

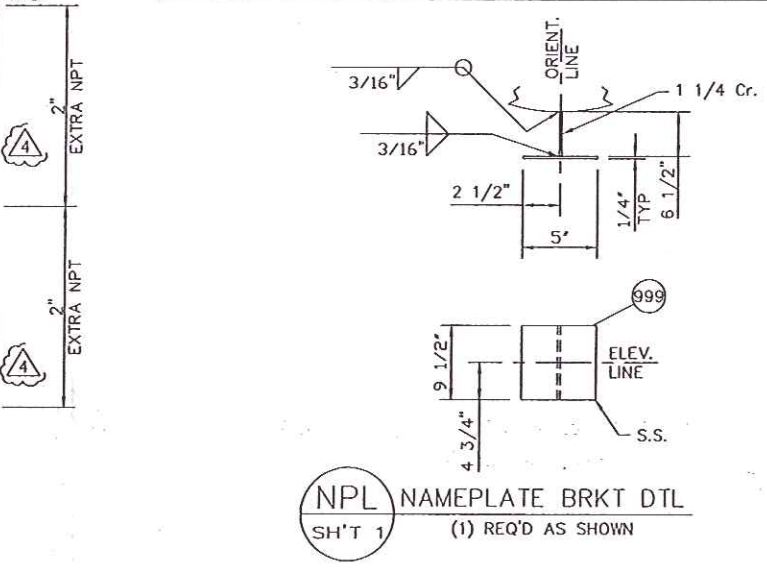
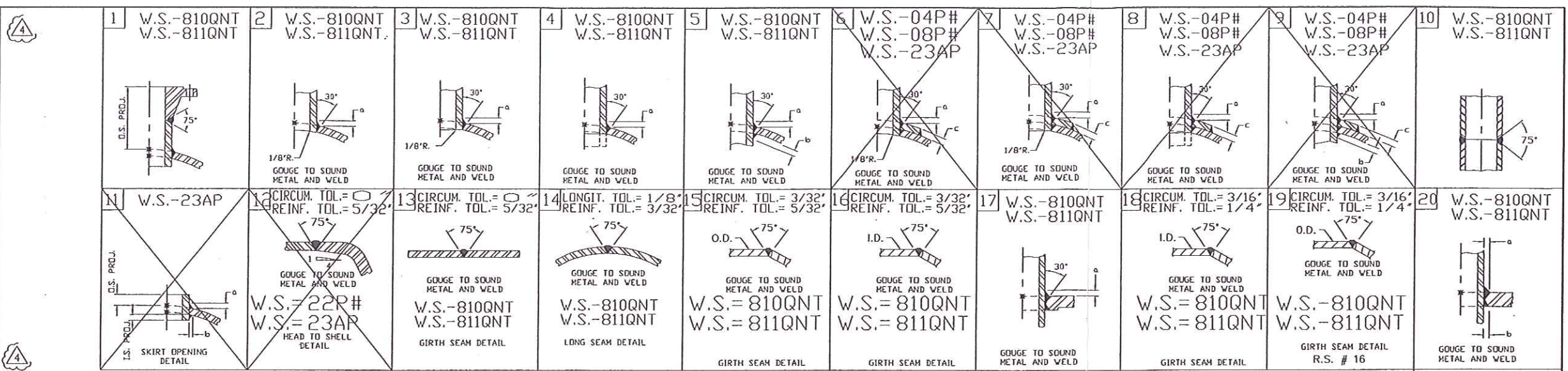
#105727

FABWELL CORPORATION
TULSA, OKLAHOMA
CERTIFIED BY
U
W
RT-1
HT
07-7004-4
2007
07-7004-9
D-607
56603-P-11-14
24" O.D. x 48" I.D. x 32" O.D. REGENER
SERVICE
ATOR RECEIVER

STEAM COIL
INT. MAWP 80 PSIG/850°F.
EXT. MAWP 80 PSIG/850°F.
MDMT O'F. ACTUAL HYDRO 379 PSIG
FIELD HYDRO 166 PSIG
REQUISITION NO. M110-01

DESIGN PRESS. & TEMP: 50 PSIG @ 975°F.
MAP (N & C): 293 PSIG @ 70°F.
TEST PRESS.: 379 PSIG
ACTUAL TEST TEMP.: 70°F.
* TOP '2' .375", REMAINING 5/8"
** TOP '2' .375", BTM. .500"

CONES AND SHELLS IMPACT TESTED PER UG-84.
REMAINING EXEMPT PER UCS-66(b)(1)(b) & COINCIDENT RATIO.
HYDROTEST ON CHART N/C.



NOTE:
INT. DESIGN: 80 PSIG @ 850°F.
EXT. DESIGN: 15 PSIG @ 850°F.
ACTUAL HYDRO: 379 PSIG
FIELD HYDRO: 166 PSIG
REQUISITION #

NOTE:
COIL TO BE HYDROTESTED
INDEPENDENTLY.

CUST. NOTE:
FABWELL IS NOT DESIGNING THE
COIL FOR ANYTHING OTHER THAN
INT. & EXTERNAL PRESSURE. FEA OR
OTHER ANALYSIS IS NOT IN OUR
SCOPE OF SUPPLY.

**** MI BLIND TO PWHT SEPARATELY:
HEAT TREAT 1275°F. ±25°F.
HEATING RATE @: 145°F/HR.
COOLING RATE @: 181°F/HR.
HOLD FOR: 2 3/4 HR. MIN.

*** S.S. = 70°F
C.S. = 30°F

**CERTIFIED
AS-BUILT
06-18-07**

Shaw Stone & Webster, Inc.
SSW ID NO.:
EQUIP. NO.: D-607 DOC CODE:
SSW P.O. No. 56603-P-11-14-0052A
☐ FOR INFORMATION
☐ COMMENTS NOTED
☐ ACCEPTED
☐ ACCEPTED AS CERTIFIED
☐ REVISE/RESUBMIT
SIGNED: DATE:
THE ACCEPTANCE OF THIS DATA BY STONE & WEBSTER DOES NOT RELIEVE THE
CONTRACTOR OR SUPPLIER FROM THE OBLIGATIONS IMPOSED BY THE
PURCHASE ORDER OR CONTRACT.

NOTE: ALL SHARP EDGES TO BE GROUND TO 1/8" RADIUS.

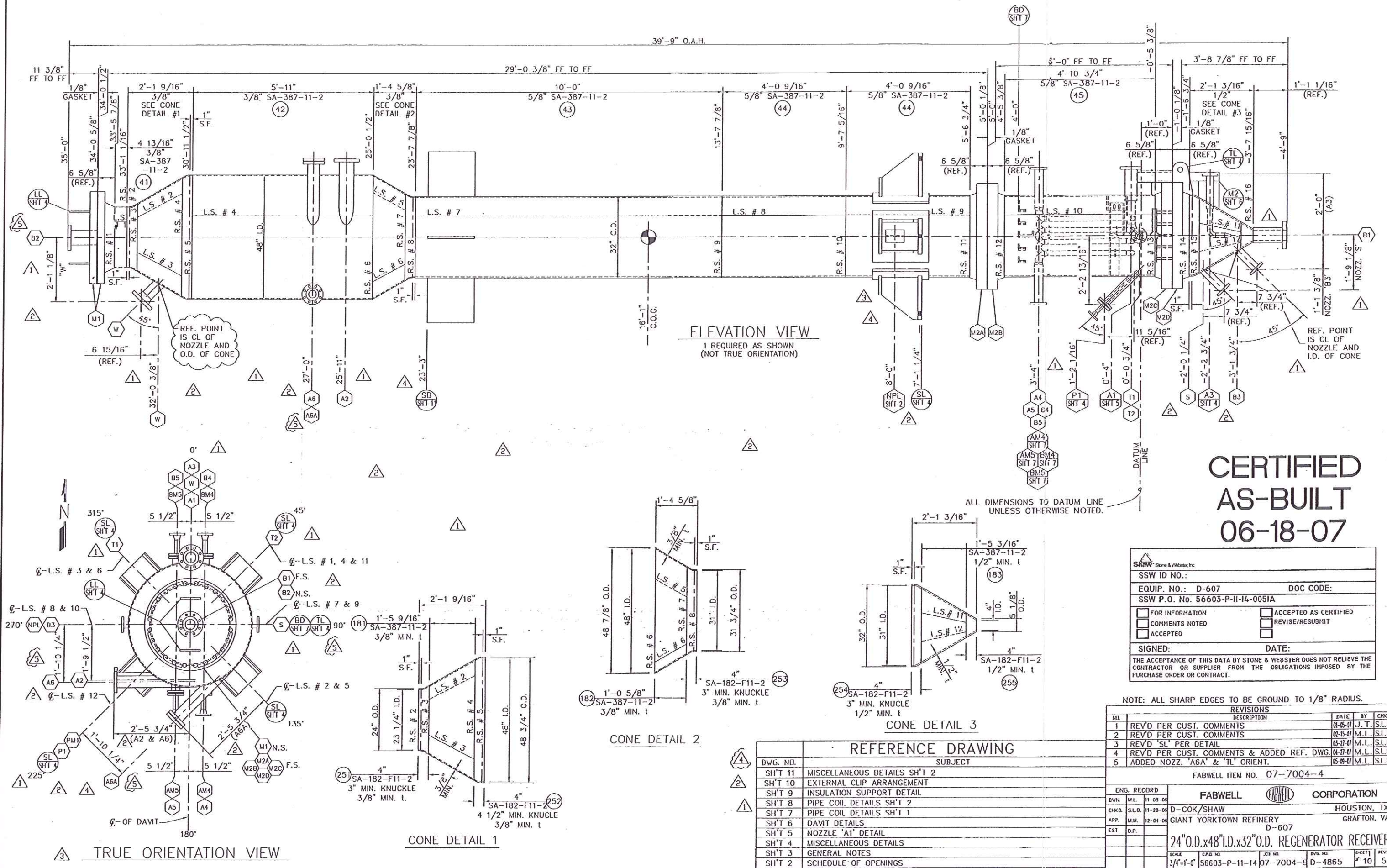
A6A	1	3"	300#	RFLWN	~	~	0.810"	SA-182-F11-2	271			~	AS SHOWN	R. FLUSH	2	~	3/8"	~	~	SPARE	204	907	955
M2D	1	32"	300#	RFLWN	270	~	0.625"	SA-182-F11-2	~			~	AS SHOWN	AS SHOWN	18	~	~	~	~	MANWAY/BODY FLANGE	952	904	~
M2A-C	3	32"	300#	RFLWN	270	~	0.625"	SA-182-F11-2	~			~	AS SHOWN	AS SHOWN	1	~	~	~	~	MANWAY/BODY FLANGE	952	904	~
M1	1	24"	300#	RFLWN	269	~	0.375"	SA-182-F11-2	~			~	AS SHOWN	AS SHOWN	1	~	~	~	~	MANWAY/BODY FLANGE	203	903	951
W	1	4"	300#	RFLWN	268	XXHVY	0.674"	SA-335-P11	414			~	AS SHOWN	R. FLUSH	1	2	3/8"	~	~	RELIEF VALVE	~	~	~
PM1	1	1 1/2"	300#	RFLWN	~	~	0.625"	SA-182-F11-2	267			~	AS SHOWN	R. FLUSH	2	~	3/8"	~	~	MOUNT FOR NOZZLE P1	953	905	202
P1	1	1"	300#	RFLWN	266	XXHVY	0.358"	SA-335-P11	416			~	AS SHOWN	SEE DT'L	17	~	3/8"	3/8"	~	PT INSERT	~	~	~
T1/2	2	1 1/2"	300#	RFLWN	~	~	0.625"	SA-182-F11-2	265			~	TO 3/8"	R. FLUSH	2	~	3/8"	~	~	TW	~	~	~
S	1	2"	300#	RFLWN	~	~	0.655"	SA-182-F11-2	264			~	AS SHOWN	R. FLUSH	2	~	3/8"	~	~	SAMPLE	~	~	~
BM4/5	2	2"	300#	RFLWN	~	~	0.621"	SA-182-F11-2	260			~	AS SHOWN	SEE DT'L	5	~	3/8"	3/8"	~	MOUNT FOR NOZZLE B4/B5	201	906	954
B4/5	2	1 1/2"	300#	RFLWN	259	XHVY	0.200"	SA-335-P11	417			~	AS SHOWN	SEE DT'L	1	17	3/8"	~	~	STEAM OUT W/ THERMAL SLEEVE	~	~	~
B3	1	2"	300#	RFLWN	~	~	0.655"	SA-182-F11-2	263			~	AS SHOWN	R. FLUSH	2	~	3/8"	~	~	SORBENT DEINVENTORY	~	~	~
B2	1	4"	300#	RFLWN	~	FORG.	1.156"	SA-182-F11-2	272			~	AS SHOWN	AS SHOWN	20	10	3/8"	~	~	GAS OUT	262	~	~
B1	1	4"	600#	RFLWN	~	~	1.00"	SA-182-F11-2	261			~	AS SHOWN	AS SHOWN	19	~	~	~	~	SORBENT OUT	~	~	~
A6	1	3"	300#	RFLWN	~	~	0.810"	SA-182-F11-2	271			~	AS SHOWN	R. FLUSH	2	~	3/8"	~	~	FRESH SORBENT IN	~	~	~
AM4/5	2	2"	300#	RFLWN	~	~	0.621"	SA-182-F11-2	260			~	AS SHOWN	SEE DT'L	5	~	3/8"	3/8"	~	MOUNT FOR NOZZLE A4/A5	201	906	954
A4/5	2	1 1/2"	300#	RFLWN	259	XHVY	0.200"	SA-335-P11	417			~	AS SHOWN	SEE DT'L	1	17	3/8"	~	~	STEAM IN W/ THERMAL SLEEVE	~	~	~
A3	1	1 1/2"	300#	RFLWN	~	~	0.625"	SA-182-F11-2	258			~	AS SHOWN	SEE DT'L	5	~	3/8"	3/8"	~	CONE SPARGER	~	~	~
A2	1	4"	300#	RFLWN	~	~	0.875"	SA-182-F11-2	257			~	AS SHOWN	R. FLUSH	2	~	3/8"	~	~	SORBENT IN	~	~	~
A1	1	3"	300#	RFLWN	~	~	0.810"	SA-182-F11-2	256			~	TO 3/8"	SEE DT'L	5	~	3/8"	3/8"	~	GAS IN	~	~	~
MARK	NO. REQ'D	SIZE	RATING	TYPE	B.O.M.	SCH.	WALL	MATERIAL	B.O.M.	O.D. X THK.	MATERIAL	B.O.M.	O.S.	I.S.	WELD DETAIL	a	b	c	SERVICE	MISC. B.O.M.			
				FLANGE				NOZZLE			REPAD		PROJECTION			WELD SIZE							

PROCEDURE	WIRE	FLUX	PREHEAT	INTERPASS TEMP.	SPECIAL REQUIREMENTS
WS-101	ER-316		50°F. MIN.	250°F. MAX.	G.T.A.W. (S.S. TO S.S.)
WS-104	E-316LT-1		50°F. MIN.	250°F. MAX.	F.C.A.W. (S.S. TO S.S.)
WS-402	ER-NiCr-3		***	500°F. MAX.	G.T.A.W. (Cr TO S.S.)
	E-NiCrFe-3		***	500°F. MAX.	SMAW (Cr TO S.S.)
WS-810 QNT	E-B-2	UV 420 TTR	300°F. MIN.	500°F. MAX.	SAW
WS-811 QNT	ER80S-B2		300°F. MIN.	500°F. MAX.	G.T.A.W.
	E8018-B2		300°F. MIN.	500°F. MAX.	SMAW
WS-813	E81T1-B2		300°F. MIN.	500°F. MAX.	F.C.A.W. (STRU. TO NON-PRESS. ONLY)

GENERAL NOTES
TO BE CONSTRUCTED IN ACCORDANCE WITH 2004 ASME SECTION VII DIVISION 1
A05 ADDENDA.
CODE STAMP REQ'D: YES
NAT'L. BOARD REG.: YES
BOLT HOLES TO STRADDLE NORMAL CENTER LINES UNLESS OTHERWISE NOTED.
CORROSION ALLOWANCE: HEAD: 1/8" SHELL: 1/8" NOZZLE: 1/8"
SUPPORT: 0" INTERNAL: 1/8"
CIRCUMFERENTIAL JT. RADIOGRAPHY: 100%
LONGITUDINAL JT. RADIOGRAPHY: 100%
FLANGE TO PIPE RADIOGRAPHY: 100%
DESIGN PRESSURE: 50 PSIG @ 975°F.
M.A.W.P.: 67 PSIG @ 975°F.
M.A.P.: 293 PSIG @ 70°F.
HEAT TREAT @: 1275°F. ±25°F.***
HEATING RATE: 400°F./hr.
HYDROSTATIC TEST PRESSURE: 379 PSIG
PAINT: SEE PAINT NOTES ON SH'T # 3.
INSULATION: 5 1/2" (BY OTHERS)
WEIGHT: SHIPPING = 17,000 lbs, SHOP HYDRO = 29,000 lbs

NO.	DESCRIPTION	DATE	BY	CHKD.
1	REV'D PER CUST. COMMENTS	11-05-07	J.T.	S.L.B.
2	REV'D & ADDED NOTES	02-07-07	M.L.	S.L.B.
3	ADDED 'AGA' & REV'D SCH. OF OPENINGS	05-09-07	M.L.	S.L.B.
4	REV'D 'NPL', ADDED NAT'L. BD.	06-18-07	M.L.	S.L.B.

FABWELL ITEM NO. 07-7004-4
ENG. RECORD
DWN. U.L. 11-08-06
CHKD. S.L.B. 11-28-06
APP. U.M. 12-04-06
EST. D.P.
FABWELL CORPORATION
HOUSTON, TX.
GRAFTON, VA.
D-COK/SHAW
GIANT YORKTOWN REFINERY
D-607
SCHEDULE OF OPENINGS
SCALE 1"=1'
CPS NO. 56603-P-11-14
JOB NO. 07-7004-4
DVS NO. D-4865
SHEET 2
REV. 4



**CERTIFIED
AS-BUILT
06-18-07**

Shaw Stone & Webster, Inc.

SSW ID NO.: _____

EQUIP. NO.: D-607 DOC CODE: _____

SSW P.O. No. 56603-P-II-14-0051A

☐ FOR INFORMATION ☐ ACCEPTED AS CERTIFIED

☐ COMMENTS NOTED ☐ REVISE/RESUBMIT

☐ ACCEPTED

SIGNED: _____ DATE: _____

THE ACCEPTANCE OF THIS DATA BY STONE & WEBSTER DOES NOT RELIEVE THE CONTRACTOR OR SUPPLIER FROM THE OBLIGATIONS IMPOSED BY THE PURCHASE ORDER OR CONTRACT.

NOTE: ALL SHARP EDGES TO BE GROUNDED TO 1/8" RADIUS.

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	REV'D PER CUST. COMMENTS	01-05-07	J.T.
2	REV'D PER CUST. COMMENTS	02-15-07	M.L.
3	REV'D 'SL' PER DETAIL	03-27-07	M.L.
4	REV'D PER CUST. COMMENTS & ADDED REF. DWG.	04-27-07	M.L.
5	ADDED NOZZ. 'A6A' & 'TL' ORIENT.	05-04-07	M.L.

FABWELL ITEM NO. 07-7004-4

ENG. RECORD	FABWELL	CORPORATION
EWN	UL	11-08-06
CHKD.	SLB	11-28-06
APP.	MM	12-04-06
EST	DP	

D-COK/SHAW

HOUSTON, TX.

GRAFTON, VA.

D-607

24"O.D.x48"ID.x32"O.D. REGENERATOR RECEIVER

SCALE: 3/4"=1'-0"

56603-P-II-14-07-7004-4

D-4865

10

5

1569			
CERTIFIED BY			
FABWELL CORPORATION			
TULSA, OKLAHOMA			
07	PSIG	AT	77 F
M.A.W.P.		MAX. TEMP.	
0	PSIG	AT	77
MIN. DESIGN METAL TEMP.			
07-7004-4		007	
MFG. SER. NO.		YEAR BUILT	
07-7004-4		007	
MIN. HD. THK.		SHELL THK.	
07-7004-4		007	
HEAD CORR.		SHELL CORR.	
07-7004-4		007	
CONE CORR.		007	
JOB NO.		ITEM NO.	
24"ODx48"IDx32"OD Regen. Receiver		007	
PURCHASE ORDER NO.			
007			
SERVICE			
007			

STEAM COIL

INT. MAWP 80 PSIG / 850° F.

EXT. MAWP 80 PSIG / 850° F.

WGT. OF ACTUAL HYDRO 379 PSIG

FIELD HYDRO 166 PSIG

REQUISITION NO. M110-01

FABWELL CORPORATION
CPO NO. 56603-P-11-14
07-7004-4 (D-607)
24"ODx48"IDx32"OD Regen. Receiver

1. Manufactured and certified by Fabwell Corporation 8410 S. Regency Dr. Tulsa, Ok 74131
(Name and address of manufacturer)
2. Manufactured for D-COK / SHAW STONE & WEBSTER 1430 ENCLAVE PARKWAY CPO: 56603-P-11-14
(Name and address of purchaser)
Location of installation GIANT YORKTOWN REFINERY GRAFTON, VA
(Name and address)

4. Type VERTICAL TANK 07-7004-4 NA D-4865 R5 1569 2007
(Horiz. or vert. tank) (Mfg's serial no.) (CRN) (Drawing No.) (Nat'l. Bd No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 2004

to 2005 ADDENDA NA UCS-65 Low Temp.
(Addenda (Date)) (Code case Nos.) (Special Service per UG-120(d))

6. Shell: SA-387-11-2 .625" .125" 4'-0" / 2'-8" 5'-11" / 25'-0"
(Mat'l. (Spec. No., Grade)) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Diam I.D. (ft. & in.)) (Length (overall) (ft. & in.))

7. Seams: WELDED DBL FULL 1.0 1275 2 HOURS WELDED DBL FULL 1.0 5
(Long. (Welded, Dbl., Sngl., Lap, Butt)) (R. T. (Spot or Full)) (Eff. (%)) (H. T. Temp. (°F)) (Time (hr)) (Girth (Welded, Dbl., Sngl., Lap, Butt)) (R. T. (Spot, Partial, or Full)) (Eff. (%)) (No. of courses)

8. Heads: (a) Mat'l. SA-387-11-2 (b) Mat'l. SA-387-11-2
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP	.375"	.125"	-----	4.5"	-----	28 deg.	-----	-----	CONCAVE
(b)	BOTTOM	.500"	.125"	-----	3"	-----	29 deg.	-----	-----	CONCAVE

If removable, bolts used (describe other fastenings) SA-193-B7, 1-1/2" dia. X 12" LG. (32) SA-194-7 HEX NUTS (64)
(Mat'l., Spec. No., Gr., Size, No.)

9. MAWP 67 psi at max temp. 975 °F
Min. design metal temp. 0 °F at 67 psi, Hydro. test pressure 379 (NEW & COLD) psi.

10. Nozzles, inspection and safety valve openings

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Mat'l.	Nom. Thk.	Reinforcement Mat'l.	How Attached	Location
IN/OUT	2	4"	CL300lwn	SA-182-F11-2	.875"	WELD	UW16.1(c)	-----
OUTLET	1	4"	CL600lwn	SA-182-F11-2	1.00"	WELD	UW16.1(f)	-----
RELIEF VALVE	1	4"	CL300WN	SA-335-P11	.674"	WELD	UW16.1(c)	-----
INLET/SPARE	3	3"	CL300lwn	SA-182-F11-2	.810"	WELD	UW16.1(c)	-----

11. Supports: Skirt NO Lugs 4 Legs NONE Other NONE Attached WELDED TO SHELL
(Yes or no) (No.) (No.) (Describe) (Where and How)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: NA
(Name of part, item number, Mfg's name and identifying stamp)

(1) 24" O.D. x 48" I.D. x 32" O.D. REGENERATOR RECEIVER (D-607); Cones & Shell Materials impact tested per UG-84, Balance material = exempt per UCS-66(b)(1)(b) & Coincidental ratio. Production Impact Tested and Acceptable. See attached U4 Form.
UG 22 LOADINGS HAVE BEEN REVIEWED AND APPLIED PER CUSTOMER DECLARATIONS.

CERTIFICATE OF SHOP 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. 8684 expires 5-19-2010
Date 6-11-07 Co. name FABWELL CORPORATION Signed E. J. Hurd
(Manufacturer) (Representative)

Vessel constructed by Fabwell Corporation at 8410 S. Regency Dr. Tulsa, Ok 74131

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of OKLAHOMA and employed by ONE BEACON AMERICA INSURANCE COMPANY of BOSTON, MA have inspected the component described in this Manufacturer's Data Report on 6-15-07 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 this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage loss of any kind arising from or connected with this inspection

Date 6-15-07 Signed A. A. Stutz Commissions B. 8432-A OK-266
(Authorized Inspector) (Nat'l Board (incl. endorsements), State, Prov. and No.)

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

Data Report Item Number	Remarks
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Certificate of Authorization: Type "U" No. 8684 Expires MAY 19 2010

Date 6-11-07 Name FABWELL CORPORATION Signed Donald Reid
(Manufacturer) (Representative)

Date 6-15-07 Name A. A. Stout Commission NA 8432-A OK 266
(Authorized Inspector) (Nat'l Board incl. endorsement, State, Province, and No.)