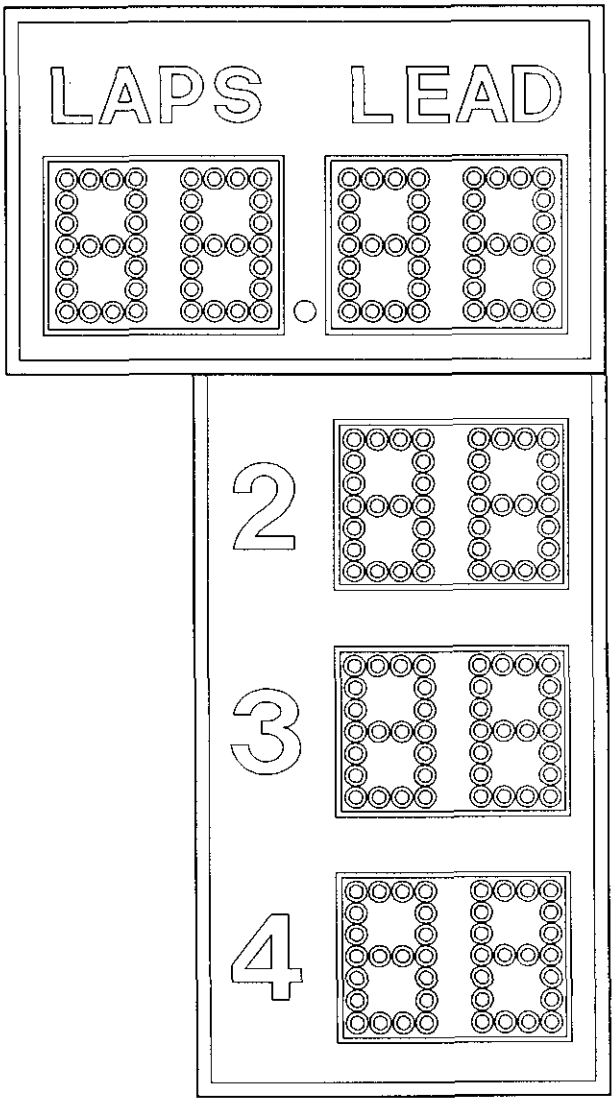
ALL AMERICAN SCOREBOARDS

A product of

Everbrite

401 S Main St
Pardeeville, WI 53954
(608) 429-2121 / (800) 356-8146

OPERATING INSTRUCTIONS AND SERVICE MANUAL
WAYNE COUNTY SPEEDWAY SCOREBOARD
MODEL MP-3810 CONVERSION



EFFECTIVE S.N. XXXX, March 17, 2000

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1. GENERAL INFORMATION

1.1 DESCRIPTION

Your All-American scoreboard has been carefully inspected and tested before leaving the factory. It is possible, however, that components may be loosened or forced out of adjustment in transit. If this occurs, follow the troubleshooting guide (section 4). If equipment then fails to operate, contact immediately:

ALL-AMERICAN Service Department
EVERBRITE Corporation
P.O. Box 97
Pardeeville, WI 53954
Telephone: (608) 429-2121
Toll Free: 800-356-8146

Parts being returned for repair are to be sent to:

ALL-AMERICAN Service Department
EVERBRITE Corporation
401 S. Main Street
Pardeeville, WI 53954

NOTE

If you need to send parts in for repair, please call the ALL AMERICAN service department for a returned goods authorization (RGA) number.

1.2 Identification

ALL-AMERICAN uses a 5 digit serial number for scoreboard identification. The serial number tags are located on the back of the control console and the lower right hand corner on the face of the scoreboard display. When contacting the factory for assistance it is important that the model number and serial number are known.

2. INSTALLATION

2.1 General Information

Shipping papers accompany each scoreboard. Check carefully to see that you receive the following:

1 ea RACETRACK Display (2 SECTIONS)
1 ea Control Console
1 ea Service Manual

1 ea Mounting Hardware Package
1 ea Press Box Junction Box
1 set Electric Eyes (if ordered)
? ft Control Cable (if ordered)

IMPORTANT!
The MP-40 cable supplied by ALL AMERICAN SCOREBOARDS for use on the Microprocessor based scoreboards is specifically designed for this system. Use of a substitute cable may void the warranty on the scoreboard!

2.2 Inspection

Inspect each unit and tighten all screws, lamps, and fittings that may have loosened in shipment.

2.3 Electronics Replacement

Select the location best suited for the new controller assembly. Preferred position is in the spot where the old collector box is located. Remove the collector box and bolt the new controller assembly into its' location. The preferred orientation is with the plate vertical with the transformers toward the bottom.

Install the rain shield over the controller assembly using the drill screws provided.

You may remove all the old relay packs and the digit shift, and collector box and discard these pieces. Make sure you plug all the holes into the back of the scoreboard that are not used.

The MP-40 data cable carries only low voltage signals and therefore can be installed with or without conduit. consult section 6 for junction box and scoreboard wiring.

2.4 Electrical connections

This scoreboard requires two 120 V. 30 AMP AC circuits for the exclusive use of the scoreboard.

The cables from the lampbanks to the relay packs must plug into the driver boards on the controller assembly as per the controller wiring diagram in section 6, using the adaptor cables supplied with this conversion kit as shown in the diagram Adaptor Cables in section 6.

Splice the colon wiring to the adaptor cable with the two pin connector as in the wiring diagram in section 6 of this manual.

Run the wires from the 4 pin plugs on the driver boards to the load center and connect them

to the circuit breakers as in section 6 (controller assembly wiring).

Connect the data cable to the controller assembly as shown in section 6.

Connect the data cable and the electric eyes to the junction box and power as shown in section 6.

NOTE !
To protect the MP-3000 control from damage, it is advisable that you disconnect the control and store in a dry secure area when not in use.

NOTE
This equipment is ETL (Electronics Testing Laboratories) CSA and NRTL approved and complies with the requirements in part 15 of the FCC rules for a class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and television reception, requiring the operator to take whatever steps are necessary to correct the interference.

3. CONTROL CONSOLE OPERATION

3.1 Console Display

The 2 line by 20 character Liquid Crystal Display module displays the scoreboard information entered from the keyboard.

3.2 Console Power

Plug the control console cable into the junction box connector marked "**DATA**".

Plug the electric eye cable into the junction box connector marked "**EE**".

Push **ON/OFF** once to turn the console on.

Push **ON/OFF** a second time to turn the console off.

When first turned on; the LCD should show as follows:

RACETRACK
VERSION 2.5 1998

Enter the code (**88**) as follows: Push **CODE** **8** **8** **ENTER** .

When the proper code has been entered, the scoreboard will be in the race mode and the LCD will show as follows:

TOP 5
LAP 0

3.3 Single Car Multiple Lap Trials

Push **MULTI-LAP** to enter the single car time trial mode.

The LCD display will show **.000 --.--- --.---** **TRIAL LAPS =** .

Select the laps to be trialed by pushing **1** **2** or **3** and then **ENTER** .

The LCD will reflect your selection.

Push **EE ENABLE** to enable the electric eye.

When the EE is enabled the LCD display will show EE in the lower left corner.

When the EE beam is broken the time will start.

Push **EE ENABLE** at any time to disable the electric eye.

When the EE beam is broken a second time, the time will stop and the hundredths and thousandths digits will display on the scoreboard and LCD display.

If you are timing 2 or 3 laps at a time, when the car breaks the EE beam the second time, the time displayed on the scoreboard will stop for two seconds and then resume timing the second lap. The LCD on the control console will show the time for the first lap in position 1 and the elapsed time for the second lap in position 2.

After the time trial you may post the lap times as follows: Push **TIME RESET** to reset the times to zero. The scoreboard will now read .00 , and the times on the LCD display will all revert to zeroes.

Now push **POST TIME** **1** **8** **4** **8** **3** , then **ENTER** and the time 18.483 will post on the scoreboard.

If a car starts to time trial but doesn't finish the lap, you may record the times for any completed laps, then push **TIME RESET** to reset the scoreboard and LCD displays.

You may now post the lap time of the completed lap and you are now ready for the next car to time trial.

3.4 Multiple Car Single Lap Continuous Trials

Push **MULTI-CAR** to enter the continuous time trial mode.

The LCD display will show

CAR	.000
CAR	.000

.

Optional: Car numbers may be entered for display.

If, for example, car number 55 is going to time trial; Push **POS 1** , and the car number **5** **5** , and then **ENTER** .

Car number 55 would appear on the scoreboard in position 1, and you would be ready for time trials. Since both times appear on the LCD display, for easier record keeping, you should alternate between position 1 and position 2 when entering car numbers

Push **EE ENABLE** to enable the electric eye.

When the EE is enabled the LCD display will show EE in the lower left corner.

When the EE beam is broken the time will start.

Push **EE ENABLE** at any time to disable the electric eye.

When the EE beam is broken a second time, the timer for the second car will start. The scoreboard will continue to show the time for the first car. When the first car crosses the EE beam again, the time display stops, showing the elapsed time for that car. After 4 seconds, the time display will switch to the time of the second car, already in progress.

If a car fails to complete the time trial lap, Push the position number of the car, then **CLEAR** .

EXAMPLE: Car 6 is the first car to time trial, followed by car 52, car 11, and car 47.

After car 6 is finished and car 52 is already timing and car 11 is ready to start timing, the

LCD display will show

1	52	8.235
2	11	0.000

If car 11 starts and then fails to finish the lap, Press **POS 2** **CLEAR** .

The time will stop for car 11, but the display will remain the same until car 47 starts timing by breaking the EE.

When there is only one car on the track, and no other cars are ready to start, you must push **TIME RESET** . If you don't the last time will not stop when they break the EE beam.

You may post the car number and fastest time to the scoreboard by pressing **POST TIME** the cars time, and **ENTER** .

3.5 Race Mode

The LCD shows the car positions for five (5) cars and the Lap number at all times.

Push **LAP +1** to increment the lap counter.

Push **LAP - 1** to decrement the lap counter.

Push **LAP** followed by the desired number(s), then **ENTER** to set or correct the Lap counter.

Push **POS 1** followed by the Car #, then **ENTER** to load the 1st Place Car #.

Repeat the procedure for **POS 2** through **POS 10** .

Push **LAP** or **POS 1** through **POS 10** then **CLEAR** to clear the respective locations.

If a car drops out during the race, you may push **POS 1** through **POS 10** for the position that car was running in, then **SHIFT** , to clear that car number and shift all following positions up.

Pressing the **DISPLAY** key alternates the car # display between the top 5 positions and positions 6 - 10.

3.6 Dimmer

Push **DIM** to dim the lamps during night use.

> **WARNING**
>
> 110 VAC wires are exposed whenever the cover over the controller assembly is removed from the scoreboard. Use extreme caution during troubleshooting or repair. To avoid possible damage to equipment or personal injury, always turn off the main power before removing the cover or replacing assemblies, or replacing lamps.

4. MAINTENANCE AND TROUBLESHOOTING

4.1 Introduction

This section gives maintenance and troubleshooting information. Included are troubleshooting guides for typical scoreboard malfunctions. If the cause of a problem cannot be determined, please contact the customer service department.

4.2 Test Equipment

A simple analog or digital voltmeter will be sufficient for all user repairable problems. Printed circuit boards requiring troubleshooting should be returned to the factory.

4.3 Troubleshooting

Whenever possible, follow the troubleshooting guides prior to contacting the customer service department. If a problem not described in the guides exists, contact the customer service department immediately. Refer to the diagrams provided for assistance in troubleshooting scoreboard malfunctions.

4.4 Troubleshooting Guides

(A) *Scoreboard doesn't light and console doesn't work*

(a) Check that the main power switch is turned on.
(b) Replace any defective or blown fuses.
(c) Check the power connections and voltages at the scoreboard.
(d) Contact the customer service department.

(B) Scoreboard digits don't light, but the console works

(a) With the main power switch "off"; remove the cover over the controller assembly.
(b) Check all connections.

(c) Turn the main power on.
(d) If the scoreboard still doesn't light, check the transformer voltage going to the receiver PCB (printed circuit board) assembly (blue wires) using a voltmeter set on the 12 VAC or higher scale.

If the voltage is less than 8 VAC contact the customer service department.

If the voltage is between 8-12 VAC see the replacement parts list for a receiver PCB assembly, and contact the customer service department.

(C) The scoreboard digits light but the console doesn't work

(a) Check for continuity between the scoreboard and the junction box.
(b) If an open circuit is found, the problem is either the cable or a cable connection.
(c) If the continuity test checks good, check the voltage between the green wire and the white wire in the junction box, using a voltmeter set on the 12 VAC or higher scale.

If the voltage is 0 VAC see the controller parts list for a transformer assembly.

If the voltage is less than 8 VAC consult the controller wiring diagram for instructions on long cable compensation.

If the voltage is between 8 VAC and 12 VAC contact the customer service department.

(D) The scoreboard digits light, the console works, but there is no control of the scoreboard.

(a) Check the voltage between the black and red wires in the junction box with a voltmeter set on the 3 VDC or higher scale. The voltage should read somewhere between 2-3 VDC when the console is working properly.
(b) If the voltage is 0 VDC contact the customer service department for assistance.
(c) If the voltage is correct, (2-3 VDC) check that this reading also appears at the scoreboard.
(d) If the correct voltage also appears at the scoreboard, see the replacement parts list for a receiver PCB assembly.

(E) The scoreboard works, but some lights stay on all the time

(a) With the main power "OFF", switch the plug from the bad digit with the plug for a known good digit.

EXAMPLE: Plug "C" into "D" and "D" into "C" locations.

(b) Turn the power back on. If the same lamps remain lit all the time, the problem is a shorted lamp socket. If the lamps on a different digit now stay lit all the time, the problem is on the driver PCB assembly. See the replacement parts list for the

proper replacement part.

(F) The scoreboard works, but some lights do not come on.

(a) Check for burned out lamps.

IMPORTANT !!!

In this scoreboard the 120 volt line is on the lamp socket all the time, and the common is switched to turn the lamps on and off. For this reason, to avoid damage to the equipment or personal injury, it is important to turn the main power off when changing the lamps.

(b) Check for a broken wire or bad connection on the 12 pin connector.
(c) See the replacement parts list for the proper replacement driver board.

5. REPLACEMENT PARTS LIST

5.1 Scoreboard Display Parts

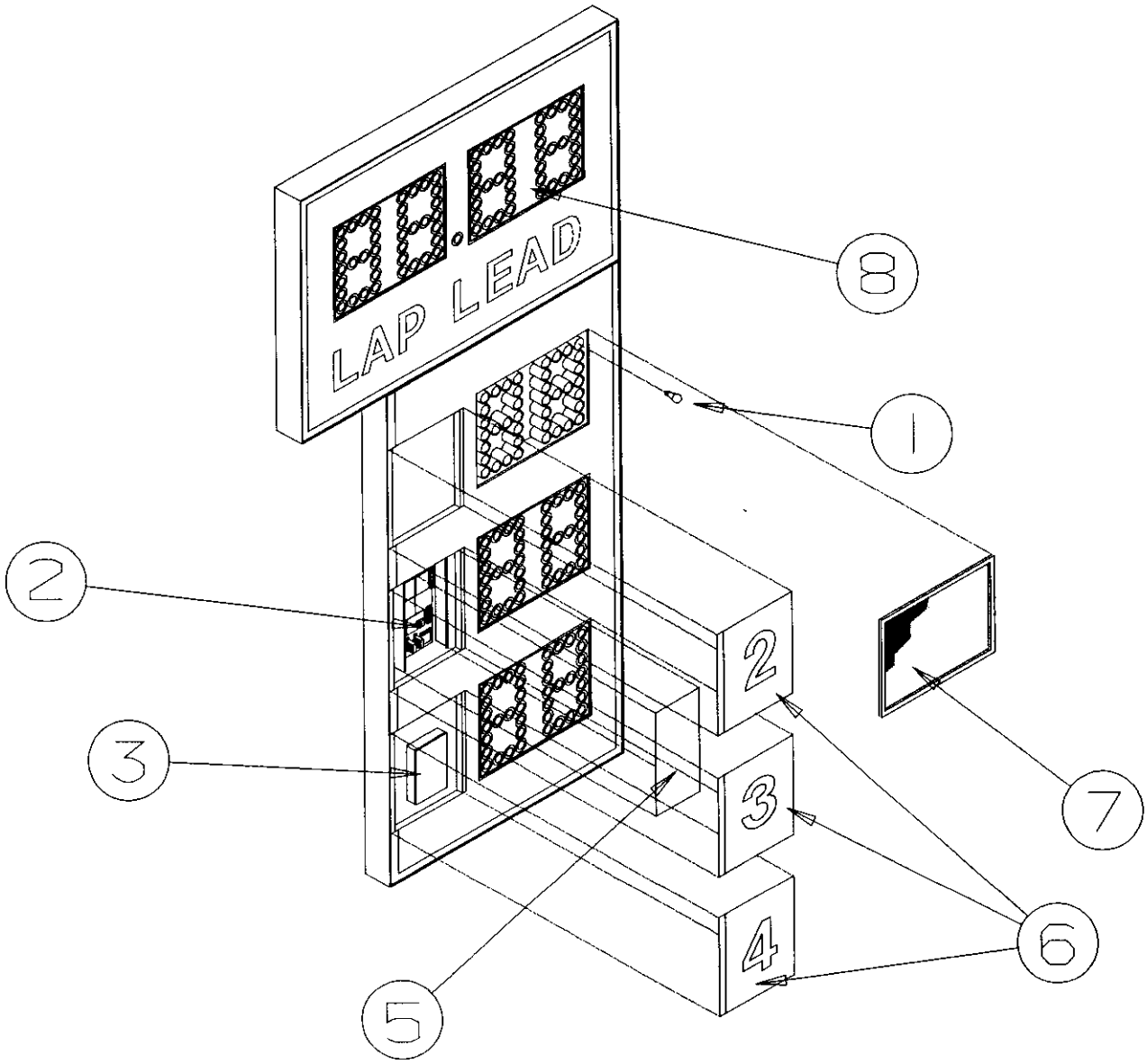


figure 1

DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-3810 Racetrack Conversion)

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	000000	Display Set		000000
1-1	850022	Lamp, 15W/125V Clear		15A15 CL
1-1A	930677	Lamp, 30W/125V Clear		30A15 CL
1-2	000000	Controller Assembly *****SEE FIGURE 2*****		000000
1-3	000000	Load Center,		000000
1-4	000000	Circuit Breakers		000000
1-5	000000	Rainshield		000000
1-6	000000	Service Access Panels		000000
1-7	705909	Screen, Car Number & Seconds		705909
1-8	705909	Screen, Lap and Time		
	120387	Control Console		SU4450
	119771	Slipsheet Pair		119771
	150184	Transmitter Board, **** Program SPSCSL.V00 ****	A1	150184
	702785	Connector, 5 Pin Male Cable	P1	RM12BPG5P
	702786	Connector, 5 Pin Female	J1/J4	RM12BRD5S
	EL053000	LCD Display, 2 Line 20 Character		
	500042	Membrane Keyboard Assembly,		500042
	931339	Enclosure,		931339
	151002	Junction Box, Single		151204
	702786	Connector, 5 Pin Female	J1/J4	RM12BRD5S
	150500	Cable, MP-41 Control		8723
	000000	Terminal Strip, 7C		670-7
	121814	20' Cable Assy W/2 male 5c con.		121814
	150257	Optional Electric Eyes		150257

5.2 Scoreboard Controller Assembly Parts

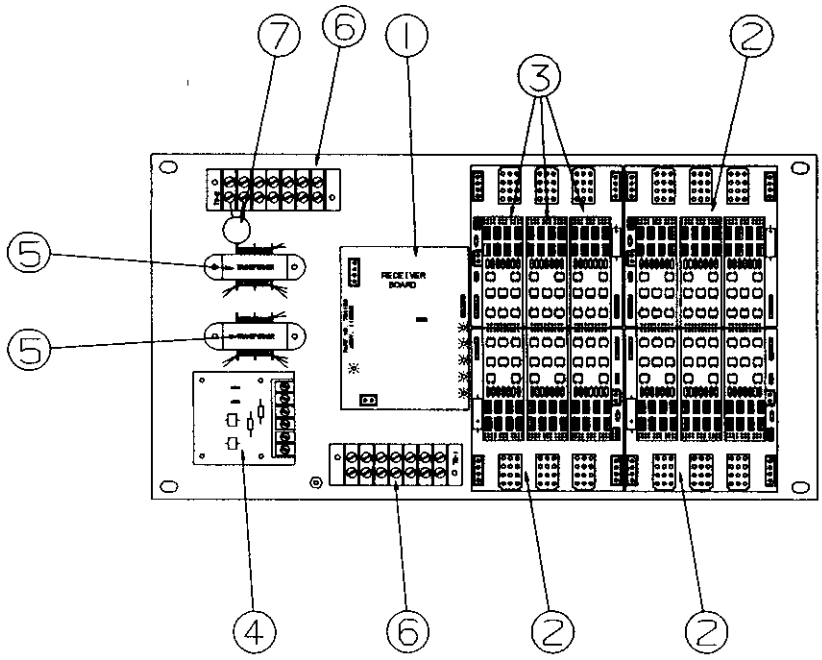


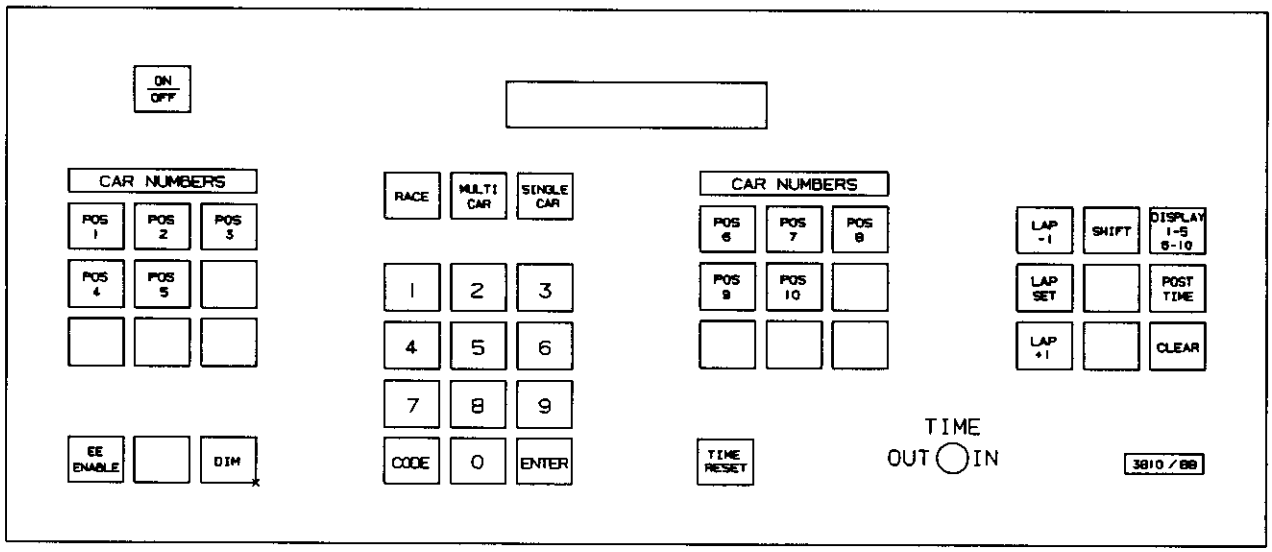
figure 2

CONTROLLER ASSEMBLY

REPLACEMENT PARTS LIST (MP-3810 Conversion)				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
2-	000000	Controller Assembly	A2	000000
2-1	119323	Receiver PCB Assembly *** PROGRAM EMRACE.1.HEX ***	A3	119323
2-2	SU555500	Driver PCB Assy, 3 Position Isolation	A4-A7	SU555500
2-3	SU563700	Driver, Plug-in	A8-A19	SU563700
2-4	118522	Transient Suppressor PCB Assembly	A20	118522
2-5	703719	Transformer, 8V/18V	T1/T2	CS-697
2-6	701137	Terminal Block, 7C	TB1&2	670-7
2-7		not needed		
2-8	705723	Spacer, P.C.Board		LCBS-6-01

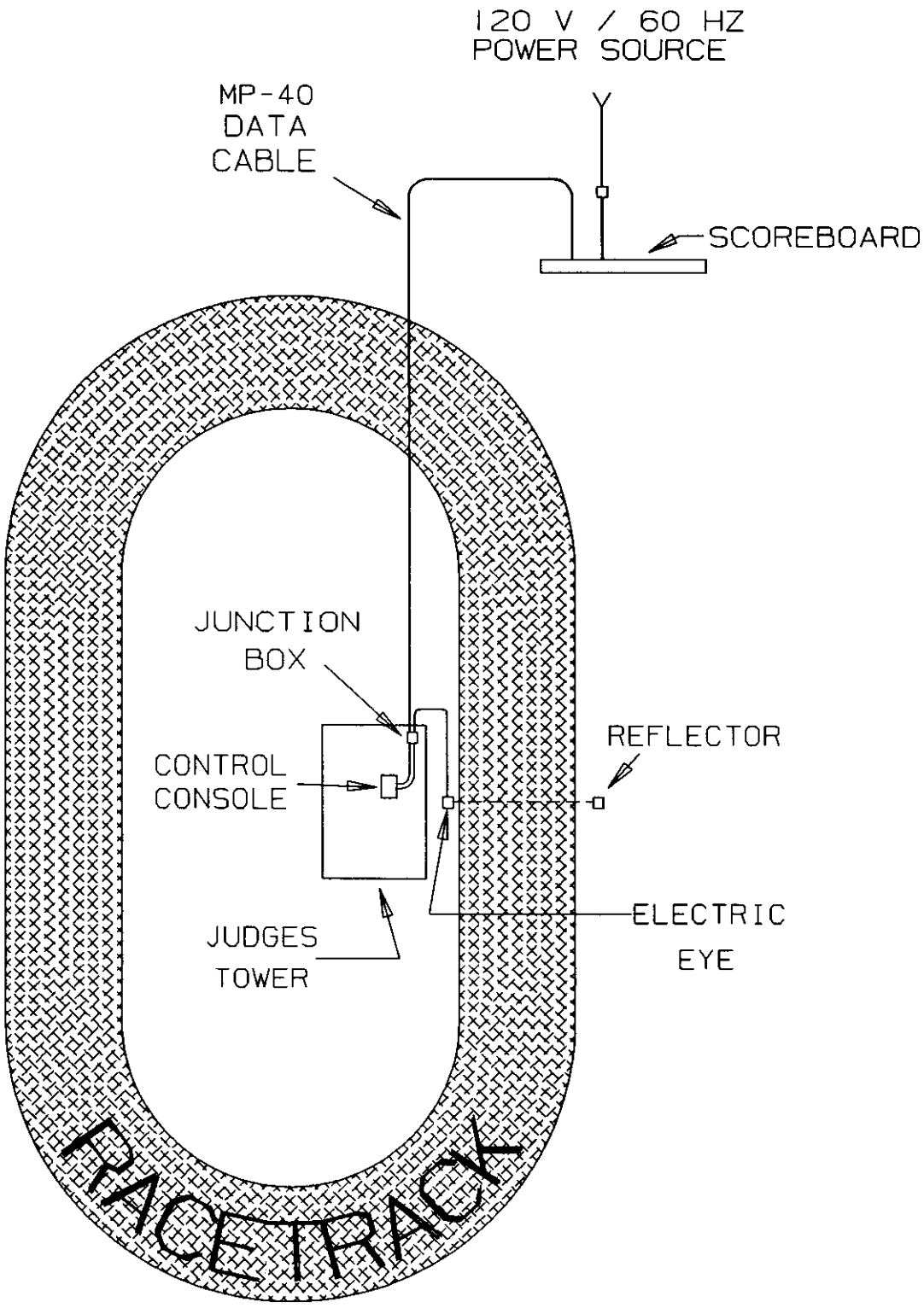
6. DIAGRAMS

6.1 Control Console Keyboard and Slipsheet Layout



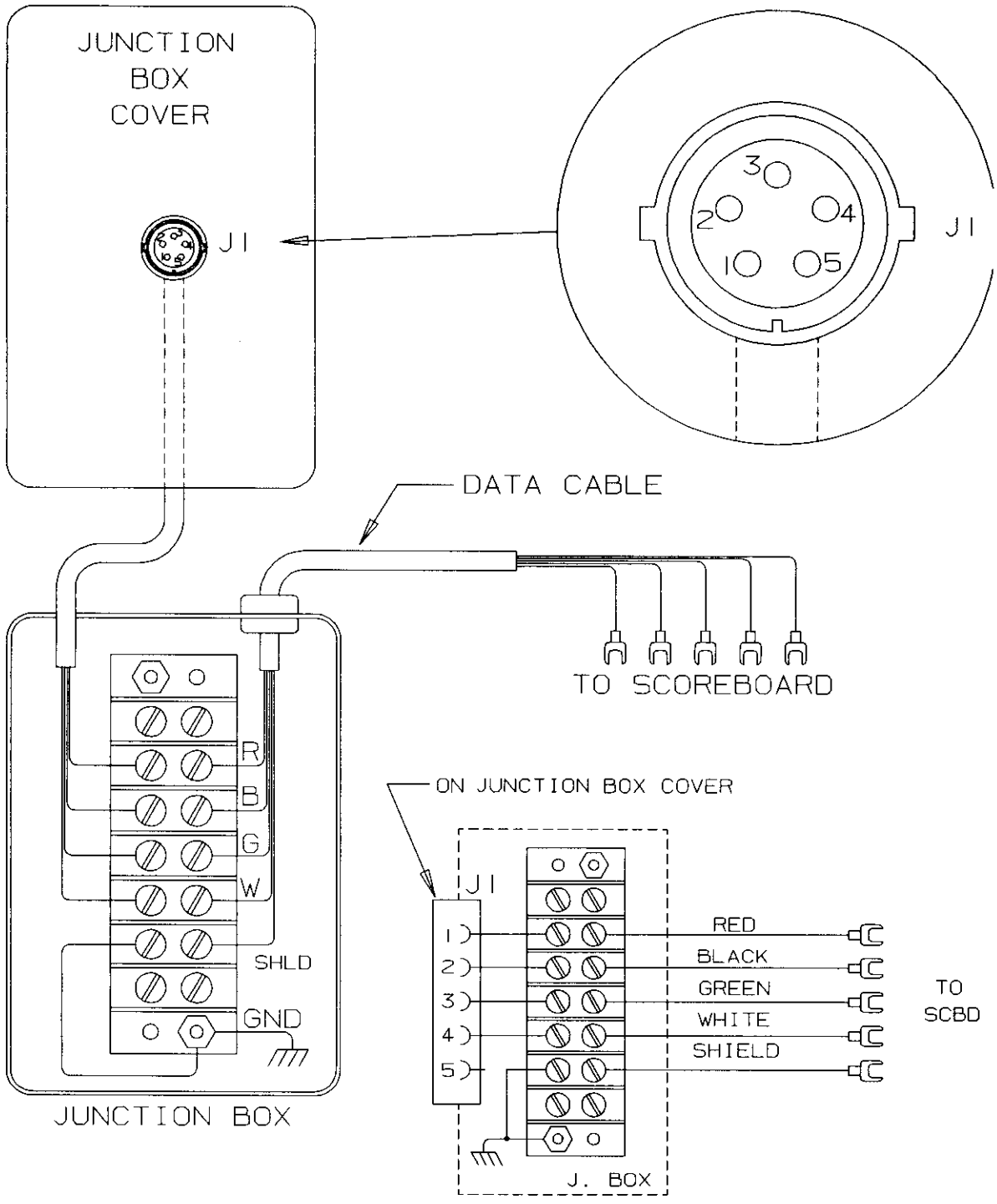
CONSOLE KEYBOARD

6.2 Scoreboard System Layout



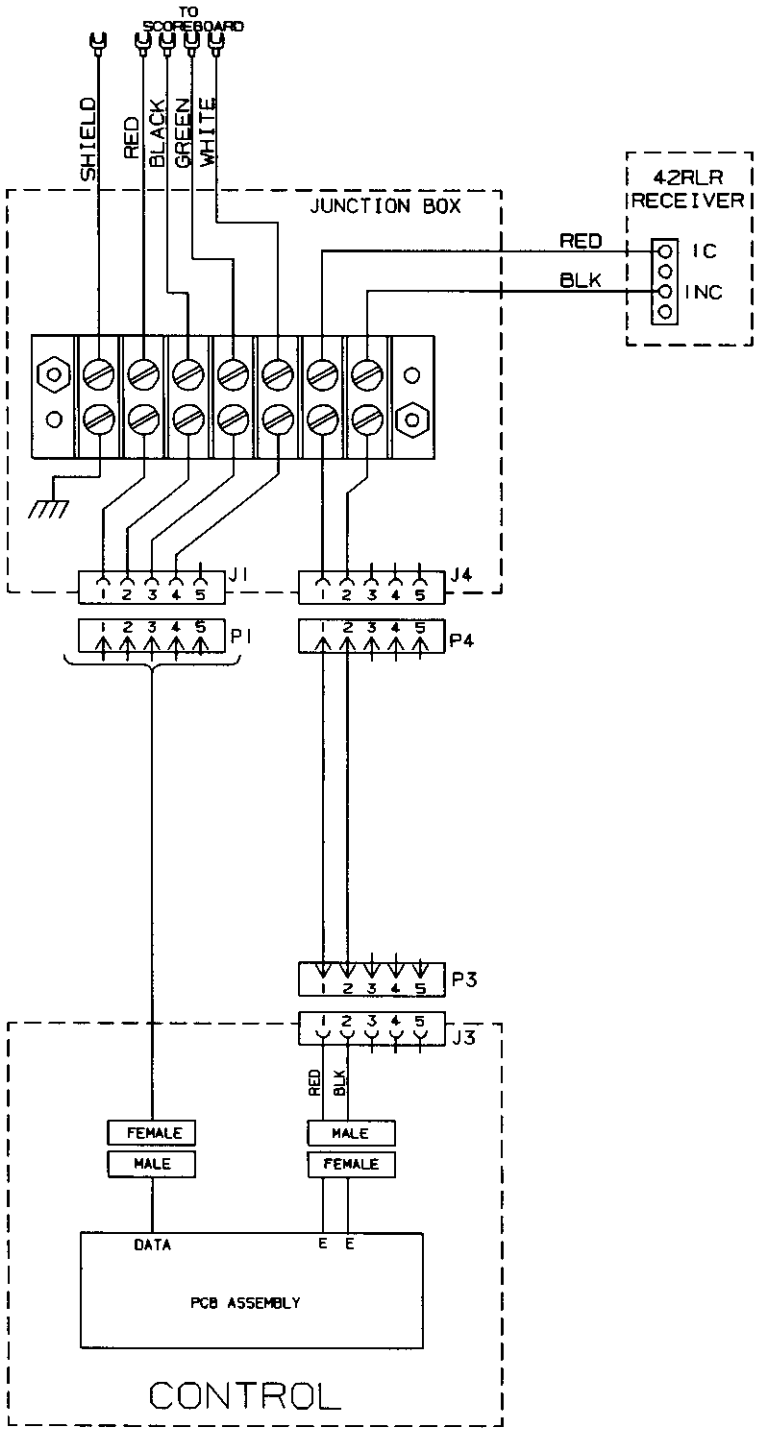
SYSTEM LAYOUT

6.3 Junction Box Wiring



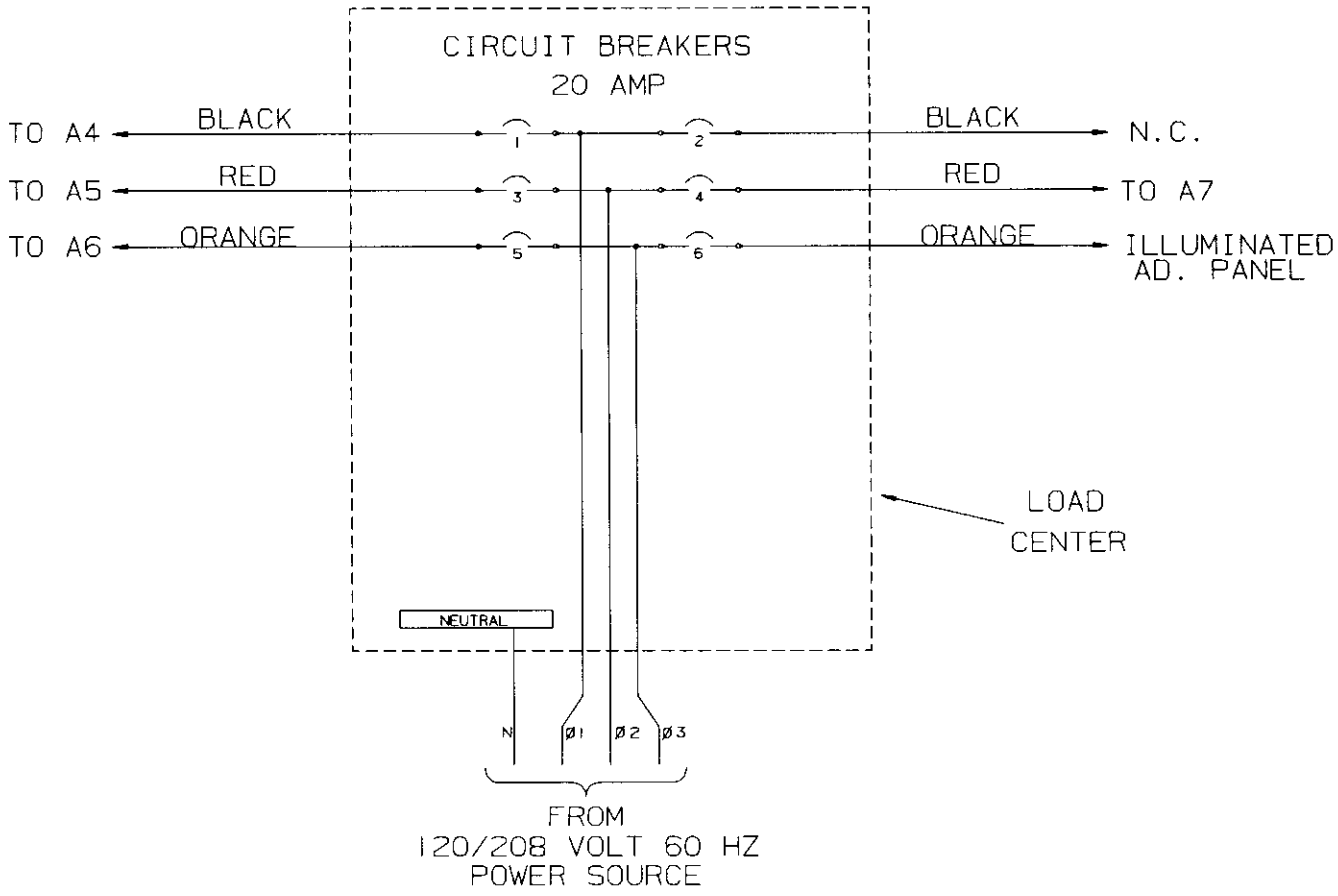
SINGLE JUNCTION BOX WIRING

6.4 Wiring of electric eyes



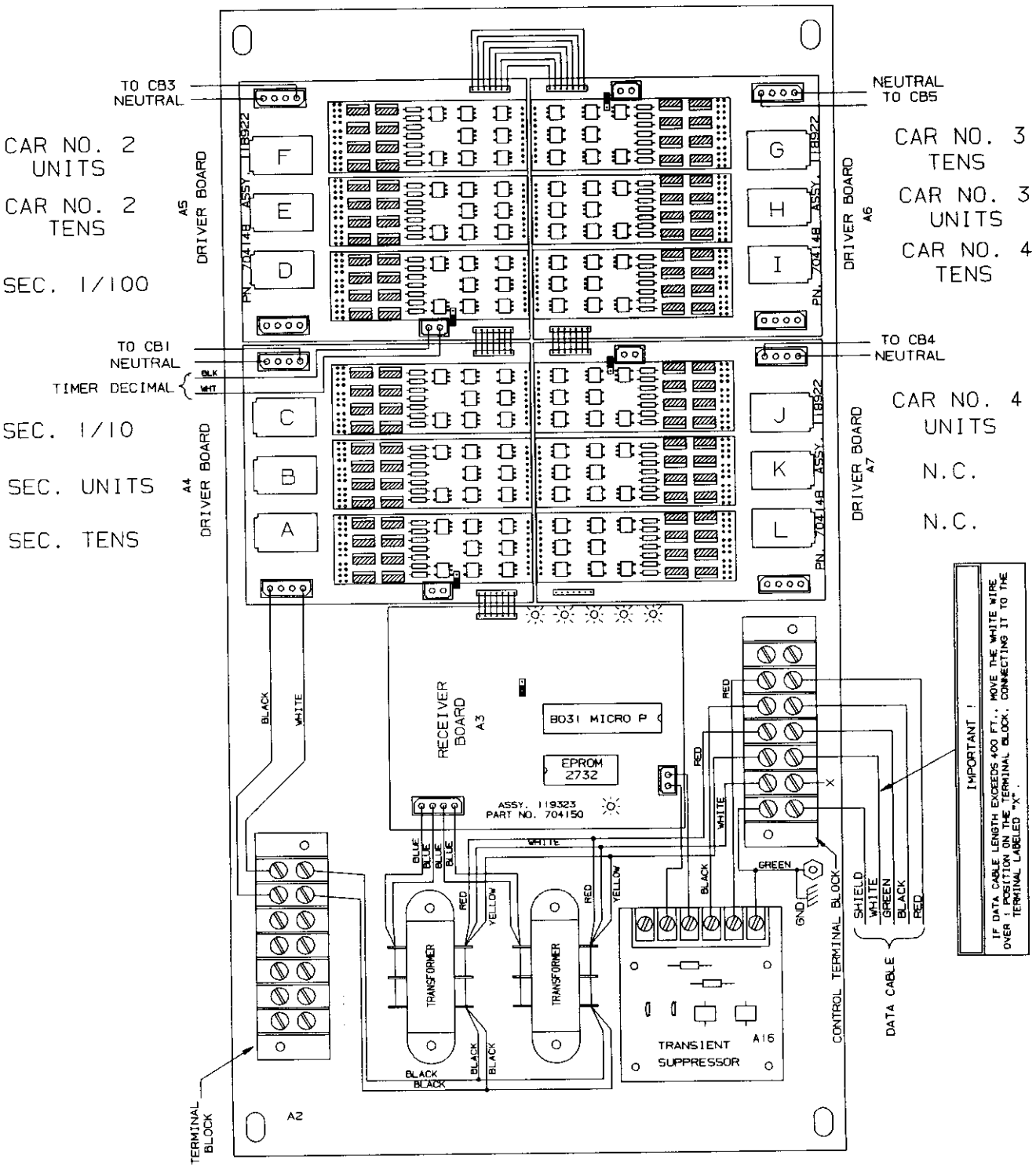
ELECTRIC EYES WIRING

6.5 Power Wiring



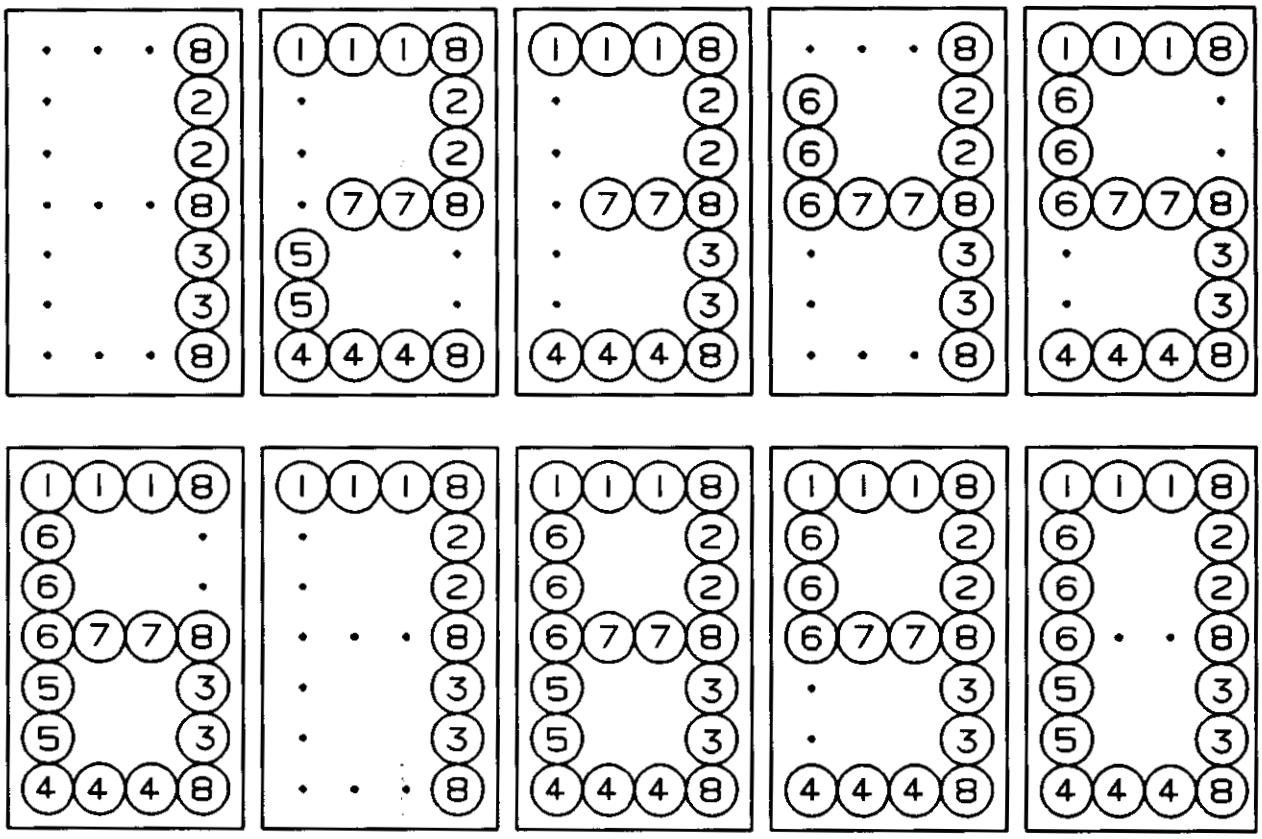
POWER WIRING

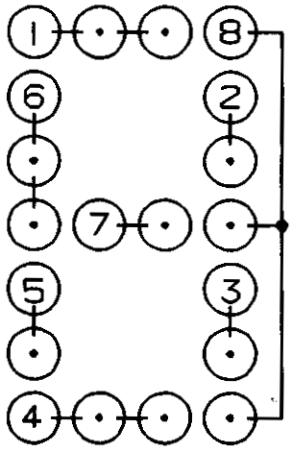
6.6 Controller Assembly Wiring



CONTROLLER ASSEMBLY

6.7 Microprocessor 4 X 7 Lamp Pattern (8 Bit)





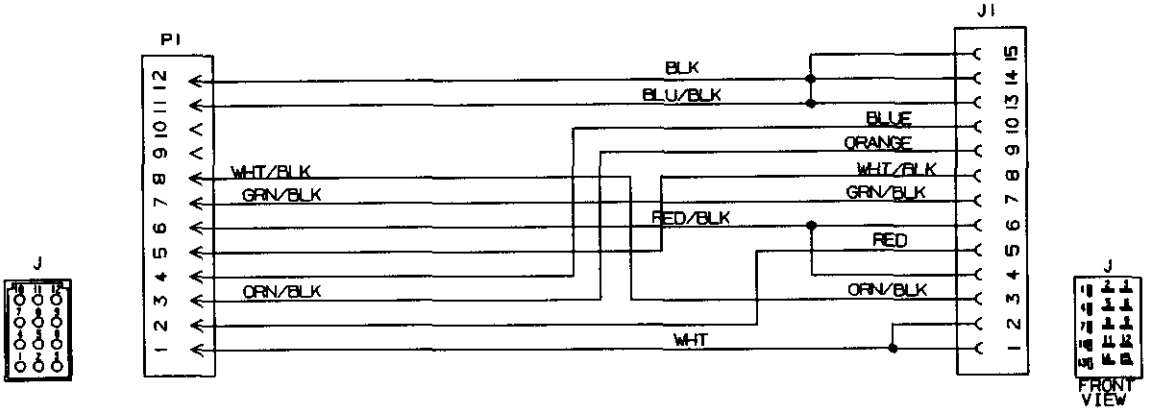
BIT NUMBERS	NUMERALS									
	0	1	2	3	4	5	6	7	8	9
1	0	.	2	3	.	5	6	7	8	9
2	0	1	2	3	4	.	.	7	8	9
3	0	1	.	3	4	5	6	7	8	9
4	0	.	2	3	.	5	6	.	8	9
5	0	.	2	.	.	.	6	.	8	.
6	0	.	.	.	4	5	6	.	8	9
7	.	.	2	3	4	5	6	.	8	9
8	0	1	2	3	4	5	6	7	8	9

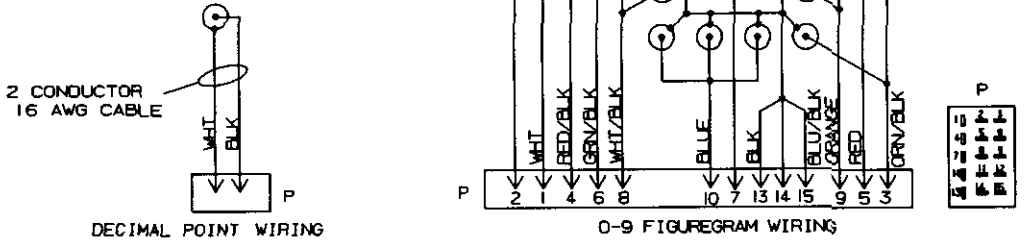
MICROPROCESSOR 4 X 7 (8 BIT) LAMP PATTERN

6.8 Figuregram Wiring

ADAPTOR CABLES

PACK NUMBER 15C CONNNNECTOR LABEL	12C CONNECTOR LABEL	LENGTH
1	D	6"
2	C	6"
3	B	6"
4	A	6"
5	F	4"
6	E	4"
7	H	3"
8	G	3"
9	J	3"
10	I	3"
11	NOT MARKED	3"





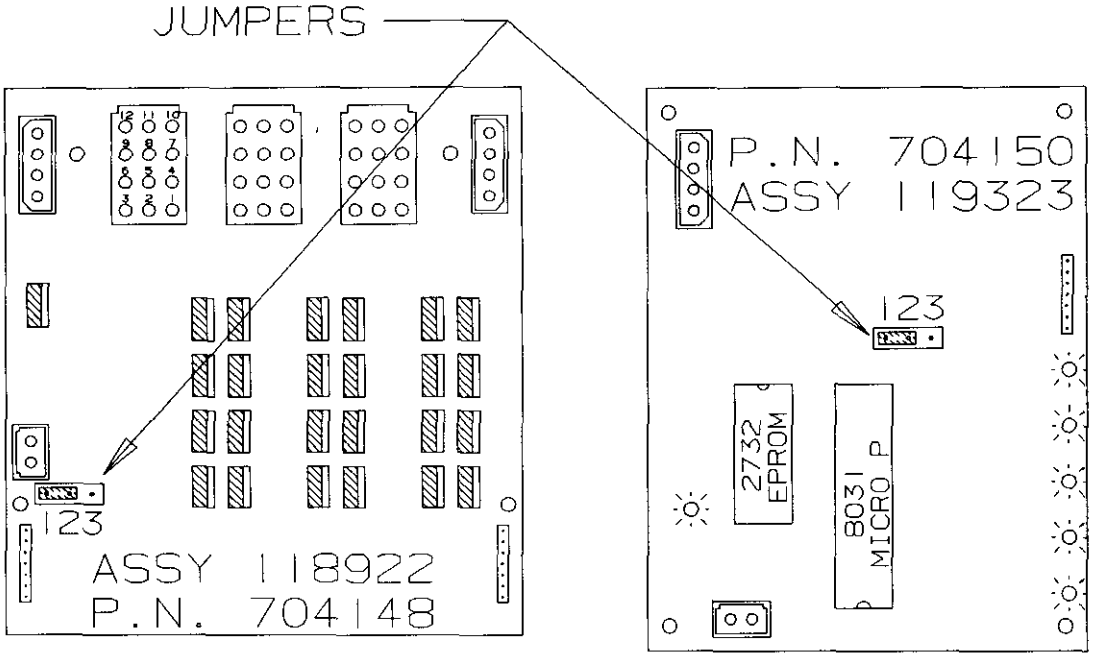
8 BIT FIGUREGRAM WIRING

6.9 Jumper Location on 3 Position System

All of the 3 position drivers and receivers are identical except for the jumper on each board. Make sure the jumpers are set for the model of scoreboard you are installing them into.

(A) On the receiver board (refer to figure); Jumper pins 2 & 3 for models MP-3385, MP-3312, MP-3529, and MP-3549. Jumper pins 1 & 2 for all other models.

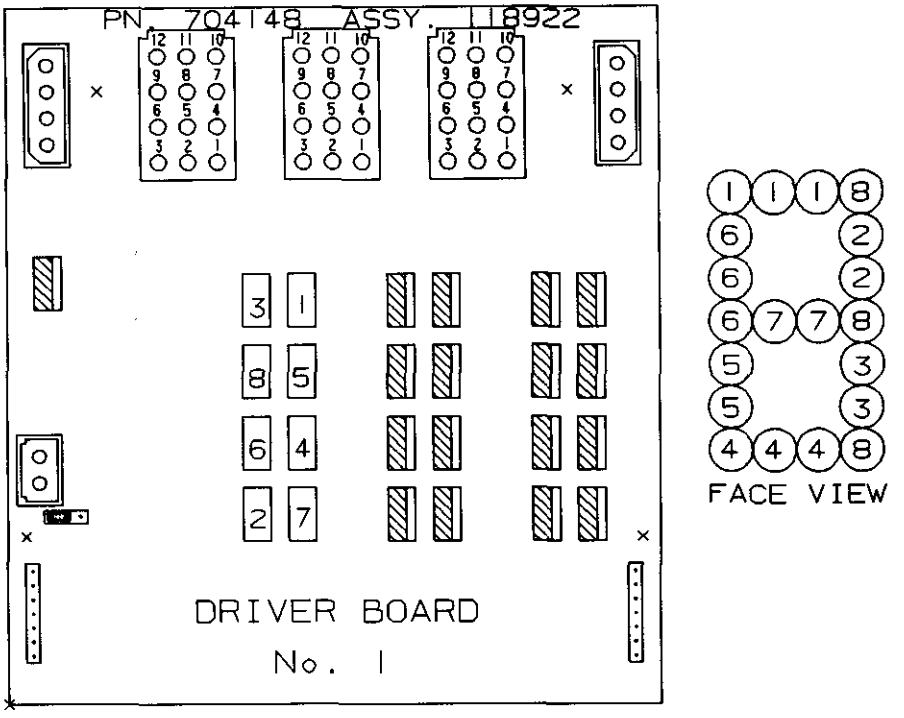
(B) On the driver board (refer to figure); Jumper pins 1 & 2 for use of a horn. Jumper pins 2 & 3 for all others.



JUMPER LOCATION

6.10 Triac Placement

The triac is the switch that controls the figuregram lamps. The triacs for any given figuregram are adjacent to the twelve pin connector on the driver board that controls that figuregram. Shown below is the triac placement and bit designation relative to the figuregram bit pattern.



MP TRIAC PLACEMENT