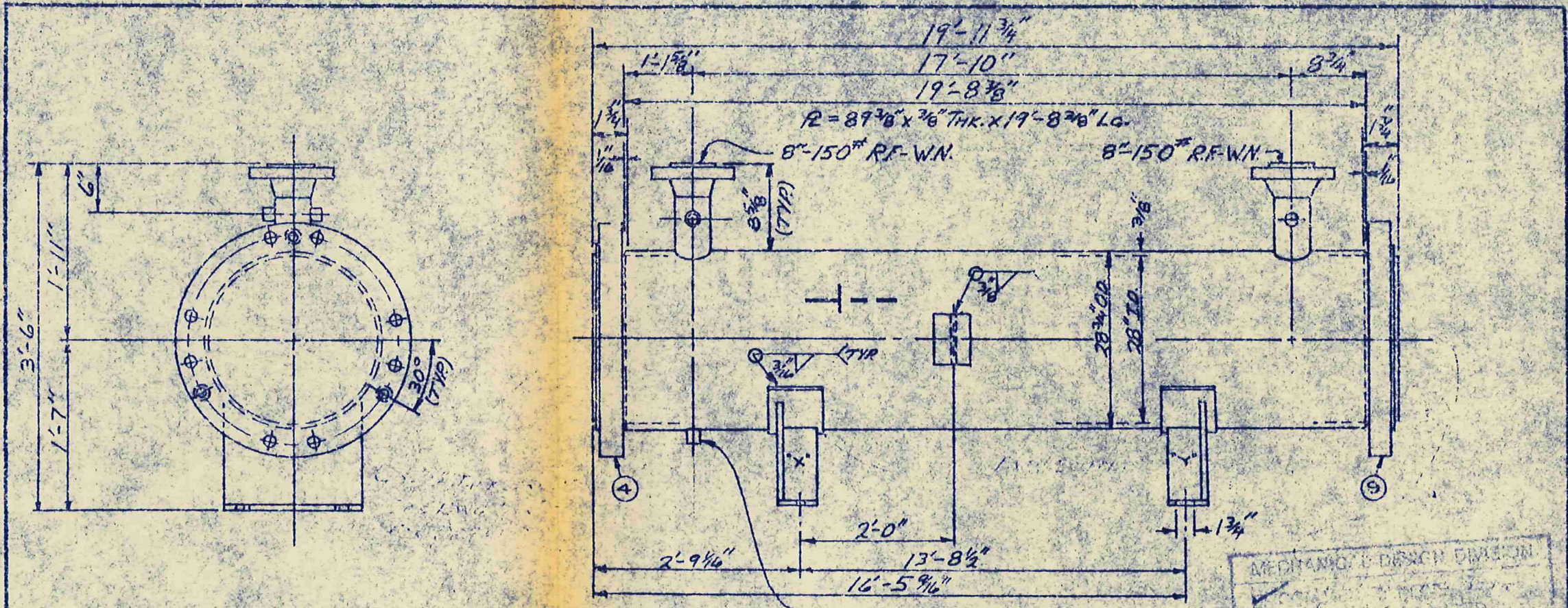
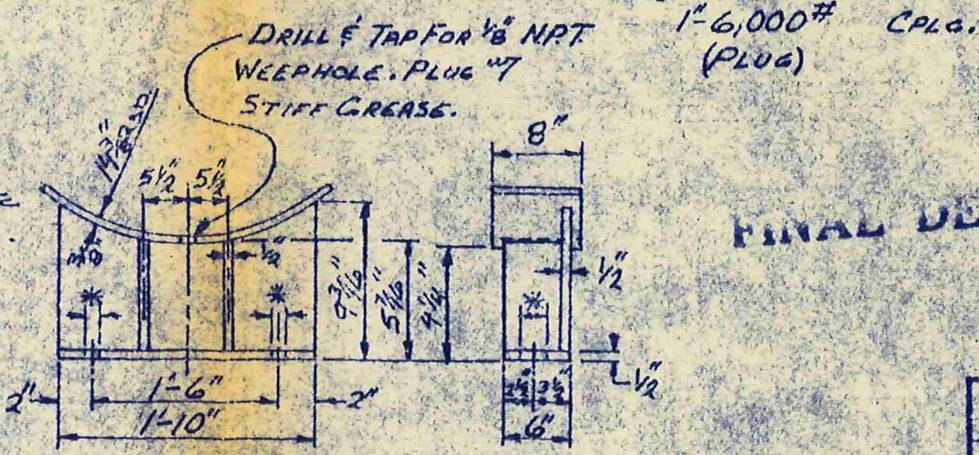


FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
DIVISION OF
PPG INDUSTRIES, INC.
BEAUMONT, TEXAS 77704

JOB. NO. _____ DATE 2/19/77 P.O. 1607-009
DEPT. Glycol EQPT. NO. 21-08-026
VENDOR Hughes-Anderson
MFR. _____
EQPT. USED FOR Reboiler Water Cooler



- NOTES:**
1. SEE DWG. STD.-1 FOR WELD DETAILS.
 2. GRIND ALL WELDS FLUSH W/ I.D.
 3. SPOT X-RAY SHELL.
 4. ALL BOLT HOLES TO STR. & IS.
 5. ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES MR-1A & SA-1A.
 6. PAINT P.O. No. 1607-009 & ITEM No. E-1404 ON SIDE & ONE END OF UNIT.



SUPPORT DETAILS

* 1-REQD. W/ 2-7/8" Ø HOLES MK'D. (X).
* 1-REQD. W/ 2-7/8" x 1/4" SLOTS MK'D. (Y).

FINAL DESIGN

JOB # 1607
ITEM # E-1404

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE SHELL DETAILS		NUMBER REQ'D. ONE	
WORK ORDER 1823	DATE 2-19-76	SIZE 28" x 20"	DRAWING NUMBER 1823-03
DR STEVE	SCALE NONE	TYPE AFM	
CK N/A			

FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
DIVISION OF
PPG INDUSTRIES, INC.
BEAUMONT, TEXAS 77704

JOB. NO. DATE 8-17-76 P.O. 1607-009
DEPT. GLYCOL EQPT. NO. 21-08-026
VENDOR HUGHES ANDERSON
MFR.
EQPT. USED FOR REABSORBER WATER
COOLER

BILL OF MATERIAL				CUSTOMER: <u>SCIENTIFIC DESIGN</u>				SCH. TO SHIP: <u>Aug 76</u>		FILE NO.: <u>291-75</u>		DATE: <u>10/15/75</u>		NO. UNITS: <u>1162</u>		W.O.: <u>1823</u>	
DWG. NO.	PART NO.	QTY.	TOTAL QTY.	PART NAME	DESCRIPTION	MATERIAL	REV.	X-5TH	REMARKS	P.O. NUMBER	ORDER DATE	DJC DATE	REC'D DATE	EST. COST	PURCH COST		
	600	600		TUBES	3/4" O.D. x 16' LG. (ANG.) x 20'-0" LG.	SA-209-300											
4	1	1		TUBE SHEET	33 1/8" O.D. x 1 3/4" THK	SA-515-70											
9	1	1		TUBE SHEET	33 1/8" O.D. x 1 3/4" THK	SA-515-70											
	15	15		RAFFLES	27 1/4" O.D. x 1/4" THK	SA-36											
	91	91		SPACERS	3/4" O.D. TUBING	STL											
	4	4		TIE ROD	1/2" x 18'-3" LG.	STL											
	10	10		NUTS	1/2" HEX	STL											
	2	2		SEAL BARS	2 1/2" x 1/2" THK x 15'-11" LG	STL											
	1	1		IMP. PLATE	12" x 1/4" THK x 14" LG	STL											
	1	1		TIE ROD	1/2" x 17'-1 1/2"	STL											
	2	2		SADDLES	8" x 3/8" THK x 3 1/4" LG	STL											
	4	4		RIBS	5 1/2" x 1/2" THK x 5 1/2" LG	STL											
	2	2		SUPPORT PL	9 1/2" x 1/2" THK x 1'-10" LG	STL											
	2	2		BASE PL	6" x 1/2" THK x 1'-10" LG	STL											
	4	4		CPIC.	3/4" - 6,000# CRIC	STL											
	4	4		PLUGS	3/4" NPT x 3" LG.	STL											
	5	5		LIFTING LUG	3 1/2" x 1/2" THK x 4" LG	SA-76											
	1	1		NAME PL SET	H-A NAME PL & EMBLEM	STN STL											
	1	1		NAME PL BRACKET	ST 4" WF @ 15.5# x 12'-3" LG	STL											
	3	3		JACKSCREWS	3/4" x 4" LG (2 FIG.)	STL											
	6	6		JACKSCREWS	3/4" x 2 3/8" LG (4 & 9 TUBESHEET)	STL											
	A	1	2	GASKET	30 1/4" O.D. x 29 1/4" I.D. x 1/8" THK 4 RIBS	304SS J.A.F.											
	B	1	2	GASKET	30 1/4" O.D. x 29 1/4" I.D. x 1/8" THK 4 RIBS	304SS J.A.F.											
	C	1	2	GASKET	30 1/4" O.D. x 29 1/4" I.D. x 1/8" THK 4 RIBS	304SS J.A.F.											
	40	40		STUDS	3/4" x 7 1/4" LG	SA-193-B7											
	80	80		STUDS	3/4" x 6 3/4" LG	SA-193-B7											
	200	200		NUTS	3/8" HEAVY	SA-190-24											

MECHANICAL DESIGN DIVISION
 DESIGN
 CHECKED
 APPROVED
 DATE 4-21-76

FINAL DESIGN

REV. BY	DATE	AUTH. BY	REV. BY	DATE	AUTH. BY	REV. BY	DATE	AUTH. BY	REV. BY	DATE	AUTH. BY	REV. BY	DATE	AUTH. BY	REV. BY	DATE	AUTH. BY
01	10/15/75	CUST.	01	5/5/76	COMP. BMM	01	10/15/75	CUST.									

HUGHES-ANDERSON
ENGINEERING CORP.
TULSA, OKLA. 74103
DRAWING NO. 1823-13

FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
 DIVISION OF
PPG INDUSTRIES, INC.
 BEAUMONT, TEXAS 77704

JOB. NO. DATE 8-17-76 P.O. 1607-009
 DEPT. GLYCOL EQPT. NO. 21-08-026
 VENDOR HUGHES ANDERSON
 MFR.
 EQPT. USED FOR REABSORBER WATER
COOLER

BILL OF MATERIAL				CUSTOMER: <u>SCIENTIFIC DESIGN</u>	DATE TO SHIP: <u>Aug 76</u>	FILE NO.: <u>29-75</u>	DATE: <u>10/15/75</u>	NO. UNITS: <u>One</u>	NO.: <u>1823</u>						
DWG. NO.	PART NO.	REQ'D FOR	TOTAL REQ'D	PART NAME	DESCRIPTION	MATERIAL	REV.	X-STR & DC	REMARKS	P.O. NUMBER	ORDER DATE	DISC DATE	REC'D DATE	EST. COST	PURCH COST
		(600)	(600)	TUBES	3/4" O.D. x 16' LG. (ANG.) x 20'-0" LG.	SA-249-300									
4	1	1	1	TUBE SHEET	33 1/8" O.D. x 1 3/8" THK	SA-515-70									
9	1	1	1	TUBE SHEET	33 1/8" O.D. x 1 3/8" THK	SA-515-70									
15	15			BAFFLES	27 1/8" O.D. x 1/8" THK	SA-36									
91	91			SPACERS	7/8" O.D. TURNING	STL									
4	4			TIE ROD	1/2" x 18'-3" LG.	STL									
10	10			NUTS	1/2" HEX	STL									
2	2			PLATE	2 1/2" x 4" THK x 15'-11" LG	STL									
1	1			PLATE	12" x 1/4" THK x 14" LG	STL									
1	1			TIE ROD	1/2" x 17'-1 1/2"	STL									
2	2			SADDLES	8" x 3/8" THK x 3 1/4" LG	STL									
4	4			RIBS	5 1/2" x 1/2" THK x 5 1/2" LG	STL									
2	2			SUPPORT PLATE	9 1/2" x 1/2" THK x 1'-10" LG	STL									
2	2			BASE PLATE	6" x 1/2" THK x 1'-10" LG	STL									
4	4			SPRINGS	3/4" - 6,000# CHG	STL									
4	4			PLUGS	3/4" NPT x 3" LG.	STL									
5	5			LIFTING LUG	3 1/2" x 1/2" THK x 4" LG.	SA-76									
1	1			NAME PLATE SET	H-A NAME PLATE & EMOLEM	STN STL									
1	1			BRACKET	ST. 4" WF @ 15.5# x 12'-3" LG	STL									
3	3			JACKSCREWS	3/4" x 4" LG (2 FIG.)	STL									
6	6			JACKSCREWS	3/4" x 2 3/8" LG (24 & 49 TUBESHEET)	STL									
A	1	2	2	GASKET	30 1/2" O.D. x 29 1/2" I.D. x 1/8" THK 4 RIBS	304SS. J.A.F.									
B	1	2	2	GASKET	30 1/2" O.D. x 29 1/2" I.D. x 1/8" THK 4 RIBS	304SS. J.A.F.									
C	1	2	2	GASKET	30 1/2" O.D. x 29 1/4" I.D. x 1/8" THK 4 RIBS	304SS. J.A.F.									
40	40			STUDS	3/4" x 7 1/4" LG	SA-193-B7									
80	80			STUDS	3/4" x 6 3/8" LG	SA-193-B7									
200	200			NUTS	3/8" HEAVY	SA-196-24									

MECHANICAL DESIGN DIVISION
 ✓
 4-21-76

FINAL DESIGN

FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
 DIVISION OF
 PPG INDUSTRIES, INC.
 BEAUMONT, TEXAS 77704

JOB. NO. _____ DATE 2/18/77 P.O. 1607-009
 DEPT. Glycol EQPT. NO. 21-08-026
 VENDOR Hughes-Anderson
 MFR. _____
 EQPT. USED FOR Reabsorber Water Cooler

BILL OF MATERIAL				CUSTOMER: <u>SCIENTIFIC DESIGN</u>		SCH. TO SHIP: <u>Aug 76</u>	FILE NO: <u>271-75</u>	DATE: <u>10/15/75</u>	NO. UNITS: <u>ONE</u>	WO. <u>1823</u>				
DWG. NO.	PAN. NO.	TOTAL REQD.	PART NAME	DESCRIPTION	MATERIAL	REV.	X-500 # D.D.	REMARKS	P.O. NUMBER	UNSH. DATE	DUE DATE	RECD. DATE	EST. COST	PURCH. COST
	1000	1000	TUBES	3/4" O.D. x 1/8" THK. (AVG.) x 20'-0" LG.	SA-247-302									
4	1	1	TUBE SHT	33 1/8" O.D. x 1 1/4" THK.	SA-515-10									
9	1	1	TUBE SHT	33 1/8" O.D. x 1 1/4" THK.	SA-515-70									
15	15	15	BAFFLES	27 1/16" O.D. x 1/4" THK.	SA-36									
91	91	91	SPACERS	3/4" O.D. TUBING	STL									
4	4	4	TE ROD	1/2" x 18'-3" LG.	STL									
10	10	10	NUTS	1/2" HEX	STL									
2	2	2	PLATE	2 1/2" x 1/4" THK. x 15'-11" LG.	STL									
1	1	1	PLATE	12" x 1/4" THK. x 14" LG.	STL									
1	1	1	TE ROD	1/2" x 17'-1 1/2"	STL									
2	2	2	SAMPLES	5" x 1/4" THK. x 34" LG.	STL									
4	4	4	RIBS	5 1/2" x 1/2" THK. x 5 1/16" LG.	STL									
2	2	2	SCREWDR	9 3/16" x 1/2" THK. x 1'-10" LG.	STL									
2	2	2	BASE PL	6" x 1/2" THK. x 1'-10" LG.	STL									
4	4	4	CPG.	3/4"-6,000# CPG.	STL									
4	4	4	PLUGS	3/4" NPT x 3" LG.	STL									
5	5	5	LIFTING LEG	3 1/2" x 1/2" THK. x 4" LG.	SA-76									
1	1	1	NAME PL SET	H-A NAME PL & EMBLEM	STN STL									
1	1	1	BRACKET	ST. 4" WF @ 15.5# x 12 3" LG.	STL									
3	3	3	JACKSCREWS	3/4" x 4" LG. (#2 F16)	STL									
6	6	6	JACKSCREWS	3/4" x 2 3/8" LG. (#4 & #9 TUBESHEET)	STL									
A	1	2	GASKET	30 1/4" O.D. x 29 1/4" I.D. x 1/8" THK. 4 RIBS	304SS. J.A.F.									
B	1	2	GASKET	30 1/4" O.D. x 29 1/8" I.D. x 1/8" THK. 4 RIBS	304SS. J.A.F.									
C	1	2	GASKET	30 1/4" O.D. x 29 1/8" I.D. x 1/8" THK. 4 RIBS	304SS. J.A.F.									
40	40	40	STUDS	3/4" x 7 3/4" LG.	SA-193-B7									
80	80	80	STUDS	3/4" x 6 3/4" LG.	SA-193-B7									
240	240	240	NUTS	3/8" HEAVY	SA-194-2H									

SCIENTIFIC DESIGN

3-26-76 WBS

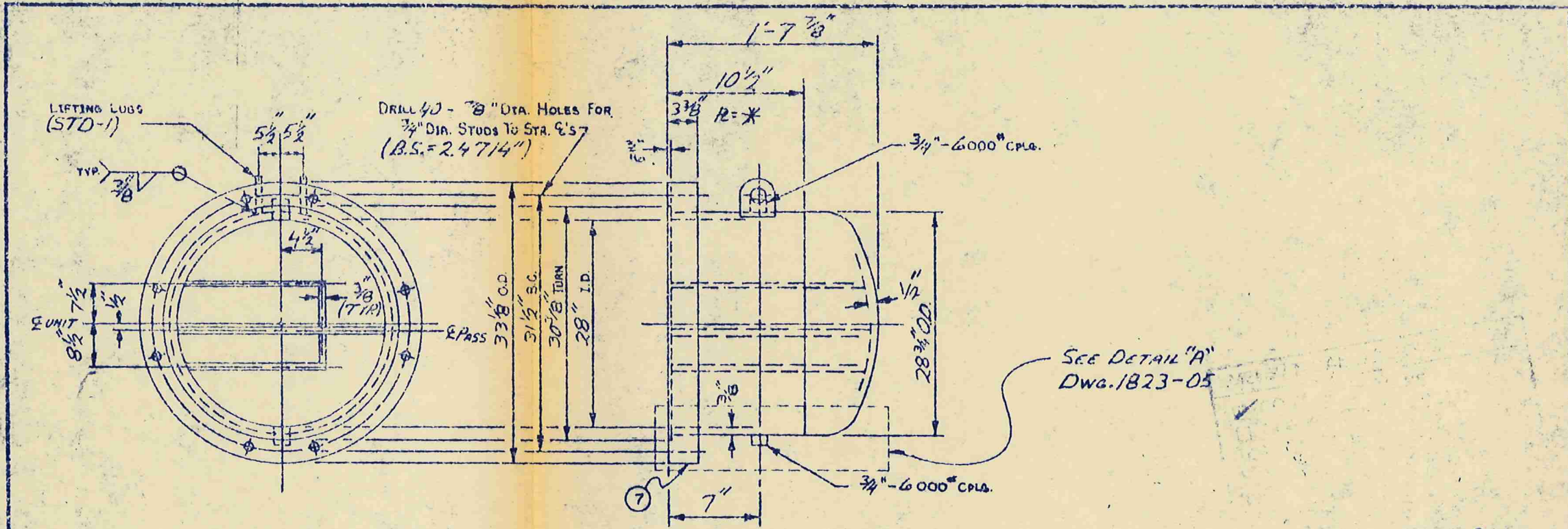
FOREIGN PRINT FILE
 HOUSTON CHEMICAL COMPANY
 DIVISION OF
 PPG INDUSTRIES, INC.
 BEAUMONT, TEXAS 77704

JOB. NO. _____ DATE 8-17-76 P.O. 1607-009
 DEPT. GLYCOL EQPT. NO. 21-02-026
 VENDOR HUGHES ANDERSON
 MFR. _____
 EQPT. USED FOR REABSORBER WATER
COOLER

BILL OF MATERIAL				CUSTOMER: <u>SCIENTIFIC DESIGN</u>		DATE TO SHIP: <u>JULY 76</u>	FILE NO: <u>291-75</u>	DATE: <u>10/17/75</u>	NO. UNITS: <u>1/1E</u>	NO: <u>1824</u>					
DWG. NO.	PART NO.	REQ'D FOR	TOTAL REQ'D	PART NAME	DESCRIPTION	MATERIAL	REV.	X-STM ← D.O.	REMARKS	P.O. NUMBER	ORDER DATE	DUE DATE	REQ'D DATE	EST. COST	PURCH COST
	198	198		TUBES	3/4" O.D. x 16' LG. (A19) x 12'-0" LG.	SA-247-302	2								
4	1	1		Tube Smt	2 1/4" O.D. x 1 1/8" THK (MACH. ALLOW ADDED TO THK)	SA-515-70									
9	1	1		Tube Smt	2 1/8" O.D. x 1 1/8" THK (MACH. ALLOW ADDED TO THK)	SA-515-70									
	15	15		BAFFLES	1 1/4" O.D. x 3/4" THK	SA-36									
	3	3		TIE RODS	1/2" φ x 10'-1 1/2" LG.	STL.	2								
	4	4		TIE RODS	1/2" φ x 10'-8 1/2" LG.	STL.	2								
	14	14		NUTS	1/2" HEX.	STL.	2								
	1	1		W.P. PL.	12 3/4" x 1/4" THK. x 15" LG.	STL.	2								
	74	74		SPACERS	3/4" φ SPACER TUBING	STL.	2								
	2	2		SADDLES	6" x 1/4" THK. x 23" LG.	STL.	2								
	2	2		SUPP. PL.	9 9/16" x 1/2" THK. x 1'-6" LG.	STL.	2								
	2	2		BASE PL.	4" x 1/2" THK. x 1'-6" LG.	STL.	2								
	2	2		RIBS	3 1/2" x 1/2" THK. x 4 1/4" LG.	STL.	2								
					SANDBLAST/SSFC-SP10 (C.S. PARTS)		3								
207	207			PRIMER	INDUSTRIAL Zinc Rich Primer (PPG# UC-46745; UC-46746)		3								
207	207			EMULS	High Solids Emul. Light Gray (PPG# UC-42208)		3								
207	207			PAINT	AQUARON White (PPG# UC-42207)		3								
	1	1		NAME PL. BRACKET	STD. 4" WF @ 15.5# x 1'-3" LG.	STL.	2								
	1	1		SET	H-A. NAME PL. & EMBLEM	STN. STL.	2								
	3	3		WASHERS	5/8" φ x 3" LG.	STL.	2								
	6	6		WASHERS	5/8" φ x 1 1/2" LG.	STL.	2								
	5	5		PLUGS	1/4" N.P.T. x 3" LG.	STL.	2								
A	1	2		GASKET	2 1/2" O.D. x 20 3/8" I.D. x 1/8" THK. 7 RIBS	304 SS J.A.F.	3								
B	1	2		GASKET	2 1/8" O.D. x 20 3/8" I.D. x 1/8" THK. 4 RIBS	304 SS J.A.F.	3								
C	1	2		GASKET	2 1/8" O.D. x 20 3/8" I.D. x 1/8" THK. 4 RIBS	304 SS J.A.F.	3								
	22	22		STUDS	3/4" φ x 6 1/4" LG.	SA-193-B7									
	24	24		STUDS	3/4" φ x 5 1/2" LG.	SA-193-B7									
	24	24		STUDS	3/4" φ x 5 1/2" LG.	SA-193-B7									
	100	100		NUTS	3/4" Heavy Hex	SA-192-24									

MECHANICAL DESIGN DIVISION
 4-21-76
FINAL DESIGN

FOREIGN PRINT FILE
 HOUSTON CHEMICAL COMPANY
 DIVISION OF
 PFG INDUSTRIES, INC.
 BEAUMONT, TEXAS 77704
 JOB. NO. _____ DATE 2/18/77 P.O. 1607-009
 DEPT. Physical EQPT. NO. 21-08-026
 VENDOR Hughes-Anderson
 MFR. _____
 EQPT. USED FOR Reabsorber Water Cooler



BACK CHANNEL DETAIL

SEE DETAIL "A"
DWG. 1823-05

3-24-76 *AS*

USE R - 89 3/8" x 3/8" THK. x 1'-10" LG.

FINAL DESIGN

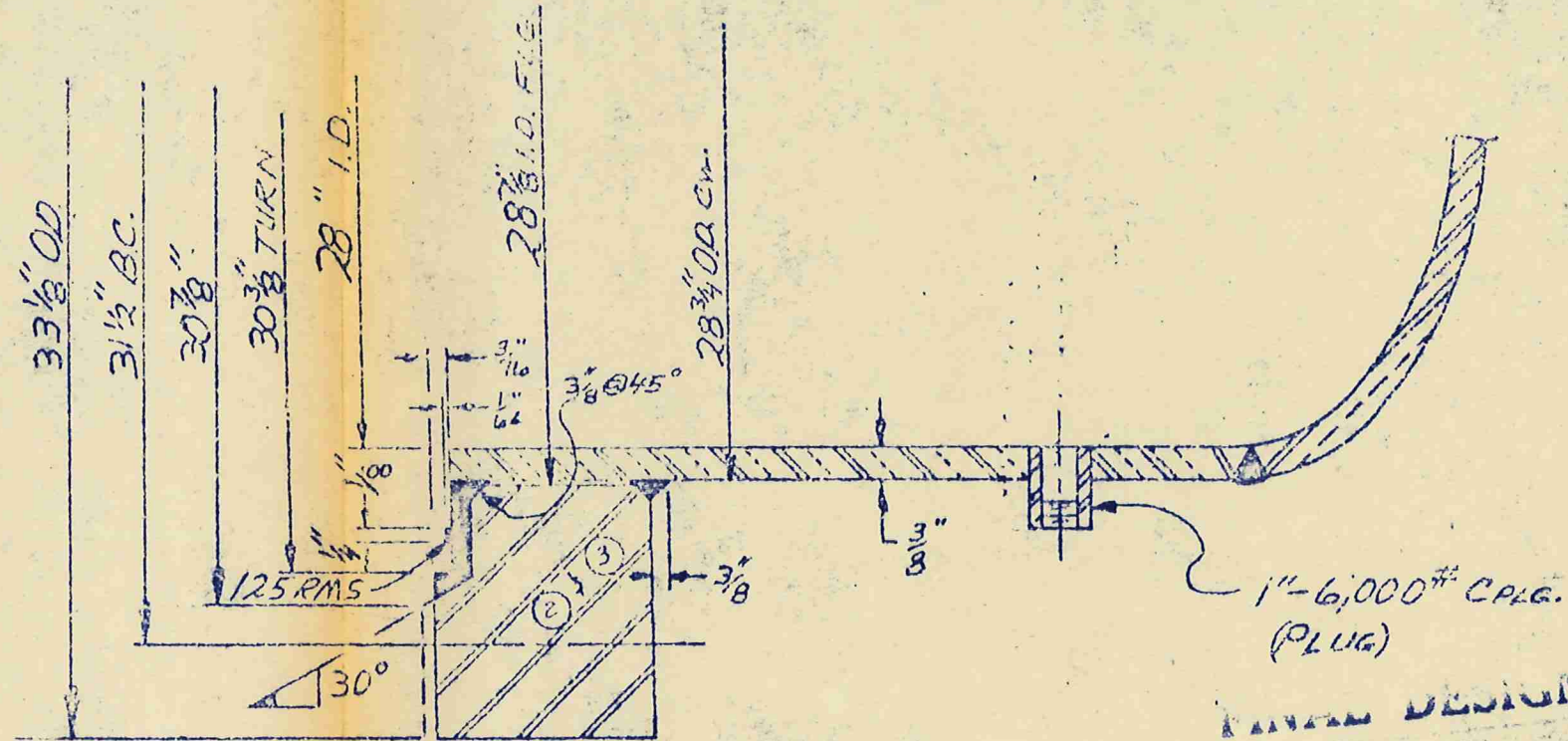
- NOTES:
- 1) SPOT X-RAY BACK CHANNEL
 - 2) SEE DWG. STD.-1 FOR WELD DETAILS.
 - 3) BOLT HOLES TO STRADDLE 'E'S
 - 4) ALL WELDING TO BE IN ACCORDANCE WITH PROCEDURES MA-304, SA-306 AND SA-1-B.
 - 5) ALL OVERLAY TO BE 308L1 1/2 PASS 309L REMAINDER IN ACC. WITH PROCEDURES UCL-43(308-L-1-M) AND UCL-43(308-L-1-A).
 - 6) ALL OVERLAY TO HAVE CHEM. ANALYSIS.

Job # 1607
ITEM # E-1404

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE <u>BACK CHANNEL DETAILS</u>			
WORK ORDER <u>1823</u>	NUMBER REQ'D <u>ONE</u>		
DR. <u>STEVE</u>	DATE <u>2-23-76</u>	SIZE <u>28"x20"</u>	DRAWING NUMBER
CK <u>WIP</u>	SCALE <u>NONE</u>	TYPE <u>RFM</u>	<u>1823-04</u>

FOREIGN PRINT FILE
 HOUSTON CHEMICAL COMPANY
 DIVISION OF
 PPG INDUSTRIES, INC.
 BEAUMONT, TEXAS 77704

JOB. NO. _____ DATE 2/18/76 P.O. 1607-009
 DEPT. Glycol EQPT. NO. 21-08-026
 VENDOR Hughes-Anderson
 MFR. _____
 EQPT. USED FOR Reboiler Water Cooler



DETAIL "A"

FINAL DESIGN

3-21-76 UR

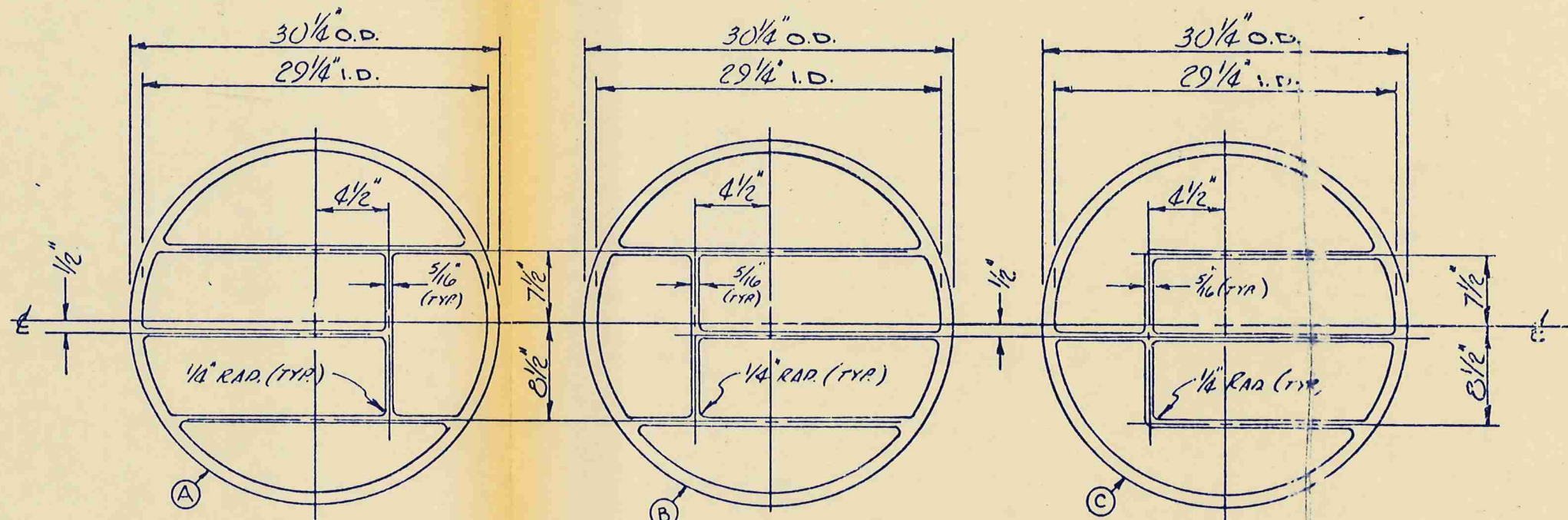
- NOTES:
1. ALL OVERLAY TO BE IN 309-L FIRST PASS & 308-L REMAINDER & IN ACCORDANCE W/ PROCEDURES UCL-43 (308-L-1-A) & UCL-43 (308-L-1-1A).
 2. ALL OVERLAY TO HAVE CHEM. ANALYSIS.

JOB # 1607
 ITEM # E-1404

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE <u>OVERLAY DETAILS</u>		NUMBER REQ'D <u>ONE</u>	
WORK ORDER <u>1823</u>	DATE <u>2-24-76</u>	SIZE <u>28x20</u>	DRAWING NUMBER <u>1823-05</u>
DR. <u>STC/UG</u>	SCALE <u>NONE</u>	TYPE <u>AFM</u>	

FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
DIVISION OF
PPG INDUSTRIES, INC.
BEAUMONT, TEXAS 77704

JOB. NO. _____ DATE 2/19/77 P.O. 1607-009
DEPT. Glycol EQPT. NO. 21-08-026
VENDOR Dugles-Anderson
MFR. _____
EQPT. USED FOR Reboiler Water Cooler



CHANNEL COVER GASKET
1/8" THK. 304 STN. STL.
JACKETED ASBESTOS
FILLED. ONE REQ'D.
(J.M. 923 OR EQUAL)

CHANNEL GASKET
1/8" THK. 304 STN. STL.
JACKETED ASBESTOS
FILLED. ONE REQ'D.
(J.M. 923 OR EQUAL)

BACK CHANNEL GASKET
1/8" THK. 304 STN. STL.
JACKETED ASBESTOS
FILLED. ONE REQ'D.
(J.M. 923 OR EQUAL)

FINAL DESIGN

X
THIS DRAWING IS THE
PROPERTY OF HUGHES-ANDERSON ENGINEERING CORP.
IT IS TO BE USED ONLY FOR THE PROJECT AND FOR THE
PURPOSES SPECIFIED IN THE ORDER. IT IS TO BE
RETURNED TO THE COMPANY UPON COMPLETION OF THE
PROJECT OR AT THE END OF THE CONTRACT TERM.
NO OTHER REPRODUCTION OR DISTRIBUTION IS
PERMITTED WITHOUT THE WRITTEN CONSENT OF
HUGHES-ANDERSON ENGINEERING CORP.
DATE 8/4/76 BY WJ
SCIENTIFIC DESIGN & ENGINEERING, INC.

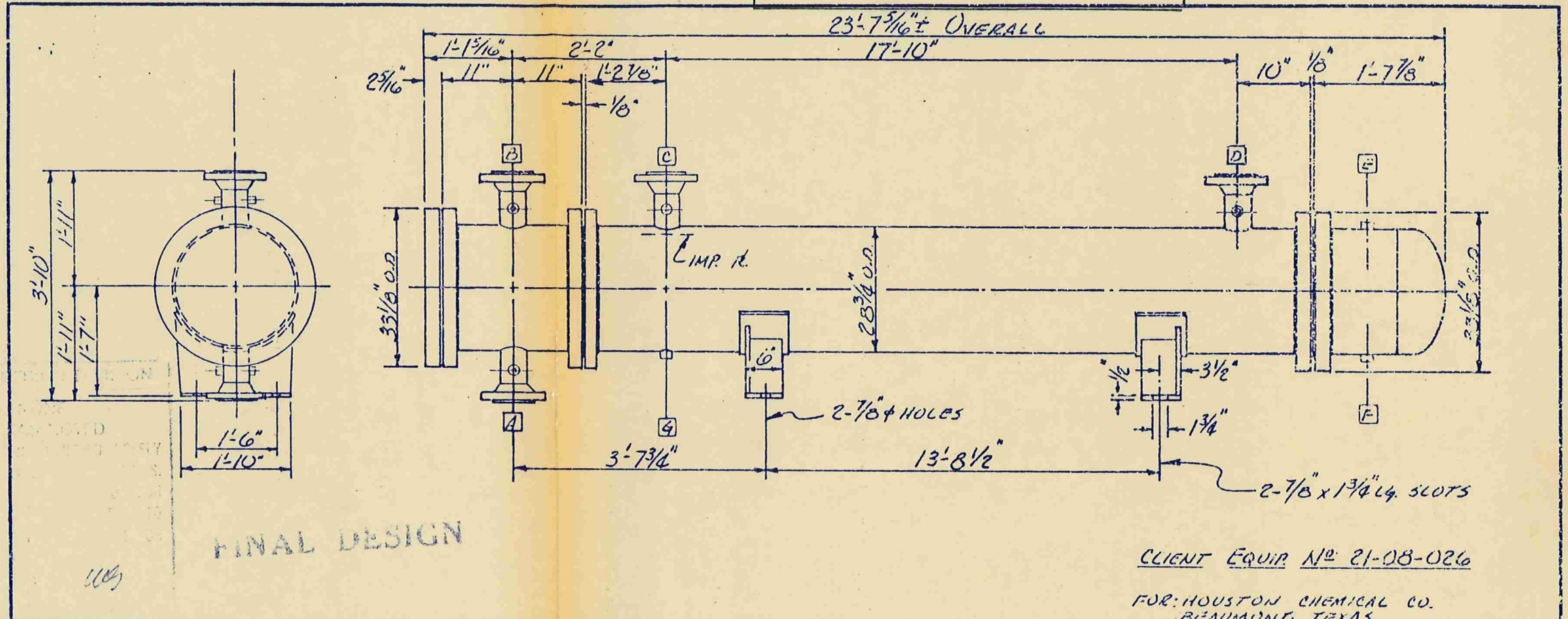
REQUIRED AS NOTED FOR ONE SET

HUGHES-ANDERSON ENGINEERING CORP.			
TULSA, OKLAHOMA			
DRAWING TITLE	SKETCH & DETAILS	NUMBER REQ'D.	TWO SETS
WORK ORDER	3	DR. <u>KEN</u>	DATE <u>10/15/75</u>
CK <u>JM</u>	BY <u>None</u>	SIZ.	3" x 30"
		TYPE	EM
		DRAWING NUMBER	1823-11

Q REV. Pass Ribs 11/14/75 KEN @ Add J.M. Number / Cust. 3/29/76 KEN

FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
DIVISION OF
PPG INDUSTRIES, INC.
BEAUMONT, TEXAS 77704

JOB. NO. _____ DATE 2/19/77 P.O. 1607-009
DEPT. Glycol EQPT. NO. 21-08-026
VENDOR Hughes-Anderson
MFR. _____
EQPT. USED FOR Reabsorber Water Cooler



CLIENT EQUIP. NO. 21-08-026

FOR: HOUSTON CHEMICAL CO.
BEAUMONT, TEXAS

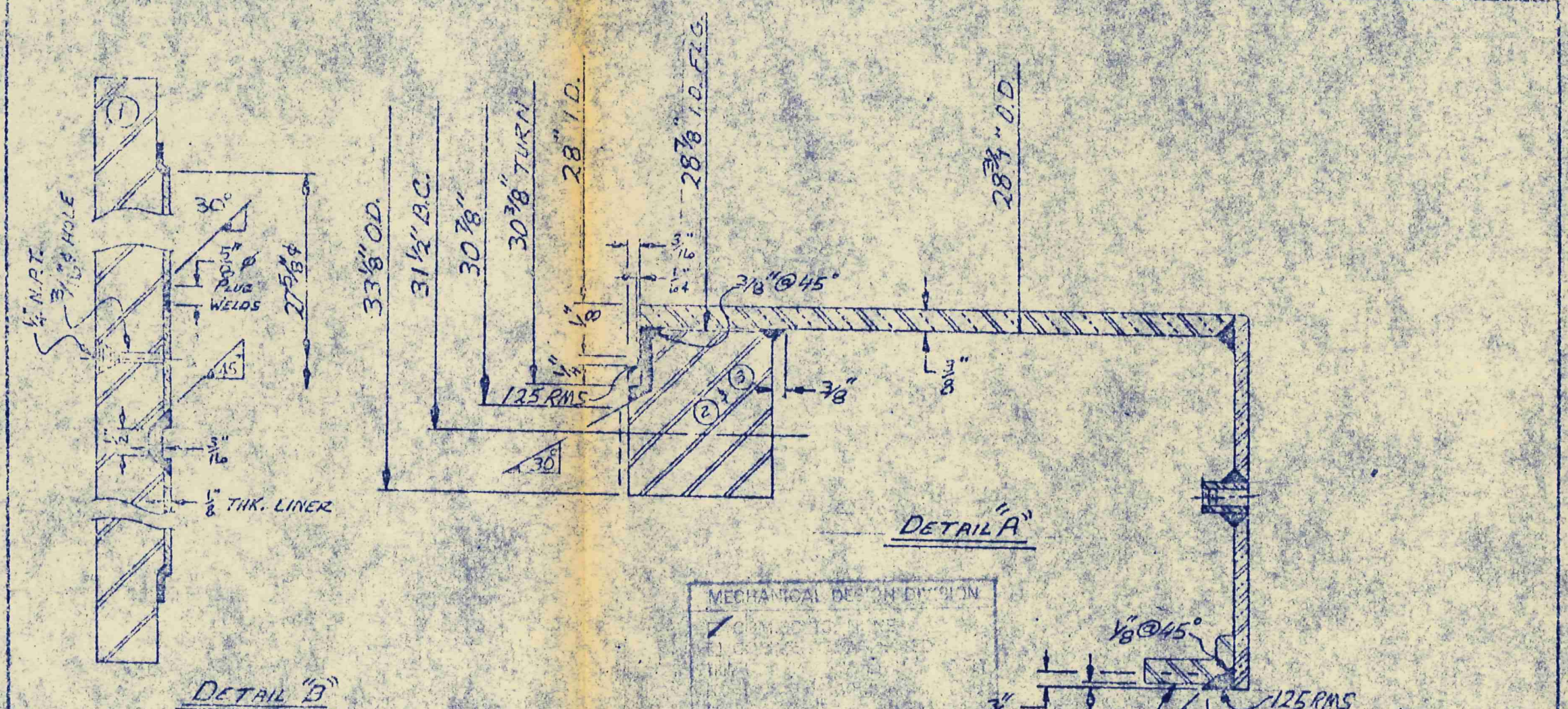
DESIGN DATA			NOZZLE DATA					GENERAL NOTES	CERTIFIED CORRECT FOR FABRICATION	
	SHELL	TUBES	MARK	SIZE	RATING	FACING	SERVICE	BY: <u>A. O. Harris</u> DATE: <u>10/21/75</u>		
DESIGN PRESS. (MAWP)	80 PSI	75 PSI	A	6"	150*	RF*	INLET	CUST.: SCIENTIFIC DESIGN CO.		
TEST PRESS.	120 PSI	115 PSI	B	6"	150*	RF*	OUTLET	DEST.: BEAUMONT, TEXAS		
DESIGN TEMPERATURE	170 °F	190 °F	C	8"	150*	RF	INLET	CUST. P.O.: 1607-009		
CORROSION ALLOWANCE	1/8"	—	D	8"	150*	RF	OUTLET	ITEM: E-1804		
NUMBER OF PASSES	1	8	E	3/4"	6000*	CPLG.	VENT	SERVICE: REABSORBER WATER COOLER		
TUBE SURFACE (EFF.)	2315	SQ. FT.	F	3/4"	6000*	CPLG.	DRAIN	SERIAL: 1823		
TUBES: 600 - 3/4" φ x 16.8 IN (AVG) SA-249-304			G	1"	6000*	CPLG.	DRAIN	FILE: 291-75		
ESTIMATED WEIGHT EACH								HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA		
DRY	11500 LBS	WET	EACH NOZZLE EQUIPPED WITH 2-3/4" 6000* CPLG'S (PLU468).					DRAWING TITLE <u>OUTLINE DIMENSIONAL</u>		
			*125 RMS FINISH ON FLG. FACE					WORK ORDER <u>1823</u> NUMBER REQ'D. <u>ONE</u>		
								DR. <u>KEN</u> DATE <u>10/15/75</u> SIZE <u>28" x 20"</u> DRAWING NUMBER <u>1823-01</u>		
								CK <u>JIM</u> SCALE <u>NONE</u> TYPE <u>AEM</u>		

Tubes: 304 SS
Shell: 2S

1 Rev./Cust. Dwg's 11/12/75 Ken 2 E & F were CPLG'S / Cust. 12/21/75 Ken 3 Gen. Rev. / Cust. 12/21/75 Ken 4 App. Nozzle #6 3/22/76 Ken 5 Rev. Nozzle #6 5/25/76 Ken 6 Check Wt. & Type 5/24/76 6/15/76

FOREIGN PRINT FILE
 HOUSTON CHEMICAL COMPANY
 DIVISION OF
 PPG INDUSTRIES, INC.
 BEAUMONT, TEXAS 77704

JOB. NO. _____ DATE 2/19/77 P.O. 1607-009
 DEPT. Glycol EQPT. NO. 21-08-026
 VENDOR Hughes-Anderson
 MFR. _____
 EQPT. USED FOR Reabsorber Water Cooler



- NOTES:
 1. ALL OVERLAY TO BE IN 309-L FIRST PASS & 308-L REMAINDER & IN ACCORDANCE W/ PROCEDURES UCL-43(308-L-1-A) & UCL-43(308-L-1-M).
 2. ALL OVERLAY TO HAVE CHEM. ANALYSIS.

MECHANICAL DESIGN DIVISION
 3-24-76 *WJ*

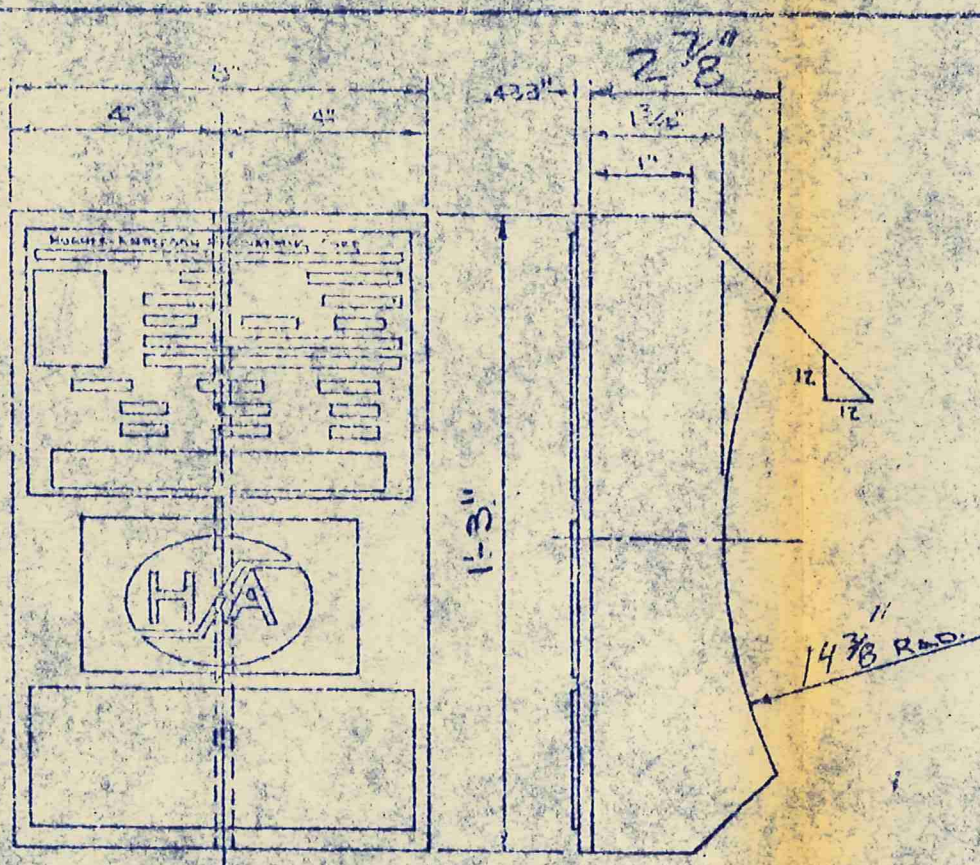
FINAL DESIGN

JOB # 1607
 ITEM # E-1404

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE <u>OVERLAY DETAILS</u>			
WORK ORDER <u>1823</u>	NUMBER REQ'D <u>ONE</u>		
DR. <u>STEVE</u>	DATE <u>2-24-76</u>	SIZE <u>28x30</u>	DRAWING NUMBER
CR. <u>WJ</u>	SCALE <u>NONE</u>	TYPE <u>AFM</u>	<u>1823-06</u>

FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
DIVISION OF
PPG INDUSTRIES, INC.
BEAUMONT, TEXAS 77704

JOB NO. _____ DATE 2/19/77 P.O. 1607-009
DEPT. Glycol EQPT. NO. 21-08-026
VENDOR Hughes-Anderson
MFR. _____
EQPT. USED FOR Reabsorber Water Cooler



HUGHES-ANDERSON ENGINEERING CORP
REABSORBER WATER COOLER

U
W
RT-3

NATL. BOARD NO. 452 ITEM NO. E-1404
P.O. NO. 1607-009 SERIAL NO. 1823
SIZE 28x20 TYPE AFM SURFACE 2315 SQ. FT.
P.T. SPOT CHANNELS & SHELL
H.T. _____

DATE _____ SHOP TEST SHELL 120 P.S.I. TUBES 115 P.S.I.
SHELL M.A.W.P. 90 P.S.I. AT 170 °F FIELD TEST 120 P.S.I.
TUBES M.A.W.P. 75 P.S.I. AT 190 °F FIELD TEST 115 P.S.I.
TUBES 810-3/4" O.D. x 1/16 B.W.G. x 20'-0" SA-249-304

HOUSTON CHEMICAL COMPANY
DIVISION OF
PPG INDUSTRIES INC.
BEAUMONT, TEXAS

R.C.C. EQUIPMENT NO. 21-08-026
INS. CODE NO. _____
NATIONAL BOARD NO. 452
MATERIAL SHELL SA-516-70 TUBES SA-249-304
DESIGN PRESS. P.S.I. 80 | 75
DESIGN TEMP. °F 170 | 190
OPERATING PRESS. P.S.I. _____
OPERATING TEMP. °F _____

SIZE 3/8" | HEAD 1/2" | HEAD 25 5/16"
THICK. 3/8" | THICK. 2" | RAD. _____

MANUFACTURER HUGHES-ANDERSON ENGINEERING CORP.
SPEC. NO. 1823 | YEAR 1976

SAFETY FACTOR _____

NAME & DETAIL

3-2076 US

FINAL DESIGN

JOB # 1607
ITEM # E-1404

HUGHES-ANDERSON ENGINEERING CORP.
TULSA, OKLAHOMA

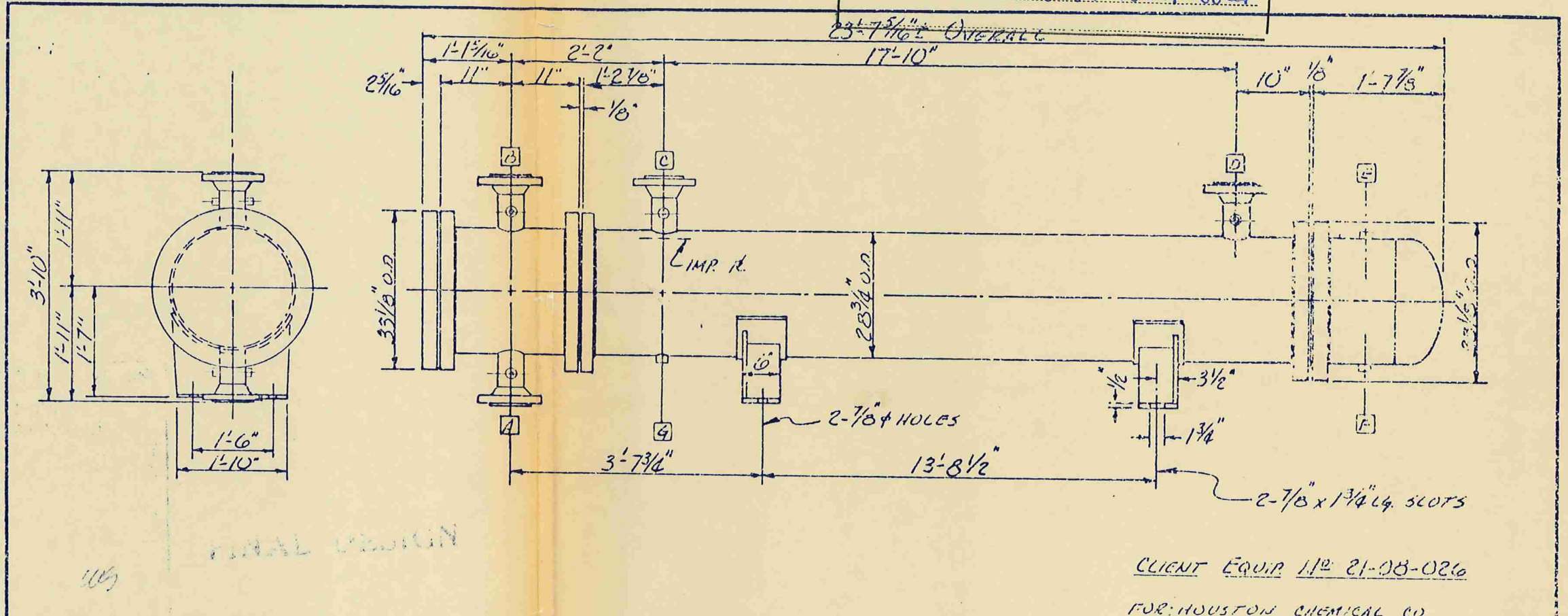
DRAWING TITLE NAME & DETAIL

WORK ORDER 1823 NUMBER REGD. ONE

DR. STW DATE 8-9-76 SIZE 28x20 DRAWING NUMBER
SCALE NONE TYPE AFM 1823-10

FOREIGN PRINT FILE
HOUSTON CHEMICAL COMPANY
DIVISION OF
PPG INDUSTRIES, INC.
BEAUMONT, TEXAS 77704

JOB. NO. DATE 2/18/77 P.O. 1607-009
DEPT. *Physical* EQPT. NO. 21-08-026
VENDOR *Hughes-Anderson*
MFR.
EQPT. USED FOR *Reabsorber Water Cooler*



8/4/76

1169

CLIENT EQUIP. 112 21-08-026

FOR: HOUSTON CHEMICAL CO.
BEAUMONT, TEXAS

DESIGN DATA			NOZZLE DATA				GENERAL NOTES		CERTIFIED CORRECT FOR FABRICATION	
DESIGN PRESS (MAWP)	80 PSI	75 PSI	MARK	SIZE	RATING	FACING	SERVICE	BY: <i>A. O. Harris</i> DATE: 10/21/75		
TEST PRESS.	120 PSI	115 PSI	A	6"	150*	RF*	INLET	CUST.: SCIENTIFIC DESIGN CO.		
DESIGN TEMPERATURE	170 °F	190 °F	B	6"	150*	RF*	OUTLET	DEST.: BEAUMONT, TEXAS		
CORROSION ALLOWANCE	1/8"		C	8"	150*	RF	INLET	CUST. P.O.: 1607-009		
NUMBER OF PASSES	1	8	D	8"	150*	RF	OUTLET	ITEM: E-1804		
TUBE SURFACE (EFF.)	2315	SQ. FT.	E	3/4"	6,000*	CPLG.	VENT	SERVICE: REABSORBER WATER COOLER		
TUBES: 600 - 3/4" φ x 16 BN 9 (AVG) SA-249-304			F	3/4"	6,000*	CPLG.	DRAIN	SERIAL: 1823		
ESTIMATED WEIGHT EACH			G	1"	6,000*	CPLG.	DRAIN	FILE: 291-75		
DRY	11500	LBS	EACH NOZZLE EQUIPPED WITH 2-3/4" 6,000* CPLG'S. (PLUGGED). *125 RMS FINISH ON FLG. FACE				1. DESIGN & CONSTRUCTION SHALL BE IN ACCORDANCE WITH: (A) SECTION VIII 1974 EDITION OF THE ASME CODE, DIV. I & SO STAMPED BY (B) TEMA "B" NATIONAL BOARD (C) CUST. SPEC'S. 2. ALL BOLT HOLES TO STRADDLE S.S. 3. SPOT X-RAY CHANNELS & SHELL 4. ONE SPARE SET OF GASKETS REQ'D. 5. CHLORIDE CONTENT SHALL NOT EXCEED 25 PPM FOR TEST WATER ON STN SCL. PARTS 6. Near white blast/SSPC-SP10 on shell and all carbon steel parts and apply one coat of inorganic zinc rich primer (PPG #UC-46745 and 46) 3 mils min. D.F.T. 1st coat to be high solids epoxy (PPG #UC-46545; light gray 5 mils min. D.F.T. Top coat to be Aquapon (PPG #A-UC-46840 & B-UC-46834) WHITE. 2 MILS MIN. D.F.T.			
WET	16600	LBS								
							HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA		DRAWING TITLE <i>OUTLINE DIMENSIONAL</i>	
							WORK ORDER 1823		NUMBER REQ'D. <i>ONE</i>	
							DR. <i>KEN</i> DATE 10/15/75		SIZE 28" x 20"	
							CK <i>JIM</i> SCALE NONE		TYPE AEM	
									DRAWING NUMBER 1823-01	

Rev./Cust. Dwg's 11/12/75 Ken (2) E&F were CPLG'S. (CUST. 12/21/75 Ken) (3) GSA Rev / Cust. 12/20/75 Ken (4) App. No. 21-08-026 Ken (5) Rel. 12/21/75 Ken (6) CMB, WTR. & TYPE 08 5/24/76 Ken 5/24/76 Ken 5/24/76 Ken