



- 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 PUMPDOWN, USING A REMOVABLE BLANKET TYPE HEATER. ALL VACUUM SECTIONS SHALL ALSO BE BAKED OUT AT 150 C DURING PUMPDOWN 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 ION PUMP DETAILS LATER.
 7. ON 12" O.D. OF BLIND, PROVIDE 3" LONG 2 3/4" O.D. CF x 1 1/2" O.D. NOZZLE AND 2 3/4" CF. BLIND FOR RGA CONNECTION WITH 25 OF SEAL-OFF FITTING. VACUUM PUMP-OUT OPERATOR IS SUPPLIED ONE PER BUILDING - REF PSI PART #V049M655.
 8. PROVIDE A CF. BLIND WITH 25 OF SEAL-OFF FITTING.

PROPERTY AND CONFIDENTIAL	DWG. NO.	DESCRIPTION	DWG. NO.	DESCRIPTION
	V049-0-041	P & ID TURBO PUMP CART		
	V049-0-017	P & ID RIGHT END STATION		
	V049-0-015	P & ID RIGHT BEAM MANIFOLD		
	V049-0-006	P & ID 80K 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 TOLERANCES: FRACTIONS: ANGULARS: 45-90° BOB AC TWO PLACE DECIMAL, ± IN THREE PLACE DECIMAL, ± IN FIVE PLACE SURFACE DIM. BREAK CORNERS IN DIM. REMOVE ALL DIMS.
WGV13	WCP5
WGV14	WCP6
WGV15	WSCS
WGV16	WTC4
WPI10	

REV	DESCRIPTION	CHKD	DRWN	DATE	DED
5	REISSUED FOR FDR UPDATE			6/11/97	0499
4	REVISED	SM	DMCV	02.14.97	0435
3	REVISED	SM	DMCV	01.03.97	0394
2	ISSUE FOR FDR UPDATE	TS	RT	10.25.96	0309
1	ISSUE FOR FDR	RED	TS	04.26.96	0134
0	ISSUE FOR DESIGN	RED	TS	01.03.96	0031
P1	PRELIMINARY DESIGN UPDATE	RED	TS	09.26.93	0003

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PIPING & INSTRUMENTATION DIAGRAM
LIGO VACUUM EQUIPMENT
 WASHINGTON SITE
 RIGHT MID STATION

CAD FILE: V0490016
 REV: D
 DWG NO: V049-0-016
 REV: 5

SCALE: NONE
 SHEET: 1 OF 1