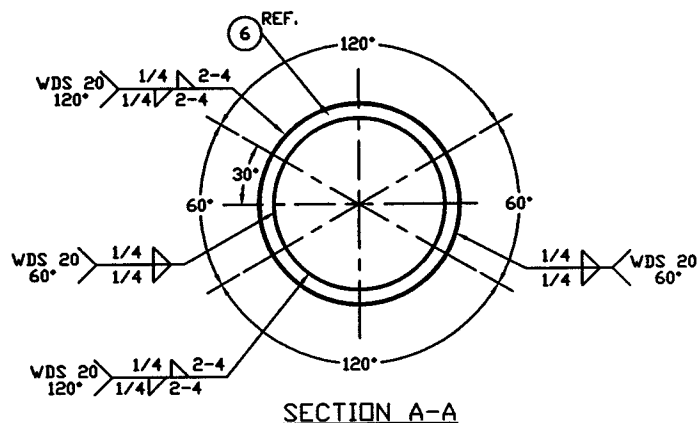


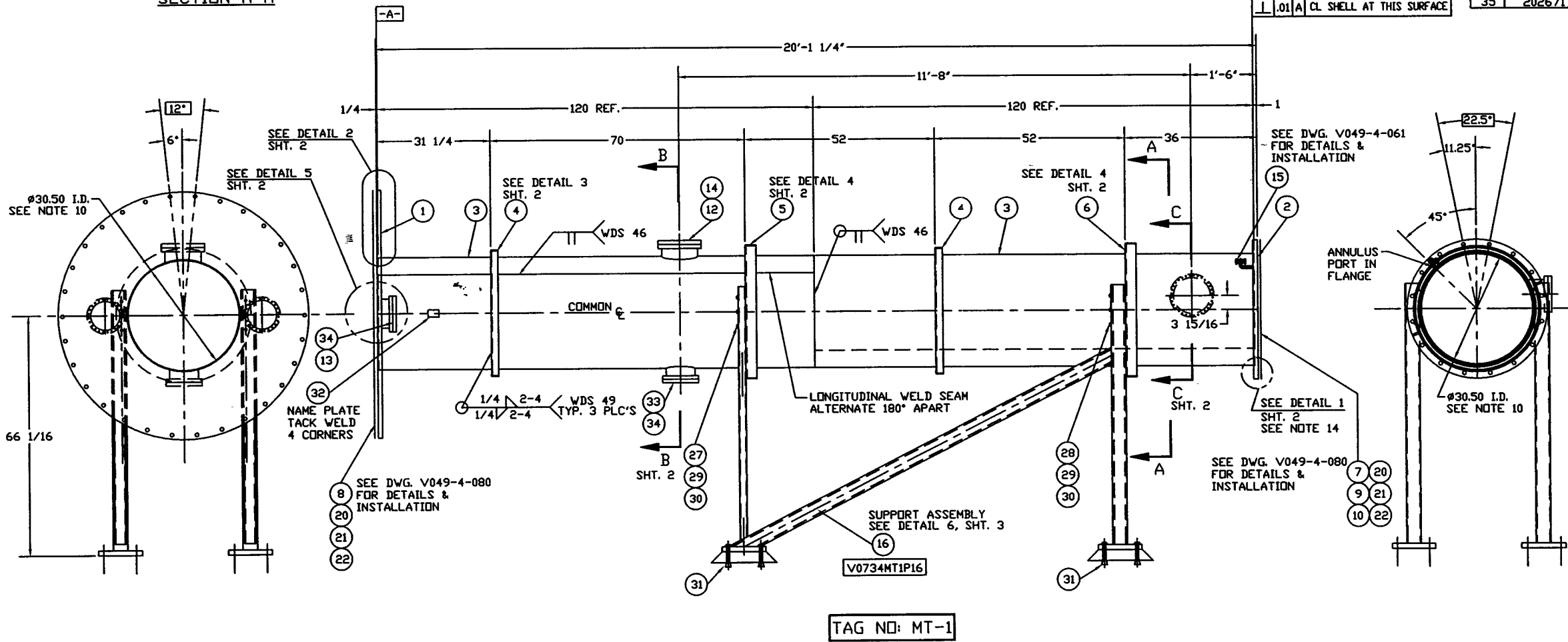
NOTES:

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. V073-4-001 & V073-4-005.
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.



ITEM	PART NUMBER	SUFFIX	QTY	UM	DESCRIPTION
1	V0734005		1	EA	FLANGE DTL FLAT FACED, 31.06"IDx68.5"OD
2	V0734001		1	EA	FLANGE DTL GROOVED, 30.5"IDx38.5"OD
3	V073M006		1	EA	SHELL, SST304/304L, 30.5"IDx120"LG
4	V049M815		1	EA	STIFFENING RING 2" X 2" X 1/4"THK ANGLE 304 SST
5	V049M820		1	EA	STIFFENING RING 3" X 3" X 1/4"THK ANGLE 304 SST
6	V049M821		1	EA	STIFFENING RING 3"x3"x3/8" THK ANGLE 304 SST
7	V0494080G1		1	EA	SHIPPING COVER ASSY, MODIFIED FOR 38.5"OD FLANGE
8	V0494080G4		1	EA	SHIPPING COVER ASSY, 68.5"OD
9	V073M011		1	EA	O-RING, VITON (PER SPEC. V049-2-045)
10	V073M012		1	EA	O-RING, VITON (PER SPEC. V049-2-045)
11	V049M319		3	EA	HALF NIPPLE, SST 304L, CONFLAT 12"OD, 81.6x250VT
12	V049M310		3	EA	HALF NIPPLE, SST 304L, CONFLAT 12"OD, 51.6x250VT
13	V073M013		3	EA	HALF NIPPLE, SST 304L, CONFLAT 10"OD, 41.6x250VT
14	202549		3	EA	BLANK FLG, CONFLAT, 12"OD, 304L SST
15	V0494061		1	EA	ANNULUS PUMP OUT PORT, 3/4"OD ELBOW x 2 3/4" CF FLG
16	V0734MTIP16		2	EA	SUPPORT ASSEMBLY
17	-		1	35	FT TS, 4"X4"X1/2" A500 GR-B
18	-		1	12	FT TUBE RECT 3"X2"X3/16" A500 GR-B
19	-		3	4	FT BAR FLAT 12"X1 3/8" A36
20	202678		3	46	EA BOLT, SA193 B7, HEX HD 7/8-9UNCx1.1G
21	202679		3	46	EA NUT, SA193 2H, HEX HD 7/8-9UNC
22	202581		3	92	EA WASHER, STL, 1 3/4 OD x 15/16 ID x 1/4 THK
23	202552		3	2	EA GASKET, DFHC, CONFLAT 12"OD
24	V049M777		136	EA	BOLT, 18-8 SST, 5/16-18x2 1/2 LG
25	V049M782		136	EA	NUT, SILICON BRZ, HEX 5/16-18
26	V049M785		272	EA	WASHER, 18-8 SST, FLAT, 5/16"
27	V049M753		3	6	EA BOLT, HEX, 5/8-11UNC x 3 1/2 LG, A325
28	V049M759		3	6	EA BOLT, HEX, 5/8-11UNC x 5 1/2 LG, A325
29	V049M755		3	12	EA NUT, HEX, 5/8-11UNC, A325
30	V049M773		3	12	EA WASHER, LOCK, 5/8 A325
31	-		16	EA	1" CONCRETE ANCHOR BOLT - BY OTHERS
32	V049M740		1	EA	PSI NAME PLATE, 2"x3"
33	V049M320		3	EA	HALF NIPPLE, SST 304L, CONFLAT 10"OD, 51.6x250VT
34	202667		3	EA	BLANK FLG, CONFLAT, 10"OD, 304L SST
35	202671		3	EA	GASKET, DFHC, CONFLAT 10"OD

\* ELECTROLESS NICKEL PLATE  
 \*\* REUSE FROM PREVIOUS LIGO PROJECT

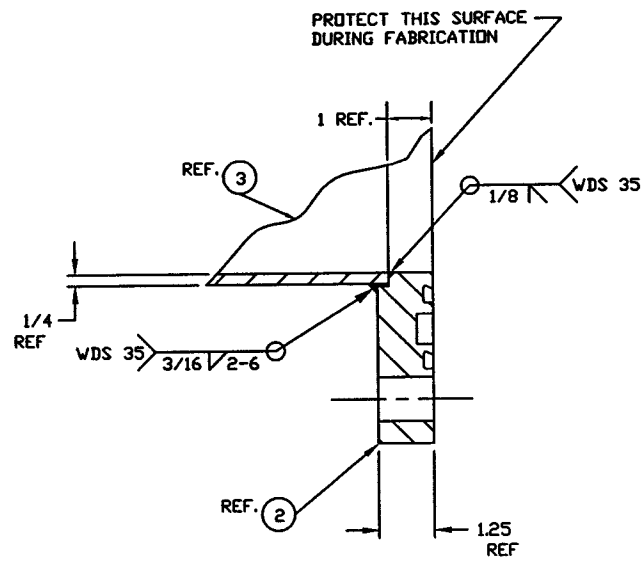


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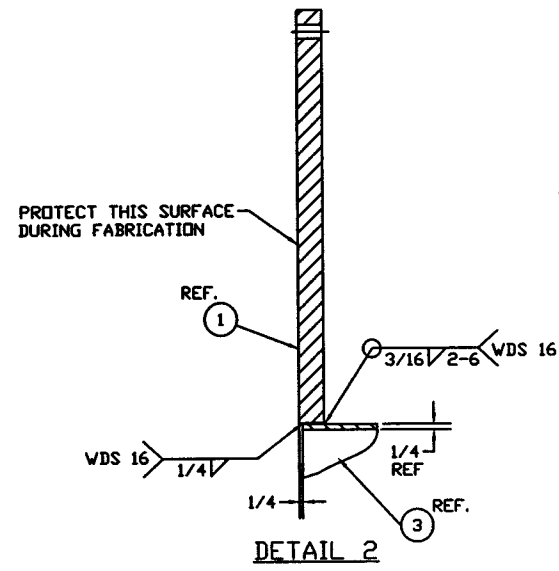
JAN 16 1998

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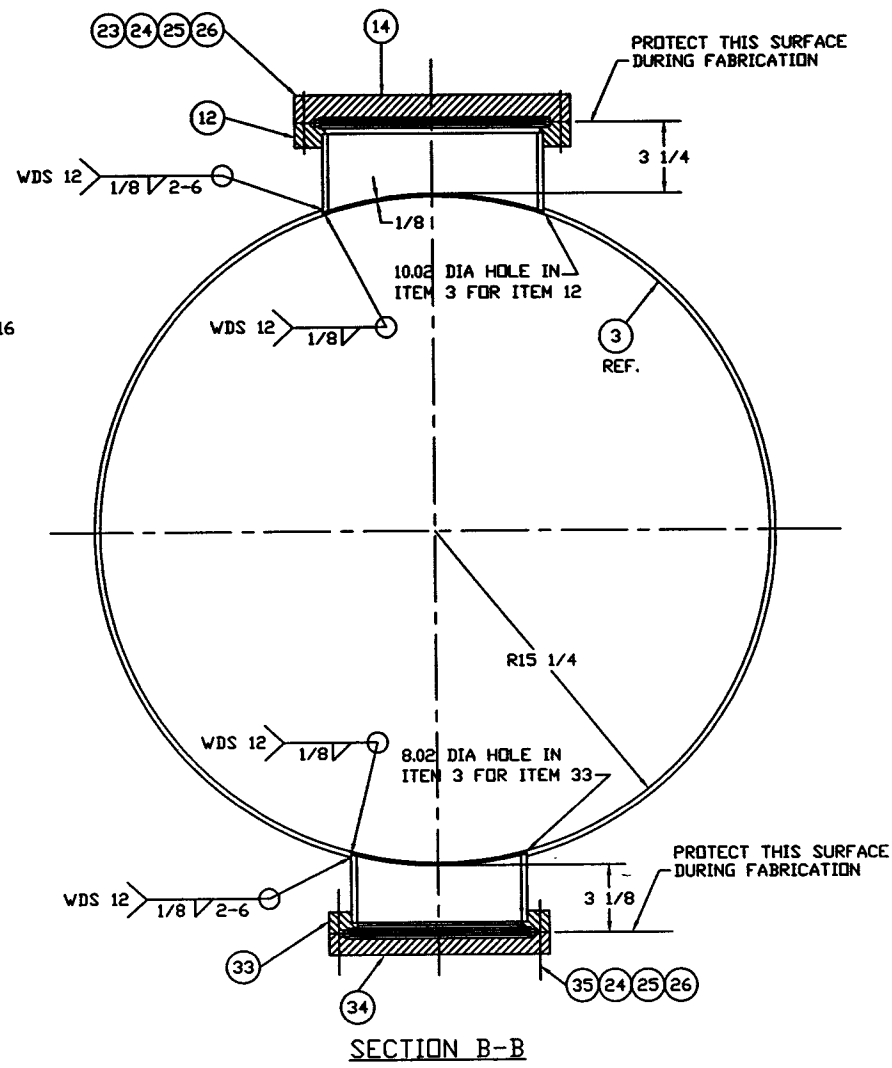
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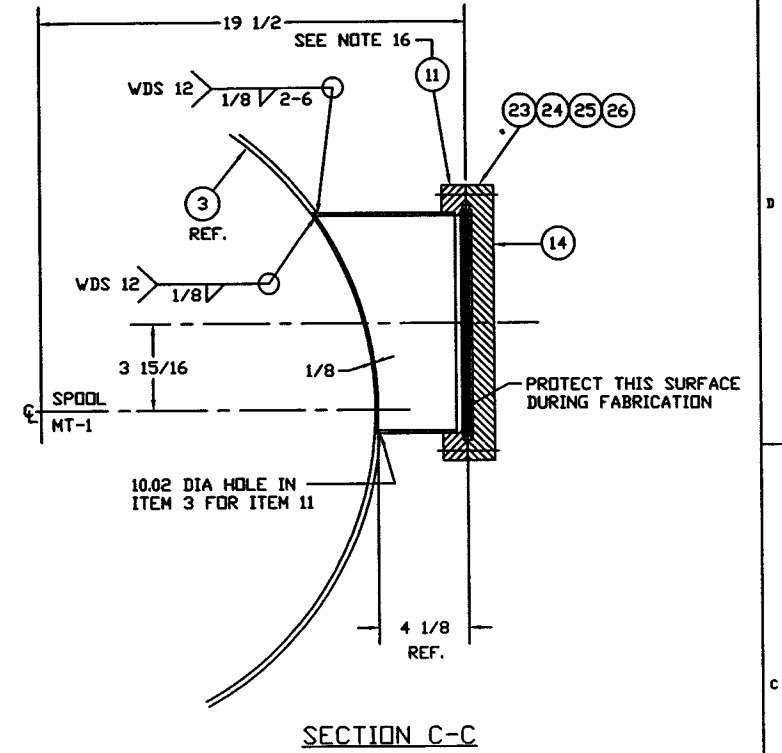
**DETAIL 1**  
SCALE: HALF



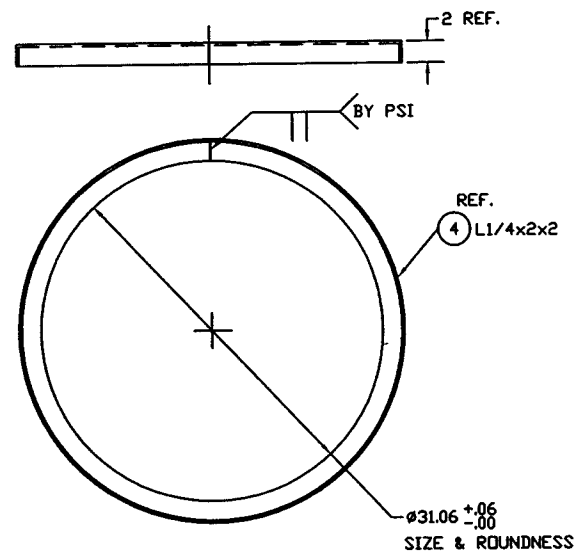
**DETAIL 2**



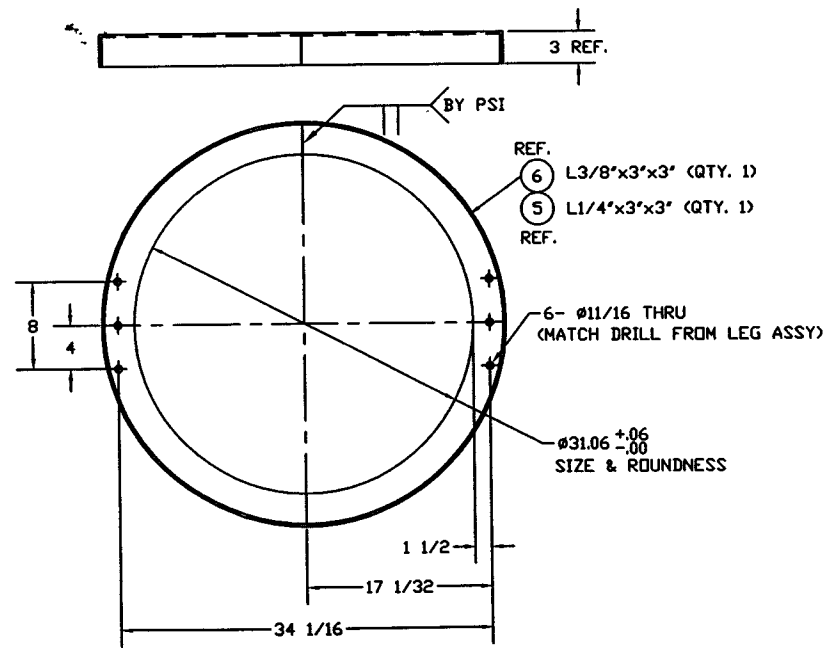
**SECTION B-B**



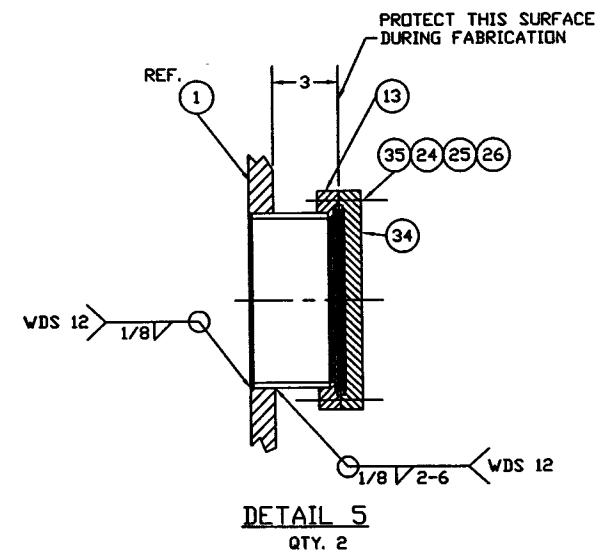
**SECTION C-C**



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



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



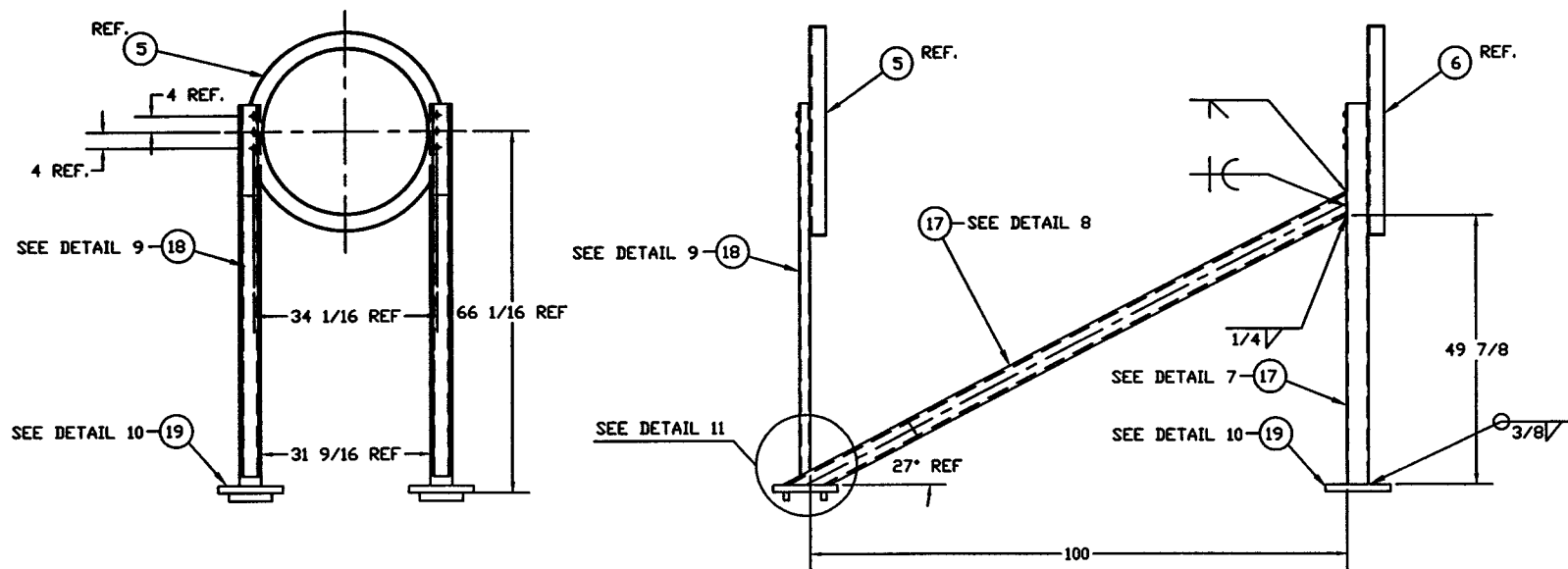
**DETAIL 5**  
QTY: 2

**FOR INFO. ONLY**

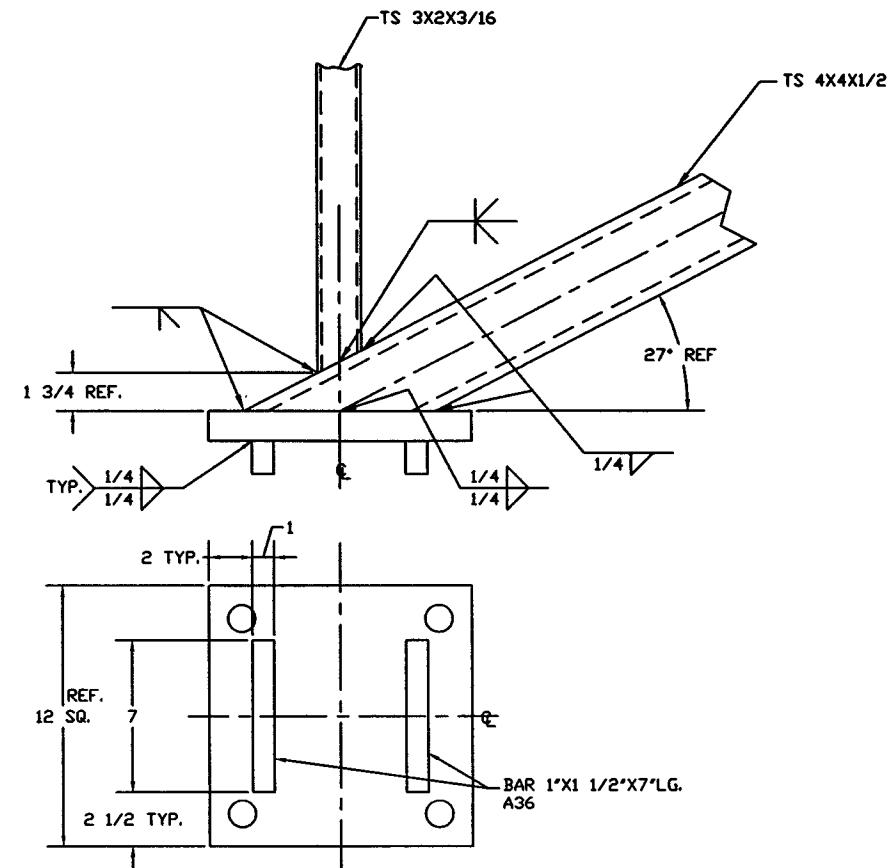
JAN 16 1998

<b>PROCESS SYSTEMS INTERNATIONAL INC.</b> 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
<b>BEAM TUBE SPOOL MT-1</b> 30.50"ID x 60.50"ID MODE CLEANER TUBE LIGO MIT VACUUM EQUIPMENT			
CAD FILE 4MT1S2	SIZE D	FIG. NO. V073-4-MT1	REV. D
SCALE 1/4	SHEET 2 OF 3		

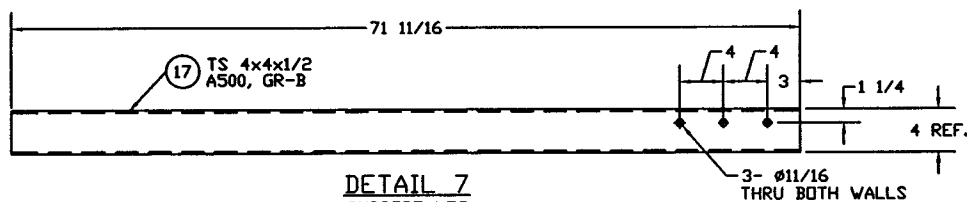
156126 - 001012



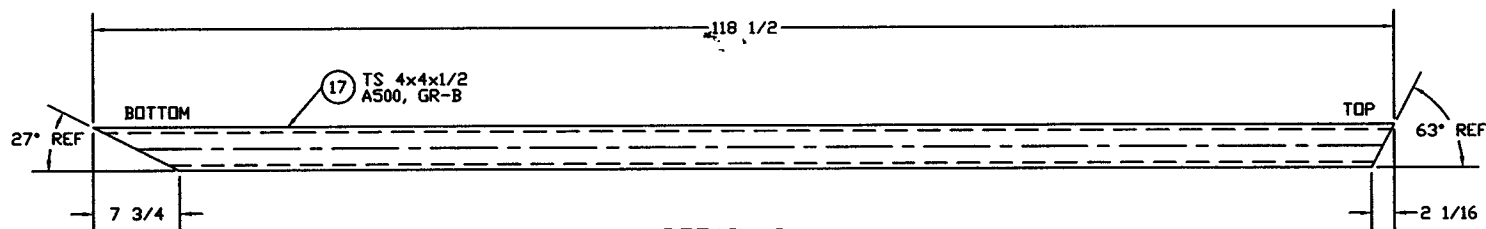
**DETAIL 6**  
SUPPORT ASSEMBLY, ITEM 16  
PART NUMBER: V0734MT1P16



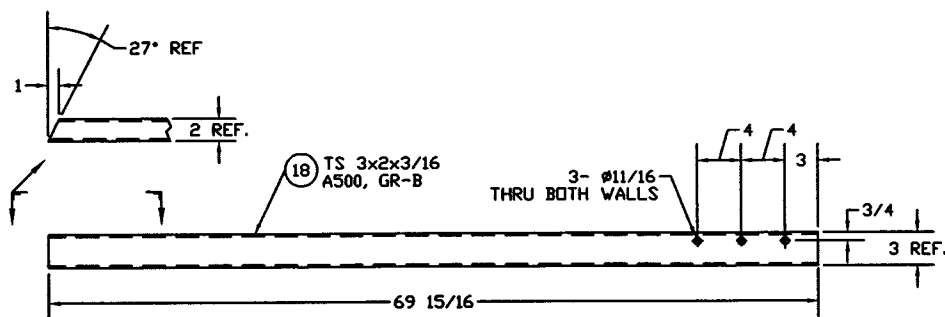
**DETAIL 11**  
TYP. 2 PLCS.



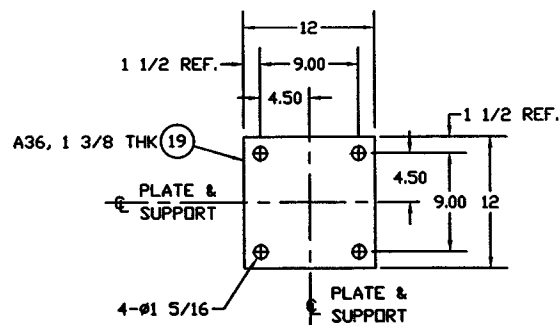
**DETAIL 7**  
SUPPORT LEG  
QTY: 2



**DETAIL 8**  
SUPPORT BRACE  
QTY: 2



**DETAIL 9**  
SUPPORT LEG  
QTY: 2  
(1 AS SHOWN)  
(1 OPP HAND)



**DETAIL 10**  
SUPPORT PAD  
QTY: 4

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<b>PROCESS SYSTEMS INTERNATIONAL INC.</b> 20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA			
<b>BEAM TUBE SPOOL MT-1</b> 30.50" ID x 60.50" ID MODE CLEANER TUBE LIGO MIT VACUUM EQUIPMENT			
CAB FILE 4HT1S3	SIZE D	P&G. NO. V073-4-MT1	REV. 0
SCALE NONE	SHEET 3 OF 3		

JAN 15 1998 - 10:56:38