

DRN JMM

7/14/2021

CHK

APP

JOB NO. 210140

REF.DWG.

DRAWING NO./TRACKING NO.

210140-RISER-02

WUSM RESEARCH BUILDING

NRB

MECH RISERS

SERVICE NAME

QTY. 1

SHT/NO 1 of 3

REV 0

QA/QC ACCEPT

FLANGE WEIGHT/ORIENTATION

FITTING ORIENTATION

BOLTS/CPLG'S/TH'D TIGHT

SPOOL IDENTIFICATION

SPEC. NA

ASME NA

X-RAY NA

HYDRO TEST NA

PWHT NA

COMMENTS

REV 0

DATE

DESCRIPTION

DRN

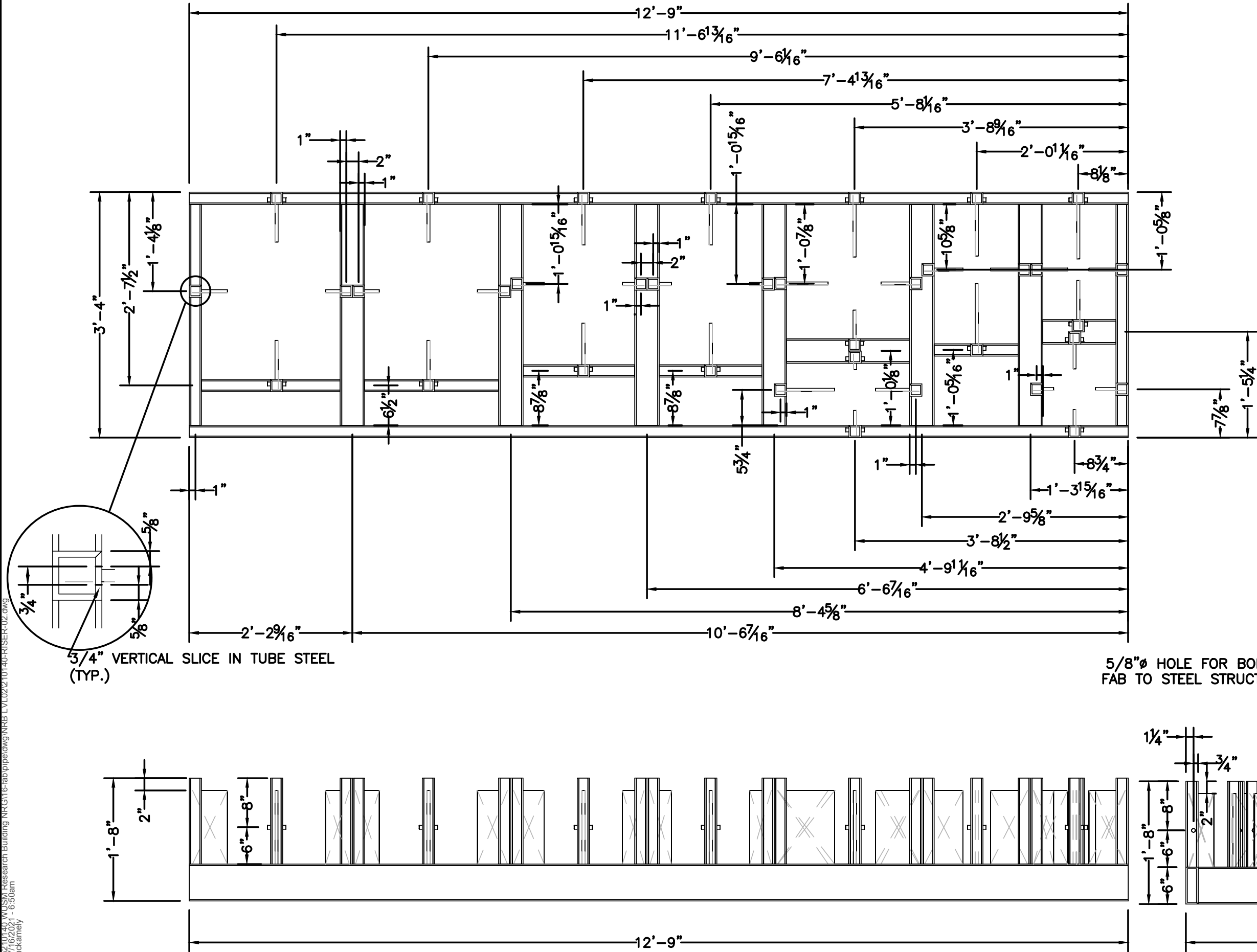
CHK

APP

MURPHY

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St. Louis, MO 63132-2303  
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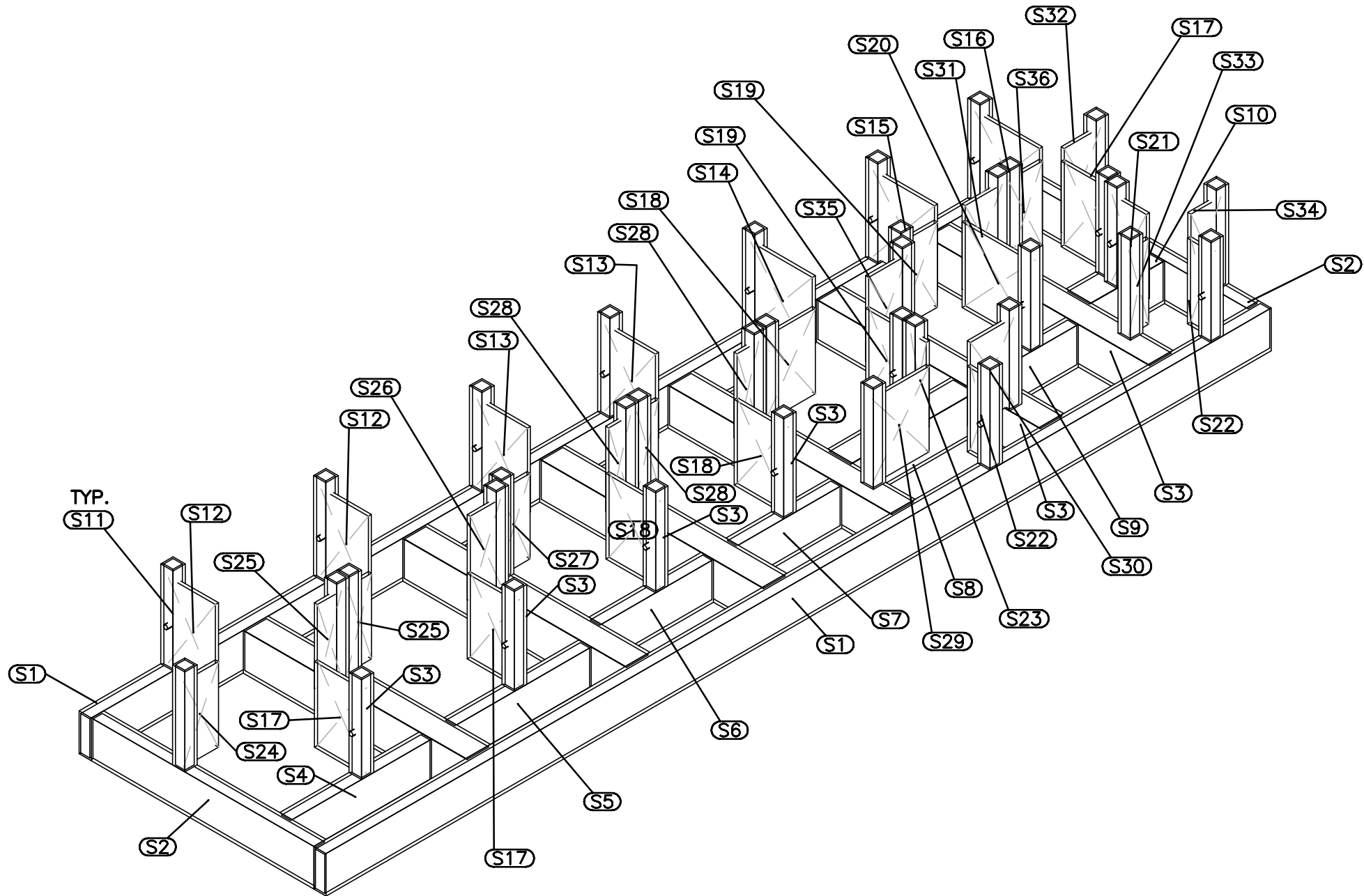


QTY 3

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

DRN JMM	7/14/2021	WUSM RESEARCH BUILDING			REV			
CHK		NRB						
APP		MECH RISERS						
JOB NO.	210140	SERVICE NAME			QTY.	SHT/NO	2 OF 3	0
REF.DWG.					1			
DRAWING NO./TRACKING NO.								
210140-RISER-02								



QTY 3

BOM-STEEL					
Item No	Order	Description	Qty	Size	Steel L
S1	CS RECT Tube		6	6x2x1/4"	153"
S2	CS RECT Tube		6	6x2x1/4"	36"
S3	CS RECT Tube		18	6x4x1/4"	36"
S4	CS RECT Tube		3	6x2x1/4"	22 1/2"
S5	CS RECT Tube		3	6x2x1/4"	21 3/4"
S6	CS RECT Tube		3	6x2x1/4"	18 1/4"
S7	CS RECT Tube		3	6x2x1/4"	16 3/4"
S8	CS RECT Tube		3	6x2x1/4"	20"
S9	CS RECT Tube		3	6x2x1/4"	13 3/4"
S10	CS RECT Tube		3	6x4x1/4"	12"
S11	CS SQ Tube	ASTM A36 CS Square Tube	108	SQ2x2x1/4	14"
S12		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 7.625	
S13		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 8.125	
S14		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 10.000	
S15		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 9.875	
S16		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 10.375	
S17		ASTM A36 CS Plate 1/2" Thick	9	12.000 x 7.875	
S18		ASTM A36 CS Plate 1/2" Thick	9	12.000 x 8.250	
S19		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 6.250	
S20		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 11.250	
S21		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 5.563	
S22		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 4.000	
S23		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 2.500	
S24		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 5.688	
S25		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 3.875	
S26		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 4.875	
S27		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 5.000	
S28		ASTM A36 CS Plate 1/2" Thick	9	12.000 x 3.500	
S29		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 9.250	
S30		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 7.000	
S31		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 6.000	
S32		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 5.875	
S33		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 3.250	
S34		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 4.813	
S35		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 6.250	
S36		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 5.500	

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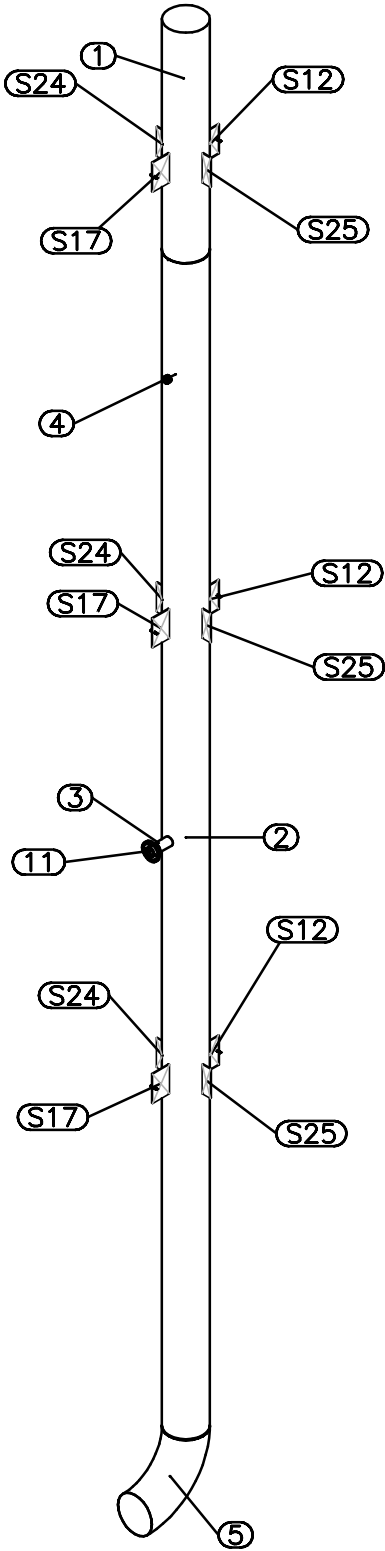
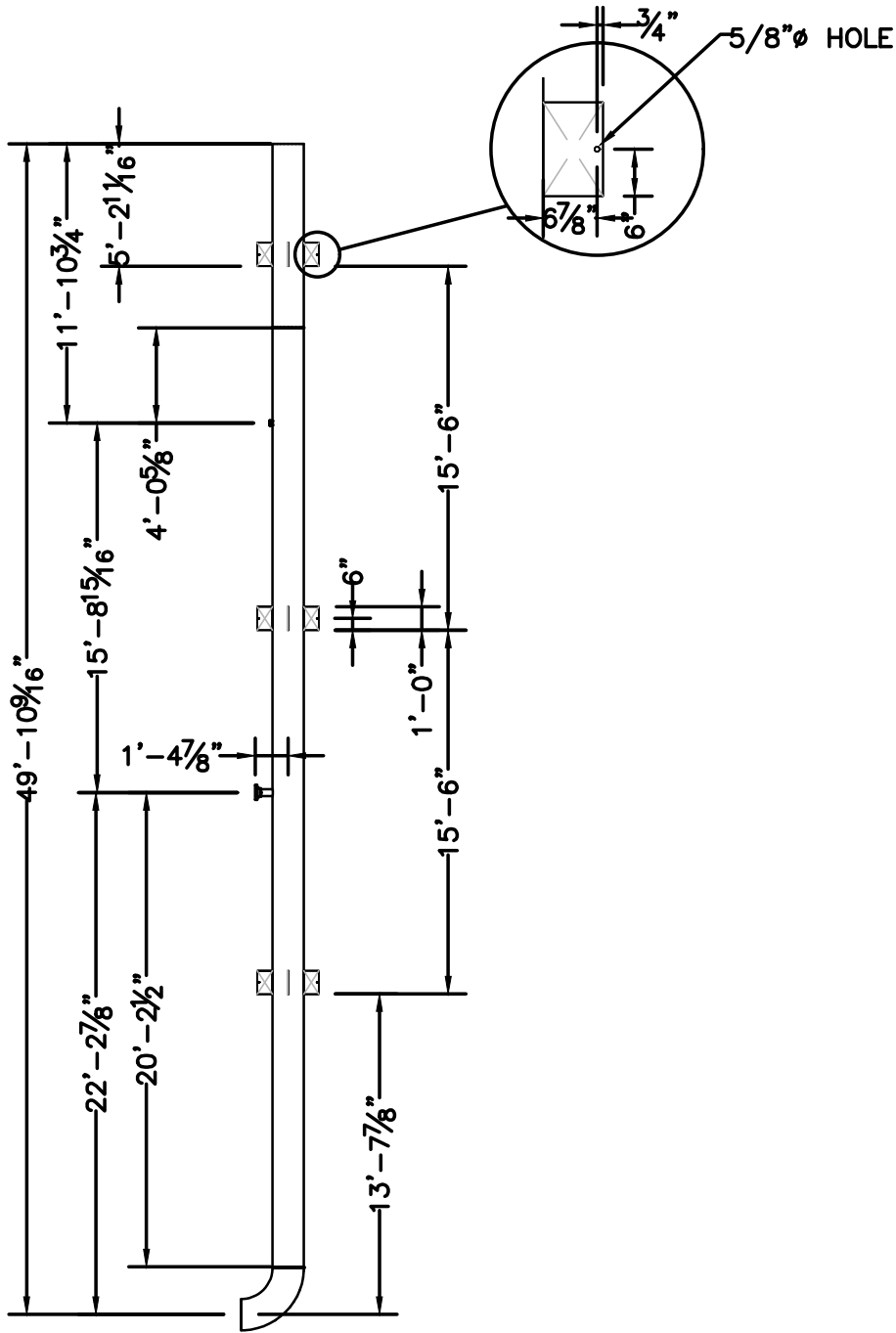
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
FLANGE WEIGHT/ORIENTATION							
FITTING ORIENTATION							
BOLTS/CPLG'S/TH'D TIGHT							
SPOOL IDENTIFICATION							
				COMMENTS			
				PWHT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

WUSM RESEARCH BUILDING				REV			
NRB				3 of 3			
MECH RISERS				0			
SERVICE NAME							
JOB NO. 210140							
REF.DWG.							
DRAWING NO./TRACKING NO.							
210140-RISER-02							
QTY. 1							
SHT/NO							
3 of 3							

DRN JMM	7/14/2021
CHK	
APP	
JOB NO. 210140	
REF.DWG.	
DRAWING NO./TRACKING NO.	
210140-RISER-02	



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
3	1	Sch 40 SA-53B CS ERW Pipe Saddle			6"	6.000	16x3
11	1	150lb RF Sch 40 Bore SA105 CS WN Flg					3
5	1	Std Wt SA234 WPB CS BW LR 90 Deg El					16
4	1	3000# FS Thread-O-Let			1 1/2"	1.500	2x16
1	1	Std Wt SA-53B CS ERW Pipe PE	BEV	BEV	7'-10"	94.027	16
2	1	Std Wt SA-53B CS ERW Pipe PE	BEV	BEV	40'-0"	480.000	16

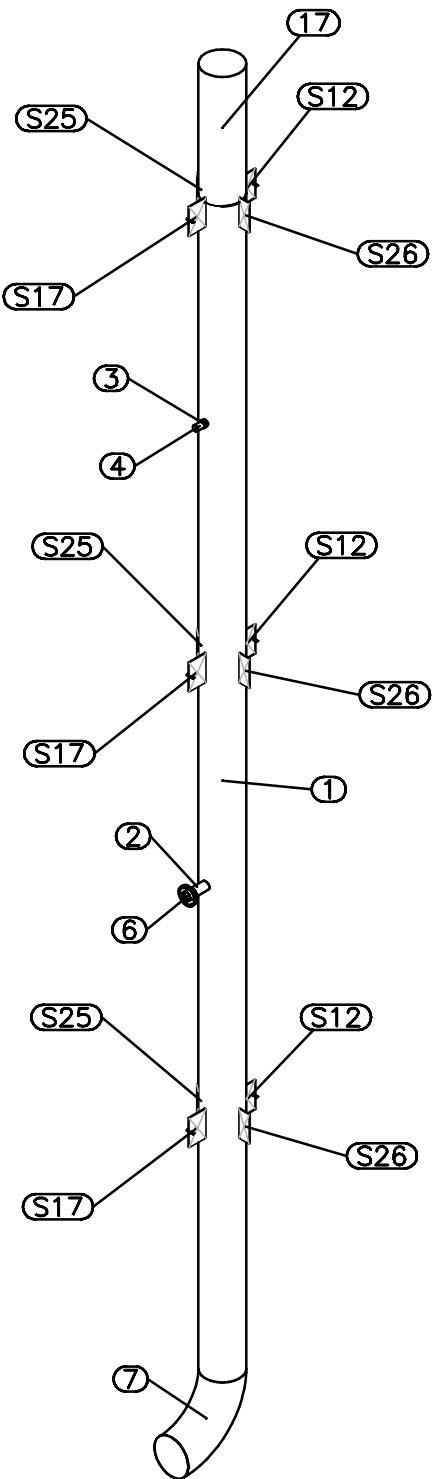
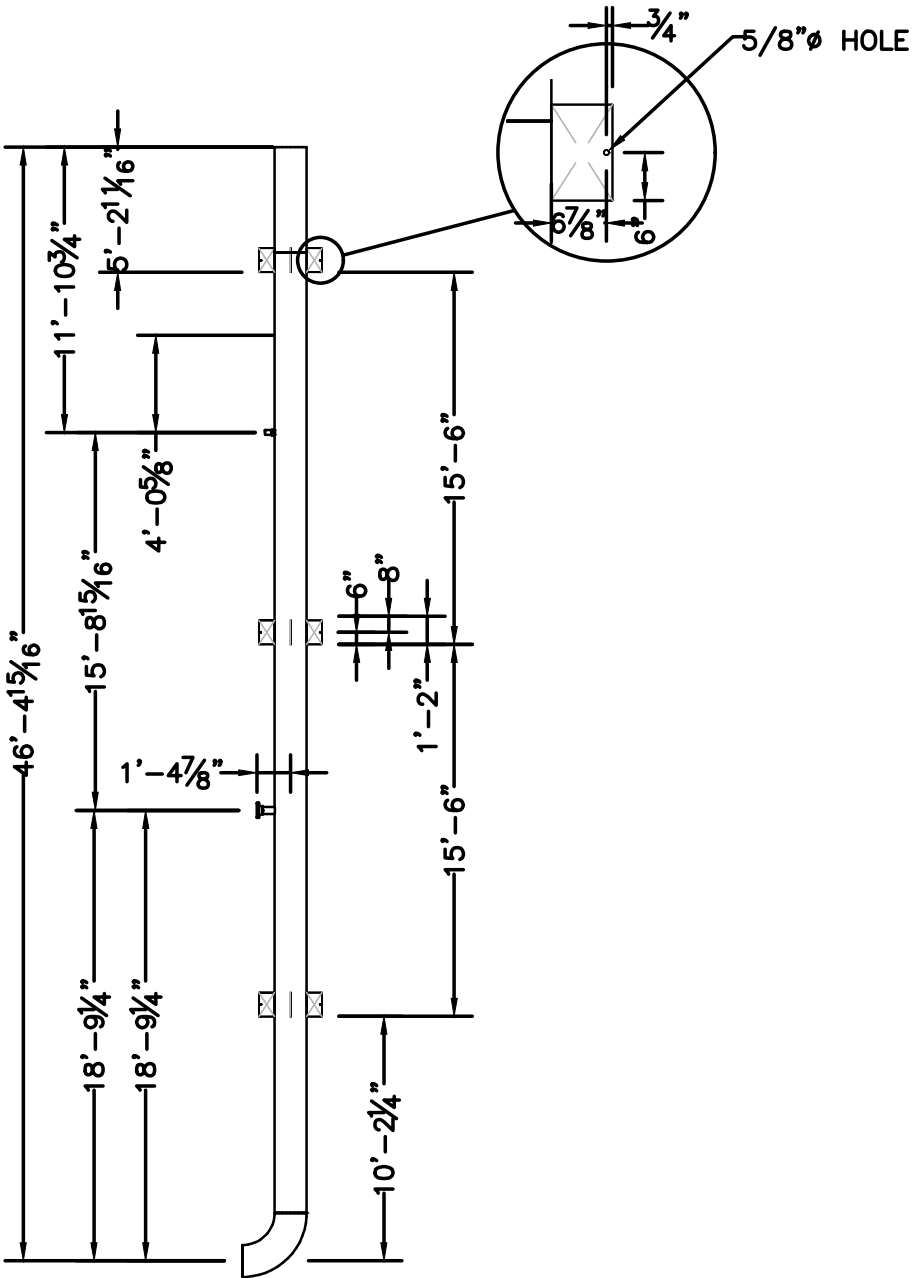
BOM-STEEL

Item No	Order	Description	Qty	Size	Steel L
S12		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 7.625	
S17		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 7.875	
S24		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 5.688	
S25		ASTM A36 CS Plate 1/2" Thick	3	12.000 x 3.875	

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DRN JMM	7/15/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT		FLANGE WEIGHT/ORIENTATION		<input type="checkbox"/>		
		NRB				FITTING ORIENTATION		FITTING ORIENTATION		<input type="checkbox"/>		
		MECH RISERS				BOLTS/CPLG'S/TH'D TIGHT		BOLTS/CPLG'S/TH'D TIGHT		<input type="checkbox"/>		
		SERVICE NAME				SPOOL IDENTIFICATION		SPOOL IDENTIFICATION		<input type="checkbox"/>		
REF.DWG.		210140-RISER-02				ASME	X-RAY	HYDRO TEST	PWHT	COMMENTS		
DRAWING NO./TRACKING NO.		210140-RISER-02-01				NA	NA	NA	NA	MURPHY WPS#		
QTY.	1	SHT/NO	1	1	0	REV	DATE	DESCRIPTION		DRN	CHK	APP



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	1	Sch 40 SA-53B CS ERW Pipe Saddle			6"	6.000	16x3
6	1	150lb RF Sch 40 Bore SA105 CS WN Flg					3
4	1	No.647 TT Dielectric Transition Fitting					2
7	1	Std Wt SA234 WPB CS BW LR 90 Deg El					16
3	1	3000# FS Thread-0-Let			1 1/2"	1.500	2x16
1	1	Std Wt SA-53B CS ERW Pipe PE	BEV	BEV	40'-0"	480.000	16
17	1	Std Wt SA-53B CS ERW Pipe PE	BEV	BEV	4'-4 11/16"	52.698	16

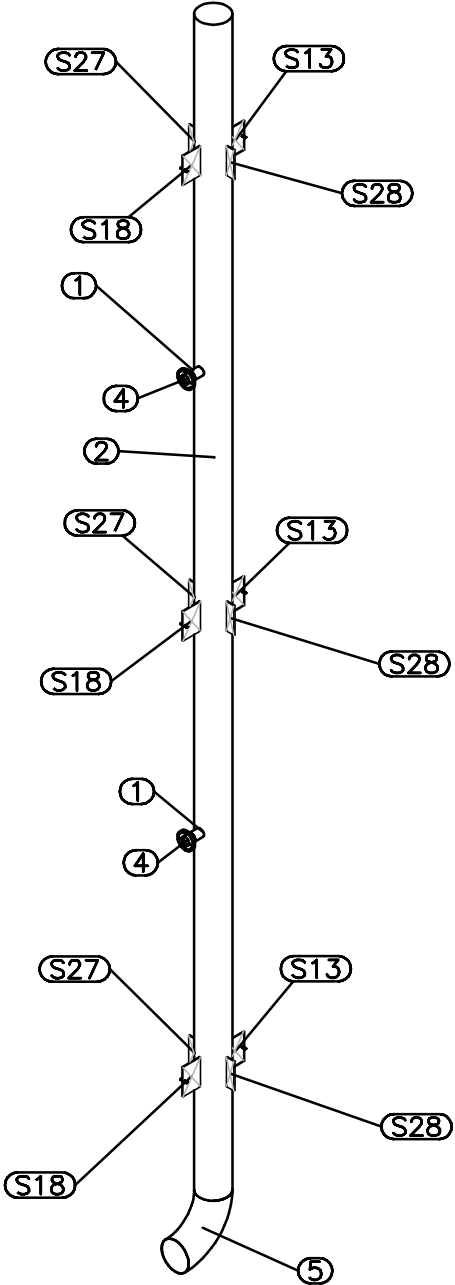
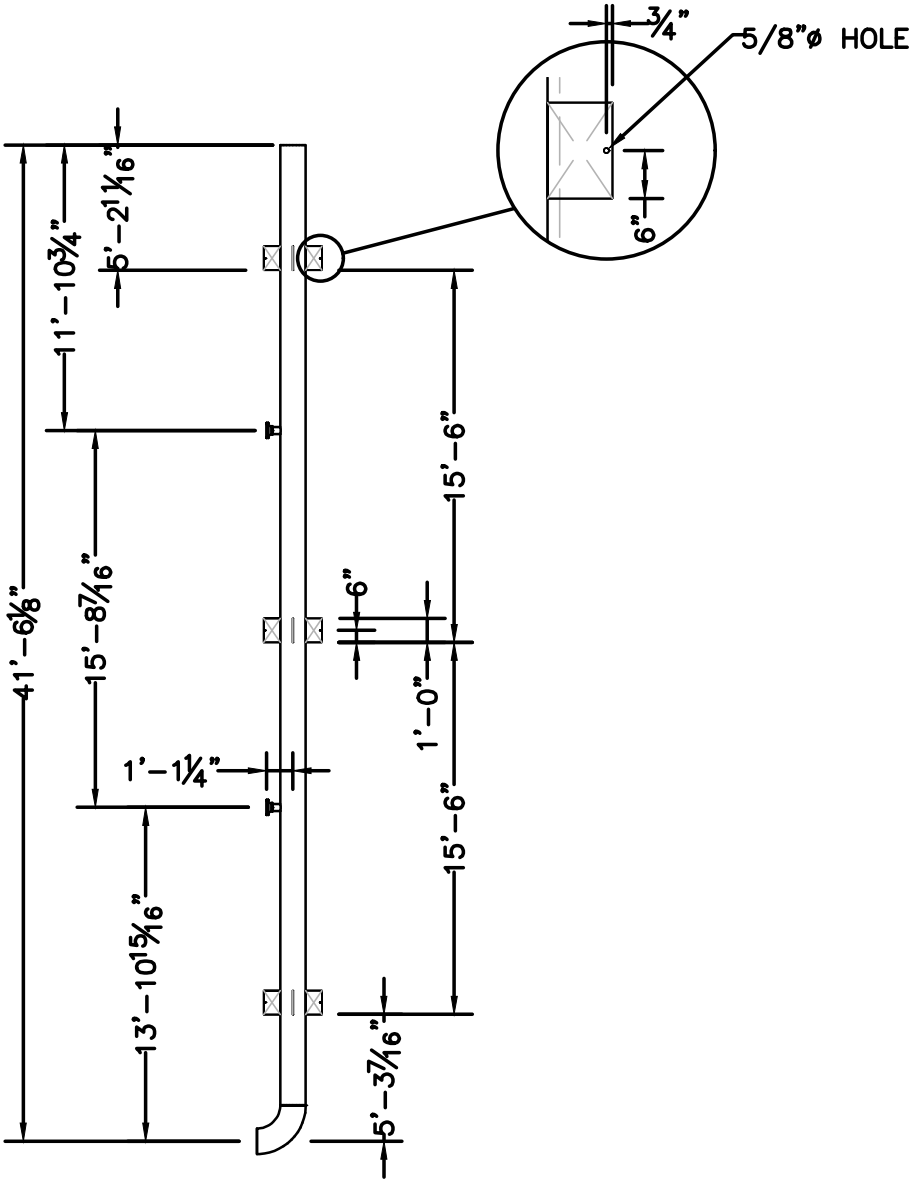
BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S12	12.000 x 7.625	ASTM A36 CS Plate 1/2" Thick	3	0.816
S26	12.000 x 4.875	ASTM A36 CS Plate 1/2" Thick	3	0.548
S17	12.000 x 7.875	ASTM A36 CS Plate 1/2" Thick	3	0.840
S25	12.000 x 3.875	ASTM A36 CS Plate 1/2" Thick	3	0.450

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DRN JMM CHK APP JOB NO. 210140 REF.DWG. DRAWING NO./TRACKING NO. 210140-RISER-02-02	7/15/2021	WUSM RESEARCH BUILDING		QA/QC ACCEPT		FLANGE WEIGHT/ORIENTATION		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>							
		NRB		FITTING ORIENTATION		BOLTS/CPLG'S/TH'D TIGHT									
		MECH RISERS		SPOOL IDENTIFICATION		COMMENTS									
		SERVICE NAME 210140-RISER-02		SPEC. NA		ASME NA			X-RAY NA		HYDRO TEST NA		PWHT NA		
QTY. 1		SHT/NO 1		REV 0		DATE		MURPHY WPS#		DRN		CHK		APP	



# Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	2	Sch 40 SA-53B CS ERW Pipe Saddle			4"	4.000	12x3
4	2	150lb RF Sch 40 Bore SA105 CS WN Flg					3
5	1	Std Wt SA234 WPB CS BW LR 90 Deg Ell					12
2	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	40'-0"	480.000	12

# BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S28	12.000 x 3.500	ASTM A36 CS Plate 1/2" Thick	3	0.414
S13	12.000 x 8.125	ASTM A36 CS Plate 1/2" Thick	3	0.864
S27	12.000 x 5.000	ASTM A36 CS Plate 1/2" Thick	3	0.560
S18	12.000 x 8.250	ASTM A36 CS Plate 1/2" Thick	3	0.877

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FLANGE WEIGHT/ORIENTATION

FITTING ORIENTATION

BOLTS/CPLG'S/TH'D TIGHT

SPOOL IDENTIFICATION

Q/A/QC ACCEPT

SPEC.

NA

0

ASME

NA

REV

X-RAY

NA

DATE

HYDRO TEST

NA

PWHT

NA

COMMENTS

MURPHY WPS#

DESCRIPTION

DRN

CHK

APP

WUSM RESEARCH BUILDING

NRB

MECH RISERS

SERVICE NAME

210140-RISER-02

REF.DWG.

DRAWING NO./TRACKING NO.

210140-RISER-02-03

QTY.

1

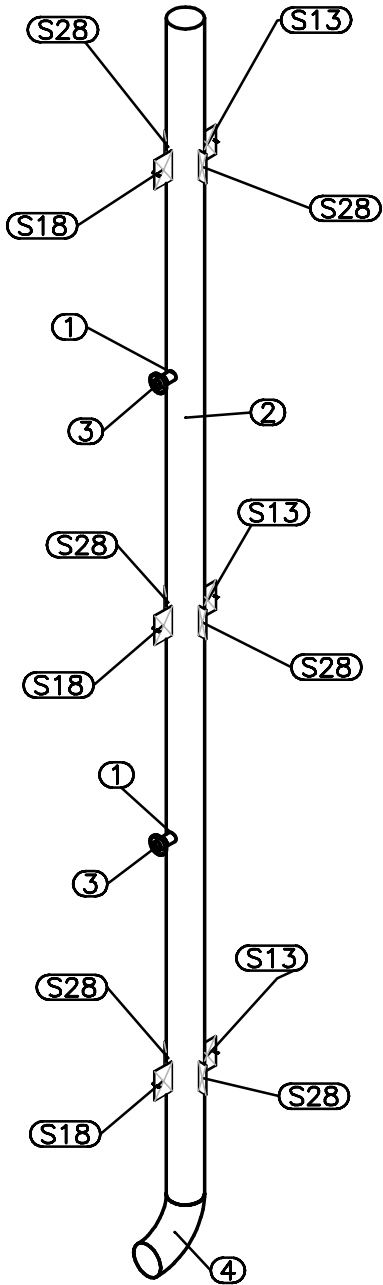
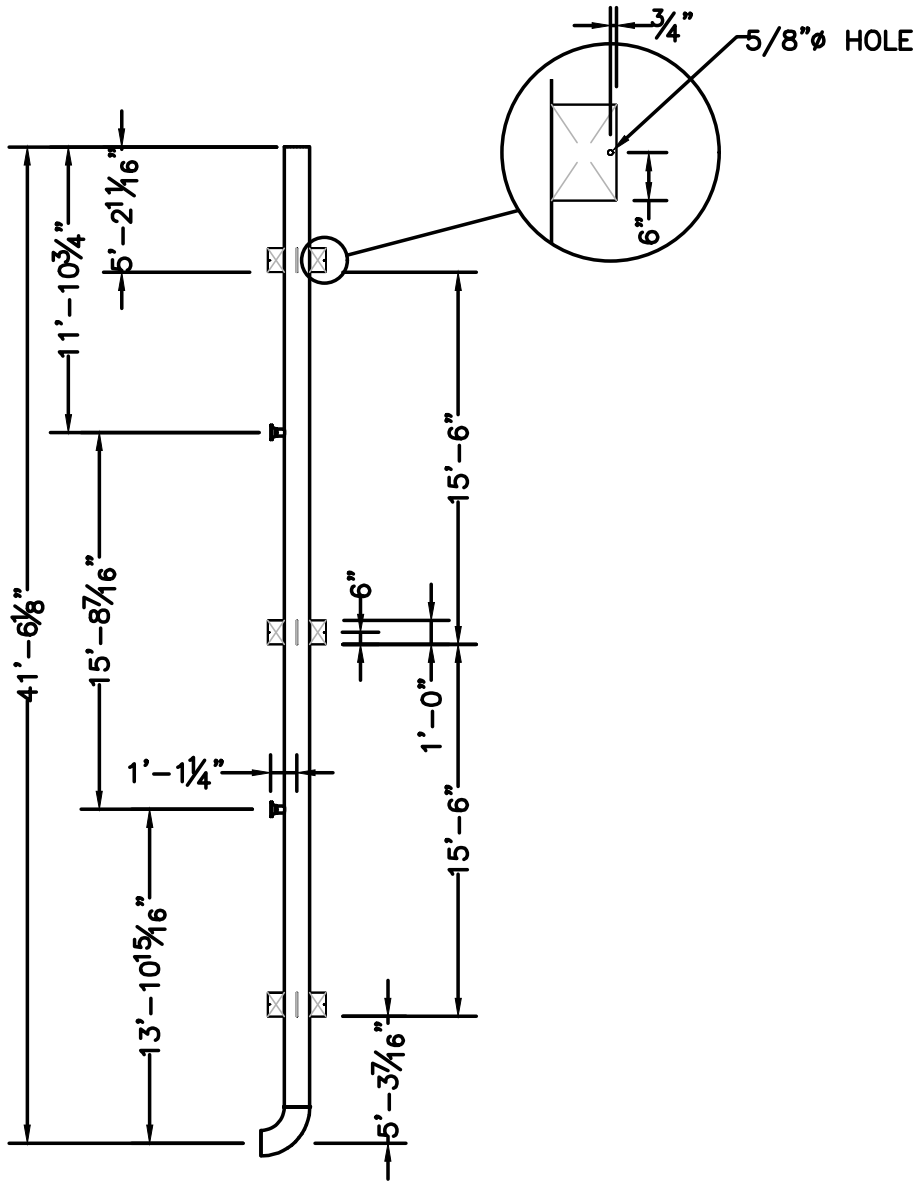
SHT/NO

1 of 1

REV

0





## Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	2	Sch 40 SA-53B CS ERW Pipe Saddle			4"	4.000	12x3
3	2	150lb RF Sch 40 Bore SA105 CS WN Flg					3
4	1	Std Wt SA234 WPB CS BW LR 90 Deg Ell					12
2	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	40'-0"	480.000	12

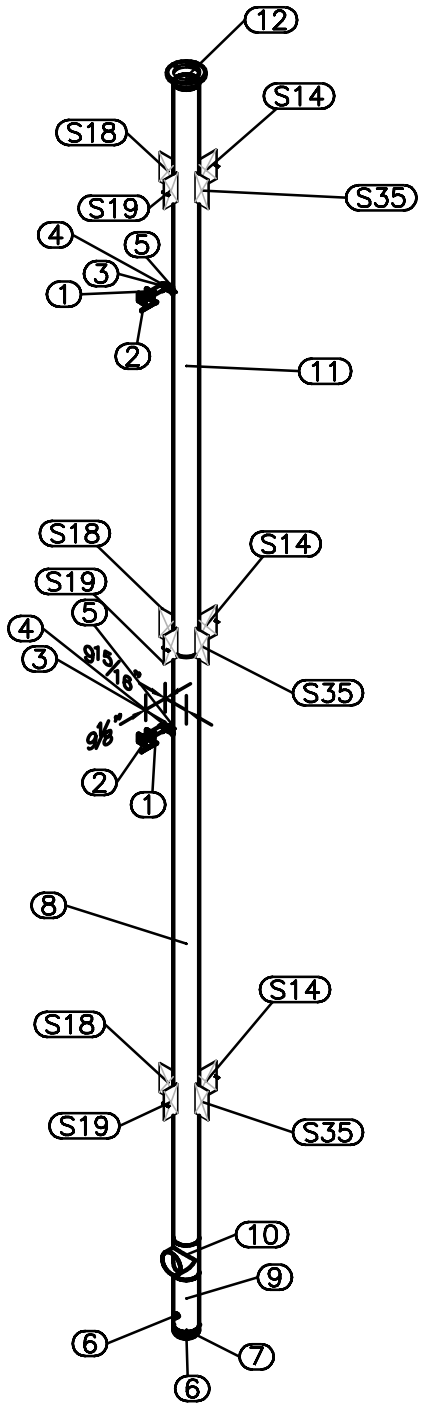
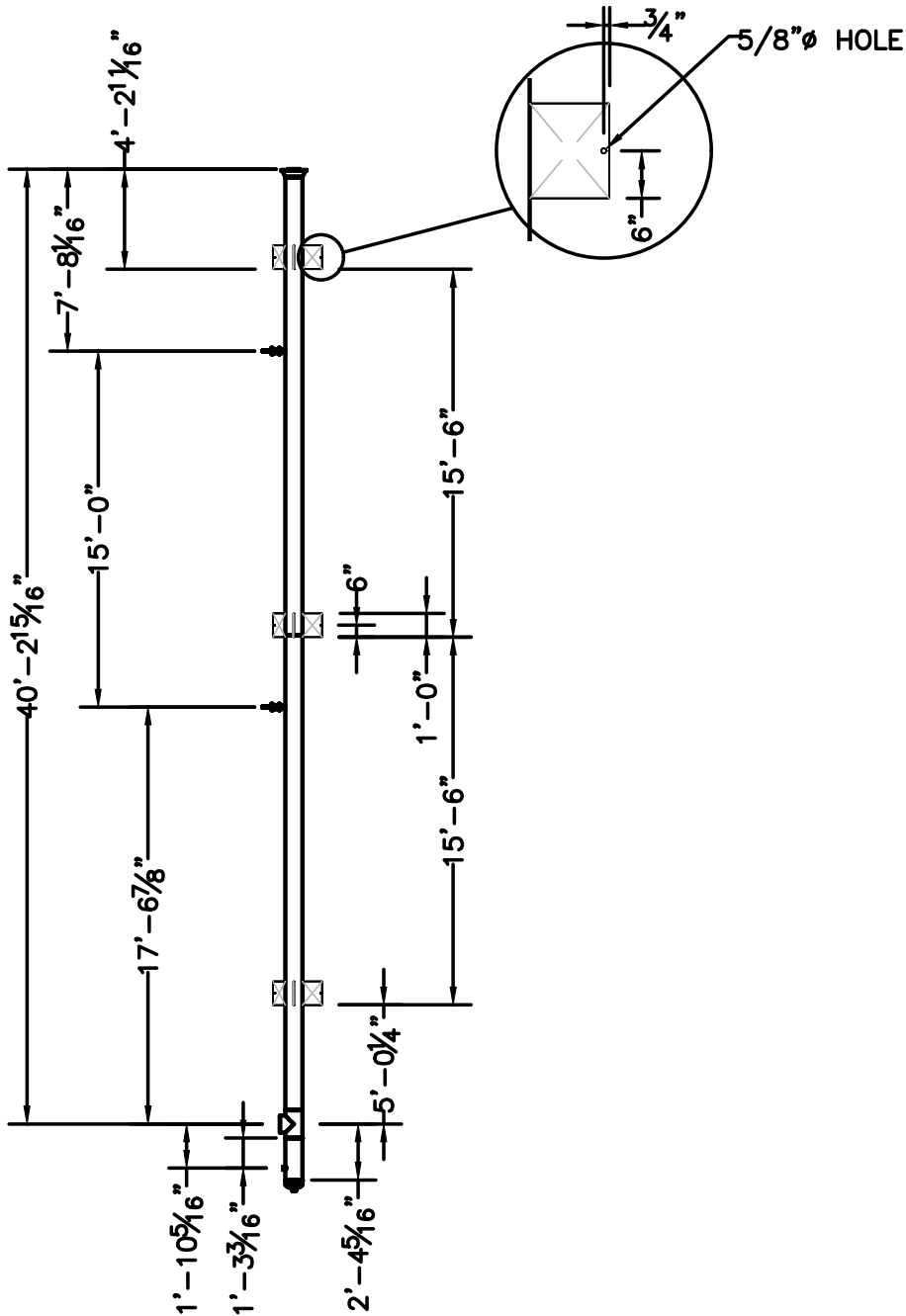
## BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S28	12.000 x 3.500	ASTM A36 CS Plate 1/2" Thick	3	0.414
S13	12.000 x 8.125	ASTM A36 CS Plate 1/2" Thick	3	0.864
S28	12.000 x 3.500	ASTM A36 CS Plate 1/2" Thick	3	0.414
S18	12.000 x 8.250	ASTM A36 CS Plate 1/2" Thick	3	0.877

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DRN JMM CHK APP	7/15/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION FITTING ORIENTATION BOLTS/CPLG'S/TH'D TIGHT SPOOL IDENTIFICATION			
		NRB				SPEC. NA				HYDRO TEST NA			
		MECH RISERS				ASME NA				X-RAY NA			
		SERVICE NAME				REV 0				DATE			
REF.DWG.		210140		210140-RISER-02		PWHT NA		COMMENTS		MURPHY WPS#		MURPHY WPS#	
DRAWING NO./TRACKING NO.		QTY.		SHT/NO		REV		DESCRIPTION		DRN		CHK APP	
210140-RISER-02-04		1		1 of 1		0							



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
10	1	Std Wt SA234 WPB CS BW TEE					8
12	1	150lb RF Sch 40 Bore SA105 CS WN Flg					8
7	1	Std Wt SA234 WPB CS BW Cap					8
2	2	83A-140 CS 1500 lb 3pc FP Ball Valve THD					1-1/2
3	2	3M A105 FS SW 90 Deg Ell					1-1/2
5	2	3000# FS Soc-O-Let			1 3/8"	1.375	1-1/2x8
6	2	3000# FS Thread-O-Let			1 1/16"	1.063	3/4x8
8	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	20'-0"	240.000	8
9	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	1'-9 3/16"	21.180	8
11	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	19'-3 9/16"	231.540	8
1	2	Sch 80 A106B CS SMLS Pipe	SW	MPT	6"	6.000	1-1/2
4	2	Sch 80 A106B CS SMLS Pipe	SW	SW	3 1/4"	3.264	1-1/2

BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S35	12.000 x 6.250	ASTM A36 CS Plate 1/2" Thick	3	0.682
S14	12.000 x 10.000	ASTM A36 CS Plate 1/2" Thick	3	1.047
S18	12.000 x 8.250	ASTM A36 CS Plate 1/2" Thick	3	0.877
S19	12.000 x 6.250	ASTM A36 CS Plate 1/2" Thick	3	0.682

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QA/QC ACCEPT

FLANGE WEIGHT/ORIENTATION  
FITTING ORIENTATION  
BOLTS/CPLG'S/TH'D TIGHT  
SPOOL IDENTIFICATION

SPEC. NA

ASME NA

X-RAY NA

HYDRO TEST NA

PMHT NA

COMMENTS

0 REV

DATE

MURPHY WPS#

DRN

CHK

APP

WUSM RESEARCH BUILDING

NRB

MECH RISERS

SERVICE NAME

210140-RISER-02

REF.DWG.

210140

DRAWING NO./TRACKING NO.

210140-RISER-02-05

QTY.

1

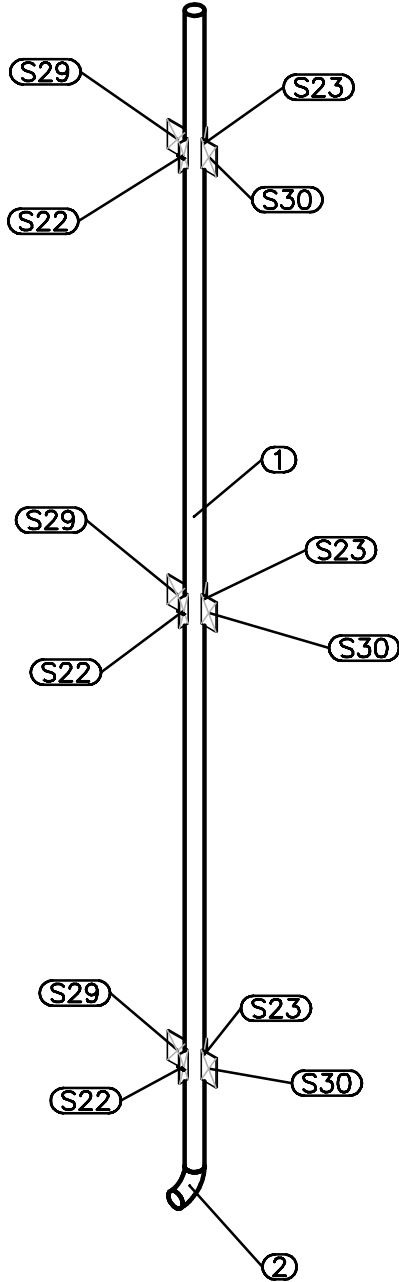
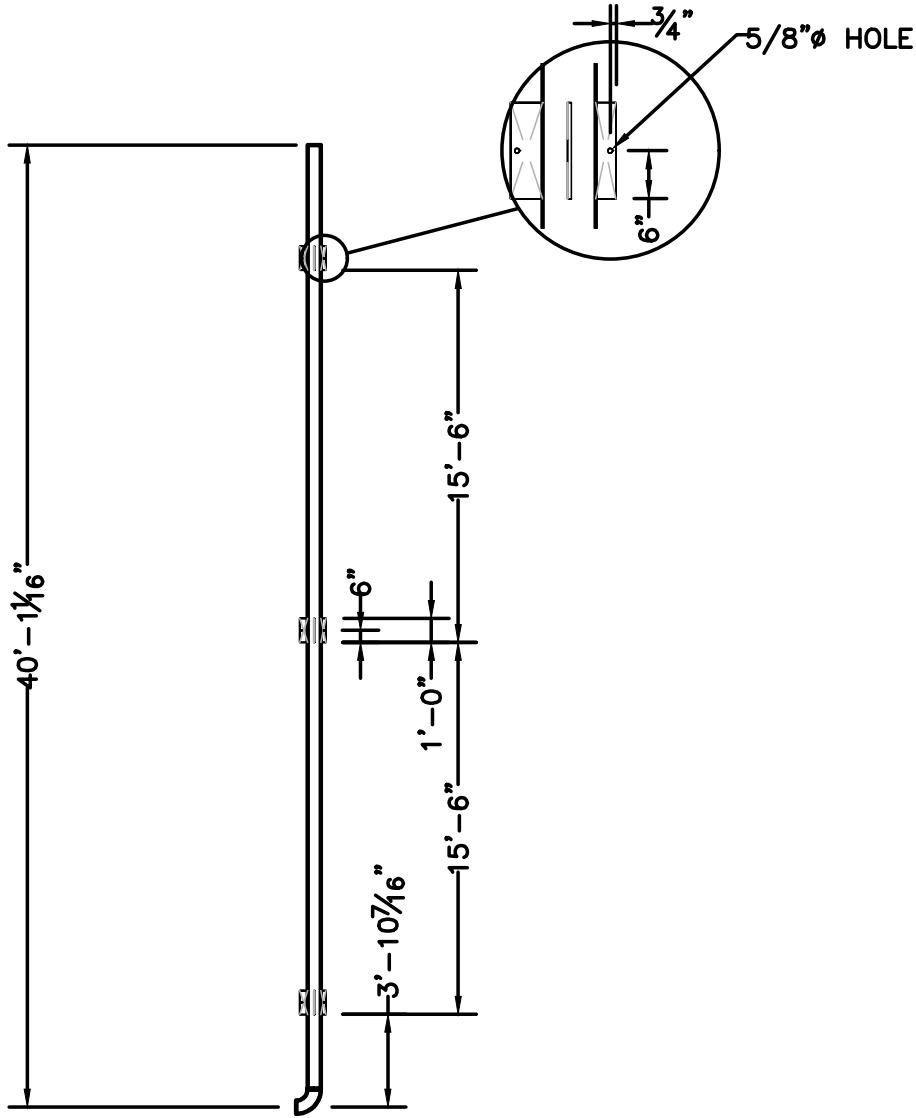
SHT/NO

1 of 1

REV

0





# Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	1	Std Wt SA234 WPB CS BW LR 90 Deg El					6
1	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	39'-3 15/16"	471.938	6

## BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S30	12.000 x 7.000	ASTM A36 CS Plate 1/2" Thick	3	0.755
S23	12.000 x 2.500	ASTM A36 CS Plate 1/2" Thick	3	0.317
S29	12.000 x 9.250	ASTM A36 CS Plate 1/2" Thick	3	0.974
S22	12.000 x 4.000	ASTM A36 CS Plate 1/2" Thick	3	0.463

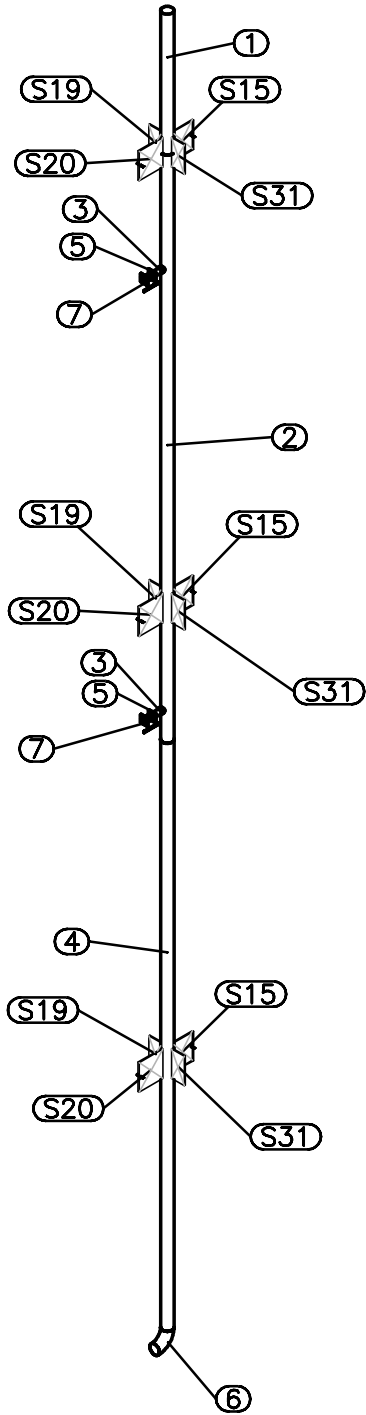
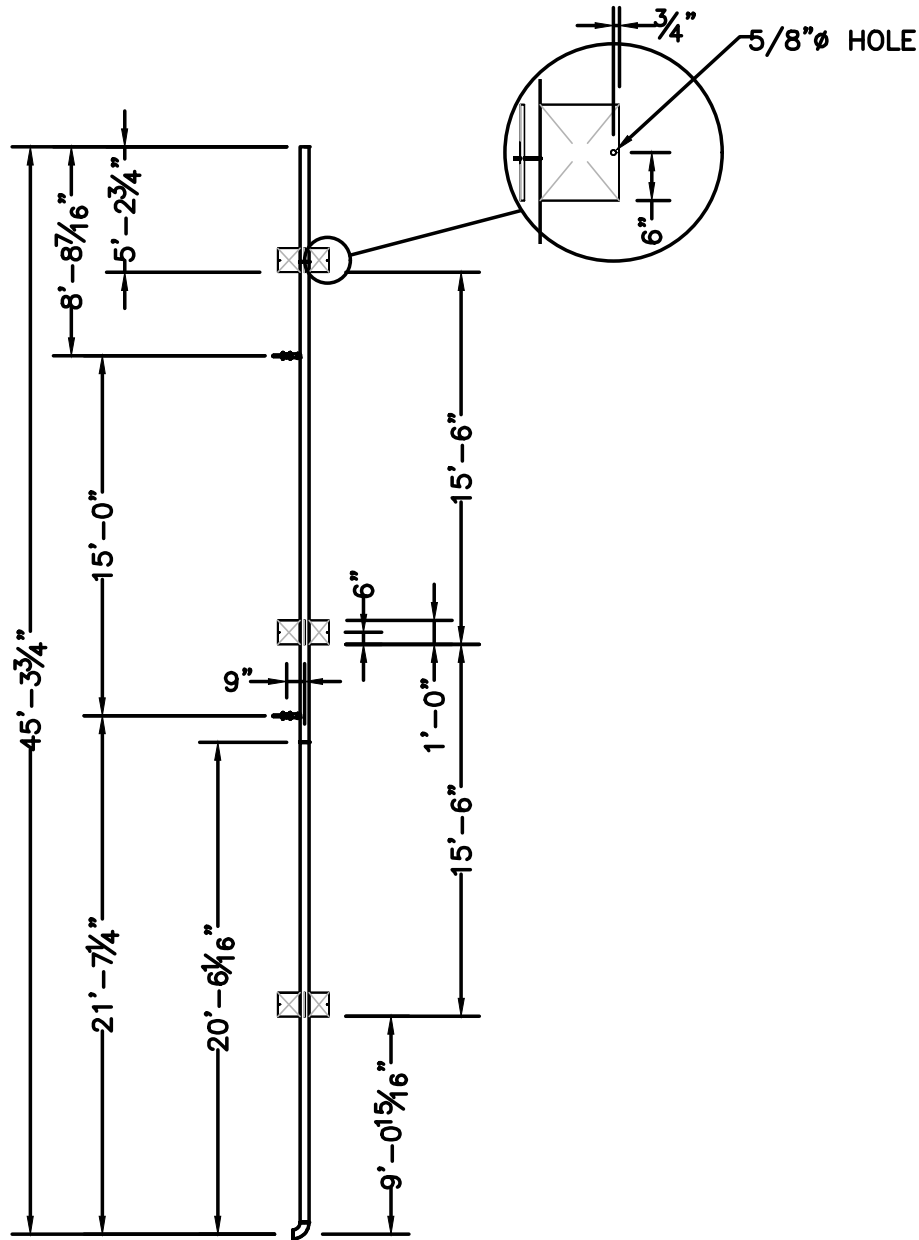
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DRN JMM	7/15/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION			
		NRB				FITTING ORIENTATION				FITTING ORIENTATION			
		MECH RISERS				BOLTS/CPLG'S/TH'D TIGHT				BOLTS/CPLG'S/TH'D TIGHT			
		SERVICE NAME				SPOOL IDENTIFICATION				SPOOL IDENTIFICATION			
CHK						SPEC.				HYDRO TEST			
APP						ASME				X-RAY			
JOB NO.	210140					NA				NA			
REF.DWG.						NA				NA			
DRAWING NO./TRACKING NO.	210140-RISER-02-06	QTY. 1				SHT/NO 1 of 1				REV 0			
						DATE				DESCRIPTION			
						REV				DRN			
						CHK				APP			





## Murphy-PFFS-SPOOL-BOM

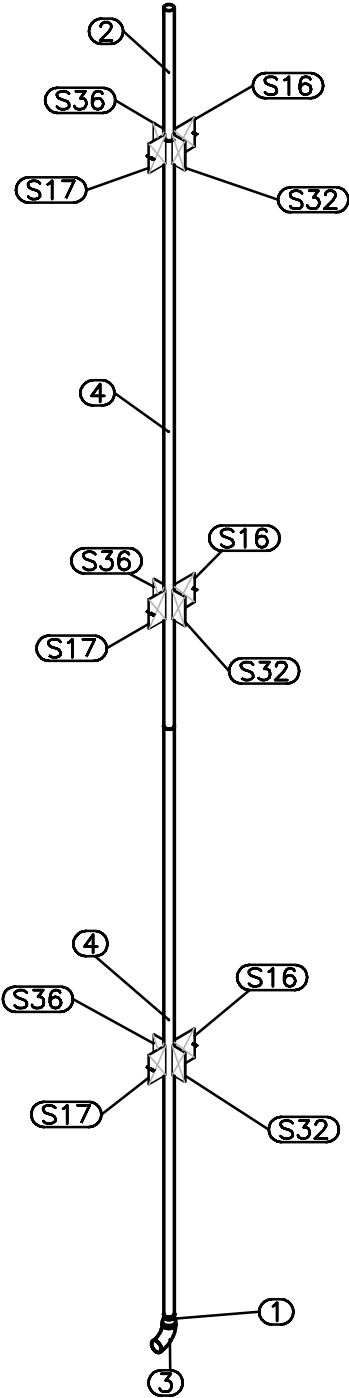
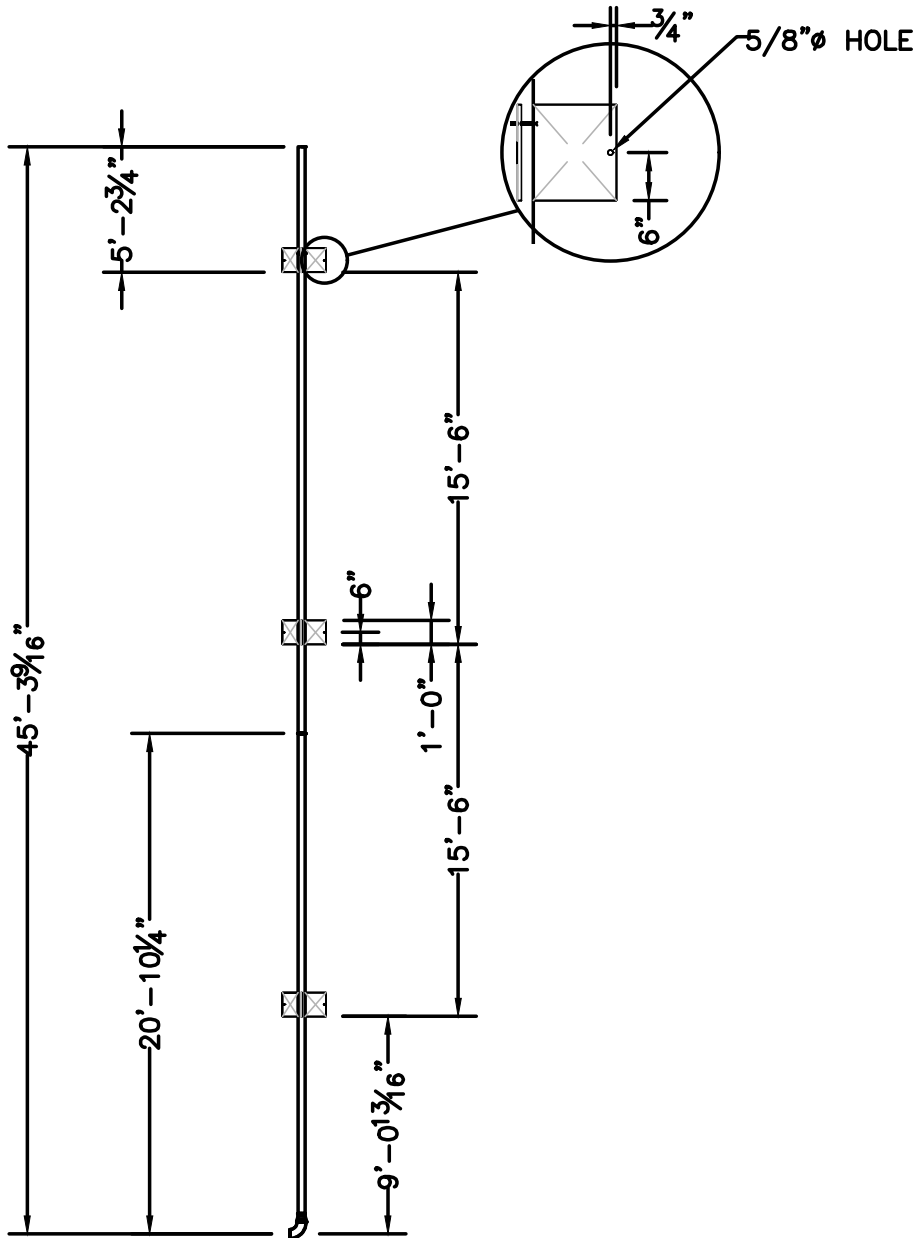
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
7	2	83A-140 CS 1500 lb 3pc FP Ball Valve THD					1-1/2
6	1	XH SA234 WPB CS BW LR 90 Deg El					4
3	2	3000# FS Soc-O-Let			1 3/8"	1.375	1-1/2x4
1	1	XH SA-53B CS SMLS Pipe	BEV	BEV	4'-9 7/16"	57.412	4
2	1	XH SA-53B CS SMLS Pipe	BEV	BEV	20'-0"	240.000	4
4	1	XH SA-53B CS SMLS Pipe	BEV	BEV	20'-0"	240.000	4
5	2	Sch 80 A106B CS SMLS Pipe	SW	MPT	4"	4.000	1-1/2

## BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S31	12.000 x 6.000	ASTM A36 CS Plate 1/2" Thick	3	0.657
S15	12.000 x 9.875	ASTM A36 CS Plate 1/2" Thick	3	1.035
S19	12.000 x 6.250	ASTM A36 CS Plate 1/2" Thick	3	0.682
S20	12.000 x 11.250	ASTM A36 CS Plate 1/2" Thick	3	1.169

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DRN	JMM	7/15/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION			
			NRB				FITTING ORIENTATION				FITTING ORIENTATION			
			MECH RISERS				BOLTS/CPLG'S/TH'D TIGHT				BOLTS/CPLG'S/TH'D TIGHT			
			SERVICE NAME				SPOOL IDENTIFICATION				SPOOL IDENTIFICATION			
REF.DWG.	210140	210140	210140-RISER-02				ASME				PWHT			
			210140-RISER-02				NA				NA			
			210140-RISER-02				NA				NA			
			210140-RISER-02				NA				NA			
DRAWING NO./TRACKING NO.	210140-RISER-02-08	1	SHT/NO				REV				MURPHY WPS#			
			1				DATE				DESCRIPTION			
			1				REV				DRN			
			1				REV				CHK			
REV	210140-RISER-02	1	SHT/NO				REV				APP			
			1				REV				APP			
			1				REV				APP			
			1				REV				APP			



## Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	1	XH SA234 WPB CS BW CONC RED					4x3
3	1	XH SA234 WPB CS BW LR 90 Deg Ell					4
2	1	XH SA-53B CS SMLS Pipe	BEV	BEV	4'-5 1/16"	53.077	3
4	2	XH SA-53B CS SMLS Pipe	BEV	BEV	20'-0"	240.000	3

## BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S16	12.000 x 10.375	ASTM A36 CS Plate 1/2" Thick	3	1.084
S32	12.000 x 5.875	ASTM A36 CS Plate 1/2" Thick	3	0.645
S17	12.000 x 7.875	ASTM A36 CS Plate 1/2" Thick	3	0.840
S36	12.000 x 5.500	ASTM A36 CS Plate 1/2" Thick	3	0.609

**MURPHY**  
SINCE 1907

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DRN JMM	7/15/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION				
		NRB				FITTING ORIENTATION				FITTING ORIENTATION				
		MECH RISERS				BOLTS/CPLG'S/TH'D TIGHT				BOLTS/CPLG'S/TH'D TIGHT				
		SERVICE NAME				SPOOL IDENTIFICATION				SPOOL IDENTIFICATION				
CHK														
APP														
JOB NO.	210140													
REF.DWG.														
DRAWING NO./TRACKING NO.	210140-RISER-02-09	QTY.	1	SHT/NO	1 of 1	REV	0	DESCRIPTION				DRN	CHK	APP