

#96013

Form No. 1 for Manufacturers' Report on an Unfired Pressure Vessel as Required by the Provisions of the API-ASME Code

- 1 Manufactured by WYATT METAL & BOILER WORKS, Houston, Tex Mfrs. Shop Job No. 756
- 2 Manufactured for Brown & Root, Inc., Houston, Texas Purchaser's Order No. T-397
(NAME AND ADDRESS OF THE PURCHASER)
- 3 Type Horiz Vessel No. H-756-51 To be installed in Texas Date built SEP 1952
(HORIZONTAL OR VERTICAL—WHEN IN SERVICE) (MFRS. SERIAL NO.) (STATE AND STATE NO.) (MONTH AND YEAR)
- 4 Have mill test reports been checked on all the plates entering this unfired pressure vessel? Yes
Do the chemical and physical properties of all plates meet the requirements of the Code? Yes
(SEE FORMS NOS. 2 AND 3 AND CHEMICAL AND PHYSICAL REPORTS)
- 5 Shell or Drums: No. one Diameter 7 ft. 11 1/2 in. Length over all 18 ft. 7/8 in.
(OR WIDTH)
- 6 Stamps on Shell plates * Bolts A-193 B7 Alloy Studs
(BRAND AND LOWEST TENSILE STRENGTH) (A.S.T.M. OR OTHER SPECIFICATIONS CARBON STEEL OR ALLOY)
7. Shell Plates .26 in. Style of Seams: Longitudinal Fusion Welded. Type Dbl. Butt
(THICKNESS)
- 8 Joints Radiographed No Vessel Stress Relieved No (yes or No) Efficiency of Joint 80 per cent
(VESSEL AS BUILT)
- 9 Girth Joints Fusion Welded. Type Dbl. Butt No. of Courses 2
- 10 Heads, (thickness) 5/16" Min in. Radius of dish 96 in. Radius of knuckle 5-13/16"
Flat, dished, elliptical, integral Ratio of ellipse Side to pressure { Top or one end Concave
Conical, Hemispherical included angle if conical { Bottom or opposite end Concave
If removable, head bolts used _____ or method of fastening _____
(NUMBER AND SIZE) (DESCRIBE OR SKETCH ON SEPARATE SKETCH SHEET)
- 11 Stress Relieving Heads Ring Nos. Controlling Thickness Temp. of Vessel Time Temp. Is Held
a If part of vessel only _____ in. _____ F. _____ Hr.
b If entire vessel NONE in. _____ F. _____ Hr.
See Form #2
- 12 Nozzle Outlets in Heads:¹ No. _____ Size _____ Material of Nozzle or Reinforcement ** How attached: Welded IS&OS
See Form #2
Nozzle Outlets in Shell: No. _____ Size _____ Material of Nozzle or Reinforcement ** How attached: Welded IS&OS
- 13 Handholes or Sight Holes¹ None
(NUMBER, SIZE AND LOCATION)
- 14 Manholes: In Heads¹ None Reinforcement _____
In Shell one 20" Special Reinforcement * Weld. IS & OS
(NUMBER) (SIZE AND LOCATION OF EACH, DISTANCE OFF CENTER OF HEAD) (WELDED, ETC., OUTSIDE ONLY OR ALSO INSIDE)
15. Method of supporting vessel 2 Saddles
(LUGS, SKIRTS, OR RING IF ON END, OR LUGS IF HORIZONTAL)
- 16 a² Allowable working pressure at atmospheric temperature (See W-525) 69 lb per sq in. f Location of yield if yielding occurred _____
b Initial Hydrostatic test pressure 103 lb per sq in. g² Hydrostatic test stress in longitudinal joints (W vessels only) 18,963 lb per sq in.
c Hydrostatic test pressure when hammer tested 86 lb per sq in. b Allowable operating stress (Two-thirds stress obtained in g²) 12,642 lb per sq in.
d Final Hydrostatic test pressure 103 lb per sq in.
e Proof test pressure if applied 103 lb per sq in.
- 17 Constructed for pressure of 69 lb per sq in. With specified operating temperature of 400 F. With corrosion allowance of None in.

Remarks See Wyatt's Sketch #756 for form #2 Data¹ Indicate location and size on Form 2 or 3.² When there are shell sections of different thicknesses, each section shall be treated separately.

WE CERTIFY the above data to be correct and that all details of material, construction, and workmanship on this unfired pressure vessel conform to the API-ASME Code for Unfired Pressure Vessels for Petroleum Liquids and Gases.

Date SEP 18 1952 Signed WYATT METAL & BOILER WORKS. By R.W. May
(MANUFACTURER)
SEP 18 1952 Checked by [Signature] For Hartford S.B.I. & I. Co.
(INSPECTOR) National Board #1195
Texas State Comm. #33

- * ASTM A-240 Gr. S Mod. to 18% Min. Chrome, .07% Max. Carbon, S.S. Type 304 75,000 PSI
- ** ASTM A-312-48T Mod. to .07% Max. Carbon, S.S. Type 304

WARRANTY CARD

W. A. WHEAT & BOILER WORK

HOUSTON TEXAS

H-756-53

SEP 69

12286

0101

NO

NO

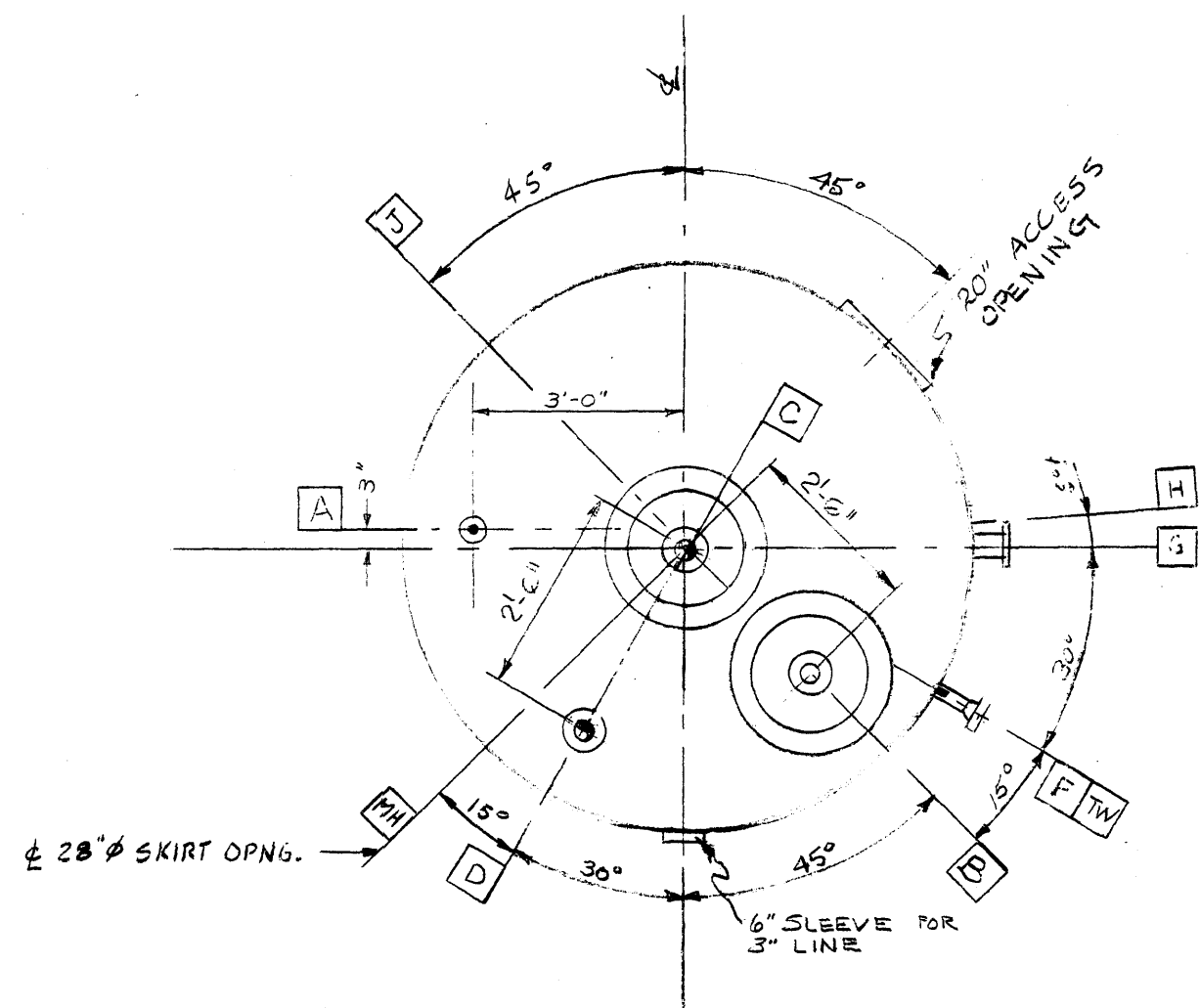
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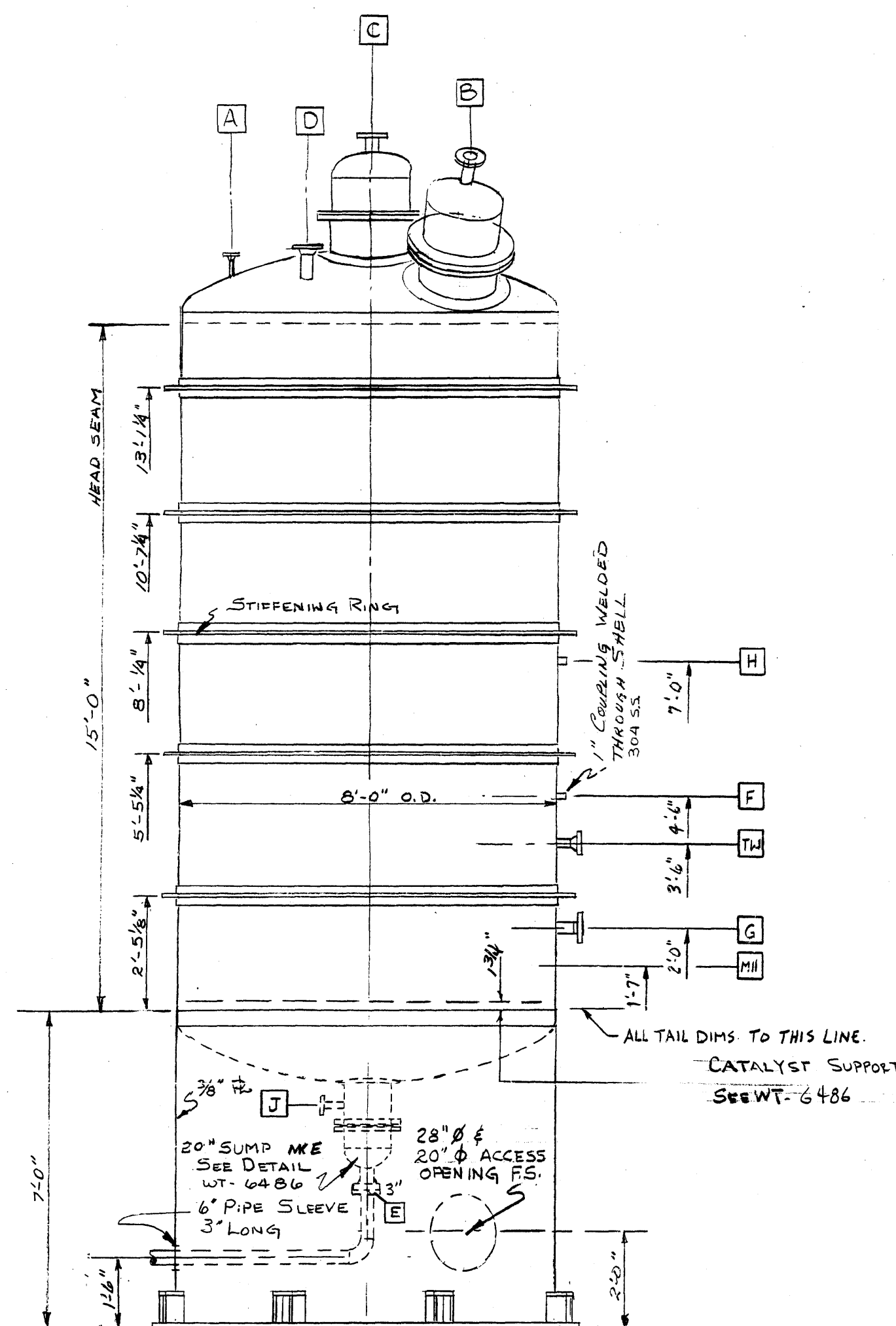
P.O. T-397

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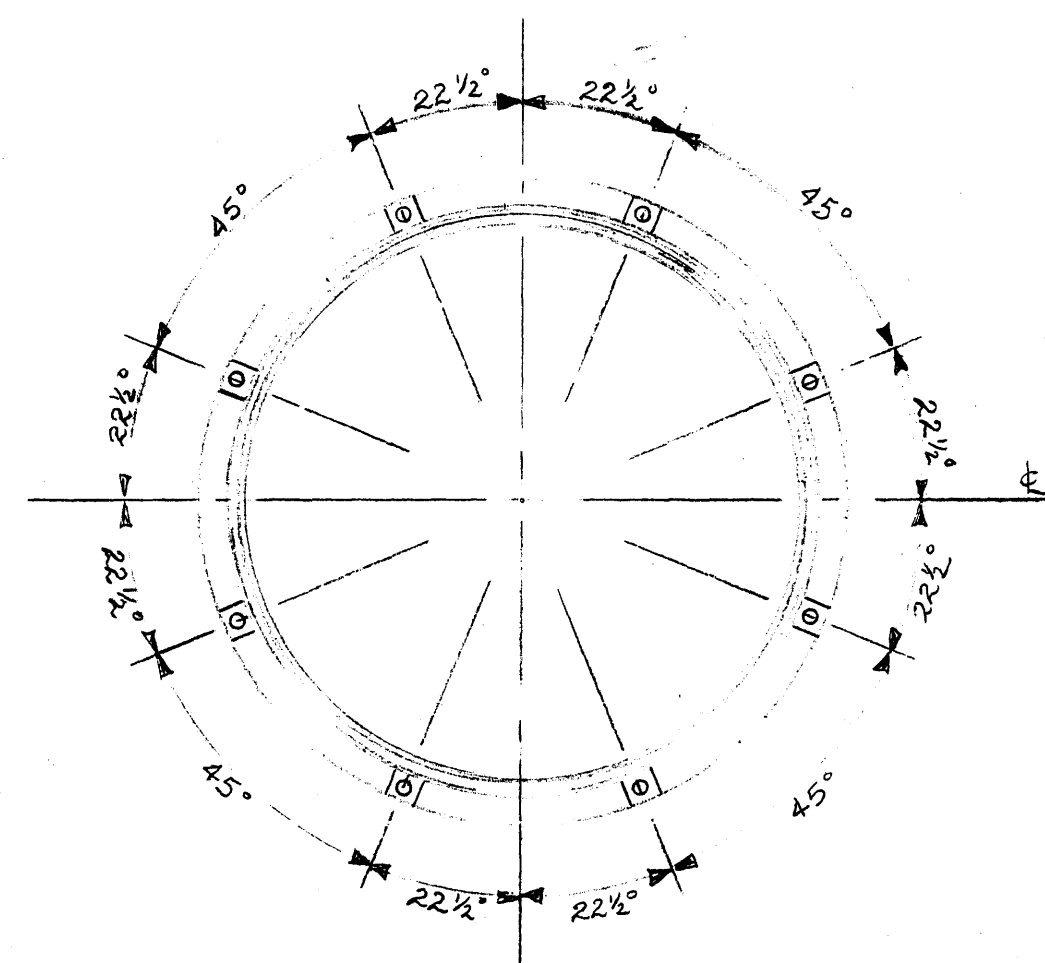
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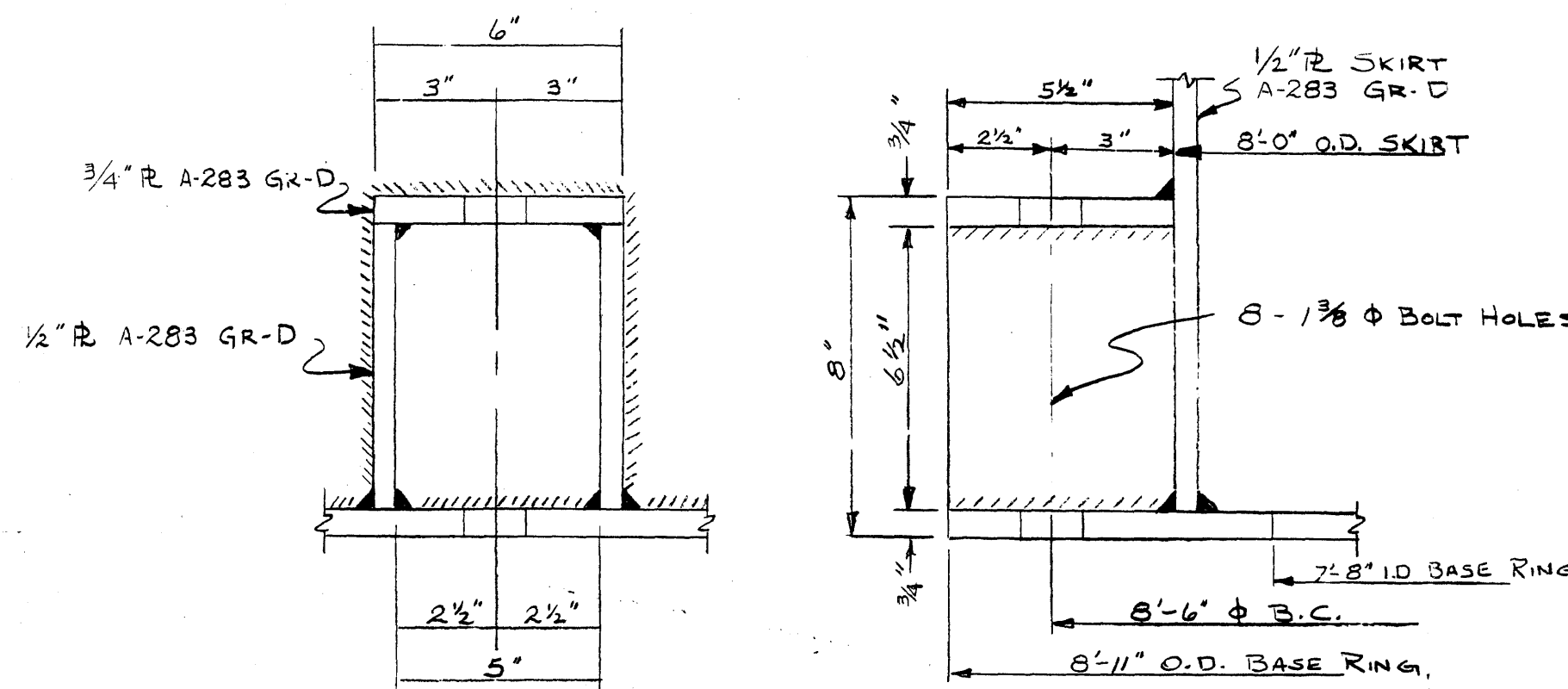
PLAN
SCALE 3/8" = 1'-0"



ELEVATION
SCALE 3/8" = 1'-0"



PLAN OF BASE
SCALE 3/8" = 1'-0"



DETAIL SKIRT & BASE RING
SCALE 3" = 1'-0"

Design Data

- ASME Code for Unfired Pressure Vessels, Case 397, Edition
- Additional specifications: API
- Code symbol to be applied: Per paragraph W529
- Design pressure: 50 PSIG plus necessary stiffening rings for full vacuum at 0°F.
- Design temperature: 400°F.
- Corrosion allowance: None inches.
- Type of heads: ASME F & D
- Stress relief required: No
- Radiograph required: No
- Joint efficiency: Head 100% Shell longitudinal 80%
- Maximum allowable working pressure (no corrosion allowance): Limited by Shell 69 psi @ 100°F. Limited by 103 psi @ 400°F.
- Hydrostatic test pressure: 103 (Based on max. new and cold allowable pressure, no corrosion allowance).
- Hammer test pressure: None psi.
- Weight empty: 9,200 lbs.
- Weight full of water: 62,000 lbs.
- Design wind velocity: 100 mph.

Material Specifications

- Shell ASTM A-240 Gr. S. Type 304
- Head ASTM A-240 Gr. S. Type 304
- Flanges ASTM A-182, F-304 and A-181 Gr. 1
- Nozzle necks ASTM A-312 Type 304
- Nozzle reinforcing ASTM A-36
- Pressure bolting ASTM A-193 B7 STUDS Nuts A-194 2H
- Internals ASTM A-240 Type 316
- Skirt and Base ASTM A-36
- Stiffener rings ASTM A-36
- Gaskets Carlock 8748 or equal
- Paint Primer on carbon steel
- Weld rod ASTM

General Notes

- All bolt holes shall straddle center lines.
- Protect all machined surfaces and threaded connections with rust preventive.
- Vessel shall be drained and cleaned before shipping.
- All nozzle flanges shall be ASA standard except for manhole flanges.

Reference Drawings:

- WT-6486 - R-19 Details
- WT-5334 - Equipment Layout

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W.O. NO.	NO.	DESCRIPTION	BY	CK.	APP'D	DATE
6300207	5	CHANGED DESIGN PRESSURE FROM 40 TO 50	JAC			12/2004
6301151	4	AS BUILT NOZZLES	CASEY			10/2004
3-1359	3	CHANGE FROM NO. 2 TO NO. 3 ADD SUMP, REV. NO. 2, C. REMOVE LADDER & PLATE.	RODF			7/1/02
	2	ELEVATION - REV. SUMP FROM 18" TO 20"	WJH			6-8-88
	1	ADDED CATALYST SUPPORT	WJH			7/1/11

REVISIONS

Celanese CHEMICAL COMPANY A DIVISION OF CELANESE CORPORATION OF AMERICA	
AREA III PURIFICATION UNIT REACTOR 8'-0" O.D. x 15'-0" S.S. R-19 (OLD V-55)	DRAWING NO. WT-6487-5
DR. BY KEEL DATE 1-14-04 CK. BY WJH DATE 1-23-04 APP. BY DATE	SCALE AS NOTED