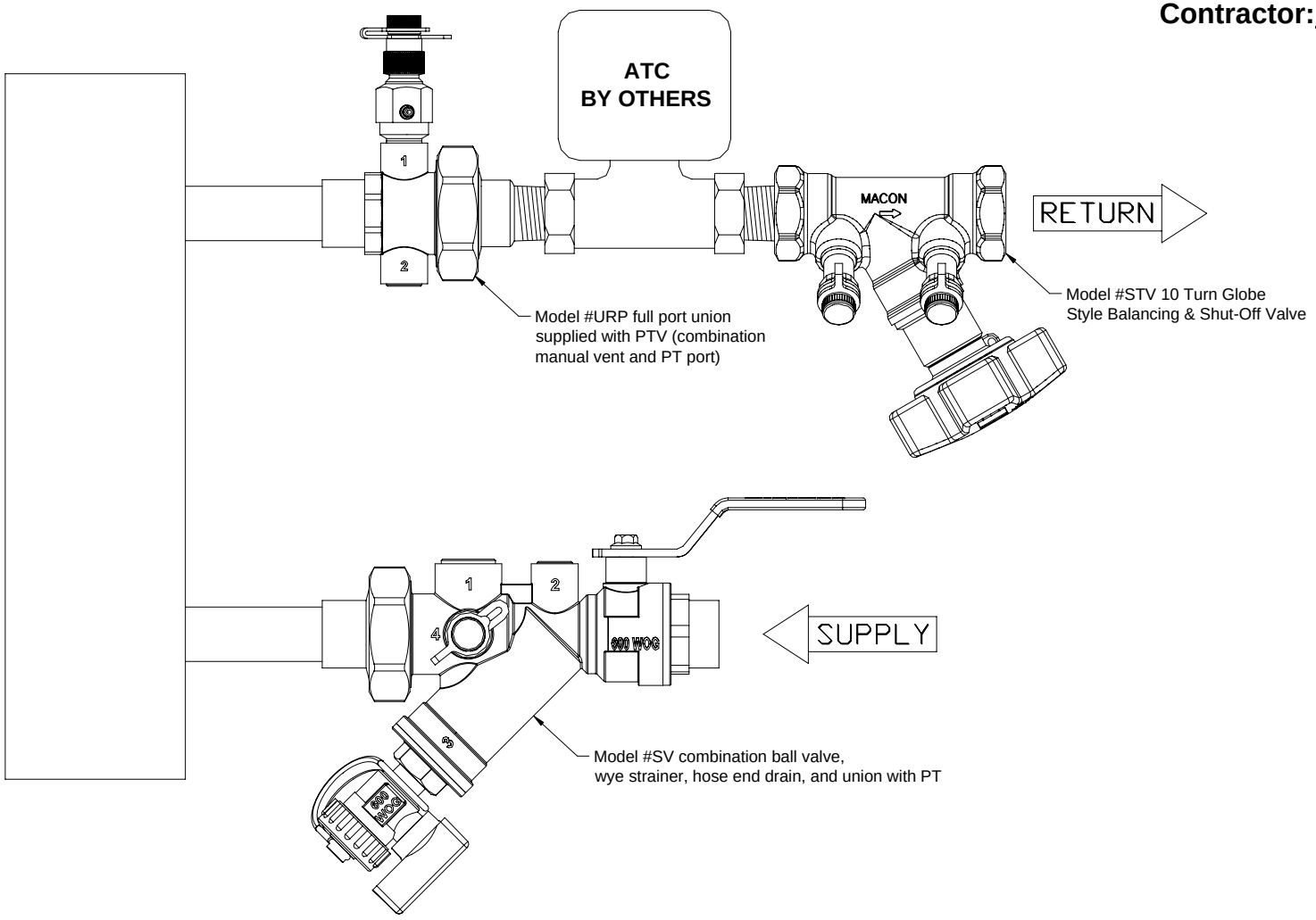
MACON® BALANCING
www.maconbalancing.com

Valve Package (Model # 2RS-CS)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



Submitted By:
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118 Exchange Street
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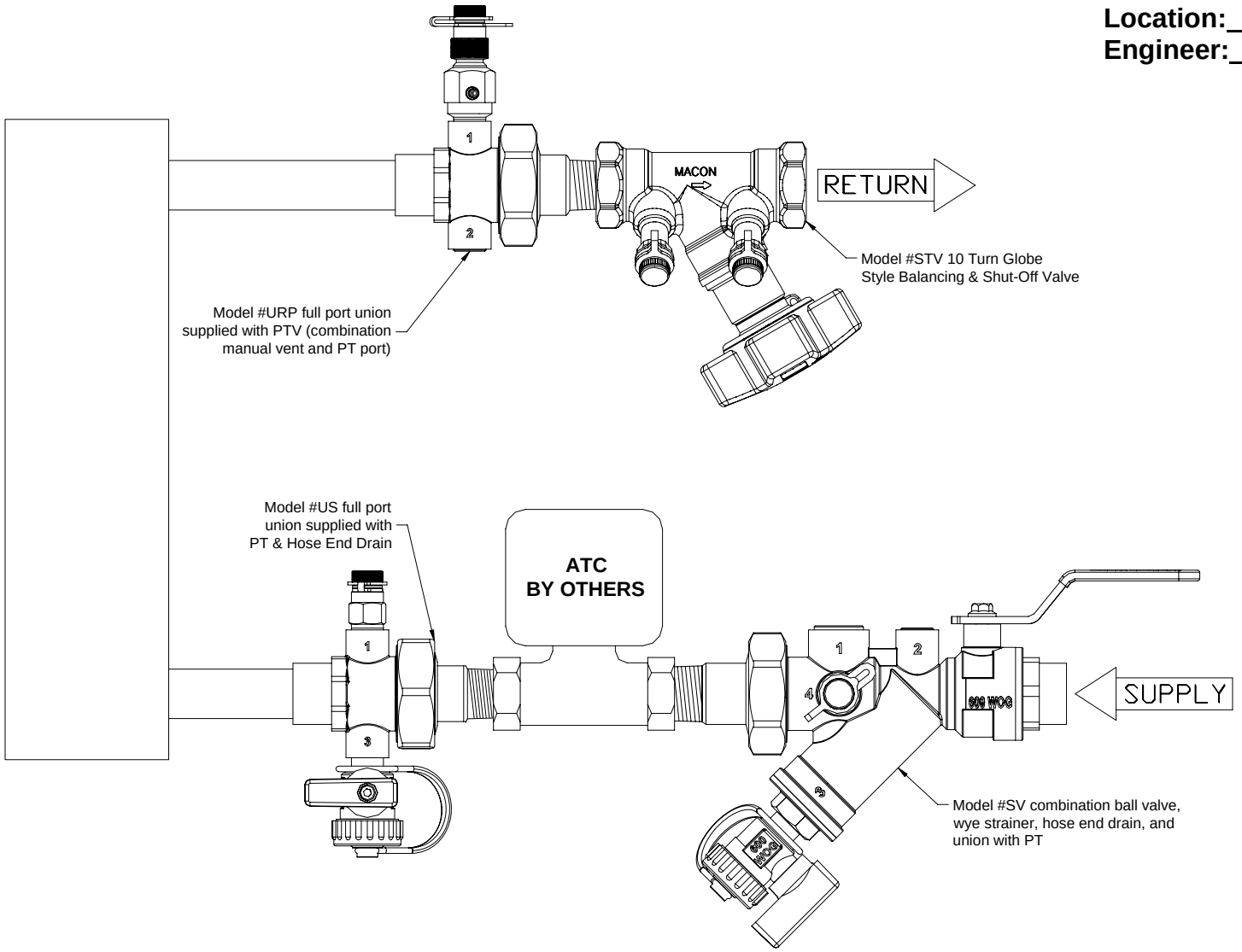
Valve Package (Model # 2SS-CS)

Job Name:_____
Location:_____
Engineer:___



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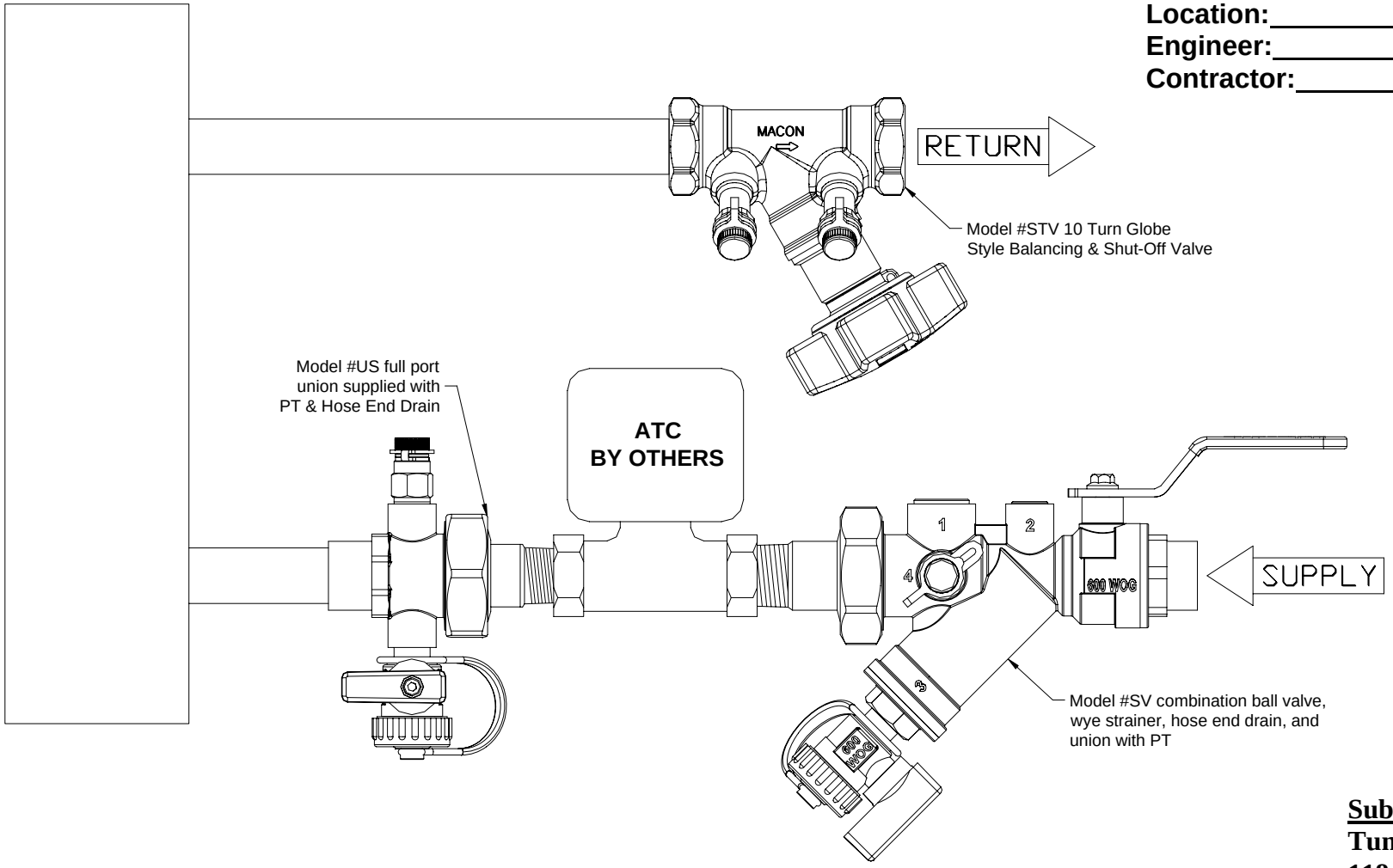
Valve Package (Model # 2SS-CSX)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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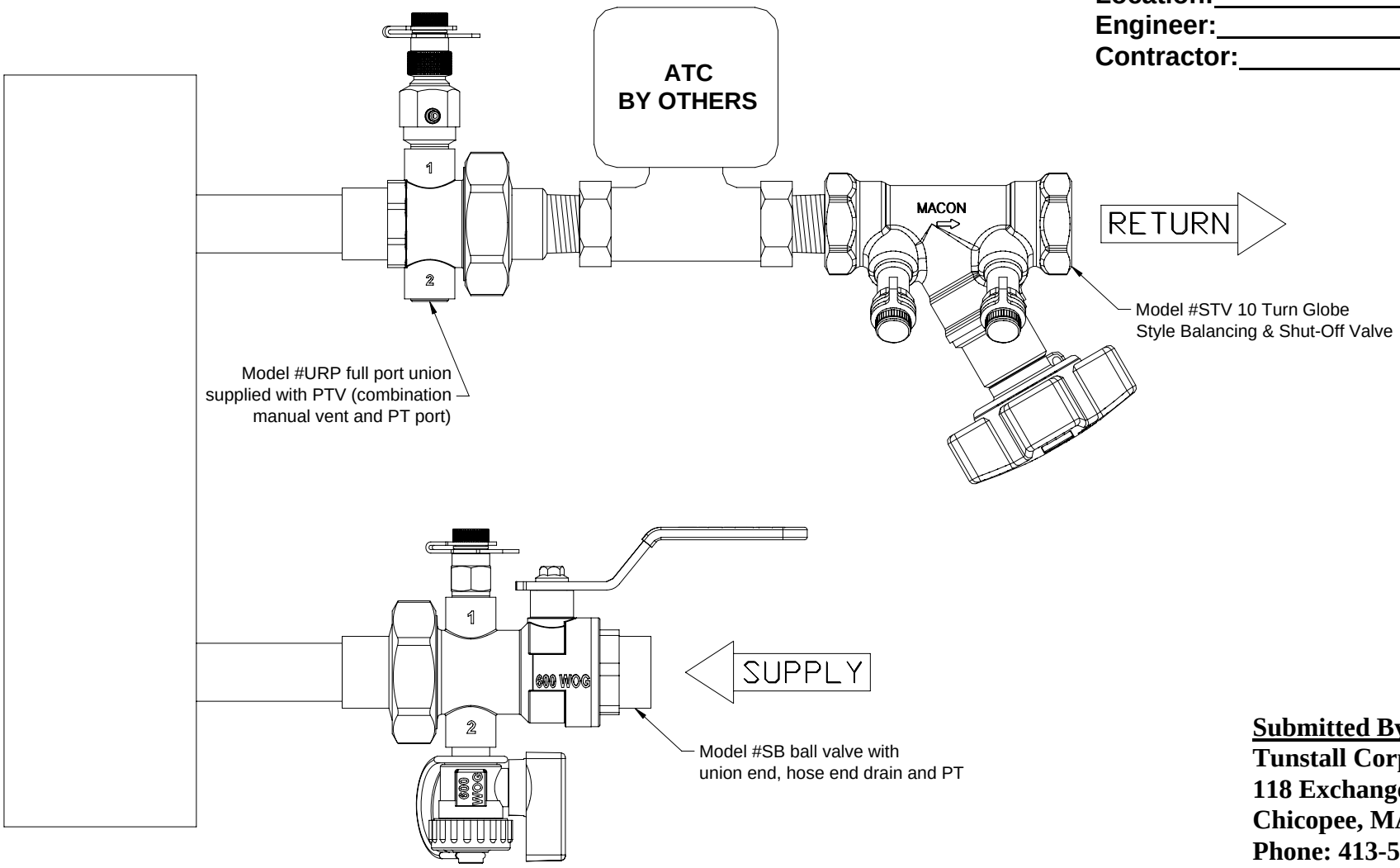
Valve Package (Model # 2RB-CS)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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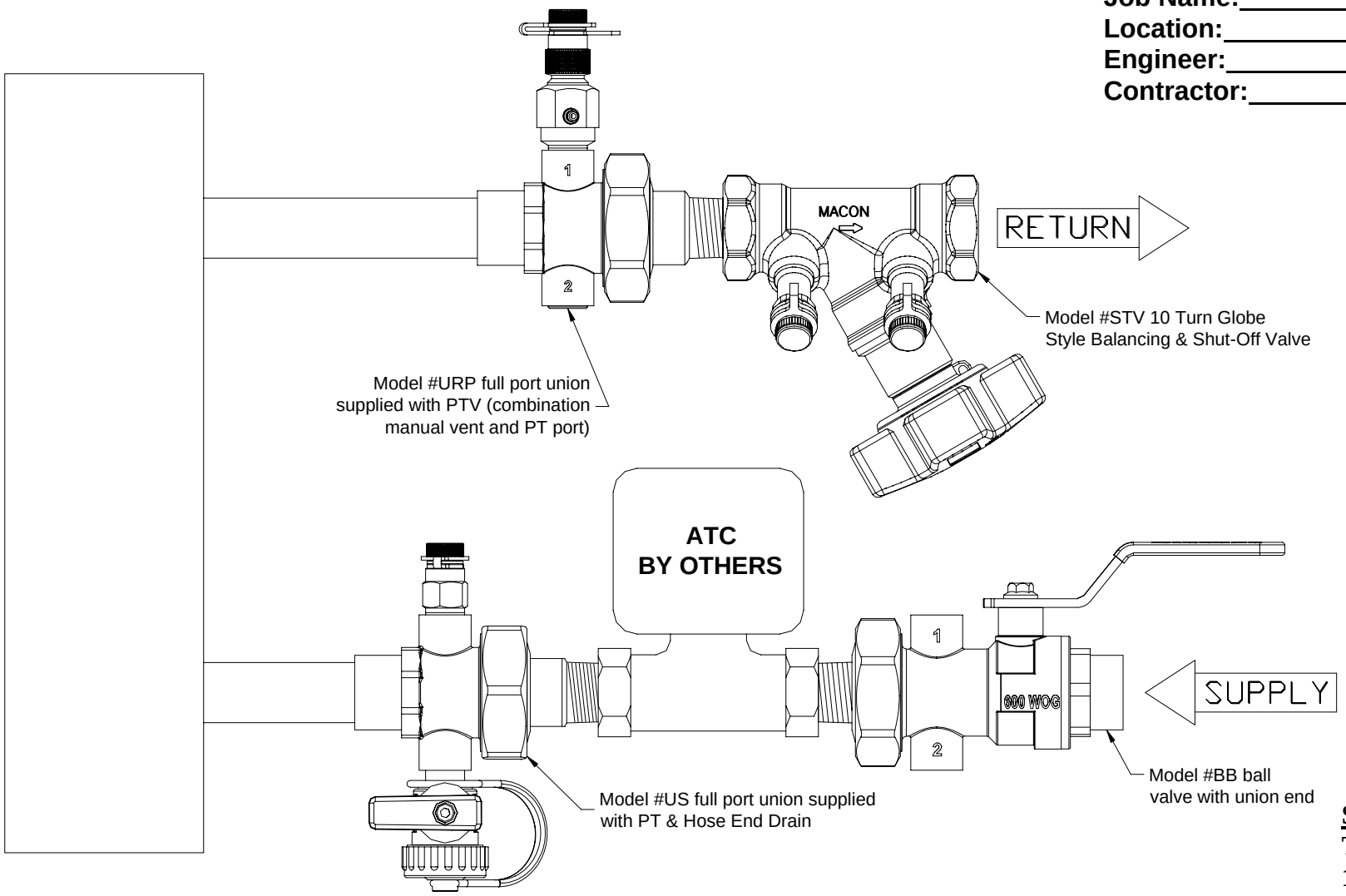
Valve Package (Model # 2SB-CS)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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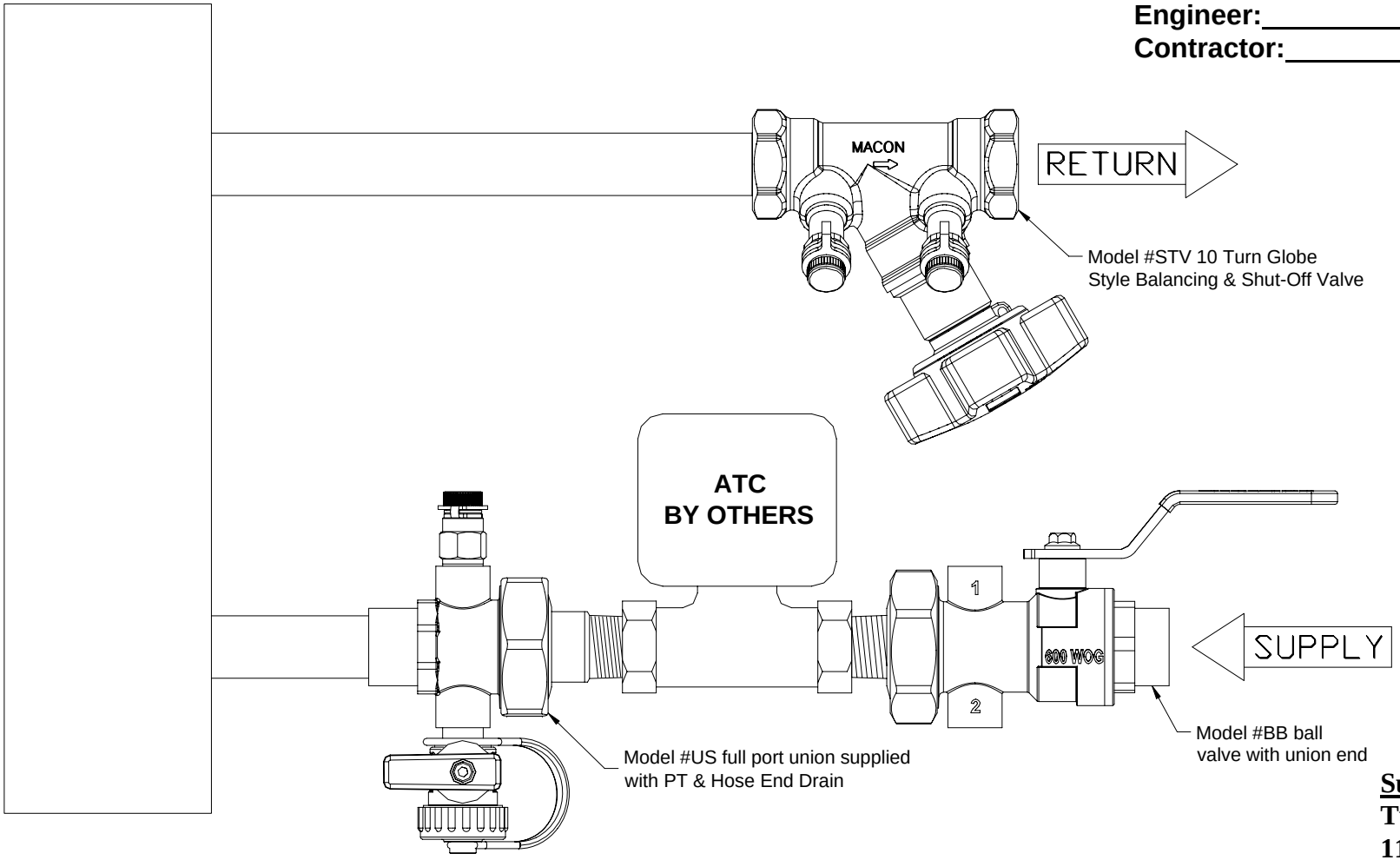
Valve Package (Model # 2SB-CSX)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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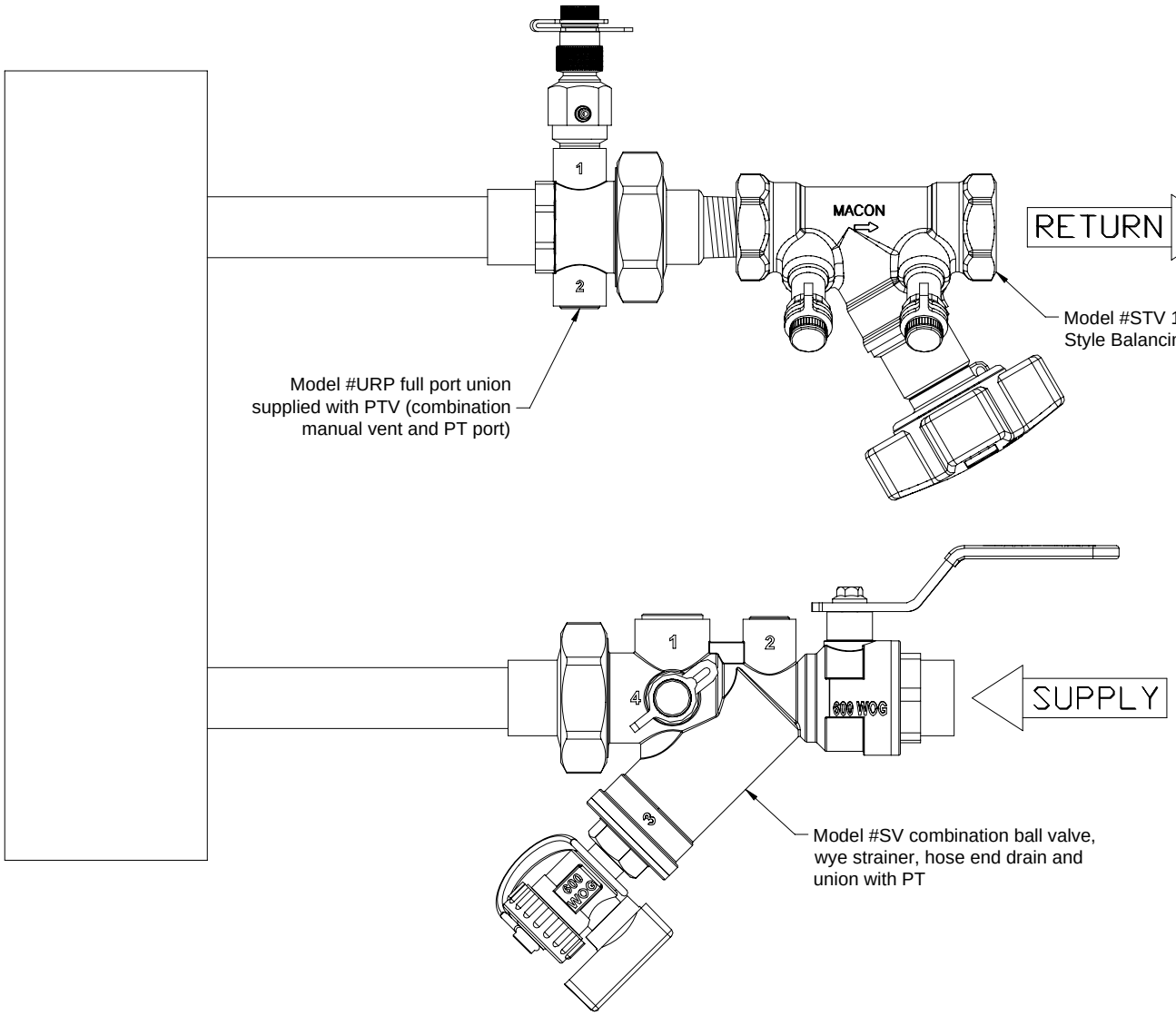
Valve Package (Model # XXS-CS)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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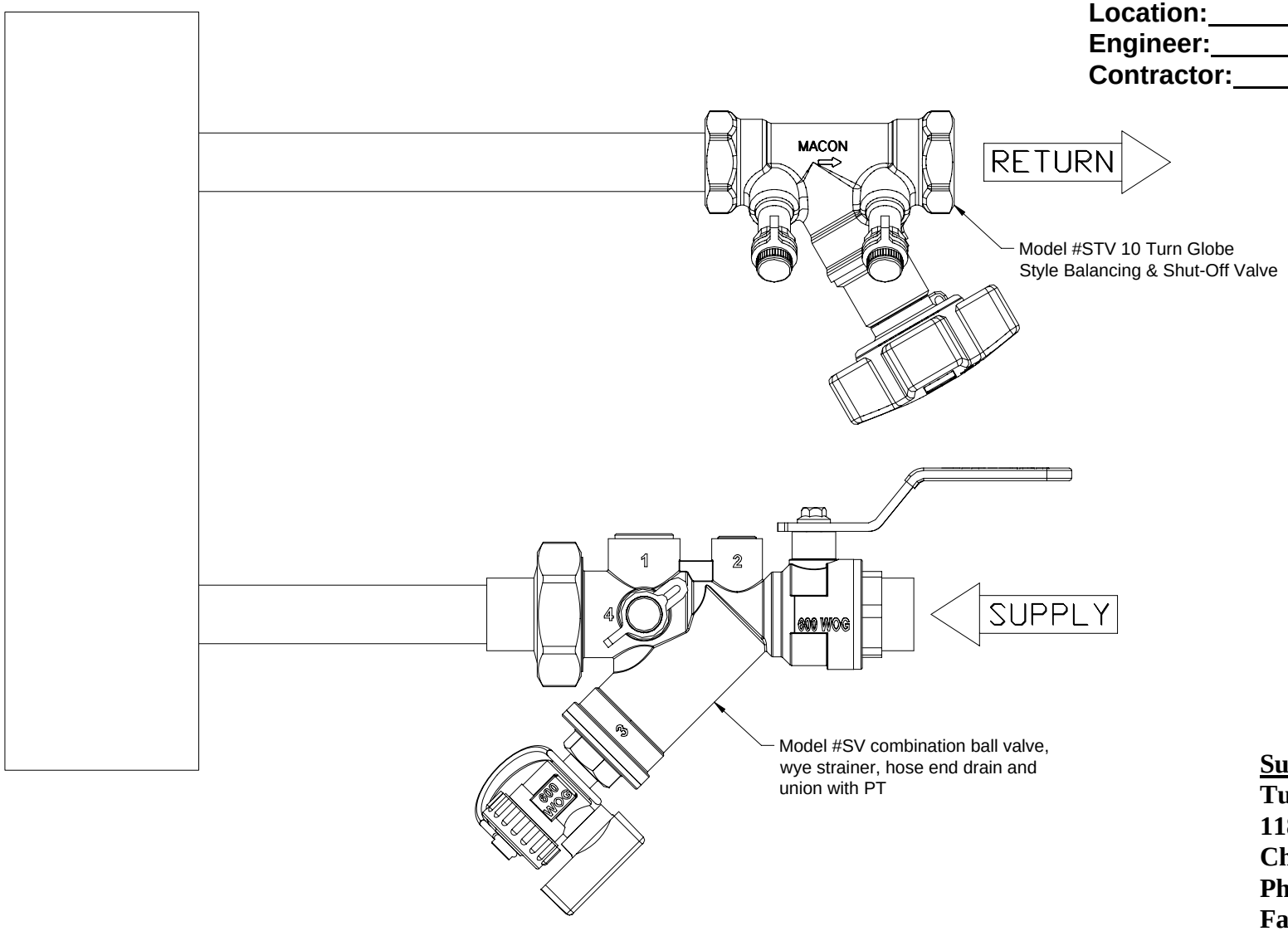
Valve Package (Model # XS-CSX)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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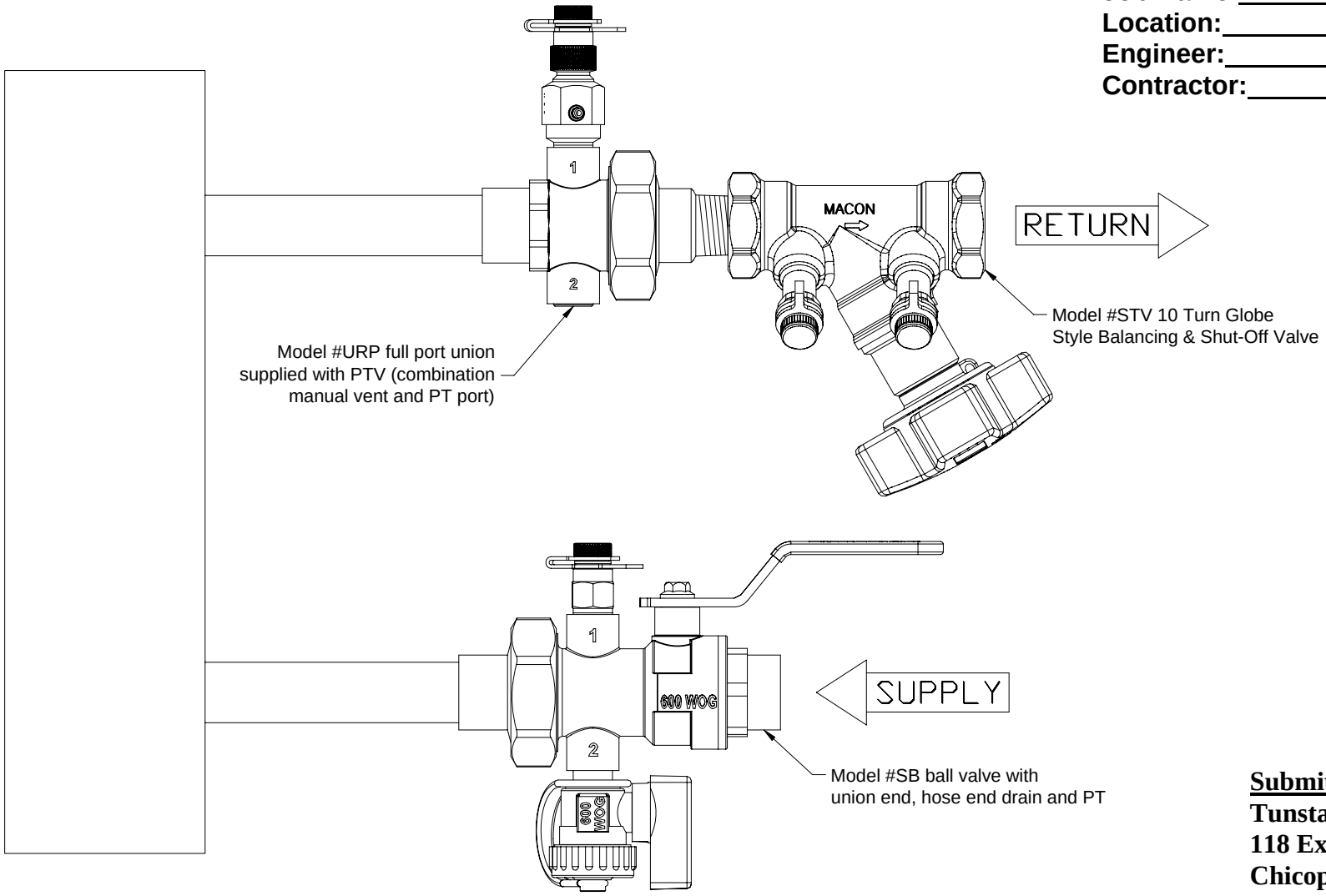
Valve Package (Model # XXB-CS)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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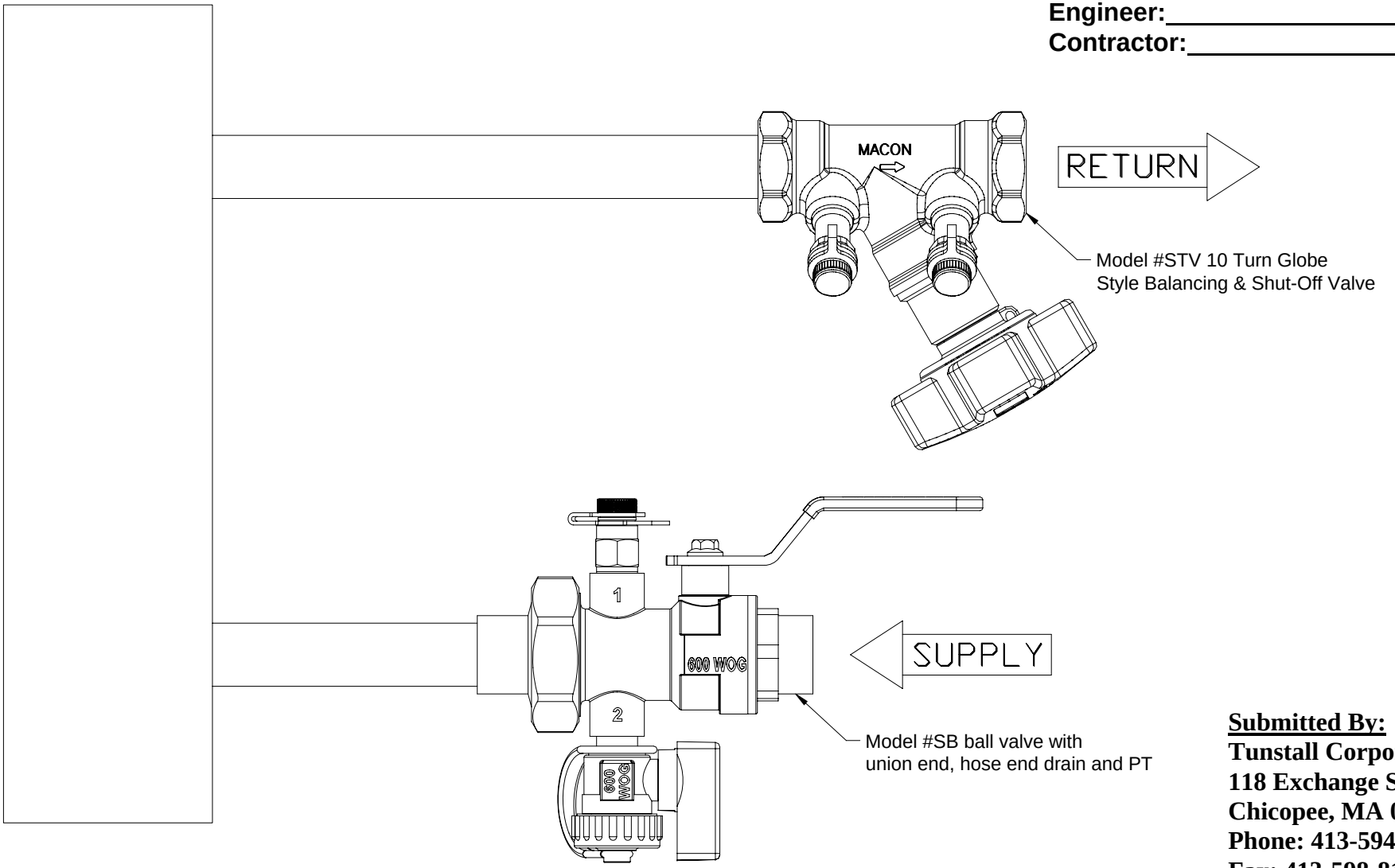
Valve Package (Model # XB-CSX)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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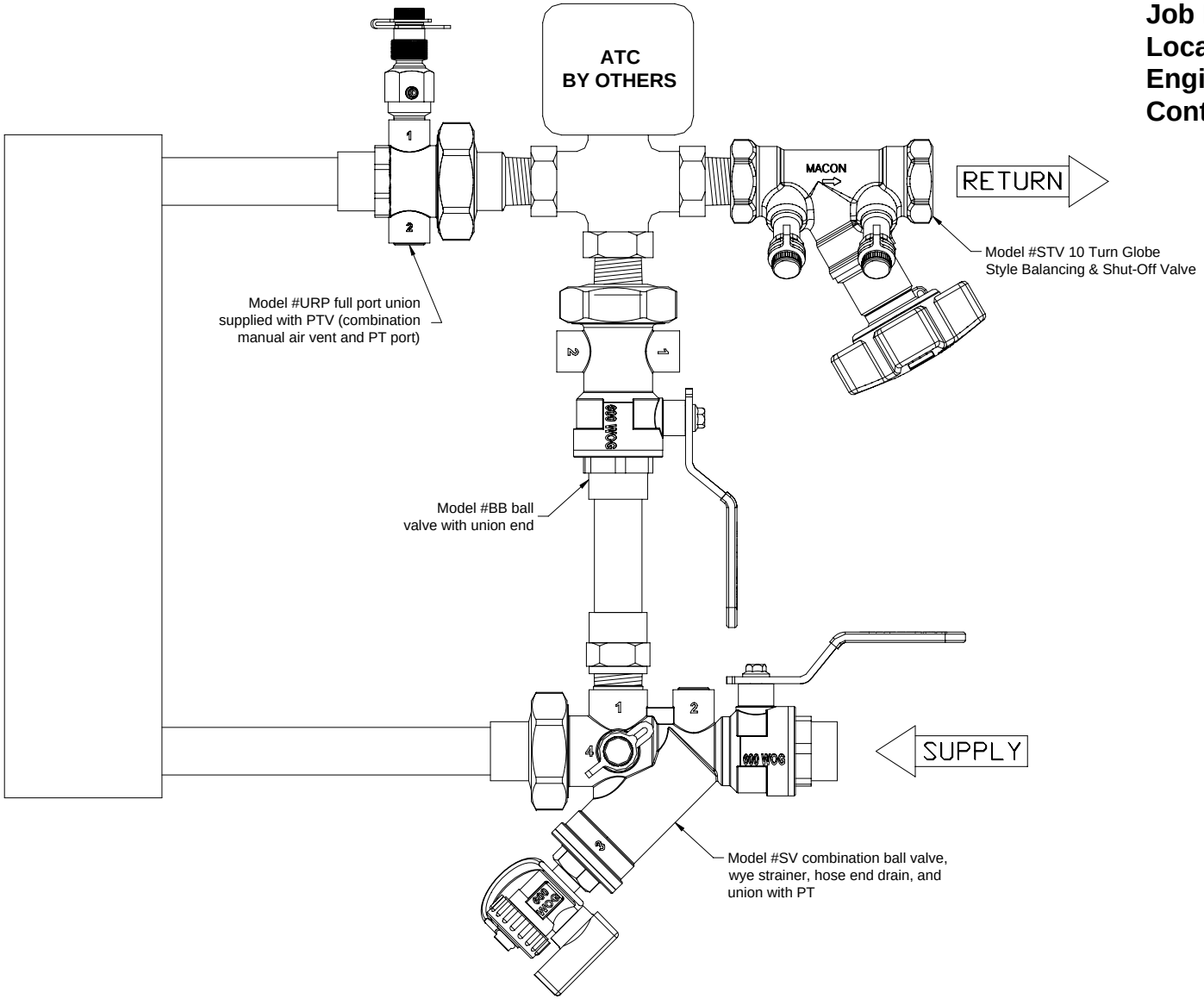
Valve Package (Model # 3RS-CS)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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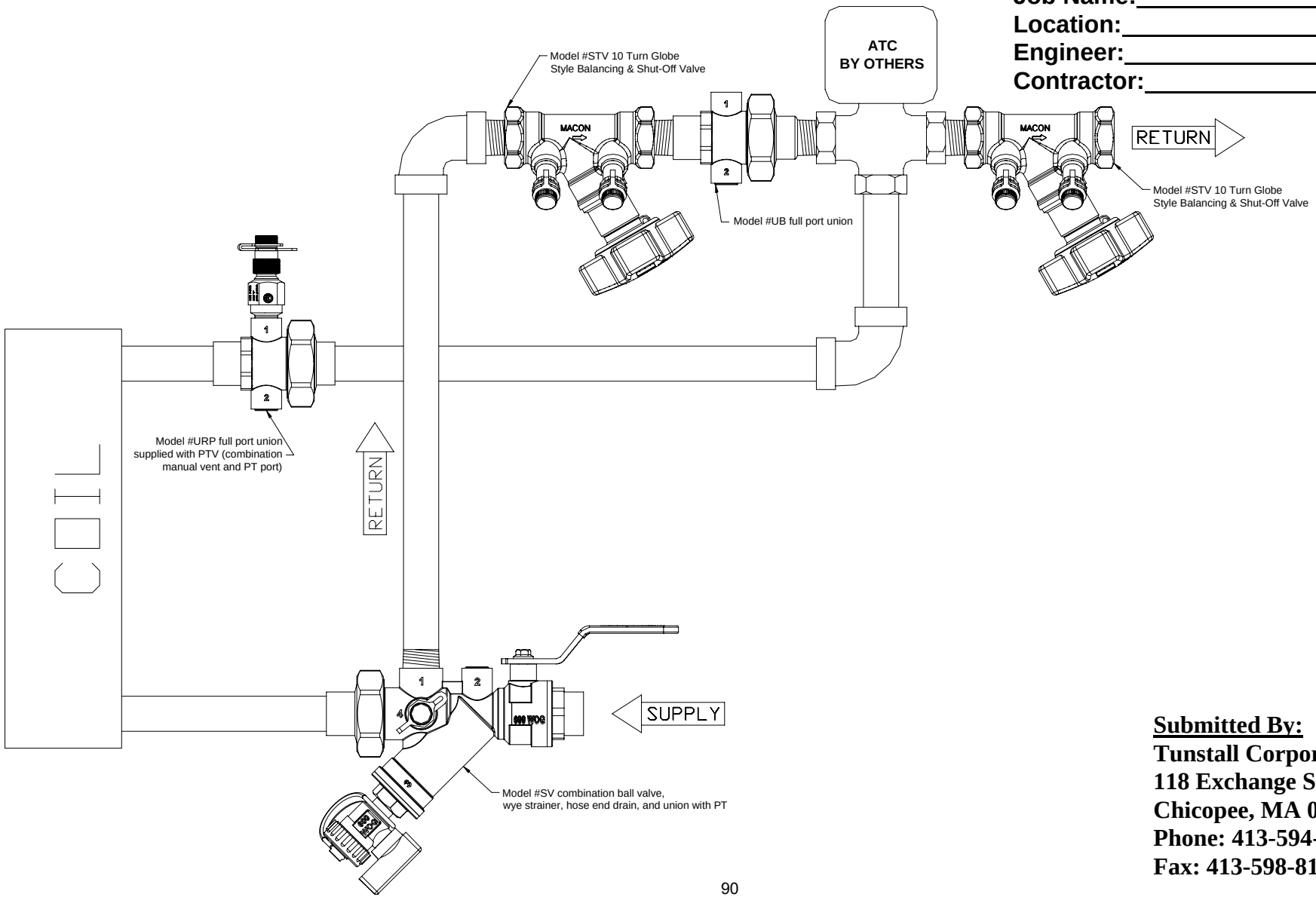
Valve Package (Model # 3RS-CS-A)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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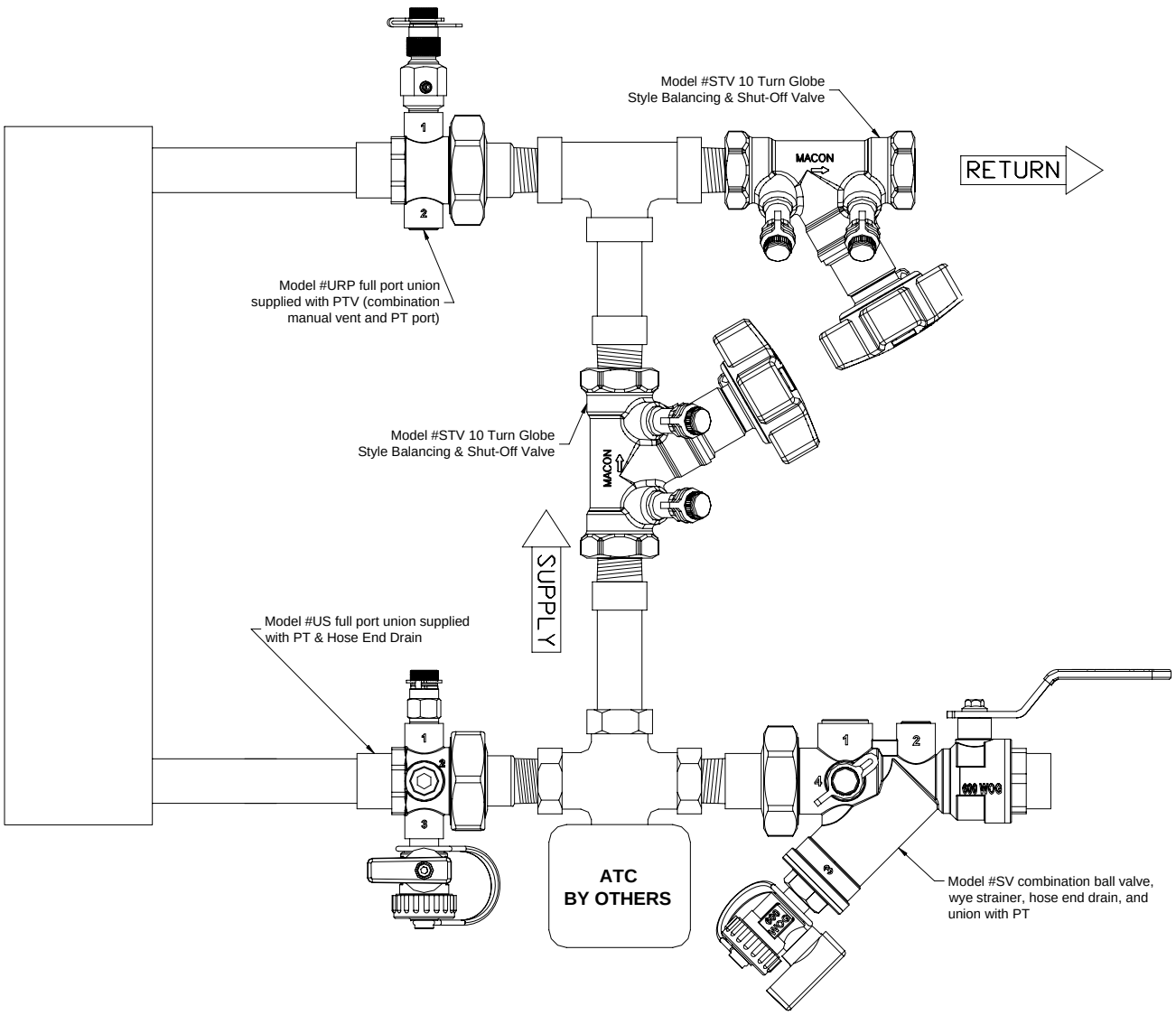
Valve Package (Model # 3SS-CS(2))

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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MACON® BALANCING
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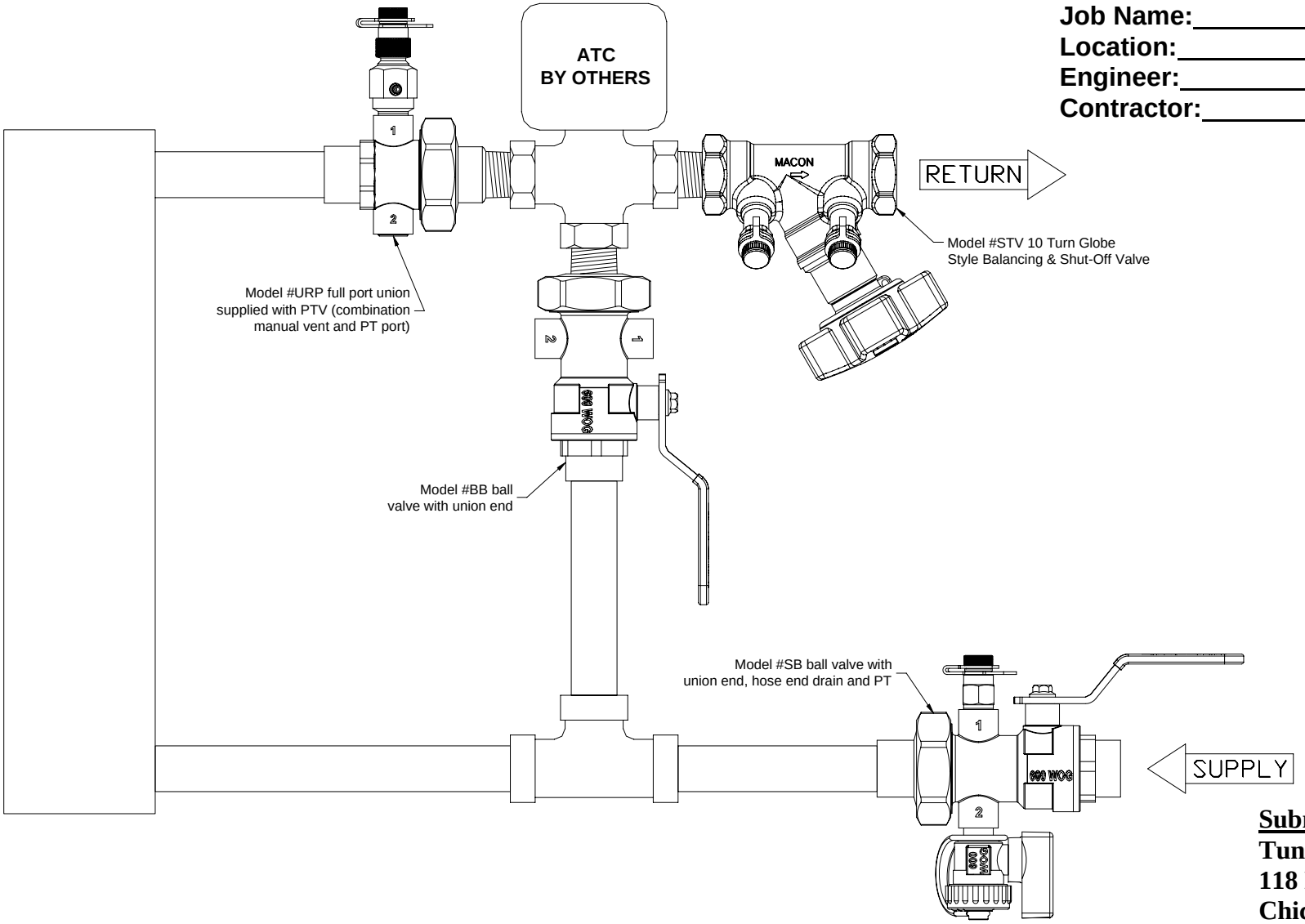
Valve Package (Model # 3RB-CS)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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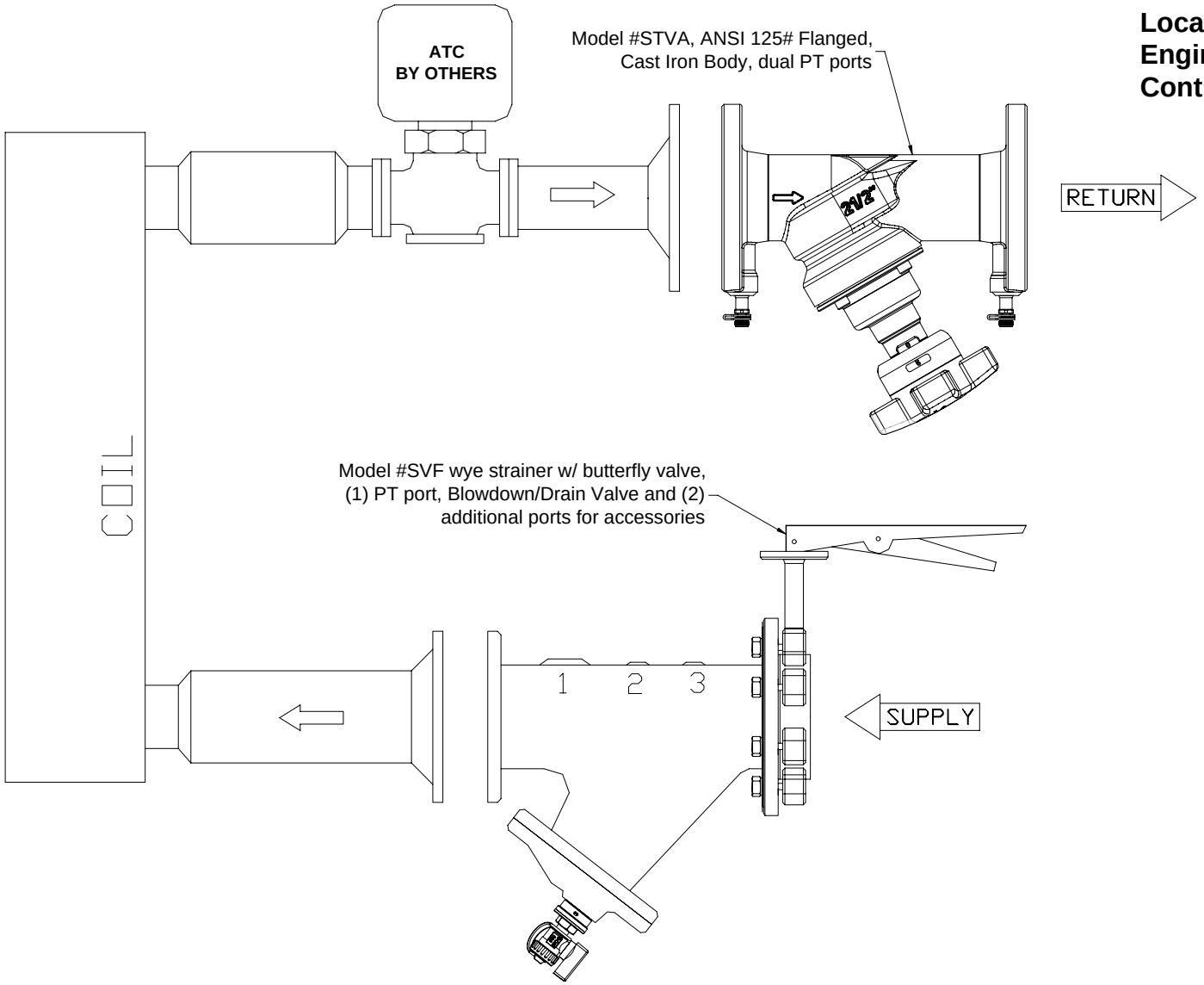
Valve Package (Model #STVA w/ SVF)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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MACON® BALANCING
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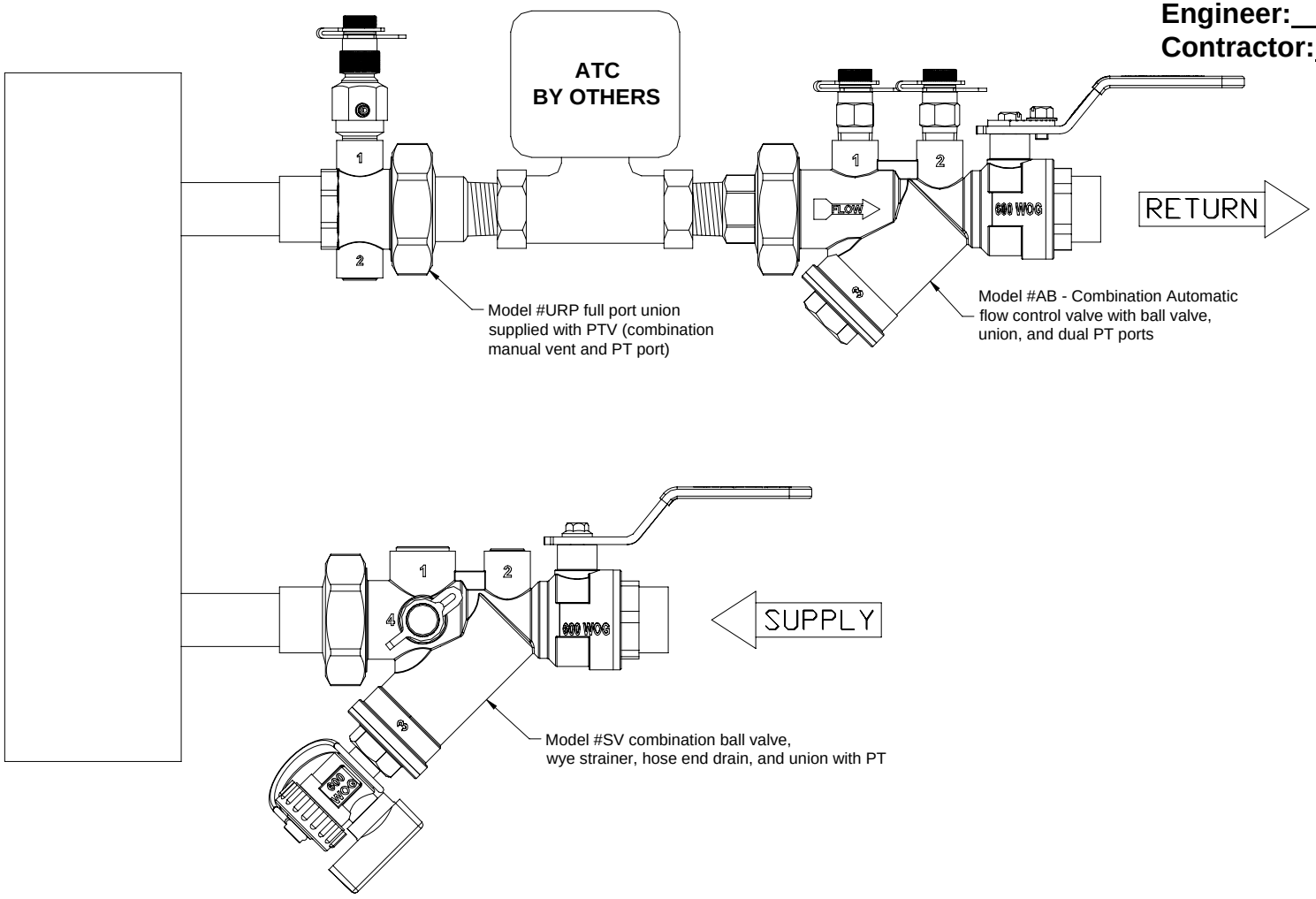
Valve Package (Model # 2RS-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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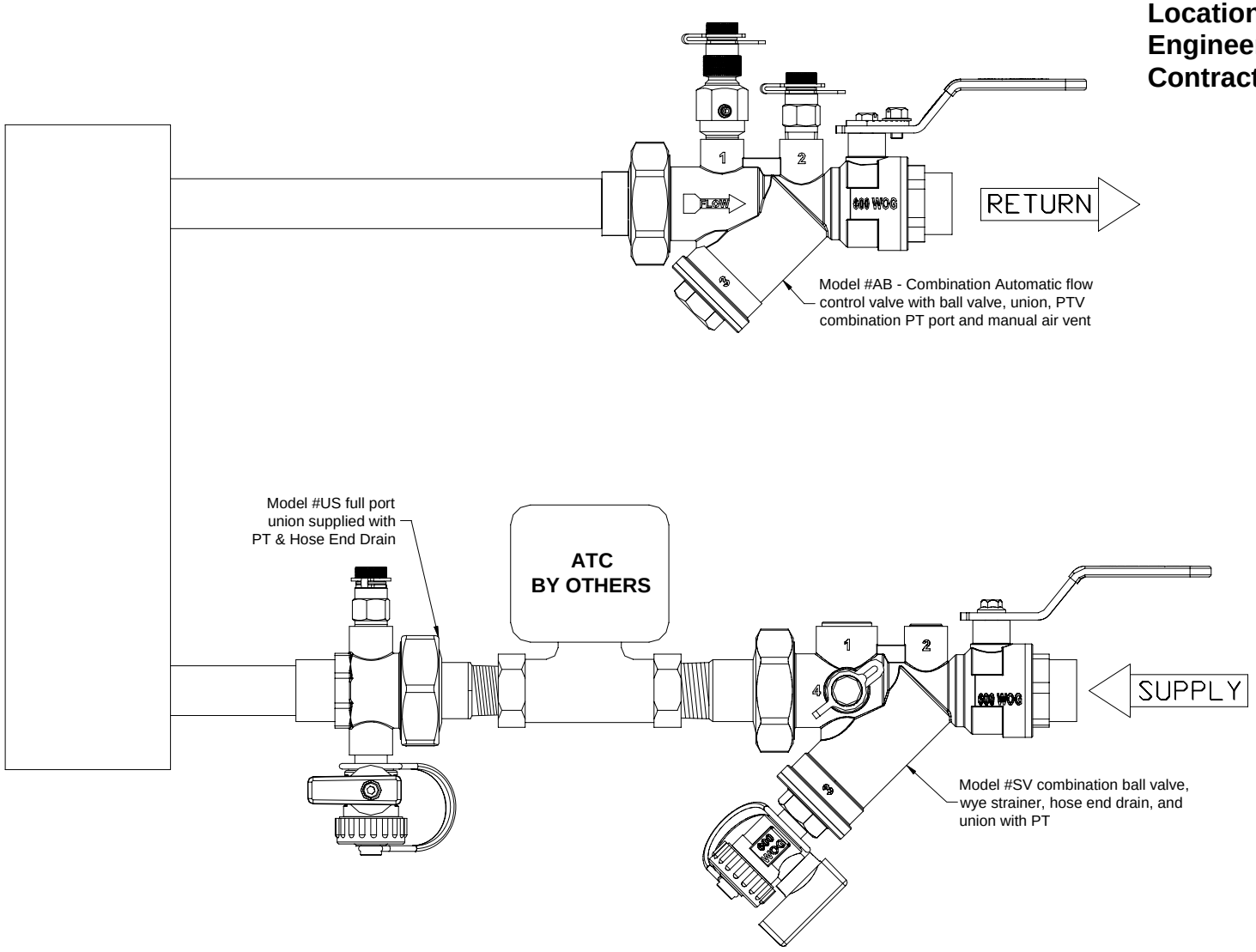
Valve Package (Model # 2SS-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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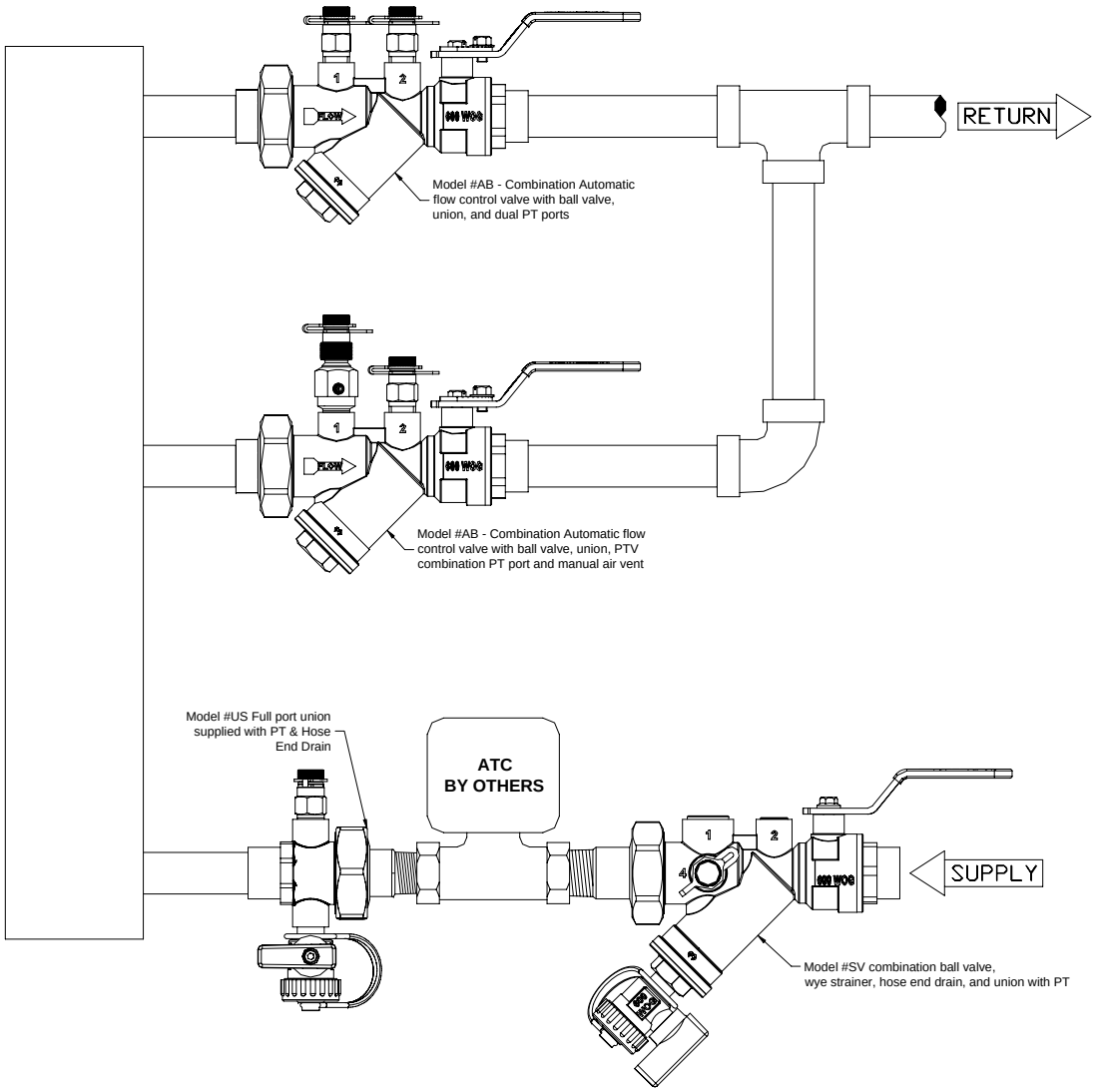
Valve Package (Model # 2SS-2AB)



Job Name:_____
Location:_____
Engineer:_____
Contractor:_____

Submitted By:
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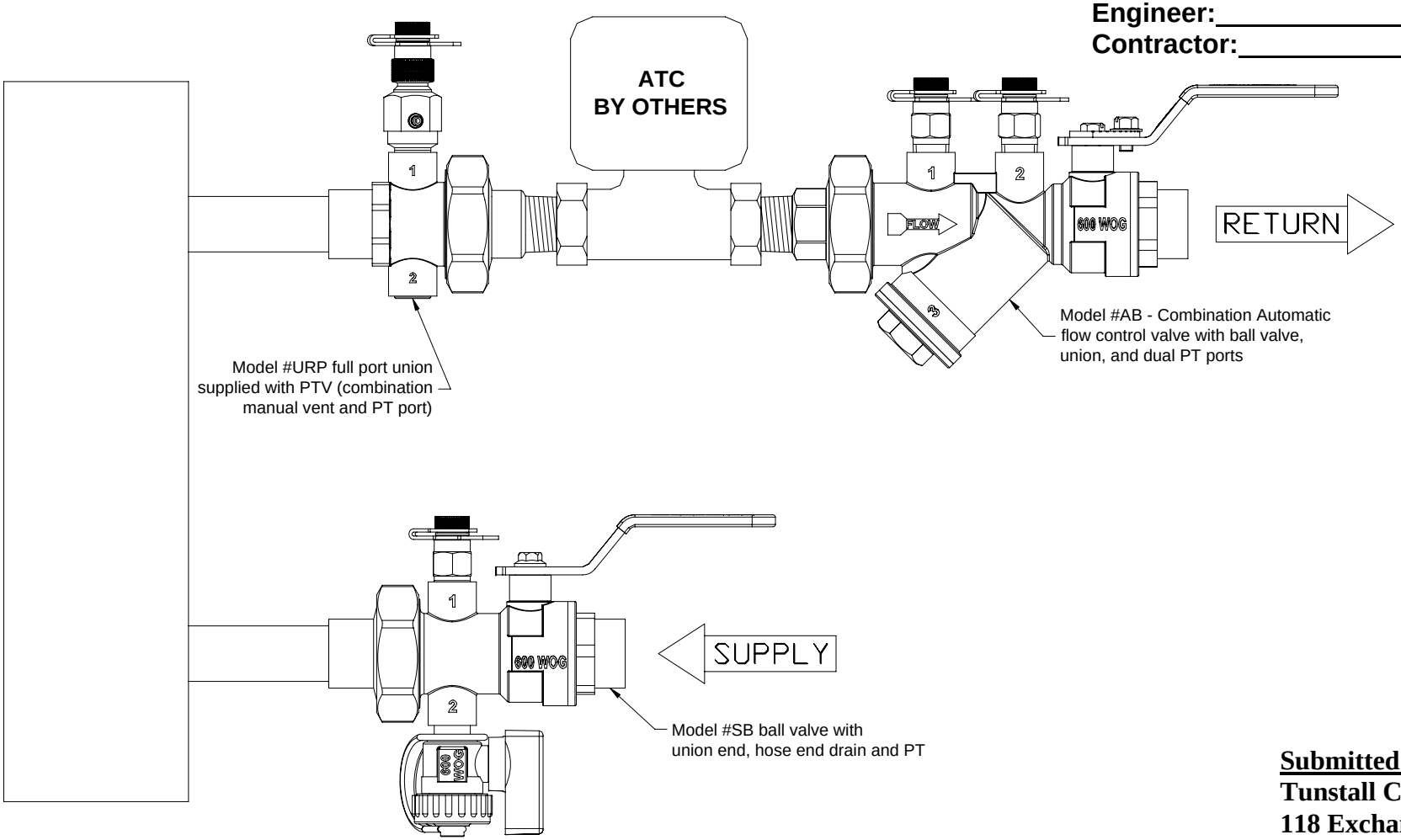
Valve Package (Model # 2RB-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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Chicopee, MA 01013
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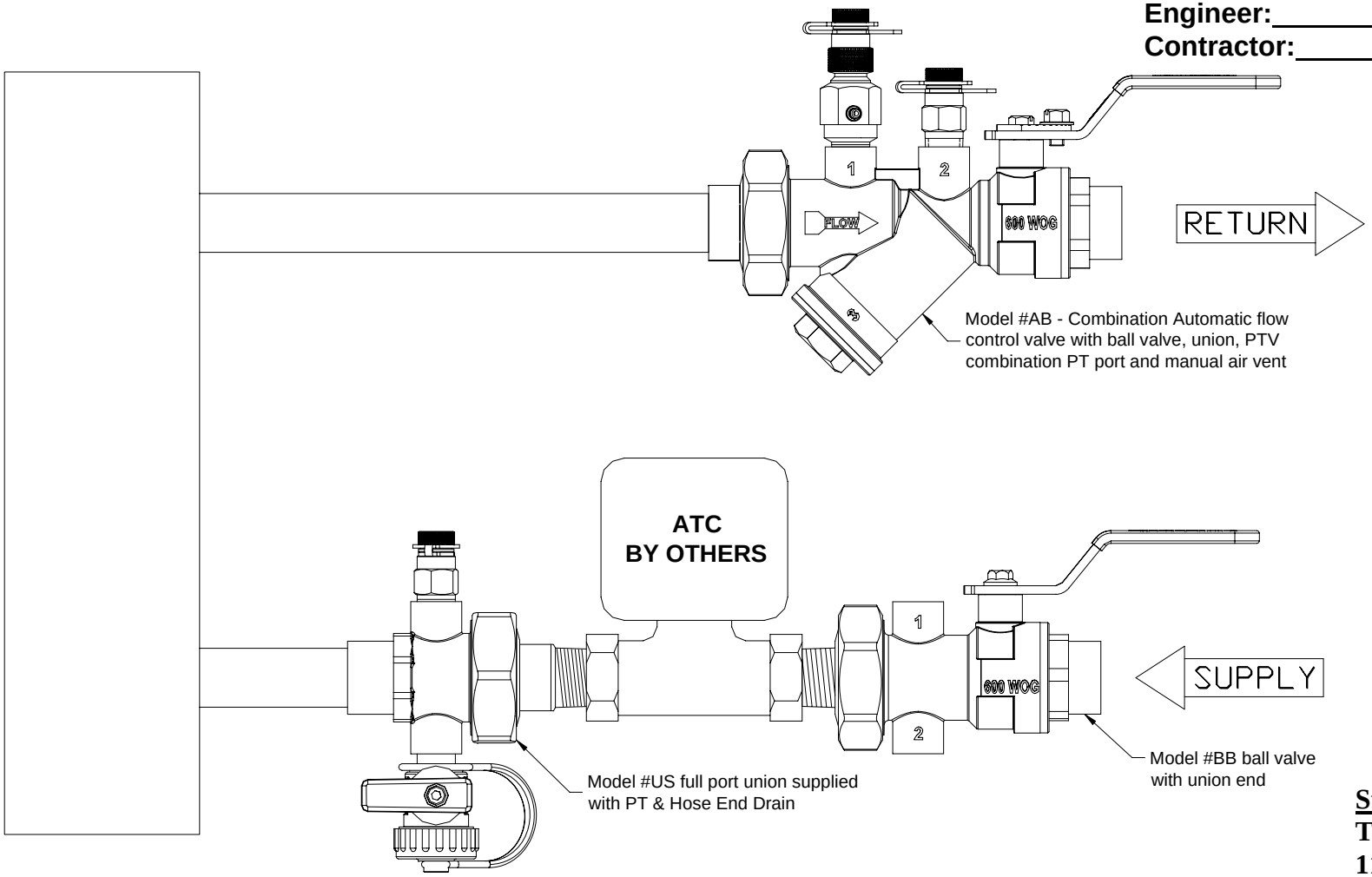
Valve Package (Model # 2SB-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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MACON® BALANCING
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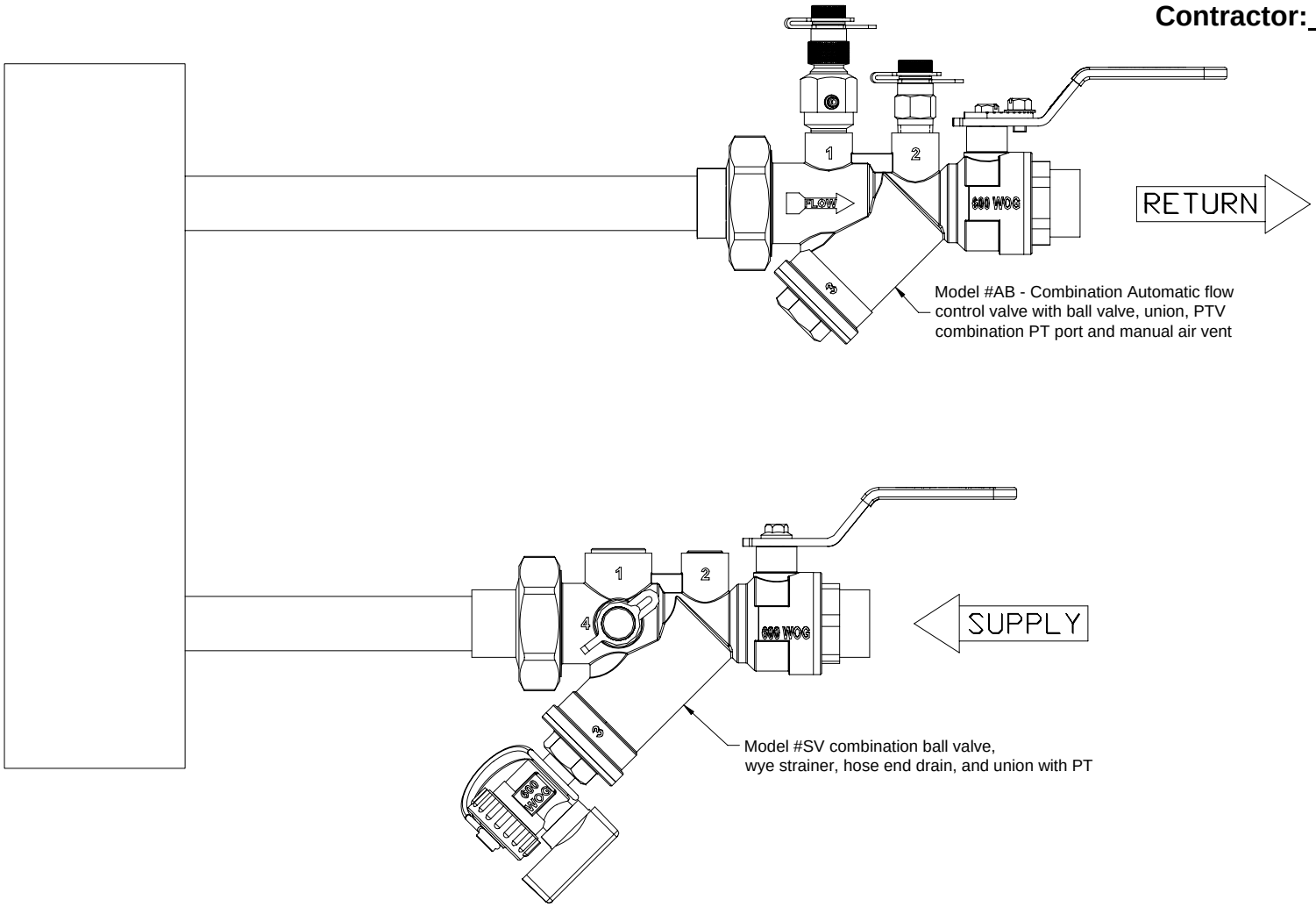
Valve Package (Model # XXS-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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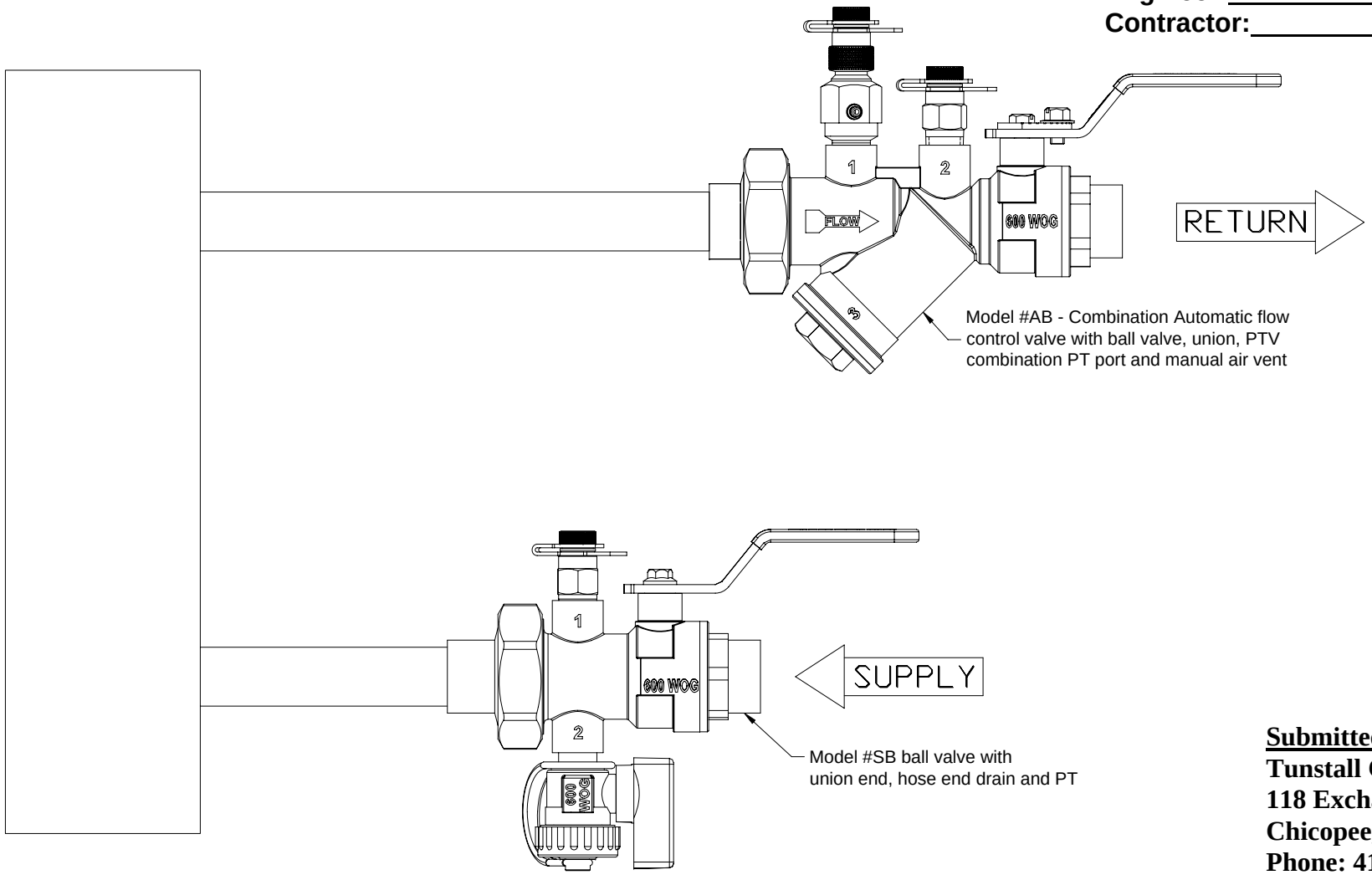
Valve Package (Model # XXB-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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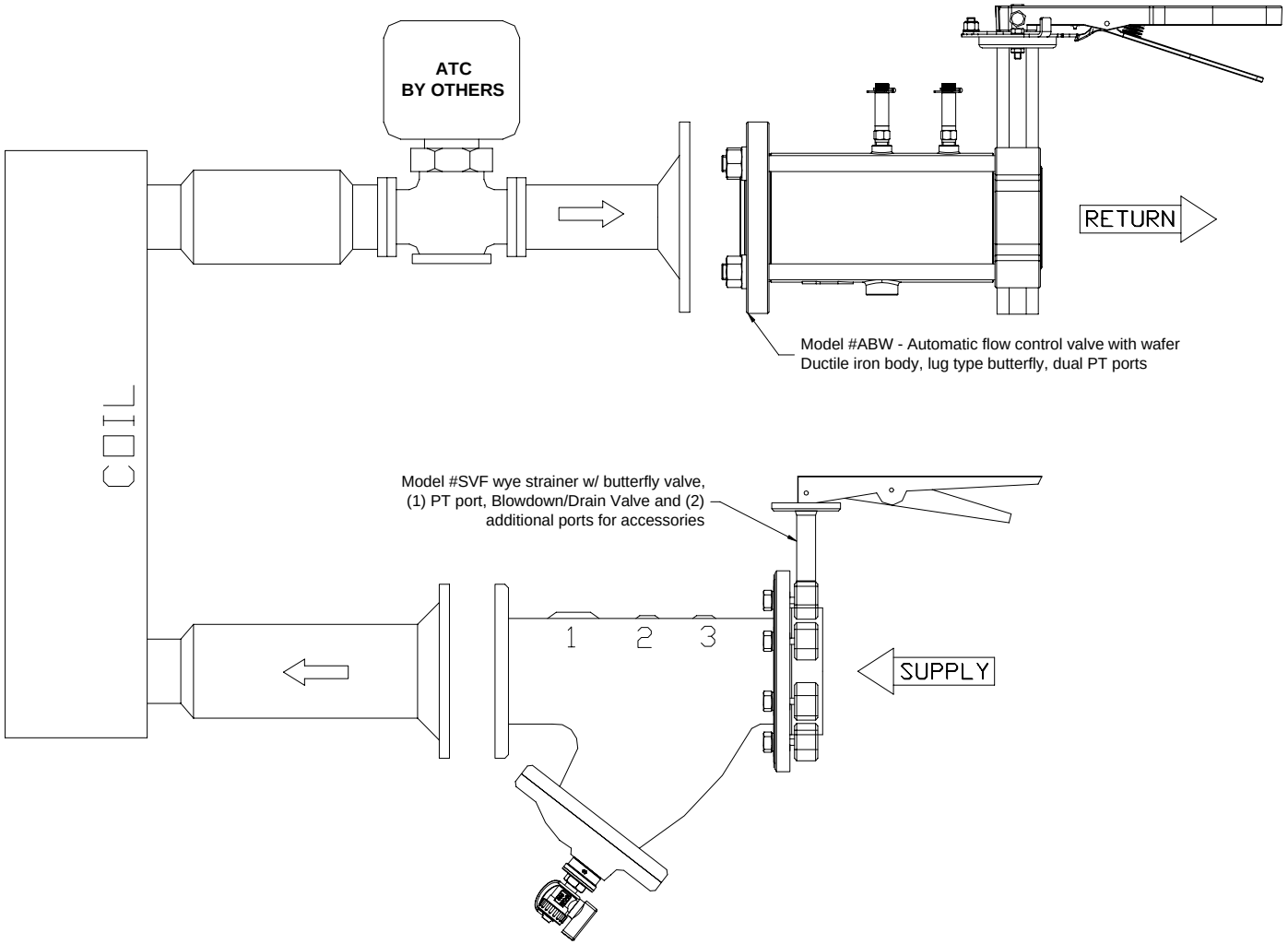
Valve Package (Model # ABW w/ SVF)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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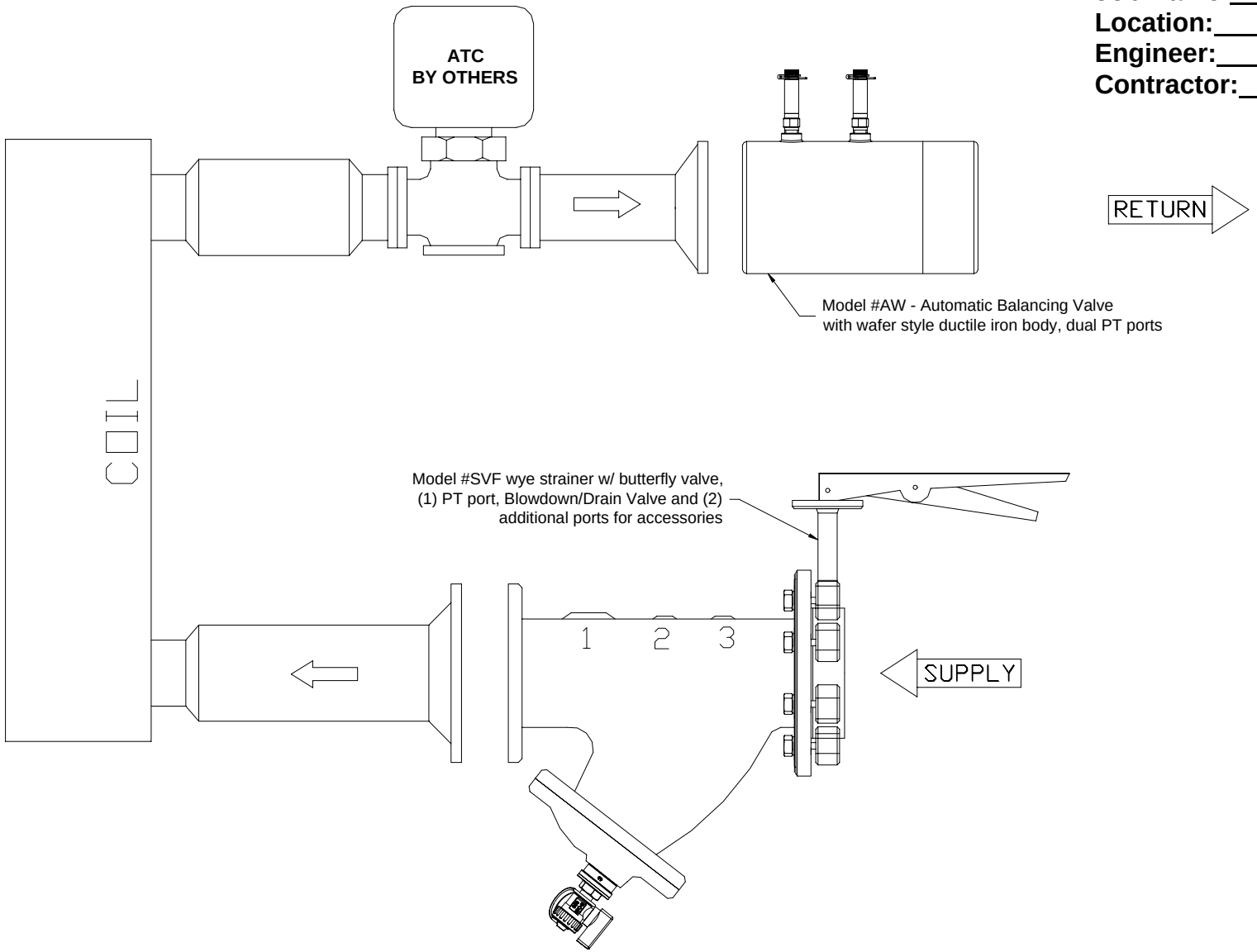
Valve Package (Model # AW w/ SVF)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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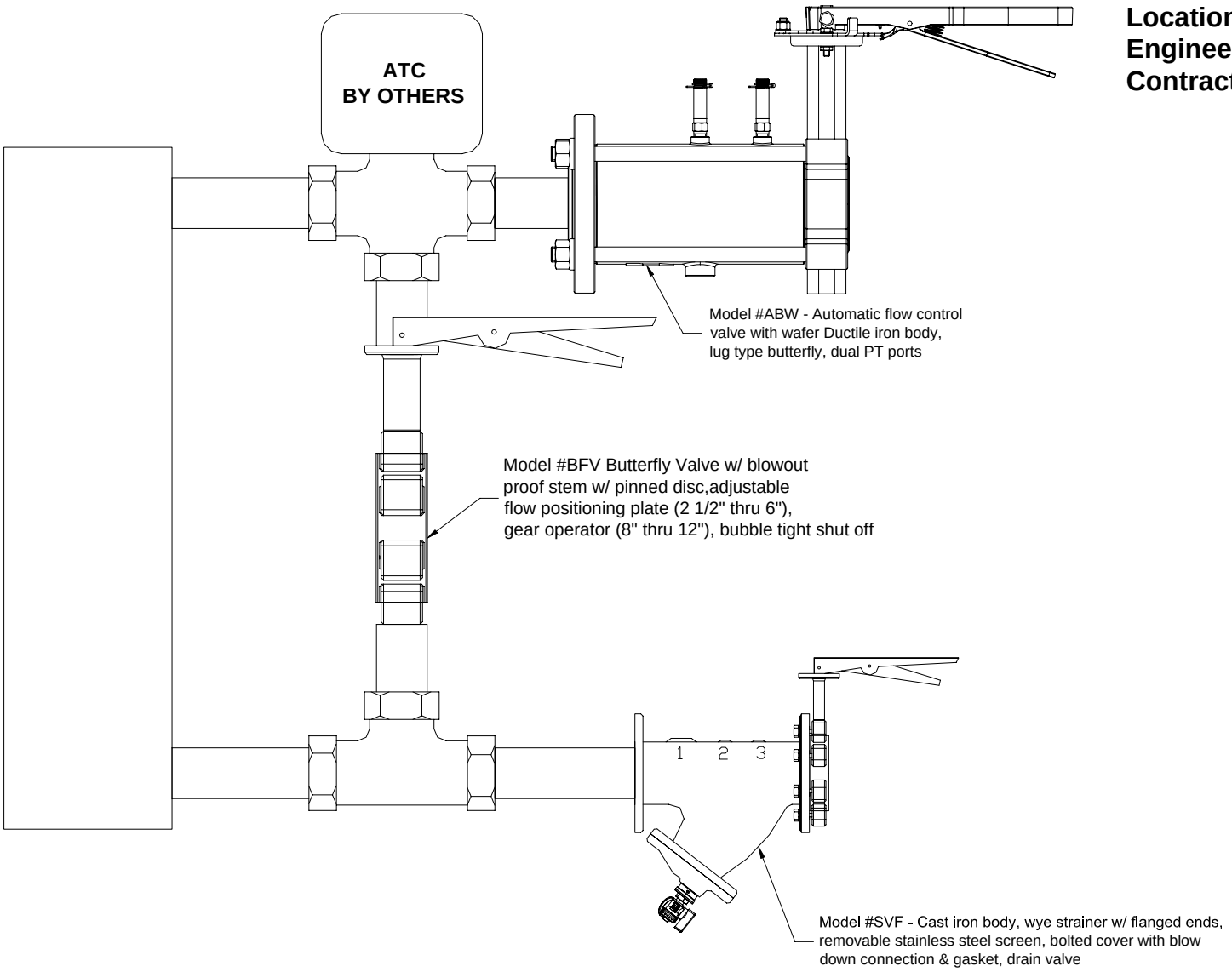
Valve Package (Model # 3BV-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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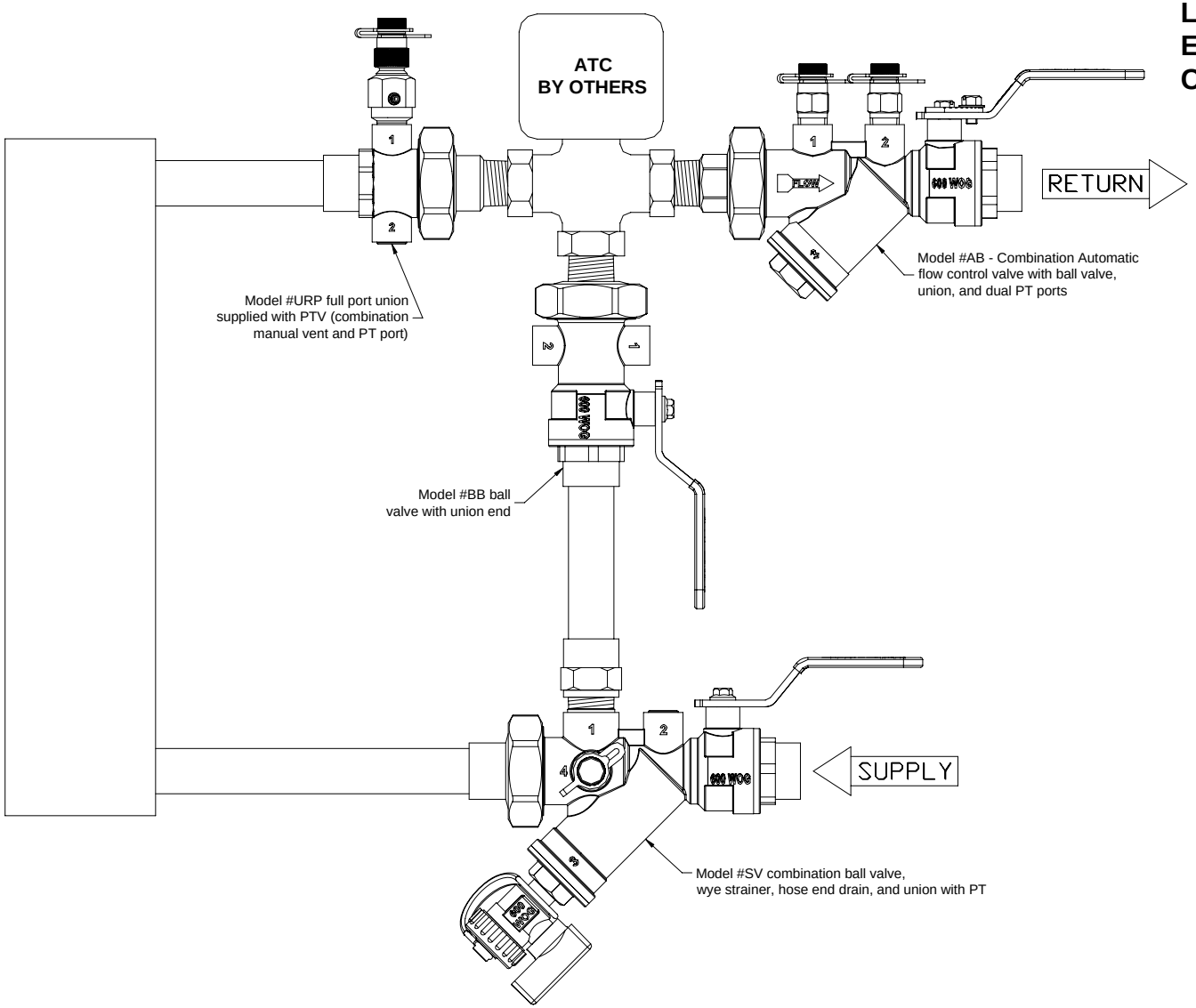
Valve Package (Model # 3RS-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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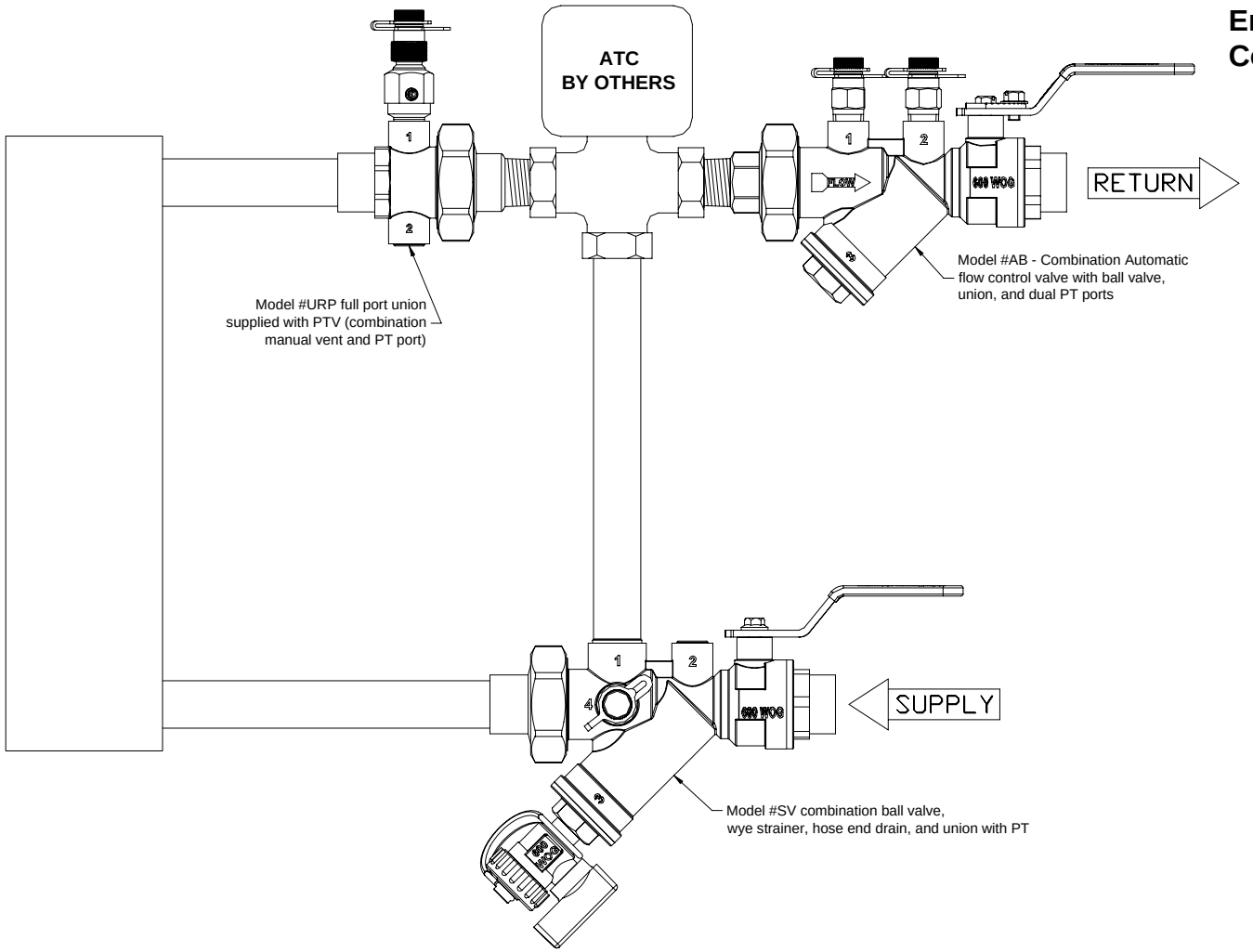
Valve Package (Model # 3RS-AB2)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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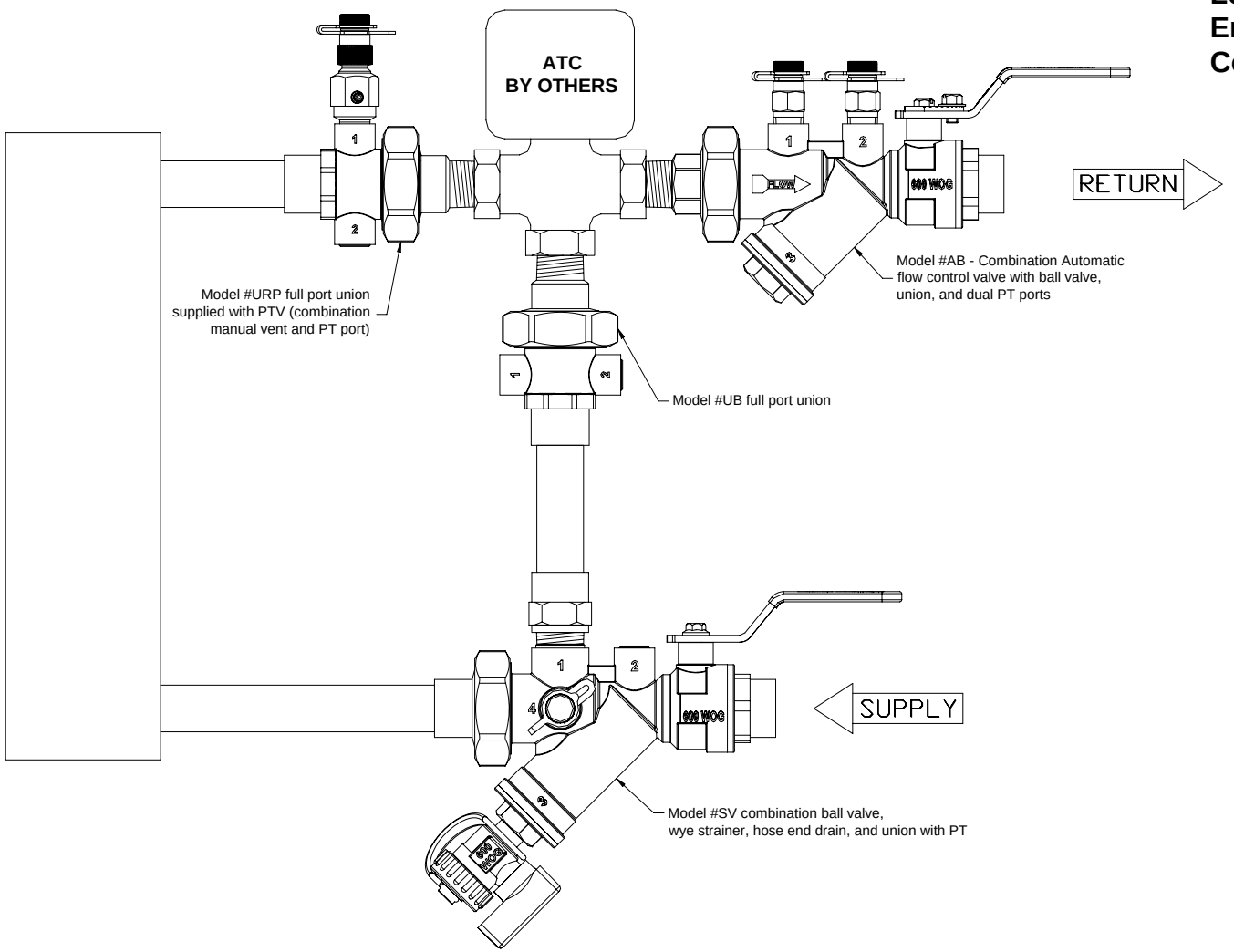
Valve Package (Model # 3RS-ABX)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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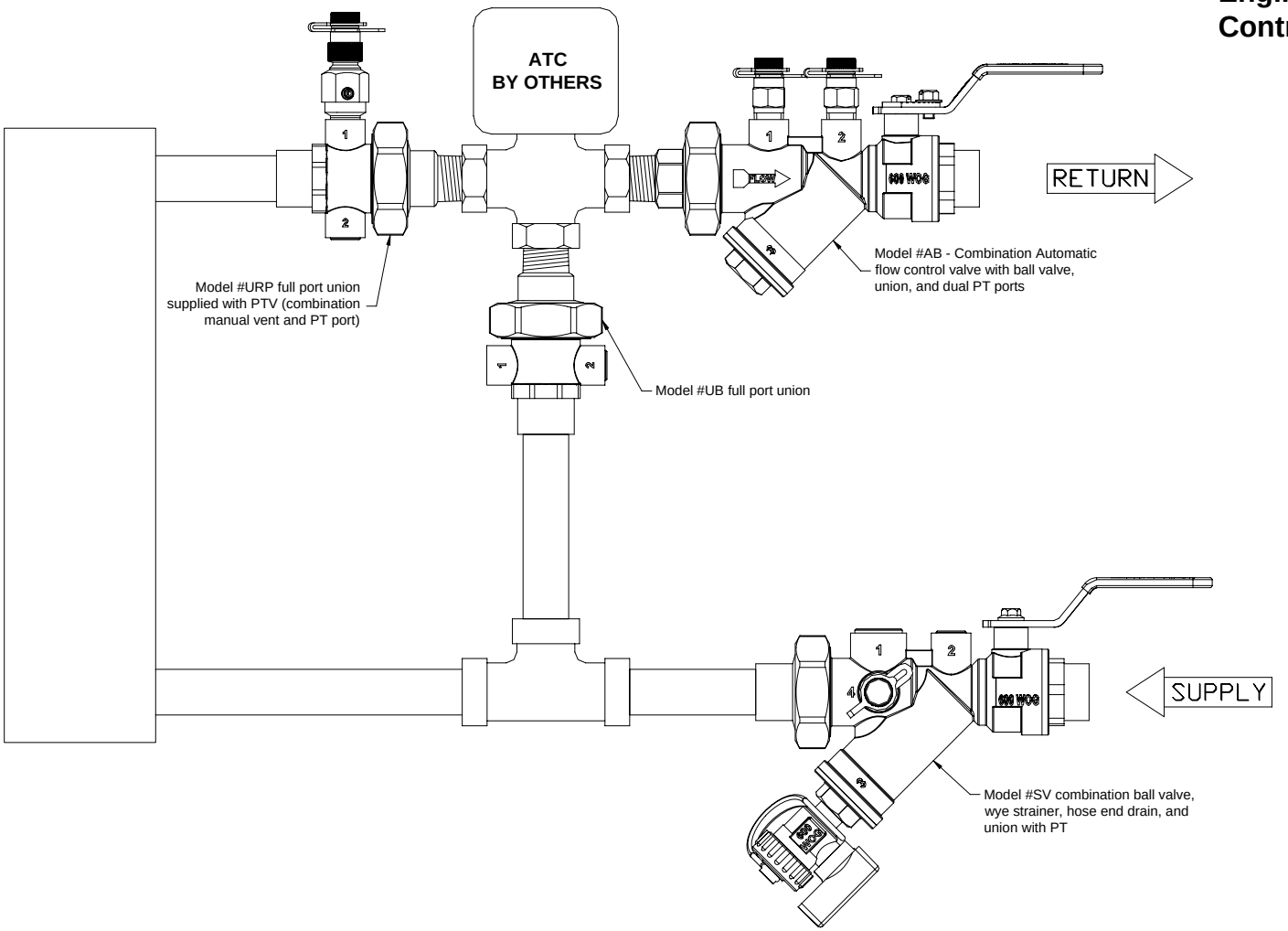
Valve Package (Model # 3RS-ABX)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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MACON® BALANCING
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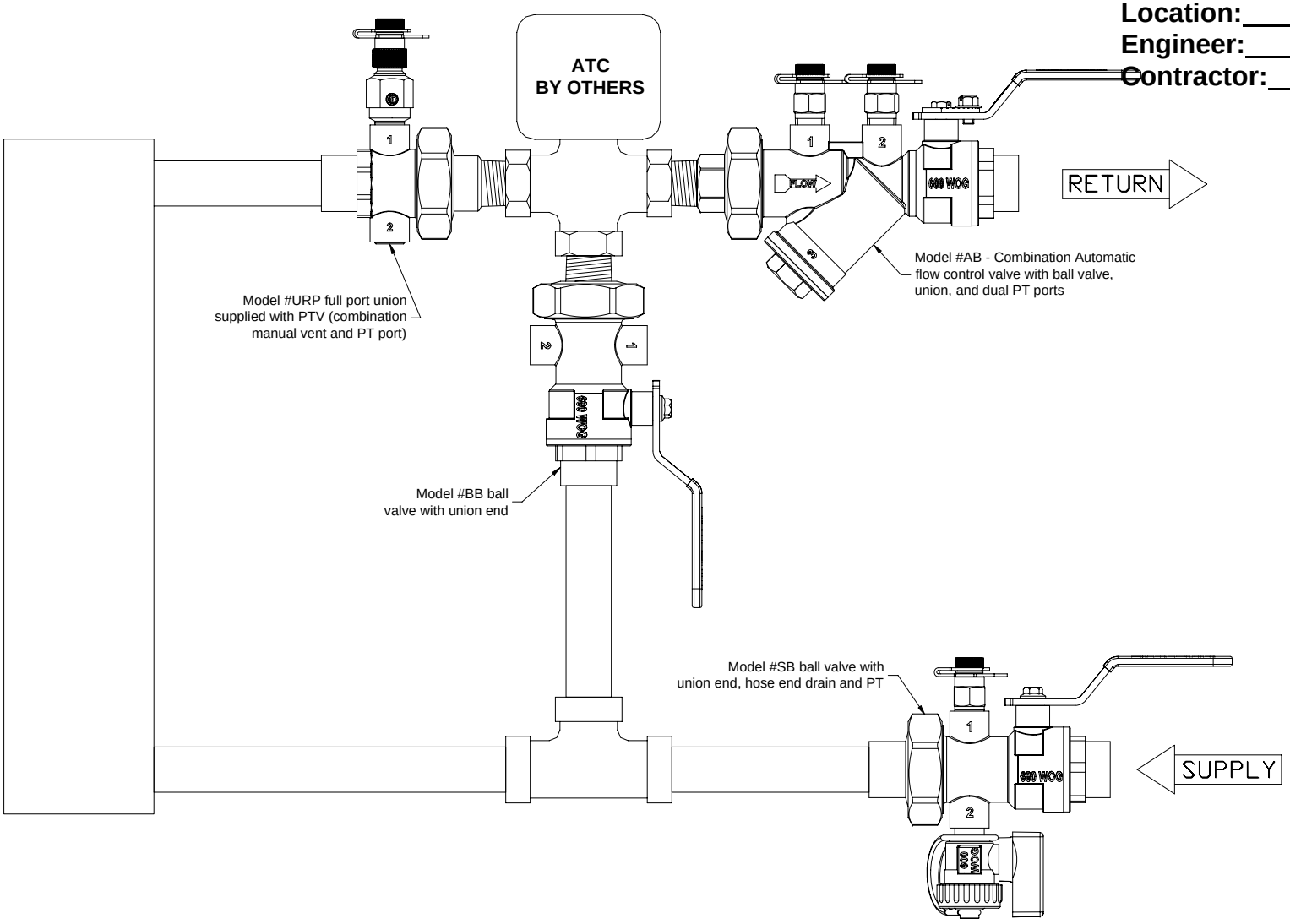
Valve Package (Model # 3RB-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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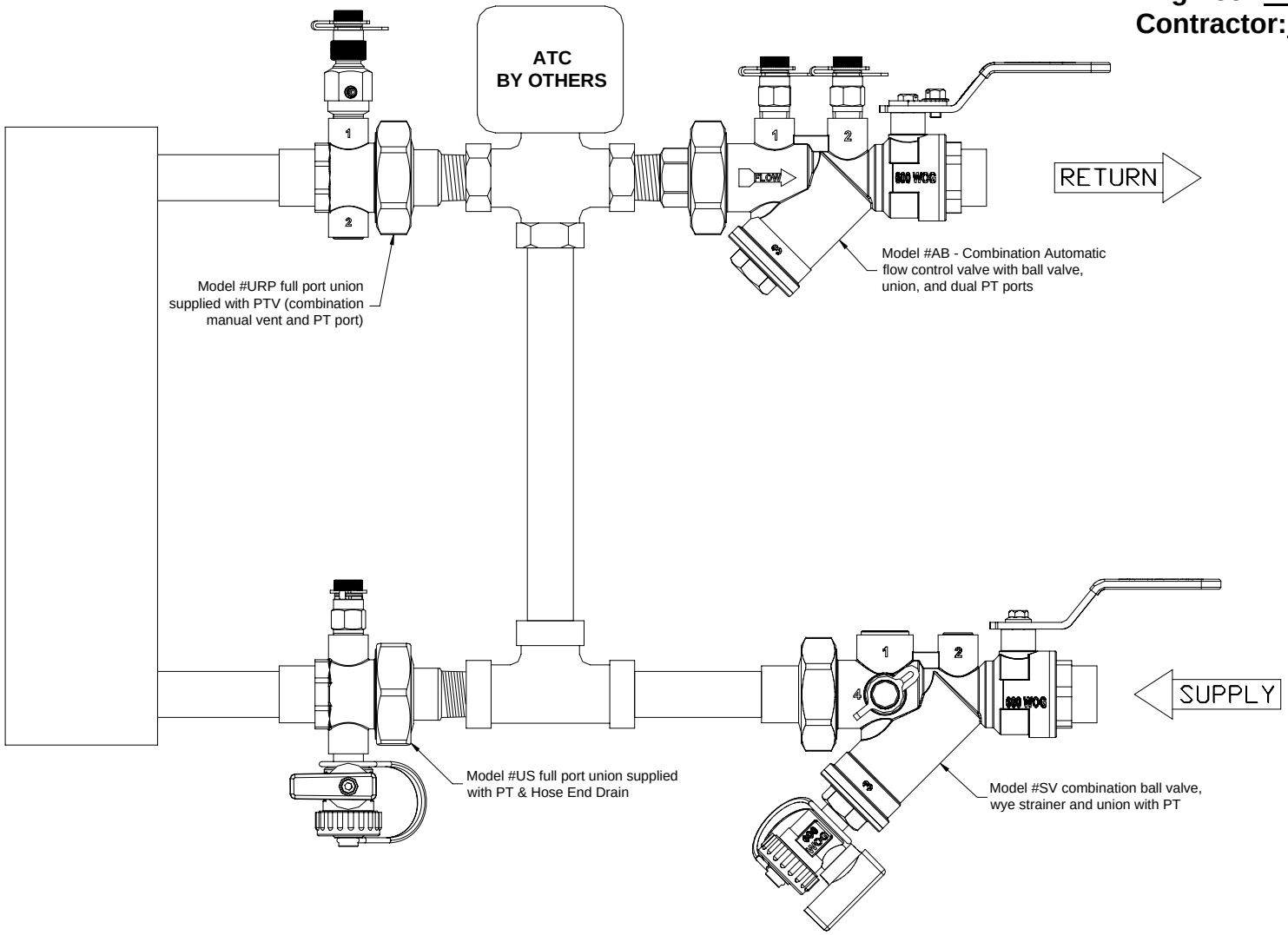
Valve Package (Model # 3RU-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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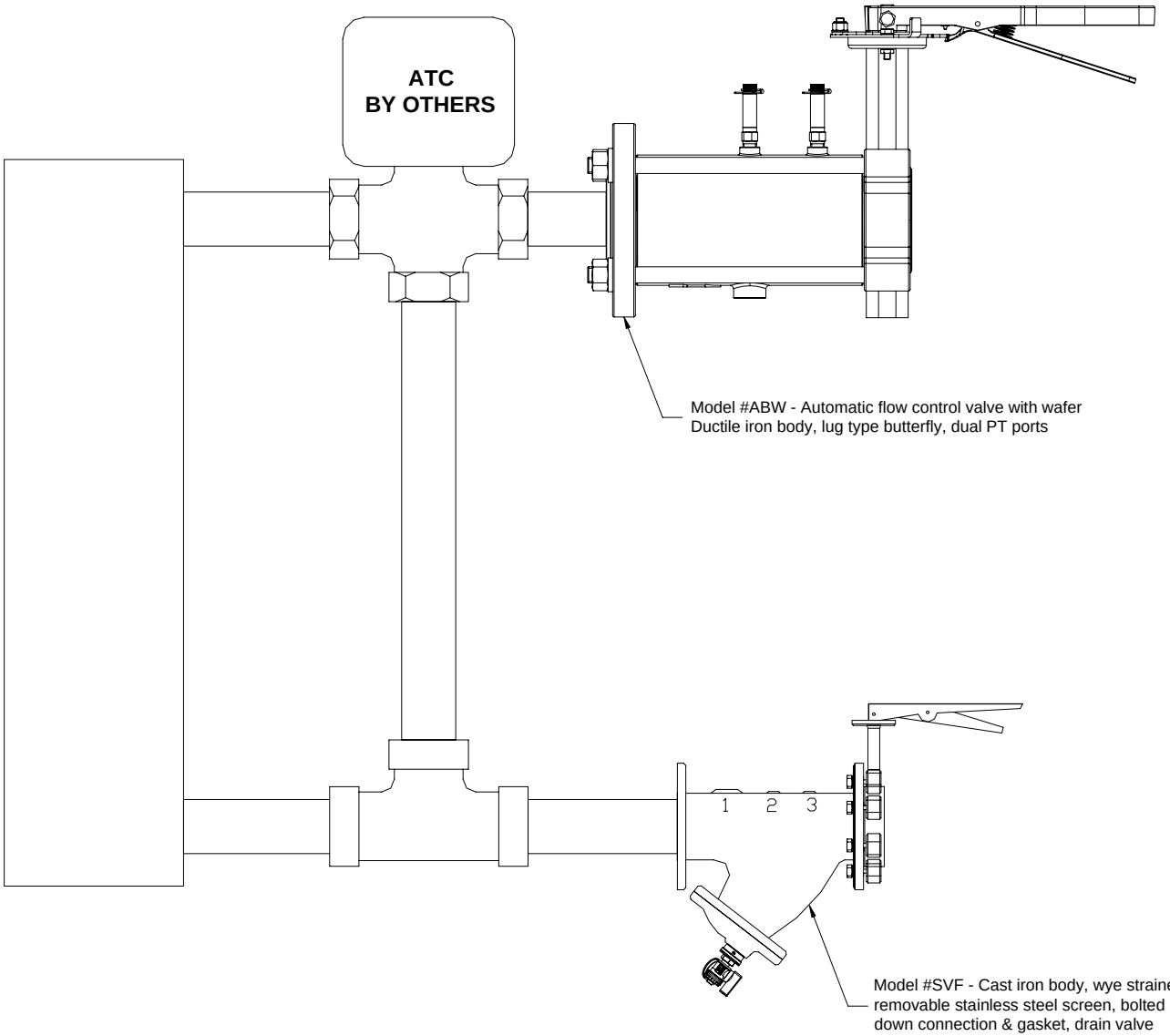
Valve Package (Model # 3SW-AB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



Model #ABW - Automatic flow control valve with wafer
Ductile iron body, lug type butterfly, dual PT ports

Model #SVF - Cast iron body, wye strainer w/ flanged ends, removable stainless steel screen, bolted cover with blow down connection & gasket, drain valve

Submitted By:
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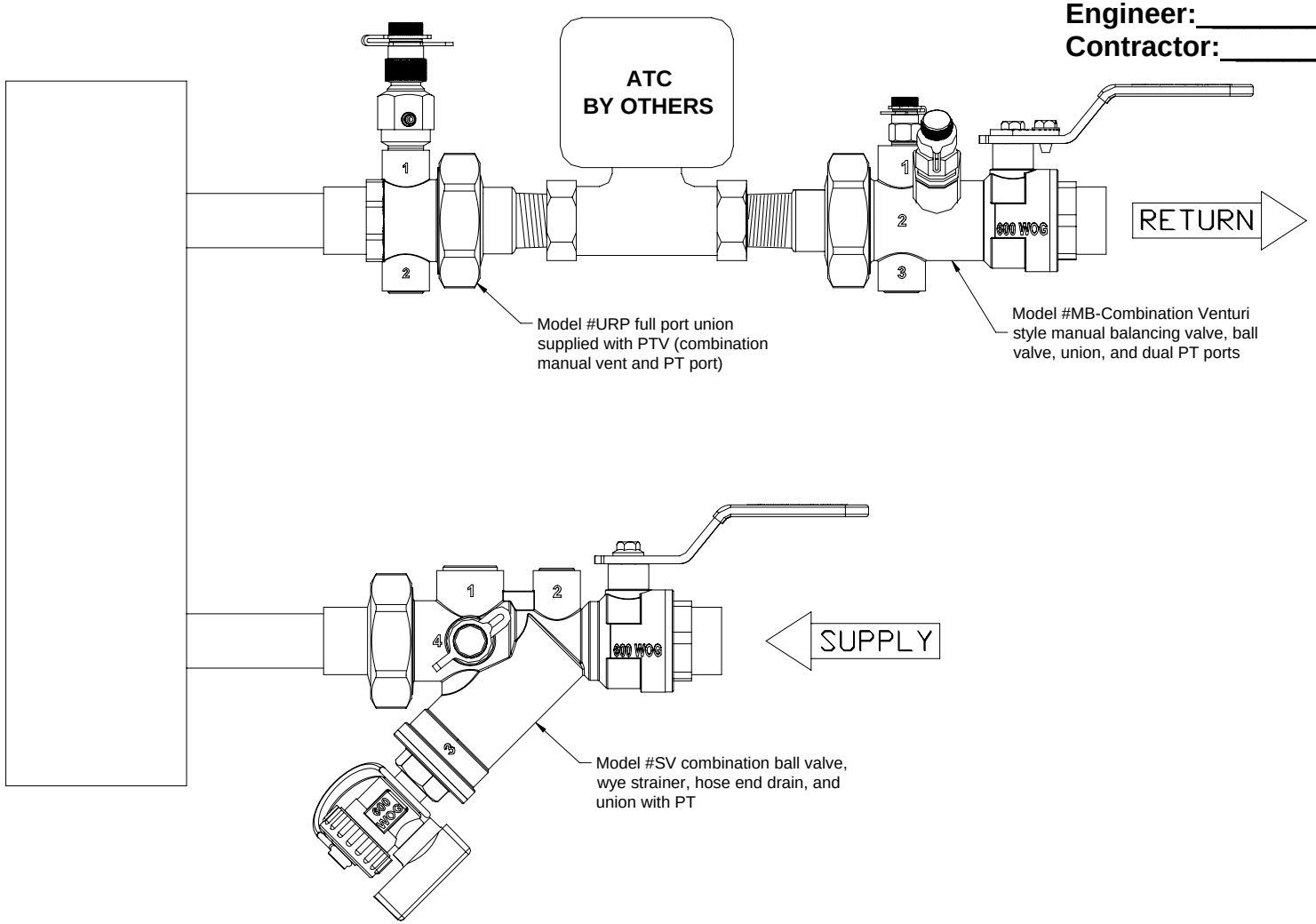
Valve Package (Model # 2RS-MV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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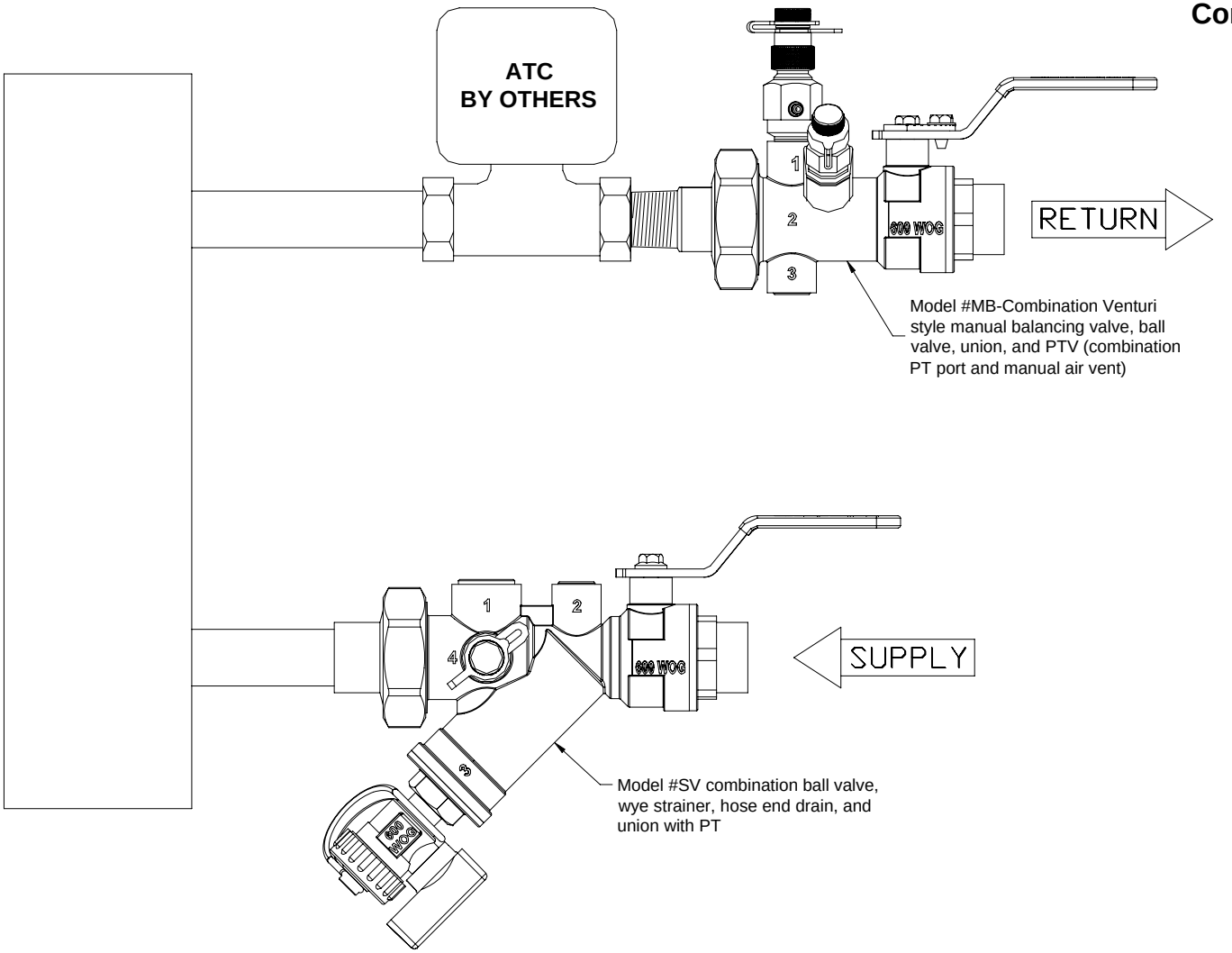
Valve Package (Model # 2RS-MV-X)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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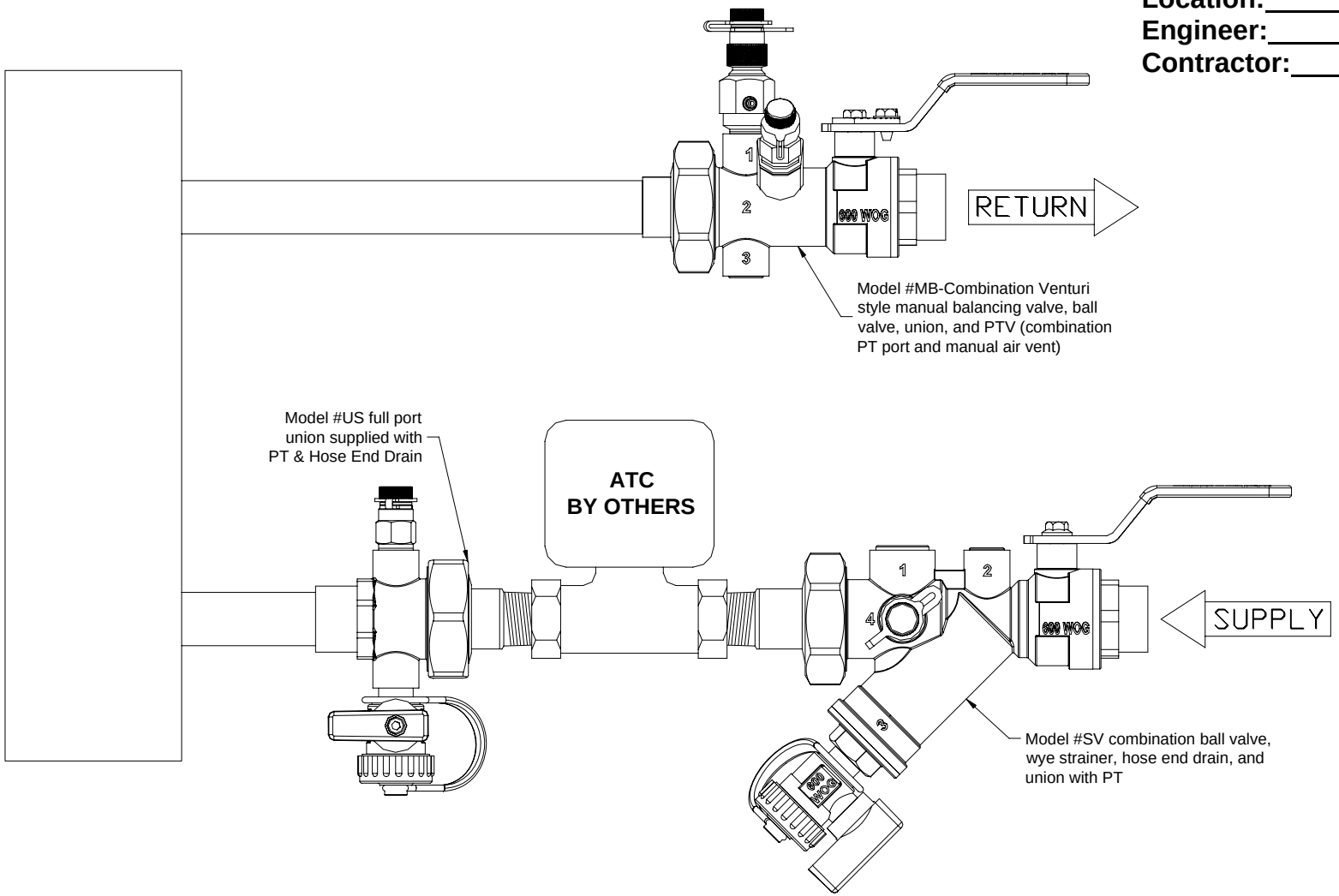
Valve Package (Model # 2SS-MV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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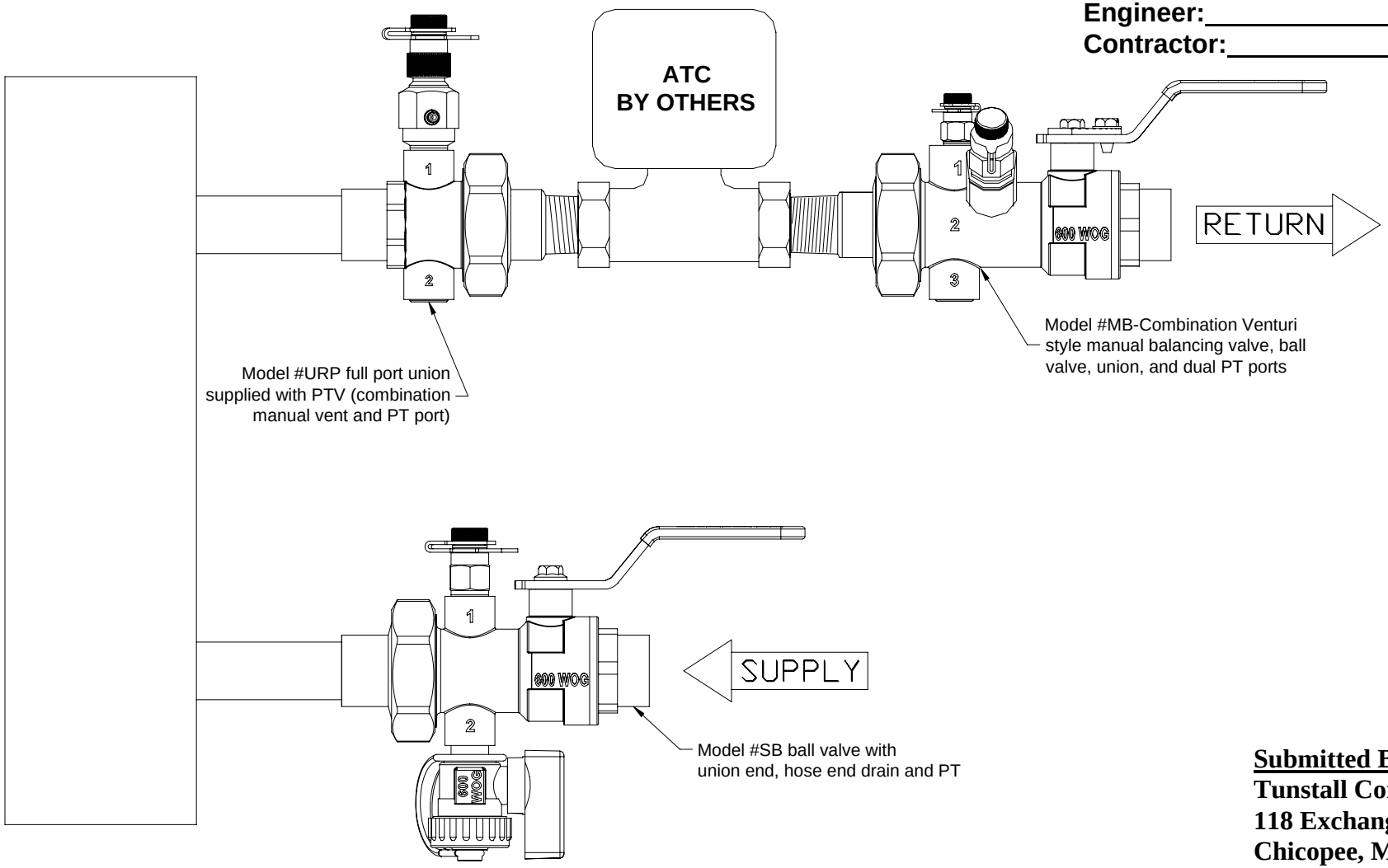
Valve Package (Model # 2RB-MV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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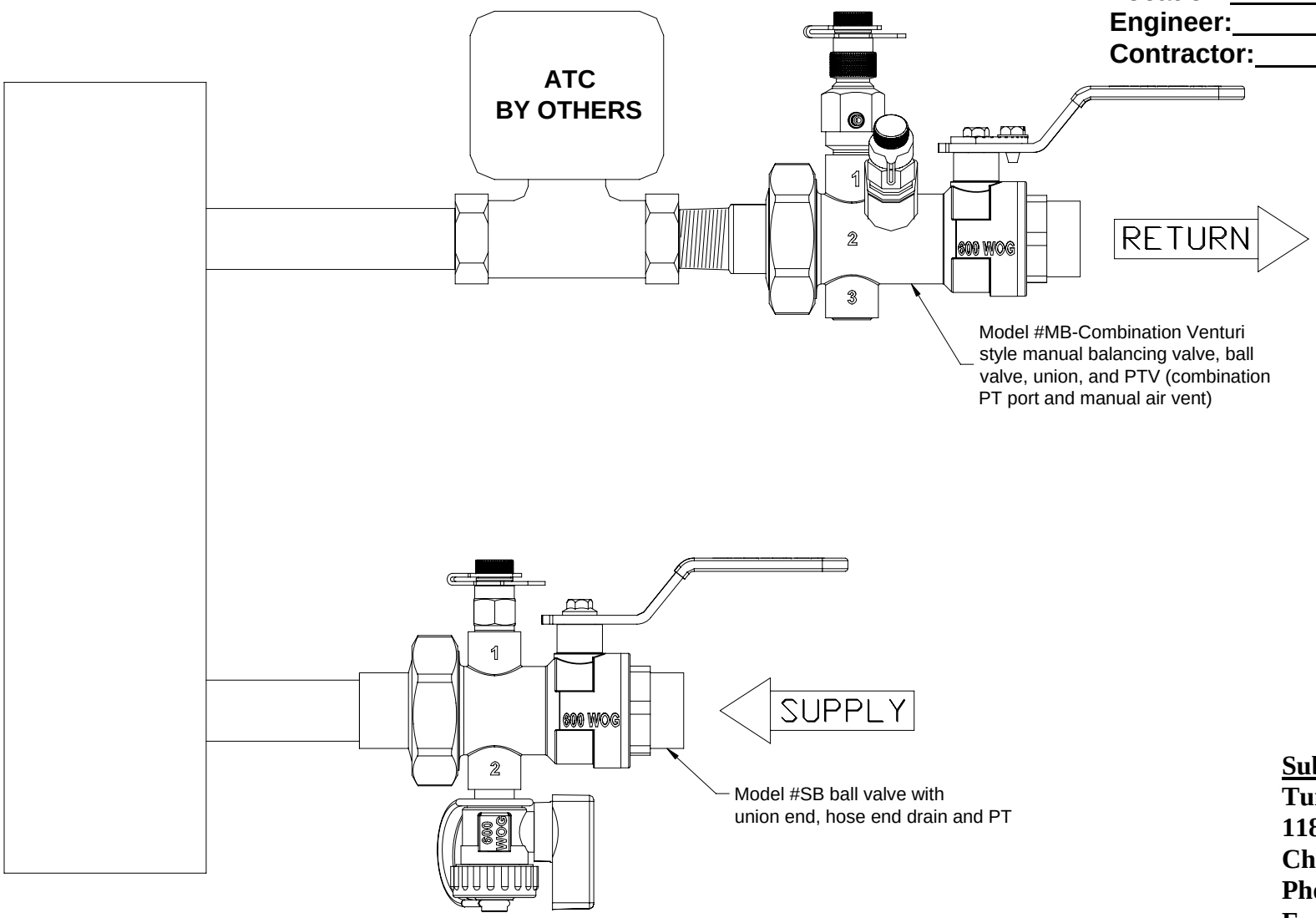
Valve Package (Model # 2RB-MV-X)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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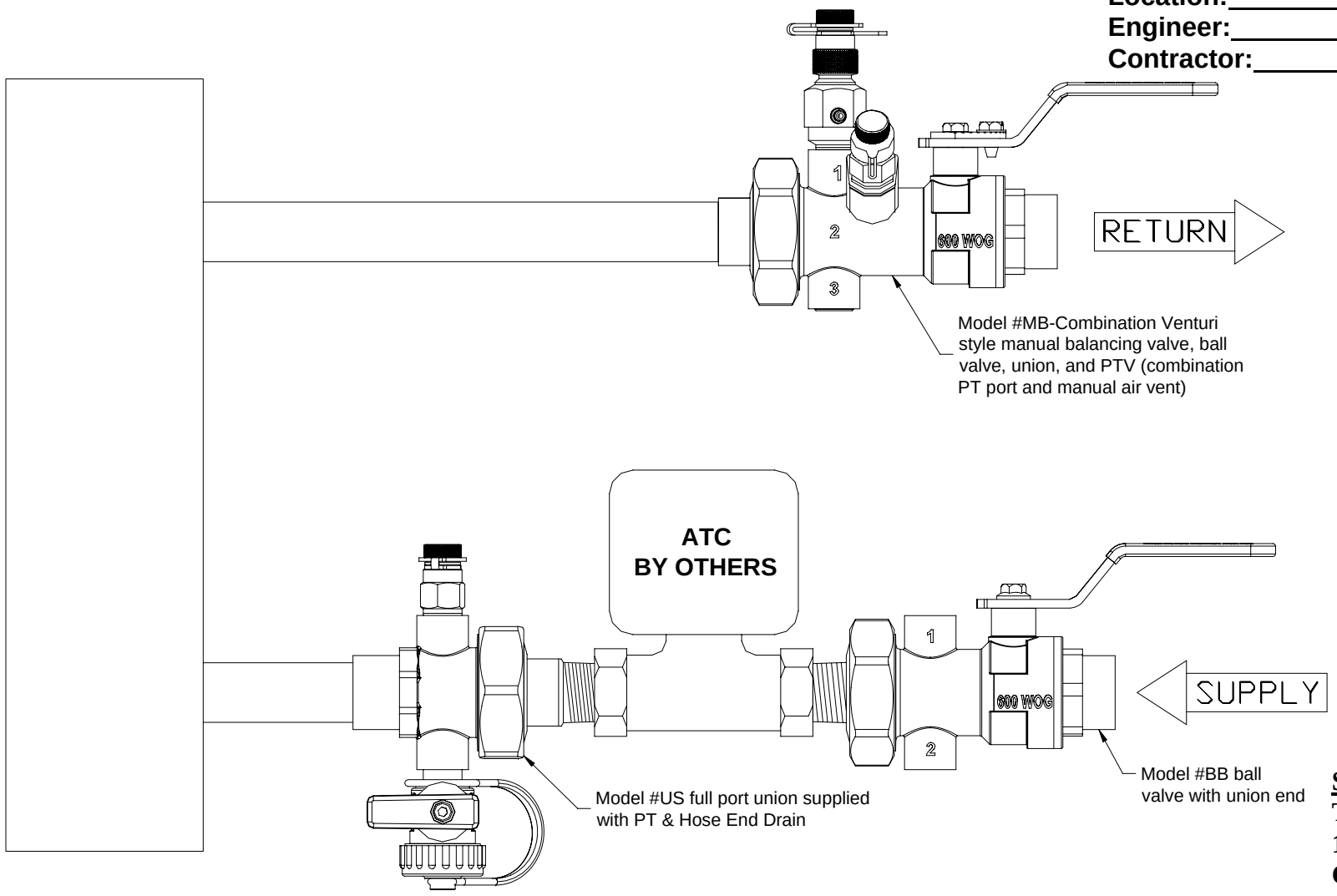
Valve Package (Model # 2SB-MV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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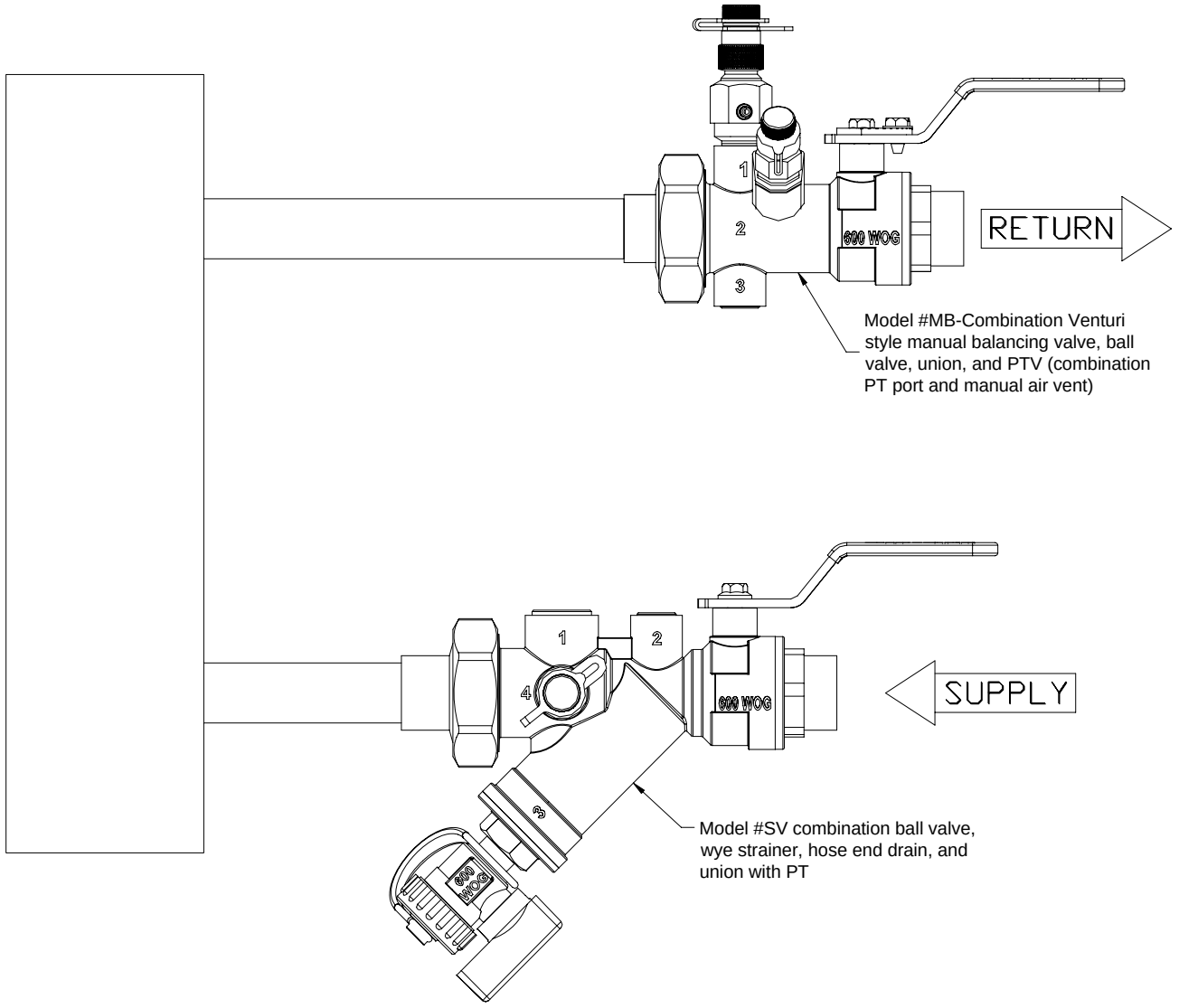
Valve Package (Model # XXS-MV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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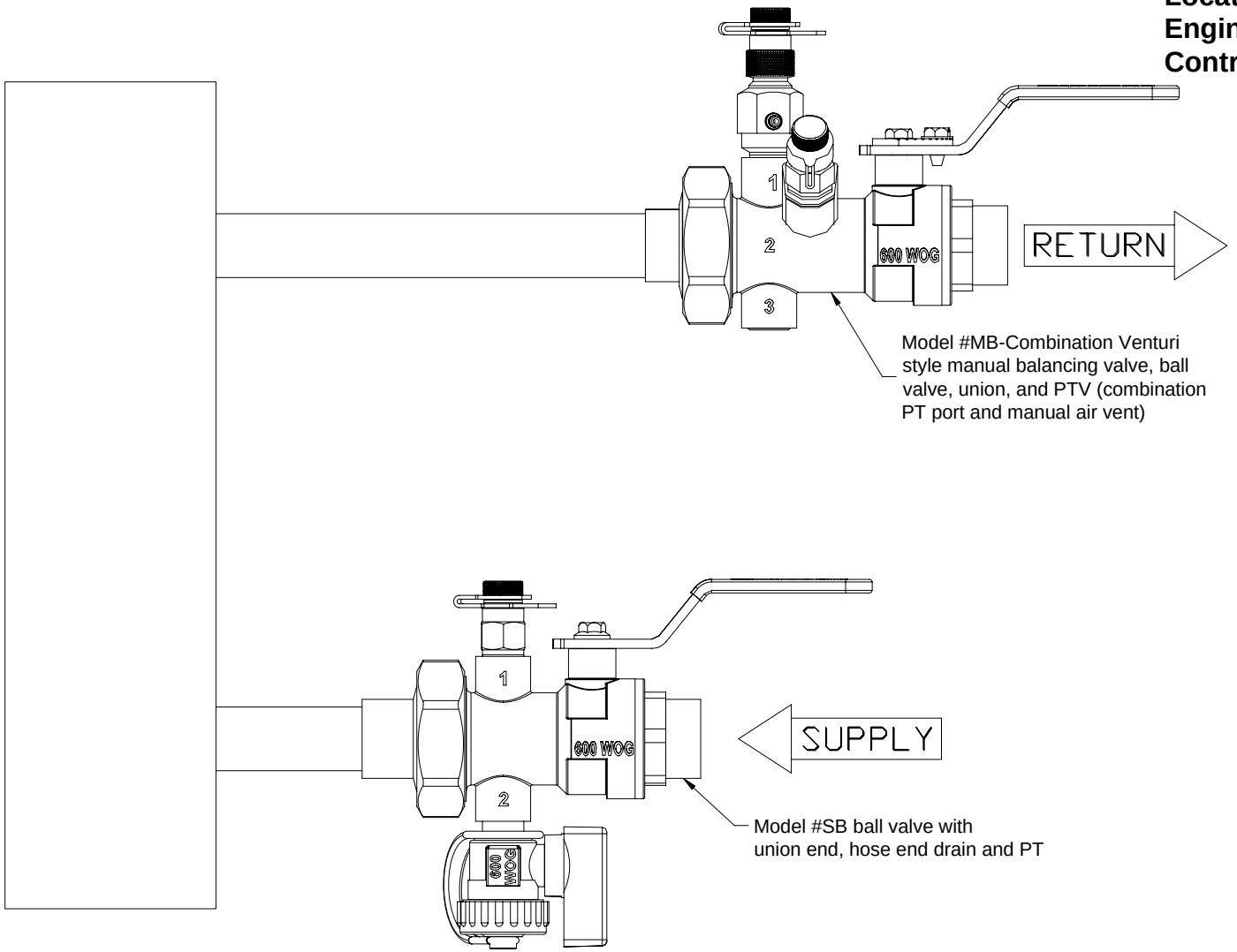
Valve Package (Model # XXB-MV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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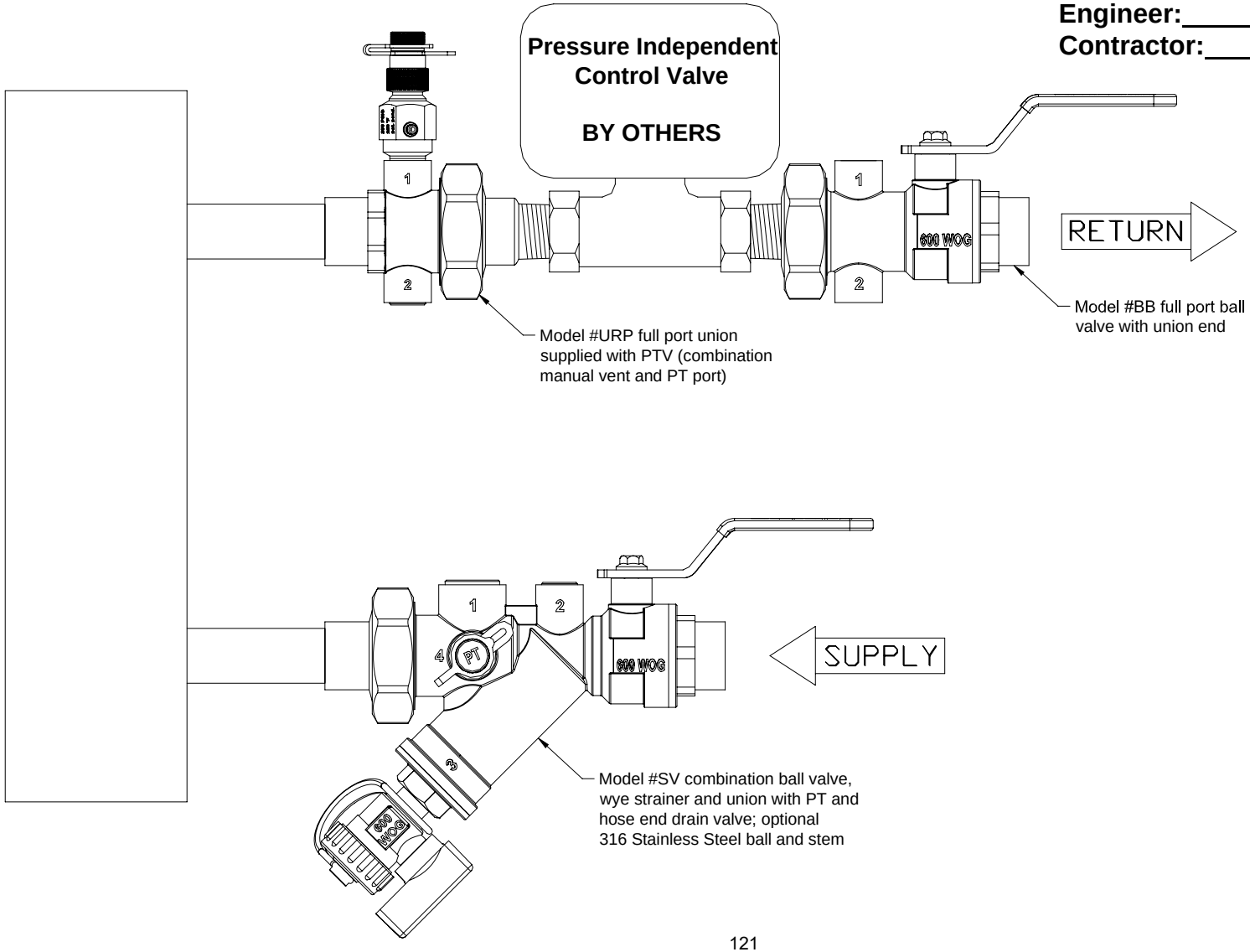
Valve Package (Model # 2RS-BB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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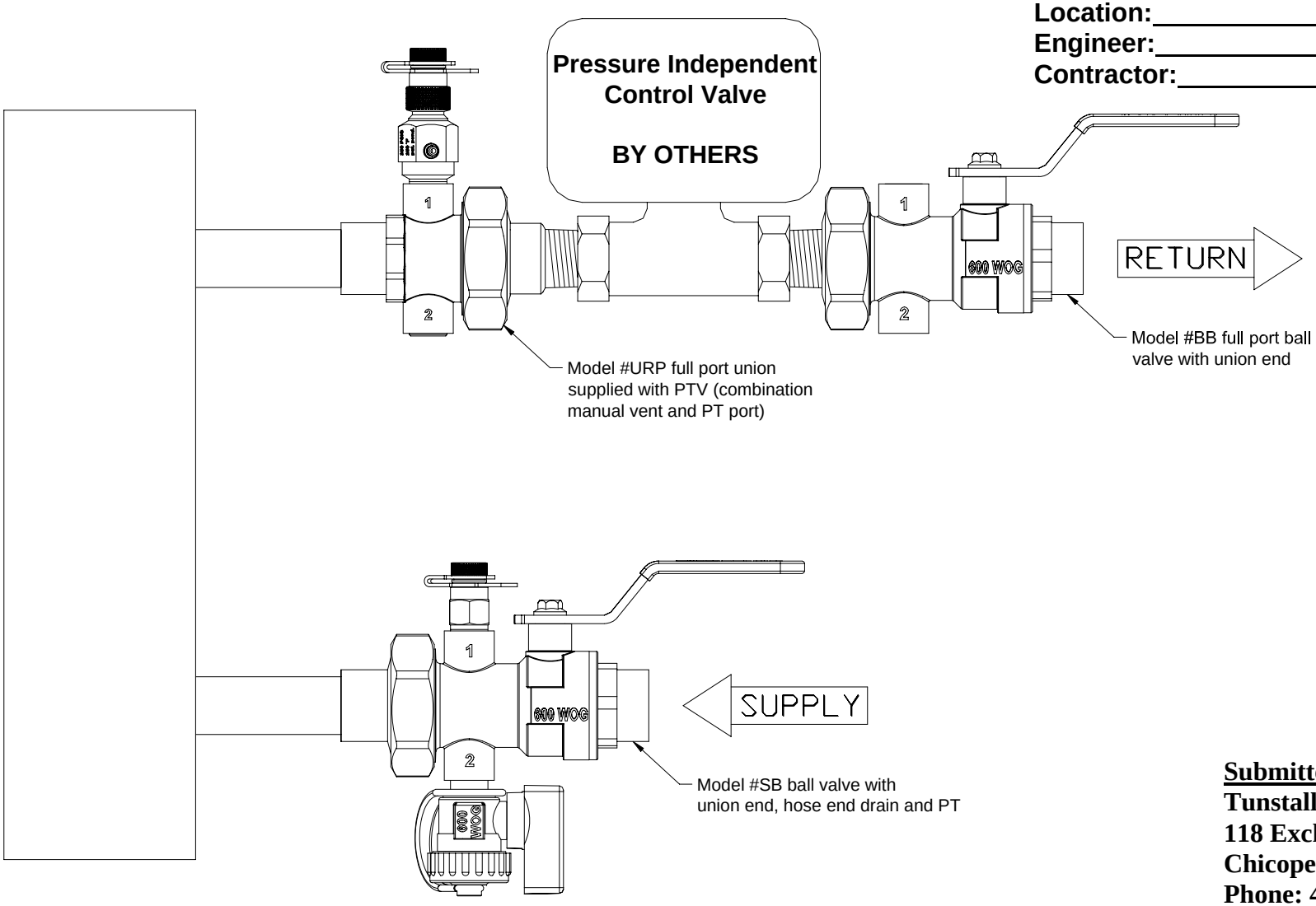
Valve Package (Model # 2RB-BB)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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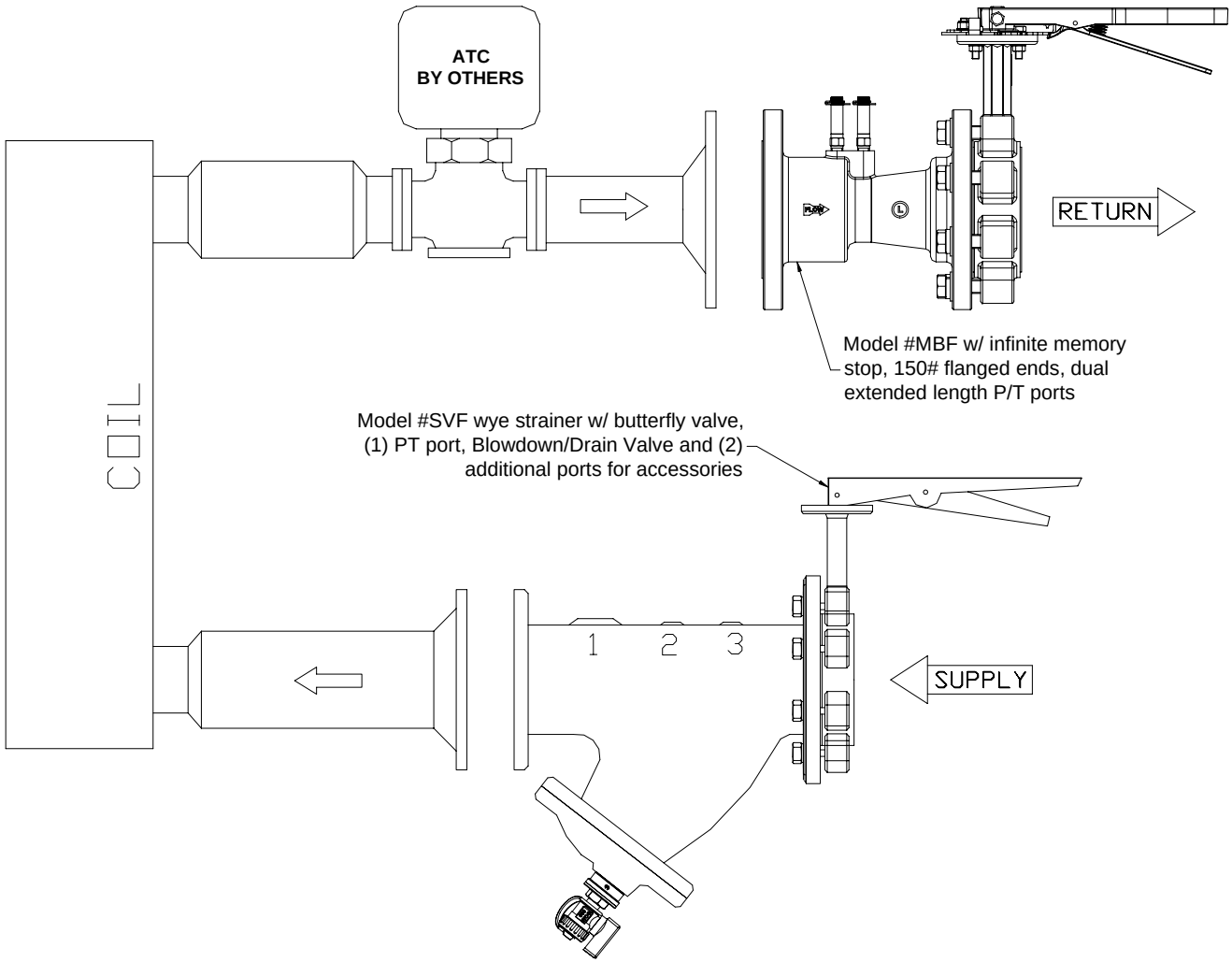
Valve Package (Model #MBF w/SVF)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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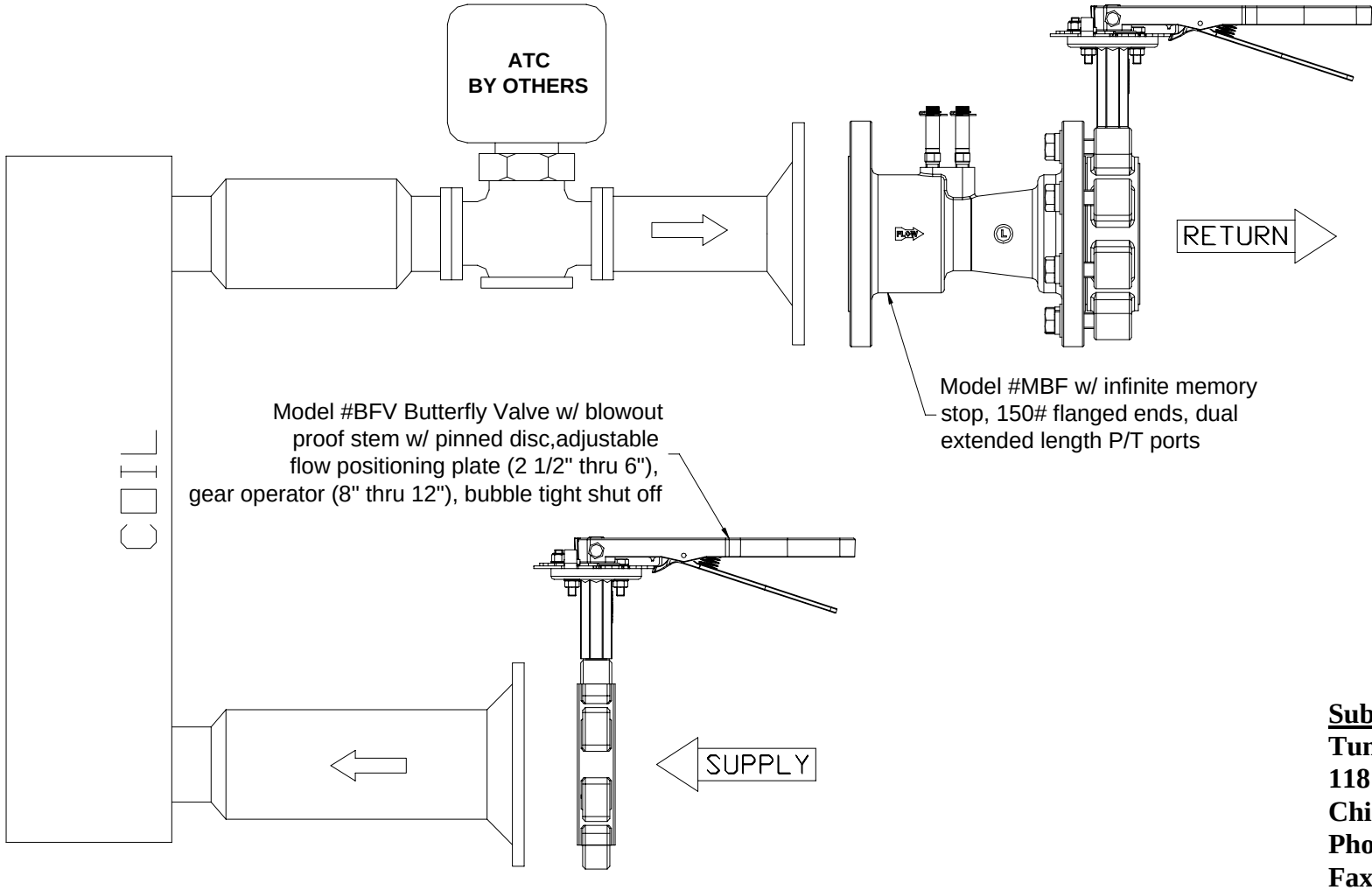
Valve Package (Model #MBF w/BFV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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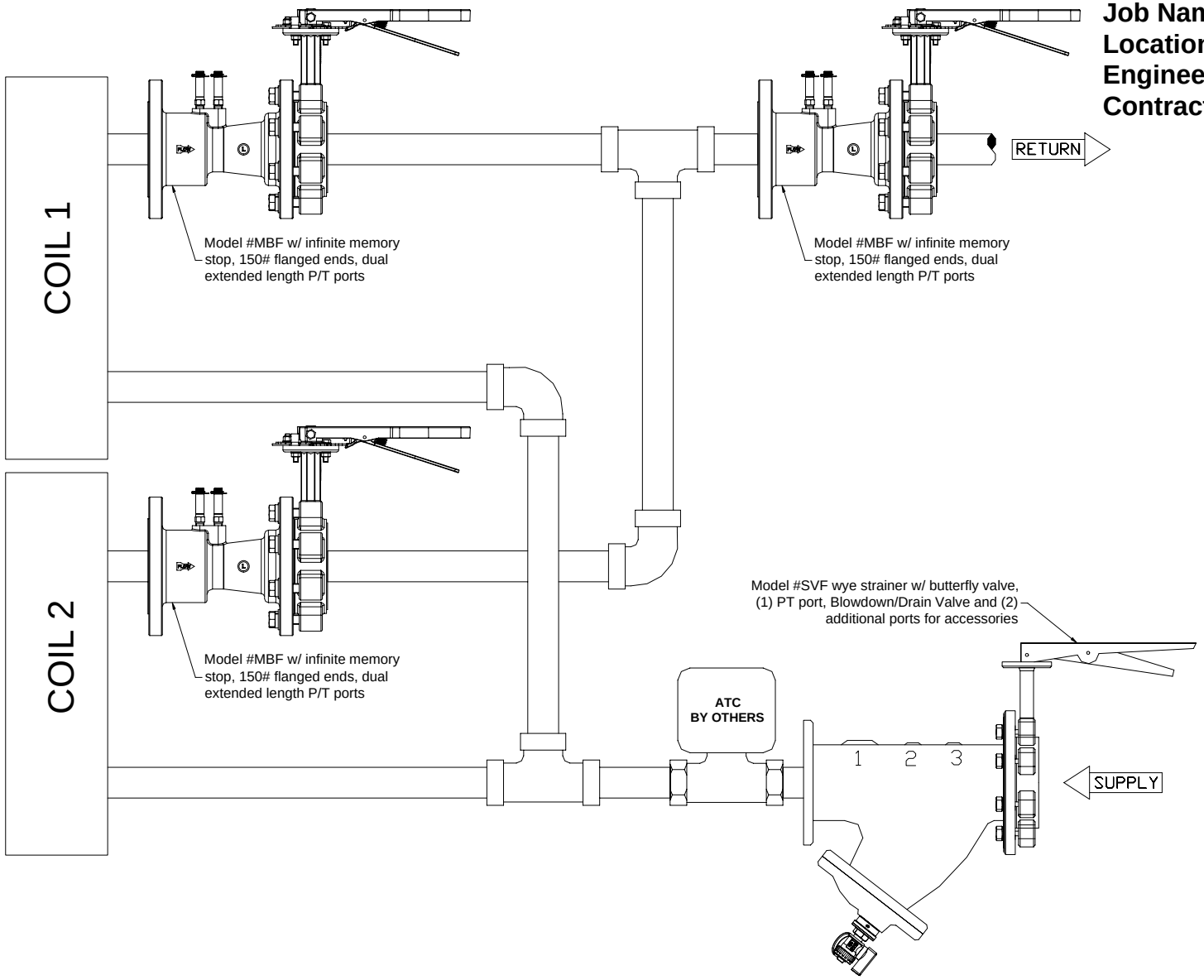
Valve Package (Model #MBF w/SVF DUAL COIL)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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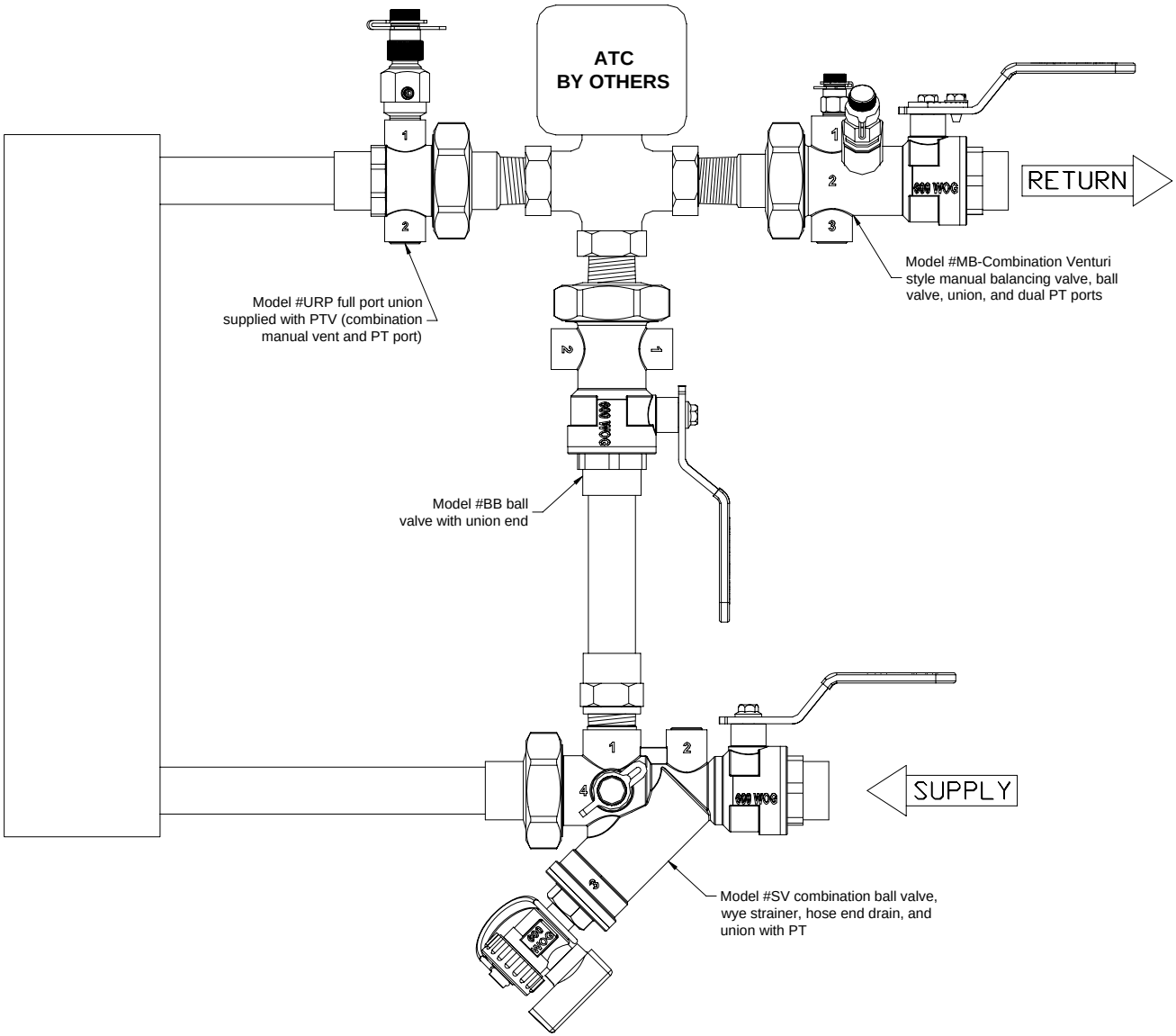
Valve Package (Model # 3RS-MV)



Job Name:_____
Location:_____
Engineer:_____
Contractor:_____

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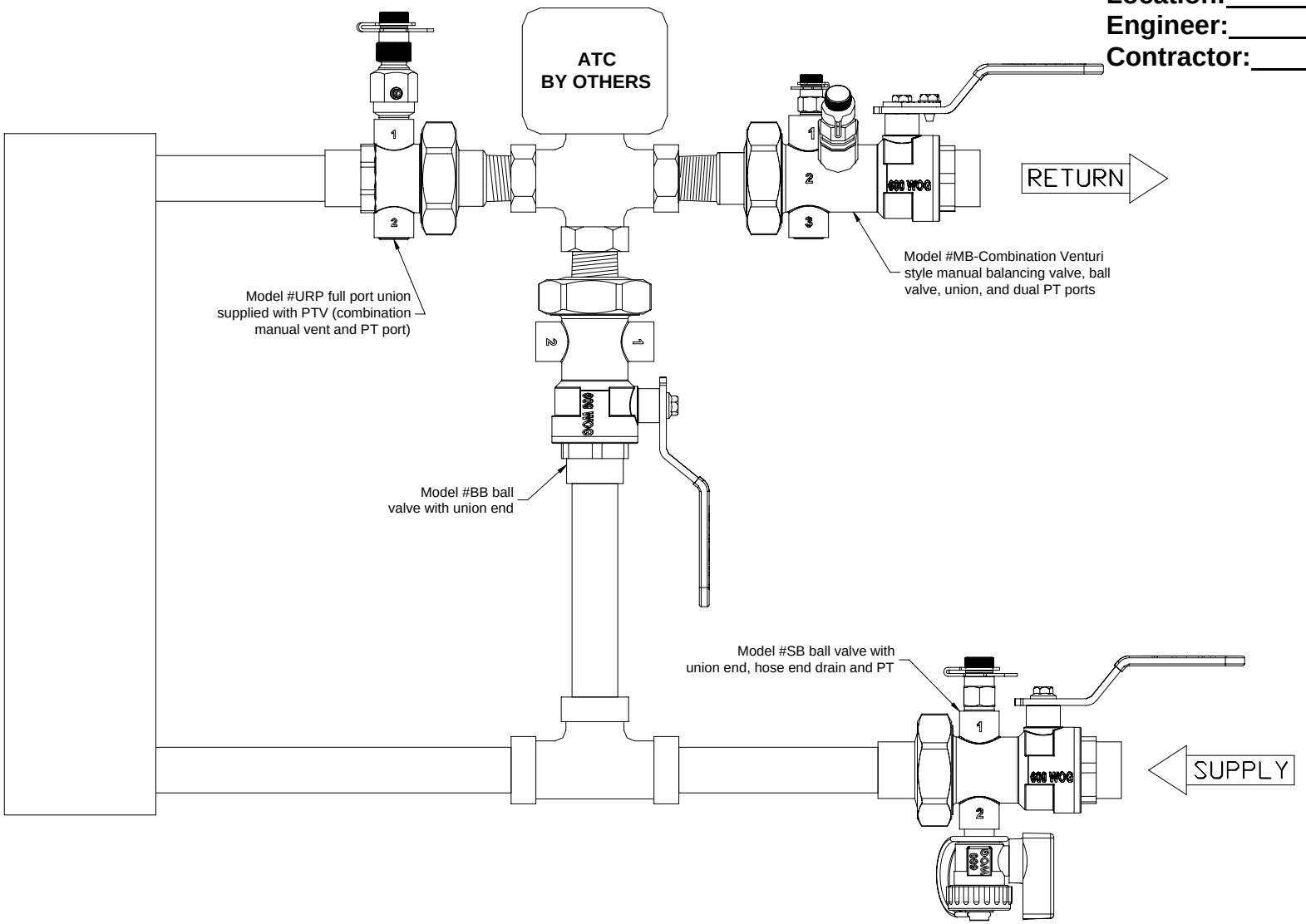
Valve Package (Model # 3RB-MV)

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



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MACON® BALANCING

INSTALLATION & OPERATING INSTRUCTIONS

THREADED VALVE CONNECTIONS

Macon threaded connections are tapered type (NPT) and should be made up according to industry standards.
Inspect and clean pipe threads on both components and piping.
Apply sealant, either sealing compound tape to the threads.
If the product contains a union nut, remove the nut and O-ring from the assembly. Place the union nut over the pipe past the threads. Install the tailpiece with a socket wrench.
Attach the body section to the other end of the piping.

Rotate the body using the hex flats nearest the joint being tightened. **Do not use a wrench on the main body of the component**. Position the body so that the PT Port, PTV, Vent, Drain Valve and or Valve Handle are in the proper position. Make sure that the flow arrow is pointing in the direction of the flow.
After both ends of the valve are assembled to the piping, reinstall the O-ring and tighten the union nut hand tight and then tighten an additional quarter turn. Care must be taken not to cut or pinch the O-ring.

SWEAT VALVE CONNECTIONS

Macon products with sweat connections are designed to be soft soldered.
Clean both copper tube and component ends with sand paper and / or a wire brush, wipe clean and apply flux uniformly.
If the product contains a union nut, remove the nut and O-ring from the assembly. Place the union nut over the copper tube past the flux surface. Install the tailpiece and / or body on the copper tube with a twisting motion to distribute the flux uniformly when inserted. Position the body so that the PT Port, PTV, Vent, Drain Valve and/or Valve Handle are in the proper position. Make sure that flow arrow is pointing in the direction of the flow.
A heat sink is required during soldering.
An appropriate heat sink is a wet rag wrapped around the component closest to the solder connection.
Ball valves are required to be fully closed during soldering to avoid deformation to the Teflon seat.
Valves should be allowed to cool before operating.

Apply heat with the flame directed way from the center of the body . Do not exceed the rated temperature of the component. Excessive heat will damage internal components such as O-rings, PT seals, and Teflon seats.
After the solder begins to melt, remove the flame and continue to apply solder until a ring is formed completely around the circumference of the joint. While the joint is still hot, remove excess flux and solder.
After both ends of the component have been assembled to the piping, reinstall the O-ring and tighten the union nut hand tight and then tighten an additional quarter turn. Care must be taken not to cut or pinch the O-ring.
The factory installed accessories (PT Port, PTV, Vent and Drain Valve) will withstand the solder temperatures if properly **heat-sinked with a wet cloth.**

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INSTALLATION & OPERATING INSTRUCTIONS

FLANGE VALVE CONNECTIONS

Class 150 Valves are mechanically compatible with standard ANSI 150 lb, flat-faced or raised-faced steel flanges or with 125 lb, cast iron flanges.
Appropriated gasket material must be used when installing flanged-mounted flow control devices (for example 1/16" thick ring type fiber filled gaskets). (Not supplied by Macon). All products have a flow direction arrow. Make sure that it is pointing in the direction of the flow.
Installing the butterfly Valve:
Do not use flange gaskets.

The molded valve gasket will seal against the standard ANSI flanges.
Before tightening any bolts on the butterfly valve, turn the disk of the butterfly to the full open position. Center the valve and hand tighten all bolts. Slowly close the disk to check for adequate disk clearance. When properly aligned, return the disk to the open position and evenly cross-tighten all bolts. Make sure the disk opens and closes properly.

GROOVED END VALVE CONNECTIONS

Grease the pipe ends, valve ends and rubber gasket lips with grease, graphite paste or similar grease.
Slip the rubber gasket over the pipe end of each joint. Slide the gasket past the grooves. Position the grooved end valve between the pipe ends and slide the gaskets back into the central spanned position.
All products have a flow direction arrow. Make sure that it is pointing in the direction of the flow. Apply grease on the outside of the gasket. Install housing clamps over the gasket – insert bolts and nuts.

Tighten nuts evenly, using socket or other wrench. Tighten so that housing clamps come together evenly. The connection is complete when housing clamps meet metal to metal, further tightening of bolts is not necessary.
Pre-assemble large diameter multi-segment housing clamps loosely and install them as half-housings. Take up evenly from top to bottom on alternate bolts.

WELD END VALVE CONNECTIONS

Clean the end of the pipe and the valve where the welds will be made. Make up the assembly butting the connections together. All products have a flow direction arrow. Make sure it is facing in the direction of the flow. Tack weld the assembly together and observe the fit.

Warning: If the valve contains a butterfly valve do not finish welding the assembly with the butterfly valve installed between the flanges. This will result in serious damage to the valve seat.

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INSTALLATION & OPERATING INSTRUCTIONS

PRESSURE TEMPERATURE PORT (PT) / PRESSURE TEMPERATURE VENT(PTV)

PT Ports and PTV are typically factory installed.
Factory installed accessories (PT Port, PTV, Vent and Drain Valve) are installed with a hydraulic sealant and should not be disturbed. If it is absolutely necessary to remove, tighten and/or adjust an accessory, it should be cleaned and resealed with new sealant and/or Teflon tape.
Care should be taken not to over tighten.
Field installations are done in accordance with general plumbing/fitting practices. Pipe dope or Teflon tape should be used to seal threads.
Do not expose PT Ports and PTV to soldering, brazing or weld heat. Complete this work before installing the PT Ports and/or PTV.
The PTV should always be installed in a vertical position.
It is preferable to install the PT Port horizontally or higher.
Do not install down at the 6 o'clock position.

SAFETY INSTRUCTIONS

Seals are made of EPDM. EPDM is compatible with hot and cold water. EPDM is resistant to: glycol, alcohol, phosphates, esters, ketones and detergents.
Do not use with: Petroleum products, hydrocarbons solvents and/or oils, chlorinated hydrocarbon or turpentine.
Always wear eye protection when using PT Ports and/or PTV.

Attach a drain hose to the hose barb connection for collecting water or water vapor from the PTV.
Always use a pressure gauge with a rating greater than the pressure in the system.
Recommended for use in hydronic systems only.
Not recommended for gas, steam or high temperature hot water.

OPERATION

PTV Venting:
Venting is achieved by rotating the valve body ½ turn or until you hear air escape. Close valve when venting is completed.

PT Port and PTV Temperature/Pressure Readings:
Remove cap slowly, look and listen for leaks.
Remove any foreign material from the entrance hole.
Select either the pressure or the temperature device to be used. Examine the probe and remove any existing burrs. Apply silicone lubricant to the probe, especially for first time use. Insert probe slowly with a twisting motion. As soon as the necessary readings and adjustments are made, remove the probe and replace cap.

MAINTENANCE

If the device leaks persistently, replace it.
Keep debris out of the device and keep caps on.

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MACON® BALANCING

INSTALLATION & OPERATING INSTRUCTIONS

AUTOMATIC BALANCING VALVES

INSTALLATION

There are no minimum straight-piping requirements for the inlet or the outlet.
Valves may be installed in horizontal or vertical lines.
The flow arrow on the valve body must be pointed in the direction of flow.
Avoid placing the valve close to a pump discharge. Allow 10' before the valve if possible.

OPERATION

Macon Automatic Balancing Valves incorporate a removable flow cartridge that is factory set to limit the GPM to within ± 5% of the specified flow.
The flow can be verified by measuring the differential pressure (D.P.) across the valve using the PT Ports provided.
If it measures between 2-32 the flow is with in the specified flow range.

MAINTENANCE

There is no periodic maintenance required on the Automatic Balancing Valve.
Using a Y strainer is always recommended to prevent clogging. A 40 mesh screen is recommended for flow of 1.5 GPM or less.
The controlled flow rate can be changed in the field without having to remove the valve from the line.
Isolate the system, relieve pressure and drain water. Carefully remove the cap and pull out the cartridge with your fingers. When refitting make sure the O-ring on the cartridge and cap are in place.

MANUAL BALANCING VALVES

INSTALLATION

Macon Manual Balancing Valves & Venturi's are unidirectional, observe flow arrows.
All models can be installed in horizontal or vertical pipe.

STRAIGHT-RUN REQUIREMENTS

The MB models have the necessary straight-run length built in and can be installed directly downstream of a 90 degree elbow or a control valve. If the control valve is smaller then the MB, than the reduction can be done with a Macon tailpiece or reducing coupling to insure a proper reading.
Models MBF, MBG, VF, VG and VW can be installed with no additional pipe diameters upstream or down-stream for line size connections.

Tap Locations (Pressure Taps or PT Ports).
For portable D.P. metering, the taps can be pointing at any clock location, except at 6 o'clock.
Optional accessories such as air vents should always point up and drain down.

OPERATION

The flow is determined by measuring the differential pressure (D.P.) across the high (Red) and low (Blue) taps on the venturi. Convert the measured D.P. to inches W.C. and use the appropriate Macon chart to read the flow.

CHART	MODELS
FCMB-0413	.50" – 2.00" MB
FC1-0413	2.50" – 6.00" MBF, MBG, VF, VG, VW
FC2-0413	8.00" – 12.00" MBF, MBG, VF, VG, VW

Models MB and MBF are equipped with a downstream throttling valve to adjust the flow.
Slowly close the valve while reading the D.P. gauge until the desired flow is reached. Set the memory stop so the handle position is maintained even if the valve is temporarily closed.

MAINTENANCE

There is no periodic maintenance required on these devices.

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Flexible Hoses

Installation:
1. Adhere to allowable radius of bend. (See table below)
2. Verify the installation conditions do not cause torsion of flexible. (See figure1 below)
3. If necessary modify the installation in the event that it is not possible to adhere to the allowable radius of bend (see paragraph 1 below). For example, add an intermediary right angle fitting (See figure 2 below).
4. Do not submit the connectors to tension, either from the installation, or as a result of pressure or expansion (see figure 3 below).
4. The braiding of the flexible must never be in contact with cement, plaster or all other materials or fluids capable of causing corrosion.

FIGURE 1

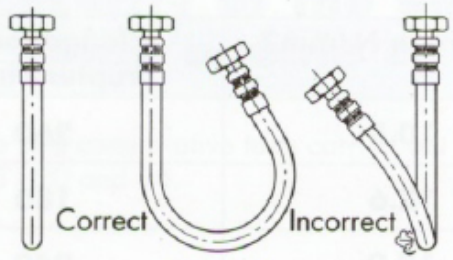


FIGURE 2

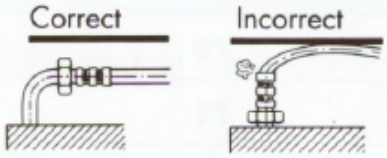
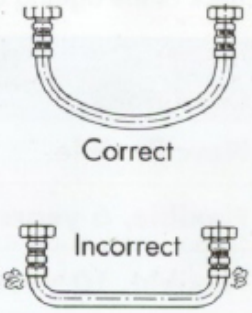


FIGURE 3



ON INSTALLATION: Avoid absolutely any tension due to stretching during the course of tightening the connectors. Do not turn fittings in the hose. Do not twist hose. Avoid sharp bends, kinking or twisting of the hose during installation. The ½", 3/4" and 1" hose connection is a metal to metal seal. The brass mating surfaces should be smooth and free of debris. The 1-1/4", 1-1/2" and 2" hose connection use a specially design gasket, do not install without the gasket. Do not use pipe dope or tape sealants on the metal to metal or gasket connection adapters when connecting to the swivel nut.

A. Install and tighten the fixed male connector.
B. Remove the swivel adapter from the swivel nut. Install and tighten the union adaptor.
C. Install and tighten the adapter to the swivel nut.
Use two spanners in order to screw the union together:
One to hold the hexagon of the adaptor.
The other to tighten the nut at the same time.

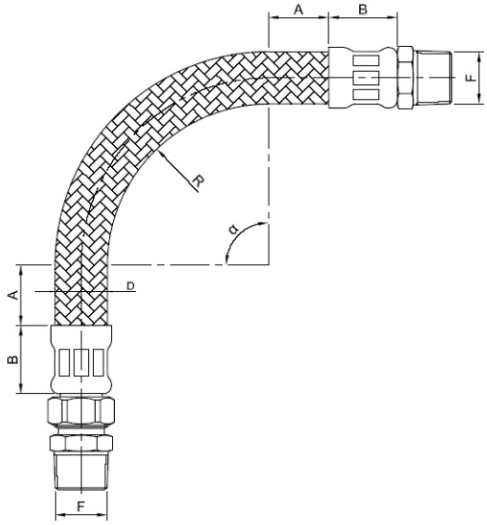
IMPORTANT: Do not re-screw the fixed connector or adaptor after tightening of the swivel nut ; this will cause tensioning of the flexible with a risk of rapid deterioration at this point.
On removal, take precautions. If the flexible incorporates two fixed connectors, at least one must be installed on a counter-part fitting with a swivel connector or a union, if not installation is impossible.

INSPECTION: Macon recommends a good maintenance practice and periodic inspections, typically when servicing other components at the unit or at the installation site. Check all hoses for small water leaks, residue, discoloration on the exterior braid and fittings. If a leak is detected, stop service to the unit and replace hose immediately. Do not attempt to the repair hose.

Caution: Introduction of chemicals into the system or unit may cause damage to the inner core of the hose. Consult a water treatment specialist for chemical compatibility before using any chemical additives.

Warning: Hoses are designed for hydronic heating and cooling service only, not for gas.

FLEXIBLE ALLOWING A BEND



I.D.	F	Length (inch)	R_{min} (mm)	A_{min} (mm)	B (mm)	D (mm)	α_{max}
13	1/2 - 14 NPT	12 "	60	40	23	17	89°
		18 "	60	40	23	17	180°
		24 "	60	40	23	17	180°
		36 "	60	40	23	17	180°
19	3/4 - 14 NPT	12 "	80	55	35	26	32°
		18 "	80	55	35	26	126°
		24 "	80	55	35	26	180°
		36 "	80	55	35	26	180°
25	1 - 11,5 NPT	12 "	110	65	35	35	5°
		18 "	110	65	35	35	75°
		24 "	110	65	35	35	142°
		36 "	110	65	35	35	180°
32	1¼ - 11,5 NPT	18 "	120	100	46	42	30°
		24 "	120	100	46	42	92°
		36 "	120	100	46	42	180°
40	1½ - 11,5 NPT	18 "	200	140	62	53	5°
		24 "	200	140	62	53	27°
		36 "	200	140	62	53	104°
50	2 - 11,5 NPT	24 "	280	230	57	63	5°
		36 "	280	230	57	63	42°

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MACON® BALANCING

LIMITED WARRANTY

Macon warrants that our products are free from defects in material and workmanship and will possess the characteristics represented by us for a period of 12 months from the date of shipment.

Upon satisfactory proof of claim, we will, within a reasonable time, make any necessary repairs, additions or corrections or, at our option, replace defective parts free of charge. Charges for correcting defects or making additions will not be allowed, nor will we accept products returned for credit unless the return is authorized by us in writing.

This warranty shall not apply to any material which has been subject to misuse, negligence, modification, temperature or pressures in excess of the limits recommended by Macon.

Macon makes no other warranties either expressed or implied, including the warranties of mechanical ability or fitness for a particular purpose. The company neither assumes nor authorizes any other persons to assume for it any liability in connection with the sales of its parts and material except under the conditions of this warranty. There are no warranties which extend beyond the description on the face hereof.

Macon is not liable for incidental or consequential damages including, but not limited to, damage or delay, loss of profit or expense incurred by the purchaser.

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GUIDE SPECIFICATIONS – STVL / STV / STVA / STVC BALANCING VALVES

TYPICAL SPECIFICATION

All balancing valves shall be of one manufacturer.

Furnish and install, as shown on job plans and in accordance with manufacturers installation instructions, Macon Balancing Valves, Series STVL/STV/STVA/STVC. Valves are to be of "Y" pattern globe style design and perform the following functions: a) Flow balancing, b) Flow measurement, c) Positive shut-off.

All balancing valves must have a minimum ten (10) turn, 360° handwheel with digital and vernier scale readout for precise setting. Balancing handwheel must include a memory stop and locking feature to prevent tampering after pre-setting.

All balancing valves shall have self-sealing ports for measurement of differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports shall be located at a 45° offsetting angle and be removable for implementation of optional drain kits where required.

All balancing valves in sizes 1/2" (DN 15) through 2" (DN 50) shall be made of dezincification resistant brass and have either sweat or NPT thread connections. Valve body sizes 2 1/2" (DN 65) through 12" (DN 300) shall be made of cast iron and flanged to 125 lb standard.

All balancing valves shall be manufactured by the company complying with international quality standard ISO 9001.

MACON® BALANCING

GUIDE SPECIFICATIONS – AUTOMATIC BALANCING VALVES

MANUFACTURER

1. Macon Balancing, Models AB, ABW, ABG and AW.

DESIGN

1. The GPM for the automatic balancing valves shall be factory set and shall automatically limit the rate of flow to with in ±5% of the specified GPM over at least 95% of the control range.
2. For .50" through 2.0" the flow cartridge shall be removable from the Y Body housing without the use of special tools to provide access for cartridge change-out, inspection and cleaning without breaking the main piping.
3. PUMP HEAD REQUIREMENT:
   The permanent pressure loss added to the pump head shall not exceed seven feet.
4. Each valve shall have 2 P/T Ports.
5. The valve handle shall be fitted with a fine tuning memory stop handle to allow for adjusting the control range.

CONSTRUCTION

1. The internal wear surfaces of the valve cartridge shall be Ultrason® Composite or stainless steel.
2. The flow cartridge shall be permanently marked with the GPM and differential range.
3. For .50" through 2.0" pipe sizes: An assembly shall consist of a brass Y-type body, integral brass-body ball valve and O-ring type union.
   Macon model AB.
4. For 2.5" and larger flanged connections:
   Ductile-iron body, suitable for mounting wafer style between standard 150# or 300# flanges.
   The long flange bolts and nuts shall be provided with each control valve.
   Macon model AW.

MINIMUM RATINGS

1. For .50" through 2.0" pipe sizes
   600 PSI @ 250°F.
2. For 2.5” through 12.0” pipe sizes
   600 PSIG @ 250°F.

FLOW VERIFICATION (choose one)

1. The differential pressure across the Automatic Balancing Valve shall be measured for flow verification and to determine the amount of system over heading or under pumping.
2. The flow shall be verified by measuring the differential pressure across the coil served or the wide open temerature control valve and calculating the flow using the coil or valve Cv.

TEST KIT

1. A pressure and temperature test kit shall be provided with the ability to read differential pressure from 0 to 75 PSI, and temperature from -10 to 230° F.

INSTALLATION

1. Install automatic balancing valves on the return lines of coils as indicated on the plans. A balancing valve on the supply side is not acceptable.
2. The standard ports and handle shall clear 1.0" thick insulation. Do not insulate flow control valves used on heating coils.
3. Install, on the supply side of coils, a Y-strainer with brass blow down valve with .75" hose-end connection with cap. Inline basket strainer is not acceptable.

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GUIDE SPECIFICATIONS – MANUAL VENTURI BALANCING VALVES

MANUFACTURER

1. Macon Balancing, Models MB or MBF

DESIGN

1. Flow devises shall be Venturi type as recommended by ASHRAE.
2. Devices shall have a precision-machined throat and have a stated catalog accuracy of 3% of flow rate.
3. MINIMUM GAUGE READING:
   The gauge reading (flow signal) shall be at least two feet at the design flow with the valve in the wide open position.
4. The valves are to have differential readout ports fitted with check valve and protective cap, and are to have a memory stop to allow complete shut-off and return to set position with out losing the set point.
5. PUMP HEAD REQUIREMENTS:
   The permanent pressure loss added to the pump head shall not exceed two feet, per device, at the design GPM in the wide-open position.

CONSTRUCTION

1. All devices shall have a Venturi section and a throttling valve with a memory stop on the downstream side of the Venturi.
2. Sizes .50" - 2.0" shall have a brass alloy body with sweat or threaded (NPT) connections, ball valve shall have a plated brass ball, blowout-proof brass stem, union end which will except various type tailpieces, Teflon seat, EPDM o-ring seals, and a steel handle.

   Sizes 2.5" – 6" shall have a cast steel body. Flanges shall be compatible with ANSI B16.5-1968 150lb. Butterfly Valve shall be ductile iron lug type, with EPDM seats, 416 SS stem, Teflon bushing, aluminum/bronze disc.
3. All valves .50" – 2.0" shall be factory leak tested at 100PSI air under water.

MINIMUM RATINGS

1. Devises with sweat or NPT connections .50" – 2": 400 PSIG @ 250°F.
2. Devises with Flanged connections 2" – 10": 200 PSIG @ 250°F.

READOUT METER KIT

Provide a portable readout meter kit by the manufacturer of the balancing devices.

1. The meter shall be housed in a durable case complete with two 10’ color coded hoses with shut-off valves at the end that connects to the balancing valve so that water does not drain out between readings.
2. Meter shall have a 6" diameter face and ±1.75% full-scale accuracy.
3. Meter shall have a forged brass body and a three-valve manifold for over-range protection.
4. Meter shall have a dual scale reading inches and feet W.C.

INSTALLATION

1. The straight pipe required to achieve 3% F.S. accuracy shall be incorporated as an integral part of the .50" to 2" valve assembly. Five pipe diameters of straight pipe are required from a control valve for sizes 2.5" – 10".
2. Install balancing valves on the return lines of the coil as recommended by ASHRAE.
3. Install in accordance with the manufacturer’s instructions.

GUIDE SPECIFICATIONS – HOOK–UP COMPONENTS

UNIONS

Manufacturer
Macon Balancing
Models UR, URP, US, UB.

Design and Material
.50" – 2.0" Brass O-ring type Union. EPDM O-ring. Fixed End available in FNPT or SWT. Tailpiece available in MNPT, FNPT, SWT or Press End. Size reductions available. Ground joint type not acceptable.

Minimum Ratings
600 PSIG @ 250°F

Y-STRAINERS

Manufacturer
Macon Balancing
Models SV, SVF.

Design and Material
.50" – 2.0" Forged or cast brass body. EPDM O-ring. Plated steel handle with vinyl grip. Blow out-proof stem. Chrome plated ball with Teflon seats. 20 mesh stainless steel screen with removable cap. Fixed End available in FNPT, SWT or Press End. Tailpiece available in MNPT, FNPT, SWT or Press End. Size reductions available. Strainer shall be fitted with a hose end blow down valve with cap and chain.
2.5" – 12.0" Cast iron body. Fiber gasket. Stainless steel strainer screen. ANSI 125# Flanged. Lug type ductile iron butterfly valve mounted on the inlet.

Minimum Rating
.50" – 2.0" 600 PSIG @ 250°F
2.5" – 12.0" 175 PSIG @ 250°F.

MANUAL AIR VENTS

Manufacturer
Macon Balancing
Models MAV, PTV.

Design and Material
MAV Brass body. Knurled slotted handle. Blowout-proof stem. Side vent. 1/4" NPT. Standard and Extended length.
PTV Brass body, EPDM core and O-rings. Knurled handle and cap. Blowout-proof stem. Side vent with 1/8" hose barb. 1/4" and 1/2" NPT. Standard and Extended length.

Minimum Ratings
MAV 400 PSIG @ 250°F
PTV 250 PSIG @ 250°F

AUTOMATIC AIR VENTS

Manufacturer
Macon Balancing
Model AAV

Design and Material
Forged brass body, manual shut-off cap. Polypropylene float. Body designed to be disassembled for cleaning. Vent capacity 1 SCFM @ 60 PSIG.

Minimum Ratings
150 PSIG @ 250°F

HOOK–UP COMPONENTS continued –

GUIDE SPECIFICATIONS – HOOK–UP COMPONENTS cont.

HOSES

Manufacturer
Macon Balancing
Models FH

Design and Material
.50" – 2.0" inner core of EPDM suitable for water temperatures between 40°F and 230°F.
Outer braided cover of stainless steel with brass fittings. Double Crimp SS Ferrules.

Minimum Ratings
Temperature Range: 5°F to 212°F
1/2" 375 PSIG Operating, 1500 PSIG Burst
3/4" 300 PSIG Operating, 1200 PSIG Burst
1.0" 225 PSIG Operating, 900 PSIG Burst
1.25" 200 PSIG Operating, 800 PSIG Burst
1.50" 175 PSIG Operating, 600 PSIG Burst
2.0" 150 PSIG Operating, 500 PSIG Burst

BALL VALVES

Manufacturer
Macon Balancing
Models AB, BB, MB, SB

Design and Material
.50" – 2.0" forged or cast brass body.
EPDM O-ring. Plated steel handle with vinyl grip.
Blow out-proof stem. Chrome plated ball with Teflon seats. Fixed End available in FNPT, SWT or Press End. Tailpieces available in MNPT FNPT, SWT or Press End. Size reductions available.

Minimum Ratings
600 PSIG @ 250°F

PRESSURE / TEMPERATURE PORTS

Manufacturer
Macon Balancing
Models PT, PTV

Design and Materials
PT Brass body. Dual durometer EPDM core.
Brass cap with EPDM O-ring and neoprene strap.
Accepts 1/8" diameter gage adapter or thermometer stem. 1/4" and 1/2" NPT.
PTV Brass body. Dual durometer EPDM core.
Brass cap with EPDM O-ring and neoprene strap.
Side air vent with 1/8" hose barb. Accepts 1/8" diameter gage adapter or thermometer stem.
1/4" and 1/2" NPT.

Minimum Ratings
PT 500 PSIG @ 250°F
PTV 250 PSIG @ 250 °F