

DIVISION 22 - PLUMBING
SECTION 22 05 53
IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Provide manufacturers catalog literature for each product required.

PART 2 PRODUCTS

2.01 PLUMBING COMPONENT IDENTIFICATION GUIDELINE

- A. Nameplates:
- Heat exchangers, water heaters, and other heat transfer products.
 - Control panels, transducers, and other related control equipment products.
 - Pumps, tanks, filters, water treatment devices, and other plumbing equipment products.
- B. Tags:
- Piping: 3/4 inch diameter and smaller.
 - Manual operated and automated control valves.
 - Instrumentation, relays, gauges, and other related control equipment products.
 - Ceiling tacks placed on lay-in ceiling surface to reference plumbing components.
- C. Pipe Markers: 3/4 inch diameter and higher.

2.02 NAMEPLATES

- A. Description: Laminated piece with up to three lines of text.
- Letter Color: White.
 - Letter Height: 1/4 inch.
 - Background Color: Black.
 - Nameplate Height: 3/4 inch.
 - Nameplate Material:
 - Flexible: Vinyl with adhesive backing per ASTM D709.
 - Metal: Brass with center-side holes for screw fastening.

2.03 TAGS

- A. Flexible: Vinyl with engraved black letters on light contrasting background color with up to three lines of text. Minimum tag size 1-1/2 inch in diameter.
- B. Metal: Brass, 19 gauge 1-1/2 inch in diameter with smooth edges, blank, smooth edges, and corrosion-resistant ball chain. Up to three lines of text.
- C. Valve Tag Chart: Typewritten 12-point letter size list in anodized aluminum frame.
- D. Piping: 3/4 inch diameter and smaller. Include corrosion resistant chain. Identify service, flow direction, and pressure.

2.04 STENCILS

- A. Pipe: Stencil size required per external insulated or uninsulated pipe diameter.
- 3/4 to 1-1/4 inch Range: 1/2 inch text over 8 inch long background.
 - 1-1/2 to 2 inch Range: 3/4 inch text over 8 inch long background.
 - 2-1/2 to 6 inch Range: 1-1/4 inch text over 12 inch long background.

- B. Equipment: Use 2-1/2 inch text using Owner defined scheme.

2.05 PIPE MARKERS

- A. Comply with ASME A13.1.
- B. Flexible Marker: Factory fabricated, semi-rigid, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid conveyed.
- C. Underground Flexible Marker: Bright-colored continuously printed ribbon tape, minimum 6 inches wide by 4 mil, 0.004 inch thick, manufactured for direct burial service.
- D. Identification Scheme, ASME A13.1:
- Primary: External Pipe Diameter, Uninsulated or Insulated.
 - 3/4 to 1-1/4 inches: Use 8 inch field-length with 1/2 inch text height.
 - 1-1/2 to 2 inches: Use 8 inch field-length with 3/4 inch text height.
 - 2-1/2 to 6 inches: Use 12 inch field-length with 1-1/4 inch text height.
 - Secondary: Color scheme per fluid service.
 - Water; Potable, Cooling, Boiler Feed, and Other: White text on green background.

2.06 UNDERGROUND WARNING TAPE

- A. Materials: Use non-detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
- Exception: Use foil-backed detectable type tape where required by serving utility or where directed by Owner.
- B. Non-detectable Type Tape: 6 inches wide, with minimum thickness of 4 mil, 0.004 inch.
- C. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, 0.005 inch, unless otherwise required for proper detection.
- D. Legend: Type of service, continuously repeated over full length of tape.
- E. Color:
- Tape for Buried Power Lines: Black text on red background.
 - Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

2.07 CEILING TACKS

- A. Description: Steel with 3/4 inch diameter color coded head.
- B. Color code as follows:
- Plumbing Equipment: Yellow.
 - Plumbing Valves: Green.
 - Heating/Cooling Valves: Blue.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install flexible nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags in clear view and align with axis of piping
- C. Install plastic pipe markers in accordance with manufacturer's instructions.
- D. Install plastic tape pipe marker around pipe in accordance with manufacturer's instructions.
- E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.

SECTION 22 07 19
PLUMBING PIPING INSULATION

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER INSULATION

- A. Insulation: ASTM C547 and ASTM C795; rigid, preformed pipe insulation, noncombustible.
- K Value: ASTM C177, 0.24 at 75 degrees F.
 - Maximum Service Temperature: 850 degrees F.
 - Maximum Moisture Absorption: 0.2 percent by volume.
- B. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm.
- C. Vapor Barrier Lap Adhesive: Compatible with insulation.
- D. Indoor Vapor Barrier Finish:
- E. Outdoor Vapor Barrier Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.

2.03 JACKETING AND ACCESSORIES

- A. PVC Plastic Jacket:
- Jacket: One piece molded type fitting covers and sheet material, off-white color.

- Minimum Service Temperature: 0 degrees F.
 - Maximum Service Temperature: 150 degrees F.
 - Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E96/E96M.
 - Thickness: 10 mil, 0.010 inch.
 - Connections: Brush on welding adhesive.
- Covering Adhesive Mastic: Compatible with insulation.
 - Canvas Jacket: UL listed 6 oz/sq yd plain weave cotton fabric treated with dilute fire-retardant lagging adhesive.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Exposed Piping: Locate insulation and cover seams in least visible locations.
- B. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- C. Glass fiber insulated pipes conveying fluids below ambient temperature:
- Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
 - Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
- D. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
- E. For hot piping conveying fluids over 140 degrees F, insulate flanges and unions at equipment.
- F. Glass fiber insulated pipes conveying fluids above ambient temperature:
- Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples.
 - Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
- G. Inserts and Shields:
- Application: Piping 1-1/2 inches diameter or larger.
 - Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
 - Insert Location: Between support shield and piping and under the finish jacket.
- H. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, see Section 07 84 00.
- I. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces (less than 10 feet above finished floor): Finish with PVC jacket and fitting covers.
- J. Exterior Applications: Provide vapor barrier jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement. Cover with aluminum jacket with seams located on bottom side of horizontal piping.
- K. Buried Piping: Provide factory fabricated assembly with inner all-purpose service jacket with self-sealing lap, and asphalt impregnated open mesh glass fabric, with one mil, 0.001 inch thick aluminum foil sandwiched between three layers of bituminous compound; outer surface faced with a polyester film.
- L. Heat Traced Piping: Insulate fittings, joints, and valves with insulation of like material, thickness, and finish as adjoining pipe. Size large enough to enclose pipe and heat tracer. Cover with aluminum jacket with seams located on bottom side of horizontal piping.

SECTION 22 10 05
PLUMBING PIPING

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- B. Welders' Certificates: Submit certification of welders' compliance with ASME BPVC-IX.

1.02 QUALITY ASSURANCE

- A. Perform work in accordance with applicable codes.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Supply Systems: Provide piping, pipe fittings, solder, and flux (if used), complying with NSF 61 and NSF 372; label pipe and fittings.
- B. Plenum-Installed Piping: Provide piping with flame spread index of 25 or less and smoke developed index of 50 or less when tested in accordance with ASTM E84 or UL 723.

2.02 SANITARY WASTE PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
- Fittings: PVC.
 - Joints: Solvent welded, with ASTM D2564 solvent cement.

2.03 SANITARY WASTE PIPING, ABOVE GRADE

- A. Cast Iron Pipe: ASTM A74, service weight.
- Fittings: Cast iron.
 - Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.
- B. PVC Pipe: ASTM D2665.
- Fittings: PVC.
 - Joints: Solvent welded, with ASTM D2564 solvent cement.

2.04 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Copper Pipe: ASTM B88 (ASTM B88M), Type K, drawn temper.
- Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
 - Joints: ASTM B32, solder.

2.05 DOMESTIC WATER PIPING, ABOVE GRADE

- A. Copper Pipe: ASTM B88 (ASTM B88M), Type L, drawn temper.
- Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
 - Joints: ASTM B32 solder.

2.06 NATURAL GAS PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Steel Pipe: ASTM A53/A53M, Grade B, Type F, Schedule 40 black.
- Fittings: ASTM A234/A234M, wrought steel welding type.
 - Joints: ASME B31.1, welded.
 - Jacket: AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil polyethylene tape.

2.07 NATURAL GAS PIPING, ABOVE GRADE

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
- Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
 - Joints: Threaded or welded to ASME B31.1.

2.08 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
- If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
 - Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
 - Trapeze Hangers: Welded steel channel frames attached to structure.
 - Vertical Pipe Support: Steel riser clamp.
 - Rooftop Supports for Low-Slope Roofs: Steel pedestals with bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified; and as follows:
 - Bases: High-density polypropylene.
 - Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
 - Steel Components: Stainless steel or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.

2.09 BALL VALVES

- A. Construction, 4 inch and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

2.10 BUTTERFLY VALVES

- A. Construction 1-1/2 inch and Larger: MSS SP-67, 200 psi CWP, cast or ductile iron body, nickel-plated ductile iron disc, resilient replaceable EPDM seat, water ends, extended neck, 10 position lever handle.

- Provide gear operators for valves 8 inches and larger, and chain-wheel operators for valves mounted over 8 feet above floor.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- G. Provide access where valves and fittings are not exposed.
- H. Install water piping to ASME B31.9.
- I. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- J. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
- K. Pipe Hangers and Supports:
- Install in accordance with ASME B31.9.

3.02 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Disinfect water distribution system in accordance with Section 33 01 10 58.

SECTION 22 14 29
SUMP PUMPS

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Provide certified pump chart or curve with duty point marked over.

1.02 WARRANTY

- A. Manufacturer Warranty: Provide 2-year manufacturer warranty for pumps and related components. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 SUBMERSIBLE SUMP PUMPS

- A. General: Rugged stainless steel and cast iron housing and base with oil-filled motor chamber, ball bearings, and mechanical seal.
- B. Impeller: Thermoplastic, open nonclog, stainless steel shaft.
- C. Motor: Base mount, enclosed, lubricated oil-free, thermal-overload protected, continuous duty, permanent split capacitor with oil-resistant, three-prong connector, 10 foot power cord.
- D. Controls: Integral, chemically-resistant, vertical plated-steel rod float switch. Cycle pump Off/On between 2.5 and 9 inch heights from bottom of pump.
- E. Solids Handling Capacity: Pass lint and other small solids up to 1/2 inch in size.
- F. Discharge Pipe Size: 2 inch, NPT, female.
- G. Accessories: Provide full flow swing-type discharge check valve.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install products with related fittings and accessories according to manufacturer instructions.
- B. Observe and provide incidentals required to complete installation in compliance with ICC (IPC).

SECTION 22 30 00
PLUMBING EQUIPMENT

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data:
- Product Data: Provide manufacturer's literature and data sheets for each product. Include information on materials of fabrication, assembly of components, dimensions, weights, capabilities, performance, electrical characteristics, location and sizes of connections, service and access locations, and manufacturer-provided and field-installed accessories.

1.02 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 WATER HEATERS

- A. Tankless Gas-Fired Water Heaters:
- Minimum Efficiency Required: ASHRAE Std 90.1 I-P.
 - Water Inlet Pressure: From 30 psi to 150 psi.
 - Supply Gas Type: Natural gas.
 - Heater Type: Self-contained, wall-mounted unit capable of handling listed capacity, air intake valve, condensate solenoid drain valve, water-inlet strainer, removable thermally-insulated front panel, blower access cover, and threaded water, gas, and condensate pipe-end connections.
 - Burner-Heat Exchanger: 316L stainless steel assembly with single flue passage, flue baffle, and draft hood; thermally insulated and encased in corrosion-resistant steel jacket; baked-on enamel finish.
 - Safeties: Provide internal safeties for vent side, water flow, flame detection, fan speed, electrical load, and thermal load.
 - Controls: Color touchscreen interface for internal controls and built-in gas pressure regulator; temperature range adjustable from 100 to 185 degrees F using safety pilot and thermocouple.
 - Accessories: Provide cold water inlet expansion tank, hot water recirculation pump, inlet ball valve, outlet ball valve, outlet ASME-rated temperature-pressure relief valve, and pipe-mounted thermometers.
 - Electrical Load: 120 VAC, single phase.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions required for applicable certifications.
- B. Electrical Work: Provide automatic control and protective devices with associated wiring to interconnect related interfaced devices required for specified operation.
- C. Coordinate system, equipment, and piping work with applicable electrical, fuel, gas, vent, drain, and waste support interconnections as included or provided by other trades.

SECTION 22 40 00
PLUMBING FIXTURES

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Provide manufacturer's literature and data sheets for each product. Include materials of fabrication, rough-in requirements, location and sizes of connections, configurations, dimensions, finishes, features, and accessories.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Systems: Provide drinking water system components certified as complying with NSF 61 and NSF 372.
- B. ADA: Where indicated to be ADA-compliant, provide fixtures complying with ADA Standards and ICC A117.1.

2.02 REGULATORY REQUIREMENTS

- A. Comply with applicable codes for installation of plumbing systems.
- B. Comply with UL (DIR) requirements.
- C. Perform work in accordance with local health department regulations.
- D. Provide certificate of compliance from Authority Having Jurisdiction indicating approval of installation.

2.03 FLUSH VALVE WATER CLOSETS

- A. Water Closets:



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FOR PERMIT &
CONSTRUCTION

Revision Schedule	
Rev. #	Description
Date	

NEW Arcare MEDICAL OFFICE BUILDING
2709 Massard Rd
FT. SMITH, AR 72903

Arcare
117 S. 2ND ST.
AUGUSTA, AR 72006

DATE	DRAWN BY
06-15-2026	CO
PROJECT #	CHECKED BY
2517	JT

SHEET
P001
PLUMBING SPECIFICATIONS

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