

ITEM	PART NUMBER	SUFFIX	QTY	UM	DESCRIPTION
1	V0494297		1	EA	FLANGE, FLAT FACED, 60 1/2" ID X 68 1/4" OD
2	V0494020		1	EA	FLANGE, GROOVED, 72 1/4" ID X 80" OD
3	V0494055		1	EA	FLANGE, REDUCING, 61.06" ID X 73" OD X 1" THK
4	V0494A7BP4		2	EA	SHELL, 304/304L SST, 1/4" THK
5	V0494A7BP5		1	EA	SHELL, 304/304L SST, 1/4" THK
6			1	FT	BAR, CS A36, 1 3/8" X 6"
7	V049M782		40	EA	NUT, HEX, 5/16-18, SILICON BRZ
8	V049M785		80	EA	WASHER, FLAT, 5/16, 18-8 SST
9			1	FT	TUBING, 4" X 2" X 3/16" A500 GR B
10	V049M813		1	EA	RING, ANGLE, 2 1/2" X 2 1/2" X 1/4"-304 SST
11	V049M814		1	EA	RING, ANGLE, 4" X 4" X 1/4"-304 SST
12	V049M308		3	EA	HALF NIPPLE, SST, 304L, CONFLAT 16 1/2" O.D.
13	V049M310		3	EA	HALF NIPPLE, SST, 304L, CONFLAT, 12" O.D.
14	V049M753		3	EA	BOLT, STL A325, 5/8-11 UNC X 3 1/2 LG
15	V049M755		3	EA	NUT, STL A325, 5/8-11 UNC
16			3	EA	ANCHOR 1" DIA, HILTI HVA, 8-1/2" EMBEDMENT
17	V049M920		1	EA	RING, 15" ID X 20" OD X 1/2" THK-304 SST
18	V049M921		1	EA	RING, 11" ID X 16" OD X 1/2" THK-304 SST
19	V049M852		3	EA	BAR, 304 SST, 4" X 3/8"
20	202678		3	EA	BOLT, SA 193 B7, 7/8-9 UNC X 4" LG
21	202679		3	EA	NUT, SA 194 B7, 7/8-9 UNC
22	202581		3	EA	WASHER, STL, 1 3/4" OD X 15/16" ID X 1/4" THK
23	V049M314		3	EA	HALF NIPPLE, SST, 304L, CONFLAT, 4 1/2" O.D.
24	202557		3	EA	BLANK, CONFLAT, SST 304L, 4 1/2" DD
25	V0494195		1	EA	BLANK, CONFLAT, SST 304L, 12" DD X 25 GF
26	202666		3	EA	BLANK, CONFLAT, SST 304L, 16 1/2" DD
27	202558		3	EA	GASKET, CONFLAT, COP DFHC, 4 1/2" DD
28	202552		3	EA	GASKET, CONFLAT, COP DFHC, 12" DD
29	202670		3	EA	GASKET, CONFLAT, COP DFHC, 16 1/2" DD
30	V049M776		8	EA	BOLT, HEX HD, 5/16-18 X 2 1/4 LG, 18-8 SST
31	V049M777		32	EA	BOLT, HEX HD, 5/16-18 X 2 1/2 LG, 18-8 SST
32	V049M780		36	EA	BOLT, HEX HD, 3/8-16 X 3 LG, 18-8 SST
33	V049M783		36	EA	NUT, HEX, 3/8-16, SILICON BRZ
34	V049M020		1	EA	O-RING, VITRON (PER SPEC V049-2-045)
35	V049M021		1	EA	O-RING, VITRON (PER SPEC V049-2-045)
36	V049M786		72	EA	WASHER, FLAT, 3/8, 18-8 SST
37	V049A7BP37		2	EA	SUPPORT ASSEMBLY
38	V049M773		3	EA	WASHER, LOCK, 5/8" A325
39	V0494061		1	EA	3/4" O.D. ELBDV X 2 3/4" O.D. CF
40	V0494080G4		1	EA	SHIPPING COVER ASSY
41	V049M740		1	EA	PSI NAME PLATE, 2" X 3"

■ ELECTROLESS NICKEL PLATE
NOTES:
 8. BOLT HOLES OF ALL FLANGES TO STRADDLE VERTICAL CENTERLINE +/- .015
 7. CLEAN PER SPEC V049-2-015
 6. DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL.
 5. MACHINING & ROLLING PER SPEC V049-2-136.
 4. SPOOL FABRICATION TO BE IN ACCORDANCE WITH SPEC. V049-2-097
 3. FOR FLANGE DETAILS SEE DWGS. V049-4-020, 097, & 055
 2. FLANGE INCLUDES AN ANNULAR CHANNEL BETWEEN O-RINGS, FOR A SINGLE PUMPOUT PORT, SEE DWG V049-4-061.
 1. EACH FINISHED SHELL ASSY. SET IS TO HAVE EACH OF THE PIECES MARKED WITH THE SAME SET NO. AND SHIPPED TOGETHER. THE NUMBER IS TO BE MADE FROM THE DRAWING NO. PLUS SEQUENTIAL LETTER. V0494A7B-A, B ETC.

APPROX. WEIGHT: 4134#

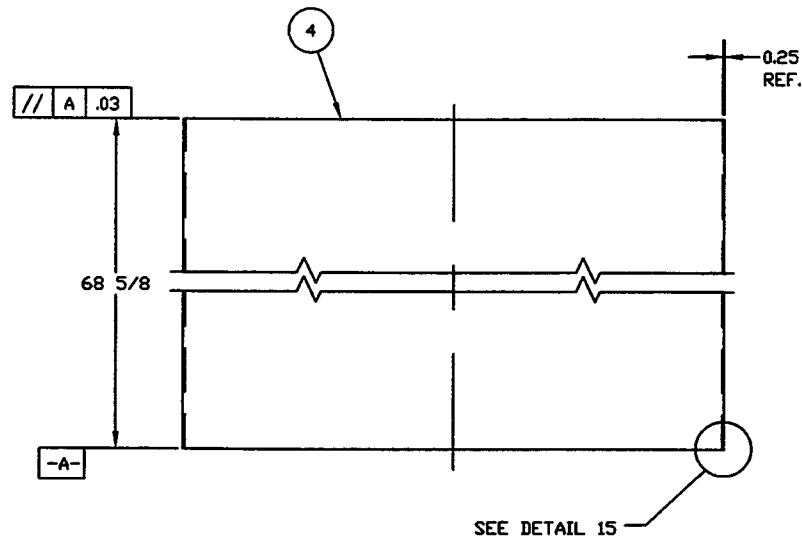
TAG NO'S: WA-7B1, WA-7B2, LA-7B2

17. WDS NO'S. REFER TO WELD DATA SPEC. V049-2-084
16. CONFLAT LEAK CHECK SLOTS ARE TO BE POSITIONED ON VERTICAL CENTERLINE.
15. CONFLAT FLANGES ARE TO HAVE PROTECTIVE COVERS AT ALL TIMES DURING & AFTER MANUFACTURING.
14. STRUCTURAL STEEL FABRICATION TO BE IN ACCORDANCE WITH SPEC. V049-2-039.
13. EACH SHELL IS TO BE MARKED WITH THE PSI PART NO. AS SHOWN WITH THE SHELL ITEM NO.
12. PLATES PRIOR TO ROLLING MUST HAVE DIAGONAL CORNER TO CORNER DIMENSIONS WITHIN 1/16" OF EACH OTHER.
11. THE CENTER LINES OF ALL SHELLS AND END FLANGES, ARE TO LIE ON THE COMMON CENTER LINE WITHIN +/- 1/16
10. LEAK TEST & METHOD PER PSI SPEC: V049-2-014
9. CERTIFIED MANUFACTURER'S MATERIAL TEST REPORTS REQUIRED.

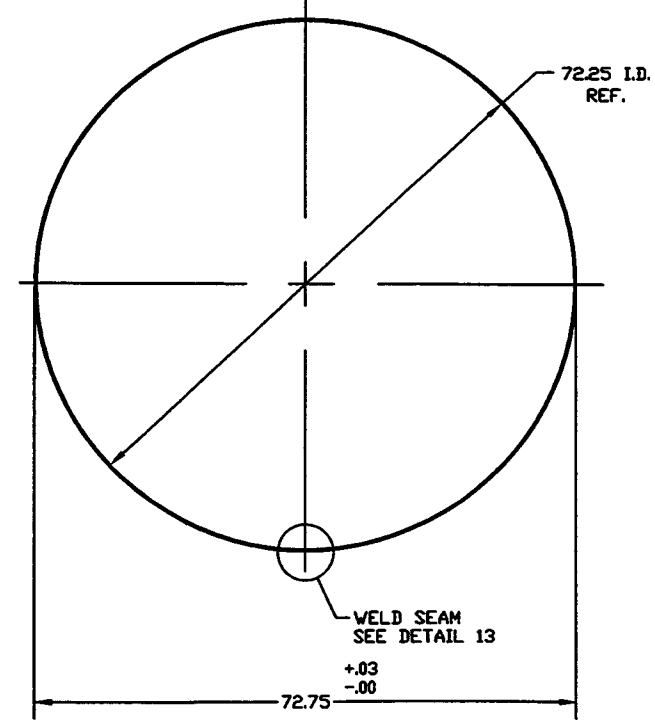
PROPRIETARY AND CONFIDENTIAL				SYMBOL		CHARACTERISTIC		UNLESS OTHERWISE SPECIFIED		TOLERANCES		REV		DESCRIPTION							
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION BELONGING TO PROCESS SYSTEMS INTERNATIONAL, INC. OR ITS AFFILIATED COMPANIES AND SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT WAS SUPPLIED. IT SHALL NOT BE COPIED, REPRODUCED OR OTHERWISE USED, NOR SHALL SUCH INFORMATION BE FURNISHED IN WHOLE OR IN PART TO OTHERS EXCEPT IN ACCORDANCE WITH THE TERMS OF ANY AGREEMENT UNDER WHICH IT WAS SUPPLIED OR WITH THE PRIOR WRITTEN CONSENT OF PROCESS SYSTEMS INTERNATIONAL, INC. AND SHALL BE RETURNED UPON REQUEST.				□	FLATNESS	DIMENSIONS ARE IN INCHES		FRACTIONAL ± .1		ANGULAR ± 30° BEND ± 2°		2	REISSUED FOR FAB/SHIPPING AS NOTED	DMV	PEF	GS	RDC	REC	PV	11/22/96	0180
				//	PARALLELISM	TWO PLACE DECIMAL ± .015		THREE PLACE DECIMAL ± .015		FINISHED SURFACE ONE BREAK CORNERS IN OUT REMOVE ALL BURRS		0	DESIGN UPDATE/ISSUED FOR FABRICATION	DMV	PEF	GS	RDC	REC	PV	10/1/96	0283
DWG. NO.				DESCRIPTION				REFERENCE DRAWINGS				REV		DESCRIPTION		ISSUE DESCRIPTION		SCALE		SHEET	
				TAG NO'S: WA-7B1, WA-7B2, LA-7B2								USED ON:		NEXT ASSY:						1-1/2" = 1'-0"	

PROCESS SYSTEMS INTERNATIONAL, INC.
 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA
 ADAPTER A-7B
 60.50" ID X 72.25" ID
 LIGO VACUUM EQUIPMENT
 DWG. NO. V049-4-A7B
 SHEET 1 OF 5
 DATE 5/9/97
 BY SPIDER
 CHECKED PV
 DATE 11/22/96
 DRAWN PV
 DATE 10/1/96
 DESIGNED PV
 DATE 11/22/96

LIGO-D970380-02-V



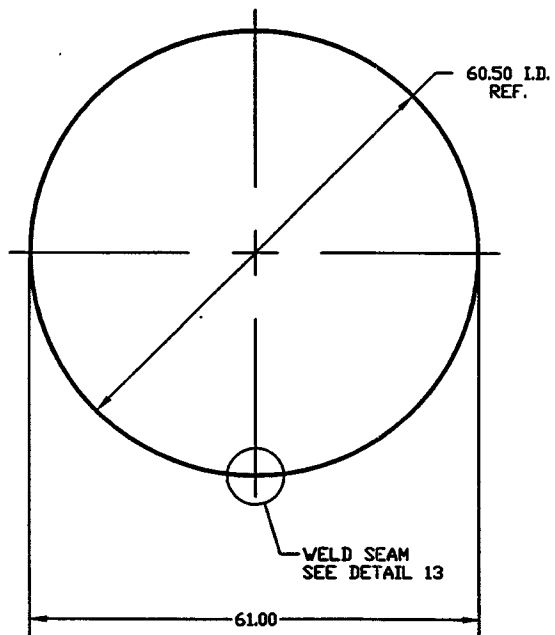
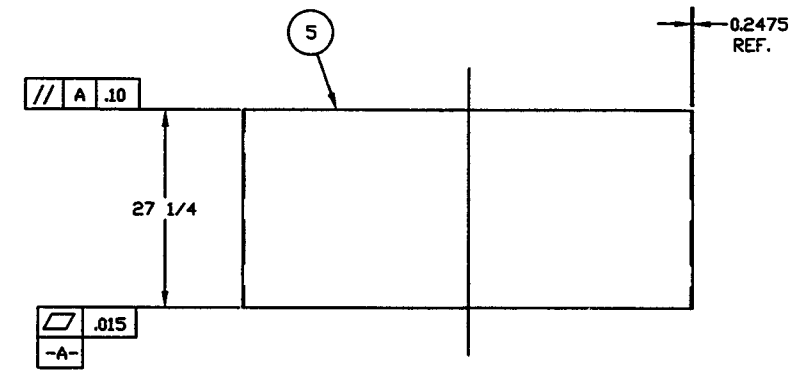
SEE DETAIL 15



DETAIL "3"

QTY: 2

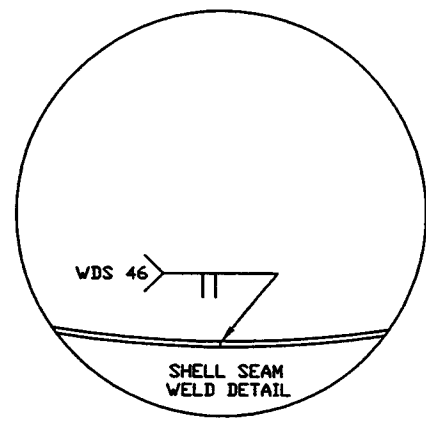
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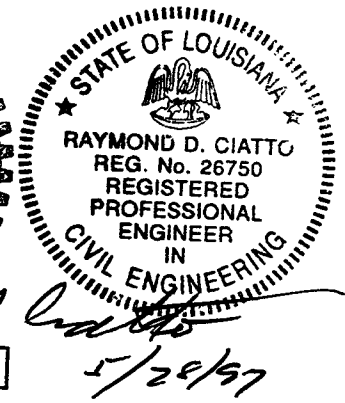
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QTY: 1

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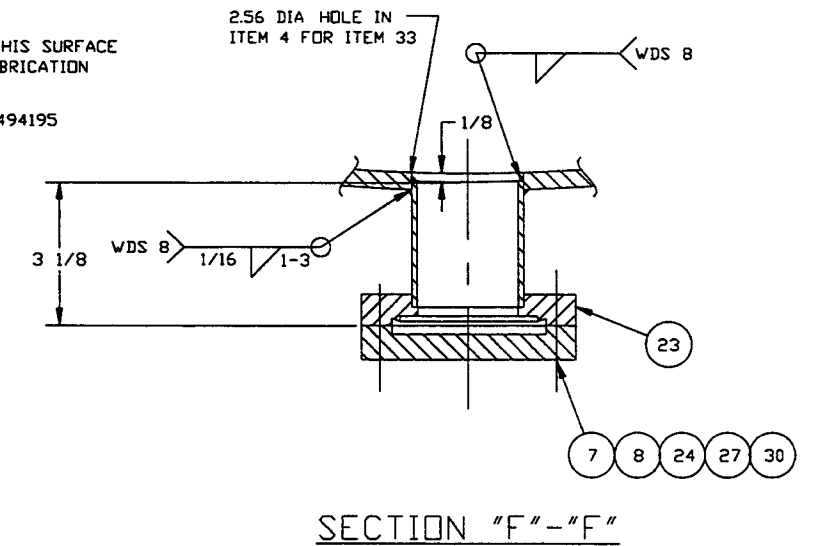
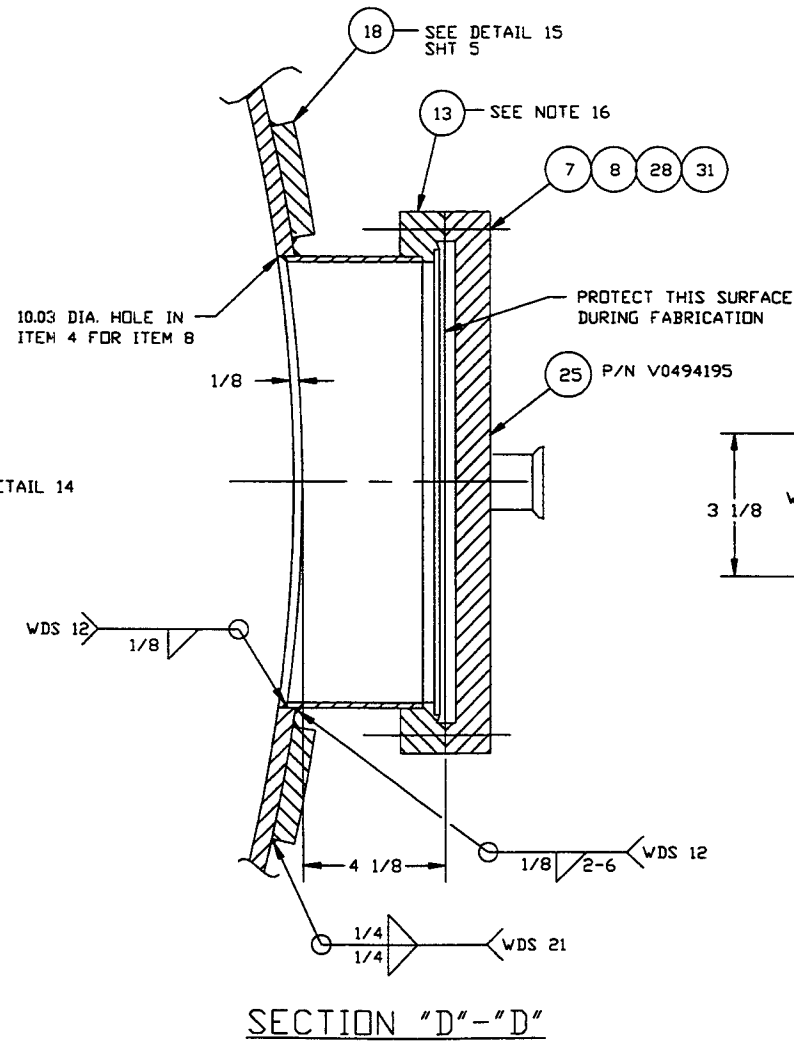
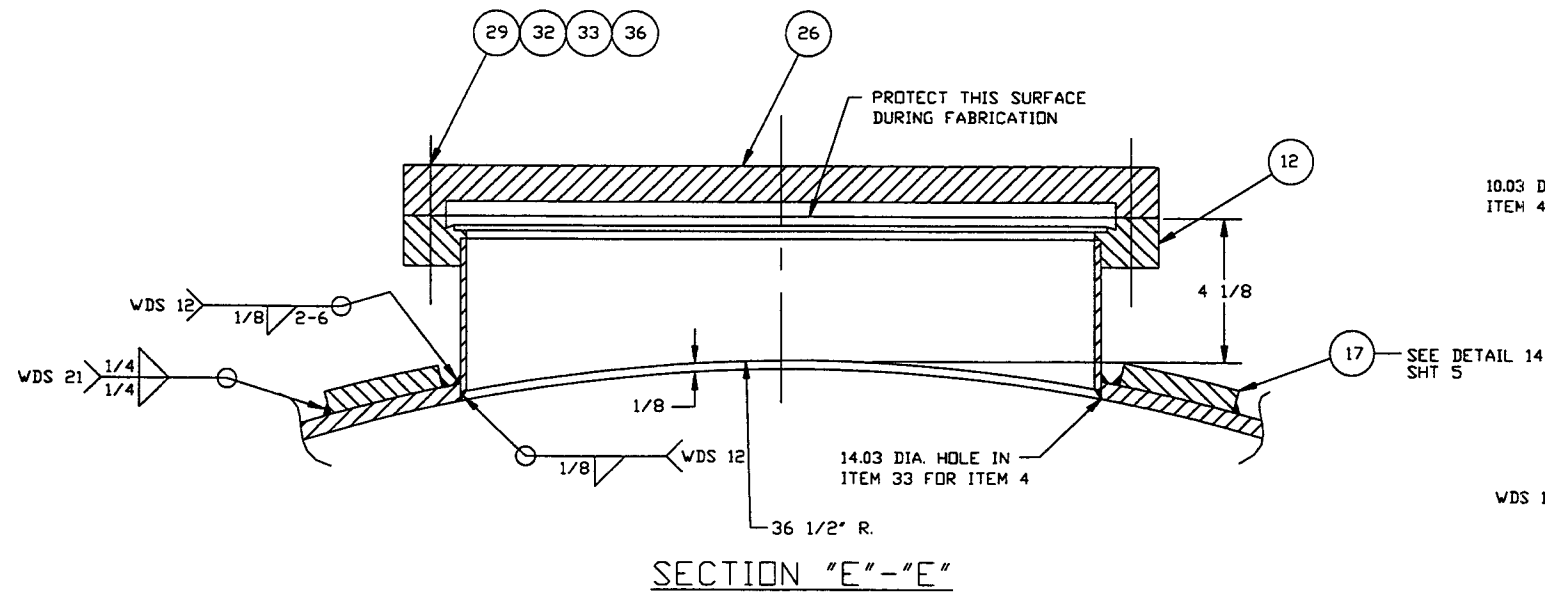
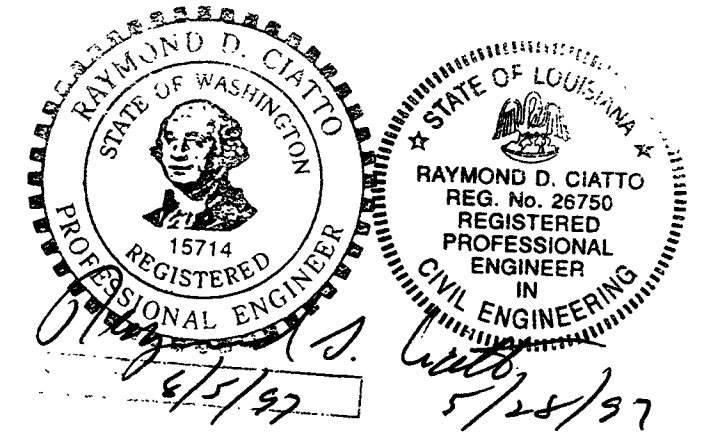
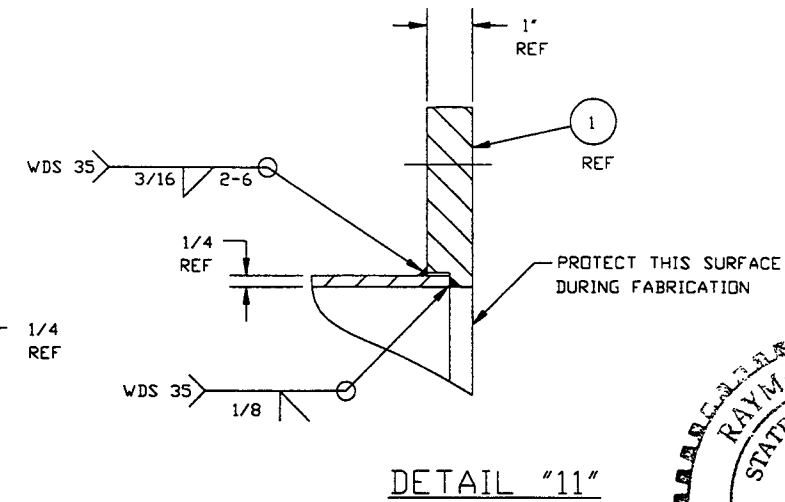
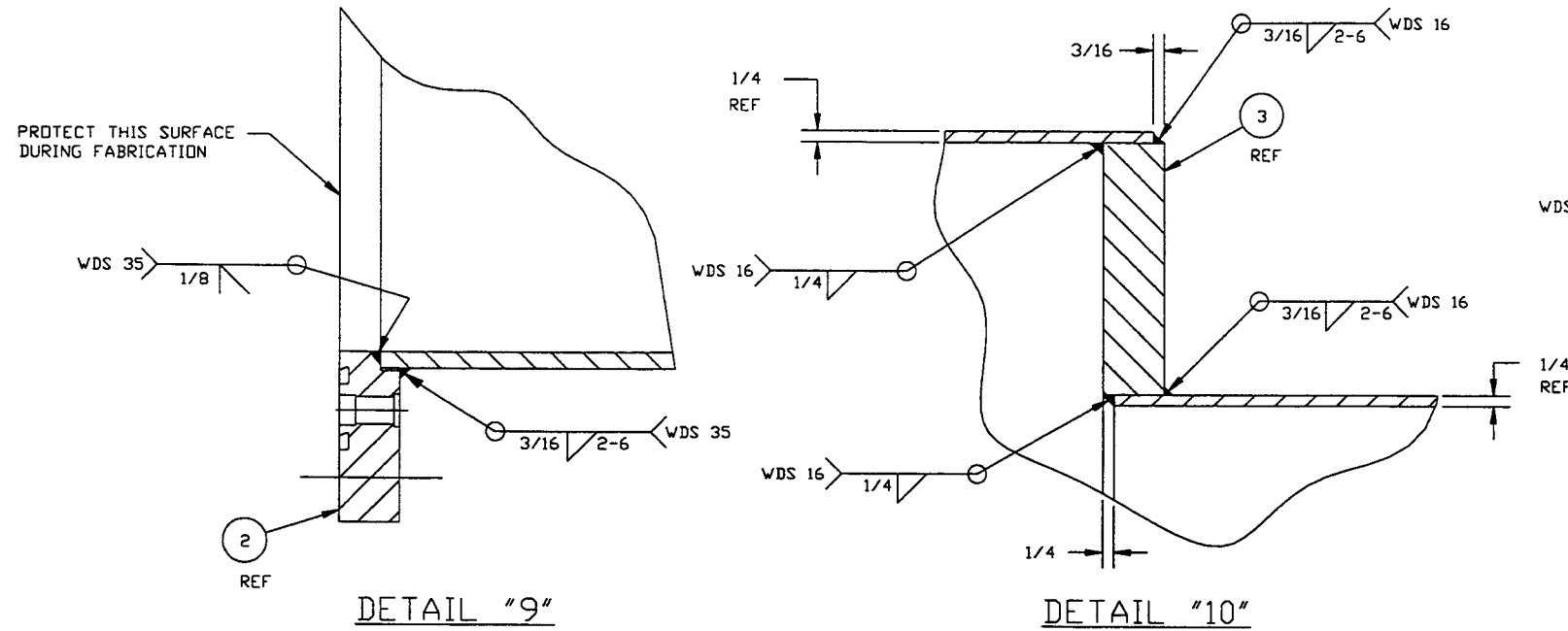


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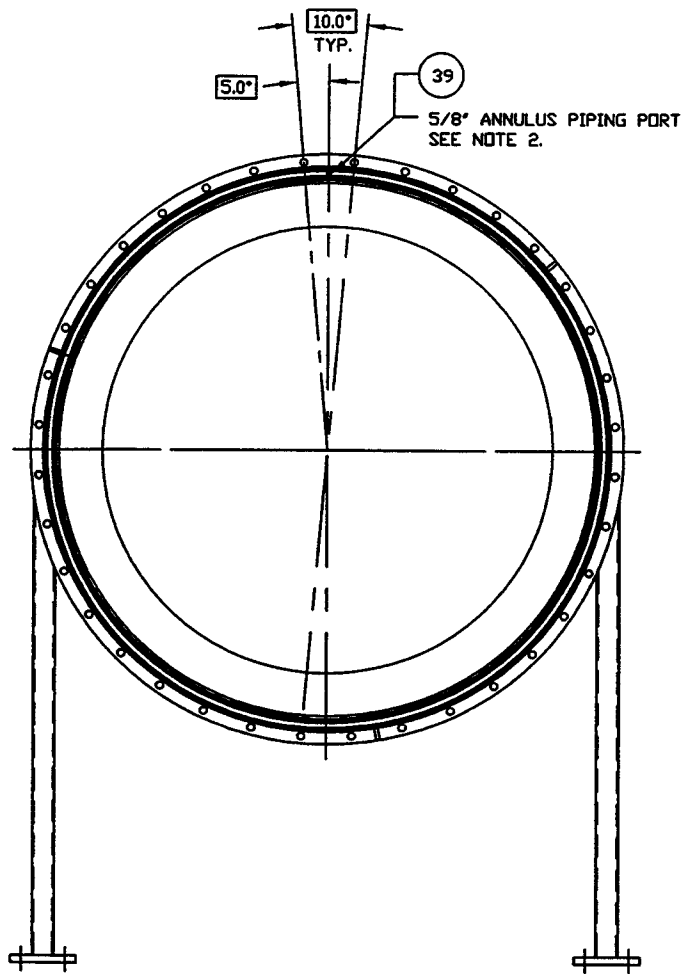
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ADAPTER A-7B 60.50"ID x 72.25"ID LIQD VACUUM EQUIPMENT			
CAD FILE V049A47B/4A7S4B	SIZE D	ENG. NO. V049-4-A7B	REV. 2
SCALE AS NOTED	SHEET 2 OF 5		

NOV 14, 1996 - 154137

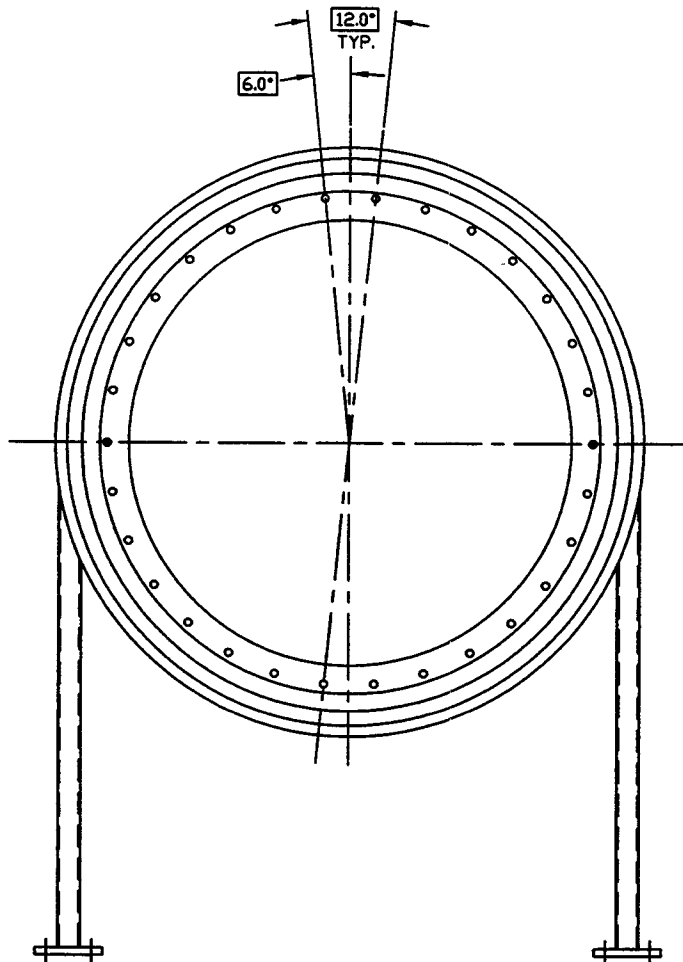


SEE SHEET 1 FOR REVISIONS

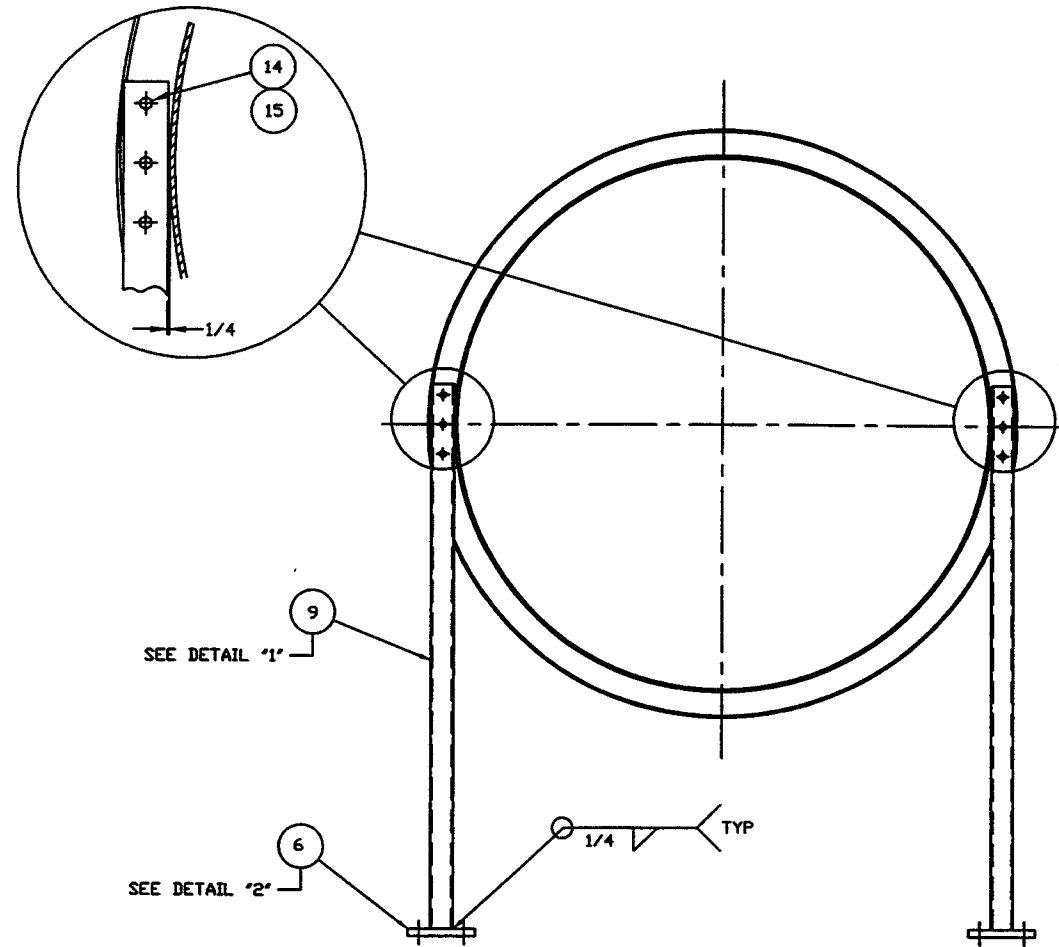
PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
ADAPTER A-7B 72 1/4" X 60 1/2" LIGO VACUUM EQUIPMENT			
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SCALE AS NOTED	SHEET 3 OF 5		



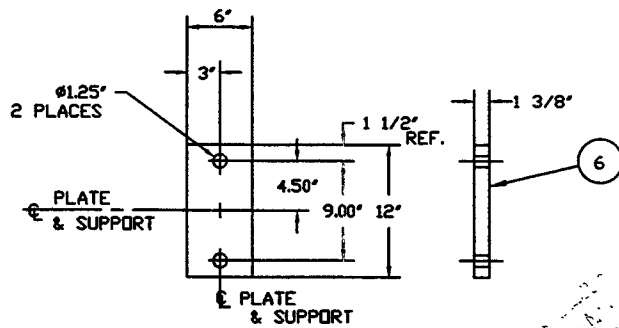
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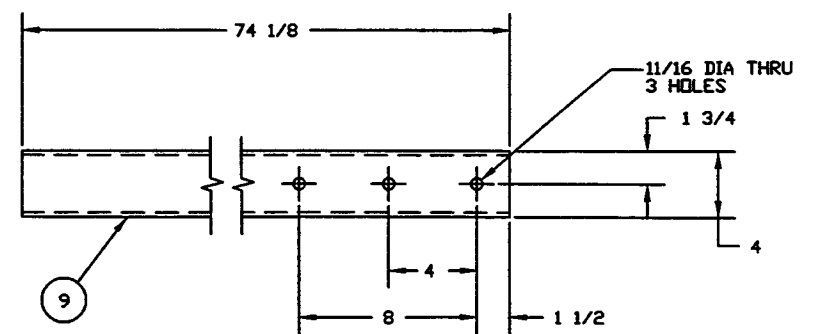
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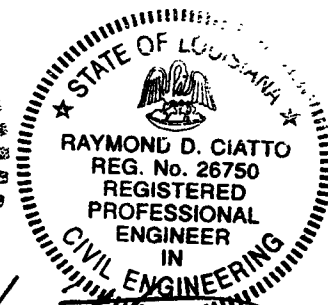
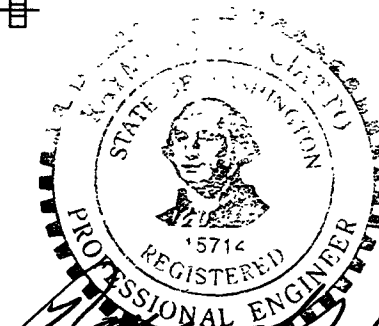
SECTION "C"- "C"



DETAIL "2"
QTY: 2



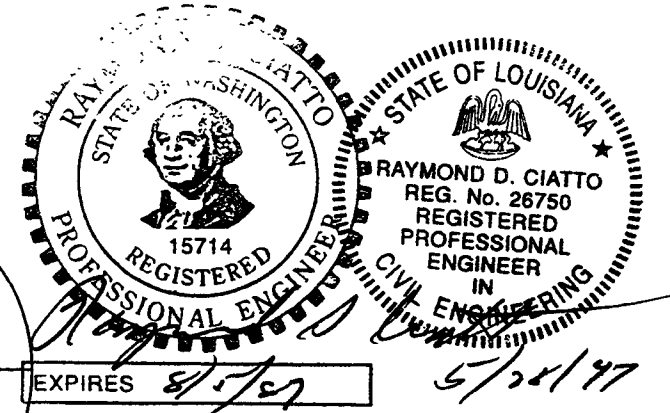
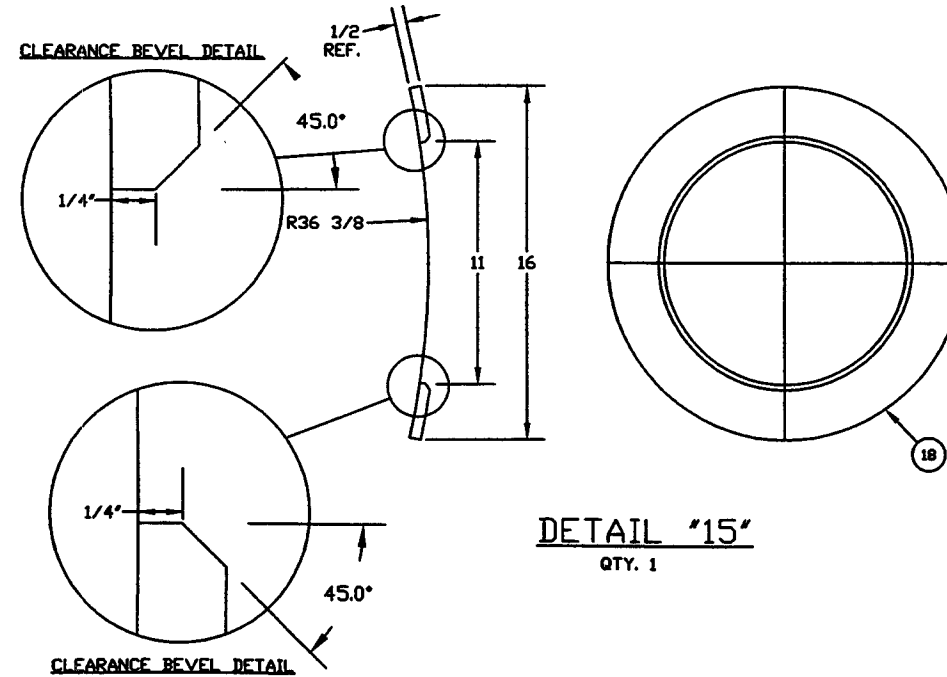
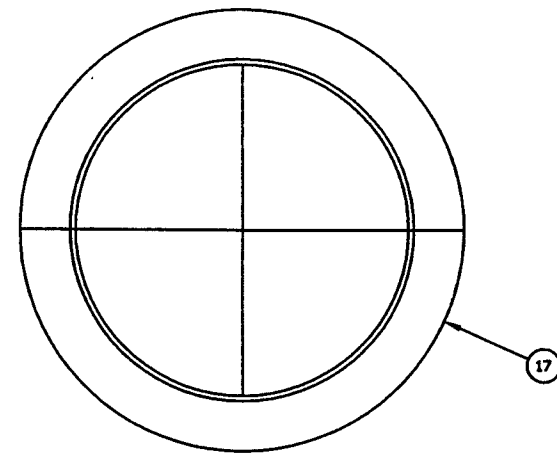
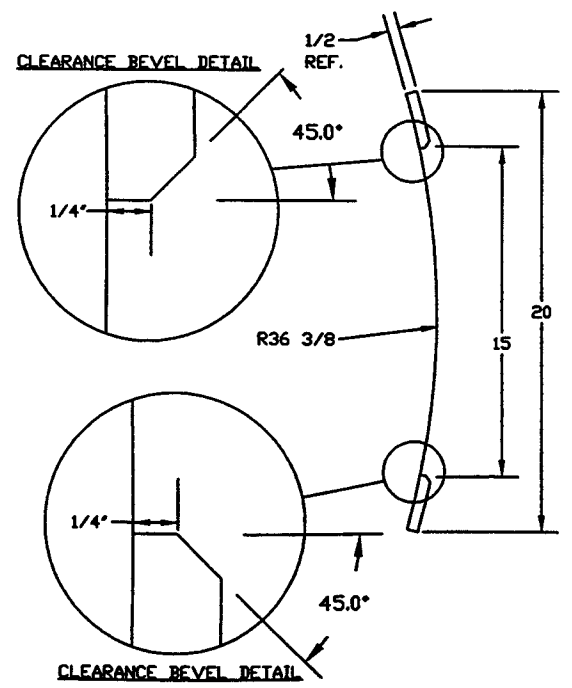
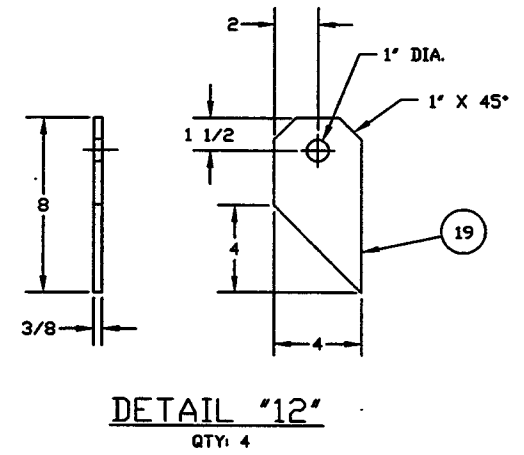
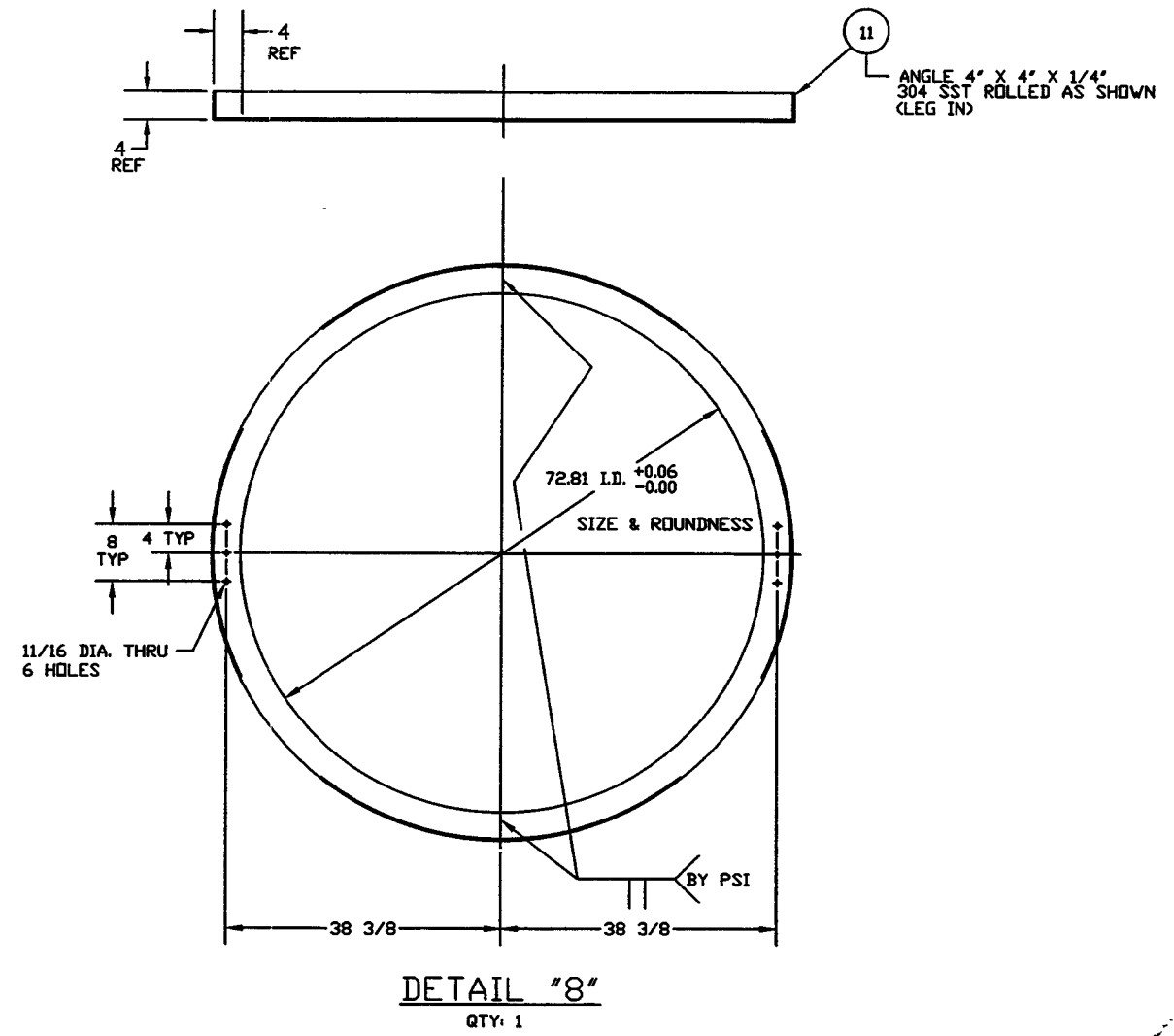
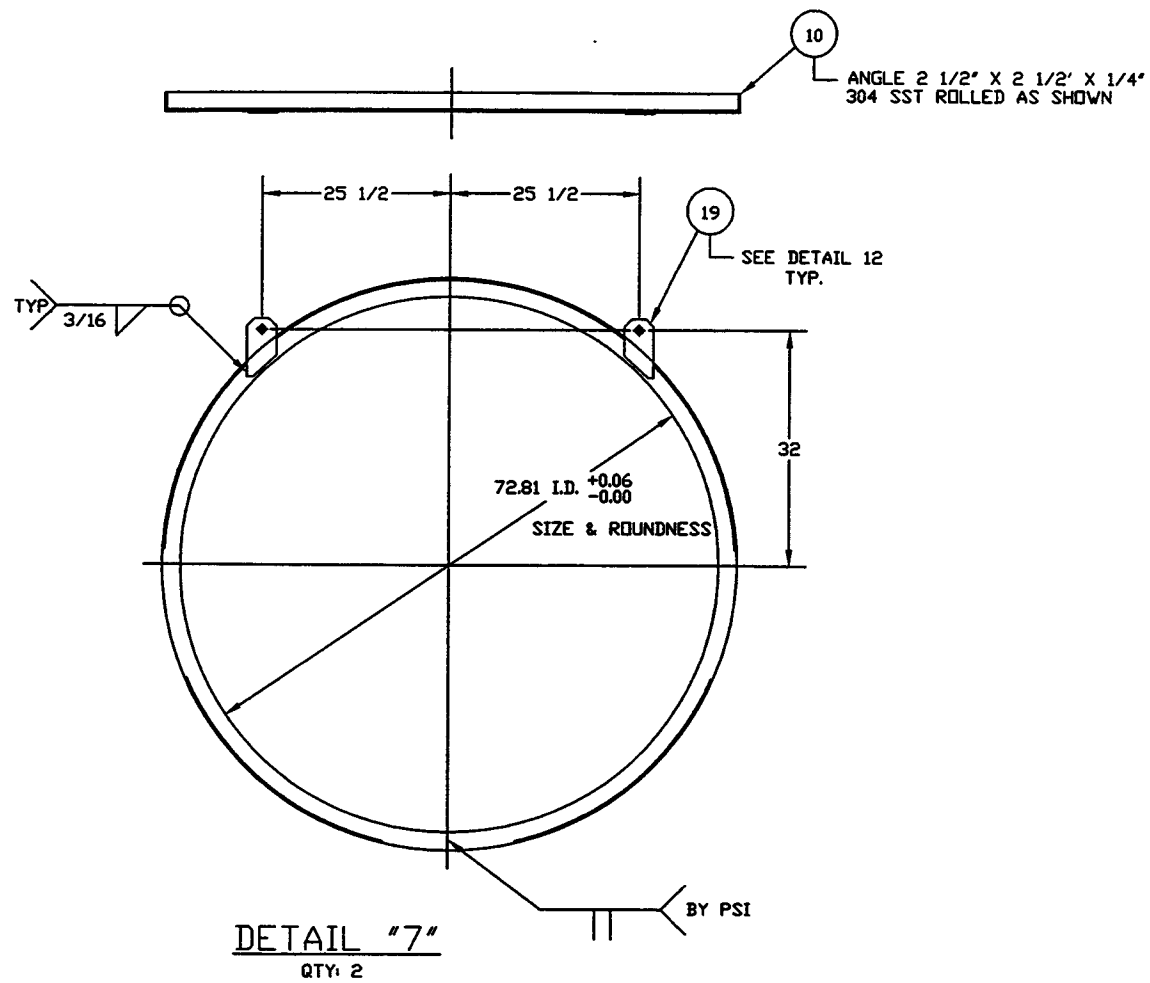
DETAIL "1"
SCALE: 1 1/2" = 1'0"
QTY: 2



Raymond D. Ciatto
 EXPIRES 4/31/97
 5/22/97

PROCESS SYSTEMS INTERNATIONAL, INC. 20 WALSH DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
ADAPTER A-7B 60.50" ID x 72.25" ID LIQD VACUUM EQUIPMENT			
CAD FILE V0494A7B/4A7B2	SIZE D	ENG. NO. V049-4-A7B	REV. 2
SCALE AS NOTED	SHEET 4 OF 5		

NOV 82, 1996 - 1524103



PROCESS SYSTEMS INTERNATIONAL, INC. 20 WALDEN DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
ADAPTER A-7B 60.50"ID x 72.25"ID LIGO VACUUM EQUIPMENT			
CAD FILE V049A47B/4A7BSS	SIZE D	DWG. NO. V049-4-A7B	REV. 2
SCALE AS NOTED	SHEET	5 OF 5	

Dec 86, 1996 - 1008-1