

NOTES:

- DIMENSIONS ARE IN INCHES/MILLIMETERS AND WEIGHTS ARE IN POUNDS/KILOGRAMS.
- A. SPECTROMETER:  
TOTAL EST WT = 1,727,000/783,362  
HORIZ CG FROM TARGET = 534/13,564  
VERT CG ABV BEAM LINE = 55/1,402
- B. GANTRY:  
TOTAL EST WT = 2,000,000/907,194  
HORIZ CG FROM TARGET = 869/22,068  
VERT CG ABV BEAM LINE = 305/7,742
- FOR INFORMATION CONCERNING CENTERS OF GRAVITY SHOWN IN SECTION 1-5A FOR INDIVIDUAL SPECTROMETER AND GANTRY COMPONENTS, SEE APPLICABLE ID IN TABLE 5-4D.

11/18/91 -  
SEE NOTE ON SHEET 5 FOR WEIGHTS & CENTER OF GRAVITIES.  
SEE THE FOLLOWING DRAWINGS FOR LATEST CONCEPTUAL STRUCTURAL DEVELOPMENTS:

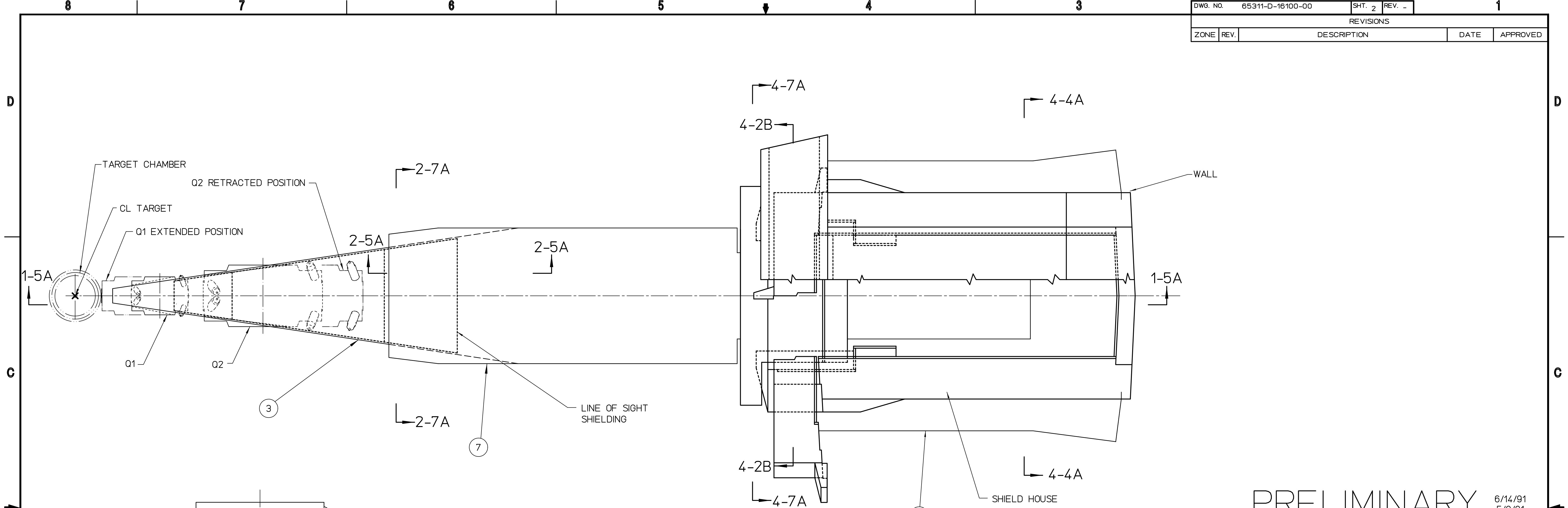
- JACK LOCATIONS, CRADLE & DIPOLE SUPPORT BRACKETS - 65311-E-16045-01.
- BOX BEAM (PARTIAL) & DIPOLE MAGNET - 65311-E-16050-01.
- GEAR REDUCERS & DRIVE MOTORS - 65311-E-16051-01.
- SHIELDING - 65311-E-16034-01
- CENTRAL BEARING & LINKS - FIGURE 18a.

SECTION 1-5A

PRELIMINARY 8/10/92  
6/14/91  
5/8/91

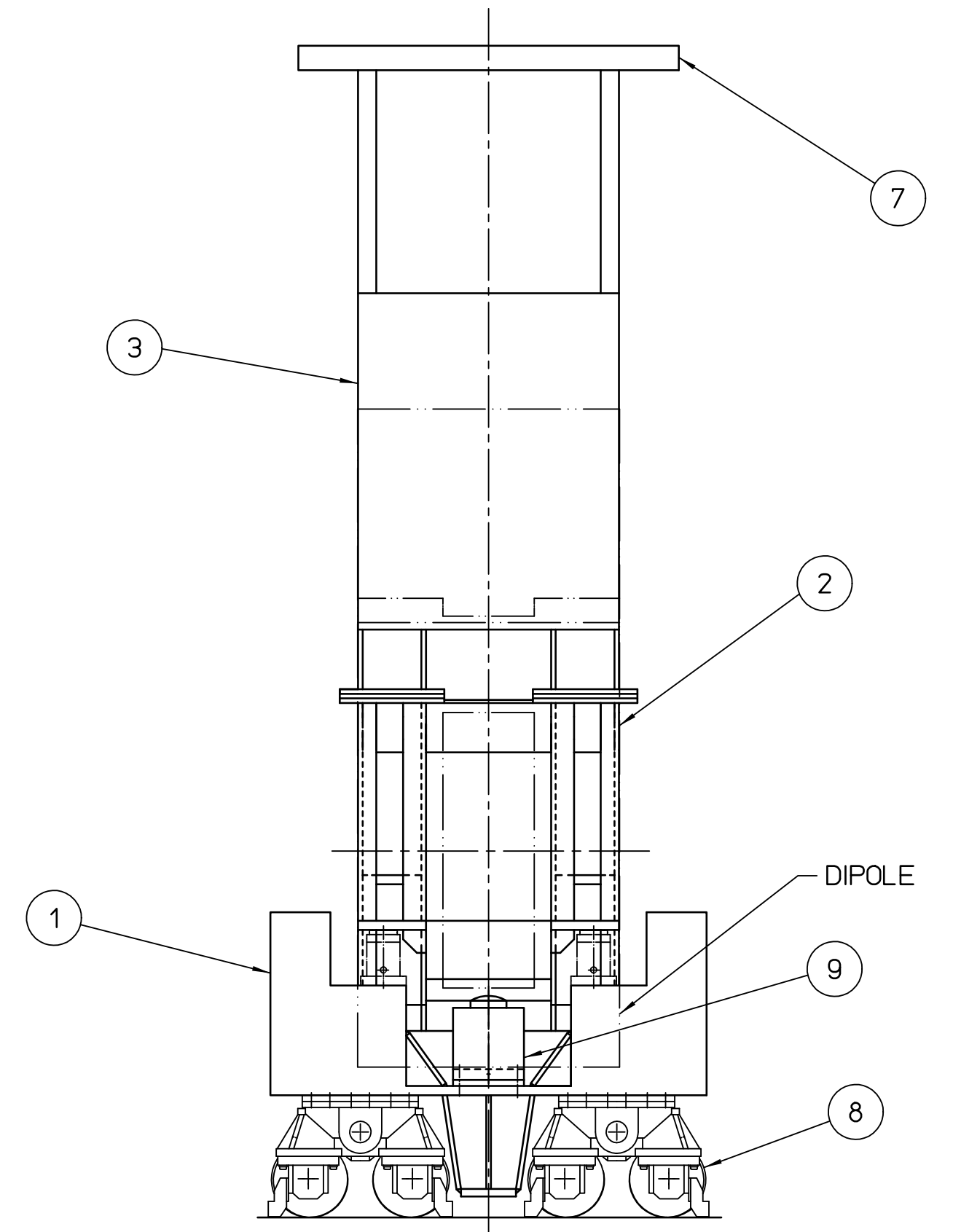
SEE SHEET 2 FOR PARTS LIST

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
PARTS LIST					
DIM & TOL PER ANSI Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMAL ANGLES * XX ± * .XXX ± *			CADD I.D. NO. /wbs6/65/653/65311/16100.d/000_sh1	 The Continuous Electron Beam Accelerator Facility NEWPORT NEWS, VIRGINIA UNITED STATES DEPARTMENT OF ENERGY	
MATERIAL			APPROVALS	DATE	HALL A HRS ELECTRON ARM SUPPORT/POSITIONING ASSEMBLY
FINISH UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			DRAWN F. A. HARRELL	5/8/91	
DO NOT SCALE DRAWING			CHECKED		
			APPROVED/ORIGINATOR		SIZE DWG. NO. D 65311-D-16100-00
			APPROVED		REV. -
					SCALE 1:48 USED ON ASSY NO. SHEET 1 OF 5

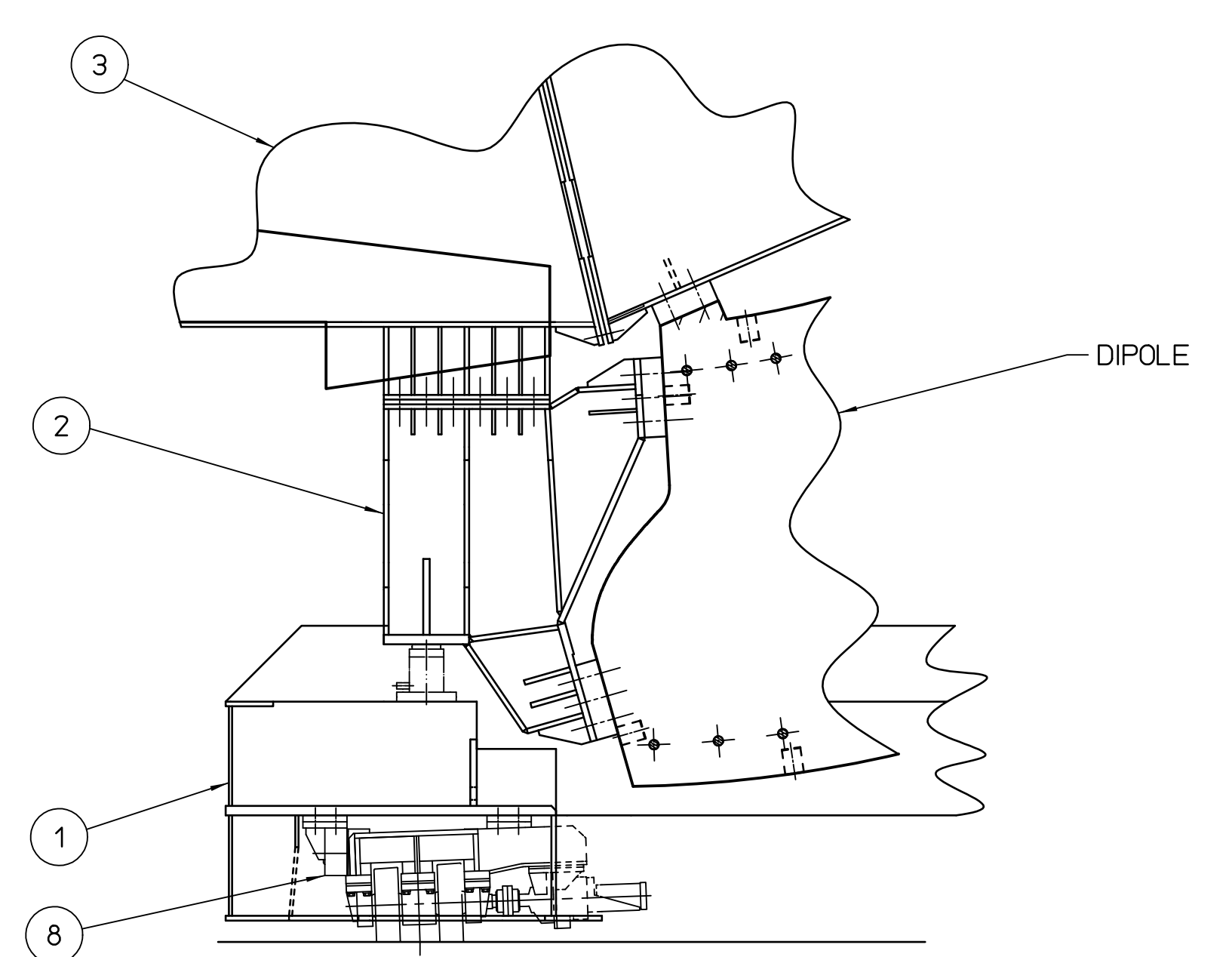


PRELIMINARY 6/14/91  
5/9/91

PLAN VIEW 2-5B  
AT TOP OF BOX BEAM



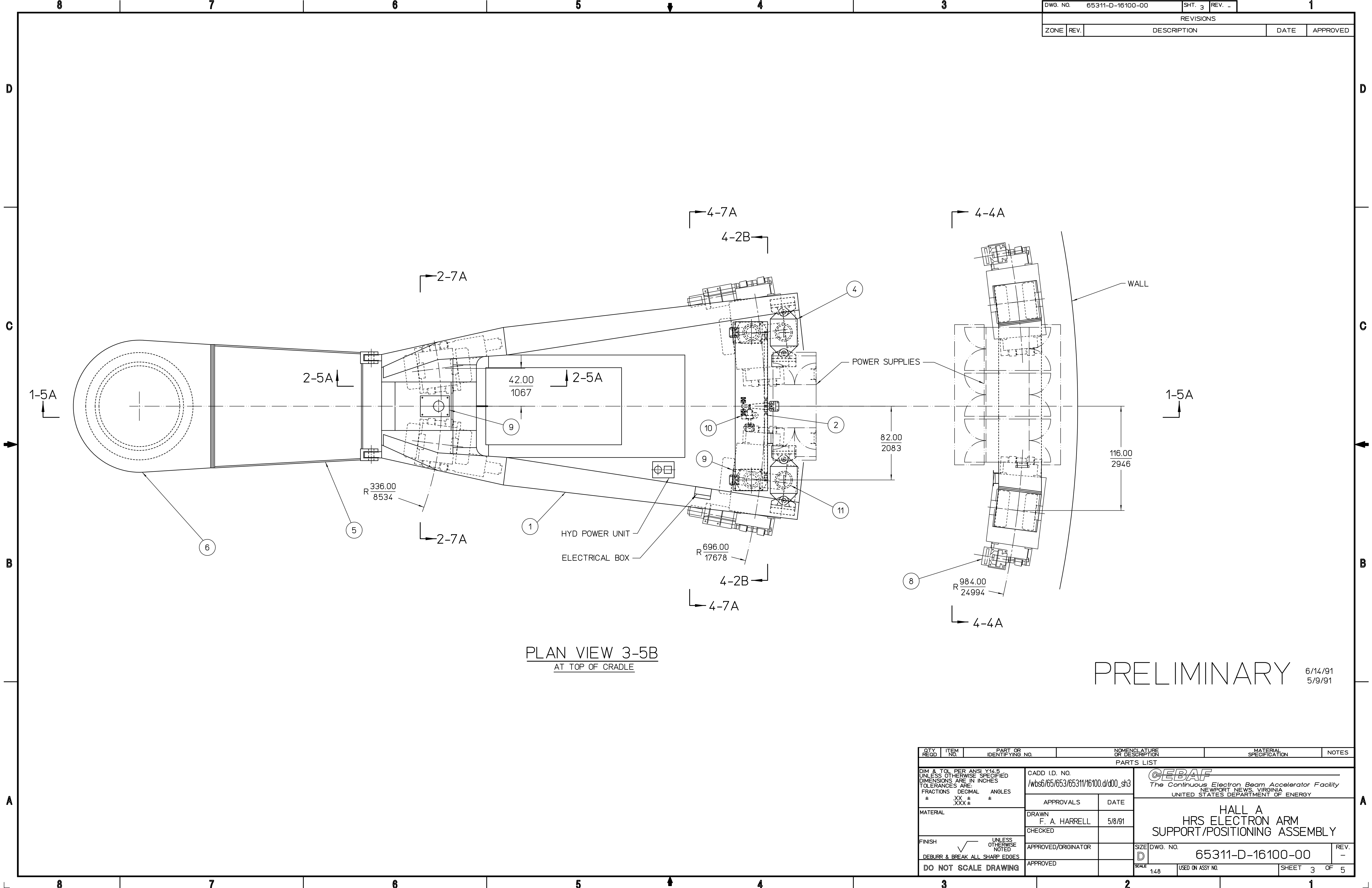
SECTION 2-7A



SECTION 2-5A

1	13	65311-D-16230-00	BACK QUAD SUPPORT ASSEMBLY		
1	12	65311-D-16220-00	FRONT QUAD SUPPORT ASSEMBLY		
1	11	65311-D-16210-00	GANTRY LEG BEARING ASSEMBLY		
1	10	65311-D-16200-00	HORIZONTAL POSITIONING DEVICE ASSEMBLY		
1	9	65311-D-16190-00	VERTICAL POSITIONING DEVICE ASSEMBLY		
1	8	65311-D-16180-00	WHEEL ASSEMBLY		
1	7	65311-D-16170-00	SERVICE PLATFORM ASSEMBLY		
1	6	65311-D-16160-00	CENTRAL BEARING ASSEMBLY		
1	5	65311-D-16150-00	LINK ASSEMBLY		
1	4	65311-D-16140-00	GANTRY ASSEMBLY		
1	3	65311-D-16130-00	BOX BEAM ASSEMBLY		
1	2	65311-D-16120-00	YOKE SUPPORT ASSEMBLY		
1	1	65311-D-16110-00	CRADLE ASSEMBLY		

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
PARTS LIST					
DIM & TOL PER ANSI Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CADD I.D. NO. /wbs6/65/653/65311/16100.d/d00_sh2		 The Continuous Electron Beam Accelerator Facility NEWPORT NEWS, VIRGINIA UNITED STATES DEPARTMENT OF ENERGY	
FRACTIONS DECIMAL ANGLES		APPROVALS		DATE	
* XX ± * * * * *		DRAWN		5/9/91	
* .XXX ± * * * * *		F. A. HARRELL		CHECKED	
UNLESS OTHERWISE NOTED		APPROVED/ORIGINATOR		SIZE DWG. NO.	
DEBURR & BREAK ALL SHARP EDGES		APPROVED		D 65311-D-16100-00	
DO NOT SCALE DRAWING		SCALE 1:48		USED ON ASSY NO.	
		SHEET 2		OF 5	



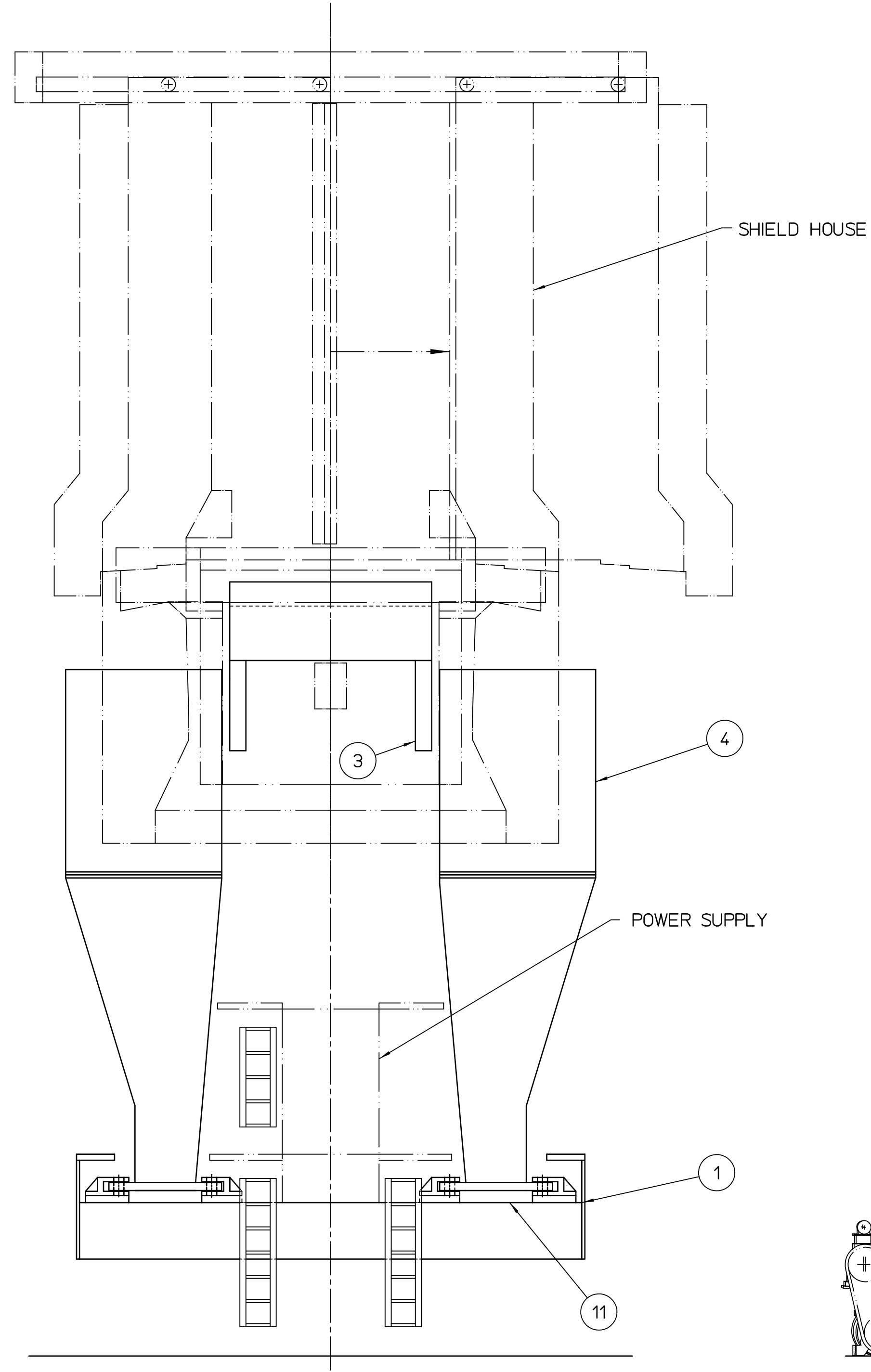
PLAN VIEW 3-5B  
AT TOP OF CRADLE

PRELIMINARY 6/14/91  
5/9/91

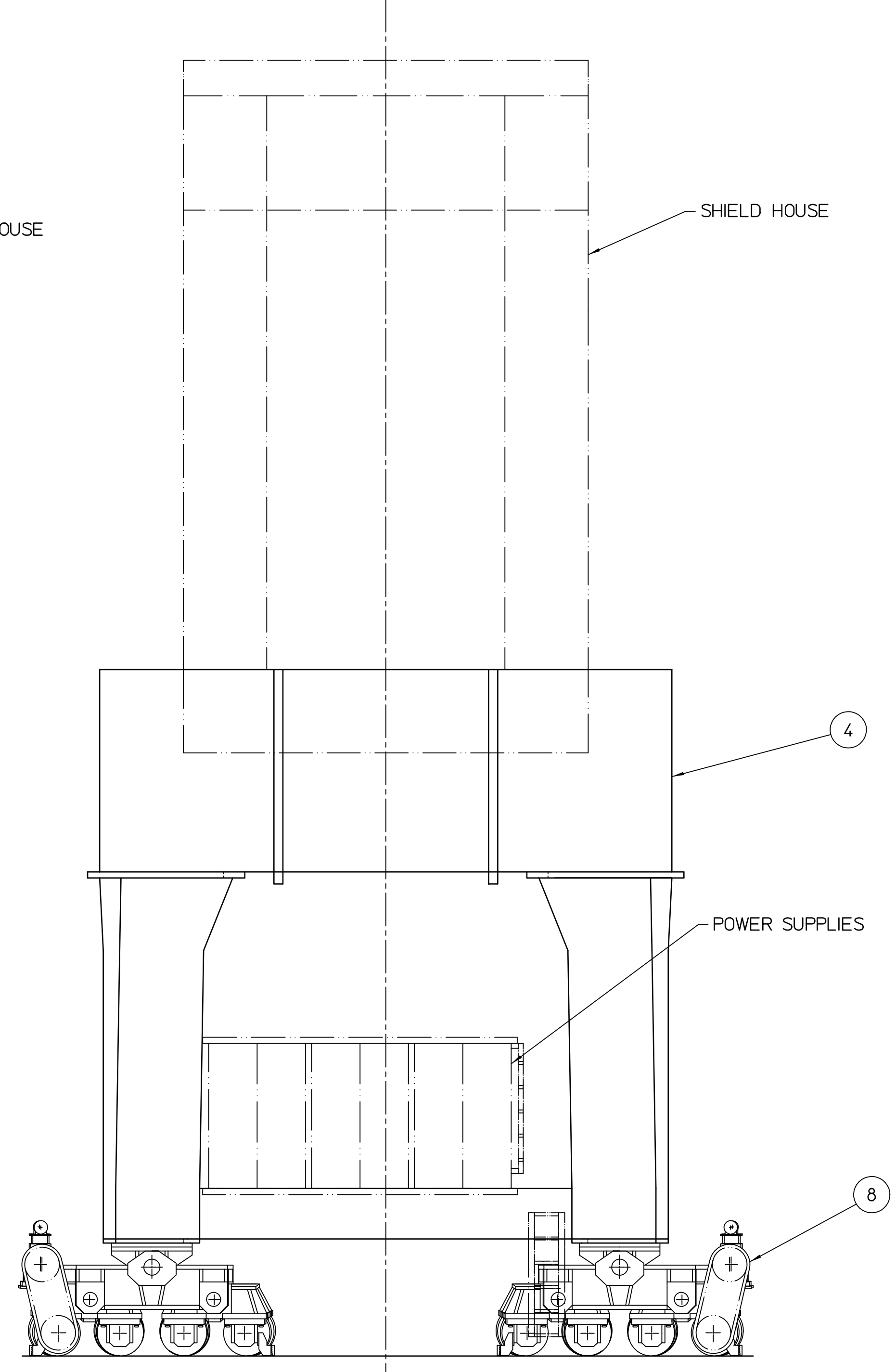
QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
PARTS LIST					
DIM & TOL PER ANSI Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMAL ANGLES * .XX ± * .XXX ±		CADD I.D. NO. /wbs6/65/653/65311/16100.d/d00_sh3		<b>CEBAF</b> The Continuous Electron Beam Accelerator Facility NEWPORT NEWS, VIRGINIA UNITED STATES DEPARTMENT OF ENERGY	
MATERIAL		APPROVALS	DATE	HALL A HRS ELECTRON ARM SUPPORT/POSITIONING ASSEMBLY	
FINISH UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN F. A. HARRELL	5/8/91		
DO NOT SCALE DRAWING		CHECKED			
		APPROVED/ORIGINATOR		SIZE DWG. NO. D 65311-D-16100-00	REV. -
		APPROVED		SCALE 1:48 USED ON ASSY NO.	SHEET 3 OF 5

D  
C  
B  
A

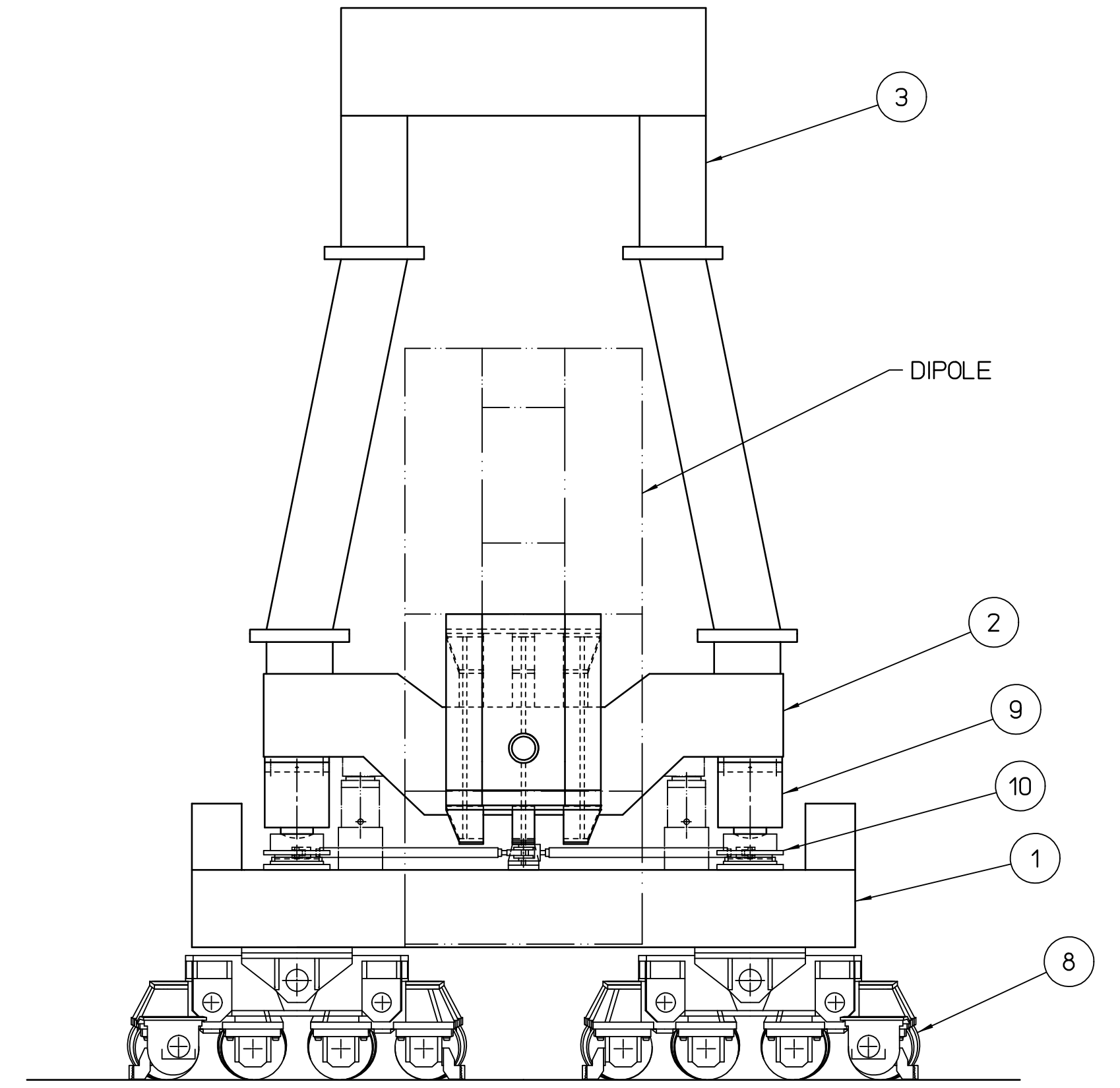
D  
C  
B  
A



SECTION 4-7A



SECTION 4-4A



SECTION 4-2B

PRELIMINARY 5/9/91

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
PARTS LIST					
DIM & TOL PER ANSI Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMAL ANGLES * XX ± * .XXX ± *		CADD I.D. NO. /wbs6/65/653/65311/16100.d/00_sh4		<b>CEBAF</b> The Continuous Electron Beam Accelerator Facility NEWPORT NEWS, VIRGINIA UNITED STATES DEPARTMENT OF ENERGY	
MATERIAL		APPROVALS	DATE	HALL A HRS ELECTRON ARM SUPPORT/POSITIONING ASSEMBLY	
FINISH UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN F. A. HARRELL	5/9/91		
DO NOT SCALE DRAWING		CHECKED	APPROVED/ORIGINATOR		
SCALE 1:48		USED ON ASSY NO.		SIZE DWG. NO. 65311-D-16100-00	REV. -
				SHEET 4 OF 5	

L

L

8 7 6 5 4 3 2 1

TABLE 5-4D

HALL A  
HRS ELECTRON ARM  
SUPPORT/POSITIONING ASSEMBLY  
REQUIREMENTS/CONSTRAINTS

BEAM HEIGHT ABOVE FLOOR	10' (3.05 m)
HALL A INNER WALL, RADIUS FROM $\epsilon$ - MINIMUM	86' (26.21 m)
CRANE HOOK HEIGHT ABOVE FLOOR	50' (15.24 m)
CRANE RAIL HEIGHT ABOVE FLOOR	54'9" (16.69 m)
MINIMUM BEAM/HRS TARGET ANGLE	12 $\frac{1}{2}$ °
MINIMUM ANGLE BETWEEN HRS ARMS	25°
ELECTRON ARM: MAXIMUM AZIMUTH ANGLE	165°

CG IS LOCATED HORIZONTALLY FROM THE CENTER LINE OF THE TARGET AND VERTICALLY FROM THE CENTER LINE OF THE BEAM.

ID:	COMPONENT:	WEIGHT		CG RADIUS		CG HEIGHT	
		Klb	x10 <sup>3</sup> Kg	FT-IN	M	FT-IN	M
A	Q1	9	4.1	7'3"	2.21	0	0
B	Q2	40	18.1	15'7"	4.75	0	0
C	DIPOLE	838	380.0	43'6"	13.26	2'5"	0.74
D	Q3	40	18.1	57'9"	17.60	13'8"	4.17
E	DETECTOR	26	11.8	76'1"	23.17	31'2"	9.50
F	BOGIES	179	81.2	63'7"	19.38	-7'8"	-2.34
G	TRANSPORTER CRADLE	176	79.8	43'7"	13.29	-4'4"	-1.32
H	LEVELING DEVICES	13	5.9	44'0"	13.41	-3'0"	-0.91
I	DIPOLE SUPPORT BRACKETS	74	33.6	45'2"	13.77	-1'	-0.03
J	BOX BEAM	177	80.3	45'10"	13.96	15'4"	4.66
K	LINE OF SIGHT SHIELDING	115	52.2	22'8"	6.92	7'8"	2.33
L	DETECTOR FLOOR	142	64.4	60'10"	18.54	18'1"	5.52
M	ELEVATOR, PLATF & LADDERS	30	13.6	65'0"	19.81	15'0"	4.57
N	POWER SUPPLIES	24	10.9	75'6"	23.01	1'6"	0.46
O	RESISTER DUMPS	7	3.2	70'0"	21.34	13'0"	3.96
P	PIPES & CABLES	36	16.3	43'0"	13.11	20'0"	6.10
Q	GANTRY	301	136.5	73'6"	22.37	10'11"	3.32
R	SHIELD HOUSE	1,670	757.5	69'11"	21.32	29'7"	9.02
S	(1/2) LINK ASSEMBLY	12	5.4	21'6"	6.55	-7'3"	-2.21
T	Q1,Q2 FOUNDATION	6	2.7	13'0"	3.96	4'6"	1.37
U	HORIZ POS DEVICE	4	1.8	56'0"	17.07	-3'1"	-0.94
		3919	1,777.6				


FLOOR PLATE REACTIONS FROM HRS:	NOT UP TO DATE					
INNER RADIUS PLATE	791	358.8	28'-0"	8.53	-10'-0"	-3.05
MIDDLE RADIUS PLATE	1,989	902.2	58'-0"	17.68	-10'-0"	-3.05
OUTER RADIUS PLATE	1,117	506.7	82'-0"	24.99	-10'-0"	-3.05

BEAM LINE ALIGNMENT TOLERANCES	
AZIMUTHAL POINTING	± 0.1 mr
AZIMUTHAL POSITION	± 2.0 mr
AZIMUTHAL POSITION MEASUREMENT	± 0.1 mr
VERTICAL POINTING	± 0.1 mr
	(± 0.1" in 900")
RADIAL POSITION	± 0.2" (5mm)
AZIMUTHAL TRAVERSING RATE	3°/min

11/18/91 - THE ESTIMATED WEIGHTS ON THIS DRAWING HAVE BEEN UPDATED TO INCLUDE A POSSIBLE GROWTH OF 20%. THE CENTER OF GRAVITIES ARE THE LATEST BUT SOME ARE BASED ON VERY EARLY PRELIMINARY CALCULATIONS.

PRELIMINARY

9/20/91  
7/1/91  
6/20/91  
5/10/91

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FRACTIONS DECIMAL ANGLES		APPROVALS		DATE	
* .XX ± * .XXX ± *		DRAWN F. A. HARRELL		5/10/91	
FINISH UNLESS OTHERWISE NOTED		CHECKED			
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DO NOT SCALE DRAWING		APPROVED		SCALE 1:1 USED ON ASSY NO. SHEET 5 OF 5	