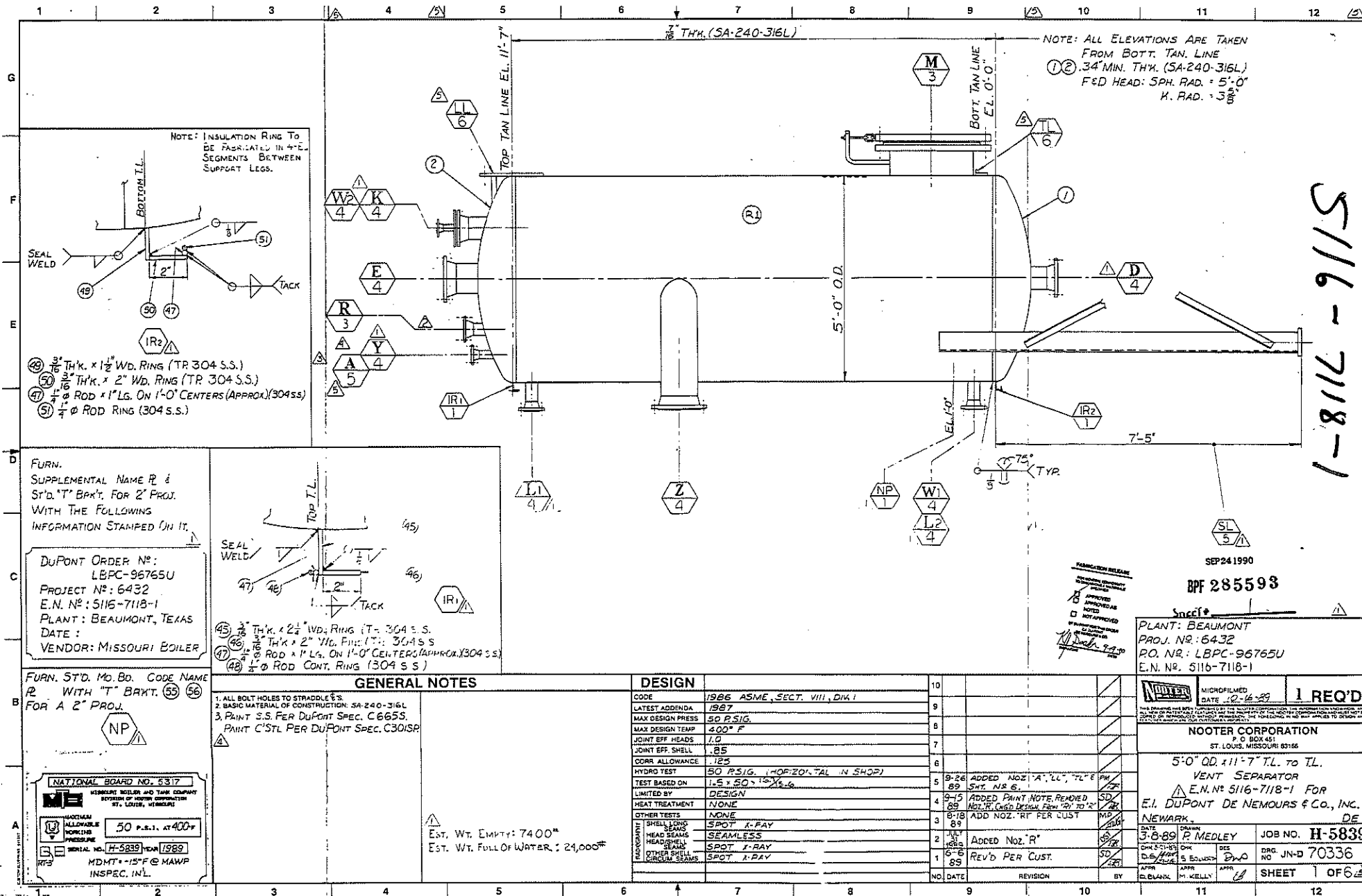
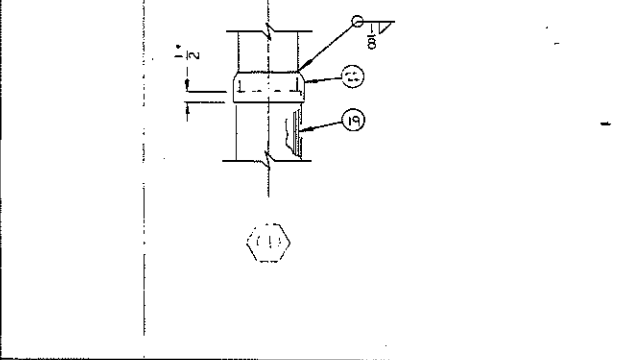
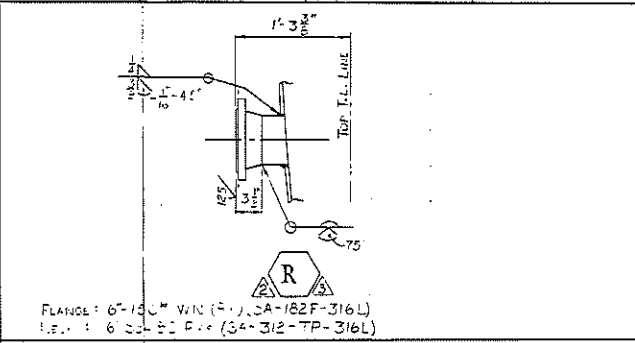
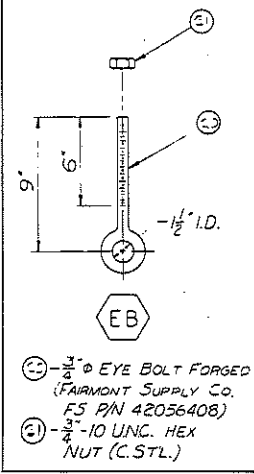
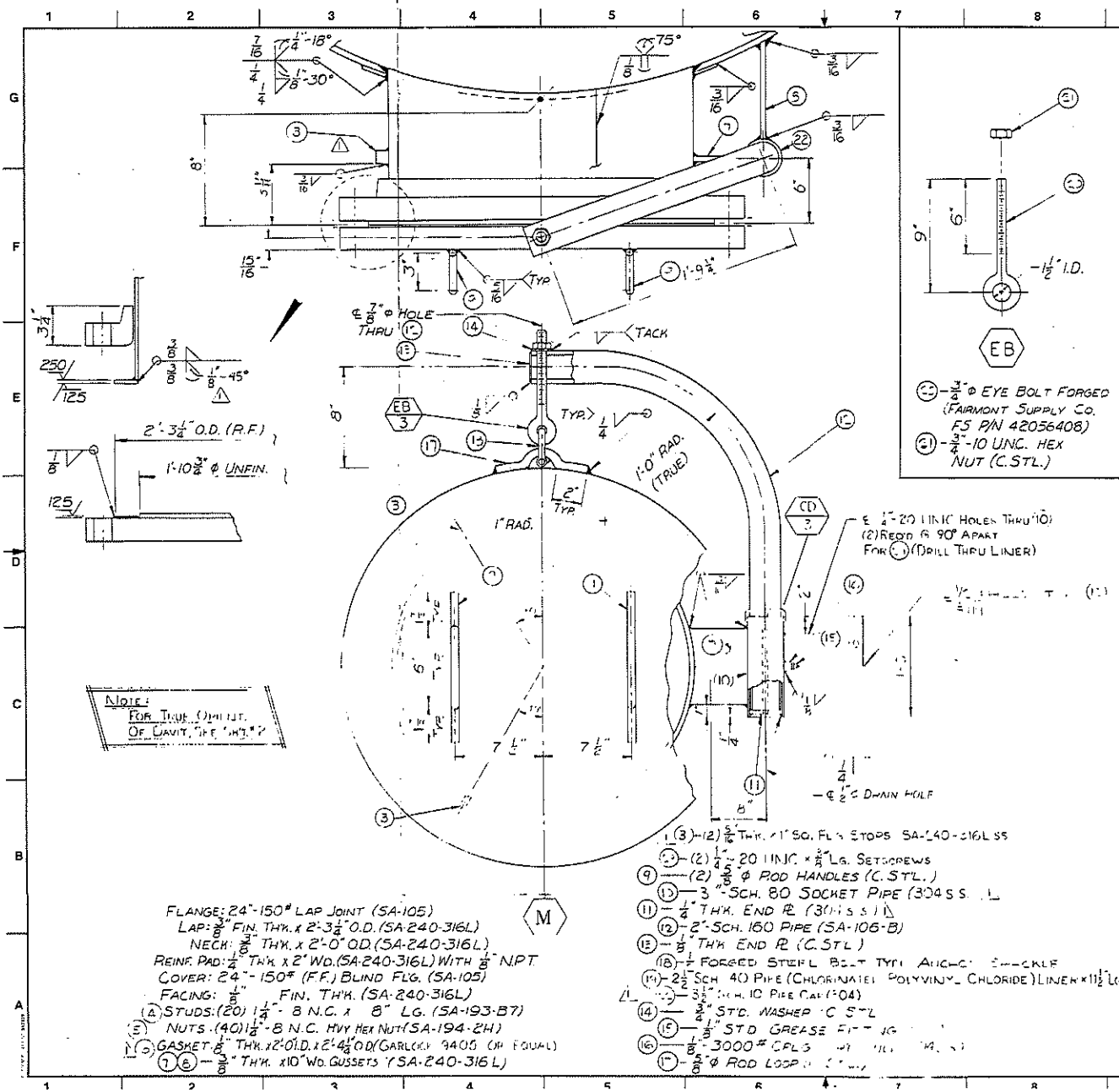








SEP241990
BPF 285593
Sheet 3

PLANT: BEAUMONT
 PROJ. N° 6432
 P.O. N° LBPC-96765U
 E.N. N° 5116-7118-1

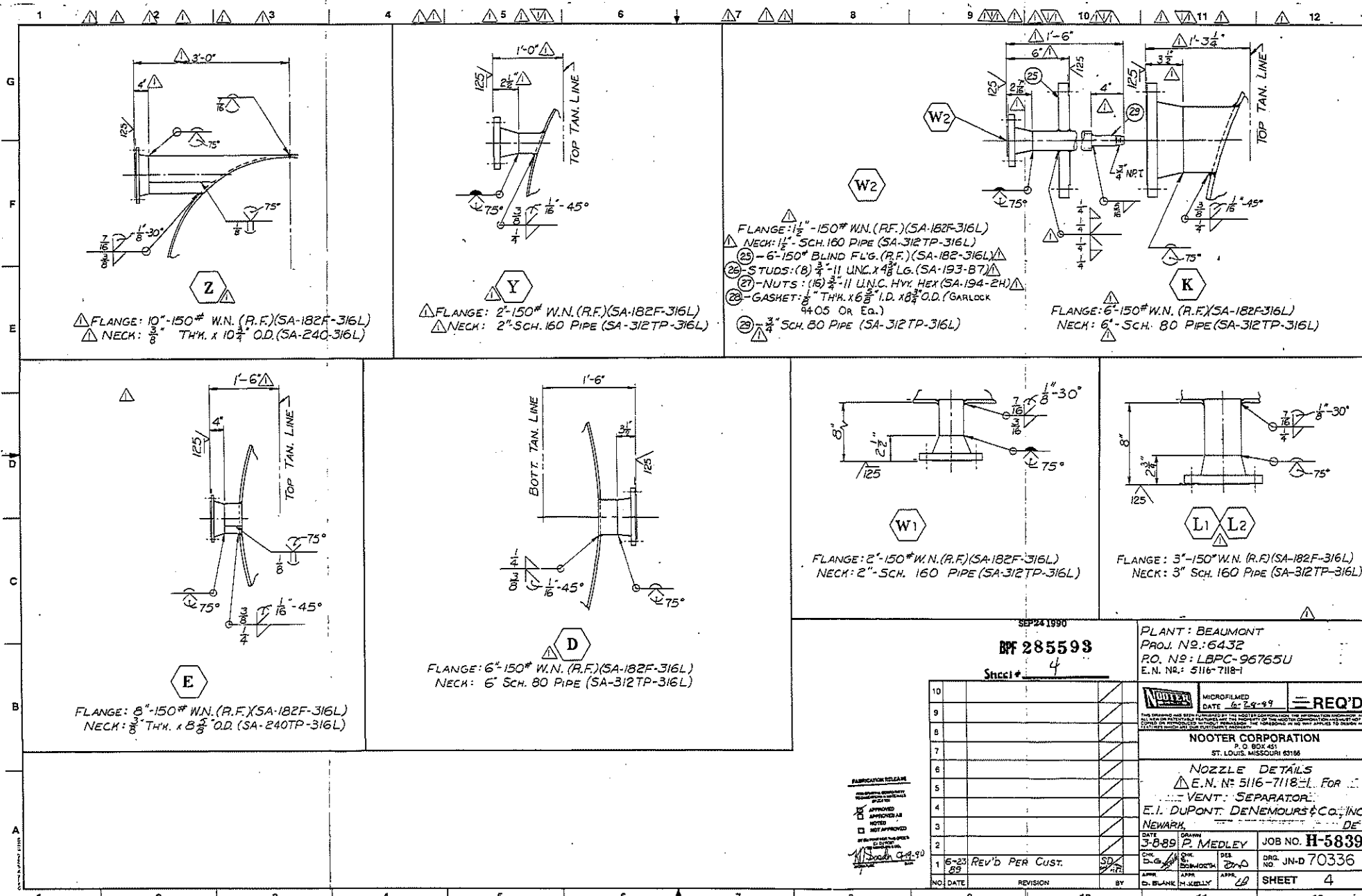
NOOTER CORPORATION
 ST. LOUIS, MISSOURI 63101

MANWAY & NOZZLE DETAILS
 N. E.N. N° 5116-7118-1 FOR
 VENT SEPARATOR
 E.I. DUPONT DENEMOURS & CO., INC.
 NEWARK, DE

DATE: 3-8-89
 DRAWN: P. MEDLEY
 CHECKED: J. MEDLEY
 APPROVED: J. MEDLEY

JOB NO. H-5839
 ORG. NO. JN-D 70336
 SHEET 3

NO.	DATE	REVISION	BY
1	3-8-89	REVISED	J. MEDLEY
2	3-8-89	ADD NOZZLE DETAIL	J. MEDLEY
3	3-8-89	CHG. DIMENSIONS	J. MEDLEY



CodeCalc (TM) - Design and Analysis of Vessels and Exchangers. VER 4.5
ASME Code, Section VIII, Div. 1, Components under EXTERNAL Pressure

NOTES

Vessel : VENT SEPARATOR

Component:

Engineer : R. BODDY

Date, Time: 02-Mar-92 12:48 PM

FILE NAME : EXTERNL1

Design Pressure, psi P 8.0 (1)
Design Temperature, Deg F TEMP 400.00 (2)

Material Name OR External Pressure Chart MAT1 SS316L, HI (3)

Shell or Head Type: (Enter at least 4 letters) TYPE #Cylindrical (4)
CYLI = Cylinder, TORI = Torispherical or F&D
ELLI = Elliptical, SPHE = Sphere or hemisphere

Actual Thickness, in. T 0.438 (5)
Corrosion Allowance, in. CA 0.125

Diameter (or Crown Radius), in. D 60.000 (6)
Diameter Basis (Enter ID or OD) BASIS OD

Design Length of Section, in. L 146.000 (7)
Aspect Ratio of Elliptical Head AR 0.000 (8)

Width of Reinforcing Ring, in. WR 0.000 (9)
Thickness of Reinforcing Ring, in. TR 0.000

- OR -

Moment of Inertia of Reinforcing Ring, in⁴ IRR 0.00 (10)
Cross Sectional Area of Reinforcing Ring, in² ARR 0.000
Distance from shell surface to ring centroid in. DRR 0.000

Results Based on 1989 ASME Code, Section VIII, Division 1, Addenda A-89

Diameter/Thickness Ratio, DT = 60.00/0.313 192.00 (11)
Length/Diameter Ratio, LD = 146.00/60.00 2.4333

Geometric Chart Factor, A = From Fig UG-28.0
A = From Fig UG-28.0 0.0002008 (12)
Materials Chart Factor, B = From Fig UHA28.4 2651

Design Pressure Formula, P = 4*B/(3*DT) per UG-28(c)
P = 4*2651/(3*192.00)

Allowable Pressure at given thickness less CA., psi #18.4 (13)
Design Pressure, as entered above, psi 8.0

Required thickness at given pressure, including CA, in. #0.349 (14)
Actual thickness, as entered above, in. 0.438

Maximum length for thickness and pressure, in. 335.94 (15)

ISP =

ISP = Not Applicable - no ring defined

Required Moment of Inertia of Stiffening Ring Not Applicable (16)

IP =

IP = Not Applicable - no stiffening ring defined

Available Moment of Inertia of Stiffening Ring Not Applicable (17)

CodeCalc (TM) - Design and Analysis of Vessels and Exchangers. VER 4.5
ASME Code, Section VIII, Div. 1, Components under EXTERNAL Pressure

NOTES

Vessel : VENT SEPARATOR

Component:

Engineer : R. BODDY

Date, Time: 02-Mar-92 01:02 PM

FILE NAME : EXTERNL1

Design Pressure, psi	P	8.0	(1)
Design Temperature, Deg F	TEMP	400.00	(2)

Material Name OR External Pressure Chart	MAT1	SS316L, HI	(3)
--	------	------------	-----

Shell or Head Type: (Enter at least 4 letters)	TYPE	#TORI	(4)
CYLI = Cylinder, TORI = Torispherical or F&D			
ELLI = Elliptical, SPHE = Sphere or hemisphere			

Actual Thickness, in.	T	0.340	(5)
Corrosion Allowance, in.	CA	0.125	

Diameter (or Crown Radius), in.	D	60.000	(6)
Diameter Basis (Enter ID or OD)	BASIS	OD	

Design Length of Section, in.	L	0.000	(7)
Aspect Ratio of Elliptical Head	AR	0.000	(8)

Width of Reinforcing Ring, in.	WR	0.000	(9)
Thickness of Reinforcing Ring, in.	TR	0.000	
- OR -			

Moment of Inertia of Reinforcing Ring, in ⁴	IRR	0.00	(10)
Cross Sectional Area of Reinforcing Ring, in ²	ARR	0.000	
Distance from shell surface to ring centroid in.	DRR	0.000	

Results Based on 1989 ASME Code, Section VIII, Division 1, Addenda A-B7

Diameter/Thickness Ratio, $DT = 60.00/0.215$		279.07	(11)
Length/Diameter Ratio, $LD = 0.00/60.00$		0.0000	

Geometric Chart Factor, $A = 0.125/(DT)$			
$A = 0.125/(279.07)$		0.0004479	(12)
Materials Chart Factor, $B = \text{From Fig UHA28.4}$		5634	

Design Pressure Formula, $P = B/(DT)$ per UG-33(e)			
$P = 5634/(279.07)$			

Allowable Pressure at given thickness less CA., psi		20.1	(13)
Design Pressure, as entered above, psi		8.0	

Required thickness at given pressure, including CA, in		0.257	(14)
Actual thickness, as entered above, in.		0.340	

Maximum length for thickness and pressure, in.		Not Applicable	(15)
--	--	----------------	------

ISP =

ISP = Not Applicable - not analysis of a cylinder

Required Moment of Inertia of Stiffening Ring		Not Applicable	(16)
---	--	----------------	------

IP =

IP = Not Applicable - not analysis of a cylinder

Available Moment of Inertia of Stiffening Ring		Not Applicable	(17)
--	--	----------------	------

Reprinted from
Spec SG4A, page 1
Dated Dec 1966

TANK AND PRESSURE VESSEL
PROCUREMENT FORMS

Forms may be obtained
from the Standards Section,
Louviers Bldg, Wilm. DE

VENT SEPARATOR

5116.7118.1 2-7-89 6432

EN NO	DATE	PROJECT NO	SPEC NO	REV NO
ONE	PT JANKO	BEAUMONT		
QUANTITY	PREPARED BY	CHECKED BY	PLANT	PAGE NO

A. GENERAL REQUIREMENTS

- Design, fabrication, and inspection per ASME Boiler and Pressure Vessel Code and the Du Pont standards and specifications noted in 26.
- Tank position VERTICAL
- Tank size: Gallons 3014 Diameter 6'-0" Length 13'-0" KRL TO KRL
- Design pressure Vessel 15 psig Jacket - psig
- Design temperature Vessel 400 °F Jacket - °F
- Service restrictions: Lethal, UW2(a) Vessel: Yes No Jacket: Yes No
Low temperature, SG4S Vessel: Category - Jacket: Category -
- Corrosion allowance Vessel int 0.250 ext - in Jacket - in
- Cycles per life of unit Vessel -
- Shell thickness Vessel 0.375 in Jacket - in
- Hydrostatic test pressure Vessel 35 psig Jacket - psig
- Specific gravity of process fluid 1.81
- Head thickness (minimum after forming) 0.325
- Type of head ASME F&D
- Welding UW-47
- Type of body flange -
- Flange face finish Process side 125-AA Service side -
- Radiographic examination: Spot Partial [Shell to head girth seam,] Full
- Heat treatment NONE
- Surface preparation and painting SPEC 9540 6665 S
- Stamping: ASME National Board Not required
- Inspection: National Board Du Pont Not required
- Notes WIND LOAD 24 PSF
2 GROUNDING LUGS REQ PER ESP
- Type and number of supports FOUR (4) PER 46B
- Lifting lugs BY VENDOR PER 544C
- Calculation: Submit Available for Du Pont inspection Not required

VESSEL INTERNALS TO BE $\frac{3}{8}$ "

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NOTE

