

25% FLOW

M. NING & LEWIS ENGINEERING CO. AS BUILT MFL JOB NO. 26993C  
HEAT EXCHANGER SPECIFICATIONS  
2-10-93

M & L INQUIRY NO. 51652 REV. 1

REFERENCE NO.

M & L JOB NO.

REV. NO. 1/3 DATE 1-14-93

ITEM NO. E-3 (1)

TEMA TYPE MODIFIED BEM ~~BE-302~~

SHELLS PER UNIT ONE SURFACE PER SHELL 349.8/344.0 (1)

POSITION: HORIZ. (VERT)

PERFORMANCE OF ONE UNIT

SHELL SIDE TUBE SIDE

40WT% ETHYLENE GLYCOL NATURAL GAS (5) (4)

17,411 (4) 5665 (3)

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TEMP. RANGE (Vaporizing) °F -132 To -120 (1)

1.003 / 1.0535 (4)

0.62 / 3.36 (4)

0.8665 (4)

0.262 (4)

N.C. GAS VAPOR N.C. GAS VAPOR 16.37

200 -253 (1)

64.3 (4) +60

50 (1) 525 (1)

ONE ONE

0.53 (4) VARIES

MAX. 15 CALC. 0.4 (4) MAX. 50 CALC. 0.6 (4)

ASSUMED 0.0005 ASSUMED 0.0005

2,047,250 (3) MTD [CORRECTED] -°F 129.12 (4) TB. (4)

46.09 WTD (4) CALC. hio = htw = ho =

CONSTRUCTION OF EACH SHELL

DESIGN PRESSURE PSIG 200 (1) 700 (1)

DESIGN TEMPERATURE MIN/MAX °F -270 / 250 -270 / 250

TEST PRESSURE PSIG CODE CODE

TUBES 249 304SS WELDED SEAMLESS NO. 81 (2) O.D. 3/4" BWG. 16 SW LENGTH 22' PITCH 1 5/16" (1)

TUBE ATTACHMENT: ROLLED WELDED (GROOVED AND ROLLED AND SEAL WELDED)

SHELL 304SS I.D. 10.42" (4) O.D. 10.75" SHELL COVER FLOATING HEAD

BONNETS 304SS CHANNEL AND COVER

TUBE SHEETS: STATIONARY 304SS FLOATING

EXPANSION JOINT: (YES) (1) FLANGE FACING: (NONE) - ALLOY VANSTONE WELDED ALLOY/CS

BAFFLES - SEGMENTAL 304SS (31) (2) PITCH 8' 1/8" (2) % CUT 34% (4) FLOW ←

BAFFLES - LONG TYPE TUBE SUPPORTS

GASKETS -

SHELL CONNECTIONS - IN 4" OUT 4" ASA 150# TYP PERFWN

CHANNEL CONNECTIONS - IN 3" OUT 4" ASA 400# TYP PERFWN

CORROSION ALLOWANCE - SHELL SIDE 0 TUBE SIDE 0 EXCEPT TUBES

IMPINGEMENT PLATE: (YES) NO TYPE IN DISTRIBUTOR DESIGN (4)

CODE REQUIREMENTS ASME SECTION VIII DIV. 1 TEMA CLASS C (1)

WEIGHTS - EACH SHELL 2,143 (2) BUNDLE FULL OF WATER 2,926 (2)

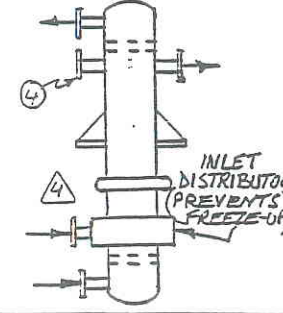
REMARKS: SR = STRESS RELIEVED XR = X-RAYED

(1) COMMERCIAL BELLOWS EXPANSION JOINT INCLUDED AS WELL AS

INLET DISTRIBUTOR TO PREVENT FREEZE-UP, 16" I.D. (4)

(2) EACH TUBE CONTAINS A FULL LENGTH TURBULATOR

GENERAL ARRANGEMENT



304SS ORIFICE PLATE INCLUDED IN BOTTOM BONNET INCLUDED ON SHELL SIDE FOR RUPTURE DISC (BY OTHERS)  
(1) 2" 150# R.F.W. FLANGED NOZZLES INCLUDED ON SHELL SIDE FOR RUPTURE DISC + 0.09 PROPANE + 0.09 NITROGEN  
(2) NG COMPOSITION (MOLE%): 97.77 METHANE + 2.05 ETHANE + 0.09 PROPANE + 0.09 NITROGEN

UPSET 1/2" WALL  
R = +250  
T = +250  
UPSET 1/2" WALL  
R = +250  
T = +250  
UPSET 1/2" WALL  
R = +250  
T = +250  
UPSET 1/2" WALL  
R = +250  
T = +250  
UPSET 1/2" WALL  
R = +250  
T = +250

VENDOR DOCUMENT INHOUSE TRANSMITTAL for FINAL RECORD

03/24/93

Distr. (w/attn):  
 TOM PEARSON - DCE ( 9) *10411 copies*  
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From: Plainfield Purchasing  
 WAYNE J. MEYER

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Vendor: MANNING & LEWIS ENGR.CO.

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Notes:

CBI Doc.#	Rev	Document Title	Vendor Doc.#	Rev	Review		Date:	Status	Comments
					Required	By:			
P.O. Item No.: 001 Final Bills:801-1 THRU 801-18									
Tag Numbers: E-3									
00	B	LNG VAPORIZER	D21887	2				F	
002	B	STRESS CALCULATIONS	M&L 269930	0				F	
010	A	DETAIL ORIFICE PLATE	B-21893	0				F	
011	A	TUBE FIELD	BT-21888	0				F	
012	A	FOR SHELL&TUBE HEAT EXCHANGER	ION'S					F	

Status Codes: "A" - Approved  
 "B" - Approved, Except as Noted  
 "C" - Disapproved, correct and Re-Submit  
 "I" - For Information, No Approval Required  
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CBI NA-COM Contract No.: E20141

VENDOR DOCUMENT INHOUSE TRANSMITTAL for FINAL RECORD

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04/02/93

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From: Plainfield Purchasing  
 WAYNE J. MEYER

P.O. No.: E20141-002

Vendor: MANNING & LEWIS ENGR.CO.

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012	A	ASME DATA REPORT	DATA REPORT	2				F	
01	A	TEST REPORTS	TEST	21293				F	

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