

REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
2	CHG INLET BVF TO BV	S. Boerckel	2/25/2011	T. KOONTZ	B. MADDUX
1	CHG DISC PIPE 4" TO 3"	S. Boerckel	2/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	1/26/2011	T. KOONTZ	B. MADDUX

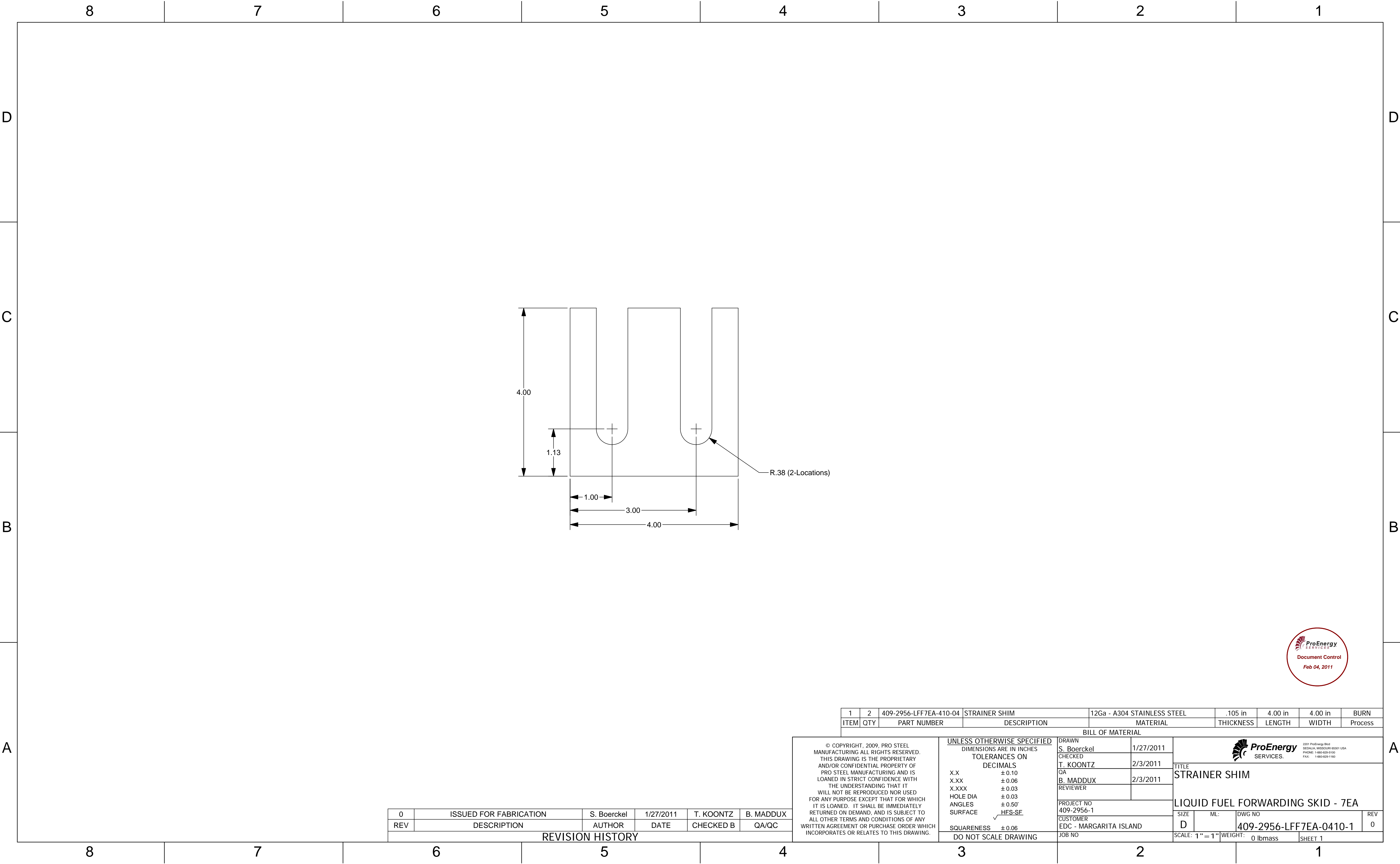
REVISION HISTORY

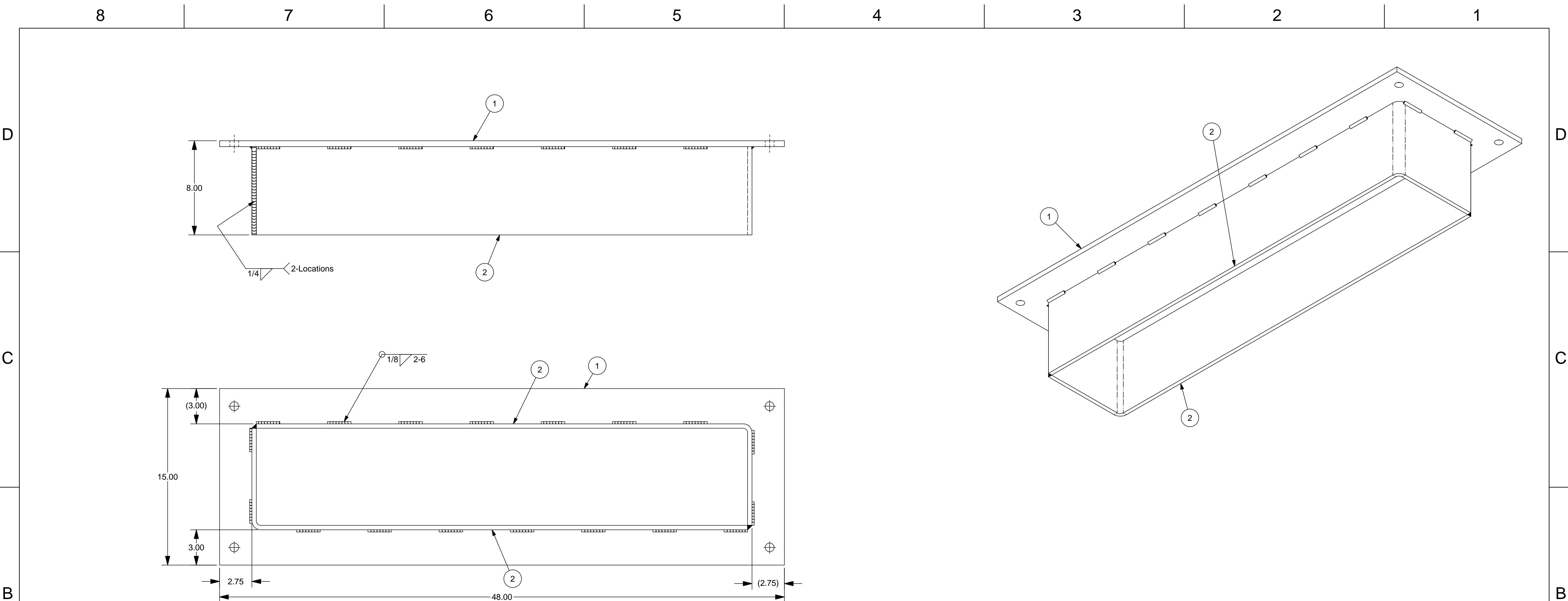
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UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	✓ HFS-SF
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN	S. Boerckel	1/26/2011
CHECKED	T. KOONTZ	2/3/2011
QA	B. MADDUX	2/3/2011
REVIEWER		
PROJECT NO		
409-2956-1		
CUSTOMER		
EDC - MARGARITA ISLAND		
JOB NO		


			
2011 ProEnergy Blvd SEDALIA, MISSOURI 65301 USA PHONE: 1-800-829-5150 FAX: 1-800-829-1160			
TITLE			
CONTROLS, INSTRUMENTAION & ELECTRICAL ARRANGEMENT			
LIQUID FUEL FORWARDING SKID - 7EA			
SIZE	ML:	DWG NO	REV
D		409-2956-LFF7EA-0000-2	2
SCALE: 1/8" = 1"		WEIGHT:	
		SHEET 2	





QTY'S BASED ON 2 UNITS

2	4	409-2956-LFF7EA-611-03	PUMP MOUNT STIFFENER	3/8 HR PLATE - A36 STEEL PLATE	.375 in	7.50 in	50.03 in	BURN/BEND
1	2	409-2956-LFF7EA-611-01	PUMP MOUNT PLATE	1/2 HR PLATE - A36 STEEL PLATE	.500 in	48.00 in	15.00 in	BURN/DRILL
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	THICKNESS	LENGTH	WIDTH	Process
BILL OF MATERIAL								

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					TITLE PUMP MOUNT WELDMENT			
					LIQUID FUEL FORWARDING SKID - 7EA			
			PROJECT NO 409-2956-1 CUSTOMER EDC - MARGARITA ISLAND		SIZE D	ML: 409	DWG NO 409-2956-LFF7EA-0611-1	REV 0
	SQUARENESS ±0.06 DO NOT SCALE DRAWING		JOB NO		SCALE: 1/4" = 1"	WEIGHT: 182 lbmass	SHEET 1	

NOTES:

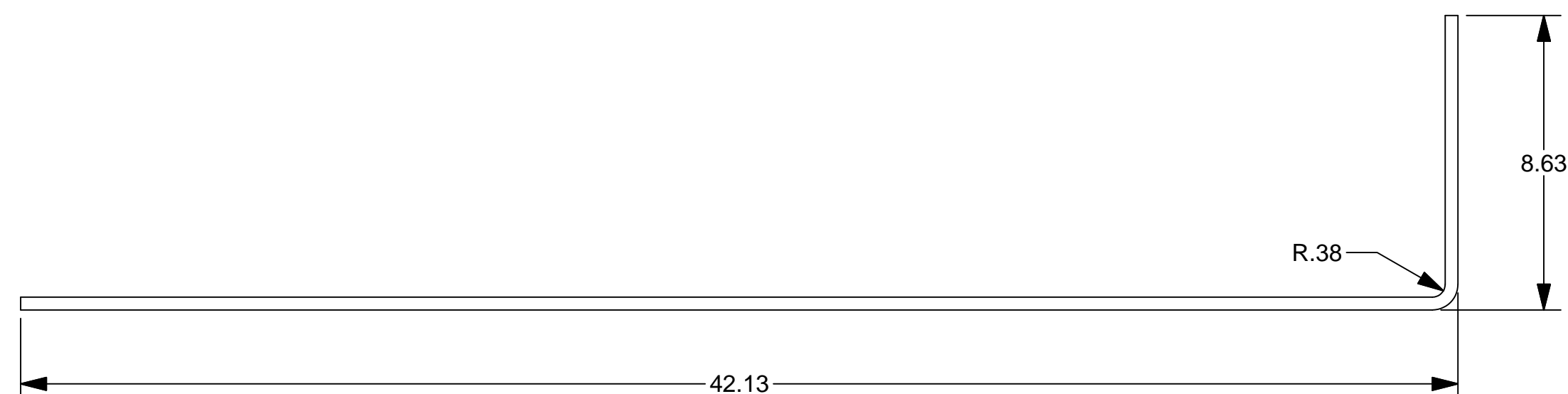
1. WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
2. WELDS ARE TO BE $\frac{1}{8}$ " LESS THAN THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN WORK AREA.
3. ALL MATERIAL SHALL BE ASTM A36, UNLESS OTHERWISE STATED.

0	ISSUED FOR FABRICATION	S. Boerckel	1/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

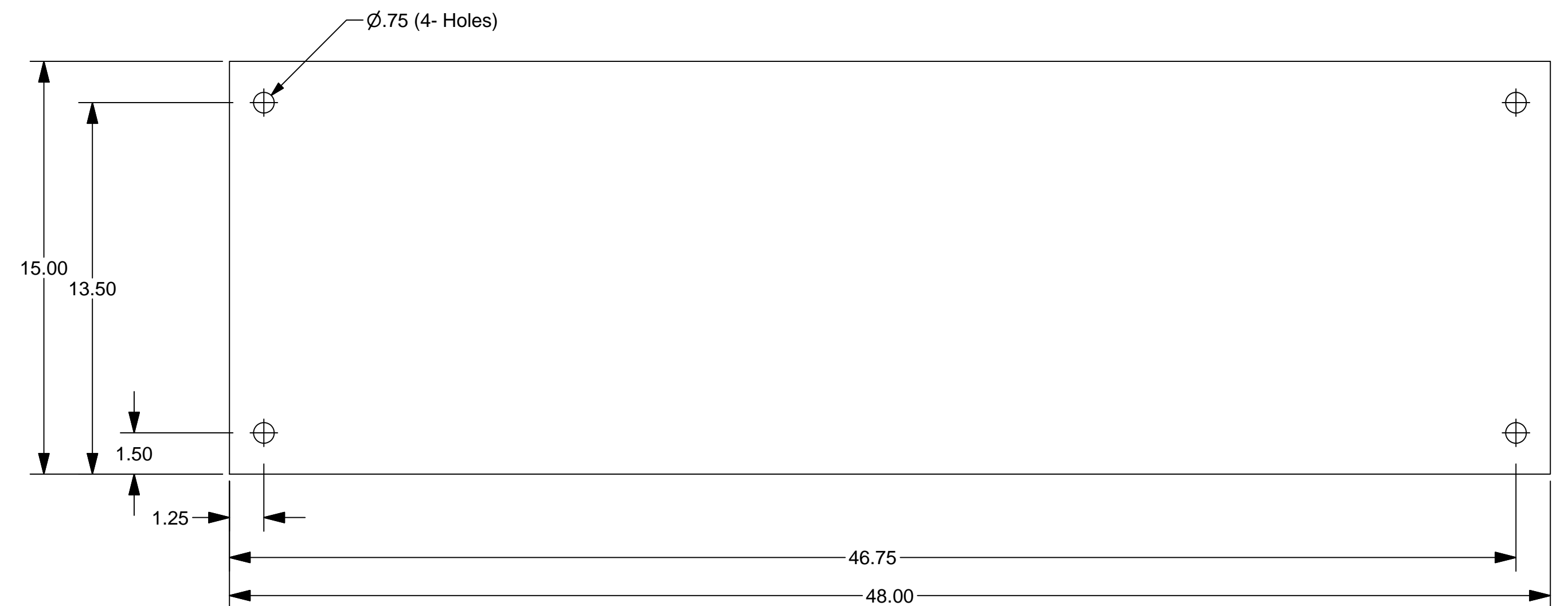


TITLE
PUMP MOUNT
WELDMENT
LIQUID FUEL FORWARDING SKID - 7EA

SIZE D	ML:	DWG NO 409-2956-LFF7EA-0611-1	REV 0
SCALE: 1/4"=1"		WEIGHT: 182 lbm _{ass}	SHEET 1



ITEM	QTY	PART NUMBER	MATERIAL
2	4	409-2956-LFF7EA-611-03	3/8 HR PLATE - A36 STEEL PLATE



ITEM	QTY	PART NUMBER	MATERIAL
1	2	409-2956-LFF7EA-611-01	1/2 HR PLATE - A36 STEEL PLATE

0	ISSUED FOR FABRICATION	S. Boerckel	1/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

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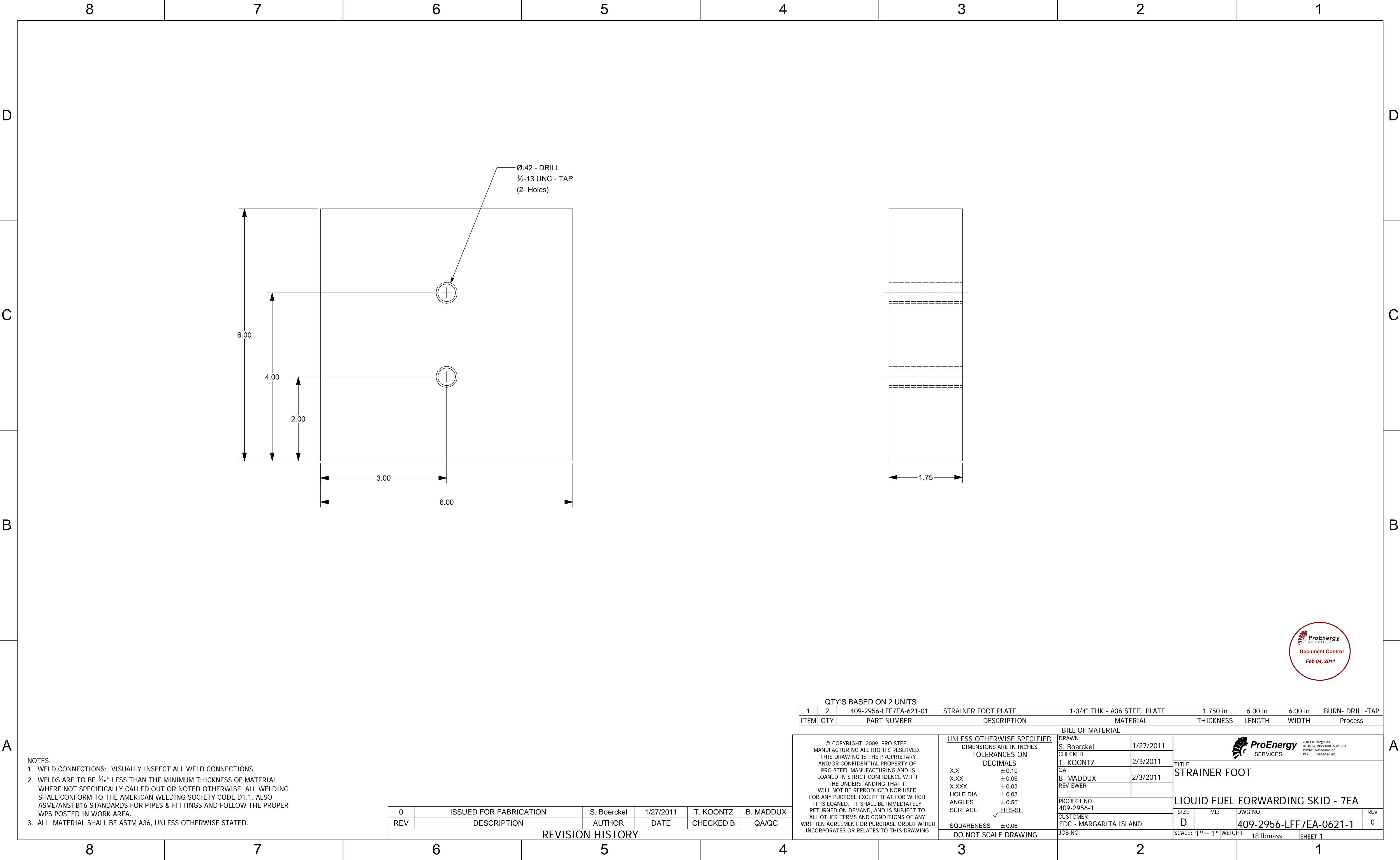
UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	<u>HFS-SF</u>
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN S. Boerckel	1/27/2011
CHECKED T. KOONTZ	2/3/2011
QA B. MADDUX	2/3/2011
REVIEWER	
PROJECT NO 409-2956-1	
CUSTOMER EDC - MARGARITA ISLAND	
JOB NO	

TITLE	PUMP MOUNT
PARTS	
LIQUID FUEL FORWARDING SKID - 7EA	


SIZE D	ML:	DWG NO 409-2956-LFF7EA-0611-2	REV 0
SCALE: 1/4"=1"		WEIGHT:	SHEET 2

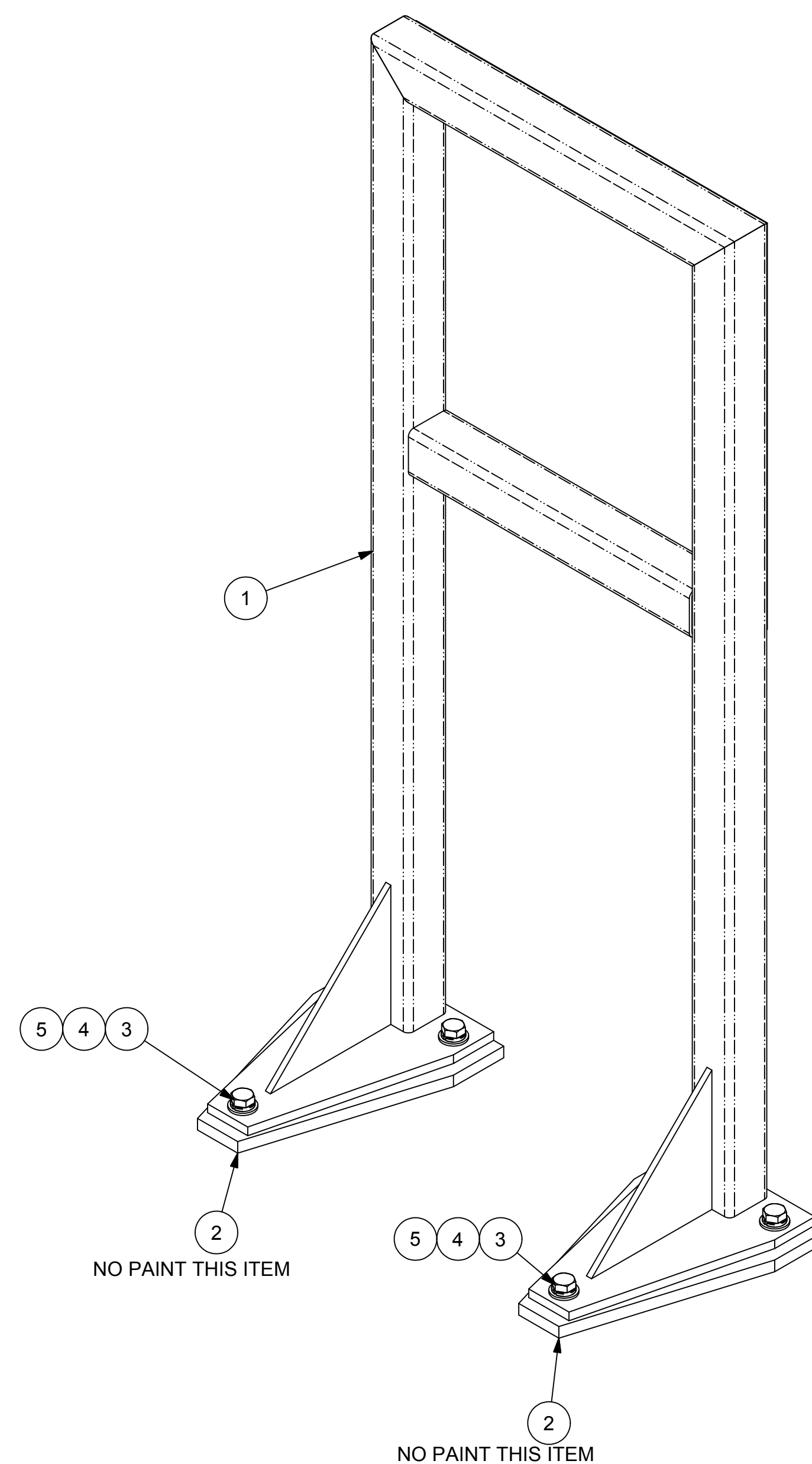
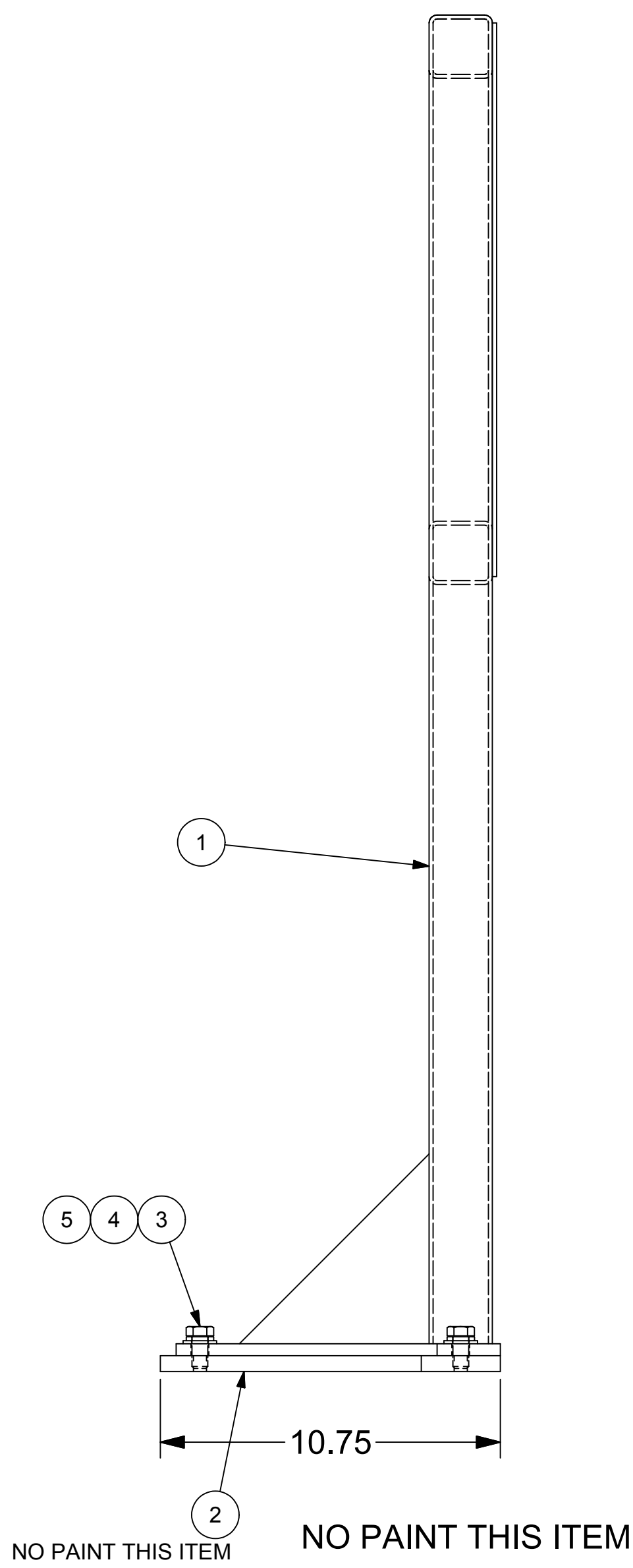
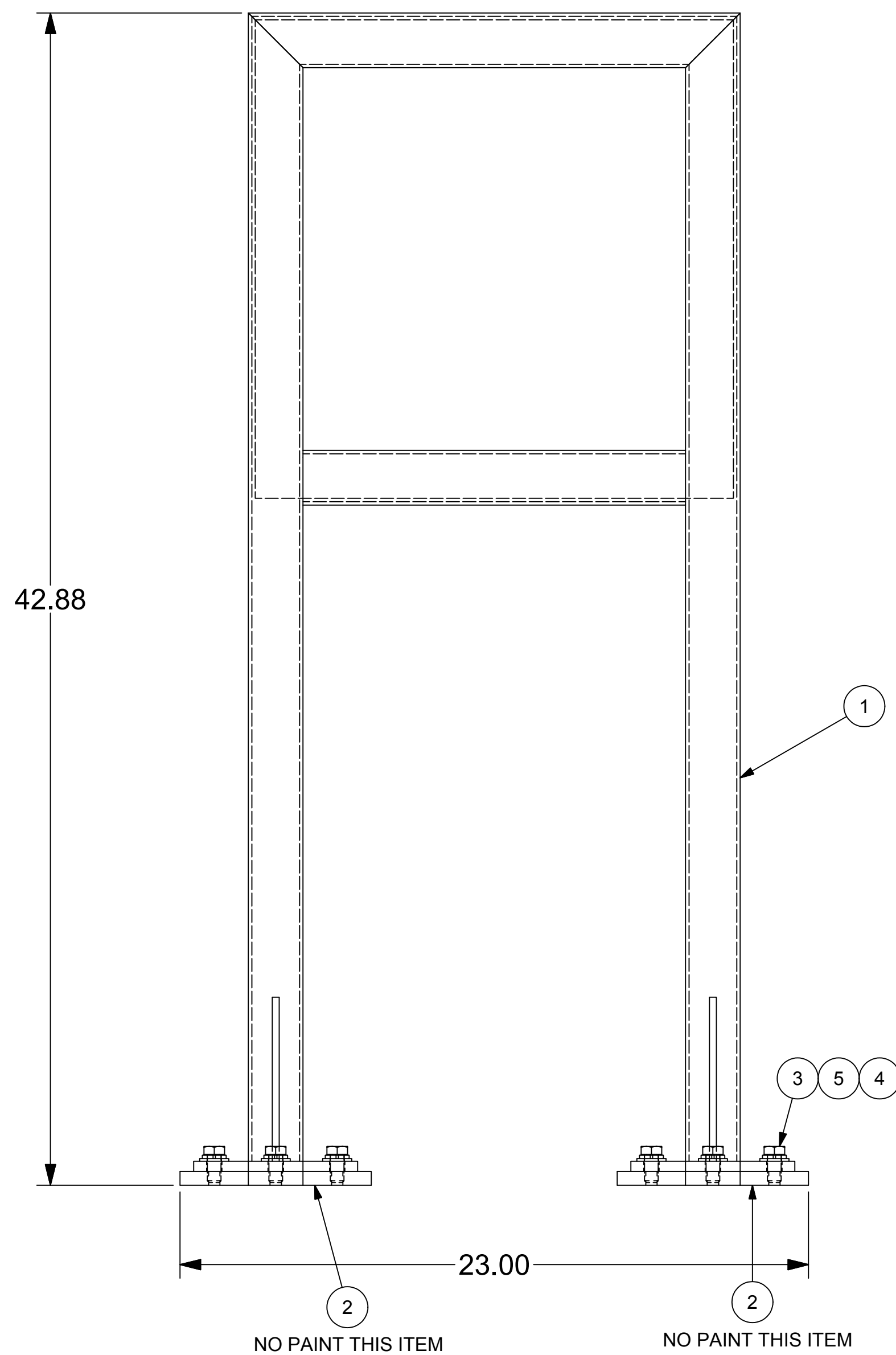




- NOTES:
- WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
 - WELDS ARE TO BE 1/16" LESS THAN THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN WORK AREA.
 - ALL MATERIAL SHALL BE ASTM A36, UNLESS OTHERWISE STATED.


0	ISSUED FOR FABRICATION	S. Boerckel	1/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

QTY'S BASED ON 2 UNITS									
1	2	409-2956-LFF7EA-621-01	STRAINER FOOT PLATE	1-3/4" THK - A36 STEEL PLATE	1.750 in	6.00 in	6.00 in	BURN- DRILL-TAP	
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	THICKNESS	LENGTH	WIDTH	Process	
BILL OF MATERIAL									
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			X.X ± 0.10		CHECKED T. KOONTZ 2/3/2011				
			X.XX ± 0.06		QA B. MADDUX 2/3/2011				
			X.XXX ± 0.03		REVIEWER				
			HOLE DIA ± 0.03		PROJECT NO 409-2956-1		LIQUID FUEL FORWARDING SKID - 7EA		
			ANGLES ± 0.50°		CUSTOMER EDC - MARGARITA ISLAND				
			SURFACE ± 0.06		JOB NO				
			SQUARENESS ± 0.06		SCALE: 1" = 1"		WEIGHT: 18 lbmass		SHEET 1
			DO NOT SCALE DRAWING						



- NOTES:
1. WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
 2. WELDS ARE TO BE GREATER THAN OR EQUAL TO THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS
 3. ALL MATERIAL FOR CARBON STEEL TUBING SHALL BE ASTM A554, WELDED ASTM A249, SEAMLESS ASTM A269, PIPE ASTM A312 & STAINLESS A304 UNLESS OTHERWISE STATED. SHAPES SHALL CONFORM TO ASTM A276.
 4. DO NOT PAINT INTERNALLY OR EXTERNALLY THREADED PARTS OR PARTS WITH FINISHED SURFACES THAT HAVE BEEN MACHINED FOR TIGHT TOLERANCE FITUP.
 5. PAINT FINISH:
SAND BLAST SSP-SP6
PRIME: KEM BOND HS (GRAY) UNIVERSAL METAL PRIMER - B50AZ8 (1-COAT / 2.0 - 5.0 mils dft)
PAINT: AMERCOAT 370 EPOXY (GRAY) (1-2 COATS 5mils dft)
PRIME & PAINT ITEM "1" (J-BOX MOUNT WELDMENT) ONLY
DO NOT PRIME OR PAINT ITEM "2" (J-BOX MOUNT PLATES)

A	RELEASED FOR FABRICATION	S. Boerckel	6/11/2010	C. BROWN	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

5	6			LOCK WASHER	1/2" HELICOID LOCK WASHER PLATED				
4	6			FLAT WASHER	1/2" PLAIN FLAT WASHER PLATED				
3	6	FST0816104BH		HEX BOLT	1/2"-13 x 1 HEX BOLT GRADE-5 PLATED		1.00 in		
2	2	SLFFPD7EA-630-01	SHEET-3	J-BOX FOOT BASE	1/2"Thk - A36 STEEL PLATE	.500 in	7.00 in	10.75 in	BURN/DRILL
1.6	2	SLFFPD7EA-631-06	SHEET-3	J-BOX FOOT	3/8"Thk - A36 STEEL PLATE	.375 in	6.00 in	10.25 in	BURN
1.5	2	SLFFPD7EA-631-05	SHEET-3	J-BOX GUSSET	1/4"Thk - A36 STEEL PLATE	.250 in	6.00 in	6.00 in	SHEAR
1.4	1	SLFFPD7EA-631-04		J-BOX PLATE	10GA - A1011 HR STEEL	.135 in	17.50 in	17.50 in	SHEAR
1.3	1	SLFFPD7EA-631-03		J-BOX CROSS TUBE	2 Sq x 1/8 Wall TUBING A-500		14.00 in		
1.2	1	SLFFPD7EA-631-02	SHEET-3	J-BOX TOP CROSS TUBE	2 Sq x 1/8 Wall TUBING A-500		18.00 in		
1.1	2	SLFFPD7EA-631-01	SHEET-3	J-BOX VERTICAL TUBE	2 Sq x 1/8 Wall TUBING A-500		42.00 in		
1	1	SLFFPD7EA-631	SHEET-2	J-BOX	WELDMENT				
ITEM	QTY	PART NUMBER	DETAIL	DESCRIPTION	MATERIAL	THICKNESS	LENGTH	WIDTH	Process
BILL OF MATERIAL									
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						CHECKED C. BROWN 6/21/2010			
				QA B. MADDUX 6/21/2010					
				REVIEWER					
				PROJECT NO					
				CUSTOMER		TITLE J-BOX MOUNT ASSEMBLY		LIQUID FUEL FORWARDING PUMP SKID-7EA	
						SIZE D	ML: 0425	DWG NO SLFFPD7EA-630	REV A
				DO NOT SCALE DRAWING		SCALE: 1/4" = 1" WEIGHT: 68 lbmass		SHEET 1 OF 3	



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UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS

X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	<u>HFS-SF</u>

✓

SQUARENESS	± 0.06
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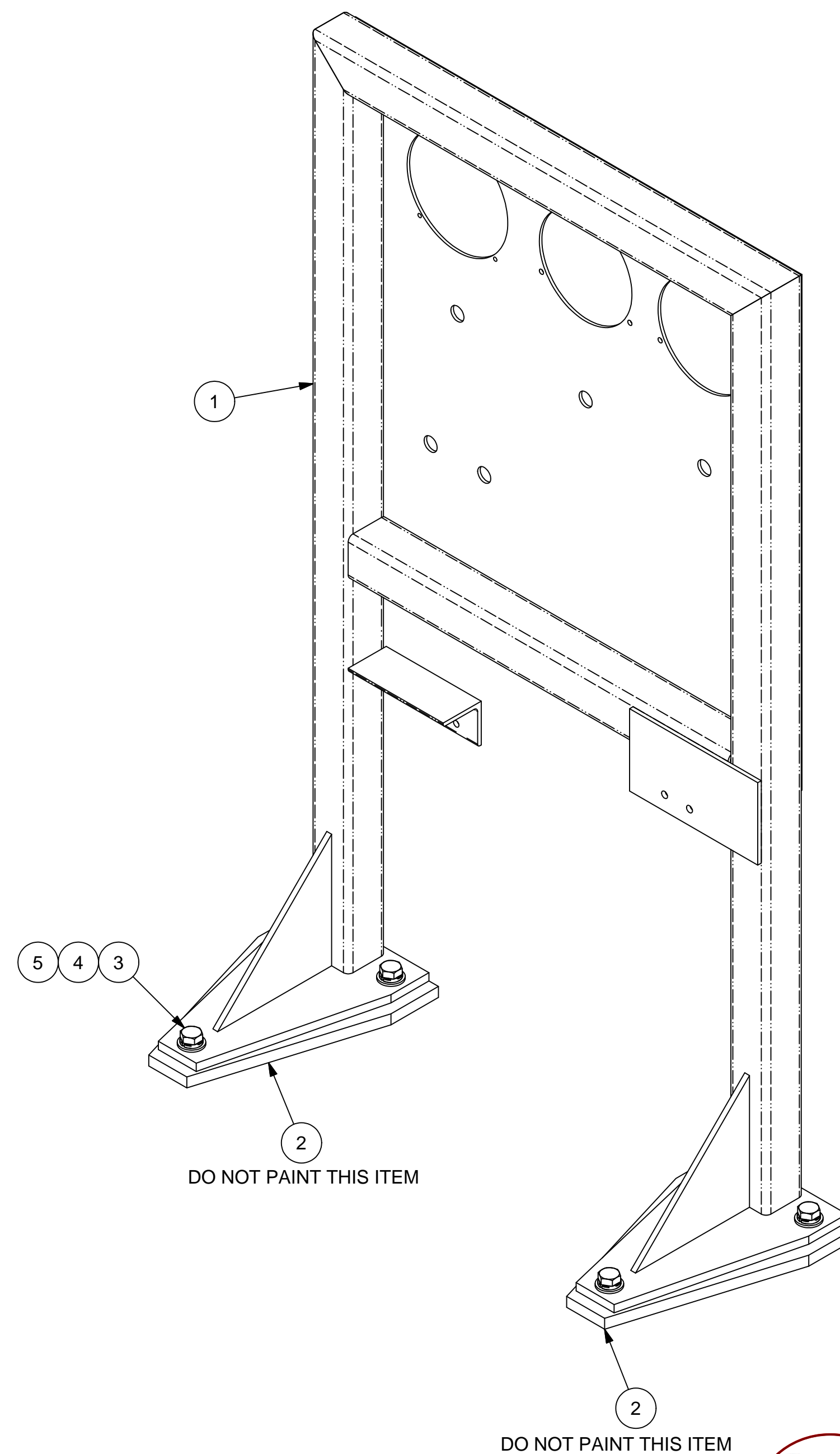
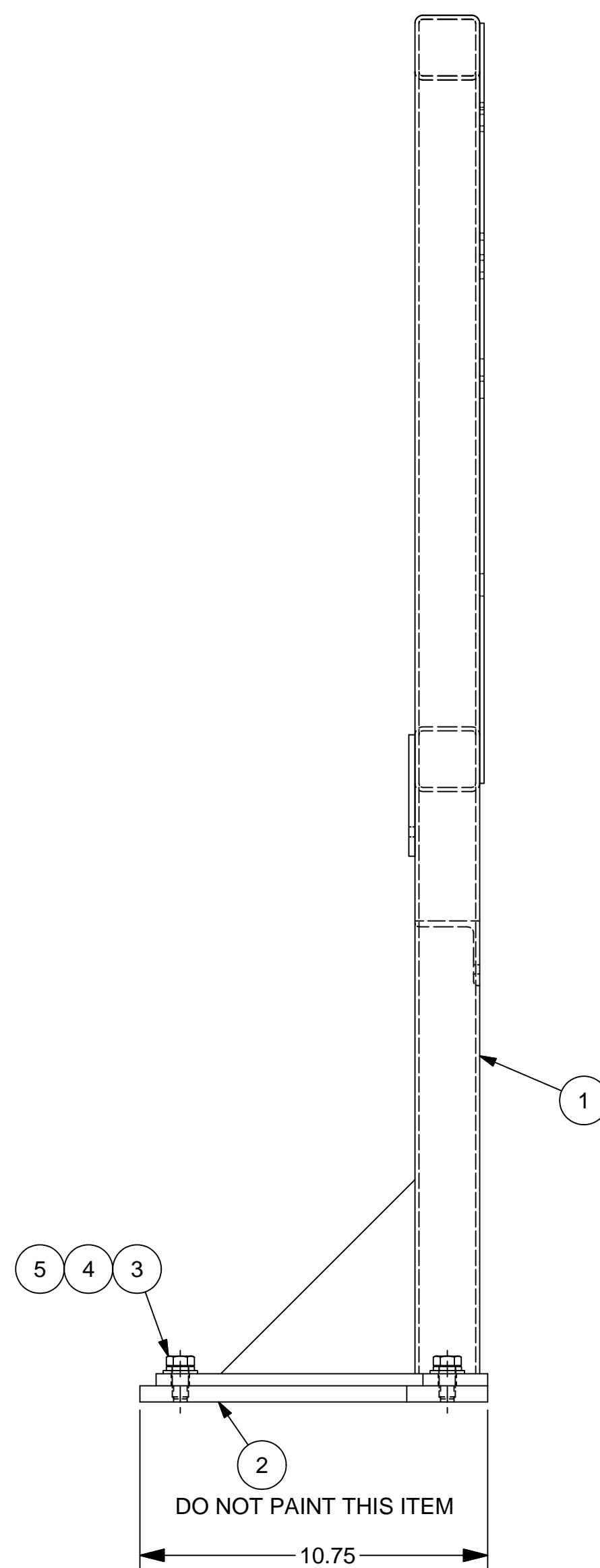
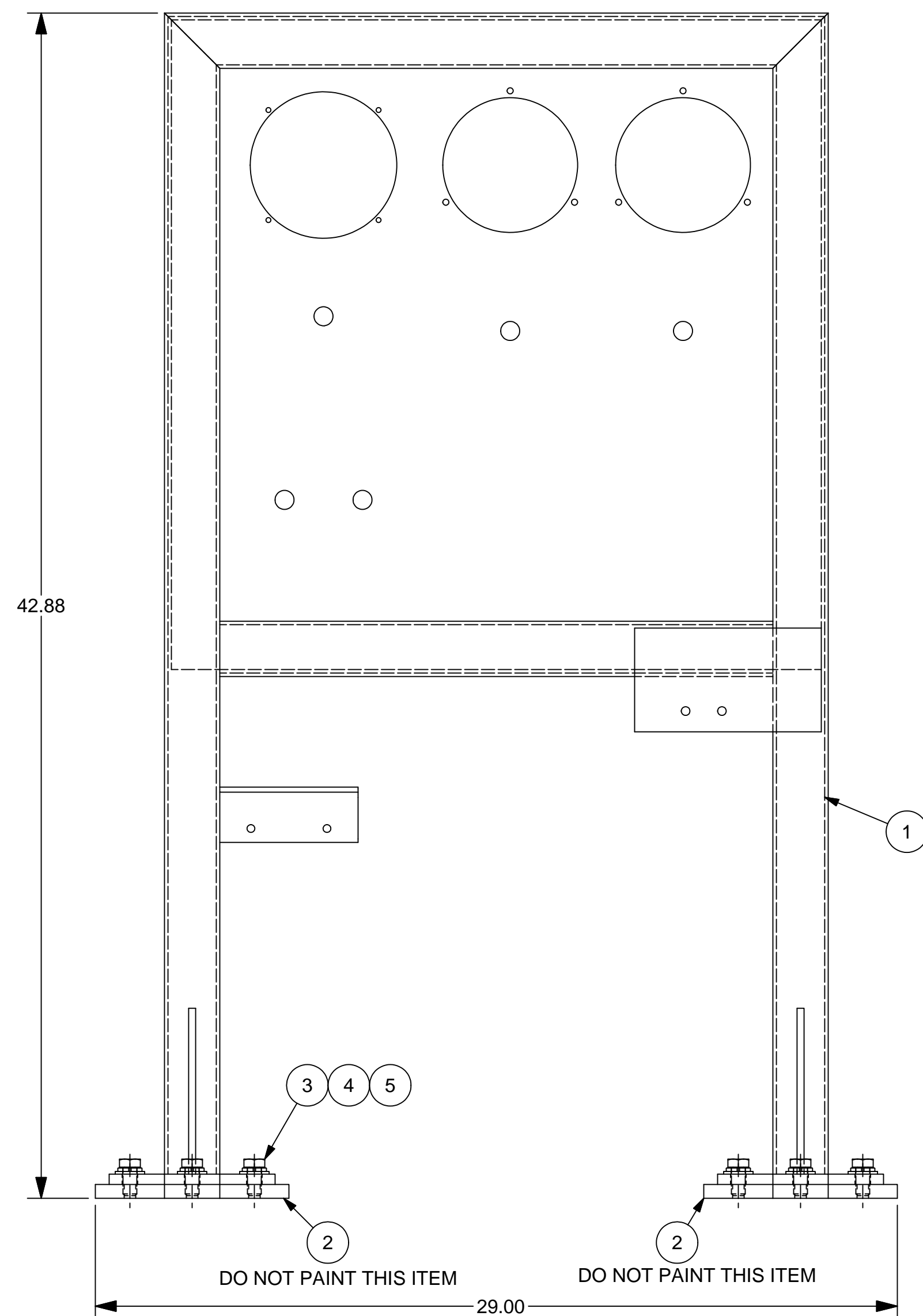
DO NOT SCALE DRAWING

DRAWN S. Boerckel	6/11/2010
CHECKED C. BROWN	6/21/2010
QA B. MADDUX	6/21/2010
REVIEWER	
PROJECT NO	
CUSTOMER	
JOB NO	

TITLE			
J-BOX MOUNT			
ASSEMBLY			
LIQUID FUEL FORWARDING PUMP SKID-7EA			
SIZE	ML:	DWG NO	REV
D	0425	SLFFPD7EA-630	A
SCALE: 1/4"=1"		WEIGHT: 68 lbmass	SHEET 1 OF 3



2201 ProEnergy Blvd
SEDALIA, MISSOURI 65301 U.S.A.
PHONE: 1-888-829-5100
FAX: 1-888-829-1160



NOTES:

1. WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
2. WELDS ARE TO BE 1/16" LESS THAN THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN WORK AREA.
3. ALL MATERIAL SHALL BE ASTM A36, UNLESS OTHERWISE STATED.
4. DO NOT PAINT INTERNALLY OR EXTERNALLY THREADED PARTS OR PARTS WITH FINISHED SURFACES THAT HAVE BEEN MACHINED FOR TIGHT TOLERANCE FITUP.
DO NOT PAINT ITEM #2.
5. PAINT FINISH:
 - BLAST SSPC-SP10/NACE 2, 2 mil
 - 2-COATS PHENICON HS (LIGHT GRAY)
 - PART-A (920A175)
 - PART-B (700-C-685)

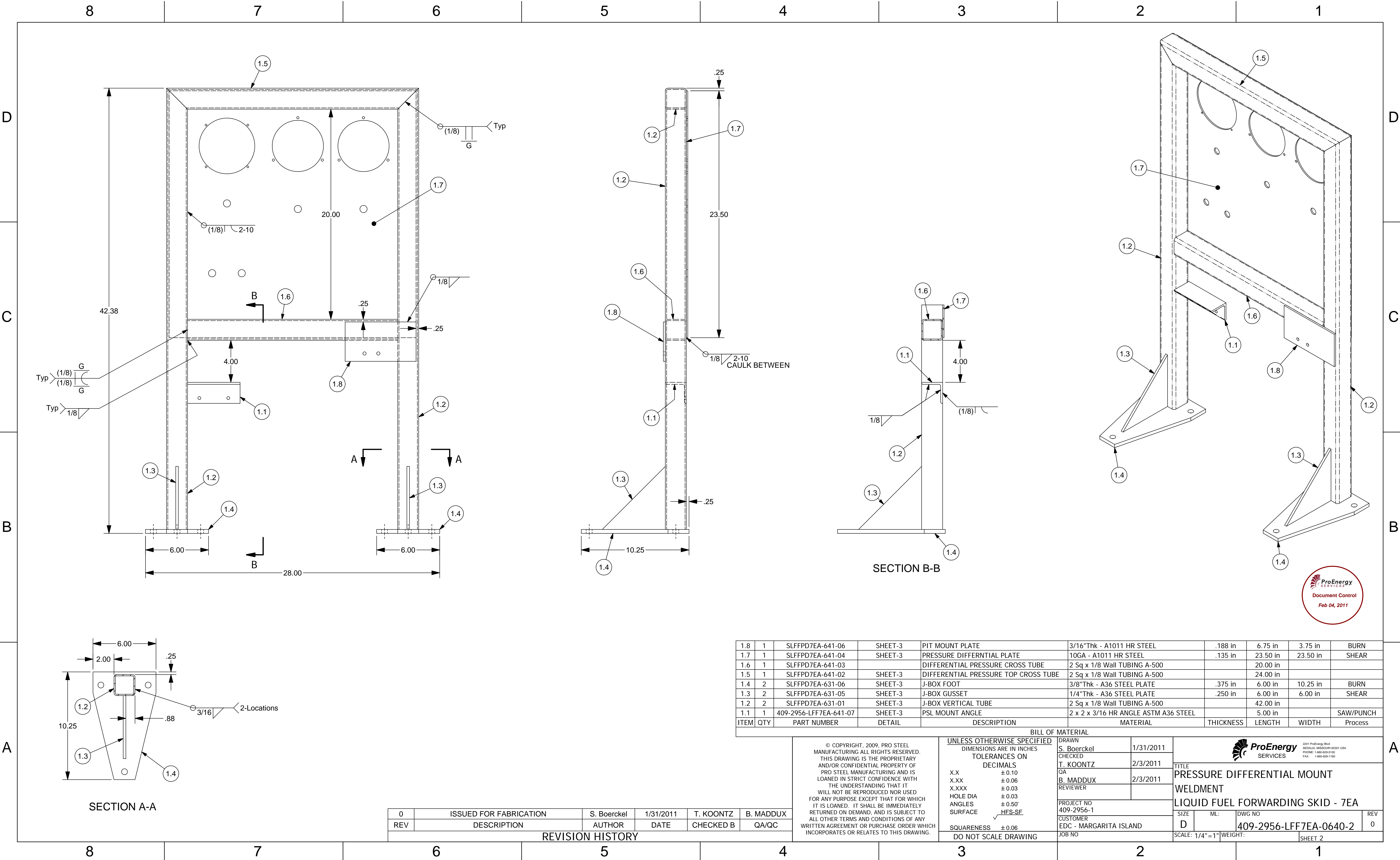
0	ISSUED FOR FEBRICATION	S. Boerckel	1/31/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

5	6			HELICAL SPRING LOCK WASHER	1/2" - HELICOID SPRING LOCK WASHER - CAD				
4	6			Type A Plain Washer	1/2" - TYPE-A PLAIN FLAT WASHER - CAD				
3	6			1/2-13 x 1.000 in LONG HHCS	HEX BOLT CAD PLATED - GRADE-5		1.00 in		
2	2	SLFFPD7EA-630-01	SHEET-3	J-BOX FOOT BASE	1/2"Thk - A36 STEEL PLATE	.500 in	7.00 in	10.75 in	BURN/DRILL
1	1	409-2956-LFF7EA-641	SHEET-2	PRESSURE DIFFERENTIAL MOUNT	WELDMENT				WELD
ITEM	QTY	PART NUMBER	DETAIL	DESCRIPTION	MATERIAL	THICKNESS	LENGTH	WIDTH	Process


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	DIMENSIONS ARE IN INCHES		S. Boerckel		1/31/2011	
	TOLERANCES ON		CHECKED		T. KOONTZ	
	DECIMALS		T. KOONTZ		2/3/2011	
	X.X ±0.10		QA		TITLE	
X.XX ±0.06	B. MADDUX		2/3/2011		PRESSURE DIFFERENTIAL MOUNT	
X.XXX ±0.03	REVIEWER		ASSEMBLY			
HOLE DIA ±0.03	PROJECT NO		LIQUID FUEL FORWARDING SKID - 7EA			
ANGLES ±0.50°	409-2956-1		D			
SURFACE <input checked="" type="checkbox"/> HFS-SF	CUSTOMER		ML:		DWG NO	
SQUARENESS ±0.06	EDC - MARGARITA ISLAND		SIZE		409-2956-LFF7EA-0640-1	
DO NOT SCALE DRAWING	JOB NO		SCALE: 1/4" = 1"		WEIGHT: 81 lbmass	
					SHEET 1	
					REV 0	



A



1.8	1	SLFFPD7EA-641-06	SHEET-3	PIT MOUNT PLATE	3/16"Thk - A1011 HR STEEL	.188 in	6.75 in	3.75 in	BURN
1.7	1	SLFFPD7EA-641-04	SHEET-3	PRESSURE DIFFERENTIAL PLATE	10GA - A1011 HR STEEL	.135 in	23.50 in	23.50 in	SHEAR
1.6	1	SLFFPD7EA-641-03		DIFFERENTIAL PRESSURE CROSS TUBE	2 Sq x 1/8 Wall TUBING A-500		20.00 in		
1.5	1	SLFFPD7EA-641-02	SHEET-3	DIFFERENTIAL PRESSURE TOP CROSS TUBE	2 Sq x 1/8 Wall TUBING A-500		24.00 in		
1.4	2	SLFFPD7EA-631-06	SHEET-3	J-BOX FOOT	3/8"Thk - A36 STEEL PLATE	.375 in	6.00 in	10.25 in	BURN
1.3	2	SLFFPD7EA-631-05	SHEET-3	J-BOX GUSSET	1/4"Thk - A36 STEEL PLATE	.250 in	6.00 in	6.00 in	SHEAR
1.2	2	SLFFPD7EA-631-01	SHEET-3	J-BOX VERTICAL TUBE	2 Sq x 1/8 Wall TUBING A-500		42.00 in		
1.1	1	409-2956-LFF7EA-641-07	SHEET-3	PSL MOUNT ANGLE	2 x 2 x 3/16 HR ANGLE ASTM A36 STEEL		5.00 in		SAW/PUNCH
ITEM	QTY	PART NUMBER	DETAIL	DESCRIPTION	MATERIAL	THICKNESS	LENGTH	WIDTH	Process

BILL OF MATERIAL									
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					X.X ±0.10 X.XX ±0.06 X.XXX ±0.03 HOLE DIA ±0.03 ANGLES ±0.50° SURFACE HFS-SF		CHECKED T. KOONTZ	2/3/2011	
					SQUARENESS ±0.06 DO NOT SCALE DRAWING		QA B. MADDUX	2/3/2011	
							REVIEWER		
							PROJECT NO 409-2956-1		TITLE PRESSURE DIFFERENTIAL MOUNT WELDMENT LIQUID FUEL FORWARDING SKID - 7EA
							CUSTOMER EDC - MARGARITA ISLAND		
							JOB NO		
							SCALE: 1/4"=1"	WEIGHT:	
							SHEET 2		

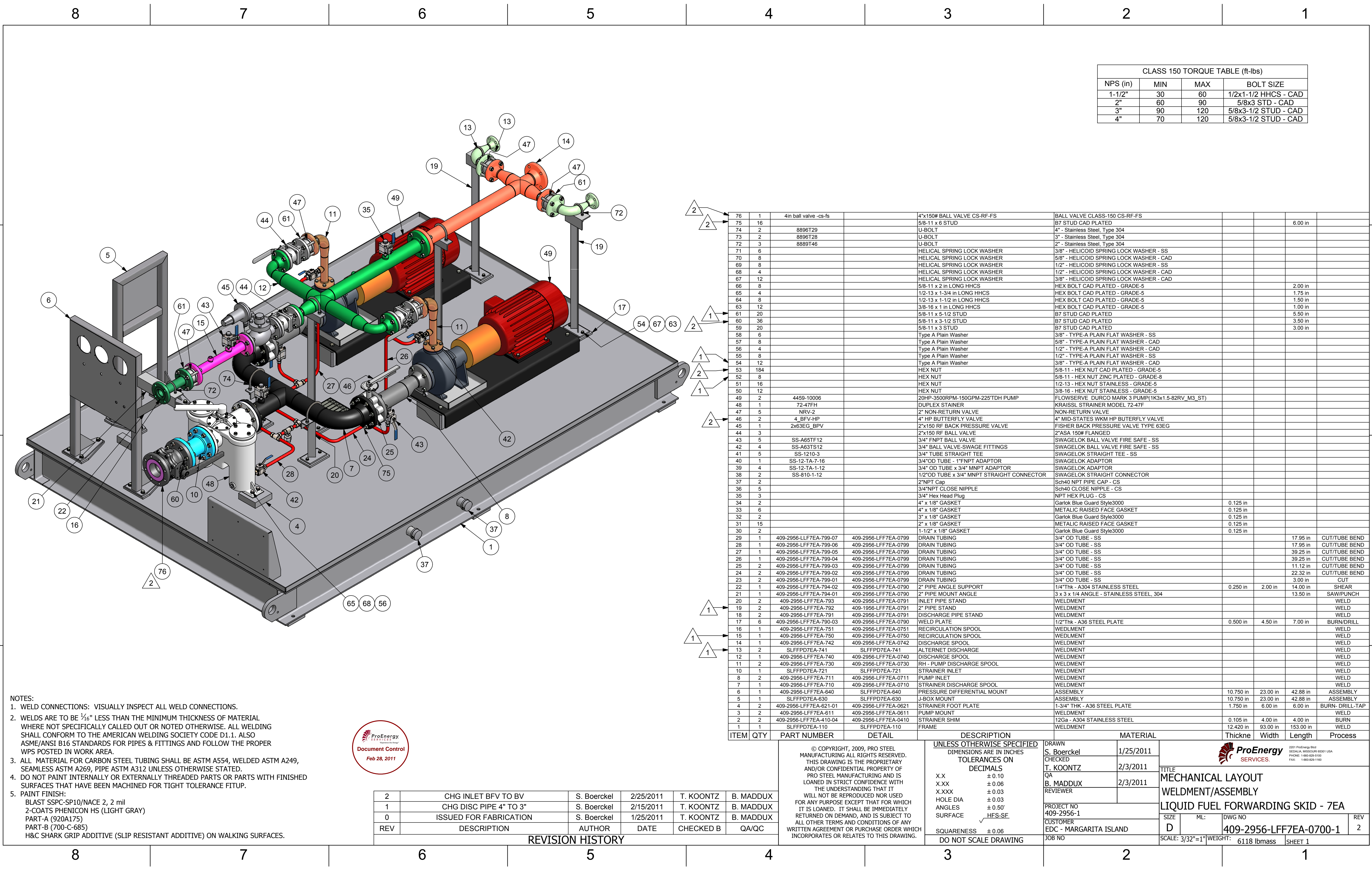
0	ISSUED FOR FABRICATION	S. Boerckel	1/31/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

D

C

B

A



CLASS 150 TORQUE TABLE (ft-lbs)			
NPS (in)	MIN	MAX	BOLT SIZE
1-1/2"	30	60	1/2x1-1/2 HHCS - CAD
2"	60	90	5/8x3 STD - CAD
3"	90	120	5/8x3-1/2 STUD - CAD
4"	70	120	5/8x3-1/2 STUD - CAD

- NOTES:
- WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
 - WELDS ARE TO BE 3/16" LESS THAN THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN WORK AREA.
 - ALL MATERIAL FOR CARBON STEEL TUBING SHALL BE ASTM A554, WELDED ASTM A249, SEAMLESS ASTM A269, PIPE ASTM A312 UNLESS OTHERWISE STATED.
 - DO NOT PAINT INTERNALLY OR EXTERNALLY THREADED PARTS OR PARTS WITH FINISHED SURFACES THAT HAVE BEEN MACHINED FOR TIGHT TOLERANCE FITUP.
 - PAINT FINISH:
BLAST SSPC-SP10/NACE 2, 2 mil
2-COATS PHENICON HS (LIGHT GRAY)
PART-A (920A175)
PART-B (700-C-685)
H&C SHARK GRIP ADDITIVE (SLIP RESISTANT ADDITIVE) ON WALKING SURFACES.



REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
2	CHG INLET BVF TO BV	S. Boerckel	2/25/2011	T. KOONTZ	B. MADDUX
1	CHG DISC PIPE 4" TO 3"	S. Boerckel	2/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	1/25/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC

REVISION HISTORY

76	1	4in ball valve -cs-fs	4"x150# BALL VALVE CS-RF-FS	BALL VALVE CLASS-150 CS-RF-FS					
75	16		5/8-11 x 6 STUD	B7 STUD CAD PLATED				6.00 in	
74	2	8896T29	U-BOLT	4" - Stainless Steel, Type 304					
73	2	8896T28	U-BOLT	3" - Stainless Steel, Type 304					
72	3	8889T46	U-BOLT	2" - Stainless Steel, Type 304					
71	6		HELICAL SPRING LOCK WASHER	3/8" - HELICOID SPRING LOCK WASHER - SS					
70	8		HELICAL SPRING LOCK WASHER	5/8" - HELICOID SPRING LOCK WASHER - CAD					
69	8		HELICAL SPRING LOCK WASHER	1/2" - HELICOID SPRING LOCK WASHER - SS					
68	4		HELICAL SPRING LOCK WASHER	1/2" - HELICOID SPRING LOCK WASHER - CAD					
67	12		HELICAL SPRING LOCK WASHER	3/8" - HELICOID SPRING LOCK WASHER - CAD					
66	8		5/8-11 x 2 in LONG HHCS	HEX BOLT CAD PLATED - GRADE-5				2.00 in	
65	4		1/2-13 x 1-3/4 in LONG HHCS	HEX BOLT CAD PLATED - GRADE-5				1.75 in	
64	8		1/2-13 x 1-1/2 in LONG HHCS	HEX BOLT CAD PLATED - GRADE-5				1.50 in	
63	12		3/8-16 x 1 in LONG HHCS	HEX BOLT CAD PLATED - GRADE-5				1.00 in	
61	20		5/8-11 x 5-1/2 STUD	B7 STUD CAD PLATED				5.50 in	
60	36		5/8-11 x 3-1/2 STUD	B7 STUD CAD PLATED				3.50 in	
59	20		5/8-11 x 3 STUD	B7 STUD CAD PLATED				3.00 in	
58	6		Type A Plain Washer	3/8" - TYPE-A PLAIN FLAT WASHER - SS					
57	8		Type A Plain Washer	5/8" - TYPE-A PLAIN FLAT WASHER - CAD					
56	4		Type A Plain Washer	1/2" - TYPE-A PLAIN FLAT WASHER - CAD					
55	8		Type A Plain Washer	1/2" - TYPE-A PLAIN FLAT WASHER - SS					
54	12		Type A Plain Washer	3/8" - TYPE-A PLAIN FLAT WASHER - CAD					
53	184		HEX NUT	5/8-11 - HEX NUT CAD PLATED - GRADE-5					
52	8		HEX NUT	5/8-11 - HEX NUT ZINC PLATED - GRADE-8					
51	16		HEX NUT	1/2-13 - HEX NUT STAINLESS - GRADE-5					
50	12		HEX NUT	3/8-16 - HEX NUT STAINLESS - GRADE-5					
49	2	4459-10006	20HP-3500RPM-150GPM-225"TDH PUMP	FLOWSERVE DURCO MARK 3 PUMP(1K3x1.5-82RV_M3_ST)					
48	1	72-47FH	DUPLEX STRAINER	KRAISSL STRAINER MODEL 72-47F					
47	5	NRV-2	2" NON-RETURN VALVE	NON-RETURN VALVE					
46	2	4. BFV-HP	4" HP BUTTERFLY VALVE	4" MID-STATES WKM HP BUTERFLY VALVE					
45	1	2x63EG_BPV	2"x150 RF BACK PRESSURE VALVE	FISHER BACK PRESSURE VALVE TYPE 63EG					
44	3		2"x150 RF BALL VALVE	2"ASA 150# FLANGED					
43	5	SS-A65TF12	3/4" FNPT BALL VALVE	SWAGELOK BALL VALVE FIRE SAFE - SS					
42	4	SS-A63TS12	3/4" BALL VALVE-SWAGE FITTINGS	SWAGELOK BALL VALVE FIRE SAFE - SS					
41	5	SS-1210-3	3/4" TUBE STRAIGHT TEE	SWAGELOK STRAIGHT TEE - SS					
40	1	SS-12-TA-7-16	3/4"OD TUBE - 1"FNPT ADAPTOR	SWAGELOK ADAPTOR					
39	4	SS-12-TA-1-12	3/4" OD TUBE x 3/4" MNPT ADAPTOR	SWAGELOK ADAPTOR					
38	2	SS-810-1-12	1/2"OD TUBE x 3/4" MNPT STRAIGHT CONNECTOR	SWAGELOK STRAIGHT CONNECTOR					
37	2		2"NPT Cap	Sch40 NPT PIPE CAP - CS					
36	5		3/4"NPT CLOSE NIPPLE	Sch40 CLOSE NIPPLE - CS					
35	3		3/4" Hex Head Plug	NPT HEX PLUG - CS					
34	2		4" x 1/8" GASKET	Garlok Blue Guard Style3000	0.125 in				
33	6		4" x 1/8" GASKET	METALIC RAISED FACE GASKET	0.125 in				
32	2		3" x 1/8" GASKET	Garlok Blue Guard Style3000	0.125 in				
31	15		2" x 1/8" GASKET	METALIC RAISED FACE GASKET	0.125 in				
30	2		1-1/2" x 1/8" GASKET	Garlok Blue Guard Style3000	0.125 in				
29	1	409-2956-LFF7EA-799-07	409-2956-LFF7EA-0799	DRAIN TUBING	3/4" OD TUBE - SS			17.95 in	CUT/TUBE BEND
28	1	409-2956-LFF7EA-799-06	409-2956-LFF7EA-0799	DRAIN TUBING	3/4" OD TUBE - SS			17.95 in	CUT/TUBE BEND
27	1	409-2956-LFF7EA-799-05	409-2956-LFF7EA-0799	DRAIN TUBING	3/4" OD TUBE - SS			39.25 in	CUT/TUBE BEND
26	1	409-2956-LFF7EA-799-04	409-2956-LFF7EA-0799	DRAIN TUBING	3/4" OD TUBE - SS			39.25 in	CUT/TUBE BEND
25	2	409-2956-LFF7EA-799-03	409-2956-LFF7EA-0799	DRAIN TUBING	3/4" OD TUBE - SS			11.12 in	CUT/TUBE BEND
24	2	409-2956-LFF7EA-799-02	409-2956-LFF7EA-0799	DRAIN TUBING	3/4" OD TUBE - SS			22.32 in	CUT/TUBE BEND
23	2	409-2956-LFF7EA-799-01	409-2956-LFF7EA-0799	DRAIN TUBING	3/4" OD TUBE - SS			3.00 in	CUT
22	1	409-2956-LFF7EA-794-02	409-2956-LFF7EA-0790	2" PIPE ANGLE SUPPORT	1/4"Thk - A304 STAINLESS STEEL	0.250 in	2.00 in	14.00 in	SHEAR
21	1	409-2956-LFF7EA-794-01	409-2956-LFF7EA-0790	2" PIPE MOUNT ANGLE	3 x 3 x 1/4 ANGLE - STAINLESS STEEL, 304			13.50 in	SAW/PUNCH
20	2	409-2956-LFF7EA-793	409-2956-LFF7EA-0791	INLET PIPE STAND	WELDMENT				WELD
19	2	409-2956-LFF7EA-792	409-1956-LFF7EA-0791	2" PIPE STAND	WELDMENT				WELD
18	2	409-2956-LFF7EA-791	409-2956-LFF7EA-0791	DISCHARGE PIPE STAND	WELDMENT				WELD
17	6	409-2956-LFF7EA-790-03	409-2956-LFF7EA-0790	WELD PLATE	1/2"Thk - A36 STEEL PLATE	0.500 in	4.50 in	7.00 in	BURN/DRILL
16	1	409-2956-LFF7EA-751	409-2956-LFF7EA-0751	RECIRCULATION SPOOL	WEDLMNT				WELD
15	1	409-2956-LFF7EA-750	409-2956-LFF7EA-0750	RECIRCULATION SPOOL	WEDLMNT				WELD
14	1	409-2956-LFF7EA-742	409-2956-LFF7EA-0742	DISCHARGE SPOOL	WELDMENT				WELD
13	2	SLFFPD7EA-741	SLFFPD7EA-741	ALTERNET DISCHARGE	WELDMENT				WELD
12	1	409-2956-LFF7EA-740	409-2956-LFF7EA-0740	DISCHARGE SPOOL	WELDMENT				WELD
11	2	409-2956-LFF7EA-730	409-2956-LFF7EA-0730	RH - PUMP DISCHARGE SPOOL	WELDMENT				WELD
10	1	SLFFPD7EA-721	SLFFPD7EA-721	STRAINER INLET	WELDMENT				WELD
9	2	409-2956-LFF7EA-711	409-2956-LFF7EA-0711	PUMP INLET	WELDMENT				WELD
8	1	409-2956-LFF7EA-710	409-2956-LFF7EA-0710	STRAINER DISCHARGE SPOOL	WELDMENT				WELD
7	1	409-2956-LFF7EA-640	SLFFPD7EA-640	PRESSURE DIFFERENTIAL MOUNT	ASSEMBLY	10.750 in	23.00 in	42.88 in	ASSEMBLY
6	1	SLFFPD7EA-630	SLFFPD7EA-630	J-BOX MOUNT	ASSEMBLY	10.750 in	23.00 in	42.88 in	ASSEMBLY
5	1	409-2956-LFF7EA-621-01	409-2956-LFF7EA-0621	STRAINER FOOT PLATE	1-3/4" THK - A36 STEEL PLATE	1.750 in	6.00 in	6.00 in	BURN-DRILL-TAP
4	2	409-2956-LFF7EA-611	409-2956-LFF7EA-0611	PUMP MOUNT	WELDMENT				WELD
3	2	409-2956-LFF7EA-410-04	409-2956-LFF7EA-0410	STRAINER SHIM	12Ga - A304 STAINLESS STEEL	0.105 in	4.00 in	4.00 in	BURN
2	2	SLFFPD7EA-110	SLFFPD7EA-110	FRAME	WELDMENT	12.420 in	93.00 in	153.00 in	WELD
1	1								
ITEM	QTY	PART NUMBER	DETAIL	DESCRIPTION	MATERIAL	Thickne	Width	Length	Process

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UNLESS OTHERWISE SPECIFIED	DESCRIPTION
DIMENSIONS ARE IN INCHES	
TOLERANCES ON DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	HFS-SF
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN S. Boerckel	1/25/2011
CHECKED T. KOONTZ	2/3/2011
QA B. MADDUX	2/3/2011
REVIEWER	
PROJECT NO 409-2956-1	
CUSTOMER EDC - MARGARITA ISLAND	
JOB NO	

TITLE MECHANICAL LAYOUT WELDMENT/ASSEMBLY LIQUID FUEL FORWARDING SKID - 7EA	SIZE D	ML: D	DWG NO 409-2956-LFF7EA-0700-1	REV 2
SCALE: 3/32"=1"	WEIGHT: 6118 lbmass	SHEET 1		

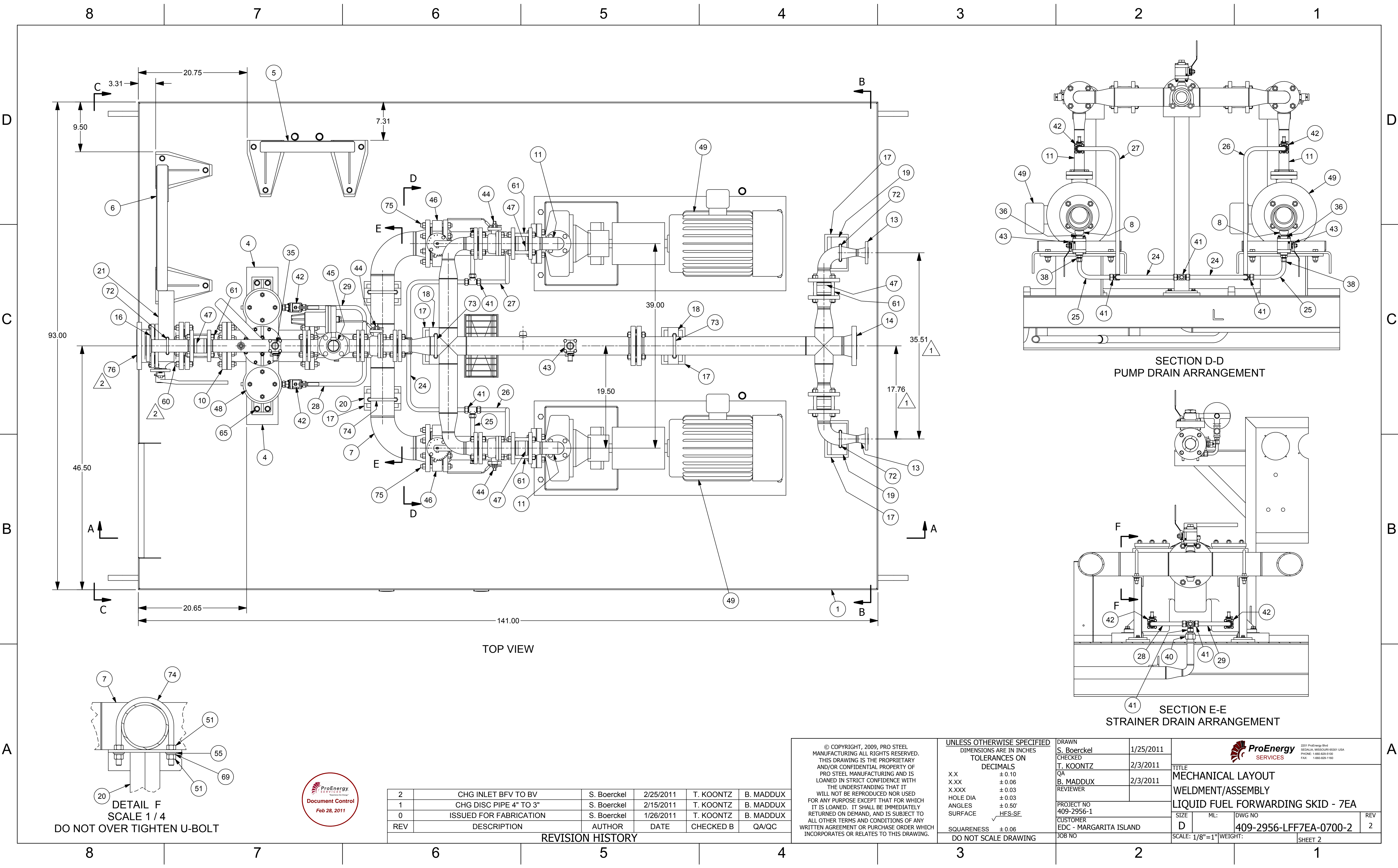


D

C

B

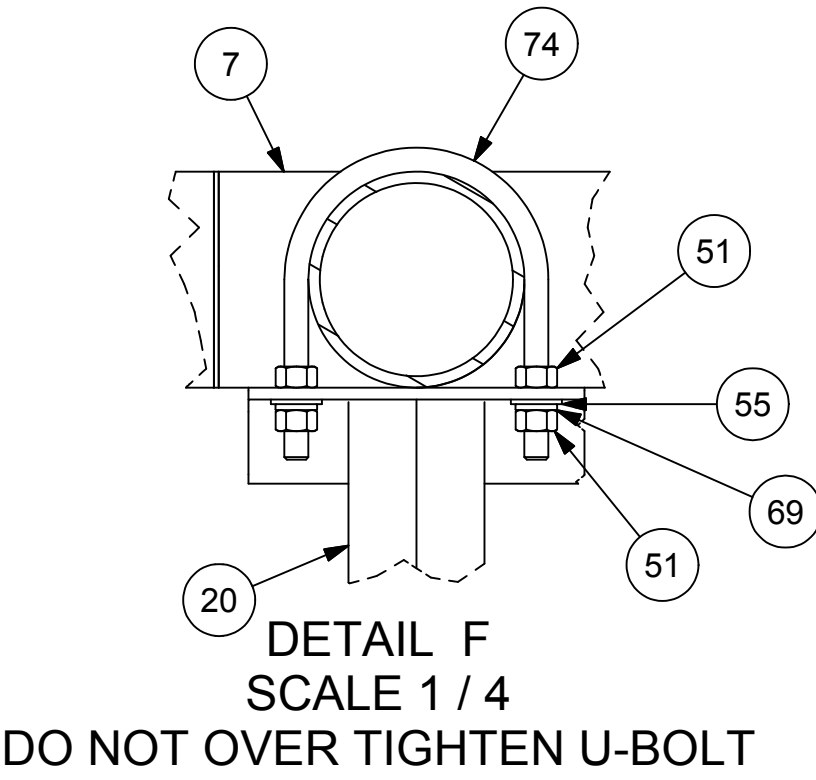
A



TOP VIEW

SECTION D-D
PUMP DRAIN ARRANGEMENT

SECTION E-E
STRAINER DRAIN ARRANGEMENT



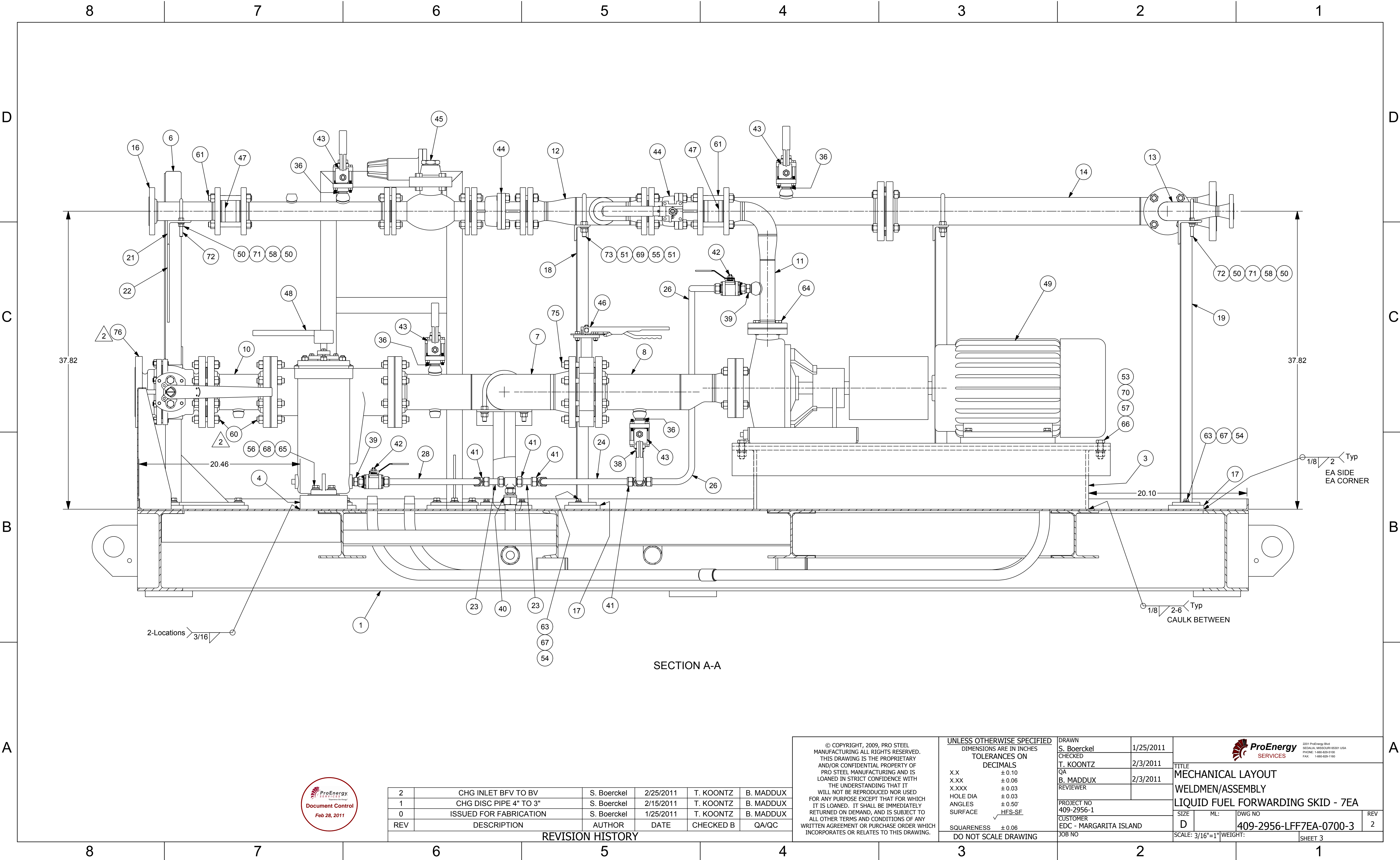
2	CHG INLET BVF TO BV	S. Boerckel	2/25/2011	T. KOONTZ	B. MADDUX
1	CHG DISC PIPE 4" TO 3"	S. Boerckel	2/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	1/26/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC

REVISION HISTORY

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS	DRAWN S. Boerckel CHECKED T. KOONTZ QA B. MADDUX REVIEWER	1/25/2011 2/3/2011 2/3/2011
X.X ± 0.10 X.XX ± 0.06 X.XXX ± 0.03 HOLE DIA ± 0.03 ANGLES ± 0.50° SURFACE $\sqrt{\text{HFS-SF}}$	PROJECT NO 409-2956-1 CUSTOMER EDC - MARGARITA ISLAND JOB NO	
SQUARENESS ± 0.06 DO NOT SCALE DRAWING		

ProEnergy SERVICES		2201 ProEnergy Blvd SEGLAKA, MISSOURI 65501 USA PHONE: 1-800-829-5100 FAX: 1-800-829-1100	
TITLE MECHANICAL LAYOUT WELDMENT/ASSEMBLY LIQUID FUEL FORWARDING SKID - 7EA			
SIZE D	ML	DWG NO 409-2956-LFF7EA-0700-2	REV 2
SCALE: 1/8"=1"		WEIGHT:	SHEET 2




REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
2	CHG INLET BFV TO BV	S. Boerckel	2/25/2011	T. KOONTZ	B. MADDUX
1	CHG DISC PIPE 4" TO 3"	S. Boerckel	2/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	1/25/2011	T. KOONTZ	B. MADDUX

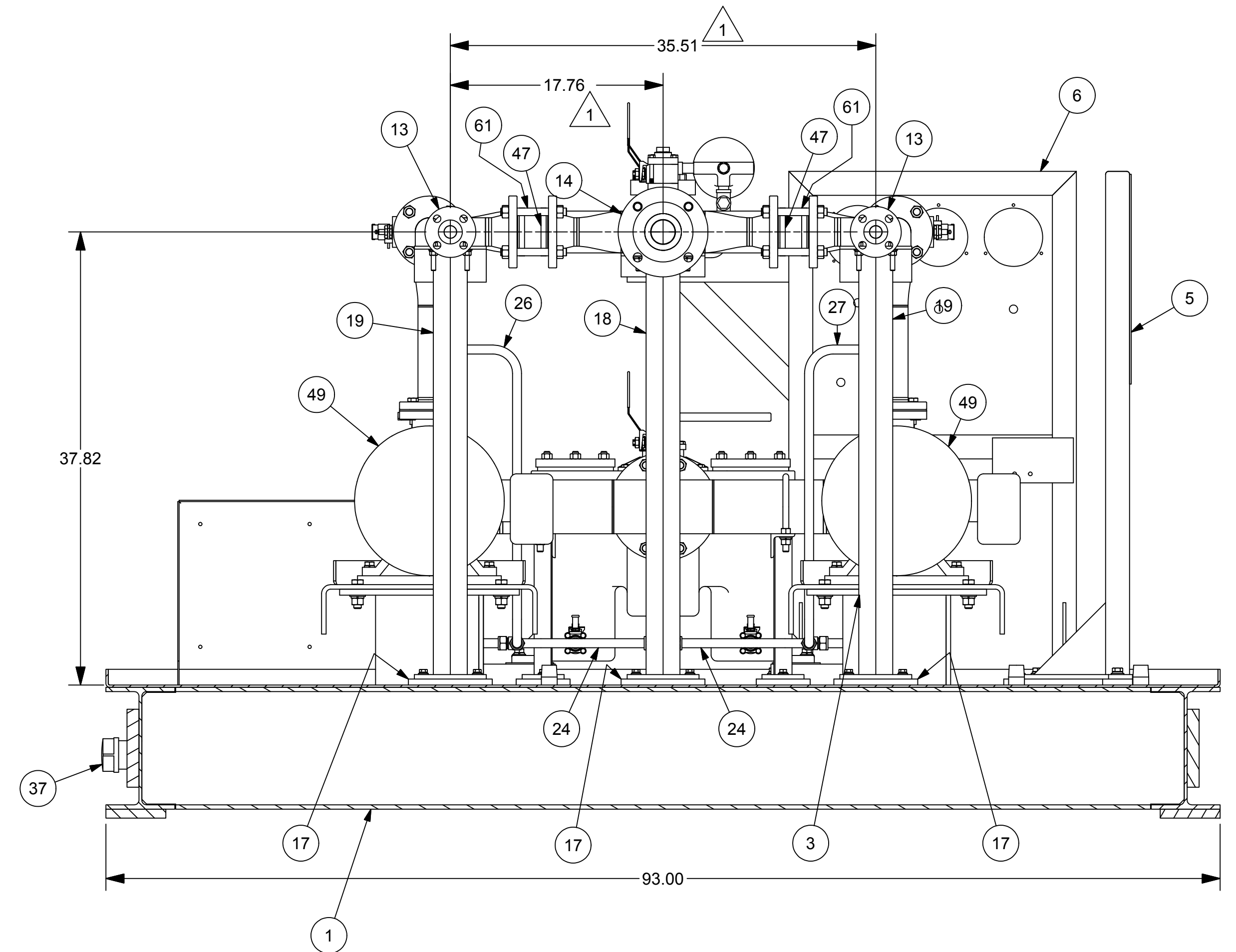
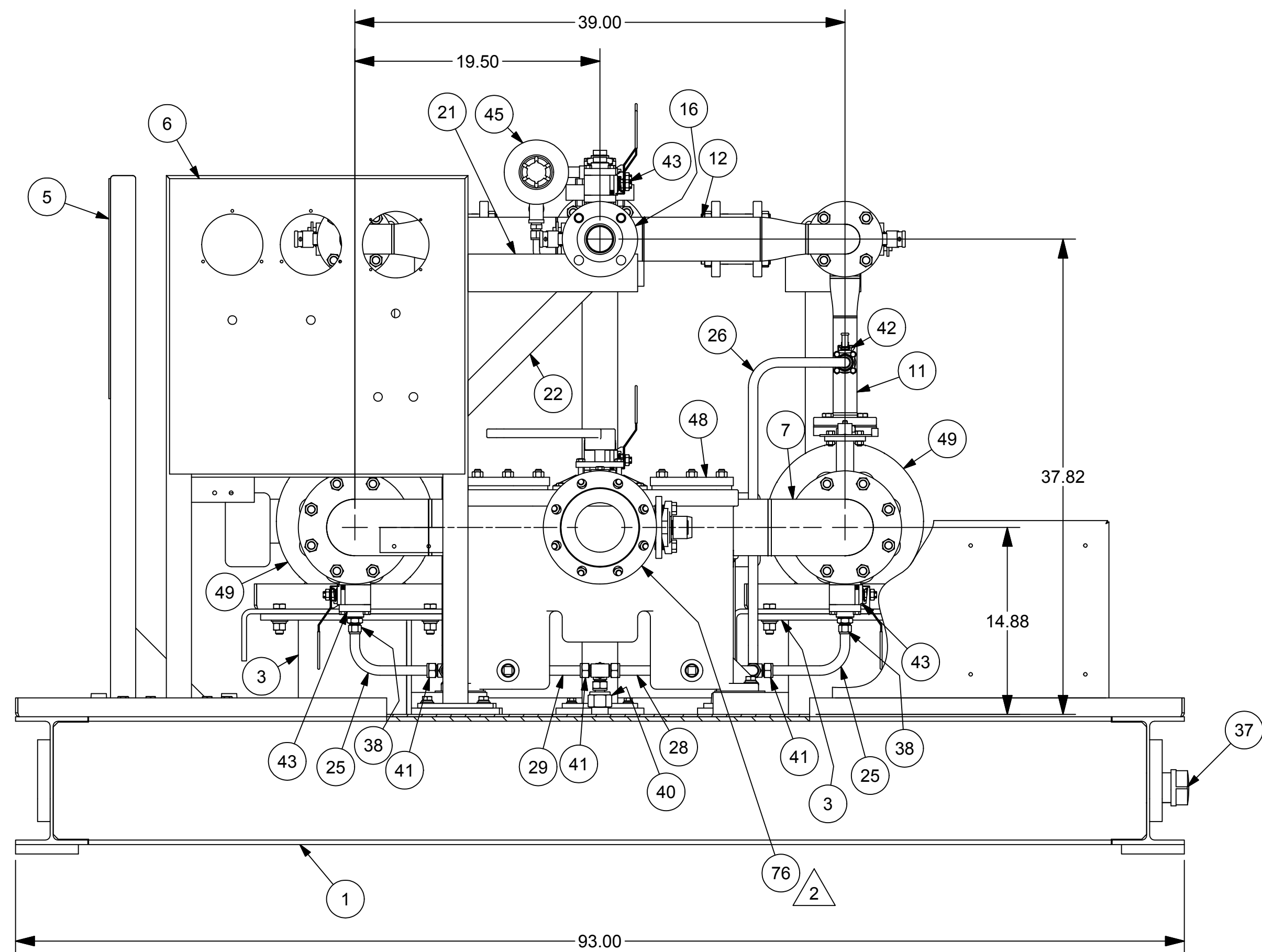
REVISION HISTORY

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UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	HFS-SF
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN	S. Boerckel	1/25/2011
CHECKED	T. KOONTZ	2/3/2011
QA	B. MADDUX	2/3/2011
REVIEWER		
PROJECT NO	409-2956-1	
CUSTOMER	EDC - MARGARITA ISLAND	
JOB NO		

			
TITLE			
MECHANICAL LAYOUT			
WELDMEN/ASSEMBLY			
LIQUID FUEL FORWARDING SKID - 7EA			
SIZE	ML	DWG NO	REV
D		409-2956-LFF7EA-0700-3	2
SCALE: 3/16"=1" WEIGHT:			
SHEET 3			




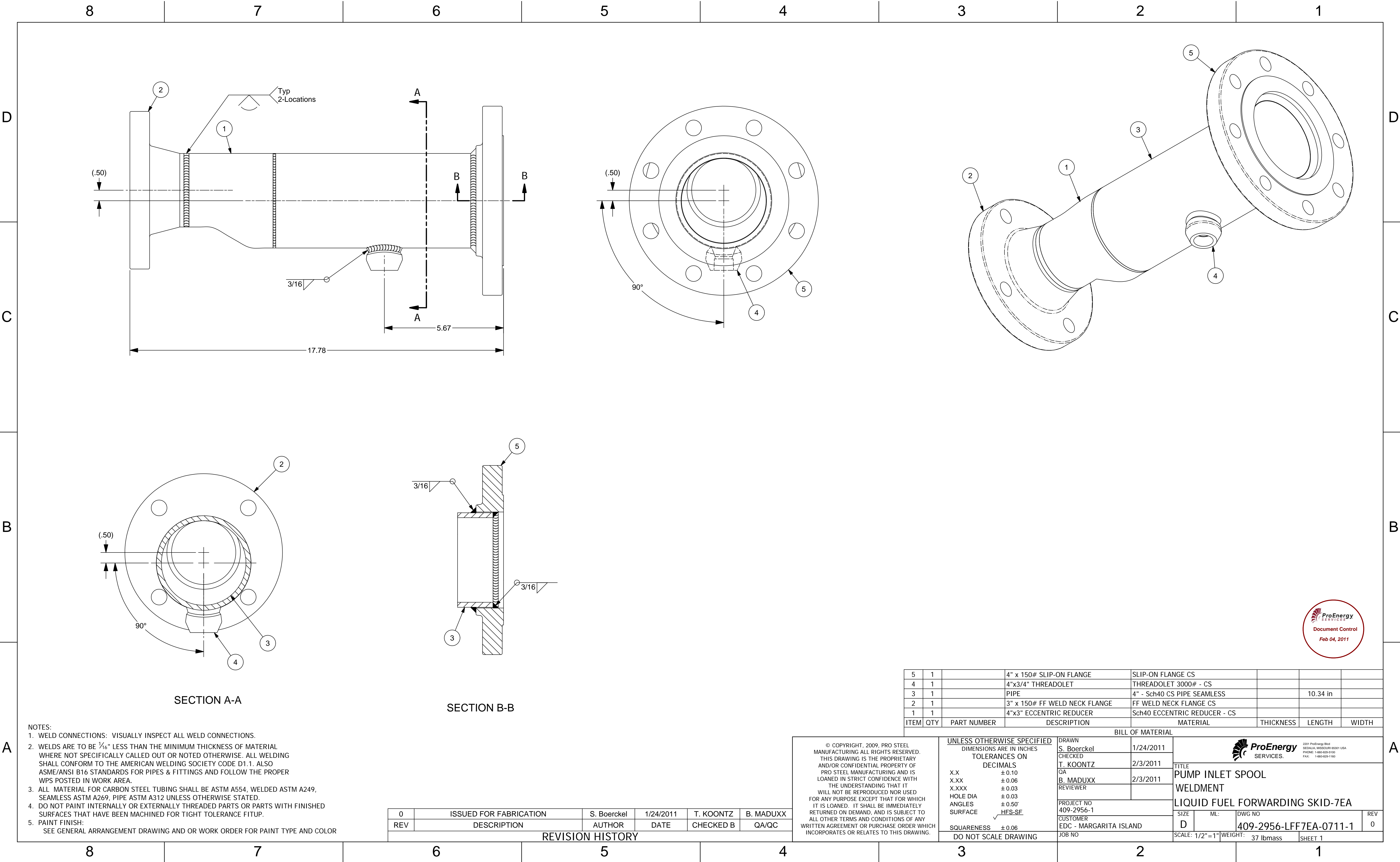
2	CHG INLET BVF TO BV	S. Boerckel	2/25/2011	T. KOONTZ	B. MADDUX
1	CHG DISC PIPE 4" TO 3"	S. Boerckel	2/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	1/26/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC


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INCORPORATES OR RELATES TO THIS DRAWING

UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	√ <u>HFS-SF</u>
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN S. Boerckel	1/25/2011
CHECKED T. KOONTZ	2/3/2011
QA B. MADDUX	2/3/2011
REVIEWER	
PROJECT NO 409-2956-1	
CUSTOMER EDC - MARGARITA ISLAND	
JOB NO	

 ProEnergy SERVICES		2501 PuEnergy Blvd SEASIDE, MINNESOTA 55053 USA PHONE: 1-662-525-5100 FAX: 1-662-829-1180	
TITLE MECHANICAL LAYOUT WELDMENT/ASSEMBLY LIQUID FUEL FORWARDING SKID - 7EA			
SIZE	ML:	DWG NO	REV
D		409-2956-LFF7EA-0700-4	2
SCALE: 1/8"=1"		WEIGHT:	SHEET 4



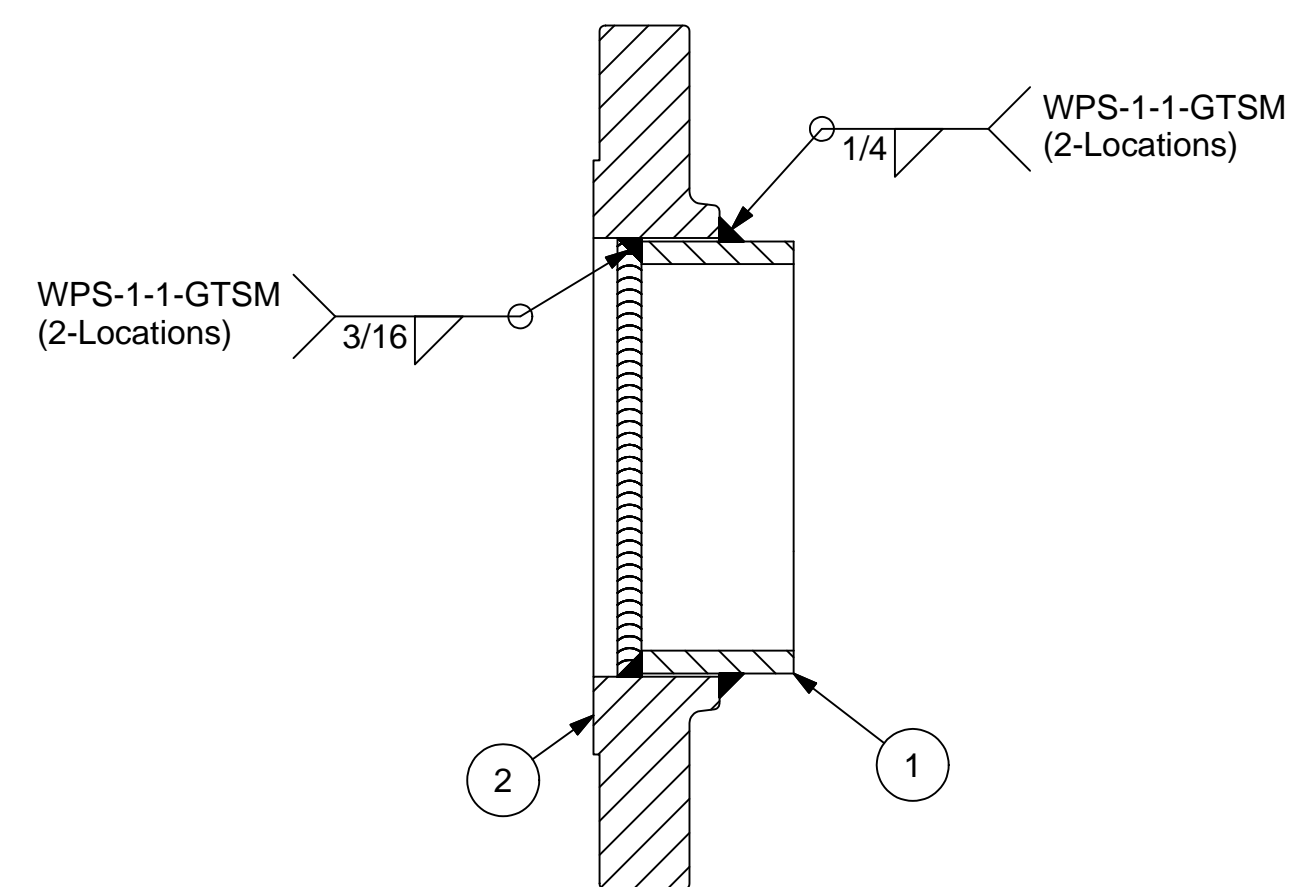
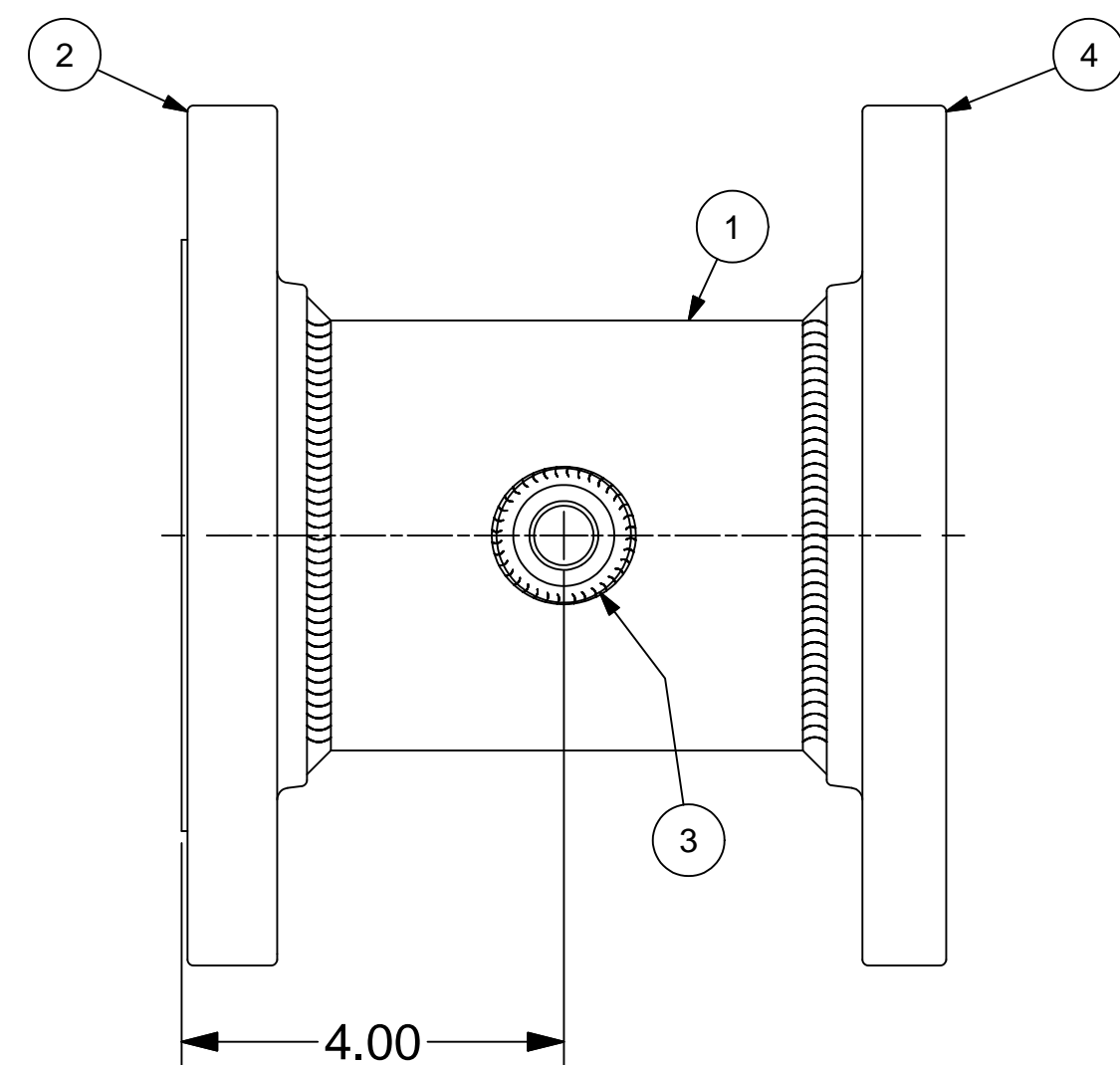
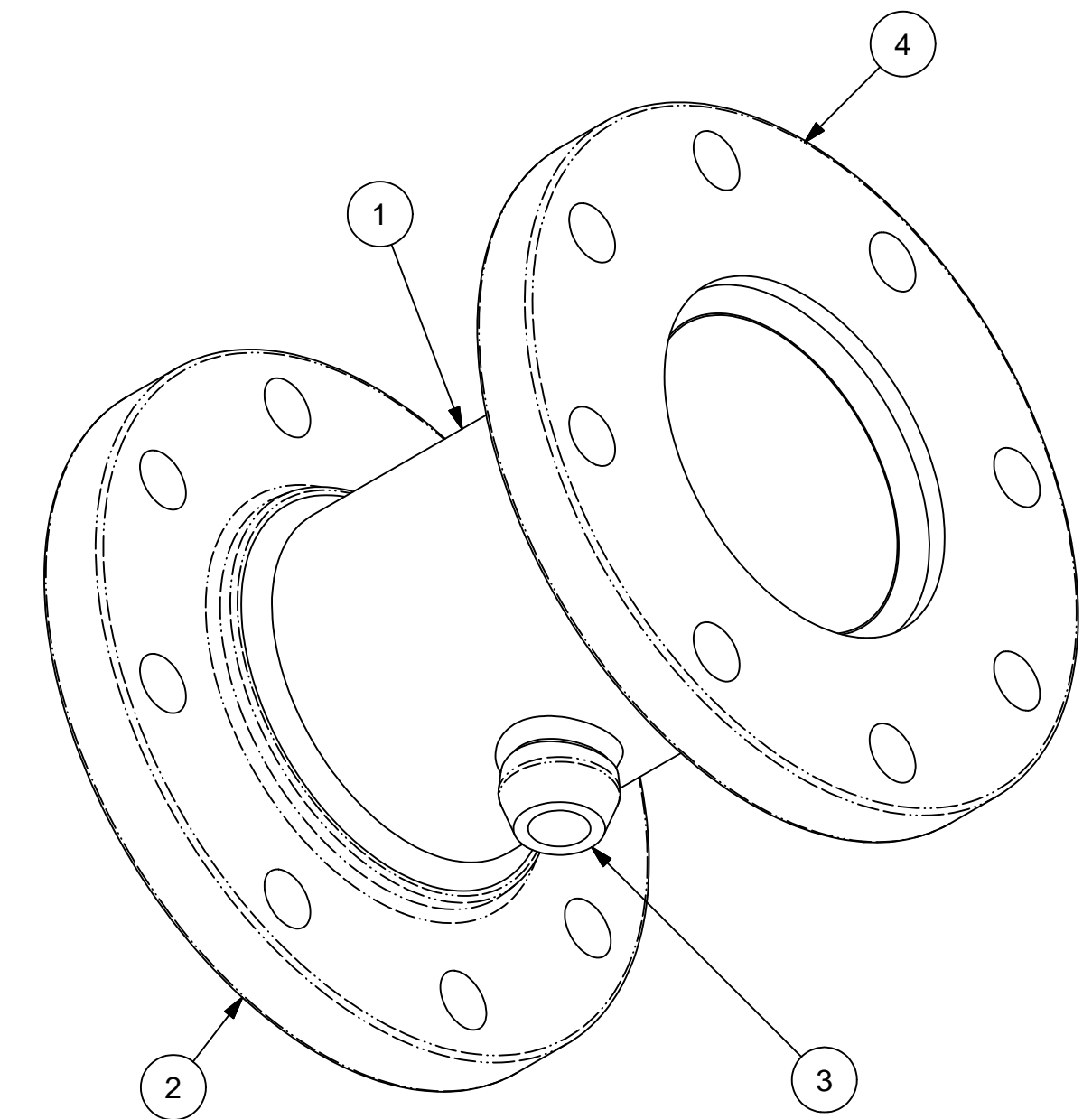
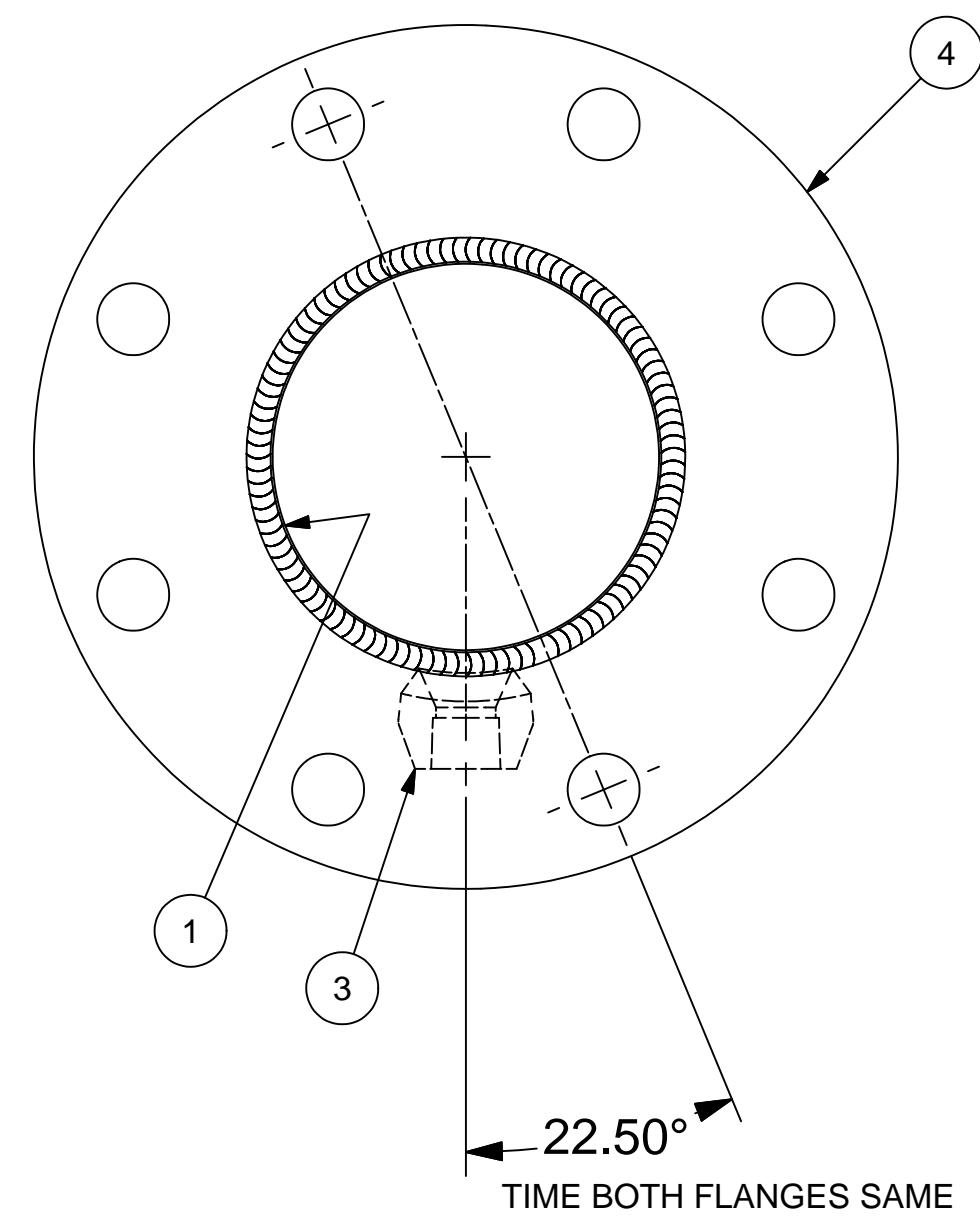
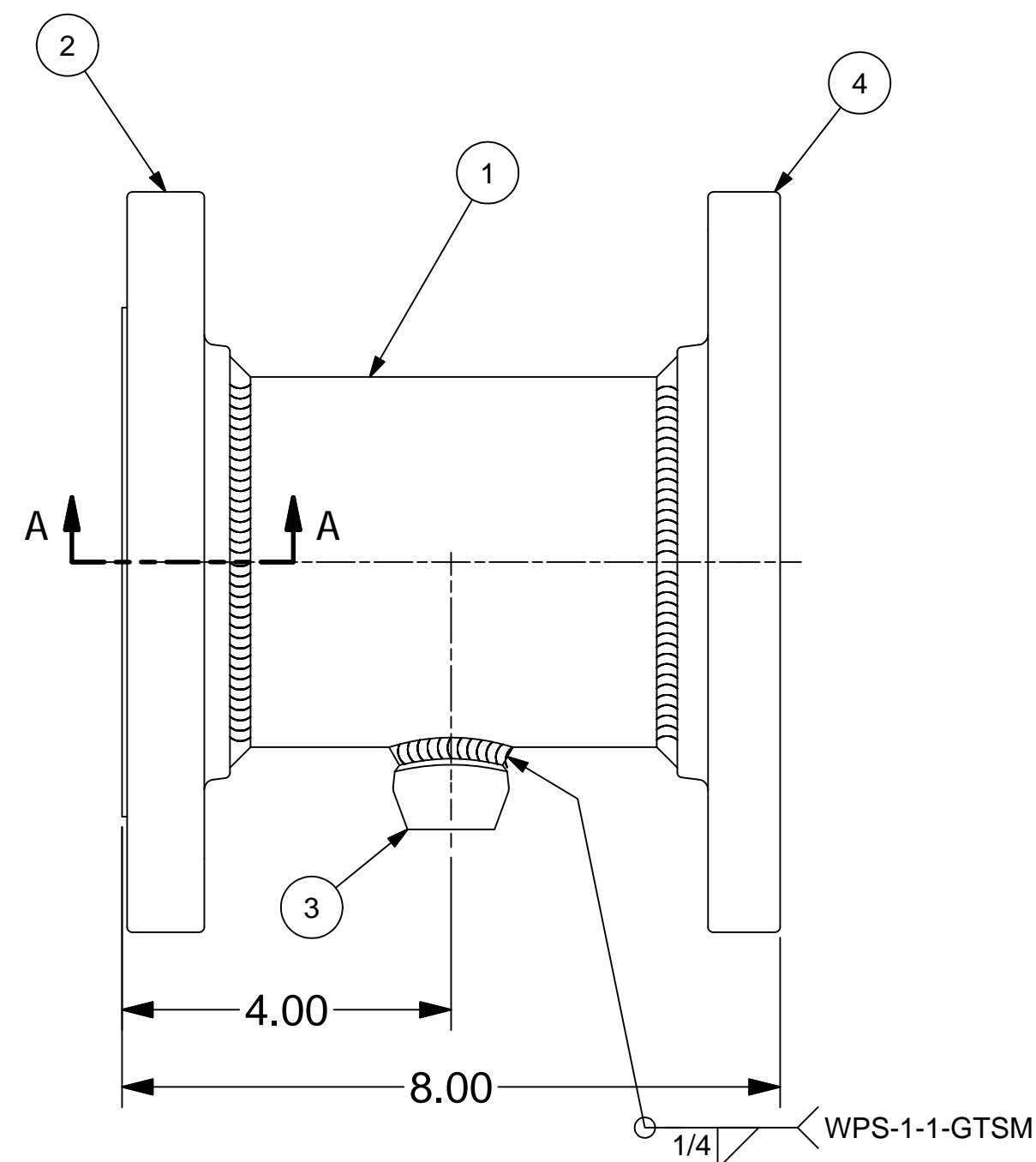
5	1		4" x 150# SLIP-ON FLANGE	SLIP-ON FLANGE CS				
4	1		4"x3/4" THREDOLET	THREDOLET 3000# - CS				
3	1		PIPE	4" - Sch40 CS PIPE SEAMLESS			10.34 in	
2	1		3" x 150# FF WELD NECK FLANGE	FF WELD NECK FLANGE CS				
1	1		4"x3" ECCENTRIC REDUCER	Sch40 ECCENTRIC REDUCER - CS				
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	THICKNESS	LENGTH	WIDTH	
BILL OF MATERIAL								
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS X.X ±0.10 X.XX ±0.06 X.XXX ±0.03 HOLE DIA ±0.03 ANGLES ±0.50° SURFACE HFS-SF SQUARENESS ±0.06 DO NOT SCALE DRAWING	DRAWN S. Boerckel		1/24/2011		<div><div>2201 ProEnergy Blvd SEALAND, MICHIGAN 48081 USA PHONE: 1-800-829-0100 FAX: 1-800-829-1160</div></div> <div>TITLE PUMP INLET SPOOL WELDMENT LIQUID FUEL FORWARDING SKID-7EA</div> <div><div>SIZE</div><div>ML:</div><div>DWG NO</div><div>409-2956-LFF7EA-0711-1</div></div> <div><div>SCALE: 1/2" = 1"</div><div>WEIGHT: 37 lbmass</div><div>SHEET 1</div></div> <div><div>REV</div><div>0</div></div>			
	CHECKED T. KOONTZ		2/3/2011					
	QA B. MADUXX		2/3/2011					
	REVIEWER							
	PROJECT NO 409-2956-1							
CUSTOMER EDC - MARGARITA ISLAND								

0	ISSUED FOR FABRICATION	S. Boerckel	1/24/2011	T. KOONTZ	B. MADUXX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

- NOTES:
- WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
 - WELDS ARE TO BE $\frac{1}{16}$ " LESS THAN THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN WORK AREA.
 - ALL MATERIAL FOR CARBON STEEL TUBING SHALL BE ASTM A554, WELDED ASTM A249, SEAMLESS ASTM A269, PIPE ASTM A312 UNLESS OTHERWISE STATED.
 - DO NOT PAINT INTERNALLY OR EXTERNALLY THREADED PARTS OR PARTS WITH FINISHED SURFACES THAT HAVE BEEN MACHINED FOR TIGHT TOLERANCE FITUP.
 - PAINT FINISH:
SEE GENERAL ARRANGEMENT DRAWING AND OR WORK ORDER FOR PAINT TYPE AND COLOR


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WILL NOT BE REPRODUCED NOR USED
FOR ANY PURPOSE EXCEPT THAT FOR WHICH
IT IS LOANED. IT SHALL BE IMMEDIATELY
RETURNED ON DEMAND, AND IS SUBJECT TO
ALL OTHER TERMS AND CONDITIONS OF ANY
WRITTEN AGREEMENT OR PURCHASE ORDER WHICH
INCORPORATES OR RELATES TO THIS DRAWING.





SECTION A-A

	4	1		4" x 150# FF SLIP-ON FLANGE	FLAT FACE SLIP-ON FLANGE - CS			
	3	1		4" x 1/2" THREAOLET	THREAOLET 3000# - CS			
	2	1		4" x 150# SLIP-ON FLANGE	SLIP-ON FLANGE CS			
	1	1	SLFFPD7EA-721-01	PIPE	4" - Sch40 CS PIPE SEAMLESS		7.000 in	
ITEM	QTY	PART NUMBER	DESCRIPTION	Material	THICKNESS	LENGTH	WIDTH	

BILL OF MATERIAL									
STEEL PRESERVED. RETIARY RY OF AND IS CE WITH AT IT OR USED FOR WHICH EDIATELY SUBJECT TO NS OF ANY ORDER WHICH IS DRAWING.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS			DRAWN S. Boerckel CHECKED J. BALLEW QA B. MADDUX REVIEWER	6/28/2010 6/29/2010 9/21/2010	 2201 ProEnergy Blvd SEDALIA, MISSOURI 65201 USA PHONE: 1-800-829-5100 FAX: 1-800-829-1100			
	X.X ± 0.10 X.XX ± 0.06 X.XXX ± 0.03 HOLE DIA ± 0.03 ANGLES ± 0.50° SURFACE <u>HFS-SF</u>			PROJECT NO CUSTOMER		TITLE STRAINER INLET SPOOL WELDMENT LIQUID FUEL FORWARDING PUMP SKID-7EA			
	SQUARENESS ± 0.06 DO NOT SCALE DRAWING			JOB NO		SIZE D	ML: 	DWG NO SLFFPD7EA-721	REV B
						SCALE: 1/2" = 1" WEIGHT: 31 lbmass		SHEET 1 OF 1	

NOTES:

1. WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
2. WELDS ARE TO BE GREATER THAN OR EQUAL TO THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN THE WORK AREA
3. ALL MATERIAL FOR CARBON STEEL TUBING SHALL BE ASTM A554, WELDED ASTM A249, SEAMLESS ASTM A269, PIPE ASTM A312 UNLESS OTHERWISE STATED. SHAPES SHALL CONFORM TO ASTM A276.
4. DO NOT PAINT INTERNALLY OR EXTERNALLY THREADED PARTS OR PARTS WITH FINISHED SURFACES THAT HAVE BEEN MACHINED FOR TIGHT TOLERANCE FITUP.
5. PAINT FINISH:
SEE GENERAL ARRANGEMENT DRAWING AND OR WORK ORDER FOR PAINT TYPE AND COLOR


B	ADD WPS & ITEM-4	S. Boerckel	9/21/2010	J. BALLEW	B. MADDUX
A	RELEASED FOR FABRICATION	S. Boerckel	6/28/2010	J. BALLEW	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					



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RETURNED ON DEMAND, AND IS SUBJECT TO
ALL OTHER TERMS AND CONDITIONS OF ANY
WRITTEN AGREEMENT OR PURCHASE ORDER WHICH
INCORPORATES OR RELATES TO THIS DRAWING.

UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	<u>HFS-SF</u>
✓	
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN S. Boerckel		6/28/2010
CHECKED J. BALLEW		6/29/2010
QA B. MADDUX		9/21/2010
REVIEWER		
PROJECT NO		
CUSTOMER		
JOB NO		

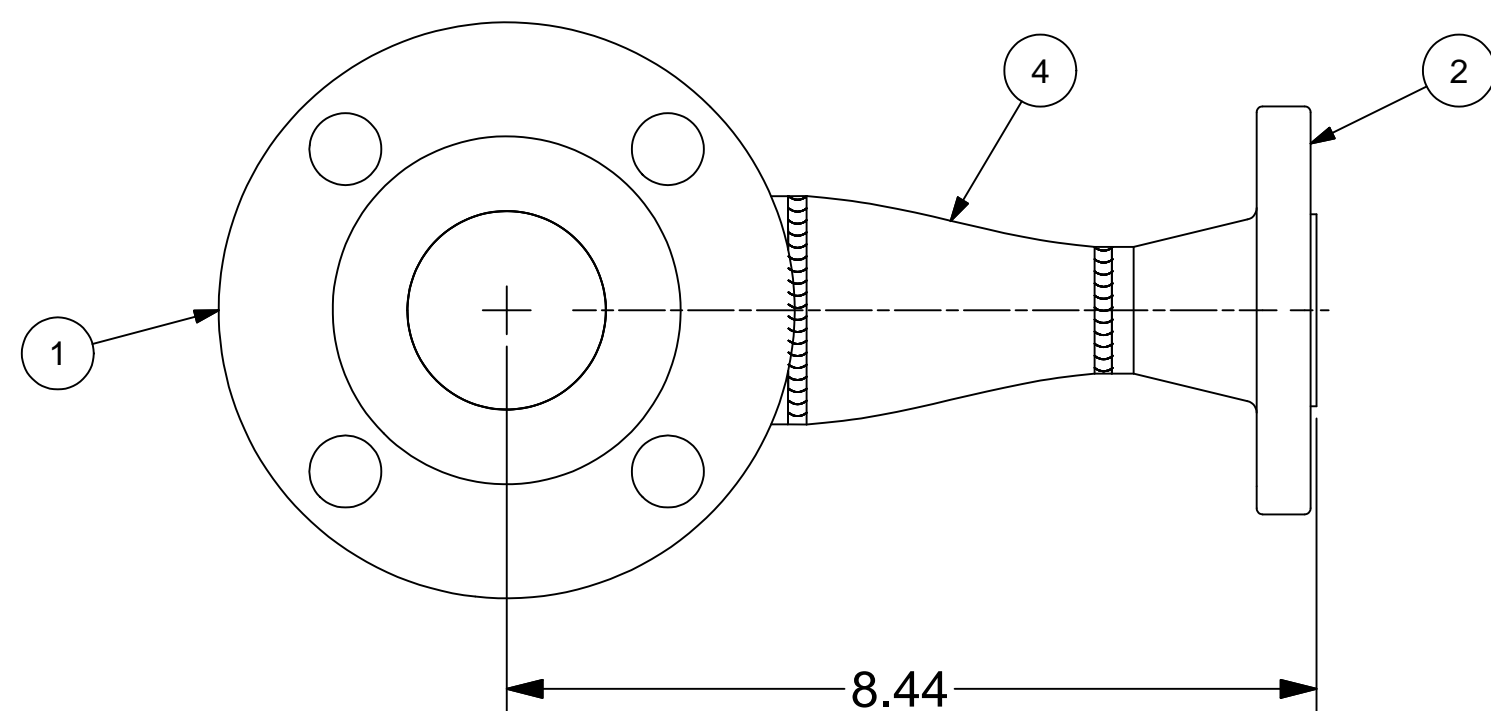
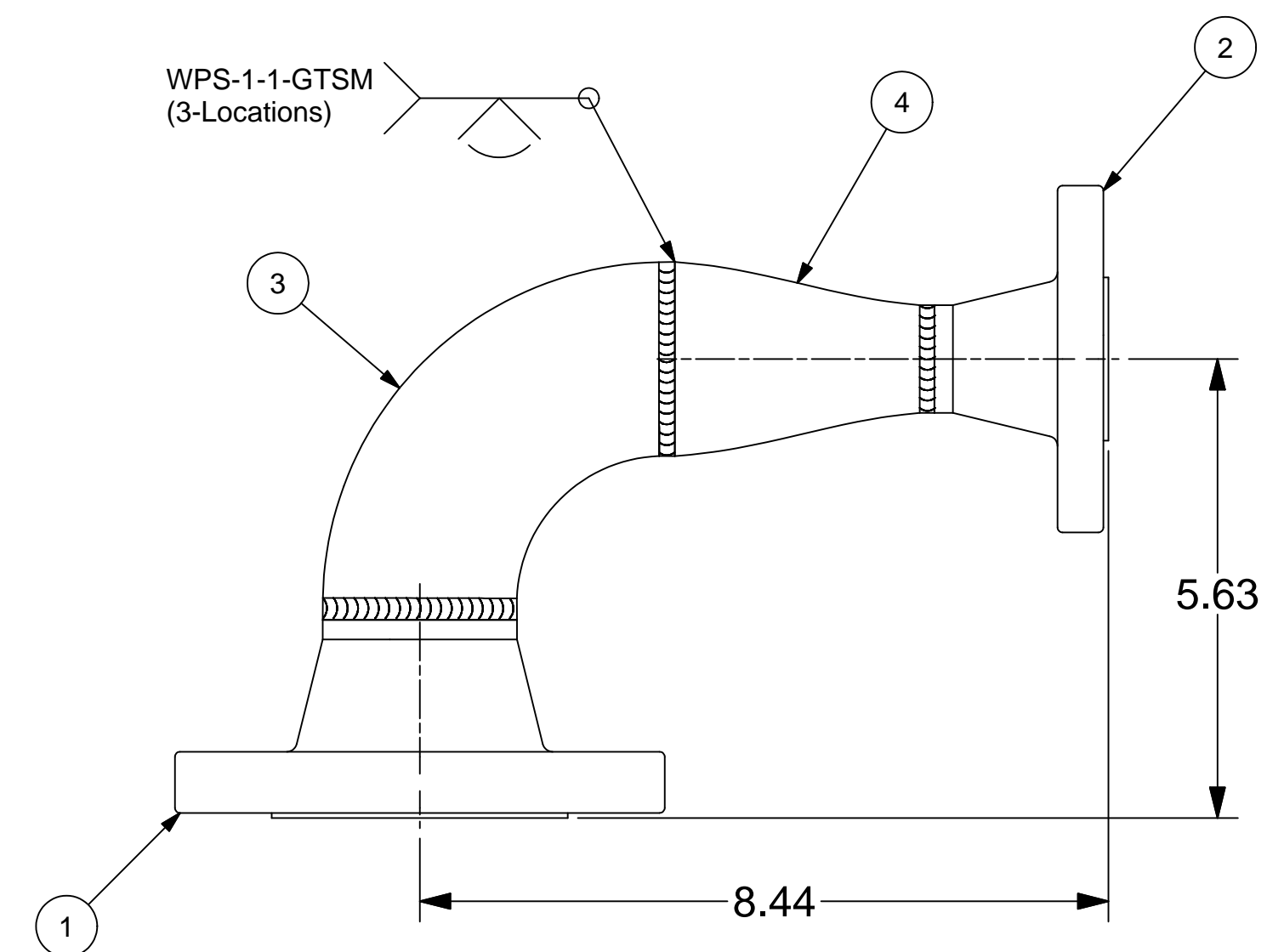
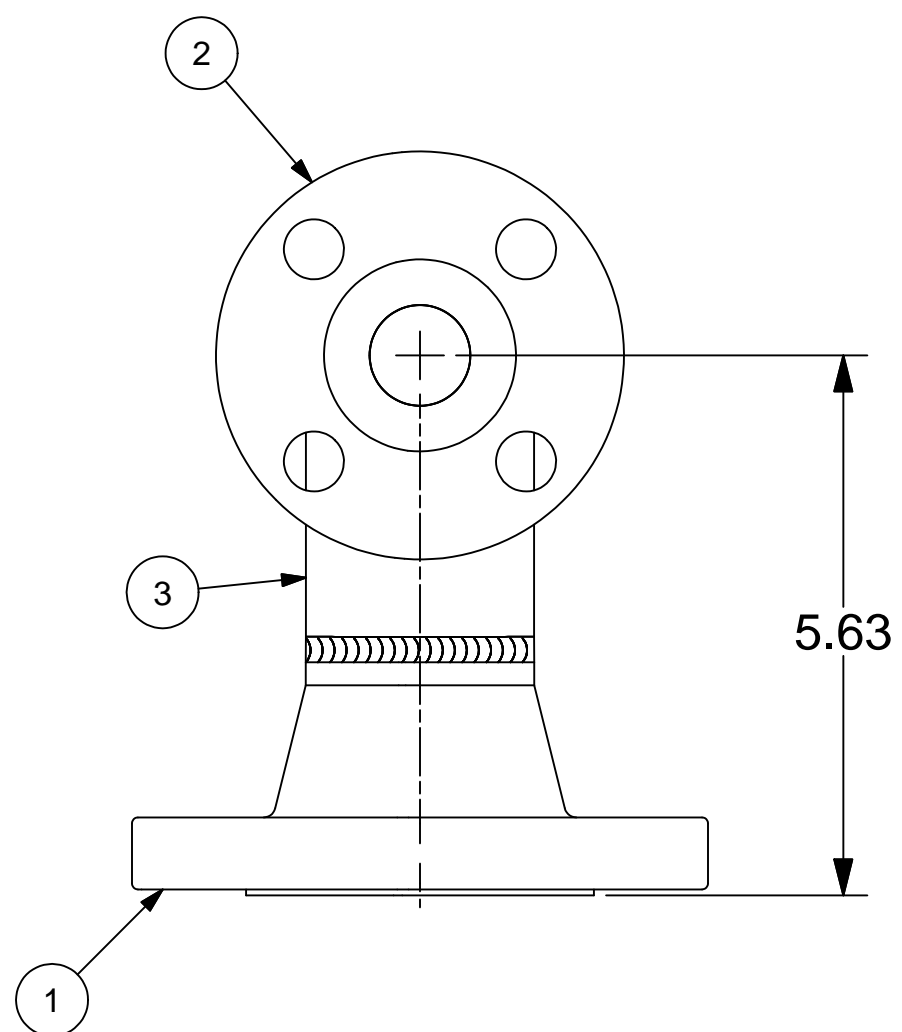
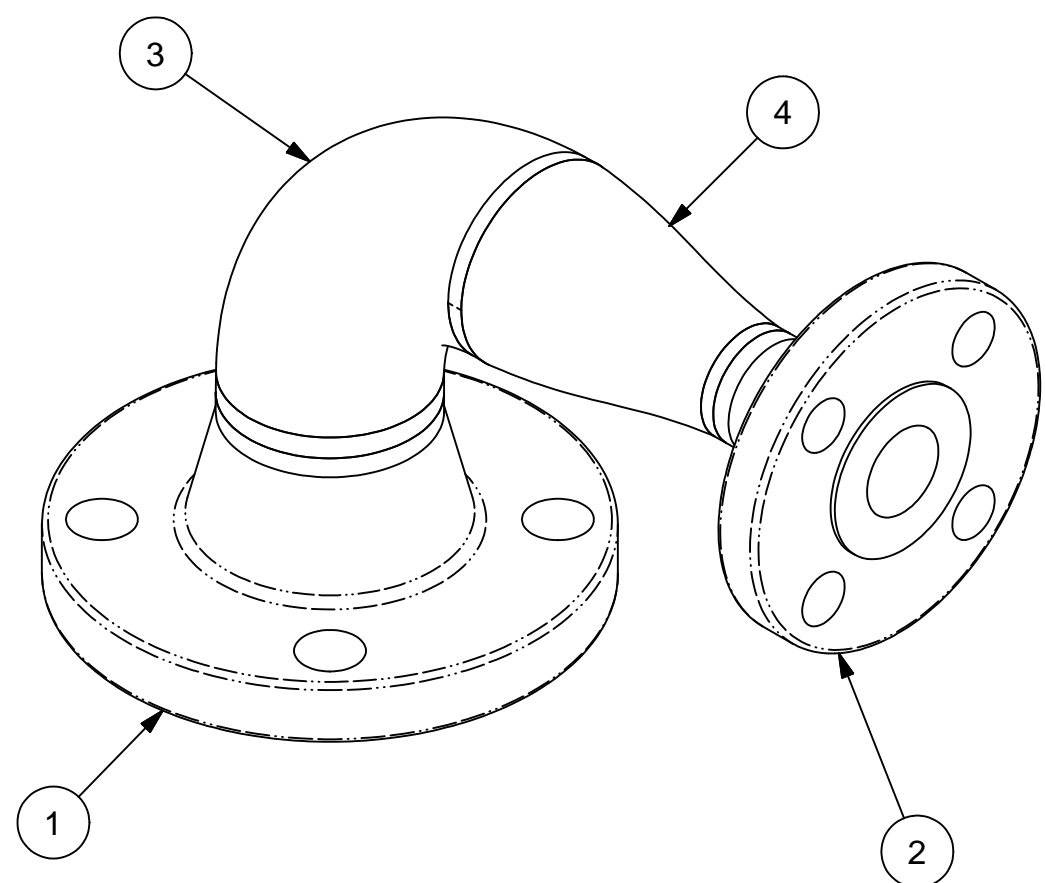
 ProEnergy SERVICES.		2501 ProEnergy Blvd SEVENA, MISSOURI 65231 USA PHONE: 1-800-829-5100 FAX: 1-800-829-1180	
TITLE STRAINER INLET SPOOL WELDMENT LIQUID FUEL FORWARDING PUMP SKID-7EA			
SIZE	ML:	DWG NO	REV
D		SLFFPD7EA-721	B
SCALE: 1/2"=1"		WEIGHT: 31 lbmass	SHEET 1 OF 1

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SERVICES


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SEDALIA, MISSOURI 65301 USA
PHONE: 1-800-829-5100
FAX: 1-800-829-1160

A

A



4	1		2" x 1" Sch40 Concentric Reducer	Sch40 CONCENTRIC BUTT WELD REDUCER CS			
3	1		2" x 90Deg LONG RADIUS ELBOW	Sch40 ELBOW CS			
2	1		1" x 150# WELD NECK FLANGE	WELD NECK FLANGE CS			
1	1		2" x 150# WELD NECK FLANGE	WELD NECK FLANGE CS			
ITEM	QTY	PART NUMBER	DESCRIPTION	Material	THICKNESS	LENGTH	WIDTH

UNLESS OTHERWISE SPECIFIED		DATE OF MATERIAL		 <div> <div> <div>3201 ProEnergy Blvd</div> <div>SECALIA, MISSOURI 65081-1504</div> <div>PHONE: 1-800-829-5100</div> <div>FAX: 1-800-829-5180</div> </div> </div>	
DIMENSIONS ARE IN INCHES		DRAWN S. Boerckel 6/28/2010		<div>TITLE</div> <div>ALTERNATE DISCHARGE SPOOL WELDMENT</div> <div>LIQUID FUEL FORWARDING PUMP SKID-7EA</div>	
TOLERANCES ON DECIMALS		CHECKED J. BALLEW 6/29/2010			
X.X ±0.10		QA CA 9/21/2010			
X.XX ±0.06		B. MADDUX REVIEWER			
X.XXX ±0.03					
HOLE DIA ±0.03		PROJECT NO			
ANGLES ±0.50°		CUSTOMER			
SURFACE <u>HFS-SF</u>				<div>SIZE D ML: DWG NO SLFFPD7EA-741</div> <div>REV B</div>	
SQUARENESS ±0.06					
DO NOT SCALE DRAWING		JOB NO		<div>SCALE: 1/2"=1' WEIGHT: 11 lbmass</div> <div>SHEET 1 OF 1</div>	

B	ADD WPS	S. Boerckel	9/21/2010	J. BALLEW	B. MADDUX
A	RELEASED FOR FABRICATION	S. Boerckel	6/28/2010	J. BALLEW	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

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UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	√ <u>HFS-SF</u>
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN		
S. Boerckel		6/28/2010
CHECKED		
J. BALLEW		6/29/2010
QA		
B. MADDUX		9/21/2010
REVIEWER		
PROJECT NO		
CUSTOMER		
JOB NO		

TITLE			
ALTERNATE DISCHARGE SPOOL			
WELDMENT			
LIQUID FUEL FORWARDING PUMP SKID-7EA			
SIZE	ML:	DWG NO	REV
D		SLFFPD7EA-741	B
SCALE: 1/2"=1"		WEIGHT: 11 lbmass	SHEET 1 OF 1

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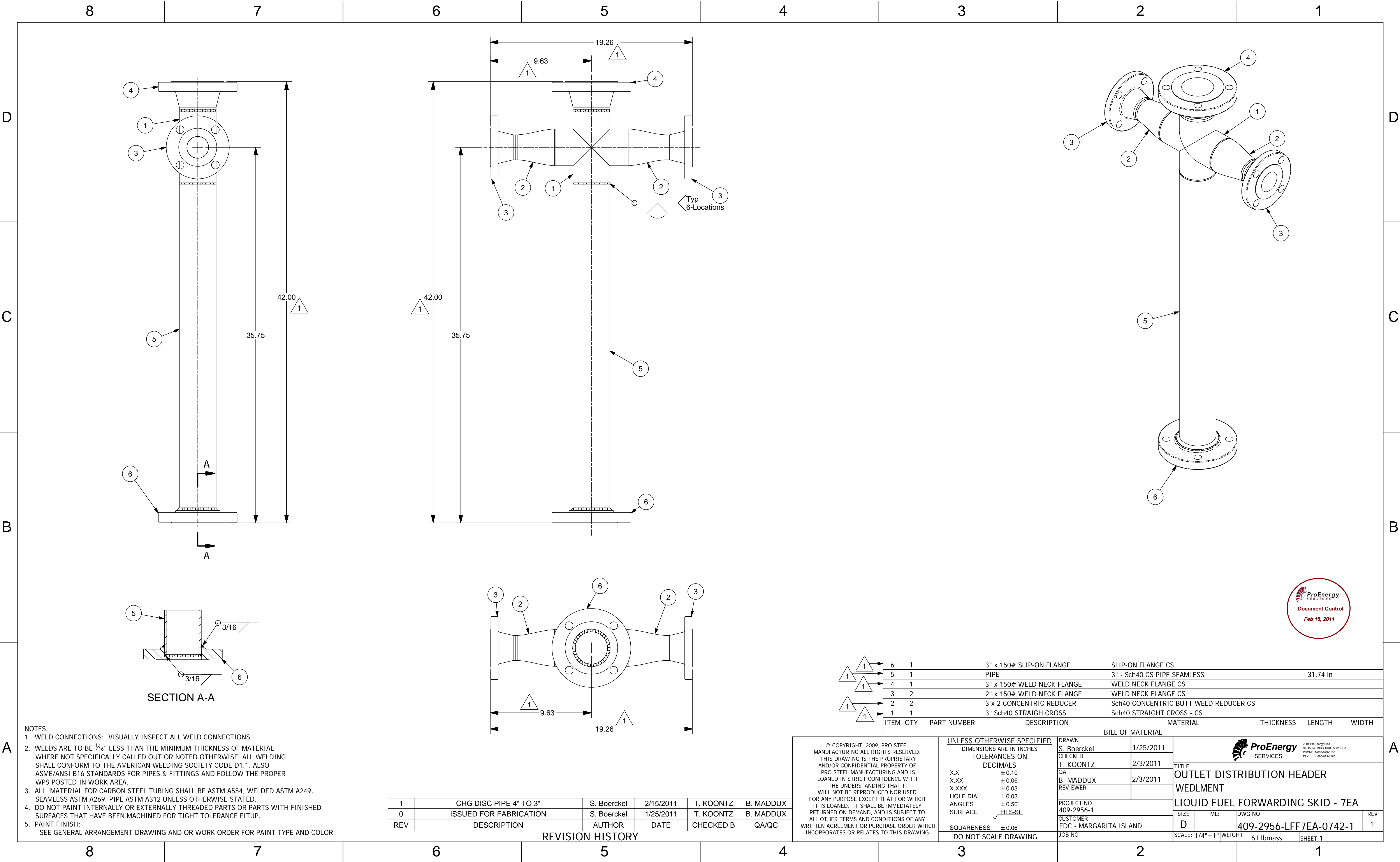
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FAX: 1-866-829-1160

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FAX: 1-800-829-1160

NOTES:

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2. WELDS ARE TO BE GREATER THAN OR EQUAL TO THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN THE WORK AREA
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4. DO NOT PAINT INTERNALLY OR EXTERNALLY THREADED PARTS OR PARTS WITH FINISHED SURFACES THAT HAVE BEEN MACHINED FOR TIGHT TOLERANCE FITUP.
5. PAINT FINISH:
SEE GENERAL ARRANGEMENT DRAWING AND OR WORK ORDER FOR PAINT TYPE AND COLOR





D

C

B

A

D

C

B

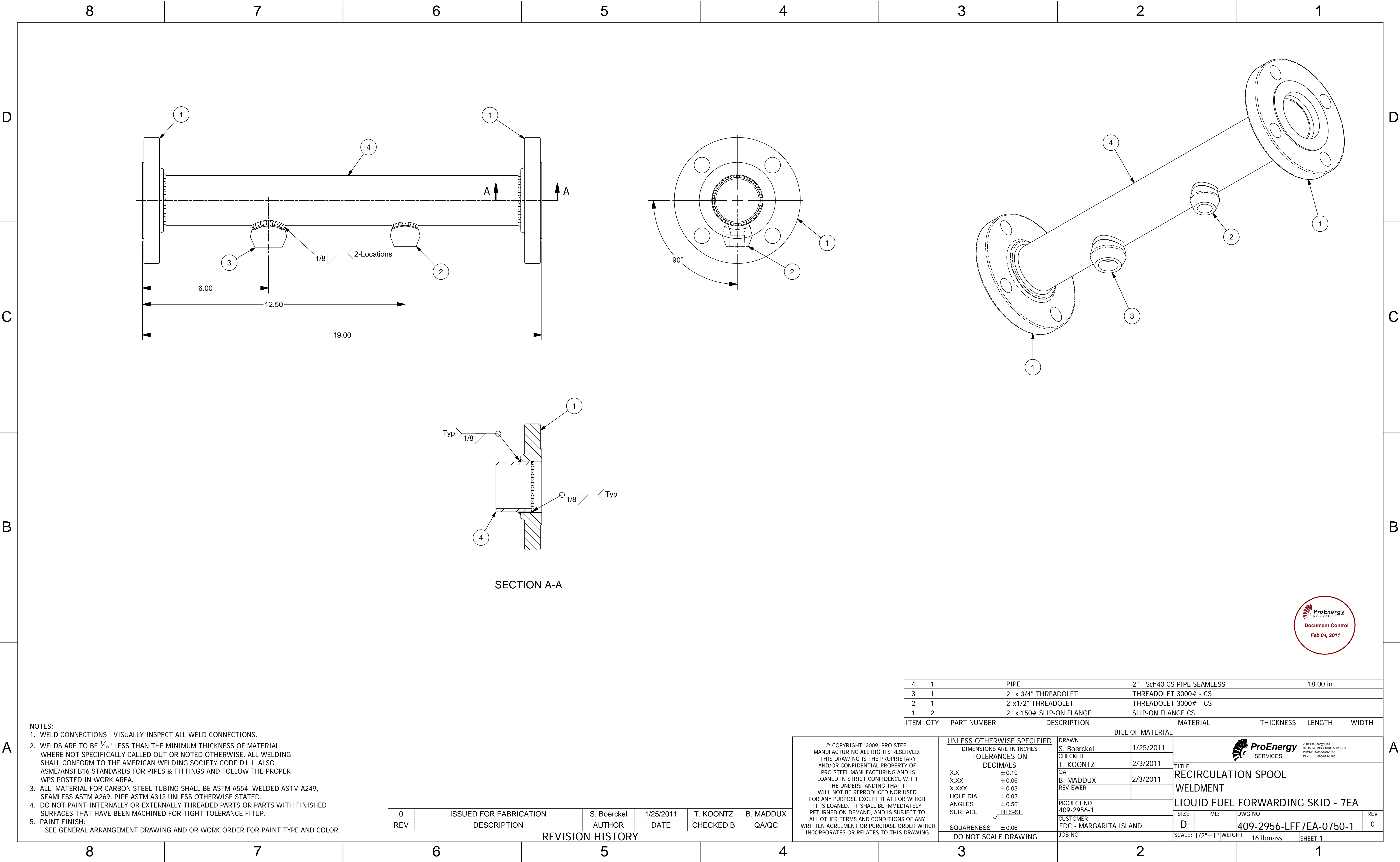
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- NOTES:
- WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
 - WELDS ARE TO BE 1/16" LESS THAN THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN WORK AREA.
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 - PAINT FINISH:
SEE GENERAL ARRANGEMENT DRAWING AND OR WORK ORDER FOR PAINT TYPE AND COLOR

1	CHG DISC PIPE 4" TO 3"	S. Boerckel	2/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	1/25/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					


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					PROJECT NO 409-2956-1 CUSTOMER EDC - MARGARITA ISLAND					
					JOB NO		SIZE D	ML: 409-2956-LFF7EA-0742-1	DWG NO 61 lbmass	REV 1
							SCALE: 1/4"=1"		SHEET 1	

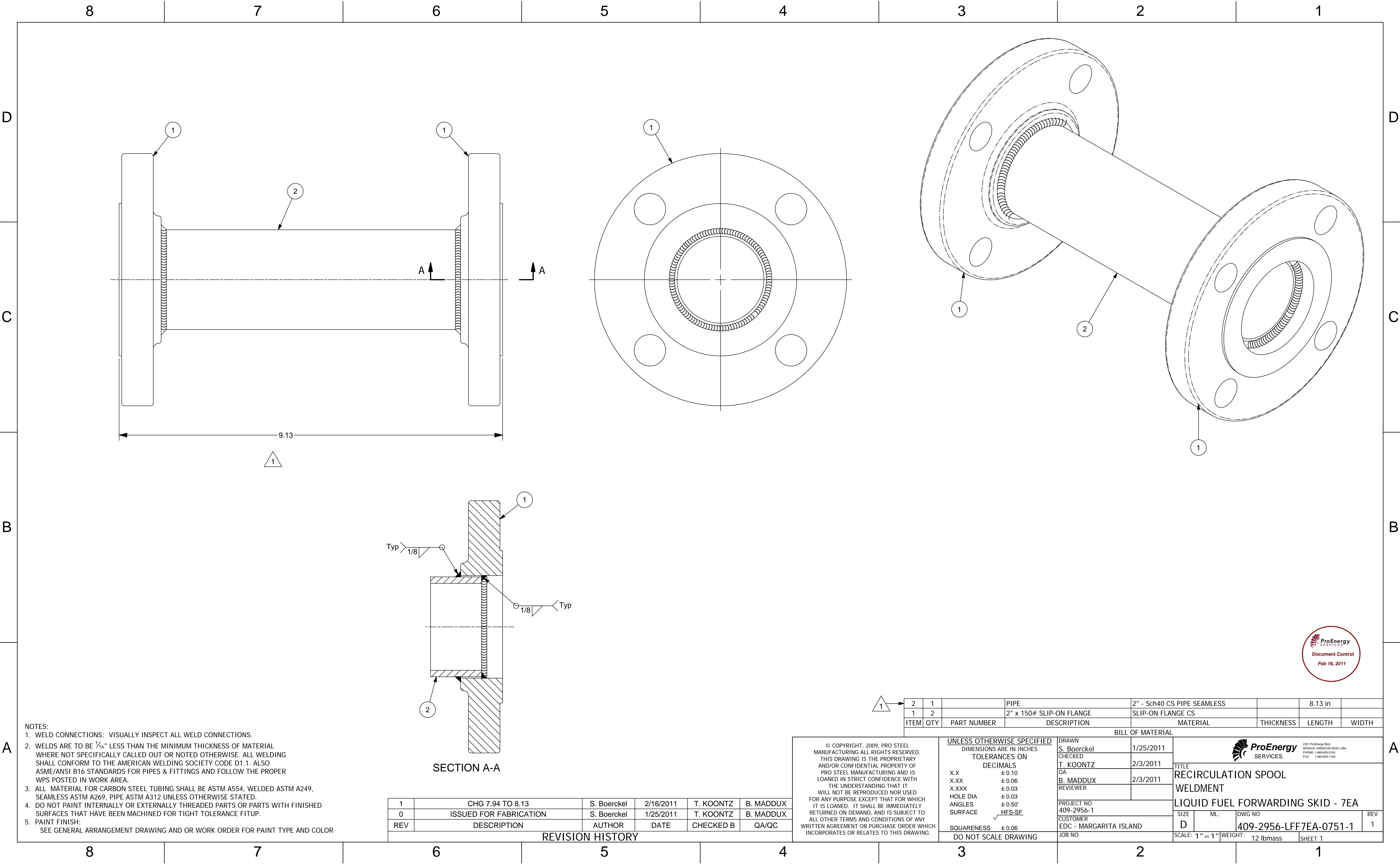


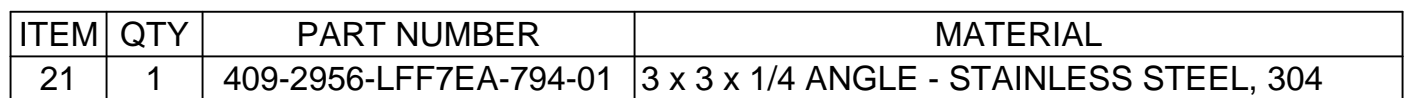
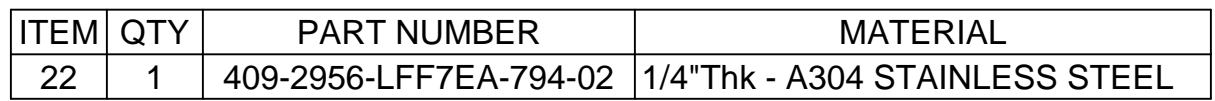
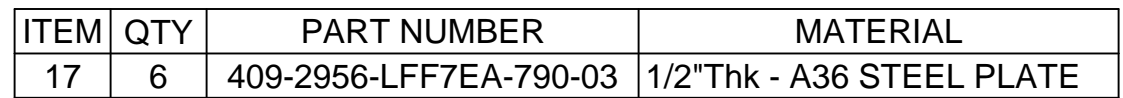



NOTES:
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5. PAINT FINISH:
SEE GENERAL ARRANGEMENT DRAWING AND OR WORK ORDER FOR PAINT TYPE AND COLOR

0	ISSUED FOR FABRICATION	S. Boerckel	1/25/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

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	X.X ± 0.10 X.XX ± 0.06 X.XXX ± 0.03 HOLE DIA ± 0.03 ANGLES ± 0.50° SURFACE <input checked="" type="checkbox"/> HFS-SF	QA B. MADDUX REVIEWER	2/3/2011	TITLE RECIRCULATION SPOOL WELDMENT		
	SQUARENESS ± 0.06 DO NOT SCALE DRAWING	PROJECT NO 409-2956-1 CUSTOMER EDC - MARGARITA ISLAND JOB NO		LIQUID FUEL FORWARDING SKID - 7EA		
		SIZE D	ML: D	DWG NO 409-2956-LFF7EA-0750-1		REV 0
		SCALE: 1/2" = 1" WEIGHT: 16 lbmass		SHEET 1		





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	SIZE D	ML: DWG NO 409-2956-LFF7EA-0790 -1	REV 0											
	SCALE: 1" = 1" WEIGHT: 4 lbmass		SHEET 1											

NOTES:

1. WELD CONNECTIONS: VISUALLY INSPECT ALL WELD CONNECTIONS.
2. WELDS ARE TO BE $\frac{1}{16}$ " LESS THAN THE MINIMUM THICKNESS OF MATERIAL WHERE NOT SPECIFICALLY CALLED OUT OR NOTED OTHERWISE. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1. ALSO ASME/ANSI B16 STANDARDS FOR PIPES & FITTINGS AND FOLLOW THE PROPER WPS POSTED IN WORK AREA.
3. ALL MATERIAL SHALL BE ASTM A36, UNLESS OTHERWISE STATED.

0	ISSUED FOR FABRICATION	S. Boerckel	1/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

REVISION HISTORY



ProEnergy
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PHONE: 1-660-829-5100
FAX: 1-660-829-1160

TITLE PIPE SUPPORTS

LIQUID FUEL FORWARDING SKID - 7EA

SIZE D	ML:	DWG NO 409-2956-LFF7EA-0790 -1	REV 0
SCALE: 1" = 1"		WEIGHT: 4 lbmass	SHEET 1

D

C

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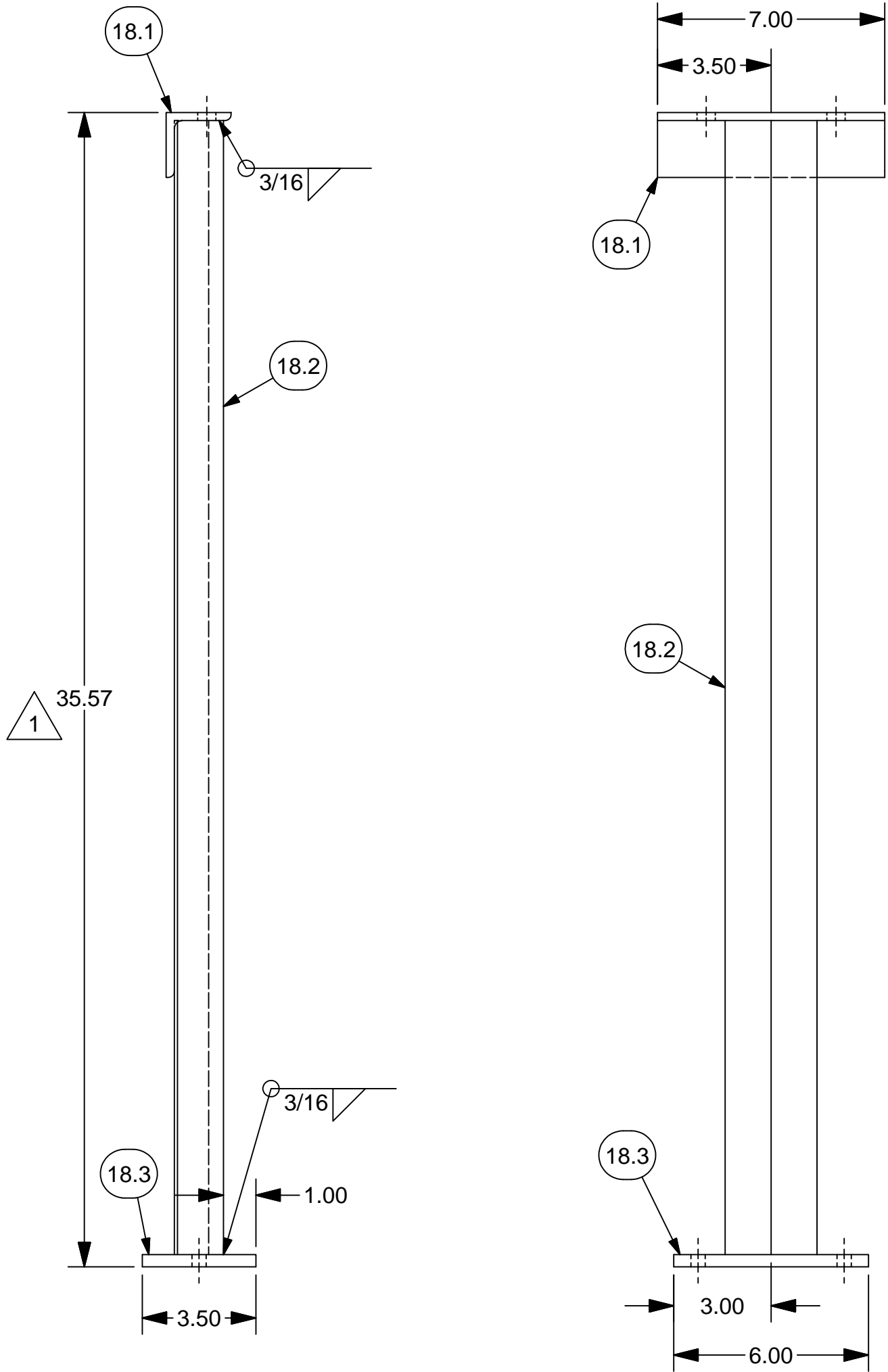
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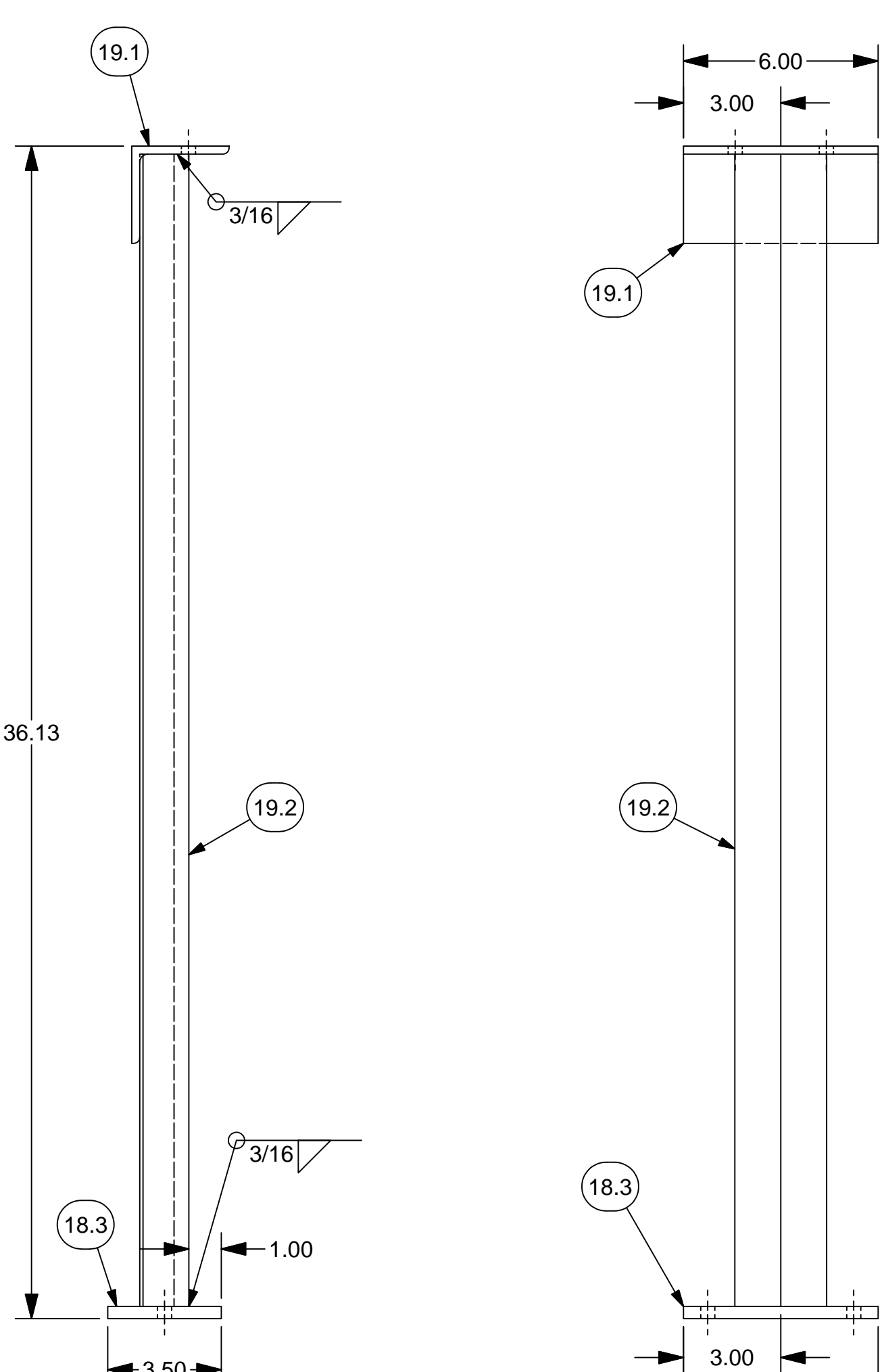
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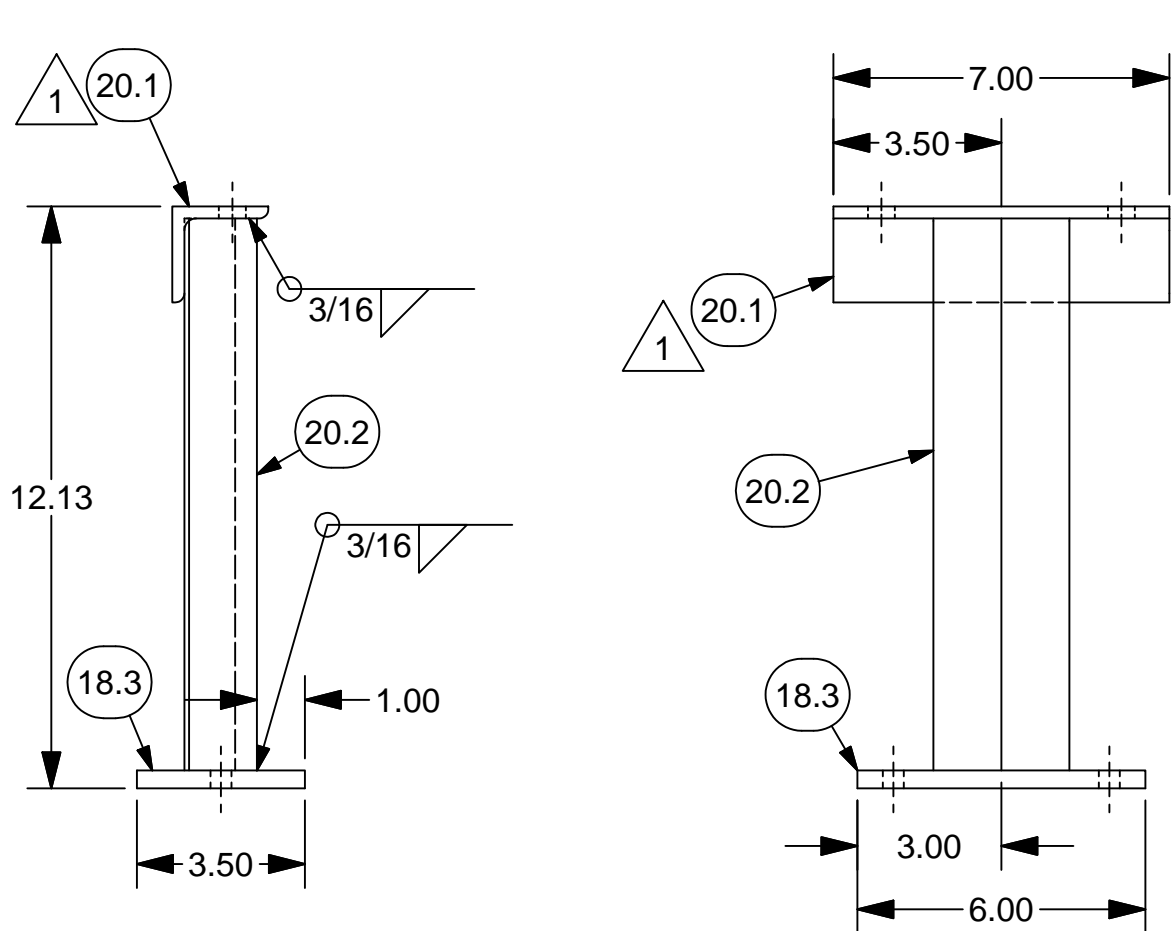
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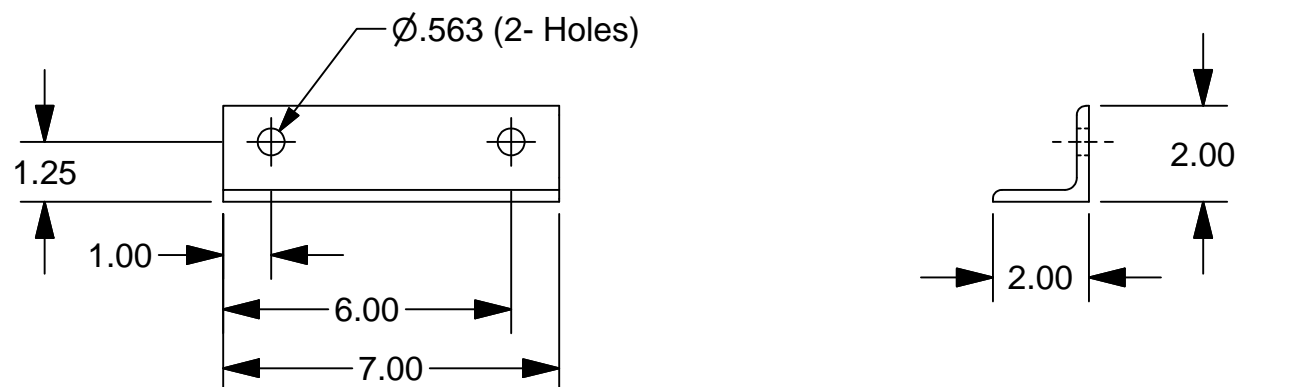
ITEM	QTY	PART NUMBER	MATERIAL
18	2	409-2956-LFF7EA-791	WELDMENT



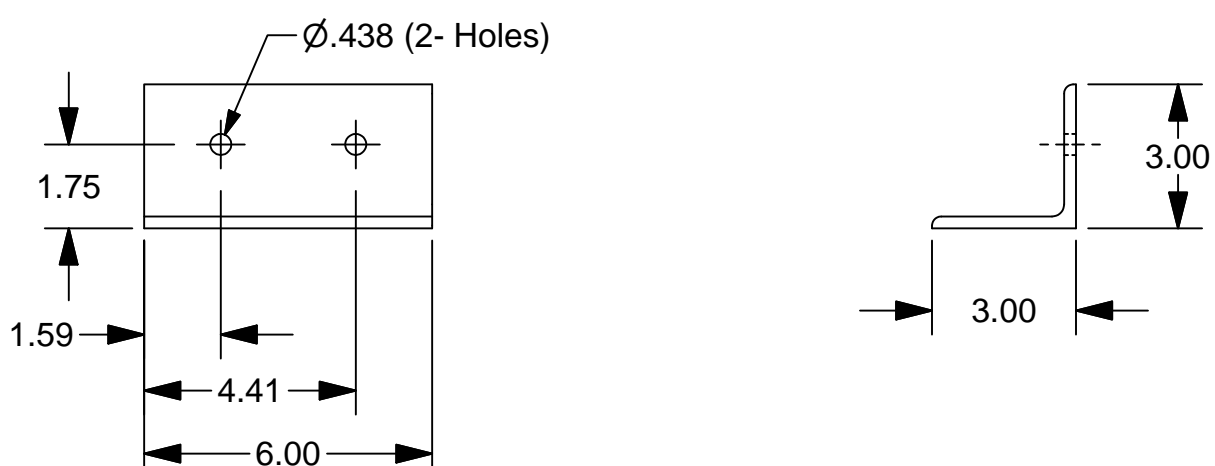
ITEM	QTY	PART NUMBER	MATERIAL
19	2	409-2956-LFF7EA-792	WELDMENT



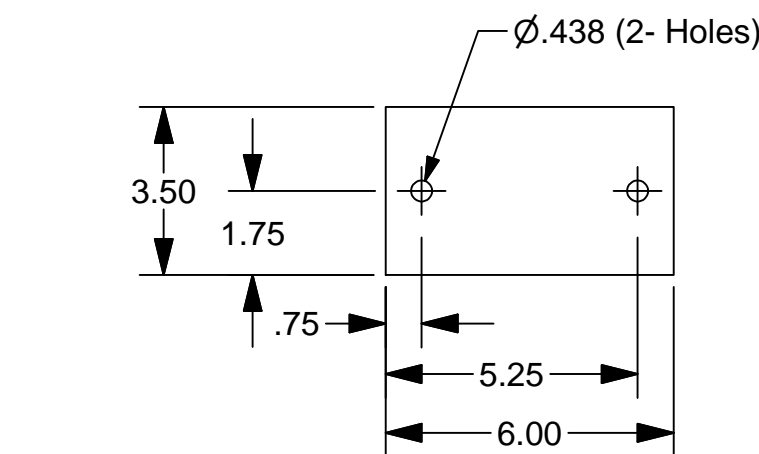
ITEM	QTY	PART NUMBER	MATERIAL
20	2	409-2956-LFF7EA-793	WELDMENT



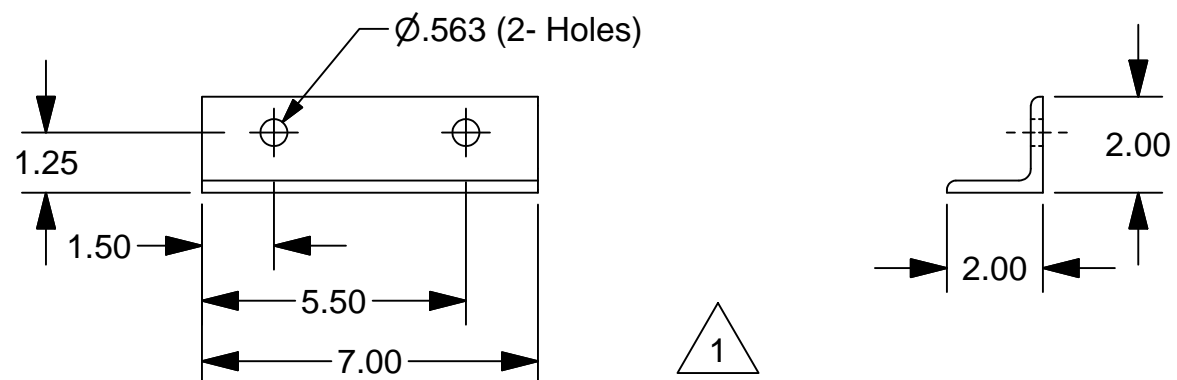
ITEM	QTY	PART NUMBER	MATERIAL
20.1	2	SLFFPD7EA-790-01	2 x 2 x 1/4 ANGLE - ASTM A36



ITEM	QTY	PART NUMBER	MATERIAL
19.1	2	409-2956-LFF7EA-792-02	3 x 3 x 1/4 ANGLE - STAINLESS STEEL, 304



ITEM	QTY	PART NUMBER	MATERIAL
18.3	6	409-2956-LFF7EA-790-02	3/8"Thk - A36 STEEL PLATE



ITEM	QTY	PART NUMBER	MATERIAL
18.1	2	409-2956-LFF7EA-790-01	2 x 2 x 1/4 ANGLE - ASTM A36

- NOTES:
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 - PAINT FINISH:
BLAST SSPC-SP10/NACE 2, 2 mil
2-COATS PHENICON HS (LIGHT GRAY)
PART-A (920A175)
PART-B (700-C-685)

1	CHG DISC PIPE 4" TO 3"	S. Boerckel	2/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	1/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

20.2	2	409-2956-LFF7EA-793-01	INLET PIPE STAND ANGLE	2 x 2 x 1/4 ANGLE - ASTM A36		11.50 in		SAW
20.1	2	SLFFPD7EA-790-01	4" PIPE MOUNT ANGLE	2 x 2 x 1/4 ANGLE - ASTM A36		7.00 in		SAW/PUNCH
20	2	409-2956-LFF7EA-793	INLET PIPE STAND	WELDMENT		12.13 in		WELD
19.2	2	409-2956-LFF7EA-792-01	DISCHARGE PIPE STAND ANGLE	2 x 2 x 1/4 ANGLE - ASTM A36		35.50 in		SAW
19.1	2	409-2956-LFF7EA-792-02	2" PIPE MOUNT ANGLE	3 x 3 x 1/4 ANGLE - STAINLESS STEEL, 304		6.00 in		SAW/PUNCH
19	2	409-2956-LFF7EA-792	2" PIPE STAND	WELDMENT		36.13 in		WELD
18.3	6	409-2956-LFF7EA-790-02	BASE PLATE	3/8"Thk - A36 STEEL PLATE	.375 in	6.00 in	3.50 in	BURN
18.2	2	409-2956-LFF7EA-791-01	DISCHARGE PIPE STAND ANGLE	2 x 2 x 1/4 ANGLE - ASTM A36		34.94 in		SAW
18.1	2	409-2956-LFF7EA-790-01	3" PIPE MOUNT ANGLE	2 x 2 x 1/4 ANGLE - ASTM A36		7.00 in		SAW/PUNCH
18	2	409-2956-LFF7EA-791	DISCHARGE PIPE STAND	WELDMENT		35.08 in		WELD
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	THICKNESS	LENGTH	WIDTH	Process



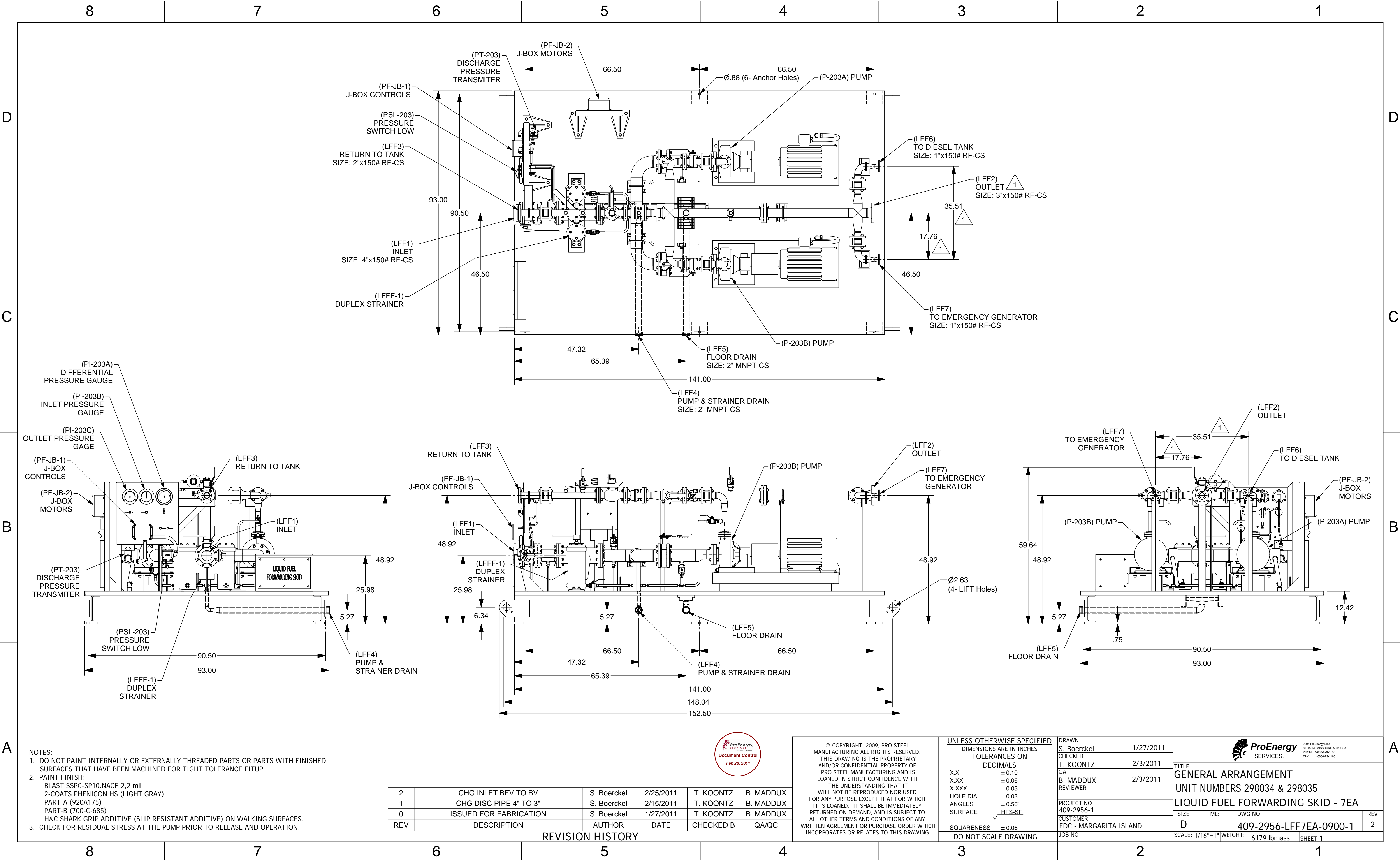
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UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	HFS-SF
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

DRAWN S. Boerckel	1/27/2011
CHECKED T. KOONTZ	2/3/2011
QA B. MADDUX	2/3/2011
REVIEWER	
PROJECT NO 409-2956-1	
CUSTOMER EDC - MARGARITA ISLAND	
JOB NO	

TITLE PIPE SUPPORTS WELDMENTS LIQUID FUEL FORWARDING SKID - 7EA			
SIZE D	ML:	DWG NO 409-2956-LFF7EA-0791-1	REV 1
SCALE: 1/4"=1" WEIGHT: 69 LBS TOTAL SHEET 1			

87654321



D

C

B

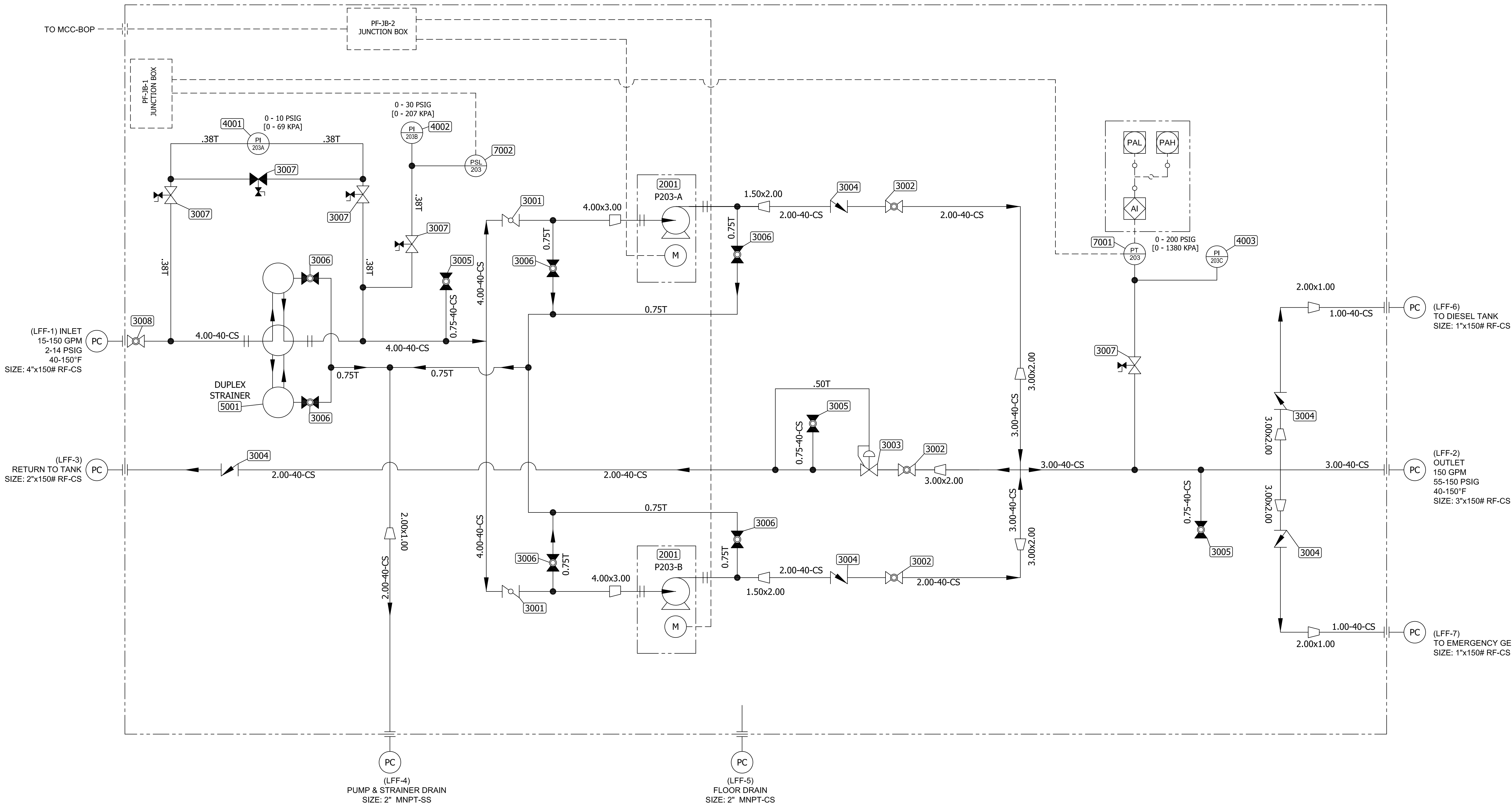
A

D

C

B

A




REV	DESCRIPTION	AUTHOR	DATE	CHECKED	QA/QC
2	CHG INLET BFV TO BV	S. Boerckel	02/24/2011	T. KOONTZ	B. MADDUX
1	CHG DISC PIPE 4" TO 3"	S. Boerckel	02/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	01/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED	QA/QC
REVISION HISTORY					

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UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS
X.X ± 0.10
X.XX ± 0.06
X.XXX ± 0.03
HOLE DIA ± 0.03
ANGLES ± 0.50°
SURFACE √ HFS-SF
SQUARENESS ± 0.06
DO NOT SCALE DRAWING

DRAWN	S. Boerckel	01/27/2011
CHECKED	T. KOONTZ	02/03/2011
QA	B. MADDUX	02/03/2011
REVIEWER		
PROJECT NO	409-2956-1	
CUSTOMER	EDC - MARGARITA ISLAND	
JOB NO		



201 ProEnergy Blvd
SEDALIA, MISSOURI 65301 USA
PHONE: 1-660-828-1100
FAX: 1-660-828-1160


TITLE P & ID SCHEMATIC UNIT NUMBERS 298034 & 298035 LIQUID FUEL FORWARDING SKID - 7EA			
SIZE D	ML:	DWG NO 409-2956-LFF7EA-0910-1	REV 2
SCALE: Not to Scale		SHEET 1	

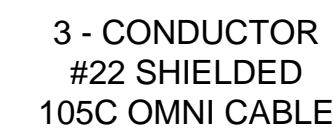
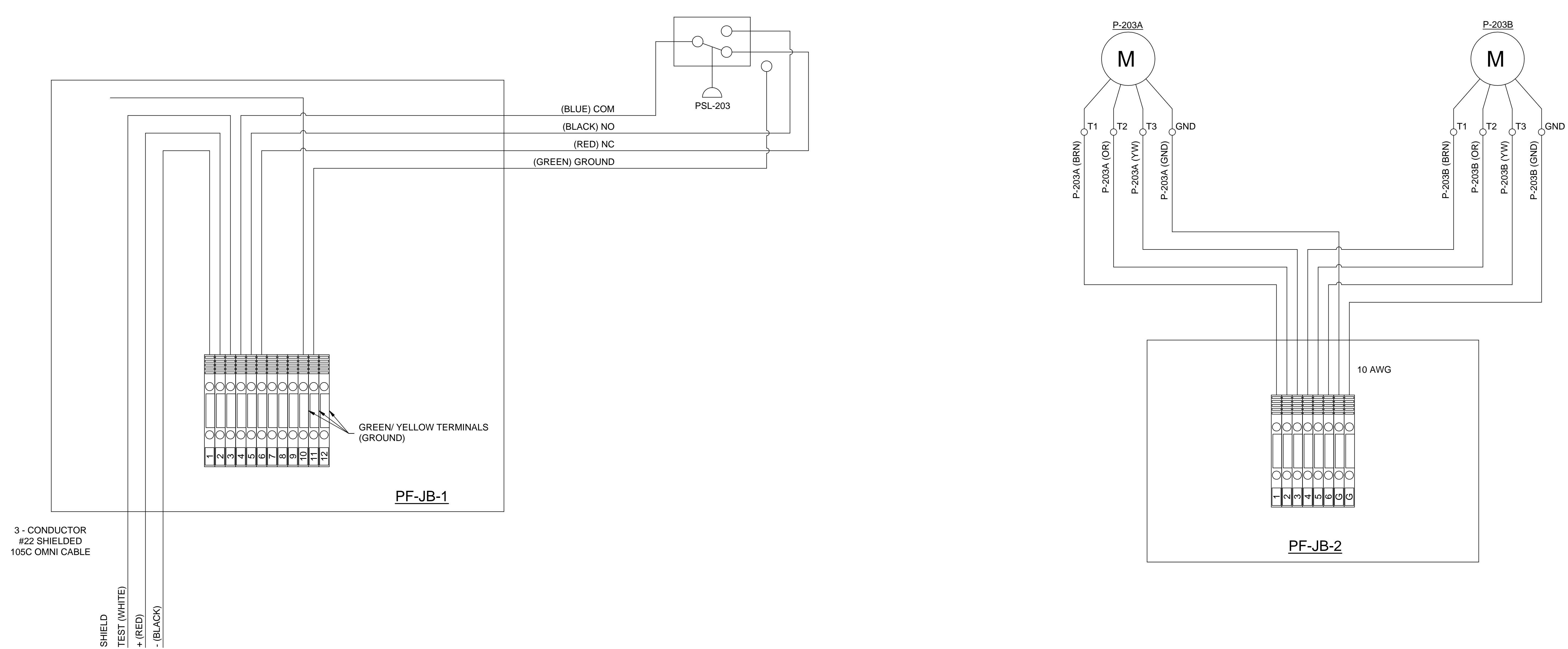
ITEM	TAG No	DEVICE	QTY	DESCRIPTION	CATALOG No	MANUFACTURER
2001	P1-A P1-B	PUMP MOTOR ASSEMBLY	2	MODEL 1K3X1.5-8RV DURCO MARK 3 PUMP (20HP) w/150# ANSI FF FLANGES (Type A BASE)	1K3x1.5-82RV M3 ST	FLOWSERVE
3001	LFFV-1A LFFV-1B	BUTTERFLY VALVE - INLET (PUMP P203-A) BUTTERFLY VALVE - INLET (PUMP P203-B)	2	4" x 150# CS FS DYNACENTRIC HP BFV SERIES B5100, CLASS 150		COOPER CAMERON
3002	LFFV-2A LFFV-2B LFFV-2C	BALL VALVE - DISCHARGE (PUMP P203-A) BALL VALVE - DISCHARGE (PUMP P203-B) BALL VALVE - RETURN TO TANK	3	2" x 150# CS FS BALL VALVE - ANSI		
3003	LFFV-3	BACKP PRESSURE VALVE	1	2" x 150# CS FS BACKP PRESSURE VALVE - 63EG	2x63EG	FISHER
3004	LFFV-4A LFFV-4B LFFV-4C LFFV-4D LFFV-4E	CHECK VALVE - DISCHARGE (PUMP P203-A) CHECK VALVE - DISCHARGE (PUMP P203-B) CHECK VALVE - RETURN TO TANK CHECK VALVE - DISCHARGE (DEISEL TANK) CHECK VALVE - DISCHARGE (EMERGENCY GENERATOR)	5	2" DUO CHECK VALVE		
3005	LFFV-5A LFFV-5B LFFV-5C	BALL VALVE - VENT (INLET) BALL VALVE - VENT (DISCHARGE) BALL VALVE - VENT (RETURN TO TANK)	3	3/4" FNPT FS BALL VALVE	SS-A65TF12	SWAGELOK
3006	LFFV-6A LFFV-6B LFFV-6C LFFV-6D LFFV-6E LFFV-6F	BALL VALVE - INLET DRAIN (PUMP P203-A) BALL VALVE - INLET DRAIN (PUMP P203-B) BALL VALVE - DISCHARGE DRAIN (PUMP P203-A) BALL VALVE - DISCHARGE DRAIN (PUMP P203-B) BALL VALVE - DRAIN (STRAINER) BALL VALVE - DRAIN (STRAINER)	4	3/4" FS SS SWAGE BALL VALVE	SS-A65TS12	SWAGELOK
3007	LFFV-7A LFFV-7B LFFV-7C LFFV-7D LFFV-7E	GAGE VALVE - INLET PRESSURE GAGE VALVE - DISCHARGE PRESSURE GAGE VALVE - PRESSURE DIFFERENTIAL UP STREAM GAGE VALVE - PRESSURE DIFFERENTIAL DOWN STREAM GAGE VALVE - PRESSURE DIFFERENTIAL EQUALIZER	5	1/4" FNPT GAGE VALVE w/ STEM TEST		DRAGON
3008	LFFV-8	BALL VALVE - INLET	1	4" x 150# CS-FS BALL VALVE - ANSI		
4001	PI-203A	DIFFERENTIAL PRESSURE GAGE	1	4.5" GAGE FLUSH MOUNT BACK CONN. 1/4" MNPT 0-10 PSIG		MID-WEST
4002	PI-203B	SUCTION PRESSURE GAGE	1	4.5" GAGE FLUSH MOUNT LOWER CONN. 1/4" MNPT 0-30 PSIG	7112-G030	DWYER
4003	PI-203C	DISCHARGE PRESSURE GAGE	1	4.5" GAGE FLUSH MOUNT LOWER CONN. 1/4" MNPT 0-200 PSIG	7112-G200	DWYER
5001	LFFF-1	DUPLEX STRAINER	1	DUPLEX STRAINER CAST IRON w/4" x 150# FLANGED CONN. (1/16" PERF. BASKETS)		
7001	PT-203	PRESSURE TRANSMITTER	1	ROSEMOUNT 3051 SERIES PT 0-200 PSIG	3051TG2A2A21AB4C6	ROSEMOUNT
7002	PSL-203	PRESSURE SWITCH LOW	1	PRESSURE & VACUUM SWITCH 40-0-40 IN WC	52NN-K117-M1-B2A-TT	SOR



Document Control
Feb 24, 2011

2	CHG INLET BFV TO BV	S. Boerckel	02/27/2011	T. KOONTZ	B. MADDUX
1	CHG DISC PIPE 4" TO 3"	S. Boerckel	02/15/2011	T. KOONTZ	B. MADDUX
0	ISSUED FOR FABRICATION	S. Boerckel	01/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

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			TITLE P & ID SCHEMATIC UNIT NUMBERS 298034 & 298035 LIQUID FUEL FORWARDING SKID - 7EA			
			PROJECT NO 409-2956-1 CUSTOMER EDC - MARGARITA ISLAND	SIZE D	ML: DWG NO 409-2956-LFF7EA-0910-2	REV 2
			JOB NO	SCALE: 1" = 6'-0"	WEIGHT:	
					SHEET 2	



SHIELD
TEST (WHITE)
+ (RED)
- (BLACK)

(BLUE) COM
(BLACK) NO
(RED) NC
(GREEN) GROUND

PSL-203

GREEN/ YELLOW TERMINALS
(GROUND)

PF-JB-1

10 AWG

PF-JB-2

P-203A

M

P-203A (BRN)

9

○ T

○

GND

P-203A (OR)

P-203A (YW)

P-203A (GND)

P-203B

M

P-203B (BRN)

T1

T2

 τ

GND

P-203B (OR)

P-203B (YW)

P-203B (GND)




0	ISSUED FOR FABRICATION	S. Boerckel	1/27/2011	T. KOONTZ	B. MADDUX
REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
REVISION HISTORY					

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UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	√ <u>HFS-SF</u>
SQUARENESS	± 0.06

DO NOT SCALE DRAWING

DRAWN S. Boerckel	1/27/2011
CHECKED T. KOONTZ	2/3/2011
QA B. MADDUX	2/3/2011
REVIEWER	
PROJECT NO 409-2956-1	
CUSTOMER EDC - MARGARITA ISLAND	
JOB NO	

 ProEnergy SERVICES.		2251 ProEnergy Blvd BIRMINGHAM, MISSISSIPPI 35203 USA PHONE: 1-800-829-5100 FAX: 1-800-829-1190	
TITLE			
ELECTRICAL SCHEMATIC			
UNIT NUMBERS 298034 & 298035			
LIQUID FUEL FORWARDING SKID - 7EA			
SIZE	ML:	DWG NO	REV
D		409-2956-LFF7EA-0920-1	0
SCALE: NONE	WEIGHT:	SHEET 1	

8	7	6	5	4	3	2	1
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A	B	C	D
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