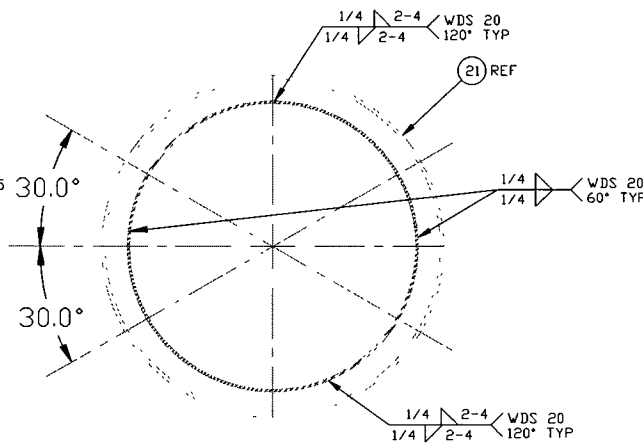


NOTES:

- 1 WDS NO'S REFER TO WELD DATA SPEC V049-2-084.
- 2 FLANGE INCLUDES AN ANNULAR CHANNEL BETWEEN D-RINGS
- 3 FOR FLANGE DETAILS SEE DWGS. V049-4-056 & 057
4. SPOOL FABRICATION TO BE IN ACCORDANCE WITH SPEC. V049-2-097.
5. DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL
- 6 CLEAN PER SPEC: V049-2-015
- 7 BOLT HOLES FOR ALL FLANGES TO STRADDLE VERTICAL CENTERLINE +/-015
- 8 CERTIFIED MANUFACTURER'S MATERIAL TEST REPORTS REQUIRED AS NOTED
- 9 LEAK TEST & METHOD PER PSI SPEC V049-2-014
- 10 THE CENTERLINES OF ALL SHELLS AND FLANGES ARE TO LIE ON THE COMMON CENTERLINE WITHIN ± 1/16
11. TIGHTEN TIE-ROD NUTS WITH BELLOWS IN "FREE" POSITION TO 100 FT-LB PRIOR TO LEAK TEST
- 12 MACHINING & ROLLING PER SPEC V049-2-136.
- 13 PLATES PRIOR TO ROLLING MUST HAVE DIAGONAL CORNER TO CORNER DIMENSIONS WITHIN 1/16" OF EACH OTHER.
- 14 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. V0494B5A-A, B ETC
15. STRUCTURAL STEEL FABRICATION TO BE IN ACCORDANCE WITH SPED V049-2-039
- 16 CONFLAT FLANGES TO HAVE PROTECTIVE COVERS AT ALL TIMES DURING & AFTER MANUFACTURING
17. CONFLAT LEAK CHECK SLOTS ARE TO BE POSITIONED ON A VERTICAL CENTERLINE.

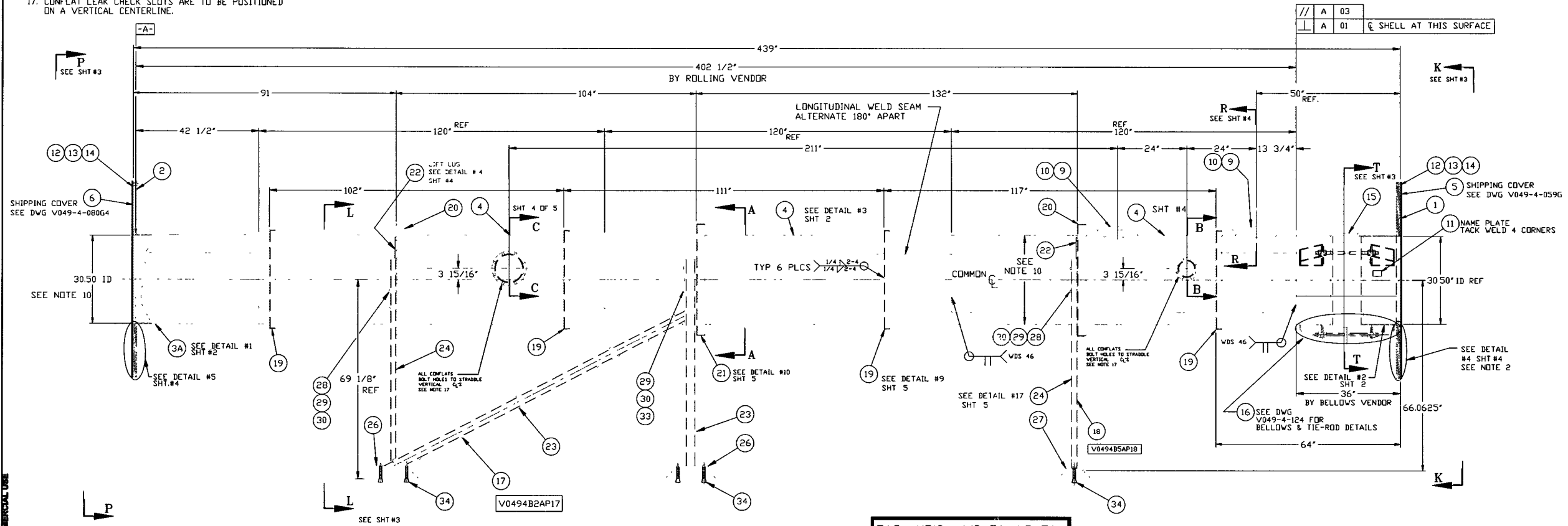


SECTION "A-A"

ITEM	PART NUMBER	SUFFIX	QTY	UM	DESCRIPTION
21	V049M821		1	EA	SUPPORT RING, 3"x3"x3/8" THK ANGLE 304 SST
22	V049M852		3	FT	FLAT BAR, 4" X .38" THK S304
23			1	35 FT	4"x4"x1/2" TS A500 GR-B
24			1	25 FT	TUBE, RECT, 3"x 2"x 3/16" THK A500 GR-B
25					
26			3	4 FT	FLAT BAR, 12"x 1 3/8" A36
27			3	2 FT	FLAT BAR, 6"x 1 3/8" A36
28	V049M763		3	12 EA	BOLT, HEX, 5/8-11UNC x 3 1/2 LG, A325
29	V049M755		3	18 EA	NUT, HEX, 5/8-11UNC, A325
30	V049M773		3	18 EA	WASHER, LOCK, 5/8 A325
31	202670		3	2 EA	GASKET, DFHC, CONFLAT 16 1/2" OD
32	V049M780		72 EA		BOLT, 18-B SST, HEX HD 3/8"-16x3" LG
33	V049M759		3	3 EA	BOLT, HEX, 5/8-11UNC x 5 1/2 LG, A325
34			20 EA		BOLT, ANCHOR, HILTI HVA 1"x8 1/4" EMBEDM
35					
36	V049M319		3	1 EA	HALF NIPPLE, SST 304L, CONFLAT 12" OD
37	V049M313		3	1 EA	HALF NIPPLE, SST, 304L, CONFLAT 8" OD
38	V0494195		3	1 EA	BLANK FLNG, CONFLAT, 12" OD, 304L SST
39	V0494196		3	1 EA	BLANK FLNG, CONFLAT, 8" OD, 304L SST
40	202552		3	1 EA	GASKET, DFHC, CONFLAT, 12" OD
41	V049M263		3	1 EA	GASKET, DFHC, CONFLAT, 8" OD
42					
43	V049M777			EA	BOLT, 18-B SST, HEX HD 5/16-18x2 1/2" LG
44					
45					
46	V049M783		72 EA		NUT, SILICON BRZ HEX 3/8"-16
47	V049M786		144 EA		WASHER, 18-B SST, FLAT 3/8"
48	V049M782		52 EA		NUT, SILICON BRZ, HEX 5/16"-18
49	V049M785		104 EA		WASHER, 18-B SST, FLAT 3/8"

ITEM	PART NUMBER	SUFFIX	QTY	UM	DESCRIPTION
1	V0494057		1	EA	30.5 ID x 60.5 ID FLANGE (GROOVED)
2	V0494056		1	EA	30.5 ID x 60.5 ID FLANGE (FLAT)
3	V0494B5AP3A		1	EA	SHELL 1/4" THK 304/304L SST
4	V0494B5AP4		3	EA	SHELL 1/4" THK 304/304L SST
5	V0494059G4		1	EA	SHIPPING COVER ASSY
6	V0494080G4		1	EA	SHIPPING COVER ASSY
7	V049M022		1	EA	O-RING, VITON (PER SPEC V049-2-045)
8	V049M023		1	EA	O-RING, VITON (PER SPEC V049-2-045)
9	V049M308		3	2 EA	HALF NIPPLE, SST, 304L, CONFLAT 16 1/2" OD
10	202666		3	2 EA	BLANK, CONFLAT 16.5" OD, SST 304L
11	V049M740		1	EA	PSI NAME PLATE, 2" X 3"
12	202678		3	60 EA	BOLT, SAI93 B7, HEX HD 7/8-9UNCx4" LG
13	202679		3	60 EA	NUT, SAI93 B7, HEX HD 7/8-9UNC
14	202581		3	150 EA	WASHER, STL, 1 3/4" OD x 15/16" ID x 1/4" THK
15	V0494B5AP1		1	EA	BELLOWS ASSY (PER SPEC V049-2-017)
16	***		3	EA	TIE-ROD ASSY (PER V049-4-124)
17	V0494B5AP17		2	EA	SUPPORT ASSEMBLY
18	V0494B5AP18		2	EA	SUPPORT ASSEMBLY
19	V049M815		1	4 EA	SUPPORT RING 2" X 2" X 1/4" THK ANGLE 304 SST
20	V049M820		1	2 EA	SUPPORT RING 3" X 3" X 1/4" THK ANGLE 304 SST

* ELECTROLESS NICKEL PLATE
*** SUPPLIED BY BELLOWS VENDOR



TAG NO'S: WB-5A, LB-5A

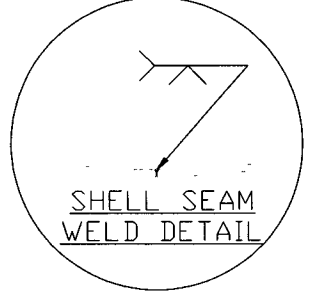
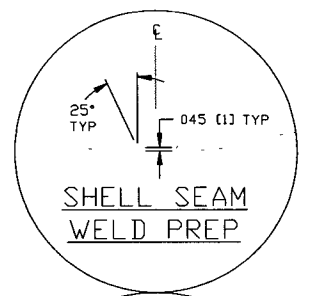
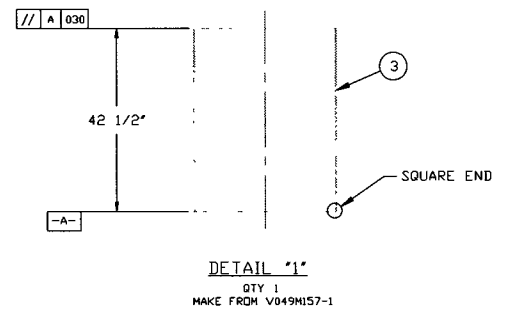
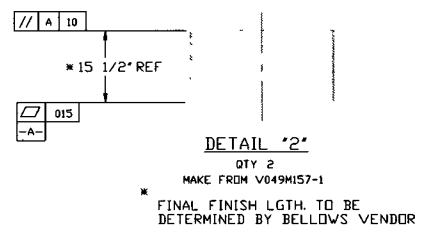
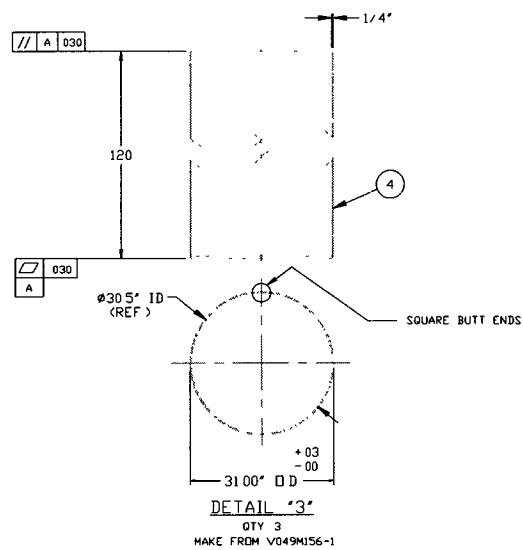
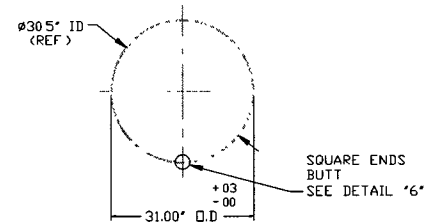
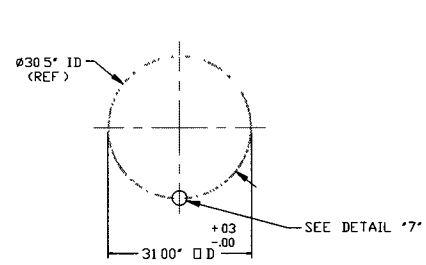
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6		5	
4		3	
2		1	

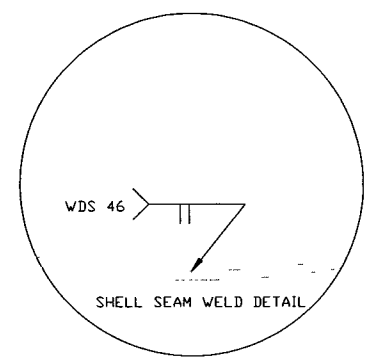
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4	REISSUED FOR FAB/SHIPPING AS NOTED	DHW PEF GS RDC REC SPIDER 5/20/97 0487
3	DESIGN UPDATE/ISSUED FOR FABRICATION	DHW PEF GS RDC REC PV 11/22/96 0180
2	FABRICATION (SHELL ONLY)	GS RDC REC PV 10/1/96 0283
1	DESIGN UPDATE / FABRICATION (BELLOW ASSY ONLY)	DHW RDC REC PV 9/11/96 0191
0	ISSUED FOR FDR	DHW RDC REC TDV 4/27/96 0146

SCALE	1/16	SHEET	1 OF 5
PROCESS SYSTEMS INTERNATIONAL, INC. 20 WALKUP DR WESTBOROUGH, MASSACHUSETTS 01581 USA SPOOL B-5A 30.50" ID x 60.50" ID MODE CLEANER TUBE LIGO VACUUM EQUIPMENT CAD FILE: V0494B5A/494B5A1.DWG NO: V049-4-B5A SCALE: 1/16 SHEET: 1 OF 5			

ELECTRONIC COPY



DETAIL-7"



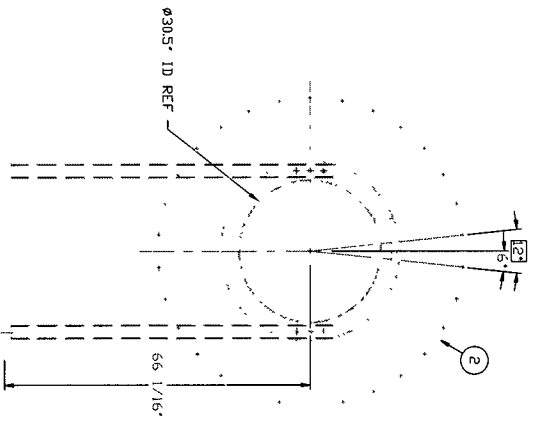
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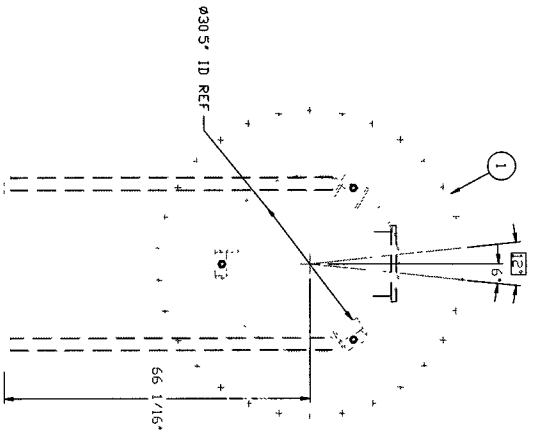
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SP00L B-5A 30.50" ID x 60.50" ID MODE CLEANER TUBE LIGO VACUUM EQUIPMENT			
CAD FILE	SIZE	DWG NO.	REV
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SCALE	NONE	SHEET	2 OF 5

EDUCATION VERSION - NOT FOR COMMERCIAL USE

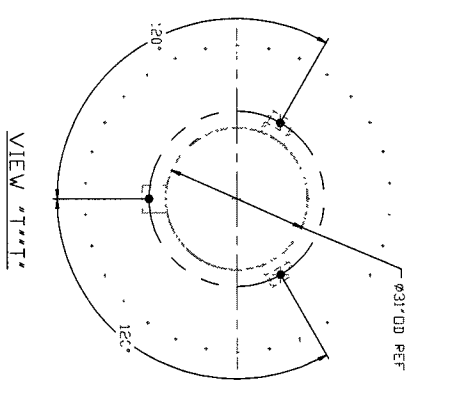
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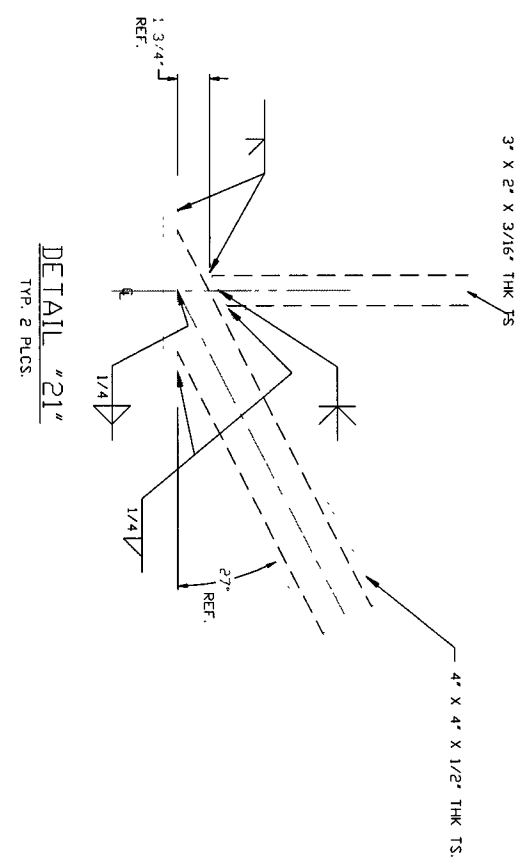
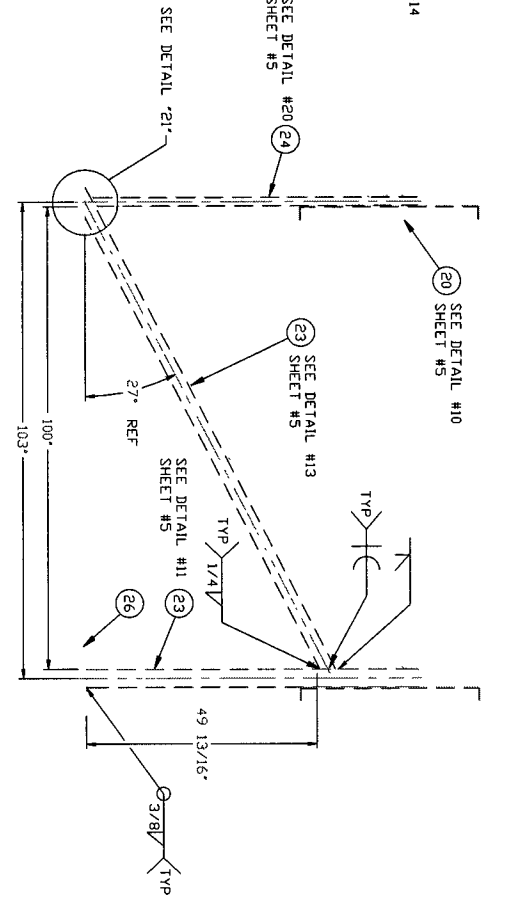
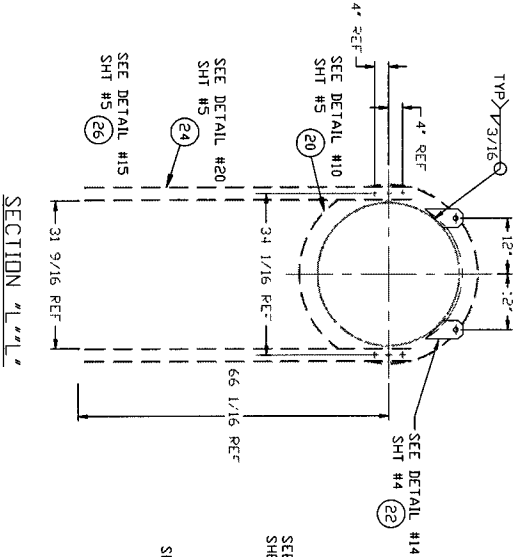
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VIEW 'K-K'

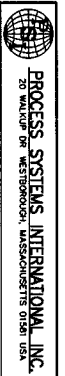


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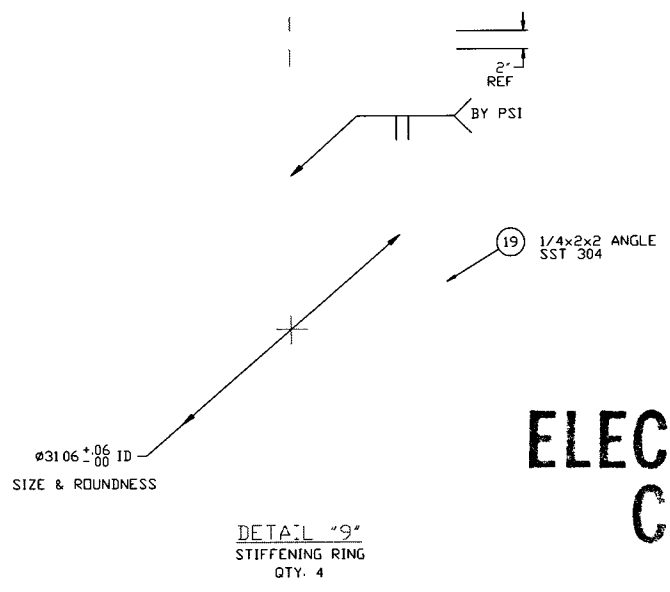
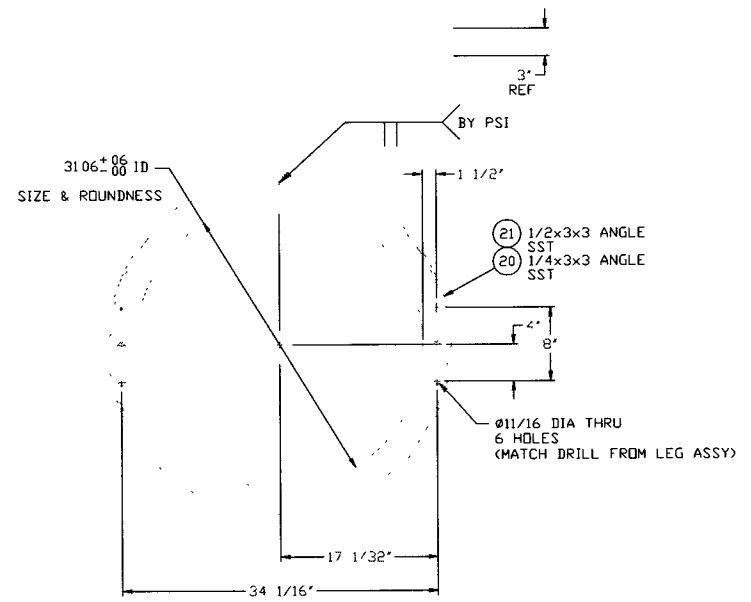
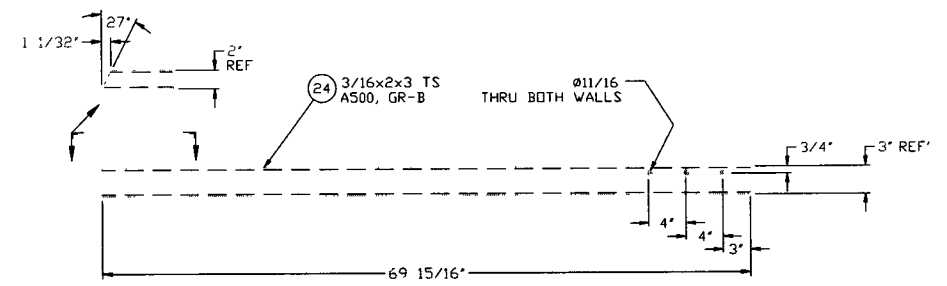
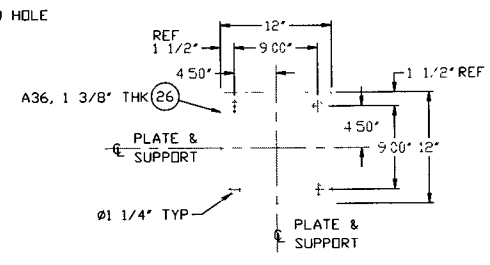
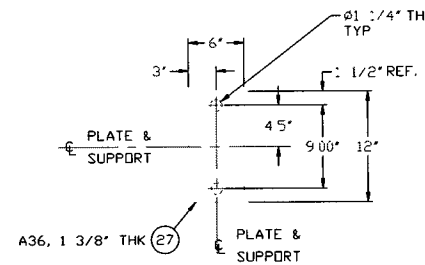
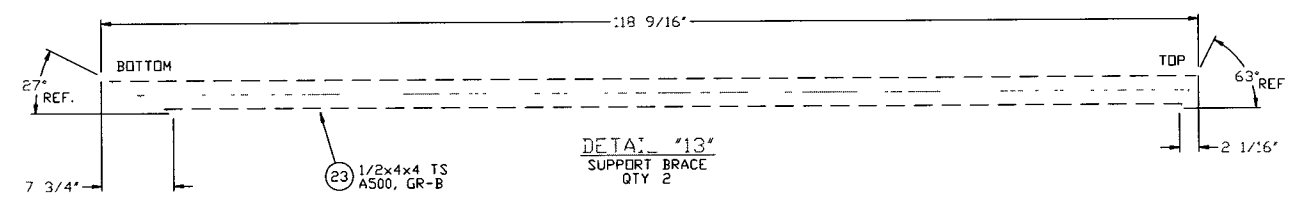
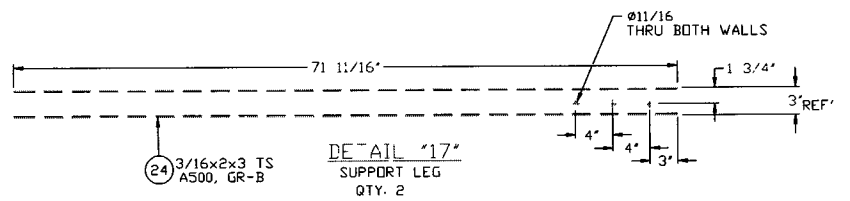
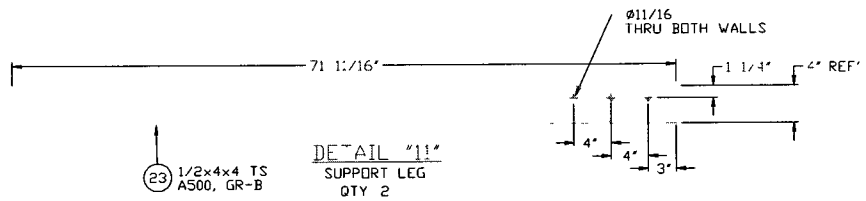
DETAIL "21"
TYP. 2 PLCS.

**ELECTRONIC
COPY**



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

SPDOL B-SA
30.50" ID X 60.50" ID
MODIFIED EXHAUST TUBE
LIGD VACUUM EQUIPMENT
JOB NO. V049-4-B5A
DATE 1/16 SHEET 3 OF 5



ELECTRONIC COPY

SEE SHEET 1 FOR REVISIONS

PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
SPOOL B-5A 30.50" ID x 60.50" ID MODE CLEANER TUBE LIGO VACUUM EQUIPMENT			
CAD FILE	SIZE	DWG NO	REV
V0494B5A/494B5A55	D	V049-4-B5A	5
SCALE	NONE	SHEET	5 OF 5

EDUCATION VERSION - NOT FOR COMMERCIAL USE

8 7 6 5 4 3 2 1