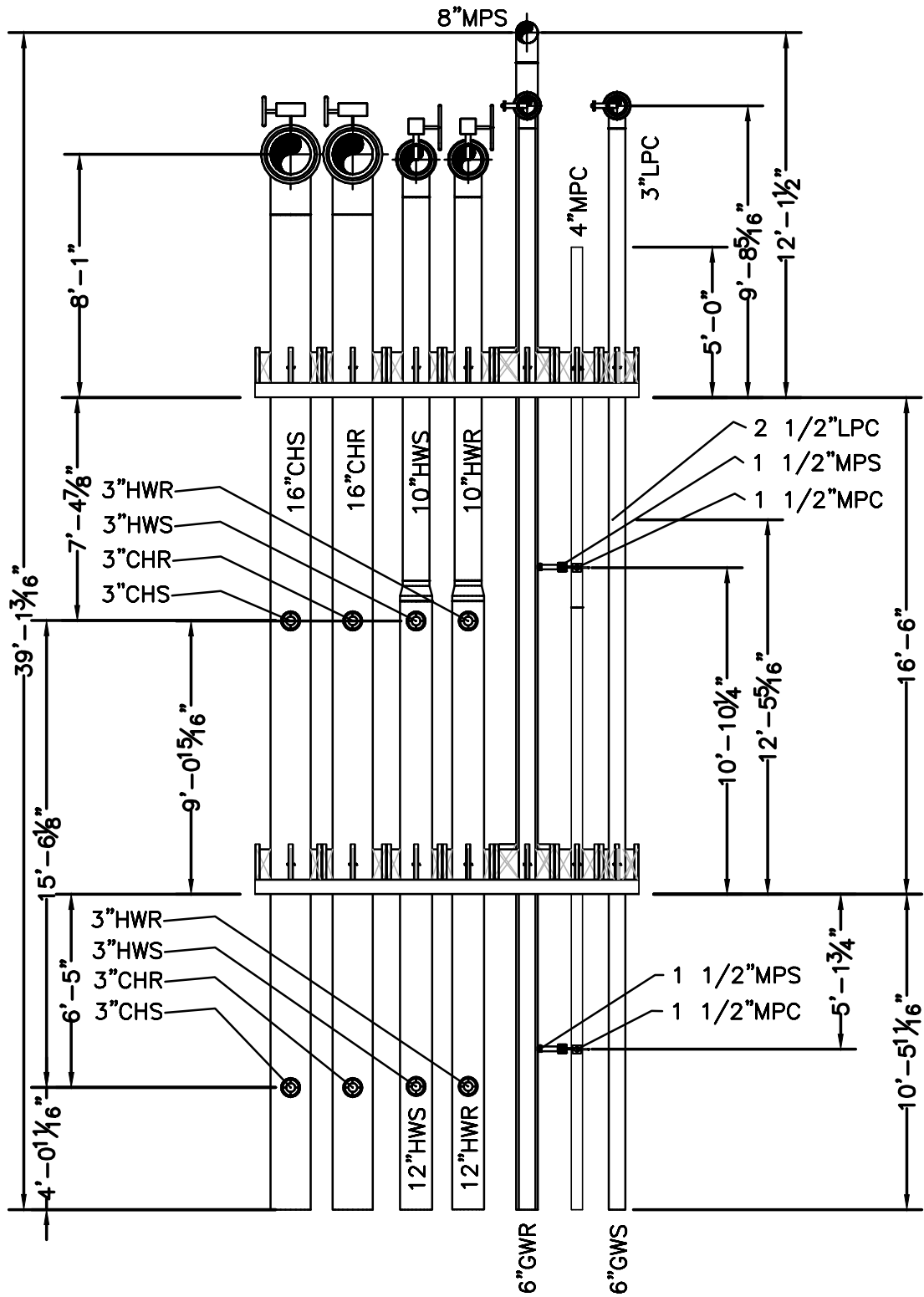


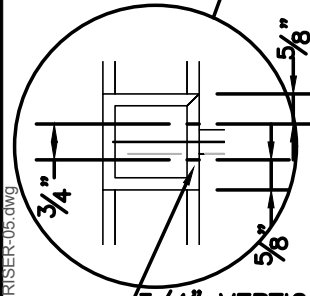
NOTE: PLATE IS 2" HIGHER ON THE MPS LINE THAN THE OTHERS ON THE RISER FOR EXPANSION.



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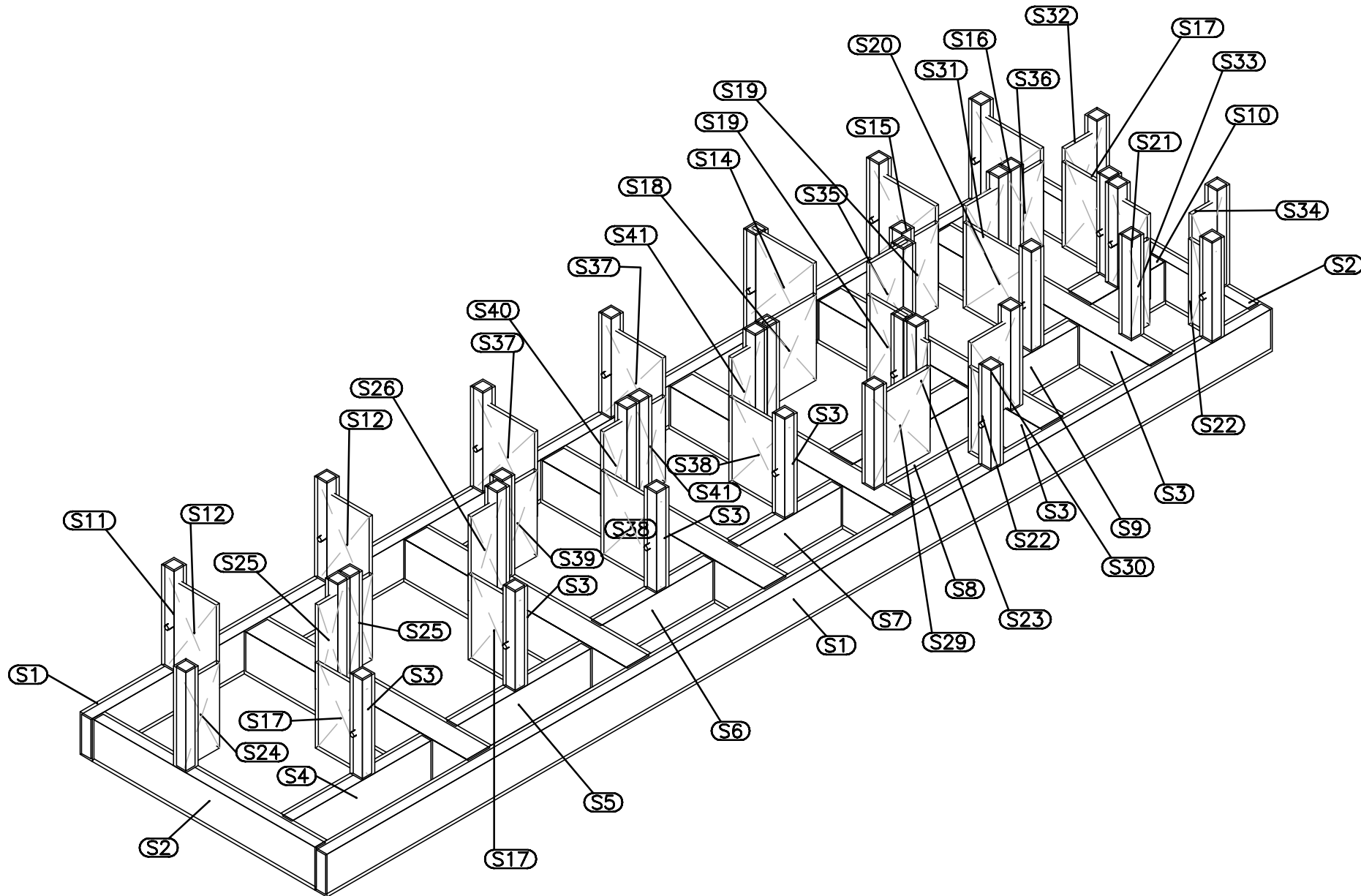
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CHK		NRB								FITTING ORIENTATION				<input type="checkbox"/>			
APP		MECH RISERS								BOLTS/CPLG'S/TH'D TIGHT				<input type="checkbox"/>			
JOB NO.	210140					_____				SPOOL IDENTIFICATION				<input type="checkbox"/>			
REF.DWG.		SERVICE NAME				SPEC.		ASME		X-RAY		HYDRO TEST		PWHT		COMMENTS	
						NA		NA		NA		NA		NA		MURPHY WPS#	
						0											
DRAWING NO./TRACKING NO.		QTY.				SHT/NO				REV		REV		DATE		DESCRIPTION	
210140-RISER-05		1				1 of 3				0						DRN	
																CHK	
																APP	



**5/8"Ø HOLE FOR BOLTING
FAB TO STEEL STRUCTURE:**

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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	
S37		ASTM A36 CS Plate 1/2" Thick	1	12.000 x 9.125	
S38		ASTM A36 CS Plate 1/2" Thick	1	12.000 x 9.250	
S39		ASTM A36 CS Plate 1/2" Thick	1	12.000 x 6.000	
S40		ASTM A36 CS Plate 1/2" Thick	1	12.000 x 4.500	
S41		ASTM A36 CS Plate 1/2" Thick	2	12.000 x 4.500	

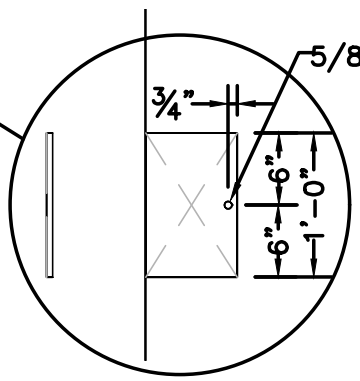
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FLANGE WEIGHT/ORIENTATION			
FITTING ORIENTATION			
BOLTS/CPLG'S/TH'D TIGHT			
SPOOL IDENTIFICATION			
QA/QC ACCEPT		COMMENTS	
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NA		NA	NA
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DESCRIPTION		DRN	CHK
MURPHY WPS#		APP	

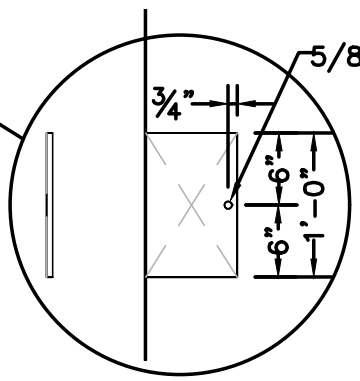
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NRB		0	
MECH RISERS		3 of 3	
SERVICE NAME		SHT/NO	
QTY.		1	
DRAWING NO./TRACKING NO.		210140-RISER-05	
JOB NO.		210140	
REF.DWG.			
7/14/2021			
CHK			
APP			



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
S12	12.000 x 7.625	ASTM A36 CS Plate 1/2" Thick	2	0.816
S24	12.000 x 5.688	ASTM A36 CS Plate 1/2" Thick	2	0.627
S17	12.000 x 7.875	ASTM A36 CS Plate 1/2" Thick	2	0.840

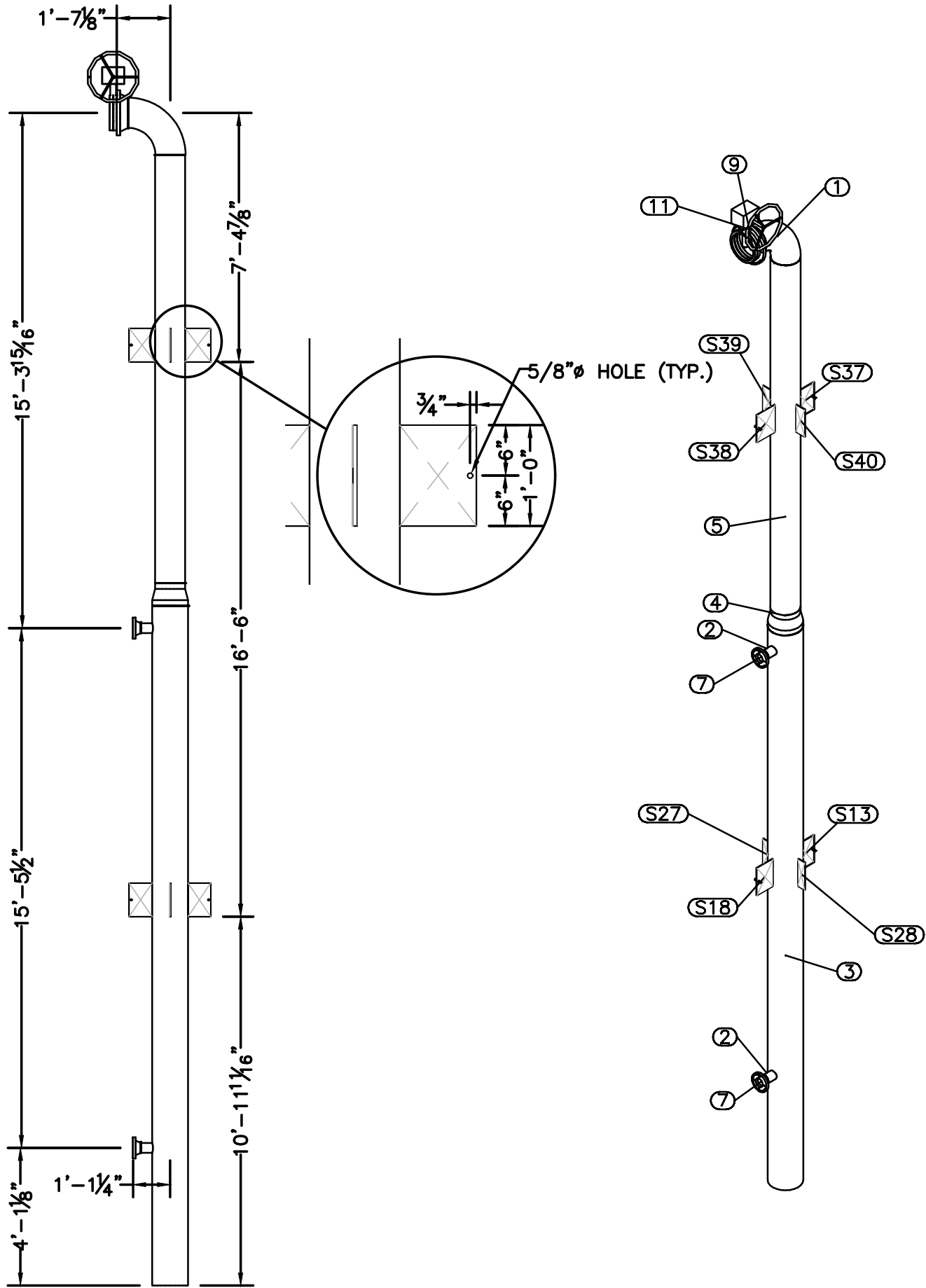
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BOM-STEEL-PLATE				
Item No	Size	Description	Qty	Area (sq ft)
S26	12.000 x 4.875	ASTM A36 CS Plate 1/2" Thick	2	0.548
S12	12.000 x 7.625	ASTM A36 CS Plate 1/2" Thick	2	0.816
S25	12.000 x 3.875	ASTM A36 CS Plate 1/2" Thick	2	0.450
S17	12.000 x 7.875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

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Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	2	Sch 40 SA-53B CS ERW Pipe Saddle			4"	4.000	12x3
4	1	Std Wt SA234 WPB CS BW CONC RED					12x10
7	2	150lb RF Sch 40 Bore SA105 CS WN Flg					3
9	1	150lb RF Sch 40 Bore SA105 CS WN Flg					10
10	1	150lb CS Flange Cap Screw Set					10 (7/8x2-1/4)
11	1	N200235 Butterfly Valve					10
1	1	Std Wt SA234 WPB CS BW LR 90 Deg El					10
5	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	12'-8 11/16"	152.691	10
3	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	20'-2 1/2"	242.500	12

BOM-STEEL-PLATE

Item No	Size	Description	Qty	Area (sq ft)
S37	12.000 x 9.125	ASTM A36 CS Plate 1/2" Thick	1	0.962
S39	12.000 x 6.000	ASTM A36 CS Plate 1/2" Thick	1	0.657
S38	12.000 x 9.250	ASTM A36 CS Plate 1/2" Thick	1	0.974
S40	12.000 x 4.500	ASTM A36 CS Plate 1/2" Thick	1	0.511
S27	12.000 x 5.000	ASTM A36 CS Plate 1/2" Thick	1	0.560
S18	12.000 x 8.250	ASTM A36 CS Plate 1/2" Thick	1	0.877
S13	12.000 x 8.125	ASTM A36 CS Plate 1/2" Thick	1	0.864
S28	12.000 x 3.500	ASTM A36 CS Plate 1/2" Thick	1	0.414

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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

DATE

PMHT

NA

COMMENTS

MURPHY WPS#

WUSM RESEARCH BUILDING

NRB

MECH RISERS

DRN JMM

CHK

APP

7/19/2021

210140

SERVICE NAME

210140-RISER-05

REF.DWG.

DRAWING NO./TRACKING NO.

210140-RISER-05-03

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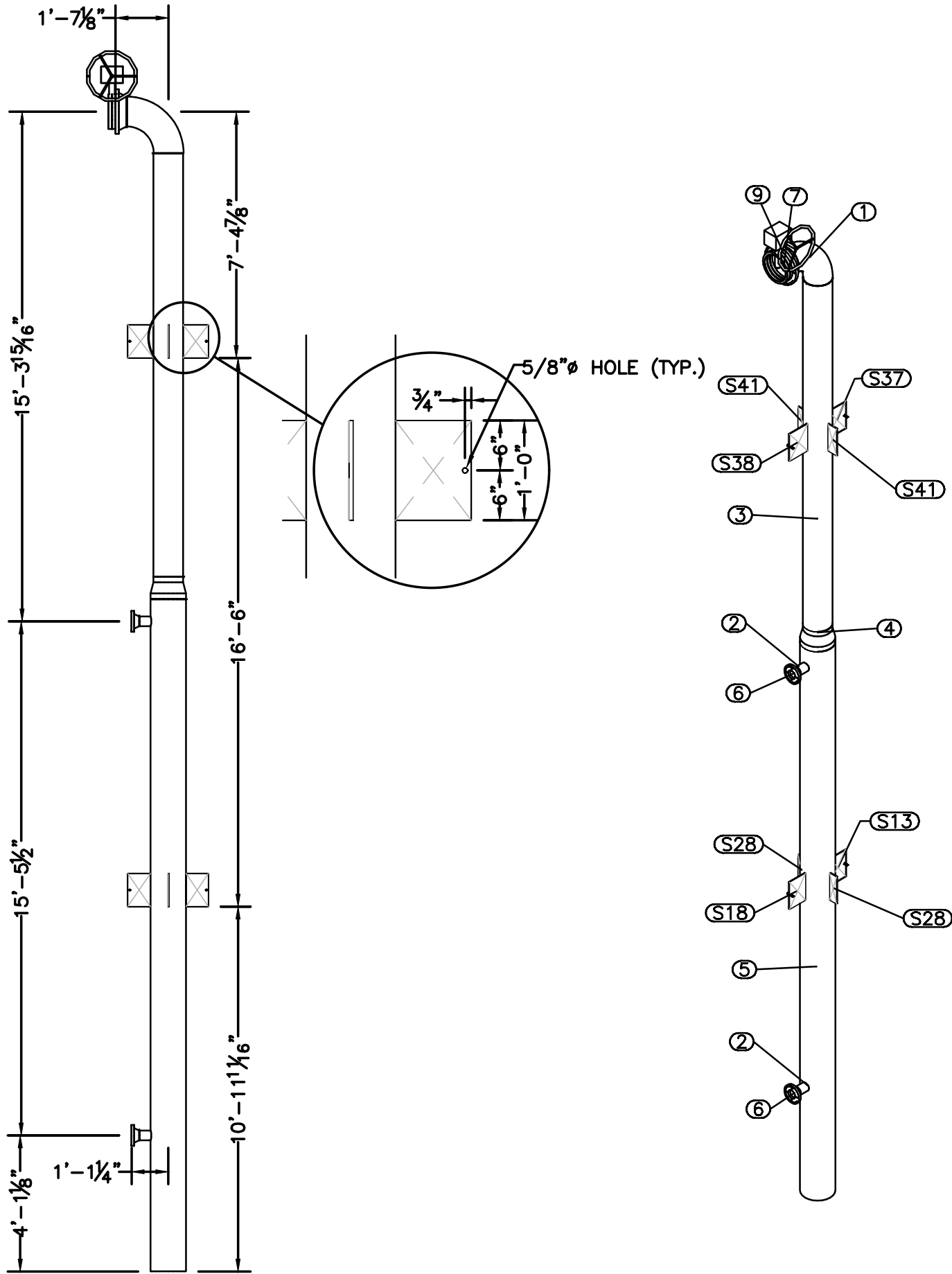
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SHT/NO

1 of 1

REV

0



Murphy-PFFS-SPOOL-BOM							
Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
2	2	Sch 40 SA-53B CS ERW Pipe Saddle			4"	4.000	12x3
4	1	Std Wt SA234 WPB CS BW CONC RED					12x10
6	2	150lb RF Sch 40 Bore SA105 CS WN Flg					3
7	1	150lb RF Sch 40 Bore SA105 CS WN Flg					10
8	1	150lb CS Flange Cap Screw Set					10 (7/8x2-1/4)
9	1	N200235 Butterfly Valve					10
1	1	Std Wt SA234 WPB CS BW LR 90 Deg Ell					10
3	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	12'-8 11/16"	152.691	10
5	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	20'-2 1/2"	242.500	12

BOM-STEEL-PLATE				
Item No	Size	Description	Qty	Area (sq ft)
S41	12.000 x 4.500	ASTM A36 CS Plate 1/2" Thick	1	0.511
S37	12.000 x 9.125	ASTM A36 CS Plate 1/2" Thick	1	0.962
S41	12.000 x 4.500	ASTM A36 CS Plate 1/2" Thick	1	0.511
S38	12.000 x 9.250	ASTM A36 CS Plate 1/2" Thick	1	0.974
S18	12.000 x 8.250	ASTM A36 CS Plate 1/2" Thick	1	0.877
S28	12.000 x 3.500	ASTM A36 CS Plate 1/2" Thick	1	0.414
S13	12.000 x 8.125	ASTM A36 CS Plate 1/2" Thick	1	0.864
S28	12.000 x 3.500	ASTM A36 CS Plate 1/2" Thick	1	0.414

DRN

JMM

7/19/2021

CHK

APP

JOB NO.

210140

REF.DWG.

DRAWING NO./TRACKING NO.

210140-RISER-05-04

1

WUSM RESEARCH BUILDING

NRB

MECH RISERS

SERVICE NAME

210140-RISER-05

QTY.

1

1 of 1

REV

0

FLANGE WEIGHT/ORIENTATION

☐

FITTING ORIENTATION

☐

BOLTS/CPLG'S/TH'D TIGHT

☐

SPOOL IDENTIFICATION

☐

QA/QC ACCEPT

FLANGE WEIGHT/ORIENTATION

☐

FITTING ORIENTATION

☐

BOLTS/CPLG'S/TH'D TIGHT

☐

SPOOL IDENTIFICATION

☐

REV

0

DATE

DESCRIPTION

DRN

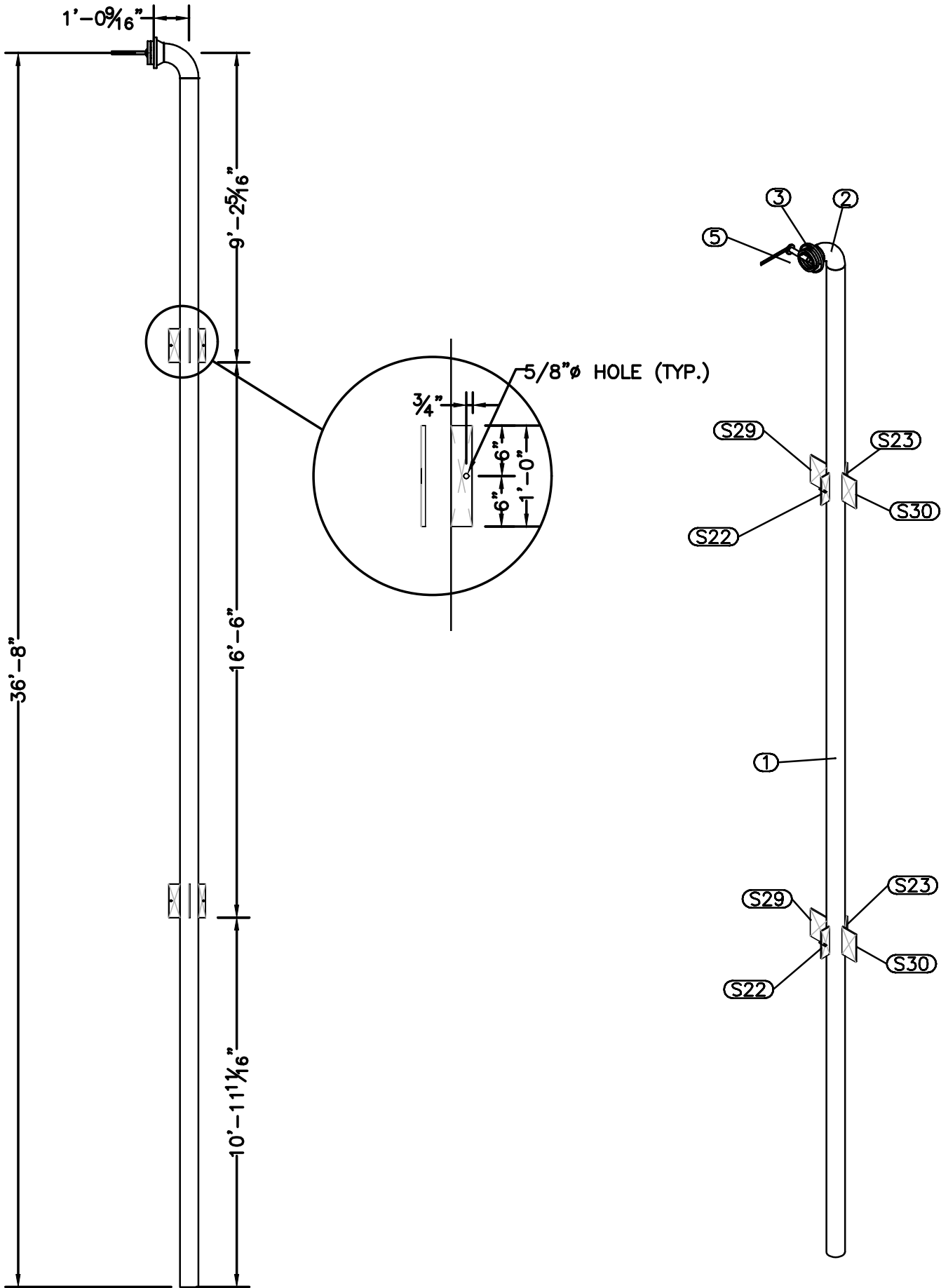
CHK

APP

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Murphy-PFFS-SPOOL-BOM

Mark	Qty	Description	End 1	End 2	Lft	LDec	Size
3	1	150lb RF Sch 40 Bore SA105 CS WN Flg					6
4	2	150lb CS Flange Cap Screw Set					6 (3/4x2)
5	1	N200235 Butterfly Valve					6
2	1	Std Wt SA234 WPB CS BW LR 90 Deg Ell					6
1	1	Sch 40 SA-53B CS ERW Pipe PE	BEV	BEV	35'-10 15/16"	430.908	6

BOM-STEEL-PLATE

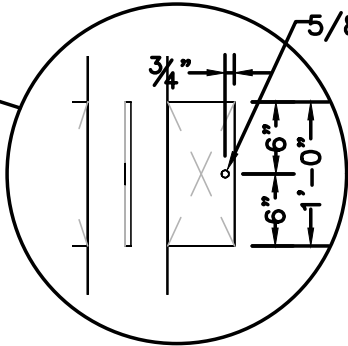
Item No	Size	Description	Qty	Area (sq ft)
S29	12.000 x 9.250	ASTM A36 CS Plate 1/2" Thick	2	0.974
S22	12.000 x 4.000	ASTM A36 CS Plate 1/2" Thick	2	0.463
S30	12.000 x 7.000	ASTM A36 CS Plate 1/2" Thick	2	0.755
S23	12.000 x 2.500	ASTM A36 CS Plate 1/2" Thick	2	0.317

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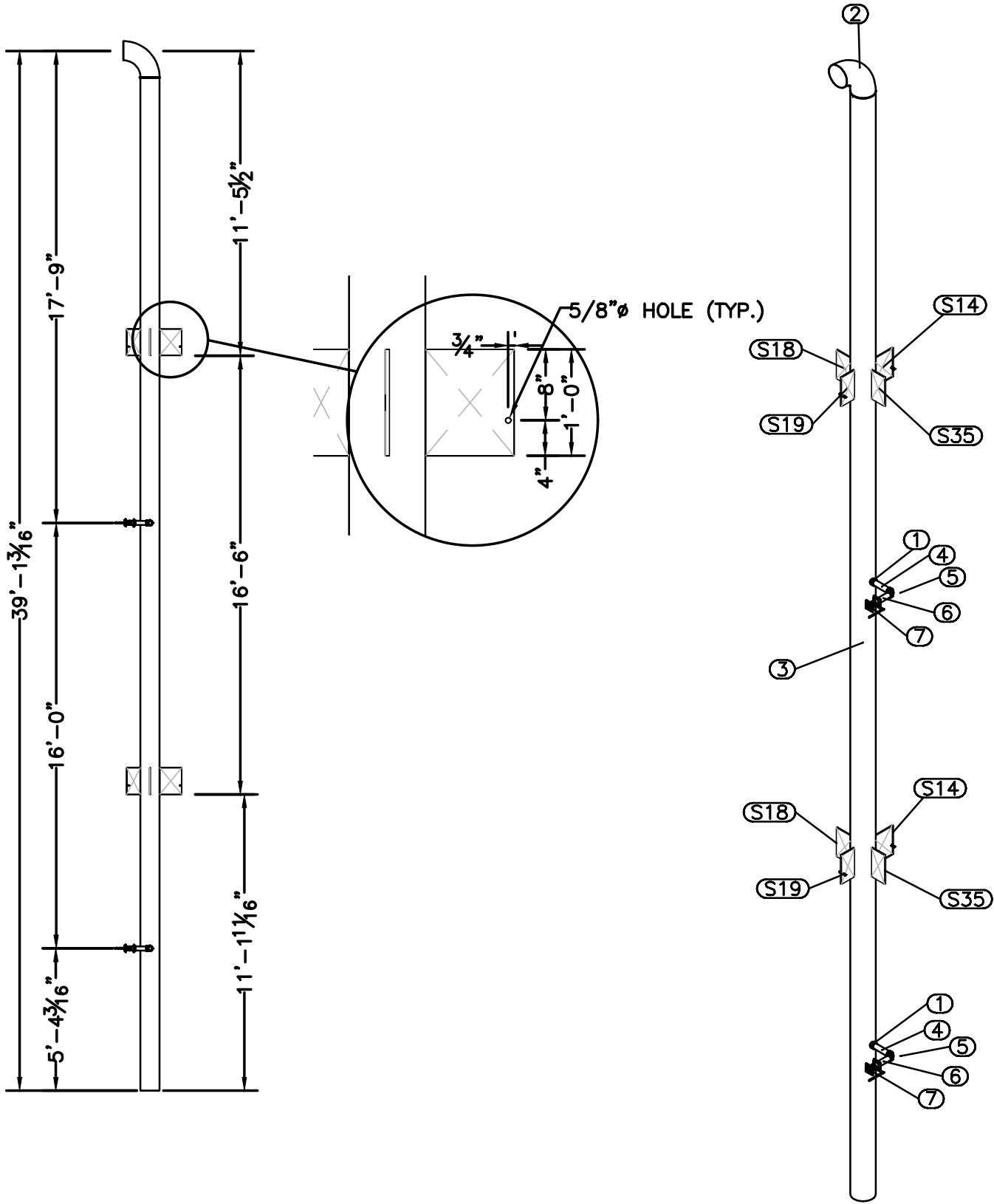
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								SPOOL IDENTIFICATION			<input type="checkbox"/>
SERVICE NAME 210140-RISER-05		HYDRO TEST		ASME	X-RAY	PWHT	COMMENTS				
QTY. 1		NA		NA	NA	NA	MURPHY WPS#				
SHT/NO 1 of 1		NA		NA	NA	NA					
REV 0		REV		DATE	DRN	CHK	APP				



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

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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
2	1	Std Wt SA234 WPB CS BW LR 90 Deg El					8
5	2	3M A105 FS SW 90 Deg El					1-1/2
1	2	3000# FS Soc-O-Let			1 3/8"	1.375	1-1/2x8
3	1	Sch 40 SA-53B CS Smls Pipe PE	BEV	BEV	38'-1 1/16"	457.063	8
6	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	7 3/8"	7.374	1-1/2

BOM-STEEL-PLATE

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

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FLANGE WEIGHT/ORIENTATION

FITTING ORIENTATION

BOLTS/CPLG'S/TH'D TIGHT

SPOOL IDENTIFICATION

QA/QC ACCEPT

0

REV

DATE

NA

SPEC.

NA

ASME

NA

X-RAY

NA

HYDRO TEST

NA

PWHT

0

REV

DATE

NA

SPEC.

NA

ASME

NA

X-RAY

NA

HYDRO TEST

NA

PWHT

COMMENTS

MURPHY WPS#

DESCRIPTION

DRN

CHK

APP

WUSM RESEARCH BUILDING

NRB

MECH RISERS

SERVICE NAME

210140-RISER-05

REF.DWG.

DRAWING NO./TRACKING NO.

210140-RISER-05-07

QTY.

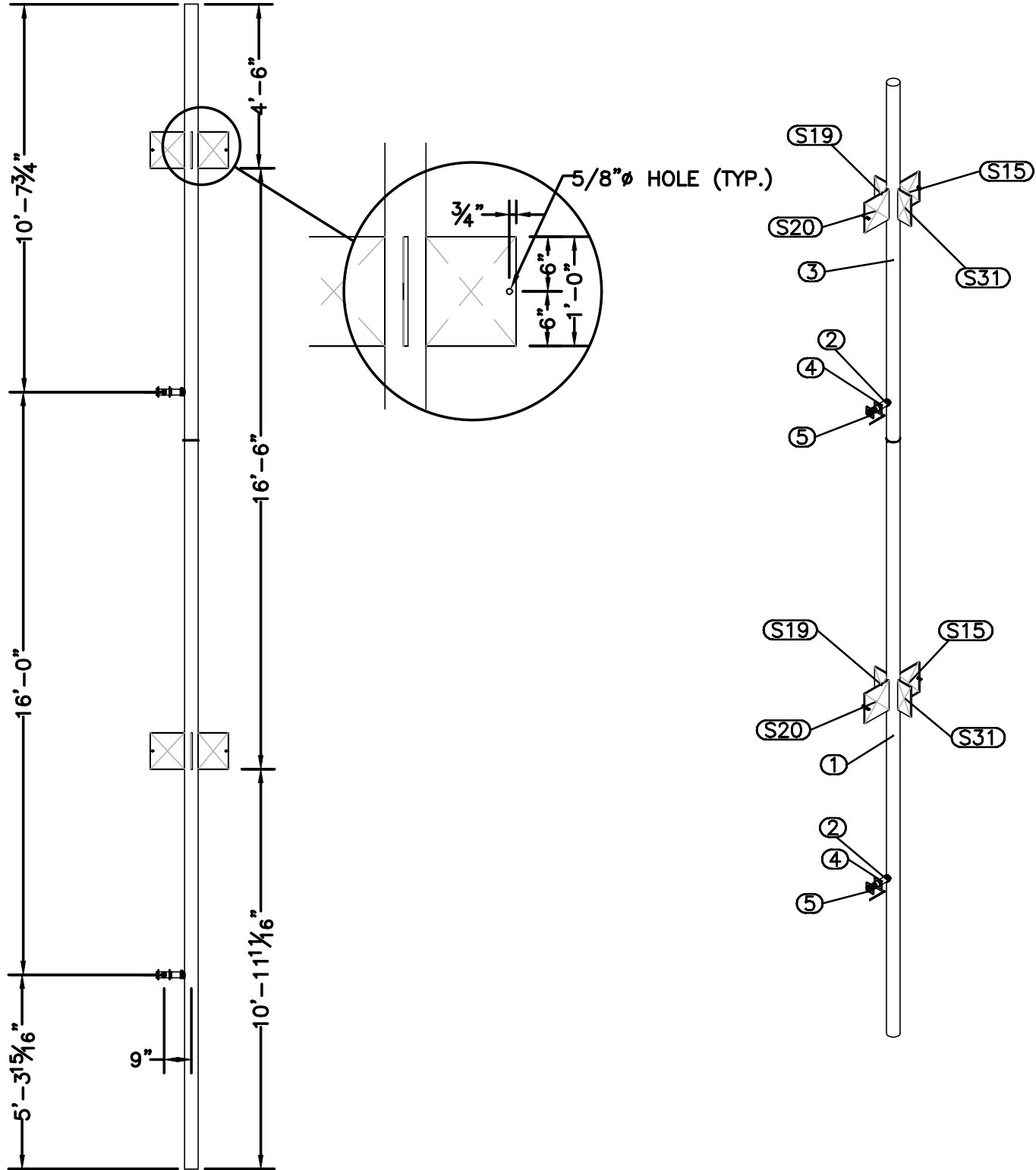
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SHT/NO

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REV

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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	11'-11 5/8"	143.595	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

SPEC. NA

ASME NA

X-RAY NA

HYDRO TEST NA

PWHT NA

COMMENTS

0 REV

DATE

MURPHY WPS#

DRN

CHK

APP

WUSM RESEARCH BUILDING

NRB

MECH RISERS

JOB NO. 210140

REF.DWG.

DRAWING NO./TRACKING NO.

7/19/2021

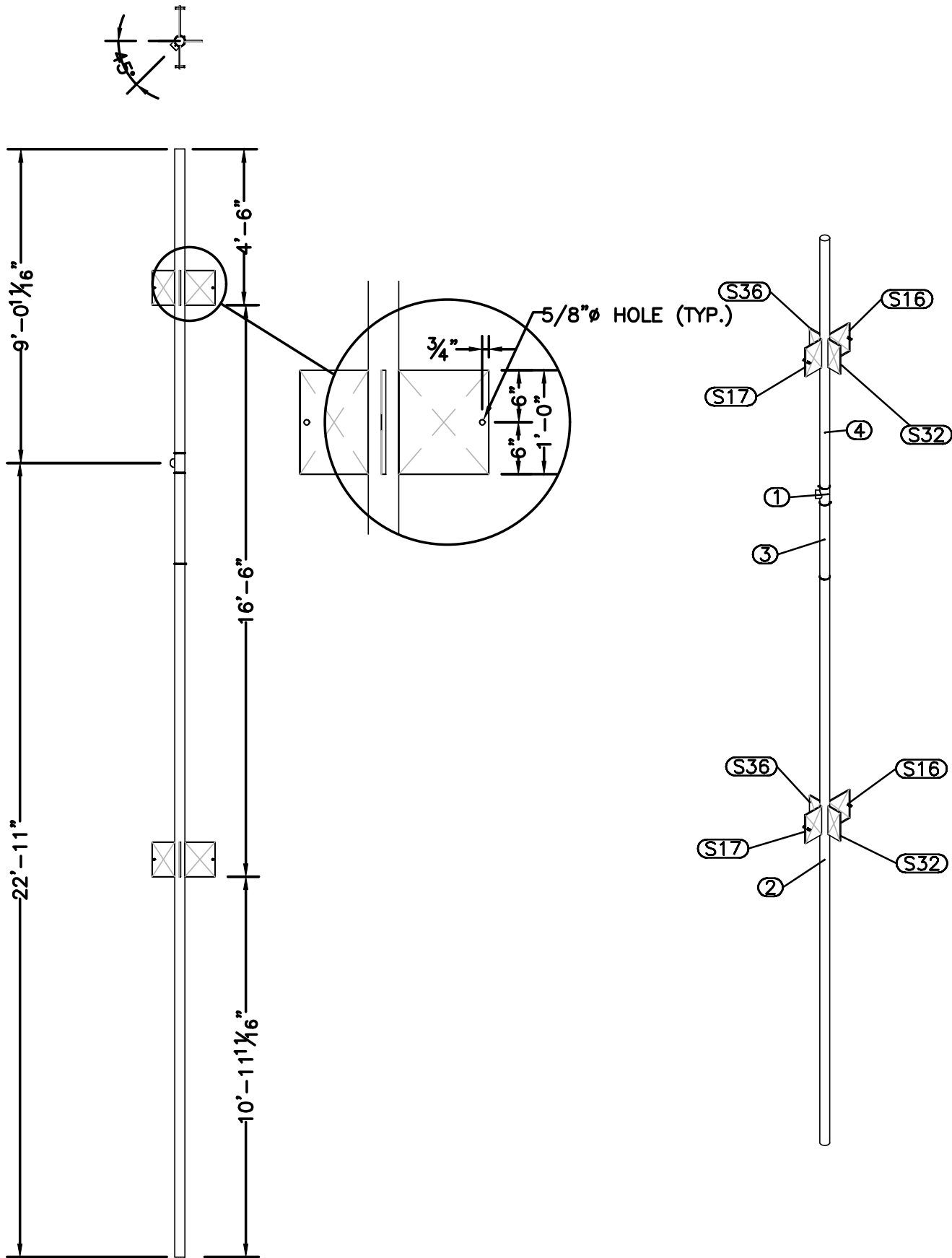
210140-RISER-05

210140-RISER-05-08

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 SA234 WPB CS BW RED TEE					3x2-1/2
2	1	XH SA-53B CS SMLS Pipe	BEV	BEV	20'-0"	240.000	3
3	1	XH SA-53B CS SMLS Pipe	BEV	BEV	2'-7 3/8"	31.377	3
4	1	XH SA-53B CS SMLS Pipe	BEV	BEV	8'-9 3/16"	105.208	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	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
S32	12.000 x 5.875	ASTM A36 CS Plate 1/2" Thick	2	0.645

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DRN JMM	7/19/2021	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											
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210140-RISER-05-09		1		1 of 1		0												APP			