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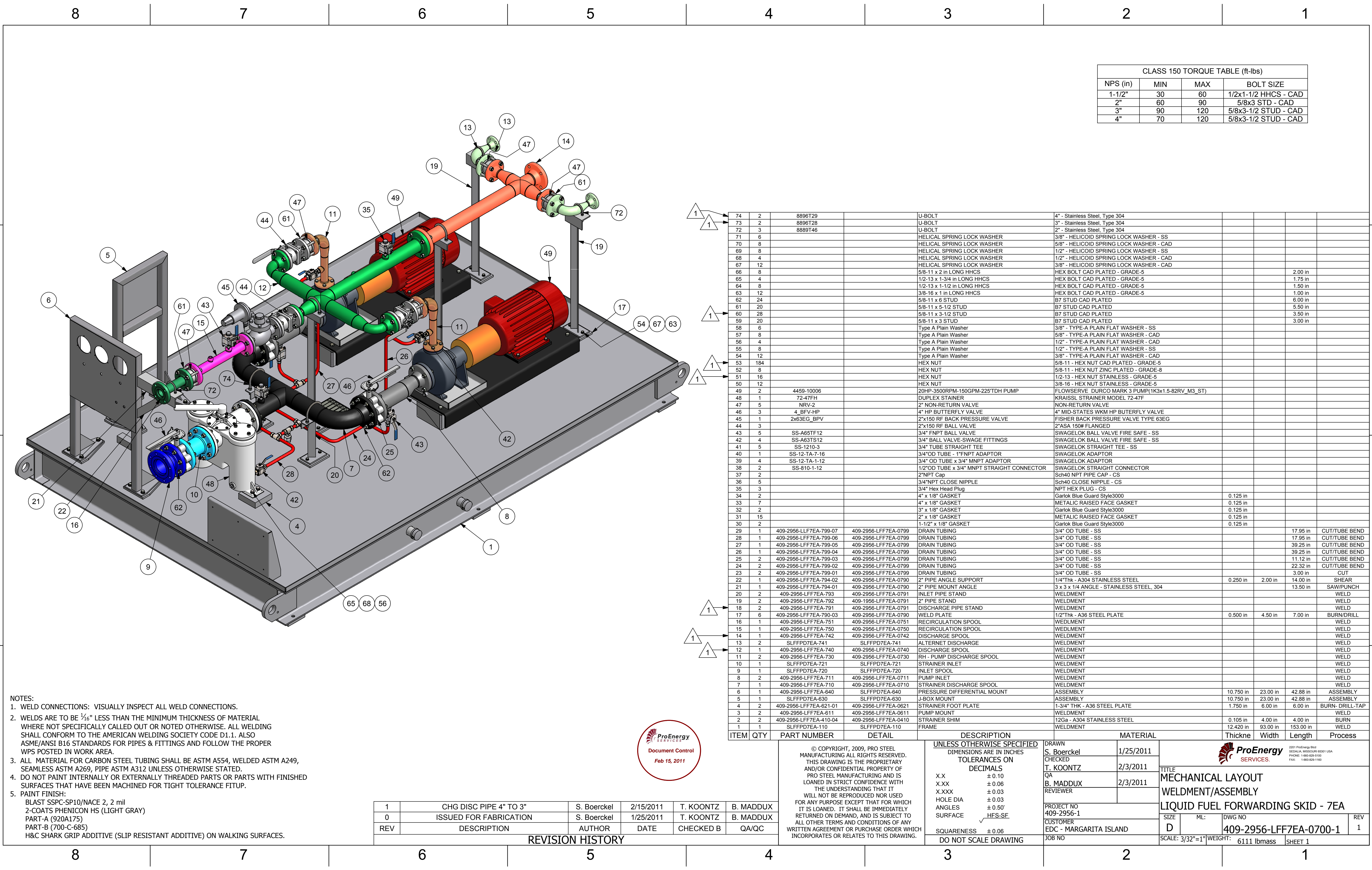
A

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.

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					

74	2	8896T29	U-BOLT	4" - Stainless Steel, Type 304					
73	2	8896T28	U-BOLT	3" - Stainless Steel, Type 304					
72	3	8896T46	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	
62	24		5/8-11 x 6 STUD	B7 STUD CAD PLATED				6.00 in	
61	20		5/8-11 x 5-1/2 STUD	B7 STUD CAD PLATED				5.50 in	
60	28		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	3	4_BFV-HP	4" HP BUTTERFLY VALVE	4" MID-STATES WKM HP BUTTERFLY VALVE					
45	1	2x63EG_BP	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	7		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	DRAIN TUBING	3/4" OD TUBE - SS				17.95 in	CUT/TUBE BEND
28	1	409-2956-LFF7EA-799-06	DRAIN TUBING	3/4" OD TUBE - SS				17.95 in	CUT/TUBE BEND
27	1	409-2956-LFF7EA-799-05	DRAIN TUBING	3/4" OD TUBE - SS				39.25 in	CUT/TUBE BEND
26	1	409-2956-LFF7EA-799-04	DRAIN TUBING	3/4" OD TUBE - SS				39.25 in	CUT/TUBE BEND
25	2	409-2956-LFF7EA-799-03	DRAIN TUBING	3/4" OD TUBE - SS				11.12 in	CUT/TUBE BEND
24	2	409-2956-LFF7EA-799-02	DRAIN TUBING	3/4" OD TUBE - SS				22.32 in	CUT/TUBE BEND
23	2	409-2956-LFF7EA-799-01	DRAIN TUBING	3/4" OD TUBE - SS				3.00 in	CUT
22	1	409-2956-LFF7EA-794-02	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	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	INLET PIPE STAND	WELDMENT					WELD
19	2	409-2956-LFF7EA-792	2" PIPE STAND	WELDMENT					WELD
18	2	409-2956-LFF7EA-791	DISCHARGE PIPE STAND	WELDMENT					WELD
17	6	409-2956-LFF7EA-790-03	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	RECIRCULATION SPOOL	WEDLMNT					WELD
15	1	409-2956-LFF7EA-750	RECIRCULATION SPOOL	WEDLMNT					WELD
14	1	409-2956-LFF7EA-742	DISCHARGE SPOOL	WELDMENT					WELD
13	2	SLFFPD7EA-741	ALTERNET DISCHARGE	WELDMENT					WELD
12	1	409-2956-LFF7EA-740	DISCHARGE SPOOL	WELDMENT					WELD
11	2	409-2956-LFF7EA-730	RH - PUMP DISCHARGE SPOOL	WELDMENT					WELD
10	1	SLFFPD7EA-721	STRAINER INLET	WELDMENT					WELD
9	1	SLFFPD7EA-720	INLET SPOOL	WELDMENT					WELD
8	2	409-2956-LFF7EA-711	PUMP INLET	WELDMENT					WELD
7	1	409-2956-LFF7EA-710	STRAINER DISCHARGE SPOOL	WELDMENT					WELD
6	1	409-2956-LFF7EA-640	PRESSURE DIFFERENTIAL MOUNT	ASSEMBLY	10.750 in	23.00 in	42.88 in		ASSEMBLY
5	1	SLFFPD7EA-630	J-BOX MOUNT	ASSEMBLY	10.750 in	23.00 in	42.88 in		ASSEMBLY
4	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
3	2	409-2956-LFF7EA-611	PUMP MOUNT	WELDMENT					WELD
2	2	409-2956-LFF7EA-410-04	STRAINER SHIM	12Ga - A304 STAINLESS STEEL	0.105 in	4.00 in	4.00 in		BURN
1	1	SLFFPD7EA-110	FRAME	WELDMENT	12.420 in	93.00 in	153.00 in		WELD
ITEM	QTY	PART NUMBER	DETAIL	DESCRIPTION	MATERIAL	Thickne	Width	Length	Process



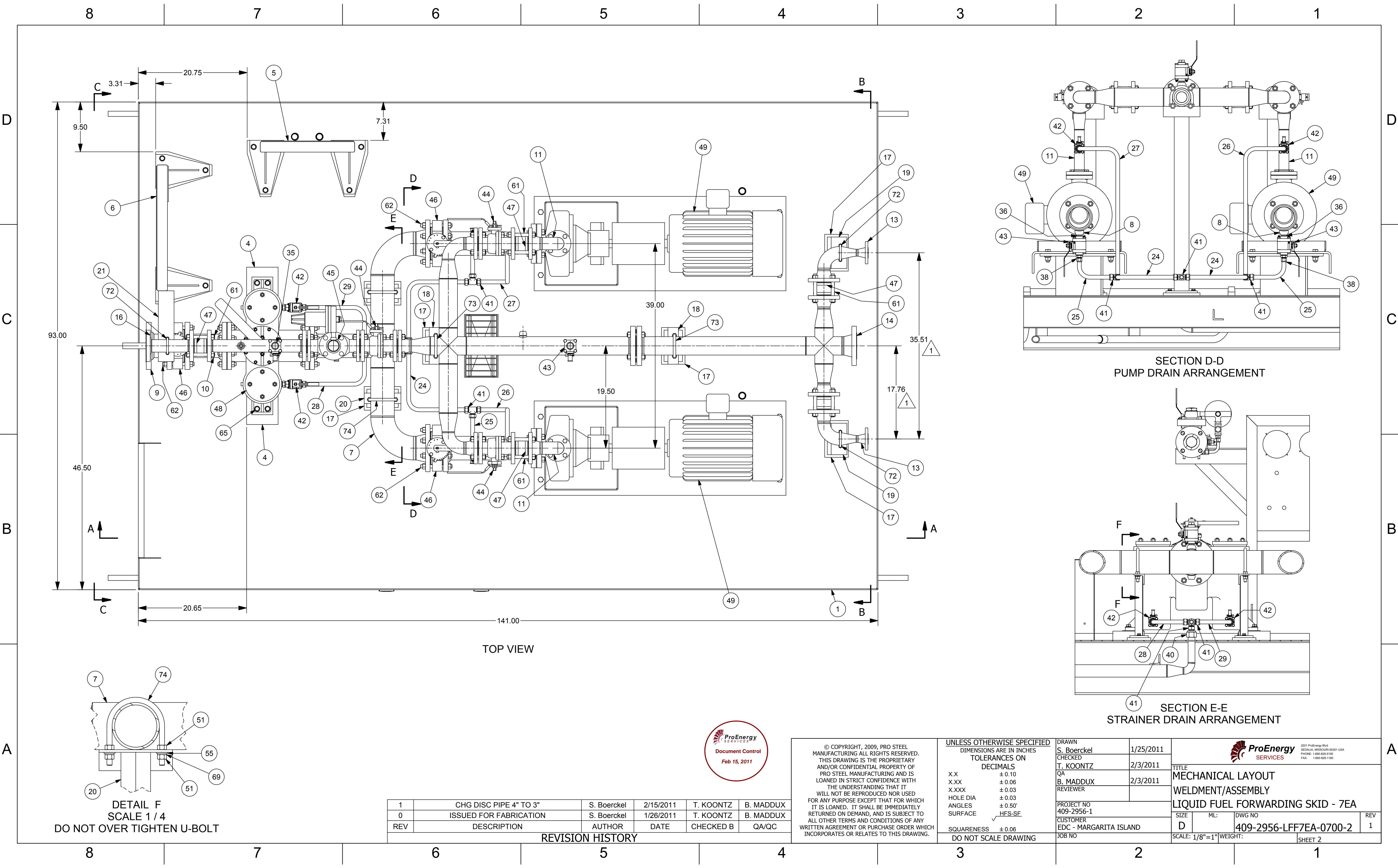
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UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS
X.X ± 0.10
X.XX ± 0.06
X.XXX ± 0.03
HOLE DIA ± 0.03
ANGLES ± 0.50°
SURFACE HFS-SF
SQUARENESS ± 0.06
DO NOT SCALE DRAWING

DRAWN S. Boerckel 1/25/2011
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: DWG NO 409-2956-LFF7EA-0700-1 REV 1
SCALE: 3/32"=1" WEIGHT: 6111 lbmass SHEET 1

ProEnergy SERVICES
2201 ProEnergy Blvd
SEALA, MISSOURI 65591 USA
PHONE: 1-800-829-5100
FAX: 1-800-829-1100



TOP VIEW

SECTION D-D
PUMP DRAIN ARRANGEMENT

SECTION E-E
STRAINER DRAIN ARRANGEMENT

DETAIL F
SCALE 1 / 4
DO NOT OVER TIGHTEN U-BOLT

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

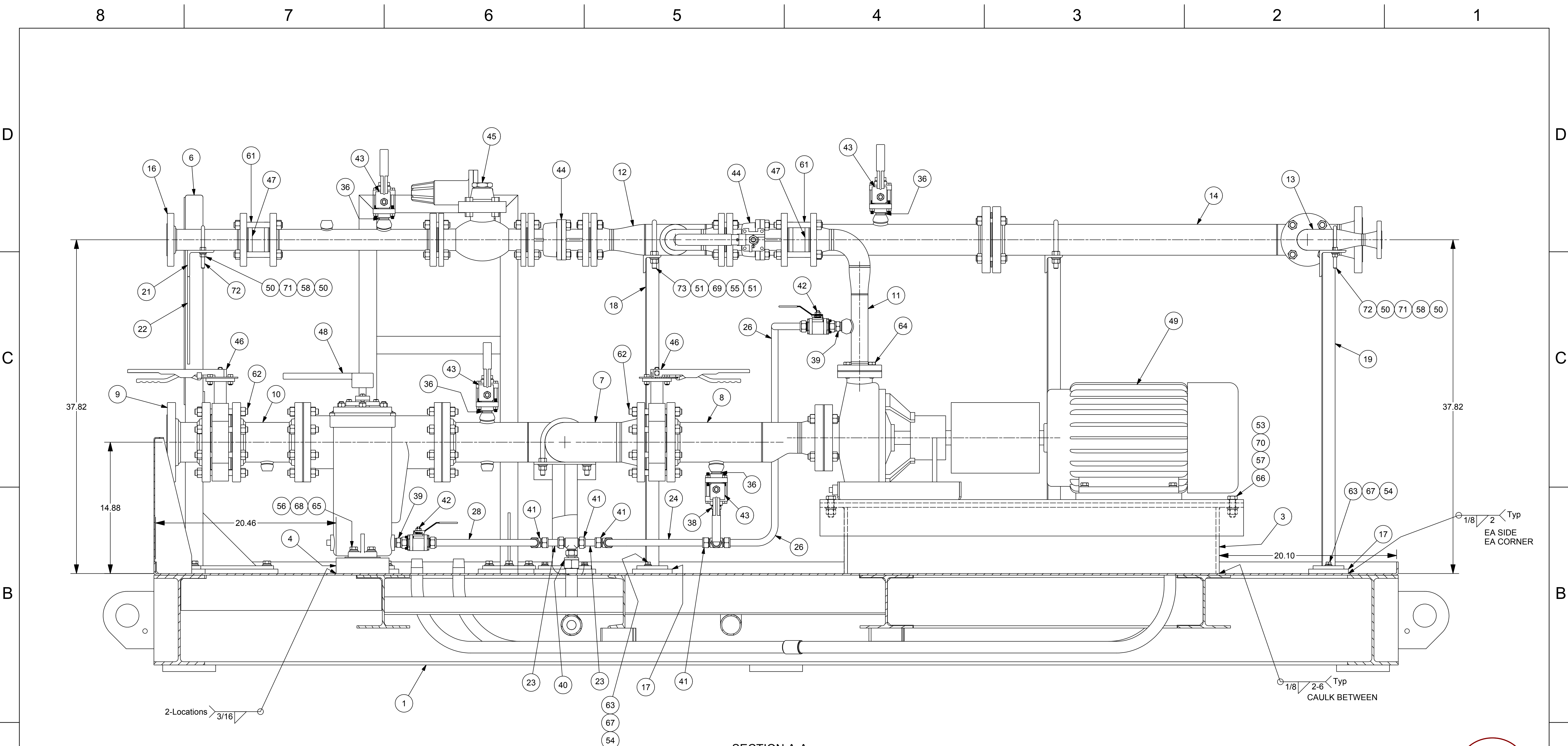


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DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	✓ HFS-SF
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

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		

ProEnergy SERVICES			
2201 ProEnergy Blvd SEDAIA, MISSOURI 65201 USA PHONE: 1-800-829-5100 FAX: 1-800-829-1100			
TITLE MECHANICAL LAYOUT WELDMENT/ASSEMBLY LIQUID FUEL FORWARDING SKID - 7EA			
SIZE	ML:	DWG NO	REV
D		409-2956-LFF7EA-0700-2	1
SCALE: 1/8"=1"		WEIGHT:	SHEET 2



SECTION A-A


REV	DESCRIPTION	AUTHOR	DATE	CHECKED B	QA/QC
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

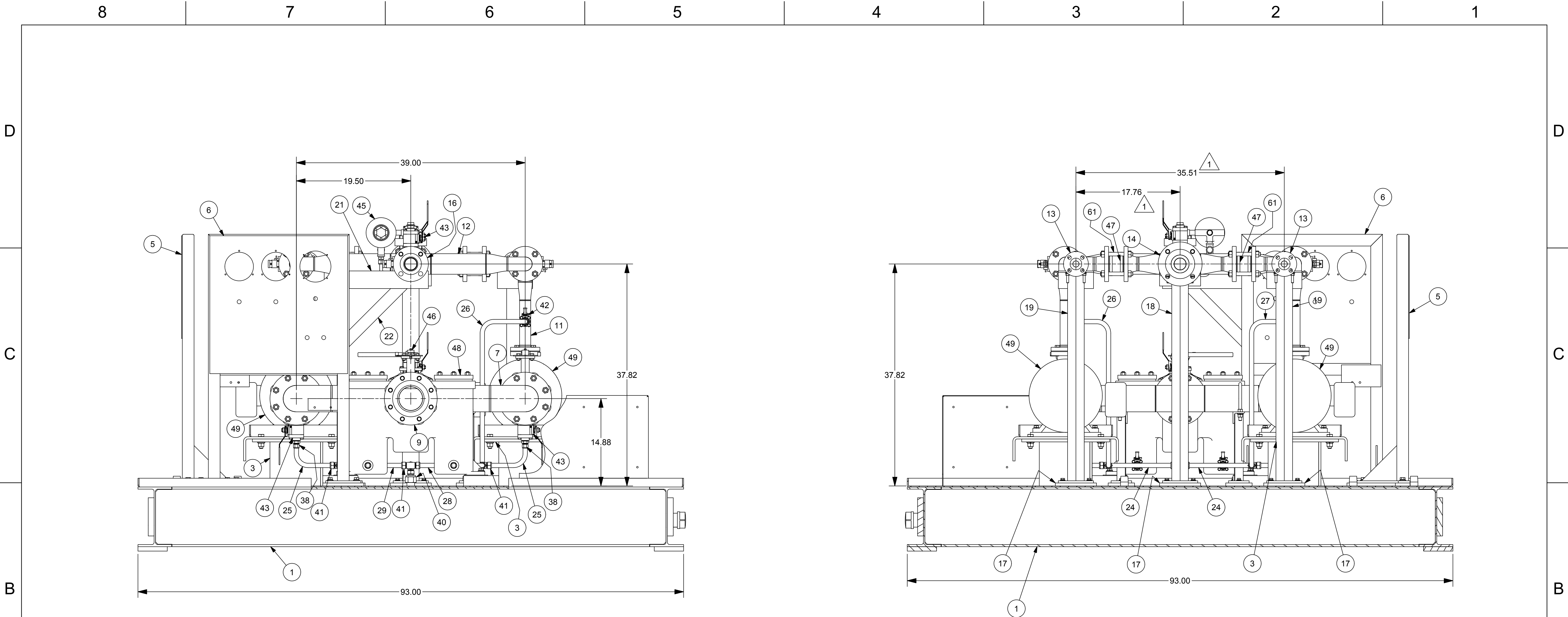
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UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
TOLERANCES ON DECIMALS	
X.X	± 0.10
X.XX	± 0.06
X.XXX	± 0.03
HOLE DIA	± 0.03
ANGLES	± 0.50°
SURFACE	✓ HFS-SF
SQUARENESS	± 0.06
DO NOT SCALE DRAWING	

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		

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






VIEW C-C

SECTION B-B



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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	DIMENSIONS ARE IN INCHES			S. Boerckel				
	TOLERANCES ON			CHECKED		TITLE MECHANICAL LAYOUT		
	DECIMALS			T. KOONTZ	2/3/2011			
	X.X	± 0.10		QA		WELDMENT/ASSEMBLY		
	X.XX	± 0.06		B. MADDUX	2/3/2011			
	X.XXX	± 0.03		REVIEWER		LIQUID FUEL FORWARDING SKID - 7EA		
	HOLE DIA	± 0.03						
	ANGLES	± 0.50°		PROJECT NO				
	SURFACE	✓ HFS-SF		409-2956-1				
			CUSTOMER					
			EDC - MARGARITA ISLAND					
	SQUARENESS ± 0.06		SIZE	ML:	DWG NO		REV	
	DO NOT SCALE DRAWING		D		409-2956-LFF7EA-0700-4		1	
			SCALE: 1/8"=1"			WEIGHT:		
						SHEET 4		