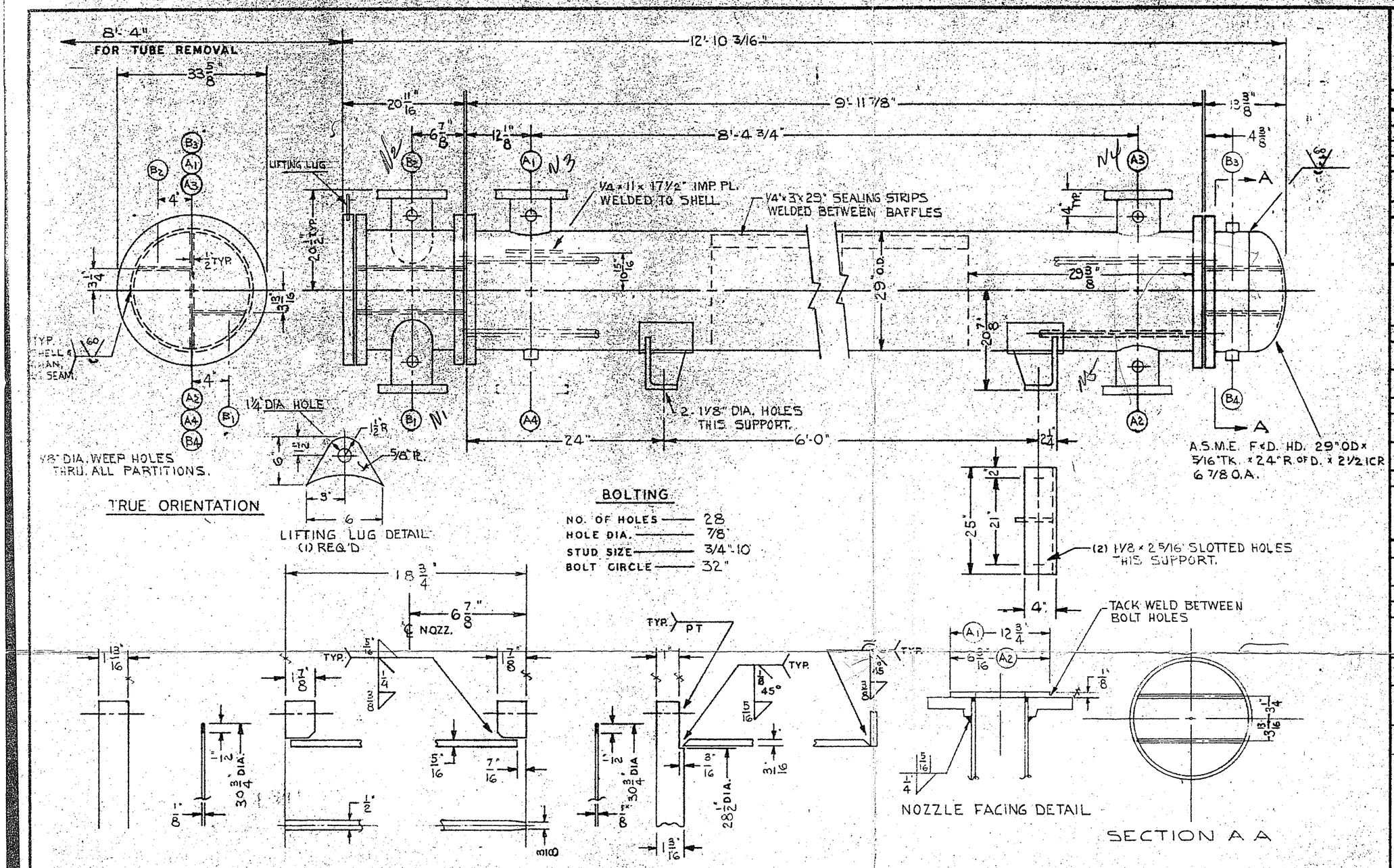

LIFTING LUG DETAIL (1) REQ'D

BOLTING

NO. OF HOLES	28
HOLE DIA.	7/8"
STUD SIZE	3/4"-10
BOLT CIRCLE	32"

CONSTRUCTION DETAILS

CONSTRUCTION TO COMPLY WITH ASME CODE SECT. VIII 1968 ED. INCLUDING CERT. AND STAMP (FORM U-1)

TEMA CL. C

FOR INSTALLATION IN STATE OF ILL.

SHELL SIDE	CONDITIONS	TUBE SIDE
75	DES. PRESS. (PS.I.G.)	75
275	DES. TEMP. (°F.)	275
134	TEST PRESS. (PS.I.G.)	113
ACETONE	DESIGN FLUID	WATER
1/16	CORR. ALLOW. EXC. TUBES	1/16

WEIGHT (LBS.)	
EMPTY:	7360
FLOODED:	10700

GENERAL NOTES

			REQ'D. SHELL	REQ'D. CHAN.	NOT REQ'D.
1	DEHYDRATE				X
2	HALOGEN TEST AT P.S.I.G.	SA-7540			X
3	AIR AND SOAP TEST AT P.S.I.G.	REINF. PADS / FACINGS			X
4	X-RAY SPOT ☒ FULL ☐		1		
5	POST WELD HEAT TREAT				X
6	SANDBLAST C.S. AFTER FAB. PER SSPC	EXT. / INT.			X
7	PICKLE				X
8	PAINT EXTERIOR C.S. ONE SHOP COAT GRAY			X	

				REQ.	
9	TUBE END WELDING	SA-8571	MANUAL		X
			AUTOMATIC		
10	TUBE HOLE GROOVING	SA-8480			X
11	CUSTOMER'S NAME PLATE				X
12	NOZZLE PROTECTION		M&L STD.	X	
			SPECIAL		
13	SPARE PARTS				X
14	IMPACT TEST: WELD METAL ☐ BASE METAL ☐ HEAT AFFECTED ZONE ☐		SHELL		X
			CHAN.		X

15 CONNS A1, A2 & A3 TO HAVE (2) 3/4"-3000 H.C. (PLUGGED) 1 NEAR & 1 FAR SIDE

16 CONNS B1 & B2 TO HAVE (2) 3/4"-6000 H.C. (PLUGGED) 1 NEAR & 1 FAR SIDE

106767

FILE 19E102R

PART	CARBON STEEL SA 53 B	SA 106 B	SA 285 C	SA 212 B	SA 181 I	SA 105 II	STAINLESS STL. 304 SA 312	SA 240	SA 182	ELC
SHELL: BARREL								X		
UNIT FLANGE										
FORMED HEAD										
NOZZLE NECK							X	X		
NOZZLE FLG.					X			F	X	
EXP. JOINT										
CONE										
REINF. PAD										
SCR. FTGS.									X	
WELD FTGS.										
BONNET OR CHAN.: BARREL			X							
UNIT FLANGE				X						
FORMED HEAD			X							
NOZZLE NECK	X									
NOZZLE FLG.					X					
COVER				X						
REINF. PAD										
SCR. FTGS.					X					
WELD FTGS.										

PART	C S SA 285 C	SA 212 B	SA	SS SA 240 304	ELC
TUBE SHT.				X	
TUBES	C S SA 214	SA 179	SA 249	SS 304 SA 213	ELC
AVG.	X				
MIN.			X		
STUDS: SA 193 B7			X	NUTS: SA 194 2H	X
GASKETS				SHELL	CHAN
COMP. ASBESTOS					X
GARLOCK # 7021					
			CS	SS	
DBL. JKT. ASB.					
SPIRAL WOUND					
PACKING					
MISCELLANEOUS				CS	SS
BAFFLES					X 304
TIE RODS; SPACERS					X "
IMPINGEMENT BAF.					X "
PASS. PARTITIONS				X	
UNIT SUPPORTS					X "
SUPPORT PAD				X	
BACK-UP STRIP					
SEALING STRIPS					X 304
SEALING STRIPS				SS 302	

MATERIAL NOTES

A. STAINLESS STEEL ELC (EXTRA LOW CARBON) (0.03% CARBON MAX.)

B. SA 312 IS WELDED PIPE UNLESS INDICATED BY "S" (FOR SEAMLESS).

C. THE LETTER "F" INDICATES FACING OF MATERIAL UNDER WHICH IT APPEARS.

D. SA 53 GR. B IS SEAMLESS PIPE.

E. SA 515-70 MAY BE SUBSTITUTED FOR SA 212 GR. B.

Proposed 282 tubes 10' 3/4"

NOZZLE SCHEDULE

MK.	SIZE	RTG. #	FACE	TYPE	NECK	REMARKS	SERVICE
A1	10	150	RF	S.O.	3/16	SEE DET.	INLET
A2	4	150	RF	S.O.	S/40S	"	OUTLET
A3	2	150	RF	S.O.	S/40S		VENT
A4	3/4	3000	-	H.C.		PLUGGED	DRAIN
B4	3/4	3000	-	H.C.		PLUGGED	DRAIN
B3	3/4	3000	-	H.C.		PLUGGED	VENT
B2	6	150	R.F.	S.O.	S/40		OUTLET
B1	6	150	RF	S.O.	S/40		INLET

3/4 O.D. 16 .620 .581 (14)

REV.	DESCRIPTION	BY	DATE	CK.
1	REV. PER CUST MARKED PRINT DTD. 2/4/69	HWS	2-11-69	

BAFFLES		TUBES	
* H: HORIZONTAL, V: VERTICAL, D: SEE DETAIL		FOR U-TUBES: LG: LENGTH OVER TUBE BUNDLE.	
NO.: 3	PITCH: 29 3/8"	NO.: 662	LG.: 10'-0"
DIA.: 28 3/16	CUT: 45 %	O.D.: 3/4"	PITCH: 15/16" Δ
TK.: 3/8"	CUT: V *	BWG: 16	PASSES: 6

REFERENCE DRAWINGS:
T.S. DRILLING TEMPLATE: ET 11841
BENDING DETAILS:
DETAILS:

CERTIFIED CORRECT FOR JOB NO. 17357-1
BY A L Gale DATE FEB. 14, 1969

SHOP	DATE		2/20			
CUST.	REPRO.		1			
	PRINTS	5				
	DATE	1-24				
ISSUED	REVISION	0	1			

CUSTOMER: CLARK OIL & REFINING CORP.
P.O. NO.: COC-29579.01-525-1
ENGINEERS: UNITED ENGINEERS & CONST. INC.
NO. OF UNITS REQUIRED: ONE
M & L SERIAL NO.: 5490
NAT'L. BD. NO.: 2926
TAG: ITEM No. E 102R1

STENCIL TAG No. ON CHANNEL 3" HIGH

INSPECTION BY CUSTOMER	REQ'D	NOT REQ'D
	X	

M & L JOB NO. 17357-1

MANNING & LEWIS ENGINEERING CO.
UNION, N. J.

29-120 CONDENSER

TEMA TYPE: AEM (HOR.)

SCALE	MADE	CKD.	DATE	DRAWING NO.	REV.
	HWS		1-22-69	C 11840	1