ALL AMERICAN
SCOREBOARDS

A Product of Everbrite 401 S. Main St. Pardeeville, WI 53901 (608)429-2121 / (800)356-8146

OPERATING INSTRUCTIONS AND SERVICE MANUAL

HOCKEY SCOREBOARD

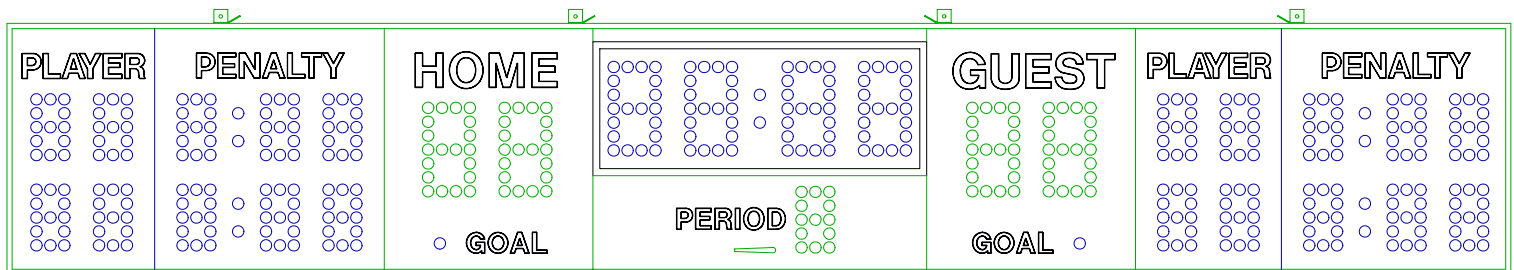MODEL MP-5549R With MP-5000R Control

PLAYER	PENALTY	HOME	00:00	GUEST	PLAYER	PENALTY
		GOAL	PERIOD	GOAL		

EFFECTIVE S.N. 18,350, November 15, 2002

TABLE OF CONTENTS

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 100
> Pardeeville, WI 53954
> Telephone: (608) 429-2121
> Toll Free: 800-356-8146
> E-mail score@everbrite.com

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.

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 the 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 it must be 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, properly filled out, 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

2. INSTALLATION

2.1   General Information

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

1 ea Hockey Display
1 ea Control Console
1 ea Service Manual
1 ea AC Adaptor
1 ea Trumpet Horn

2.2 Inspection

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

2.3 Pre-Test

Before installing the scoreboard, pre-test all functions.

(A) Connect the scoreboard to a 15 AMP, 120 Volt AC service.
(B) Plug the control console into the top of the scoreboard.
(C) Test operate all functions on the scoreboard according to operating instructions in section 3 of this manual.
(D) When all the functions test out, disconnect the power and the control console before hanging the scoreboard.

2.5 Electrical connections

This scoreboard requires a 120 VAC 15 AMP service for the exclusive use of the scoreboard.

NOTE
To protect the MP-5000R 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 **UL** 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   Scoreboard Power

         Turn on the branch circuit to the scoreboard. The scoreboard will show zeroes in the
         Home and Guest scores.

   3.2   Console Display

         The 2 line by 20 character Liquid Crystal Display module displays the scoreboard
         information entered from the keyboard. The following information is displayed
         continuously: Time, Home and Guest scores, Period, Goal, Auto Horn Enable, 1/10
         Second Enable, and Penalty Timer Enable.

   3.3   Console Power

         Plug the control console cable into the wall junction box.

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

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

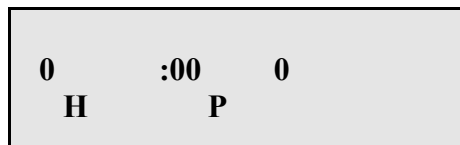   When first turned on; the console display should show as follows.

         ```
         MULTISPORT CONTROL
          MP5000 VER 2.12  2001
         ```

   3.4   To Use Scoreboard

         Enter the two digit code (40) shown in the upper right corner of the keyboard as in
         the following example:

         Push   **CODE**   **4**   **0**   **ENTER** .

         When the proper code has been entered, the timer on the scoreboard will show ":00",
         and the console display will show as follows.

         ```
           0       :00     0
             H          P
         ```

3.5 Setup

The SETUP key will step through a list of options.

Press YES/NO or make Numeric Entries to make changes.

Pushing ENTER without any other input skips to the next item.

Pushing CLEAR exits setup, and all changes are kept.

Accurate time will be kept without power to the scoreboard for up to 2 months.

3.6 Time Control

The UP/DN key determines the timer mode. When in the UP mode an arrow

up symbol is displayed next to the time on the LCD display. If in the DOWN mode there is no arrow displayed.

Switching the time toggle switch to the IN and OUT position, starts and stops the timer.

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

Push EDIT to change the timer to another value.

3.7 Team Scores

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

(A) To add 1 to the existing score: Push GOAL .

(B) To directly enter or correct a score: Push Home or Guest SCORE followed

by the desired number, then ENTER .

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

Push: Home SCORE 2 3 ENTER .

3.8 Horn

The horn will blow when the HORN button is pressed.

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

The automatic horn function may be disabled in Setup.

An 'H' is displayed on the LCD when this function is enabled.

3.9   Goal Indicators

Pushing Home or Guest   **GOAL**   to add 1 point to the score will also illuminate

the appropriate goal indicator. A '<G' or 'G>' will be displayed while the goal
indicator is illuminated.

3.10 Period Indicators

Push   **PERIOD**   once to increment the period indicator. The LCD display will

show the period directly below the time.

3.11 Timeout Period

An automatic timeout period of 1 minute is provided for "Time Outs" when the main
timer is not running.

Push: **TIME OUT TIMER**   to start the 1 minute timer. The LCD will show

"TIME OUT = 1:00" and start to count down. When 1 minute has elapsed the internal
beeper sounds, and the display returns to the current game time.

If you want to return to play before the Time Out Timer gets back to zero,

push: **TIME OUT TIMER**   **CLEAR**   and the console will return to play mode.

3.12 Penalty Time Control

To set a penalty, Push Home or Guest   **PENALTY**   followed by the Player

Number and then the penalty time, as in the following example for a 3 minute penalty
for player number 25.

Push: **PENALTY**   **2**   **5**   **ENTER** **,** **3**   **0**   **0**   **ENTER** **.**

To view/clear penalty, Push   **H**   **or**   **G**   **STATS**   . The LCD will step thru all

active penalties, one at a time. While a penalty is displayed, Push   **CLEAR**   to

remove it.

3.13 Shots On Goal

The Home and Guest Shots On Goal can be changed in the following way.

To add 1 to the existing shots: Push   **SOG**   .

The LCD will show S.O.G. = and the present total. Push the number keys for the new total followed by the desired number, then   **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.

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.

WARNING !!!

120 VAC wires are exposed whenever the cover over the power supply 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.

4.4 Troubleshooting Guides

(A) Scoreboard doesn't light

(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) Check to see that the Green LED on the power supply is lit.
(e) Check for 12 VDC at the power supply terminal.
(f) Contact the customer service department.

(B)   Control console doesn't turn on

(a) Check that the AC power to the AC adaptor is turned on.
(b) Replace any defective or blown fuses.
(c) Check the power connections and voltages in the control.
(d) Contact the customer service department.

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

(a) With the main power switch "off"; remove the cover over the power
    supply, and receiver.
(b) Check all connections.
(c) Turn the main power on.
(d) Turn the control console on and enter the code.

   If LED D1 on the receiver board is flashing rapidly call the customer service
   department.

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

(a) With the main power switch "off"; remove the cover over the power
    supply, and receiver.
(b) Check all connections.
(c) Turn the main power on.
(d) If the scoreboard still doesn't light, check the voltage between the
    positive and negative terminal strips on the power supply for 12 VDC
    with a voltmeter set on the 12 VDC or higher scale.

   If the voltage is 12 VDC or greater, go to (e).

   If the voltage is less than 12 VDC check the power supply input voltage for
   120 VAC and contact the customer service department.

(e) Check LED D4 on the receiver board. It should be medium brightness.
    Change the Dim level on the control console. D4 brightness should change.
(f) Check if LED D5 on the receiver board is on.

   If D5 is on, check if D2 and D6 are flashing and call customer service
   department. The flash will be very fast. The LED's may appear to be on at
   half brightness.

If D5 is not on, check that the receiver board is plugged into the power supply and call the customer service department.

(E)   The scoreboard works, but some digits do not change.

(a) Find the driver board that controls the first digit in the shift order that is not working.
(b) Check for 12 VDC at the driver board.
(c) Reseat the data in ribbon cable connectors.
(d) Swap the driver board with a driver further down the shift order.
(e) If the digit still doesn't work call the customer service department.

CLUSTER REMOVAL

If it becomes necessary to remove a LED cluster: Insert a pointed object, like the end of a ball point pen, into the two holes in the cluster retaining ring, and rotate the cluster until these holes are at 3 o'clock and 9 o'clock. At this position the cluster should be removable from the front of the face of the scoreboard.

Reverse the procedure to install the cluster.

5. REPLACEMENT PARTS LIST

5.1 Scoreboard Display Parts
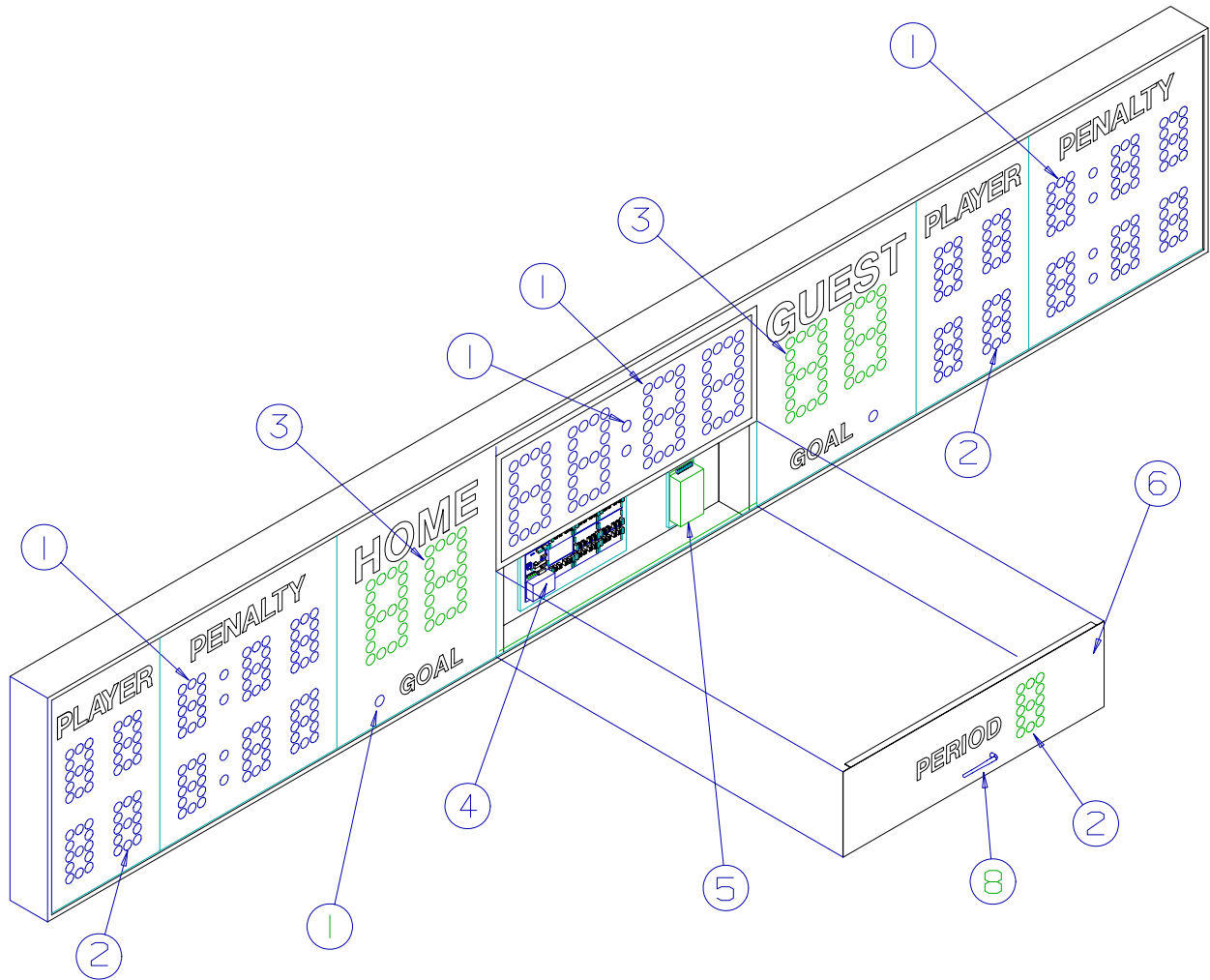
figure 1

DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-5549R Hockey)

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	151897	Display Assembly, MP-5549R		151897
1-1	150820	Cluster, 1.5" X Red		150820
1-2	150821	Cluster, 1.5" X Amber		150821
1-3	150822	Cluster, 1.5" X Green		150822
1-4	151620	Controller Assembly, MP-5549R W/8 Drv	A2	151620
1-5	151731	Power Supply Plate Assembly		151731
1-6	151247	Period & Service Panel		151247
1-7	702623	Connector, 2C Fem. AB (HORN)	J5	S3302AB
1-8	EL00474P	Antenna, 2.4 GHZ External		
1-8A	WI00018P	Antenna Cable, 8' Coaxial		RFX-C8
	151742	Control Console, 5000R		151742
	151684	Slipsheet Pair		151684
	151785	Transmitter PCB Assembly, 5000R	A1	151785
		***** PROGRAM MP5000 V2.12 *****		
	SW005100	Toggle Switch,	S1	SW005100
	EL00479P	Transceiver, 2.4 GHZ Radio OEM	A17	
	EL00473P	Antenna, 2.4 GHZ Internal		RFX-A5 Maxrad
	EL057700	LCD Display, 2 Line 20 Character		
	151682	Keyboard Assembly,		151682
	WH009100	Ribbon Cable Assembly, 14C 8"		WH009100
	122763	Enclosure,		
	EL00478P	Power Adaptor, 9 VDC		EL00478P
	118044	Horn, #55 Trumpet		118044

5.2 Controller Assembly Parts
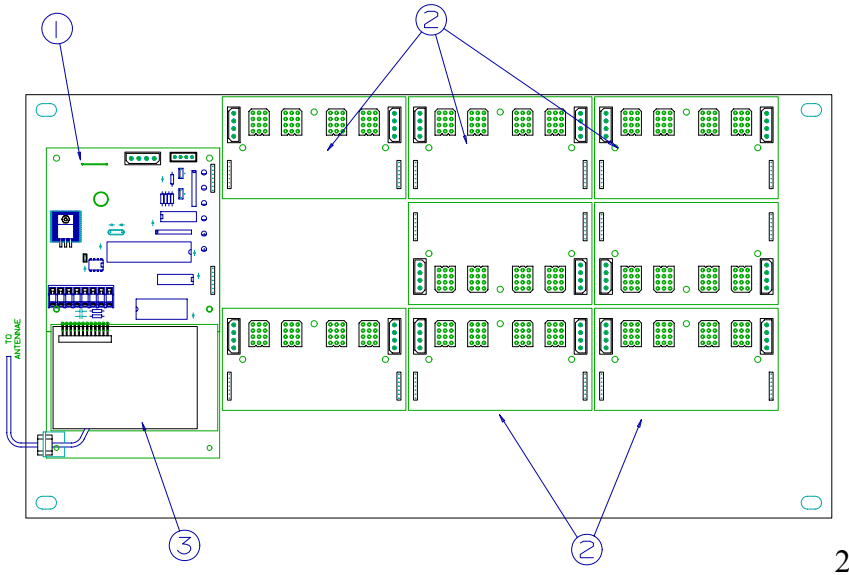
figure 2

CONTROLLER ASSEMBLY

		REPLACEMENT PARTS LIST (MP-5549R) Controller Assembly			
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #	
2-	151620	Controller Assembly	A2	151620	
2-1	150635	PC Board Assy, 5000 Series Receiver ***** PROGRAM RX5000 V2.12 *****	A3	150635	
2-2	150634	PC Board Assy, 4 Pos. Driver A4-A11		150634	
2-3	EL00479P	Radio Transceiver, 2.4 GHZ OEM		EL00479P	
2-4	930674	Cable Assy, 3" Ribbon 7C Fem.		CE 100F22-7 Pand	
2-5	705723	Spacer, Amerlock		SPC# PCS-6	
2-6	922450	Spacer, Alum.		93N2130	

5.3 Power Supply Assembly Parts
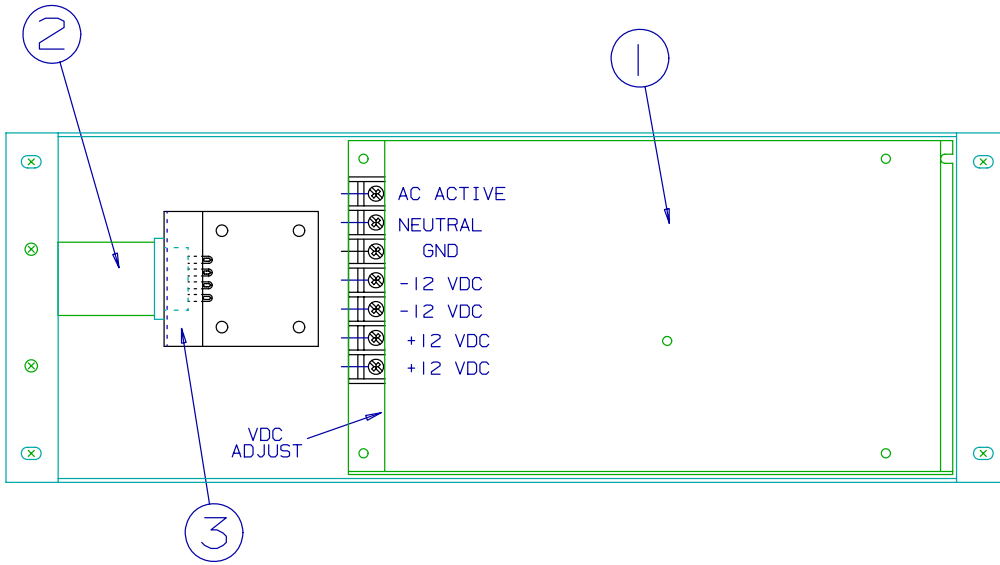
figure 3

POWER SUPPLY PLATE ASSEMBLY

REPLACEMENT PARTS LIST (MP-5549R) Power Supply Plate				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
3-	151731	Power Supply Plate Assembly	A14	151731
3-1	BL00054P	Power Supply, 12V 150 Watt		S-150-13-5
3-2	EL00525P	Relay, 12 VDC DPDT 10A contact	K1	MY2DC12(S)
3-3	703118	Socket, Relay		27E008
3-4	151716	Cable Assy, 3' Power		151716

6. DIAGRAMS

6.1 Control Console Keyboard and Slipsheet Layout
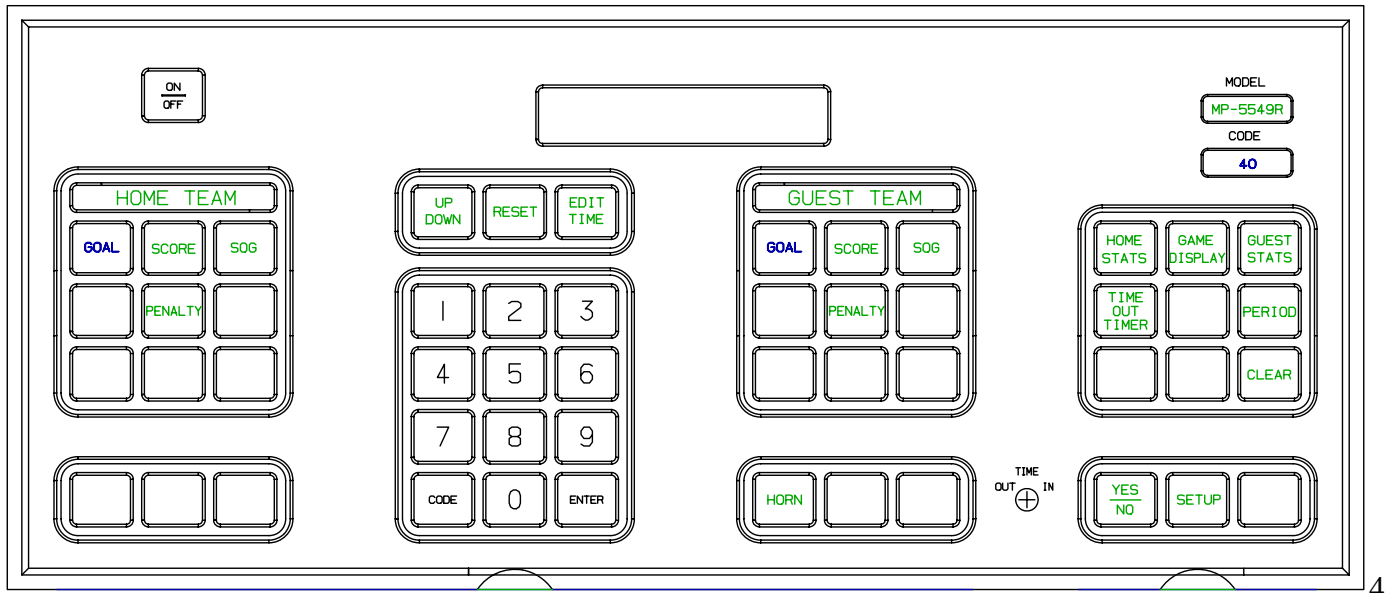
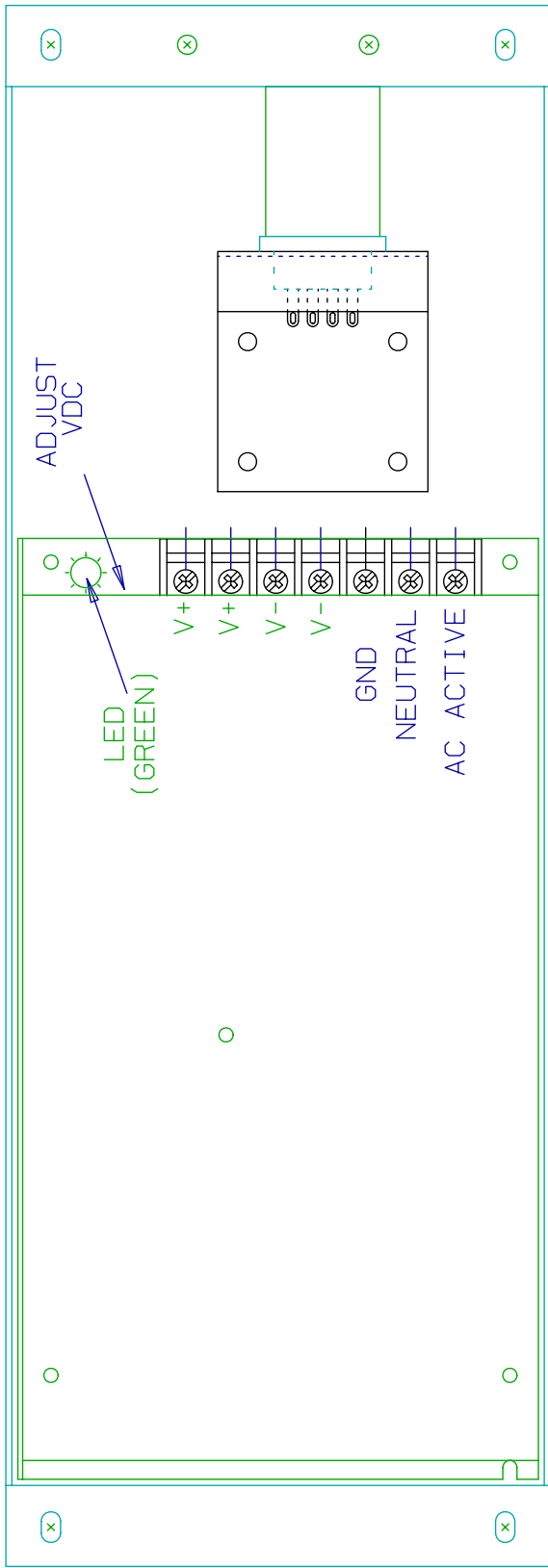CONSOLE KEYBOARD

6.2 Scoreboard System Layout

SCOREBOARD

POWER SOURCE
120 V / 60 HZ

ANTENNAE

CONTROL CONSOLE

5
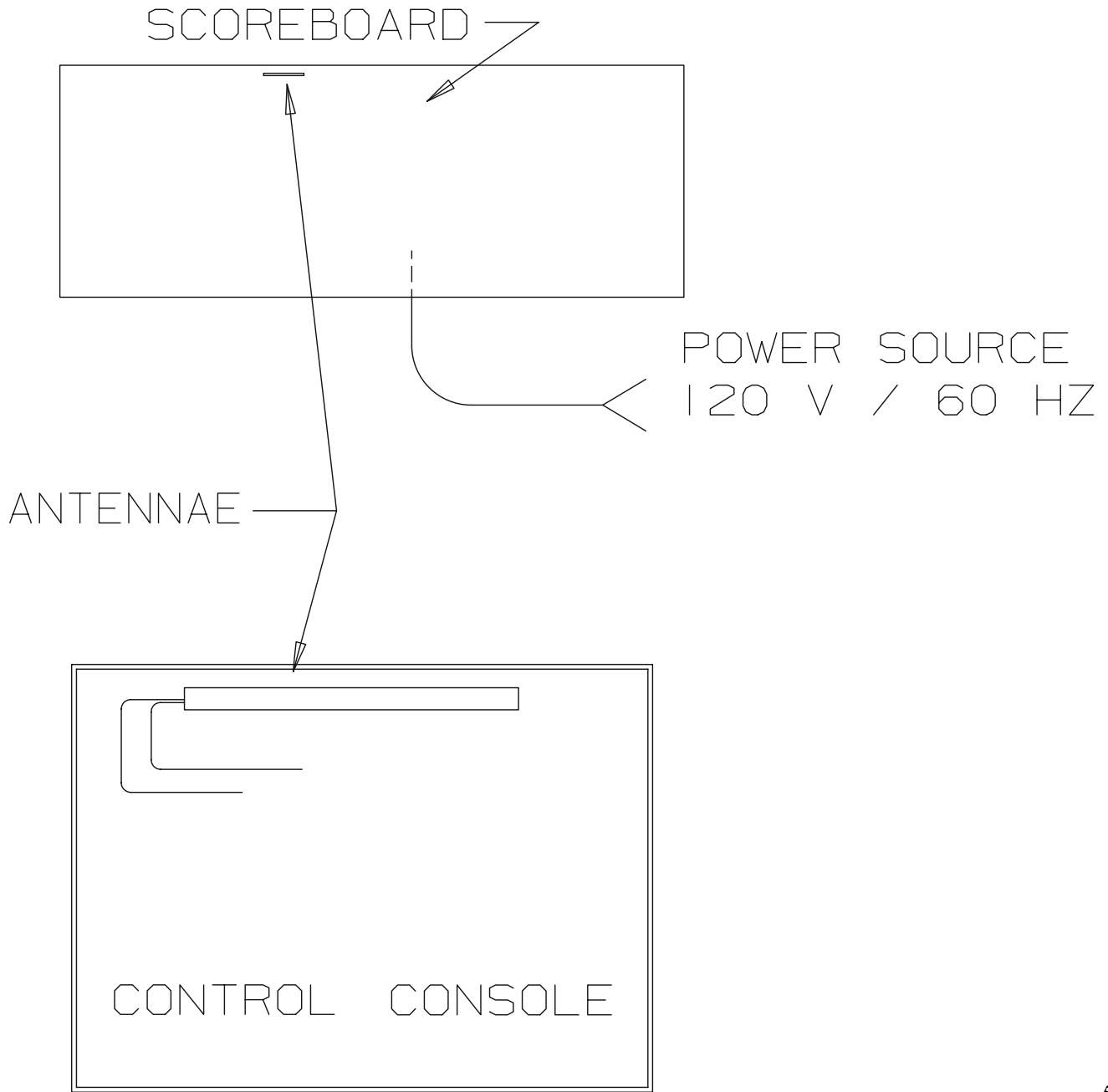
SYSTEM LAYOUT

6.3 Controller Assembly Wiring Diagram

G.PEN.2 SEC.UNITS
G.PEN.2 SEC.TENS
G.PEN.2 MINUTES
G.PEN.1 SEC.UNITS
G.PEN.1 SEC.TENS
G.PEN.1 MINUTES
H.PEN.2 SEC.UNITS
H.PEN.2 SEC.TENS
H.PEN.2 MINUTES
H.PEN.1 SEC.UNITS
H.PEN.1 SEC.TENS
H.PEN.1 MINUTES

H.PLR.1 TENS
H.PLR.1 UNITS
H.PLR.2 TENS
H.PLR.2 UNITS
G.PLR.1 TENS
G.PLR.1 UNITS
G.PLR.2 TENS
G.PLR.2 UNITS

GUEST INDICATORS
G.SCORE TENS
G.SCORE UNITS
COLON/ PERIOD INDICATORS
HOME INDICATORS
H.SCORE TENS
H.SCORE UNITS
PERIOD (DIGIT)
MIN.TENS
MIN.UNITS
SEC.TENS
SEC.UNITS

TO 12 VDC POWER SUPPLY
GND
+12

TO 12 VDC POWER SUPPLY
GND
+12

TO GND

TO HORN

TO 12 VDC POWER SUPPLY
GND
+12

RECEIVER BOARD
R1
R4
U7
U5
GRN
WHT
SHLD
BLK
RED
U4
U1 80C31 MICRO P
U2
27C256 EPROM
TRANCEIVER

TO ANTENNAE

6

CONTROLLER WIRING

6.4 Power Supply Plate Wiring

ADJUST
VDC

LED
(GREEN)

V+
V+
V-
V-
GND
NEUTRAL
AC ACTIVE

7
POWER SUPPLY PLATE ASSEMBLY

6.5 Receiver Board Diagram

D1 = +5 VOLT
D2 = DATA IN
D3 = CH.1 DATA OUT
D4 = CH.2 DATA OUT
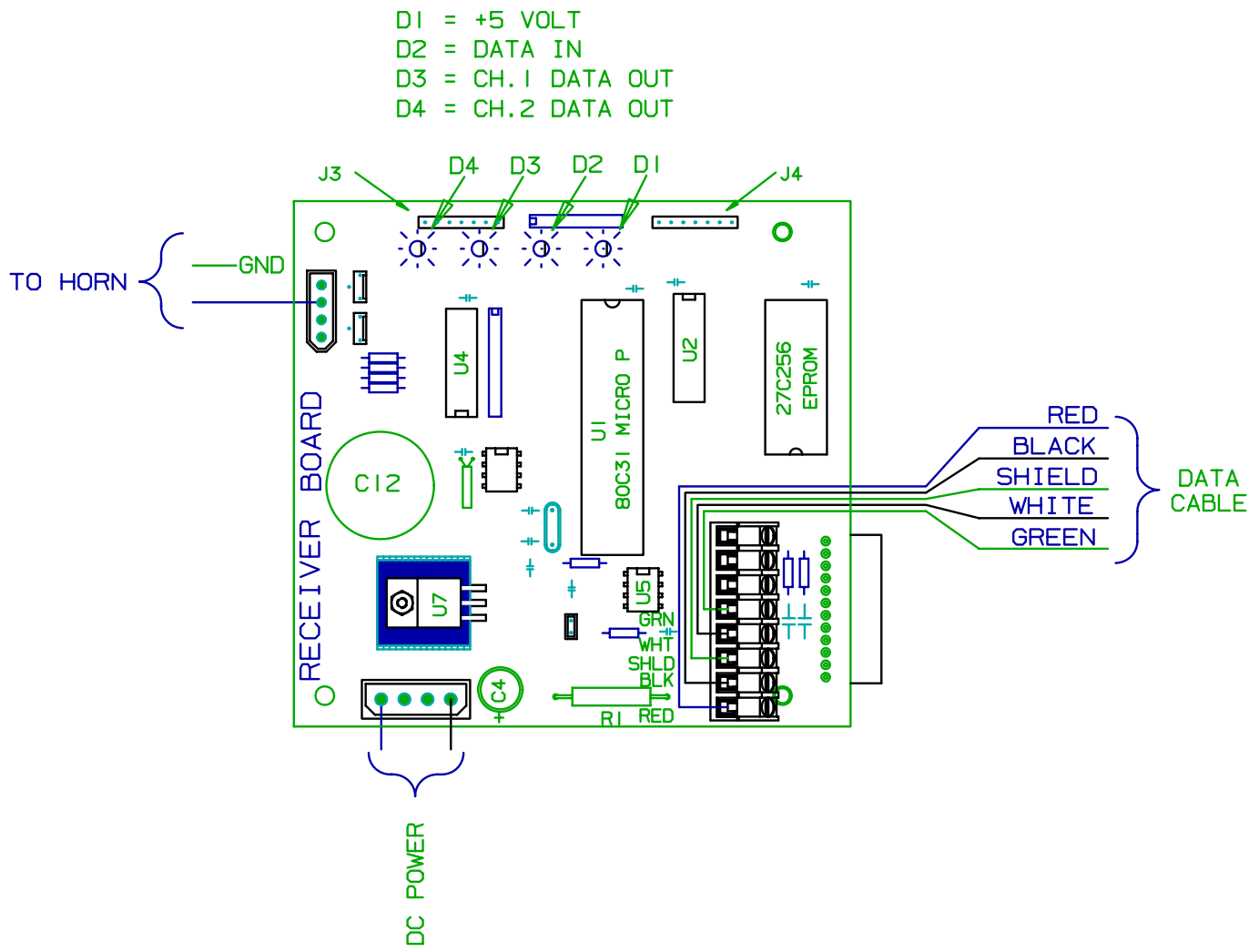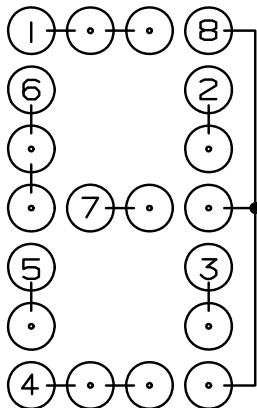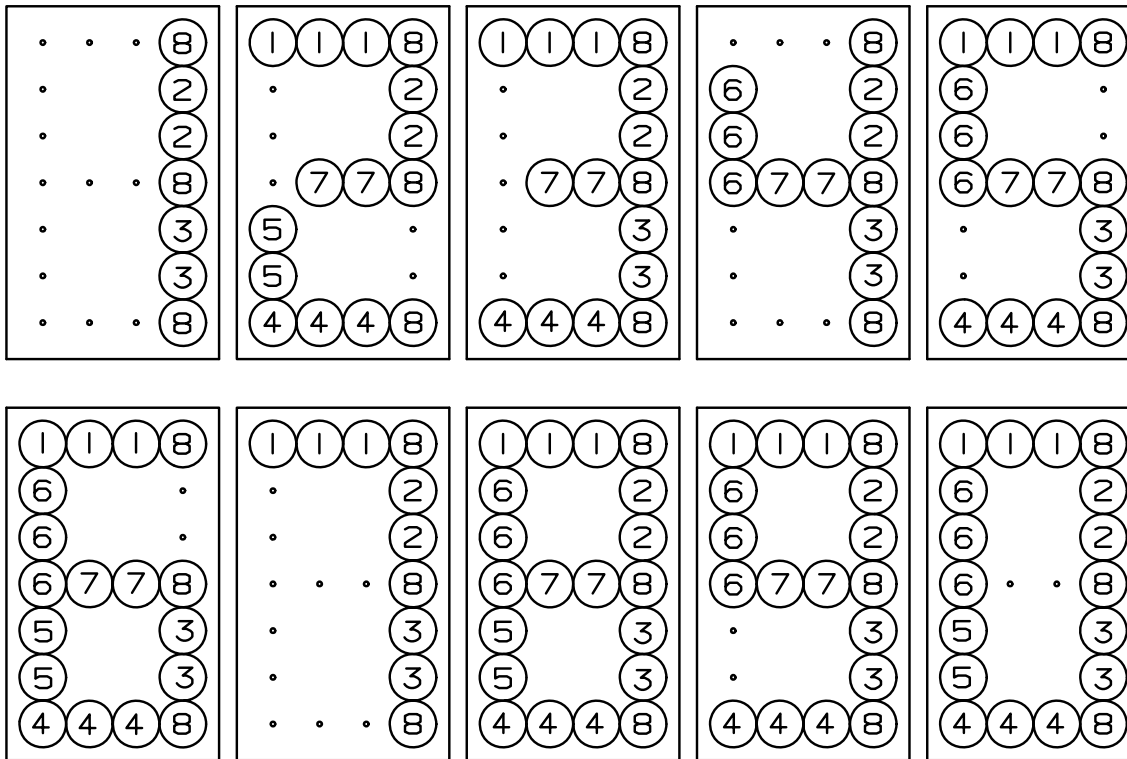

RECEIVER BOARD

6.6 Driver Board Diagram
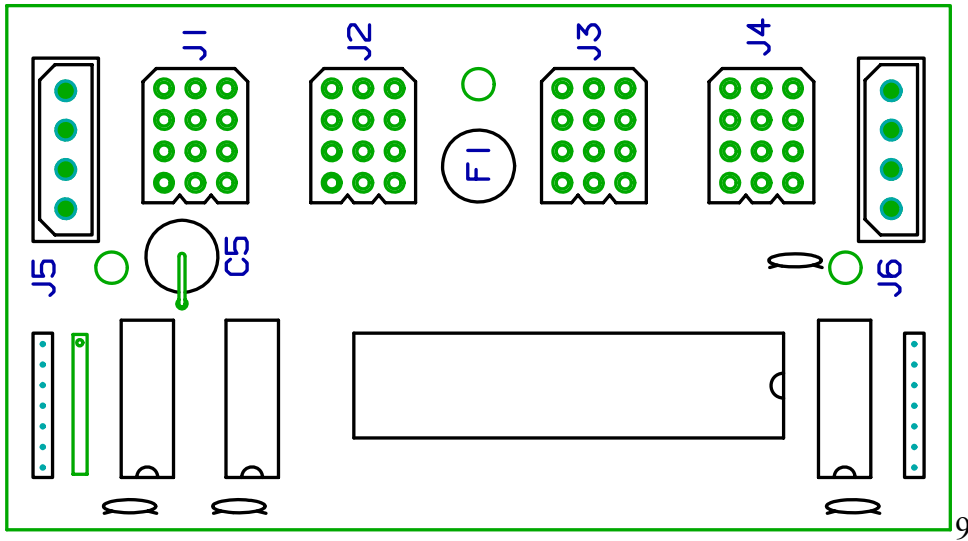
RECEIVER BOARD

6.7 Microprocessor 4 X 7 LED Pattern (8 Bit)

NUMERALS

		0	1	2	3	4	5	6	7	8	9
B I T N U M B E R S	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

10

The Timers Colon Wiring ties the top to bit 8 of seconds units, and the bottom to bit 8 of seconds tens.

MICROPROCESSOR 4 X 7 (8 BIT) LED PATTERN

6.8   Installation Drawing

POWER

HORN

125.750

87.750

51.000   53.000   50.750   30.750   5

APPROX. WEIGHT = 275 lbs.

36" 37
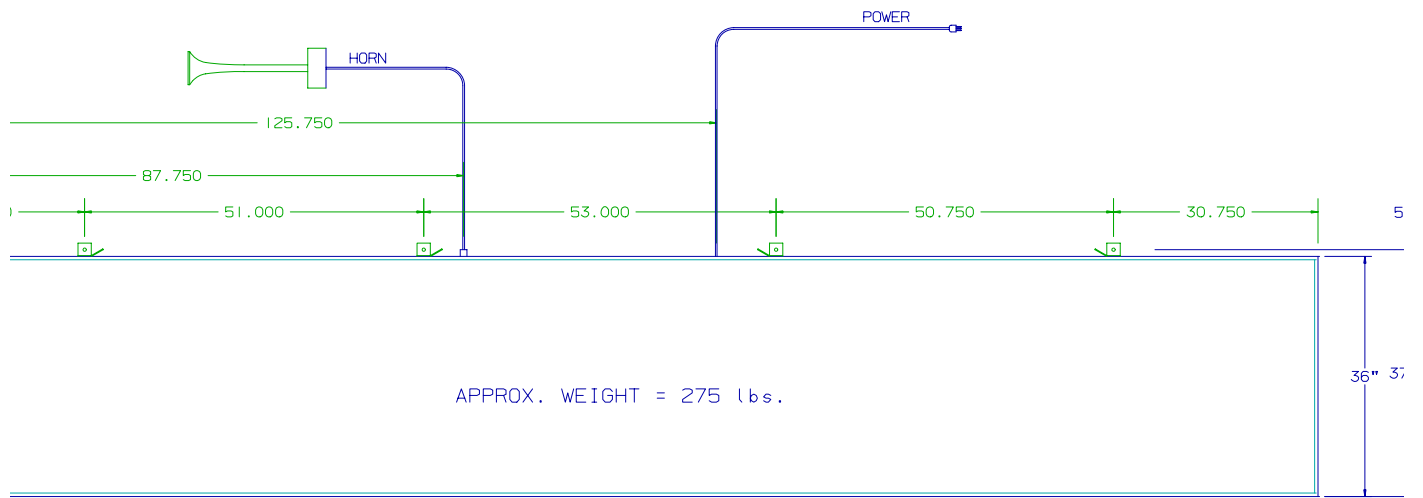
USE 1/2" DIA. HARDWARE (NOT FURNISHED)
FOR MOUNTING THE SCOREBOARD DISPLAY

11

INSTALLATION DRAWING