

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(Alternative Form for Single Chamber, Completely Shop-Fabricated Vessels Only)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by VERNON MFG. CO. 8375 S. 89TH W. AVE. TULSA, OK. 74131
2. Manufactured for SOUTHWEST FILTER CO. P O BOX 580608 TULSA, OK. 74158-0608
3. Location of Installation LA PORTE, TEXAS
4. Type VERT 911104-2 D-6557 361 1991
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. 1989
6. Shell: A-89 NONE NONE
7. Seams: WLD. DBL. BUTT FULL 100 WLD. SNGL. BUTT SPOT 1
8. Heads: (a) Matl. SA-516-70 (b) Matl. SA-516-70
9. MAWP 661 10 661 992
10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Matl.	Thick.	Reinforcement Matl.	How Attached	Location
IN/OUT	2	10"300#	RFWN	SA-106-B	.594	SA-516-70	WELDED	SHELL
DRAIN	1	2"300#	RFWN	SA-106-B	.343	WELD	WELDED	BTM HEAD
DRAIN	1	1"	RFLWN	SA-105	300#	WELD	WELDED	SHELL

11. Supports: Skirt NO Legs 3 Other WLD. TO SHELL/HEAD
12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: SHELL - KIRKWOOD TANK S/N K-91-381-1
CLOSURE FLANGES ARE 36" I.D. 300# RFWN SPECIAL ASME DESIGN FROM SA-350-LF2WL MATERIAL.
EXEMPT FROM IMPACT TESTING PER UG-20, PARA "F"

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. 20654 expires 11-1, 1991
Date 9-18-91 Co. name VERNON MFG. CO. Signed [Signature]
CERTIFICATE OF SHOP INSPECTION
Vessel constructed by VERNON MFG. CO. at TULSA, OK.
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 OK. and employed by DELTA LLOYDS INS. CO.
have inspected the component described in this Manufacturer's Data Report on 9-18, 1991, 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 or a loss of any kind arising from or connected with this inspection.
Date 9-18-91 Signed [Signature] Commissions AB 8748 OK 127

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

1. Manufactured and certified by VERNON MFG. CO. 8375 S. 89TH W. AVE. TULSA, OK. 74131
(Name and address of manufacturer)

2. Manufactured for SOUTHWEST FILTER CO. P O BOX 580608 TULSA, OK. 74158-0608
(Name and address of purchaser)

3. Location of installation LA PORTE, TEXAS
(Name and address)

4. Type VERT 911104-2 D-6557 361 1991
(Model, size, tech, etc.) (Mfg.'s serial No.) (CRN) (Draw) (Dist. Ed. No.) (Year built)

Data Report

Item Number

Remark :

ITEM #10 CONT.

[illegible]

Date 9-18-91 Co. name VERNON MFG. CO. Signed Thomas E. Brundel
(Board member) (Represent to the)

Date 9-18-91 Signed D. H. [Signature] Commissions NB 8748 OK 127
(Authorized Inspector) (Mtd. Board final endorsement, date, price, and Mo.)

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE FORM)

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

1. Manufactured and certified by Kirkwood Tank Co., Inc. 3237 North Lewis Tulsa, OK 74110
(Name and address of manufacturer)
2. Manufactured for Southwest Filter P. O. Box 580608 Tulsa, OK 74158-0608
(Name and address of purchaser)
3. Location of installation Not Known
(Name and address)
4. Type K-91-381-1 1991
(Horiz. or vert. tank) (Mfg's serial No. of Part) (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 construction and workmanship conform to ASME Rules, Section VIII, Division 1 1989
Year

A-89 2053
Addenda (date) Code Case No. Special Service per UG-120(d)

6. (a) Drawing prepared by None (b) Description of part inspected Rolled & Welded Cylinder
7. Postweld heat treatment: Temp. None °F Time _____
8. Shell: SA-516-70 .875 3'-0" 3'-7.875" 1
Matl. Nom. Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft & in.) Length (Overall) (ft & in.) No. of Courses
9. Seams: Welded Dbl Butt Full 100 None R.T.
Long. R.T. Eff. (%) Girth R.T.
10. Heads: (a) Matl. None (b) Matl. _____
(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)										
(b)										

If removable, bolts used (describe other fastenings) _____

(Matl., Spec. No., Gr., Size, No.)

11. MAWP _____ psi at max. temp. _____ °F. Min. design metal temp. _____ °F at _____ psi.
Hydro., pneu., or comb. test press. None psi in the _____ position
12. Nozzles and Inspection Openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
None								

13. Supports: Skirt No Lugs No Legs No Other None Attached _____

14. Remarks: P.O. 6557KT SHELL
ITEM No. 06F-101 B
SWFCO SER. NO. 2138

No Design Functions Performed

CERTIFICATE OF SHOP COMPLIANCE

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

"U" Certificate of Authorization No. 5655 expires January 15, 1992
Date 7-23-91 Co. name Kirkwood Tank Co., Inc. Signed Steel Mfg. Co.
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

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 Delta Lloyds Insurance Company

have inspected the pressure vessel part described in this Manufacturer's Data Report on 7-23, 19 91, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this part of a pressure vessel in accordance with the 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 part 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 7-23-91, 19 91 Signed Delta Lloyd Commissions Delta Lloyd
(Authorized Inspector) (National Board (incl. endorsement), State, Prov. and No.)



CARTRIDGE FILTER DATA SHEET (LIQUID)

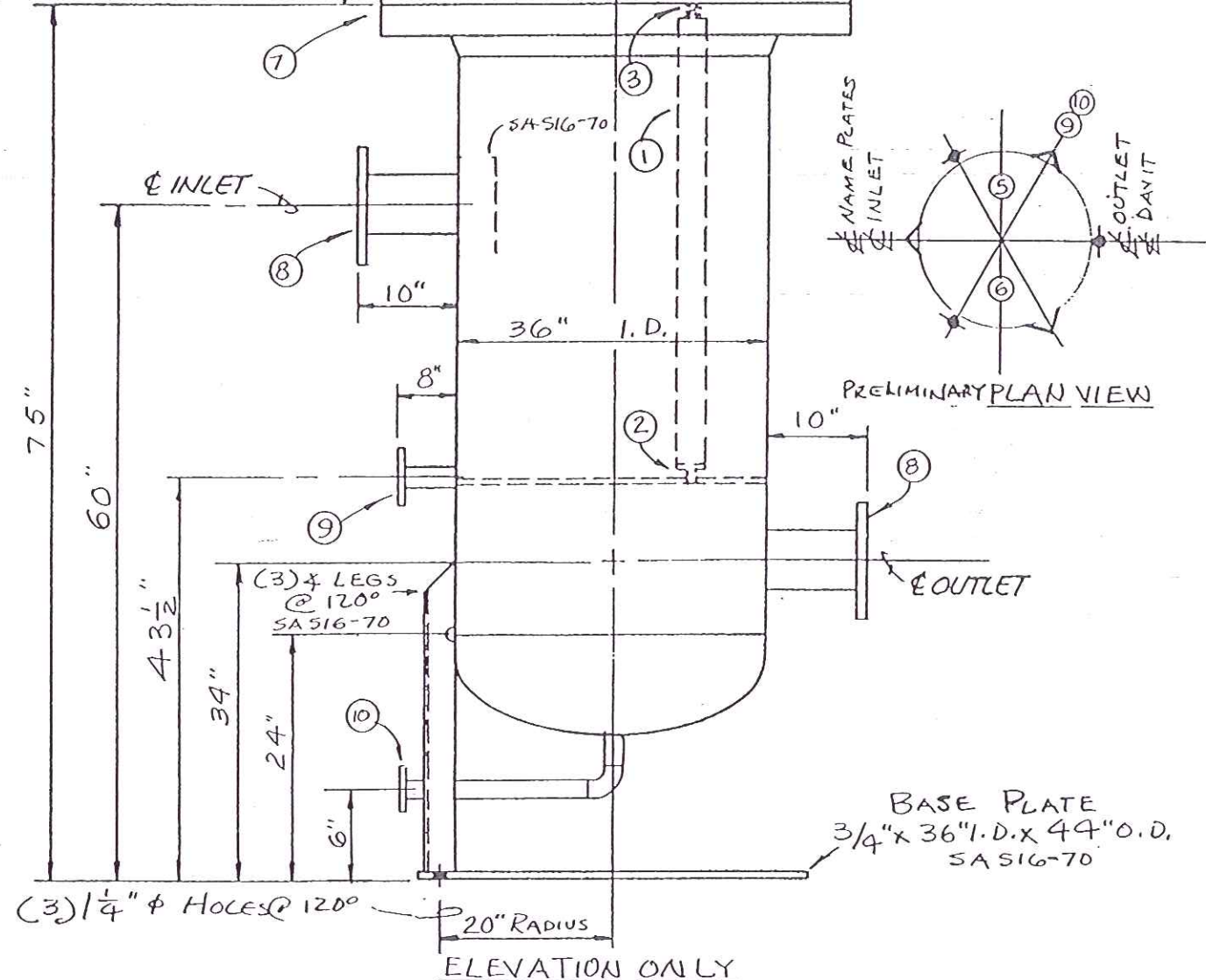
REVISIONS	0		1		2		3	
	By	Date	By	Date	By	Date	By	Date
1	Originator	AW5	17DEC90	AW5	23APR91			
2	Checked	MWE	17DEC90	MWE	24APR91			
3	Approved	JL	19DEC90	JL	24APR91			

L420.2.1E (APR 90)

Job No. 6636	Page 1 of 2
Client TENNECO NGL CORP.	
Location LAPORTE, TEXAS	
Unit MTBE C4'S FEED FILTER	
Item No. 06F-101A/B	
Service MTBE C4'S FEED FILTER	
Requisition No. 6636-50DI-L420-0	

INFORMATION TO BE SUPPLIED: ☒ BY PURCHASER ☐ BY VENDOR	
1 Service MTBE C4'S FEED FILTER	No. Req'd. TWO (2)
2 Manufacturer SOUTHWEST FILTER CO.	Serial No.
3 OPERATING CONDITIONS	
4	
5 • Liquid Filtered HCBN, MeOH, MTBE	• Description of Particles Removed
6 • Flow Rate (GPM) Norm 2502 Max 2947	• Total Suspended Solids (Feed)
7 • Oper Press (PSIG) Norm 285 Max 307	ppm Wt % LBS/HR
8 • Oper Temp (°F) Norm 104 Max 104	• Particle Size (microns) Min. 28 ABS Max. 28 ABS
9 • Specific Gravity @ Operating Temp. 0.614	• Size of Particles to Be Removed
10 • Viscosity @ Operating Temp. (Cp) 0.19	> microns ppm Wt %
11 • Allowable Clean Pressure Drop (PSI) 3 CLEAN	• Removal Efficiency (%) 99.99
12 • DENSITY (LB/FT ³) 38.3 20 DIRTY @ NOR. COND.	• Beta Ratio 10,000
13 MECHANICAL DESIGN	
14	
15 • Inspection • Spot Radiography • Hydrotest • Corrosion Allowance (IN.) [Note 5] 0.125 MIN	
16 • Other • Surface • DESIGN PRESS. 640 PSIG DESIGN TEMP. 250°F	
17 • Codes: • ASME Design w/o Stamp • ASME Design with Stamp (Note 2) • Other	
18 MATERIALS OF CONSTRUCTION	
19 Description ASTM Number	* CONNECTIONS NO. SIZE RATING/FACING/TYPE
20 • Housing CARBON STEEL A516 GR 70	Inlet 1 10" 300 # ANSI RFWN
21 • Cover	Outlet 1 10" 300 # ANSI RFWN
22 • Element Supports	Vent 1 1" 300 # ANSI RFWN
23 • Housing Supports	Drain 1 2" / 1" 300 # ANSI RFWN
24 • Nozzles	Instruments
25 • Elements PLEATED 100% POLYPROPYLENE	Relief Valve * 1 3" 300 # ANSI RFWN
26 • Gaskets (elements) BUNA 'N'	* R.V. SUPPLY BY PURCHASER
27 • Gaskets (housing)	* All connections 1-1/2" and larger shall be flanged
28 MISCELLANEOUS	
29 DATA BY VENDOR	
30 • Horizontal • Vertical	☐ Housing Model: 361 VFC ☐ Element Model No: FILTERITE FPPP-3028AB
31 • Shop Coating	☐ Hsg Diameter: (IN.) 36 I.D. ☐ No. of Elements 95
32 • Sandblast • Primer	☐ Hsg Length (IN.) 104 OVERALL ☐ Element Length x O.D. (IN.) 30 x 2 3/4
33 • Finish Painting	☐ Clearance Required (IN.) ☐ Removal Length (IN.) 33 MIN
34 • Filter Cover Type:	☐ Total Element Solids Holding Capacity: (FT ³)
35 • Hinged	☐ Effective Filtration Area (FT ²) 1434.5
36 • Thru bolted-on	☐ Clean Pressure Drop Flange to Flange (PSI) 3
37 • Swing bolted-on	☐ Collapse Pressure Drop (PSI) 50
38 • Clamp-on	☐ Max. Allow. Working Press. (PSIG) 640 at (°F) 250
39 • Screwed	☐ Min. Design Metal Temp (°F) 10 at (PSIG) 640
40 • Hydraulic Lift	☐ Hydrotest Pressure (PSIG, 30 Minutes) 960
41 • Davit (see Note 1)	☐ Support Method ☒ Legs ☐ Piping ☐ Saddles
42 • Special	☐ Shipping Weight (LBS) 5600 ☒ Operating Weight (LBS) 7089
43	
44 NOTES: 1. Davits Shall Be Furnished for Covers over 77 LBS 7. INLET & OUTLET PIPING SIZE	
45 2. Where required by local authorities, vendor shall obtain National Board Registration 15 10 INCHES. PROPOSED	
46 3. Design temperature of filter housing shall not be limited by gasket material DRAIN SIZE 1.5"	
47 4. ASME Design refers to ASME Code, Section VIII, Division 1 and all mandatory addenda. 8. MIN. DESIGN METAL	
48 5. Specified corrosion allowance applies for all pressure retaining parts. TEMP. +10°F	
49 6. VENDOR TO SUBMIT COMPLETE DATA SHEET WITH QUOTATION.	

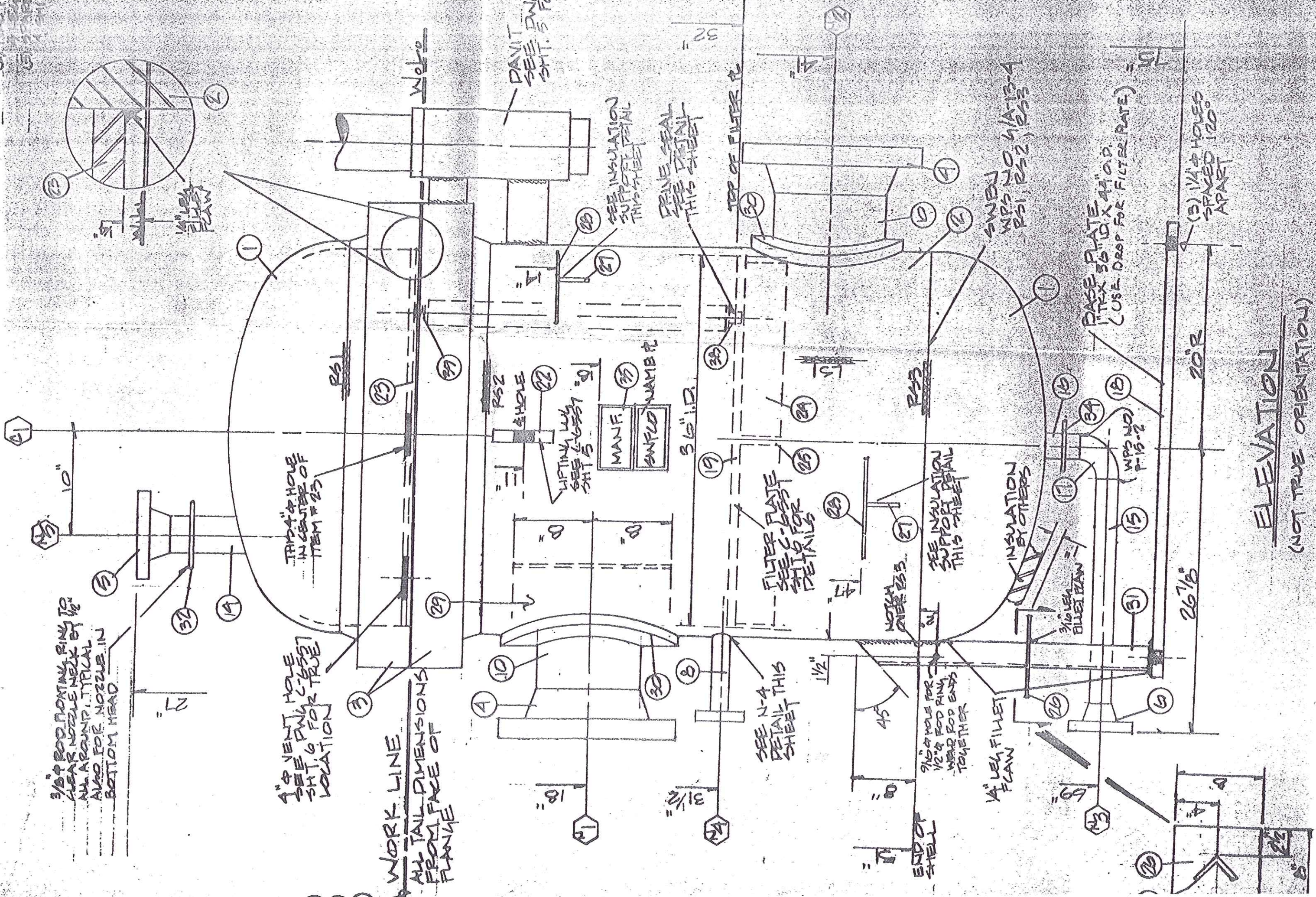
M.W. KELLOGG P.D. No. 6636-02DI-4920-01 ITEM NOS. 06 F-101A/B
MTBE C4'S FEED FILTER ASME STAMP #NB FOR 690PSIG @ 10/250F 7/8" C.A.
 PWHT- NO, RADIOGRAPH- RT2, LIFT LUGS- TWO (2), INSULATION SUPPORTS- YES,
 EXTERIOR- PER. SPEC. AXA-505-SS PT-NOZZLES & REINF. PAOS, UT-CLOSURE
 MT-NONE, FCAW- NOZZLES & ATTACHMENTS
 SHELL- 7/8" SA516-70 HEADS- .791" MIN. ELLIP. SA516-70
 BOLTING- B7 & 2H SKID REQ'D- NO
 GASKET- SPIRAL WOUND DRAUT- YES
 SPARE GSKTS- ONE (1) FIRE PROOF SUPPORTS- YES
 CLOSURE- SA350LF2 WEIGHT- 5600# EA



- ① (95) FPPP-3028ABBEX FILTER ELEMENT ② 316L SS BOTTOM SEAL STOOL
 ③ 316L SS TOP SPRING SEAL ④ COMPRESSION PLATE "V" VENT HOLES
 ⑤ 1"-300# REFWN VENT ⑥ 3"-300# REFWN RV NOZZLE
 ⑦ 36"-ASME REFWN'S C/W GASKET & BOLTING ⑧ 10"-300# REFWN IN & OUT
 ⑨ 1"-300# REFWN DRAIN ⑩ 2"-300# REFWN DRAIN

TITLE: <u>MODEL 36IVFC FILTER</u>	DRAWN	DATE
	CHKD.	DATE
	BYG. R8.	

SOUTHWEST FILTER COMPANY, TULSA, OKLAHOMA



3/8" ROD MOUNTING RING TO
CLEAR NOZZLE NECK BY 1/2"
ALL AROUND. TYPICAL
ALSO FOR NOZZLE IN
BOTTOM HEAD

1" VENT HOLE
SEE DWG C-6557
SHT. 6 FOR TRUE
LOCATION

WORK LINE
ALL TAIL DIMENSIONS
FROM FACE OF
FLANGE

DAVIT
SEE DWG
SHT. 5 F

SEE INSULATION
SUPPORT DETAIL
THIS SHEET

DRIVE SEAL
SEE DETAIL
THIS SHEET

SEE N-4
DETAIL THIS
SHEET

SEE INSULATION
SUPPORT DETAIL
THIS SHEET

1/4" VEL FILLET
FCW

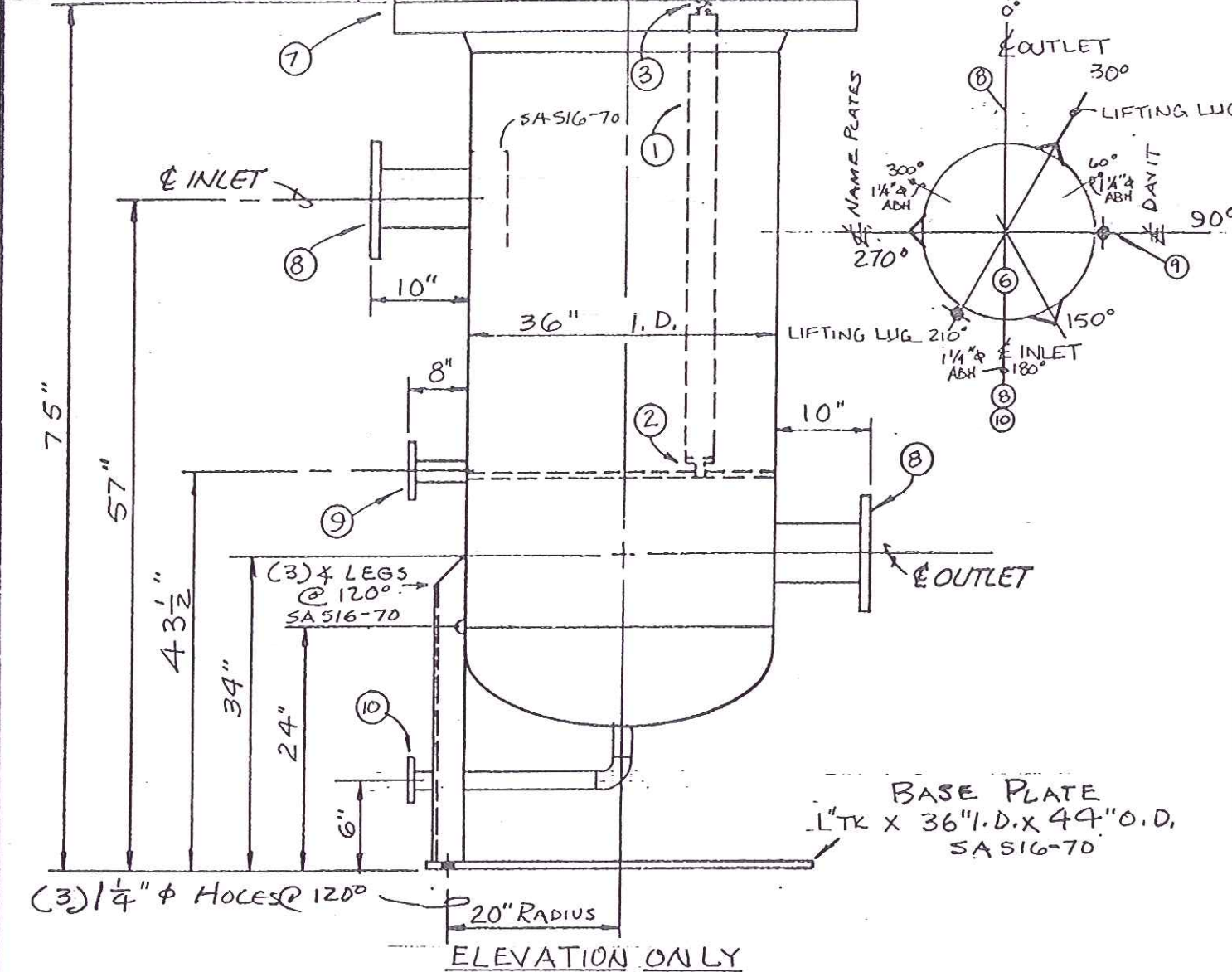
BASE PLATE
36" O.D. X 44" O.D.
(USE DROP FOR FILTER RATE)

(3) 1/4" HOLES
SPACED 120°
APART

ELEVATION
(NOT TRUE ORIENTATION)

M.W. KELLOGG P.D. No. 6636-02DI-420-01
 MTBE C4'S FEED FILTER ASME STAMP & NB FOR 640PSIG @ 10/250F 7/8" C.A.
 PWHT- NO, RADIOGRAPH- RT2, LIFT LUGS- TWO (2), INSULATION SUPPORTS- YES,
 EXTERIOR- PER SPEC. AXA-505-SS
 MT- NONE,
 S. = 1/8" SA516-70
 BOLTING- B7 & 2H
 GASKET- SPIRAL WOUND
 SPARE GSKTS- ONE (1)
 CLOSURE- SA350LF2

ITEM NOS. 06 F-101A1B
 DT- NOZZLES & REINF. PADS, DT- CLOSURE
 FCAW- NOZZLES & ATTACHMENTS
 HEADS- .837" MIN. ELLIP. SA516-70
 SKID REQ'D- NO
 DRAVIT- YES
 FIRE PROOF SUPPORTS- YES
 WLGHT- 5600# EA



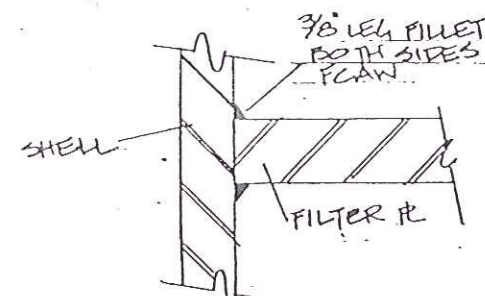
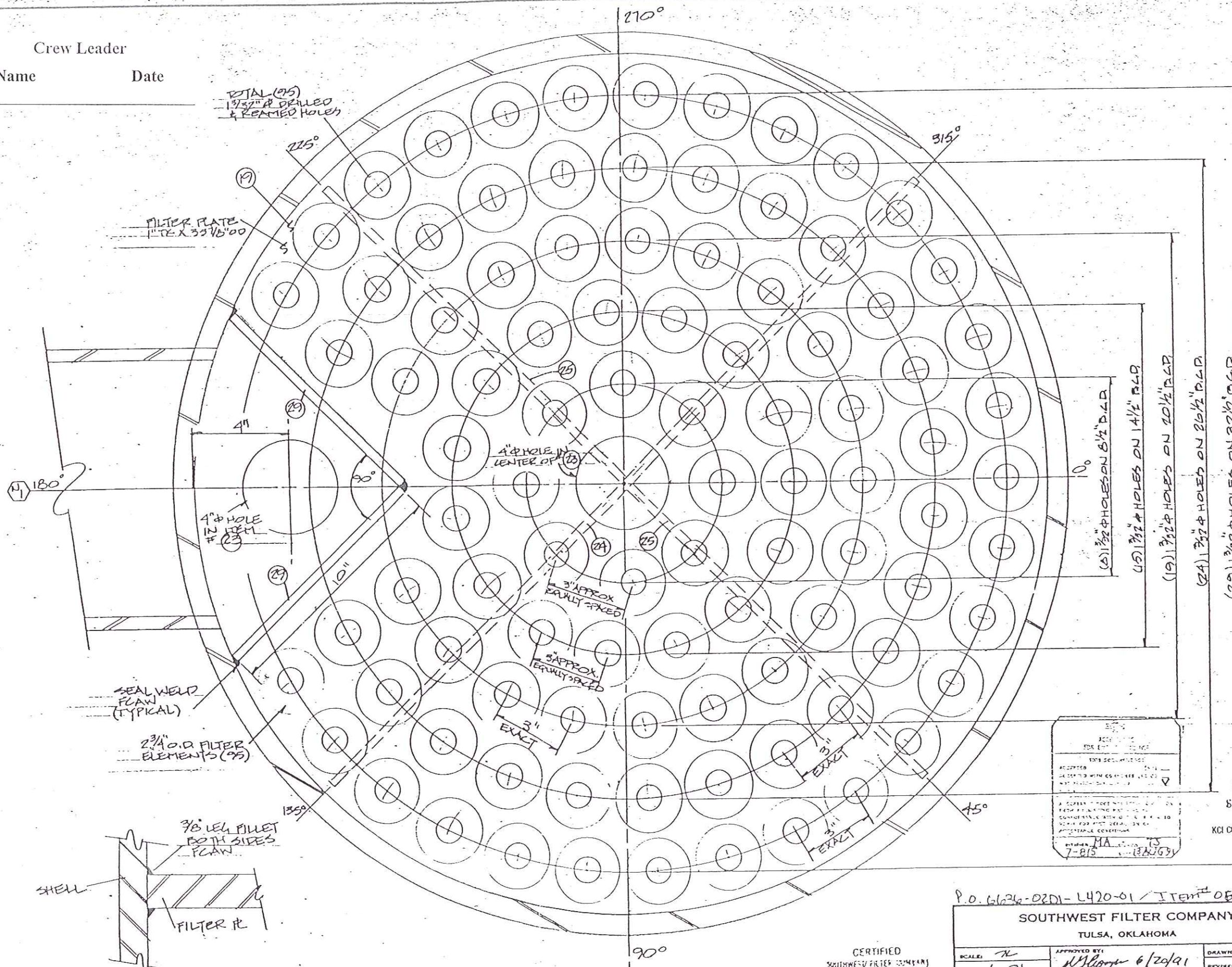
- ① (95) FPP-3028ABBEX FILTER ELEMENT ② 316L SS BOTTOM SEAL STOOD
 - ③ 316L SS TOP SPRING SEAL ④ COMPRESSION PLATE 1/4" VENT HOLES
 - ⑤ 3"-300# RFWN RV NOZZLE
 - ⑦ 36"-ASME RFWN'S C/W GASKET & BOLTING ⑧ 10"-300# RFWN IN & OUT
 - ⑨ 1"-300# RFWN DRAIN ⑩ 2"-300# RFWN DRAIN
- REV. 1 ADDED P.D. NO. & PLAN 4/11/91 REV. 2 CUSTOMER COMMENTS 10/20/91 RP

1. MODEL 36IVFC FILTER		BROWN	DATE
		ANT	11/29/91
		exp.	DATE
		AWT	4/12/91
SOUTHWEST FILTER COMPANY, TULSA, OKLAHOMA		REV. 2	
		NO. A-6557	SHT. 1

Crew Leader

Name

Date



FILTER PLATE WELD DETAIL

FILTER PLATE LAYOUT

REVISION	DATE
1	7-8-91
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95	7-8-91

RECEIVED
SEP 03 1991
KCI CONSTRUCTORS, INC.

P.O. 6626-0201-1420-01 / ITEM OFF-01413			
SOUTHWEST FILTER COMPANY TULSA, OKLAHOMA			
SCALE: 1/2"	APPROVED BY: <i>[Signature]</i>	DRAWN BY: TEA	
DATE: 6-91	DATE: 6/20/91	REVIEWED:	
FILTER PLATE DETAILS			
MODEL 361-VFC FILTER			DRAWING NUMBER: 16551-416

CERTIFIED
SOUTHWEST FILTER COMPANY
TULSA, OKLAHOMA
DATE: 7/2/91

N