



CALIFORNIA INSTITUTE OF TECHNOLOGY
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DCN No. E000492-00-D

SHEET 1 OF 1

DOCUMENT CHANGE NOTICE (DCN)

DOCUMENT No. (DOC-REV-GP. ID)	TITLE	NEW REV.
D960004-A-D	Tower Base	B

CHANGE DESCRIPTION (FROM/TO): Add cutouts in the bottom flanges. Add dimensions of cutout: 2X, 2.50, 2X, 2.50 and 2X, 1.25.
 zone D2, From 1.469 to 1.154
 zone C2, From 6X, .562 to 6X, .247

REASON FOR CHANGE: This change is valid only for the LHO 2k IFO curved Mode Cleaner Mirror (MC2).

ACTION: Incorporate change Attach DCN to drawing(s) Other action (specify):

DISPOSITION OF HARDWARE (IDENTIFY SERIAL NUMBERS)	DCN DISTRIBUTION (X=incl. docs)																														
<input type="checkbox"/> No hardware affected (record change only)	<table border="0"> <tr> <td>Coyne</td> <td>Barish</td> <td>Coles</td> </tr> <tr> <td>Raab</td> <td>Lazzarini</td> <td>Lindquist</td> </tr> <tr> <td>Stapfer</td> <td>Sanders</td> <td>Shoemaker</td> </tr> <tr> <td>Whitcomb</td> <td>Tyler</td> <td>Weiss</td> </tr> <tr> <td></td> <td>Zydowicz</td> <td></td> </tr> <tr> <td></td> <td>Barton</td> <td>X Tanner</td> </tr> <tr> <td></td> <td>Jones</td> <td>X Reitze</td> </tr> <tr> <td></td> <td>Heefner</td> <td></td> </tr> <tr> <td></td> <td>X Romie</td> <td></td> </tr> <tr> <td></td> <td>Fritschel</td> <td></td> </tr> </table>	Coyne	Barish	Coles	Raab	Lazzarini	Lindquist	Stapfer	Sanders	Shoemaker	Whitcomb	Tyler	Weiss		Zydowicz			Barton	X Tanner		Jones	X Reitze		Heefner			X Romie			Fritschel	
Coyne		Barish	Coles																												
Raab		Lazzarini	Lindquist																												
Stapfer		Sanders	Shoemaker																												
Whitcomb		Tyler	Weiss																												
		Zydowicz																													
	Barton	X Tanner																													
	Jones	X Reitze																													
	Heefner																														
	X Romie																														
	Fritschel																														
<input type="checkbox"/> List S/Ns which comply already:																															
<input type="checkbox"/> List S/Ns to be reworked or scrapped:																															
<input checked="" type="checkbox"/> List S/Ns to be built with this change: see Reason for Change																															
<input type="checkbox"/> List S/Ns to be retested per this change:																															
<input type="checkbox"/>																															
<input type="checkbox"/>																															
<input type="checkbox"/>																															
<input type="checkbox"/>																															
<input type="checkbox"/>																															

SAFETY, COST, SCHEDULE, REQUIREMENTS IMPACT? No Yes (If yes, enter Change Request number)

APPROVALS:	DATE	OTHER APPROVALS (specify)	DATE
ORIGINATOR: J. Romie <i>J. Romie</i>	11-9-00		10-01
TASK LEADER:			
GROUP LEADER: <i>D. Coyne</i>	1/12/01		
DCC RELEASE: <i>J. Romie</i>	1-16-01		

X-Sender: tanner@phys.ufl.edu
Date: Fri, 03 Mar 2000 11:37:26 -0500
To: David Reitze <reitze@phys.ufl.edu>, Dennis Coyne <coyne@ligo.caltech.edu>
From: David <tanner@phys.ufl.edu>
Subject: Re: level MC?
Cc: Dave Tanner <tanner@phys.ufl.edu>, Sanichiro Yoshida <sany@ligo-la.caltech.edu>
Mime-Version: 1.0

At 05:16 PM 2/24/00 -0500, David Reitze wrote:

>On Thu, 24 Feb 2000, Dennis Coyne wrote:

>
>> David^2,
>> The 2 km mode cleaner was set to be parallel to the seismic optics
>> tables, because we didn't know better (r didn't think about the
>> consequences). We've discovered that the vertical bounce mode (14 Hz I
>> think) is clearly visible in the length control signal. Some of us
>> discussed the intent to set the future mode cleaners horizontal. Were
>> you in that loop? i.e. is the 4 km mode cleaner at Livingston set to be
>> horizontal by shimming? If not, would you please consider how to do this
>> in the next vent cycle. The x-arm at Livingston in the corner station is
>> inclined 312 microradians to the local horizontal. This means a ~4mm
>> differential height between the flat MC mirrors and the curved MC
>> mirror. One possibility is to raise the HAM2 optics table by 4 mm.
>> Thoughts?

>>
>
>We were in the loop; HAM2 is lower than HAM1 in the LLO 4k by ~ 4mm. We
>made and installed a spacer under MC2 such that all of the MC mirrors are
>balanced locally horizontal.

>
>> We're considering a 'negative' shim under the curved MC suspension
>> (reducing it's height with a special SOS baseplate) for the 2 km MC.

>
>Heard about that, too, from Haisheng. I think the height difference
>between HAM7,8 at LHO is ~8 mm (Larry gave me the angles between LIGO
>global and LVEA horizontal). We'll look into machining
>a modified SOS base. Also, MC2 has a slightly different wire thickness
>(0.017") than MC1,3 which shows up as a difference in the bounce mode
>resonances; we'll repack the wire to clean the spectrum up a bit.

It's not possible to shave 8 mm (0.315") off the bottom of the base and
have any strength left in the 0.375" thick flange that forms the foot and
clamp surface for the suspension. It is possible, I think, to cut away the
base flange and lower the attachment holes where the side plates screw into
the base by the necessary amount. The side plates will still be about
0.060" above the table. See the attached sketch, in gif and pdf form. I've
cut the height of the block down too, so the side plates overlap in a
similar way to the standard suspension.

After making the sketch I looked at the 2kglobals and realized that
WHAM7 is 8.5 mm lower (compared with local level) than WHAM8, not 8 mm, so
everything will need to be dropped an additional 0.020" (1.154->1.134,
.247->.227, and .622->.602) The distance from the attachment holes to the
bottom of the side plates is .562, so there is .040 between the bottoms of
the side plates and the table.

D. J. L. 000200-2

Subject: Re: level MC?

Date: Mon, 06 Nov 2000 09:04:09 -0500

From: David <tanner@phys.ufl.edu>

To: Janeen Hazel Romie <romie_j@ligo.caltech.edu>

CC: David Reitze <reitze@phys.ufl.edu>

Yes, it was made and I believe installed. Dave Reitze will let you know if I'm wrong.

At 10:59 AM 11/3/00 -0800, you wrote:

>Dear David,

>I'm working on updating the SOS drawings. Was this modified base plate made
>for the 2k curved MC mirror (MC2)? I need to document it if it was.

>Janeen

>

>

>David wrote:

>

>> At 05:16 PM 2/24/00 -0500, David Reitze wrote:

>> >On Thu, 24 Feb 2000, Dennis Coyne wrote:

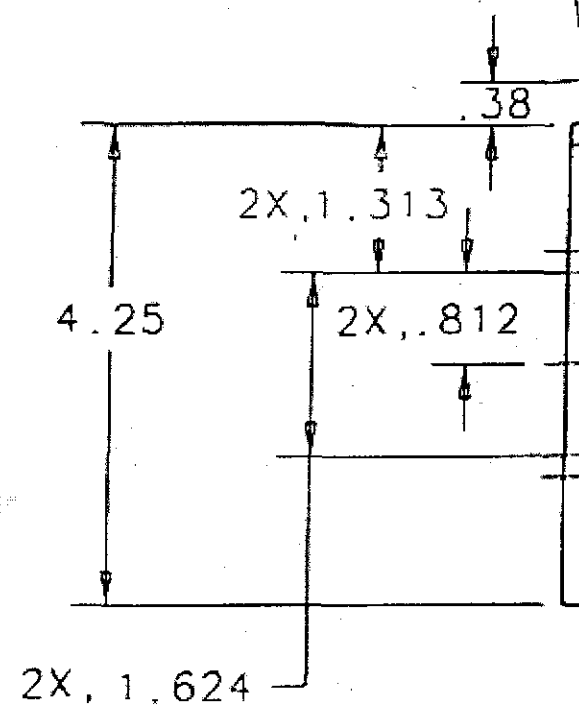
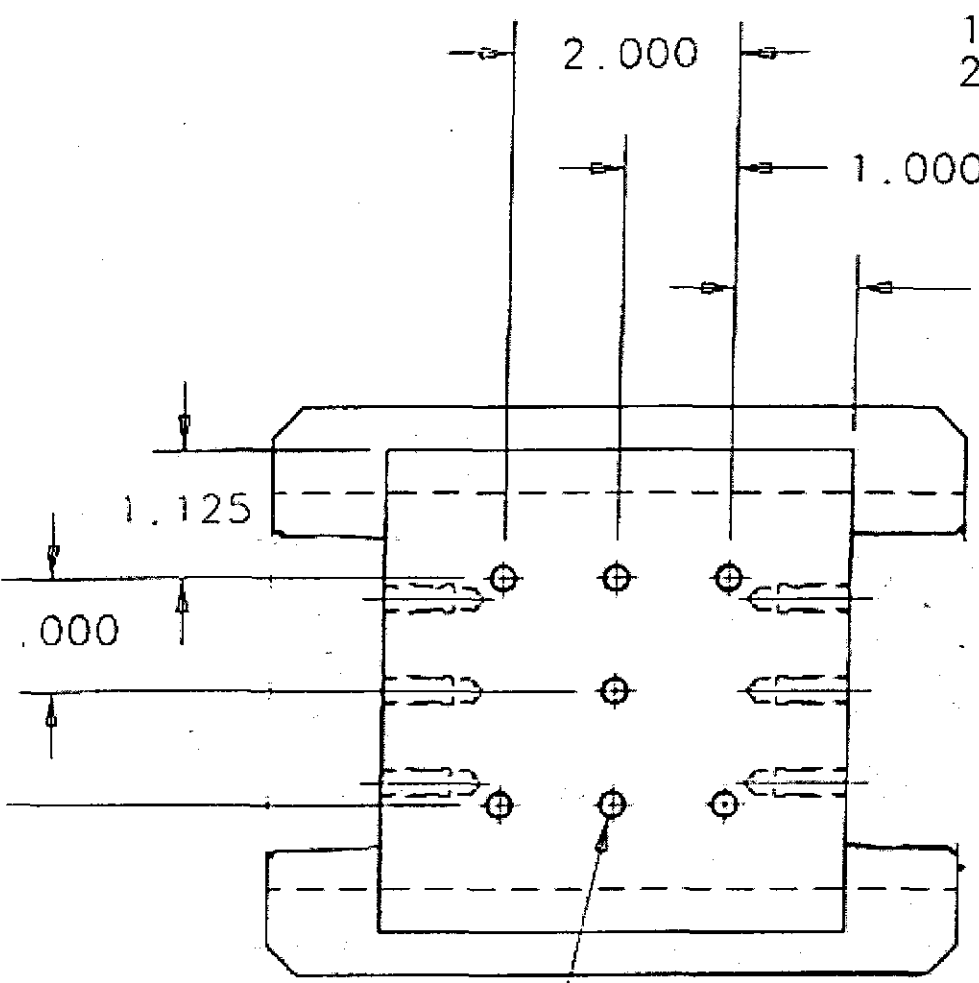
>> >

>> >> David^2,

>> >> The 2 km mode cleaner was set to be parallel to the seismic optics
>> >> tables, because we didn't know better (r didn't think about the
>> >> consequences). We've discovered that the vertical bounce mode (14 Hz I
>> >> think) is clearly visible in the length control signal. Some of us
>> >> discussed the intent to set the future mode cleaners horizontal. Were
>> >> you in that loop? i.e. is the 4 km mode cleaner at Livingston set to be
>> >> horizontal by shimming? If not, would you please consider how to do this
>> >> in the next vent cycle. The x-arm at Livingston in the corner station is
>> >> inclined 312 microradians to the local horizontal. This means a ~4mm
>> >> differential height between the flat MC mirrors and the curved MC
>> >> mirror. One possibility is to raise the HAM2 optics table by 4 mm.

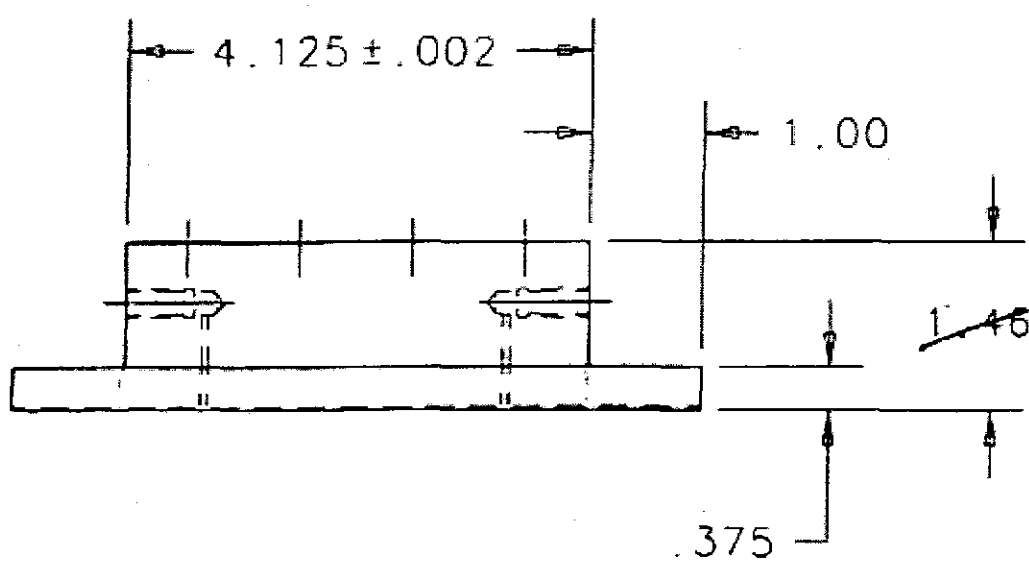
BEAK ALL SHARP EDGES .01/.02 X 45°

6X
1/4-20 UNC -2B ∇ .63
2X EACH SIDE



7X
1/4-20 UNC -2B ∇ .63
TAP DRILL THRU

6X, ~~.502~~
.247



~~1.469~~ 1.154

 .002

BOTH SURFACES

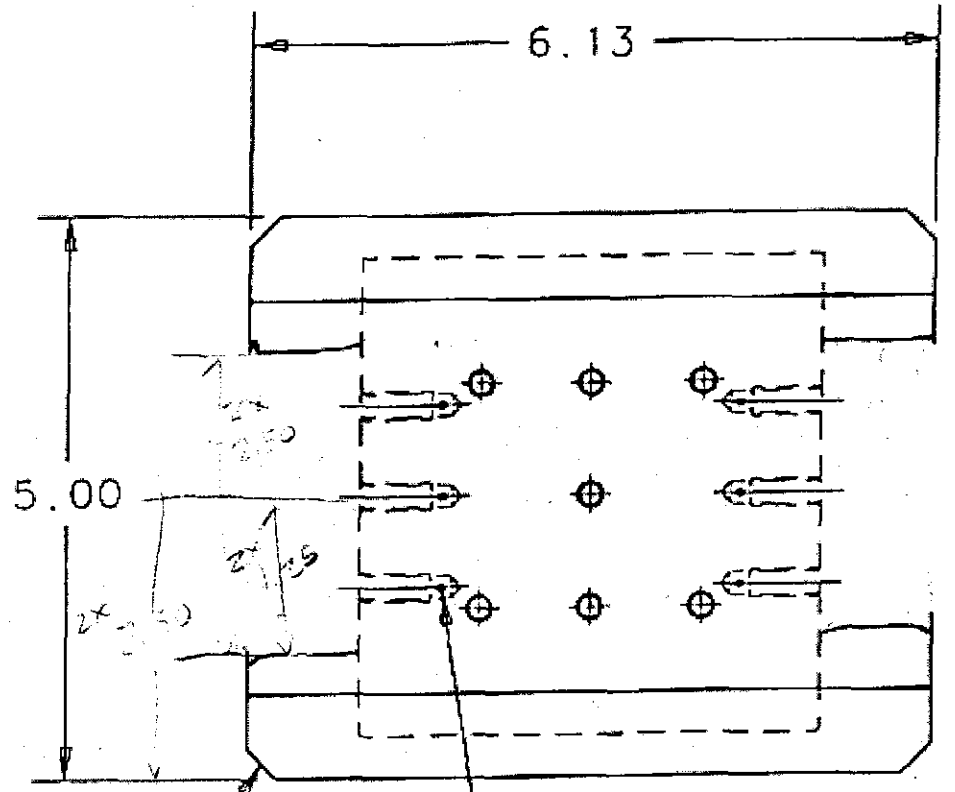
32

.75

3.50

.031 DP.
UNDERCUT

Handwritten: .622



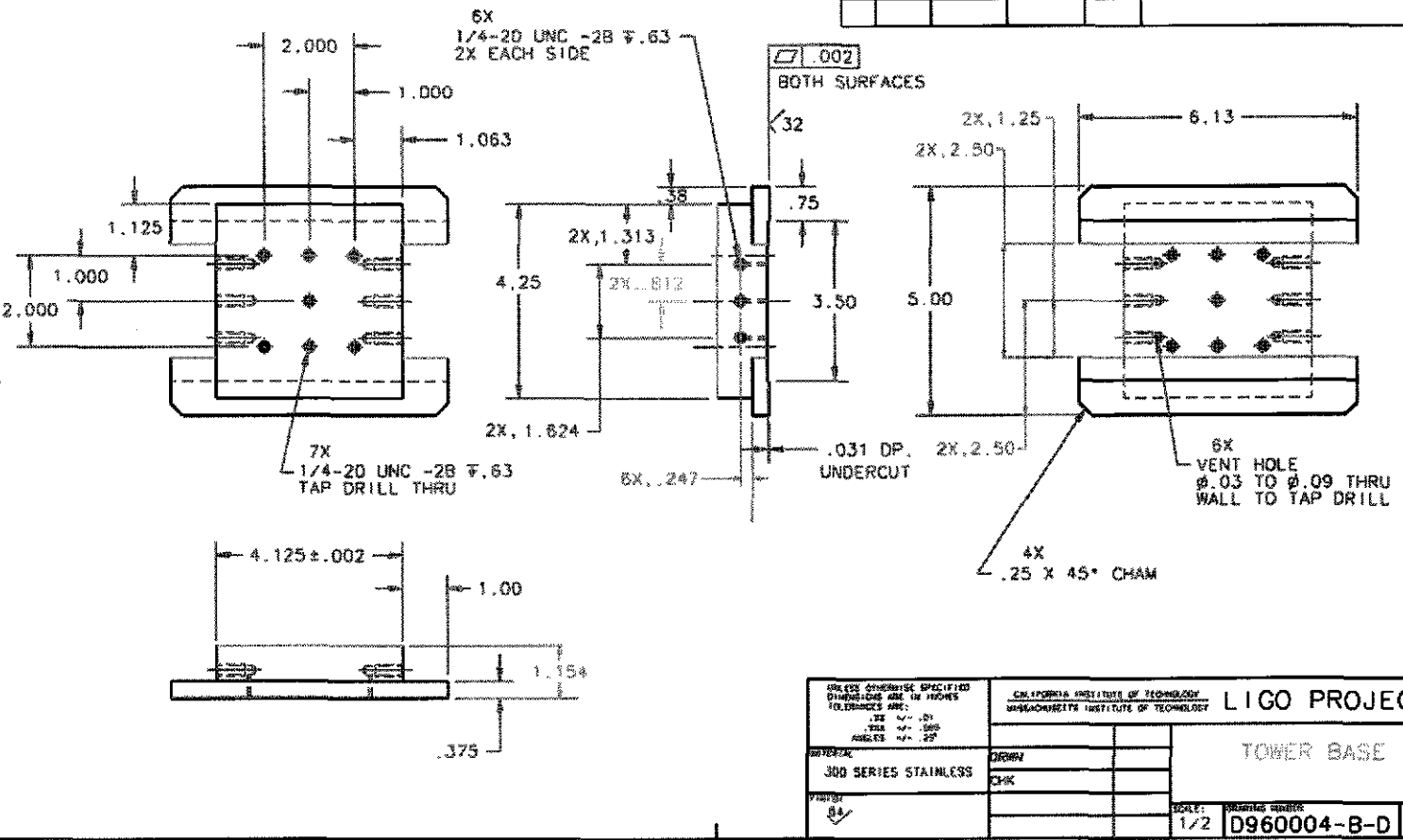
6X
VENT HOLE
Ø.03 TO Ø.09 TH
WALL TO TAP. DRI

4X
.25 X 45° CHAM

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: .XX +/- .01 .XXX +/- .005 ANGLES +/- .25°	CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		LIGO PRO. TOWER BAS
	MATERIAL 300 SERIES STAINLESS	DRWN CHK	
FINISH			

NOTES: (UNLESS OTHERWISE SPECIFIED)
 1. FILLETS: R .015 MAX
 2. BREAK ALL SHARP EDGES .01/.02 X 45°

REV	DATE	BY	APP'D	DESCRIPTION
A	7-28-97	J. Hazel		E970121/INITIAL RELEASE
B	1-10-01	J. Romie		E000492/CUTOUTS FOR LMO2s



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FEES .001 HOLE .005 ANGLES .01°	CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY	LIGO PROJECT TOWER BASE
MATERIAL: 300 SERIES STAINLESS	DRAWN: CHK:	SCALE: 1/2
PART NO: 84	DRAWING NUMBER: D960004-B-D	SHEET: 1 of 1

c:\msd\l\9604-D960004.plt