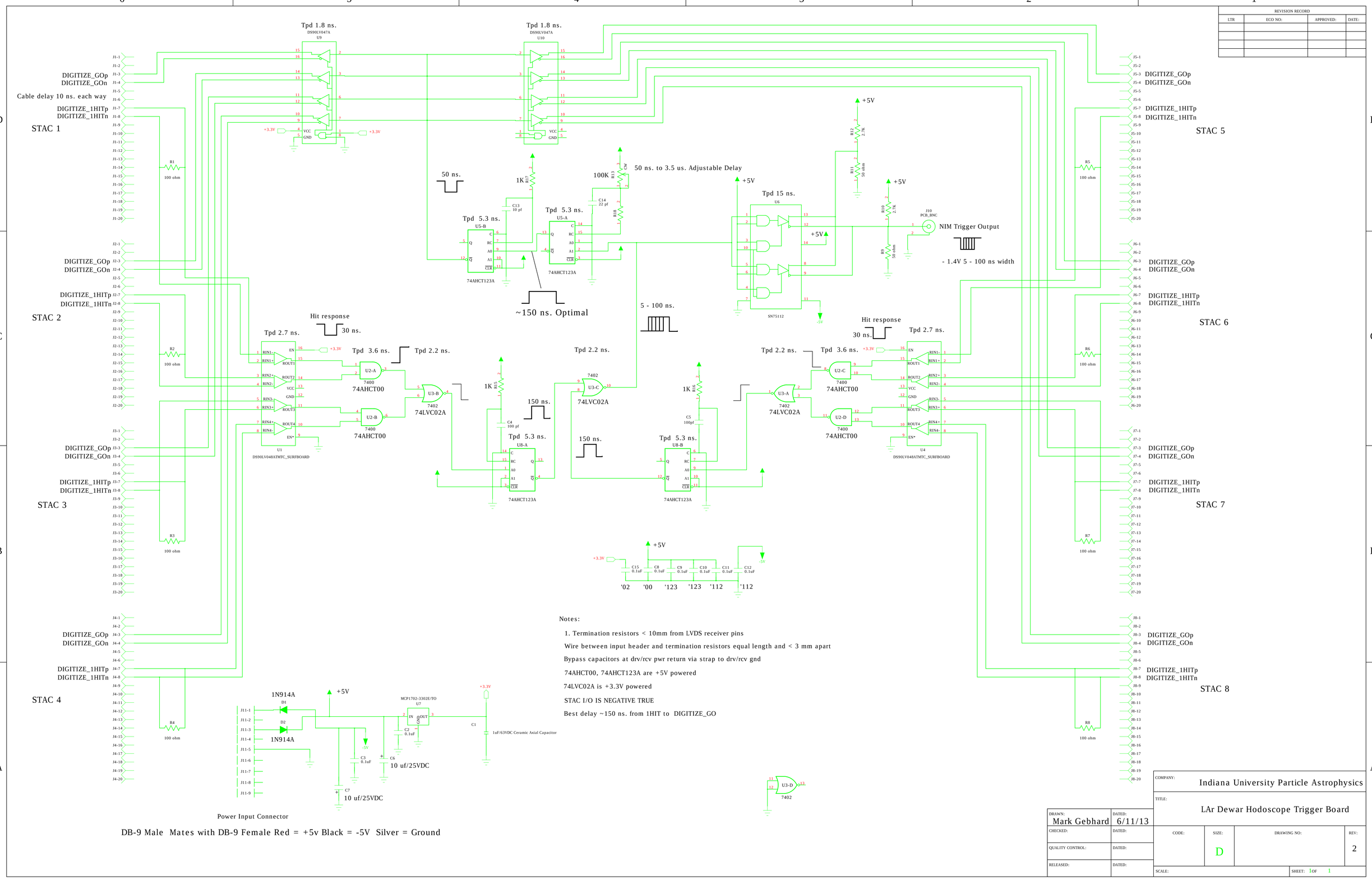
Tpd 1.8 ns.
DS90LV047A
U9
U10
DIGITIZE_GOp
DIGITIZE_GOn
Cable delay 10 ns. each way
DIGITIZE_1HITp
DIGITIZE_1HITn
STAC 1
STAC 2
STAC 3
STAC 4
STAC 5
STAC 6
STAC 7
STAC 8
R1
R2
R3
R4
R5
R6
R7
R8
100 ohm
+3.3V
VCC
GND
50 ns.
1K
R17
C13
10 pf
100K
R13
C14
22 pf
R18
50 ns. to 3.5 us. Adjustable Delay
Tpd 5.3 ns.
U5-B
U5-A
74AHCT123A
~150 ns. Optimal
Tpd 15 ns.
U6
SN75112
+5V
-5V
R12
2.7K
R11
50 ohm
R10
2.7K
R9
50 ohm
J10
PCB_BNC
NIM Trigger Output
- 1.4V 5 - 100 ns width
5 - 100 ns.
Hit response
30 ns.
Tpd 2.7 ns.
Tpd 3.6 ns.
Tpd 2.2 ns.
U2-A
U2-B
U2-C
U2-D
7400
74AHCT00
U3-A
U3-B
U3-C
U3-D
7402
74LVC02A
U1
U4
DS90LV048ATMTC_SURFBOARD
EN
ROUT1
ROUT2
ROUT3
ROUT4
RIN1-
RIN1+
RIN2-
RIN2+
RIN3-
RIN3+
RIN4-
RIN4+
EN*
1K
R15
R16
C4
100 pf
C5
100pf
150 ns.
U8-A
U8-B
C15
0.1uF
C8
0.1uF
C9
0.1uF
C10
0.1uF
C11
0.1uF
C12
0.1uF
'02
'00
'123
'123
'112
'112
Notes:
1. Termination resistors < 10mm from LVDS receiver pins
Wire between input header and termination resistors equal length and < 3 mm apart
Bypass capacitors at drv/rcv pwr return via strap to drv/rcv gnd
74AHCT00, 74AHCT123A are +5V powered
74LVC02A is +3.3V powered
STAC I/O IS NEGATIVE TRUE
Best delay ~150 ns. from 1HIT to DIGITIZE_GO
1N914A
D1
D2
J11-1
J11-2
J11-3
J11-4
J11-5
J11-6
J11-7
J11-8
J11-9
MCP1702-3302E/TO
U7
IN
OUT
GND
C2
0.1uF
C3
0.1uF
C6
10 uf/25VDC
C7
10 uf/25VDC
C1
1uF/63VDC Ceramic Axial Capacitor
Power Input Connector
DB-9 Male Mates with DB-9 Female Red = +5v Black = -5V Silver = Ground
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
COMPANY:
Indiana University Particle Astrophysics
TITLE:
LAr Dewar Hodoscope Trigger Board
DRAWN:
Mark Gebhard
DATED:
6/11/13
CHECKED:
QUALITY CONTROL:
RELEASED:
CODE:
SIZE:
D
DRAWING NO:
REV:
2
SCALE:
SHEET: 1 OF 1