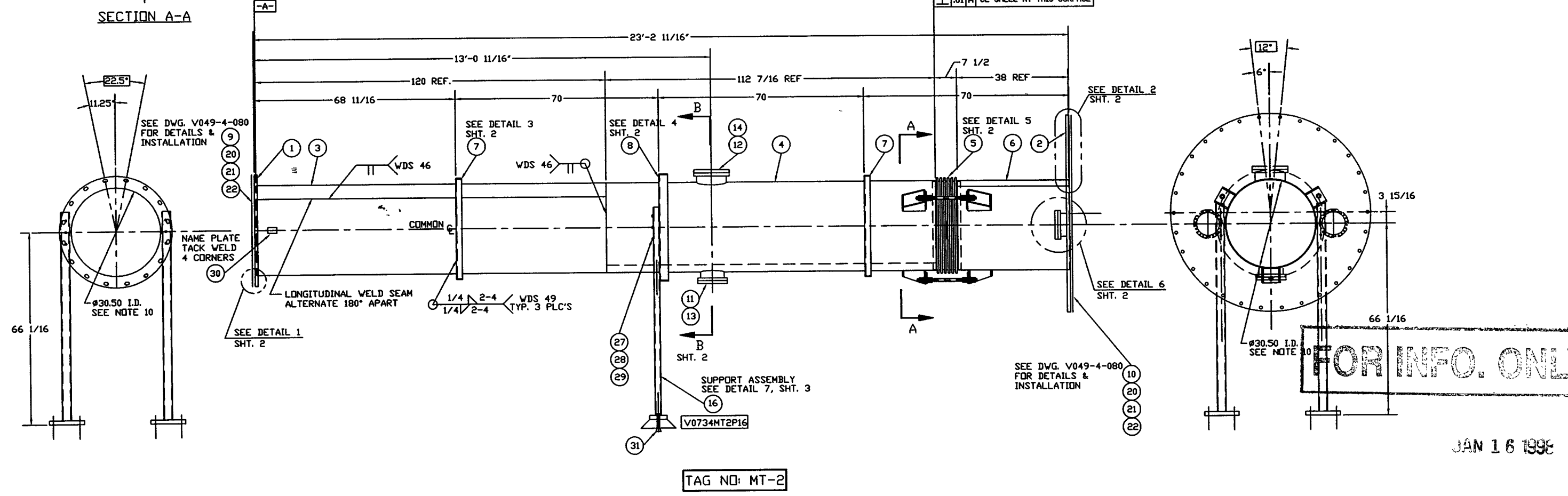
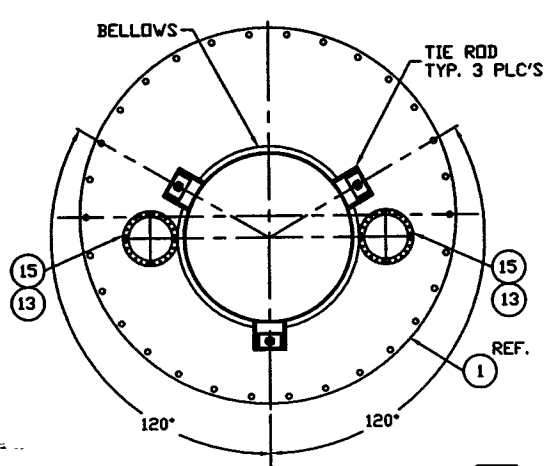


ITEM	PART NUMBER	SUFFIX	QTY	UM	DESCRIPTION
1	V0734002		1	EA	FLANGE DTL FLAT F. V/SLOT HOLES, 30.5"IDx38.5"OD
2	V0734003		1	EA	FLANGE DTL 394' OFFSET, FLAT F., 31.06"IDx68.5"OD
3	V073M006		1	EA	SHELL, SST304/304L, 30.5"IDx120"LG
4	V0734MT2P1		1	EA	SHELL, SST304/304L, 30.5"IDx112.5"LG
5	V073M010		1	EA	BELLOWS & TIE ROD ASSY
6	V073M007		1	EA	SHELL, SST304/304L, 30.5"IDx38"LG
7	V049M815		1	EA	STIFFENING RING 2" X 2" X 1/4" THK ANGLE 304 SST
8	V049M820		1	EA	STIFFENING RING 3" X 3" X 1/4" THK ANGLE 304 SST
9	V0494080G1		1	EA	SHIPPING COVER ASSY, MODIFIED FOR 38.5"OD FLANGE
10	V0494080G4		1	EA	SHIPPING COVER ASSY, 68.5"OD
11	V049M320		3	EA	HALF NIPPLE, SST 304L, CONFLAT 10"OD, 51.6x250VT
12	V049M310		3	EA	HALF NIPPLE, SST 304L, CONFLAT 12"OD, 51.6x250VT
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, 41.6x250VT
16	V0734MT2P16		2	EA	SUPPORT ASSEMBLY
17	202671		3	EA	GASKET, OFHC, CONFLAT 10"OD
18	-		1	EA	FT TUBE RECT 3"X2"X3/16" A500 GR-B
19	-		3	EA	FT BAR FLAT 6"X1 3/8" A36
20	202678		3	EA	BOLT, SA193 B7, HEX HD 7/8-9UNCx1LG
21	202679		3	EA	NUT, SA193 2H, 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, OFHC, CONFLAT 12"OD
24	V049M777		104	EA	BOLT, 18-8 SST, 5/16-18x2 1/2 LG
25	V049M782		104	EA	NUT, SILICON BRZ, HEX 5/16-18
26	V049M785		208	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	V049M740		1	EA	PSI NAME PLATE 2"x3"
31	-		4	EA	1" CONCRETE ANCHOR BOLT - BY OTHERS

* ELECTROLESS NICKEL PLATE
 ** REUSE FROM PREVIOUS LIGO PROJECT

- 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. V073-4-002 & V073-4-003.
 13. BOLT HOLES OF ALL FLANGES TO STRADDLE VERTICAL CENTERLINE. +/-0.015
 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 LEAK TEST.



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DWG. NO.	DESCRIPTION
	REFERENCE DRAWINGS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TELEANCES: FRACTIONAL ± 1 ANGULAR ± 1/2 TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 FINISHED SURFACE RING BREAK CORNERS BY CUT REMOVE ALL BURRS
DO NOT SCALE THIS DRAWING
USED ON
NEXT ASS'Y: V073-5-001

REV	DESCRIPTION	CHKD	DRWN	DATE	DESD
0	RELEASED FOR CLIENT APPROVAL AND FABRICATION			12.05.97	0009

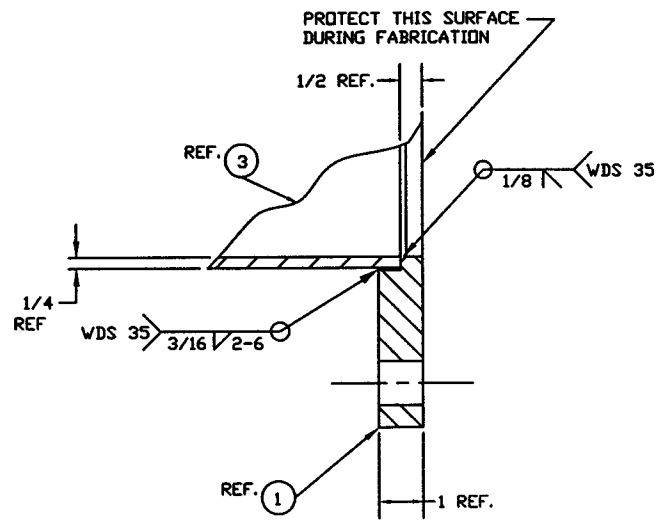
PROCESS SYSTEMS INTERNATIONAL, INC.
 30 WALRUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA

BEAM TUBE SPOOL MT-2
 30.50" I.D. X 60.50" I.D.
 MODE CLEANER TUBE
 LIGO MIT VACUUM EQUIPMENT

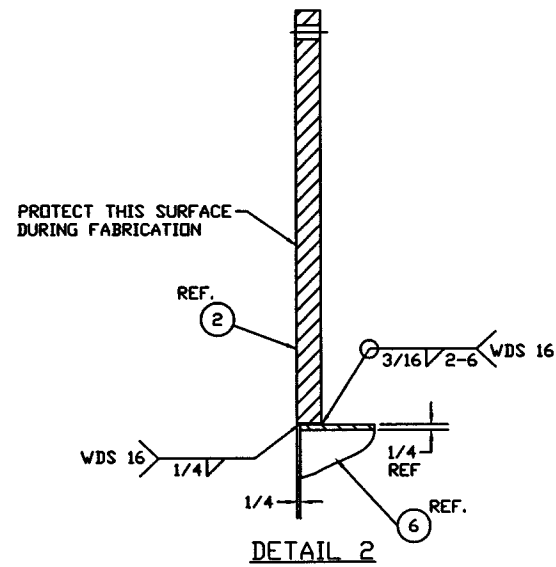
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 SIZE: 11" X 17"
 SHEET: 1 OF 3

SCALE: 3/4" = 1'-0"

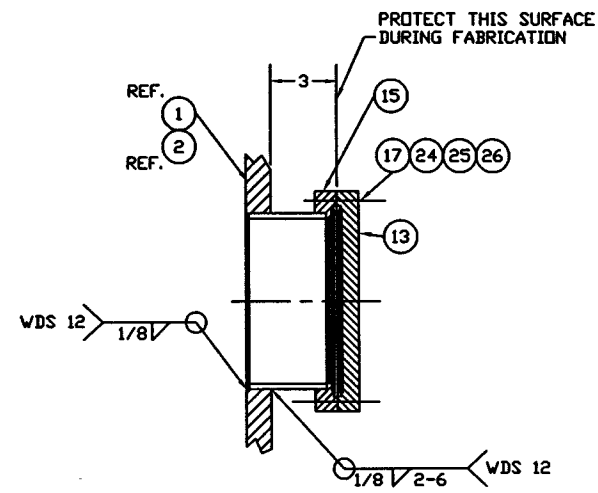
LIGO-D980104-00-V



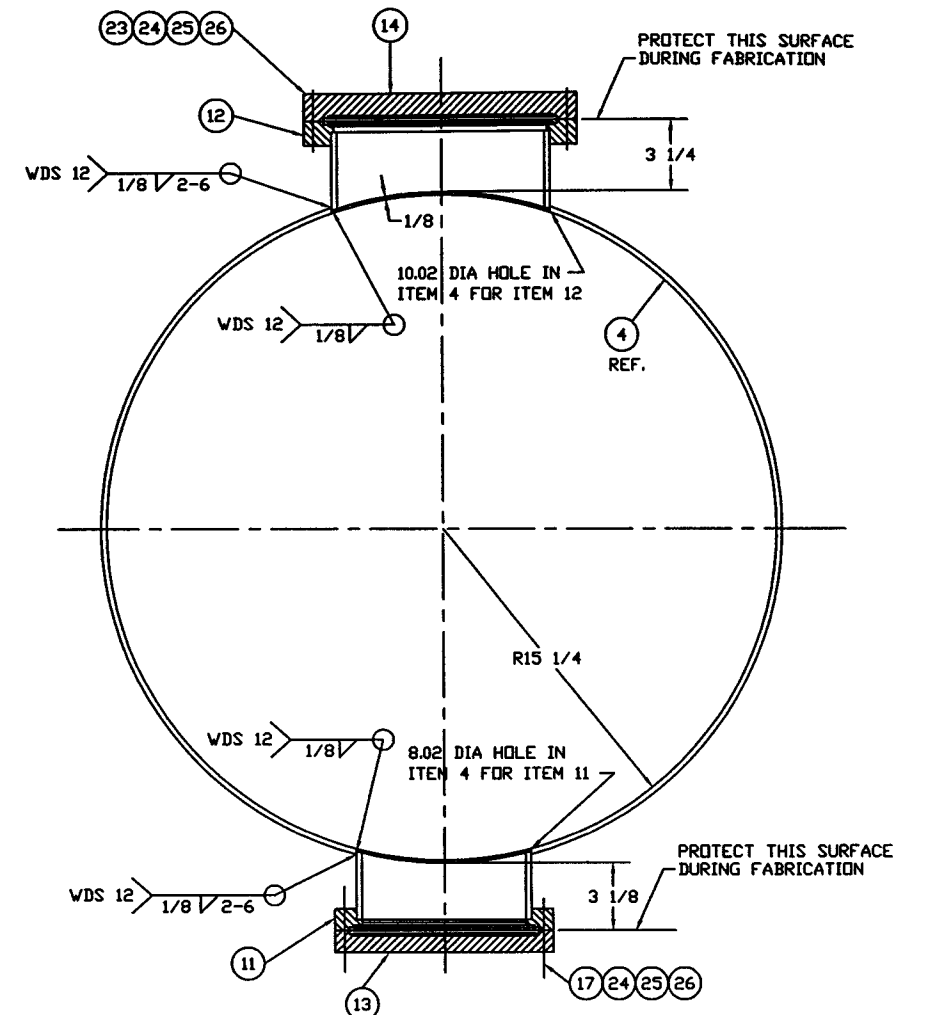
DETAIL 1
SCALE: HALF



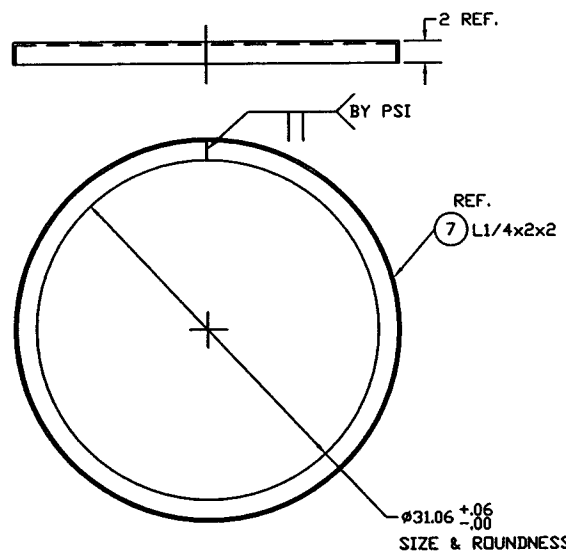
DETAIL 2



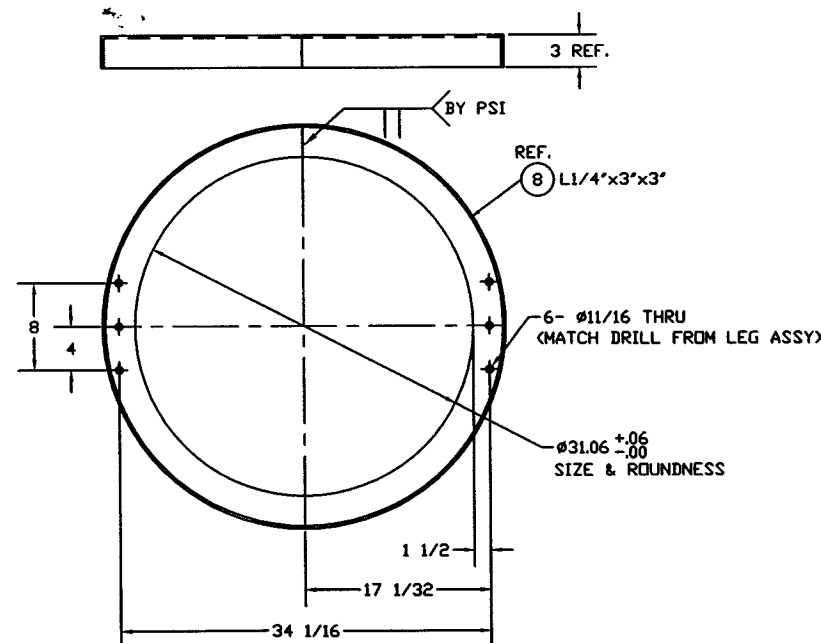
DETAIL 6
QTY: 2



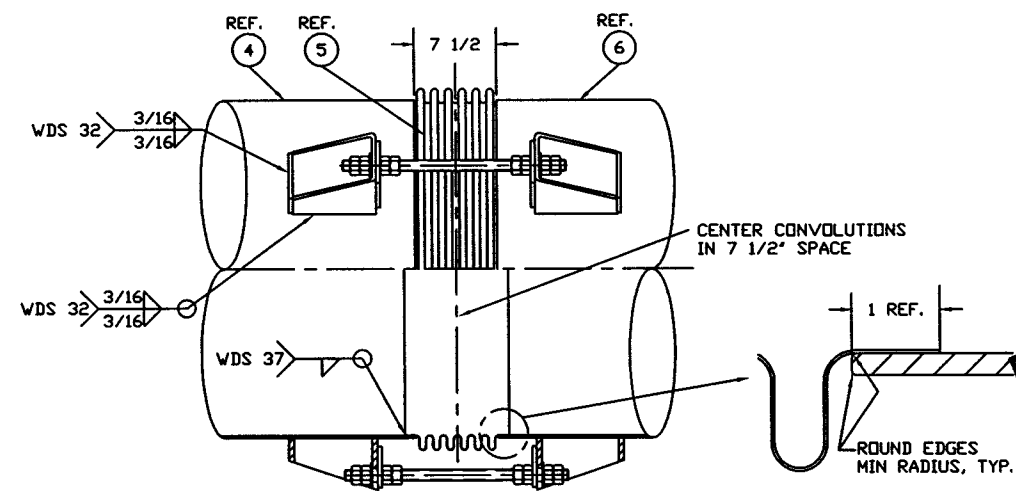
SECTION B-B



DETAIL 3
SCALE: 1 1/2"=1'-0"
STIFFENING RING
QTY: 2



DETAIL 4
SCALE: 1 1/2"=1'-0"
SUPPORT RING
QTY: 1



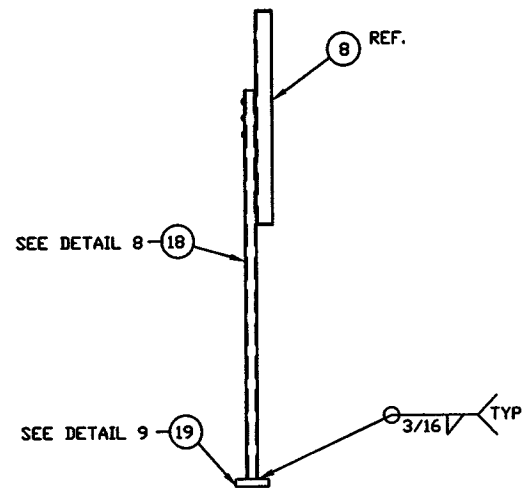
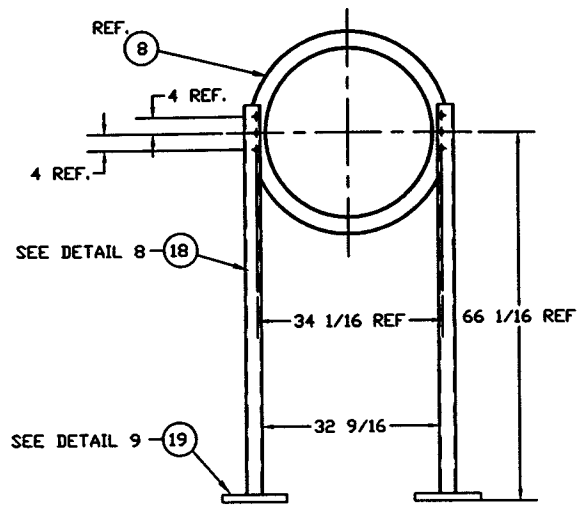
DETAIL 5
SCALE: 1 1/2"=1'-0"

FOR INFO. ONLY

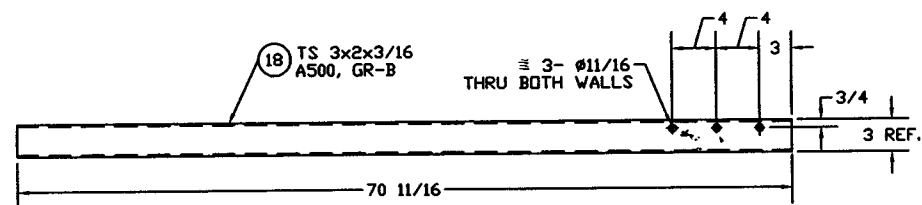
JAN 16 1998

PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
BEAM TUBE SPOOL MT-2 30.50"ID x 60.50"ID MODE CLEANER TUBE LIGO MIT VACUUM EQUIPMENT			
CAD FILE	SIZE	DWG. NO.	REV.
4MT2S2	D	V073-4-MT2	0
SCALE	SHEET	2 OF 3	
1/4			

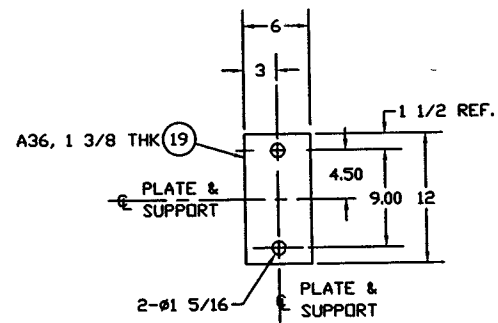
NOV 26 1996 - 081012



DETAIL 7
SUPPORT ASSEMBLY, ITEM 16
PART NUMBER: V0734MT2P16



DETAIL 8
SUPPORT LEG
QTY: 2
(1 AS SHOWN)
(1 OPP HAND)



DETAIL 9
SUPPORT PAD
QTY: 2

FOR INFO. ONLY

JAN 15 1998

PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
BEAM TUBE SPOOL MT-2 30.50" ID x 60.50" ID MODE CLEANER TUBE LIGO MIT VACUUM EQUIPMENT			
CAD FILE 4MT2S3	SIZE D	DWG. NO. V073-4-MT2	REV. 0
SCALE NONE	SHEET 3 OF 3		

JAN 16, 1998 - 110405