



a division of

EVERBRITE Corporation

P.O. Box 97
Pardeeville, WI 53954
Phone 608-429-2121 / 800-356-8146

OPERATING INSTRUCTIONS AND SERVICE MANUAL

FOOTBALL SCOREBOARD

MODEL MP-2457



U.S. PATENTED

EFFECTIVE 1987

TABLE OF CONTENTS

1. General Information

- 1.1 Description
- 1.2 Identification
- 1.3 Damage
- 1.4 Damage Claim procedure

2. Installation

- 2.1 General Information
- 2.2 Mounting
- 2.3 Data Cable Installation
- 2.4 Electrical Connection

3. Control Console Operation

- 3.1 Scoreboard Power
- 3.2 Control Console Power
- 3.3 Control Console Display
- 3.4 Time Setting And Control
- 3.5 Team Scores
- 3.6 Yards To Go, Down, And Quarter
- 3.7 Horn (Optional)
- 3.8 Dimmer
- 3.9 Baseball Conversion (Optional)

4. Maintenance And Troubleshooting

- 4.1 Introduction
- 4.2 Test Equipment
- 4.3 Troubleshooting
- 4.4 Troubleshooting Guide

5. Replacement Parts List

- 5.1 Scoreboard Display Parts
- 5.2 Controller Assembly

6. Diagrams

- 6.1 Control Console Keyboard Layout (Slipsheet)
- 6.2 Scoreboard Layout With Floating Time Control (C-7430)
- 6.3 Controller Assembly Wiring and Layout (D-150102)
- 6.4 Jumper Location on 5 Position Driver Board (B-151285)
- 6.5 Triac Placement Diagram
- 6.6 Press Box Junction Box Wiring (B-121273)
- 6.7 Figuregram Wiring Diagram (A-13534 & A-13587)
- 6.8 Microprocessor 4X7 Lamp Pattern (8 Bit) (A-12497)
- 6.9 Conversion Placards For Baseball (B-13168)
- 6.10 Installation Drawings (C-150649)

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 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
413 South Main Street
Pardeeville, WI 53954

1.2 Identification

All-American uses a 4 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. When contacting the factory for assistance it is important that the model and serial numbers are known.

1.3 Damage

Upon receipt, check for visible damage. If this occurs, or if damage is found after shipment has been accepted, follow the damage claim procedure.

1.4 Damage Claim Procedure

An instruction sheet is enclosed advising the Consignee in case of damage in transit.

If damage is noted at time of delivery, Consignee must obtain an Inspection of Bad Order from the delivering carrier. In order to process your claim, this must be properly filled out with a complete statement of all damage and signed by the carrier.

If damage is discovered after delivery, you should call the delivery company. Have them make out a Concealed Damage report. Fifteen days after delivery are allowed, so this should be done PROMPTLY or it is impossible to process this claim.

Advise EVERBRITE Corporation of necessary replacement parts, or repairs. Consignee will be invoiced and then should file a claim with the carrier to recover charges.

TO FILE YOUR CLAIM FOLLOW THIS PROCEDURE:

- (A) Cost of replacement parts or repair charges are invoiced to the carrier by the Consignee.
- (B) The following documents, plus invoice are forwarded to the Trucking Company in support of your claim:
 - (a) Original bill of lading.
 - (b) Original paid freight bill.
 - (c) Certified copy of original invoice.
 - (d) Standard form for Presentation of Loss and Damage Claim, properly filled out.

2. INSTALLATION

2.1 General Information

Check shipment and if damaged file damage claim.

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

- 1 ea Football Display
- 1 ea Control Console
- 1 ea Service Manual
- 1 ea Mounting Hardware Package
- 1 ea Junction Box
- ? ft Control Cable (if ordered)
- 1 ea Horn (if ordered)

2.2 Mounting

For Permanent mounting to uprights, see the enclosed installation drawing in section 6.

2.3 Data Cable Installation

The MP-40 data cable is approved for direct burial and therefore can be installed with or without conduit. Consult section 6 for junction box and scoreboard wiring.

2.4 Electrical Connections

The MP-2457 requires two 110 V. 20 Amp circuits or one 110 V. 40 Amp circuit.

3. CONTROL CONSOLE OPERATION

3.1 Scoreboard Power

Turn on the branch circuits to scoreboards. The Home and Guest score, Time seconds units, and time seconds tens will show "0".

IMPORTANT

To protect the MP-2001 Control Console from damage, it is advisable to disconnect the Control Console and store in a dry secure area, when it is not in use.

NOTE

This equipment 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 TV reception requiring the operator to take whatever steps are necessary to correct the interference.

3.2 Console Power

Plug the control console cable into the press junction box.

Push ON/OFF once to turn the console ON.

Push ON/OFF a second time to shut the console OFF.

The console display should show CODE when first on.

Enter the two digit code (66) as shown in the lower left corner of the keyboard as in the following example:

Push CODE 6 6 ENTER

When the proper code has been entered the console display will show: :00

3.3 Console Display

The 4 digit Liquid Crystal Display shows the game time plus information entered from the keyboard.

3.4 Time Setting and Control (console display)

To set a 20 minute period; key in the following:

SET 2 0 0 0 ENTER

Any time up to 99:59 may be preset in a similar manner.

The UP/DN key determines the timer mode. When the LED

indicator glows the timer will count up. The timer will count down when the LED indicator is off.

Push IN/OUT to start/stop the timer

Push RESET to return the timer to the previously set value.

3.5 Team Scores

The Home and Guest Scores can be changed in four different ways.

To add 1 to the existing score: Push ADD 1 .

To add 6 to the existing score: Push ADD 6 .

To directly enter or correct a score proceed as in the following:

Example: Present Home Score is 15. Change the score to 23.

Push home SCORE 2 3 ENTER .

To clear the score; Push SCORE CLEAR .

3.6 YARDS TO GO, DOWN, And QUARTER

Entries to the above functions are made in the same manner as team scores.

3.7 Horn Operation (Optional)

The horn will blow for 1/2 second each time HORN is pressed.

The horn will blow automatically at the end of each period for 2 seconds.

3.8 Dimmer Operation

The NIGHT/DAY key alternately brightens and dims the scoreboard display.

3.9 Baseball Conversion (Optional)

For the baseball conversion operation, the Ball, Strike, and Out functions are incremented once for each consecutive actuation of the key for these functions.

The Inning function is operated like the direct entry of scores. To change from inning 2 to inning 3, push: INNING 3 ENTER.

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.

WARNING

110 VAC wires are exposed whenever the cover over the controller is removed from the scoreboard. Use extreme caution during troubleshooting or repair. To avoid possible damage always remove power before removing the cover or replacing assemblies.

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 Guide

(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 "off" remove the cover over the controller assembly.
- (b) Check all connections.
- (c) Turn main power "on".
- (d) If board still doesn't light check the transformer voltage going to the Receiver PCB 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 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 then 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 V 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. (2-3 VDC when working properly)
 - (b) If the voltage is 0 V contact the service department for assistance.
 - (c) If the voltage is correct (2-3 V) 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" in "D" and "D" in "C" locations.
 - (b) Turn the power back on. If the same lights remain lit, the problem is a shorted lamp socket. If the lights now stay on in a different digit the problem is the driver board. See the replacement parts list for the proper replacement driver board.
- (F) The Scoreboard Works But Some Lights Do Not Come On
 - (a) Check for burned out lamps.
 - (b) Check for broken wire or bad connection on 12 pin connector.
 - (c) See the replacement parts list for the proper replacement driver board.

5. REPLACEMENT PARTS LIST

5.1 Scoreboard Display Parts

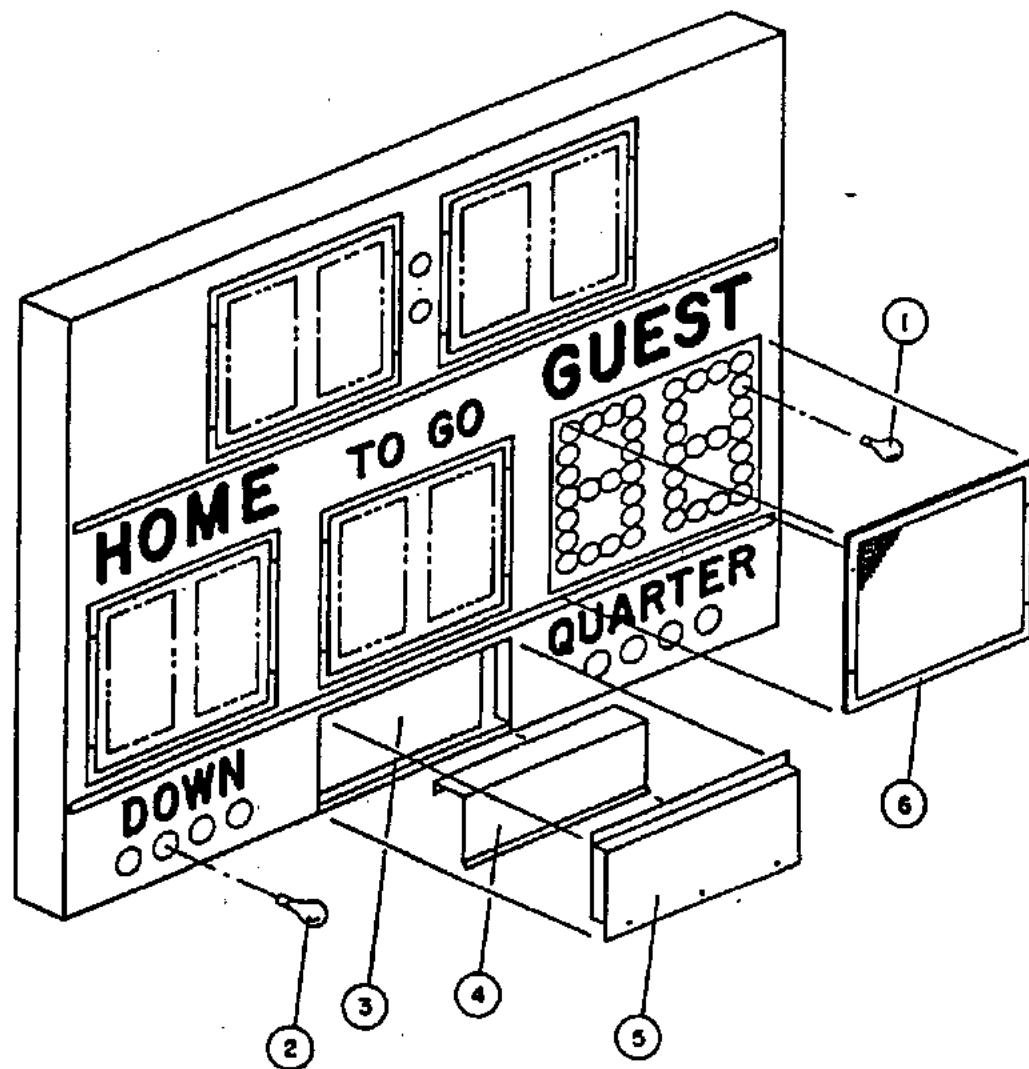
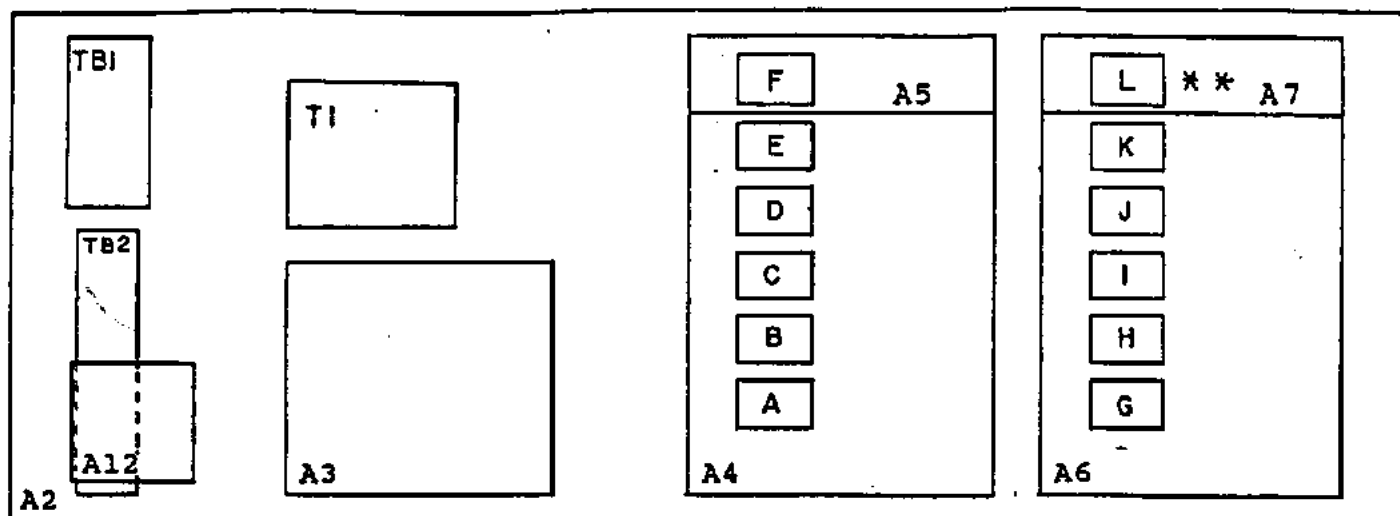


figure 1
DISPLAY ASSEMBLIES

REPLACEMENT PARTS LIST MODEL: MP-2457

Fig. & index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	119393	Display, MP-2457		119393
1-1	850022	Lamp, 15W/130V. Clear		15A15CL
1-2	850030	Lamp, 25W/130V clear		25A19 GR CL
1-3	150106 ****	Controller, MP-2457 Assembly (See Detail Section 5.2) ****	A2	150106
1-4	150660	Rain Shield		150660
1-5	150668	Service Door		150668
1-6	171663	Screen, Figuregram (Qty 5)		705922
---	150365	Control Console		150365
	180157	Transmitter PCB Assembly	A1	180157
	702785	Male 5 Pin Cable Connector	P1	RM12BPG-5P
---	151002	Press Junction Box (Single)		151002
	702786	Connector, 5 Pin Fem. Box Mount	J1	RM12BRD-5S
---	151002	Midfield Junction Box (Optional)		151002
	702786	Connector, 5 Pin Fem. Box Mount	J3	RM12BRD-5S

5.2 Controller Assembly



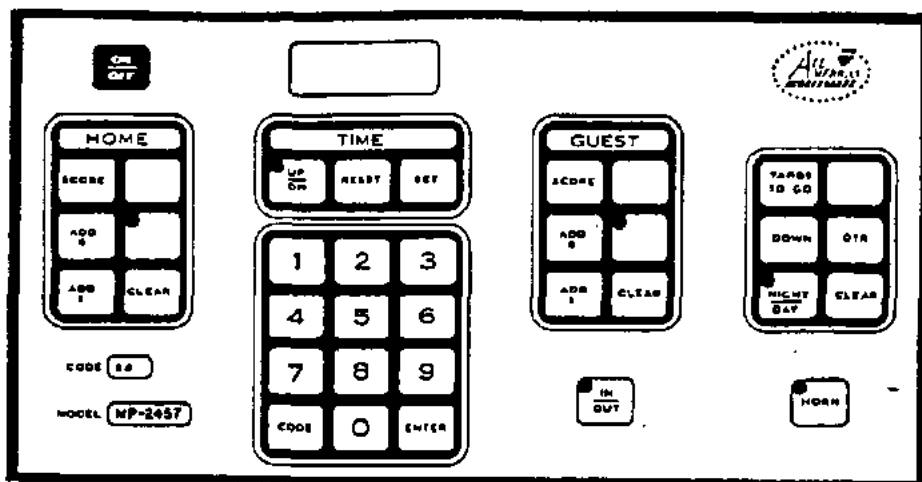
** Present on 1/10 Second Timers Only

figure 2
CONTROLLER ASSEMBLY

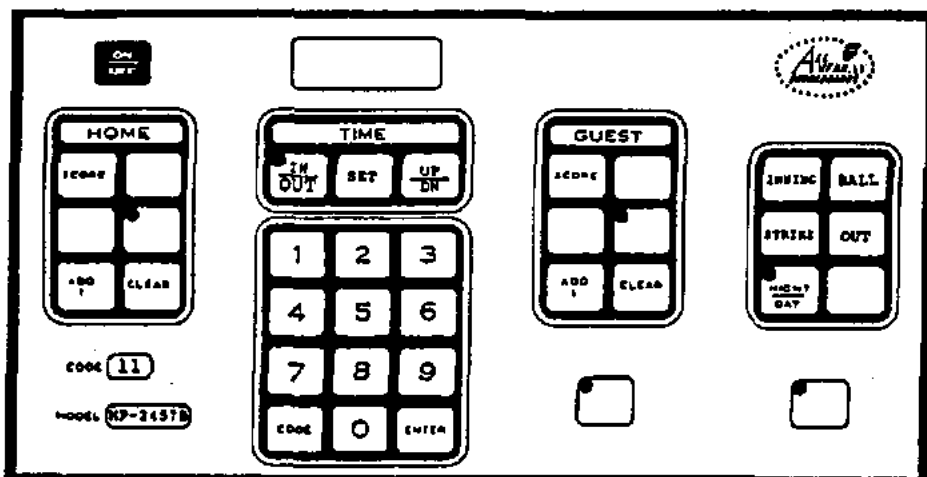
REPLACEMENT PARTS LIST MODEL: MP-2457				
fig. & index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
2-	150106	MP-2457 Controller Assembly	A2	150106
	150366	Receiver/Decoder PCB Assembly ***** Program MPCNTR.V60 *****	A3	150366
	151351	5 Position Driver #1	A4	151351
	150368	5 Position Driver #2	A6	150368
	150370	1 Position Driver	A5	150370
	118522	Transient Suppressor PCB Assy	A12	118522
	151300	Horn Suppressor Assy		151300
	701134	6 Pin Power Terminal Block	TB1	ME 1106
	701103	12 Pin Terminal Block	TB2	670-12
	151301	Transformer, 8V/18V	T1	CS-697
	705075	Ribbon Cable Assy, 20C with 2 Fem		AS-1053
	705723	Spacer, P.C. Board		LCBS-6-01

6. DIAGRAMS

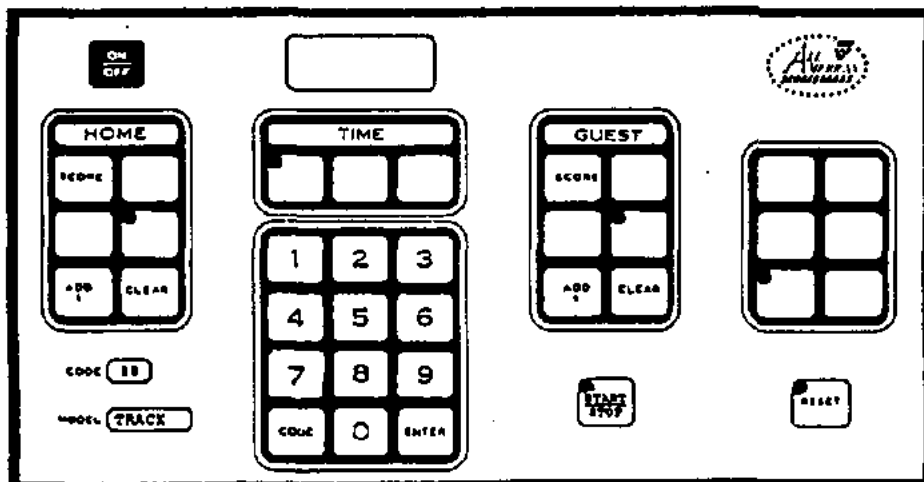
6.1 Control Console Keyboard and Slipsheet Layouts



MP-2457

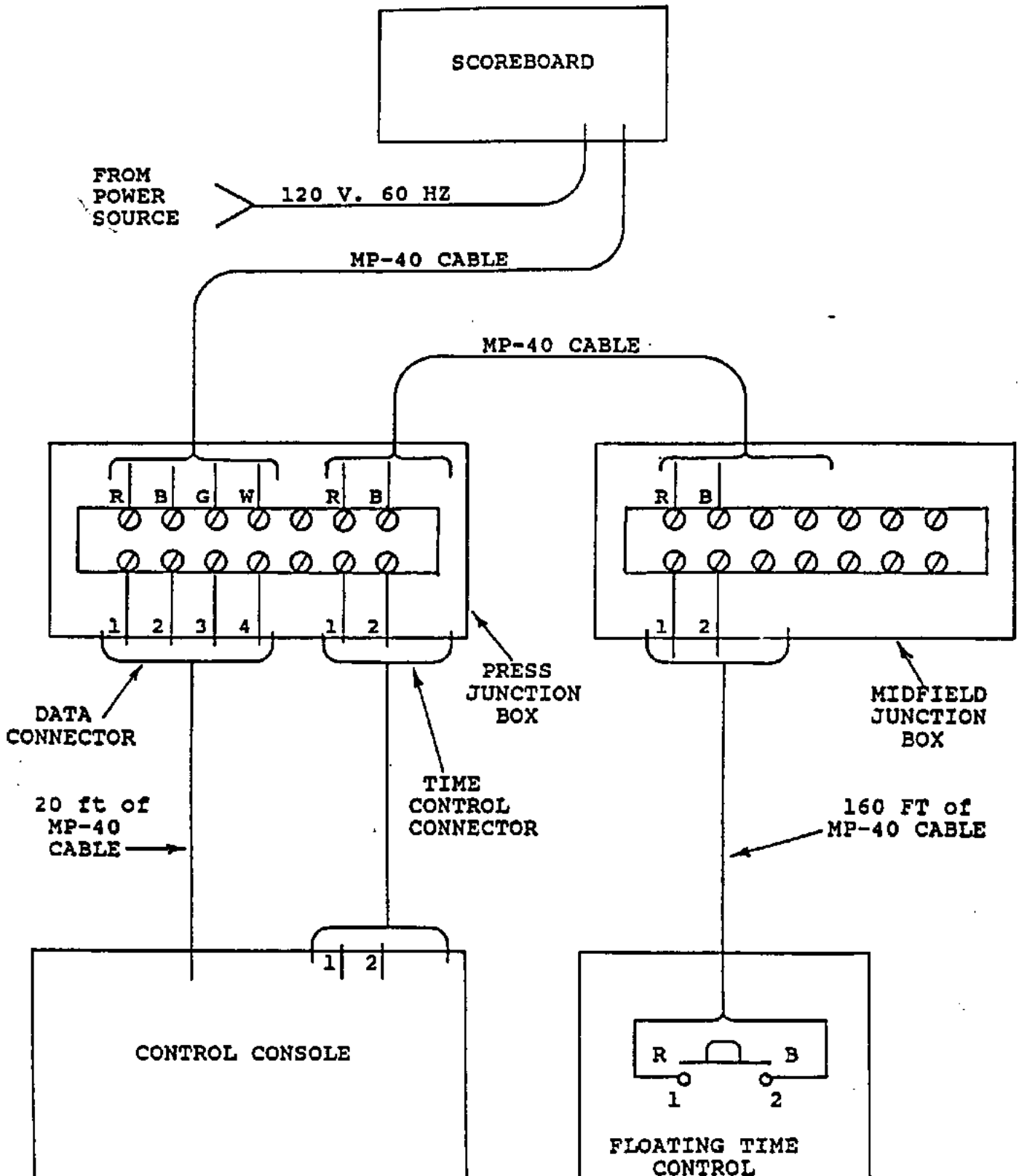


MP-2457 BASEBALL CONVERSION

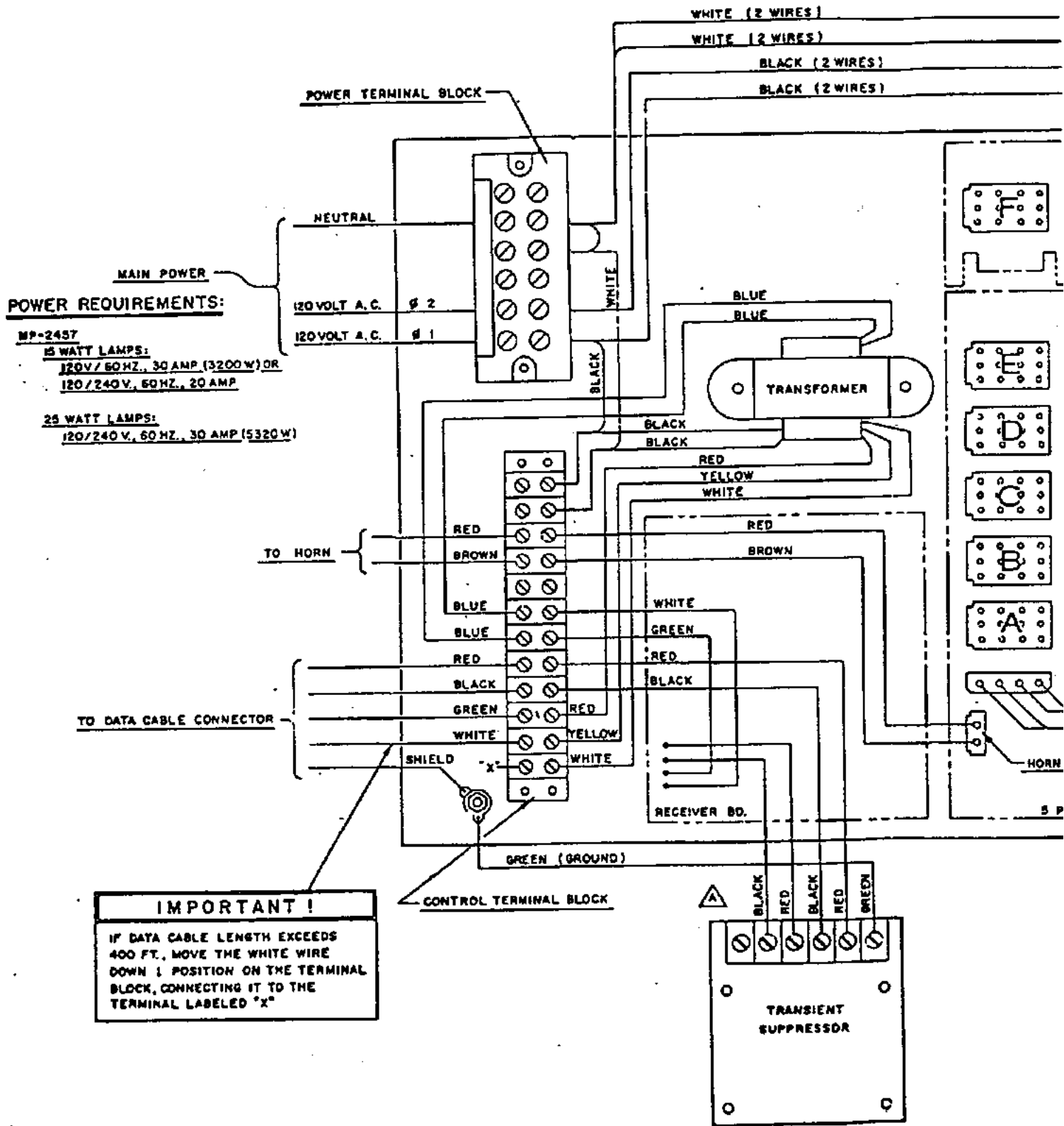


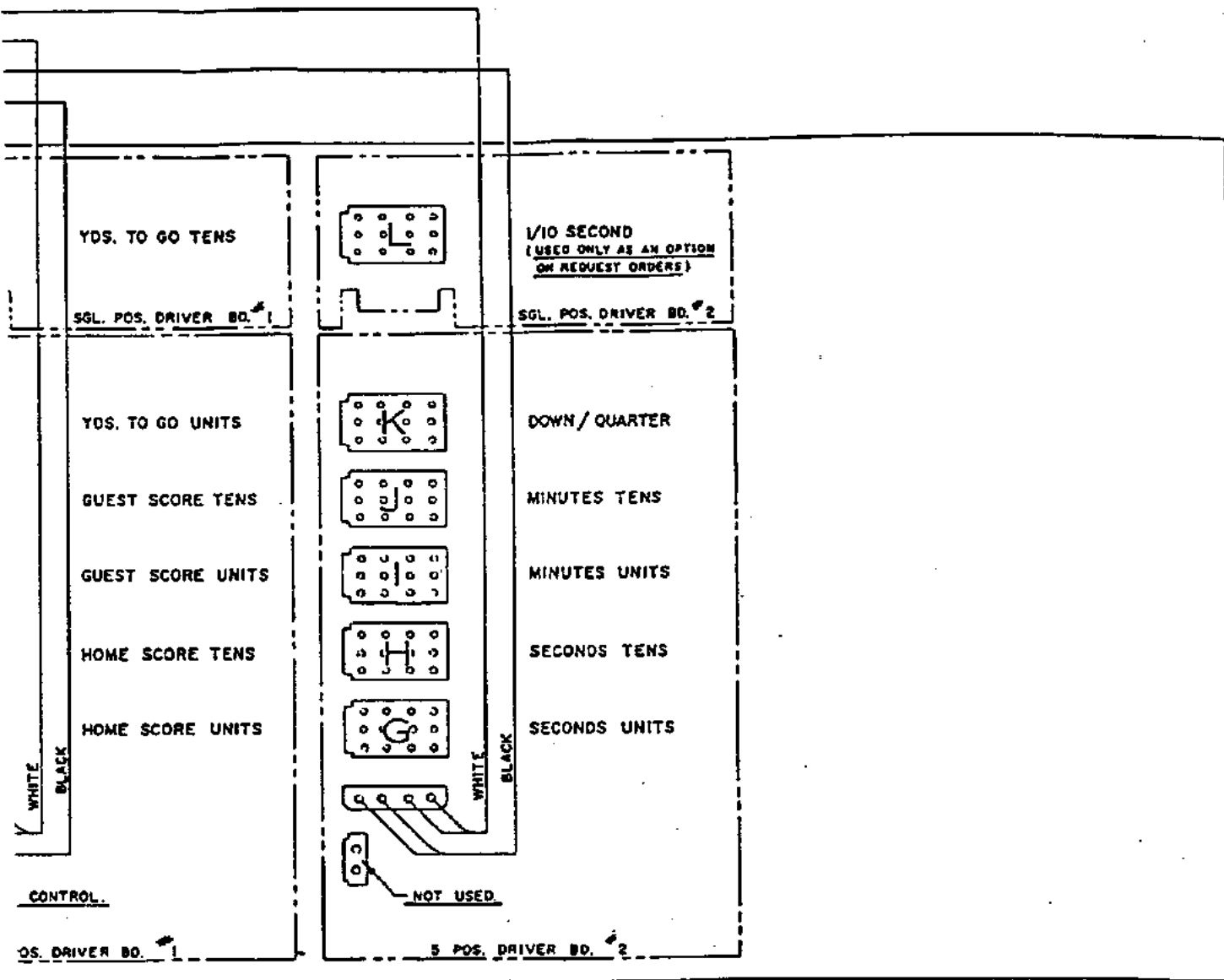
TRACK CONVERSION

6.2 Scoreboard Layout With Floating Time



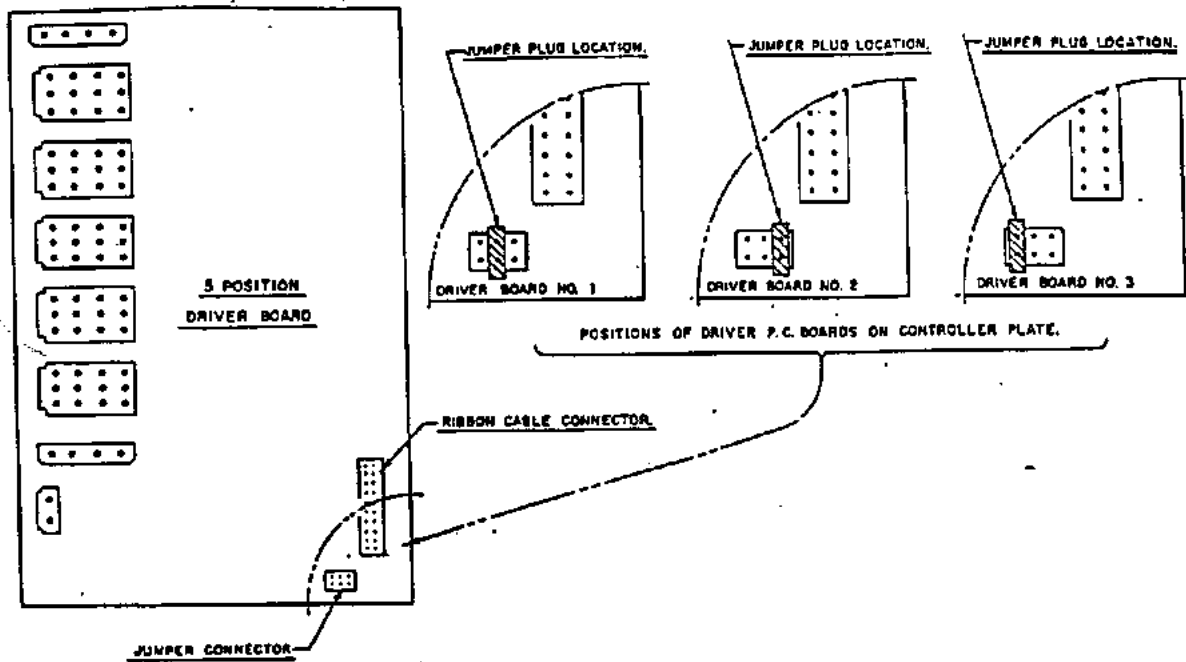
6.3 Controller Assembly Wiring





CONTROLLER ASSEMBLY

6.4 Jumper Location on 5 Position Driver Board

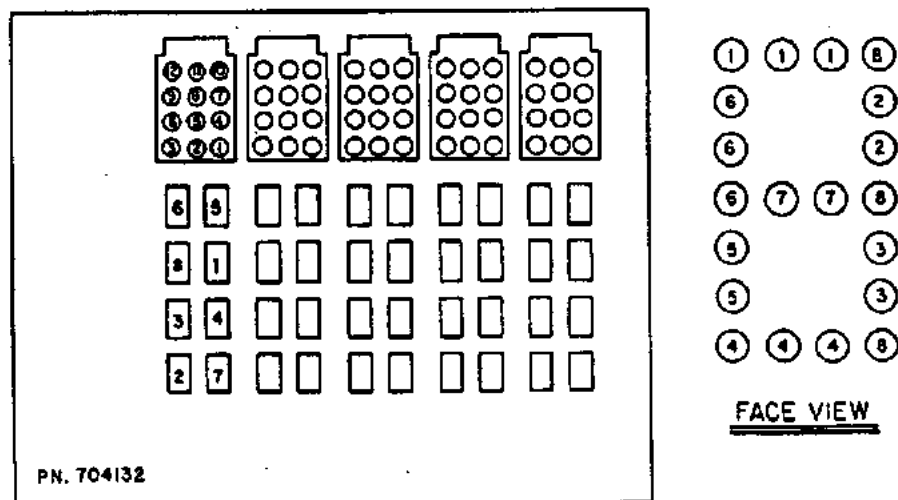


JUMPER LOCATION

6.5 Triac Placement Diagram

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.

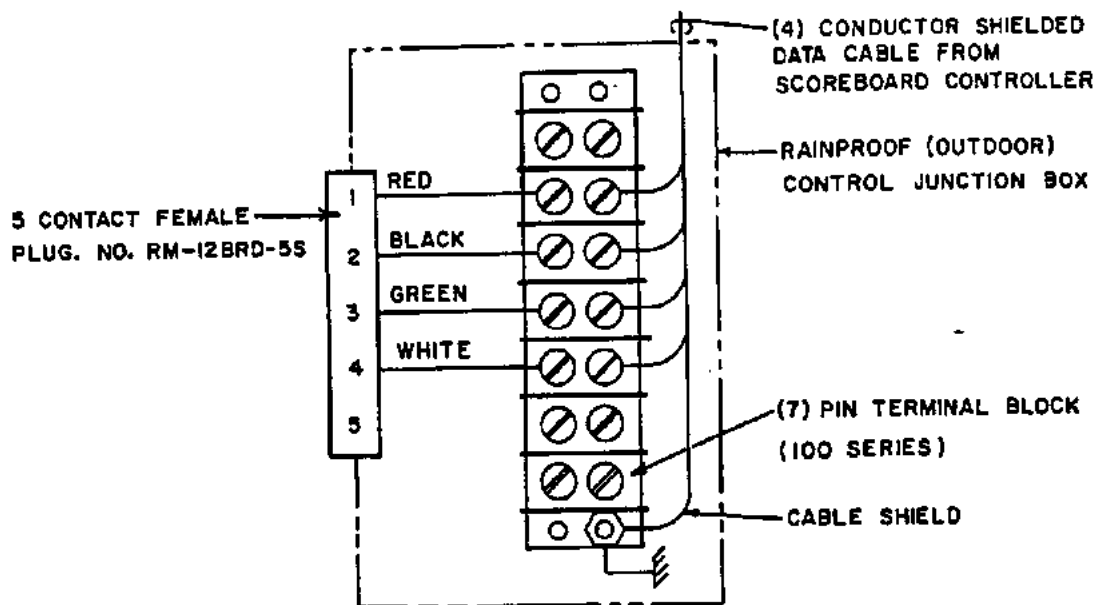
Shown below is the triac placement and bit designation relative to the figuregram bit pattern.



FACE VIEW

MP TRIAC PLACEMENT

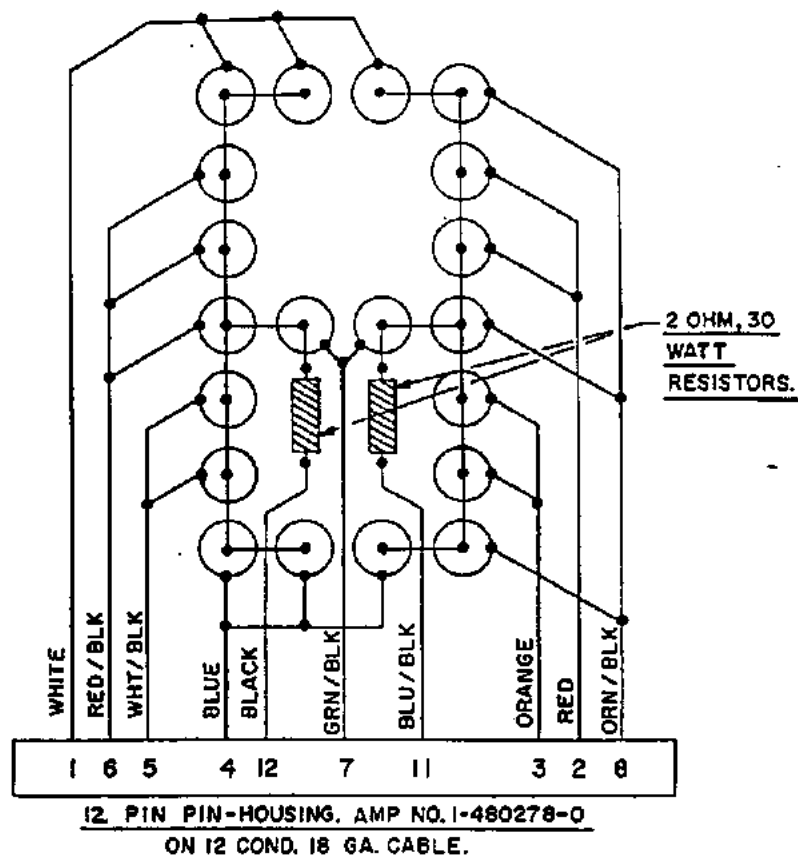
6.6 Press Box Junction Box Wiring



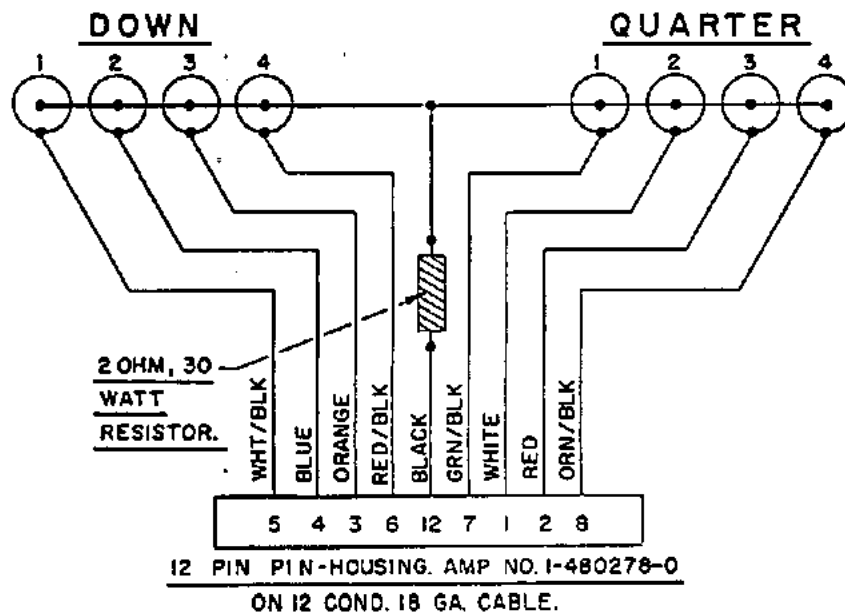
NOTE:
USED FOR ALL OUTDOOR FOOTBALL & BASEBALL SCOREBOARDS WITH MICRO-
PROCESSOR CONTROL EXCEPT THE MODEL MP-2310 BASEBALL.

JUNCTION BOX WIRING

6.7 Figuregram Wiring

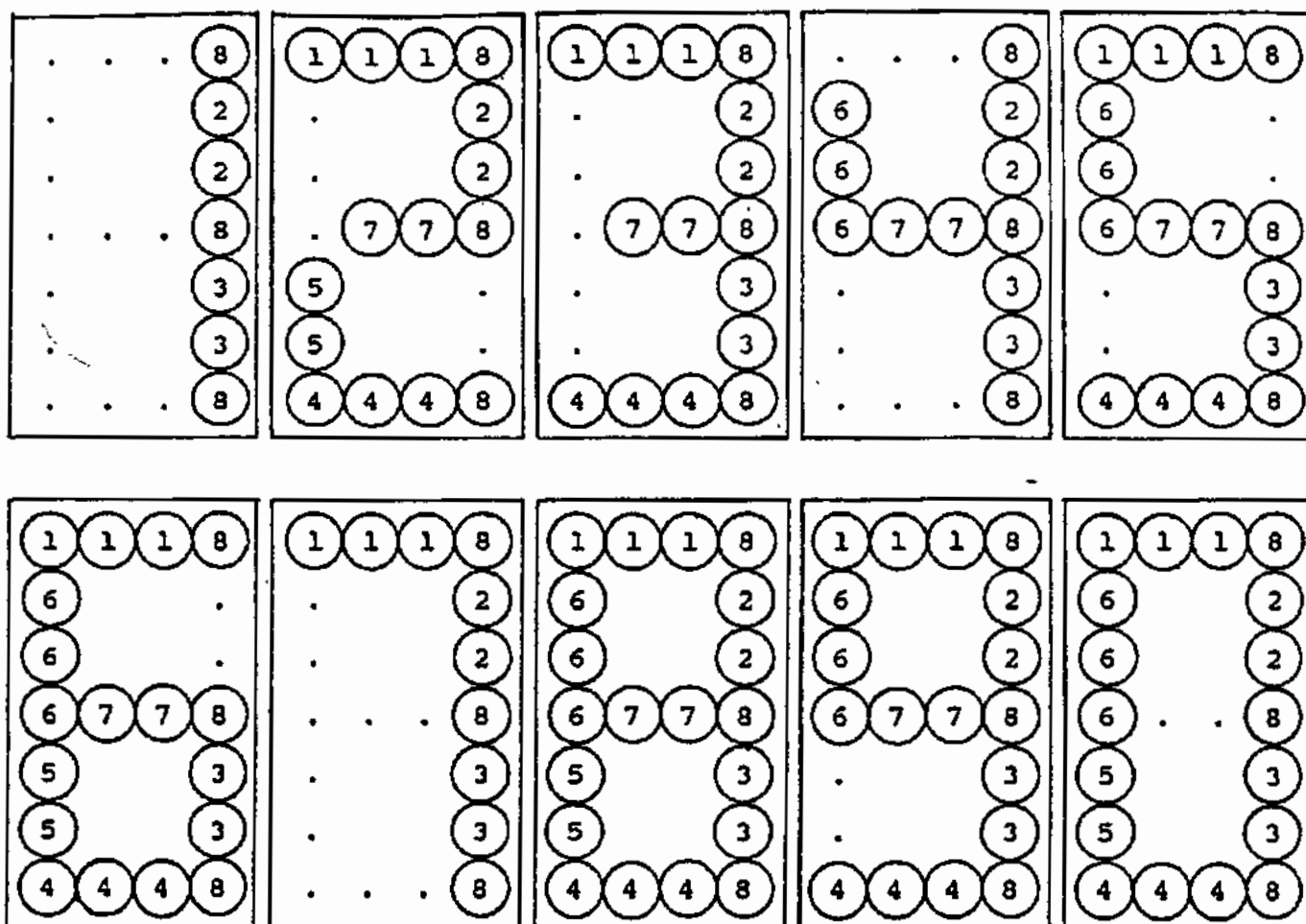


8 BIT FIGUREGRAM WIRING

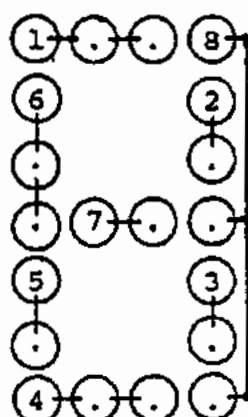


DOWN AND QUARTER WIRING

6.8 Microprocessor 4X7 Lamp Pattern (8 Bit)



NUMERALS



8 BITS

	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

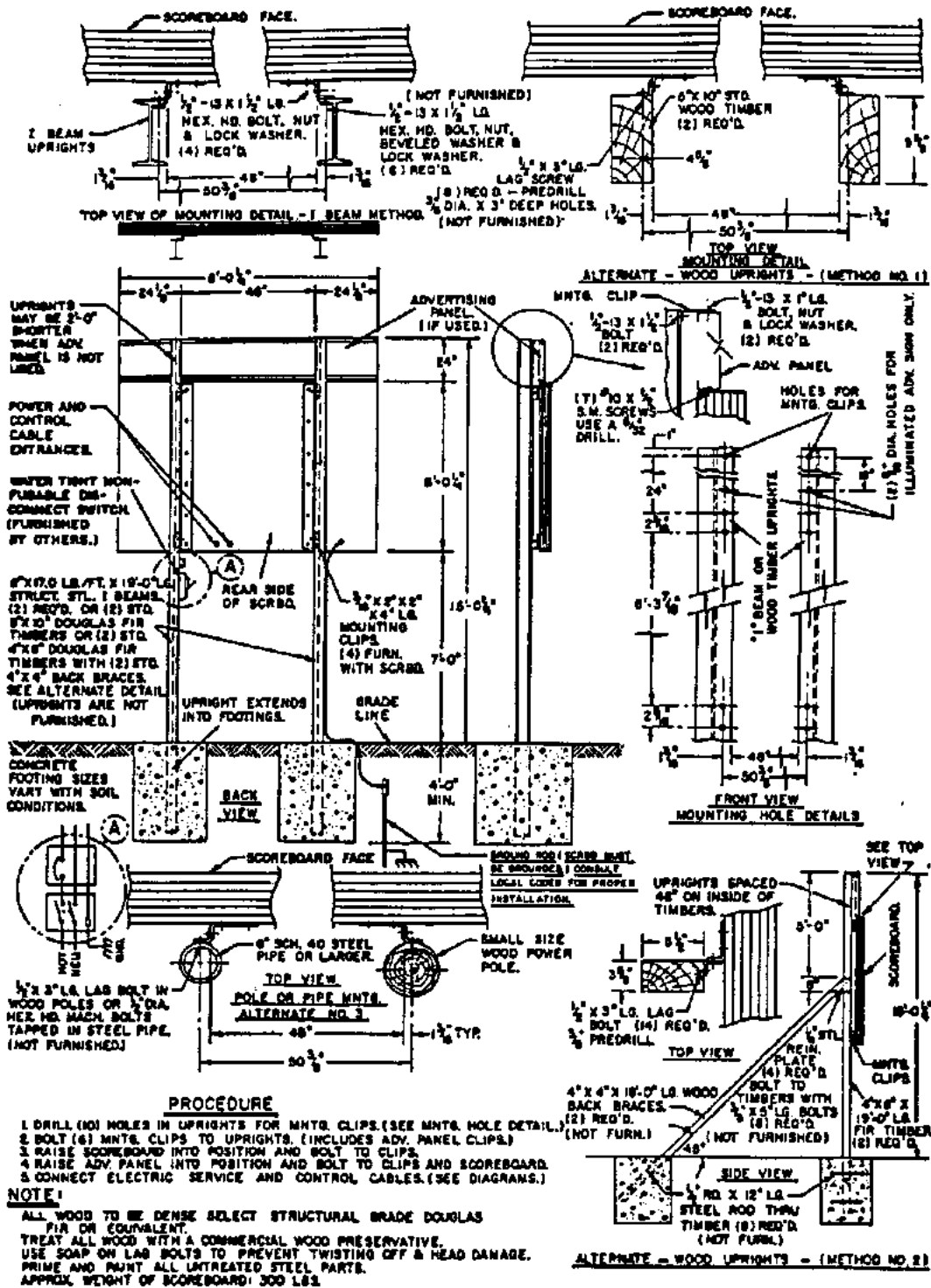
6.9 Baseball Conversion Placards

<div><div></div><div></div></div>		INNING
HOME	OUT	GUEST
<div><div></div><div></div></div>	<div><div></div><div></div></div>	<div><div></div><div></div></div>
BALL		STRIKE
<div><div></div><div></div><div></div><div></div></div>		<div><div></div><div></div><div></div><div></div></div>

REMOVE BULBS IN
DOTTED LOCATIONS.
(3 PLACES)

BASEBALL CONVERSION

6.10 Installation Drawings



INSTALLATION DRAWING for MP-2457