



- NOTES:**
1. EACH PUMPOUT PORT LOCATION HAS BOTH POWER & CONTROL PLUG-IN CONNECTIONS.
  2. ALL VACUUM GAUGES TO BE BAKED OUT AT 250 C DURING PUMPOUT, USING A REMOVABLE BLANKET TYPE HEATER. ALL VACUUM SECTIONS SHALL ALSO BE BAKED OUT AT 150 C DURING PUMPOUT USING A REMOVABLE BLANKET TYPE HEATER. SEE DWG V049-0-043 FOR BAKEDOUT SYSTEM.
  3. DIMENSIONS IN ( ) ARE IN MILLIMETERS.
  4. BEAM MANIFOLD DIMENSIONS INDICATE INSIDE DIAMETERS.
  5. ATMOSPHERIC AIR INTAKE SHALL BE LOCATED AWAY FROM SOURCES OF CONTAMINATION.
  6. BEAM MANIFOLD FLANGE ANNULUS IDN PUMP DETAILS LATER.
  7. ON 12\"/>

**PROPRIETARY AND CONFIDENTIAL**  
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| DWG. NO.   | DESCRIPTION                  | DWG. NO. | DESCRIPTION |
|------------|------------------------------|----------|-------------|
| V049-0-041 | P & ID TURBO PUMP CART       |          |             |
| V049-0-011 | P & ID LEFT MID STATION      |          |             |
| V049-0-006 | P & ID 60K CRYOPUMP          |          |             |
| V049-0-002 | P & ID BEAM SPLITTER CHAMBER |          |             |
| V049-0-001 | P & ID LEGEND                |          |             |

| EQUIP. THIS DWG. | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES |
|------------------|---|
| WBSC10           |   |
| VTC5             |   |
| VG18             |   |
| VCP7             |   |
| VG17             |   |
| VPI1             |   |

| REV | DESCRIPTION               | CHKD | BRWN | DATE    | ISSUE DESCRIPTION |      |          |          |      |
|-----|---------------------------|------|------|---------|-------------------|------|----------|----------|------|
| 5   | REISSUED FOR FDR UPDATE   |      |      | 6/11/97 | 0499              |      |          |          |      |
| 4   | REVISED                   | SM   | BMCV | RJV     | 0214.97 0435      |      |          |          |      |
| 3   | REVISED                   | SM   | BMCV | RJV     | 0103.97 0394      |      |          |          |      |
| 2   | ISSUE FOR FDR UPDATE      | TS   | RT   | SM      | BMCV              | RJV  | 10.25.96 | 0309     |      |
| 1   | ISSUE FOR FDR             | RED  | TS   | RT      | SM                | BMCV | RJV      | 04.26.96 | 0134 |
| 0   | ISSUE FOR DESIGN          | RED  | TS   | RT      | SM                | BMCV | RJV      | 01.03.96 | 0031 |
| PI  | PRELIMINARY DESIGN UPDATE | RED  |      |         | AFG               |      |          | 09.26.95 | 0003 |

**PROCESS SYSTEMS INTERNATIONAL, INC.**  
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**PIPING & INSTRUMENTATION DIAGRAM**  
 LIGO VACUUM EQUIPMENT  
 WASHINGTON SITE  
 LEFT END STATION

GAP FILE: V0490010  
 SHEET: D  
 DWG. NO.: V049-0-010  
 REV: 5

SCALE: NONE  
 SHEET: 1 OF 1