soldering instructions:

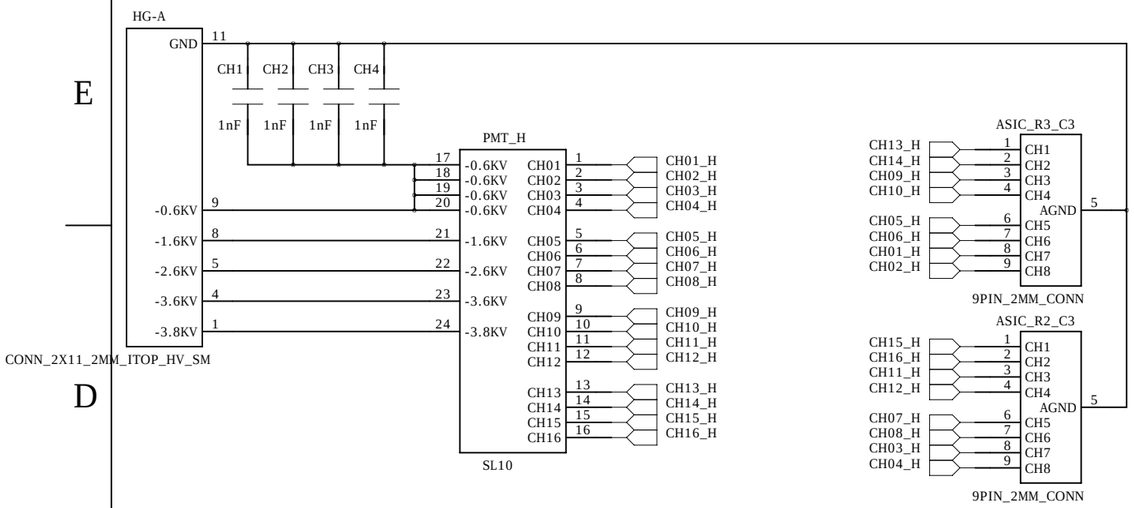
1. solder the high-voltage capacitors on the non-PMT side of the board
2. solder the 9-pin 2mm connectors so the plastic retaining the pins is on the non-PMT side of the board, making sure to align them so all the pins are perpendicular to the board and parallel with each other
3. flush-cut the 2mm pins on the PMT side of the board
4. place all 24 pins (192 pins?) in the board from the PMT side and press them into place
5. put the board down on a flat, hard surface and make sure all 192 are flush and aligned perpendicular to the board
6. solder the 192 pins
7. solder the high-voltage input connectors on the non-PMT side of the board, taking care to align each pin on the center of the pad it sits on

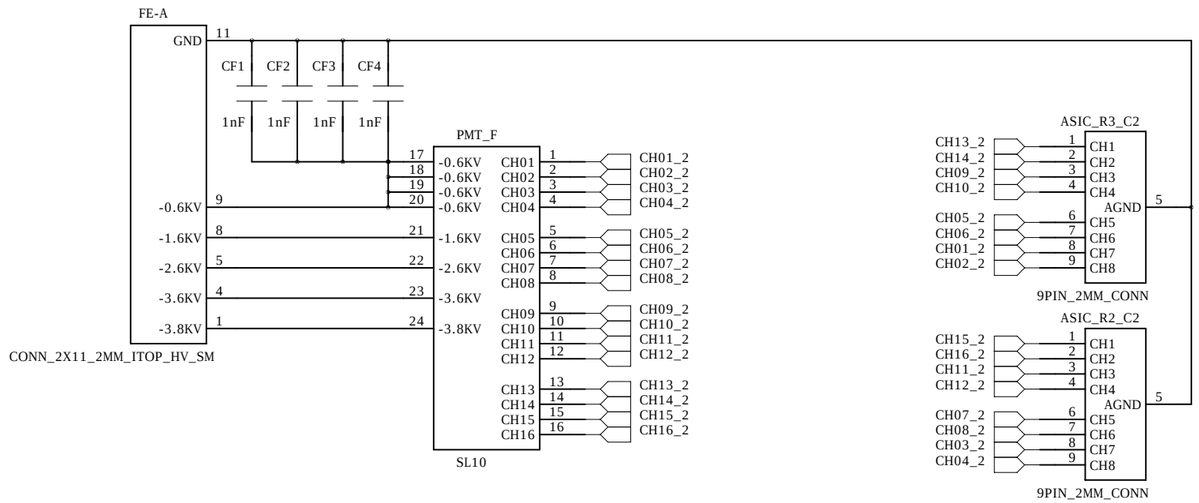
revB is different from revA in the following ways:
the trace size is at least 8 mils (compared to 6 mils for revA) to reduce fabrication cost
the via size is 15mils (compared to 10mils for revA) to reduce fabrication cost
revB has 2 mounting holes
revB has different autorouting, but the same manually routed ground and anode traces
the pin socket holes for the PMT are oversized 58mils (versus 1.4mm~55mils for revA)

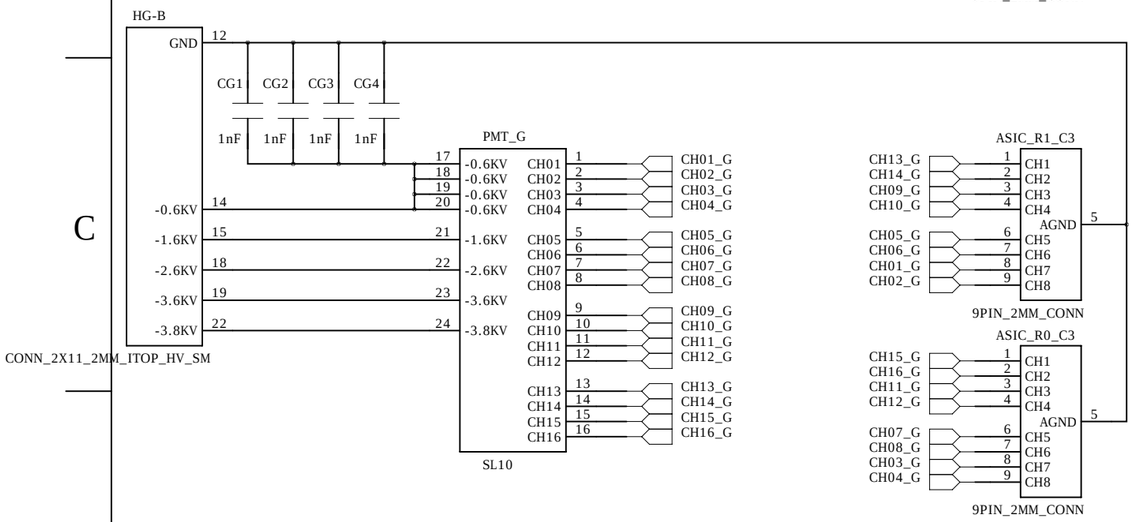
revC is different from revB in the following ways:
there are 6 layers on the PCB (versus 4 on the revB)
there is a keepout on the top and bottom layers for HV traces around the PMTs to try to stop arcing in the air above the board
1.5mm spacing between HV traces and any other trace, via or pad (versus 0.9mm for the revB)
separated "high" HV (2.6kV to 3.8kV) from "low" HV (0.6kV to 1.6kV) to ease setting up design rules
2mm between HV vias (versus 1mm on the revB)
1.5mm between HV traces and the copper ground pour around the anodes (versus 1mm on the revB)
ground traces for different PMTs are closer together
turned ground hatch around anodes into a solid pour
made thickness of ground pour thinner so it would flow around the pins better
made pads for input HV connectors and capacitors rounded

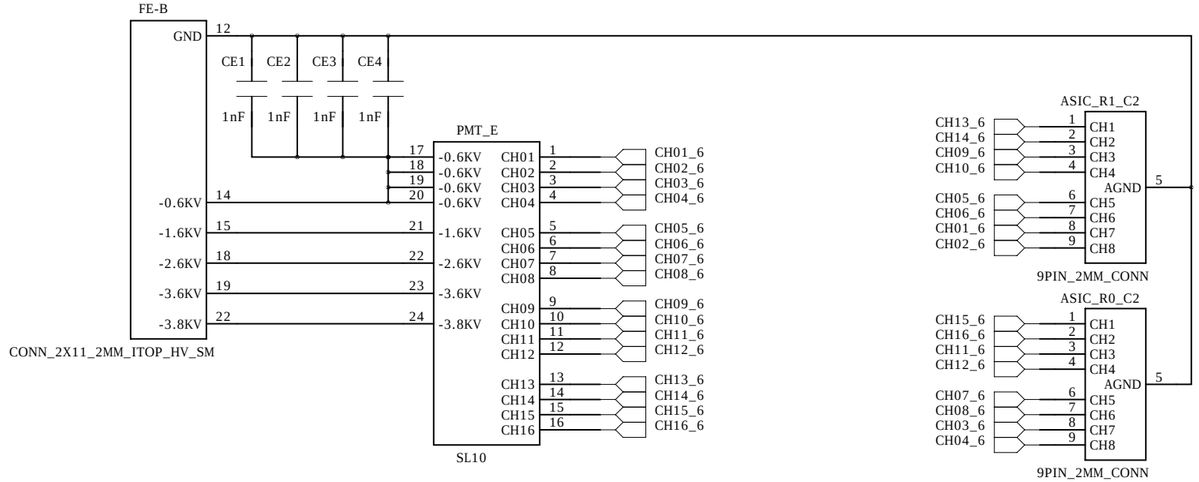
notes updated 2011-10-09

institution:	University of Hawai'i at Manoa High Energy Physics Group Instrumentation Development Lab
title:	iTOP front front
revision:	C
IDLAB design #:	IDL_11_020
circuit design:	MZA, LJR
PCB design:	MZA, LJR
sheet #:	1 of 3
sheet description:	PMTs #H, #G, #F and #E
date last modified:	2011-10-09









class "HV" 0.9mm spacing
class "GNDs" 0.3mm spacing
class "ANODEs" 0.3mm spacing

signal traces 0.1524mm

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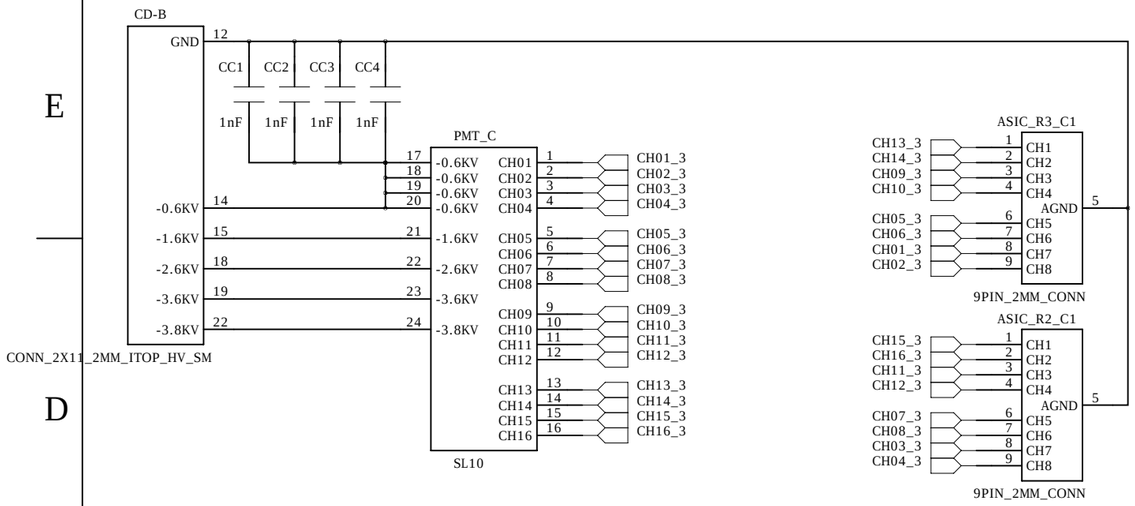
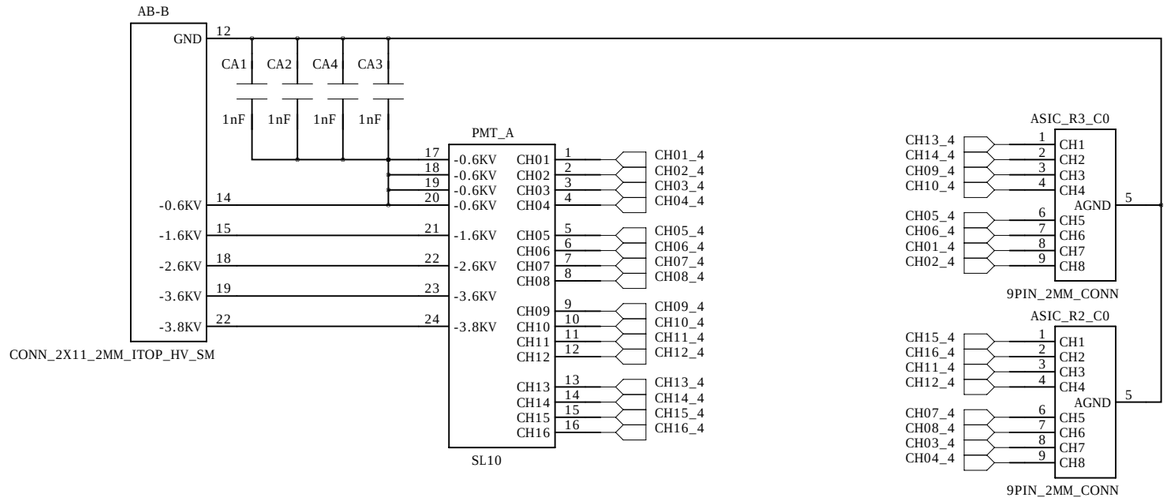
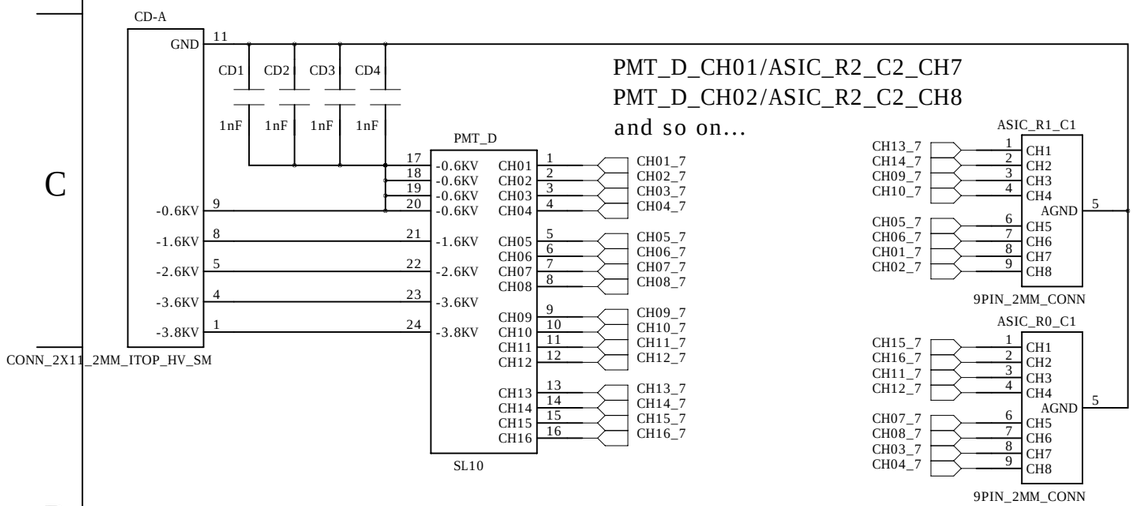
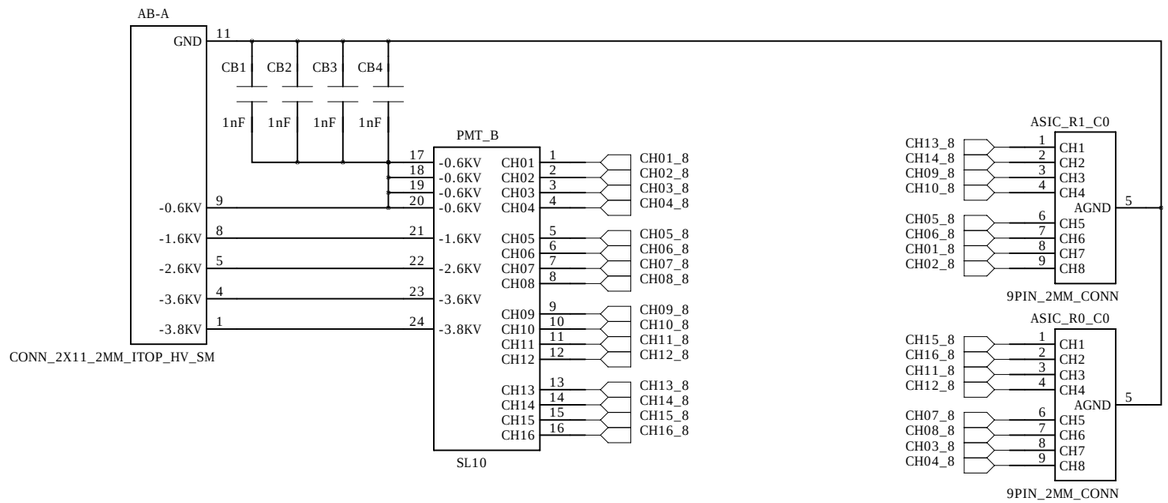
sheet #:	2 of 3
sheet description:	PMTs #H, #G, #F and #E
date last modified:	2011-10-09







PMT_D_CH01/ASIC_R2_C2_CH7
PMT_D_CH02/ASIC_R2_C2_CH8
and so on...



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IDLAB design #:	IDL_11_020
circuit design:	MZA, LJR
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sheet #:	3 of 3
sheet description:	PMTs #C, #D, #A and #B
date last modified:	2011-10-09