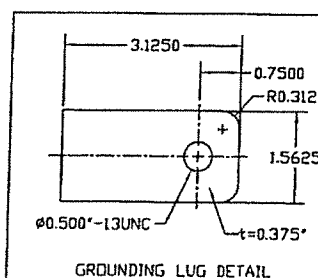
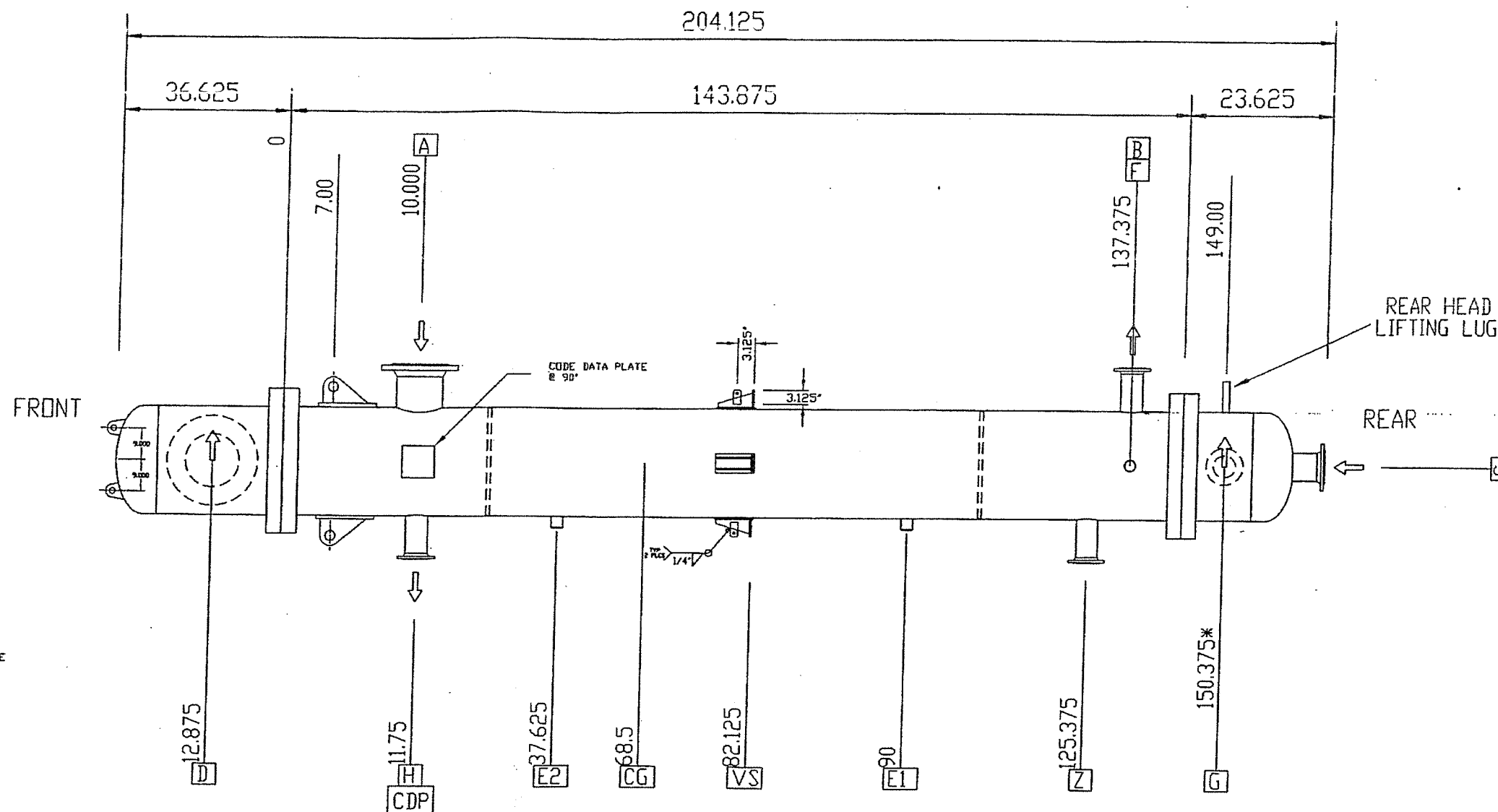
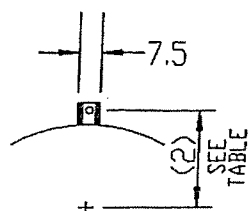
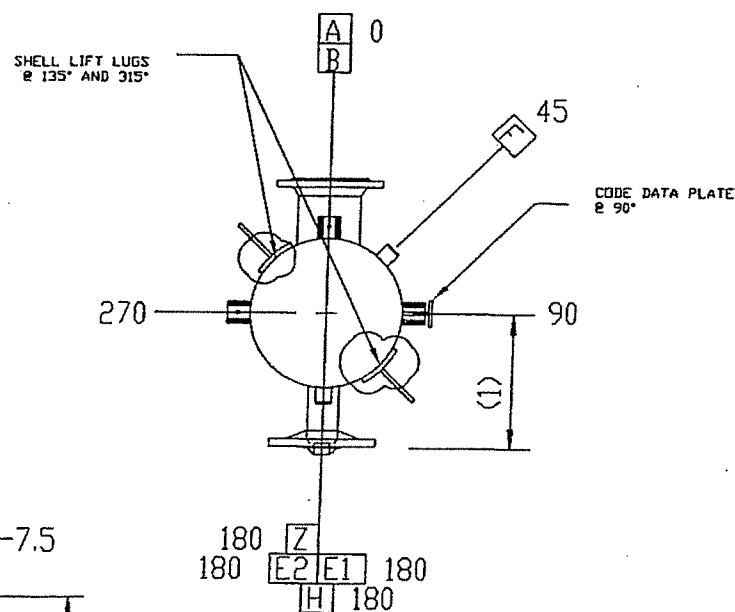
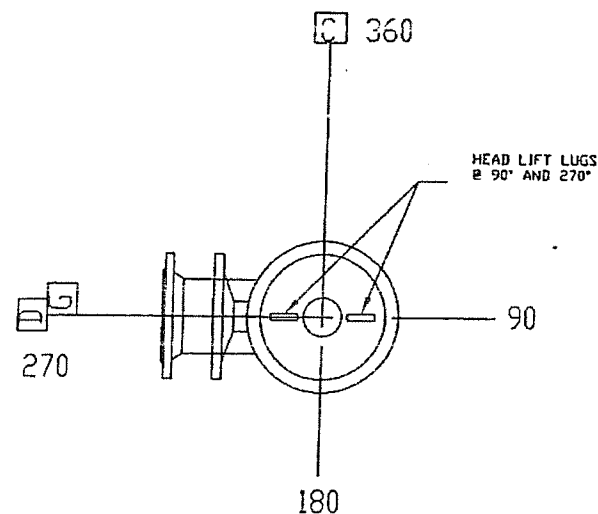


Dimensions: in



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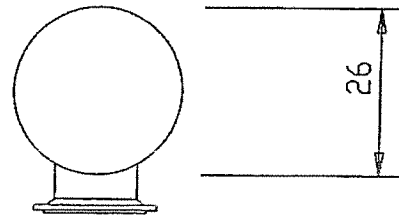
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* DIMENSION REDUCED 2.5"
TO MOVE NOZZLE OFF OF REAR
HEAD CYLINDER-TO-COVER SEAM LINE

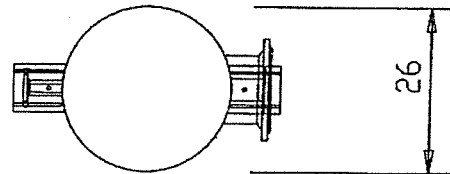
Nozzles				Couplings / Supports(2)			Design Specifications			Shell	Tube	Company: DCR Location: Plymouth Stripper Column Reboiler Item No: E-4202 Date: February 17, 2007 Job No.: 7794				
Label	Size:	Description	Project.	Label	Size:	Description	Project.	Design Pressure	psig	150/FV	75/FV	DCR Construction, Inc. Harlingen, Texas				
A	10"	150 # ANSI S.D.R.F	19	E1	0.5	3000 # Half Length	13.938	Test Pressure	psig	195	98					
B	3"	150 # ANSI S.D.R.F	19	E2	0.5	3000 # Half Length	13.938	Min. Design Temperature	F	-20	-20					
C	6"	150 # ANSI S.D.R.F	6	F	1	3000 # Half Length	13.938	Max. Design Temperature	F	400	400					
D	12"	150 # ANSI S.D.R.F	19	VS1	1	1.125 Bolt Holes	17	Number of Passes		1	1					
G	3"	150 # ANSI S.D.R.F	19	VS2	1	1.125 Bolt Holes	17	Corrosion Allowance	in	0.0625	0.0					
H	1"	150 # ANSI S.D.R.F	19	VS3	1	1.125 Bolt Holes	17	Radiographing		None	None	ASME VIII-1 2004 A06				
Z	2"	150 # ANSI S.D.R.F	19	VS4	1	1.125 Bolt Holes	17	Post-Weld Heat Treatment		None	None					
								Wt Empty: 4571 Full: 7802 Bundle: 2871 lb				TEMA Type: BEM		Setting Plan		
								Rev:	Date:	Description	Dwg	Ckd	Appd			Size: 25-144
								2	12-18-07	Certified As-Built	AGR	DCR	PWW			TEMA Class: C
											Dwg No: F-4202 01A		Rev: 2			

Dimensions: in

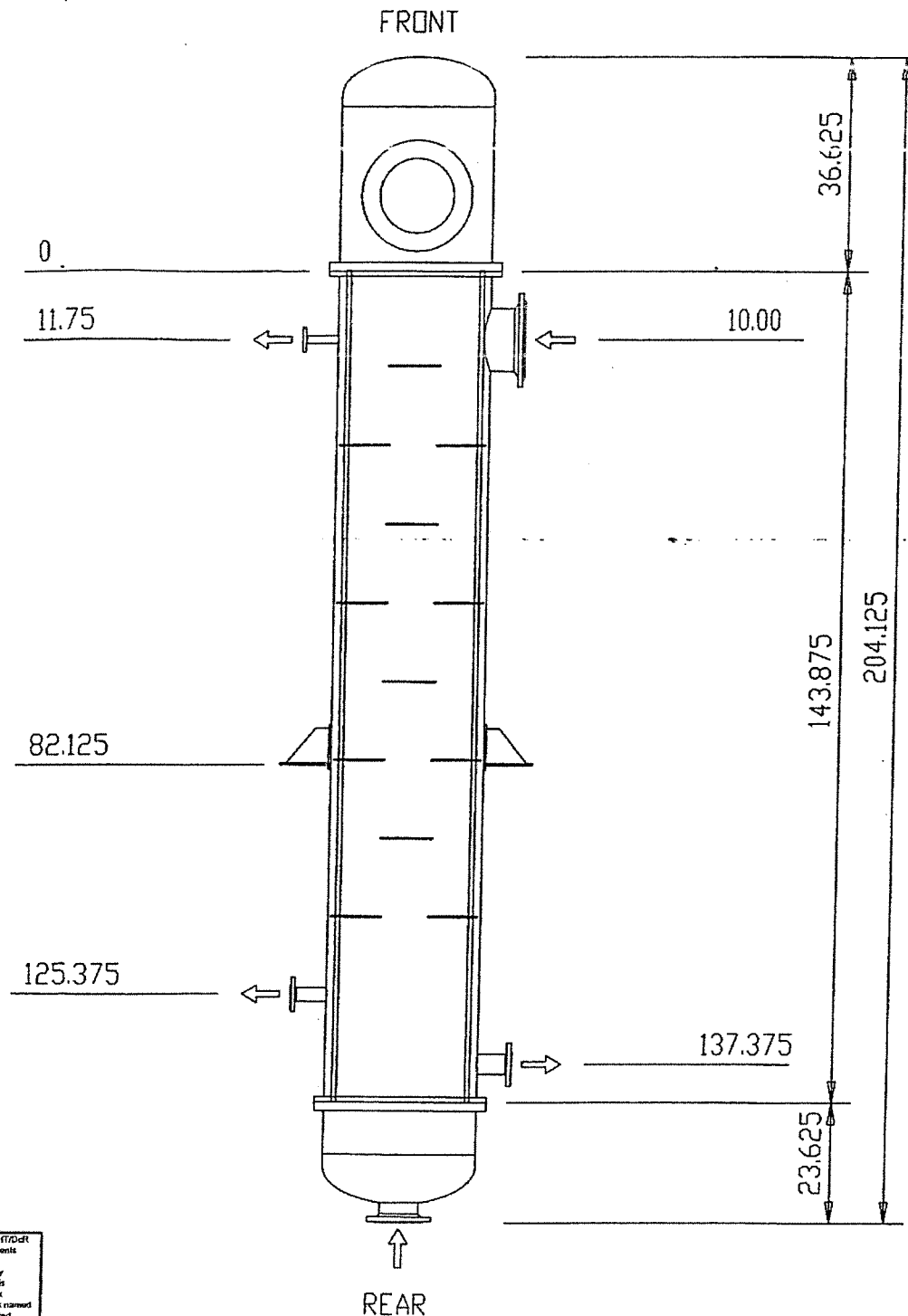
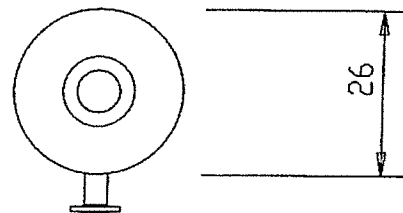
Front Head



Shell



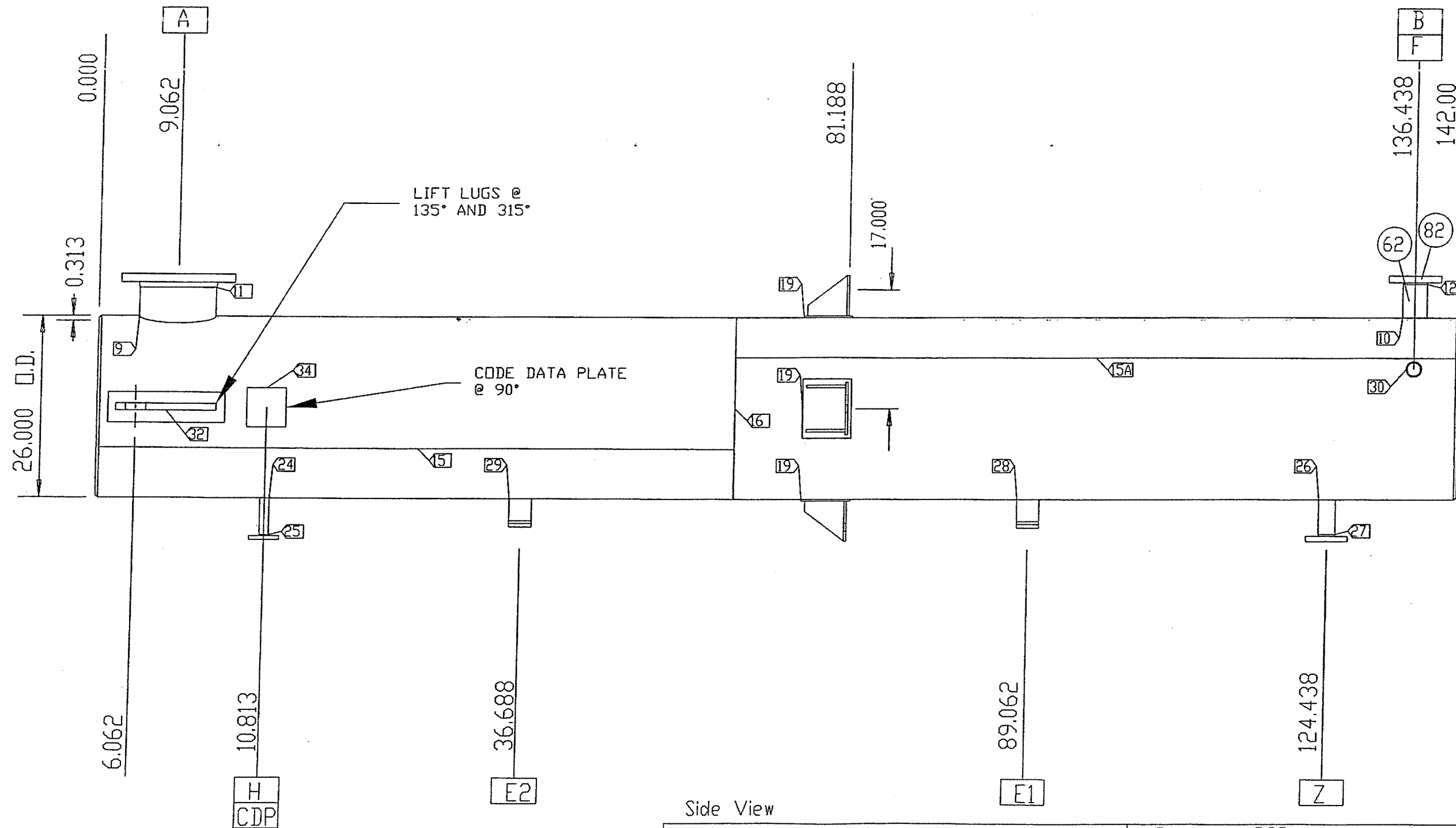
Rear Head



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Nozzles				(1)			Couplings / Supports(2)			Design Specifications			Shell	Tube	Company: DCR Location: Plymouth Stripper Column Reboiler Item No.: E-4202 Date: February 18, 2007 Job No.: 7794				
Label	Size:	Description	Project.	Label	Size:	Description	Project.	Design Pressure	psig	150/FV	75/FV	DCR Construction, Inc. Harlingen, Texas							
A	10"	150 # ANSI S.D.R.F	19	E1	0.5	3000 # Half Length	13.938	Test Pressure	psig	195	98								
B	3"	150 # ANSI S.D.R.F	19	E2	0.5	3000 # Half Length	13.938	Design Temperature	F	400	400								
C	6"	150 # ANSI S.D.R.F	6	F	1	3000 # Half Length	13.938	Number of Passes		1	1								
D	12"	150 # ANSI S.D.R.F	19	VS1	1	1.125 Bolt Holes	17	Corrosion Allowance	in	0.0625	0.0								
G	3"	150 # ANSI S.D.R.F	19	VS2	1	1.125 Bolt Holes	17	Radiographing		None	None								
H	1"	150 # ANSI S.D.R.F	19	VS3	1	1.125 Bolt Holes	17	Wt Empty: 4571 Full: 7802 Bundle: 2871 lb				ASME VIII-1 2004 A06 TEMA Type: BEM Size: 25-144 TEMA Class: C							
Z	2"	150 # ANSI S.D.R.F	19	VS4	1	1.125 Bolt Holes	17	Rev:	Date:	Description	Dwg					Ckd	Appd	Setting Plan	
								1	10-25-07	Revised As Noted	KFF					DGB	PW		
								2	12-18-07	Certified As-Built	AGB	DGB	PW	Dwg No.: E-4202 01B	Rev: 2				



Notes:
All Dimensions In Inches
Bolt holes to straddle centerlines
Weld joint details per drawing 20

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No.: E-4202
Date: February 17, 2007 Job No.: 7794

DCR Construction, Inc.
Harlingen, Texas

Scale: NTS

Rev:	Date:	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Shell Detail	Rev:
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM		
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144	Dwg No.: E-4202 06A	2
						TFMA Class: C		

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Design Specifications

TEMA Class		Shell Side	Tube Side	Tubesheets
Design pressure	psi	150	75	
Vacuum design pressre	psi	14.504	14.504	
Test pressure	psi	195	97.5	
Design temperature	F	400	400	400
Average metal temperature	F	298.16	238.6	298.16
Corrosion allowance	in	0.0625		
Front tubesheet corrosion allow	in			
Rear tubesheet corrosion allow	in			
Radiographing		None	None	
Number of passes		1	1	
Nozzle flange rating				
Post weld heat treatment		No	No	
Code		ASME Section VIII Div.1 2004 A05		TEMA Eighth Edition 1999
Weights		Empty:4463	Full:7708	Bundle:2844 lbf

Cylinders/Covers

	Front Head		Shell	Rear Head		Shell Cover		Tubes
	Cover	Cyl.	Cyl.	Cyl.	Cover	Cyl.	Cover	
Head type	Ellipsoidal				Ellipsoidal			
Outside diameter	in	26	26	26	26			0.75
Calculated thk.	in	0.0624	0.0759	0.2012	0.0759	0.0624		0.0022
TEMA minimum thk.	in	0.1875	0.1875	0.3125	0.1875	0.1875		
Actual thickness	in	0.1875	0.1875	0.3125	0.1875	0.1875		0.049
X-ray		None	None	None	None	None		
Joint efficiency		None	None	None	None	None		
Corrosion allowance	in			0.0625				
External pressure	psi	15	15	15	15			164.504
Length Ext.Press.	in		28	144	9			144
Maximum Ext.Press.	psi	53.281	58.976	35.903	84.611	53.281		865.299
Minimum thk. Ext.Press.	in	0.072	0.091	0.239	0.058	0.072		0.017
Max.length Ext.Press.	in		156	1330	156			440

Nozzles

Nozzle designator		A	B	C	D	G	H	Z
Vessel side		Shell	Shell	Tube	Tube	Tube	Shell	Shell
Outside diameter	in	10.75	3.5	6.625	12.75	3.5	1.315	2.375
Calculated thickness	in	0.149	0.1075	0.0385	0.0674	0.0282	0.1005	0.102
Code minimum thk	in	0.191	0.1867	0.1074	0.1132	0.1088	0.191	0.187
Actual thickness	in	0.25	0.216	0.109	0.156	0.12	0.25	0.218
Reinf.pad OD	in							
Reinf.pad thickness	in							
Corrosion allowance	in	0.0625	0.0625			0.0625	0.0625	
External pressure	psi	15	15	15	15	15	15	
Length ext. press.	in	6	6	3.25	6	6	6	
Maximum ext. press.	psi	293.186	737.754	140.493	97.001	279.513	2900.801	1116.054

DELTA CORPORATION

CATEGORY 15

6

279.513

WITH COMMENTS

REVIEWED

3/16/07

REVIEW IS FOR COMPLIANCE WITH THE PROCUREMENT DOCUMENTS ONLY.

REMARKS

6

1116.054

NOT RELEASED

RESUBMIT DRAWING

RELEASED FOR

Nozzle Flanges

DCR Construction, Inc.

DCR Construction, Inc.
P.O. Box 1415
Mulberry, FL 33860
Phone: 863-709-1121
Fax: 863-709-9701

DRAWING LOG

JOB NUMBER 7791 SERIAL NUMBER 4202

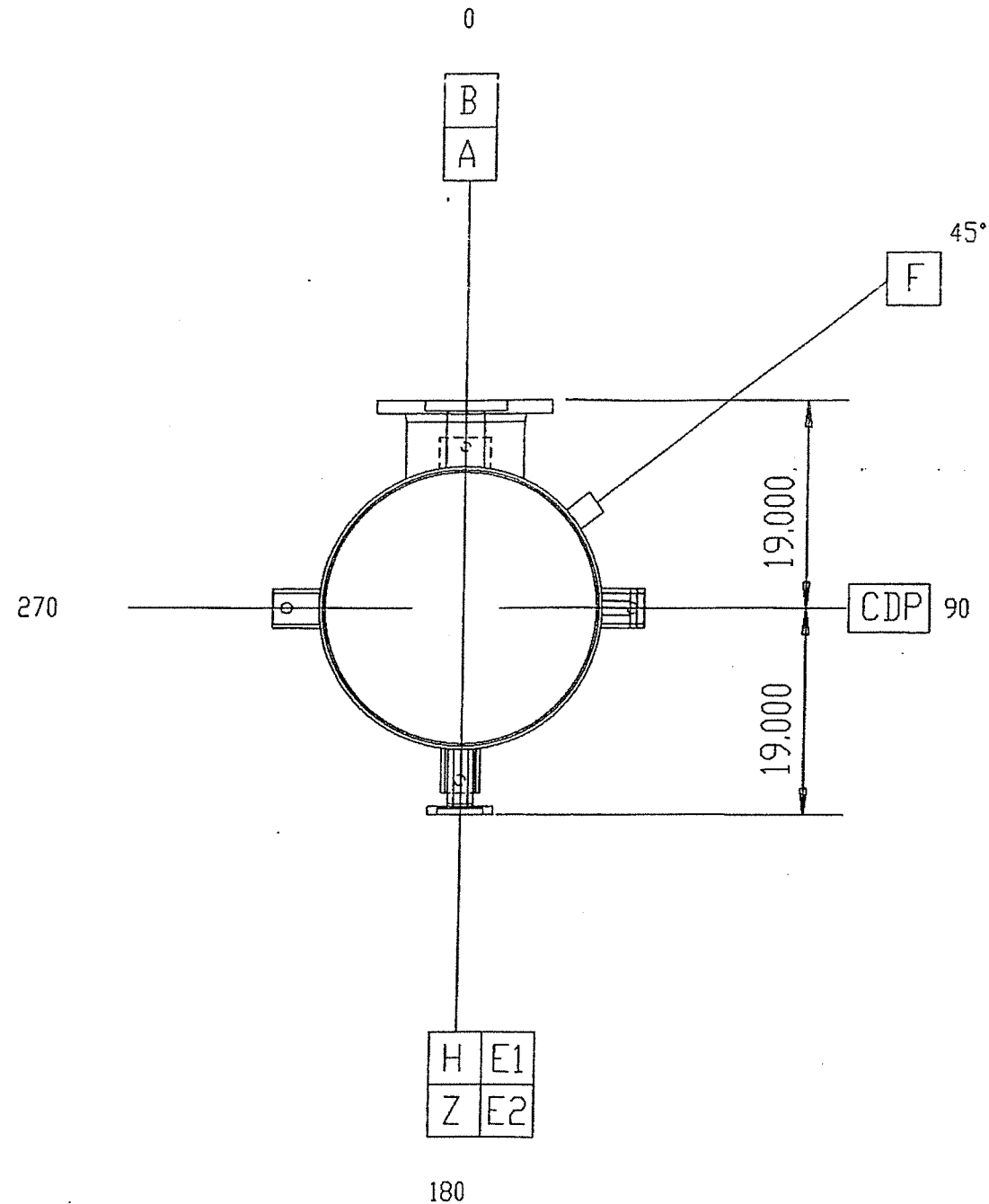
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4202-17B	0
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4202-18B	0
4202-19	0
4202-20	0

DELTA-T CORPORATION	
CATEGORY	REMARKS
☒ DRAFTED	
☒ REVIEWED	☒ FIRST RELEASED
☒ WITH COMMENTS	☒ RESUBMIT DRAWING
☒ REVIEWED	
☒ WITHOUT COMMENTS	☒ RELEASED FOR
REVIEW KIT FOR COMPLIANCE WITH THE PROCUREMENT DOCUMENTS ONLY.	

3/19/07

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ENGINEERING MANAGER			

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Front End View

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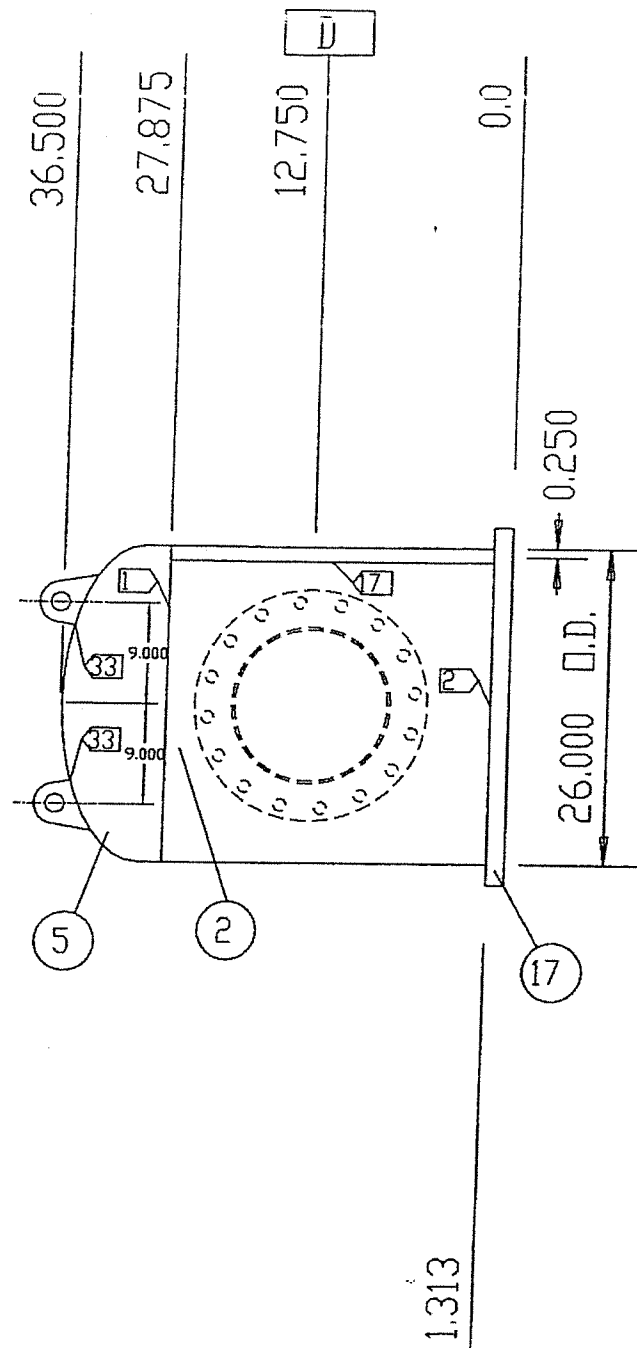
Notes:
All Dimensions In Inches
Bolt holes to straddle centerlines
Weld joint details per drawing 20

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No: E-4202
Date: February 17, 2007 Job No: 7794

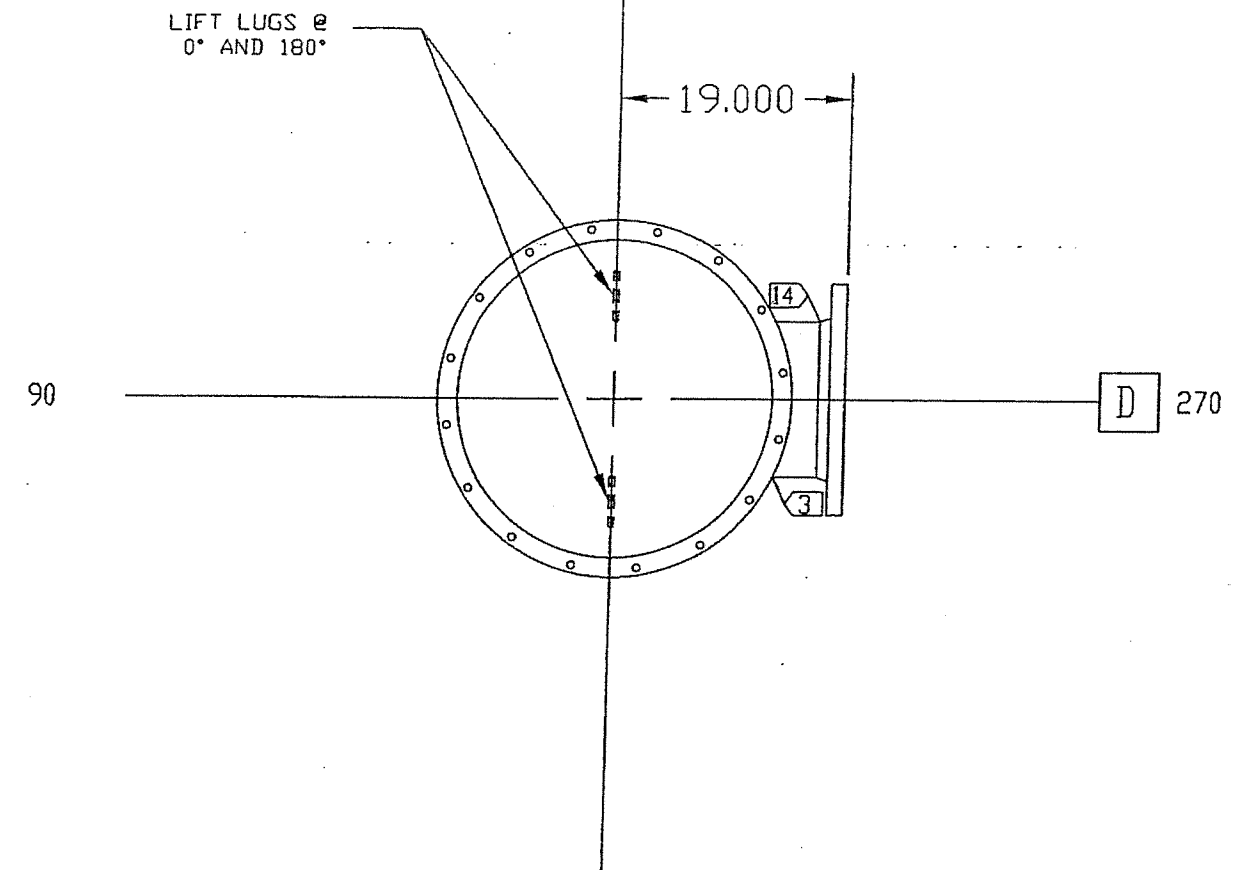
DCR Construction, Inc.
Harlingen, Texas

Scale: NTS

Rev:	Date:	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Shell Detail	
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM	Dwg No: E-4202 06B	Rev: 2
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144 TFMA Class: C		



Side View



Rear End View

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Notes:
All Dimensions In Inches
Bolt holes to straddle centerlines
Weld joint details per drawing 20

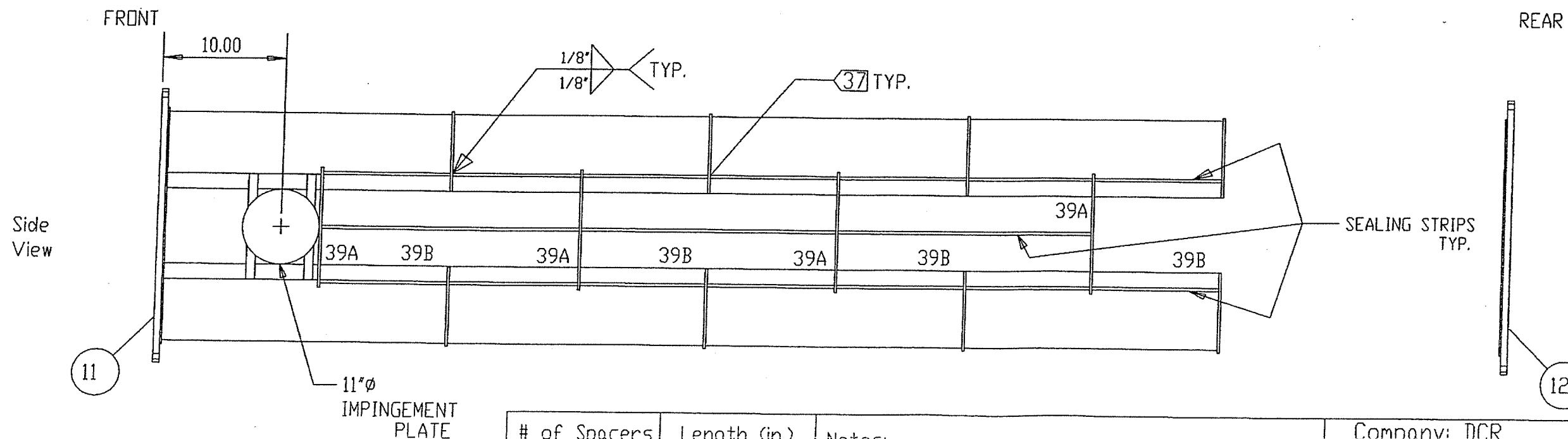
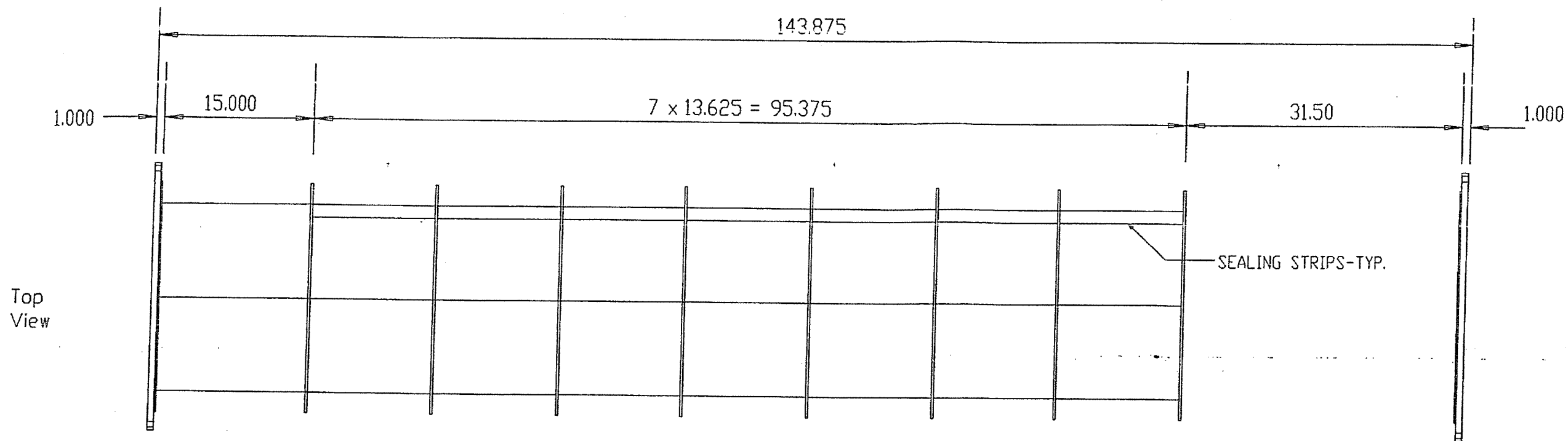
Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No: E-4202
Date: February 17, 2007 Job No: 7794

DCR Construction, Inc.
Harlingen, Texas

Scale: NTS

Rev:	Date:	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Front Head Detail	Rev:
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM		2
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144		

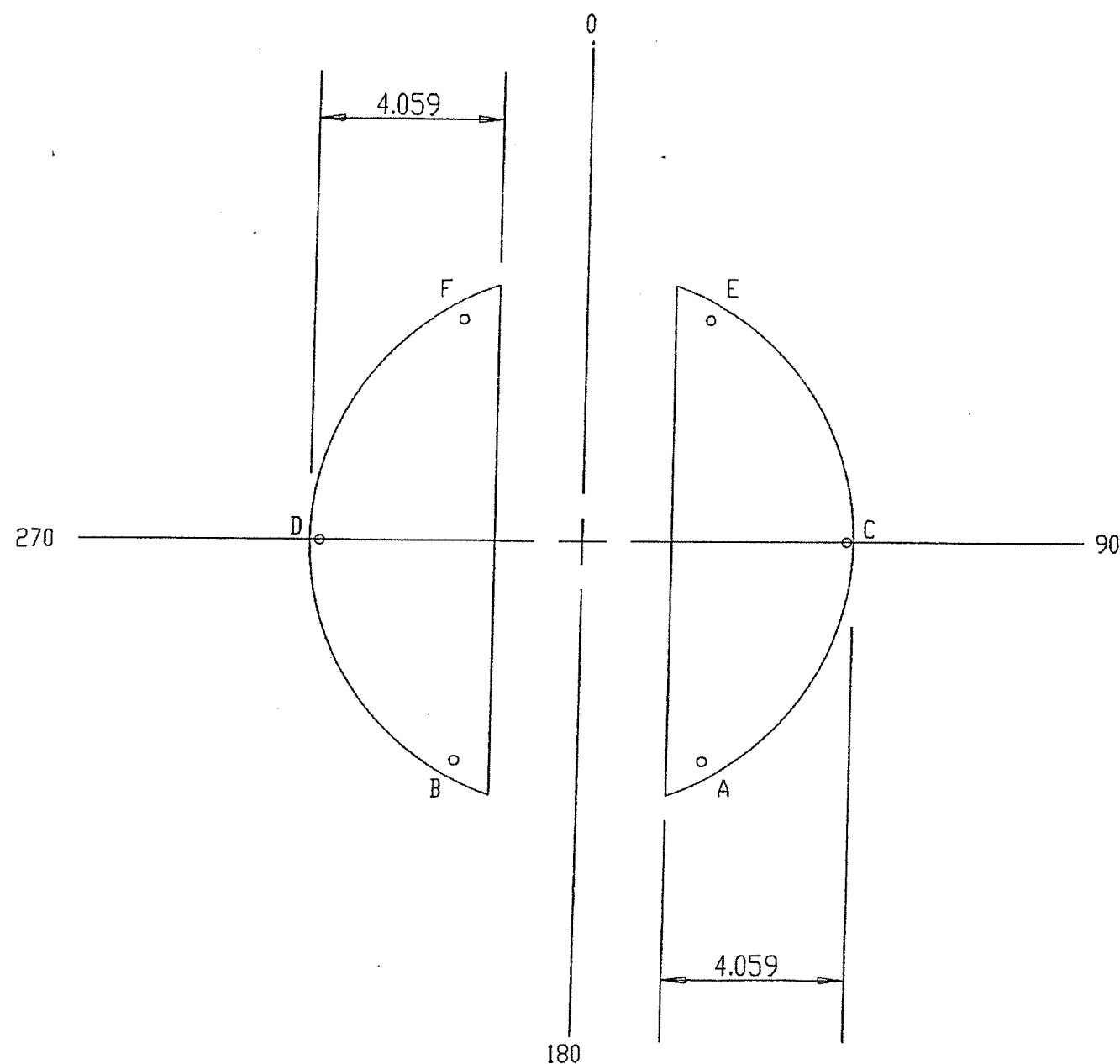
Dwg No: E-4202 02



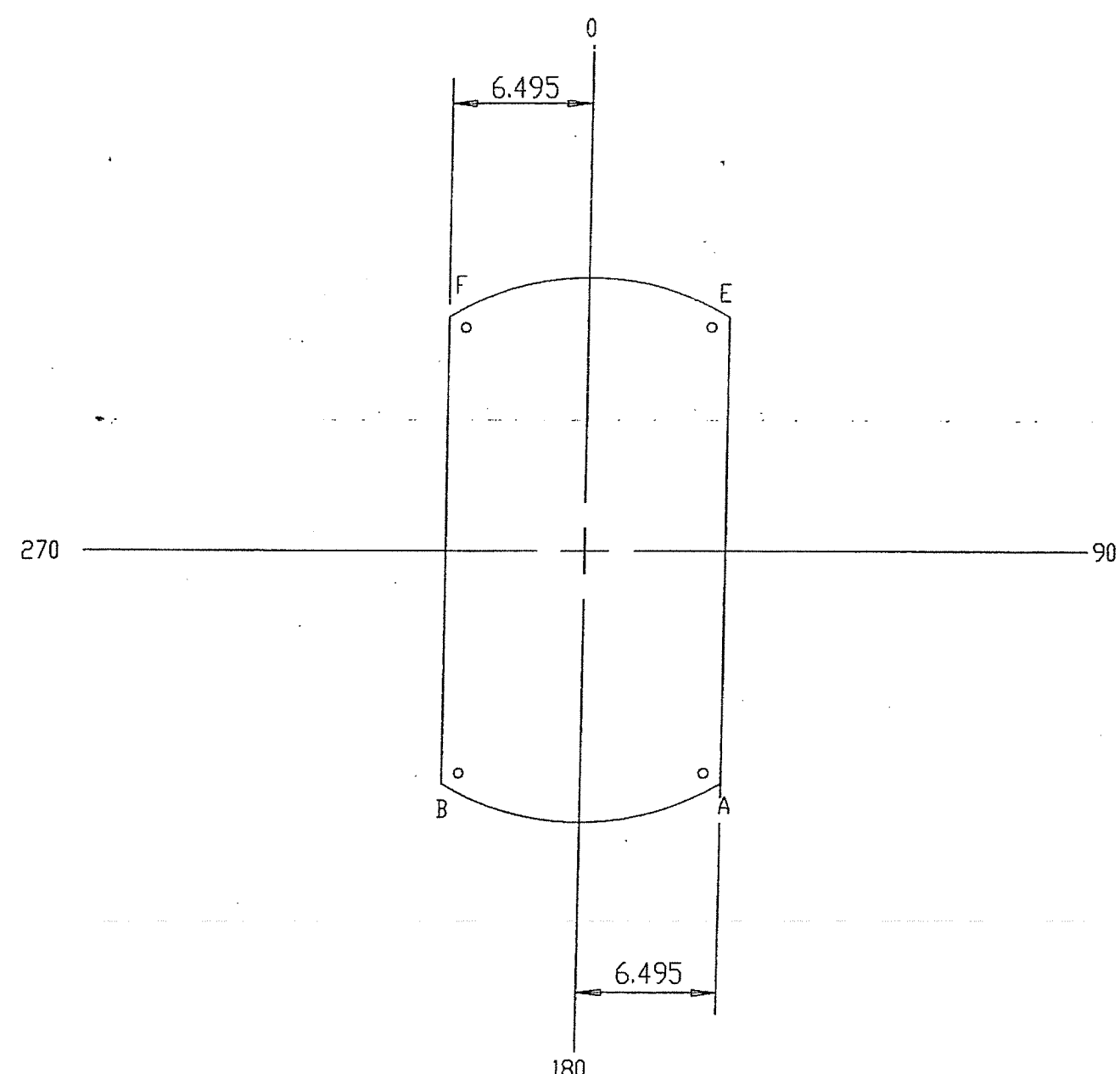
# of Spacers	Length (in.)
28	13.375
6	27.000
4	14.875
2	28.50

Notes:						
All Dimensions In Inches						
Bolt holes to straddle centerlines						
Weld joint details per drawing 20						
Scale: NTS						
Rev:	Date:	Description	Dwg	Ckd	Appd	
1	10-25-07	Revised As Noted	KFF	DGB	PW	
2	12-18-07	Certified As-Built	AGB	DGB	PW	

Company: DCR		
Location: Plymouth		
Stripper Column Reboiler		
Item No.: E-4202		
Date: February 18, 2007 Job No.: 7794		
DCR Construction, Inc.		
Harlingen, Texas		
ASME VIII-1 2004 A06	Bundle Detail	
TEMA Type: BEM		
Size: 25-144	Dwg No.: E-4202 11	Rev: 2
TEMA Class: C		



(39 A) 4 Baffles 25.188 O.D. 0.250 Tk



(39 B) 4 Baffles 25.188 O.D. 0.250 Tk

Notes:
All Dimensions In Inches
Weld joint details per drawing 20

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No.: E-4202
Date: February 18, 2007 Job No.: 7794

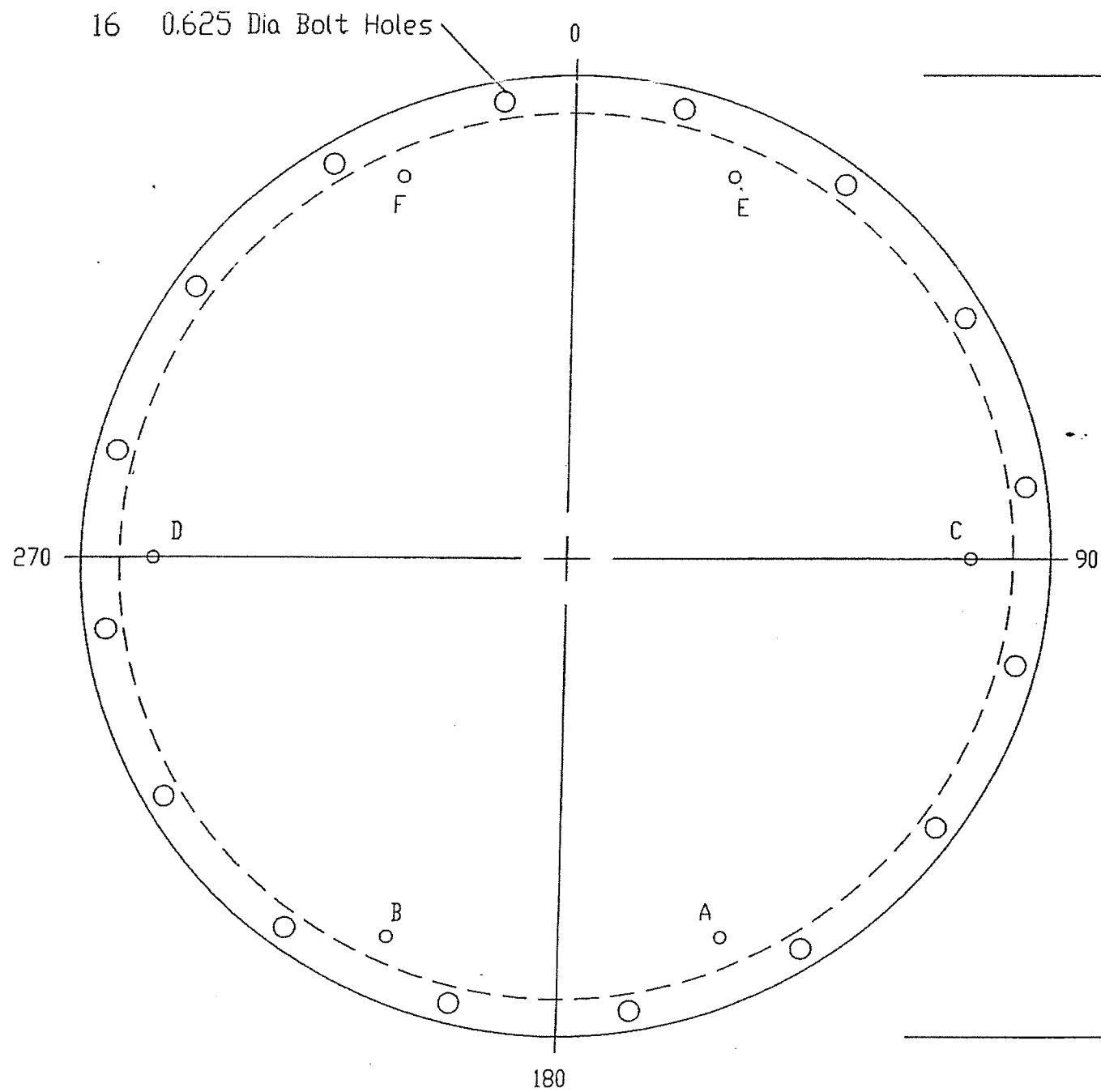
DCR Construction, Inc.
Harlingen, Texas

Scale: NTS

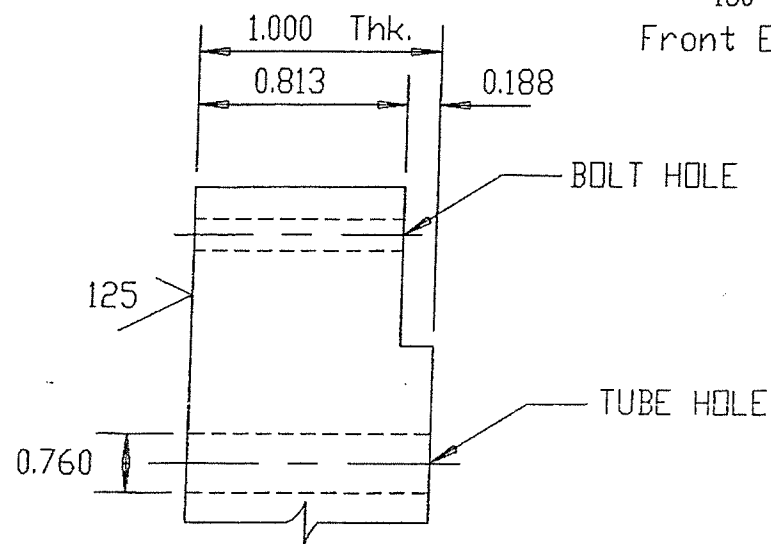
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2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144 TFMA Class: C		

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Front End View



29.250

25.250 Dia

28.000 Bolt Circle

11

Front TubSh

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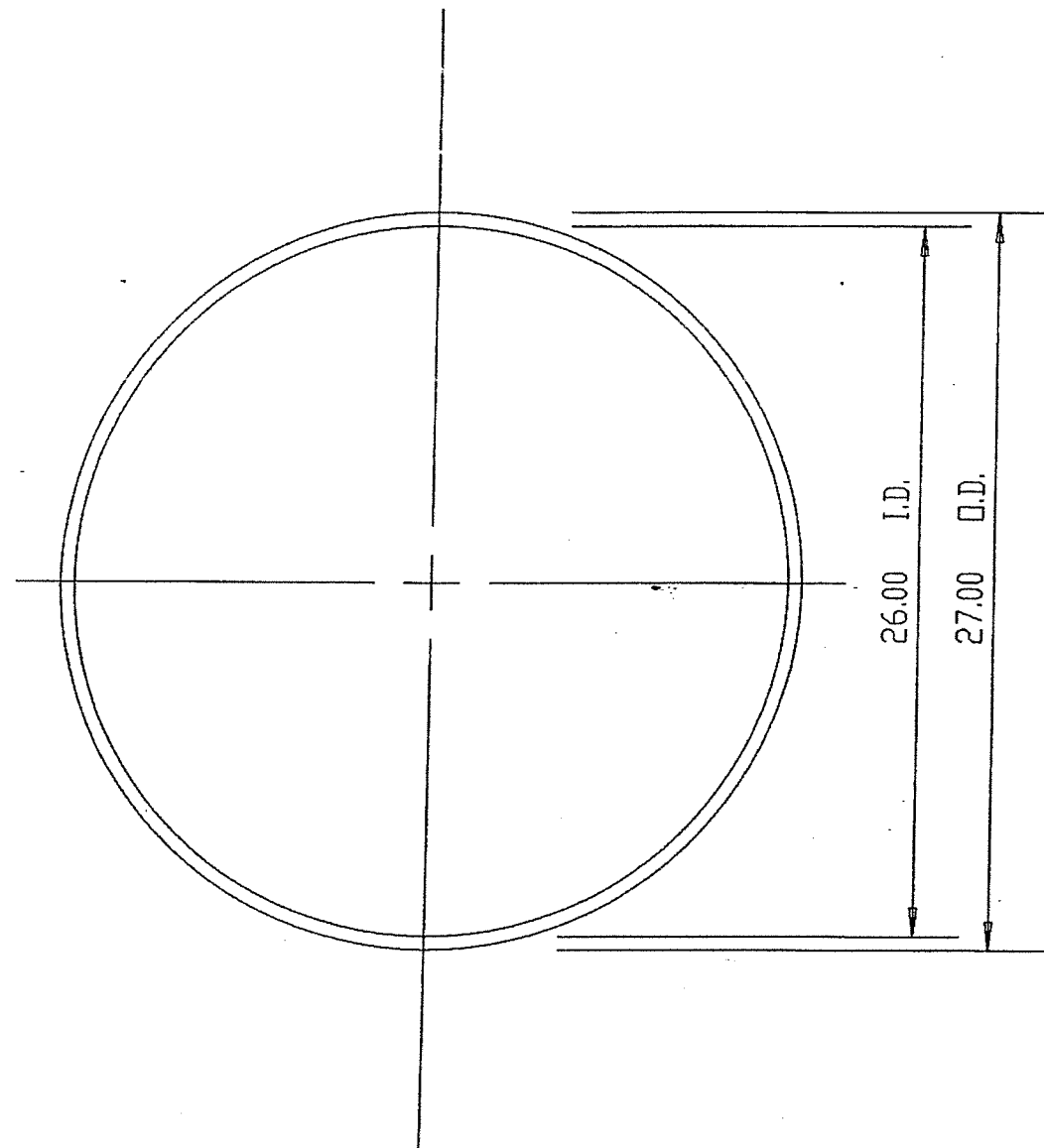
Notes:
All Dimensions In Inches
Bolt holes to straddle centerlines
Shell ID 25.375

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No: E-4202
Date: February 18, 2007 Job No: 7794

DCR Construction, Inc.
Harlingen, Texas

Scale: NTS

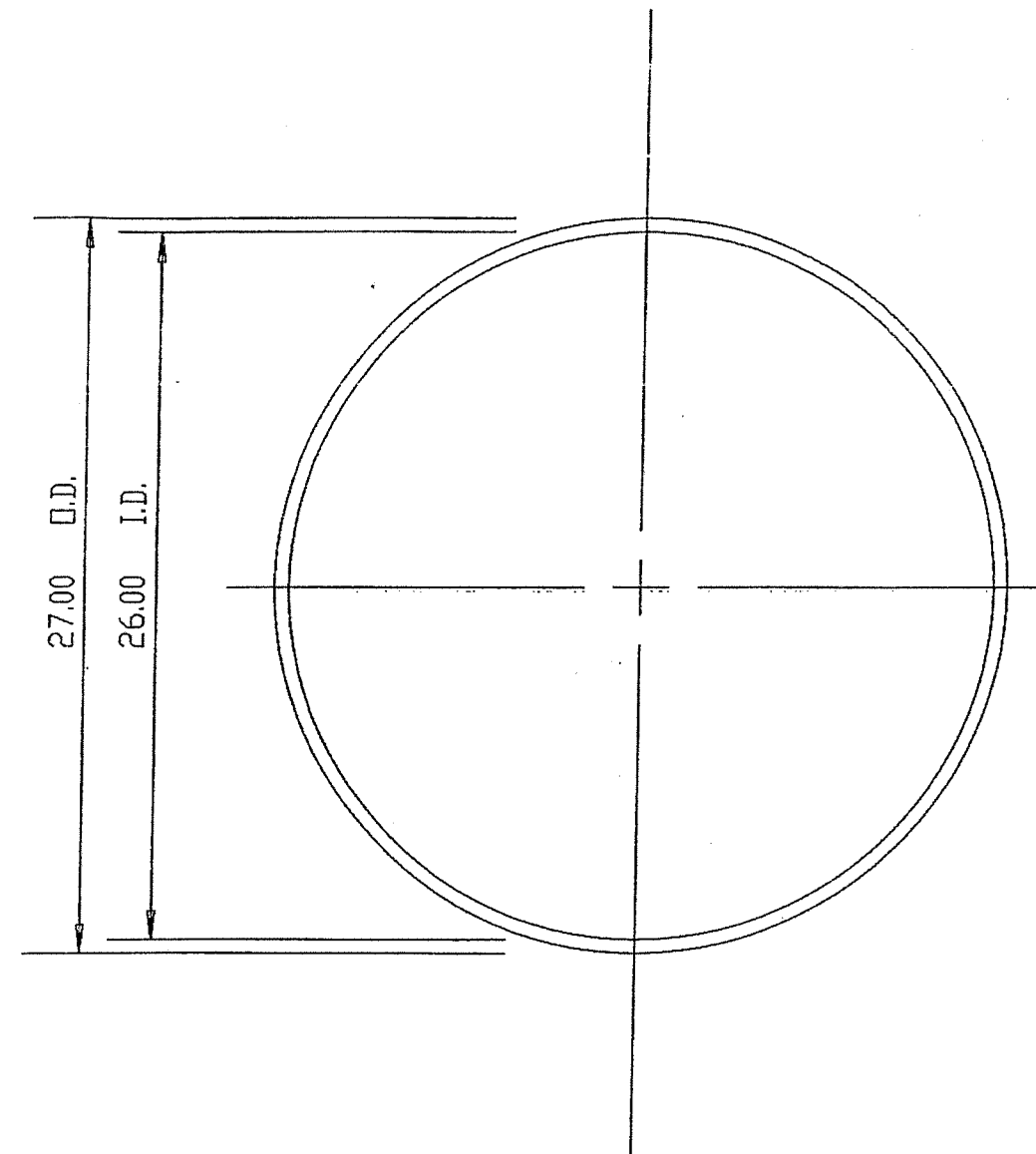
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1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM	Dwg No: E-4202 14	Rev: 2
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144 TEMA Class: C		



32

Rear Head Gasket at Tbsht

0.125 Thk.



31

Front Head Gasket at Tbsht

0.125 Thk.

Notes:
All Dimensions In Inches

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No: E-4202
Date: December 8, 2006 Job No: 7794

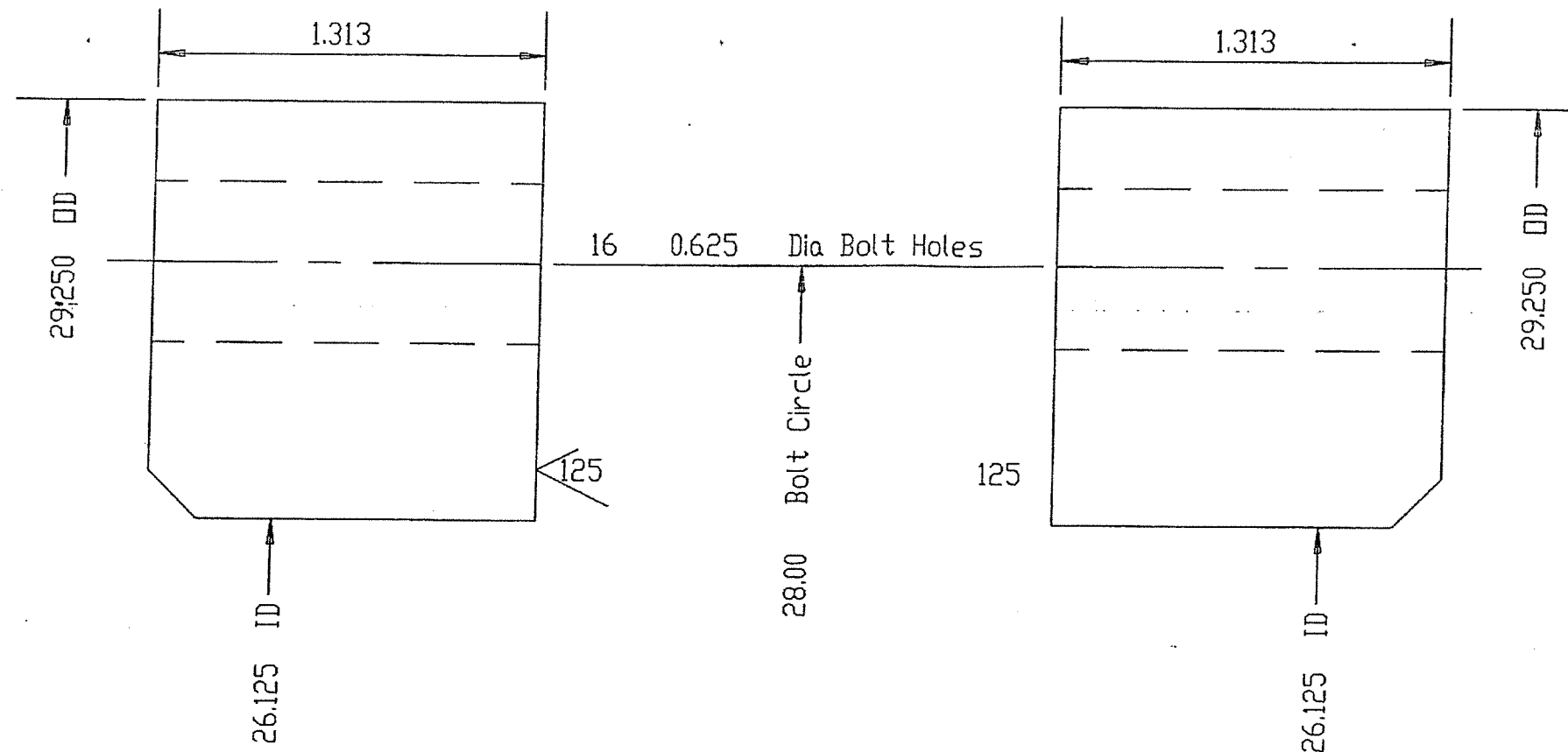
DCR Construction, Inc
Harlingen, Texas

Scale: NTS

Rev:	Date:	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Gasket Detail	
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM		
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144	Dwg No.:	Rev:
						TFMA Class: C	E-4202 17	2

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17 Top Hd Flng TubSh

18 Bottom Hd Flng TubSh

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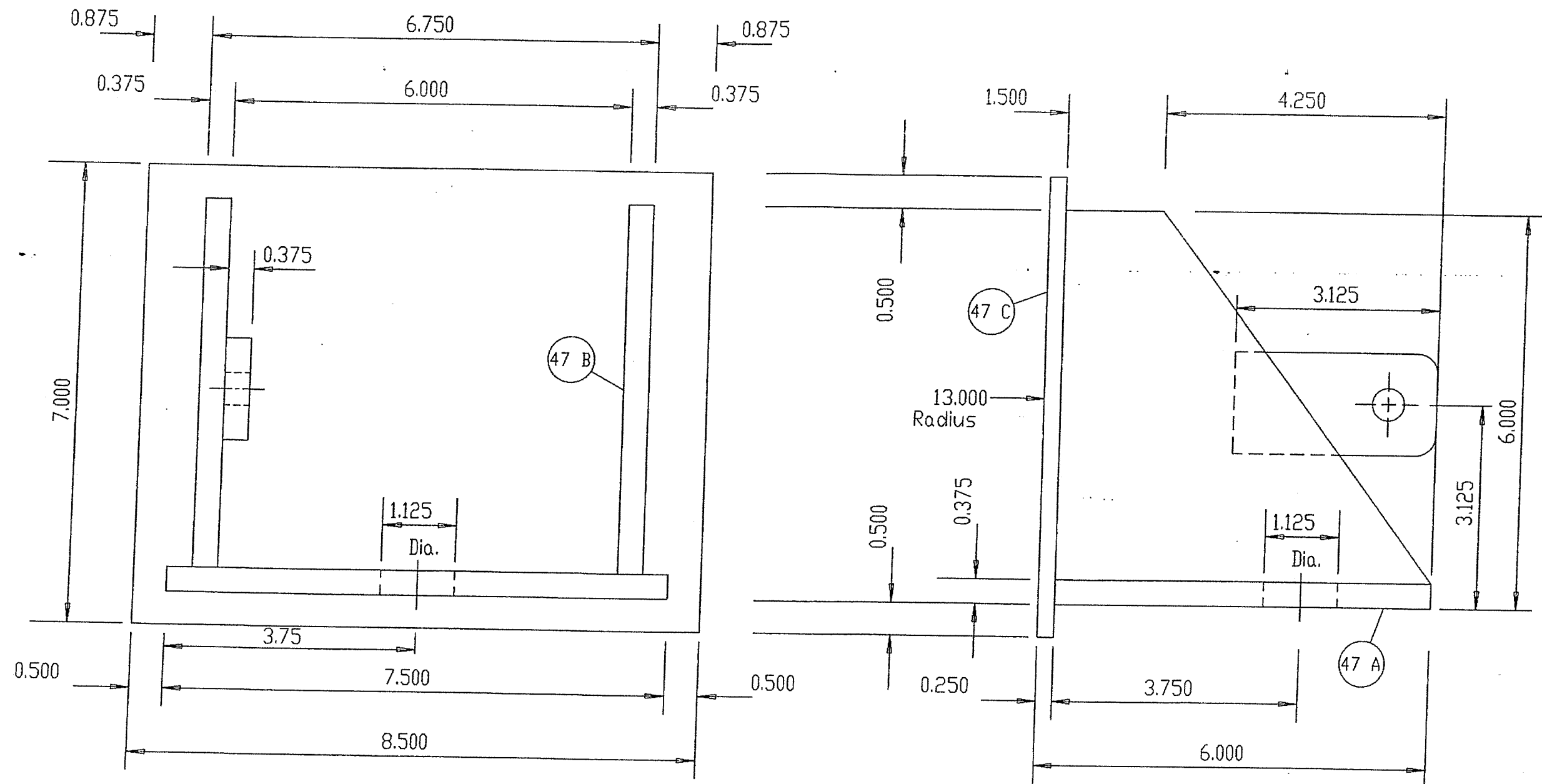
Notes:
All Dimensions In Inches
Bolt holes to straddle centerlines

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No: E-4202
Date: February 1, 2007 Job No: 7794

DCR Construction, Inc.
Harlingen, Texas

Scale: NTS

Rev:	Date:	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Flange Detail	Dwg No: E-4202 18	Rev: 2
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM			
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144			
						TFMA Class: C			



Notes:
All Dimensions In Inches

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No: E-4202
Date: February 18, 2007 Job No: 7794

DCR Construction, Inc
Harlingen, Texas

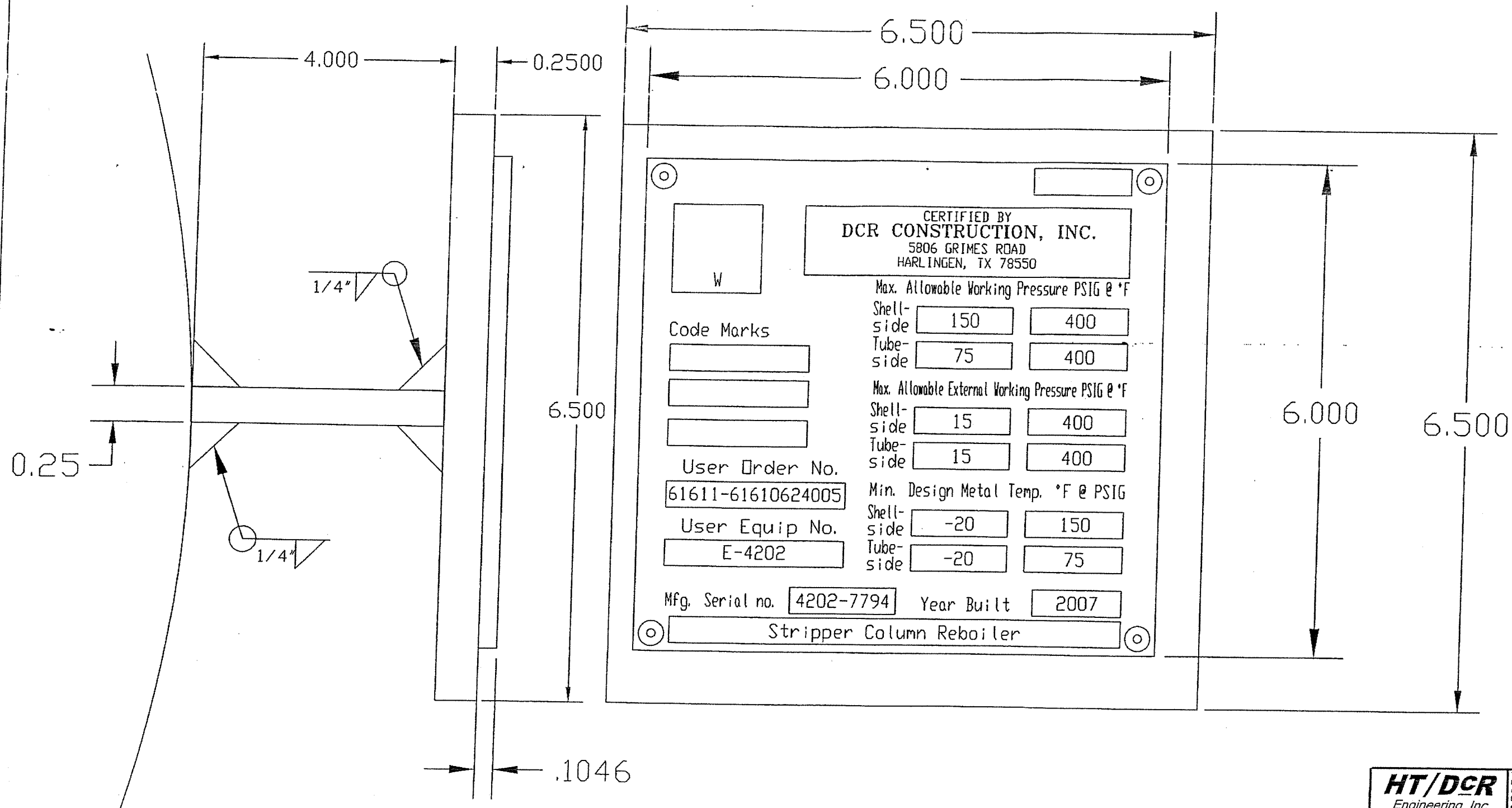
Scale: NTS

Rev:	Date:	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Vertical Support
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM	
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144	

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Rev:



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Notes:
 All Dimensions In Inches

Company: DCR
 Location: Plymouth
 Stripper Column Reboiler
 Item No.: E-4202
 Date: February 26, 2007 Job No.: 7794

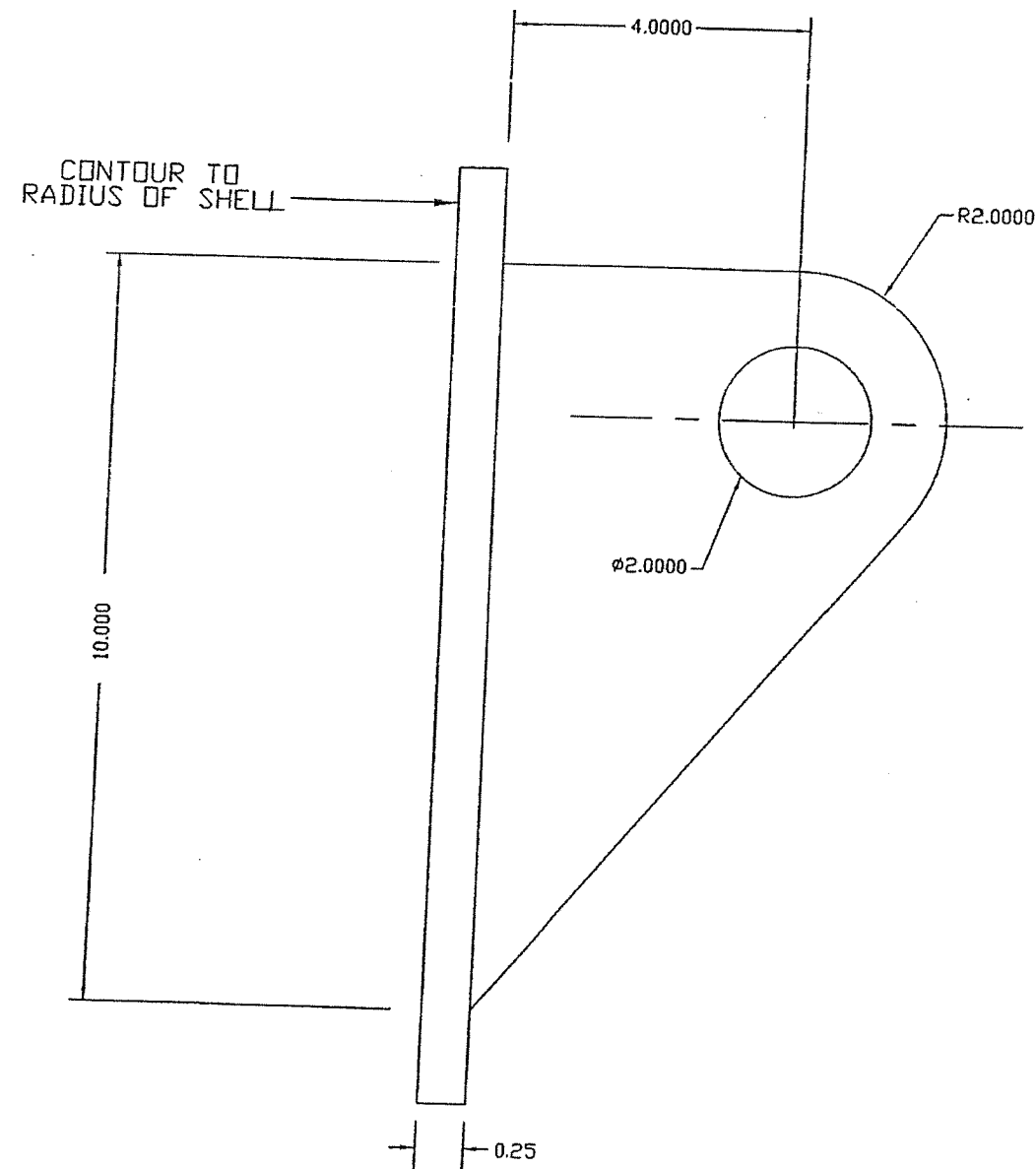
DCR Construction, Inc
 Harlingen, Texas

Scale: NTS

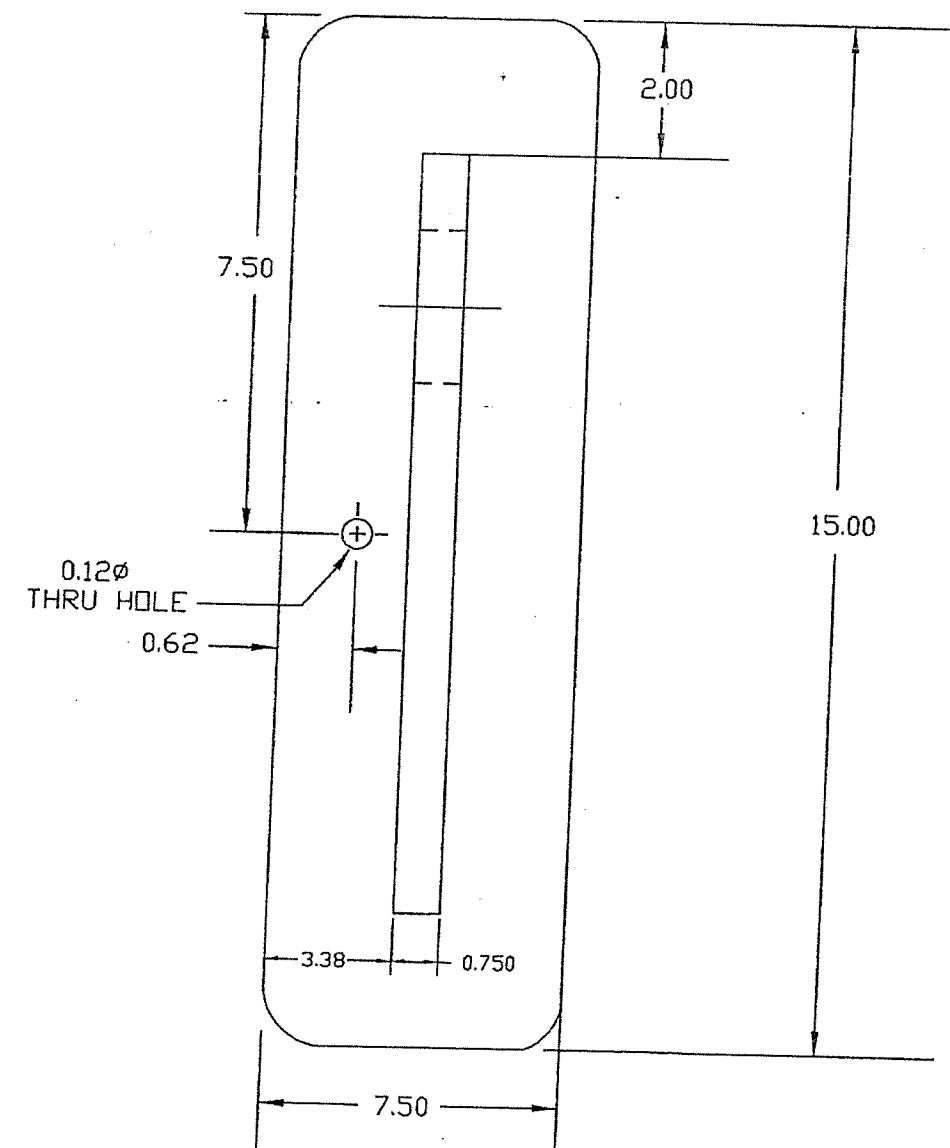
Rev:	Date:	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Code Data Plate
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM	
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144	
						TEMA Class: C	

Dwg No.: E-4202 22

Rev: 2



LIFTING LUG
2 REQUIRED



Notes:
All Dimensions In Inches

Company: DCR
Location: Plymouth
Stripper Column Reboiler
Item No: E-4202
Date: February 18, 2007 Job No: 7794

DCR Construction, Inc
Harlingen, Texas

Scale: NTS

Rev	Date	Description	Dwg	Ckd	Appd	ASME VIII-1 2004 A06	Lifting Lug Detail
1	10-25-07	Revised As Noted	KFF	DGB	PW	TEMA Type: BEM	
2	12-18-07	Certified As-Built	AGB	DGB	PW	Size: 25-144	Dwa No:

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