

ARMSTRONG NANOBUBBLE GENERATOR

SYSTEM SOLUTION FOR SCALE REMOVAL AND INHIBITION

The Nanobubble Generator is a proven solution for the inhibition and removal of scale in hot water systems. This patented technology is easily installed, has no moving parts, requires no maintenance or additional electrical inputs, and uses no chemicals.

Whether it's on a heat exchanger or strategically placed within the hot water piping infrastructure to address the entire system, the Nanobubble Generator significantly reduces scale, which improves the overall health of the hot water system and drives operational efficiencies, leading to a smaller carbon footprint.



Armstrong Nanobubble Generator Model ANG25



Armstrong Nanobubble Generator Model ANG80

Designs, materials, weights, and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com for the most up-to-date information.

ARMSTRONG NANOBUBBLE GENERATOR

OPERATING RANGES

Armstrong Nanobubble Generator - Recommended Operating Ranges													
3/4" x 1-1/2"		1" x 2"		1-1/2" x 2-1/2"		2" x 3"		3" x 4"		4" x 6"		6" x 8"	
ANG20		ANG25		ANG40		ANG50		ANG80		ANG100		ANG150	
GPM	Pressure Drop (psi)	GPM	Pressure Drop (psi)	GPM	Pressure Drop (psi)	GPM	Pressure Drop (psi)	GPM	Pressure Drop (psi)	GPM	Pressure Drop (psi)	GPM	Pressure Drop (psi)
1.1	2.5	6.7	2.5	20.9	2.7	43.0	3.5	60.0	3.0	150.0	2.8	350.0	3.2
1.4	3.1	8.3	3.1	26.5	3.4	46.0	3.9	70.0	3.4	175.0	3.3	400.0	3.7
1.7	3.8	10	3.8	32.1	4.1	50.0	4.4	80.0	3.9	200.0	3.8	450.0	4.2
1.9	4.4	11.7	4.4	35	4.5	53.0	4.6	90.0	4.4	225.0	4.2	500.0	4.6
2.2	5.0	13.3	5	37.8	5	56.0	4.8	100.0	4.9	250.0	4.7	550.0	5.1
2.5	5.6	15	5.6	39.3	5.3	60.0	5.0	110.0	5.4	275.0	5.2	600.0	5.5
2.8	6.3	16.7	6.3	40.6	5.7	63.0	5.3	120.0	5.9	300.0	5.6	650.0	6.0
3.1	6.9	17.5	6.6	42	6	66.0	5.8	130.0	6.4	325.0	6.1	700.0	6.5
3.3	7.5	18.3	6.9	43.5	6.4	70.0	6.3	140.0	6.9	350.0	6.6	750.0	6.9
3.6	8.1	20	7.5	44.9	6.8	73.0	6.5	150.0	7.4	375.0	7.0	800.0	7.4
3.7	8.4	21.7	8.1	46.3	7.1	76.0	7.0	160.0	7.9	400.0	7.5	850.0	7.8
3.9	8.8	22.5	8.4	47.7	7.5	80.0	7.5	170.0	8.4	425.0	8.0	900.0	8.3
4.0	9.0	23.3	8.8	49.1	8.1	83.0	7.7	180.0	8.9	450.0	8.4	950.0	8.8
4.2	9.4	25	9.4	52	8.2	86.0	8.2	190.0	9.4	475.0	8.9	1000.0	9.2
4.4	10.0	25.8	9.7	54.9	8.3	90.0	8.8	200.0	9.8	500.0	9.4	1050.0	9.7
4.6	10.4	26.7	10	57.7	9.3	93.0	9.4	210.0	10.3	525.0	9.8	1100.0	10.2
4.7	10.6	28.3	10.6	60.5	10.4	96.0	10.3	220.0	10.8	550.0	10.3	1150.0	10.6
5.0	11.3	30	11.3	63.4	11.4	100.0	12.5	230.0	11.3	575.0	10.8	1200.0	11.1

TECHNICAL SPECIFICATIONS

General		
Connection Size Options		3/4" NPT Female
		1" NPT Female
		1-1/2" NPT Female
		2" 150lb Flange
		3" 150lb Flange
		4" 150lb Flange
		6" 150lb Flange
Materials	ANG Unit	Type 316 Stainless Steel
	ANG Sidestream	Stainless Steel Models ONLY: Piped components use Schedule 10 and Schedule 40 stainless steel
Temperatures		
Maximum Operating Temperature		230°F (110°C)
Pressures		
Maximum Operating Pressure		150 psi (15 bar)
Maximum Allowable Pressure		200 psi (13.8 bar)
Pressure Drop Across Model		Recommended Max. Pressure Drop: 15 psi (1 bar) Recommended Min. Pressure Drop: 5 psi (0.35 bar)
Certifications and Compliance		
NSF / ANSI 61		Compliant

Designs, materials, weights, and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com for the most up-to-date information.



ARMSTRONG NANOUBBLE GENERATOR

WRITTEN SPECIFICATIONS

Category: Water Processing Equipment

Type: Nanobubble Generator

Model: ANG

1.0 General

- 1.1 Nanobubble Generator shall have an inlet at one end, an outlet at the opposite end, and a conditioning element between the inlet and outlet.
- 1.2 Nanobubble Generator shall be built with either threaded or flanged connections for either sidestream or inline installation.
- 1.3 Nanobubble Generator shall be constructed of 316L stainless steel.
- 1.4 Nanobubble Generator shall be capable of producing nanobubbles sized at 100nm.
- 1.5 Nanobubble Generator shall function as a static mixer and shall not require electrical components.

2.0 Nanobubble Generator shall have the following operational specifications:

- 2.1 Flow rate of 1 to 1,150 GPM (4,353 LPM) based on sizing criteria per model
- 2.2 Maximum 15 psig (1 barg) drop
- 2.3 Water operating pressure of 5 - 150 psig (0.35 - 10.3 barg)
- 2.4 Maximum allowable water pressure of 200 psig (13.4 barg)
- 2.5 Required velocity of 2 - 15 FPS (0.6 - 4.5 MPS)

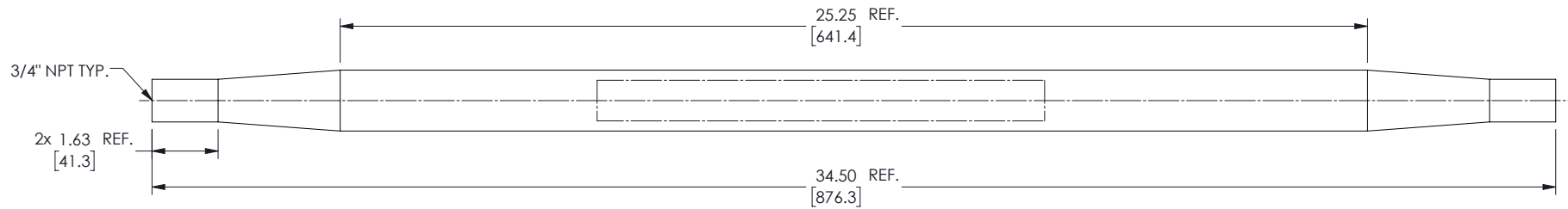
3.0 Nanobubble Generator shall be built to ASME Section IV B31.1, B31.3.

4.1 Nanobubble Generator shall carry a 5-year warranty.

APPROVAL





BY: _____ DATE: _____

- ☐ APPROVED, PROCEED WITH FABRICATION
- ☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS
- ☐ DISAPPROVED, DO NOT FABRICATE



NOTES:
1. MAX. WATER PRESSURE 150 PSI [10.3].

				ARMSTRONG INTERNATIONAL Copyright © 2010 ARMSTRONG INTERNATIONAL, INC.	
DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]				ANG20 3/4 NPT X 1-1/2 OD SS 316	
FRACTIONAL ± 1/64 ANGULAR: ± 2		NAME Ross Pulifer		DATE 12/14/2023	
DECIMAL .XXX ± .005 .XX ± .015 .X ± .3		DRAWN		MATERIAL	
		RELEASED		CN85171	
				REV A DWG. SALES	

				ARMSTRONG INTERNATIONAL Copyright © 2010 ARMSTRONG INTERNATIONAL, INC.																									
DO NOT SCALE DRAWING				ANG25 1 NPT X 2 OD SS 316																									
TOLERANCES UNLESS OTHERWISE SPECIFIED																													
DIMENSIONING ENGLISH (mm)																													
FRACTIONAL ± 1/64 ANGULAR: ± 2																													
<table><tr><th></th><th>IN</th><th>MM</th></tr><tr><td>DECIMAL .XXXX</td><td>± .0005</td><td>-----</td></tr><tr><td>.XXX</td><td>± .005</td><td>.010</td></tr><tr><td>.XX</td><td>± .015</td><td>.10</td></tr><tr><td>.X</td><td>± .3</td><td></td></tr></table>			IN	MM	DECIMAL .XXXX	± .0005	-----	.XXX	± .005	.010	.XX	± .015	.10	.X	± .3		<table><tr><th></th><th>NAME</th><th>DATE</th></tr><tr><td>DRAWN</td><td>Ross Pulfer</td><td>12/14/2023</td></tr><tr><td>RELEASED</td><td></td><td></td></tr></table>			NAME	DATE	DRAWN	Ross Pulfer	12/14/2023	RELEASED			MATERIAL	
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DECIMAL .XXXX	± .0005	-----																											
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DRAWN	Ross Pulfer	12/14/2023																											
RELEASED																													
		CN85171		SHEET 1 OF 1																									
				REV A DWG. SALES																									

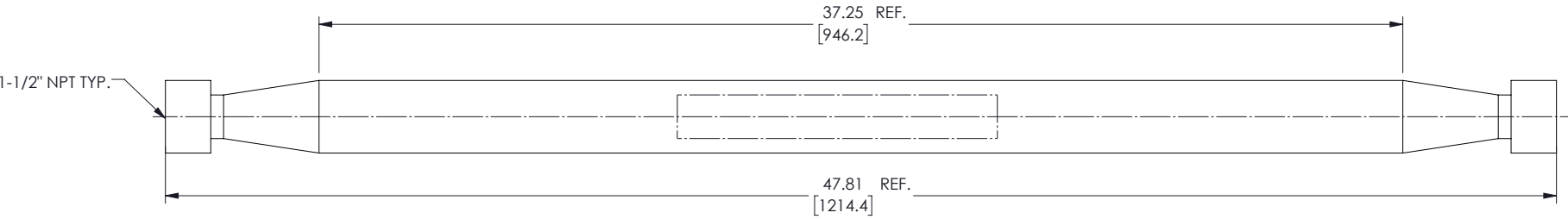
APPROVAL

BY: _____ DATE: _____

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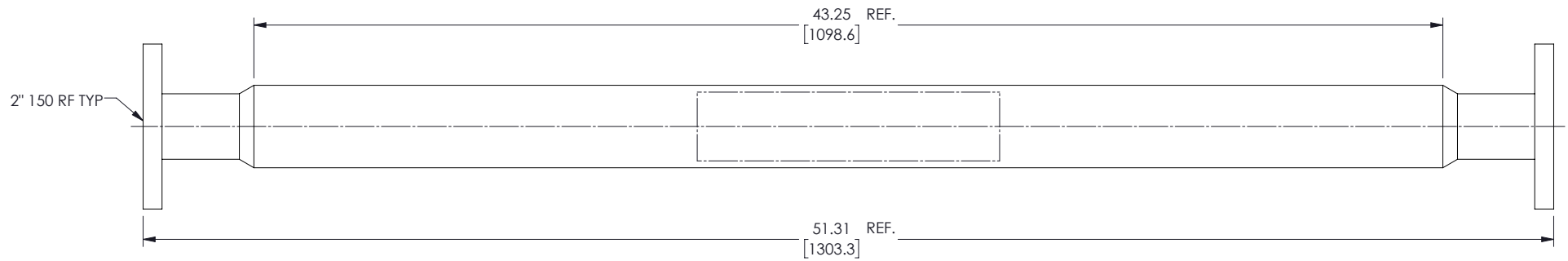
NOTES:
1. MAX. WATER PRESSURE 150 PSI [10.3].

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DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]		ANG40 1-1/2 NPT X 2-1/2 OD SS 316	
FRACTIONAL ± 1/64 ANGULAR: ± 2		DATE 12/14/2023	
DECIMAL .XXX ± .005 .XX ± .015 .X ± .3		DRAWN Ross Pulfer	
		RELEASED 1/5/2024	
		MATERIAL	
		SHEET 1 OF 1	
		REV A DWG. SALES	


APPROVAL

BY: _____ DATE: _____

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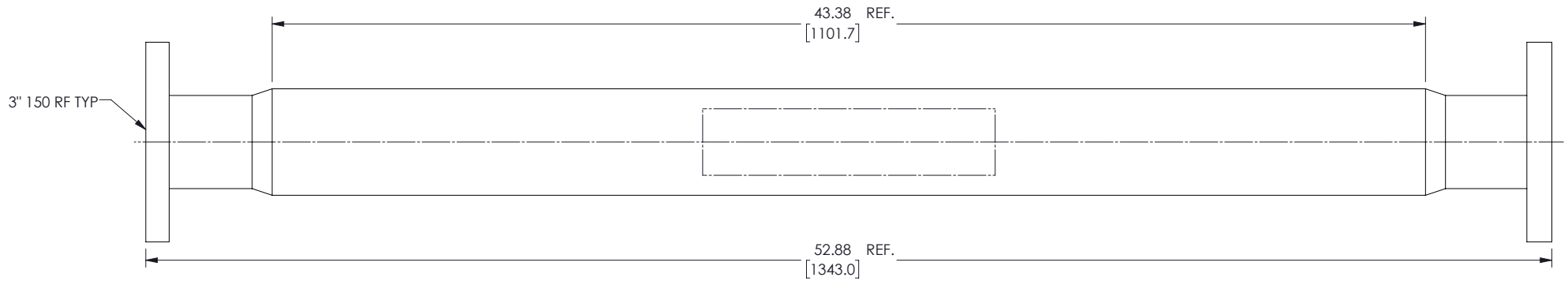
NOTES:
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DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]		ANG50 2 150 RF X 3 OD SS 316	
FRACTIONAL ± 1/64 ANGULAR: ± 2		SHEET 1 OF 1	
DECIMAL .XXXX ± .0005 .XXX ± .005 .XX ± .015 .X ± .3		NAME Ross Pulifer	DATE 12/14/2023
DRAWN		MATERIAL CN85171	
RELEASED		REV. A	DWG. SALES


APPROVAL

BY: _____ DATE: _____

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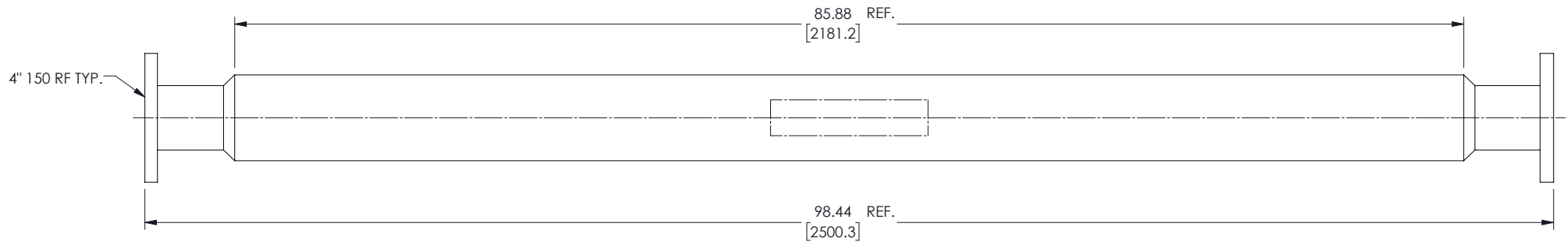
NOTES:
1. MAX. WATER PRESSURE 150 PSI [10.3].

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		ANG80 3 150 RF X 4 OD SS 316	
DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]		NAME Ross Pulifer	DATE 12/14/2023
FRACTIONAL ± 1/64 ANGULAR: ± 2		DRAWN	MATERIAL
DECIMAL .XXX ± .005 .010 .XX ± .015 .10 .X ± .3		RELEASED	REV A DWG. SALES


APPROVAL

BY: _____ DATE: _____

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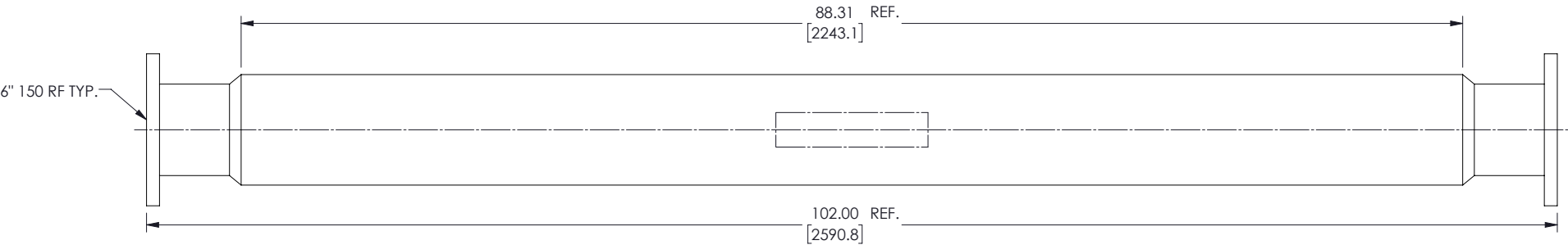
NOTES:
1. MAX. WATER PRESSURE 150 PSI [10.3].

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DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]		ANG100 4 150 RF X 6 OD SS 316	
FRACTIONAL ± 1/64 ANGULAR: ± 2		SHEET 1 OF 1	
DECIMAL .XXX ± .005 .010 .XX ± .015 .10 .X ± .3		MATERIAL	
DRAWN Ross Pulfer		DATE 12/14/2023	
RELEASED		REV A DWG. SALES	



APPROVAL

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DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED				ANG150 6 150 RF X 8 OD SS 316	
DIMENSIONING ENGLISH [mm]					
FRACTIONAL ± 1/64 ANGULAR: ± 2					
DECIMAL		.XXXX ± .0005 .XXX ± .005 .XX ± .015 .X	IN. MM		
				NAME Ross Pulfer	DATE 12/14/2023
DRAWN				MATERIAL	
RELEASED				CN85171	REV. A DWG. SALES
					SHEET 1 OF 1

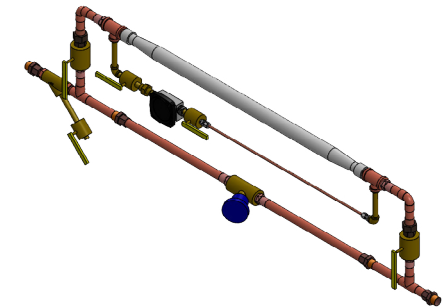
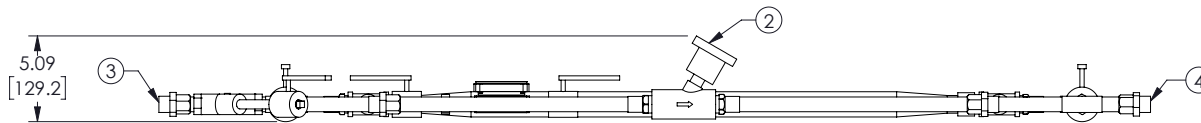
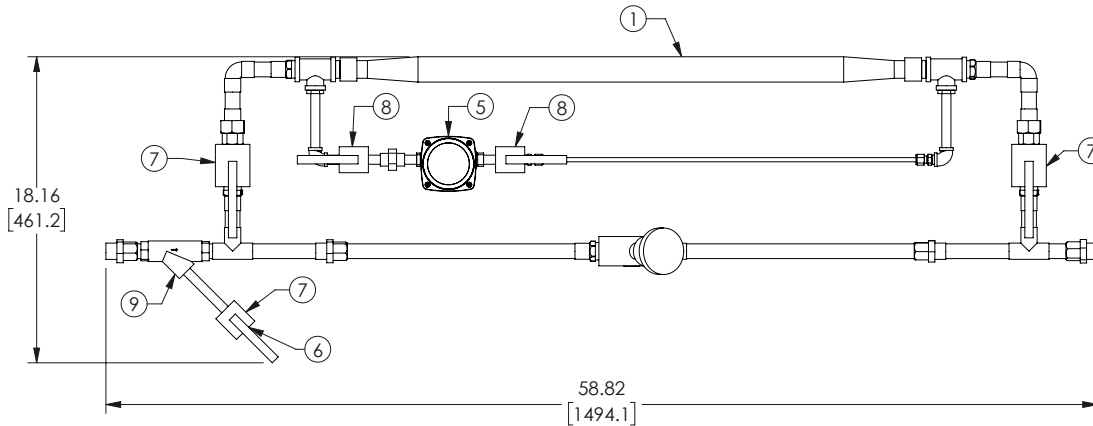
APPROVAL

BY: _____ DATE: _____

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☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

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PROJECT NAME:

TAG:

ITEM DESCRIPTION	CONNECTION
1 ANG20 (1)	3/4" NPT
2 BALANCE VALVE (1)	3/4" NPT
3 WATER INLET	3/4" SWT
4 WATER OUTLET	3/4" SWT
5 DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6 BLOWDOWN (1)	1/4" NPT
7 BALL VALVE (2) & (1)	3/4" & 1/4" NPT
8 BALL VALVE (2)	1/4" NPT
9 STRAINER (1)	3/4" NPT
ITEM	MATERIAL
PIPING	COPPER TYPE "L"

NOTES:

1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D195377

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]	
FRACTIONAL ± 1/64	
ANGULAR: ± 2	
DECIMAL	
.XXX ± .0005	.10
.XX ± .015	.10
.X ± .3	.3



NAME	DATE
DRAWN Ross Pulifer	06/26/2024
RELEASED	4/22/2025

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ANG20PP-CPR 3/4 CPR PREPIPED WITH BYPASS	
MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

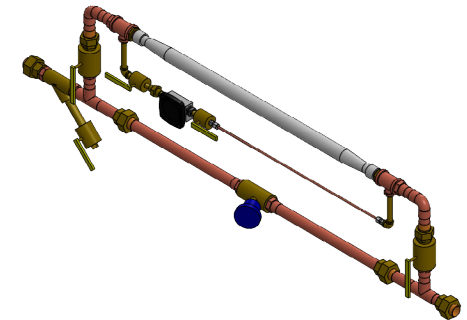
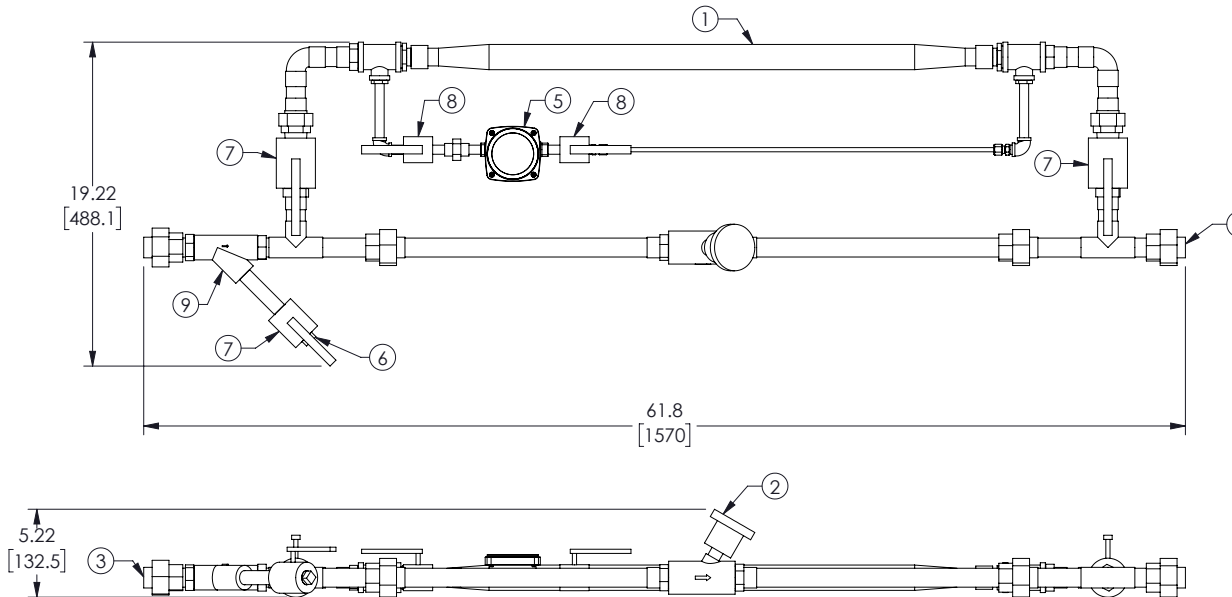
APPROVAL

BY: _____ DATE: _____

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
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PROJECT NAME:		
TAG:		
ITEM	DESCRIPTION	CONNECTION
1	ANG20 (1)	3/4" NPT
2	BALANCE VALVE (1)	1" NPT
3	WATER INLET	1" SWT
4	WATER OUTLET	1" SWT
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2) & (1)	1" NPT & 1/2" NPT
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1" NPT
ITEM		MATERIAL
PIPING		COPPER TYPE "L"

NOTES:

1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D195378

																						
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TOLERANCES UNLESS OTHERWISE SPECIFIED																						
DIMENSIONING ENGLISH [mm]																						
FRACTIONAL: $\pm 1/64$																						
ANGULAR: ± 2																						
DECIMAL	<table><tr><td>.XXX</td><td>$\pm .0005$</td><td>----</td></tr><tr><td>.XX</td><td>$\pm .005$</td><td>.01</td></tr><tr><td>.X</td><td>$\pm .015$</td><td>.10</td></tr><tr><td></td><td>-----</td><td>.3</td></tr></table>	.XXX	$\pm .0005$	----	.XX	$\pm .005$.01	.X	$\pm .015$.10		-----	.3	<table><tr><td>IN.</td><td>M.</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	IN.	M.						
.XXX	$\pm .0005$	----																				
.XX	$\pm .005$.01																				
.X	$\pm .015$.10																				
	-----	.3																				
IN.	M.																					

	
NAME	DATE
DRAWN Ross Pulifer	06/28/2024
RELEASED	12/19/2024

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ANG20PP-CPR 1 CPR PREPIPED WITH BYPASS	
MATERIAL	SHEET 1 OF 1
REV 0 DWG.	SALES

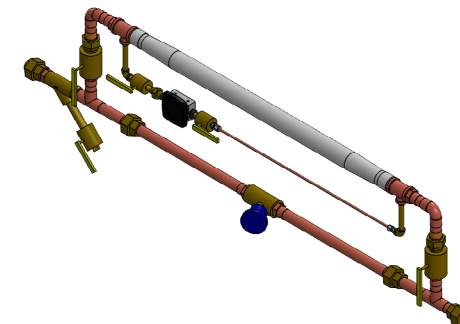
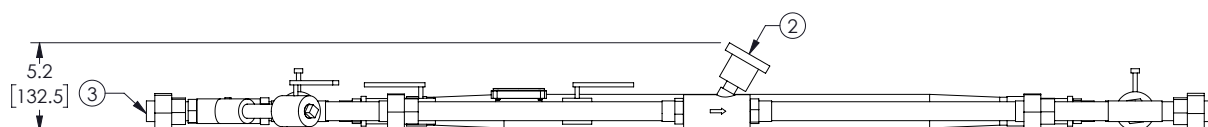
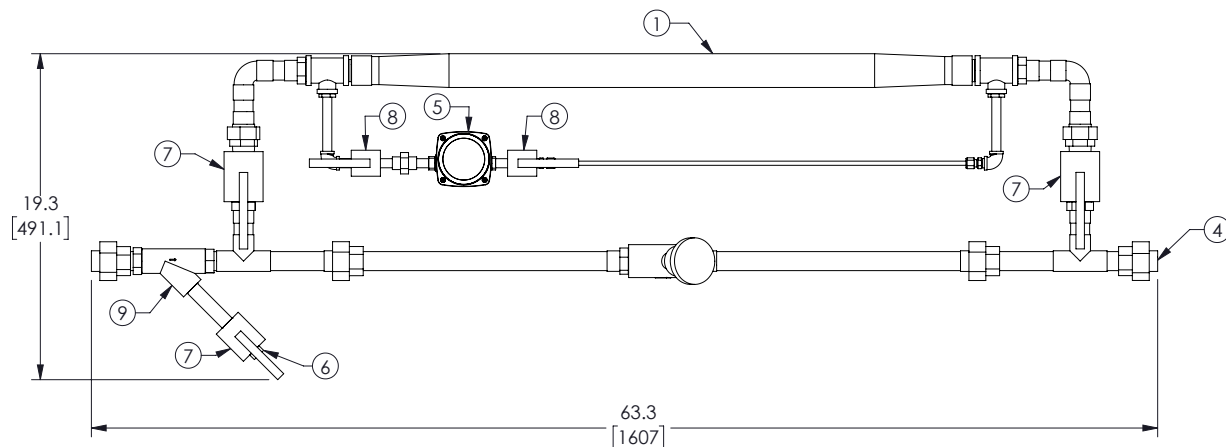
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

PROJECT NAME:


TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG25 (1)	1" NPT
2	BALANCE VALVE (1)	1" NPT
3	WATER INLET	1" SWT
4	WATER OUTLET	1" SWT
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2) & (1)	1" NPT & 1/2" NPT
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1" NPT
ITEM		MATERIAL
PIPING		COPPER TYPE "L"

NOTES:

1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D195379

		
DO NOT SCALE DRAWING		
TOLERANCES UNLESS OTHERWISE SPECIFIED		
DIMENSIONING		
ENGLISH [mm]		
FRACTIONAL $\pm 1/64$		
ANGULAR: ± 2		
DECIMAL	.XXX $\pm .0005$	<u>IN.</u> <u>M.</u>
	.XXX $\pm .005$.010
	.XX $\pm .015$.10
	.X -----	.3

	
NAME	DATE
DRAWN Ross Pulifer	07/02/2024
RELEASED	4/22/2025

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MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

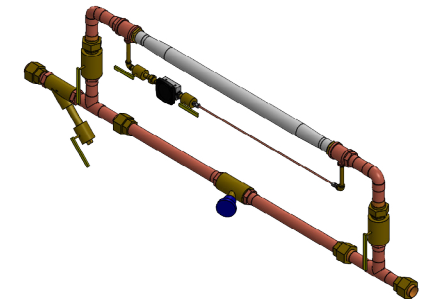
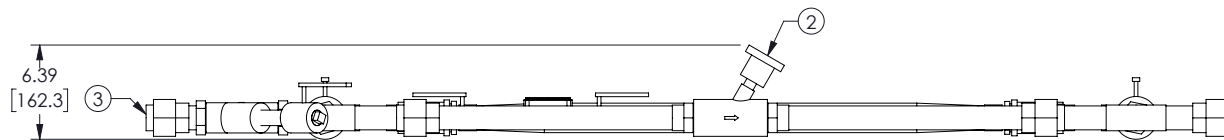
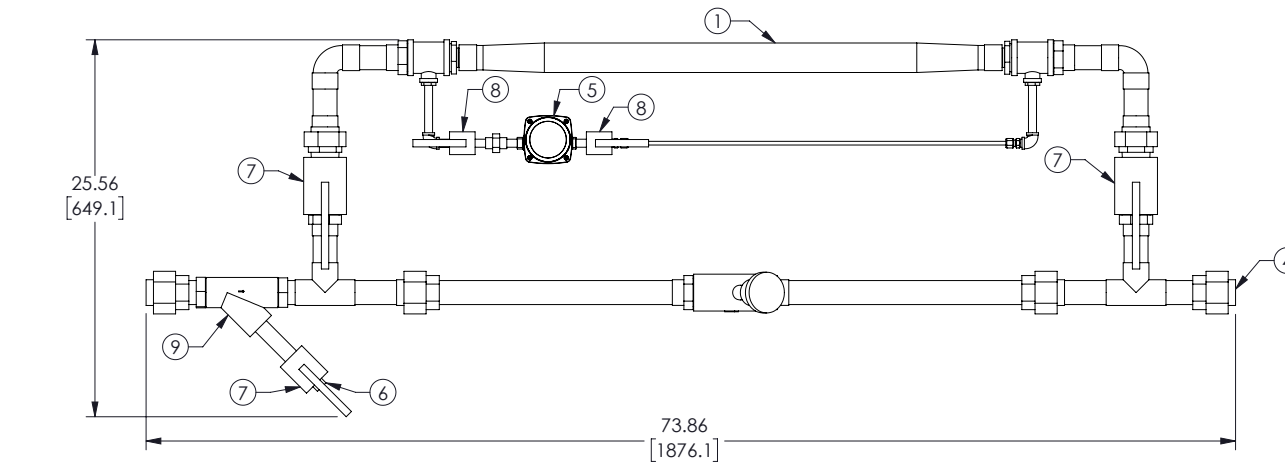
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BY: _____ DATE: _____

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☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG25 (1)	1" NPT
2	BALANCE VALVE (1)	1-1/2" NPT
3	WATER INLET	1-1/2" SWT
4	WATER OUTLET	1-1/2" SWT
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	3/4" NPT
7	BALL VALVE (2) & (1)	1-1/2" NPT & 3/4" NPT
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1-1/2" NPT
ITEM		MATERIAL
PIPING		COPPER TYPE "L"

NOTES:

1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D195381

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH [mm]	
FRACTIONAL	$\pm 1/64$
ANGULAR:	± 2
DECIMAL	$\pm .0005$
.XXX	$\pm .005$
.XX	$\pm .015$
.X	$\pm .3$

NAME	
DATE	
DRAWN	Ross Pulifer
RELEASED	4/22/2025

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ANG25PP-CPR 1-1/2 CPR PREPIPED WITH BYPASS	
MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

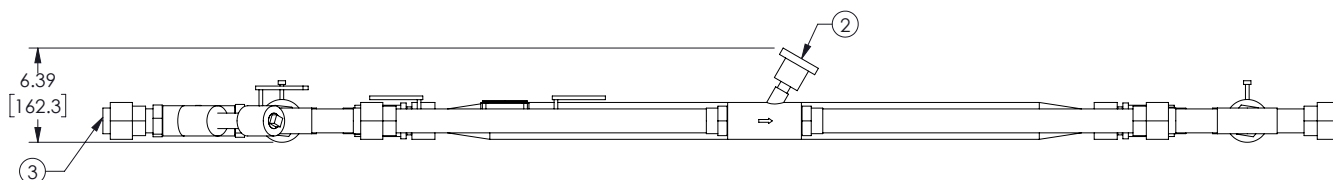
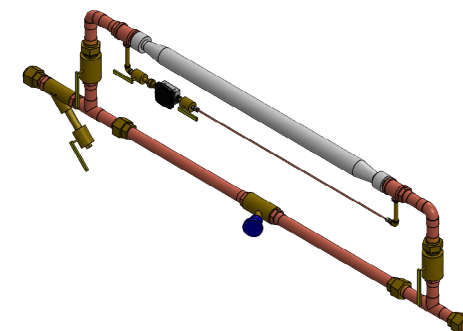
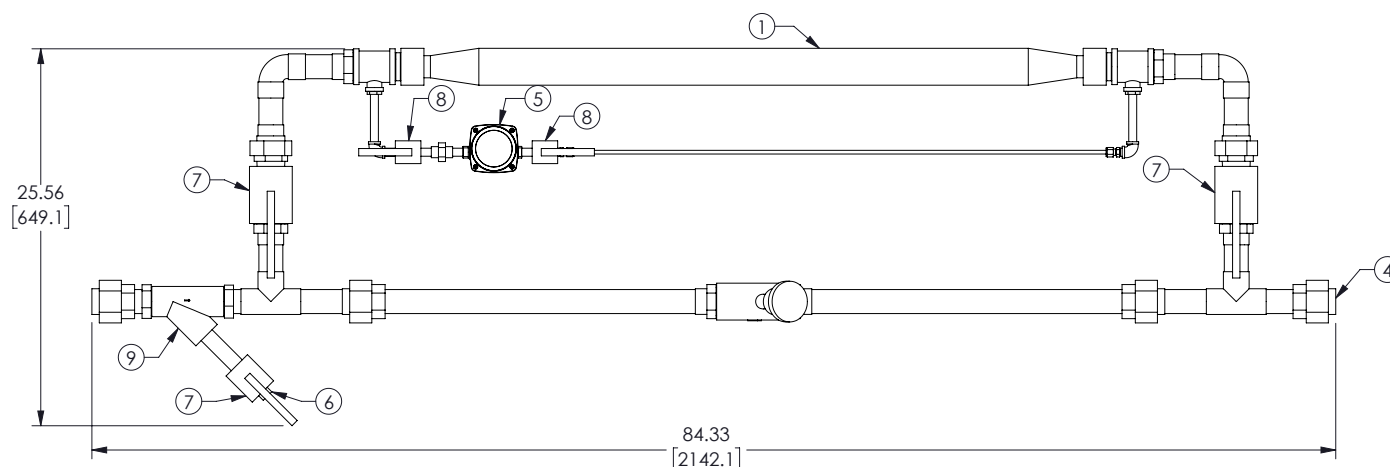
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:


TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG40 (1)	1-1/2" NPT
2	BALANCE VALVE (1)	1-1/2" NPT
3	WATER INLET	1-1/2" SWT
4	WATER OUTLET	1-1/2" SWT
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	3/4" NPT
7	BALL VALVE (2) & (1)	1-1/2" NPT & 3/4" NPT
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1-1/2" NPT
ITEM		MATERIAL
PIPING		COPPER TYPE "L"

NOTES:

1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D201146

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]	
FRACTIONAL ± 1/64	
ANGULAR: ± 2	
DECIMAL	
.XXX ± .0005	.010
.XX ± .015	.10
.X ± .3	

	
NAME	DATE
DRAWN Ross Pulifer	11/08/2024
RELEASED	12/19/2024

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MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

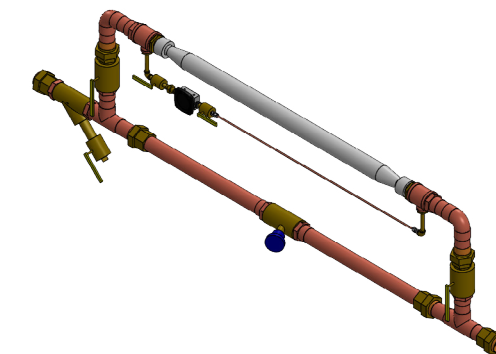
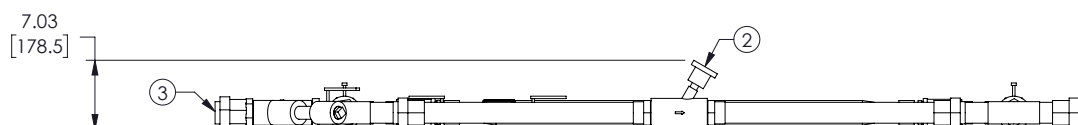
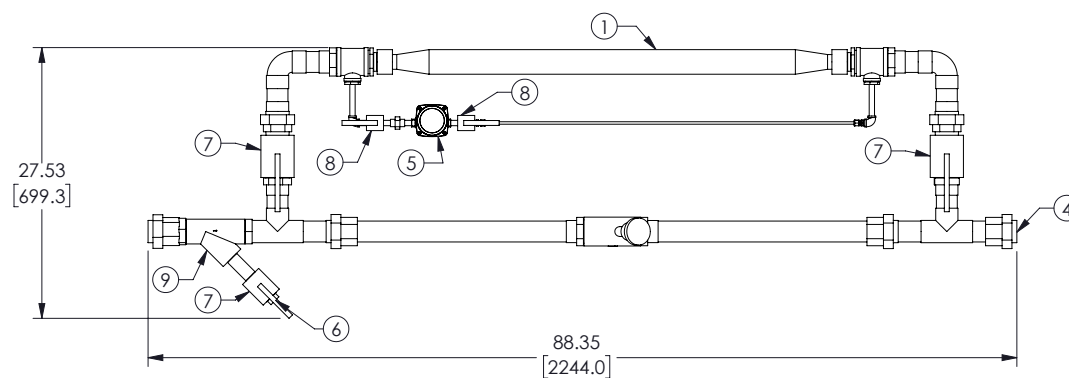
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG40 (1)	1-1/2" NPT
2	BALANCE VALVE (1)	2" NPT
3	WATER INLET	2" SWT
4	WATER OUTLET	2" SWT
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1" NPT
7	BALL VALVE (2) & (1)	2" NPT & 1" NPT
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	2" NPT
ITEM		MATERIAL
PIPING		COPPER TYPE "L"

NOTES:

1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D201147

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONING ENGLISH [mm]	
FRACTIONAL ± 1/64	
ANGULAR: ± 2	
DECIMAL	
.XXX ± .0005	.010
.XX ± .015	.10
.X ± .3	.3

NAME	
DATE	
DRAWN	11/08/2024
RELEASED	12/19/2024

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ANG40PP-CPR 2 CPR PREPARED WITH BYPASS	
MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

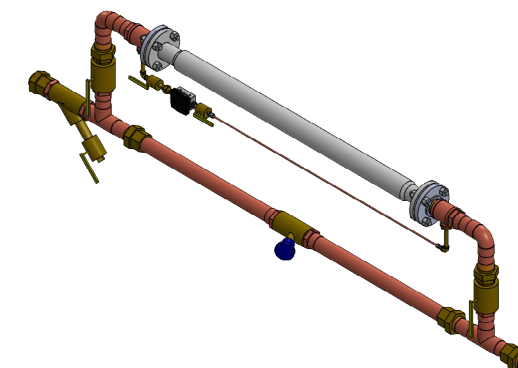
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS


☐ DISAPPROVED, DO NOT FABRICATE

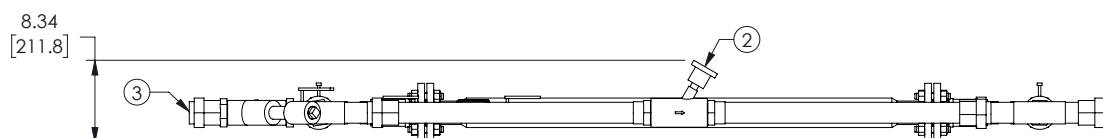
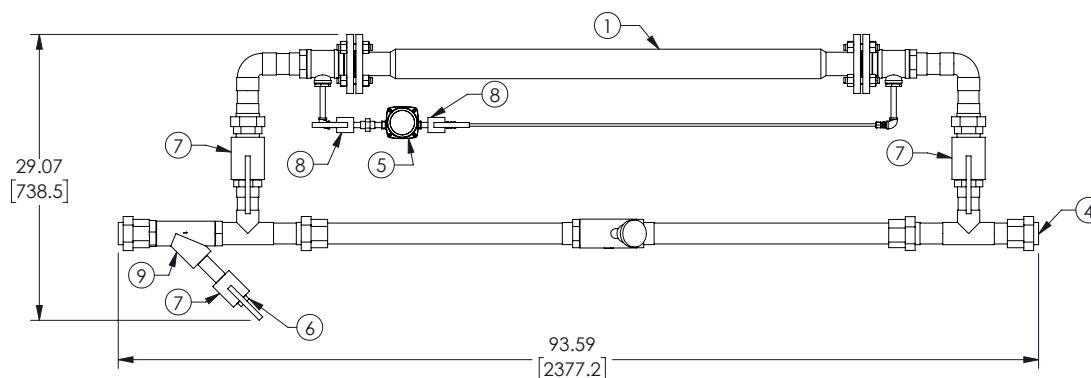


PROJECT NAME:

TAG:

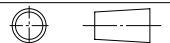
ITEM	DESCRIPTION	CONNECTION
1	ANG50 (1)	2" 150 RF
2	BALANCE VALVE (1)	2" NPT
3	WATER INLET	2" SWT
4	WATER OUTLET	2" SWT
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1" NPT
7	BALL VALVE (2) & (1)	2" NPT & 1" NPT
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	2" NPT
ITEM		MATERIAL
PIPING		COPPER TYPE "L"


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		ANG50PP-CPR 2 CPR PREPARED WITH BYPASS	
DRAWN	Ross Pulifer	DATE	07/02/2024
RELEASED		DATE	12/19/2024
MATERIAL		SHEET 1 OF 1	
REV		DWG. SALES	



NOTES:

1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D195382

	
DO NOT SCALE DRAWING	
TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH [mm]	
FRACTIONAL	± 1/64
ANGULAR:	± 2
DECIMAL	.XXX ± .0005
	.XX ± .005
	.X ± .015
	.3

	
NAME	DATE
Ross Pulifer	07/02/2024
RELEASED	12/19/2024

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ANG50PP-CPR 2 CPR PREPARED WITH BYPASS	
MATERIAL	SHEET 1 OF 1
REV	DWG. SALES

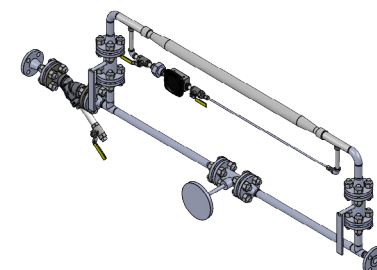
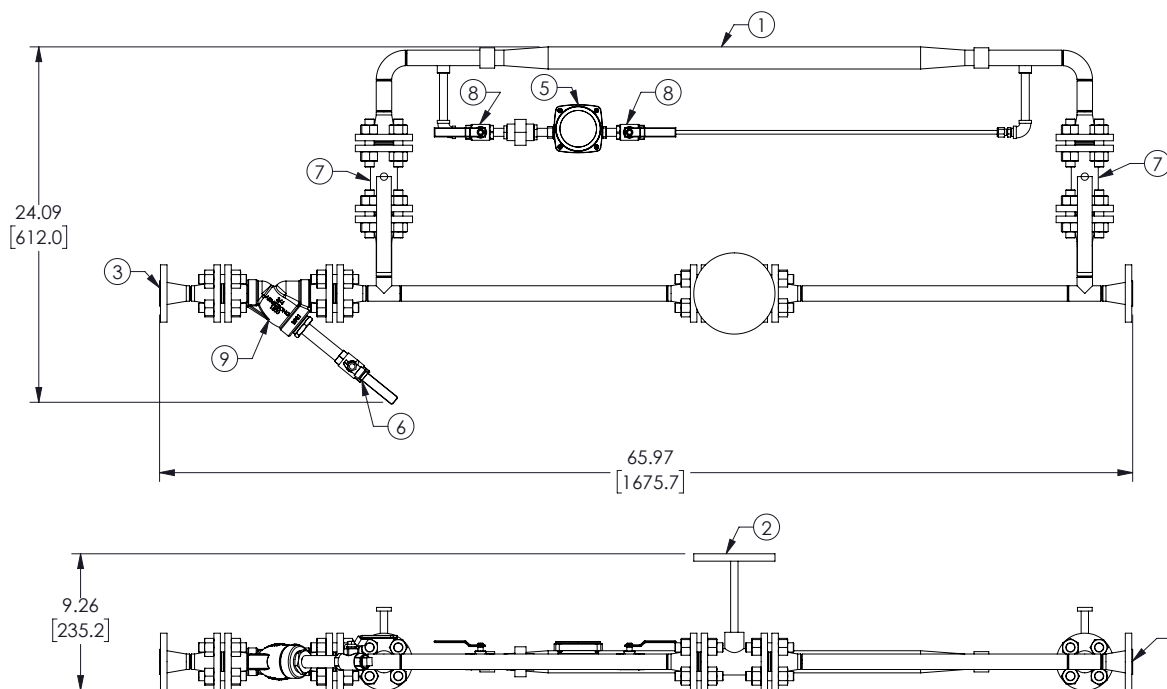
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:


ITEM	DESCRIPTION	CONNECTION
1	ANG20 (1)	3/4" NPT
2	GLOBE VALVE (1)	3/4" 150RF
3	WATER INLET	3/4" 150RF
4	WATER OUTLET	3/4" 150RF
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2)	3/4" 150RF
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	3/4" 150RF

ITEM	MATERIAL
PIPING	SS TP316L

NOTES:

- ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
- COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
- REFERENCE ARMSTRONG PART NUMBER: D195384
- GLOBE VALVE TO BE ORIENTATED SUCH THAT INCOMING FLOW IS UNDER THE SEAT

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH [mm]	
FRACTIONAL $\pm 1/64$	
ANGULAR: ± 2	
DECIMAL	
.XXX $\pm .0005$.010
.XX $\pm .005$.010
.X $\pm .015$.10
	.3

	
NAME	DATE
DRAWN Ross Pulifer	07/08/2024
RELEASED	12/18/2024

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ANG20PP-SS 3/4 SS PREPiped with BYPASS

MATERIAL SHEET 1 OF 1
CN90513 REV 0 DWG. SALES

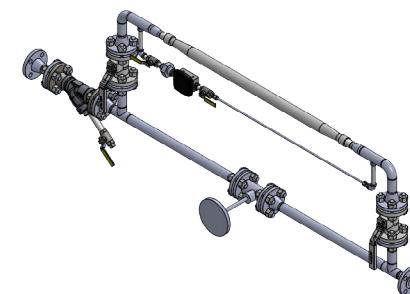
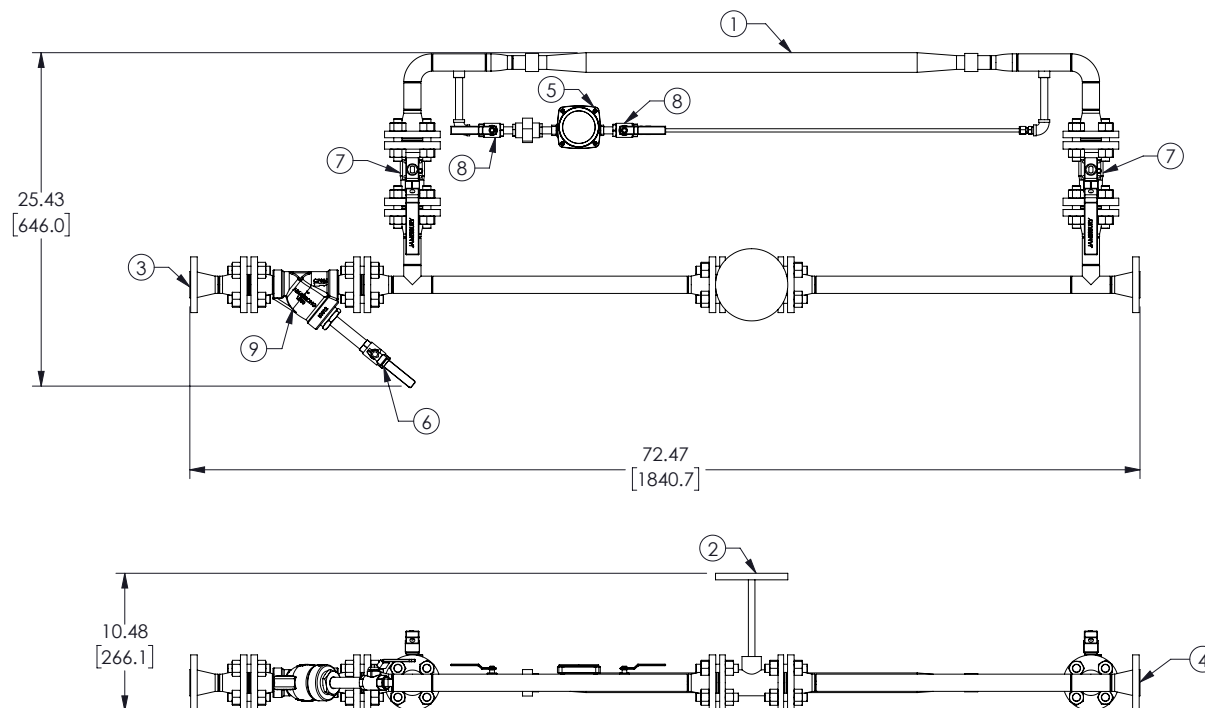
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG20 (1)	3/4" NPT
2	GLOBE VALVE (1)	1" 150RF
3	WATER INLET	1" 150RF
4	WATER OUTLET	1" 150RF
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2)	1" 150RF
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1" 150RF

ITEM	MATERIAL
PIPING	SS TP316L

NOTES:

- ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
- COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
- REFERENCE ARMSTRONG PART NUMBER: D195385
- GLOBE VALVE TO BE ORIENTATED SUCH THAT INCOMING FLOW IS UNDER THE SEAT

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH [mm]	
FRACTIONAL ± 1/64	
ANGULAR: ± 2	
DECIMAL	.XXX ± .0005 .XX ± .015 .X ± .3
	.010 .10 .3

NAME	DATE
DRAWN Ross Pulifer	07/25/2024
RELEASED	12/18/2024

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ANG20PP-SS 1 SS PREPIPED WITH BYPASS	
MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

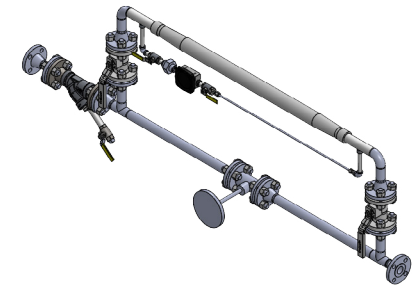
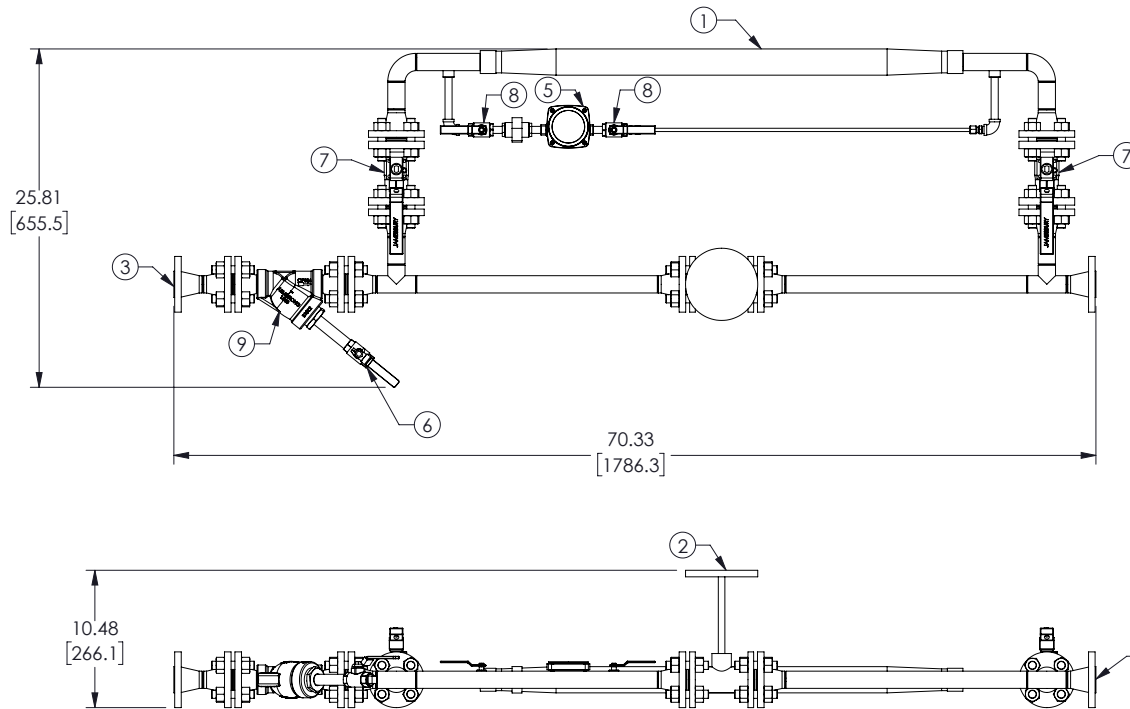
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG25 (1)	1" NPT
2	GLOBE VALVE (1)	1" 150RF
3	WATER INLET	1" 150RF
4	WATER OUTLET	1" 150RF
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2)	1" 150RF
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1" 150RF
ITEM		MATERIAL
PIPING		SS TP316L

NOTES:

- ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
- COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
- REFERENCE ARMSTRONG PART NUMBER: D195386
- GLOBE VALVE TO BE ORIENTATED SUCH THAT INCOMING FLOW IS UNDER THE SEAT

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH [mm]	
FRACTIONAL	± 1/64
ANGULAR:	± 2
DECIMAL	.XXX ± .0005 .XX ± .005 .X ± .015
	.010 .10 .3

NAME		DATE
DRAWN	Ross Pulifer	08/01/2024
RELEASED		12/18/2024

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ANG25PP-SS 1 SS PREPIPED WITH BYPASS	
MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

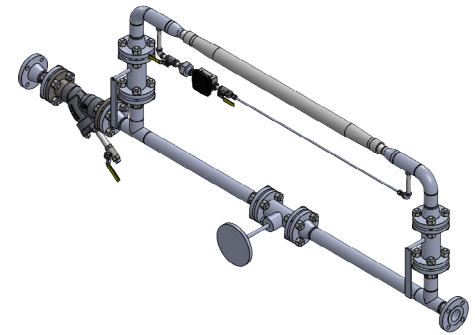
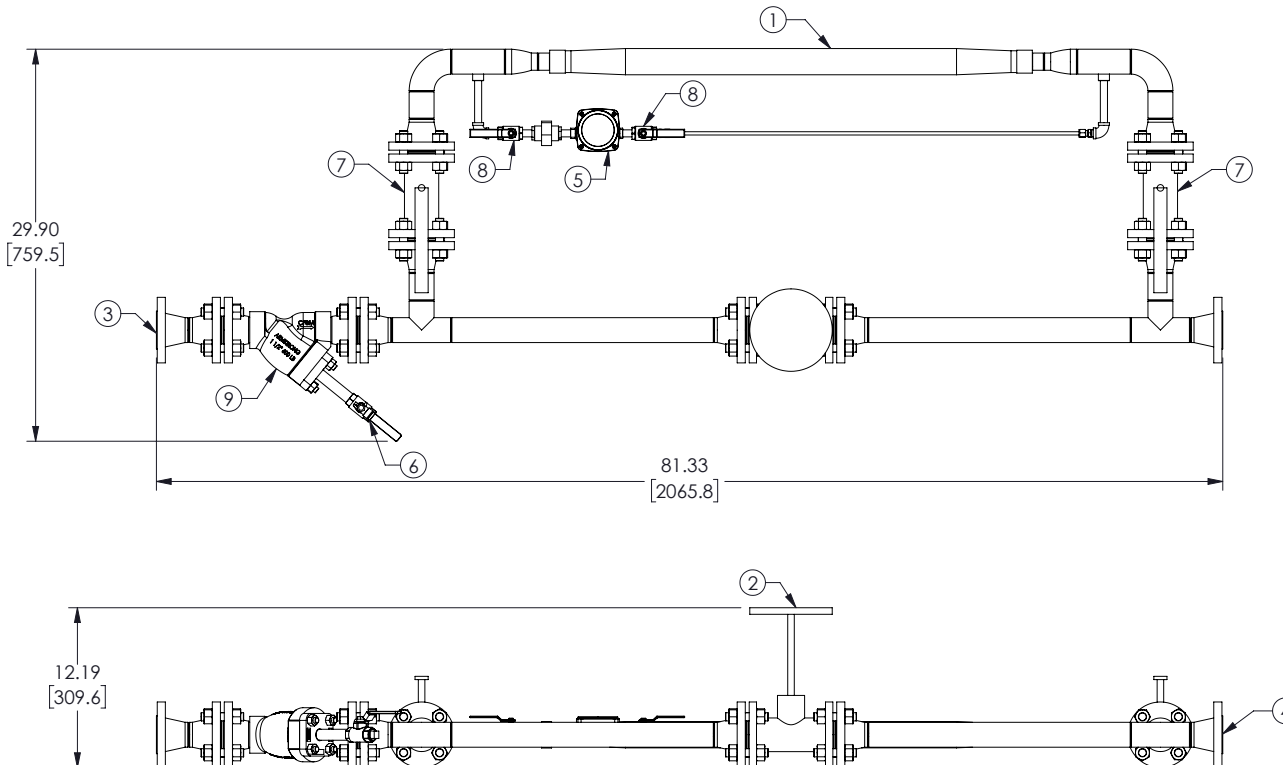
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG25 (1)	1" NPT
2	GLOBE VALVE (1)	1-1/2" 150RF
3	WATER INLET	1-1/2" 150RF
4	WATER OUTLET	1-1/2" 150RF
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2)	1-1/2" 150RF
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1-1/2" 150RF

ITEM	MATERIAL
PIPING	SS TP316L

NOTES:

- ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
- COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
- REFERENCE ARMSTRONG PART NUMBER: D195387
- GLOBE VALVE TO BE ORIENTATED SUCH THAT INCOMING FLOW IS UNDER THE SEAT

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH [mm]	
FRACTIONAL	± 1/64
ANGULAR:	± 2
DECIMAL	.XXX ± .0005 .XX ± .005 .X ± .015
	.010 .10 .3



NAME	DATE
ROSS PULFIR	08/01/2024
RELEASED	12/18/2024

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ANG25PP-SS 1-1/2 SS PREPARED WITH BYPASS

MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

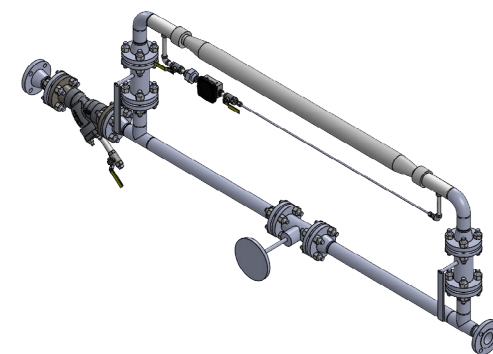
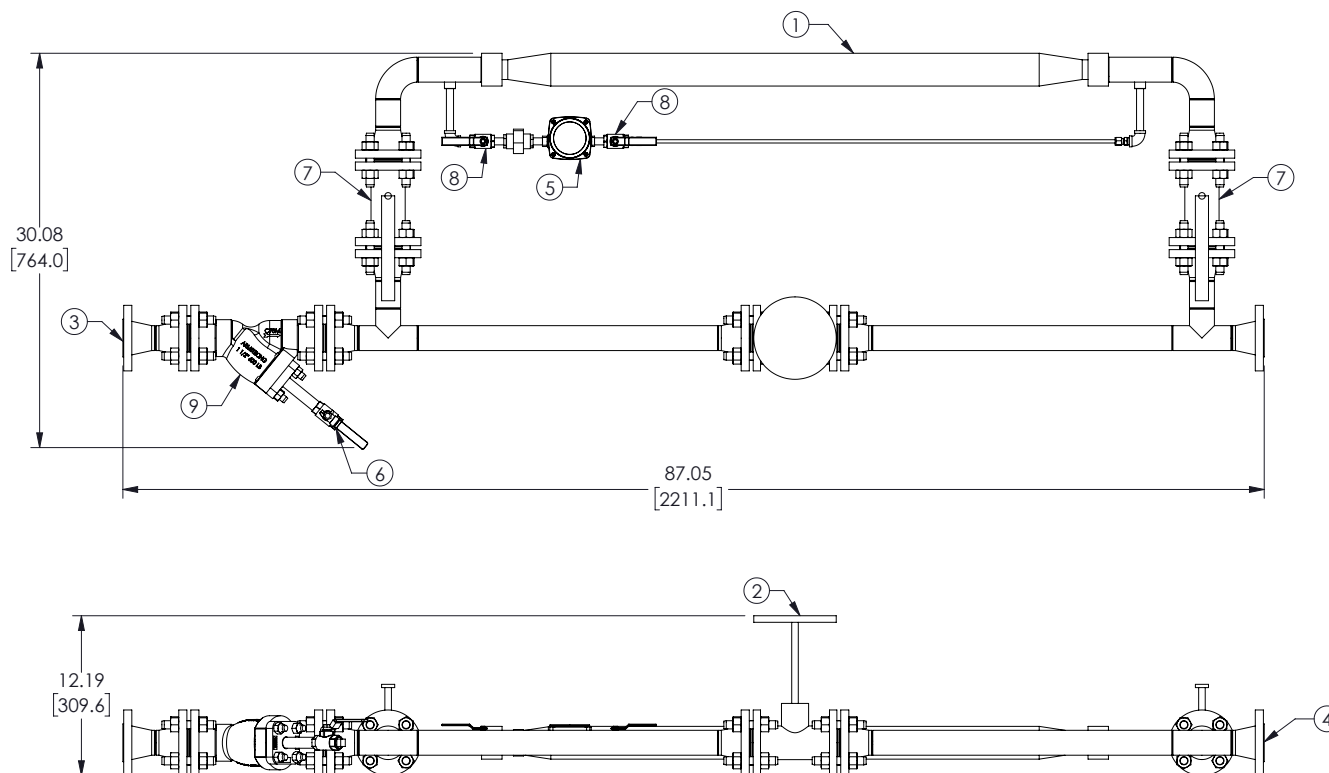
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:


ITEM	DESCRIPTION	CONNECTION
1	ANG40 (1)	1-1/2" NPT
2	GLOBE VALVE (1)	1-1/2" 150RF
3	WATER INLET	1-1/2" 150RF
4	WATER OUTLET	1-1/2" 150RF
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2)	1-1/2" 150RF
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	1-1/2" 150RF

ITEM	MATERIAL
PIPING	SS TP316L

NOTES:

- ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
- COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
- REFERENCE ARMSTRONG PART NUMBER: D201148
- GLOBE VALVE TO BE ORIENTATED SUCH THAT INCOMING FLOW IS UNDER THE SEAT

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH [mm]	
FRACTIONAL $\pm 1/64$	
ANGULAR: ± 2	
DECIMAL	
.XXX $\pm .0005$.010
.XX $\pm .005$.010
.X $\pm .015$.3

	
NAME	DATE
DRAWN Ross Pulifer	11/11/2024
RELEASED	12/18/2024

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ANG40PP-SS 1-1/2 SS PREPiped with
BYPASS

MATERIAL	SHEET 1 OF 1
REV 0	DWG. SALES

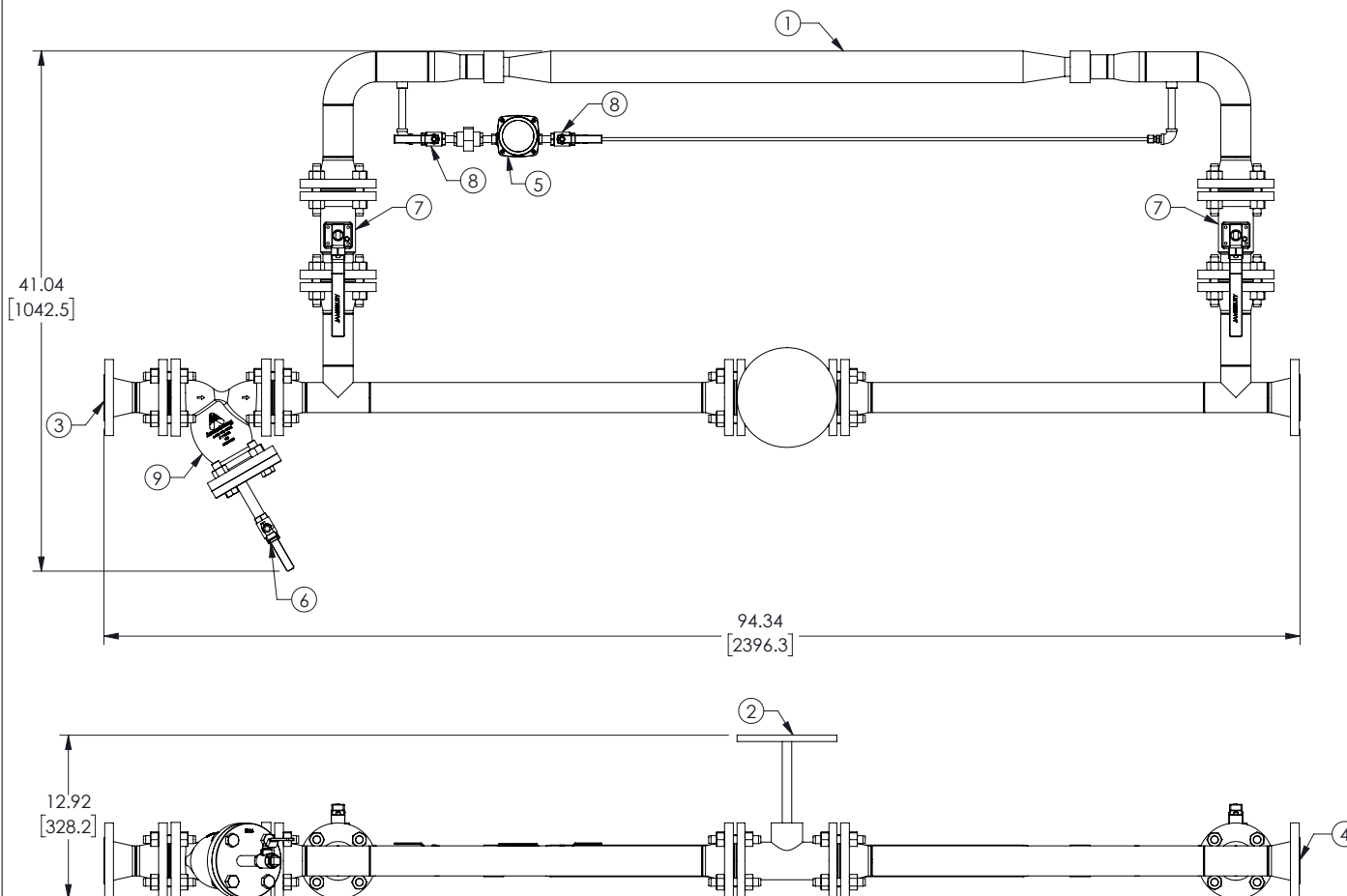
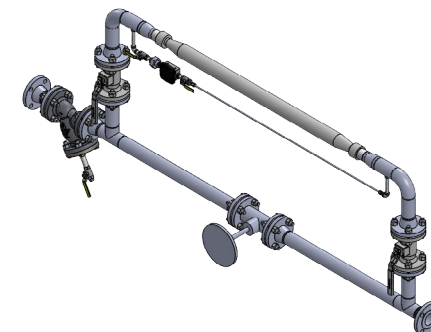
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



NOTES:



1. ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
2. COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
3. REFERENCE ARMSTRONG PART NUMBER: D201149
4. GLOBE VALVE TO BE ORIENTATED SUCH THAT INCOMING FLOW IS UNDER THE SEAT


PROJECT NAME:

TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG40 (1)	1-1/2" 150RF
2	GLOBE VALVE (1)	2" 150RF
3	WATER INLET	2" 150RF
4	WATER OUTLET	2" 150RF
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2)	2" 150RF
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	2" 150RF

ITEM	MATERIAL
PIPING	SS TP316L

		
DO NOT SCALE DRAWING		
TOLERANCES UNLESS OTHERWISE SPECIFIED		
DIMENSIONING		
ENGLISH [mm]		
FRACTIONAL $\pm 1/64$		
ANGULAR: ± 2		
DECIMAL	.XXX $\pm .0005$	<u>IN.</u> <u>M.</u>
	.XXX $\pm .005$.010
	.XX $\pm .015$.10
	.X -----	.3

	
NAME	DATE
DRAWN Ross Pulifer	11/11/2024
RELEASED	12/18/2024

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ANG40PP-SS 2 SS PREPIPED WITH BYPASS

MATERIAL SHEET 1 OF 1
REV 0 DWG. SALES

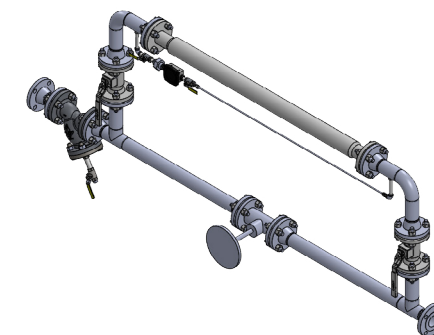
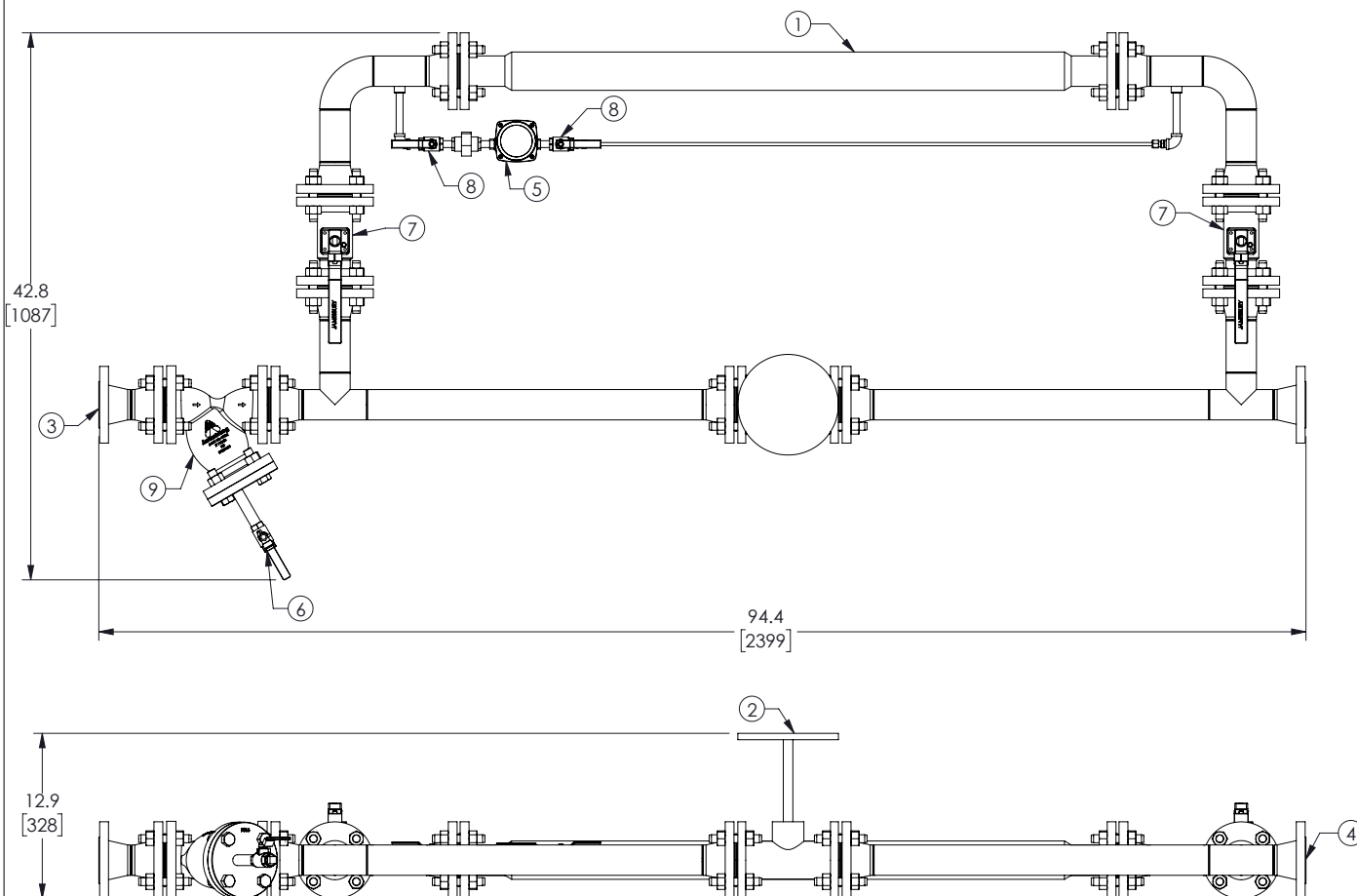
APPROVAL

BY: _____ DATE: _____

☐ APPROVED, PROCEED WITH FABRICATION

☐ APPROVED AS NOTED, PROCEED WITH FABRICATION IN ACCORDANCE WITH COMMENTS

☐ DISAPPROVED, DO NOT FABRICATE



PROJECT NAME:

TAG:

ITEM	DESCRIPTION	CONNECTION
1	ANG50 (1)	2" 150RF
2	GLOBE VALVE (1)	2" 150RF
3	WATER INLET	2" 150RF
4	WATER OUTLET	2" 150RF
5	DIFFERENTIAL PRESSURE GAUGE (1)	1/4" NPT
6	BLOWDOWN (1)	1/2" NPT
7	BALL VALVE (2)	2" 150RF
8	BALL VALVE (2)	1/4" NPT
9	STRAINER (1)	2" 150RF
ITEM		MATERIAL
PIPING		SS TP316L

NOTES:

- ALL DIMENSIONS +/-1[25] UNLESS OTHERWISE SPECIFIED
- COMPLETE ASSEMBLY LEAD FREE COMPLIANT - THE WETTED SURFACE OF THIS PRODUCT CONTACTED BY CONSUMABLE WATER CONTAINS LESS THAN ONE QUARTER OF ONE PERCENT (0.25%) OF LEAD BY WEIGHT.
- REFERENCE ARMSTRONG PART NUMBER: D195388
- GLOBE VALVE TO BE ORIENTATED SUCH THAT INCOMING FLOW IS UNDER THE SEAT

DO NOT SCALE DRAWING TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIMENSIONING ENGLISH (mm)	
FRACTIONAL ± 1/64	
ANGULAR: ± 2	
DECIMAL	
.XXX ± .0005	.10
.XX ± .005	.10
.X ± .015	.3



NAME	DATE
ROSS PULFIR	08/02/2024
RELEASED	DATE
	12/18/2024

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