SECTION 15190

MECHANICAL IDENTIFICATION

PART 1 DESIGN DIRECTIVE

1.1 QUALITY ASSURANCE

A. Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.

PART 2 PRODUCTS

2.1 PAINTED IDENTIFICATION MATERIALS

A. Standard fiberboard stencils, prepared for required applications with letter sizes not less than 11/4" high letters for ductwork and not less than 3/4" high letters for access door signs and similar operational instructions. Use standard exterior type black enamel paint. Painted identification is not allowed on piping systems.

B. All propane gas piping, interior and exterior, shall be painted with two coats of yellow rust inhibitive paint.

2.2 PLASTIC PIPE MARKERS

A. Snap-on or strap-on type vinyl markers with integral flow arrows and factory applied graphics. Seton Name Plate Corp. - Setmark

B. Adjust size of marker and letters to accommodate the outside diameter, including insulation, of the pipe identified. Follow the guidelines published in ANSI A13.1 for marker/lettering size and color.

C. Lettering: Include in the submittal the manufacturer's standard preprinted nomenclature that best describes piping system in each instance, for review by the Architect/Engineer/owner.

D. Print each pipe marker with arrows indicating direction of flow, either integrally with piping system service lettering (to accommodate both directions), or as a separate unit of plastic.

2.3 VALVE TAGS & SCHEDULES

A. Provide 1-1/2” – 2” diameter, 19 gage, polished brass valve tags with black paint filled stamp engraved piping system abbreviation in 1/4" high letters and

sequenced valve numbers 1/2" high, and with 5/32" hole for fastener.

B. For each page of the schedule(s), provide frames of finished hardwood or extruded aluminum and plastic (Lexan) panes. Secure with screws for secure, removable mounting on walls. Schedules should include piping service, and name & address of installing contractor.

2.4 ENGRAVED PLASTIC LAMINATE SIGNS AND EQUIPMENT MARKERS

A. Provide 1/8" thick plastic laminate engraved with 1/4" high letters, block font, black with white core (letter color). Approximate size: 4-1/2" x 6", or as required to accommodate lettering. Wording shall indicate device identification number and description. Attach with stainless steel screws or contact type permanent adhesive where screws should not penetrate the substrate.

2.5 IDENTIFICATION

A. All underground piping shall have a metal detection underground warning tape installed above the pipe at a depth recommended by the manufacturer. The tape shall be capable of being identified by a metal detector, have a brightly colored background, and shall continuously identify the pipe with black letters.

Label Identification Chart				
Product	Tape Verbage	Manufacturer	Part Number 2" wide	Part Number 6" wide
Fuel Oil	Caution Buried Oil Line Below	Seton	60824	60832
LP Gas	Caution Buried Gas Line Below	Seton	57355	57361
Sanitary	Caution Buried Sewer Line Below	Seton	57352	57358
Water	Caution Buried Water Line Below	Seton	57353	57359
Miscellaneous	Caution Buried Pipeline Below	Seton	57357	57363

PART 3 – EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

A. Where identification is to be applied to surfaces that require insulation, painting or other covering or finish, including valve tags in finished mechanical spaces, install identification after completion of covering and painting. Install identification prior to installation of acoustical ceilings and similar removable

concealment.

3.2 DUCTWORK IDENTIFICATION

A. Identify air supply, return, exhaust, intake, and relief ductwork with stenciled signs and arrows, showing ductwork service and direction of flow, in black or white (whichever provides most contrast with ductwork color).Label all ducts in mechanical equipment rooms and in congested corridors when concealed by ceilings.

3.3 PIPING SYSTEM IDENTIFICATION

A. Locate pipe markers and color bands as follows:

1. Near each valve and control device.

2. Near each branch, excluding short takeoffs for fixtures and terminal units; mark each pipe at branch, where there could be question of flow pattern.

3. Install identification on both sides of walls, floors, or enclosure penetrations.

4. At access doors, manholes and similar access points that permit view of concealed piping.

5. Near major equipment items and other points of origination and termination.

6. Spaced at maximum of 25' along the piping runs.

B. Provide pipe markings in accordance with the following table:

PIPE LABEL IDENTIFICATION CHART		
Service	Marker Wording	Background color
<30psig Steam	LO-PRESSURE STEAM	Yellow
Steam condensate	CONDENSATE RETURN	Yellow
	PUMPED CONDENSATE	Yellow
Hot water systems	HEATING RETURN	Yellow
	HEATING SUPPLY	Yellow
Chilled water systems	CHILLED WATER RETURN	Green
	CHILLED WATER SUPPLY	Green
Two pipe hot/chilled water systems	HOT CHILLED WATER RETURN	Yellow
	HOT CHILLED WATER SUPPLY	Yellow
Heat recovery loops	GLYCOL	Yellow
Cooling tower water	CONDENSER WATER RETURN	Green
	CONDENSER WATER SUPPLY	Green
Nitrogen	NITROGEN	Black
Vacuum	VACUUM	Yellow
Compressed air	COMPRESSED AIR	Blue
Fire protection	SPRINKLER-FIRE	Red
Propane gas	PROPANE GAS	Yellow
Diesel & #2 oil	FUEL OIL	Yellow
DI Water	DEIONIZED WATER	Green
Domestic cold water	DOMESTIC COLD WATER	Green
Domestic hot water	DOMESTIC HOT WATER	Yellow
Domestic hot water recirculating	DOMESTIC HOT WATER RETURN	Yellow
Make-up water	MAKE-UP WATER	Green
Tempered water (emer. eye wash & showers)	TEMPERED WATER	Green
Sanitary drain	SANITARY DRAIN	Green
Storm drain, incl. roof drains	STORM DRAIN	Green
Plumbing vent	VENT	Green
Condensate drain	DRAIN	Green

3.4 VALVE IDENTIFICATION

A. Provide a valve tag on every isolation valve including and control valve in each piping system. Exclude check valves, valves within factory fabricated equipment units, plumbing fixture faucets, interior and exterior hose bibs, shut off valves at plumbing fixtures, HVAC terminal devices, and similar rough-in connections of end use fixtures and units. List each tagged valve in the valve schedules for each piping system.

B. Mount valve schedule frames and schedules in the main mechanical room in a visible location.

3.5 MECHANICAL EQUIPMENT IDENTIFICATION

A. Install an engraved plastic laminate sign on or near each major item of mechanical equipment.

3.6 UNDERGROUND PIPE INDENTIFICATION

A. Install pipe identification tape 12" above all underground pipe installations.

B. Install 2"wide tape for pipe ≤ 24" deep; 6"wide tape for pipe > 24" deep.

END OF SECTION 15190