SECTION 02415
PRESSURE REDUCING VALVES

PART I: GENERAL

1.1 GENERAL REQUIREMENTS
- A. Pressure reducing valves (PRV).

1.2 MEASUREMENT AND PAYMENT
- A. A unit prices:
  1. Payment for pressure reducing valves is on a unit price basis for each valve installed.
  2. Payment includes vault, piping, manhole, fittings and appurtenances necessary for complete installation of valve.
  3. Refer to Section 01270 – Measurement and Payment for a unit price procedures.
- B. Stipulated Price (Lump Sum):
  1. If Contract is a Stipulated Price Contract, payment for work in this Section is included in Total Stipulated Price.

1.3 REFERENCES
- A. ASME – American Society of Mechanical Engineers.
  1. ASME B16.1 – Cast Iron Pipe Flanges and Flanged Fittings.
- B. ASTM – American Society for Testing and Materials.
  1. ASTM A48 – Standard Specification for Gray Iron Castings.
- C. CFTS –City of Friendswood Technical Specifications.

1.4 SUBMITTALS
- A. Conform to requirements of Section 01330 – Submittal Procedures.
- B. Submit manufacturer's product data for proposed valves for approval.
- C. Submit design calculations and shop drawings for valve vaults and manholes, sealed by a Professional Engineer licensed by the State of Texas.

1.5 QUALITY CONTROL
- A. Submit manufacturer's affidavit that pressure reducing valves purchased for the Work, were manufactured and tested in the United States and conform to requirements of this Section.

PART II: PRODUCTS

2.1 MATERIALS
- A. Provide approved PRV with basket strainer in location and arrangement as shown on the Drawings.
  1. Valve body: Ductile iron with ASME B16.1, Class 125, flanges.

2. Valve cover: ASTM A48 cast iron.
3. Valve internals:
   a. Provide top and bottom single moving disc and diaphragm assembly.
   b. Use flexible nylon fabric reinforced elastomer diaphragm integral with assembly.
   c. Provide valve internal trim (seat ring, disc guide and cover bearing) made of stainless steel.
   d. Provide heat-fusion bonded epoxy coating to internal and external surfaces of valve body including disc retainer and diaphragm washer. Holiday-test coating applied to valve body.
   e. Treat stem and seat with penetrative salt nitride process.
   f. Use Xylan coated seat.
   g. Do not use leather parts.

B. Control Tubing: Contain shutoff cocks with Y-strainer.

C. PRV: Equip with visual valve position indicator. Fit valve position indicator with air-bleed petcock. Authorized manufacturer's representative to initially set pressure in field with sixty pounds per square inch (60 psi) downstream pressure.

D. Provide basket strainer upstream of PRV as shown on the Drawings.
   1. Strainer body: Quick-opening type, fabricated-steel construction with ANSI B 16.1, Class 150, flanges.
   2. Basket: Type 304, stainless steel.
   3. Model: Provide basket compatible with the manufacturer of the pressure reducing valve. Hayward Model 90 or approved equal, for PRV four inches (4 In) through twenty-four inches (24 In). Provide Hayward Model 510 or approved equal, for PRV fourteen inches (14 In) or greater when space limitations dictate use of smaller strainer housing.

E. Provide pressure reducing pilot that has adjustable range of twenty pounds per square inch (20 psi) to one hundred seventy-five pounds per square inch (175 psi). Provide and install pilot system components according to manufacturer’s recommendations unless otherwise approved by the Project Manager.

F. Valve Vaults: Provide as shown on the Drawings and conforming to requirements of Section 02440 – Valve Boxes, Meter Boxes and Meter Vaults.

PART III: EXECUTION

3.1 EARTHWORK

A. Conform to applicable provisions of Section 02125 – Excavation and Backfill for Utilities.

3.2 SETTING VALVES

A. Provide services of authorized representative of valve manufacturer on site during installation of valves and to serve as adviser on aspects of installation. Take necessary precautions to protect pilot system during PRV installation.

B. Prior to installing valves, remove foreign matter from within valves. Inspect valves in open and closed position to verify that parts are in satisfactory working condition.

3.3 DISINFECTION AND TESTING

A. Disinfect valves and appurtenances as required by Section 02455 – Disinfection of Waterlines and test as required by Section 02450 – Hydrostatic Testing of Waterlines.

3.4 PAINTING OF PIPING AND VALVES

A. Paint piping and valves located in vaults, stations and above ground using ACRO Paint No. 2215 or approved equal.

END OF SECTION