

GENERAL NOTES

DWG #	SHT #	REV #	DESCRIPTION	CBI STATUS	CALTECH STATUS
0	1 OF 2	2D	GENERAL NOTES AND DRAWING LIST	REV 2D RELEASED	REV 2D SUBMITTED
0	2 OF 2	2D	BEAM TUBE WELD SEAM ORIENTATION	REV 2D RELEASED	REV 2D SUBMITTED
1	1 OF 4	6D	HANFORD BT MODULES HX1 AND HX2	REV 6D REVISION	REV 6D SUBMITTED
1	2 OF 4	6D	HANFORD BT MODULES HY1 AND HY2	REV 6D REVISION	REV 6D SUBMITTED
1	3 OF 4	6D	LIVINGSTON BT MODULES LX1 AND LX2	REV 6D REVISION	REV 6D SUBMITTED
1	4 OF 4	6D	LIVINGSTON BT MODULES LY1 AND LY2	REV 6D REVISION	REV 6D SUBMITTED
2	1 OF 4	4D	SUB-ASSEMBLY END LOCATIONS- HX1 & HY1	REV 4D REVISION	REV 4D SUBMITTED
2	2 OF 4	4D	SUB-ASSEMBLY END LOCATIONS- HX2 & HY2	REV 4D REVISION	REV 4D SUBMITTED
2	3 OF 4	4D	SUB-ASSEMBLY END LOCATIONS- LX1 & LY1	REV 4D REVISION	REV 4D SUBMITTED
2	4 OF 4	4D	SUB-ASSEMBLY END LOCATIONS- LX2 & LY2	REV 4D REVISION	REV 4D SUBMITTED
2	1 OF 4	4D	SUPPORT LOCATIONS- HX1 & HY1	REV 4D REVISION	REV 4D SUBMITTED
2	2 OF 4	4D	SUPPORT LOCATIONS- HX2 & HY2	REV 4D REVISION	REV 4D SUBMITTED
2	3 OF 4	4D	SUPPORT LOCATIONS- LX1 & LY1	REV 4D REVISION	REV 4D SUBMITTED
2	4 OF 4	4D	SUPPORT LOCATIONS- LX2 & LY2	REV 4D REVISION	REV 4D SUBMITTED
4	1 OF 7	4D	SUB-ASSEMBLIES A AND B	REV 4D REVISION	REV 4D SUBMITTED
4	2 OF 7	4D	SUB-ASSEMBLIES C, D, E AND J	REV 4D REVISION	REV 4D SUBMITTED
4	3 OF 7	4D	SUB-ASSEMBLIES F AND G	REV 4D REVISION	REV 4D SUBMITTED
4	4 OF 7	4D	SUB-ASSEMBLIES H, I, K AND R	REV 4D REVISION	REV 4D SUBMITTED
4	5 OF 7	4D	SUB-ASSEMBLIES L AND M	REV 4D REVISION	REV 4D SUBMITTED
4	6 OF 7	4D	SUB-ASSEMBLIES N, O, P AND Q	REV 4D REVISION	REV 4D SUBMITTED
4	7 OF 7	4D	SUB-ASSEMBLY S	REV 4D REVISION	REV 4D SUBMITTED
5	-	-	VOID		
6	-	6D	ELEVATION-BEAM TUBE FIXED SUPPORT	REV 6D RELEASED	REV 6D SUBMITTED
7	1 OF 2	7D	PLAN VIEW AND DETAILS (AWAY FROM TERMINATION) - BT FIXED SUPPORT	REV 7D RELEASED	REV 7D SUBMITTED
7	2 OF 2	7D	PLAN VIEW AND DETAILS (NEAR TERMINATION) - BT FIXED SUPPORT	REV 7D RELEASED	REV 7D SUBMITTED
8	1 OF 2	8D	SUPPORT LUG ASSEMBLY AND SECTION DETAILS-BT FIXED SUPPORT	REV 8D RELEASED	REV 8D SUBMITTED
8	2 OF 2	8D	SUPPORT LUG ASSEMBLY AND SECTION DETAILS-BT FIXED SUPPORT	REV 8D RELEASED	REV 8D SUBMITTED
9	-	-	VOID		
10	-	-	VOID		
11	-	-	VOID		
12	-	-	VOID		
13	-	3D	PUMP PORT DETAILS	REV 3D RELEASED	NOT SUBMITTED
14	-	-	VOID		
15	-	4D	VACUUM STIFFENER DETAILS	REV 4D RELEASED	REV 4D SUBMITTED
16	-	5D	SUPPORT RINGS-FIXED, GUIDED AND TERMINATIONS	REV 5D RELEASED	REV 5D SUBMITTED
17	-	-	VOID		
18	-	-	VOID		
19	1 OF 2	6D	BT GUIDED SUPPORT-ELEVATION	REV 6D RELEASED	REV 6D SUBMITTED
19	2 OF 2	6D	BT GUIDED SUPPORT-ELEVATION AND DETAILS	REV 6D RELEASED	REV 6D SUBMITTED
20	1 OF 4	2D	BT TERMINATION SUPPORT-ELEVATION	REV 2D RELEASED	REV 2D SUBMITTED
20	2 OF 4	2D	BT TERMINATION SUPPORT-PLAN VIEW	REV 2D RELEASED	REV 2D SUBMITTED
20	3 OF 4	2D	BT TERMINATION SUPPORT-PIECE DETAILS	REV 2D RELEASED	REV 2D SUBMITTED
20	4 OF 4	2D	BT TERMINATION SUPPORT-PIECE DETAILS	REV 2D RELEASED	REV 2D SUBMITTED
21	-	1D	TERMINATION SUPPORT RING DETAILS	REV 1D RELEASED	REV 1D SUBMITTED

DWG #	SHT #	REV #	DESCRIPTION	CBI STATUS	CALTECH STATUS
101	1 OF 7	1D	TYPE "B" - PLAN VIEW "A"	UNDER REVISION	REV 0 SUBMITTED
101	2 OF 7	1D	TYPE "B" - SECTION "A"	UNDER REVISION	REV 0 SUBMITTED
101	3 OF 7	1D	TYPE "B" - SECTION "B"	UNDER REVISION	REV 0 SUBMITTED
101	4 OF 7	1D	TYPE "B" - PLAN "A", DETAIL 1	UNDER REVISION	REV 0 SUBMITTED
101	5 OF 7	1D	TYPE "B" SUPPORTS-PLAN "A"	UNDER REVISION	REV 0 SUBMITTED
101	6 OF 7	1D	TYPE "B" SUPPORTS-SECTION "A"	UNDER REVISION	REV 0 SUBMITTED
101	7 OF 7	-	VOID	UNDER REVISION	REV 0 SUBMITTED
102	1 OF 3	1D	TYPE "H" - PLAN VIEW "A"	UNDER REVISION	REV 0 SUBMITTED
102	2 OF 3	1D	TYPE "H" - SECTION "A"	UNDER REVISION	REV 0 SUBMITTED
102	3 OF 3	1D	TYPE "H" - SECTION "B"	UNDER REVISION	REV 0 SUBMITTED
103	-	1D	CALIBRATION MODULE-PLAN "A"	UNDER REVISION	REV 0 SUBMITTED

TOLERANCE TABLE

APPLIES TO ALL FABRICATED PIECES OR ASSEMBLIES (UNLESS NOTED OTHERWISE)

	LINEAR DIMENSIONS		ANGULAR DIMENSIONS
	≤ 24"	>24"	0° TO 360°
TOLERANCE	± 1/16	± 1/8	± 0.5°

NONDESTRUCTIVE EXAMINATION (NDE) SYMBOLS

VI = VISUAL INSPECTION

MST = HELIUM MASS SPECTROMETER TEST

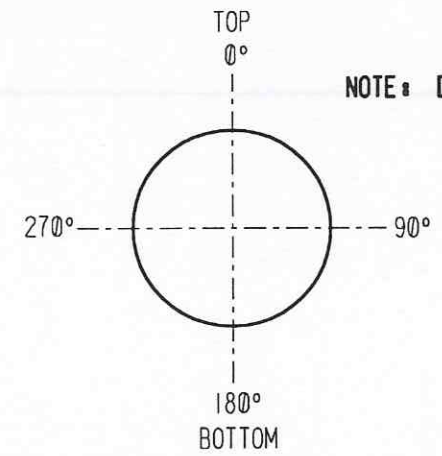
APPROVED	
<i>M. TELLALIAN</i>	6/28/96
CBI	DATE
CALTECH	DATE

CBI			<small>SUPPLIER'S / PURCHASER'S NO</small>		
LIGO BEAM TUBE HANFORD, WA AND LIVINGSTON, LA					
GENERAL NOTES					
<small>CUSTOMER'S NO</small>			<small>CONTRACT NO</small>		
BY DIR <u>CHKD M.T.</u> DATE <u>6-28-96</u>			DATE <u>5-9-96</u> 953571		
BY M.L. TELLALIAN			DWG 0		
ENGINEERING ASSIGNED			REV 2D		
<u>D960510-02-B</u>					

BEAM TUBE ASSEMBLY	TUBE LENGTH (W/O EXP. JT.) (FT.)	TUBE LENGTH (W/O EXP. JT.) (IN.)	# OF WRAPS		SEAM ORIENTATION (DEGREES)				PUMP PORT	EXPANSION JOINT AT START	EXPANSION JOINT SEAM ORIENTATION (DEG.)
			24" COIL	36" COIL	24" COIL		36" COIL				
					START	END	START	END			
A	62.9167	755.000	31.07	20.39	90	115	90	230		Y	250
B	65.0000	780.000	32.10	21.07	0	36	0	25			
C	65.0000	780.000	32.10	21.07	135	171	90	115	Y		
D	65.0000	780.000	32.10	21.07	315	351	270	295	Y		
E	49.6328	595.594	24.51	16.09	135	319	135	167	Y	Y	270
F	47.0078	564.094	23.22	15.23	0	79	0	83			
G	44.9271	539.125	22.19	14.56	180	248	180	22		Y	135
H	49.6328	595.594	24.51	16.09	45	229	180	212	Y		
I	49.6328	595.594	24.51	16.09	225	49	0	32	Y		
J	49.6328	595.594	24.51	16.09	315	139	315	347	Y	Y	270
K	56.9583	683.500	28.13	18.46	270	317	0	166	Y	Y	90
L	54.3333	652.000	26.83	17.61	0	299	0	220			
M	52.2552	627.062	25.81	16.94	180	112	0	338		Y	225
N	56.9583	683.500	28.13	18.46	45	92	180	346	Y		
O	56.9583	683.500	28.13	18.46	225	272	0	166	Y	Y	90
P	56.9583	683.500	28.13	18.46	225	272	0	166	Y		
Q	56.9583	683.500	28.13	18.46	45	92	180	346	Y	Y	90
R	56.9583	683.500	28.13	18.46	90	137	180	346	Y	Y	0
S	65.0000	780.000	32.10	21.07	0	36	180	205			

NOTE: BOLD TEXT DENOTE THAT THESE BEAM TUBE LENGTHS ARE THE 8 BASIC LENGTHS OF TUBES.

D = 48.998 IN. (DIAMETER TO PLATE CENTERLINE)
 C = 153.932 IN. (CIRCUMFERENCE AT PLATE CENTERLINE)
 L_24 = 24.297 IN. (PITCH AT D WITH 24" WIDE COIL)
 L_36 = 37.027 IN. (PITCH AT D WITH 36" WIDE COIL)



NOTE: DIRECTION OF CONSTRUCTION IS INTO THE PAGE

APPROVED
M. Tellalian 6-28-96
 CBI DATE
 CALTECH DATE

BY		DATE		DTR		REV. SH. 1		REVISIONS		CBI		SUPPLIER'S / PURCHASER'S NO	
BY		DATE		DTR		REV. SH. 1		REVISIONS		LIGO BEAM TUBE HANFORD, WA AND LIVINGSTON, LA		CONTRACT NO 953571	
BY		DATE		DTR		REV. SH. 1		REVISIONS		BEAM TUBE WELD SEAM ORIENTATION		CUSTOMER'S NO	
BY		DATE		DTR		REV. SH. 1		REVISIONS		BY DTR		DATE 5-9-96	
BY		DATE		DTR		REV. SH. 1		REVISIONS		M.L. TELLALIAN		DWG 0	
BY		DATE		DTR		REV. SH. 1		REVISIONS		ENGINEERING ASSIGNED		SHT 2	
BY		DATE		DTR		REV. SH. 1		REVISIONS		REVISIONS		REV 2D	

INDICATES CHANGE FROM PREVIOUS ISSUE

5571GENI.DGN