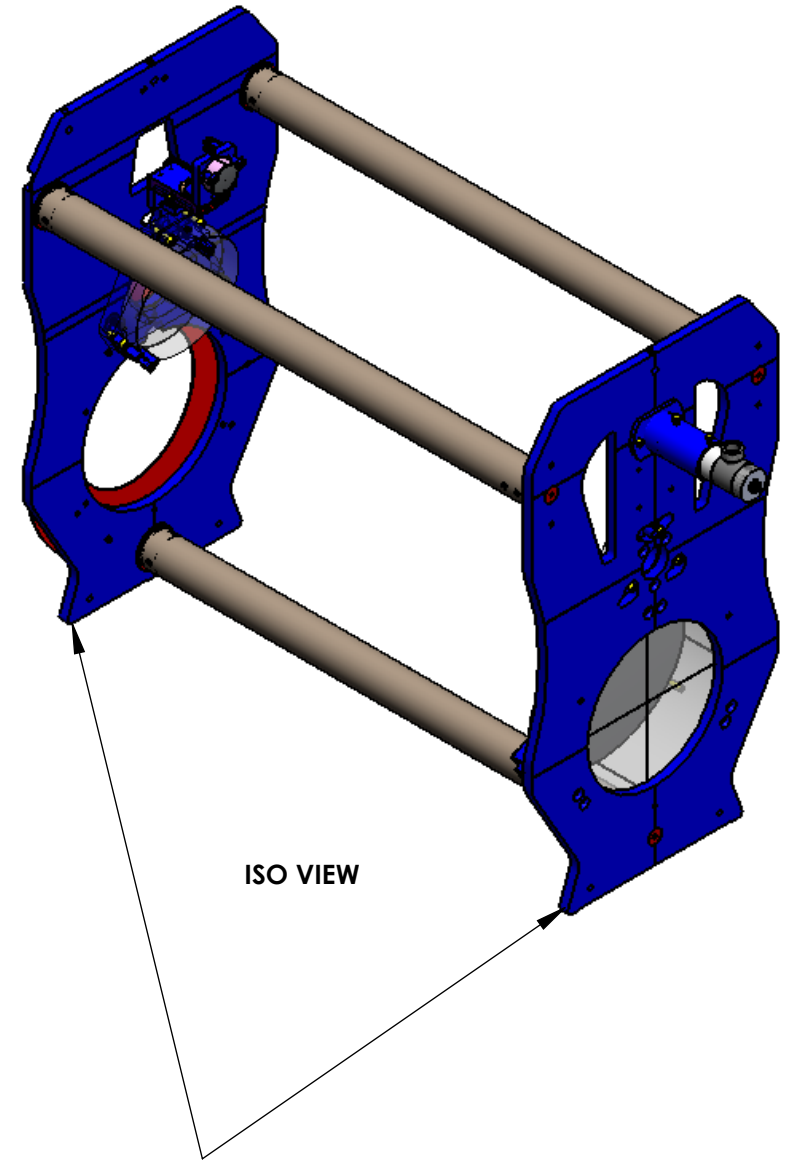


ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	D1101727	ALIGO TMS TELE PRIMARY 3 TUBE END PLATE	1
2	D1001108	ALIGO ETM TELESCOPE TUBE LARGE WASHER	6
3	D1000243	ALIGO ETM TELE TUBE AND INSERTS ASSEMBLY	3
4	D1101688	ALIGO TMS TELE ENTRY END PLATE	1
5	90585A628 (McM-Carr) or equiv	FLAT HEAD SOCKET SCREW, 3/8-16 x 1-1/2	6
6	D1002728	ALIGO TMS PRIMARY MIRROR SIDE CLAMP LOWER	2
7	90585A541 (McM-Carr) or equiv	FLAT HEAD SOCKET SCREW, 1/4-20 x 7/8	13
8	D1002732	ALIGO TMS PRIMARY MIRROR CLAMP	3
9	9713K61 (McM-Carr) or equiv	DISC SPRING .255" ID, .500" OD, .018" THICK 47 Lb @ .008" DEFLECTION	24
10	78066 HOLO-KROME	SCREW, SOCKET HEAD CAP, 1/4-20 UNC-2A X 1.5 LONG	3
11	78064 HOLO-KROME	SCREW, SOCKET HEAD CAP, 1/4-20 UNC-2A X 1.25 LONG	2
12	78068 HOLO-KROME	SCREW, SOCKET HEAD CAP, 1/4-20 UNC-2A X 1.75 LONG	1
13	78034 HOLO-KROME	SCREW, SOCKET HEAD CAP, #8-32 UNC-2A X 1 LONG	2
14	92196A201 McMASTER-CARR OR EQ.	SCREW, SOCKET HEAD CAP, #8-32 UNC-2A X 1.25 LONG	2
15	D1002731	ALIGO TMS PRIMARY MIRROR SIDE CLAMP UPPER	1
16	94355A614 (McM-Carr) or equiv	SKT SET SCRW, FLAT PT, 1/4-28 X 1/2	1
17	99934A330 (McM-Car) or equiv	SKT SET SCRW, 6-32 X 1/8 L, SILVER TIP	1
18	D1000075	ALIGO PRIMARY PARABOLIC MIRROR	1
19	9686A1600 McMASTER-CARR	.255 ID, .468 OD, .032 TH	28
20	D1200244	ALIGO TMS F1 MIRROR ASSEMBLY	1
21	D1200243	ALIGO TMS F2 MIRROR ASSEMBLY	1
22	D1102365	ALIGO TMS TELESCOPE SECONDARY MIRROR ASSEMBLY	1
23	90585A245 (McM-Carr) or equiv	FLAT HEAD SOCKET SCREW, 10-24 x 3/4	2
24	D1001241	ALIGO ETM TELESCOPE BEAM DUMP GLASS	1
25	AS568A-108	O-RING, 1/4" ID X .716" OD APPROVED VITON ELASTOMER, SHORE A 70-75	12
26	D1102297	ALIGO TRANSMON TELESCOPE SSSL PLATE	1
27	92510A780 (McM-Carr) or equiv	SPACER, ALUMINUM .252 I.D., 1/2 O.D., 5/8 L	1
28	MS 15795-807	WASHER, FLAT, NO. 8	16
29	AS568A-106	O-RING, 3/32" WIDTH, 3/16" I.D. APPROVED VITON ELASTOMER, SHORE A 70-75	10
30	D0902829	ALIGO, AOS, TMS, ALIGNMENT TELESCOPE, MT. ADAPTER	1
31	D-271 (Davidson Optronics)	AUTOCOLLIMATOR	1
32	D1200527	ALIGO, AOS, TMS, ALIGNMENT TELESCOPE, CENTERING SLEEVE	1
33	99934A330 (McM-Car) or equiv	SKT SET SCRW, 6-32 X 1/8 L, SILVER TIP	2
34	78042 HOLO-KROME	SCREW, SHC, 10-24 X .75 LG.	2

REV.	DATE	DCN #	DRAWING TREE #
v1	01 MAR 2012	E1101204	E1101208-v1
v3	03 APR 2012	E1200317-x0	-
V4	10-26-12	TO FOLLOW	-

NOTE:
THE STARTING ORIENTATION for ASSEMBLY OF THE END PLATES IS SHOWN ON PAGE 3 and 4

THE END PLATES ARE PLACED ON A FLAT SURFACE TO START THE TWO TOP EDGES ARE THEN CO-PLANAR AFTER THE TUBES ARE FIXED IN PLACE



ISO VIEW

ATTACH PARTS IN D1100933 BOTH ENDS FOR STABILIZATION

D1102361 ALIGO TMS Telescope Frame Assembly, PART PDM REV: X-044, DRAWING PDM REV: X-005

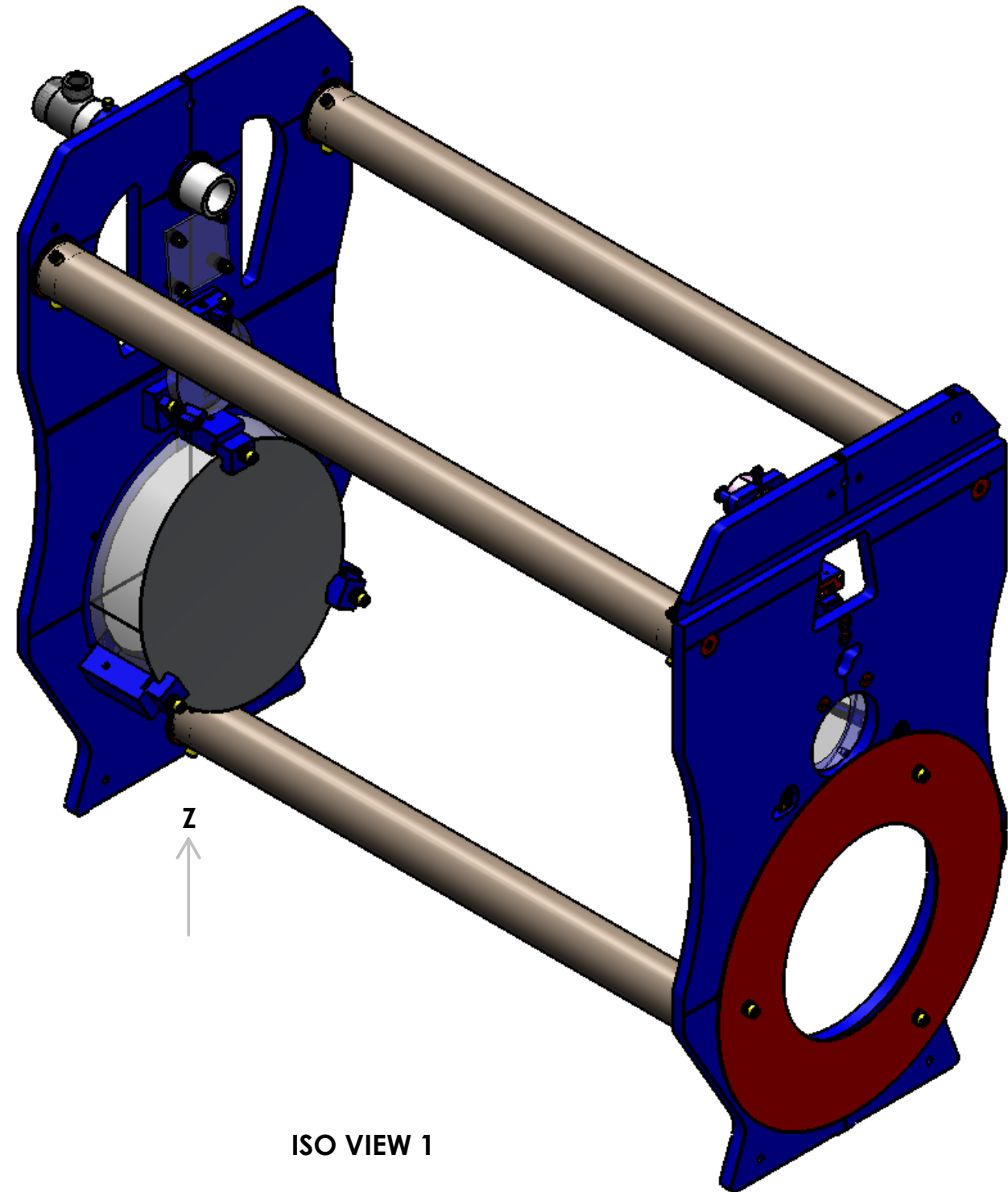
NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)	
DIMENSIONS ARE IN INCHES	1. INTERPRET DRAWING PER ASME Y14.5-1994.
TOLERANCES:	2. REMOVE ALL SHARP EDGES, R.02 MIN.
.XX ± .01	3. DO NOT SCALE FROM DRAWING.
.XXX ± .005	4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
ANGULAR ± 1.0°	
MATERIAL	N/A
FINISH	N/A μinch

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME	
SYSTEM ADVANCED LIGO		SUB-SYSTEM AOS	
NEXT ASSY		D1002460	
DESIGNER	K. MAILAND	15 DEC 2011	SIZE DWG. NO.
DRAFTER	C. CONLEY	01 MAR 2012	B
CHECKER	SEE DCC	SEE DCC	D1102361
APPROVAL	SEE DCC	SEE DCC	REV. v4
SCALE: 1:8		PROJECTION:	
SHEET 1 OF 7			

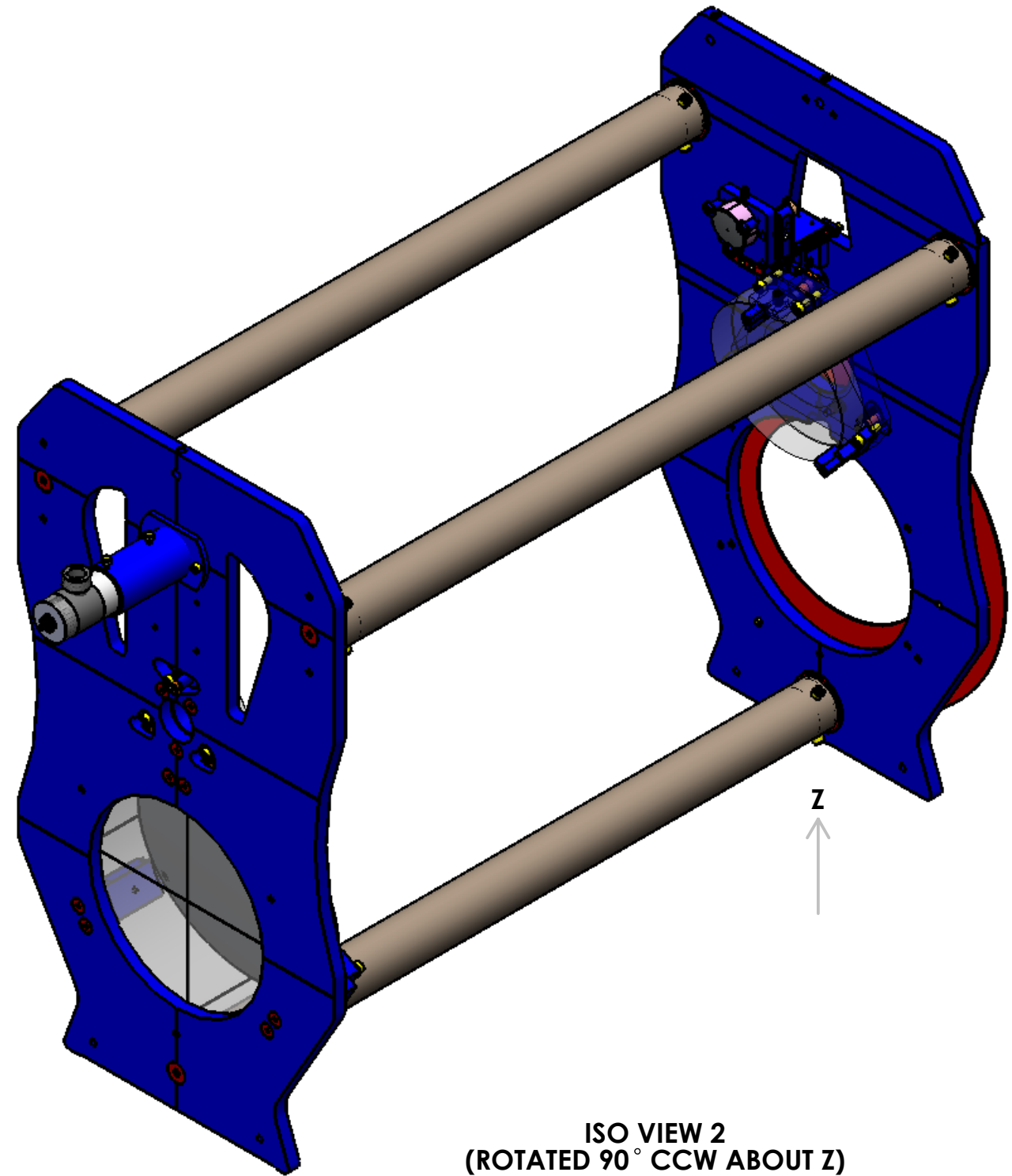
8 7 6 5 4 3 2 1

NOTES CONTINUED:

- 5. BAG OR WRAP AND TAG ASSEMBLY WITH DRAWING NUMBER, REVISION, AND SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY.
EXAMPLE (TAG): DXXXXXX-VY, S/N 001
- 6. MASS/WEIGHT = TBD LB [TBD KG].
- ⑦ STACK 8 ITEMS ⑨ AT EACH CLAMPING POINT. ITEMS TO ALTERNATE ORIENTATIONS WITHIN EACH STACK. I.D.'s AT FAR ENDS OF EACH STACK. COMPRESS EACH STACK BY 325° OF ROTATION OF ITEM ⑩.
- ⑧ FOR PROPER ALIGNMENT OF THE MAIN FRAME ASSEMBLY (ITEMS ① THRU ⑤): ORIENT THE COMPONENTS AS SHOWN IN VIEW A-A ON A PRECISION FLAT TABLE. TIGHTEN ITEMS ⑤ TO 340 LB-IN. USE A 2 OR 3 STEP TIGHTENING SEQUENCE. USE OF ALCOHOL ON ITEMS ⑤ AT ASSEMBLY IS PERMISSIBLE.



ISO VIEW 1



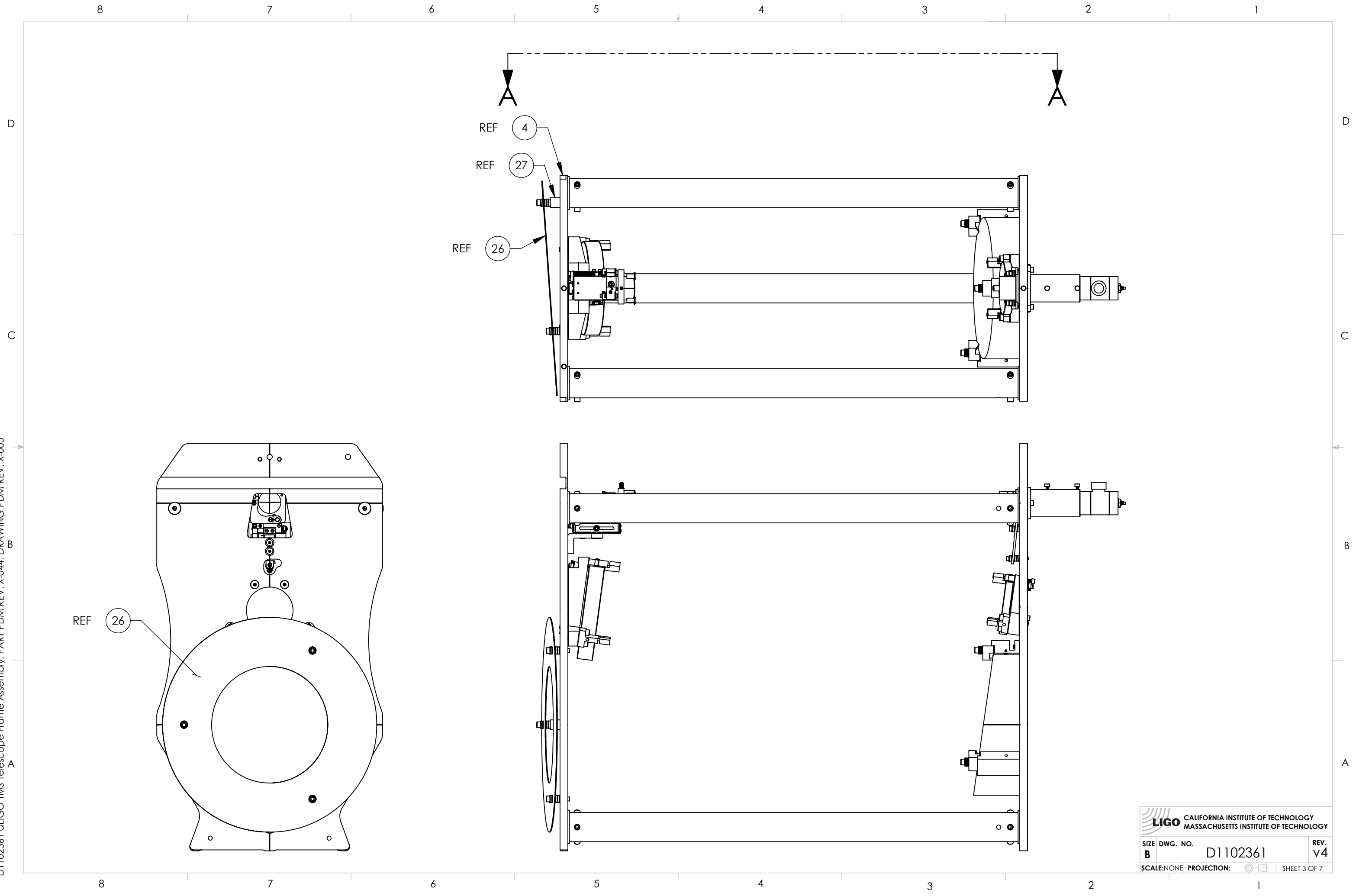
ISO VIEW 2
(ROTATED 90° CCW ABOUT Z)

D1102361 dLIGO TMS Telescope Frame Assembly, PART PDM REV: X-044, DRAWING PDM REV: X-005

8 7 6 5 4 3 2 1

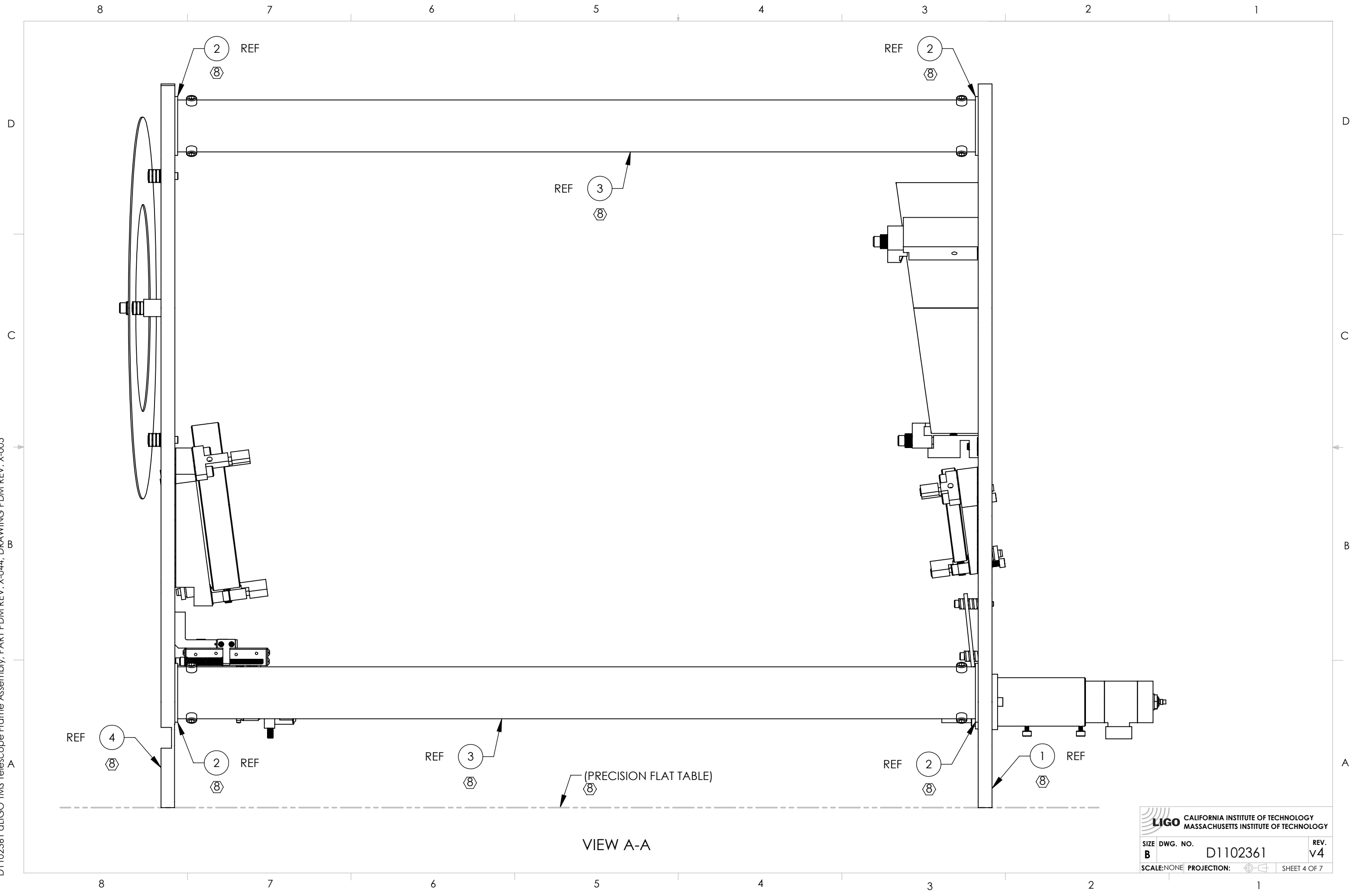
 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY	
SIZE DWG. NO. B D1102361	REV. v4
SCALE: 13:64 PROJECTION:  SHEET 2 OF 7	

D1102361 aLIGO TMS Telescope Frame Assembly, PART PDM REV: X-044, DRAWING PDM REV: X-005




 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY	
SIZE B	DWG. NO. D1102361
SCALE: NONE	PROJECTION: 
REV. v4	SHEET 3 OF 7

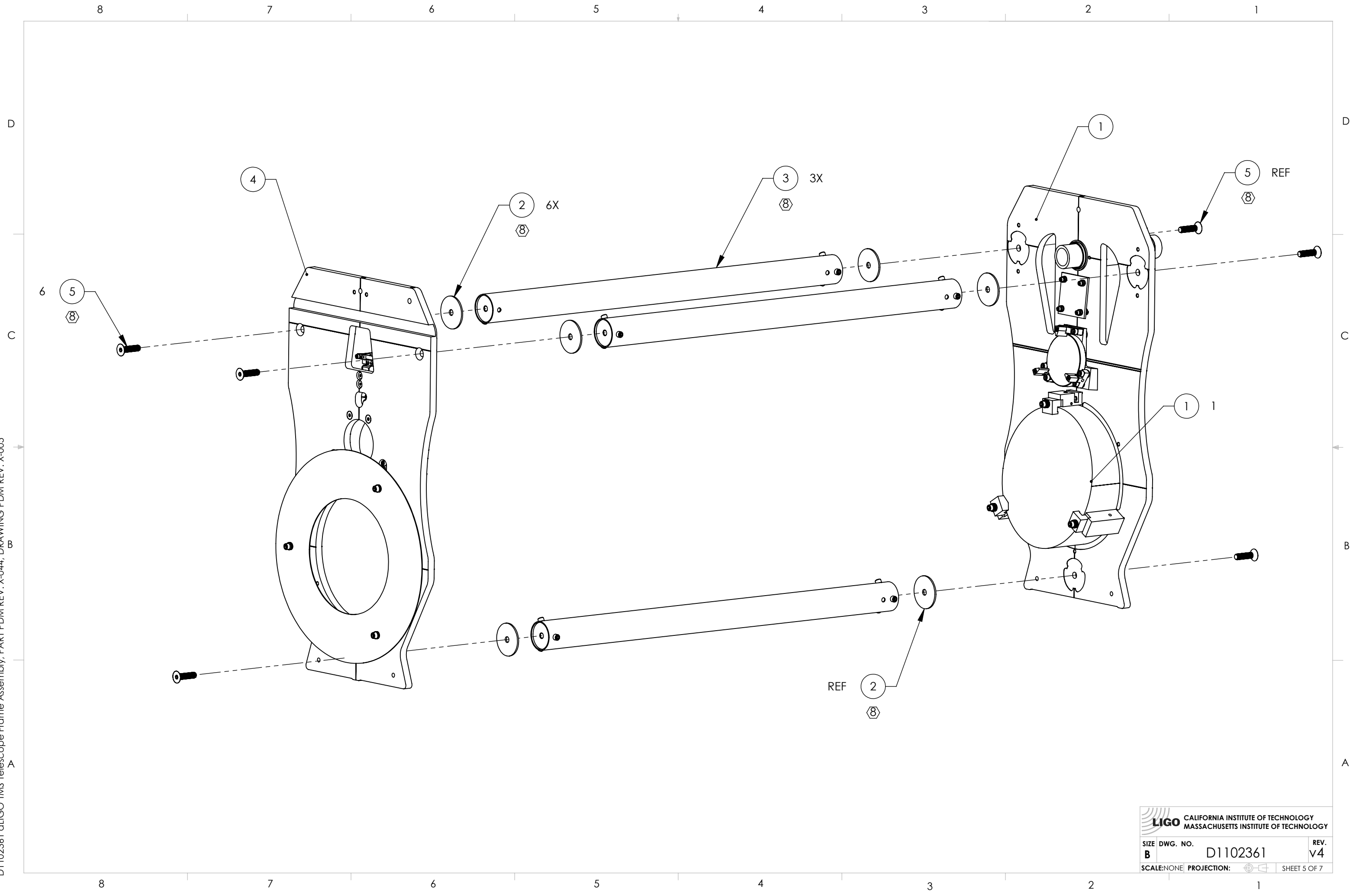
D1102361 aLIGO TMS Telescope Frame Assembly, PART PDM REV: X-044, DRAWING PDM REV: X-005




VIEW A-A

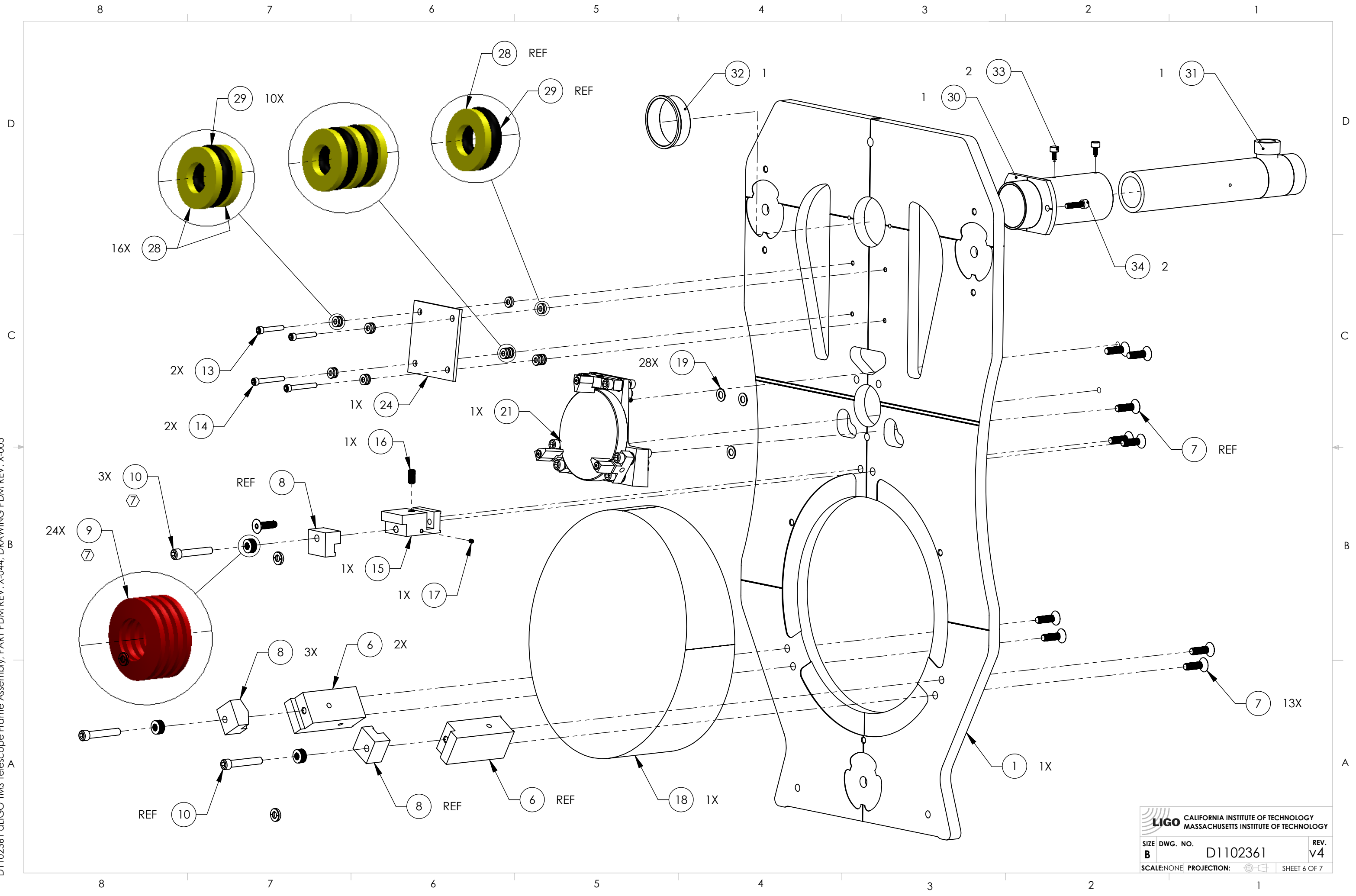
 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		
SIZE	DWG. NO.	REV.
B	D1102361	v4
SCALE: NONE	PROJECTION:	SHEET 4 OF 7


D1102361 aLIGO TMS Telescope Frame Assembly, PART PDM REV: X-044, DRAWING PDM REV: X-005



 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		
SIZE	DWG. NO.	REV.
B	D1102361	v4
SCALE: NONE	PROJECTION:	SHEET 5 OF 7

D1102361 aLIGO TMS Telescope Frame Assembly, PART PDM REV: X-044, DRAWING PDM REV: X-005

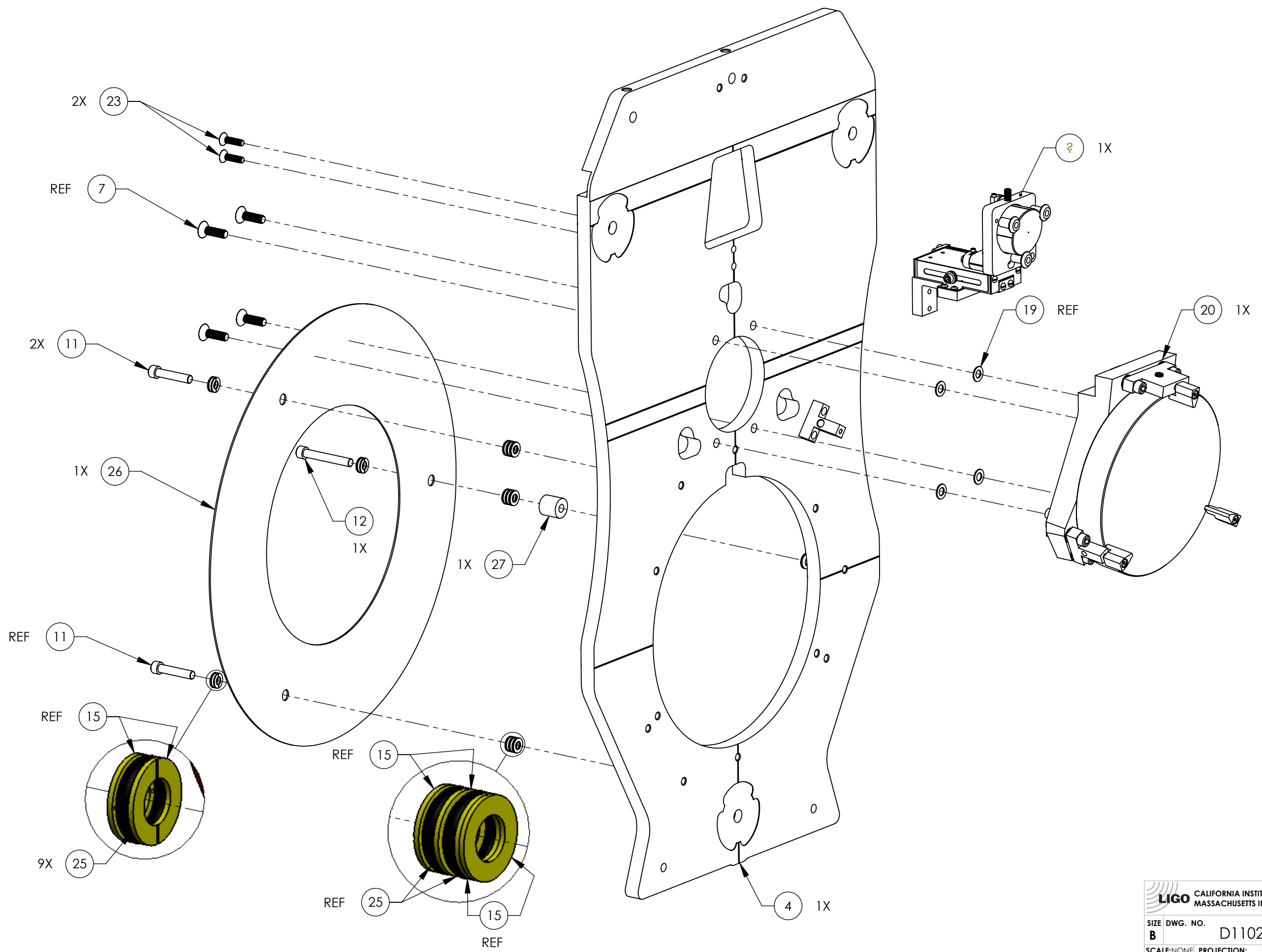


 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		
SIZE	DWG. NO.	REV.
B	D1102361	v4
SCALE: NONE	PROJECTION:	SHEET 6 OF 7

D1102361 aLIGO TMS Telescope Frame Assembly, PART PDM REV: X-044, DRAWING PDM REV: X-005

8 7 6 5 4 3 2 1

D
C
B
A



8 7 6 5 4 3 2 1

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SIZE	DWG. NO.	REV.
B	D1102361	v4
SCALE: NONE	PROJECTION:	SHEET 7 OF 7