Section 351 VIII.8. PRESSURE REDUCING VALVE

VIII.8.1. The pressure reducing valve shall be a hydraulically operated, diaphragm actuated, y-pattern, globe style control valve that reduces a higher upstream pressure to a lower, constant, downstream pressure regardless of fluctuating demand or varying upstream pressure. Pressure sensing shall be done integrally on the valve body through a port on the downstream side of the valve. No piston valve operated actuators will be accepted. The valve shall meet the applicable requirements of AWWA Standard C530.

VIII.8.2. The valve body and cover shall be constructed of a high strength ductile iron conforming to ASTM A536 and joined with type 316 bolts and nuts. The valve shall be pressure rated at 250 psi. The valve body shall be internally and externally coated with an AWWA C550 Standard, NSF 61 approved, epoxy powder - fusion bonded coating. The valve stem and seat shall be constructed of type 316 stainless steel. The valve body shall have integral flanges, faced, and drilled per ANSI Class 150. The seat area shall have a flow opening without stem guides, bearings or supporting ribs.

VIII.8.3. The actuator assembly shall be single diaphragm operated. The actuator shall be capable of being changed to a double chamber configuration in the field without the addition of any partitions or chambers. The valve stem shall be guided by replaceable bearing bushings to assure alignment for true seal and control. The diaphragm shall consist of nylon fabric, bonded with EPDM elastomers, compatible with chlorinated, drinking water. The entire actuator assembly consisting of the valve shaft, bearing, diaphragm assembly, separating partition and top cover must be removable from the valve as a single unit. The control chamber between the diaphragm and the separating partition shall be capable of being open to or isolated from the valve internal body pressure. All repairs shall be possible without removing the valve body from the water line. The actuator assembly shall have stainless steel nuts, bolts, and studs. The actuator shall include a visual indicator. The valve shall capable of accepting a V-Port Throttling Plug in the field.

VIII.8.4 The pilot control shall be a direct acting, field adjustable, spring loaded. The pilot will be locally sensed from the downstream tap on the valve body. All pilot control tubing, connectors, valves, and fittings shall be of type 316 stainless steel material. Cock valves and a y-strainer must be supplied in the control loop assembly. The pilot control for the valve shall reduce the upstream pressure of approximately 80 PSI and maintain a consistent 50-55 PSI downstream pressure.

VIII.8.5. Prior to shipment, the valve shall pass in-factory standard tests that include a full range pressure test and a full function, operational test. Test results shall be submitted to the Owner for approval prior to installation.

VIII.8.6. Start-Up and Owner staff training shall be performed by a trained, authorized factory employee, whose service area includes the Owner's project site.

VIII.8.9. The pressure reducing valve shall be Bermad Series #WW-14"-720-00-Y-C-A5-EB-NN-Im as manufactured by Bermad Victaulic Technologies, or Owner approved equivalent.

Section 351 X.5. MODULAR ABOVE GROUND ALUMINUM VALVE ENCLOSURE

X.5.1. The enclosure for the pressure reducing valve assembly shall be of factory manufactured, modular construction, with a maximum of four sections mechanically secured together to form a weathertight, secure, enclosure for a permanent, above ground installation.

X.5.2. The enclosure shall be designed and constructed to meet the requirements of the following standards, in addition to all applicable local codes and regulations:

- ASSE 1060 for a Class II-Freeze Retardant Enclosure (Insulated, Non-Heated)
- ASTM B209
- ASTM B221

X.5.3 The roof, walls and access panels/doors shall be of mill finished, marine grade 5052-H32 (0.125 inch) aluminum complying with ASTM B209. All bracing and framing shall interior mounted and be 6063-T52 aluminum in conformance with ASTM B221. No wood, particle board, or wood composite materials shall be used in the fabrication of the enclosure. Stainless steel materials shall be used for all fabrication and installation fasteners, brackets, anchor clips, vent screening and miscellaneous enclosure components. Weather and temperature stable insulation for the roof and wall panels shall have a minimum R-value of 10, with a high flame point resistance and low water absorption rate. The installed enclosure shall have the minimum inside dimensions as dimensioned on the drawings.

X.5.4. The two long sides of the enclosure shall be provided with dual, padlockable, removable access panels or swinging, hinged doors centered on the side of the enclosure. The panels/doors shall be the maximum dimension allowed by ASSE 1060 3.3.3. The enclosure shall be furnished with 10-mesh stainless steel screen covered vents/drain ports on the bottom of each side of the enclosure.

X.5.5. The enclosure shall be field installed on a cast in place concrete pad, with the nominal length and width dimensions recommended by the enclosure manufacturer. The concrete pad thickness shall be as shown on the plans. All portions of the enclosure and mounting hardware in contact with the concrete pad shall be protected with a thick mil epoxy coating, or other protective system to prevent corrosion. The enclosure shall be mounted to the slab with type 316 stainless steel wedge anchors, sized to withstand the design wind load of the enclosure. The anchoring system shall by KWIK Bolt 3 SS316 as manufactured by Hilti, or approved equivalent.

X.5.6. As the enclosure's function is part of a public water system, it shall be wind load designed to meet the requirements of the FBCB Wind Load Map for the project site.

X.5.7. The enclosure shall be Hot Box Drawing LA108120054 by Hubbell, Enclosure Model BFP8-CH by AquaShield Protective Enclosures, or approved equivalent.

MOTT MACDONALD

Supplement to JEA Water and Wastewater Standards Manual Section 755
January 2018 (as revised)

1. Section 755 I.2.: Add: "The Contractor shall comply with all requirements of the applicable regulatory agency permit approved Horizontal Directional Drill (HDD) Frac-Out Plan for this Project. The Contractor shall submit any amendment required to this Frac-Out Plan for Project specific site conditions or HDD operations in accordance with Section 755 I.8."
2. Section 755 I.8.2.1.6: Add: "The Contractor shall comply with all requirements of the applicable regulatory agency permit approved Horizontal Directional Drill (HDD) Frac-Out Plan for this Project. The Contractor shall submit any amendment required to this Frac-Out Plan for Project specific site conditions or HDD operations in accordance with Section 755 I.8."
3. Section 755 I.8.2.4.3: Add: "The Contractor shall comply with all requirements of the applicable regulatory agency permit approved Horizontal Directional Drill (HDD) Frac-Out Plan for this Project. The Contractor shall submit any amendment required to this Frac-Out Plan for Project specific site conditions or HDD operations in accordance with Section 755 I.8."
4. Section 755 I.8.2.4.4.: Add: "The Contractor shall comply with all requirements of the applicable regulatory agency permit approved Horizontal Directional Drill (HDD) Frac-Out Plan for this Project. The Contractor shall submit any amendment required to this Frac-Out Plan for Project specific site conditions or HDD operations in accordance with Section 755 I.8."
5. Section 755 I.10.4.: Add: "At the conclusion of all drilling operations, drilling fluid remaining in the pit will be settled, removed completely from the pit, and hauled to a disposal site of the HDD Contractor's choice in accordance with applicable regulations within 48 hours of the pipe pull-in. The pit(s) shall be backfilled in 8-inch lifts with FDOT Index 514 Optional Base Group 6 (Limerock-LBR 100) material and compacted in accordance with FDOT Standard Specification Section 120-8, 9, and 10. The paved and/or vegetated surface of the disturbed pit area shall be restored as specified."
6. Section 755 I.11.: Add: "The Contractor shall comply with all requirements of the applicable regulatory agency permit approved Horizontal Directional Drill (HDD) Frac-Out Plan for this Project. The Contractor shall submit any amendment required to this Frac-Out Plan for Project specific site conditions or HDD operations in accordance with Section 755 I.8."
7. Section 755 III.3. Delete: First two paragraphs.
   Add: "The Contractor shall utilize an optical gyroscope tool for steering and recording the location of the pilot hole drill head. The steering tool shall be insensitive to vibration and down hole conditions and pressures. It shall also be insensitive to any external magnetic interference such as rail lines, bridges, metallic pipelines and conduits, electric cables, and

road, rail, or water body traffic. The gyroscope tool shall also be furnished with a continuous borehole mud pressure sensor that reports to the HDD operator.

The tool shall communicate and record to the HDD operator continuous, real time X, Y, and Z coordinates of the rotating drill head using "continuous measurement while drilling" technology. The tool shall have the following accuracies: Azimuth (0.04°); Inclination (0.01°); and Tool Face (0.02°).

The use of Magnetic Guidance System (MGS) and "Walk-Over" steering and tracking tools will not be permitted for this Project.

The optical gyroscope tool shall be of a proven type for HDDs of a similar scope as proposed for this Project and shall be operated by personnel trained and experienced with this steering and recording tool for projects of a similar scope as proposed for this Project."

8. Section 755 III.3.1.1: First sentence change: "…to an established **GPS control** bench mark."
9. Section 755 IV.4.: First paragraph, after first sentence add: "Once over-reaming activities commence, the Contractor shall not stop HDD activities until the HDPE pipe is completely pulled into the bore hole."