

FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS

as required by the provisions of the ASME Code rules, Section VIII, Division 1

1. Manufactured and certified by OHMSTEDE, INC. - LAPORTE PLANT 12415 LAPORTE RD. LAPORTE, TX 77571
(name and address of manufacturer)2. Manufactured for KELLOGG / TENNECO OIL CO., INC. - P.O. BOX 1307 LAPORTE, TX 77571
(name and address of purchaser)3. Location of installation TENNECO OIL CO., INC. 1200 N. BROADWAY LAPORTE, TX 77571
(name and address)4. Type: HORIZ. HT. EXCH. 28389 N/A 28389 153 1991
(horiz. or vert., tank) (mfr's. serial no.) (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 design, construction and workmanship conform to ASME Code, Section VIII, Division 1: 1989
(year)1989 AN/AN/A

(addenda (Date))

(Code Case no.)

(special service per UG-120(d))

Items 6-11 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA516-70 1/2" 1/8" 2' - 8" 24' - 11 13/16"
(mat'l. spec. no., grade) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))7. Seams: DBL-BUTT SPOT 85% N/A N/A DBL-BUTT SPOT 3
(long. (dbl., singl.)) (RT (spot or full)) (eff. (%)) (HT temp. (°F)) (time) (girth (dbl., singl.)) (RT (spot, partial, or full)) (no. of courses)8. Heads: (a) SA-516-70 (ELLIPTICAL HEAD) (b) N/A
(mat'l. spec. no., grade) (mat'l. 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)	END	1/2"	1/8"			2:1				CONCAVE
(b)										

If removable, bolts used (describe other fastenings): N/A

(mat'l., spec. no., gr., size, no.)

9. Type of jacket: N/A Proof test: _____10. Jacket closure: N/A If bar, give dimensions: _____ If bolted, describe or sketch.
(describe as ogee & weld, bar, etc.)11. MAWP: 103 at max. temp. 650° Min design metal temp.: 10° at 103 Hydro. XXXXXXXX test pressure 155
(psi) (°F) (°F) (psi) (psi)

Items 12 and 13 to be completed for tube sections.

12. Tubesheets: SA350-LF2 31 7/8" 2" 1/8" BOLTED
(stationary mat'l. spec. no., gr.) (dia. (in.) (subject to pressure)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment (welded, bolted))N/A

(floating mat'l. spec. no., gr.) (dia. (in.)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment)

13. Tubes: SA214 3/4" .083" (MW) 330 U
(mat'l. spec. no., gr.) (OD (in.)) (nom. thickness (in. or gauge)) (no.) (type (straight or U))

Items 14-17 inclusive to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell: SA516-70 1/2" 1/8" 2' - 8" 1' - 7 7/16"
(mat'l. spec. no., gr.) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))15. Seams: DBL-BUTT SPOT 85% N/A N/A DBL-BUTT SPOT 1
(long. (dbl., singl.)) (RT (spot or full)) (eff. (%)) (HT temp. (°F)) (time) (girth (dbl., singl.)) (RT (spot, partial, or full)) (no. of courses)16. Heads: (a) ELLIPTICAL HEAD: SA516-70 (b) N/A
(mat'l. spec. no., grade) (mat'l. 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)	END	1/2"	1/8"			2:1				CONCAVE
(b)										

If removable, bolts used (describe other fastenings): (32) 3/4" SA193-B7 STUDS WITH (2) SA194 2H NUTS EACH.

(mat'l., spec. no., gr., size, no.)

17. MAWP: 103 at max. temp. 650° Min design metal temp.: 10° at 103 Hydro. XXXXXXXX test pressure 155
(psi) (°F) (°F) (psi) (psi)

18. Nozzles, inspection and safety valve openings: PER UG 125 NOTE 39

Purpose (inlet, outlet, drain, etc.)	Number	Dia. or Size	Type	Mat'l.	Nom. Thickness	Reinforcement Material	How Attached	Location
INLET	1	2" 150LB	RFLWN	SA350-LF2	1.125"	INTEGRAL	WELDED	SHELL
INLET	1	2" 150LB	RFLWN	SA350-LF2	1.125"	INTEGRAL	WELDED	SHELL
OUTLET	1	8" 150LB	RFLWN	SA350-LF2	1.375"	INTEGRAL	WELDED	SHELL
OUTLET	1	8" 150LB	RFLWN	SA350-LF2	1.375"	INTEGRAL	WELDED	CHANNEL
OUTLET	1	3" 150LB	RFLWN	SA106B	.438"	INTEGRAL	WELDED	CHANNEL
INLET	1	8" 150LB	RFLWN	SA106B	.500"	INTEGRAL	WELDED	CHANNEL
VENT, DRAIN	1 EA.	3/4" 6000LB	CPLG	SA105		INTEGRAL	WELDED	CHANNEL

19. Supports: Skirt NO Lugs 2 Legs NO Other (2) HORIZ. SUPPORTS ATTACHED - WELDED TO SHELL
(yes or no) (no.) (no.) (describe) (where and how)20. Remarks: Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report: MINIMUM DESIGN METAL TEMPERATURE PER UG-20.
(name of part, item number, mfr's name and identifying stamp)ROLLED AND WELDED CYLINDERS MANUFACTURED BY OHMSTEDE, INC. - LAKE CHARLES PLANT
UNDER AUTHORIZATION NUMBER 17397 AND SERIAL NUMBERS 28389-1 AND 28389-2.CUSTOMER ITEM NUMBER 06E-111.

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. 18673 expires JUNE 27, 1992Date 9-11-91 Name OHMSTEDE, INC. - LAPORTE PLANT
(manufacturer)Signed [Signature]
(representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by OHMSTEDE, INC. at LAPORTE, TXI, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the state or province of TEXAS and employed by H.S.B.I. & I. CO.of HARTFORD, CT have inspected the pressure vessel described in this Manufacturers' DataReport on 9-11, 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 the Manufacturers' 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 9-11-91 Signed [Signature] Commissions N13 9263
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state, prov. and no.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME BOILER AND PRESSURE VESSEL CODE.

"U" Certificate of Authorization no. _____ expires _____, 19____

Date _____ Name _____ Signed _____
(assembler that certified and constructed field assembly) (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 Manufacturers' 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 that to the best of my knowledge and belief, the manufacturer has con-

structed 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 the Manufacturers' 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. Bd. (incl. endorsements) state, prov. and no.)

MANUFACTURED NO. 1531

CERTIFIED AND MANUFACTURED BY



ST. GABRIEL LAKE CHARLES
X LA PORTE T.X. CO. CORPUS CHRISTI

SHELL TUBE

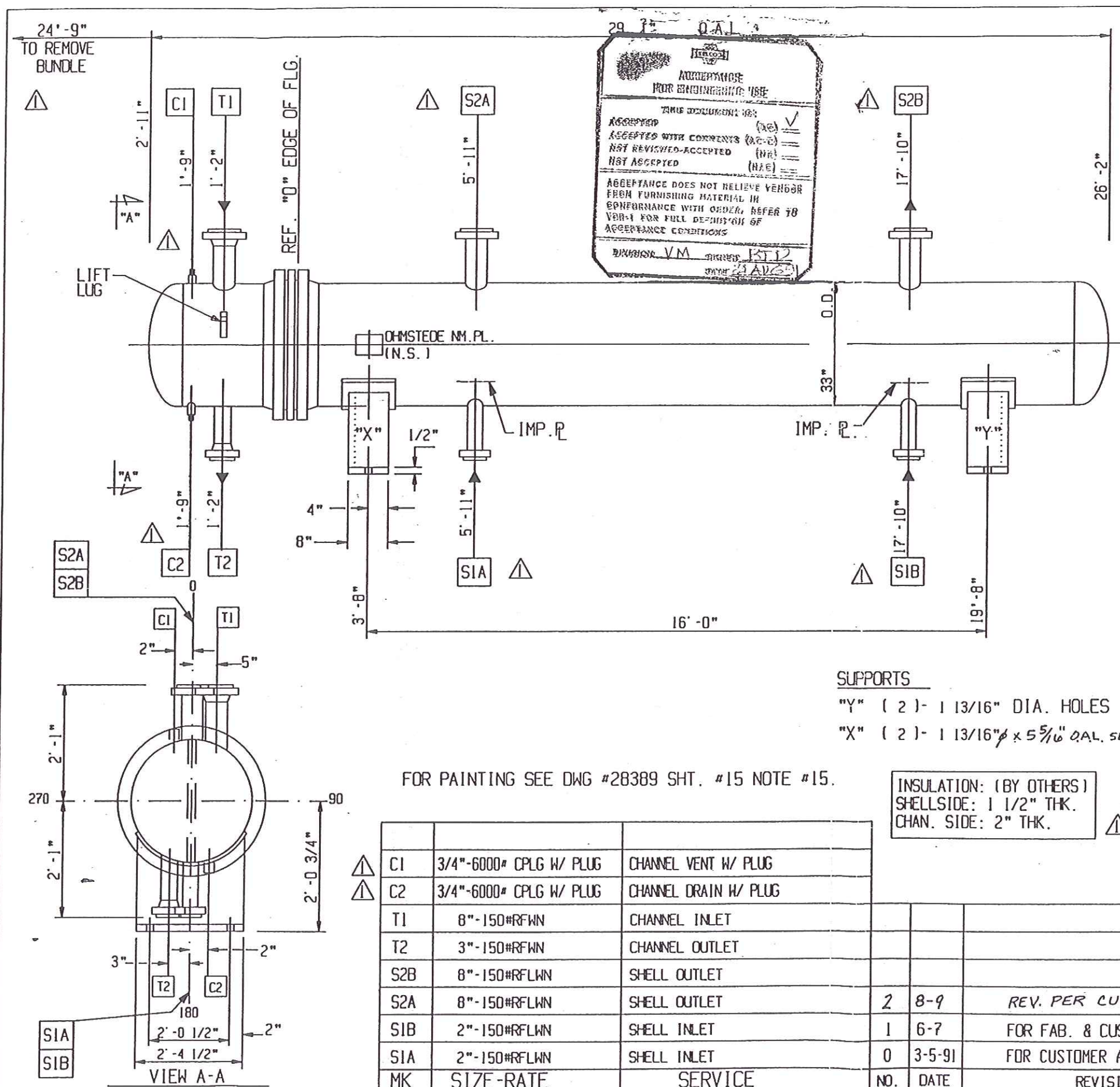
MAWP	103	PSI	103	PSI
MAX DESIGN TEMP	650	°F	650	°F
TEST PRESS	155	PSI	155	PSI
MIN DESIGN METAL TEMP	10	°F @ 103 PSI	10	°F @ 103 PSI
ITEM NO.	061-11		SERIAL NO.	283189
SIZE	32X 288	TYPE B X U		YEAR BUILT 1951
PUR NO.	6636-99D	-C210-01		
SHELL & TUBI	SHIDES MAX EXT PRESS	155 PSI AT 160°F		

MAX ALLOW PRESS NEW YORK
SHIELDSIDE - 103 PSI
TUBESIDE - 103 PSI

SHIELDSIDE PRESS
SHIELDSIDE - 155 PSI
TUBESIDE - 155 PSI

SERVICE: METHANOL COLUMN
REBOILER

103349



DESIGN DATA		SHELL	TUBE
DESIGN PRESSURE P.S.I.G.		75/FV	75/FV
TEST PRESSURE P.S.I.G. SHOP/FIELD		155/155	155/155
DESIGN TEMPERATURE DEG. F./MDMT (MAX/MIN)		650/ 10	650/ 11
CORROSION ALLOWANCE		.1250"	.1250"
NUMBER OF PASSES		CROSS	2
RADIOGRAPHIC EXAMINATION		SPOT(RT-3)	SPOT(RT-3)
HEAT TREAT REQUIRED		NO	NO
ESTIMATED WEIGHTS, LBS.			
DRY: 20000	BUNDLE: 13000	WET: 30000	
SPECIFICATIONS			
ASME CODE SECTION VIII DIV.1 STAMP YES		M.W. KELLOGG SPECS	
TEMA CLASS R		06E-111-IFCDS,C41-1E-6636	
NATIONAL BOARD REGISTRATION REQUIRED		4-7TS-6636,9-4S-6636 (P42-1TS-6636) 23	
		MATERIAL	RECEIVED
CHANNEL:	SA-516-70	SEP 10 1991 KCI CONSTRUCTORS, INC.	
SHELL:	SA-516-70		
TUBESHEETS:	SA-350-LF2		
BAFFLES:	SA36		
TUBES:	SA-214		
(330) 1 3/4" O.D.X .083" MIN.		X 24'-0" ST. LGT	
TUBE PITCH 1" ☐		SURFACE 3205 SQ.FT.	
GENERAL NOTES			
ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.			
<u>MAX. ALLOWABLE PRESSURES:</u>			
<u>SHELLSIDE:</u>			
MAWP (HOT & CORR.) = 103 PSIG LIM. BY SHELL FLANGE BOLTING			
MAP (N & C) = 103 PSIG LIM. BY SHELL FLANGE BOLTING			
<u>TUBESIDE:</u>			
MAWP (HOT & CORR.) = 103 PSIG LIM. BY CHANNEL FLANGE BOLTING			
MAP (N & C) = 103 PSIG LIM. BY CHANNEL FLANGE BOLTING			
MINIMUM DESIGN METAL TEMP = +10°F			
GASKETS: .1250" THK. AIDJNAF			
2 SETS OF SPARE GASKETS REQUIRED.			
CUST:	M.W.KELLOGG/TENNECO	CERTIFIED MH	
P.O. NO.:	6636-99D1-C210-01 ✓	DATE 7/16/91	
ITEM NO.:	06E-111 ✓		
SERVICE : METHANOL COLUMN REBOILER			
SHIP TO : LAPORTE , TX.			
OHMSTEDE JOB NO.:28389			
06-E-111			

FOR PAINTING SEE DWG #28389 SHT. #15 NOTE #15.

INSULATION: (BY OTHERS)
SHELLSIDE: 1 1/2" THK.
CHAN. SIDE: 2" THK.

△	C1	3/4"-6000# CPLG W/ PLUG	CHANNEL VENT W/ PLUG
△	C2	3/4"-6000# CPLG W/ PLUG	CHANNEL DRAIN W/ PLUG
	T1	8"-150#RFLWN	CHANNEL INLET
	T2	3"-150#RFLWN	CHANNEL OUTLET
	S2B	8"-150#RFLWN	SHELL OUTLET
	S2A	8"-150#RFLWN	SHELL OUTLET
	SIB	2"-150#RFLWN	SHELL INLET
	SIA	2"-150#RFLWN	SHELL INLET
	MK	SIZE-RATE	SERVICE

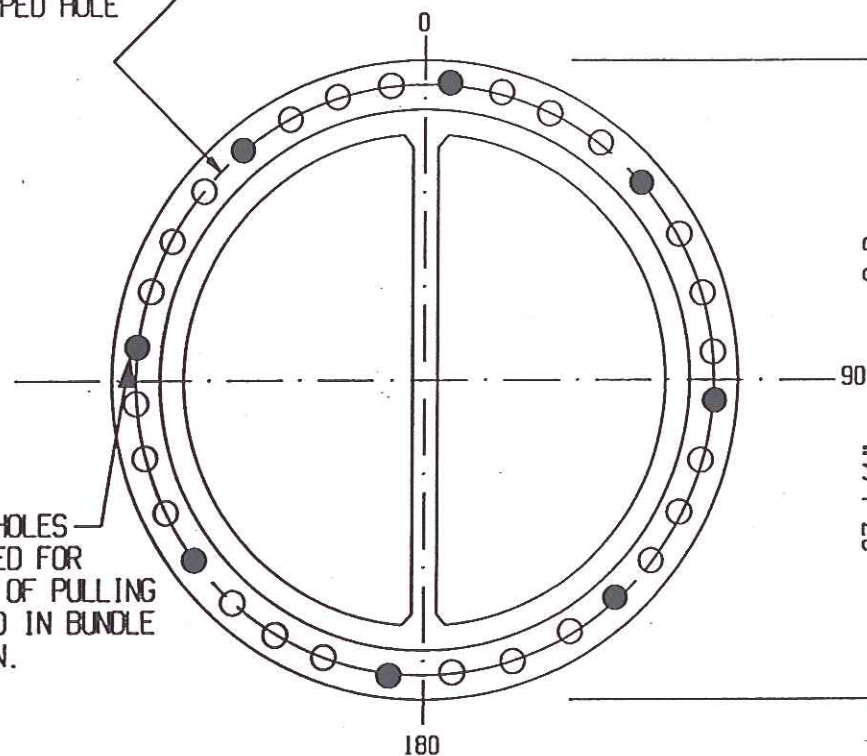
NO.	DATE	REVISIONS
2	8-9	REV. PER CUSTOMER C.C.
1	6-7	FOR FAB. & CUST. REVIEW.
0	3-5-91	FOR CUSTOMER APPROVAL

ASSEMBLY AND SPECIFICATIONS FOR			
ONE 32-288		B X U	
DWN. BY	GEO	OHMSTEDE	
DATE	3-1-91		
CKD. BY	JIC		
DRAWING NO.	28389	SHEET NO.	1
		REV.	2

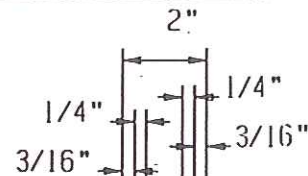
DRILL (32) HOLES EQUALLY SPACED TO STRADDLE CTR. LINES.
 DRILL & TAP (8) HOLES 3/4" -10TPI THRU EO. SPACED.
 DRILL (24) HOLES 7/8" DIA.
 CHORD= 3.4919

● = TAPPED HOLE

(4)
 THREADED HOLES
 MAY BE USED FOR
 INSERTION OF PULLING
 EYE TO AID IN BUNDLE
 EXTRACTION.



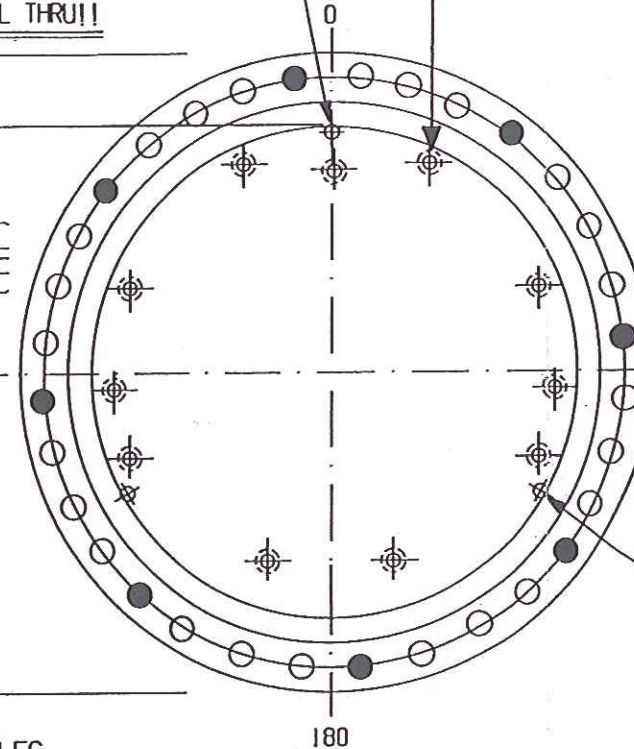
CHANNEL SIDE



STARTING POINT FOR (3) HOLES:
 DRILL 5/16" DIA. X 1" DP. TO
 POINT OF DRILL & TAP 3/8"-16NC
 EO. SPACED 120 DEG. APART ON
 31 9/16" DIA. CIRCLE (SHELLSIDE
 ONLY) SEE DETAIL GUIDE PIN.
 DO NOT DRILL THRU!!

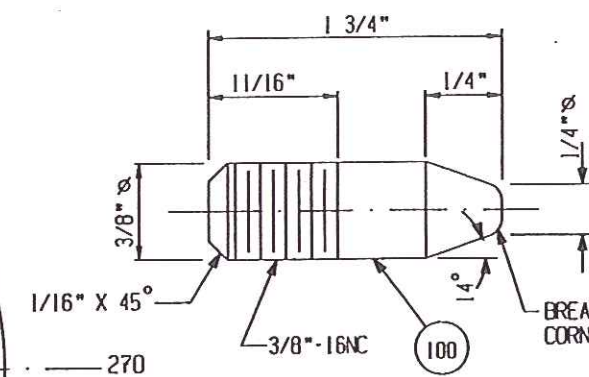
90 15 31/32" TO
 O.D. GUIDE PIN
 (TYP)

SHOP NOTE:
 D & T GUIDE PIN HOLES
 BEFORE MACHINING 31 7/8"
 DIA. SHELLSIDE TURN.



SHELL SIDE

DRILL & TAP 3/4" DEEP FOR 11- 1/2" DIA.
 TIE RODS ON SHELL SIDE OF
 # 19 TUBESHEET. DO NOT DRILL THRU!!
 (SEE TUBE LAYOUT FOR LOCATIONS.)

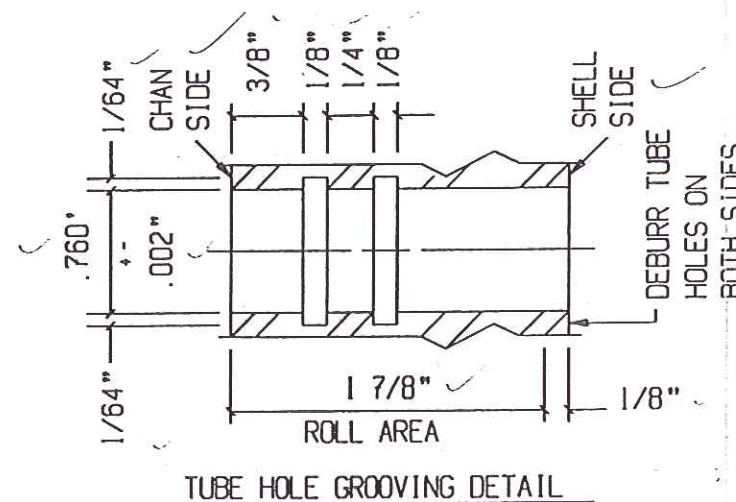


DETAIL GUIDE PIN
 (3) REQ'D.

100 (3) PLACES

ACCEPTANCE FOR ENGINEERING USE	
THIS DOCUMENT IS:	
ACCEPTED	(AC) ☒
ACCEPTED WITH COMMENTS	(AC-C) ☐
NOT REVIEWED-ACCEPTED	(NR) ☐
NOT ACCEPTED	(NAC) ☐
ACCEPTANCE DOES NOT RELIEVE VENDOR FROM FURNISHING MATERIAL IN CONFORMANCE WITH ORDER. REFER TO VDR-1 FOR FULL DEFINITION OF ACCEPTANCE CONDITIONS	
DIVISION <u>VM</u>	SIGNED <u>RTD</u>
DATE <u>02 AUG 91</u>	

02 JUL 91



NOTES:

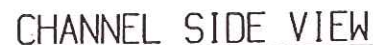
- 1) MACHINE ALL GASKET SURFACES TO 125 RMS.
- 2) ALL PASS PLATE GROOVE WIDTHS TO BE 1/2" WIDE.
- 3) ALL PASS PLATE GROOVE JUNCTIONS TO BE NOTCHED 3/8" AT 45 Deg.

CUST: M.W.KELLOGG/TENNECO
 P.O. NO.: 6636-9901-C210-01
 ITEM NO.: 06E-111
 SERVICE: METHANOL COLUMN REBOILER
 SHIP TO: LAPORTE, TX.
 OHMSTEDE JOB NO.: 28389

TUBESHEET DETAILS

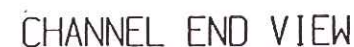
OHMSTEDE

0	6-7	FOR FAB. & CUST. REVIEW	OWN. BY ERIC	DATE 6- 6-91	CKD. BY	DRAWING NO.	SHEET NO.	REV
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1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #S/PI-1, #A/PI-1, M3TR
2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
3) SEE DWG. 28389 SHT.#14 FOR WELD & BEVEL DETAILS.
4) SPOT RADIOGRAPHY. (RT-3)

LIFT LUG PER DWG
28389 SHT. #11
(N.S.) & (F.S.)
ON 60° & 300° E.




**ACCEPTANCE
FOR ENGINEERING USE**

THIS DOCUMENT IS:

ACCEPTED (AC) ☒

ACCEPTED WITH COMMENTS (AC-C) ☐

NOT REVIEWED-ACCEPTED (NR) ☐

NOT ACCEPTED (NAC) ☐

ACCEPTANCE DOES NOT RELIEVE VENDOR
FROM FURNISHING MATERIAL IN
CONFORMANCE WITH ORDER. REFER TO
VDR-1 FOR FULL DEFINITION OF
ACCEPTANCE CONDITIONS

DIVISION VM SIGNED BJT
DATE 12 AUG 63

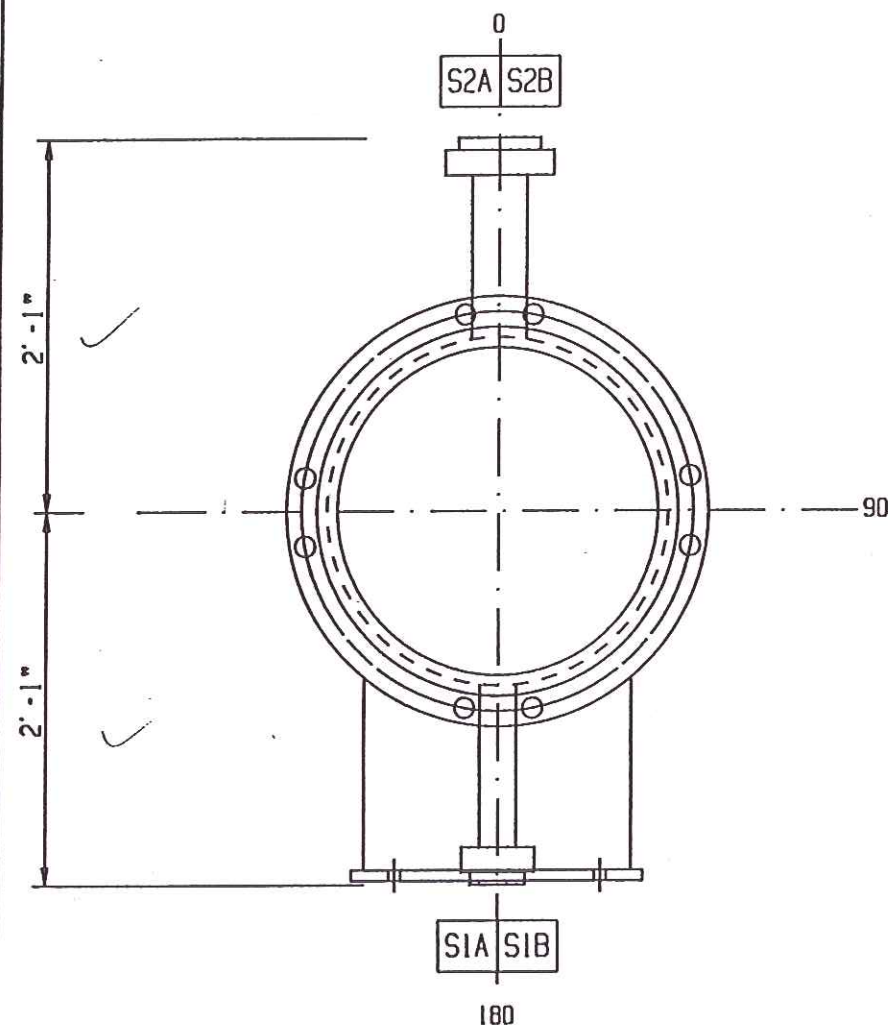
RECEIVED
AUG 16 1991

KCI CONSTRUCTORS, INC.

CUST: M.W.KELLOGG/TENNECO
P.O. NO.: 6636-99D1-C210-D1
ITEM NO.: 06E-111
SERVICE: METHANOL COLUMN REBOILER
SHIP TO: LAPORTE, TX.
OHMSTEDE JOB NO.: 28389

			FRONT CHANNEL DETAILS ✓			
			OWN. BY ERIC	OHMSTEDE		
			DATE 6- 6-91			
0	6-7	FOR FAB. & CUST. REVIEW	CKD. BY DC			
NO.	DATE	REVISIONS				

FOR FLANGE DETAILS SEE DWG. 28389 SHT. #13

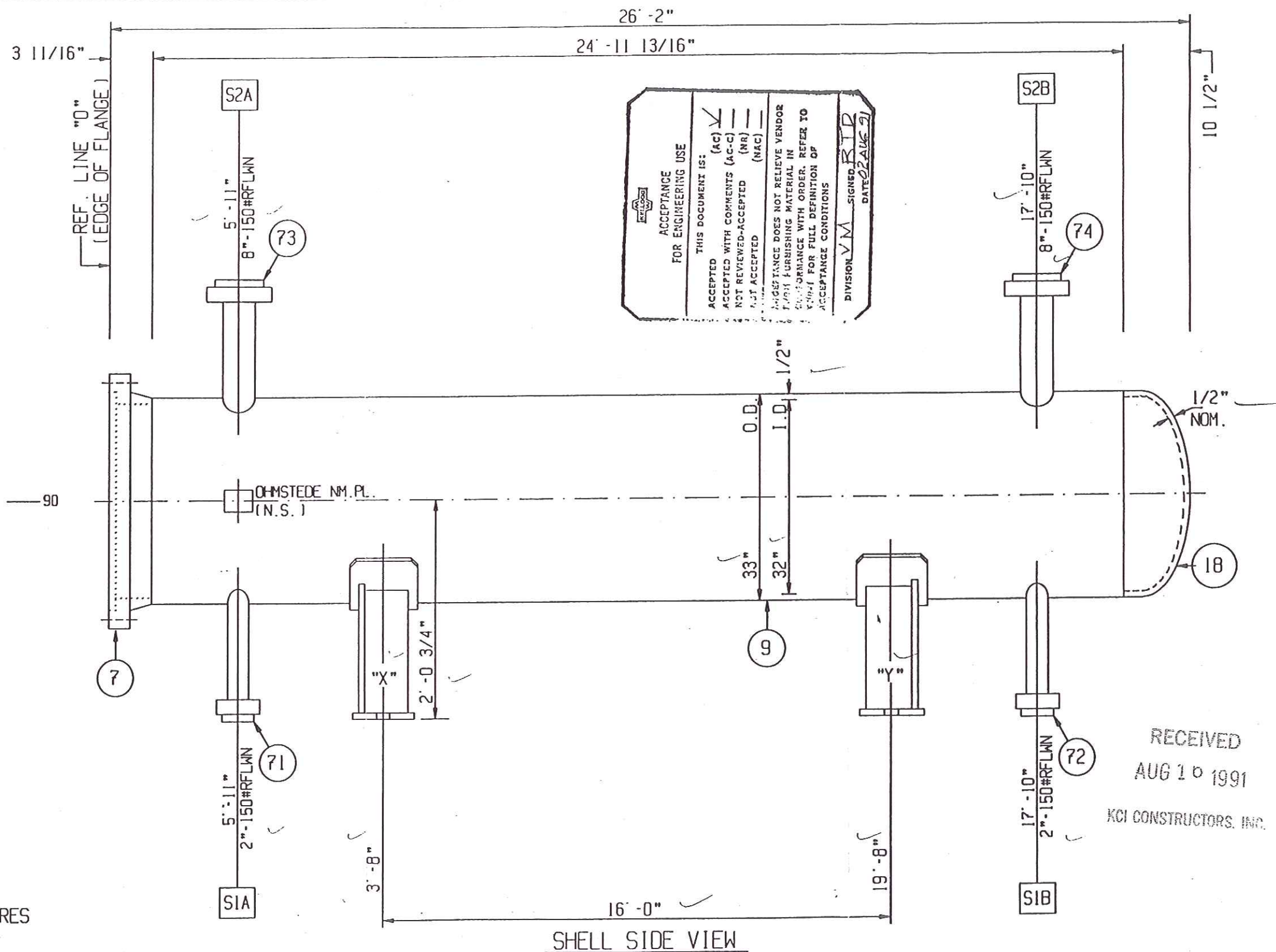


SHELL END VIEW

NOTES :

- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #S/PI-1, #A/PI-1, #M3TR
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28389 SHT.#14 FOR WELD & BEVEL DETAILS.
- 4) GRIND ALL INSIDE WELDS FLUSH.
- 5) SPOT RADIOGRAPHY. (RT-3)

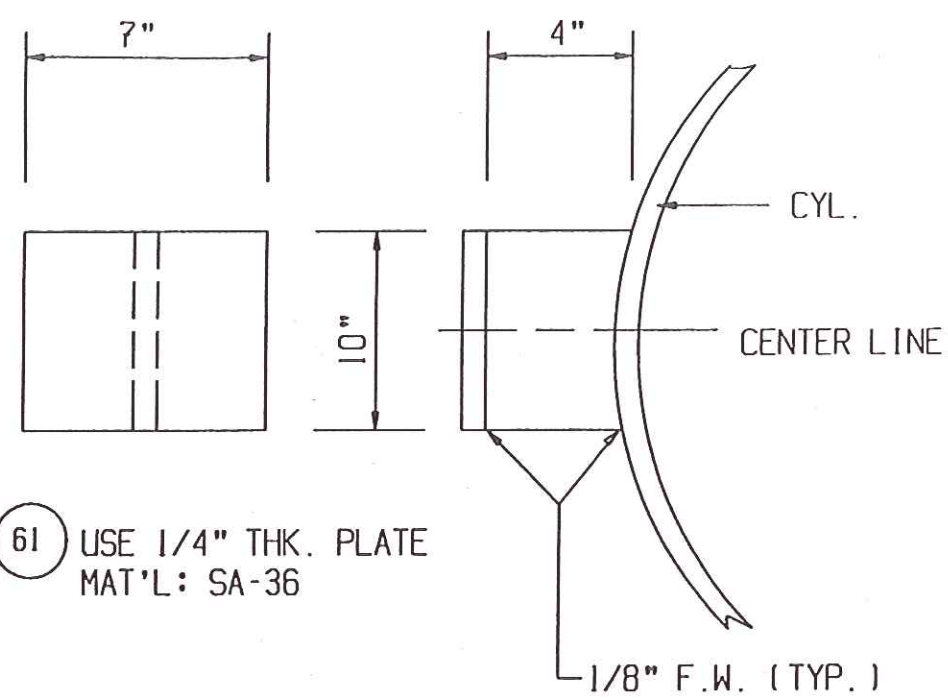
CUST: M.W.KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: 06E-111
SERVICE: METHANOL COLUMN REBOTLER
SHIP TO: LAPORTE, TX.
OHMSTEDE JOB NO.:28389



RECEIVED
AUG 16 1991

KCI CONSTRUCTORS, INC.

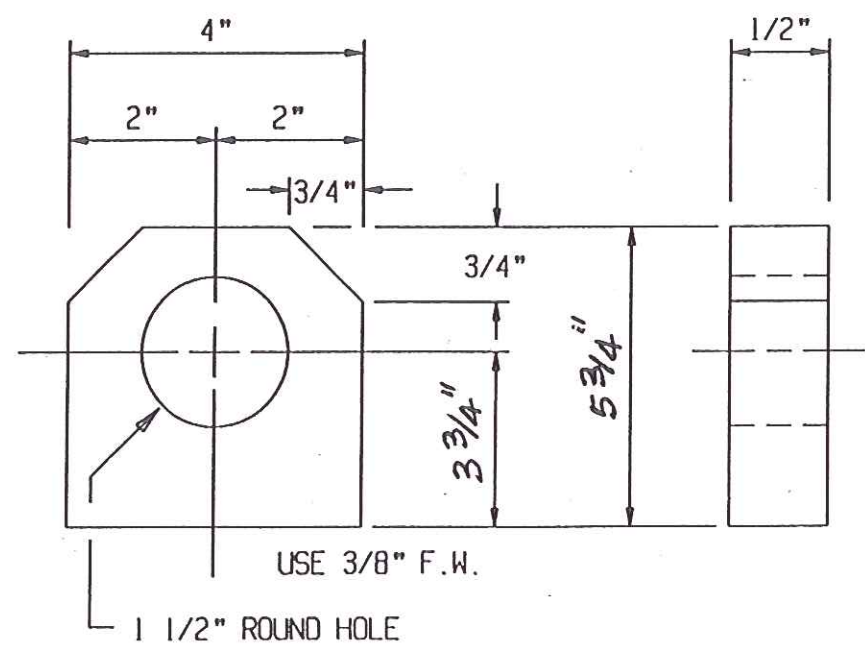
			SHELL DETAILS ✓			
			DWN. BY ERIC		OHMSTEDE	
			DATE 6- 6-91			
0	6-7	FDR FAB. & CUST. REVIEW	DC	CKD. BY DC		
NO.	DATE	REVISIONS				
				DRAWING NO. 28389 ✓	SHEET NO. 4 ✓	REV. 0 ✓



61 USE 1/4" THK. PLATE
MAT'L: SA-36

(ONE) REQ'D.

NAME PLATE BRACKET DETAIL



62
SA-516-70

NO. REQUIRED: (2)

LIFTING LUG DETAIL

ACCEPTANCE FOR ENGINEERING USE	
THIS DOCUMENT IS:	
ACCEPTED	(AC) ☒
ACCEPTED WITH COMMENTS	(AC-C) ☐
NOT REVIEWED-ACCEPTED	(NR) ☐
NOT ACCEPTED	(NAC) ☐
ACCEPTANCE DOES NOT RELIEVE VENDOR FROM FURNISHING MATERIAL IN CONFORMANCE WITH ORDER. REFER TO VDR-1 FOR FULL DEFINITION OF ACCEPTANCE CONDITIONS	
DIVISION <u>VN</u>	SIGNED <u>BTD</u> DATE <u>02 AUG 91</u>

MATERIAL: 18-8 STN. STL. (16 GA)

60

NATIONAL BOARD NO. *	
CERTIFIED AND MANUFACTURED BY	
Ohmstede, Inc.	
☐ ST. GABRIEL	☐ LAKE CHARLES
☒ LA PORTE	☐ CORPUS CHRISTI
RT-3	
MAWP	SHELL TUBE
103 PSI	103 PSI
AT	
MAX. DESIGN TEMP.	650 °F
TEST PRESS.	155 PSI
MIN. DESIGN METAL TEMP.	10 °F @ 103 PSI
ITEM NO. 06E-111	SERIAL NO. 28389
SIZE 32 X 288	TYPE B X U
P.O. NO. 6636-9901-C210-01	YEAR BUILT 1991
SERVICE: METHANOL COLUMN REBOILER SHELLSIDE & TUBESIDE MAX. EXT. PRESS= 15 PSI @ 650 F.	

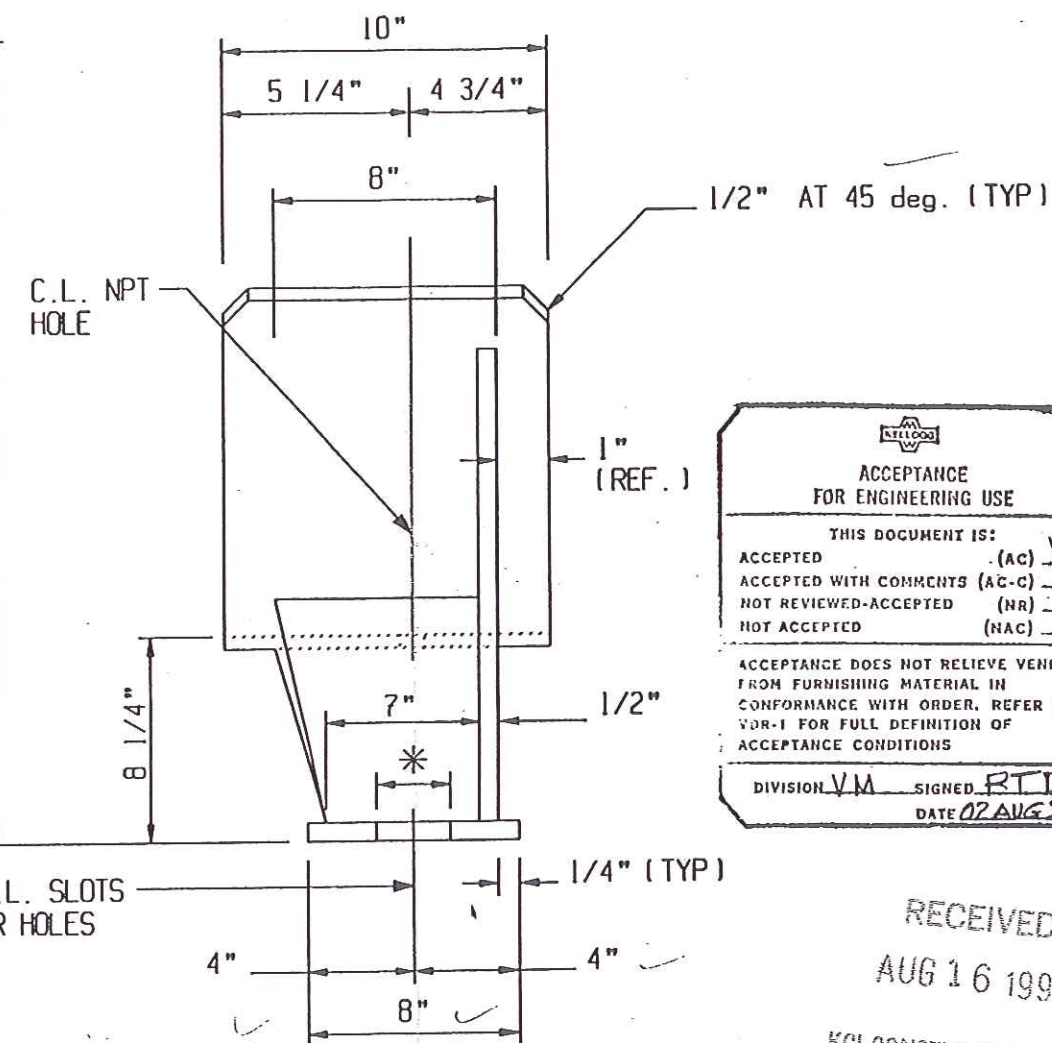
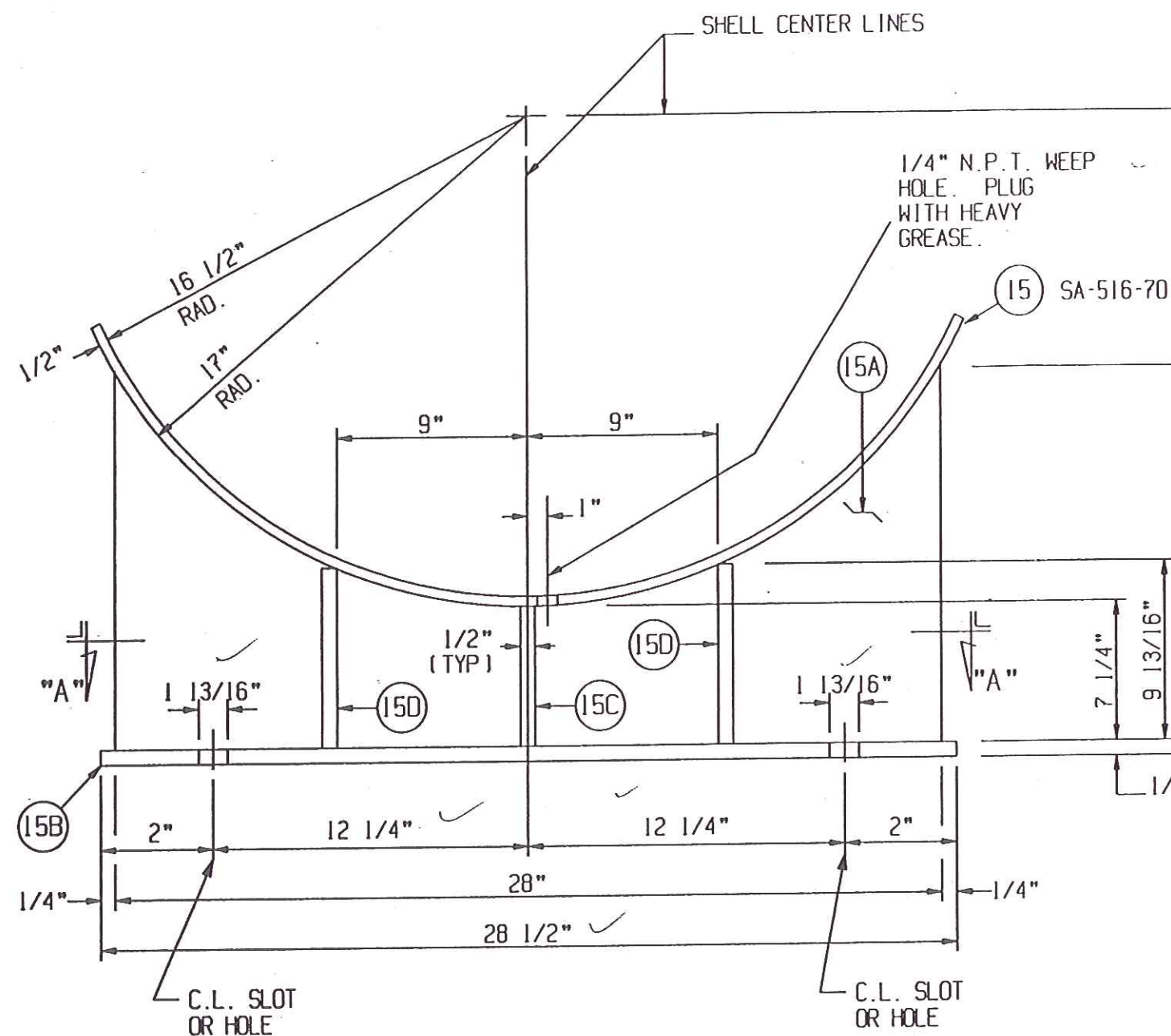
*TO BE ASSIGNED AT TIME OF SHIPMENT

MAX. ALLOW. PRESS. (NEW & COLD)	RECEIVED
SHELLSIDE: 103 PSIG	AUG 16 1991
TUBESIDE: 103 PSIG	KCI CONSTRUCTORS, INC.
SHOP TEST PRESS.	
SHELLSIDE: 155 PSIG	
TUBESIDE: 155 PSIG	

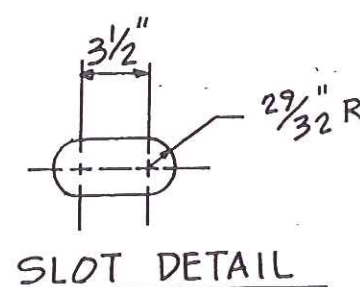
60 SUPPLEMENTARY NAME PLATE
USE BACKSIDE OF STD. NAME PLATE

CUST: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: 06E-111
SERVICE: METHANOL COLUMN REBOILER
SHIP TO: LAPORTE, TX.
OHMSTEDE JOB NO.: 28389

NAME PL., BRKT. & LIFT LUGS	
OWN. BY ERIC	OHMSTEDE
DATE 6-6-91	
CKD. BY DC	DRAWING NO. 28389
NO.	SHEET NO. 11
DATE	REV. 0
FOR FAB. & CUST. REVIEW	
REVISIONS	

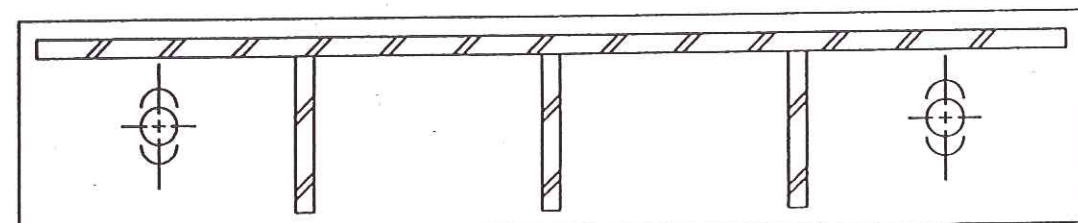


ACCEPTANCE FOR ENGINEERING USE	
THIS DOCUMENT IS:	
ACCEPTED	(AC) ☒
ACCEPTED WITH COMMENTS	(AC-C) ☐
NOT REVIEWED-ACCEPTED	(NR) ☐
NOT ACCEPTED	(NAC) ☐
ACCEPTANCE DOES NOT RELIEVE VENDOR FROM FURNISHING MATERIAL IN CONFORMANCE WITH ORDER. REFER TO VDR-1 FOR FULL DEFINITION OF ACCEPTANCE CONDITIONS	
DIVISION VM	SIGNED RTD DATE 02 AUG 91



CUST: M.W. KELLOGG/TENNECO
 P.O. NO.: 6636-9901-C210-01
 ITEM NO.: 06E-111
 SERVICE: METHANOL COLUMN REBOILER
 SHIP TO: LAPORTE, TX.
 OHMSTEDE JOB NO.: 28389

* ONE REQUIRED MARKED 'X' W/ (2) SLOTS PER DETAIL
 ONE REQUIRED MARKED 'Y' W/ (2) 1 13/16\"/>

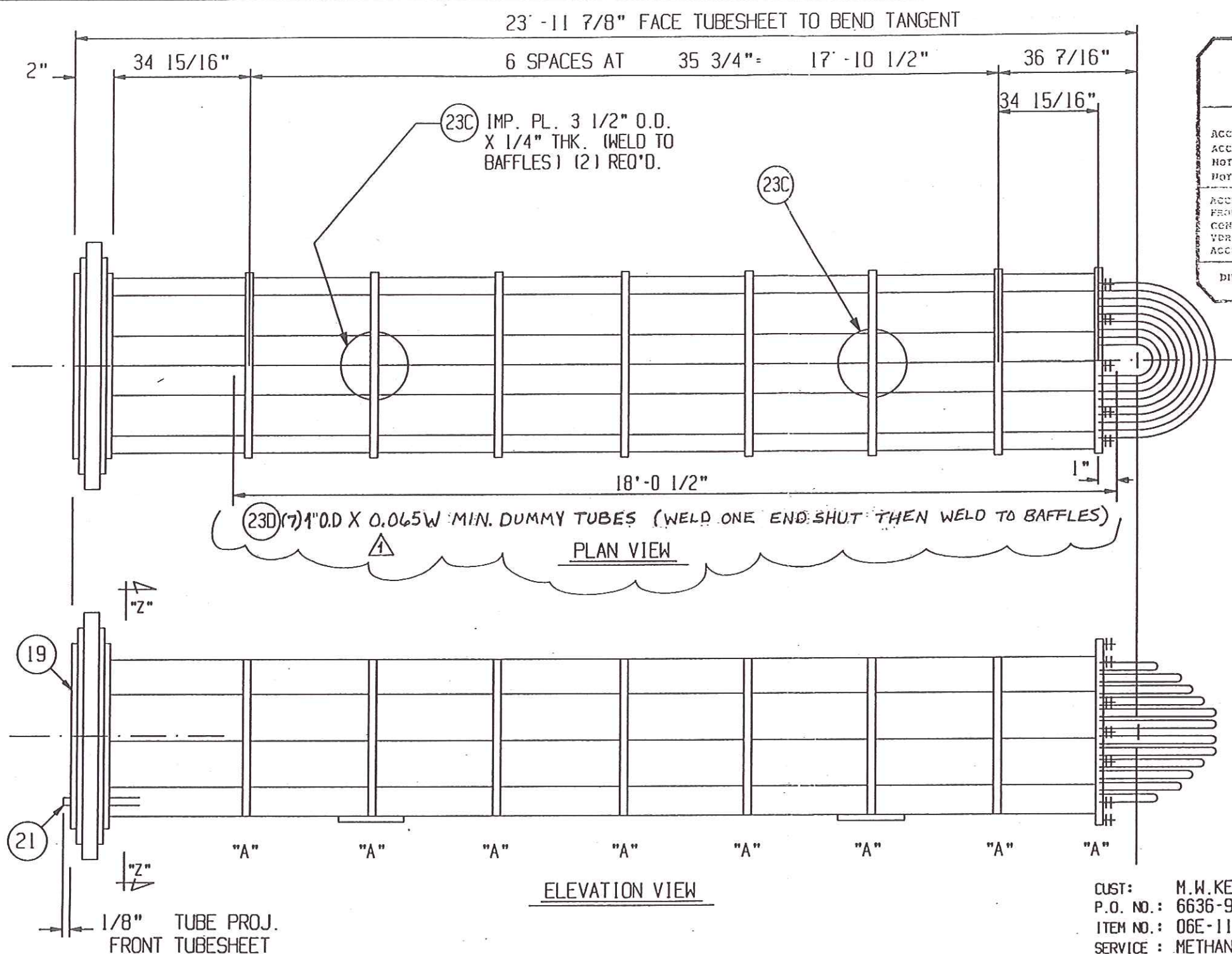


SECTION "A-A"

SUPPORT DETAILS

OHMSTEDE

			SUPPORT DETAILS			
			OHMSTEDE			
0	6-7	FOR FAB. & CUST. REVIEW	DC	OWN. BY ERIC		
				DATE 6- 6-91		
NO.	DATE	REVISIONS		CKD. BY DC	DRAWING NO. 28389	SHEET NO. 10
						REV. 0



ACCEPTANCE FOR ENGINEERING USE

THIS DOCUMENT IS:

ACCEPTED (AC) ☒

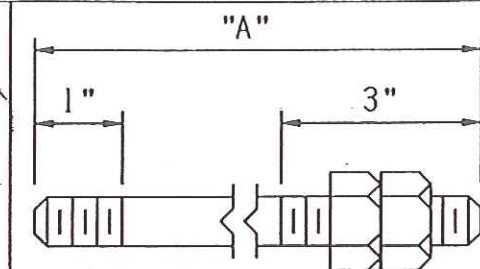
ACCEPTED WITH COMMENTS (AC-C) ☐

NOT REVIEWED-ACCEPTED (NR) ☐

NOT ACCEPTED (NAC) ☐

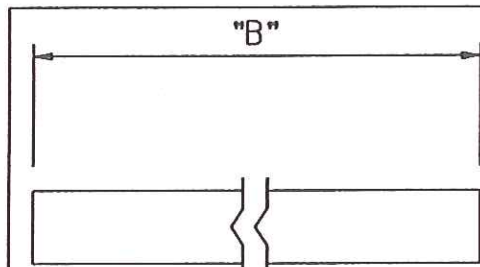
ACCEPTANCE DOES NOT RELIEVE VENDOR FROM FURNISHING MATERIAL IN CONFORMANCE WITH GSA ORDER TO VDR-1 FOR FULL DESCRIPTION OF ACCEPTANCE CONDITIONS

DIVISION VM SIGNED: RJP DATE: 24 AUG 91



MAT'L: H.R. STEEL (23B)
1/2" O.D. TIE RODS (23)

REQ'D.	"A"
11	23' - 10 7/8"



MAT'L: A-214 (23A)
3/4" O.D. SPACER TUBING

REQ'D.	"B"
11	34 3/4"
66	35 3/8"
11	34 9/16"

RECEIVED
SEP 10 1991
KCI CONSTRUCTORS, INC.

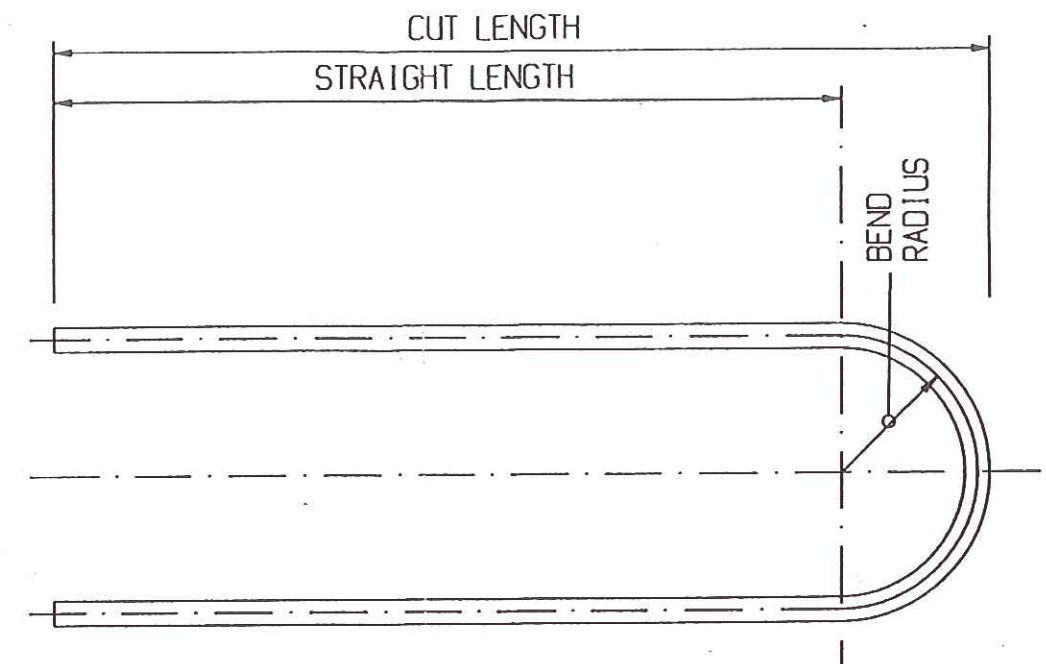
CUST: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01 ✓
ITEM NO.: 06E-111 ✓
SERVICE: METHANOL COLUMN REBOILER
SHIP TO: LAPORTE, TX.
OHMSTEDE JOB NO.: 28389

NOTES:

1) SEE DWG. NO. 28389 SHT. #9 FOR SECTION AND VIEW DETAILS.

BUNDLE DETAILS			
		OWN. BY ERIC	OHMSTEDE
		DATE 6-6-91	
		CKD. BY DC	
		DRAWING NO. 28389 ✓	
1	8-9	REV. PER CUSTOMER C.C.	SHEET NO. 8
0	6-7	FOR FAB. & CUST. REVIEW	
NO.	DATE	REVISIONS	REV. 1

ROW	NO. OF TUBES	BEND RADIUS	BEND DIAMETER	BEND LENGTH	STRAIGHT LENGTH	CUT LENGTH	ORDER LENGTH
A	28	1 1/8" ✓	2 1/4"	0' -3 9/16"	24' -0" ✓	24' -1 1/2"	48' -3 9/16"
B	28	2 1/8"	4 1/4"	0' -6 11/16"	24' -0"	24' -2 1/2"	48' -6 11/16"
C	28	3 1/8"	6 1/4"	0' -9 7/8"	24' -0"	24' -3 1/2"	48' -9 7/8"
D	28	4 1/8"	8 1/4"	1' -1"	24' -0"	24' -4 1/2"	49' -1"
E	27	5 1/8"	10 1/4"	1' -4 1/8"	24' -0"	24' -5 1/2"	49' -4 1/8"
F	27	6 1/8"	12 1/4"	1' -7 1/4"	24' -0"	24' -6 1/2"	49' -7 1/4"
G	26	7 1/8"	14 1/4"	1' -10 7/16"	24' -0"	24' -7 1/2"	49' -10 7/16"
H	25	8 1/8"	16 1/4"	2' -1 9/16"	24' -0"	24' -8 1/2"	50' -1 9/16"
J	24	9 1/8"	18 1/4"	2' -4 11/16"	24' -0"	24' -9 1/2"	50' -4 11/16"
K	23	10 1/8"	20 1/4"	2' -7 13/16"	24' -0"	24' -10 1/2"	50' -7 13/16"
L	21	11 1/8"	22 1/4"	2' -11"	24' -0"	24' -11 1/2"	50' -11"
M	17	12 1/8"	24 1/4"	3' -2 1/8"	24' -0"	25' -0 1/2"	51' -2 1/8"
N	14	13 1/8"	26 1/4"	3' -5 1/4"	24' -0"	25' -1 1/2"	51' -5 1/4"
O	11	14 1/8"	28 1/4"	3' -8 3/8"	24' -0"	25' -2 1/2"	51' -8 3/8"
P	3	15 1/8"	30 1/4"	3' -11 9/16"	24' -0"	25' -3 1/2"	51' -11 9/16"



TOTAL NO. REQUIRED: 330 U-TUBES ✓
 SIZE: 3/4" O.D. X 0.083" MIN. ✓
 MATERIAL: SA-214 ✓

MAXIMUM OUT-OF-ROUNDNESS OF TUBES AT
 U-BENDS NOT TO EXCEED 10%.

QUANTITIES SHOWN ARE FOR
 ONE SET OF U-TUBES,
 1 -SET REQ'D. TOTAL.

RECEIVED
 AUG 16 1991

KCI CONSTRUCTORS, INC.

CUST: M.W.KELLOGG/TENNECO
 P.O. NO.: 6636-99D1-C210-01 ✓
 ITEM NO.: 06E-111 ✓
 SERVICE: METHANOL COLUMN REBOILER
 SHIP TO: LAPORTE, TX.
 OHMSTEDE JOB NO.: 28389

 ACCEPTANCE FOR ENGINEERING USE	
THIS DOCUMENT IS:	
ACCEPTED	(AC) ✓
ACCEPTED WITH COMMENTS	(AC-C) —
NOT REVIEWED-ACCEPTED	(NR) —
NOT ACCEPTED	(NAC) —
ACCEPTANCE DOES NOT RELIEVE VENDOR FROM FURNISHING MATERIAL IN CONFORMANCE WITH ORDER. REFER TO VDR-1 FOR FULL DEFINITION OF ACCEPTANCE CONDITIONS	
DIVISION <u>VM</u> SIGNED <u>BTD</u> DATE <u>02 AUG 91</u>	

			TUBE BENDING SCHEDULE		
			OWN. BY ERIC		OHMSTEDE
			DATE 6- 6-91		
			CKD. BY DC		
0	6-7	FOR FAB. & CUST. REVIEW	DC	DRAWING NO.	28389 ✓
NO.	DATE	REVISIONS		SHEET NO.	7
				REV.	0