SECTION 22 11 19

DOMESTIC WATER PIPING SPECIALTIES

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\*\* NOTE TO SPECIFIER \*\* MIFAB, Inc.; roof and scupper drain grates.
This section is based on the products of MIFAB, Inc., which is located at:1321 W. 119th St.Chicago, IL 60643Toll Free Tel: 800-465-2736Tel: 773.341.3030Fax: 773-341-3047 Email: [request info (sales@mifab.com )](https://arcat.com/rfi?action=email&company=MIFAB%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(15143mfb)%253A%2520&coid=38108&spec=15143mfb&rep=&fax=773-341-3047%2520)
Web: <http://www.mifab.com>
 [ [Click Here](https://arcat.com/company/mifab-inc-38108) ] for additional information.
Manufacturer of Commercial and Industrial Plumbing and Drainage Products
Serving all of the USA, Canada, Australia, and the Middle East, MIFAB can provide you with the quality, engineered plumbing and drainage solutions you need. Innovative product designs save the installer time and material cost and provides the owner with higher quality cast stainless steel drains and cleanouts for the same cost as the industry standard nickel bronze.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Backflow valves.
			1. Automatic control valves
			2. Pressure reducing Valves.
			3. All Other backflow valves.
		2. Backflow preventers.
		3. Couplings:
			1. Flexible.
			2. No Hub:
				1. Heavy duty shielded couplings.
				2. Regular duty couplings.
				3. Shielded repair couplings.
				4. Transition shielding couplings.
				5. Service weight gaskets.
		4. Hydrants:
			1. Wall types.
			2. Special purpose types.
		5. Hydrant boxes.
		6. Water hammer arrestors.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 22 05 00 - Common Work Results for Plumbing.
		2. Section 22 10 00 - Plumbing Piping.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American National Standards Institute (ANSI):
			1. ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings.
			2. ANSI B16.4 - Cast Iron Threaded Fittings.
			3. ANSI B16.5 - Pipe Flanges and Flanged Fittings.
			4. ANSI A112 - Plumbing Supply Fittings.
		2. American Society of Sanitary Engineering (ASSE):
			1. ASSE 1001 - Performance Requirements for Atmospheric Type Vacuum Breakers.
			2. ASSE 1003 - Performance Requirements for Water Pressure Reducing Valves for Potable Water Distribution Systems.
			3. ASSE 1011 - Performance Requirements for Hose Connection Vacuum Breakers.
			4. ASSE 1012 - Performance Requirements for Backflow Preventers with an Intermediate Atmospheric Vent.
			5. ASSE 1013 - Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers.
			6. ASSE 1015 - Performance Requirements for Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies.
			7. ASSE 1019 - Performance Requirements for Wall Hydrant with Backflow Protection and Freeze Resistance.
			8. ASSE 1048 - Performance Requirements for Double Check Detector Fire Protection Backflow Prevention Assemblies.
			9. ASSE 1056 - Performance Requirements for Spill Resistant Vacuum Breaker Assemblies
		3. ASTM International (ASTM):
			1. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
			2. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
			3. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 PSI Tensile Strength.
			4. ASTM A351 - Standard Specification for Castings, Austenitic, for Pressure-Containing Parts.
			5. ASTM A536 - Standard Specification for Ductile Iron Castings.
			6. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings.
			7. ASTM B584 - Standard Specification for Copper Alloy Sand Castings for General Applications.
			8. ASTYM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
			9. ASTM C1173 - Standard Specification for Flexible Transition Couplings for Underground Piping Systems.
			10. ASTM C1277 - Standard Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings.
			11. ASTM C1460 - Standard Specification for Shielded Transition Couplings for Use with Dissimilar DWV Pipe and Fittings Above Ground.
			12. ASTM C1540 - Standard Specification for Heavy-Duty Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings.
		4. American Water Works Association (AWWA):
			1. AWWA C153 - Ductile-Iron Compact Fittings
			2. AWWA C508 - Swing-Check Valves for Waterworks Service, 2-In. Through 48-In. NPS
			3. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service.
			4. AWWA C515 - Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service.
			5. AWWA C550 - Protective Interior Coatings for Valves and Hydrants.
			6. AWWA C606 - Grooved and Shouldered Joints.
		5. Cast Iron Soil Pipe Institute (CISPI):
			1. CISPI 310 - Specification for Coupling for use in Coming in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
		6. CSA Group (CSA):
			1. CSA B64 Series - Backflow preventers and vacuum breakers.
			2. CSA B602 - Mechanical couplings for drain, waste, and vent pipe and sewer pipe.
		7. Canadian Uniform Plumbing Code (cUPC).
		8. International Association of Plumbing and Mechanical Officials (IAPMO).
		9. FM Global (FM):
			1. FM1680
		10. Manufacturers Standardization Society (MSS):
			1. MSS SP-70 - Gray Iron Gate Valves, Flanged and Threaded Ends.
			2. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
		11. National Fire Protection Association (NFPA):
		12. National Science Foundation (NSF):
		13. Underwriters Laboratories (UL):
		14. Underwriters Laboratories Canada (ULC):
			1. CAN/ULC S102.2 - Standard Method of Test for Surface Burning Characteristics of Flooring. Floor Coverings, and Miscellaneous Materials and Assemblies.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern, and color.
		2. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: MIFAB, Inc., which is located at:1321 W. 119th St.Chicago, IL 60643Toll Free Tel: 800-465-2736Tel: 773.341.3030Fax: 773-341-3047 Email: [request info (sales@mifab.com )](https://arcat.com/rfi?action=email&company=MIFAB%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(15143mfb)%253A%2520&coid=38108&spec=15143mfb&rep=&fax=773-341-3047%2520);Web: <http://www.mifab.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs: coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. BACKFLOW VALVES - AUTOMATIC CONTROL VALVES (ACV)
		1. Due to interchangeability of operating pilot, the ACV can be used to perform any hydraulic control function', pressure control, regulation, flow control, water level control, remote electric control, and other functions or combination of functions. Closing Procedure: Pace slows down automatically, reducing Line water hammer or surge risks.
			1. Common Features:
				1. Body and Cover: Ductile iron. Resilient seal disc. Guided top and bottom. Bottom Guide: Vanes, sliding in stainless steel seat arrangement.
				2. Single seated, line pressure operated, diaphragm actuated, and pilot controlled.
				3. Valve Sealing: By means of a stainless steel seat.
				4. Trim Parts: Replaceable without removing valve from line.
				5. Flange Dimensions: Conform to ISO Standards.
				6. Flange Rating: ANSI B16.1 Class 150, 250 PSI rating; 350 psi valves are available. Operating Velocity: 18 ft/sec. Water Temperature: 33 to 180 degrees F.
			2. Function: Through the interchangeability of operating pilot the Beeco Automatic Control Valves can be used to perform any hydraulic control function such as pressure control and regulation, flow control, water level control, remote electric control and other functions or combination of functions. During the closing procedure, the pace slows down automatically, reducing or mitigating the risk for water hammer or surges in the line.

\*\* NOTE TO SPECIFIER \*\* Valve size from 2-1/ to 24 inches. Delete options not required or delete valve if not required.

* + 1. ACV Series, Reduced Port: Valve Size: \_\_\_\_\_\_\_\_.
			1. Pressure reducing.
			2. Pressure sustaining.
			3. Electrical actuated.

\*\* NOTE TO SPECIFIER \*\* Valve size from 2-1/2 to 24 inches. Delete options not required or delete valve if not required.

* + 1. ACV-HF Series, High Flow: Valve Size: \_\_\_\_\_\_\_\_.
			1. Pressure reducing.
			2. Pressure sustaining.
			3. Electrical actuated.
			4. High Pressure Valve: Up to 350 psi.
			5. High Pressure Pilot: Above 235 psi incoming pressure.
			6. Stainless steel body and cover.

\*\* NOTE TO SPECIFIER \*\* Valve size from 1-1/2 to 6 inches. Delete options not required or delete valve if not required.

* + 1. ACV-HF5EL Series, Full Port ,High Flow, Electric Actuated Valves: Valve Size: \_\_\_\_\_\_\_\_.
			1. Electrical actuated.
			2. Pressure Reducing: Flange connection.
			3. Pressure Reducing: Threaded 1-1/2 NPT.
			4. Pressure Reducing: Threaded 2 NPT.
			5. Pressure Sustaining: Flange connection.
			6. Pressure Sustaining: Threaded 1-1/2 NPT.
			7. Pressure Sustaining: Threaded 2 NPT.
			8. High Pressure Valve: Up to 350 psi.
			9. High Pressure Pilot: Above 235 psi incoming pressure.
			10. Stainless steel body and cover.

\*\* NOTE TO SPECIFIER \*\* Valve size from 1-1/2 to 6 inches. Delete options not required or delete valve if not required.

* + 1. ACV-HF5PR Series, Full Port, High Flow, Pressure Reducing: Valve Size: \_\_\_\_\_\_\_\_.
			1. Electrical actuated.
			2. Pressure Reducing: Flange connection.
			3. Pressure Reducing: Threaded 1-1/2 NPT.
			4. Pressure Reducing: Threaded 2 NPT.
			5. Pressure Sustaining: Flange connection.
			6. Pressure Sustaining: Threaded 1-1/2 NPT.
			7. Pressure Sustaining: Threaded 2 NPT.

\*\* NOTE TO SPECIFIER \*\* Valve size from 1-1/2 to 6 inches. Delete options not required or delete valve if not required.

* + 1. ACV-HF5PS Series, Full Port, High Flow Pressure Sustaining: Valve Size: \_\_\_\_\_\_\_\_.
			1. Electrical actuated.
			2. Pressure Reducing: Flange connection.
			3. Pressure Reducing: Threaded 1-1/2 NPT.
			4. Pressure Reducing: Threaded 2 NPT.
			5. Pressure Sustaining: Flange connection.
			6. Pressure Sustaining: Threaded 1-1/2 NPT.
			7. Pressure Sustaining: Threaded 2 NPT.

\*\* NOTE TO SPECIFIER \*\* Valve size from 2-1/2 to 12 inches. Delete options not required or delete valve if not required.

* + 1. ACV-UL-HF Series, High Flow UL: Valve Size: \_\_\_\_\_\_\_\_.
			1. Pressure reducing.
			2. Pressure sustaining.
			3. Electrical actuated.

\*\* NOTE TO SPECIFIER \*\* Valve size from 1-1/2 to 6 inches. Delete options not required or delete valve if not required.

* + 1. ACV-HF-EOSSV Electric Override Safety Shut Off Valves: Shuts-off when excessive relief valve flow exceeds a user-adjustable set point. Valve Size: \_\_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. BACKFLOW VALVES - PRESSURE REDUCING VALVES
		1. General:
			1. Standards Compliance: Tested and Certified to ASSE 1003; ANSI A112.26.2, listed with IAPMO and certified to cUPC.
			2. Reduces pressure in flow and no-flow conditions.
			3. Serviceability: In-line.
			4. Internal bypass for thermal expansion.
			5. Body and Cage per ASTM B584: Bronze construction. Corrosion resistant.
			6. Removable Stainless Steel Strainer: Built in.
				1. Keeps debris from pressure reducing chamber.
			7. Valve Disk: Elastomer.
			8. Diaphragm: Reinforced EPDM.
			9. EPDM Seat: Engineered polymer.
			10. Temperature Range: 33 to 180 degrees F.
			11. Maximum Working Pressure: 300 psi.
			12. Adjustable Screw Pressure Range: 25 to 75 psi.
			13. Standard Reduced Pressure Setting: 50 psi.

\*\* NOTE TO SPECIFIER \*\* Valve Sizes: 1/4, 1-1/2, and 2 inch. Delete valve if not required.

* + 1. PRV-C Large: Balanced piston design. Valve Size: \_\_\_\_\_\_\_\_.
			1. End Connections: Threaded or Soldered.

\*\* NOTE TO SPECIFIER \*\* Valve Sizes: 1/2, 3/4, and 1 inch. Delete valve if not required.

* + 1. PRV-C Compact: Valve Size: \_\_\_\_\_\_\_\_.
			1. End Connections: Threaded or Soldered. Single or double union.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. BACKFLOW VALVES - ALL OTHERS

\*\* NOTE TO SPECIFIER \*\* Delete product paragraphs not required.

* + 1. AG Air Gaps 1/2 through 10 inches.
			1. Custom made to fit onto relief valves of all Beeco Friendly Reduced Pressure Backflow devices.
			2. Provides unobstructed, physical separation between the discharge end of a potable water supply line and an open receiving vessel.
			3. Cast Iron and fused bonded epoxy coating to keep them rust free.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/4, 3/8, 1/2, or 3/4 inch. Delete if not required.

* + 1. Anti-Siphon Vacuum Breaker (ASVB): Pipe Size: \_\_\_\_\_\_\_\_.
			1. Prevents cross contamination from back siphonage of contaminated water. Install per local code and building plans by a licensed professional. Do not use under continuous pressure or where back pressure conditions are possible.
			2. Maximum Temperature: 180 degrees F.
			3. Maximum Working Pressure: 125 psi.
			4. Anti-Siphon Vacuum Breaker: Per ASSE Standard 1001, CSA B64 and ANSI A112.1.1.
			5. Installation: 6 inch (154 mm) above highest point of downstream piping.
			6. There can be no shutoff devices downstream of the ASVB.
			7. Flow Path: Minimizes flow loss through the device.
			8. Body: Brass or Polished Chrome Plated.
			9. Lightweight Disc: Engineered material resists heat and shock.
			10. Able to close vent with minimal flow.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 12 inch. Delete if not required.

* + 1. AV-MH Air Release and Vacuum Break Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Exhausts large quantities of air when system is filling. Valve remains open until liquid has reached the float and is lifted into its seat, closing the valve.
				1. Allows release of smaller air volumes using a top float and bottom float.

Air bubbles from open sources and pumping vortexes accumulate at high points in pipelines forcing liquid out of the valve chamber. The floating force of the bottom float decreases. The bottom float then drops, allowing trapped air to be vented through a small nozzle located in the top float.

* + - 1. When Vacuum Occurs: Float will drop, allowing air into the system preventing pipe collapsing due to the negative pressure.
			2. Ratings: Standard Pressure: 230 psi. High Pressure: 350 psi.
			3. Maximum Operating Temperature: 150 degrees F.
			4. Connections: ISO, ANSI, BS, JIS flanges, BSP, NPT threads.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 12 inch. Delete if not required.

* + 1. AV-MS Air Release and Vacuum Break Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Exhausts large quantities of air when system is filling. Valve remains open until liquid has reached the float and is lifted into its seat, closing the valve.
				1. Allows release of smaller air volumes using a top float and bottom float.

Air bubbles from open sources and pumping vortexes accumulate at high points in pipelines forcing liquid out of the valve chamber. The floating force of the bottom float decreases. The bottom float then drops, allowing trapped air to be vented through a small nozzle located in the top float.

* + - 1. When Vacuum Occurs: Float will drop, allowing air into the system preventing pipe collapsing due to the negative pressure.
			2. Ratings: Standard Pressure: 230 psi. High Pressure: 350 psi.
			3. Maximum Operating Temperature: 150 degrees F.
			4. Connections: ISO, ANSI, BS, JIS flanges, BSP, NPT threads.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2, 3/4, or 1 inch. Delete if not required

* + 1. AV-P-A Air Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. For efficient release of entrapped air from pipeline, while network is at normal working pressure. It also releases air through initial filling of a small-diameter pipe or admit air into it while it is drained.
			2. Float: Naturally-buoyant material (specific weight lower than 1).
				1. Air Accumulation in the Valve: Loss of buoyancy causes float to drop and to pulls down a small seal, that partially opens air outlet allowing the pressurized air to escape.
				2. Water level then rises, and hydraulic sealing of orifice provides a drip tight closure at a pressure of 3 psi.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2, 3/4, 1, or 2 inch. Delete if not required.

* + 1. AV-P-K Air and Vacuum Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. For efficient discharge and intake of air in water transport systems, filtering systems, containers, and other places where confined air could impair the system's operation.
			2. Discharge: Large quantities of air at a high flow velocity when the conduit is being filled. When water arrives at the valve, the float rises and closes the outlet.
			3. Introduction of Air into Pipeline: When internal pressure is sub-atmospheric, the pressure difference forces the float to drop to the opened position, allowing large volumes of air to flow into the pipe.
			4. Leak-proof sealing at all conditions, including low system pressure.
			5. Float: Aerodynamic design provides air flow at a very high velocity.
				1. Does not close before water has reached the valve.
			6. Threaded Outlet Elbow: Allows various possibilities of drain connection.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2, 3/4, 1, 1-1/4, 1-1/2 or 2 inch. Delete if not required.

* + 1. AV-P-KA Combination Air Release and Vacuum Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. For efficient discharge and intake of air in water transport systems, filtering systems, containers, and other places where confined air could impair the system's operation.
			2. Discharge: Large quantities of air at a high flow velocity when the conduit is being filled. When water arrives at the valve, the float rises and closes the outlet.
			3. Introduction of Air into Pipeline: When internal pressure is sub-atmospheric, the pressure difference forces the float to drop to the opened position, allowing large volumes of air to flow into the pipe.
			4. Relieving Entrained Air While the Network is Pressurized: Diluted air accumulates in high peaks of pipeline and in valve peak. Pressurized air expels descends the water level moving the float with it. At a certain position, the float pulls down the small seal, partially opening the nozzle. Pressurized air escapes, the water level rises, and the nozzle re-closes.
			5. Leak-proof sealing at all conditions, including low system pressure.
			6. Float: Aerodynamic design provides air flow at a very high velocity.
				1. Does not close before water has reached the valve.
			7. Threaded Outlet Elbow: Allows various possibilities of drain connection.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2, to 14 inch. Delete if not required

* + 1. BCV Ball Check Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Mechanical One-way directional valve. Gases and fluid flow in the desired direction opens the valve, while backflow forces the valve closed.
			2. Contains a ball that sits freely above the seat, which has only one through hole.
				1. When pressure above the seat exceeds that above the ball, liquid flows through the valve.
				2. When pressure above the ball exceeds pressure below the seat, the ball returns to rest in the seat, forming a seal that prevents backflow.
			3. Body: Ductile Iron
			4. Cover: Ductile Iron
			5. Ball: Aluminum, NBR/EPDM Coated
			6. Gasket: NBR/EPDM

\*\* NOTE TO SPECIFIER \*\* Pipe Size: to 4 inch. Delete if not required

* + 1. BCV-IPS Thread End Ball Check Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Mechanical One-way directional valve. Gases and fluid flow in the desired direction opens the valve, while backflow forces the valve closed.
			2. Contains a ball that sits freely above the seat, which has only one through hole.
				1. When pressure above the seat exceeds that above the ball, liquid flows through the valve.
				2. When pressure above the ball exceeds pressure below the seat, the ball returns to rest in the seat, forming a seal that prevents backflow.
			3. Body and Bonnet: Cast iron.
			4. Ball: Aluminum, rubber Coated
			5. Gasket: same as ball.
			6. Bolts: Carbon steel, zinc plated.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 to inch. Delete if not required.

* + 1. BV-IPS-BRZ Soldered End Connections Bronze Ball Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. For commercial and industrial applications on a wide variety of liquids and gases.
			2. Standard Compliance: Federal Specification WW-V-35, Type II class A, Style 3 and MSS SP-110.
			3. Full Port Ball Valve design eliminating significant pressure losses caused by reduced port valves. Two piece body with chrome plated ball. Blow out proof stem with adjustable packing.
			4. Locking Handle. Stainless steel and stainless steel locking nut.
			5. Ratings: 600 WOG and 150 SWP.
			6. Temperature Range: 0 to 180 degrees F
			7. Optional Variations:
				1. Low lead.
				2. Stainless steel handles.
				3. Tee handle; 1 to 2 inch NPT only. Standard in 1/2 and 3/4 inch.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 to 2 inch. Delete if not required.

* + 1. BV-SWT-BRZ Solder End Connections Bronze Ball Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. For commercial and industrial applications on a wide variety of liquids and gases.
			2. Standard Compliance: Federal Specification WW-V-35, Type II class A, Style 3 and MSS SP-110.
			3. Full Port Ball Valve design eliminating significant pressure losses caused by reduced port valves. Two piece body with chrome plated ball. Blow out proof stem with adjustable packing.
			4. Ratings: 600 WOG and 150 SWP.
			5. Temperature Range: 0 to 180 degrees F
			6. Optional Variations:
				1. Locking handles.
				2. Low lead.
				3. Stainless steel handles.
				4. Tee handle; 1 to 2 inch NPT only. Standard in 1/2 and 3/4 inch.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/4 to 1 inch. Delete if not required.

* + 1. CV Bronze Silent Check Valve Threaded and SWEAT Connections:
			1. Pipe Size: \_\_\_\_\_\_\_\_.
			2. Reduces water hammer while performing as a swing check valve.
				1. Poppet Design: Horizontal or vertical position.
				2. Silent operation and low pressure drop.
			3. End Connections: IPS and SWEAT. Solder without disassembly; a low temperature solder should be used to eliminate damage to the seating surface.
			4. Maximum Working Pressure: 400 psi.
			5. Working Temperature Rating: Minus 20 to 100 degrees F.
			6. Maximum Temperature Rating: 400 degrees F.
			7. Materials:
			8. Body: No lead Bronze.
			9. Adapter and Check: Low lead Brass.
			10. Spring, Spring Guide, and Stem: 300 series stainless steel.
			11. Seat: High temperature Viton material.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 12 inch. Delete if not required.

* + 1. CV-FLG-RD Swing Check: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Prevents backflow protecting system equipment. For horizontal or vertical flow upward installation. Low pressure drops. Moderate velocity applications.
			2. Standard Compliance: AWWA C508. Flanges: ANSI B16.5.
			3. Standard Working Pressure: 125 psi. High Pressure: 250 psi.
			4. Temperature Range with NBR Disk: 50 to 180 degrees F.
			5. Temperature range with Bronze or EPDM disk trim: 50 to 250 degrees F.
			6. Zero leakage at 5 psi differential.
			7. Fusion Bond epoxy coating.
			8. Only one moving part.
			9. Ductile Iron Body and Cover
			10. Disc fully encapsulated with EPDM.
			11. Free of pockets that could collect a buildup.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 12 inch. Delete if not required.

* + 1. CV-FLG-RD-WS Swing Check Valve with L and W: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Prevents backflow protecting system equipment. For horizontal or vertical flow upward installation. Low pressure drops. Moderate velocity applications.
			2. Standard Compliance: AWWA C508. Flanges: ANSI B16.5.
			3. Standard Working Pressure: 125 psi. High Pressure: 250 psi.
			4. Temperature Range with NBR Disk: 50 to 180 degrees F.
			5. Temperature range with Bronze or EPDM disk trim: 50 to 250 degrees F.
			6. Outside lever and weight to balance disc or give it added weight.
				1. Balancing Disc: Valve opens with minimum pressure.
				2. Weighting Disc: Valve will be very sensitive to a reversal of flow.
			7. Zero leakage at 5 psi differential.
			8. Fusion Bond epoxy coating.
			9. Only one moving part.
			10. Ductile Iron Body and Cover
			11. Disc fully encapsulated with EPDM.
			12. Free of pockets that could collect a buildup.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 to 1 inch. Delete if not required

* + 1. DC In Line Dual Check Valve Low Lead: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Prevents reverse flow of polluted water into drinking water supply; horizontal or vertical position placed at service entrance or at point of use device. Continuous pressure applications in non-health hazard residential water system containment. Install right after the water meter. Check with your local inspection authorities for installation requirements.
			2. Standards Compliance: AB 1953 Low Lead.
			3. Body and Tailpiece: Bronze with Stainless Steel check springs and plastic polymer check assemblies.
			4. Minimum Working Pressure: 10 psi
			5. Maximum Working Pressure: 150 psi
			6. Temperature Range: 33 to 180 degrees F continuous
			7. Contains two heavy replaceable check modules for ease of service or repair.
			8. End connections: NPT and Copper sweat.
			9. Interchangeability of tail piece Inlet: 1/2 up to 1 inch allows for changes in pipe size from inlet to outlet.
			10. Outlet: 1/2 up to 1 inch

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 or 3/4 inch. Delete if not required

* + 1. DCAV Dual Check Valve with Atmospheric Vent: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Not for use with potable water. For use on boiler feed lines to prevent backflow contamination when pressure in supply line is below pressure in the boiler feed line. Horizontal or vertical continuous pressure applications. Check with your local inspection authorities for installation requirements.
			2. Tested and Certified To: ASSE 1012-2009, cUPC, CSA B64.3-11. IAPMO listed.
			3. Body and Tailpiece: Bronze with Stainless Steel check springs and plastic polymer check assemblies.
			4. Maximum Working Pressure: 170 psi
			5. Temperature Range: 33 to 250 degrees F continuous
			6. Contains two heavy replaceable check modules for ease of service or repair.
			7. End connections: Union connections; NPT or sweat.
			8. Inlet and Outlet: 1/2 or 3/4 inch

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 24 inch. Delete if not required.

* + 1. EPV Eccentric Plug Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. For operation in clean and dirty water applications. The valve seals with a "drop tight" closure. Allows for a full flow with very little pressure drop.
			2. Ductile Iron Plug: Encapsulated in rubber, assuring a "drop tight" seal.
			3. V-Type Packing: Self-adjusting. Easily replaced in the field.
			4. Upper and Lower Thrust Bearings: For proper plug alignment.
			5. Welded Nickel Seat: Prevents corrosion and insures clean sealing every time.
			6. Working Pressure: 225 and 350 psi; Class 125 / 250.

\*\* NOTE TO SPECIFIER \*\* Delete temperature and end type options not required.

* + - 1. Temperature: 50 to 250 degrees F for EPDM coated plug.
			2. Temperature: 50 to 180 degrees F for NBR coated plug.
			3. End Flange Type: ANSI B16.1 Class 150. ANSI B16.2 Class 250
			4. End mechanical joint.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 24 inch. Delete if not required

* + 1. FCV Flex Check Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Designed to mitigate disc slam. Disc Travel: 35 degrees from full open to full closed. Disc closes before flow reversal in most applications.
			2. Utilizes an angled seat and fully encapsulated, resilient disc. Handles a wide range of fluids including flows containing suspended solids.
			3. Horizontal or vertical flow-up applications.
				1. Horizontal: Install valve with nameplate facing up and the cover level. Flow Arrow: must point in normal system flow direction.
			4. Body and Cover: Cast or ductile iron.
			5. Disc: Ductile iron; EPDM / NBR / Viton coated.
			6. Gasket: NBR / EPDM/ Viton.
			7. Plug: Malleable iron.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required

* + 1. GV-FXF-NRS Flanged by Flanged NRS Gate Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Used in irrigation and water distribution. Best used in fully opened or fully closed position but can be used as a throttling valve.
			2. An AWWA C515 resilient seated gate valve with a non-rising stem.
			3. Flanges: ANSI B16.1, Class 125 drilling pattern.
			4. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			5. Stem and Bolts: Heat treated stainless steel.
			6. Hand wheel or operating nut.
			7. Gaskets: EPDM.
			8. Working Water Pressure Rating: 300 psi.
			9. Working Temperature Rating: Up to 180 degrees F.
			10. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 12 inch. Delete if not required.

* + 1. GV-FXF-NRS-MJ Mechanical Joint by Mechanical Joint Gate Valve:
			1. Pipe Size: \_\_\_\_\_\_\_\_.
			2. Used in irrigation and water distribution. Best used in fully opened or fully closed position but can be used as a throttling valve.
			3. An AWWA C515 resilient seated gate valve with a non-rising stem.
			4. Mechanical Joint Bells: AWWA C153
			5. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			6. Stem and Bolts: Stainless steel.
			7. Operating Nut: 2 inches. Handwheel.
			8. Gasket: EPDM. Packing: Graphite.
			9. Working Water Pressure Rating: 300 psi.
			10. Working Temperature Rating: Up to 180 degrees F.
			11. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 12 inch. Delete if not required.

* + 1. GV-FXF-OSY Flanged by Flanged OSY Gate Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Used in irrigation and water distribution as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			2. An AWWA C515 resilient seated gate valve with a non-rising stem.
			3. Standards Compliance: MSS SP-70
			4. Flanges: ANSI B16.1, Class 125 drilling pattern.
			5. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			6. Stem and Bolts: Heat treated stainless steel.
			7. Hand wheel or operating nut.
			8. O-ring and Gasket: EPDM.
			9. Working Water Pressure Rating: 300 psi.
			10. Working Temperature Rating: Up to 180 degrees F.
			11. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. GV-FXF-UL/FM Flanged by Flanged UL/FM Gate Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Used in fire protection and water distribution as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			2. An AWWA C515 resilient seated OS and Y gate valve.
			3. Standards Compliance: MSS SP-70. UL Listed and FM approved.
			4. Flanges: ANSI B16.1, Class 125 drilling pattern.
			5. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			6. Stem and Bolts: Stainless steel.
			7. Hand wheel or operating nut.
			8. Gasket: EPDM.
			9. Working Water Pressure Rating: 300 psi.
			10. Working Temperature Rating: Up to 180 degrees F.
			11. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. GV-FXG-NRS Flanged by Grooved NRS Gate: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Used in irrigation and water distribution as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			2. Flanges: ANSI B16.1, Class 125 drilling pattern.
			3. Groove: AWWA C606.
			4. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			5. Stem and Bolts: Heat treated stainless steel.
			6. Hand wheel or operating nut.
			7. O-ring and Gasket: EPDM.
			8. Working Water Pressure Rating: 300 psi.
			9. Working Temperature Rating: Up to 180 degrees F.
			10. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. GV-FXG-OSY Flanged by Flanged OS and Y Gate Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Used in irrigation and water distribution as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			2. Resilient seated.
			3. Standards Compliance: MSS SP-70
			4. Flanges: ANSI B16.1, Class 125 drilling pattern.
			5. Grooved Dimensions: AWWA C606
			6. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			7. Stem and Bolts: Heat treated stainless steel.
				1. Pre-grooved stems for installation of tamper switch.
			8. Hand wheel or operating nut.
			9. O-ring and Gasket: EPDM.
			10. Working Water Pressure Rating: 300 psi.
			11. Working Temperature Rating: Up to 180 degrees F.
			12. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. GV-FXG-UL/FM Flanged by Grooved UL/FM OS and Y Gate Valve:
			1. Pipe Size: \_\_\_\_\_\_\_\_.
			2. Used in fire protection and water distribution as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			3. Resilient seated.
			4. Standards Compliance: MSS SP-70 and AWWA C515. UL listed. FM approved.
			5. Grooved Dimensions: AWWA C606
			6. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			7. Stem and Bolts: Stainless steel.
				1. Pre-grooved stems for installation of tamper switch.
			8. Hand wheel or operating nut.
			9. Packing: Graphite.
			10. Gasket: EPDM.
			11. Working Water Pressure Rating: 300 psi.
			12. Working Temperature Rating: Up to 180 degrees F.
			13. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. GV-GXG-NRS Grooved by Grooved NRS Gate Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Used in fire protection fire as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			2. Non-rising stem.
			3. Grooved Dimensions: AWWA C606
			4. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			5. Stem and Bolts: Stainless steel.
			6. Working Temperature Rating: Up to 180 degrees F.
			7. Hand wheel or operating nut.
			8. Gasket: EPDM.
			9. Working Water Pressure Rating: 300 psi.
			10. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required..

* + 1. GV-GXG-OSY Grooved by Grooved OSY Gate Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Used in irrigation and water distribution as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			2. Resilient seated.
			3. Standards Compliance: AWWA C515
			4. Grooved Dimensions: AWWA C606
			5. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			6. Stem and Bolts: Stainless steel.
				1. Pre-grooved stems for installation of tamper switch.
			7. Hand wheel or operating nut.
			8. Gasket: EPDM. Packing: Graphite.
			9. Working Water Pressure Rating: 300 psi.
			10. Working Temperature Rating: Up to 180 degrees F.
			11. Fusion Bonded Interior and Exterior: AWWA C550.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. GV-GXG-UL/FM Grooved by Grooved UL/FM OSY Gate Valve:
			1. Pipe Size: \_\_\_\_\_\_\_\_.
			2. Used in fire protection and water distribution as main shutoffs. Best used in fully opened or fully closed position but can be used as a throttling valve.
			3. Resilient seated.
			4. Standards Compliance: MSS SP-70, AWWA C515 UL listed and FM approved.
			5. Grooved Dimensions: AWWA C606
			6. Body, Bonnet, and Wedge: High strength ductile iron, ASTM A536, Grade 65-45-12. Encapsulated wedge with EPDM rubber.
			7. Stem and Bolts: Stainless steel.
				1. Pre-grooved stems for installation of tamper switch.
			8. Hand wheel or operating nut.
			9. Gasket: EPDM. Packing: Graphite.
			10. Working Water Pressure Rating: 300 psi.
			11. Working Temperature Rating: Up to 180 degrees F.
			12. Fusion Bonded Interior and Exterior: AWWA C550.
		2. HBVB Hose Connection Vacuum Breaker -LL: Connection Size: 3/4 inch.
			1. For use on potable water lines such as service sinks, laundry tubs, and hose bibbs to protect against back siphonage of polluted water into the potable water supply. Assembly provides protection where a potential health hazard does not exist. Not to be used under continuous pressure or where there is a possibility of a back pressure condition.
			2. Standards Compliance: ASSE 1011 and CSA B64.2 and is IAPMO listed.
			3. Break Away Set Screw: Provides a tamper resistant installation.
			4. Allows sill cock to be easily drained.
			5. Material: Brass.
				1. Model: HVB.75F-X-.75M-RB-LL 3/4 inch Rough Brass
				2. Model: HVB.75F-X-.75M-CP-LL 3/4 inch Chrome Plated
			6. Maximum Pressure: 125 psi.
			7. Maximum Temperature: 180 degrees F.
			8. Inlet Connection: 3/4 inch standard female hose thread.
			9. Outlet Connection: 3/4 inch standard male hose thread.
		3. MI-CONTROL Water Heater Shutoff Thermal Expansion Control:
			1. Connection Size: 3/4 inch.
			2. Used where a water heater shut-off and thermal expansion relief valve are needed in combination to protect a closed plumbing system against thermal expansion. Will provide thermal expansion relief at a pressure 5 psi or more below the set pressure of the primary thermal expansion relief valve.
			3. Shut Off Valve: Quick quarter turn.
			4. Body: Brass with chrome plated ball.
			5. Certifications: ASSE approved and IAPMO listed.
			6. Discharge Connections: 1/2 inch NPT, 1/4 inch PEX, 3/8 inch PEX, 3/8 inch compression.
			7. Incoming Water Pressure: Up to 600 psi.
			8. Maximum Working Temperature: 180 degrees F.
			9. Adjustable Pressure: From 80 to 150 psi. Factory set at 145 psi.
			10. Wetted surfaces contacted by consumable water contains less than one quarter of one percent (0.25 percent) of lead by weight.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 to 2 inch. Delete if not required.

* + 1. PVB Anti-Siphon Pressure Vacuum Breaker: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Prevents reverse flow of polluted water from entering the potable water supply due to backsiphonage. For use under continuous pressure. Provides protection where a potential health hazard exists.
			2. Standards Compliance: IAPMO listed to ASSE 1056 And CSA B64.1.3
			3. Body: Cast Bronze construction per ASTM B584.
			4. Other FDA Approved Materials: Silicon elastomers, buna nitrile, polypropylene polymers, and Delrin.
			5. Check Valve Seat: Plastic. Springs: 300 series Stainless steel. Fasteners: 300 series stainless steel. Check Valve Disc: Silicone rubber. A lightweight plastic disc float.
			6. Bonnet with silicone rubber O-ring seal.
			7. Handles: To shutoff water flow to the valve.
			8. Test Cocks: For winterization, draining and testing.
			9. Maximum Working Water Pressure: 150 psi.
			10. Maximum Working Water Temperature: 140 degrees F.
			11. Hydrostatic Test Pressure: 300 psi.
			12. Back Pressure Backflow Protection: Install Beeco FRP Device Reduced Pressure Zone Backflow Assembly.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 16 inch. Delete if not required.

* + 1. SCV Globe Style Class 125 FIG Silent Check Valve: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Fast-closing check valve to prevent slam when closing. Eliminates water hammer with a check valve that operates smoothly and silently. Features a center guided single disc with bronze or stainless seating with special stainless steel spring control to insure positive, noiseless opening and closing.
			2. Working Pressure: 200 to 300 psi depending on size and flange.
			3. Size valve to the system flow rate.
			4. Body: Cast iron.
			5. Disc: Bronze or stainless steel
			6. Seat: Bronze or stainless steel
			7. Seat O-Ring: EPDM, NBR. Viton
			8. Spring: Stainless steel
			9. Bushing: Bronze.
			10. Screw: Stainless steel

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 to 2 inch. Delete if not required.

* + 1. STR Bronze Strainer: Pipe Size: \_\_\_\_\_\_\_\_.
			1. "Y" type bronze body strainer with a bronze cap and a stainless steel mesh screen. Screen can be cleaned without valve removal from the pipeline and equipped with an enclosure plug in the brass clean out cap for addition of a test gauge or secondary water line.
			2. Standards Compliance: cUPC lead free.
			3. Maximum Working Pressure: 400 psi WOG at 210 degrees F.
			4. Bronze Body: Standard C87850.
			5. Retainer Cap: Bronze.
			6. Cap Gasket: NBR.
			7. Standard Screen: 304 Stainless steel 20 mesh.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to0 inch. Delete if not required.

* + 1. STR-DI Ductile Iron Flanged Strainer: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Flanges: Class 125 conform to ANSI B16.1.
			2. Working Pressure: 125 psi. Shell Pressure: 350 psi.
			3. Body and Access Cover: Ductile Iron A536 65-45 12.
			4. A drain/blow-off connection with a ductile iron closure plug.
			5. Integral Strainer Screen: 305 stainless steel. Accessible for cleaning without removing device.
			6. Bolts: Carbon Steel ASTM A307.
			7. Gasket: NBR.
			8. Drain Plug: Carbon Steel ASTM A307.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 10 inch. Delete if not required.

* + 1. STR-PC Ductile Iron Powder Coated Strainer: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Flanges: Class 125 conform to ANSI B16.1.
			2. Working Pressure: PN16/Class 125. Temperatures: To 180 degrees F
			3. Body and Access Cover: Ductile Iron A536 65-45 12.
			4. A drain/blow-off connection with a ductile iron closure plug.
			5. FDA approved epoxy coating inside and out.
			6. Integral Strainer Screen: 305 stainless steel. Accessible for cleaning without removing device.
			7. Bolts: Carbon Steel ASTM A307.
			8. Gasket: NBR.
			9. Drain Plug: Carbon Steel ASTM A307.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 14 inch. Delete if not required.

* + 1. WSCV Water Cast Iron Silent Check Valve Class 125. Valve Size: \_\_\_\_\_\_\_\_.
			1. Fast-closing designed to prevent slam when closing and prevent water hammer effect. The spring allows the closure disc to travel further than other valves of this style, decreasing flow loss.
			2. Body: Cast Iron per ASTM A126 Class B.
			3. Seat: Stainless Steel ASTM A351 CF8.
			4. Seat: Bronze per ASTM B62 and UNS No. C83600.
			5. Disc: Stainless Steel ASTM A351 CF8.
			6. Disc: Bronze per ASTM B62 and UNS No. C83600.
			7. Spring: Stainless Steel, AISI 304
			8. Bushing: Bronze ASTM B62 and UNS No. C83600
			9. Screw: Stainless Steel, AISI 304
			10. Seat O-Ring: EPDM, NBR, or Viton

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. BACKFLOW PREVENTERS

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 8 inch. Delete if not required.

* + 1. Barracuda 20 Double Check Valve Backflow Preventer: Valve Size: \_\_\_\_\_\_\_\_.
			1. Stops non-health hazard pollutants from entering potable water supply by backpressure or backsiphonage.
			2. Working Pressure: 10 to 175 psi.
			3. Temperature Range: 33 to 140 degrees F.
			4. Flanged Ends: ANSI B16.1 Class 125
			5. Two independent dual-action check modules in a 304 stainless steel housing.
				1. Low Flow: Operates as "poppet style" check.
				2. High Flow: Operate as "swing style" check.
			6. Elastomer Sealing Discs: USC approved replaceable silicone.
			7. Two resiliently seated and inline serviceable AWWA C509 gate valves with outside yoke and stem (OS and Y).
				1. Gate Valves: Stainless steel stems with pre-machined groove for installation of supervisory tamper switches.
				2. Test Cocks: Handle-less. Operate via a tamper resistant actuator.
				3. Full access service port with replaceable elastomer cover seal.
				4. Serviceable without special tools.
				5. For horizontal and vertical applications.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Grooved end connections.
			2. Non-rising stem gate valve.
			3. Outside stem and yolk gate valve.
			4. Strainer attached.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 8 inch. Delete if not required.

* + 1. Barracuda 40 Double Check Valve Backflow Preventer: Valve Size: \_\_\_\_\_\_\_\_.
			1. Stops non-health hazard pollutants from entering potable water supply by backpressure or backsiphonage.
			2. Working Pressure: 10 to 175 psi.
			3. Temperature Range: 33 to 140 degrees F.
			4. Flanged Ends: ANSI B16.1 Class 125
			5. Two independent dual-action check modules in a 304 stainless steel housing.
				1. Low Flow: Operates as "poppet style" check.
				2. High Flow: Operate as "swing style" check.
			6. Elastomer Sealing Discs: USC approved replaceable silicone.
			7. Two resiliently seated and inline serviceable AWWA C509 gate valves with non-rising stems (NRS).
				1. Gate Valves: Stainless steel stems
				2. Test Cocks: Handle-less. Operate via a tamper resistant actuator.
				3. Full access service port with replaceable elastomer cover seal.
				4. Relief Valve: Operate using zero dynamic sliding seals.

Wetted Surfaces: Stainless steel.

* + - * 1. Serviceable without special tools.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Grooved end connections.
			2. Non-rising stem gate valve.
			3. Outside stem and yolk gate valve.
			4. Strainer attached.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. DCDA (2-1/2 to 10 inch) Double Check Detector Assemblies: Valve Size: \_\_\_\_\_\_\_\_.
			1. Stops flow reversal into potable water system.
			2. Certifications: ASSE 1048, CSA B64.5, and IAPMO listed. Lead free.
			3. Service internal components through a removable cover. Two repairable positive seating check modules with captured springs and rubber seat discs.
			4. Swing away clamp for removing self-contained checks. There is no pressure to relieve when changing the seats.
			5. Horizontal or vertical orientation.
			6. Maximum Working Water Pressure: 175 psi.
			7. Temperature Range: 33 to 140 degrees F.
			8. Hydrostatic Test Pressure: 350 psi.
			9. Flanged Ends per ANSI B16.1.
			10. Grooved dimensions per AWWA C606.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 to 2 inch. Delete if not required.

* + 1. FDC (1/2 to 2 inch)-LL Double Check Backflow Assemblies. Valve Size: \_\_\_\_\_\_\_\_.
			1. Stops flow reversal into potable water system.
			2. Certifications: ASSE 1048, CSA B64.5, and IAPMO listed. Lead free.
			3. Service internal components through a single screwed in cover. Two repairable positive seating check modules with captured springs and rubber seat discs.
			4. Easily removable self-contained checks. There is no pressure on the lid.
			5. Maximum Working Water Pressure: 175 psi
			6. Maximum Working Temperature 180 degrees F
			7. Hydrostatic Test Pressure: 350 psi
			8. End Connection: NPT threaded to ANSI B 1.20.1.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Locking handles.
			2. Less ball valves.
			3. Strainer attached.
			4. Stainless steel handles.
			5. Tee Handle: 1.00 to 2.00 inch only.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. FDC (2-1/2 to 10 inch) Double Check Backflow Assemblies. Valve Size: \_\_\_\_\_\_\_\_.
			1. Stops flow reversal into potable water system.
			2. Certifications: ASSE 1048, CSA B64.5, and IAPMO listed. Lead free.
			3. Service internal components through a single removable cover. Two repairable positive seating check modules with captured springs and rubber seat discs.
			4. Swing away clamp for ease of removing self-contained checks. There is no pressure to relieve when changing seats.
			5. Maximum Working Water Pressure: 175 psi.
			6. Working Temperature Range: 33 to 140 degrees F.
			7. Hydrostatic Test Pressure: 350 psi.
			8. Flanged Ends per ANSI B16.1.
			9. Grooved dimensions per AWWA C606.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Non rising stem gate valve.
			2. Outside stem and yoke gate valve.
			3. Strainer attached.
			4. Double check detector assembly.
			5. Grooved flange connection.
			6. No gate valves.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1/2 to 2 inch. Delete if not required.

* + 1. FRP (1/2 to 2 inch) Reduced Pressure Zone Backflow Preventer Assemblies.
			1. Valve Size: \_\_\_\_\_\_\_\_.
			2. Stops flow reversal into a potable water system.
			3. Certifications: ASSE 1013, CSA B64.4 and IAPMO listed.
			4. Tested and Approved To: ASSE 1013, and CSA B64.4, and IAPMO listed.
			5. Two repairable positive seating check modules with captured springs and rubber seat discs.
			6. Service internal components through a screwed in cover.
			7. Serviceable and replaceable relief valve while in line.
			8. Checks have thumb screws holding in the discs. Allows check removal with pliers.
			9. Maximum Working Pressure: 175 psi.
			10. Hydrostatic Test Pressure: 350 psi.
			11. Temperature Range: 33 to 180 degrees F.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Quarter turn ball valve.
			2. Stainless handles.
			3. Locking handles.
			4. Strainer attached.
			5. Less ball valves.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. FRP (2-1/2 to 10 inch) Reduced Pressure Zone Backflow Assemblies.
			1. Valve Size: \_\_\_\_\_\_. Complies with AWWA-C511
			2. Stops flow reversal into potable water system.
			3. Certifications: ASSE 1013, cUPC, and IAPMO listed.
			4. Service internal components through a single removable cover. Two repairable positive seating check modules with captured springs and rubber seat discs.
			5. Relief valve to atmosphere, easily repairable in line, and positioned for maximum protection in the vertical up position.
			6. Swing away clamp for ease of removing self-contained checks. There is no pressure to relieve when changing the seats.
			7. Maximum Working Water Pressure: 175 psi.
			8. Maximum Working Temperature: 140 degrees F.
			9. Hydrostatic Test Pressure: 350 psi.
			10. Flanged Ends per ANSI B16.1.
			11. Grooved Dimensions per AWWA C606.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2-1/2 to 10 inch. Delete if not required.

* + 1. RPDA (2-1/2 to 10 inch) Reduced Pressure Zone Backflow Detector Assemblies.
			1. Valve Size: \_\_\_\_\_\_\_\_
			2. Stops flow reversal into potable water system.
			3. Certifications: ASSE 1015, cUPC and IAPMO listed.
			4. Service internal components through a single removable cover. Two repairable positive seating check modules with captured springs and rubber seat discs.
			5. Relief valve to atmosphere, easily repairable in line, and positioned for maximum protection in the vertical up position.
			6. Swing away clamp for ease of removing self-contained checks. There is no pressure to relieve when changing the seats.
			7. Maximum Working Water Pressure: 175 psi.
			8. Maximum Working Temperature: 140 degrees F.
			9. Hydrostatic Test Pressure: 350 psi.
			10. Flanged Ends per ANSI B16.1.
			11. Grooved Dimensions per AWWA C606.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. FLEXIBLE COUPLINGS
		1. General: Unless specified otherwise for each of the following products.
			1. Tested and Certified: ASTM C1173, CSA B602, cUPC, IAPMO listed.
			2. Material: Neoprene compound per ASTM C564 requirements.
			3. Clamps: Type 300 AISI stainless steel. Minimum Tensile: 165,000 psi
				1. Tightened with 5/16 inch Type 300 AISI stainless steel hex head shoulder screws. Screw Housing: Type 300 AISI stainless steel.
				2. Required Bolt Torque: 60 inch-lbs.
			4. Maintains 4.3 psi. maximum line pressure; 10 ft head pressure.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 3/4 to 12 inch. Delete if not required.

* + 1. MI-FLEX Flexible Rubber Coupling. Pipe Size: \_\_\_\_\_\_\_\_.
			1. Connects cast iron, plastic, steel, or lead pipes to cast iron, plastic, steel, or lead pipes.
			2. Non constant temperature rating: 140 degrees F.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 4 or 6 inch. Delete if not required.

* + 1. MI-FLEX-CC Flexible Rubber Coupling: Pipe Sizes: \_\_\_\_\_\_\_\_.
			1. Connects concrete pipe to cast iron or plastic pipe.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 4 to 10 inch. Delete if not required.

* + 1. MI-FLEX-CL Flexible Rubber Coupling: Pipe Sizes: \_\_\_\_\_\_\_\_.
			1. Connects clay pipe to cast iron or plastic pipe.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. MI-FLEX-CON Flexible Coupling: Pipe Size: 4 inch.
			1. Connects asbestos cement or Ductile Iron pipe to Cast Iron or Schedule 40 Plastic pipe.
			2. Non constant temperature rating: 140 degrees F.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/4 to 1-1/2 inch. Delete if not required.

* + 1. MI-FLEX-DTC Flexible Couplings tubular to Drainpipe: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Connects tubular traps to common household drainpipe for new installation, repairs, and alterations.
			2. Material: Flexible PVC meeting ASTM C564 requirements.
			3. Non constant temperature rating is 140 F.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2, 2, 3, or 4 inch. Delete if not required.

* + 1. MI-FLEX-SO Flexible Rubber Coupling: Pipe Size: \_\_\_\_\_\_\_\_.
			1. Connect plastic socket to plastic or cast iron.
			2. Non constant temperature rating is 140 F.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. NO HUB COUPLINGS

\*\* NOTE TO SPECIFIER \*\* Delete coupling types and product options not required.

* + 1. Heavy Duty Shielded Couplings

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 12 inch. Delete if not required.

* + - 1. MI-QXHUB Heavy Duty Quick Hub Coupling: Pipe Size: \_\_\_\_\_\_\_\_
				1. Provides a positive and significant seal between no hub cast iron pipe and PVC and ABS pipe and fittings. Sealing rings in Quick Hub gasket ensure gasket remains within shield during shipping and handling.

Push coupling onto the pipe.

* + - * 1. Tested and Certified To: ASTM-C1540, CSA B602, IAPMO to FM1680.

Intertek Tested to CAN/ULC S102.2 - Smoke Test.

* + - * 1. Gasket: Neoprene meeting ASTM C564 requirements.
				2. Bands, Eyelets, Screw Housing and Shield: 304 AISI stainless steel

Minimum tensile: 165,000 psi.

* + - * 1. Screws: Type 305 AISI stainless steel, 3/8 inch Hex head / Shoulder.
				2. Shield: Painted red for easy identification.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 15 inch. Delete if not required.

* + - 1. MI-XHUB Heavy Duty No Hub Coupling:
				1. Provides a positive and significant seal between no hub cast iron pipe and fittings, and PVC and ABS pipe and fittings.
				2. Tested and Certified To: ASTM C1540, ASTM C1460, CSA B602, IAPMO to FM1680.

Intertek Tested to CAN/ULC S102.2 - Smoke Test.

* + - * 1. Gasket: Neoprene meeting ASTM C564 requirements.
				2. Bands, Eyelets, Screw Housing and Shield: 304 AISI stainless steel

Minimum tensile: 165,000 psi.

* + - * 1. Screws: Type 305 AISI stainless steel, 3/8 inch Hex head / Shoulder.
				2. Shield: Painted red for easy identification.
		1. Regular Duty:

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 15 inch. Delete if not required.

* + - 1. MI-HUB Regular Duty No Hub Coupling: Pi[pe Size: \_\_\_\_\_\_\_\_.
				1. Provides a positive and significant seal between no hub cast iron pipe and fittings and PVC and ABS pipe and fittings.
				2. Tested and Certified To: ASTM C1277, ASTM C1460 CISPI 310, CSA B602 (File No. 247608), and B70 Standards.
				3. Listed with IAPMO and NSF certified CISPI 310.

Intertek Tested to CAN/ULC S102.2 - Smoke Test.

* + - * 1. Gasket: Neoprene meeting ASTM C564 requirements.
				2. Bands, Eyelets, and Shield: 301 AISI stainless steel

Minimum tensile: 165,000 psi.

* + - * 1. Screw Housing: 304 AISI stainless steel.
				2. Screws: 305 AISI stainless steel, 5/16 inch Hex head / Shoulder.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 12 inch. Delete if not required.

* + - 1. MI-QHUB Regular Duty No Hub Quick Hub Coupling
				1. Provides a positive and significant seal between no hub cast iron pipe and PVC and ABS pipe and fittings. Sealing rings in Quick Hub gasket ensure gasket remains within shield during shipping and handling.

Push coupling onto the pipe.

* + - * 1. Tested and Certified To: ASTM-C1277, ASTM C1460, CISPI 310, NSF, CSA B602 (File No. 247608), IAPMO listed.

Intertek Tested to CAN/ULC S102.2 - Smoke Test.

* + - * 1. Gasket: Neoprene meeting ASTM C564 requirements.
				2. Bands, Eyelets, and Shield: 301 AISI stainless steel

Minimum tensile: 165,000 psi.

* + - * 1. Screw Housing: 304 stainless steel.
				2. Screws: Type 305 AISI stainless steel, 3/8 inch Hex head / Shoulder.
		1. Shielded Repair Couplings:

\*\* NOTE TO SPECIFIER \*\* Pipe Size: to 12 inch. Delete if not required.

* + - 1. MI-HUB-ARC Repair No Hub Coupling:
				1. For resistance to heavy earth loads and shear forces. Provides improved pipe alignment. For cast iron, plastic, or steel pipe to cast Iron, plastic, or steel pipe.
				2. Tested and Certified to ASTM C1173, CSA B602, cUPC, IAPMO listed.
				3. Gaskets: Neoprene compound per ASTM C564 requirements
				4. Shield housing: Type 300 stainless steel.
				5. Clamps: Type 300 AISI stainless steel. Minimum Tensile: 165,000 psi

Tightened with 5/16 inch Type 300 AISI stainless steel hex head shoulder screws. Screw Housing: Type 300 AISI stainless steel.

Required Bolt Torque: 60 inch-lbs.

* + - * 1. Non Constant Temperature Rating: 140 degrees F.
				2. Maximum Line Pressure 4.3 psi. at 10 ft head pressure

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 4, 5, 6, oe 8 inch. Delete if not required.

* + - 1. MI-HUB-ARC-CL Repair No Hub Coupling: Pipe Size: \_\_\_\_\_\_\_.
				1. For clay to cast iron, plastic, lead or steel pipe.
				2. Tested and Certified to ASTM C1460, CSA B602, cUPC, IAPMO listed.
				3. Gaskets: Neoprene compound per ASTM C564 requirements
				4. Shield housing: Type 300 stainless steel.
				5. Clamps: Type 300 AISI stainless steel. Minimum Tensile: 165,000 psi

Tightened with 5/16 inch Type 300 AISI stainless steel hex head shoulder screws. Screw Housing: Type 300 AISI stainless steel.

Required Bolt Torque: 60 inch-lbs.

* + - * 1. Non Constant Temperature Rating: 140 degrees F.
				2. Maximum Line Pressure 4.3 psi. at 10 ft head pressure
		1. Transition Shielded Couplings
			1. General: Unless otherwise specified in the products below.
				1. Tested and Certified To: ASTM C1460, CSA B602, cUPC, IAPMO listed.
				2. Gaskets: Neoprene compound per ASTM C564 requirements
				3. Shield housing: Type 300 stainless steel.
				4. Clamps: Type 300 AISI stainless steel. Minimum Tensile: 165,000 psi

Tightened with 5/16 inch Type 300 AISI stainless steel hex head shoulder screws. Screw Housing: Type 300 AISI stainless steel.

Required Bolt Torque: 60 inch-lbs.

* + - * 1. Non Constant Temperature Rating: 140 degrees F.
				2. Maximum Line Pressure 4.3 psi. at 10 ft head pressure

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 8 inch. Delete if not required..

* + - 1. MI-HUB-TR Transition No Hub Coupling: Pipe Size: \_\_\_\_\_\_\_\_.
				1. Connects cast iron, plastic, or steel pipe to cast iron, plastic, or steel pipe.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 4 inch. Delete if not required..

* + - 1. MI-HUB-TRC Transition No Hub Coupling: Pipe Size: \_\_\_\_\_\_\_\_.
				1. Connects cast iron, plastic, or steel pipe to copper or plastic pipe.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 to 3 inch. Delete if not required...

* + - 1. MI-HUB-TRCC Transition No Hub Coupling: Pipe Size: \_\_\_\_\_\_\_\_.
				1. Connects copper pipe to copper or plastic pipe.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: , 4, or 6 inch. Delete if not required..

* + - 1. MI-HUB-TRP Transition No Hub Coupling: Pipe Size: \_\_\_\_\_\_\_\_.
				1. Connects plastic, steel, or extra heavy cast iron pipe to copper pipe.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 3 or 4 inch. Delete if not required.

* + - 1. MI-HUB-TRS Transition No Hub Coupling: Pipe Size: \_\_\_\_\_\_\_\_.
				1. Connects plastic, steel, or extra heavy cast iron pipe to copper pipe.

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 1-1/2 or 2 inch. Delete if not required...

* + - 1. MI-HUB-TRT Transition No Hub Coupling: Pipe Size: \_\_\_\_\_\_\_\_.
				1. Connects cast iron, plastic, or steel pipe to tubular pipe.
			2. MI-HUB-TRTW Transition No Hub Coupling: Pipe Size: 4 inch.
				1. Connects thin wall plastic to schedule 40 plastic or steel.
		1. Service Weight Gaskets

\*\* NOTE TO SPECIFIER \*\* Pipe Size: 2 to 15 inch. Delete if not required...

* + - 1. POG-SW Service Weight Gaskets: Pipe Size: \_\_\_\_\_\_\_\_.
				1. Tested and Certified to ASTM C564 and IAPMO listed
				2. Material: Neoprene. Durometer: 50 to 60.
				3. One piece compression gasket used to join hub and spigot cast iron soil pipe and fittings manufactured to ASTM A74.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. WALL HYDRANTS

\*\* NOTE TO SPECIFIER \*\* Delete paragraph product options not required.

* + 1. MHY-10 Low Lead Non Freeze Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead.
			3. Hydrant; Tested and Certified To: ASSE 1019-B, and IAPMO listed.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011 and IAPMO listed. Self-draining, and vandal resistant.
			5. Neoprene Plunger: Controls flow and drain functions.
			6. Operating Stem: Hardened bronze.
			7. Drain Port: Under the hexagon nut.
			8. Casing: Heavy duty brass. Head Casting: Heavy duty chrome plated bronze.
			9. Face Plate: Polished chrome plated.
			10. Inlet Connection: Combination 3/4 inch SWT or 1 inch MIP 360 degree swivel. Can be removed for straight back 3/4 inch SWT.
			11. Operating Key: Furnished with each hydrant.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose Connection: 1 inch.
				2. ASSE 1052 double check vacuum breaker.
				3. Wall clamp.
				4. Chrome plated double check vacuum breaker
		1. MHY-15 Low Lead Non Freeze Exposed Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead.
			3. Hydrant; Tested and Certified To: ASSE 1019-B, and IAPMO listed.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011 and IAPMO listed. Self-draining, and vandal resistant.
			5. Neoprene Plunger: Controls flow and drain functions.
			6. Operating Stem: Hardened bronze.
			7. Drain Port: Under the hexagon nut.
			8. Casing: Heavy duty brass. Head Casting: Heavy duty chrome plated bronze.
			9. Face Plate: Polished chrome plated.
			10. Inlet Connection: Combination 3/4 inch SWT or 1 inch MIP 360 degree swivel. Can be removed for straight back 3/4 inch SWT.
			11. Operating Key: Furnished with each hydrant.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose Connection: 1 inch.
				2. Wall clamp.
				3. Chrome plated double check vacuum breaker
		1. MHY-16 Non Freeze Exposed Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead.
			3. Hydrant; Tested and Certified To: ASSE 1019-B, and IAPMO listed.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011 and IAPMO listed. Self-draining, and vandal resistant.
			5. Neoprene Plunger: Controls flow and drain functions.
			6. Operating Stem: Hardened bronze.
			7. Drain Port: Under the hexagon nut.
			8. Casing: Heavy duty brass. Head Casting: Heavy duty chrome plated bronze.
			9. Face Plate: Polished chrome plated.
			10. Inlet Connection: Combination 3/4 inch SWT or 1 inch MIP 360 degree swivel. Can be removed for straight back 3/4 inch SWT.
			11. Operating Key: Furnished with each hydrant.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose Connection: 1 inch.
				2. Wheel handle.
				3. Wall clamp.
				4. Chrome plated double check vacuum breaker
		1. MHY-20 Encase Non Freeze Low Lead Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead.
			3. Hydrant; Tested and Certified To: ASSE 1019-B.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011. Self-draining, and vandal resistant.
			5. Neoprene Plunger: Controls flow and drain functions.
			6. Operating Stem: Hardened bronze.
			7. Drain Port: Under the hexagon nut.
			8. Casing: Heavy duty brass. Head Casting: Heavy duty chrome plated bronze.
			9. Face Plate: Polished chrome plated.
			10. Inlet Connection: Combination 3/4 inch SWT or 1 inch MIP 360 degree swivel. Can be removed for straight back 3/4 inch SWT.
			11. Wall Housing: Nickel bronze box and hinged locking cover.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Chrome plated double check vacuum breaker
				2. Cylinder key locks.
				3. Fabricated stainless steel hydrant box with round back for tilt up construction.
				4. Four 1 x 1-1/4 inch slots on top and two sides of box to receive mounting brackets
				5. Wall clamp.
				6. Hose Connection: 1 inch.
				7. Cast stainless steel hydrant box.
				8. Polished chrome plated nickel bronze box.
				9. Dual check valves.
		1. MHY-25 Encased Non Freeze Low Lead Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead.
			3. Hydrant; Tested and Certified To: ASSE 1019-B.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011. Self-draining, and vandal resistant.
			5. Neoprene Plunger: Controls flow and drain functions.
			6. Operating Stem: Hardened bronze.
			7. Drain Port: Under the hexagon nut.
			8. Casing: Heavy duty brass. Head Casting: Heavy duty chrome plated bronze.
			9. Face Plate: Polished chrome plated.
			10. Inlet Connection: Combination 3/4 inch SWT or 1 inch MIP 360 degree swivel. Can be removed for straight back 3/4 inch SWT.
			11. Wall Housing: Nickel bronze box and hinged locking cover.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Chrome plated double check vacuum breaker
				2. Cylinder key locks.
				3. Fabricated stainless steel hydrant box with round back for tilt up construction.
				4. Four 1 x 1-1/4 inch slots on top and two sides of box to receive mounting brackets
				5. Wall clamp.
				6. Hose Connection: 1 inch.
				7. Cast stainless steel hydrant box.
				8. Polished chrome plated nickel bronze box.
				9. Dual check valves.
		1. MHY-26 Encased Non Freeze Low Lead Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead.
			3. Hydrant; Tested and Certified To: ASSE 1019-B.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011. Self-draining, and vandal resistant.
			5. Neoprene Plunger: Controls flow and drain functions.
			6. Operating Stem: Hardened bronze.
			7. Drain Port: Under the hexagon nut.
			8. Casing: Heavy duty brass. Head Casting: Heavy duty chrome plated bronze.
			9. Face Plate: Polished chrome plated.
			10. Inlet Connection: Combination 3/4 inch SWT or 1 inch MIP 360 degree swivel. Can be removed for straight back 3/4 inch SWT.
			11. Wall Housing: Nickel bronze box and hinged locking cover.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Chrome plated double check vacuum breaker
				2. Cylinder key locks.
				3. Fabricated stainless steel hydrant box with round back for tilt up construction.
				4. Four 1 x 1-1/4 inch slots on top and two sides of box to receive mounting brackets
				5. Wall clamp.
				6. Hose Connection: 1 inch.
				7. Cast stainless steel hydrant box.
				8. Polished chrome plated nickel bronze box.
				9. Dual check valves.
		1. MHY-30 Low lead Moderate Climate Exposed Wall Hydrant:
			1. Listed: IAPMO.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead. Self-draining
			3. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011. Self-draining, and vandal resistant. 3/4 inch male hose connection.
			4. Inlet Connection: Combination 3/4 inch female or 1 inch male threaded
			5. Head Casting: Heavy duty chrome plated bronze.
			6. Face Plate: Polished chrome plated.
			7. Neoprene Plunger: Controls flow and drain functions.
			8. Operating Stem: Hardened bronze.
			9. Maximum Static Operating Pressure: 125 psi
			10. Minimum Running Pressure: 8 psi

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose Connection: 1 inch.
		1. MHY-35 Encased Low Lead Moderate Climate Wall Hydrant:
			1. Listed: IAPMO.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead. Self-draining
			3. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011. Self-draining, and vandal resistant. 3/4 inch male hose connection.
			4. Inlet Connection: Combination 3/4 inch female or 1 inch male threaded
			5. Head Casting: Heavy duty chrome plated bronze.
			6. Face Plate: Polished chrome plated.
			7. Neoprene Plunger: Controls flow and drain functions.
			8. Operating Stem: Hardened bronze.
			9. Maximum Static Operating Pressure: 125 psi
			10. Minimum Running Pressure: 8 psi
			11. Encasement: Nickel bronze box with hinged locking cover.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Cylinder key locks.
				2. Fabricated stainless steel hydrant box with round back for tilt up construction.
				3. Four 1 x 1-1/4 inch slots on top and two sides of box to receive mounting brackets
				4. Wall clamp.
				5. Hose Connection: 1 inch.
				6. Cast stainless steel hydrant box.
				7. Polished chrome plated nickel bronze box.
		1. MHY-40 Non Freeze Hot and Cold Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial use in office and apartment complexes, malls and shopping centers, schools, churches, and industrial buildings. Exposed type, self-draining, non-freeze, and low lead. Self-draining
			3. Hydrant; Tested and Certified To: ASSE 1019-B and IAPMO listed.
				1. Hot and cold temperature control selection.
				2. Neoprene Plunger: Controls flow and drain functions.
				3. Operating Stem: Hardened bronze.
				4. Casing: Heavy duty brass.
				5. Head Casing: Heavy duty chrome plated bronze.
				6. Face Plate: chrome plated.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011 and IAPMO listed. Self-draining, and vandal resistant. 3/4 inch male hose connection.
			5. Loose tee key to be furnished with each hydrant.
		2. MHY-45 Hot and Cold Encased Non Freeze Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For use in restaurants, food service areas and other facilities requiring anti-contamination hot and cold potable water supply.
			3. Hydrant; Tested and Certified To: ASSE 1019-B and IAPMO listed.
				1. Hot and cold temperature control selection.
				2. Neoprene Plunger: Controls flow and drain functions.
				3. Operating Stem: Hardened bronze.
				4. Casing: Heavy duty brass.
				5. Head Casing: Heavy duty chrome plated bronze.
				6. Face Plate: chrome plated.
			4. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011 and IAPMO listed. Self-draining, and vandal resistant. 3/4 inch male hose connection.
			5. Polished nickel bronze box with hinged locking cover.
			6. Loose tee key to be furnished with each hydrant.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Cylinder key locks.
				2. Wall clamp.
				3. Hose Connection: 1 inch.
				4. Female Solder Adapter: 3/4 inch.
				5. Elbow and Union Nut: 90 degree 3/4 inch IPS
				6. Cast stainless steel hydrant box.
				7. Polished chrome plated nickel bronze box.
		1. MHY-50 Low Lead Moderate Climate Narrow Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial applications in moderate climates to fit in a 4 inch wall.
			3. Listed: IAPMO.
			4. Antisiphon Vandal Resistant Vacuum Breaker: Certified to ASSE 1011. Self-draining. Male Hose Connection: 3/4 inch.
			5. Inlet Connection: Combination 3/4 inch female or 1 inch male threaded.
				1. Swivel: 360 degrees.
			6. Head Casting: Heavy duty chrome plated bronze.
			7. Face Plate: Polished chrome plated.
			8. Operating key furnished with each hydrant.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose Connection: 1 inch.
		1. MHY-55 Encased Low Lead Moderate Climate Narrow Wall Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For commercial applications in moderate climates to fit in a 4 inch wall.
			3. Listed: IAPMO.
			4. Antisiphon Vandal Resistant Vacuum Breaker: Certified to ASSE 1011. Self-draining. Male Hose Connection: 3/4 inch.
			5. Inlet Connection: Combination 3/4 inch female or 1 inch male threaded.
			6. Swivel: 360 degrees.
			7. Head Casting: Heavy duty chrome plated bronze.
			8. Face Plate: Polished chrome plated.
			9. Operating key furnished with each hydrant.
			10. Encasement: Satin finish nickel bronze box with hinged locking cover.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Chrome Plated Double Check Vacuum Breaker
				2. Cylinder key lock.
				3. Fabricated stainless steel hydrant box with round back for tilt up construction.
				4. Four 1 x 1-1/4 inch slots on top and two sides of box to receive mounting brackets
				5. Wall clamp.
				6. Hose Connection: 1 inch.
				7. Cast stainless steel hydrant box.
				8. Polished chrome plated nickel bronze box.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. SPECIAL PURPOSE HYDRANTS

\*\* NOTE TO SPECIFIER \*\* Delete paragraph product options not required.

* + 1. MHY-58 Roof Hydrant:
			1. Self-draining, non-freeze. Lift handle with lock feature.
			2. One piece neoprene plunger.
			3. Operating Stem: Hardened bronze.
			4. Steel Casing: 1 inch galvanized steel
			5. Head Casting: Heavy duty bronze with head nut assembly
			6. Inlet Connection: Combination 3/4 inch female and 1 inch male.
			7. Outlet: 3/4 inch male hose connection.
			8. Operating Rod: 3/8 inch diameter galvanized steel and a tapped 1/8 inch drain port in the bronze tailpiece.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose connection: 1 inch.
				2. Adapter Vacuum Breaker: 8-3/4"
				3. Decorative casing guard
		1. MHY-60 Lawn/Ground Hydrant:
			1. Installs flush with surrounding surfaces. For use on golf courses, shopping centers, parks, and landscaped areas around buildings.
			2. Hydrant; Tested and Certified To: ASSE 1019-B and IAPMO listed.
				1. Hot and cold temperature control selection.
				2. Neoprene Plunger: Controls flow and drain functions.
				3. Operating Stem: Hardened bronze.
				4. Casing: Heavy duty brass.
				5. Head Casing: Heavy duty chrome plated bronze.
				6. Face Plate: Polished chrome plated.
			3. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011 and IAPMO listed. Self-draining, and vandal resistant. 3/4 inch male hose connection.
			4. Antisiphon Vandal Resistant Vacuum Breaker: Certified to ASSE 1011. Self-draining. Male Hose Connection: 3/4 inch.
			5. Steel Casing: heavy duty galvanized steel pipe.
			6. Head Casting: Heavy duty bronze with head nut assembly
			7. Inlet Connection: Combination 3/4 inch female and 1 inch male.
				1. Drain port tapped for 1/8 inch NPT.
			8. Outlet: 3/4 inch male hose connection.
			9. Operating Key: Opens the hydrant, box . Prevents unauthorized use.
			10. Encasement: Satin finish nickel bronze box with hinged locking cover.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Anchor flange.
				2. Anchor flange and membrane clamp.
				3. Hose storage box.
				4. Hose connection: 1 inch.
				5. Cylinder key lock
				6. Hose Connection: 1 inch
				7. Stainless steel encasement box
				8. Drain Port in box: 1/4 inch
				9. Drain Port in box: 3/8 inch
				10. Drain Port in box: 1/2 inch
				11. Polished chrome plated nickel bronze box.
		1. MHY-61 Lawn/Ground Hydrant 1-1/4, 1-1/2, 2 inch Connections:
			1. Installs flush with surrounding surfaces. For use on golf courses, shopping centers, parks, and landscaped areas around buildings.
			2. Hydrant; Tested and Certified To: ASSE 1019-B and IAPMO listed.
				1. Neoprene Plunger: Controls flow and drain functions.
				2. Operating Stem: Hardened bronze.
				3. Steel Casing: heavy duty galvanized steel pipe.
				4. Head Casting: Heavy duty bronze with head nut assembly
				5. Face Plate: Polished chrome plated.
			3. Anti-Siphon Vacuum Breaker; Tested and certified to the ASSE 1011 and IAPMO listed. Self-draining, and vandal resistant. 3/4 inch male hose connection.
			4. Inlet Connection: 1-1/4, 1-1/2, 2 inch male threaded.
				1. Drain port tapped for 1/8 inch NPT.
			5. Outlet: 3/4 inch male hose connection.
			6. Operating Key: Opens the hydrant, box . Prevents unauthorized use.
			7. Encasement: Satin finish nickel bronze box with hinged locking cover.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Anchor flange.
				2. Anchor flange and membrane clamp.
				3. Hose storage box.
				4. Hose connection: 1 inch.
				5. Cylinder key lock
				6. Hose Connection: 1 inch
				7. Stainless steel encasement box
				8. Drain Port in box: 1/4 inch
				9. Drain Port in box: 3/8 inch
				10. Drain Port in box: 1/2 inch
				11. Polished chrome plated nickel bronze box.
		1. MHY-65 Post Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For exterior deck areas, farms, golf courses, parks, recreation, and landscaped areas to provide a ready supply of potable water.
				1. Opening Hydrant: Allows free flow of water from hose connection and seals the drain port preventing waste of water.
				2. Closing Hydrant: Opens drain port to allow existing water in the hydrant to drain preventing freezing.
			3. Inlet connection: Combination 3/4 inch female 1 inch male
			4. One piece neoprene plunger.
			5. Operating Stem: Hardened bronze.
			6. Steel Casing: 1 inch galvanized steel. Prevents rust and deterioration in acidic ground areas.
			7. Head Casting: Heavy duty bronze with head nut assembly.
				1. Head Nut Assembly: Remove for access to internal parts.
			8. Operating Rod: 3/8 inch diameter galvanized steel.
			9. Decorative Casing Guard: 1/8 inch tapped drain port in the bronze tailpiece, and an operating key.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose connection: 1 inch.
				2. Vacuum Breaker: Certified to ASSE 1011 and IAPMO listed.
				3. Wheel handle.
				4. Decorative casing guard.
		1. MHY-66 Post Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For exterior deck areas, farms, golf courses, parks, recreation, and landscaped areas to provide a ready supply of potable water.
				1. Opening Hydrant: Allows free flow of water from hose connection and seals the drain port preventing waste of water.
				2. Closing Hydrant: Opens drain port to allow existing water in the hydrant to drain preventing freezing.
			3. Inlet Connection: 1-1/4, 1-1/2, 2 inch male threaded.
			4. One piece neoprene plunger.
			5. Operating Stem: Hardened bronze.
			6. Steel Casing: 1 inch galvanized steel. Prevents rust and deterioration in acidic ground areas.
			7. Head Casting: Heavy duty bronze with head nut assembly.
				1. Head Nut Assembly: Remove for access to internal parts.
			8. Operating Rod: 3/8 inch diameter galvanized steel.
			9. Decorative Casing Guard: 1/8 inch tapped drain port in the bronze tailpiece, and an operating key.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose connection: 1 inch.
				2. Vacuum Breaker: Certified to ASSE 1011 and IAPMO listed.
				3. Wheel handle.
				4. Decorative casing guard.
		1. MHY-68 Yard Hydrant:
			1. Length: \_\_\_\_\_\_\_\_.
			2. For areas requiring ready water flow. Used to clean tools and equipment, maintain lawns and gardens, water livestock, fill field spray equipment and provide a general potable water supply even in below freezing temperature conditions.
				1. Opening Hydrant: Allows free flow of water from hose connection and seals the drain port preventing waste of water.
				2. Closing Hydrant: Opens drain port to allow existing water in the hydrant to drain preventing freezing.
			3. Inlet connection: Combination 3/4 inch female 1 inch male
			4. One piece neoprene plunger.
			5. Operating Stem: Hardened bronze.
			6. Steel Casing: 1 inch galvanized steel. Prevents rust and deterioration in acidic ground areas.
			7. Head Casting: Heavy duty bronze with head nut assembly.
				1. Head Nut Assembly: Remove for access to internal parts.
			8. Operating Rod: 3/8 inch diameter galvanized steel.
			9. Decorative Casing Guard: 1/8 inch tapped drain port in the bronze tailpiece.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Hose connection: 1 inch.
				2. Vacuum Breaker: Certified to ASSE 1011 and IAPMO listed.
				3. Decorative casing guard.
		1. MHY-9000-NPB Low Lead, rough bronze, Anti-Contamination Wall Faucet
			1. For use in mild climate areas on residential, commercial, industrial, and institutional properties.
			2. Exposed type, with 3/4 inch male hose connection and anti-siphon vacuum breaker.
			3. Body: Low lead bronze with rough bronze finish.
				1. Operating Handles: Brown plastic wheel handle, clear plastic wheel handle, cast iron wheel handle and/or an operating key.
				2. Operating Key: The square brass stud that receives the screw to secure the four different types of operating handles is shielded for tamper proofing. This is applicable when the hydrant is used with an operating key.
			4. Inlet Connection: 1/2 or 3/4 inch FPT. Tapered threads only.
			5. Anti-Siphon Vacuum Breaker: ASSE 1011 and IAPMO listed.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Cast brass box
				2. Chrome plated cast brass box
				3. Cylinder lock
		1. MHY-9200-NPB Low Lead, Polished Chrome, Anti-Contamination Wall Faucet.
			1. For use in mild climate areas on residential, commercial, industrial, and institutional properties.
			2. Exposed type, with 3/4 inch male hose connection and anti-siphon vacuum breaker.
			3. Body: Low lead bronze. Finish: Polished chrome plated.
				1. Operating Handles: Brown plastic wheel handle, clear plastic wheel handle, cast iron wheel handle and/or an operating key.
				2. Operating Key: The square brass stud receives screw to secure four different types of operating handles is shielded for tamper proofing.
			4. Inlet Connection: 1/2 or 3/4 inch FPT. Tapered threads only.
			5. Anti-Siphon Vacuum Breaker: ASSE 1011 and IAPMO listed.
				1. Vandal resistant, self-draining, with fine male threads on the end that screws into the faucet body ensuring vacuum breaker is in place for a hose connection to be secured to the faucet.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Cast brass box.
				2. Chrome plated cast brass box.
				3. Cylinder lock.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. HYDRANT BOXES

\*\* NOTE TO SPECIFIER \*\* Delete paragraph product options not required.

* + 1. MHY-15-RECT Hydrant Box:
			1. Type 304 stainless steel rectangular hydrant box with piano hinge and Allen key lock. Fits in a 10-1/2 x 5-1/4 inch space, the size of a brick.
			2. For use MHY-10, through 55 series (except 40 and 45 series) of MIFAB wall hydrants.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Cylinder key lock.
				2. Paddle latch.
				3. VP Vandal resistant hardware (VP screwdriver included).
		1. MHY-3-RB Core Hole Wall Hydrant Box:
			1. Encased stainless steel hydrant box for 6 inch diameter core holes in tilt up construction with screwdriver operated cam latch.
			2. To be installed into a 6 inch diameter core hole in tilt up construction. For use with the MIFAB MHY-10, 15, 16, 30 and 50 wall hydrants.
			3. Cover Plate: 7 inch square. Hinged Door Opening: 6 inch square.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Cylinder key lock.
				2. VP Vandal resistant hardware (VP screwdriver included).
		1. MHY-95 Flush Mounted Wall Box:
			1. Flush cast mounted brass wall box with hydrant. For MHY-90 Series hydrants. Encased water supply in moderate climate areas.
			2. Not intended for use with MHY-90, 91, 92, 30, or 31 Series Cast Iron Wheel Handle Wall Hydrants.
			3. Cover (HxW): 8-13/16 x 7-3/16 inch.
			4. Wall Opening: 7-3/4 x 6-1/8 inch.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - 1. Optional Variations:
				1. Polished chrome plated nickel bronze box.
				2. Cylinder key lock.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. WATER HAMMER ARRESTORS

\*\* NOTE TO SPECIFIER \*\* Delete paragraph product options not required.

* + 1. WHB Stainless Steel Bellows Water Hammer Arrestors:
			1. For commercial, institutional, and residential water supply lines Reduces hydraulic shock waves caused by quick opening and closing of valves in the piping system.
			2. Nesting type Bellows and Body Casing: Type 304 Stainless Steel. Prevents corrosion.
			3. Connection: 3/4 or 1 inch Male NPT
			4. Bellows Operated Piston: Stainless Steel. Improves operating efficiency.
			5. Tested and Certified To: PDI WH-201
			6. Operating Pressure: Up to 350 psig. for effective and safe operation.
			7. Line Limit Surge Pressure: Pp to 1500 psig.
			8. Maximum Working Temperature: 250 degrees F.
		2. CL/CLS Piston Operated Water Hammer Arrestor.
			1. For commercial, institutional, and residential water supply lines Reduces hydraulic shock waves caused by quick opening and closing of valves in the piping system.
				1. Installed as close as possible to quick closing valves.
			2. Listed per ASSE 1010 and ANSI A112.26.1M. NSF certified.
			3. Body: "K" copper, thick body, hard drawn.

\*\* NOTE TO SPECIFIER \*\* Nickel plated and stainless steel are options for models CL-A through F. Delete options not required.

* + - 1. Body: Nickel plated
			2. Body: Stainless steel.
			3. Piston: Ryton PPS with two Parco 5778-80 O-rings and Dow Corning 111 FDA approved silicone lubricant.
				1. Ribbed Piston: Reduces secondary shock.
				2. Flared Piston Skirt: Prevents particles in water from contacting O-rings.
			4. Large Volume Air Chamber: Provides superior dampening performance.
			5. Connection: CDA 360 brass MPT.
			6. Maximum Working Temperature: 250 degrees F.
			7. Operating Pressure: Up to 350 psig.
			8. Surge Pressure: Up to 1,500 psig.
			9. No access door is required to service water hammer arrestors
			10. Wetted Surfaces contacted by consumable water contains less than one quarter of one percent (0.25 percent) of lead by weight.
		1. CL-NP Nickel Plated Type "K" Copper Piston Operated Water Hammer Arrestor.
			1. For commercial, institutional, and residential water supply lines Reduces hydraulic shock waves caused by quick opening and closing of valves in the piping system.
				1. Installed as close as possible to quick closing valves.
			2. Listed per ASSE 1010 and ANSI A112.26.1M.
			3. Body: "K" copper, thick body, hard drawn.
			4. Piston: Ryton PPS with two Parco 5778-80 O-rings and Dow Corning 111 FDA approved silicone lubricant.
				1. Ribbed Piston: Reduces secondary shock.
				2. Flared Piston Skirt: Prevents particles in water from contacting O-rings.
			5. Large Volume Air Chamber: Provides superior dampening performance.
			6. Connection: CDA 360 brass MPT.
			7. Maximum Working Temperature: 250 degrees F.
			8. Operating Pressure: Up to 350 psig.
			9. Surge Pressure: Up to 1,500 psig.
			10. No access door is required to service water hammer arrestors
			11. Wetted Surfaces contacted by consumable water contains less than one quarter of one percent (0.25 percent) of lead by weight.
		2. CL-SS Type Stainless Steel Piston Operated Water Hammer Arrestor.
			1. For commercial, institutional, and residential water supply lines Reduces hydraulic shock waves caused by quick opening and closing of valves in the piping system.
				1. Installed as close as possible to quick closing valves.
			2. Listed per ASSE 1010 and ANSI A112.26.1M.
			3. Body: "K" copper, thick body, hard drawn.
			4. Piston: Ryton PPS with two Parco 5778-80 O-rings and Dow Corning 111 FDA approved silicone lubricant.
				1. Ribbed Piston: Reduces secondary shock.
				2. Flared Piston Skirt: Prevents particles in water from contacting O-rings.
			5. Large Volume Air Chamber: Provides superior dampening performance.
			6. Connection: CDA 360 brass MPT.
			7. Maximum Working Temperature: 250 degrees F.
			8. Operating Pressure: Up to 350 psig.
			9. Surge Pressure: Up to 1,500 psig.
			10. No access door is required to service water hammer arrestors
			11. Wetted Surfaces contacted by consumable water contains less than one quarter of one percent (0.25 percent) of lead by weight.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	1. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturer's recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION