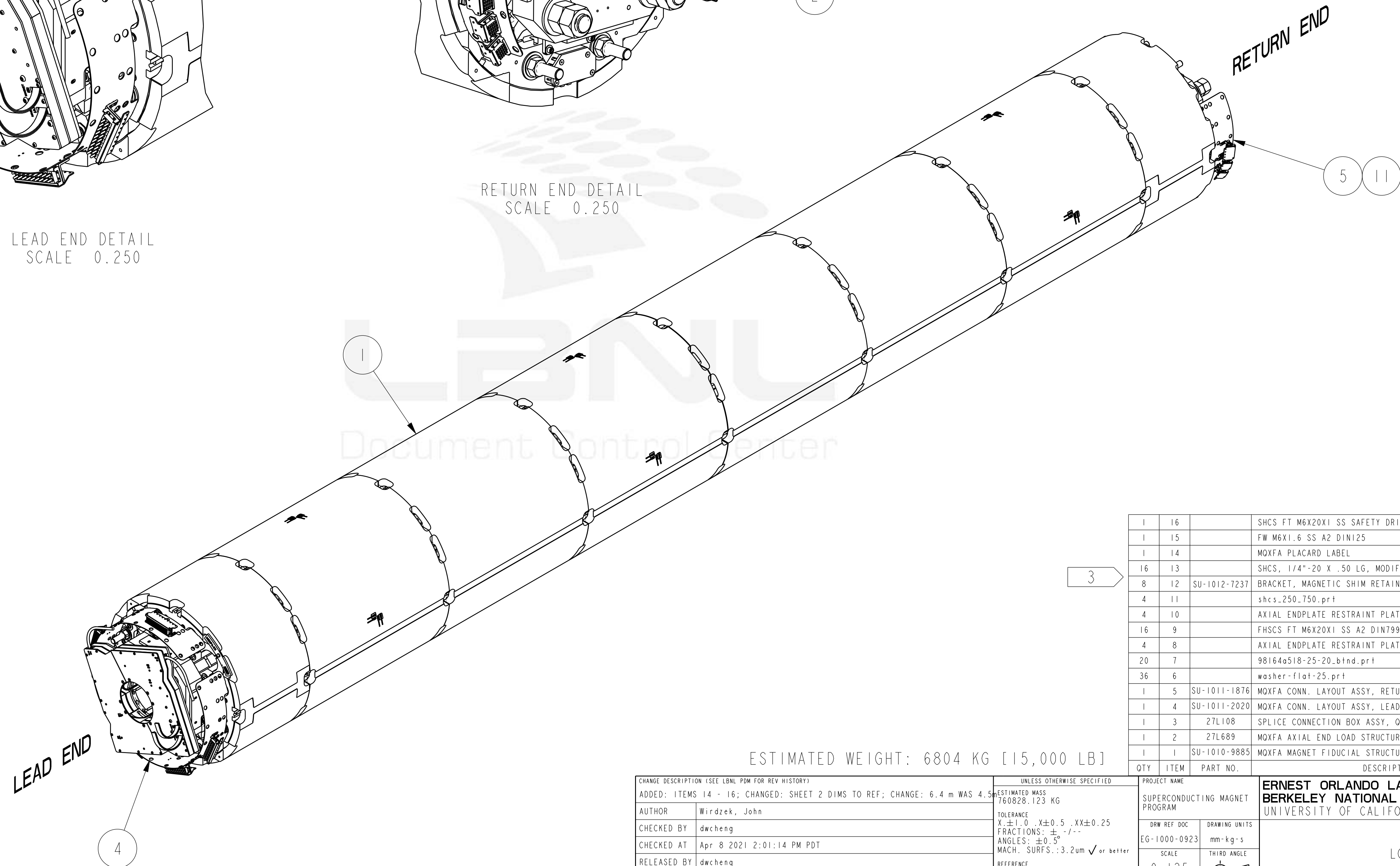
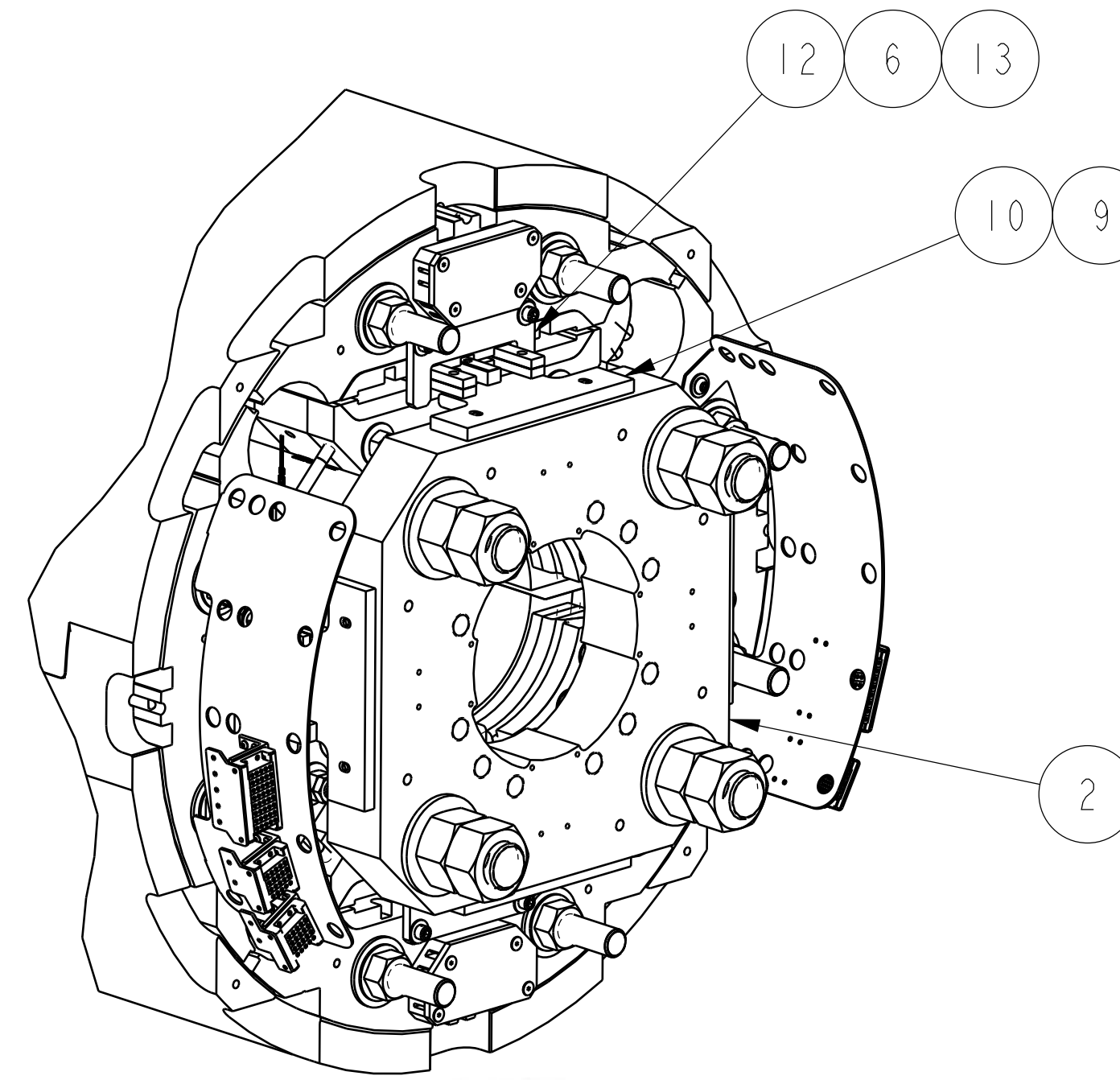
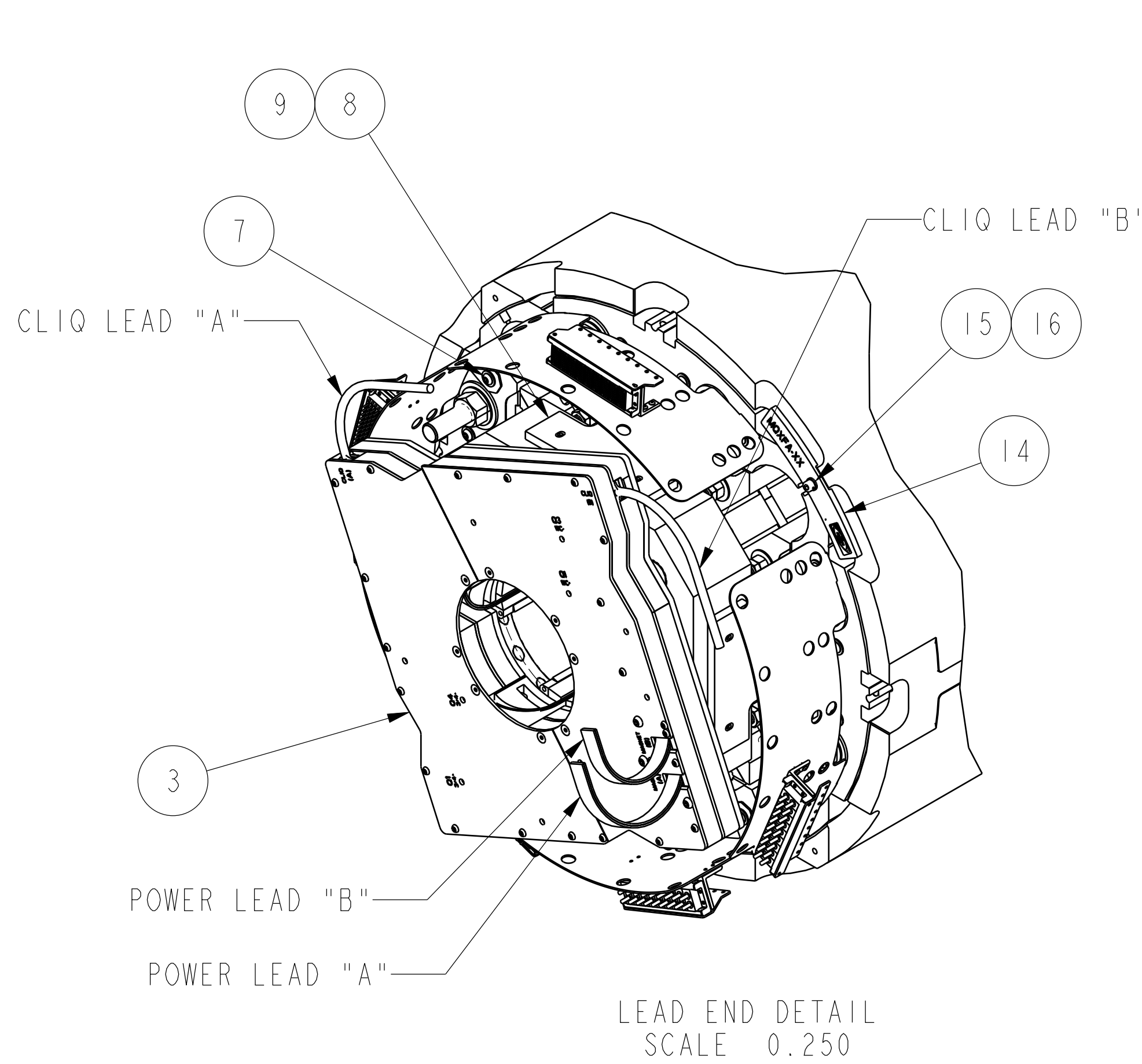


NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS (mm) AND VALUES ARE IN SI UNITS. DIMENSIONS AND VALUES IN BRACKETS ARE U.S. CUSTOMARY UNITS (inch) CONVERTED FROM MILLIMETERS / SI UNITS.

2. APPLICABLE STANDARDS AND SPECIFICATIONS:
ASME Y14.5M-2009, DIMENSIONING AND TOLERANCING.

3. ITEMS 12 & 13 TO BE INSTALLED ON 'LE' BEFORE SPLICES ARE MADE. MAGNETIC SHIMS, SU-1012-1777, AS REQUIRED, WILL BE INSTALLED BEFORE ITEMS 12 & 13 ARE INSTALLED ON 'RE'.

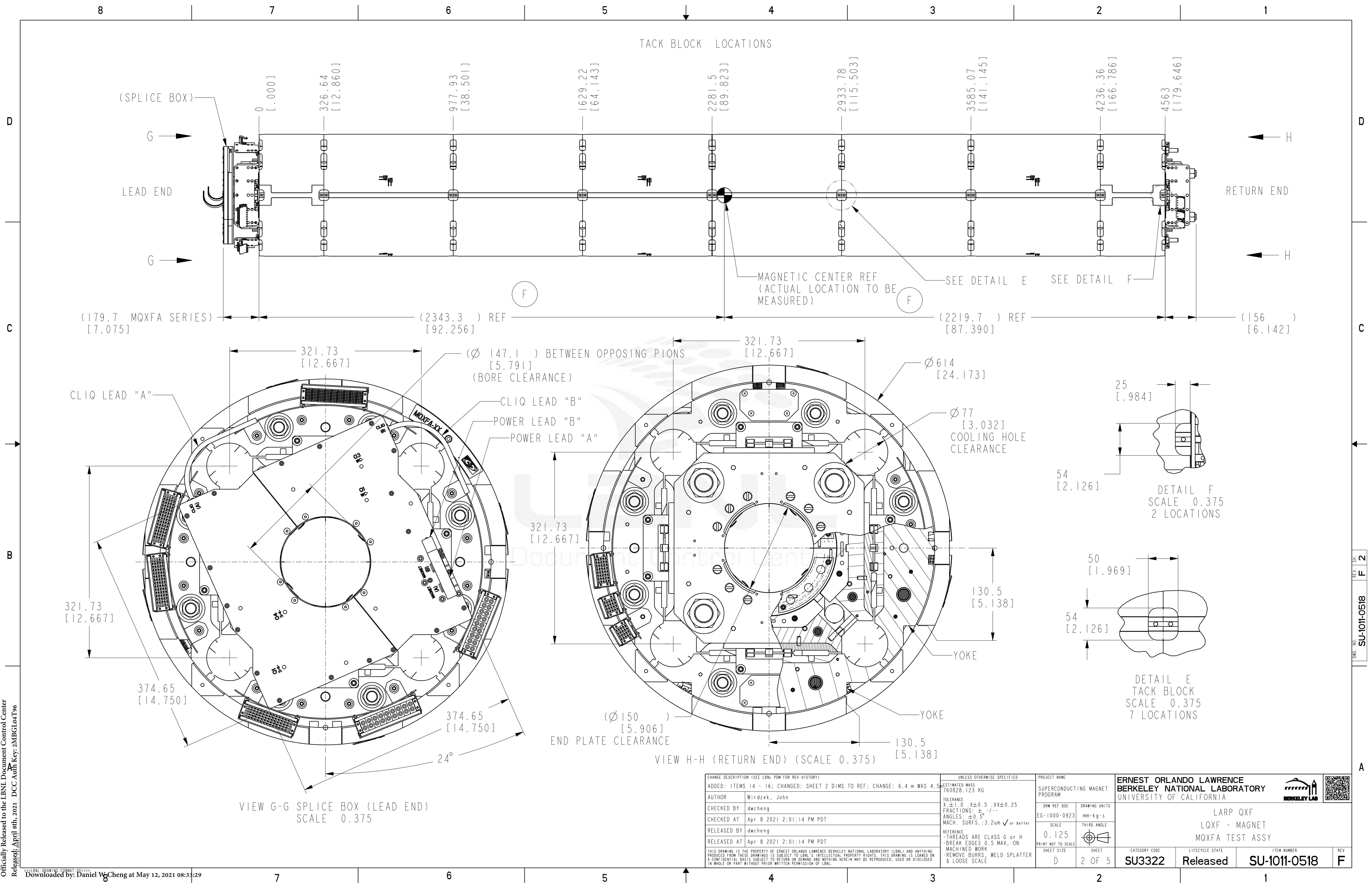


ESTIMATED WEIGHT: 6804 KG [15,000 LB]

QTY	ITEM	PART NO.	DESCRIPTION	MATERIAL
1	16		SHCS FT M6X20X1 SS SAFETY DRILLED	
1	15		FW M6X1.6 SS A2 DIN125	
1	14		MOXFA PLACARD LABEL	
16	13		SHCS, 1/4"-20 X .50 LG, MODIFIED SAFETY SCREW	
8	12	SU-1012-7237	BRACKET, MAGNETIC SHIM RETAINER	
4	11		shcs_250_750.prt	
4	10		AXIAL ENDPLATE RESTRAINT PLATE, RE	
16	9		FHSCS FT M6X20X1 SS A2 DIN7991	
4	8		AXIAL ENDPLATE RESTRAINT PLATE, LE	
20	7		98164a518-25-20_b.tnd.prt	
36	6		washer-float-25.prt	
1	5	SU-1011-1876	MOXFA CONN. LAYOUT ASSY, RETURN END	
1	4	SU-1011-2020	MOXFA CONN. LAYOUT ASSY, LEAD END	
1	3	27L108	SPLICE CONNECTION BOX ASSY, QXFA	
1	2	27L689	MOXFA AXIAL END LOAD STRUCTURE ASSY	
1	1	SU-1010-9885	MOXFA MAGNET FIDUCIAL STRUCTURE	

CHANGE DESCRIPTION (SEE LBNL PDM FOR REV HISTORY)		UNLESS OTHERWISE SPECIFIED		PROJECT NAME	
ADDED: ITEMS 14 - 16; CHANGED: SHEET 2 DIMS TO REF; CHANGE: 6.4 m WAS 4.5		ESTIMATED MASS 760828.123 KG		SUPERCONDUCTING MAGNET PROGRAM	
AUTHOR	Wirdzek, John	TOLERANCE	X ± 1.0, X ± 0.5, XX ± 0.25	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA	
CHECKED BY	dwcheng	FRACTIONS:	±, /, -	LARP QXF	
CHECKED AT	Apr 8 2021 2:01:14 PM PDT	ANGLES:	±0.5°	LQXF - MAGNET	
RELEASED BY	dwcheng	MACH. SURFS:	.3.2um ✓ or better	MOXFA TEST ASSY	
RELEASED AT	Apr 8 2021 2:01:14 PM PDT	REFERENCE	- THREADS ARE CLASS G or H - BREAK EDGES 0.5 MAX, ON MACHINED WORK - REMOVE BURRS, WELD SPLATTER & LOOSE SCALE	SCALE	THIRD ANGLE
THIS DRAWING IS THE PROPERTY OF ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY (LBNL) AND ANYTHING PRODUCED FROM THESE DRAWINGS IS SUBJECT TO LBNL'S INTELLECTUAL PROPERTY RIGHTS. THIS DRAWING IS LOANED ON A CONFIDENTIAL BASIS SUBJECT TO RETURN ON DEMAND AND NOTHING HEREIN MAY BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR PART WITHOUT PRIOR WRITTEN PERMISSION OF LBNL.		DRW REF DOC	EG-1000-0923	0.125	PRINT NOT TO SCALE
		SHEET SIZE	D	SHEET	1 OF 5
		CATEGORY CODE	SU3322	LIFECYCLE STATE	Released
		ITEM NUMBER	SU-1011-0518	REV	F

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Released: April 8th, 2021 DCC Auth Key: 2MBGL04T96



TACK BLOCK LOCATIONS

(SPLICE BOX)

LEAD END

RETURN END

MAGNETIC CENTER REF (ACTUAL LOCATION TO BE MEASURED)

SEE DETAIL E

SEE DETAIL F

(179.7 MQXFA SERIES) [7.075] (2343.3) REF [92.256] (2219.7) REF [87.390] (156) [6.142]

CLIQ LEAD "A"

CLIQ LEAD "B"

POWER LEAD "B"

POWER LEAD "A"

(Ø 147.1) BETWEEN OPPOSING PIONS [5.791] (BORE CLEARANCE)

Ø 614 [24.173]

Ø 77 [3.032] COOLING HOLE CLEARANCE

25 [.984]

54 [2.126]

DETAIL F SCALE 0.375 2 LOCATIONS

50 [1.969]

54 [2.126]

DETAIL E TACK BLOCK SCALE 0.375 7 LOCATIONS

321.73 [12.667]

321.73 [12.667]

321.73 [12.667]

374.65 [14.750]

374.65 [14.750]

24°

(Ø 150) [5.906] END PLATE CLEARANCE

YOKE

YOKE

130.5 [5.138]

130.5 [5.138]

VIEW H-H (RETURN END) (SCALE 0.375)

VIEW G-G SPLICE BOX (LEAD END) SCALE 0.375

CHANGE DESCRIPTION (SEE LBNL PDM FOR REV HISTORY)		UNLESS OTHERWISE SPECIFIED		PROJECT NAME	
ADDED: ITEMS 14 - 16; CHANGED: SHEET 2 DIMS TO REF; CHANGE: 6.4 m WAS 4.5		ESTIMATED MASS 760826.123 KG		SUPERCONDUCTING MAGNET PROGRAM	
AUTHOR	Wirdzek, John	TOLERANCE	X ± 1.0, X ± 0.5, XX ± 0.25	DRW REF DOC	EG-1000-0923
CHECKED BY	dwcheng	FRACTIONS:	± 1/-	DRAWING UNITS	mm-kg-s
CHECKED AT	Apr 8 2021 2:01:14 PM PDT	ANGLES:	± 0.5°	SCALE	0.125
RELEASED BY	dwcheng	MACH. SURFS:	± 3.2um ✓ or better	PRINT NOT TO SCALE	
RELEASED AT	Apr 8 2021 2:01:14 PM PDT	REFERENCE	- THREADS ARE CLASS G or H - BREAK EDGES 0.5 MAX, ON MACHINED WORK - REMOVE BURRS, WELD SPLATTER & LOOSE SCALE	SHEET SIZE	D
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				CATEGORY CODE	SU3322
				LIFECYCLE STATE	Released
				ITEM NUMBER	SU-1011-0518
				REV	F

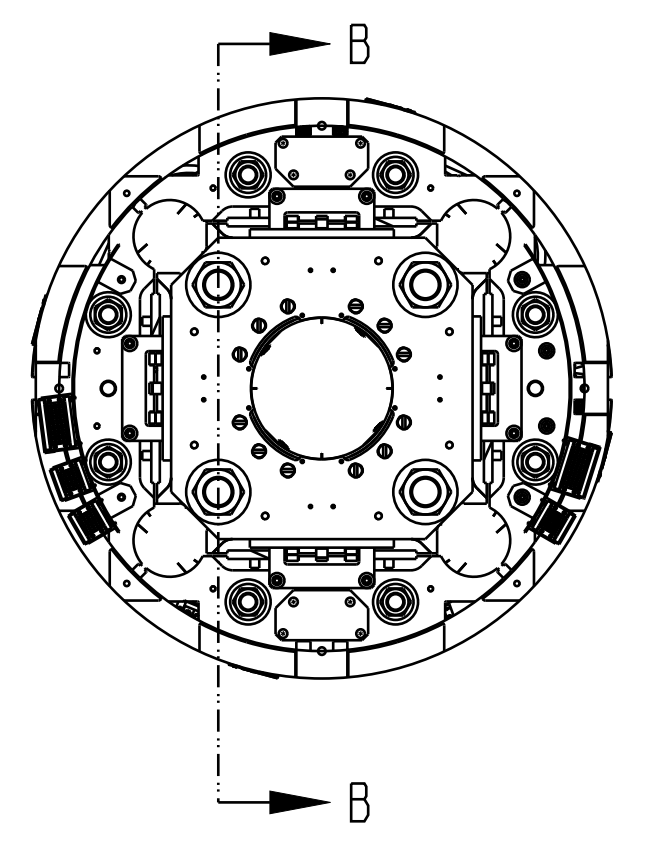
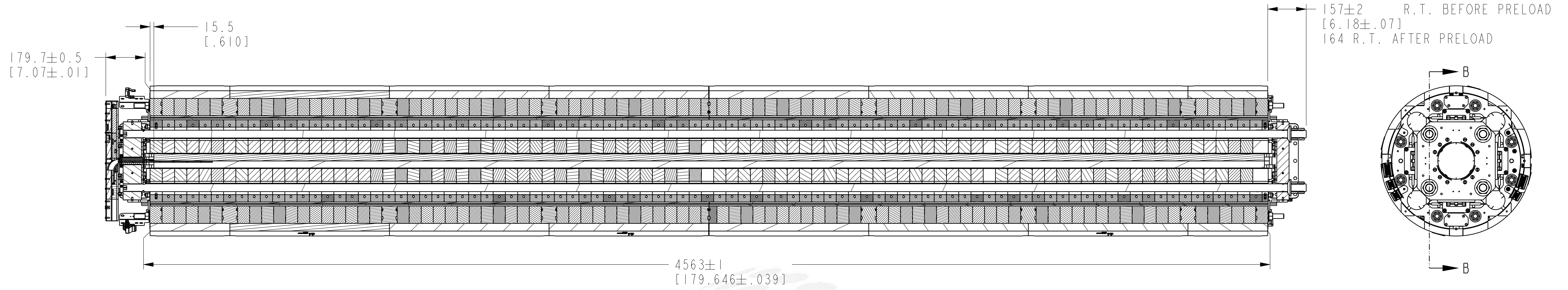
Officially Released to the LBNL Document Control Center
Released: April 8th, 2021 DCC Auth Key: 2MBGL04T96
Downloaded by: Daniel W Cheng at May 12, 2021 08:33:29

DRG. NO. SU-1011-0518

REV. SH. F 2

A

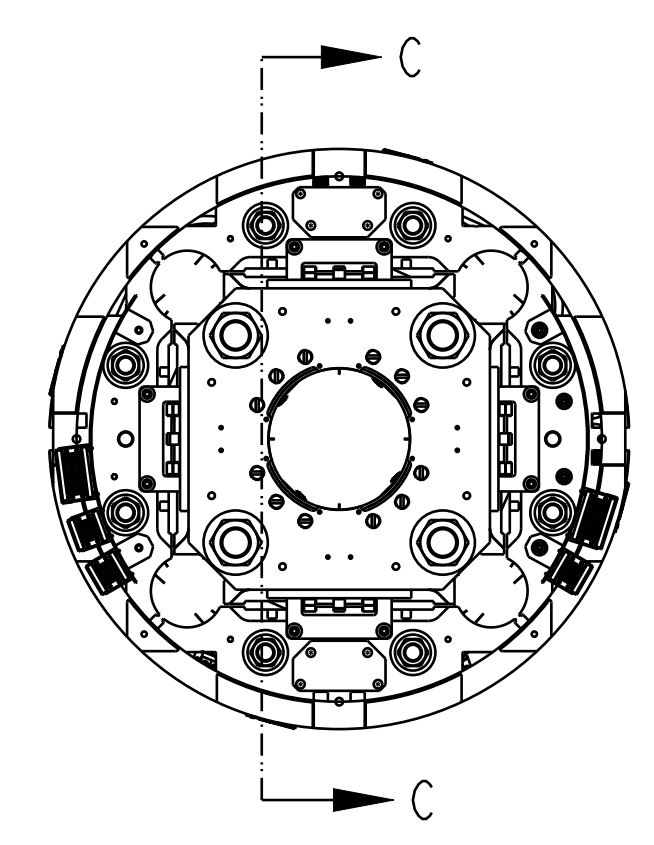
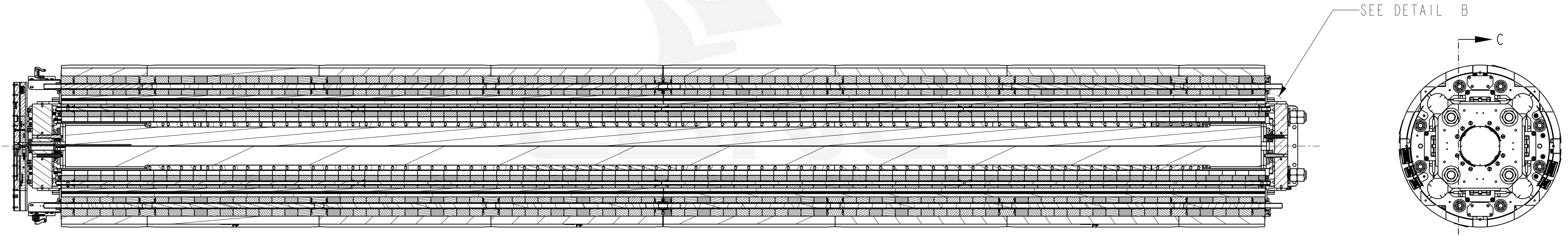
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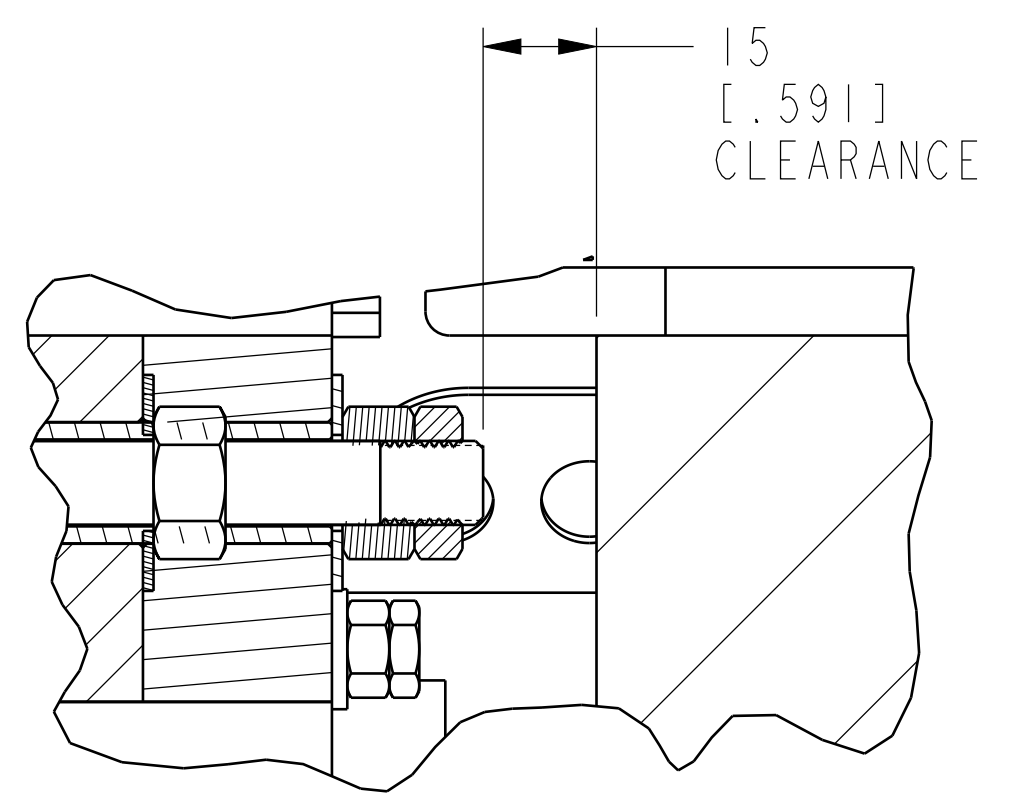
C

SECTION B-B

B



SECTION C-C



DETAIL B
SCALE 1.000

CHANGE DESCRIPTION (SEE LBNL PDM FOR REV HISTORY)		UNLESS OTHERWISE SPECIFIED		PROJECT NAME		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA	
ADDED: ITEMS 14 - 16; CHANGED: SHEET 2 DIMS TO REF; CHANGE: 6.4 m WAS 4.5		ESTIMATED MASS 760826.123 KG		SUPERCONDUCTING MAGNET PROGRAM		LARP QXF LQXF - MAGNET MOXFA TEST ASSY	
AUTHOR	Wirdzek, John	TOLERANCE	X±1.0, X±0.5, XX±0.25	DRW REF DOC	DRAWING UNITS	CATEGORY CODE	LIFECYCLE STATE
CHECKED BY	dwcheng	FRACTIONS	±, -/-	EG-1000-0923	mm·kg·s	SU3322	Released
CHECKED AT	Apr 8 2021 2:01:14 PM PDT	ANGLES	±0.5°	SCALE	THIRD ANGLE	ITEM NUMBER	REV
RELEASED BY	dwcheng	MACH. SURFS.	±3.2um ✓ or better	0.125	PRINT NOT TO SCALE	SU-1011-0518	F
RELEASED AT	Apr 8 2021 2:01:14 PM PDT	REFERENCE	-THREADS ARE CLASS G or H -BREAK EDGES 0.5 MAX, ON MACHINED WORK -REMOVE BURRS, WELD SPLATTER & LOOSE SCALE	SHEET SIZE	SHEET		
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A

D

D

C

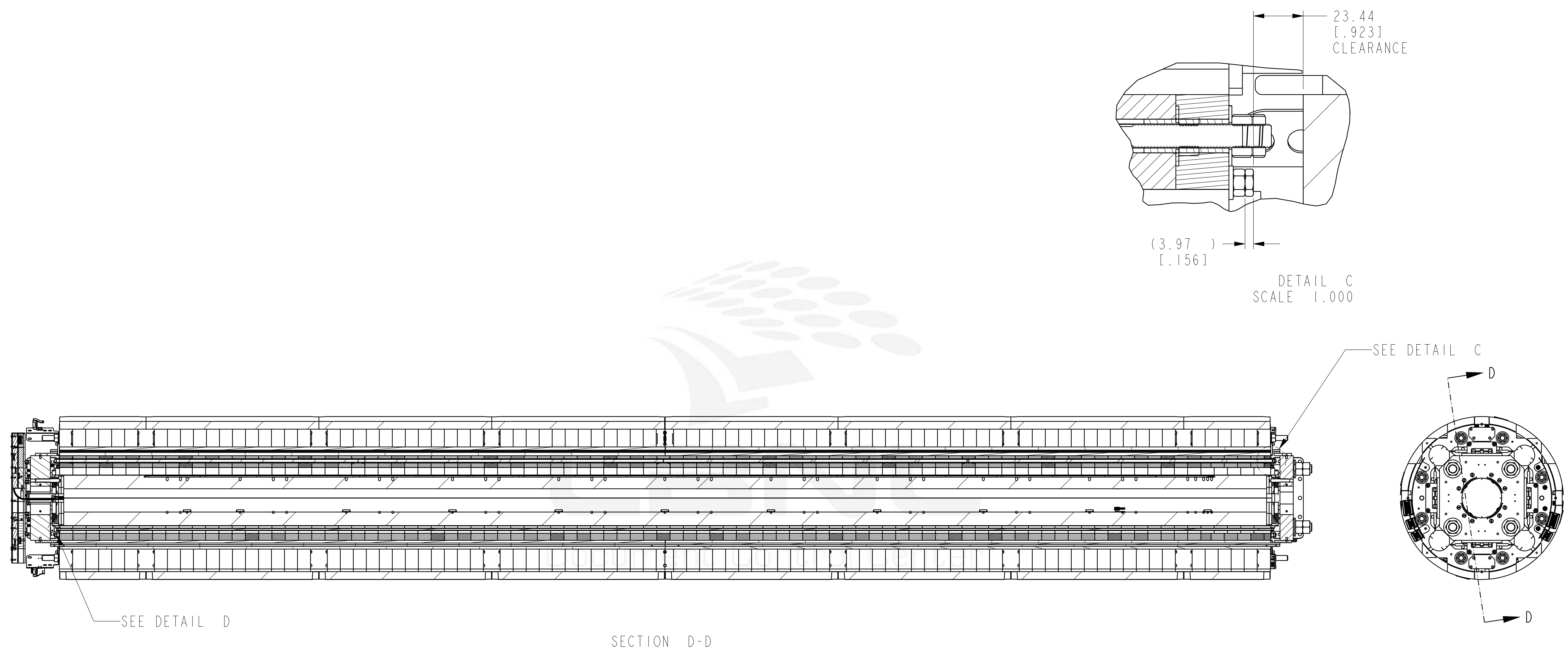
C

B

B

A

A



SECTION D-D

SEE DETAIL D

SEE DETAIL C

DETAIL C
SCALE 1.000

DETAIL D
SCALE 1.000

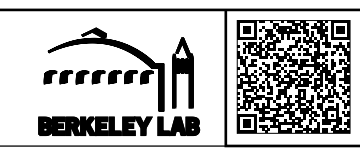
23.5
[.925]
CLEARANCE

23.44
[.923]
CLEARANCE

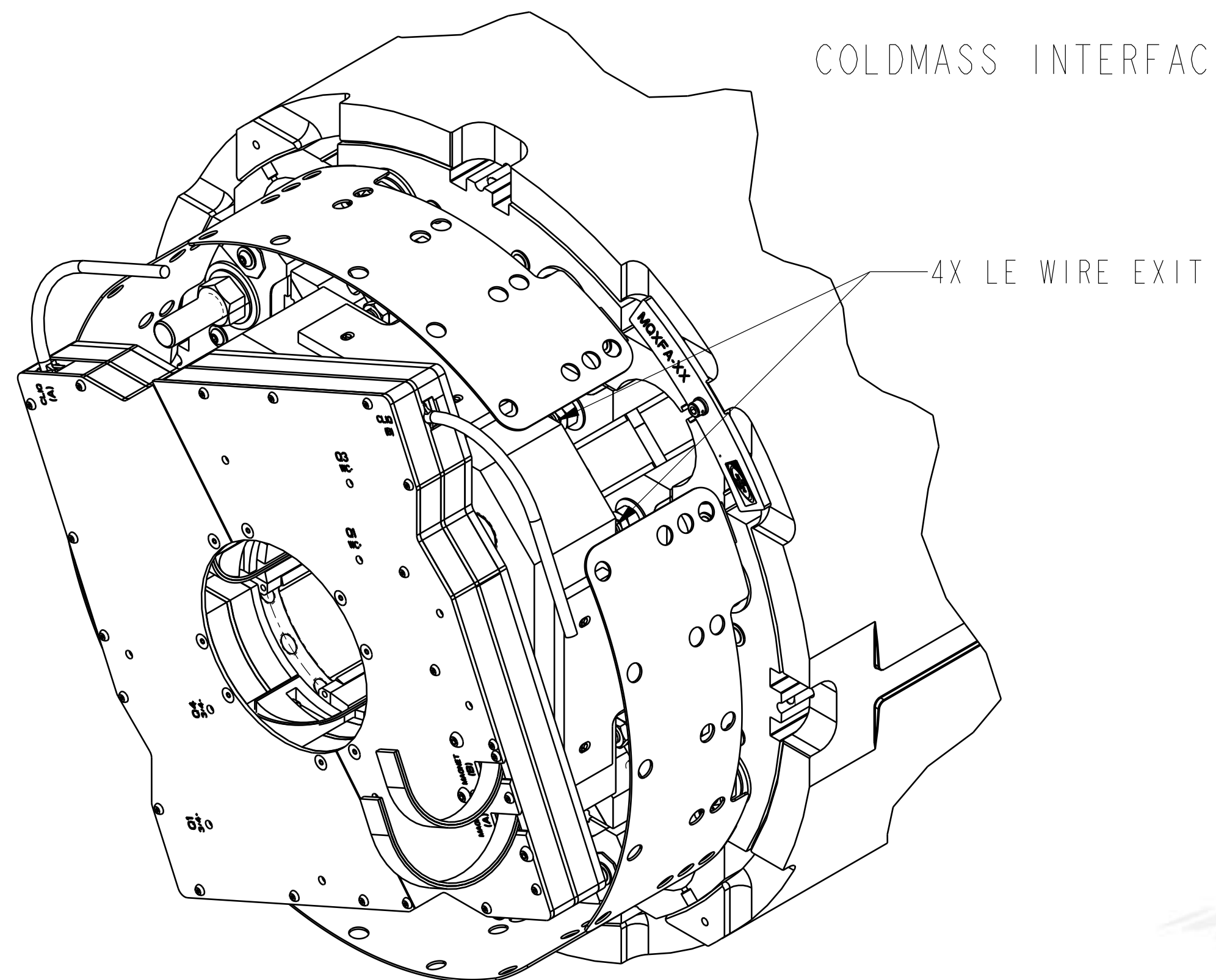
(3.97)
[.156]

2
REF

CHANGE DESCRIPTION (SEE LBNL PDM FOR REV HISTORY) ADDED: ITEMS 14 - 16; CHANGED: SHEET 2 DIMS TO REF; CHANGE: 6.4 m WAS 4.5		UNLESS OTHERWISE SPECIFIED		PROJECT NAME		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA	
ESTIMATED MASS 760828.123 KG		TOLERANCE X: ±1.0, XX: ±0.5, XXX: ±0.25		SUPERCONDUCTING MAGNET PROGRAM		LARP QXF LQXF - MAGNET MQXFA TEST ASSY	
AUTHOR: Wirdzek, John		FRACTIONS: ± / -		DRAWING UNITS		mm·kg·s	
CHECKED BY: dwcheng		ANGLES: ±0.5°		EG-1000-0923		SCALE	
CHECKED AT: Apr 8 2021 2:01:14 PM PDT		MACH. SURFS.: 3.2um ✓ or better		0.125		THIRD ANGLE	
RELEASED BY: dwcheng		REFERENCE		PRINT NOT TO SCALE		SHEET SIZE	
RELEASED AT: Apr 8 2021 2:01:14 PM PDT		-THREADS ARE CLASS G or H		D		SHEET	
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		-REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				LIFECYCLE STATE	
						Released	
						ITEM NUMBER	
						SU-1011-0518	
						REV	
						F	

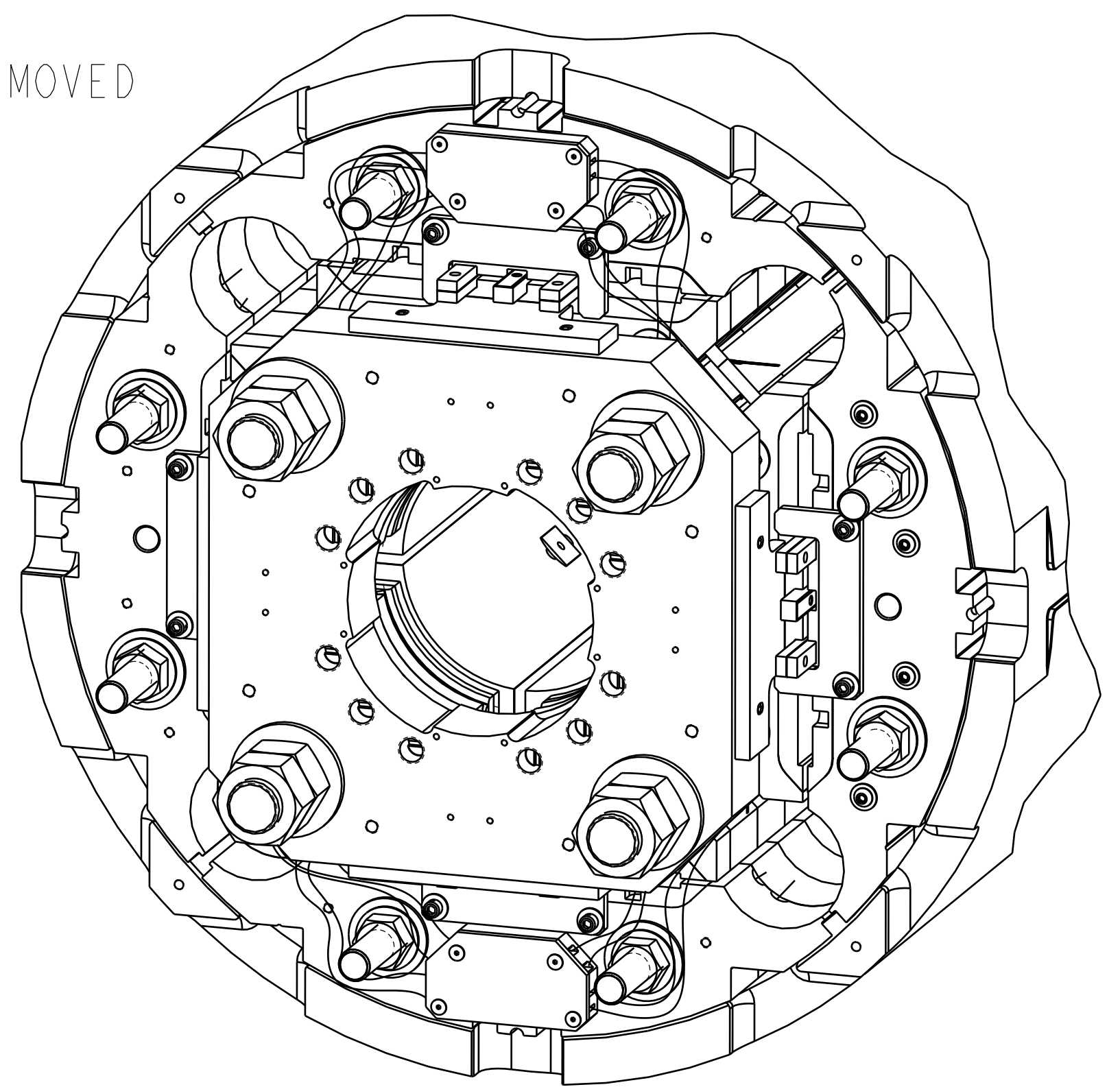


COLDMASS INTERFACE WITH CONNECTORS AND SKIRTS REMOVED



LEAD END

4X LE WIRE EXIT



RETURN END

Q1-Q2 PH JUMPER BLOCK

Q2 PHB03a, PHB04a, 6.4m
 Q2 VTA01a/b, VTA02, 6.4m
 Q2 VTB01a/b, VTB02, 6.4m
 Q2 PHB01a, PHB02a, 6.4m

Q1 VTB01a, VTB02, 6.4m
 Q1 PHB01a, PHB02a, 6.4m

Q1 VTA01a/b, VTA02, 6.4m
 Q1 PHB03a, PHB04a, 6.4m

Q3 VTA01a, VTA02, 6.4m
 Q3 PHB03a, PHB04a, 6.4m

Q4 VTB01a/b, VTB02, 6.4m
 Q4 PHB01a, PHB02a, 6.4m

WC†, WC-6.4m

Q4-Q3 PH JUMPER BLOCK

Q3 VTB01a/b, VTB02, 6.4m
 Q3 PHB01a, PHB02a, 6.4m

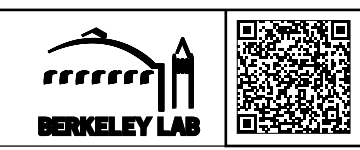
Q4 VTA01a/b, VTA02, 6.4m
 Q4 PHB01a, PHB02a, 6.4m
 Q4 PHB03a, PHB04a, 6.4m

VIEW H-H (RETURN END)

VIEW G-G (LEAD END)

F

CHANGE DESCRIPTION (SEE LBNL PDM FOR REV HISTORY)		UNLESS OTHERWISE SPECIFIED		PROJECT NAME	
ADDED: ITEMS 14 - 16; CHANGED: SHEET 2 DIMS TO REF; CHANGE: 6.4 m WAS 4.5m		ESTIMATED MASS 760826.123 KG		SUPERCONDUCTING MAGNET PROGRAM	
AUTHOR	Wirdzek, John	TOLERANCE	X ± 1.0, X ± 0.5, XX ± 0.25	DRW REF DOC	EG-1000-0923
CHECKED BY	dwcheng	FRACTIONS	1/2, 1/4, 1/8	DRAWING UNITS	mm-kg-s
CHECKED AT	Apr 8 2021 2:01:14 PM PDT	ANGLES	± 1°	SCALE	0.333
RELEASED BY	dwcheng	MACH. SURFS	.3.2um ✓ or better	THIRD ANGLE	
RELEASED AT	Apr 8 2021 2:01:14 PM PDT	REFERENCE	- THREADS ARE CLASS G or H - BREAK EDGES 0.5 MAX, ON MACHINED WORK - REMOVE BURRS, WELD SPLATTER & LOOSE SCALE	PRINT NOT TO SCALE	
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		CATEGORY CODE	SU3322	LIFECYCLE STATE	Released
		ITEM NUMBER	SU-1011-0518	REV	F



ERNEST ORLANDO LAWRENCE
 BERKELEY NATIONAL LABORATORY
 UNIVERSITY OF CALIFORNIA

LARP QXF
 LOXF - MAGNET
 MOXFA TEST ASSY