

BuildingName
The Description of the Project
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SPECIFICATION DIVISION 23

NUMBER SECTION DESCRIPTION

DIVISION 23 HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

SECTION 231123 - FACILITY NATURAL-GAS PIPING

END OF CONTENTS TABLE

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SECTION 231123 - FACILITY NATURAL-GAS PIPING

REVISIONS:

APRIL 2018: REVISED TO LIST MFR.S FROM PML. R BENEDEK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

**INCLUDE PARAGRAPH 1.1.A AND B IN EVERY SPECIFICATION SECTION.
EDIT RELATED SECTIONS 1.1.B TO MAKE IT PROJECT SPECIFIC.**

- A. Drawings and general provisions of the Contract, Standard General and Supplementary General Conditions, Division 1 Specification Sections, and other applicable Specification Sections including the Related Sections listed below, apply to this Section.

1.2 SCOPE OF WORK:

- A. Provide piping, fittings, and specialties for Natural Gas Systems

1.3 WORK BY OTHERS - UTILITY COMPANY:

SPEC EDITOR: GAS METERS ARE TYPICALLY FURNISHED AND INSTALLED BY THE MICHCON, WITH CHARGES BILLED DIRECTLY TO THE OWNER. IF OTHER THAN MICHCON, CONTACT THE UTILITY SERVING THE SITE FOR INFORMATION AND COORDINATE WITH CONSTRUCTION MANAGEMENT. VERIFY AVAILABLE PRESSURE WITH MICHCON AND REQUIRED PRESSURE AT APPLIANCES. MICH CON GENERALLY LIMITS PRESSURE TO 14"WC UNLESS YOU CAN PROVE THE NEED FOR HIGHER PRESSURE.

- A. Gas meter, pressure regulator and related valves will be furnished and installed by MichCon.
- B. All gas piping outside the building, upstream of the gas meter is provided by MichCon.
- C. Contractor shall coordinate installation of meter and related components with MichCon and owner.
- D. Expenses and fees for MichCon work shall be paid for by the owner.

1.4 QUALITY ASSURANCE:

- A. Comply with the requirements of NFPA 54 - National Fuel Gas Code, for gas piping materials and components, and gas piping systems installation, inspection, testing, and purging.

PART 2 - PRODUCTS

2.1 GAS LINE PRESSURE REGULATORS:

SPEC EDITOR: DO NOT SPECIFY APPLIANCE PRESSURE REGULATORS HERE IF THEY ARE SPECIFIED TO BE INTEGRAL WITH GAS APPLIANCE IN EQUIPMENT SECTION. GAS LINE PRESSURE REGULATORS ARE NORMALLY FURNISHED BY GAS SUPPLIER, AND BY GAS-FIRED EQUIPMENT MANUFACTURER. ADDITIONAL PRESSURE LIMITING AND RELIEF VALVES ARE NOT REQUIRED IN ALL CASES. CONSULT NFPA 54 AND GAS SUPPLIER.

SPEC EDITOR: IF USED, INCLUDE SCHEDULE OR OTHERWISE INDICATE INLET AND OUTLET PRESSURES AND FLOW

- A. Single stage, steel jacketed, corrosion-resistant gas pressure regulators; with atmospheric vent, elevation compensator; with threaded ends for 2 inch and smaller, flanged ends for 2-1/2 inch and larger; for inlet and outlet gas pressures, specific gravity, and volume flow indicated.

SPEC EDITOR: VEN WILL ADD NAMES BELOW

- B. Manufacturers:

- 1. _____
- 2. _____
- 3. _____
- 4. Etc..

2.2 LUBRICATED PLUG VALVES:

SPEC EDITOR: THIS GAS ISOLATION VALVE IS TYPICALLY SPECIFIED FOR LARGER PIPING ONLY, AT BOILERS ETC. FOR LAB ISOLATION, USE BALL VALVES SPECIFIED IN 220523. DELETE PARAGRAPH 2.2.A IF BALL VALVES ARE SPECIFIED FOR 2" AND LESS IN SECTION 220523.

- A. Gas Cocks 2 Inch and Smaller: 150 psi WOG, bronze body, straight-away pattern, square head, threaded ends.
- B. Gas Cocks 2-1/2 Inch and Larger: MSS SP-78; 175 psi, lubricated plug type, semi-steel body, single gland, wrench operated, flanged ends.
- C. Manufacturers: Jenkins Bros., Lunkenheimer Co., NIBCO, Inc., Powell Co., Stockham

2.3 MASTER GAS SHUT OFF VALVE AND VALVE BOX

SPEC EDITOR: THIS WAS REQUIRED ON LABS AT ONE TIME, BUT IS NO LONGER. SPECIFIC APPLICATIONS MAY WARRANT ITS USE. ADDITIONAL RESEARCH SHOULD BE DONE PRIOR TO SPECIFYING. CONSIDER CHEMTROL.

- A. Master gas shut off valve shall be bronze body ball valve. Recessed valve box constructed of extruded aluminum with aluminum back plate and frame cover. Assembly shall include clear flexible window with emergency pull ring. Permanently affix the following to the window:

CAUTION: MASTER GAS SHUT OFF VALVE

a) CLOSE ONLY IN EMERGENCY

B. Manufacturers: Ohmeda, Mueller

PART 3 - EXECUTION

SPEC EDITOR: DELETE ARTICLE 3.1 AND 3.2 FOR NEW PROJECTS.

3.1 PREPARATION:

A. Precautions: Before turning off gas, turn off all equipment valves. Perform a leakage test to determine that all equipment is turned off.

3.2 HANDLING FLAMMABLE LIQUIDS:

A. Remove and legally dispose of liquid from drips in existing gas piping. Handle cautiously to avoid spillage or ignition.

3.3 NATURAL GAS PIPING INSTALLATION REQUIREMENTS:

A. See Section 221113 for piping materials and installation requirements.

B. Install, inspect, test, and purge natural gas systems in accordance with NFPA 54, and local utility requirements.

C. See Section 220523 for valve installation requirements.

SPEC EDITOR: INDICATE ON THE DRAWINGS, THE ROUTING AND TERMINATION LOCATION OF THE CONDUIT VENT PIPE.

D. Gas piping in air plenum ceilings shall be continuously welded or installed in air-tight conduit constructed of Schedule 40 seamless black steel pipe with welded joints. Vent conduit to the outside and terminate with a screened vent cap. Valves shall not be installed in plenums.

E. Drips and Sediment Traps: Install a drip leg at inlet to terminal equipment, points where condensate may collect, and at the outlet of the gas meter. Do not install drips where condensate is likely to freeze. Construct drips using a tee with plugged or capped bottom outlet. Drip shall be minimum of 3 pipe diameters long, same size as pipe. Locate drips to permit cleaning and emptying.

3.4 GAS LINE PRESSURE REGULATOR INSTALLATION:

SPEC EDITOR: REFER TO NFPA 54 FOR OVERPRESSURE PROTECTION.

A. Install a gas isolation valve upstream of each gas pressure regulator. Where two gas pressure regulators are installed in series in a single gas line, a valve is not required at the second regulator.

B. Install pressure relief or pressure limiting devices so they can be readily operated to determine if the valve is free; so they can be tested to determine the pressure at which they will operate; and examined for leakage when in the closed position.

C. Install vent line from pressure regulators to outdoors.

3.5 ELECTRICAL BONDING AND GROUNDING:

- A. Install above ground portions of gas piping systems, upstream from equipment shutoff valves electrically continuous and bonded to a grounding electrode in accordance with NFPA 70 - "National Electrical Code."
- B. Do not use gas piping as a grounding electrode.
- C. Conform to NFPA 70 - "National Electrical Code," for electrical connections between wiring and electrically operated control devices.

END OF SECTION 231123