11. WDS NO'S. REFER TO WELD DATA SPEC. V049-2-084.
10. USE LEG ASSEMBLY FOR STIFFENER ALIGNMENT SPACING
9. I.D.'S ARE TO BE ALIGNED ALONG THEIR COMMON CENTER LINE TO WITHIN ±.06
8. LEAK TEST & METHOD PER PSI SPEC. V049-2-014, BY PSI.
7. CERTIFIED MANUFACTURER'S MATERIAL TEST REPORTS REQUIRED, AS NOTED.
6. FLANGE BOLT HOLES TO STRADDLE NATURAL CENTERLINES OF VESSEL, UNLESS NOTED.
5. CLEAN PER SPEC. V049-2-015
4. NOZZLES "B" TO BE CONTOURED TO INSIDE DIAMETER OF SHELL OR TO CURVATURE OF HEAD, UNLESS OTHERWISE NOTED.
3. DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL. GRINDING TO INTERNAL VACUUM BOUNDARY SURFACES IS NOT ALLOWED.
2. HEADS ARE ASME F&D.
1. CHAMBER FABRICATION TO BE IN ACCORDANCE WITH SPEC. V049-2-096

WEIGHTS: SHELL ASSY. = 3100 LBS.
SUPPORTS = 600 LBS.
TOTAL = 3700 LBS.

R22 7/16"

WDS 12 1/8 1/8 2-6

1/8"

-A-

12"

80K LONG LEG ASS'Y V049-4-140 (7)

12" OD C.F. FLG. V049M310-3 (4)

3 7/8"

K

SEE DWG. #V049-4-146 DETAIL #04

DATUM LINE

80K LONG LEG ASS'Y V049-4-140 (7)

(13) FOR FASTENING LOW "E" SHEILD DURING SHIPPING (SEE SHT 2 FOR TYP DETAIL & WELDING) 6 HOLES EQ'LY SPACED 180° APART @ END

6 1/2"

.015 A

33 1/2" 61" 108" 122" 134"

46"

PLAN

9/16"

15"

10 1/2" AT OUTSIDE OF SHELL

(15)

7 13/16"

2.16"

FULL PENETRATION

WDS 45

HEAD WITH INSIDE BEVEL (3) SEE DV049-4-147 DETAIL #03 V049-4-147P3

1/4"

45°

SEE DETAIL #01 (1)

HEAD & SHELL ID'S TO MATCH

3/8"

SEE SHT #2 DETAIL #01 (1)

V049-4-147P3

SEE DWG.#DV049-4-147 DETAIL #02 P/N V049-4-147 P2

HEAD ONLY TO BE WELDED AT FINAL ASSY. DWG.#V049-4-006

V049M314-2D 4.5 OD CF FLG SEE DETAIL FOR NOZZLE "J" FOR INSERTING & WELDING (5) (2)

FAR WALL (4)

SUPPORTS ON NEAR WALL

COMMON CENTER LINE SEE NOTE 9

SUPPORTS ON NEAR WALL

44 5/8" I.D. (9)

79 1/2" I.D.

44 5/8" I.D.

V049M317-3 2 3/4" OD CF FLG (6) SEE DETAIL FOR NOZZLE "J" FOR INSERTING & WELDING

1/16 1-3 WDS 8

1/8"

2.75 OD CF FLG V049M317-3 (6)

(5) 4.5 O.D.

(6) 2.75 OD CF FLG V049M317

TYP. ITEMS 5 & 6

SECTION "K""K"

45°

15"

36 9/16"

1/8"

(7)

SEE DETAIL #11 INSTALL AS SHOWN

(7)

END VIEW

8 1/8"

15"

3 1/2"

31"

15"

R9/16"

61 15/16"

PAD

R39 3/8"

1/4"OD X .065 WT TP 304L SA213 SST. (15)

WELD PAD 1" X 1" X .25 THK (16)

8 7/16"

15° REF

7/16"

28"

26 15/16"

R1"

WELD PAD 1" X 1" X .25 THK 304L SA240 SST. (16) EX

REF

1"

13/16"

R1" REF

3/8"

(15) 1/4"OD X .065 WT

DETAIL #11

28" REF

14"

4"

R1" 2X

R1"

VIEW "L""L"

RAYMOND D. CIATTO
STATE OF WASHINGTON
15714
REGISTERED
PROFESSIONAL ENGINEER

STATE OF LOUISIANA
RAYMOND D. CIATTO
REG. No. 26750
REGISTERED
PROFESSIONAL
ENGINEER
IN
CIVIL ENGINEERING

EXPIRES 6/5/97

7/9/97

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DWG. NO	DESCRIPTION	DWG NO.	DESCRIPTION
REFERENCE DRAWINGS			

SYMBOL	CHARACTERISTIC
▱	FLATNESS
⌭	CYLINDRICITY
//	PARALELLISM
⊥	PERPENDICULARITY
∠	ANGULARITY
⌖	TRUE POSITION
◎	CONCENTRICITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ± 1
ANGULAR MACH 30°-30' BEND ±2°
TWO PLACE DECIMAL ± .03
THREE PLACE DECIMAL ± .015
FINISHED SURFACE RMS 63
BREAK CORNERS .06 OUT. REMOVE ALL BURRS

DO NOT SCALE THIS DRAWING

USED ON

NEXT ASS'Y: DV049-4-006

REV	DESCRIPTION	CHKD	DRWN	DATE	DCN#
2	ISSUED FOR FABRICATION	RDC	REC	PV	1/4/97	0399
1	ISSUED FOR FABRICATION REB	RDC	REC	PV	12/9/96	0379
0	ISSUED FOR FABRICATION DMW	RDC	REC	JT	11/11/96	0341

ISSUE DESCRIPTION

PROCESS SYSTEMS INTERNATIONAL INC.
20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA

80K PUMP WELDMENT, LONG -RIGHT-

LIGO VACUUM EQUIPMENT

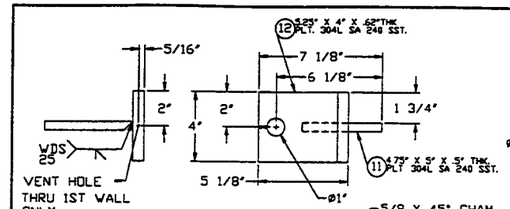
CAD FILE	SIZE	DWG. NO.	REV
494119S1	D	V049-4-119	2

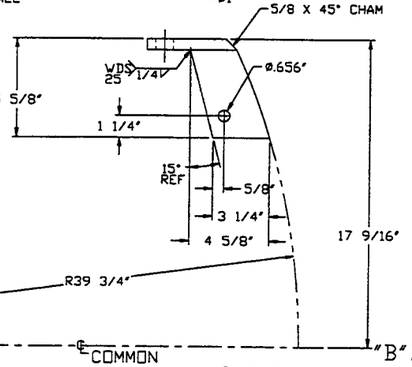
SCALE NONE SHEET 1 OF 2

LIGO-D970421-02-V

1-6-97

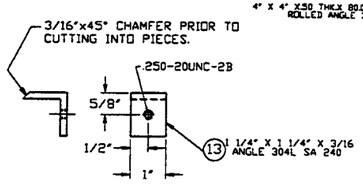
JUL 09, 1997 - 12:00:48



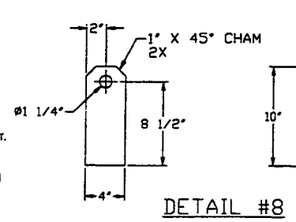


DETAIL #3
VERTICAL SUPPORT
4 REQUIRED

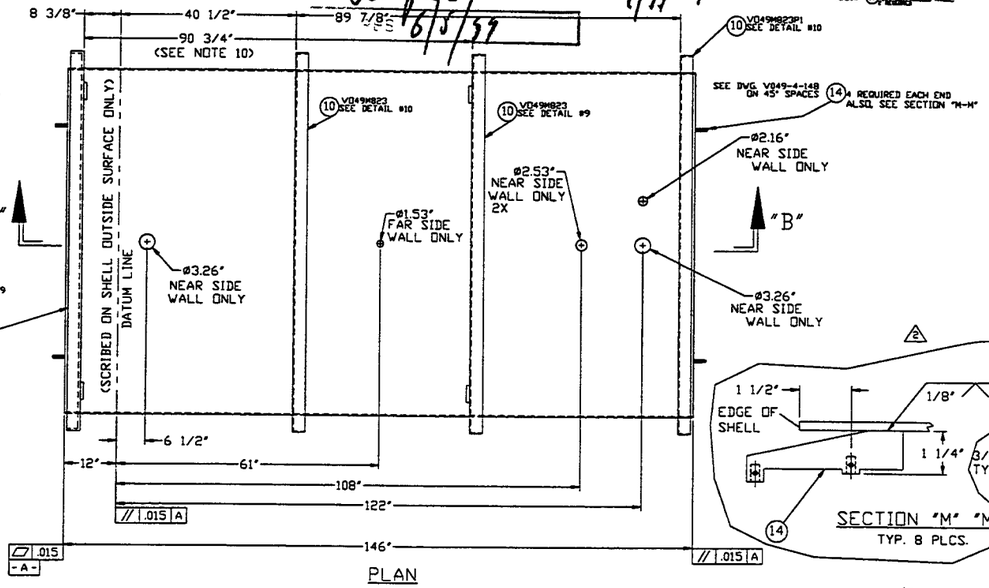
4" X 4" X.50 THK X 80.06"ID ROLLED ANGLE 304L (9) V049MB24P1 SEE DETAIL #9



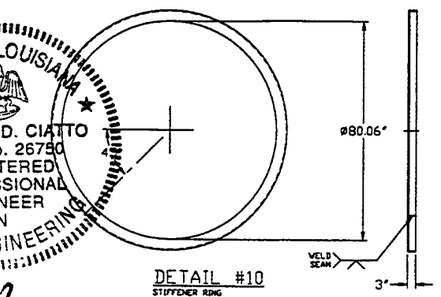
DETAIL #7
16 REQUIRED



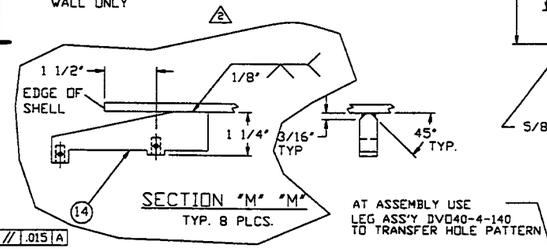
DETAIL #8
LIFTING LUG
4 REQUIRED



PLAN

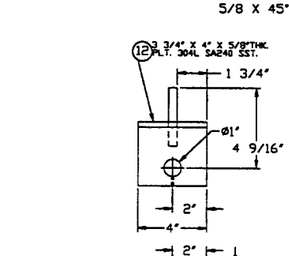


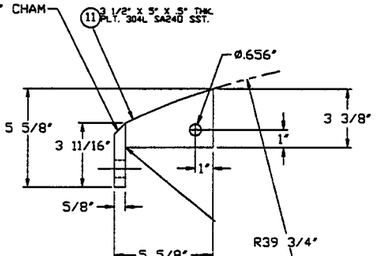
DETAIL #10
STIFFENER RING



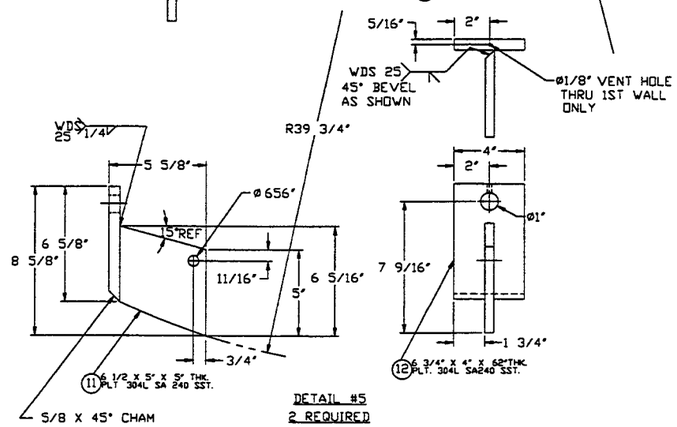
SECTION "M" "M"
TYP. 8 PLCS.

AT ASSEMBLY USE LEG ASS'Y DV040-4-140 TO TRANSFER HOLE PATTERN

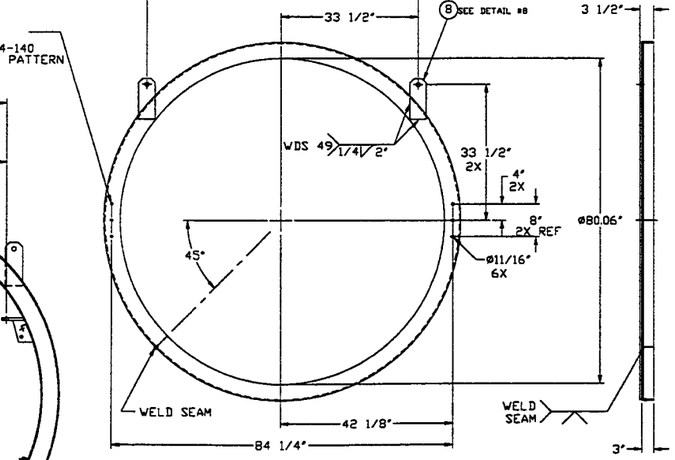




DETAIL #4
(2) TOP SUPPORT
2 REQUIRED



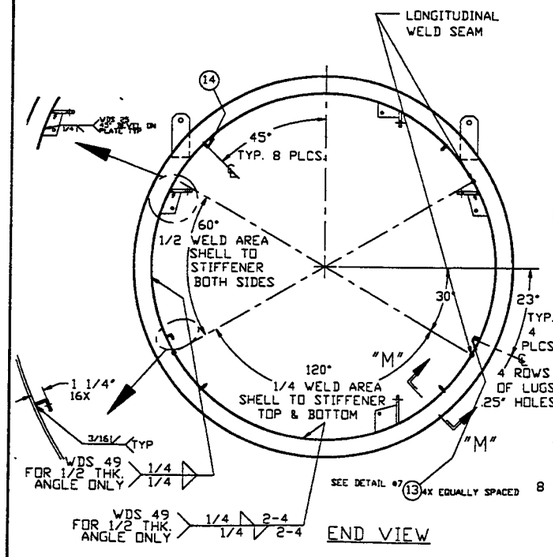
DETAIL #5
2 REQUIRED



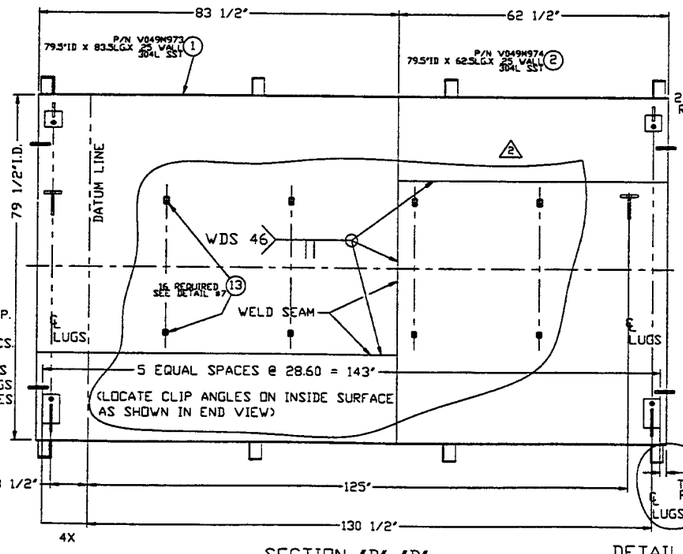
V049MB24P1 -NOT SHOWN- (9) 4" X 4" X.50 THK X 80.06"ID ROLLED ANGLE 304 SST ONE REQUIRED

V049MB23P1 -SHOWN- (10) 4" X 4" X .25 WALL X 80.06"ID 304 SST. ROLLED ANGLE ONE REQUIRED

DETAIL #9
STIFFENER RING

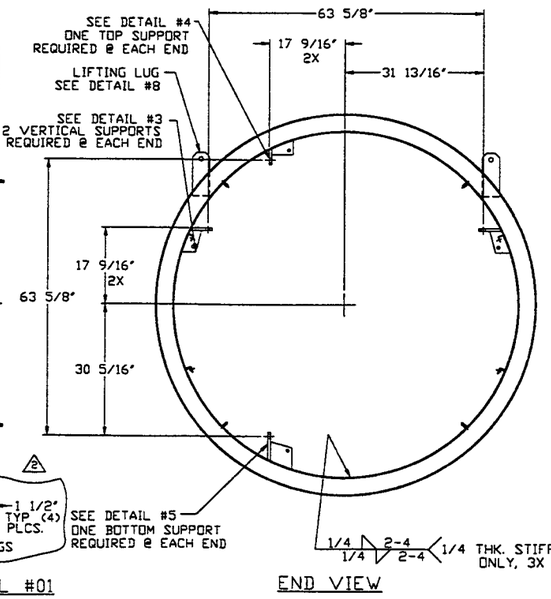


END VIEW



SECTION "B" "B"

DETAIL #01
FROM SHT.#1



END VIEW

SEE SHEET 1 FOR REVISIONS

PROCESS SYSTEMS INTERNATIONAL INC.
20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA

80K PUMP WELDMENT, LONG -RIGHT-

LIGO VACUUM EQUIPMENT

CAD FILE	SIZE	DWG. NO.	REV.
494119S2	D	V049-4-119	2
SCALE NONE		SHEET 2 OF 2	

Jul 09, 1997 - 12:04:12

RAYMOND D. CIATTO
STATE OF WASHINGTON
15714
REGISTERED
PROFESSIONAL ENGINEER
7/9/97

STATE OF LOUISIANA
RAYMOND D. CIATTO
REG. No. 26750
REGISTERED
PROFESSIONAL
ENGINEER
IN
CIVIL ENGINEERING
6/5/97