

**FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

86231

1. Manufactured and certified by Continental Fabricators, Inc.; 5601 West Park Ave.; St. Louis, MO 63110  
(Name and address of Manufacturer)

2. Manufactured for Monsanto Company; 500 Monsanto Ave.; Sauget, IL 62206  
(Name and address of Purchaser)

3. Location of installation Same

4. Type: Horizontal Separator Tank CJ-6012 --- 1118-L, 2666 1995  
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 1992 Edition, 1993 Addenda --- ---  
Edition and Addenda (date) Code Case No. Special Service per UG-120(d)

Items 6 - 11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): 3 (b) Overall length (ft & in.): 23'-9" WS/WS

Course(s)			Material		Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	65-3/8" I.S.	7'-11"	*5		.313"	0"	1	Spot	85%	1	Spot	85%	---	---
2	65-3/8" I.S.	7'-11"	*5		.313"	0"	1	Spot	85%	1	Spot	85%	---	---
3	65-3/8" I.S.	7'-11"	*5		.313"	0"	1	Spot	85%	1	Spot	85%	---	---

7. Heads: (a) SA240 Gr. 304L S/S (b) SA240 Gr. 304L S/S  
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	Left Hd.	.313"	0"	60" I.S.	4" I.S.	---	---	---	---	---	Yes	---	---	---
(b)	Right Hd.	.313"	0"	60" I.S.	4" I.S.	---	---	---	---	---	Yes	---	---	---

If removable, bolts used (describe other fastening) ---  
(Mat'l Spec. No., Grade, size, No.)

8. Type of jacket --- Jacket closure ---  
(Describe as ogee & weld, bar, etc.)

If bar, give dimensions --- If bolted, describe or sketch.

9. MAWP 71 --- psi at max. temp. 302 --- °F Min. design metal temp. -20 --- °F at 71 psi.  
(internal) (external) (internal) (external)

10. Impact test No - Exempt from impact testing per UHA-51a (304L S/S) & UNF-65 (Alloy 20)  
(Indicate yes or no and the component(s) impact tested)

11. Hydro., ~~proof~~ test press. 108 PSI (Horiz.) Proof test ---

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: --- --- --- --- ---  
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)  
--- --- --- --- ---  
Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: --- --- --- --- ---  
Mat'l Spec. No., Grade or Type O.D., in. Nom. thk., in. or gauge Number Type (Straight or U)

Items 14 - 18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): --- (b) Overall length (ft & in.): ---

Course(s)			Material		Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
---														
---														
---														

15. Heads: (a) --- (b) ---  
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	---													
(b)	---													

If removable, bolts used (describe other fastening) ---  
(Mat'l Spec. No., Grade, Size, No.)

16. MAWP --- --- psi at max. temp. --- --- °F Min. design metal temp. --- °F at --- psi.  
(Internal) (external) (Internal) (external)

17. Impact test: --- (Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. --- Proof test ---

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Misc.	6	2" CL 150	RF S.O.F.	*1	*2	.218"	0"	---	Sk (d)	None	Shell
Misc.	5	2" CL 150	RF S.O.F.	*3	*4	.218"	0"	---	Sk (d)	None	Shell
Outlet	1	4" CL 150	RF S.O.F.	*3	*4	.337"	0"	---	Sk (d)	None	Shell
Misc.	5	6" CL 150	RF S.O.F.	*1	*2	.280"	0"	---	Sk (d)	None	Shell
Inlet	1	6" CL 150	RF S.O.F.	*3	*4	.280"	0"	---	Sk (d)	None	Left Hd.
Manway	1	19-3/8" I.D.	FF Plt Flg	*5	*5	.313"	0"	*5	Sk (d)	None	Shell
Manway	1	19-3/8" I.D.	FF Plt Flg	*5	*5	.313"	0"	---	Sk (d)	None	Right Hd.

20. Supports: Skirt No Lugs --- Legs --- Others Saddles Attached Shell; Welded  
(Yes or No) (No.) (No.) (Describe) (Where and How)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:  
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks: 5'-6" O.D. x 24'-0" T/T Crude NCB/Acid Separator Tank, Item 304, P.O. BX31783  
Safety relief valves by others

#### 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. 27 Expires April 30, 19 96

Date 3/16/95 Name Continental Fabricators, Inc. Signed J.S. Adams  
(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 the State or Province of MO and employed by Commercial Union Insurance Co. of Boston, MA have inspected

the pressure vessel described in this Manufacturer's Data Report on 3/15, 19 95, 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 3/17/95 Signed Richard D. Lynch Commissions NB7967(A) MO-01BA  
(Authorized Inspector) (Nat'l Board incl. endorsement, State, Province and No.)

#### CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1.

U Certificate of Authorization No. --- Expires ---, 19 ---

Date --- Name --- Signed ---  
(Assembler) (Representative)

#### CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of --- and employed by --- of ---

have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items ---, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of --- psi. 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 --- Signed --- Commissions ---  
(Authorized Inspector) (Nat'l Board incl. endorsement, State, Province 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

86231

1. Manufactured and certified by Continental Fabricators, Inc.; 5601 West Park Ave.; St. Louis, MO 63110  
(name and address of manufacturer)

2. Manufactured for Monsanto Company; 500 Monsanto Ave.; Sauget, IL 62206  
(name and address of purchaser)

3. Location of installation Same  
(name and address)

4. Type: Horizontal Separator Tank CJ-6012  
(horiz., vert., or sphere) (tank, separator, heat exch., etc.) (mfg's serial no.)  
1118-L, Rev. 1 2666 1995  
(CRN) (drawing no.) (Nat'l. Bd. no.) (year built)

Data Report  
Item Number

Remarks

**19. Nozzles, inspection and safety valve openings (continued):**

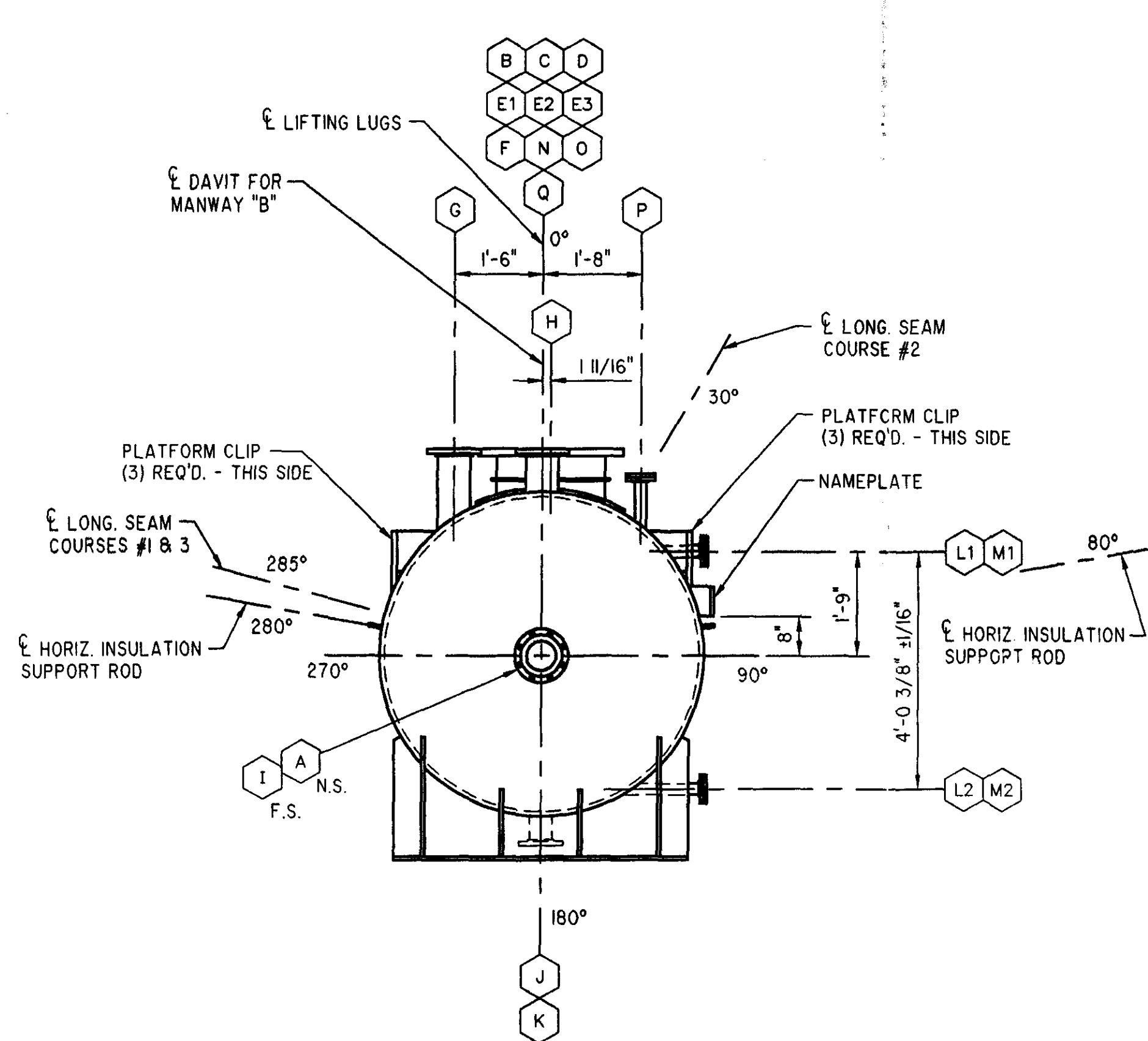
Purpose (inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Pump	1	21.5" I.D.	FF Plt Flg	*6	*7	.313"	0"	*5	Sk (d) & (a-1)	None	Shell

- \*1) SB-464 Alloy 20
- \*2) SB-462 Alloy 20
- \*3) SA-312 Tp. 304L S/S
- \*4) SA-182-F304L S/S
- \*5) SA-240 Gr. 304L S/S
- \*6) SB-463 Alloy 20
- \*7) SA-240 Gr. 304L S/S Backer Material  
with 1/8" Thick Weld Overlay (Alloy 20) on Full Flange Face

Certificate of Authorization: Type U No. 27 Expires April 30 19 96

Date 3/14/95 Name Continental Fabricators, Inc. Signed J.S. Adams  
(manufacturer) (representative)

Date 3/17/95 Name Richard A. Lynch Commission NB 7967 40-0186  
(Authorized Inspector) (Nat'l. Board incl. endorsement, state, province and no.)



END VIEW

## GENERAL NOTES

1. ALL BOLT HOLES TO STRADDLE NORMAL VESSEL CENTERLINES.
2. USE ONLY MATERIAL (INCLUDING WELDING ELECTRODES) BOUGHT FOR THIS JOB DUE TO SPECIAL CHEMISTRY REQUIREMENTS FOR ALL ALLOY 20 MATERIALS.
3. SHOP SHALL USE ONLY S/S (P8 MAT'L.) FOR TEMPORARY SUPPORTS AND CLIPS.
4. ALL NOZZLES TO BE TRIMMED FLUSH INSIDE VESSEL AND GROUND TO A 1/16" MIN. RADIUS UNLESS NOTED OTHERWISE.
5. ALL REINFORCING PADS, OR SEGMENTS THEREOF, TO HAVE ONE 1/8" NPT TELL-TALE HOLE LOCATED AT THE LOWEST POINT. TEST WITH AIR AND SOAP SUDS AT 10 PSIG AND PACK WITH GREASE PRIOR TO SHIPPING.
6. 100% LIQUID PENETRANT TESTING SHALL BE PERFORMED ON ALL ALLOY 20 WELDS WHICH SHALL INCLUDE THE FINISHED BEVELED SURFACE PRIOR TO ADDING THE FILLET WELD AS WELL AS THE INSIDE AND OUTSIDE SURFACES OF THE COMPLETED WELD.
7. PRIOR TO HYDROTESTING, VESSEL SHALL BE THOROUGHLY CLEANED OF ALL DIRT, WELD SPATTER, LOOSE SCALE, OIL AND ALL OTHER FOREIGN MATTER.
8. TEST VESSEL WITH 1/8" THK. GASKETS (GARLOCK 3510) AND SERVICE BOLTING.  
DO NOT USE SERVICE GASKETS.  
TESTING MEDIUM SHALL BE AT OR ABOVE 60°F WHERE PRACTICABLE BUT IN NO CASE BELOW 45°F.  
TEST WATER MUST BE STERILE (CHLORINATED) TO NOT LESS THAN 0.2 PPM BUT NOT MORE THAN 1 PPM OF DISSOLVED CHLORINE GAS) AND CONTAIN LESS THAN 25 PPM CHLORIDE ION.  
HYDROTEST CHARTS ARE REQUIRED.
9. PRIOR TO SHIPPING, INSTALL SERVICE GASKETS AND BOLTING, COVER ALL REMAINING FLANGE FACES WITH TEST GASKETS AND WOOD OR STEEL COVERS.  
SHIP LOOSE WITH VESSEL, ONE SPARE GASKET EACH MANWAY "B" AND "I" ONLY.
10. THE MONSANTO P.O. NUMBER (BX31783) SHALL BE DYE STENCILED OR PAINTED IN A CONSPICUOUS LOCATION ON THE VESSEL. PAINT OR INK USED FOR MARKING SHALL BE NON-METALLIC PIGMENT TYPE.
11. SOLVENT CLEAN ALL EXTERIOR SURFACES OF VESSEL, INCLUDING SADDLES, PER SSPC-SP1 THEN APPLY ONE COAT OF INTERNATIONAL INTERTUF #132 HS (FORMERLY PORTER #1332) II - 12 MILS WET FILM THICKNESS.
12. PLATE COILS SUPPLIED BY CUSTOMER AND INSTALLED BY C.F.I. PLATE COILS ARE TO BE TRIAL FIT AND LUGS INSTALLED PRIOR TO HYDROTESTING. PLATE COILS ARE TO BE INSTALLED AFTER HYDROTESTING AND PAINTING.

**DETAIL 1A**  
INSULATION SUPPORT

**DETAIL 1B**  
PLATFORM CLIP  
(6) REQ'D.

ELEVATION

DETAIL 1C

- LIFTING LUG  
(2) REQ'D.  
SEE "SHOP NOTE"

1. TRIM LUG REPAD AS REQ'D. TO CLEAR NOZZLES "P" AND "Q".
2. GRIND FLUSH AND FULL XRAY SHELL CIRC. SEAM UNDER LUG REPAD WHERE REQ'D.
3. TRIM LUG REPAD AT MANWAY "B" REPAD AND BUTT WELD TOGETHER.

## WELD PROCEDURES

- |         |      |                     |
|---------|------|---------------------|
| #100    | SMAW | P8-P8               |
| #141    | SAW  | P8-P8               |
| #III    | GTAW | P8-P8               |
| #1225   | SMAW | P45-P45             |
| #1228   | GTAW | P45-P45             |
| #1210   | SMAW | P8-P45              |
| #2023-A | SMAW | P8-ALLOY 20 OVERLAY |



## REFERENCE

SUPERIOR WELDING CO.  
DWG. NO. 7L-9110-A REV. 2  
7L-9110-B 2

Q	1	6"	CL150	RF SO	SCH. 40s	-	2E	2	VENT
P	1	2"	CL150	RF SO	SCH. 80s	-	2A	2	SPARE W/ BLIND
O	1	6"	CL150	RF SO	SCH. 40s	-	2E	2	L.I. (SHUT DOWN)
N	1	6"	CL150	RF SO	SCH. 40s	-	2E	2	VENT
M1,M2	2	2"	CL150	RF SO	SCH. 80s	-	2C	2	SPARE W/ BLIND
L1,L2	2	2"	CL150	RF SO	SCH. 80s	-	2C	2	SPARE W/ BLIND
K	1	4"	CL150	RF SO	SCH. 80s	-	2D	2	OUTLET W/ VTX. BK
J	1	2"	CL150	RF SO	SCH. 80s	-	2B	2	DRAIN
I	1	20"	SPCL.	PL. 1 1/4"	PL. 5/16"	-	3B	3	MANWAY W/ DAVIT
H	1	22"	SPCL.	PL. 1 1/2"	PL. 5/16"	3/8" x 4 1/2" WIDE	2G	2	PUMP
G	1	6"	CL150	RF SO	SCH. 40s	-	2E	2	L.I. (NCB)
F	1	6"	CL150	RF SO	SCH. 40s	-	2E	2	L.I. (INT.)
E1-E3	3	2"	CL150	RF SO	SCH. 80s	-	2A	2	T.W. SAMPLE, SPARE W/ BLIND
D	1	2"	CL150	RF SO	SCH. 80s	-	2A	2	VENT
C	1	2"	CL150	RF SO	SCH. 80s	-	2A	2	SAMPLE
B	1	20"	SPCL.	PL. 1 1/4"	PL. 5/16"	3/8" x 2" WIDE	3A	3	MANWAY W/ DAVIT
A	1	6"	CL150	RF SO	SCH. 40s	-	2F	2	INLET W/ BAFFLE

### NOZZLE SCHEDULE

I	JG	A	12-21-94	GEN'L CHG'S PER CUST. MARK-UP	
NO.	DR.	CR.	DATE	DESCRIPTION	
REVISIONS					

	NATIONAL BOARD No. <span style="border: 1px solid black; display: inline-block; width: 100px; height: 30px;"></span>			
	CERTIFIED BY			
	 <b><u>Continental Fabricators, Inc.</u></b> ST. LOUIS, MO.			
	-7.5 PSI @ 250°F			
	MAWP	71	PSI	302 °F
	MDMT	-20	°F	71 PSI
	SER. NO	CJ-6012	YR.	1995

NAMEPLATE

BRACKET TO BE 304 S/S AND TO  
EXTEND 3" FROM OUTSIDE OF SHELL

DEPT NO 221  
ITEM NO 304  
EQUIP NO 21-000943

FLANGES MUST CONFORM TO ANSI B16.5 STANDARD  
CURRENT CODE, ACCEPTED EDITION

EXEMPT FROM IMPACT TESTING PER UHA-51(a) FOR S/S AND  
PER UNF-65 FOR ALLOY 20

## GENERAL SPECIFICATIONS

DESIGN, CONSTRUCTION AND TEST IN ACCORDANCE WITH THE ASME CODE

SECTION VIII, DIV. I :	1992	EDITION:	1993	ADD
INSPECTION: INS. CO.	YES	CUSTOMER	YES	
ASME STAMPING	YES	N.B.	YES	
INTERNAL DESIGN PRESS.	71	PSI •	302	
EXTERNAL DESIGN PRESS.	7.5	PSI •	250	
EFFICIENCY: HEAD	85%	SHELL	85%	

CORROSION ALLOWANCE NONE

MAWP 71 PSI • 302 °F LIMITED BY DESIGN

MDMT -20 °F • 71 PSI

RADIOGRAPH SPOT XRAY PER ASME CODE

HEAT TREATING NONE

SHOP TEST PRESSURE HYDROTEST AT 108 PSI  
IN HORIZONTAL POSITION

MATERIAL SPECIFICATIONS:

HEADS	SA240-304L	
SHELL	SA240-304L	
REINFORCEMENT	SA240-304L	
SUPPORTS	SA240-304	
FLANGES	SA182-F304L/SB462 ALLOY 20	
NOZZLES: PIPE	SA312-304L/SB464 ALY. 20 PLATE	SA240-304L / SB463 ALLOY 20
INTERNAL	SA240-304L	
COUPLINGS	-	
BOLTS/STUDS	SA193-B8	NUTS SA194-8
GASKETS	1/8" T.B. (GARLOCK 3510)	

ESTIMATED SHIPPING WEIGHT 11,500 LBS.  
WEIGHT FULL OF WATER 48,000 LBS.  
TAG ITEM 304  
NO. REQ'D ONE



THIS DRAWING IS CONFIDENTIAL AND THE PROPERTY OF CONTINENTAL FABRICATORS INC. AND SHALL NOT BE DISCLOSED OR REPRODUCED IN ANY PART.

CRUDE NCB/ACID SEPARATOR TANK

FOR MONSANTO. CO. TS D 2-1215

LOCATION SAUGET, IL. 15-V-24915

DR. JSG	APPD. JSA	SCALE NONE	CUSTOMER NO. BY 31783
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CH. MM	PAINT NONE	DATE 12-1-94
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ORDER NO.	SHEET NO.	TOTAL	DRAWING NO.	REV.
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