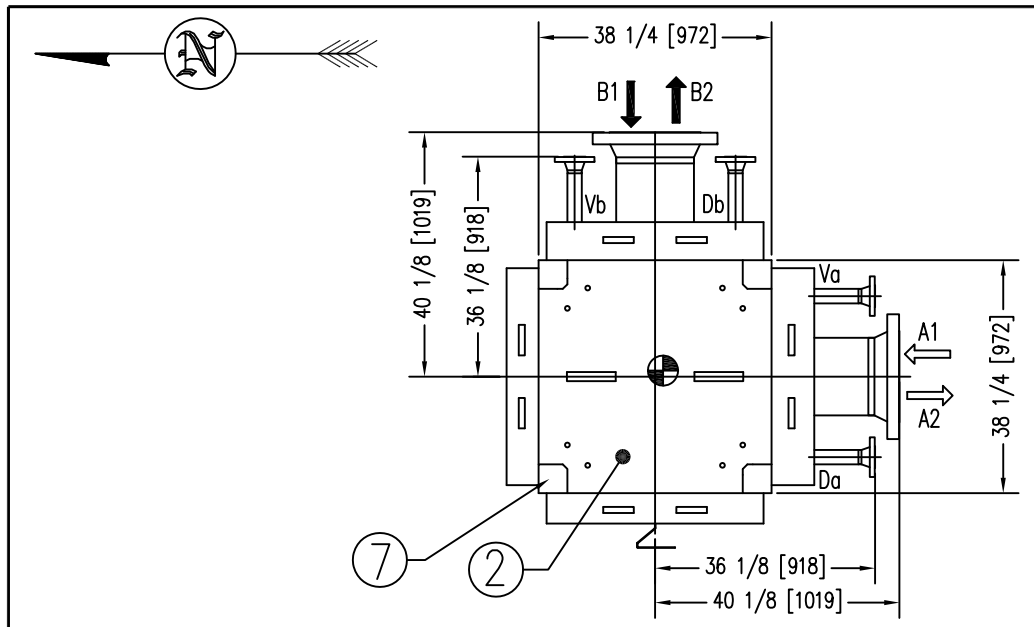
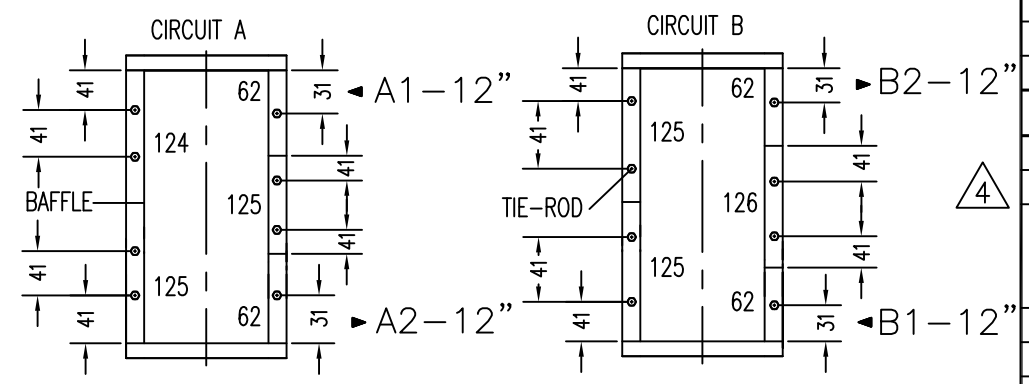
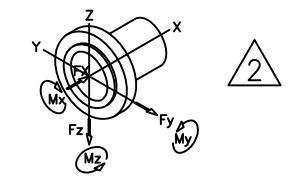


PLAN

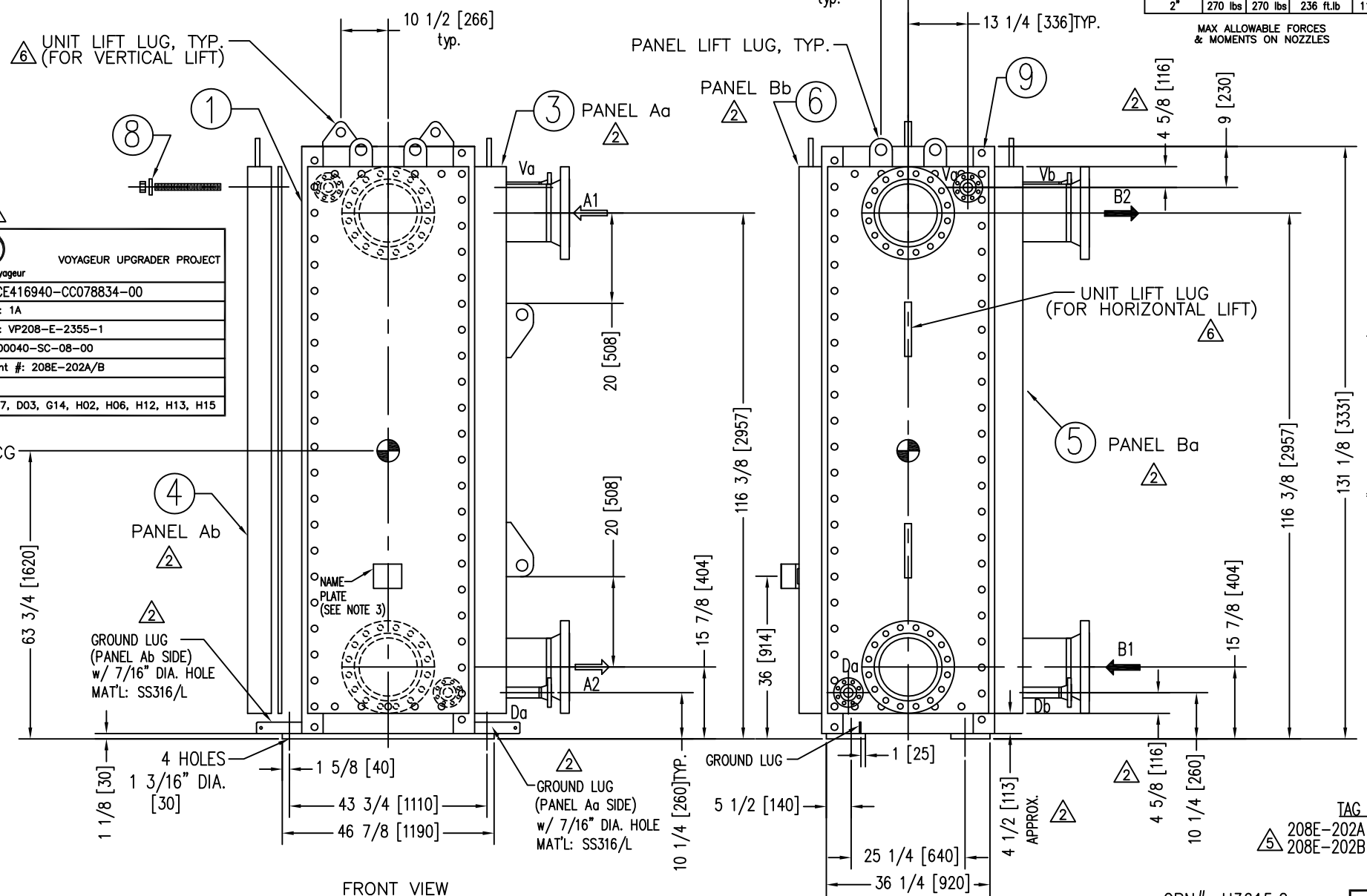
NUMBER OF PLATE CHANNELS BETWEEN BAFFLES





NOZZ. SIZE	Fx	Fy/Fz	Mx	My/Mz
12"	3148 lbs	3148 lbs	17702 ft.lb	8851 ft.lb
2"	270 lbs	270 lbs	236 ft.lb	118 ft.lb

MAX ALLOWABLE FORCES & MOMENTS ON NOZZLES



FRONT VIEW

SIDE VIEW

SUNCOR ENERGY Voyageur	VOYAGEUR UPGRADER PROJECT
PO #:	CE416940-CC078834-00
Suncor Re #: 1A	
Suncor VP #: VP208-E-2355-1	
WBS #: 03-00040-SC-08-00	
Tag/Equipment #: 208E-202A/B	
TEID #:	
Item Code:A17, D03, G14, H02, H06, H12, H13, H15	

**PRESENT ALFA LAVAL JOB# 799 IS FOR 2 LEAN/RICH EXCHANGERS 208E-202 A/B, IDENTICAL TO 208E-202C COMPLETED IN 2008 UNDER SUNCOR P.O.# CC015354, (ALFAL LAVAL JOB# 297463 / MFG. SERIAL# 50767). 6

TAG UNIT
5 208E-202A (MO# 2600)
208E-202B (MO# 2601)

CRN#: U3615.2

6 A/L CANADA
P.O.# CA-PPI-12-0050

CERTIFIED PRINT
BY: Daniel Ludwig DATE: 11/13/12

REVIEW	
QC	
AI	

6 FINAL "AS BUILT" DRAWINGS & DESIGN CALCULATIONS TO BE STAMPED & SIGNED BY A PROFESSIONAL ENGINEER.

PERFORMANCE/UNIT (FOR ONE EXCHANGER)	CIRCUIT A	CIRCUIT B
FLUID	LEAN AMINE	RICH AMINE
FLOW RATE lb/hr	1205000	1263000
TEMP. IN/OUT °F	269.9/192	140.5/220
PRESSURE DROP PSI	10.5	11.7
EXCHANGER DATA		
PANEL GASKETS	SIGRAFLEX HOCHDRUCK	SIGRAFLEX HOCHDRUCK
PANEL LINERS	SS316/316L, 0.118 MIN. THK.	SS316/316L, 0.118 MIN. THK.
NOZZLES * DUAL CERTIFIED	A1 12"-300# WN-RF SS316/316L* A2 12"-300# WN-RF SS316/316L* Va/Da 2"-300# WN-RF SS316/316L* 1 w/ BLIND FLANGES	B1 12"-300# WN-RF SS316/316L* B2 12"-300# WN-RF SS316/316L* Vb/Db 2"-300# WN-RF SS316/316L* 1 w/ BLIND FLANGES
NOZZLE LINERS	–	–
NUMBER OF PASSES	4	4
DESIGN PRESSURE PSIG	500/FV	385/FV
TEST PRESSURE PSIG	650	501
DESIGN TEMP. Min/Max°F	-20/350 1	-20/350 1
SURFACE AREA sq.ft.	3439.1	(500 PLATES)
WEIGHT lb	EMPTY: 45000	FLOODED: 50000
PAINT; BLAST PER SSPC-SP10	DAMPNEY THURMALOX 200C, 4 MILS DFT. COLOR: A/L BLUE	
2" THK. INSULATION PROVIDED BY OTHERS 1		

ITEM	QTY.	PARTS LIST	MATERIAL
1	1	PLATE PACK	SA 240 316L
2	2	MASSIVE HEAD – 7 3/4"	SA 516-60
3	1	PANEL Aa – 7" 1	SA 516 Gr 70(N)
4	1	PANEL Ab – 5 1/4" 1	SA 516 Gr 70(N)
5	1	PANEL Ba – 6 1/4" 1	SA 516 Gr 70(N)
6	1	PANEL Bb – 5"	SA 516 Gr 70(N)
7	4	COLUMN	SA 516-60
8 2	52 52 52 52	STUD, M42 DIA x 335 mm LG., NUT, WASHER; PANEL Aa STUD, M42 DIA x 275 mm LG., NUT, WASHER; PANEL Ab STUD, M42 DIA x 305 mm LG., NUT, WASHER; PANEL Ba STUD, M42 DIA x 265 mm LG., NUT, WASHER; PANEL Bb	SA 540 B21 CL1
9	16	STUD, M33 DIA x 215 mm LG., NUT, WASHER; CORNERS	SA 193 B7/194 2H

NOTES:
1. DRAWING NOT TO SCALE
2. DESIGNED,CONSTRUCTED AND "U" STAMPED IN ACCORDANCE WITH A.S.M.E CODE SECTION VIII DIV 1, 2010 EDITION, ADDENDA 2011a & NATIONAL BOARD & ABSA REGISTERED.
3. LOCATE NAMEPLATE AS SHOWN.
4. BOLT HOLES TO STRADDLE SHOWN CENTERLINES ±1°.
5. TOLERANCE ON DIMENSIONS ±1/8. TOLERANCE ON ANGULAR DIMENSIONS ±1/2°.
6. IMPACT TESTING ON S.S. COMPONENTS EXEMPT PER UHA-51(d) & (e). 1
7. IMPACT TESTING REQUIRED ON C.S. PANELS, HEADS, LIFT LUGS & SA-540-B21, CL1 BOLTS. 3
8. UT PANELS PER SA 578 LEVEL B. MT EDGES, CUT SURFACES & NOZZLE OPENINGS IN PANELS. 2
9. BASELINE UT READINGS ARE REQUIRED AS PER SUNCOR STD. PMW0018A. 2
10. FOR PANEL GASKET DETAILS, SEE DRAWING CP75-33098. 2
11. 300 SERIES S.S. FILLER WELD MATERIAL SHALL HAVE A FERRITE NUMBER BETWEEN 3 & 10. 4
12. FOR INFORMATION ON INSTALLATION, OPERATION & MAINTENANCE OF THE EXCHANGERS, REFER TO IOM MANUAL.

REV#	BY	CHECK	REVISION	DATE
6	DL	KG	REVISED PER CUSTOMER COMMENTS	11/13/12
5	DL	KG	REVISED JOB INFO. TO REFLECT NEW ORDER	8/27/12
4	KG	JB	REVISED PER CUSTOMER COMMENTS	1/18/08
3	KG	JB	REVISED NOTE 7	12/12/07
2	KG	JB	REVISED PER CUSTOMER COMMENTS	11/8/07
1	KG	JB	REVISED TO CERTIFIED PRINT PER CUSTOMER COMMENTS	9/14/07

Alfa Laval Inc.
Lykens, PA 17048

6 **(2)COMPABLOC® MODEL CPX75-V-500
CPX75 MODEL REPLACES CPL

CUSTOMER END USER: SUNCOR VOYAGEUR

SCALE	DATE	PURCHASE ORDER No.	ALFA LAVAL JOB No.
NTS	2/26/07	6 CE416940-CC078834-00	5 799

BY	CHECKED	ITEM [LEAN/RICH EXCHANGER]	SERIAL NO 5	DRAWING No.	REV.
KG	JB	5 208E-202A/B	30112-70214 30112-70215	50765-67-GA	6