SECTION 13 1501 – WATER FEATURE MECHANICAL IDENTIFICATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. Equipment Name Plates
 - 2. Valve Tags
 - 3. Stencils
 - 4. Pipe Markers
- B. Related Sections:
 - 1. SECTION 13 1401 WATER FEATURE PIPE AND FITTINGS
 - 2. SECTION 13 1404 WATER FEATURE WHITE GOODS
 - 3. SECTION 13 1502 WATER FEATURE PUMPS AND MOTORS
 - 4. SECTION 13 1503 WATER FEATURE FILTERS
 - 5. SECTION 13 1504 WATER FEATURE CHEMICAL FEED SYSTEMS
 - 6. SECTION 13 1505 WATER FEATURE OZONE GENERATION AND INJECTION
 - 7. SECTION 13 1506 WATER FEATURE UV STERILIZERS
 - 8. SECTION 13 1507 WATER FEATURE HEATERS
 - 9. SECTION 13 1508 WATER FEATURE HYDRONIC SYSTEMS
 - 10. SECTION 13 1509 WATER FEATURE CHILLERS
 - 11. SECTION 13 1510 WATER FEATURE HEAT EXCHANGERS
 - 12. SECTION 13 1511 WATER FEATURE VALVES, GAUGES, AND METERS
 - 13. SECTION 13 1515 AQUARIUM ACCESSORY EQUIPMENT
- C. References:
 - 1. The latest published edition of a reference shall be applicable, unless identified by a specific edition date.
 - 2. All materials, installation and workmanship shall comply with the applicable requirements and standards addressed within the following references:
 - a. ANSI / ASME A13.1 "Scheme for the Identification of Piping Systems".
 - b. ANSI Z535.1 "Safety Color Code".

1.2 SUBMITTALS FOR REVIEW

- A. SECTION 01 3300 SUBMITTAL PROCEDURES
- B. Submit product data sheets on all products contained in this section for approval. Data sheets must substantiate conformance with applicable standards.
- C. Shop Drawings: Provide drawings indicating wording, symbols, letter size, and color coding for mechanical identification.
 - 1. Submit process diagrams indicating equipment numbers and valve tag numbers with a valve schedule and chart. Schedule shall indicate valve position during normal and shutdown operation.
 - 2. Approved drawing shall be mounted on foam board, laminated, and mounted on mechanical room wall.
- 1.3 Coordination
 - A. Coordinate installation of mechanical identification devices with the completion of covering and painting of services where devices are to be applied.

- B. Coordinate installation of mechanical identification devices with the location of access panels and doors.
- C. Install identifying devices before installing acoustical ceiling tiles or similar concealment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Provide manufacturers standard products that conform to ANSI / ASME A13.1 requirement for lettering size, background size, background color and angle of installation.
- B. Provide mechanical identification materials manufactured by:
 - 1. Brady Corporation
 - 2. ASG Technologies
 - 3. Seton Identification Products
 - 4. Approved Contractor Submitted Alternate

2.2 EQUIPMENT NAME PLATES

- A. General: Provided an engraved multi-layered plastic laminated nameplate for all mechanical equipment purchased for this project. Nameplate to be 1/16-inch-thick black with white letters. Provide an additional engraved nameplate for each disconnect and controller connected to the mechanical equipment.
- B. Mechanical Equipment: Nameplate shall be a minimum of 3-inches high x 6-inches wide engraved with 3/4-inch high (minimum) lettering identifying the Equipment Tag as shown on the mechanical drawings and schedules. If necessary, the size of the plate should be enlarged to accommodate 3/4-inch characters. Do not reduce the letter height.
- C. Disconnects and Controllers: Nameplate shall be a minimum of 2-inches high x 4-inches wide engraved with 1/2-inch high (minimum) lettering exactly matching the connected equipment nameplate. If necessary, the size of the plate should be enlarged to accommodate 1/2-inch characters. Do not reduce the letter height.
- D. Access Panels: Provide a 1/16-inch-thick white nameplate with black letters identifying access to concealed valves or equipment such as those found above acoustical ceilings tiles. The nameplate shall be 3/4-inches high x 2-1/2-inches wide. Coordinate the information to be engraved on each plate so that it exactly matches the valve tag or equipment nameplate. The minimum letter height shall be 1/4-inch. Install these nameplates on the ceiling support to the right of the tile that would provide access.

2.3 VALVE TAGS

- A. General: Provide valve tags on all controlling valves installed and related to this project. Match service abbreviations and identification number with mechanical drawings.
- B. Valve Tags shall be approximately 19 gauge brass and no less than 1-1/2-inches in diameter. Tag shall be stamped and black filled with a service abbreviation and ID number. The service abbreviation shall be on the top line and be no less than 1/4-inches in height. The ID number shall be on the bottom line not less than 1/2-inch in height. If necessary, to accommodate longer abbreviations or number sequences increase tag size to 2-inches in diameter.
- C. Attach valve tag to the stem or body of the valve so that the tag is visible but does not interfere with the valve operation.

2.4 STENCILS

- A. Description: Stencils with clean cut symbols and letters of the following size:
 - 1. 3/4- to 1-1/4-inch (19 to 32mm) Outside Diameter of Insulation or Pipe: 8-inch (200mm) long color field, 1/2-inch (13mm) high letters.

- 2. 1-1/2- to 2-inch (40 to 50mm) Outside Diameter of Insulation or Pipe: 8-inch (200mm) long color field, 3/4-inch (19mm) high letters
- 3. 2-1/2- to 6-inch (65 to 150mm) Outside Diameter of Insulation or Pipe: 12-inch (300mm) long color field, 1-1/4-inch (32mm) high letters
- 4. 8- to 10-inch (200 to 250mm) Outside Diameter of Insulation or Pipe: 24-inch (600mm) long color field, 2-1/2-inch (63mm) high letters
- 5. Larger than 10 inch (250mm) Outside Diameter of Insulation or Pipe: 32-inch (800mm) long color field, 3-1/2-inch (88mm) high letters

2.5 PIPE MARKERS

- A. Identify all piping, concealed or exposed, with plastic pipe markers, plastic tape markers or stenciled painting.
- B. Pipe Markers shall comply with ANSI / ASME A13.1 2007 "Scheme for the Identification of Piping Systems" and be installed as required and indicated below using legends spelled out fully with few abbreviations and directional arrows to indicate flow. Arrows must have the same background color as the pipe marker legend or be incorporated into the pipe marker.
- C. Pipe marker color shall conform to ANSI Z535.1 "Safety Color Code".
- D. Minimum information indicating flow direction arrow and identification of fluid being conveyed as follows:

Pipes carrying unfiltered water to be labeled as:	RAW WATER
Pipes carrying filtered water to be labeled as:	FILTERED WATER
Backwash piping labeled as:	BACKWASH
Chlorine piping labeled as:	CHLORINE
Ozone gas piping labeled as:	OZONE
Acid piping labeled as:	ACID
Soda Ash piping labeled as:	BASE

- E. Plastic Pipe Markers: Supply and install factory fabricated, semi rigid plastic pipe marker.
 - 1. Pipes with an overall diameter of 6-inches or less (including insulation), shall be marked with a wrap-around pipe marker formed as a pre-tensioned device to extend 360° around the pipe at each location. Marker to be equipped with a 1/2-inch strip of adhesive on the inside to further secure the marker in a permanent position.
 - 2. For pipes with an overall diameter greater than 6-inches (including insulation) provide a semi rigid plastic strap-on pipe marker with a height no less than 3 times the letter height supplied with no less than two nylon straps to secure the marker in place
- F. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings in contrasting color. Pipe must be clean and dry prior to placement to ensure adhesion. Flow directional arrow markings shall wrap completely around pipe for pipes with an overall diameter of 6-inches or less (including insulation) or wrap no less than 20-inches around on pipe larger than 6-inches diameter.
- G. Underground Plastic Pipe Markers: Provide bright colored continuously printed plastic ribbon tape identifying flow direction and fluid content. Tape shall be minimum 6-inches (150mm) wide by 4 mil (0.1mm) thick with a minimum tensile strength of 120 lbs., manufactured for direct burial service resistant to alkaline, acids, and other destructive agents usually found in soil.

PART 3 - EXECUTION

3.1 PREPARATION

A. All surfaces that are to receive adhesive applied mechanical identification nameplates or adhesive pipe marking tape should be clean and dry prior to application.

3.2 INSTALLATION

- A. Equipment Name Plates
 - 1. Install plastic name plates with a 2 mil. permanent double-faced adhesive covering entire surface of the nameplate or with stainless steel mechanical fasteners.
 - 2. Identify pumps, filters, controllers, generators, and all other equipment with plastic name plates
 - 3. Identify control panels and major control components outside panels with plastic name plates
- B. Valve Tags
 - 1. Attach each valve tag using the following solid brass (or other suitable material approved by the engineer) products: Jack chain, 1-1/2-inch "S" hooks, or #6 beaded chain.
 - 2. Attach in a manner that tags are easily visible but do not obstruct the operation of the valve.
- C. Stencils
 - 1. Apply stencil painting in accordance with the manufacturer's instructions.
- D. Pipe Markers
 - 1. Mark pipe in accordance with manufacturer's instructions.
 - 2. Install identifying markers/stencils in clear view so they are visible for a normal standing position and align with axis of piping.
 - 3. Spacing between identifying markers/stencils not to exceed 20-feet (6m). Install above and below every floor penetration and on either side of every wall penetration and insure there is at least one marker per pipe in every room. Install pipe markers insuring visibility at each primary valve, branch, and any change in piping direction.
 - 4. Flow directional arrow markings shall wrap completely around pipe for pipes with an overall diameter of 6-inches or less (including insulation) or wrap no less than 20-inches around on pipe larger than 6-inches diameter.
 - 5. Install underground plastic pipe markers 6- to 8-inches (150 to 200mm) below finish grade, directly above buried pipe.

END OF SECTION