TRICON Control Systems Inc
84-00 73rd. Ave., Unit F, Glendale, NY 11385
Phone: (718) 417-9455 Fax: (718) 417-9481

Documents index

Job data sheets
Job configuration sheets
Instructions

Prints

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Job data

General information

Company:	**Start**
Contact:	**Sean**
Job name:	**Woodrow Wilson Houses**
Job address:	**Woodrow Wilson Houses**
Car name:	**Car A**
P.O. Number	**EV0000009CFP01**
Car type:	**Group car w/dispatcher**
Delivery date:	**Finals**
Date prepared:	**February 28, 2003**
Tape length:	**250 Feet**
Car speed:	**350 fpm**
Car max. load:	**2500 pounds**
Comments:	

Building riser

Floor markings:	**L, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20**
Front openings:	**L, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20**
Rear openings:	**None**
Up hall calls:	**None**
Down hall calls:	**None**
Rear up hall calls:	**None**
Rear down hall calls:	**None**
Group up hall calls:	**L**
Group down hall calls:	**2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20**
Group rear up hall calls:	**None**
Group rear down hall calls:	**None**

Options

Hand held unit(s):	**1**
Cabinet model	**VVMG, 32x48x12**
Cabinet door opens to:	**Left**
Legs:	**Yes**
Car top box:	**No**
Pre-wired car station:	**No**

Signals

Car station

Car call pushbuttons:	**Switch, ack. lights, 110 VDC**
Car station pos. indicator:	**CE Microcom**
Fire light:	**110 VDC**
Fire buzzer:	**110 VDC**
Passing chime:	**Use fire buzzer**
Emergency battery:	**GAL (built-in light bulbs)**

Other car signals

Car lanterns:	**Lamps, gong, 110 VDC**
Car transom pos. indicator:	**CE Microcom**
Voice annunciator:	**None**

Hall signals

Hall call pushbuttons:	**Switch, ack. lights, 110 VDC**
Lobby pos. indicator:	**CE Microcom**
Pos. ind. In other floors:	**None**

Doors

Front door

Door type:	**Master door**
Door operator:	**GAL MOD-PM (perm. Magnet)**
Retiring cam:	**None**

Rear door

Door type:	**None**
Door operator:	**None**
Retiring cam:	**None**

Other

Safety edge interface:	**None**

Drive

Main line voltage and type:	**208V Three phase, 60Hz**
Drive type:	**Magnetek HPV 900**
Drive model:	**[290260] HPV900-2080-OE1**
Coupling model:	**None**

Hoist motor

Nominal current:	**84.5 amps**
Nominal voltage:	**208 volts**
RPM	**1200 rpm**

Brake

Brake control type:	**Garvac electronic**
Brake lift voltage:	**230 volts**
Brake hold voltage:	**160 volts**
Brake coil resistance:	**280 ohms**

Services

Fire service

Fire code:	**NY City**
Recall floor:	**L**
Smoke detectors:	**No**

Other services

Parking floor:	**L**

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Job configuration

Inputs and outputs

Car calls wiring

Floor	Name	Button	Ack. Light
1	Car call at L	CSTA-BO-1	CSTA-BO-26
2	Car call at 2	CSTA-BO-2	CSTA-BO-18
3	Car call at 3	CSTA-BO-3	CSTA-BO-28
4	Car call at 4	CSTA-BO-4	CSTA-BO-20
5	Car call at 5	CSTA-BO-5	CSTA-BO-30
6	Car call at 6	CSTA-BO-6	CSTA-BO-22
7	Car call at 7	CSTA-BO-7	CSTA-BO-32
8	Car call at 8	CSTA-BO-8	CSTA-BO-24
9	Car call at 9	CSTA-CO-1	CSTA-CO-26
10	Car call at 10	CSTA-CO-2	CSTA-CO-18
11	Car call at 11	CSTA-CO-3	CSTA-CO-28
12	Car call at 12	CSTA-CO-4	CSTA-CO-20
13	Car call at 13	CSTA-CO-5	CSTA-CO-30
14	Car call at 14	CSTA-CO-6	CSTA-CO-22
15	Car call at 15	CSTA-CO-7	CSTA-CO-32
16	Car call at 16	CSTA-CO-8	CSTA-CO-24
17	Car call at 17		
18	Car call at 18		
19	Car call at 19		
20	Car call at 20		

'Floor' refers to the floor number as shown in the setup tool.
In a group, some cars may not have any calls at some floors.

Group hall calls wiring

Floor	Name	Terminal
1	Up call at L	DHALL-BO-1
2	Down call at 2	DHALL-BO-2
3	Down call at 3	DHALL-BO-3
4	Down call at 4	DHALL-BO-4
5	Down call at 5	DHALL-BO-5
6	Down call at 6	DHALL-BO-6
7	Down call at 7	DHALL-BO-7
8	Down call at 8	DHALL-BO-8
9	Down call at 9	DHALL-CO-1
10	Down call at 10	DHALL-CO-2
11	Down call at 11	DHALL-CO-3
12	Down call at 12	DHALL-CO-4
13	Down call at 13	DHALL-CO-5
14	Down call at 14	DHALL-CO-6
15	Down call at 15	DHALL-CO-7
16	Down call at 16	DHALL-CO-8
17	Down call at 17	DHALL2-AO-1
18	Down call at 18	DHALL2-AO-2
19	Down call at 19	DHALL2-AO-3
20	Down call at 20	DHALL2-AO-4

Hall PI's wiring

Car parameters

Par#	Name	Value
61	Buzzer as pass. chime	Set to 'Yes'
95	Full field time	Set to zero
97	MG start time	Set to zero
98	MG ON time	Set to zero
99	MG Insp. ON time	Set to zero
108	Fire recall floor	Set to 1
109	Fire alt. recall floor	Set to 2
112	Const. press. close	Set to 'No'
138	Car is part of a group	Set to 'Yes'

Floor table

Floor	Name	OP	HU	HD	ROP	RHU	RHD	IF
1	L	Y						
2	2	Y						
3	3	Y						
4	4	Y						
5	5	Y						
6	6	Y						
7	7	Y						
8	8	Y						
9	9	Y						
10	10	Y						
11	11	Y						
12	12	Y						
13	13	Y						
14	14	Y						
15	15	Y						
16	16	Y						
17	17	Y						
18	18	Y						
19	19	Y						
20	20	Y						

Indicators setup

Floor	Name	Hall	Car top	Car station

PI board 1 setup								
Floor	Pos				UL	DL	RUL	RDL
1		0	0	0	Y			
2		0	0	0		Y		
3		0	0	0		Y		
4		0	0	0		Y		
5		0	0	0		Y		
6		0	0	0		Y		
7		0	0	0		Y		
8		0	0	0		Y		
9		0	0	0		Y		
10		0	0	0		Y		
11		0	0	0		Y		
12		0	0	0		Y		
13		0	0	0		Y		
14		0	0	0		Y		
15		0	0	0		Y		
16		0	0	0		Y		
17		0	0	0		Y		
18		0	0	0		Y		
19		0	0	0		Y		
20		0	0	0		Y		

Brake setup	
Electronic brake control unit	
Brake pick voltage	230
Brake hold voltage	160

1.1 The CTRL board.

Inputs		
Connector	**Name**	**Label**
A1-1	Controller inspection switch	**COINS**
A1-2	Controller inspection up button	**CIUB**
A1-3	Controller inspection down button	**CIDB**
A1-4	Doors disable switch	**DD**
A1-5	Relay sequence	**RSEQ**
A1-6	Drive fault	**DRF**
A1-7	Overloads	**OVL**
A1-8	Primary locks (swing door)	**PRL**
B1-1	Safety Line	**SAF**
B1-2	Gate	**GATE**
B1-3	Locks	**LOCKS**
B1-4	Gate & Locks	**GL**
B1-5	Up normal terminal	**UNT**
B1-6	Up slowdown limit	**USL**
B1-7	Down normal terminal	**DNT**
B1-8	Down slowdown limit	**DSL**
C1-1	Brake drop switch (Note 1)	**BDS**
C1-2	Up high speed limit	**HUSL**
C1-3		
C1-4		
C1-5		
C1-6	Down high speed limit	**HDSL**
C1-7	Car call buttons fuse (Note 1)	**CBF**
C1-8	Car call indicators fuse (Note 1)	**CAF**
Outputs		
Connector	**Name**	**Label**
A3-1, A3-2	Run up	**UP**
A2-1, A2-2	Run down	**DN**
A3-3, A3-4	Brake	**BK**
A2-3, A2-4	High speed	**HS**
A3-5, A3-6	Medium speed	**MS**
A2-5, A2-6	Door bypass	**DBYP**
A3-7, A3-8	Access top lock bypass	**ATLB**
A2-7, A2-8	Access bottom lock bypass	**ABLB**
B3-1, B3-2	Door open	**DO**
B2-1, B2-2	Rear door open	**RDO**
B3-3, B3-4	Door close	**DC**
B2-3, B2-4	Rear door close	**RDC**
B3-5, B3-6	Door nudging	**NUDG**
B2-5, B2-6	Rear door nudging	**RNUG**
B3-7, B3-8	Door cam	**CAM**
B2-7, B2-8	Drive reset	**DRES**
C3-1, C3-2	Pump or MG start	**STRT**
C2-1, C2-2	Pump or MG run	**RUN**
C3-3, C3-4	Brake lift	**BL**
C2-3, C2-4	Brake relevel	**BRL**
C3-5, C3-6	Full field	**FF**
C2-5, C2-6	Drive pattern enable	**PE**
C3-7, C3-8	Approach speed	**AS**
C2-7, C2-8	Leveling speed	**LS**

Note 1- Requires version 6.XX CPU software, used for remote mo nitoring faults

1.1 The CTOP board.

Inputs			
Terminals	**Connectors**	**Name**	**Label**
AF-1	**A1-1**	Governor	**GOV**
AF-2	**A1-2**	Top final	**TF**
AF-3	**A1-3**	Bottom final	**BF**
AF-4	**A1-4**	Oil buffer	**OB**
AF-5	**A1-5**	Compensation sheave switch	**CSH**
AF-6	**A1-6**	Pit stop switch	**PS**
AF-7	**A1-7**	Plank switch	**PLS**
AF-8	**A1-8**	Escape hatch	**EH**
BO-1	**B1-1**	Top of car stop switch	**TSSW**
BO-2	**B1-2**	Car Stop Switch	**SS2**
BO-3	**B1-3**	Door overload	**DOV**
BO-4	**B1-4**	Field loss	**FLOS**
BO-5	**B1-5**	AC overload	**ACOL**
BO-6	**B1-6**	DC Overload	**DCOL**
BO-7	**B1-7**	Open limit	**DOL**
BO-8	**B1-8**	Close limit	**DCL**
CO-1	**C1-1**	Top of car inspection switch	**TINS**
CO-2	**C1-2**	Top of car inspection up switch	**TIUB**
CO-3	**C1-3**	Top of car inspection down switch	**TIDB**
CO-4	**C1-4**	Leveling up	**LU**
CO-5	**C1-5**	Leveling down switch	**LD**
CO-6	**C1-6**	Door zone	**IDZ**
CO-7	**C1-7**	Step up	**US**
CO-8	**C1-8**	Step down	**DS**
Outputs			
Terminals	**Connectors**	**Name**	**Label**
AF-25, AF-26	**A3-1 to A3-2**	Not used	
AF-17, AF-18	**A2-1 to A2-2**	Not used	
AF-27, AF-28	**A3-3 to A3-4**	Not used	
AF-19, AF-20	**A2-3 to A2-4**	Not used	
AF-29, AF-30	**A3-5 to A3-6**	Not used	
AF-21, AF-22	**A2-5 to A2-6**	Not used	
AF-31, AF-32	**A3-7 to A3-8**	Not used	
AF-23, AF-24	**A2-7 to A2-8**	Not used	
BO-26	**B3-1 to B3-2**	Position indicator 1	**PO1**
BO-18	**B2-1 to B2-2**	Position indicator 2	**PO2**
BO-28	**B3-3 to B3-4**	Position indicator 3	**PO3**
BO-20	**B2-3 to B2-4**	Position indicator 4	**PO4**
BO-30	**B3-5 to B3-6**	Position indicator 5	**PO5**
BO-22	**B2-5 to B2-6**	Position indicator 6	**PO6**
BO-32	**B3-7 to B3-8**	Position indicator 7	**PO7**
BO-24	**B2-7 to B2-8**	Position indicator 8	**PO8**
CO-26	**C3-1 to C3-2**	Position indicator 9	**PO9**
CO-18	**C2-1 to C2-2**	Position indicator 10	**PO10**
CO-28	**C3-3 to C3-4**	Position indicator 11	**PO11**
CO-20	**C2-3 to C2-4**	Position indicator 12	**PO12**
CO-30	**C3-5 to C3-6**	Position indicator 13	**PO13**
CO-22	**C2-5 to C2-6**	Position indicator 14	**PO14**
CO-32	**C3-7 to C3-8**	Position indicator 15	**PO15**
CO-24	**C2-7 to C2-8**	Position indicator 16	**PO16**

1.1 The CSTA board.

Inputs			
Terminals	**Connectors**	**Name**	**Label**
AF-1	**A1-1**	Independent switch	**IND**
AF-2	**A1-2**	Fire car switch	**FCAR**
AF-3	**A1-3**	Fire hold switch	**FHLD**
AF-4	**A1-4**	Door open button	**DOB**
AF-5	**A1-5**	Door close button	**DCB**
AF-6	**A1-6**	Calls reset button	**RES**
AF-7	**A1-7**	Safety edge	**SAF**
AF-8	**A1-8**	Electric Eye	**EE**
BO-1	**B1-1**	Car call button 1	**CC1**
BO-2	**B1-2**	Car call button 2	**CC2**
BO-3	**B1-3**	Car call button 3	**CC3**
BO-4	**B1-4**	Car call button 4	**CC4**
BO-5	**B1-5**	Car call button 5	**CC5**
BO-6	**B1-6**	Car call button 6	**CC6**
BO-7	**B1-7**	Car call button 7	**CC7**
BO-8	**B1-8**	Car call button 8	**CC8**
CO-1	**C1-1**	Car call button 9	**CC9**
CO-2	**C1-2**	Car call button 10	**CC10**
CO-3	**C1-3**	Car call button 11	**CC11**
CO-4	**C1-4**	Car call button 12	**CC12**
CO-5	**C1-5**	Car call button 13	**CC13**
CO-6	**C1-6**	Car call button 14	**CC14**
CO-7	**C1-7**	Car call button 15	**CC15**
CO-8	**C1-8**	Car call button 16	**CC16**
Outputs			
Terminals	**Connectors**	**Name**	**Label**
AF-25, AF-26	**A3-1 to A3-2**	Up direction arrow	**UDA**
AF-17, AF-18	**A2-1 to A2-2**	Car lantern up	**CLU**
AF-27, AF-28	**A3-3 to A3-4**	Down direction arrow	**DDA**
AF-19, AF-20	**A2-3 to A2-4**	Car lantern down	**CLD**
AF-29, AF-30	**A3-5 to A3-6**	Stop switch bypass	**SBYP**
AF-21, AF-22	**A2-5 to A2-6**	Buzzer (fire, attendant, handicap, etc)	**BUZ**
AF-31, AF-32	**A3-7 to A3-8**	Fire light	**FLT**
AF-23, AF-24	**A2-7 to A2-8**		
BO-26	**B3-1 to B3-2**	Car call ack. light 1	**CCA1**
BO-18	**B2-1 to B2-2**	Car call ack. light 2	**CCA2**
BO-28	**B3-3 to B3-4**	Car call ack. light 3	**CCA3**
BO-20	**B2-3 to B2-4**	Car call ack. light 4	**CCA4**
BO-30	**B3-5 to B3-6**	Car call ack. light 5	**CCA5**
BO-22	**B2-5 to B2-6**	Car call ack. light 6	**CCA6**
BO-32	**B3-7 to B3-8**	Car call ack. light 7	**CCA7**
BO-24	**B2-7 to B2-8**	Car call ack. light 8	**CCA8**
CO-26	**C3-1 to C3-2**	Car call ack. light 9	**CCA1**
CO-18	**C2-1 to C2-2**	Car call ack. light 10	**CCA2**
CO-28	**C3-3 to C3-4**	Car call ack. light 11	**CCA3**
CO-20	**C2-3 to C2-4**	Car call ack. light 12	**CCA4**
CO-30	**C3-5 to C3-6**	Car call ack. light 13	**CCA5**
CO-22	**C2-5 to C2-6**	Car call ack. light 14	**CCA6**
CO-32	**C3-7 to C3-8**	Car call ack. light 15	**CCA7**
CO-24	**C2-7 to C2-8**	Car call ack. light 16	**CCA8**

1. Dispatcher hall calls 1 to 16 and fire inputs (DHALL)

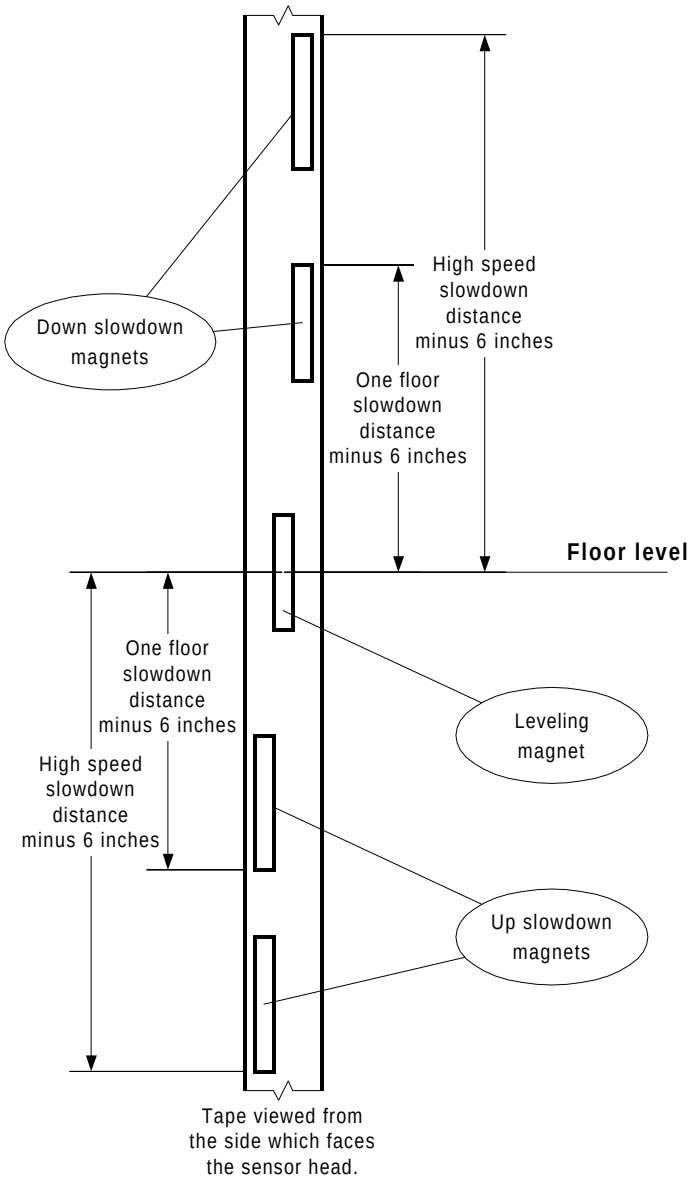
Inputs

Terminals	Connectors	Name	Label
AO-1	A1-1	Fire recall switch	FIRE
AO-2	A1-2	Fire smoke detectors bypass switch	FBYP
AO-3	A1-3	Smoke detectors	SMOK
AO-4	A1-4	Lobby smoke detector(s)	LSMK
AO-5	A1-5	Lobby MG stop switch	LMG
AO-6	A1-6	Lobby button fuse (Note 1)	HLF
AO-7	A1-7	Hall call button fuse (Note 1)	HBF
AO-8	A1-8	Hall call acknowledge fuse (Note 1)	HAF
BO-1	B1-1	Hall call button 1	H1
BO-2	B1-2	Hall call button 2	H2
BO-3	B1-3	Hall call button 3	H3
BO-4	B1-4	Hall call button 4	H4
BO-5	B1-5	Hall call button 5	H5
BO-6	B1-6	Hall call button 6	H6
BO-7	B1-7	Hall call button 7	H7
BO-8	B1-8	Hall call button 8	H8
CO-1	C1-1	Hall call button 9	H9
CO-2	C1-2	Hall call button 10	H10
CO-3	C1-3	Hall call button 11	H11
CO-4	C1-4	Hall call button 12	H12
CO-5	C1-5	Hall call button 13	H13
CO-6	C1-6	Hall call button 14	H14
CO-7	C1-7	Hall call button 15	H15
CO-8	C1-8	Hall call button 16	H16

Hall board outputs

Terminals	Connectors	Name	Label
AO-26	A3-1, A3-2		
AO-18	A2-1, A2-2		
AO-28	A3-3, A3-4		
AO-20	A2-3, A2-4		
AO-30	A3-5, A3-6		
AO-22	A2-5, A2-6		
AO-32	A3-7, A3-8		
AO-24	A2-7, A2-8		
BO-1	B3-1, B3-2	Hall call acknowledge light 1	H1
BO-2	B2-1, B2-2	Hall call acknowledge light 2	HA2
BO-3	B3-3, B3-4	Hall call acknowledge light 3	HA3
BO-4	B2-3, B2-4	Hall call acknowledge light 4	HA4
BO-5	B3-5, B3-6	Hall call acknowledge light 5	HA5
BO-6	B2-5, B2-6	Hall call acknowledge light 6	HA6
BO-7	B3-7, B3-8	Hall call acknowledge light 7	HA7
BO-8	B2-7, B2-8	Hall call acknowledge light 8	HA8
CO-1	C3-1, C3-2	Hall call acknowledge light 9	HA9
CO-2	C2-1, C2-2	Hall call acknowledge light 10	HA10
CO-3	C3-3, C3-4	Hall call acknowledge light 11	HA11
CO-4	C2-3, C2-4	Hall call acknowledge light 12	HA12
CO-5	C3-5, C3-6	Hall call acknowledge light 13	HA13
CO-6	C2-5, C2-6	Hall call acknowledge light 14	HA14
CO-7	C3-7, C3-8	Hall call acknowledge light 15	HA15
CO-8	C2-7, C2-8	Hall call acknowledge light 16	HA16

Note 1- Requires version 6.XX CPU software, used for remote monitoring faults



This instructions apply to jobs requiring high speed operation and having only one door operator.

1. One floor slowdown distance calculation:
   This distance will be determined by the height of the shortest floor in the building, it should be the the shortest floor distance divided by 2.5 .

2. High speed slowdown distance.
   This distance will be equal to the top speed of the car divided 50 (in feet).

All magnets are NOTH POLE type.

This values are recommended starting values and may have to be adjusted depending on the job conditions.
A sluggish or under-powered machine may require longer slowdown distances.

Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename: C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Doc_Tape.vsd

Drawn: Drawn: 1-14-98 rja

High speed
no rear door

Tape magnets installation

REV
A

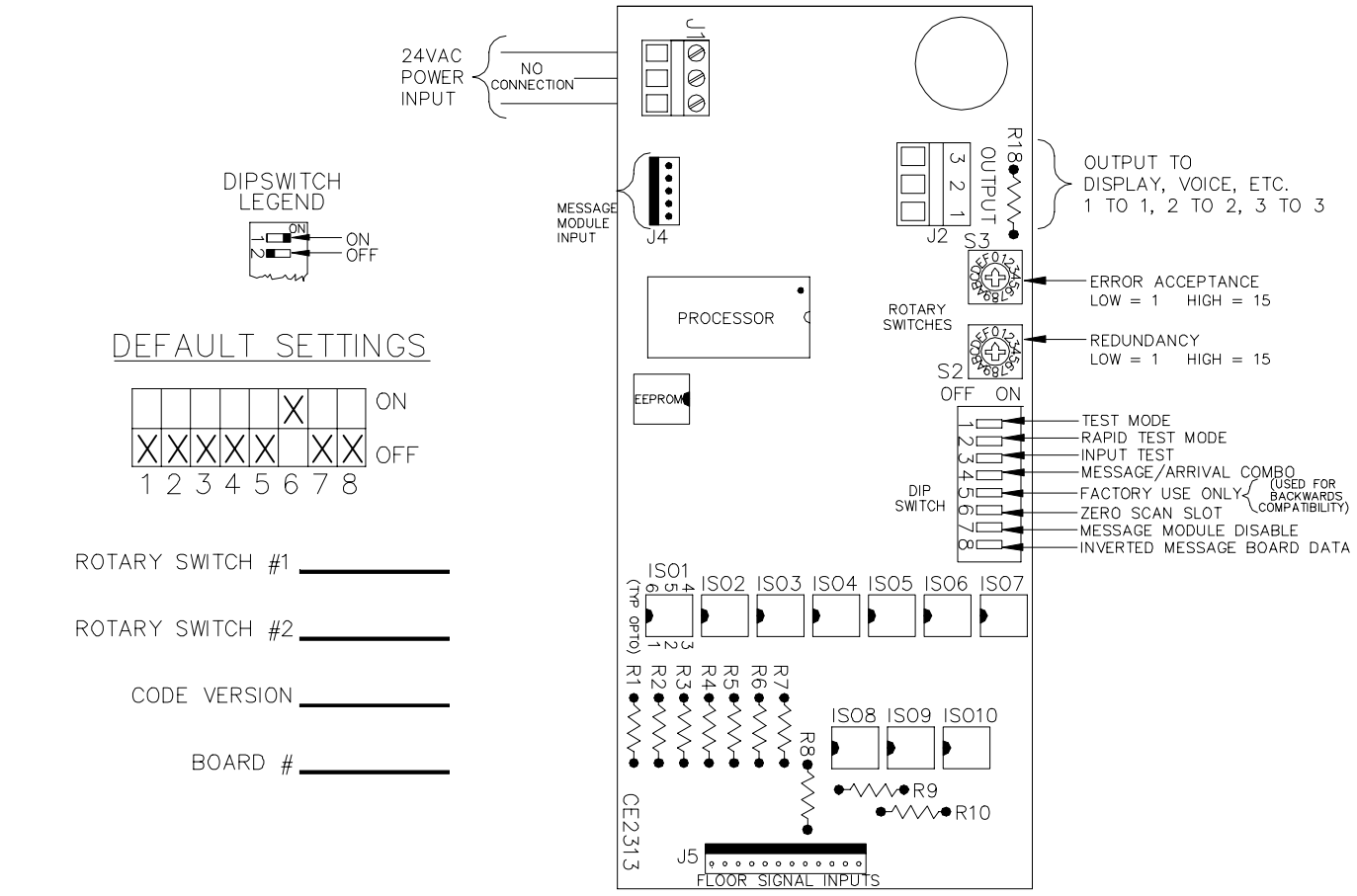
Car Parameters list (V5)

Num	Description	Default	Units
1	Set nudging to: Off, Close, stop, reopen	0	Enum
2	Door nudging time	20	sec
3	Front door reopen time	20	1/10 sec
4	Front door short door time	30	1/10 sec
5	Maximum time doors will remain open due to a car call only.	100	1/10 sec
6	Front door hall call minimum time	50	1/10 sec
7	Maximum time the doors will stay fully opened due to a hall or a combination hall and car call.	100	1/10 sec
8	Front door retry count	3	Ea.
9	Door retry time	60	sec
10	Enable door preopening in the outer door zone when slowing	0	Yes/No
11	The front door will start to open when the car reaches the inner door zone	0	Yes/No
12	This door is a swing type door	0	Yes/No
13	Door is of the manual type, such as scissor gates.	0	Yes/No
14	Door flag 2	0	Yes/No
15	Door parameter 1	0	Ea.
16	Door parameter 2	0	Ea.
17	Front door operator open protective time.	140	1/10 sec
18	Front door operator close protective time	140	1/10 sec
19	Front door lock timeout time	30	1/10 sec
20	Door operator flag 1	0	Yes/No
21	Front door operator open output is always ON	0	Yes/No
22	The close output will always drop out when the close limit is open.	0	Yes/No
23	The door operator does not have a close limit	0	Yes/No
24	Test gate and locks while closing door	0	Yes/No
25	Door operator flag 3	0	Yes/No
26	Cam drop time	0	1/10 sec
27	Hold the close and/or the open relay after the limits have open.	0	1/10 sec
28	Rear door reopen time	5	1/10 sec
29	Rear door short door time	30	1/10 sec
30	Maximum time doors will remain open due to a car call only.	100	1/10 sec
31	Rear door hall call minimum time	50	1/10 sec
32	Rear door hall call maximum time	100	1/10 sec
33	Door retry count	5	Ea.
34	Rear door retry time	60	sec
35	Enable door preopening in the outer door zone when slowing	0	Yes/No
36	The rear door will start to open when the car reaches the inner door zone	0	Yes/No
37	Rear door is of the swing type, manual hall door.	0	Yes/No
38	Rear door is manual	0	Yes/No
39	Rear door flag 2	0	Yes/No
40	Rear door nudging mode	0	Ea.
41	Rear door nudging time	20	Ea.
42	Rear door open T.O. time	150	1/10 sec
43	Rear door close T.O. time	150	1/10 sec
44	Rear door lock T.O. time	30	1/10 sec
45	Rear door operator flag 1	0	Yes/No
46	Rear door operator open out on	0	Yes/No
47	The rear door close output will always drop out when the close limit is open	0	Yes/No
48	The rear door operator does not have a close limit	0	Yes/No
49	Test gate and locks while closing door	0	Yes/No
50	Rear door operator flag 3	0	Yes/No

Num	Description	Default	Units
51	Rear door operator cam drop time	0	1/10 sec
52	Hold the close and/or the open relay after the limits have open.	0	1/10 sec
53	The car has car lanterns	1	Yes/No
54	The hall pos. ind. outputs dir. arrows.	0	Yes/No
55	Flash PI when on nudging	0	Yes/No
56	Pulse buzzer when on nudging	0	Yes/No
57	Flash and pulse rate on nudging	10	1/10 sec
58	The PI will be turned OFF when this time expires after the car stopped with no calls	0	sec
59	Time the lantern output will stay ON and OFF.	10	1/10 sec
60	Passing chime ON time.	4	1/10 sec
61	The buzzer is used as passing chime.	0	Yes/No
62	The passing chime will always operate in automatic service.	1	Yes/No
63	Run timeout time	20	sec
64	Minimum time to wait before re-starting.	0	1/10 sec
65	Maximum time allowed during slowdown.	20	sec
66	Time it takes to fully stop from maximum speed	50	1/10 sec
67	If the car does not achieve stable leveled condition in this time, abort releveling altogether.	15	sec
68	Releveling timeout	15	sec
69	A car level for this time is considered level	30	1/10 sec
70	When set, the motor field goes into weakening after the field weaken timer has elapsed.	1	Yes/No
71	If the car stops between floors, it will re-start in approach speed	1	Yes/No
72	Drive flag 8	0	Yes/No
73	Drive max. consecutive faults	5	Ea.
74	Conecutive faults interval.	120	sec
75	How many times the drive will try to reset before giving up.	5	Ea.
76	Time between brake dropped and run relays drop	0	1/10 sec
77	Time to hold the drive running after the brake is dropped	10	1/10 sec
78	Delay to start relevel.	0	1/10 sec
79	Drive reset line ON time.	35	1/10 sec
80	Drive reset OFF time	40	1/10 sec
81	Time to delay the brake lift	0	1/10 sec
82	Defines for how long the brake lift voltage will be applied.	35	1/10 sec
83	How long the brake will hold after the car reached the full leveled position	0	1/10 sec
84	Brake lift delay in inspection	0	1/10 sec
85	Brake drop delay in inspection	0	1/10 sec
86	Brake lift delay when releveling	0	1/10 sec
87	Brake drop delay during releveling	0	1/10 sec
88	The brake has a contact that open when the brake is lifted.	0	Yes/No
89	The brake has a separate relevel setting	0	Yes/No
90	Brake flag 1	0	Yes/No
91	Brake parameter 1	0	Ea.
92	Speed at which the field weakens.	1000	fpm
93	Time to apply full field before dropping to run field strength	25	1/10 sec
94	Time the field is held high after the car stops	25	1/10 sec
95	Time it takes to establish full field	0	1/10 sec
96	Maximum time to drop all contactors	10	1/10 sec
97	MG start time	35	1/10 sec
98	MG shut down time.	6	min
99	MG shut down time.	6	min
100	Hydraulic pump hold time	20	1/10 sec
101	Start the MG set as soon as a direction is established.	0	Yes/No

Num	Description	Default	Units
102	Pattern start delay	0	1/10 sec
103	Pattern relevel start delay	0	1/10 sec
104	Set leveling speed with LU or LD	1	Yes/No
105	Set leveling speed when reaching outer door zone.	0	Yes/No
106	Pattern start delay on inspection	0	1/10 sec
107	No vanes at top and bottom floors	0	Yes/No
108	Fire recall floor	2	Floor
109	Alternate fire recall floor	3	Floor
110	Smoke detector latches are reset by the lobby fire recall switch.	0	Yes/No
111	Constant pressure on open button to open doors during Fire operation	1	Yes/No
112	Close the doors only by holding the door close button	0	Yes/No
113	Do not auto recall while in attendant or independent	0	Yes/No
114	Fire recall wait time	250	1/10 sec
115	Close doors with nudging speed during fire recall.	0	Yes/No
116	The fire light blinks	0	Yes/No
117	The fire buzzer output	0	Yes/No
118	Fire buzzer pulse rate	10	1/10 sec
119	Fire parameter 1	0	Ea.
120	Fire parameter 2	0	Ea.
121	Open rear door on the recall floor	0	Yes/No
122	Open the rear door instead ogf the front door on fire Phase I recall	0	Yes/No
123	The electric eye will reopen doors on independent.	0	Yes/No
124	Allow the doors to close when no calls registered.	0	Yes/No
125	Canadian code operations	0	Yes/No
126	Rope gripper	0	Enum
127	When in car inspection, open doors if leveled at a floor	0	Yes/No
128	If set, use only two access limit switches	0	Yes/No
129	The car does not have a top of car inspection switch	0	Yes/No
130	The car does not have an in-car inspection switch	1	Yes/No
131	The car station does not have a switch to turn on the access operation	1	Yes/No
132	When in inspection, set bith APPR and LEV speeds.	0	Yes/No
133	Inspection flag 1	0	Yes/No
134	Inspection flag 2	0	Yes/No
135	Hold the car's direction when stopping and opening doors	0	Yes/No
136	When this flag is set, doors will not reopen due to calls at the floor.	0	Yes/No
137	The car has a local hall call riser	0	Yes/No
138	This car is part of a group	0	Yes/No
139	Out of service time.	90	sec
140	Time to wait before starting to move while stopped between floors	15	sec
141	Parking floor	0	Floor
142	Time to wait before moving a car to a zone floor	60	sec
143	Leave the front door open when no demand	0	Yes/No
144	Leave front door open	0	Yes/No
145	If no calls away and hall call in the opposite direction, reverse direction without closing doors.	0	Yes/No
146	Car drops car calls behind when reverses direction	0	Yes/No
147	Anti-nuisance count	0	Ea.
148	Time the slowdown will be delayed after the slowdown magnet was reached.	0	1/100 sec
149	Time the low speed slowdown will be delayed after the slowdown magnet was reached.	0	1/100 sec

JOB# _____



DIPSWITCH LEGEND

DEFAULT SETTINGS

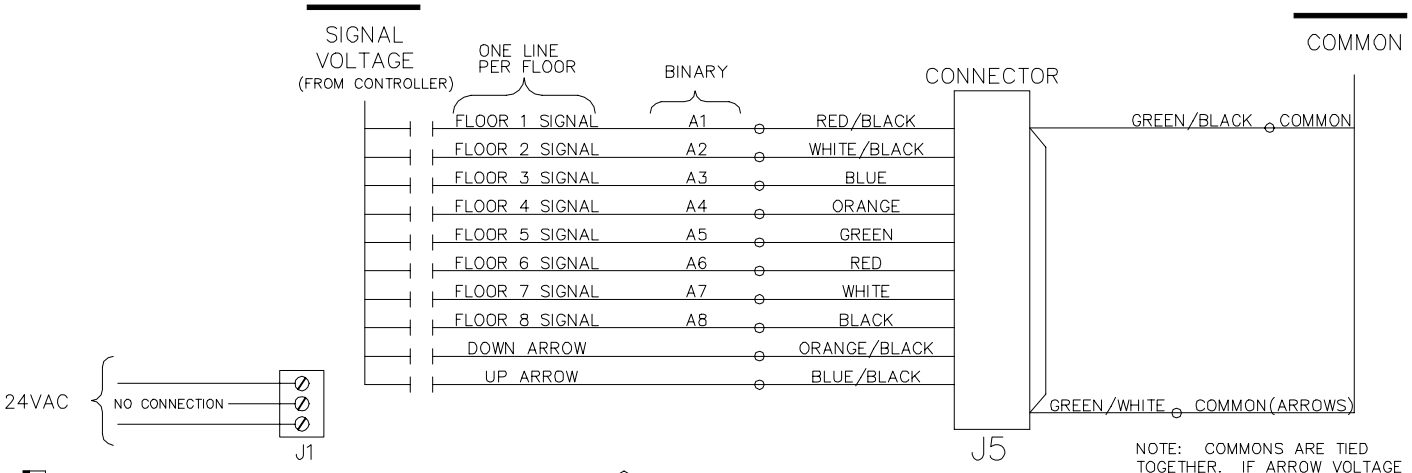
1	2	3	4	5	6	7	8	
					X			ON
X	X	X	X	X		X	X	OFF

ROTARY SWITCH #1 _____

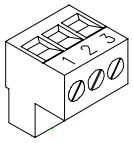
ROTARY SWITCH #2 _____

CODE VERSION _____

BOARD # _____



WIRES ENTER FROM THIS SIDE ON ALL MTA STYLE CONNECTORS.



TYPICAL REMOTE DISPLAY INPUT TERMINAL CONNECTS ONLY TO MCCU2, J3, OR SHXXX SERIES, J2.

NOTE: COMMONS ARE TIED TOGETHER. IF ARROW VOLTAGE IS DIFFERENT THAN FLOOR SIGNAL VOLTAGE, COMMONS MAY BE SEPARATED. PLEASE CONTACT FACTORY.

TYPICAL REMOTE DISPLAY CHIME PORT CONNECT TO C.E. PART #MPCB-1 ONLY.

NOTE: IF BINARY, CHART ON BACK

DATE DRAWN: 08/30/96	DRAWN BY: K.L.S.	REQUESTED BY: M.W., D.R.	C.E. ELECTRONICS, INC. 614 East Edgerton Street Bryan, Ohio 43506 (419) 636-6705
BOARD NUMBER: 2313	PRODUCT ENGLAND CCU	DWG REV #: 0	
APPROVED BY:			DWG. NO. CE2313

The driver can be programmed from the hand held unit to display any of the characters in the list below.

Select the character(s) to display at a floor and enter the right column value into the indicator setup entry for that floor.

For simplex controllers, use the hall position indicator, for group cars use the car top position indicator.

Character to display	Value to enter
'blank'	0
1 to 32	1 to 32
B	33
B1	34
B2	35
B3	36
L	37
PH	38
M	39
P1	40
P2	41
C	42
MZ	43
X	44
EX	45
XX	46
LL	47
L1	48
L2	49
G	50
GR	51
R	52
SB	53
GF	54
P3	55
1R	56
G1	57
G2	58
G3	59

Magnetek HPV 900 AC Vector Drive / Elon 1000 Quick Start Up Reference Guide

The Magnetek HPV 900 drive is an AC Vector drive. In order to obtain optimal ride quality and performance, the drive must be tuned to the motor to which it is connected. The tuning process is not a very complicated one, but it does require that you are familiar with the drive and AC motors. If you have never worked on this drive, or another AC Vector drive, please contact O. Thompson Co. for assistance.

The following is a quick start up and adjustment procedure for the Magnetek HPV 900 drive. It is written to be a supplement to the Magnetek HPV 900 Vector Elevator Drive Technical Manual. Refer to the Magnetek HPV 900 Vector Elevator Drive Technical Manual for a detailed explanation of the drive features. The HPV 900 drive is a fully digital drive with configurable inputs, outputs and modes of operation. This supplement will describe the interface and configuration between an Elon 1000 and a HPV 900. Unfortunately, due to the complexity of any drive system, it is not possible to cover all potential problems or possibilities. If you encounter any difficulties, please contact O. Thompson Technical Support at (718) 417-3131.

Before the controller and drive were shipped, the entire system was tested and run at O. Thompson's factory. The drive ran a motor, and conformed to O. Thompson's specifications before it was shipped. All drive parameters were then preset based on the information provided in the controller order form. The drive should run on inspection operation with very little effort. If not, verify that the information given to O. Thompson on the motor is correct. If not, contact O. Thompson Technical Support for assistance.

SYSTEM OVERVIEW

The Elon 1000 uses a multi-step reference to the HPV 900 drive. The controller turns on various speeds and the drive ramps the motor up or down to the desired speed. Adjustments to the jerk rates, acceleration rate, and deceleration rate are done through modifying the appropriate drive parameter. The s curve adjustments are described below.

PARAMETERS

The following parameters are the HPV900 key parameters and parameters that have been changed from the drive default settings. Refer to the HPV 900 manual for the full parameter description.

CONFIGURE CO
USER SWITCHES C1

SPD COMMAND SRC---- multi-step

CONT CONFIRM SRC---- External Tb1

CONFIGURE CO
LOGIC INPUTS C2

LOG IN 1 TB1-1 ---- Drive Enable (Default)

LOG IN 2 TB1-2 ---- Run (Default)

LOG IN 3 TB1-3 ---- Fault Reset (Default)

LOG IN 4 TB1-4 ---- STEP REF B0

LOG IN 5 TB1-5 ---- STEP REF B1

LOG IN 6 TB1-6 ---- STEP REF B2

LOG IN 7 TB1-7 ---- STEP REF B3

LOG IN 8 TB1-8 ---- UP / DWN

LOG IN 9 TB1-9 ---- Contact Confirm

CONFIGURE CO
LOGIC OUTPUTS C3

LOG OUT 1 TB1-14 ---- RUN COMMANDED

LOG OUT 2 TB1-15 ---- SPEED REG RLS

LOG OUT 3 TB1-16 ---- NO FUNCTION

LOG OUT 4 TB1-17 ---- NO FUNCTION

RELAY COIL 1 ---- READY TO RUN

RELAY COIL 2 ---- SPEED REG RLS

ADJUST AO
DRIVE A1

CONTRACT CAR SPD ---- Car speed in feet per minute

CONTRACT MOTOR SPD ---- Motor speed in revolutions per minute required to make the car run at contract speed. This is not the RPM data from the nameplate. It programs the speed at which the drive will run the motor when the car is at high speed.

RESPONSE ---- 10.0 (Default) Min 1.0, Max 20.0 (speed loop gain)

INERTIA ---- 2.00 (Default) Min 0.25, Max 50.0 (acceleration time)

CONTACT FLT TIME ---- .8

ENCODER PULSES---- This parameter tells the drive how many PPR (Pulses Per Revolution). 1024(Default) refer to the nameplate on the encoder for the correct PPR value.

SPD DEV HI LEVEL ---- 20.0

SPD COMMAND BIAS ---- 0.0 (Default)

SPD COMMAND MULT ---- 1.0 (Default)

ADJUST AO
S – CURVES A1

ACCEL RATE 0 ---- 3.50

DECEL RATE 0 ---- 4.00

JERK RATE 0 ---- 05.0

LEV JERK RATE 0 ---- 05.0

ACCEL RATE 1 ---- 7.99

DECEL RATE 1 ---- 7.99

JERK RATE 1 ---- 0

LEV JERK RATE 1 ---- 0

ACCEL RATE 2 ---- 7.99

DECEL RATE 2 ---- 7.99

JERK RATE 2 ---- 0

LEV JERK RATE 2 ---- 0

ACCEL RATE 3 ---- 7.99

DECEL RATE 3 ---- 7.99

JERK RATE 3 ---- 0

LEV JERK RATE 3 ---- 0

ADJUST AO
MULTISTEP REF A3

Speed Command 1 ----- 4 FPM

Speed Command 2 ----- 12 FPM

Speed Command 3 ----- 45 FPM

Speed Command 4 ----- 200 FPM

Speed Command 8 ----- Contract speed

ADJUST AO
POWER CONVERT A4

PWM FREQUENCY ---- 10.0khz

INPUT L-L VOLTS ---- set to the drive input voltage

ADJUST AO
MOTOR A5

RATED MTR PWR ---- set to motor HP or KW

RATED MTR VOLTS ---- set to motor name plate volts

RATED EXCIT FREQ ---- set to motor name plate frequency

RATED MOTOR CURR ---- set to motor name plate current

MOTOR POLES---- This parameter tells the drive how many poles the motor has. To obtain this value, determine the motor speed at rated excitation frequency without any slip.

The formula is:

$$\frac{120 * \text{Rated Frequency}}{\text{No Slip Motor RPM}}$$

If you cannot determine the motor speed with zero slip, take the motor nameplate RPM and use it in the formula. Round the number to the nearest even whole number to determine motor poles.

Note: This value must be an even number or a setup fault will occur.

Standard motor poles, must be a even number, 900RPM = 8 poles, 1200 RPM = 6 poles, 1800 RPM = 4 poles

RATED MTR SPEED ---- This parameter tells the drive what speed the motor should be turning when excited at its rated frequency and producing rated power. This should be the full load motor speed on the motor nameplate. This must be less than the synchronous motor speed.

Note: This Value must be less than 900 RPM on 8 pole motors, 1200 on 6 pole motors, 1800 RPM on 4 pole motors or a drive setup fault will occur.

% NO LOAD CURR ---- set the motor no load current percentage, see the calculation below:

$$\text{\% NO LOAD CURR} = \frac{\text{no load current (from motor manufacture)}}{\text{Rated motor name plate current}}$$

INSPECTION START UP

Before applying power to the controller, confirm that the incoming three-phase AC voltage at the main line matches the value on the power section of the wiring diagrams.

Confirm that the three leads from the controller to the motor are connected. If there are more than three leads coming out of the motor, make sure that the motor is wired in a delta configuration with correct field rotation, or follow the motor manufacturer's recommendation.

Confirm that the encoder is connected correctly. Refer to the Magnetek drive interface page of the wiring diagrams for proper hook up.

Locate the Test sheets, which were shipped with the controller. These sheets have the drive parameters that were calculated for your installation.

Apply power to the controller.

Before attempting to run the drive, confirm the parameters are set correctly. Verify that the parameters in the drive match those on the test sheets. For information on using the programming unit please refer to page 35 of the HPV 900 manual.

Make sure the controller is on inspection operation. Verify that the hoistway is clear, and the car is ready to be moved. Using the up/dn toggle on the relay board, attempt to run the car.

If the motor moves in the opposite direction, stop the car and, Reverse any two of the hoist motor wires.

If the encoder feedback is reversed the car will run at a very low speed with high current. Running the car in the down direction monitor the speed reference and the speed feedback. The two signals should be negative if the encoder is the proper direction. To reverse the encoder direction, reverse A and A- signals from the encoder to the drive.
Note: Anytime you have the above condition of high current that is not resolved by reversing the encoder, suspect the encoder may have been damaged. Try replacing the encoder. Also ensure the encoder wiring is routed separately from the motor power wires.

Run the car again and confirm that the car runs correctly in both directions.

Using the programmer, access the "Display D1" menu. Monitor parameter "Speed Reference." Run the car in the down direction. The speed reference should be negative. Monitor parameter "Speed Feedback." Run the car in the down direction. The speed feedback should be negative. If not, reverse the A and A- signals from the encoder to the drive.

Using the drive parameter unit, access the ""Display D1" menu and go to the "Elevator Data" sub-menu. Scroll to the function "Car Speed" and press the enter key. Hold a hand tach against the governor rope and run the car in either direction while monitoring the displayed speed and the tach. If the displayed speed is slower than the observed speed on the hand tach, access the "ADJUST" menu and go to the "DRIVE" sub-menu. Scroll to the parameter "Contract Motor RPM" and **reduce** the present value. If the displayed speed is faster than the observed speed on the hand tach, access the "ADJUST" menu and go to the "DRIVE" sub-menu. Scroll to the parameter "Contract Motor RPM" and **increase** the present value. Modify the speed until the displayed speed and the speed observed on the tach match.

If vibration is observed in the motor, decrease the value of the "Response" parameter in "User Switches A1" menu until the vibration is gone.

The car can now be run on inspection operation.

DRIVE FAULTS

If a fault occurs in the drive, the fault LED on the front panel of the drive will illuminate. The controller will reset the drive if the number of drive faults in a

given period of time has not been exceeded. To access the drive faults, using the parameter unit, go to the “FAULTS FO” menu. This menu has two sub-menus, “Active Faults F1” and “Active Faults History F2”. Use the arrow keys to access the desired menu. If the drive is faulted, the active faults will display the present fault. Fault history will display faults, which have occurred. For a complete list of the drive faults, refer to the MagneTek HPV 900 manual.
Note: High-speed stops will usually cause the drive to fault.

High Speed Adjusting

HPV 900 Adaptive Tune

If the motor to which the drive is connected is an old motor and no data is available for it, an adaptive tune must be performed. The adaptive tune requires that the car is run at contract speed and is capable of lifting full load.

1. Select the “Default Motor” option for the Motor ID parameter. This will load default values into the motor data parameters to prepare the drive for the adaptive tune.

2. Enter the following motor data into the drive:

    a. Motor HP or kW from nameplate into “RATED MTR POWER.”
    b. Motor AC voltage from nameplate into “RATED MTR VOLTS.”
    c. Motor AC frequency (usually 60 cycles) into “RATED EXCIT FREQ.”
    d. Motor nameplate full load amps into “RATED MTR CURR.”
    e. The number of motor poles into “MOTOR POLES.
    f. Motor RPM with full load at the correct frequency into “RATED MTR SPEED.”

3. Place a balanced load into the car. Reduce the car speed to 70% of contract speed. This can be done at the drive by changing the value of the parameter “Speed Command 8” to 70% of contract speed. The high-speed output will be either an MSR or HSR relay contact closure to the drive. This can be seen on the HPV 900 Multi-Step Reference page of the controller wiring diagrams. This multi floor run speed output will depend on the parameters programmed into the controller. Normally cars with high speed equal to or less than 200 FPM will have the parameter “Drive: High Speed” set to “No” and run with the MSR relay energized at high speed. Cars with speeds greater than 200 FPM will have the parameter “Drive: High Speed” set to “Yes” and run with the HSR relay energized at high speed. Adjust the corresponding speeds to the desired settings using the drive programmer. To change the speeds, access the “ADJUST A0” menu

and go the “MULTISTEP REF A3” sub-menu. Refer to the table below for the preliminary settings.

Speed Command 1	4
Speed Command 2	12
Speed Command 3	45
Speed Command 4	200
Speed Command 8	Contract Speed

4. Run the car from top to bottom and back. While the car is running, monitor the motor torque (found under Display Menu – Power Data D2). The torque should be between ± 15%. If not, verify that the car is balanced correctly.

   Note: If the car does not have compensation, the motor torque will vary depending on where in the hoistway the car is. Verify that the motor torque is between + 15% as the car passes through the center of the hoistway.

5. Verify that the flux reference (found under Display Menu – Power Data D2) is 100%. If not, reduce the car speed until it is.

6. With the car running from top to bottom and back, observe EST NO LOAD CURR (found under Display Menu – Power Data D2). Enter this estimated value into the parameter % NO LOAD CURR.

7. Repeat steps 5 and 6 until the value of the EST NO LOAD CURR and the % NO LOAD CURR are equal.

8. Verify that the motor torque is still ± 15% and flux reference is still 100%. If not, adjust accordingly and adjust the %NO LOAD CURR as needed.

8. Increase the car speed to 100% of contract speed. With balanced load still in the car, run the car from top to bottom and back.

9. While the car is running, observe EST NO LOAD CURR (found under Display Menu – Power Data D2). Compare this value to the value found under %NO LOAD CURR (found under Adjust Menu – Motor M5).

10. If the EST NO LOAD CURR value is 2% larger than the %NO LOAD CURR then increase FLUX SAT SLOPE 2 by 10%. If the EST NO LOAD CURR and %NO LOAD CURR values are within 2%, continue to step 12.

11. Repeat steps 9 and 10 until EST NO LOAD CURR and %NO LOAD CURR are within 2%.

12. Place full load in the car. Run the car at contract speed from top to bottom and back.

13. Observe EST RATED RPM (found under Display Menu – Power Data D2).

14. Enter this value into RATED MTR SPEED (found under Adjust Menu – Motor M5).

15. Remove the full load from the car and place a balanced load in it. Run the car from bottom to top and back.

16. Observe EST INERTIA (found under Display Menu – Elevator Data D1). Write down the value for up and down.

17. Average the up and down values of EST INERTIA. Enter this value into INERTIA (found under Adjust Menu – Drive A1).

18. Remove weights from the car. Ride the car up and down, adding 100 pounds of weight at a time. Observe one floor, two floor and multi floor runs to be sure that the car rides well under all load conditions.

Speed Profile Adjustments

The Elon 1000 control utilizes the HPV 900's internal speed profile. The speed profile has been preliminarily set at the factory. Only minor adjustment will be required. The deceleration rate and jerk rates has been set to a value that will stop the car fairly quickly. These setting will help with your first high speed runs.

The Elon 1000 control uses the following speeds.

Speed	Function	Typical Setting
Speed Command 1	Leveling speed	4 FPM
Speed Command 2	Approach speed	12 FPM
Speed Command 3	Inspection	45 FPM
Speed Command 4	One floor run speed	200 FPM
Speed Command 8	Contract speed	Rated Speed

Acceleration / Deceleration Rates

The drive has multiple acceleration and deceleration rates available. The Elon 1000 uses the first set of rates, “Accel Rate 0” and “Decel Rate 0.” The rates are adjusted obtain the desired acceleration to speed and deceleration into the floor. **Larger numbers are more aggressive rates and will start or stop the car faster.** Generally these values should be kept as low as possible.

Jerk Rates

The drive has two different jerk rates to adjust. The first rate, “Jerk Rate 0” controls the initial jerk at the start of acceleration, the jerk at the transition from acceleration to speed, and the transition from speed to deceleration. The second rate, “Lev Jerk Rate 0” controls the transition from deceleration to leveling. **Larger numbers are more aggressive rates.** Generally these values should be kept as low as possible.

Final Speed Profile Adjustments

The factory default settings of the speed profile will help with your first high-speed runs, preventing the car from overshooting floors. Adjust the acceleration, deceleration and jerk rates for a comfortable high speed run. After the multi floor run has been adjusted, you can adjust the one floor runs. Raise or lower the one floor run speed to have same finial leveling distance as the multi floor run.

A dual trace storage oscilloscope can be used to shape the Speed Profile to the desired setting. Ensure the scope has a floating ground (ground pin on the scope power cord must not be connected to earth ground). You can monitor the speed reference and car speed at the drives analog outputs, TB1-33 and TB1-35. The common signal is TB1-34.

1 Hand held unit

The hand held unit tool is used to setup and trouble-shoot the controller, it allows the user to change parameters and access status and error information.

1.1 How to use the hand held unit.

The Hand held unit (**HHU**) contains many functions arranged as a tree of menus (see menu structure diagram, Figure 9, on page 7). The name 'menu tree' refers to the similarity between the arranging of the menus and the branches of a tree, (although the menu tree will be upside-down), every menu (branch) divides into more menus (branches), until it ends into function screens (leaves).
When first powered up, the current menu is set to the **Main menu**. Using the 4 and 6 keys, you can change between the sub-menus of the main menu. Once the desired sub-menu is displayed, pressing the **8** or the **#** keys will make that menu the current menu.

Every sub-menu can be either another menu or a function screen. If it is a sub-menu, it will be made the current menu, it will be moved to the top line of the display and one of the sub-menus of this new current menu will be displayed in the second line of the display. This process will repeat as long as a sub-menu with it's own sub-menus is selected.

Once a sub-menu is selected that corresponds to a function screen, the screen itself is displayed. Different screens work in different ways and they are explained below. To leave a function screen and return to the menus, press the ***** key. The star key can be thought of as an ESCAPE key ('get out of here' key), the pound key ('#'), is the ENTER or DO IT key.

1.2 Car diagnostics screens

1.2.1 States (Car diagnostics → States)

Description
This screen shows the current state of the various software components. The car controller software is divided into individual pieces called **state machines**. Every state machine is responsible for a particular task. There are state machines for the front door operator, the rear door operator, the motor field control, etc.
All state machines communicate with each other and cooperate to provide all elevator services. The current operating mode of the controller can be deduced by observing the current state of the machines, for example, if the controller is in inspection, the service SM (state machine) will show **Inspection** and the inspection SM will show in which of the inspection modes ea. **In car inspection**.
Operation
To view all state machines use the **2** key to move up and the **8** key to move down. The **3** and the **9** keys will move up and down four states at a time.

1.2.2 Errors (Car diagnostics → Errors)

1.2.3 Inputs and outputs (Car diagnostics → Inputs and outputs)

1.2.3.1 Description

This screen allows the real-time observation of all IO24 board inputs and outputs.

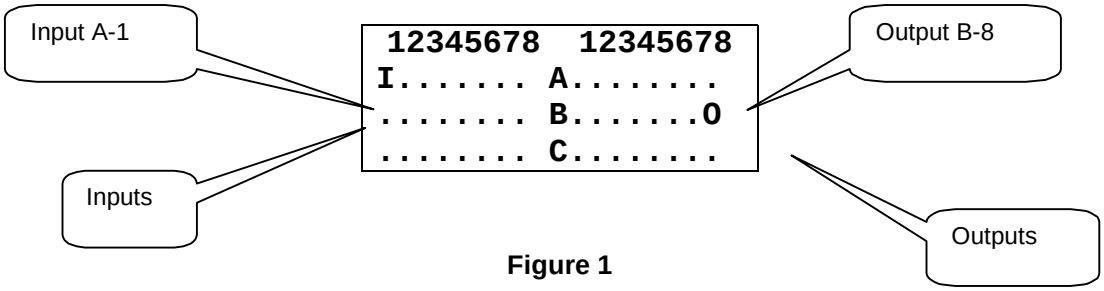


Figure 1

1.2.3.2 Operation

Upon entering the screen, a menu of IO boards is shown, select the desired one using the **4** and **6** (left and right keys) until it shows on the screen and the, press the # key.
If the board is not available or it is not communicating, the screen will remain blank, leave the screen by pressing the ***** key.
If the board is operating properly, all 24 inputs and 24 outputs will be displayed at once, the inputs, on the left side and the outputs on the right side. When an inputs is turned ON, it will show as an **I**, an output turned ON will show as an **O**.

1.3 Car setup screens

1.3.1 Car parameters (Car setup → Parameters)

1.3.1.1 Description

The car setup screen allows the viewing and modification of the car controller parameters. There are more than 150 parameters, including front and rear door operation, drive setup, group operation, etc.

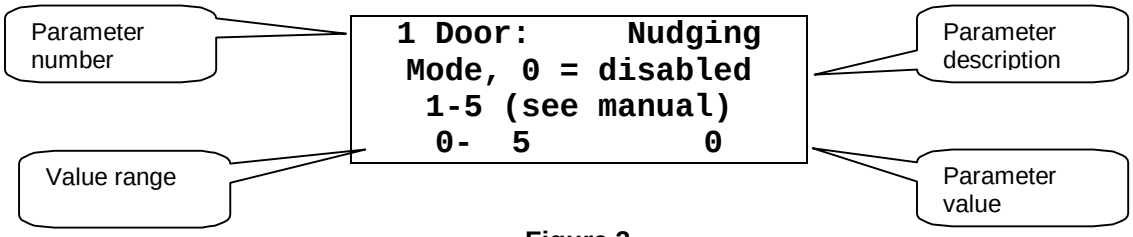


Figure 2

1.3.1.2 Operation

When this screen is selected from the menu, the first parameter is displayed. To move forward one parameter at a time, press **8**, to move backward one parameter at a time, press **2**. Since there are a lot of parameters, you can move forward and backward 10 parameters at a time pressing the **7** and **1** keys, or 20 parameters at a time with the **9** and **3** keys.

To change a numeric parameter, press the # key, a cursor will display in the parameter value field. Use the number keys to modify the parameter. If you are satisfied with the value you entered, press the # key again to save it, else, you can abort the change and leave the parameter as it was by pressing the ***** key.

Some parameters only accept the values '**Yes**' or '**No**', they are called 'flags'. To change a flag parameter, press the # key to allow editing, just like numeric parameters, then press the **Y** or **N** keys (also, the 2 or 8 keys will invert the value of the flag). You can also abort the editing of a flag parameter with the star ('*****') key.

To leave the car parameters screen press the ***** key while you are not editing. Actually, if you press the ***** key several times you will be returned to the main menu,

this is a good way to return to a known point in the menus in case you where lost in the menu structure.

1.3.2 Floor table (Car setup → Floor table)

1.3.2.1 Description.

The floor table setup screen describes the building to the car controller. The Elon-1000 software is standard. As delivered, it can handle any number of floors, front and/or rear doors, etc., the floor table describes to the software how the building is distributed. It allows you to enter how many openings there are and in how many floors, how many hall calls, etc.

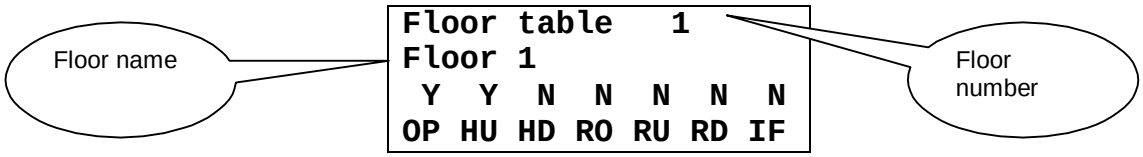


Figure 3

1.3.2.2 Operation

When this screen is selected from the menu, the first floor of the controller is displayed. The first line displays the screen name (Floor table) and the current car floor, numbered 1 to 32. (The first car floor may not be the car's bottom floor since in a group, not all cars may go to the bottom floor).
The car will reject up calls at the top floor and down calls at the bottom floor, if you are adding floors, add the top and bottom floors first and then all the intermediate floors. Ex. If you add floor two of a four story building with both up and down calls, you will find that only the down call was accepted, this is due to the fact that floor two IS the top floor at this time and the car computer rejected the up call.

1.3.2.3 Fields:

OP	If set to 'Y', there is a front door opening at this floor.
HU	If set to 'Y', there is a front door up hall call at this floor.
HD	If set to 'Y', there is a front door down hall call at this floor.
ROP, RHU, RHD	Same as front but for the rear door.
IF	Imaginary floor, the car will count this floor but it has no openings here, used mainly for blind hatches and to synchronize position indicators.

1.3.3 Position indicators (Car setup → Position indicators)

1.3.3.1 Description

The controller has up to three built-in position indicators, every one of them consists of up to eight outputs. The are located as follows:

- Hall board indicator, in HALL-AO terminal board outputs.
- Car station board indicator, in the CSTA-BO terminal board outputs.
- Car top board indicator, in the CTOP-CO terminal board outputs.

The eight outputs of any of the position indicators can be programmed to any output combination at any floor. The two more useful ways of programming them are the binary output sequence, used with digital position indicators, and the floor-per-floor sequence used mainly with strip (also called multi-light) position indicators.

- Binary outputs:

To set the position indicator to binary outputs, enter 1, 2, 3, 4, 5 and so on for all floors, starting at the bottom floor.

- Floor-per-floor outputs:

Enter 1, 2, 4, 8, 16, 32, 64, 128 for the bottom, 2, 3, 4, 5, 6, 7 and eight floors. If more than eight floors are needed, it is possible to use more than one position indicator, if this is the case, set one position indicator for floors 1 to 8 and the other position indicator for floors 9 to 16, set all floors not used to zero.

1.3.3.2 Operation

Select the position indicator to be modified by moving the cursor up and down with the **2** or **8** keys until it sits on top of it. At this point, press the # key.

The screen shows three floors at the same time (if the car has only two floors, it will show only the two). Select the floor to be modified by using the **2** and **8** keys.

To change the value, press the # key. The cursor will show in the value field, modify it using the number keys to enter a decimal value between 0 and 255. If a mistake is made, press the ***** key to cancel editing. If the new value entered is correct, press the # key to store it.

To exit the screen, press the ***** key.

1.3.4 PI board setup screens

1.3.4.1 PI board setup, floor table screen (Car setup → PI board setup → Floor table)

1.3.4.1.1 Description

This screen has fields to enter values for the board's position indicator and hall lantern outputs.

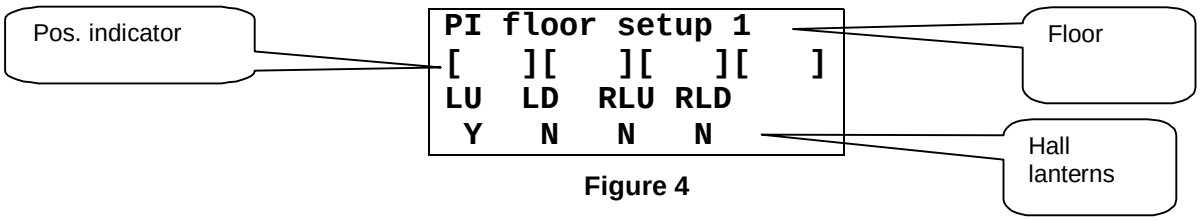


Figure 4

1.3.4.1.2 Operation

The **2** and **8** keys move to previous and next floor. To change values, press the # key, a cursor will show in the second line, fourth field, see figure below

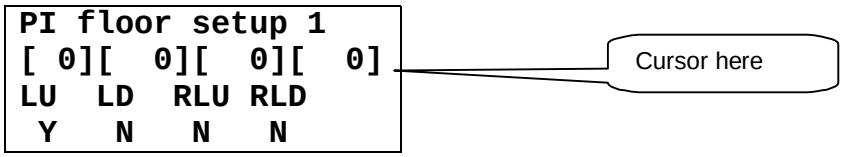


Figure 5

At this time, you can enter a decimal value indicating a combination of outputs to turn ON when the car is at this floor. After the value is entered, pressing the # key will move to the next field. The first three fields can be used, the fourth (the one on the left side) is not implemented at this time.

The fields under LU, LD, RLU and RLD are flag fields that enable the lantern up, lantern down, rear lantern up and rear lantern down respectively at this floor.

When pressing the # key at the last field (RLD field), the information will be saved in the board. Pressing the ***** key at any time will keep the data unchanged.

1.3.4.2 PI board setup, indicator parameters (Car setup → PI board setup → Indicator parameters)

1.3.4.2.1 Description

This screen contains fields to modify the position indicator behavior.

- Blink ON time

This set the time the lights will stay ON when the pos. indicator blinks

- Blink OFF time

This set the time the lights will stay OFF when the pos. indicator blinks

- Sleep time

If there is no position and/or direction change for longer than the time set in this field, the position indicator will shut off. Setting this time to zero will turn the indicators ON indefinitely.

- Has direction arrows.

If set to Yes, two outputs will be allocated for direction arrows.

```
Blink ON time  0.50
Blink OFF time 0.50
Sleep time     0.0
Has dir arrows No
```

Figure 6

1.3.4.2.2 Operation

Once in this screen, values can be edited immediately, pressing the # key will move to the next field, pressing the # key at the last field will update the settings, pressing the ***** key at any time will cancel the editing and leave the screen.

1.3.4.3 PI board setup, lantern parameters (Car setup → PI board setup → Lantern parameters)

1.3.4.3.1 Description

This screen contains several parameters related to the hall lanterns:

- Blink ON time:
  Time the lantern will stay ON for the first blink of the down direction, if set to zero, there will be no double-ding for the down direction.
- Blink OFF time:
  Time the lantern will stay OFF after the first ding of the down direction double ding.
- WAIT time:
  Time the lantern will stay OFF if switching from Up to down or vice-versa.

```
Blink ON time  0.50
Blink OFF time 0.50
Sleep time     0.0
Has dir arrows No
```

1.3.4.3.2 Operation: See 'PI board setup, indicator parameters' above.

1.3.5 Clock setup (Car setup → clock)

1.3.5.1 Description

The controller contains a real-time clock that can be set with this screen.

1.3.5.1.1 Operation

Pressing the # key switches between display and setup modes, when in setup mode, a cursor will be visible under the field to be modified and the screen will look like in

Change between fields with the **6** (right) and **4** (left) keys. Increment or decrement fields with the **2** (up) and **8** (down) keys. When you are satisfied, press the # key to start the clock. At the set date and time.

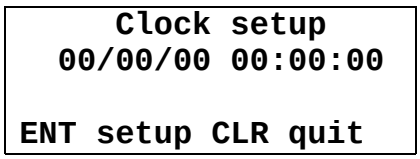


Figure 7, clock display screen

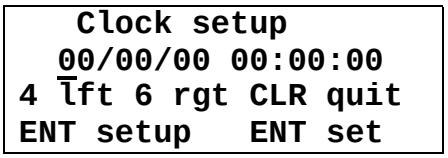


Figure 8, clock setup screen

1.4 Dispatcher setup screens

1.5 Menu structure diagram

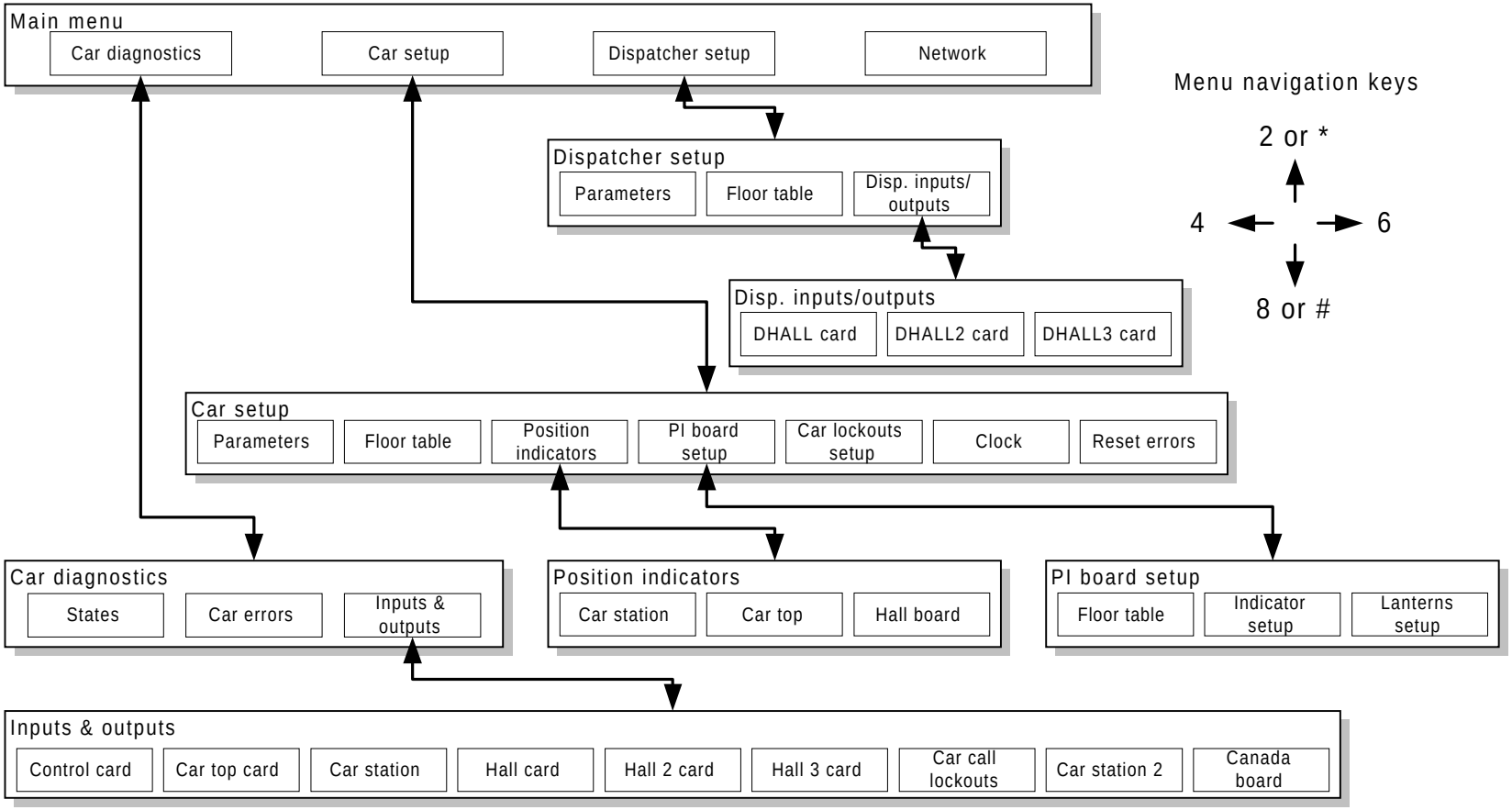
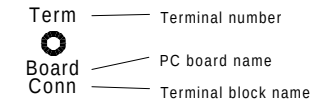


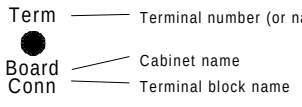
Figure 9

Symbols

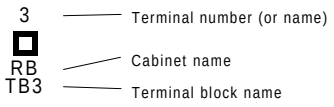
PC board terminal



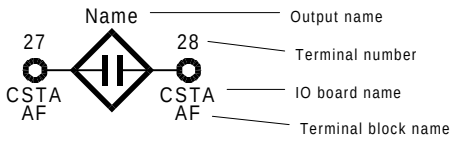
Rail mounted terminal



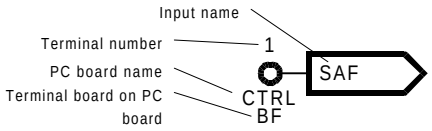
MTA connector (square pins)



Computer output

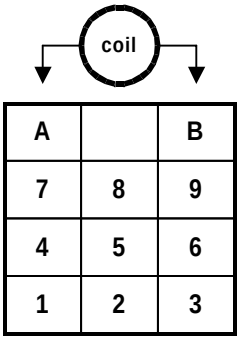


Computer input

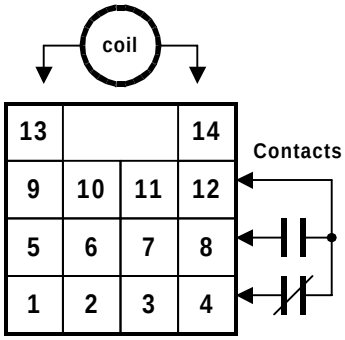


Light emitting diode

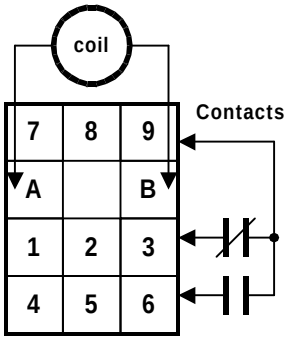
Three poles relay PC socket



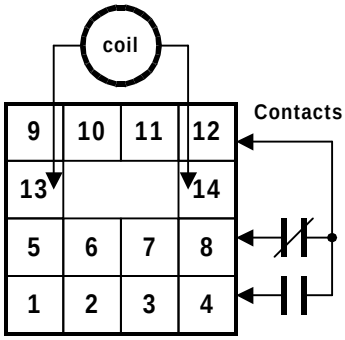
Four poles relay PC socket



Three poles relay track mount socket



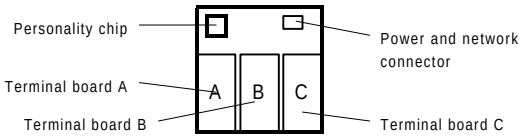
Four poles relay track mount socket



Board Identification

All of the input / output boards can be identified by the name of the software chip , located in the top left corner of the board. Each of the I/O boards have a corresponding mapping sheet which can be found at the front of this book. The Relay board is identified by the marking in the bottom left corner of the board. The housing version of the board will be marked "RBH" but the prints will have the standard identifier of "RB"

Typical IO board



The terminal boards can be A, C, L or O type. When a print indicates CSTA-CL, it means that an L type terminal board is installed in the C location. In some instances A location could be filled with either an A or an O type terminal board.

Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

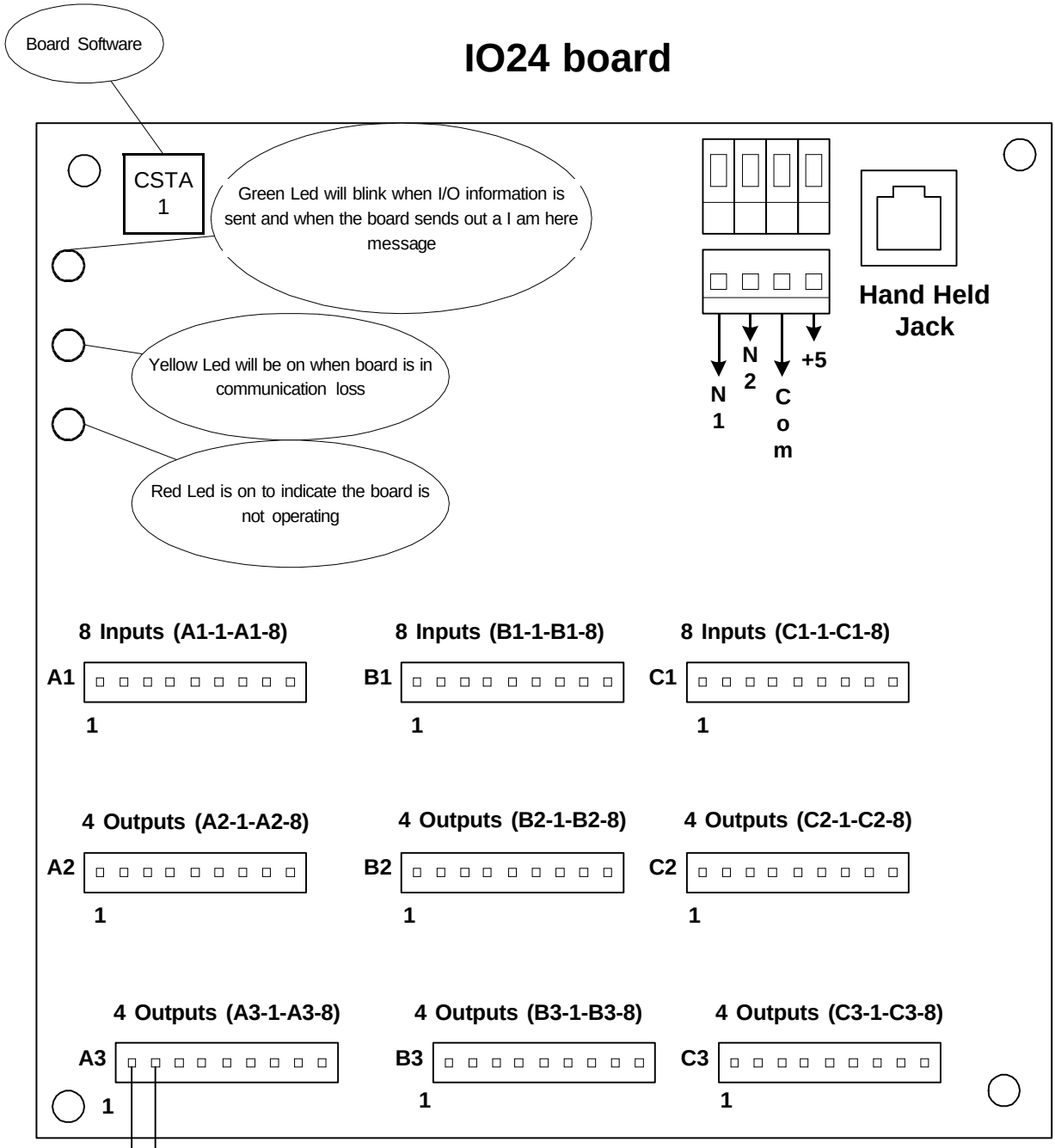
TRICON Systems
Elon 1000

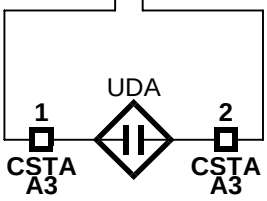
Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_01.vsd
Drawn:	3-5-98 rja

Symbols

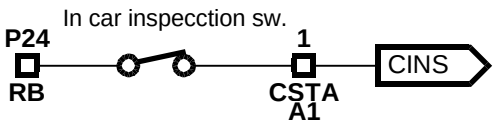
REV **A**

IO24 board





Sample Output Symbol



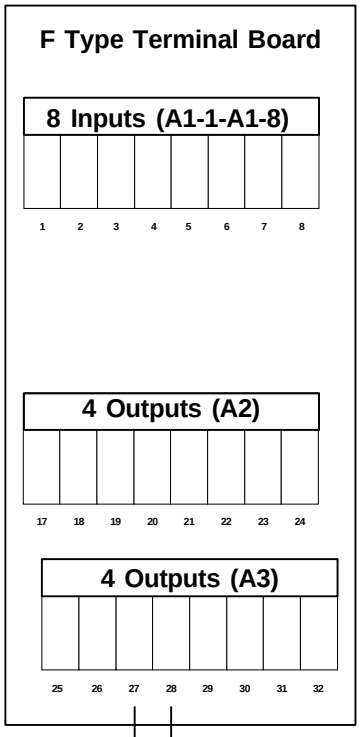
Sample Input Symbol

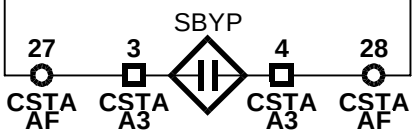
TRICON Systems Elon 1000	**Filename:**	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_02.vsd	REV
	Drawn:	02/28/03	Page 2 of 36 Pages
I/O24 Board			**A**

IO FIELD TERMINAL BOARDS

F Type Field Terminal Board

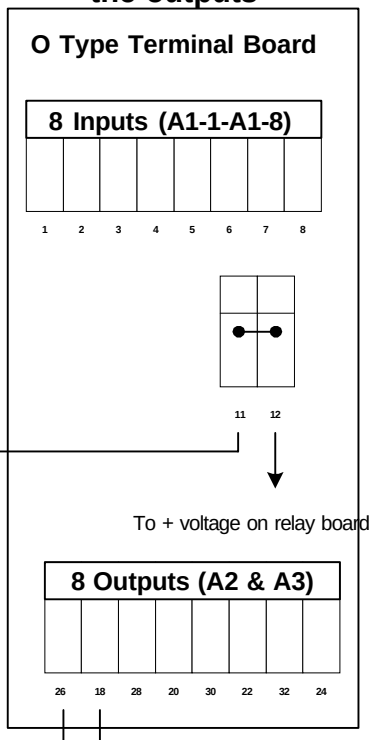
8 inputs
8 Outputs -16 terminals

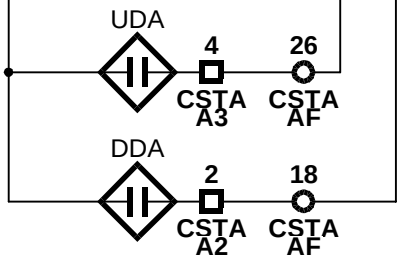




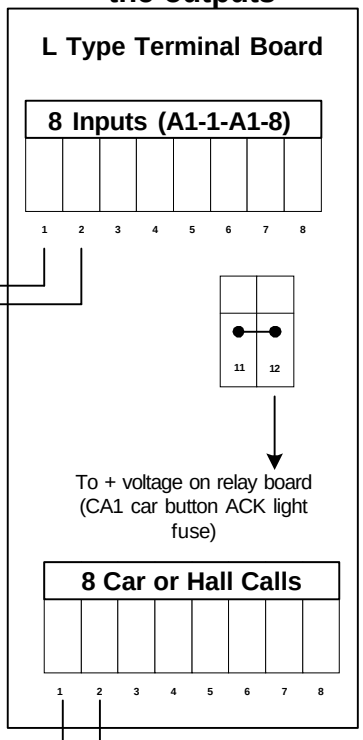
Sample Output Symbol

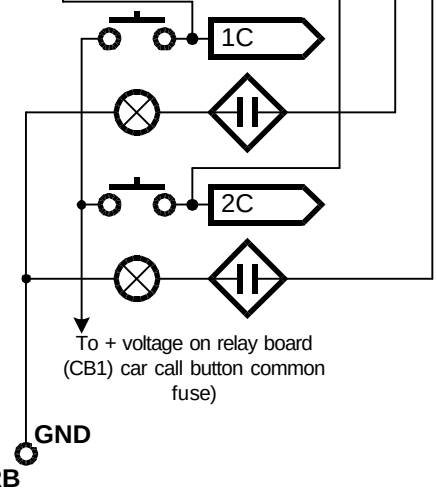
O Type Field Terminal Board
8 inputs
8 Outputs - 8 terminals with one common for the outputs



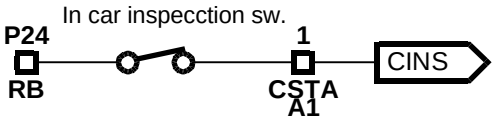


O Type Field Terminal Board
8 inputs
8 Outputs - 8 terminals with one common for the outputs





Note 1: F and O field terminal boards can be interchanged if the outputs have one common.



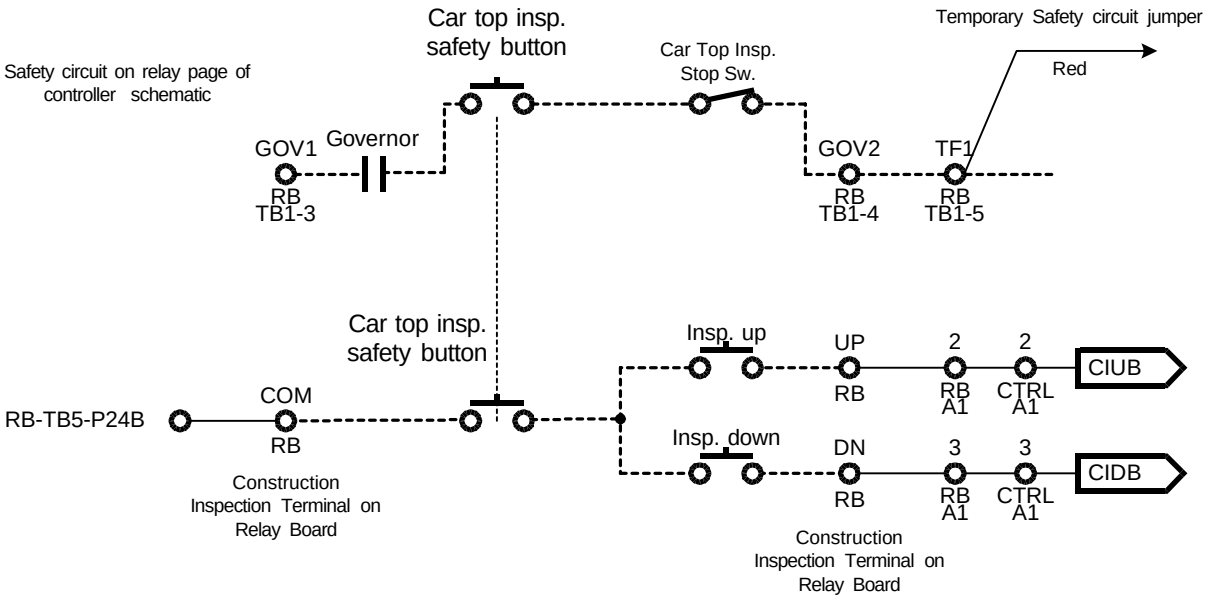
Sample Input Symbol

TRICON Systems Elon 1000	**Filename:**	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_03.vsd	REV
	Drawn:	02/28/03	Page 3 of 36 Pages	**A**
IO Field terminal Boards			

Construction Car Top Inspection Circuit

Note1: The circuit below shows a temporary run box hook up for construction inspection speed operation. The controller is delivered with jumpers on the doors , gates, normals and a portion of the safety circuit, to make start up easier. As you wire these items remove the jumpers. The portion of the safety circuit shown below is **not jumped**, assuming you will wire in the governor and construction inspection before starting up the car.

Note2: The temporary run box must have a safety button, up , down and stop switch as shown in the schematic. The safety button is a two pole button. The safety circuit must open every time the safety button is released. The run box uses the same inspection direction inputs on the CTRL board as the controller inspection.



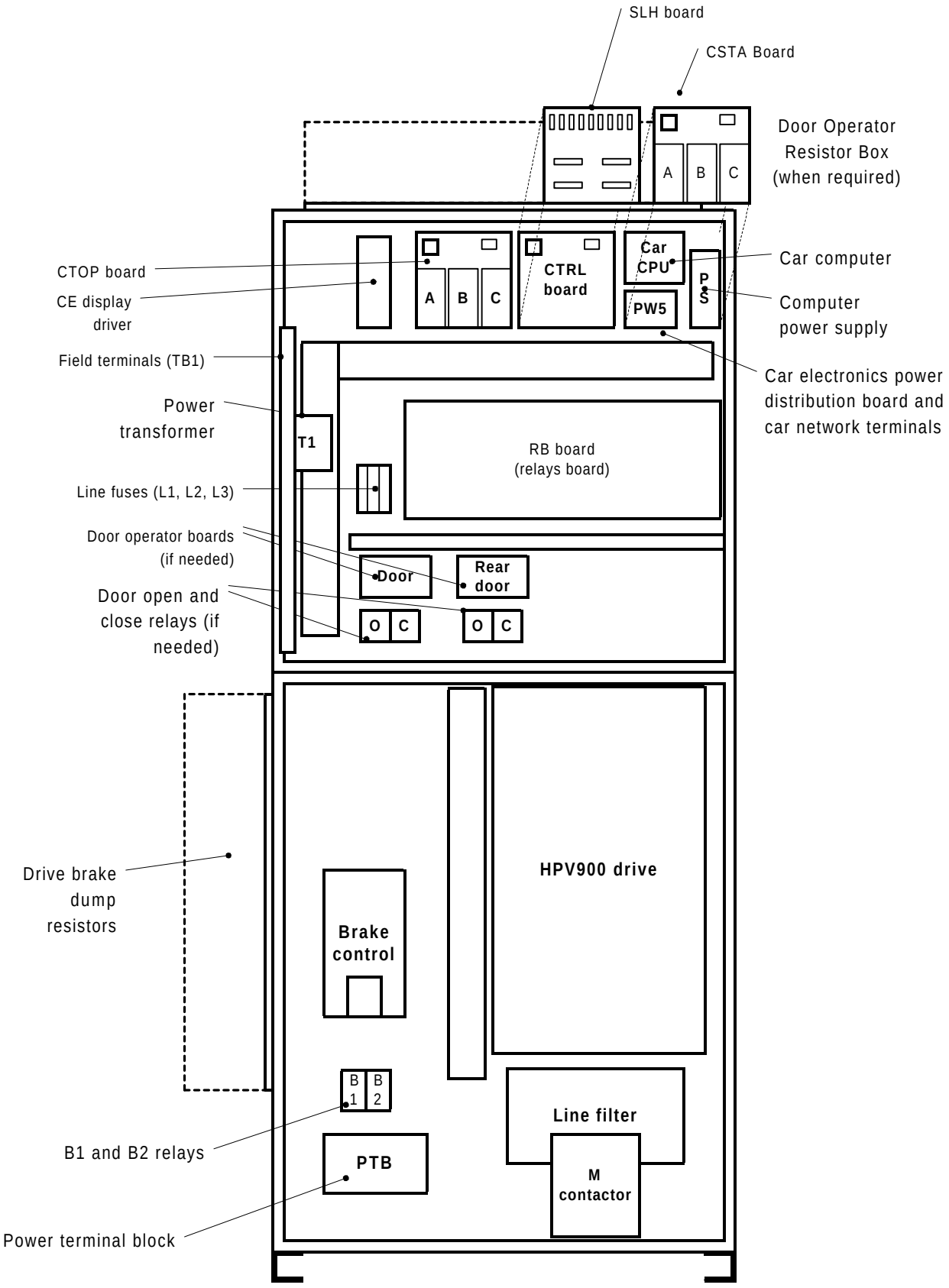
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_04.vsd			
Created:	TomH, 6/14/99	**Modified:**	TomH, 2/28/03	Page 4 of 36 Pages

Construction Inspection Circuit

REV **X**



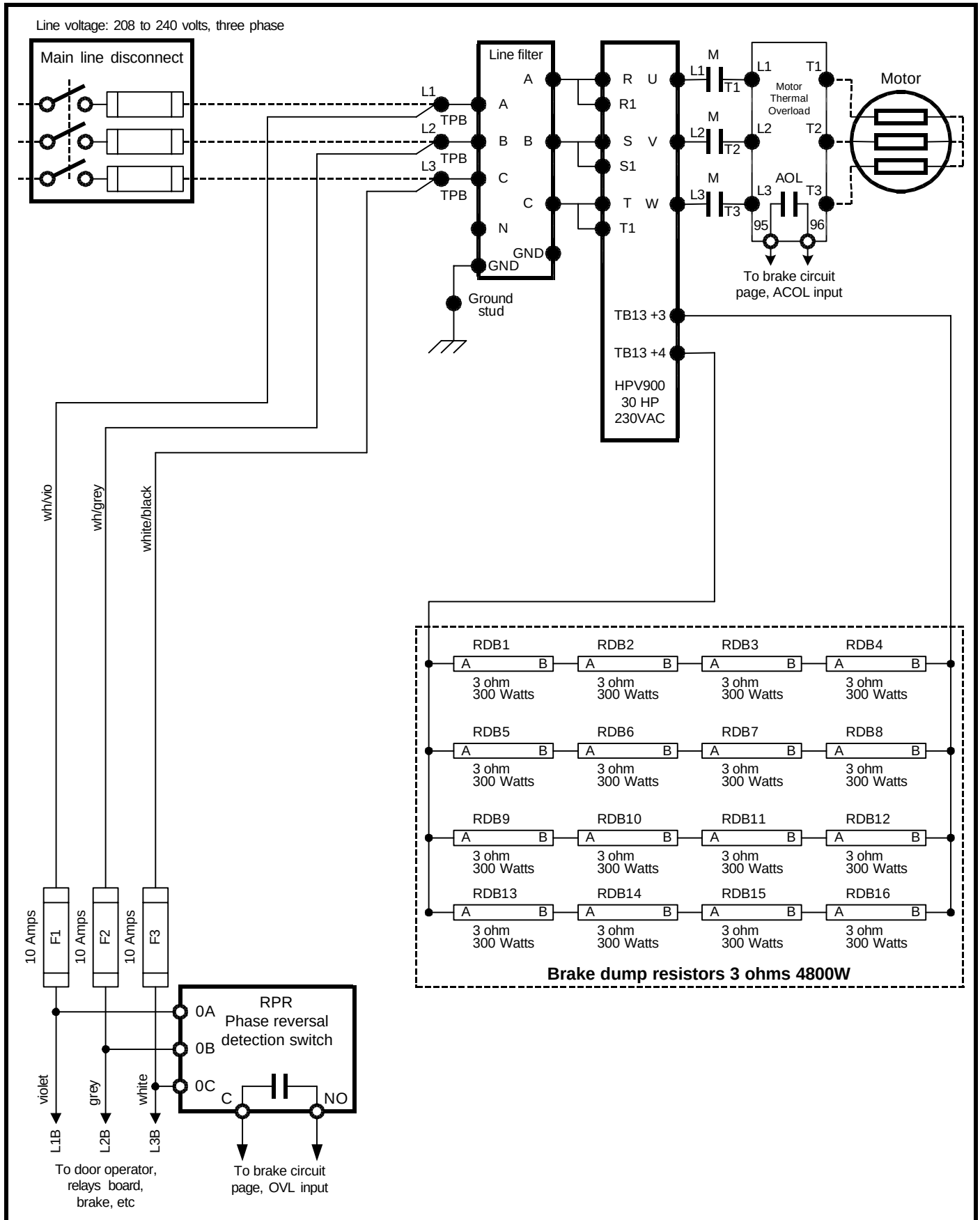
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Final\Page_05.vsd
Drawn:	3/5/98 andrew, Modified: 2/28/03

Layout

REV
A



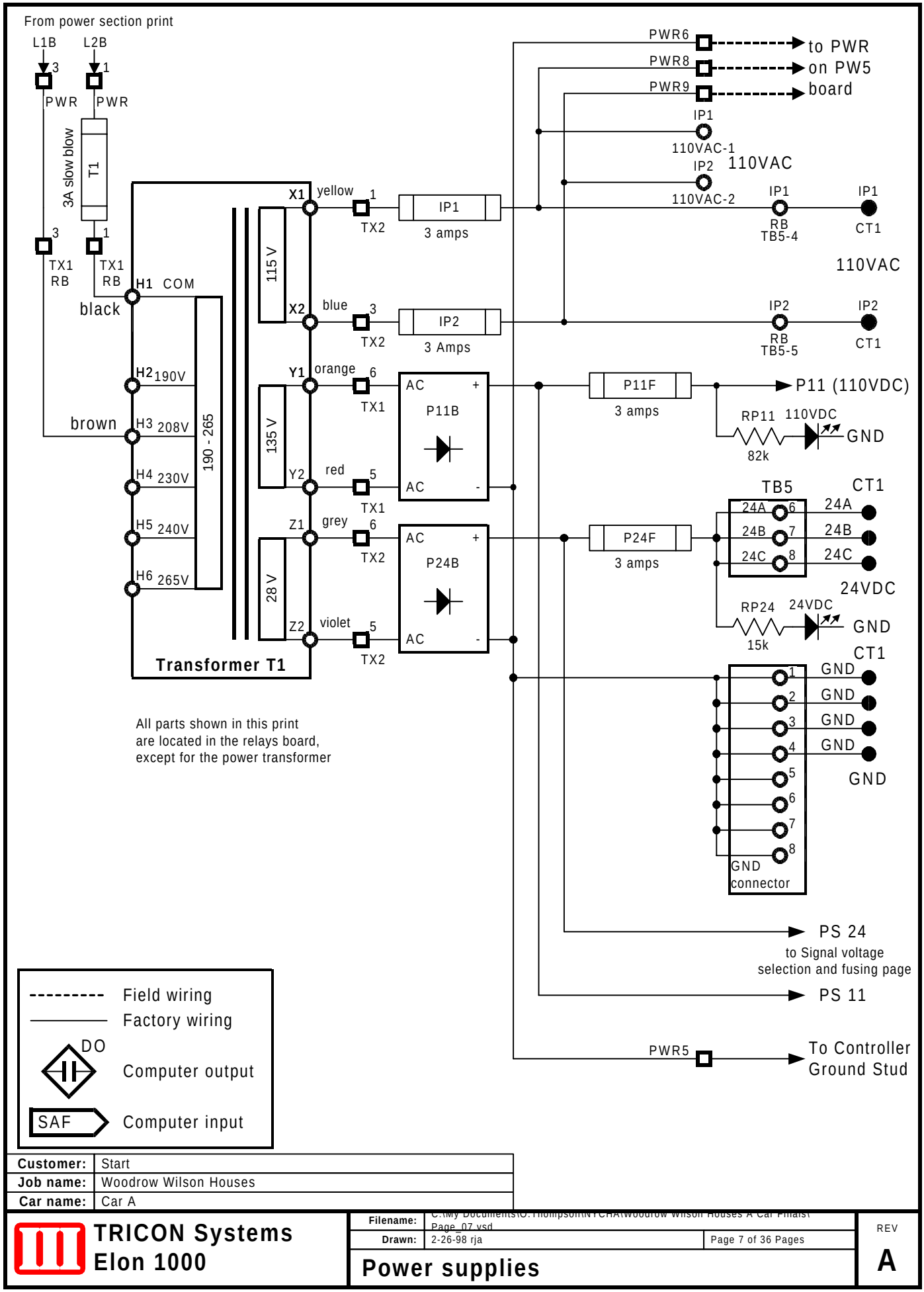
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_06.vsd				
Created:	TomH, 8/31/99	**Modified:**	TomH, 2/28/03		Page 6 of 36 Pages

Power Magnetek HPv900

REV
X



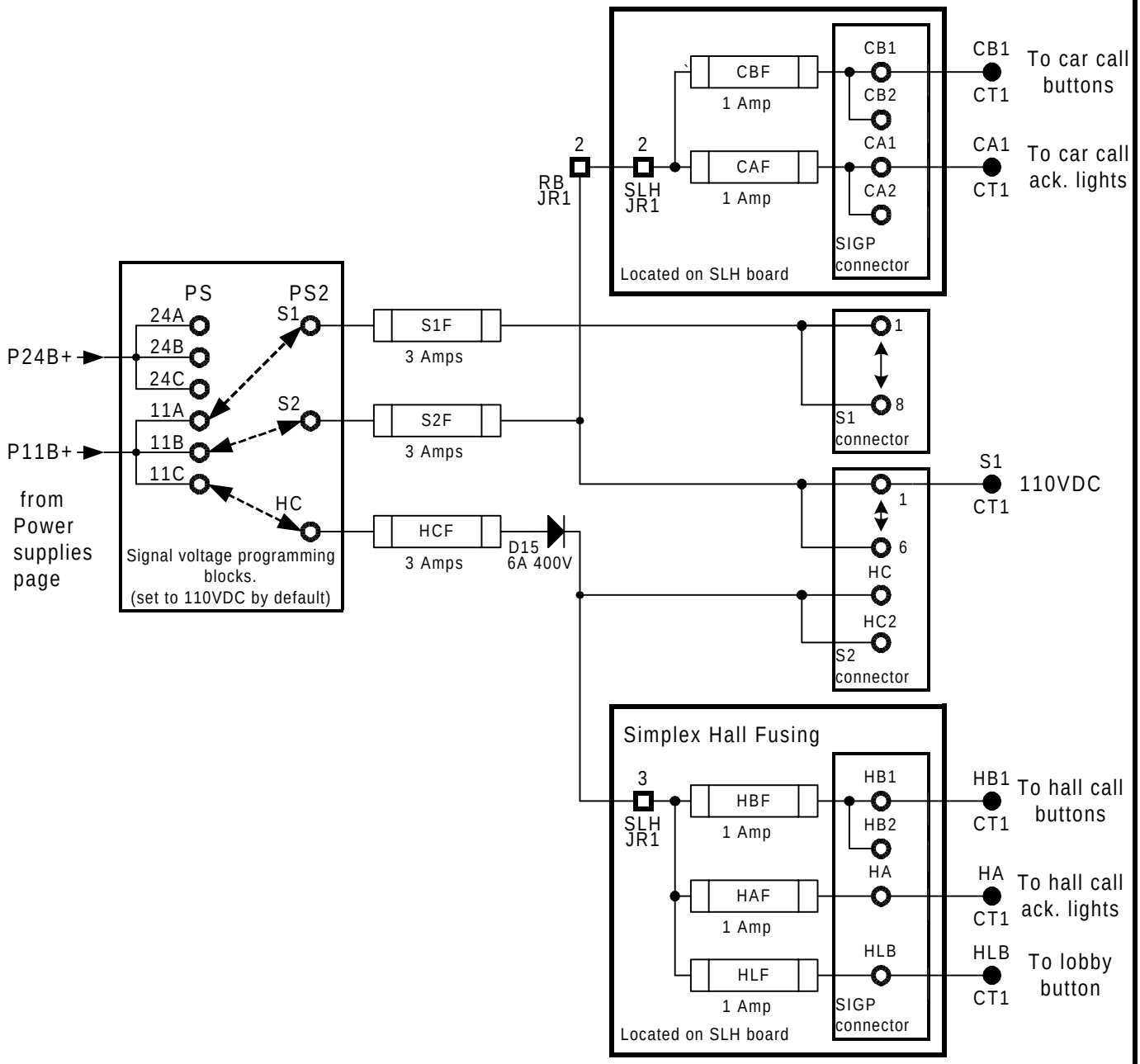
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Finish\ Page_07.vsd	
Drawn:	2-26-98 rja	Page 7 of 36 Pages

Power supplies

REV **A**



Field wiring

Factory wiring

DO — Computer output

SAF — Computer input

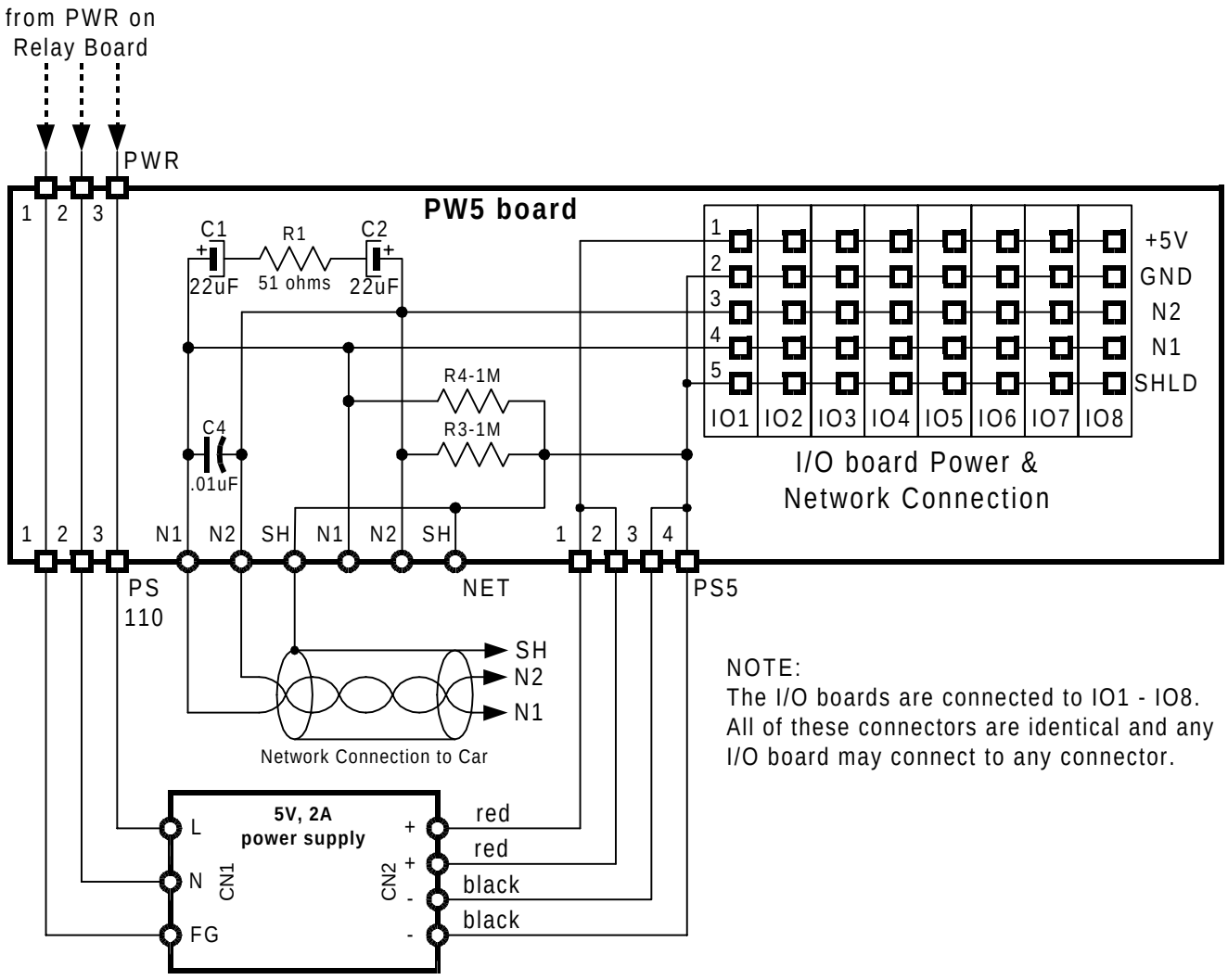
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\C. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_08.vsd
Drawn:	2-26-98 rja

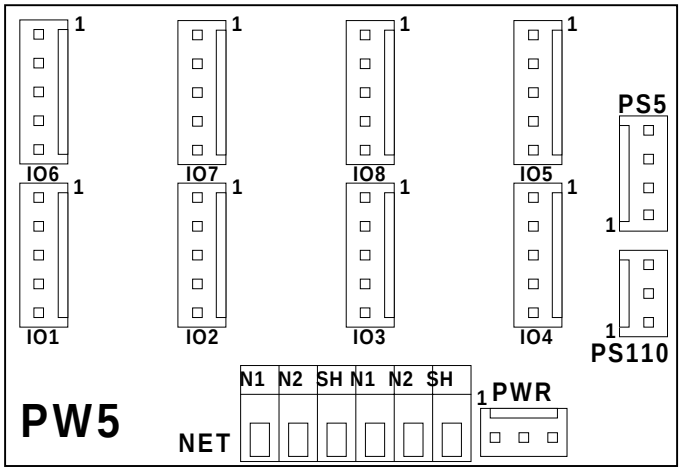
Signal voltage selection and fusing

REV **A**



NOTE:
The I/O boards are connected to IO1 - IO8.
All of these connectors are identical and any
I/O board may connect to any connector.

PW5 board connector layout



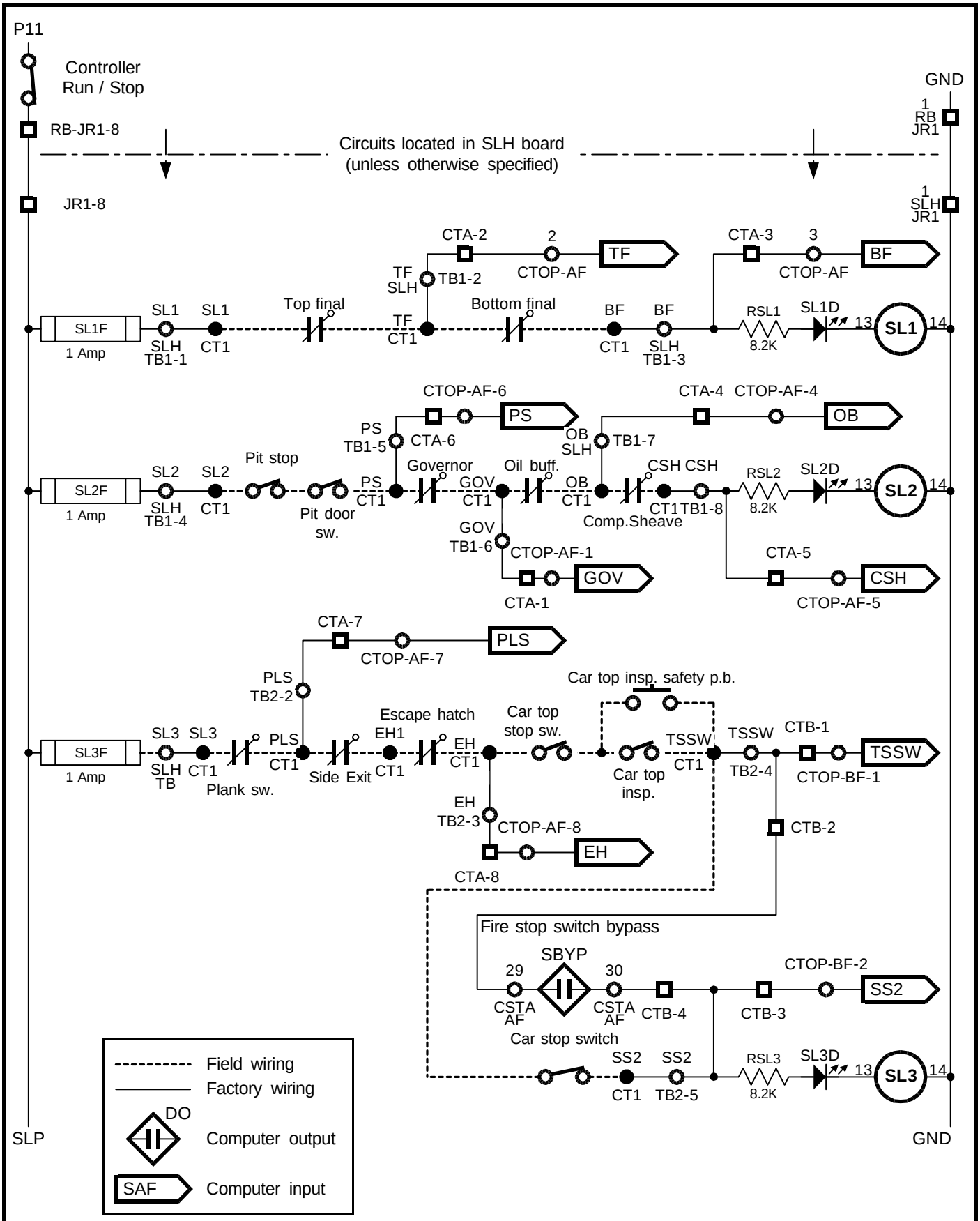
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\IO...\Woodrow Wilson Houses A Car Phase1 Page_09.vsd	
Drawn:	5-21-98 rja	Page 9 of 36 Pages

PW5 Power / Network Connections

REV
A



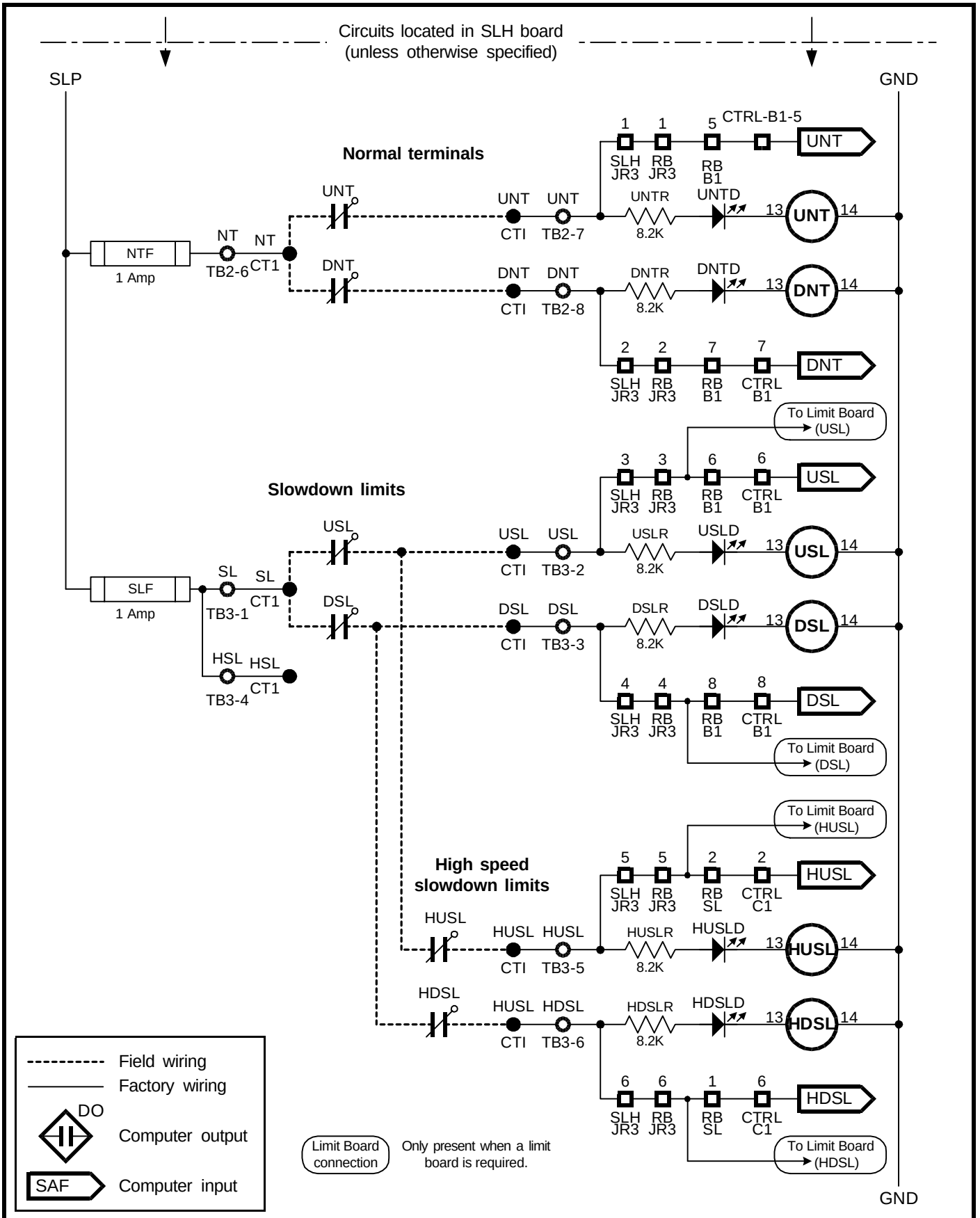
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_10.vsd				
Created:	RicardoA, 5/12/99	**Modified:**	RicardoA, 2/28/03		Page 10 of 36 Pages

Safety line 1

REV **A**



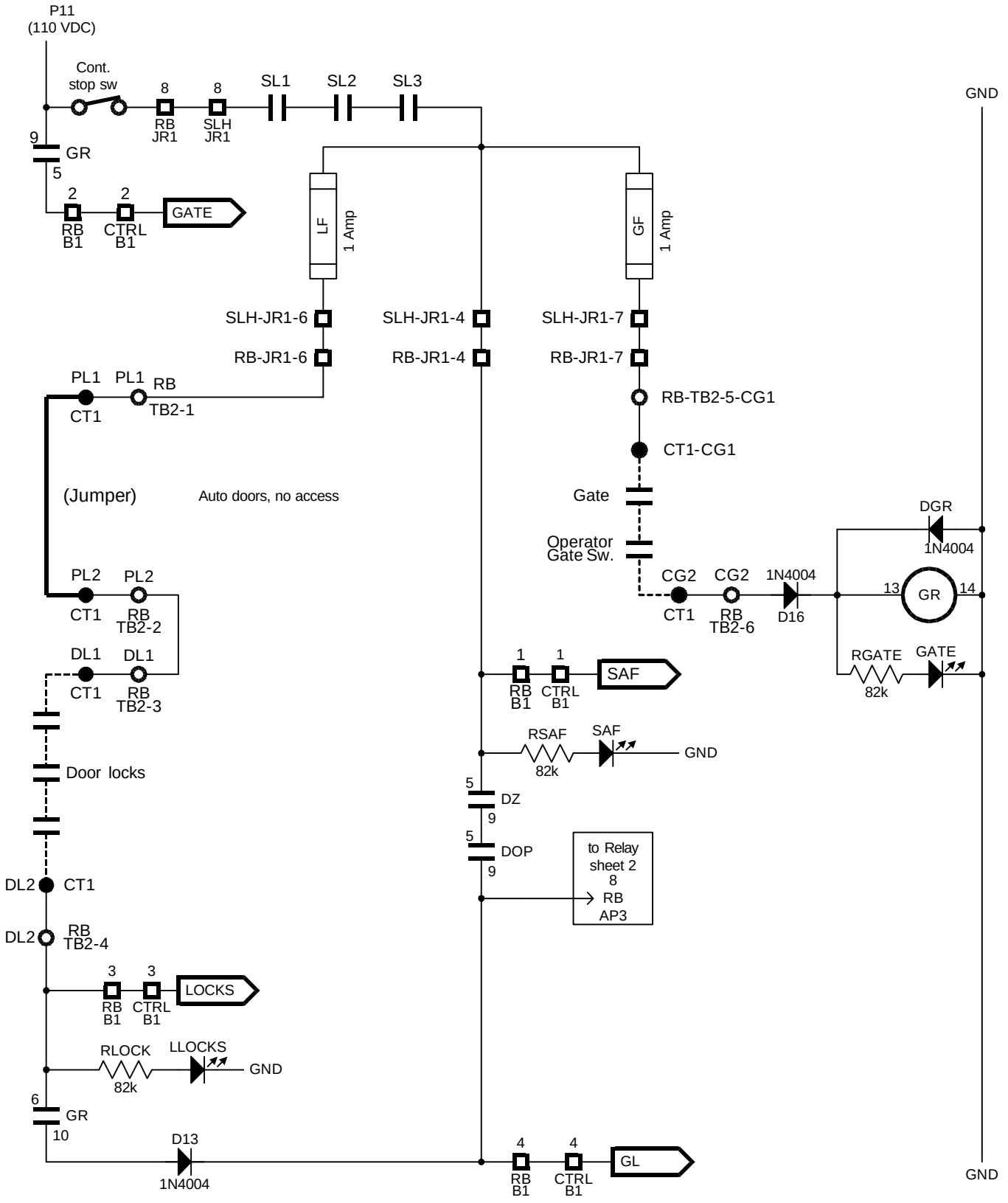
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_11.vsd				
Created:	RicardoA, 5/12/99	**Modified:**	RicardoA, 2/28/03		Page 11 of 36 Pages

Safety line 2

REV **A**



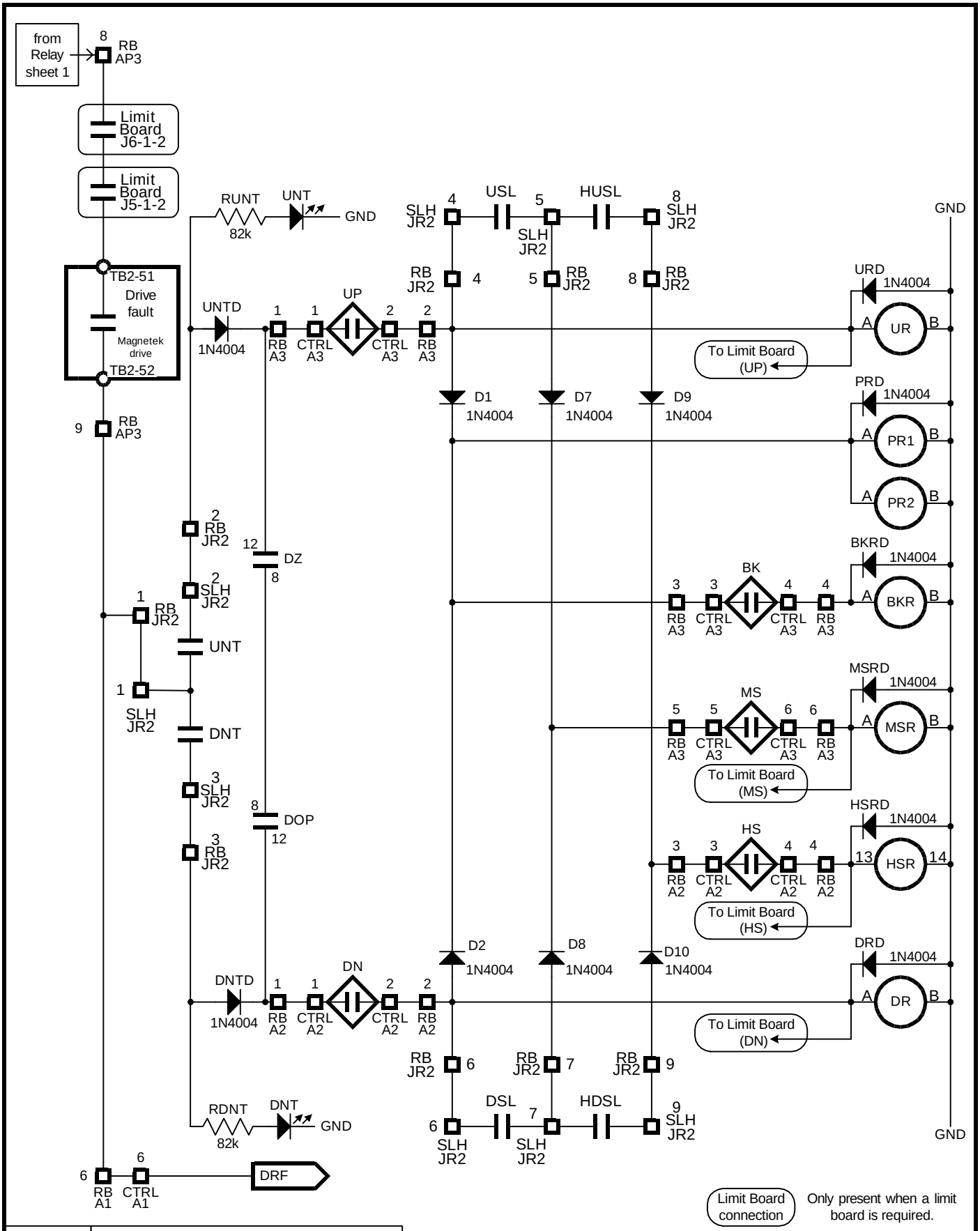
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_12.vsd				
Created:	RicardoA, 5/12/99	**Modified:**	RicardoA, 2/28/03		Page 12 of 36 Pages

Relay section, sheet 1

REV
A



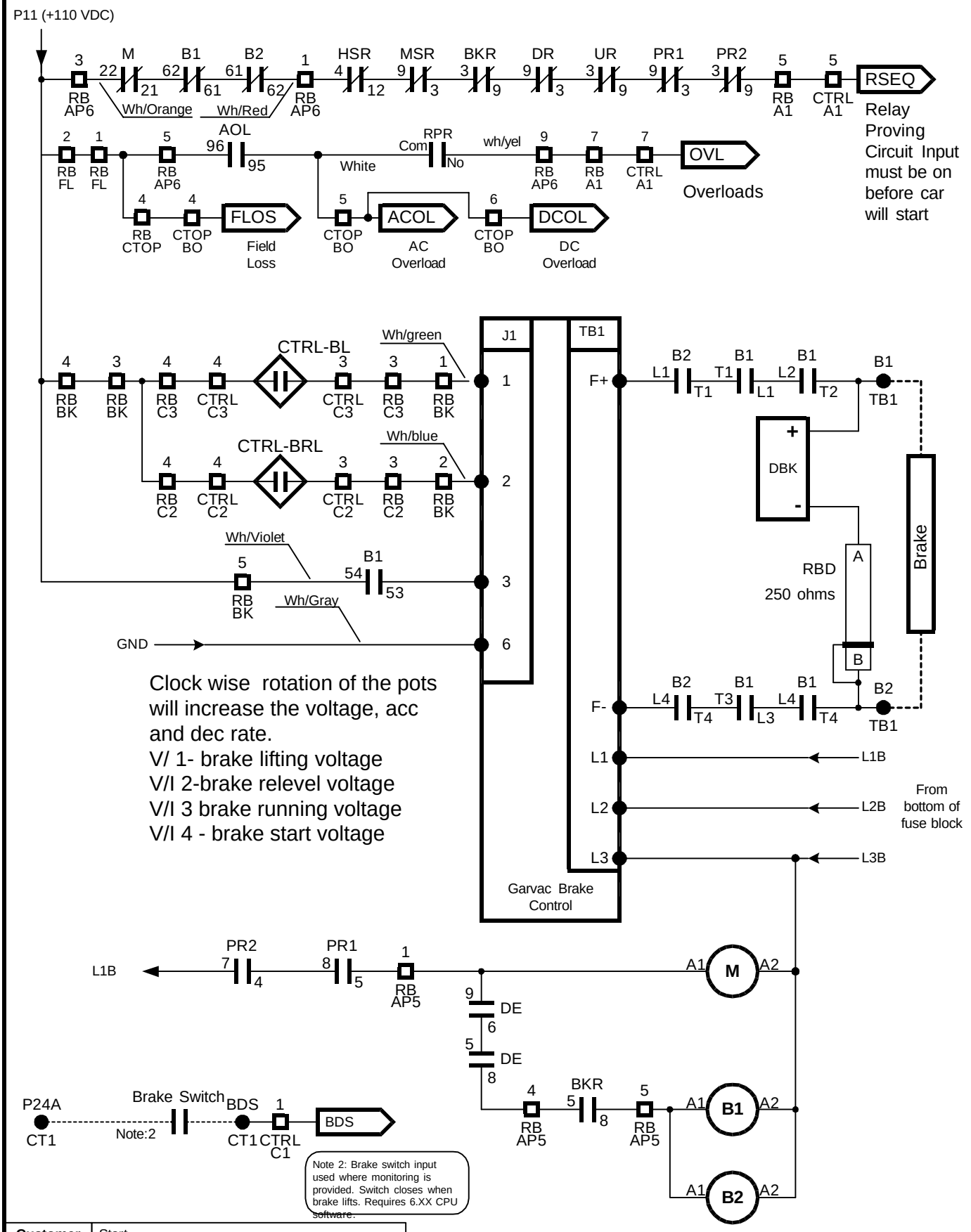
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_13.vsd				
Created:	RicardoA, 5/12/99	**Modified:**	RicardoA, 2/28/03		Page 13 of 36 Pages

Relay section, sheet 2

REV **A**



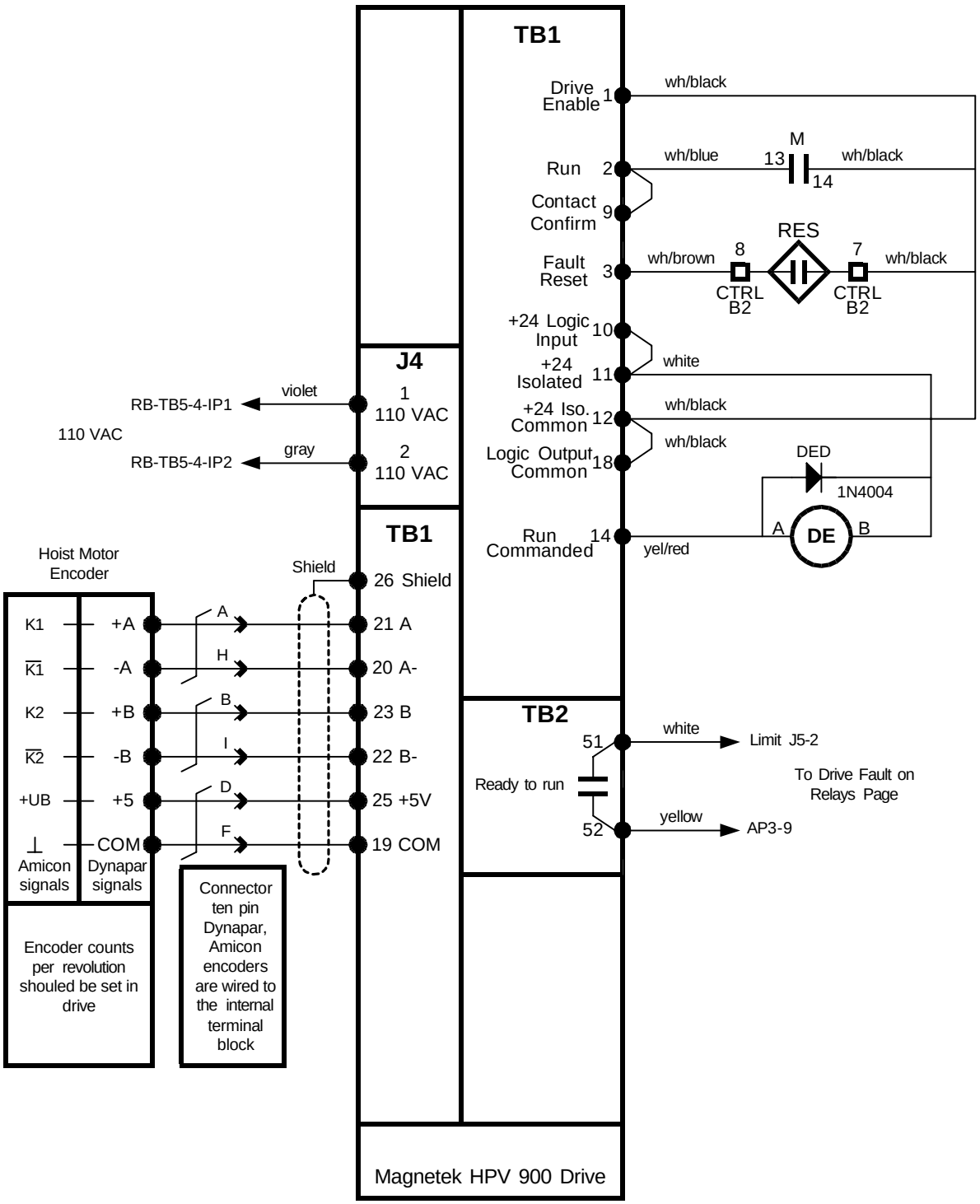
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_14.vsd			
Created:	Tom Hillpot, 8/30/99	**Modified:**	Tom Hillpot, 2/28/03	Page 14 of 36 Pages

Brake Circuit

MAGNETEK HPV 900 DRIVE INTERFACE



Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

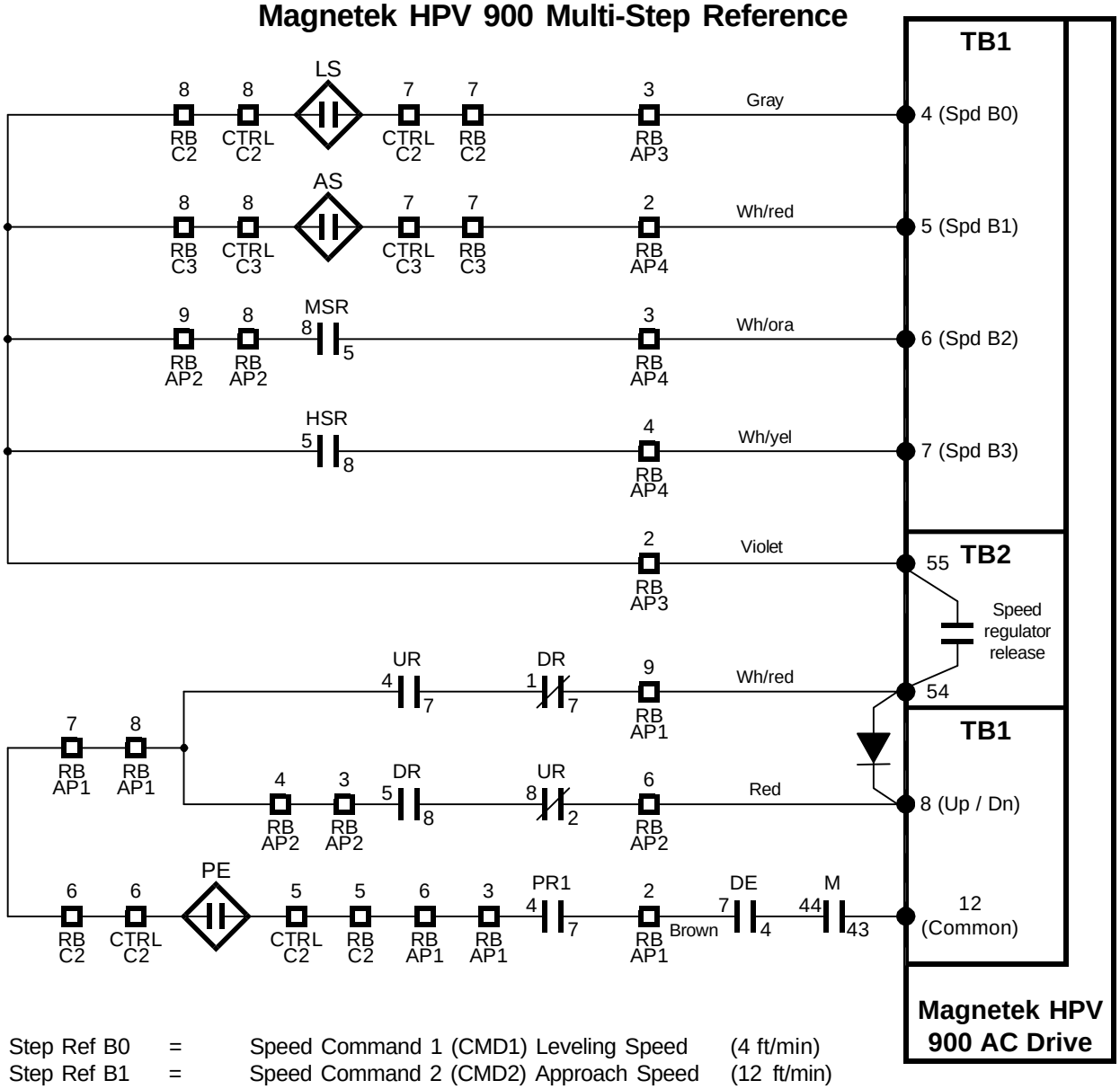
TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_15.vsd				
Created:	TomH, 8/30/99	**Modified:**	TomH, 2/28/03		Page 15 of 36 Pages

Magnetek Drive Interface

REV
X

Magnetek HPV 900 Multi-Step Reference



Step Ref B0 = Speed Command 1 (CMD1) Leveling Speed (4 ft/min)
Step Ref B1 = Speed Command 2 (CMD2) Approach Speed (12 ft/min)
Step Ref B0 & B1 = Speed Command 3 (CMD3) Inspection Speed (45 ft/min)
Step Ref B2 = Speed Command 4 (CMD4) One Floor Run Speed
Step Ref B3 = Speed Command 8 (CMD8) Contract Speed

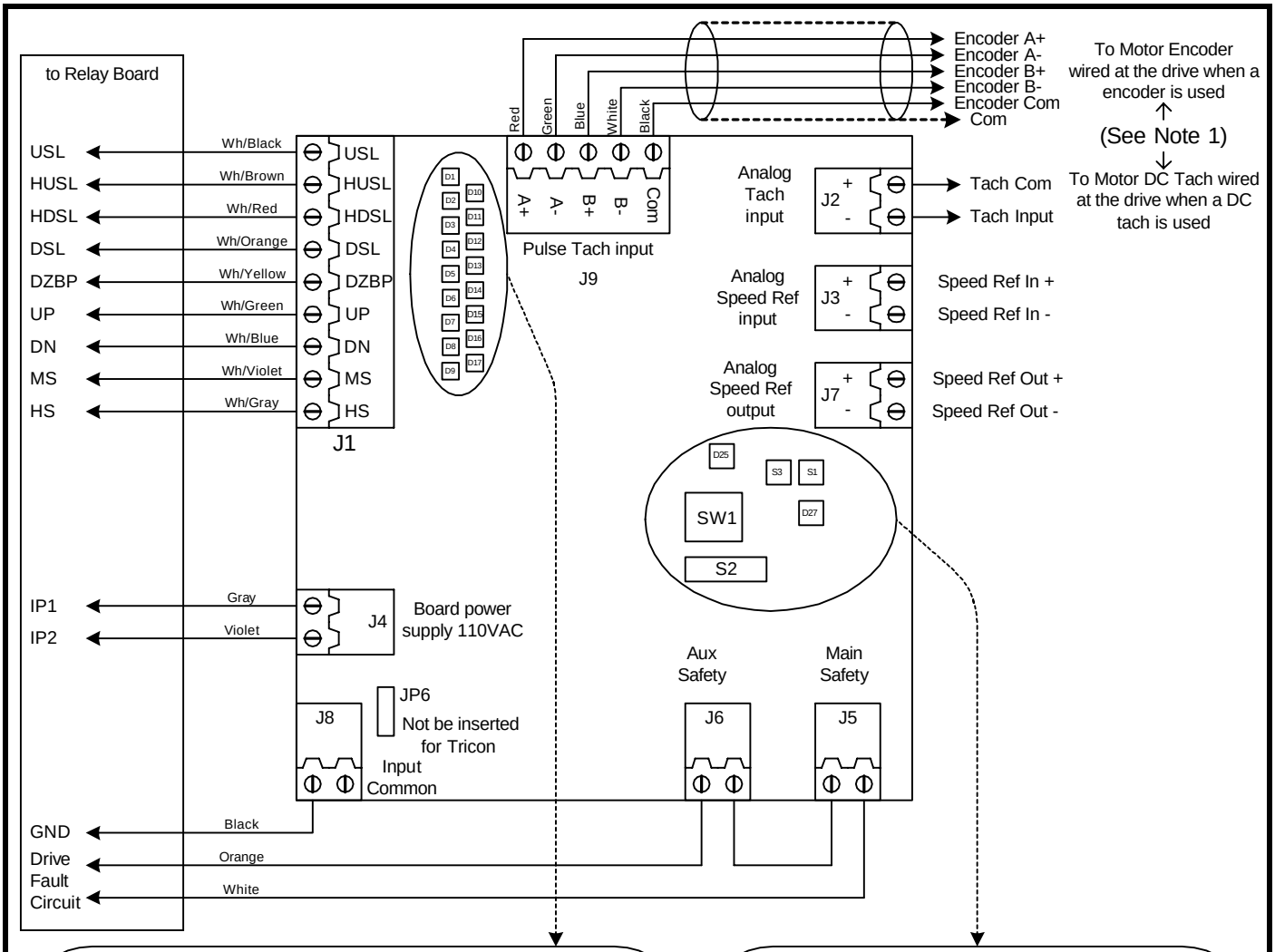
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

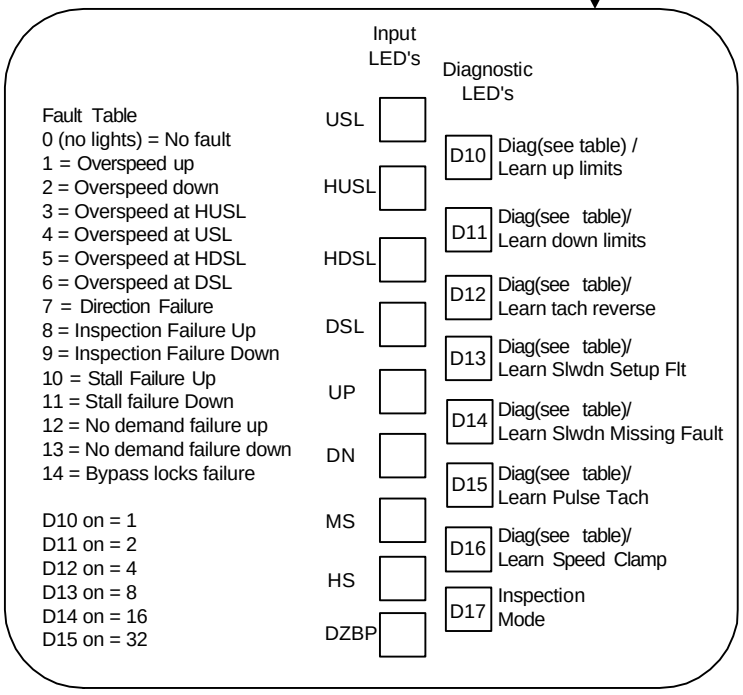
TRICON Controls
Elon 1000

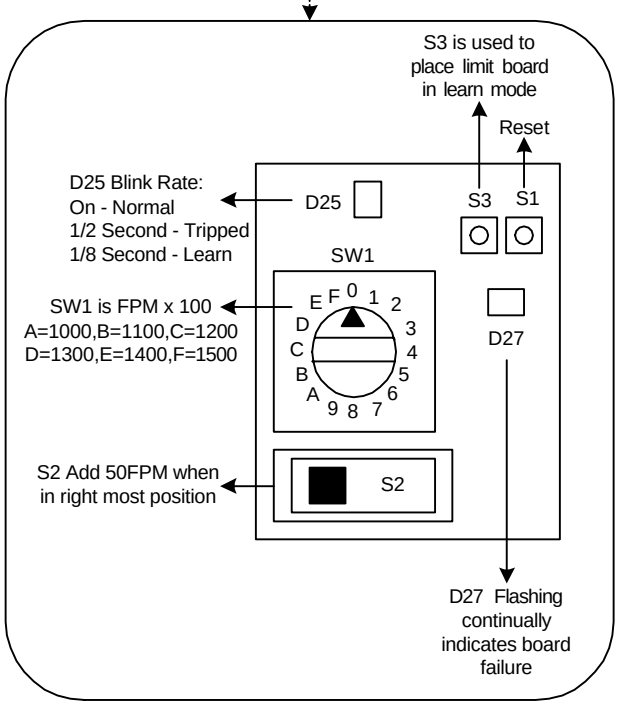
Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_16.vsd				
Created:	Ian MacMillan, 6/14/99	**Modified:**	Ian MacMillan, 2/28/03		Page 16 of 36 Pages

Multi-Step Speed Reference

REV **1**







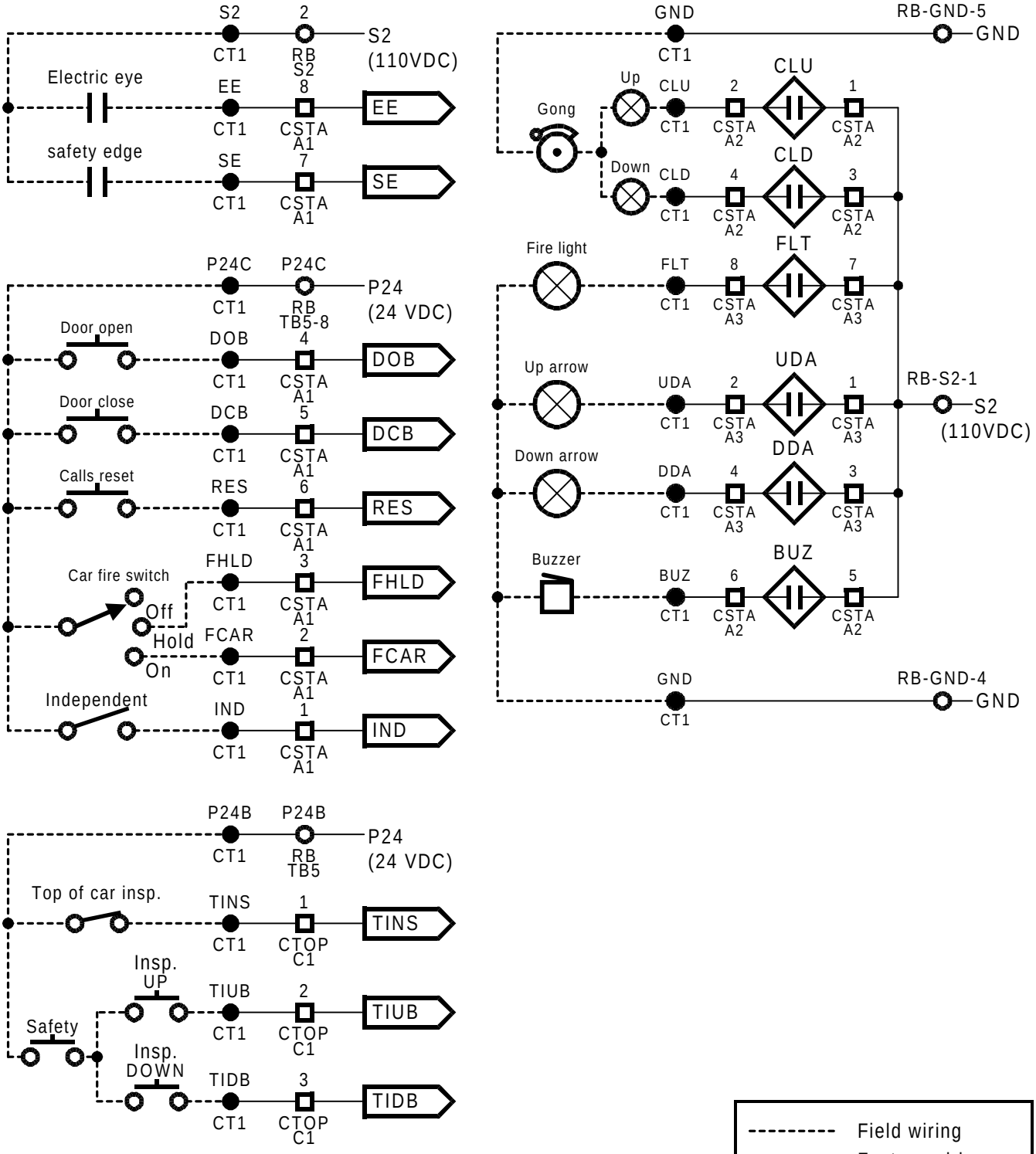
Note 1: An encoder or a Dc Tach can be used to provide the limit board with hoist motor speed feedback.The limit board speed feed will be factory wired to the drive.

Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_17.vsd			
Created:	Tom Hillpot, 8/30/99	**Modified:**	Tom Hillpot, 2/28/03	Page 17 of 36 Pages

Limit Board VVVF



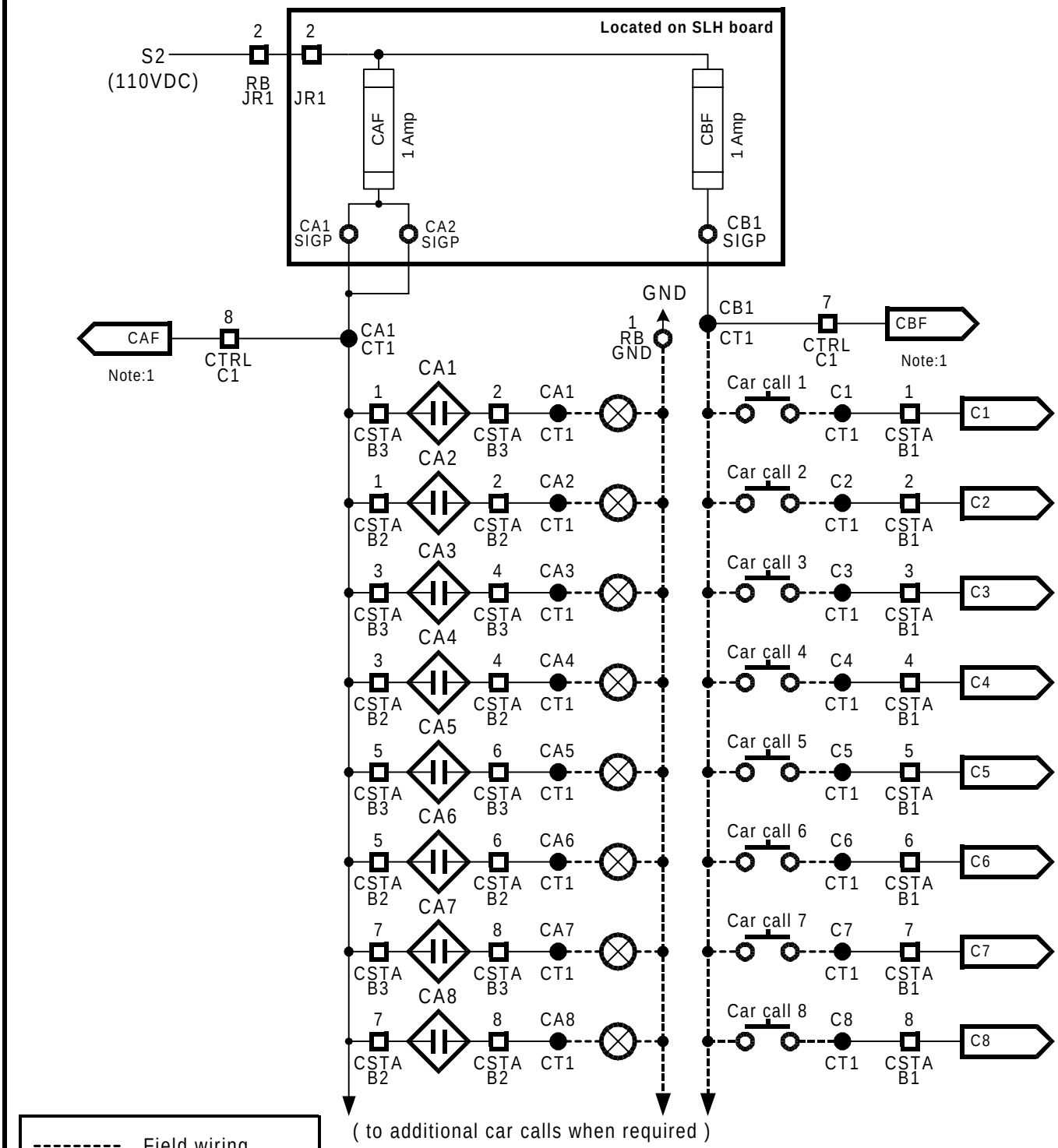
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Final\Page_18.vsd	
Drawn:	2-26-98 rja	Page 18 of 36 Pages

Car station wiring 1

REV **A**



Field wiring

Factory wiring

DO — Computer output

SAF — Computer input

Typical calls wiring shown, for job-specific assignments, look at the calls table in the job data sheets.

Note:1 Input used where fuse monitoring is provided. Requires version 6.XX CPU software.

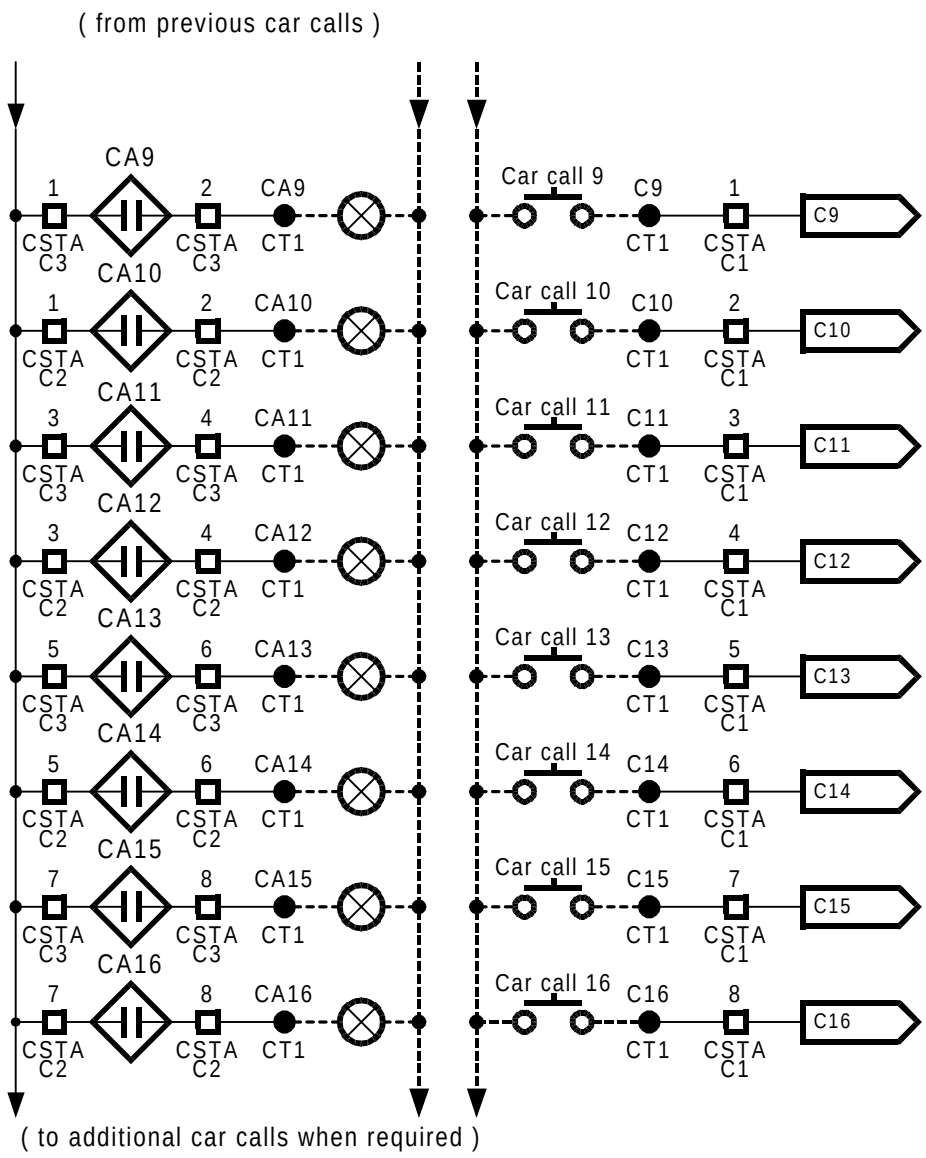
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_19.vsd
Drawn:	2-26-98 rja

Car station wiring 2 - calls 1-8

REV **A**



Field wiring

Factory wiring

DO — Computer output

SAF — Computer input

Typical calls wiring shown, for job-specific assignments, look at the calls table in the job data sheets.

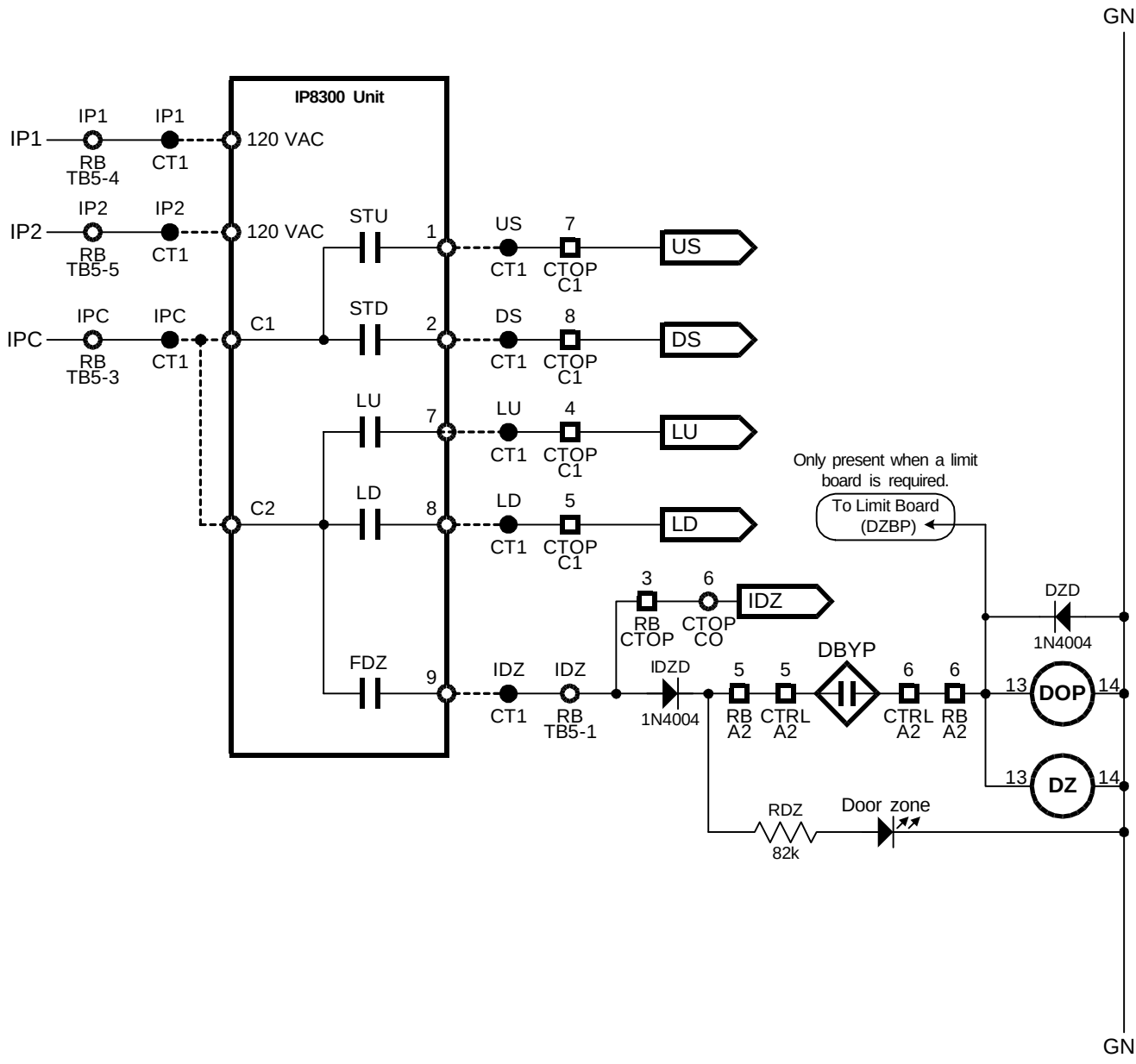
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_20.vsd
Drawn:	2-26-98 rja

Car station wiring 3 - calls 9-16

REV **A**



Field wiring

Factory wiring

DO — Computer output

SAF — Computer input

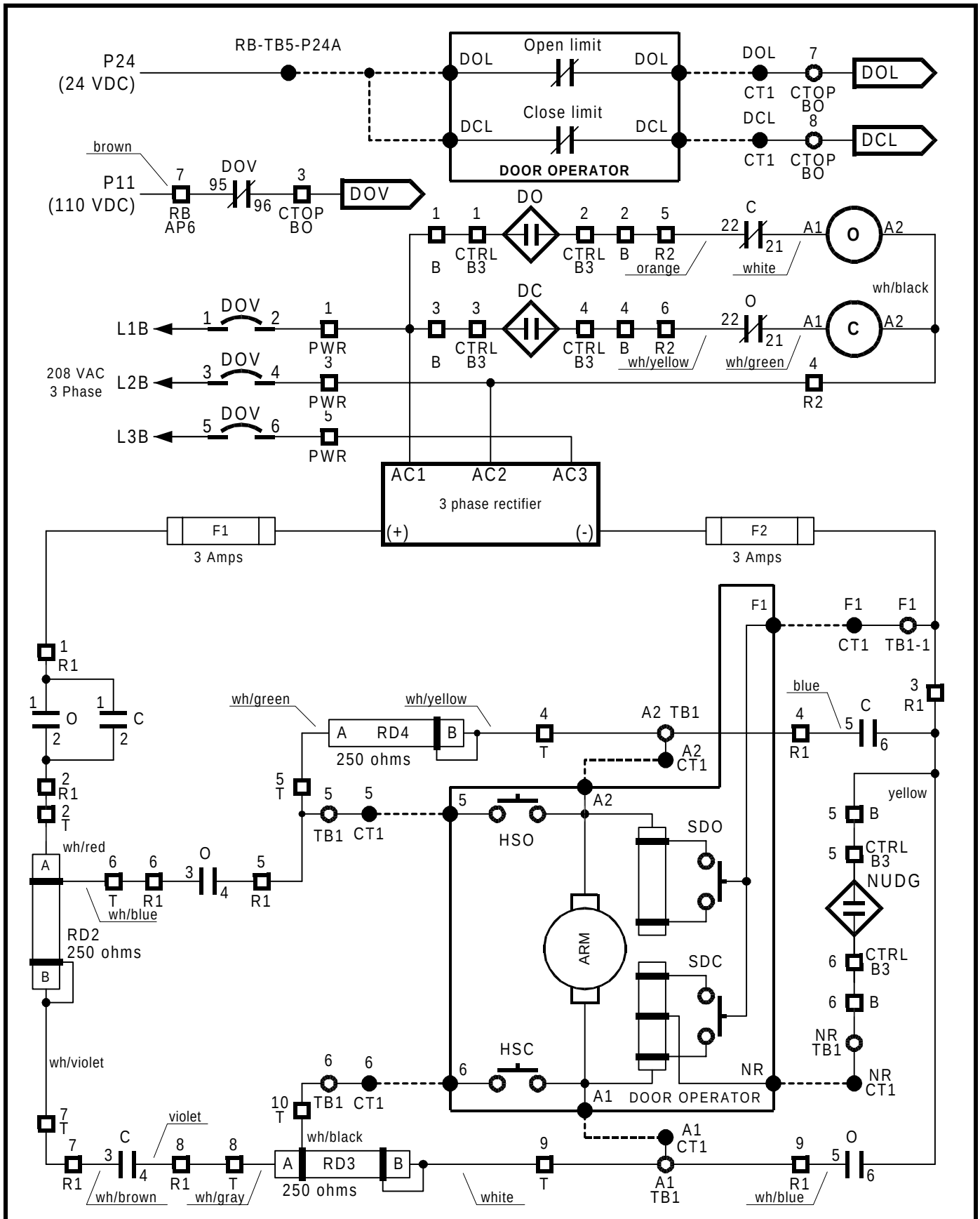
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_21.vsd				
Created:	RicardoA, 5/18/99	**Modified:**	RicardoA, 2/28/03		Page 21 of 36 Pages

Position selector, NYCHA

REV **X**



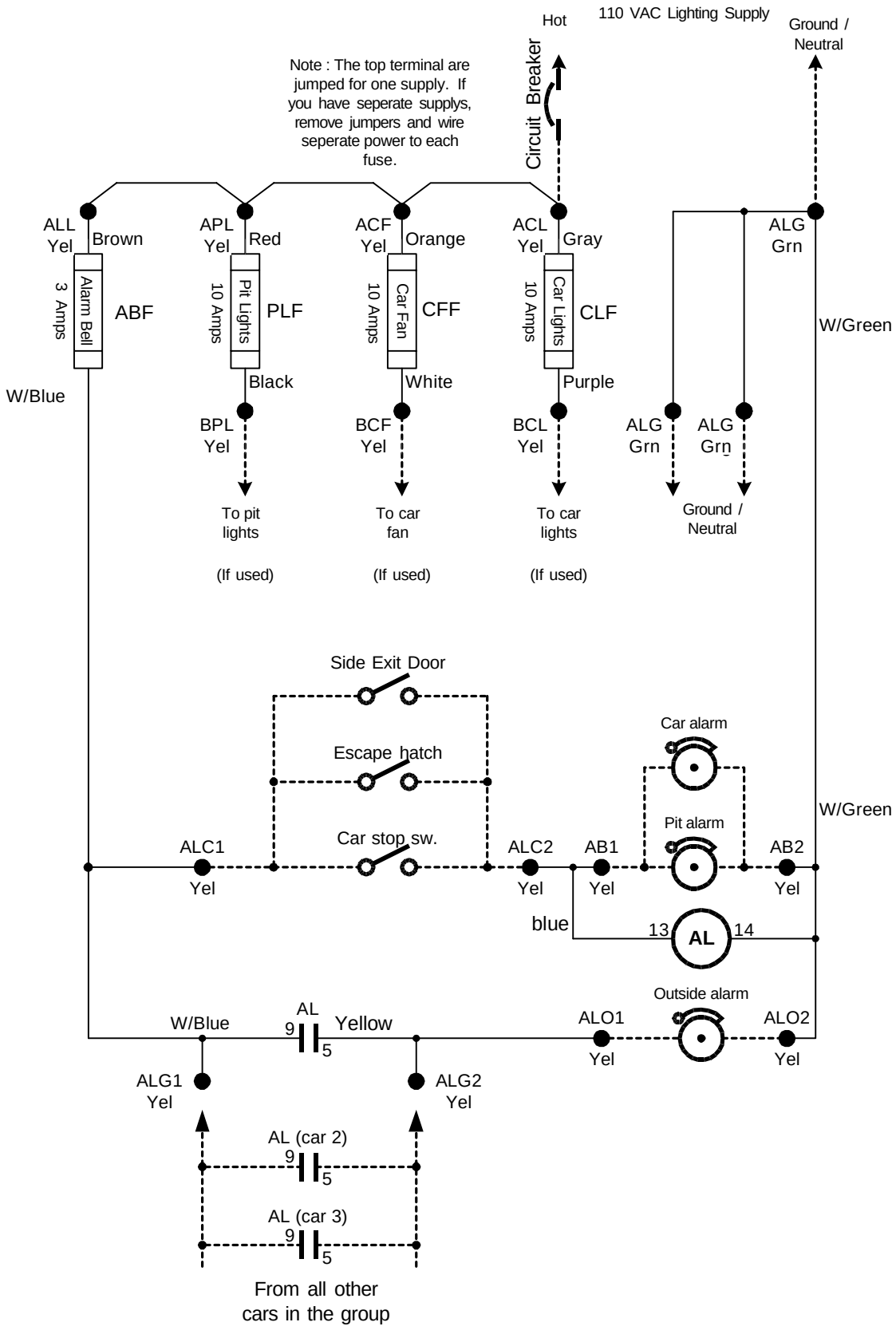
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\RYCHA\Woodrow Wilson Houses A Car Phase1 Page_22.vsd
Drawn:	2-26-98 rja

GAL MOD

REV **A**



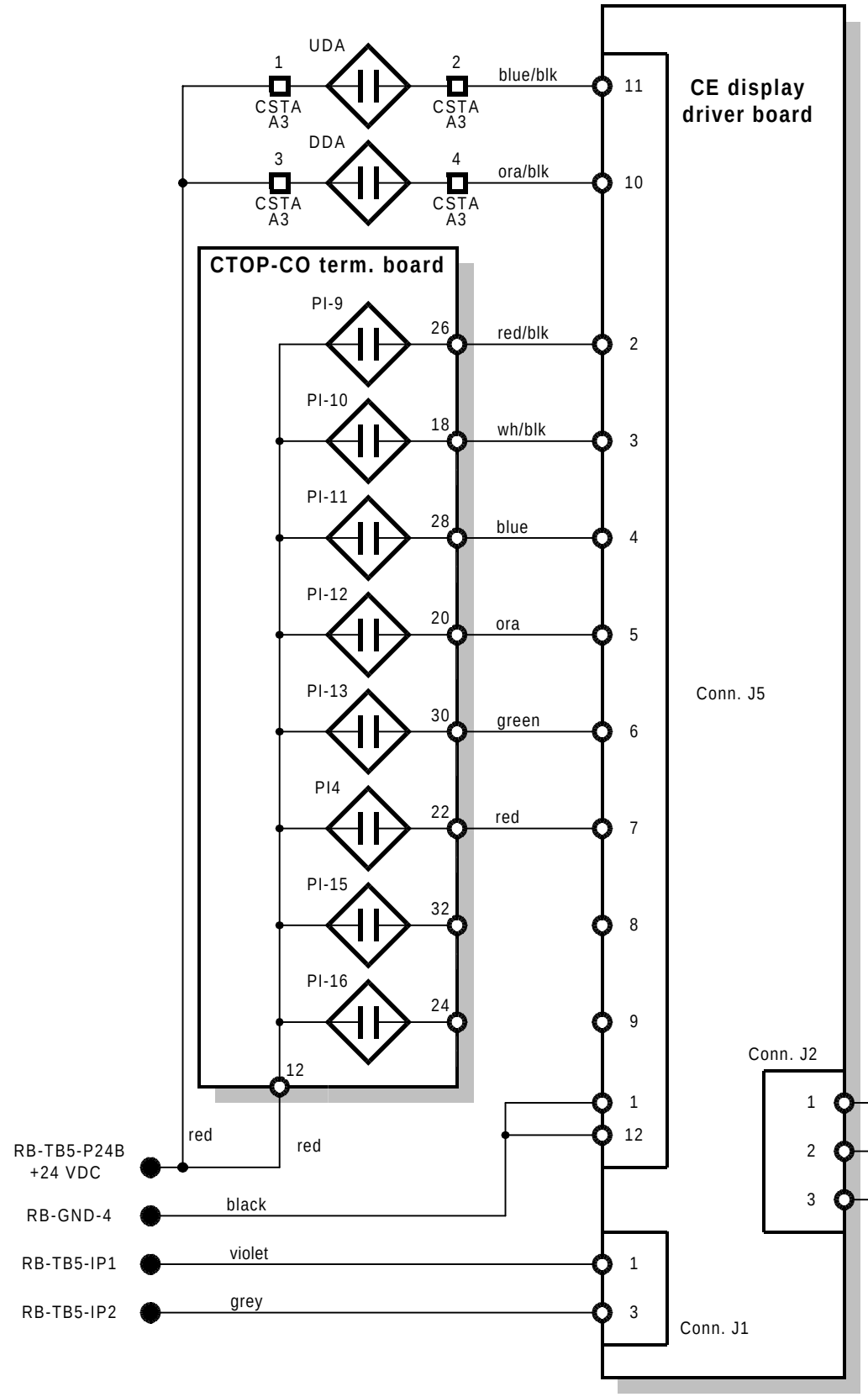
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_23.vsd				
Created:	rjabal, 11/4/98	**Modified:**	rjabal, 2/28/03		Page 23 of 36 Pages

Alarm circuit (master car)

REV **X**



NOTE 1 : The position indicators from the CTOP board are used when a CE driver, provided by Tricon is used on a group car. This drawing shows a CE driver board provided by Tricon, wired to the CTOP board PI outputs. The PI outputs 1-8 are from the "C" section of the CTOP board. To configure the first 8 outputs on the "C" section setup the parameters for position indicators, HALL board. To configure the outputs for a binary output, starting with 1 at the bottom landing do the following. Example floor1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7, 8=8, ETC.. The value 1-32 will display the number you enter, 33-54 will display character shown in the manual. The direction arrow outputs are located on the CSTA board.

NOTE 2: If using shielded pair, connect shield to pin 1

NOTE:3 To displays on the car and lobby. Do not operate more than four displays from the display driver provided by Tricon

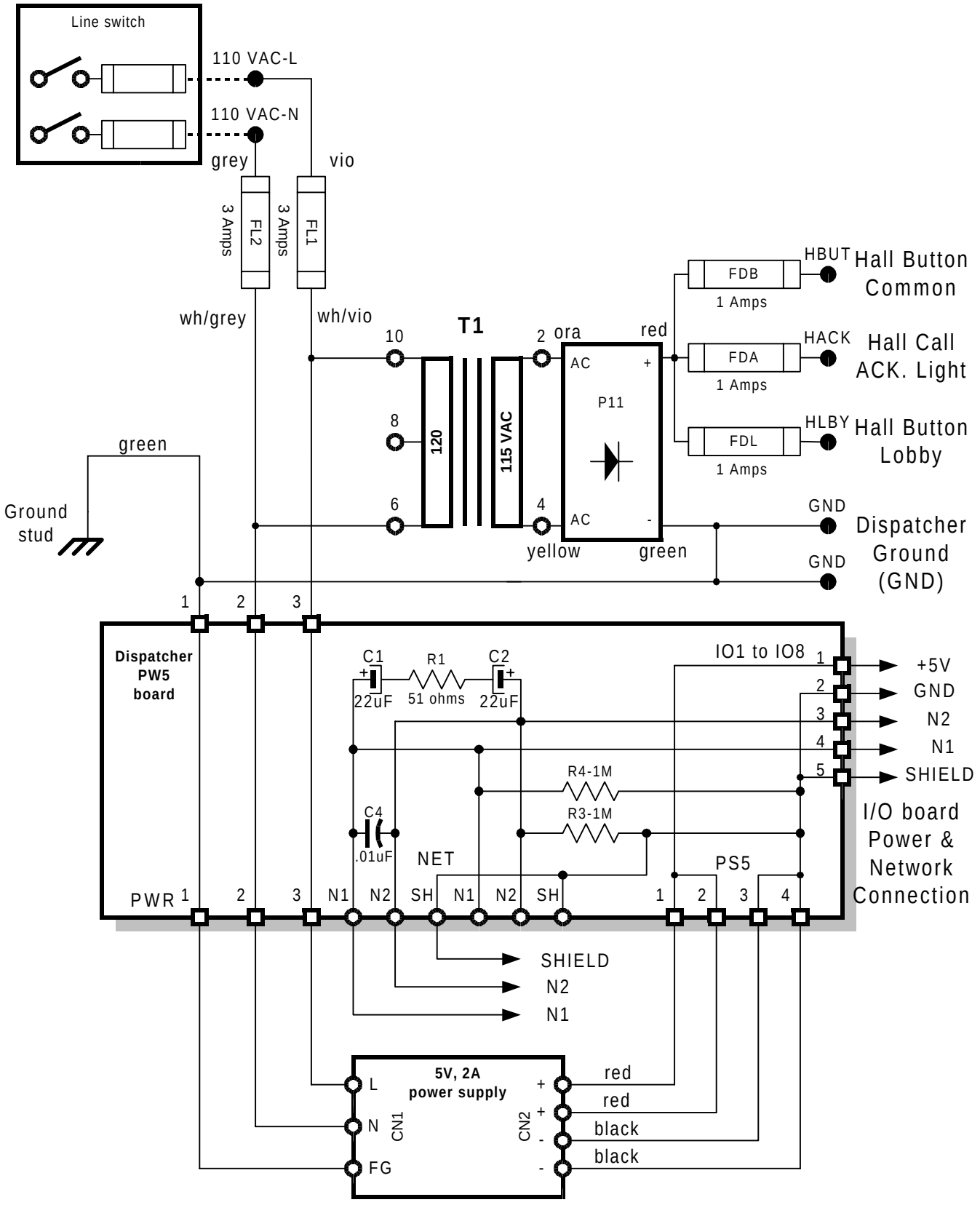
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\C. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_24.vsd
Drawn:	andrew 12/1/97 Modified: 2/28/03

CE digital display driver

REV **A**



Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

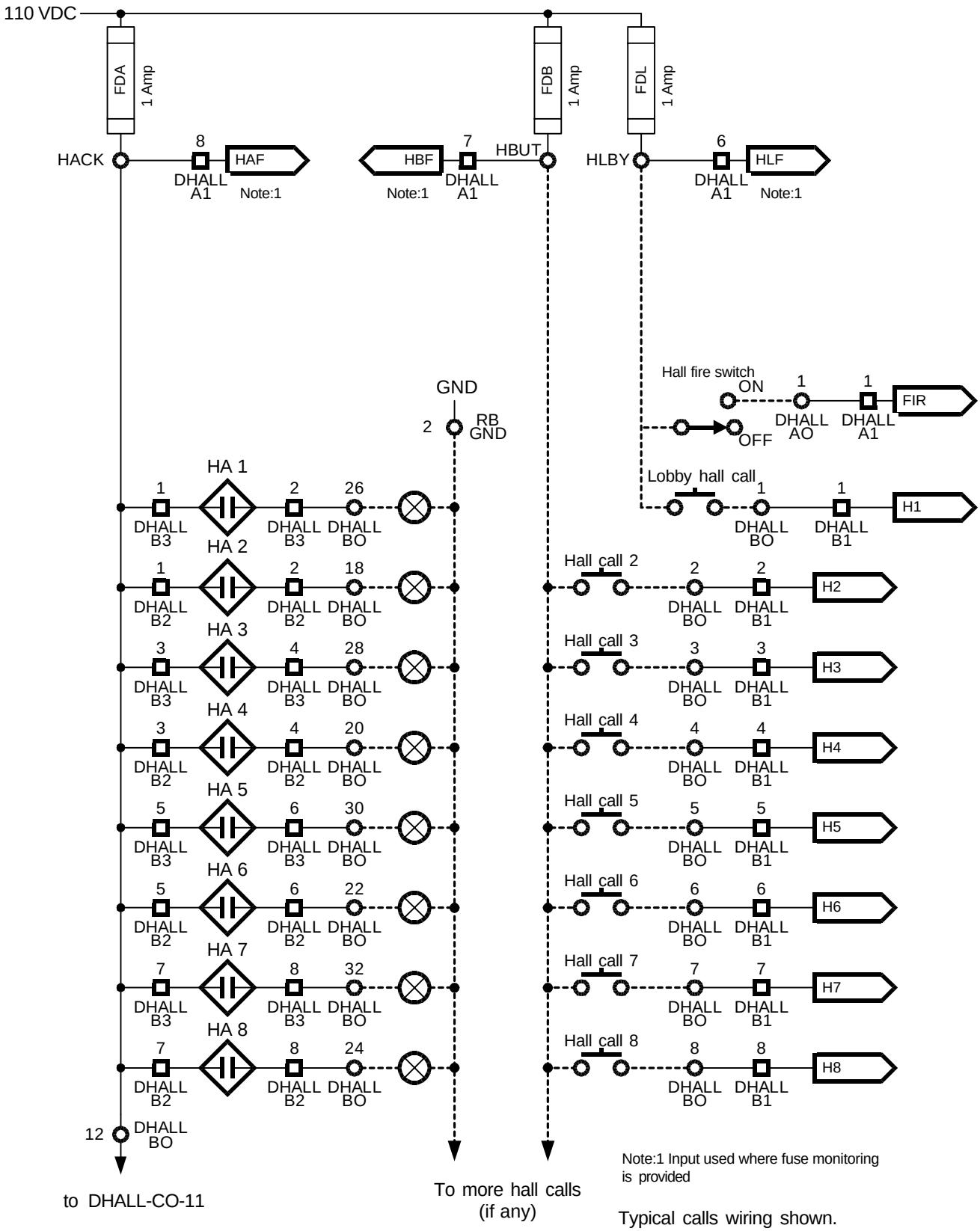
TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\TCHA\Woodrow Wilson Houses A Car Phase1 Page_25.vsd
Drawn:	6/22/99 rjabal, Modified: 2/28/03

Dispatcher power supplies

REV **A**

(Dispatcher +110 VDC)



Note:1 Input used where fuse monitoring is provided

Typical calls wiring shown.
For job-specific assignments, look at the calls table in the job data sheets.

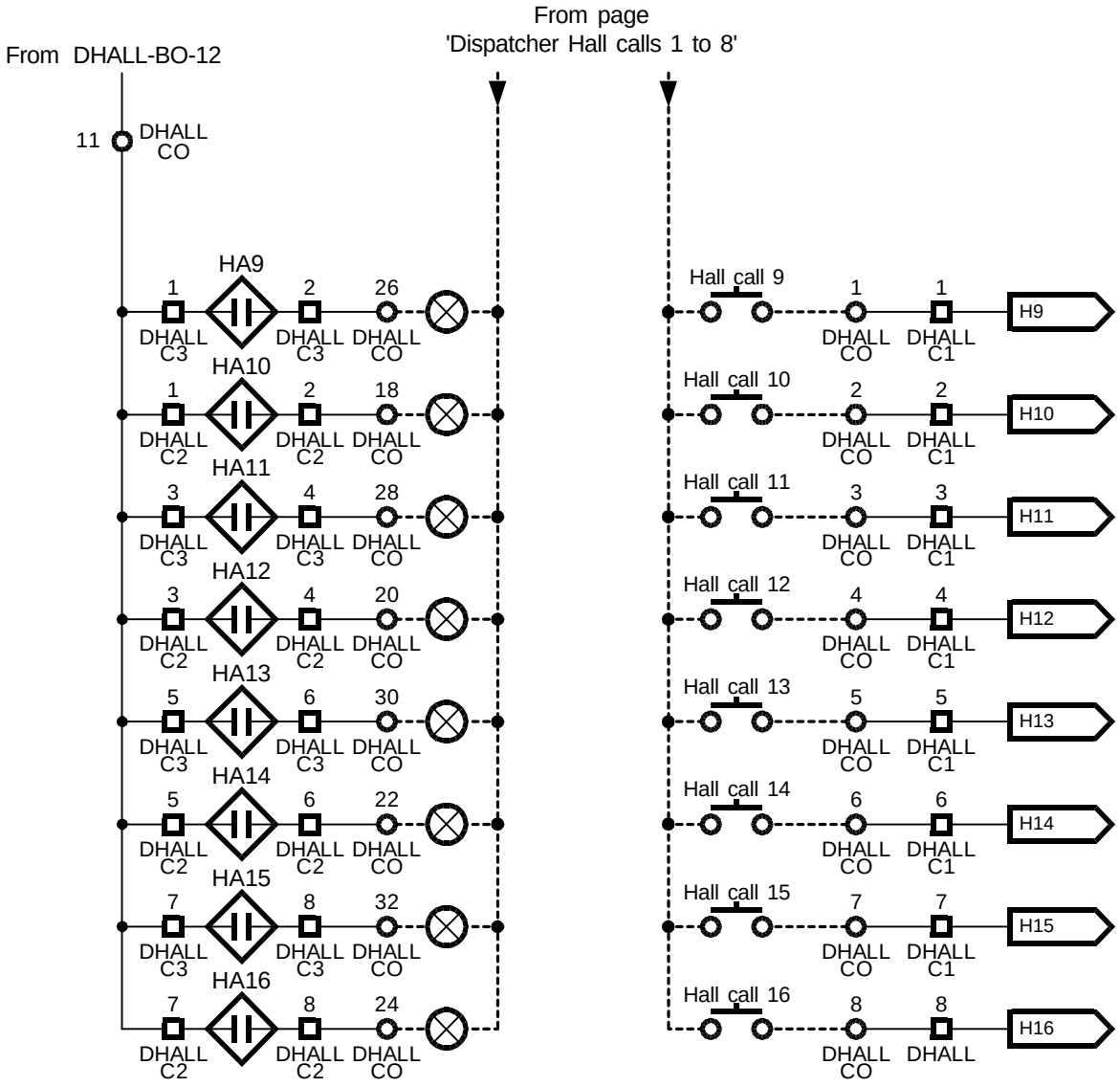
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_26.vsd				
Created:	RicardoA, 5/19/99	**Modified:**	RicardoA, 2/28/03		Page 26 of 36 Pages

Dispatcher hall calls 1 to 8

REV **A**



Typical calls wiring shown, for job-specific assignments, look at the calls table in the job data sheets.

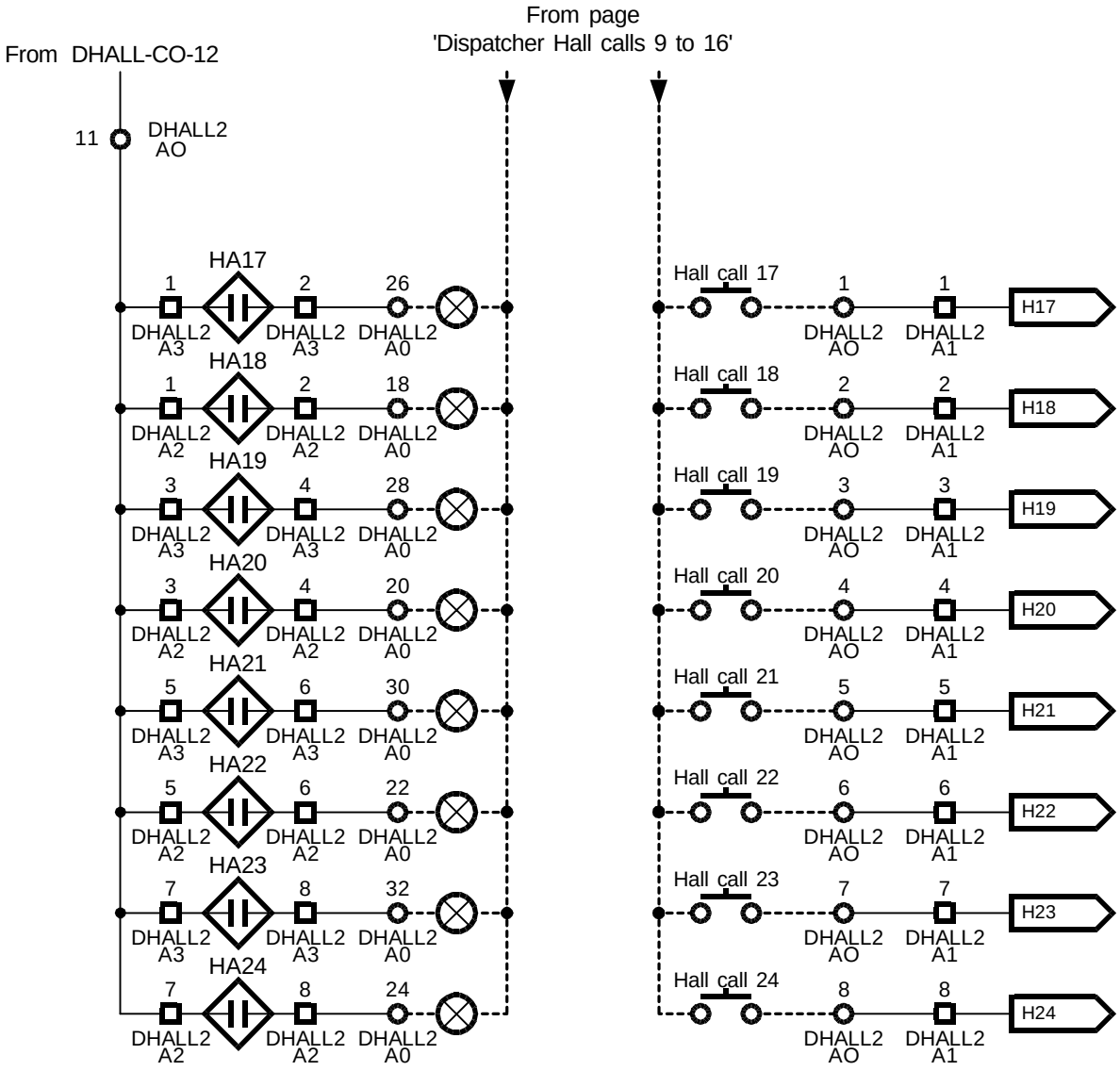
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

TRICON Controls
Elon 1000

Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_27.vsd				
Created:	RicardoA, 5/19/99	**Modified:**	RicardoA, 2/28/03		Page 27 of 36 Pages

Dispatcher hall calls 9 to 16

REV **A**



Typical calls wiring shown, for job-specific assignments, look at the calls table in the job data sheets.

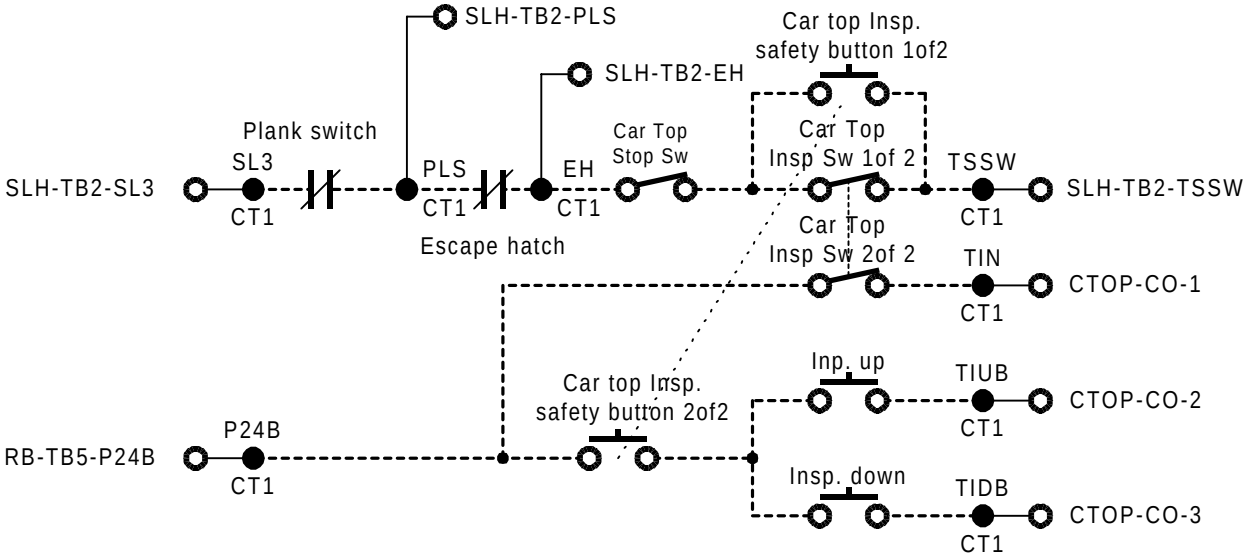
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

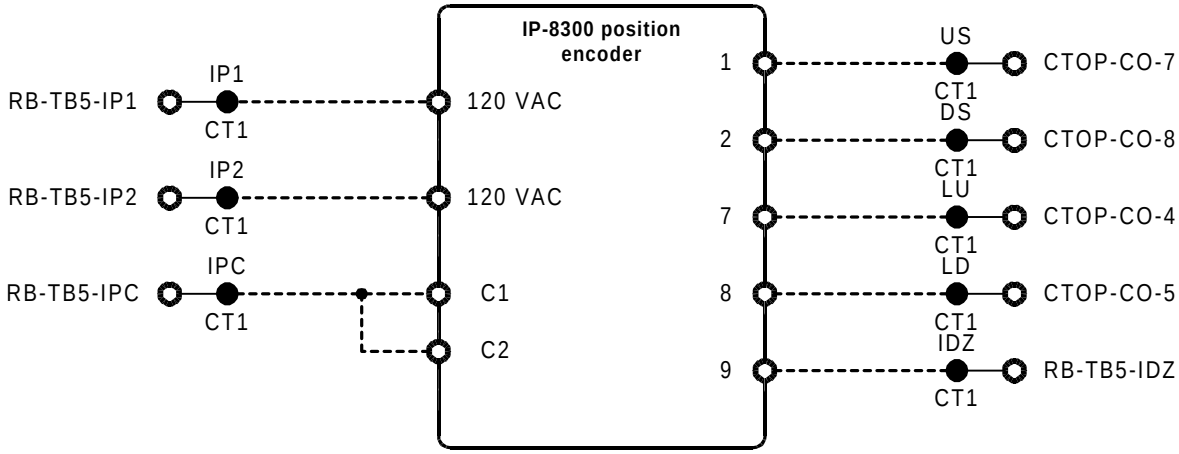
TRICON Controls
Elon 1000

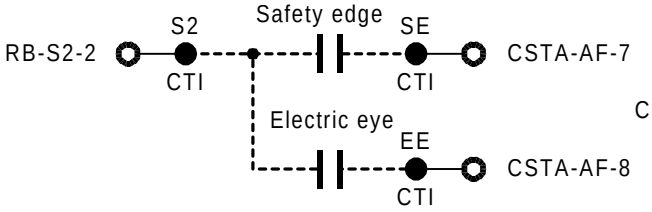
Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_28.vsd				
Created:	RicardoA, 5/19/99	**Modified:**	RicardoA, 2/28/03		Page 28 of 36 Pages

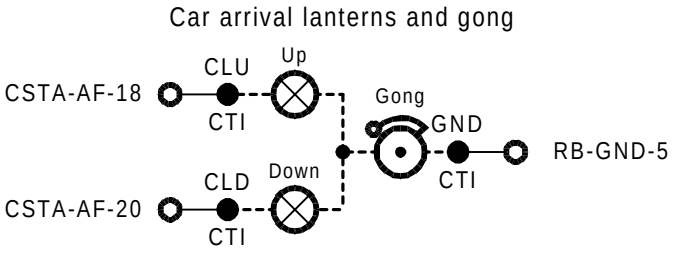
Dispatcher hall calls 17 to 24

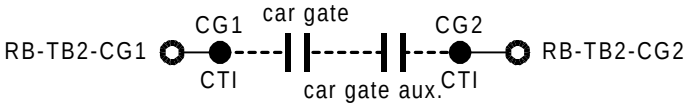
REV
A

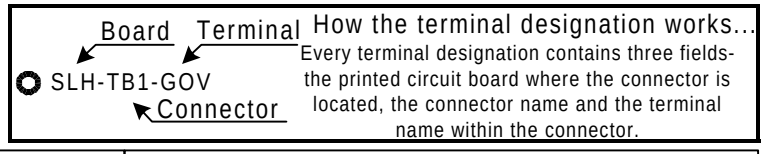


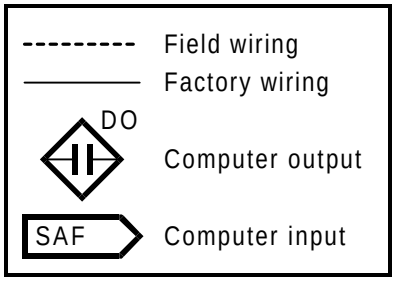












Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

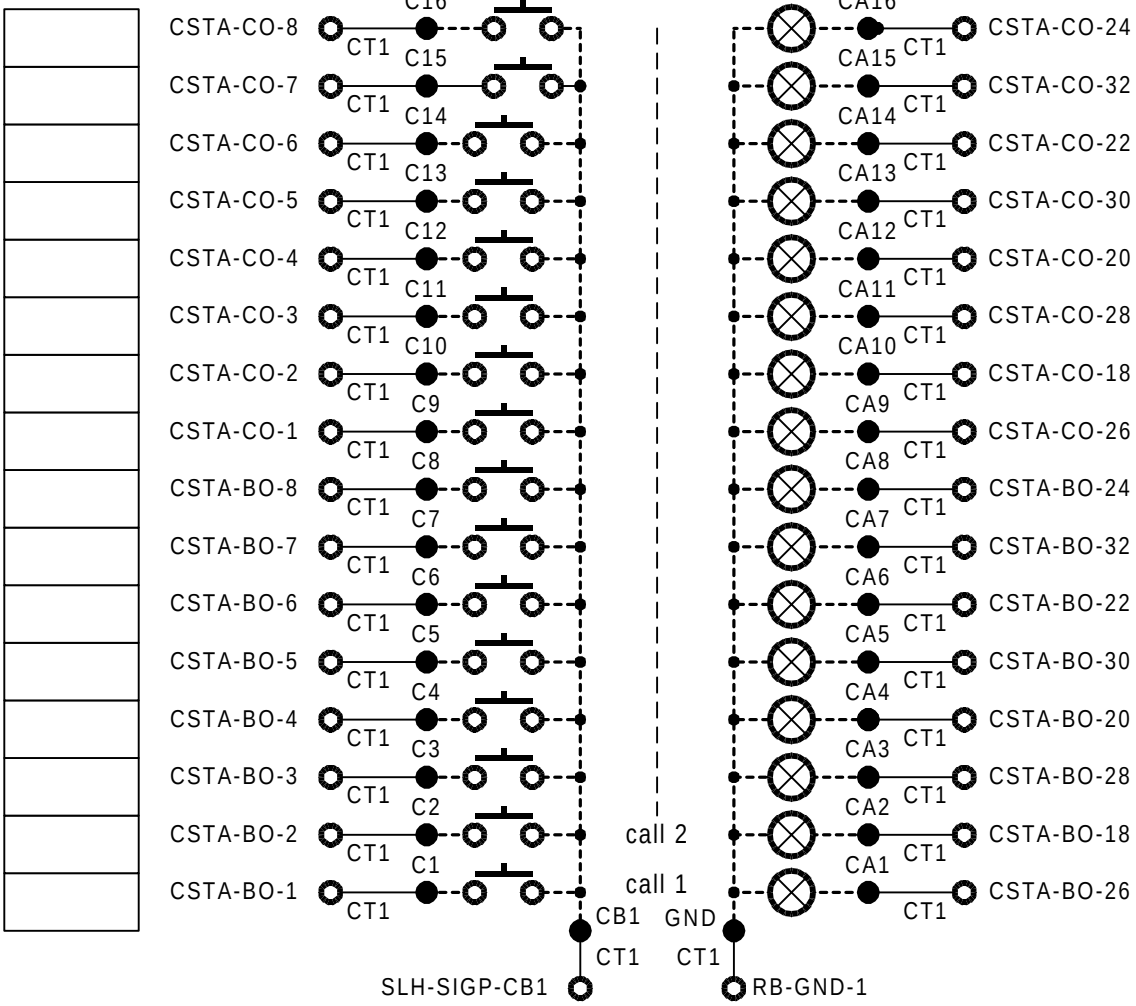
Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_29.vsd
Drawn:	2-26-98 rja

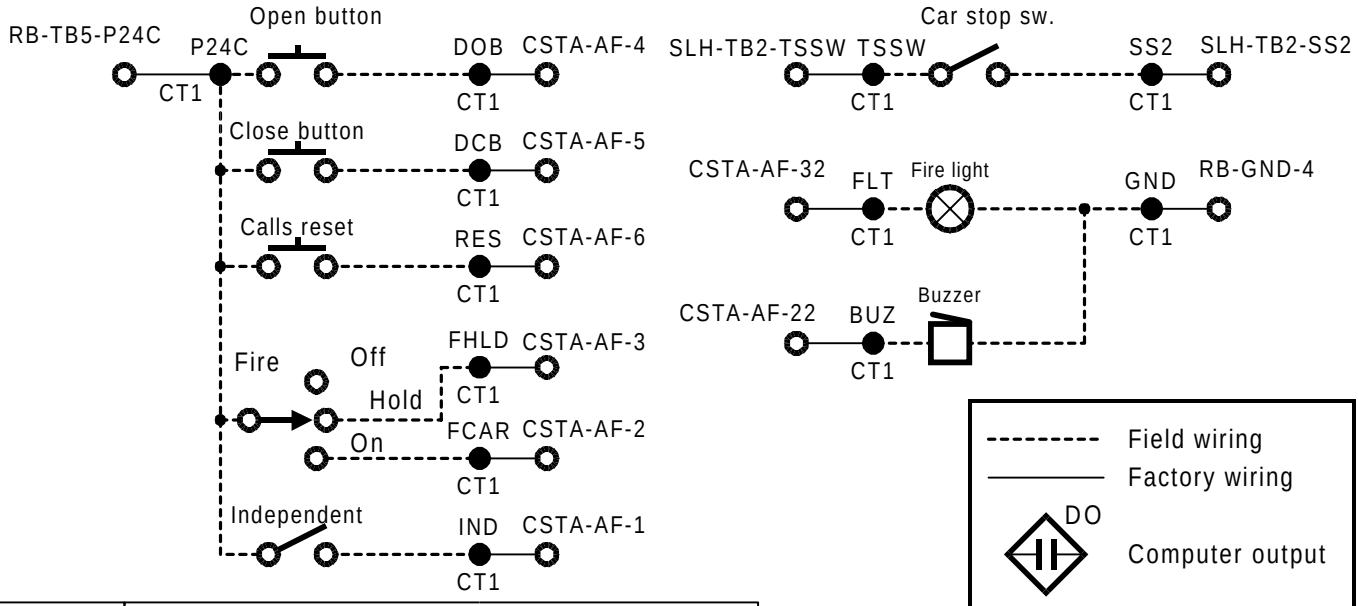
Wiring diagram, Top of car

REV **A**

Car calls are assigned to terminals by the computer, call 1 corresponds to the bottom floor, call 2 to the next floor up, and so on. Unused calls will not be activated.

Floor names





Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

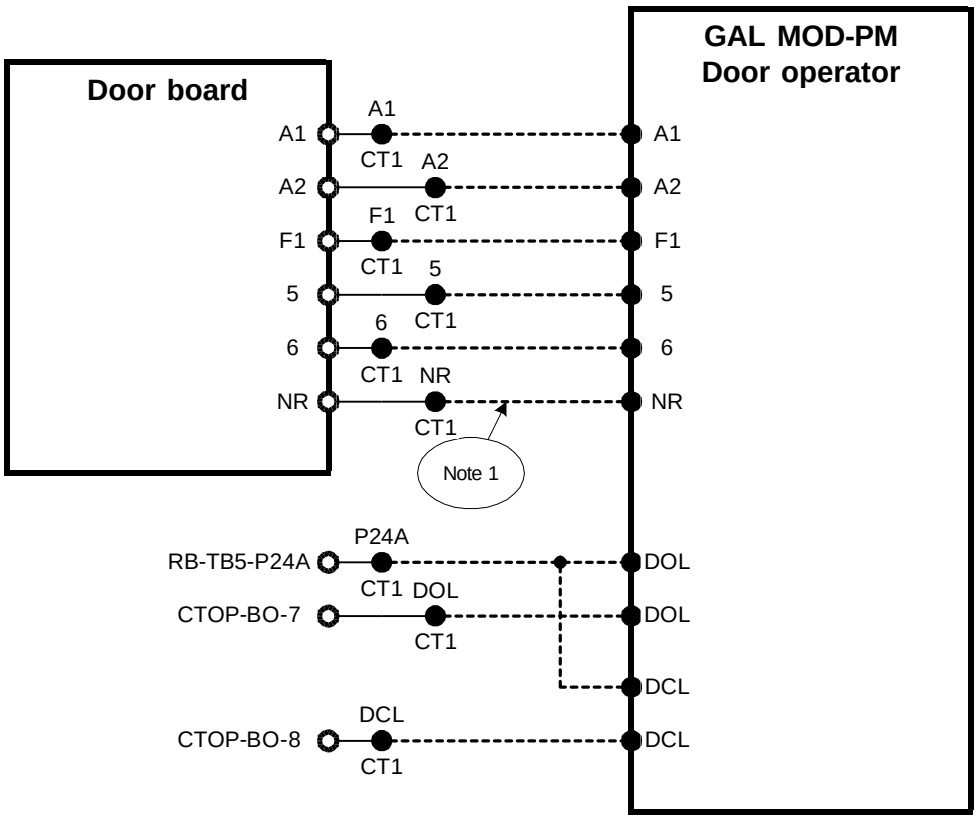
TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Final\Page_30.vsd
Drawn:	2-26-98 rja

Wiring diagram, Car station

REV **A**

Door operator wiring diagram



NOTE 1: This connection only used if door operator has nudging feature.

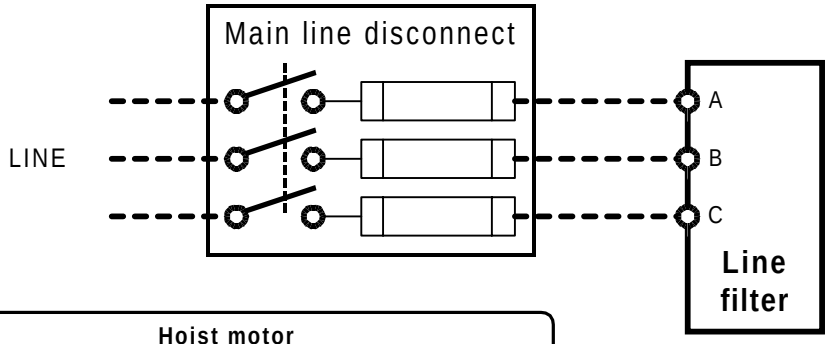
Customer:	Start		
Job name:	Woodrow Wilson Houses	**Car name:**	Car A

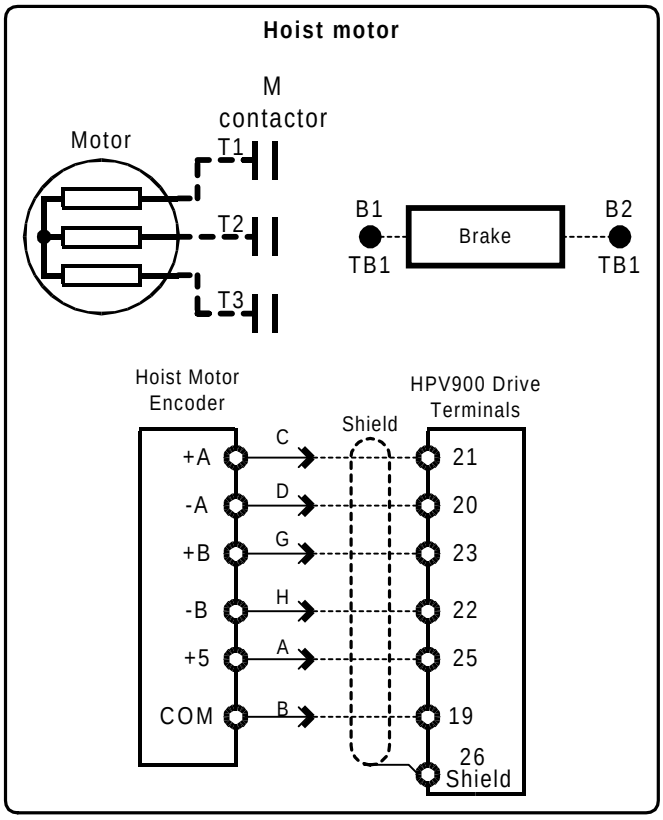
TRICON Controls
Elon 1000

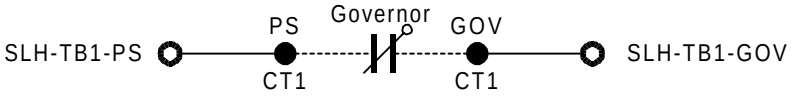
Filename:	C:\My Documents\O.Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_31.vsd			
Created:	RicardoA, 7/6/99	**Modified:**	RicardoA, 2/28/03	Page 31 of 36 Pages

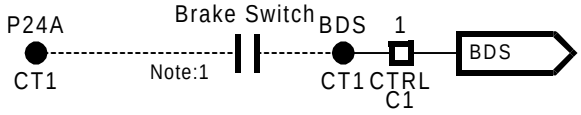
Wiring diagram, door operator

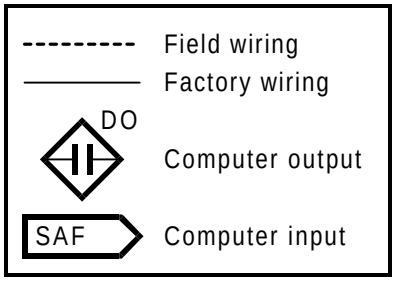
REV
X











Note:1 Brake switch input used where monitoring is provided. Switch closes when brake lifts.

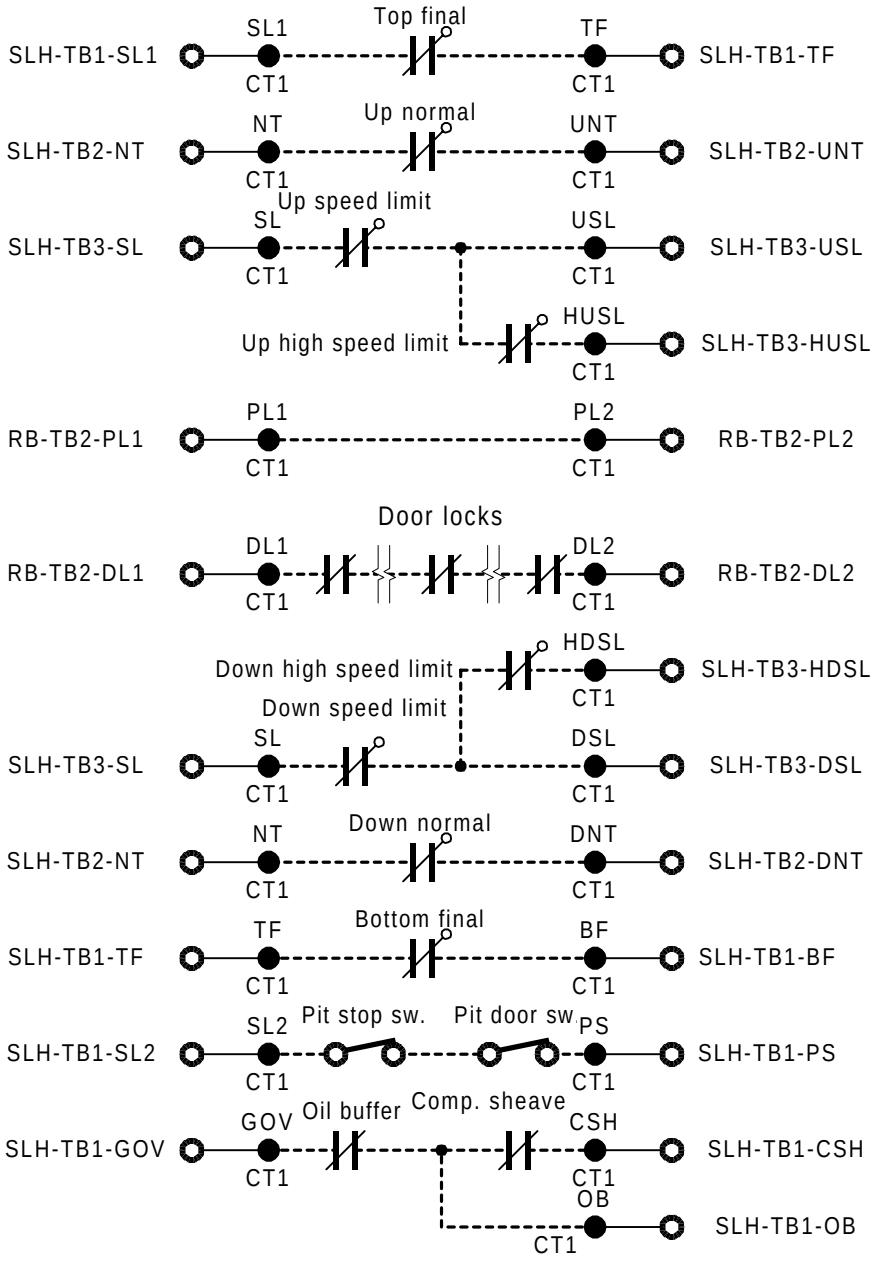
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Final\Page_32.vsd
Drawn:	2-26-98 rja

Wiring diagram, Machine room

REV **A**



Field wiring

Factory wiring

DO — Computer output

SAF — Computer input

Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

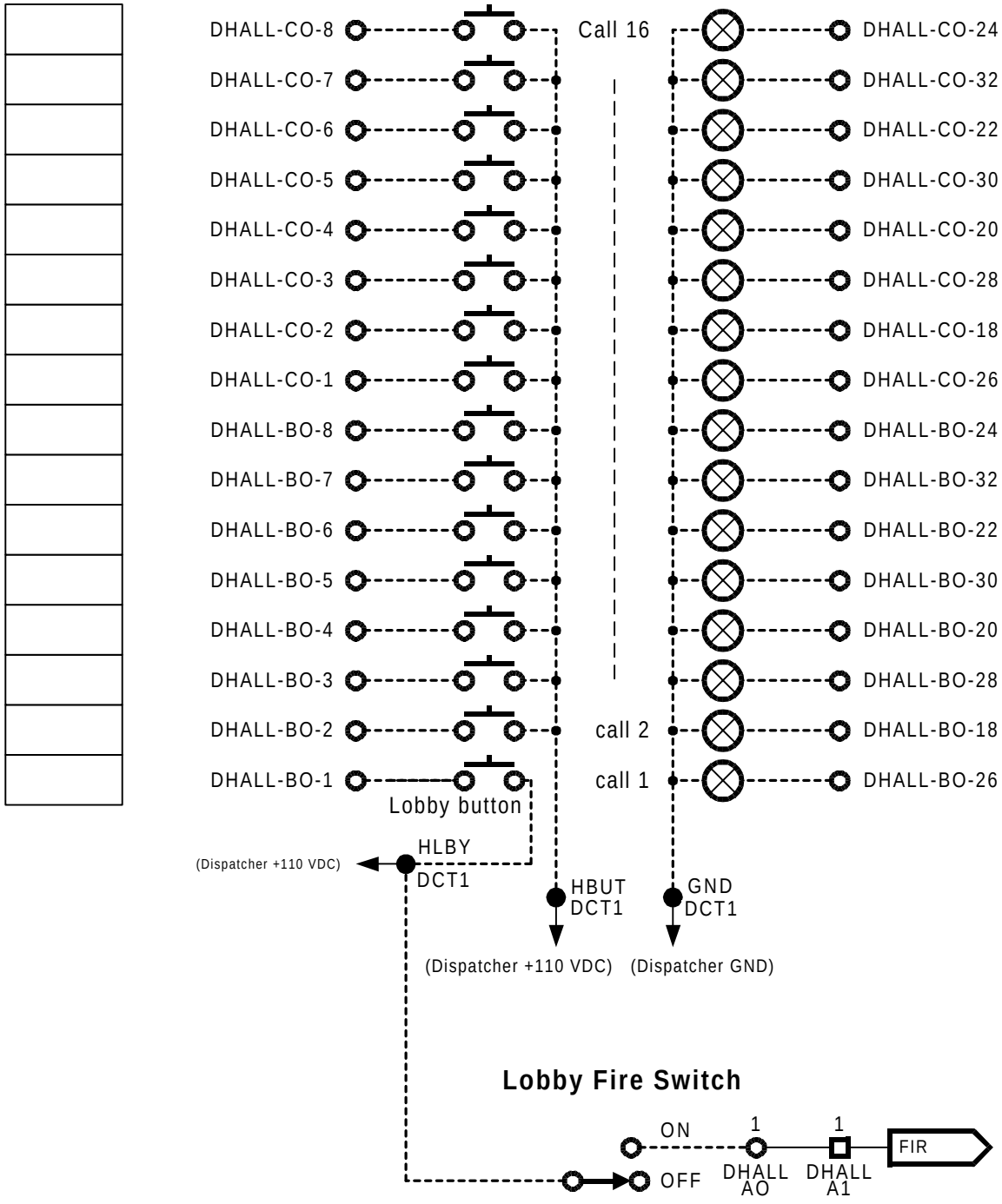
Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_33.vsd	
Drawn:	2-26-98 rja	Page 33 of 36 Pages

Wiring diagram, Hoistway

REV **A**

Floor names

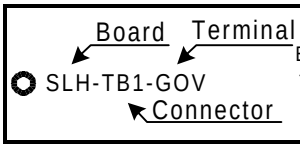
Hall calls are assigned to terminals by the computer, call 1 corresponds to the bottom floor, call 2 to the next floor up, and so on. Unused calls will not be activated.

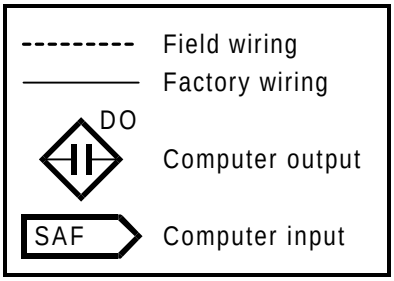


Lobby Fire Switch

How the terminal designation works...

Every terminal designation contains three fields- the printed circuit board where the connector is located, the connector name and the terminal name within the connector.





Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

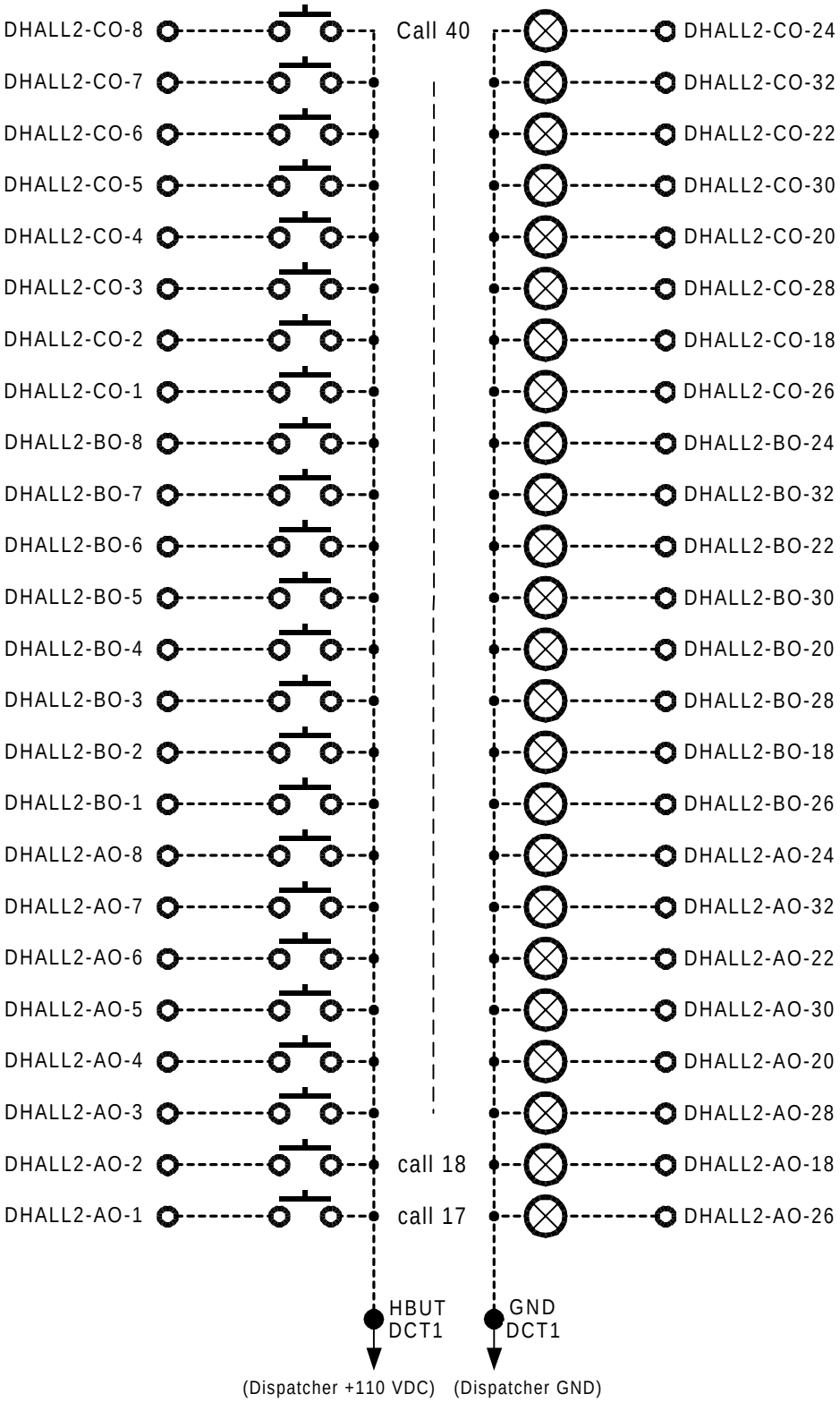
Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Finals\Page_34.vsd	
Drawn:	2-26-98 rja	Page 34 of 36 Pages

Wiring Diagram, Hall calls 1 - 16

REV **A**

Additional hall calls on DHALL2 board.

Floor names



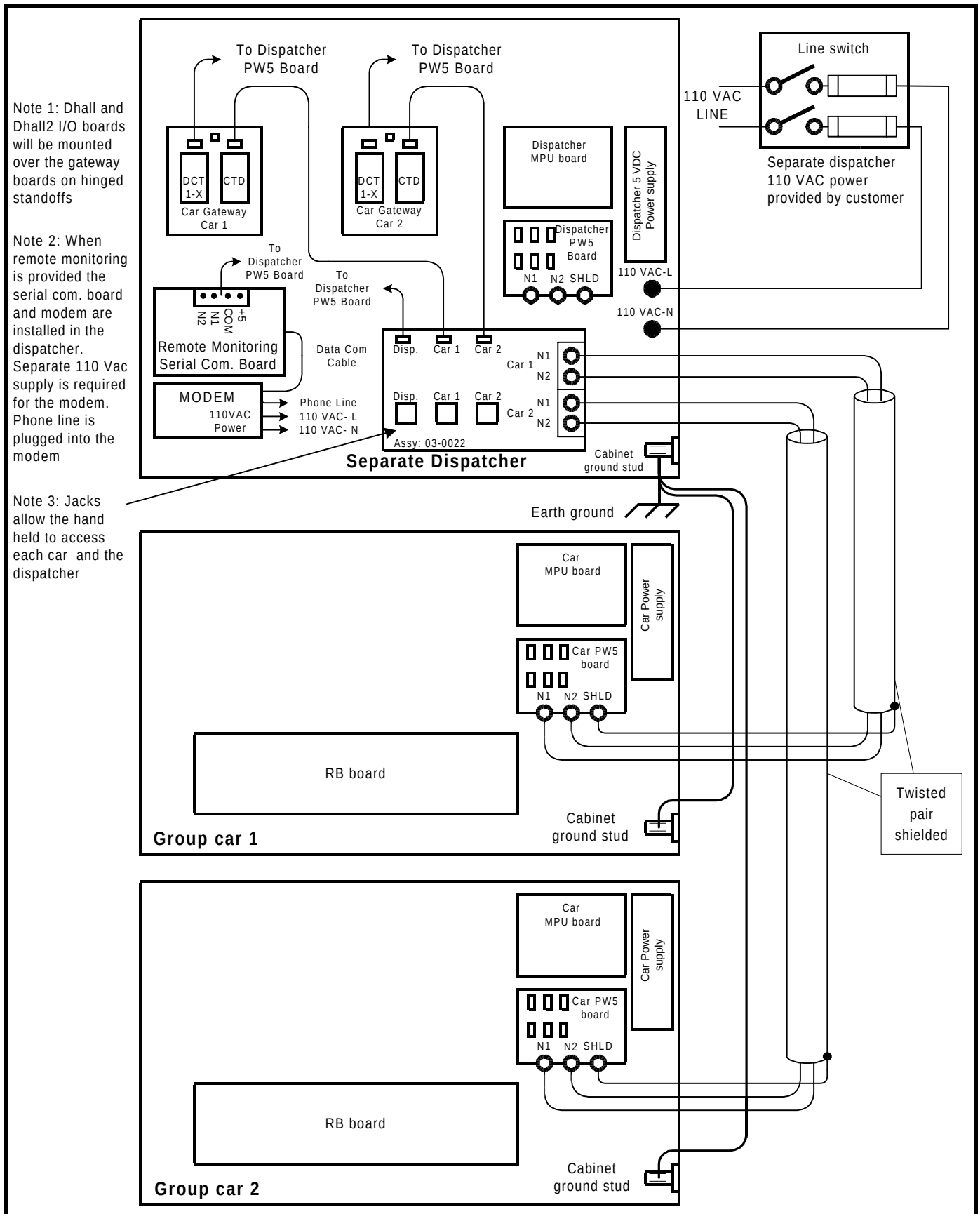
Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Phase1 Page_35.vsd	
Drawn:	2-26-98 rja	Page 35 of 36 Pages

Wiring Diagram, Hall calls 17 - 40

REV
A



Customer:	Start
Job name:	Woodrow Wilson Houses
Car name:	Car A

TRICON Systems
Elon 1000

Filename:	C:\My Documents\O. Thompson\NYCHA\Woodrow Wilson Houses A Car Phase1 Page_36.vsd	
Drawn:	2-26-98 rja	Page 36 of 36 Pages

Separate Dispatcher Interconnect

REV **A**