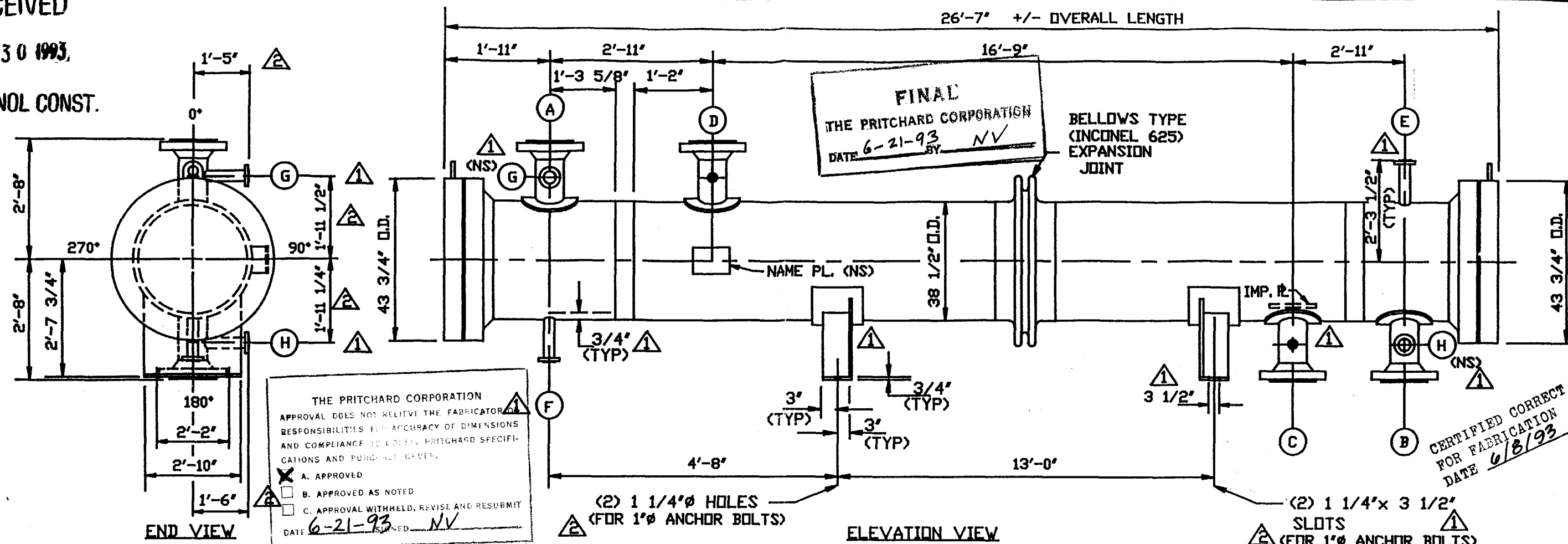


RECEIVED

JUN 30 1993

METHANOL CONST.

86075



GENERAL NOTES

- DESIGNED & CONSTRUCTED IN ACCORDANCE W/
 - SECT VIII, DIV 1, 1989 EDIT. & 1991 ADDENDA OF THE ASME BOILER & PRESSURE CODE & SO STAMPED WITH NATIONAL BOARD REGISTRATION.
 - TEMA CLASS 'C'
 - API 660
 - CUSTOMER SPECS
- ALL BOLT HOLES TO STRADDLE ϕ 'S.
- MIN. TEST WATER TEMP = 60°F. TEST WATER PER SPEC. PQC-D-6-92
- ONE SPARE SETS OF GASKETS REQ'D
- PAINT: SOLVENT CLEAN ENTIRE UNIT PER SSPC-SP1 AND COMMERCIAL BLAST PER SSPC-SP6. PRIME WITH VALSPAR 13-F-12 MZ-7 (2-4.0 MILS DFT)
- TUBE SIDE IN HYDROGEN SERVICE
- TUBE TO TUBESHEET JOINT: ROLLER EXPANDED ONLY.
- THIS ITEM IS DESIGNED FOR OPERATING CONDITIONS AND START-UP WITH NO FLOW ON SHELLSIDE.

NOZZLE DATA

MK.	DESCRIPTION	SERVICE
A	18'-300#RF-WN	INLET
B	20'-300#RF-WN	OUTLET
C	12'-300#RF-WN	INLET
D	12'-300#RF-WN	OUTLET
E	3/4'-300#RF-LWN	VENT
F	3/4'-300#RF-LWN	DRAIN
G	3/4'-300#RF-LWN	VENT
H	3/4'-300#RF-LWN	DRAIN

NOZZS C & D TO HAVE
1-3/4'-6000# CPLG (NS)
ALL CPLGS. TO BE PLUGGED.

DESIGN DATA

	SHELL SIDE	TUBE SIDE
DES. PRESS.	525 PSIG	450 PSIG
FIELD PRESS.	788 PSIG	675 PSIG
DES. TEMP.	500 °F	650 °F
MIN. DESIGN METAL TEMP.	+ 17 °F	+ 17 °F
C. A.	.0625'	.0625'
NO. PASSES	1	1
HEAT TREAT	NO	YES
RADIOGRAPHY	SPOT	FULL
INSUL. THK.	1 1/2'	1 1/2'
MAWP (H&C)	525 PSIG	450 PSIG
LIMITED BY	EXP JOINT	BODY FLG
SHOP TEST PRESS. (N&C)	788 PSIG	678 PSIG
MAWP (N&C)	525 PSIG	452 PSIG
LIMITED BY	EXP JOINT	BOLTING

CUSTOMER: THE PRITCHARD CORP / FORTIER METHANOL CO.

DESTINATION: WESTWEGD, LOUISIANA

PROJECT NAME: AMMONIA TO METHANOL CONVERSION

P.O. 2639-7-1-17 JUN 10 1993

REQ'N. No. 7-1

SERVICE: PROCESS GAS PREHEATER

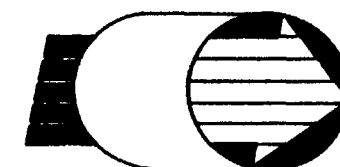
TUBES: 160-2"O.D.x 14 BWG(MIN)x 20'-0" LG SA-213-T11

SURF: 1648 FT²(EFF.) ITEM: E-110

SIZE: 37-240 SERIAL NO. X-4573

TYPE: NEN NO. REQ'D: 1

WT: DRY 25000# WET 37400#



Energy Exchanger Co.

1844 No. Garnett Rd. • Tulsa, Okla. 74116

OUTLINE DIMENSIONAL DRAWING

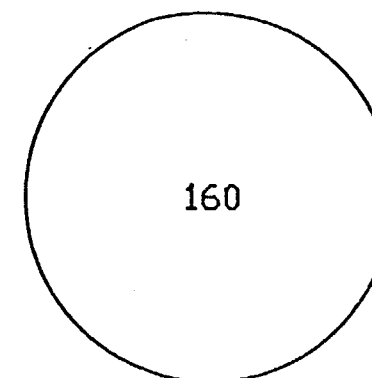
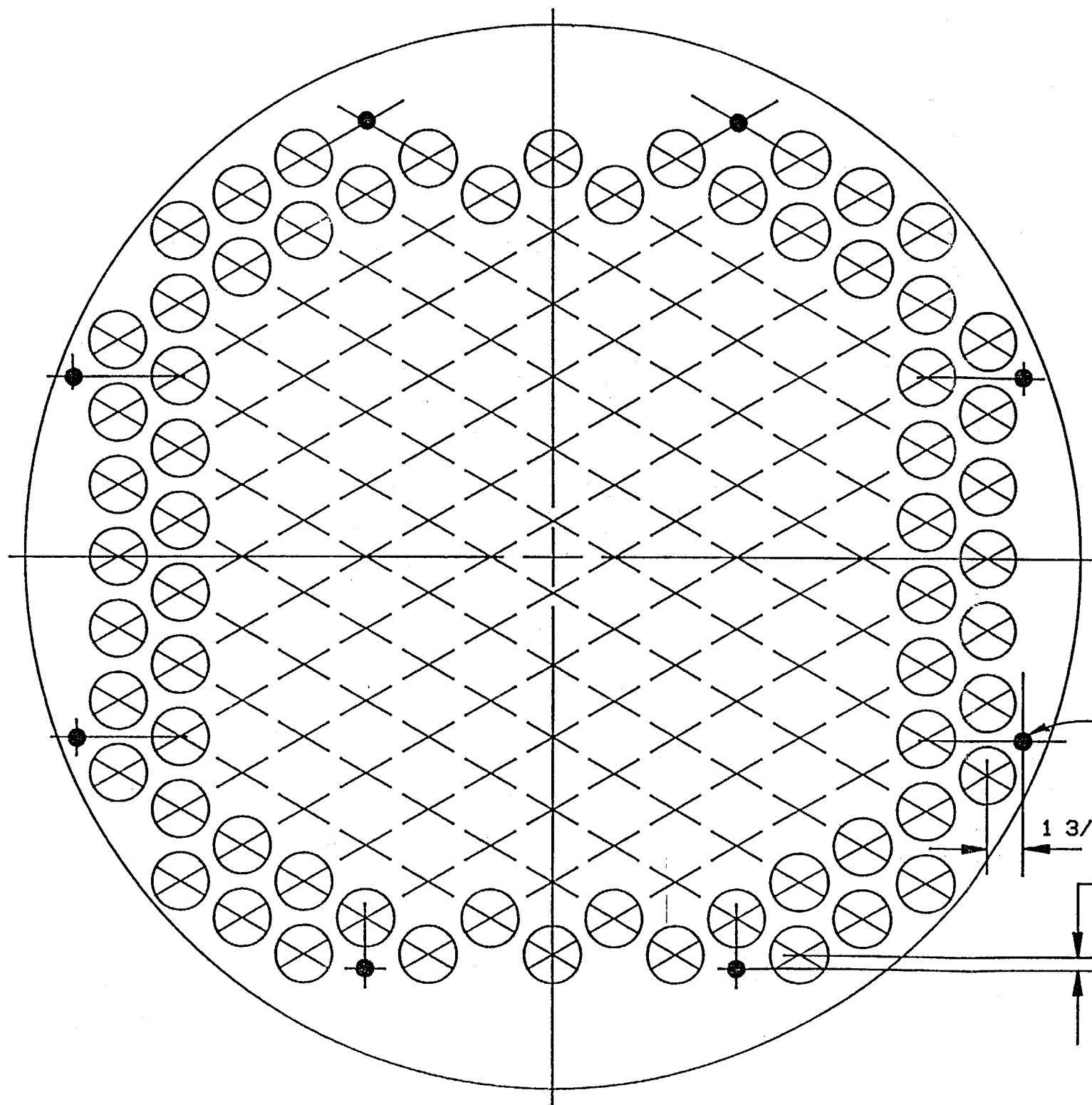
F147

NO.	DATE	REVISION	BY	DATE 12/15/92	DR. S.T.	APP. LOW	DRAWING NO.	REV.
2	3/8/93	ADD INFO/ CUST	BA				CERTIFIED CORRECT FOR FABRICATION	
1	2/1/93	REV. PER CUSTOMER COMMENTS	S.T. S.G.				DATE 12/18/93 BY <i>Kan Jolly</i>	

X-4573-A

3

86075



NO. OF HOLES PER PASS

NOTES

- 1.) DRILL & REAM TUBE HOLES IN TUBE SHEETS TO 2.018" $\pm$.003" DIA. FOR 160 - 2.0" O.D. TUBES
- 2.) TUBE PITCH - 2.500" TRI.
- 3.) 36 $\frac{3}{8}$ " TUBE CIRCLE
- 4.) SEE DWG X-4573-E FOR TUBE HOLE GROOVING DETAIL

LOCATION ONLY FOR
(8) $\frac{1}{2}$ " ϕ TIE RODS

1 3/8"

5/8"
(TYP @
BTM)

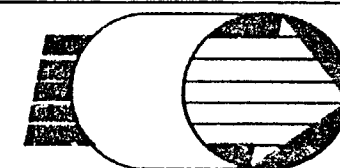
THE PRITCHARD CORPORATION
PRITCHARD REQ'N NO. 7-1
P.D. NO. 2639-7-1-17
ITEM NO. E-110
SERVICE: PROCESS GAS PREHEATER
OWNER: FORTIER METHANOL COMPANY
LOCATION: WESTWEG, LOUISIANA
PROJECT NAME: AMMONIA TO METHANOL
CONVERSION

CERTIFIED CORRECT
FOR FABRICATION
DATE 3-8-93 BY: *gmk*

THE PRITCHARD CORPORATION
APPROVAL DOES NOT RELIEVE THE FABRICATOR'S
RESPONSIBILITY FOR ACCURACY OF DIMENSIONS
AND COMPLIANCE TO CODES, PRITCHARD SPECI-
FICATIONS AND PURCHASE ORDER.

☒ A. APPROVED
☐ B. APPROVED AS NOTED
☐ C. APPROVAL WITHHELD, REVISE AND RE-submit

DATE 4/1/93 SIGNED *NV*



Energy Exchanger Co.

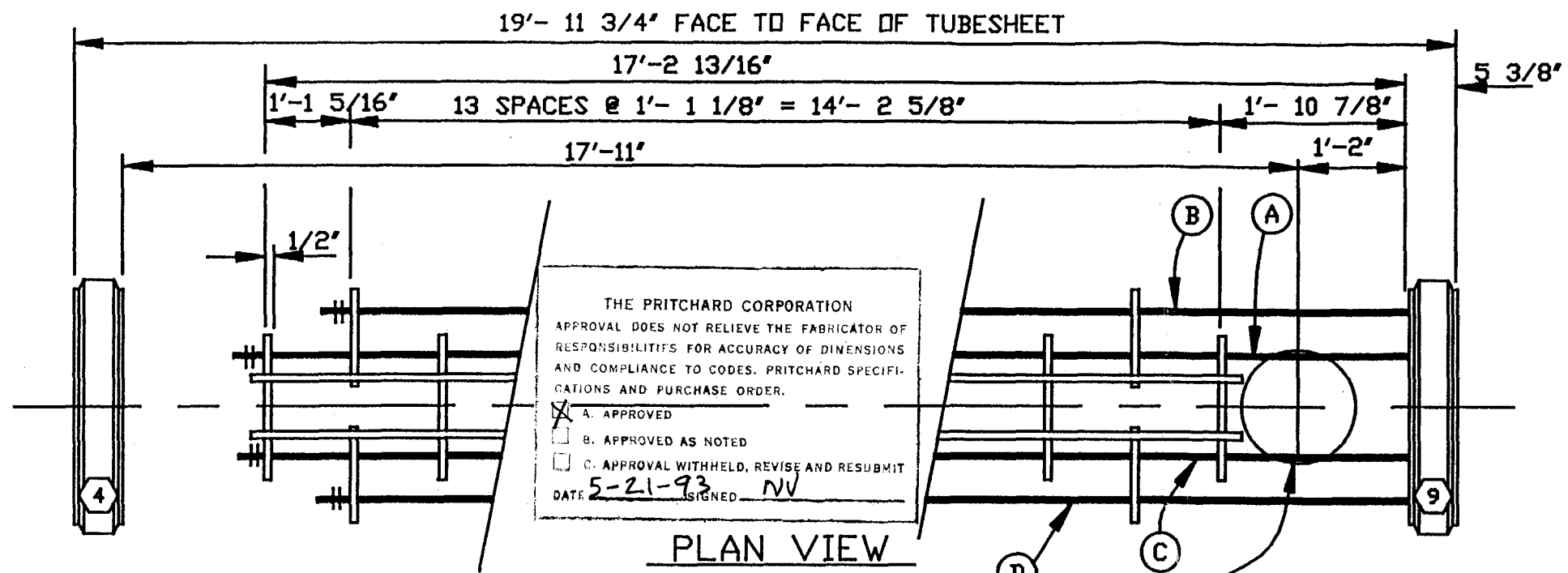
1844 No. Garnett Rd. • Tulsa, Okla. 74116

TUBE LAYOUT

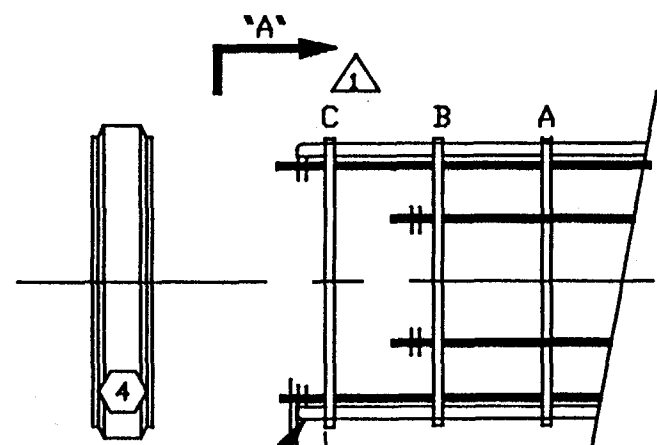
DATE 2/3/93	DWG. BY: BA	DRAWING NO.:	REV.
CHK'D. BY: <i>gmk</i>	APP'D. BY: HM	X-4573-F	0

VIEW LOOKING AT SHELL SIDE OF # 9 TUBESHEET

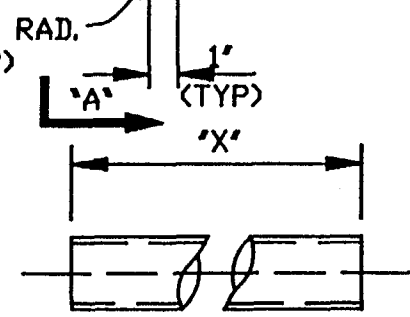
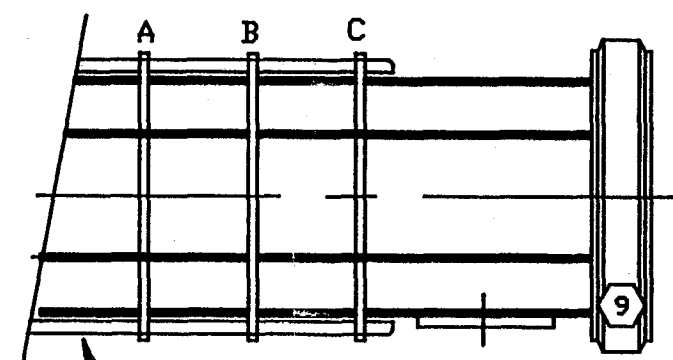
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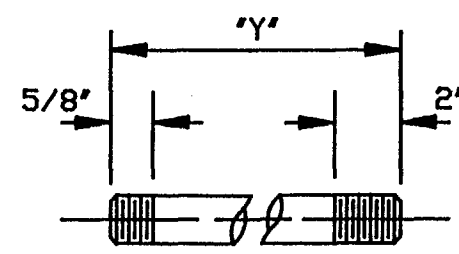
IMP PLATE: 13 3/4" O.D. x 1/4" THK
 (1- REQ'D) (WELD TO SPACERS)



ELEVATION VIEW



3/4" O.D. SPACER TUBING (C-STL)

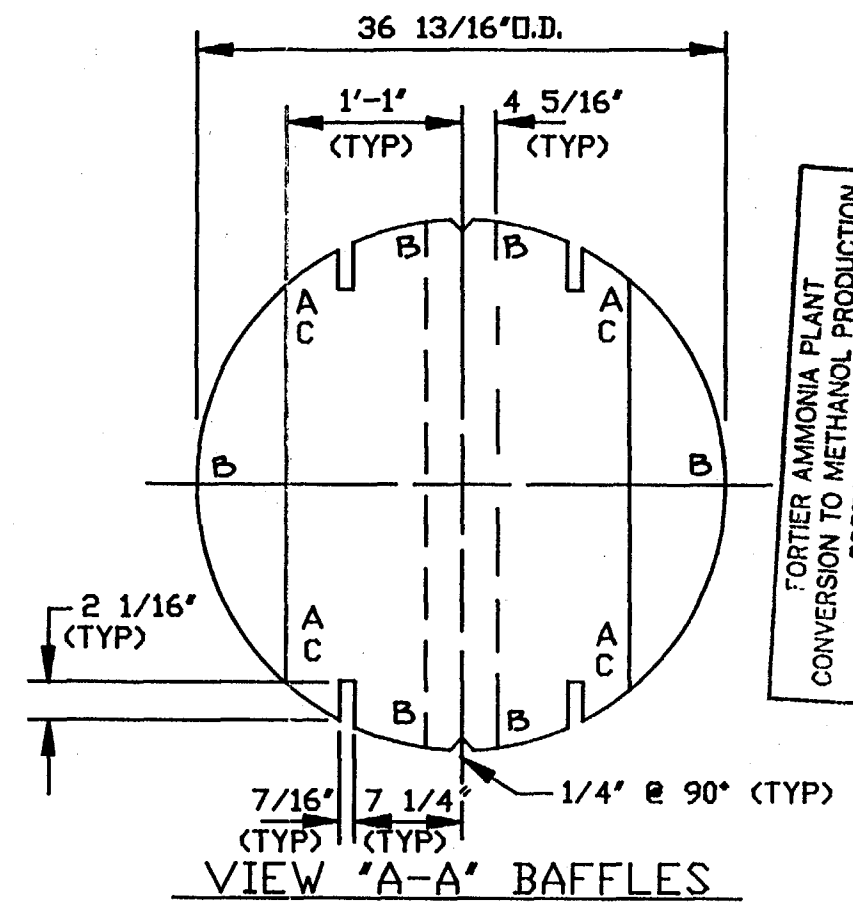


1/2" TIE RODS (C-STL)

MK'D	REQ'D	"X"	MK'D	REQ'D	"X"	REQ'D	"Y"
(A)	4	1'-10 3/8"				4	17'-5"
(B)	4	2'-11 11/16"				4	16'-3 3/4"
(C)	56	1'-0 13/16"					
(D)	24	2'-1 15/16"					

5/10/93 REV. BAF. DESIGNATIONS PER EEC. MIKE/Qmt
 3/8/93 REV A BAFFLES TO "C" AS NOTED / EEC B/Qmt

- NOTES:
- 1.) DRILL 2 1/32" Ø HOLES FOR TUBES.
 - 2.) DRILL 9/16" Ø HOLES FOR TIE RODS.
 - 3.) DEBURR ALL TUBE HOLES.
 - 4.) REMOVE ALL SHARP CORNERS ON BAFFLES.



- 6- REQ'D CUT "AAAA" } 5/16" THK (15)
 7- REQ'D CUT "BBB-BBB" }
 2- REQ'D CUT "CCCC" — 1/2" THK. (16)

THE PRITCHARD CORPORATION
 PRITCHARD REQ'N NO. 7-1
 P.O. NO. 2639-7-1-17
 ITEM NO. E-110
 SERVICE: PROCESS GAS PREHEATER
 OWNER: FORTIER METHANOL COMPANY
 LOCATION: WESTWEG, LOUISIANA
 PROJECT NAME: AMMONIA TO METHANOL CONVERSION

CERTIFIED CORRECT FOR FABRICATION
 DATE 5-11-93 BY: [Signature]

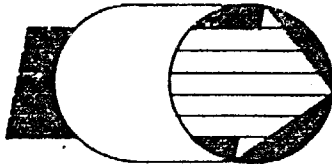
Energy Exchanger Co.

1844 No. Garnett Rd. • Tulsa, Okla. 74116

BUNDLE DETAILS

DATE: 2/3/93	DRAWN BY: BA	DRAWING NO.	REV.
CHK'D BY: JMH	APP'D BY: HM	X-4573-G	2

N. B. NO. LATER



CERTIFIED BY

Energy Exchanger Company

TULSA, OKLAHOMA



W

RT-4

P.H.T.

MAWP SHELL	525	P.S.I. e	500	*F	788	TEST P.S.I.G.
MAWP TUBE	450	P.S.I. e	650	*F	675	TEST P.S.I.G.
MIN. DESIGN METAL TEMP.		SHELL	+17	*F e	525	P.S.I.
		TUBE	+17	*F e	450	P.S.I.
SERIAL NO.	X-4573					YEAR BUILT
P.O. NO.	2639-7-1-17					
SERVICE	PROCESS GAS PREHEATER					

ITEM

E-110

SIZE

37-240

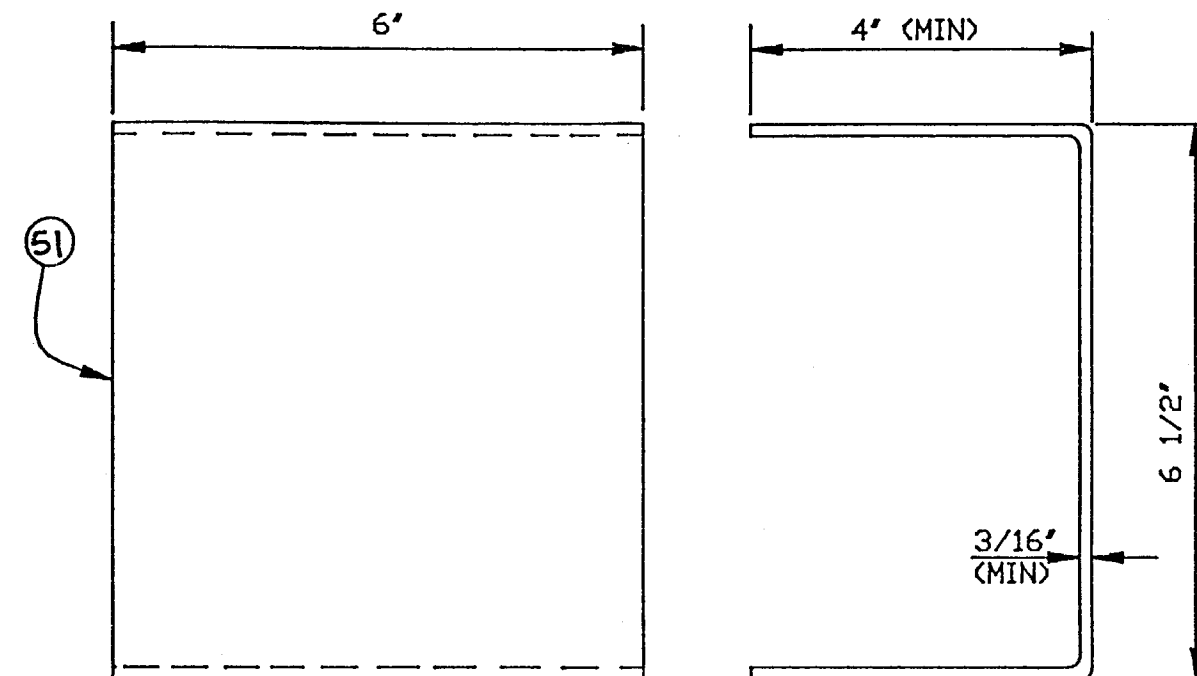
TYPE

NEN

SHOP TEST: SHELLSIDE 788 P.S.I.G.
 TUBESIDE 678 P.S.I.G.

PROJECT: AMMONIA TO METHANOL PLANT CONVERSION

CUSTOMER: PRITCHARD CORP/ FORTIER METHANOL CO.



NAME PLATE BRACKET DETAIL

NAME PLATE DETAIL

THE PRITCHARD CORPORATION

APPROVAL DOES NOT RELIEVE THE FABRICATOR OF RESPONSIBILITIES FOR ACCURACY OF DIMENSIONS AND COMPLIANCE TO CODES, PRITCHARD SPECIFICATIONS AND PURCHASE ORDER.

☒ A. APPROVED

☐ B. APPROVED AS NOTED

☐ C. APPROVAL WITHHOLD, REVIEW AND RESUBMIT

DATE 4/1/93 SIGNATURE NV

THE PRITCHARD CORPORATION
PRITCHARD REQ'N NO. 7-1
P.O. NO. 2639-7-1-17
ITEM NO. E-110
SERVICE: PROCESS GAS PREHEATER
OWNER: FORTIER METHANOL COMPANY
LOCATION: WESTWEGO, LOUISIANA
PROJECT NAME: AMMONIA TO METHANOL
CONVERSION

CERTIFIED CORRECT
FOR FABRICATION
DATE 3-8-93

BY: *gmk*

	Energy Exchanger Co. 1844 No. Garnett Rd. • Tulsa, Okla. 74118				
<u>NAME PLATE DETAIL</u>					
DATE: 2/3/93	<table border="1"> <tr> <td data-bbox="2303 1655 2542 1673">DRAWN BY: BA</td> <td data-bbox="2542 1655 2924 1673">DRAWING NO.</td> </tr> <tr> <td data-bbox="2303 1673 2542 1693">CHK'D BY: <i>Qmt</i></td> <td data-bbox="2542 1673 2924 1693"> X-4573-J </td> </tr> </table>	DRAWN BY: BA	DRAWING NO.	CHK'D BY: <i>Qmt</i>	X-4573-J
DRAWN BY: BA	DRAWING NO.				
CHK'D BY: <i>Qmt</i>	X-4573-J				
	<table border="1"> <tr> <td data-bbox="2303 1693 2542 1711">APP'D BY: HM</td> <td data-bbox="2542 1693 2924 1711">REV. 1</td> </tr> </table>	APP'D BY: HM	REV. 1		
APP'D BY: HM	REV. 1				

① 3/8/93 ADD INFO / CUST B/ *Qmd*