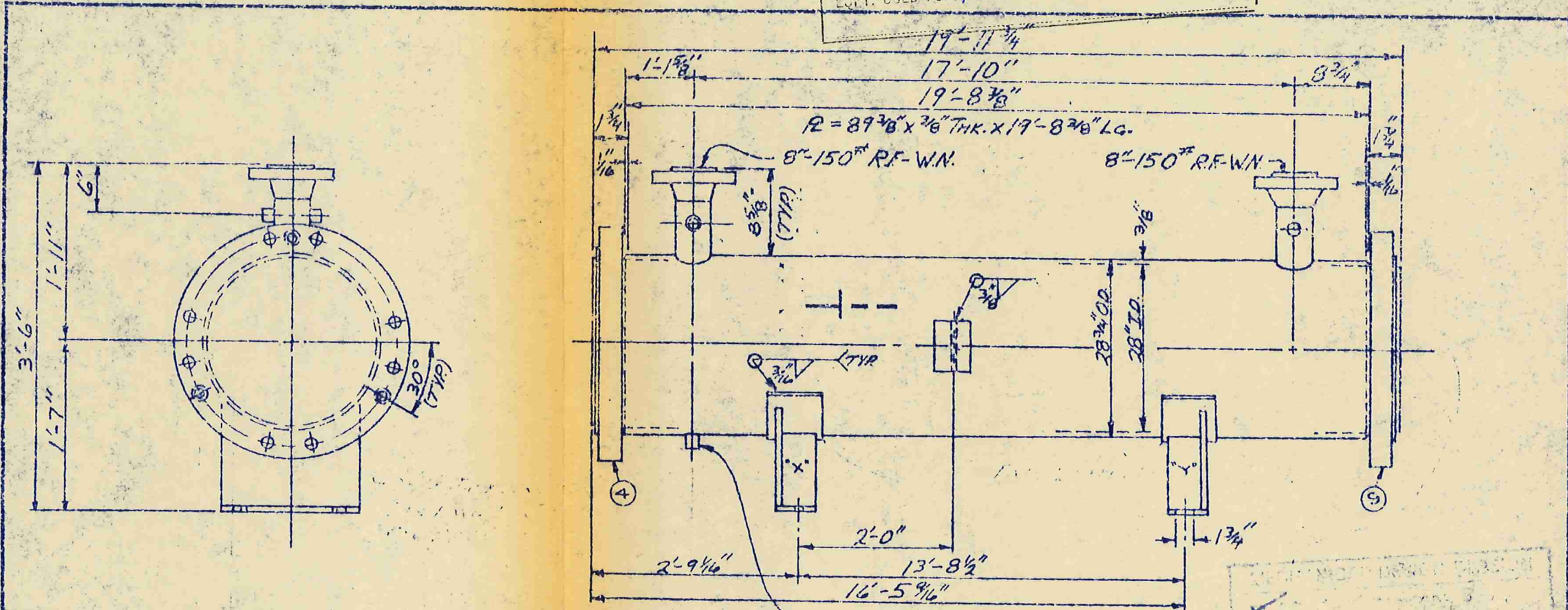
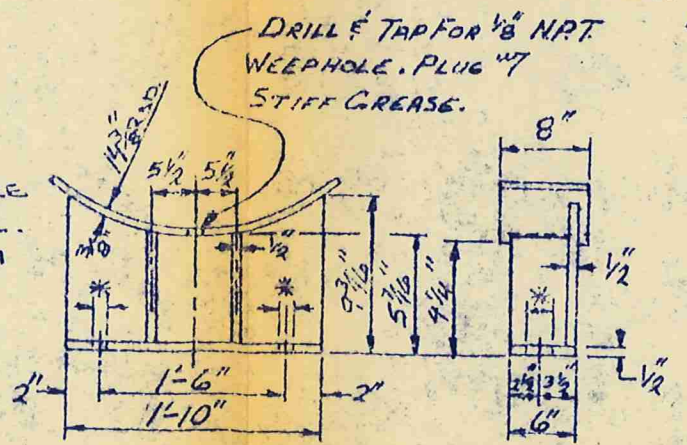


FOREIGN PRINT FILE  
 HOUSTON-CHEMICAL COMPANY  
 DIVISION OF  
 PPG INDUSTRIES, INC.  
 BEAUMONT, TEXAS 77704

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



- 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. G'S.
  5. ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES MA-1A & SA-1A.
  6. PAINT P.O. No. 1607-009 & ITEM No. E-1404 ON SIDE & ONE END OF UNIT.



SUPPORT DETAILS

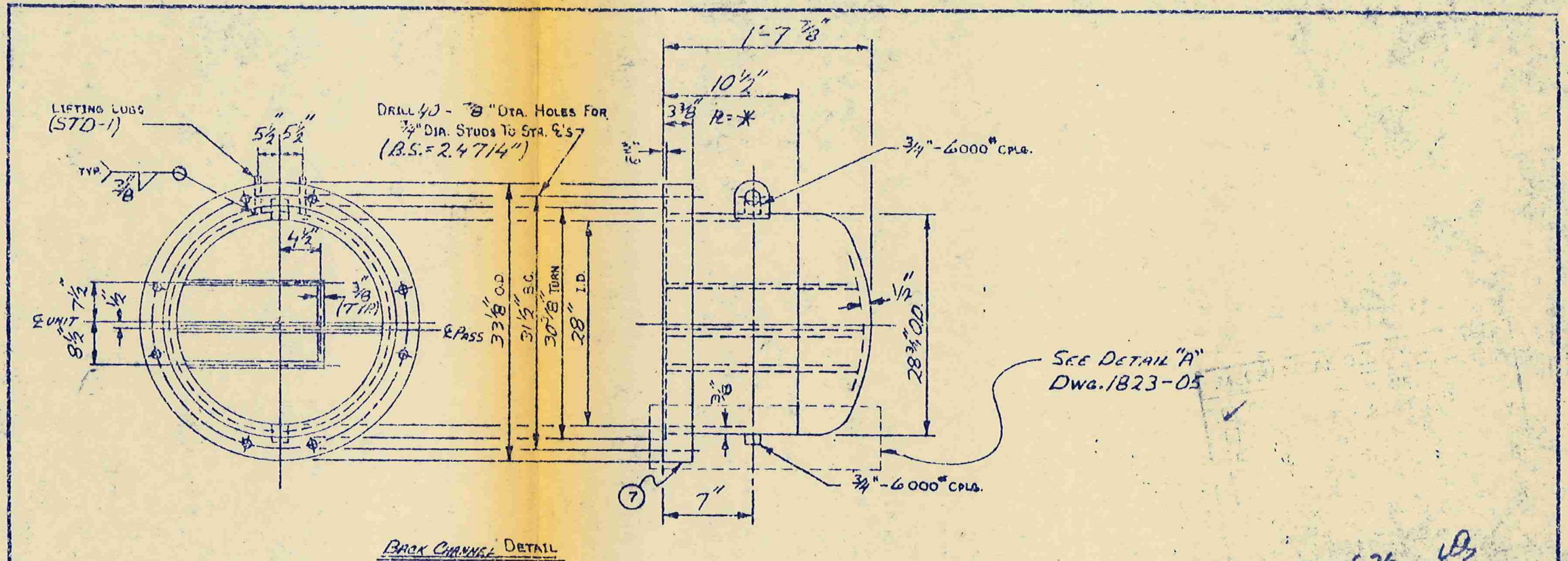
- \* 1-REQD. W/ 2-7/8" Ø HOLES MK'D. (X).
- \* 1-REQD. W/ 2-7/8" x 1 3/4" SLOTS MK'D. (Y).

FINAL DESIGN

JOB # 1607  
 ITEM # E-1404

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

3-24-76 105



BACK CHANNEL DETAIL

SEE DETAIL "A"  
Dwg. 1823-05

3-24-76 *UB*

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

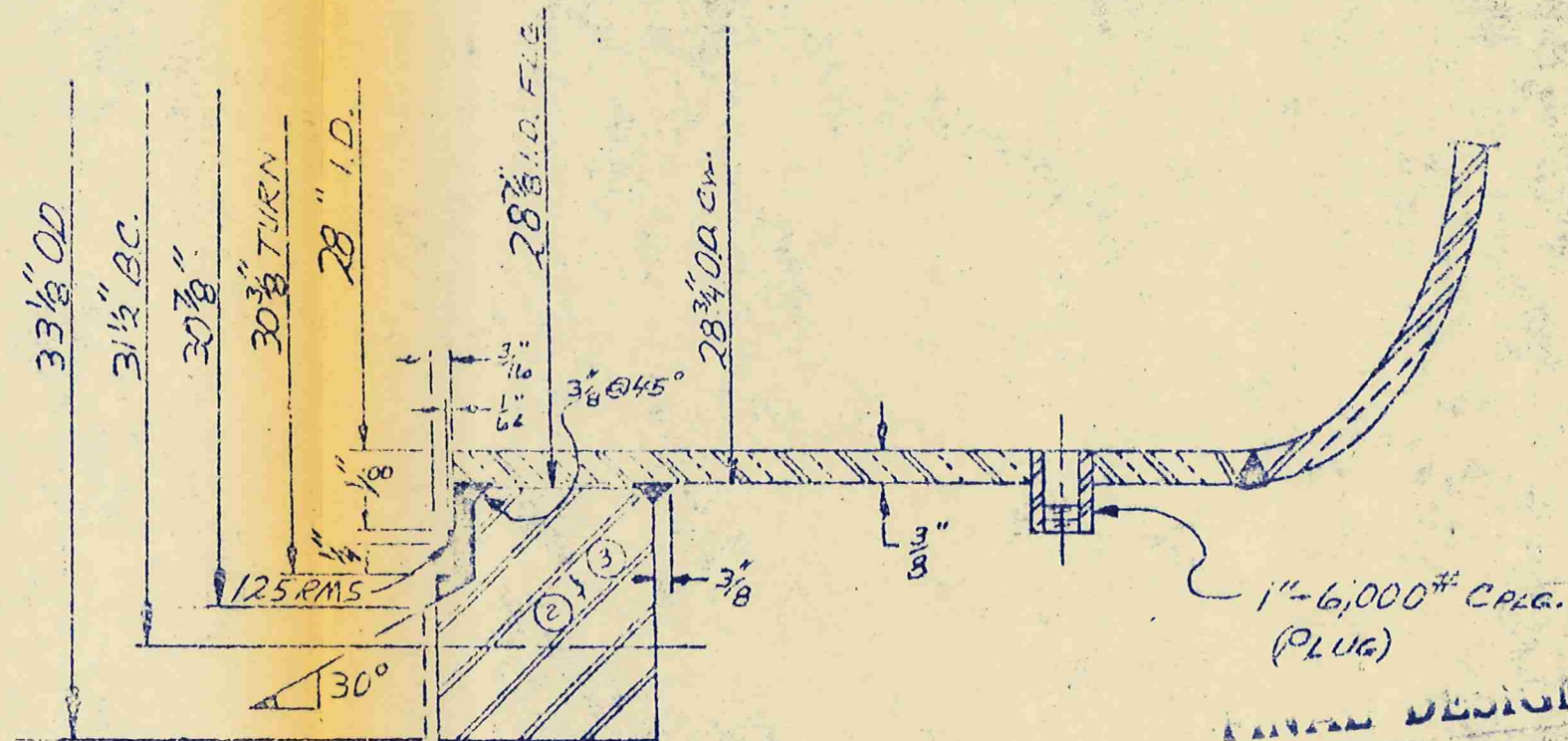
**FINAL DESIGN**

NOTES:

- 1) SPOT X-RAY BACK CHANNEL
- 2) SEE DWG. STD.-1 FOR WELD DETAILS.
- 3) BOLT HOLES TO STRADDLE  $\epsilon$ 'S
- 4) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES MA-304, SA-304 AND SA-1-B.
- 5) ALL OVERLAY TO BE 308L1 1/2 PASS 309L REMAINDER IN ACC. W/ 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 1823	NUMBER REQ'D ONE		
DR. STEVE	DATE 2-23-76	SIZE 28" x 20"	DRAWING NUMBER
CK <i>UB</i>	SCALE NONE	TYPE RFM	1823-04



FINAL DESIGN

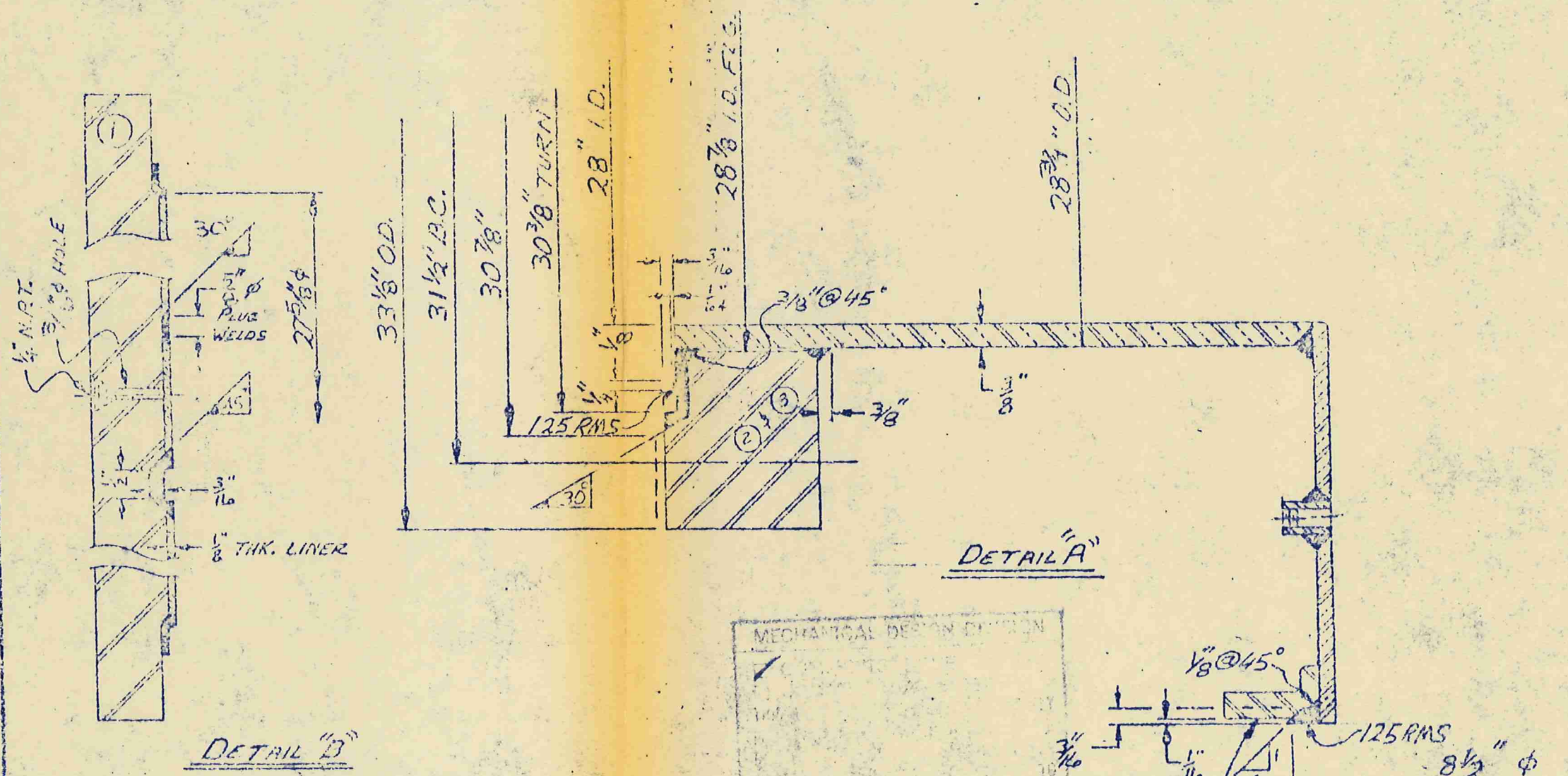
DETAIL "A"

3-21-76 WJ

- 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>			
WORK ORDER <u>1823</u>		NUMBER REQ'D <u>ONE</u>	
DR <u>STEVE</u>	DATE <u>2-24-76</u>	SIZE <u>28x20</u>	DRAWING NUMBER
CR <u>WJ</u>	SCALE <u>NONE</u>	TYPE <u>AFM</u>	<u>1823-05</u>



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.

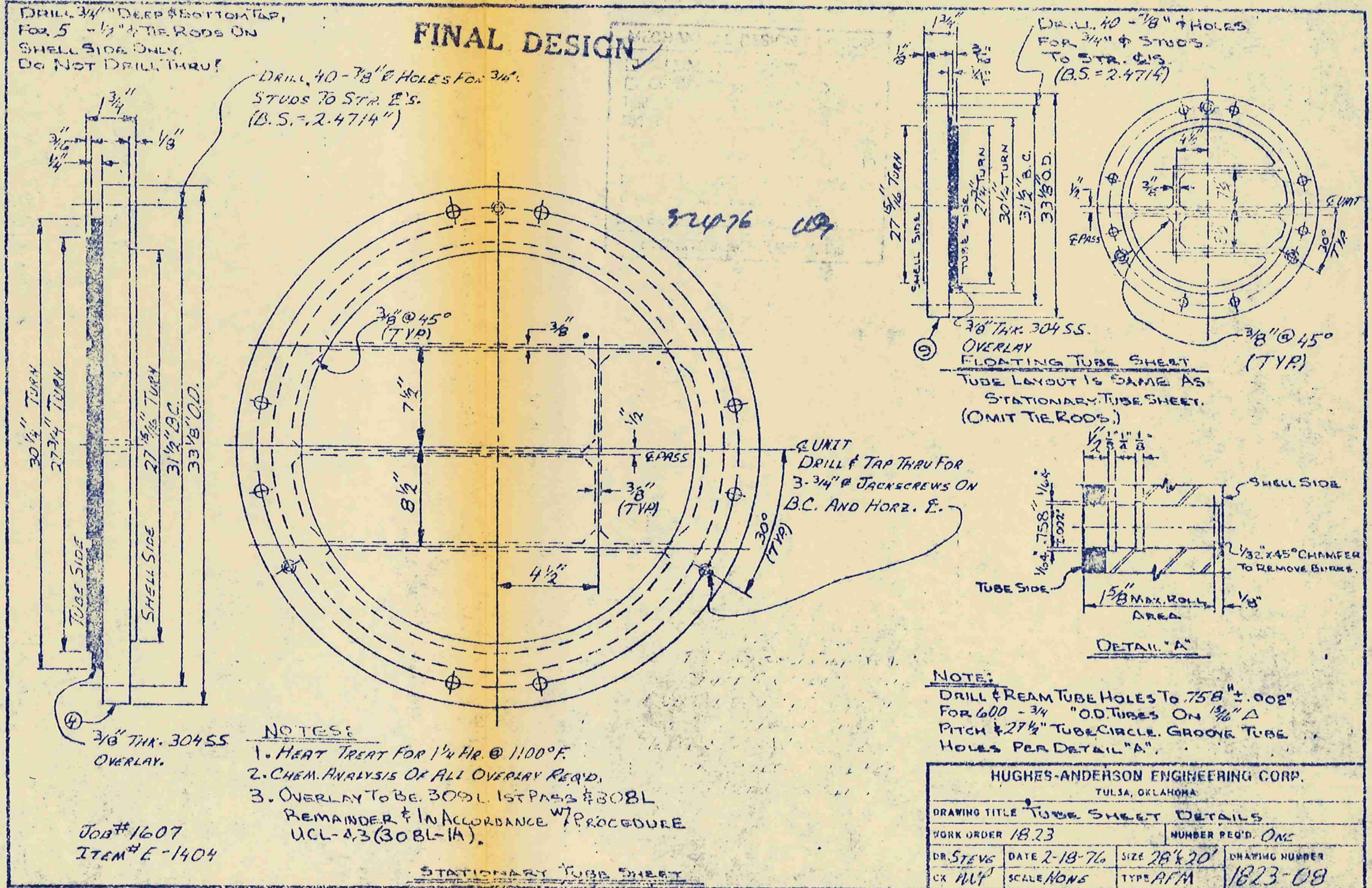
MECHANICAL DESIGN DIVISION  
 3-24-76 *WJ*

**FINAL DESIGN**

JOB # 1607  
 ITEM # E-1404

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE <b>OVERLAY DETAILS</b>			
WORK ORDER <b>1823</b>	NUMBER REQ'D <b>ONE</b>		
DR. <b>STEVE</b>	DATE <b>2-24-76</b>	SIZE <b>28" x 30"</b>	DRAWING NUMBER
CR. <b>WJ</b>	SCALE <b>NONE</b>	TYPE <b>AFM</b>	<b>1823-06</b>

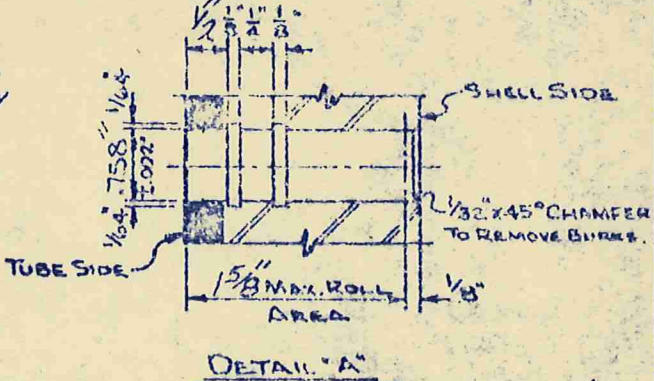
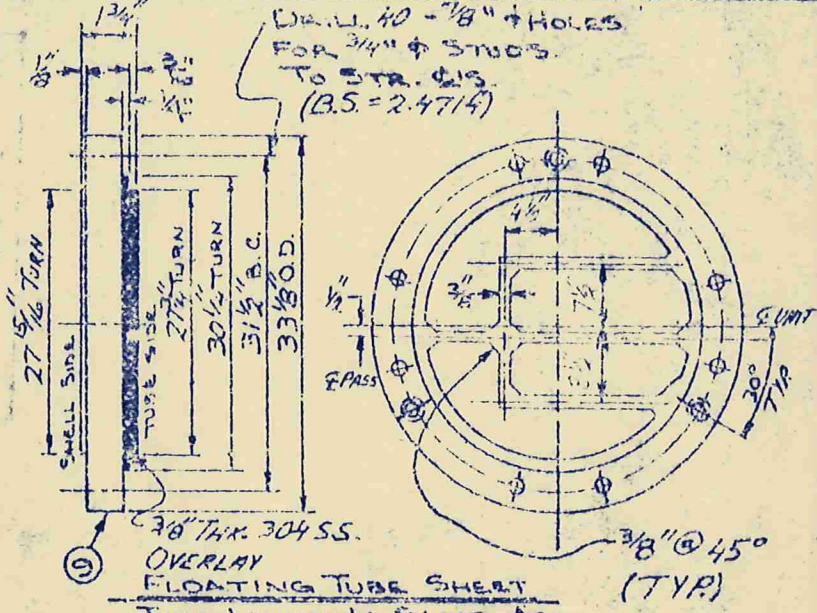
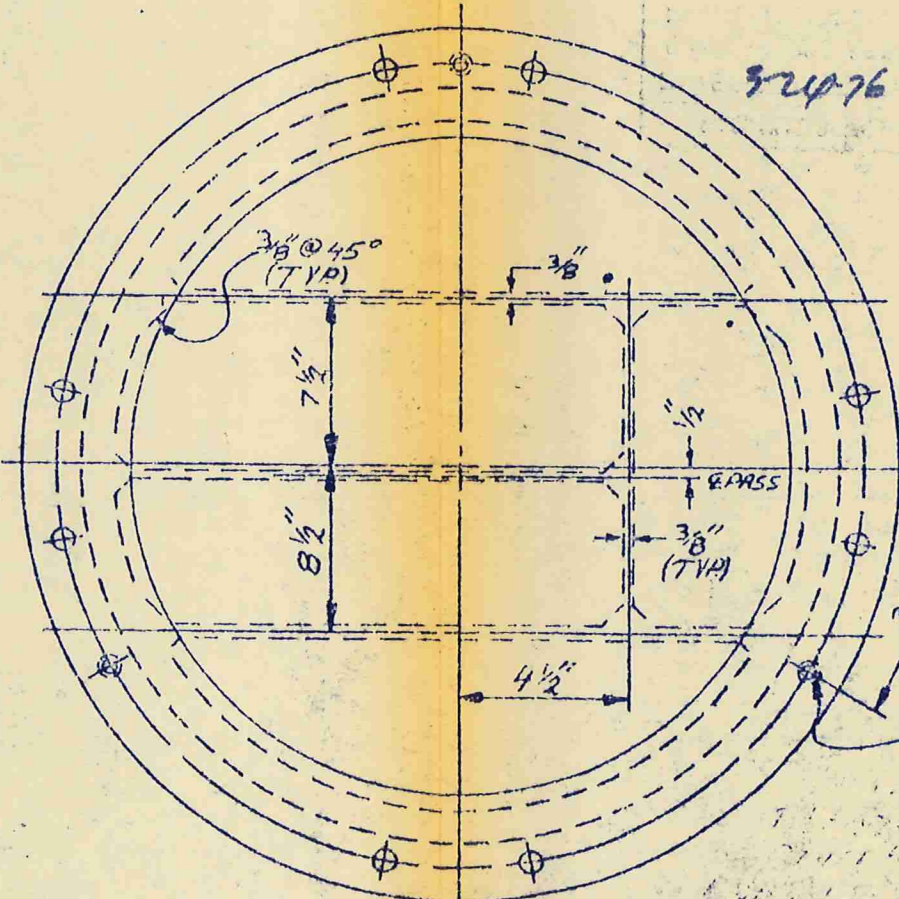
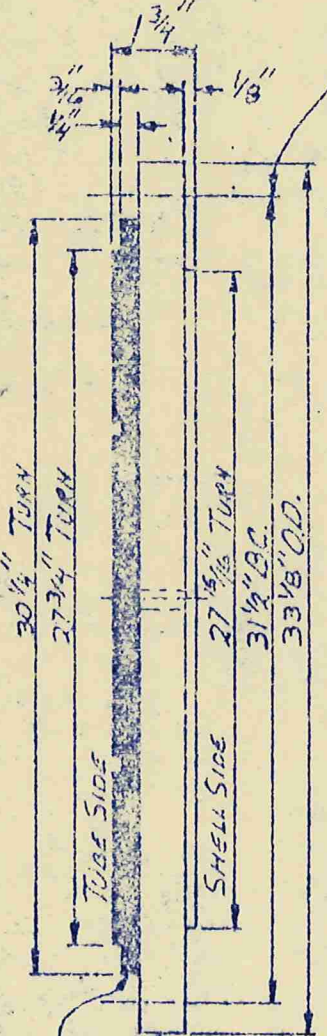
# FINAL DESIGN



DRILL 3/4" DEEP BOTTOM TAP, FOR 5 - 1/2" TIE RODS ON SHELL SIDE ONLY. DO NOT DRILL THRU!

DRILL 40 - 7/8" Ø HOLES FOR 3/4" STUDS TO STR. E.S. (B.S. = 2.4714")

DRILL 40 - 7/8" Ø HOLES FOR 3/4" STUDS TO STR. E.S. (B.S. = 2.4714")



3/8 THK. 304 SS OVERLAY.

- NOTES:**
1. HEAT TREAT FOR 1 1/4 HR @ 1100°F
  2. CHEM. ANALYSIS OF ALL OVERLAY REQ'D.
  3. OVERLAY TO BE 309L 1ST PASS & 308L REMAINDER & IN ACCORDANCE W/ PROCEDURE UCL-4.3 (308L-1A).

**NOTE:**  
DRILL & REAM TUBE HOLES TO 758" ± .002" FOR 600 - 3/4" O.D. TUBES ON 1 1/8" Δ PITCH & 27 1/2" TUBE CIRCLE. GROOVE TUBE HOLES PER DETAIL "A".

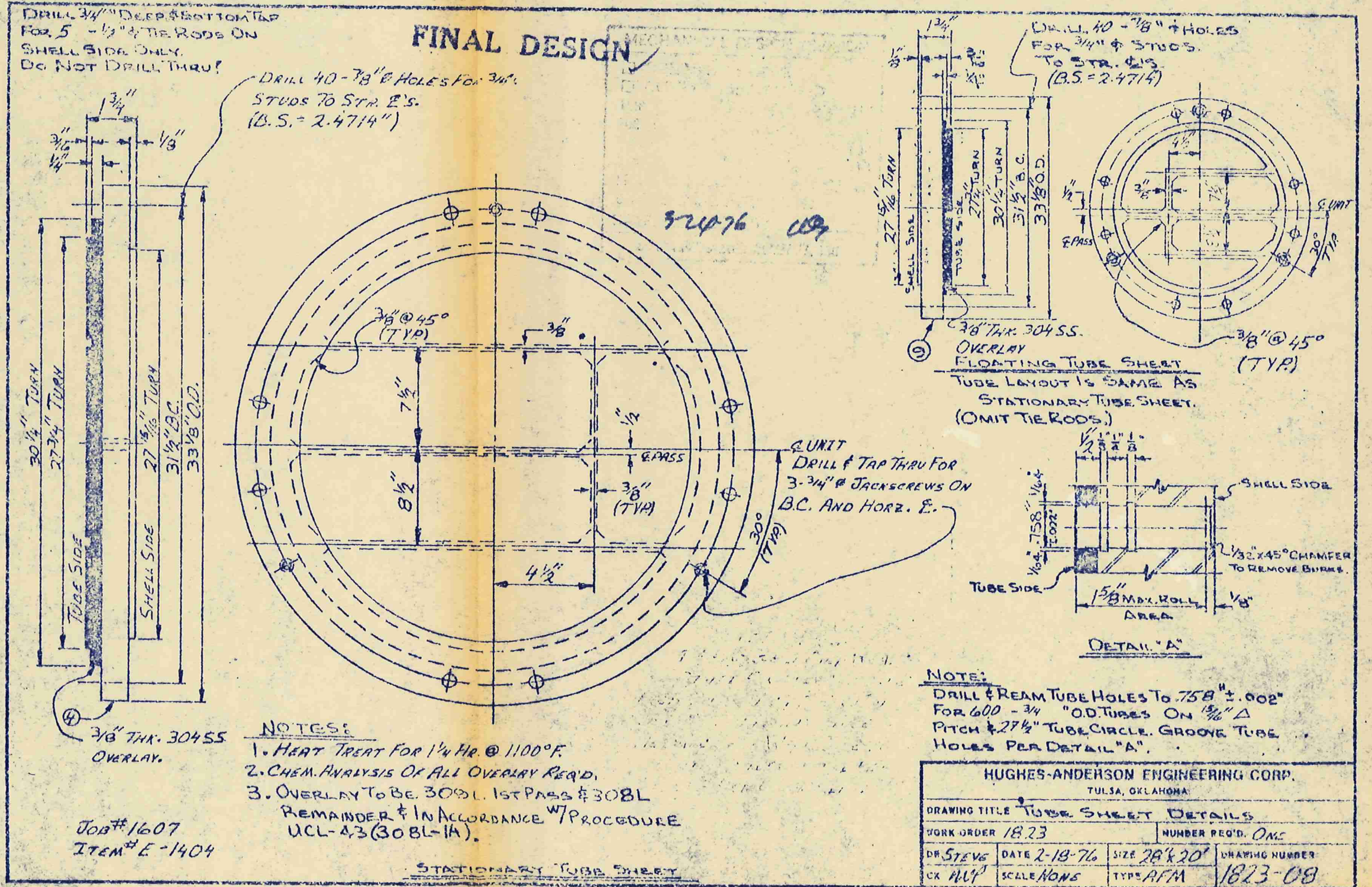
JOB # 1607  
ITEM # E-1404

STATIONARY TUBE SHEET

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE <b>TUBE SHEET DETAILS</b>			
WORK ORDER 18.23		NUMBER REQ'D. ONE	
DR. STEVE	DATE 2-18-76	SIZE 28" x 20"	DRAWING NUMBER
CK ALLY	SCALE NONE	TYPE AFM	1823-08

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

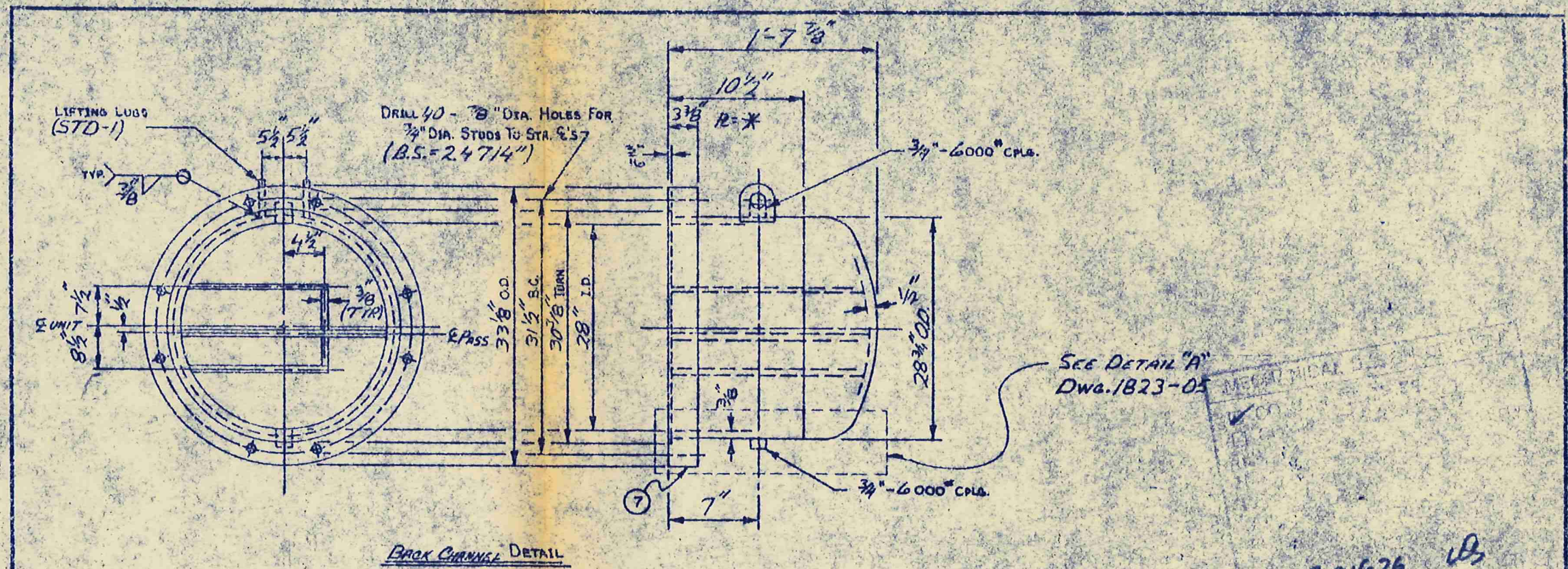


Job# 1607  
Item# E-1404

- NOTES:
- HEAT TREAT FOR 1/4 Hr. @ 1100°F.
  - CHEM. ANALYSIS OF ALL OVERLAY REQ'D.
  - OVERLAY TO BE 30% L. 1ST PASS & 30% L. REMAINDER & IN ACCORDANCE W/ PROCEDURE UCL-43 (30BL-1A).

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. Physical EQPT. NO. 21-08-026  
VENDOR Hughes-Anderson  
MFR. \_\_\_\_\_  
EQPT. USED FOR Reboiler Water Cooler



BACK CHANNEL DETAIL

SEE DETAIL "A"  
DWG. 1823-05

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

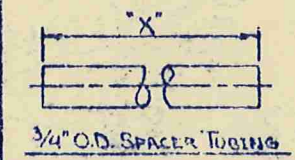
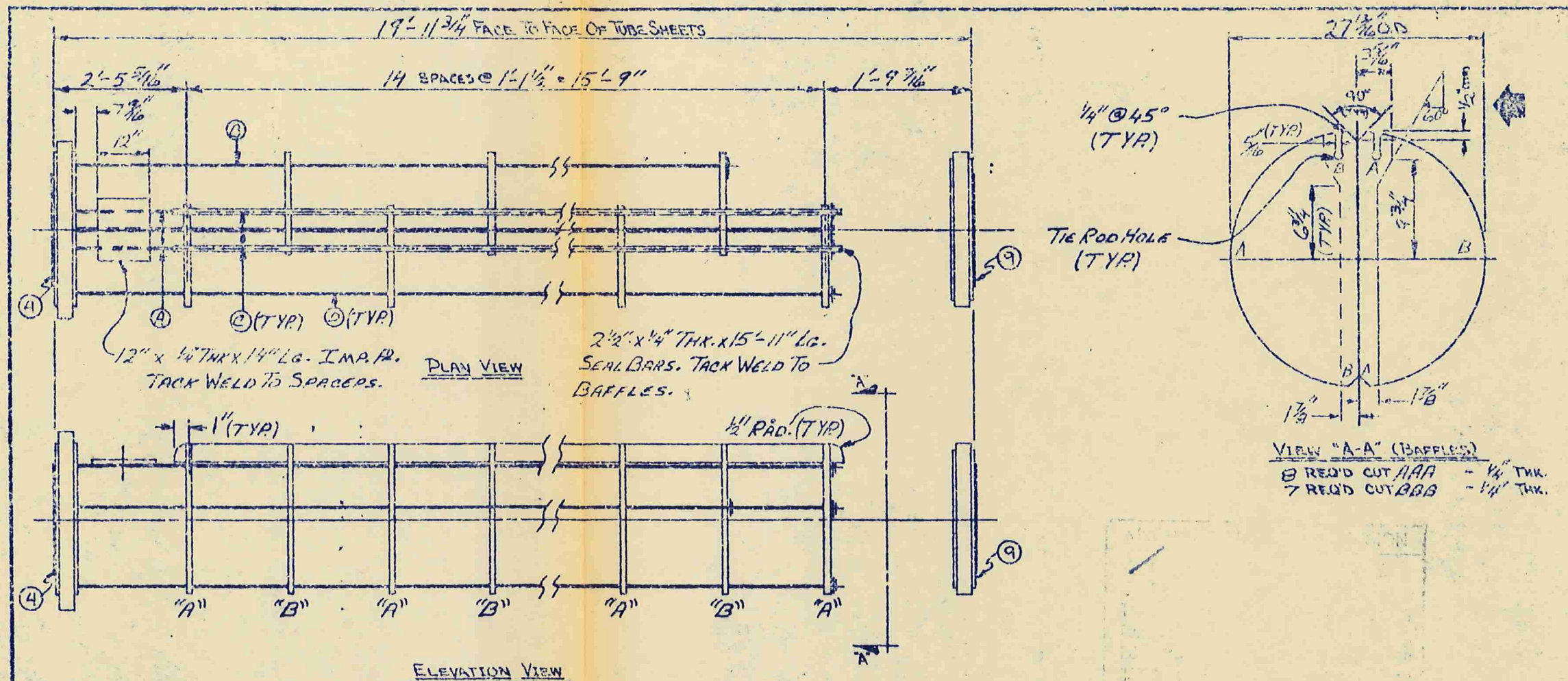
FINAL DESIGN

- NOTES:
- 1) SPOT X-RAY BACK CHANNEL
  - 2) SEE DWG. STD-1 FOR WELD DETAILS.
  - 3) BOLT HOLES TO STRADDLE C'S
  - 4) ALL WELDING TO BE IN ACCORDANCE WITH PROCEDURES MA-304, SA-304 AND SA-1-B.
  - 5) ALL OVERLAY TO BE 308L 1/2I 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.

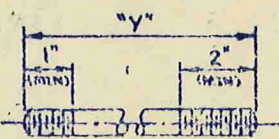
Job# 1607  
ITEM# E-1404

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE BACK CHANNEL DETAILS			
WORK ORDER 1823	NUMBER REQ'D ONE		
DR. STEVE	DATE 2-23-76	SIZE 28" x 20"	DRAWING NUMBER
CK. JHP	SCALE NONE	TYPE AFM	1823-04





MK	No.	"X"
(A)	4	2'-3 1/16"
(B)	1	3'-4 5/16"
(C)	42	1'-1 1/4"
(D)	13	2'-2 3/8"



No.	"Y"
4	18'-3"
1	17'-1 1/2"

- NOTES!**
1. DRILL 1 1/8" DIA. HOLES IN BAFFLES FOR TUBES.
  2. DRILL 3/16" DIA. HOLES IN BAFFLES FOR TIE RODS.
  3. DEBURR ALL TUBE HOLES AND REMOVE ALL SHARP CORNERS.

**FINAL DESIGN**

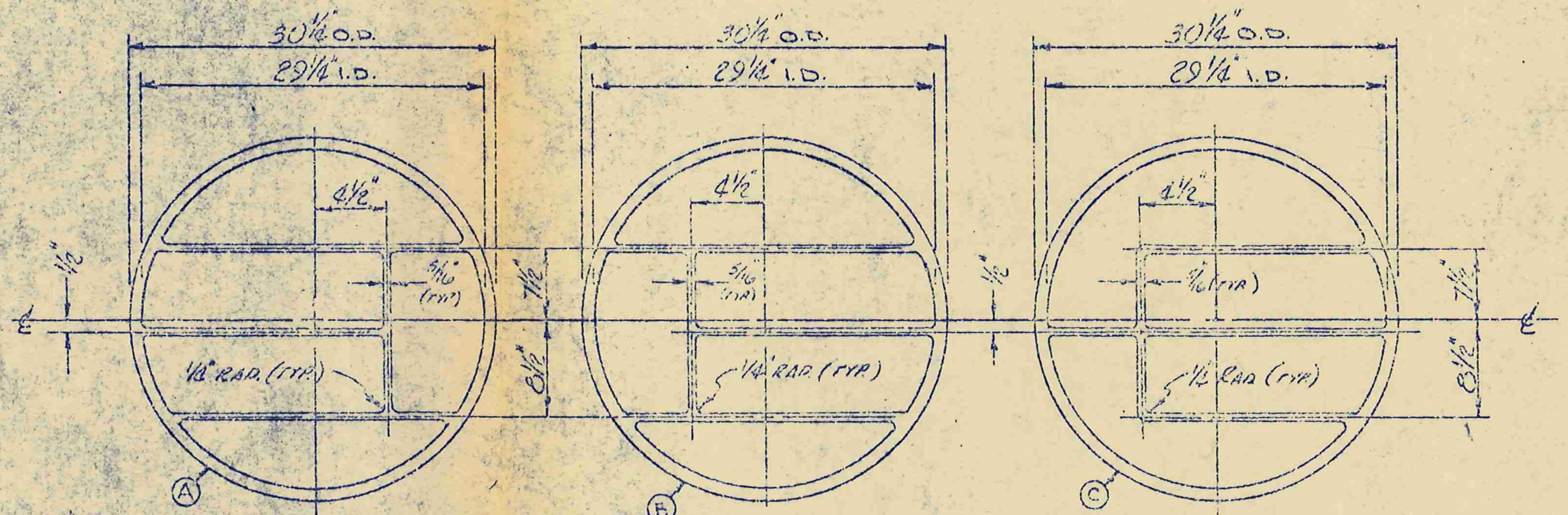
3-24-76 UO

JOB # 1607  
ITEM # E-1404

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE BUNDLE DETAILS			
WORK ORDER 1823	NUMBER REQ'D ONE		
DR. STEVE	DATE 2-18-76	SIZE 28" x 20"	DRAWING NUMBER
CK. MOP	SCALE NONE	TYPE AFM	1823-09

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

JOB. NO. \_\_\_\_\_ DATE 8-16-76 P.O. 1607-009  
 DEPT. GLYCOL EQPT. NO. 21-08-026  
 VENDOR HUGHES ANDERSON  
 MFR. \_\_\_\_\_  
 EQPT. USED FOR REABSORBER 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)

MECHANICAL DESIGN DIVISION  
 COMMENTS: NONE  
 COMMENTS: AS NOTED  
 THIS DRAWING IS TO BE USED AS A BASIS FOR FABRICATION.  
 4-21-76 *cds*

REQUIRED AS NOTED FOR ONE SET

HUGHES-ANDERSON ENGINEERING CORP. TULSA, OKLAHOMA			
DRAWING TITLE <u>GASKET DETAILS</u>			
WORK ORDER <u>1823</u>	NUMBER REQ'D. <u>TWO SETS</u>		
DR. <u>Ken</u>	DATE <u>10/19/75</u>	SIZE <u>20" x 30"</u>	DRAWING NUMBER
CK <u>Jim</u>	SCALE <u>None</u>	TYPE <u>A/FM</u>	<u>1823-11</u>

Q Rev. Pass Rias 10/19/75 Ken @ Add J.M. Number / Cust. 3/24/76 Ken

FINAL DESIGN