

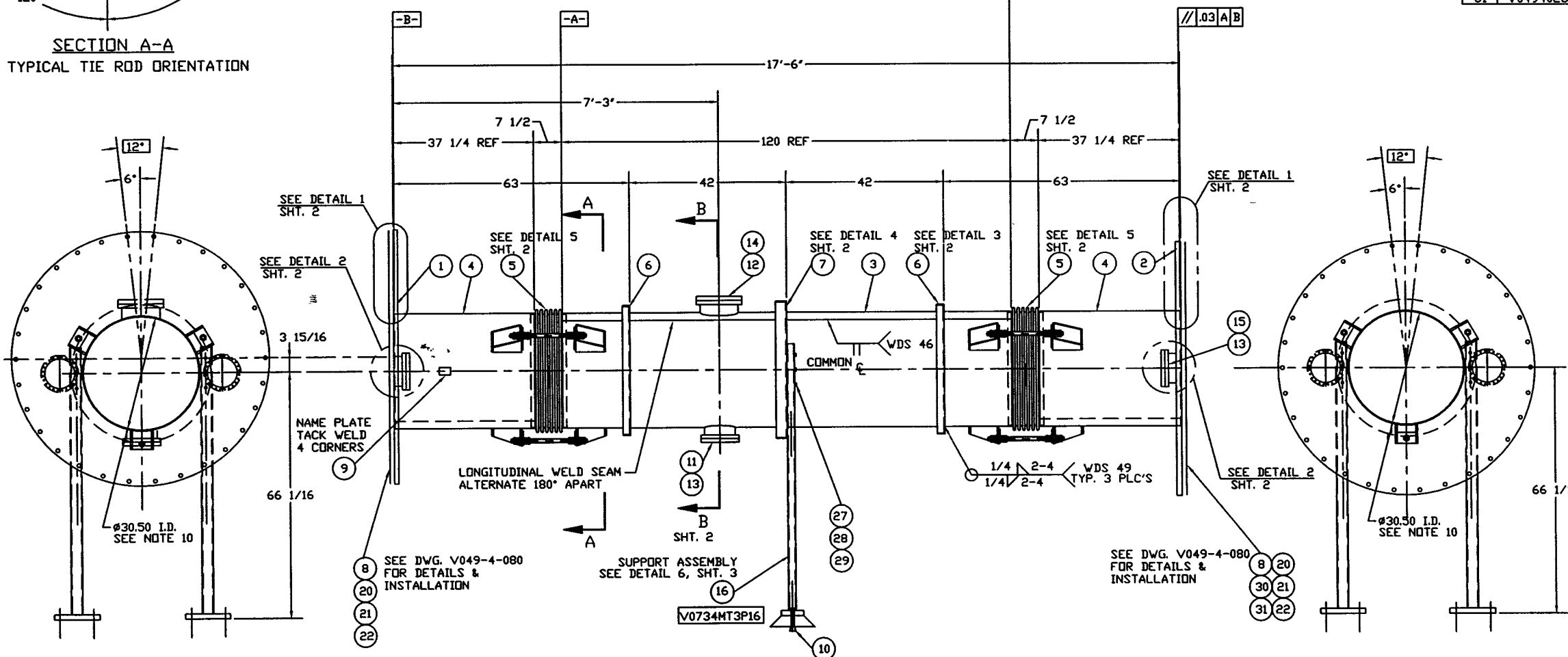
SECTION A-A
TYPICAL TIE ROD ORIENTATION

NOTES:

1. SPOOL FABRICATION TO BE IN ACCORDANCE WITH SPEC. V049-2-097.
2. MACHINING AND ROLLING PER SPEC V049-2-136.
3. PLATES PRIOR TO ROLLING MUST HAVE DIAGONAL CORNER TO CORNER DIMENSIONS WITHIN 1/16" OF EACH OTHER.
4. DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL.
5. STRUCTURAL STEEL FABRICATION AND PAINTING TO BE IN ACCORDANCE WITH SPEC. V049-2-139.
6. CLEAN PER SPEC. V049-2-015.
7. LEAK TEST AND METHOD PER PSI SPEC. V049-2-014.
8. CERTIFIED MANUFACTURER'S MATERIAL TEST REPORTS REQUIRED AS NOTED.
9. THE CENTERLINES OF ALL SHELLS AND FLANGES ARE TO LIE ON THE COMMON CENTERLINE WITHIN ± 1/16".
10. EACH SHELL IS TO BE MARKED WITH THE PSI PART NO.
11. WDS NO'S. REFER TO WELD DATA SPEC. V049-2-084.
12. FOR FLANGE DETAILS SEE DWGS. V073-4-003 & V073-4-004.
13. BOLT HOLES OF ALL FLANGES TO STRADDLE VERTICAL CENTERLINE. +/- .015
14. FLANGE INCLUDES AN ANNULAR CHANNEL BETWEEN O-RINGS.
15. CONFLAT FLANGES ARE TO HAVE PROTECTIVE COVERS AT ALL TIMES DURING AND AFTER MANUFACTURING.
16. CONFLAT LEAK CHECK SLOTS ARE TO BE POSITIONED ON VERTICAL CENTERLINE.
17. TIGHTEN TIE-ROD NUTS WITH BELLOWS IN 'FREE' POSITION TO 100 FT-LB PRIOR TO INSTALLING END FLANGES AND PRIOR TO LEAK TEST.

ITEM	PART NUMBER	SUFFIX	QTY	UM	DESCRIPTION
1	V0734003		1	EA	FLANGE DTL 3.94" OFFSET, FLAT F. 31.06" ID X 68.5" OD
2	V0734004		1	EA	FLANGE DTL, GROOVED 1/2" SLOT HOLES 31.06" ID X 68.5" OD
3	V073M006		1	EA	SHELL, SST 304/304L, 30.5" ID X 120" LG
4	V0734MT3P1		2	EA	SHELL, SST 304/304L, 30.5" ID X 37.25" LG
5	V073M010		2	EA	BELLOWS & TIE ROD ASSY
6	V049M815		1	EA	STIFFENING RING 2" X 2" X 1/4" THK ANGLE 304 SST
7	V049M820		1	EA	STIFFENING RING 3" X 3" X 1/4" THK ANGLE 304 SST
8	V0494080G4		2	EA	SHIPPING COVER ASSY, 68.5" OD FLANGE
9	V049M740		1	EA	PSI NAME PLATE 2"x3"
10	-		4	EA	1" CONCRETE ANCHOR BOLT - BY OTHERS
11	V049M320		3	EA	HALF NIPPLE, SST 304L, CONFLAT 10" OD, 5" LG X 250VIT
12	V049M310		3	EA	HALF NIPPLE, SST 304L, CONFLAT 12" OD, 5" LG X 250VIT
13	202667		3	EA	BLANK FLG, CONFLAT, 10" OD, 304L SST
14	202549		3	EA	BLANK FLG, CONFLAT, 12" OD, 304L SST
15	V073M013		3	EA	HALF NIPPLE, SST 304L, CONFLAT 10" OD, 4" LG X 250VIT
16	V0734MT3P16		2	EA	SUPPORT ASSEMBLY
17	202671		3	EA	GASKET, DFHC, CONFLAT 10" OD
18	-		1	EA	FT TUBE RECT 3" X 2" X 3/16" A500 GR-B
19	-		3	EA	FT BAR FLAT 6" X 1 3/8" A36
20	202678		3	EA	BOLT, SAE 93 B7, HEX HD 7/8-9UNC X 1 1/2
21	202679		3	EA	NUT, SAE 93 B7, HEX HD 7/8-9UNC
22	202581		3	EA	WASHER, STL, 1 3/4" OD X 15/16" ID X 1/4" THK
23	202552		3	EA	GASKET, DFHC, CONFLAT 12" OD
24	V049M777		152	EA	BOLT, 18-8 SST, 5/16-18 X 2 1/2 LG
25	V049M782		152	EA	NUT, SILICON BRZ, HEX 5/16-18
26	V049M785		304	EA	WASHER, 18-8 SST, FLAT, 5/16"
27	V049M753		3	EA	BOLT, HEX, 5/8-11UNC X 3 1/2 LG, A325
28	V049M755		3	EA	NUT, HEX, 5/8-11UNC, A325
29	V049M773		3	EA	WASHER, LOCK, 5/8 A325
30	V0494022		1	EA	O-RING VITON (PER SPEC. V049-2-045)
31	V0494023		1	EA	O-RING VITON (PER SPEC. V049-2-045)

* ELECTROLESS NICKEL PLATE
** REUSE FROM PREVIOUS LIGO PROJECT

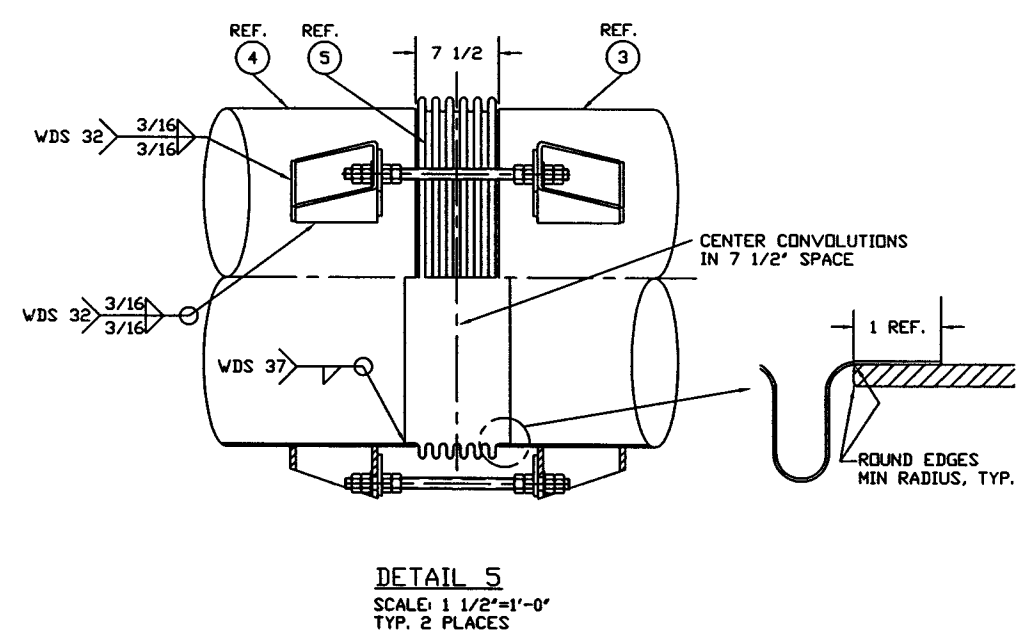
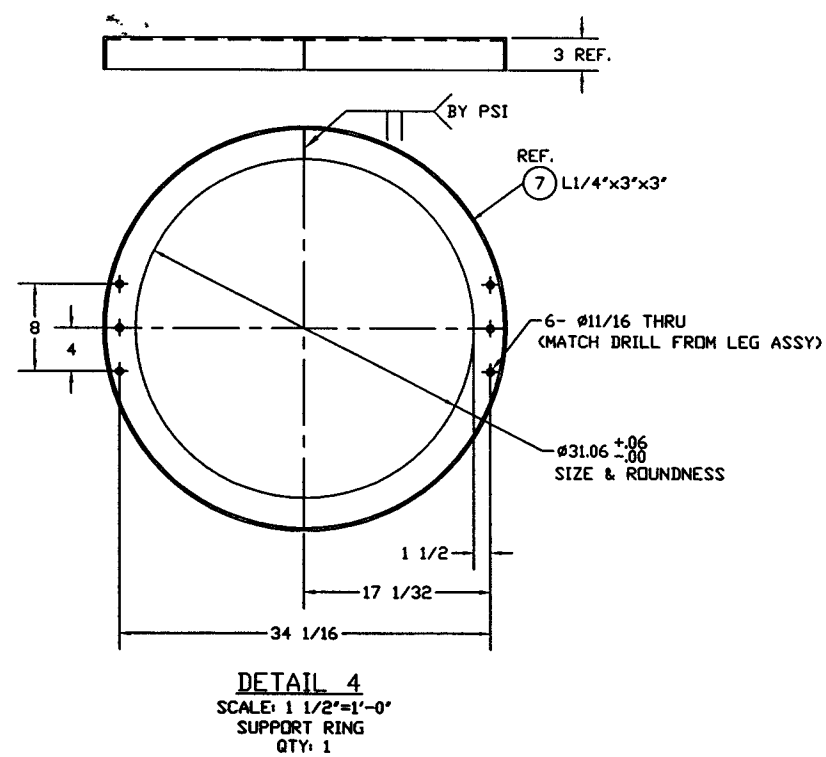
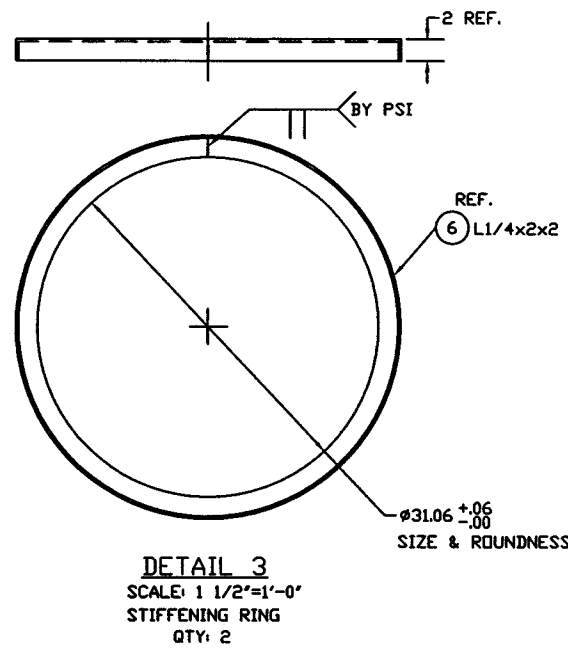
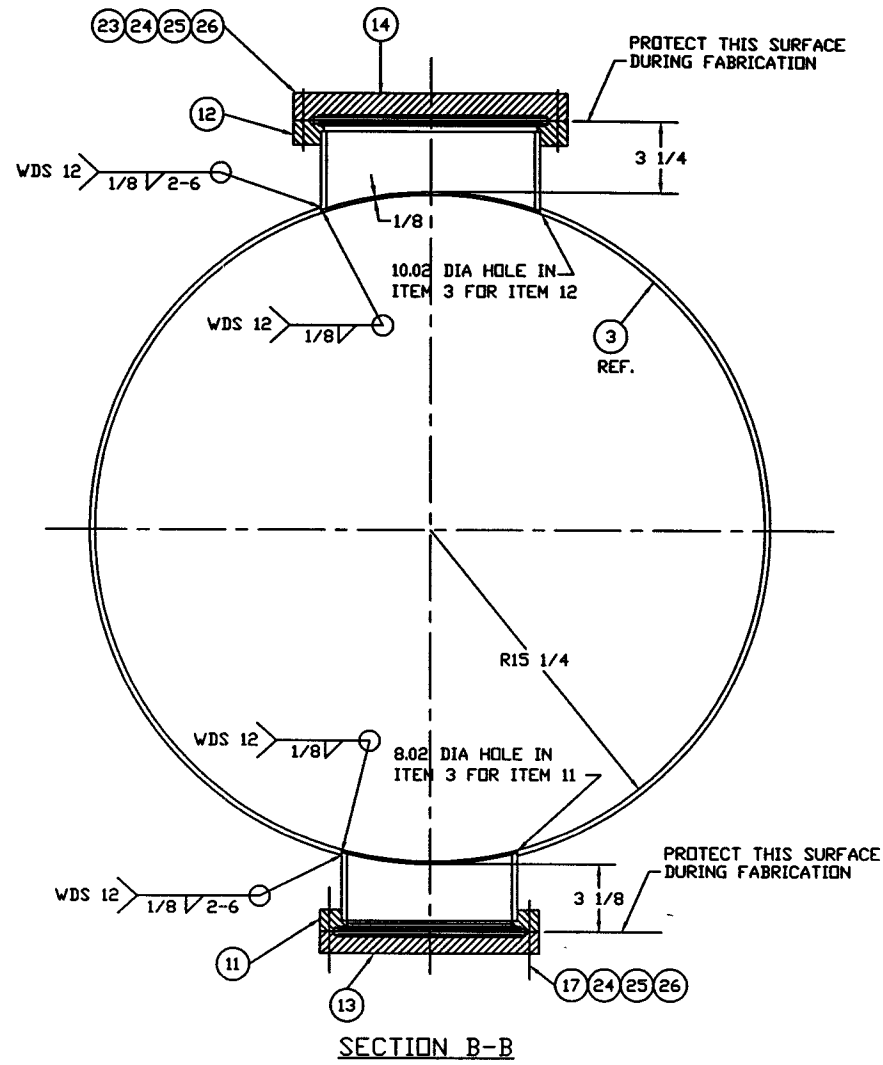
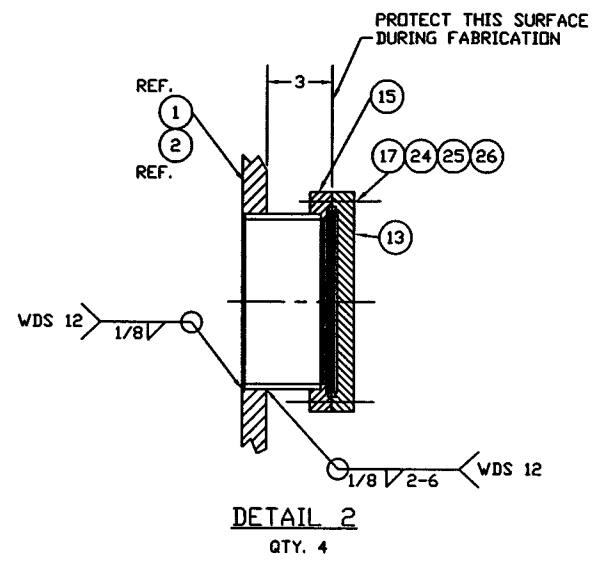
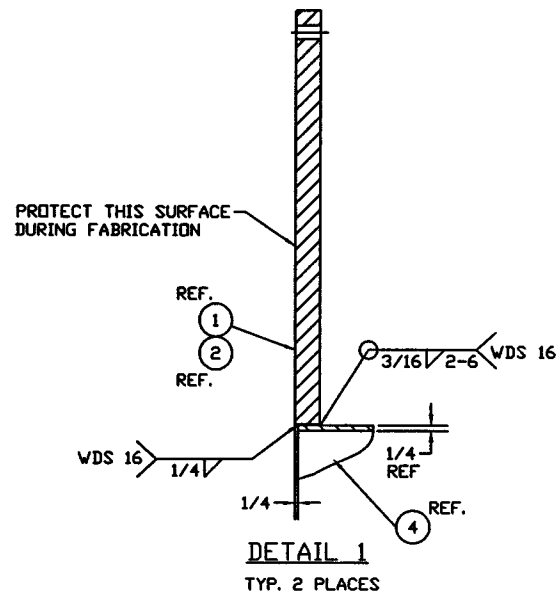


TAG NO: MT-3

FOR INFO. ONLY

JAN 16 1998

PROPRIETARY AND CONFIDENTIAL 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.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TOLERANCES: FRACTIONAL ± .01 ANGULAR ± .04 90° BORE ± .002 TWO PLACE DECIMAL ± .003 THREE PLACE DECIMAL ± .005 FINISHED SURFACE RING BREAK CORNERS 3R OUT REMOVE ALL BURRS		PROCESS SYSTEMS INTERNATIONAL, INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA	
	DO NOT SCALE THIS DRAWING USED ON:	SHT. 0 REV.	0 REV.	0 REV.	0 REV.	0 REV.
DWG. NO. REFERENCE DRAWINGS	DESCRIPTION	NEXT ASS'Y: V073-5-001	5	4	3	2
RELEASED FOR CLIENT APPROVAL AND FABRICATION			12.05.97	0009	12.05.97	0009
ISSUE DESCRIPTION			CHKD	DRWN	DATE	DECD
SCALE 3/4"=1'-0"			SHEET 1 OF 3	LIGO-D980105-00-V		

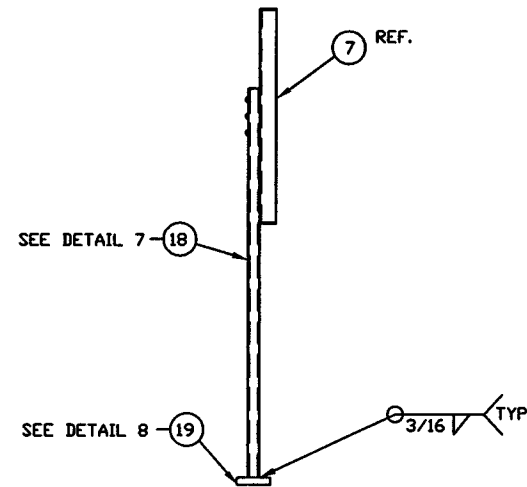
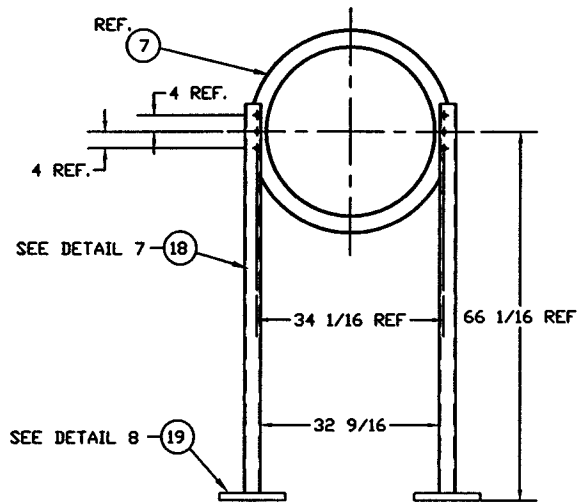


FOR INFO. ONLY

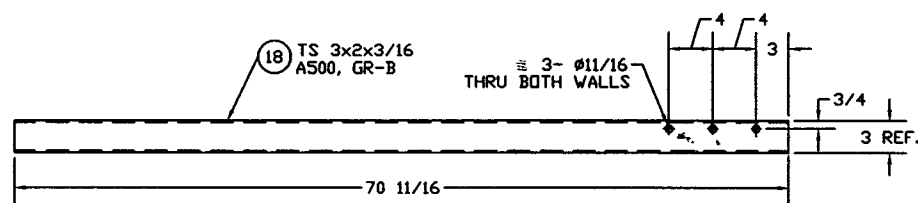
JAN 16 1998

PROCESS SYSTEMS INTERNATIONAL, INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
BEAM TUBE SPOOL MT-3 30.50"ID x 60.50"ID MODE CLEANER TUBE LIGO MIT VACUUM EQUIPMENT			
CAD FILE	SIZE	ENG. NO.	REV.
4MT3S2	D	V073-4-MT3	0
SCALE	1/4	SHEET	2 OF 3

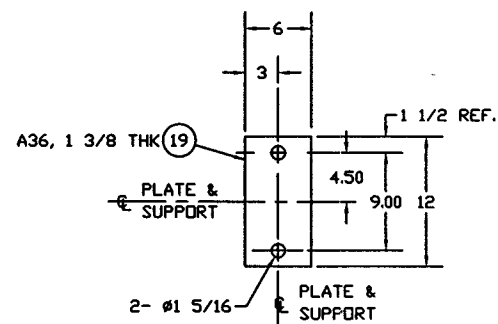
Nov 26, 1996 - 081012



DETAIL 6
SUPPORT ASSEMBLY, ITEM 16
PART NUMBER: V0734MT3P16



DETAIL 7
SUPPORT LEG
QTY: 2
(1 AS SHOWN)
(1 OPP HAND)



DETAIL 8
SUPPORT PAD
QTY: 2

FOR INFO. ONLY

JUN 16 1998

PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
BEAM TUBE SPOOL MT-3 30.50"ID x 60.50"ID MODE CLEANER TUBE LIGO MIT VACUUM EQUIPMENT			
CAD FILE 4HT3S3	SIZE D	DWG NO. V073-4-MT3	REV. 0
SCALE NONE	SHEET 3 OF 3		

JUN 16 1998 - 110858