

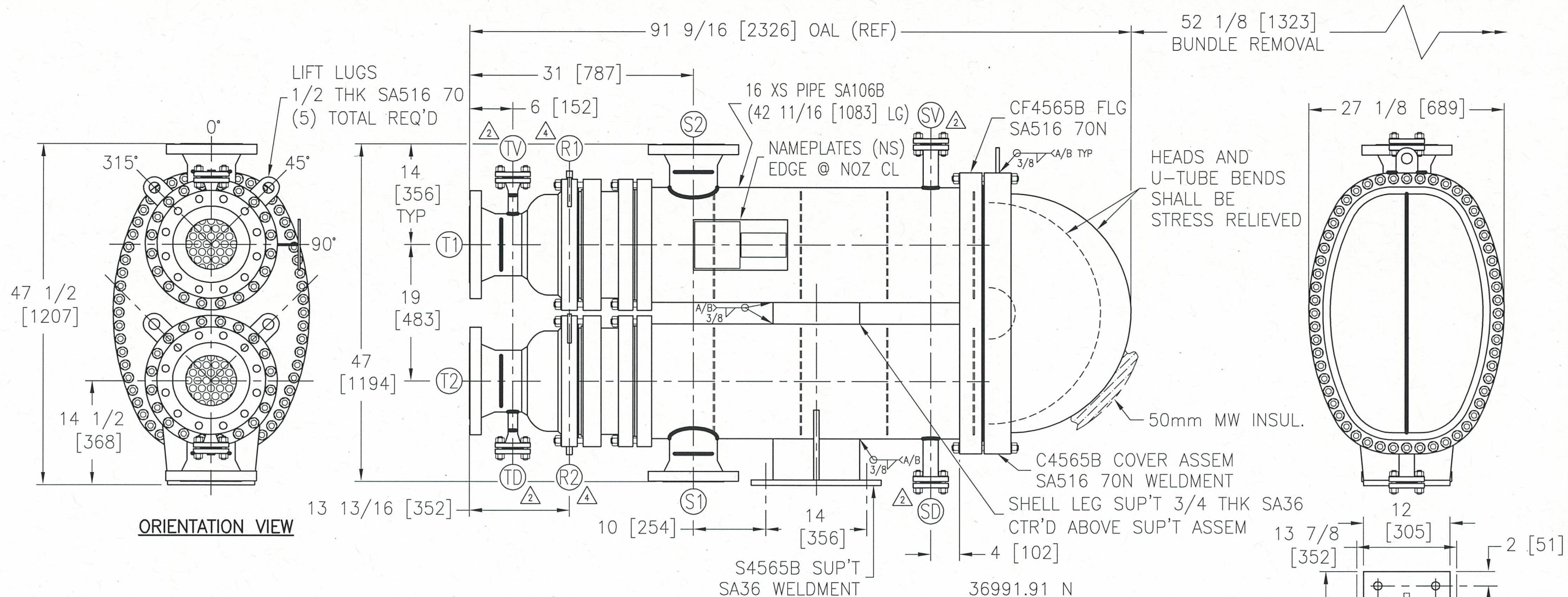
 MEG ENERGY	CHRISTINA LAKE REGIONAL PROJECT Phase 3A EPC for Central Plant Facilities SLI Project No. 511036	 SNC-LAVALIN

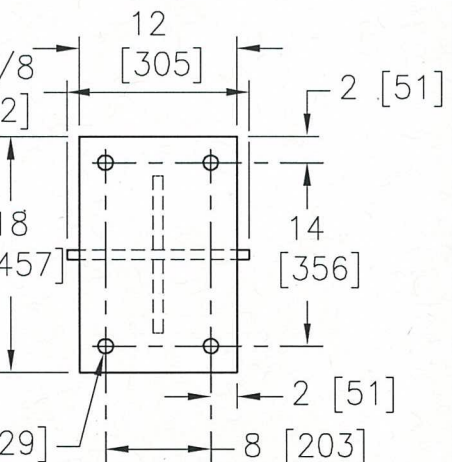
 SNC-LAVALIN	<input type="checkbox"/> A1 Not suitable to initiate fabrication. modify as noted, resubmit for review
	<input type="checkbox"/> B1 Suitable to initiate fabrication as noted. modify as noted, resubmit for review
Vendor's drawing review for conformity with specifications and design drawing.	<input type="checkbox"/> C1 Suitable to fabricate to completion as noted. submit final documents including as-builts as required
This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contract.	<input checked="" type="checkbox"/> D1 Suitable to fabricate to completion. submit final documents including as-built documents as required
	<input type="checkbox"/> E1 Not suitable as final documents as noted. modify as noted and resubmit.
	<input type="checkbox"/> F1 Suitable as final documents. no further resubmittal required (unless revised by vendor)

Vendor: Heat Exchanger Design, Inc. - 12427	No.: 4565B Sht 1	Rev: 4	Date Rec'd 2014/03/04
Doc. Title: B00.03,H00.01,H00.03,J00.01,J00.08 - General Arrangement Drawing - Tag: 3A-E-397			

Client Code:	Project: MEG Phase 3A EPC	
Reviewed by: <i>Aside</i>	Document No	Submittal
Date: <i>March 6, 2014</i>	P-5330-01-0004	05



ORIENTATION VIEW



W-RT1

Manufactured & Certified by
HEAT EXCHANGER DESIGN, INC.

Serial Number
4565B1, 2 or 3

Hydro Test Pressure
631 / 819

Shell Side / Tube Side

Shell Side 485 PSI @ 410 °F

Tube Side 630 PSI @ 410 °F

Maximum Allowable Working Pressure

Shell Side FV PSI @ 410 °F

Tube Side FV PSI @ 410 °F

Maximum Allowable External Working Pressure

Shell Side -20 °F @ 485/FV PSI

Tube Side -20 °F @ 630/FV PSI

Minimum Design Metal Temperature

CUSTOMER: MEG ENERGY CORP.

P.O.#: P-5330-01

CRN#: TBD

SERVICE: HP BFW MIN FLOW RECYCLE COOLER(S)

ITEM: 3A-E-397A, B or C

Year Built: 2014

US NAMEPLATE FACSIMILE (SS316)
MTD ON 4" SA36 STAND OFF BKT

Manufactured & Certified by
HEAT EXCHANGER DESIGN, INC.

Serial Number
4565B1, 2 or 3

Hydro Test Pressure
4351 / 5647

Shell Side / Tube Side

Shell Side 3344/FV kPa @ 210 °C

Tube Side 4344/FV kPa @ 210 °C

Maximum Allowable Working Pressure

Shell Side -29 °C @ 3344/FV kPa

Tube Side -29 °C @ 4344/FV kPa

Minimum Design Metal Temperature

SI NAMEPLATE FACSIMILE (SS316)

NOZZLE SCHEDULE			TUBE DATA	
NOZ.	SIZE / RATING	SERVICE	(#) SIZE	(92) 1" OD x 14 BWG U-TUBES
S1	6" 300# RFWN (S160)	SHELL IN (SA105/106B)		54 [1372] ST LEGS
S2	6" 300# RFWN (S160)	SHELL OUT (SA105/106B)	MATERIAL	SA179
T1	8" 300# RFWN (S140)	TUBE IN (SA105/106B)	BAFFLES	33% V CUT, 12 [305] PITCH
T2	8" 300# RFWN (S140)	TUBE OUT (SA105/106B)		3/16 C STL
TV	1" 300# RFWN (S160) w/BLIND	TUBE VENT (SA105/106B)	TUBESHEET	SA516 70/106B WELDMENT
TD	1" 300# RFWN (S160) w/BLIND	TUBE DRAIN (SA105/106B)		
SV	1" 300# RFLWN w/BLIND	SHELL VENT (SA105)		
SD	1" 300# RFLWN w/BLIND	SHELL DRAIN (SA105)		
R	1/2" NPT TAPPED w/PLUG	VENT/RAIN (DRILLED/TAPPED)		

ELEVATION VIEW

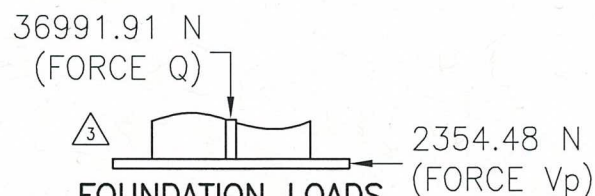
LIFT USING STRAPS

(3) IDENTICAL UNITS REQ'D

MISC CONSTRUCTION NOTATION

- 1) FOR MECHANICAL CALCULATIONS SEE CC4565B (& RELATED)
- 2) DIMENSIONS ARE IN INCHES [mm] & SYMM UNLESS NOTED OTHERWISE
- 3) BOLTING: SA193 B7/194 2H
- 4) GASKETS: SI & KAMMPROFILE TYPE CS/GRAPHITE w/ OD GAGE RING
- 5) TUBES SHALL BE DOUBLE GROOVED, STRENGTH WELDED & ROLL EXPANDED (60° TRI-PITCH)
- 6) CORROSION ALLOWANCE SHALL NOT BE APPLIED TO TUBES
- 7) 50mm MINERAL WOOL INSULATION REQ'D PER SPEC
- 8) NITROGEN FILLED REQ'D FOR SHIPMENT
- 9) HEADS & U-TUBE BENDS SHALL BE STRESS RELIEVED

FOUNDATION LOADS



NOZZLE LOADINGS: MAX. CALCULATED		
NOZ.	P, VC, VL (N)	Mt, Mc, MI (N-m)
S1/S2	4600, 5630, 5630	4860, 3440, 3440
T1/T2	6050, 7430, 7430	8070, 5710, 5710

SPECIAL DATA

ASME SECTION VIII, DIV 1, 2010 ED., A11	
CLIENT CLASS	NA
CLIENT INSP.	AS REQUIRED
WEIGHT (Kg)	3585# (1626)
SQ' AREA (M ²)	259 (24)
PREP/PAINT SPEC	MEG-ENG-MEC-SP-1101*
INSULATION SPEC	MEG-ENG-MEC-SP-1102

REVISION LOG

NO.	DATE	COMMENT
4	27-FEB	ADDED DRILLED/TAPPED VENT & DRAIN
3	4-FEB	ADDED FOUNDATION LOADS

CUSTOMER DATA

CUSTOMER: MEG ENERGY CORP.	P.O.#: P-5330-01
PROJECT: CLRP PHASE 3A CENTRAL PLANT FACILITY: EPC	ITEM: 3A-E-397A, B or C
SERVICE: HP BFW MIN FLOW RECYCLE COOLER(S)	SIZE: (3) SH16D92-04-00-TV-6B8B

HEAT EXCHANGER DESIGN, INC.

UNIT IS A MULTITUBE HAIRPIN HEAT EXCHANGER (3) IDENTICAL UNITS REQ'D NOT CONNECTED	DRAWN BY Cliff Shipley
APPROVED BY	

GENERAL ARRANGEMENT

DATE	DRAWING NUMBER	REV
29-AUG-13	4565B	4
		SHT 1