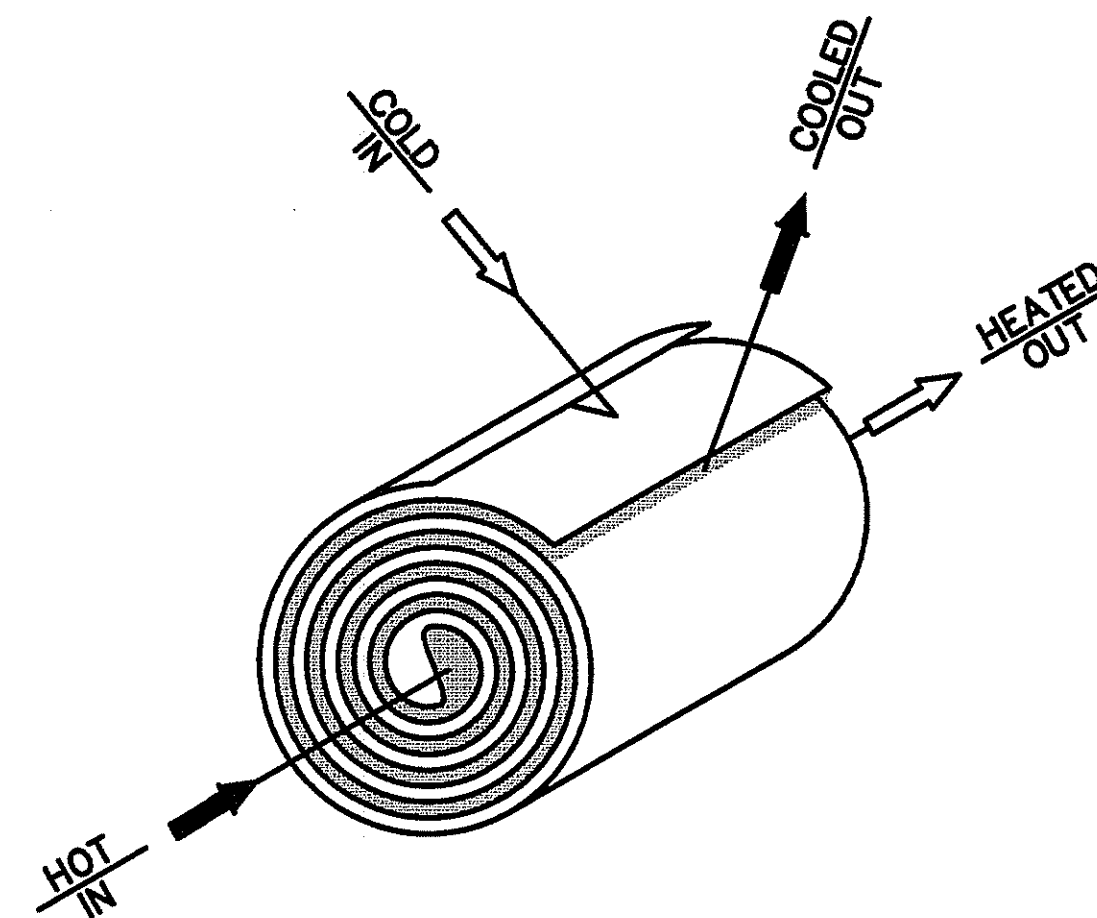
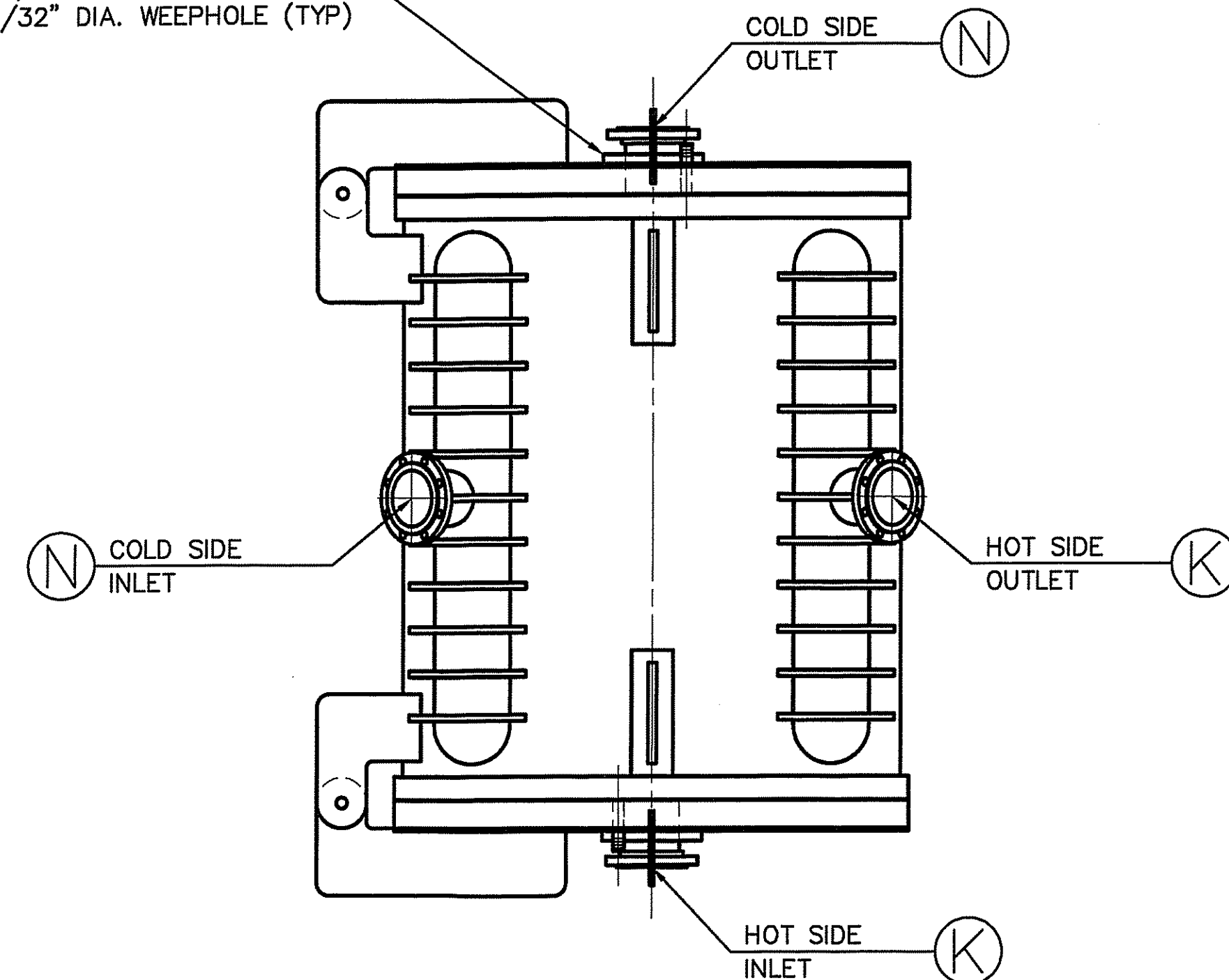
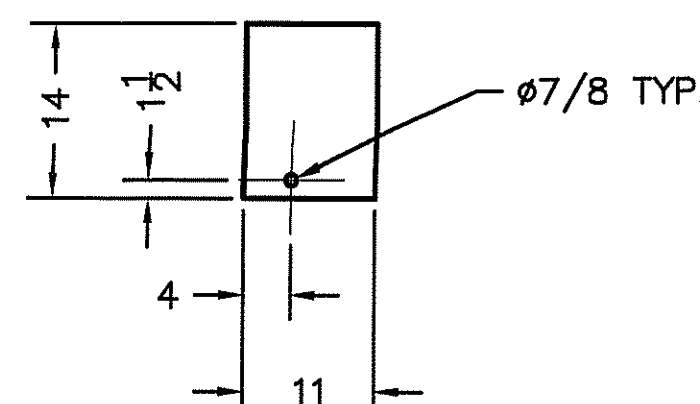
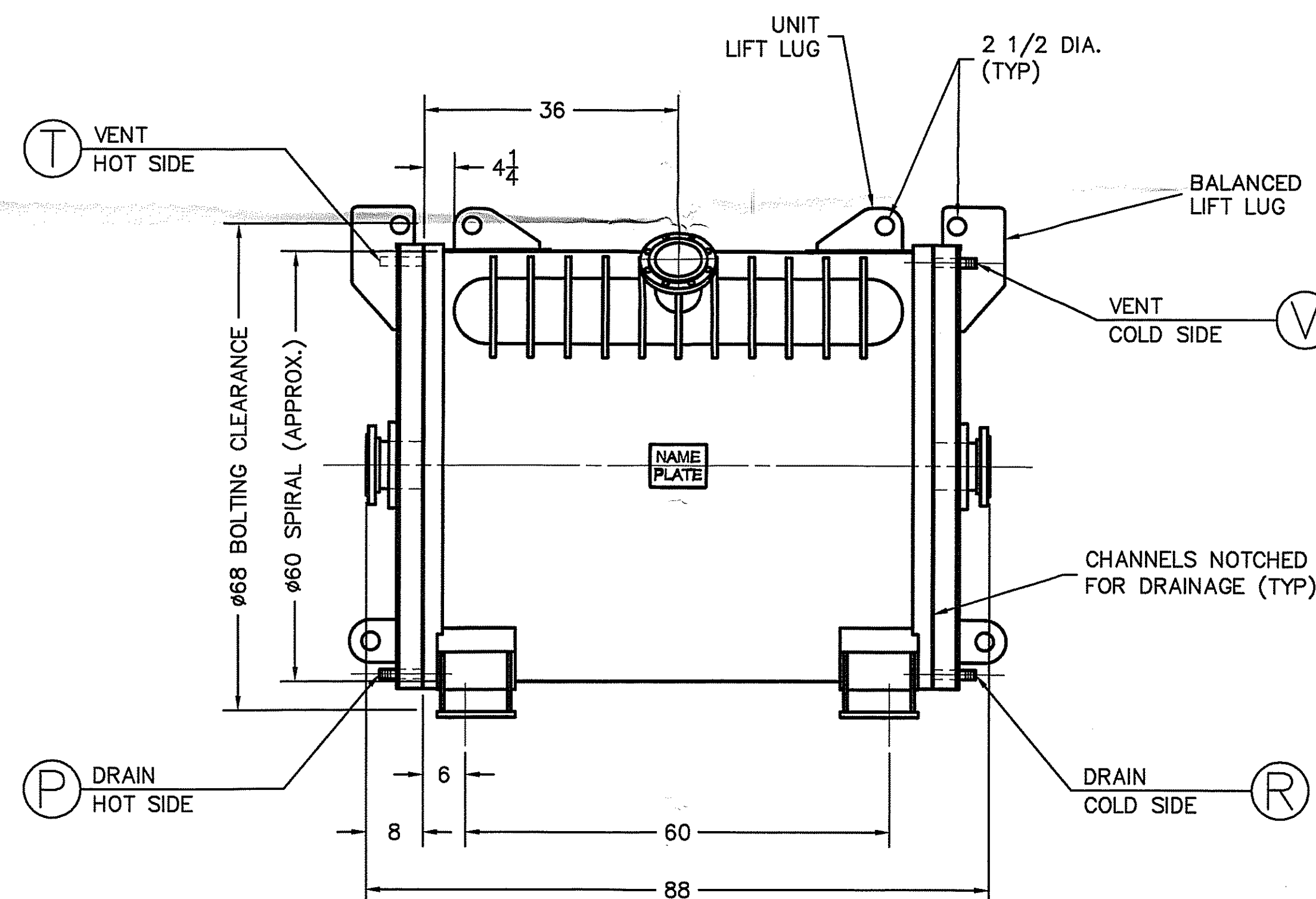
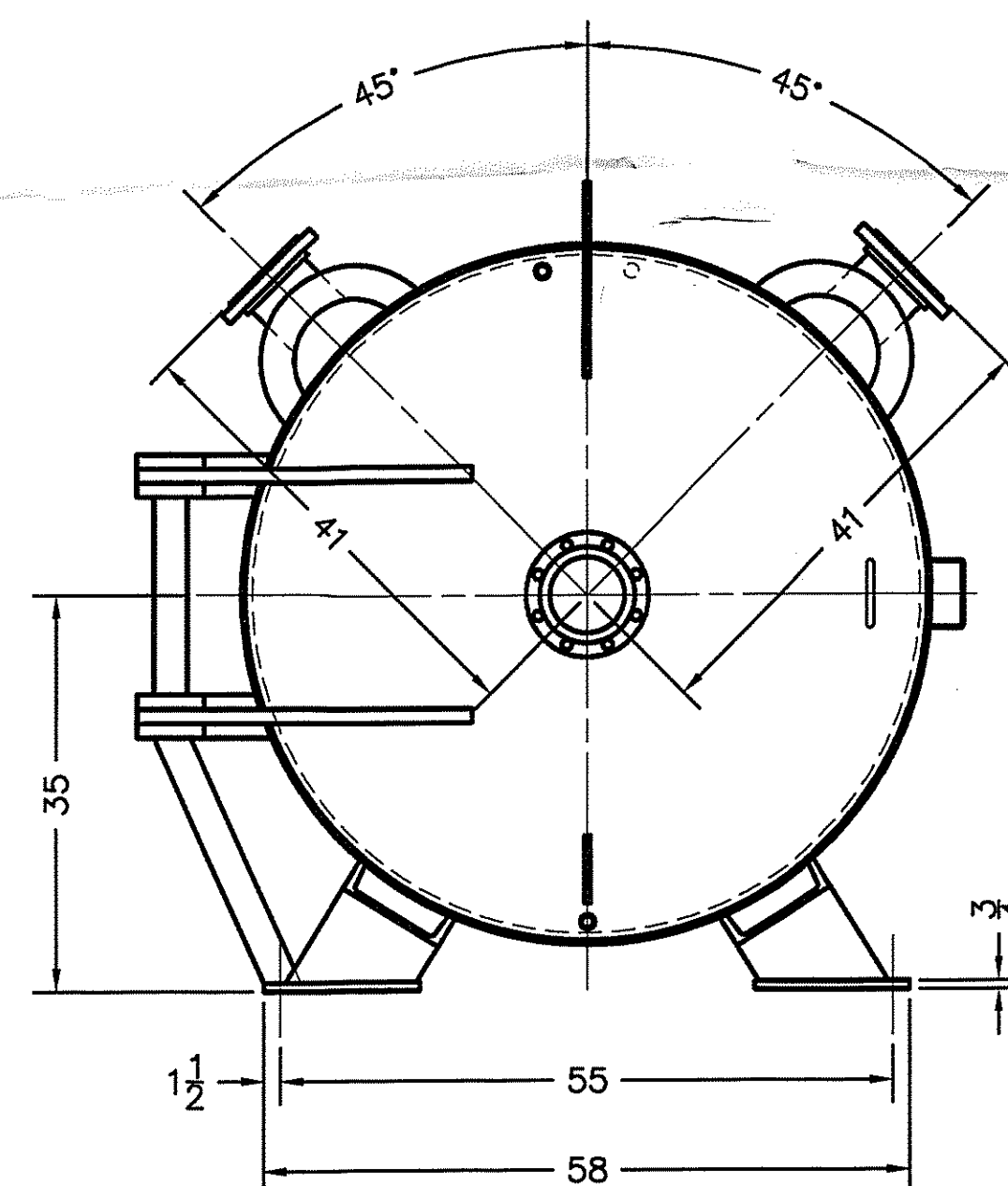


NOZZLE REINFORCING PAD
1 1/2" THK. x 12" O.D. WITH
11/32" DIA. WEEPHOLE (TYP)



FLOW PATTERN



MOUNTING PAD DETAIL

WARNING!!!

WHEN COVER IS REMOVED FOR INSPECTION OF ONE PASSAGE, BE SURE THERE IS NO PRESSURE IN THE OPPOSITE CHANNEL. IF PRESSURE IS TO BE APPLIED FOR TESTING WITH ONE COVER REMOVED, THE UNCOVERED SPIRAL MUST BE RETAINED BY SUITABLE HOLD DOWN BARS TO PREVENT PARTIAL TELESCOPING UNDER PRESSURE.

CAUTION:

UNIT MUST BE BOLTED DOWN WHILE OPENING

WEIGHTS (APPROX)

EMPTY = 25250 lbs FLOODED = 30500 lbs

PRESSURES

INNER CHANNEL (HOT SIDE) MAX. ALLOWABLE = 150 psig + FV WORKING PRESS. HYDROSTATIC TEST = 241 psig
OUTER CHANNEL (COLD SIDE) MAX. ALLOWABLE = 150 psig + FV WORKING PRESS. HYDROSTATIC TEST = 241 psig

DESIGN TEMP

INNER CHANNEL (HOT SIDE) MIN = 0 °F MAX = 400 °F
OUTER CHANNEL (COLD SIDE) MIN = 0 °F MAX = 400 °F

CHANNELS (ALTERNATE CHANNELS WELDED)

INNER CHANNEL (HOT SIDE) SPACING = 1/2 in
OUTER CHANNEL (COLD SIDE) SPACING = 1/2 in

SPIRAL

OUTER THICKNESS .3125 THK x 72 WIDE
MATERIAL SA-240-316L SS

NOTES:

- 1.) DESIGNED, CONSTRUCTED, AND STAMPED IN ACCORDANCE WITH A.S.M.E. CODE SEC VIII-DIV. 1, 1995 EDITION, ADDENDA 1995.
- 2.) ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED.
- 3.) ALL HEADS ARE SA-516-70(N), FACED WITH SA-240-316L SS.
- 4.) GASKETS- GYLON 3500, 1/8" THK. x 64" NOM. DIA.
- 5.) HOOKBOLT ASSY 42 PER COVER, 1" DIA. x 10" LG, SA-193, B7, ZINC PLATED.
- 6.) PAINT- CARBOLINE 193, COLOR: RED, 3 MILS D.F.T. BLAST PER SSPC-SP10
- 7.) TOLERANCE ON ALL DIMENSIONS ±1/8". TOLERANCE ON ANGULAR DIMENSIONS ±1/2° BOLT HOLES TO STRADDLE SHOWN CENTER LINES, ±1°
- 8.) LOCATION OF NAMEPLATE IS MFG OPTION.
- 9.) FOR WELD DETAILS SEE DRAWING NO. D-101.
- 10.) ALL ATTACHMENTS TO THE SPIRAL SHELL ARE SA-240-316L SS.

NOZZLES ARE SA-312-316L, SCH 40.

VENTS AND DRAINS ARE SA-312-316L, SCH 40.

FLANGES ARE SA-182-F316L.

MARK	REQ'D	SIZE	RATING	FACING	REMARKS
V	1	1"	***	NPT	CAPPED
T	1	1"	***	NPT	CAPPED
R	1	1"	***	NPT	CAPPED
P	1	1"	***	NPT	CAPPED
N	2	6"	150#	SO-RF	
K	2	6"	150#	SO-RF	

CERTIFIED PRINT

APPROVED FOR FABRICATION OR ERECTION

BY: J. Shulga DATE: 7/9/96

REVIEW
QC
AI

Alfa Laval Thermal Inc.

800 CHESTNUT STREET
LYKENS, PA 17048-0010



CUSTOMER: CIBA GEIGY CORP.

ORDER NO.: XQ3884-2099

ITEM NO.: 5053

OPTICAL BRIGHTENER RX POLYMER COOLER
1900 SQ. FT. SPIRAL HEAT EXCHANGER

JOB NO.: 964434 MFG NO.: 22612-22613

DRAWN BY: JR DATE: 6-13-96

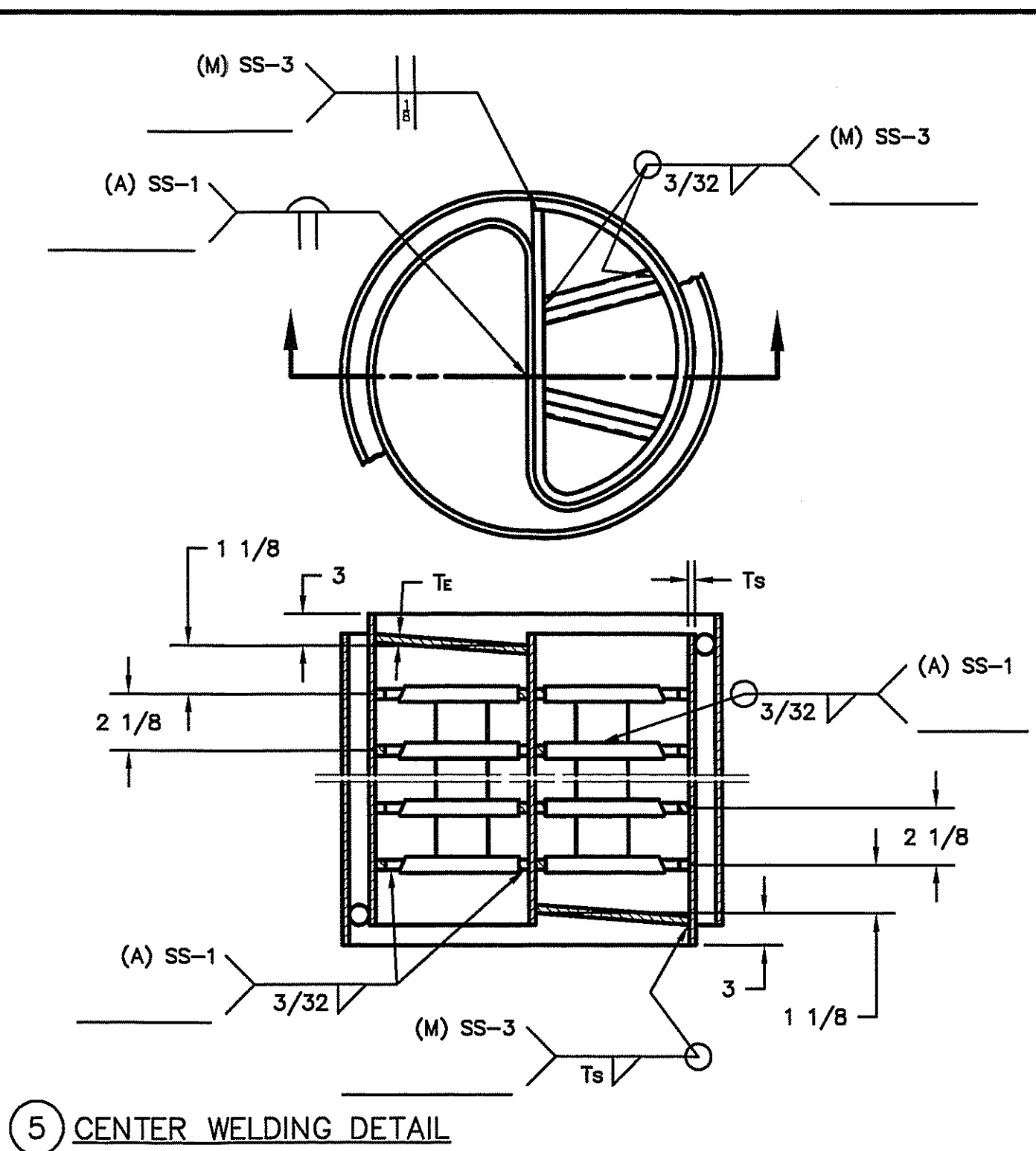
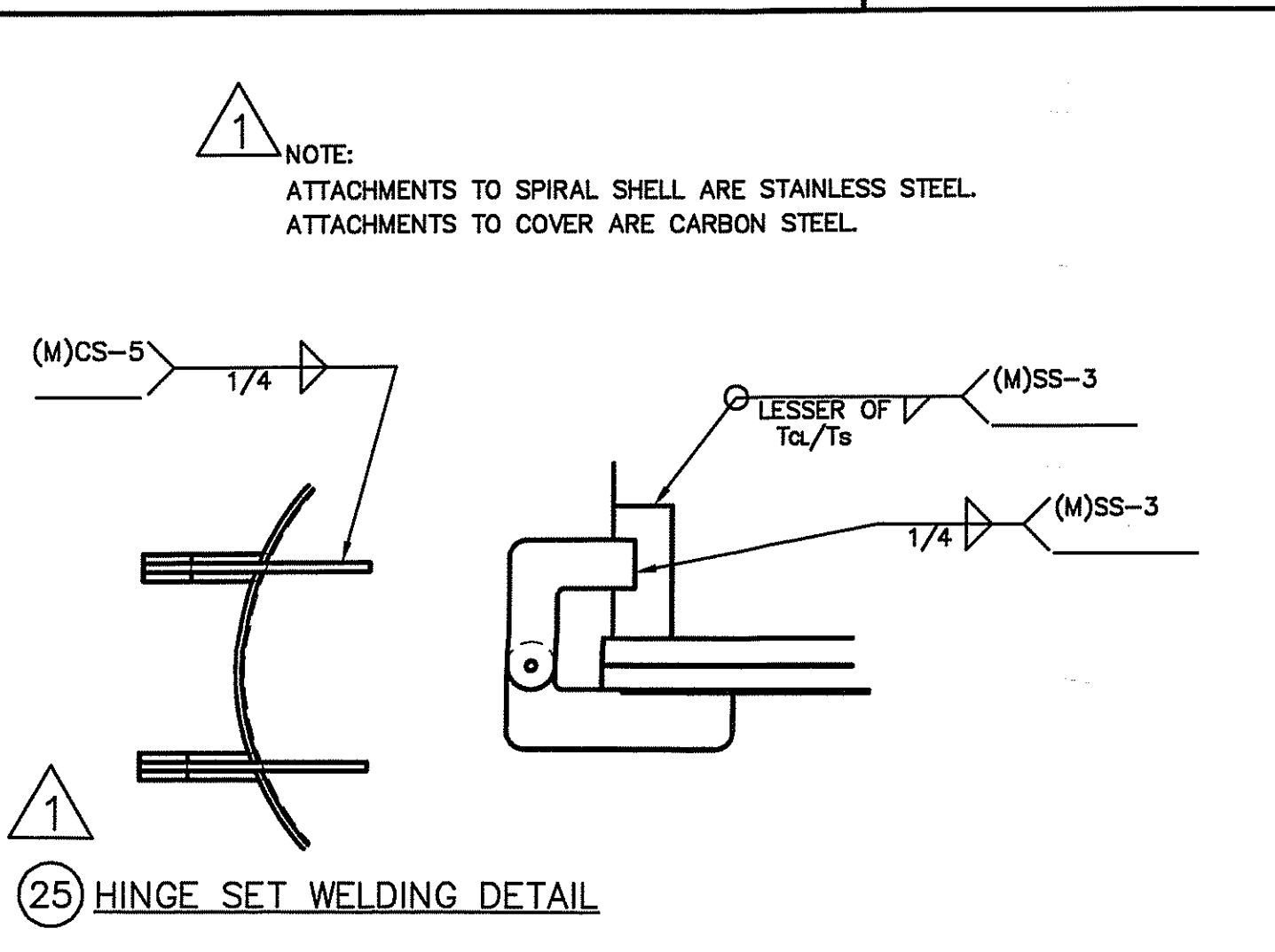
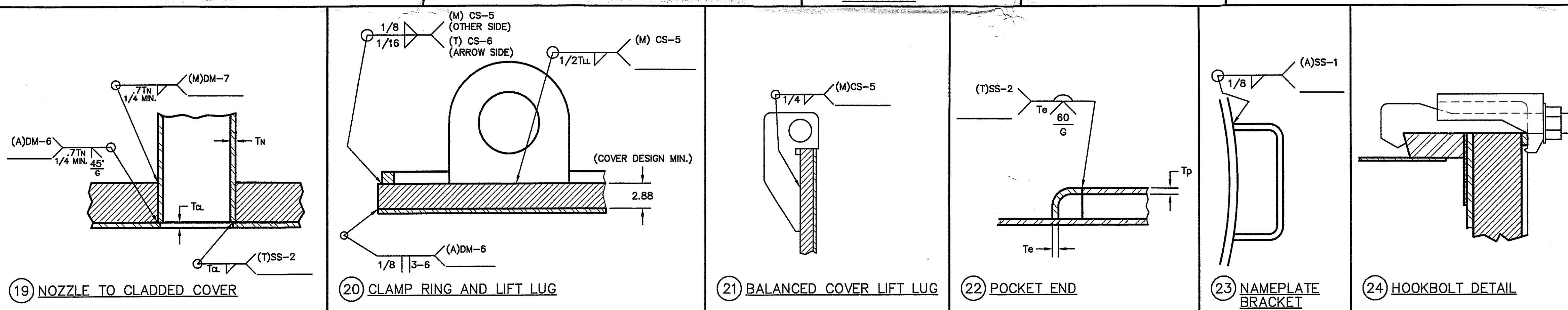
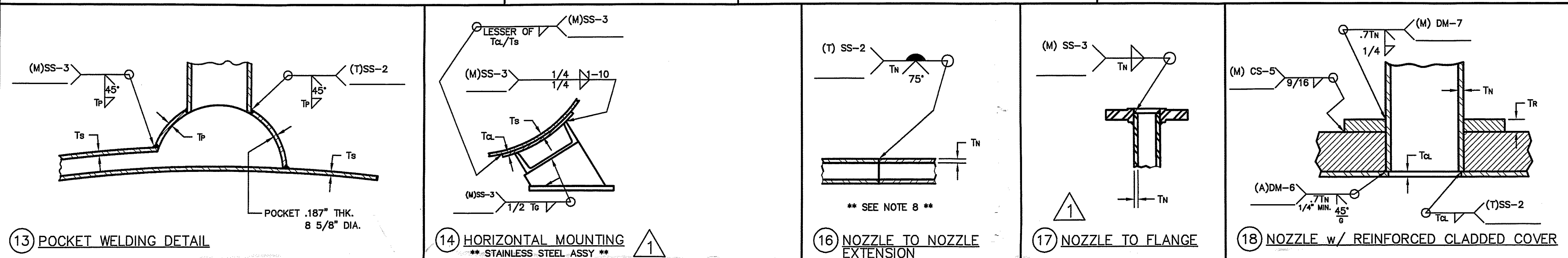
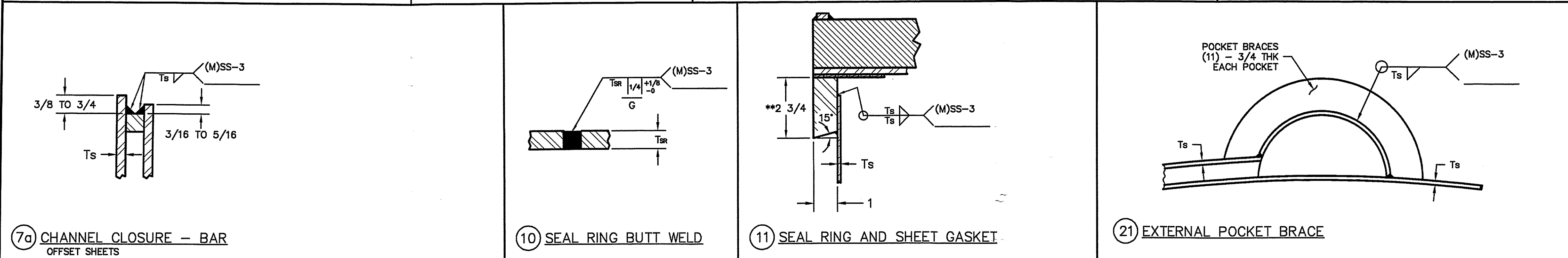
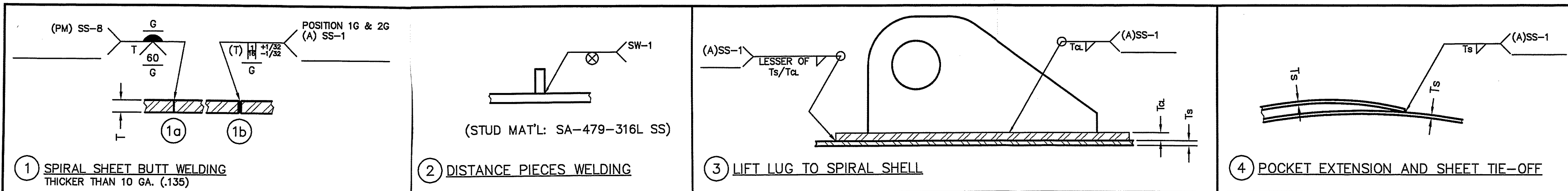
CHK'D BY: JCS SCALE: 3/4 = 12

APP'D BY: JCS SHEET 1 OF 1

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DRAWING NO. 1H-22612-13

DATE	SYM.	DESCRIPTION	BY	CHK	APP	DATE
07-02-96	1	ADDED NOTE 10; CHANGED DWG STATUS TO CERTIFIED	TWL	JCS	JCS	7/9/96



- NOTES:**
- 1.) WELDING IN ACCORDANCE WITH A.S.M.E. CODE SEC. IX, 1995, ADDENDA 1995.
 - 2.) ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED.
 - 3.) SIZES OF SHOWN WELDS ARE MINIMUM THROAT SIZES.
 - 4.) ** = DIMENSION BEFORE MACHINING.
 - 5.) TOLERANCES ON PREPARATION ANGLES $\pm 5^\circ$.
 - 6.) ALL GAPS $1/16" +0, -1/32"$, EXCEPT AS NOTED.
 - 7.) ALL WELD POSITIONS ARE FLAT AND HORIZONTAL, EXCEPT AS NOTED.
 - 8.) WELD METAL BACKING USED.
 - 9.) SPIRAL EXTENSION BUTT WELDS, WELD METAL BACKING USED.
 - 10.) ER316L WIRE USED FOR PROCEDURE (T)SS-2 AND (PM)SS-8.
 - 11.) E316L ELECTRODES USED FOR PROCEDURE (A)SS-1.
 - 12.) E316LT-1 WIRE USED FOR PROCEDURE (M)SS-3.
 - 13.) E309 ELECTRODES USED FOR PROCEDURE (A)DM-6.
 - 14.) E309LT-1 WIRE USED FOR PROCEDURE (M)DM-7.
 - 15.) ALL ATTACHMENTS TO SPIRAL SHELL ARE STAINLESS STEEL. ALL ATTACHMENTS TO COVER ARE CARBON STEEL, EXCEPT NOZZLE.

REVIEW QC AI		Alfa Laval Thermal Inc. 800 CHESTNUT STREET LYKENS, PA 17048-0010	
CUSTOMER: CIBA-GEIGY CORP.		ORDER NO.: XQ3884-2099 ITEM NO.: 5053	
WELDING AND COMPONENT PRODUCTION DWG. FOR STAINLESS STEEL SPIRALS			
JOB NO.: 964434 MFG NO.: 22612-22613		THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF ALFA LAVAL THERMAL INC. AND MUST NOT BE COPIED, REPRODUCED, TRANSMITTED, OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE CONSENT OF ALFA LAVAL THERMAL INC.	
DRAWN BY: JR DATE: 6/14/96		SCALE: 1 = 1	
CHK'D BY: J. SHARBAUGH		APP'D BY: J. SHARBAUGH	
DATE: 07-02-96		SHEET 1 OF 1	

DATE	SYM.	DESCRIPTION	BY	CHK	APP	DATE
07-02-96	1	ADDED NOTE 15; ADDED SS NOTE TO DETAILS 14 AND 25; ADDED DETAIL 17	TWL			

107370

107385

D-101