

## **SECTION 22 48 20 - NATURAL GAS SYSTEMS (STEEL PIPE)**

### **PART 1 - GENERAL**

#### **1.1 WORK INCLUDED**

- A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Documents.

#### **1.2 INSTALLATION**

- A. Install Work In Compliance With:
  - 1. National Fuel Gas Code NFPA 54, ANSI Z223.1.
  - 2. Building and Fire Code of New York State, as amended.
  - 3. American Gas Association (AGA).
  - 4. Local utility company - Rochester Gas and Electric Corporation.

#### **1.3 SUBMITTALS**

- A. Submit shop drawings on items specified in this section under Part 2, "Products."

### **PART 2 - PRODUCTS**

#### **2.1 SERVICE**

- A. Installation by local utility company.

#### **2.2 PIPING**

- A. Interior:
  - 1. Refer to Section "Piping Systems and Accessories," Exhibit "A", for piping materials.
- B. Exterior:
  - 1. Exposed above ground: Provide one coat of alkyd primer and two coats of exterior acrylic latex gloss enamel, color as selected by the Owner.

#### **2.3 SLEEVES**

- A. Schedule 40 black steel pipe sleeves, two pipe sizes larger than the pipe.

## 2.4 GAS COCKS

- A. Refer to Section "Valves"

## PART 3 - EXECUTION

### 3.1 GAS PIPING

- A. General:
  - 1. Make arrangements with the local gas company for service, and pay all costs.
  - 2. Pipe joining qualifications: Welded piping fabricated by approved welder. Welder to be certified under ASME or API Code III.
  - 3. Interior gas piping sizes are based on schedule 40 black steel. If CSST piping is used, plumbing contractor to verify correct pipe size.
- B. Interior: Pitch up in direction of flow; install 6 in. long drip legs at low points.

### 3.2 PIPING SYSTEM INSTALLATION

- A. Piping shall not be installed in or through a ducted supply, return or exhaust, or a clothes chute, chimney or gas vent, dumbwaiter or elevator shaft. Piping installed downstream of the point of delivery shall not extend through any townhouse unit other than the unit served by such piping.
- B. Piping in solid partitions and walls. Concealed piping shall not be located in solid partitions and solid walls, unless installed in a chase or casing.
- C. Underground penetrations prohibited. Gas piping shall not penetrate building foundation walls at any point below grade. Gas piping shall enter and exit a building at a point above grade and the annular space between the pipe and the wall shall be sealed.
- D. Protection against physical damage. Where piping will be concealed within light-frame construction assemblies, the piping shall be protected against penetration by fasteners in accordance with the following:
  - 1. Exception: Black steel piping and galvanized steel piping shall not be required to be protected.
  - 2. Protection against physical damage. In concealed locations, where piping other than black or galvanized steel is installed through holes or notches in wood studs, joists, rafters or similar members less than 1-3/4 inches from the nearest edge of the member, the pipe shall be protected

by shield plates. Such shield plates shall cover the area of the pipe where the member is notched or bored, and shall extend a minimum of 4 inches above sole plates, below top plates and to each side of a stud, joist or rafter. The movement of piping made of CSST (including, but not limited to, piping made of listed AR-CSST) shall not be otherwise constrained by straps, clips or other support devices. In addition, where CSST (including, but not limited to, listed AR-CSST) is installed in a concealed location and parallel to any joist, rafter, or similar member, the CSST shall be protected by shield plates in any area where the CSST is not:

- a) Physically supported in a manner that ensures the CSST will always be at least 1-3/4 inches away from the nearest edge of any member, or
- b) Encased in a protective metal pipe made of schedule 40 steel or iron pipe or in a protective pipe sleeve made of a material approved by the building official as the equivalent of schedule 40 steel or iron pipe.

Such shield plates shall cover the area the where the CSST is located, and shall extend a minimum of 4 inches to each side of the CSST.

In all cases, shield plates shall be certified or listed as complying with ANSI LC-1. In addition, in the case of piping made of CSST, shield plates shall be listed for use with the manufacturer's CSST system.

3. Piping in solid floors shall be laid in channels in the floor and covered in a manner that will allow access to the piping with a minimum amount of damage to the building. Where such piping is subject to exposure to excessive moisture or corrosive substances, the piping shall be protected in an approved manner. As an alternative to installation in channels, the piping shall be installed in a conduit of Schedule 40 steel, wrought iron, PVC or ABS pipe.
4. Underground piping systems shall be installed a minimum depth of 12 inches below grade.

### **3.3 ARRANGEMENTS**

- A. Provide for application to and approval from Rochester Gas and Electric for connection to gas main, and pay costs.
- B. Provide sleeves where required by gas service. Coordinate with the utility company.
- C. Provide 6 in. deep concrete pad on 12 in. gravel base, length and width as required by utility company.
- D. Gas piping supplying an emergency generator shall be connected on the supply side of the main gas shutoff valve and marked as supplying an emergency

generator. The building's main gas shutoff valve shall be marked or tagged to indicate the existence of the separate EPS shutoff valve.

- E. For gas services supplying elevated pressure to an emergency generator, provide a gas pressure regulator in the supply line to the remainder of the building.

### **3.4 GAS PIPING TESTS**

- A. Provide necessary items to complete proper testing of natural gas piping.
- B. Perform tests as required by the gas company. Tests to be witnessed by the gas company. Make arrangements and pay costs.
  - 1. 25 psi air pressure for two hours.
  - 2. Tests to be performed before connection to equipment with regulators.
  - 3. Provide written certification that tests have been conducted and satisfactorily completed. Submit to Owner's Representative.

**END OF SECTION**