

- GENERAL NOTES**
- 1) Materials for shell should be SA-516-70 Normalized steel. ✓
 - 2) PWHT required. ✓
 - 3) Brinell hardness to be less than 225. ✓
 - 4) 100% RT required after PWHT. ✓
 - 5) Nozzle attachment welds are to be ultrasonically examined after PWHT. All welds to be full penetration. Nozzle welds to be backgouged and inspected then welded. Grind smooth interior surface. ✓
 - 6) All nozzles to be 100% ultrasonic tested after stress relieving. ✓
 - 7) Bolt Holes to straddle centerlines. ✓
 - 8) Shell exterior surface to be sandblasted per SSPC-SP-10. Apply 3 mils (1 coat) of primer. Finish coat to be 3 mils (1 coat) Dupont DB 823-Y or equal (White) ✓

FOR FLG DETAILS SEE
DWG. 69-1875-1-2M

- 4 MATERIAL P-1
3 SPOT X-RAY
2 REF. EDGE STDS FOR WELDING SECTION B-8
NOTES: 1. ALL BOLT HOLES TO STRADDLE C/S

69-1875-1		ONE REQUIRED		2 7/20/69		QUOTES FOR REPAIR SHELL		1 1/16/69		REVISED SUPPLY LOCATION		DESCRIPTION		REVISIONS		ABBOTT HEAT EXCHANGER CORP. 2801 DAWSON ROAD • TULSA, OKLAHOMA 74110 PONE Y-01882 ITEM NO. C-III SHELL		DATE: 3-25-69 DWO NO: 69-1875-1-2 REV: 2	
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FORM U-2 MANUFACTURER'S PARTIAL DATA REPORT
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

- Items 6-11 Incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

- [illegible]

FORM U-2 (BACK)

15. Heads: (a)

(b)

(Mat'l Spec. No., Grade or Type) H.T. — Time & Temp

(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

[illegible]

If removable, bolts used (describe other fastening)

(Mat'l Spec. No., Grade, size, No.)

18. MAWP 75 ** psi at max. temp. 150 °F Min. design metal temp. -20 °F at 75 psi.
(internal) (external) (internal) (external)

17. Impact test NO, EXEMPT FROM IMPACTS DUE TO JOINT TYPE at test temperature of °F
(Indicate yes or no and the component(s) impact tested)

18. Hydro., ~~press.~~ ~~test press.~~ Proof test

19. Nozzles, inspection, and safety valve openings:

[illegible]

20. Supports: Skirt _____ (Yes or No) Lugs _____ (No.) Legs _____ (No.) Others _____ (Describe) Attached _____ (Where and How)

21. Remarks: 37" x 20' LG. Tube Bundle; ITEM #: C-111

TUBESHEETS & BUNDLE DESIGNED PER HUGHES-ANDERSON HEAT EXCHANGERS, INC.

* CORROSION ALLOW. INCLUDES 3/8" THk (MIN) SB-127 ALLOY 400 CLAD ON SHELLSIDE.

**** SHELL SIDE OF TUBESHEET AND TUBES DESIGNED FOR 90 PSI @ 200°F.**

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1,

U Certificate of Authorization No.

11979

Expires

01/27/2012

Date 3/31/09 Name Hughes Anderson Heat Exchangers, Inc.
(Manufacturer)

Signed Randall L. Bell
(Representative)

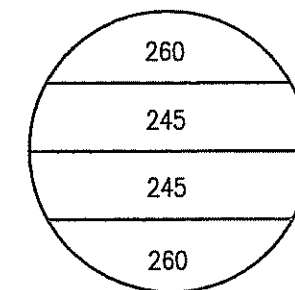
CERTIFICATE OF SHOP/FIELD INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OKLA and employed by OneBeacon America Insurance Company of Lynn, Mass have inspected the pressure vessel described in this Manufacturer's Data Report on Mar. 31, 2009, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in the Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

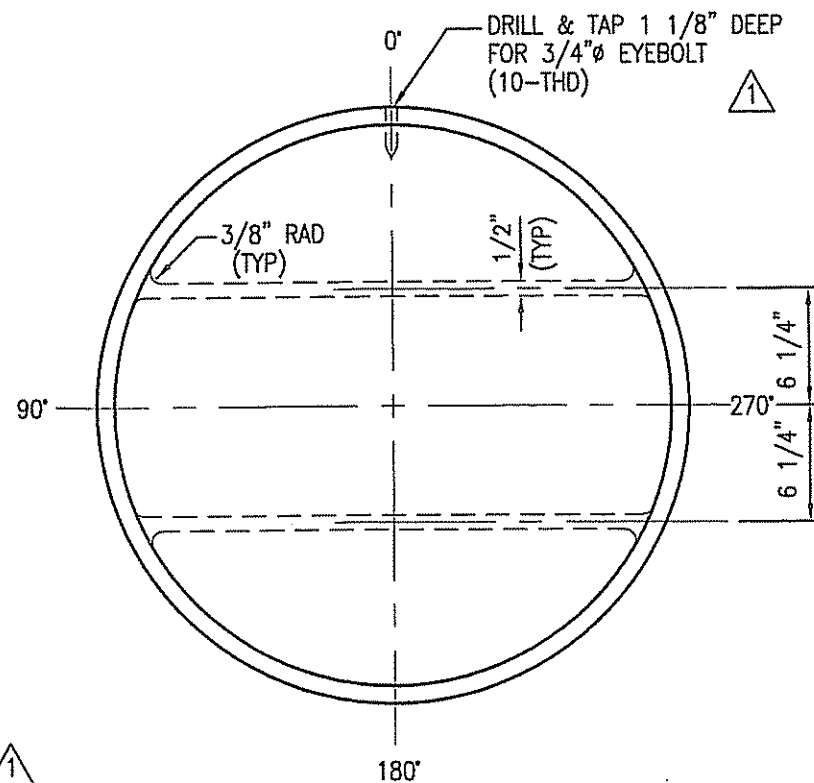
Date Apr. 31, 09 Signed B. Haddock
(Authorized Inspector)

Commissions N.B. #5298-A-B, Okla #258
(Nat'l Board incl. endorsement. State, Provin





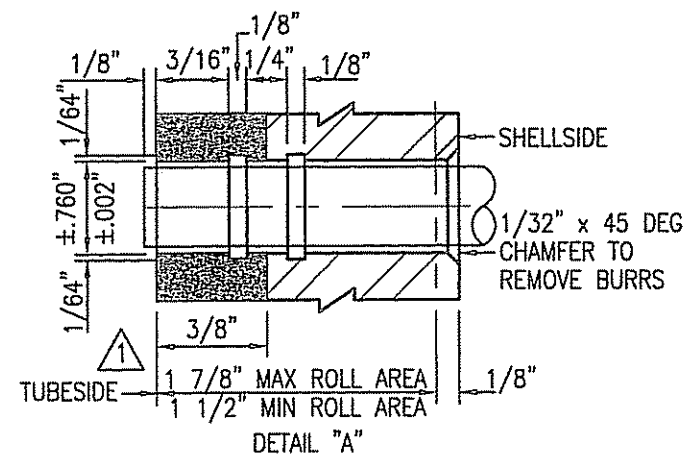
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1	APW	2/19	CUST																



Technical drawing of a tube with the following dimensions and specifications:

- Overall length: 36 13/16" O.D.
- Outer diameter (O.D.): 36 5/16" (with a 36 5/16" TURN feature)
- Inner diameter (I.D.): 35 11/16" (with a 35 11/16" ID GROOVE feature)
- Wall thickness: 3/8" THK (MIN)
- Material: SB-127 ALLOY 400 CLAD
- Surface finish: 250 RMS (on the main body), 63 RMS (on the end flange)
- End flange: 36 5/16" TURN, 1/4" thick, 7" diameter.
- Internal features: CUT GROOVES 3/16" DEEP, 35 15/16" TURN.
- Other dimensions: 2", 1/4", 3/16", 1/4", 250 RMS, 63 RMS, 3/8" THK (MIN), SB-127 ALLOY 400 CLAD.

NAT'L BOARD NO. _____
 CERTIFIED BY:
 HUGHES-ANDERSON HEAT EXCH., INC.
 SERIAL: 9836
 YEAR: 2009



1. DRILL & TAP 3/4" DEEP FROM SHELL SIDE OF #4 TUBESHEET ONLY! FOR 8- 1/2" ϕ TIERODS. DO NOT DRILL THRU! SEE TUBE LAYOUT FOR LOCATIONS.
2. DRILL & REAM TUBE HOLES TO .760" $\phi \pm .002$ " FOR 1010 - 3/4" OD TUBES ON 15/16" \triangleleft PITCH AND 34 1/16" ACTUAL TUBE CIRCLE
GROOVE TUBE HOLES PER DETAIL "A"



HUGHES-ANDERSON HEAT EXCHANGERS INC.
1001 NORTH FULTON TULSA, OKLAHOMA 74115

TITLE		TUBESHEET DETAILS			
CUSTOMER		WESTERN REFINING YORKTOWN, INC.		P.O. NO. P034922	
SIZE 37" X 20'		ITEM NO. C-111			QTY. ONE
TYPE S- TYPE BUNDLE		DR APW	DATE 01/19/2009		DRAWING NUMBER 9836-02
SERIAL NO. 9836		CK ADH	SCALE		

REV	BY	DATE	AUTH.	REV	BY	DATE	AUTH.	REV	BY	DATE	AUTH.	REV	BY	DATE	AUTH.	REV	BY	DATE	AUTH.
1	APW	2/19	CUST																