

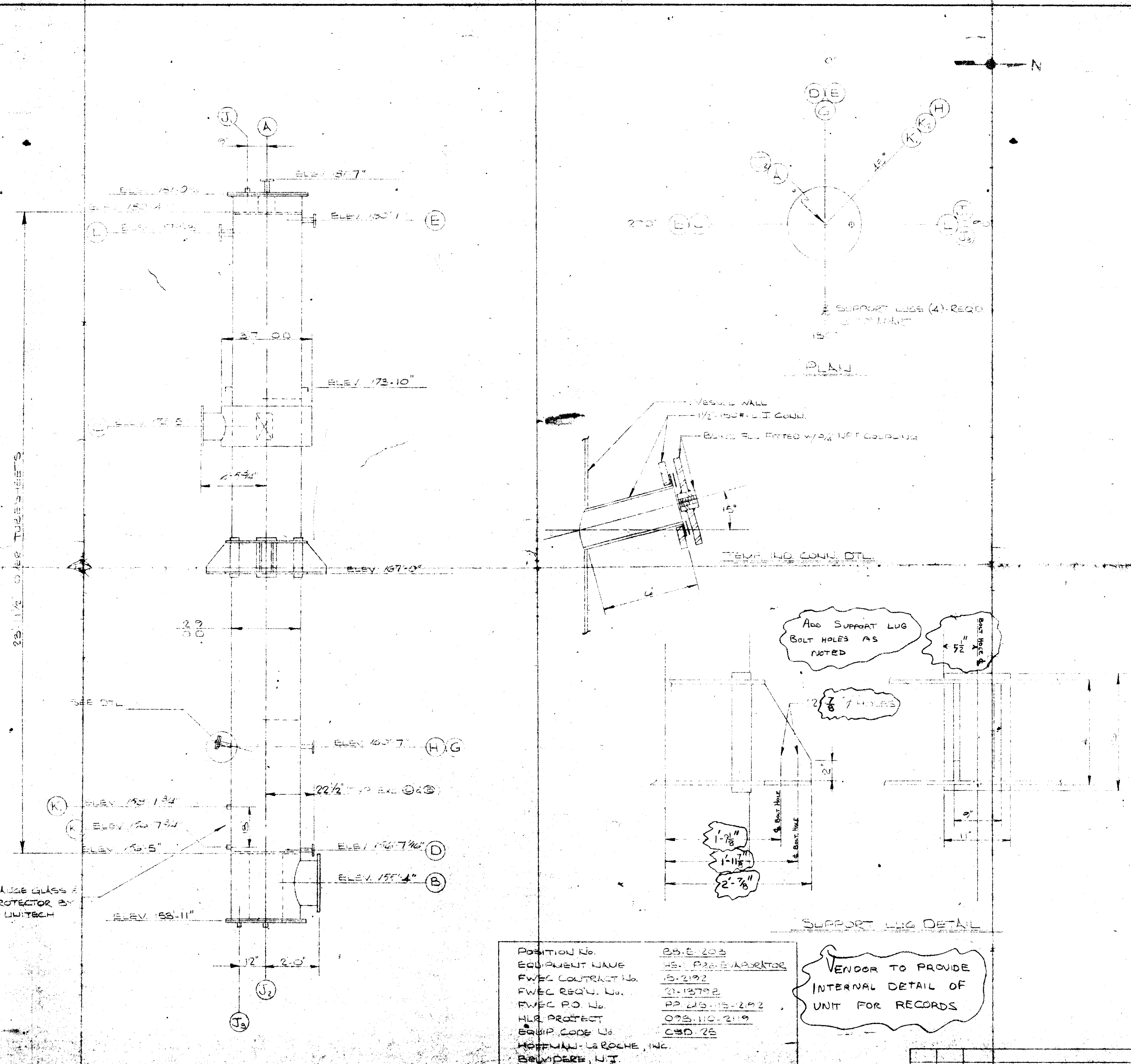
SPECIFICATION	SHELL SIDE	TUBE SIDE
PART	HE-1	
QUANTITY	ONE	
DESIGN	75 PSIG / FV	14 PSIG / FV
OPERATING	121 PSIG	194 PSIG
TEST	117.5 PSIG	21 PSIG
DESIGN	350°F	350°F
OPERATING	150°F	125°F
CODE	ASME VIII	U-2
STAMPING	YES	NO
TYPE	VAPOR COND	EXCHANGE L/C
SPECIFIC GRAVITY	1.0	1.25
JOINT EFF.	0.7	0.7
RADIOGRAPH	U ₂	U ₂
STRESS RELIEVE	NO	NO
CORR. ALLOW	1/16" ON CARBON STEEL ONLY	
SANDBLAST		
SHOP PAINT		
GASKETS	VTGON	
INSULATION	BY OTHERS	
SHIPMENT	ONE PIECE	

VENDOR TO SUBMIT CORRECTED
DRAWING CERTIFIED.

1. ONLY APPROVED FOR REVISIONS
OR CHANGES TO THE ORIGINAL
DRAWING. ANY CHANGES TO THE
DRAWING MUST BE MADE BY THE
DESIGNER OR A PERSON AUTHORIZED
BY THE DESIGNER. ANY CHANGES
TO THE DRAWING MUST BE MADE
BY THE DESIGNER OR A PERSON
AUTHORIZED BY THE DESIGNER.
ANY CHANGES TO THE DRAWING
MUST BE MADE BY THE DESIGNER
OR A PERSON AUTHORIZED BY THE
DESIGNER.

NO.	SIZE	RATE	TYPE	DESCRIPTION	MAT'L
1	2"	150*	L.T.	LIQUOR INLET	5/8"
2	1 1/2"	150*	L.T.	LIQUOR OUTLET	5/8"
3	1 1/2"	150*	L.T.	VAPOR JULET	5/8"
4	1 1/2"	150*	L.T.	CONDENSATE OUT	5/8"
5	2"	150*	L.T.	2KS OUTLET	5/8"
6	1"	150*	L.T.	PRESS. IND. CONN.	5/8"
7	1"	3000*	SERD	TEMP. IND. CONN.	5/8"
8	1 1/2"	3000*	SERD	VALT. ED. IN. (P. 100)	5/8"
9	1 1/2"	3000*	SERD	GALVE GLASS CONN.	5/8"
10	1"	150*	L.T.	DEV. CONN.	5/8"

STAINLESS STEEL NOZZLE NECK WITH
CARBON STEEL BACKING FLANGE



POSITION NO. 25.5-203
EQUIPMENT NAME HE-1 PRESS. EXCHANGER
FWEC CONTRACT NO. 15-2192
FWEC REQ'D. NO. 21-13792
FWEC P.O. NO. 21-13792
HLR PROTECT 075-110-2119
EQUIP. CODE NO. CSD-25
HOFFMAN-LE ROCH, INC.
BIRMINGHAM, N.J.

VENDOR TO PROVIDE
INTERNAL DETAIL OF
UNIT FOR RECORDS

- NOTES
- VESSEL TO BE FABRICATED IN ACCORDANCE WITH:
 - ASME, B, & P, V, CODE SECTION VIII, LATEST EDITION, (EXCEPT FOR TUBES)
 - GOOD SHOP PRACTICE FOR DESIGN CONDITIONS SHOWN, (EXCEPT FOR TUBES)
 - ALL BOLT HOLES TO STRADDLE VESSEL CENTER LINES.
 - PRIOR TO SHIPMENT FABRICATOR TO CLEAN RUST, SCALE, GREASE, WELD SPATTER AND OTHER FOREIGN MATERIAL FROM INSIDE OF VESSEL. ALL NOZZLES AND OPENINGS TO BE COVERED FOR SHIPMENT.
 - MATERIALS OF CONSTRUCTION:

ALL BOLT MATERIALS EXCEPT: 304L STAINLESS STEEL - 9/16" HEADS - 5/8" DIA. W/ 3/4" DIA.

- METHOD OF CONSTRUCTION:

ALL MAIN SEAMS TO BE FULL PENETRATION BUTT WELDS. CARBON STEEL TO STAINLESS STEEL WELDING TO BE ACCOMPLISHED USING STAINLESS STEEL FILLER METAL. FILLER METAL TO BE COMPATIBLE WITH STAINLESS PARENT METAL.
- HEATING SURFACE TO CONSIST OF (140) 0.8" X 3" B.W.G. (AVERAGE) X 24" LONG, WELDED TUBES ON 12" PITCH.
- EXPAND EACH END OF TUBE INTO TUBESHEETS BY MEANS OF CONTROLLED TORQUE EXPANDER AFTER WELDING OPERATIONS ARE COMPLETED. TUBES TO PROJECT 1/4" TUBESIDE OF TUBESHEETS, TUBESIDE GROOVING NOT REQUIRED. CHAMFER TUBESIDE ON SHELLSIDE OF TUBESHEETS. STAINLESS STEEL TUBING TO BE FULLY FINISHED AND ANNEALED.

WEIGHT SCHEDULE	
VESSEL WEIGHT, EMPTY	5000 LBS.
VAPOR BODY WEIGHT, EMPTY	100 LBS.
HEATING ELEMENT, WEIGHT EMPTY	100 LBS.
VESSEL WEIGHT, OPERATING	5200 LBS.
VESSEL WEIGHT, FLOODED	5300 LBS.

REFERENCE DRAWINGS	
PROCESS FLOW DIAGRAM	15-2192
PIPING AND INSTRUMENT DIAGRAM	15-2192
GENERAL ARRANGEMENT	15-2192
PIPING DRAWINGS	15-2192
FOUNDATION AND LOADING DIAGRAM	15-2192

ENGINEER DATA	
NAME:	HOFFMAN-LE ROCH, INC. BIRMINGHAM, N.J.

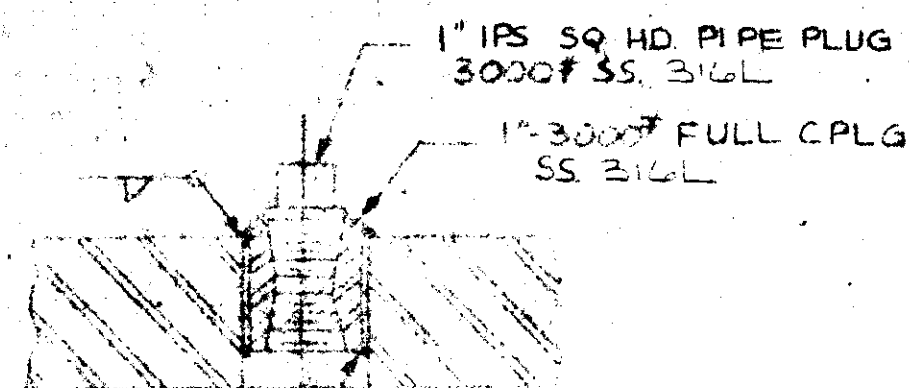
CUSTOMER DATA	
NAME:	HOFFMAN-LE ROCH, INC. BIRMINGHAM, N.J.

ASSEMBLY DRAWING OF HEATING ELEMENT HE-1	
UNITECH CONTRACT NO. 20313	

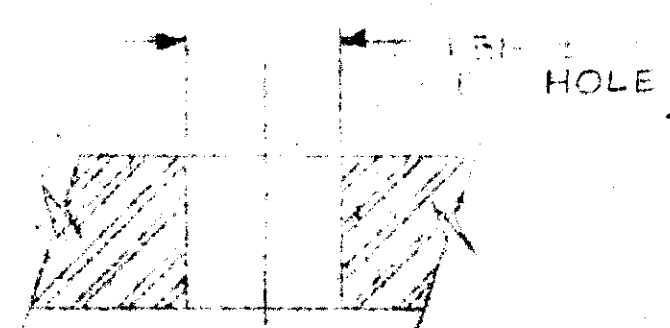
UNITECH	Unitech Division
---------	------------------

REV.	DATE	BY	CHKD.	REMARKS
1	12-17-76	EXT		

#99642

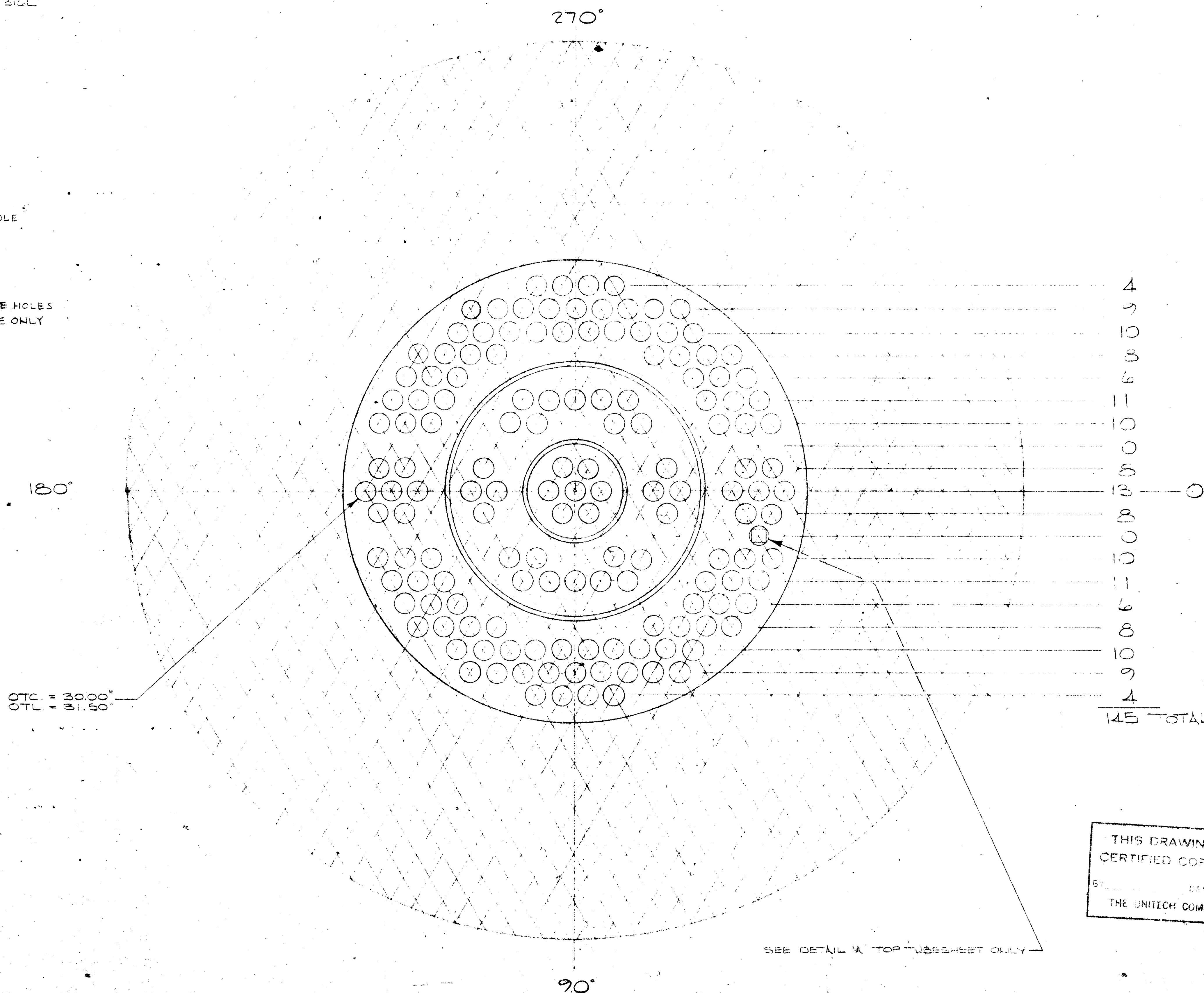


DETAIL A



CHAMFER TUBE HOLES
SHELL SIDE ONLY

DETAIL B
TYPICAL HOLES



SEE DETAIL A TOP TUBESHEET ONLY

THIS DRAWING IS
CERTIFIED CORRECT
BY: [Signature] DATE: JUN 1 1965
THE UNITECH COMPANY

17/8" Δ

NOTES:

- VESSEL DATA--

SHELL, O.D.	33"
NO. TUBESHEETS REQ'D	TWO
NO. TUBES REQ'D	145
NO. PLUGS REQ'D	NONE
TUBE SIZE, O.D.	1 1/2" O.D. 16 BWG
TUBE # HOLES	175 Δ
TUBE LENGTH	24'-0"
TUBE TYPE	STRAIGHT
TUBE MAT'L	3/8" 316L
TUBESHEET MAT'L	3/8" 316L
VESSEL INLET SIZE	12"
NO. OF PAGES	THREE

2. DRILL 145 TUBEHOLE ON BOTH
TUBESHEETS TOGETHER IN ONE (1)
OPERATION.

Unitech
TUBESHEET LAYOUT DRAWING
FOR
HE-1

REV. NO.	DATE	REMARKS	SCALE	DATE	BY
B	10/1/65	REL. FOR FAB.	3" = 1'-0"	10/1/65	JLB
A	10/1/65	FOR CONTRACT			
UNITECH CONTRACT No. 20513			THE UNITECH COMPANY		
			T-513-8-B		