



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
**PROJECT DRAWING TREE**

**E1100735**      **v1**  
 DOCUMENT NO.      REV

TITLE: **aLIGO TMS First Article Installation & Tooling**

	APPROVALS:	DATE:	REV	DCN NO.	BY	CHECK	DCC	DATE
AUTHOR:	C. CONLEY	1-Apr-12	v1	E1100351				
CHECKED:								
APPROVED:								
DCC RELEASE								

NUMBER	DESCRIPTION	REVISION
<b>D1101064</b>	<b>aLIGO TMS First Article Installation &amp; Tooling</b>	<b>v1</b>
D0900419	AdvLIGO SUS BSC6-H2, XYZ Local CSm for ETM Tel Assy	v1
D0901880	aLIGO AOS TRANSMISSION MONITOR SYSTEM ASSEMBLY	v1
D1000549	aLIGO UPPER INTERMEDIATE MASS TOP ASSEMBLY	v1
D060316	aLIGO, SUS, QUAD N-PTYPE TABLECLOTH, OSEM AND ECD ADJUSTER	v2
D060317	ADVANCED LIGO, SUS, QUAD N-PTYPE TABLECLOTH, ECD STATIC BLOCK	v2
D060318	aLIGO, SUS, QUAD N-PTYPE TABLECLOTH, OSEM AND ECD MOUNTING BRACKET (LOCAL CONTROLS)	v2
D060336	Advanced LIGO, SUS, Penre MASS Quad N-Ptype, 2MM CAM, OSEM ADJUSTER	v2
D060320	aLIGO, SUS, QUAD N-PTYPE TABLECLOTH, OSEM ADJUSTMENT PLATE	v2
D060321	ADVANCED LIGO, SUS, QUAD N-PTYPE TABLECLOTH, POSITION ADJUSTER FOR FRONT PITCH OSEM	v2
D060336	Advanced LIGO, SUS, Penre MASS Quad N-Ptype, 2MM CAM, OSEM ADJUSTER	v2
D060322	LIGO, SUS, QUAD N-PTYPE TABLECLOTH, TRANSVERSE OSEM ADJUSTER	v2
D060323	aLIGO, SUS, QUAD N-PTYPE TABLECLOTH, TRANSVERSE OSEM POSITION ADJUSTMENT PLATE	v2
D060336	Advanced LIGO, SUS, Penre MASS Quad N-Ptype, 2MM CAM, OSEM ADJUSTER	v2
D060324	aLIGO, SUS, QUAD N-PTYPE TOP STAGE, BLADE CARTRIDGE	v2
D060332	Advanced LIGO, SUS, Quad N-Ptype Top Stage, WIRE CLAMP TOP STAGE	v2
D060333	Advanced LIGO, SUS, Quad N-Ptype Top Stage, WIRE CLAMP BODY, TOP STAGE	v2
D060334	Advanced LIGO, SUS, Quad N-Ptype, WIRE CLAMP JAW, ALL MASSES	v2
D060335	Advanced LIGO, SUS, TOP MASS Quad N-Ptype, RECESSED 1/4" 20 UNC X 0.75" CAP HEAD	v2
D060235	ADV LIGO, SUS, QUAD N-PTYPE TOP STAGE, TOP STAGE BLADES	v1
D060325	Advanced LIGO, SUS, TOP STAGE N-P TYPE, ROTATIONAL ADJUSTER, STATIC HALF	v2
D060326	Advanced LIGO, SUS, Quad N-Ptype Top Stage, BLADE CLAMP (TOP HALF)	v2
D060327	Advanced LIGO, SUS, Quad N-Ptype Top Stage, BLADE CLAMP (BTM HALF)	v2
D060328	Advanced LIGO, SUS, Quad N-Ptype Top Stage, 3/8-16 UNC T NUT Based on Wixroyd 2418.W120	v3
D060329	Advanced LIGO, SUS, Quad N-Ptype Top Stage, Top Stage STIFF BACK	v2
D060330	Advanced LIGO, SUS, Quad N-Ptype Top Stage, ROTATIONAL ADJUSTER BASE PLATE	v2
D060331	Advanced LIGO, SUS, Quad N-Ptype Top Stage, JACKING SCREW/Earthquake Stop	v2
D070140	Advanced LIGO, SUS, Quad N-Ptype Top Stage, top stage blade wire clamp shim	v2
D1100980	aLIGO, QUAD, E.STOP SCREW, SPLIT SHAFT COLLAR	v1
D060492	aLIGO, SUS, QUAD ETM-ITM, UPPER STRUCTURE WELDMENT	v2
D060499	Advanced LIGO, SUS, Quad ITM/ETM, Removeable Cross Member (Upper Structure)	v3
D070247	Advanced LIGO, SUS, Quad ITM/ETM, Tablecloth Pads (Upper Structure)	v1
D1000444	aLIGO INTERMEDIATE MASS TOP ASSY WITH ADDED MASS(22kg)	v1
D1000442	aLIGO INTERMEDIATE MASS TOP ASSEMBLY, FIRST ARTICLE	v1
D060409	Advanced LIGO, SUS, Quad N-Ptype Top Mass, OSEM ECD UNIT	v3
D060416	Magnet and Flag Assembly	v3
D060417	ADVANCED LIGO, SUS, TOP MASS QUAD N-PTYPE, OSEM MAGNET AND FLAG CONCEPT PART BUILT	v2
D060237	ADV LIGO, SUS, QUAD N-PTYPE UI MASS, BOTTOM BLADE SPRINGS	v2
D060377	Advanced LIGO, SUS, Quad N-Ptype UI MASS, BLADE TIP Z POSITION ADJ (BTM HALF PART 2)	v2
D060378	Advanced LIGO, SUS, Quad N-Ptype UI MASS, BLADE TIP Z POSITION ADJ (BTM HALF)	v2
D060380	ADVANCED LIGO, SUS, QUAD N-PTYPE UI MASS, BLADE CLAMP (TOP HALF)	v2
D060397	ADVANCED LIGO, SUS, TOP MASS QUAD N-PTYPE, TOP MASS SPACER	v2
D060398	ADVANCED LIGO, SUS, TOP MASS QUAD N-PTYPE, PITCH ADJUSTER & MASS ADJUSTER TURRET	v2
D060399	ADVANCED LIGO, SUS, QUAD TOP MASS N-PTYPE, STOP BRIDGE	v2
D060412	Advanced LIGO, SUS, Quad N-Ptype Top Mass, OSEM BRACKET (TOP OSEM)	v2
D060420	ADVANCED LIGO, SUS, TOP MASS QUAD N-PTYPE, WIRE CLAMP ADJUSTMENT BLOCK	v2
D070219	Advanced LIGO, SUS, Quad N-PType Wiring Harness, Mass Wire Clamp Base	v2
D070226	Advanced LIGO, SUS, Quad N-PType Wiring Harness, Cable Clamp Jaw	v2
D1000393	aLIGO INTERMEDIATE MASS TOP PLATE	v1
D1000394	aLIGO INTERMEDIATE MASS BOTTOM PLATE	v1
D1000395	aLIGO INTERMEDIATE TOP MASS SPACER	v1
D1000632	aLIGO TOP ADD MASS BAR	v2
D1001040	FLUOREL CABLE CLAMP PAD	v1



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
**PROJECT DRAWING TREE**

**E1100735**

**v1**

DOCUMENT NO.

REV

TITLE:

**aLIGO TMS First Article Installation & Tooling**

D1101069	SUS Spring Stop Screw	v1
D1101195	HEX NUT, 1/4-20 Ni Cu, MODIFIED	v1
D1101273	aLIGO SUS TOP MASS QUAD STOP BRIDGE, REVISED	v1
D1000631	aLIGO TOP ADD MASS TOWER	v2
D1000633	aLIGO TOP ADD MASS TEE	v2
D1000655	aLIGO TOP ADD MASS TOP SLOTTED BAR	v1
D1000656	aLIGO TOP ADD MASS SIDE SLOTTED BAR	v2
D1101166	aLIGO TMS UPPER SUSPENSION WIRE ASSEMBLY	v1
D060332	Advanced LIGO, SUS, Quad N-Ptype Top Stage, WIRE CLAMP TOP STAGE	v2
D060333	Advanced LIGO, SUS, Quad N-Ptype Top Stage, WIRE CLAMP BODY, TOP STAGE	v2
D060334	Advanced LIGO, SUS, Quad N-Ptype, WIRE CLAMP JAW, ALL MASSES	v2
D060335	Advanced LIGO, SUS, TOP MASS Quad N-Ptype, RECESSED 1/4" 20 UNC X 0.75" CAP HEAD	v2
D1000441	aLIGO INTERMEDIATE WIRE CLAMP ASSY MIDDLE WIRE	v1
D060334	Advanced LIGO, SUS, Quad N-Ptype, WIRE CLAMP JAW, ALL MASSES	v2
D060335	Advanced LIGO, SUS, TOP MASS Quad N-Ptype, RECESSED 1/4" 20 UNC X 0.75" CAP HEAD	v2
D1000396	aLIGO INTERMEDIATE WIRE CLAMP BODY MIDDLE WIRE	v1
D060311	TMS SUSPENSION TABLECLOTH PLATE, FRONT	v3
D060315	aLIGO, SUS, QUAD N-Ptype TABLECLOTH, TABLECLOTH PINCH PLATE, UPPER STRUCTURE	v2
D0900004	UHV COMPATIBLE CABLE CLAMP	v1
D1000407	aLIGO OSUMS INTERMEDIATE SUPPORT RIGHT SIDE BRACKET	v2
D1000408	aLIGO OSUMS INTERMEDIATE SUPPORT LEFT SIDE BRACKET	v2
D1000409	aLIGO OSUMS INTERMEDIATE SUPPORT RIGHT SIDE TRAY	v2
D1000410	aLIGO OSUMS INTERMEDIATE SUPPORT LEFT SIDE TRAY	v2
D1000411	TMS INTERMEDIATE OSUM SUPPORT PLATE, REAR	v2
D1100421	TMS SUSPENSION TABLECLOTH PLATE, FRONT	v1
D1100554	TMS OSEM PLATE CLAMP	v1
D1100712	TMS EARTHQUAKE STOP SCREW	v1
D1100791	TMS SUS CABLE CLAMP PLATE, INNER	v1
D1100792	TMS SUS CABLE CLAMP PLATE, OUTER	v1
D1101186	aLIGO SUS .500-13 X 1 SHCS MODIFIED	v1
D1101269	NICKEL-COPPER ALLOY 400, .250-20 HEX NUT, MODIFIED	v1
D1002460	aLIGO TMS TELESCOPE ASSEMBLY	v1
D1000484	ISC TRANSMON ASSEMBLY	v1
D1000971	ISC TRANSMON BEAM DUMP - SMALL	v1
D070476	Black Glass Small Beam Dump LEFT	v1
D070477	Black Glass Small Beam Dump RIGHT	v1
D1000968	ISC Tall Mounting Post	v3
D1000972	ISC TRANSMON BEAM DUMP MOUNTING INTERFACE - SMALL	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1001076	ISC TRANSMON - HIGH POWER BEAM DUMP	v5
D1001077	ISC TRANSMON HIGH POWER BEAM DUMP - LEG	v3
D1001078	ISC TRANSMON HIGH POWER BEAM DUMP - BASE	v3
D1001079	ISC TRANSMON HIGH POWER BEAM DUMP - FRONT	v3
D1001080	ISC TRANSMON HIGH POWER BEAM DUMP - BACK	v3
D1001081	ISC TRANSMON HIGH POWER BEAM DUMP - SIDE 1	v3
D1001082	ISC TRANSMON HIGH POWER BEAM DUMP - SIDE 2	v2
D1001083	ISC TRANSMON HIGH POWER BEAM DUMP - SILICON CARBIDE	v1
D1001089	ISC TRANSMON - HIGH POWER BEAM DUMP - FRONT STOP	v1
D1002059	ISC Mounting Base - Double	v2
D1100701	ISC High-Power Beam Dump - SiC Spring Stop	v1
D1001160	aLIGO OPTICS TABLE TOP STRUCTURAL ASSEMBLY	v2
D1001109	aLIGO ETM TELESCOPE BRIDGE SUPPORT TEE PLATE	v2
D1001129	aLIGO ETM OPTICAL TABLE	v4
D1001161	aLIGO OPTICS TABLE TOP MODIFIED EYEBOLT	v3
D1001163	aLIGO OPTICS TABLE GUSSET PLATE, LARGE	v2
D1001164	aLIGO OPTICS TABLE GUSSET PLATE, SMALL	v2
D1002221	aLIGO OPTICS TABLE SPEADER BRIDGE	v2
D1002696	aLIGO ETM TELESCOPE BRIDGE SUPPORT TEE PLATE_Front	v2
D1002698	aLIGO_TMS_Telescope_Roll_Slide_Mass	v2
D1002699	aLIGO_Pitch_Slide_Mass	v2
D1002755	aLIGO_TMS_Telescope_Roll_Slide_Rod	v1
D1002757	aLIGO_TMS_Telescope_Pitch_Slide_Scr.	v1
D1002758	aLIGO_TMS_Telescope_Pitch_Guide	v2
D1002759	aLIGO_TMS_Telescope_Roll_Lock	v2
D1002767	aLIGO OPTICS TABLE_Cylinder_Mass	v1
D1002768	aLIGO_TMS_Telescope_Roll_Mass_Adj_Rod	v3
D1002769	aLIGO_TMS_Telescope_Roll_Slide_Bkt	v1
D1003162	aLIGO TMS TELESCOPE PITCH MASS ADJ. ROD	v3



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
**PROJECT DRAWING TREE**

**E1100735**

**v1**

DOCUMENT NO.

REV

TITLE:

**aLIGO TMS First Article Installation & Tooling**

D1003330	aLIGO Optics Table Small Cylinder Mass	v1
D1100358	TMS Telescope Mass Attachment Screw	v1
D1100989	NICKEL/COPPER ALLOY 400 .312-18 HEX NUT, MODIFIED	v1
D1001346	aLIGO, ASSY, CABLE BRACKET, HAM TABLE	v3
D1001342	aLIGO, CABLE BRACKET BASEPLATE	v3
D1001343	aLIGO, CABLE BRACKET, UPRIGHT	v3
D1001344	aLIGO, CABLE BRACKET SCREW INSULATOR	v2
D1001345	aLIGO, CABLE BRACKET, NUTPLATE	v3
D1002042	ISC QPD Sled Assembly	v1
D1000971	ISC TRANSMON BEAM DUMP - SMALL	v1
D070477	Black Glass Small Beam Dump RIGHT	v1
D1000972	ISC TRANSMON BEAM DUMP MOUNTING INTERFACE - SMALL	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002106	ISC QPD Mount Assembly	v3
D0900004	Cable Clamp Assembly, UHV Compatible	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002110	ISC QPD Housing	v1
D1002172	ISC QPD Housing PEEK Insulator	v1
D1002601	QPD Pedestal Insert front PEEK Piece	v1
D1002602	aLIGO ISC QPD Flexible Circuit Board	v4
D1002603	ISC QPD Front - Alumina	v3
D1100363	ISC GQPD/IQPD 1" Lens Mount Assembly	v1
D1000968	ISC Tall Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1100364	ISC GQPD/IQPD 2" Lens Mount Assembly	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1101616	GQPD_IQPD_1in_Mirror_Mount_LH_Assy	v1
D1000968	ISC Tall Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002060	ISC Mounting Base - Single	v2
D1002071	aLIGO SUS UK PROOF BOUNCE TESTER 15KG PROOF MASS	v1
D1002763	ISC Mirror Mount Panel Bracket	v2
D1100044	ISC 1" Mirror Mount Black Glass	v1
D1002041	ISC QPD Sled	v1
D1002043	ISC QPD Sled Assembly - Green	v1
D1000971	ISC TRANSMON BEAM DUMP - SMALL	v1
D070476	Black Glass Small Beam Dump LEFT	v1
D070477	Black Glass Small Beam Dump RIGHT	v1
D1000968	ISC Tall Mounting Post	v3
D1000972	ISC TRANSMON BEAM DUMP MOUNTING INTERFACE - SMALL	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002041	ISC QPD Sled	v1
D1002106	ISC QPD Mount Assembly	v3
D0900004	Cable Clamp Assembly, UHV Compatible	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002110	ISC QPD Housing	v1
D1002172	ISC QPD Housing PEEK Insulator	v1
D1002601	QPD Pedestal Insert front PEEK Piece	v1
D1002602	aLIGO ISC QPD Flexible Circuit Board	v4
D1002603	ISC QPD Front - Alumina	v3
D1100363	ISC GQPD/IQPD 1" Lens Mount Assembly	v1
D1000968	ISC Tall Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1100364	ISC GQPD/IQPD 2" Lens Mount Assembly	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1100362	GQPD_IQPD_1in_Mirror_Mount_LH_Assy	v1
D1000968	ISC Tall Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002060	ISC Mounting Base - Single	v2
D1002071	aLIGO SUS UK PROOF BOUNCE TESTER 15KG PROOF MASS	v1
D1100044	ISC 1" Mirror Mount Black Glass	v1
D1003295	ISC TransMon Periscope Lens Assembly	v1
D1002059	ISC Mounting Base - Double	v2



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
**PROJECT DRAWING TREE**

**E1100735**

**v1**

DOCUMENT NO.

REV

TITLE:

**aLIGO TMS First Article Installation & Tooling**

D1003296	ISC TransMon Periscope Lens Bracket	v1
D1100257	ISC TransMon Compound Angled Mirror Mount RED Assembly	v1
D1001116	ISC Short Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002071	aLIGO SUS UK PROOF BOUNCE TESTER 15KG PROOF MASS	v1
D1002703	ISC 2" Mirror Mount Black Glass	v1
D1002763	ISC Mirror Mount Panel Bracket	v2
D1100244	ISC TransMon Angled Mounting Base	v2
D1100309	ISC In-Air Periscope	v1
D1100310	ISC In-Air Periscope Tube	v1
D1101015	ISC In-Air Periscope Side	v1
D1100642	ISC Rotary Beam Diverter	v1
D1002763	ISC Mirror Mount Panel Bracket	v2
D1100046	ISC 2" Diameter Black Glass Optic	v1
D1100642	ISC Rotary Beam Diverter	v2
D1100643	ISC Rotary Beam Diverter - Rotary Holder	v4
D1100645	ISC Rotary Beam Diverter - Magnet Keeper	v4
D1100646	ISC Rotary Beam Diverter - Base Plate	v1
D1100656	ISC Rotary Beam Diverter - Counter Weight	v2
D1100910	ISC Rotary Beam Diverter - Threaded Spacer	v1
D1100657	ISC Rotary Beam Diverter - REED Assembly	v1
D1003171	ISC Vertical Beam Block - REED Mount	v2
D1100658	ISC Rotary Beam Diverter - REED Plate	v1
D1100845	ISC REED Switch Cover	v1
D1100810	ISC TransMon Cable Routing Post Assembly	v1
D1002060	ISC Mounting Base - Single	v2
D1100796	ISC TransMon Cabling Post	v1
D1101616	TransMon_2in_Mirror_Mount_LH_Assy	v1
D1000968	ISC Tall Mounting Post	v3
D1002059	ISC Mounting Base - Double	v2
D1002763	ISC Mirror Mount Panel Bracket	v2
D0900004	Cable Clamp Assembly, UHV Compatible	v1
D1001432	TMS, SISKIYOU MOUNT BRACKET, UPPER OUTBOARD	v1
D1001434	TMS, SISKIYOU MOUNT BRACKET, UPPER INBOARD	v1
D1001435	TMS, SISKIYOU MOUNT BRACKET, LOWER INBOARD	v1
D1002504	TMS, SISKIYOU MOUNT BRACKET, LOWER OUTBOARD	v1
D1100084	ISC TransMon Assembly Cover - Outer Panel	v1
D1100904	aLigo_TMS_Periscope_Mount_Clamp	v1
D1003120	aLIGO TMS Telescope Frame Assembly	v1
D1000084	aLIGO_F1_MIRROR_ASSEMBLY	v2
D1000164	aLIGO_F1_MIRROR_WEDGE_ANGULAR_PLATE	v1
D1001136	aLIGO ETM F1 MIRROR CLAMP	v2
D1002336	aLIGO ETM F1 Mirror Side Clamp Lower	v1
D1002337	aLIGO ETM F1 Mirror Side Clamp Upper	v1
D1000088	aLIGO_F2_MIRROR_ASSEMBLY	v2
D1000085	aLIGO_F2_MIRROR_WEDGE	v1
D1002458	aLIGO AOS Transmon F2 Mirror Side Clamp Lower	v1
D1002459	aLIGO AOS Transmon F2 Mirror Side Clamp Upper	v1
D1002465	aLIGO AOS Transmon F2 Mirror Clamp	v2
D1100522	TMS Telescope Second Fold Mirror	v1
D1000243	aLIGO_ETM_TELE_TUBE_AND_INSERTS_ASSEMBLY	v1
D1000072	aLIGO_ETM_TELE_TUBE	v1
D1000242	aLIGO_ETM_TELE_TUBE_THD_INSERT	v2
D1001600	aLIGO_TMS_Tele_Sec_Mirror_Mt_Assem.	v3
D1001892	aLIGO TMS Del-Tron-RS1-1 Hort. Slide Assy.	v2
D1001947	aLIGO TMS DEL-TRON RS1-1 HOR. SLIDE	v2
D1001948	aLIGO TMS DEL-TRON RS1-1 HOR. GUIDE	v3
D1001894	aLIGO TMS DEL-TRON-RS1-1-VERTICAL SLIDE ASSY	v1
D1001945	aLIGO TMS DEL-TRON RS1-1 VERTICAL SLIDE	v2
D1001946	aLIGO TMS DEL-TRON RS1-1 VERTICAL GUIDE	v2
D1001951	aLIGO TMS DEL-TRON RS1-2 FOCUS SLIDE ASSY	v1
D1001952	aLIGO TMS DEL-TRON RS1-2 FOCUS CARRIAGE	v2
D1001953	aLIGO TMS DEL-TRON RS1-2 FOCUS GUIDE	v2
D1002210	aLIGO TMS FLEXABLE SEC MIRROR MT. ASSY	v2
D0901565	ADLIGO_ETM_TELE_SECONDARY	v1
D1002211	aLIGO TMS FLEXABLE SEC MIRROR MT.	v4
D1100114	TMS Telescope Secondary Mirror Clamp	v1
D1001813	aLIGO TMS THREAD MT. SEC. FOCUS	v2
D1001832	aLIGO TMS VERT. SLIDE SEC. BRK.	v2



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
**PROJECT DRAWING TREE**

**E1100735**

**v1**

DOCUMENT NO.

REV

TITLE:

**aLIGO TMS First Article Installation & Tooling**

D1001833	a LIGO TMS HOR. SLIDE SEC.	v2
D1001834	aLIGO TMS HOLDER SEC. FOCUS	v2
D1001835	aLIGO TMS ACROSS THREAD MT.	v2
D1001836	aLIGO TMS VERTICAL HOLDER MT.	v2
D1001837	aLIGO TMS VERTICAL LOCK	v2
D1001839	aLIGO TMS HOR. LOCK	v2
D1001841	aLIGO TMS FOCUS SLIDE LOCK	v3
D1001973	aLIGO TMS FOCUS SCREW	v2
D1001987	aLIGO TMS VERT.-HOR. SCREW	v3
D0902829	aLIGO_SLEEVE_ALIGNMENT_TELESCOPE	v2
D1000070	TRANSMON_TELE_END_PLATE_PRIMARY_3_TUBE	v2
D1000071	TRANSMON_TELE_END_PLATE_ENTRY_3_TUBE	v3
D1000075	aLIGO_PRIMARY_PARABOLIC_MIRROR	v1
D1000275	aLIGO_TRANSMON_TELE_BLACK_GLASS_PLATE	v2
D1001108	aLIGO ETM TELESCOPE TUBE LARGE WASHER	v2
D1001241	aLIGO ETM TELESCOPE BEAM DUMP GLASS	v1
D1002728	aLIGO TMS Primary Mirror Side Clamp Lower	v1
D1002731	aLIGO TMS Primary Mirror Side Clamp Upper	v1
D1002732	aLIGO TMS Primary Mirror Clamp	v2
D1100827	aLIGO TMS VERTICAL SAFETY WIRE ASSEMBLY	v1
D1100672	TMS Vertical Safety Clamp Base	v1
D1100673	TMS Vertical Safety Clamp Plate, Upper	v1
D1100674	TMS Vertical Safety Suspended Clamp	v1
D1100675	TMS Vertical Safety Catch	v1
D1100707	TMS Vertical Safety Clamp Plate, Lower	v1
D1101130	aLIGO TMS TELESCOPE SAFETY SUPPORT BEAM ASSEMBLY	v1
D1100264	TMS Telescope Safety Support Beam	v2
D1100271	TMS Safety Beam Nut Plate	v1
D1100280	TMS Safety Chain Mount, Front	v1
D1100281	TMS Safety Chain Mount, Rear	v1
D1100989	NICKEL/COPPER ALLOY 400 .312-18 HEX NUT, MODIFIED	v1
D1101163	aLIGO TMS TELESCOPE SUSPENSION WIRE ASSEMBLY	v1
D060422	ADVANCED LIGO, SUS, QUAD N-PTYPE UI MASS, UI MASS WIRE CLAMP	v2
D060334	Advanced LIGO, SUS, Quad N-Ptype, WIRE CLAMP JAW, ALL MASSES	v2
D060335	Advanced LIGO, SUS, TOP MASS Quad N-Ptype, RECESSED 1/4" 20 UNC X 0.75" CAP HEAD	v2
D060426	Advanced LIGO, SUS, Quad N-Ptype UI MASS, UI MASS WIRE CLAMP BODY	v3
D1101162	aLIGO TMS Telescope SUS Clamp Assembly	v1
D1002239	aLIGO_TMS_Telescope_Wire_Clamp_Jaw	v1
D1002240	aLIGO_TMS_Tele_Wire_Clamp_Base	v1
D1002424	VIBRATION ABSORBER ASSEMBLY, UPPER QUAD	v1
D1002347	PIN, LOCKING, VIBRATION ABSORBER, aLIGO, SUS	v3
D1002425	aLIGO, SUS, VIBRATION ABSORBER, 5LB CLAMP BASE	v1
D1002426	aLIGO, SUS, VIBRATION ABSORBER, 5LB CLAMP TOP	v1
D1002427	aLIGO, SUS, VIBRATION ABSORBER, 5LB MASS	v1
D1002594	aLIGO, SUS, UPPER QUAD VIBRATION ABSORBER MOUNTING PLATE	v2
D1002597	aLIGO, SUS, UPPER QUAD VIBRATION ABSORBER CLAMP	v1
D070056	aLIGO, SUS, QUAD N-PTYPE, QUAD DOG CLAMP	v2
D1003190	aLIGO QUAD SHORTER DOG CLAMP	v2
D1100785	aLIGO, SUS, QUAD, NITRONIC WASHER, FLAT	v2
D1001781	aLIGO TMS SEISMIC SAFETY STOP STRUCTURE	v2
D1001929	aLIGO TMS SEISMIC SAFETY STOP CHAMBER BRACKET	v1
D1001937	CROSS BAR FOR EARTHQUAKE STOP TMS	v1
D1001939	TIE IN TO EARTHQUAKE STOP SIDE BAR	v1
D1001941	aLIGO EARTHQUAKE STOP ROD	v1
D1001942	aLIGO END BRACKET FOR EARTHQUAKE ROD	v1
D1001943	aLIGO TOP LONG TUBE EARTHQUAKE STOP PLATE	v1
D1100499	TMS Horizontal Restraint Link	v1
D1100988	aLIGO TMS SEISMIC SAFETY STOP CHAIN	v1
D1100989	NICKEL/COPPER ALLOY 400 .312-18 HEX NUT, MODIFIED	v1
D1101269	NICKEL-COPPER ALLOY 400 .250-20 HEX NUT, MODIFIED	v1
D1001891	aLIGO TMS VERTICLE SEISMIC SAFETY STOP ASSEMBLY	v1
D1003329	aLIGO TMS Safety Exchange Clamp	v1
D1100986	TMS Telescope Chain, 12 in.	v1
D1100989	NICKEL/COPPER ALLOY 400 .312-18 HEX NUT, MODIFIED	v1
D1100460	aLIGO TMS TELE ALIGNMENT SUPPORT BRIDGE ASSY	v1
D1100462	aLIGO TMS TELE ALIGNMENT SUPPORT BRIDGE LEGS	v1
D1100463	aLIGO TMS TELE ALIGNMENT SUPPORT BRIDGE TOP BAR, PRIMARY	v1
D1100464	aLIGO TMS TELE ALIGNMENT SUPPORT BRIDGE SIDE BRACE	v1
D1100465	aLIGO TMS TELE ALIGNMENT SUPPORT BRIDGE GUSSET	v1



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
**PROJECT DRAWING TREE**

**E1100735**

**v1**

DOCUMENT NO.

REV

TITLE:

**aLIGO TMS First Article Installation & Tooling**

D1100552	aLIGO TMS TELE ALIGNMENT SUPPORT BRIDGE TOP BAR, ENTRY	v1
D1100531	aLIGO TMS OPTICAL TABLE SUPPORT BRIDGE ASSY	v1
D1100532	aLIGO TMS OPTICAL TABLE SUPPORT BRIDGE, LEGS	v1
D1100533	aLIGO TMS OPTICAL TABLE SUPPORT BRIDGE, TOP BAR	v1
D1100534	aLIGO TMS OPTICAL TABLE SUPPORT BRIDGE, SIDE BRACE	v1
D1100535	aLIGO TMS OPTICAL TABLE SUPPORT BRIDGE, EXTERNAL GUSSET	v1
D1100541	aLIGO TMS OPTICAL TABLE SUPPORT BRIDGE	v1
D1100613	aLIGO TMS TELESCOPE ASSEMBLY ALIGNMENT STABILAZATION TOOL	v1
D1100400	TMS TOOLING Telescope Alignment Support Bar	v1
D1100402	TMS TOOLING Telescope Alignment Support Spacer	v1
D1100403	TMS TOOLING Telescope Alignment Support Nutplate	v1
D1100414	TMS TOOLING Telescope Alignment Support Bracket	v1
D1100649	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE ASSY	v1
D1100650	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE LEGS	v1
D1100651	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE TOP BAR	v1
D1100652	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE GUSSET	v1
D1100653	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE PIN	v1
D1100654	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE PIN SUPP BAR	v1
D1100656	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE PIN GUIDE BAR	v1
D1100671	aLIGO TMS TELE-OPT TABLE BALANCE BRIDGE TIE PLATE	v1
D1100841	aLIGO TMS TELE-OPT TABLE INSTALL TOOL ASSY	v1
D1100886	MODIFIED GENIE LIFT FORKS	v1
D1100842	aLIGO TMS TELE-OPT TABLE INSTALL TOOL, SUPP PLATE	v1
D1100843	aLIGO TMS TELE-OPT TABLE INSTALL TOOL, SUPP YOKE	v1
D1100933	TMS TELESCOPE BENCH SUPPORT ASSEMBLY	v1
D1100106	TMS Telescope Bench Support	v1
D1100712	TMS Earthquake Stop Screw	v1
D1101269	NICKEL-COPPER ALLOY 400 .250-20 HEX NUT, MODIFIED	v1
D1101361	TMS TOOLING TELESCOPE I-P ALIGNMENT MIRROR ASSEMBLY	v1
D1100418	TMS TOOLING Telescope Mirror Clamp, 2 in.	v1
D1101109	TMS Telescope Input Beam Alignment Mirror	v1
D1101342	aLIGO TMS Tooling Primary Mirror Plate	v1
D1101362	TMS Tooling Fixture Clamp	v1
D1101487	TMS TOOLING TELESCOPE O-P ALIGNMENT MIRROR ASSEMBLY	v1
D1100897	aLIGO TMS TOOLING TELESCOPE MIRROR CLAMP, 56 MM	v1
D1100949	TMS Telescope Tooling Mirror, 56 mm	v1
D1101506	aLIGO TMS TELE SAFETY SUPPORT TURNBUCKLE ASSY, SIDE, SHORT	v1
D1101500	aLIGO TMS TELESCOPE SAFETY SUPPORT TURNBUCKLE	v1
D1101550	aLIGO TMS TELESCOPE SAFETY SUPPORT TURNBUCKLE YOKE	v1
D1101557	aLIGO TMS TELESCOPE SUPPORT TURNBUCKLE THREADED ROD, SHORT	v1
D1101510	aLIGO TMS TELE ALIGNMENT 6in MIRROR MOUNT ASSY	v1
D1101447	aLIGO TMS TELE ALIGNMENT MIRROR MOUNT, 6"	v1
D1101559	aLIGO TMS TELE SAFETY SUPPORT TURNBUCKLE ASSY, SIDE LONG	v1
D1101500	aLIGO TMS TELESCOPE SAFETY SUPPORT TURNBUCKLE	v1
D1101550	aLIGO TMS TELESCOPE SAFETY SUPPORT TURNBUCKLE YOKE	v1
D1101558	aLIGO TMS TELESCOPE SUPPORT TURNBUCKLE THREADED ROD, LONG	v1
D1101565	aLIGO TMS TELE SAFETY SUPPORT TURNBUCKLE ASSY, FRONT	v1
D1101500	aLIGO TMS TELESCOPE SAFETY SUPPORT TURNBUCKLE	v1
D1101550	aLIGO TMS TELESCOPE SAFETY SUPPORT TURNBUCKLE YOKE	v1
D1101564	TMS aLIGO TELE SAFETY SUPPORT TURNBUCKLE, FRONT, THREADED ROD	v1
D1100729	TMS TELESCOPE MIRROR GAUGE ROD	v1
D1100728	TMS TELESCOPE DUMMY SECONDARY MIRROR	v1
D1100989	NICKEL-COPPER ALLOY 400 .312-18 HEX NUT, MODIFIED	v1
D1101486	aLIGO TMS EARTHQUAKE STOP TOOLING GAUGE	v1
D1101575	aLIGO ALLEN WRENCH, FOR TMS VERT.-HOR. SCREW	v1
D1101757	aLIGO TMS Upper SUS Wire Adjuster	v1

**TOOLING LAYOUTS**

D1100908	aLIGO TMS TELE-OPT TABLE TOOL ASSY-GENIE FORK CONNECTION	v1
D1101095	aLIGO TMS TELESCOPE-SUPPORT BRIDGE CONNECTION	v1
D1101096	aLIGO TMS OPT TABLE-TELE- SUPPORT BRIDGE CONNECTION	v1
D1101097	aLIGO TMS TELE-OPT TABLE-BALANCE BRIDGE CONNECTION	v1
D1101307	TOOLING LAYOUT-aLIGO TMS Telescope Cartridge lift Safety Supports	v1