April 6, 2018

Monty D. Simon
Project Manager
Baltimore City Department of Public Works
200 N. Holiday Street
Baltimore, MD 21201

RE: SC918H Stainless Steel Ball Valves
JMT Job No. 11-0125-012
Client Ref No. SC918H

Dear Mr. Simon:

In reference to the stainless-steel ball valves 2.5” and larger that are specified in the design, we recommend that these valves remain specified as stainless steel ball valves. The ball valves will be used in corrosive and aggressive environment including exposure to hydrogen sulfide and abrasive grit within the wastewater which necessitate selection of stainless steel as material of construction for longevity. Use of stainless steel ball valves are preferable and generally industry accepted for this application.

If you have any questions or need further information, please do not hesitate to contact me at 410-316-2395 or basavakarin@jmt.com.

Very truly yours,

JOHNSON, MIRMIRAN & THOMPSON, INC.

Ben Asavakarin, P.E.
Vice President

AIS Waiver Application

To: Ulliman Schutte Construction, LLC
9111 Springboro Pike
Miamsburg, OH 45342

Date: 2/27/18
From: Ferguson Waterworks
Justin Colton
Sales Representative

Attention: **Adam Quinlan**
Project#: **SC 918 Back River WWTP Headworks Improvements**

Item#	**Response**

A. General
   a. Describe the unit process which contains the proposed foreign-made iron/steel.
      i. The project involves major construction on the Back River Wastewater Treatment plant specific contract # 918H Headworks. The project will include ball valves necessary for isolation, flushing and other maintenance activities. We have not been able to locate a domestic source for the ½" thru 6" diameter ball valve scope and arrangements required on the project. We identified that Apollo/Conbraco had the most complete scope in regards to made in the USA. They can do full AIS ½"-2" while 2-1/2" and larger configurations have an imported ball and fasteners.
   b. Describe the foreign-made iron/steel component.
      i. The ball for 2-1/2" and large valves is ASTM A276 Type 316 stainless steel and is an import product. The rest of the valve components are domestically produced outside the fasteners (fasteners would be compliant based on the national waiver).

B. Public Interest
   a. Why is the use of the product in the public interest? For example, is the use of a foreign-made iron/steel component necessary because of compatibility with existing components in the water or wastewater system, or other reason
      i. This application doesn't have any public interest concerns. AIS compliant valves do not exist in these sizes and configurations so we are seeking acceptance to have a product to supply.

C. Availability
   a. Describe the requirements in the project plans, specifications or permits which describe the required quality and quality of the product.

i. The total current project scope has 24 ea 3", 10 ea 4" and 3 ea 6" flanged stainless-steel ball valves. (See attached Valve Schedule for further details) They are required at different phases of a 3 year design build project with multiple subcontractors for various applications. See attached product data sheets that describe the valves quality and performance characteristics.

ii. Describe the efforts to use domestic suppliers.

Both Ferguson Enterprises (supplier of valves) and Ulliman Schutte Construction (subcontractor installing valves) have both conducted an in-depth internet search for ball valve manufacturers and have contacted to following major ball valve suppliers via email and telephone. Apollo had the ½"-1-1/2" and the closest AIS offering 2" and larger.

Alternate MFGs contacted:

Nibco Valve	#888-253-9862
Jamesbury Valve	#877-208-3606
Valtorc Valve	#770-423-7100
Milwaukee Valve	#301-621-4299
FNW Valve	#757-969-4974

D. Cost

a. No cost factor to this waiver application since a AIS compliant product cannot be located so all budgeting/pricing was based on this product.

Any questions please do not hesitate to call.

Justin Colton
Inside Plant Sales Representative NVA/MD/DC
Ferguson Waterworks, a Wolseley company
13890 Lowe St. Suite A Chantilly, VA 20151 USA
T: (301) 870-7901 F: (301) 870-7909

Conbraco Industries, Inc.
Post Office Box 125
Pageland, SC 29728
Phone: (843) 672-6161

www.**apollovalves**.com

January 19, 2018

Subject: American Iron and Steel Certification

Project: Back River – Baltimore, Maryland

Reference: AIS Letter of Compliance for Iron and Steel Products

Attention: Justin Colton
Plant Outside Sales VA/MD/DC
Ferguson Enterprises

Justin,

Apollo's 3 inch 87A20001, 4 inch 87A20A01 and 6 inch 87A20C01 are unavailable with 100% domestically manufactured components. We have never offered 100% domestically manufactured versions of these items. The fasteners and balls are imported.

Best regards,

Kevin D. Bartell

Kevin Bartell
Product Engineering Manager - Industrial
"Apollo Valves"
Conbraco Industries, Inc.

87A-200 SERIES

Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 1.5" through 2.5"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.

5 YEAR WARRANTY

STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A351 CF8M
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Lever	316 SS
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Lockwasher	302 or 304 SS

VARIATIONS AVAILABLE:

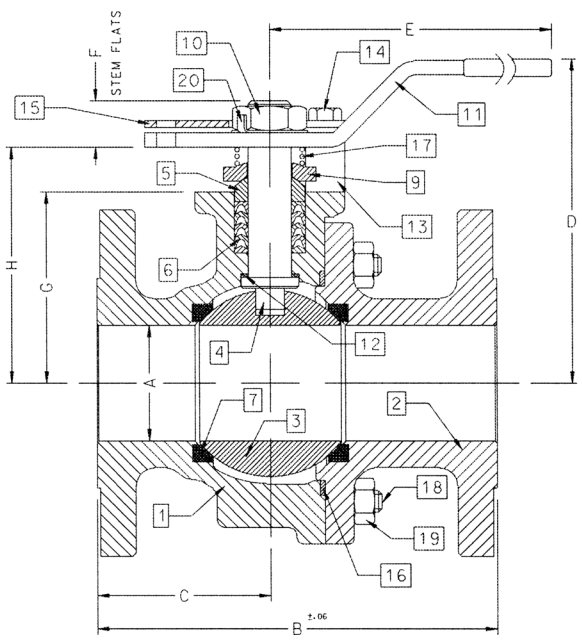
87H - Hastelloy
87M - Monel
87N - Nickel
87S - 304L SS

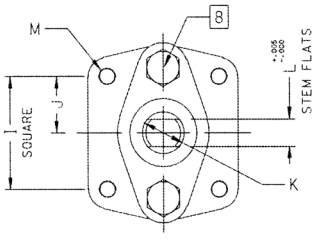
For BV's in Hydrogen Peroxide Service only

OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

(SUFFIX)	OPTION
-01	Standard Configuration
-04-	2.25" Stem Extension (Carbon Steel, Zinc Plated) (up to 2.5")
-14-	Side Vented Ball (Uni-Directional)
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-MG-	Gear Operator with Standard Handwheel
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)





ACTUATOR MOUNTING

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-207-01	1.5"	1.50	6.50	3.00	4.62	6.65	0.72	2.41	3.09	1.949	0.974	0.625	0.412	5/16-18	14
87A-208-01	2"	2.00	7.00	3.04	5.61	8.41	0.80	3.31	4.08	1.949	0.974	0.750	0.477	5/16-18	25
87A-209-01	2.5"	2.50	7.50	3.34	6.24	8.41	0.80	3.94	4.71	1.949	0.974	0.750	0.477	5/16-18	30

87A-200 SERIES

Stainless Steel ASME Class 150 Flanged Full Port Ball Valve - 3" through 6"

For **STANDARDS COMPLIANCE** and **STANDARD FEATURES** refer to page D-3.

5 YEAR WARRANTY

STANDARD MATERIAL LIST

	PART	MATERIAL
1	Body	ASTM A351 CF8M
2	Retainer	ASTM A351 CF8M
3	Ball	ASTM A276 Type 316 or A351 CF8M
4	Stem	ASTM A276 Type 316
5	Packing Gland	ASTM A276 Type 316
6	Stem Seals	PTFE
7	Seats	RPTFE
8	Gland Screws	ASTM A193 B8 Class 1
9	Gland Plate	316 SS
10	Adapter Screw	18-8 SS
11	Handle Adapter	316 with Vinyl Grip
12	Stem Bearing	RPTFE
13	Stop	ASTM A276 Type 316
14	Stop Screw	316 SS
15	Lock Plate	302 or 304 SS
16	Body Seal	RPTFE
17	Grounding Spring	SS
18	Body Joint Stud	ASTM A193 Grade B8M
19	Body Joint Nut	ASTM A194 Grade 8
20	Pipe Handle	Galvanized Steel (not shown)

VARIATIONS AVAILABLE:

87H - Hastelloy
87N - Nickel
87S - 304L SS

OPTIONS AVAILABLE: (More information in Section J)

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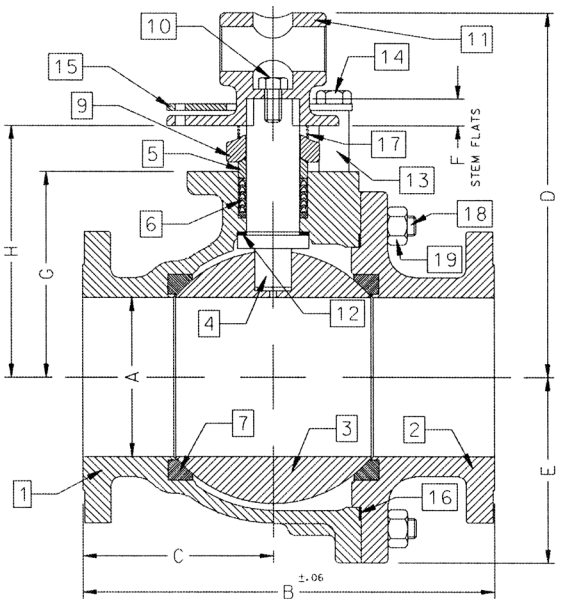
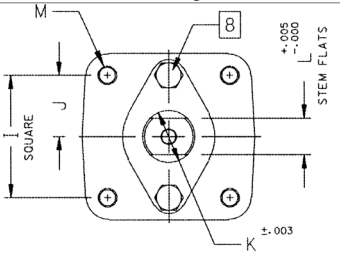
-21-	UHMWPE Seats
-24-	Graphite packing, spiral wound graphite body seal, RPTFE bearing (API 607, 6th edition, ISO 10497:2010)
-35-	PTFE Seats and Seals
-38-	PEEK Seats and Graphite Packing
-49-	No Lubrication. Assembled Dry.
-57-	Oxygen Cleaned
-65-	MPTFE Seats and Graphite Packing (Fire Safe)
-69-	Drilled and Tapped Purge Ports with Plugs
-70-	4" Extended Bonnet
-73-	316 SS Spiral Wound Gaskets w/PTFE Filler
-76-	Live Loaded (Lever)
-77-	Live Loaded (Gear, Actuator)
-80-	Multi-Seal (Super TFE)
-82-	Flat Face Flanges
-90-	Double Packed 4" Extended Bonnet
-9P-	Double Packed 4" Extended Bonnet with Monitoring Port
-EP-	Garlock EVSP Stem Packing w/Spiral Wound Graphite Gasket (Fire Safe by Design)
-KF-	PCTFE Stem Bearing
-MG-	Gear Operator with Standard Handwheel
-MH-	Gear Operator with Standard Handwheel & Locking Device
-MJ-	Gear Operator with Oversize Handwheel
-MK-	Gear Operator with Oversize Handwheel & Locking Device
-MP-	Positive Material Identification
-TC-	With Test Certificate
-TD-	Tested to API Spec 6D
-UL-	UL & CSA Listed (w/Markings)





FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-9, GRAPH NO. 2

ACTUATOR MOUNTING

PRODUCT NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	WT.
87A-200-01	3"	3.00	8.00	3.68	8.80	3.88	0.50	4.75	5.95	2.840	1.420	1.250	0.725	3/8-16	60
87A-20A-01	4"	4.00	9.00	3.94	9.99	5.13	0.50	5.94	7.13	2.840	1.420	1.250	0.725	3/8-16	91
87A-20C-01	6"	6.00	15.50	7.19	13.73	7.00	1.00	7.75	9.48	4.596	2.298	2.000	1.375	3/4-10	248

Valve #	Structure	Primary View (Typ. Plan view)	Secondary View (Typ. Section View)	Schematic Dwg	Size	Type	Material	Connection	Oper.	Spec Section	Line Service	Location / Service Descritption	Working Pressure Rating (PSI, WOG)	Type of Pipeline	CL Valve Elev.	Floor or Grd Elev.
GRF-BV-009	M03-GRF	M03-109	M03-401	I03-101 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-1	275	304 SST S40	31.00	25.00
GRF-BV-010	M03-GRF	M03-109	M03-401	I03-101 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-1	275	304 SST S40	33.00	25.00
GRF-BV-011	M03-GRF	M03-109	M03-401	I03-101 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-1	275	304 SST S40	32.00	25.00
GRF-BV-012	M03-GRF	M03-109	M03-401	I03-101 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-2	275	304 SST S40	31.00	25.00
GRF-BV-013	M03-GRF	M03-109	M03-401	I03-101 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-2	275	304 SST S40	33.00	25.00
GRF-BV-014	M03-GRF	M03-109	M03-401	I03-101 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-2	275	304 SST S40	32.00	25.00
GRF-BV-015	M03-GRF	M03-109	M03-401	I03-103 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-3	275	304 SST S40	31.00	25.00
GRF-BV-016	M03-GRF	M03-109	M03-401	I03-103 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-3	275	304 SST S40	33.00	25.00
GRF-BV-017	M03-GRF	M03-109	M03-401	I03-103 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-3	275	304 SST S40	32.00	25.00
GRF-BV-018	M03-GRF	M03-109	M03-401	I03-103 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-4	275	304 SST S40	31.00	25.00
GRF-BV-019	M03-GRF	M03-109	M03-401	I03-103 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-4	275	304 SST S40	33.00	25.00
GRF-BV-020	M03-GRF	M03-110	M03-401	I03-103 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-4	275	304 SST S40	32.00	25.00
GRF-BV-021	M03-GRF	M03-110	M03-401	I03-105 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-5	275	304 SST S40	31.00	25.00
GRF-BV-022	M03-GRF	M03-110	M03-401	I03-105 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-5	275	304 SST S40	33.00	25.00
GRF-BV-023	M03-GRF	M03-110	M03-401	I03-105 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-5	275	304 SST S40	32.00	25.00
GRF-BV-024	M03-GRF	M03-110	M03-401	I03-105 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-6	275	304 SST S40	31.00	25.00
GRF-BV-025	M03-GRF	M03-110	M03-401	I03-105 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-6	275	304 SST S40	33.00	25.00
GRF-BV-026	M03-GRF	M03-110	M03-401	I03-107 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-6	275	304 SST S40	32.00	25.00
GRF-BV-027	M03-GRF	M03-110	M03-401	I03-107 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-7	275	304 SST S40	31.00	25.00
GRF-BV-028	M03-GRF	M03-110	M03-401	I03-107 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-7	275	304 SST S40	33.00	25.00
GRF-BV-029	M03-GRF	M03-110	M03-401	I03-107 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-7	275	304 SST S40	32.00	25.00
GRF-BV-030	M03-GRF	M03-110	M03-401	I03-107 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Before Solenoid @ pump GRF-HOR-8	275	304 SST S40	31.00	25.00
GRF-BV-031	M03-GRF	M03-110	M03-401	I03-107 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - After Solenoid @ pump GRF-HOR-8	275	304 SST S40	33.00	25.00
GRF-BV-032	M03-GRF	M03-110	M03-401	I03-107 / M03-901	3	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Fluidizing	FW for Sparge Lines - Bypass @ pump GRF-HOR-8	275	304 SST S40	32.00	25.00
IPS-BV-01	M01 - IPS	M01-104	M01-302	I01-103	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-1	275	DIP	18.54	17.54
IPS-BV-02	M01 - IPS	M01-104	M01-302	I01-103	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-2	275	DIP	18.54	17.54
IPS-BV-03	M01 - IPS	M01-104	M01-302	I01-103	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-3	275	DIP	18.54	17.54
IPS-BV-04	M01 - IPS	M01-104	M01-302	I01-103	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-4	275	DIP	18.54	17.54
IPS-BV-05	M01 - IPS	M01-104	M01-302	I01-104	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-5	275	DIP	18.54	17.54
IPS-BV-06	M01 - IPS	M01-104	M01-302	I01-104	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-6	275	DIP	18.54	17.54
IPS-BV-07	M01 - IPS	M01-104	M01-302	I01-104	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-7	275	DIP	18.54	17.54
IPS-BV-08	M01 - IPS	M01-104	M01-302	I01-104	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	Drain	Drain line for IPS Discharge-8	275	DIP	18.54	17.54
IPS-BV-09	M01 - IPS	M01-403	M01-101	I01-103	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	FW	Flushing Service to Sump Pumps	275	DIP	7.55	5.41
IPS-BV-18	M01 - IPS	M01-401	M01-401	Not shown	4	Ball Valve	316 SST	Flg	Lever	40 05 23.32-2.02	FW	4" FW to North Hose Bibbs Isolation	275	DIP	58.52	53.50
FSF-BV-103	M02-FSF	M02-105	M02-302	M02-903	6	Ball Valve	316 SST	Flg	Nut w/ Ext. Stem	40 05 23.32-2.02	FW	Flushing Water Header Bldg Inlet Isolation - South	275	DIP	50.50	53.50
FSF-BV-104	M02-FSF	M02-105	M02-302	M02-903	6	Ball Valve	316 SST	Flg	Nut w/ Ext. Stem	40 05 23.32-2.02	FW	Flushing Water Header - Interconnect	275	DIP	50.50	53.50
FSF-BV-105	M02-FSF	M02-107	M02-304	M02-903	6	Ball Valve	316 SST	Flg	Nut w/ Ext. Stem	40 05 23.32-2.02	FW	Flushing Water Header Bldg Inlet Isolation - North	275	DIP	50.50	53.50