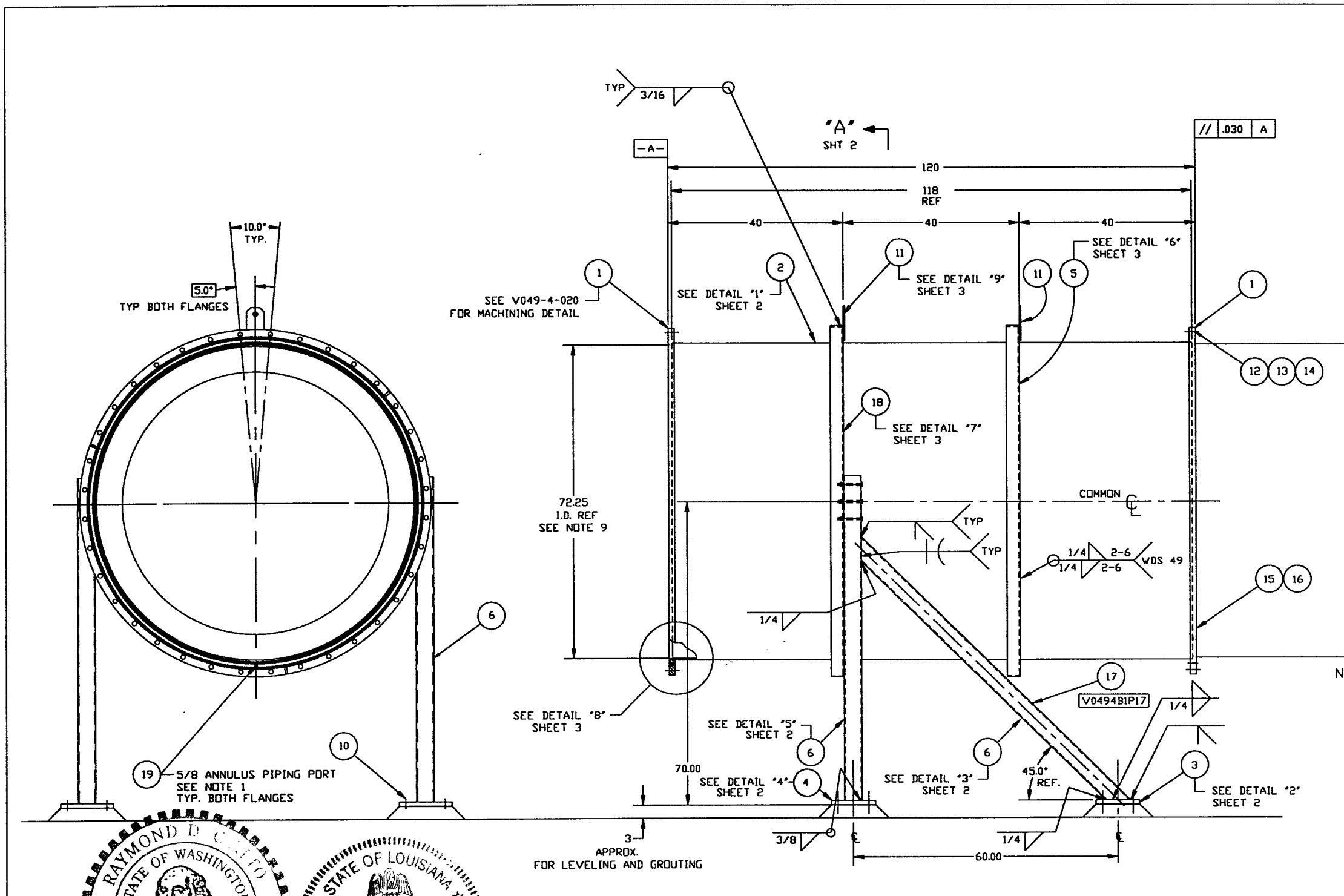


| ITEM | PART NUMBER | SUFFIX | QTY | UM | DESCRIPTION |
|------|-------------|--------|-----|----|---|
| 1 | V0494020 | | 2 | EA | FLANGE, GROOVED, 72 1/4" ID X 80" OD |
| 2 | V0494BIP2 | | 1 | EA | SHELL, 304/304L SST, 1/4" THK |
| 3 | | 1 | 2.5 | SF | PLATE, A36, 1 3/8" THK |
| 4 | | 1 | 2 | SF | PLATE, A36, 1 3/8" THK |
| 5 | V0494B14 | | 1 | EA | RING ANGLE, 304 SST 4" X 4" X 1/4" |
| 6 | | 1 | 28 | FT | TUBING, RECT. 4" X 4" X 1/2" A500 GRB |
| 7 | V0494759 | | 3 | EA | BOLT, 5/8-11 UNC X 5 1/2" LG. A325 |
| 8 | V0494753 | | 3 | EA | NUT, 5/8-11 UNC, A325 |
| 9 | V0494773 | | 3 | EA | LOCK WASHER, 5/8" STL |
| 10 | | | 16 | EA | ANCHOR HILTI HVA 1" DIA B 1/4" MIN EMBED W/WASHER |
| 11 | V0494832 | | 3 | EA | BAR, 4"x3/8", SST 304 |
| 12 | 202678 | | 3 | EA | BOLT, SAI93 B7, HEX 7/8-UNCx4" LG |
| 13 | 202679 | | 3 | EA | NUT, SAI94 ZH HEX 7/8-UNC |
| 14 | 202581 | | 3 | EA | WASHER, STL, 1 3/4 O.D.x1 5/16 I.D.x1/4" THK |
| 15 | V0494020 | | 2 | EA | O-RING, VITRON (PER SPEC. V049-2-045) |
| 16 | V0494021 | | 2 | EA | O-RING, VITRON (PER SPEC. V049-2-045) |
| 17 | V0494BIP17 | | 2 | EA | SUPPORT ASSY. |
| 18 | V0494B22 | | 1 | EA | RING ANGLE, 304 SST, 4x3x1/2 |
| 19 | V0494061 | | 2 | EA | 3/4" O.D. ELBOW X 2 3/4" O.D. CF. |

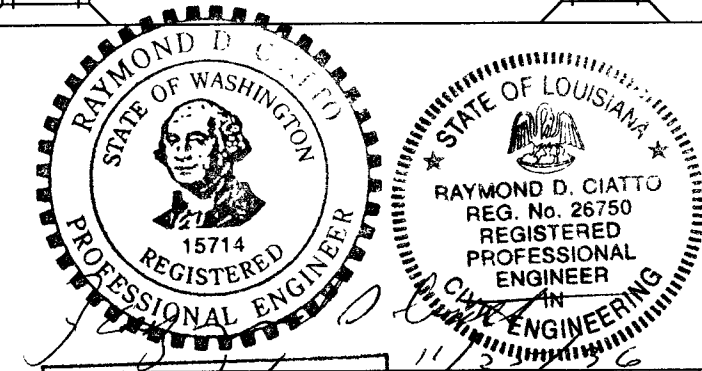
* ELECTROLESS NICKEL PLATE



- NOTES:
14. VDS NO'S. REFER TO WELD DATA SPEC V049-2-084.
 13. STRUCTURAL STEEL FABRICATION TO BE IN ACCORDANCE WITH SPECIFICATION #V049-2-039.
 12. EACH FINISHED SHELL IS TO BE MARKED WITH A SEQUENTIAL PSI SERIAL NUMBER. THE NUMBER IS TO BE MADE FROM THE DRAWING PLUS THE SEQUENTIAL NUMBER. V0494B1-01, 02 ETC.
 11. PLATES PRIOR TO ROLLING MUST HAVE DIAGONAL CORNER TO CORNER DIMENSIONS WITHIN 1/16" OF EACH OTHER.
 10. MACHINING & ROLLING PER SPEC V049-2-136.
 9. THE CENTER LINES OF ALL SHELLS AND FLANGES ARE TO LIE ON THE COMMON CENTER LINE WITHIN +/- 1/16.
 8. LEAK TEST & METHOD PER SPEC V049-2-014.
 7. CERTIFIED MANUFACTURER'S MATERIAL TEST REPORTS REQUIRED AS NOTED
 6. BOLT HOLES OF ALL FLANGES TO STRADDLE VERTICAL CENTERLINE, +/- .015
 5. CLEAN PER SPEC V049-2-015
 4. DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL.
 3. SPOOL FABRICATION TO BE IN ACCORDANCE WITH SPEC. V049-2-097.
 2. FOR FLANGE DETAILS SEE DWG V049-4-020.
 1. THESE FLANGES EACH INCLUDE AN ANNULAR CHANNEL BETWEEN O-RINGS, MANIFOLD TO A SINGLE PUMPOUT PORT ON EACH CHAMBER, SEE DWG V049-4-061

APPROX. WEIGHT: 3528#

D961150-03-V



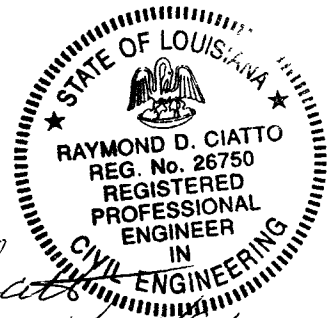
| SYMBOL | CHARACTERISTIC | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES | REV | DESCRIPTION | CHKD | DRWN | DATE | DESN |
|--------|------------------|--|-----|--|------|------|----------|------|
| □ | FLATNESS | FRACTIONAL ± .1 | 3 | REISSUED FOR FABRICATION | | | 11/22/96 | 0180 |
| ○ | CYLINDRICITY | ANGULARITY 40°-20° BEND 40° | 2 | DESIGN UPDATE/ISSUED FOR FAB | | | 10/9/96 | 0339 |
| // | PARALLELISM | TWO PLACE DECIMAL ± .03 | 1 | DESIGN UPDATE / FABRICATION (SHELL ONLY) | | | 10/1/96 | 0283 |
| ⊥ | PERPENDICULARITY | THREE PLACE DECIMAL ± .015 | 0 | ISSUED FOR FDR | | | 4/29/96 | 0146 |
| ∠ | ANGULARITY | FINISHED SURFACE AND BREAK CORNERS TO REMOVE ALL BURRS | P1 | PRELIMINARY | | | 4/13/96 | |
| ⊕ | TRUE POSITION | DO NOT SCALE THIS DRAWING | | | | | | |
| ⊙ | CONCENTRICITY | USED ON NEXT ASS'Y. | | | | | | |

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

SPOOL B-1
72.25" ID
LIGO VACUUM EQUIPMENT

SCALE: 1-1/2" = 1'

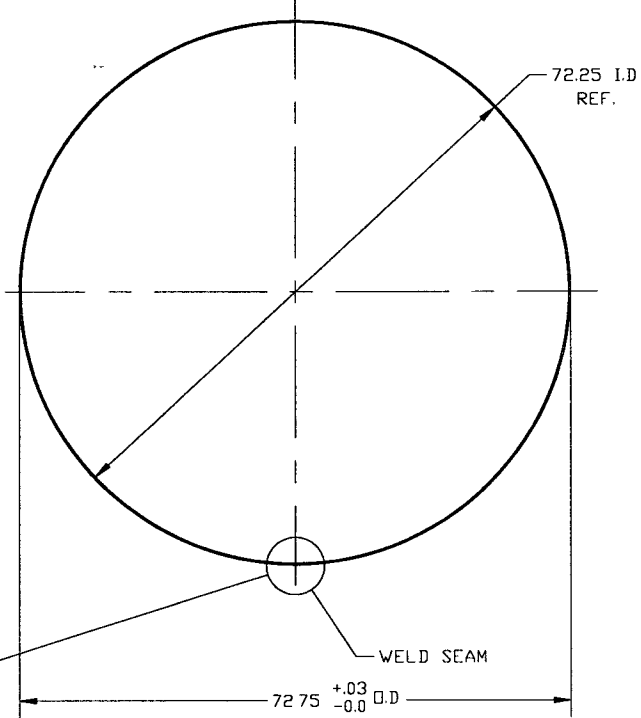
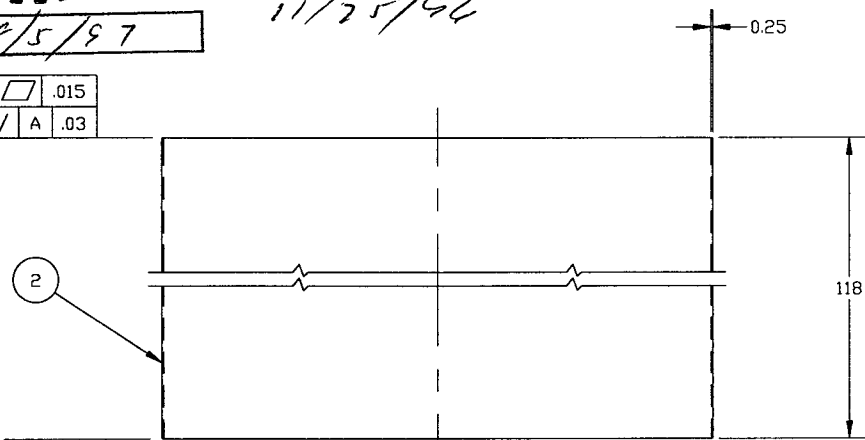
SHEET: 1 OF 3



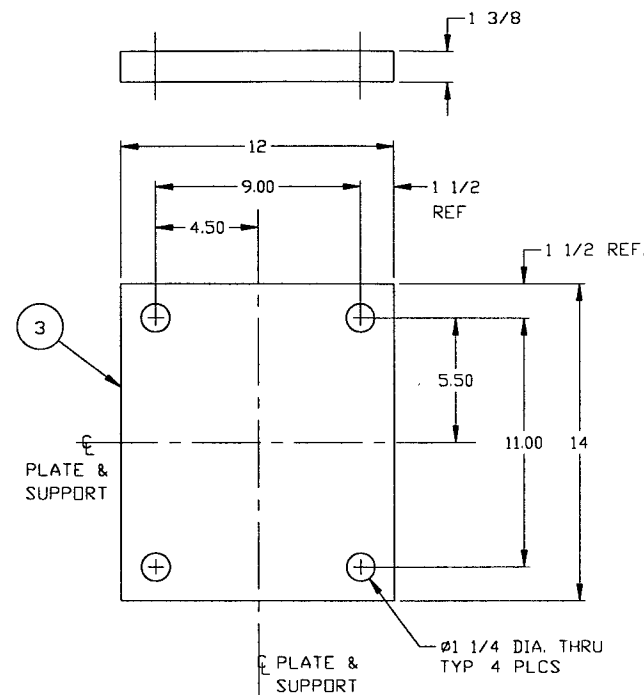
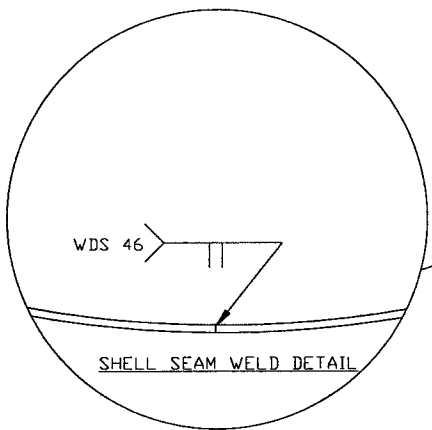
EXPIRES 8/5/97

.015
A .03

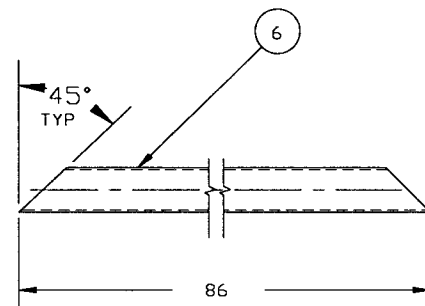
.015
-A-



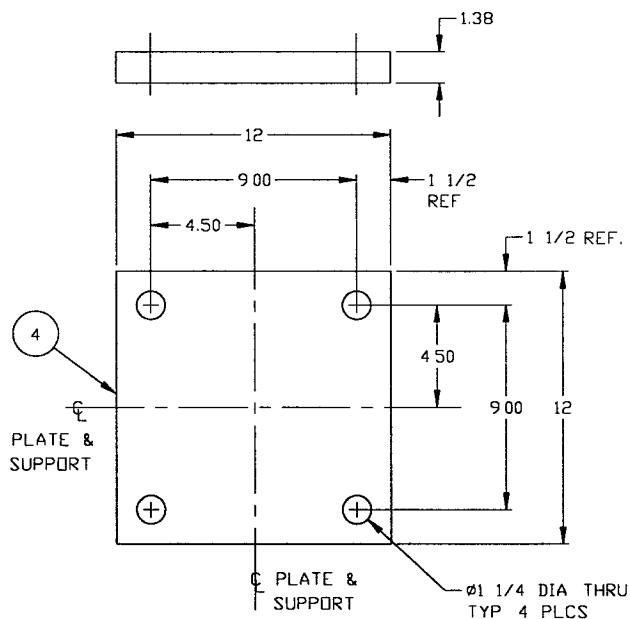
DETAIL "1"
QTY: 1
MAKE FROM V049M154-1



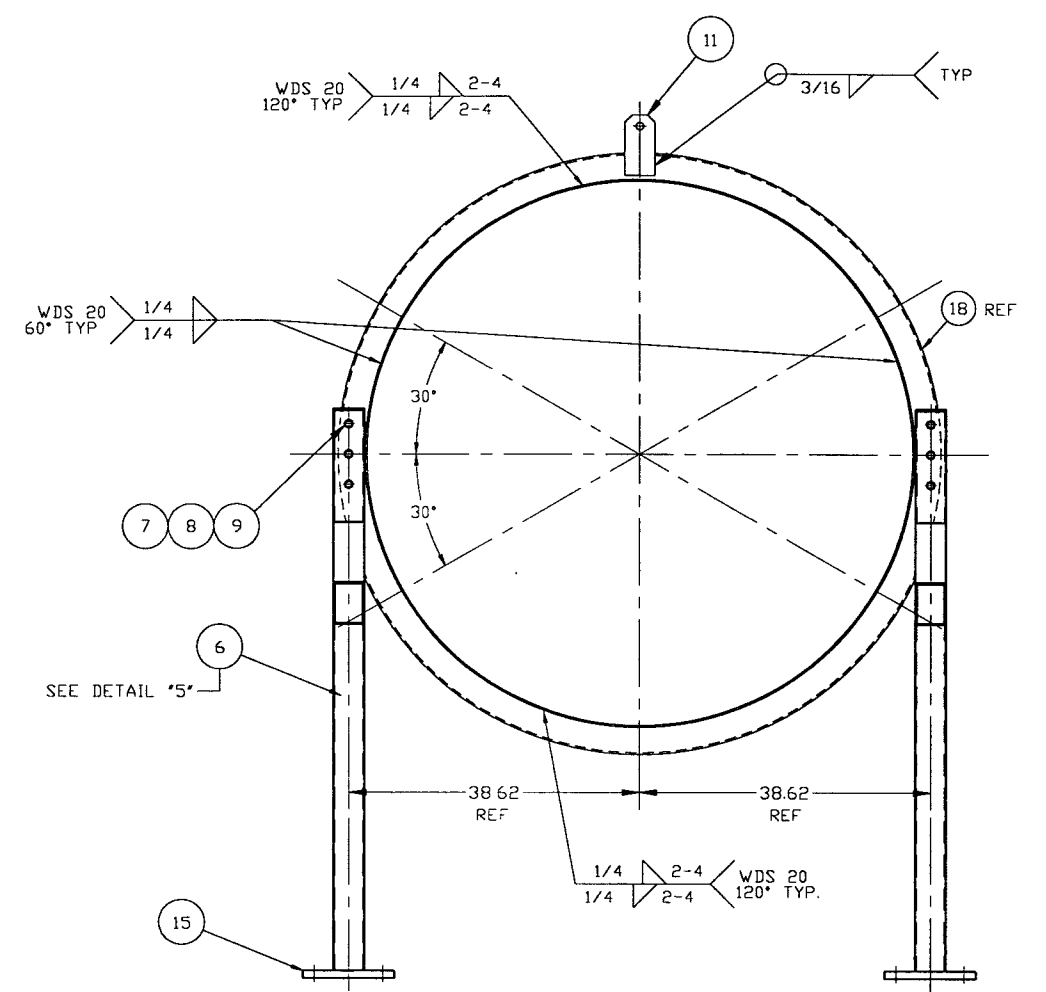
DETAIL "2"
QTY: 2



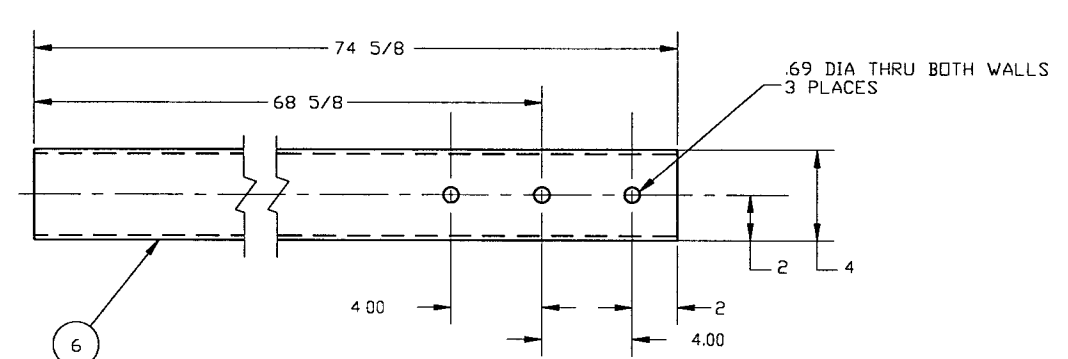
DETAIL "3"
QTY: 2



DETAIL "4"
QTY: 2



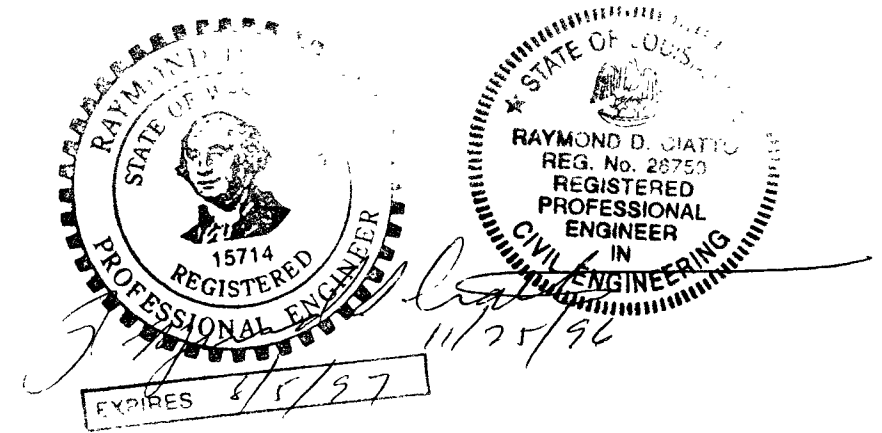
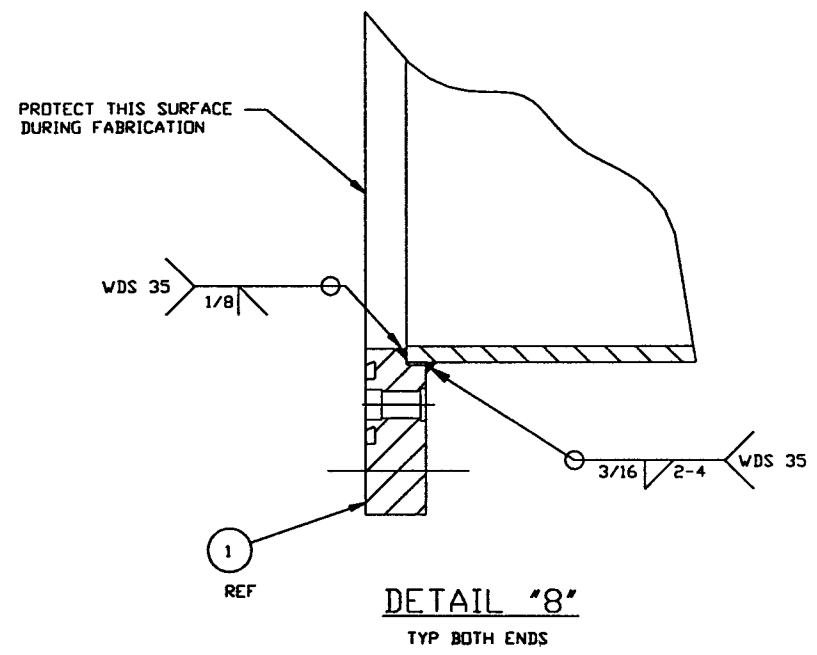
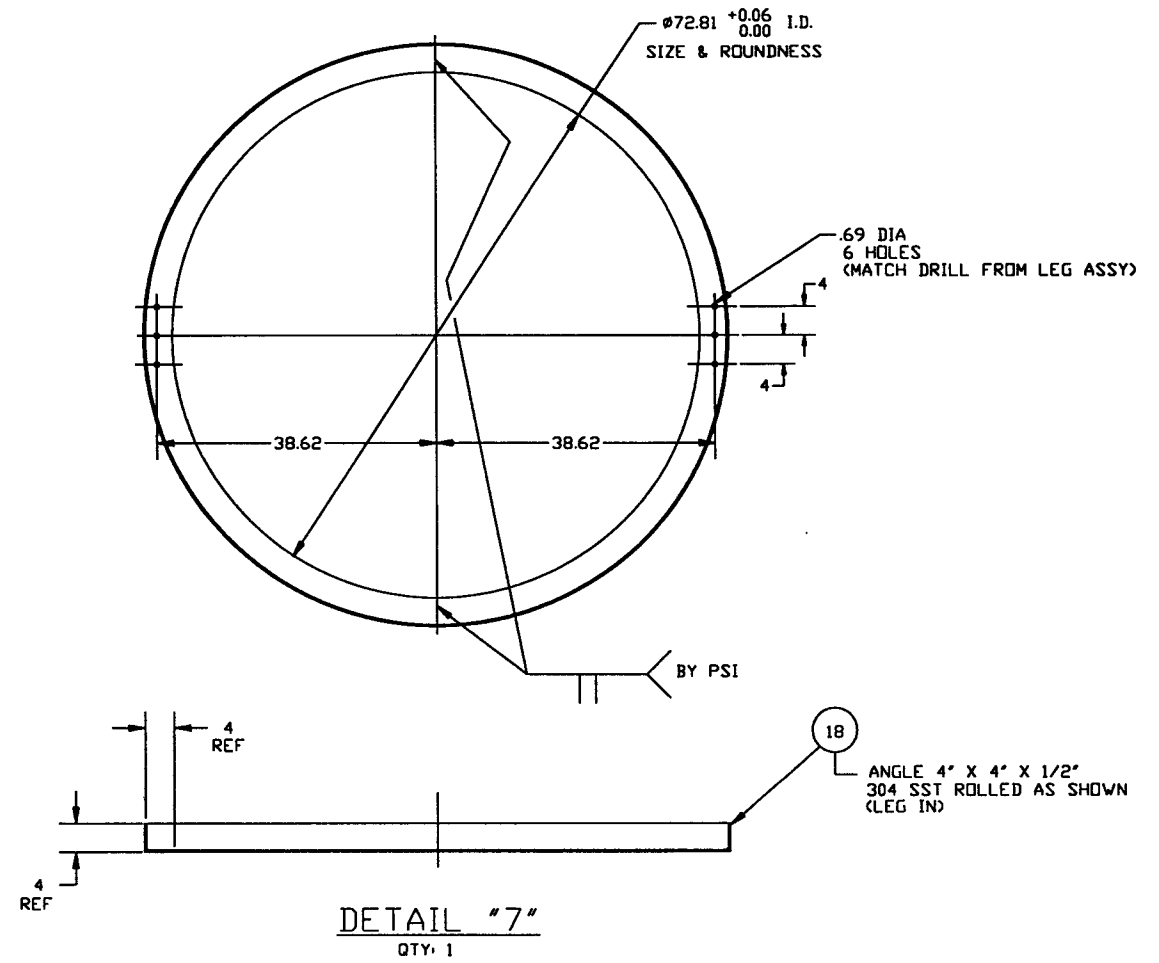
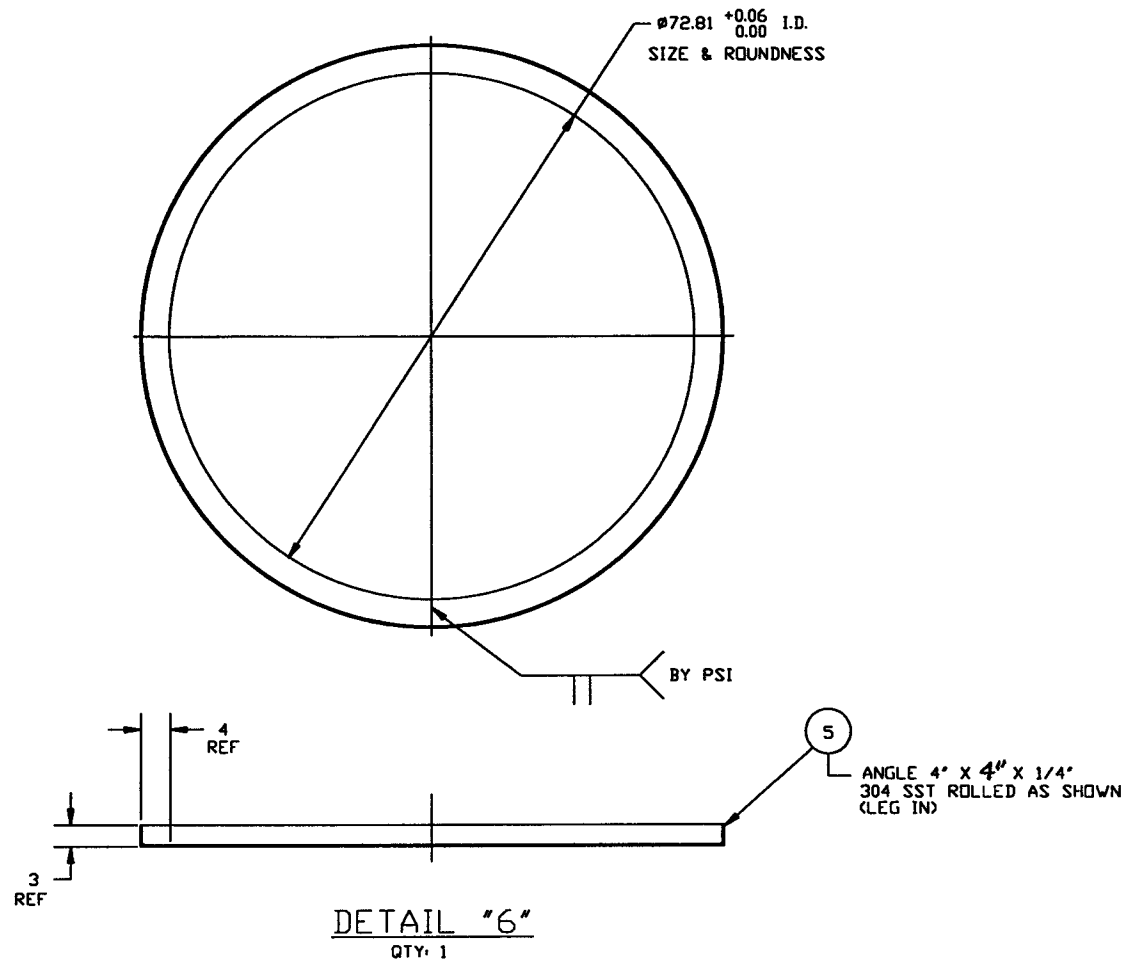
SECTION "A"- "A"



DETAIL "5"
QTY: 2

| | | | |
|--|-----------------|-----------------------|----------|
| PROCESS SYSTEMS INTERNATIONAL INC. 20 WALKUP DR WESTBOROUGH, MASSACHUSETTS 01581 USA | | | |
| SPOOL B-1 72.25" I.D. LIGO VACUUM EQUIPMENT | | | |
| CAD FILE V0494B1/4B1S2 | SIZE D | DWG. NO. V049-4-B1 | REV 3 |
| SCALE AS NOTED | SHEET 2 OF 3 | | |

Nov 18, 1996 - 09:26:57



| | | | |
|---|-----------------|-----------------------|-----------|
| PROCESS SYSTEMS INTERNATIONAL, INC. <small>20 WALRUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA</small> | | | |
| SPOOL B-1 72.25" ID LIGO VACUUM EQUIPMENT | | | |
| CAD FILE V0494B1/4B1S3 | SIZE D | DWG. NO. V049-4-B1 | REV. 3 |
| SCALE AS NOTED | SHEET 3 OF 3 | | |