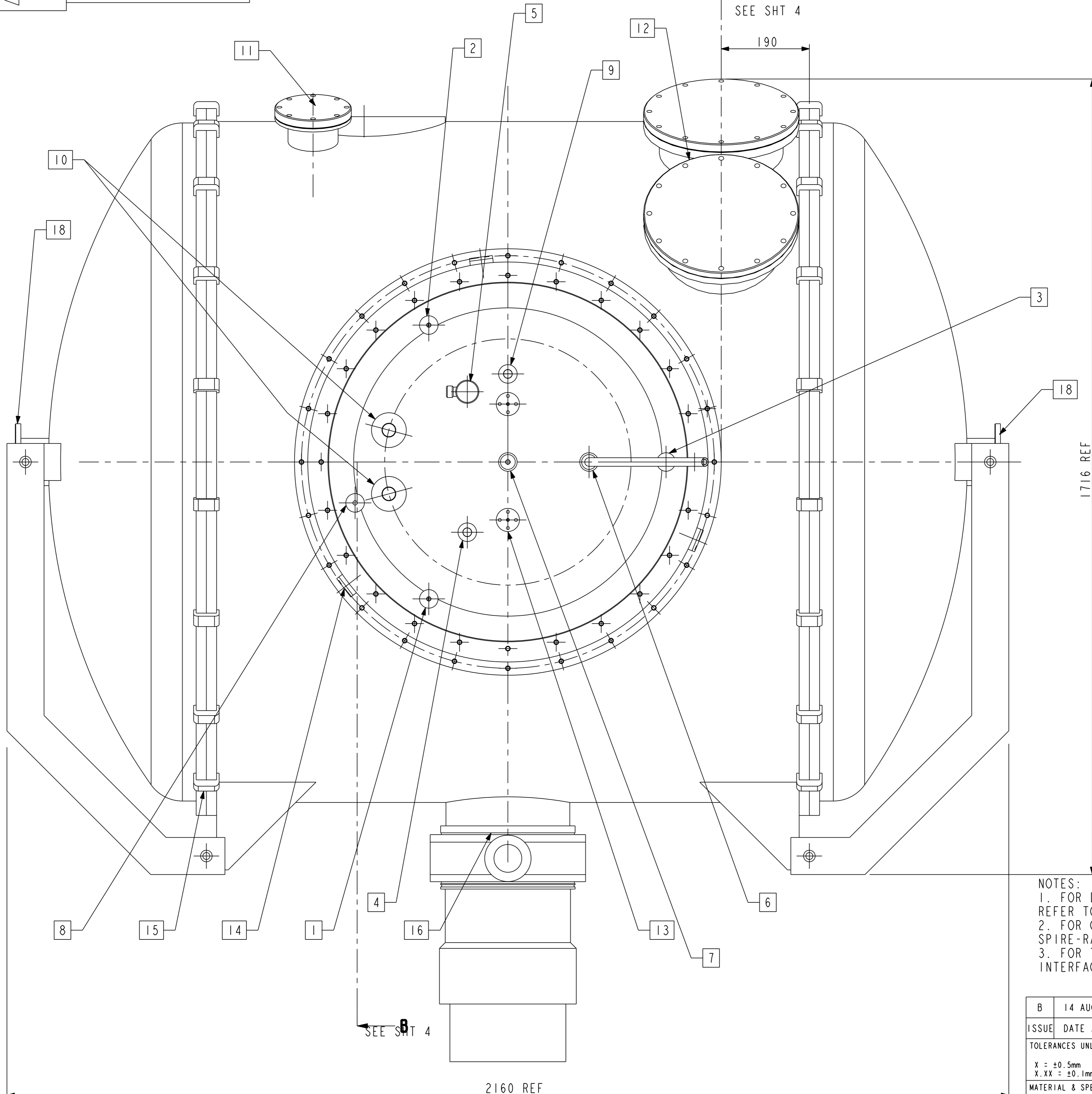


LIST OF SERVICES	
PORT N°	DESCRIPTION
1	N2 VENT LINE AND NON RETURN VALVE NW25
2	N2 LEVEL PROBE NW25
3	N2 FILL NW25
4	4K He VENT LINE NW25/ BURST DISK
5	DEMOUNTABLE He LEVEL PROBE/TEMP SENSOR WIRING
6	He SYPHON ENTRY Ø12.7
7	LAMBDA POINT NEEDLE VALVE
8	9K SHIELD He VENT LINE
9	LAMBDA PUMPING PORT (SIZE TBD BY CONTRACTOR)
10	CRYOSTAT WIRING CONNECTIONS
11	COLD CALIBRATION SOURCE WIRING PORT, ISO 100
12	2 x INSTRUMENT WIRING PORT ISO 250
13	2 x UPPER VERTICAL TRANSIT FIXING
14	3 x UPPER RADIAL TRANSIT FIXING
15	ISO VACUUM CLAMP QTY T.B.D.
16	PUMPING PORT ISO 250
17	8 x LOWER VESSEL TRANSIT FIXINGS
18	2 X AUXILARY VACUUM PORTS ISO 100



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APPROVAL	INITIAL
PROJECT MANAGER	
SYSTEMS ENGINEER	
OPTICAL ENGINEER	
THERMAL ENGINEER	
P.A.	

NOTES:
 1. FOR DETAILS SHOWING SCOPE OF SUPPLY FOR CRYOSTAT REFER TO DRAWING A1-KGO710-002
 2. FOR CRYOSTAT PROCUREMENT SPECIFICATION SEE DOCUMENT SPIRE-RAL-DOC-0005821
 3. FOR TELESCOPE SIMULATOR, COLD CALIBRATION & FILTER INTERFACE DETAILS REFER TO DRAWING A1-KGO710-003.

B	14 AUG 01		M. HARMAN			STM	
ISSUE	DATE APPD	MOD. No.	DRN. BY	CHKD BY.	APPD BY.	STATUS	
TOLERANCES UNLESS STATED			FINISH		ORIGINAL SCALE		
X = ±0.5mm X.XX = ±0.1mm			CLEAN REMOVE ALL BURRS		1:5 DO NOT SCALE		
MATERIAL & SPEC. SEE DETAILS			SURFACE TEXTURE µm SEE DETAILS ✓ UNLESS STATED				
USED ON					SPIRE		
CENTRAL LABORATORY OF THE RESEARCH COUNCILS							
TITLE SPIRE COLD CALIBRATION CRYOSTAT WITH SPIRE INTERGRATED							
HERSCHEL							
A1	KGO710-001					SHEET	1 OF 6

END VIEW OF CRYOSTAT
WITH ENDS REMOVED.

NOTE: - CUT OUT IN 77K SHIELD FOR SPIRE CRYOHARNES TO EXIT SHIELD

2245
2070, MAX CEILING HEIGHT FOR TO SYPHON REMOVAL = 2700

10 REF. FROM CENTRE OF WINDOW
TO HERSCHEL OPTICAL REFERENCE

40 REF. FROM CENTRE OF
CRYOSTAT TO WINDOW CENTRE

A
SEE SHEET 3

Ø1099 REF

500

A
SEE SHEET 3

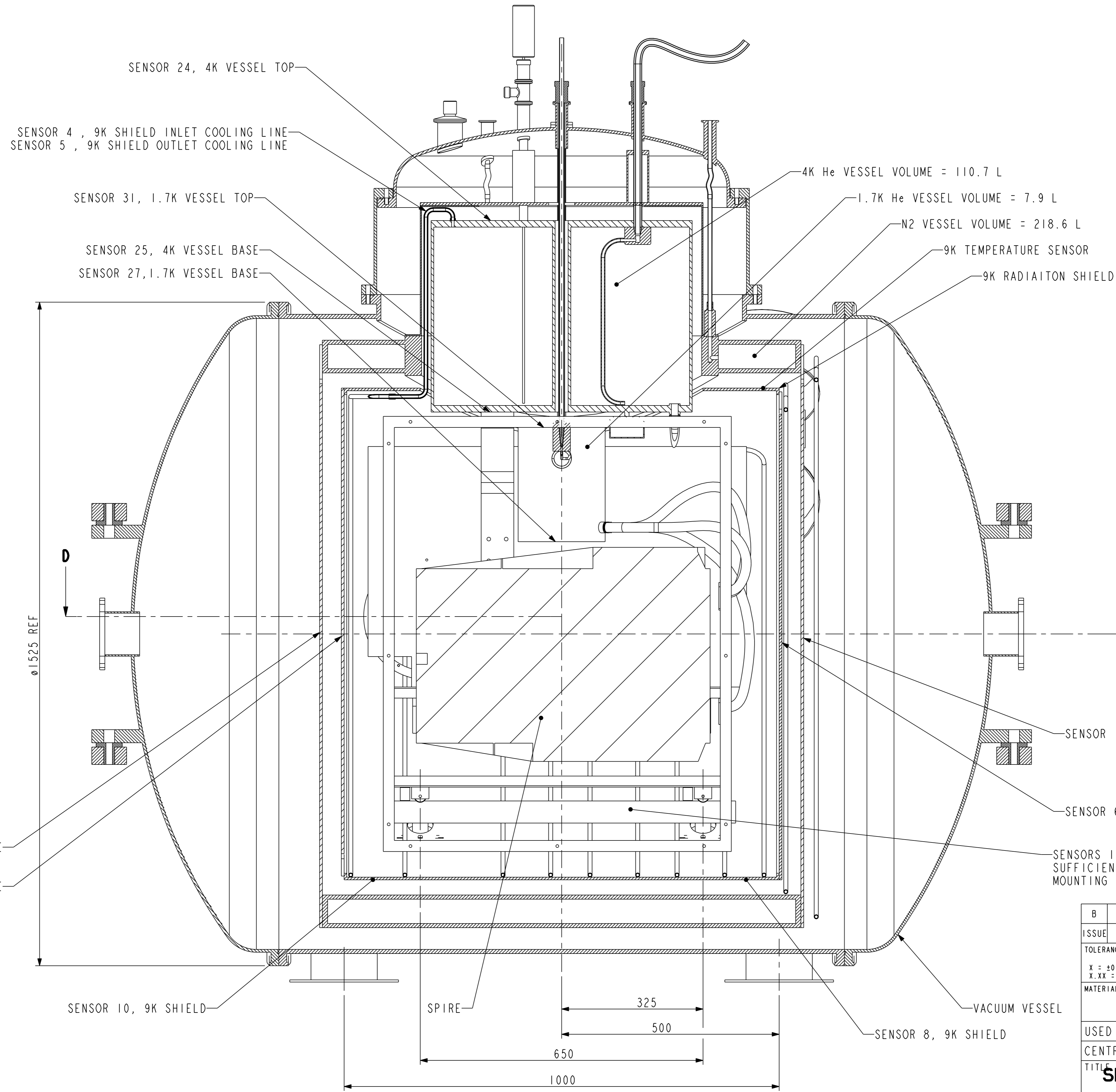
189 REF CENTRE TO BASE OF SPIRE

1294 REF

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APPROVAL	INITIAL
PROJECT MANAGER	
SYSTEMS ENGINEER	
OPTICAL ENGINEER	
THERMAL ENGINEER	
P. A.	

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ISSUE	DATE APPD	MOD. No.	DRN. BY	CHKD BY.	APPD BY.	STATUS	
TOLERANCES UNLESS STATED			FINISH		ORIGINAL SCALE		
X = ±0.5mm X.XX = ±0.1mm			CLEAN REMOVE ALL BURRS		1:5 DO NOT SCALE		
MATERIAL & SPEC. SEE DETAILS			SURFACE TEXTURE µm SEE DETAILS ✓ UNLESS STATED				
USED ON SPIRE				© CLRC 2001			
CENTRAL LABORATORY OF THE RESEARCH COUNCILS							
TITLE SPIRE COLD CALIBRATION CRYOSTAT WITH SPIRE INTERGRATED							
HERSCHEL						SBB2110	
A1	KG0710-001					SHEET	2 OF 6



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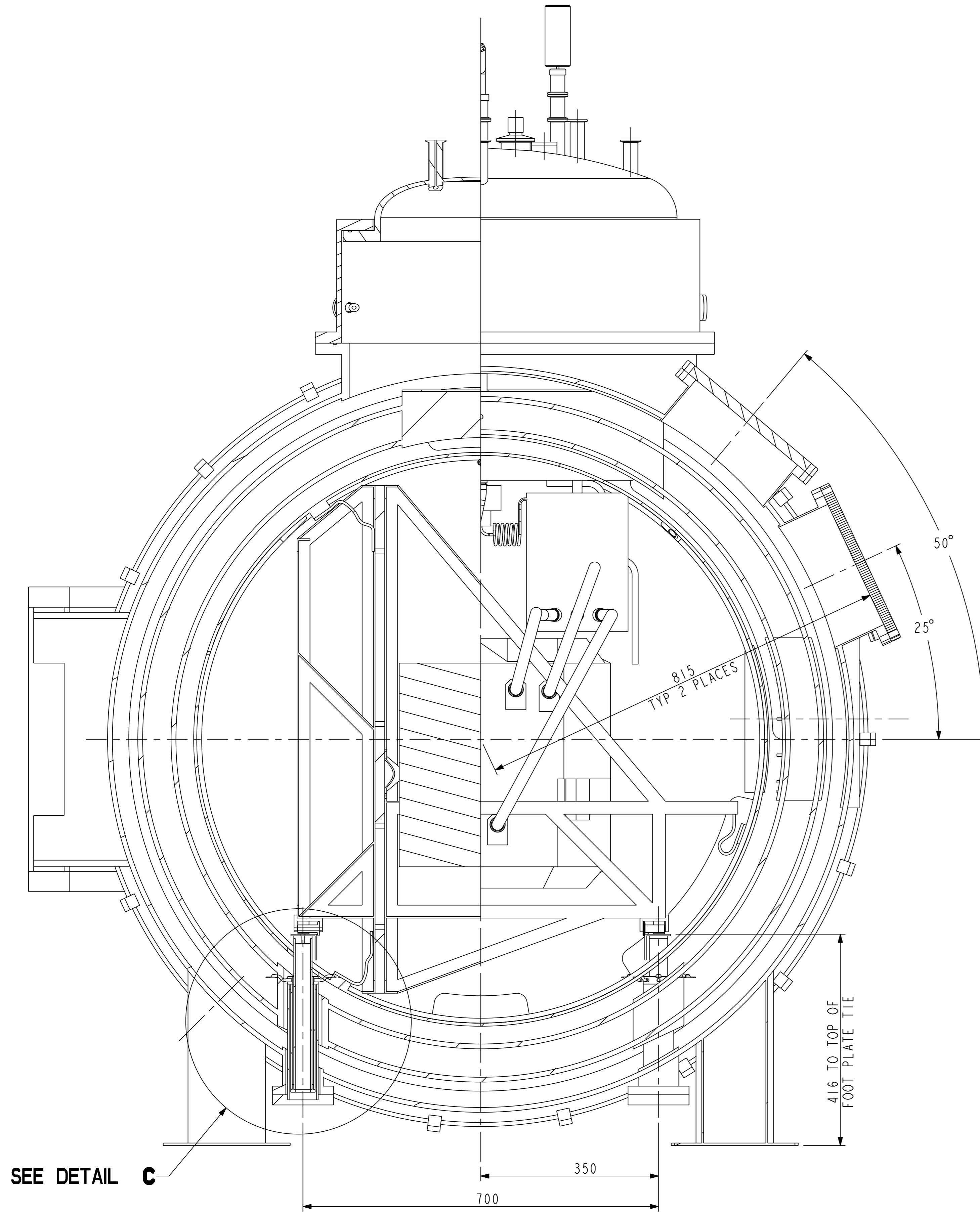
APPROVAL	INITIAL
PROJECT MANAGER	
SYSTEMS ENGINEER	
OPTICAL ENGINEER	
THERMAL ENGINEER	
P.A.	

SENSORS 16-23 ARE TO BE MOUNTED AT R.A.L.
SUFFICIENT WIRING MUST BE PROVIDED FOR
MOUNTING IN ANY POSITION THE INSTRUMENT SPACE

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TOLERANCES UNLESS STATED		FINISH		ORIGINAL SCALE			
X = ±0.5mm	X, X.X = ±0.3mm	CLEAN		1:5			
X, XX = ±0.1mm	ANG = ±0°15'	REMOVE ALL BURRS		DO NOT SCALE			
MATERIAL & SPEC.		SURFACE TEXTURE µm					
SEE DETAILS		SEE DETAILS					
		UNLESS STATED					
USED ON			SPIRE		© CLRC 2001		
CENTRAL LABORATORY OF THE RESEARCH COUNCILS							
TITLE SPIRE COLD CALIBRATION CRYOSTAT							
HERSCHEL WITH SPIRE INTERGRATED							
						SBB2110	
A1	KG0710-001					SHEET	3 OF 6

SECTION A-A
FROM SHEET 2

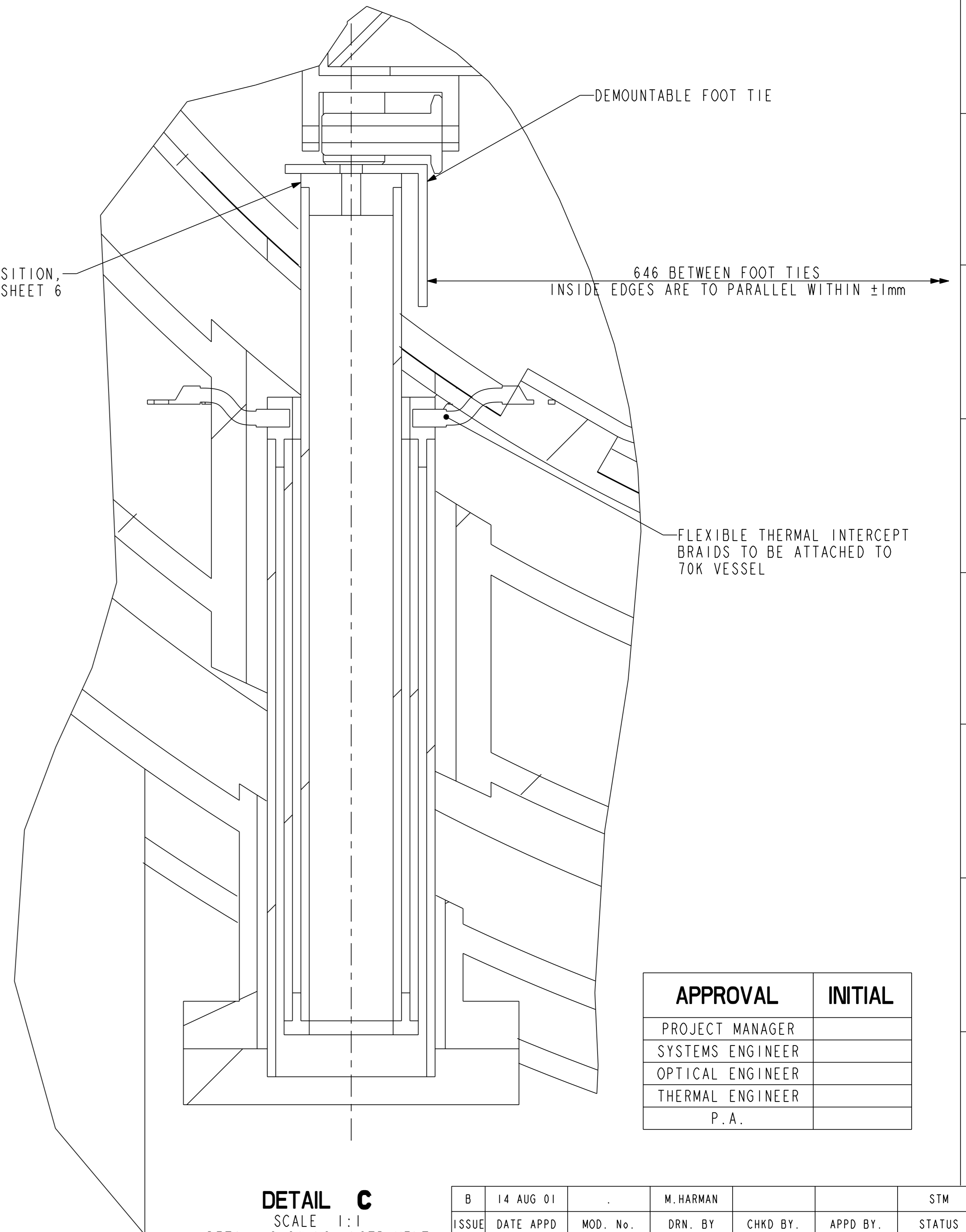
KG0710-001



SEE DETAIL C

SECTION B-B

SENSOR POSITION, SEE SHEET 6



DEMOUNTABLE FOOT TIE

646 BETWEEN FOOT TIES
INSIDE EDGES ARE TO PARALLEL WITHIN ±1mm

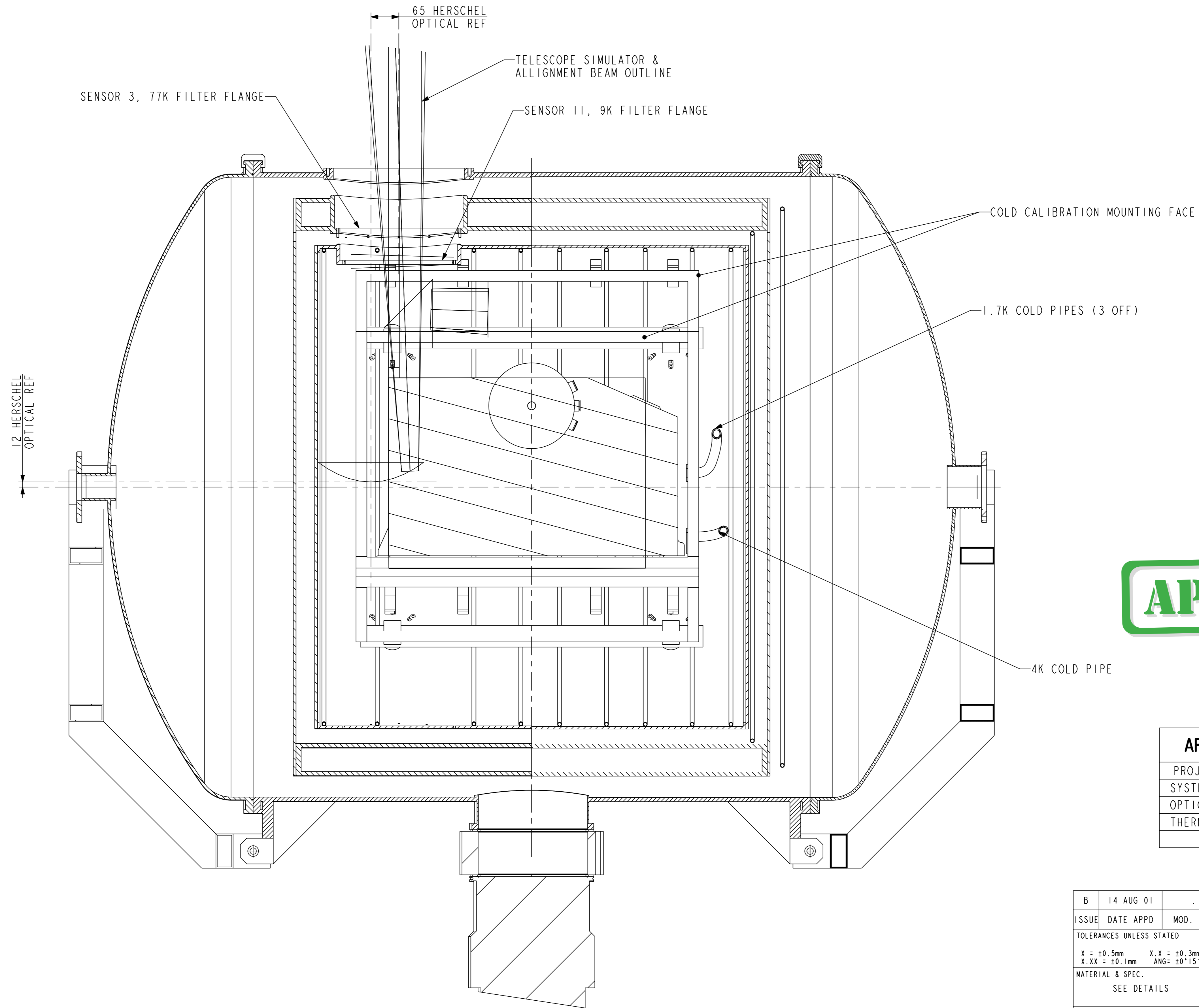
FLEXIBLE THERMAL INTERCEPT BRAIDS TO BE ATTACHED TO 70K VESSEL

APPROVAL	INITIAL
PROJECT MANAGER	
SYSTEMS ENGINEER	
OPTICAL ENGINEER	
THERMAL ENGINEER	
P. A.	

DETAIL C
SCALE 1:1
DETAIL SHOWING INSTRUMENT SUPPORT LEG

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TOLERANCES UNLESS STATED			FINISH		ORIGINAL SCALE		
X = ±0.5mm X.XX = ±0.1mm			CLEAN REMOVE ALL BURRS		1:5 DO NOT SCALE		
MATERIAL & SPEC. SEE DETAILS			SURFACE TEXTURE μm SEE DETAILS ✓ UNLESS STATED				
USED ON SPIRE						© CLRC 2001	
CENTRAL LABORATORY OF THE RESEARCH COUNCILS							
TITLE SPIRE COLD CALIBRATION CRYOSTAT WITH SPIRE INTERGRATED							
HERSCHEL						SBB2110	
A1	KG0710-001					SHEET	4 OF 6

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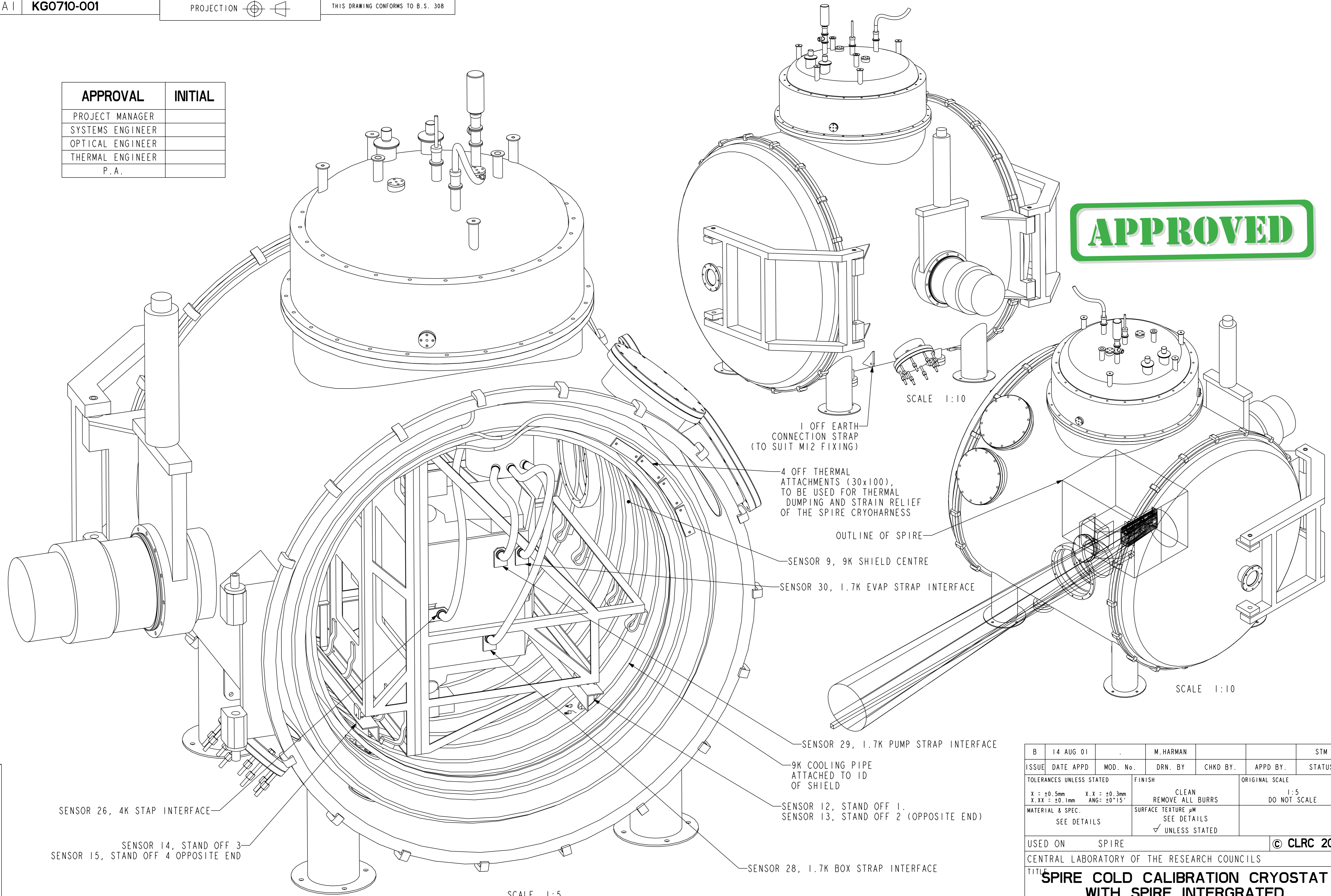
APPROVAL	INITIAL
PROJECT MANAGER	
SYSTEMS ENGINEER	
OPTICAL ENGINEER	
THERMAL ENGINEER	
P. A.	

SECTION D-D
FROM SHEET 3

B	14 AUG 01		M. HARMAN				
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TOLERANCES UNLESS STATED			FINISH		ORIGINAL SCALE		
X = ±0.5mm X,XX = ±0.1mm			CLEAN REMOVE ALL BURRS		1:5 DO NOT SCALE		
MATERIAL & SPEC. SEE DETAILS			SURFACE TEXTURE µm SEE DETAILS ✓ UNLESS STATED				
USED ON SPIRE					© CLRC 2001		
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TITLE SPIRE COLD CALIBRATION CRYOSTAT WITH SPIRE INTERGRATED							
HERSCHEL						SBB2110	
A1	KG0710-001					SHEET	5 OF 6

APPROVAL	INITIAL
PROJECT MANAGER	
SYSTEMS ENGINEER	
OPTICAL ENGINEER	
THERMAL ENGINEER	
P.A.	

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SENSOR 26, 4K STAP INTERFACE

SENSOR 14, STAND OFF 3
SENSOR 15, STAND OFF 4 OPPOSITE END

1 OFF EARTH CONNECTION STRAP (TO SUIT M12 FIXING)

4 OFF THERMAL ATTACHMENTS (30x100), TO BE USED FOR THERMAL DUMPING AND STRAIN RELIEF OF THE SPIRE CRYOHARNESS

OUTLINE OF SPIRE

SENSOR 9, 9K SHIELD CENTRE

SENSOR 30, 1.7K EVAP STRAP INTERFACE

SENSOR 29, 1.7K PUMP STRAP INTERFACE

9K COOLING PIPE ATTACHED TO ID OF SHIELD

SENSOR 12, STAND OFF 1, SENSOR 13, STAND OFF 2 (OPPOSITE END)

SENSOR 28, 1.7K BOX STRAP INTERFACE

SCALE 1:5
ISOMETRIC VIEW WITH ENDS REMOVED

SCALE 1:10

SCALE 1:10

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USED ON SPIRE					© CLRC 2001		
CENTRAL LABORATORY OF THE RESEARCH COUNCILS							
TITLE SPIRE COLD CALIBRATION CRYOSTAT WITH SPIRE INTERGRATED							
HERSCHEL					SBB2110		
A	KG0710-001					SHEET	6 OF 6