aLIGO AOS OpLev TRX Pier Assembly (HAM)

AUTHOR(S)	DATE	Document Change Notice, Release or Approval
Eric James	9 Sep, 2012	see LIGO DCC record Status

This document is intended to serve as a description of this assembly until a real assembly drawing can be made.

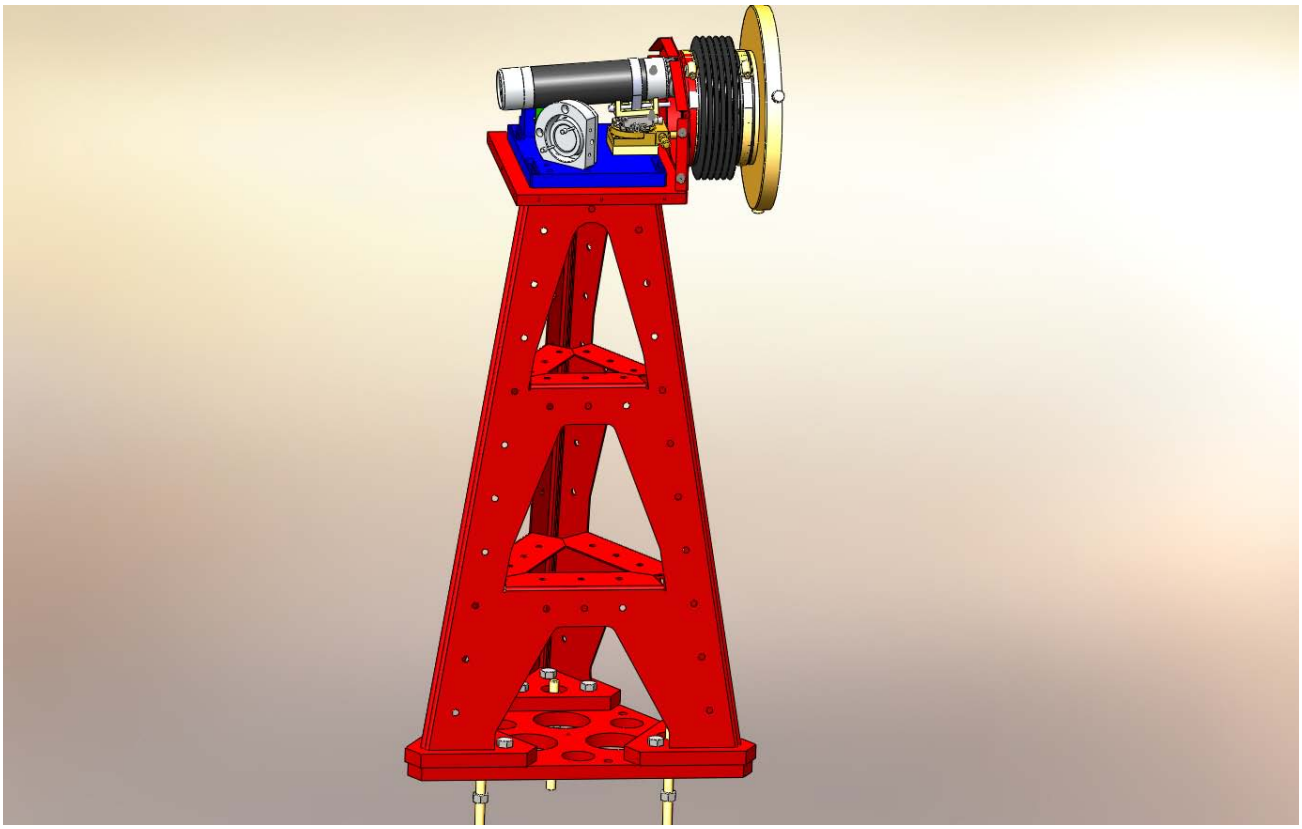


Figure 1: HAM Transceiver Pier Assembly. Shown with cover removed.

Bill of Material

Item	Part number	Description	Quant.
1	D1001854	TRX Pier Weldment	1
2	D1000434	Pier Footing	1
3	D1001627	TRX Mounting Base	1
4	D1001620	QPD Bracket	1
5	D1100290	QPD Board Assembly	1
6		15-pin M-M Cable, Photodiode Board	1
7	KSP-60-C1A-S05	OptoSigma Rotary Stage	1
8	GOHT40A10-MO2 0600-S10	OptoSigma Goniometer	1
9	SL38	Newport Gimbol Mirror Mount	1
10		Pico Motors w/Cables	2

aLIGO AOS OpLev TRX Pier Assembly (HAM)

11	D1102242	Transmitter Telescope Mount	1
12	D0901362-1	Projection Telescope Assembly, Short	1
13	D1200463	Transceiver Enclosure Assembly	1
14	D1200622	6-inch Reducer	1
15	CT-6	Gortiflex 6" Rubber Bellows	1
16		1/2-20 x 1.5" Hex head cap screw	9
17		1/4-20 x 3/4" SHCS	10
18		1/4-20 x 3" SHCS	1
19		#8-32 x 1/2" SHCS	11
20		#8 Flat Washer	11
21		M3 x 10 SHCS	4
22		M3 x 6 SHCS	4
23		#4-40 x 5/8" SHCS	4
24		3" Band Clamp	1
25	45945K37	McMaster -Carr 6" Band Clamp	2
26	92421A540	McMaster -Carr 1/4-20 Brass Thumb Screw	3
27	9600K62	McMaster-Carr Rubber Grommet	1
28	F12 635S	Fermion Laser w/ 10m fiber	1
29	D1200461	Laser Power Board	1
30	D1100013	Whitening Chassis	1
31	D1101248	Anti-aliasing Chassis	1
32		9-pin M-F Cable, Anti-aliasing Chassis	1
33		BNC M-M Cable, Laser	1
34			
35			

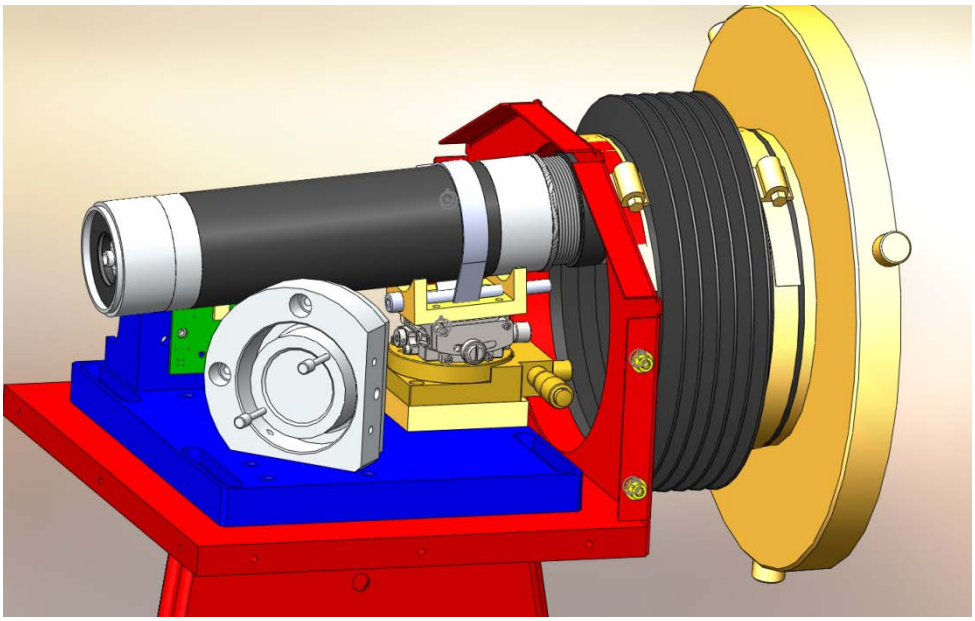


Figure 2: Telescope mounting hardware

aLIGO AOS OpLev TRX Pier Assembly (HAM)

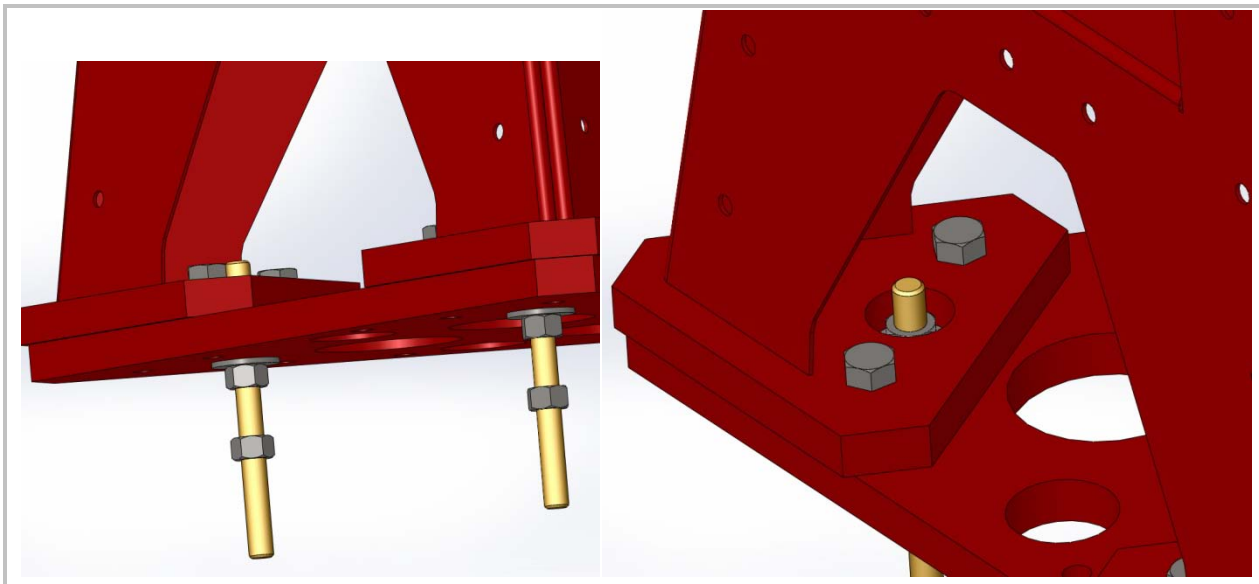


Figure 3:Base plate details

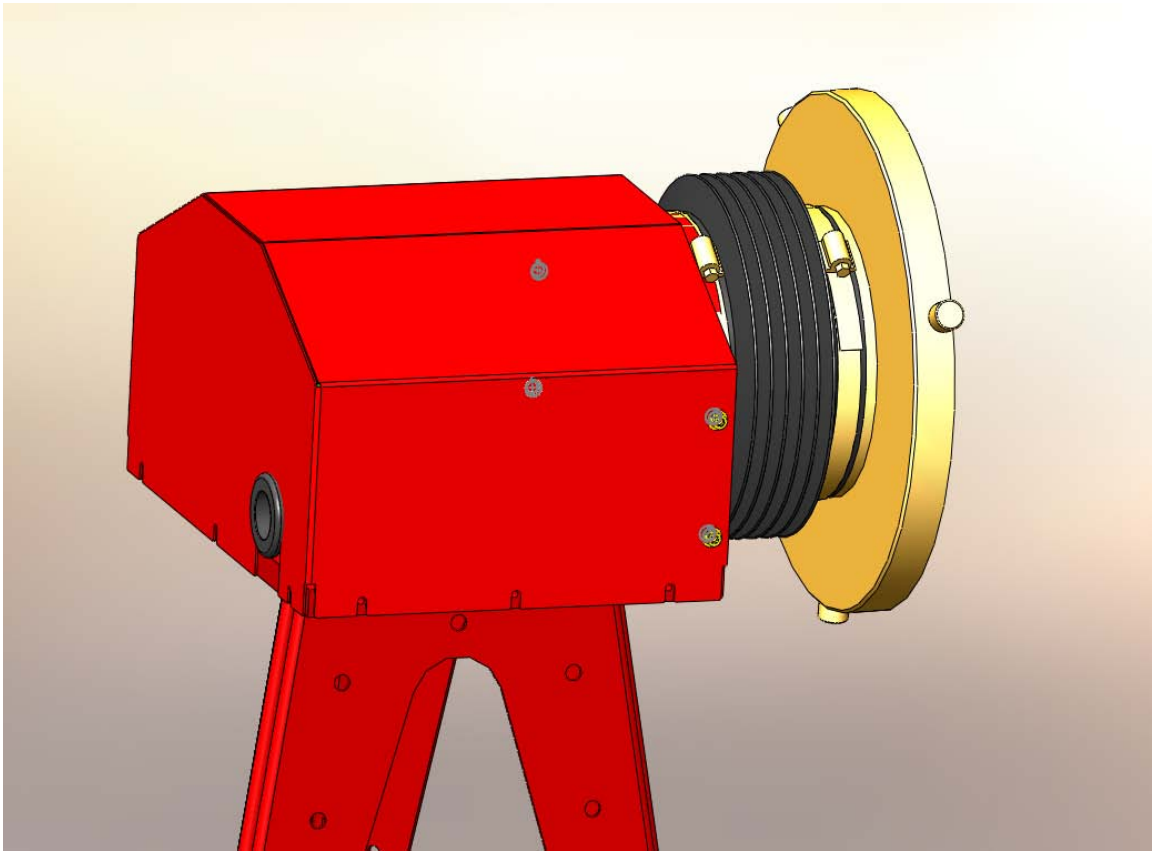
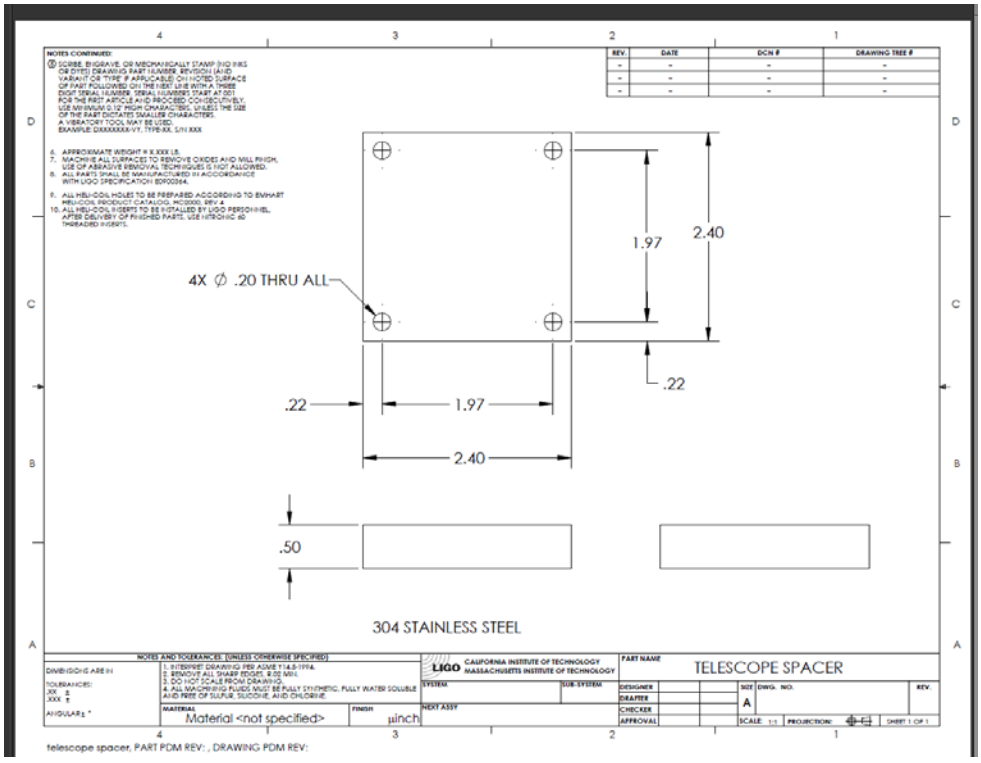


Figure 4: Cover installed

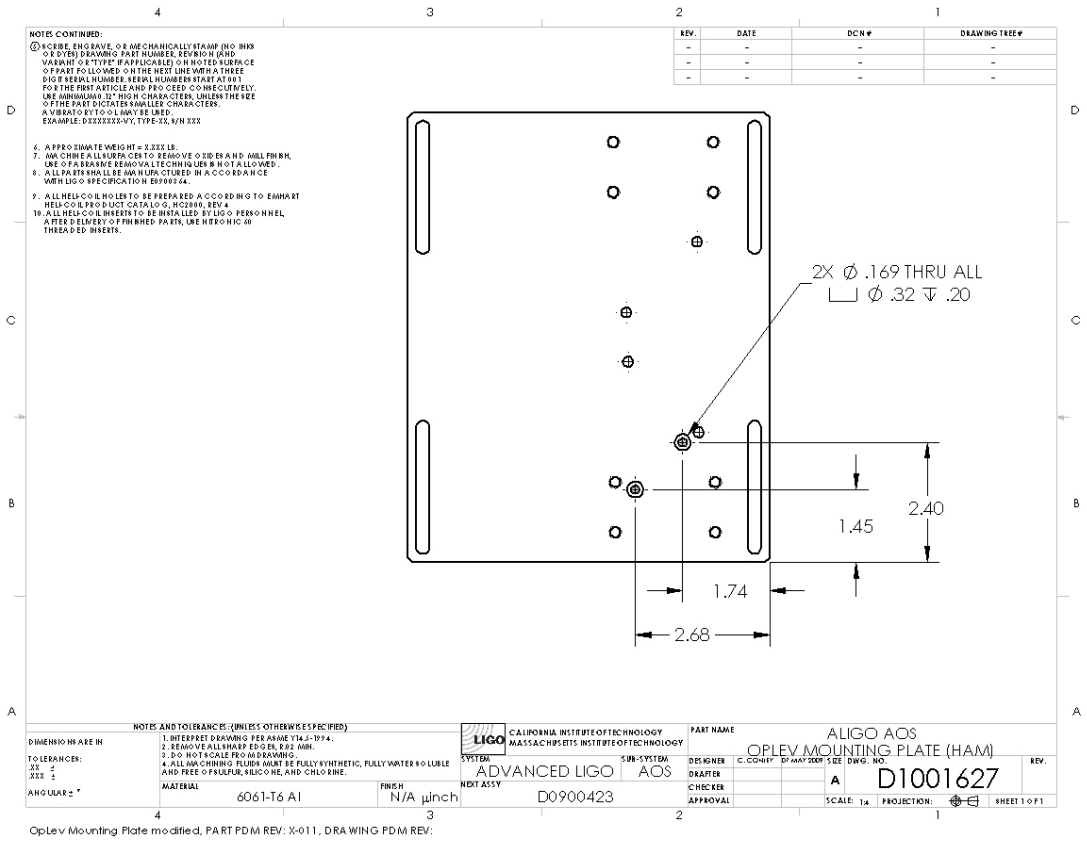
aLIGO AOS OpLev TRX Pier Assembly (HAM)

Notes, August 23, 2012:
During installation, it was discovered that the telescope was too long for the return beam to get behind it and to the QPD. The solution was to raise the telescope mount using a 1/2" shim (see below) and lower the folding mirror mount by omitting the block under it (D1001628). It was necessary to drill new holes in the base plate (D1001627) to mount the mirror without the block (see modification drawing below). This left the QPD too high to steer the beam to it so the bracket was installed backwards (turned 180°) and make a new set of #4-40 holes in the bracket at a lower elevation.

Since the telescope for the beam splitter transceiver is much smaller, it was not necessary to make the same changes for the beam splitters which otherwise use the same transceiver design.



aLIGO AOS OpLev TRX Pier Assembly (HAM)



OpLev Mounting Plate modified, PART PDM REV: X-011, DRAWING PDM REV: