



Electrical Solutions Corporation

2368 Eastman Ave, Suite 13, Ventura, CA 93003
Phone (805) 658-0848 ~ Fax (805) 658-0868

Greetings,

I have been asked to create a control drawing for a new relay-based Gate Controller.

Problem

The existing controller has only 2 photo eyes and no vehicle safety loop. The electrician wants to add a 3rd photo eye, but because there are no drawings of the existing gate control, he doesn't know where to connect the new photo eye.

Solution

- Examine gate control circuit.
- Because of the complexity of the circuit, it will be quicker and less expensive to design a new control panel than to troubleshoot the existing unit.

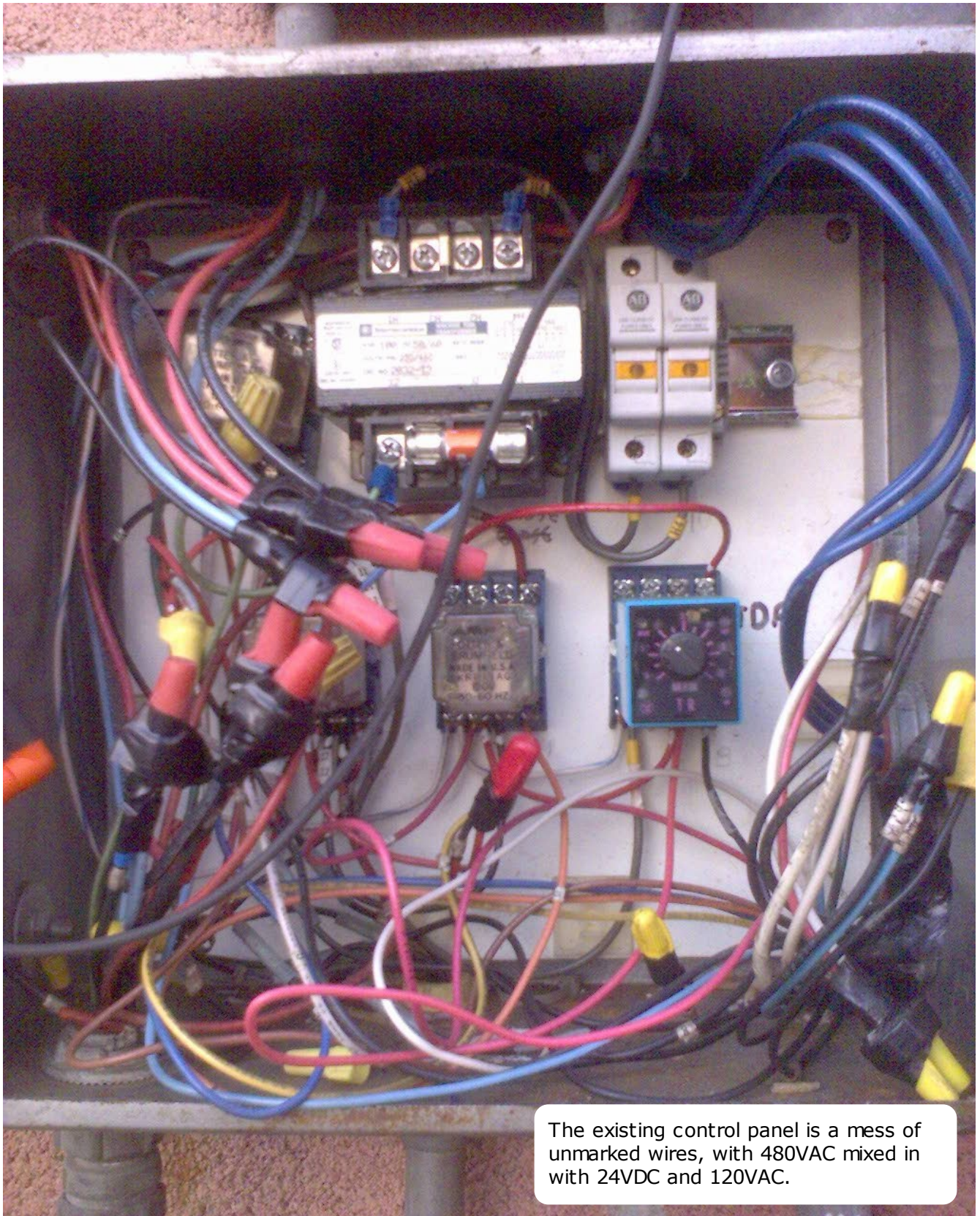
New Requirements

- The gate controller for rear gate should **interface** with the existing gate annunciation panel in the Control Room.
- When the call button from either the front or rear gate is pressed, a **buzzer** should sound in the Control Room, and a **pilot light** should light up indicating the gate where the caller is located.
- The buzzer should sound only while the call button is pressed, but the light should stay lit until the Open button in the Control Room is pressed.
- Whenever a car is detected near the **Open Loop**, the gate should automatically open. The gate should open until a **limit switch** is activated indicating that the gate is fully open.
- Once the car has cleared the Open Loop, a 2 minute timer will start. When the timer has timed out the gate will close until another limit switch indicates that the gate is fully closed..
- If the gate is closing and either (1) the loop detects a car, or (2) the **photo eyes** detect an obstruction, then the gate will immediately reverse until the open limit switch is once again activated.

Below, you will find my field notes prior to sending them to the designer for **final drafting**.

Sincerely,

Rick Hurdle
Electrical Solutions Corporation



The existing control panel is a mess of unmarked wires, with 480VAC mixed in with 24VDC and 120VAC.



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PREPARED BY

R. Hurdle

CHECKED BY

DATE

11/19/07

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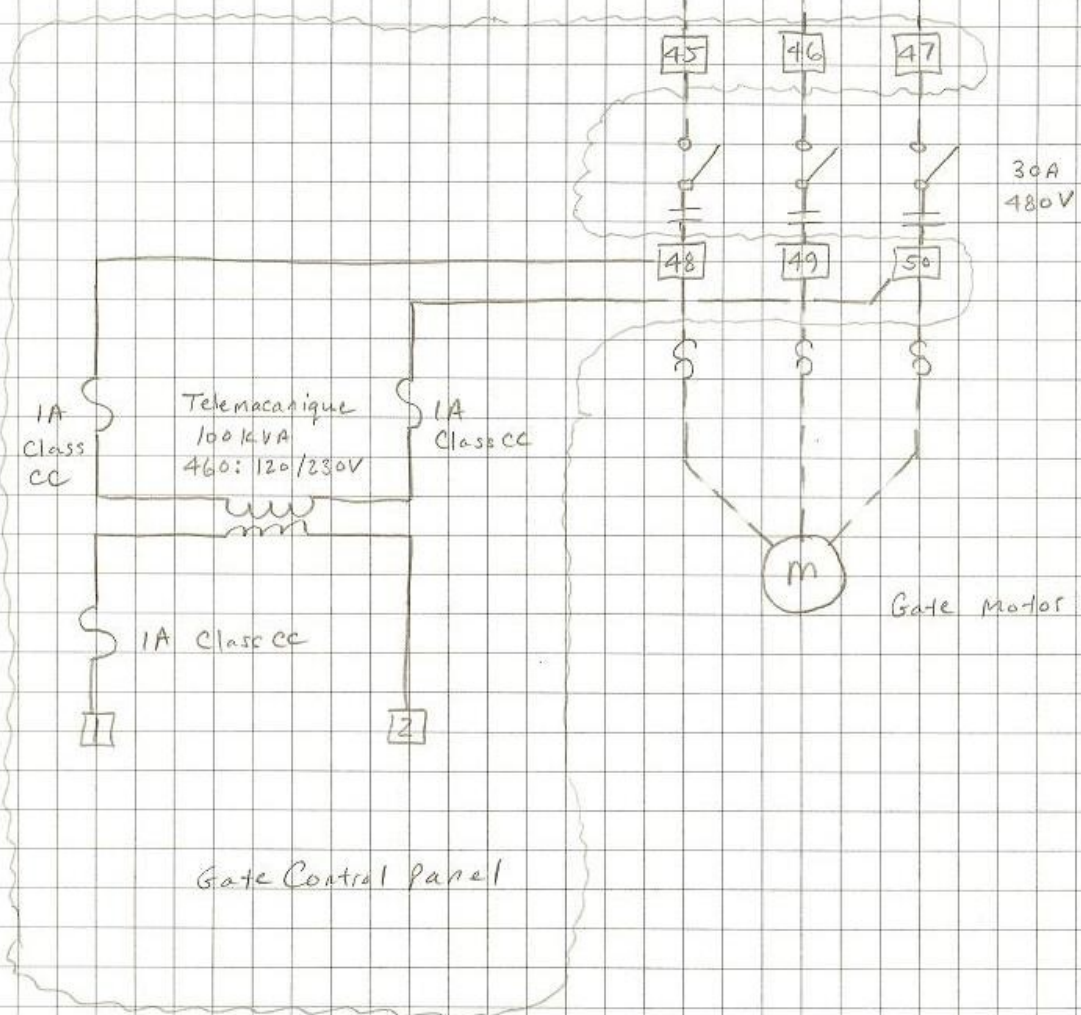
SUBJECT

West Gate Control - Power Flow

WO./AFE. NO.

Fed From Panel LPF
277/480VAC 3 ϕ
Ckt + 8, 10, 12

L1 L2 L3

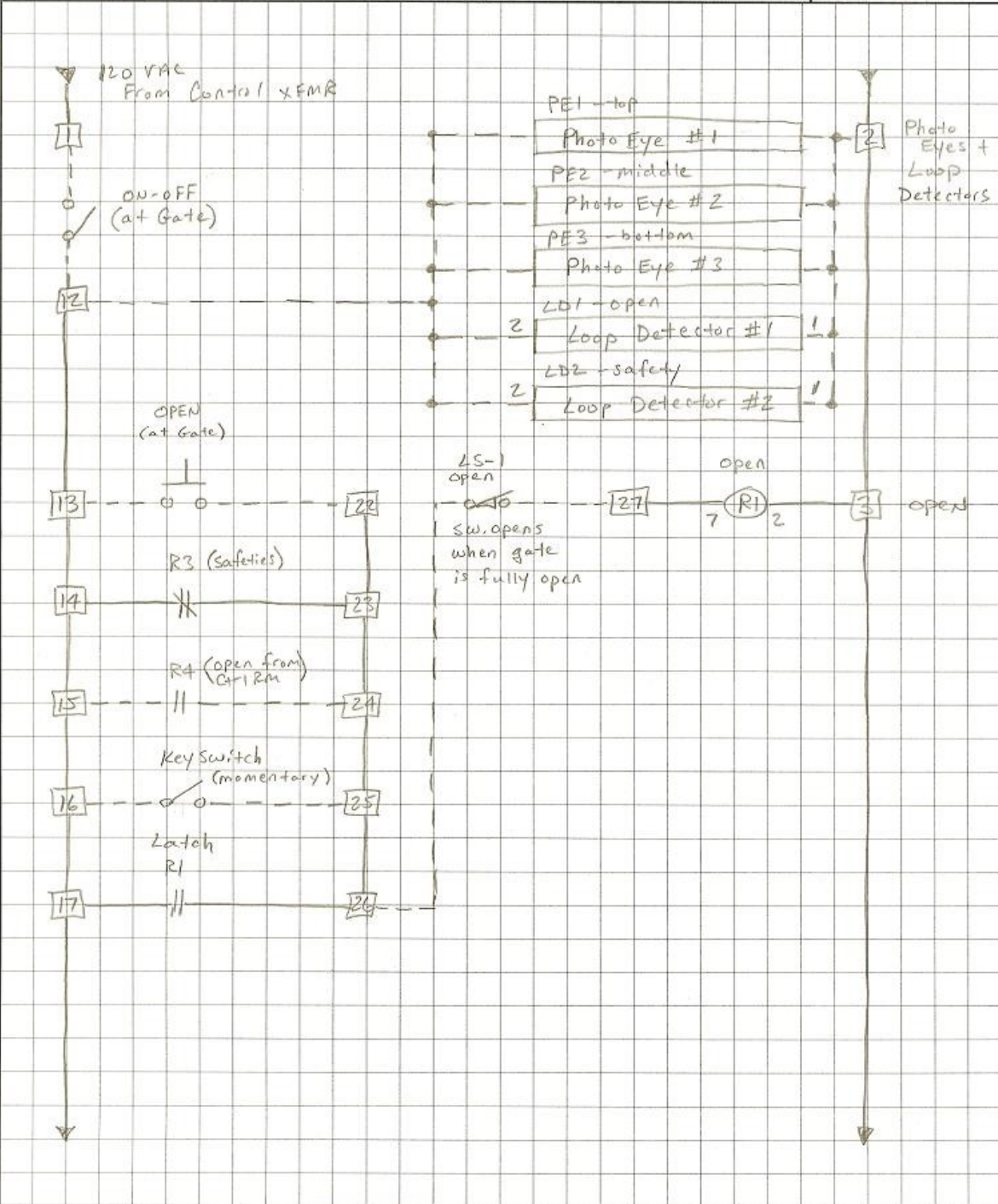




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SUBJECT: West Gate Control - Control Panel





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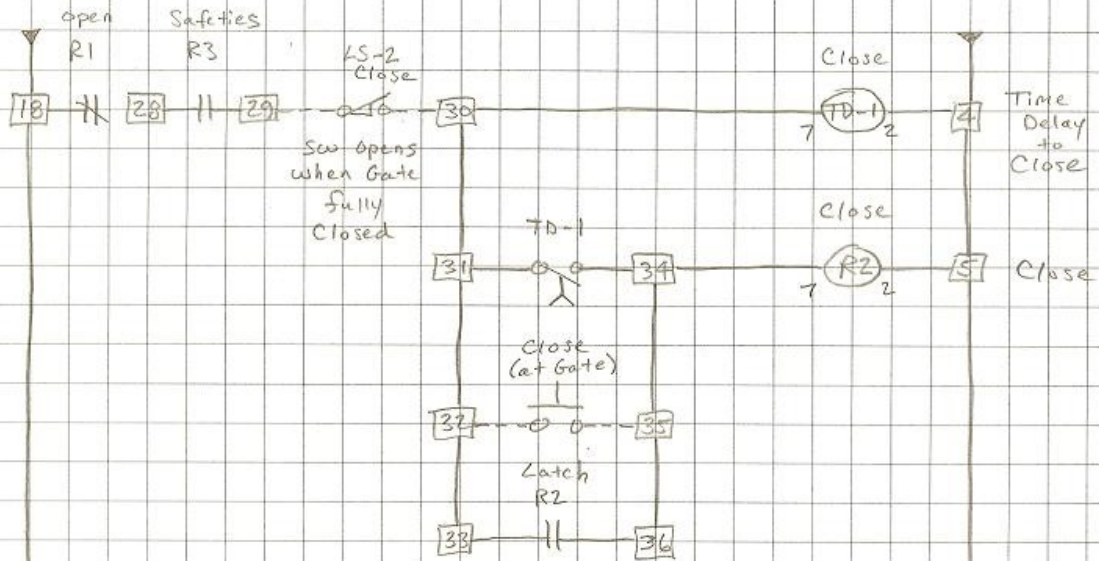
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SUBJECT

West Gate Control - Control Panel

W.O. / A.P.E. NO.





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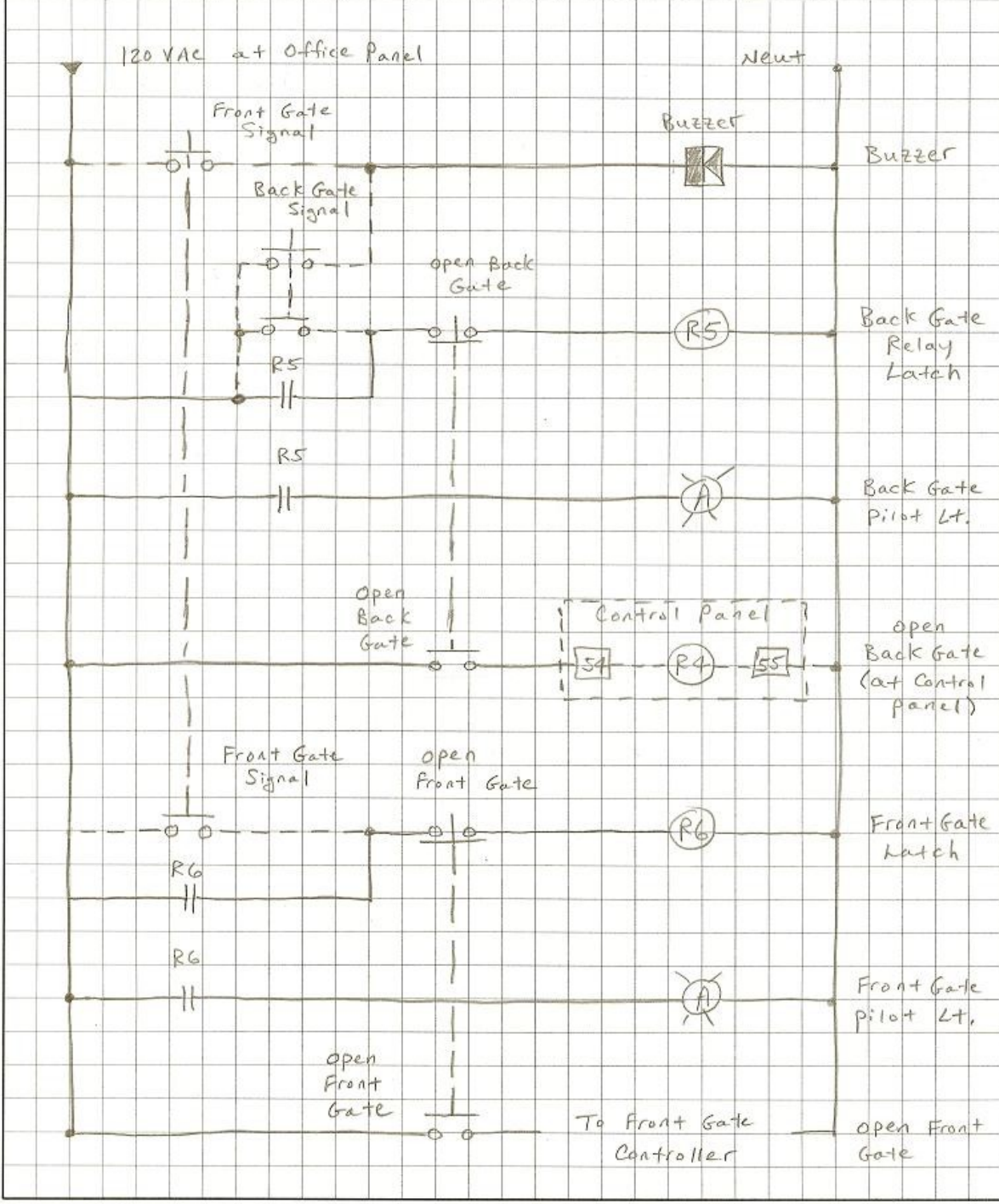
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SUBJECT: West Gate Control - Office Panel (exist)





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SUBJECT: West Gate Control - Term Block Layout

NC = Not Connected

TB Color



= Connected together

END Block

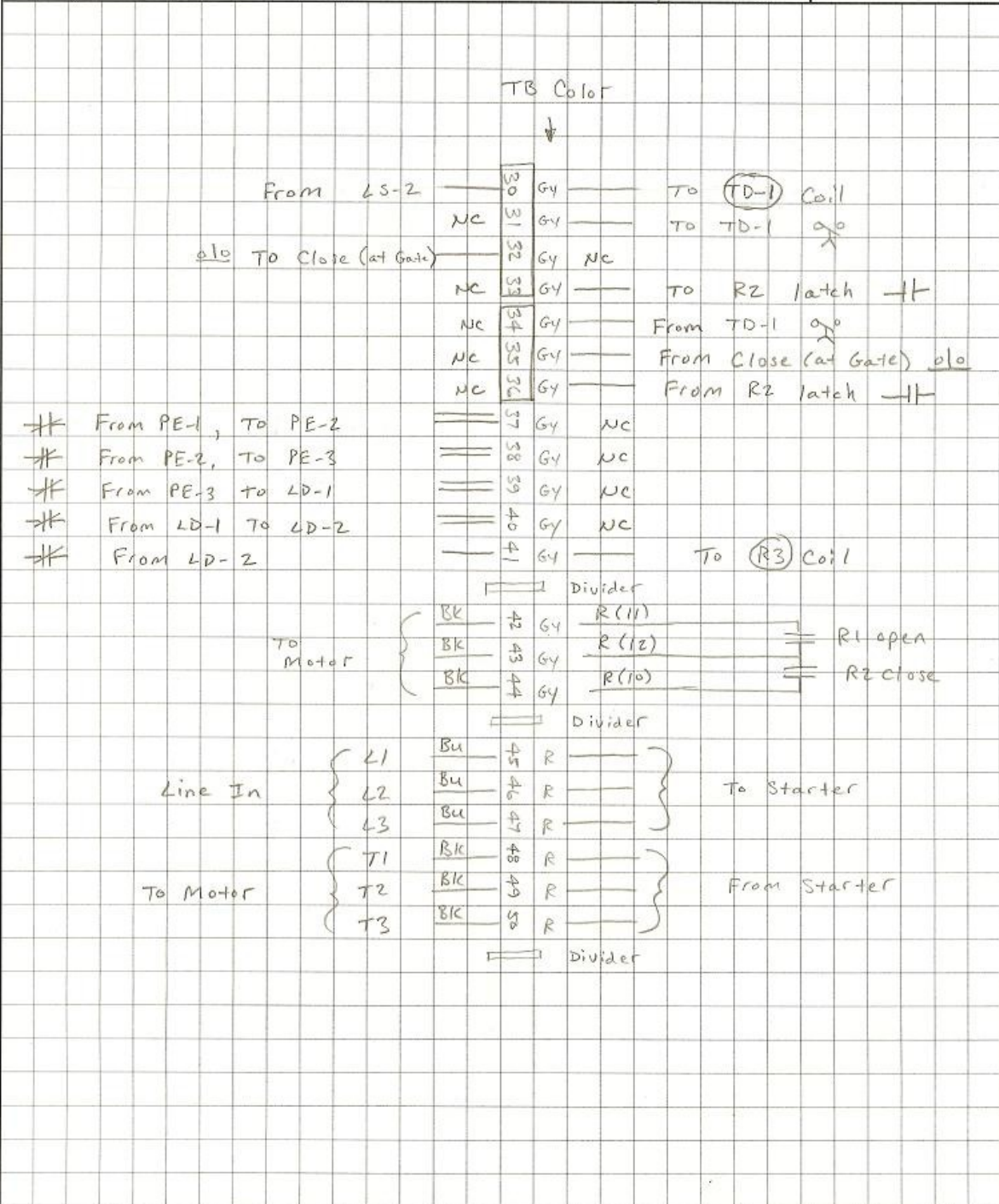
ON/OFF (at Gate)	1	BK	120 vac from xfmr fuse
Photo Eyes + Loop Det	2	w	Neutral from xfmr
NC	3	w	Neut to (R1) coil
NC	4	w	Neut to (TD-1) coil
NC	5	w	Neut to (R2) coil
NC	6	w	Neut to (R3) coil
Spare	7	w	spare
spare	8	w	spare
NC	6	Gn	To enclosure
spare	9	Gn	spare
spare	11	Gn	spare
To PE, LD, ON/OFF	12	BK	NC
$\frac{1}{0/0}$ To Open (at Gate)	13	BK	NC
NC	14	BK	To R3 ✗
$\frac{1}{H}$ To R4 (Cont Rm)	15	BK	NC
$\frac{0}{0}$ To Key Sw.	16	BK	NC
NC	17	BK	To R1 $\frac{1}{H}$
NC	18	BK	To R1 ✗
To PE-1 (Safety String)	19	BK	NC
spare	20	BK	spare
spare	21	BK	spare
To open (at Gate)	22	Gy	NC
NC	23	Gy	To R3
To R4 (Cont Room)	24	Gy	NC
To Key Sw.	25	Gy	NC
To LS-1	26	Gy	To R1 $\frac{1}{H}$
To LS-1	27	Gy	To (R1) coil
NC	28	Gy	From R1 ✗ To R3 $\frac{1}{H}$
To LS-2	29	Gy	From R3 $\frac{1}{H}$



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SUBJECT: West Gate Control - Term Block Layout





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SUBJECT: West Gate Controls - Term Block Layout

