PERMITS FOR MANUFACTURED PRODUCTS. ALL ITEMS SHALL BE CLEARLY MARKED TO MATCH EQUIPMENT MARKS ON THE PLUMBING DRAWINGS. ALL OPTIONS MUST BE CLEARLY MARKED ON THE SUBMITTAL SHEET. MODEL NUMBER LISTING ON A COVER SHEET IS NOT AN ACCEPTABLE SUBSTITUTE FOR MARKING THE ACTUAL MATERIAL SHEET. ELECTRICAL DATA FOR POWERED EQUIPMENT MUST BE INDICATED ON THE SUBMITTAL SHEET FOR THAT ITEM.

ALL ITEMS MUST BE SUBMITTED IN ONE PACKAGE AT THE SAME TIME, IN ELECTRONIC PDF FORMAT. SEPARATE SUBMITTALS FOR FIXTURES AND EQUIPMENT IS NOT ACCEPTABLE.

SUBMITTAL REVIEW IS CONSIDERED A GENERAL ACCEPTANCE OF THE BASIC APPLICABILITY OF THE EQUIPMENT. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND/OR ALTERNATE ARRANGEMENT OF THE EQUIPMENT WITHIN A GIVEN SPACE. WHEN SUBSTITUTED EQUIPMENT IS INSTALLED, CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION OR ADDITIONAL COST BROUGHT ON BY THE USE OF THIS EQUIPMENT.

HANGERS AND SUPPORTS
 HANGERS SHALL BE COMPLETE WITH RODS AND SUPPORTS PROPORTIONED TO THE SIZE OF PIPE TO BE SUPPORTED, IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

SIZE HANGERS FOR INSULATED PIPING TO BEAR ON OUTSIDE OF INSULATION. PROVIDE INSULATION PROTECTORS AT HANGERS BEARING ON THE OUTSIDE OF INSULATION. PROVIDE A RIGID INSERT OR RIGID INSULATION AT EACH INSULATION PROTECTOR.

WHERE SEVERAL PIPES OF EQUAL OR SMALLER RUN PARALLEL AND IN THE SAME PLANE, THEY MAY BE SUPPORTED ON GANG OR MULTIPLE HANGERS. LARGER PIPING SHALL BE INDEPENDENTLY HUNG, RUN PARALLEL AND BE EQUALLY SPACED.

PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH IFC SECTION 306, AND SPACING OF HANGERS SHALL NOT EXCEED THE LIMITS SET FORTH IN TABLE 306.5. PIPES SHALL BE SUPPORTED WITHIN 1'-0" OF EACH ELBOW.

VERTICAL PIPE SUBJECT TO MOVEMENT SHALL BE SUPPORTED FROM THE WALL BY MEANS OF A PIPE CLAMP.

SUPPORT DOMESTIC WATER PIPING IN SPACES BEHIND PLUMBING FIXTURES BY BRACKETS AND U-BOLTS SECURED TO WASTE AND VENT STACKS. SIZE U-BOLTS TO BEAR ON THE PIPING.

AFTER HANGER RODS ARE INSTALLED IN FINISHED CONCRETE CEILING, FILL THE REMAINING OPENING WITH CEMENT SO THAT NO HOLE SHOWS AT THE CEILING.

WHERE COPPER PIPING IS USED, NONFERROUS METAL SUPPORT(S) OR PROPER ISOLATION BETWEEN DISSIMILAR MATERIALS SHALL BE PROVIDED.

PIPE HANGERS AND SUPPORTS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH RECOMMENDATIONS SET FORTH IN MANUFACTURERS STANDARDIZATION SOCIETY STANDARD PRACTICES NO. SP-69 AND SP-56.

SPECIFICATIONS

WASTE AND VENT PIPING SYSTEMS AND ACCESSORIES
 SANITARY PIPING SHALL BE PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM.

PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D-1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D-1785 AND ASTM D-2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D-2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F-1066. SOLVENT CEMENTS SHALL CONFORM TO ASTM D-2564. PRIMER SHALL CONFORM TO ASTM F-656. BURIED PIPE SHALL CONFORM TO ASTM D-2321.

WASTE AND VENT PIPING SHALL BE TESTED IN ACCORDANCE WITH THE GOVERNING CODES. AT A MINIMUM, WASTE PIPING SHALL BE TESTED WITH AT LEAST 1'0" FOOT OF WATER HEAD PRESSURE APPLIED. TESTING WITH AIR IS NOT ALLOWED.

ALL VENTS THROUGH ROOF SHALL BE LOCATED AT LEAST 1'-0" AWAY FROM ANY AIR INTAKE, EVAPORATIVE COOLER, OR ANY OTHER DEVICE THAT WOULD DRAW AIR FROM THE VENT. FLASH AROUND ALL PIPES PENETRATING THROUGH ROOF WITH STANDARD MANUFACTURED FLASHINGS. FLASHING SHALL BE SHEET METAL WITH RUBBER GASKETS AND SHALL EXTEND INTO ROOFING AND UP FIVE DISTANCES IN ACCORDANCE WITH THE LOCAL CODE.

NO DOUBLE COMBINATION FITTINGS MAY BE UTILIZED IN THE HORIZONTAL.

WHERE TWO HORIZONTAL PIPES (BACK-TO-BACK WATER CLOSETS OR TWO TOILET DRAINAGE) COMBINE IN THE VERTICAL, A DOUBLE COMBINATION WYE EIGHTH BEND FITTING SHALL BE USED. DOUBLE SANITARY TEE OR SANITARY CROSS IS NOT ACCEPTABLE.

WHERE DRAWINGS REQUIRE CONNECTION TO EXISTING SANITARY SYSTEMS IN EXISTING BUILDINGS, THE CONTRACTORS RESPONSIBILITY TO FIELD DETERMINE EXISTING CONDITIONS AND LOCATION OF FLOW PRIOR TO COMMENCING WORK. PROVIDE SCOPING OF EXISTING FLOORING AS NECESSARY TO GATHER THIS INFORMATION. CONTRACTOR SHALL ALERT ENGINEER THERE IS A TEST REQUIRED TO MAINTAINING PROPER SLOPE IN CONNECTING TO EXISTING, OR IF THERE IS A MORE DIRECT CONNECTION POSSIBLE.

DOMESTIC WATER SYSTEMS AND ACCESSORIES
 WATER PIPING ABOVE SLABS TYPE 1 SHALL BE DRAWN COPPER IN ACCORDANCE WITH ASTM B86, WROUGHT SOLDER JOINTS, AND B16.22.

WATER PIPING BELOW SLABS TYPE 2 SHALL BE DRAWN COPPER TUBING, WITH NO JOINTS BELOW SLAB, ASTM B86. ALL DOMESTIC WATER PIPING SHALL HAVE A MINIMUM PRESSURE RATING OF 100PSI AT 100F.

DOMESTIC WATER PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL GOVERNING CODES. PIPING SHALL BE INSTALLED IN AN ACCESSIBLE MANNER. PIPING TO BE FLUSHED AND DISINFECTED PRIOR TO UTILIZATION. VALVES SHALL BE APOLLO 70 OR EQUAL.

BACKFLOW PREVENTERS SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS FOR EASE OF TESTING AND SERVICING. FOR BACKFLOW PREVENTERS WITH VENT CONNECTIONS, ROUTE VENT LINE TO NEAREST DRAIN AND DISCHARGE WITH AIR GAP. BACKFLOW PREVENTERS SHALL BE TESTED IN ACCORDANCE WITH IFC 312.10.2. CONTRACTOR SHALL PROVIDE CERTIFICATIONS THAT STATE DEVICES HAVE BEEN TESTED AND APPROVED.

THERMOMETERS SHALL BE 90° ADJUSTABLE ANGLE, 30°-180° RANGE (TERICE B49 OR EQUAL). PRESSURE GAUGES SHALL BE 1/2" DIA. SIZE, 0-160PSI (TERICE 600CD OR EQUAL).

CONTRACTOR SHALL FIELD VERIFY INCOMING DOMESTIC WATER PRESSURE. WHERE PRESSURE EXCEEDS 80PSI, PROVIDE PRESSURE REGULATING VALVE (WATTS LF223) AND UPSTREAM STRAINER (WATTS LF577).

CONTRACTOR SHALL FIELD COORDINATE LOCATION OF ACCESSIBLE ISOLATION VALVES ON DOMESTIC HOT & COLD WATER SUPPLIES TO FIXTURES OR GROUPS OF FIXTURES SUCH THAT THEY MAY BE SHUT OFF FOR SERVICING. SERVICE AND HOSE BIBB VALVES SHALL BE IDENTIFIED. ALL OTHER VALVES INSTALLED IN LOCATIONS THAT ARE NOT ADJACENT TO THE FIXTURE(S) SHALL BE IDENTIFIED, INDICATING THE FIXTURE(S) SERVED.

INSULATION
 INSULATE ALL DOMESTIC HOT WATER AND HOT WATER RECIRCULATION PIPING IN ACCORDANCE WITH IECC TABLE C-403.2.10. PIPE UP TO 1/2" THICK INSULATION. PIPE 1/2" OR LARGER: 1/2" THICK INSULATION

INSULATE ALL HORIZONTAL COLD WATER PIPING LOCATED ABOVE CEILING, VERTICAL PIPING LOCATED IN AN EXTERIOR WALL, EXPOSED PIPING (I.E. MECH ROOMS). PIPE UP TO 1 1/2" THICK, PIPING 1/2" AND OVER: 1" THICK INSULATION. INSULATION MAY BE OMITTED FOR HORIZONTAL CPVC PIPING LESS THAN 1/2".

INSULATION SHALL HAVE A K-FACTOR (AVERAGE THERMAL CONDUCTIVITY) NOT TO EXCEED 0.27 BTU-INHR x SQFT x FT.

TANK TYPE WATER HEATERS
 WATER HEATERS SHALL BE U.L. LISTED AND SHALL MEET OR EXCEED THE STANDBY LOSS REQUIREMENTS OF U.S. DEPT. OF ENERGY AND CURRENT EDITION OF ASHRAE/IESNA 90.1.

WATER HEATERS SHALL HAVE 150PSI WORKING PRESSURE AND BE EQUIPPED WITH EXTRUDED HIGH DENSITY ANODE ROD AND HIGH TEMPERATURE CUTOFF SWITCH. WATER HEATERS SHALL BE THERMOSTATICALLY CONTROLLED AND SET TO 120° UNLESS OTHERWISE NOTED. WATER HEATERS SHALL BE INSTALLED ON SUSPENDED PLATFORM, STEEL STAND OR CONCRETE PAD, AS INDICATED ON DRAWINGS.

WATER HEATERS SHALL HAVE A MINIMUM 3 YEAR LIMITED WARRANTY.

WATER HEATERS SHALL BE INSTALLED LEVEL AND PLUMB. FIELD COORDINATE EXACT WATER HEATER LOCATION, MAINTAIN MANUFACTURERS RECOMMENDED CLEARANCES, AND INSTALL SUCH THAT CONTROLS AND DEVICES ARE ACCESSIBLE FOR SERVICING.

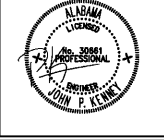
INSTALL SHUTOFF VALVES IN COLD WATER INLET AND HOT WATER OUTLET. INSTALL THERMOMETER ON HOT WATER OUTLET. WATER HEATER SHALL HAVE ASME RATED COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVE IN TOP PORTION OF TANK (FACTORY OR FIELD INSTALLED). PIPE RELIEF VALVE OUTLET TO FLOOR DRAIN, MOP SINK, INDIRECT WASTE RECEPTOR OR TO EXTERIOR. MAINTAIN CONTINUOUS DOWNWARD PITCH TOWARD DISCHARGE LOCATION, AND PROVIDE AIR GAP AT DISCHARGE LOCATION. WHERE WATER HEATER DRAIN PAN IS INDICATED ON PLANS, ROUTE DRAIN TO SAME LOCATION AS RELIEF VALVE AND DISCHARGE WITH AIR GAP.

SLEEVES
 SLEEVES SHALL BE PROVIDED WHERE PIPES PASS THROUGH WALLS, FLOORS AND ROOFS. PROVIDE STANDARD WEIGHT STEEL SLEEVES IN CONCRETE AND MASONRY CONSTRUCTION, PROVIDE 26GA GALVANIZED SHEET METAL SLEEVES IN INTERIOR DRYWALL CONSTRUCTION. SLEEVES SHALL BE THE FULL THICKNESS OF WALLS AND SHALL ALLOW FOR THE FULL THICKNESS OF PIPE INSULATION, WHERE APPLICABLE.

SLEEVES MAY BE OMITTED WHEN OPENINGS ARE CORE DRILLED FOR CONCEALED VERTICAL AND HORIZONTAL PIPING. SLEEVES ARE NOT REQUIRED AT INDIVIDUAL PLUMBING FIXTURES OR IN CONCRETE FLOOR SLABS ON GRADE, UNLESS OTHERWISE NOTED.

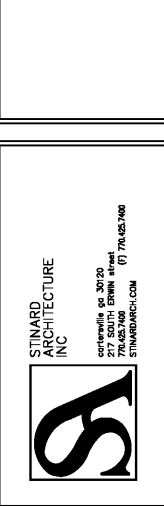
SLEEVES FOR ALL PIPING PENETRATING FIRE RATED WALLS AND FLOORS SHALL BE PROVIDED WITH 3M PIPE BARRIER NO. CP-25 FIRE PROOF CALKING, OR EQUAL, IN ANNUAL SPACE BETWEEN SLEEVE AND PIPING. CONTRACTOR SHALL VERIFY THE RATING OF THE WALL AND CONFIRM THE PENETRATION PROTECTION PROVIDED MEETS THAT RATING.

PENETRATIONS THROUGH OUTSIDE WALLS SHALL BE WATERTIGHT. CALK BETWEEN PLUMBING PIPE AND SLEEVE. PACK WITH FIBERGLASS AND CALK, 1" DEEP AT EACH FACE WITH NON-HARDENING SEALANT BETWEEN PIPE AND SLEEVE.



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Life Storage #357
 115 S. Arrowhead Dr.
 Montgomery, AL 36117



ISSUE FOR CONSTRUCTION REVISIONS:

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| 1 | City Comments | 5-6-2019 |
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SHEET NUMBER: P0.1

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