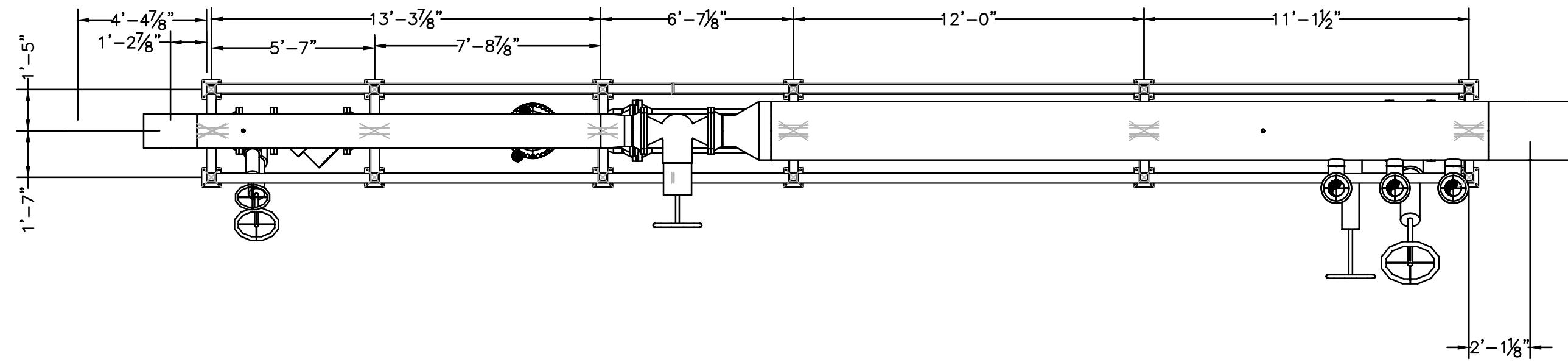


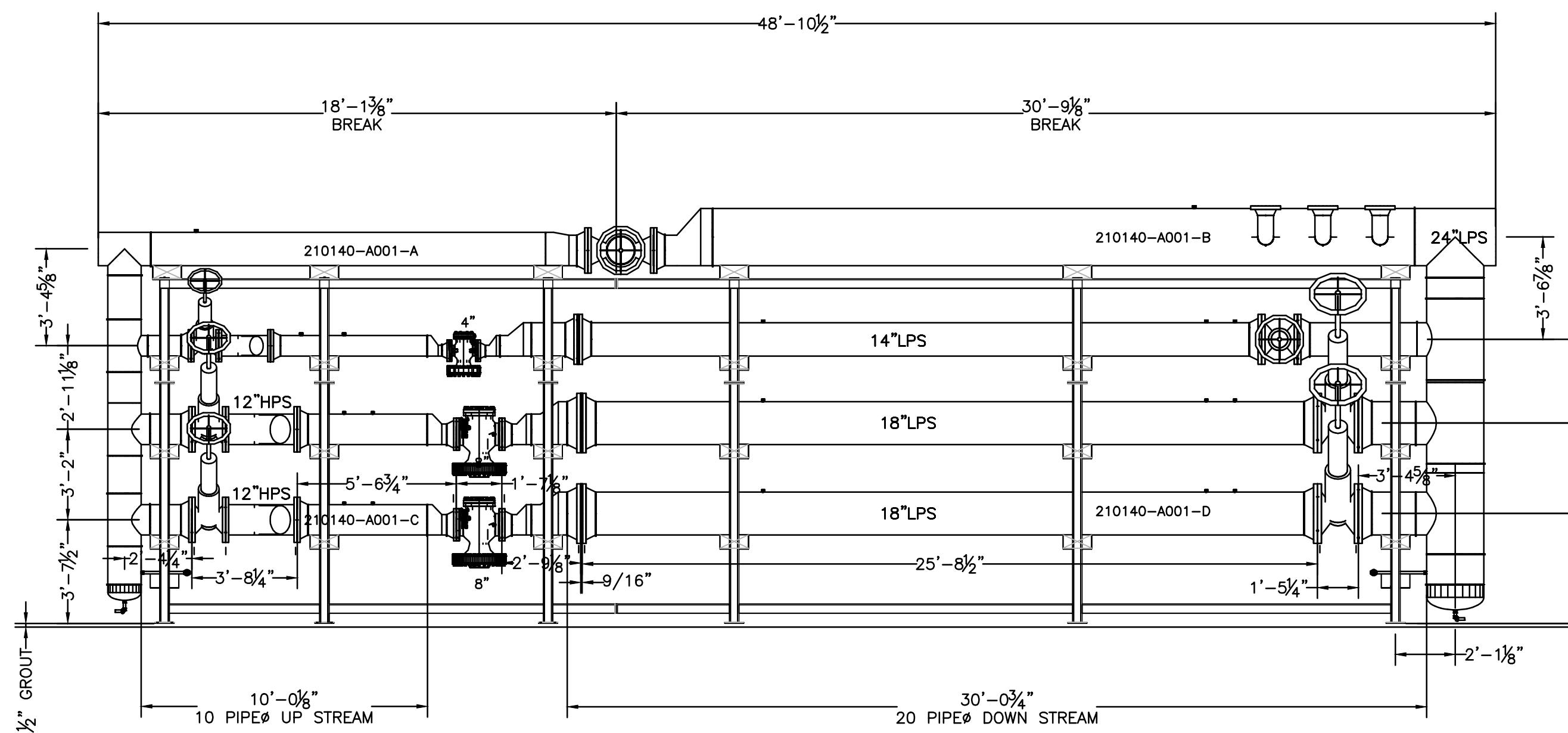
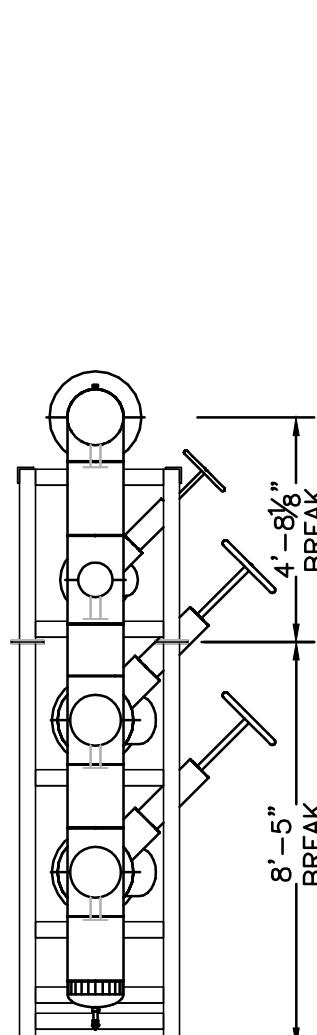
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PAINT	<input type="checkbox"/>
color:	N/A
GAL'V	<input type="checkbox"/>

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PLAN VIEW

SCALE: 1/4"=1'-0"



FRONT VIEW

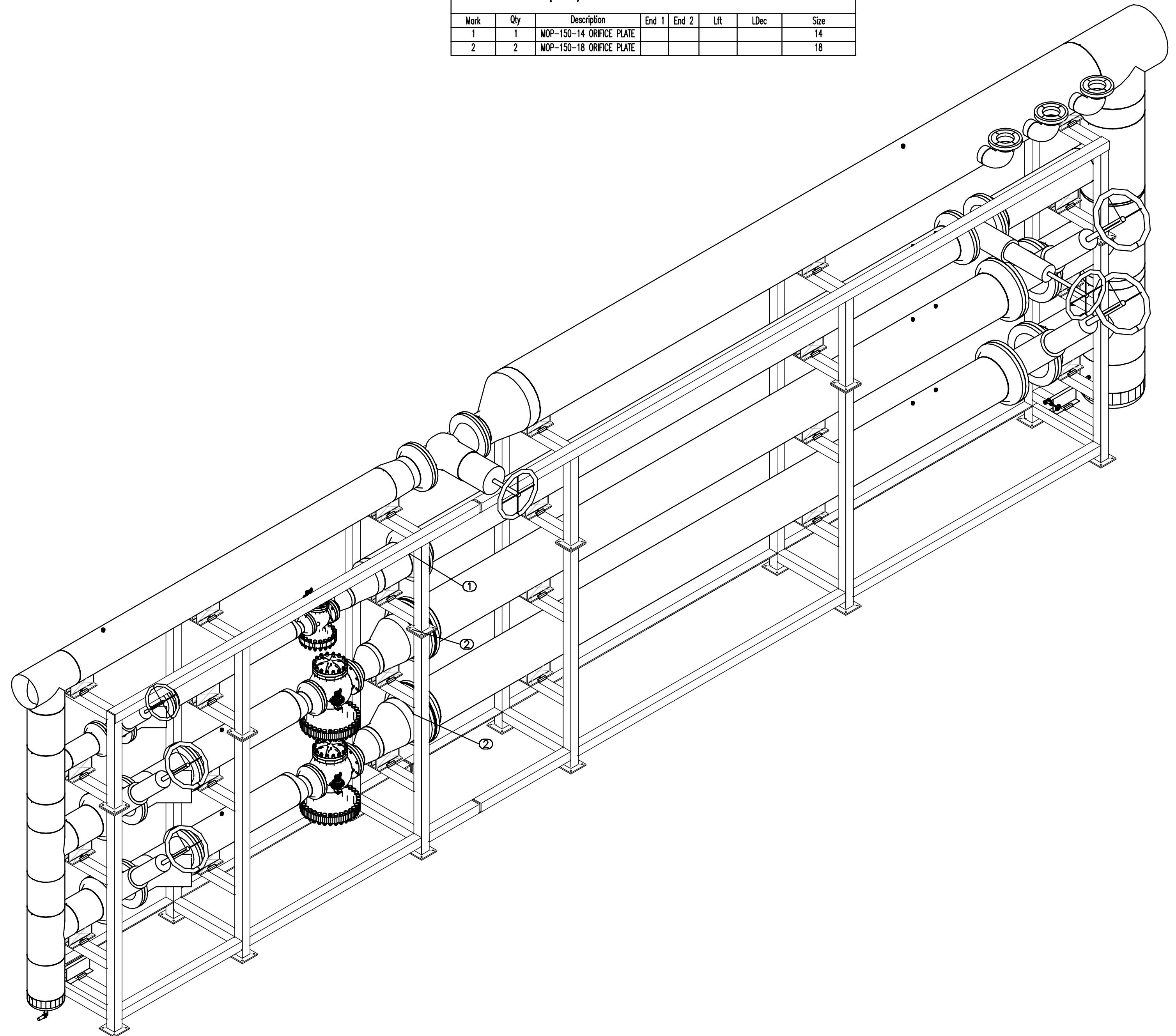
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DRN JMM	11/19/2020	WUSM RESEARCH BUILDING	NRB	DUE DATE				
				QC	TACK	CUT	CUT	
CHK								
APP								
JOB NO.	210140	PRV-2						
SERVICE NAME	HPS/LPS							
REF.DWG.	210140-A001	QTY. 1	SHT/NO. 1 of 2	REV. 0	REV. 0	DATE	DATE	DESCRIPTION
DRAWING NO./TRACKING NO.								
DRN	CHK	APP	DRN	CHK	APP	DRN	CHK	APP

COATINGS	
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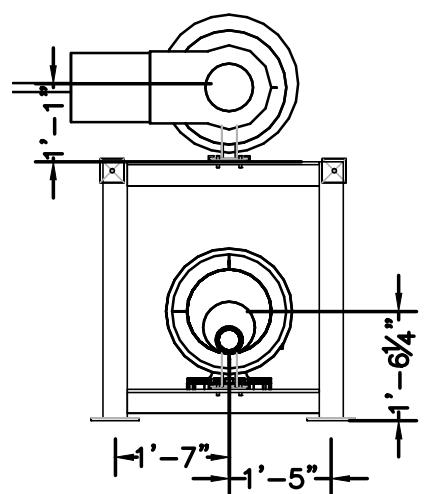
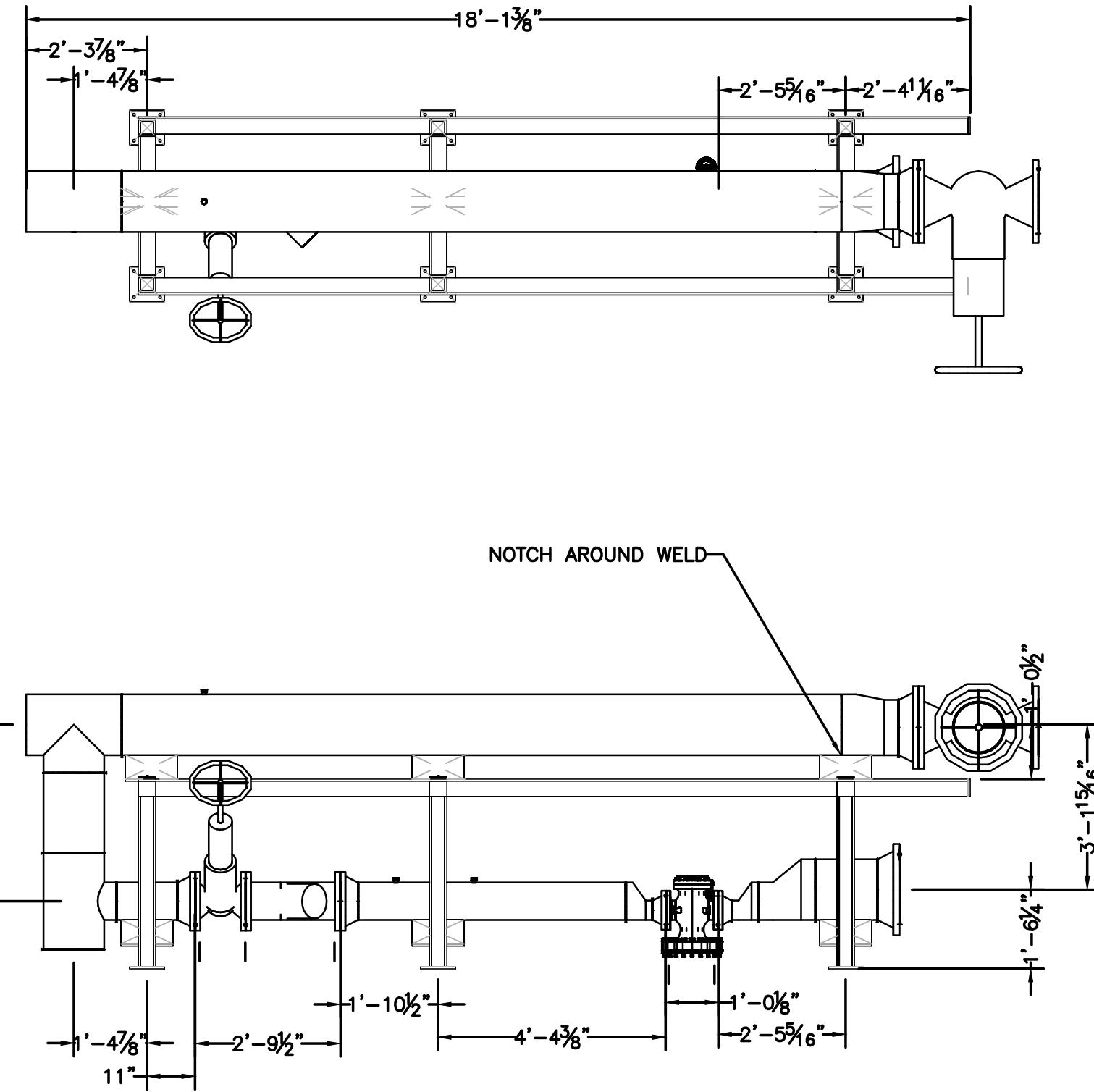
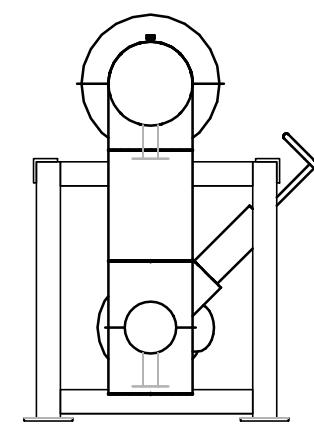
Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	lDec	Size
1	1	MOP-150-14 ORIFICE PLATE					14
2	2	MOP-150-18 ORIFICE PLATE					18

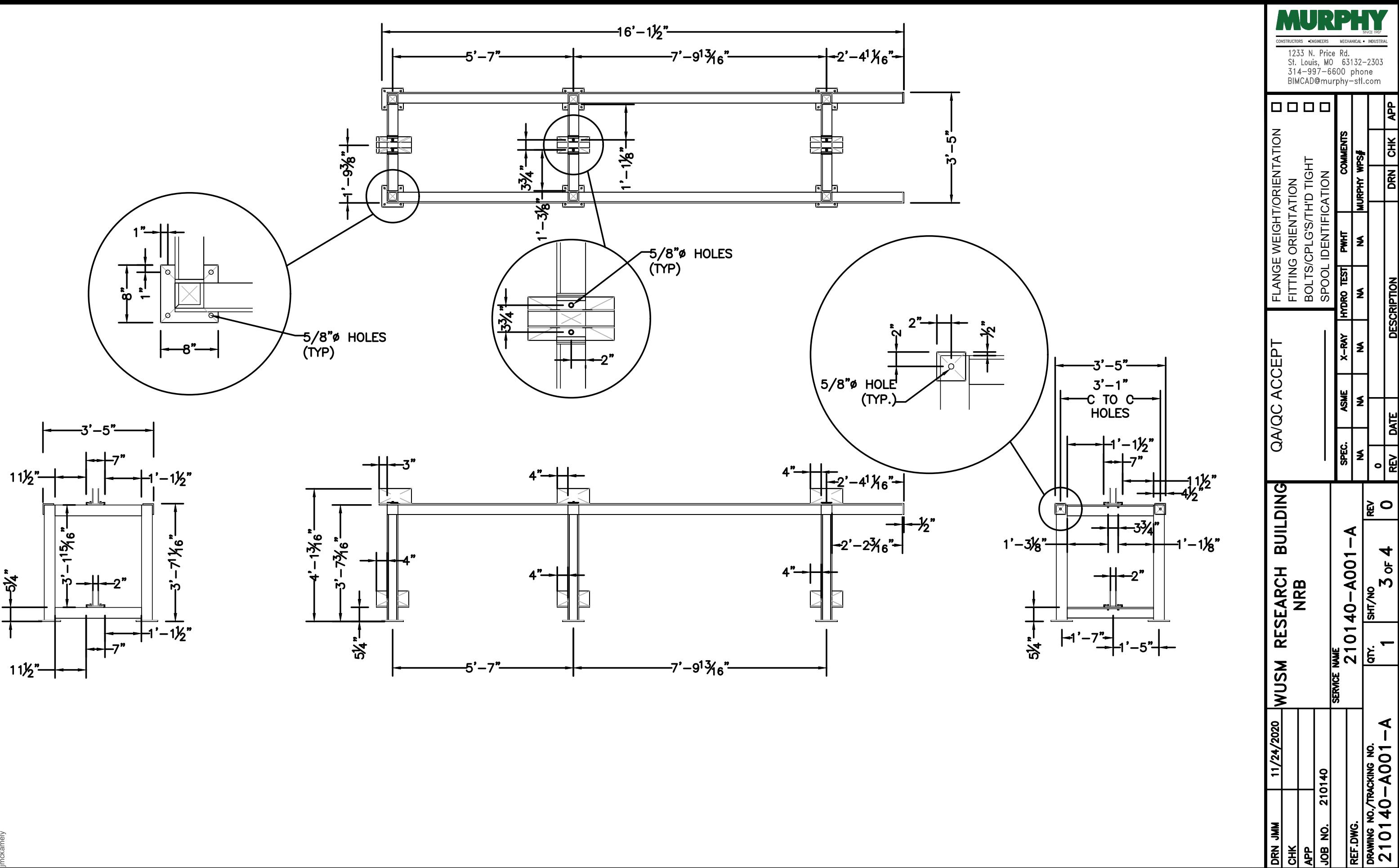


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DRN	JMM	11/19/2020	WUSM RESEARCH BUILDING	DUE DATE	QC		TACK		CUT	
					WELD INCHES	WELD MAP	SPECIAL NOTE	SHIP LOOSE MATERIAL	WT	COMPLETION DATE
			NRB							
			PRV-2							
JOB NO.	210140		SERVICE NAME							
REF. DWG.			HPS / LPS							
DRAWING NO./TRACKING NO.	210140-A001 ISO	QTY. 1	SHT/NO. 2 of 2	REV. 0	REV. 0	REV. 0	REV. 0	REV. 0	REV. 0	DESCRIPTION
APP										
CHK										
DRN										
APP										
CHK										
DRN										
APP										
CHK										

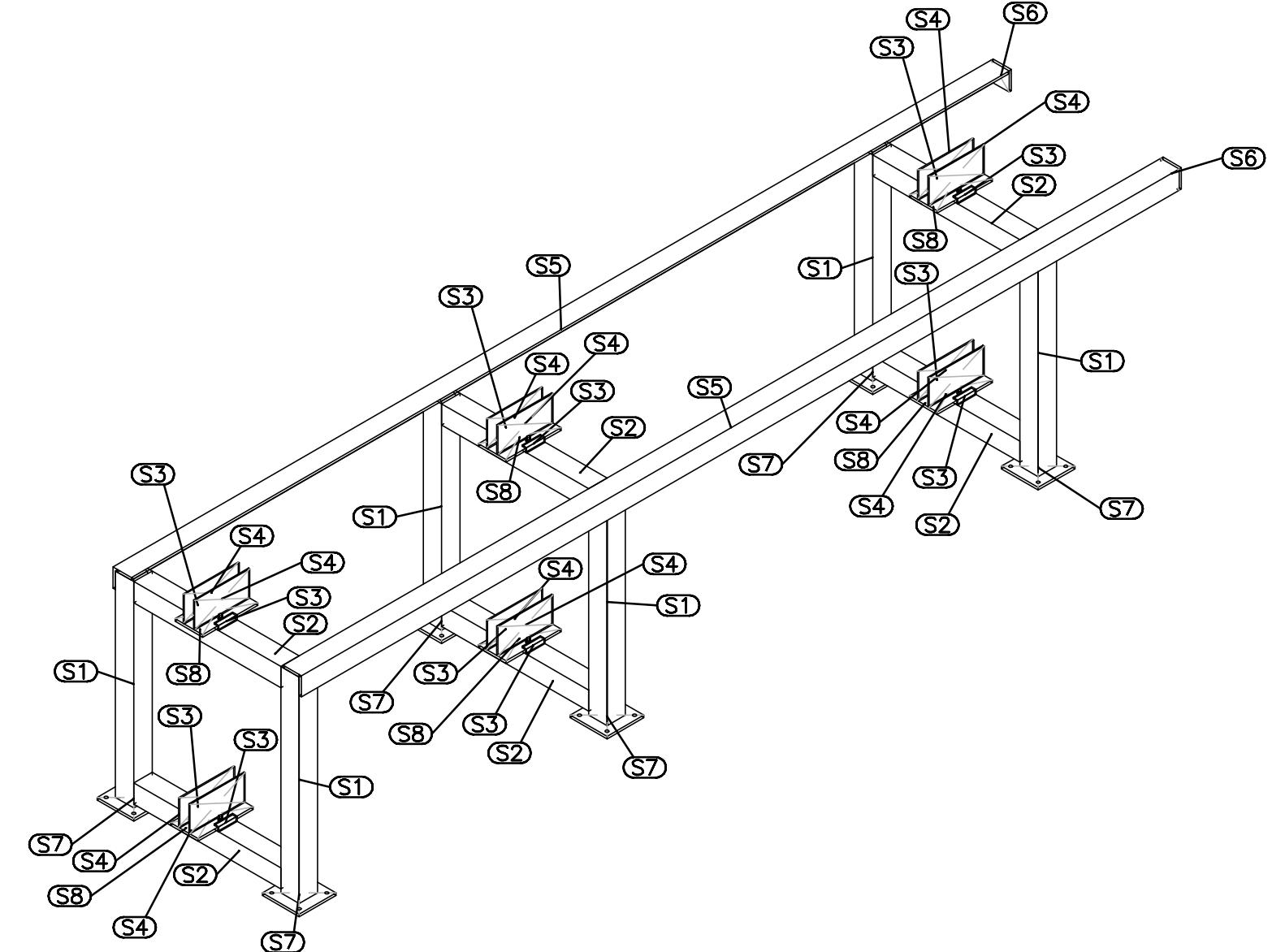


DRN JMM	11/24/2020	WUSM RESEARCH BUILDING			QA/QC ACCEPT	FLANGE WEIGHT/ORIENTATION	
CHK		NRB			FITTING ORIENTATION		
APP					BOLTS/CPLG'S/THD TIGHT		
JOB NO.	210140				SPOOL IDENTIFICATION		
REF.DWG.		SPEC.	ASME	X-RAY	PWHT	COMMENTS	
DRAWING NO./TRACKING NO.	210140-A001-A	REV.	0	0	NA	NA	MURPHY WPS#
QTY.	1	SHT/NO	1 of 4	REV.	DATE	DESCRIPTION	DRN CHK APP
210140-A001-A	1	0					



BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S1	CS SQ Tube	ASTM A36 CS Square Tube	6	SQ4x4x1/2	42 3/4"
S2	L4x4x1/2	ASTM A36 CS Equal Angle	6	L4x4x1/2	32"
S3	L1x1x1/4	ASTM A36 CS Equal Angle	12	L1x1x1/4	4"
S4		ASTM A36 CS Plate 1/4" Thick	12	12x5 9/16x1/4	
S5	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	191"
S6		ASTM A36 CS Plate 1/2" Thick	2	4x4x1/2	
S7		ASTM A36 CS Plate 1/2" Thick	6	8x8x1/2	
S8		ASTM A36 CS Plate 1/2" Thick	6	6x12x1/2	



DRN JMM	11/24/2020	WUSM RESEARCH BUILDING					QA/QC ACCEPT			FLANGE WEIGHT/ORIENTATION			FITTING ORIENTATION			COMMENTS		
		NRB		SPEC.		ASME		X-RAY		HYDRO TEST		PWHT		BOLTS/CPLG'S/THD TIGHT		SPOOL IDENTIFICATION		
REF.DWG.	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A
DRAWING NO./TRACKING NO.	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A
REF.DWG.	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A	210140-A001-A
DRN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JMM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHK																		
APP																		
JOB NO.	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140	210140

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Murphy-PFFS-SPOOL-BOM

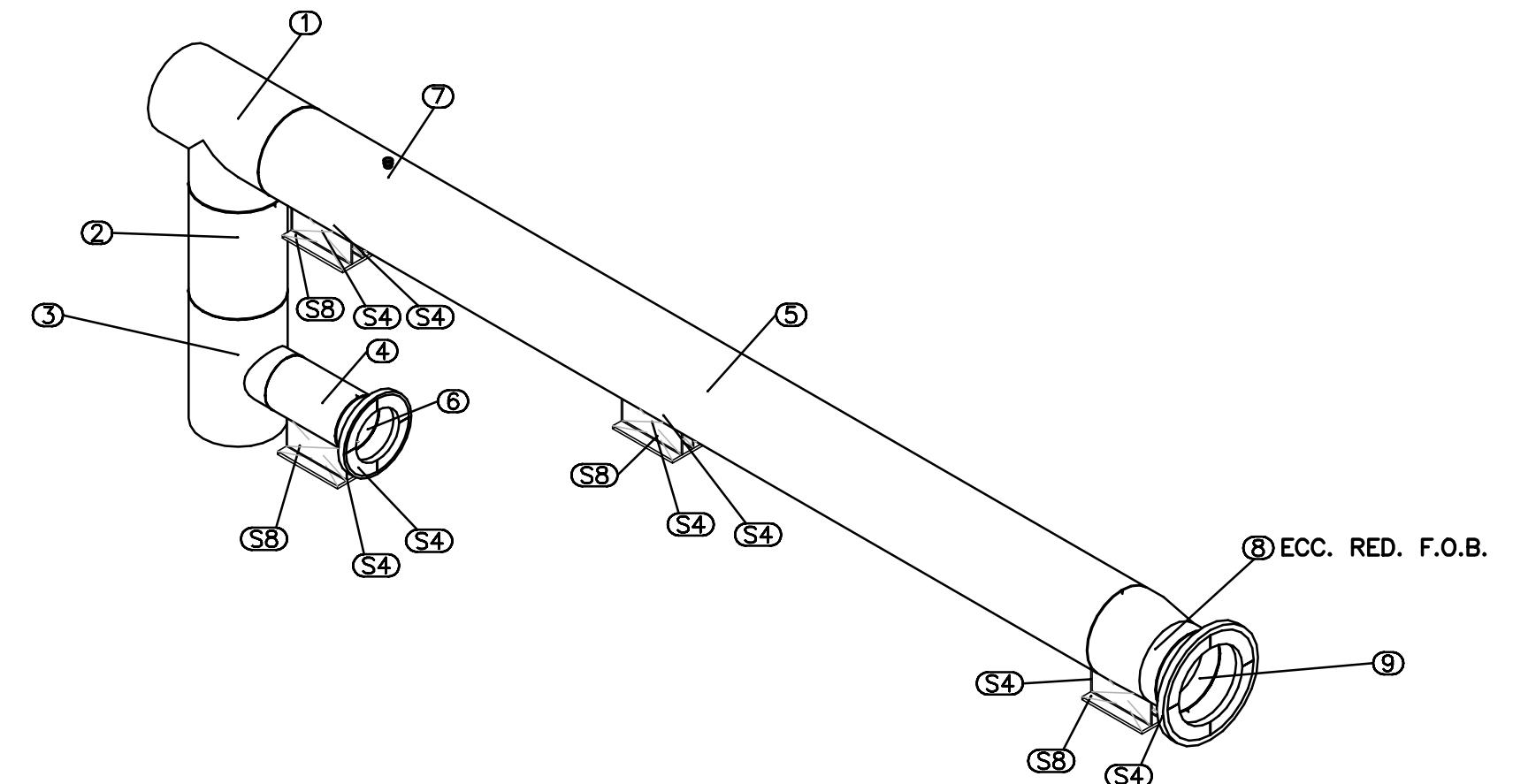
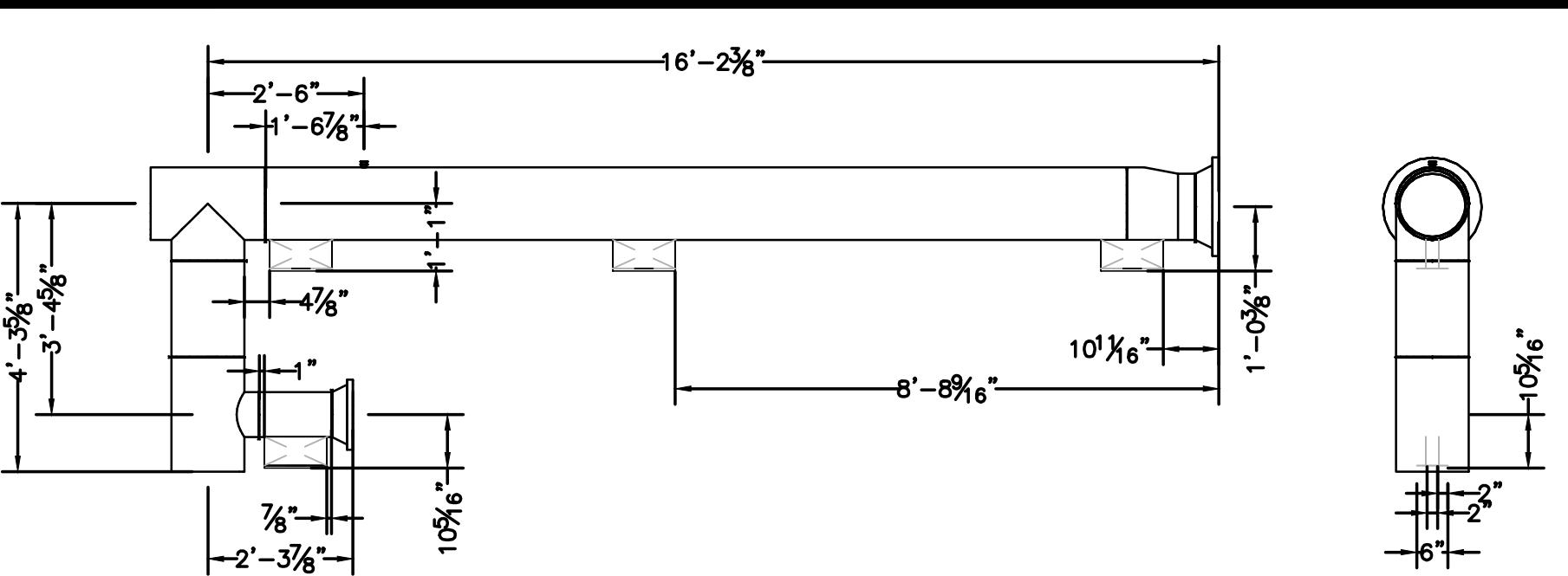
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
3	1	Std Wt SA234 WPB CS BW RED TEE					14x8
1	1	Std Wt SA234 WPB CS BW TEE					14
6	1	150lb RF Sch 40 Bore SA105 CS WN Flg					8
9	1	150lb RF Sch 40 Bore SA105 CS WN Flg					12
8	1	Std Wt SA234 WPB CS BW ECC RED					14x12
7	1	3000# FS Thread-O-Let			1 1/16"	1.063	3/4x14
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	1'-6 3/8"	18.372	14
5	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	13'-9 1/2"	165.518	14

FLANGE WEIGHT/ORIENTATION		FITTING ORIENTATION		COMMENTS	
BOLTS/CPLG'S/THD TIGHT		SPOOL IDENTIFICATION			
Item No	Order	Description	Qty	Size	Steel L
S4		ASTM A36 CS Plate 1/4" Thick	8	12x5 9/16x1/4	0"
S8		ASTM A36 CS Plate 1/2" Thick	4	6x12x1/2	0"

BOM-STEEL

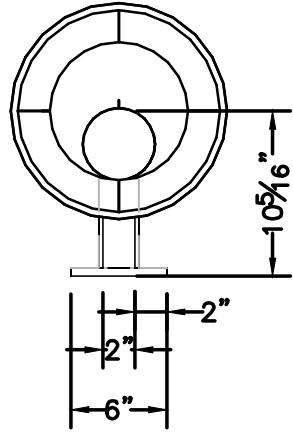
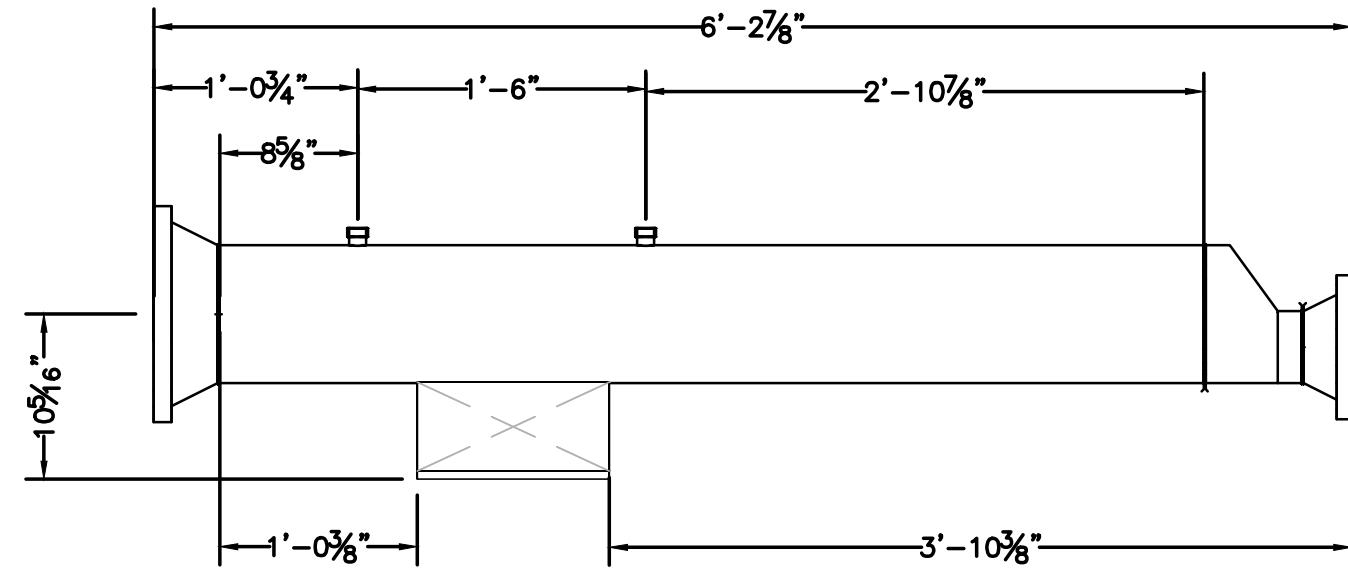
Item No	Order	Description	Qty	Size	Steel L	QA/QC ACCEPT	
						SPEC.	ASME
S4		ASTM A36 CS Plate 1/4" Thick	8	12x5 9/16x1/4	0"	NA	NA
S8		ASTM A36 CS Plate 1/2" Thick	4	6x12x1/2	0"	NA	NA

REF.DWG.	DRAWING NO./TRACKING NO.	210140-A001-A			
		QTY.	SHT/NO	REV	DATE
	210140-A001-A01	1	1 of 1	0	0



Murphy-PFFS-SPOOL-BOM

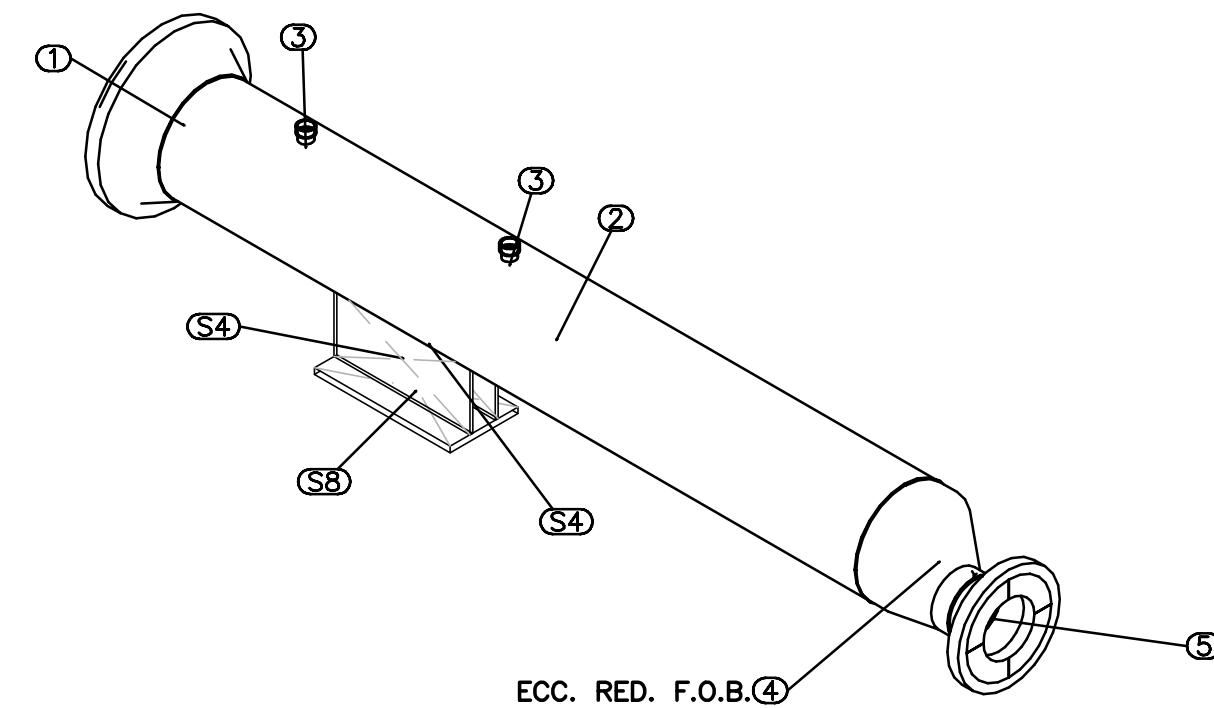
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
5	1	150lb RF Sch 40 Bore SA105 CS WN Flg					4
1	1	150lb RF Sch 40 Bore SA105 CS WN Flg					8
4	1	Std Wt SA234 WPB CS BW ECC RED					8x4
3	2	3000# FS Thread-O-Let			1 1/16"	1.063	3/4x8
2	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	5'-1 1/2"	61.497	8

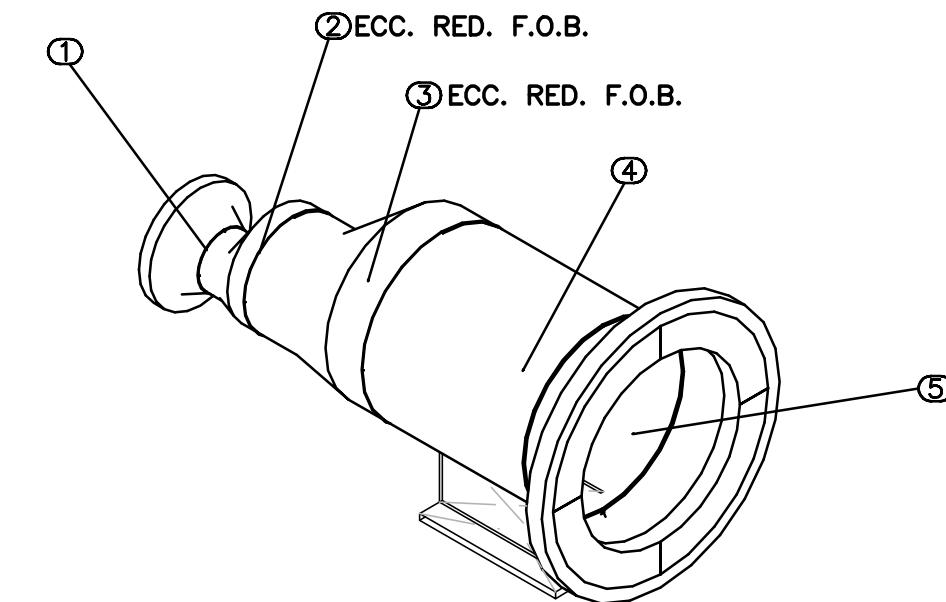
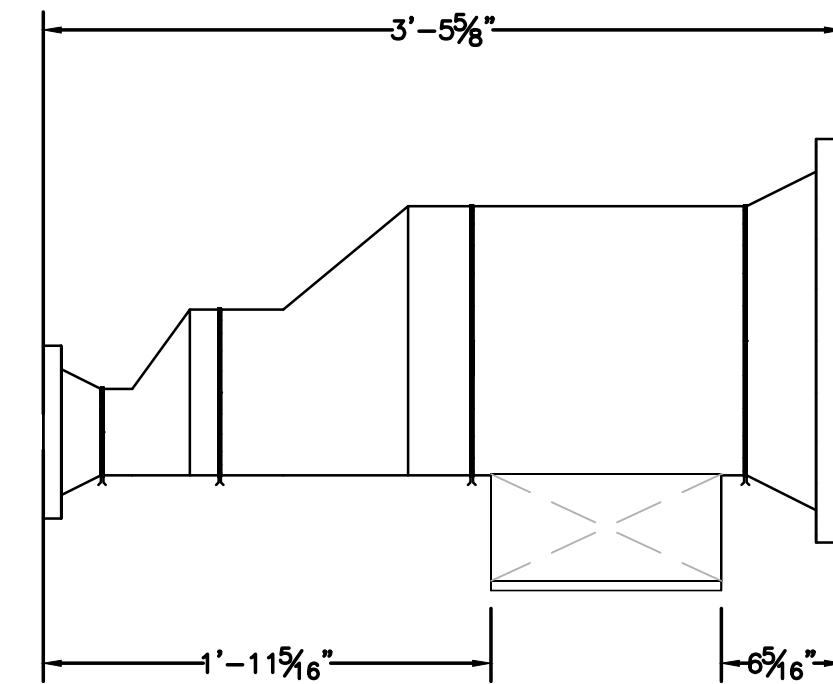


BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S4		ASTM A36 CS Plate 1/4" Thick	2	12x5 9/16x1/4	0°
S8		ASTM A36 CS Plate 1/2" Thick	1	6x12x1/2	0°

REF.DWG.	DRAWING NO./TRACKING NO.	SERVICE NAME	QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION	FITTING ORIENTATION	COMMENTS			
			SPEC.	ASME	X-RAY	PWHT						
210140-A001-A02	210140-A001-A	WUSM RESEARCH BUILDING NRB	0	0	0	0						
			REV	DATE	DESCRIPTION	APP	DRN	CHK	APP			
			1	SHT/NO	1 of 1	0						
			QTY.									





Murphy-PFFS-SPOOL-BOM

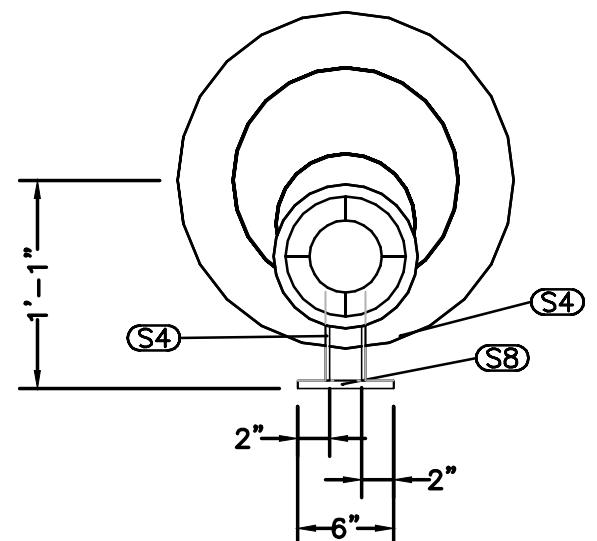
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	1	150lb RF Sch 40 Bore SA105 CS WN Flg					4
5	1	150lb RF Sch 40 Bore SA105 CS WN Flg					14
2	1	Std Wt SA234 WPB CS BW ECC RED					8x4
3	1	Std Wt SA234 WPB CS BW ECC RED					14x8
4	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-2 1/8"	14.120	14

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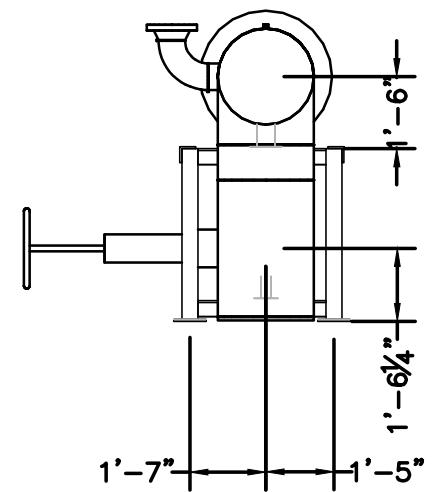
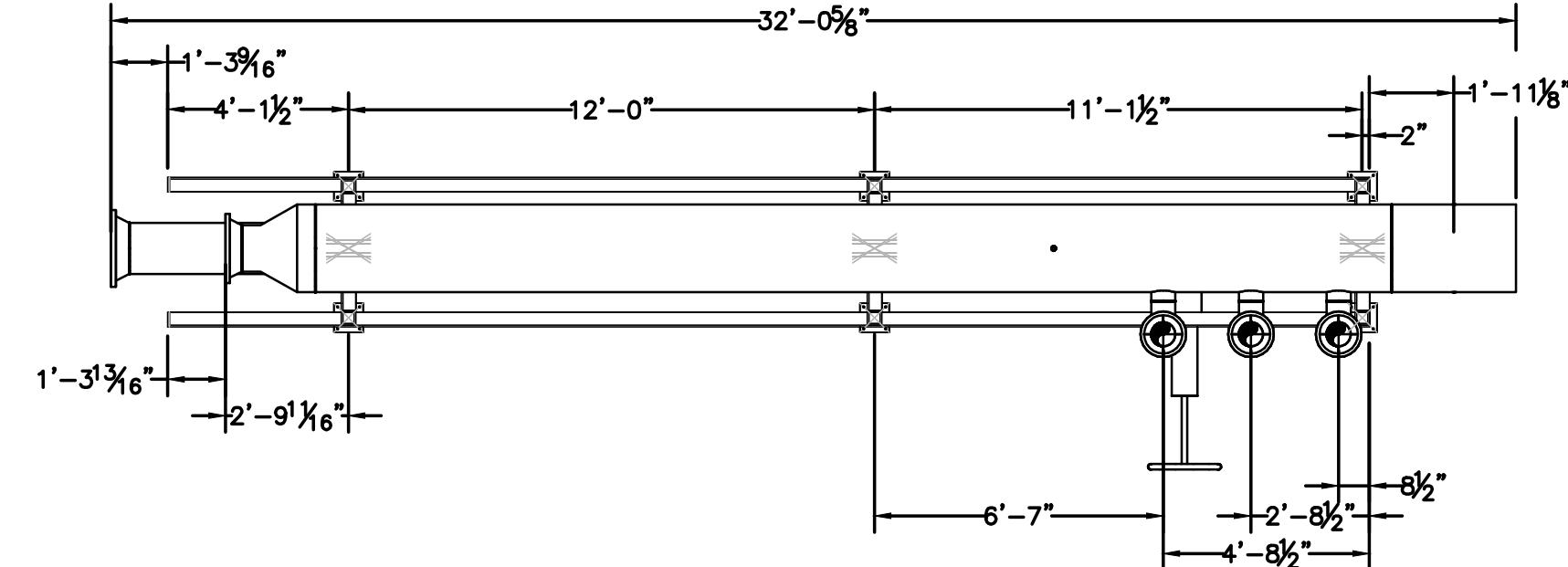
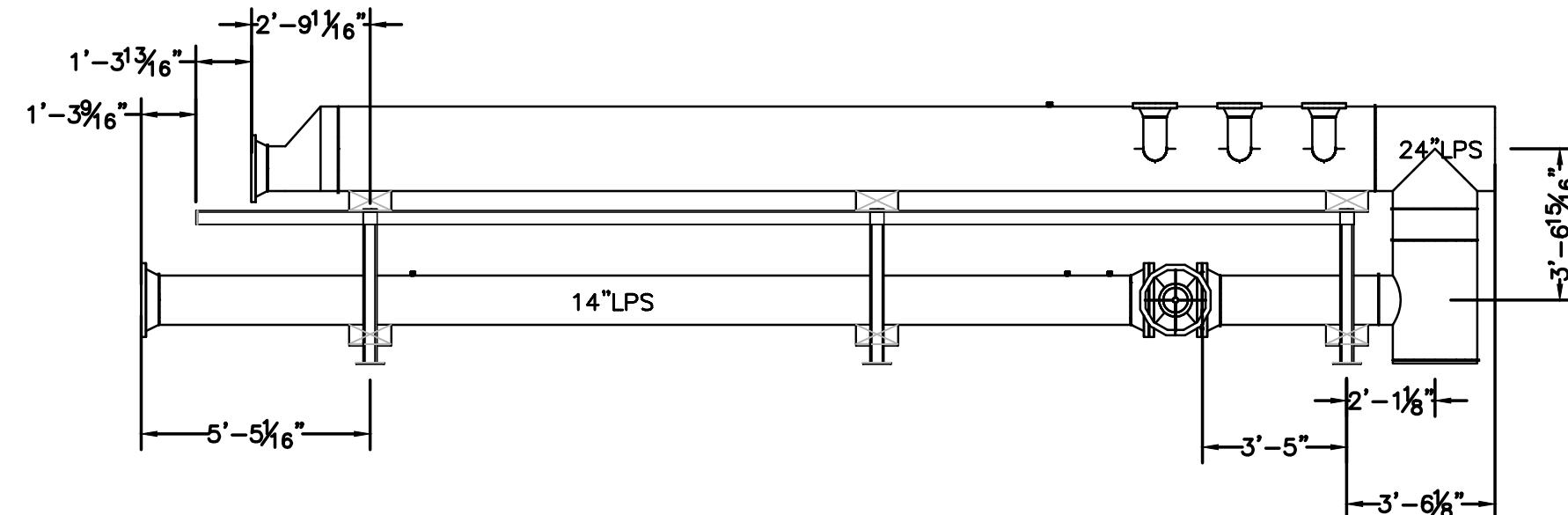
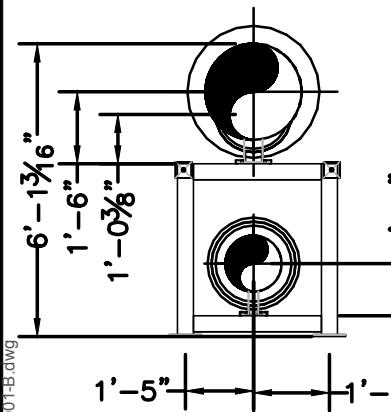
BOM-STEEL		FLANGE WEIGHT/ORIENTATION	FITTING ORIENTATION	BOLTS/CPLG'S/THD TIGHT	SPOOL IDENTIFICATION	COMMENTS
Item No	Order	Description	Qty	Size	Steel L	
S4		ASTM A36 CS Plate 1/4" Thick	2	12x5 9/16x1/4	0"	
S8		ASTM A36 CS Plate 1/2" Thick	1	6x12x1/2	0"	
						MURPHY WPS#
						DRN CHK APP
						DESCRIPTION

DRN JMM/KSI	11/25/2020	WUSM RESEARCH BUILDING NRB	QA/QC ACCEPT			
			SPEC.	ASME	X-RAY	PWHT
CHK	NA	NA	NA	NA	NA	NA
APP						
JOB NO. 210140			SERVICE NAME			
REF.DWG.			210140-A001-A			
DRAWING NO./TRACKING NO.			QTY. 1	SHT/NO. 1 of 1	REV. 0	DATE
210140-A001-A03						

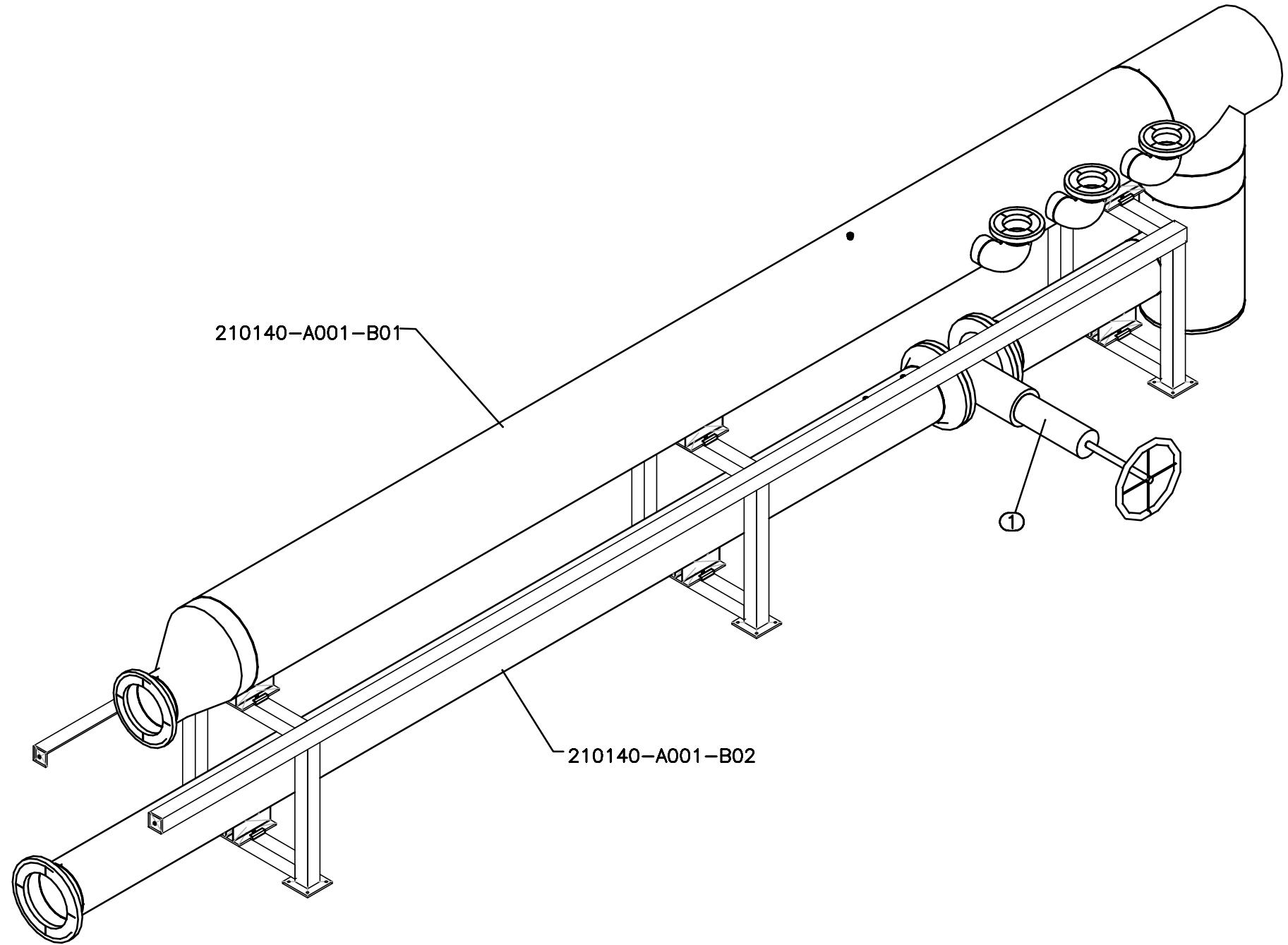


DRN JMM/KSI 11/25/2020 WUSM RESEARCH BUILDING
CHK APP NRB
JOB NO. 210140 SERVICE NAME 210140-A001-A

REF.DWG. DRAWING NO./TRACKING NO. 210140-A001-A03
DRAWING NO./TRACKING NO. 210140-A001-A03 QTY. 1 SHT/NO. 1 of 1 REV. 0 DATE



REF.DWG.	DRAWING NO./TRACKING NO.	WUSM RESEARCH BUILDING			QA/QC ACCEPT	FLANGE WEIGHT/ORIENTATION	FITTING ORIENTATION	BOLTS/CPLG'S/THD TIGHT	SPOOL IDENTIFICATION	COMMENTS
		SPEC.	ASME	X-RAY						
JOB NO.	SERVICE NAME	QTY.	SHT/NO	REV	DATE	DESCRIPTION	DRN	CHK	APP	
210140-A001-B	210140-A001-B	1	1 of 4	0	0					



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	1	Fig 47 Gate Valve					14
3	2	150# 304 Spiral Wound Style CG 1-8					14
2	2	150# CS Flange Bolt Set					14 (1x4-1/2)

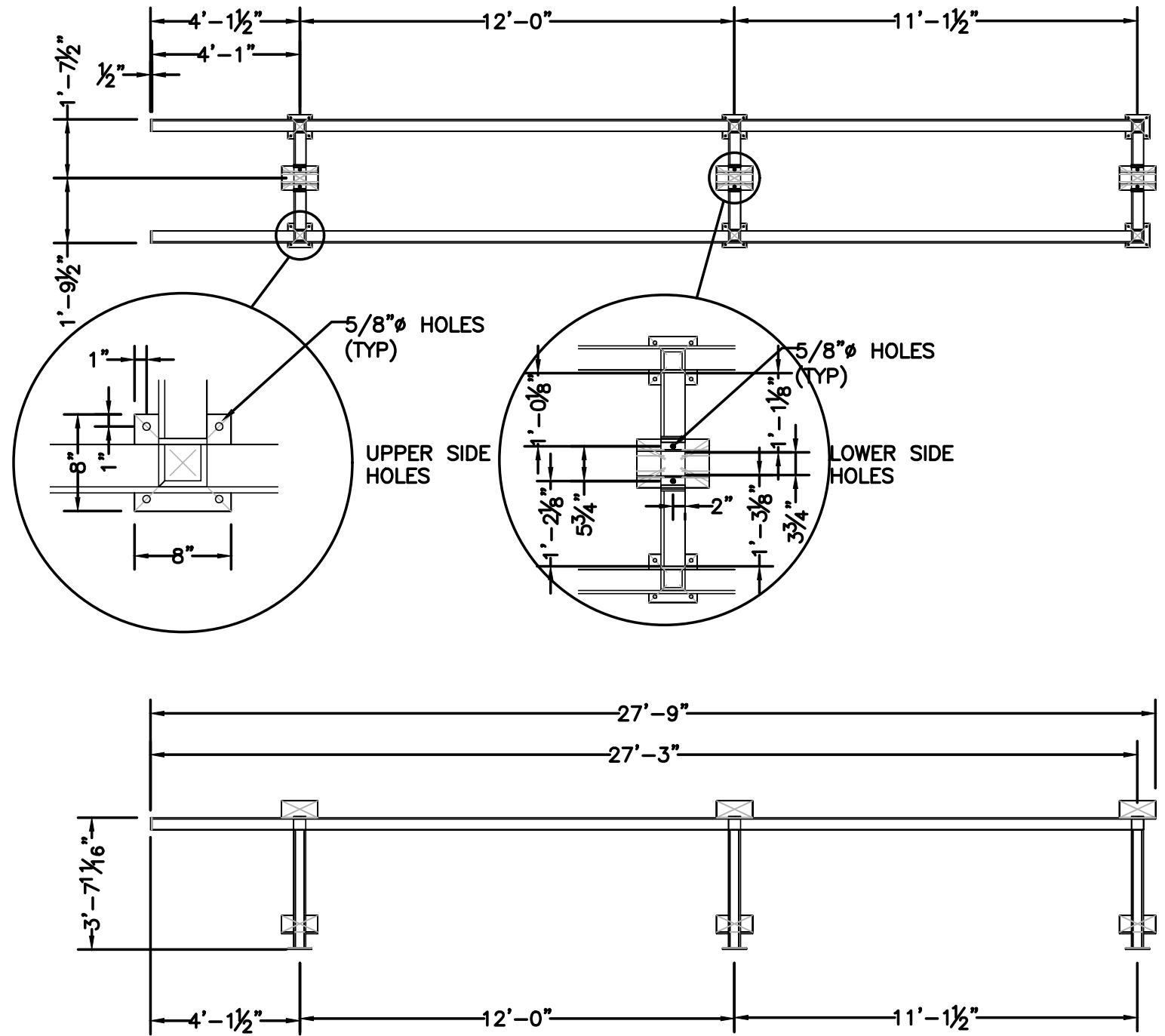
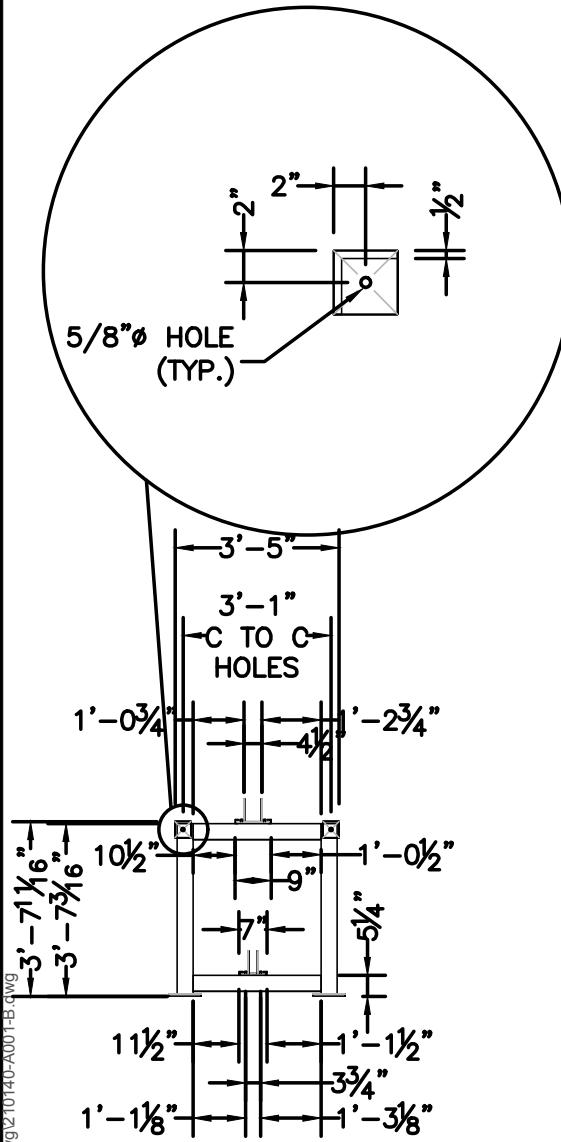
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REF.DWG.	DRAWING NO./TRACKING NO.	SERVICE NAME		QA/QC ACCEPT		FLANGE WEIGHT/ORIENTATION		FITTING ORIENTATION		COMMENTS	
		SPEC.	ASME	X-RAY	PWHT	BOLTS/CPLG'S/THD TIGHT	SPOOL IDENTIFICATION	DRN	CHK	APP	
	210140-A001-B	210140-A001-B	1	SHT/NO 2 of 4	REV 0	0	0	0	0	0	
	210140-A001-B	210140-A001-B	1	SHT/NO 2 of 4	REV 0	0	0	0	0	0	

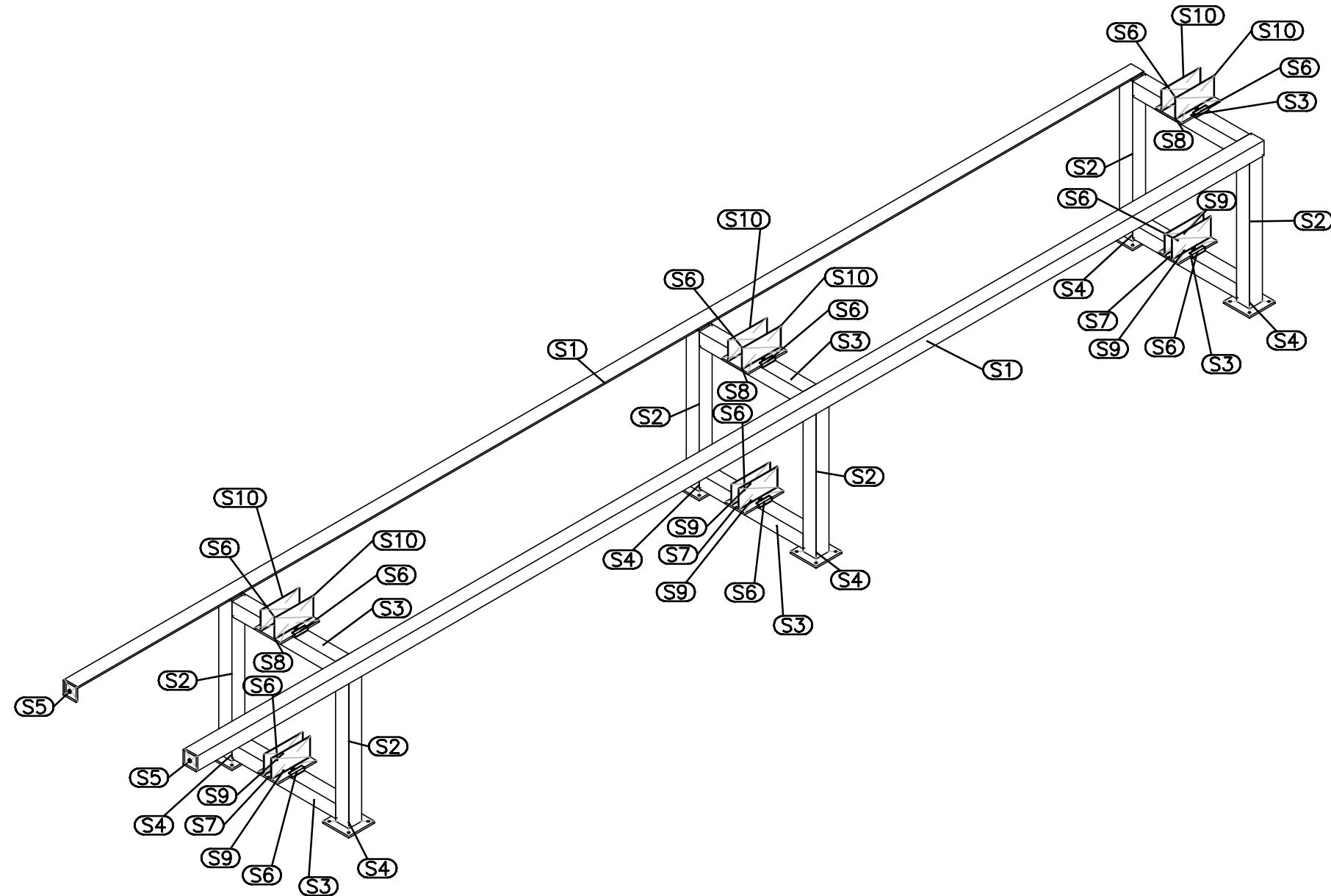
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WJSM RELIANCE BUILDING		NRB		FITTING ORIENTATION		BOLTS/CPLGS/TH'D TIGHT		SPOOL IDENTIFICATION	
REF.DWG.	DRAWING NO./TRACKING NO.	SERVICE NAME		SPEC.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS
		210140-A001-B		NA	NA	NA	NA	NA	MURPHY WPS#
210140-A001-B		QTY.	SHT/NO	REV	0	0	REV	DATE	DESCRIPTION
		1	3 of 4						DRN CHK APP



BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S1	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	328 1/2"
S2	CS SQ Tube	ASTM A36 CS Square Tube	6	SQ4x4x1/2	42 3/4"
S3	L4x4x1/2	ASTM A36 CS Equal Angle	6	L4x4x1/2	32"
S4		ASTM A36 CS Plate 1/2" Thick	6	8x8x1/2	
S5		ASTM A36 CS Plate 1/2" Thick	2	4x4x1/2	
S6	L1x1x1/4	ASTM A36 CS Equal Angle	12	L1x1x1/4	4"
S7		ASTM A36 CS Plate 1/2" Thick	3	12x6x1/2	
S8		ASTM A36 CS Plate 1/2" Thick	3	12x8x1/2	
S9		ASTM A36 CS Plate 1/4" Thick	6	12x5-9/16x1/4	
S10		ASTM A36 CS Plate 1/4" Thick	6	12x5-5/8x1/4	



REF.DWG.	DRAWING NO./TRACKING NO.	210140-A001-B			REV	DATE	DESCRIPTION	DRN	CHK	APP
		QTY.	SHT/NO	4 of 4						
210140-A001-B	210140-A001-B	1	1		O					
					0					
					REV	DATE	DESCRIPTION	DRN	CHK	APP

Murphy-PFFS-SPOOL-BOM

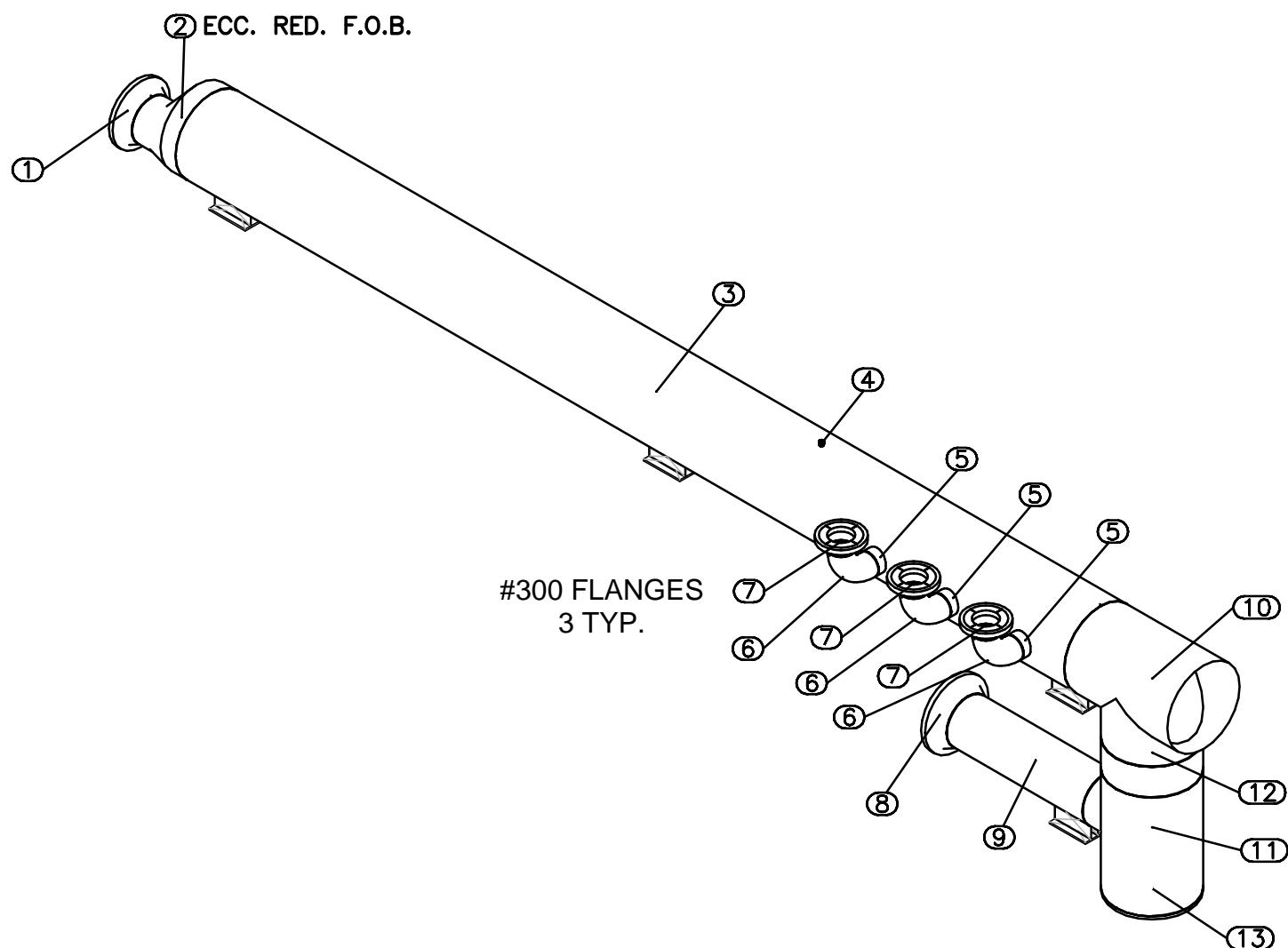
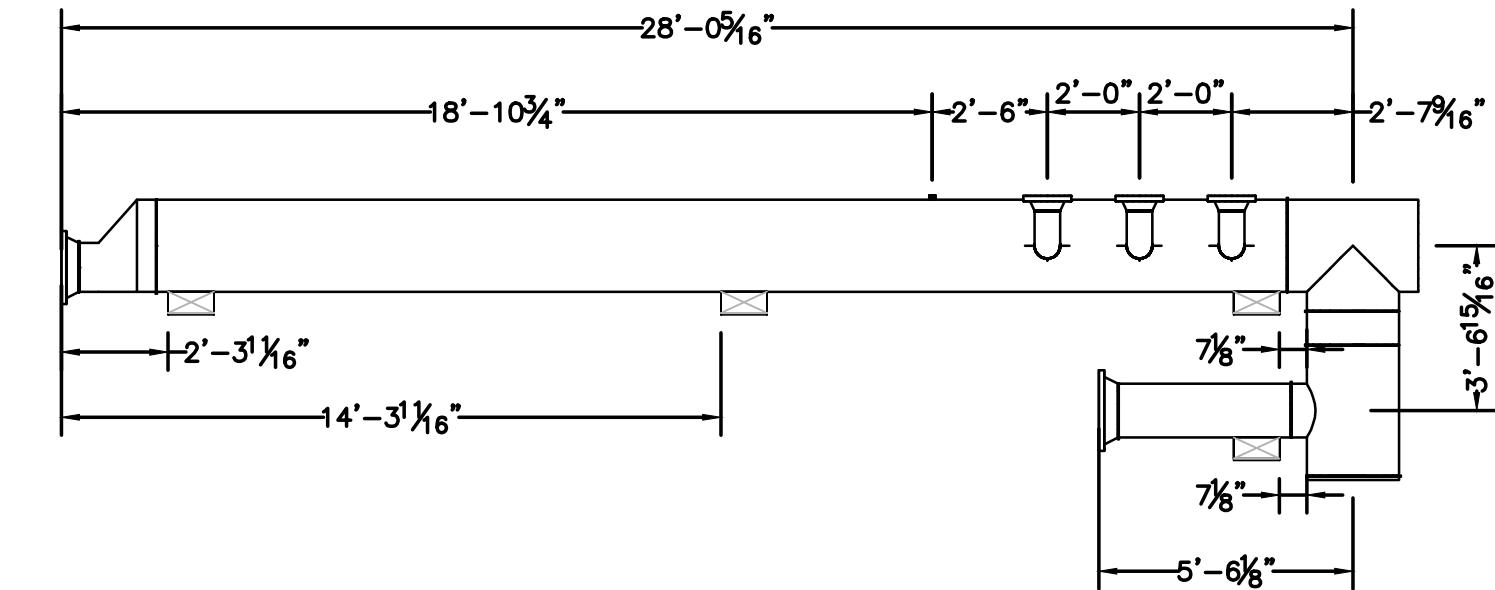
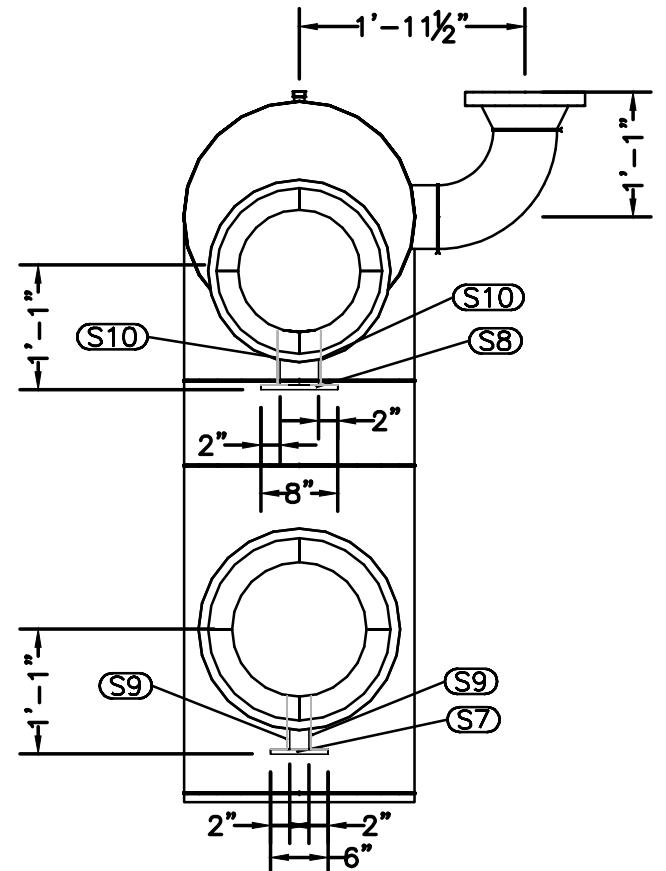
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
11	1	Std Wt SA234 WPB CS BW RED TEE					24x14
10	1	Std Wt SA234 WPB CS BW TEE					24
1	1	150lb RF Sch 40 Bore SA105 CS WN Flg					12
8	1	150lb RF Sch 40 Bore SA105 CS WN Flg					14
7	3	300lb RF Sch 40 Bore SA105 CS WN FLG					6
2	1	Std Wt SA234 WPB CS BW ECC RED					24x12
6	3	Std Wt SA234 WPB CS BW LR 90 Deg Ell					6
5	3	FS STD WELDOLET			2 3/8"	2.375	6x24
4	1	3000# FS Thread-O-Let			1 1/16"	1.063	3/4x24
9	1	Sch 40 SA-53B CS SMLS Pipe PE	BEV	BEV	3'-8 7/8"	44.875	14
3	1	Std Wt SA-53B CS SMLS Pipe PE	BEV	BEV	24'-6 7/16"	294.438	24
12	1	Std Wt SA-53B CS SMLS Pipe PE	BEV	BEV	8 11/16"	8.685	24
13	1	Std Wt SA-53B CS SMLS Pipe PE	BEV	BEV	0 7/8"	0.889	24

FLANGE WEIGHT/ORIENTATION		FITTING ORIENTATION		COMMENTS		
BOLTS/CPLG'S/THD TIGHT		SPOOL IDENTIFICATION		DRN	CHK	APP

BOM-STEEL

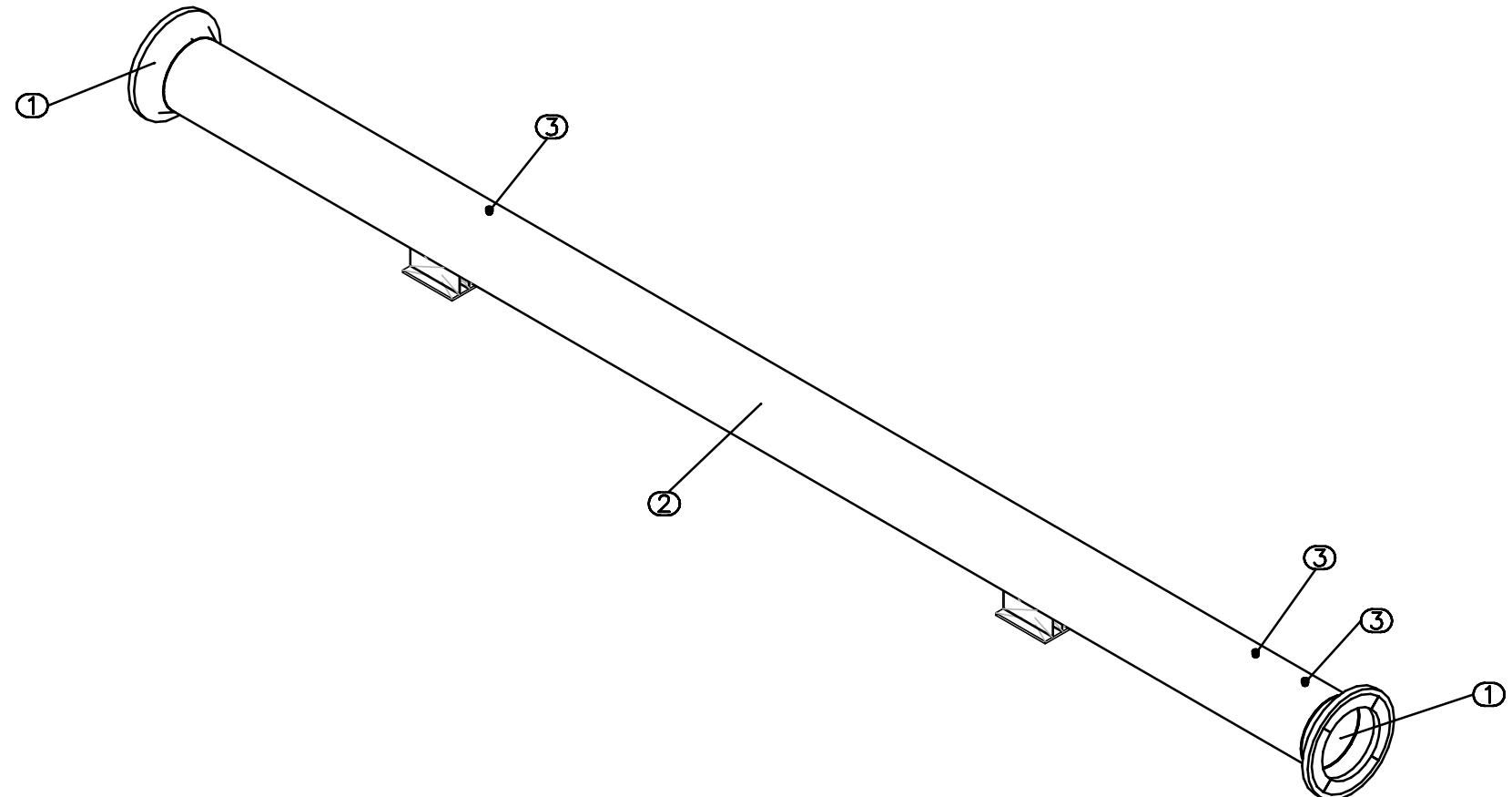
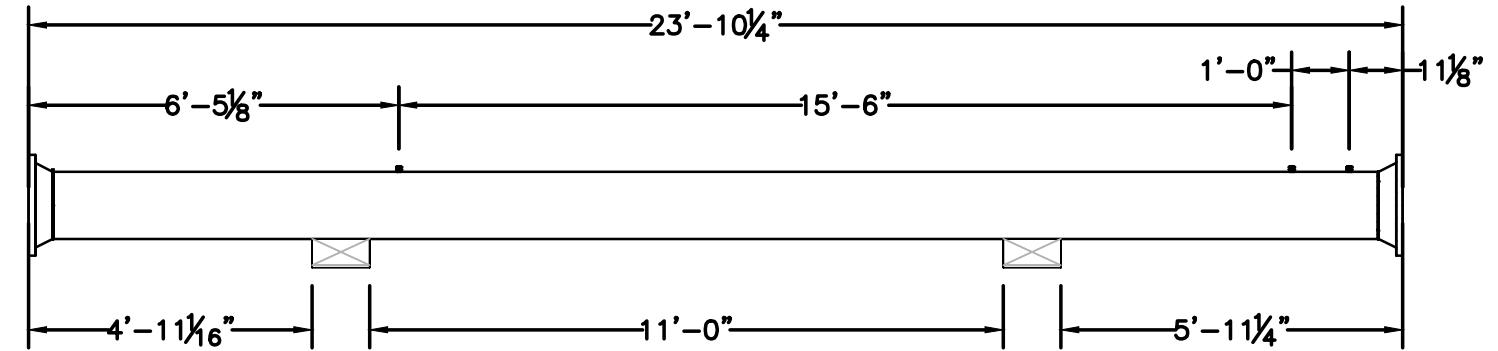
Item No	Order	Description	Qty	Size	Steel L
S7		ASTM A36 CS Plate 1/2" Thick	1	6x12x1/2	0"
S8		ASTM A36 CS Plate 1/2" Thick	3	8x12x1/2	0"
S9		ASTM A36 CS Plate 1/4" Thick	2	12x5 9/16x1/4	0"
S10		ASTM A36 CS Plate 1/4" Thick	6	12x5 5/8x1/4	0"

DRN JMM/KSI	11/25/2020	WUSM RESEARCH BUILDING		SPEC.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS
		NRB	NRB						
210140-B		210140-B		0	0				
210140-A001-B01		210140-A001-B01		1	1				
REF.DWG.		REF.DWG.		1	1				
DRAWING NO./TRACKING NO.		DRAWING NO./TRACKING NO.		1	1				
210140-A001-B01		210140-A001-B01		1	1				



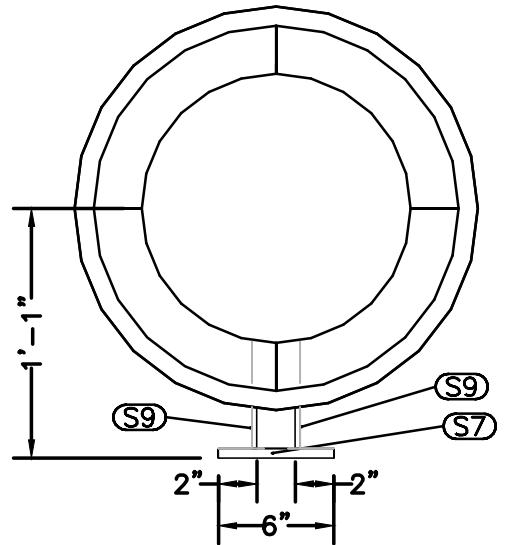
Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	2	150lb RF Sch 40 Bore SA105 CS WN Flg					14
3	3	3000# FS Thread-O-Let			1"	1.000	1/2x14
2	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	23'-0"	276.000	14



BOM-STEEL

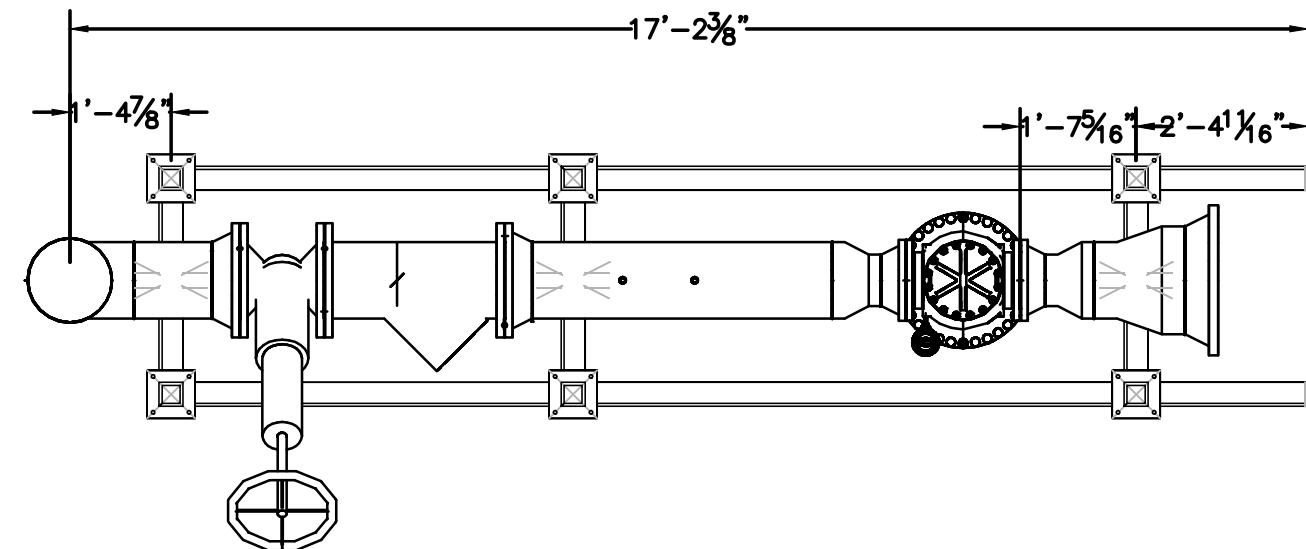
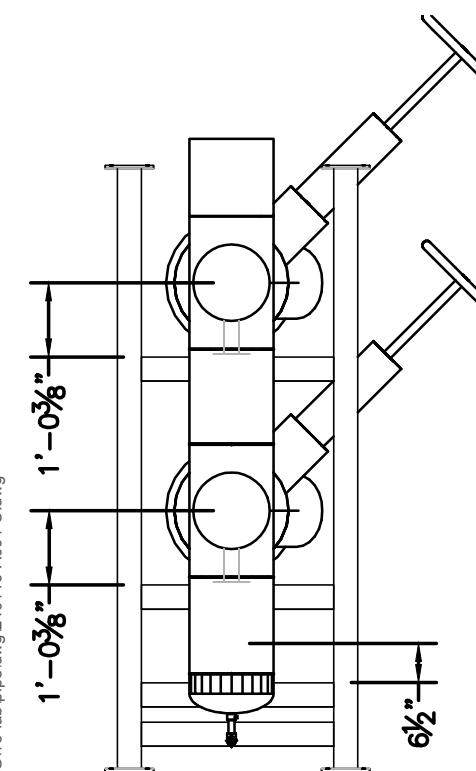
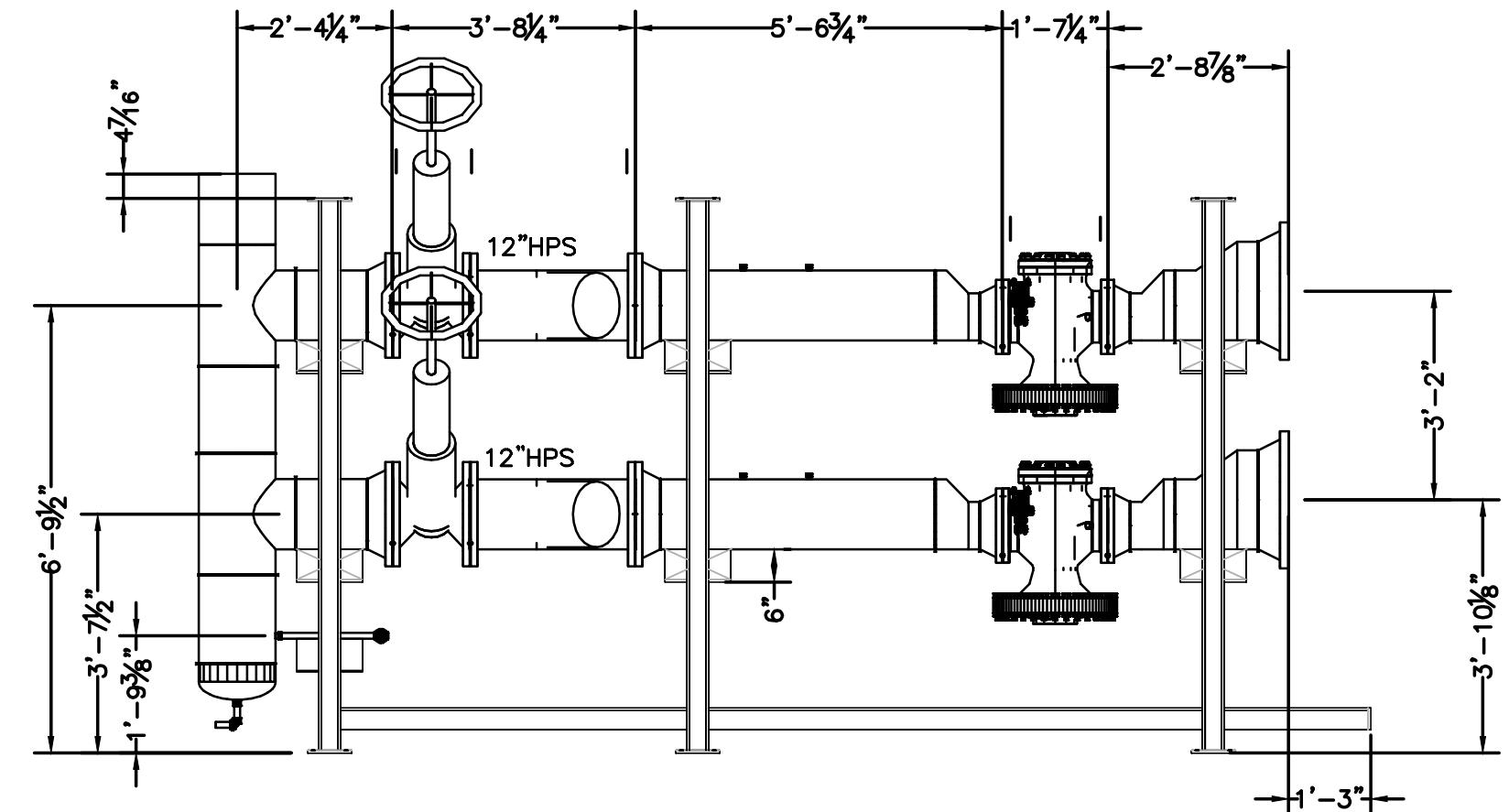
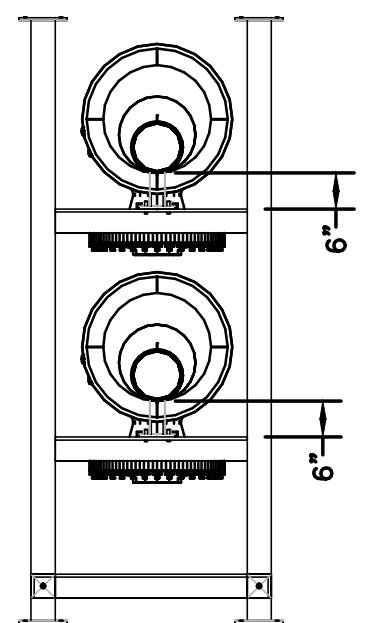
Item No	Order	Description	Qty	Size	Steel L
S7		ASTM A36 CS Plate 1/2" Thick	2	6x12x1/2	0°
S9		ASTM A36 CS Plate 1/4" Thick	4	12x5 9/16x1/4	0°



DRN JMM/KSI	11/25/2020	WUSM RESEARCH BUILDING NRB	QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION				FITTING ORIENTATION				BOLTS/CPLG'S/THD TIGHT				SPOOL IDENTIFICATION				
			SPEC.	ASME	X-RAY	PWHT	SPEC.	ASME	X-RAY	PWHT	SPEC.	ASME	X-RAY	PWHT	SPEC.	ASME	X-RAY	PWHT	DRN	CHK	APP		
REF.DWG.																							
DRAWING NO./TRACKING NO.	210140-A001-B02	210140-B	QTY.	1	SHT/NO	1 of 1	REV	0	REV	0	REV	DATE	DESCRIPTION										

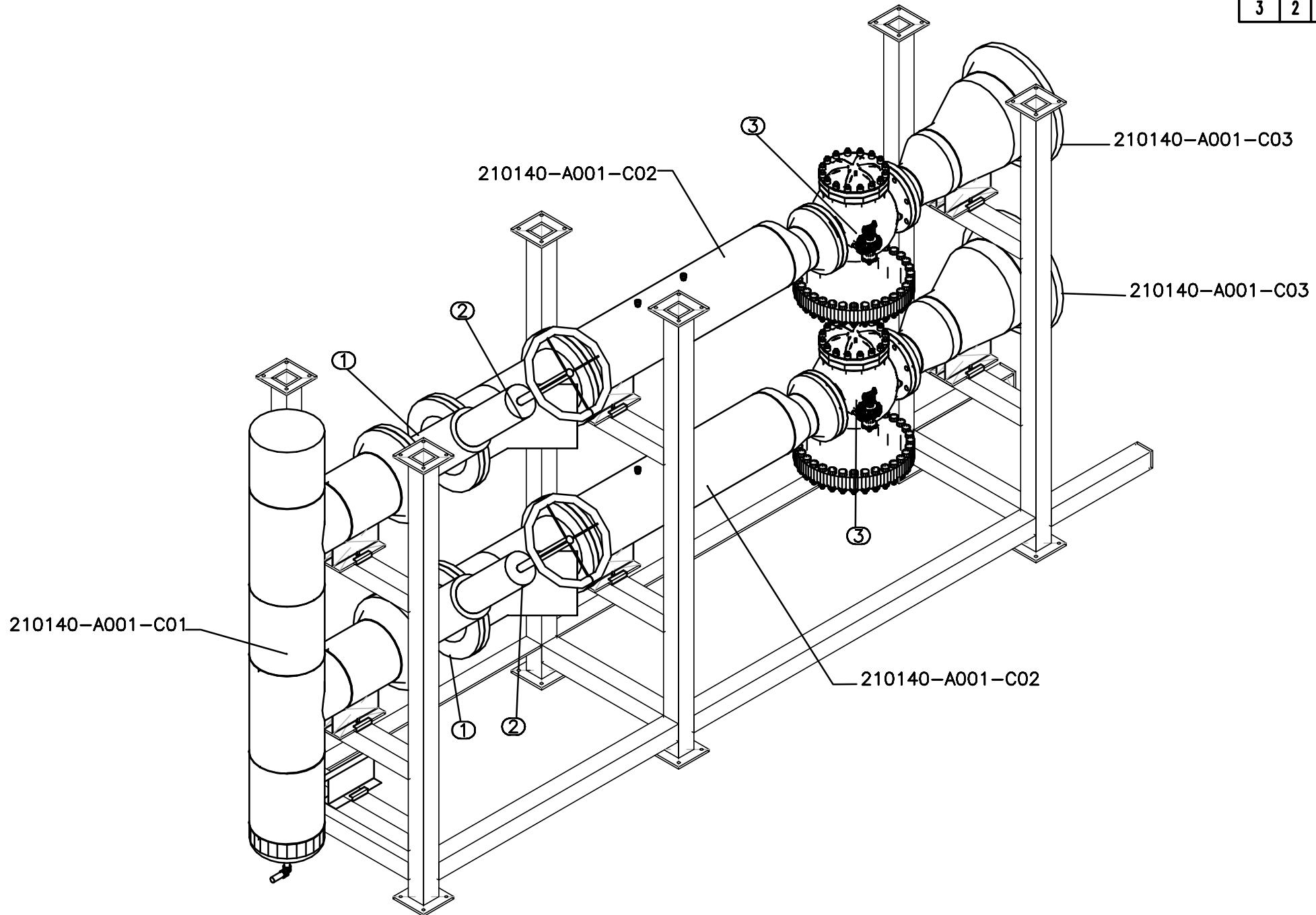
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WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION			
NRB								FITTING ORIENTATION			
								BOLTS/CPLGS/TH'D TIGHT			
								SPOOL IDENTIFICATION			
REF.DWG.	SERVICE NAME			SPEC.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS		
DRAWING NO./TRACKING NO.	210140-A001-C			NA	NA	NA	NA	NA	MURPHY WPS#		
210140-A001-C	qty.	SHFT/NO	REV	0	0	0	0	0	DESCRIPTION	DRN	CHK
210140-A001-C	1	1 OF 4	REV	0	0	0	0	0		APP	



Murphy-PFFS-SPOOL-BOM

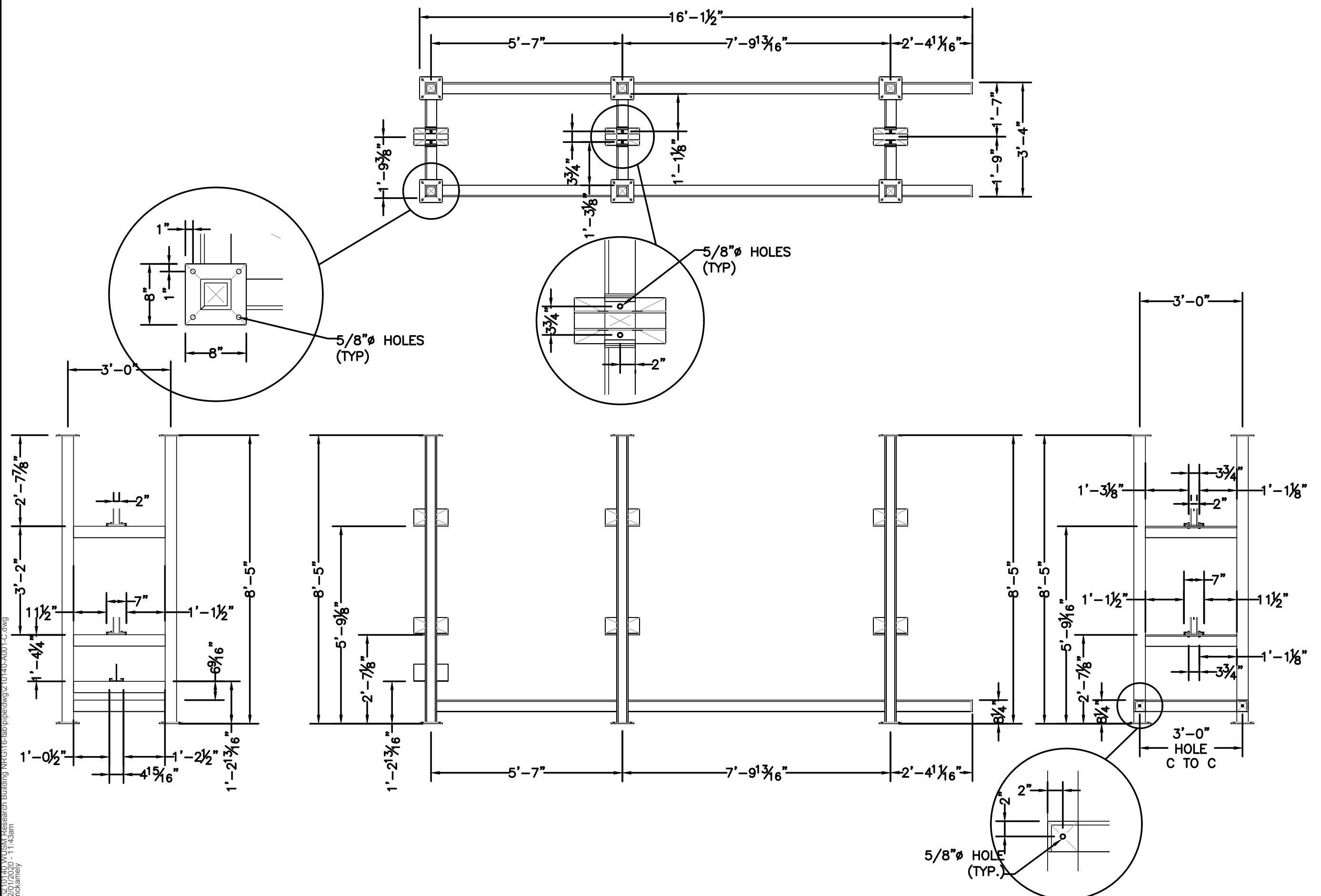
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	2	125# CI Flg Y-Strainer YS 58-CI TITAN					12
1	2	Fig 47 Gate Valve					12
4	4	150# 304 Spiral Wound Style CG 1-8					8
5	6	150# 304 Spiral Wound Style CG 1-8					12
6	3	150# CS Flange Bolt Set					8 (3/4x3-3/4)
7	4	150# CS Flange Bolt Set					12 (7/8x4-1/4)
3	2	SPENCE TYPE E PRV					SP-ED-8

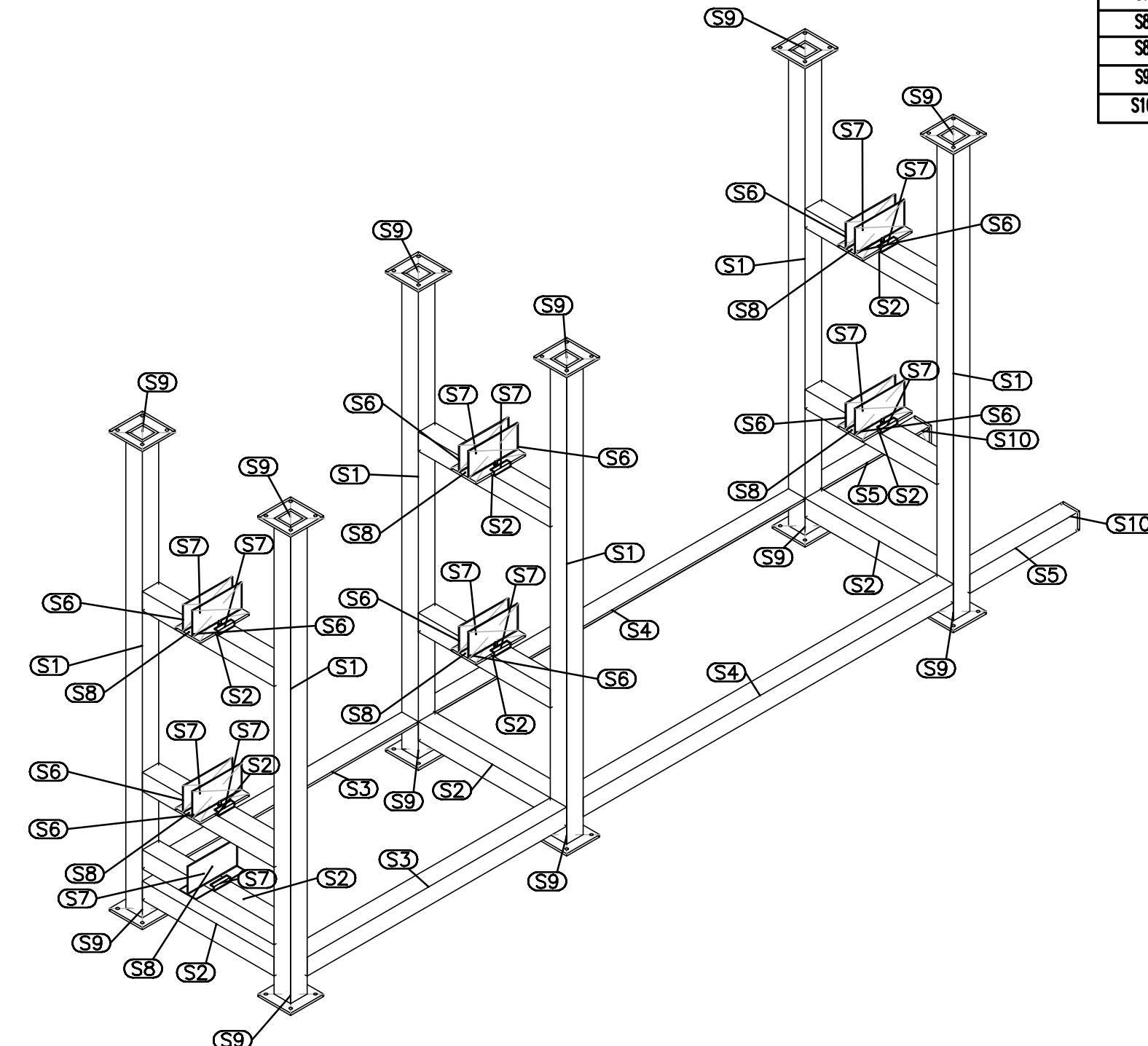


DRN JMM	11/24/2020	WUSM RESEARCH BUILDING NRB	QA/QC ACCEPT			FLANGE WEIGHT/ORIENTATION			FITTING ORIENTATION			COMMENTS		
			SPEC.	ASME	X-RAY	PWHT	BOLTS/CPLG'S/THD TIGHT	SPOOL IDENTIFICATION	DRN	CHK	APP	DRN	CHK	APP
REF.DWG.	SERVICE NAME			210140-A001-C			REV	DATE	DESCRIPTION					
DRAWING NO./TRACKING NO.	QTY.	1	SHT/NO	2 of 4	0	REV	0	REV	DATE	DESCRIPTION				
210140-A001-C														

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DRN	JMM	11/24/2020	WUSM	RESEARCH	BUILDING	QA/QC ACCEPT	FLANGE WEIGHT/ORIENTATION	□			
CHK			NRB				FITTING ORIENTATION	□			
APP							BOLTS/CPLGS/TH'D TIGHT	□			
						SPOOL IDENTIFICATION		□			
JOB NO.		210140	SERVICE NAME		SPEC.		ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS
REF. DWG.		210140-A001-C		NA		NA	NA	NA	NA	MURPHY WPS#	
DRAWING NO./TRACKING NO.		QTY.	SHT/NO	REV	0	0	REV	DATE	DESCRIPTION		
210140-A001-C		1	3 of 4						DRN	CHK	APP

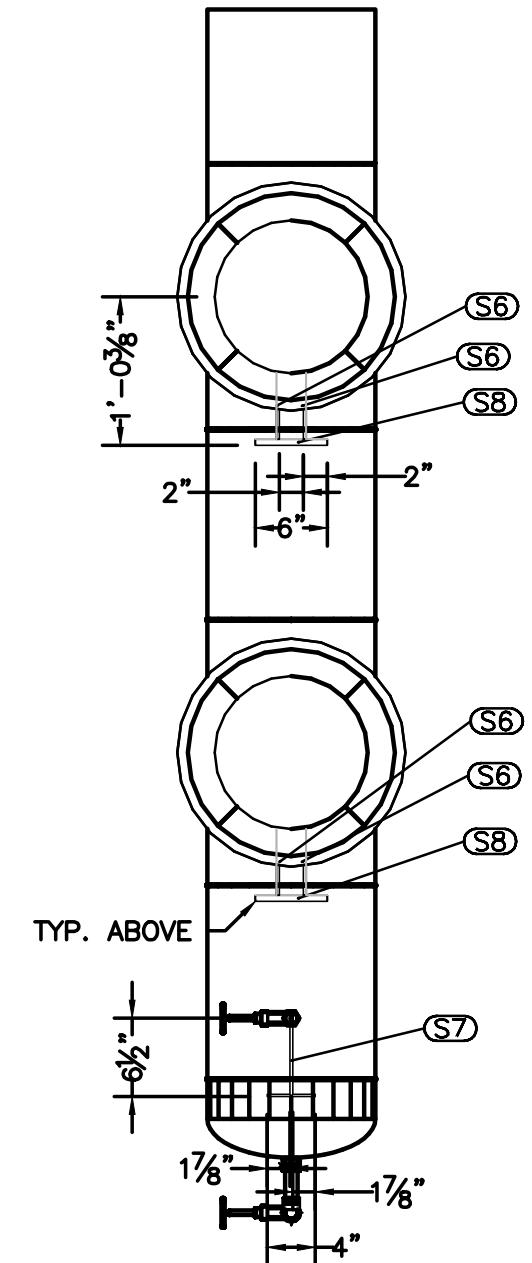
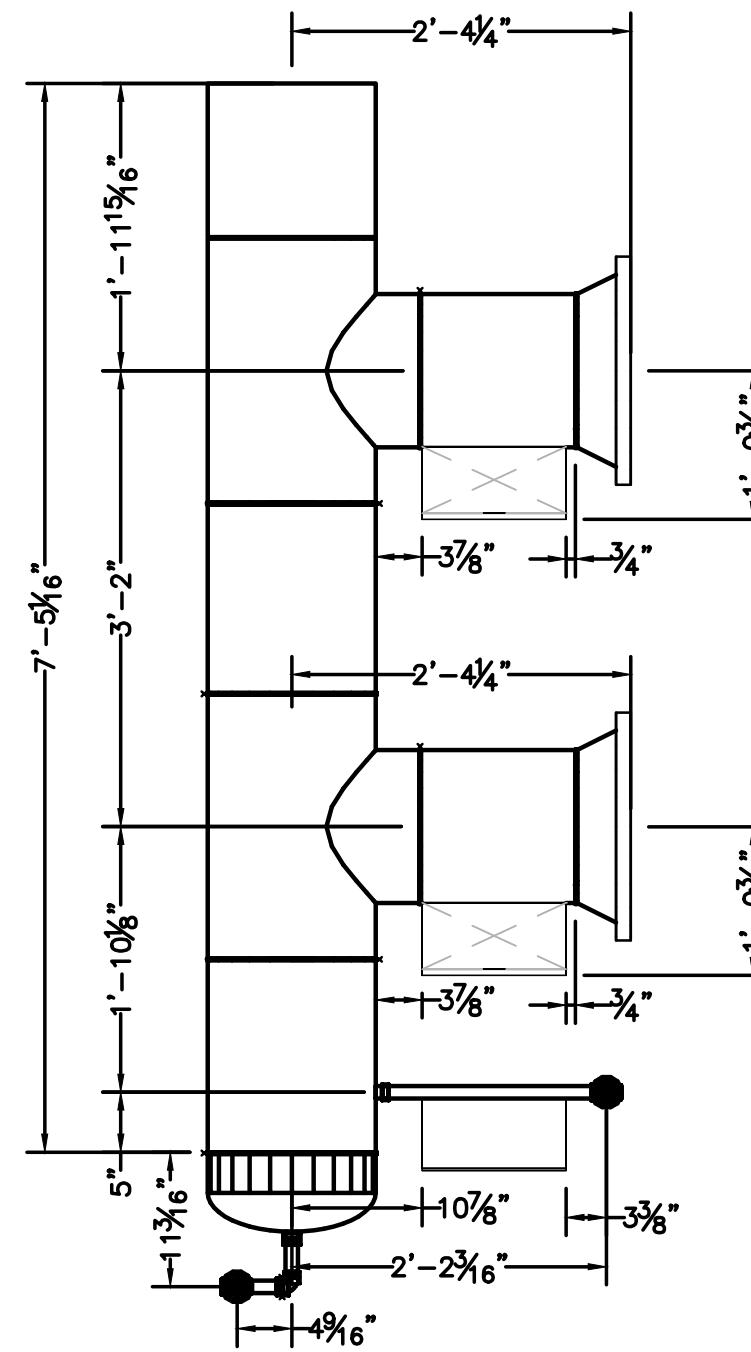




BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S1	CS SQ Tube	ASTM A36 CS Square Tube	6	SQ4x4x1/2	100"
S2	L4x4x1/2	ASTM A36 CS Equal Angle	10	L4x4x1/2	32"
S3	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	63"
S4	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	89 3/4"
S5	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	26 1/4"
S6		ASTM A36 CS Plate 1/4" Thick	12	12x5 9/16x1/4	
S7	L1x1x1/4	ASTM A36 CS Equal Angle	14	L1x1x1/4	4"
S8	WT6x7		1		12"
S8		ASTM A36 CS Plate 1/2" Thick	6	6x12x1/2	0"
S9		ASTM A36 CS Plate 1/2" Thick	12	8x8x1/2	0"
S10		ASTM A36 CS Plate 1/2" Thick	2	4x4x1/2	0"

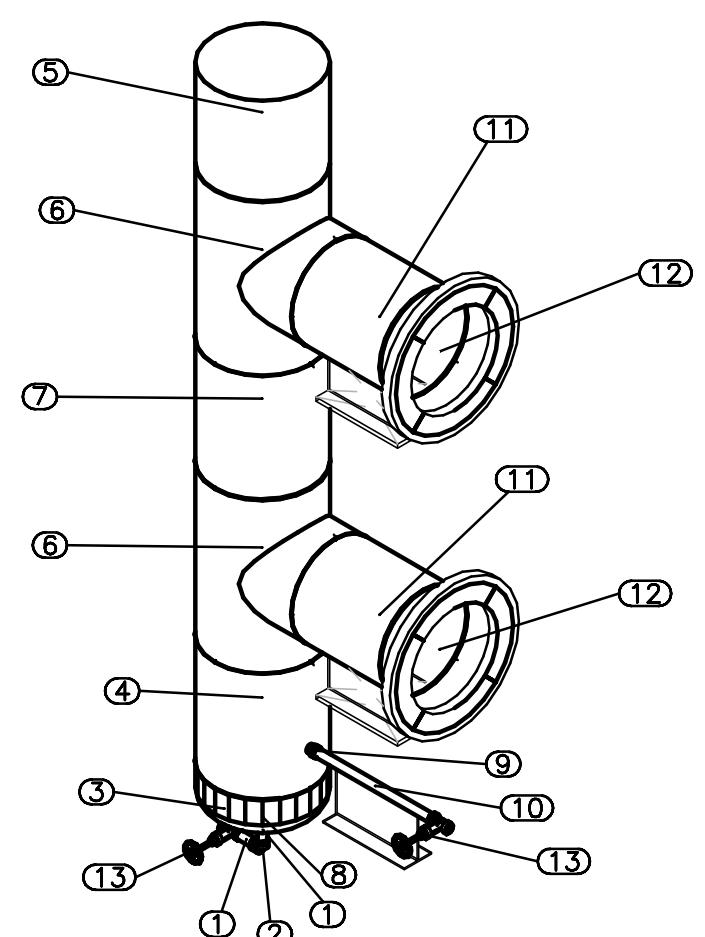
REF.DWG.	DRAWING NO./TRACKING NO.	210140-A001-C			REV	DATE	DESCRIPTION	SPECS.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS
		QTY.	SHT/NO	1									
210140-A001-C					0			NA	NA	NA	NA	NA	MURPHY WPS#
								DRN	CHK	APP			

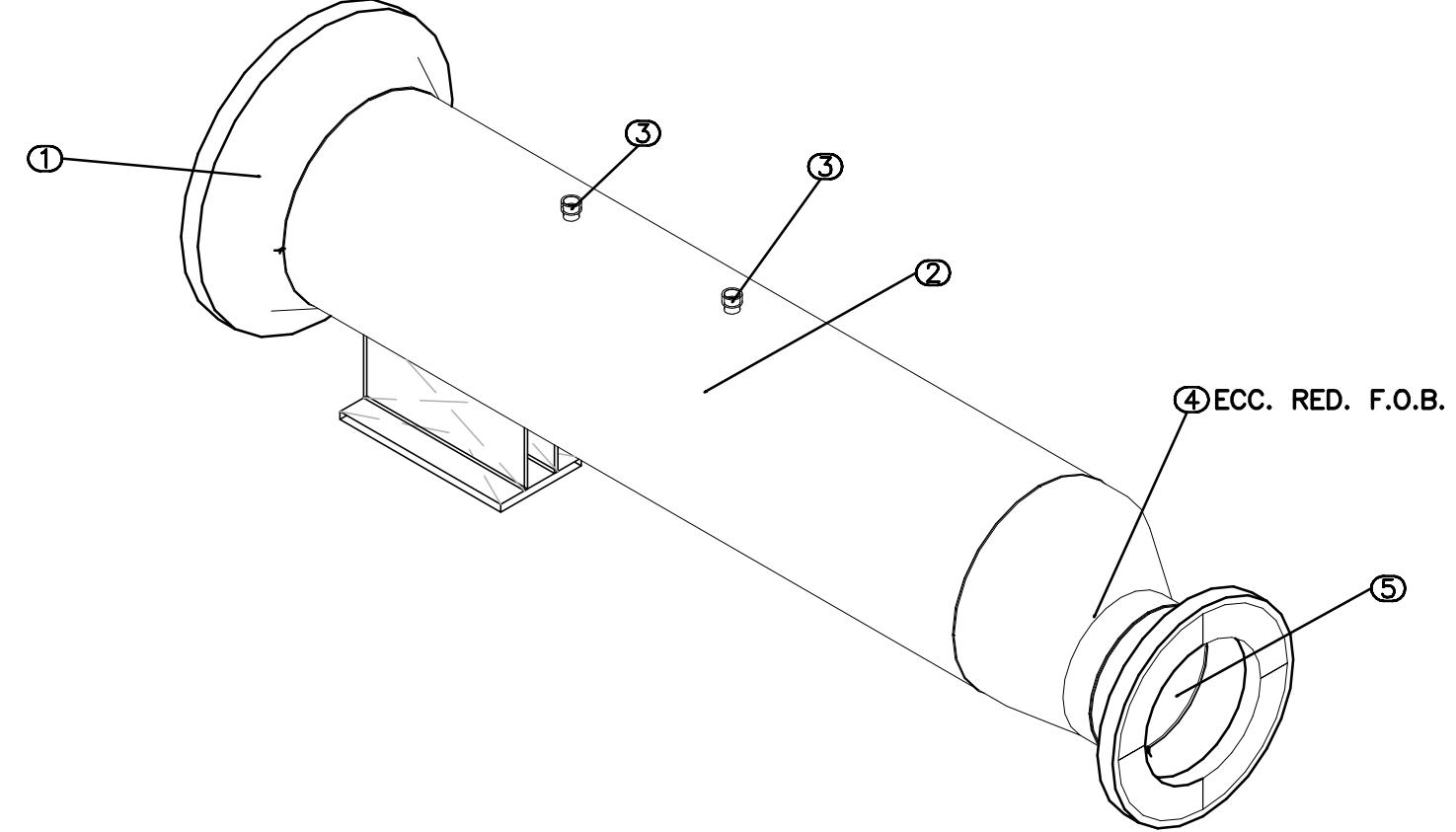
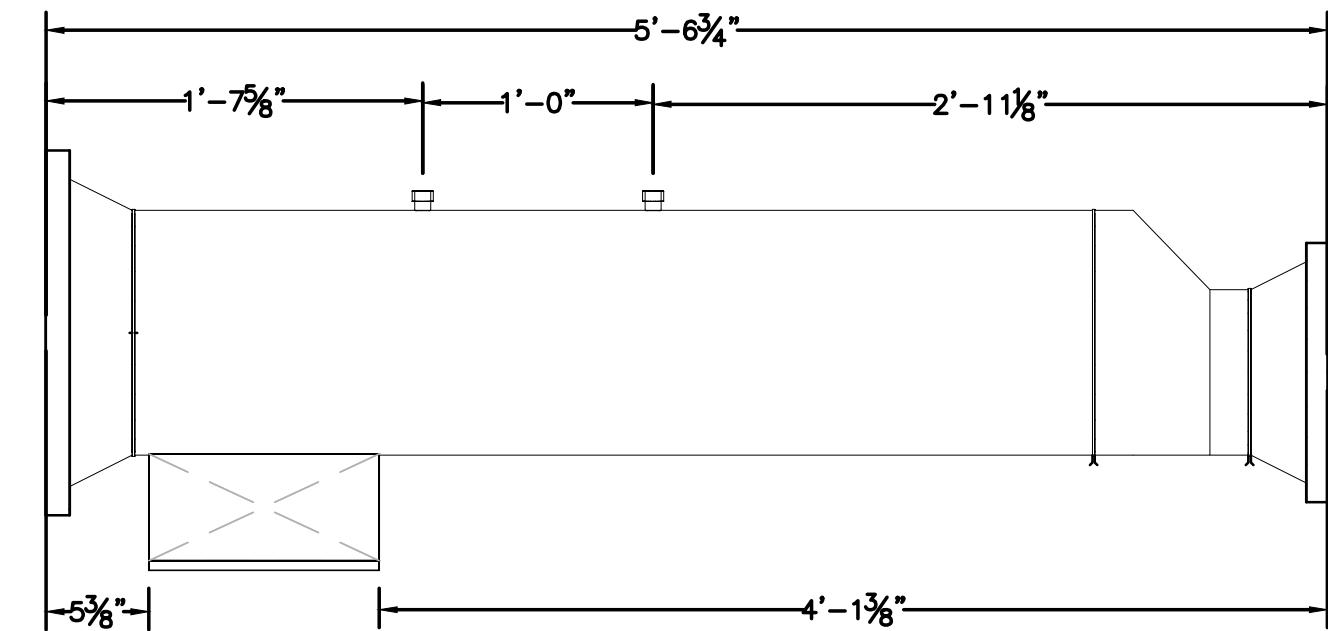


Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
6	2	Std Wt SA234 WPB CS BW RED TEE					14x12
13	2	T-134 Gate Valve					3/4
12	2	150lb RF Sch 40 Bore SA105 CS WN Flg					12
3	1	Std Wt SA234 WPB CS BW Cap					14
2	1	3M A105 FS SW 90 Deg Elbow					3/4
8	1	3000# FS Soc-O-Let			1 1/16"	1.063	3/4x14
9	1	3000# FS Thread-O-Let			1 1/16"	1.063	3/4x14
11	2	Sch 40 SA-53B CS SMLS Pipe PE	BEV	BEV	1'-0 7/8"	12.875	12
4	1	Sch 40 SA-53B CS SMLS Pipe PE	BEV	BEV	1'-4"	16.014	14
5	1	Sch 40 SA-53B CS SMLS Pipe PE	BEV	BEV	1'-0 13/16"	12.812	14
7	1	Sch 40 SA-53B CS SMLS Pipe PE	BEV	BEV	1'-3 3/4"	15.736	14
10	1	Sch 80 A106B CS SMLS Pipe	MPT	MPT	1'-6"	18.000	3/4
1	2	Sch 80 A106B CS SMLS Pipe	MPT	SW	3"	3.000	3/4

FLANGE WEIGHT/ORIENTATION	FITTING ORIENTATION	BOLTS/CPLG'S/THD TIGHT	COMMENTS		
			DRN	CHK	APP
SPOOL IDENTIFICATION					
DRN JMM/KSI	11/30/2020	WUSM RESEARCH BUILDING	QA/QC ACCEPT		
REF.DWG.		NRB	SPEC.	ASME	X-RAY
REF.DWG.		210140-A	NA	NA	NA
REF.DWG.		210140-A001-C01	QTY. 1	SHT/NO. 1 of 1	REV 0
REF.DWG.		JOB NO. 210140	REV 0	DATE	
DRAWING NO./TRACKING NO.		210140-A001-C01	REF. 1	1	





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					12
4	2	Std Wt SA234 WPB CS BW ECC RED					12x8
3	4	3000# FS Thread-O-Let			1"	1.000	1/2x12
2	2	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	4'-1 7/8"	49.877	12

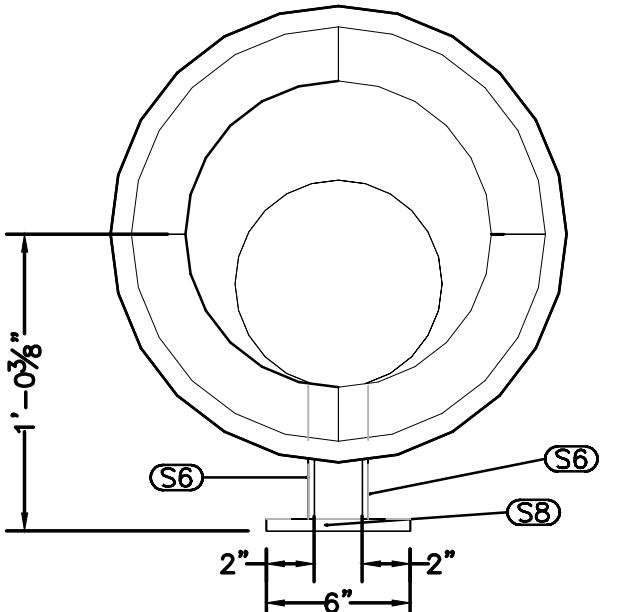
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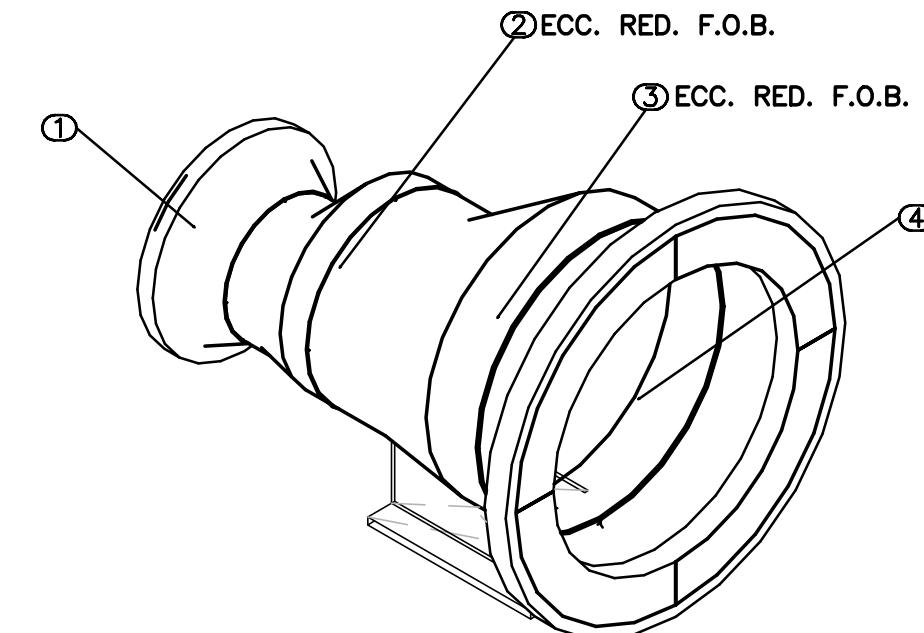
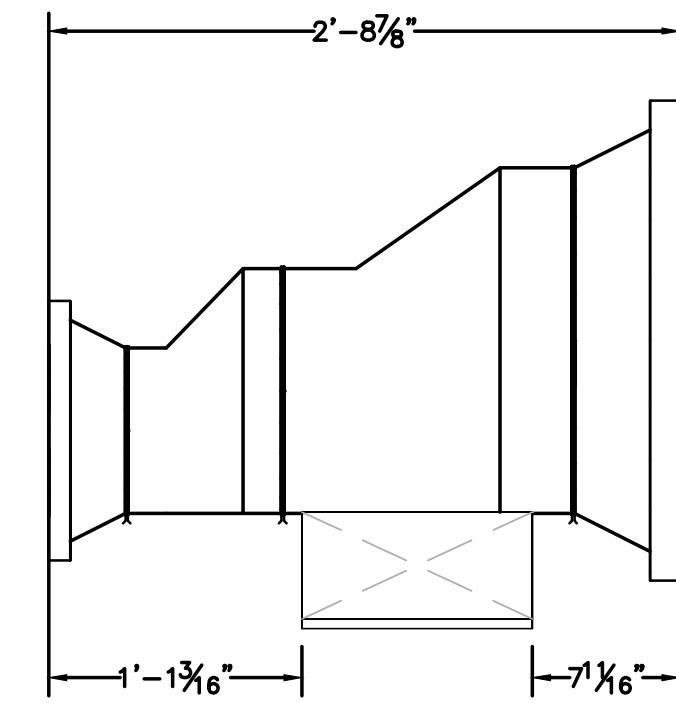
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	210140-A001-C02	2	1 of 1	0					
	210140-A001-C02	2	1 of 1	0					
	210140-A001-C02	2	1 of 1	0					
	210140-A001-C02	2	1 of 1	0					

BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S6		ASTM A36 CS Plate 1/4" Thick	4	12x5 9/16x1/4	0°
S8		ASTM A36 CS Plate 1/2" Thick	2	6x12x1/2	0°

QUANTITY OF 2





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
4	2	150lb RF Sch 40 Bore SA105 CS WN Flg					18
2	2	Std Wt SA234 WPB CS BW ECC RED					12x8
3	2	Std Wt SA234 WPB CS BW ECC RED					18x12

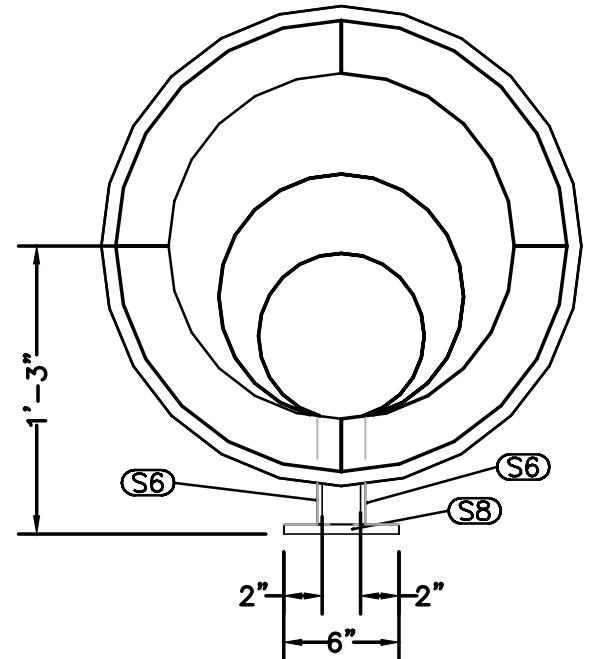
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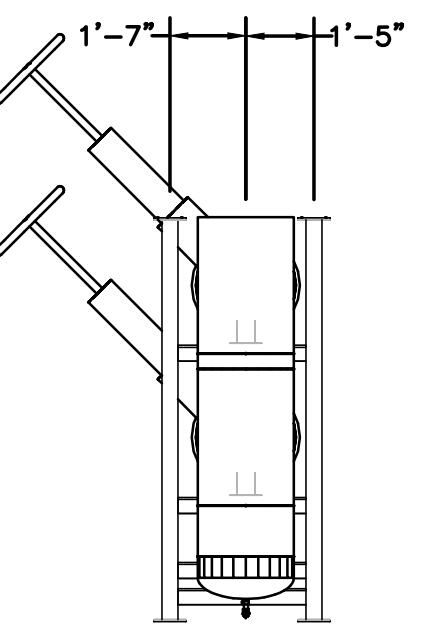
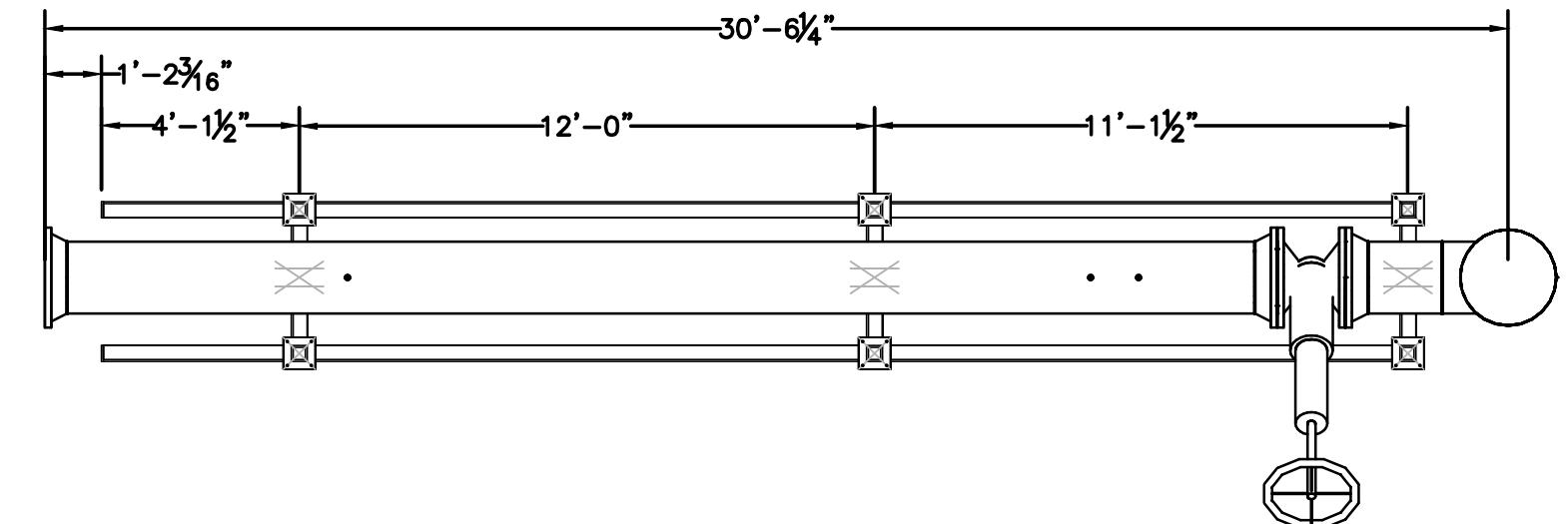
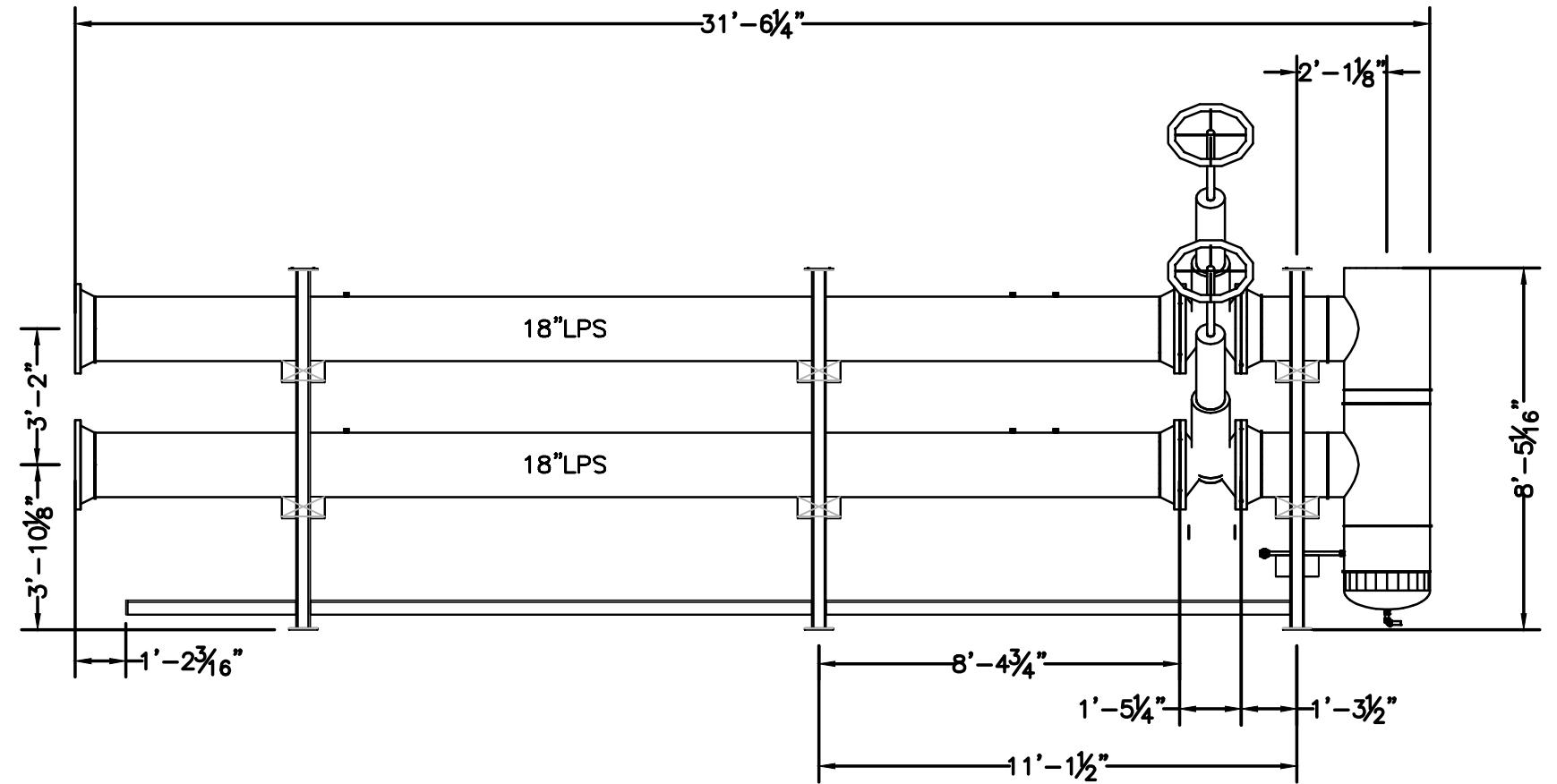
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DRN	JMM/KSI	11/30/2020	WUSM RESEARCH BUILDING	QA/QC ACCEPT	FLANGE WEIGHT/ORIENTATION
REF.DWG.	CHK	APP	NRB	FITTING ORIENTATION	BOLTS/CPLG'S/THD TIGHT
JOB NO.	210140	SERVICE NAME	210140-A	SPOOL IDENTIFICATION	COMMENTS
DRN	DATE	REV	DESCRIPTION	DRN	CHK
DRAWING NO./TRACKING NO.	QTY.	SHT/NO	REV	APP	
210140-A001-C03	2	1 of 1	0		

BOM-STEEL					
Item No	Order	Description	Qty	Size	Steel L
S6		ASTM A36 CS Plate 1/4" Thick	4	12x5 9/16x1/4	0"
S8		ASTM A36 CS Plate 1/2" Thick	2	6x12x1/2	0"

QUANTITY OF 2

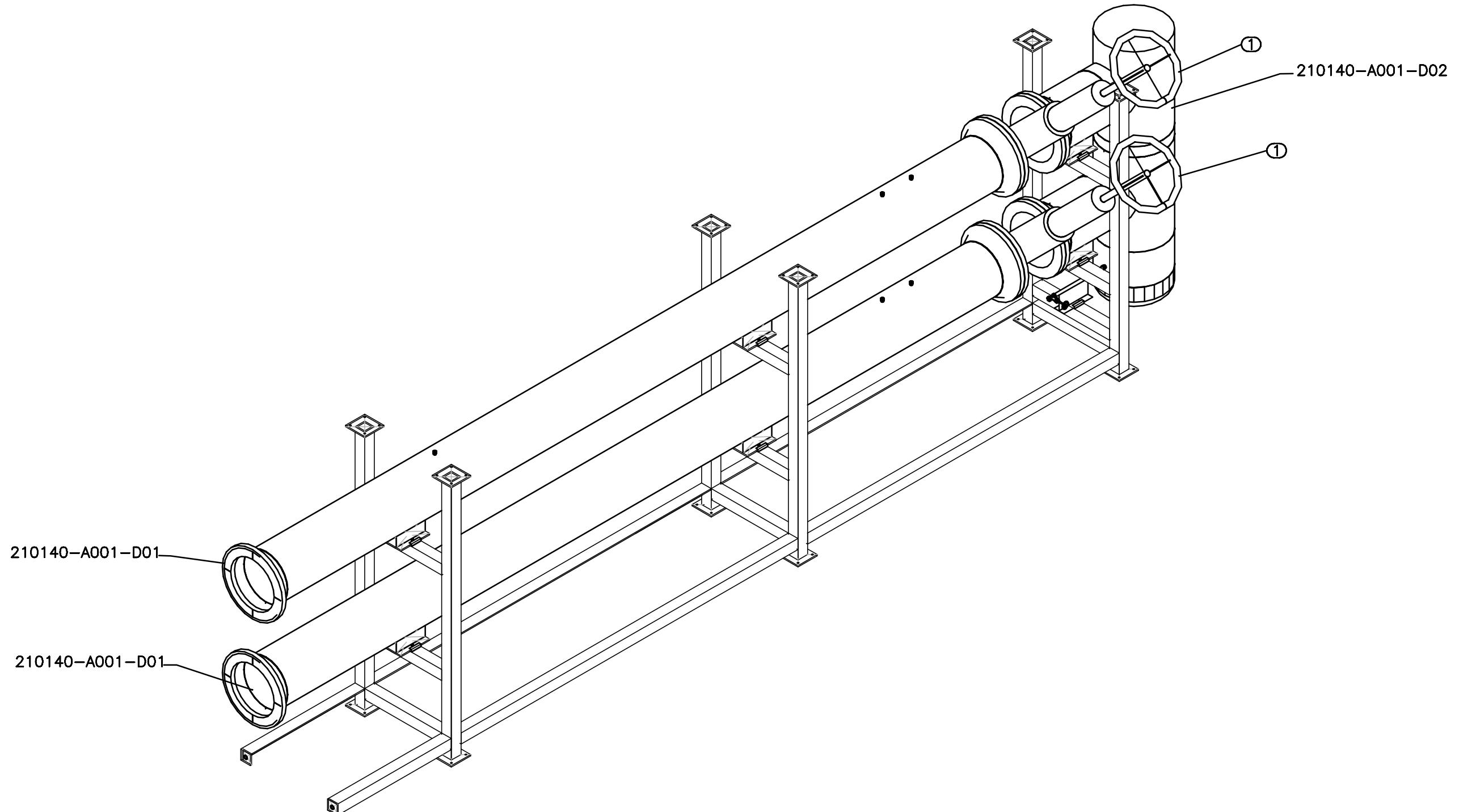


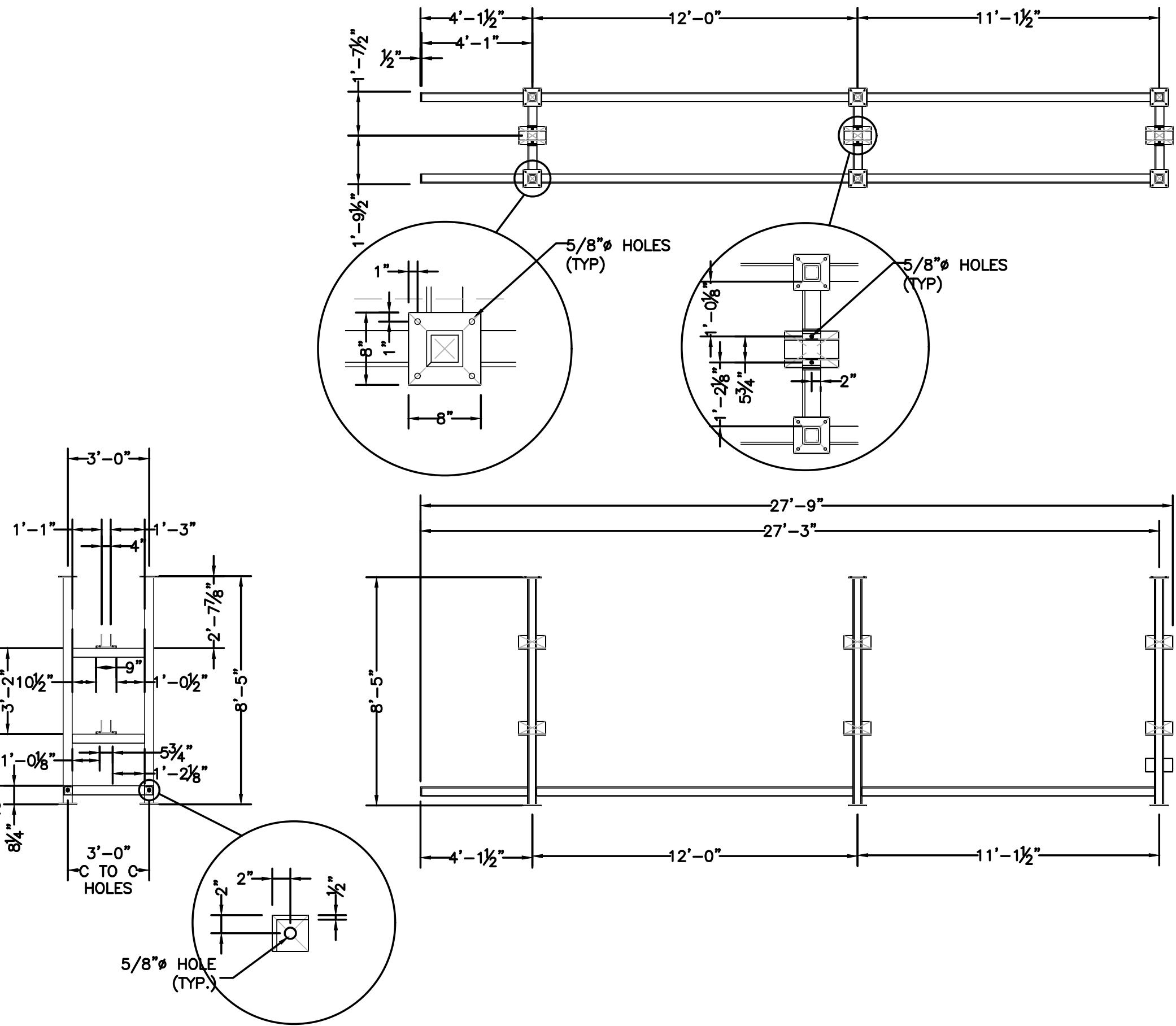


REF.DWG.	DRAWING NO./TRACKING NO.	WUSM RESEARCH BUILDING			QA/QC ACCEPT	FLANGE WEIGHT/ORIENTATION	FITTING ORIENTATION	BOLTS/CPLG'S/THD TIGHT	SPOOL IDENTIFICATION	COMMENTS	
		SPEC.	ASME	X-RAY							
DRN	JMM	11/24/2020	NRB								
CHK											
APP											
JOB NO.	210140	SERVICE NAME	210140-A001-D	REV	0	REV	DATE	DESCRIPTION	DRN	CHK	APP
210140-A001-D	1	1	1 of 4	0							

Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	2	Fig 47 Gate Valve					18
2	4	150# 304 Spiral Wound Style CG 1-8					18
3	4	150# CS Flange Bolt Set					18 (1-1/8x5)



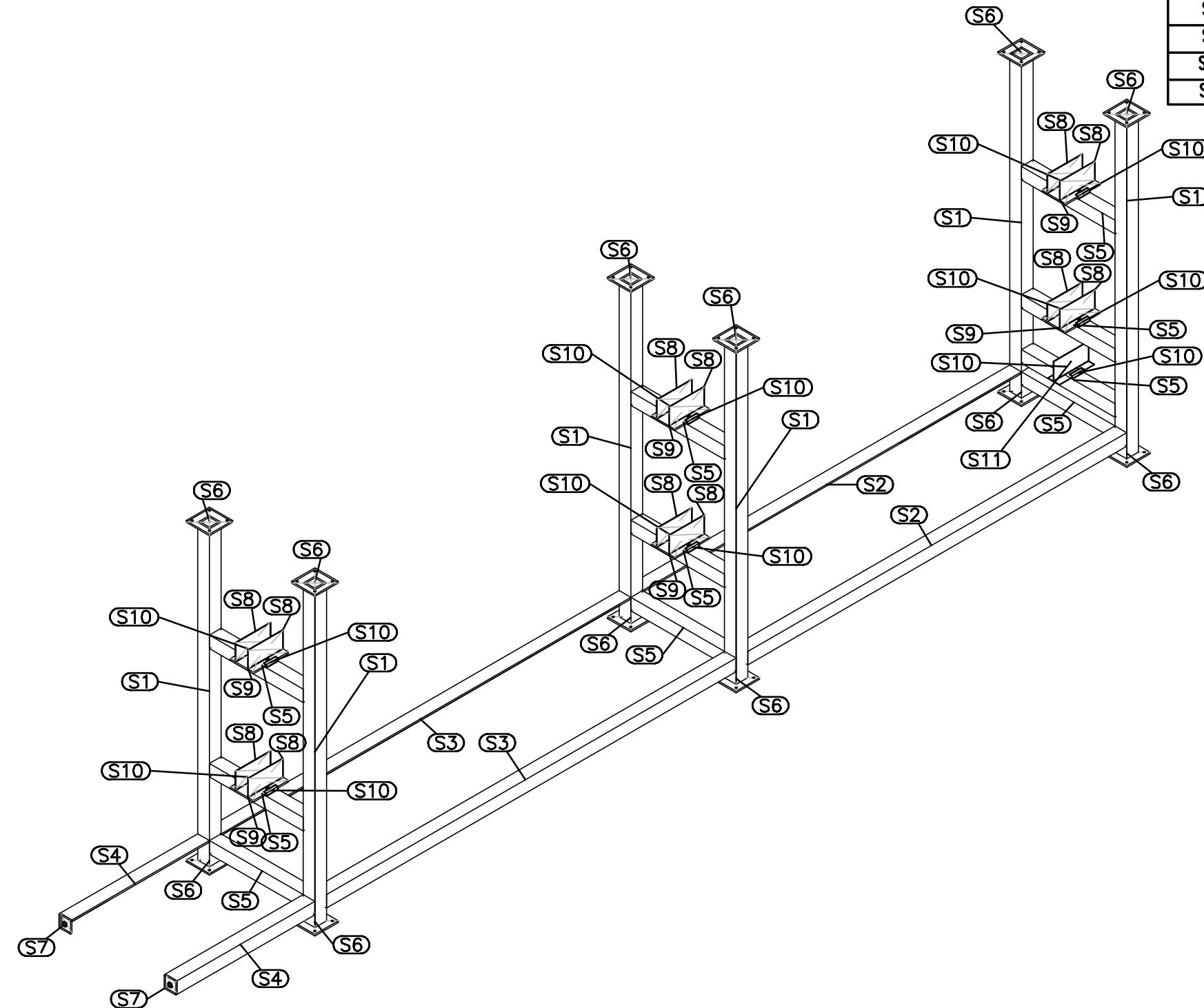


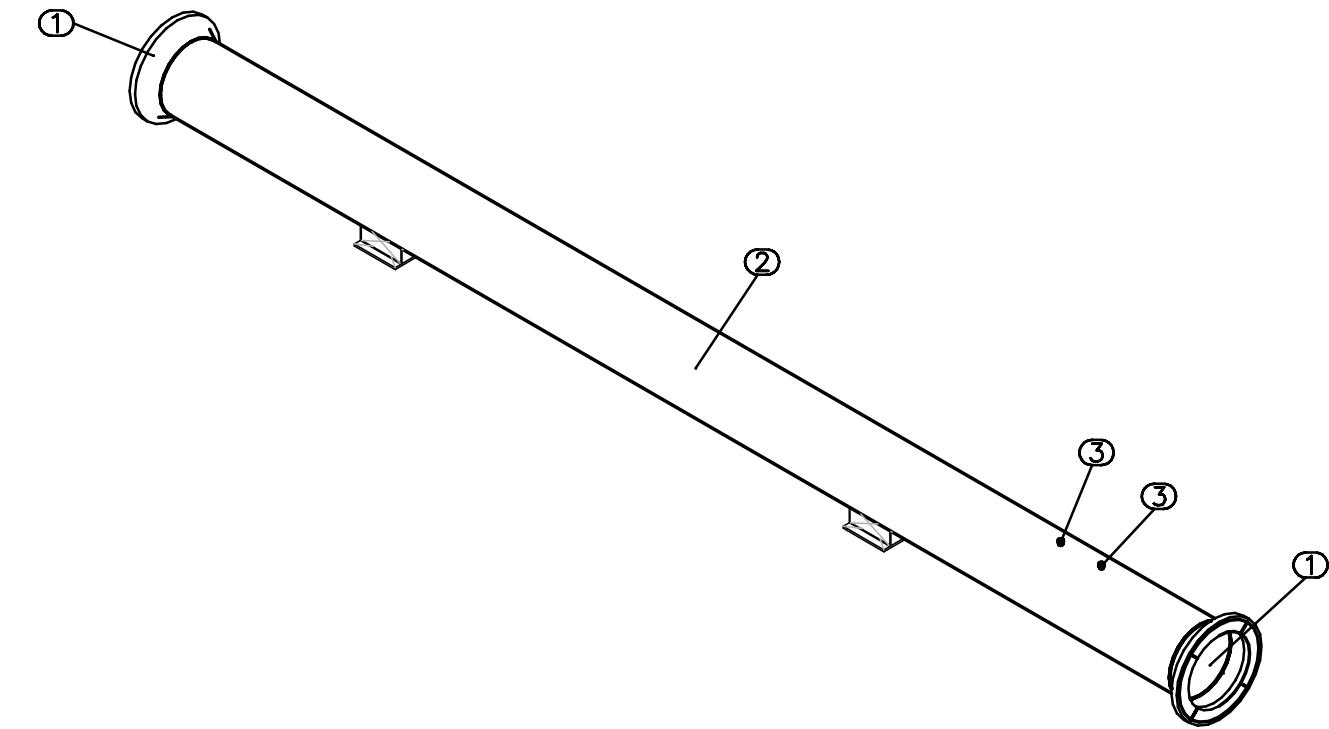
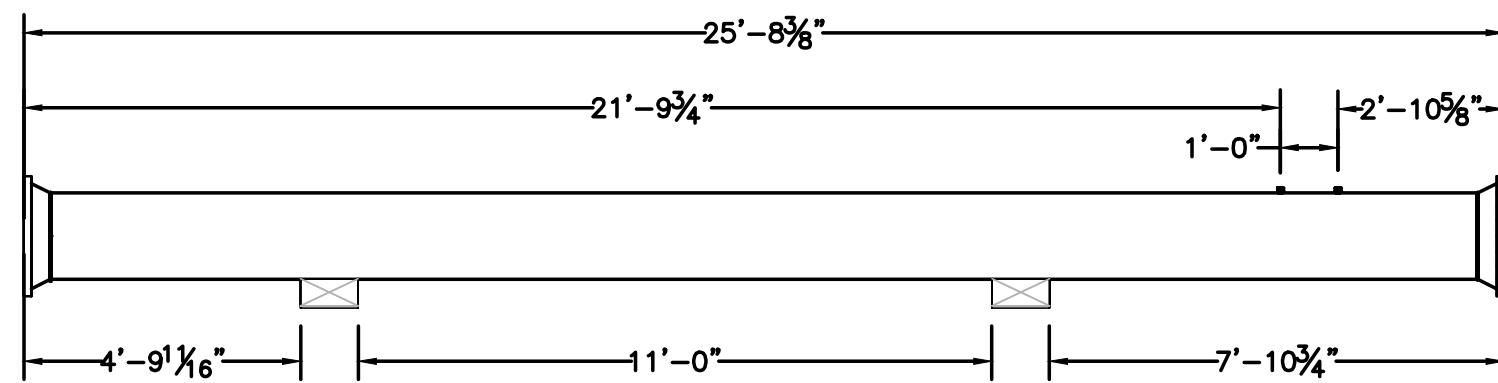
DRN JMM	11/24/2020	WUSM RESEARCH BUILDING			QA/QC ACCEPT	FLANGE WEIGHT/ORIENTATION
CHK		SPEC.	ASME	X-RAY	FITTING ORIENTATION	
APP		NA	NA	NA	BOLTS/CPLG'S/THD TIGHT	
JOB NO. 210140		NA	NA	NA	SPOOL IDENTIFICATION	
REF.DWG.		NA	NA	NA	MURPHY WPS#	
DRAWING NO./TRACKING NO.	210140-A001-D	QTY. 1	SHT/NO. 3 of 4	REV. 0	DATE 0	DESCRIPTION APP

BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S1	CS SQ Tube	ASTM A36 CS Square Tube	6	SQ4x4x1/2	100"
S2	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	129 1/2"
S3	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	140"
S4	L4x4x1/2	ASTM A36 CS Equal Angle	2	L4x4x1/2	47"
S5	L4x4x1/2	ASTM A36 CS Equal Angle	10	L4x4x1/2	32"
S6		ASTM A36 CS Plate 1/2" Thick	12	8x8x1/2	0"
S7		ASTM A36 CS Plate 1/2" Thick	2	4x4x1/2	0"
S8		ASTM A36 CS Plate 1/4" Thick	12	12x5-9/16x1/4	0"
S9		ASTM A36 CS Plate 1/2" Thick	6	12x8x1/2	0"
S10	L1x1x1/4	ASTM A36 CS Equal Angle	14	L1x1x1/4	4"
S11	WT6x7		1		12"

DRN JMM	11/24/2020	WUSM RESEARCH BUILDING NRB	QA/QC ACCEPT			FLANGE WEIGHT/ORIENTATION			FITTING ORIENTATION			COMMENTS		
			SPEC.	ASME	X-RAY	PWHT	BOLTS/CPLG'S/THD TIGHT	SPool IDENTIFICATION	DRN	CHK	APP	MURPHY WPS#		
REF.DWG.				REV. 0	DATE									
DRAWING NO./TRACKING NO.	210140-A001-D	210140-A001-D	QTY. 1	SHT/NO. 4 of 4	REV. 0	0	0	0	0	0	0	0	0	0
JOB NO.	210140	210140												





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					18
3	4	3000# FS Thread-O-Let			1"	1.000	1/2x18
2	2	Std Wt SA-53B CS SMLS Pipe PE	BEV	BEV	24'-9 1/8"	297.125	18

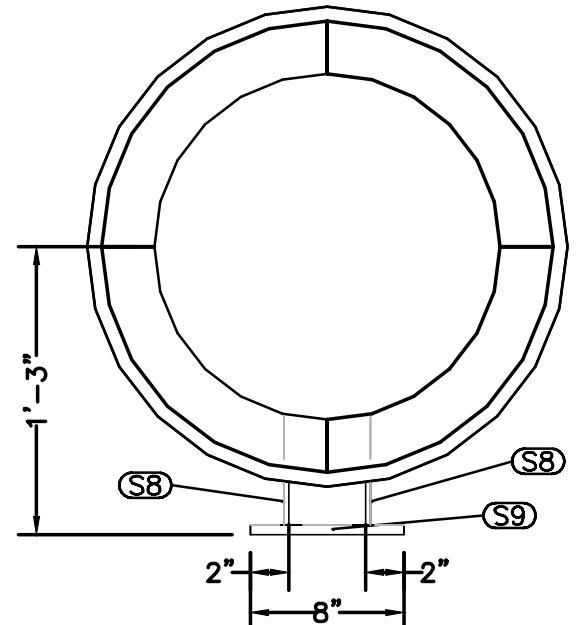
BOM-STEEL

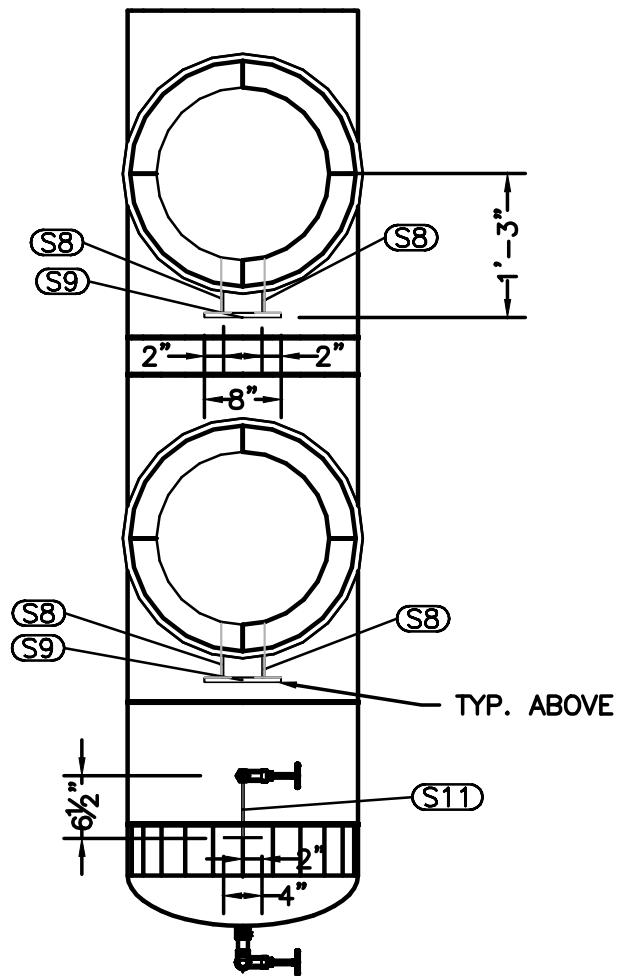
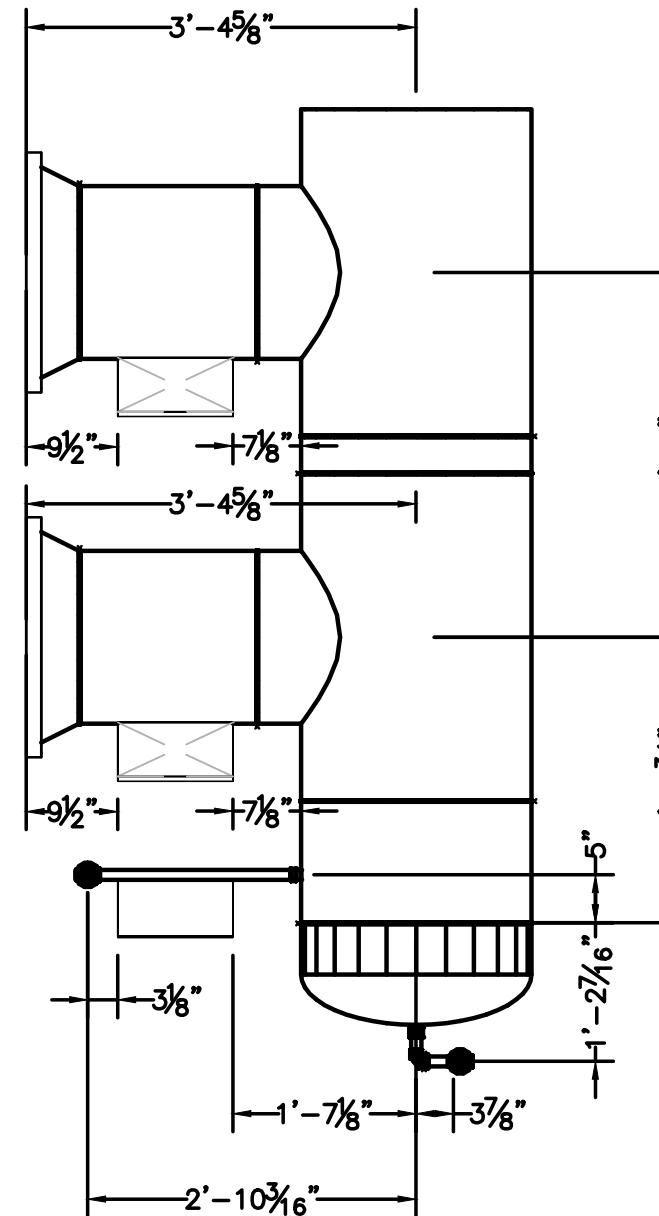
Item No	Order	Description	Qty	Size	Steel L
S8		ASTM A36 CS Plate 1/4" Thick	8	12x5 5/8x1/4	0°
S9		ASTM A36 CS Plate 1/2" Thick	4	8x12x1/2	0°

QUANTITY OF 2

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REF.DWG.	DRAWING NO./TRACKING NO.	QTY.	SHT/NO	REV	DATE	DESCRIPTION	QA/QC ACCEPT			FLANGE WEIGHT/ORIENTATION			FITTING ORIENTATION			BOLTS/CPLG'S/THD TIGHT			SPOOL IDENTIFICATION		
							SPEC.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS	DRN	CHK	APP	DRN	CHK	APP	DRN	CHK	APP
	210140-A	2	1 of 1	0																	
	210140-A001-D01																				
	210140-A001-D01																				





Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
5	2	Std Wt SA234 WPB CS BW RED TEE					24x18
3	2	T-134 Gate Valve					3/4
1	2	150lb RF Sch 40 Bore SA105 CS WN Flg					18
12	1	Std Wt SA234 WPB CS BW Cap					24
10	1	3M A105 FS SW 90 Deg Ell					3/4
9	1	3000# FS Soc-O-Let			1 1/16"	1.063	3/4x24
6	1	3000# FS Thread-O-Let			1 1/16"	1.063	3/4x24
2	2	Std Wt SA-53B CS SMLS Pipe PE	BEV	BEV	1'-6 3/8"	18.375	18
7	1	Std Wt SA-53B CS SMLS Pipe PE	BEV	BEV	1'-0 5/8"	12.625	24
11	1	Std Wt SA-53B CS SMLS Pipe PE	BEV	BEV	3 3/4"	3.736	24
4	1	Sch 80 A106B CS SMLS Pipe	MPT	MPT	1'-9"	21.000	3/4
8	1	Sch 80 A106B CS SMLS Pipe	SW	SW	2"	2.000	3/4
13	1	Sch 80 A106B CS SMLS Pipe	MPT	SW	3"	3.000	3/4

DRN JMM/KSI	11/30/2020	WUSM RESEARCH BUILDING NRB	QA/QC ACCEPT		DESCRIPTION	SPEC.	ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS	
			REV	DATE								
REF.DWG.												
DRAWING NO./TRACKING NO.												
210140-A001-D02	210140-A	210140-A	1	1	1 of 1	0	0	0	0	0	0	0
JOB NO.	210140	210140										

BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S8		ASTM A36 CS Plate 1/4" Thick	4	12x5 5/8x1/4	0"
S9		ASTM A36 CS Plate 1/2" Thick	2	8x12x1/2	0"
S11	WT6x7		1		12"

