

SHIP THE 16" CHS RISER LOOSE.

SHIP THE SUPPORT GUIDE PLATES FOR THE 16" CHS RISER LOOSE ALSO. THE SUPPORT GUIDE PLATES WILL BE WELDED ON IN THE FIELD.

NOTE: PLATE IS 2" HIGHER ON THE MPS LINE THAN THE OTHERS ON THE RISER FOR EXPANSION.

THERE NEEDS TO BE A 2" GAP BETWEEN THE STEAM SUPPORT PLATES AND THE FRAME TO ALLOW FOR EXPANSION IN THE DOWNWARD DIRECTION.

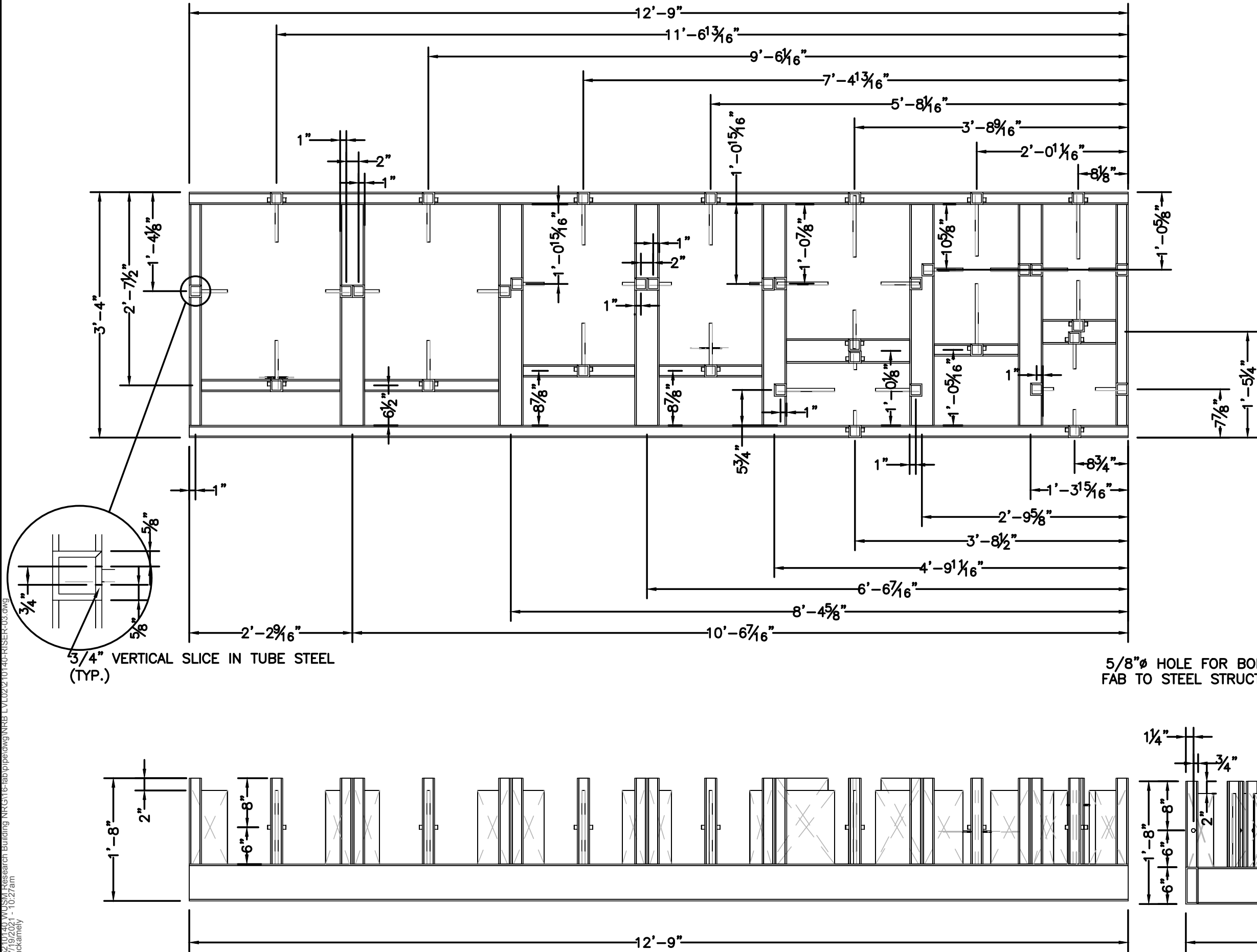
THERE NEEDS TO BE A 2" GAP BETWEEN THE STEAM SUPPORT PLATES AND THE FRAME TO ALLOW FOR EXPANSION IN THE DOWNWARD DIRECTION.

STEAM EXPANSION JOINT INSTALLED AT THIS LOCATION.

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St. Louis, MO 63132-2303
314-997-6600 phone
BIMCAD@murphy-stl.com

DRN JMM		7/14/2021		WUSM RESEARCH BUILDING					QA/QC ACCEPT					WEIGHT/ORIENTATION					<input type="checkbox"/>	
CHK				NRB										FITTING ORIENTATION					<input type="checkbox"/>	
APP				MECH RISERS										BOLTS/CPLG'S/TH'D TIGHT					<input type="checkbox"/>	
JOB NO.		210140												SPOOL IDENTIFICATION					<input type="checkbox"/>	
REF.DWG.				SERVICE NAME					SPEC.		ASME		X-RAY		HYDRO TEST		PWHT		COMMENTS	
									NA		NA		NA		NA		NA		MURPHY WPS#	
DRAWING NO./TRACKING NO.				QTY.		SHT/NO		REV												
210140-RISER-03				1		1 of 3		0												
										0										
				REV				DESCRIPTION		DATE						DRN		CHK APP		

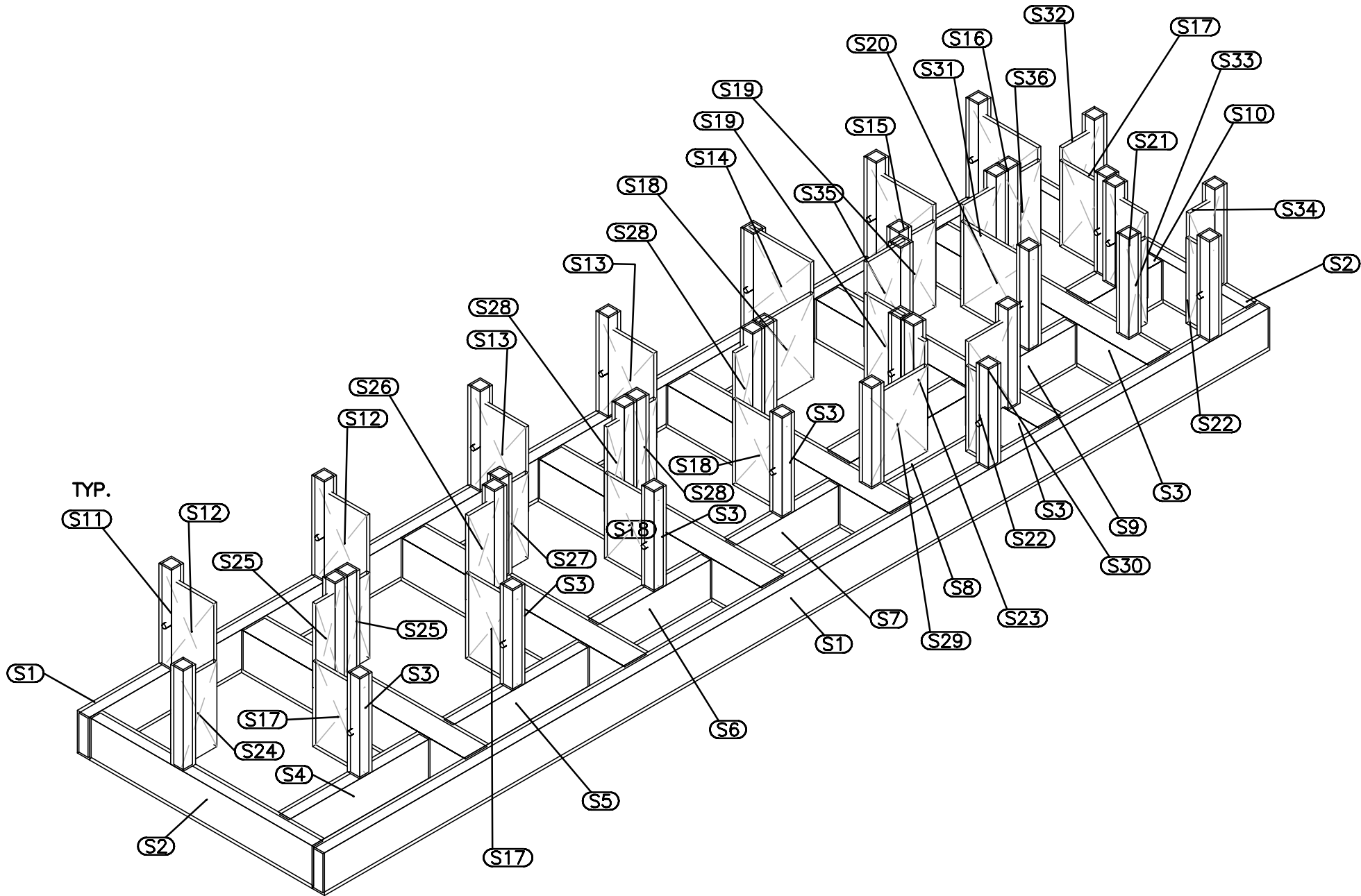


QTY 2

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DRN JMM	7/14/2021	WUSM RESEARCH BUILDING			QA/QC ACCEPT			FLANGE WEIGHT/ORIENTATION		
CHK		NRB						<input type="checkbox"/> FITTING ORIENTATION		
APP		MECH RISERS						<input type="checkbox"/> BOLTS/CPLG'S/TH'D TIGHT		
JOB NO. 210140		SERVICE NAME						<input type="checkbox"/> SPOOL IDENTIFICATION		
REF.DWG.					SPEC. NA	ASME NA	X-RAY NA	HYDRO TEST NA	PWHT NA	COMMENTS
DRAWING NO./TRACKING NO. 210140-RISER-03	QTY. 1	SHT/NO 2 OF 3	REV 0		REV 0	DATE	DESCRIPTION			MURPHY WPS#
							DRN	CHK	APP	

NOTE: PLATE IS 2" HIGHER ON THE MPS LINE THAN THE OTHERS ON THE RISER FOR EXPANSION.



BOM-STEEL

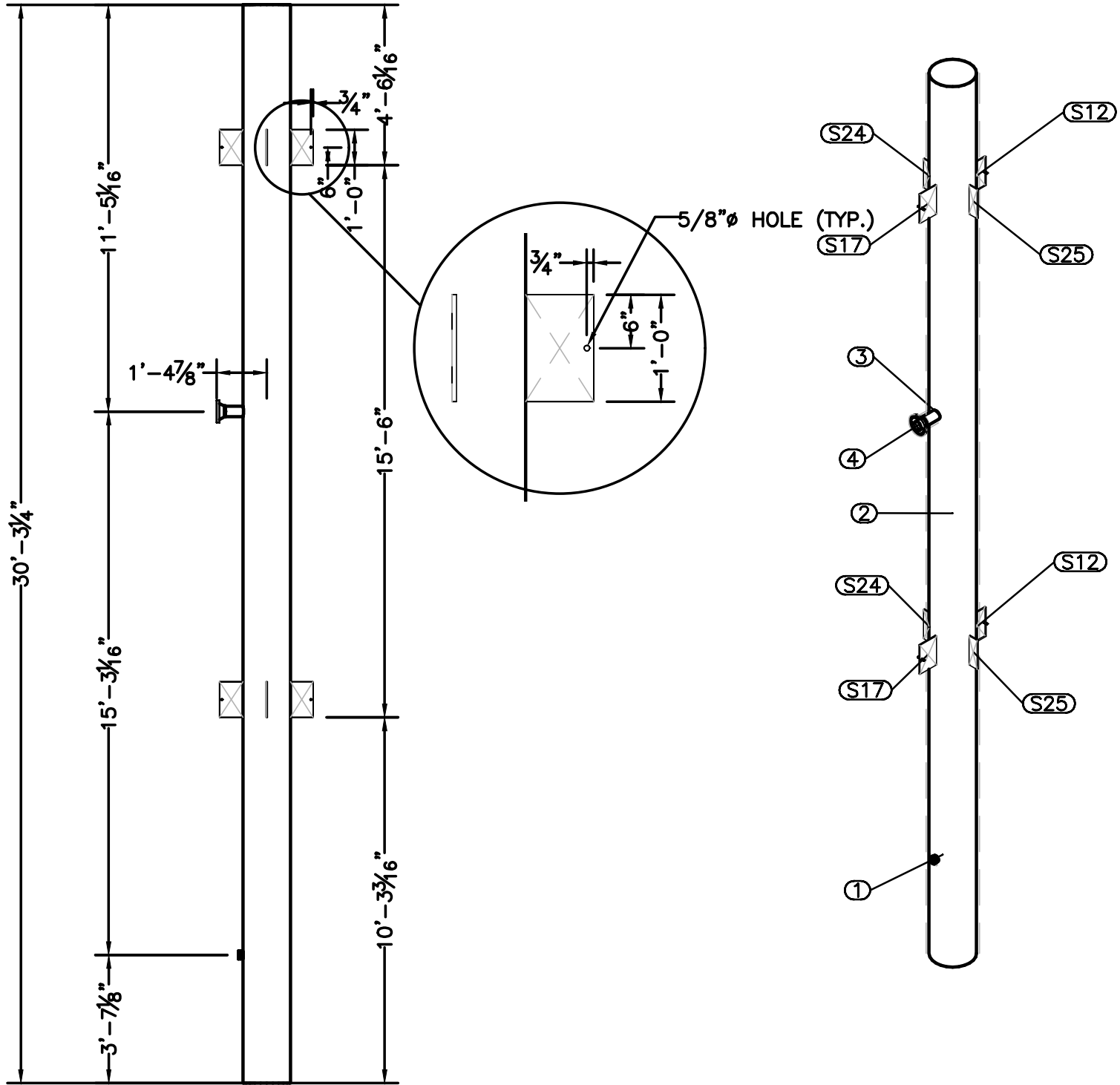
Item No	Order	Description	Qty	Size	Steel L
S1	CS RECT Tube		4	6x2x1/4"	153"
S2	CS RECT Tube		4	6x2x1/4"	36"
S3	CS RECT Tube		12	6x4x1/4"	36"
S4	CS RECT Tube		2	6x2x1/4"	22 1/2"
S5	CS RECT Tube		2	6x2x1/4"	21 3/4"
S6	CS RECT Tube		2	6x2x1/4"	18 1/4"
S7	CS RECT Tube		2	6x2x1/4"	16 3/4"
S8	CS RECT Tube		2	6x2x1/4"	20"
S9	CS RECT Tube		2	6x2x1/4"	13 3/4"
S10	CS RECT Tube		2	6x4x1/4"	12"
S11	CS SQ Tube	ASTM A36 CS Square Tube	72	SQ2x2x1/4	14"
S12		ASTM A36 CS Plate 1/2" Thick	4	12.000 x 7.625	
S13		ASTM A36 CS Plate 1/2" Thick	4	12.000 x 8.125	
S14		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 10.000	
S15		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 9.875	
S16		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 10.375	
S17		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 7.875	
S18		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 8.250	
S19		ASTM A36 CS Plate 1/2" Thick	4	12.000 x 6.250	
S20		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 11.250	
S21		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 5.563	
S22		ASTM A36 CS Plate 1/2" Thick	4	12.000 x 4.000	
S23		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 2.500	
S24		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 5.688	
S25		ASTM A36 CS Plate 1/2" Thick	4	12.000 x 3.875	
S26		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 4.875	
S27		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 5.000	
S28		ASTM A36 CS Plate 1/2" Thick	6	12.000 x 3.500	
S29		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 9.250	
S30		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 7.000	
S31		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 6.000	
S32		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 5.875	
S33		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 3.250	
S34		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 4.813	
S35		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 6.250	
S36		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 5.500	

QTY 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		SPEC.		ASME		X-RAY	
		NA		NA		NA	
		0		REV		DATE	
COMMENTS		MURPHY WPS#		DRN		CHK	
APP		APP		APP		APP	

WUSM RESEARCH BUILDING		NRB		MECH RISERS		SERVICE NAME	
7/14/2021		210140		3 OF 3		REV 0	
JMM		CHK		APP		REF.DWG.	
JOB NO.		DRAWING NO./TRACKING NO.		QTY.		SHT/NO	
210140		210140-RISER-03		1		3	



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
4	1	150lb RF Sch 40 Bore SA105 CS WN Flg					3
1	1	3000# FS Thread-O-Let			1 1/2"	1.500	2x16
2	1	Std Wt SA-53B CS ERW Pipe PE	BEV	BEV	30'-3 1/4"	363.250	16

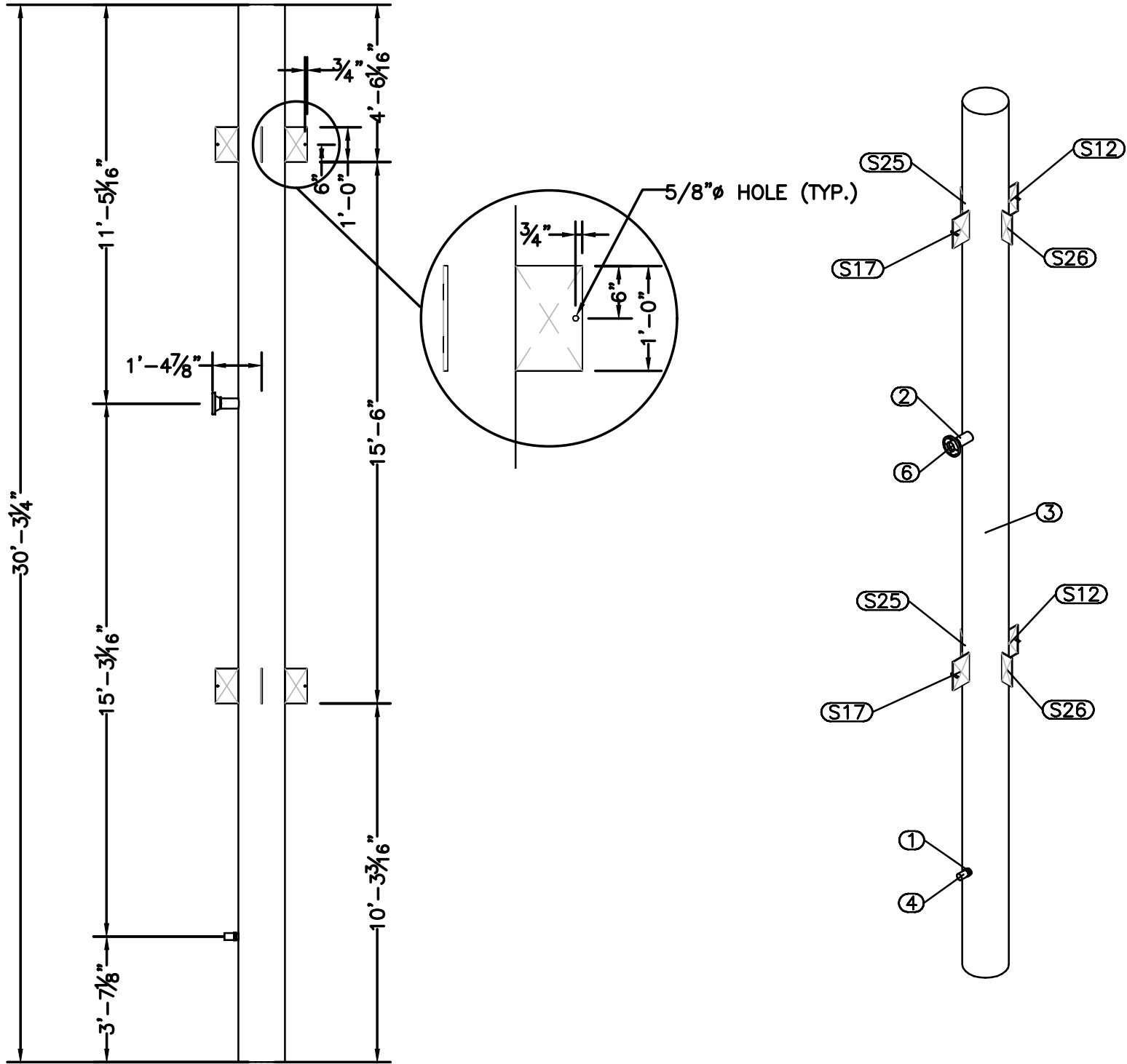
BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S17	12.000 x 7.875	ASTM A36 CS Plate 1/2" Thick	2	0.840
S24	12.000 x 5.688	ASTM A36 CS Plate 1/2" Thick	2	0.627
S12	12.000 x 7.625	ASTM A36 CS Plate 1/2" Thick	2	0.816
S25	12.000 x 3.875	ASTM A36 CS Plate 1/2" Thick	2	0.450

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DRN JMM	7/16/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION			
		NRB				FITTING ORIENTATION				BOLTS/CPLG'S/TH'D TIGHT			
		MECH RISERS				SPOOL IDENTIFICATION				SPOOL IDENTIFICATION			
		SERVICE NAME				SPEC.				ASME			
CHK						X-RAY				HYDRO TEST			
APP						NA				NA			
JOB NO.	210140					REV				DATE			
REF.DWG.						REV				DATE			
DRAWING NO./TRACKING NO.	210140-RISER-03-01	QTY. 1				SHT/NO 1 of 1				REV 0			
						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
1	1	3000# FS Thread-O-Let			1 1/2"	1.500	2x16
3	1	Std Wt SA-53B CS ERW Pipe PE	BEV	BEV	30'-3 1/4"	363.250	16

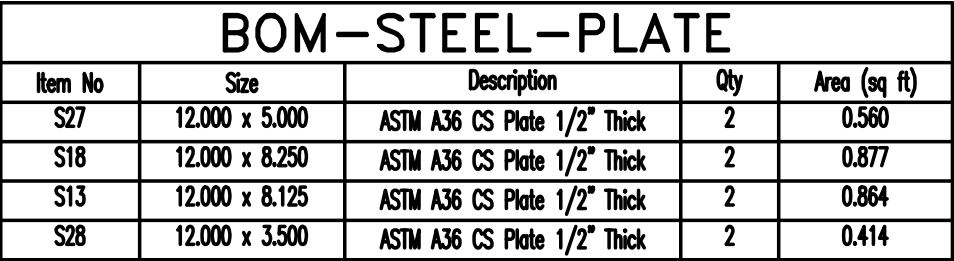
BOM-STEEL-PLATE

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

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DRN JMM CHK APP JOB NO. 210140 REF.DWG. DRAWING NO./TRACKING NO. 210140-RISER-03-02	7/16/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION			
		NRB				FITTING ORIENTATION				BOLTS/CPLG'S/TH'D TIGHT			
		MECH RISERS				SPOOL IDENTIFICATION				SPOOL IDENTIFICATION			
		SERVICE NAME 210140-RISER-03				HYDRO TEST				COMMENTS			
QTY. 1		SHT/NO 1 of 1		REV 0		ASME NA		X-RAY NA		PWHT NA		MURPHY WPS#	
REV 0		DATE		DESCRIPTION		REV		DATE		DRN		CHK APP	

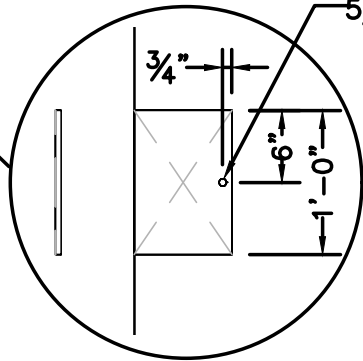


Murphy-PFFS-SPOOL-BOM							
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	2	Sch 40 SA-53B CS ERW Pipe Saddle			4"	4.000	12x3
3	2	150lb RF Sch 40 Bore SA105 CS WN Flg					3
2	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	30'-3 1/4"	363.250	12

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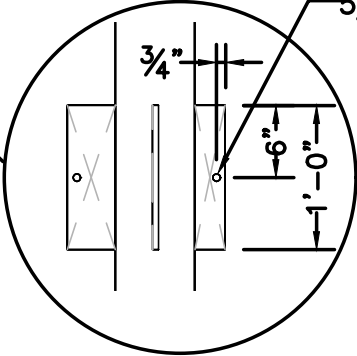
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CHK																		FITTING ORIENTATION	<input type="checkbox"/>			
APP																		BOLTS/CPLG'S/TH'D TIGHT	<input type="checkbox"/>			
JOB NO.	210140																	SPOOL IDENTIFICATION	<input type="checkbox"/>			
REF.DWG.		SERVICE NAME 210140-RISER-03								SPEC. NA		ASME NA		X-RAY NA		HYDRO TEST NA		PWHT NA		COMMENTS		
DRAWING NO./TRACKING NO. 210140-RISER-03-03		QTY. 1		SHT/NO 1 OF 1		REV 0																
										DESCRIPTION										DRN	CHK	APP



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

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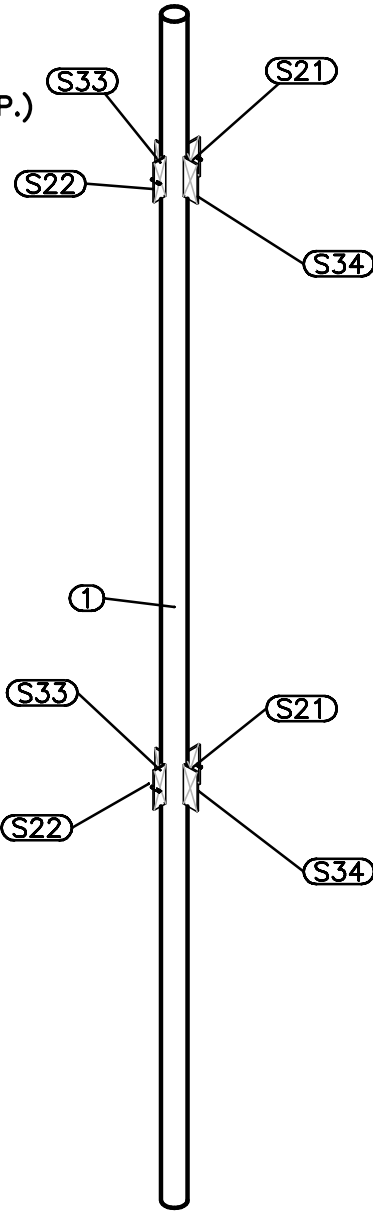
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BOM-STEEL-PLATE				
Item No	Size	Description	Qty	Area (sq ft)
S30	12.000 x 7.000	ASTM A36 CS Plate 1/2" Thick	2	0.755
S23	12.000 x 2.500	ASTM A36 CS Plate 1/2" Thick	2	0.317
S29	12.000 x 9.250	ASTM A36 CS Plate 1/2" Thick	2	0.974
S22	12.000 x 4.000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

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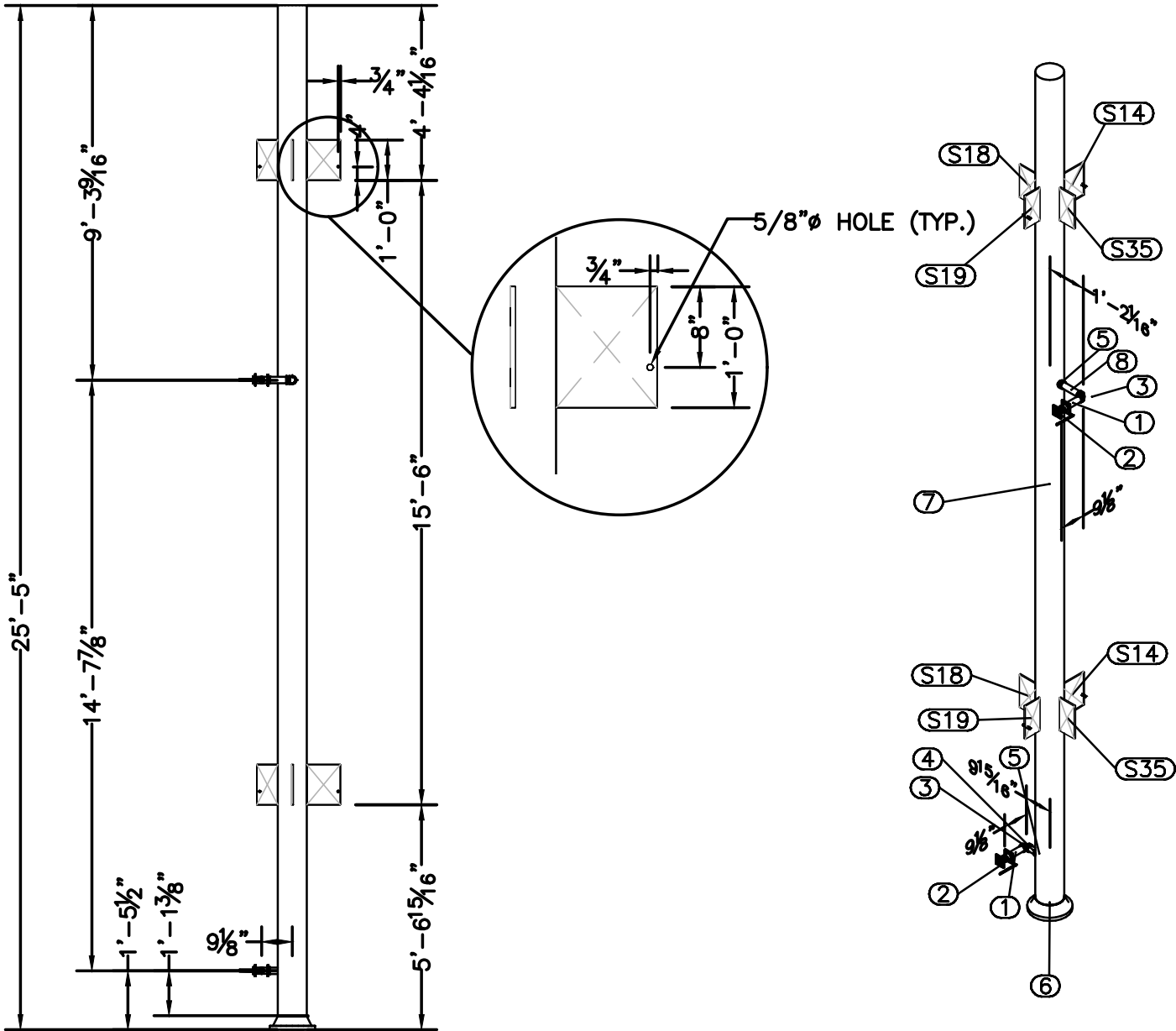


Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	30'-3 1/4"	363.250	6

BOM-STEEL-PLATE				
Item No	Size	Description	Qty	Area (sq ft)
S34	12.000 x 4.813	ASTM A36 CS Plate 1/2" Thick	2	0.542
S21	12.000 x 5.563	ASTM A36 CS Plate 1/2" Thick	2	0.615
S33	12.000 x 3.250	ASTM A36 CS Plate 1/2" Thick	2	0.390
S22	12.000 x 4.000	ASTM A36 CS Plate 1/2" Thick	2	0.463

DRN JMM		7/16/2021	WUSM RESEARCH BUILDING				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION				<input type="checkbox"/>			
CHK			NRB								FITTING ORIENTATION				<input type="checkbox"/>			
APP			MECH RISERS								BOLTS/CPLG'S/TH'D TIGHT				<input type="checkbox"/>			
JOB NO.		210140									SPOOL IDENTIFICATION				<input type="checkbox"/>			
REF.DWG.			SERVICE NAME				SPEC.		ASME		X-RAY		HYDRO TEST		PWHT		COMMENTS	
			210140-RISER-03				NA		NA		NA		NA		NA		MURPHY WPS#	
DRAWING NO./TRACKING NO.			QTY.		SHT/NO		REV											
210140-RISER-03-06			1		1 OF 1		0											
									0									
			REV		DATE		DESCRIPTION		DRN		CHK		APP					

NOTE: PLATE IS 2" ON THE MPS LINE THAN THE OTHERS ON THE RISER FOR EXPANSION.



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
6	1	150lb RF Sch 40 Bore SA105 CS WN Flg					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-0-Let			1 3/8"	1.375	1-1/2x8
7	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	25'-0 7/8"	300.875	8
1	2	Sch 80 A106B CS SMLS Pipe	SW	MPT	6"	6.000	1-1/2
4	1	Sch 80 A106B CS SMLS Pipe	SW	SW	3 1/4"	3.264	1-1/2
8	1	Sch 80 A106B CS SMLS Pipe	SW	SW	7 3/8"	7.374	1-1/2

BOM-STEEL-PLATE

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

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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

HYDRO TEST

NA

PMHT

NA

COMMENTS

MURPHY WPS#

DESCRIPTION

DRN

CHK

APP

WUSM RESEARCH BUILDING

NRB

MECH RISERS

JOB NO. 210140

REF.DWG.

DRAWING NO./TRACKING NO.

SERVICE NAME

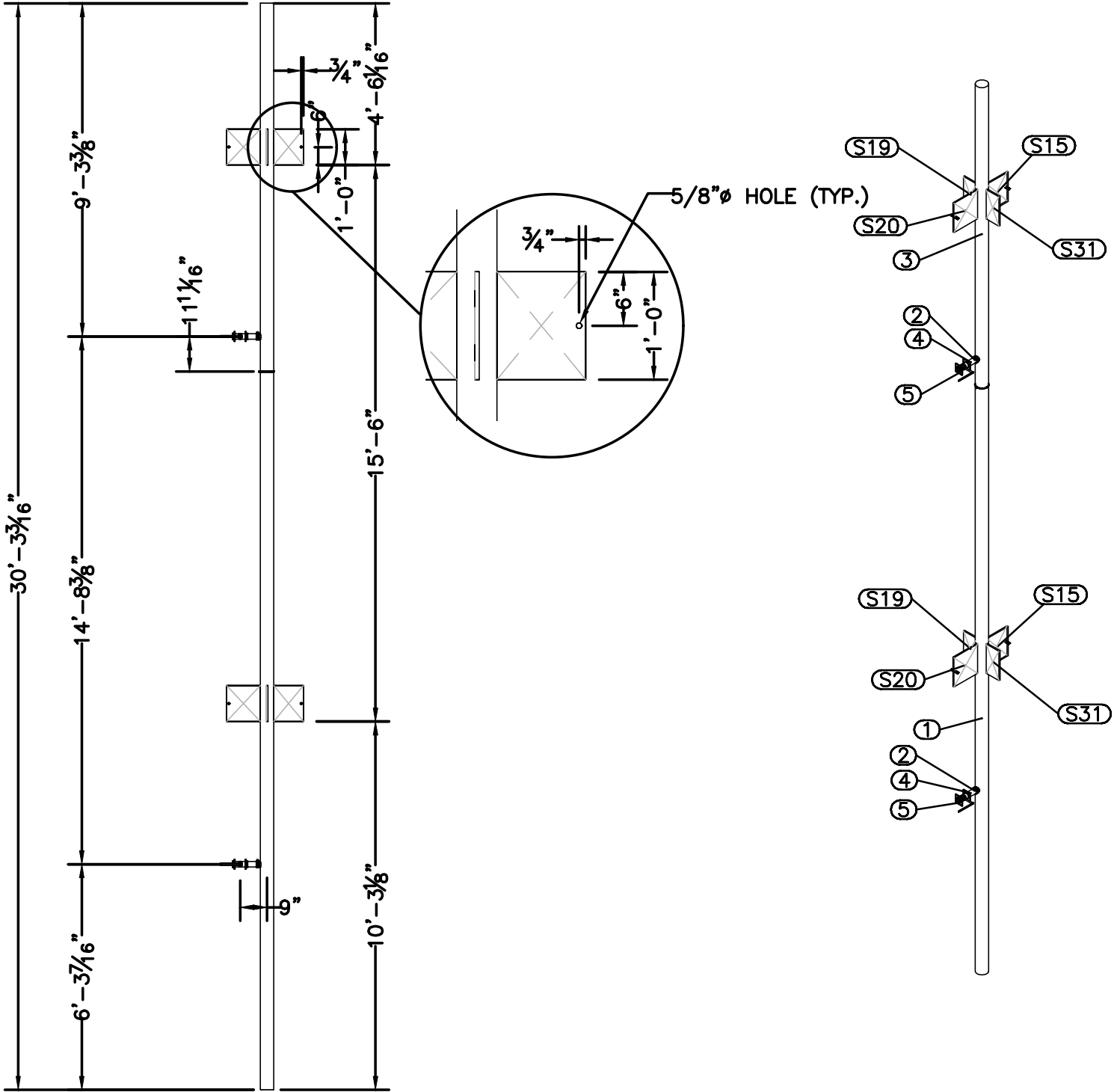
210140-RISER-03

210140-RISER-03-07

QTY. 1

SHT/NO 1 of 1

REV 0



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
5	2	83A-140 CS 1500 lb 3pc FP Ball Valve THD					1-1/2
2	2	3000# FS Soc-O-Let			1 3/8"	1.375	1-1/2x4
1	1	XH SA-53B CS SMLS Pipe	BEV	BEV	20'-0"	240.000	4
3	1	XH SA-53B CS SMLS Pipe	BEV	BEV	10'-3 1/16"	123.035	4
4	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)
S15	12.000 x 9.875	ASTM A36 CS Plate 1/2" Thick	2	1.035
S31	12.000 x 6.000	ASTM A36 CS Plate 1/2" Thick	2	0.657
S20	12.000 x 11.250	ASTM A36 CS Plate 1/2" Thick	2	1.169
S19	12.000 x 6.250	ASTM A36 CS Plate 1/2" Thick	2	0.682

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FLANGE WEIGHT/ORIENTATION

FITTING ORIENTATION

BOLTS/CPLG'S/TH'D TIGHT

SPOOL IDENTIFICATION

QA/QC ACCEPT

0

SPEC.

NA

ASME

NA

X-RAY

NA

HYDRO TEST

NA

PWHT

NA

COMMENTS

MURPHY WPS#

REV

DATE

DESCRIPTION

DRN

CHK

APP

WUSM RESEARCH BUILDING

NRB

MECH RISERS

JOB NO.

210140

REF.DWG.

DRAWING NO./TRACKING NO.

210140-RISER-03-08

SERVICE NAME

210140-RISER-03

QTY.

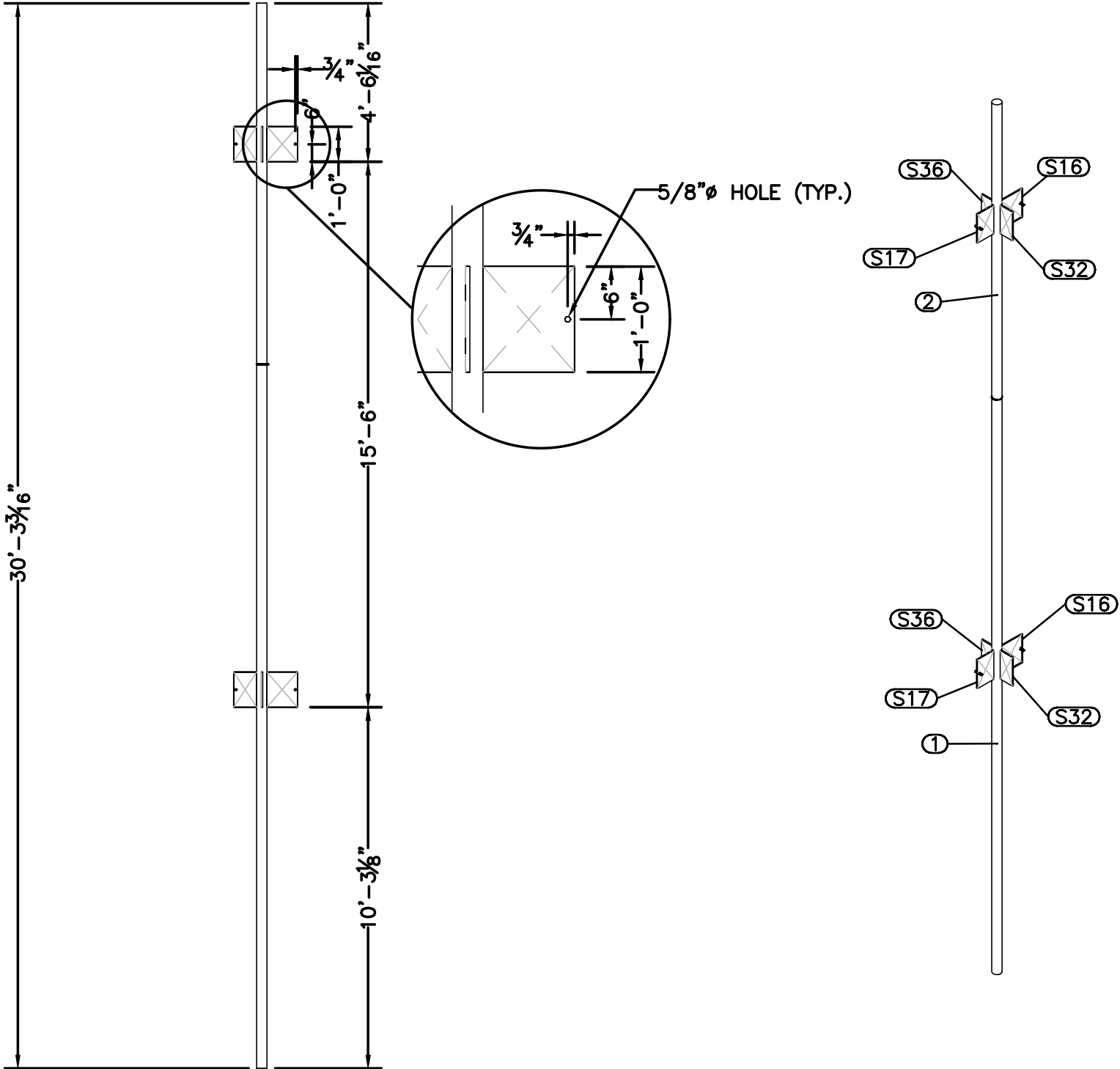
1

SHT/NO

1 of 1

REV

0



Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
1	1	XH SA-53B CS SMLS Pipe	BEV	BEV	20'-0"	240.000	3
2	1	XH SA-53B CS SMLS Pipe	BEV	BEV	10'-3 1/16"	123.035	3

BOM-STEEL-PLATE

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

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DRN JMM CHK APP JOB NO. 210140 REF.DWG. DRAWING NO./TRACKING NO. 210140-RISER-03-09	7/16/2021	WUSM RESEARCH BUILDING NRB MECH RISERS				QA/QC ACCEPT				FLANGE WEIGHT/ORIENTATION FITTING ORIENTATION BOLTS/CPLG'S/TH'D TIGHT SPOOL IDENTIFICATION				
	SERVICE NAME 210140-RISER-03		SPEC. NA		ASME NA		X-RAY NA		HYDRO TEST NA		PWHT NA		COMMENTS	
	QTY. 1		SHT/NO 1 of 1		REV 0		DATE		DESCRIPTION		MURPHY WPS#			
	1		1		0						DRN		CHK APP	