This master should be used by designers working on Port of Portland construction projects and by designers working for PDX tenants (“Tenants”). Usage notes highlight a few specific editing choices, however the entire section should be evaluated and edited to fit specific project needs.

SECTION 335133 – NATURAL GAS UTILITY METERS

1. GENERAL
	* + 1. DESCRIPTION
				1. This section describes provision of natural gas meters used for natural gas utility cost allocation.
			2. RELATED WORK SPECIFIED ELSEWHERE
				1. Section 330900, Tenant Metering System
				2. Section 331233, Water Utility Meters
				3. Section 337173, Electric Utility Meters
			3. REFERENCES
				1. ANSI: American National Standards Institute

ANSI B109.1: Diaphragm-Type Gas Displacement Meters (Under 500 Cubic Feet Per Hour Capacity)

ANSI B109.2: Diaphragm-Type Gas Displacement Meters (Over 500 Cubic Feet Per Hour Capacity)

* + - 1. SUBMITTALS
				1. Submit technical data sheets, installation manuals, and/or user documentation manuals that describe product installation, operation and maintenance, physical data, electrical characteristics, signal output (cubic feet/pulse), and connection requirements.
			2. WARRANTY
				1. Provide manufacturer’s standard one year warranty against defects in materials, fabrication, finishes, and installation commencing on date of substantial completion.
1. PRODUCTS
	* + 1. NATURAL GAS METERS

 For Tenant projects, keep Paragraph A and delete B.

For Port projects, keep Paragraph B and delete A.

* + - * 1. Acceptable Manufacturer and Models: Elster American Meter, Models AL-425, AL-800, and AL-1000, no substitutions. Meter and meter output shall be furnished through Johnson Controls, Inc., local branch office located at 4011 SE International Way, Milwaukie, Oregon 97222.
				2. Acceptable Manufacturer and Model: Elster American Meter, Models AL-425, AL-800, and AL-1000, or pre-bid approved equal.
				3. Meter Description:

Aluminum case, molded convoluted diaphragms, security seals that indicate tampering.

Suitable for 10-psig maximum natural gas pressure.

Temperature compensated meter.

Line 4 is for Tenant use only. Delete entirely for Port projects.

Use Model AL-1000 for service connections with capacity up to 1,000 Standard Cubic Feet per Hour (SCFH), Model AL-800 for service connections up to 800 SCFH, and Model AL-425 for service connections up to 425 SCFH. Coordinate with the Port to determine service connection capacity.

Paragraph C is for Tenant use. Revise specific product models for Port projects.

* + - * 1. Meter Output Description:

Model AL-425 Meter:

Provide Elster American Remote Volume Pulser, Model RVP-VI.

One pulse per revolution of index drive.

Compatible with 1cubic foot and 2 cubic foot drives.

Four digit odometer.

RVP shall be provided with the meter base.

Models AL-800 & AL-1000

Provide Elster American Remote Volume Pulser, Model RVP-FI.

One pulse per revolution of index drive.

Compatible with 5 cubic foot drives.

Six digit odometer.

RVP shall be provided with the meter base.

1. EXECUTION
	* + 1. INSTALLATION
				1. Install all devices as required by code and the Authority Having Jurisdiction, and as recommended by the equipment manufacturer.
				2. Location: Set meter in a location designated by the Port for connection to the existing gas distribution system. Meter shall be located downstream of the pressure reducing valve that is provided by the Port. Coordinate meter location with the Port prior to installation.
				3. Support: The gas main piping supports are intended to support the meter. If this support is not adequate, provide additional support such as a shelf, pipe stand, wall, or ceiling suspension system. All such supports shall be designed and stamped by a professional engineer and submitted to the Port for review.
				4. Orientation: Install meter with gas piping inlet and outlet on the top of the meter.
				5. Cleaning: Clean inlet and outlet piping free of debris prior to connecting the meter.
			2. STARTUP AND TESTING
				1. Follow the meter manufacturer’s recommendations for placing the meter into operation. Pay close attention to the sequence and speed at which valves are opened to prevent damage to the meter.
				2. After installation is complete, test meter operation by flowing gas and verifying that the RVP register and pulse output are functioning properly. Identify any leaks and make necessary repairs.

END OF SECTION 335133