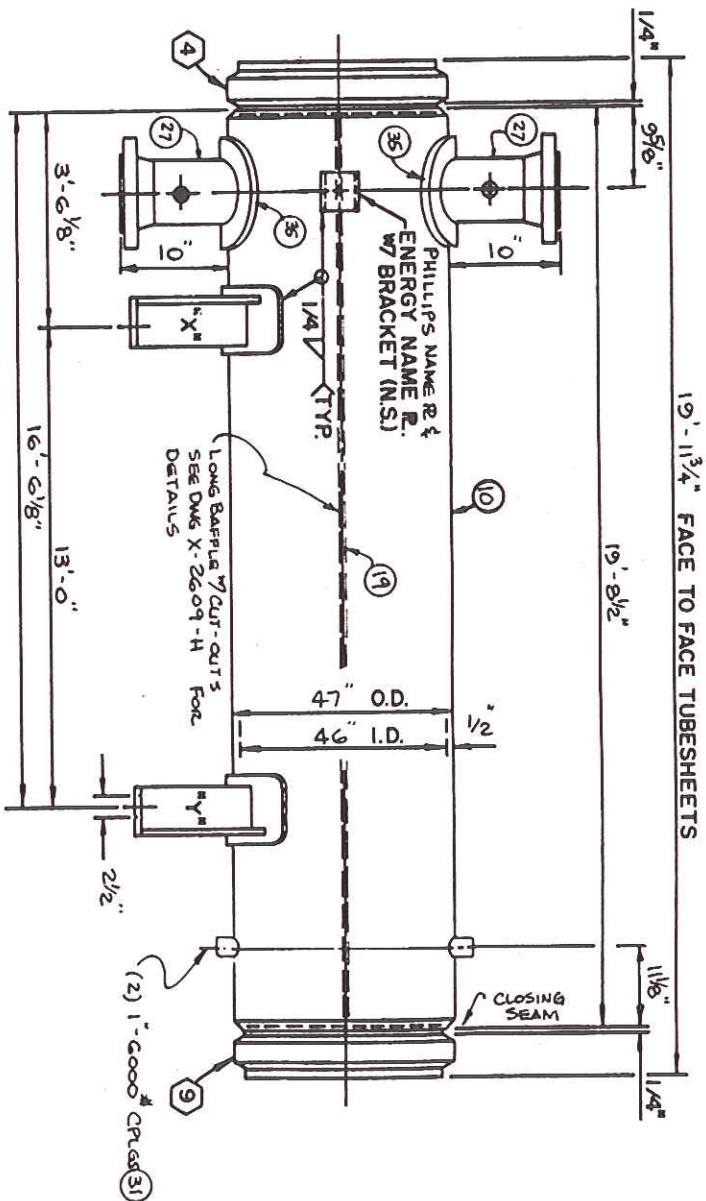




NOTES:

- 1) SEE DWG. STD-1 FOR WELD DETAILS.
- 2) GRIND ALL WELDS FLUSH W/ I.D.
- 3) SEE DWG. NO. X-2609-F FOR SUBSHEET DETAILS.
- 4) SEE DWG. NO. X-2609-D FOR SUBSHEET DETAILS.
- 5) SPOT RADIOGRAPH SHELL @ START, STOP & INTERSECTIONS
6. WELD PADS EQUIPPED W/ 1-1/4" NPT WEEPHOLE, AIR TESTED @ 15 PSI, THEN FLANGED & STIFF GRASZ
7. NOZZLES EQUIPPED W/ 1-1" 6000 #CRG & 1-1 1/2" 6000 #CRG AS SHOWN

PAUL H. FOWLER & HIS WIFE

EVG
11/7/87

Δ "Kites Across Dim. DP/1/11/11



Energy Exchanger Co.
1844 No. Garnett Rd. • Tulsa, Okla. 74116

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

SHELL DETAILS

DATE: 1/4/86	DRAWN BY: SP	DRAWING NO. X-2609-C	REV.
CHK'D BY: J.E.	APPRO. BY: <i>[Signature]</i>		1

DRAWING NO.

REV.

ITEM No: PC-7469-112-41-1085/

HCC - 41 - 2621

P.O.No.: 659106-4-0401-01

FAC/INV Na: A14112

PROJ. NO.: AFE PC-7469

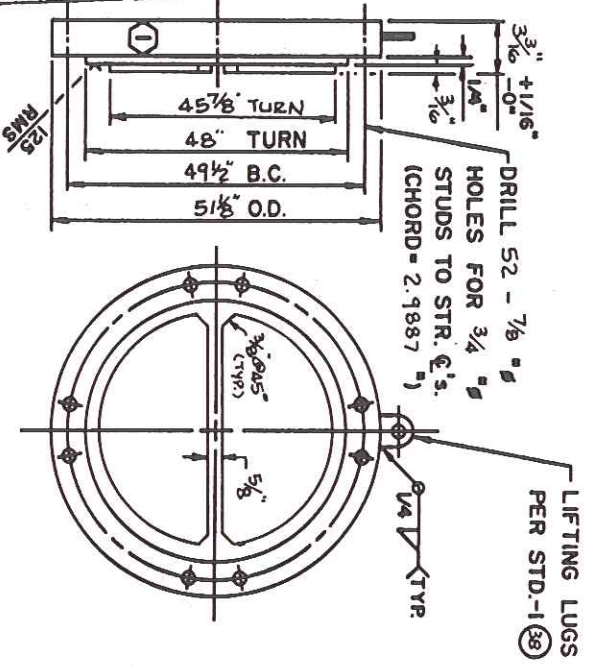
CONTRACT NO.: 659106

10-20

44-1085

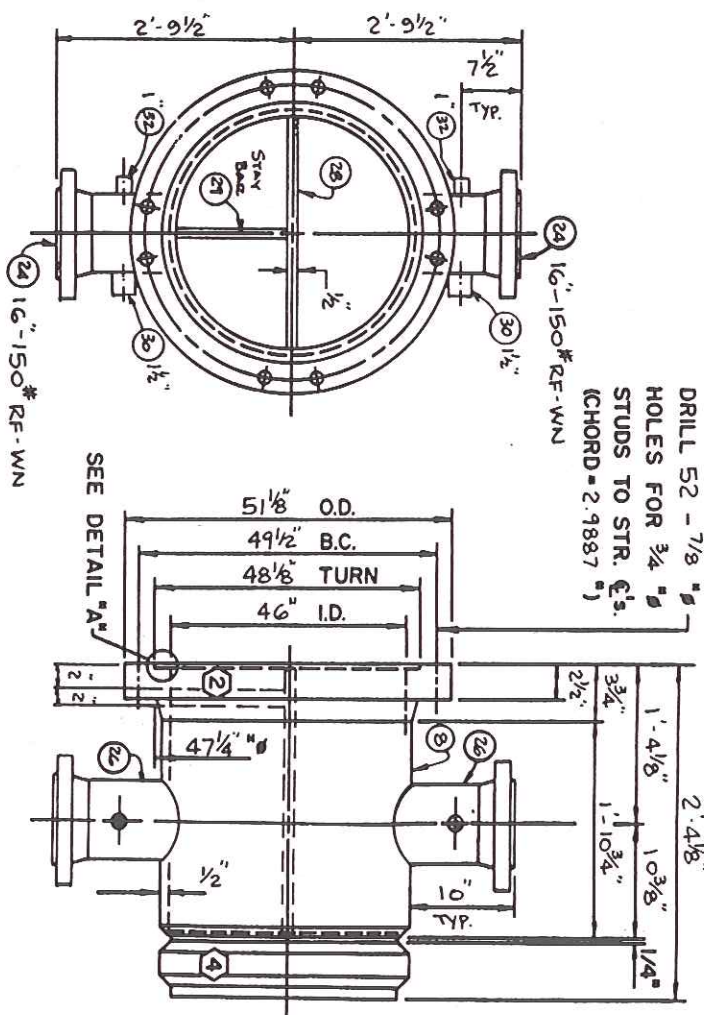
CONFIDENTIAL	459106
PHONE	4-0401-01
SERIAL	008601)
ITEM NO.	PC 7469-112-

659106
4-0401-01
007(01)
PC7469-112-41-1085

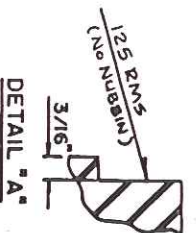
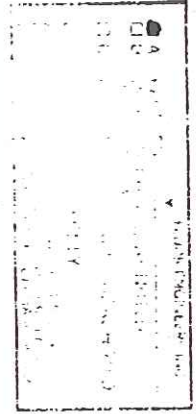


CHANNEL COVER DETAILS

- NOTES:
- 1) SEE DWG. STD-1 FOR WELD DETAILS.
 - 2) SEE DWG. NO. X-2609-F FOR TUBESHEET DETAILS.
 - 3) SPOT RADIOGRAPH CHANNEL @ START, STOP, AND INTERSECTION
 - 4) EACH NOZZLE EQUIPPED W/ 1-1" 6000# CRG & 1-1 1/2" 6000# CRG (AS SHOWN)



CHANNEL DETAILS



Energy Exchanger Co.
1844 No. Garnett Rd. • Tulsa, Okla. 74116

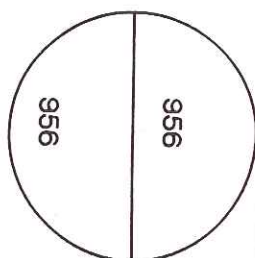
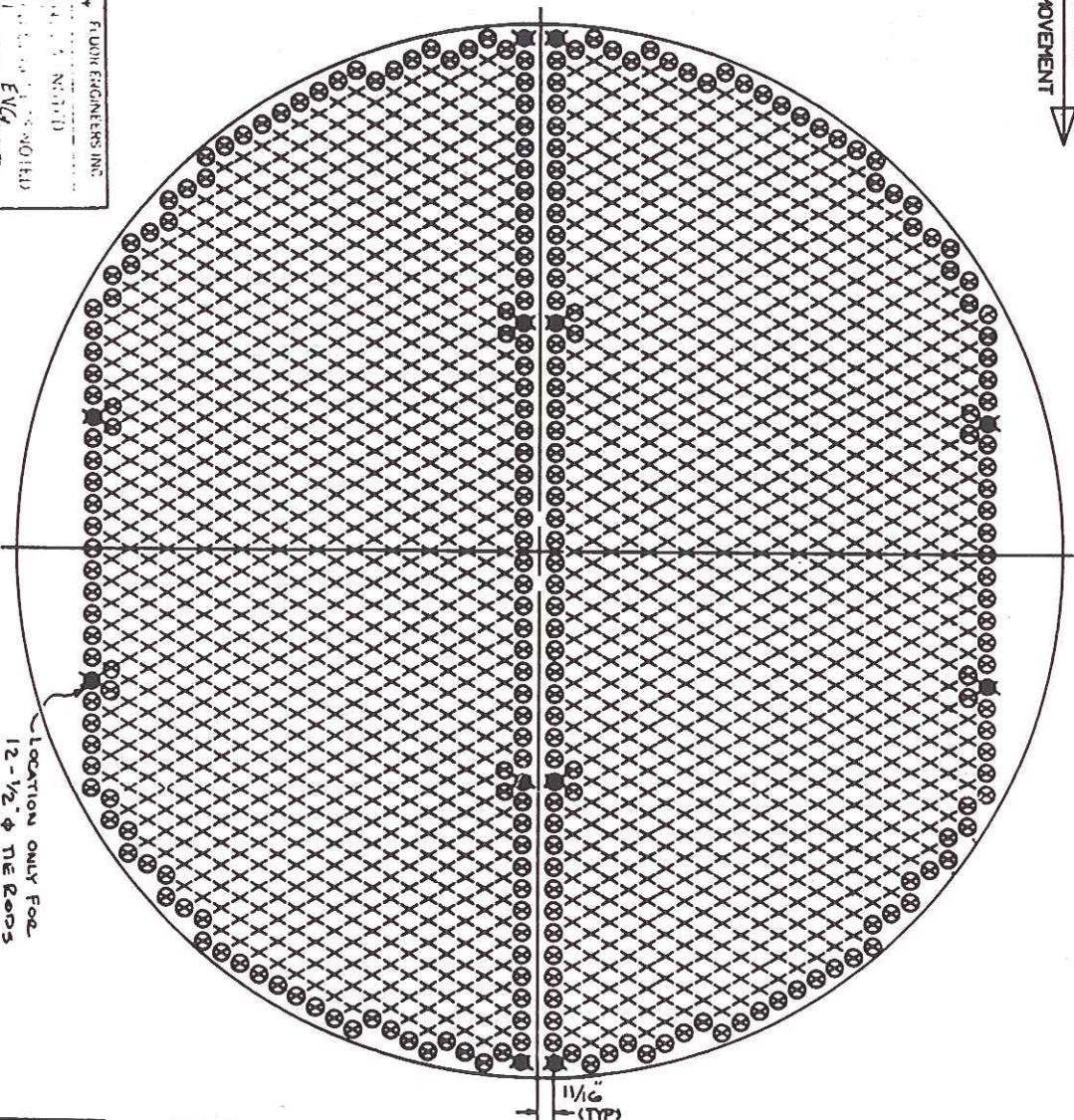
CHANNEL DETAILS

DATE: 11/4/86	DRAWN BY: SP	DRAWING NO. X-2609-B	REV. 0
CHK'D BY: J.E.	APP'D BY: AS		

ITEM No: PC-7469-112-41-1085/
HCC-41-2621
P.O. No.: 659106-4-0401-01
FAC/INV No: A14112
PROJ. No: AFE PC-7469
CONTRACT No: 659106

DC-01

NC TAPE
MOVEMENT



NO. OF HOLES PER PASS

NOTES

- 1.) DRILL & REAM TUBE HOLES IN TUB SHEETS TO .760" $\pm .002$ DIA. FOR 1912-.7500" O.D. TUBES
- 2.) TUBE PITCH -.937" TRI
- 3.) 45 1/4" TUBE CIRCLE
- 4.) SEE DWG. X-2609-F FOR TUBE HOLE GROOVING DETAIL

ITEM No: PC-7469-112-41-1085/
HCC-41-2621
P.O. No: 659106-4-0401-01
FAC/INV No: A14112
Prod. No: AFE PC-7469
CONTRACT No: 659106

659106
4-0401-01
012(01)
PC-7469-112-
41-1085

DC-01



ENERGY EXCHANGER CO.
1844 NO. GARRETT RD.
TULSA, OKLA. 74118

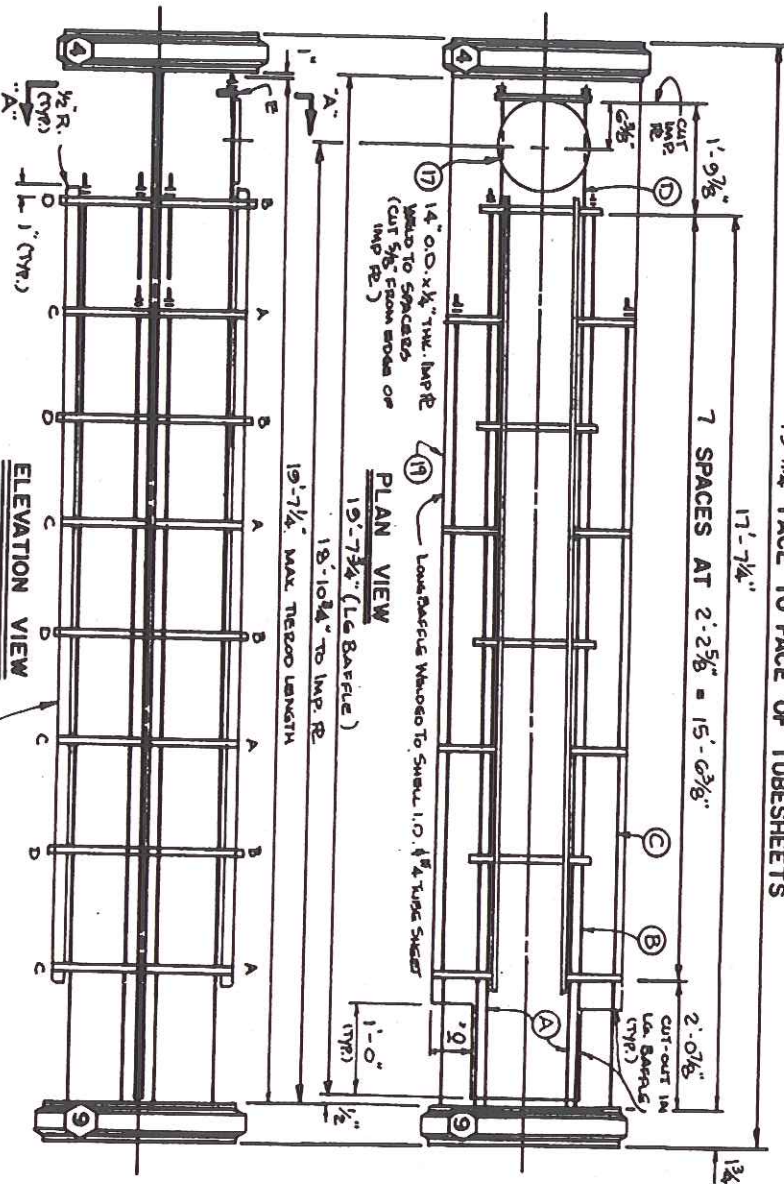
TUBE LAYOUT

DATE	DR	DRAWING NO.	REV
11/3/86	SR	X-2609-G	0
CK J.E.	APPD <i>[Signature]</i>		

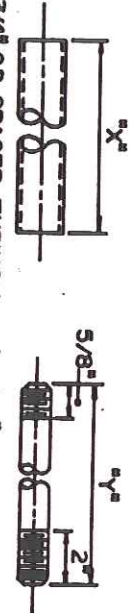
VIEW LOOKING AT SHELL SIDE OF # 9 TUBESHEET

FLUOR ENGINEERS INC.
117/87
ENC 117/87

19'-11 3/4" FACE TO FACE OF TUBESHEETS



ELEVATION VIEW



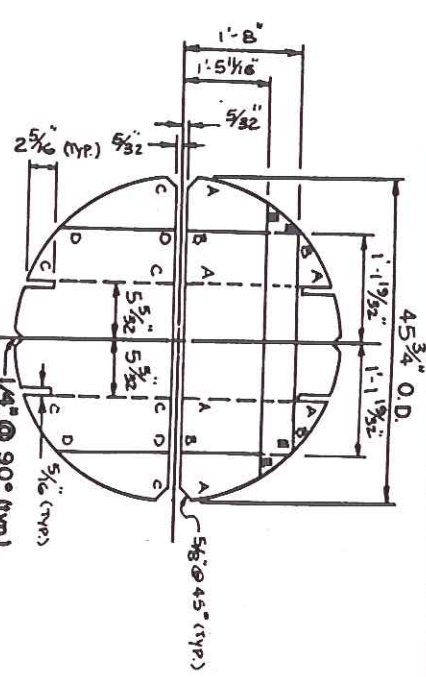
3/4" OD SPACER TUBING (C.S.T.L.)

MK'D RECD	X"	MK'D RECD	X"
A	12	2'-0 3/8"	
B	56	2'-2"	
C	12	4'-4 5/8"	
D	2	1'-9 1/4"	

RECD	Y"
2	19'-8"
6	17'-10"
4	15'-7 3/8"

NOTES:

- 1) DRILL 4 3/4" DIA. HOLES FOR TUBES.
- 2) DRILL 3/4" DIA. HOLES FOR TIE RODS.
- 3) DEBURR ALL TUBE HOLES.
- 4) REMOVE ALL SHARP CORNERS ON BAFFLES.



ENGINEERS INC
 PROJECT
 DATE 11/7/87
 BY J. E.

ITEM NO: PC-7469-112-41-1085/41-1085
 HCC-41-2621
 P.O. NO.: 659106-4-0401-01
 FAC/INV NO.: A14112
 PROJ. NO.: AFE PC-7469
 CONTRACT NO.: 659106



Energy Exchanger Co.
 1844 No. Garnett Rd. • Tulsa, Okla. 74116

BUNDLE DETAILS

DATE: 11/4/86	DRAWN BY: J.E.	DRAWING NO. X-2609-H	REV. 0
---------------	----------------	----------------------	--------

N. B. No. 1080



CERTIFIED BY
ENERGY EXCHANGER COMPANY
TULSA, OKLAHOMA



MAMP SHELL 263 PS1 250 395 TEST PS1.G.
MAMP TUBE 150 PS1 150 225 TEST PS1.G.
SERIAL NO. X-2609 YEAR BUILT 1986
P.O. NO. 659106-4-0401-01

SERVICE REACTOR JACKET WATER COOLER,

TRAIN 1A

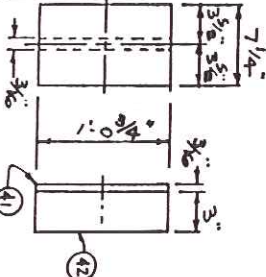
ITEM * SIZE 46" x 240" TYPE NFN

* PC-7469-112-41-1085 / HCC-41-2621

FAC./INV. No: A14112

N&C TEST: S.S. = 449 PS1.; T.S. = 227 PS1.

NAME PLATE DETAIL



PROCEED CHANGE AS NOTED
PROJECTED
DATE 1/23/87

FLUOR ENGINEERS INC.

PROCEED CHANGE AS NOTED
PROJECTED
DATE 1/23/87

NAME PLATE BRACKET DETAIL

ITEM No: PC-7469-112-41-1085/
HCC-41-2621
P.O. No.: 659106-4-0401-01
FAC./INV No: A14112
PROJ. No.: AFE PC-7469
CONTRACT No.: 659106

NATL BD.

MATL BOARD SERIAL NO. 1080

CERTIFIED BY ENERGY EXCHANGER COMPANY

MFR SERIAL NO. X-2609 YR BUILT 1986

SPEC NO.

BUILT FOR Phillips 66 Co.

SIZE & SERVICE TEMA-C 46" x 240" REACTOR JACKET WATER COOLER, TRAIN 1A

P.D. 659106-4-0401-01 MFR DWG NO. X-2607 PVI NO.

SHOP ORDER NO. X-2609 CO. DWG NO.

M.A.W. PRESS. @ TEMP TEST PRESS. THK MATERIAL

TUBES	150 PSIG	150 F	225 PSIG	075"	SA-214
SHELL	263 PSIG	250 F	395 PSIG	.5"	SA-516-70
CHANNEL	150 PSIG	150 F	225 PSIG	.5"	SA-516-70

CHANNEL HEAD TYPE N 2625" SA-516-70

NO. TUBES 1912 TUBE SIZE .75 IN. SURFACE AREA 7345 SQ. FT.

CORR ALLOW. SHELL .0625" CHAN. .0625" CHAN. HD. .0625"

H.T. NO XR RT 3 EMPTY WT. 35100

PHILLIPS NAME PLATE



Energy Exchanger Co.
1844 No. Garnett Rd. • Tulsa, Okla. 74116

NAME PLATE & BRACKET DETAIL

DATE 11/4/86 DRAWN BY APPROVED BY
CHECKED BY J.E. X-2609-K

CONTRACT 659106
P.O. NO. 4-0401-01
DATE 015 (02)
PC-7469-112
DC-01