

SECTION 15420 – PLUMBING DISTRIBUTION PIPING

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. The work shall include labor, materials, tools, equipment, transportation, insurance, temporary protection, supervision and incidental items essential for proper installation and operation, even though not specifically mentioned or indicated on the drawings but which are usually provided or are essential for proper installation of systems related to this Section, as indicated on the drawings and specified herein.
- B. The specifications and drawings describe the minimum requirements that must be met for the installation of work as shown on the drawings and as specified hereinunder.
- C. Shop drawings.
- D. Field acceptance testing.
- E. Specific work: Provide potable and industrial (non-potable) water piping, etc., as shown on the drawings and as specified, complete.

1.2 RELATED SECTIONS

- A. Examine drawings and criteria sheets and other Sections of the Specifications for requirements which affect work under this Section whether or not such work is specifically mentioned in this Section.
 - 1. Section 15050 – Basic Mechanical Materials and Methods
 - 2. Section 15055 – Through-Penetration Firestop Systems
 - 3. Section 15060 – Hangers and Supports
 - 4. Section 15075 – Mechanical Identification
 - 5. Section 15410 – Plumbing Valves
 - 6. Section 15430 – Drainage and Vent Piping
 - 7. Section 15440 – Plumbing Specialties
 - 8. Section 15450 – Plumbing Fixtures
 - 9. Section 15460 – Plumbing Equipment
 - 10. Section 15480 – Medical Plumbing Systems

1.3 REFERENCES

- A. Applicable provisions of the following Codes and Trade Standard Publications shall apply to the work of this Section, and are hereby incorporated into, and made a part of the Contract Documents.
 - 1. Material standards shall be as specified or detailed hereinafter and as follows:
 - a. ANSI American National Standards Institute
 - b. ASME American Society of Mechanical Engineers
 - c. ASTM American Society of Testing Materials ASTM B88-78: Wrought Copper Fittings
 - d. AWS American Welding Society
 - e. CS Commercial Standards, U.S. Dept. of Commerce
 - f. FM Factory Mutual
 - g. FS Federal Specification, U.S. Government
 - h. MSS Manufacturers Standardization Society of the Valve and Fittings Industry
 - i. UL Underwriters Laboratories, Inc.
 - j. OSHA Occupational Safety and Health Act
 - k. ASPE American Society of Plumbing Engineers

1.4 SUBMITTALS

- A. Refer to Section 01330 – SUBMITTAL PROCEDURES.
- B. Prepare and submit shop drawings in accordance with the requirements of the General Conditions and Supplementary Conditions and in the manner described therein, modified as noted hereinafter.
- C. Submittals – The following documents shall be provided:
 - 1. Pipe and fittings for each system.

1.5 QUALITY ASSURANCE

- A. Refer to Section 01400 – QUALITY REQUIREMENTS.

1.6 CROSS AND INTER-CONNECTIONS

- A. No plumbing fixtures, equipment, device or piping shall be installed which will provide a cross or interconnection between a distributing supply or a drainage system, waste or soil pipe which will permit or make possible the backflow of sewage, polluted water or waste into the domestic water supply system.

PART 2 – PRODUCTS

2.1 PIPING, FITTINGS AND JOINTS

A. Cement Lined Ductile Iron Pipe and Fittings

1. Below Ground Water Service Piping (4" and Larger)

- a. Class 52 ductile iron pipe with cement lining, ANSI, AWWA C-A21.10, ANSI/AWWA C104-A21.4, ANSI C111-A21.11.
- b. Fittings and special castings shall be Class 250 cement lined ductile iron and shall conform to ANSI A21.10. And A21.11. Joints shall be made with push-on Tyton joints or screwed flanges and shall be rodded and clamped. Incoming water services shall be provided with two (2) Dresser model 38 flexible couplings.

B. Copper Tubing and Fittings

1. All Aboveground Potable and Non-Potable Water Systems

- a. Tubing to be Type L hard temper with wrought copper fittings conforming to ASTM B88-and ASME B16.22. All joints shall be soldered with ASME AWS/A5.8 lead free solder.
- b. Shall not be used for urinal waste piping which shall remain cast iron. May be used for sewage ejector and sump pump discharge piping.
- c. Copper tubing with grooved ends and mechanical joints are acceptable for sizes 2-1/2" to 8" only. Tubing to be Type L hard temper with wrought grooved end fittings conforming to ASTM B152 and ASTM B75.

C. Copper Tubing and Fittings

1. Type K Below Ground Water Systems (3" and Smaller)

- a. Tubing to be Type K, soft temper brazed joints with bituminous coating. Conforming to ASTM B88 and fittings conforming to ASME B16.22.

D. Galvanized Steel Pipe

1. Aboveground, Sanitary Vent Piping (2" and Smaller), Vacuum Exhaust, Exterior Gas Train Vent, Sewage Ejector and Sump Pump Discharge

- a. Schedule 40 American Standard weight and manufacture galvanized steel pipe conforming to ASTM A120-74. Threads to be American pipe thread standard. Fittings shall be 125# cast iron screwed.

E. Schedule 40 Black Steel Pipe and Fittings

1. Above Ground Natural Gas, Interior Gas Train Vent

- a. Black steel pipe Schedule 40 and conforming to ASTM A120-74 (seamless type). Fittings shall be black malleable screwed type conforming to ANSI B16.3-71 for pipe 2 1/2" and smaller.
- b. Pipe 3" and larger and for systems where pressure exceeds 14 w.c. shall be welded.
- c. Gas piping dropping inside concrete block partitions shall be factory wrapped for corrosion protection.

2.2 SLEEVES AND PLATES, ESCUTCHEONS, FIRESTOPPING AND SMOKESTOPPING

- A. Where pipes pass through concrete walls or floors, this Contractor shall provide and set individual sleeves for each pipe, and all other work under his charge. Sleeves shall be of sufficient size to provide 1/2" minimum air space around the pipe, or insulation on covered lines passing through it. All openings shall be sealed, smokeproofed and made tight as outlined in items below. This Contractor shall be responsible for the exact location of sleeves provided under this Contract and shall coordinate all requirements for sleeves. In the event that failure to do so requires cutting and patching, it shall be done at this Contractor's expense.
- B. This Contractor, for work under his charge, shall determine the diameter of each individual wall opening or sleeve before ordering, fabricating or installing.
- C. Sleeves passing through lightproof or soundproof walls and floors and through firewalls shall be sealed and made tight using only approved materials and methods.
- D. Sleeves and wall openings shall not be used in any portions of the building where their use would impair the strength or construction features of the building. This Contractor shall immediately bring to the Architect's attention any situation which may promote this condition.
- E. Provide chrome plated brass escutcheons with set screw for exposed piping in all areas. In mechanical rooms use plain brass or cast iron escutcheons suitable for painting. All escutcheons shall be sized to fit the bare pipe or insulation in a snug and neat manner. They shall be of sufficient size to cover sleeves openings for the pipes and of sufficient depth to cover sleeves projecting above floors. Escutcheons shall be as manufactured by Beaton & Caldwell, Dearborn Brass or Grinnell. All escutcheons shall be of one-piece construction.
- F. Pipe sleeves shall be made of galvanized Schedule 40 pipe, 20 gauge galvanized steel or 16 gauge steel as follows:
 1. Sleeves passing through fire or smoke rated drywall construction shall be 16 gauge galvanized steel.
 2. Sleeves passing through masonry or concrete construction shall be Schedule 40 pipe or in the case of a cast-in-place firestop device, plastic and steel assembly with integral water and cold smoke seal.

3. Sleeves passing through non-fire or smoke rated drywall construction shall be 20 gauge galvanized steel.
- G. Sleeves shall be set as follows:
1. Set sleeves 1" above finished floor (6" at mechanical rooms and wet areas).
 2. Set sleeves to be flush with each side of finished wall.
 3. Sleeves shall be set securely in place before concrete is poured.
- H. This Contractor shall fire stop and/or smokestop the space between the sleeves and piping systems provided under his Contract as follows:
1. Through Penetration Firestopping in Fire Rated Construction.
 - a. Systems or devices listed in the UL Fire Resistance Directory under categories XHCR and HXEL may be used, providing that they conform to the construction type, penetrant type, annular space requirements and fire rating involved in each separate instance, and that the system be symmetrical for wall applications. Systems or devices must be asbestos free.
 - 1) Additional requirements: Systems must withstand the passage of cold smoke either as an inherent property of the system or by the use of a separate product included as part of the UL System or device.
 - 2) Acceptable manufacturers and products
 - a) Those listed in the UL Fire Resistance directory for the UL System involved, including Hilti, 3M, BioFire Shield or approved equal.
 - 3) All products must be from a single manufacturer.
 2. Smokestopping at Smoke Partitions
 - a. Any system complying with the requirements for through penetration firestopping in fire rated construction, as specified in Item H1 is acceptable, provided that the system provides the required smoke seal.
 3. Accessories
 - a. Fire, void or cavity materials: As classified under category XHHW in the UL Fire Resistance Directory.
 - b. Forming materials: As classified under category XHKU in the UL Fire Resistance Directory.
 4. Cast-in-place firestop devices, such as Hilti CP 680 shall be set in place prior to concrete placement. The cast-in-place device shall provide a watertight and cold smoke seal after the through penetrant is installed.
 5. The materials, installation procedures, clean-up, safety precautions and requirements shall be in accordance with manufacturers published information.

- I. Piping which passes through exterior walls or foundation slabs on grade, shall have penetration closures similar to Link Seal of the modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall opening. Links shall be loosely assembled with bolts to form a continuous belt around the pipe and with a pressure plate under each bolt head and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely watertight seal between the pipe and wall, reducing chances of cathodic reaction between these members. The Plumbing Contractor for work under his charge shall determine the required inside diameter of each individual wall opening or sleeve before ordering, fabrication or installation. The inside diameter of the wall opening shall be sized to fit the pipe and ensure a watertight joint. Where applicable, when installing seals, take into account the pipe O.D. if non-standard due to coating or jacketing.

2.3 ANCHORS, EXPANSION JOINTS AND OFFSETS

- A. Make proper provisions for expansion and contraction in all parts of the hot water and hot water recirculation piping systems wherever possible by means of pipe bends, pipe offsets, swing connections or changes in direction of piping. Where piping deflection cannot be employed to absorb expansion and contraction, furnish expansion joints. Expansion joints in copper piping shall be two-ply stainless steel bellows protected from torsion and misalignment by an outer steel or brass casing. Stroke shall provide for a minimum total expansion of 1 3/4 inch per hundred feet in copper piping between anchors. Ratings shall be 150 psig w.p. and 300°F temperature, designed for use with copper pipe. Expansion joints shall be as manufactured by U.S. Flexible Metallic Tubing Company, Robertshaw-Fulton or approved equal.
- B. Provide pipe guides where necessary or required to confine lateral movement and on each side of expansion loops or expansion joints. Guides for piping 2 inches and under shall be teflon lined copper, as manufactured by Keflex-Mave Type "BC" or approved equal. Guides for piping 2 1/2 inch and up shall be fabricated steel, covered inside and outside with protective coating, top half removable.
- C. All mains and risers having expansion offsets or joints shall be securely anchored to the building construction in such a manner as to throw all expansion towards the offsets of joints. All anchors shall be constructed from heavy galvanized iron, secured to the pipe and securely fastened to the construction. Anchors shall be furnished with turnbuckles or other suitable means for adjustment. The Plumbing Contractor shall be responsible for any additional structural items that may be required for proper installation of hangers. Anchors, guides and supports shall be approved by the Architect.

2.4 AIR VENTING AND DRAINAGE

- A. Grade all piping, except waste piping, for drainage through equipment or through accessible hose bibb drain valves in low points so that systems can be completely free of water by gravity flow.

- B. All high points in closed water piping systems shall be relieved of air through equipment vents or through accessible manual vents on the high points of the pipe lines. Vent valves on large piping and equipment shall be 1/2 inch gate valves with discharge pipes to convenient points for catching discharge; if impractical, provide caps and chains.
- C. Vent valves on small piping and equipment shall be 1/4 inch gate valves with discharge pipe to convenient points for catching discharge; if impractical, provide caps and chains.
- D. All draining, venting and filling of existing systems where new connections will be made under this Contract, as required, shall be provided under this Contract.

PART 3 – EXECUTION

3.1 CORE DRILLING

- A. All core drilling required for the installation of the plumbing system is to be done by the Plumbing Subcontractor. This contractor shall carry all costs for core drilling. The General Contractor will not be responsible for any circular penetrations required for the proper installation of the plumbing system. Locate all required openings prior to coring, coordinate the opening with the General Contractor and all other trades. Do not disturb the existing systems. Thoroughly investigate the existing conditions in the vicinity of the required opening prior to coring. This Subcontractor shall be responsible for damages to the building and its systems from the coring operations. Disturbances from coring shall be kept to a minimum.

3.2 INTERIOR COPPER WATER PIPING INSTALLATION

- A. Test all water piping in accordance with this Specification.
- B. Pipe used in piping assembly must be clean of dirt and obstructions and shall have ends square and reamed before butting into the fittings.
- C. Cut the tube to the required length with tube cutter designed for copper work.
- D. Remove burrs from the inside and outside of the cut edge and clean the end of the tube with steel wool or sand cloth until all discoloration is removed and metal is smooth and bright.
- E. Oxides will be removed by sand cloth, brush, etc.
- F. Removal of oxides or discoloration of pipe and fittings by acids or self-cleaning flux is forbidden.
- G. Apply a thin, uniform and complete coating of reliable brand of soldering flux meeting the ASME AWS/A5.8, lead free to the cleaned surfaces of the tube and fittings.

- H. When joints are soldered, remove excess solder with a cloth or brush leaving a fillet of solder in the chamber at the end of the fitting.
- I. All piping must be true and plumb and with proper pitch for draining after soldering.
- J. All lines of water piping shall be protected from water hammer by shock absorbers. Where shock absorbers are used, they shall be as manufactured by Josam Mfg. Co., JR Smith, or Zurn Mfg. Co., shall conform to the Plumbing and Drainage Institute published requirements and shall be made accessible through access panels.
- K. All connections to tanks and equipment shall be made with unions.

3.3 EXTERIOR WATER PIPING INSTALLATION

- A. All outside underground water piping shall have a minimum cover of five feet.
- B. All joints shall be left exposed to view until tests have been completed and approved.
- C. Provide retainer clamps and duplex flexible couplings on the incoming exterior service at the building wall. Clamps shall be 1/2" by 2" for pipe 4" in diameter and 5/8" by 2 1/2" for pipe 6" and larger. Rods shall be 3/4" diameter. Flexible couplings shall be installed 3' apart.

3.4 DISINFECTION OF DOMESTIC WATER SYSTEMS

A. General

1. All water piping systems shall be thoroughly disinfected with a solution containing not less than 50 ppm of available chlorine by this Plumbing Contractor. The chlorinating material shall be either liquid chlorine or sodium hypochlorite solution.
2. This work is to be supervised by the Owner's representative and performed by an Owner approved chemical testing laboratory and results sent to the Architect/Engineer or his representative for verification. All costs shall be borne by this Plumbing Contractor.
3. The testing laboratory shall submit a summary of the test procedure to the Owner for approval prior to any work being performed. All work to be in accordance with the Owner's requirements. This Plumbing Contractor shall provide any and all valves, pipe and connections required to disinfect the water supply system totally or in part as required. Provide isolating valves and draw-off valves for proper containment, phasing and flushing.

B. Procedure

1. The water systems shall be tested and thoroughly flushed prior to chlorination.
2. The chlorine shall be introduced at a point of the system so as not to create a hazard to the existing systems. The disinfection solution shall be allowed to remain in the system for a period of 24 hours, during which period all valves and faucets shall be opened and closed several times with the chlorine drawn to all points in the system. After

disinfection, the solution shall be flushed from the system with potable water until the residual chlorine content is not greater than 0.2 ppm for the domestic potable system. Prior to any further testing procedures, the Engineer and the Owner shall review all draw-off valve locations and chlorine introduction locations.

3. The Contractor is to allow ample time for the chlorination of the water systems and is to plan the chlorination just prior to occupancy if possible. If the system is to sit dormant for any extended period of time prior to occupancy, the Contractor is to flow water to all points in the building to completely flush the systems prior to occupancy. A full (3) days notice will be given the Owner and Engineer prior to the start of disinfection.

C. Tests

1. The Owner's representative shall select a location on the floor for a chlorine concentration test and a chlorine residual, a coliform bacteria and total plate count bacteria tests. The laboratory report shall include sample locations, chlorine concentration, chlorine residual, coliform bacteria count and, after flushing, total plate count bacteria tests.
2. Acceptable limits for total plate count shall be 300 per 100 ml sample. Acceptable levels of chlorine residual shall be 0.2 ppm, for the domestic potable water system.
3. If these parameters are not met, continued flushing of the water systems shall be required until they are met.
4. Full Owner acceptance of the water systems shall not be given until these parameters are met, documented and submitted by the Testing Laboratory selected.
5. Incoming exterior water mains shall be disinfected similarly except chlorine introduction shall be from the point of new water service connection to the existing main. System shall be disinfected when water pressure testing is completed and accepted.

3.5 CONNECTIONS TO EQUIPMENT

- A. Furnish and install waste and vents, traps, cold water, hot water, non-domestic cold and hot water, medical gases, piping, shutoffs, backflow preventers, pressure reducing valves, vacuum breakers, shock absorbers, regulators and flexible tubing for all final connections to kitchen, medical and laboratory equipment, headwalls, casework and sinks provided under other Sections. Roughing for this equipment shall be as indicated on the drawings.
- B. Obtain exact roughing in dimensions from manufacturers of all service locations before connecting to or roughing for equipment. Provide shutoff valves at each piece of equipment.
- C. Owner provided equipment shall be furnished and set under other Sections. Roughing for and final connections to including piping shall be provided by this Contractor. Equipment included shall be:
 1. Kitchen equipment (dishwasher, ice maker)
 2. Prefabricated medical gas headwalls
 3. Preformed sink tops
 4. Scrub stations
 5. Sterilizers, glasswashers

3.6 TESTING OF PIPING SYSTEMS

A. General

1. All piping systems shall be subjected to testing with water, gas or air as noted and shall hold tight at the pressure head stated for the time interval required without adding air or water. While any system is being tested, required head or pressure shall be maintained until all joints are inspected. All systems tested in the existing building shall be tested with air before water.
2. All tests shall be witnessed by the inspector having jurisdiction and the Architect/Engineer, with 48 hour notice given these authorities.
3. All equipment, material and labor required for testing any of the various systems or any part thereof shall be furnished by this Contractor.

B. Water Piping Systems: Upon completion of all water supply systems or a section of them as required, they shall be tested and proved tight under a water pressure of 150 psi. Gauge should be located on the lowest point of the new system and pressure shall hold for a period of (1) hour without introducing additional water. The water used for testing shall be from a domestic water source of supply.

C. Defective Work: If inspection or tests show defects, such defective work or material shall be replaced and inspection and tests shall be repeated. All repairs to piping shall be made with new materials. No caulking of screwed joints or holes will be acceptable.

3.7 FIXTURE ROUGHINGS

A. Install rough plumbing, including fixture carriers and supports, valves and water hammer arrestors within chase tolerances. Supply roughing through finish walls and at hose bibbs and shower heads shall be secure and free of movement. Locate valves and water hammer arrestors within 12" of approved access panel location.

B. Align exposed waste and supply pipe roughings with fixture connections within 1" tolerance. Provide flush valves in alignment with the fixture, without vertical or horizontal offsets. Obtain fixture manufacturer roughing data sheets for recommended roughing dimensions.

C. Provide fixture templates for casework Contractor for counter mounted sinks and lavatories.

D. Secure fixture supports to floor slab construction with lag bolts and metal expansion shields to support at least 250 lbs. for (5) minutes.

E. Provide fixture rough-in piping connection sizes in accordance with the drawing schedule.

3.8 NATURAL GAS PIPING INSTALLATION

- A. Gas meter(s), service piping to meter(s), and regulators will be provided by the local gas company. Gas piping provided under this Contract shall begin on the building side of the meter and extend to gas fired equipment.
 - 1. All piping shall pitch to drains at drip legs at least 6" long. Branch connections shall be taken off the top or side of the piping main.
 - 2. At each equipment connection, on the downstream side of any required equipment regulators, provide shutoff valve and union with drip leg.
 - 3. At gas booster pressure reducing valve and all other vented gas regulators, provide individual vent piping to the exterior, with turned down elbow and stainless steel insect screen.
 - 4. All gas valves shall be installed in accessible locations. Valves shall be provided at each branch runout from the supply main.
 - 5. This Contractor shall install all gas valves supplied by equipment suppliers.
 - 6. Piping shall be securely fastened, separately hung and shall not be strapped or supporting other systems. Piping drops in concrete block walls or buried shall be factory wrapped for protection from corrosion.
 - 7. All gas piping to laboratories shall first be connected to a master gas shut-off valve located in a cabinet immediately inside the lab.

3.9 NATURAL GAS TESTING

- A. All gas piping shall be tested in accordance with NFPA-54 latest edition.
- B. Prior to acceptance and initial operation, all piping installations shall be inspected and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of this code.
- C. Where repairs or additions are made following the pressure test, the affected piping shall be tested. Minor repairs and additions are not required to be pressure tested provided that the work is inspected and connections are tested with a noncorrosive leak-detecting fluid or other leak-detecting methods approved by the authority having jurisdiction.
- D. The test medium shall be air, nitrogen, carbon dioxide, or an inert gas.
- E. Pipe joints, including welds, shall be left exposed for examination during the test. Appliances and equipment that are not to be included in the test shall be either disconnected from the piping or isolated by blanks, blind flanges, or caps. Flanged joints at which blinds are inserted to blank off other equipment during the test shall not be required to be tested.
- F. Where the piping system is connected to appliances, equipment, or equipment components designed for operating pressures of less than the test pressure, such appliances, equipment, or equipment components shall be isolated from the piping system by disconnecting them and capping the outlet(s).

- G. Test pressure shall be measured with a manometer or with a pressure measuring device designed and calibrated to read, record, or indicate a pressure loss due to leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than 5 times the test pressure. The test pressure to be used shall be no less than 1½ times the proposed maximum working pressure, but not less than 3 psi (20 kPa), irrespective of design pressure. Test duration shall be not less than ½ hour for each 500 ft³ (14 m³) of pipe volume or fraction thereof. The duration of the test shall not be required to exceed 24 hours. The piping system shall withstand the test pressure specified without showing any evidence of leakage or other defects. Any reduction of test pressures as indicated by pressure gauges shall be deemed to indicate the presence of a leak unless such reduction can be readily attributed to some other cause.
- H. The leakage shall be located by means of an approved gas detector, a noncorrosive leak detection fluid, or other approved leak detection methods. Matches, candles, open flames, or other methods that provide a source of ignition shall not be used
- I. Where leakage or other defects are located, the affected portion of the piping system shall be repaired or replaced and retested.
- J. Gas utilization equipment shall not be placed in operation until after the piping system has been tested and purged.
- K. When piping is placed in operation, the air or inert gas in the piping shall be displaced with fuel gas. The air can be safely displaced with fuel gas provided that a moderately rapid and continuous flow of fuel gas is introduced at one end of the line and air is vented out at the other end. The fuel gas flow shall be continued without interruption until the vented gas is free of air. The point of discharge shall not be left unattended during purging. After purging, the vent shall then be closed.
- L. The open end of piping systems being purged shall not discharge into confined spaces or areas where there are sources of ignition unless precautions are taken to perform this operation in a safe manner by ventilation of the space, control of purging rate, and elimination of all hazardous conditions.

3.10 IDENTIFICATION OF SYSTEMS

- A. Provide clip-on color coded piping identification markers on piping systems installed under this Section. Provide matching flow arrows to indicate direction of flow. Markers shall be Seton Nameplate Co., W.H. Brady, Westline Products or approved equal.
- B. Color coding shall comply with the American Hospital Association or ANSI A13.1 Standards as directed by the Owner.
- C. Install markers on each side of wall penetrations, at each valve, at tee fittings and base of risers. Spacing of markers shall not exceed 20'-0" and shall include at least one marker in each room. Letters shall not be less than 1 1/2" in height. Arrows shall not be less than 9' long.

- D. Install markers on cleaned or painted piping only after piping is complete and has been accepted by the Architect. Install marker adjacent to access panels where piping is concealed.
- E. Stencil equipment, such as pumps, compressors, water heaters, and tanks with the name of the equipment and equipment number. Stencils shall be at least 6" high and of a color to provide a contrast with the equipment finish.

END OF SECTION