Multi-Section Outdoor LED Scoreboards

Installation, Maintenance, and Specifications Manual

ED12562

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Scoreboard Models

BA-1518-11	FB-1424-11	FB-1630-11	FB-2001-11	SO-1424-11
BA-1524-11	FB-1430-11	FB-1630L-11	FB-2002-11	SO-1624-11
BA-2007-11	FB-1524-11	FB-1730-11	FB-2003-11	SO-1830-11
BA-3718-11	FB-1530-11	FB-1830-11	MS-2009-11	SO-1830L-11
BA-3724-11	FB-1624-11	FB-1830L-11	MS-2118-11	SO-1930-11

ED12562
Product 1192
Rev 4 – 28 October 2002

Note: *Please fill in the information below for your display, and use it as a reference when calling Daktronics for assistance.*

Scoreboard Serial No. _____

Scoreboard Model No. _____

Date Installed _____

DAKTRONICS
PO Box 5128 331 32nd Ave Brookings SD 57006
Tel 605-697-4036 or 877-605-1115 Fax 605-697-4444
www.daktronics.com e-mail: helpdesk@daktronics.com

Table of Contents

Section 1: Introduction

1.1 How To Use This Manual

This manual explains the installation of ***Daktronics Outdoor LED Timing Displays*** and provides details for display maintenance. For other questions regarding the safety, installation, operation, or service of these systems, contact Daktronics. Customer Service Help Desk telephone numbers are listed on the cover page of this manual. This manual would be referred to as **ED12562**.

Important Safeguards:

1. Read and understand these instructions before installing the display.
2. Do not drop the control console or allow it to get wet.
3. Properly ground the timer with a grounding electrode at the display location.
4. ***Disconnect power when the display is not in use.***
5. ***Disconnect power when servicing the display.***
6. Do not modify the structure or attach any panels or coverings to the display without the express written consent of Daktronics, Inc.

The box at right illustrates the Daktronics drawing numbering system. Daktronics identifies individual engineering drawings by the drawing number (7087-P08A-69945 in the example), which is located in the lower right corner of the drawing. This manual refers to drawings by their last set of digits and the letter preceding them. The example would be **Drawing A-69945**.

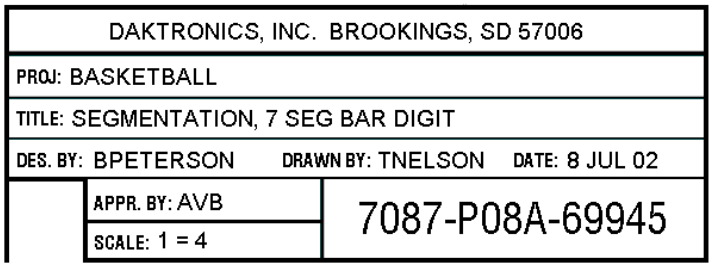

Figure 1: Daktronics Drawing Label

Reference drawings are grouped and inserted in alphanumeric order in the **Appendix**.

Listed below are a number of drawing types commonly used by Daktronics, along with the information that each is likely to provide.

- System Riser Diagrams: overall system layout from control room to display, power, and phase requirements.
- Shop Drawings: fan locations, transformer locations, mounting information, power and signal entrance points, and access method (front or rear).
- Schematics: power wiring, signal wiring, panelboard or power termination panel assignments, signal termination panel assignments, and transformer assignments.
- Final Assembly: component locations, part numbers, display dimensions, and assembly/disassembly instructions.

All references to drawing numbers, appendices, figures, or other manuals are presented in **bold** typeface, as in this example: "Refer to **Drawing A-114667** for the location of the driver enclosure." Additionally, any drawings referenced within a particular subsection are listed at the beginning of that subsection in the following manner:

Reference Drawing:
Shop Drawing; 16 High 2 ½" Small Matrix ..... **Drawing A-114667**

Daktronics identifies each manual by assigning an engineering document, or ED, number, which is located on the cover page. This manual, for example, would be referred to as **ED13313**.

The serial and model numbers of a Daktronics scoreboard can be found on the ID label on the display. The label will be similar to the one shown in **Figure 2**. When calling Daktronics Customer Service, please have this information available to ensure that your request is serviced as quickly as possible. For future reference, note your scoreboard model number, serial number, and installation date on the front page of this manual.

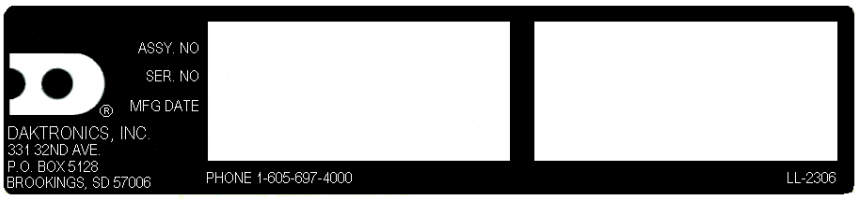

Figure 2: Scoreboard Label

Daktronics displays are built for long life and require little maintenance. However, from time to time, certain display components will have to be replaced. The Replacement Parts List in **Section 4** provides names and part numbers of components that may require replacement during the life of this display.

Following the Replacement Parts List is an explanation of Daktronics exchange and replacement programs. Refer to these instructions if you must replace or repair any display component.

1.2 Daktronics Nomenclature

To fully understand some Daktronics drawings, such as schematics, it is necessary to know how various components are labeled in those drawings. You will find this information useful when trying to communicate maintenance or troubleshooting efforts.

The label "A" on a drawing item typically denotes an assembly. An assembly can be a single circuit board or a collection of components that function together, usually mounted on a single plate or in a single enclosure.

In addition, the following labeling formats might be found on various Daktronics drawings:

- "TB_ _" denotes a termination block for power or signal cable.
- "F_ _" denotes a fuse.
- "E_ _" denotes a grounding point.
- "J_ _" denotes a power or signal jack.
- "P_ _" denotes a power or signal plug for the opposite jack.

Finally, Daktronics part numbers are commonly listed on drawings. Those part numbers can be used when requesting replacement parts from Daktronics Customer Service. Take note of the following part number formats. (Not all possible formats are listed here.)

- "0P-_ _ _ _-_ _ _ _" denotes an individual circuit board, such as a driver board.
- "0A-_ _ _ _-_ _ _ _" denotes an assembly, such as a circuit board and the plate or bracket to which it is mounted. A collection of circuit boards working as a single unit may also carry an assembly label.
- "W-_ _ _ _" denotes a wire or cable. Cables may also carry the assembly numbering format in certain circumstances. This is especially true of ribbon cables.
- "F-_ _ _ _" denotes a fuse.
- "T-_ _ _ _" denotes a transformer.
- "PR-_ _ _ _ _ -_" denotes a specially ordered part.
- "M-_ _ " denotes a metal part, and "0M_ _ _ _ _ _" typically denotes a fabricated metal assembly.

1.3 Manual Overview

This manual details outdoor LED timing displays with numeric digits. It is divided into the following sections:

Section 1:	Provides an overview of the product, product safety information, labeling and numbering descriptions.
Section 2:	Contains a list of drawings to be used in model identification.
Section 3:	Contains specifications for scoreboard models listed in this manual.
Section 4:	Contains a list of drawings listing component locations.
Section 5:	Lists specific schematic drawings for each scoreboard model.
Section 6:	Contains information regarding mechanical installation.
Section 7:	Contains information pertaining to electrical installation.
Section 8:	Provides details concerning scoreboard maintenance and troubleshooting.
Section 9:	Provides information for team name message center maintenance.
Section 10:	Lists optional scoreboard features.
Appendix A:	Contains all engineering drawings referenced in the manual.
Appendix B:	Contains information about eyebolts and scoreboard lifting.

The various sections in this manual contain model-specific information, including dimensions, digit configuration, and power requirements. The scoreboard engineering drawings, located in Appendix A, also list dimensions, weight, and mounting instructions for each display. Additionally, the model number and electrical requirements can be found on a label on the display entrance panel.

1.4 Product Overview

Daktronics outdoor LED scoreboards are part of a family of scoring and timing displays designed to offer easy installation, readability and reliability. Microprocessor control assures consistent operation and accuracy.

Featuring large, highly visible digits 15, 18, 24, and 30" tall, the boards use light-emitting diodes to power the scoreboard display. (Light-emitting diodes, or LEDs, are tiny, solid-state lighting units. They are low-energy, high intensity lighting components.) Scoreboards in this series use red-orange LEDs for maximum outdoor visibility.

Because of their LED technology, the scoreboards consume little power. Power usage in this series ranges from little more than a household lamp.

The scoreboards in this series are modular in construction, typically with a top and a bottom section, but some with as many as four different sections. The units are shipped separately and joined at installation. Unpowered sections, connected to the internal power and signal panels with cabling, are referred to as slave sections, while those housing the electronic control components are masters.

Cabinets for the displays are of heavy-gauge aluminum construction. Mounting weights and dimensions for each model are listed in **Section 3** of this manual.

☛**Note:** Some drawings and text in this manual refer to team name message centers, or TNMCs. Team name message centers are scoreboard-mounted matrix LED units which electronically display home and guest team names. TNMCs are available as a standard new scoreboard option with many of the models in this series, and the message centers are also available for retrofit on existing scoreboards. With some TNMC systems still in development, additional models will be added to subsequent editions of this manual. **Section 10** of this manual offers step-by-step information of TNMC maintenance and troubleshooting.

1.5 Model Names

Daktronics scoreboards are differentiated by their model numbers: *FB-1624*, for example, designates a specific football scoreboard. The two-letter prefixes for scoreboards in this manual include the following: **BA**- baseball; **FB**-football; **MS**-multi-sport, and **SO**-soccer.

In the outdoor LED scoreboard series, the three or four numbers following the prefix typically identify a specific model.

Most Daktronics scoreboards also carry a two-number suffix that refers to indoor-outdoor status and power supply: ***-9*** and ***-10*** are indoor displays, 120 V and 230 V respectively; and ***-11*** and ***-12*** are outdoor scoreboards, 120 V and 230 V. All of the LED displays in this manual carry the ***-11*** suffix, signifying that they have been designed and manufactured for outdoor use and have a 120 V AC power requirement.

1.6 Product Safety Approval

Daktronics outdoor scoreboards and timing displays are ETL listed, tested to CSA standards and CE labeled for outdoor use. Contact Daktronics with any questions regarding testing procedures

Section 2: Model Identification

Use the following drawings to determine the scoreboard model number. The drawings are listed here in alphabetical order by scoreboard model line, and they are inserted in the **Appendix** in alphanumeric order. Individual scoreboard drawings are also grouped in the **Appendix**.

Reference Drawing:

Multi-Section Baseball Scoreboards ..... **Drawing A-126086**
Multi-Section Baseball Scoreboards, w/TNMC..... **Drawing A-126362**
Multi-Section Football Scoreboards ..... **Drawing A-42148**
Multi-Section Football Scoreboards, w/TNMC ..... **Drawing A-84233**
Multi-Section Multi-sport Scoreboards ..... **Drawing A-128203**
Multi-Section Soccer Scoreboards..... **Drawing A-98161**
Multi-Section Soccer Scoreboards w/TNMC ..... **Drawing A-128172**

Section 3: Specifications

The chart on the following pages shows all of the mechanical specifications, circuit specifications and maximum power requirements for each model in this manual. Models are listed in alphanumeric order.

3.1 Multi-Section Scoreboards

Note: Signal wires must be a minimum of 22 gauge with shield. Daktronics recommends using W-1234.

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
BA-1518-11	2 Total	H8'-0", W16'-0", D6" (2438 mm, 4877 mm, 152 mm)	400 lb 182 kg (845 lb) (383 kg)	▪ Indicators 2" (51 mm) ▪ All Others 18" (457 mm)	250 W	120 V AC	2.1 A	A1 63
	Top	H3'-0", W16'-0", D6" (914 mm, 4877 mm, 152 mm)						
	Bottom	H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)						
BA-1518-11 w/TNMC	2 Total	H8'-0", W16'-0", D6" (2438 mm, 4877 mm, 152 mm)	480 lb 218 kg (912 lb) (414 kg)	▪ Indicators 2" (51 mm) ▪ All Others 18" (457 mm)	550 W	120 V AC	4.6 A	A1 63
	Top	H3'-0", W16'-0", D6" (914 mm, 4877 mm, 152 mm)						
	Bottom	H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
BA-1524-11	2 Total	H9'-0", W16'-0", D6" (2743 mm, 4877 mm, 152 mm)	480 lb 218 kg (1020 lb) (463 kg)	▪ Runs, Hits, Errors 18" (457 mm) ▪ Indicators 2" (51 mm) ▪ All Others 24" (610 mm)	340 W	120 V AC	2.8 A	A1 63
	Top	H4'-0", W16'-0", D6" (2743 mm, 4877 mm, 152 mm)						
	Bottom	H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)						
BA-2007-11 w/TNMC	4 Total	H9'-4", W36'-0", D6" (2845 mm, 10973 mm, 152 mm)	840 lb 381 kg 2 crates (700 lb) (318 kg) (1125 lb) (510 kg)	▪ Innings, Runs, Hits, Errors 18" (457 mm) ▪ All Others 24" (610 mm)	1000 W	120 V AC	8.0 A	A1 64 A2 65 A3 66 A4 11
	2 Top	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)						
	2 Bottom	H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)						
BA-3718-11	4 Total	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm)	640 lb 291 kg 2 crates (825 lb) (374 kg) (525 lb) (238 kg)	▪ Innings, Runs, Hits, Errors 15" (381 mm) ▪ All Others 18" (457 mm)	650 W	120 V AC	5.5 A	A1 64 A2 65 A3 66
	2 Top	H3'-0", W14'-0", D6' (914 mm, 8534 mm, 152 mm)						
	2 Bottom	H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
BA-3718-11 w/TNMC	4 Total	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm)	720 lb 327 kg 2 crates (746 lb) (338 kg) (468 lb) (212 kg)	▪ Innings, Runs, Hits, Errors 15" (381 mm) ▪ All Others 18" (457 mm)	950 W	120 V AC	7.8 A	A1 64 A2 65 A3 66
	2 Top	H3'-0", W14'-0", D6" (914 mm, 8534 mm, 152 mm)						
	2 Bottom	H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)						
BA-3724-11	4 Total	H9'-4", W36'-0", D6" (2845 mm, 10973 mm, 152 mm)	840 lb 381 kg 2 crates (700 lb) (318 kg) (1125 lb) (510 kg)	▪ Innings, Runs, Hits, Errors 18" (457 mm) ▪ All Others 24" (610 mm)	695 W	120 V AC	5.8 A	A1 64 A2 65 A3 66
	2 Top	H4'-0", W18'-0", D6" (2845 mm, 5486 mm, 152 mm)						
	2 Bottom	H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)						
BA-3724-11 w/TNMC	4 Total	H9'-4", W36'-0", D6" (2845 mm, 10973 mm, 152 mm)	960 lb 435 kg 2 crates (856 lb) (388 kg) (1112 lb) (504 kg)	▪ Innings, Runs, Hits, Errors 18" (456 mm) ▪ All Others 24" (610 mm)	990 W	120 V AC	8.25 A	A1 64 A2 65 A3 66

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
FB-1424-11	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	400 lb 182 kg (805 lb) (365 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)				
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)						
FB-1430-11	2 Total	H8-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	560 lb 254 kg (1068 lb) (484 kg)	▪ Clock 30" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	360 W	120 V AC	3 A	A1 12
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)						
FB-1430-11 w/TNMC	2 Total	H8-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	760 lb 345 kg (1444 lb) (655 kg)	▪ Clock 30" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	660 W	120 V AC	5.5 A	A1 12
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)						
FB-1524-11	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	400 lb 182 kg (805 lb) (365 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	360 W	120 V AC	3 A	A1 12
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)						
FB-1524-11 w/TNMC	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	520 lb 236 kg (844 lb) (383 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	660 W	120 V AC	5.5 A	A1 63
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
FB-1530-11	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	580 lb 263 kg (1102 lb) (499 kg)	▪ Clock 30" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	430 W	120 V AC	3.6 A	A1 12
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7630 mm, 152 mm)						
FB-1530-11 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	700 lb 318 kg (1330 lb) (603 kg)	▪ Clock 30" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	730 W	120 V AC	6.1 A	A1 12
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7630 mm, 152 mm)						
FB-1624-11	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	440 lb 200 kg (900 lb) (408 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	390 W	120 V AC	3.25 A	A1 15 A2 16
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)						
FB-1630-11	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	600 lb 272 kg (1140 lb) (517 kg)	▪ Clock 30" (457 mm) ▪ Indicators 8" (203 mm) ▪ TOL 18" (457 mm) ▪ All Others 24" (610 mm)	395 W	120 V AC	3.3 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7630 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
FB-1630-11 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	620 lb 281 kg (1178 lb) (534 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	695 W	120 V AC	5.8 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7630 mm, 152 mm)						
FB-1630L-11	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	720 lb 327 kg (1368 lb) (621 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	395 W	120 V AC	3.3 A	A1 15 A2 16
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)						
FB-1630L-11 w/TNMC	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	840 lb 381 kg (1596 lb) (724 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	695 W	120 V AC	5.8 A	A1 15 A2 16
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
FB-1730-11	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	620 lb 281 kg (1178 lb) (534 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	400 W	120 V AC	3.3 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7630 mm, 152 mm)						
FB-1730-11 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	740 lb 336 kg (1406 lb) (638 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others ■ 24" (610 mm)	700 W	120 V AC	5.8 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)						
FB-1830-11	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	640 lb 291 kg (1550 lb) (703 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	430 W	120 V AC	3.6 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7630 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
FB-1830-11 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	760 lb 345 kg (1444 lb) (655 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	730 W	120 V AC	6.1 A	A1 15 A2 16
	Top and Bottom	H3'-0", W14'-0", D6' (914 mm, 8534 mm, 152 mm)						
FB-1830L-11	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	780 lb 354 kg (1482 lb) (672 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	450 W	120 V AC	3.8 A	A1 15 A2 16
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)						
FB-1830L-11 w/TNMC	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	900 lb 408 kg (1710 lb) (776 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	755 W	120 V AC	6.3 A	A1 15 A2 16
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
FB-2001-11	2 Total	H10'-0", W32'-0", D6" (3048 mm, 9754 mm, 152 mm)	940 lb 426 kg (1786 lb) (810 kg)	■ Clock 30" (457 mm) ■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	455 W	120 V AC	3.8 A	A1 15 A2 16
	Top	H6'-0", W32'-0", D6" (1829 mm, 9754 mm, 152 mm)						
	Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)						
FB-2002-11	2 Total	H8'-0", W20'-0", D6" (2438 mm, 6096 mm, 152 mm)	520 lb 236 kg (988 lb) (448 kg)	■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	365 W	120 V AC	3 A	A1 15 A2 16
	Top	H6'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)						
	Bottom	H4'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)						
FB-2003-11 w/TNMC	2 Total	H8'-0", W20'-0", D6" (2438 mm, 6096 mm, 152 mm)	660 lb 299 kg (1254 lb) (569 kg)	■ Indicators 8" (203 mm) ■ TOL 18" (457 mm) ■ All Others 24" (610 mm)	695 W	120 V AC	5.8 A	A1 15 A2 16

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
MS-2009-11	2 Total	H10'-0", W25'-0", D6" (3048 mm, 6096 mm, 152 mm)	480 lb 218 kg (912 lb) (414 kg)	▪ Clock, Score, Period 24" (610 mm) ▪ All Others 18" (457 mm)	360 W	120 V AC	4.7 A	A1 71 A2 72
	Top and Bottom	H5'-0", W25'-0", D6" (1524 mm, 6096 mm, 152 mm)						
MS-2118-11	2 Total	H8'-0", W12'-0", D6" (2438 mm, 3658 mm, 152 mm)	275 lb 125 kg (390 lb) (176 kg)	▪ Clock, Score, Period 18" (457 mm) ▪ Penalty 15" (381 mm)	370 W	120 V AC	3.1 A	A1 71 A2 72
	Top and Bottom	H4'-0", W12'-0", D6" (1219 mm, 5486 mm, 152 mm)						
SO-1424-11	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	400 lb 181 kg (805 lb) (365 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	335 W	120 V AC	2.8 A	A1 12
	Top and Bottom	H4'-0", w18'-0", D6" (1219 mm, 5486 mm, 152 mm)						
SO-1624-11	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	440 lb 200 kg (900 lb) (408 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	385 W	120 V AC	3.2 A	A1 13 A2 14
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
SO-1624-11 w/TNMC	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	520 lb 236 kg (988 lb) (448 kg)	■ Indicators 8" (203 mm) ■ All Others 24" (610 mm)	685 W	120 V AC	5.7 A	A1 13 A2 14
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)						
SO-1830-11	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	560 lb 254 kg (1064 lb) (483 kg)	■ Clock 30" (762 mm) ■ TOL 18" (457 mm) ■ Indicators 8" (203 mm) ■ All Others 24" (610 mm)	440 W	120 V AC	3.7 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 762 mm, 152 mm)						
SO-1830-11 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	680 lb 308 kg (1292 lb) (586 kg)	■ Clock 30" (762 mm) ■ TOL 18" (457 mm) ■ Indicators 8" (203 mm) ■ All Others 24" (610 mm)	740 W	120 V AC	6.2 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 762 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
SO-1830L-11	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	720 lb 327 kg (1368 lb) (621 kg)	■ Clock 30" (762 mm) ■ TOL 18" (457 mm) ■ Indicators 8" (203 mm) ■ All Others 24" (610 mm)	440 W	120 V AC	3.7 A	A1 15 A2 16
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)						
SO-1830L-11 w/TNMC	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	840 lb 381 kg (1596 lb) (724 kg)	■ Clock 30" (762 mm) ■ TOL 18" (457 mm) ■ Indicators 8" (203 mm) ■ All Others 24" (610 mm)	740 W	120 V AC	6.2 A	A1 15 A2 16
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)						
SO-1930-11	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	560 lb 254 kg (1064 lb) (483 kg)	■ Clock 30" (762 mm) ■ TOL 18" (457 mm) ■ Indicators 8" (203 mm) ■ All Others 24" (610 mm)	470 W	120 V AC	4 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)						

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Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps Per Line (Single Phase)	Driver Number and Address
SO-1930-11 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	950 lb 432 kg (1550 lb) (703 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm)	770 W	120 V AC	6.4 A	A1 15 A2 16
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)						

Section 4: Component Locations

Use the following drawings to determine the location of scoreboard components. The drawings are listed below by model number and inserted in the **Appendix** in alphanumeric order by drawing number.

Reference Drawings:

Component Locations, BA-1518-11 ..... **Drawing A-141077**
Component Locations, BA-1518-11 w/TNMC ..... **Drawing A-144637**
Component Locations, BA-1524-11 ..... **Drawing A-141745**
Component Locations, BA-2007-11 w/LED TNMC ..... **Drawing A-147199**
Component Locations, BA-3718-11 ..... **Drawing A-141749**
Component Locations, BA-3718-11 w/TNMC ..... **Drawing A-144659**
Component Locations, BA-3724-11 ..... **Drawing A-141751**
Component Locations, BA-3724-11 w/TNMC ..... **Drawing A-144678**
Component Locations, FB-1424-11 ..... **Drawing A-142712**
Component Locations, FB-1430-11 ..... **Drawing A-147264**
Component Locations, FB-1524-11 (w/TNMC) ..... **Drawing A-142650**
Component Locations, FB-1530-11 ..... **Drawing A-145498**
Component Locations, FB-1624-11 ..... **Drawing A-142652**
Component Locations, FB-1630-11 ..... **Drawing A-148369**
Component Locations, FB-1630L-11 ..... **Drawing A-148432**
Component Locations, FB-1730-11 ..... **Drawing A-148018**
Component Locations, FB-1830-11 ..... **Drawing A-145120**
Component Locations, FB-1830L-11 ..... **Drawing A-145554**
Component Locations, FB-2001-11 ..... **Drawing A-148468**
Component Locations, FB-2002-11 ..... **Drawing A-148476**
Component Locations, FB-2003-11 ..... **Drawing A-148545**
Component Locations, MS-2009-11 ..... **Drawing A-149704**
Component Locations, MS-2118-11 ..... **Drawing A-142620**
Component Locations, SO-1624-11 ..... **Drawing A-142741**
Component Locations, SO-1424-11 ..... **Drawing A-142742**
Component Locations, SO-1830-11 ..... **Drawing A-148537**
Component Locations, SO-1830L-11 ..... **Drawing A-146372**
Component Locations, SO-1930-11 ..... **Drawing A-148531**

Section 5: Schematics

Reference Drawings:

Schematic; 1 Driver ..... **Drawing A-141799**
Schematic; 1 Driver w/TNMC ..... **Drawing A-141806**
Schematic; 2 Drivers ..... **Drawing A-141807**
Schematic; 2 Drivers w/TNMC..... **Drawing A-141808**
Schematic; 3 Drivers ..... **Drawing A-142358**
Schematic; 3 Drivers w/TNMC..... **Drawing B-142360**
Schematic; 3 Drivers w/TNMC & SOP Driver ..... **Drawing B-146392**

Use the following table to determine the schematic for your scoreboard. The drawings are listed below by model number; they have been inserted in the **Appendix** in alphanumeric order by drawing number.

☛ **Note:** All scoreboards listed in this manual are equipped with 16-column drivers.

Models	Schematic Name	Drawing
BA-1518	Schematic; 1 Driver	A-141799
BA-1518 w/TNMC	Schematic; 1 Driver w/TNMC	A-141806
BA-1524	Schematic; 1 Driver	A-141799
BA-2007 w/TNMC	Schematic; 3 Drivers w/TNMC & SOP Driver	B-146392
BA-3718	Schematic; 3 Drivers	A-142358
BA-3718 w/TNMC	Schematic; 3 Drivers w/TNMC	B-142360
BA-3724	Schematic; 3 Drivers	A-142358
BA-3724 w/TNMC	Schematic; 3 Drivers w/TNMC	B-142360
FB-1424	Schematic; 1 Driver	A-141799
FB-1424 w/TNMC	Schematic; 1 Driver w/TNMC	A-141806
FB-1430	Schematic; 1 Driver	A-141799
FB-1430 w/TNMC	Schematic; 1 Driver w/TNMC	A-141806
FB-1524	Schematic; 1 Driver	A-141799
FB-1524, w/TNMC	Schematic; 1 Driver w/ TNMC	A-141806
FB-1530	Schematic; 1 Driver	A-141799
FB-1530 w/TNMC	Schematic; 1 Driver w/TNMC	A-141806
FB-1624	Schematic; 2 Drivers	A-141807
FB-1630	Schematic; 2 Drivers	A-141807
FB-1630 w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
FB-1630L	Schematic; 2 Drivers	A-141807
FB-1630L w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
FB-1730	Schematic; 2 Drivers	A-141807
FB-1730 w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808

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Models	Schematic Name	Drawing
FB-1830	Schematic; 2 Drivers	A-141807
FB-1830 w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
FB-1830L	Schematic; 2 Drivers	A-141807
FB-1830L w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
FB-2001	Schematic; 2 Drivers	A-141807
FB-2002	Schematic; 2 Drivers	A-141807
FB-2003	Schematic; 2 Drivers	A-141807
FB-2003 w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
MS-2009	Schematic; 2 Drivers	A-141807
MS-2118	Schematic; 2 Drivers	A-141807
SO-1424	Schematic; 1 Driver	A-141799
SO-1424 w/TNMC	Schematic; 1 Driver w/TNMC	A-141806
SO-1624	Schematic; 2 Drivers	A-141807
SO-1624 w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
SO-1830	Schematic; 2 Drivers	A-141807
SO-1830 w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
SO-1830L	Schematic; 2 Drivers	A-141807
SO-1830L w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808
SO-1930	Schematic; 2 Drivers	A-141807
SO-1930 w/TNMC	Schematic; 2 Drivers w/TNMC	A-141808

Section 6: Mechanical Installation

Mechanical installation consists of installing concrete footings and steel beams, and mounting the scoreboard and accompanying ad panels to the beams.

6.1 Scoreboard Protective Devices

☛ ***Note: Some owners install devices to protect the display from projectiles. Scoreboard protection devices not provided by Daktronics must be approved by Daktronics prior to installation. Failure to follow this approval procedure will void the scoreboard warranty.***

Daktronics makes available optional devices, including screens and netting, to help protect the scoreboard from damage due to normal ball impact.

6.2 Footings and Beams

Reference Drawings:

Installation Specifications, BA-1518 ..... **Drawing A-55008**
Installation Specifications, BA-1524 ..... **Drawing A-120972**
Installation Specifications, BA-3718 ..... **Drawing A-126455**
Installation Specifications; BA-3724 ..... **Drawing A-126445**
Installation Specifications; FB-2002 & FB-2003 ..... **Drawing A-128044**
Installation Specifications; MS-2009 ..... **Drawing A-144415**
Installation Specifications; MS-2118 ..... **Drawing A-128206**
Beam & Footing Recommendations, FB-XX24 ..... **Drawing A-44514**
Beam & Footing Recommendations, FB-XX30 ..... **Drawing A-44515**
Beam Spacings, Football/Track/Soccer ..... **Drawing A-70089**
Structure, Football ..... **Drawing A-44556**
Beam Spacing; Displays w/TNMC ..... **Drawing A-84292**
Beam and Footing Recommendations, FB-XX30L ..... **Drawing A-158779**
Beam and Footing Recommendations FB-200X ..... **Drawing A-160931**

Use the following tables to determine, which drawings provide the installation specifications for each model.

Models	Specification Name	Drawing
BA-1518-11	Installation Specifications, BA-1518	A-55008
BA-1524-11	Installation Specifications, BA-1524	A-120972
BA-3718-11	Installation Specifications, BA-3718	A-126455
BA-3724-11	Installation Specifications, BA-3724	A-126445
MS-2009-11	Installation Specifications, MS-2009	A-144415
MS-2118-11	Installation Specifications, MS-2118	A-128206

Models Without Team Name Message Center	Reference Drawings	
FB-1424-11, FB-1524-11, FB-1624-11, SO-1424-11, SO-1624-11	Beam & Footing Recommendations, FB-XX24	A-44514
	Beam Spacings, Football/Track/Soccer	A-70089
	Structure, Football	A-44556
FB-2001, FB-2002-11, FB-2003-11	Beam Spacings, Football/Track/Soccer	A-70089
	Structure, Football	A-44556
	Beam and Footing Recommendations, FB-200X	A-160931
	Installation Specifications, FB-2002 & FB-2003	A-128044
FB-1430-11, FB-1530-11, FB-1630-11, FB-1730-11, FB-1830-11, FB-2001-11, SO-1830-11, SO-1830L-11, SO-1930-11	Beam & Footing Recommendations, FB-XX30	A-44515
	Beam Spacings, Football/Track/Soccer	A-70089
	Structure, Football	A-44556
FB-1630L-11, FB-1830L-11	Beam and Footing Recommendations, FB-XX30L	A-158779
	Beam Spacings, Football/Track/Soccer	A-70089
	Structure, Football	A-44556

Models With Team Name Message Center	Reference Drawings	
FB-1424-11, FB-1524-11, SO-1424-11, SO-1624-11	Beam & Footing Recommendations, FB-XX24	A-44514
	Beam Spacing, Football/Track/Soccer	A-84292
	Structure, Football	A-44556
FB-1430-11, FB-1530-11, FB-1630-11, FB-1730-11, FB-1830-11, SO-1830-11, SO-1830L-11, SO-1930-11	Beam & Footing Recommendations, FB-XX30	A-44515
	Beam Spacing, Displays w/TNMC	A-84292
	Structure, Football	A-44556
FB-1630L-11, FB-1830L-11	Beam & Footing Recommendations, FB-XX30L	A-158779
	Beam Spacing, Football/Track/Soccer	A-70089
	Structure, Football	A-44556

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Models With Team Name Message Center	Reference Drawings	
FB-2003-11	Installation Specifications, FB-2002 & FB-2003	A-128044
	Beam Spacing, Football/Track/Soccer	A-70089
	Structure, Football	A-44556
	Beam and Footing Recommendations, FB-200X	A-160931

These drawings specify the number of beams and the recommended spacing between them.

The drawings also indicate the size of beams required to support the scoreboard at different heights and under various wind speed conditions. All of the beam specifications illustrate "W"-shape steel beams (wide-flange I-beams). The first number indicates the front-to-rear depth of the beam, and the second number indicates the weight in pounds per foot of length.

Column and footing size drawings are estimates only and are not intended for construction purposes. Columns and footings and all connection details must be designed and certified by a professional engineer licensed to practice in the state in which the display will be installed. Be sure that your installation complies with local building codes and is suitable for your particular soil and wind conditions.

Daktronics assumes no liability for installations derived from the information provided in this manual or installations designed and installed by others.

6.3 Lifting the Scoreboard

Reference Drawings:

Lifting Scoreboard ..... **Drawing A-44548**

Large scoreboard sections and message centers are shipped equipped with eyebolts that are used to lift the displays. The eyebolts are located along the top of the cabinet for each scoreboard or scoreboard section.

Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display. Using a spreader bar ensures that the force on the lifting straps or eyebolts is straight up, minimizing lifting stress. Lifting methods are shown in the illustration below, **Figure 3**, and in **Drawing A-44548**.

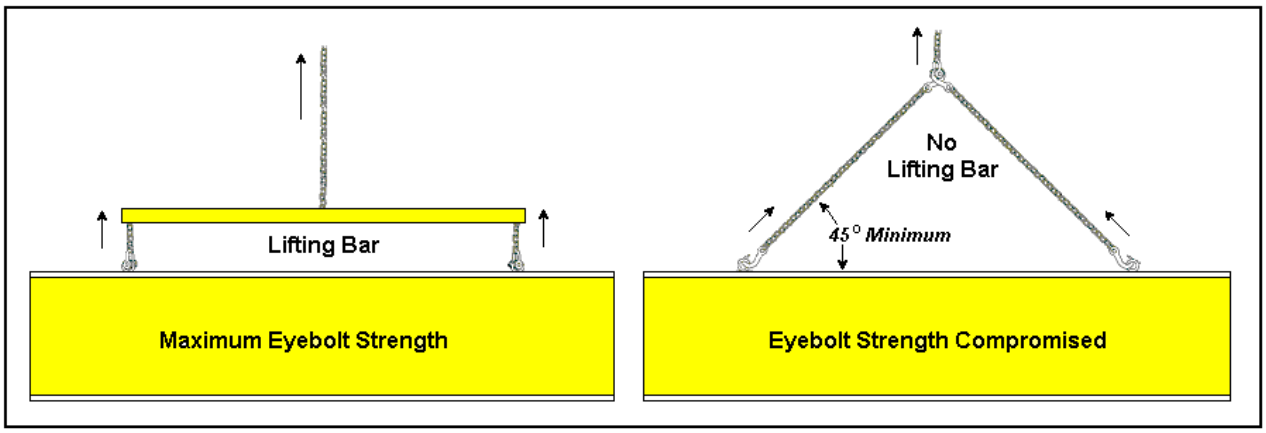


Figure 3: Lifting the Display

Figure 3 illustrates both the preferred method (left example) and an alternative method (right example) for lifting a scoreboard. When lifting the display:

- Use a spreader bar.
- Use every lifting point provided.

Take special care to ensure the rated load of the eyebolts is not exceeded. Refer to **ED7244: Eyebolts**, to determine allowable loads and load angles for the lifting hardware. **ED7244** is located in the **Appendix** of this manual.

Avoid using other lifting methods. Cables and chains attached to the eyebolts and directly to a center lifting point, as shown in the right-hand example in **Figure 3**, can create a dangerous lateral force on the eyebolts and may cause the eyebolts to fail. Daktronics scoreboards use $^{1}/_{2}$" and $^{5}/_{8}$" shoulder-type eyebolts mounted to a $^{1}/_{8}$" aluminum plate or steel nut plate, but exceeding load angles or weight limits could cause the bolts to pull out or the scoreboard cabinet to buckle. In either circumstance, the result would be serious damage to the scoreboard. If you must use this method, ensure a minimum angle between the chain and scoreboard of at least 45°.

☛ ***Note: Daktronics assumes no liability for scoreboard damage resulting from incorrect setup or incorrect lifting methods.***

Eyebolts are intended for lifting only. Do not attempt to permanently support the display by the eyebolts.

In typical multi-section installations, the lower scoreboard section is installed first and secured to the support beams, and the upper section is then placed atop or above the lower section and attached to the beams. There may be cables extending from the top of the lower section. Guide these cables into the hole in the bottom of the upper section for later connection.

If installers remove the lift eyebolts when the display is permanently mounted, plug the holes with bolts and the rubber sealing washers that were removed with the eyebolts. Apply silicone or another waterproof sealant to the eyebolt openings. Inspect the top and sides of the display for any other holes or openings that may allow moisture to enter the display, and plug and seal those openings as well.

6.4 Scoreboard Mounting

Reference Drawing:

Installation Method ..... **Drawing A-44412**
Panel Mounting Method..... **Drawing A-52187**
Installation Specifications, BA-1518 ..... **Drawing A-55008**
Installation Specifications, BA-1524 ..... **Drawing A-120972**
Installation Specifications, BA-3718 ..... **Drawing A-126455**
Installation Specifications, BA-3724 ..... **Drawing A-126445**
Installation Specifications, MS-2118..... **Drawing A-128206**
Display Mounting Straps, BA-3718..... **Drawing A-114415**

Scoreboards can be mounted to two, three, or four poles. Refer to **Section 6.2** to determine the center-to-center distance of the poles for each model.

Drawing A-44412 shows that the hardware used for mounting the scoreboard to the beams. Each section of the scoreboard attaches at the top and the bottom to all the beams, **Drawing A-44412** also show top and side views of the scoreboard secured to the beams. Note that the threaded rods *do not* pass through the flanges of the beams, but instead run along both sides of each beam.

Review the illustrations of the mounting hardware in **Drawing A-44412**, and then follow this procedure for each section:

1. Loosely attach the inner and outer mounting clamps to the rear flanges of the scoreboard's horizontal frame members, using the $^{3}/_{8}$" bolts. Measure the beam spacing and position the clamps to fit on either side of the beams.
2. Insert a $^{1}/_{2}$" square nut into each mounting clamp. Screw a threaded rod into each of the nuts from the rear.
3. Position the scoreboard at the front of the beams with the threaded rods extending from the rear of the clamps, straddling the beams. Raise the scoreboard section to the desired height.
4. Slide clamping angles over the ends of the rods and loosely install the washers and nuts.
5. Make final adjustments in the positioning of the scoreboard. Tighten the $^{3}/_{8}$" bolts in the mounting clamps.
6. Make sure that the threaded rods are perpendicular to the scoreboard, and tighten all of the $^{1}/_{2}$" nuts.

6.5 Ad Panel Mounting

Reference Drawing:

Ad Panel Mounting ..... **Drawing A-52187**

Drawing A-52187 shows the mounting of advertising or identification panels.

Mount the ad panel or ad panels in the following manner:

1. Use the mounting channel to determine which hole combination to use. Be sure to keep the bolts as close to the beam as possible.
2. Using the mounting channel as a template, drill $^{9}/_{16}$" holes in the upper and lower rear flange of the ad panel where the supports will go.
3. Place square nuts inside the channel and thread the bolts through.
4. Lift the ad panel into position with the bolts still in place.
5. Place mounting angles over each pair of bolts and secure with lock washers and hex nuts.
6. When the panel is adjusted to the final desired position, tighten the hex nuts firmly.

When mounting ad panels with back sheets, remove the back sheets above and below the upper and lower rear flanges of the ad panel where the holes have been drilled. Be sure to replace the back sheets after placing the square nuts inside the channel and threading the bolts through the holes.

6.6 Optional One- or Two-Line Message Center Mounting

Reference Drawing:

Mounting Detail; 2 $^{1}/_{2}$" Matrix ..... **Drawing A-115882**

Refer to the manual provided with the message center for instructions on how to mount the message center to the beams using the clamping method. Some retrofit message centers may be mounted directly to the scoreboard face.

Drawing A-11582 shows the mounting method for a 2 $^{1}/_{2}$" matrix display.

Section 7: Electrical Installation

Electrical installation consists of the following processes:

- Providing power and ground to a disconnect near the scoreboard;
- Routing power and ground from the main disconnect to the scoreboard power and signal entrance enclosure;
- Connecting the scoreboard ground to a grounding electrode at the display location;
- Routing the control signal cable from the control location to the display location.

☛ ***Note: Only qualified individuals should perform power routing and termination to the display. It is the responsibility of the electrical contractor to ensure that all electrical work meets or exceeds local and national codes.***

7.1 Power Requirements

Reference Drawings:

Components 8/16 Pos Power and Signal Entrance ..... **Drawing A-109114**
Components 2/4 Pos Power and Signal Entrance ..... **Drawing A-125977**

Refer to the chart in **Section 3** to determine circuit specifications and maximum power requirements for the models described in this manual.

Daktronics outdoor LED scoreboards have been designed for easy access to components, and the power and control signal hookup has been simplified. Front panels are removable to allow access to the digits, cabling, and other electronic components.

Correct power installation is imperative for proper display operation. The subsections that follow give details of power installation. Only qualified individuals should attempt to complete the electrical installation; untrained personnel should not attempt to install these displays or any of the electrical components. Improper installation could result in serious damage to the equipment and could be hazardous to personnel.

Daktronics outdoor scoreboards and timing displays require a dedicated, 120 V circuit for incoming power. The display itself has no breakers or fuses.

☛ ***WARNING: It is critical that the scoreboard circuit be fused at 15 A, and that all conductors used must be designed to pass a 15 A current in normal operation. Failure to meet wiring and overcurrent protection device requirements is a violation of the National Electrical Code® and will void the scoreboard warranty.***

All power conductors are 14 AWG, except where 18 AWG wiring is called out on the schematic. All signal conductors are 22 AWG.

Refer to the outdoor scoreboard schematic listed above and to the chart in **Section 1** to determine circuit specifications and maximum power requirements for the models described in this manual.

Grounding

Displays MUST be grounded according to the provisions outlined in Article 250 of the National Electrical Code and according to the specifications in this manual. Daktronics recommends a resistance-to-ground of 10 ohms or less.

The electrical contractor who is performing the electrical installation can verify ground resistance. Scoreboard Sales and Service personnel can also perform this service.

The display system *must* be connected to an earth electrode installed at the display. Proper grounding is necessary for reliable equipment operation. It also protects the equipment from damaging electrical disturbances and lightning. ***The display must be properly grounded or the warranty will be void.*** Refer to the schematic, **Drawing A-156750**, for information on where to connect the grounding wire. Connection at the duplex receptacle is illustrated in the lower section of the drawing.

The material for an earth-ground electrode differs from region to region and may vary according to conditions present at the scoreboard installation site. Consult the National Electrical Code and any local electrical codes that may apply. The support structure of the display cannot be used as an earth-ground electrode. The support is generally embedded in concrete, and if it is in earth, the steel is usually primed or it corrodes, making it a poor ground in either case.

Branch Circuit Grounding

A grounding electrode at separate structures/displays will not be required where only one branch circuit supplies the structure and branch circuit includes an equipment-grounding conductor for grounding the non-current-carrying parts of all equipment.

Power Installation

There are two considerations for power installation: installation with ground and neutral conductors provided, and installation with only a neutral conductor provided. These two power installations differ slightly, as described in the following subsections:

Installation with Ground and Neutral Conductors Provided

For this type of installation, the power circuit *must* contain an isolated earth-ground conductor. Under this circumstance, *do not* connect neutral to ground at the disconnect or at the display. ***This would violate electrical codes and void the warranty***. Use a disconnect so that all hot lines and neutral can be disconnected. The National Electrical Code requires the use of a lockable power disconnect within sight of or at the display.

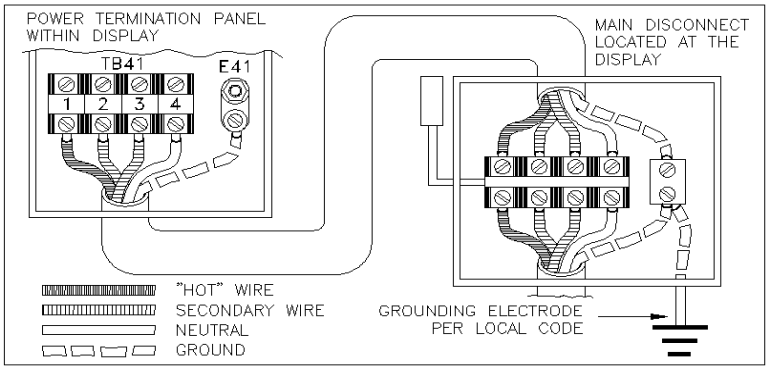


Figure 4: Installation with Ground and Neutral Provided

Installation with Only a Neutral Conductor Provided

Installations where no grounding conductor is provided must comply with Article 250-32 of the National Electrical Code. If the installation in question meets all of the requirements of Article 250-32, the following guidelines must be observed:

- Connect the grounding electrode cable at the local disconnect, never at the display entrance enclosure.
- Use a disconnect that opens all of the ungrounded phase conductors.
- The neutral and the ground conductors should be bonded in the display power enclosure.

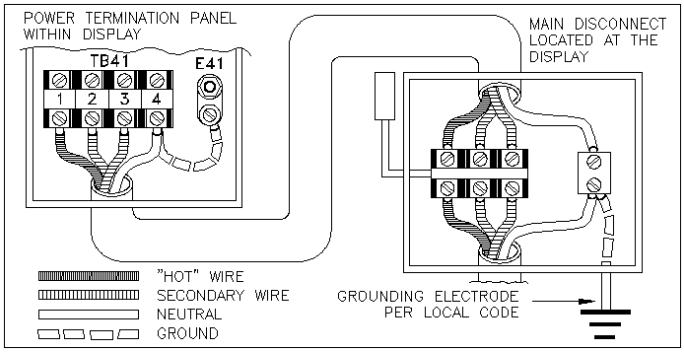


Figure 5: Installation with Only Neutral Provided

7.2 Power and Signal Connection

Reference Drawings:

Components 8/16 Pos Power and Signal Entrance ..... **Drawing A-109114**
Components 2/4 Pos Power and Signal Entrance ..... **Drawing A-125977**

Route power and signal cables into the scoreboard from the rear. There are two knockouts for conduit connection in the back. All wires connect to the entrance plate. **Drawings A-109114** and **A-125977** illustrate the two types of entrance panels.

To gain access to the entrance panel, open the access door or digit panel and remove the cover from the entrance enclosure. Refer to **Section 4** and **Component Locations** drawings for the access location for your scoreboard.

Connect the power and signal cables to the entrance panel as shown in **Drawing A-109114** and **A-125977**.

Connections Between Sections

There are several cables in the slave sections of the scoreboard, which must be connected to a panel in the master section (refer to **Section 4**). Route these cable through the 2 1/2" holes in the connecting sides of the various sections when mounting the scoreboard.

To gain access to the entrance panel, open the access door on the front of the scoreboard. Refer to **Section 4** for the location of the access door for the model of your scoreboard.

Pull the cables from the other sections and route them to the bottom of the interconnect panel. Connect the plugs on the cables to the connecting jacks in the interconnect panel. Match the numbers on the plugs with the numbers on the jacks and insert.

Interconnect Panel Connections

Reference Drawings:

Interconnect Panel Digit Designation ..... **Drawing A-174754**

All multi-section football and soccer scoreboards use an interconnect panel as a connection between the digits of the top section and their corresponding driver. Because both drivers are located in the bottom section, only the top section digits use an interconnect panel. For detailed digit designation and the resulting interconnect panel and driver designation refer to **Drawing A-174754**.

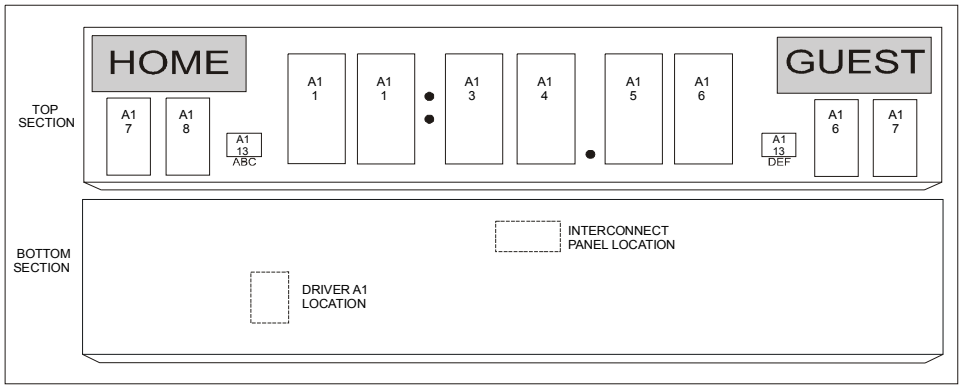


Figure 6: Interconnect Panel Digit Designation

Section 8: Scoreboard Maintenance and Troubleshooting

IMPORTANT NOTES:

1. **Disconnect power before doing any repair or maintenance work on the scoreboard!**
2. **Permit only qualified service personnel to access internal display electronics.**
3. **Disconnect power when not using the scoreboard.**

☛ ***Note:*** *For assistance in the maintenance of team name message centers or other optional scoreboard message centers, refer to* ***Section 10*** *or the service manual that accompanies those units.*

8.1 Cabinet Specifications

Cabinets for the Daktronics outdoor LED scoreboards are constructed of heavy-gauge aluminum. Exact dimensions and weights for each model are listed in the chart in **Section 3**. Removable panels for digits and indicators and for component access are detailed in each model's **Component Locations** drawing, listed in **Section 4**.

8.2 Component Location and Access

Reference Drawings:

Digit Assembly (18 and 24").....**Drawing A-135662**
Digit Assembly (15").....**Drawing A-135538**
Digit Assembly 30" LED .....**Drawing A-145339**
Interconnect Panel Digit Designation; FB Displays .....**Drawing A-174754**

For the front-access scoreboards in this series, all internal electronic components and digits can be reached by opening a face panel or removing a digit panel on the front of the display.

Digit panels have been simplified on the outdoor LED scoreboards. They are held in place on the scoreboard face by an offset flange across the top and by a single screw at the bottom. See **Figure 6** at right. Open the scoreboard with care. Hold the digit panel in place by putting hand pressure on it while removing the screw, and carefully lift it from the board, sliding it down and out. If the panel is not held in place, it will drop immediately when the screw is removed, possibly damaging LEDs or the digit harness. Refer to **Drawing A-135662**, **A-145339**, and **A-135538**.

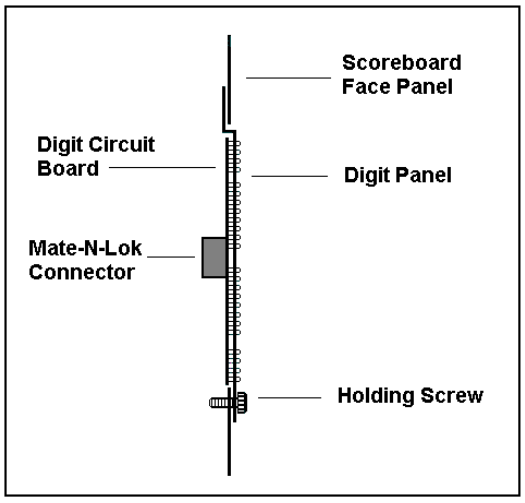


Figure 6: LED Digit Panel (Not to Scale)

Component location varies with each scoreboard model, but drivers and power and signal components are typically mounted inside the scoreboard behind a digit.

With a non-digit access panel, simply remove the top, side or bottom screws holding it in place. Hinged panels swing open when the screws are loosened or removed.

Some scoreboard models make use of an interconnect panel. For those scoreboards, **Drawing A-174754**, further illustrate digit designation and harness connections. Also located within this drawing is a table listing the precise labeling of harnesses for connection to the interconnect panel and the related driver.

☛ ***Note: Disconnect power before servicing the display!*** Disconnect power, too, when the display is not in use. Prolonged power-on may shorten the life of some electronic components.

Replacing a Digit

The digit circuit board, the platform for the LEDs, is mounted to the back of the digit panel. Do not attempt to remove individual LEDs. In the case of a malfunctioning board, replace the entire digit panel. Refer to **Drawings A-135538** and **A-135662**.

To remove a scoreboard digit, follow these steps:

1. Open the digit panel as described in the preceding section.
2. Disconnect the power/signal connector from the back of the digit. Release the connector by squeezing together the locking tabs as you pull the connector free.
3. The digits are secured to the inside of the panel with standoff bolts, spacers and nuts. Remove the #8 nuts and lift the digit off the standoff bolts.
4. Position a new digit over the screws and tighten the nuts.
5. Reconnect the power/signal connector. ☛ ***Note:*** *This is a keyed connector – it will attach in one way only. Do not attempt to force the connection!*
6. Close and secure the digit panel and test the scoreboard.

Replacing a Digit Segment

Reference Drawing:

Digit; 24" 7-Seg LED..... **Drawing A-155644**

Some larger Daktronics digits are comprised of individual segments. The digit segment circuit board, the platform for the LEDs, is mounted to the back of the digit panel. Do not attempt to remove individual LEDs. In the case of a malfunctioning LED or segment, replace the entire digit segment panel. Refer to **Drawing A-155644**.

To remove a digit segment, follow these steps:

1. Open the digit panel as described above.
2. Disconnect the two-pin power/signal connector from the back of the segment. Release the connector by squeezing together the locking tabs as you pull the connector free.
3. The digits are secured to the inside of the panel with standoff bolts, spacers, and nuts. Remove the #8 nuts and lift the segment off the standoff bolts
4. Position a new segment over the bolts and tighten the nuts.

5. Reconnect the power/signal connector. ☛ ***Note:*** *This is a keyed connector – it will attach in one way only. Do not attempt to force the connection!*
6. Close and secure the digit panel and test the scoreboard.

Replacing a Breakout Board

The digit breakout board, the central signal/power termination for the segments, is mounted to the back of the digit panel. If the entire digit is malfunctioning, replace the breakout board. Refer to **Drawing A-155644**.

To remove a digit breakout board, follow these steps:

1. Open the digit panel as described in the previous section.
2. Disconnect all of the 2-pin and 9-pin power/signal connectors from the back of the breakout board. Release the connectors by squeezing together the locking tabs as you pull the connector free. Refer to **Figure 7**.
3. The breakout boards are secured to the inside of the panel with standoff bolts, spacers, and nuts. Remove the #8 nuts and lift the breakout board off the standoff bolts.

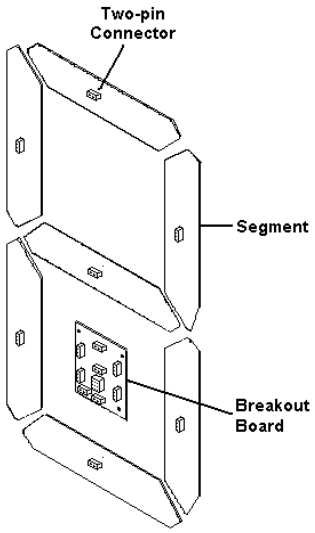


Figure 7: Segmented Digit Panel (rear view)

4. Position a new breakout board over the bolts and tighten the nuts.
5. Reconnect the power/signal connectors. ☛ ***Note:*** *These are keyed connectors – they will attach in one way only. Do not attempt to force the connection!*
6. Close and secure the digit panel and test the scoreboard.

Replacing a Driver

Drivers are typically mounted inside the scoreboard and immediately behind a digit, but location and mounting varies. Refer to the **Component Locations** drawings for the location of your scoreboard driver.

Each driver is enclosed with a power supply and signal terminal block. Before a failed driver can be reached, the enclosure must be accessed. Follow these steps:

1. Open the digit panel or scoreboard face panel as described in **Section 8.2**.
2. Remove the cover from the driver enclosure.
3. Disconnect all connectors from the driver. Release each connector by squeezing together the locking tabs as you pull the connector free. ☛ ***Note:*** *When reconnecting, remember that these are keyed connectors and will attach in one way only. Do not attempt to force the connections.*
4. Remove the hardware securing the driver to the inside of the enclosure.
5. Carefully lift the driver from the display and place it on a clean, flat surface.
6. Follow steps 1 through 5 in reverse order to attach a new driver.

8.3 Schematic

Refer to **Section 5** for a complete listing of the schematics for the Daktronics multi-section outdoor LED scoreboards. The drawings diagram the power and signal inputs and all wiring for each scoreboard model.

8.4 LED Drivers

Reference Drawings:

16 Column LED Driver II Specifications..... **Drawing A-134371**

In the scoreboard, the LED drivers perform the task of switching digits on and off. Refer to **Drawing A-134371**.

Each driver has up to19 connectors providing power and signal inputs to the circuit and outputs to the digits and indicators. The connectors function as follows:

16-Column LED Driver	
Connector No.	*Function*
1 – 16	Output to digits and indicators
17	Controls power/signal
18	Power input for outputs 1-8
19	Power input (120V) for driver
20	Power input for outputs 9-16

Output connectors 1 through 16 each have nine pins. Pin 7 provides power (hot) to the digit or indicators wired to that connector. The other eight pins provide switching connections.

8.5 Segmentation and Digit Designation

Reference Drawing:

Segmentation, 7 Segment Bar Digit ..... **Drawing A-38532**

In each digit, certain LEDs always go on and off together. These groupings of LEDs are referred to as *segments.* **Drawing A-38532** illustrates digit segmentation. It also details which connector pin is wired to each digit segment and the wiring color code used throughout the display.

The component locations drawings listed in **Section 4** specify the driver connectors controlling the digits. Numbers shown in hexagons in the upper half of each digit indicate which connector is wired to that digit.

8.6 Power-On Self-Test

Reference Drawing:

Outdoor LED Power-Up Self Test .....**Drawing A-133350**
LED Bar Digit Power Up Self Test.....**Drawing A-133351**

The scoreboard performs a self-test each time that power is turned on and the control console is powered off or not attached to the scoreboard. If the control console is attached and powered on, the self-test does not run, and data from the control console is displayed on the scoreboard after a brief period.

The self-test runs in three cycles or phases. Each scoreboard self-test pattern will vary depending on the scoreboard model, the number of drivers and types of digits. **Drawing A-133350** shows how the test pattern displays in the digits with no protocol pins set on J26 of the LED drivers. **Drawing A-133351** shows a sample test pattern displayed on a scoreboard.

Cycle 1: Displays the protocol in the digits that are controlled by LED driver A1. P0 is always displayed when P26 is not installed.

Cycle 2: Displays the driver number and address in the digits that are controlled by each driver. A000 is always displayed when P25 is not installed.

Cycle 3: Displays a rotating patter in all digits. The pattern starts in row 1 and rotates through row 8 (refer to **Drawing A-133350**).

8.7 Lightning Protection

The transient voltage surge suppressor (TVSS), located in the load center, reduces the brief surge induced into the power lines when lightning strikes in the vicinity of the scoreboard. A varistor in the power lines to the driver logic also helps to protect this circuit by reducing such surges.

The use of a disconnect near the scoreboard to completely cut all current-carrying lines significantly protects the circuits against lightning damage. The National Electrical Code also requires it. In order for this system to provide protection, the power *must* be disconnected when the scoreboard is not in use. The control console should also be disconnected from power and from the signal junction box when the system is not in use. The same surges that may damage the scoreboard's driver can also damage the console's circuit.

8.8 Troubleshooting

Daktronics scoreboards require little maintenance. However, from time to time, a display may malfunction, and certain display components will have to be repaired or replaced. The following table provides a list of problems common to most LED displays and specifies corrective actions:

Symptom/Condition	Possible Cause
Scoreboard will not light	▪ Console not connected or poor connection. ▪ No power to control console. ▪ No power to the scoreboard.

(Continued on the next page)

(Continued from the previous page)

Symptom/Condition	Possible Cause
Garbled display	▪ Internal driver logic malfunction. ▪ Control console malfunction.
Digit will not light	▪ Black wire to digit broken. ▪ Poor contact at driver connection. ▪ Driver malfunction.
Segment will not light	▪ Broken LED or connection. ▪ Driver shift register failure. ▪ Broken wire between driver and digit. ▪ Poor contact at driver connector.
Segment stays lit	▪ Driver shift register failure. ▪ Short circuit on digit.
Date appears in the wrong place on the scoreboard	▪ Incorrect address settings on drivers (consult tables and set correct addresses).

The Replacement Parts List in **Section 8.9** includes part numbers of components it may be necessary to reorder during the life of your display. Most scoreboard components have a white label that lists the part number. Refer to the Replacement Part List and the drawings in this manual to obtain the correct replacement part number for any damaged component. Also refer to the appropriate manual for a list of potential problems with add-on or separately-mounted message centers.

For troubleshooting assistance and to order replacement components, *contact your service provider first*. Your service provider may have the appropriate part or assembly on hand and, in an emergency, may be able to provide same-day service.

Your scoreboard service may advise you to call Daktronics directly, or your facility may not have an area or regional service provider. In those instances, feel free to call the Daktronics Help Desk at 877-605-1115. For faster service, note the model of the scoreboard and any problem-area assembly numbers, as shown on the scoreboard spec sheet. If you need to order replacement components, it would be helpful to have a purchase order number or other purchase information available at the time you call.

8.9 Replacement Parts

The following Daktronics parts list includes components used by all of the LED outdoor timers. Some part numbers are listed on the final assembly engineering drawings in the **Appendix**.

Description	Location	Part No.
LED driver, 16 column	Scoreboard	0P-1192-0011
Power supply, 24V @ 7.2 A, 120 V AC	Driver Enclosure	A-1505
Fan, 3.15" sq., 32 cfm, 8.5 watts, 120 V AC	Driver Enclosure	B-1010
Plug, $^1/_4$" phone	Signal	P-1003
J-Box 1/4" phone, Indoor	Signal	0A-1009-0038
J-Box 1/4" phone, Outdoor	Signal	0A-1091-0227
Signal surge arrestor	Power/signal entrance enclosure	0P-1033-0114
12V DC trumpet horn assembly	Scoreboard	0A-1091-1213
Signal cord; 1/4" phone 20'	N/A	W-1236
Signal cord; 1/4" phone 30'	N/A	W-1238
Signal cord; 1/4" phone 50'	N/A	W-1237
Digit, 15", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0009
Digit, 18", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0008
Digit, 24", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0003
Digit, 30", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0020
Indicator, 2" circular, outdoor LED, red-orange	Scoreboard	0P-1192-0010
Indicator, football possession, outdoor LED, red-orange	Scoreboard	0P-1192-0018
Indicator, soccer possession, outdoor LED, red-orange	Scoreboard	0P-1192-0022
Segment breakout board (30" LED only)	Scoreboard	0P-1192-0019

8.10 Daktronics Exchange and Repair and Return Programs

Daktronics recommends that each customer keep an inventory of essential parts in case problems arise. If equipment fails, the customer's local service technician can get the equipment operational again with spare parts kept on hand.

For specific repair information for your Daktronics scoreboard, refer to the warranty in the original purchase packet shipped with the display. Unless specifically stated in the warranty agreement, *the warranty does not cover on-site labor.*

To meet customer repair and maintenance needs, Daktronics offers two options: an Exchange Program and a Repair and Return Program.

Daktronics' unique Exchange Program is a quick, economical service for replacing key components in need of repair. If a component fails, Daktronics sends the customer a replacement, and the customer, in turn, sends the failed component to Daktronics. This not only saves money but also decreases scoreboard downtime. Under normal circumstances, Daktronics sends a reconditioned replacement part within 24 hours. In urgent situations, Daktronics ships using the fastest method available.

Daktronics provides these plans to ensure users get the most from their scoreboards and components. The company offers the service to qualified customers who follow the program guidelines explained below. Please call the Help Desk – 877-605-1115 – if you have questions regarding the Exchange Program or any other Daktronics service.

When you call the Help Desk, a trained service technician will work with you to solve the equipment problem. You will work together to diagnose the problem and determine which replacement part to ship. If, after you make the exchange, the equipment still causes problems, please contact our Help Desk immediately.

If the replacement part fixes the problem, package the defective part in the same box and wrapping in which the replacement part arrived, fill out and attach the enclosed UPS shipping document, and *RETURN THE PART TO DAKTRONICS*. In most circumstances, you will be invoiced for the replacement part at the time it is shipped. This bill, which represents the exchange price, is due when you receive it.

Daktronics expects immediate return of an exchange part if it does not solve the problem. The company also reserves the right to refuse equipment that has been damaged due to acts of nature or causes other than normal wear and tear.

If you do not ship the defective equipment Daktronics within 30 working days from the invoice date, Daktronics assumes you are purchasing the replacement part outright (with no exchange), and you will be invoiced for it. This second invoice represents the difference between the exchange price and the full purchase price of the equipment. The balance is due when you receive the second invoice. If you return the exchange equipment after 30 working days from the invoice date, you will be credited for the amount on the second invoice, minus a restocking fee. ***To avoid a restocking charge, you must return the defective equipment within 30 days from the invoice date.***

Daktronics also offers a Repair and Return Program for items not subject to exchange.

Return Materials Authorization: To return parts for service, contact your local representative prior to shipment to acquire a Return Material Authorization (RMA) number. If you have no local representative, call the Daktronics Help Desk for the RMA. This expedites repair of your component when it arrives at Daktronics.

Packaging for Return: Package and pad the item well so that it will not be damaged in shipment. Electronic components such as printed circuit boards should be installed in an enclosure or placed in an antistatic bag before boxing. Please enclose your name, address, phone number and a clear description of symptoms.

This is how to reach us:

***Mail**:* Customer Service, Daktronics Inc.
PO Box 5128
331 32nd Ave
Brookings SD 57006

***Phone**:* Daktronics Help Desk: 877-605-1115 (toll free)
or 605-697-4036

***Fax**:* 605-697-4444

***E-mail**:* helpdesk@daktronics.com

Section 9: Team Name Message Center Maintenance

IMPORTANT NOTES:

1. **Disconnect power before doing any repair or maintenance work on the scoreboard!**
2. **Permit only qualified service personnel to access internal display electronics.**
3. **Disconnect power when the scoreboard is not in use.**

9.1 Team Name Message Center System Overview

Team name message centers are available in two sizes: and 8x32 matrix model, comprised of four 8x8-pixel modules, and an 8x48 model, made up of six 8x8 modules. TNMCs are typically installed in pairs. Light emitting diodes (LEDs) illuminate the displays.

The monochrome message centers feature an array of red LEDs, and they are capable of displaying characters up to 10" high. Pixels on the 10" TNMC consist of a three-LED cluster.

Although TNMCs are customarily used for team names, they can display an type of caption. Characters are shown on a single line, and either single- or double-stroke fonts may be used for the caption or name.

9.2 Maintenance and Troubleshooting Overview

Standard Daktronics outdoor LED scoreboards are typically front-accessible, but some models may be ordered with rear service access. Because of that, Daktronics team name message centers have been designed so that they may be accessed from both the front and rear for easy maintenance and repair of internal components.

This section provides the following TNMC information:

- **Signal Routing Summary:** provides a basic explanation of the signal travel through the TNMC display.
- **Power Routing Summary:** provides a basic explanation of the power travel through the display.
- **Service and Diagnostics:** provides instructions for removing various display components and explains the functions of circuit board connectors and the meaning of any diagnostic LEDs.
- **Maintenance:** lists a number of steps to take to keep this Team Name Message Centers in safe, working order.
- **Troubleshooting:** lists possible display malfunctions and suggests a number of causes and corrections for each malfunction.

- **Replacement Parts Lists:** lists the part description and part number of display components that could possibly need replacing during the life of this display.
- **Daktronics Exchange and Repair and Return Programs:** explains the Daktronics component return policy.

9.3 Signal Summary

Reference Drawing:

Control Layout; Outdoor LED TNMC ..... **Drawing B-107507**

Refer to **Drawing B-107507** for complete information on TNMC signal routing. From signal input from the All Sport controller, routing can be summarized as follows:

1. Data from the display controller travels via cable harness into the display.
2. The signal then travels through the power and signal entrance enclosure, (power and signal termination panel) to the J1 connector on the current loop interface card.
3. Data exits at J3 and is relayed to the J1 connector on the multipurpose display controller (MDC). The signal then exits the MDC and enters the first module of the TNMC.
4. Signal is relayed from module to module until it reaches the last module on the message center. Refer to **Drawing B-107507**.

9.4 Power Summary

Reference Drawing:

Control Layout; Outdoor LED TNMC ..... **Drawing B-107507**

Refer to **Drawing B-107507**. Power routing for the display can be summarized as follows:

1. Incoming power terminates at the power and signal entrance enclosure. It is then routed to the power supply within the TNMC.
2. From the power supply, power from the power supply is relayed to the MDC, the current loop interface (CLI) card, and to each module.

9.5 Service and Diagnostics

Reference Drawing:

Control Layout; Outdoor LED TNMC ..... **Drawing B-107507**
Exploded Front, Module ..... **Drawing B-126111**
Exploded Rear, Module ..... **Drawing B-126112**
F. Assy; 832 LED TNMC ..... **Drawing A-143808**
F. Assy; 848 LED TNMC ..... **Drawing A-144323**
Component Layout; 832/848 LED TNMC ..... **Drawing A-145045**
Schematic; Red LED TNMC ..... **Drawing A-145620**

The following subsections address servicing of the following display components:

- **TNMC Interface Card**
- **TNMC Controller**
- **Modules and Drivers**
- **Power Supplies**

The subsections also address any diagnostic LEDs, fuses and signal/power connectors found on the unit. On **Drawings A-143808**, **A-144323**, **A-145045**, the TNMC components are denoted in the table on the following page.

Description	Part Number	Location
TNMC interface card	0A-1146-0016	Behind modules, on TNMC back panel (refer to **Drawing A-145045**)
TNMC controller	0A-1146-0061	Behind modules, on TNMC back panel (refer to **Drawing A-145045**)
Modules	0A-1208-3002	Over entire face of the TNMC (refer to **Drawings A-143808** and **A-144323**)
Power supplies	0A-1213-4013	Behind modules and attached to power supply assembly 0A-1213-4013 on the back panel (refer to **Drawing A-145045**)

>>Remember: Disconnect power before servicing internal components!

TNMC Current Loop Interface Card

The CLI card, located on the rear-access panel of the TNMC, translates the signal media to TIA/EIA-232 (formerly RS-232) for use within the components of the TNMC. The signal transfers into the TNMC controller where that component interprets and distributes the data to the modules. Refer to **Drawing A-145045**.

TNMC Controller

The controller, located on the rear-access panel, receives signal from the CLI and sends data to the modules. Refer to **Drawing A-145045** for the position of the controller board. **Figure 7**, below, illustrates a typical controller.

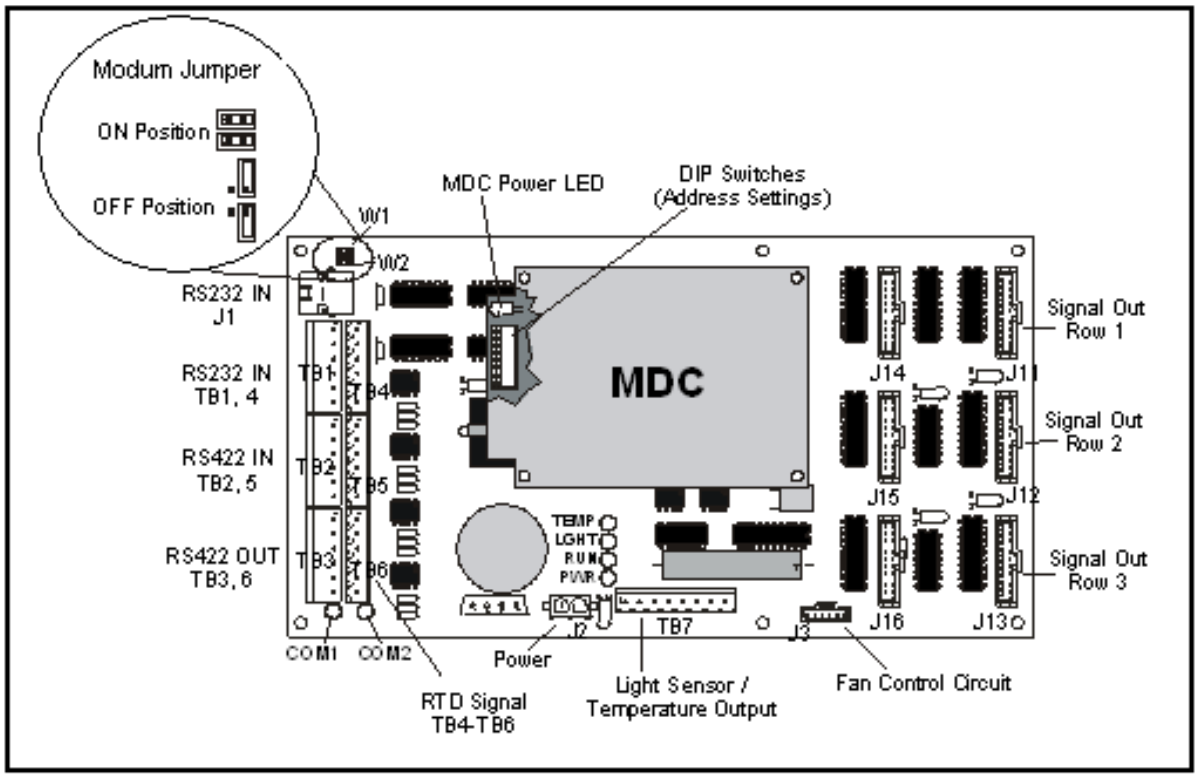


Figure 7: Controller Component Layout

DIP switches are located on the controller's MDC (see **Figure 7**). These DIP switches set the hardware address that the software uses to identify that particular display. When replacing a controller board, be sure to set the DIP switches in the same address configuration as the defective controller.

>>**Note:** Setting the DIP switches to address 0 (turn all the switches to OFF by switching them toward the printed switch numbers) can activate a test mode. Power down the display and then reconnect to run the test mode.

Switch Number								Address
8	7	6	5	4	3	2	1	
Off	Off	Off	Off	Off	Off	Off	Off	**Test Mode**
Off	Off	Off	Off	Off	Off	Off	On	**1**
Off	Off	Off	Off	Off	Off	On	Off	**2**
Off	Off	Off	Off	Off	Off	On	On	**3**
Off	Off	Off	Off	Off	On	Off	Off	**4**
Off	Off	Off	Off	Off	On	Off	On	**5**
Off	Off	Off	Off	Off	On	On	Off	**6**
Off	Off	Off	Off	Off	On	On	On	**7**
…	…	…	…	…	…	…	…	**…**
On	On	On	On	Off	Off	Off	Off	**240**

Four diagnostic LEDs are located on the controller. Two other LEDs note when the MDC is receiving signal information. The following table explains what each LED represents.

LED	Color	Function	Operation	Summary
TEMP	Red	Temperature level	Flashes	Flash rate is dependent upon the temperature. The LED flashes faster in high temperature and slows as the temperature decreases.
LGHT	Red	Photocell light level	Flashes	Flash rate is dependent on the light level. The LED flashes faster in bright light and slows as darkness descends.
RUN	Red	Controller	Steady Flash	A steady flash indicates the controller is running correctly. Normal flash rate is about once a second.
PWR	Green	Power	Always On	The LED, when lit, indicates that there is power to the data input circuit.
RX1	Yellow	Com 1	Flashes	The LED turns on and flashes when receiving information.
RX2	Yellow	Com 2	Flashes	The LED turns on and flashes when receiving information; this LED is typically used in custom applications.

The controller contains two jumpers (W1 and W2) for use with a modem system. *The jumpers must jump both pins for a modem system.* Refer to **Figure 7** for the location of the jumpers.

Removing/Changing the Controller

Complete the following steps to remove the controller from the display.

1. To access the controller from the front, unlatch the latch fasteners (referred to as "latch plugs" on the drawings) at the top and bottom center of the module by turning them a

quarter-turn. Use a $^{7}/_{32}$" nut driver. Turn the top latch clockwise and the bottom latch counterclockwise. Carefully remove the module and detach the ribbon cables. It may be helpful to label the cables to know which cable goes to which connector when reattaching.

To access the controller from the rear of the TNMC, remove the right rear-access panel from the TNMC by loosening all four of the screws. Slide the access panel up to the larger keyhole and carefully lift it off the TNMC. Take care not to drop the panel, and remember that the module controller is attached to the panel.

2. Disconnect power from J2.
3. Remove all power and signal connections from the board. Release "locked" connectors by squeezing together the tabs, then carefully pulling them from the jack. Label the cables, indicating which cable was removed from which connector; the labeling will be helpful when you replace the board.
4. Remove the four nuts holding the board in place.
5. Follow the previous steps in reverse order to install a new controller board.

Modules and Drivers

The module and driver board are a single functional unit.

The LED power supplies are identified as assemblies (refer to **Power Supplies**, following in this section). Each power supply unit controls four modules; a power supply assembly (two power supply units) controls eight modules.

Removing/Changing a Module

To remove module, complete the following steps:

1. The modules are attached to an internal frame called the module mounting panel. Find the latch-access fasteners (referred to as "latch plugs" on the drawing) on the module. One is centered below the top row of pixels and one is centered above the bottom row.
2. Unlatch the latch fasteners by turning them a quarter-turn using a $^{7}/_{32}$" nut driver. Turn the top latch clockwise and the bottom latch counterclockwise. Carefully remove the module and detach the ribbon cables. Label the cables, indicating which cable was removed from which connector; the labeling will be helpful when you replace the board.

   To access the controller from the rear of the TNMC, remove the right rear-access panel from the TNMC by loosening all four of the screws. Slide the access panel up to the larger keyhole and carefully lift it off the TNMC. Take care not to drop the panel, and remember that the module controller is attached to the panel.
3. If you are accessing the unit from the rear, follow this procedure: While holding onto the module , push it out and turn it sideways and diagonally so that it will fit through the opening in the frame. Carefully disconnect the ribbon cables. Once again, label the cables, indicating which cable was removed from which connector; the labeling will be helpful when reconnecting.

When installing a module, reverse the previous steps, taking note of the following conditions:

- Weatherstripping on the back edge of the module must be intact and in good condition if it is to prevent water from seeping into the display.
- Module latches must be fully engaged to create a watertight seal around the edge of the module. The module should be firmly seated against the display when the latches are fully engaged.

Each module assembly contains a module housing (containing LEDs and the driver board) and a louver assembly. **Drawing B-126111** and **B-126112** illustrate the various module components.

From time to time, it may become necessary to remove one or more parts form the module housing for repair or replacement. The following subsection explains how to disassemble a module.

Removing the Louver Assembly

Damaged louvers may reduce the brightness and contrast of this display. If any of the louvers on the display are broken or damaged, replace the entire louver assembly. Refer to the Replacement Parts List in **Section 9.9**. When replacing the louver assembly, take care not to strip the plastic twist-on fasteners.

Removing/Changing a Louver

Complete the following steps to remove the louver assembly from the face of the module.

1. See the directions above in the **Module and Drivers** subsection for information on how to access the louver from the front or rear.
2. Remove the five twist-on fasteners holding the louver assembly to the module with an $^{11}/_{32}$" nut driver.
3. Lift the louver assembly straight away from the module.

Power Supplies

The LED power supplies are identified as assembly 0A-1213-4013 in the component location drawings.

Removing/Changing a Power Supply

Complete the following steps to remove a power supply from the display:

1. See the directions above in the **Module and Drivers** subsection for information on how to access the component from the front or rear.
2. Disconnect all the wires connected to the power supply.
3. Remove the hardware holding the power supply in place to free the unit.
4. Follow these steps in reverse order to install a new power supply.

Weatherstripping

To ensure that the display is waterproof, weatherstripping has been provided around the entire display and around each module. It is important that the weatherstripping is installed properly at all times or water may leak into the display and damage the components.

9.6 TNMC Display Maintenance

Complete a yearly inspection to maintain safe and dependable display operation. This inspection should address the following issues:

- **Loose Hardware**
  Verify that fasteners, such as bolts and rivets, have not come loose. Check and tighten or replace fasteners as required.
- **Excessive Dust Buildup**
  Occasionally it may be necessary to vacuum the inside of the display cabinet to remove dust/dirt buildup that may interfere with airflow.
- **Water Intrusion – Water Stain Marks**
  Water can enter the display where weatherstripping has come loose or deteriorated; where fasteners have come loose, allowing gaps in the panels; or where moisture may be entering around hardware. Check electronic components for displays of corrosion.
- **Corrosion**
  Check the paint, and look for possible corrosion, especially at footings, structural tie points, and ground rods and other types of grounding electrodes.

If you notice any of the preceding conditions, make repairs or take corrective actions immediately.

9.7 Troubleshooting

This subsection contains some symptoms that may be encountered in the displays. This list does not include every possible symptom, but does represent common situations that may occur.

Symptom/Condition	Possible Cause/Remedy
One or more LEDs on a single module fail to light.	▪ Check/replace the ribbon cables on the module. ▪ Replace the module.
One or more LEDs on a single module fail to turn off	▪ Check/replace the ribbon cables on module. ▪ Replace the module.
A section of the display is not working; the section extends all the way to the right side of the display.	▪ Replace the first module/driver on the left side of the first module that is not working. ▪ Replace the second module that is not working. ▪ Replace the power supply assembly on the first module that is not working. ▪ Replace the ribbon cable.
One row of modules does not work or is garbled.	▪ Replace the first module. ▪ Replace the controller. ▪ Check the fuses in the power termination box.
A group of modules that share the same power supply assembly fails to work.	▪ Replace the power supply assembly.

Symptom/Condition	Possible Cause/Remedy
Entire display fails to work.	▪ Check for proper line voltage into the power termination panel. ▪ Check/replace the ribbon cable from the controller to the modules. ▪ Check the voltage settings on the power supplies. ▪ Check/replace the signal cable to the controller. ▪ Replace the controller. ▪ Verify proper use of the software in the operation manual.
Temperature always reads 32 degrees F/0 degrees C.	▪ Check temperature sensor connections. ▪ Replace the temperature sensor. ▪ Replace the controller.
Display is stuck on bright or dim.	▪ Check manual/auto dimming in the Venus 1500 software. ▪ Check the light detector cable. ▪ Check the light detector for obstructions. ▪ Replace the light detector. ▪ Replace the controller.

9.8 Initialization Information at Startup

Every time the display is powered up, the display will run through an initialization in which it will test all LEDs and addresses. When completed, the initialization test will display Home and Guest in the appropriate location.

9.9 Replacement Parts List

The following table contains some of the TNMC components that may require replacement over the life of a display. Many of the components within the display also have attached part number labels.

Part Description	Part Number
Controller II	0A-1146-0061
Current loop interface card	0A-1146-0016
Module; 3R, 8x8 coated type 1 (red, 3 LED/Pixel)	0A-1208-3002
Power supply with harness (1, A-1633)	0A-1213-2039
Power supply with harness (1, A-1555)	0A-1213-2011
Power supply assembly (2, A-1555)	0A-1213-2043
Modem jack; 6-pin female	J-1094
Cable; 18” RJ-11; 6-conductor	0A-1137-0160
Ribbon cable; 40-conductor, 30 AWG (controller to module, module to module	W-1412
Cable; 22 AWG	W-1234
Electrical contact cleaner/lubricant (CaiLube)	CH-1020

To prevent theft Daktronics recommends purchasing a lockable cabinet to store manuals and replacement and spare parts.

9.10 TNMC Exchange and Repair and Return Programs

Refer to **Section 8.10** for information on the Daktronics Exchange and Repair and Return programs.

Section 10: Scoreboard Options

This section lists information on optional equipment for the outdoor LED scoreboards.

10.1 Football Scoreboard Accessories

The following options are available for the Daktronics football scoreboard. They make the scoreboard more adaptable to scoring and timing needs:

- Caption kits for additional sports
- Trumpet horn for football and soccer

10.2 Captions for Other Sports

Reference Drawing:

Caption Options, Baseball & Softball .....**Drawing A-44431**
Caption Options, Track .....**Drawing A-44432**
Captions Options, Soccer .....**Drawing A-101442**
Caption Options, Football.....**Drawing A-128281**
Caption Changing .....**Drawing A-44549**

Many scoreboards that have clock digits may use optional captions which allow them to score different sports.

- **Drawing A-44431** shows the optional **baseball** and **softball** caption sets that are available for use on **football** scoreboards.
- **Drawing A-44432** shows the optional **track** caption sets that are available for use on **football** scoreboards.
- **Drawing A-101442** shows the optional **soccer** caption sets that are available for use on **football** scoreboards.
- **Drawing A-128281** shows the optional **football** caption sets that are available for use on **soccer** scoreboards.

Installing and Changing Captions

Standard captions are applied directly to the face of the scoreboard. Optional captions are on changeable panels that fit into guides mounted above and below the standard captions. If the guides are not already installed, attach them to the scoreboard as shown in **Drawing A-44549**.

To install a changeable panel:

1. Insert the top of the panel into the upper retainer.
2. Lift the panel all the way up into the retainer.
3. Insert the bottom of the panel into the lower retainer.
4. Reverse this procedure to remove the caption panel.

An optional caption changer is available for installing and removing panels from the ground. Each caption panel is punched with keyholes. Screw heads on the crossbar of the caption changer fit into the keyholes. The caption changer pole consists of three sections, with a ring tightener to adjust for length. Loosen the ring to extend the pole to the desired length; tighten the ring for pole use.

CAUTION

- The aluminum caption changer can conduct electricity. Do not use it within 20 feet of power lines.
- Be careful when using the caption changer in high or gusting winds. Wind may catch the panel and unhook it from the changer. The surface area of the caption panel could also act as a sail, making it difficult to maintain a grip on the pole. Hold the pole tightly and be careful to maintain your balance when using the caption changer in windy situations.

10.3 Trumpet Horn

Reference Drawing:

120V DC Horn Mounting ..... **Drawing A-162100**
Horn Installation; 12V DC ..... **Drawing A-162102**
Schematic, Outdoor Scbd 12V DC Trumpet Horn AS5K ..... **Drawing A-128938**

The trumpet horn options are only available for installation on scoreboards that have clocks. There are two types of trumpet horns:

- Internally mounted 120 V trumpet horn
- Externally mounted 12 V DC trumpet horn

120 V Trumpet Horn Installation (Internally Mounted)

Caution: Disconnect scoreboard power before installing the horn!

Refer to **Drawings A-162100** and **A-132173** for complete installation information. Note that the horn can be mounted at either the top or the bottom of the scoreboard. The instructions below describe a horn mounting on the display's lower extrusion; reverse the horn positioning for a top-of-scoreboard installation. Power connections for the horn kit are installed at the factory

1. Unscrew and remove the trumpet from the horn body.
2. Mount the horn body to the bracket with the 1/4" bolts and nuts provided. Be sure that the horn is oriented so that the wire opening is a the bottom.
3. Mount the bracket to the bottom frame member using #10 screws. There are two holes in the frame for this purpose.
4. Connect the wires with a white plug to the mating jack on the horn interconnect harness. The interconnect cable itself extends from a jack marked HORN or J101 on the right side of the driver enclosure.
5. Close and secure the access panel.
6. Screw the trumpet into the horn body. The trumpet will tilt down about 10 degrees to allow moisture drainage.

7. Connect to power the scoreboard.
8. Connect the control console to the scoreboard.
9. Test the horn by pressing the key labeled **HORN** on the control console.

DC Trumpet Horn Installation (Externally Mounted)

Caution: Disconnect scoreboard power before installing the horn!

Refer to **Drawings A-128938** and **A-162102** for complete installation information. With single-section scoreboards, the external horn mounting location is above the center-most door. If the horn is ordered with a new scoreboard, the horn power enclosure assembly (*Steps 3, 4, and 5, below*) will be factory-installed, already attached to the interior back panel of the scoreboard. If the horn is added later, attachment of the horn power enclosure assembly will be part of the installation. In either case, the horn interconnect harness is also factory-installed and ready for the final attachment with the horn.

1. Locate the horn panel near the top of the scoreboard. Refer to the component locations drawings listed in **Section 4**. Note that there is a 2" knockout in this panel.
2. Loosen the screws securing the bottom of the panel and swing it open.
3. *Note: This step and the next two are not required if the horn is ordered as original equipment; these procedures will be completed at the factory.* In the interior back panel of the scoreboard, drill two $^{5}/_{32}$" holes 4" apart. (The holes may have been predrilled at the factory.) These screw holes will be used to attach the horn power enclosure assembly, so they should be located within reach of the 2" knockout in the horn panel. Refer to the **Figure 3** detail on **Drawing A-162102**.
4. Attach the horn power enclosure assembly to the inside of the scoreboard, using #10 tapping screws in the $^{5}/_{32}$" holes.
5. Attach the plate assembly to the horn enclosure using the #10 hardware provided.
6. Remove the 2" knockout in the horn access panel. Note that there are two $^{7}/_{32}$" holes on either side of the knockout.
7. Thread the two gray wires from the horn through the top of the mounting angle.
8. Attach the horn to the mounting angle using the #10 hardware provided.
9. Insert the bushing into the $^{3}/_{8}$" hole in the mounting angle.
10. Place the horn/angle assembly over the 2" knockout and $^{7}/_{32}$" holes in the front panel of the scoreboard. Attach the assembly using the #10 hardware provided.
11. Open the front panel and remove the cover from the horn enclosure.
12. Use the wire nuts provided to attach one gray wire from the horn to the black wire from the plate assembly. Connect the second gray wire from the horn to the red wire from the plate assembly.
13. Connect the wires with a white plug to the mating jack on the horn interconnect harness. The interconnect cable itself extends from the jack marked **HORN** or **J101** on the right side of the driver enclosure.
14. Close and secure the access panel.
15. Connect to power the scoreboard.
16. Connect the control console to the scoreboard.
17. Test the horn by pressing the key labeled **HORN** on the control console.

10.4 Radio Control

Radio control is an option with all Daktronics outdoor LED scoreboards, the system providing scoreboard control via a 2.4 GHz, extra-high frequency FM signal.

The radio transmitter and receiver are not standard equipment. This setup requires a control console such as the All Sport, equipped with radio output. The display receives control signal via a radio receiver mounted internally to the front panel. The receiver plugs into the power receptacle in the driver/power enclosure.

For additional information about this option, contact your Daktronics representative; for complete information on radio communications, refer to the All Sport 5000 Series or All Sport 3000 Series Control Console Operation Manuals, **ED11976** and **ED12126**.

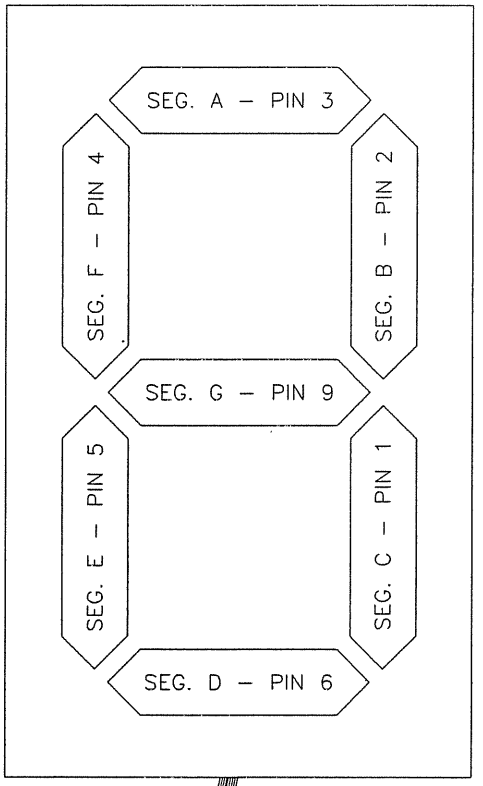
Appendix A: Reference Drawings

A Drawings

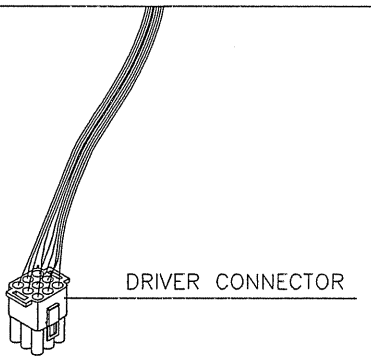
Schematic; 1 Driver w/TNMC ..... **Drawing A-141806**
Schematic; 2 Drivers ..... **Drawing A-141807**
Schematic; 3 Drivers ..... **Drawing A-142358**
Component Locations, MS-2118-11 ..... **Drawing A-142620**
Component Locations, FB-1524-11 ..... **Drawing A-142650**
Component Locations, FB-1624-11 ..... **Drawing A-142652**
Component Locations, FB-1424-11 ..... **Drawing A-142712**
Component Locations, SO-1624-11 ..... **Drawing A-142741**
Component Locations, SO-1424-11 ..... **Drawing A-142742**
F. Assy; 832 LED TNMC ..... **Drawing A-143808**
F. Assy; 848 LED TNMC ..... **Drawing A-144323**
Installation Specifications, MS-2009 ..... **Drawing A-144415**
Component Locations, BA-1518-11 w/TNMC ..... **Drawing A-144637**
Component Locations, BA-3718-11 w/TNMC ..... **Drawing A-144659**
Component Locations, BA-3724-11 w/TNMC ..... **Drawing A-144678**
Component Layout; 832/848 LED TNMC ..... **Drawing A-145045**
Component Locations, FB-1830-11 ..... **Drawing A-145120**
Digit Assembly 30” LED ..... **Drawing A-145339**
Component Locations, FB-1530-11 ..... **Drawing A-145498**
Component Locations, FB-1830L-11 ..... **Drawing A-145554**
Schematic; Red LED TNMC ..... **Drawing A-145620**
Component Locations; SO-1830L-11 ..... **Drawing A-146372**
Component Locations, BA-2007-11 w/LED TNMC ..... **Drawing A-147199**
Component Locations, FB-1430-11 ..... **Drawing A-147264**
Component Locations; FB-1730-11 ..... **Drawing A-148018**
Component Locations, FB-1630-11 ..... **Drawing A-148369**
Component Locations, FB-1630L-11 ..... **Drawing A-148432**
Component Locations; FB-2001-11 ..... **Drawing A-148468**
Component Locations; FB-2002-11 ..... **Drawing A-148476**
Component Locations; SO-1930-11 ..... **Drawing A-148531**
Component Locations; SO-1830-11 ..... **Drawing A-148537**
Component Locations; FB-2003-11 ..... **Drawing A-148545**
Component Locations; MS-2009-11 ..... **Drawing A-149704**
Beam and Footing Recommendations, FB-XX30L ..... **Drawing A-158779**
Beam and Footing Recommendations, FB-200X ..... **Drawing A-160931**
120 V DC Horn Mounting ..... **Drawing A-162100**
Horn Installation; 12V DC ..... **Drawing A-162102**
Interconnect Panel Digit Designation ..... **Drawing A-174754**

B Drawings

Control Layout; Outdoor LED TNMC ..... **Drawing B-107507**
Exploded Front, Module ..... **Drawing B-126111**
Exploded Rear, Module ..... **Drawing B-126112**
Schematic; 2 Drivers w/TNMC ..... **Drawing B-141808**
Schematic; 3 Drivers w/TNMC ..... **Drawing B-142360**
Schematic; 3 Drivers w/TNMC & SOP Driver ..... **Drawing B-146392**

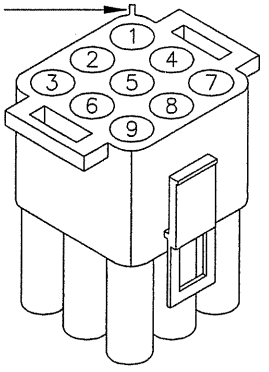


7 SEGMENT BAR DIGIT
FRONT VIEW



COLOR CODE		
PIN NO.	WIRE COLOR	DRIVER SEGMENT
1	ORN	C
2	RED	B
3	BRN	A
4	BLU	F
5	PNK	E
6	TAN	D
7	BLK	COM.
8	GRY	H
9	VIO	G

CONNECTOR PIN NUMBERING
NOTE SPLINE NEAR NO. 1



NOTE: "H" SEGMENT, GRAY WIRE IS NOT USED ON 7 SEGMENT BAR DIGIT.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: BASKETBALL
TITLE: SEGMENTATION, 7 SEGMENT BAR DIGIT
DES. BY: DRAWN BY: HEIDERSCHEIDT DATE: 5 JUN 89
REVISION 02 APPR. BY: AVB SCALE: 1=4
1009-R04A-38532

REV.	DATE	DESCRIPTION	BY	APPR.
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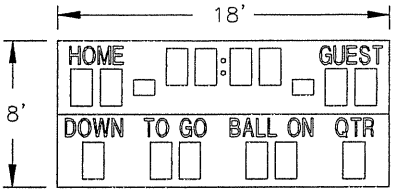
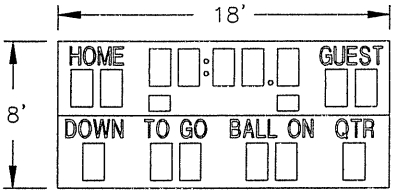
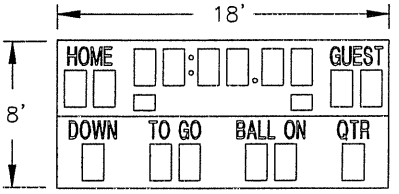
1	2 JAN 92	CHANGED FROM B-SIZE TO A-SIZE DWG.	C FICK	



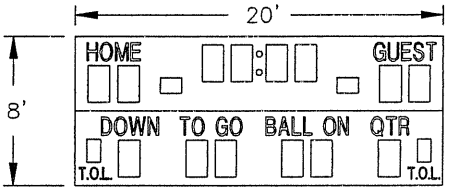
FB-1424



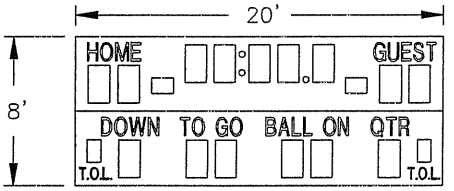
FB-1524



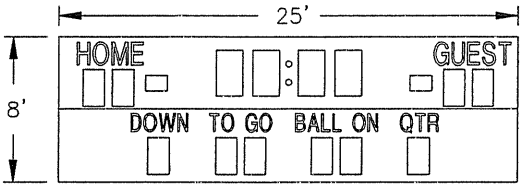
FB-1624



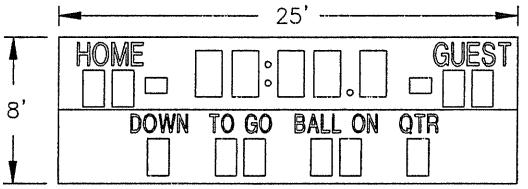
FB-2002



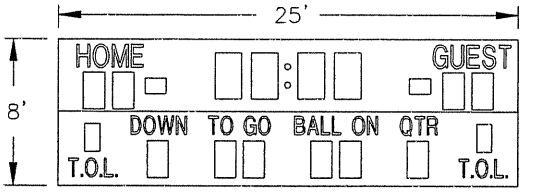
FB-2003



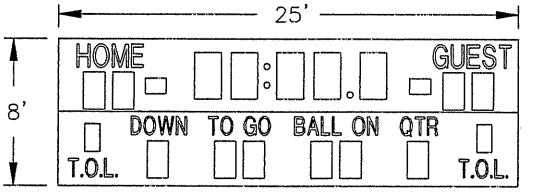
FB-1430



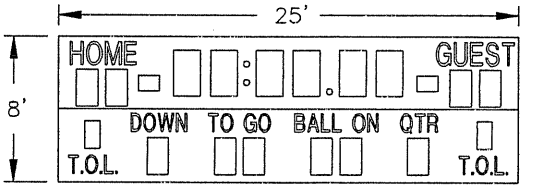
FB-1530



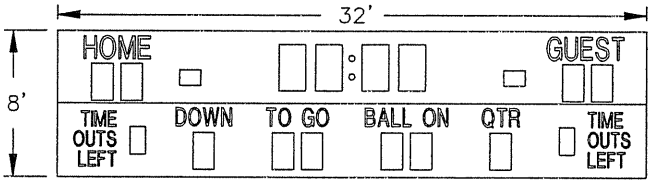
FB-1630



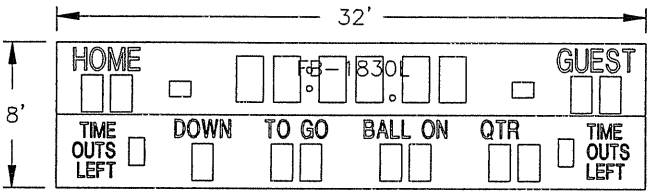
FB-1730



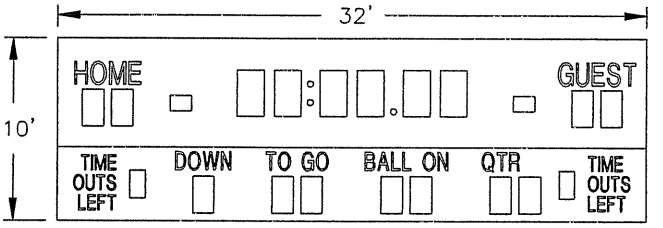
FB-1830



FB-1630L



FB-1830L



FB-2001

REV.	DATE	DESCRIPTION	BY	APPR.
8	16MAR00	ADDED FB-2002 AND FB-2003	GBREE	
7	22FEB00	REMOVED FB-824	BDP	
6	16JUL98	ADDED FB-2001	JLK	
5	06APR98	CHANGED INDICATORS ON FB-1524	BDP	
4	03 NOV 97	REMOVED MODELS SO-824, SO-1424, AND SO-1624.	MWJ	
3	12APR95	ADDED MODELS SO-824, SO-1424, AND SO-1624.	AVB	AVB
2	23FEB94	ADDED FB-1624.	CFICK	
1	23AUG90	CHANGED POSS INDICATOR ON FB-1524 TO THREE LAMPS EACH. CHANGED ALL POSS INDICATORS TO SHOW LAMPS.	AVB	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: MULTIPLE SECTION FOOTBALL SCBD MODELS

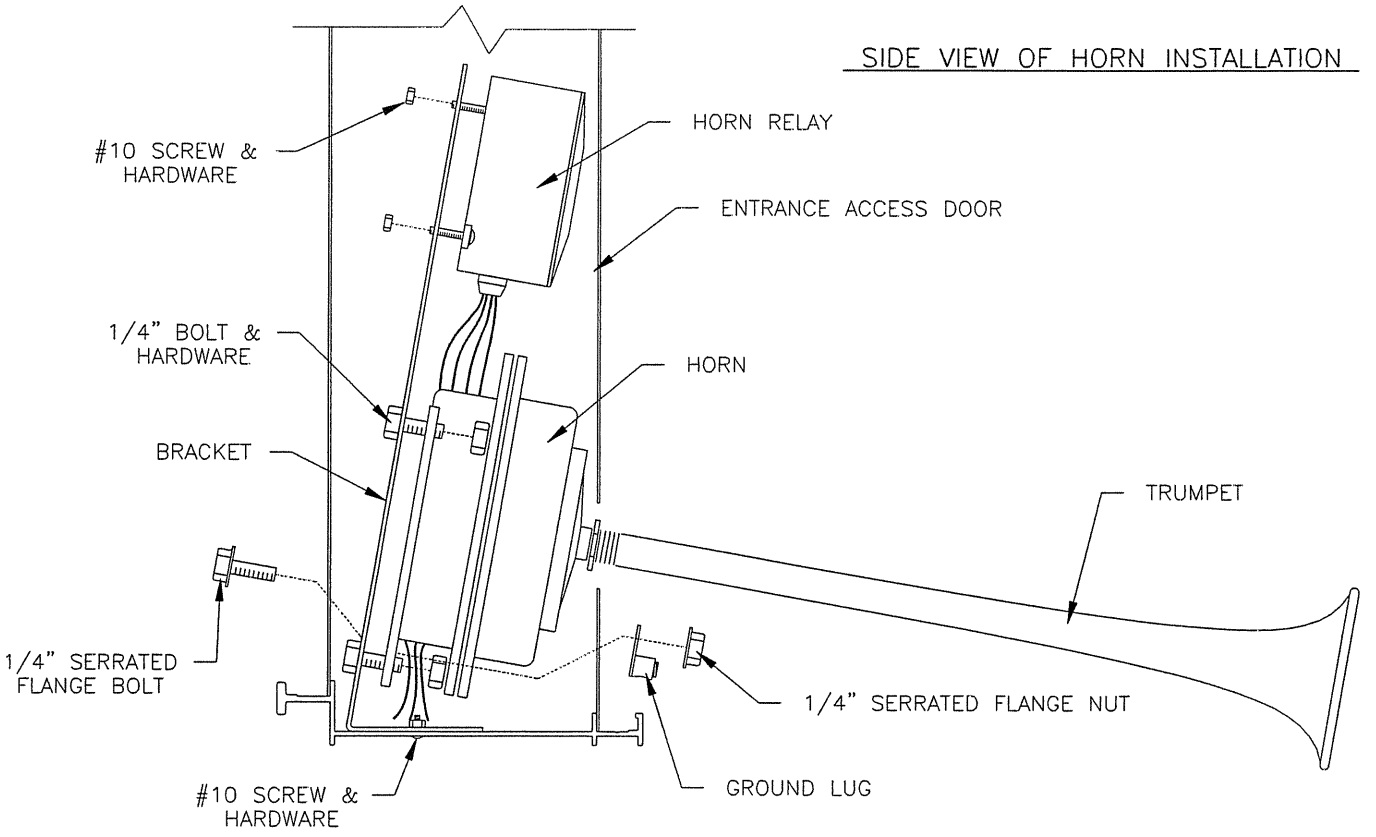
DES. BY: DRAWN BY: AVB DATE: 06AUG90

REVISION APPR. BY:

SCALE: 1=120

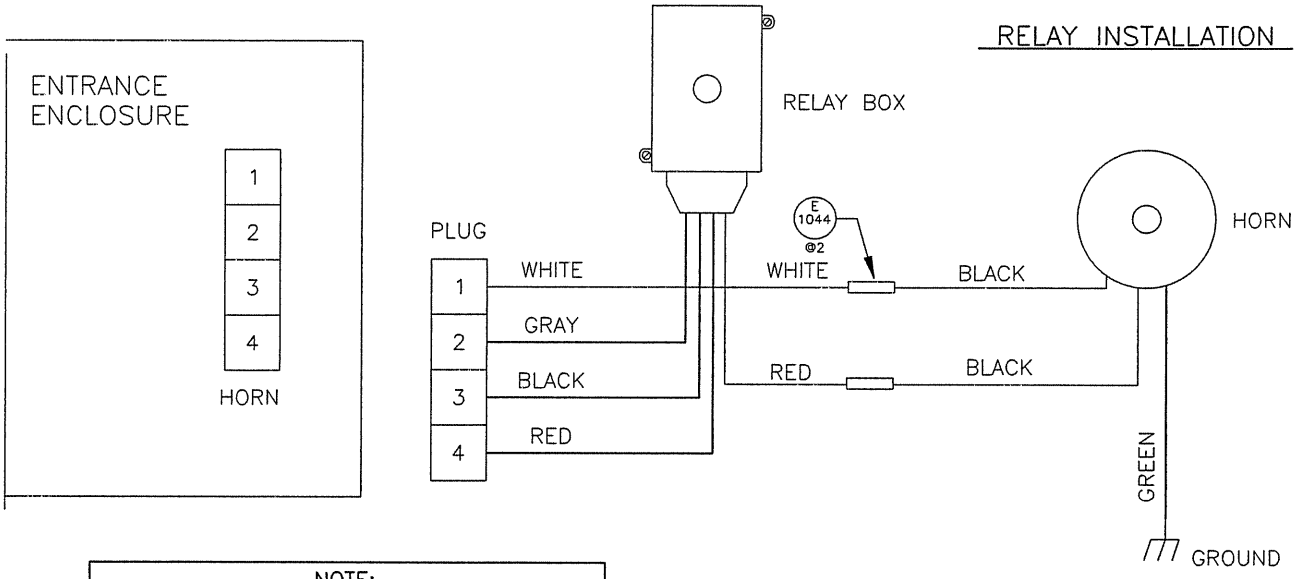
1091-R08A-42148

SIDE VIEW OF HORN INSTALLATION



THIS SCHEMATIC IS FOR SCOREBOARDS PROIR TO ALLSPORT 5000 PROTOCOL.
SEE DWG A-132173 FOR SCOREBOARDS USING AN ALLSPORT 5000 PROTOCOL.

RELAY INSTALLATION

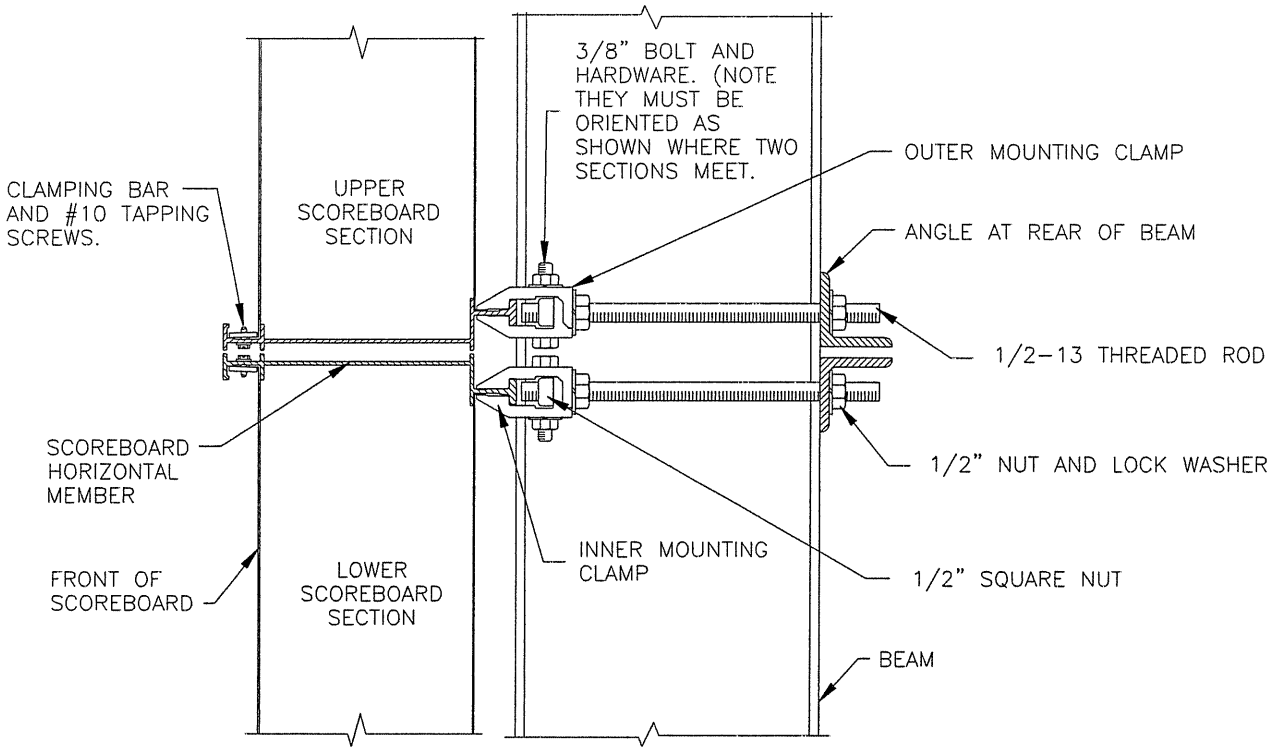


NOTE:
HORN IS TO BE MOUNTED BEHIND ACCESS DOOR THAT HAS 2" DIAMETER KNOCKOUT.

DAKTRONICS, INC. BROOKINGS, SD 57006

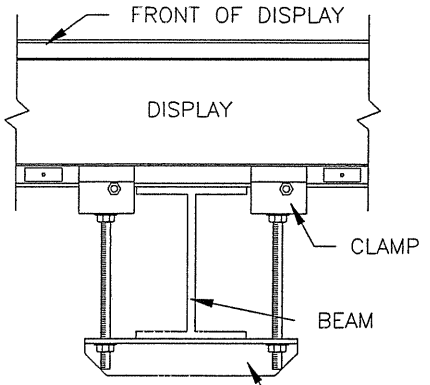
PROJ: OUTDOOR SCOREBOARDS
TITLE: HORN INSTALLATION
DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 16AUG90
REVISION 02 APPR. BY: AVB SCALE: 1=4
1091-E10A-44197

REV	DATE	DESCRIPTION	BY	APPR.
02	21 DEC 04	REPLACED E-1084 WITH E-1044	ADH	
01	11JAN01	ADDED NOTE ABOUT AS 5000 PROTOCOL RELATING TO SCHEMATIC	MCOPL	



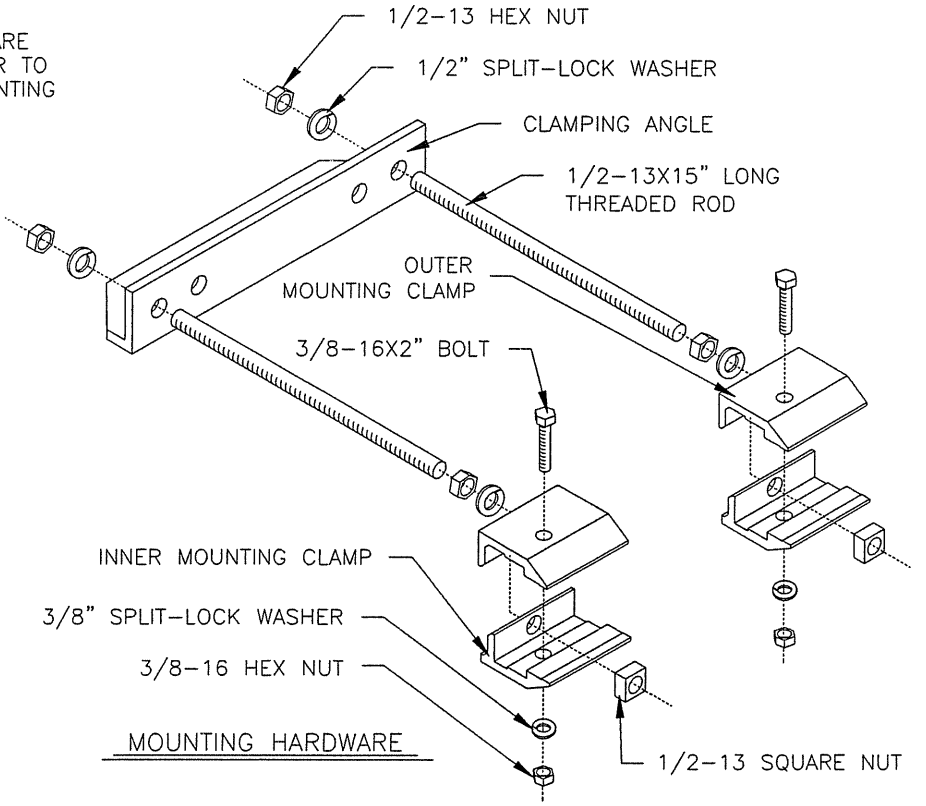
SIDE VIEW

NOTE: CLAMPING BARS AND HARDWARE MAY HAVE TO BE REMOVED IN ORDER TO INSTALL THE INNER AND OUTER MOUNTING CLAMPS.



TOP VIEW
1=10

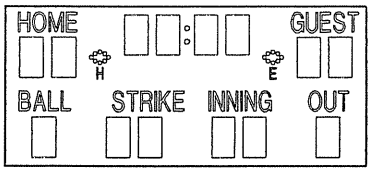
- THREADED RODS RUN ALONG BOTH SIDES OF BEAM.
- THEY DO NOT PASS THROUGH THE FLANGES OF THE BEAM.
- NO DRILLING IS NECESSARY.



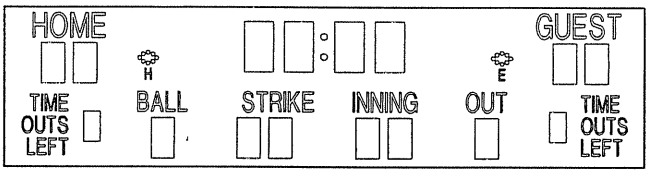
MOUNTING HARDWARE

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR SCOREBOARDS			
TITLE: DISPLAY MOUNTING			
DES. BY: JHEIDERSCHEIDT	DRAWN BY: JHEIDERSCHEIDT	DATE: 29AUG90	
REVISION	APPR. BY:	SCALE: 1=5	1091-R10A-44412

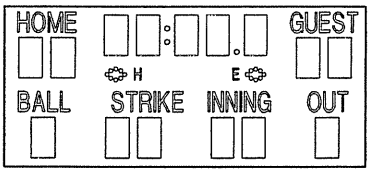
REV.	DATE	DESCRIPTION	BY	APPR.



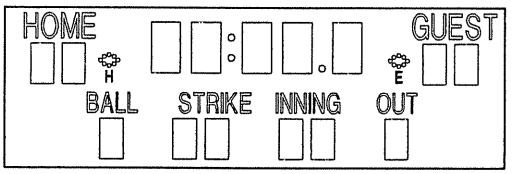
FB-1424



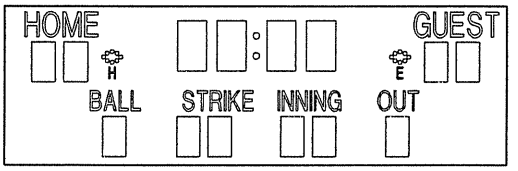
FB-1630L



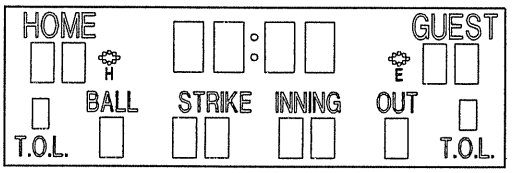
FB-1524



FB-1530

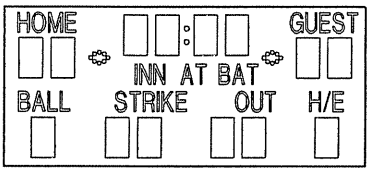


FB-1430

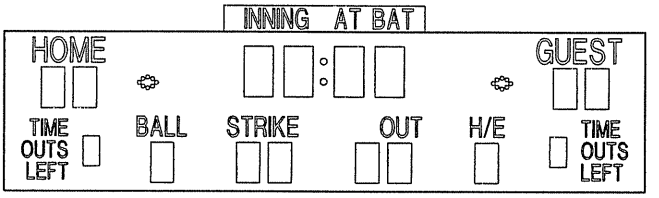


FB-1630

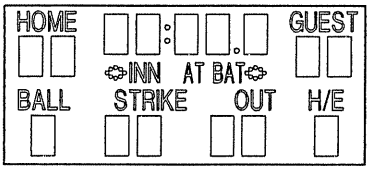
DISPLAYS SHOWN WITH BASEBALL/SOFTBALL CAPTIONS WITH CLOCK OPTION



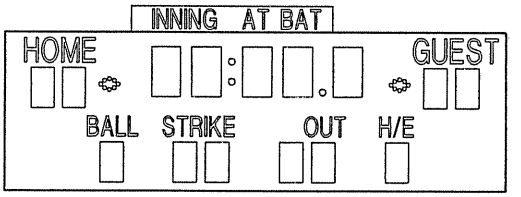
FB-1424



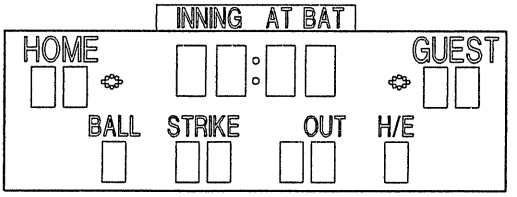
FB-1630L



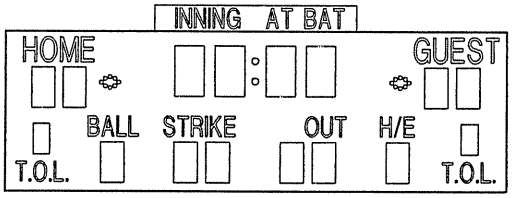
FB-1524



FB-1530



FB-1430



FB-1630

DISPLAYS SHOWN WITH BASEBALL/SOFTBALL CAPTIONS WITHOUT CLOCK

REV.	DATE	DESCRIPTION	BY	APPR.
05	28OCT04	MOVED H AND E CAPTION BELOW INDICATOR	MCOPL	
4	21FEB00	REMOVED CODES.	BDP	
3	06APR98	CHANGED FB-1524 INDICATORS	BDP	
2	30DEC92	SWAPPED "INNING" AND "OUT" CAPTIONS ON CODE 30 AND 32.	AVB	AVB
1	18SEP90	CENTERED "STRIKE" CAPTION OVER DIGITS OF CODE 33/39 DISPLAYS.	JLH	AVB

DAKTRONICS, INC. BROOKINGS, SD 57006

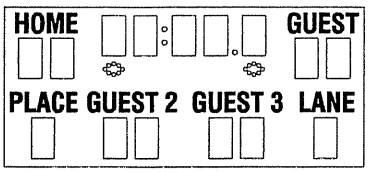
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: CAPTION OPTIONS, BASEBALL & SOFTBALL

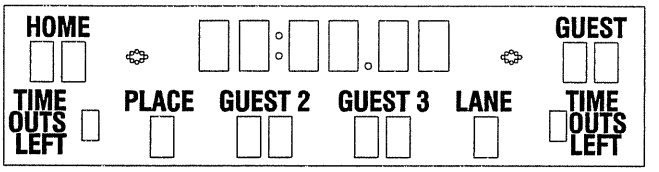
DES. BY: DRAWN BY: JHEIDERSCHEIDT DATE: 30AUG90

REVISION 05 APPR. BY: SCALE: 1=110

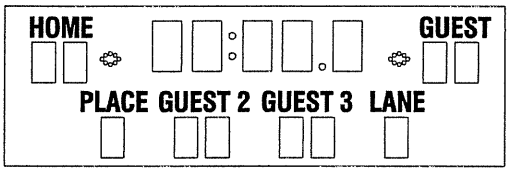
1091-R08A-44431



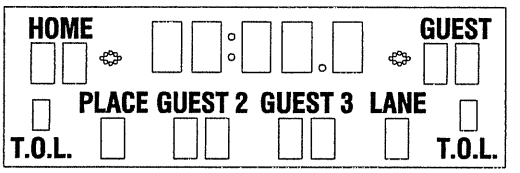
FB–1524



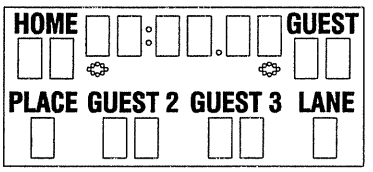
FB–1830L



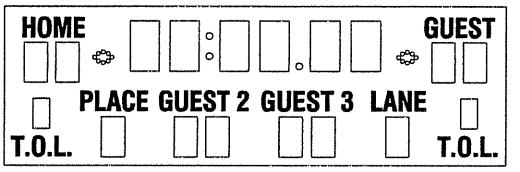
FB–1530



FB–1730 AND FB–2003

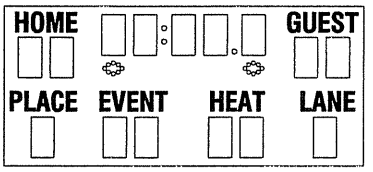


FB–1624

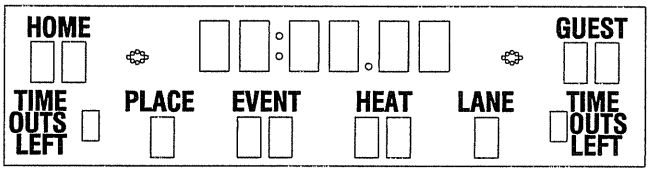


FB–1830

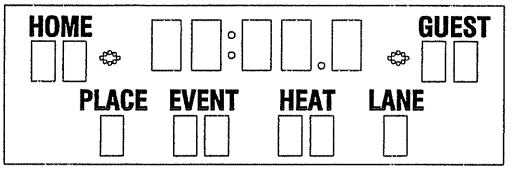
DISPLAYS SHOWN WITH GUEST 2/GUEST 3 TRACK CAPTIONS



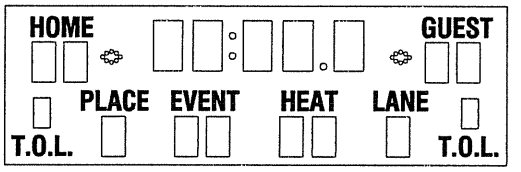
FB–1524



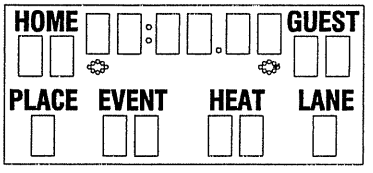
FB–1830L



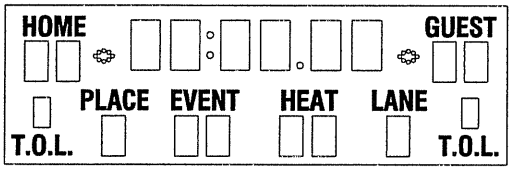
FB–1530



FB–1730 AND FB–2003



FB–1624



FB–1830

DISPLAYS SHOWN WITH EVENT/HEAT TRACK CAPTIONS

REV.	DATE	DESCRIPTION	BY	APPR.
06	12 JAN 05	CHANGED CAPTION TEXT, ADDED PROPRIETARY NOTE	MDW	
5	17MAR00	ADDED FB–2003	GBREE	
4	21FEB00	REMOVED CODES.	BDP	
3	22OCT98	UPDATED FB–1524 INDICATORS	BDP	
2	19APR96	CORRECTED "HEAT" CAPTION ON FB–1624.	AVB	AVB
1	25 MAY 94	ADDED MODEL FB–1624.	AVB	AVB

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: CAPTION OPTIONS, TRACK

DES. BY: DRAWN BY: JHEIDER DATE: 30AUG90

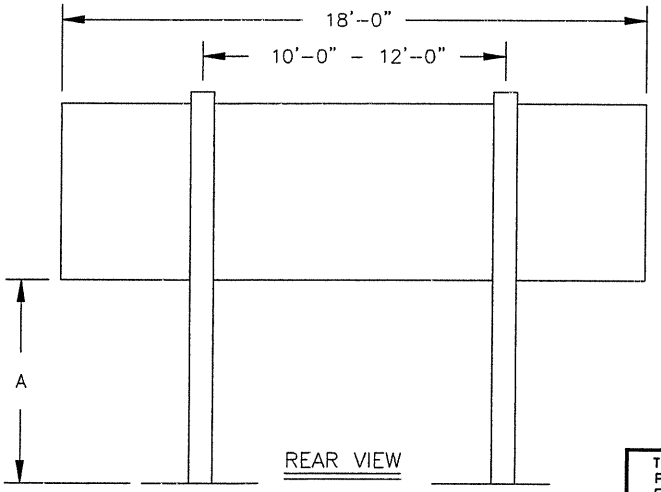
REVISION 06 APPR. BY: SCALE: 1=110

1091-R08A-44432

MODELS FB–1424/1524/1624/2007

DISTANCE TO BOTTOM OF SCOREBOARD (FT) A	DOES SCOREBOARD HAVE ATTACHED AD PANEL?	DESIGN WIND VELOCITY (MPH) 70	80	90	100
10	NO	W8x28 *3.00 X 5.60*	W8x31 *3.00 X 6.20*	W10x33 *3.00 X 6.80*	W8x35 *3.00 X 7.30*
	YES	W10x39 *3.00 X 6.80*	W12x45 *3.00 X 7.50*	W8x48 *3.00 X 8.20*	W12x53 *3.00 X 8.80*
12	NO	W8x31 *3.00 X 5.90*	W10x33 *3.00 X 6.50*	W10x39 *3.00 X 7.10*	W8x40 *3.00 X 7.60*
	YES	W12x45 *3.00 X 7.10*	W8x48 *3.00 X 7.80*	W12x53 *3.00 X 8.50*	W12x58 *3.00 X 9.20*
14	NO	W8x35 *3.00 X 6.20*	W10x39 *3.00 X 6.80*	W12x45 *3.00 X 7.40*	W8x48 *3.00 X 8.00*
	YES	W8x48 *3.00 X 7.4*	W12x53 *3.00 X 8.10*	W12x58 *3.00 X 8.80*	W12x65 *3.00 X 9.60*
16	NO	W10x39 *3.00 X 6.40*	W12x45 *3.00 X 7.10*	W8x48 *3.00 X 7.70*	W12x53 *3.00 X 8.30*
	YES	W10x49 *3.00 X 7.60*	W12x58 *3.00 X 8.40*	W12x65 *3.00 X 9.10*	W12x72 *3.00 X 9.80*
18	NO	W12x45 *3.00 X 6.60*	W8x48 *3.00 X 7.30*	W12x53 *3.00 X 8.00*	W12x58 *3.00 X 8.60*
	YES	W10x54 *3.00 X 7.80*	W12x65 *3.00 X 8.60*	W12x72 *3.00 X 9.40*	W10x77 *3.00 X 10.10*
20	NO	W8x48 *3.00 X 6.90*	W10x49 *3.00 X 7.60*	W12x58 *3.00 X 8.30*	W12x65 *3.00 X 8.90*
	YES	W10x60 *3.00 X 8.10*	W10x68 *3.00 X 8.90*	W10x77 *3.00 X 9.70*	W12x87 *3.00 X 10.50*

W6x12 ← RECOMMENDED BEAM SECTION FOR MOUNTING SCOREBOARD
2.00 X 4.25 ← *RECOMMENDED FOOTINGS IN FEET (DIAMETER X DEPTH)*



NOTE:
RECOMMENDATIONS FOR A DISPLAY WITH AN ATTACHED AD PANEL WERE CALCULATED USING A 48" TALL AD PANEL.

INFORMATION GIVEN IS FOR ESTIMATING PURPOSES ONLY. COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENSED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

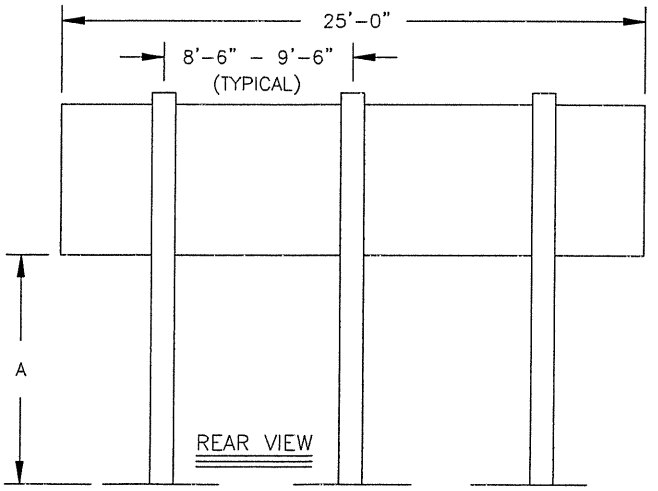
REV.	DATE	DESCRIPTION	BY	APPR.
03	07MAY04	ADDED MODEL FB–2007	MCOPL	
2	13JUL00	REVISED BEAM SECTIONS & FOOTINGS. ADDED FB–1624 TO MODELS	MVD	
1	23MAR98	ADDED DISCLAIMER ABOUT FOOTING AND BEAM LIABILITY.	TWEBER	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: FOOTBALL SCOREBOARDS
TITLE: BEAM & FOOTING RECOMMENDATIONS, FB–XX24
DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 07SEP90
REVISION 03 APPR. BY:
SCALE: NONE
1091-R08A-44514

MODELS FB-1430, FB-1530, FB-1630, FB-1730, & FB-1830					
DISTANCE TO BOTTOM OF SCOREBOARD (FT) A	DOES SCOREBOARD HAVE ATTACHED AD PANEL?	DESIGN WIND VELOCITY (MPH)			
		70	80	90	100
10	NO	W8x28 *3.00 X 5.70*	W8x31 *3.00 X 6.30*	W8x35 *3.00 X 6.90*	W10x39 *3.00 X 7.50*
	YES	W10x39 *3.00 X 6.90*	W12x45 *3.00 X 7.60*	W8x48 *3.00 X 8.30*	W12x53 *3.00 X 9.00*
12	NO	W8x31 *3.00 X 6.00*	W8x35 *3.00 X 6.60*	W10x39 *3.00 X 7.20*	W12x45 *3.00 X 7.80*
	YES	W12x45 *3.00 X 7.20*	W8x48 *3.00 X 7.90*	W10x54 *3.00 X 8.70*	W10x60 *3.00 X 9.30*
14	NO	W8x35 *3.00 X 6.30*	W10x39 *3.00 X 6.90*	W12x45 *3.00 X 7.60*	W8x48 *3.00 X 8.20*
	YES	W8x48 *3.00 X 7.50*	W12x53 *3.00 X 8.30*	W10x60 *3.00 X 9.00*	W12x65 *3.00 X 9.70*
16	NO	W10x39 *3.00 X 6.60*	W12x45 *3.00 X 7.20*	W8x48 *3.00 X 7.90*	W12x53 *3.00 X 8.50*
	YES	W12x53 *3.00 X 7.70*	W10x60 *3.00 X 8.50*	W12x65 *3.00 X 9.30*	W12x72 *3.00 X 10.00*
18	NO	W12x45 *3.00 X 6.80*	W8x48 *3.00 X 7.50*	W12x53 *3.00 X 8.10*	W12x58 *3.00 X 8.80*
	YES	W12x58 *3.00 X 8.00*	W12x65 *3.00 X 8.80*	W12x72 *3.00 X 9.60*	W12x79 *3.00 X 10.30*
20	NO	W8x48 *3.00 X 7.00*	W12x53 *3.00 X 7.70*	W12x58 *3.00 X 8.40*	W12x65 *3.00 X 9.10*
	YES	W12x65 *3.00 X 8.30*	W12x72 *3.00 X 9.10*	W12x79 *3.00 X 9.90*	W12x87 *3.00 X 10.70*

W6x12 ← RECOMMENDED BEAM SECTION FOR MOUNTING SCOREBOARD
2.00 X 4.25 ← *RECOMMENDED FOOTINGS IN FEET (DIAMETER X DEPTH)*

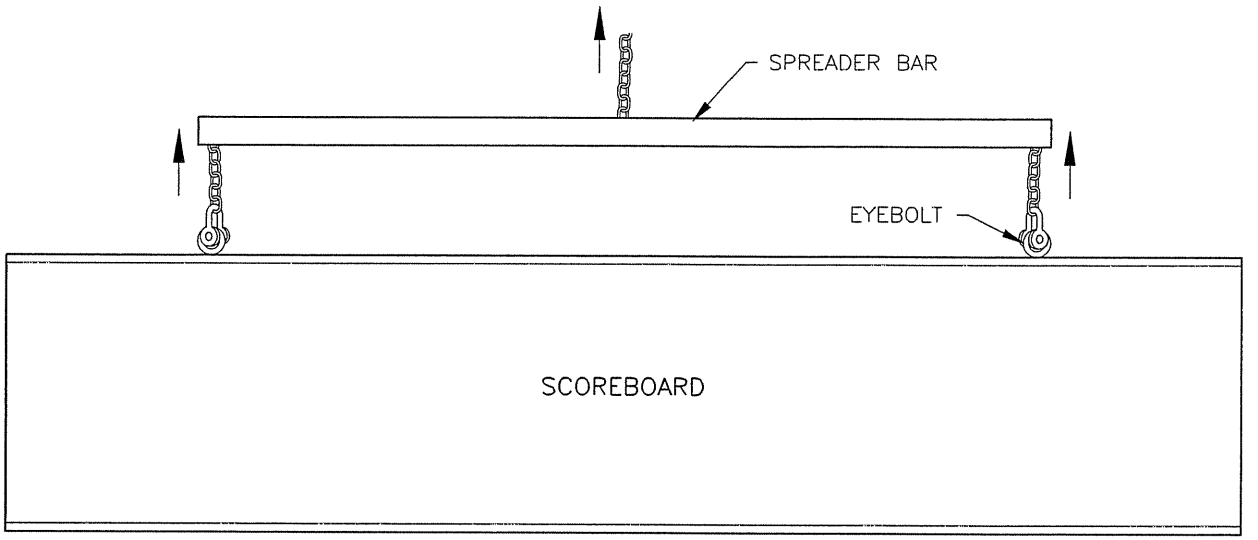


NOTE:
RECOMMENDATIONS FOR A DISPLAY WITH AN ATTACHED AD PANEL WERE CALCULATED USING A 48" TALL AD PANEL.

INFORMATION GIVEN IS FOR ESTIMATING PURPOSES ONLY. COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

REV.	DATE	DESCRIPTION	BY	APPR.
2	13JUL00	REVISED BEAM SECTIONS & FOOTINGS.	MVD	
1	23MAR98	ADDED DISCLAIMER ABOUT FOOTING AND BEAM LIABILITY.	TWEBER	

DAKTRONICS, INC. BROOKINGS, SD 57006
PROJ: FOOTBALL SCOREBOARDS
TITLE: BEAM & FOOTING RECOMMENDATIONS, FB-XX30
DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 08SEP90
REVISION APPR. BY:
SCALE: NONE
1091-R08A-44515

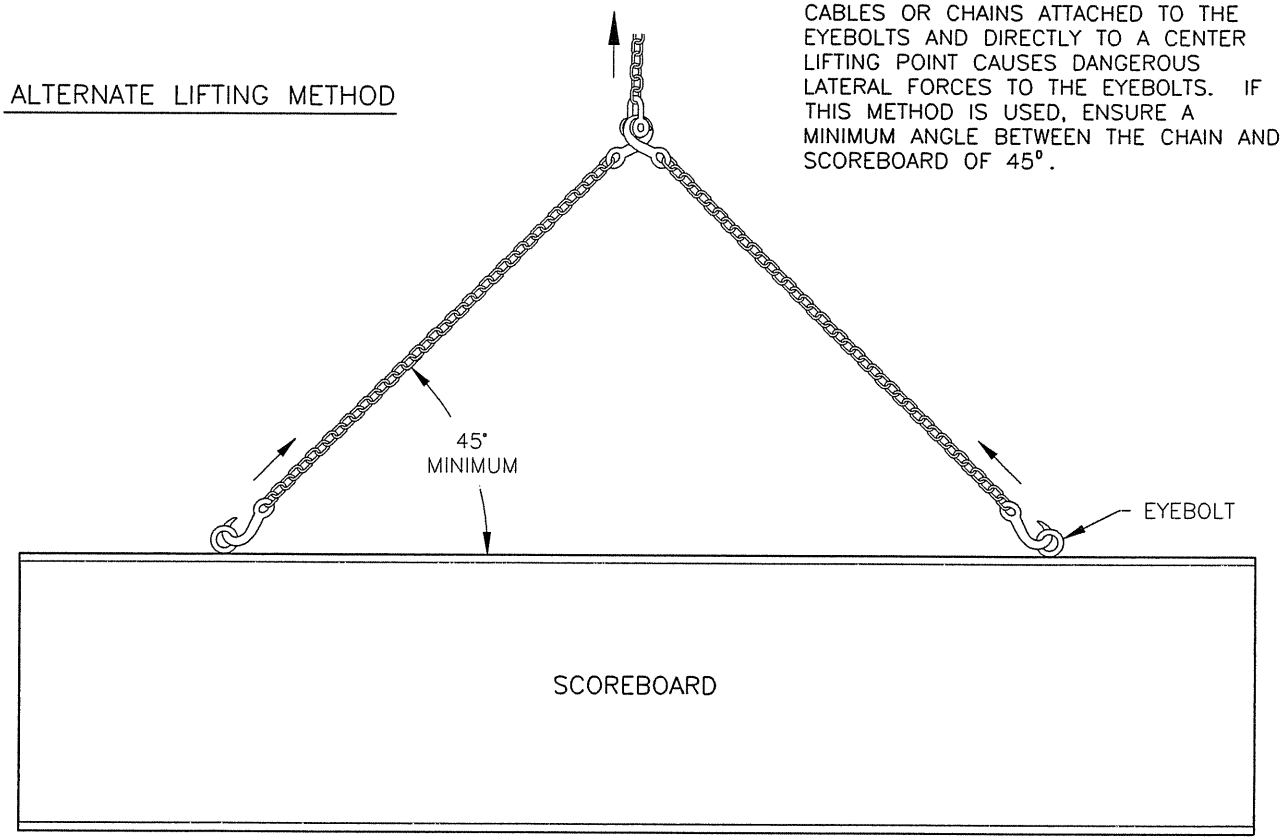


PREFERRED LIFTING METHOD

USE A SPREADER BAR SO THAT THE FORCE ON THE EYEBOLTS IS STRAIGHT UP.

ALTERNATE LIFTING METHOD

CABLES OR CHAINS ATTACHED TO THE EYEBOLTS AND DIRECTLY TO A CENTER LIFTING POINT CAUSES DANGEROUS LATERAL FORCES TO THE EYEBOLTS. IF THIS METHOD IS USED, ENSURE A MINIMUM ANGLE BETWEEN THE CHAIN AND SCOREBOARD OF 45°.



REV.	DATE	DESCRIPTION	BY	APPR.
1	17 MAY 01	ADDED MINIMUM ANGLE TO ALTERNATE LIFTING METHOD; CHANGED CORRECT TO PREFERRED METHOD AND WRONG TO ALTERNATE METHOD	TWEBER	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

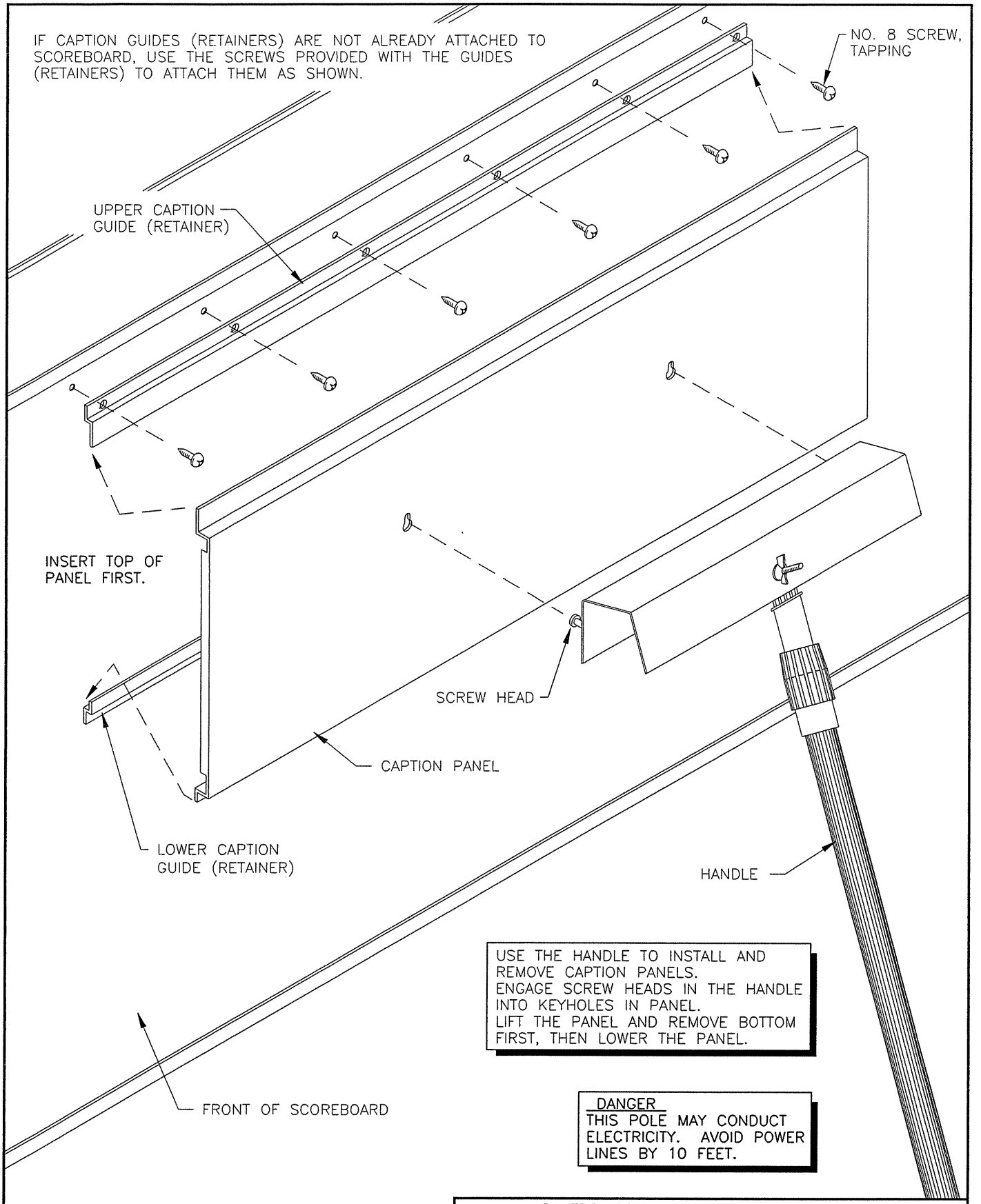
TITLE: LIFTING SCOREBOARD

DES. BY: DRAWN BY: AVB DATE: 12SEP90

REVISION APPR. BY:

SCALE: NONE

1091-R10A-44548



REV.	DATE	DESCRIPTION	BY	APPR.
1	22AUG91	CORRECTED CAPTION CHANGER ILLUSTRATION TO REFLECT ACTUAL DEVICE.	JLH	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

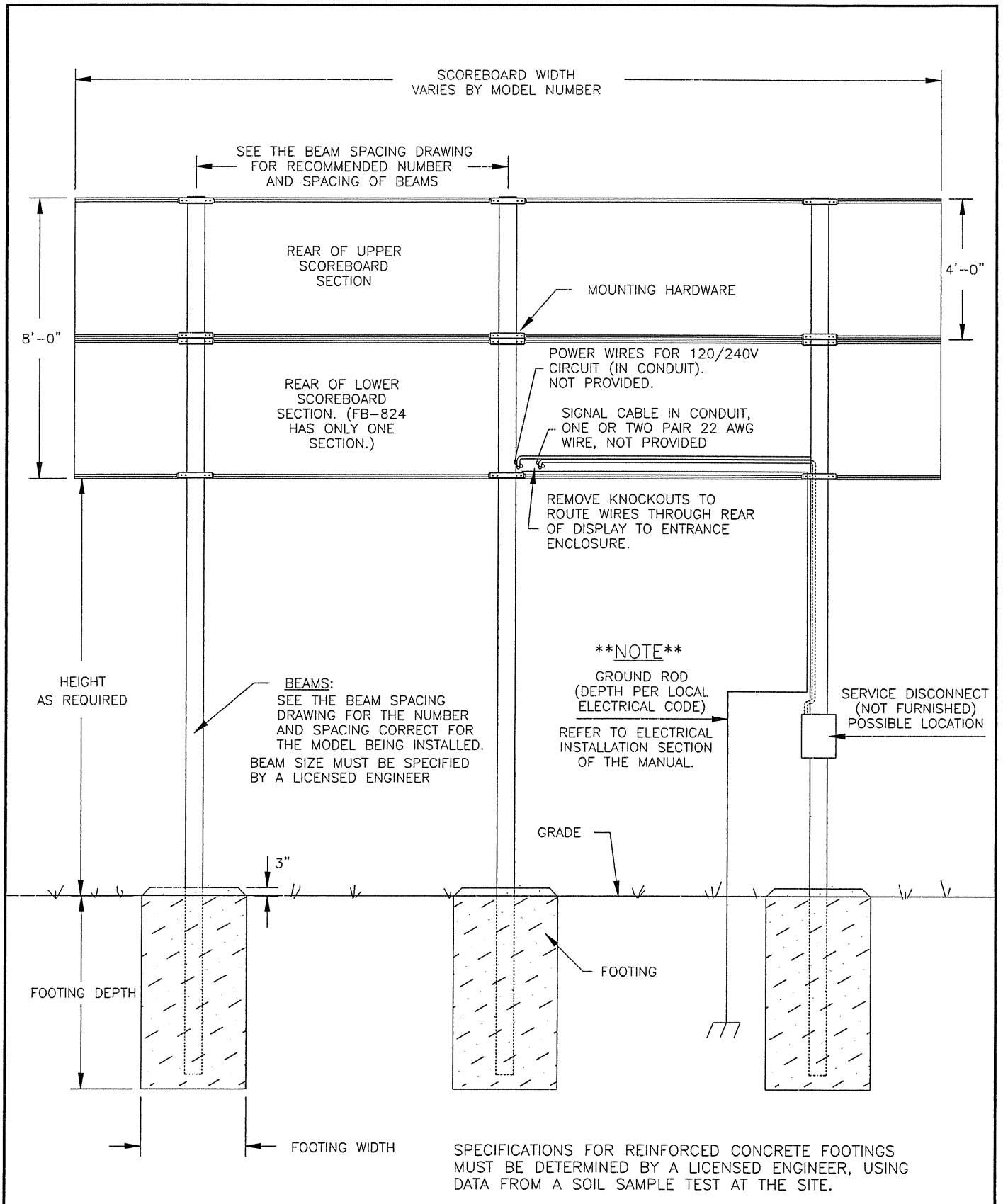
TITLE: CAPTION CHANGING

DES. BY: DRAWN BY: AVB DATE: 19SEP90

REVISION APPR. BY:

SCALE: NONE

1091-E10A-44549



SPECIFICATIONS FOR REINFORCED CONCRETE FOOTINGS MUST BE DETERMINED BY A LICENSED ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

REV.	DATE	DESCRIPTION	BY	APPR.
2	28APR95	ADDED NOTE THAT SPECIFICATIONS MUST BE MADE BY A LICENSED ENGINEER.	AVB	AVB
1	17SEP90	CORRECTED WIRE SPECIFICATIONS. ADDED GROUNDING ROD REFERENCE.	JLH	

DAKTRONICS, INC. BROOKINGS, SD 57006

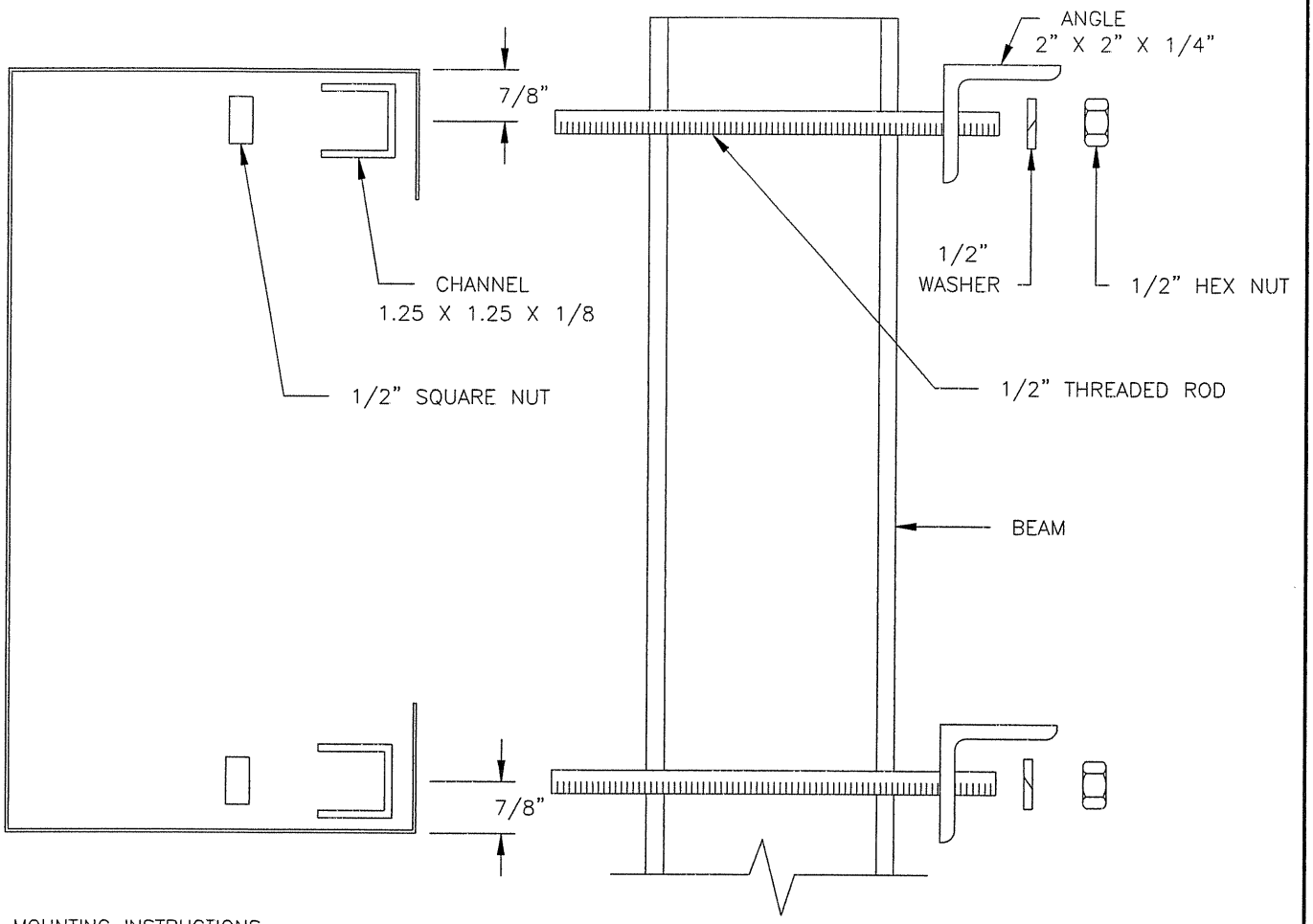
PROJ: FOOTBALL SCOREBOARDS

TITLE: STRUCTURE, FOOTBALL

DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 12SEP90

REVISION | APPR. BY: | SCALE: 1=45

1091-R10A-44556



MOUNTING INSTRUCTIONS:

1. USE THE MOUNTING CHANNEL TO DETERMINE WHICH HOLE COMBINATION SHOULD BE USED. BE SURE TO KEEP THE BOLTS AS CLOSE TO THE BEAM AS POSSIBLE.
2. USING THE MOUNTING CHANNEL AS A TEMPLATE, DRILL 9/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF AD PANEL WHERE THE SUPPORTS WILL GO.
3. PLACE SQUARE NUTS INSIDE CHANNEL AND THREAD BOLTS THROUGH.
4. LIFT AD PANEL INTO POSITION WITH BOLTS STILL IN PLACE.
5. PLACE MOUNTING ANGLES OVER EACH PAIR OF BOLTS AND SECURE WITH LOCK WASHERS AND HEX NUTS.
6. WHEN PANEL IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN HEX NUTS FIRMLY.

MOUNTING INSTRUCTIONS: FOR AD PANELS WITH BACKSHEETS.

1. USE THE MOUNTING CHANNEL TO DETERMINE WHICH HOLE COMBINATION SHOULD BE USED. BE SURE TO KEEP THE BOLTS AS CLOSE TO THE BEAM AS POSSIBLE.
2. USING THE MOUNTING CHANNEL AS A TEMPLATE, DRILL 9/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF AD PANEL WHERE THE SUPPORTS WILL GO.
3. REMOVE BACKSHEETS IN AREAS ABOVE AND BELOW HOLES DRILLED IN STEP 2.
4. PLACE SQUARE NUTS INSIDE CHANNEL AND THREAD BOLTS THROUGH.
5. REPLACE BACKSHEETS REMOVED IN STEP 3.
6. LIFT AD PANEL INTO POSITION WITH BOLTS STILL IN PLACE.
7. PLACE MOUNTING ANGLES OVER EACH PAIR OF BOLTS AND SECURE WITH LOCK WASHERS AND HEX NUTS.
8. WHEN PANEL IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN HEX NUTS FIRMLY.

REV.	DATE	DESCRIPTION	BY	APPR.
2	13AUG97	INCLUDED INSTRUCTIONS FOR AD PANELS WITH BACKSHEETS.	JAA	
1	26MAY93	ADDED DESCRIPTION TEXT TO PARTS.	MGG	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: AD PANEL MOUNTING

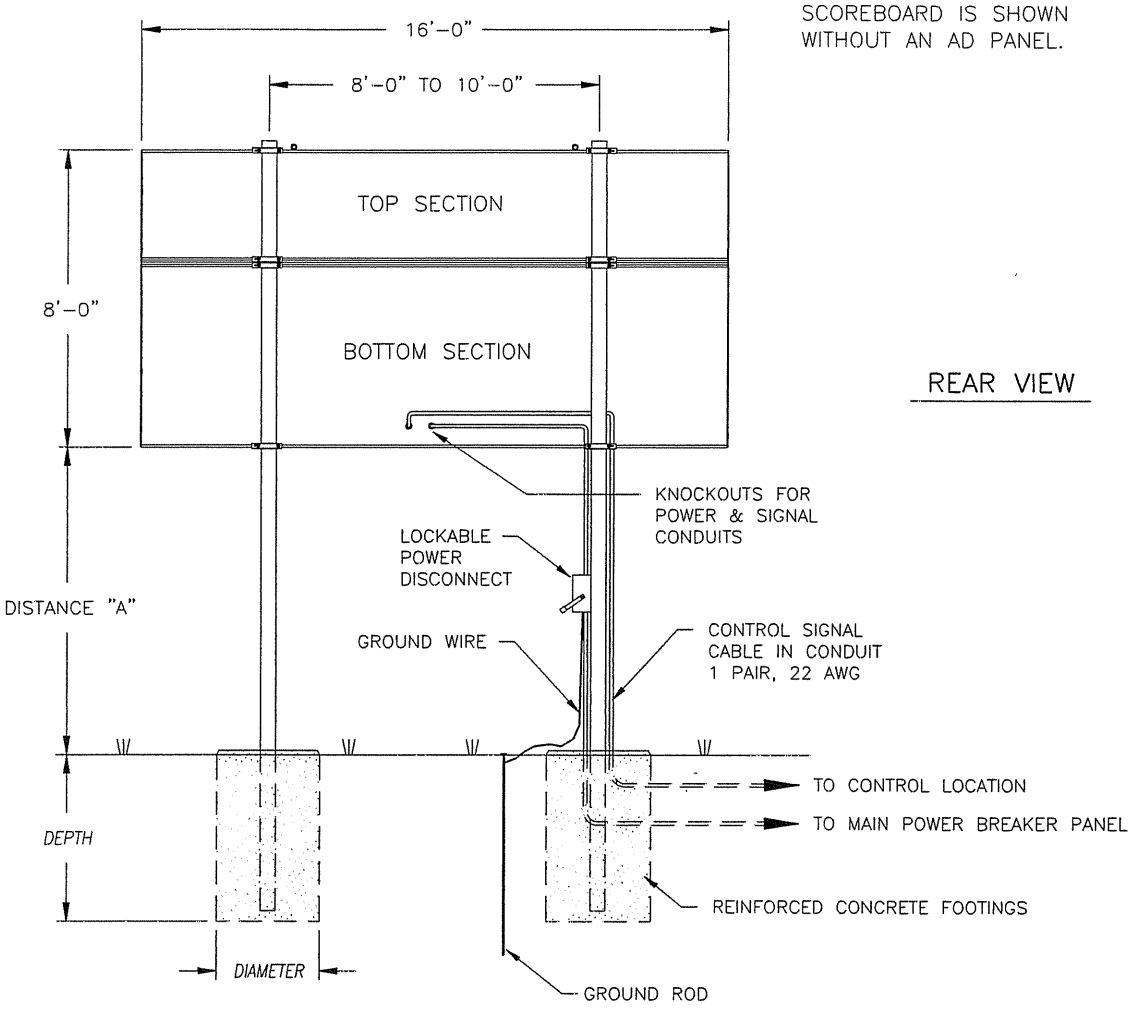
DES. BY: DRAWN BY: MGUNDERSON DATE: 09JUL92

REVISION APPR. BY:

SCALE: NONE

1091-R10A-52187

SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.



MODEL BA-1518 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	16'-0" x 8'-0"	BEAM	W8x24	W8x28	W8x35
		FOOTING	*3.0' x 5.4'*	*3.0' x 6.0'*	*3.0' x 7.0'*
12'-0"	16'-0" x 8'-0"	BEAM	W8x28	W8x31	W10x39
		FOOTING	*3.0' x 5.6'*	*3.0' x 6.2'*	*3.0' x 7.3'*
14'-0"	16'-0" x 8'-0"	BEAM	W8x31	W8x35	W10x45
		FOOTING	*3.0' x 5.9'*	*3.0' x 6.5'*	*3.0' x 7.7'*

MODEL BA-1518 WITH 30"-HIGH AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	16'-0" x 10'-6"	BEAM	W8x31	W8x35	W12x45
		FOOTING	*3.0' x 6.1'*	*3.0' x 6.7'*	*3.0' x 7.9'*
12'-0"	16'-0" x 10'-6"	BEAM	W8x35	W8x40	W8x48
		FOOTING	*3.0' x 6.4'*	*3.0' x 7.0'*	*3.0' x 8.3'*
14'-0"	16'-0" x 10'-6"	BEAM	W10x39	W10x45	W10x54
		FOOTING	*3.0' x 6.6'*	*3.0' x 7.3'*	*3.0' x 8.6'*

FOOTING = DIAMETER X DEPTH

FOOTING DIMENSIONS ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.

FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT ^{2}

ACTUAL FOOTING DEPTH AND DIAMETER FOR A PARTICULAR INSTALLATION MUST BE DETERMINED BY A QUALIFIED STRUCTURAL ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

DAKTRONICS, INC. IS NOT RESPONSIBLE FOR STRUCTURES DESIGNED AND INSTALLED BY OTHERS.

REV.	DATE	DESCRIPTION	BY	APPR.
2	19DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	
1	01 SEPT 99	UPDATE FOOTING AND BEAM SPECS FOR 2000 LB/FT2.	JNILSE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

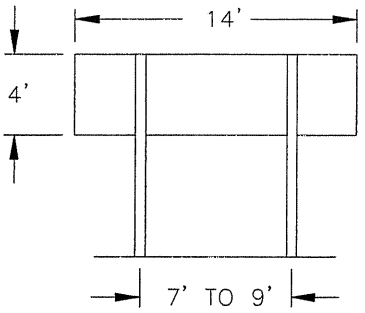
TITLE: INSTALLATION SPECIFICATIONS, BA-1518

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 04FEB93

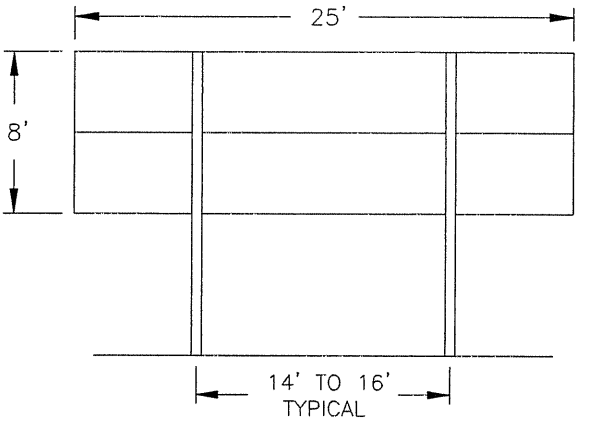
REVISION APPR. BY:

SCALE: 1=60

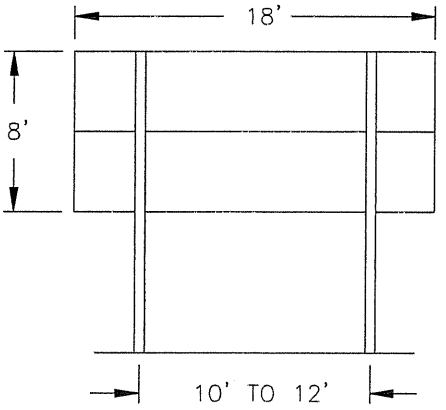
1091-R10A-55008



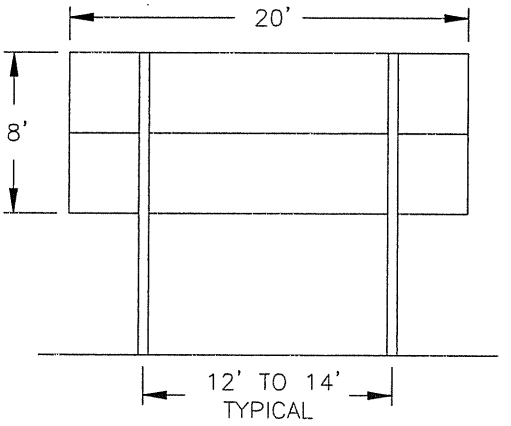
MODELS FB-824, SO-824



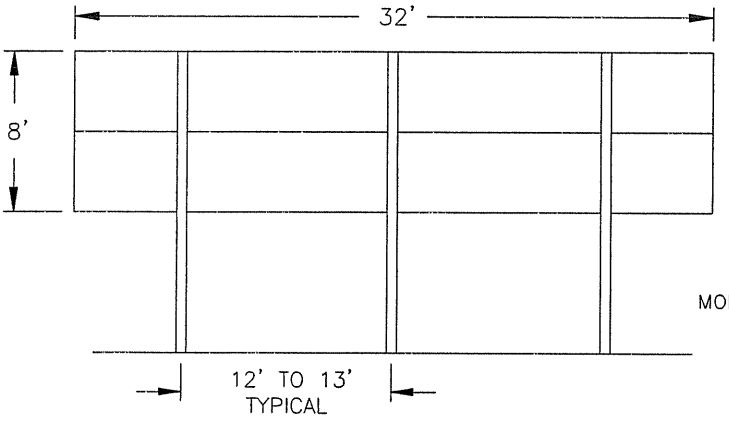
MODELS FB-1430, FB-1530,
FB-1630, FB-1730,
FB-1830, SO-1830, SO-1930
SO-2030



MODELS:
FB-1424, FB-1524,
FB-1624, SO-1424,
SO-1624



MODELS FB-2002, FB-2003



MODELS FB-1630L, FB-1830L

REV.	DATE	DESCRIPTION	BY	APPR.
05	14OCT04	REDUCED 8'X25' AND 8'X32' POLES QUANTITIES	MCOPL	
04	04NOV03	CHANGED POLE SPACING OF 25' SCOREBOARDS	MCOPL	
03	04JAN02	ADDED MODEL FB-2004	MCOPL	
02	17MAR00	ADDED MODELS FB-2002 AND FB-2003	GBREEN	
01	02 SEPT 99	ADDED MODELS SO-1830, SO-1930, SO-2030, AND FB-2001	JNILSE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: BEAM SPACINGS, FOOTBALL/TRACK/SOCCER

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 27APR95

REVISION 05 APPR. BY:

SCALE: 1=100

1091-R08A-70089

REV.	DATE	DESCRIPTION	BY	APPR.
04	20 DEC 04	REPLACED E-1084 WITH E-1014	ADH	
3	19JUL00	UPDATED HORN ENCLOSURE IN FIGURE 3	GDB	
2	14FEB00	ADDED ENTRANCE ENCLOSURE TO FIGURE 3	BDP	
1	23 SEPT 96	CHG SCALE OF FIGURES 1 & 2 SWITCHED POSITIONS OF FIGURES 1 & 2	JEM	

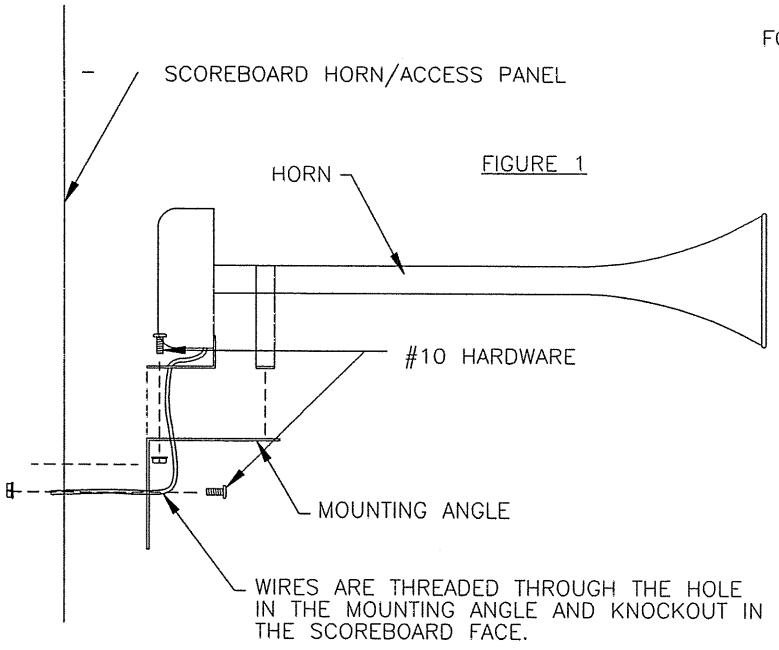


FIGURE 1

FOR COMPLETE INSTALLATION INSTRUCTIONS, REFER TO ED-10006.

LOCATE HORN PANEL OF THE SCOREBOARD.

MOUNTING ENCLOSURE TO INSIDE OF SCOREBOARD

1. OPEN THE HORN PANEL AND LOCATE THE ENTRANCE PLATE. DRILL TWO 5/32" HOLES 4 INCHES APART IN THE BACK OF THE SCOREBOARD NEAR THE ENTRANCE PLATE.
2. ATTACH THE ENCLOSURE TO THE INSIDE OF THE SCOREBOARD OVER THE 5/32" HOLES USING #10 TAPPING SCREWS. ATTACH THE PLATE ASSEMBLY TO THE ENCLOSURE USING #10 HARDWARE.

REMOVE 2" KNOCKOUT IN THE HORN PANEL AND DRILL TWO 7/32" HOLES USING THE TEMPLATE DRAWING A-83502. IF NO KNOCKOUT EXISTS, USE THE TEMPLATE TO DRILL ONE 8/32" HOLE AND TWO 7/32" HOLES IN THE PANEL.

MOUNTING HORN TO SCOREBOARD FACE

1. THREAD THE TWO GREY WIRES FROM THE HORN THROUGH THE TOP OF THE MOUNTING ANGLE.
2. ATTACH THE HORN TO THE MOUNTING ANGLE USING THE HARDWARE PROVIDED (FIGURE 1).
3. INSERT THE BUSHING INTO THE 3/8" HOLE IN THE MOUNTING ANGLE.
4. MOUNT HORN/ANGLE ASSEMBLY TO THE FACE OF THE SCOREBOARD OVER THE 2" KNOCKOUT AND 7/32" HOLES USING #10 HARDWARE PROVIDED.
5. OPEN THE HORN PANEL AND REMOVE THE COVER FROM THE ENCLOSURE.
6. USING THE WIRENUTS PROVIDED CONNECT ONE GREY WIRE FROM THE HORN TO THE BLACK WIRE FROM THE PLATE ASSEMBLY. CONNECT THE OTHER GREY WIRE TO THE RED WIRE (FIGURE 3).
7. CONNECT THE PLUG FROM THE PLATE ASSEMBLY TO THE HORN JACK ON THE SIDE OF THE ENTRANCE ENCLOSURE OR ON THE ENTRANCE PLATE.
8. ATTACH THE COVER TO THE ENCLOSURE USING #10 HARDWARE.
9. CLOSE AND SECURE THE HORN PANEL.

SIDE VIEW
SCALE 1=5

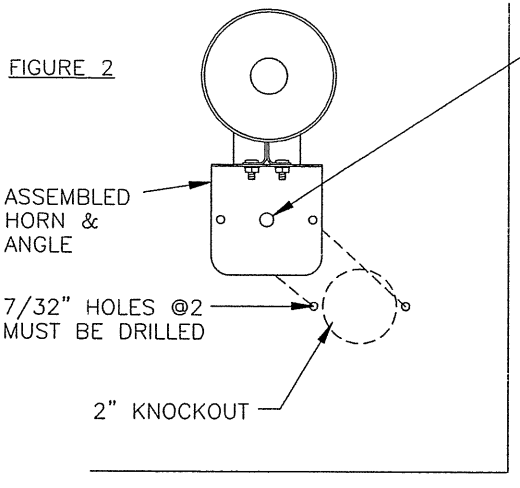


FIGURE 2

FRONT VIEW
SCALE 1=5

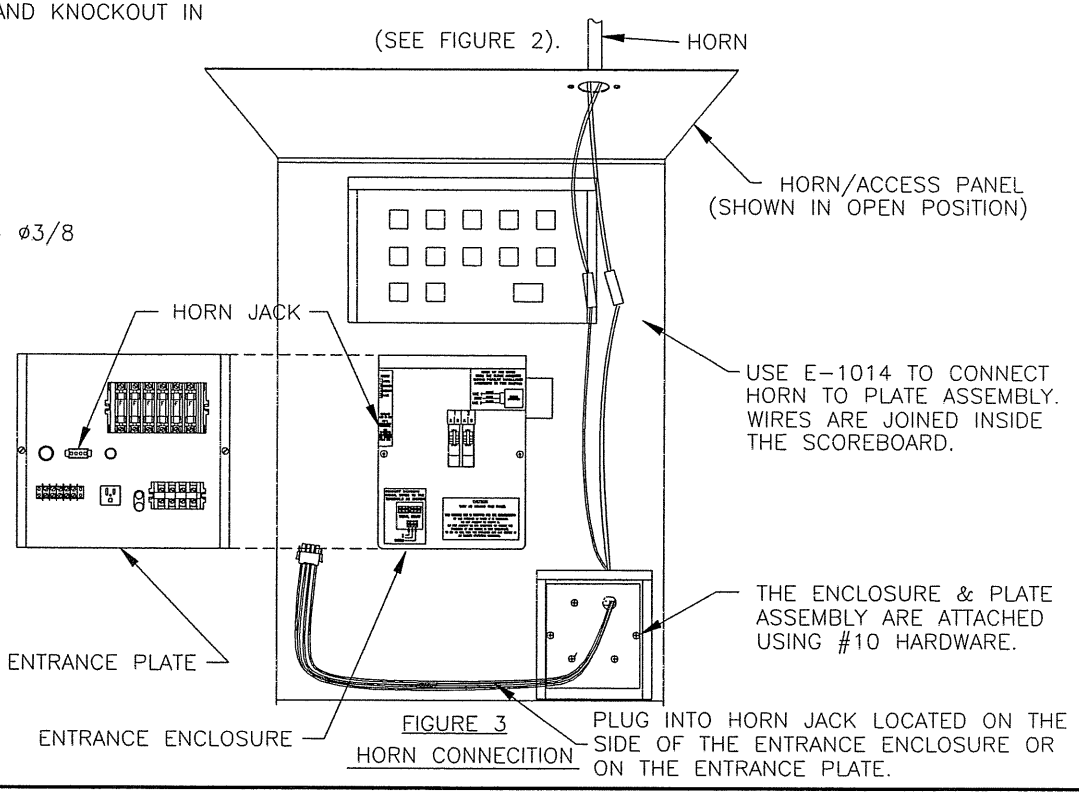


FIGURE 3
HORN CONNECITION

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: STANDARD SCOREBOARDS

TITLE: FINAL ASSEMBLY, 12V DC HORN MOUNTING

DES. BY:

DRAWN BY: JMOEN

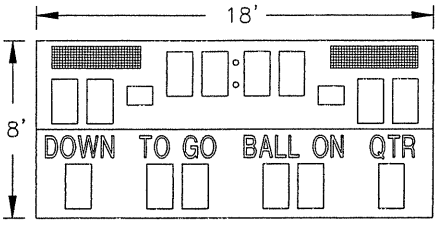
DATE: 20 JUN 96

APPR. BY:

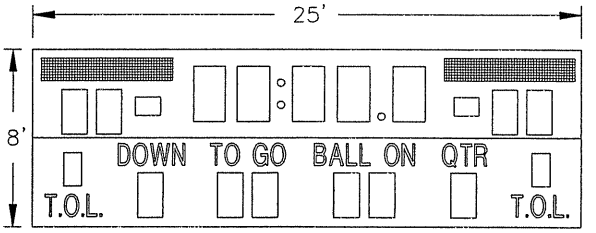
SCALE: 1=10

REVISION

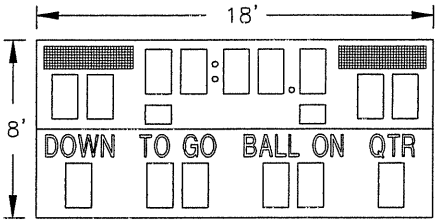
091-E10A-83333



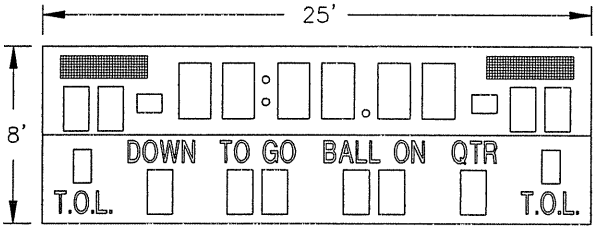
SO-1424 WITH 832-12 TNMC



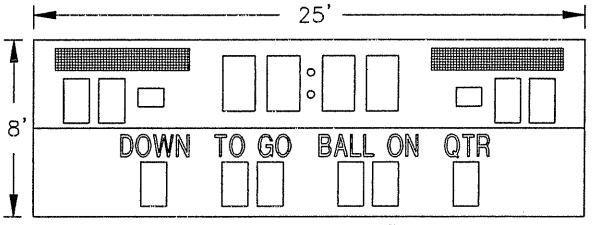
FB-1730 WITH 848-12 TNMC



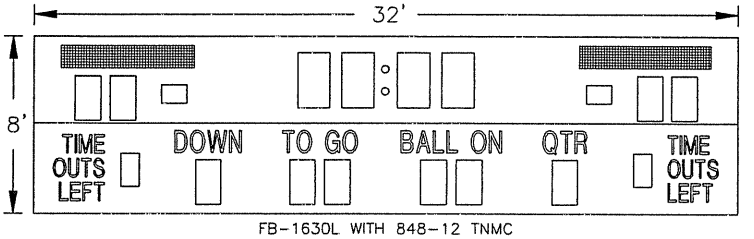
FB-1524 WITH 832-12 TNMC



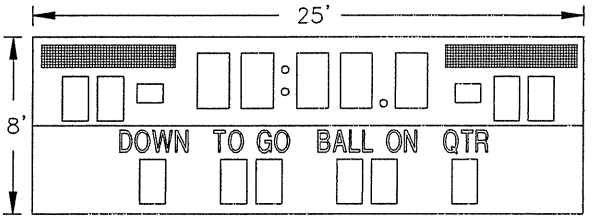
FB-1830 WITH 832-12 TNMC



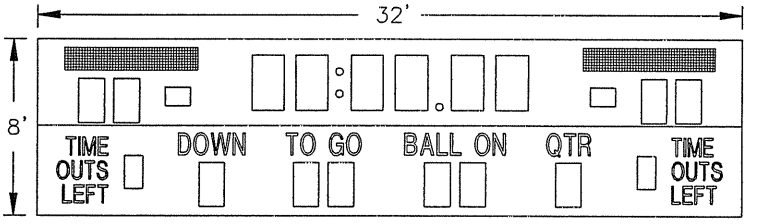
FB-1430 WITH 848-12 TNMC



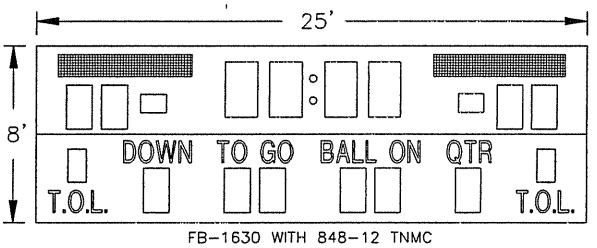
FB-1630L WITH 848-12 TNMC



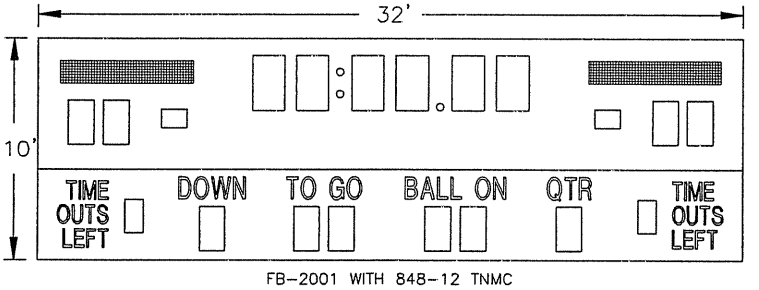
FB--1530 WITH 848-12TNMC



FB-1830L WITH 848-12 TNMC



FB-1630 WITH 848-12 TNMC



FB-2001 WITH 848-12 TNMC

REV.	DATE	DESCRIPTION	BY	APPR.
08	13AUG02	ADDED MODEL FB-2001 W/ TNMC	MCOPL	
7	21FEB00	REMOVED MODELS SO-1624 AND SO-1830 ADDED MODEL FB-1424	BDP	
6	28JUL99	ADDED MODEL SO-1830. AND MODEL FB-1630	MVD	
5	22OCT98	ADDED MODEL FB-1524.	BDP	
4	16SEP98	ADDED MODEL FB-1730.	BDP	
3	18AUG97	ADDED MODEL FB-1830.	REY	
2	05FEB97	ADDED MODEL FB-1830L.	BDP	
1	03OCT96	ADDED MODELS SO-1624 AND FB-1430.	AVB	AVB

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

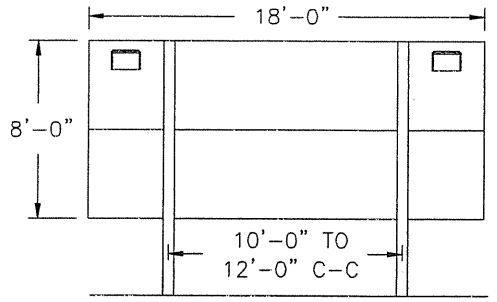
TITLE: MULTIPLE SECTION FOOTBALL SCBD MODELS W/TNMC

DES. BY: JOSBAH DRAWN BY: BYOUNG DATE: 18AUG97

REVISION APPR. BY:

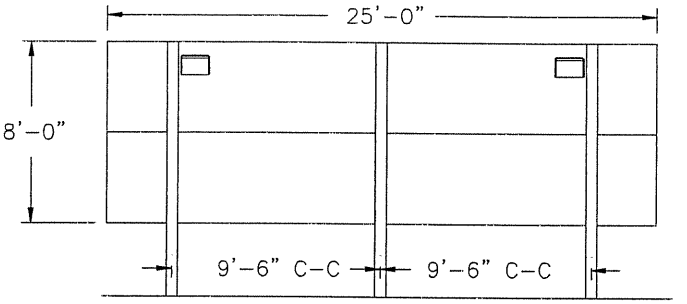
SCALE: 1=100

1091-R08A-84233



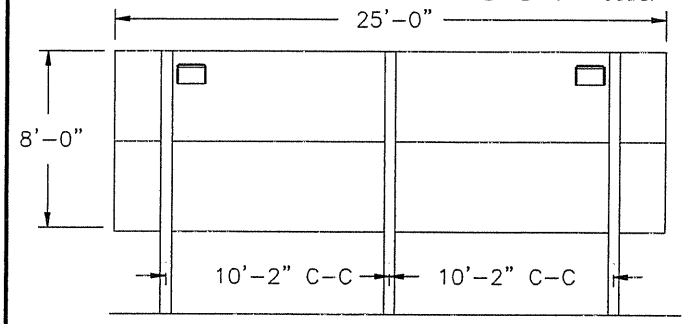
REAR VIEW

MODEL SO-1624 WITH 832-12 TNMC
MODEL FB-1424 WITH 832-12 TNMC
MODEL FB-1524 WITH 832-12 TNMC
MODEL SO-1424 WITH 832-12 TNMC
BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.



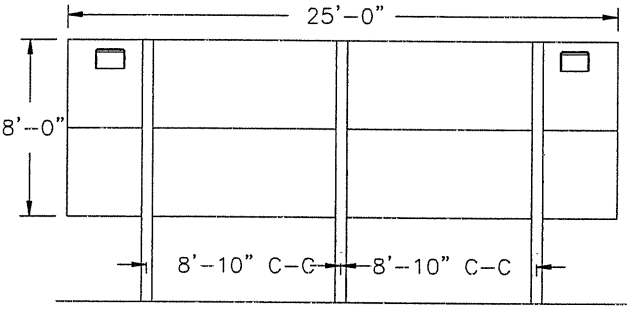
REAR VIEW

MODEL FB-1430 WITH 848-12 TNMC
MODEL FB-1630 WITH 848-12TNMC (9)
MODEL SO-1830 WITH 848-12 TNMC
BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.



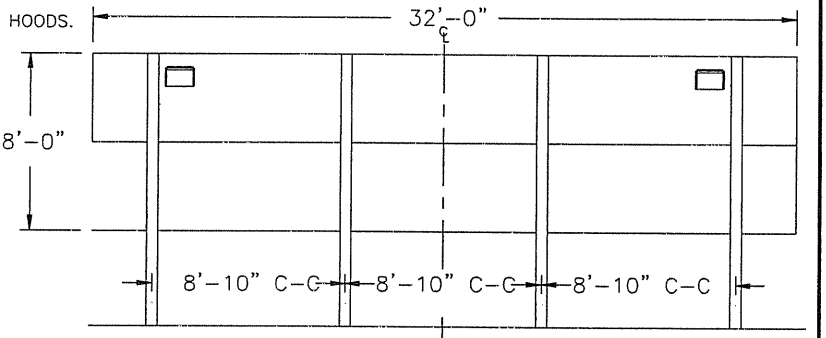
REAR VIEW

MODEL FB-1530 WITH 848-12 TNMC
MODEL FB-1730 WITH 848-12 TNMC
MODEL SO-1930 WTIH 848-12 TNMC
BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.



REAR VIEW

MODEL FB-1830 WITH 832-12 TNMC
BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.



REAR VIEW

MODEL FB-1630L WITH 848-12 TNMC &
MODEL FB-1830L WITH 848-12 TNMC
BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.

REV.	DATE	DESCRIPTION	BY	APPR.
11	24OCT03	CHANGED POLE SPACING ON FB-XX24 AND SO-XX24 MODELS WITH 832-12 TNMC	MCOPL	
10	28MAR00	ADDED FB-1424, SO-1424 WITH 832-12TNMC. ADDED FB-1530, SO-1930 WITH 848-10TNMC.	GBREE	
9	02 SEPT 99	ADDED SO-1630 WITH 848-10TNMC.	JNILSE	
8	26JUL99	ADD SO-1830 W/TNMC	BDP	
7	08DEC98	UPDATED TO SHOP FAN HOODS FOR 1600 SERRIES TNMC FAN HOODS.	BDP	
6	22OCT98	ADDED FB-1730 & FB-1524	BDP	
5	20AUG97	ADDED FB-1830	BDP	
4	14 FEB 97	CORRECTED MODEL NUMBER FB-1430L TO FB-1430.	AVB	AVB
3	05FEB97	ADDED MODEL FB-1830L WITH MODEL FB-1630L	BDP	
2	16 SEPT 96	ADDED MODEL FB-1430L	JEM	
1	16 AUG 96	ADDED REAR VIEW OF SO-1624	BPETER	

DAKTRONICS, INC. BROOKINGS, SD 57006

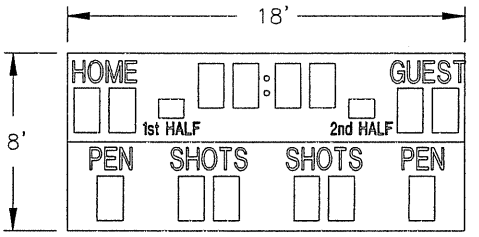
PROJ: FOOTBALL SCOREBOARDS

TITLE: BEAM SPACING; DISPLAYS W/ TNMC

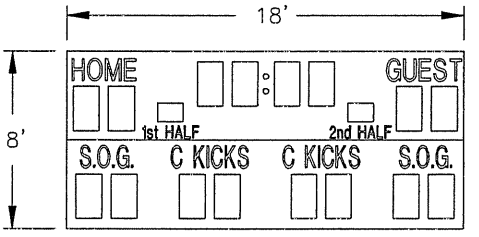
DES. BY: JOSBAH DRAWN BY: JOSBAH DATE: 15 JULY 96

REVISION 11 | APPR. BY: | SCALE: 1 = 100

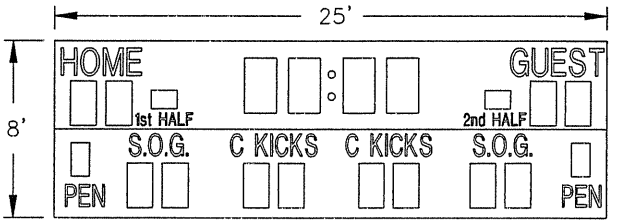
1091-R08A-84292



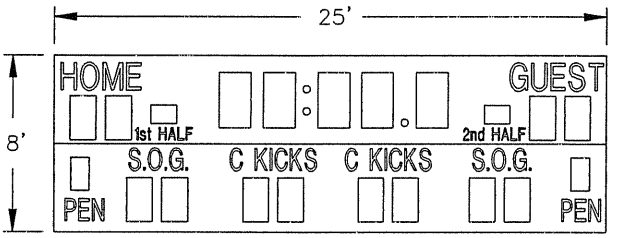
SO-1424



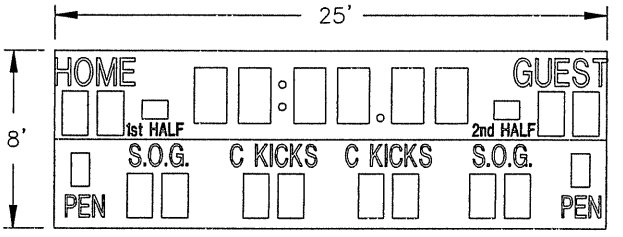
SO-1624
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



SO-1830
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



SO-1930
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



SO-2030
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)

REV.	DATE	DESCRIPTION	BY	APPR.
2	21FEB00	UPDATED CAPTIONS	BDP	
1	29OCT98	REPOSITIONED 1ST HALF AND 2ND HALF ON MODELS SO-1424, 1830, 1930 & 2030; ADDED SAVES CAPTION OPTION TO SO-1624.	TWEBER	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

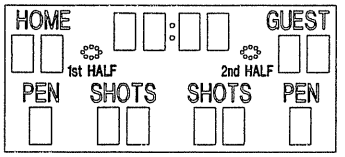
TITLE: MULTIPLE SECTION SOCCER SCBD MODELS

DES. BY: AVB DRAWN BY: MJORDAN DATE: 03 NOV 97

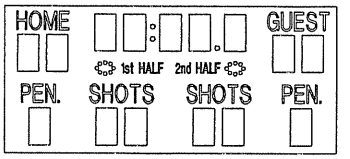
REVISION APPR. BY:

SCALE: 1=100

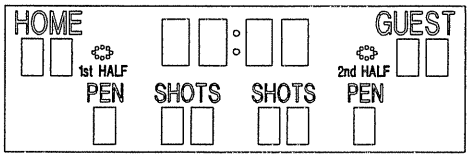
1091-R08A-98161



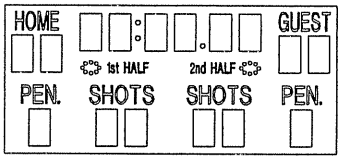
FB-1424



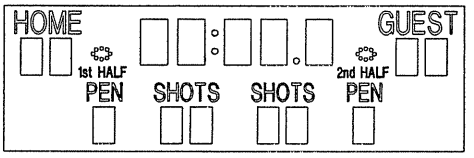
FB-1524



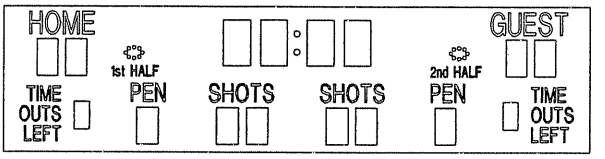
FB-1430



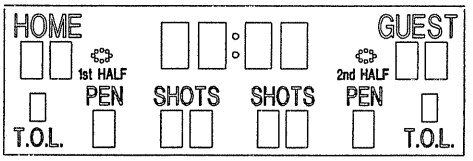
FB-1624



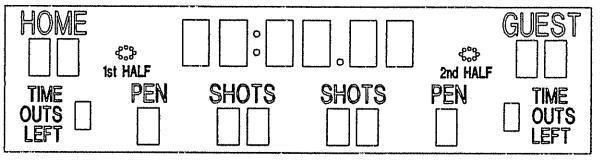
FB-1530



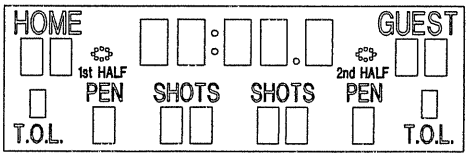
FB--1630L



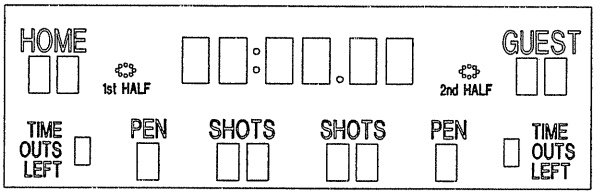
FB-1630 AND FB--2002



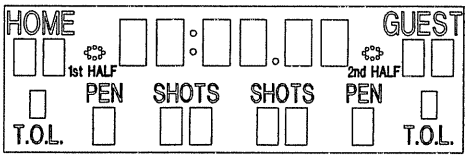
FB-1830L



FB-1730 AND FB-2003



FB-2001



FB-1830

REV.	DATE	DESCRIPTION	BY	APPR.
03	26JULY01	ADDED FB-1524 AND FB-1624	MCOPL	
02	17MAR00	ADDED FB-2002 & FB-2003	GBREE	
01	21FEB00	UPDATED TO CAPTION OPTIONS, SOCCER	BDP	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

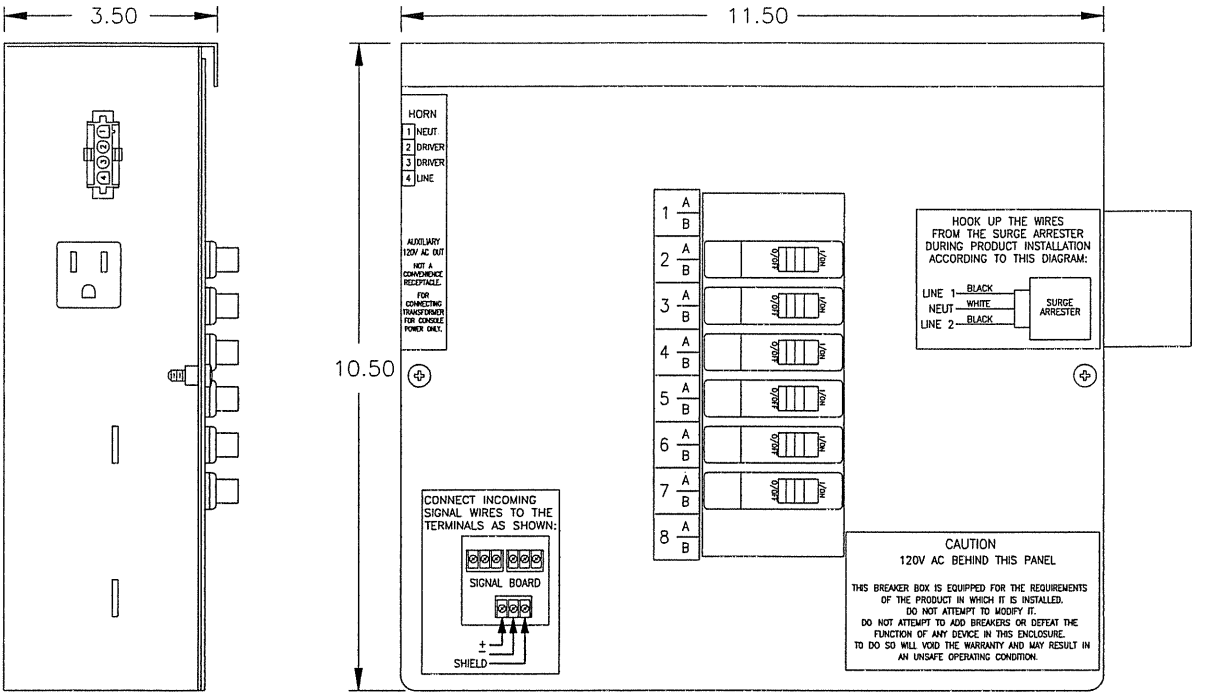
TITLE: CAPTION OPTIONS, SOCCER

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 09APR98

REVISION APPR. BY:

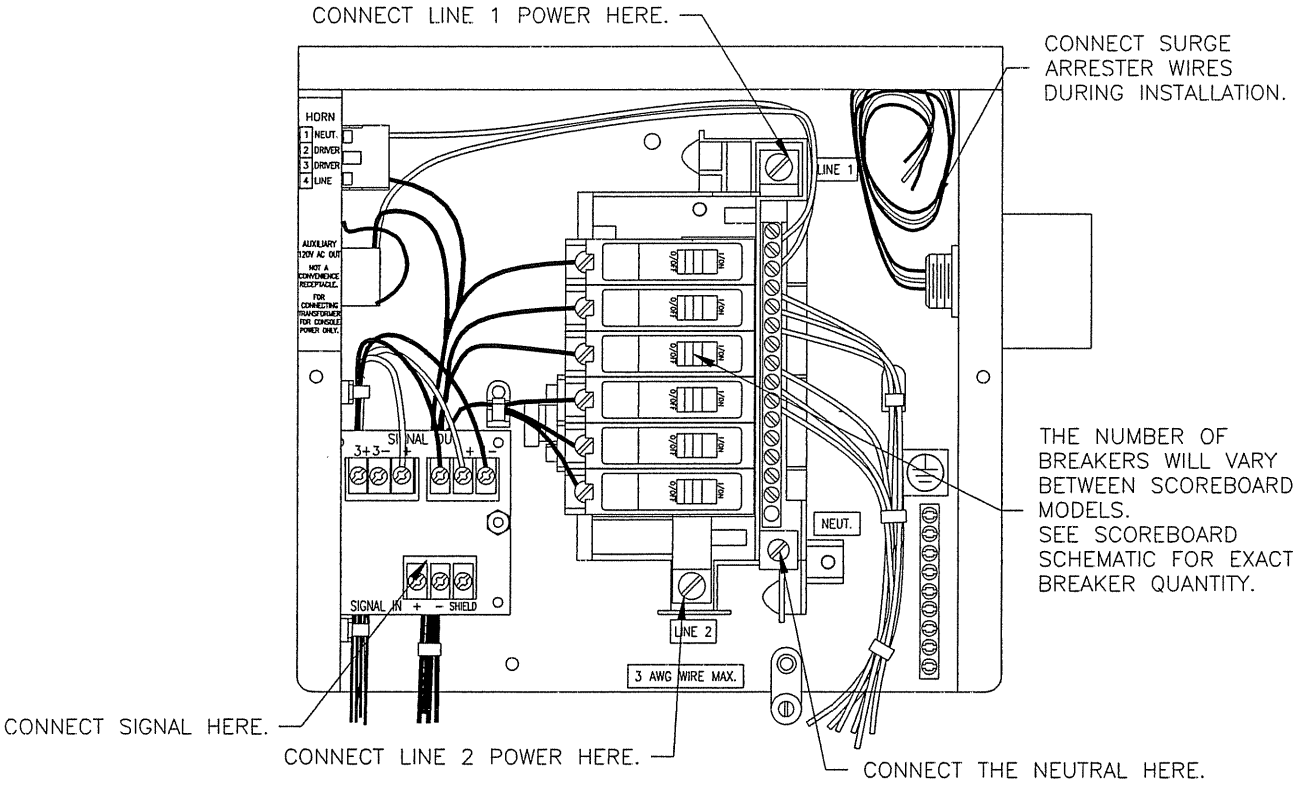
SCALE: 1=120

1091-R08A-101442



LEFT SIDE

FRONT VIEW



FRONT VIEW

(WITH COVER REMOVED)

REV.	DATE	DESCRIPTION	BY	APPR.
02	18JAN01	ADDED TB-1037 AND GROUND LUG AND DECREASED SIZE OF LEFT MOUNTING HOLE	MCOPL	
01	16 OCT 00	REMOVED GROUND LUG AND INCREASED THE SIZE OF THE LOWER MTG HOLES TO 5/16Ø.	JNILSE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

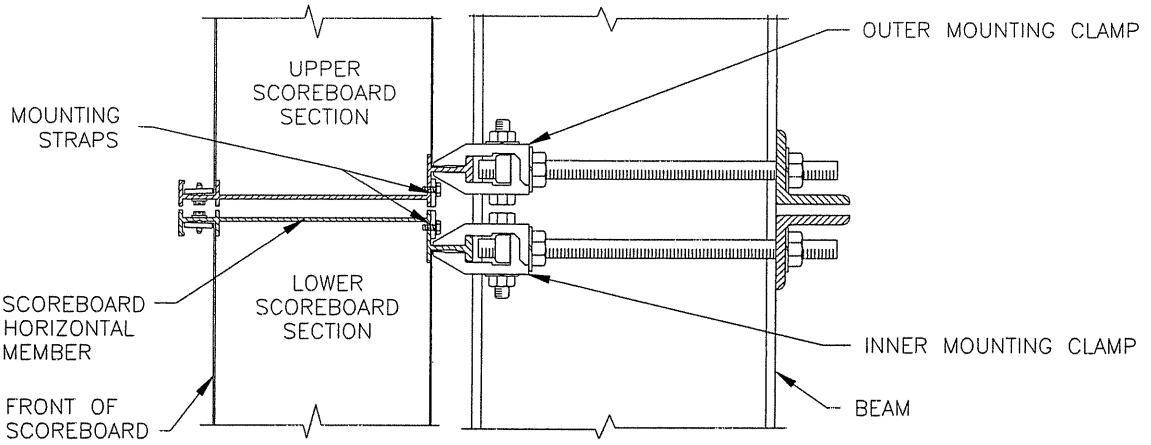
TITLE: COMPONENTS, 8/16 POS POWER AND SIGNAL ENTRANCE

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 16DEC99

REVISION APPR. BY:

SCALE: 1=3

1091-E10A-109114



SIDE VIEW

STRAP INSTALLATION PROCEDURE

AFTER CLAMPING ALL FOUR SECTIONS OF THE BA-3718 SCOREBOARD TO MOUNTING BEAMS, IT IS NECESSARY TO ATTACH THE TWO BOTTOM SECTIONS TO EACH OTHER AND THE TWO TOP SECTIONS TO EACH OTHER.

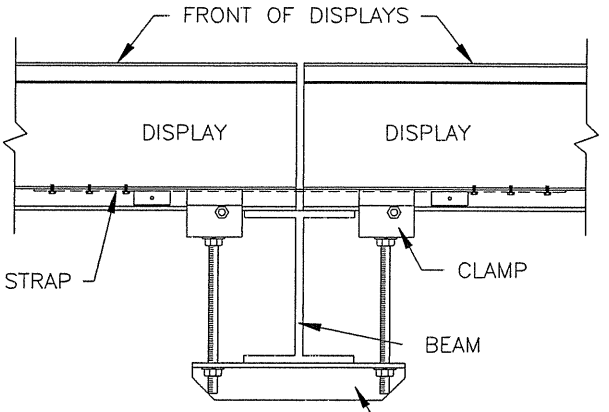
THIS IS ACHIEVED USING FOUR MOUNTING STRAPS (1/8" X 3/4" X 29" LONG) AND #10 HEX HEADED SCREWS.

POSITION THE MOUNTING STRAPS AS SHOWN ON THIS DRAWING AND DRILL 5/32" DIAMETER HOLES IN THE EXTRUSION USING THE HOLES IN THE MOUNTING STRAPS AS GUIDES.

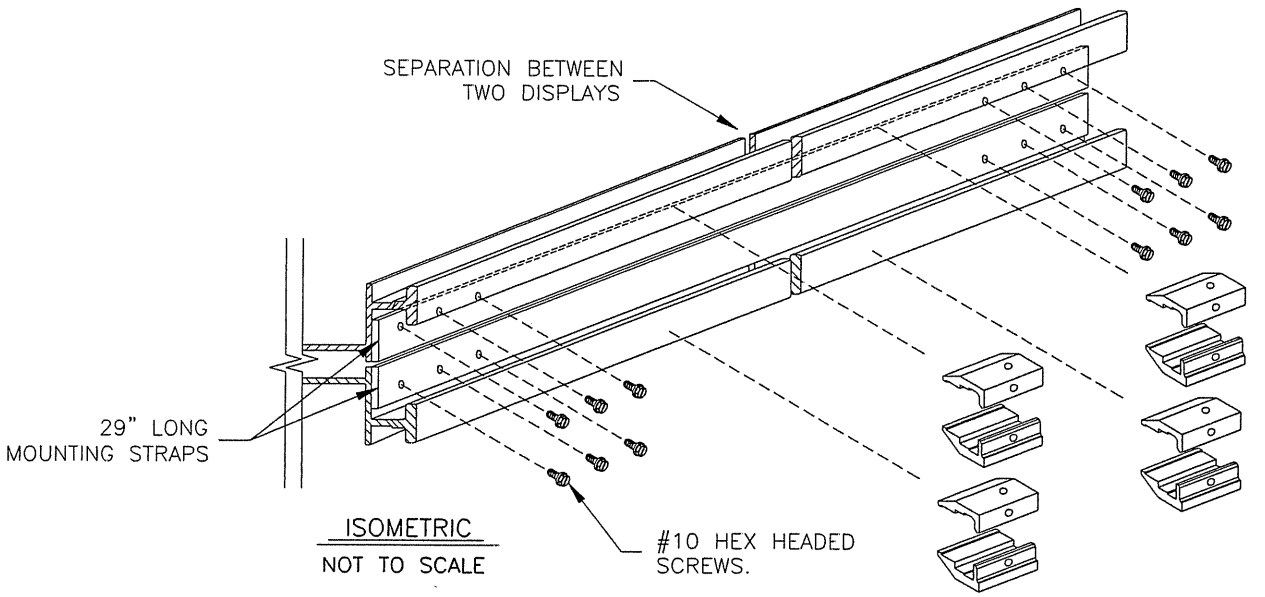
ATTACH SIX SCREWS TO EACH STRAP.

ATTACH ONE STRAP TO THE TOP & BOTTOM OF EACH LEFT & RIGHT SECTION.

FAILURE TO ATTACH THE MOUNTING STRAPS TO THESE DISPLAY SECTIONS VOIDS ALL WARRANTY.



TOP VIEW
1=10



ISOMETRIC
NOT TO SCALE

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

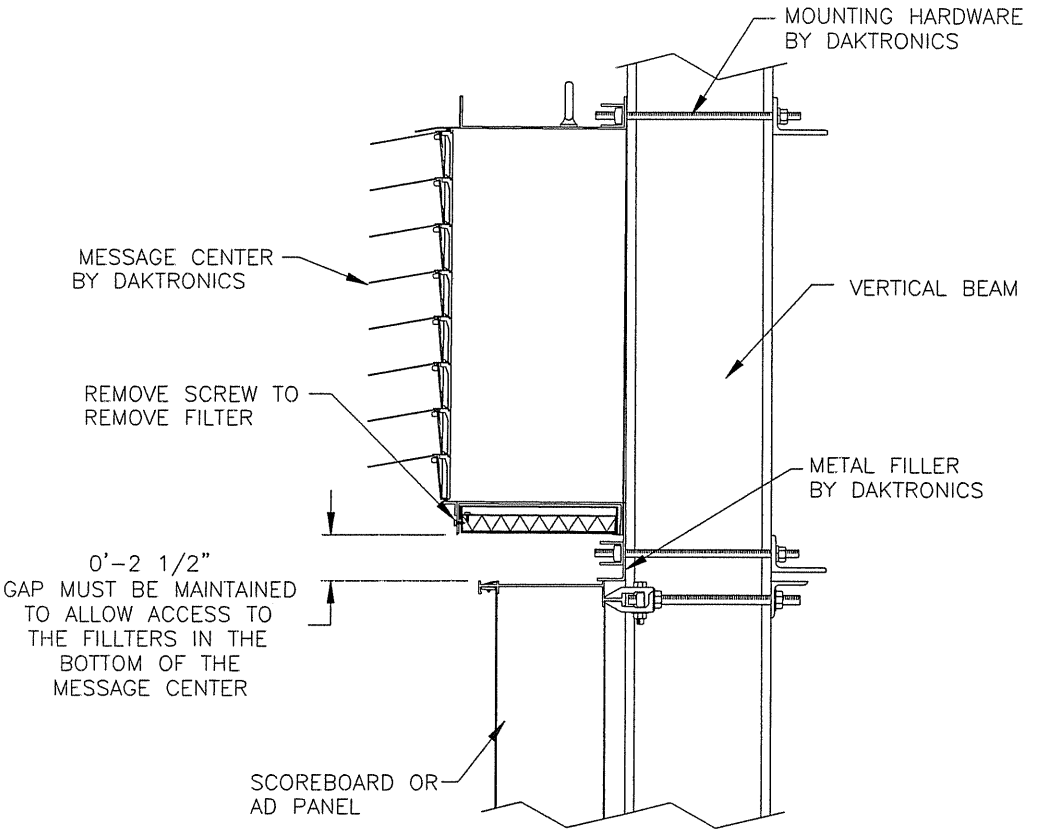
TITLE: DISPLAY MOUNTING STRAPS, BA-3718

DES. BY: TWEBER DRAWN BY: PLACHER DATE: 09APR99

REVISION APPR. BY:

SCALE: 1=5

1091-E10A-114415



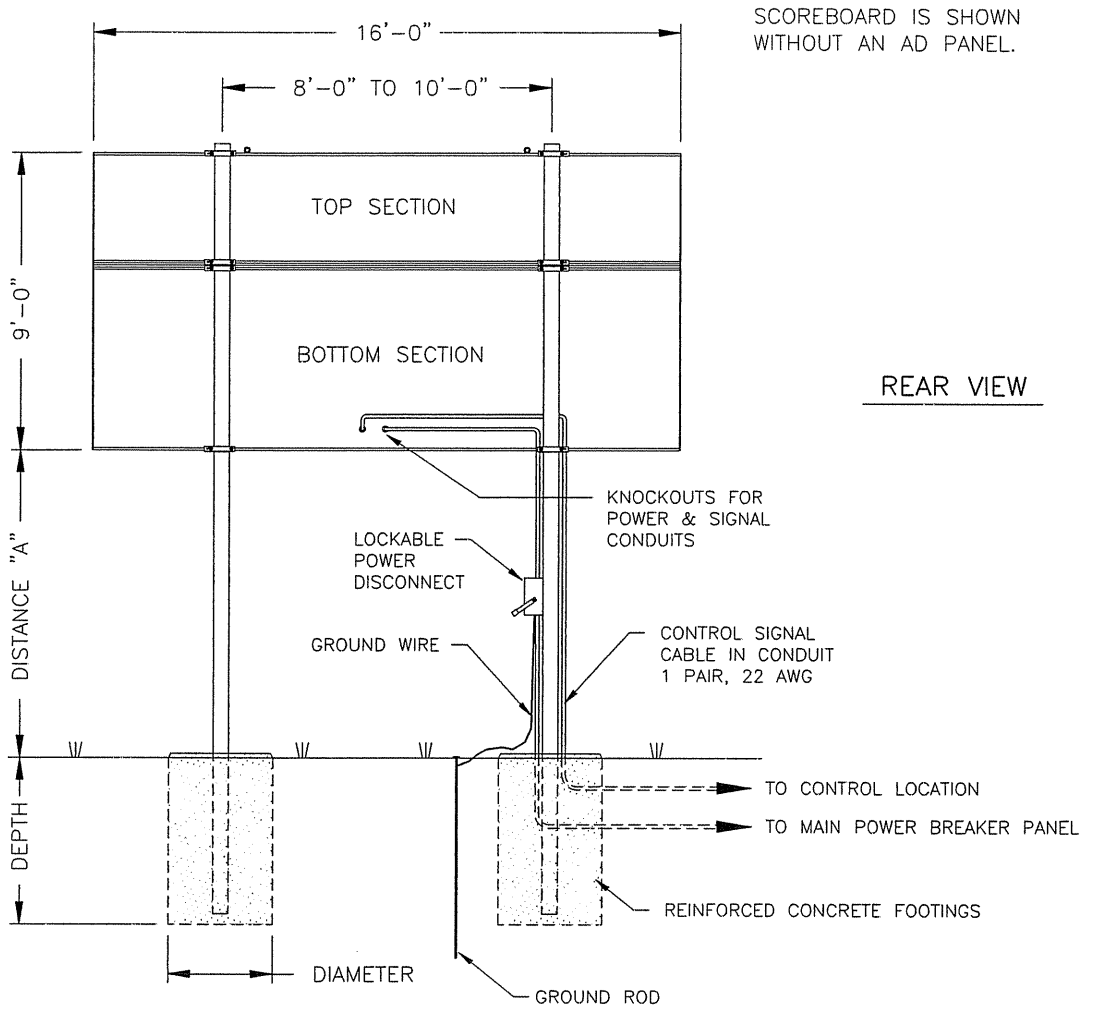
SIDE VIEW

AN 1/8" THICK METAL FILLER HAS BEEN ATTACHED BELOW THE 2 1/2" MESSAGE CENTER TO MAINTAIN A 2 1/2" GAP ABOVE ANY SCOREBOARD OR AD PANEL THAT IT MAY BE MOUNTED ABOVE. IF THE GAP IS NOT MAINTAINED, THE FILTER WILL NOT BE ACCESSIBLE.

IF THE BOLT HEADS WHICH ATTACH THE METAL FILLER TO THE BOTTOM OF THE MESSAGE CENTER INTERFERE WITH THE MOUNTING OF THE MESSAGE CENTER, NEW 9/16" HOLES MAY BE DRILLED AND THE BOLTS MOVED SOMEWHERE ELSE ALONE THE METAL FILLER.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR SCOREBOARD			
TITLE: MOUNTING DETAIL; 2 1/2" MATRIX			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 28JUL99	
REVISION	APPR. BY:		1157-E10A-115882
	SCALE: 1=10		



SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.

REAR VIEW

MODEL BA-1524 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	16'-0" x 9'-0"	BEAM *FOOTING*	W8x28 *4.0' x 5.1'*	W8x31 *4.0' x 5.6'*	W10x39 *4.0' x 6.7'*
12'-0"	16'-0" x 9'-0"	BEAM *FOOTING*	W8x31 *4.0' x 5.4'*	W8x35 *4.0' x 5.9'*	W12x45 *4.0' x 6.9'*
14'-0"	16'-0" x 9'-0"	BEAM *FOOTING*	W8x35 *4.0' x 5.6'*	W10x39 *4.0' x 6.2'*	W8x48 *4.0' x 7.3'*

MODEL BA-1524 WITH 30"-HIGH AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	16'-0" x 11'-6"	BEAM *FOOTING*	W8x35 *4.0' x 5.7'*	W10x39 *4.0' x 6.3'*	W8x48 *4.0' x 7.4'*
12'-0"	16'-0" x 11'-6"	BEAM *FOOTING*	W10x39 *4.0' x 6.0'*	W12x45 *4.0' x 6.6'*	W12x53 *4.0' x 7.7'*
14'-0"	16'-0" x 11'-6"	BEAM *FOOTING*	W12x45 *4.0' x 6.2'*	W8x48 *4.0' x 6.9'*	W10x60 *4.0' x 8.1'*

FOOTING = DIAMETER X DEPTH

FOOTING DIMENSIONS ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.

FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT ^{2}

ACTUAL FOOTING DEPTH AND DIAMETER FOR A PARTICULAR INSTALLATION MUST BE DETERMINED BY A QUALIFIED STRUCTURAL ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

DAKTRONICS, INC. IS NOT RESPONSIBLE FOR STRUCTURES DESIGNED AND INSTALLED BY OTHERS.

REV.	DATE	DESCRIPTION	BY	APPR.
2	15AUG01	CORRECTED VERTICAL DIMENSION OF SCBD FROM 8'-0" TO 9'-0".	KJB	
1	20DEC00	REVISED COLUMN SECTIONS & FOOTINGS	MVD	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

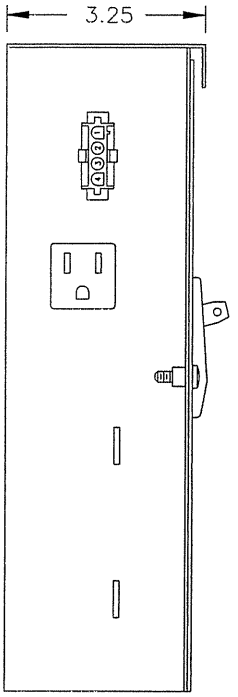
TITLE: INSTALLATION SPECIFICATIONS, BA-1524

DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 26 AUG 99

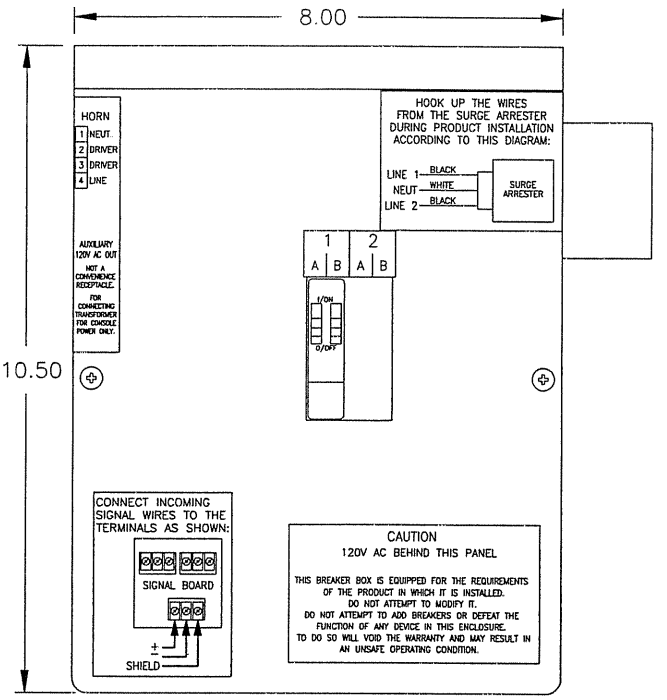
REVISION APPR. BY:

SCALE: 1=60

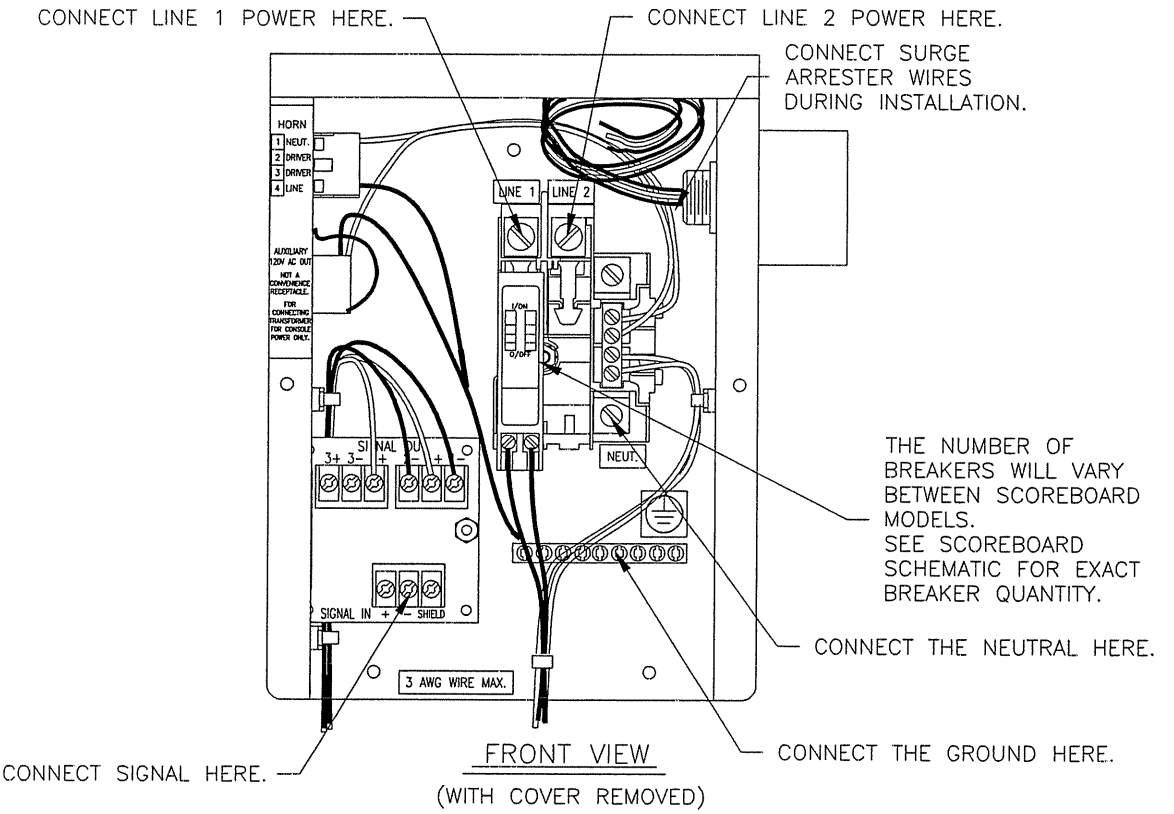
1091-R10A-120972



LEFT SIDE



FRONT VIEW



FRONT VIEW
(WITH COVER REMOVED)

REV.	DATE	DESCRIPTION	BY	APPR.
01	17JAN01	ADDED TB-1037 AND REMOVED GROUND LUG	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

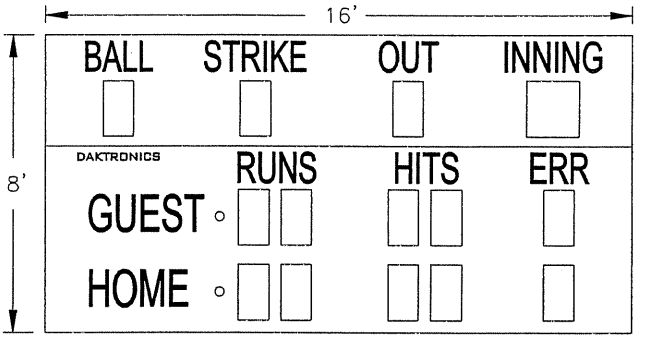
TITLE: COMPONENTS, 2/4 POS, POWER AND SIGNAL ENTRANCE

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 04JAN00

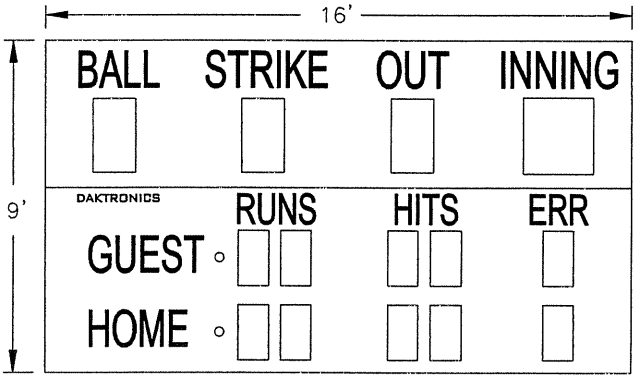
REVISION APPR. BY:

SCALE: 1=3

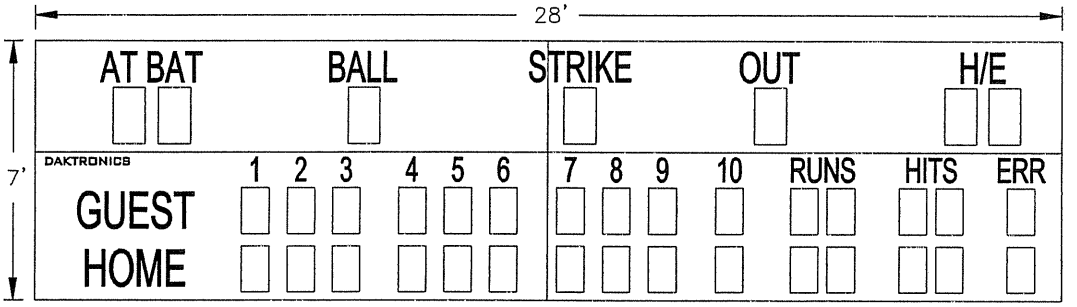
1091-E10A-125977



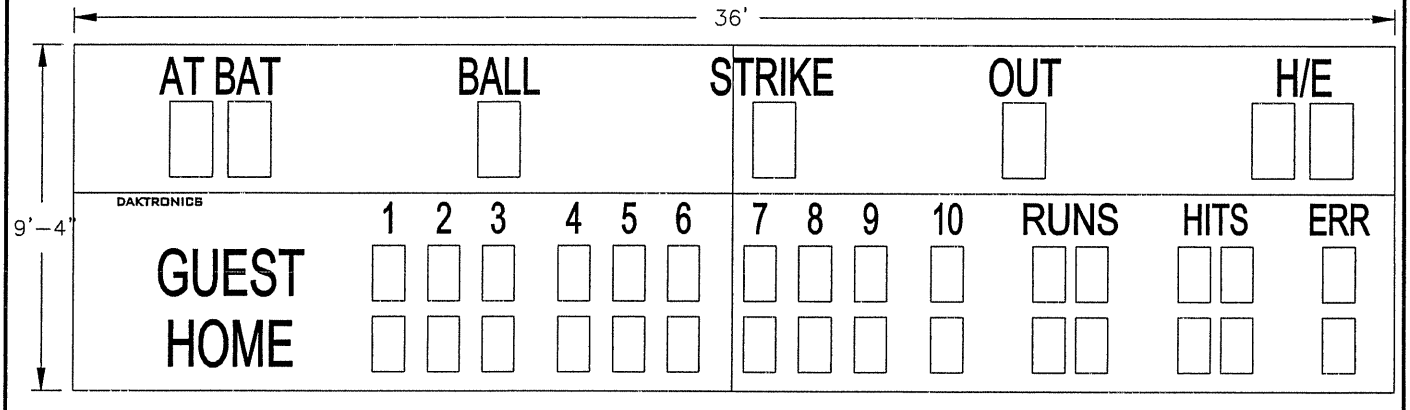
BA-1518



BA-1524



BA-3718



BA-3724

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

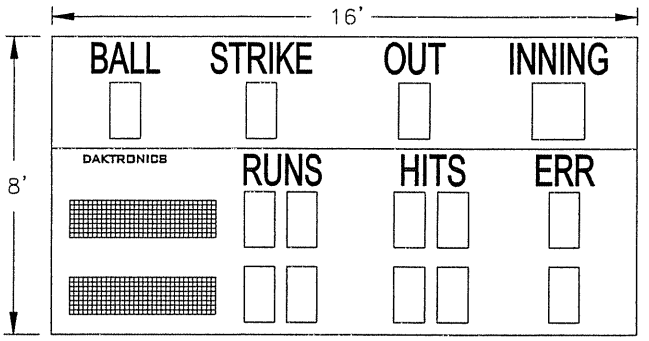
TITLE: MULTIPLE SECTION BASEBALL SCOREBOARD MODELS

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 09DEC99

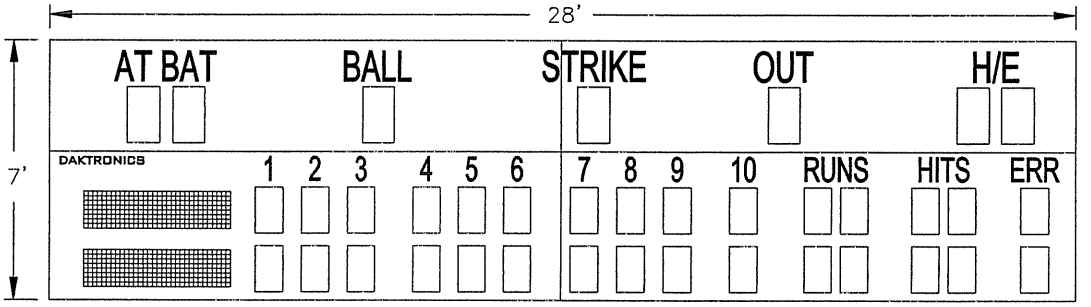
REVISION APPR. BY:

SCALE: 1=50

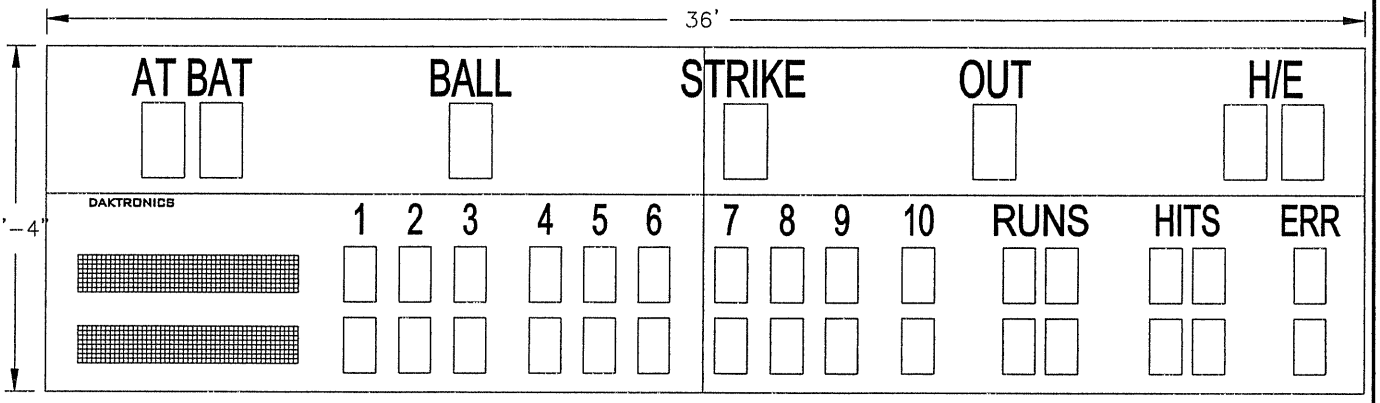
1091-E10A-126086



BA-1518 WITH 832-12 TNMC



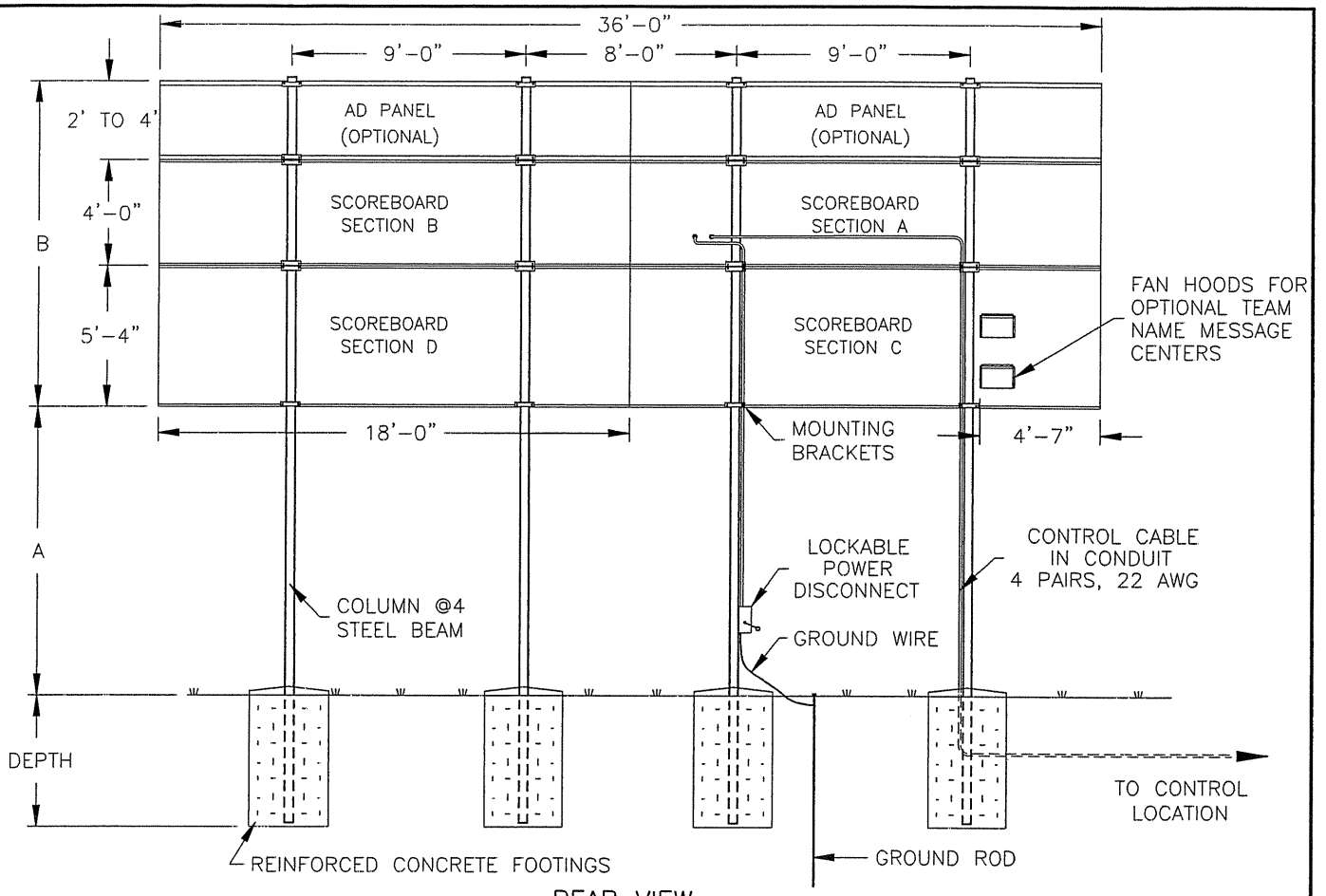
BA-3718 WITH 832-12 TNMC



BA-3724 WITH 848-12 TNMC

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS		
TITLE: MULTIPLE SECTION BASEBALL SCBD MODELS W/TNMC		
DES. BY: BPETERSON	DRAWN BY: BPETERSON	DATE: 09DEC99
REVISION	APPR. BY:	1091-E10A-126362
	SCALE: 1=50	



REAR VIEW

BA-3724

ELECTRICAL

POWER CABLE MUST HAVE A SEPERATE GROUND CONDUCTOR. SCOREBOARD MUST BE CONNECTED TO A GROUND ROD AT SCOREBOARD LOCATION.

FOOTING DIMENSIONS ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS, AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.

COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

MODEL BA-3724

VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY 70 MPH	80 MPH	100 MPH
10 FT	NONE	9'-4"	BEAM	W8x31	W10x33	W8x40
			FOOTING	3.5'x5.6'	3.5'x6.2'	3.5'x7.3'
	2 FT	11'-4"	BEAM	W8x35	W10x39	W8x48
			FOOTING	3.5'x6.1'	3.5'x6.7'	3.5'x8.0'
	4 FT	13'-4"	BEAM	W8x40	W8x48	W12x58
			FOOTING	3.5'x6.6'	3.5'x7.3'	3.5'x8.6'
14 FT	NONE	9'-4"	BEAM	W10x39	W12x45	W10x49
			FOOTING	3.5'x6.1'	3.5'x6.7'	3.5'x7.9'
	2 FT	11'-4"	BEAM	W12x45	W8x48	W10x60
			FOOTING	3.5'x6.6'	3.5'x7.3'	3.5'x8.6'
	4 FT	13'-4"	BEAM	W10x49	W12x58	W10x68
			FOOTING	3.5'x7.1'	3.5'x7.8'	3.5'x9.2'
18 FT	NONE	9'-4"	BEAM	W10x49	W10x54	W10x68
			FOOTING	3.5'x7.1'	3.5'x7.8'	3.5'x9.2'
	2 FT	11'-4"	BEAM	W12x58	W12x65	W12x79
			FOOTING	3.5'x7.6'	3.5'x8.4'	3.5'x9.9'
	4 FT	13'-4"	BEAM	W12x65	W12x72	W14x90
			FOOTING	3.5'x8.1'	3.5'x8.9'	3.5'x10.5'

FOOTING = DIAMETER X DEPTH

A NOTE ABOUT BEAM NOMENCLATURE:

For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 5 to 10 inches in this chart.

REV.	DATE	DESCRIPTION	BY	APPR.
1	12DEC00	REVISED BEAM SECTIONS & FOOTINGS.	MVD	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

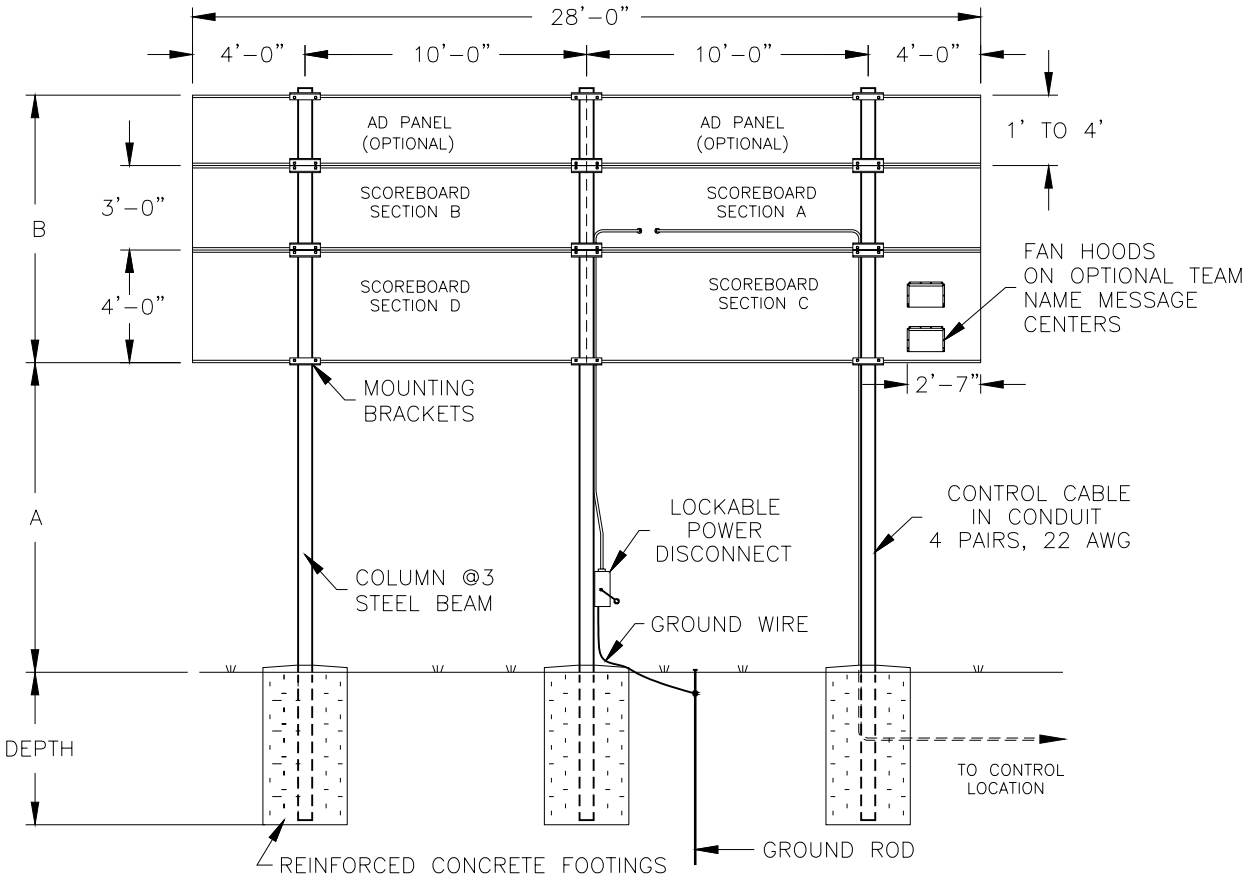
TITLE: INSTALLATION SPECIFICATIONS, BA-3724

DES. BY: BPETERSON DRAWN BY: MVANDYK DATE: 12JAN00

REVISION APPR. BY:

SCALE: 1=80

1091-R10A-126445



REAR VIEW
BA-3718

ELECTRICAL

POWER CABLE MUST HAVE A SEPERATE GROUND CONDUCTOR. SCOREBOARD MUST BE CONNECTED TO A GROUND ROD AT SCOREBOARD LOCATION.

FOOTING DIMENSIONS ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS, AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.

COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

MODEL BA-3718

VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY 70 MPH	80 MPH	100 MPH
10 FT	NONE	7 FT	BEAM	W8x24	W8x28	W8x35
			FOOTING	*3'x5.5'*	*3'x6.1'*	*3'x7.2'*
	2 FT	9 FT	BEAM	W8x31	W8x35	W12x45
			FOOTING	*3'x6.2'*	*3'x6.8'*	*3'x8.0'*
	4 FT	11 FT	BEAM	W8x35	W8x40	W10x49
			FOOTING	*3'x6.8'*	*3'x7.5'*	*3'x8.8'*
14 FT	NONE	7 FT	BEAM	W8x31	W8x35	W10x45
			FOOTING	*3'x6.1'*	*3'x6.7'*	*3'x7.9'*
	2 FT	9 FT	BEAM	W10x39	W12x45	W12x53
			FOOTING	*3'x6.7'*	*3'x7.4'*	*3'x8.8'*
	4 FT	11 FT	BEAM	W10x45	W10x49	W12x65
			FOOTING	*3'x7.3'*	*3'x8.0'*	*3'x9.5'*
18 FT	NONE	7 FT	BEAM	W10x39	W10x45	W10x54
			FOOTING	*3'x6.5'*	*3'x7.2'*	*3'x8.4'*
	2 FT	9 FT	BEAM	W8x48	W12x53	W12x65
			FOOTING	*3'x7.2'*	*3'x8.0'*	*3'x9.4'*
	4 FT	11 FT	BEAM	W10x54	W10x60	W10x77
			FOOTING	*3'x7.8'*	*3'x8.6'*	*3'x10.1'*

FOOTING = DIAMETER X DEPTH

A NOTE ABOUT BEAM NOMENCLATURE:

For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 4 to 8 inches in this chart.

REV.	DATE	DESCRIPTION	BY	APPR.
1	17JUL00	REVISED BEAM SECTIONS & FOOTINGS.	MVD	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

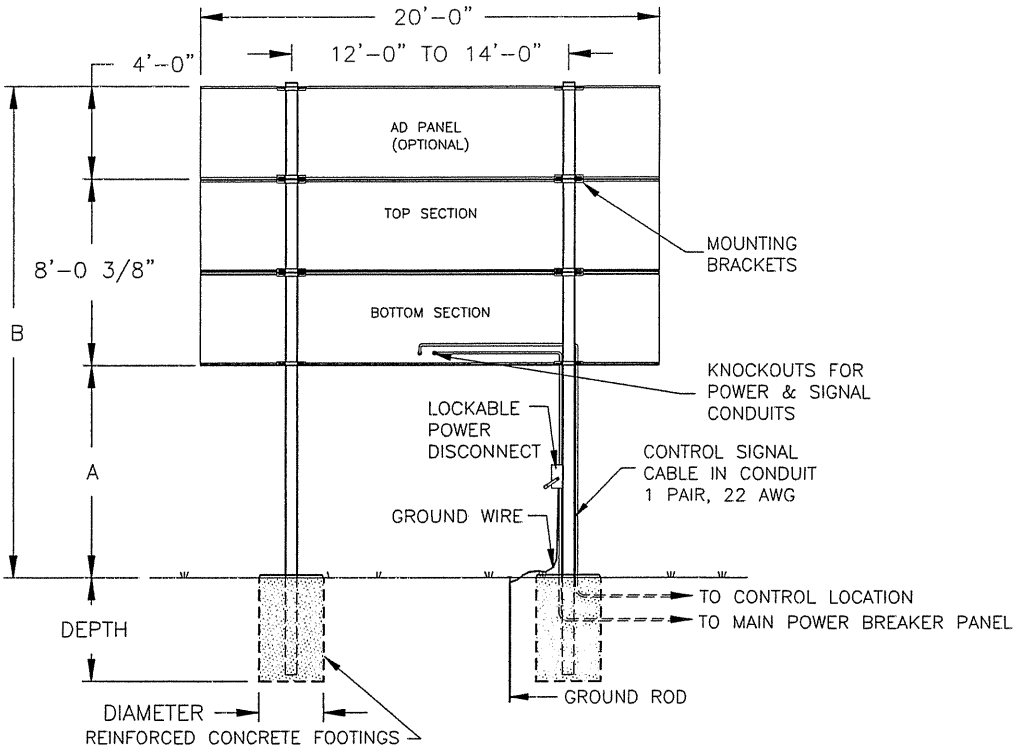
TITLE: INSTALLATION SPECIFICATIONS, BA-3718

DES. BY: BPETERSON DRAWN BY: MVANDYK DATE: 12JAN00

REVISION APPR. BY:

SCALE: 1=80

1091-R10A-126455



REAR VIEW

FB-2002 & FB-2003

ELECTRICAL

POWER CABLE MUST HAVE A SEPERATE GROUND CONDUCTOR. SCOREBOARD MUST BE CONNECTED TO A GROUND ROD AT SCOREBOARD LOCATION.

FB-2002 & FB-2003

VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY 70 MPH	80 MPH	90 MPH	100 MPH
10 FT	NONE	18'-0"	BEAM	W8x28	W8x31	W8x35	W10x39
			FOOTING	*3.0'x5.8'*	*3.0'x6.4'*	*3.0'x7.0*	*3.0'x7.6'*
	4 FT	22'-0"	BEAM	W10x39	W10x45	W10x49	W10x54
			FOOTING	*3.0'x7.0'*	*3.0'x7.8'*	*3.0'x8.5'*	*3.0'x9.2'*
12 FT	NONE	20'-0"	BEAM	W8x31	W8x35	W10x39	W12x45
			FOOTING	*3.0'x6.1'*	*3.0'x6.7'*	*3.0'x7.7'*	*3.0'x7.9'*
	4 FT	24'-0"	BEAM	W10x45	W10x49	10x54	W10x60
			FOOTING	*3.0'x7.3'*	*3.0'x8.1'*	*3.0'x8.8'*	*3.0'x9.5'*
14 FT	NONE	22'-0"	BEAM	W8x35	W8x40	W10x45	W8x48
			FOOTING	*3.0'x6.4*	*3.0'x7.0'*	*3.0'x7.7'*	*3.0'x8.3'*
	4 FT	26'-0"	BEAM	W8x48	W10x54	W10x60	W10x68
			FOOTING	*3.0'x7.6'*	*3.0'x8.4'*	*3.0'x9.2'*	*3.0'x9.9'*
16 FT	NONE	24'-0"	BEAM	W10x39	W10x45	W10x49	W10x54
			FOOTING	*3.0'x6.7'*	*3.0'x7.3'*	*3.0'x8.0'*	*3.0'x8.6'*
	4 FT	28'-0"	BEAM	W12x53	W10x60	W12x65	W10x77
			FOOTING	*3.0'x7.9'*	*3.0'x8.7'*	*3.0'x9.5'*	*3.0'x10.2'*
18FT	NONE	26'-0"	BEAM	W12x45	W8x48	W10x54	W10x60
			FOOTING	*3.0'x6.9'*	*3.0'x7.6'*	*3.0'x8.2'*	*3.0'x8.9'*
	4 FT	30'-0"	BEAM	W12x58	W12x65	W12x72	W12x87
			FOOTING	*3.0'x8.1'*	*3.0'x8.9'*	*3.0'x9.7'*	*3.0'x10.5'*
20 FT	NONE	28'-0"	BEAM	W8x48	W12x53	W10x60	W12x65
			FOOTING	*3.0'x7.1'*	*3.0'x7.8'*	*3.0'x8.5'*	*3.0'x9.2'*
	4 FT	32'-0"	BEAM	W12x65	W12x72	W12x79	W14x90
			FOOTING	*3.0'x8.4'*	*3.0'x9.2'*	*3.0'x10.1'*	*3.0'x10.9'*

FOOTING = DIAMETER X DEPTH

FOOTING DIMENSIONS ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS, AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.

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A NOTE ABOUT BEAM NOMENCLATURE:

For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 8 to 14 inches in this chart.

REV.	DATE	DESCRIPTION	BY	APPR.
01	06AUG01	REMOVED CONDUIT TO TOP SECTION	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

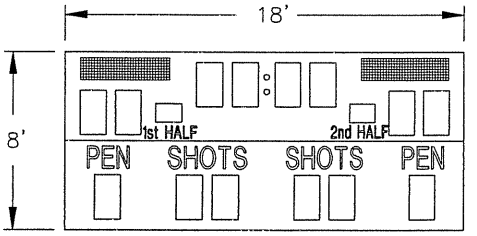
PROJ: OUTDOOR INCANCESCENT SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, FB-2002 & FB-2003

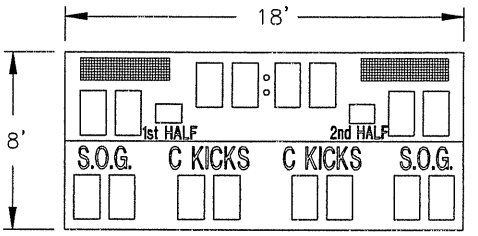
DES. BY: MVANDYK DRAWN BY: MVANDYK DATE: 15JAN01

REVISION APPR. BY: SCALE: 1/8"=1'

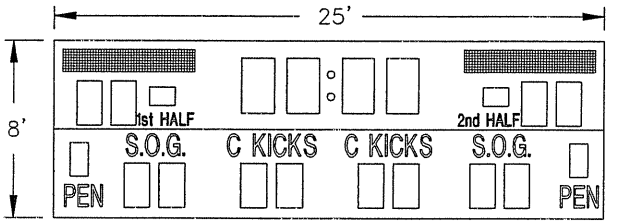
1091-E10A-128044



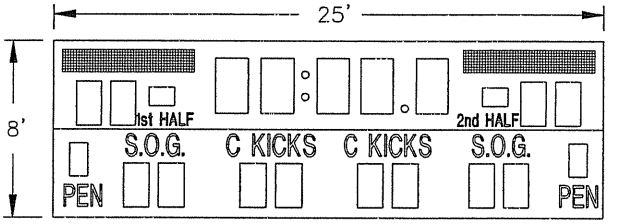
MODEL SO-1424 WITH 832-12 TNMC



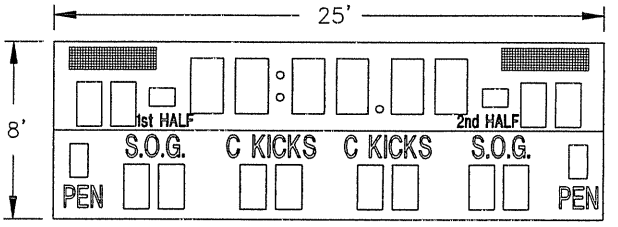
SO-1624 WITH 832-12 TNMC
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



SO-1830 WITH 848-12 TNMC
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



SO-1930 WITH 848-12 TNMC
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



SO-2030 WITH 832-12 TNMC
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)

REV.	DATE	DESCRIPTION	BY	APPR.
01	13MAR03	ADDED MODEL SO-2030	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

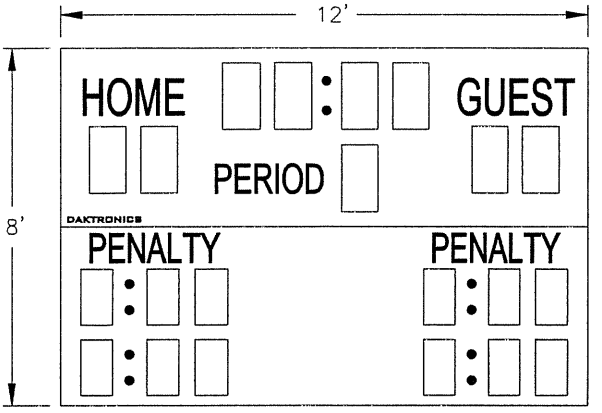
TITLE: MULTIPLE SECTION SOCCER SCBD MODELS W/TNMC

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 21FEB00

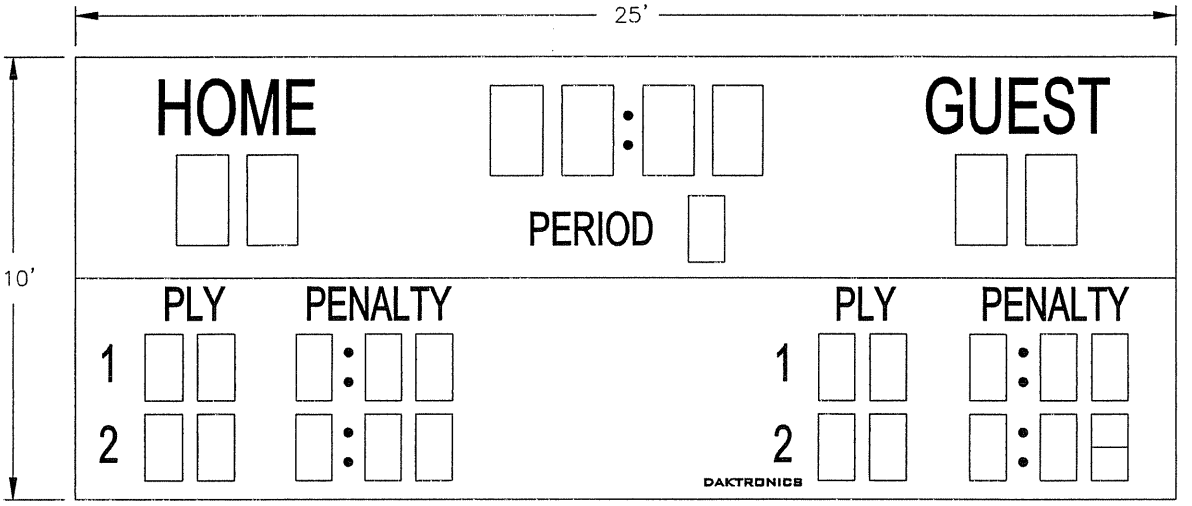
REVISION 01 APPR. BY:

SCALE: 1=100

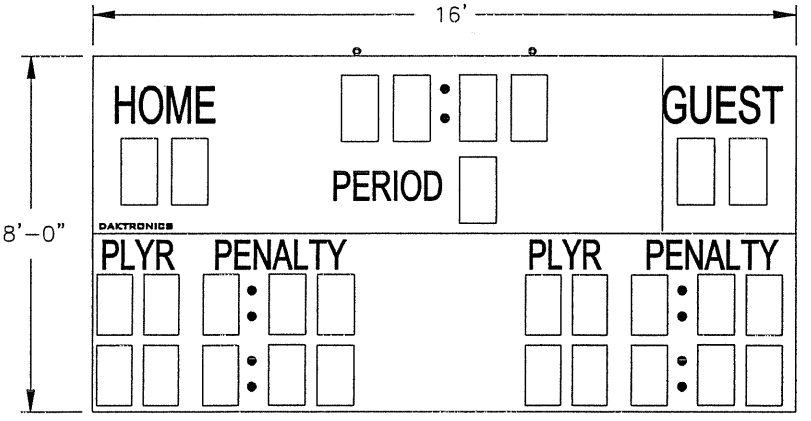
1091-E10A-128172



MS-2118



MS-2009



MS-2918

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: MULTIPLE SECTION MULTISPORT SCBD MODELS

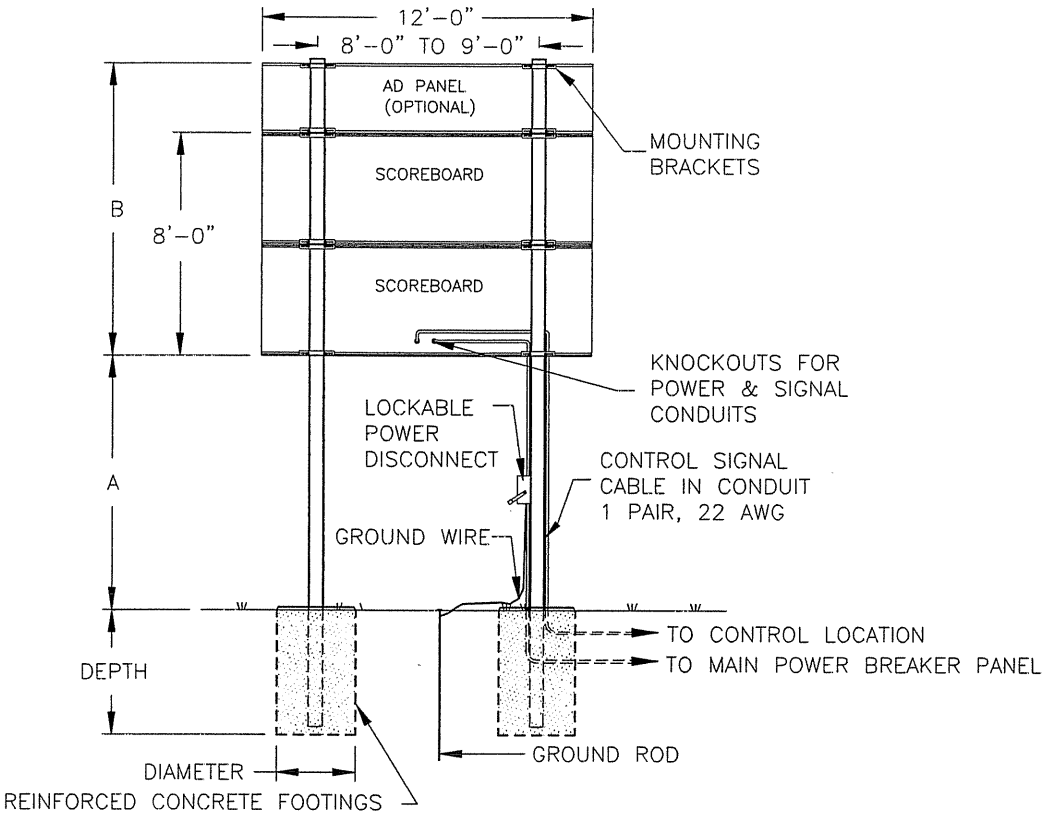
DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 22FEB00

REVISION APPR. BY:

SCALE: 1=50

1091-E10A-128203

REV.	DATE	DESCRIPTION	BY	APPR.
02	13AUG02	ADDED MODEL MS-2918	MCOPL	
1	22FEB01	ADDED MODEL MS-2009	TWEBER	



ELECTRICAL

POWER CABLE MUST HAVE A SEPERATE GROUND CONDUCTOR. SCOREBOARD MUST BE CONNECTED TO A GROUND ROD AT SCOREBOARD LOCATION.

REAR VIEW

MS-2118

MODEL MS-2118						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	8'-0"	BEAM	W8x24	W8x24	W8x31
			FOOTING	3.0'x4.9'	3.0'x5.4'	3.0'x6.4'
	2 FT	10'-0"	BEAM	W8x28	W8x31	W8x35
			FOOTING	3.0'x5.4'	3.0'x5.9'	3.0'x7.0'
	4 FT	12'-0"	BEAM	W8x31	W8x35	W12x45
			FOOTING	3.0'x5.9'	3.0'x6.5'	3.0'x7.6'
12 FT	NONE	8'-0"	BEAM	W8x24	W8x28	W8x35
			FOOTING	3.0'x5.1'	3.0'x5.6'	3.0'x6.6'
	2 FT	10'-0"	BEAM	W8x31	W8x35	W12x45
			FOOTING	3.0'x5.7'	3.0'x6.2'	3.0'x7.3'
	4 FT	12'-0"	BEAM	W8x35	W10x39	W8x48
			FOOTING	3.0'x6.1'	3.0'x6.7'	3.0'x7.9'
14 FT	NONE	8'-0"	BEAM	W8x28	W8x31	W10x39
			FOOTING	3.0'x5.4'	3.0'x5.9'	3.0'x7.0'
	2 FT	10'-0"	BEAM	W10x33	W10x39	W8x48
			FOOTING	3.0'x5.9'	3.0'x6.5'	3.0'x7.6'
	4 FT	12'-0"	BEAM	W10x39	W10x45	W12x53
			FOOTING	3.0'x6.4'	3.0'x7.0'	3.0'x8.3'

FOOTING = DIAMETER X DEPTH

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A NOTE ABOUT BEAM NOMENCLATURE:

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REV.	DATE	DESCRIPTION	BY	APPR.
1	21DEC00	REVISED COLUMN SECTIONS & FOOTINGS	MVD	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

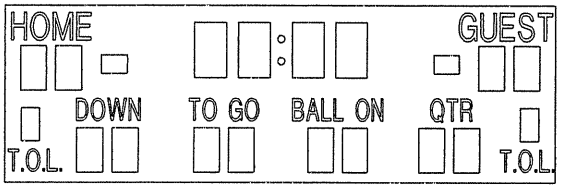
TITLE: INSTALLATION SPECIFICATIONS, MS-2118

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 22FEB00

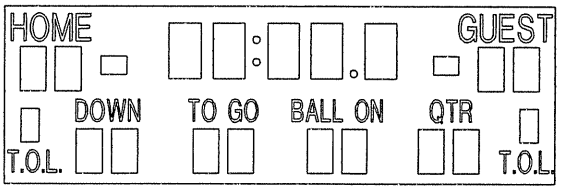
REVISION APPR. BY:

SCALE: 1=80

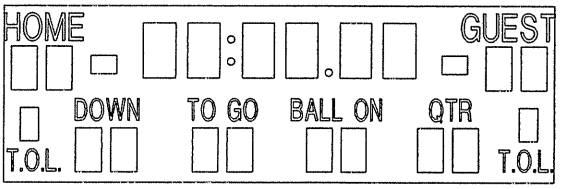
1091-R10A-128206



SO-1830



SO-1930



SO--2030

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

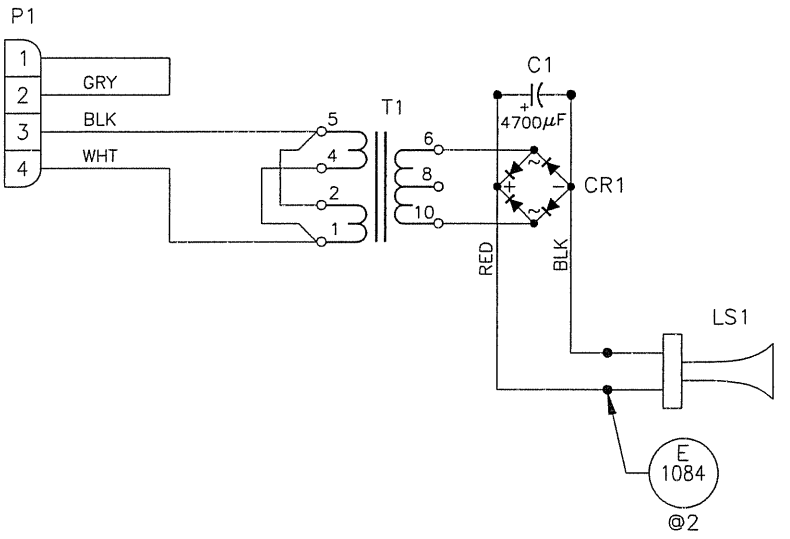
TITLE: CAPTION OPTIONS, FOOTBALL

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 23FEB00

REVISION | APPR. BY:

SCALE: 1=100

1091-R08A-128281



0A-1091-1214

NOTE: THIS ASSEMBLY DOES NOT INCLUDE THE HORN. IT IS ONLY SHOWN FOR PROPER CONNECTION.

REV.	DATE	DESCRIPTION	BY	APPR.
01	18 MAY 01	PART NUMBER WAS CHANGED FROM -1213 TO -1214.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

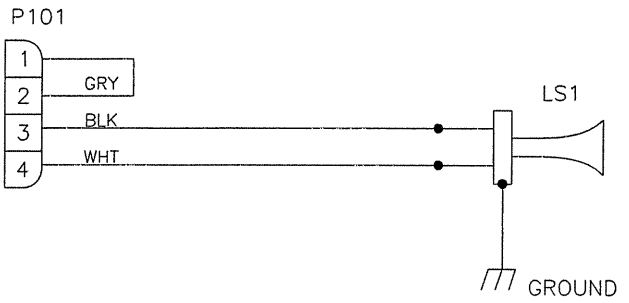
PROJ: STANDARD SCOREBOARDS

TITLE: SCHEMATIC, OUTDOOR SCBD 12VDC TRUMPET HORN, AS5K

DES. BY: DRAWN BY: JCM DATE: 06MAR00

REVISION 01 | APPR. BY: | SCALE: NONE

1091-R03A-128938



0A-1091-0470

REV.	DATE	DESCRIPTION	BY	APPR.
1	07SEP00	ADDED GND WIRE TO ASSEMBLY	CMC	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: STANDARD OUTDOOR SCOREBOARDS

TITLE: SCHEMATIC; 120VAC TRUMPET HORN

DES. BY: DRAWN BY: RASMUS DATE: 16MAY00

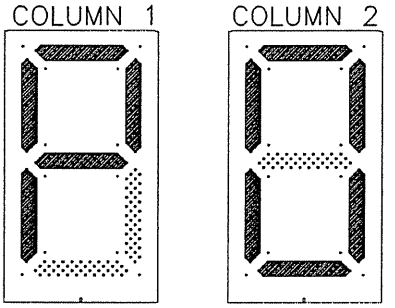
REVISION 01 | APPR. BY: | SCALE: 1=1

1091-R03A-132173

1ST CYCLE OF SELF TEST PATTERN SHOWN WITH NO PROTOCOL PINS SET ON J26

LED BAR DIGIT

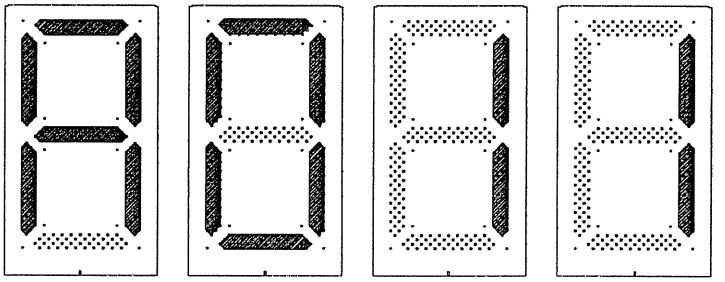
COLUMN 1 COLUMN 2



2ND CYCLE OF SELF TEST PATTERN SHOWN SET ON ADDRESS 11

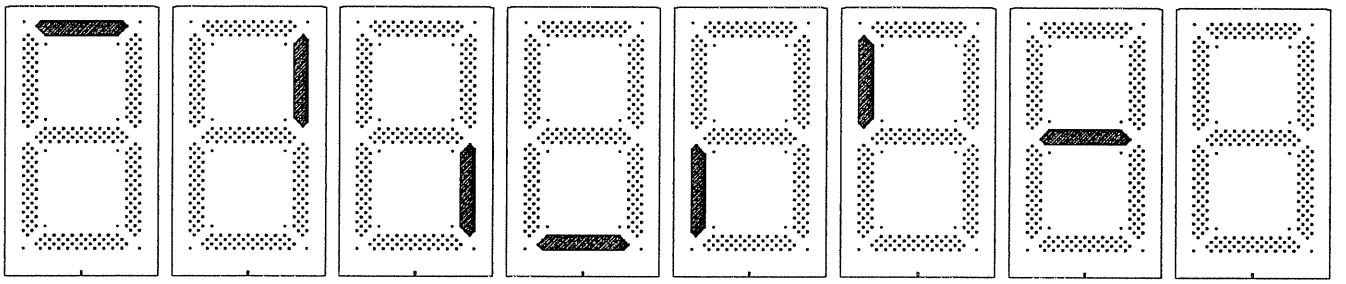
LED BAR DIGIT

COLUMN 1 COLUMN 2 COLUMN 3 COLUMN 4



3RD CYCLE OF SELF TEST PATTERN ON LED BAR DIGIT STARTING WITH ROW1 GOING TO ROW 8

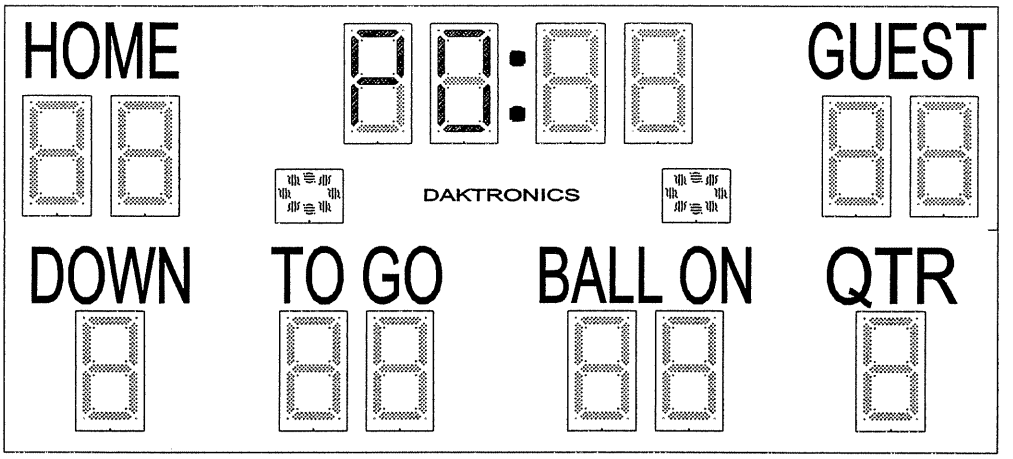
ROW 1 ROW 2 ROW 3 ROW 4 ROW 5 ROW 6 ROW 7 ROW 8



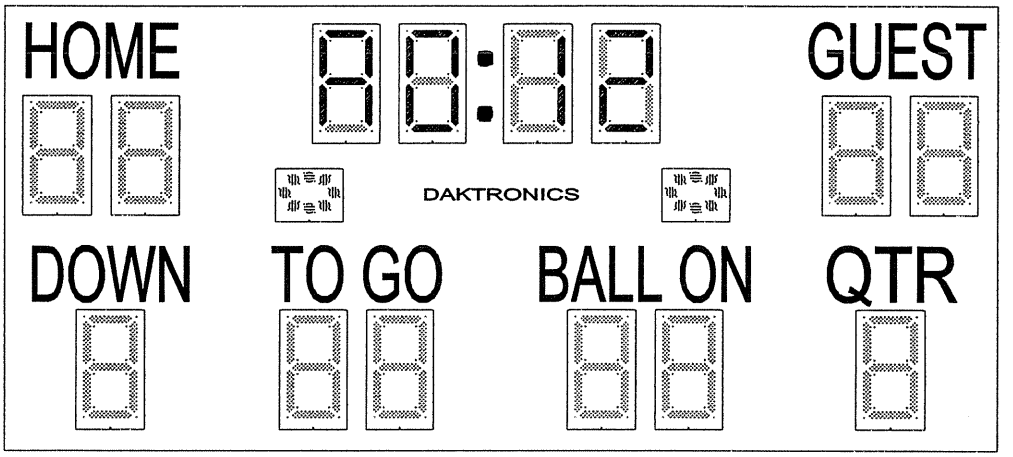
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ:			
TITLE: OUTDOOR LED POWER UP SELF TEST			
DES. BY:	DRAWN BY: N WRIEDT	DATE: 10 JAN 01	
REVISION	APPR. BY:	SCALE: NONE	1192-E07A-133350

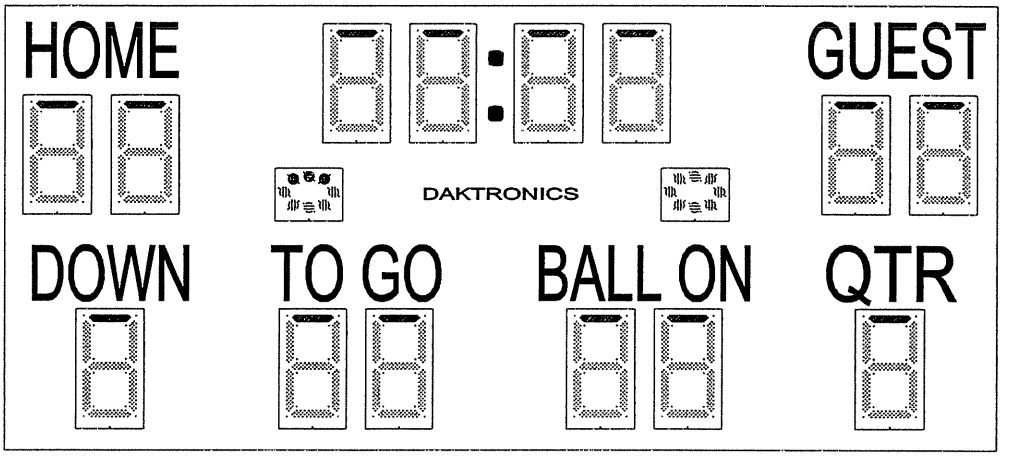
1ST CYCLE OF THE SELF TEST PATTERN WITH THE NO PROTOCOL PINS SET



2ND CYCLE OF THE SELF TEST PATTERN WITH THE ADDRESS PINS SET FOR A FB-1424



3RD CYCLE OF THE SELF TEST PATTERN WITH THE ROW1 TEST ON ONLY



** NOTE **
THIS DRAWING SHOWS A SAMPLE OF A SELF TEST PATTERN ON ONE SCOREBOARD MODEL. EACH SCOREBOARDS SELF TEST PATTERN WILL VARY DEPENDING UPON THE SCOREBOARD MODEL, NUMBER OF DRIVERS AND TYPE OF DIGITS.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

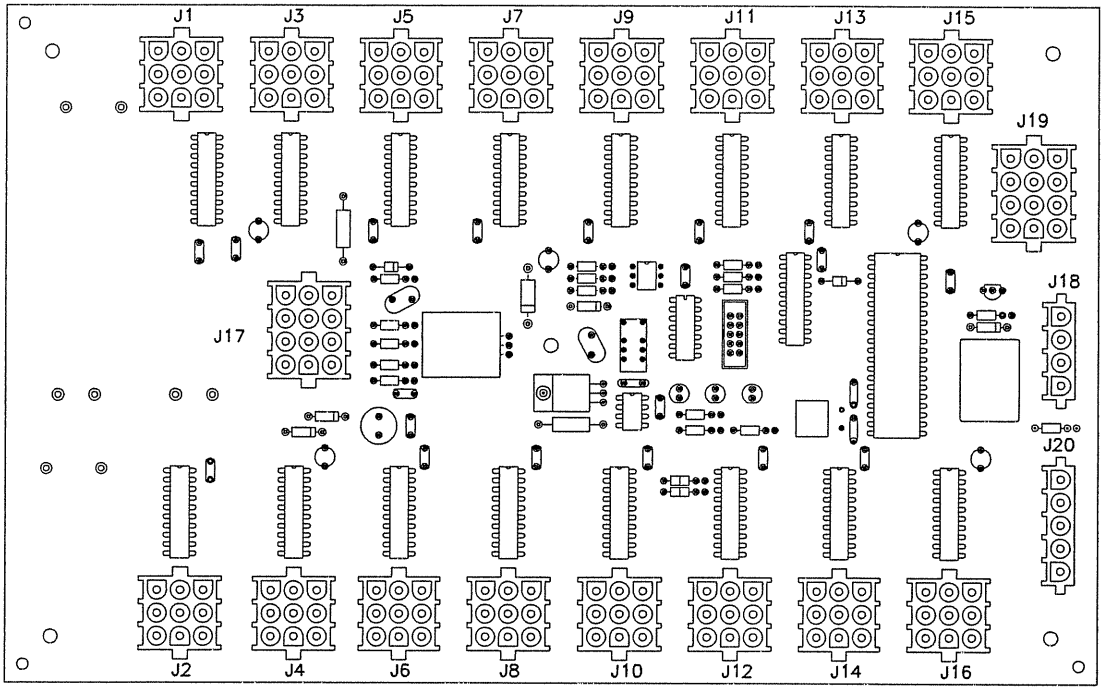
TITLE: LED BAR DIGIT POWER UP SELF TEST

DES. BY: DRAWN BY: N WRIEDT DATE: 11 JAN 01

REVISION 00 | APPR. BY: | SCALE: NONE

1192-E07A-133351

OP-1192-0011 16 COLUMN LED DRIVER II



J17 MAIN	
PIN	FUNCTION
1	SIG-P
2	SIG-N
3	SIG2-P
4	CLOUT-P
5	CLOUT-N
6	N/C
7	GND-N
8	EARTH-N
9	N/C
10	GND-N
11	+24A-P
12	+24B-P

J1-16 DIGIT	
PIN	FUNCTION
1	SEGC-N
2	SEGB-N
3	SEGA-N
4	SEGF-N
5	SEGE-N
6	SEGD-N
7	+VCC-P
8	SEGH-N
9	SEGG-N

J19 ADDRESS	
PIN	FUNCTION
1	GND-N
2	ADD0-N
3	ADD1-N
4	GND-N
5	ADD2-N
6	ADD3-N
7	GND-N
8	ADD4-N
9	ADD5-N
10	GND-N
11	ADD6-N
12	ADD7-N

J18 RELAY	
PIN	FUNCTION
1	HORNOUT-N
2	AUXOUT-N
3	120SW-P
4	120SW-N

J20 PROTOCOL	
PIN	FUNCTION
1	GND-N
2	PR0-N
3	PR1-N
4	PR2-N
5	TOD-N

NOTE

-WITH NO ADDRESS PINS SELECTED THE DRIVER WILL DEFAULT TO A/S 4000 PROTOCOL

-GREEN LED INDICATES THE DRIVER HAS POWER

-RED LED WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL

-AMBER LED INDICATES LED DRIVER STATUS, LED WILL BE BLINKING TO INDICATE THAT THE DRIVER IS RUNNING, IF THE LED IS OFF OR ON SOLID ALL OF THE TIME, THEN THE DRIVERS CPU IS NOT FUNCTIONING AND MAY NEED TO BE RESET OR REPLACED.

-REFER TO DRAWINGS A-115078 & A-115079 FOR J19 ADDRESS SETTINGS FOR THIS DRIVER.

-REFER TO DRAWING A-115081 FOR J20 PROTOCOL SETTINGS FOR THIS DRIVER.

-REDRIVE CIRCUIT IS PROCESSOR REFRESHED (REFER TO DWG A-128429 FOR FURTHER INFORMATION ON THE CURRENT LOOP REDRIVE CIRCUIT SPECIFICATIONS)

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

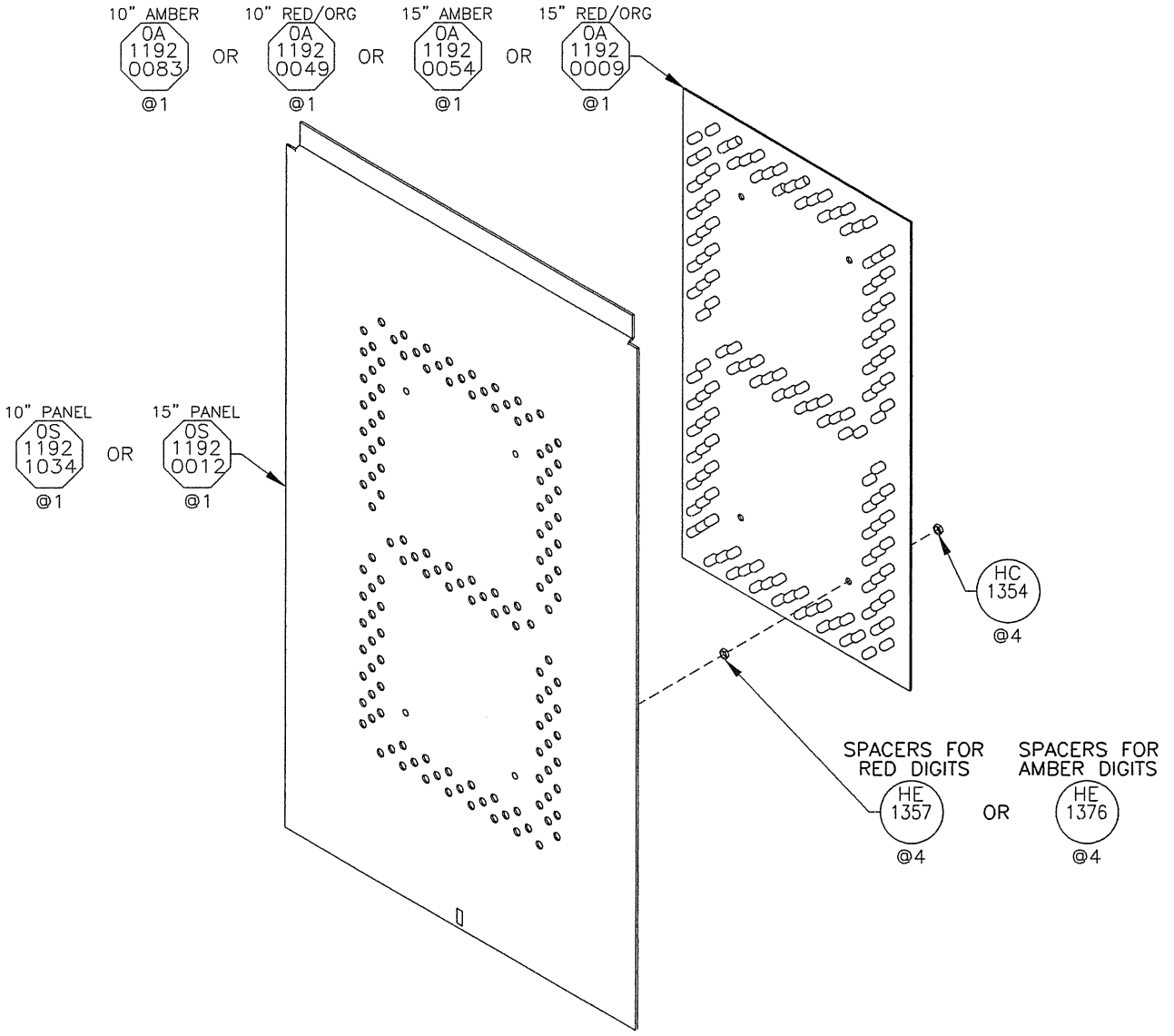
TITLE: 16 COLUMN LED DRIVER II SPECIFICATIONS

DES. BY: EB DRAWN BY: NWRIEDT DATE: 11 JAN 01

REVISION 00 APPR. BY:

SCALE: NONE

1192-R07A-134371



REV.	DATE	DESCRIPTION	BY	APPR.
04	28AUG02	ADDED HE-1376	MCOPL	
03	20MAY02	ADDED 10" DIGIT ASSEMBLY NUMBERS, ADDED AMBER LED DIGIT ASSEMBLY NUMBERS	MCOPL	
2	18JAN01	REPLACED OP-1192-0001 WITH OP-1192-0009	MCOPL	
1	08DEC00	UPDATED TO INSERTED STUDS	GDB	

DAKTRONICS, INC. BROOKINGS, SD 57006

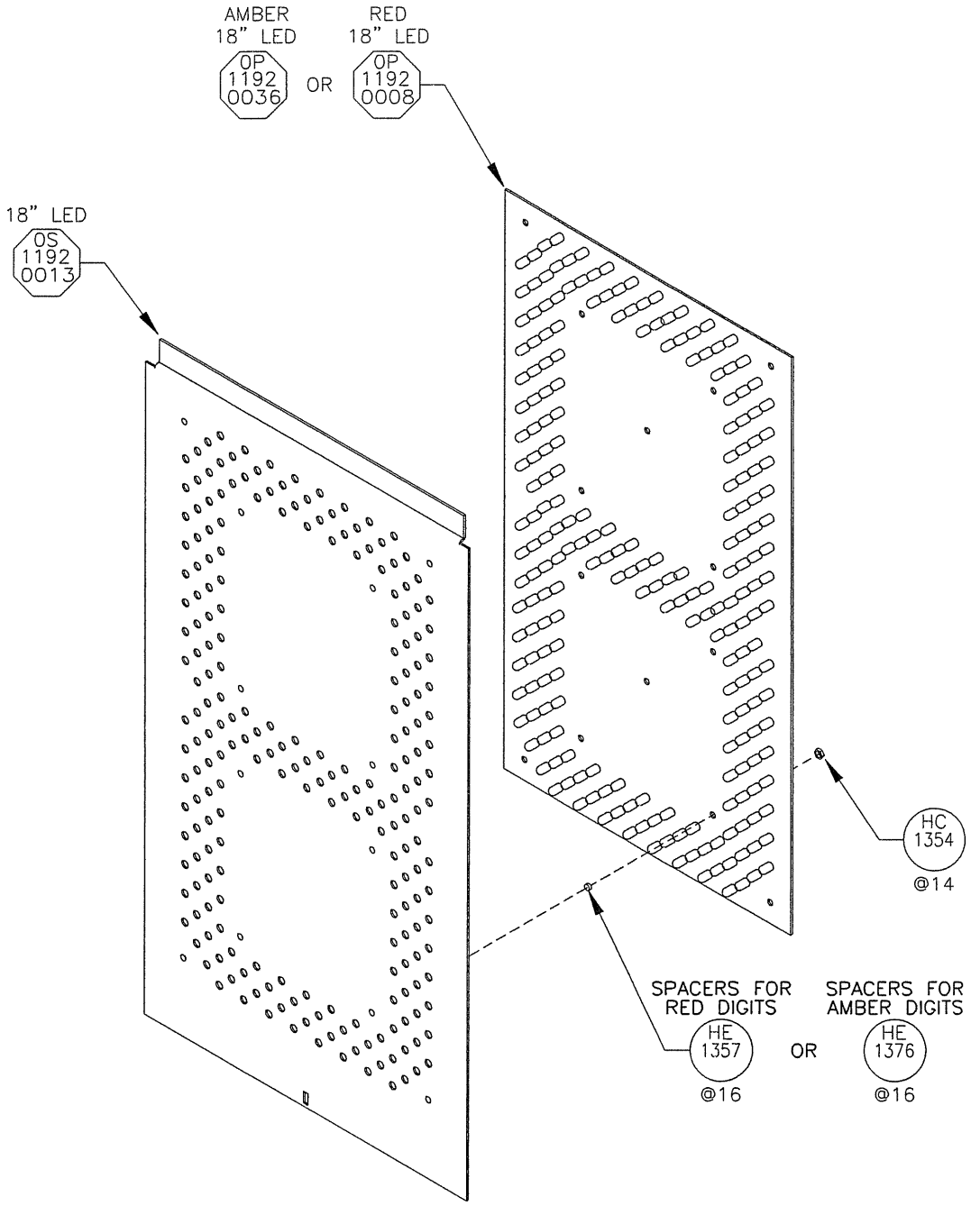
PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: DIGIT ASSEMBLY; 15" DIGIT, 10" DIGIT

DES. BY: GBREEN DRAWN BY: GBREEN DATE: 21JUL00

REVISION 04 APPR. BY: SCALE: 1=5

1192-E08A-135538



REV.	DATE	DESCRIPTION	BY	APPR.
03	28AUG02	ADDED HE-1376 REMOVED 24" LED DIGIT ASSY NUMBERS	MCOPL	
2	29JUN01	ADDED 18" AND 24" AMBER DIGIT PART NUMBERS	MCOPL	
1	8DEC00	UPDATED ATTACHING TO SHOW PEM STUD AND SPACER	GDB	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: DIGIT ASSEMBLY 18" RES/ORG-AMBER

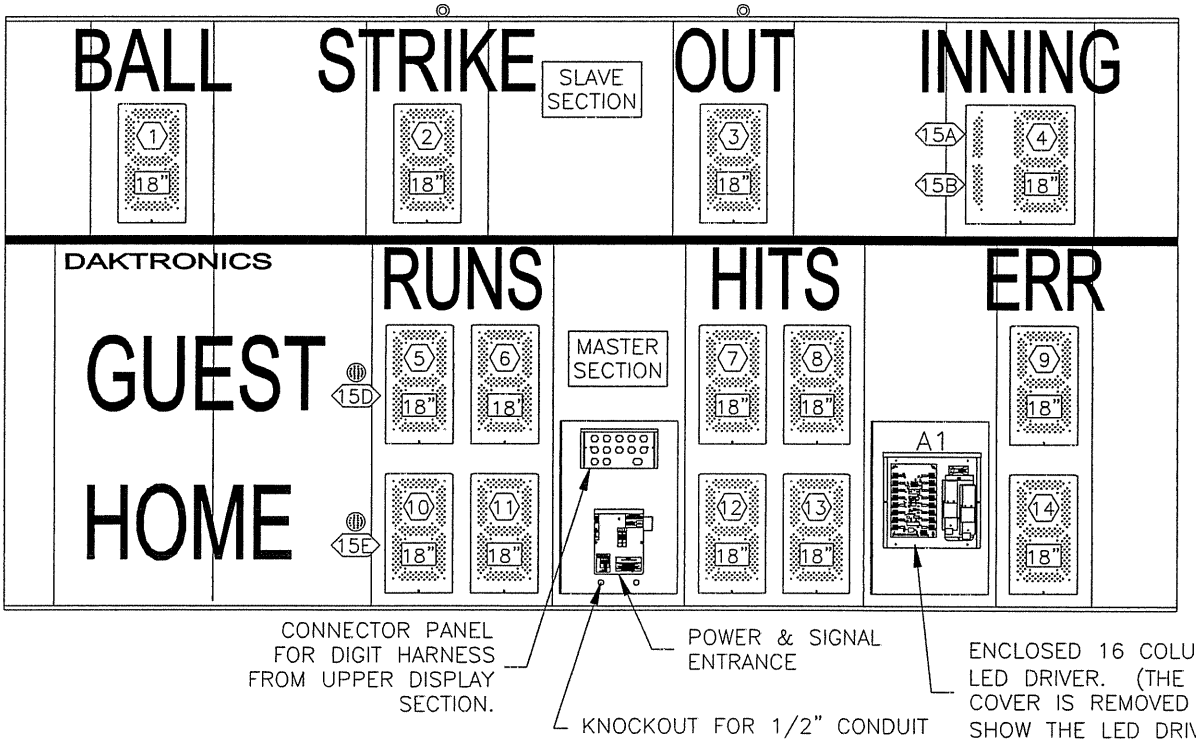
DES. BY: GBREEN DRAWN BY: GBREEN DATE: 24JUL00

REVISION APPR. BY:

SCALE: 1=5

1192-E08A-135662

BA-1518-11



⟨12⟩ = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

⟨15A⟩ = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR

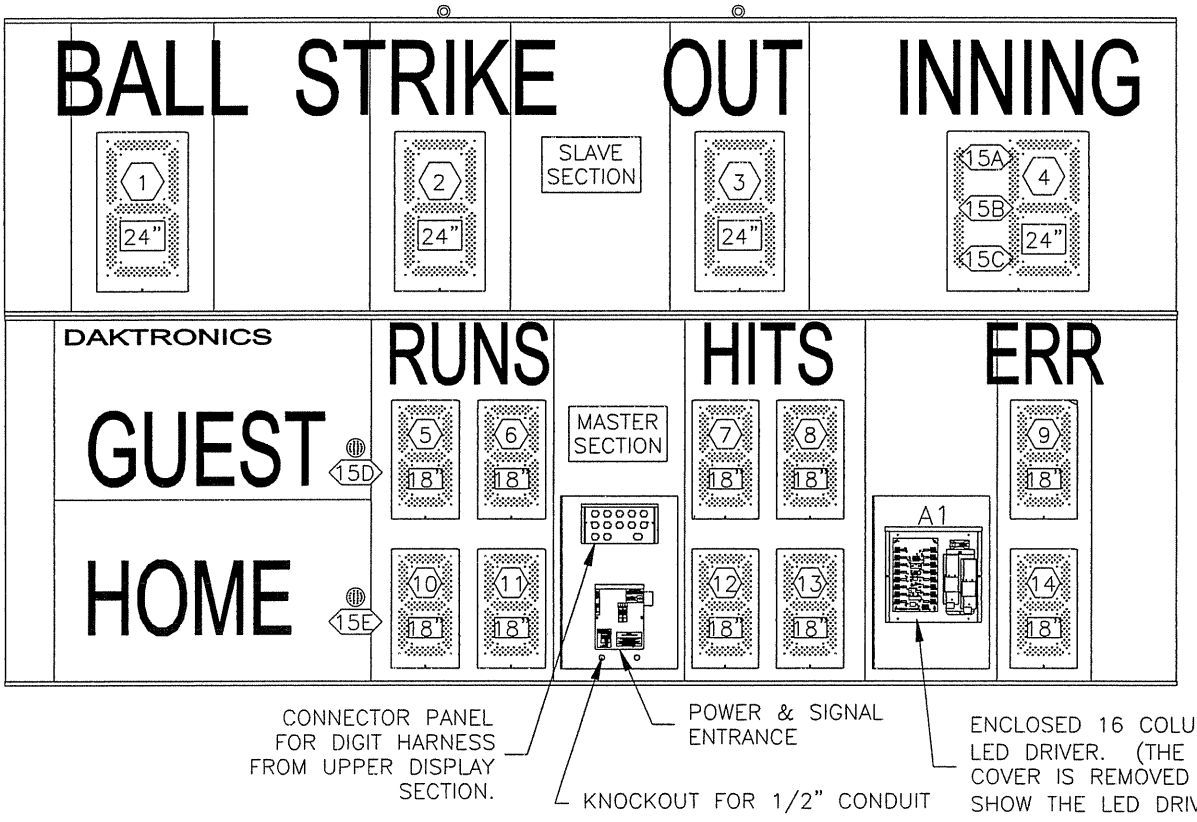
18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED DIGIT SCOREBOARDS	
TITLE: COMPONENT LOCATIONS, BA-1518-11	
DES. BY: GBREEN	DRAWN BY: GBREEN DATE: 18DEC00
REVISION APPR. BY:	1192-E10A-141077
SCALE: 1=30	

BA-1524-11



(12) = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

(15A) = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR

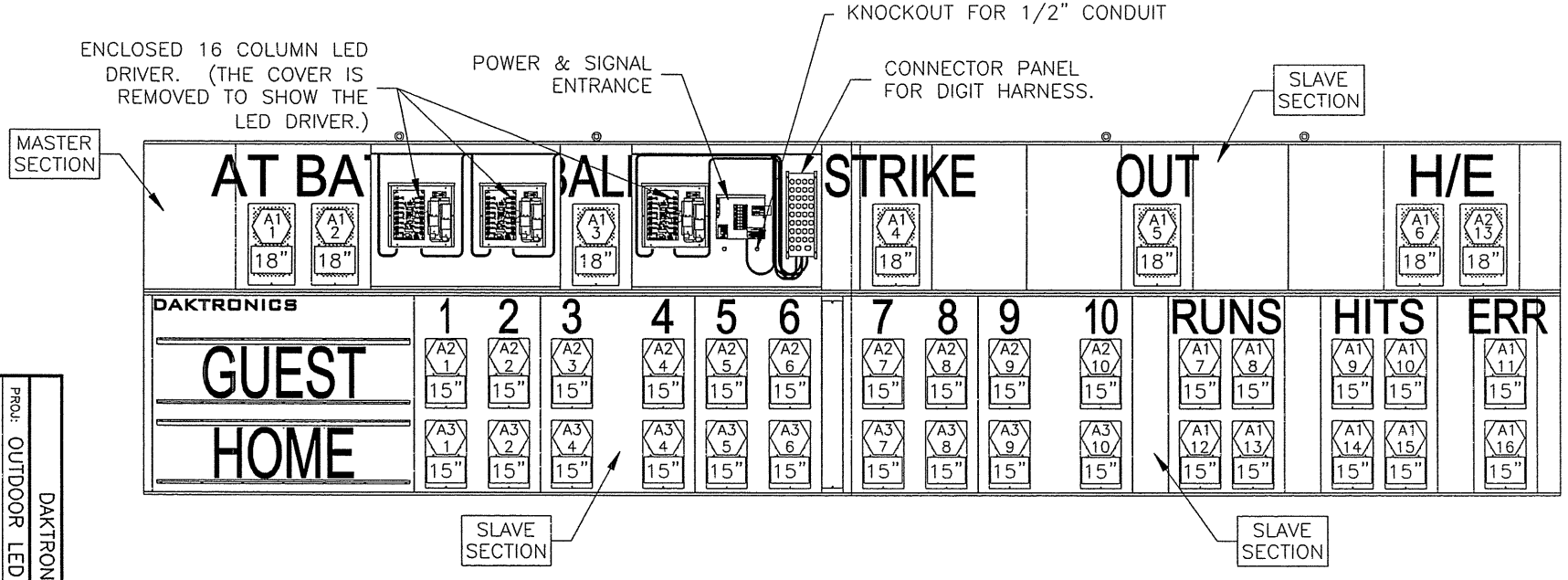
[18"] = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: OUTDOOR LED DIGIT SCOREBOARDS		
TITLE: COMPONENT LOCATIONS, BA-1524-11		
DES. BY: GBREEN	DRAWN BY: JNILSEN	DATE: 04DEC00
REVISION	APPR. BY:	1192-E10A-141745
	SCALE: 1=30	

BA-3718-11



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-3718-11

DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 04DEC00

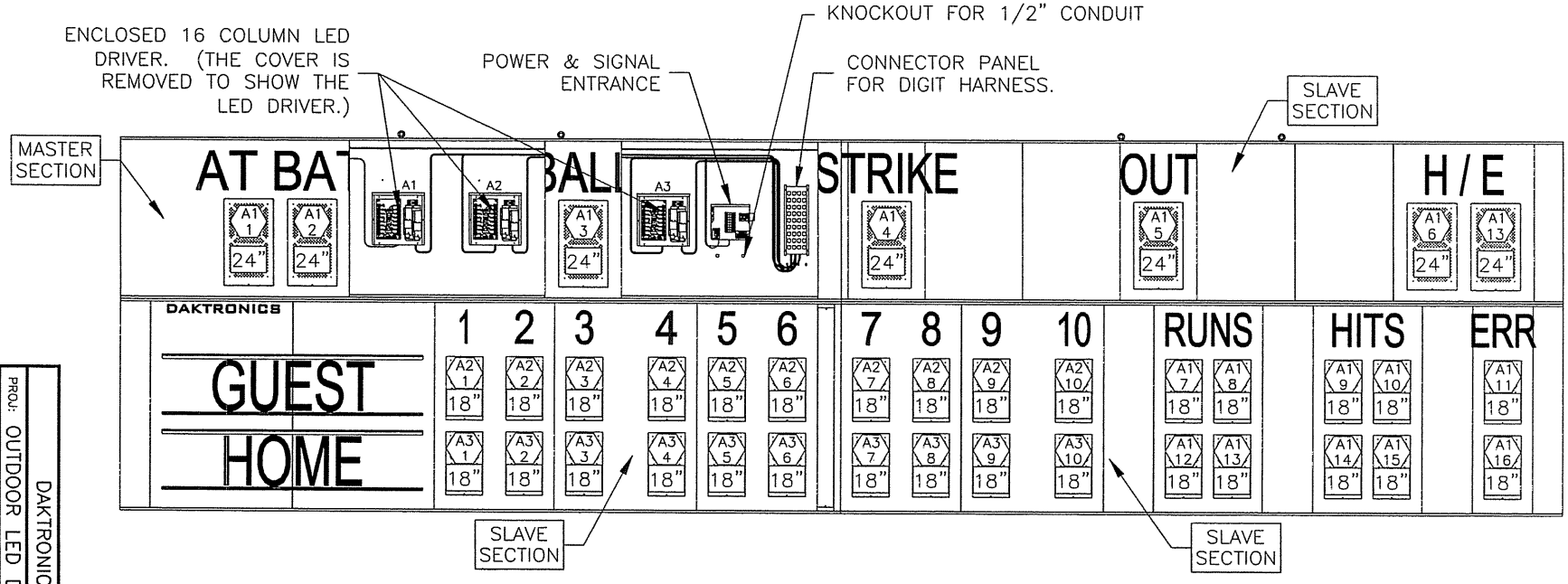
REVISION APPR. BY:

SCALE: 1=40

1192-E10A-141749

BA-3724-11

LED DIGITS



(A1 / 1) = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-3724-11

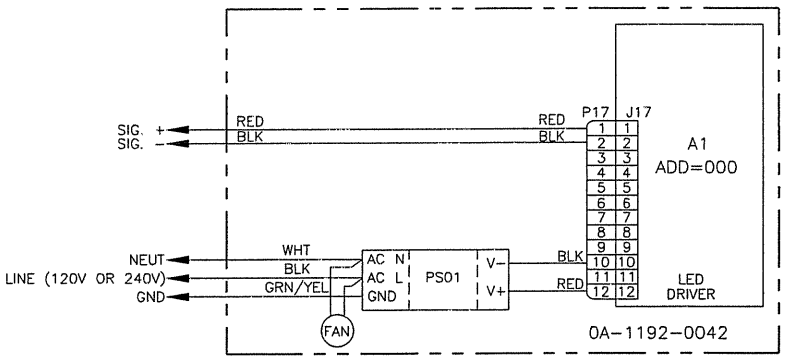
DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 03DEC00

APPR. BY:

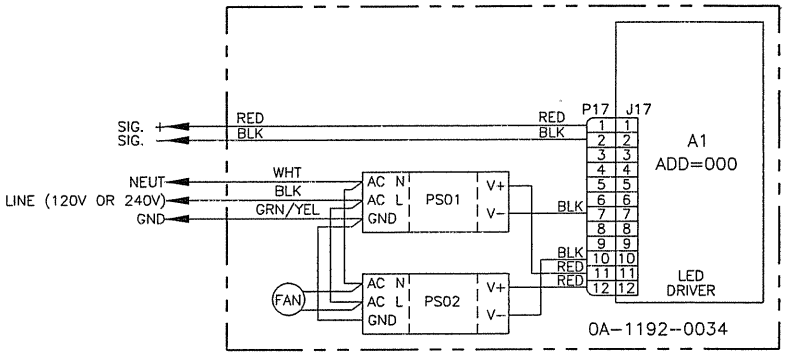
SCALE: 1=50

1192-E10A-141751

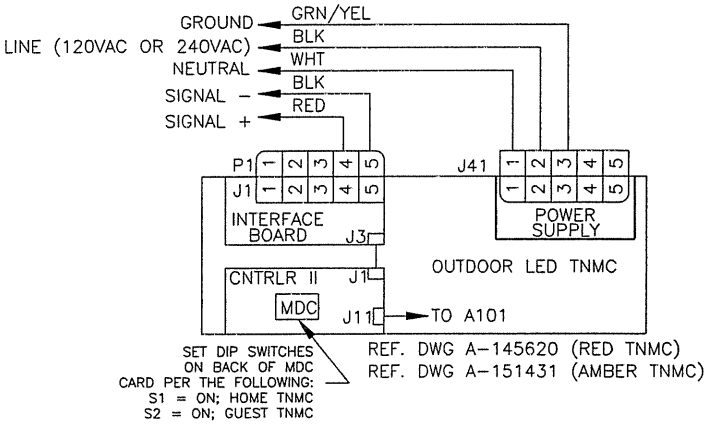
8 COLUMN DRIVER



16 COLUMN DRIVER



TEAM NAME



REV.	DATE	DESCRIPTION	BY	APPR.
3	6JUL01	REMOVED PART NUMBER FOR RED TNMC & ADDED DWG NUMBERS RED & AMBER TNMC'S	RASMUS	
2	8JUN01	CHANGED PART NUMBER OF TNMC FROM A-1192-71.	RASMUS	
1	22MAY01	CHANGED POSITIVE & NEGATIVE AROUND ON THE 8 COLUMN DRIVER LAYOUT	RASMUS	CMC

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

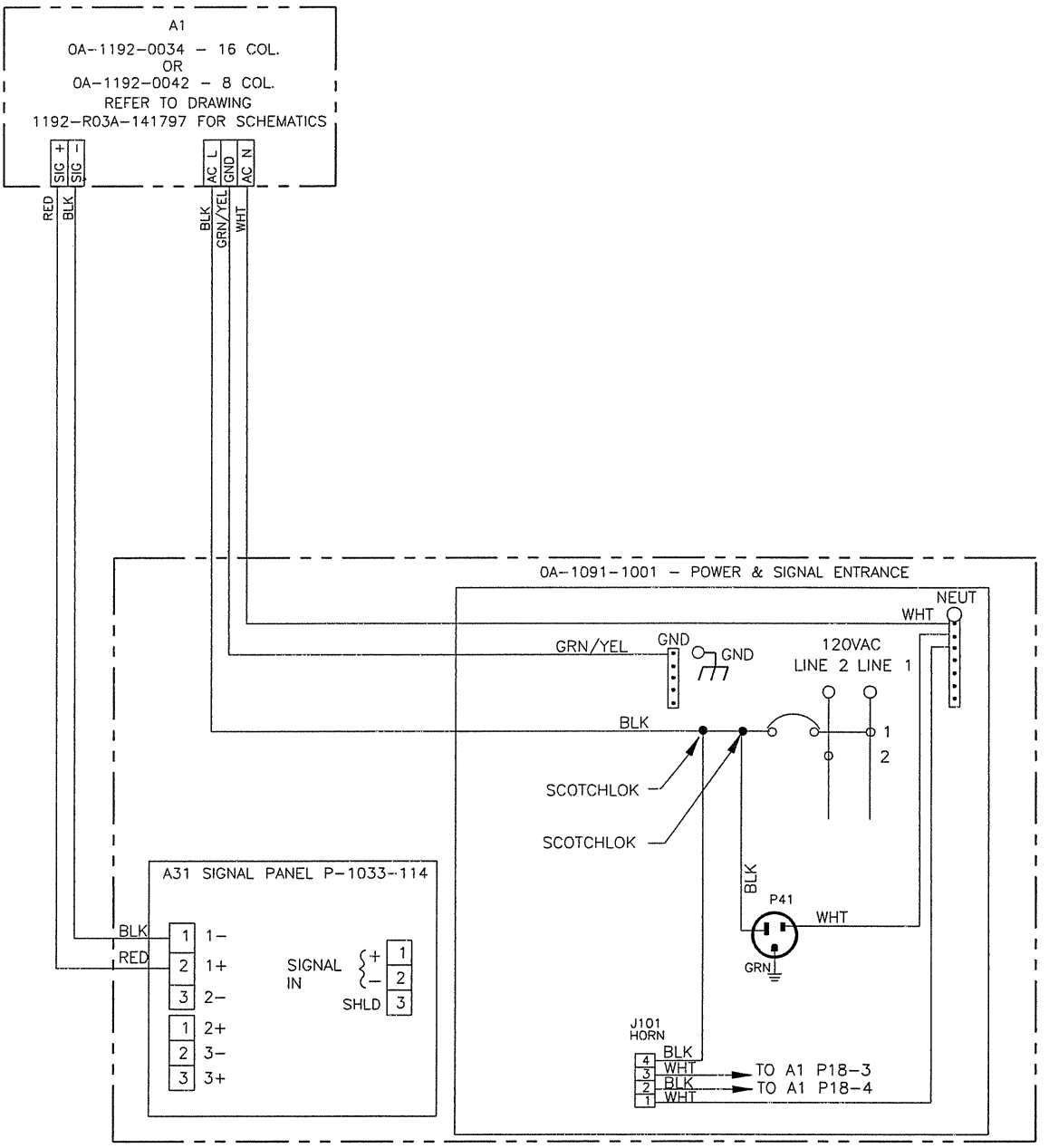
TITLE: SCHEMATIC; 8 AND 16 COL. O.D. LED DRVR AND TNMC

DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 05 DEC 00

REVISION APPR. BY:

SCALE: 1=1

1192-R03A-141797



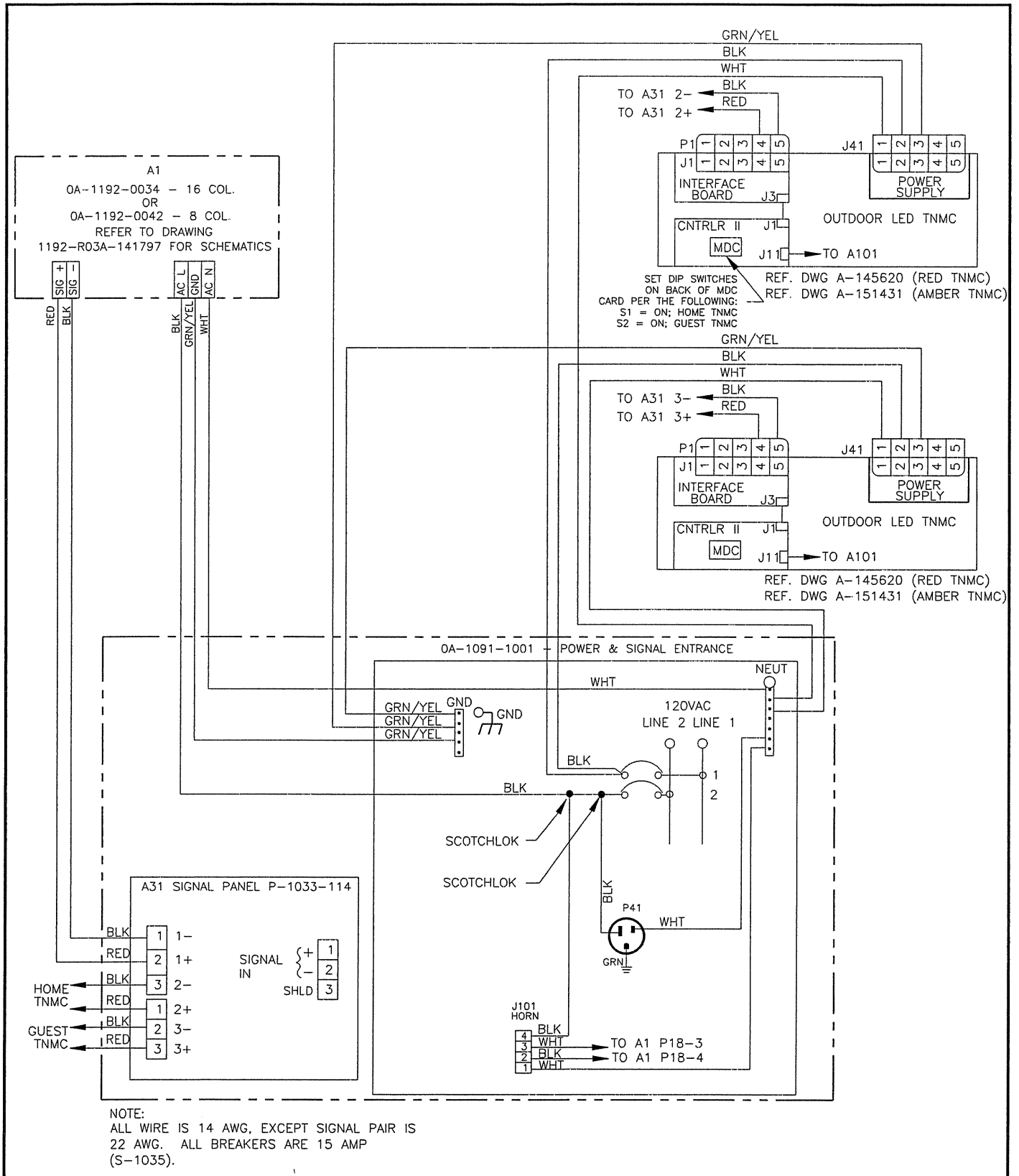
NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

REV.	DATE	DESCRIPTION	BY	APPR.
02	14 DEC 00	UPDATED HORN HARNESS LAYOUT.	CJB	
01	07 DEC 00	UPDATED LAYOUT.	CJB	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS
TITLE: SCHEMATIC; 1 DRIVER
DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 06 DEC 00
REVISION 02 APPR. BY: SCALE: 1=1

1192-R03A-141799



NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

REV.	DATE	DESCRIPTION	BY	APPR.
4	6JUL01	REMOVED PART NUMBER FROM TNMC'S & ADDED DWG NUMBERS FOR AMBER & RED	RASMUS	
3	6JUN01	CHANGED PART NUMBER OF TNMC FROM A-1192-71	RASMUS	
02	14 DEC 00	UPDATED HORN HARNESS LAYOUT.	CJB	
01	07 DEC 00	UPDATED LAYOUT.	CJB	

DAKTRONICS, INC. BROOKINGS, SD 57006

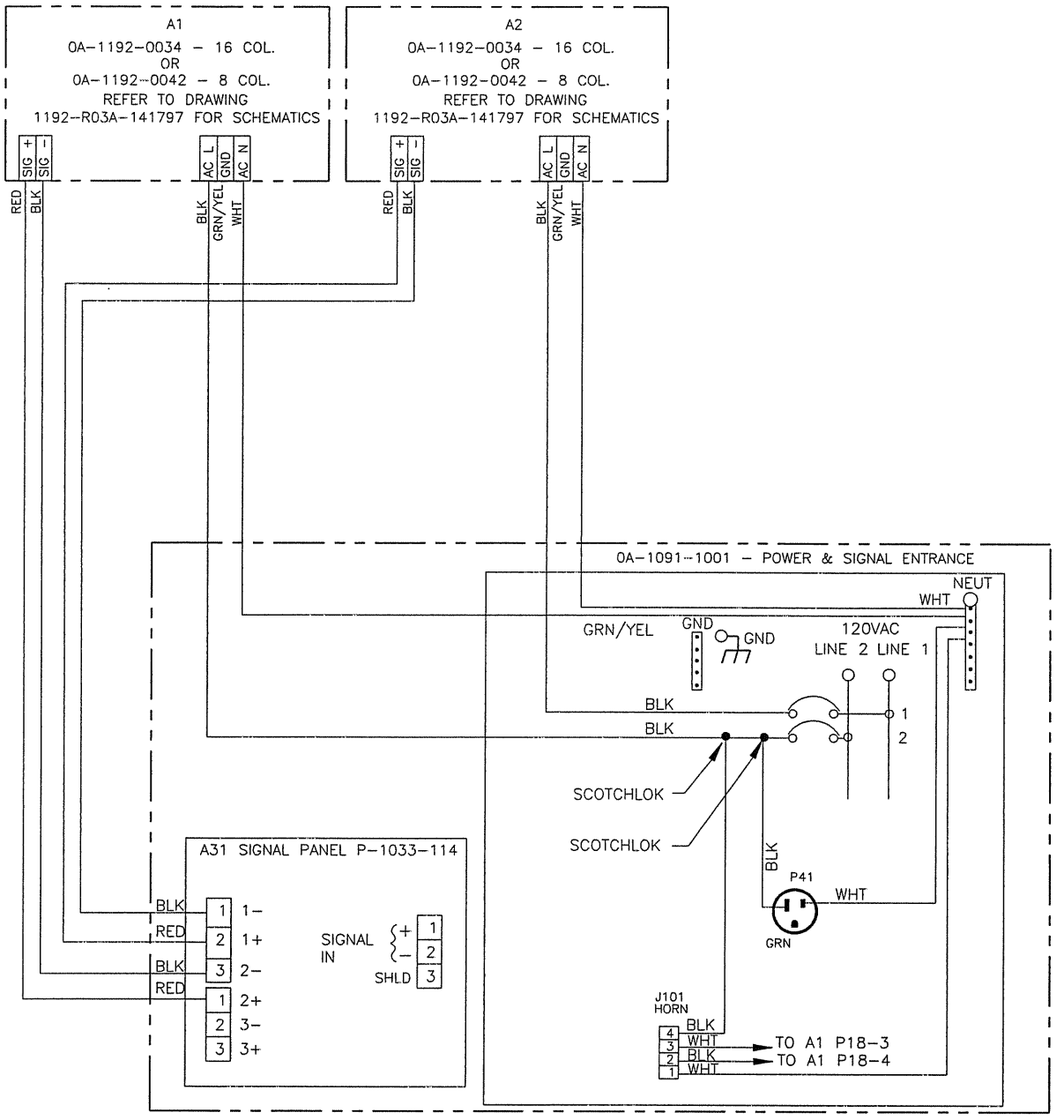
PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; 1 DRIVER W/ TNMC

DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 06 DEC 00

REVISION 04 APPR. BY: SCALE: 1=1

1192-R03A-141806



NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

REV.	DATE	DESCRIPTION	BY	APPR.
02	14 DEC 00	UPDATED HORN HARNESS LAYOUT.	CJB	
01	07 DEC 00	UPDATED LAYOUT.	CJB	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

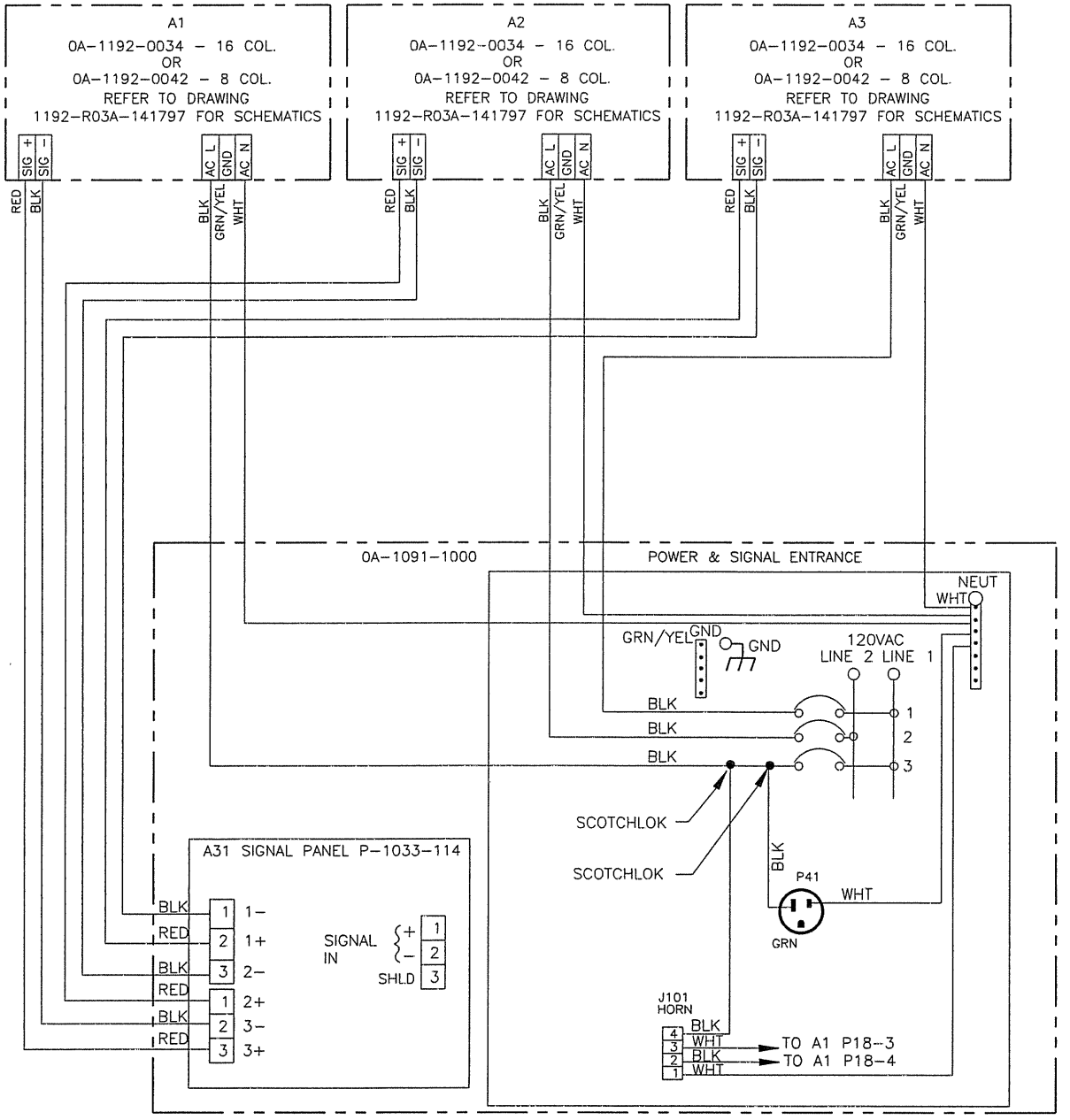
TITLE: SCHEMATIC; 2 DRIVERS

DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 06 DEC 00

REVISION APPR. BY:

SCALE: 1=1

1192-R03A-141807



NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

REV.	DATE	DESCRIPTION	BY	APPR.
01	27 DEC 00	CHANGED PART 0A-1091-1001 TO 0A-1091-1000	GWS	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: LED OUTDOOR SCOREBOARDS

TITLE: SCHEMATIC; 3 DRIVER

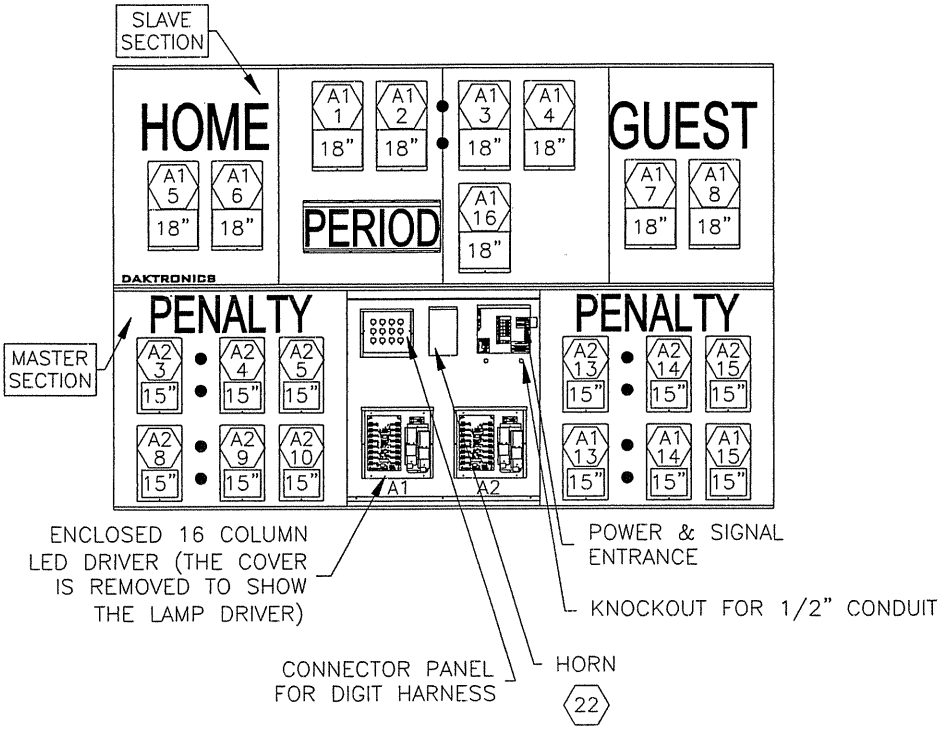
DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 20 DEC 00

REVISION APPR. BY:

SCALE: 1=1

1192-R03A-142358

MS-2118-11



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
1	9 MAR 01	REMOVED INCANDESCENT DRIVER ENCLOSURES	TWEBER	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2118-11

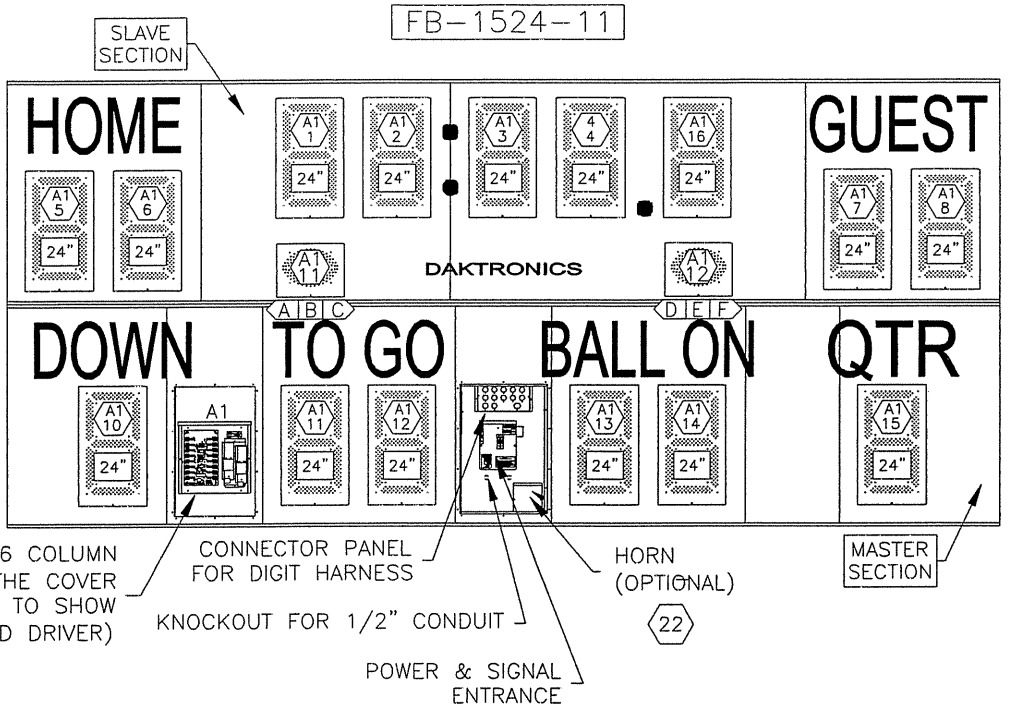
DES. BY: DRAWN BY: MCOPLAN DATE: 02JAN01

REVISION APPR. BY:

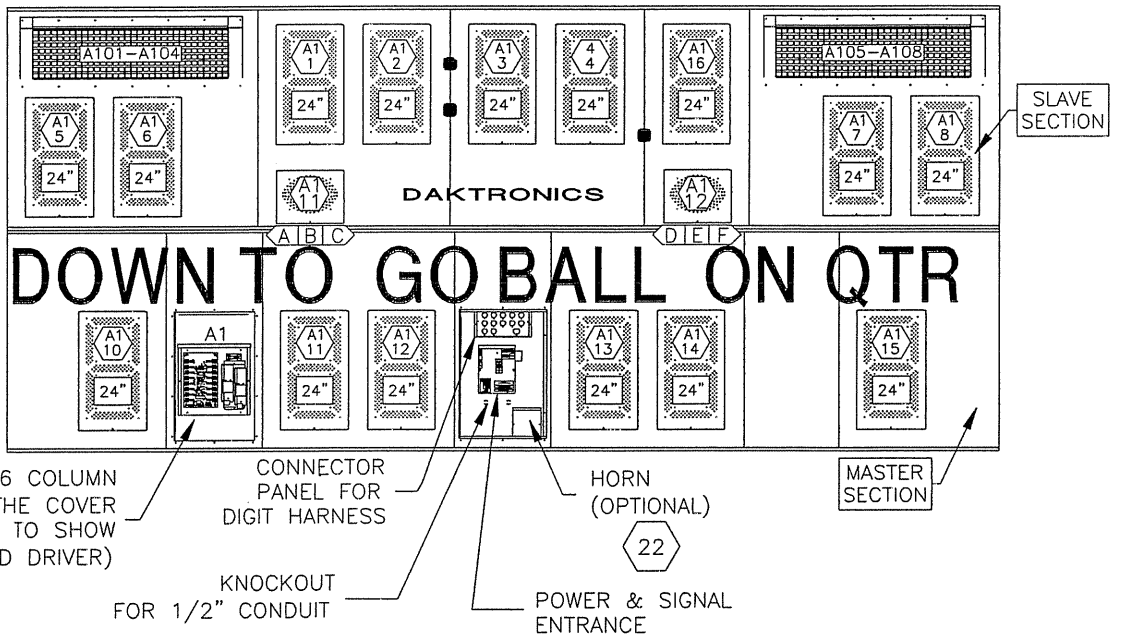
SCALE: 1=40

1192-E10A-142620

FB-1524-11



FB-1524-11 W/ 832-10 LED TNMC



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
05	23MAY01	UPDATED MODEL NUMBER	DUSWH	
04	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	
03	21MAR01	ADDED NEW FOOTBALL POS INDICATOR.	JNILSE	
02	16MAR01	ADDED NEW SOCCER POS INDICATOR.	JNILSE	
01	21FEB01	ADDED LED TNMC TO DWG	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-1524-11

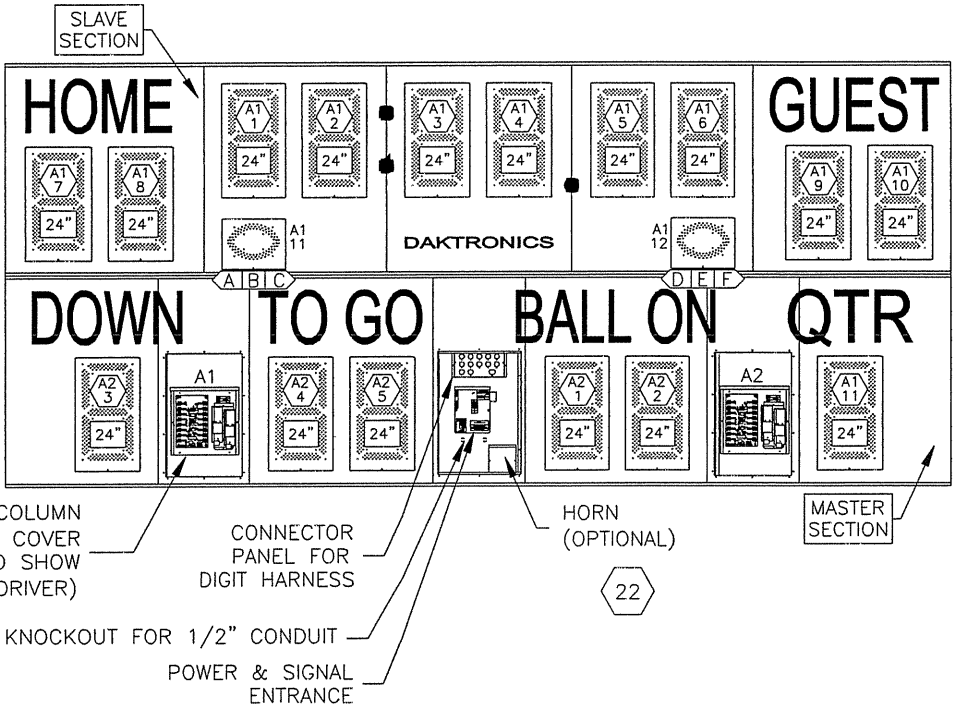
DES. BY: DRAWN BY: MCOPLAN DATE: 03JAN01

REVISION APPR. BY:

SCALE: 1=40

1192-E10A-142650

FB−1624−11



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
02	22 MAY 01	CHANGED DIGIT NUMBERS	DUSWH	
01	16MAR01	UPDATED LED POSS INDICATOR.	JNILSE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB−1624−11

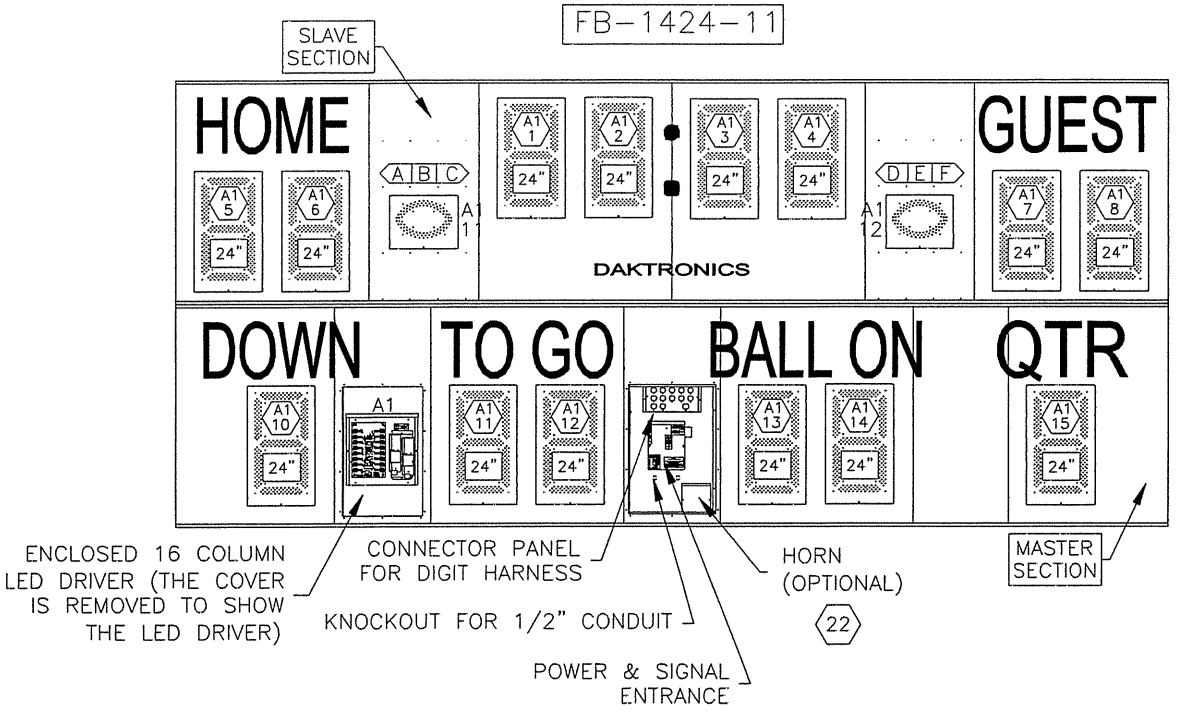
DES. BY: DRAWN BY: MCOPLAN DATE: 04JAN01

REVISION APPR. BY:

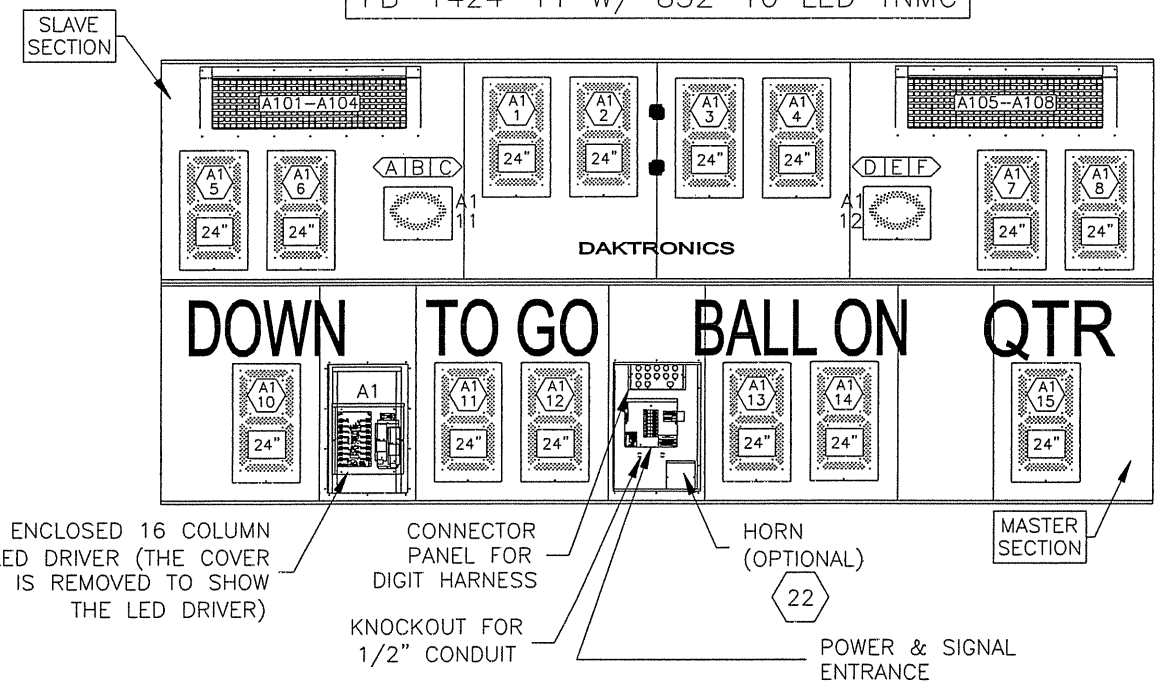
SCALE: 1=40

1192-E10A-142652

FB-1424-11



FB-1424-11 W/ 832-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
03	22 MAY 01	CHANGED MODEL NUMBER	DUSWH	
02	02MAY01	REVISED TNMC COMPONENT NUMBERS	MCOPL	
01	16MAR01	UPDATED TNMC TO SHOW LED MODEL AND UPDATED POSS INDICATOR.	JNILSE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-1424-11

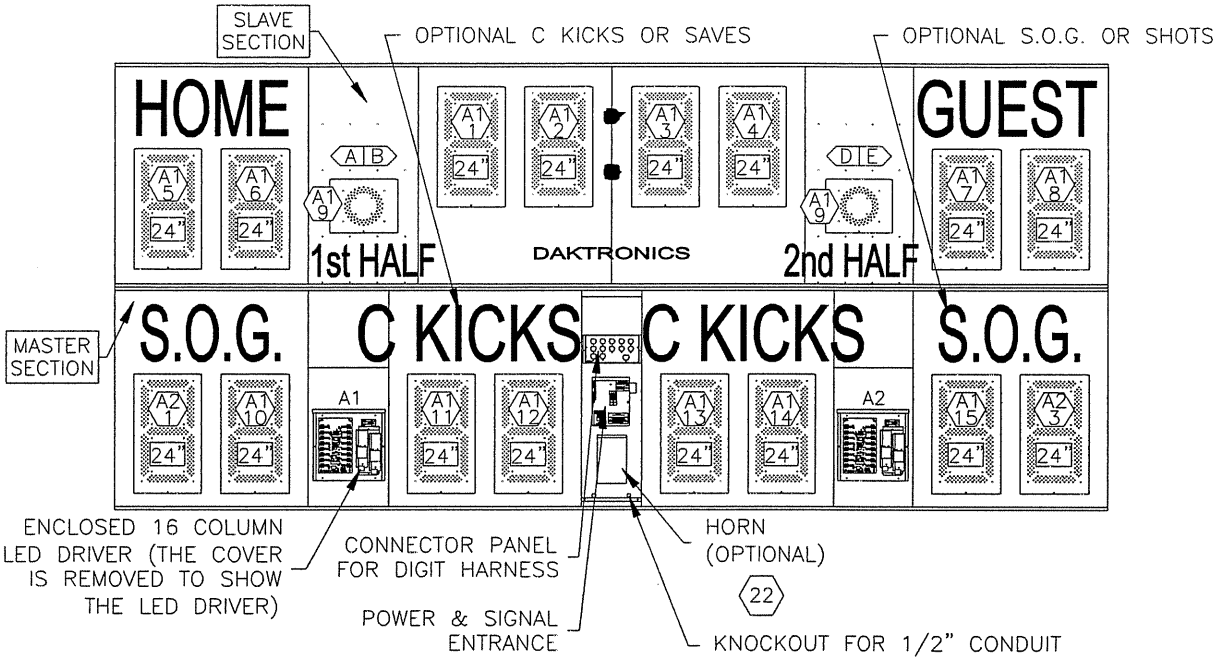
DES. BY: DRAWN BY: MCOPLAN DATE: 03JAN01

REVISION APPR. BY:

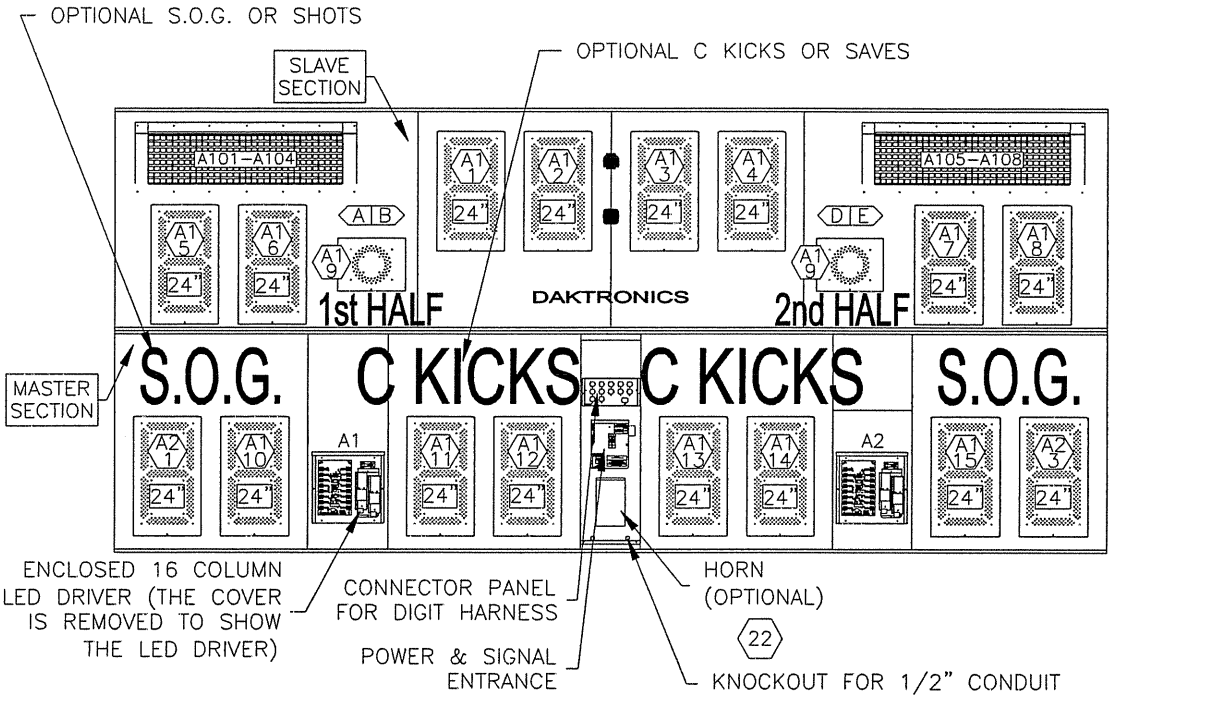
SCALE:

1192-E10A-142712

SO-1624-11



SO-1624-11 W/ 832-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
02	24MAY01	UPDATED MODEL NUMBER	DUSWH	
01	16MAR01	UPDATED TNMC TO SHOW NEW LED MODEL AND UPDATED POSS INDICATORS.	JNILSE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, SO-1624-11

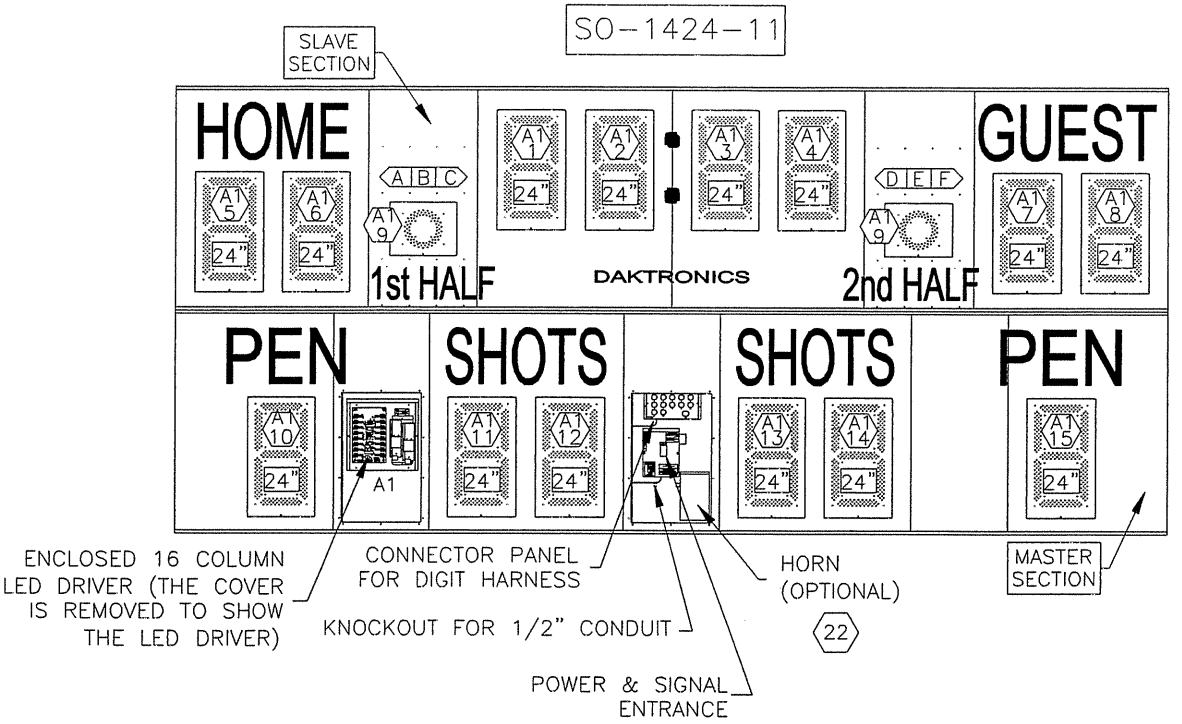
DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 03JAN01

REVISION 02 APPR. BY:

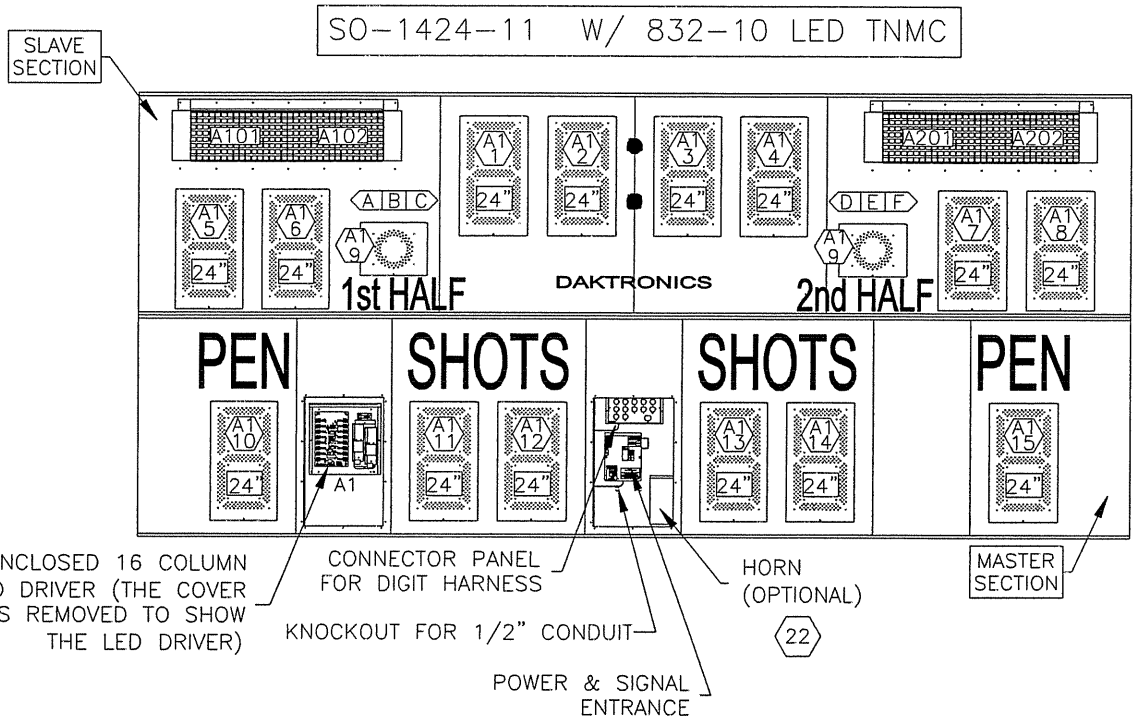
SCALE: 1=40

1192-E10A-142741

SO-1424-11



SO-1424-11 W/ 832-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LAMP DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
02	24MAY01	UPDATED MODEL NUMBER	DUSWH	
01	16MAR01	UPDATED TNMC TO SHOW NEW LED MODEL AND UPDATED POSS INDICATORS.	JNILSEN	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

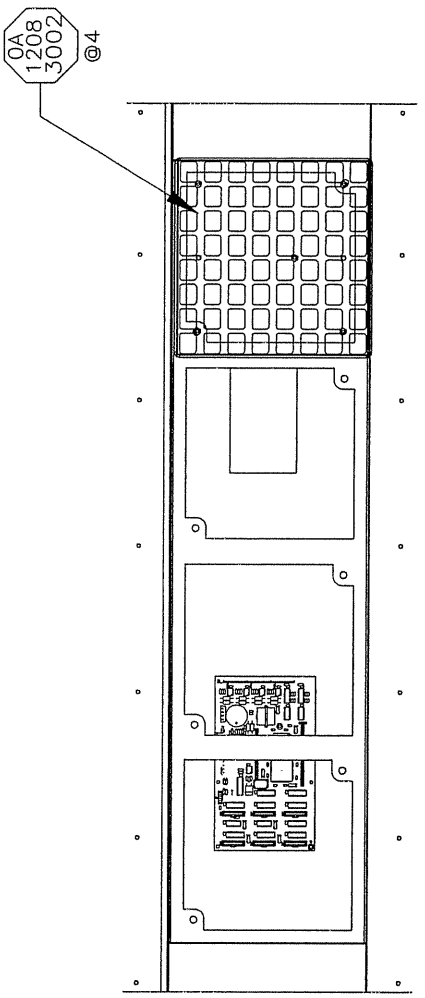
TITLE: COMPONENT LOCATIONS, SO-1424-11

DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 03JAN01

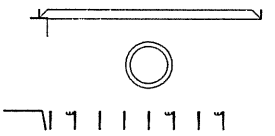
REVISION APPR. BY:

SCALE: 1=40

1192-E10A-142742



FRONT VIEW



SIDE VIEW

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

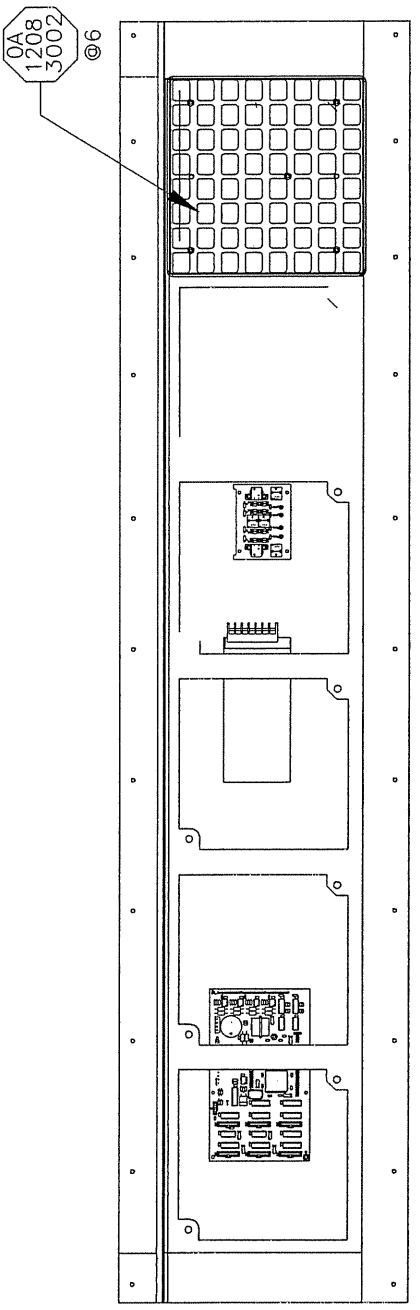
TITLE: F. ASSY; 832 LED TNMC

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 30JAN01

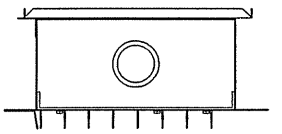
REVISION APPR. BY:

SCALE: 1=10

1192-E10A-143808



FRONT VIEW



SIDE VIEW

REV.	DATE	DESCRIPTION	BY	APPR.
02	29MAY01	MADE ASSEMBLY REAR-ACCESSIBLE	MCOPL	
01	26FEB01	CHAMFERED LOWER RIGHT CORNERS ON MODULE MOUNTING PANEL	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

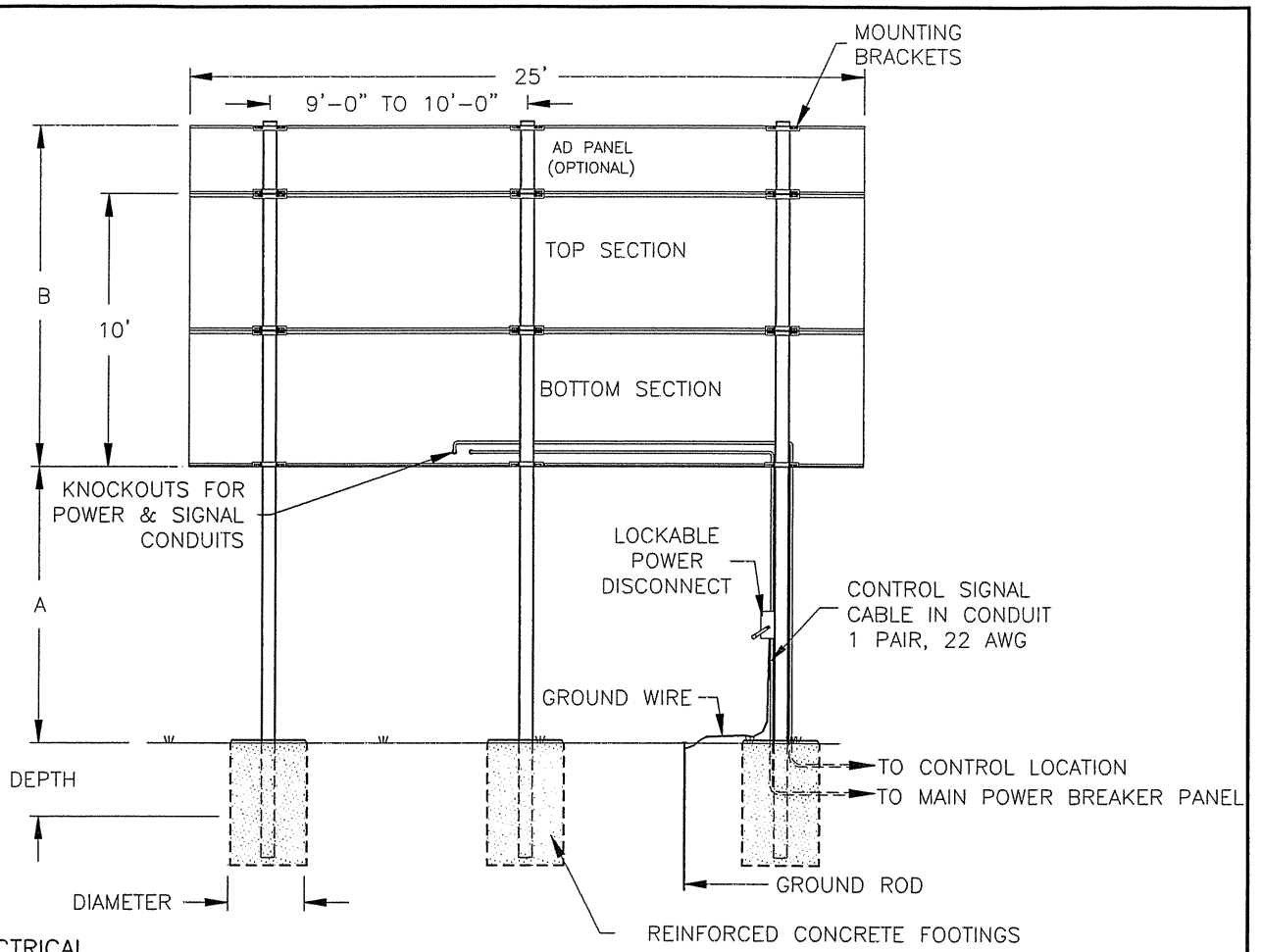
TITLE: F. ASSY; 848 LED TNMC

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 07FEB01

REVISION | APPR. BY:

SCALE: 1=10

1192-E10A-144323



REAR VIEW

MS-2009

ELECTRICAL

POWER CABLE MUST HAVE A SEPERATE GROUND CONDUCTOR. SCOREBOARD MUST BE CONNECTED TO A GROUND ROD AT SCOREBOARD LOCATION.

FOOTING DIMENSIONS ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS, AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.

COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

MODEL MS-2009

VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY 70 MPH	80 MPH	100 MPH
10 FT	NONE	10'-0"	BEAM	W12X26	W12X26	W10x33
			FOOTING	3'x7.5'	3'x8.2'	3'x9.8'
	2 FT	12'-0"	BEAM	W14X30	W10X33	W12X40
			FOOTING	3'x8.2'	3'x9.0'	3'x10.7'
	4 FT	14'-0"	BEAM	W10X33	W10X39	W12X45
			FOOTING	3'x8.8'	3'x9.7'	3'x11.5'
12 FT	NONE	10'-0"	BEAM	W14X30	W10X33	W12X40
			FOOTING	3'x7.8'	3'x8.6'	3'x10.2'
	2 FT	12'-0"	BEAM	W10X33	W14X38	W14X43
			FOOTING	3'x8.5'	3'x9.4'	3'x11.1'
	4 FT	14'-0"	BEAM	W10X39	W12X40	W14X53
			FOOTING	3'x9.1'	3'x10.1'	3'x11.9'
14 FT	NONE	10'-0"	BEAM	W10X33	W10X35	W12X40
			FOOTING	3'x8.1'	3'x9.0'	3'x10.6'
	2 FT	12'-0"	BEAM	W10X38	W12X40	W14X48
			FOOTING	3'x8.8'	3'x9.7'	3'x11.5'
	4 FT	14'-0"	BEAM	W12X40	W12X45	W14X61
			FOOTING	3'x9.5'	3'x10.4'	3'x12.4'

FOOTING = DIAMETER X DEPTH

ASSUMPTIONS: UBC 1997 CODE
UBC SOIL CLASS 3 (2000 PSF)

A NOTE ABOUT BEAM NOMENCLATURE:

For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 4 to 8 inches in this chart.

REV.	DATE	DESCRIPTION	BY	APPR.
02	07 APR 03	EXTENDED 'B' DIMENSION TO TOP OF ADD PANEL.	JJS	
01	06AUG01	ADDED POLE TO CENTER OF SCOREBOARD	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCADESCENT SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, MS-2009

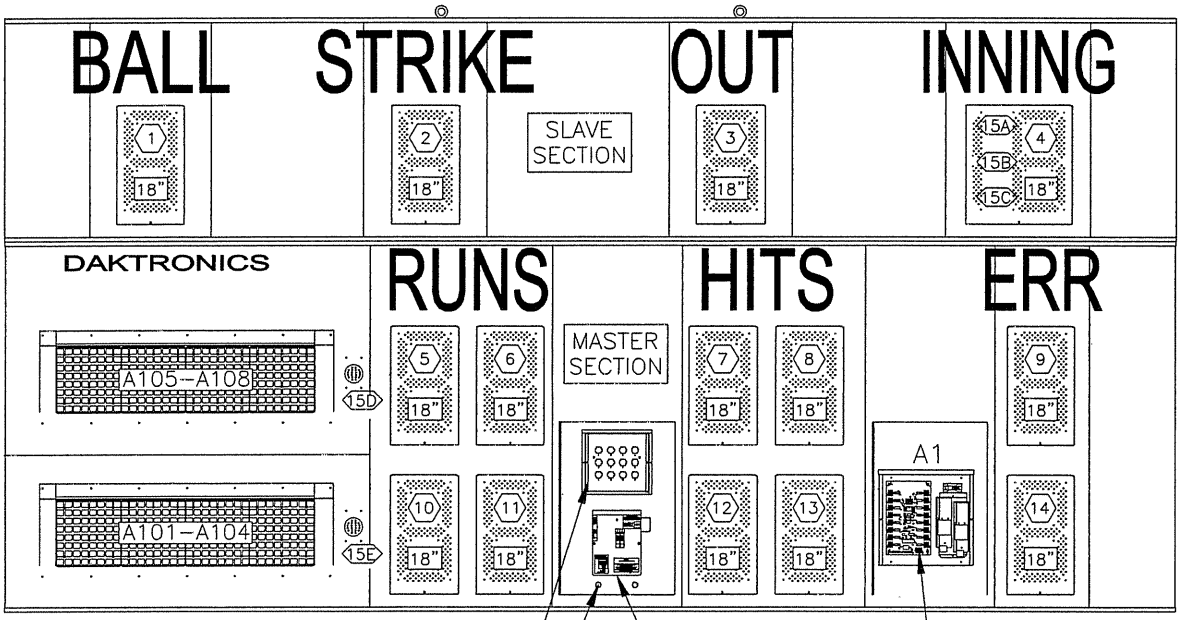
DES. BY: RNEYENS DRAWN BY: RNEYENS DATE: 9FEB01

REVISION APPR. BY:

SCALE: 1=80

1091-R10A-144415

BA-1518-11 W/ 832-10 LED TNMC



CONNECTOR PANEL FOR DIGIT HARNESS FROM UPPER DISPLAY SECTION.

POWER & SIGNAL ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)

⟨12⟩ = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

⟨15A⟩ = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR

[18"] = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
03	23MAY01	UPDATED MODEL NUMBER	DUSWH	
02	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	
01	22FEB01	DELETED SEVERAL LINES ON TNMC	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-1518-11 W/TNMC

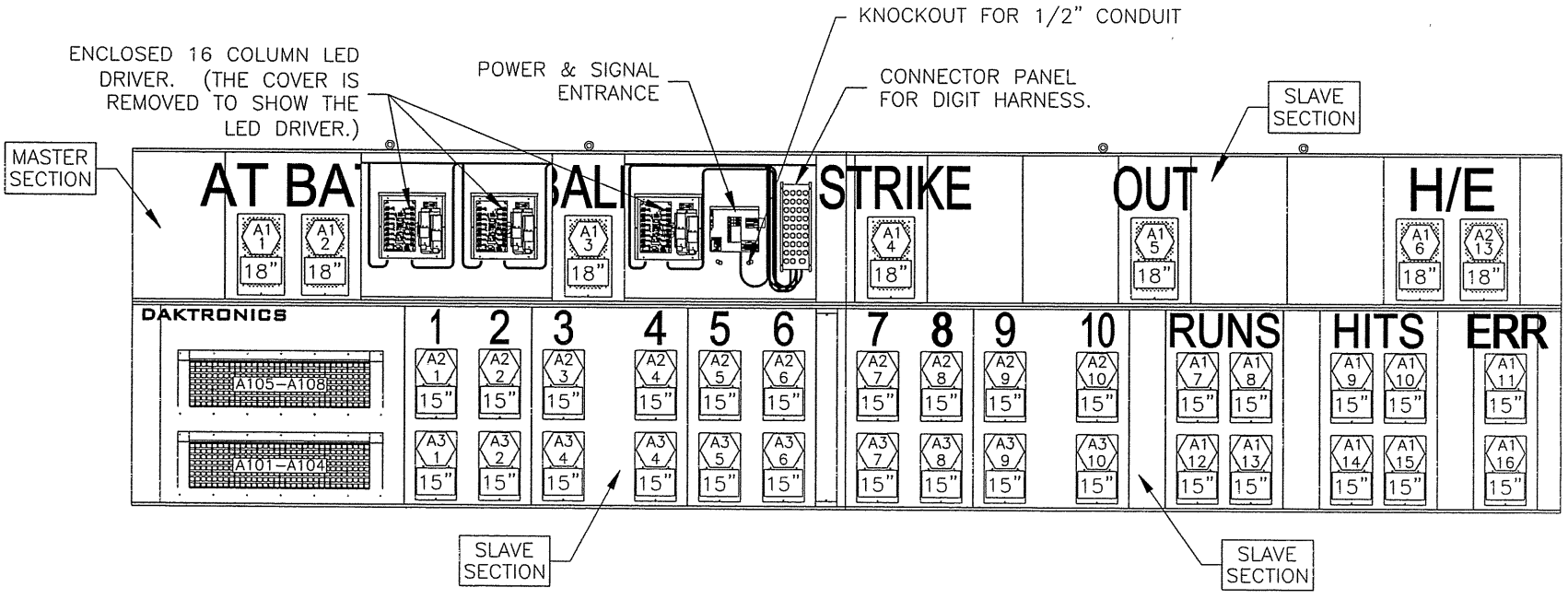
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 14FEB01

REVISION APPR. BY:

SCALE: 1=30

1192-E10A-144637

BA-3718-11 W/ 832-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
03	23MAY01	UPDATED MODEL NUMBER	DUSWH	
02	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	
01	22FEB01	DELETED SEVERAL LINES ON TNMC	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-3718-11 W/TNMC

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 15FEB01

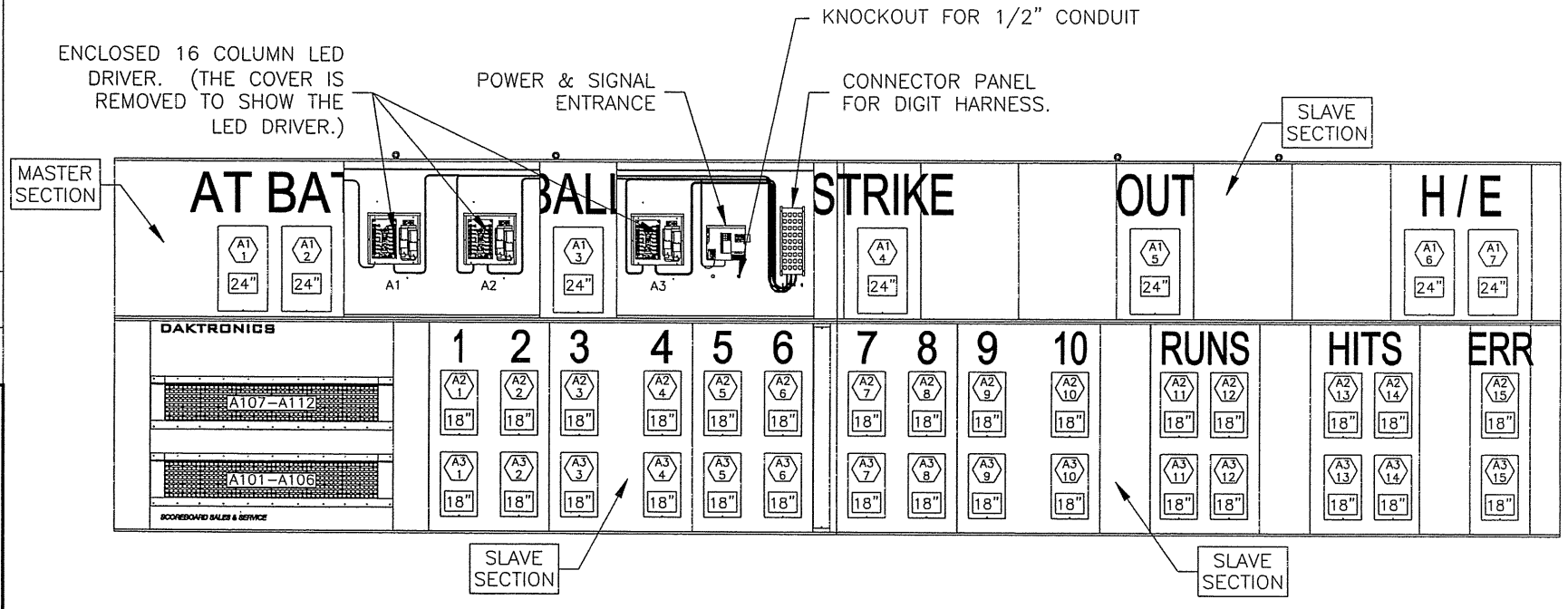
APPR. BY:

SCALE: 1=40

REVISION

1192-E10A-144659

BA-3724-11 W/ 848-10 LED TNMC



(A1 1) = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
03	23MAY01	UPDATED MODEL NUMBER	DUSWH	
02	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	
01	21FEB01	CORRECTED SEVERAL INCORRECT DRIVER DESIGNATION LABELS	MCOPL	

REVISION

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-3724-11 W/TNMC

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 15FEB01

APPR. BY:

SCALE: 1=50

1192-E10A-144678

REV.	DATE	DESCRIPTION	BY	APPR.
03	22JAN02	CHANGED PART OP-1146-0016 TO OP-1146-0020	MCOPL	
02	28MAR01	REVISED SIGNAL IN DIAGRAM	MCOPL	
01	12MAR01	CHANGED DRV TO MDC	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LAYOUT; 832/848 LED TNMC

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 22FEB01

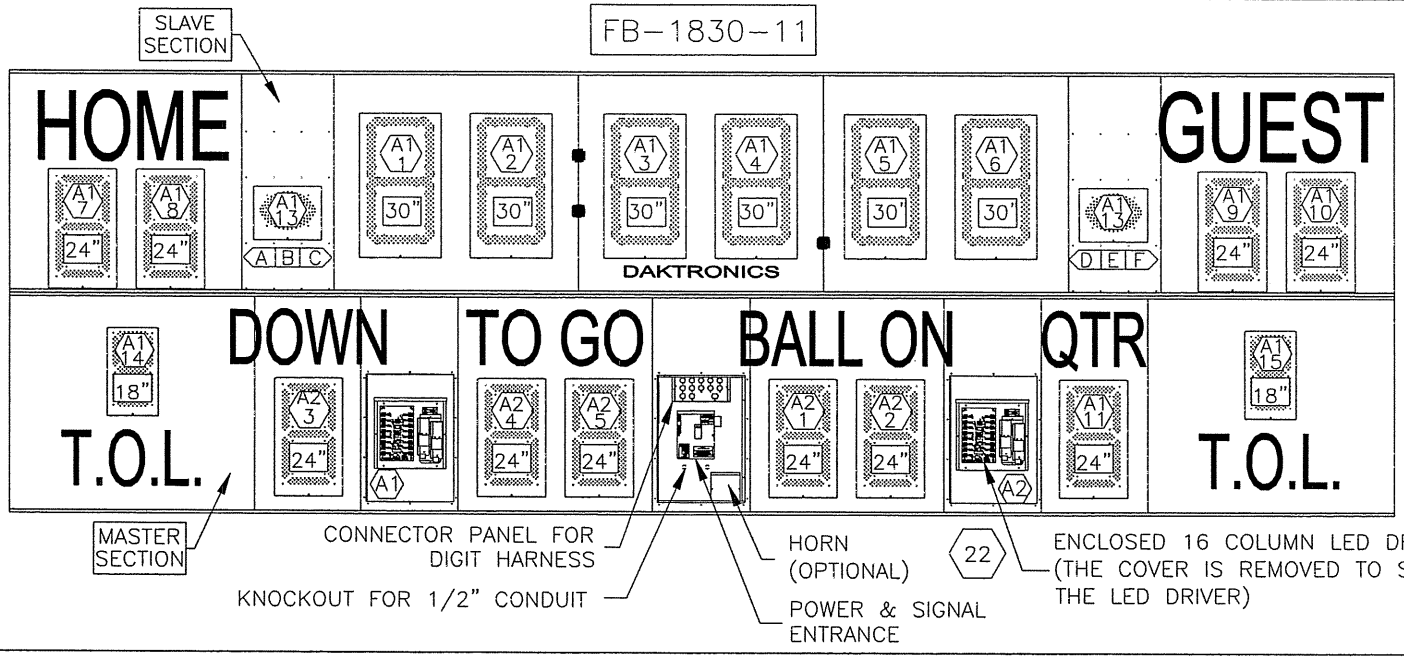
REVISION APPR. BY:

SCALE: NONE

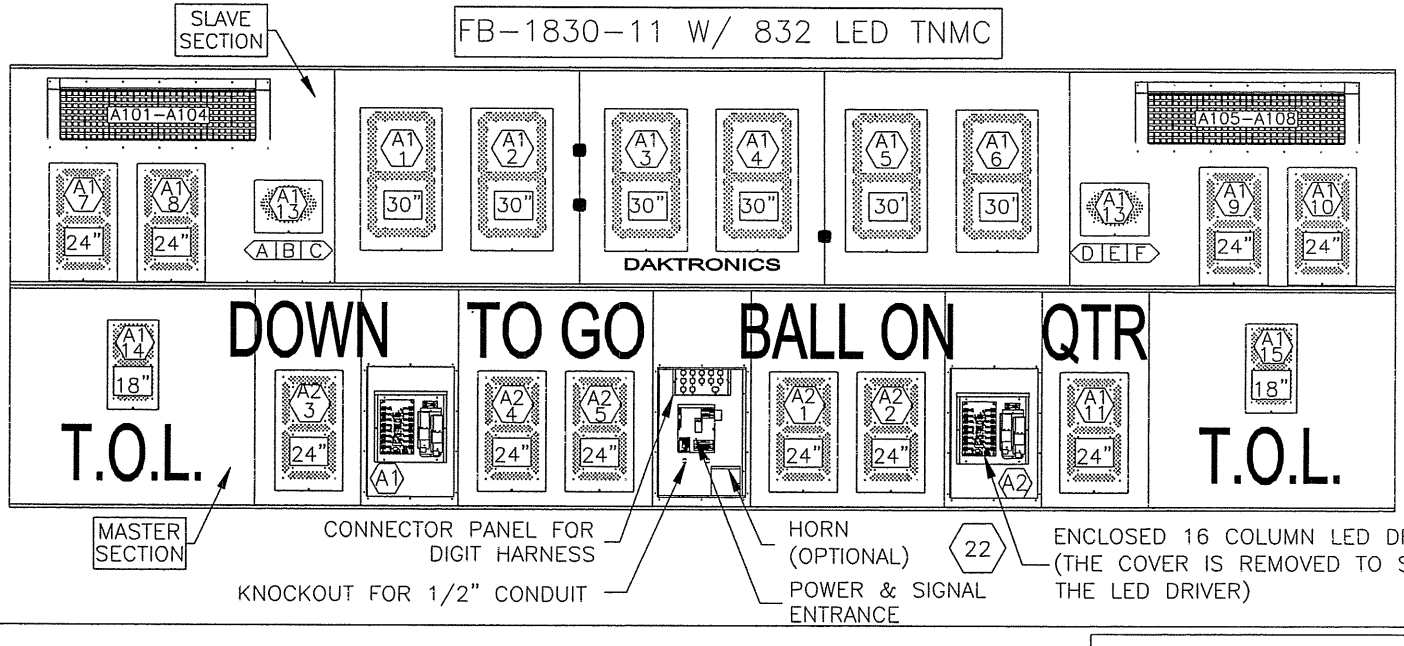
1192-E07A-145045

REV.	DATE	DESCRIPTION	BY	APPR.
01	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	

FB-1830-11



FB-1830-11 W/ 832 LED TNMC



(A1 1) = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

(A|B|C) = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB-1830-11

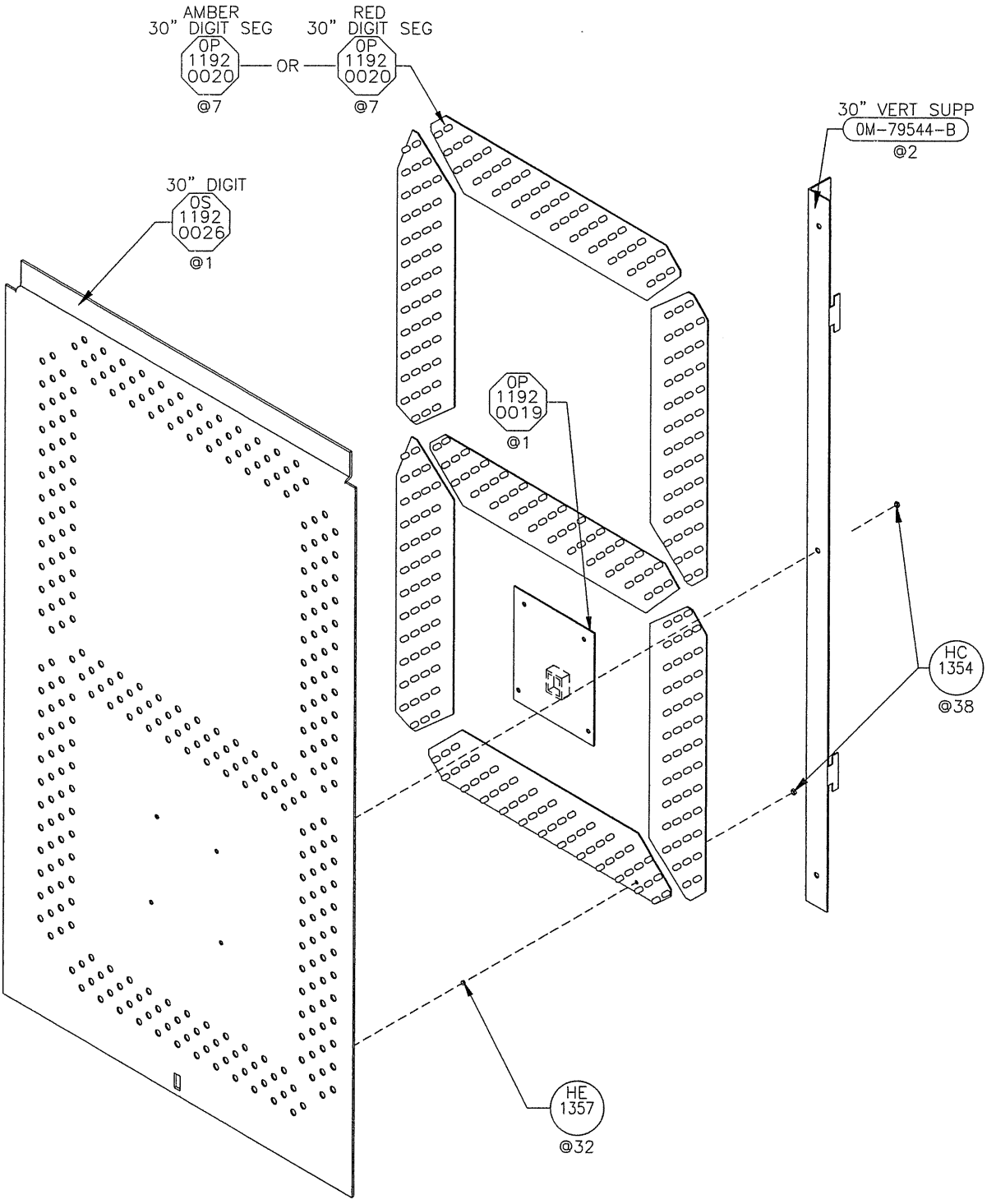
DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 23FEB01

REVISION

APPR. BY:

SCALE: 1=40

1192-E10A-145120



REV.	DATE	DESCRIPTION	BY	APPR.
05	04APR02	CHANGED HS-1357 TO HE-1357	MCOPL	
04	29JUN01	ADDED AMBER LED DIGIT SEG PART NUMBER	MCOPL	
03	29MAY01	CHANGED STIFFENER ANGLE AND REMOVED 36" DIGIT SPECIFICATIONS	DUSWH	
02	10APRIL01	ADDED STIFFENER ANGLE 0M-79544-B @2 AND INCREASED THE QTY OF HC-1354 FROM 32 TO 38.	JNILSE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: DIGIT ASSEMBLY 30" LED

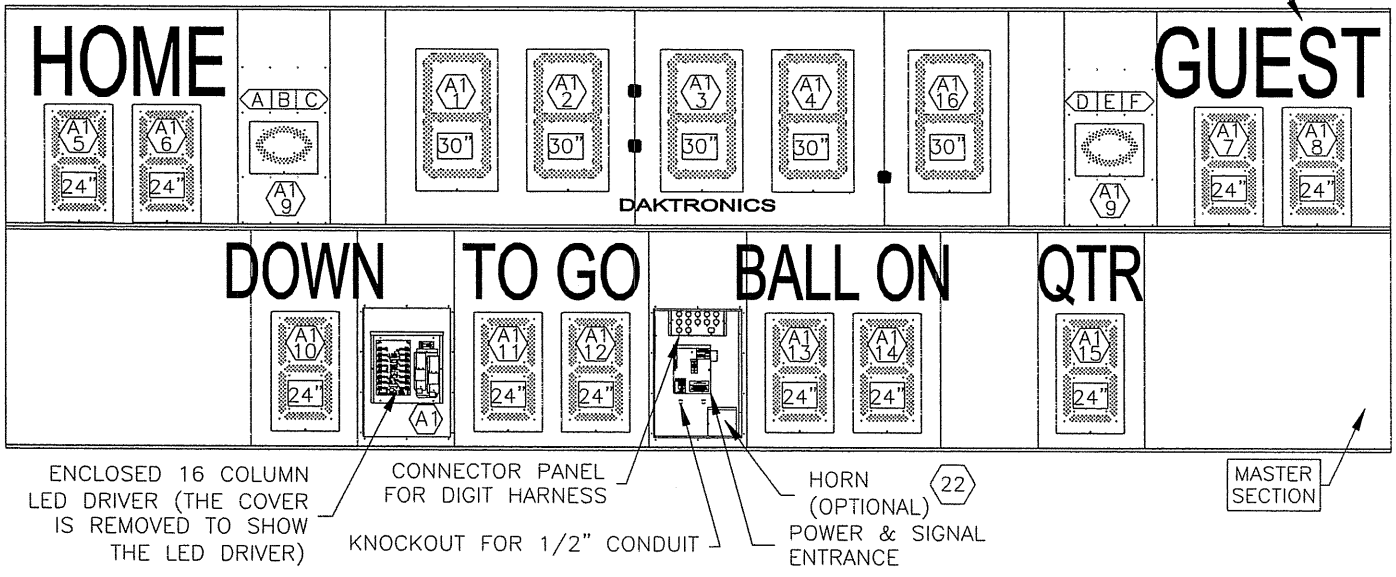
DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 28FEB01

REVISION | APPR. BY: | SCALE: 1=4

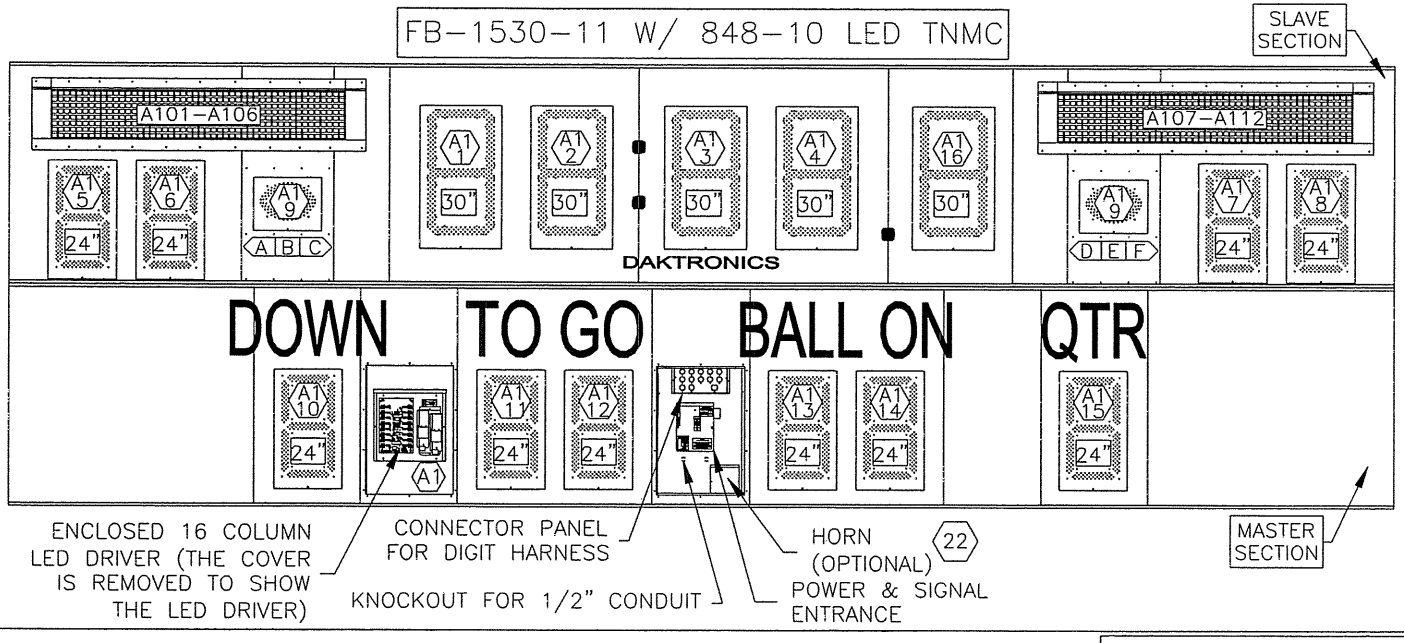
1192-E10A-145339

REV.	DATE	DESCRIPTION	BY	APPR.
02	24MAY01	UPDATED MODEL NUMBER	DUSWH	
01	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	

FB-1530-11



FB-1530-11 W/ 848-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB-1530-11

DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 05MAR01

APPR. BY:

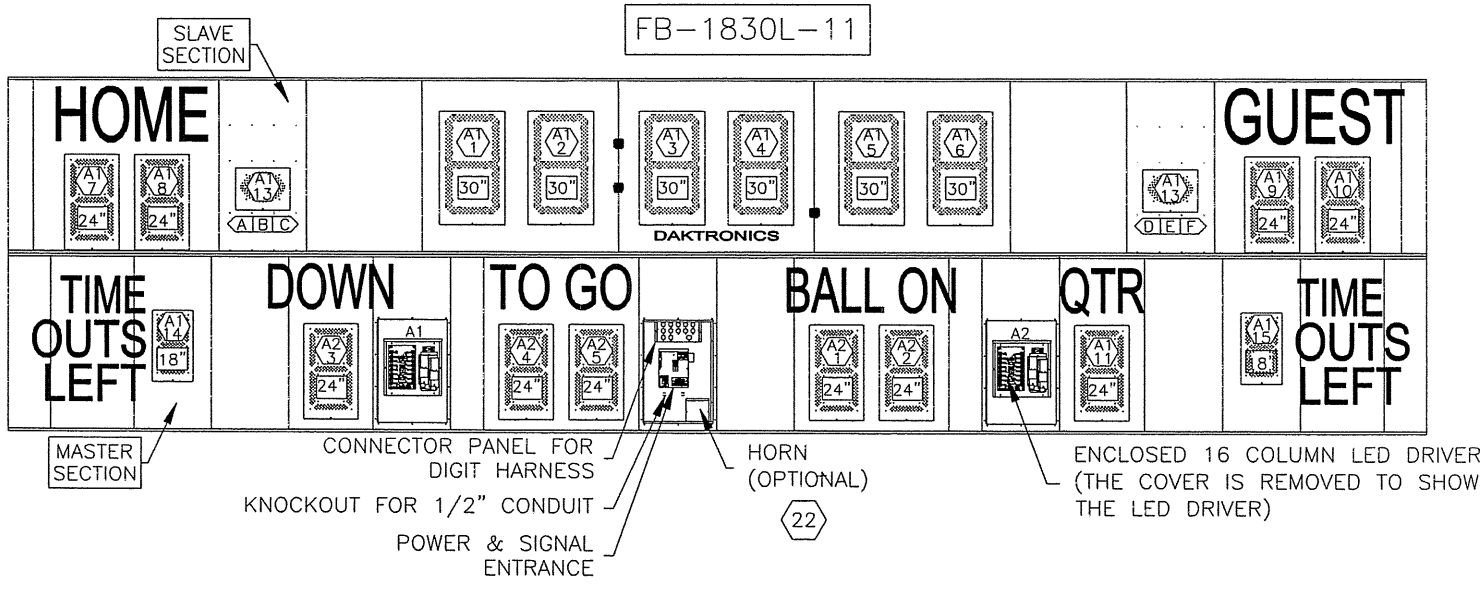
SCALE: 1=40

REVISION

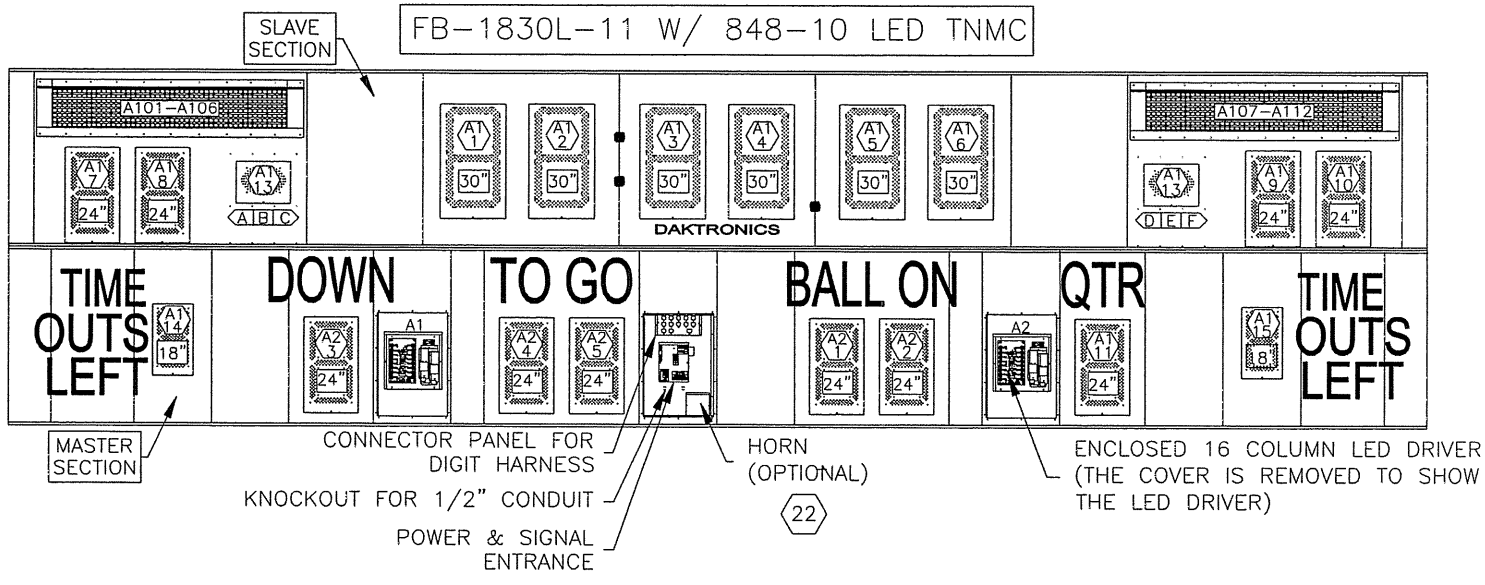
1192-E10A-14549 8

REV.	DATE	DESCRIPTION	BY	APPR.
02	24MAY01	UPDATED MODEL NUMBER	DUSWH	
01	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	

FB-1830L-11



FB-1830L-11 W/ 848-10 LED TNMC



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB-1830L-11

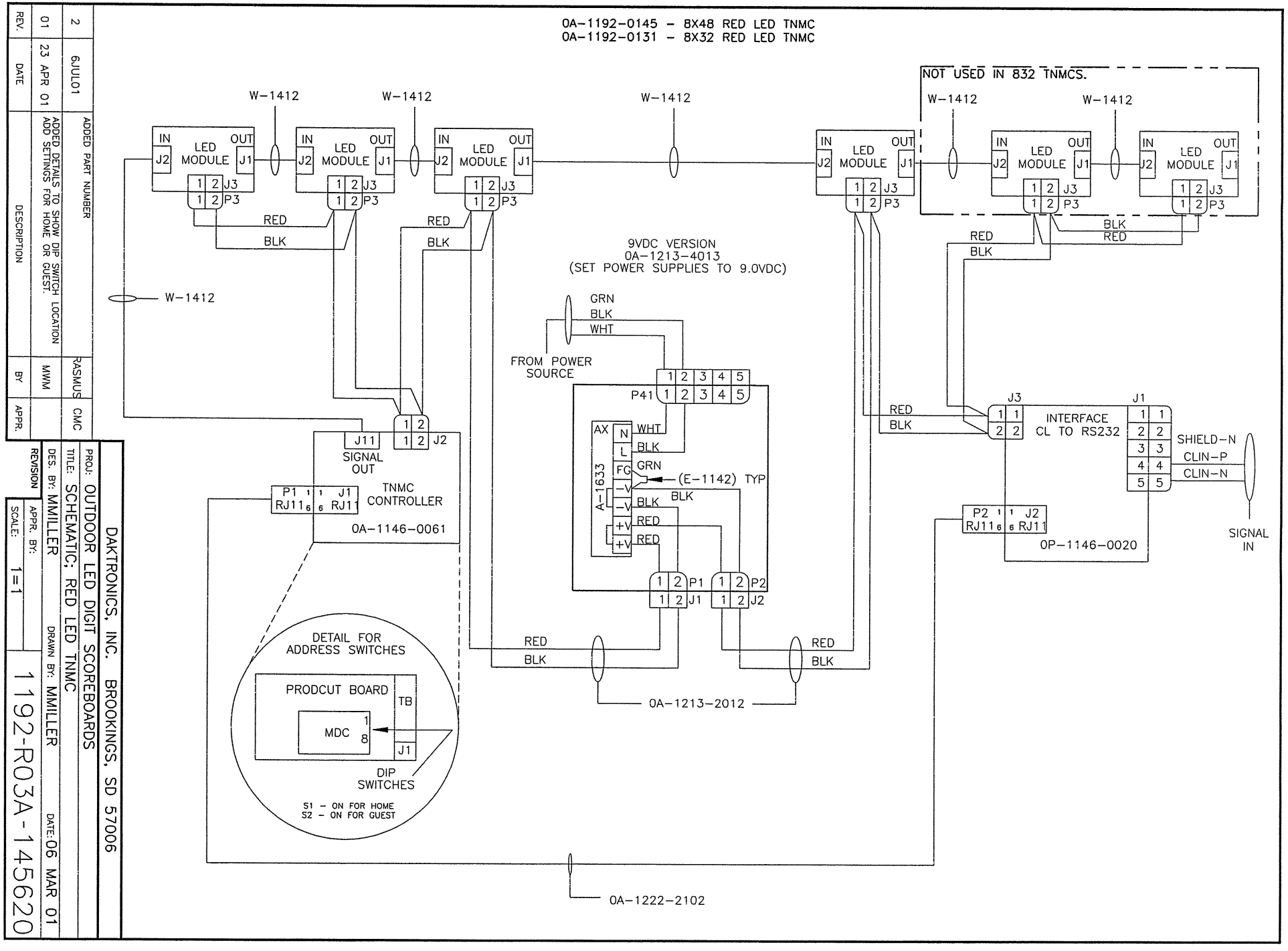
DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 06MAR01

REVISION

APPR. BY:

SCALE: 1=50

1192-E10A-145554



REV.	DATE	DESCRIPTION	BY	APPR.
2	6JUL01	ADDED PART NUMBER	RASMUS	CMC
01	23 APR 01	ADDED DETAILS TO SHOW DIP SWITCH LOCATION ADD SETTINGS FOR HOME OR GUEST.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: SCHEMATIC; RED LED TNMC

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 06 MAR 01

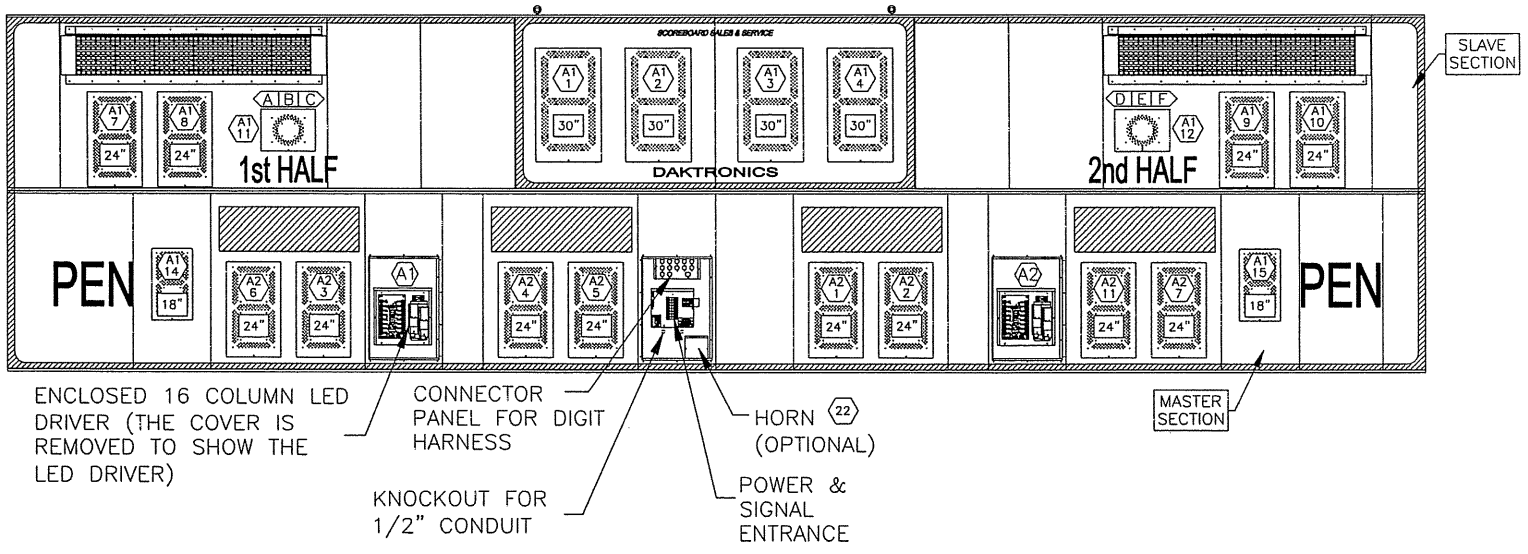
SCALE: 1=1 APPR. BY:

REVISION

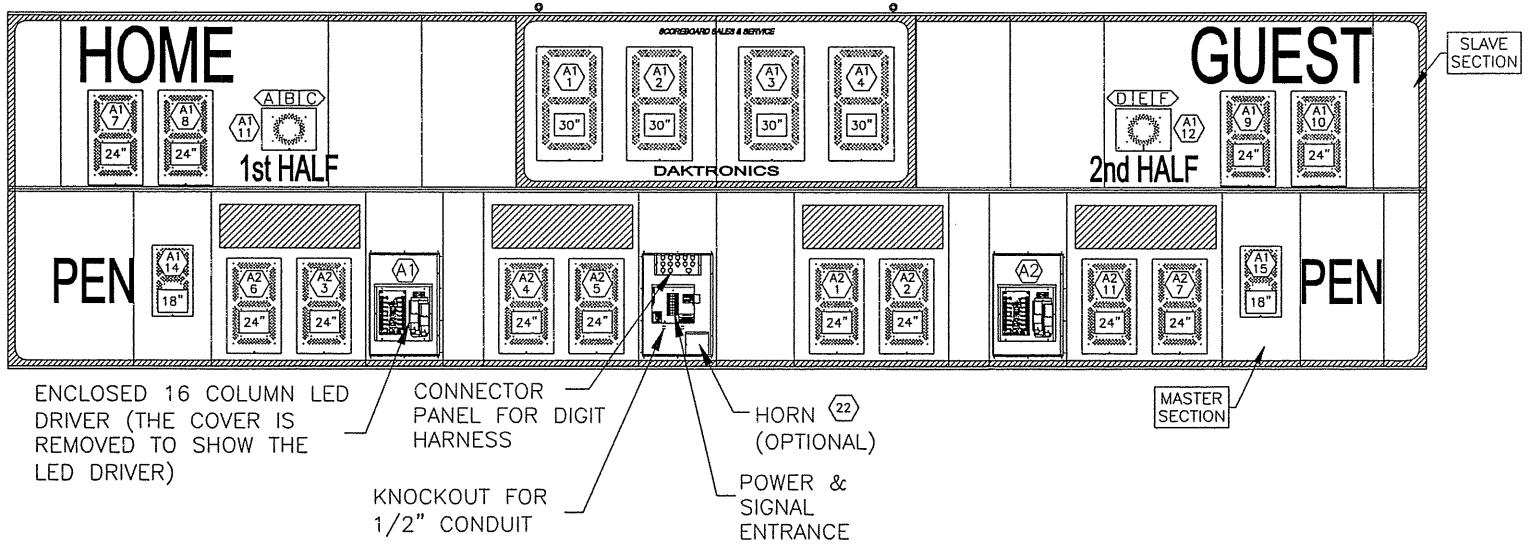
1192-R03A-145620

REV.	DATE	DESCRIPTION	BY	APPR.
02	10JULY01	CHANGED DRIVER LABELING	MCOPL	
01	23MAY01	UPDATED MODEL NUMBER	DUSWH	

SO-1830L-11 W/ 848-10 LED TNMC



SO-1830L-11



(A1 1) = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

(A1B1C) = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-1830L-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 21MAR01

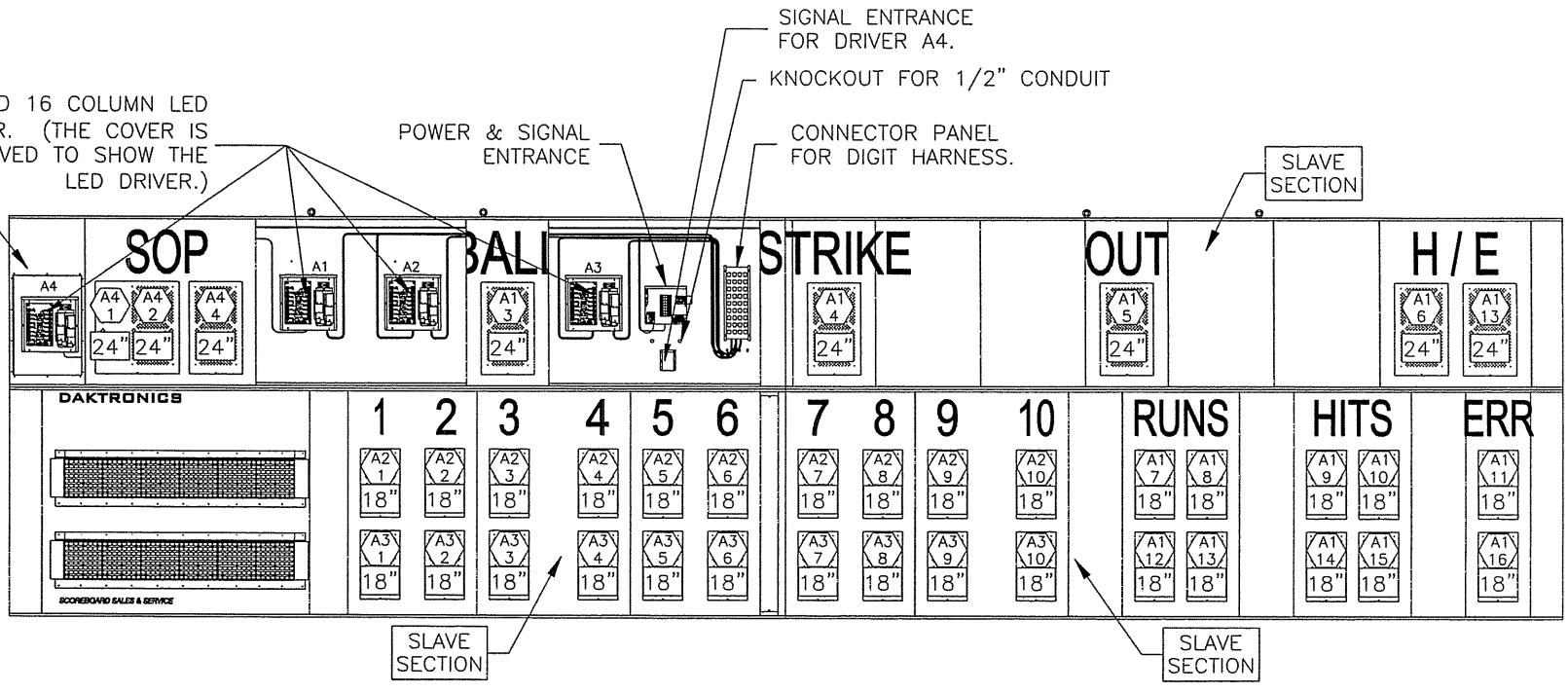
REVISION 02

APPR. BY:

SCALE: 1=50

1192-E07A-146372

BA-2007-11 W/ 848-10 LED TNMC



(A1 1) = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
01	23MAY01	UPDATED MODEL NUMBER	DUSWH	

REVISION

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-2007-11 W/LED TNMC

DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 04MAR01

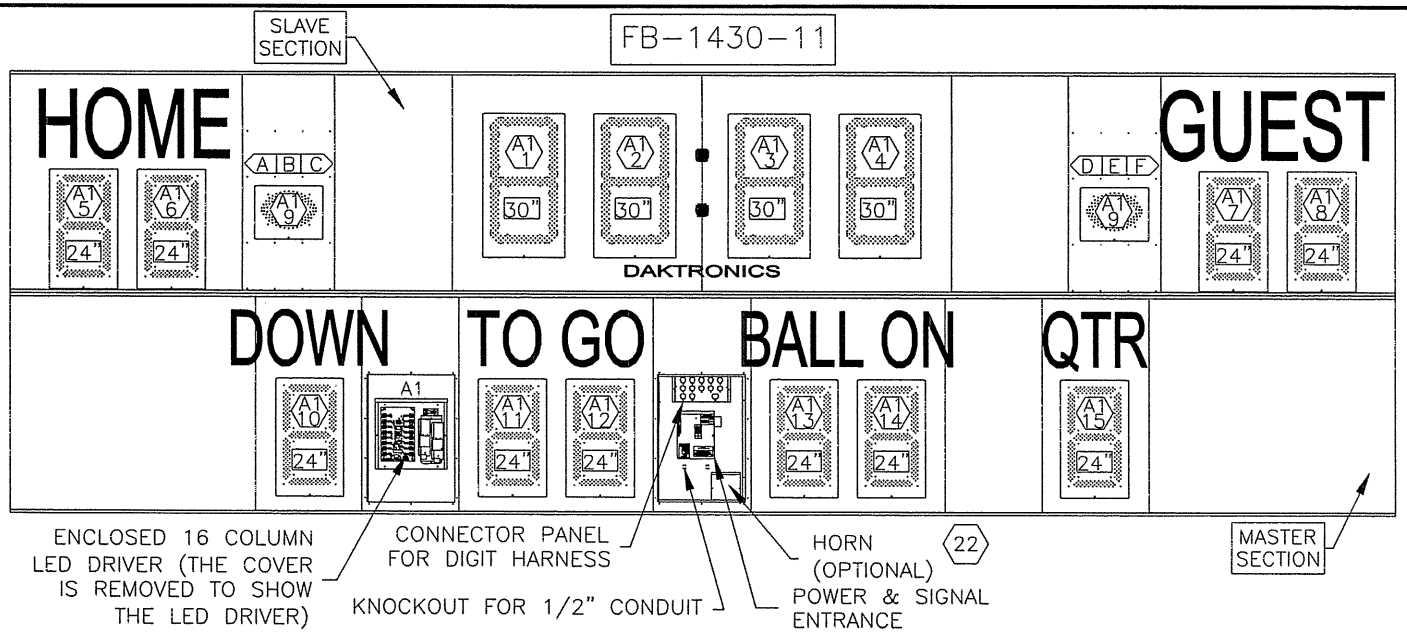
APPR. BY:

SCALE: 1=50

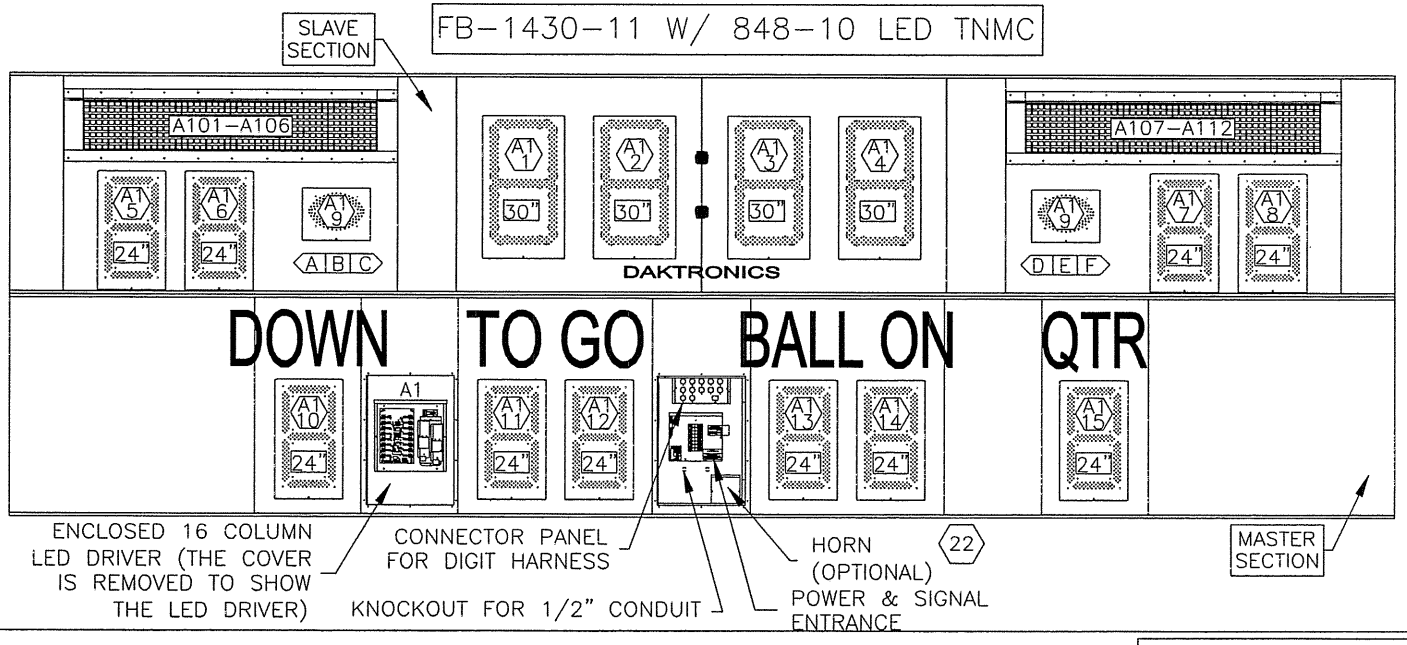
1192-E10A-147199

REV.	DATE	DESCRIPTION	BY	APPR.
02	23MAY01	UPDATED MODEL NUMBER	DUSWH	
01	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	

FB-1430-11



FB-1430-11 W/ 848-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB-1430-11

DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 05APRIL01

APPR. BY:

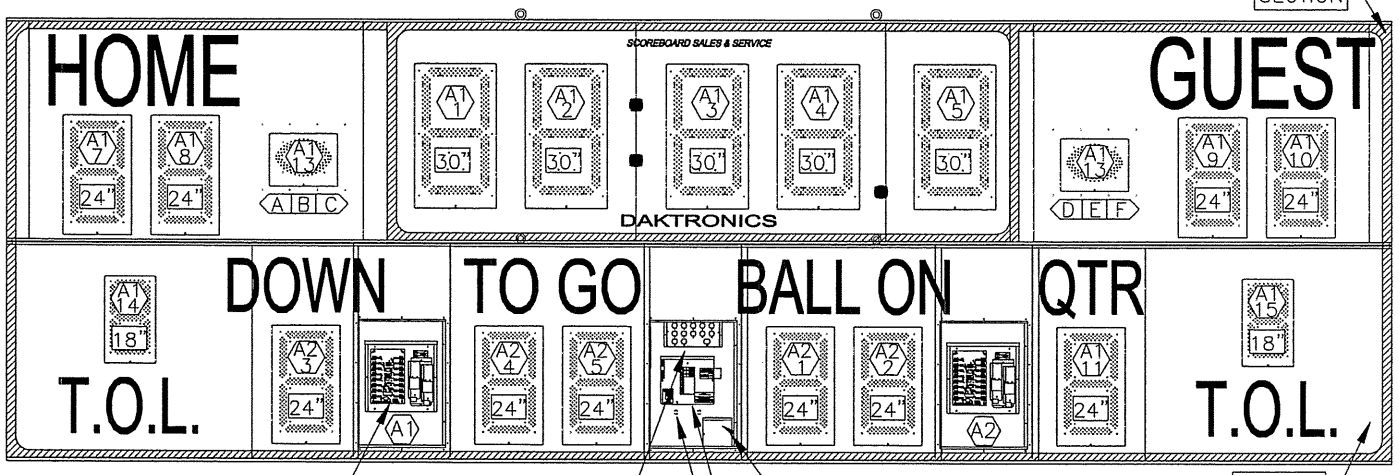
SCALE: 1=40

REVISION

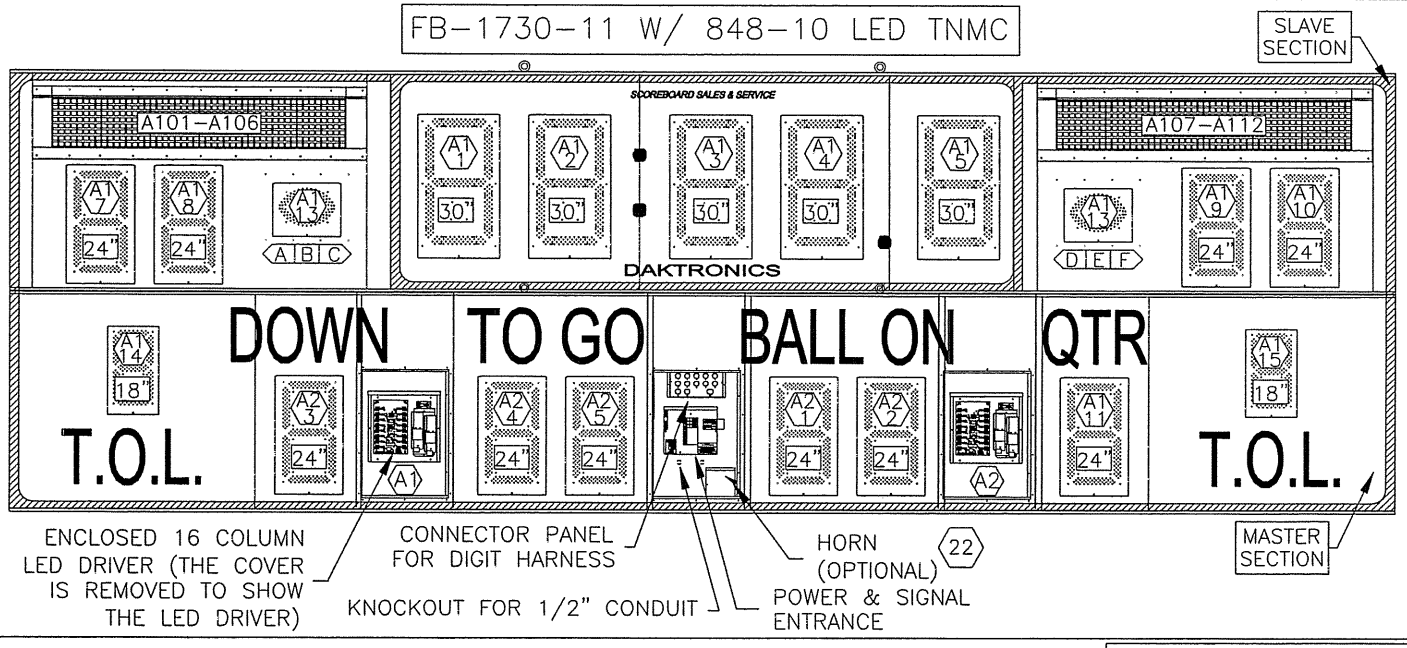
1192-E10A-14726

REV.	DATE	DESCRIPTION	BY	APPR.
01	24MAY01	UPDATED MODEL NUMBER	DJSWH	

FB-1730-11



FB-1730-11 W/ 848-10 LED TNMC



(A1 1) = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

<A|B|C> = SEGMENT DESIGNATIONS

[24"] = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS: FB-1730-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 02MAY01

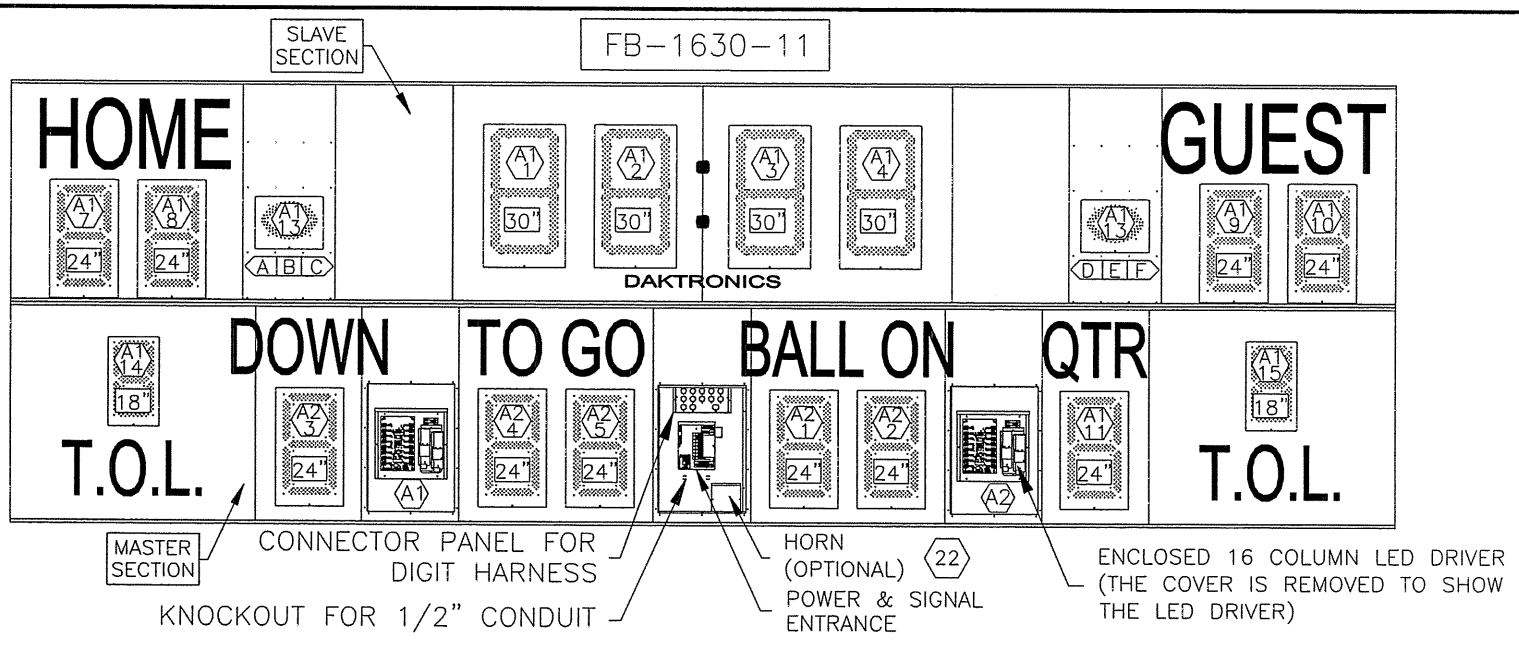
APPR. BY:

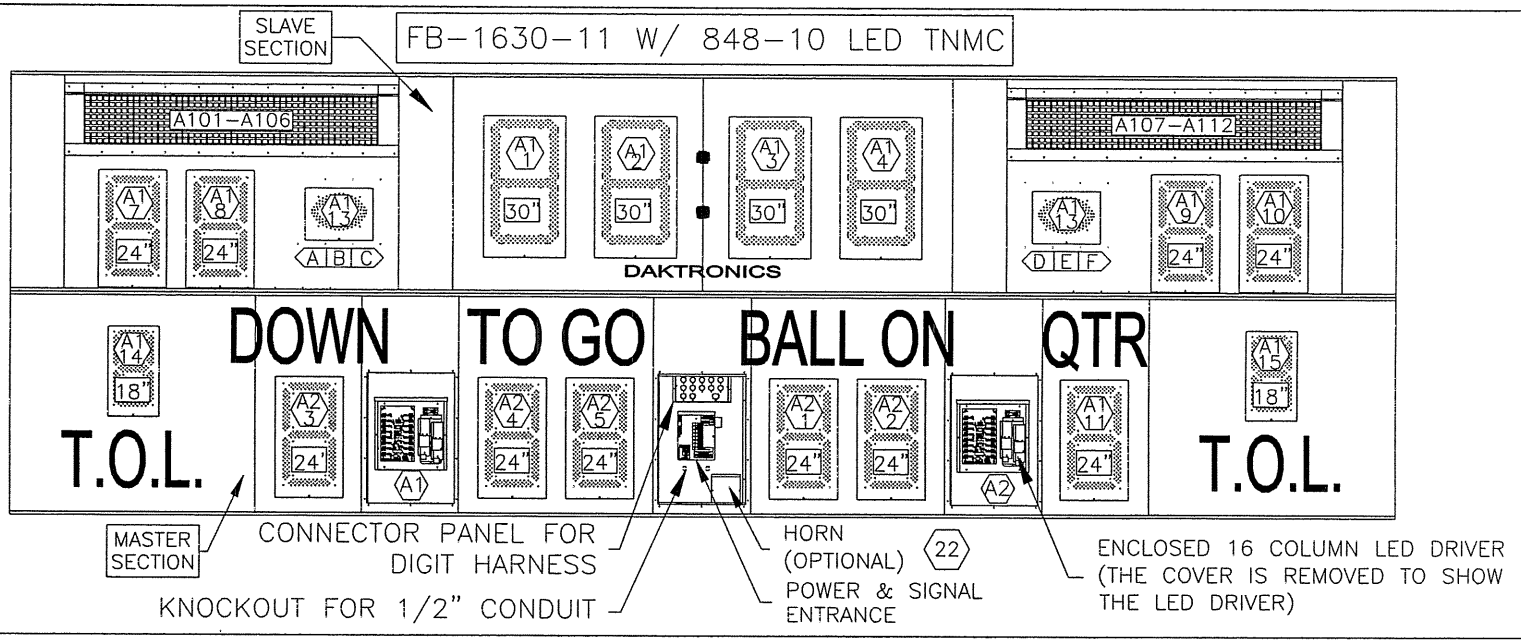
SCALE: 1=40

REVISION

1192-E07A-148018

REV.	DATE	DESCRIPTION	BY	APPR.
02	22 MAY 01	CHANGED MODEL NUMBER	DUSWH	
01	02MAY01	UPDATED TNMC COMPONENT NUMBERS	MCOPL	





A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB-1630-11

DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 01MAY01

REVISION

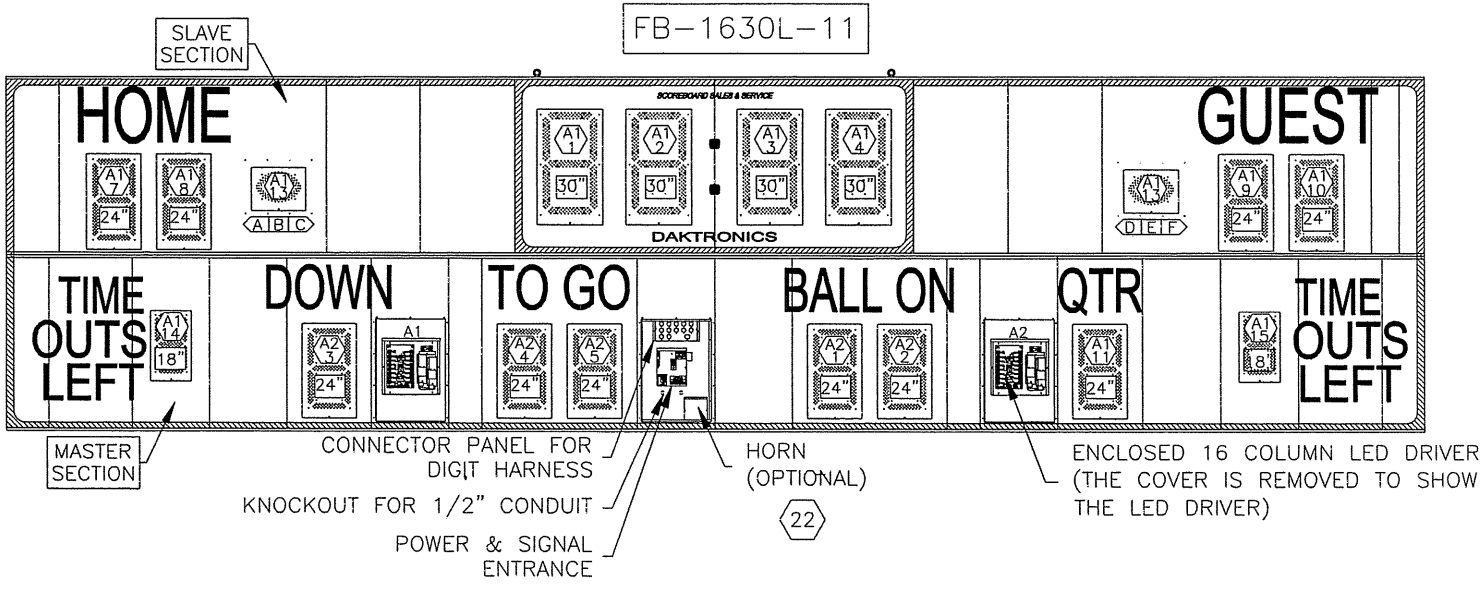
APPR. BY:

SCALE: 1=40

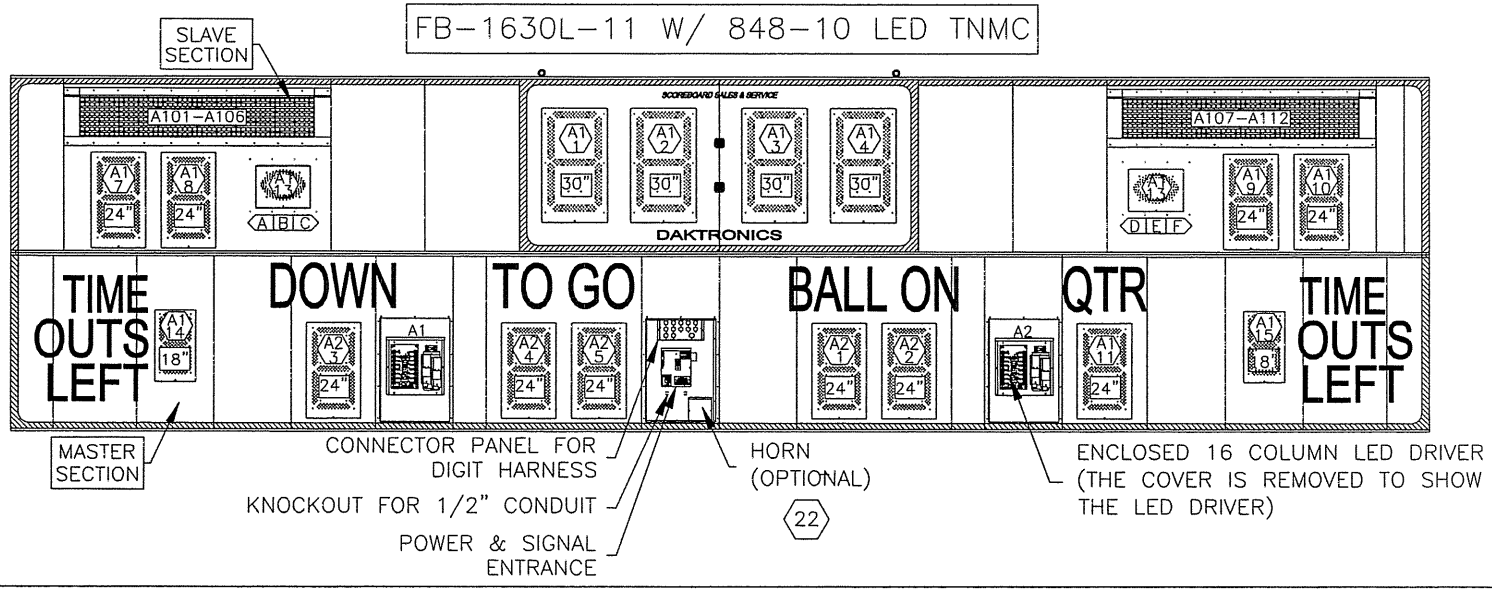
1192-E10A-148369

REV.	DATE	DESCRIPTION	BY	APPR.
01	24MAY01	UPDATED MODEL NUMBER	DUSWH	

FB-1630L-11



FB-1630L-11 W/ 848-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-1630L-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 02MAY01

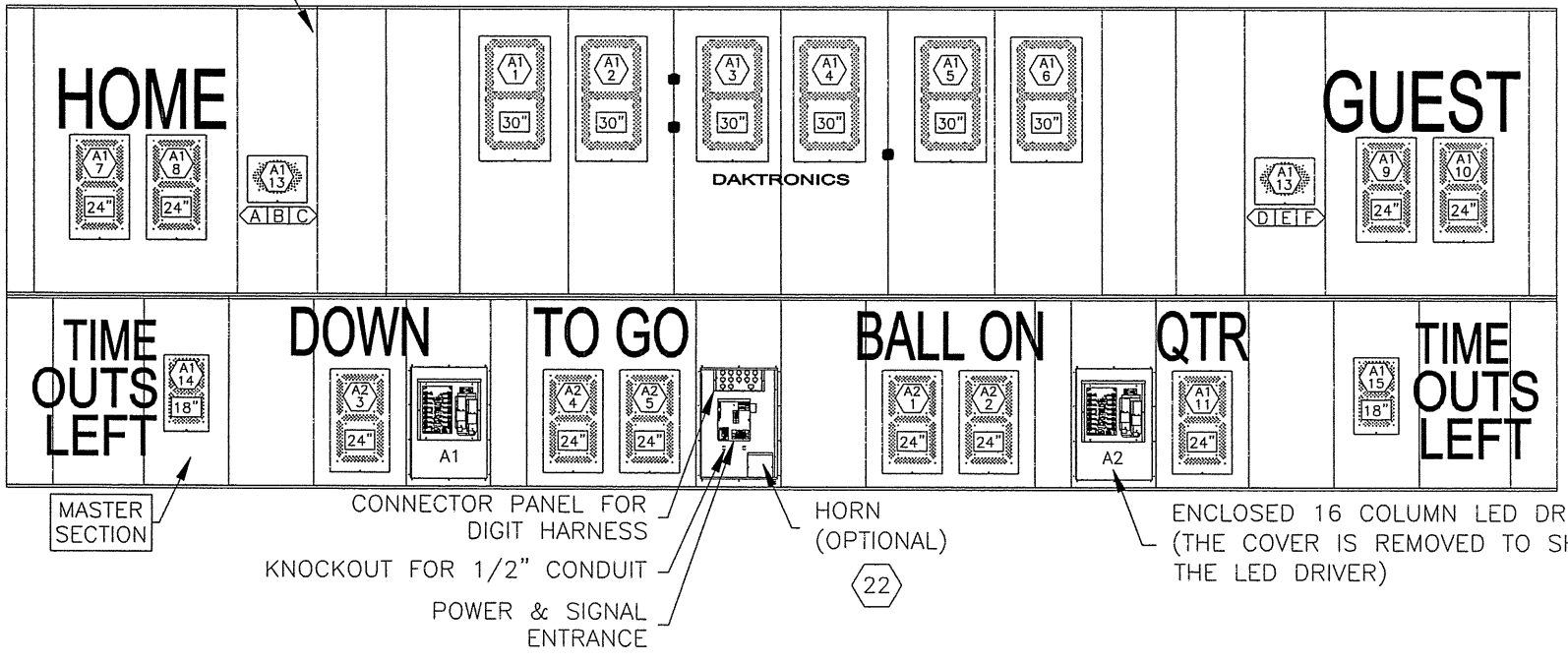
REVISION APPR. BY:

SCALE: 1=50

1192-E07A-148432

REV.	DATE	DESCRIPTION	BY	APPR.
01	21JUN01	MOVED CLOCK DIGITS UP 12" AND MOVED INDICATOR PANELS NEXT TO SCORE DIGITS	MCOPL	

FB-2001-11



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

24" = DIGIT SIZE

A B C = SEGMENT DESIGNATIONS

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2001-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 03MAY01

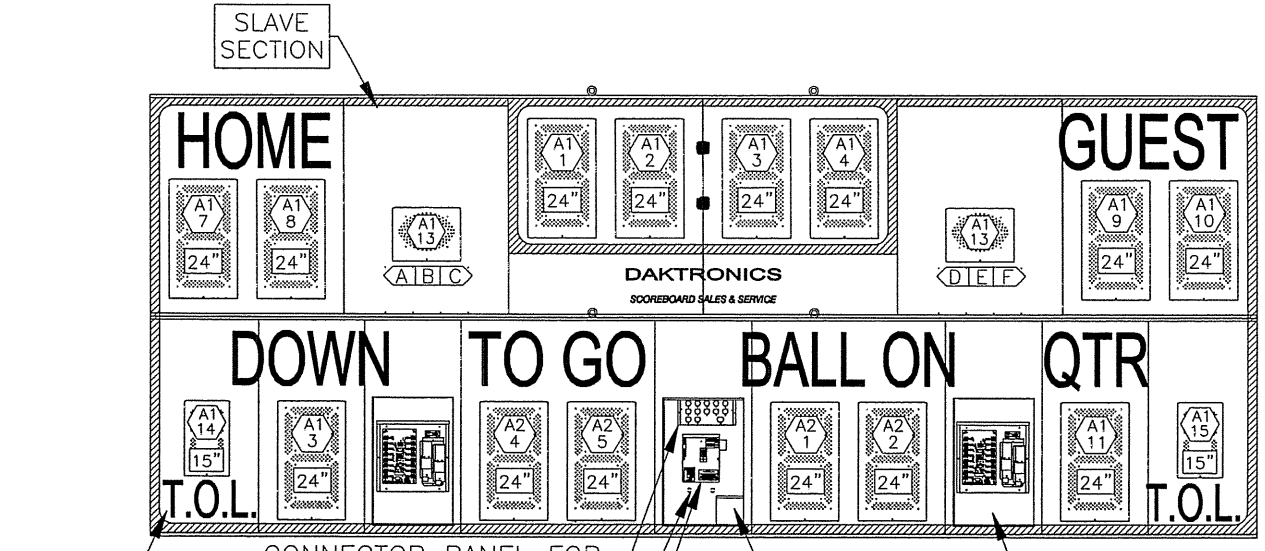
REVISION APPR. BY:

SCALE: 1=45

1192-E07A-148468

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 SEP 01	CORRECTED POSSESSION INDICATOR DIGIT DRIVER ASSIGNMENT PER ECO 23090.	MRB	

FB-2002-11



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

24" = DIGIT SIZE

A B C = SEGMENT DESIGNATIONS

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2002-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 03MAY01

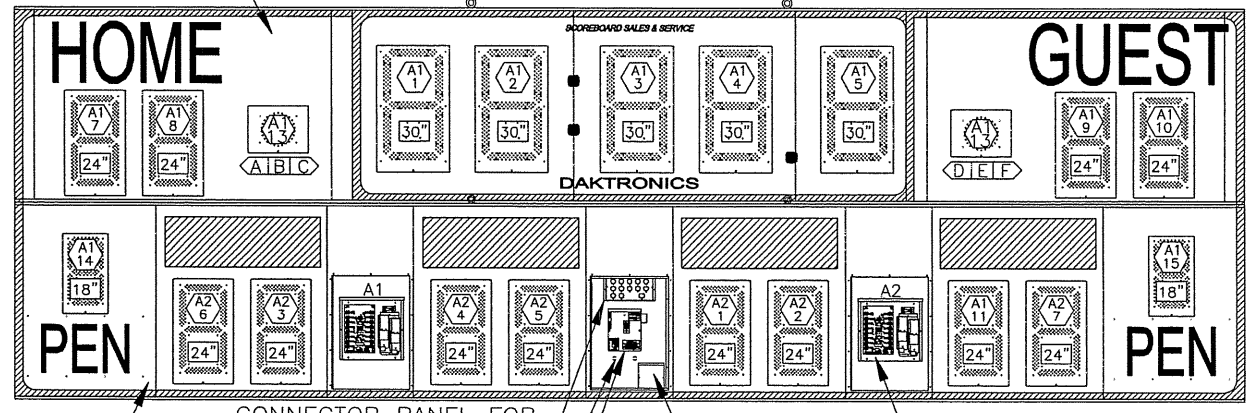
REVISION APPR. BY:

SCALE: 1=40

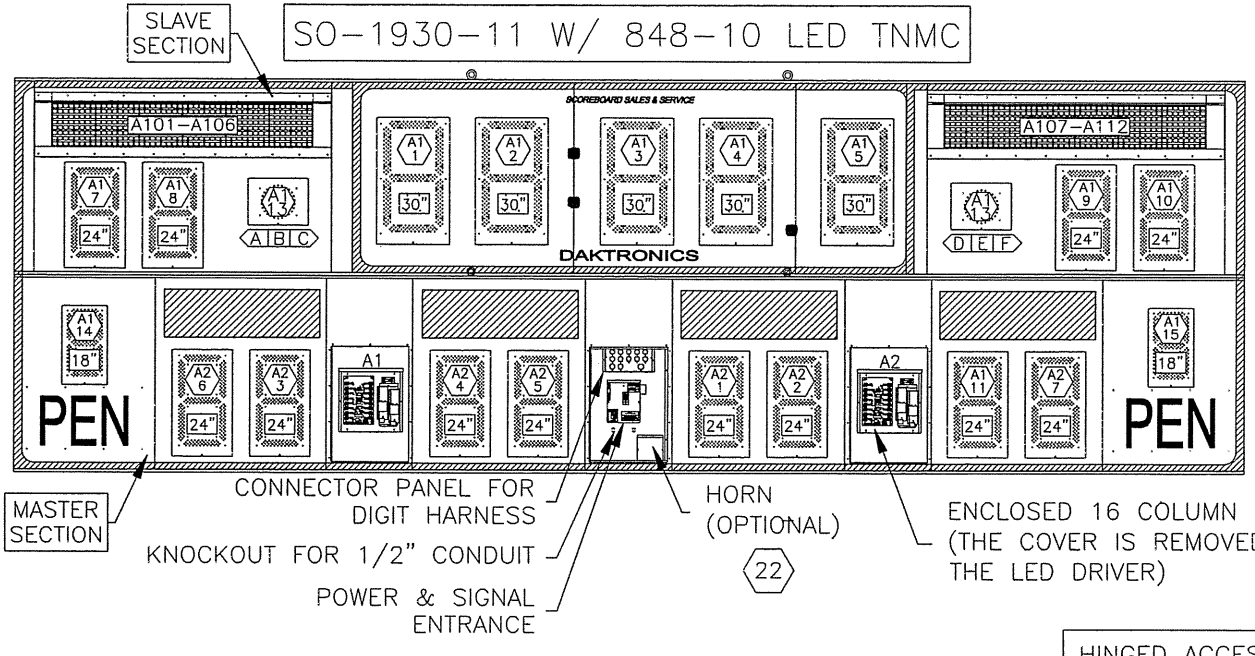
1192-E10A-148476

REV.	DATE	DESCRIPTION	BY	APPR.
2	22 JUNE 01	UPDATED DIGIT ASSIGNMENTS AND ADDED DRIVER A2 TO DRAWING.	HBB	
01	24MAY01	UPDATED MODEL NUMBER	DUSWH	

SO-1930-11



SO-1930-11 W/ 848-10 LED TNMC



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-1930-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 05MAY01

APPR. BY:

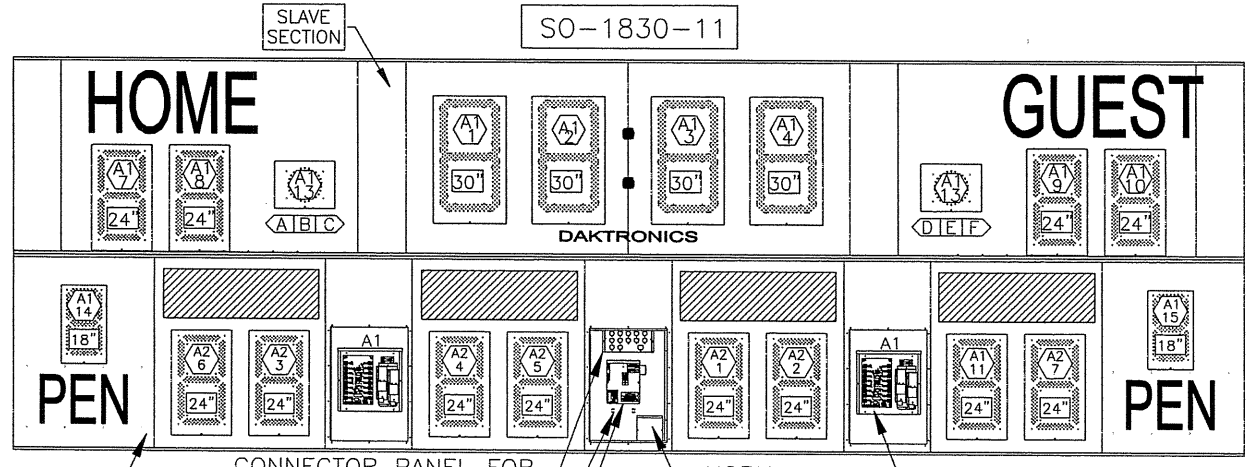
SCALE: 1=45

REVISION 02

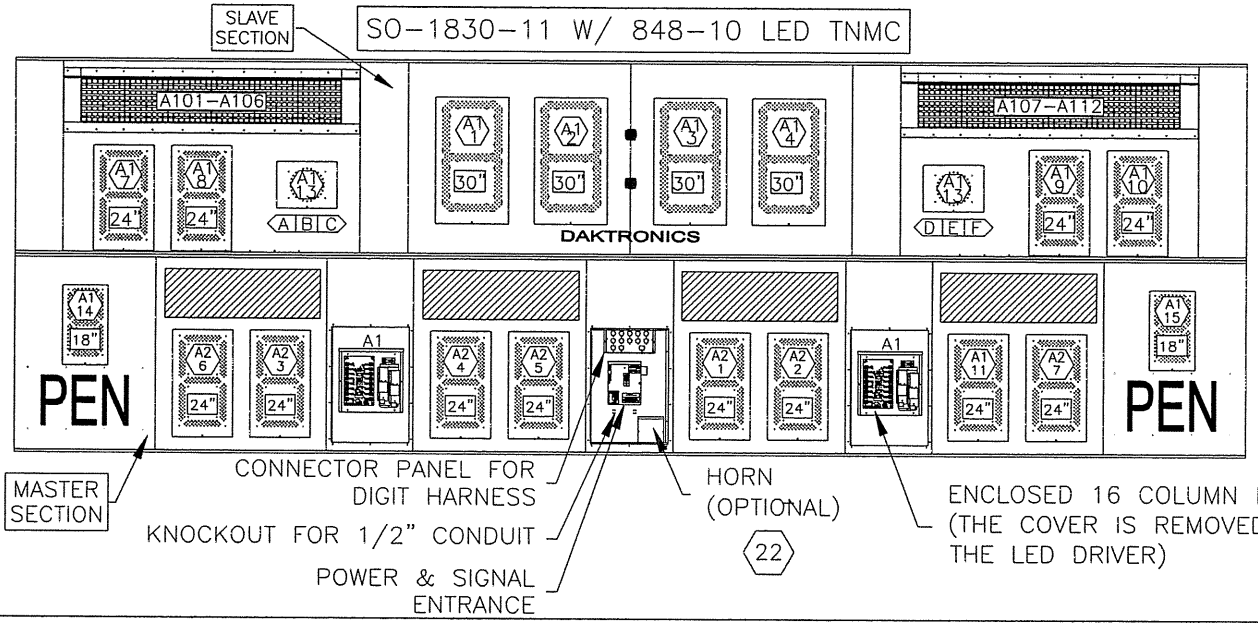
1192-E07A-148531

REV.	DATE	DESCRIPTION	BY	APPR.
01	23MAY01	UPDATED MODEL NUMBER	DUSWH	

SO-1830-11



SO-1830-11 W/ 848-10 LED TNMC



A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

A B C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-1830-11

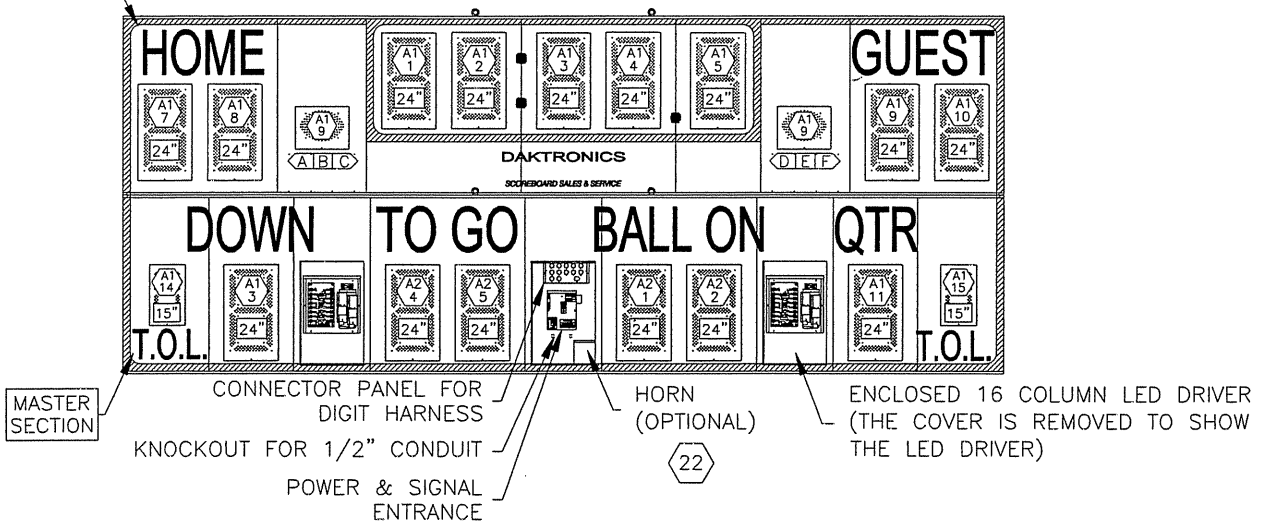
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 05MAY01

REVISION

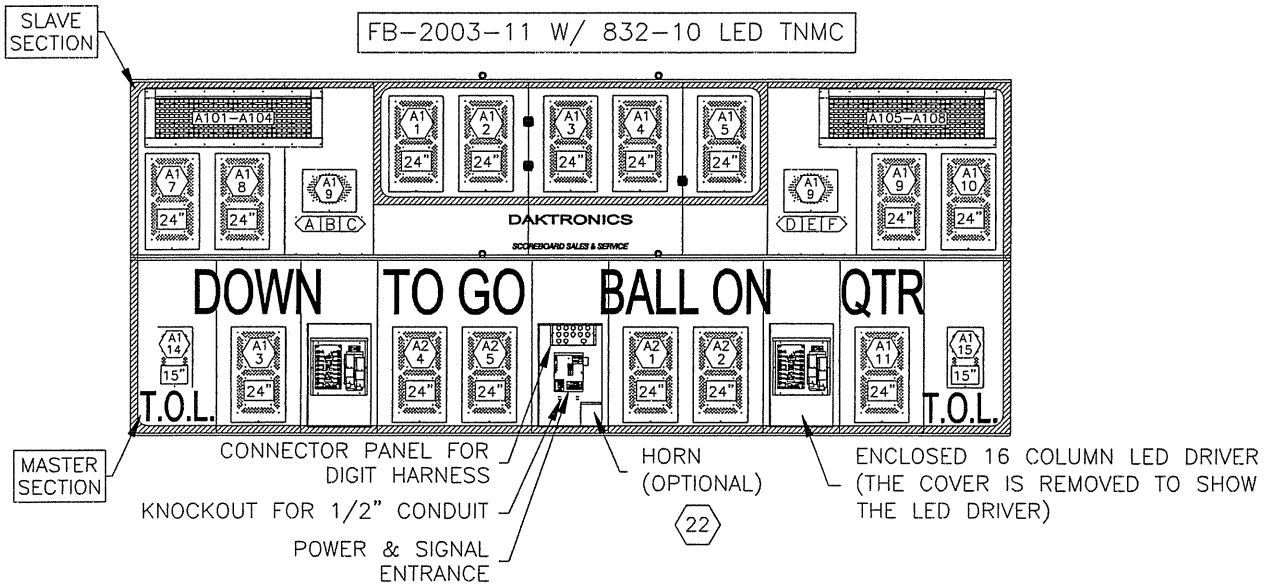
SCALE: 1=45 APPR. BY:

1192-E07A-148537

FB-2003-11



FB-2003-11 W/ 832-10 LED TNMC



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

24" = DIGIT SIZE

A B C = SEGMENT DESIGNATIONS

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
01	11JUN01	ADDED FB-2003-11 W/ LED TNMC	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2003-11

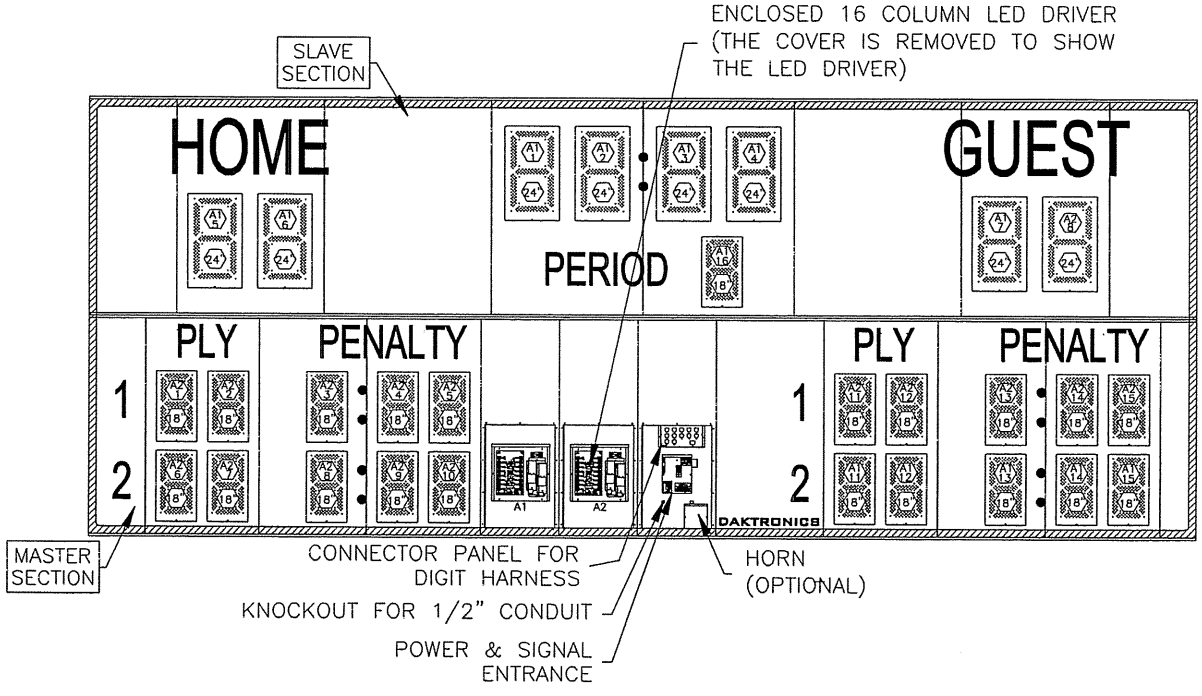
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 06APR01

REVISION APPR. BY:

SCALE: 1=50

1192-E07A-148545

MS-2009-11



A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL PANEL BOARD.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, MS-2009-11

DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 30MAY01

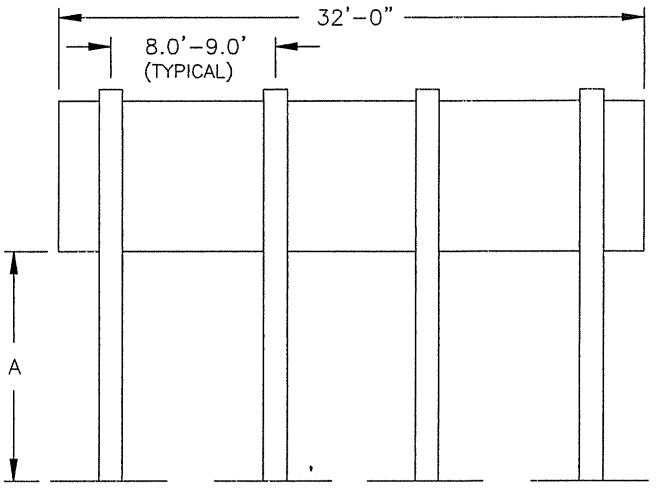
REVISION APPR. BY:

SCALE: 1=50

1192-E10A-149704

MODELS FB-1630L & FB-1830L				
DISTANCE TO BOTTOM OF SCOREBOARD (FT) A	DOES SCOREBOARD HAVE ATTACHED AD PANEL?	DESIGN WIND VELOCITY (MPH)		
		70	80	100
10	NO	W10x22 *3.0 X 6.5*	W10x22 *3.0 X 7.2*	W12x26 *3.0 X 8.5*
	YES	W14x30 *3.0 X 7.9*	W10x33 *3.0 X 8.7*	W16x40 *3.0 X 10.3*
12	NO	W8X24 *3.0 X 6.8*	W12x26 *3.0 X 7.5*	W14x30 *3.0 X 8.9*
	YES	W10x33 *3.0 X 8.2*	W12x35 *3.0 X 9.0*	W12x40 *3.0 X 10.7*
14	NO	W12x26 *3.0 X 7.5*	W10x30 *3.0 X 8.3*	W14x38 *3.0 X 9.8*
	YES	W10x33 *3.0 X 8.5*	W12x40 *3.0 X 9.4*	W14x48 *3.0 X 11.1*
16	NO	W14x30 *3.0 X 7.4*	W10x33 *3.0 X 8.2*	W12x40 *3.0 X 9.6*
	YES	W10x39 *3.0 X 8.8*	W14x43 *3.0 X 9.7*	W14x53 *3.0 X 11.4*
18	NO	W10x33 *3.0 X 7.7*	W14x38 *3.0 X 8.4*	W12x40 *3.0 X 9.9*
	YES	W12x40 *3.0 X 9.0*	W14x48 *3.0 X 10.0*	W14x61 *3.0 X 11.7*
20	NO	W10x39 *3.0 X 8.4*	W12x40 *3.0 X 9.2*	W14x48 *3.0 X 10.3*
	YES	W12x45 *3.0 X 9.4*	W14x53 *3.0 X 10.3*	W14x61 *3.0 X 12.2*

W6x12 ← RECOMMENDED BEAM SECTION FOR MOUNTING SCOREBOARD
2.00 X 4.25 ← *RECOMMENDED FOOTINGS IN FEET (DIAMETER X DEPTH)*



REAR VIEW

NOTE:
RECOMMENDATIONS FOR A DISPLAY WITH AN ATTACHED AD PANEL WERE CALCULATED USING A 48" TALL AD PANEL.

UBC 97 CODE USED WITH SOIL CLASS 3.

INFORMATION GIVEN IS FOR ESTIMATING PURPOSES ONLY. COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: BEAM AND FOOTING RECOMMENDATIONS, FB-XX30L

DES. BY: MCOPL/RNEYEN DRAWN BY: MCOPLAN DATE: 04JAN02

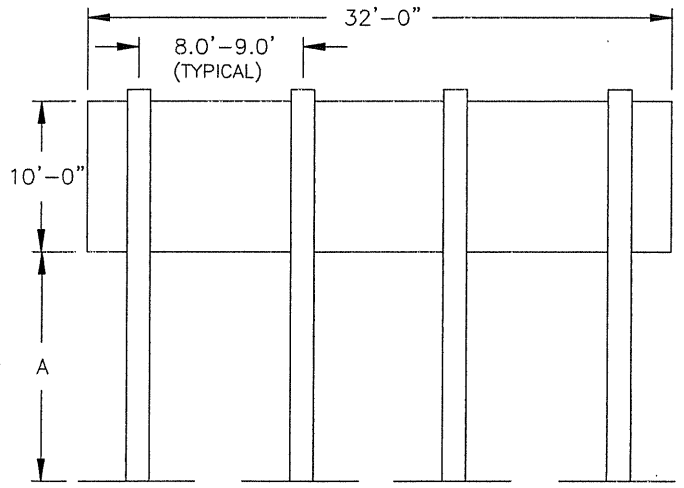
REVISION APPR. BY:

SCALE: NONE

1091-R08A-158779

MODELS FB–2001 & FB–2004				
DISTANCE TO BOTTOM OF SCOREBOARD (FT) A	DOES SCOREBOARD HAVE ATTACHED AD PANEL?	DESIGN WIND VELOCITY (MPH)		
		70	80	100
10	NO	W8x24 *3.0 X 7.2*	W12x26 *3.0 X 7.9*	W10x33 *3.0 X 9.4*
	YES	W10x33 *3.0 X 8.5*	W10x39 *3.0 X 9.4*	W14x43 *3.0 X 11.1*
12	NO	W12X26 *3.0 X 7.5*	W12x30 *3.0 X 8.3*	W14x38 *3.0 X 9.8*
	YES	W14x38 *3.0 X 8.8*	W12x40 *3.0 X 9.7*	W12x50 *3.0 X 11.5*
14	NO	W12x30 *3.0 X 7.8*	W10x33 *3.0 X 8.6*	W12x40 *3.0 X 10.2*
	YES	W12x40 *3.0 X 9.1*	W12x45 *3.0 X 10.0*	W12x58 *3.0 X 11.9*
16	NO	W10x33 *3.0 X 8.1*	W10x39 *3.0 X 9.0*	W12x45 *3.0 X 10.6*
	YES	W14x43 *3.0 X 9.4*	W12x50 *3.0 X 10.4*	W14x61 *3.0 X 12.2*
18	NO	W10x39 *3.0 X 8.4*	W12x40 *3.0 X 9.2*	W12x50 *3.0 X 10.9*
	YES	W14x48 *3.0 X 9.7*	W12x53 *3.0 X 10.7*	W16x67 *3.0 X 12.6*
20	NO	W12x45 *3.0 X 9.4*	W12x50 *3.0 X 10.3*	W14x61 *3.0 X 12.2*
	YES	W12x53 *3.0 X 10.0*	W14x61 *3.0 X 11.0*	W14x74 *3.0 X 13.0*

W6x12 ← RECOMMENDED BEAM SECTION FOR MOUNTING SCOREBOARD
2.00 X 4.25 ← *RECOMMENDED FOOTINGS IN FEET (DIAMETER X DEPTH)*



REAR VIEW

NOTE:
RECOMMENDATIONS FOR A DISPLAY WITH AN ATTACHED AD PANEL WERE CALCULATED USING A 48" TALL AD PANEL.

UBC 97 CODE USED WITH SOIL CLASS 3.

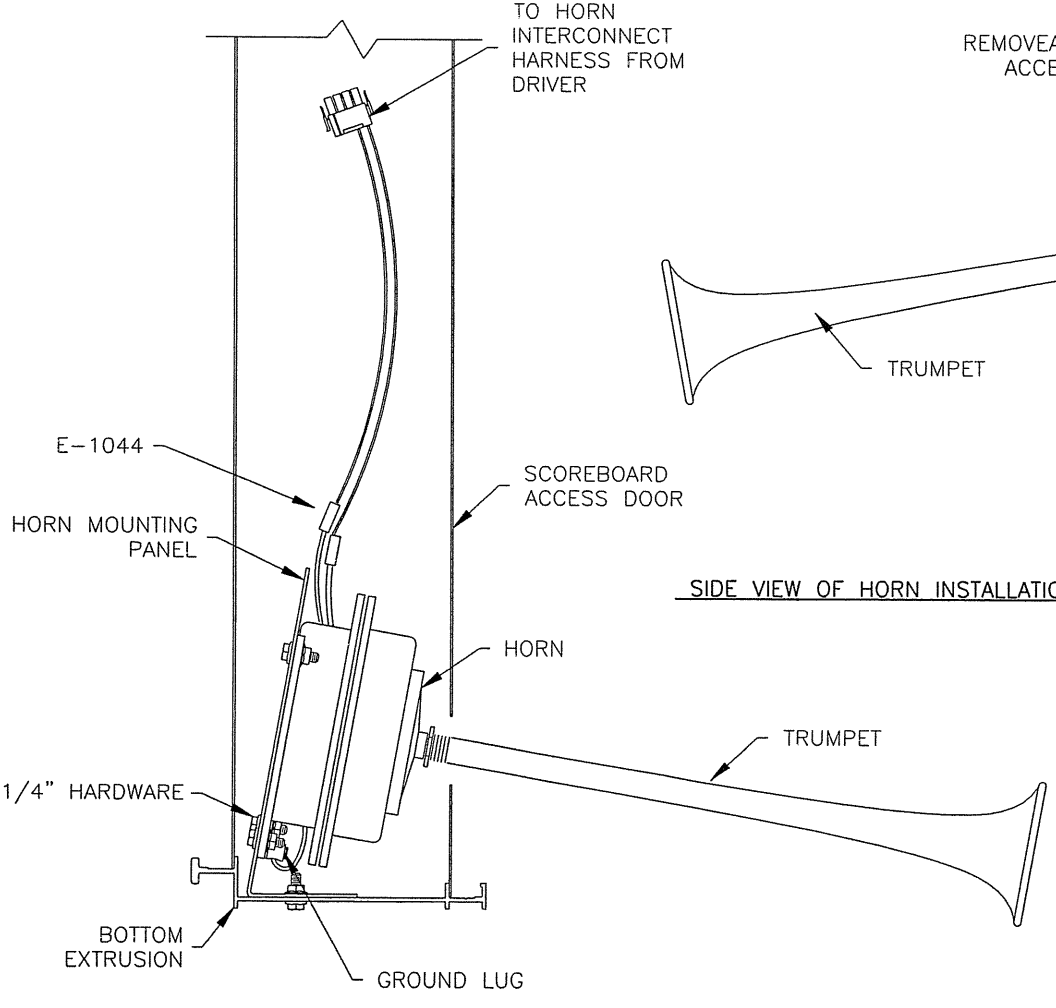
INFORMATION GIVEN IS FOR ESTIMATING PURPOSES ONLY. COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

REV.	DATE	DESCRIPTION	BY	APPR.
01	07 APR 03	ADDED 10'–0" DIMENSION TO LEFT OF SCOREBOARD.	JJS	

DAKTRONICS, INC. BROOKINGS, SD 57006
PROJ: OUTDOOR SCOREBOARDS
TITLE: BEAM AND FOOTING RECOMMENDATIONS, FB–200X
DES. BY: MCOPL/RNEYEN DRAWN BY: MCOPLAN DATE: 04JAN02
REVISION APPR. BY:
SCALE: NONE
1091-R08A-160931

REV.	DATE	DESCRIPTION	BY	APPR.
01	22 DEC 04	REPLACED E-1084 WITH E-1044	ADH	

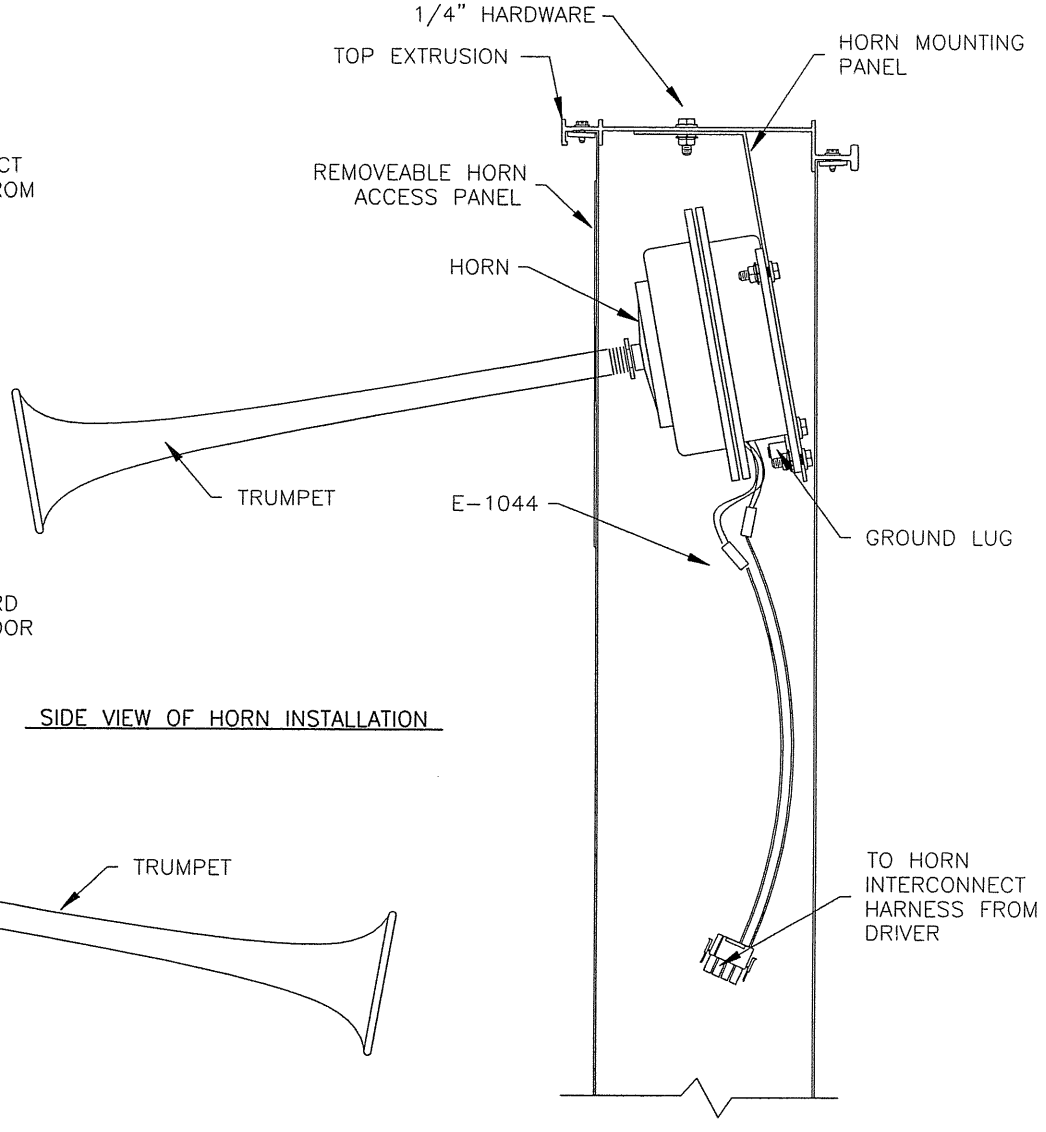
120V HORN MOUNTING FOR BOTTOM EXTRUSION



NOTE:
HORN IS TO BE MOUNTED BEHIND ACCESS DOOR THAT HAS 2" DIAMETER KNOCKOUT.

SIDE VIEW OF HORN INSTALLATION

120V HORN MOUNTING FOR UPPER EXTRUSION



NOTE:
HORN IS TO BE MOUNTED BEHIND THE REMOVEABLE HORN ACCESS PANEL.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: 120V DC HORN MOUNTING

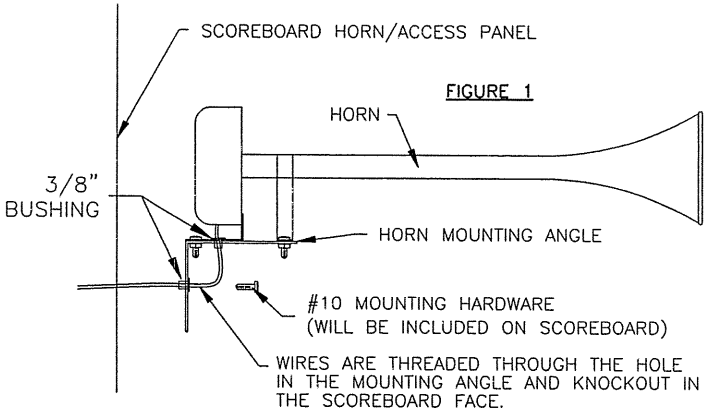
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 31JAN02

APPR. BY:

SCALE: 1=5

REVISION 01

1192-E10A-162100



IF A HORN HAS BEEN ORDERED WITH A HORN, FOLLOW THESE INSTRUCTIONS:
*NOTE THAT THE HORN ACCESS PANEL WILL BE A REMOVEABLE PANEL ON A TWO SECTION SCOREBOARD OR A DOOR ON A SINGLE SECTION SCOREBOARD. BEFORE PROCEEDING, REMOVE THE REMOVEABLE ACCESS PANEL OR OPEN THE DOOR. SEE FIGURE 2 AND 3.

1) THE KNOCKOUT ON THE SCOREBOARD HAS BEEN REMOVED AND THE HORN POWER ENCLOSURE ASSEMBLY HAS BEEN INTERNALLY MOUNTED BY DAKTRONICS. THE HORN MOUNTING ANGLE HAS BEEN ATTACHED TO THE HORN BY DAKTRONICS.

2) THE HORN HAS BEEN PACKAGED IN BUBBLE WRAP AND WILL BE LOCATED INSIDE THE SCOREBOARD BEHIND THE DOOR (OR THE MIDDLE-MOST DOOR IF THERE ARE MORE THAN ONE ON THE SCOREBOARD.) REMOVE THE HORN WITH ATTACHED HORN MOUNTING ANGLE FROM THE PACKAGING.

3) TO MOUNT THE HORN MOUNTING ANGLE (WITH ATTACHED HORN), LOCATE THE REMOVED KNOCKOUT AND THE TWO MOUNTING HOLES ON THE SCOREBOARD. REMOVE THE TWO #10 SCREWS FROM THE MOUNTING HOLES AND ATTACH THE HORN MOUNTING ANGLE TO THE SCOREBOARD WHILE FEEDING THE TWO GREY WIRES THROUGH THE KNOCKOUT. SEE FIGURE 2.

4) LOCATE THE TWO RED AND GREY WIRES ATTACHED TO THE HORN POWER ENCLOSURE ASSEMBLY. ATTACH ONE OF THE GREY HORN WIRES TO THE RED WIRE AND ATTACH THE OTHER GREY WIRE TO THE BLACK WIRE. USE INCLUDED WIRE NUTS. SEE FIGURE 3.

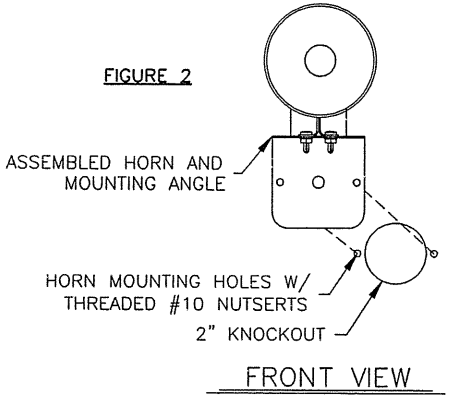
IF THE HORN IS AN ADDITION TO AN EXISTING SCOREBOARD, FOLLOW THESE INSTRUCTIONS:

1) THE 2" KNOCKOUT WILL HAVE TO BE REMOVED TO MOUNT THE HORN. LOCATE THE REMOVEABLE HORN ACCESS PANEL WITH THE 2" KNOCKOUT (TWO SECTION SCOREBOARDS) OR LOCATE THE DOOR WITH THE 2" KNOCKOUT (SINGLE SECTION SCOREBOARDS). REMOVE THE KNOCKOUT. SEE FIGURE 2.

2) TO MOUNT THE HORN POWER ENCLOSURE ASSEMBLY, OPEN THE DOOR WITH THE 2" KNOCKOUT (SINGLE SECTION SCOREBOARDS) OR OPEN THE CENTRAL MOST DOOR (TWO SECTION SCOREBOARDS). DRILL TWO 7/32" HOLES 4" APART AND ATTACH THE HORN POWER ENCLOSURE ASSEMBLY USING RIVETS.

3) ATTACH THE HORN TO THE INCLUDED HORN MOUNTING ANGLE WITH THE INCLUDED #10 HARDWARE. SEE FIGURE 1.

4) REFER TO THE STEP 3 AND 4 IN THE PREVIOUS MOUNTING INSTRUCTIONS.



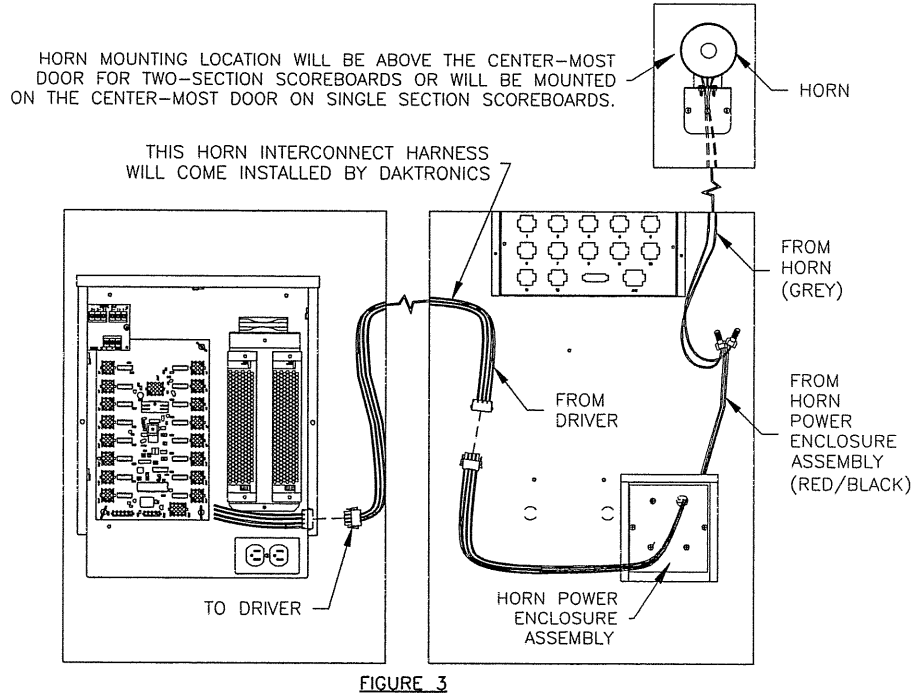


FIGURE 3

REV	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

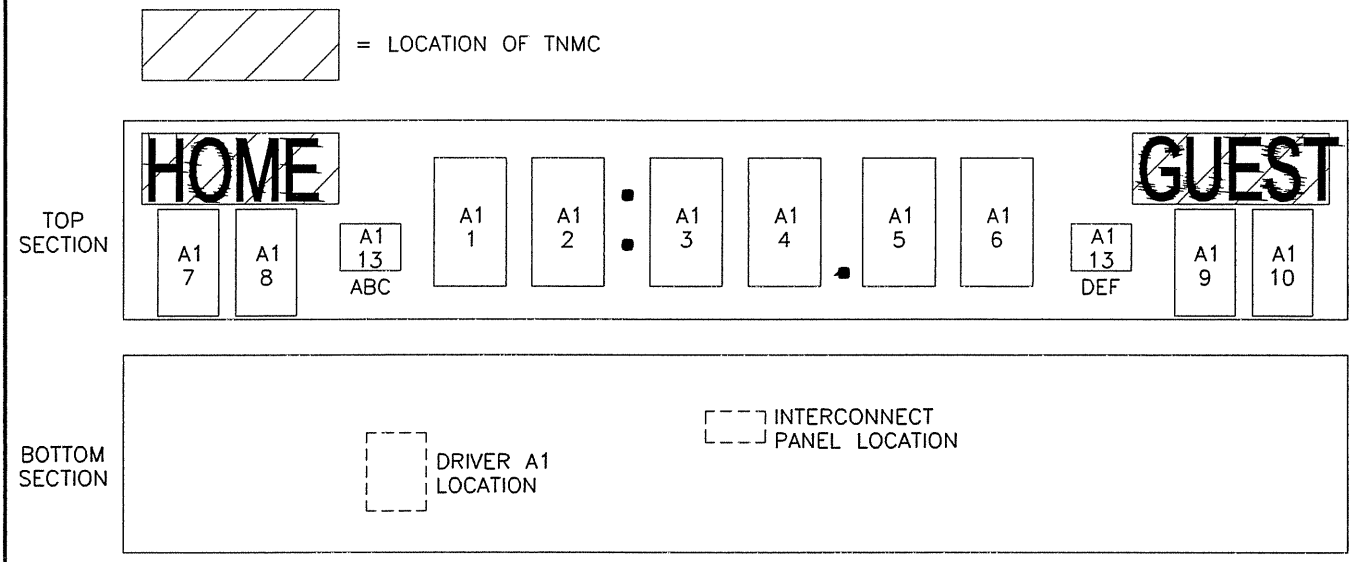
TITLE: HORN INSTALLATION; 12V DC

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 31JAN02

SCALE: 1=12 APPR. BY:

REVISION

1192-E10A-162102



-DEPENDING ON THE MODEL OF THE DISPLAY ORDERED, THE OVERALL LOOK OF THE DISPLAY MAY BE SLIGHTLY DIFFERENT BUT THE DIGIT DESIGNATION WILL REMAIN THE SAME. SOME MODELS MAY OR MAY NOT HAVE ONE OR BOTH OF THE TWO RIGHT CLOCK DIGITS (A1-5 AND A1-6).

DIGIT DESIGNATION (TOP SECTION)	INTERCONNECT PANEL LABELING (PANEL LOCATED IN THE BOTTOM SECTION)	DRIVER DESIGNATION (DRIVER LOCATED IN THE BOTTOM SECTION)	
A1-1	1	A1-1	
A1-2	2	A1-2	
A1-3	3	A1-3	
A1-4	4	A1-4	
A1-5	5	A1-5	
A1-6	6	A1-6	
A1-7	7	A1-7	
A1-8	8	A1-8	
A1-9	9	A1-9	
A1-10	10	A1-10	
A1-13 ABC	11	A1-13	
A1-13 DEF	12	A1-13	
LED TNMC	TNMC OR P42	TNMC OR J42	J42 } SEE SCHEMATIC
INCANDESCENT TNMC	TNMC OR P41	TNMC OR J41	TO ENTRANCE ENCL } SEE SCHEMATIC

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: INTERCONNECT PANEL DIGIT DESIGNATION; FB DISPLAYS

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 05SEP02

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION APPR. BY:

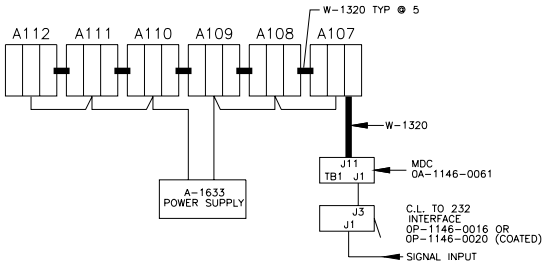
SCALE: NONE

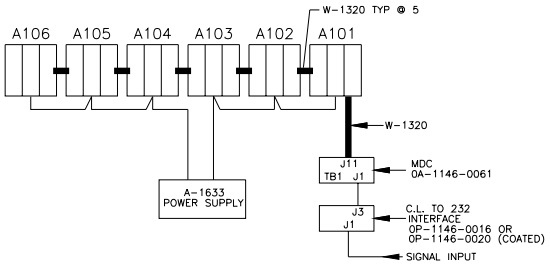
1091-E07A-174754

GUEST

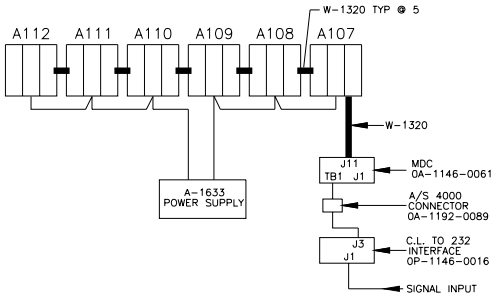
HOME

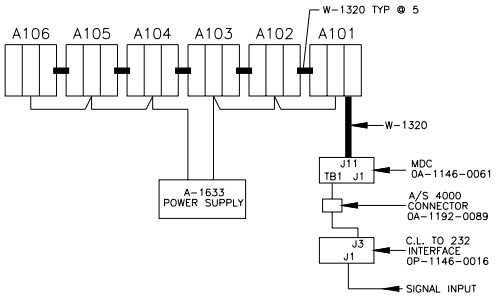
AS-5000 MASTER-MASTER LAYOUT





AS-4000 MASTER-MASTER LAYOUT





NOTE:

USE THE FOLLOWING POWER SUPPLY ASSEMBLY
0A-1213-4013 8X32 OR 8X48 TNMC P/S ASSY

USE THE FOLLOWING POWER/SIGNAL HARNESS
0A-1192-0068 OUTDOOR LED TNMC POWER/SIGNAL HARNESS (1 PER TNMC)
0A-1192-0073 MULTI-SECTION OUTDOOR LED TNMC HARNESS (USE W/ -0068)

USE THE FOLLWING ADAPTER FOR A/S 4000 APPLICATIONS
0A-1192-0089 A/S 4000 CONNECTOR KIT

FOR BOTH A/S 5000 AND 4000 APPLICATIONS THE FOLLOWING DIP SWITCHES MUST BE SET ON THE BACK OF THE MDC FOR HOME AND GUEST:
HOME; S1 = ON
GUEST; S2 = ON

REV.	DATE	DESCRIPTION	BY	APPR.
01	24 JUN 02	ADDED OP-1146-0020 TO CL TO RS232 INTERFACE PART.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

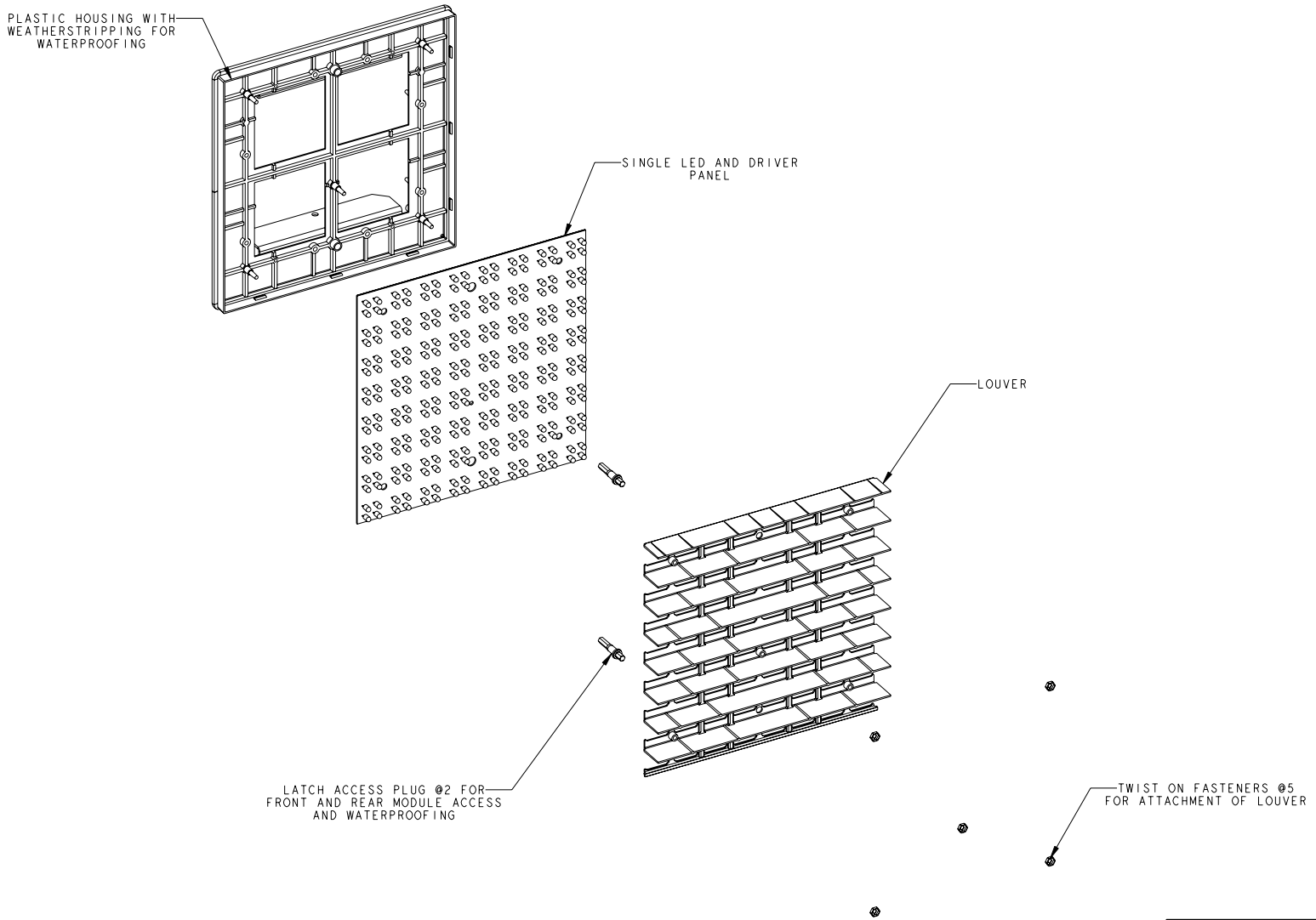
TITLE: CONTROL LAYOUT; OUTDOOR LED TNMC

DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 22 DEC 00

REVISION APPR. BY:

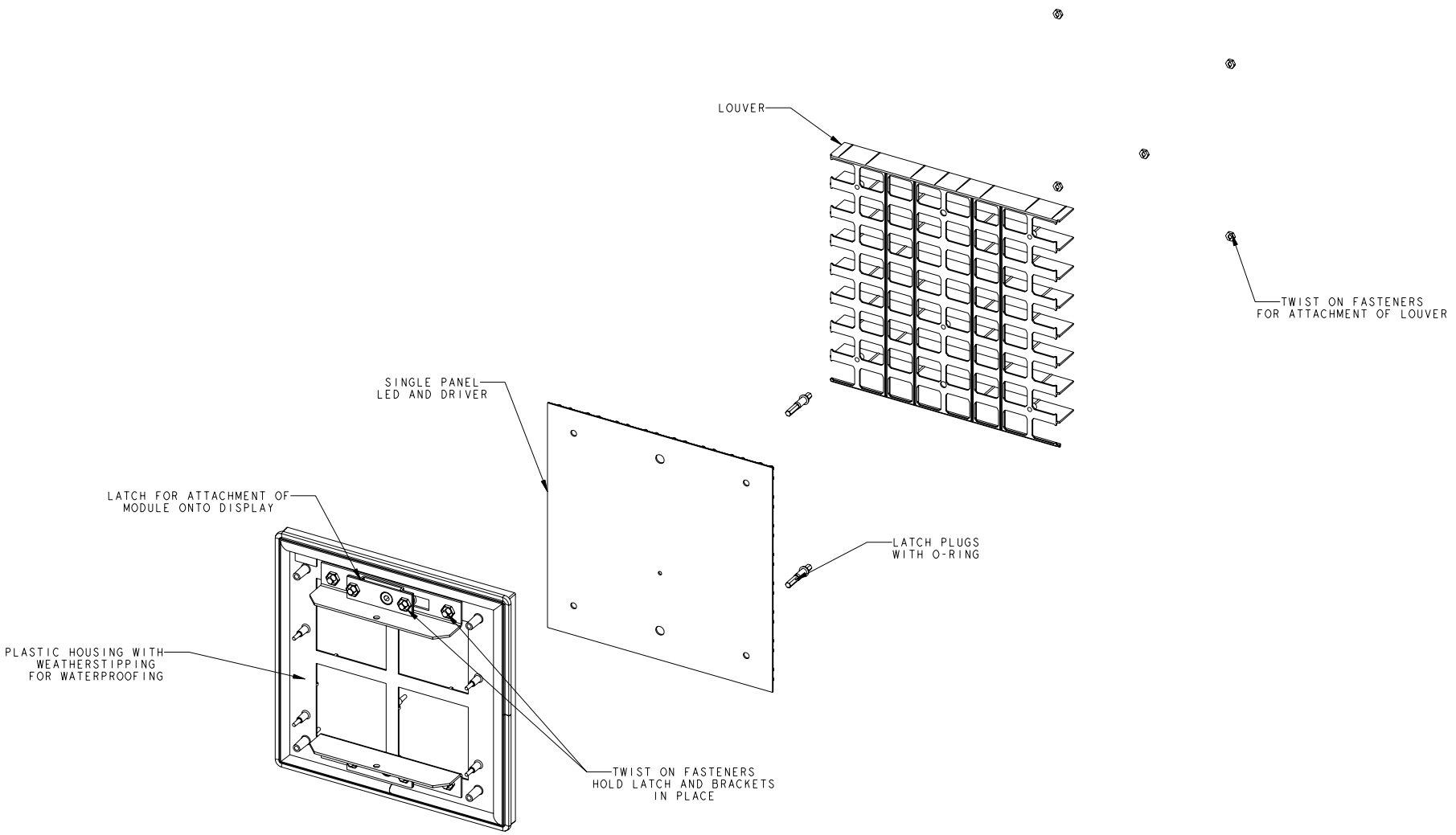
SCALE: 1=1

1192-E10B-107507



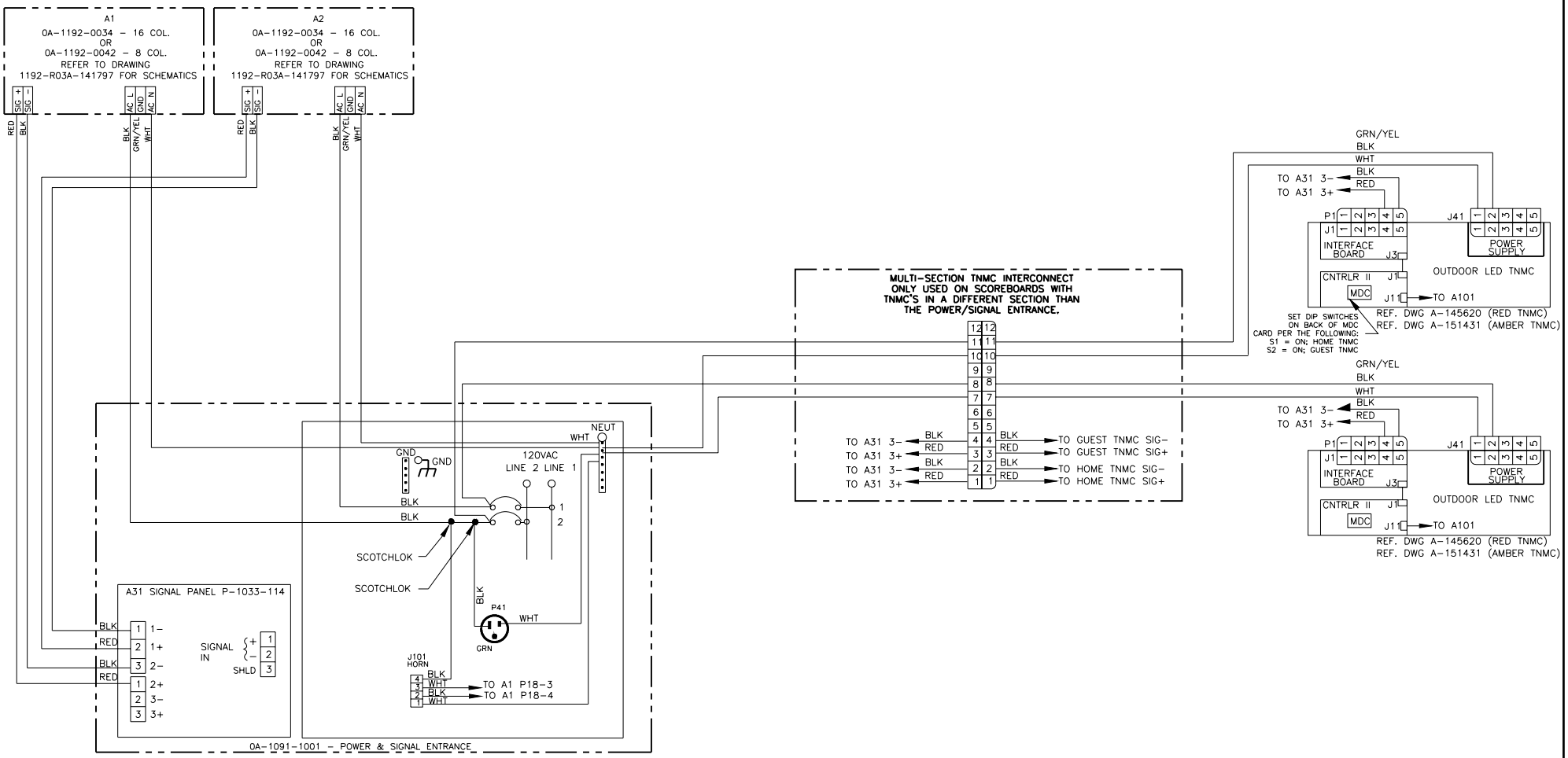
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	34MM OUTDOOR GALAXY
TITLE:	EXPLODED FRONT VIEW; SINGLE PANEL MODULE
DES. BY: NANDAL	DRAWN BY: DNUGTEREN DATE: 10JAN00
REVISION	SHEET 1 OF DWG 126111
SCALE: 1=2	1208-E10B-126111



REV.	DATE	DESCRIPTION	BY	APPR.
REVISION				

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	34MM OUTDOOR GALAXY
TITLE:	EXPLODED REAR VIEW; SINGLE PANEL MODULE
DES. BY: NANDAL	DRAWN BY: DNUGTEREN DATE: 10JAN00
SHEET 1 OF DWG 126112	
SCALE: 1=2	1208-E10B-126112



NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

REV.	DATE	DESCRIPTION	BY	APPR.
5	6JUL01	REMOVED PART NUMBER OF TNMC & ADDED DWG NUMBERS FOR RED & AMBER	RASMUS	
4	6JUN01	CHANGED PART NUMBER OF TNMC FROM A-1192-71	RASMUS	
3	20 DEC 00	ADDED MULTI-SECTION TNMC INTERCONNECT.	CJB	
2	14 DEC 00	UPDATED HORN WIRE TO GO TO A1 P18-3&4	CJB	
1	07 DEC 00	UPDATED LAYOUT.	CJB	

DAKTRONICS, INC. BROOKINGS, SD 57006

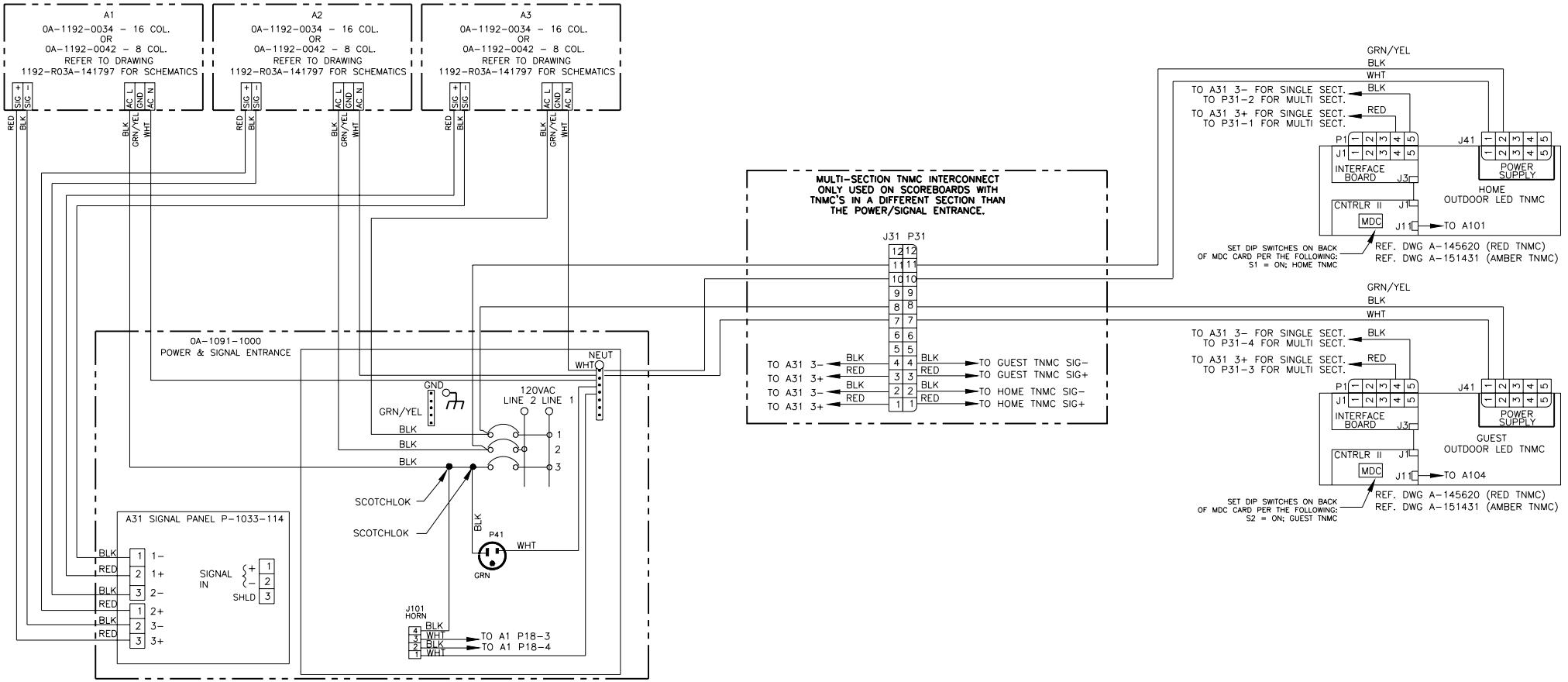
PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; 2 DRIVERS W/ TNMC

DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 06 DEC 00

REVISION | APPR. BY: | SCALE: 1=1

1192-R03B-141808



NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

REV.	DATE	DESCRIPTION	BY	APPR.
3	6JUL01	REMOVED PART NUMBER OF TNMC & ADDED DWG NUMBER FOR RED & AMBER	RASMUS	
02	23 APR 01	UPDATED DWG TO SHOW NEW TNMC ASSY	MWM	
01	27 DEC 00	CHANGED PART 0A-1091-1001 TO 0A-1091-1000	GWS	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

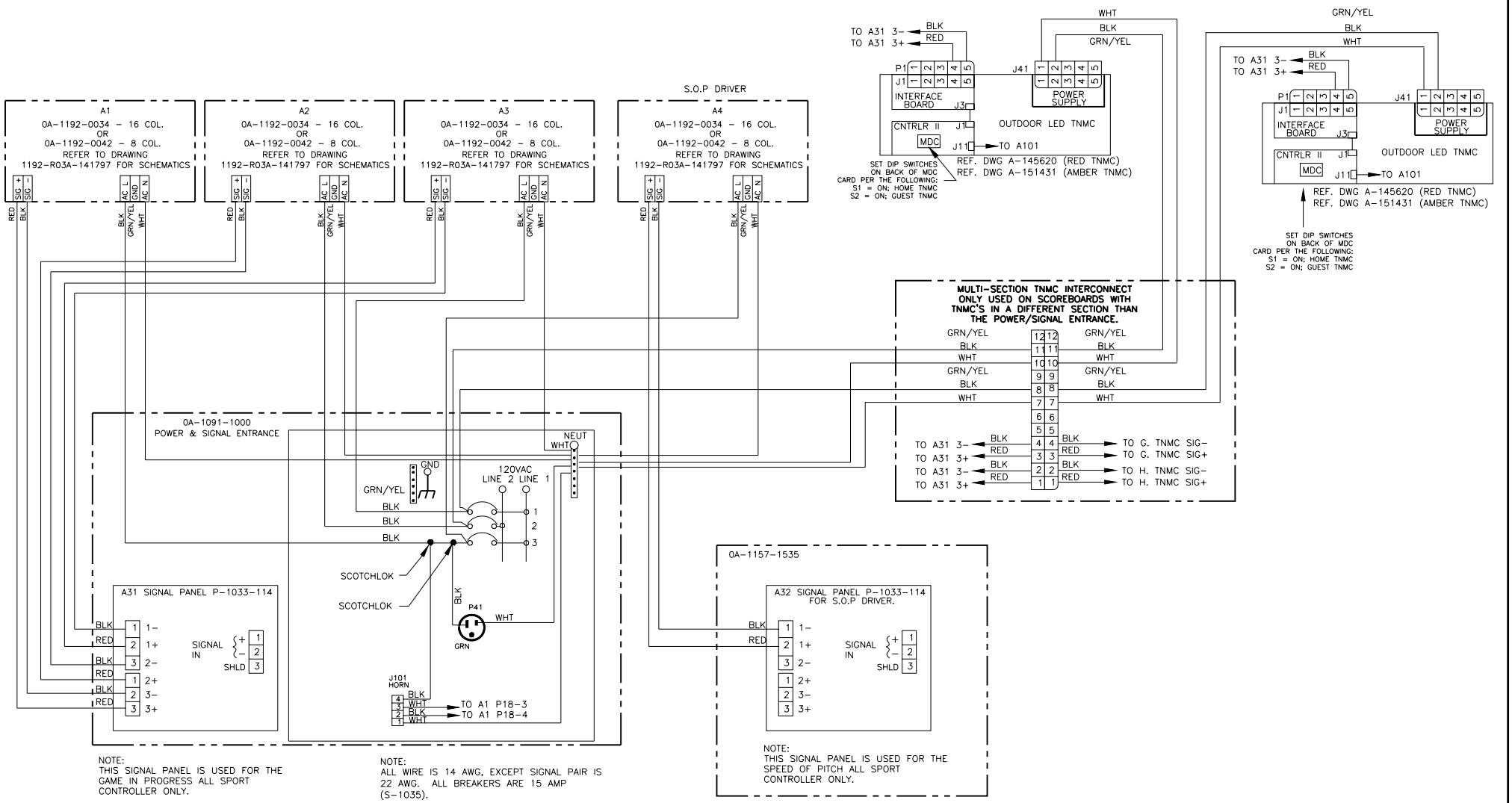
TITLE: SCHEMATIC; 3 DRIVER W/ TNMC

DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 20 DEC 00

REVISION APPR. BY:

SCALE: 1=1

1192-R03B-142360



NOTE:
THIS SIGNAL PANEL IS USED FOR THE GAME IN PROGRESS ALL SPORT CONTROLLER ONLY.

NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

NOTE:
THIS SIGNAL PANEL IS USED FOR THE SPEED OF PITCH ALL SPORT CONTROLLER ONLY.

REV.	DATE	DESCRIPTION	BY	APPR.
01	18 JUL 01	REVISED WITH NEW STYLE TNMC'S.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; 3 DRIVERS W/TNMC & SOP DRIVER

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 22 MAR 01

REVISION APPR. BY:

SCALE: 1=1

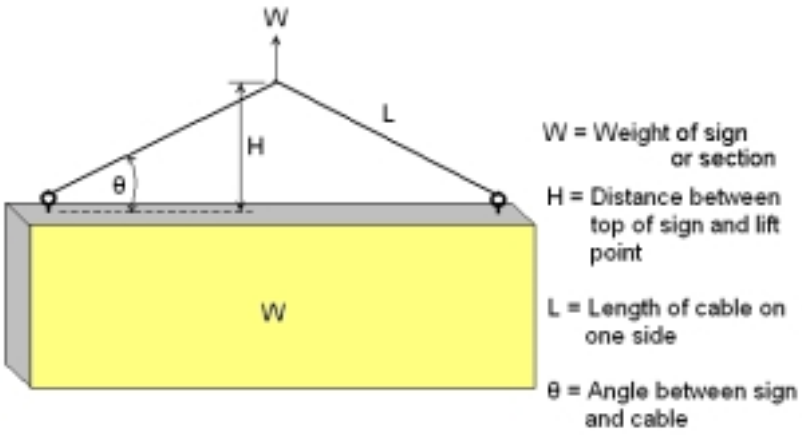
1192-R03B-146392

Appendix B: Eyebolts

Eyebolts

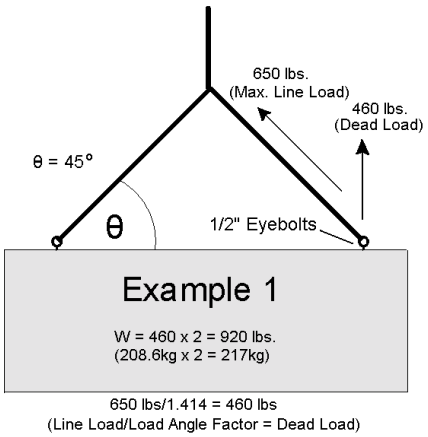
Almost every display that leaves Daktronics is equipped with eyebolts for lifting the display. There are two standard sizes of eyebolts: ½″ and ⅝″.

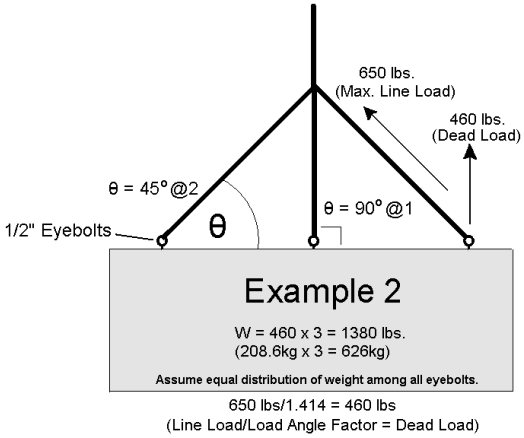
Load Increase Factor: The load increases as the lift angle (θ) decreases. The allowable load on the eyebolts also decreases with the lift angle due the bending stress on the eyebolts. In sum, the smaller the angle between the cable and the top of the display, the lighter the sign must be to safely lift it. *Do NOT attempt to lift the display when the lift angle is less than 30 degrees.*

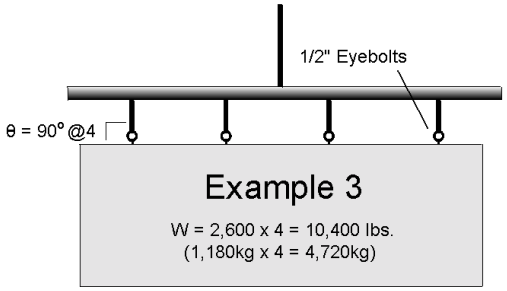


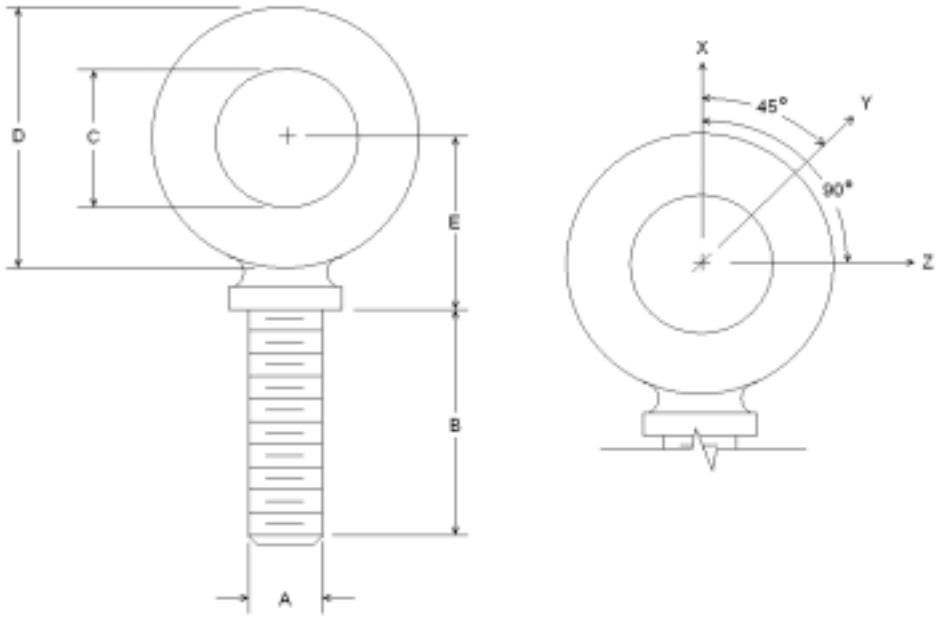
Horizontal Angle	Load Angle Factor (L/H)
90	1.00
60	1.155
50	1.305
45	1.414
30	2.00

	½"		⅝"	
θ	Line Load	Weight/ Anchor	Line Load	Weight/ Anchor
90	2600	2600	4000	4000
60	1500	1299	3300	2858
45	650	460	1000	707
30	520	260	800	400









A	B	C	D	E	No.	Min. Proof Load (lbs.)	Min. Break Load (lbs.)	Stocked	Min. Eff. Thrd. Length	Line Loads		
										Wx	Wy	Wz
1/4	1	3/4	1-3/16	25/32	21	600	2,000	Blank 1/4-20	7/8	400	100	80
3/8	1-1/4	1	1-21/32	1-3/16	23	2,100	5,000	Blank 3/8-16	1-1/8	1,400	350	250
1/2	**1-1/2**	**1-3/16**	**2-1/16**	**1-13/32**	**25**	**3,900**	**9,200**	**Blank 1/2-13**	**1-11/32**	**2,600**	**650**	**520**
9/16	1-5/8	1-9/32	2-13/16	1-17/32	26	4,500	11,830	Blank 9/16-12	1-3/8	3,000	750	600
5/8	**1-3/4**	**1-3/8**	**2-1/2**	**1-11/16**	**27**	**6,000**	**14,700**	**Blank 5/8-11**	**1-9/16**	**4,000**	**1,000**	**800**
3/4	2	1-1/2	2-13/16	1-13/16	28	9,000	21,700	Blank 3/4-10	1-5/8	6,000	1,500	1,200
7/8	2-1/4	1-11/16	3-1/4	2-1/16	29	10,000	30,000	Blank 7/8-9	1-13/16	6,600	1,670	1,330
1	2-1/2	1-13/16	3-9/16	2-5/16	30	12,000	39,400	Blank 1-8	2-1/16	8,000	2,000	1,600
1-1/2	3-1/2	2-9/16	5-1/2	3-5/32	34	27,000	91,300	Blank 1-1/2-6	3	17,800	4,500	3,600

A. Do not use eyebolts on angular lifts unless absolutely necessary. For angular lifts, the shoulder pattern eyebolt is preferred.

B. Load should always be applied to eyebolts in the plane of the eye, not at some angle to this plane.

C. Shoulder eyebolts must be properly seated (should bear firmly against the mating part), otherwise the working loads must be reduced to those indicated for regular eyebolts. A washer or spacer may be required to put the plane of the eye in the direction of the load when the shoulder is seated.

D. No load greater than the safe working load listed in the data table should be used.

E. To obtain the greatest strength from the eyebolt, it must fit reasonably tight in its mounting hole to prevent accidental unscrewing due to twist of cable.

F. Eyebolts should never be painted or otherwise coated when used for lifting. Such coatings may cover potential flaws in the eyebolt.

G. To attain the safe working loads listed for regular eyebolts, 90% of the thread length must be engaged.