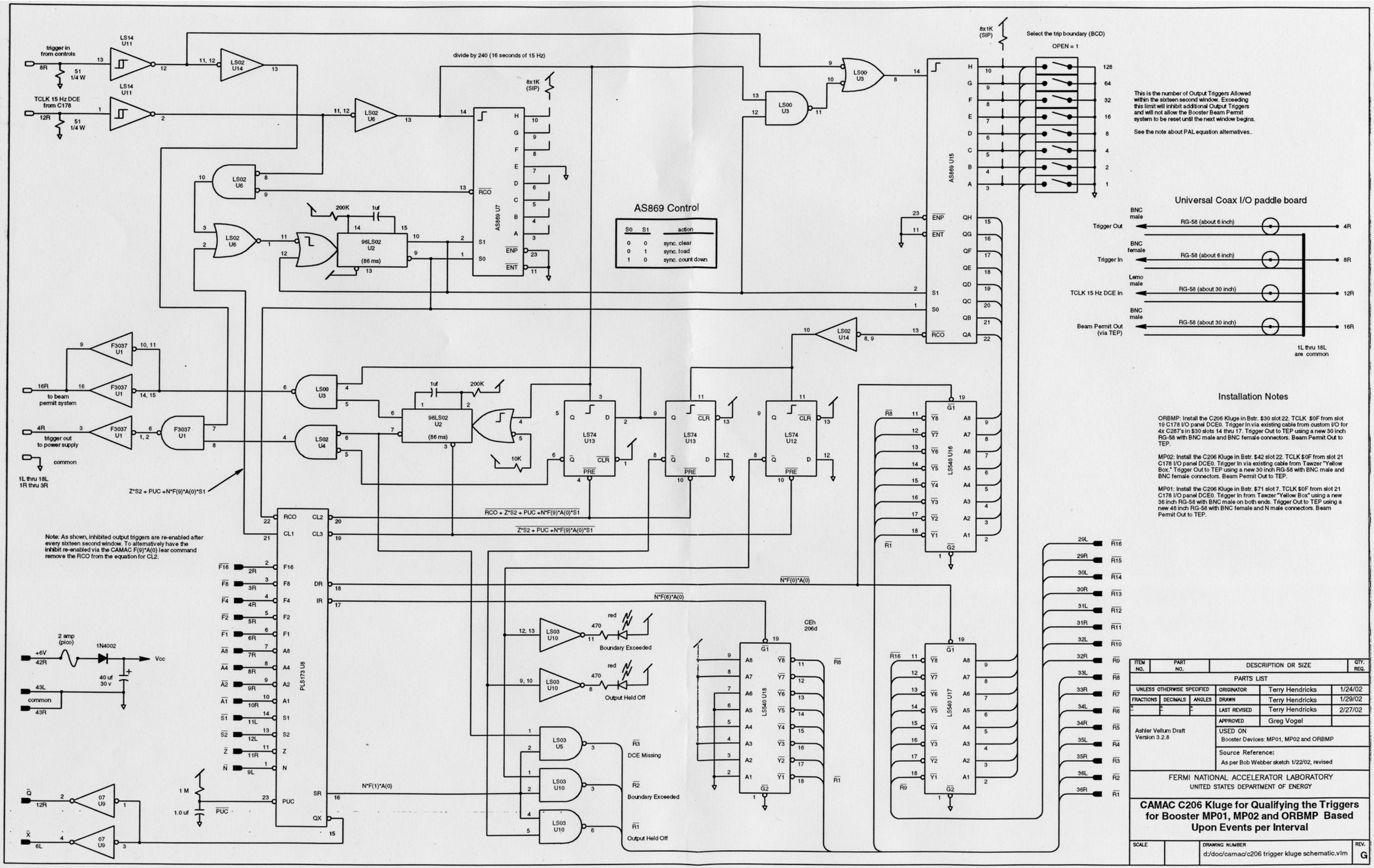
trigger in from controls
8R
51 1/4 W
LS14 U11
TCLK 15 Hz DCE from C178
12R
51 1/4 W
LS14 U11
LS02 U14
divide by 240 (16 seconds of 15 Hz)
LS02 U6
8x1K (SIP)
AS869 U7
RCO
S1
S0
ENP
ENT
LS02 U6
LS02 U6
200K
1uf
96LS02 U2
(86 ms)
AS869 Control
S0 S1 action
0 0 sync. clear
0 1 sync. load
1 0 sync. count down
LS00 U3
LS00 U3
8x1K (SIP)
Select the trip boundary (BCD)
OPEN = 1
128
64
32
16
8
4
2
1
AS869 U15
ENP
ENT
S1
S0
RCO
QH
QG
QF
QE
QD
QC
QB
QA
This is the number of Output Triggers Allowed within the sixteen second window. Exceeding this limit will inhibit additional Output Triggers and will not allow the Booster Beam Permit system to be reset until the next window begins.
See the note about PAL equation alternatives..
Universal Coax I/O paddle board
Trigger Out
BNC male
RG-58 (about 6 inch)
4R
Trigger In
BNC female
RG-58 (about 6 inch)
8R
TCLK 15 Hz DCE In
Lemo male
RG-58 (about 30 inch)
12R
Beam Permit Out (via TEP)
BNC male
RG-58 (about 30 inch)
16R
1L thru 18L are common
F3037 U1
F3037 U1
F3037 U1
F3037 U1
16R
to beam permit system
4R
trigger out to power supply
common
1L thru 18L
1R thru 3R
LS00 U3
LS02 U4
96LS02 U2
(86 ms)
1uf
200K
10K
LS74 U13
LS74 U13
LS74 U12
LS02 U14
LS540 U16
LS540 U17
LS540 U18
Z*S2 + PUC +N*F(9)*A(0)*S1
RCO + Z*S2 + PUC +N*F(9)*A(0)*S1
Z*S2 + PUC +N*F(9)*A(0)*S1
N*F(0)*A(0)
N*F(6)*A(0)
N*F(1)*A(0)
Note: As shown, inhibited output triggers are re-enabled after every sixteen second window. To alternatively have the inhibit re-enabled via the CAMAC F(9)*A(0) lear command remove the RCO from the equation for CL2.
PLS173 U8
RCO
CL1
CL2
CL3
F16
F8
F4
F2
F1
A8
A4
A2
A1
S1
S2
Z
N
DR
IR
SR
QX
PUC
1 M
1.0 uf
2 amp (pico)
1N4002
+6V
42R
Vcc
40 uf 30 v
43L
common
43R
07 U9
07 U9
LS03 U10
LS03 U10
LS03 U10
LS03 U5
470
red
Boundary Exceeded
Output Held Off
DCE Missing
Boundary Exceeded
Output Held Off
CEh 206d
Installation Notes
ORBMP: Install the C206 Kluge in Bstr. $30 slot 22. TCLK $0F from slot 19 C178 I/O panel DCE0. Trigger In via existing cable from custom I/O for 4x C287's in $30 slots 14 thru 17. Trigger Out to TEP using a new 30 inch RG-58 with BNC male and BNC female connectors. Beam Permit Out to TEP.
MP02: Install the C206 Kluge in Bstr. $42 slot 22. TCLK $0F from slot 21 C178 I/O panel DCE0. Trigger In via existing cable from Tawzer "Yellow Box." Trigger Out to TEP using a new 30 inch RG-58 with BNC male and BNC female connectors. Beam Permit Out to TEP.
MP01: Install the C206 Kluge in Bstr. $71 slot 7. TCLK $0F from slot 21 C178 I/O panel DCE0. Trigger In from Tawzer "Yellow Box" using a new 36 inch RG-58 with BNC male on both ends. Trigger Out to TEP using a new 48 inch RG-58 with BNC female and N male connectors. Beam Permit Out to TEP.
ITEM NO. | PART NO. | DESCRIPTION OR SIZE | QTY. REQ.
PARTS LIST
UNLESS OTHERWISE SPECIFIED
FRACTIONS DECIMALS ANGLES
ORIGINATOR Terry Hendricks 1/24/02
DRAWN Terry Hendricks 1/29/02
LAST REVISED Terry Hendricks 2/27/02
APPROVED Greg Vogel
Ashler Vellum Draft Version 3.2.8
USED ON
Booster Devices: MP01, MP02 and ORBMP
Source Reference:
As per Bob Webber sketch 1/22/02, revised
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
CAMAC C206 Kluge for Qualifying the Triggers for Booster MP01, MP02 and ORBMP Based Upon Events per Interval
SCALE
DRAWING NUMBER
d:/doc/camac/c206 trigger kluge schematic.vlm
REV.
G