Jefferson Lab
E94010 Technical Note 17
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Polarized Helium 3 Target Laser Interlock System

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Laser interlock System Parts

Part	Qty.	Price		Required
Keypad and CPU	1	$256	(Securitron)DK-26ss	Y
Touch Sense Bar	1	$272	(Securitron)TSB-3CL	N
Electromagntic Lock (600 pound holding force)	1	$224	(Securitron)M32-24	Y
24V / 10A power supply 8 outputs	1	$768	(Securitron)BPS-24-10	Y
Exit Button	1	$72	(Securitron)PB2	N
Door Switchs	At least 2	$33.67	(Alarm-it)2507-AH	Y
Aluminim Panel from machine shop	1	?	N/A	Y
Die Cast boxes (4.68 X 3.68 X 2.21)	3	$8	(JLAB)5975-11030	Y
Die Cast boxes (7.39 X 4.7 X 3.1)	1	$15	(JLAB)5975-11040	Y
Kill Switchs	At least 2	$48	(JLAB)5930-91000	Y
2 Cond 16Awg Cable		$.12/FT	(JLAB)6145-32000	Y
Black and Red hook up wire	?10ft	?		Y
Lugs	?100	?		Y
Yellow Flashing Beacon	1	$25		Y
F Wall mount MS3120 E12-3S	1	$14	(JLAB)5935-63045	Y
M Cable end MS3126 F12-3P	1	$18	(JLAB)5935-63055	Y
F Wall mount MS3120 E14-5S	1	$17.50	(JLAB)5935-63090	Y
M Cable end MS3126 F14-5S	1	$16	(JLAB)5935-63093	Y

Est Cost for parts $2000.00

Prepared by Mark Taylor 12/22/98

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Figure 1:

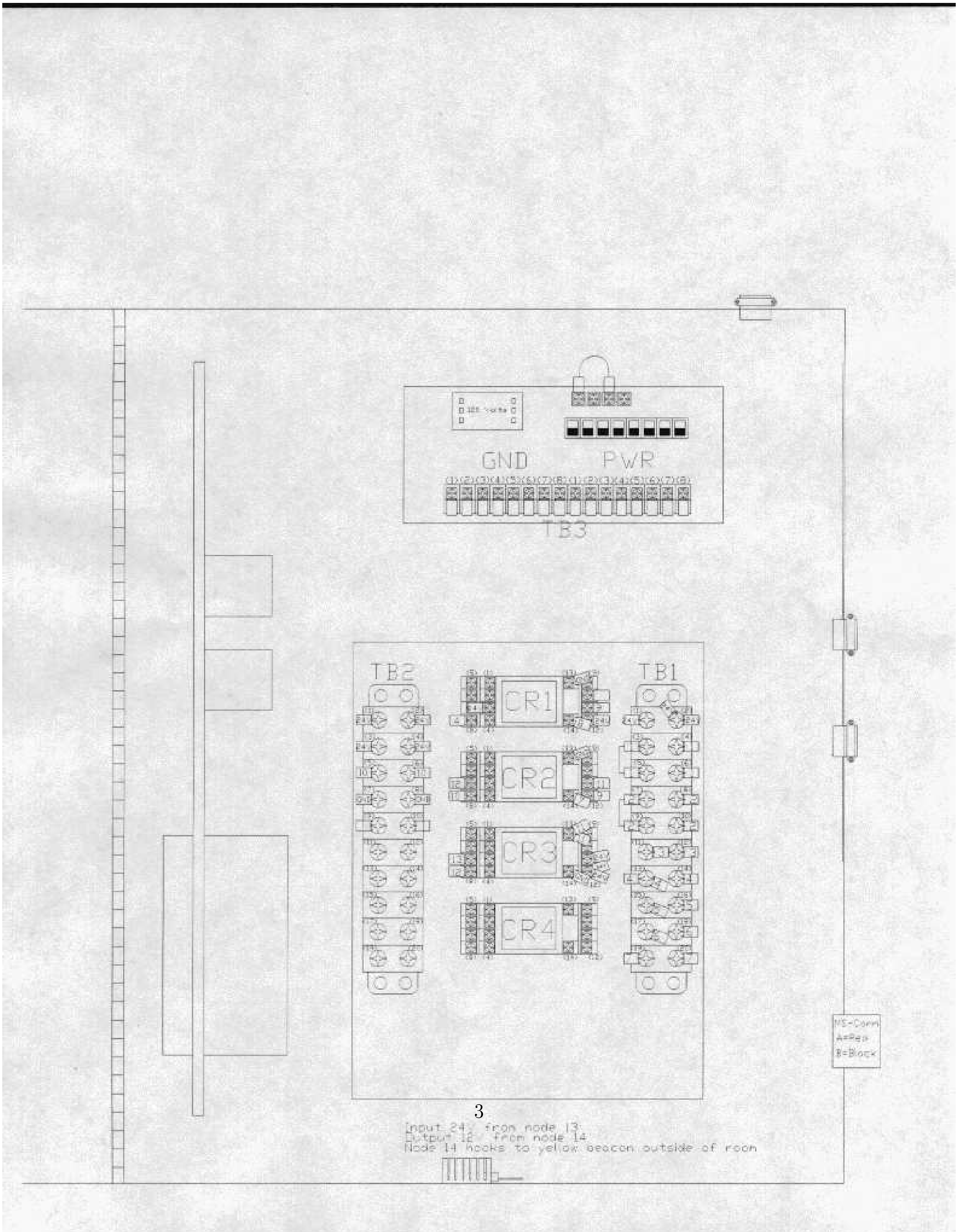
GND
PWR
TB3
TB2
TB1
CR1
CR2
CR3
CR4
Node 14 hooks to yellow beacon outside of room

Figure 2:

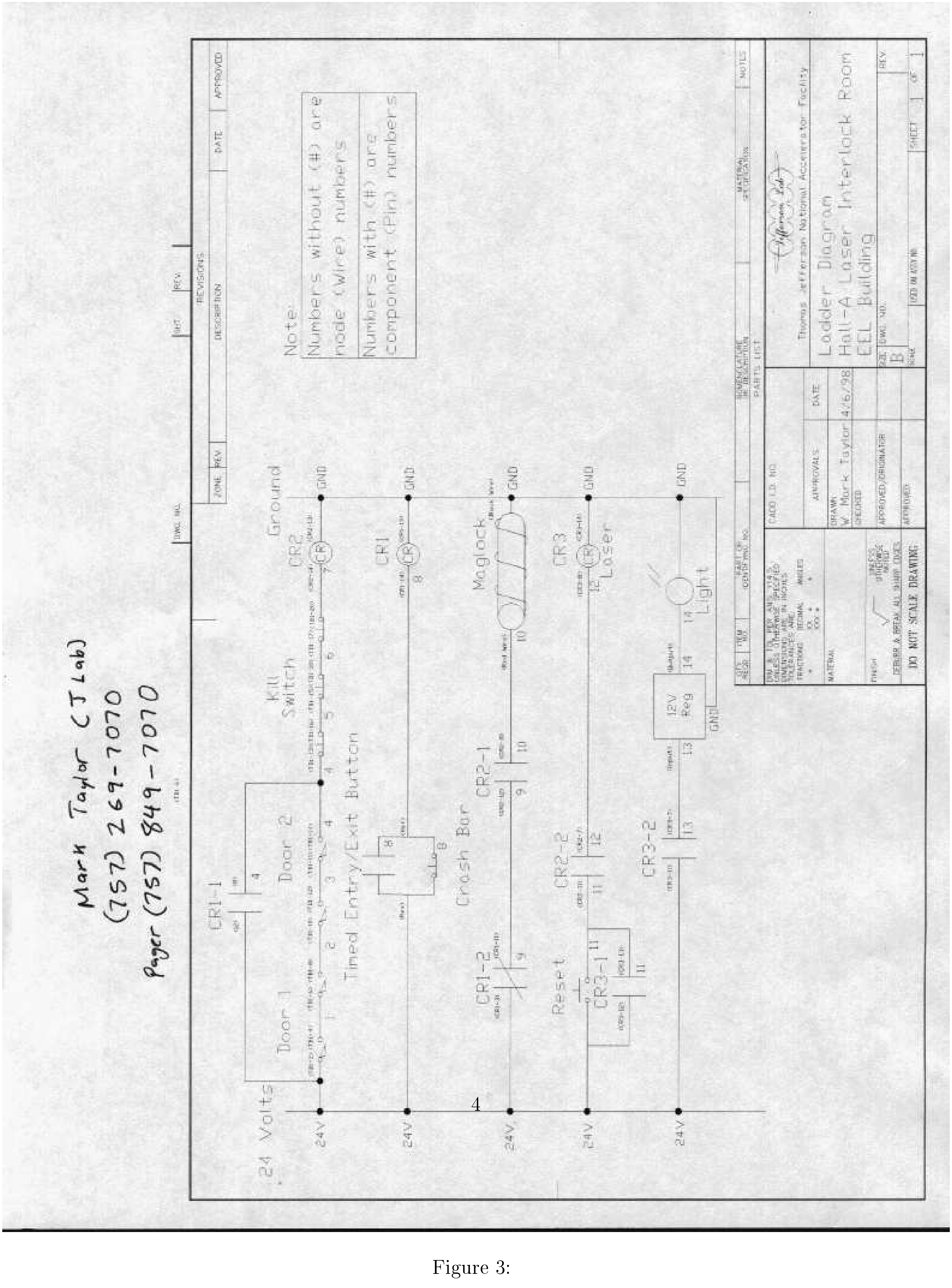
Mark Taylor (CT Lab)
(757) 269-7070
Pager (757) 849-7070
24 Volts
Ground
24V
GND
CR1-1
Door 1
Door 2
Kill Switch
CR2
CR1
Timed Entry/Exit Button
Crash Bar
CR1-2
CR2-1
Maglock
Reset
CR3-1
CR2-2
CR3
Laser
CR3-2
12V Reg
Light
Note:
Numbers without (#) are node (wire) numbers
Numbers with (#) are component (Pin) numbers
Thomas Jefferson National Accelerator Facility
Ladder Diagram
Hall-A Laser Interlock Room
EEL Building
W. Mark Taylor 4/6/98
DO NOT SCALE DRAWING

Figure 3:

Operating instructions for laser interlock system

To enable the laser the following steps should be taken

1) Make sure the safety interlock box is placed over the laser.
2) Put the key in the interlock position. (At this point red lamp should be lit)
3) Make sure the emergency reset button has not been pressed in.
4) Press the reset button on the front of the laser interlock box. (At this point the green Lamp should be lit).

To Kill power to the laser in an emergency kill situation

1) Press the emergency kill button on the front panel of the laser interlock system.(The red lamp should be lit).

To operate the laser in the bypass mode

1) Put the key in the bypass mode.
2) Make sure the emergency reset button has not been pressed in.
3) Press the reset button on the front of the laser interlock box. (At this point the green Lamp should be lit).

Figure 4: