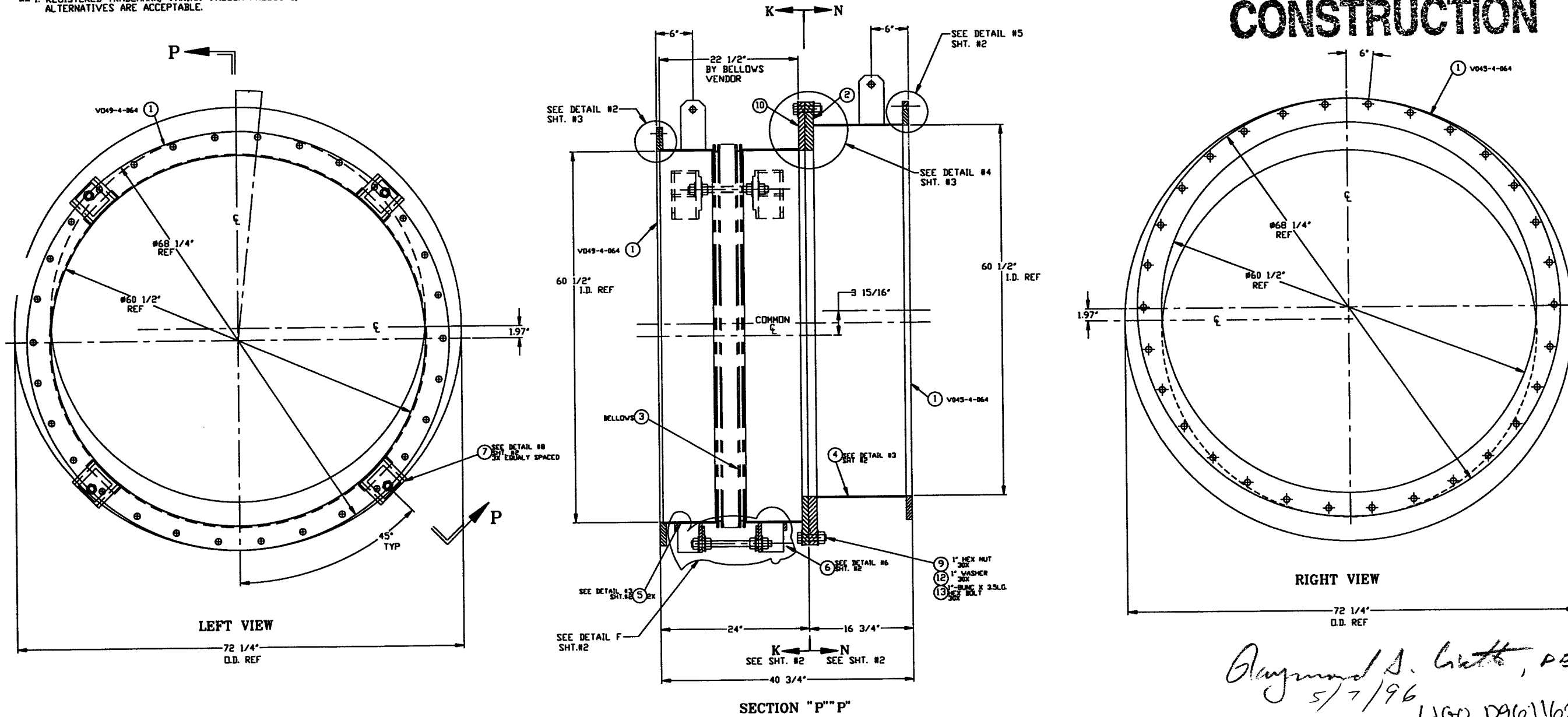


**NOTES:**

9. LEAK TEST & METHOD PER PSI SPEC. V049-2-014
8. CERTIFIED MANUFACTURER'S MATERIAL TEST REPORTS REQUIRED.
7. BOLT HOLES TO STRADDLE NATURAL CENTERLINES AS SHOWN ± .015.
6. CLEAN PER SPEC. V049-2-015
5. DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL.
4. SPOOL FABRICATION TO BE IN ACCORDANCE WITH SPEC. V049-2-097.
3. FOR FLANGE DETAILS SEE DWGS.
2. THESE FLANGES EACH INCLUDE AN ANNULAR CHANNEL BETWEEN O-RINGS, MANIFOLD TO A SINGLE PUMPOUT PORT ON EACH CHAMBER, SEE DWG V049-4-
1. REGISTERED TRADEMARK, VARIAN VACUUM PRODUCTS; COMPATIBLE ALTERNATIVES ARE ACCEPTABLE.

ITEM	PART NUMBER	SUFFIX	QTY	UM	DESCRIPTION
1	V049-4-064	3	2		60.5" ID FLANGE DETAIL (FLAT)
2	V049-4-067	3	1	-	60.5 ID 1.96 OFFSET FLANGE DETAIL (GROOVE)
3	-	3	1		BELLOWS
4	DETAIL #3	3	1		60.5 I.D. SHELL; 304L S.S.T.
5	DETAIL #3	3	2		60.5 I.D. SHELL; 304L S.S.T.
6	DETAIL #6	3	3		TIE ROD; 1-BUNC THREADED ROD 304L S.S.T.
7	DETAIL #7	3	6		8" X 6" X 5" THK REC. TUBE 304 S.S.T.
8	DETAIL #8	3	1		UNION; 2" THK. 304L S.S.T.
9	-	3	38		NUT, HEX 1-BUNC 304 S.S.T.
10	V049-4-066	3	1	-	60.5 ID 1.96 OFFSET FLANGE DETAIL (FLAT)
11	DETAIL #9	3	8		4" X 3.75" X .38" THK PLAT 304 S.S.T.
12	-	3	38		WASHER 1" FLAT 304 S.S.T.
13	-	3	38		BOLT, HEX 1-BUNC X 3.5" LG. 304 S.S.T.

**NOT FOR CONSTRUCTION**



*Raymond S. Gatto, PE*  
5/7/96

LIGO D901162-00-V

DWG. NO.	DESCRIPTION	DWG. NO.	DESCRIPTION
8	REFERENCE DRAWINGS	6	
7		5	
		4	
		3	
		2	
		1	

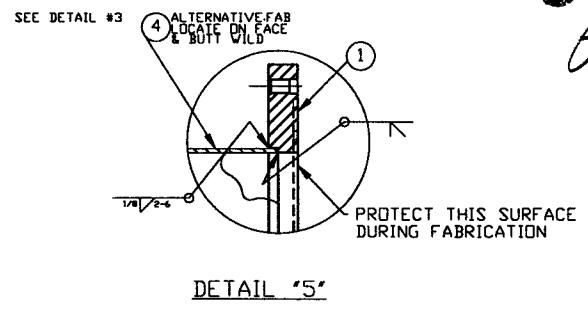
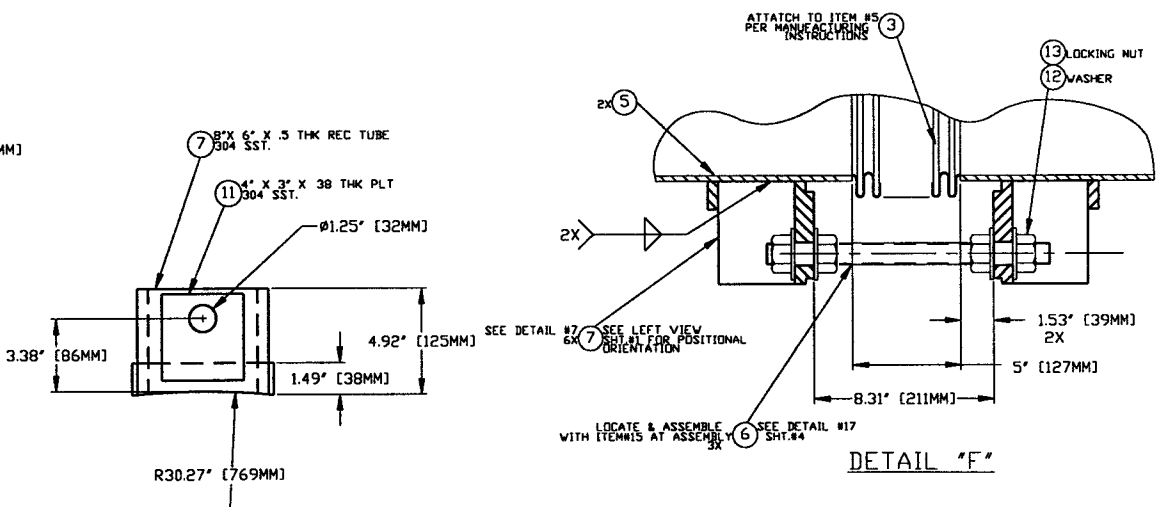
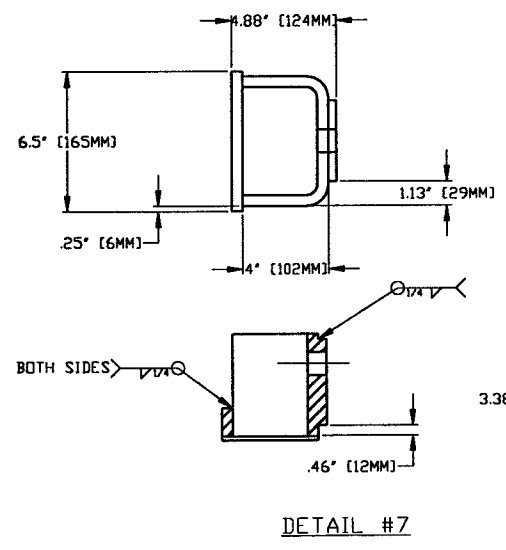
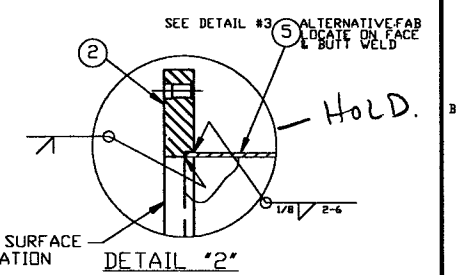
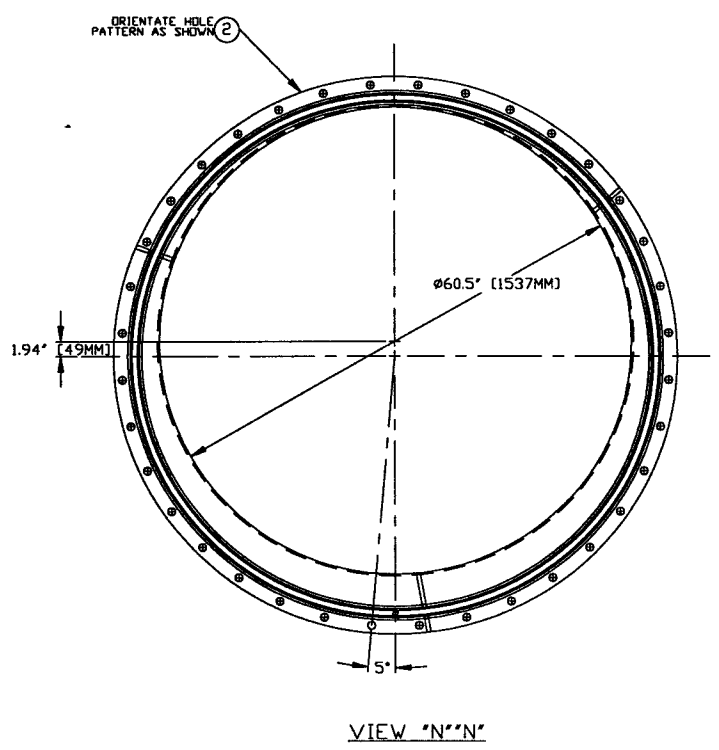
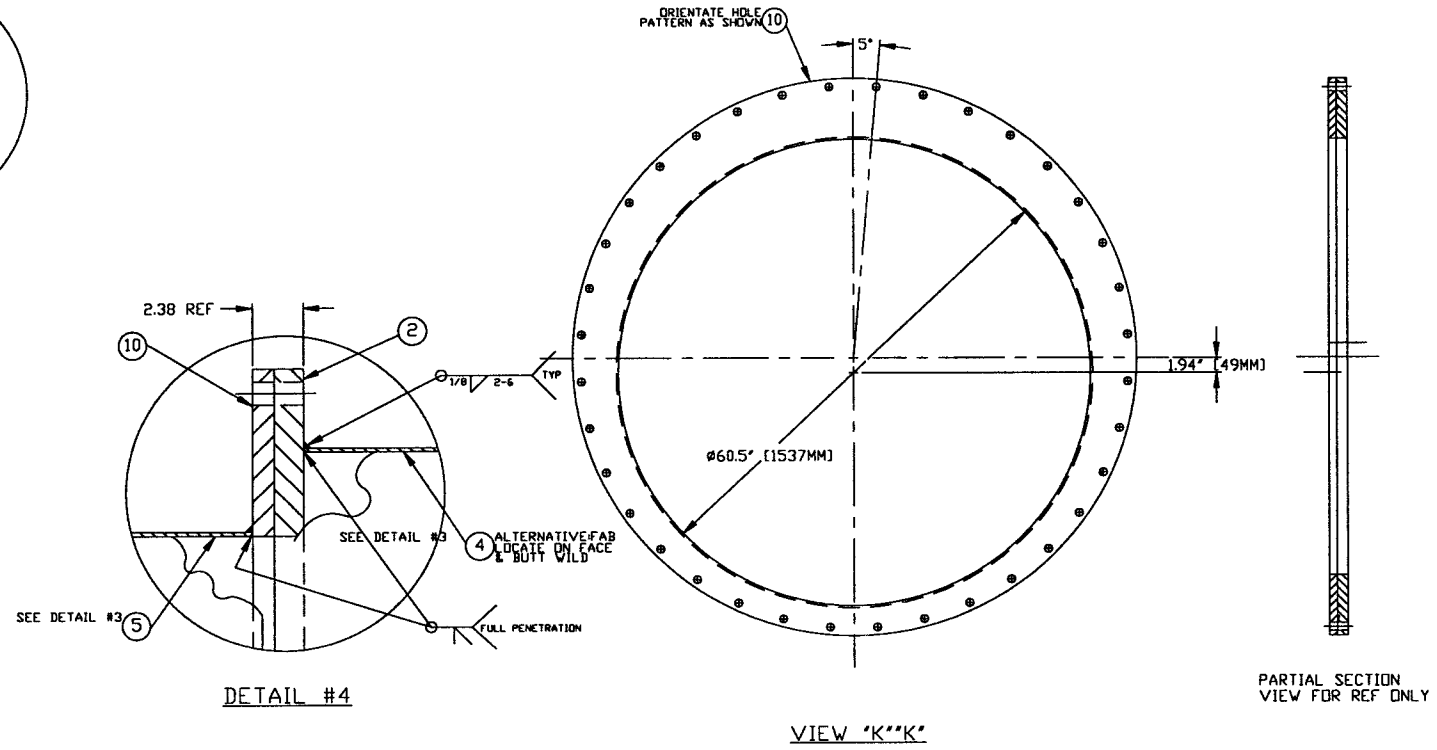
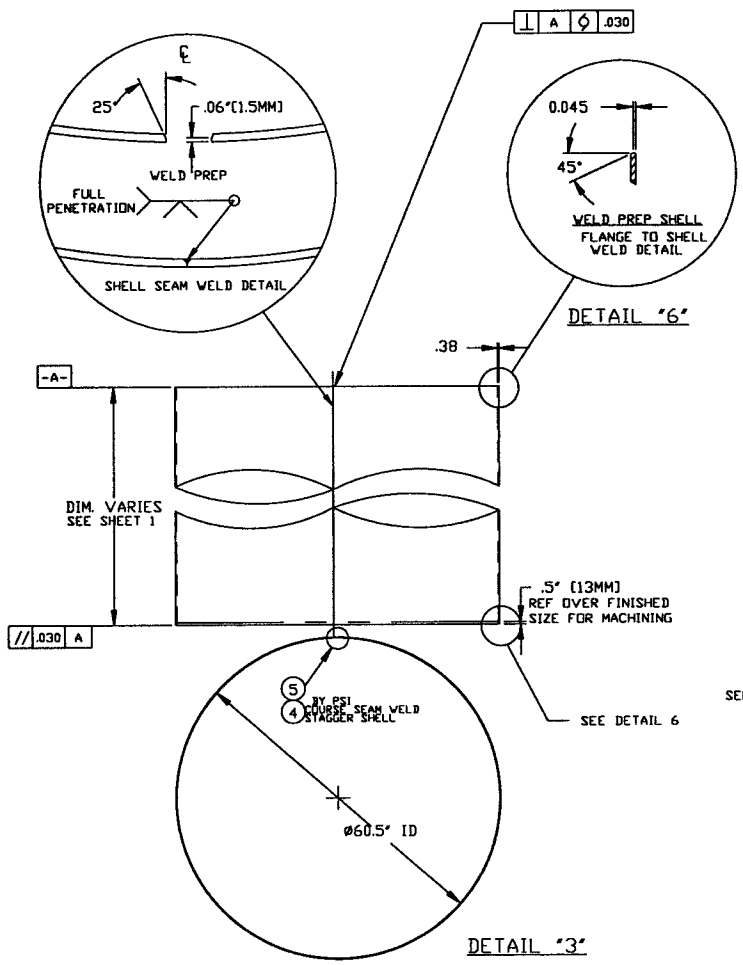
**PROCESS SYSTEMS INTERNATIONAL, INC.**  
20 WALCUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA

OFFSET SPOOL BE-3A  
60.25" ID x 60.50" ID  
LIGO VACUUM EQUIPMENT

DO NOT SCALE THIS DRAWING 0 ISSUED FOR FAB

4/29/96 0146

SCALE NONE SHEET 1 OF 2



**NOT FOR CONSTRUCTION**

*Raymond D. Little, PE*  
5/7/96 **HOLD**

PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
OFFSET SPOOL BE-3A 60.25" ID x 60.50" ID LIGO VACUUM EQUIPMENT			
CAD FILE 49BE3AS2	SIZE D	DWG NO. VD49-4-BE3A	REV 0
SCALE NONE	SHEET 2 OF 2		

LIGO 10961162-00-V

REV 03, 1996 - 144837