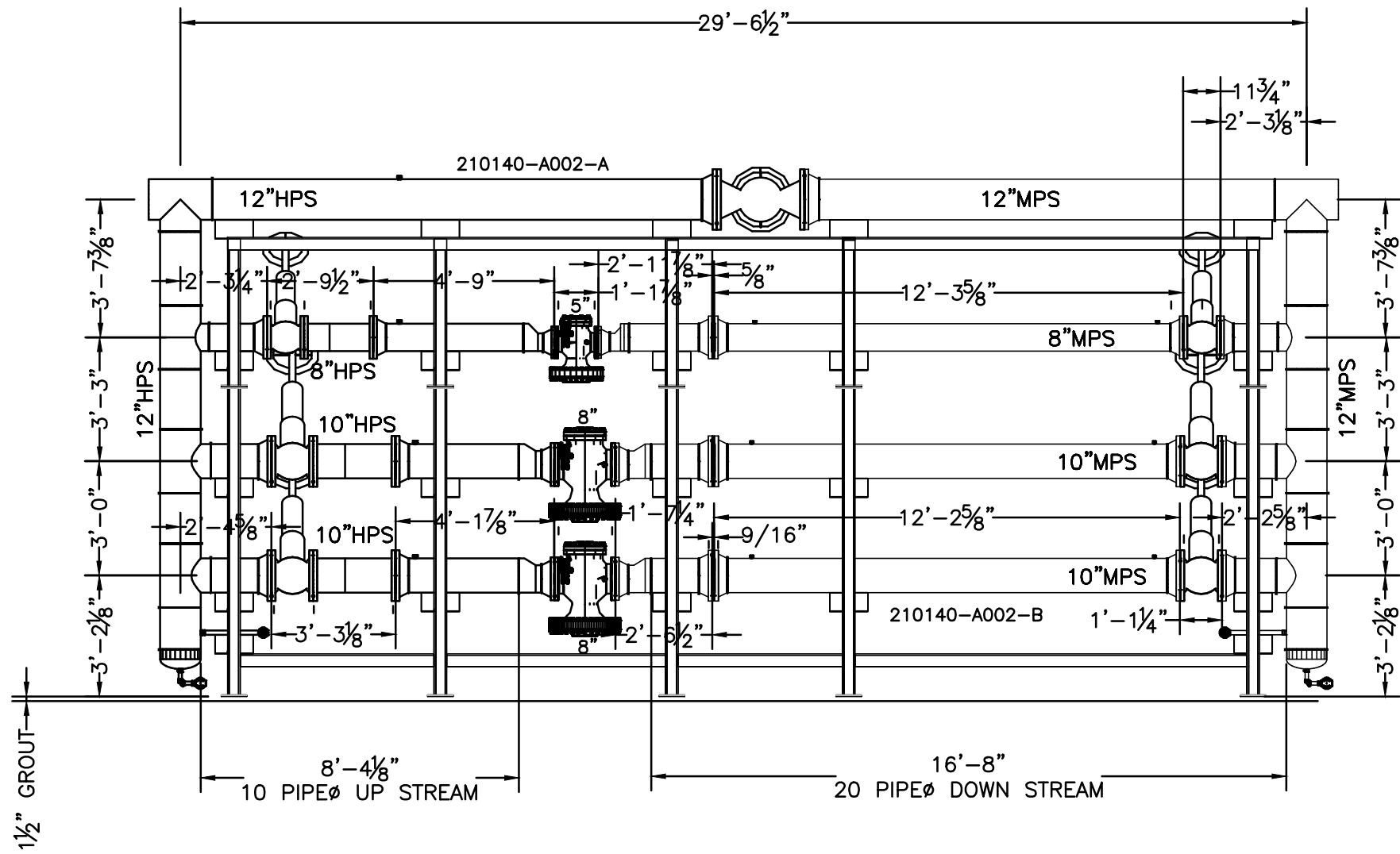
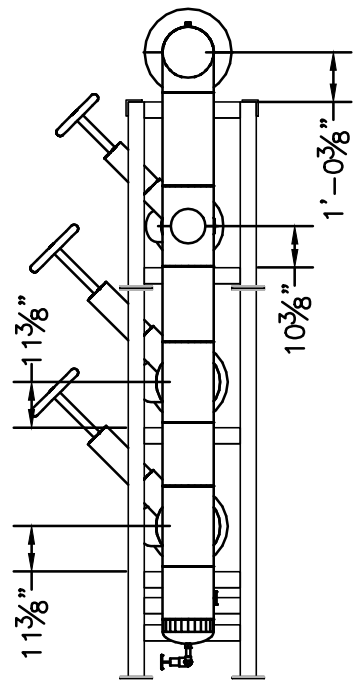


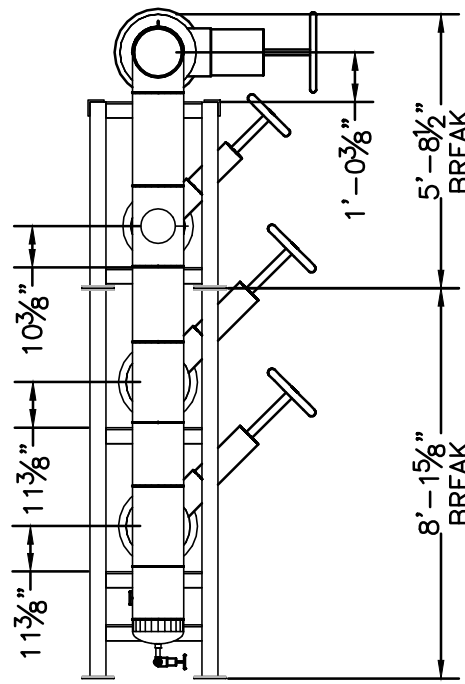
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12/02/2020 9:52am  
jmurphy

COATINGS	
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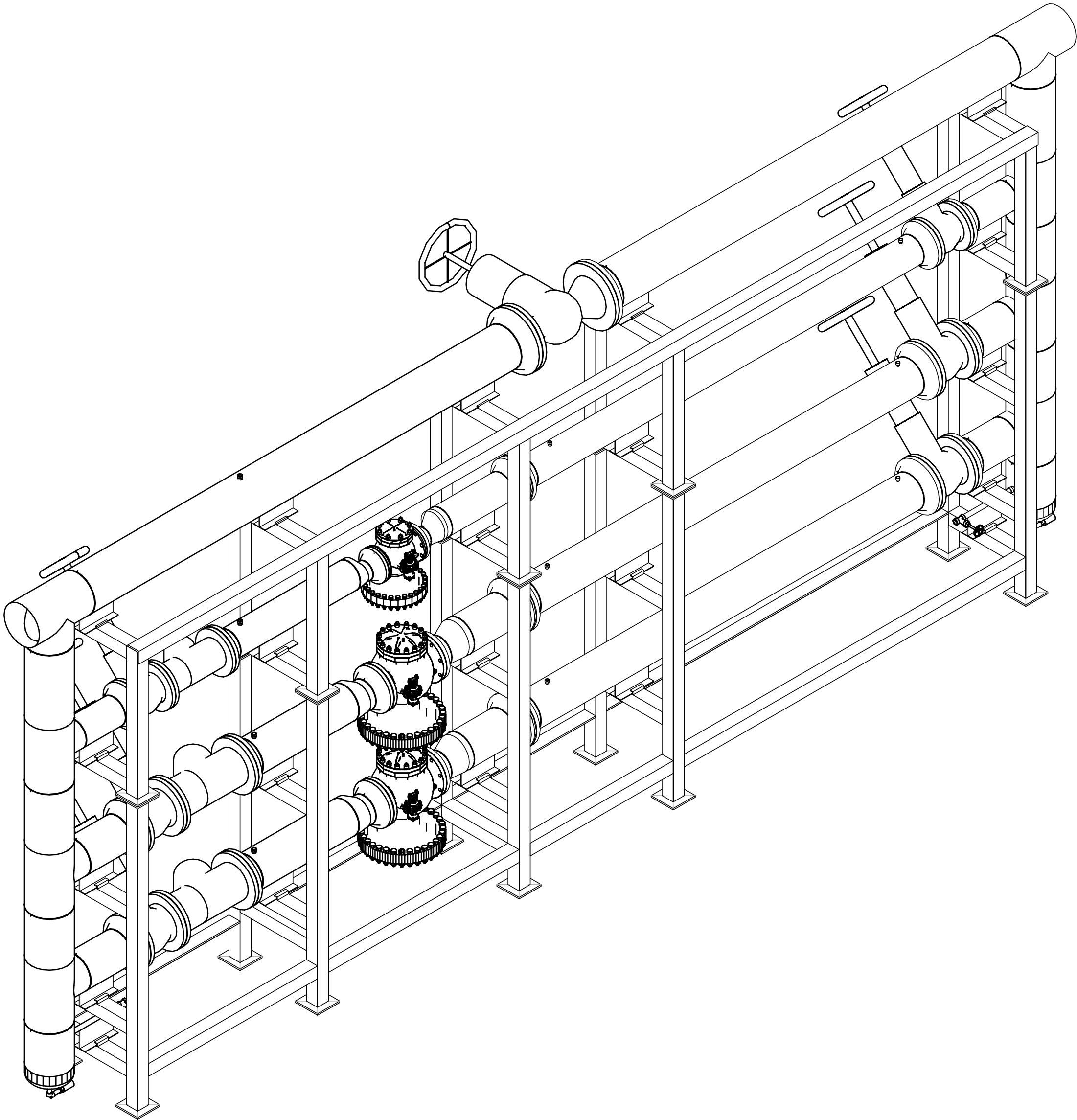
FRONT VIEW  
SCALE: 1/4"=1'-0"



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DRN	JMM	11/19/2020	WUSM RESEARCH BUILDING
CHK			NRB
APP			PRV - 1
JOB NO.	210140	SERVICE NAME	HPS/MPS
REF. DWG.		QTY.	1
DRAWING NO./TRACKING NO.	210140-A002	SHT/NO	1 of 2
REV		0	0
DATE		DESCRIPTION	DRN
TACK		CUT	APP
QC		WELD MAP	SHIP LOOSE MATERIAL
SPOOL WEIGHT		SPECIAL NDE	COMPLETION DATE
WELD GAP		VT	COMMENTS
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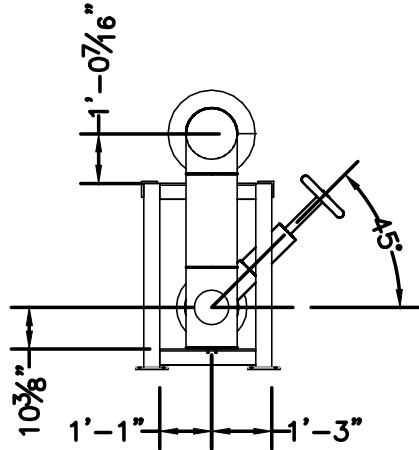
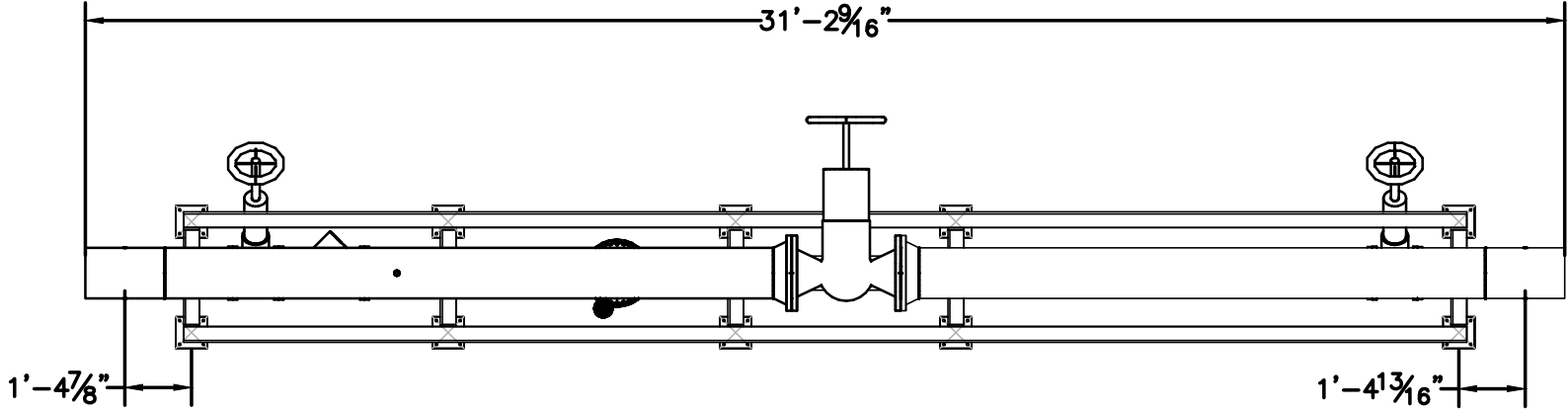
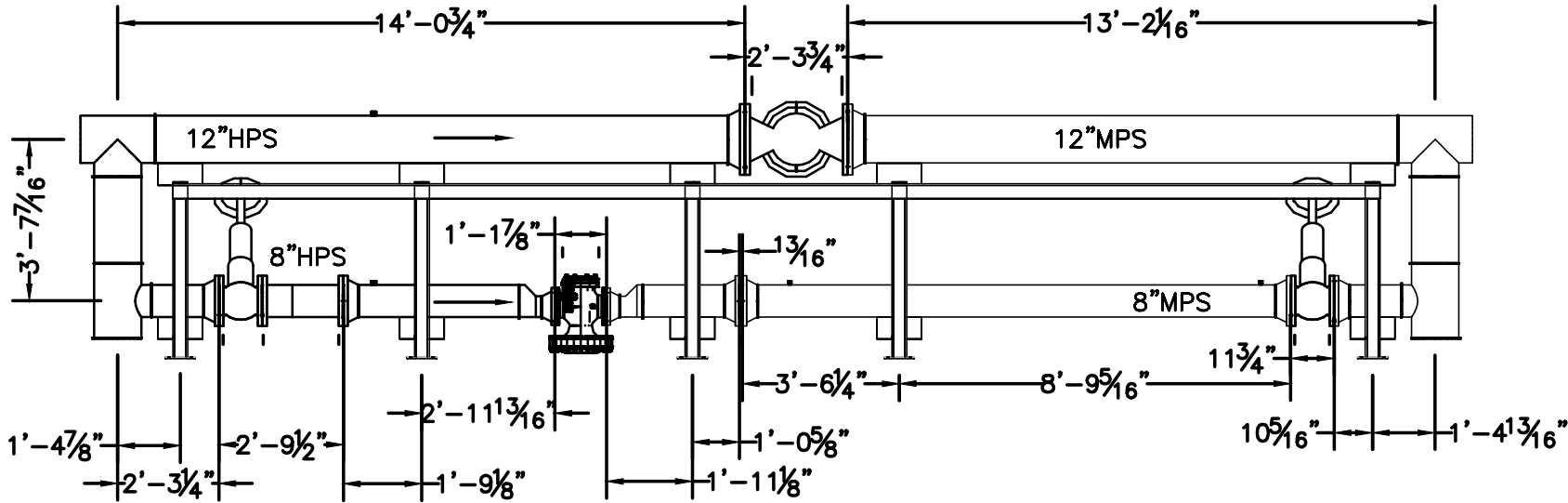
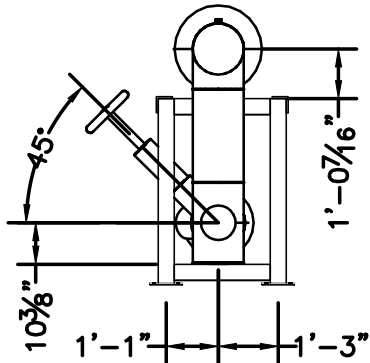
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12/02/2020 - 9:53am  
jmcadney

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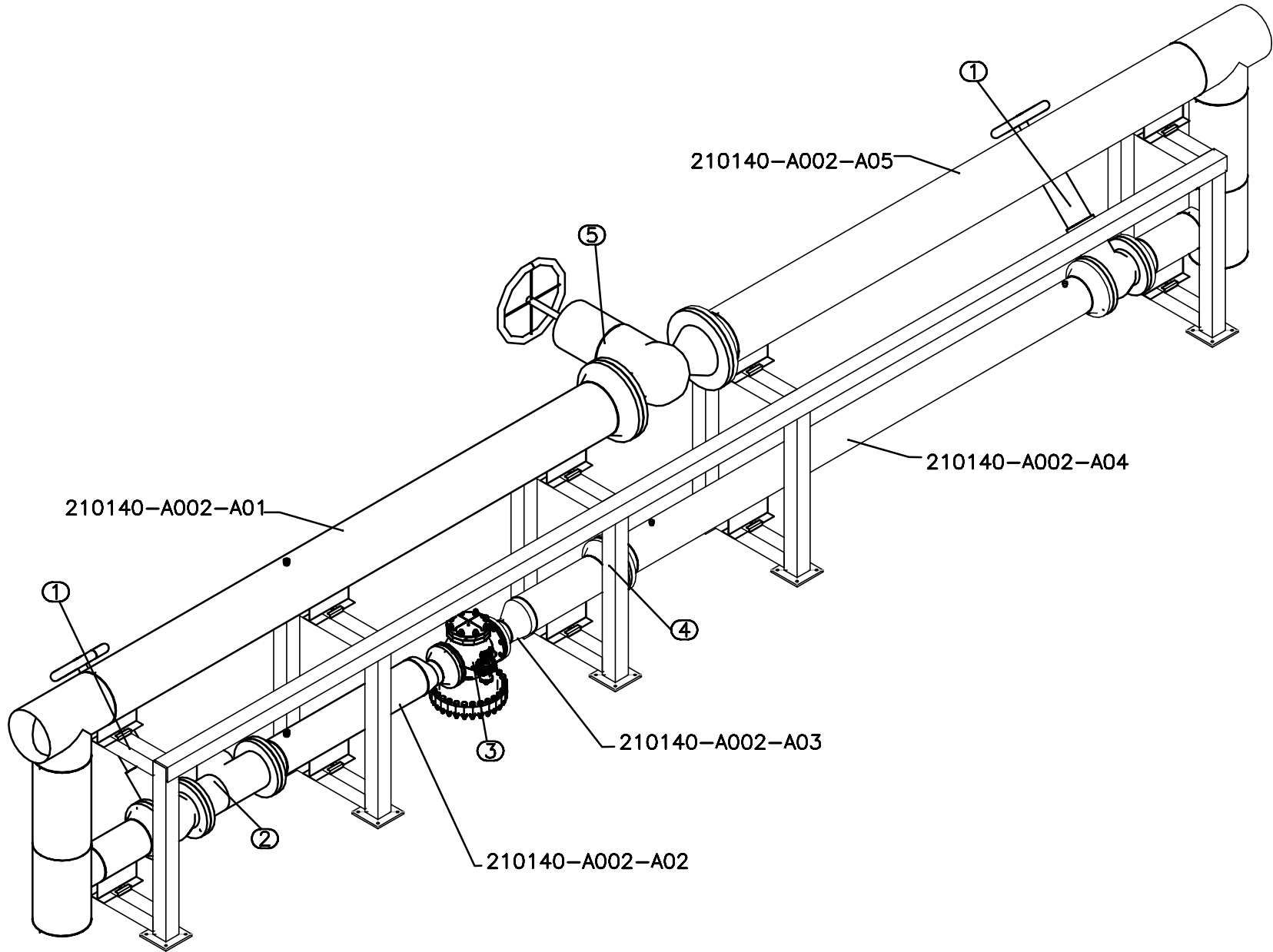


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DRN JMM	11/19/2020	WUSM RESEARCH BUILDING				DUE DATE	QC	TACK	CUT	
CHK		NRB				WELD INCHES	WELD MAP			
APP		PRV-1				SPOOL WEIGHT	SPECIAL NDE	SHIP LOOSE MATERIAL		
JOB NO.	210140	HPS/MPS				WELD GAP	VT	COMPLETION DATE		
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210140-A002		1		2 of 2		REV	DATE	DESCRIPTION	DRN	CHK
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210140-A002-A				1		1 of 4		NA		NA				
						REV								
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						REV		DATE		DESCRIPTION		DRN	CHK	APP



# Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	1	125# CI Flg Y-Strainer YS 58-CI					8
5	1	Fig 143 Globe Valve					12
1	2	F-617-0 Gate Valve					8
6	2	150# 304 Spiral Wound StyleCG 1-8					5
7	7	150# 304 Spiral Wound StyleCG 1-8					8
8	2	150# 304 Spiral Wound StyleCG 1-8					12
9	2	150# CS Flange Bolt Set					5 (3/4x3-1/4)
10	7	150# CS Flange Bolt Set					8 (3/4x3-3/4)
11	1	150# CS Flange Bolt Set					12 (7/8x4-1/4)
12	1	150# CS Flange Bolt Set					12 (7/8x4-1/4)
4	1	MOP-150-MUFFLING ORIFICE PLATE					8
3	1	SPENCE SP-ED-5 PRV					5

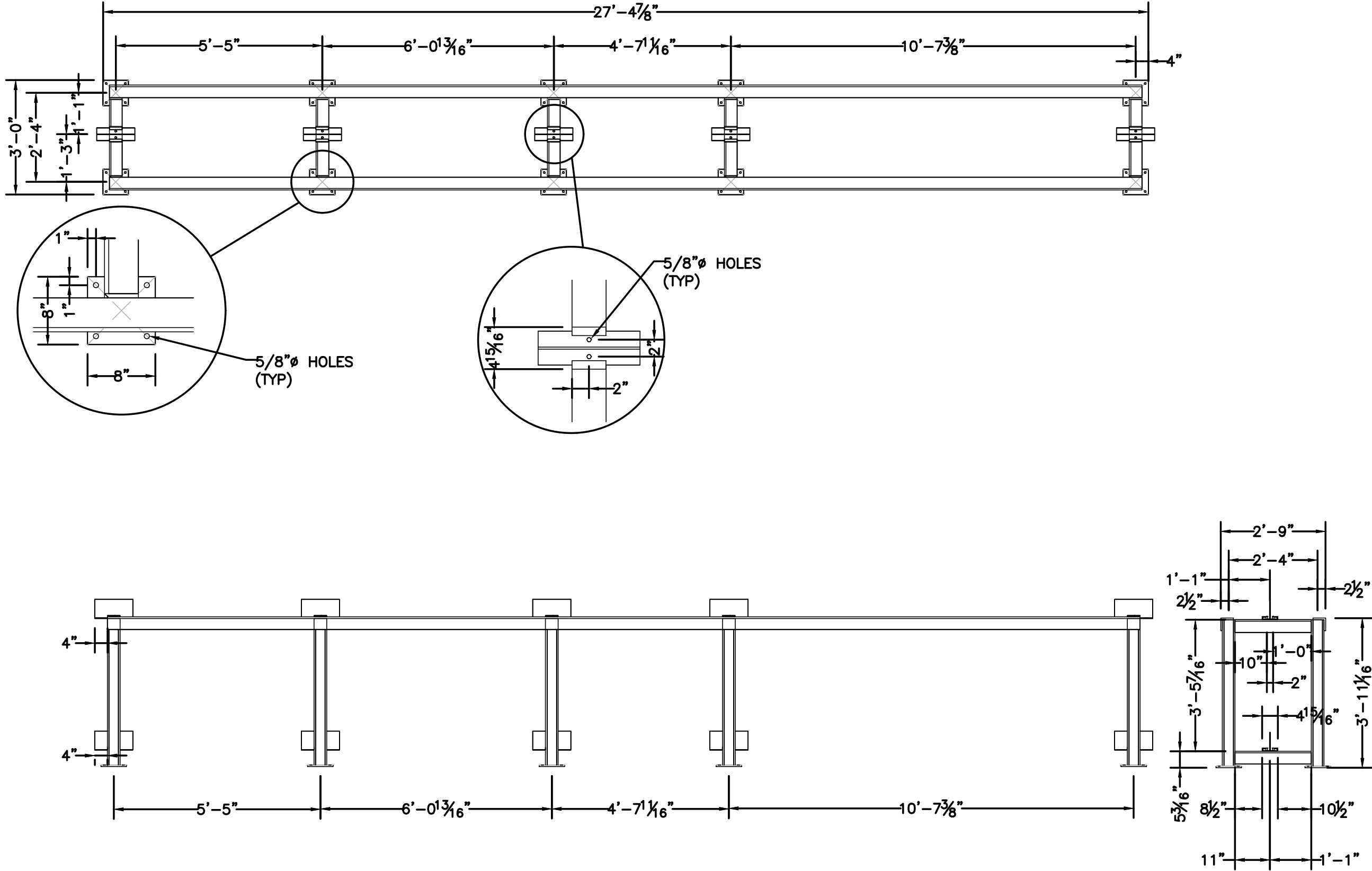
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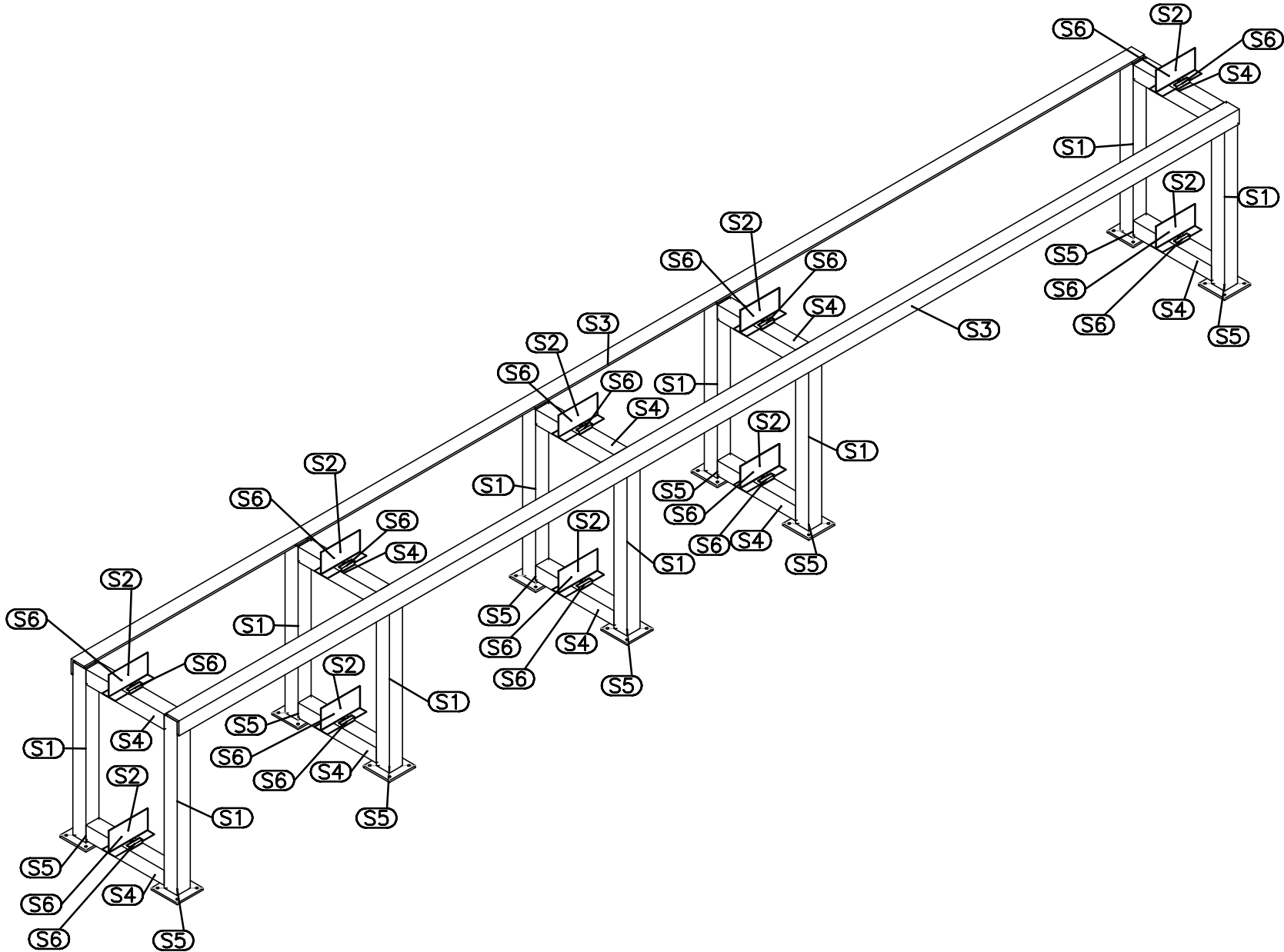
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QA/QC ACCEPT			
SPEC.	ASME	X-RAY	HYDRO TEST
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0	REV	DATE	DESCRIPTION
COMMENTS			MURPHY WPS#
PWHT			NA
DRN			CHK
APP			

DRN JMM	11/24/2020	WUSM RESEARCH BUILDING			
CHK		NRB			
APP		SERVICE NAME			
JOB NO.	210140	210140-A002-A			
REF.DWG.		QTY.	SHT/NO	REV	
DRAWING NO./TRACKING NO.	210140-A002-A	1	2 of 4	0	



DRN JMM		11/24/2020	WUSM RESEARCH BUILDING			QA/QC ACCEPT		FLANGE WEIGHT/ORIENTATION		<input type="checkbox"/>					
CHK			NRB					FITTING ORIENTATION		<input type="checkbox"/>					
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REF.DWG.			SERVICE NAME			SPEC.		ASME	X-RAY	HYDRO TEST	PWHT		COMMENTS		
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						REV		DATE		DESCRIPTION				DRN	CHK
			QTY.			SHT/NO		REV							
			1			3 of 4		0							



BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S1	CS SQ Tube	ASTM A36 CS Square Tube	10	SQ4x4x1/2	46"
S2	WT6x7		10		12"
S3	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	325"
S4	L4x4x1/2	ASTM A36 CS Equal Angle	10	L4x4x1/2	24"
S5		ASTM A36 CS Plate 1/2" Thick	10	8x8x1/2	
S6	L1x1x1/4	ASTM A36 CS Equal Angle	20	L1x1x1/4	4"

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☐ FLANGE WEIGHT/ORIENTATION

☐ FITTING ORIENTATION

☐ BOLTS/CPLG'S/TH'D TIGHT

☐ SPOOL IDENTIFICATION

QA/QC ACCEPT

SPEC.

NA

0

ASME

NA

REV

X-RAY

NA

DATE

HYDRO TEST

NA

PWHT

NA

COMMENTS

MURPHY WPS#

DRN JMM

11/24/2020

CHK

APP

JOB NO.

210140

REF.DWG.

DRAWING NO./TRACKING NO.

210140-A002-A

WUSM RESEARCH BUILDING

NRB

SERVICE NAME

210140-A002-A

QTY.

1

SHT/NO

4 of 4

REV

0

DESCRIPTION

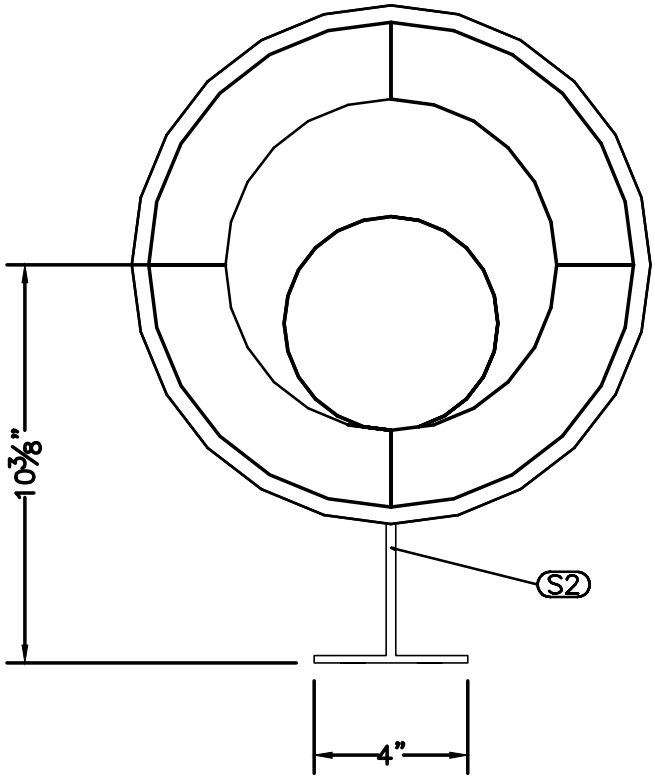
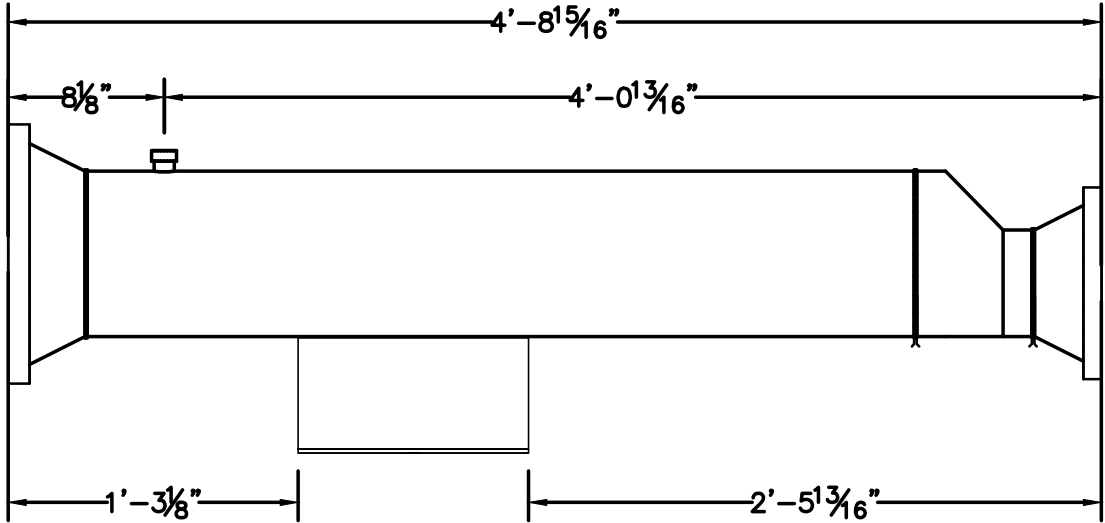
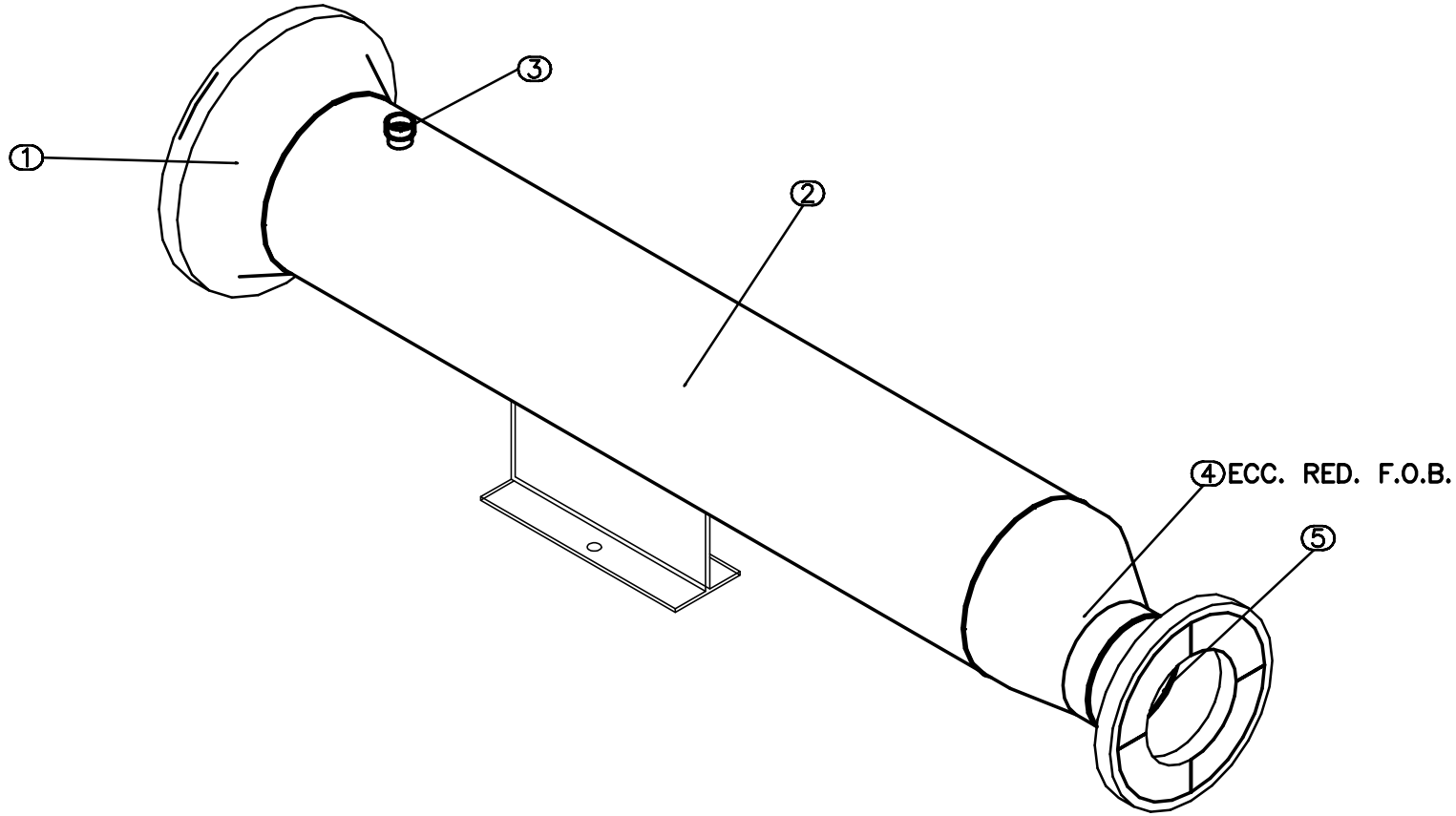
DRN

CHK

APP







Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
5	1	150lb RF Sch 40 Bore SA105 CS WN Flg					5
1	1	150lb RF Sch 40 Bore SA105 CS WN Flg					8
4	1	Std Wt SA234 WPB CS BW ECC RED					8x5
3	1	3000# FS Thread-0-Let			1 1/16"	1.063	3/4x8
2	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	3'-7 1/16"	43.063	8

BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S2	WT6x7		1		12"

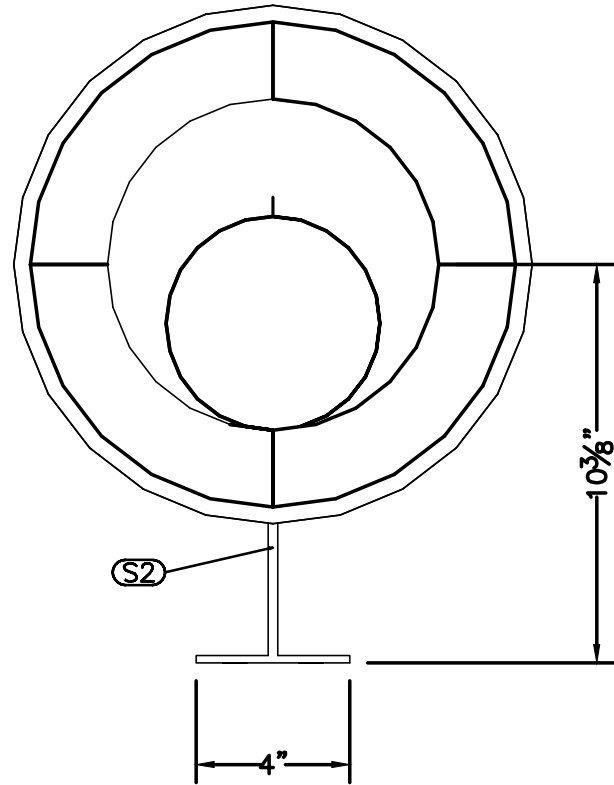
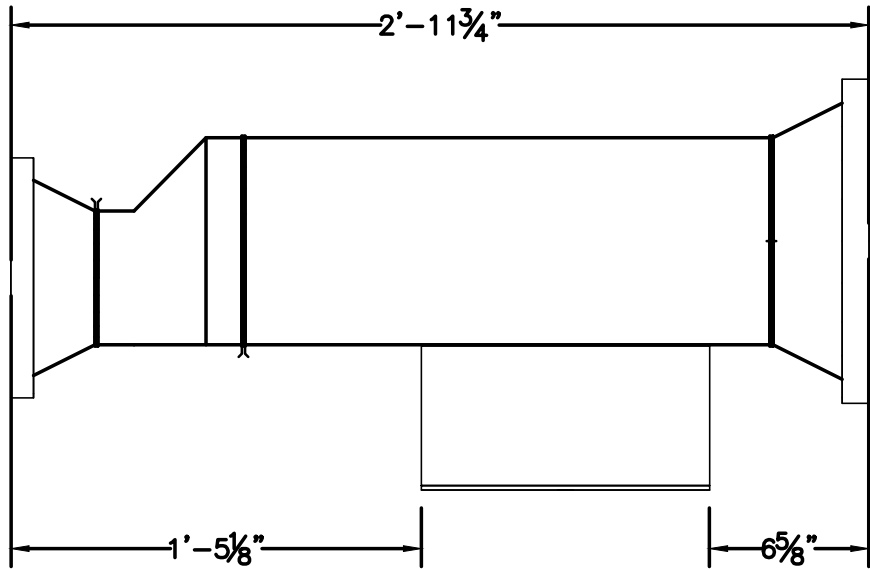
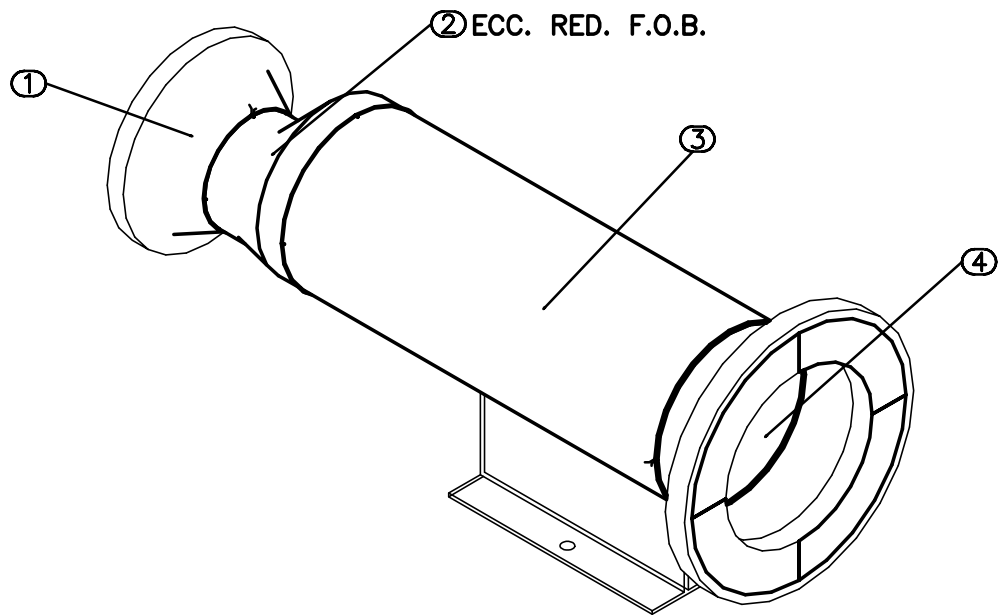
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QA/QC ACCEPT		FLANGE WEIGHT/ORIENTATION		FITTING ORIENTATION		BOLTS/CPLG'S/TH'D TIGHT		SPOOL IDENTIFICATION	
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SPEC.		ASME		X-RAY		HYDRO TEST		PWHT	
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REV		DATE		DESCRIPTION		DRN		CHK	
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APP		WUSM RESEARCH BUILDING		NRB		SERVICE NAME		COMMENTS	
						210140-A002-A		MURPHY WPS#	
REF.DWG.		JMM/KSI		12/1/2020		QTY.			
DRAWING NO./TRACKING NO.		JOB NO.		210140		1			
210140-A002-A02						1 of 1			
						REV			
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# Murphy-PFFS-SPOOL-BOM

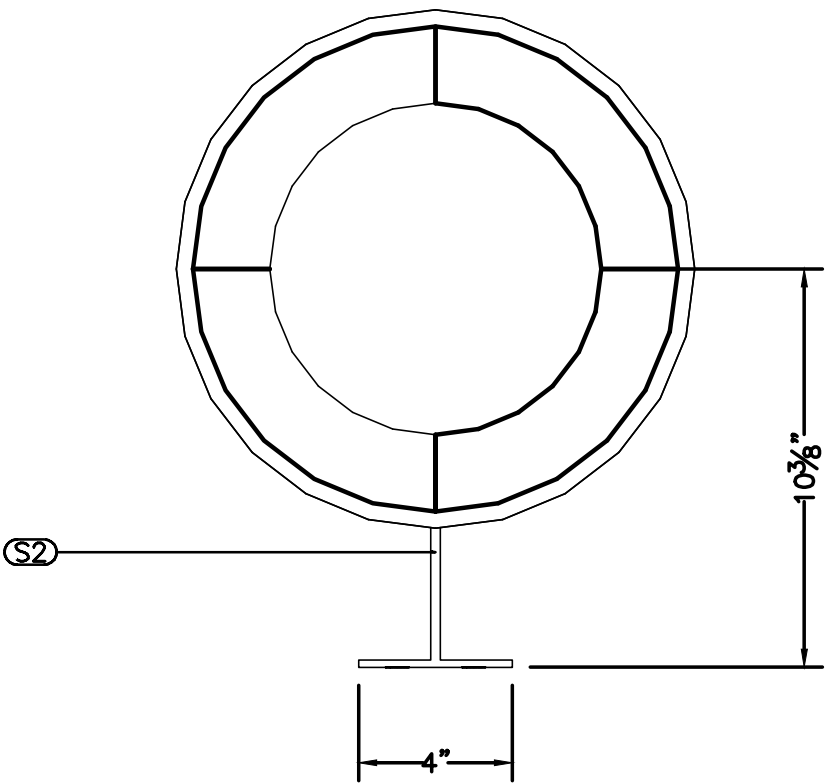
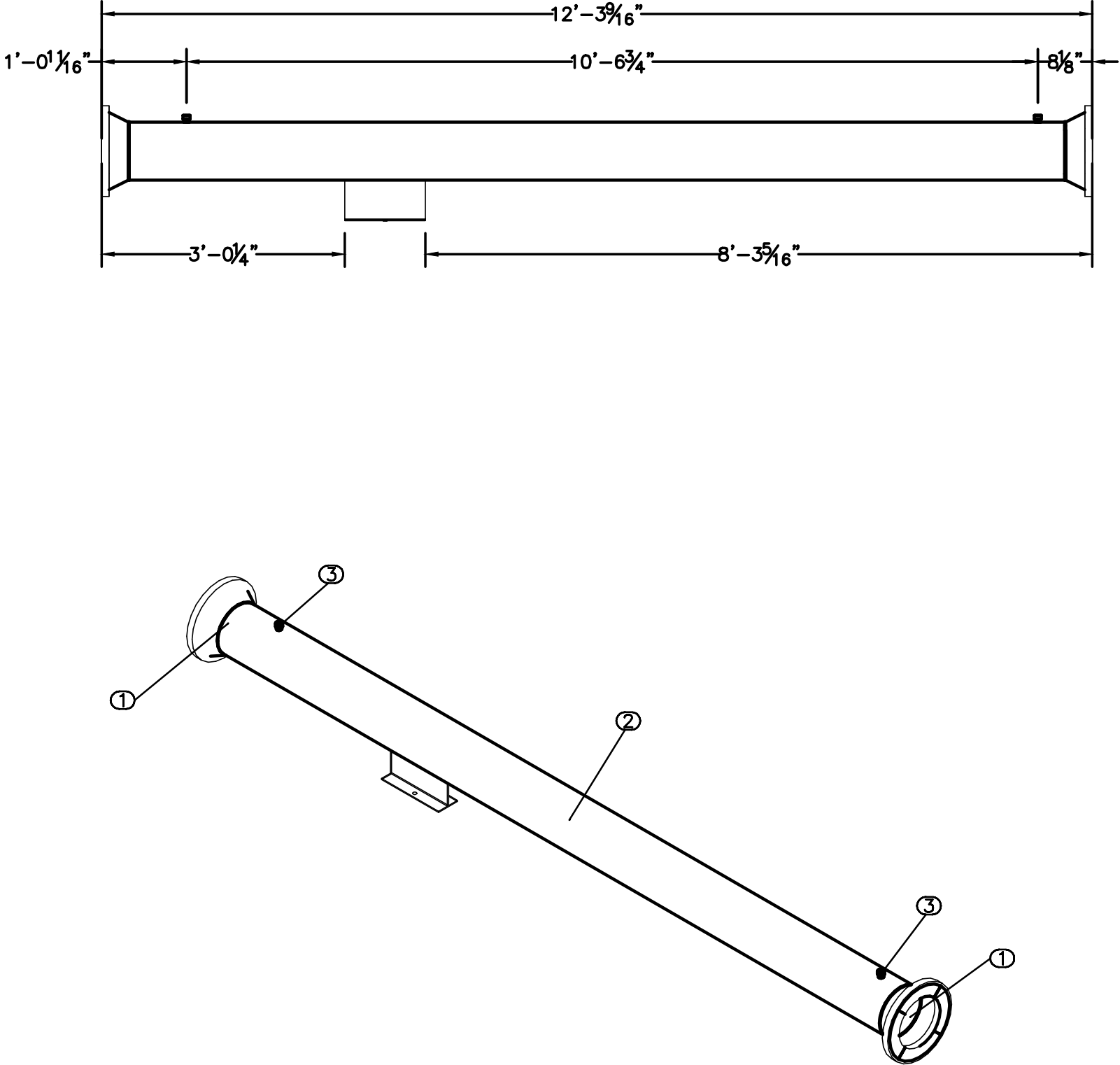
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1	1	150lb RF Sch 40 Bore SA105 CS WN Flg					5
4	1	150lb RF Sch 40 Bore SA105 CS WN Flg					8
2	1	Std WL SA234 WPB CS BW ECC RED					8x5
3	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-9 7/8"	21.870	8

# BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S2	WT6x7		1		12"



DRN	JMM/KSI	12/1/2020	<b>WUSM RESEARCH BUILDING</b>						<b>QA/QC ACCEPT</b>							FLANGE WEIGHT/ORIENTATION <input type="checkbox"/>										
CHK			<b>NRB</b>													FITTING ORIENTATION <input type="checkbox"/>										
APP																BOLTS/CPLG'S/TH'D TIGHT <input type="checkbox"/>										
JOB NO.	210140															SPOOL IDENTIFICATION <input type="checkbox"/>										
REF.DWG.			<b>SERVICE NAME</b>																							
DRAWING NO./TRACKING NO.			<b>210140-A002-A</b>																							
<b>210140-A002-A03</b>			QTY.			1			SHT/NO			1 of 1			REV			0								
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									REV		DATE		DESCRIPTION								DRN		CHK		APP	



Murphy-PFFS-SPOOL-BOM							
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	2	150lb RF Sch 40 Bore SA105 CS WN Flg					8
3	2	3000# FS Thread-O-Let			1"	1.000	1/2x8
2	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	11'-7 5/16"	139.289	8

BOM-STEEL					
Item No	Order	Description	Qty	Size	Steel L
S2	WT6x7		1		12"

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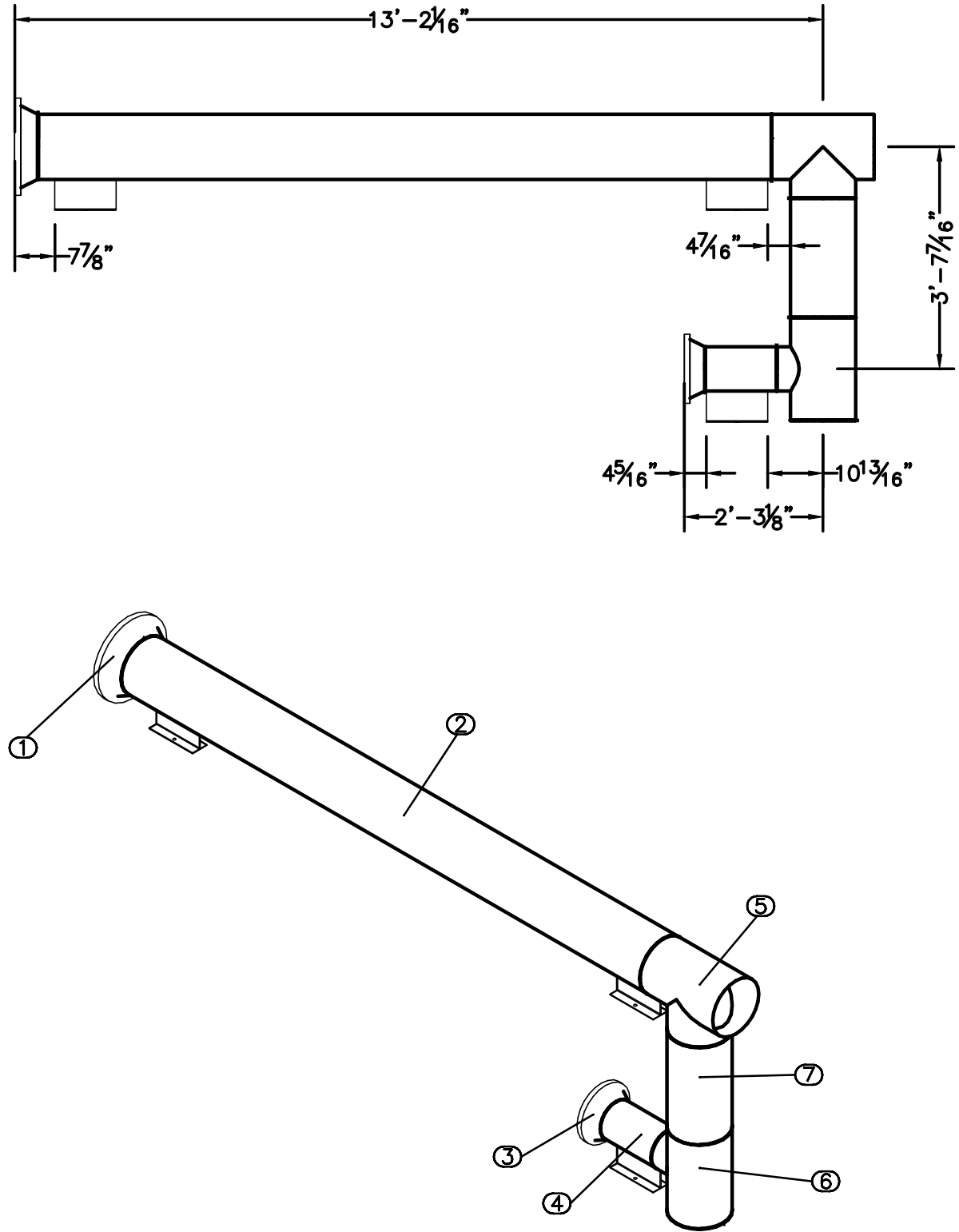
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<input type="checkbox"/>	FITTING ORIENTATION
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QA/QC ACCEPT	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS
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DRN	JMM/KSI	12/1/2020	WUSM RESEARCH BUILDING
CHK			NRB
APP			
JOB NO.	210140	SERVICE NAME	210140-A002-A
REF.DWG.		QTY.	1
DRAWING NO./TRACKING NO.	210140-A002-A04	SHT/NO	1 of 1
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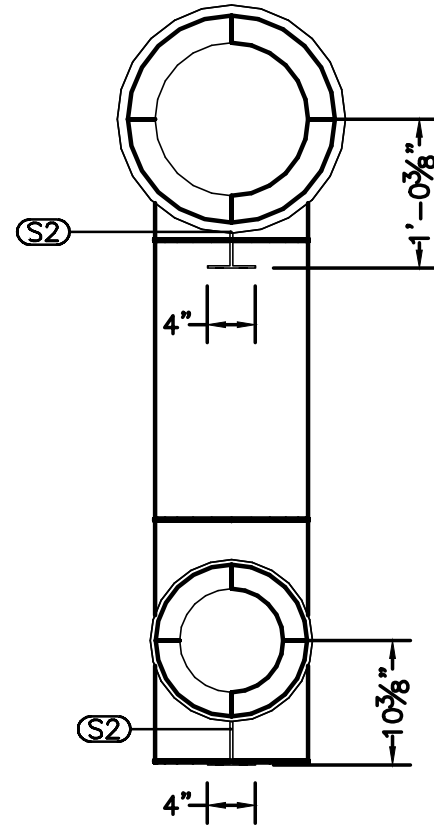


# Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
6	1	Std Wt SA234 WPB CS BW RED TEE					12x8
5	1	Std Wt SA234 WPB CS BW TEE					12
3	1	150lb RF Sch 40 Bore SA105 CS WN Flg					8
1	1	150lb RF Sch 40 Bore SA105 CS WN Flg					12
4	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-1 7/8"	13.875	8
2	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	11'-11 5/16"	143.286	12
7	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-11 3/16"	23.185	12

## BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S2	WT6x7		3		12"



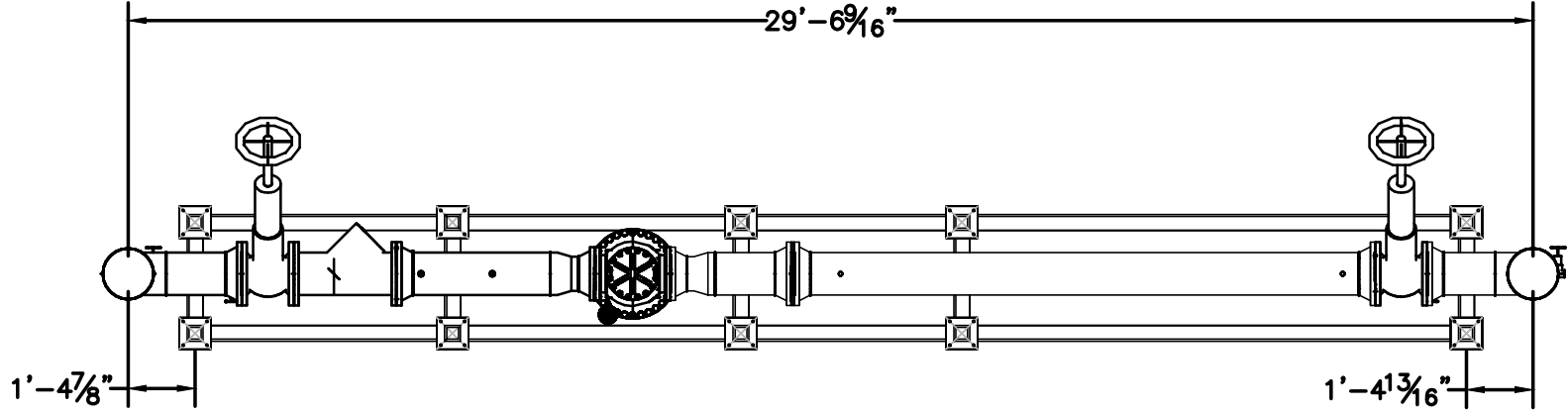
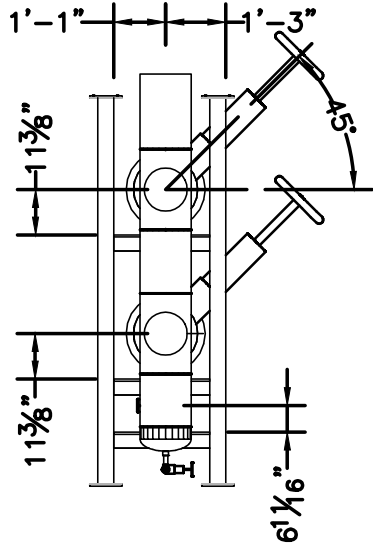
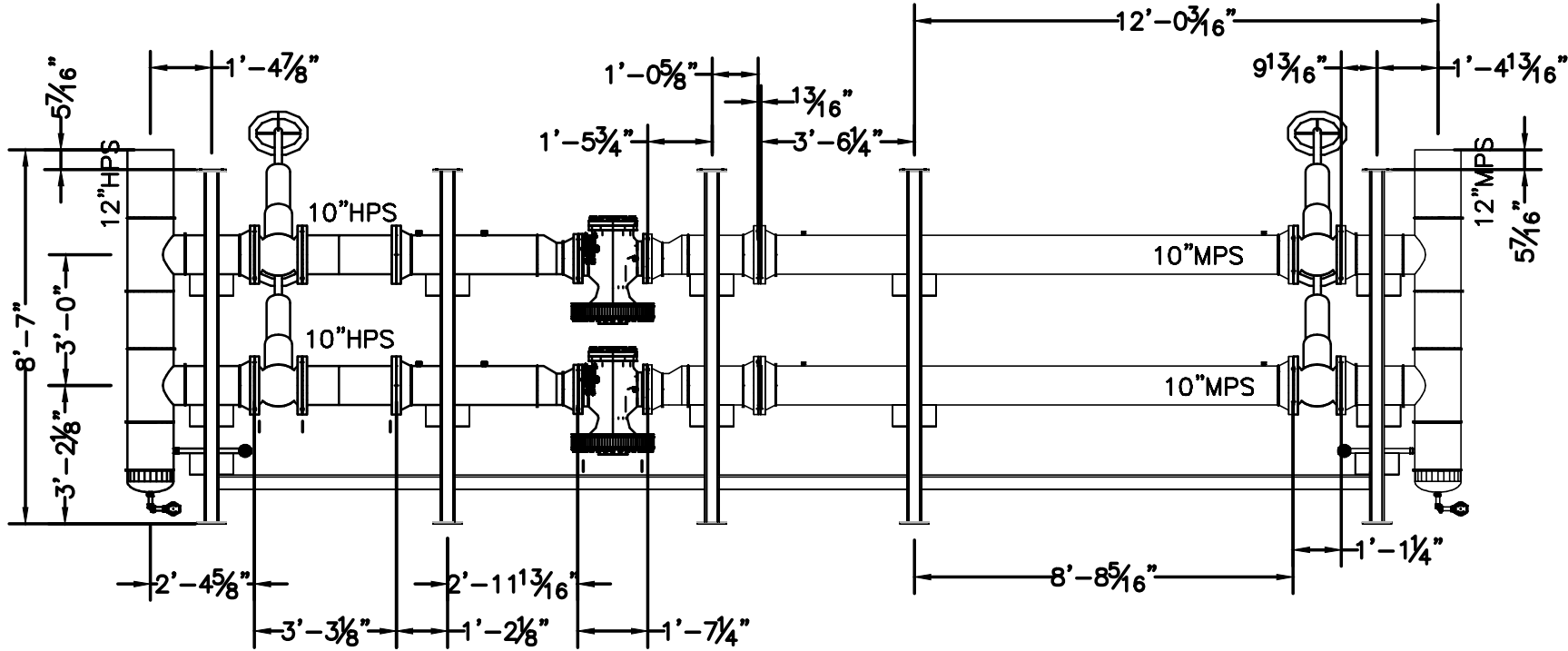
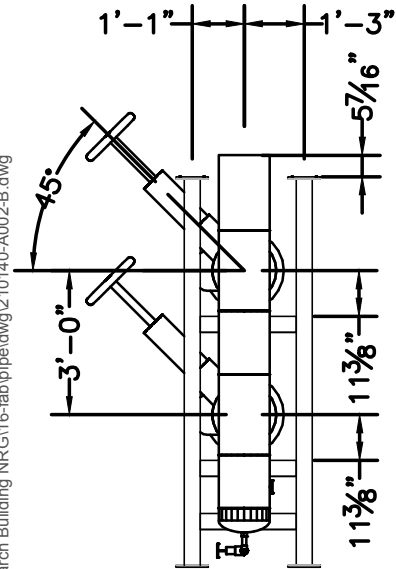
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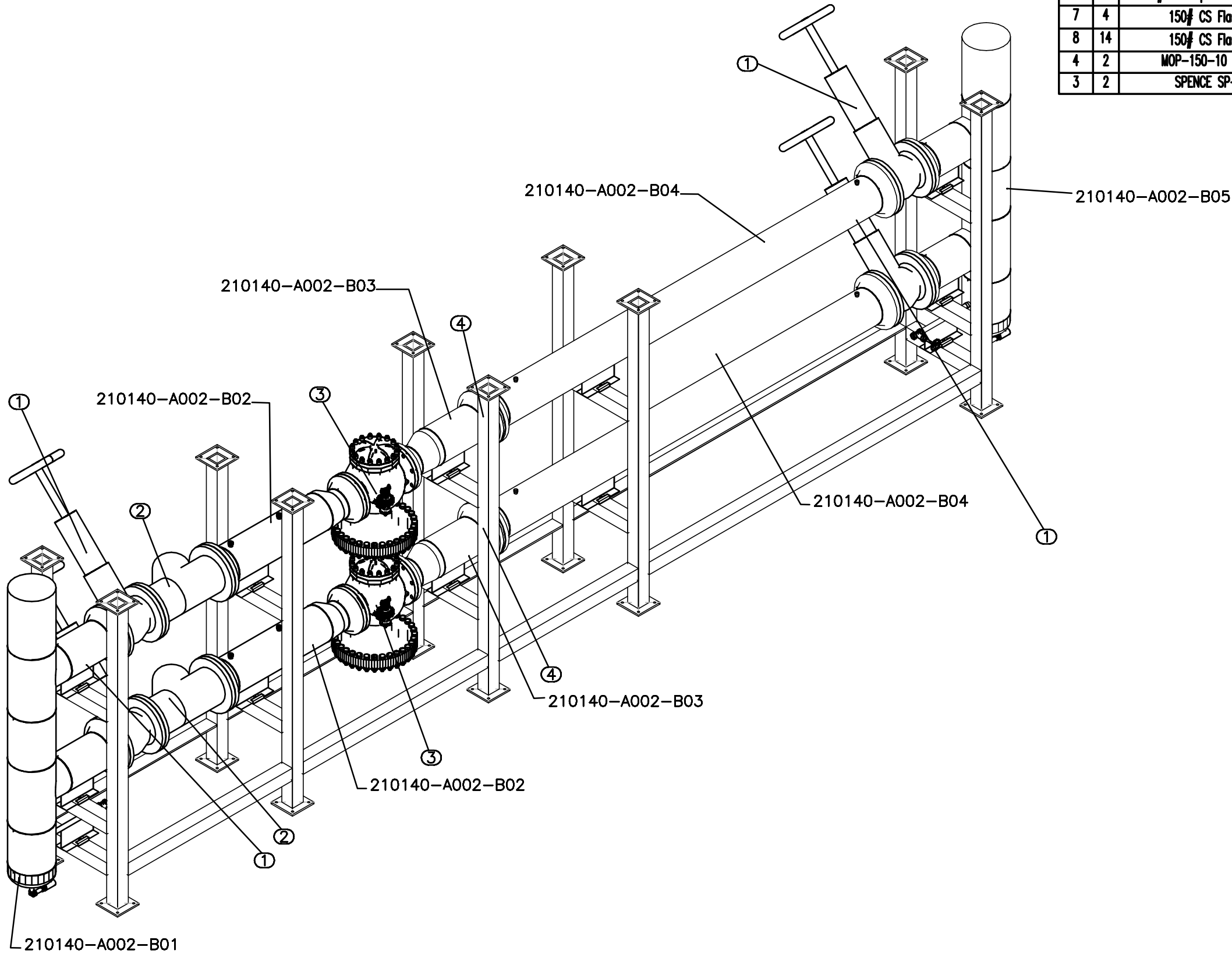
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DRN	JMM/KSI	12/1/2020	WUSM RESEARCH BUILDING		
CHK			NRB		
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DRN JMM	11/24/2020	WUSM RESEARCH BUILDING		
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REF.DWG.		SERVICE NAME		
		210140-A002-B		
DRAWING NO./TRACKING NO.		QTY.	SHT/NO	REV
210140-A002-B		1	1 of 4	0

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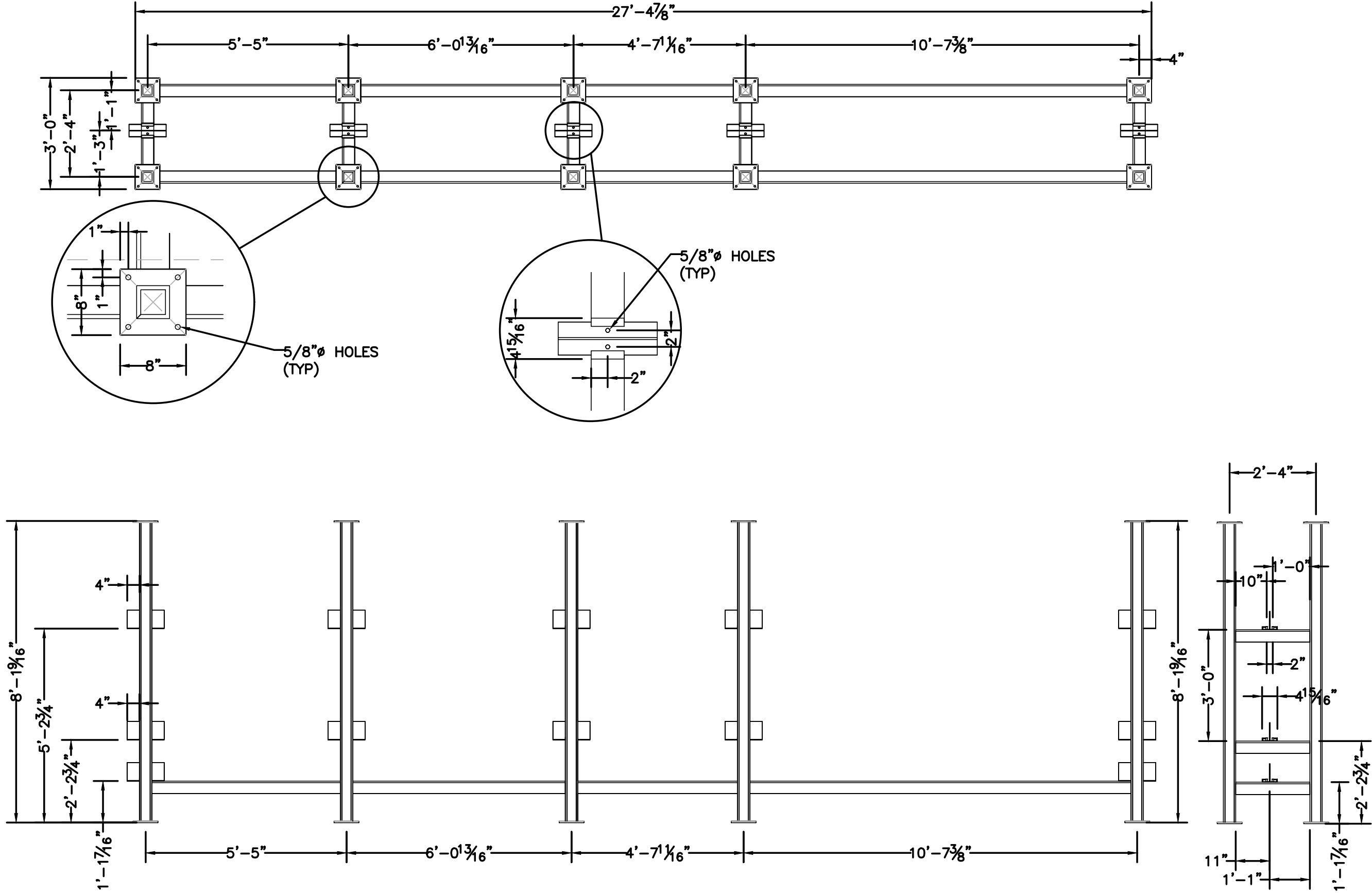
## Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	2	125# CI Flg Y-Strainer YS 58-CI					10
1	4	F-617-0 Gate Valve					10
5	4	150# 304 Spiral Wound StyleCG 1-8					8
6	11	150# 304 Spiral Wound StyleCG 1-8					10
7	4	150# CS Flange Bolt Set					8 (3/4x3-3/4)
8	14	150# CS Flange Bolt Set					10 (7/8x4)
4	2	MOP-150-10 ORIFICE PLATE					10
3	2	SPENCE SP-ED-8 PRV					8

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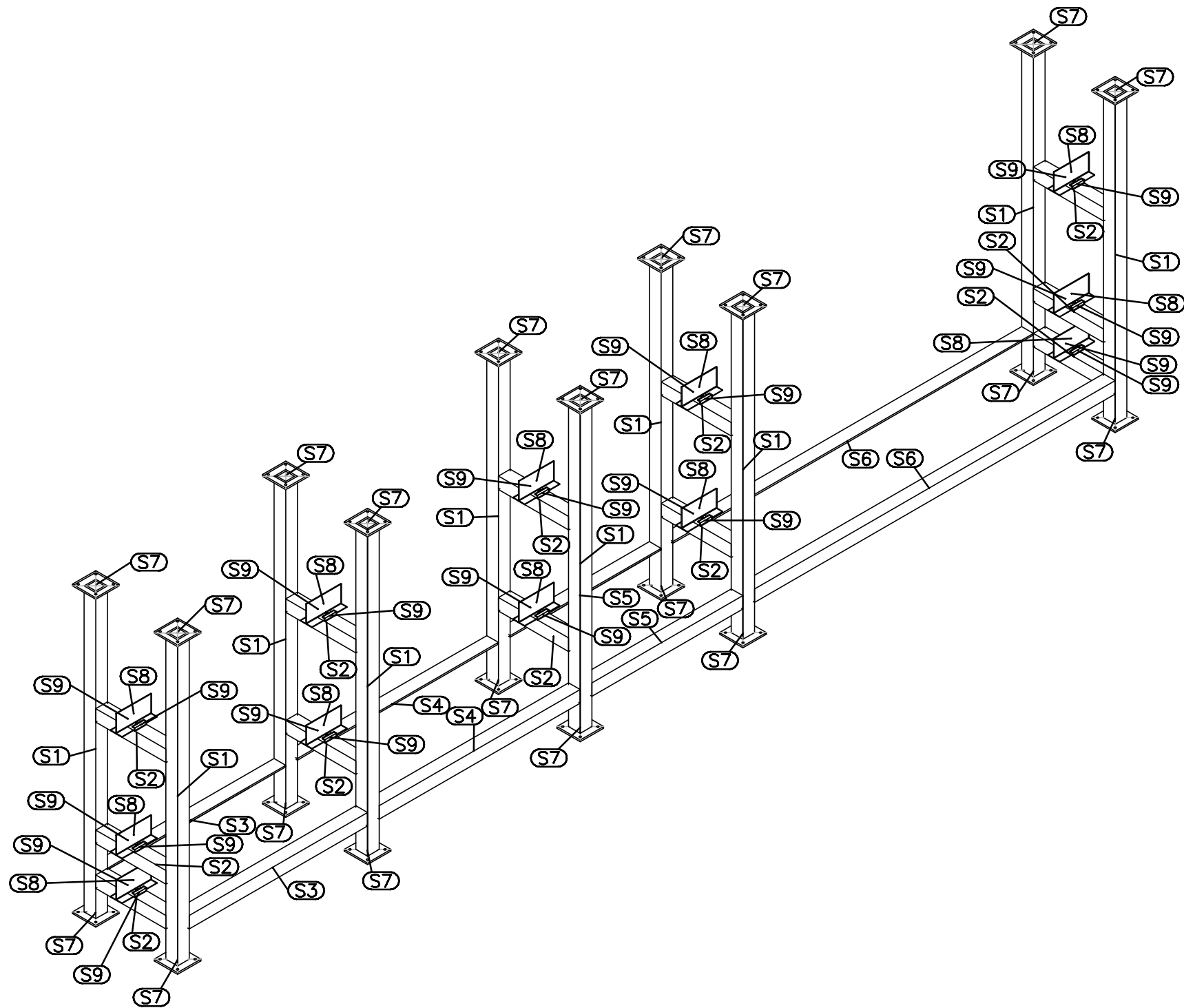
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DRN	JMM	11/24/2020	WUSM RESEARCH BUILDING								
CHK			NRB								
APP											
JOB NO.	210140	SERVICE NAME		210140-A002-B							
REF.DWG.											
DRAWING NO./TRACKING NO.	210140-A002-B	QTY.	1	SHT/NO	2 of 4	REV	0				



QA/QC ACCEPT	FLANGE WEIGHT/ORIENTATION				<input type="checkbox"/>			
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	BOLTS/CPLG'S/TH'D TIGHT				<input type="checkbox"/>			
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SPEC.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS			
NA	NA	NA	NA	NA	MURPHY WPS#			
0	REV	DATE	DESCRIPTION			DRN	CHK	APP

DRN	JMM	11/24/2020	WUSM RESEARCH BUILDING			SERVICE NAME	210140-A002-B		
CHK			NRB			QTY.	1	3 of 4	REV
APP						SHT/NO	4	0	
JOB NO.	210140					REF.DWG.			
DRAWING NO./TRACKING NO.	210140-A002-B								



# BOM-STEEL

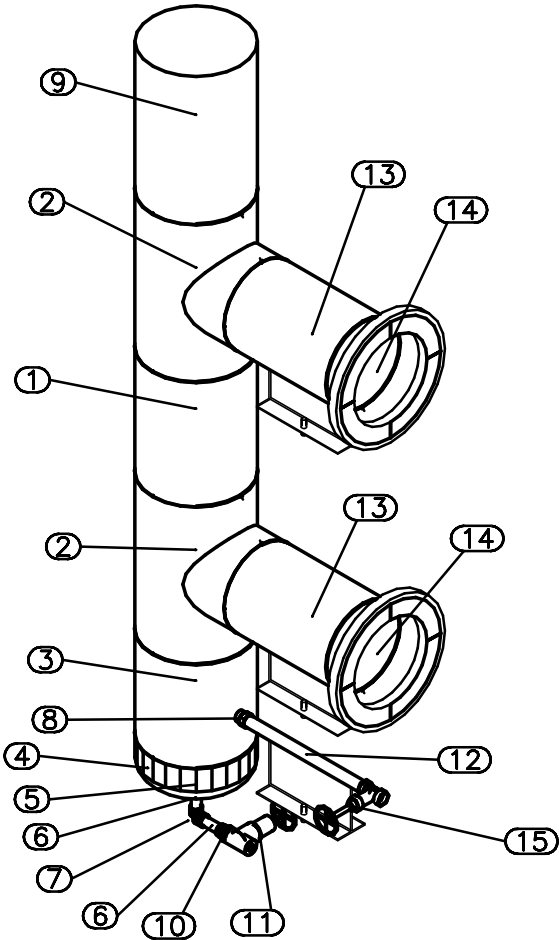
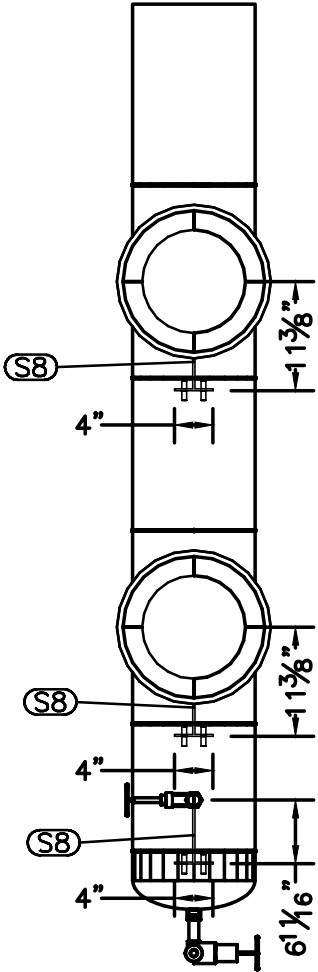
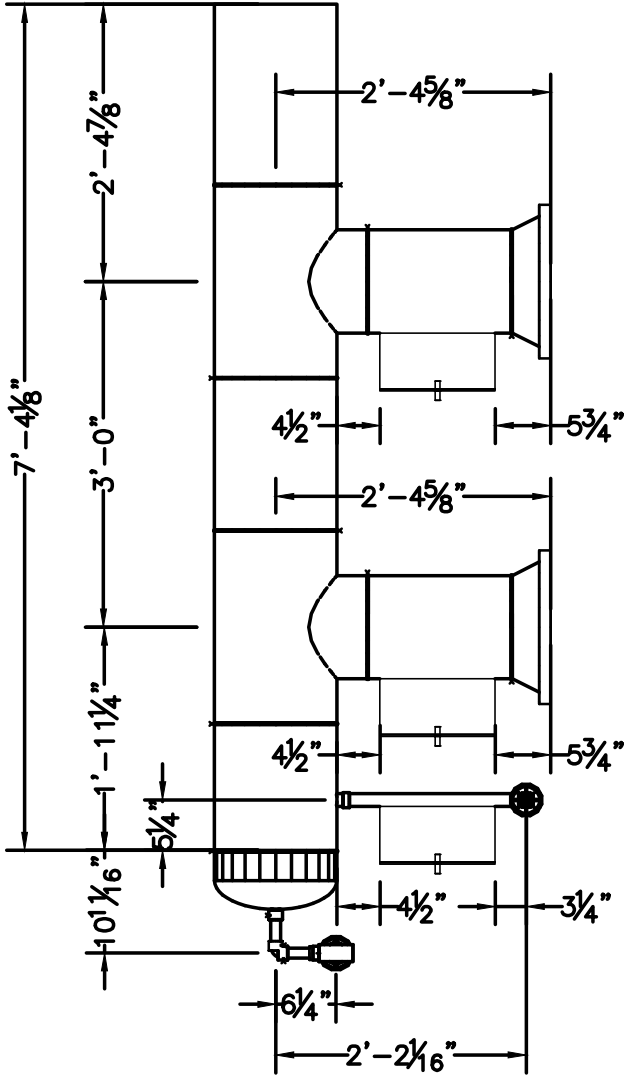
Item No	Order	Description	Qty	Size	Steel L
S1	CS SQ Tube	ASTM A36 CS Square Tube	10	SQ4x4x1/2	96 1/2"
S2	L4x4x1/2	ASTM A36 CS Equal Angle	12	L4x4x1/2	24"
S3	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	61"
S4	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	68 3/4"
S5	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	51 3/4"
S6	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	123 1/2"
S7		ASTM A36 CS Plate 1/2" Thick	20	8x8x1/2	
S8	WT6x7		12		12"
S9	L1x1x1/4	ASTM A36 CS Equal Angle	24	L1x1x1/4	4"

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DRN JMM	11/24/2020	<b>WUSM RESEARCH BUILDING</b>						<b>QA/QC ACCEPT</b>							FLANGE WEIGHT/ORIENTATION <input type="checkbox"/>							
CHK															FITTING ORIENTATION <input type="checkbox"/>							
APP															BOLTS/CPLG'S/TH'D TIGHT <input type="checkbox"/>							
JOB NO.	210140														SPOOL IDENTIFICATION <input type="checkbox"/>							
REF.DWG.		SERVICE NAME						210140-A002-B								SPEC.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS	
																NA	NA	NA	NA	NA	MURPHY WPS#	
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DRAWING NO./TRACKING NO. 210140-A002-B		QTY.		SHT/NO		REV		DESCRIPTION									REV	DATE	DRN		CHK	APP
		1		4 OF 4		0																





Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	2	Std Wt SA234 WPB CS BW RED TEE					12x10
11	1	800# FS BB OS&Y Gate Valve SW					3/4
15	1	T-134 Gate Valve					1
14	2	150lb RF Sch 40 Bore SA105 CS WN Flg					10
10	1	3M FS SW Cplg					3/4
4	1	Std Wt SA234 WPB CS BW Cap					12
7	1	3M A105 FS SW 90 Deg Ell					3/4
5	1	3000# FS Soc-0-Let			1 1/16"	1.063	3/4x12
8	1	3000# FS Thread-0-Let			1 5/16"	1.313	1x12
13	2	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-2 7/8"	14.875	10
1	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-3 3/4"	15.750	12
3	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-1 1/8"	13.136	12
9	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-6 3/4"	18.750	12
12	1	Sch 80 A106B CS SMLS Pipe	MPT	MPT	1'-6 5/16"	18.308	1
6	2	Sch 80 A106B CS SMLS Pipe	SW	SW	3"	3.000	3/4

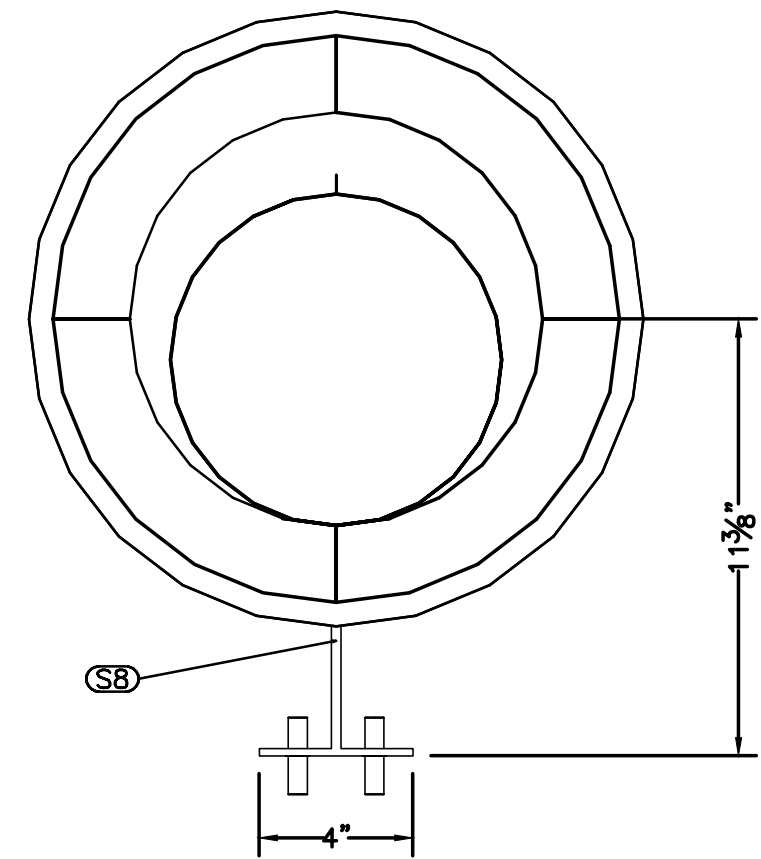
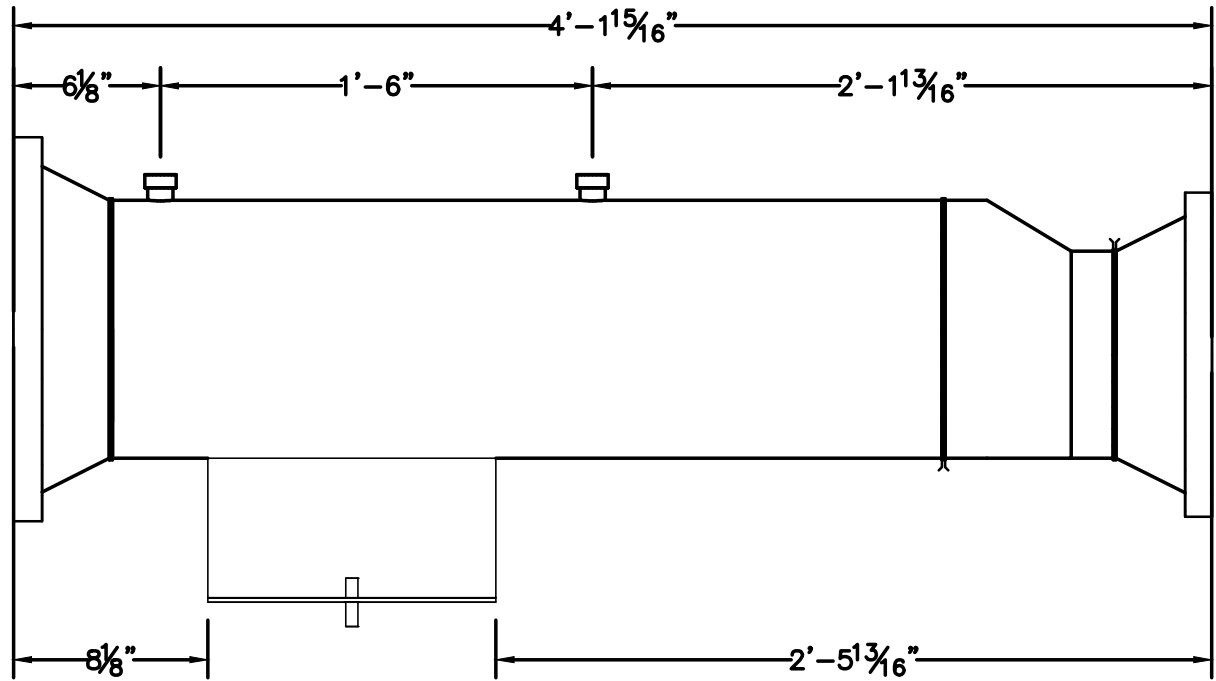
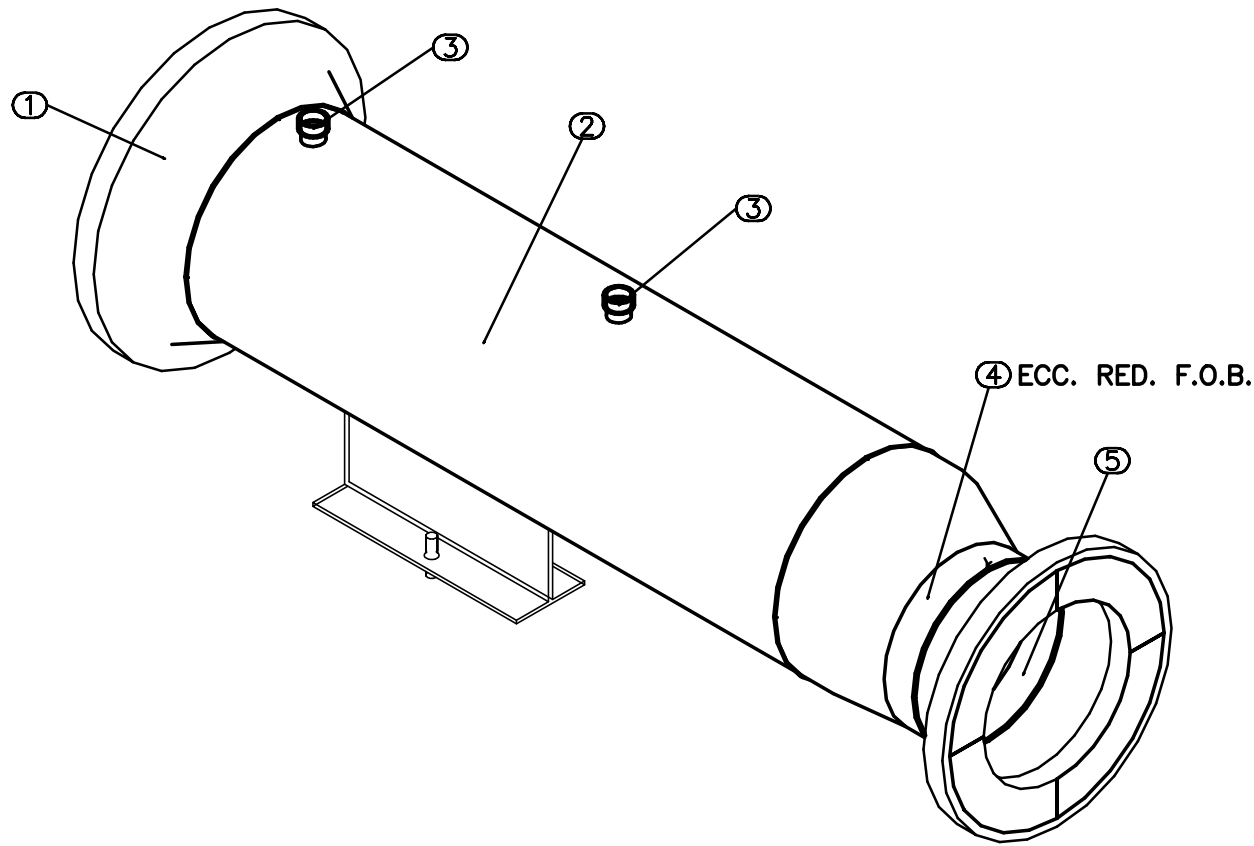
BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S8	WT6x7		3		12"

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<input type="checkbox"/>	FLANGE WEIGHT/ORIENTATION				
<input type="checkbox"/>	FITTING ORIENTATION				
<input type="checkbox"/>	BOLTS/CPLGS/TH'D TIGHT				
<input type="checkbox"/>	SPOOL IDENTIFICATION				
		COMMENTS			
		MURPHY WPS#			
		DRN	CHK	APP	

WUSM RESEARCH BUILDING		SERVICE NAME		210140-A002-B	
NRB		QTY.		1 of 1	
JOB NO. 210140		REF.DWG.		DRAWING NO./TRACKING NO.	
210140-A002-B01		210140		210140-A002-B01	
12/1/2020		1		REV 0	



## Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
5	2	150lb RF Sch 40 Bore SA105 CS WN Flg					8
1	2	150lb RF Sch 40 Bore SA105 CS WN Flg					10
4	2	Std Wt SA234 WPB CS BW ECC RED					10x8
3	4	3000# FS Thread-0-Let			1 1/16"	1.063	3/4x10
2	2	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	2'-10 9/16"	34.558	10

## BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S8	WT6x7		2		12"

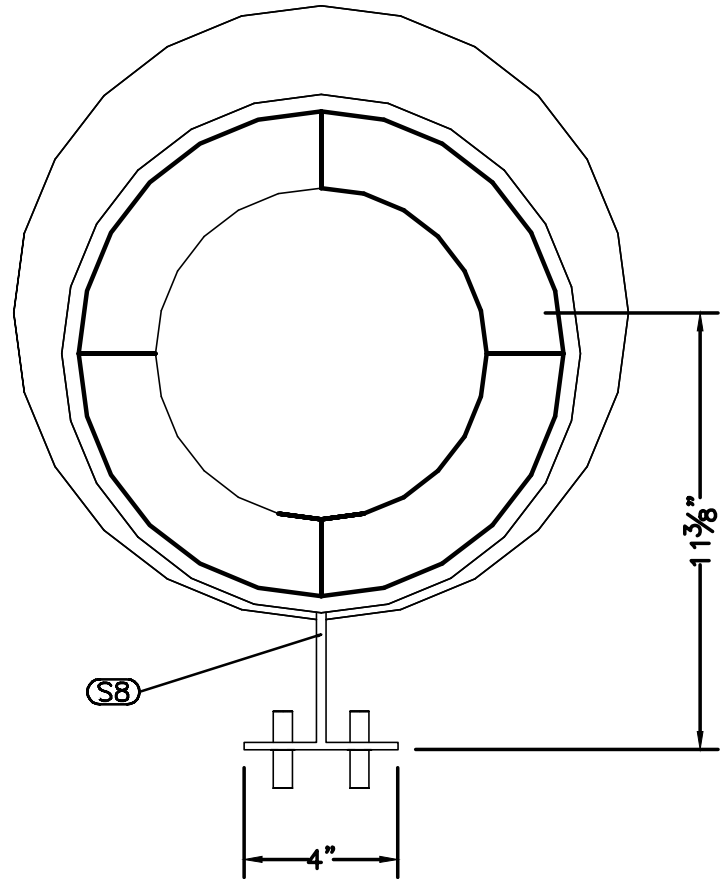
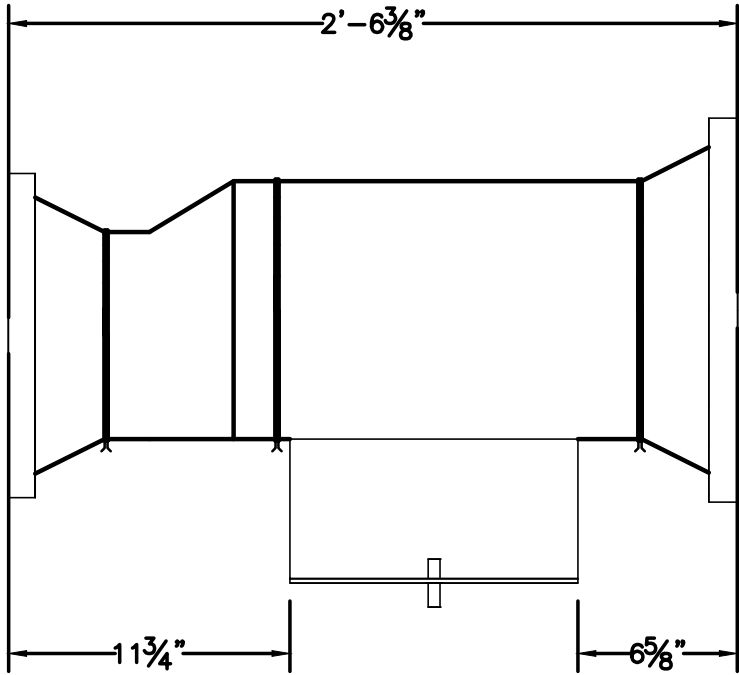
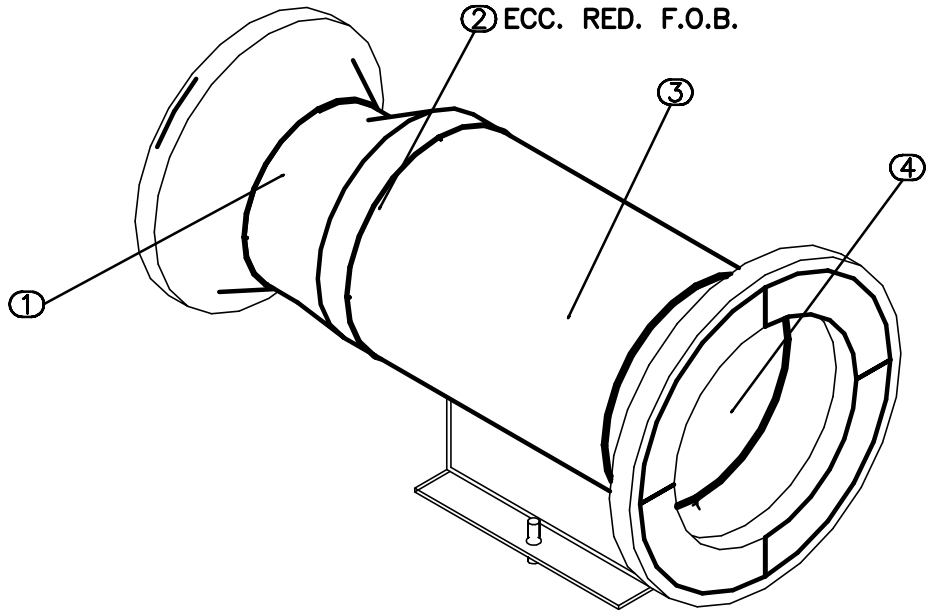
QUANTITY OF 2

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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FLANGE WEIGHT/ORIENTATION													
				FITTING ORIENTATION													
				BOLTS/CPLG'S/TH'D TIGHT													
				SPOOL IDENTIFICATION													
				SPEC.		ASME		X-RAY		HYDRO TEST		PWHT		COMMENTS			
				NA		NA		NA		NA		NA		MURPHY WPS#			
0				REV		DATE		DESCRIPTION				DRN		CHK		APP	

DRN JMM/KSI		12/1/2020		WUSM RESEARCH BUILDING											
CHK				NRB											
APP															
JOB NO.		210140		SERVICE NAME											
REF.DWG.				210140-A002-B											
DRAWING NO./TRACKING NO.		210140-A002-B02		QTY.		2		SHT/NO		1 of 1		REV		0	



## Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
4	2	150lb FF Sch 40 Bore SA105 CS WN Flg					10
1	2	150lb RF Sch 40 Bore SA105 CS WN Flg					8
2	2	Std Wt SA234 WPB CS BW ECC RED					10x8
3	2	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-3"	14.995	10

## BOM-STEEL

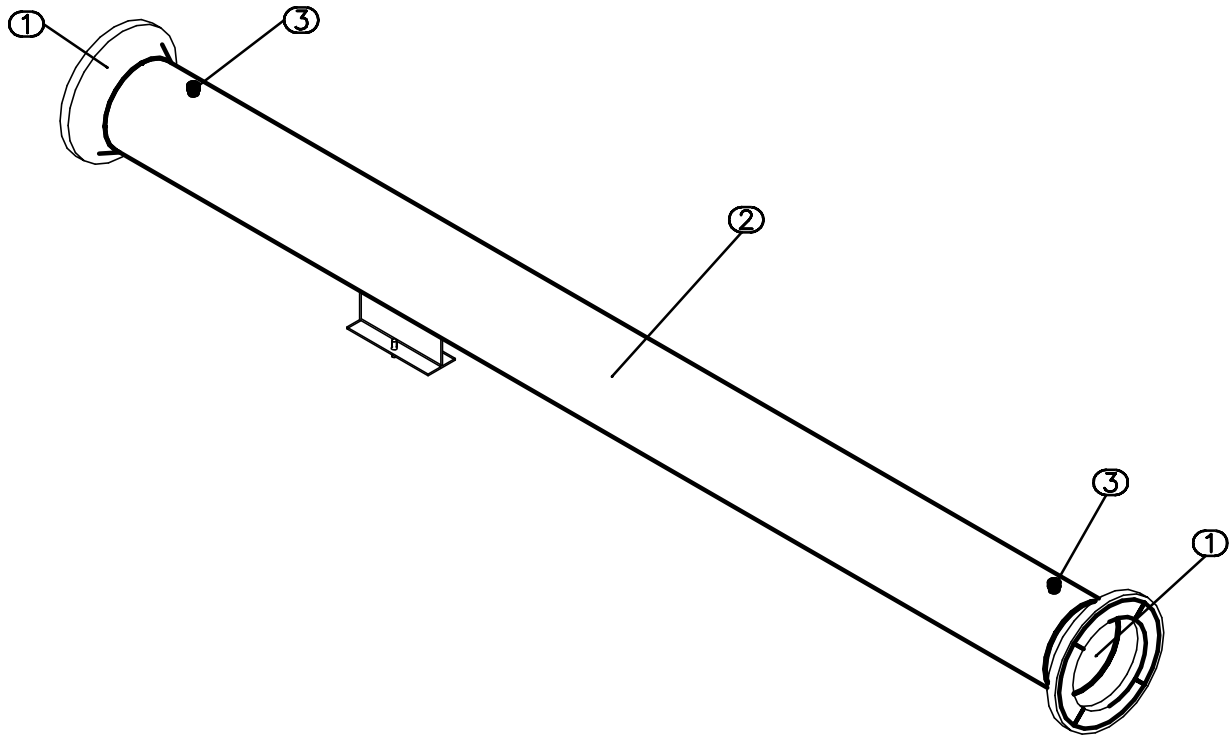
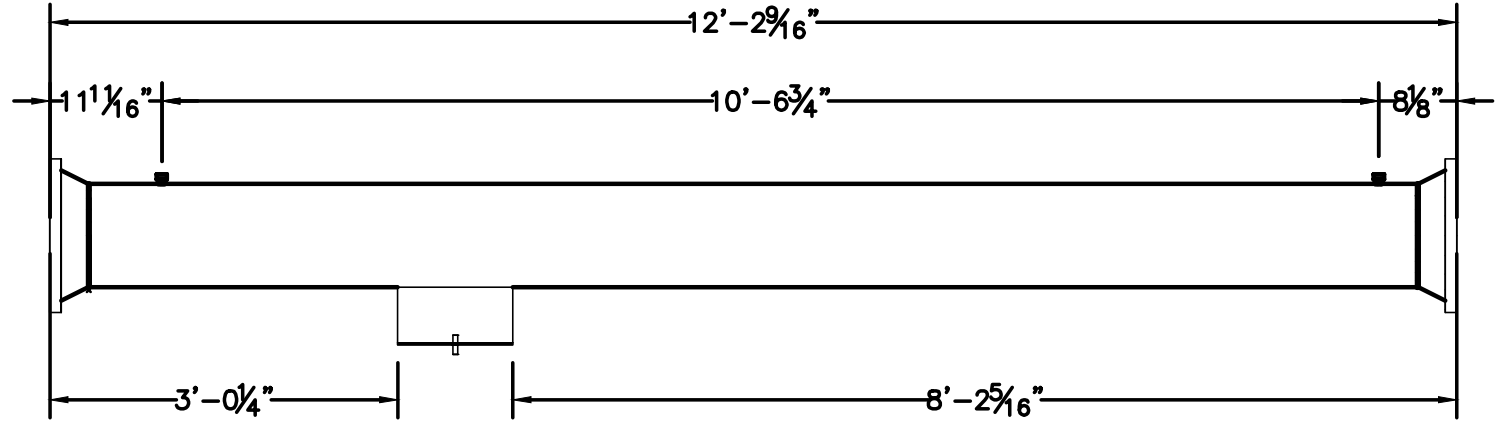
Item No	Order	Description	Qty	Size	Steel L
S8	WT6x7		2		12"

QUANTITY OF 2

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WUSM RESEARCH BUILDING				QA/QC ACCEPT				<input type="checkbox"/> FLANGE WEIGHT/ORIENTATION													
NRB								<input type="checkbox"/> FITTING ORIENTATION													
								<input type="checkbox"/> BOLTS/CPLGS/TH'D TIGHT													
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JOB NO. 210140																					
REF.DWG.				SPEC.				ASME		X-RAY		HYDRO TEST		PWHT		COMMENTS					
				NA				NA		NA		NA		NA		MURPHY WPS#					
DRAWING NO./TRACKING NO.				QTY.		SHT/NO		REV		DATE		DESCRIPTION				DRN		CHK		APP	
210140-A002-B03				2		1 of 1		0													



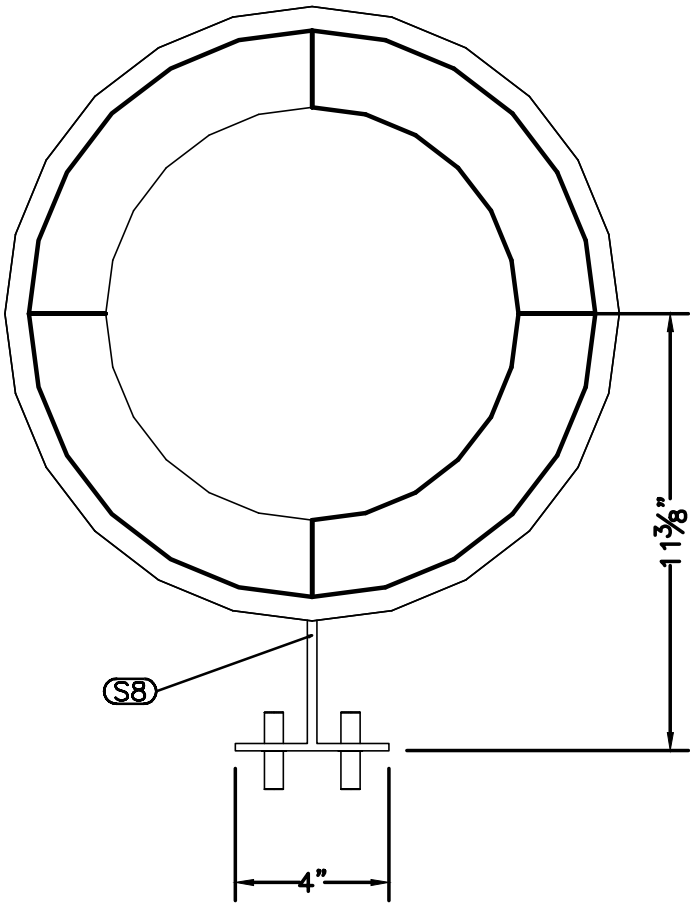
## Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	4	150lb RF Sch 40 Bore SA105 CS WN Flg					10
3	4	3000# FS Thread-O-Let			1"	1.000	1/2x10
2	2	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	11'-6 5/16"	138.291	10

## BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S8	WT6x7		2		12"

QUANTITY OF 2



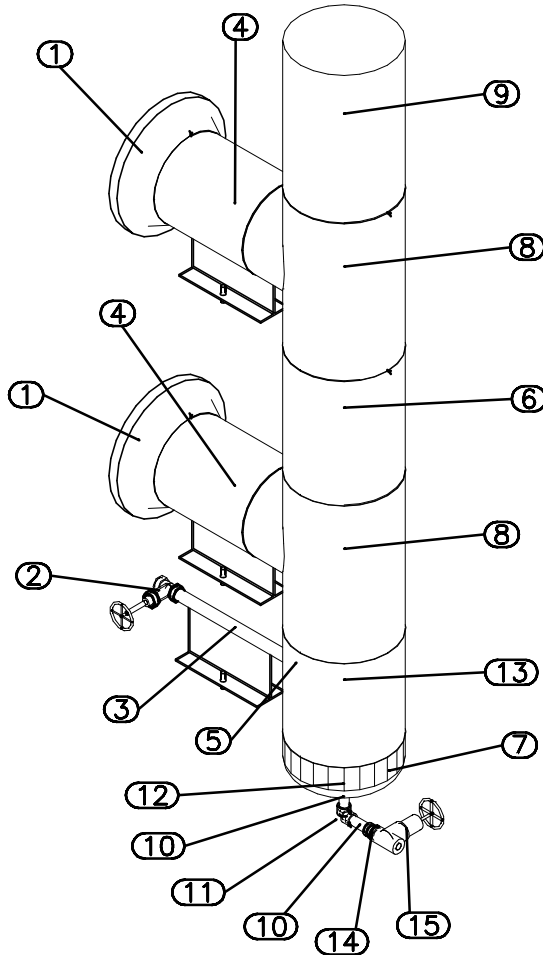
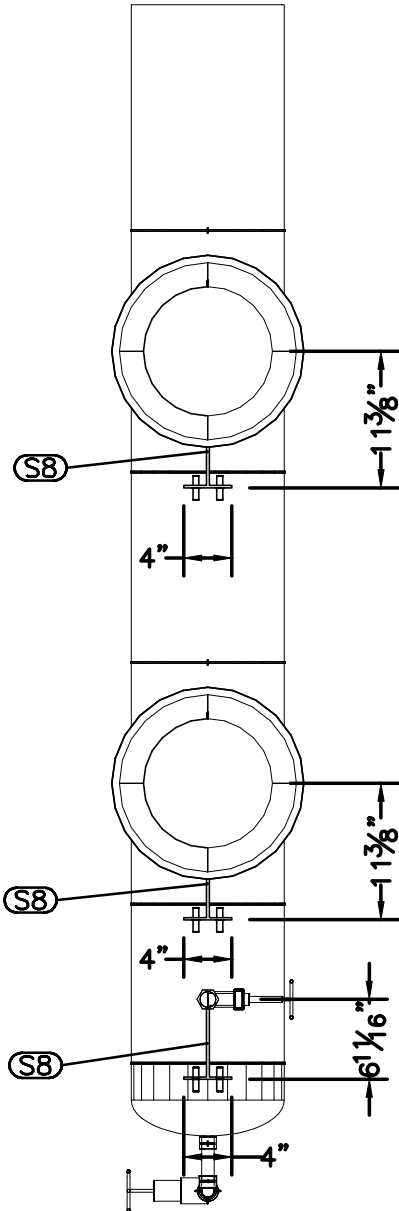
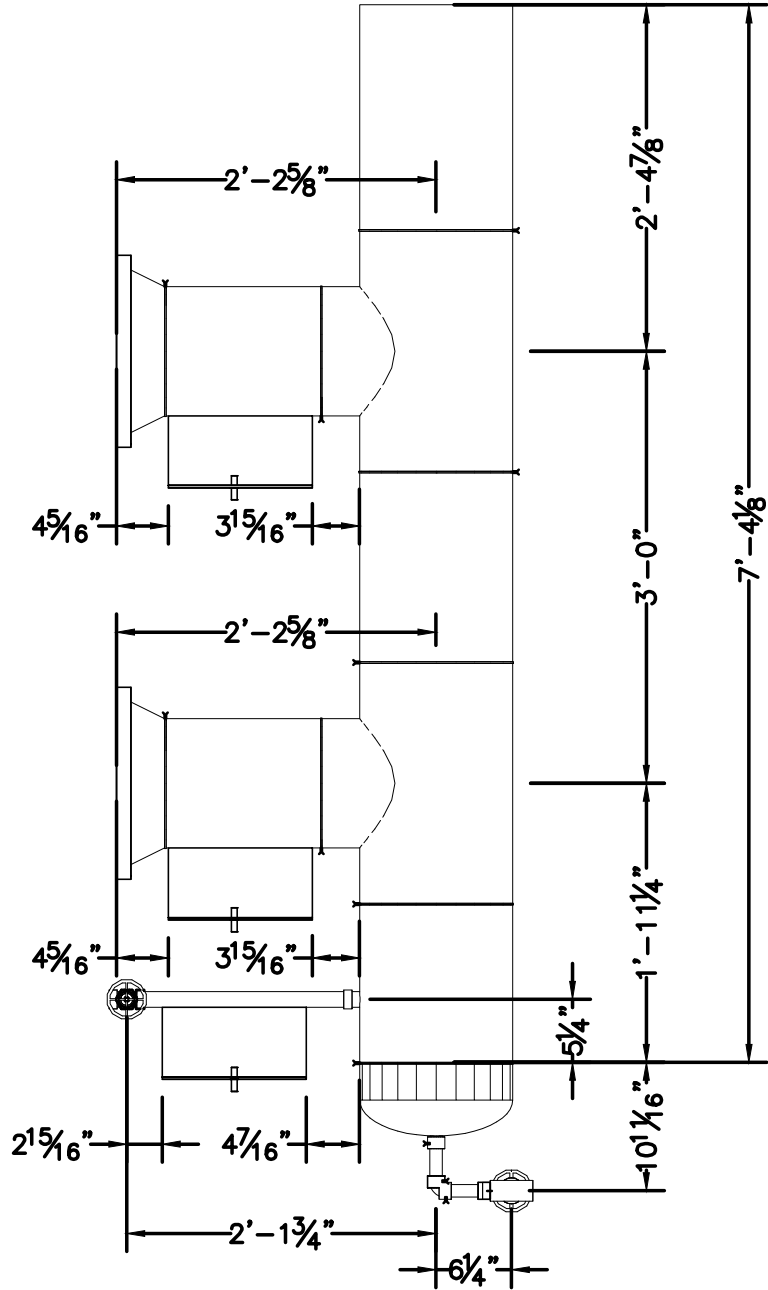
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<input type="checkbox"/>	FLANGE WEIGHT/ORIENTATION
<input type="checkbox"/>	FITTING ORIENTATION
<input type="checkbox"/>	BOLTS/CPLG'S/TH'D TIGHT
<input type="checkbox"/>	SPOOL IDENTIFICATION

QA/QC ACCEPT	ASME	X-RAY	HYDRO TEST	COMMENTS
	NA	NA	NA	

SPEC.	NA	NA	NA	MURPHY WPS#
0	REV	DATE	DESCRIPTION	DRN

DRN	JMM/KSI	12/1/2020	WUSM RESEARCH BUILDING
CHK			NRB
APP			
JOB NO.	210140	SERVICE NAME	210140-A002-B
REF.DWG.		QTY.	2
DRAWING NO./TRACKING NO.	210140-A002-B04	SHT/NO	1 of 1
		REV	0



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
8	2	Std Wt SA234 WPB CS BW RED TEE					12x10
15	1	800# FS BB OS&Y Gate Valve SW					3/4
2	1	T-134 Gate Valve					1
1	2	150lb RF Sch 40 Bore SA105 CS WN Flg					10
14	1	3M FS SW Cplg					3/4
7	1	Std Wt SA234 WPB CS BW Cap					12
11	1	3M A105 FS SW 90 Deg Ell					3/4
12	1	3000# FS Soc-O-Let			1 1/16"	1.063	3/4x12
5	1	3000# FS Thread-O-Let			1 5/16"	1.313	1x12
4	2	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-0 7/8"	12.872	10
6	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-3 3/4"	15.750	12
9	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-6 3/4"	18.750	12
13	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-1 1/8"	13.136	12
3	1	Sch 80 A106B CS SMLS Pipe	MPT	MPT	1'-6"	18.000	1
10	2	Sch 80 A106B CS SMLS Pipe	SW	SW	3"	3.000	3/4

BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S8	WT6x7		3		12"

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<input type="checkbox"/>	FLANGE WEIGHT/ORIENTATION				
<input type="checkbox"/>	FITTING ORIENTATION				
<input type="checkbox"/>	BOLTS/CPLG'S/TH'D TIGHT				
<input type="checkbox"/>	SPOOL IDENTIFICATION				
		COMMENTS			
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		HYDRO TEST	NA		
		X-RAY	NA		
		ASME	NA		
		SPEC.	NA		
0	REV	DATE	DESCRIPTION		
			DRN	CHK	APP

DRN	JMM/KSI	12/1/2020	WUSM RESEARCH BUILDING		
CHK			NRB		
APP					
JOB NO.	210140	SERVICE NAME			
REF.DWG.		210140-A002-B			
DRAWING NO./TRACKING NO.	210140-A002-B05	QTY.	1	SHT/NO	1 of 1
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