Generation III
Multi-Section
Outdoor LED Scoreboards

Display Manual

ED-13771 *Rev 16 - 10 October 2006*

DAKTRONICS

Models								
BA-1518		FB-1424		FB-1830L		MS-2118		SO-2014
BA-1524		FB-1430		FB-2001		MS-2918		SO-2030
BA-2006		FB-1524		FB-2002				
BA-2007		FB-1530		FB-2003		SO-1424		
BA-2012		FB-1624		FB-2004		SO-1624		
BA-2013		FB-1630		FB-2007		SO-1830		
BA-2020		FB-1630L				SO-1830L		
BA-3718		FB-1730		MS-2009		SO-1930		
BA-3724		FB-1830		MS-2020		SO-2011		

331 32nd Avenue PO Box 5128 Brookings, SD 57006-5128
tel 800-325-8766 605-697-4300 fax 605-697-4700
www.daktronics.com email: sales@daktronics.com

DAKTRONICS

ED-13771
Product 1192
Rev 16 – 13 October 2006

Please fill in the information below for your display; use it for reference when calling Daktronics for assistance.

Display Serial No. _____

*Display Model No.*_____

Date Installed _____

DAKTRONICS, INC.

Table of Contents

Section 1: Introduction

This manual explains the installation of ***Daktronics Multi-Section Outdoor LED Scoreboards*** and provides details for display maintenance. For other questions regarding the safety, installation, operation or service of these systems, contact Daktronics. Customer Service Helpdesk telephone numbers are listed on the cover page of this manual.

1.1 How to use this manual

Important Safeguards:

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

Figure 1 illustrates the Daktronics drawing numbering system. Daktronics identifies individual engineering drawings by their 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 numbers and the letter preceding them. The example would be **Drawing A-69945**.

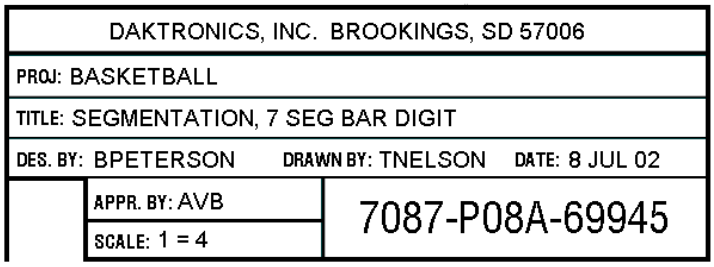


Figure 1: *Daktronics Drawing Label*

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

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-69945** 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:
Segmentation, 7 Seg Bar Digits..... **Drawing A-69945**

Daktronics identifies manuals by their engineering document (ED) number, which is located on the cover page of the manual. For example, this manual would be referred to as **ED-13771**.

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 second page of this manual.

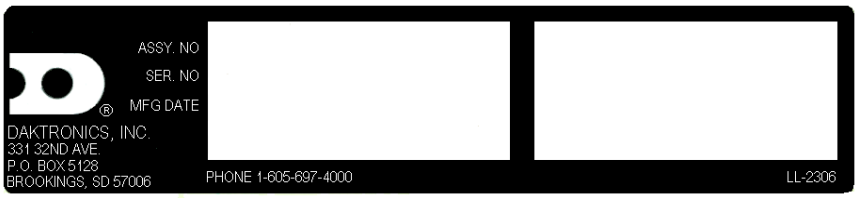


***Figure 2:** Scoreboard ID Label*

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 9** provides the 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 found 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 for 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 Product Overview

The 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 PanaView® digits 15, 18, 24, and 30" tall, the scoreboards use light emitting diodes, or LEDs, to illuminate the display. LEDs are tiny, solid-state components that use a semiconductor chip to transform electrical current into light; they are high-intensity, low-energy lighting units. Scoreboards in this series typically use red or amber LEDs for optimum outdoor readability.

Because of their LED technology, the scoreboards consume little power – barely more than a single household lamp. Power usage for displays in this series ranges from 300 W to a maximum of 1500 W.

Each of the sections in this manual contains model-specific information, including physical 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, scoreboard model numbers and electrical requirements can be found on a label on the scoreboard entrance panel.

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

Cabinets for the displays, available in more than 150 colors, are constructed of heavy-gauge aluminum. Digit and indicator faceplates are black, and they are set directly into the scoreboard surface. Permanent captions and optional striping are white vinyl.

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 several of the models in this series, and the message centers are also available for retrofit on existing scoreboards. **Section 9** of this manual offers step-by-step information on TNMC maintenance and troubleshooting.

The outdoor LED scoreboards have been designed for use with an All Sport® 3000 Series control console; displays equipped with team name message centers require an All Sport 5000 Series controller. Both consoles use All Sport keyboard overlays (sport inserts) for game control, and the boards operate without modification on All Sport 5000 signal protocol. Refer to the following controller manuals for operating instructions:

- **ED-12126**: All Sport 3000 Series Control Console Operation Manual
- **ED-11976**: All Sport 5000 Series Control Console Operation Manual

1.4 Model Names

Daktronics scoreboards are differentiated by their model numbers: *BA-1518*, for example, designates a specific baseball scoreboard. The two-letter prefixes for scoreboards in this manual include the following: **BA** – baseball; **CR** – cricket; **FB** – football; **MS** – multisport; and **SO** – soccer.

Most Daktronics scoreboards carry a two-number suffix that refers to indoor-outdoor status and digit color: *-11* are outdoor scoreboards, 120 V and they feature red digits; *-21* are outdoor scoreboards, 120 V and feature amber digits.

1.5 Product Safety Approval

Daktronics outdoor scoreboards are ETL listed and tested to CSA standards for outdoor use. Contact Daktronics for information regarding testing procedures.

Section 2: Model Identification

Use the following drawings to determine the model number of your scoreboard. The drawings listed here are located in **Appendix A: Reference Drawings**; where they are inserted in alphanumeric order by drawing number. Individual scoreboard drawings may also be found in the **Appendix**.

Reference Drawings:

Section 3: Specifications

The table 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.

Notes: Signal wires must be a minimum of 22 AWG with shield. Daktronics recommends using W-1234.
Models with an –11 or –12 suffix feature red digits and indicators; suffixes –21 and –22 indicate amber digits.

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-1518	2 Total Top Bottom	H8'-0", W16'-0", D6" (2438 mm, 4877 mm, 152 mm) H3'-0", W16'-0", D6" (914 mm, 4877 mm, 152 mm) H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)	400 lb (182 kg) 845 lb (383 kg)	▪ Indicators 2" (51 mm) ▪ All Others 18" (457 mm) -11: red -21: amber	300W	120 V AC	2.5 A	A1 63
BA-1518 w/TNMC	2 Total Top Bottom	H8'-0", W16'-0", D6" (2438 mm, 4877 mm, 152 mm) H3'-0", W16'-0", D6" (914 mm, 4877 mm, 152 mm) H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm	480 lb (218 kg) 912 lb (414 kg)	▪ Indicators 2" (51 mm) ▪ All Others 18" (457 mm) -11: red -21: amber	500 W (w/red TNMC) 600 W (w/amber TNMC)	120 V AC	4.2 A 5.0	A1 63

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-1524	2 Total Top Bottom	H9'-0", W16'-0", D6" (2743 mm, 4877 mm, 152 mm) H4'-0", W16'-0", D6" (1219 mm, 4877 mm, 152 mm) H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)	480 lb (218 kg) 912 lb (414 kg)	▪ Indicators 2" (51 mm) ▪ Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 63
BA-1524 w/TNMC	2 Total Top Bottom	H9'-0", W16'-0", D6" (2743 mm, 4877 mm, 152 mm) H4'-0", W16'-0", D6" (1219 mm, 4877 mm, 152 mm) H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)	560 lb (254 kg) 1064 lb (483 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	500 W (w/red TNMC) 600 W (w/amber TNMC)	120 V AC	4.2 A 5.0 A	A1 64 A2 65 A3 66

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-2006	2 Total Top Bottom	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm) H3'-0", W14'-0", D6" (2134 mm, 4367 mm, 152 mm) H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm	640 lb (290 kg) 2 Crates 825 lb (374 kg) 525 lb (238 kg)	▪ Innings, Runs, Hits and Errors 15" (9381 mm) ▪ All Others 18" (457 mm) -11: red -21: amber	1200 W	120 V AC	10.0 A	A1 64 A2 65 A3 66
BA-2006 w/TNMC	4 Total 2 Top 2 Bottom	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm) H3'-0", W14'-0", D6" (914 mm, 4267 mm, 152 mm) H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)	840 lb (381 kg) 2 crates 700 lb (318 kg) 1125 lb (510 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	1400 W (w/red TNMC) 1500 W (w/amber TNMC)	120 V AC	11.7 A 12.5 A	A1 64 A2 65 A3 66

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-2007	2 Total Top Bottom	H9'-4", W36'-0", D6" (2845 mm, 10973 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm) H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)	840 lb (381 kg) 2 crates 700 lb (318 kg) 1125 lb (510 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	1200 W	120 V AC	10.0 A	A1 64 A2 65 A3 66 A4 11
BA-2007 w/TNMC	4 Total 2 Top 2 Bottom	H9'-4", W36'-0", D6" (2845 mm, 10973 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm) H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)	840 lb (381 kg) 2 crates 700 lb (318 kg) 1125 lb (510 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	1400 W (w/red TNMC) 1500 W (w/amber TNMC)	120 V AC	11.7 A 12.5 A	A1 64 A2 65 A3 66 A4 11
BA-2012	2 Total Top and Bottom	H8'0", W16"0", D6" (2438 mm, 4877 mm, 152 mm) H4'0", W16"0", D6" (1219 mm, 4877 mm, 152 mm)	350 lb (159 kg) 820 lb (372 kg)	▪ All Digits 24" (610 mm) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 61

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-2013	2 Total Top Bottom	H9'4", W36"0", D6" (2845 mm, 10973 mm, 152 mm) H3'0", W18"0", D6" (1219 mm, 5486 mm, 152 mm) H5'4", W18"0", D6" (1626 mm, 5486 mm, 152 mm)	900 lb (408 kg) 2 Crates 825 lb (374 kg) 1125 lb (510 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	1500 W	120 V AC	12.5 A	A1 64 A2 65 A3 66 A4 4 A5 11
BA-2013 w/TNMC	4 Total 2 Top 2 Bottom	H9'4", W36"0", D6" (2845 mm, 10973 mm, 152 mm) H3'0", W18"0", D6" (1219 mm, 5486 mm, 152 mm) H5'4", W18"0", D6" (1626 mm, 5486 mm, 152 mm)	1020 lb (463 kg) 2 Crates 985 lb (447 kg) 1125 lb (510 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	1700 W (w/red TNMC) 1800 W (w/amber TNMC)	120 V AC	14.2 A 15.0	A1 64 A2 65 A3 66 A4 4 A5 11
BA-2020	2 Total Top and Bottom	H8'0", W16"0", D6" (2438 mm, 4877 mm, 152 mm) H4'0", W16"0", D6" (1219 mm, 4877 mm, 152 mm)	350 lb (159 kg) 820 lb (372 kg)	▪ All Digits 24" (610 mm) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 12

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-3718	4 Total 2 Top 2 Bottom	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm) H3'-0", W14'-0", D6" (2134 mm, 4267 mm, 152 mm) H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)	640 lb (290 kg) 2 Crates 825 lb (374 kg) 525 lb (238 kg)	▪ Innings, Runs, Hits and Errors 15" (9381 mm) ▪ All Others 18" (457 mm) -11: red -21: amber	900 W	120 V AC	7.5 A	A1 64 A2 65 A3 66
BA-3718 w/TNMC	4 Total 2 Top 2 Bottom	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm) H3'-0", W14'-0", D6" (914 mm, 8534 mm, 152 mm) H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)	720 lb (327 kg) 2 Crates 746 lb (338 kg) 468 lb (212 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	1100 W (w/red TNMC) 1200 W (w/amber TNMC)	120 V AC	9.2 A 10.0 A	A1 64 A2 65 A3 66

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-3724	4 Total 2 Top 2 Bottom	H9'-4", W36'-0", D6" (2845 mm, 10973 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm) H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)	840 lb (381 kg) 2 Crates 700 lb (318 kg) 1125 lb (510 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	900 W	120 V AC	7.5 A	A1 64 A2 65 A3 66
BA-3724 w/TNMC	4 Total 2 Top 2 Bottom	H9'-4", W36'-0", D6" (2845 mm, 10973 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm) H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)	960 lb (435 kg) 2 Crates 856 lb (388 kg) 1112 lb (504 kg)	▪ Innings, Runs, Hits and Errors 18" (457 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	1100 W (w/red TNMC) 1200 W (w/amber TNMC)	120 V AC	9.2 A 10.0 A	A1 64 A2 65 A3 66
FB-1424	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	400 lb (182 kg) 805 lb (365 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 12

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1424 w/TNMC	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-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) -11: red -21: amber	500 W (w/red TNMC) 600 W (w/amber TNMC)	120 V AC	4.2 A 50. A	A1 12
FB-1430	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	560 lb (255 kg) 1064 lb (483 kg)	▪ Clock 30" (457 mm) ▪ All Others 24" (610 mm) ▪ Indicators 8" (203 mm) -11: red -21: amber	300 W	120 V AC	4.2 A	A1 12
FB-1430 w/TNMC	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	680 (308 kg) 1292 lb (586 kg)	▪ Clock 30" (457 mm) ▪ All Others 24" (610 mm) ▪ Indicators 8" (203 mm) -11: red -21: amber	500 W (w/red TNMC) 600 W (w/amber TNMC)	120 V AC	4.2 A 5.0 A	A1 12

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1524	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) 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) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 12
FB-1524 w/TNMC	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	520 lb (236 kg) 988 lb (448 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	500 W (w/red TNMC) 600 W (w/amber TNMC)	120 V AC	4.2 A 5.0 A	A1 12
FB-1530	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	580 lb (264 kg) 1102 lb (500 kg)	▪ Clock 30" (457 mm) ▪ All Others 24" (610 mm) ▪ Indicators 8" (203 mm) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 12

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1530 w/TMNC	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	700 lb (340 kg) 1330 lb (603 kg)	▪ Clock 30" (457 mm) ▪ All Others 24" (610 mm) ▪ Indicators 8" (203 mm) -11: red -21: amber	500 W (w/red TNMC) 600 W (w/amber TNMC)	120 V AC	4.2 A 5.0 A	A1 12
FB-1624	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	440 lb (200 kg) 836 lb (379 kg)	▪ Indicators 8" (203 mm) ▪ All others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16
FB-1630	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	600 lb (272 kg) 1140 lb (517 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1630 w/TNMC	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	720 lb (327 kg) 1368 lb (621 kg)	▪ Clock 30 (762 mm) ▪ TOL 8" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 4" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
FB-1630L	2 Total Top and Bottom	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	840 lb (381 kg) 1596 lb (724 kg)	▪ Clock 30" (762 mm) ▪ TOL 8" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 4" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1630L w/TNMC	2 Total Top and Bottom	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 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) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
FB-1730	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	620 lb (282 kg) 1178 lb (534 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1730 w/TNMC	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	740 lb (336 kg) 1406 lb (638 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
FB-1830	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	640 lb (290 kg) 1216 lb (552 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1830 w/TNMC	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	760 lb (345 kg) 1444 lb (655 kg)	▪ Clock 30" (762 mm) TOL 18" (457 mm ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red ▪ -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
FB-1830L	2 Total Top and Bottom	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 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) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-1830L w/TNMC	2 Total Top and Bottom	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	900 lb (408 kg) 1710 lb (776 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber *TNMC)*	120 V AC	6.7 A 7.5 A	A1 15 A2 16
FB-2001	2 Total Top Bottom	H10'-0", W32'-0", D6" (3048 mm, 9754 mm, 152 mm) H6'-0", W32'-0", D6" (1829 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	940 lb (427 kg) 1786 lb (810 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-2001 w/TNMC	2 Total Top Bottom	H10'-0", W32'-0", D6" (3048 mm, 9754 mm, 152 mm) H6'-0", W32'-0", D6" (1829 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	1060 lb (481 kg) 2014 lb (914 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
FB-2002	2 Total Top and Bottom	H8'0", W20'-0", D6" (2438 mm, 6096 mm, 152 mm) H4'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)	520 lb (236 kg) 988 lb (448 kg)	▪ TOL 15" (381 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	600 w	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-2002 w/TNMC	2 Total Top and Bottom	H8'0", W20'-0", D6" (2438 mm, 6096 mm, 152 mm) H4'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)	640 lb (290 kg) 1234 lb (569 kg)	▪ TOL 15" (381 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
FB-2003	2 Total Top and Bottom	H8'-0", W20'-0", D6" (2438 mm, 6096 mm, 152 mm) H4'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)	540 lb (245 kg) 1026 lb (445 kg)	▪ TOL 15" (381 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16
FB-2003 w/TNMC	2 Total Top and Bottom	H8'-0", W20'-0", D6" (2438 mm, 6096 mm, 152 mm) H4'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)	660 lb (299 kg) 1254 lb (569 kg)	▪ TOL 15" (381 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red ▪ -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-2004	2 Total Top Bottom	H10'-0", W32'-0", D6" (3048 mm, 9754 mm, 152 mm) H6'-0", W32'-0", D6" (1829 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	880lb (400 kg) 1716 lb (778 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16
FB-2004 w/TNMC	2 Total Top Bottom	H10'-0", W32'-0", D6" (3048 mm, 9754 mm, 152 mm) H6'-0", W32'-0", D6" (1829 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	1000 lb (454 kg) 1954 lb (886 kg)	▪ Clock 30" (762 mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
FB-2007	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	400 lb (182 kg) 805 lb (365 kg)	▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 12
FB-2204 w/TNMC	2 Total Top Bottom	H10'-$^{3}/_{8}$", W32'-0", D6" (254 mm, 9754 mm, 152 mm) H6'-0" $^{3}/_{16}$", W32'-0", D6" (1834 mm, 9754 mm, 152 mm) H4'-0 $^{3/}_{16}$", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	1000 lb (454 kg) 1900 lb (862 kg)	▪ Clock 30" (762mm) ▪ TOL 18" (457 mm) ▪ Indicators 8" (203 mm) ▪ All Others 24" (610 mm) -11: red -21: amber	800 W (w/ red TNMC) 900 W (w/ amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
MS-2009	2 Total Top and Bottom	H10'-0", W25'-0", D6" (3048 mm, 7620 mm, 152 mm) H5'-0", W25'-0", D6" (1524 mm, 7620 mm, 152 mm)	480 lb (218 kg) 912 lb (414 kg)	▪ Clock, Score 24" (610 mm) ▪ All Others 18" (457 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 71 A2 72

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
MS-2009 w/TNMC	2 Total Top and Bottom	H10'-0", W25'-0", D6" (3048 mm, 7620 mm, 152 mm) H5'-0", W25'-0", D6" (1524 mm, 7620 mm, 152 mm)	600 lb (272 kg) 1200 lb (414 kg)	▪ Clock, Score 24" (610 mm) ▪ All Others 18" (457 mm) -11: red -21: amber	800 W (w/ red TNMC) 900 W (w/ amber TNMC)	120 V AC	6.7 A 7.5 A	A1 71 A2 72
MS-2020	2 Total Top Bottom	H9'-0", W18'-0", D6" (2743 mm, 5486 mm, 152 mm) H3'-6", W18'-0", D6" (1067 mm, 5486 mm, 152 mm) H5'-6", W18'-0", D6" (1676 mm, 5486 mm, 152 mm)	525 lb (238 kg) 960 lb (436 kg)	▪ Clock, Score 24" (610 mm) ▪ PERIOD 18" (457 mm) -11: red -21: amber	300 W	120 V AC	2.5 A	A1 11
MS-2118	2 Total Top and Bottom	H8'-0", W12'-0", D6" (2438 mm, 3658 mm, 152 mm) H4'-0", W12'-0", D6" (1219 mm, 3658 mm, 152 mm)	275 lb (125 kg) 523 lb (237 kg)	▪ Clock, Score, ▪ Period 18" (457 mm) ▪ Penalty ▪ 15" (381 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 71 A2 72

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
MS-2918	2 Total Top and Bottom	H8'-0", W16'-0", D6" (2438 mm, 4877 mm, 152 mm) H4'-0", W16'-0", D6" (1219 mm, 4877 mm, 152 mm)	480 lb (218 kg) 912 lb (414 kg)	• Clock, Score, Period 18" (457 mm) • Player, Penalty 15" (381 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 71 A2 72
SO-1424	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	400 lb (181 kg) 805 lb (365 kg)	• Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber •	300 W	120 V AC	2.5 A	A1 12
SO-1424 w/TNMC	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	480 lb (218 kg) 912 lb (414 kg)	• Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	500 W (w/red TNMC) 600 W (w/amber TNMC)	120 V AC	5.0 A	A1 12

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
SO-1624	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	440 lb (200 kg) 900 lb (408 kg)	• Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 13 A2 14
SO-1624 w/TNMC	2 Total Top and Bottom	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm) H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	520 lb (236 kg) 988 lb (448 kg)	• Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 13 A2 14
SO-1830	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	560 lb (236 kg) 1064 lb (483 kg)	• Clock 30" (762 mm) • TOL 18" (457 mm) • Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
SO-1830 w/TNMC	2 Total Top and Bottom	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	680 lb (309 kg) 1292 lb (586 kg)	• Clock 30" (762 mm) • TOL 18" (457 mm) • Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
SO-1830L	2 Total Top and Bottom	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 7620 mm, 152 mm)	780 lb (355 kg) 1482 lb (672 kg)	• Clock 30" (762 mm) • TOL 18" (457 mm) • Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
SO-1830 L w/TNMC	2 Total Top and Bottom	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm) H4'-0", W32'-0", D6" (1219 mm, 7620 mm, 152 mm)	900 lb (408 kg) 1710 lb (776 kg)	• Clock 30" (762 mm) • TOL 18" (457 mm) • Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
S0-1930	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 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) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
SO-1930 w/TNMC	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 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) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16
SO-2011	2 Total Top Bottom	H7'-6", W20'-0", D6" (2286 mm, 6096 mm, 152 mm) H4'-6", W20'-0", D6" (1372 mm, 6096 mm, 152 mm) H3'-0", W20'-0", D6" (914 mm, 6096 mm, 152 mm)	600 lb (272 kg) 1140 lb (517 kg)	• Clock, Home and Guest 24" (610 mm) • All Other 18" (457 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 17 A2 11

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
SO-2014	2 Total Top Bottom	H10’-0”, W32’-0”, D6” (3048mm, 9754mm, 152 mm) H6’0-0”, W32’-0”, D6” (1829mm, 9754mm, 152 mm) H4’-0”, W32’-0”, D6” (1219mm, 9754mm, 152 mm)	880 lb (400 kg) 1672 lb (758 kg)	• Clock 30” (762 mm) • Score/Stats 24” (610 mm) • Penalty 18” (457 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16
SO-2030	2 Total Top and Bottom	H8’-0”, W25’-0”, D6” (2438 mm, 7620 mm, 152 mm) H4’-0”, W25’-0”, D6” (1219 mm, 7620 mm, 152 mm)	750 lb (340 kg) 1425 lb (646 kg)	• Clock 30” (762 mm) • Penalty 18” (457 mm) • Indicators 8” (203 mm) • All Others 24” (610 mm) -11: red -21: amber	600 W	120 V AC	5.0 A	A1 15 A2 16

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
S0-2030 w/TNMC	2 Total Top and Bottom	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm) H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	900 lb (408 kg) 1710 lb (776 kg)	• Clock 30" (762 mm) • Penalty 18" (457 mm) • Indicators 8" (203 mm) • All Others 24" (610 mm) -11: red -21: amber	800 W (w/red TNMC) 900 W (w/amber TNMC)	120 V AC	6.7 A 7.5 A	A1 15 A2 16

Section 4: Component Locations

Use the following drawings to determine the location of scoreboard components. The drawings are listed below by model number; they are located in **Appendix A: Reference Drawings**, where they are inserted in alphanumeric order by drawing number. Drawings for models that offer optional team name message centers typically include views with and without the TNMC components.

Model	Drawing Title	Drawing
BA-1518	Component Locations; BA-1518-11/-21, G3	A-229343
BA-1518 TNMC	Component Locations; BA-1518-11/-21, G3	A-179745
BA-1524	Component Locations; BA-1524-11/-21, G3	A-229211
BA-1524 TNMC	Component Locations; BA-1524-11/-21, G3	A-179869
BA-2006	Component Locations; BA-2006-11/-21, G3	A-210140
BA-2007	Components Locations; BA-2007-11/-21, G3	A-234661
BA-2007 TNMC	Component Locations; BA-2007 w/TNMC	A-234593
BA-2012	Component Locations; BA-2012-11/-21, G3	A-202673
BA-2013	Component Locations, BA-2013-11/-21, G3	A-260862
BA-2013 TNMC	Component Locations, BA-2013-11/-21 w/TNMC, G4	A-260830
BA-2020	Component Locations; BA-2020-11/-21, G3	A-234140
BA-3718	Component Locations; BA-3718-11/-21, G3	A-180070
BA-3718 TNMC	Component Locations; BA-3718-11/-21, G3	A-180070
BA-3724	Component Locations; BA-3724-11/-21, G3	A-228330
BA-3724 TNMC	Component Locations; BA-3724-11/-21 w/TNMC, G3	A-229073
FB-1424	Component Locations; FB-1424-11/-21, G3	A-180606
FB-1424 TNMC	Component Locations; FB-1424-11/-21, G3	A-180606
FB-1430	Component Locations; FB-1430-11/-21, G3	A-185439
FB-1430 TNMC	Component Locations; FB-1430-11/-21, G3	A-185439
FB-1524 TNMC	Component Locations; FB-1524-11/-21, G3	A-181757
FB-1530	Component Locations; FB-1530-11/-21, G3	A-182405

Model	Drawing Title	Drawing
FB-1530 TNMC	Component Locations; FB-1530-11/-21, G3	A-182405
FB-1624	Component Locations; FB-1624-11/-21, G3	A-183010
FB-1630	Component Locations; FB-1630-11/-21, G3	A-181807
FB-1630 TNMC	Component Locations; FB-1630-11/-21, G3	A-181807
FB-1630L	Component Locations; FB-1630L-11/-21, G3	A-188581
FB-1630L TNMC	Component Locations; FB-1630L-11/-21, G3	A-188581
FB-1730	Component Locations; FB-1730-11/-21, G3	A-185446
FB-1730 TNMC	Component Locations; FB-1730-11/-21, G3	A-185446
FB-1830	Component Locations; FB-1830-11/-21, G3	A-181940
FB-1830 TNMC	Component Locations; FB-1830-11/-21, G3	A-181940
FB-1830L	Component Locations; FB-1830L-11/-21, G3	A-180441
FB-1830L TNMC	Component Locations; FB-1830L-11/-21, G3	A-180441
FB-2001	Component Locations; FB-2001-11/-21, G3	A-189150
FB-2001 TNMC	Component Locations; FB-2001-11/-21 w/TNMC	A-184837
FB-2002	Component Locations; FB-2002-11/-21, G3	A-188811
FB-2003	Component Locations; FB-2003-11/-21, G3	A-187933
FB-2003 TNMC	Component Locations; FB-2003-11/-21, G3	A-187933
FB-2004	Component Locations; FB-2004-11/-21, G3	A-189160
FB-2004 TNMC	Component Locations; FB-2004-11/-21 w/TNMC, G3	A-194436
FB-2007	Component Locations; FB-2007-11/21, G3	A-211011

MS-2009	Component Locations; MS-2009-11/-21, G3	A-234590
MS-2009 TNMC	Component Locations; MS-2009-11/-21, w/TNMC, G3	A-234590
MS-2020	Component Locations; MS-2020-11/21, G3	A-241550
MS-2118	Component Locations; MS-2118-11/-21, G3	A-182031
MS-2918	Component Locations; MS-2918-11/-21, G3	A-183029

Model	Drawing Title	Drawing
SO-1424	Component Locations; SO-1424-11/-21, G3	A-188778
SO-1424 TNMC	Component Locations; SO-1424-11/-21, G3	A-188778
SO-1624	Component Locations; SO-1624-11/-21, G3	A-188178
SO-1624 TNMC	Component Locations; SO-1624-11/-21, G3	A-188178
SO-1830	Component Locations; SO-1830-11/-21, G3	A-188831
SO-1830 TNMC	Component Locations; SO-1830-11/-21, G3	A-188831
SO-1830L	Component Locations; SO-1830L-11/-21, G3	A-188988
SO-1830L TNMC	Component Locations; SO-1830L-11/-21, G3	A-188988
SO-1930	Component Locations, SO-1930-11/-21	A-180366
SO-1930 TNMC	Component Locations, SO-1930-11/-21	A-180366
SO-2011	Component Locations; SO-2011-11/-21, G3	A-186096
SO-2014	Component Locations, SO-2014-11/-21, G3	A-219727
SO-2030	Component Locations, SO-2030-11/-21	A-184900
SO-2030 TNMC	Component Locations, SO-2030-11/-21	A-184900

Section 5: Schematics

Reference Drawings:

Schematic; Gen III Outdoor LED, 16 Column Drvr ..... **Drawing A-177931**
Schematic; Gen III, OD LED, 3 Drvr Display ..... **Drawing A-179541**
Schematic; Gen III, OD LED, 1 Drv w/TNMC ..... **Drawing A-179790**
Schematic; Gen III, OD LED, 3 Drv w/TNMC ..... **Drawing A-180081**
Schematic; Gen III, O.D. LED, 2 Drvr Display ..... **Drawing A-180637**
Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC ..... **Drawing A-180688**
Schematic; BA-2011/BA-2007, Gen III, Optional TNMC ..... **Drawing B-181354**
Schematic; BA-2013 Gen III, Optional TNMC ..... **Drawing B-260324**

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

Note: All scoreboards listed in this manual are equipped with 16-column drivers. Wiring diagrams for the 16-column drivers, in both master and slave configurations, are shown on the single-driver schematic **Drawing A-177931.**

Models	Schematic Name	Drawing
BA-1518	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
BA-1518 TNMC	Schematic; Gen III, OD LED, 1 Drv w/TNMC	A-179790
BA-1524	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
BA-1524 TNMC	Schematic; Gen III, OD LED, 1 Drv w/TNMC	A-179790
BA-2006	Schematic; Baseball w/ S.O.P, Gen III, Optional TNMC	B-204264
BA-2007 TNMC	Schematic; BA-2011/BA2007, Gen III, Optional TNMC	B-181354
BA-2012	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
BA-2013	Schematic; BA-2013 Gen III, Optional TNMC	B-260324
BA-2013 TNMC	Schematic; BA-2013 Gen III, Optional TNMC	B-260324
BA-2020	Schematic; Gen III Outdoor, LED, 16 Column Drvr	A-177931
BA-3718	Schematic; Gen III, OD LED, 3 Drvr Display	A-179541
BA-3718 TNMC	Schematic; Gen III, OD LED, 3 Drv w/TNMC	A-180081
BA-3724	Schematic; Gen III, OD LED, 3 Drvr Display	A-179541
BA-3724 TNMC	Schematic; Gen III, OD LED, 3 Drv, Multi-Sec w/TNMC	A-180081

FB-1424	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
FB-1424 TNMC	Schematic; Gen III, OD LED, 1 Drv w/TNMC	A-179790

Models	Schematic Name	Drawing
FB-1430	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
FB-1430 TNMC	Schematic; Gen III, OD LED, 1 Drv w/TNMC	A-179790
FB-1524	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
FB-1524 TNMC	Schematic; Gen III, OD LED, 1 Drv w/TNMC	A-179790
FB-1530	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
FB-1530 TNMC	Schematic; Gen III, OD LED, 1 Drv w/TNMC	A-179790
FB-1624	Schematic; Gen III, OD LED, 2 Drv	A-180637
FB-1630	Schematic; Gen III, OD LED, 2 Drv	A-285418
FB-1630 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-285418
FB-1630L	Schematic; Gen III, OD LED, 2 Drv	A-180637
FB-1630L TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
FB-1730	Schematic; Gen III, OD LED, 2 Drv	A-285418
FB-1730 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-285418
FB-1830	Schematic; Gen III, OD LED, 2 Drv	A-285418
FB-1830 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-285418
FB-1830L	Schematic; Gen III, OD LED, 2 Drv	A-180637
FB-1830L TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
FB-2001	Schematic; Gen III, OD LED, 2 Drv	A-180637
FB-2001 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
FB-2002	Schematic; Gen III, OD LED, 2 Drv	A-180637
FB-2002 TNMC	Schematic, Gen III OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
FB-2003	Schematic; Gen III, OD LED, 2 Drv	A-180637
FB-2003 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
FB-2004	Schematic; Gen III, OD LED, 2 Drv	A-180637
FB-2004 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi Sec w/TNMC	A-180688
FB-2007-11/21	Schematic; Gen III, OD LED, 2 Drv	A-211011

Models	Schematic Name	Drawing
MS-2009	Schematic; Gen III, OD LED, 2 Drv	A-180637
MS-2020	Schematic; GEN III, OD LED, 16 Column Drv	A-177931
MS-2118	Schematic; Gen III, OD LED, 2 Drv	A-180637
MS-2918	Schematic; Gen III, OD LED, 2 Drv	A-180637

SO-1424	Schematic; Gen III Outdoor LED, 16 Column Drvr	A-177931
SO-1424 TNMC	Schematic; Gen III, OD LED, 1 Drv w/TNMC	A-179790
SO-1624 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
SO-1830	Schematic; Gen III, OD LED, 2 Drv	A-180637
SO-1830 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
SO-1830L	Schematic; Gen III, OD LED, 2 Drv	A-180637
SO-1830L TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
SO-1930	Schematic; Gen III, OD LED, 2 Drv	A-180637
SO-1930 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688
SO-2011	Schematic, Gen III, OD LED, 2 Drv	A-180637
SO-2014	Schematic, Gen III, OD LED, 2Drv	A-180637
SO-2030	Schematic; Gen III, OD LED, 2 Drv	A-180637
SO-2030 TNMC	Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC	A-180688

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 users install devices to protect the scoreboard from projectiles. Daktronics must approve scoreboard protection devices not provided 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 impacts.

6.2 Footings and Beams

Reference Drawings:

Installation Specifications, BA-1518 ..... **Drawing A-55008**
Installation Specifications, BA-1524 ..... **Drawing A-120972**
Installation Specifications, BA-2012 & BA-2020 ..... **Drawing A-202766**
Installation Specifications, BA-3718 ..... **Drawing A-126455**
Installation Specifications, BA-3724 ..... **Drawing A-126445**
Installation Specifications, MS-2009 ..... **Drawing A-144415**
Installation Specifications, MS-2118 ..... **Drawing A-128206**
Installation Specifications, MS-2918 ..... **Drawing A-172188**
Installation Specifications, SO-2011 ..... **Drawing A-187149**
Installation Specifications, FB-2002 & FB-2003 ..... **Drawing A-128044**
Beam & Footing Recommendations, FB-XX24 ..... **Drawing A-44514**
Beam & Footing Recommendations, FB-XX30 ..... **Drawing A-44515**
Beam and Footing Recommendations, FB-200X ..... **Drawing A-160931**
Structure Football ..... **Drawing A-44556**
Beam and Footing Recommendations, FB-XX30L ..... **Drawing A-158779**
Beam and Footing Recommendations, FB-XX30 ..... **Drawing A-207019**
Beam and Footing; 8'X32' Scoreboard, 3-pole ..... **Drawing A-220526**
Installation Specifications, MS-2020 ..... **Drawing A-241622**

Use the following tables to determine which drawings provide the installation specifications for each model. The drawings are listed below by model number; they are located in **Appendix A: Reference Drawings**, where they are inserted in alphanumeric order by drawing number.

Model	Drawing Title	Number
BA-1518	Installation Specifications, BA-1518	A-55008
BA-1524	Installation Specifications, BA-1524	A-120972
BA-2006	Installation Specifications, BA-3718	A-126455

Model	Drawing Title	Number
BA-2007	Installation Specifications, BA-3724	A-126445
BA-2012, BA-2020	Installation Specifications, BA-2012	A-202766
BA-2013	Installation Specification, BA-3724	A-126445
BA-3718	Installation Specifications, BA-3718	A-126455
BA-3724	Installation Specifications, BA-3724	A-126445

MS-2009	Installation Specifications, MS-2009	A-144415
MS-2020	Installation Specifications, MS-2020	A-241622
MS-2118	Installation Specifications, MS-2118	A-128206
MS-2918	Installation Specifications, MS-2918	A-172188

SO-2011	Installation Specifications, SO-2011	A-187149

Models without TNMC	Drawing Titles	Number
FB-1424, FB-1524, FB-1624, FB-2007, SO-1424, SO-1624	Beam & Footing Recommendations, FB-XX24 Structure, Football	A-44514 A-44556
3 Beam FB-1430, FB-1530, FB-1630, FB-1730, FB-1830, SO-1830, SO 1930, SO-2030	Beam and Footing Recommendations, FB-XX30 **(3 Beam)** Structure, Football	A-44514 A-207019
2 Beam FB-1430, FB-1530, FB-1630, FB-1730, FB-1830, SO-1830, SO 1930, SO-2030	Beam and Footing Recommendations, FB-XX30 (**2 Beam)**	A-207019
4 Beam FB-1630L, FB-1830L, SO-1830L	Beam & Footing Recommendations, FB-XX30L **(4 Beams)** Structure, Football	A-158779 A-44556
3 Beam FB-1630L, FB-1830L, SO-1830L	Beam and Footing Recommendations, FB-XX30L **(3 Beam)**	A-220526
SO-1930, SO-2030	Beam & Footing Recommendations, FB-XX30	A-44515

Models without TNMC	Drawing Titles	Number
	Structure, Football	A-44556
FB-2001, FB-2004, SO-2014	Beam and Footing Recommendations, FB-200X	A-160931
	Structure, Football	A-44556
FB-2002, FB-2003	Installation Specifications, FB-2002 & FB-2003	A-128044
	Structure, Football	A-44556

Models with TNMC	Drawing Titles	Number
FB-1424, FB-1524, SO-1424, SO-1624	Beam & Footing Recommendations, FB-XX24	A-44514
	Structure, Football	A-44556
FB-1430, FB-1530, FB-1630, FB-1730, FB-1830, SO-1830, SO-1930, SO-2030	Beam & Footing Recommendations, FB-XX30	A-44515
	Structure, Football	A-44556
FB-2001, FB–2004	Beam and Footing Recommendations, FB-200X	A-160931
	Structure, Football	A-44556
FB-1630L, FB-1830L, SO-1830L	Beam & Footing Recommendations, FB-XX30L	A-158779
	Structure, Football	A-44556
FB-2003	Installation Specifications, FB-2002 & FB-2003	A-128044
	Structure, Football	A-44556
SO-1930, SO-2030	Beam & Footing Recommendations, FB-XX30	SO-1930, SO-2030
	Structure, Football	

Refer to the installation specification drawings listed in the preceding tables for the rear view of each of the models. 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 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 dimensions provided with the drawings can help in estimating installation costs.

Note: They are estimates only and are not intended for construction purposes. Be sure that your installation complies with local building codes and is suitable for your particular soil and wind conditions.

The columns and footings and all connection details must be designed and certified by a professional engineer licensed to practice in the state in which scoreboard will be installed.

Note: Daktronics does not assume any liability for any installation derived from the information provided in this manual or for those designed and installed by others.

6.3 Lifting the Scoreboard

Reference Drawing:

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.

Note: Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display.

Using a spreader bar ensures that the force on the eyebolts is straight up, minimizing lifting stress. Lifting methods are shown in **Figure 3** and in **Drawing A-44548**.

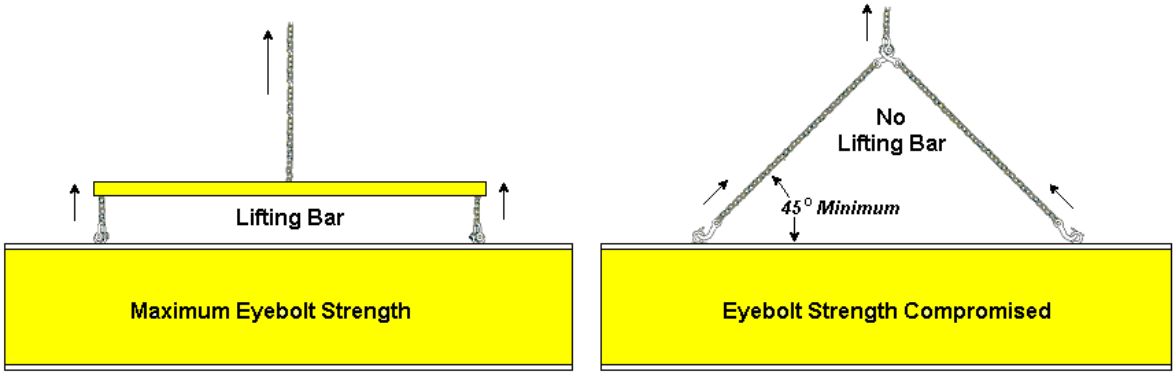


Figure 3: *Lifting the Display*

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 not to exceed the rated load of the eyebolts. Refer to **ED-7244**, **Eyebolts**, to determine allowable loads and load angles for the lifting hardware. **ED-7244** is located in **Appendix B** 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, there could be serious damage to the scoreboard. If you must use this method, ensure a minimum angle between the chain and scoreboard of at least 45degrees.

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 with the eyebolts.

In typical multi-section installations, the lower scoreboard is installed first and secured to the support beams. 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, plug the holes with bolts and the rubber sealing washers used 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 Drawings:

Display Mounting.....**Drawing A-44412**
Display Mounting Straps, BA-3718.....**Drawing A-114415**

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

Drawing A-44412 shows 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. The drawing also shows 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.

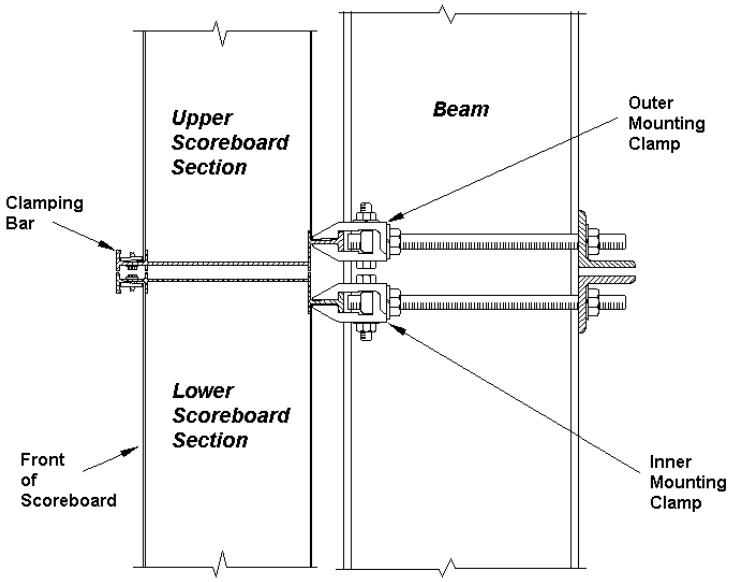


Figure 4: *Multi-Section Scoreboard Mounting (Side View)*

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

1. Using the 3/8" bolts, loosely attach the inner and outer mounting clamps to the rear flanges of the scoreboard's horizontal frame members. 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. From the rear, screw a threaded rod into each of the nuts, as shown in **Figure 4**.

3. Position the scoreboard in 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.

7. Model BA-3718-11 requires the use of mounting straps. Refer to Drawing **A-114415** for installation instructions.

Scoreboard Mounting Using Spacers

Reference Drawing:

Scoreboard Mtg; Scoreboard with Spacers ..... **Drawing A-182909**

Many Daktronics customers add message centers or advertising panels to the top or bottom of their scoreboards, and in some cases the depth of the add-on component may not match the depth of the scoreboard. (Scoreboards in this series are typically 6" or 11" deep.)

To create a uniform appearance for the overall display, Daktronics recommends using spacers behind the scoreboard so that the front face of the

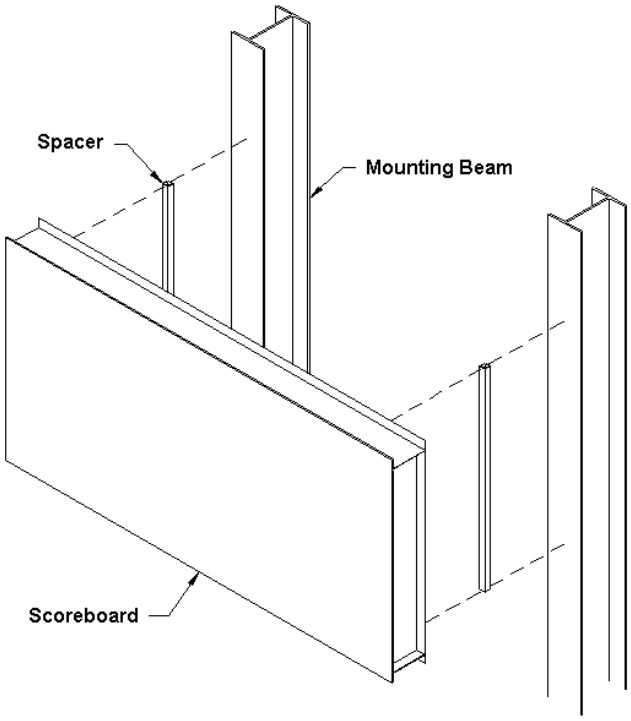


Figure 5: *Mounting with Spacers*

display lines up evenly with the front face of the added component. The concept is illustrated in **Figure 5**.

Drawing A-182909 provides complete details for inserting spacers. At installation, spacers are placed between the mounting beams and the back of the scoreboard cabinet. Spacer size is determined by the height and the extra depth required for the front surface of the scoreboard to match that of the optional message center or ad panel. Daktronics does not provide these spacers.

6.5 Ad Panel Mounting

Reference Drawing:

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

Drawing A-52187 shows the mounting of advertising or identification panels. The installation requires mounting channel (C-channel), mounting angles, and 1/2" threaded rods (15"), square nuts, hex nuts, and washers.

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 the 1/2" square nuts inside the channel and thread the long rods through.

4. Lift the ad panel into position with the threaded rods still in place.

5. Place mounting angles over each pair of rods 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 rods through the holes.

6.6 Optional One- or Two-Line Message Center Mounting

Reference Drawing:

Mounting Detail; 2 1/2" Matrix..... **Drawing A-115882**

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

Drawing A-115882 illustrates 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 driver/power enclosure.
- Connecting the scoreboard ground to a grounding electrode at the scoreboard location.
- Routing the control signal cable from the control location to the scoreboard 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

Reference Drawing:
Schematic; Gen III Outdoor LED, 16 Column Drvr..... **Drawing A-177931**

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 display 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.

The multi-section outdoor scoreboards 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 an 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 5** to determine circuit specifications and maximum power requirements for the models described in this manual.

Grounding

Reference Drawing:
Schematic; Gen III Outdoor LED, 16 Column Drvr..... **Drawing A-177931**

Note: 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 contractor performing the electrical installation can verify ground resistance. Daktronics Sales and Service personnel can also provide 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.

Note: The display must be properly grounded, or the warranty will be void**.** Refer to the schematic, **Drawing A-177931**, for information on connecting the grounding wire. The connection is illustrated in the "Pwr In" detail of the *Master Configuration* portion of the schematic.

The material for an earth-ground electrode differs from region to region and may vary according to conditions present at the 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.

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 paragraphs:

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.

Note: This would violate electrical codes and void the warranty.

Use a disconnect so that all hot and neutral lines can be disconnected. The National Electrical Code requires the use of a lockable power disconnect within sight of or at the display.

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 driver/power enclosure.

- Use a disconnect that opens all of the ungrounded phase conductors.

7.2 Power and Signal Connection

Reference Drawings:

Schematic; Gen III Outdoor LED, 16 Column Drvr ..... **Drawing A-177931**
Schematic; Gen III, OD LED, 3 Drvr Display ..... **Drawing A-179541**
Schematic; Gen III, OD LED, 1 Drv w/TNMC ..... **Drawing A-179790**
Schematic; Gen III, OD LED, 3Dr w/TNMC ..... **Drawing A-180081**
Schematic; Gen III, OD LED, 2 Drv ..... **Drawing A-180637**
Schematic; Gen III, OD LED,
2 Drv Multi-Sec w/TNMC ..... **Drawing A-180688**
Driver; Gen III Outdoor LED, 16 Col Master ..... **Drawing A-178197**
Schematic; Baseball w/S.O.P.,
Gen III optimal TNMC ..... **Drawing B-204264**
Schematic; BA-2013 GEN III, Optional TNMC ..... **Drawing B-260324**

Route power and signal cables into the scoreboard from the rear. There are two knockouts for conduit connection in the back. All power and signal wiring terminates at the driver enclosure. **Drawing A-178197** illustrates the 16-column driver used in Daktronics outdoor LED scoreboards.

To gain access to the driver enclosure, open the access door or digit panel and remove the cover from the enclosure. Refer to the component locations drawings for the access location for your scoreboard.

Connect power and signal cables at the appropriate locations on the driver enclosure panel, shown in **Drawing A-178197**.

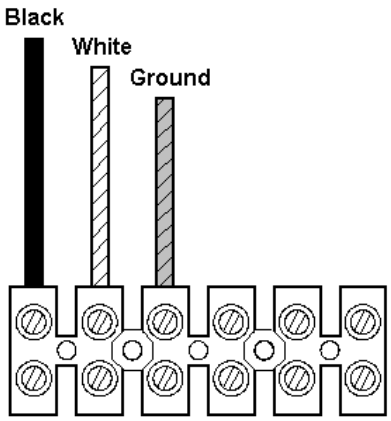


Figure 6: *Power Terminal Block*

The conventional power termination panel has been eliminated from Daktronics outdoor scoreboards; the power feeder circuit connects directly to a terminal block in the driver enclosure, as shown in **Figure 6** above.
The terminal block is located in the lower right corner of the enclosure. Connect the power wires as shown in the illustration. Refer to the driver engineering drawings and the schematics listed at the beginning of this section for additional wiring details. The schematics include a detailed illustration of the power termination.

Note: Driver enclosures in some earlier Daktronics scoreboards included a 120 V power receptacle. There is no 120 V receptacle in Generation III displays. If you want power to operate the control console at the scoreboard for troubleshooting,

Daktronics recommends that you have the installation electrician provide a 120 V outlet close to the disconnect box specifically for this purpose**.**

Route signal cabling to the signal surge arrestor card in the upper left corner of the driver enclosure. The connections are labeled to permit easy installation. At the Signal In terminal block on the PCB, connect the red signal wire to the positive terminal, the black to the negative terminal, and the shield (silver) wire to the shield terminal.

Note: It is important that the shield wire is properly connected to the shield terminal on the signal surge arrestor card.

Figure 7 (on the previous page) illustrates the printed circuit board and the terminal blocks.

For signal cable, Daktronics recommends, as a minimum, single-pair, shielded cable, 22 AWG (Daktronics part number W-1077). Two-pair shielded cable (Daktronics part W-1234) is preferred.

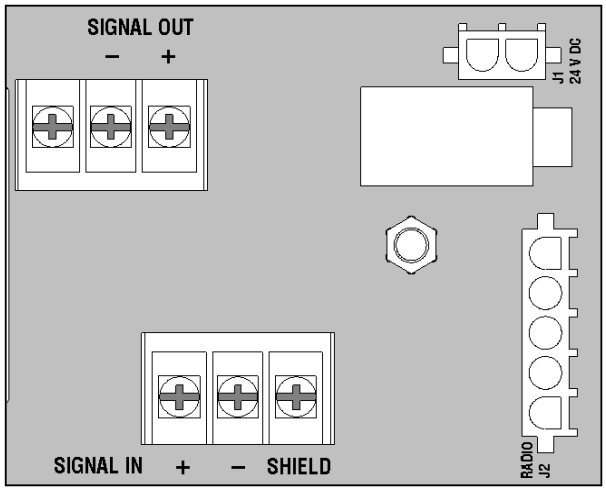


Figure 7: *Signal Surge Arrestor Card*

For additional information on signal connection, refer to the All Sport 5000 Series or All Sport 3000 Series control console operation manuals, **ED-11976** and **ED-12126**.

Interconnect Harness Connections

All multi-section football and soccer scoreboards use an interconnect harness as a connection between the digits of the top section and their corresponding driver in the lower section. Typically, one driver runs the top section of the board, while the other driver runs the bottom section, but only the top section digits use the interconnect harness. Cabling runs from the individual digits to a common point in the upper scoreboard section, and the harness drops through the bottom of the scoreboard cabinet to connect to the driver in the lower section. (At shipping, the interconnect

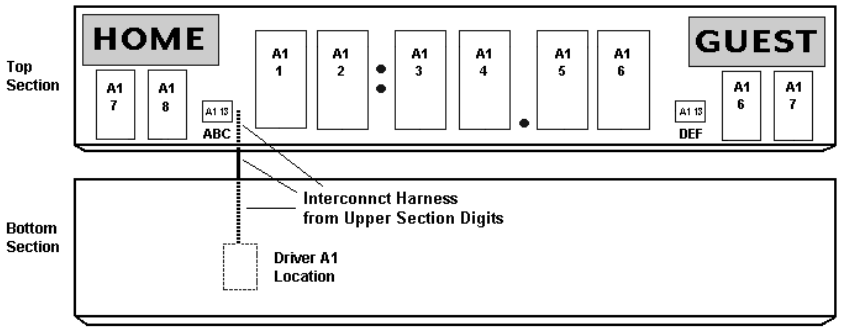


Figure 8: *Interconnect Harness Connections with Digit Designation*

harness will extend approximately 7' from the bottom of the upper section. Open the access panel to the lower driver, pull the interconnect harness through the hole in the top of the lower cabinet, and plug the harness into the appropriate driver connection.)

Figure 8 illustrates the interconnect harness connection.

On some larger four-section scoreboards, BA-3724 and BA-2007, the digit interconnect harnesses plug directly into drivers in the upper left section of the scoreboard.

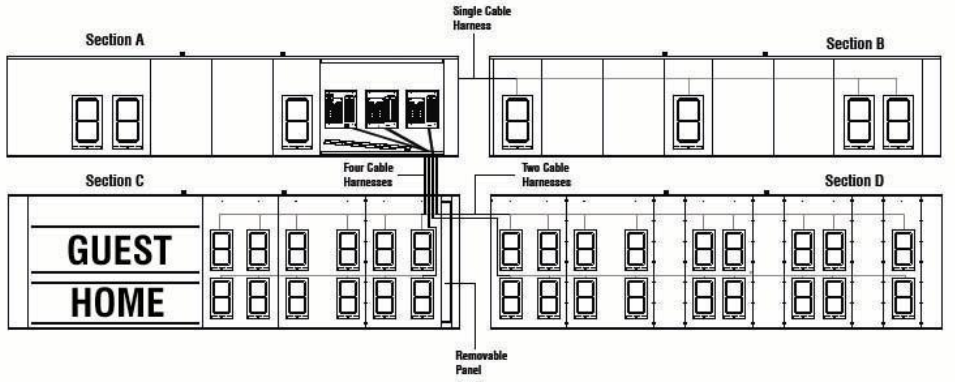


Figure 9: *Scoreboard Interconnect Harnessing*

Because the four sections of these scoreboards are shipped separately and joined onsite, care must be taken to properly route the interconnect cables. Refer to **Figure 9** and follow this general procedure to connect the digit harnesses.

1. When the scoreboard sections are uncrated, you should see cables protruding from the tops or sides of *Sections B, C,* and *D*. These are the digit interconnect harnesses, and each harness may contain as many as nine individual digit connectors. They will be routed through 2½" holes in the scoreboard cabinets and into *Section A*, where the connectors will plug into the appropriate driver connections. (Digits in all sections have been connected and tested at the factory; the only installation that must be completed onsite is the attachment of the cables to the driver connections.)
2. Begin the installation by first connecting the harnesses in the lower scoreboard sections, *C* and *D*. There is a removable panel on the face of *Section C*, immediately to the right of the digits. Unfasten the two screws to remove the panel; this will provide access for routing the cable harness from *Section D*.

3. Harnesses should be protruding through a pair of 2½" holes on the left end of *Section D*. Refer to **Figure 9**. Run these cables into the mating holes on the right side of *Section C*, and then continue to route the cabling up and through the two end holes in the top of *Section C*. There are four holes on the upper right side of the *Section C* cabinet. The first two holes are occupied by the digit interconnect cabling from *Section C*, and these two cables should already be routed up and through the top of the scoreboard cabinet.

4. Open the right access panel in *Section A*. The panel is hinged at the top and fastened with three screws at the bottom; it also contains a brace to prop open the door.

5. On the left side of the *Section B* cabinet is the interconnect harness – a single cable with multiple connectors. Run the cable into and through the single mating hole on the right side of the *Section A* scoreboard.

6. Plug the connectors from all the cables into corresponding connection on the appropriate driver. Each plug is clearly marked.

On other larger four-section scoreboards, BA-3718 and BA-2006, the digit interconnect harnesses plug directly into connector panels in the upper left section of the scoreboard.

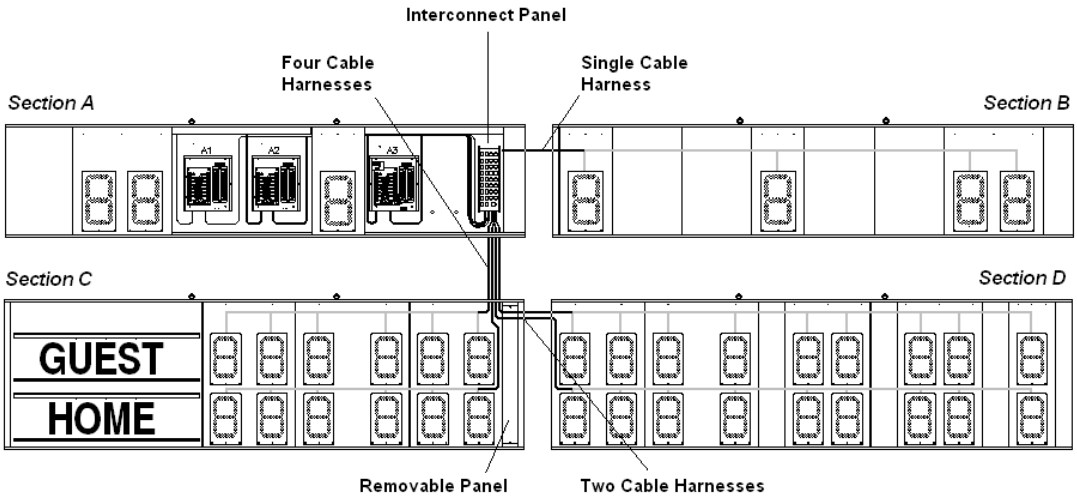


Figure 10: *Scoreboard Interconnect Harnessing*

Because the four sections of these scoreboards are shipped separately and joined onsite, care must be taken to properly route the interconnect cables. Refer to **Figures 10** and **11** and follow this general procedure to connect the digit harnesses.

1. When the scoreboard sections are uncrated, you should see cables protruding from the tops or sides of *Sections B, C,* and *D*. These are the digit interconnect harnesses, and each harness may contain as many as nine individual digit connectors. They will be routed through $2^1/_2$" holes in the scoreboard cabinets and into *Section A,* where the connectors will plug into the appropriate jacks on the interconnect panel. (Digits in all sections have been connected and tested at the factory; the only installation that must be completed onsite is the attachment of the cables to the interconnect panel.)

2. Begin the installation by first connecting the harnesses in the lower scoreboard sections, *C* and *D*. There is a removable panel on the face of *Section C*, immediately to the right of the digits. Unfasten the two screws to remove the panel; this will provide access for routing the cable harness from *Section D*.

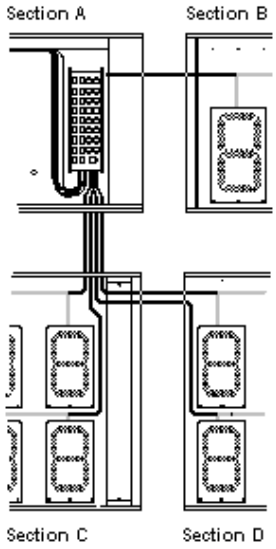


Figure 11: *Detail, Interconnect Harnessing*

3. Harnesses should be protruding through a pair of $2^1/_2$" holes on the left end of *Section D*. Refer to **Figures 10** and **11**. Run these cables into the mating holes on the right side of *Section C*, and then continue to route the cabling up and through the two end holes in the top of *Section C*. There are four holes on the upper right side of the *Section C* cabinet. The first two holes are occupied by the digit interconnect cabling from *Section C*, and

these two cables should already be routed up and through the top of the scoreboard cabinet.

4. Open the right access panel in *Section A*. The panel is hinged at the top and fastened with three screws at the bottom; it also contains a brace to prop open the door. The interconnect panel is on the right. Digits and drivers in this scoreboard section are already connected, so no further installation work is required.

5. On the left side of the *Section B* cabinet is the interconnect harness – a single cable with multiple connectors. Run the cable into and through the single mating hole on the right side of the *Section A* scoreboard.

6. Plug the connectors from all the cables into their mating jacks on the interconnect panel. Each plug and jack combination are clearly marked.

Multiple Driver Connections

All of the large, multi-section LED scoreboards require multiple drivers, and those models have been configured to operate with a master/slave driver system. Master and slave drivers function identically, but slave units lack the power termination block and signal surge suppression card. The two drivers have been designed to simply plug into one another via an interconnect harness. The slave receives power and redriven signal from the master driver enclosure. Larger boards can add as many driver slaves as they require.

All driver interconnect harnesses are factory-installed. No additional connection is necessary. (The harness emerges from the bottom of the master driver enclosure, and the J42 jack from the master is connected to the slave's P43 plug.) Likewise, signal cables from drivers to digit also have been factory-installed, and no additional connection is necessary.

Refer to your scoreboard drawings to determine driver location and other model-specific information.

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 9** 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, indicators, and component access are detailed in each model's component locations drawing, listed in **Section 4**.

8.2 Component Location and Access

For front-access scoreboards, all internal electronic components and digits can be reached by opening a face panel, an access door, or 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 three screws at the bottom, as shown in **Figure 12** (very large digits may have additional screws across the bottom.)

Note: Open the scoreboard with care.

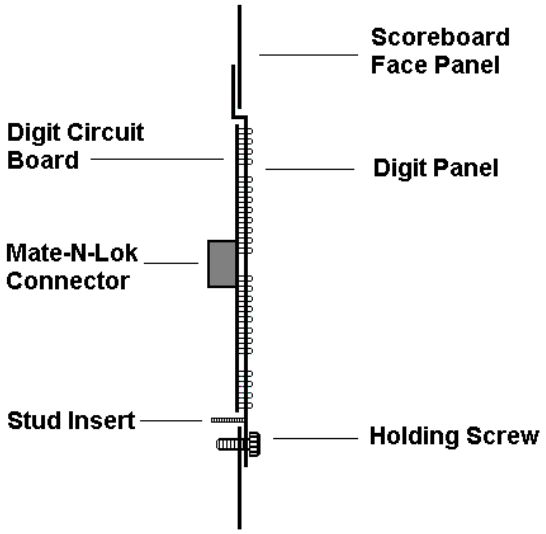


Figure 12: *LED Digit Panel (Not to Scale)*

Hold the digit panel in place by putting hand pressure on it while removing the screws, and carefully lift it from the board, sliding it out and down. If the panel is not held in place, it could drop immediately when the screw is removed, possibly damaging LEDs or the digit harness. (A stud insert on the back of the digit panel is designed to minimize damage from dropping.)

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

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

Note: Disconnect power before servicing the display!

Replacing a Digit

The digit circuit board, the platform for the LEDs, is mounted to the back of the digit panel. See **Figure 13** below. Do not attempt to remove individual LEDs. In the case of a malfunctioning board, replace the entire digit panel.

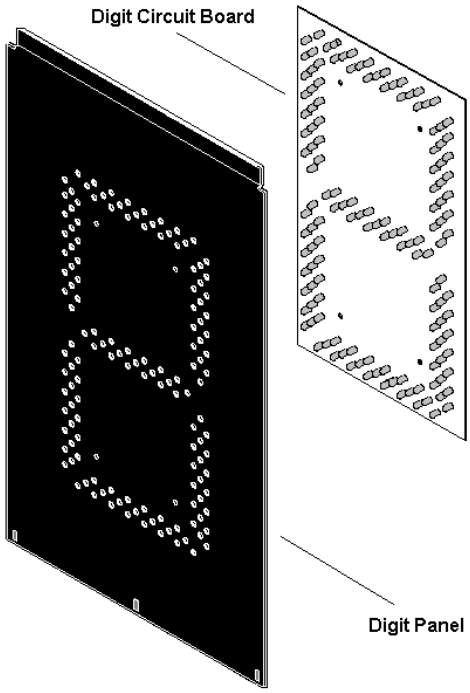


Figure 13: *Digit Assembly*

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 fixed machine screws, spacers, and push nuts. Remove the nuts and lift the digit off the standoff screws. The push nuts can be removed in several ways, but Daktronics recommends using a 9/32" nut driver.

4. Position a new digit over the screws and tighten the nuts.

5. Reconnect the power/signal connector.

   Note: This is a keyed connector and 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 Assemblies; Gen III LED Digits ..... **Drawing B-177679**

When a digit malfunctions, in most cases it is necessary to replace the entire digit circuit board. Some larger digits (24", 30", 36"), however, are constructed in segments, as shown in **Figure 14**, and
it may be possible to make repairs by removing only the defective segment.
As with smaller digits, the digit segment circuit boards are mounted to the back of the digit panel.

Note: Do not attempt to remove individual LEDs.

Refer to **Drawing B-177679**. To remove a digit segment, follow these steps:

1. Open the digit panel as described above in the previous section.

2. Disconnect the 2-pin power/signal connector from the back of the individual segment. Release the connector by squeezing together the locking tabs as you pull the connector free.

3. The individual segments are secured to the inside of the panel with fixed machine screws, spacers, and push nuts. Remove the nuts and lift the segment off the standoff screws.

4. Position a new segment over the screws and tighten the nuts.

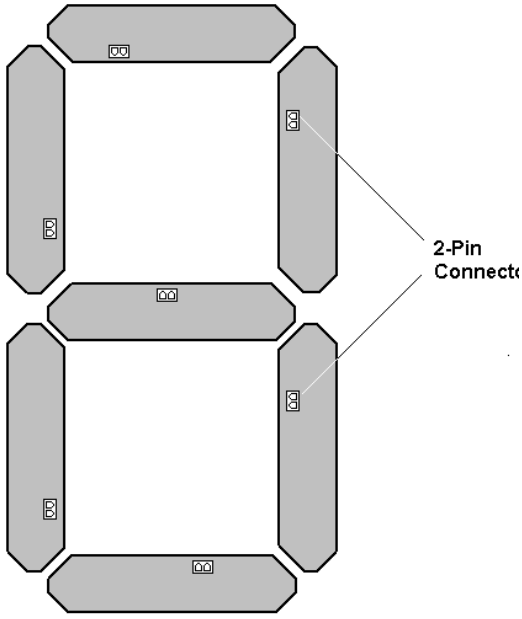


Figure 14: *Segmented Digit Panel (Rear View)*

5. Reconnect the power/signal connector.

   Note: This is a keyed connector and will attach in one way only. Do not attempt to force the connection!

6. Close and secure the digit panel and test the scoreboard.

   Replace a malfunctioning colon, decimal, or indicator assembly in the same manner.

Replacing a Driver

Drivers are typically mounted inside the scoreboard and immediately behind a digit, but location and mounting varies with the model of the scoreboard. Refer to the component locations drawings in **Section 4** for the location of your scoreboard driver.

All scoreboards in this manual are front-accessible. Each driver is enclosed with a power supply and signal terminal block.

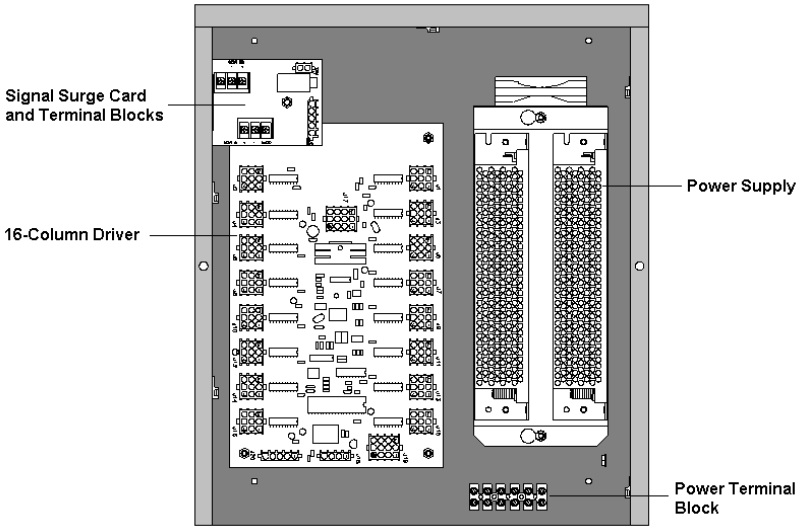


Figure 15: *16-Column Driver Enclosure*

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: This is a keyed connector and will attach in one way only. Do not attempt to force the connections!
4. Remove the screws, nuts, or wing nuts securing the driver to the inside of the enclosure. Refer to **Figure 15**.
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

Reference Drawings:

Schematic; Gen III Outdoor LED, 16 Column Drvr.....**Drawing A-177931**
Schematic; Gen III, OD LED, 3 Drvr Display.....**Drawing A-179541**
Schematic; Gen III, OD LED, 1 Drv w/TNMC.....**Drawing A-179790**
Schematic; Gen III, OD LED, 3Drv w/TNMC.....**Drawing A-180081**
Schematic; Gen III, OD LED, 2 Drv.....**Drawing A-180637**
Schematic; Gen III, OD LED, 2 Drv Multi-Sec w/TNMC.....**Drawing A-180688**

Drawings A-177931, **A-179541**, **A-179790**, **A-180081**, **A-180637**, and **A-180688** are the schematic diagrams for the Daktronics multi-section scoreboards and the 16-column drivers used in them. The schematics include power and signal inputs and all wiring for the models described in this manual. Refer to **Section 5** for a complete listing of scoreboards and the appropriate schematic.

8.4 LED Drivers

Reference Drawings:
Driver; Gen III Outdoor LED, 16 Col Master.....**Drawing A-178197**
16 Column LED Driver II Specifications .....**Drawing A-134371**
Address Table, 1 Through 128.....**Drawing A-115078**

In the scoreboard, the LED drivers perform the task of switching digits on and off.

Refer to **Drawing A-178197**. Each driver has up to 19 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	Power and signal input
18	Relay
19	Address
20	Protocol

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.

For the scoreboard to receive signal and function properly, the driver must be set to the correct address. This address is set with jumper wires in a 12-pin plug which mates with a jack on the driver. **Drawing A-134371** details the specifications for 16-column drivers. Refer to **Drawing A-115078** for a listing of the wire/pin connections for driver addresses 1 – 128.

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 in **Section 4** specify the driver connectors controlling the digits. Numbers displayed in hexagons in the upper half of each digit, as shown in **Figure 16**, indicate which connector is wired to that digit. The lower number in the square indicates nominal digit size.

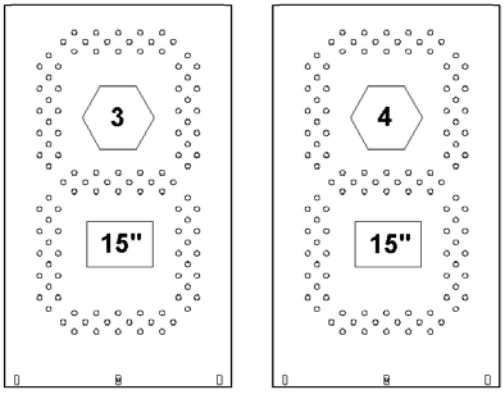


Figure 16: *Digit Designation*

8.6 Lightning Protection

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 the disconnect. 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.

8.7 Troubleshooting

This section lists potential problems with the scoreboard and indicates possible causes and corrective actions. This list does not include every possible problem, but does represent some of the more common situations that may occur.

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

8.8 Replacement Parts

Refer to the following table for Daktronics scoreboard replacement parts.

Description	Location	Daktronics Part No.
Driver, 16 col, outdoor, LED	Driver enclosure	0P-1192-0011
Power supply, 24 V, 150W, 86-132 V input	Driver enclosure	A-1720
Signal surge arrestor	Driver enclosure	0P-1110-0011
Fan, 32 cfm, 24 V DC, 3.15 sq. in	Driver enclosure	B-1030
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
12V DC trumpet horn asm.	Scoreboard	0A-1091-1213
Signal cord; $^1/_4$" phone 20'	Signal	W-1236
Signal cord; $^1/_4$" phone 30'	Signal	W-1238
Signal cord; $^1/_4$" phone 50'	Signal	W-1237
Digit, 15", 7-seg outdoor LED, red	Scoreboard	0P-1192-0200
Digit, 15", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0214
Digit, 18", 7-seg outdoor LED, red	Scoreboard	0P-1192-0202
Digit, 18", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0216
Digit, 18" ones, 7-seg outdoor LED, red	Scoreboard	0P-1192-0203
Digit, 18" ones, 7-seg outdoor LED, amber	Scoreboard	0P-1192-0217

Description	Location	Daktronics Part No.
Digit segment, 24” outdoor LED, red (horizontal)	Scoreboard	0P-1192-0205
Digit segment, 24” outdoor LED, red (vertical)	Scoreboard	0P-1192-0204
Digit segment, 24” outdoor LED, amber (horizontal)	Scoreboard	0P-1192-0219
Digit segment, 24” outdoor LED, amber (vertical)	Scoreboard	0P-1192-0218
Digit segment, 30” outdoor LED, red (horizontal)	Scoreboard	0P-1192-0207
Digit segment, 30” outdoor LED, red (vertical)	Scoreboard	0P-1192-0206
Digit segment, 30” outdoor LED, amber (horizontal)	Scoreboard	0P-1192-0221
Digit segment, 30” outdoor LED, amber (vertical)	Scoreboard	0P-1192-0220
Digit segment, 36” outdoor LED, red (horizontal)	Scoreboard	0P-1192-0209
Digit segment, 36” outdoor LED, red (vertical)	Scoreboard	0P-1192-0208
Digit segment, 36” outdoor LED, amber (horizontal)	Scoreboard	0P-1192-0223
Digit segment, 36” outdoor LED, amber (vertical)	Scoreboard	0P-1192-0222
Indicator, 2” circular, outdoor LED, red	Scoreboard	0P-1192-0228
Indicator, 2” circular, outdoor LED, amber	Scoreboard	0P-1192-0229
Indicator, possession (football), outdoor LED, red	Scoreboard	0P-1192-0230
Indicator, possession (football) outdoor LED, amber	Scoreboard	0P-1192-0231
Indicator, soccer, outdoor LED, red	Scoreboard	0P-1192-0240

Description	Location	Daktronics Part No.
Indicator, soccer, outdoor LED, amber	Scoreboard	0P-1192-0241

8.9 Daktronics Exchange and Repair and Return Programs

To meet the repair and maintenance needs of its customers, Daktronics offers both 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.

Daktronics provides this program to ensure users get the most from their Daktronics products, and to offer the service to qualified customers who follow the program guidelines explained below. Please call the Helpdesk – 877-605-1115 – if you have questions regarding the Exchange Program or any other Daktronics service.

When you call the Helpdesk, 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 Helpdesk 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.

Note: 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 Helpdesk 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 Helpdesk: 877-605-1115 (toll free) or 605-697-4036
Fax:	605-697-4444

Section 9: Team Name Message Center Maintenance

IMPORTANT NOTES:

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

9.1 Team Name Message Center System Overview

Team name message centers (TNMCs) are available in two sizes: an 8x32 matrix model with four 8x8-pixel modules, and an 8x48 model comprised of six 8x8 modules. **Figure 17**, below, illustrates the larger unit. Light emitting diodes (LEDs) – tiny, solid-state lighting units – illuminate the displays.

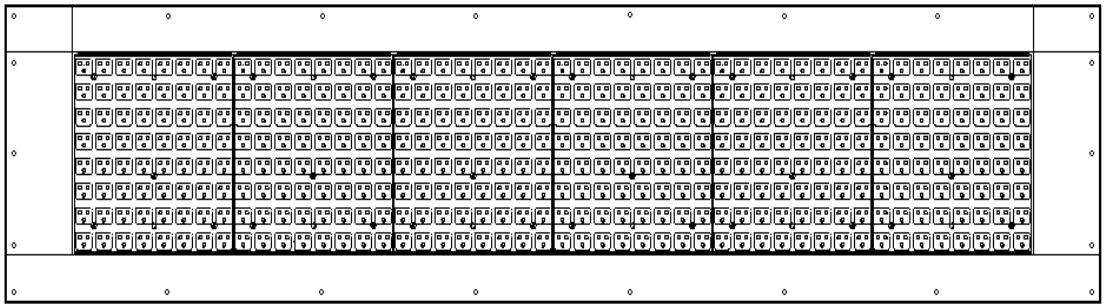


Figure 17: *8x48 Team Name Message Center*

The message centers feature an array of red or amber LEDs, and they are capable of displaying characters up to 10" high. Pixels in the red TNMC consist of a three-LED cluster, while amber TNMCs use four-LEDs per pixel.

The four-module TNMC measures approximately 1'-4" tall by 4' wide, while the six-module TNMC measures approximately 1'-4" by 6' wide; both have an in-cabinet depth of about 5". The smaller units weigh about 80 pounds per pair, and the larger TNMC sets add about 120 pounds to scoreboard weight.

TNMCs are typically installed in pairs. Although the message centers customarily are used for team names (home and guest), they are programmable and can display any 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 typically are front-accessible, but some models may be ordered with rear service access. For that reason, 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.

9.3 Signal Summary

Reference Drawings:

Schematic, Red LED TNMC, Gen III ..... **Drawing A-187661**
Schematic; Amber LED TNMC, Gen III ..... **Drawing A-187662**
Component Locations; 832/842
Red/Amb TNMC, G3 ..... **Drawing A-187987**

Use these reference dwgs after 11/29/05

Schematic, Amber TNMC, GEN IV ..... **Drawing A-252645**
Schematic, Red TNMC, GEN IV ..... **Drawing A-252681**
Component Locations; 832/848
Red/Amb LED TNMC, G4 ..... **Drawing A-257029**

Refer to your schematic, **A-187661** or **A-187662 (or A-252645 or A-252681 for GEN 4)**, for complete information on TNMC signal routing. **Drawing A-187987 (or A-257029 for GEN 4)** indicates the locations of the internal electronic components. Routing for signal input from the All Sport controller can be summarized as follows:

1. Data from the display controller travels via cable harness into the scoreboard.

2. The signal then travels through the driver/power enclosure to the J1 connector on the current loop interface card.

3. Data exits at J42 via current loop harness, and connects with P43 at the TNMC controller assembly. An interconnect harness carries the signal to the first module, and the signal relays from module to module, in daisy-chain style, until it reaches the last module on the message center.

9.4 Power Summary

Reference Drawings:

Schematic, Red LED TNMC, Gen III ..... **Drawing A-187661**
Schematic; Amber LED TNMC, Gen III ..... **Drawing A-187662**
Component Locations; 832/842
Red/Amb TNMC, G3 ..... **Drawing A-187987**

Use these reference dwgs after 11/29/05

Schematic, Amber TNMC, GEN IV ..... **Drawing A-252645**
Schematic, Red TNMC, GEN IV ..... **Drawing A-252681**
Component Locations; 832/848
Red/Amb LED TNMC, G4 ..... **Drawing A-257029**

Refer to your schematic, **A-187661** or **A-187662 (or A-252645 or A-252681 for GEN 4)**, for complete information on TNMC power routing. **Drawing A-187987 for GEN III only (or A-257029 for GEN 4)** indicates the locations of the internal electronic components. Note that amber TNMCs always contain two power supplies, while red TNMCs require only a single power supply.

Power routing for the display can be summarized as follows:

1. Incoming power terminates at the terminal block in the scoreboard driver enclosure. Using the same harness and J42-P43 connections as signal, power is then routed to the TNMC controller where it then travels to both the power supply assembly and to a transformer on the controller tray.

2. From the power supply assembly, power is relayed to the first module, and then from module to module.

3. While the modules draw their power directly from the power supply assemblies (9 V for red LED modules, 12 V for amber), the TNMC controller itself receives 16 V power from the transformer.

9.5 Service and Diagnostics

The following subsections address servicing of these display components:

- TNMC Controller
- Modules and Drivers
- Power Supplies

The subsections also address diagnostic LEDs and signal/power connectors found on the TNMC controller.

Note: Disconnect power before servicing internal components!

TNMC Controller

Reference Drawings:

Component Locations; 832/848
Red/Amb LED TNMC, G3 ..... **Drawing A-187987**
4 Column MASC LED Driver Specifications ..... **Drawing A-166216**
Component Locations; 832/848
Red/Amb LED TNMC, G4 ..... **Drawing A-257029**

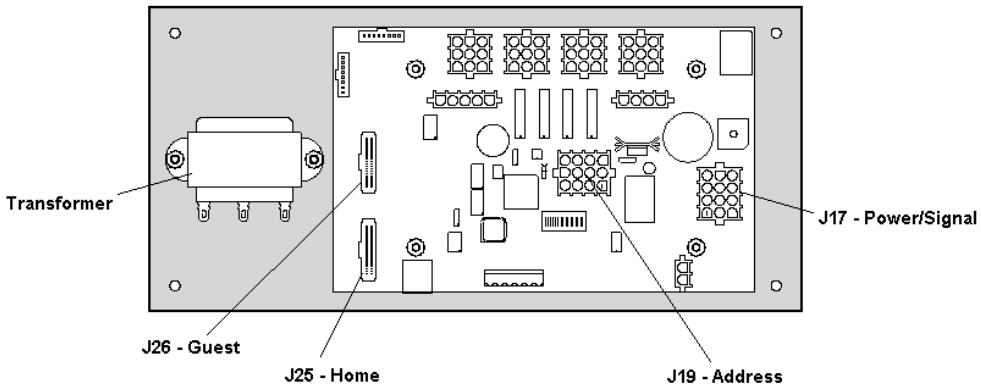


Figure 18: *TNMC Controller Assembly*

The TNMC controller, located on the rear-access panel, receives signal directly from the control console and sends data to the modules. Refer to the signal summary in

Section 9.3 for more information and to **Drawing A-187987 (or A-257029 for GEN 4)** for the location of the controller board in the TNMC. The controller itself is detailed in **Drawing A-166216**, and **Figure 18** below illustrates a typical controller assembly. The card and transformer are mounted to a tray, which in turn is mounted to the back panel of the TNMC cabinet.

Note: Connectors J25 and J26 control Home and Guest display. When the ribbon cable is plugged into J25, the TNMC sends home team information to the matrix display. In the opposite message center, the signal cable would be plugged into the J26 connector, and guest information would be displayed. (Switching the cables reverses the information each message center receives.)

J19 is the connector for the address plug. The address setting for TNMCs will always be 221. (There may be other settings if the TNMCs are used to display messages other than team names.)

Diagnostic LEDs

Reference Drawing:

4 Column MASC LED Driver Specifications ..... **Drawing A-166216**

There are seven diagnostic LEDs located on the TNMC controller, six indicating when the controller is receiving signal, and the seventh indicating power status. Four of the LEDs, those indicating CAN and RS-232 signal functions, are not used with the TNMC controller.

The following table explains the operation and functions of each of the diagnostic LEDs.

LED	Color	Function	Operation	Summary
DS1	RED	CL Signal	Steady on or blinking	DS1 will be on or blinking when the driver is receiving signal and off when there is no signal with CL (current loop).
DS2	Green	CL Signal	Steady on or blinking	DS2 will be on or blinking when the driver is receiving signal and off when there is no signal with CL (current loop).
DS3 (Not used with TNMC functions)	Red	CAN Signal	Steady on or blinking	DS3 will be blinking when the driver is receiving signal and on when there is no signal with CAN controller area network). If there is no CAN device connected to TB1, both DS3 and DS4 will be on and steady.

DS4 (Not used with TNMC functions)	Green	CAN Signal	Steady on or blinking	DS4 will be blinking when the driver is receiving signal and on when there is no signal with CAN (controller area network). If there is no CAN device connected to TB1, both DS3 and DS4 will be on and steady.
DS5 (Not used with TNMC functions)	Red	RS-232	Steady on or blinking	DS5 will be on or blinking when the driver is receiving signal and off when there is no signal with RS-232.
DS6	Green	RS-232 signal	Steady on or blinking	DS6 will be on or blinking when the driver is receiving signal and off when there is no signal with RS-232.
DS7	Green	Power	Steady on	DS7 when on and steady indicates the driver has power.

Removing/Changing the Controller

Reference Drawings:

Exploded Front View; Single Panel Module.....**Drawing B-126111**
Exploded Rear View; Single Panel Module .....**Drawing B-126112**
Component Locations; 832/848 Red/Amb LED TNMC, G3.....**Drawing A-187987**

Use this reference drawing after 11/29/05

Component Locations; 832/848 Red/Amb LED TNMC, G4.....**Drawing A-257029**

Drawing A-187987 (or A-257029 for Gen IV) indicates the location of the TNMC controller for each of the TNMC models. **Figure 19** below illustrates a typical TNMC layout. Complete the following steps to remove the controller from the display.

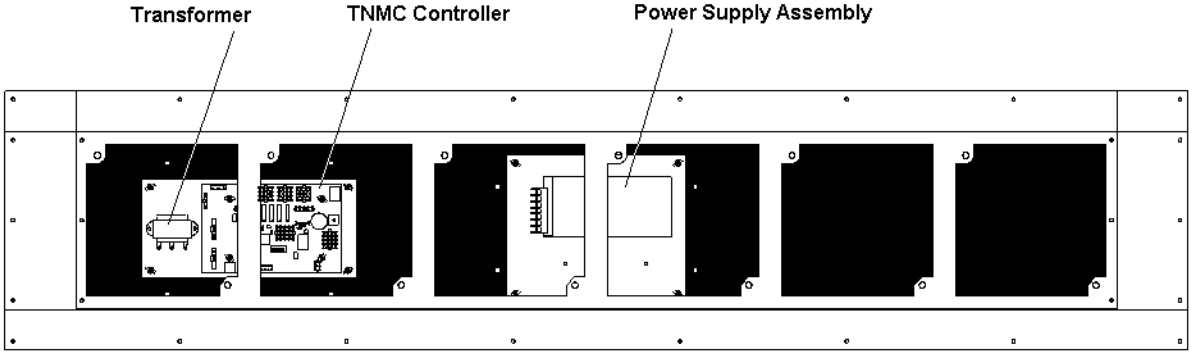


Figure 19: *TNMC Internal Components (Modules Removed)*

1. To access the controller from the front, unlatch the latch fasteners on the front face the LED module. Refer to **Drawings B-126111** and **B-126112**. (The fasteners are

referred to as “latch plugs” on the drawings). One latch fastener is centered below the top row of pixels and one is centered above the bottom row. They may be slightly hidden by the louvers.

2. Using a 7/32" nut driver, turn each fastener a quarter-turn. 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 so you will know which cable goes to which connector when reattaching.

   Note: To access the controller from the rear of the TNMC, as shown in **Figure 20** above, remove the appropriate rear-access panel from the TNMC by loosening all four of the screws. Slide the access panel sideways to the larger part of the 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. Disconnect power from J17.

4. Remove all power and signal connections from the board. Release “locked” connectors by squeezing together the tabs, and 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.

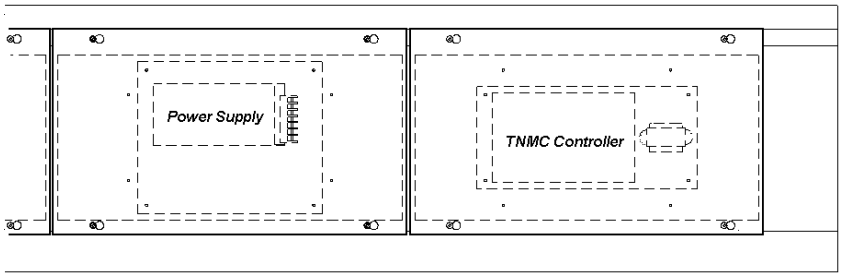


Figure 20: *TNMC Rear Access*

5. Remove the four nuts holding the board in place.

6. Follow the previous steps in reverse order to install a new controller board.

Modules and Drivers

Reference Drawings: (For displays installed prior to 11/29/05)

Exploded Front View; Single Panel Module.....**Drawing B-126111**
Exploded Rear View; Single Panel Module .....**Drawing B-126112**

The module and driver board is a single, functional unit. To remove a 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 drawings) on the front of the module. One is centered below the top row of pixels and one is centered above the bottom row. (They may be slightly hidden by the louvers.)

2. Unlatch the latch fasteners, illustrated in **Figure 21**, 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.

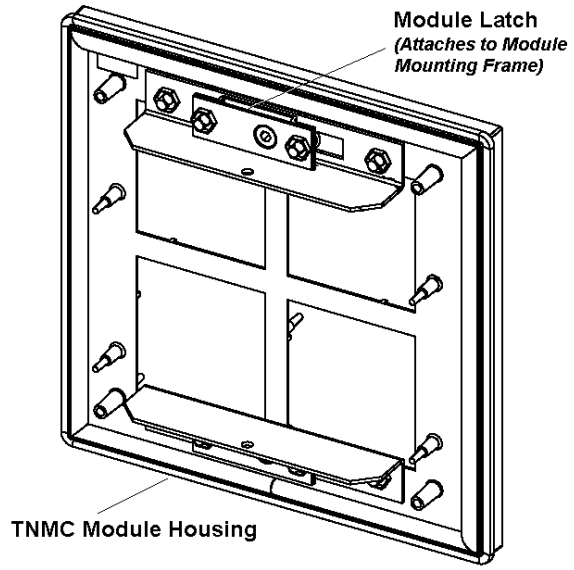


Figure 21: *TNMC Module (Rear View)*

If you are accessing the unit from the rear, follow this procedure*:*

1. Remove the rear access panel (explained in preceding subsection.)

2. While holding onto the module, push it out and turn it in such a manner (generally a sideways, diagonal turn) that it will fit through the frame opening.

3. Pull the module back 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 and take note of the following points:

   - Weatherstripping on the back edge of the module must be intact and in good condition 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. **Drawings B-126111** and **B-126112** illustrate the various module components.

Individual components such as louvers can be removed for service, but Daktronics recommends that the module be kept intact and that the entire assembly be sent in for repair or replacement.

Figure 22: *Removing a Module*

For display installed after 11/29/05

The module and driver are a single functioned unit. Each module assembly is made up of a module housing (containing LEDs and the driver) and a louver assembly.

1. Locate the latch access fasteners on the module (one is centered below the second row of pixels and one is centered above the bottom two rows)

2. With a $^{1}/_{8}$" hex wrench, turn both latch access fasteners a quarter turn counter-clockwise to open as shown in **Figure 22** – and the clockwise to close.

3. Gently pull the module far enough forward to reach behind the back and disconnect the power and ribbon cables

When installing a module, reverse the previous steps and take note of the following points.

- The weather-stripping 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.

- The 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.

Power Supplies

Reference Drawings:

Schematic, Red LED TNMC, Gen III ..... **Drawing A-187661**
Schematic; Amber LED TNMC, Gen III ..... **Drawing A-187662**

Use these reference drawings after 11/29/05

Schematic, Amber TNMC, GEN IV ..... **Drawing A-252645**
Schematic, Red TNMC, GEN IV ..... **Drawing A-252681**

The red-LED TNMC uses a single power supply assembly to power all modules in the 8x32 and 8x48 models. The amber TNMC uses a dual power supply assembly to power all modules in the 8x32 or 8x48 models. Refer to **Drawings A-187661** and **A-187662 (or A-252645 or A-252681 for GEN IV)**.

Removing/Changing a Power Supply

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

1. See the directions in the preceding **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 installed around the entire display and around each module. It is important that the weatherstripping is attached 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.

- **Corrosion**
  Check the paint and electronic components, looking for possible corrosion, especially at footings, structural tie points, and ground rods and other types of grounding electrodes.

Note: If you notice any of the preceding conditions, make repairs or take corrective action 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 fails to light.	■ Check/replace the ribbon cables on the module. ■ Replace the module.
One or more LEDs on a single module fails 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.
A group of modules that share the same power supply assembly fails to work.	■ Replace the power supply assembly.
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.

9.8 Initialization Information at Startup

Every time the display is powered up, the display will run through an initialization during which it will test all LEDs and addresses. First, the message center will display the proper address number. When completed, the initialization test will display Home and Guest in the appropriate location. If the entire TNMC display fails at startup, signal may not be properly connected, or the address plug may not be connected to the J17 jack on the TNMC controller card. Check both connections in the event of a failure.

9.9 Replacement Parts List

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

Part Description	**Part Number** (Prior to 11/29/05)	**Part Number** (After 11/29/05)
Controller assy; 832/848, LED TNMC, G3	0A-1152-2549	Same
Driver (only); MASC, 4-col, LED, coated	0P-1192-0068	Same
Transformer; 115/230 V pri, 16 V sec @ 2 A	T-1063	Same
Module, TNMC; amber LED (4A, 8x8, coated, Type 2)	0A-1208-3005*	OA-1208-4001
Module, TNMC; red LED (3R, 8x8, coated, Type 2)	0A-1208-3017	OA-1208-4000
Power supply assy; amber LED TNMC	0A-1192-2551	OA-1192-3161
Power supply (only); amber LED TNMC	A-1555	A-1591
Power supply assy; red LED TNMC	0A-1192-2550	OA-1192-3160
Power supply (only); red LED TNMC	A-1633	Same
Cable assy; 20-pos ribbon, 18", dual row (module to module)	W-1387	Same
Cable assy; 20-pos ribbon, 30" (TNMC controller to first module)	0A-1000-0017	Same
Electrical contact cleaner/lubricant (CaiLube®)	CH-1019	Same

**Effective as of Fall 2003, Daktronics Part Number 0A-1208-3005 was replaced with Part Number 0A-1208-3018. Contact Daktronics Customer Service for specific replacement part numbers.*

Part numbers for each complete team name message center assembly are as follows:

Assembly	Part Number (Prior to 11/29/05)	Part Number (After 11/29/05)
Amber LED TNMC, 832	0A-1192-2555	OA-1192-3165
Red LED TNMC, 832	0A-1192-2554	OA-1192-3164
Amber LED TNMC, 848	0A-1192-2553	OA-1192-3167
Red LED TNMC, 848	0A-1192-2552	OA-1192-3166

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

Refer to **Section 8.9** for information on the Daktronics Exchange and Repair and Return programs.

Section 10: Scoreboard Options

This section provides information about optional equipment for Daktronics multi-section 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
- Radio control

10.2 Captions for Other Sports

Reference Drawings:

Caption Options, Baseball & Softball ..... **Drawing A-44431**
Caption Options, Track ..... **Drawing A-44432**
Caption 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 that allow them to score different sports.

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

Note: The aluminum caption changer can conduct electricity. Do not use it within 20 feet of power lines.

Note: 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 Drawings:

120V DC Horn Mounting ..... **Drawing A-162100**
Horn Installation; 12V DC ..... **Drawing A-162102**
Schematic, Outdoor Scbd 12VDC
Trumpet Horn AS5K ..... **Drawing A-128938**
Schematic; 120VAC Trumpet Horn ..... **Drawing A-132173**

Trumpet horn options are available for installation only on scoreboards with 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)

Note*:* 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 at 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 to 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)

Note: 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 while 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 pre-drilled at the factory.) Because these screw holes will be used to attach the horn power enclosure assembly, 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 the power to 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 provides display 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 terminal block 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, **ED-11976** and **ED-12126**.

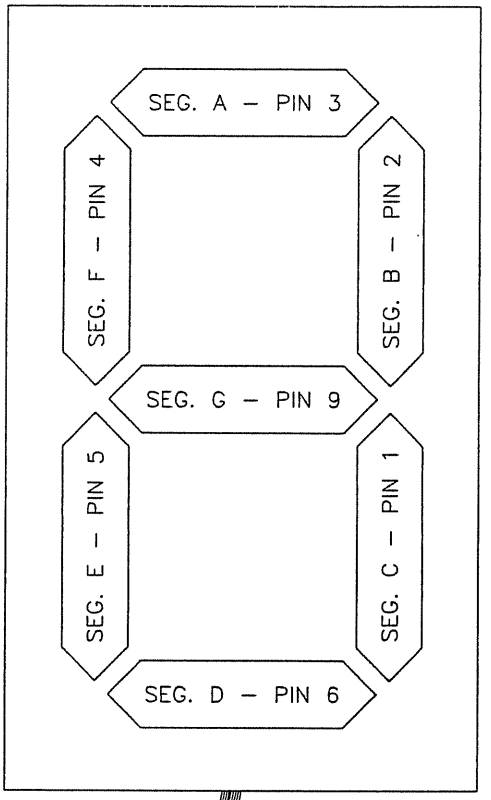
Appendix A: Reference Drawings

A Drawings

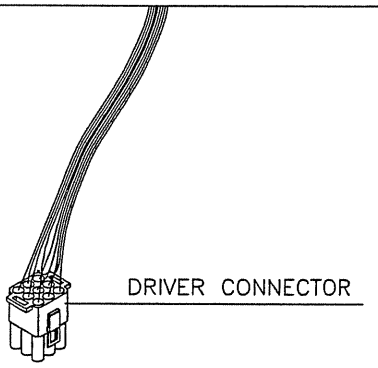
Schematic; Red TNMC GEN IV .... **Drawing A-252681**
Components Locations; 832/842 Red/Amb LED TNMC, G4 ..... **Drawing A-257029**
Comp. Location; BA-2013-11/-21 w/TNMC, FD, G4 ..... **Drawing A-260830**
Component Locations; BA-2013-11/-21, FD, G4 ..... **Drawing A-260862**
Schematic; Gen III, OD LED, 2 Drv .... **Drawing A-285418**

B Drawings

Control Layout; Outdoor LED TNMC. .... **Drawing B-107507**
Exploded Front, Module ....**Drawing B-126111**
Exploded Rear, Module ....**Drawing B-126112**
Digit Assemblies; Gen III LED Digits .... **Drawing B-177679**
Schematic; BA-2011/BA-2007, Gen III, Optional TNMC ..... **Drawing B-181354**
Schematic; Baseball w/ S.O.P., Gen III, Optional TNMC ..... **Drawing B-204264**
F. ASSY; FB-2007-11/-21,G3..... ....**Drawing B-211007**
Schematic; BA-2013 GEN III, Optional TNMC ..... **Drawing B-260324**

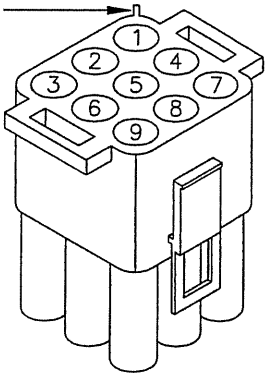


7 SEGMENT BAR DIGIT
FRONT VIEW



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

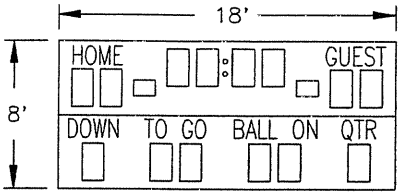


NOTE: "H" SEGMENT, GRAY WIRE IS NOT USED ON 7 SEGMENT BAR DIGIT.

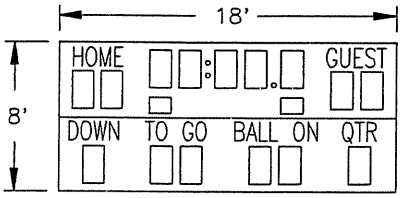
REV.	DATE	DESCRIPTION	BY	APPR.
2	30 APR 97	ADDED SEGMENT DESIGNATIONS TO DIGIT FIGURE.	AVB	AVB
1	2 JAN 92	CHANGED FROM B-SIZE TO A-SIZE DWG.	C FICK	

DAKTRONICS, INC. BROOKINGS, SD 57006

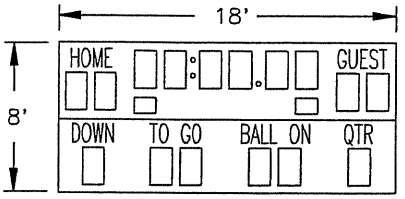
PROJ: BASKETBALL
TITLE: SEGMENTATION, 7 SEGMENT BAR DIGIT
DES. BY: DRAWN BY: HEIDERSCHEIDT DATE: 5 JUN 89
REVISION 02
APPR. BY: AVB
SCALE: 1=4
1009-R04A-38532



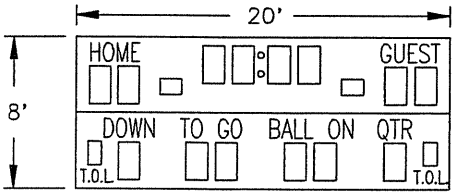
FB-1424



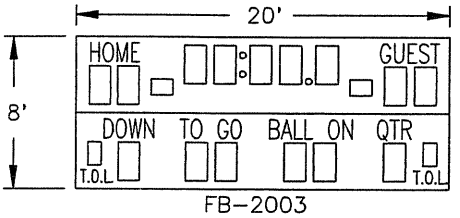
FB-1524



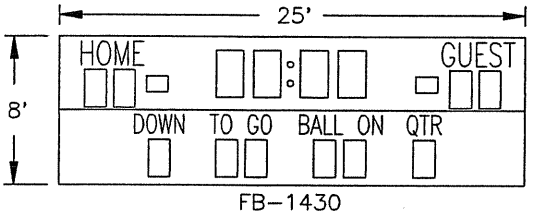
FB-1624



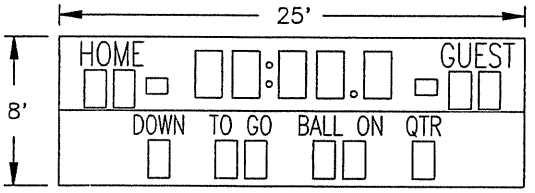
FB-2002



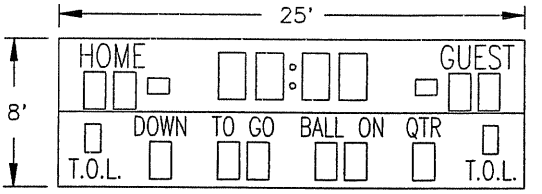
FB-2003



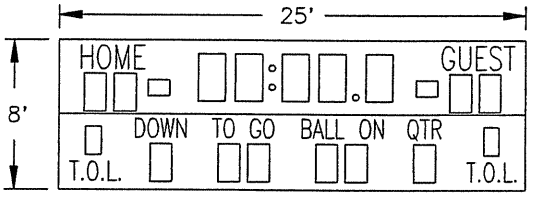
FB-1430



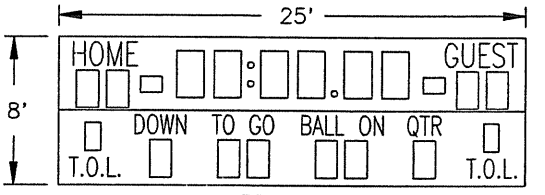
FB-1530



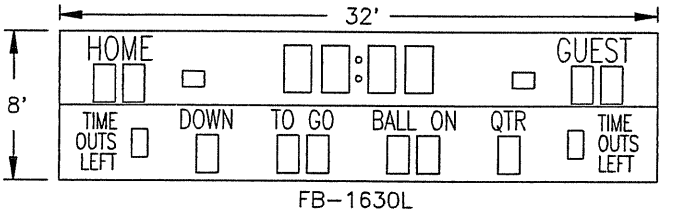
FB-1630



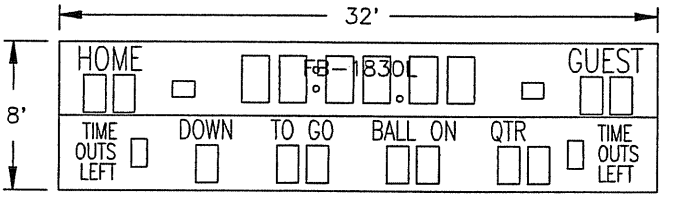
FB-1730



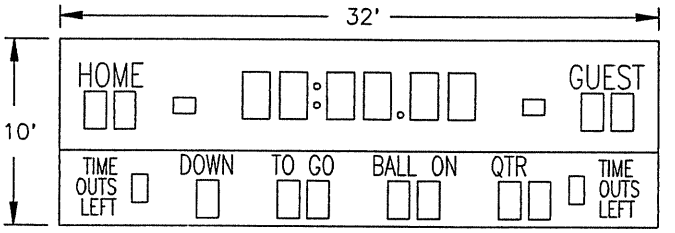
FB-1830



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

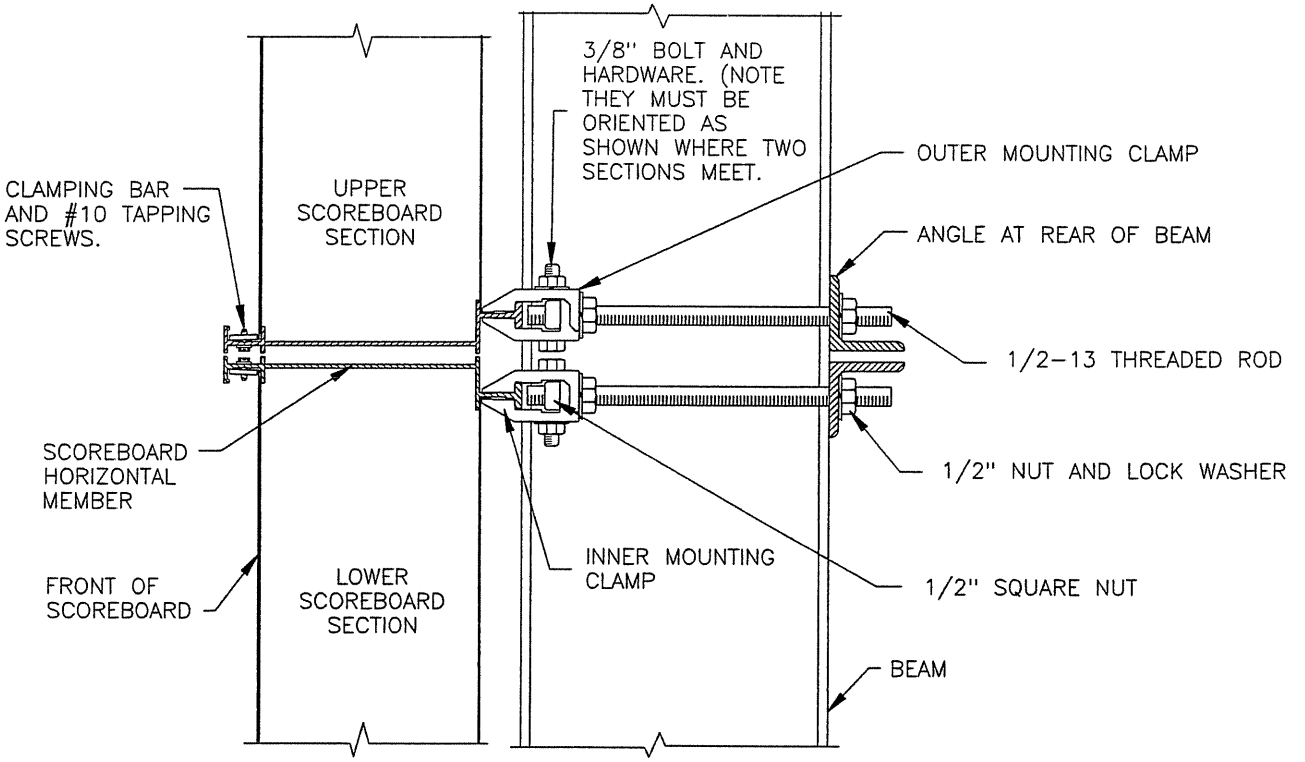
TITLE: MULTIPLE SECTION FOOTBALL SCBD MODELS

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

REVISION APPR. BY:

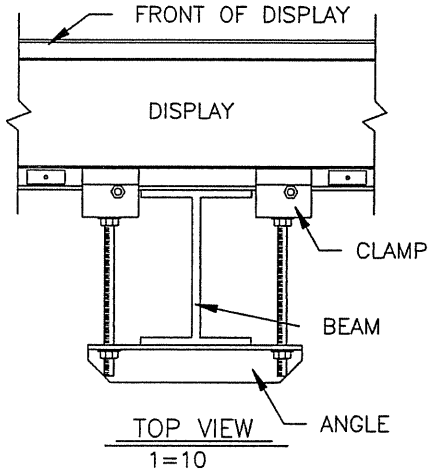
SCALE: 1=120

1091-R08A-42148

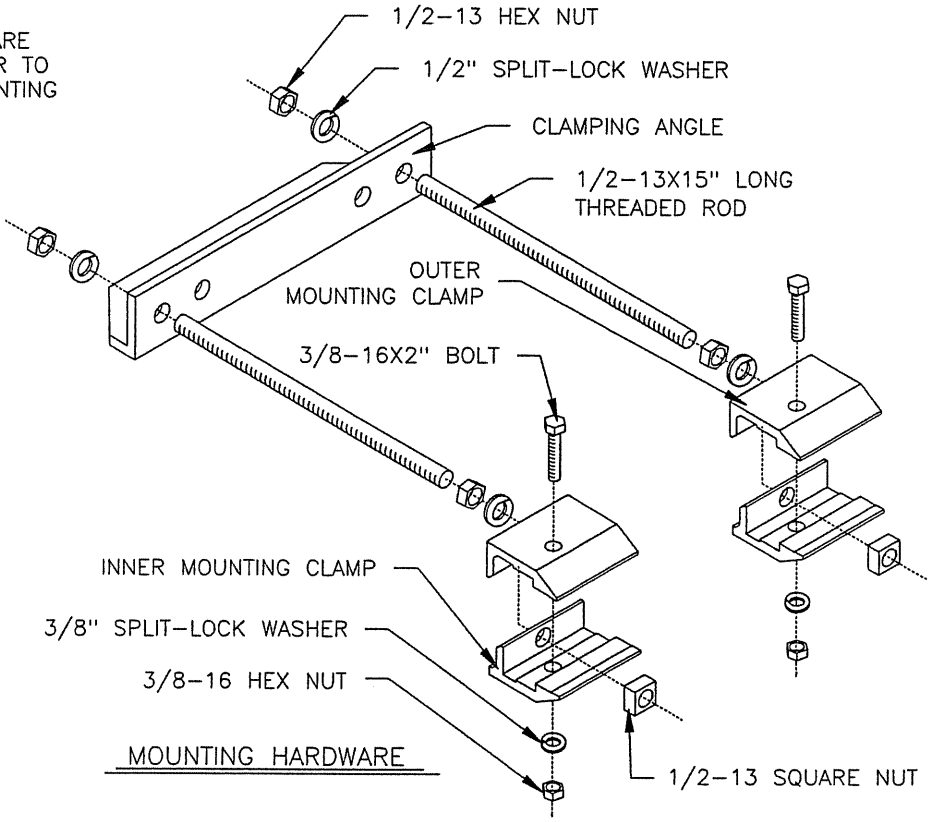


SIDE VIEW

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



TOP VIEW
1=10



MOUNTING HARDWARE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

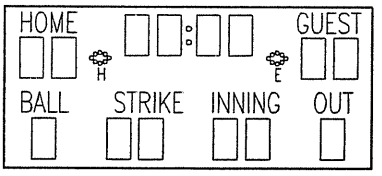
PROJ: OUTDOOR SCOREBOARDS

TITLE: DISPLAY MOUNTING

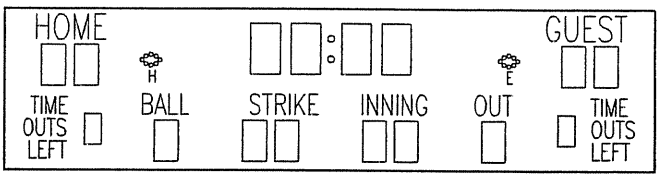
DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 29AUG90

REVISION | APPR. BY: | SCALE: 1=5

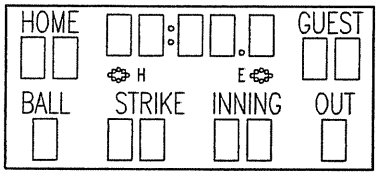
1091-R10A-44412



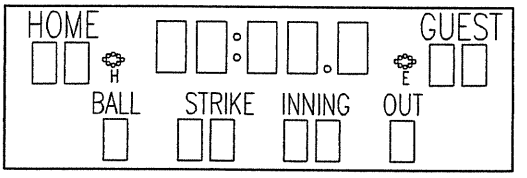
FB-1424



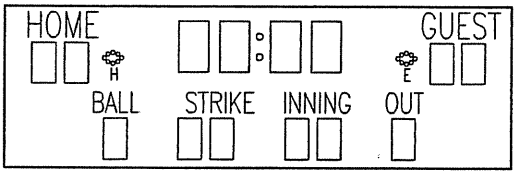
FB-1630L



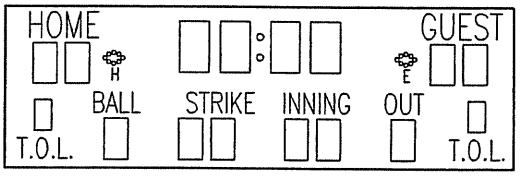
FB-1524



FB-1530

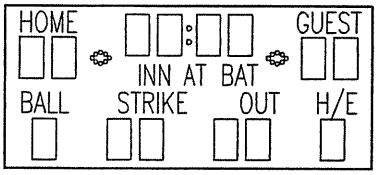


FB-1430

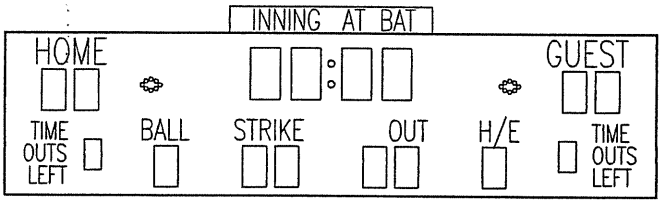


FB-1630

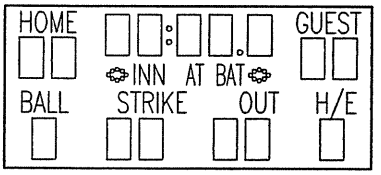
DISPLAYS SHOWN WITH BASEBALL/SOFTBALL CAPTIONS WITH CLOCK OPTION



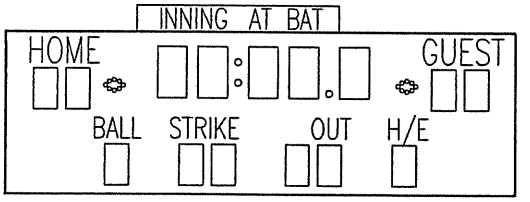
FB-1424



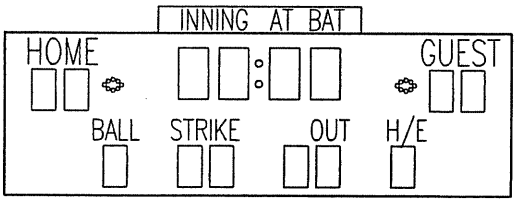
FB-1630L



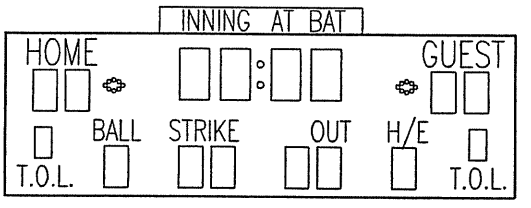
FB-1524



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

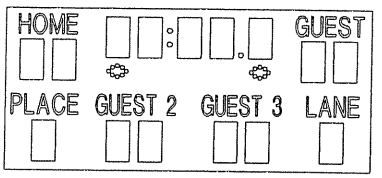
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: CAPTION OPTIONS, BASEBALL & SOFTBALL

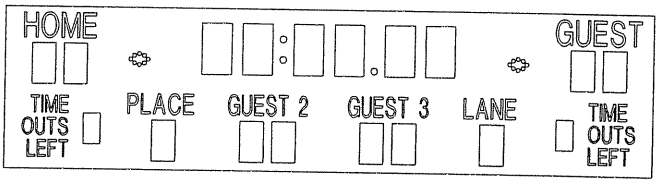
DES. BY: DRAWN BY: JHEIDERSCHEIDT DATE: 30AUG90

REVISION 05 | APPR. BY: | SCALE: 1=110

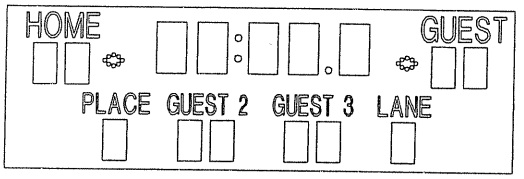
1091-R08A-44431



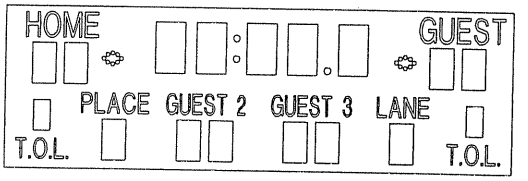
FB-1524



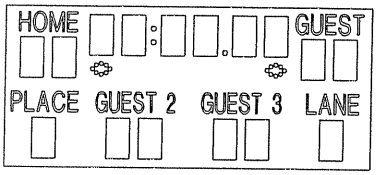
FB-1830L



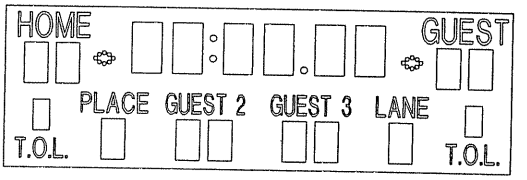
FB-1530



FB-1730 AND FB-2003

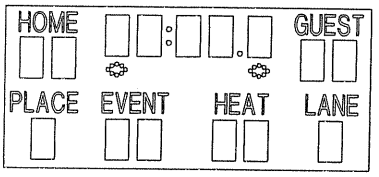


FB-1624

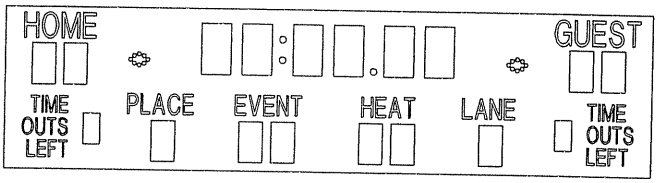


FB-1830

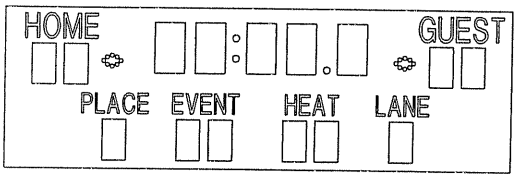
DISPLAYS SHOWN WITH GUEST 2/GUEST 3 TRACK CAPTIONS



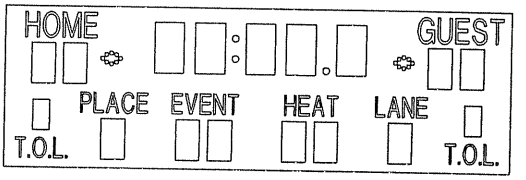
FB-1524



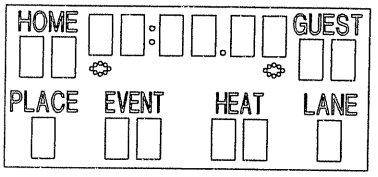
FB-1830L



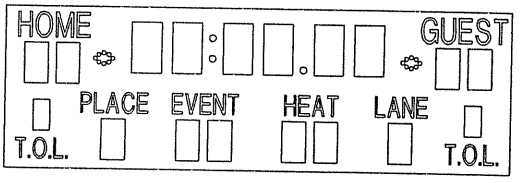
FB-1530



FB-1730 AND FB-2003



FB-1624



FB-1830

DISPLAYS SHOWN WITH EVENT/HEAT TRACK CAPTIONS

REV	DATE	DESCRIPTION	BY	APPR.
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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: CAPTION OPTIONS, TRACK

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

REVISION APPR. BY:

SCALE: 1=110

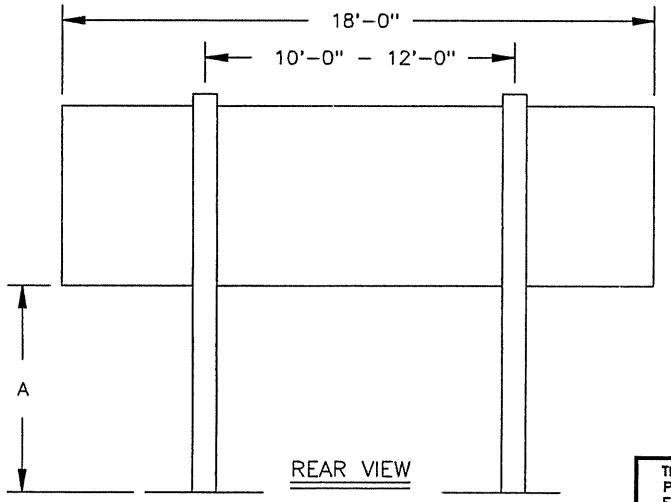
1091-R08A-44432

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

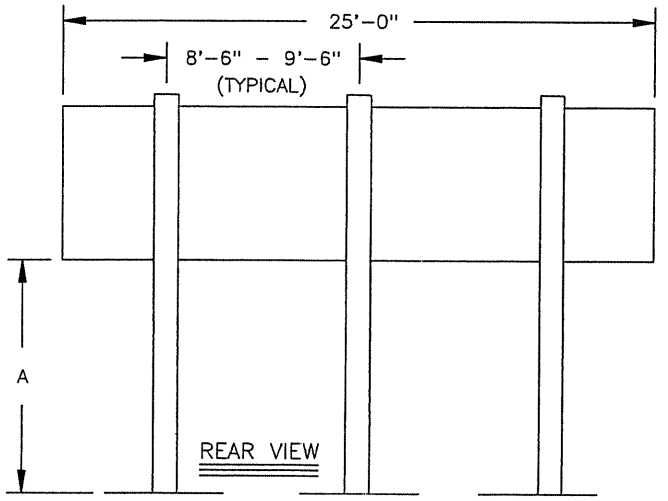
DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 07SEP90

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.

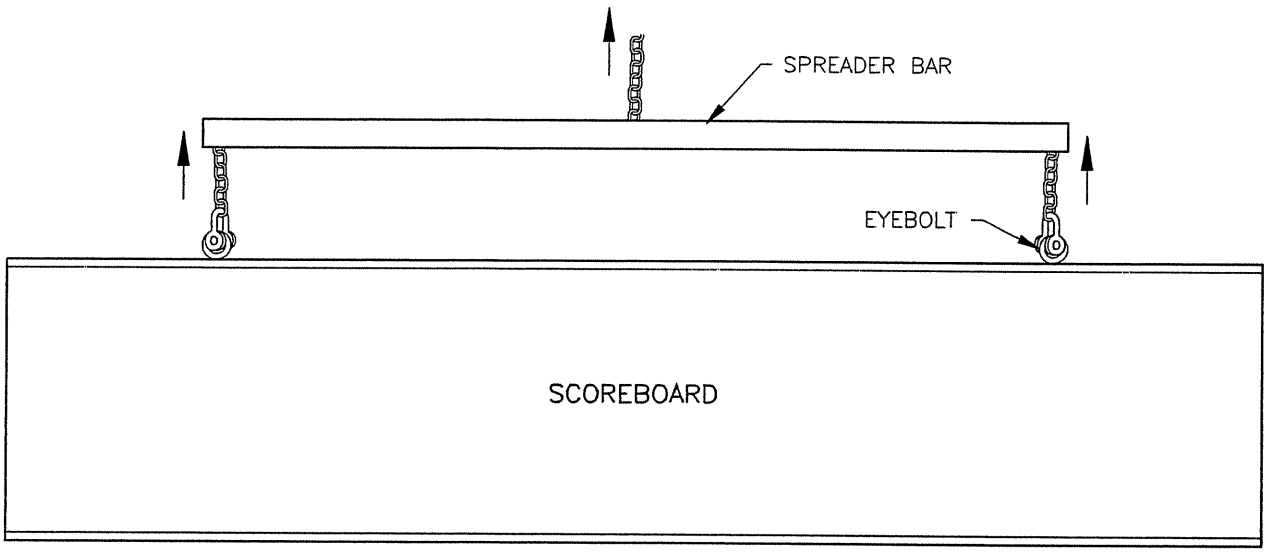
INFORMATION GIVEN IS FOR ESTIMATING PURPOSES ONLY. COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

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

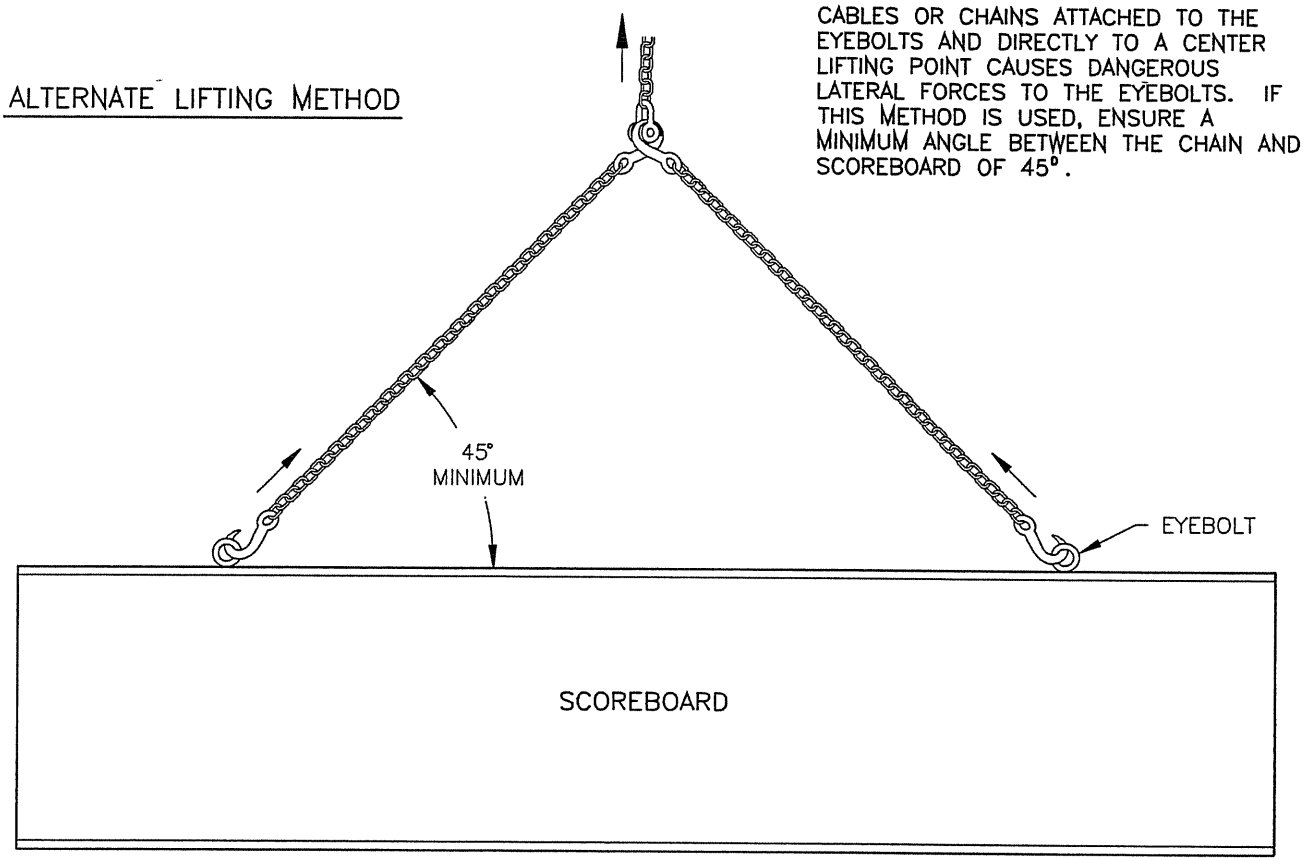


PREFERRED LIFTING METHOD

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

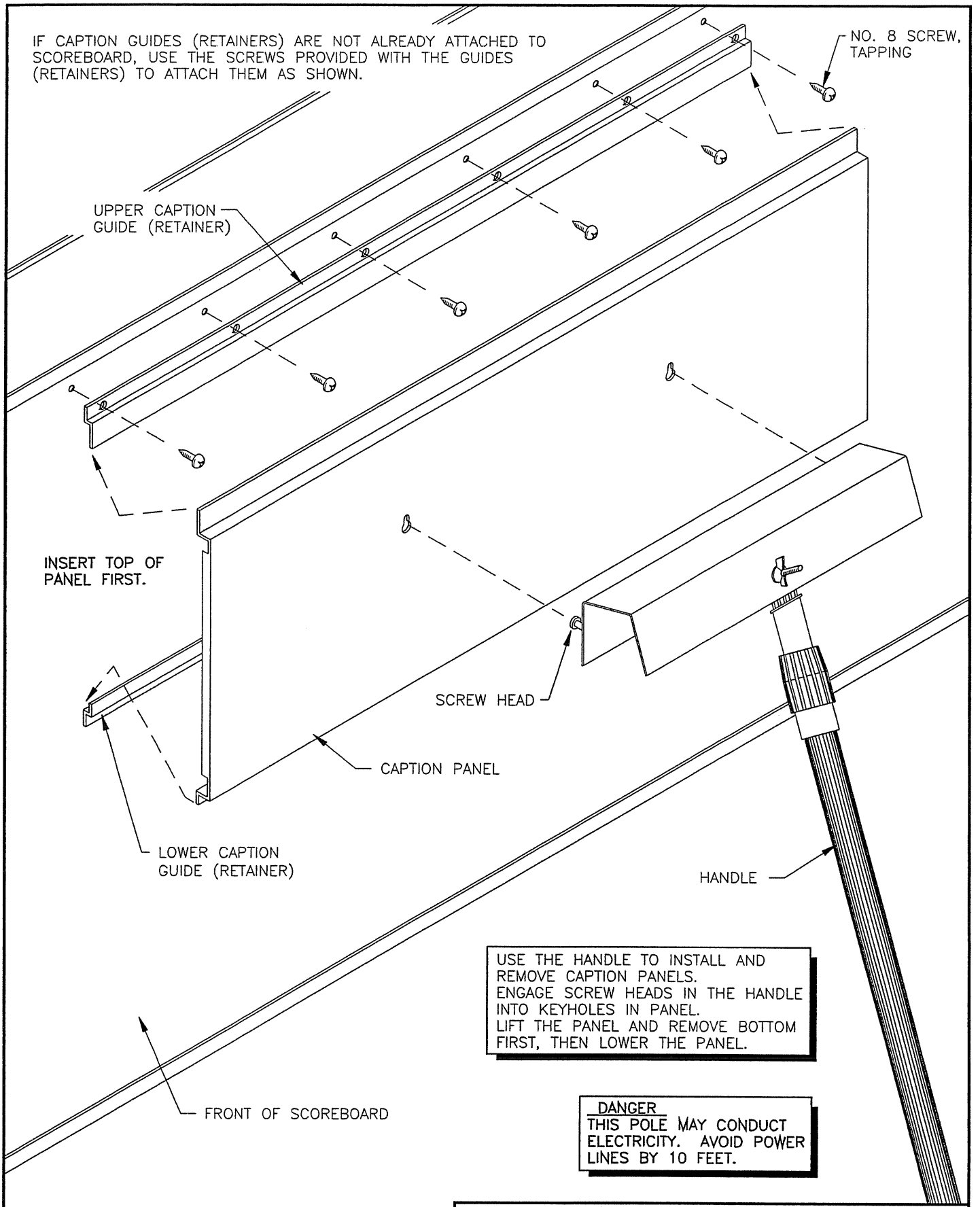
TITLE: LIFTING SCOREBOARD

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

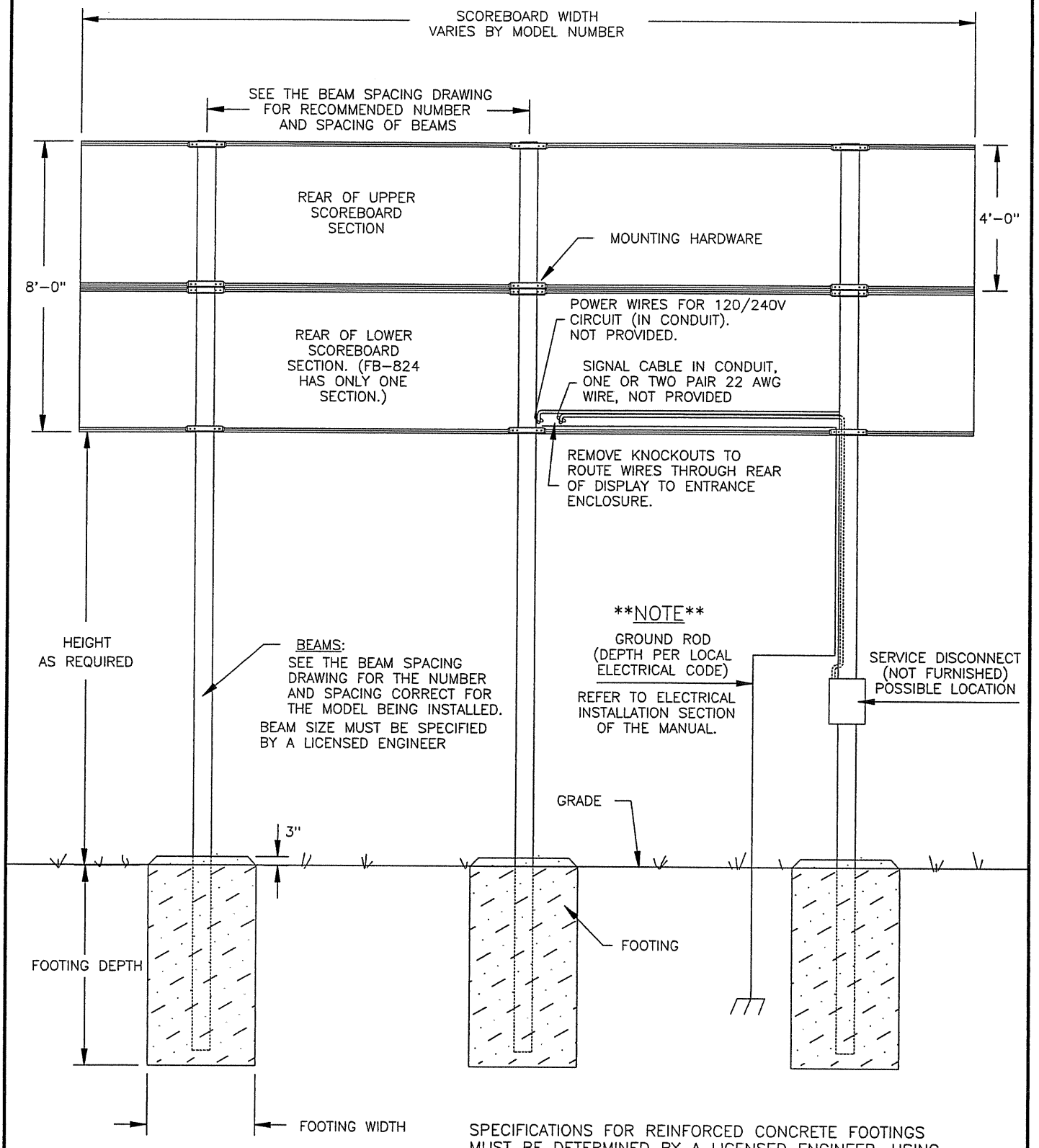
TITLE: CAPTION CHANGING

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

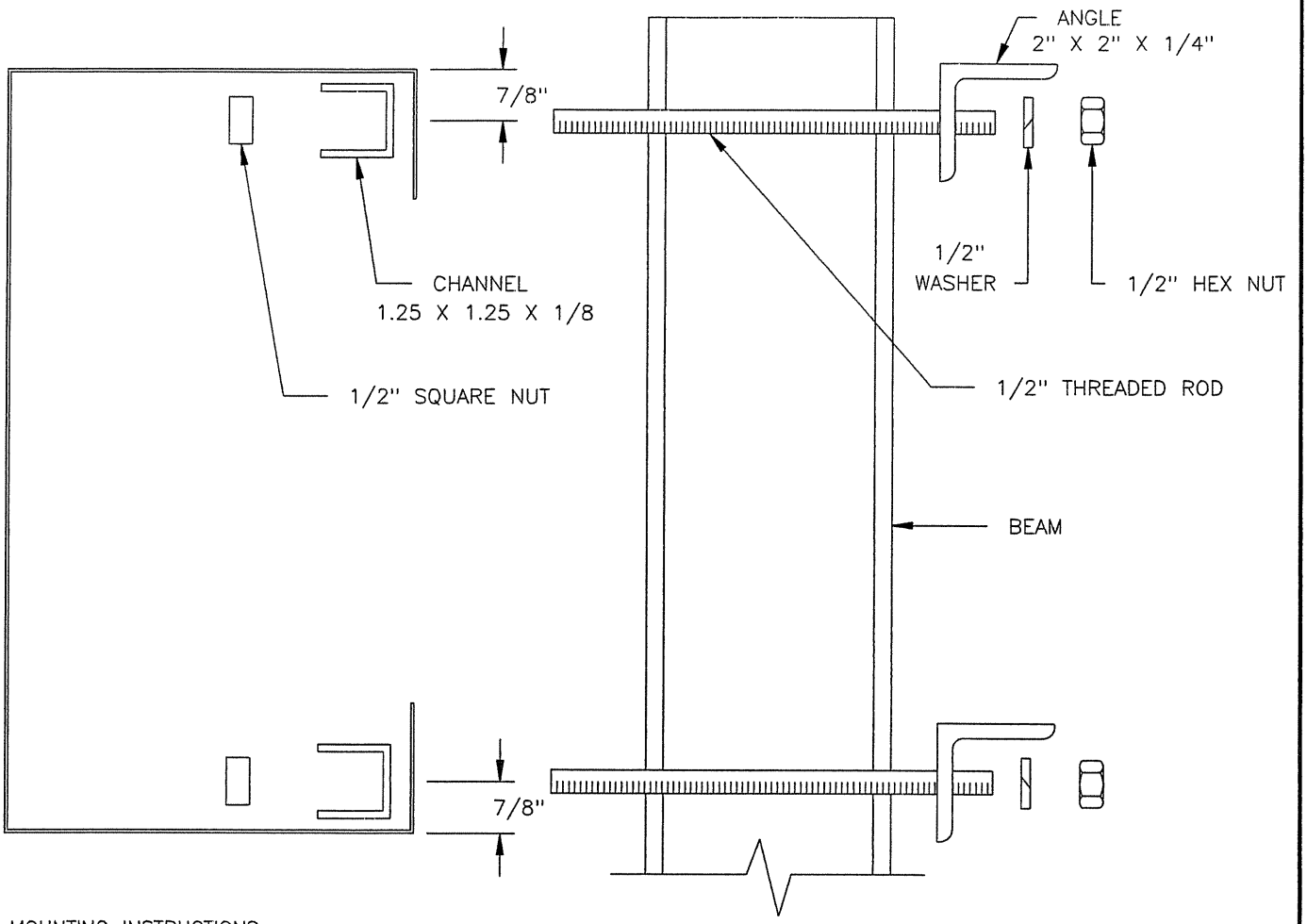
TITLE: STRUCTURE, FOOTBALL

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

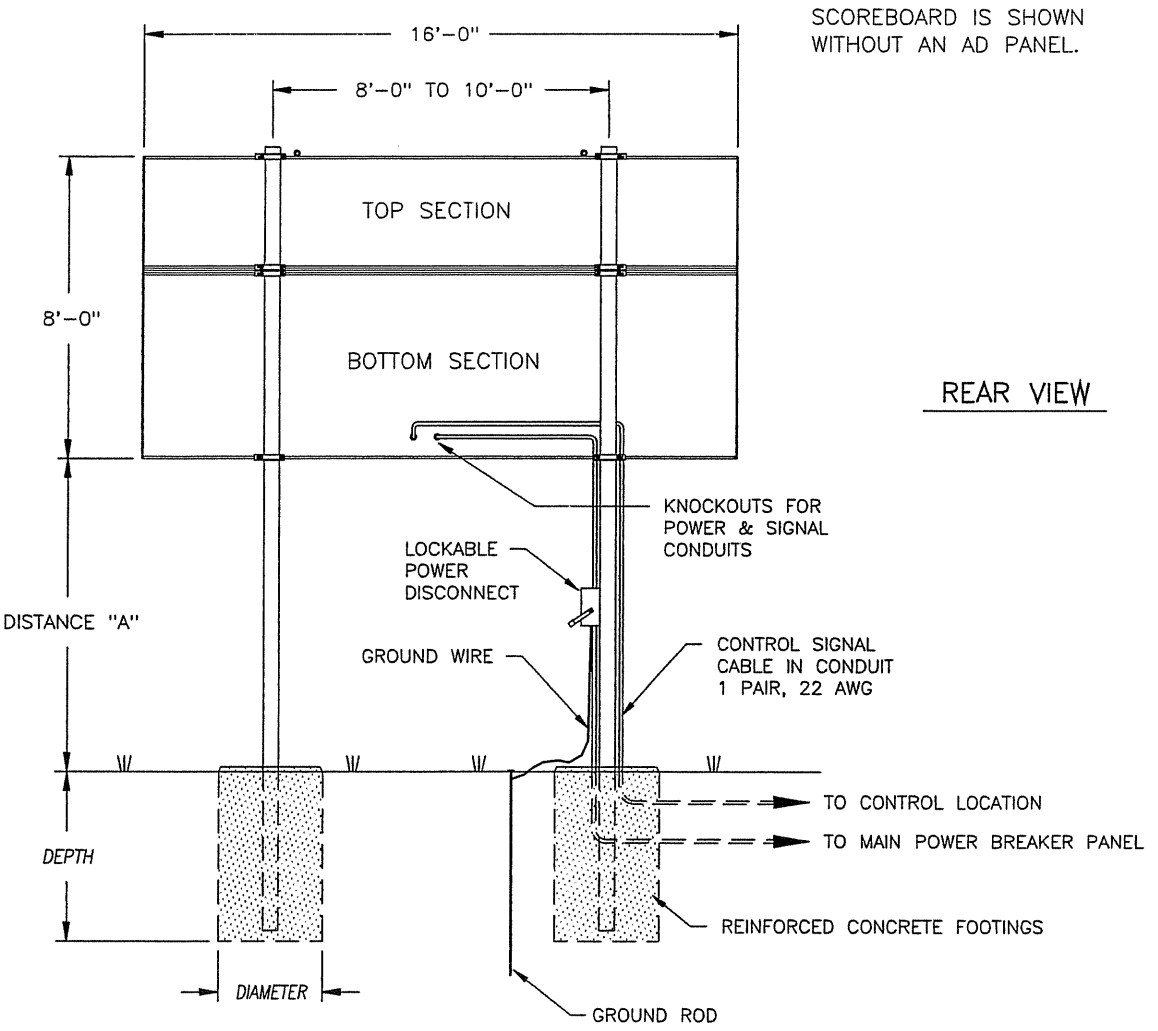
TITLE: AD PANEL MOUNTING

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

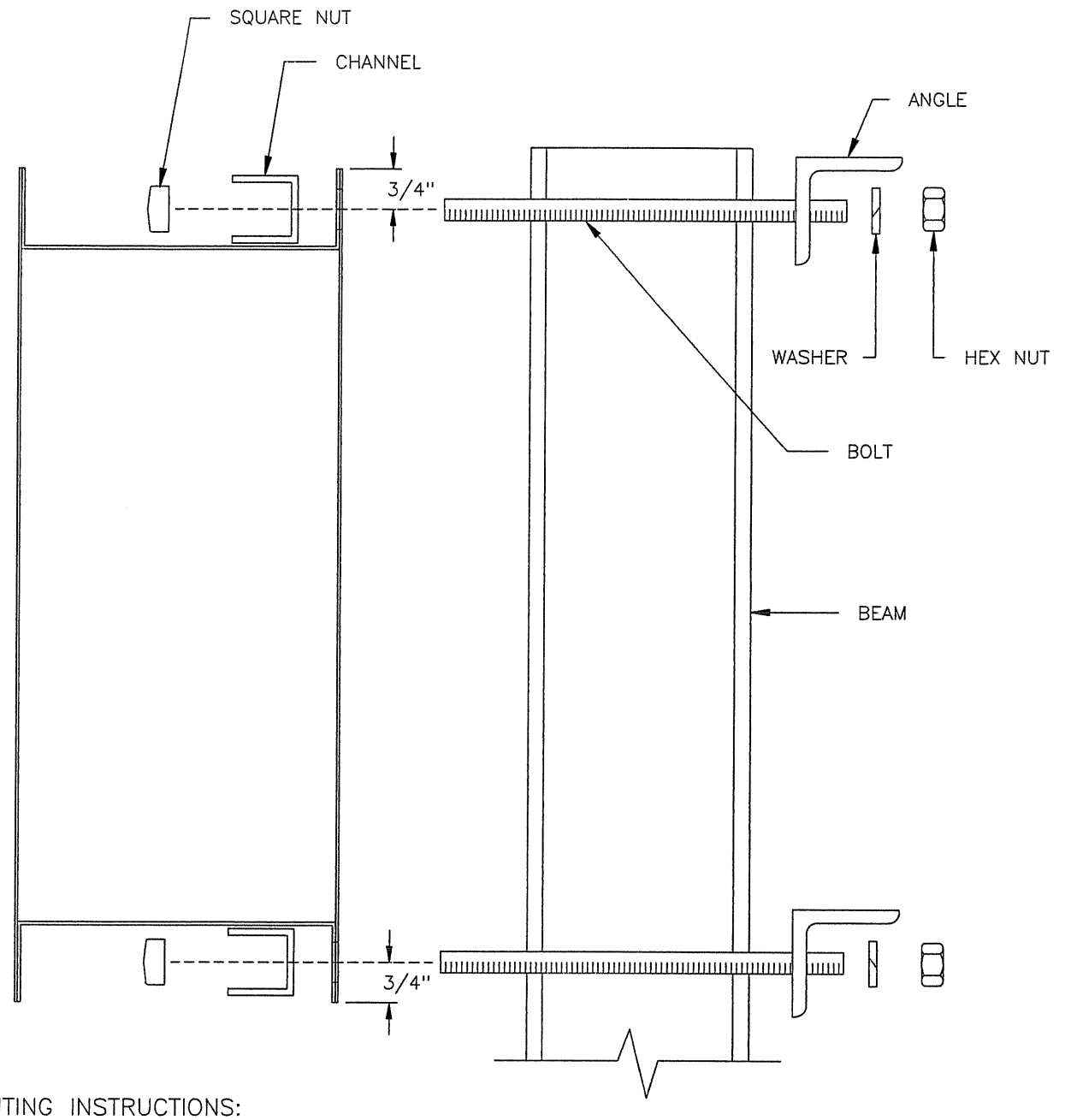
TITLE: INSTALLATION SPECIFICATIONS, BA-1518

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

REVISION APPR. BY:

SCALE: 1=60

1091-R10A-55008



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 SCOREBOARD WHERE THE SUPPORTS WILL GO.
3. PLACE SQUARE NUTS INSIDE CHANNEL AND THREAD BOLTS THROUGH.
4. LIFT SCOREBOARD 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 SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN HEX NUTS FIRMLY.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

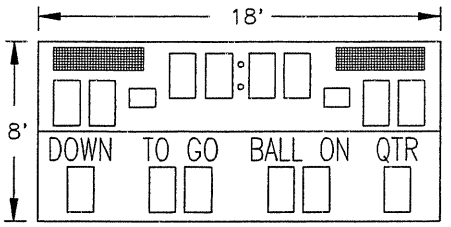
TITLE: SCOREBOARD MOUNTING

DES. BY: DRAWN BY: A VANBEMMEL DATE: 10FEB93

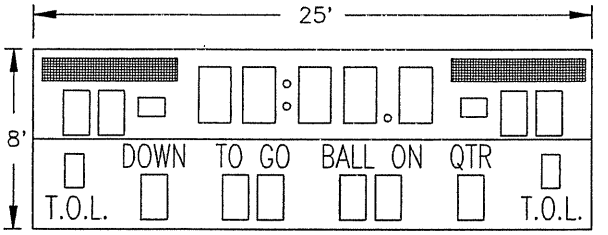
REVISION APPR. BY:

SCALE: NONE

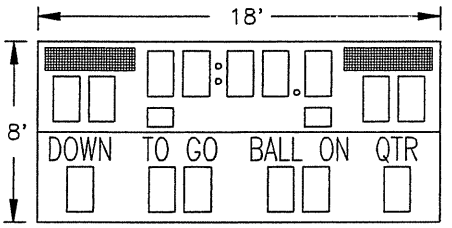
1091-R10A-55101



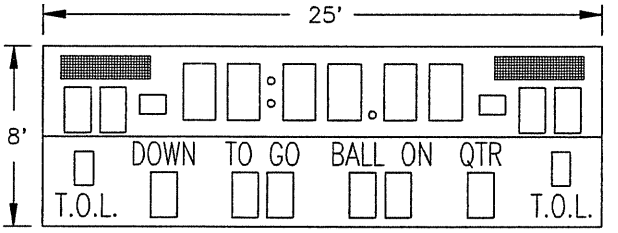
SO-1424 WITH 832-12 TNMC



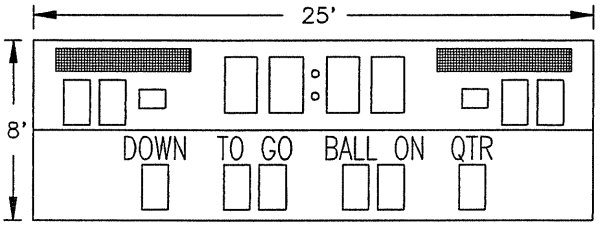
FB-1730 WITH 848-12 TNMC



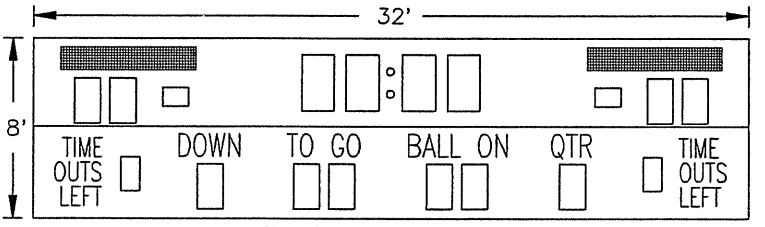
FB-1524 WITH 832-12 TNMC



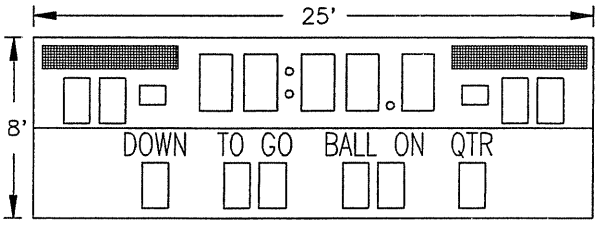
FB-1830 WITH 832-12 TNMC



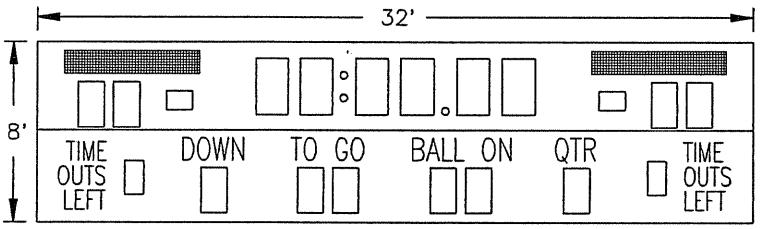
FB-1430 WITH 848-12 TNMC



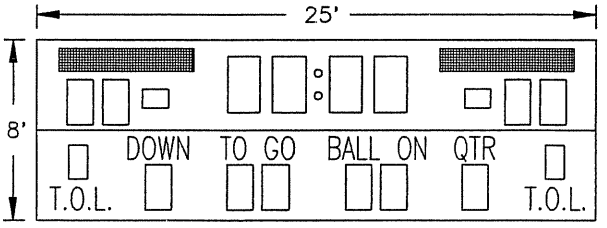
FB-1630L WITH 848-12 TNMC



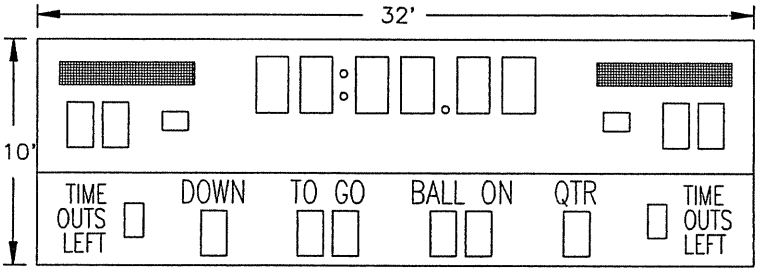
FB-1530 WITH 848-12TNMC



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

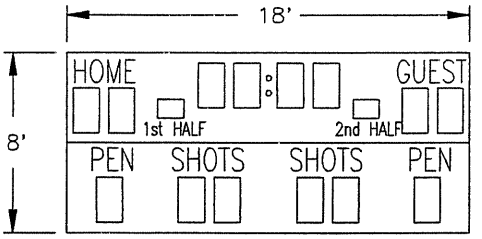
TITLE: MULTIPLE SECTION FOOTBALL SCBD MODELS W/TNMC

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

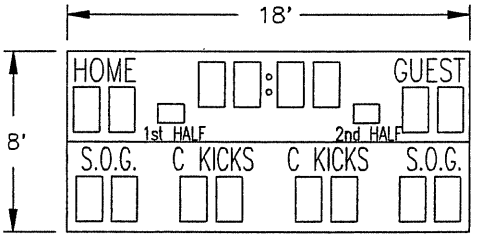
REVISION APPR. BY:

SCALE: 1=100

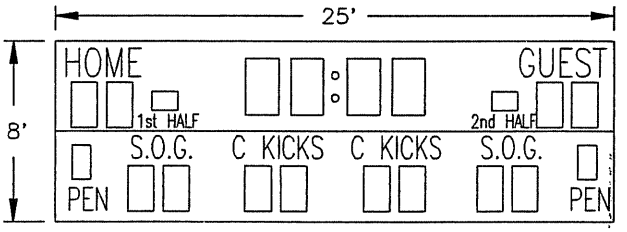
1091-R08A-84233



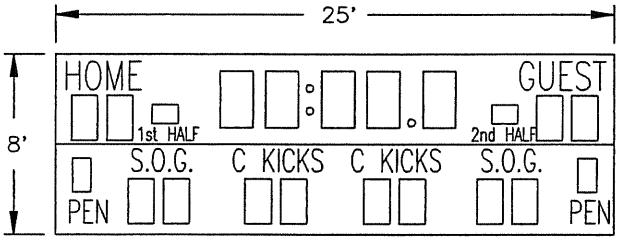
SO–1424



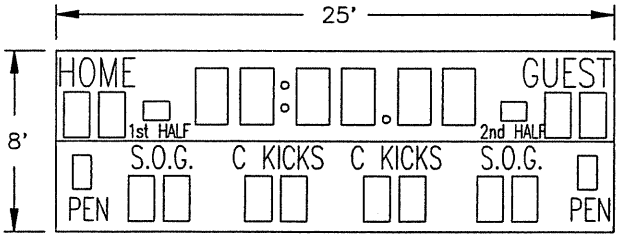
SO–1624
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



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

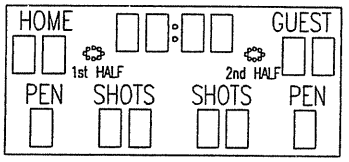
TITLE: MULTIPLE SECTION SOCCER SCBD MODELS

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

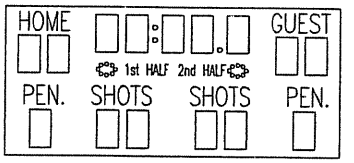
REVISION APPR. BY:

SCALE: 1=100

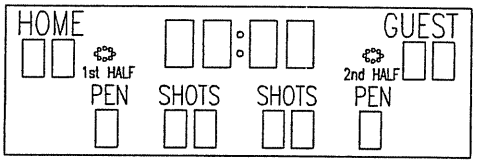
1091-R08A-98161



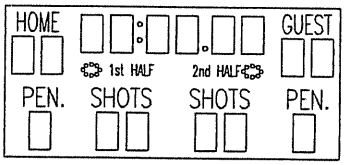
FB-1424



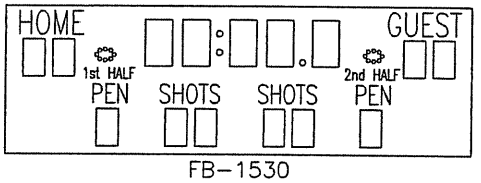
FB-1524



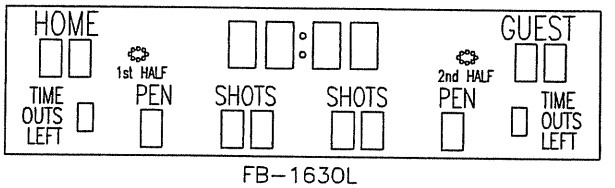
FB-1430



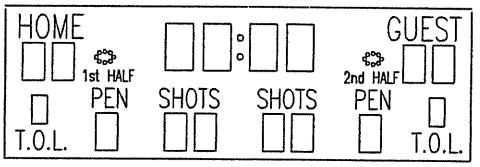
FB-1624



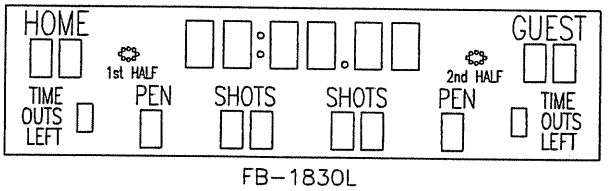
FB-1530



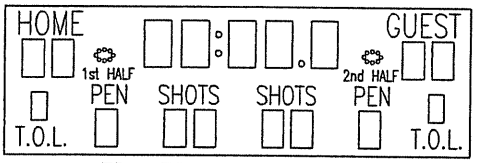
FB-1630L



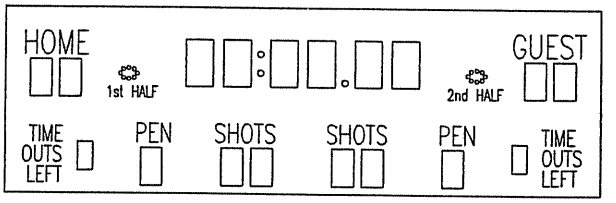
FB-1630 AND FB-2002



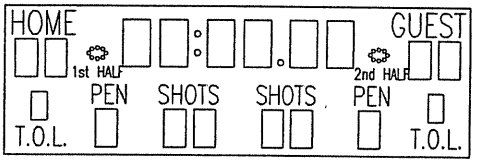
FB-1830L



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

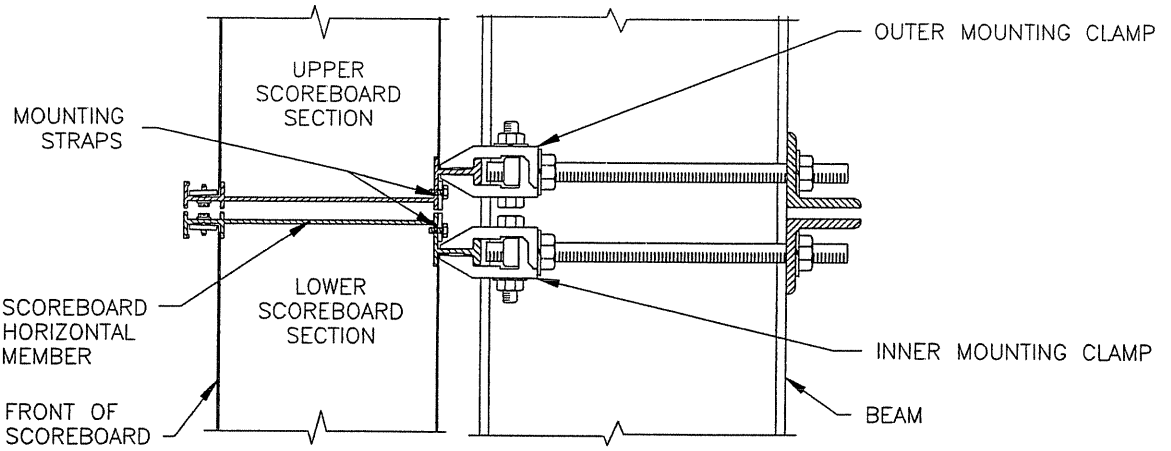
TITLE: CAPTION OPTIONS, SOCCER

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

REVISION APPR. BY:

SCALE: 1=120

1091-R08A-101442



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.

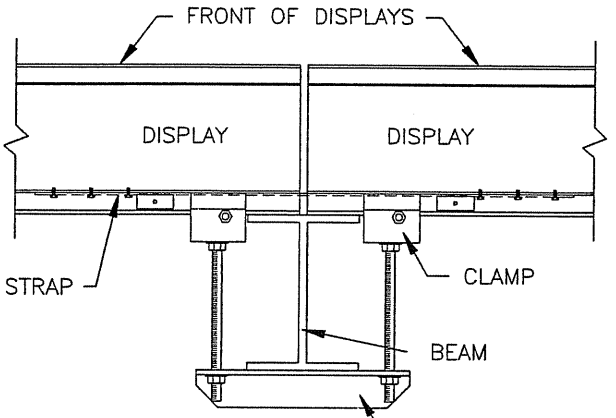
THIS IS ACHIEVED USING FOUR MOUNTING STRAPS (1/8" X 3/4" X 29" LONG) AND #10 HEX HEADED SCREWS.

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.

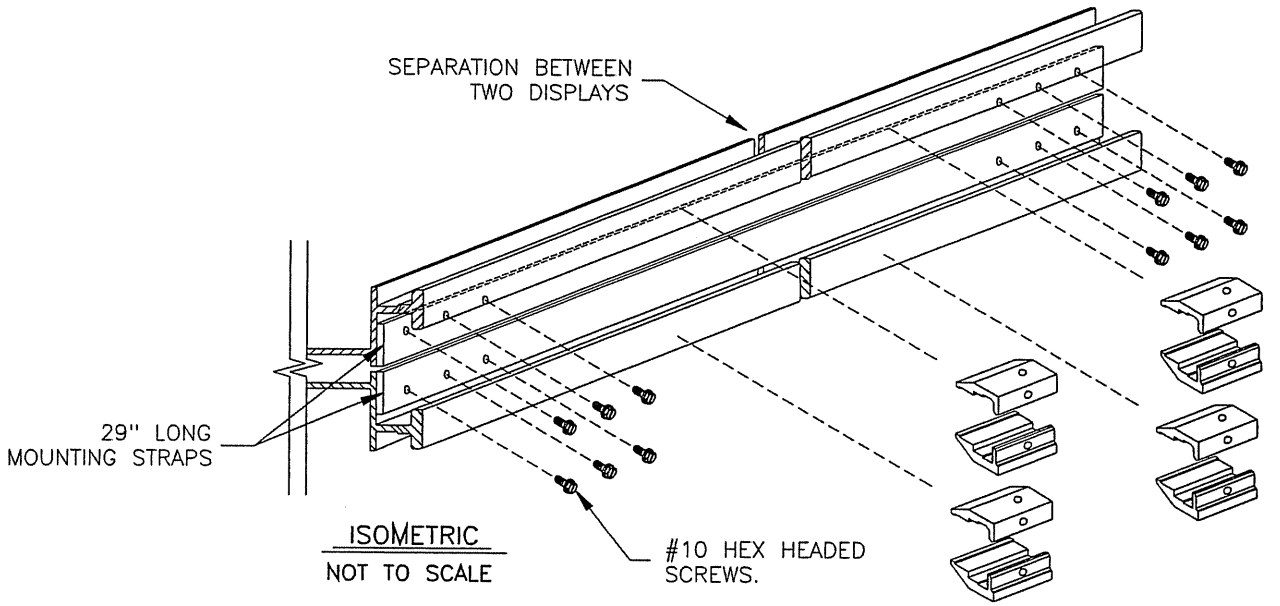
ATTACH SIX SCREWS TO EACH STRAP.

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

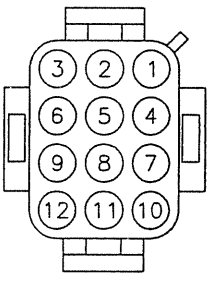
REVISION APPR. BY:

SCALE: 1=5

1091-E10A-114415

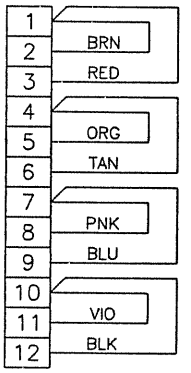
KEY: 0 = WIRE NOT CONNECTED 1 = WIRE IS CONNECTED

DECIMAL ADDRESS	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
1	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	1	0
3	0	0	0	0	0	0	1	1
4	0	0	0	0	0	1	0	0
5	0	0	0	0	0	1	0	1
6	0	0	0	0	0	1	1	0
7	0	0	0	0	0	1	1	1
8	0	0	0	0	1	0	0	0
9	0	0	0	0	1	0	0	1
10	0	0	0	0	1	0	1	0
11	0	0	0	0	1	0	1	1
12	0	0	0	0	1	1	0	0
13	0	0	0	0	1	1	0	1
14	0	0	0	0	1	1	1	0
15	0	0	0	0	1	1	1	1
16	0	0	0	1	0	0	0	0
17	0	0	0	1	0	0	0	1
18	0	0	0	1	0	0	1	0
19	0	0	0	1	0	0	1	1
20	0	0	0	1	0	1	0	0
21	0	0	0	1	0	1	0	1
22	0	0	0	1	0	1	1	0
23	0	0	0	1	0	1	1	1
24	0	0	0	1	1	0	0	0
25	0	0	0	1	1	0	0	1
26	0	0	0	1	1	0	1	0
27	0	0	0	1	1	0	1	1
28	0	0	0	1	1	1	0	0
29	0	0	0	1	1	1	0	1
30	0	0	0	1	1	1	1	0
31	0	0	0	1	1	1	1	1
32	0	0	1	0	0	0	0	0
33	0	0	1	0	0	0	0	1
34	0	0	1	0	0	0	1	0
35	0	0	1	0	0	0	1	1
36	0	0	1	0	0	1	0	0
37	0	0	1	0	0	1	0	1
38	0	0	1	0	0	1	1	0
39	0	0	1	0	0	1	1	1
40	0	0	1	0	1	0	0	0
41	0	0	1	0	1	0	0	1
42	0	0	1	0	1	0	1	0
43	0	0	1	0	1	0	1	1
44	0	0	1	0	1	1	0	0
45	0	0	1	0	1	1	0	1
46	0	0	1	0	1	1	1	0
47	0	0	1	0	1	1	1	1
48	0	0	1	1	0	0	0	0
49	0	0	1	1	0	0	0	1
50	0	0	1	1	0	0	1	0
51	0	0	1	1	0	0	1	1
52	0	0	1	1	0	1	0	0
53	0	0	1	1	0	1	0	1
54	0	0	1	1	0	1	1	0
55	0	0	1	1	0	1	1	1
56	0	0	1	1	1	0	0	0
57	0	0	1	1	1	0	0	1
58	0	0	1	1	1	0	1	0
59	0	0	1	1	1	0	1	1
60	0	0	1	1	1	1	0	0
61	0	0	1	1	1	1	0	1
62	0	0	1	1	1	1	1	0
63	0	0	1	1	1	1	1	1
64	0	1	0	0	0	0	0	0
65	0	1	0	0	0	0	0	1
66	0	1	0	0	0	0	1	0
67	0	1	0	0	0	0	1	1
68	0	1	0	0	0	1	0	0
69	0	1	0	0	0	1	0	1
70	0	1	0	0	0	1	1	0
71	0	1	0	0	0	1	1	1
72	0	1	0	0	1	0	0	0
73	0	1	0	0	1	0	0	1
74	0	1	0	0	1	0	1	0
75	0	1	0	0	1	0	1	1
76	0	1	0	0	1	1	0	0
77	0	1	0	0	1	1	0	1
78	0	1	0	0	1	1	1	0
79	0	1	0	0	1	1	1	1
80	0	1	0	1	0	0	0	0
81	0	1	0	1	0	0	0	1
82	0	1	0	1	0	0	1	0
83	0	1	0	1	0	0	1	1
84	0	1	0	1	0	1	0	0
85	0	1	0	1	0	1	0	1
86	0	1	0	1	0	1	1	0
87	0	1	0	1	0	1	1	1
88	0	1	0	1	1	0	0	0
89	0	1	0	1	1	0	0	1
90	0	1	0	1	1	0	1	0
91	0	1	0	1	1	0	1	1
92	0	1	0	1	1	1	0	0
93	0	1	0	1	1	1	0	1
94	0	1	0	1	1	1	1	0
95	0	1	0	1	1	1	1	1
96	0	1	1	0	0	0	0	0
97	0	1	1	0	0	0	0	1
98	0	1	1	0	0	0	1	0
99	0	1	1	0	0	0	1	1
100	0	1	1	0	0	1	0	0
101	0	1	1	0	0	1	0	1
102	0	1	1	0	0	1	1	0
103	0	1	1	0	0	1	1	1
104	0	1	1	0	1	0	0	0
105	0	1	1	0	1	0	0	1
106	0	1	1	0	1	0	1	0
107	0	1	1	0	1	0	1	1
108	0	1	1	0	1	1	0	0
109	0	1	1	0	1	1	0	1
110	0	1	1	0	1	1	1	0
111	0	1	1	0	1	1	1	1
112	0	1	1	1	0	0	0	0
113	0	1	1	1	0	0	0	1
114	0	1	1	1	0	0	1	0
115	0	1	1	1	0	0	1	1
116	0	1	1	1	0	1	0	0
117	0	1	1	1	0	1	0	1
118	0	1	1	1	0	1	1	0
119	0	1	1	1	0	1	1	1
120	0	1	1	1	1	0	0	0
121	0	1	1	1	1	0	0	1
122	0	1	1	1	1	0	1	0
123	0	1	1	1	1	0	1	1
124	0	1	1	1	1	1	0	0
125	0	1	1	1	1	1	0	1
126	0	1	1	1	1	1	1	0
127	0	1	1	1	1	1	1	1
128	1	0	0	0	0	0	0	0



ADDRESS PLUG
WIRE SIDE

WIRING DIAGRAM
ADDRESS PLUG
WITH ALL WIRES
CONNECTED



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: ADDRESS TABLE, 1 THROUGH 128

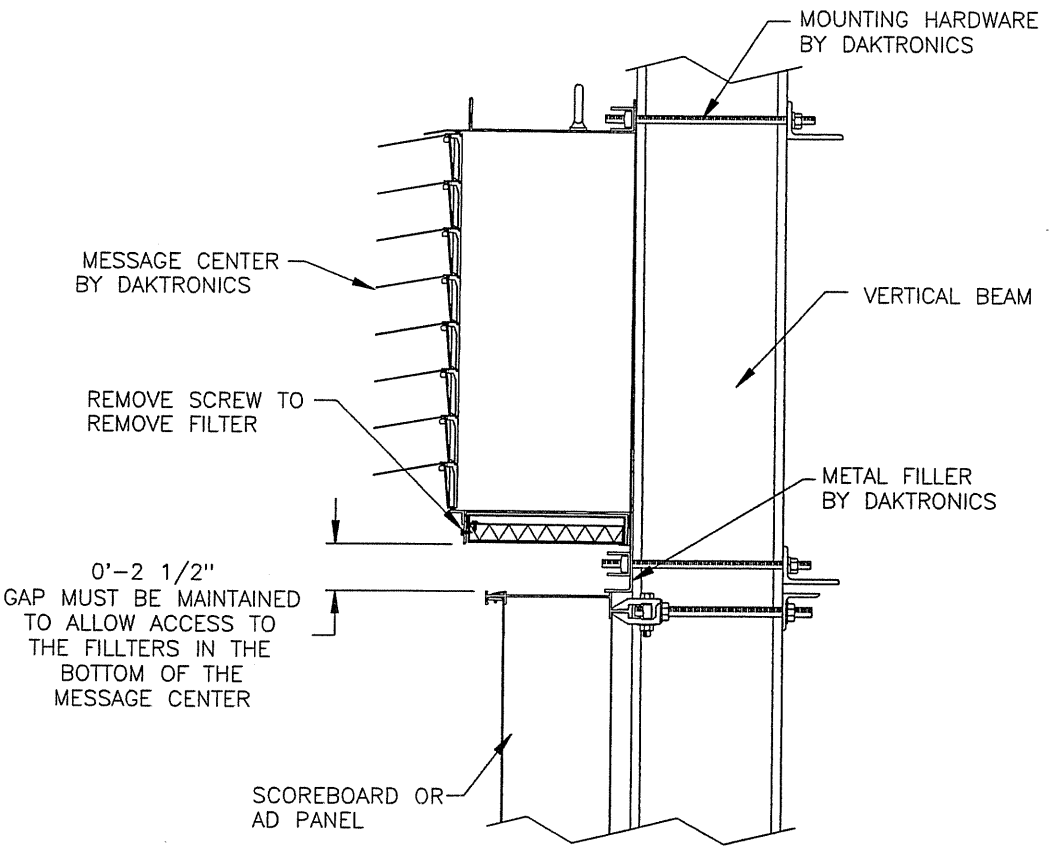
DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 28 APR 99

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION APPR. BY:

SCALE: NONE

1150-R04A-115078



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

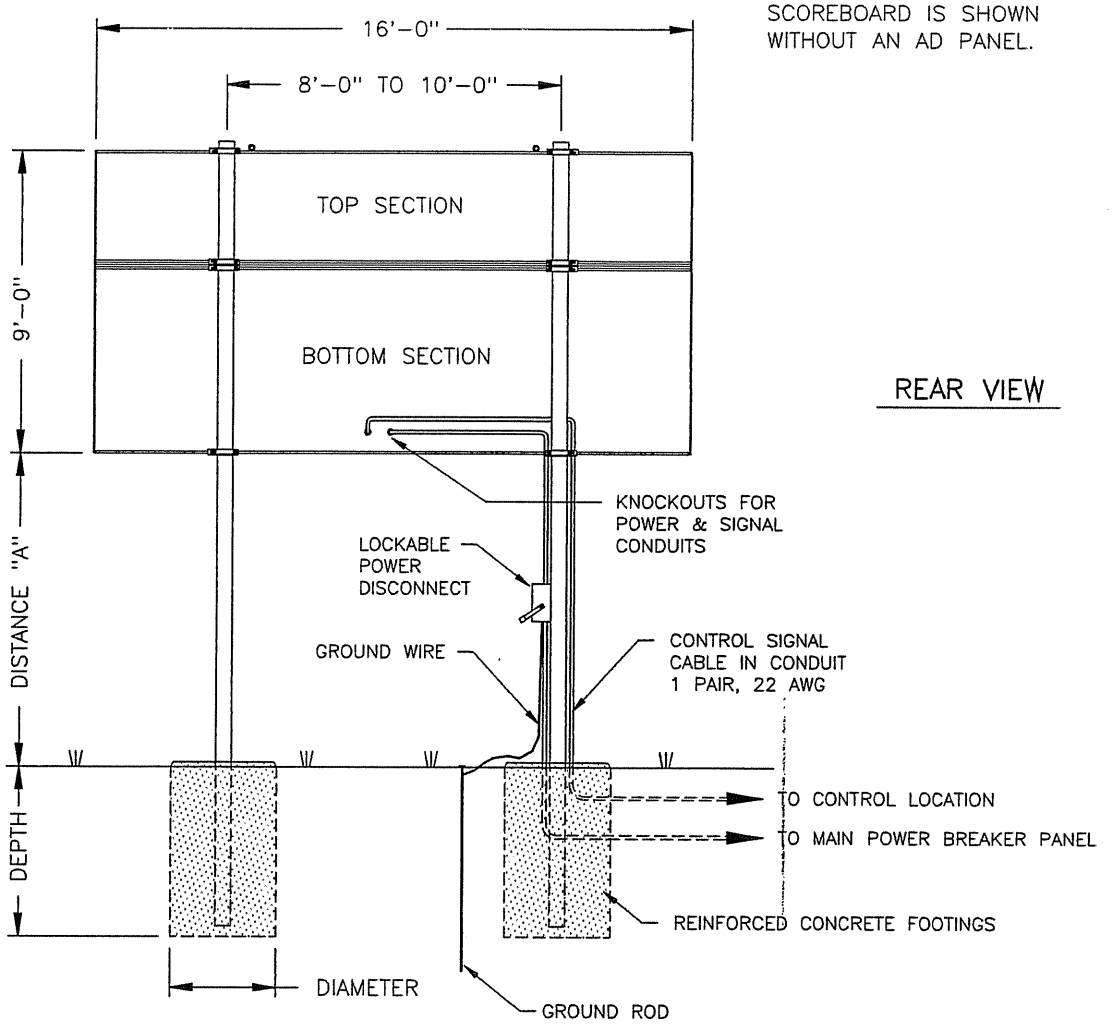
TITLE: MOUNTING DETAIL; 2 1/2" MATRIX

DES. BY: BPETERSON DRAWN BY: MVANDYK DATE: 28JUL99

REVISION APPR. BY:

SCALE: 1=10

1157-E10A-115882



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	W8x28	W8x31	W10x39
		FOOTING	*4.0' x 5.1'*	*4.0' x 5.6'*	*4.0' x 6.7'*
12'–0"	16'–0" x 9'–0"	BEAM	W8x31	W8x35	W12x45
		FOOTING	*4.0' x 5.4'*	*4.0' x 5.9'*	*4.0' x 6.9'*
14'–0"	16'–0" x 9'–0"	BEAM	W8x35	W10x39	W8x48
		FOOTING	*4.0' x 5.6'*	*4.0' x 6.2'*	*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	W8x35	W10x39	W8x48
		FOOTING	*4.0' x 5.7'*	*4.0' x 6.3'*	*4.0' x 7.4'*
12'–0"	16'–0" x 11'–6"	BEAM	W10x39	W12x45	W12x53
		FOOTING	*4.0' x 6.0'*	*4.0' x 6.6'*	*4.0' x 7.7'*
14'–0"	16'–0" x 11'–6"	BEAM	W12x45	W8x48	W10x60
		FOOTING	*4.0' x 6.2'*	*4.0' x 6.9'*	*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

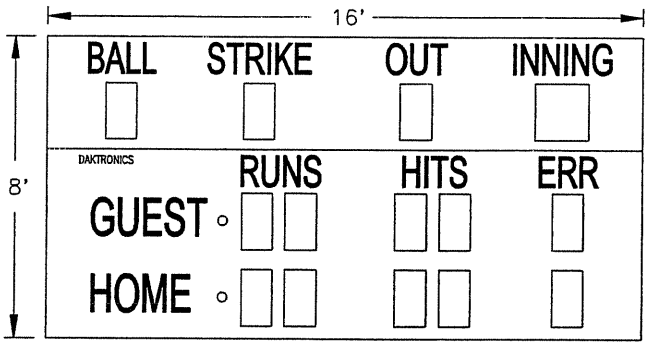
TITLE: INSTALLATION SPECIFICATIONS, BA–1524

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

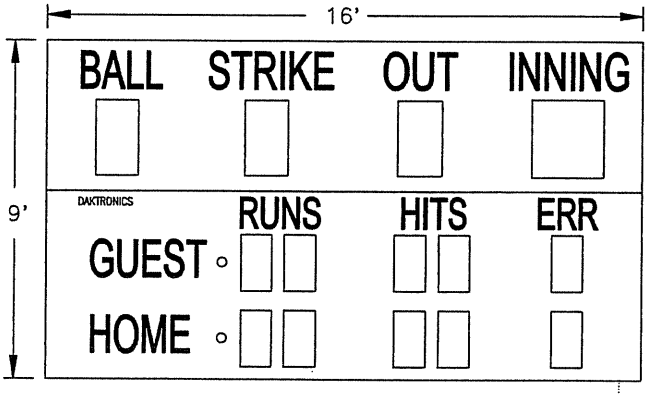
REVISION APPR. BY:

SCALE: 1=60

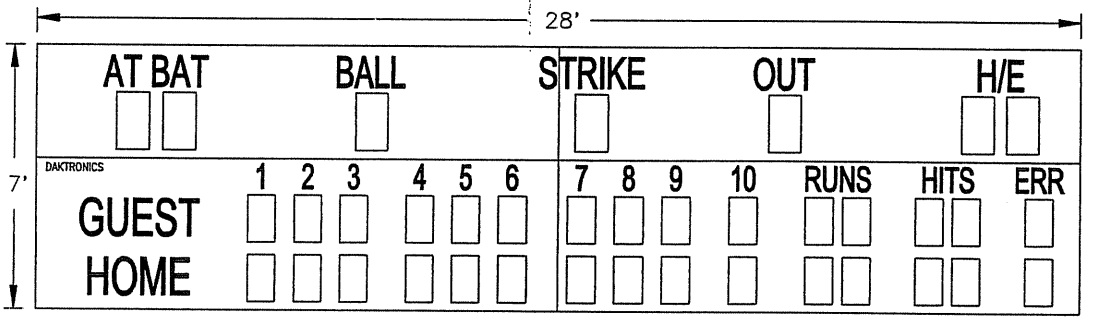
1091-R10A-120972



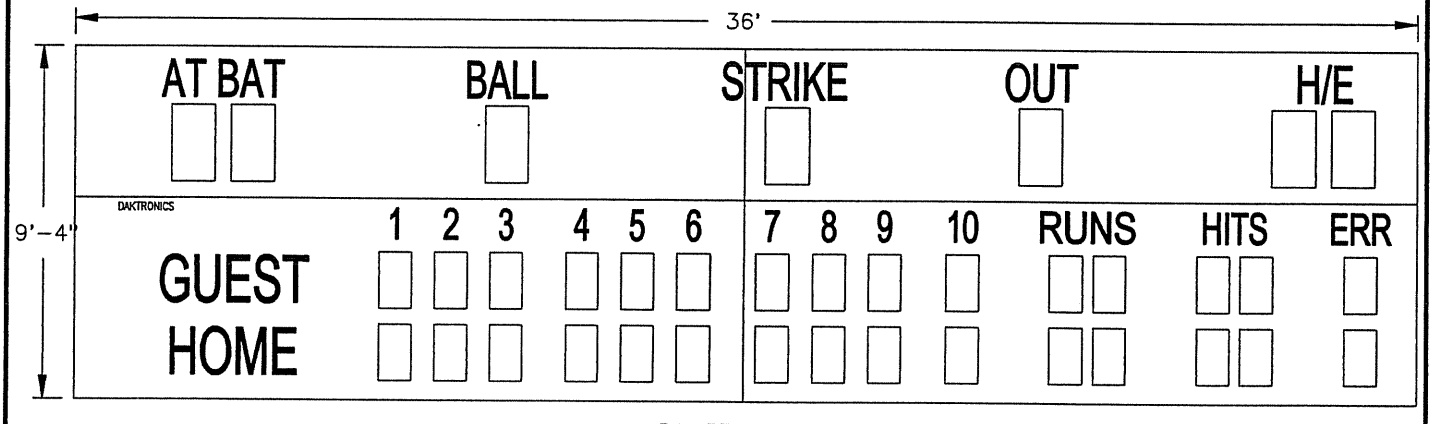
BA–1518



BA–1524



BA–3718



BA–3724

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

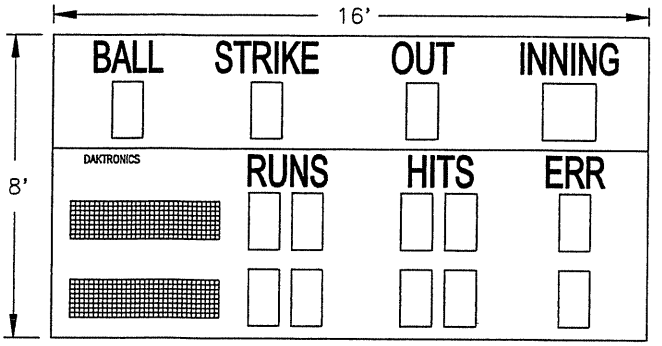
TITLE: MULTIPLE SECTION BASEBALL SCOREBOARD MODELS

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

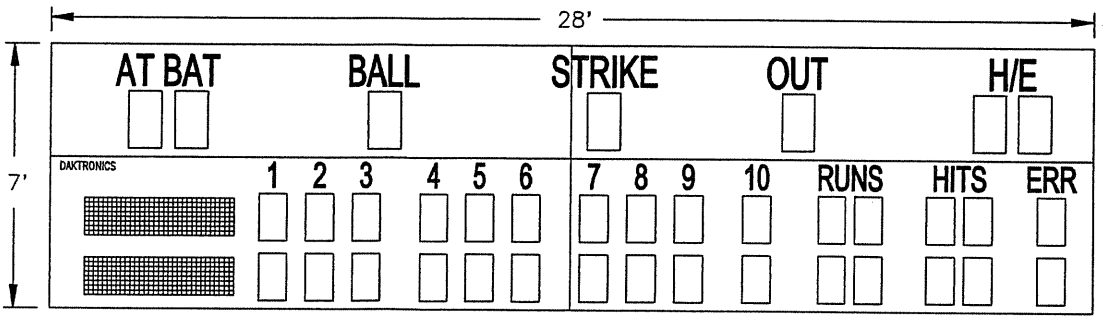
REVISION APPR. BY:

SCALE: 1=50

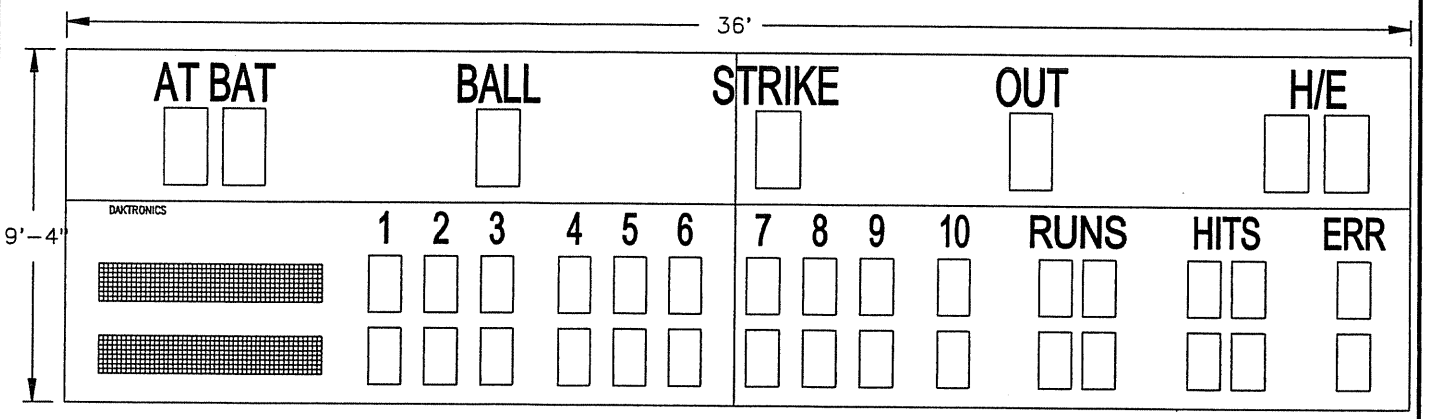
1091-E10A-126086



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

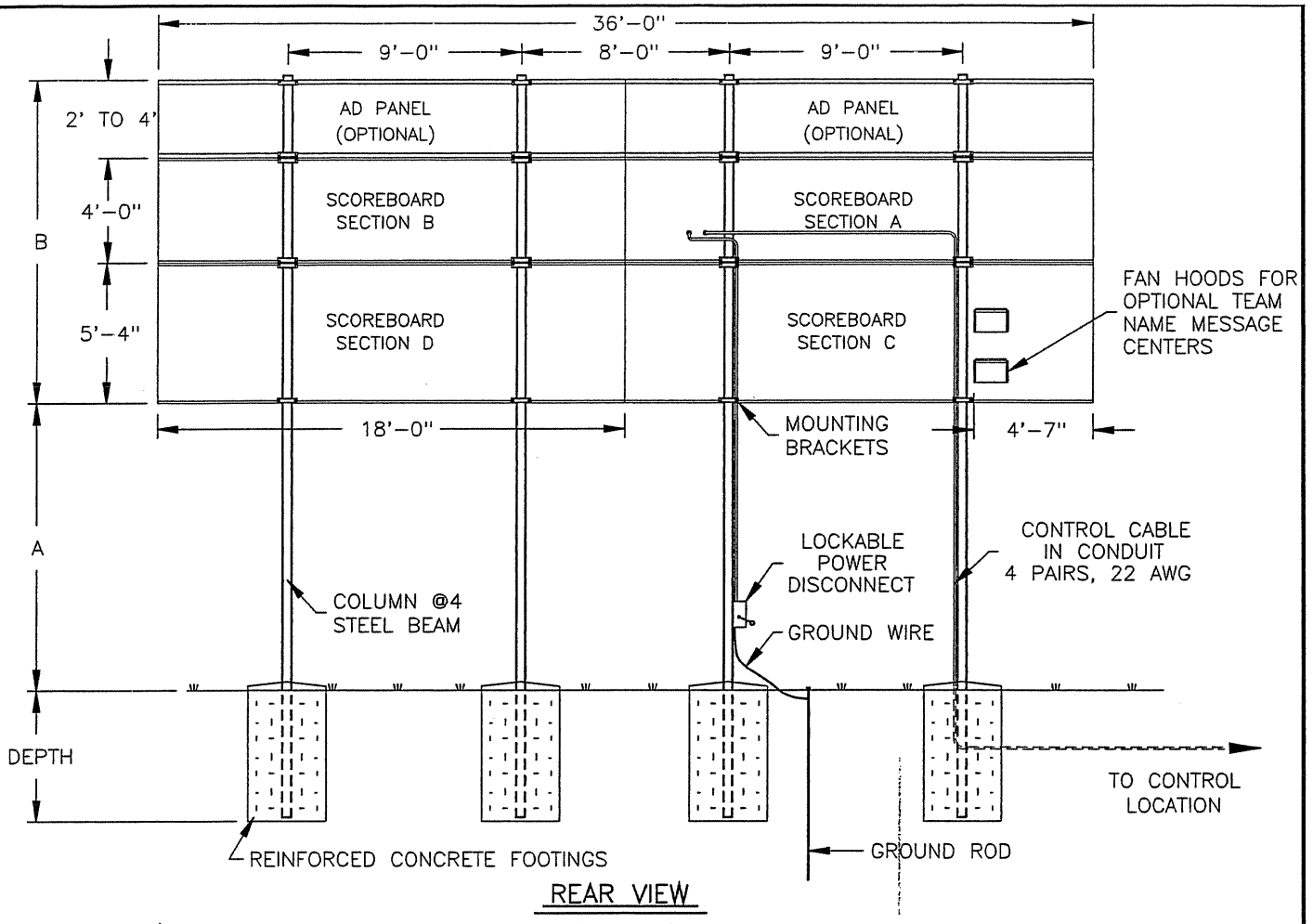
TITLE: MULTIPLE SECTION BASEBALL SCBD MODELS W/TNMC

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

REVISION APPR. BY:

SCALE: 1=50

1091-E10A-126362



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

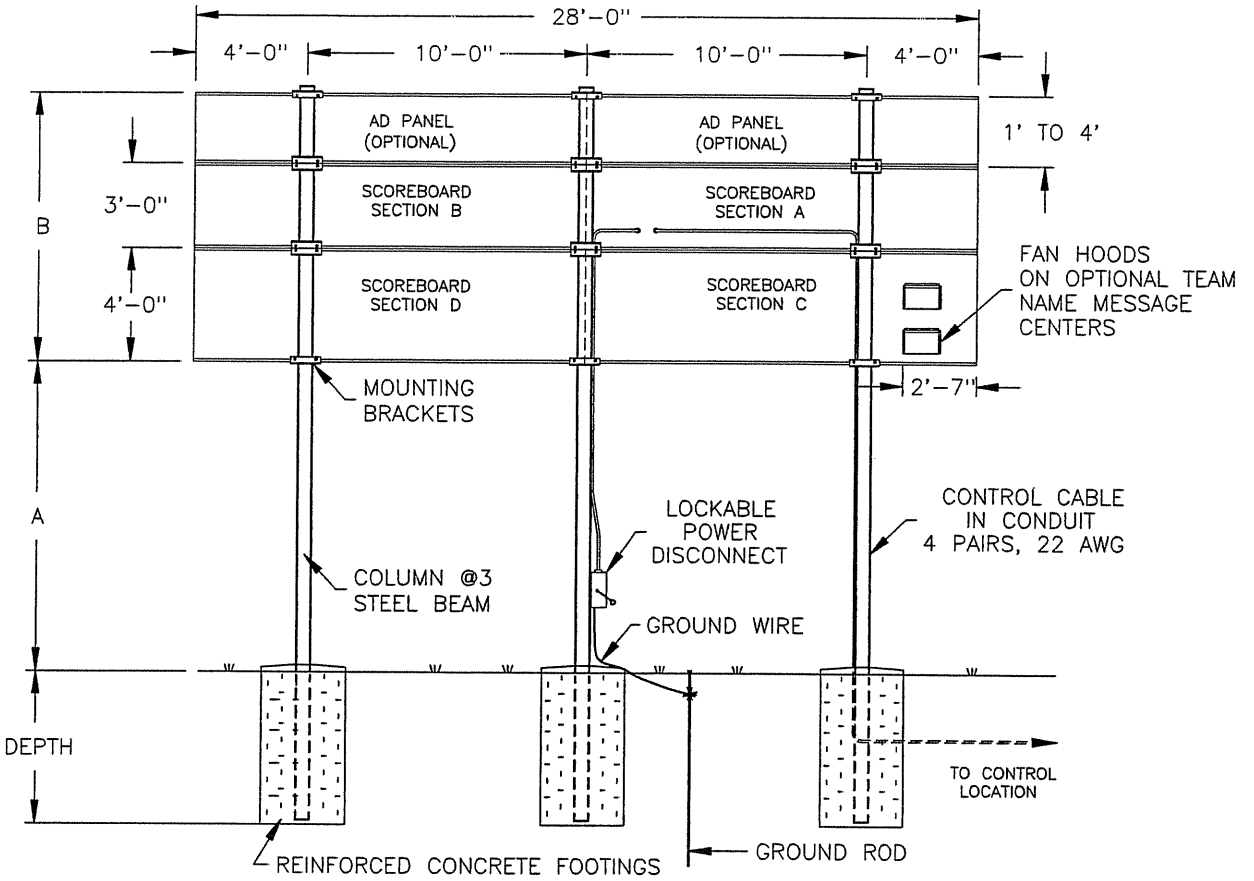
TITLE: INSTALLATION SPECIFICATIONS, BA-3724

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'

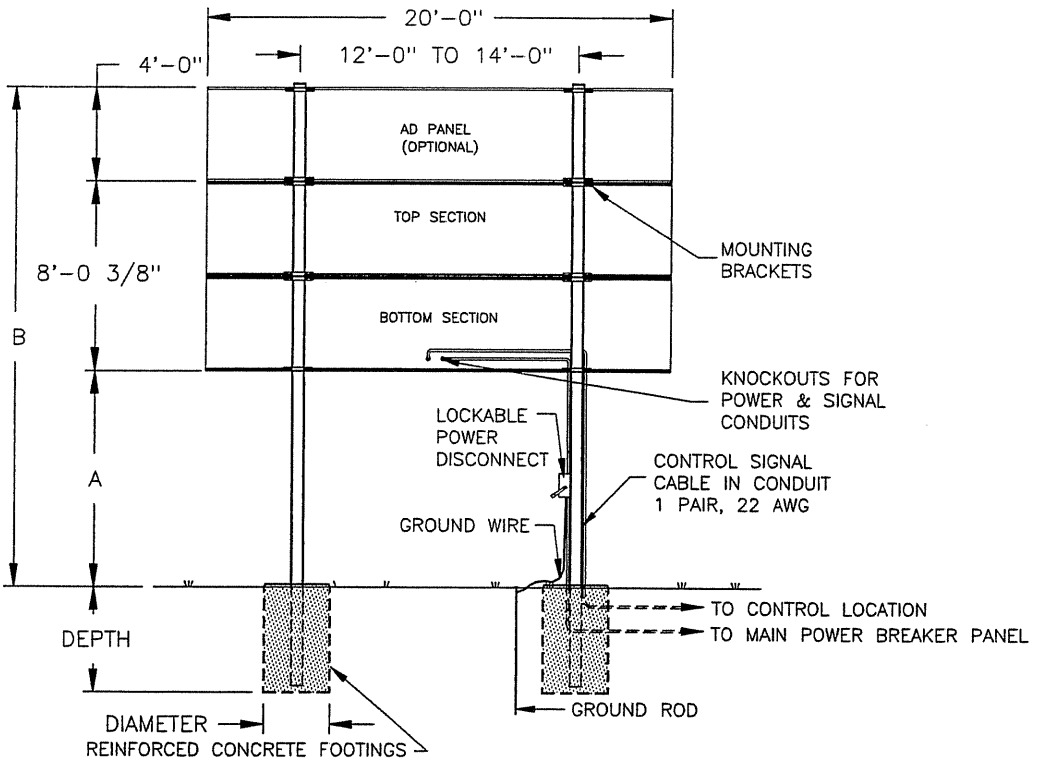
FOOTING = DIAMETER X DEPTH

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.

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.

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

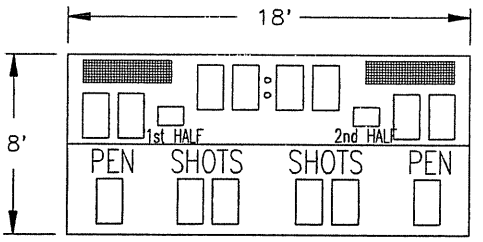
TITLE: INSTALLATION SPECIFICATIONS, FB-2002 & FB-2003

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

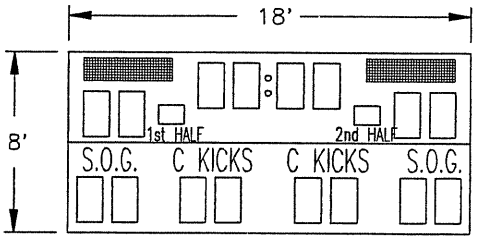
REVISION APPR. BY:

SCALE: 1/8"=1'

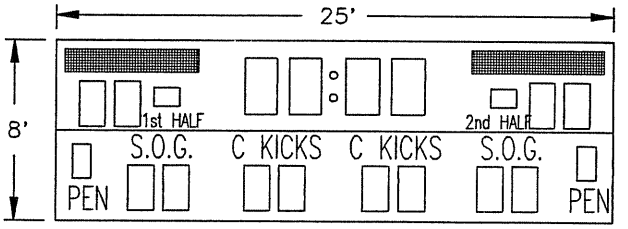
1091-E10A-128044



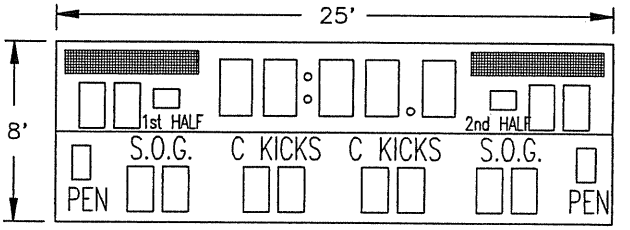
MODEL SO-1424 WITH 832-12 TNMC



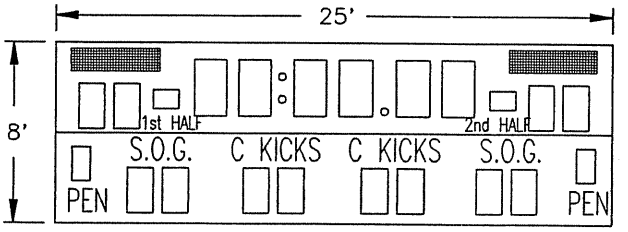
SO-1624 WITH 832-12 TNMC
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



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

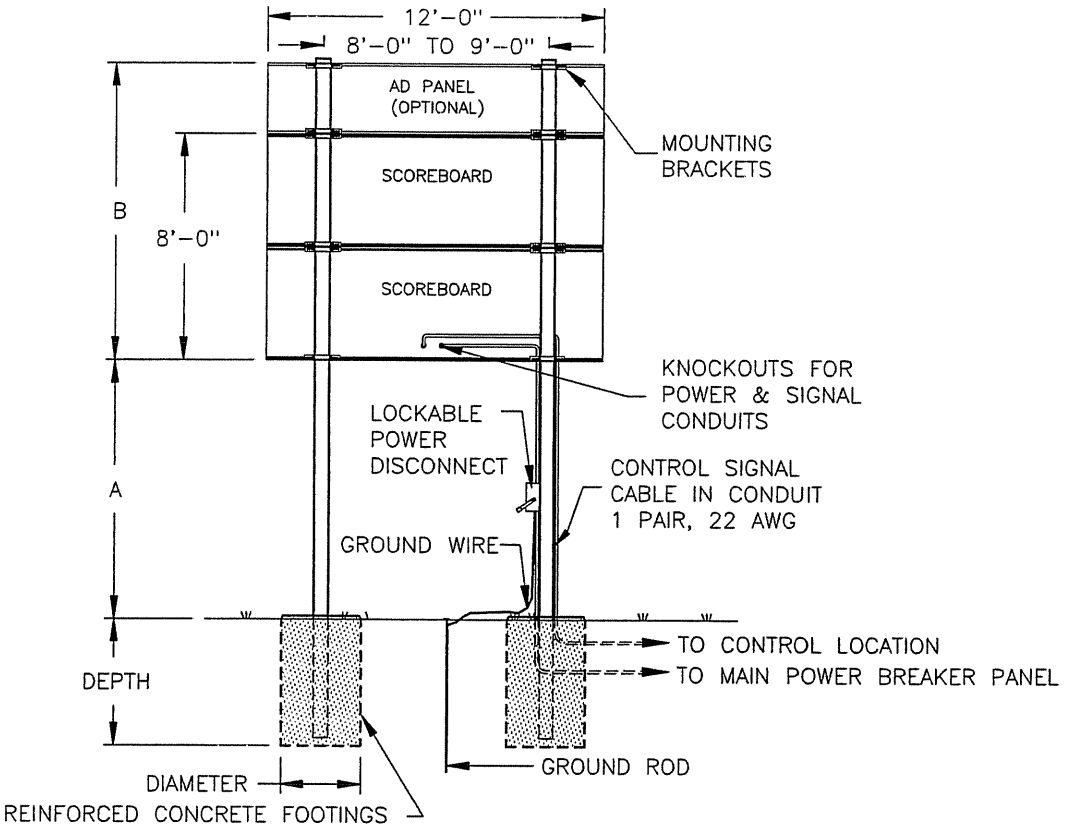
TITLE: MULTIPLE SECTION SOCCER SCBD MODELS W/TNMC

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

REVISION APPR. BY:

SCALE: 1=100

1091-E10A-128172



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

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.

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	21DEC00	REVISED COLUMN SECTIONS & FOOTINGS	MVD	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

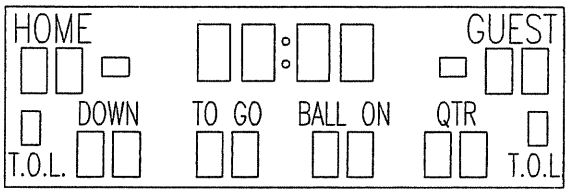
TITLE: INSTALLATION SPECIFICATIONS, MS-2118

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

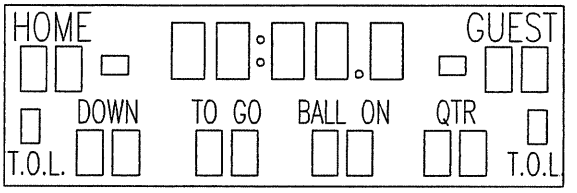
REVISION APPR. BY:

SCALE: 1=80

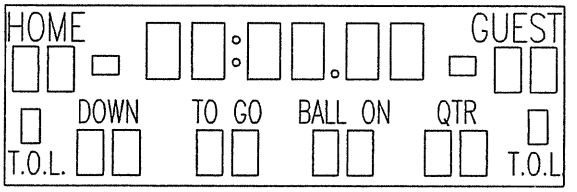
1091-R10A-128206



SO-1830



SO-1930



SO-2030

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

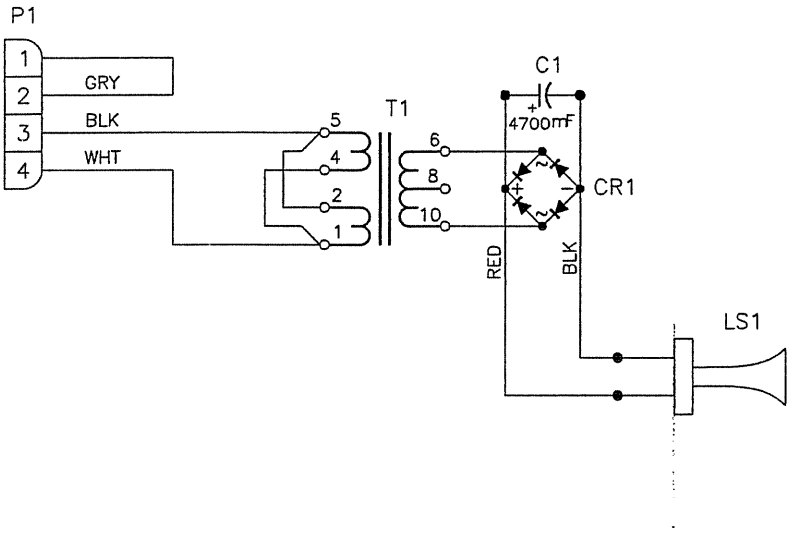
TITLE: CAPTION OPTIONS, FOOTBALL

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

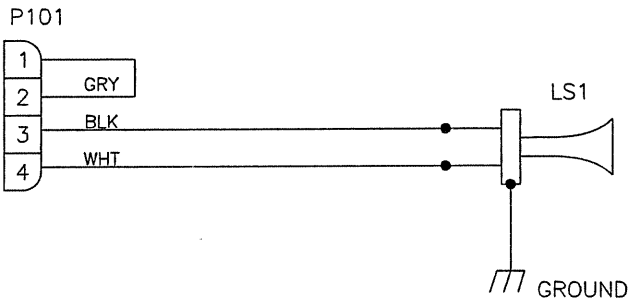
PROJ: STANDARD SCOREBOARDS

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

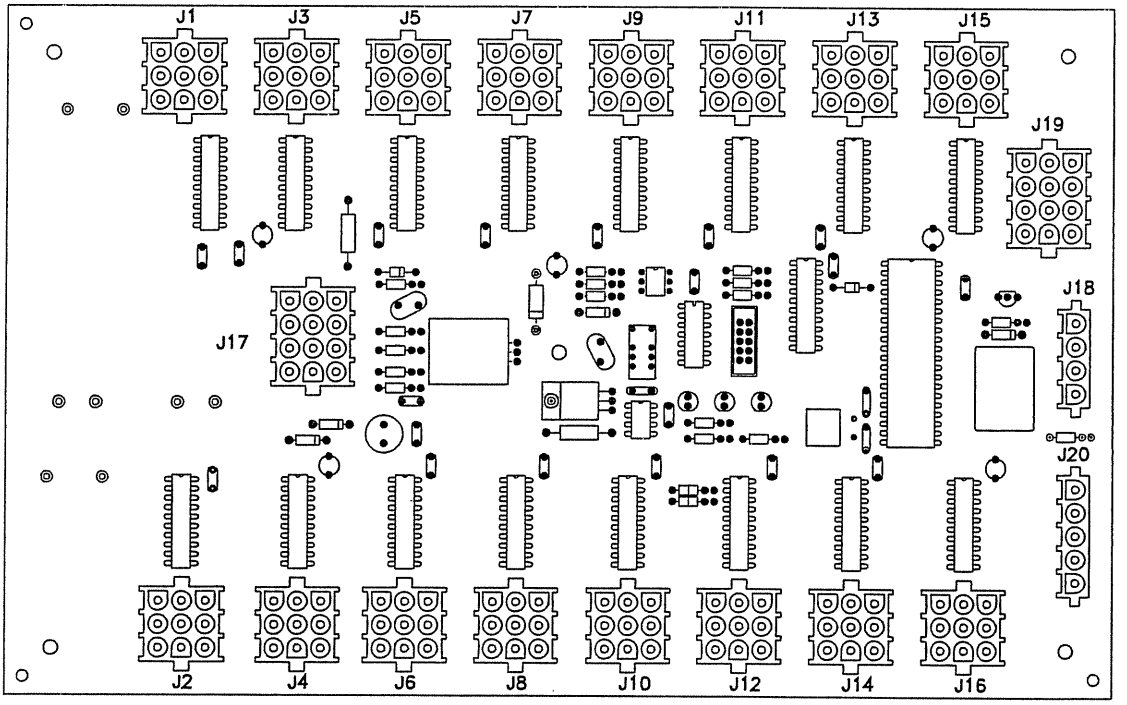
TITLE: SCHEMATIC; 120VAC TRUMPET HORN

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

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

1091-R03A-132173

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

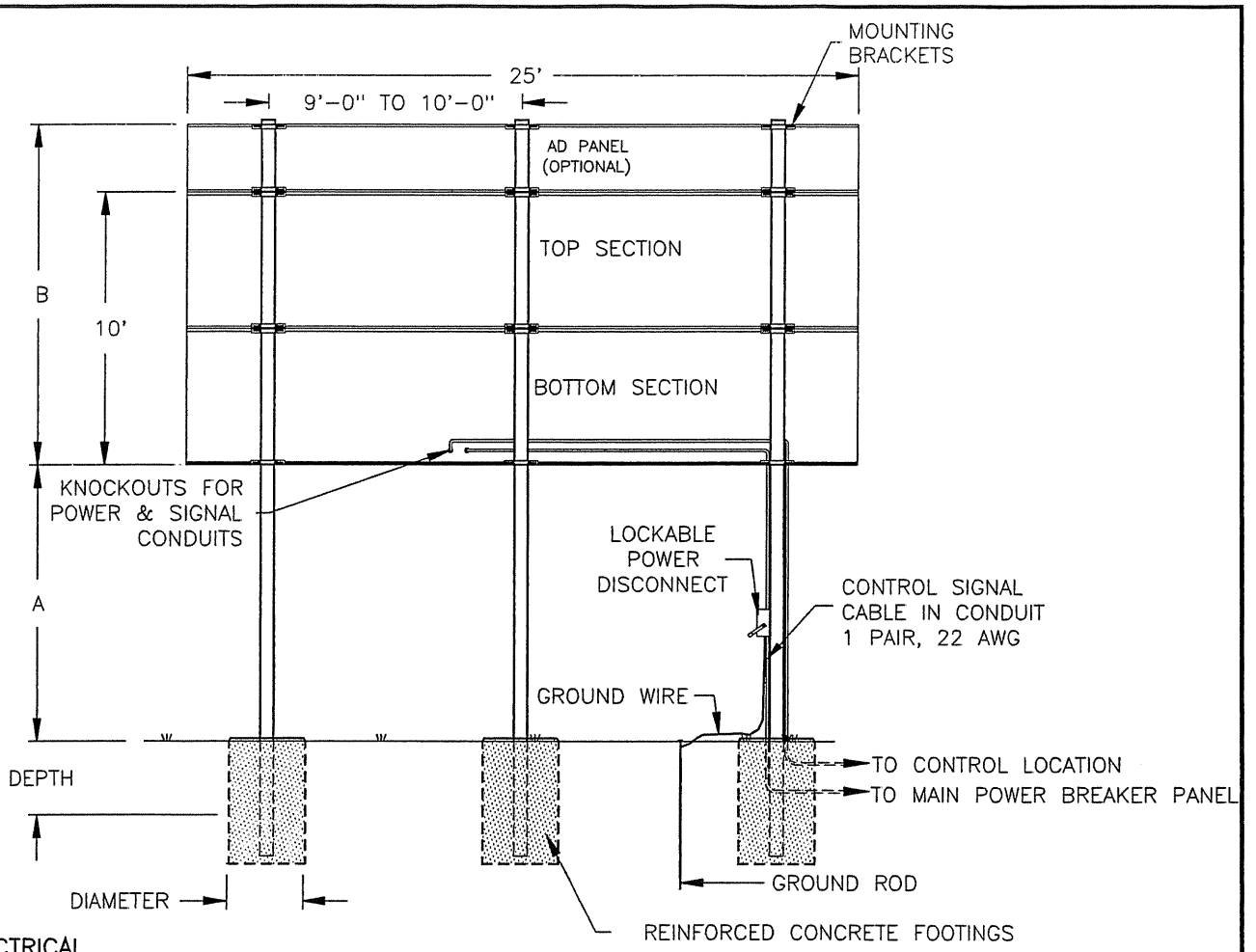
PROJ:

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



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	

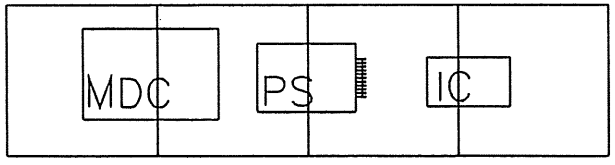
DAKTRONICS, INC. BROOKINGS, SD 57006

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

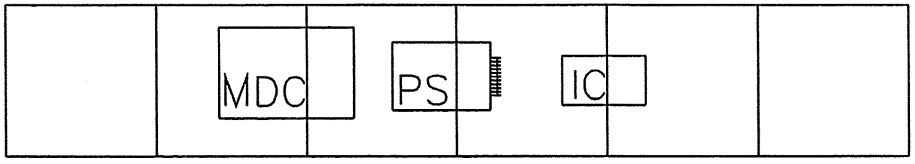
REV.	DATE	DESCRIPTION	BY	APPR.
03	22JAN02	CHANGED PART OP-1146-0016 TO OP-1146-0020	MCOPL	
02	28MAR01	REVISED SIGNAL IN DIAGRAM	MCOPL	
01	12MAR01	CHANGED DRV TO MDC	MCOPL	

832 LED TNMC



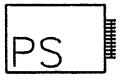
FRONT VIEW

848 LED TNMC



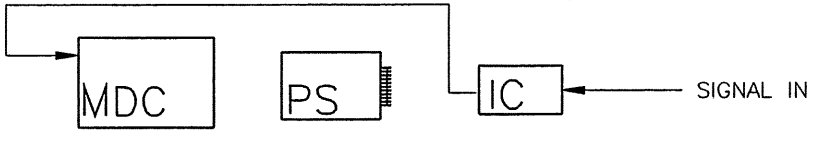
FRONT VIEW

MDC CONTROLLER
0A-1146-0061
MOUNTED TO BACK



POWER SUPPLY
0A-1213-4013
MOUNTED TO BACK

TNMC INTERFACE CARD
0P-1146-0020
MOUNTED TO BACK



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LAYOUT; 832/848 LED TNMC

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

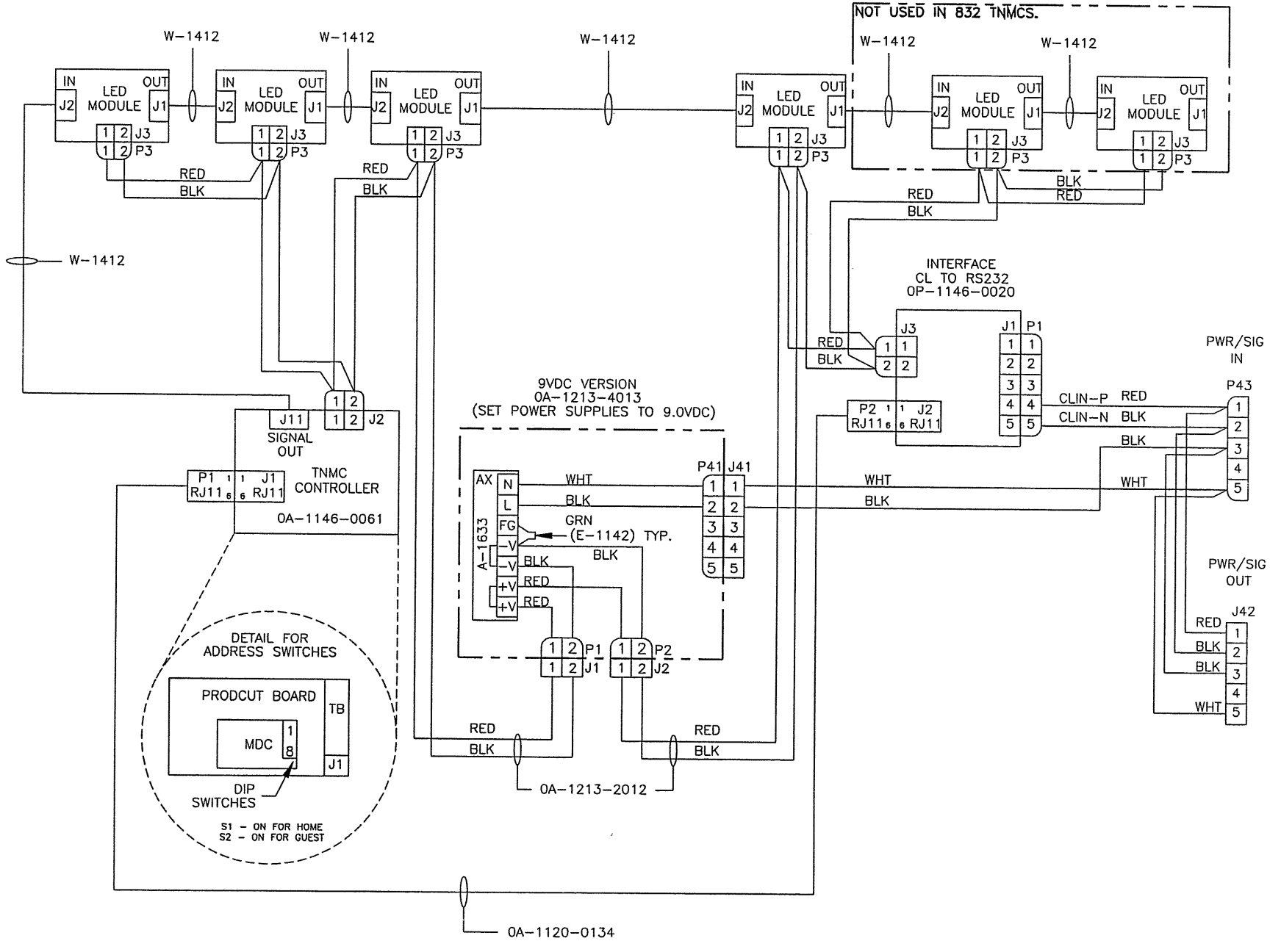
REVISION APPR. BY:

SCALE: NONE

11 92-E07A-145045

REV.	DATE	DESCRIPTION	BY	APPR.
01	19 NOV 01	CHANGED PART NUMBER FOR RJ11 CABLE FROM J2 ON INTERFACE TO J1 ON TNMC CONTROLLER	MWM	

0A-1192-1079 – 8X32 RED LED TNMC
0A-1192-1080 – 8X48 RED LED TNMC



REVISION	DES. BY: MMILLER	DRAWN BY: MMILLER	DATE: 07 NOV 01
	APPR. BY:		
	SCALE: 1=1		

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: SHCEMATIC; LED TNMC, GEN II

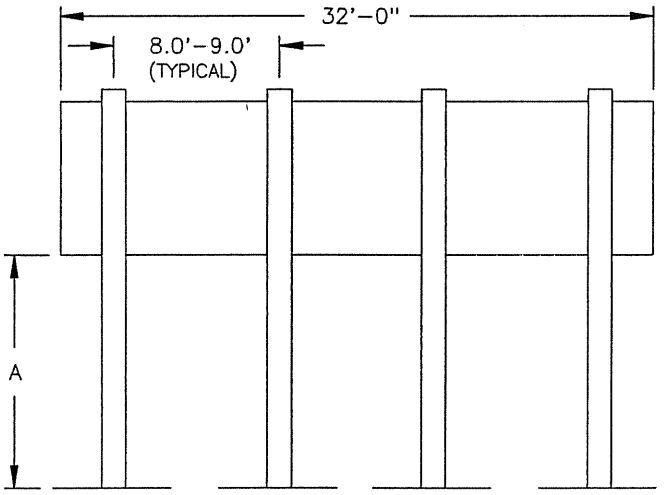
DAKTRONICS, INC. BROOKINGS, SD 57006

1192-R03A-158552

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

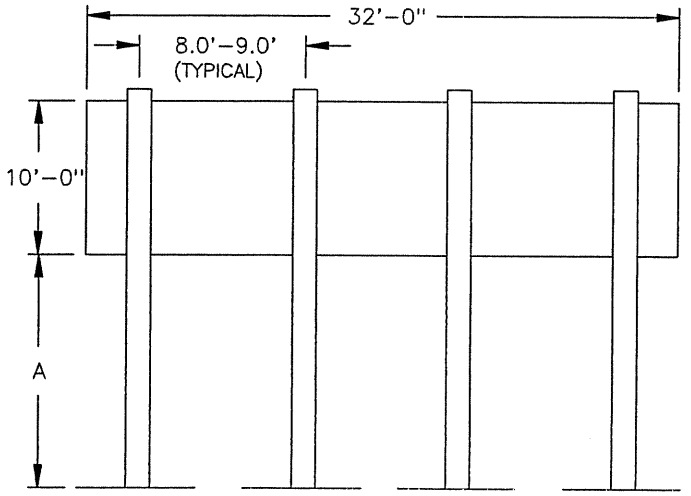
REVISION APPR. BY:

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	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: 120V DC HORN MOUNTING

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

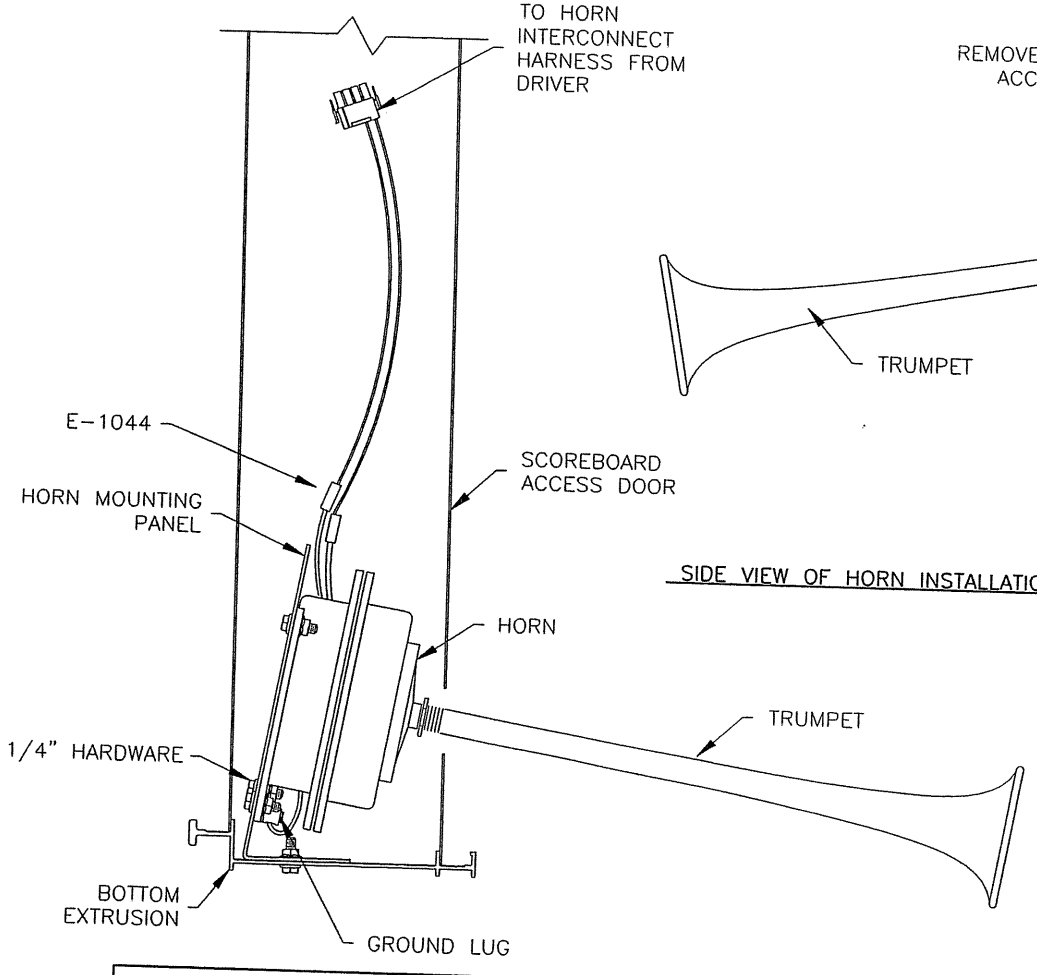
APPR. BY:

SCALE: 1=5

REVISION 01

1192-E10A-162100

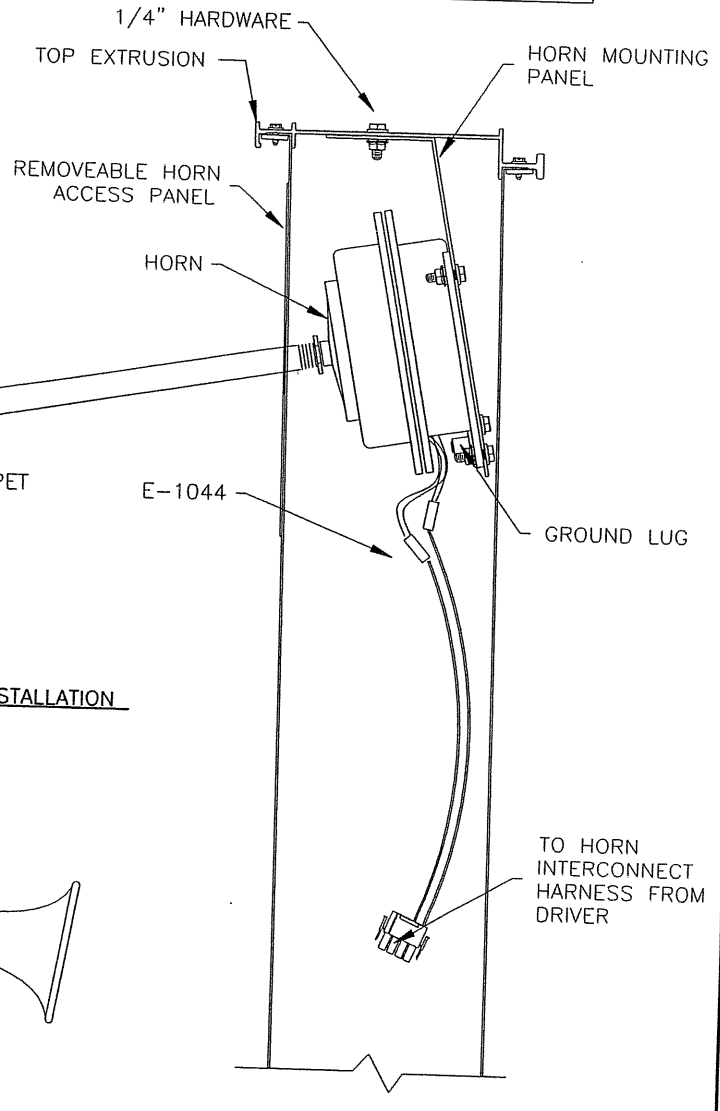
120V HORN MOUNTING FOR BOTTOM EXTRUSION



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.

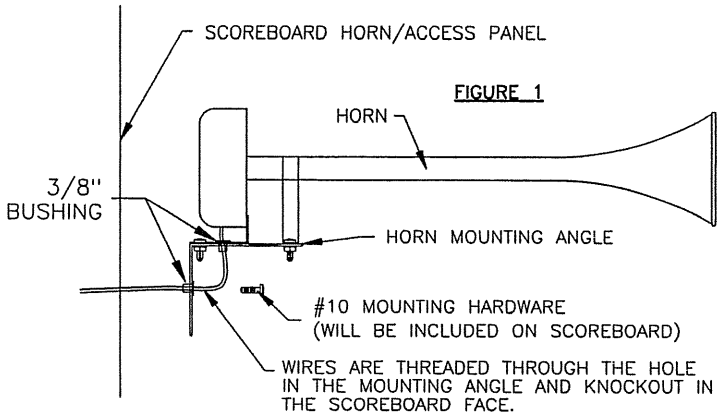


FIGURE 1

SIDE VIEW

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.

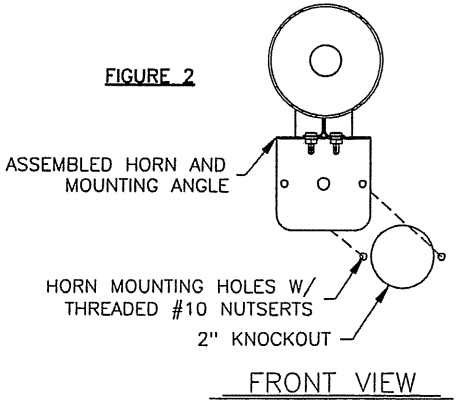


FIGURE 2

FRONT VIEW

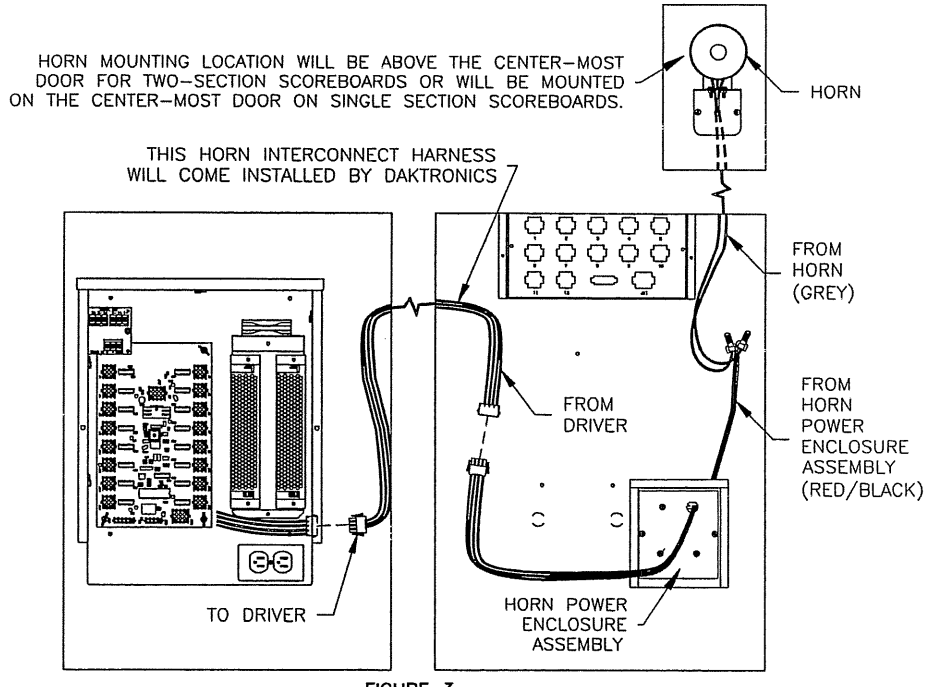


FIGURE 3

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

REVISION

APPR. BY:

SCALE: 1=12

1192-E10A-162102

OP-1192-0067 UNCOATED OR OP-1192-0068 COATED
4 COLUMN MASC LED DRIVER

J-27 RS232 COM	
PIN	FUNCTION
1	RX-P
2	TX-P
3	GND-N
4	+12V -P
5	DCD-P
6	RESET-P

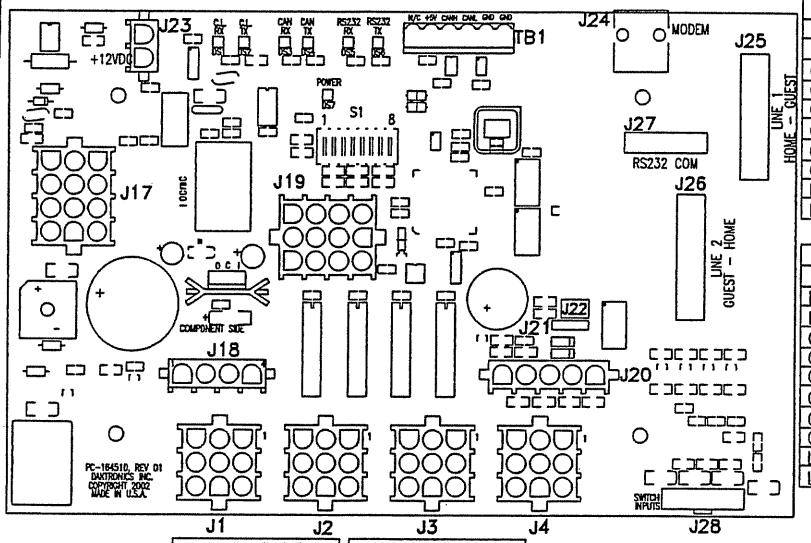
J19 ADDRESS	
PIN	FUNCTION
1	GND-N
2	ADD0-N
3	ADD1-N
4	GND-N
5	ADD2-N
6	ADD3-N
7	GND-N
8	ADD4-N
9	ADD5-N
10	GND-N
11	ADD6-N
12	ADD7-N

TB1 CAN	
PIN	FUNCTION
1	N/C
2	+5V-P
3	CANH-P
4	CANL-P
5	GND-N
6	GND-N

J24	
PIN	FUNCTION
1	MODEM_RTS-P
2	MODEM_RESET-P
3	MODEM_TX-P
4	GND-N
5	MODEM_RX-P
6	MODEM_DCD-P

J23 +12VDC	
PIN	FUNCTION
1	+12VDC-P
2	GND-N

J17 MAIN	
PIN	FUNCTION
1	CLIN-P
2	CLIN-N
3	232IN-P
4	CLOUT-P
5	CLOUT-N
6	16VAC-P
7	GND-N
8	N/C
9	16VAC-N
10	GND-N
11	N/C
12	+VBB-P



J25			
FUNCTION	PIN	PIN	FUNCTION
L1_ID0-P	1	20	RED1-P
L1_ID1-P	2	19	GRN1-P
GND-N	3	18	L1_LATCH-P
GND-N	4	17	L1_DIM-P
GND-N	5	16	RED2-P
GRN2-P	6	15	RED3-P
GND-N	7	14	L1_CLK-P
GND-N	8	13	GRN3-P
L1_ID2-P	9	12	RED4-P
L1_ID3-P	10	11	GRN4-P

J26			
FUNCTION	PIN	PIN	FUNCTION
L2_ID0-P	1	20	RED1-P
L2_ID1-P	2	19	GRN1-P
GND-N	3	18	L2_LATCH-P
GND-N	4	17	L2_DIM-P
GND-N	5	16	RED2-P
GRN2-P	6	15	RED3-P
GND-N	7	14	L2_CLK-P
GND-N	8	13	GRN3-P
L2_ID2-P	9	12	RED4-P
L2_ID3-P	10	11	GRN4-P

J18 RELAY	
PIN	FUNCTION
1	HORNOUT-N
2	AUXOUT2-N
3	120SW1-N
4	120SW1-P

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

J20 PROTOCOL	
PIN	FUNCTION
1	GND
2	PR0-N
3	PR1-N
4	PR2-N
5	PR3-N

J21 ISP	
PIN	FUNCTION
1	VFP-P
2	BKD-P
3	GND-N
4	RESET-P

J22 ISP	
PIN	FUNCTION
1	BKD-P
2	GND-N
3	N/C
4	RESET-P
5	VFP-P
6	+5V-P

J28 SWITCH	
PIN	FUNCTION
1	SWITCH1-P
2	SWITCH1-N
3	SWITCH2-P
4	SWITCH2-N
5	SWITCH3-P
6	SWITCH3-N
7	SWITCH4-P
8	SWITCH4-N

NOTE:

-RED LED CL RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL

-GREEN LED CL TX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL

-RED LED CAN RX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN

-GREEN LED CAN TX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN

-IF THERE IS NOT A CAN DEVICE CONNECTED TO TB1, CAN RX AND TX LEDS WILL BE ON AND STEADY.

-RED LED RS232 RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232

-GREEN LED RS232 TX6 WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232

-GREEN LED POWER INDICATES THE DRIVER HAS POWER

REV.	DATE	DESCRIPTION	BY	APPR.
3	27 NOV 04	UPDATE DRIVER J-27 FOR CORRECT PIN OUT	DMD	
2	16 MAY 03	UPDATE DRIVER FOR LATEST REVISION OF MASC DRIVER.	CJB	
1	06JUN02	ADDED LED LABELS ADDED NEW NOTES	JJS	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

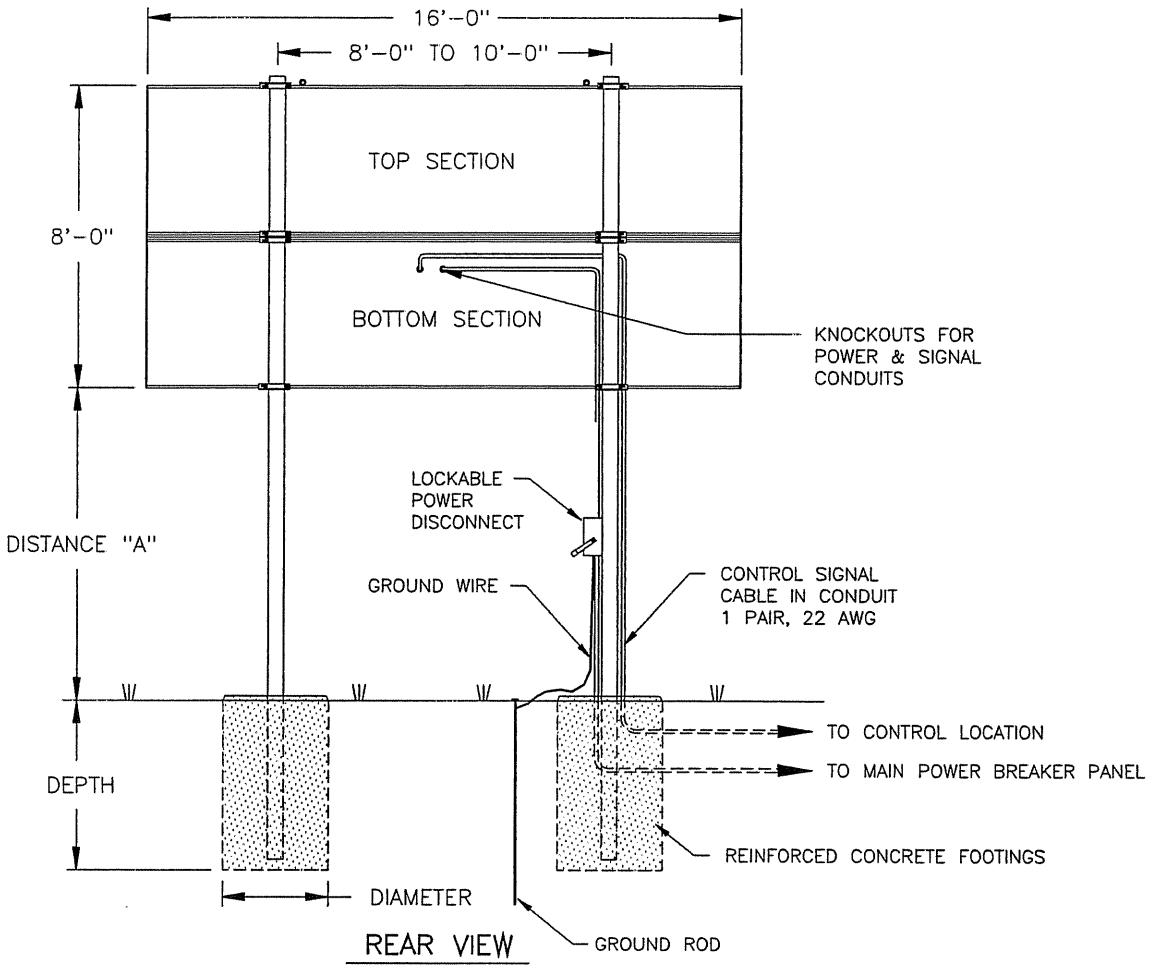
TITLE: 4 COLUMN MASC LED DRIVER SPECIFICATIONS

DES. BY: DRAWN BY: JSPAHR DATE: 29 APR 02

REVISION 03 APPR. BY: SCALE: 1=2

1192-R07A-166216

SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.



REAR VIEW

MODEL MS-2918 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 MS-2918 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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, MS-2918

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 25JUL02

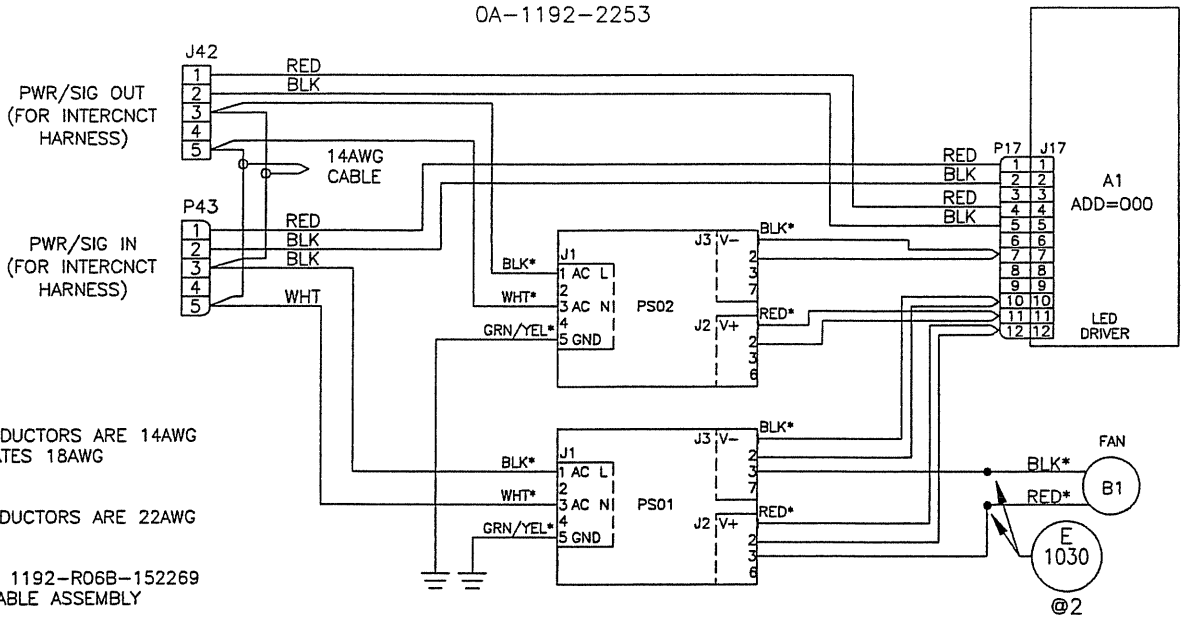
REV.	DATE	DESCRIPTION	BY	APPR.
REVISION				

APPR. BY:

SCALE: 1=60

1091-R10A-172188

SLAVE CONFIGURATION
0A-1192-2253

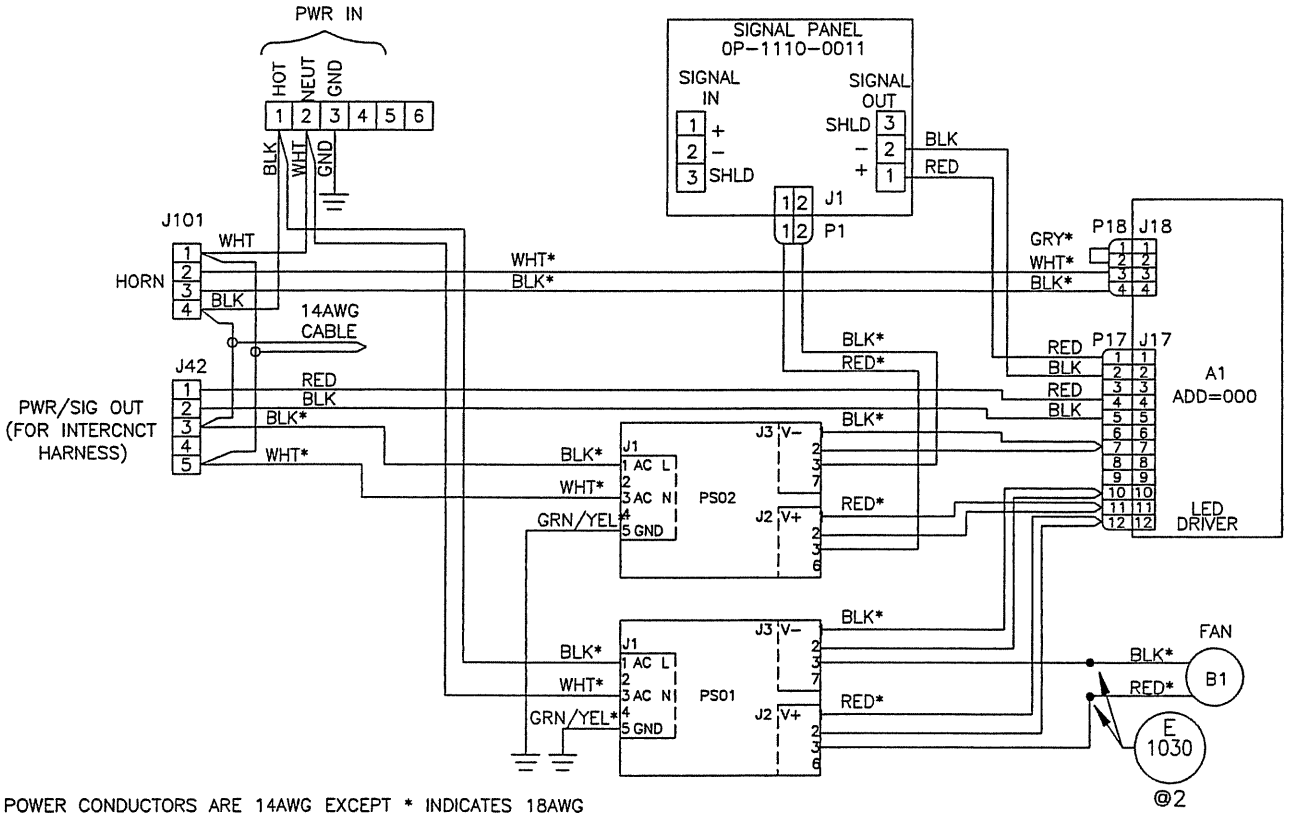


ALL POWER CONDUCTORS ARE 14AWG EXCEPT * INDICATES 18AWG CONDUCTORS.

ALL SIGNAL CONDUCTORS ARE 22AWG CONDUCTORS.

REFERENCE DWG 1192-R06B-152269 FOR DETAILED CABLE ASSEMBLY DIAGRAM.

MASTER CONFIGURATION
0A-1192-2252



ALL POWER CONDUCTORS ARE 14AWG EXCEPT * INDICATES 18AWG CONDUCTORS.

ALL SIGNAL CONDUCTORS ARE 22AWG CONDUCTORS.

REFERENCE DWG 1192-R06B-178207 FOR DETAILED CABLE ASSEMBLY DIAGRAM.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARD

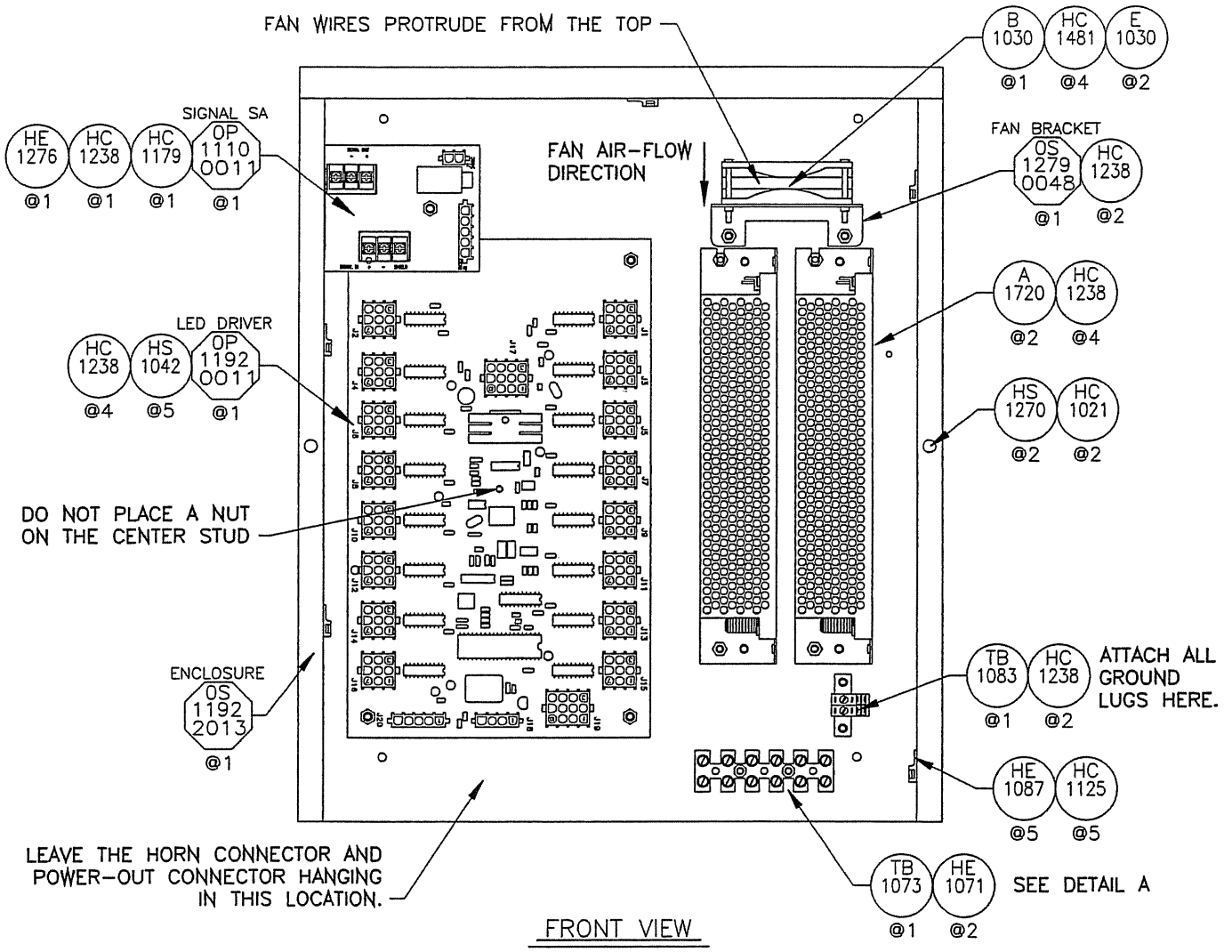
TITLE: SCHEMATIC; GEN III OUTDOOR LED, 16 COLUMN DRVR

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 05 NOV 02

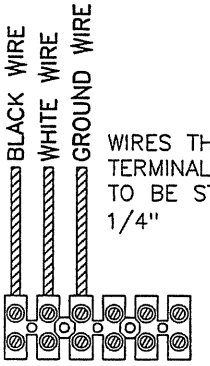
REV.	DATE	DESCRIPTION	BY	APPR.
01	10 DEC 02	ADDED BLOCKS 5 AND 6 TO PWR IN	AJL	MWM

REVISION 01 APPR. BY: SCALE: 1=1

1192-R03A-177931



FRONT VIEW



WIRES THAT GO INTO TERMINAL BLOCKS NEED TO BE STRIPPED BACK 1/4"

DETAIL: A
(SCALE 1=1.5)

NOTES:

-NOTE THAT WIRES PROTRUDE FROM THE FAN ON ONE OF THE FOUR SIDES. WHEN MOUNTING THE FAN TO THE POWER SUPPLY BRACKET, MAKE SURE THE FAN WIRES PROTRUDE FROM THE TOP.

-THE FAN AIR-FLOW SHOULD BLOW AIR ONTO THE POWER SUPPLIES.

-SEE DRAWING A-178206 FOR LABELING.

REV.	DATE	DESCRIPTION	BY	APPR.
08	24MAY04	ADDED TB-1083 TO DRIVER ASSEMBLY	MCOPL	
07	19 APR 04	CHANGED WIRE STRIP LENGTH FROM 1/8" TO 1/4" PER ECO-40503	RWD	
06	16 SEPT 03	ADDED NOTE TO STRIP WIRE 1/8" PER ECO 41476	RWD	
05	14JUL03	REPLACED OLD BLOCK OF TB-1073 WITH NEW BLOCK OF TB-1073	MCOPL	
04	30JAN03	CHANGED MOUNTING METHODS FOR THE POWER SUPPLIES AND FAN, CHANGED THE MOUNTING HARDWARE ON SEVERAL COMPONENTS	MCOPL	
03	03JAN03	ADDED HC-1202 @1 AND HC-1354 @1	MCOPL	
02	30DEC02	CHANGED BLOCK OF OP-1110-0011	MCOPL	
01	04DEC02	REPLACED TB-1072 WITH TB-1073, ADDED NOTES AND DETAIL A	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: DRIVER; GEN III OUTDOOR LED, 16 COL MASTER

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 08NOV02

REVISION 08 APPR. BY: SCALE: 1=4

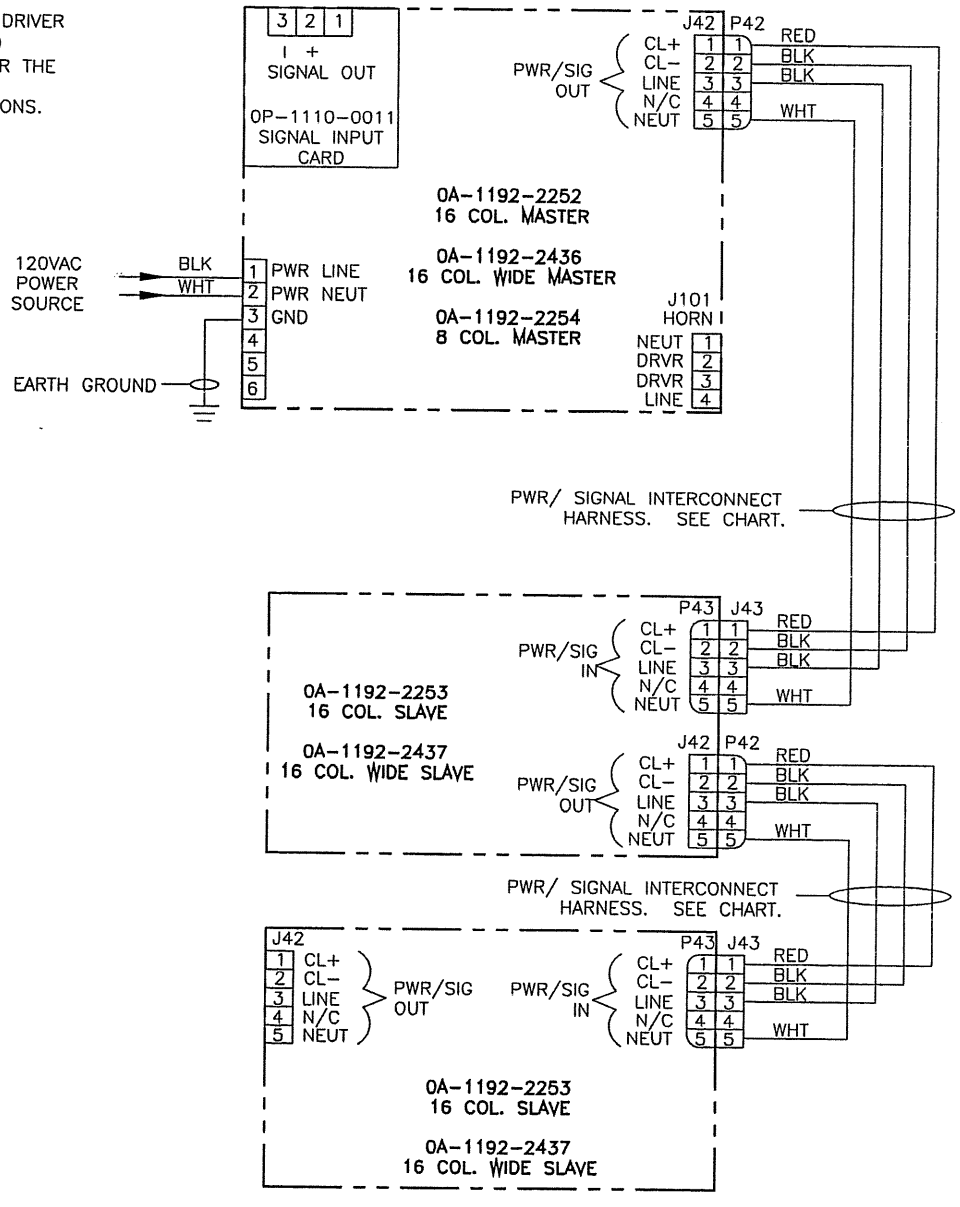
1192-E10A-178197

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 FEB 03	CORRECTED SPELLING ON NEUT. ADDED 16 COL. WIDE PART NUMBER	MWM	

THIS SCHEMATIC REPRESENTS THE INTERCONNECT OF THE MASTER DRIVER TO OTHER DRIVERS/TNMC'S IN A MULTI DRIVER SCOREBOARD CONFIGURATION. SEE THE PRE-PAINT ASSEMBLY DRAWING AND/OR THE FINAL ASSEMBLY DRAWING FOR THE PART NUMBERS OF THE INTERCONNECT HARNESSES NEEDED AND INSTALLATION INSTRUCTIONS.

PWR/SIG INTERCONNECT HARNESS

PART NUMBER	LENGTH
0A-1192-1028	4'
0A-1192-1029	8'
0A-1192-1030	10'
0A-1192-1031	12'
0A-1192-1032	16'
0A-1192-1033	22'
0A-1192-1034	26'
0A-1192-1083	30'
0A-1192-1084	35'



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; GEN III, OD LED, 3 DRVR DISPLAY

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 04 DEC 02

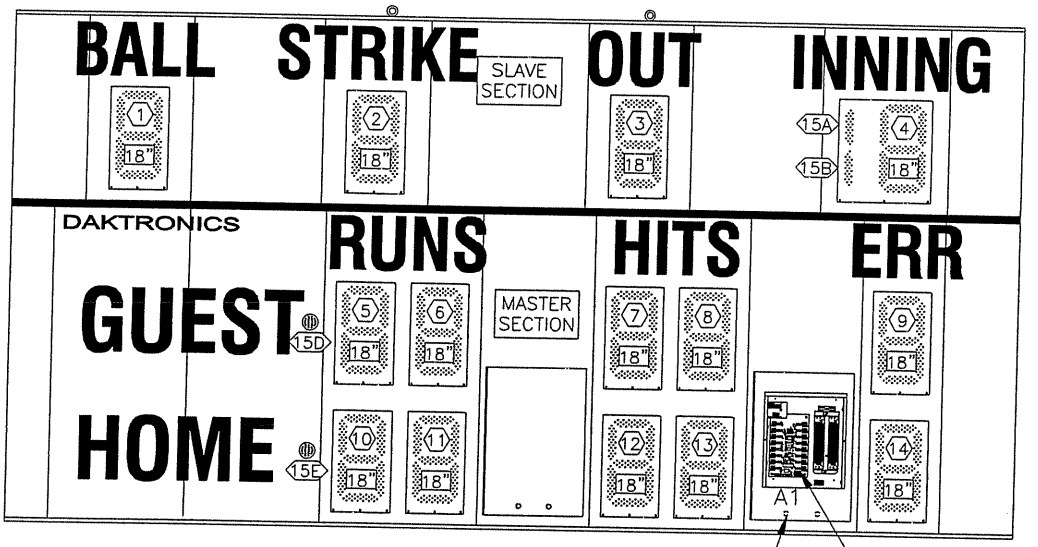
APPR. BY:

SCALE: 1=1

REVISION

1192-R10A-179541

BA-1518-11/-21

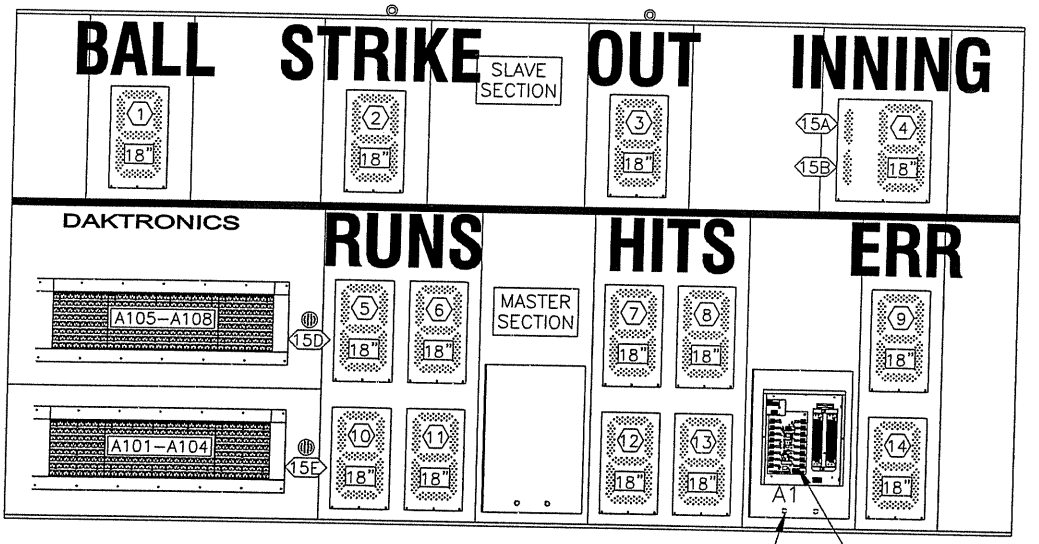


KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

BA-1518-11/-21 W/ LED TNMC



KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

⟨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 THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

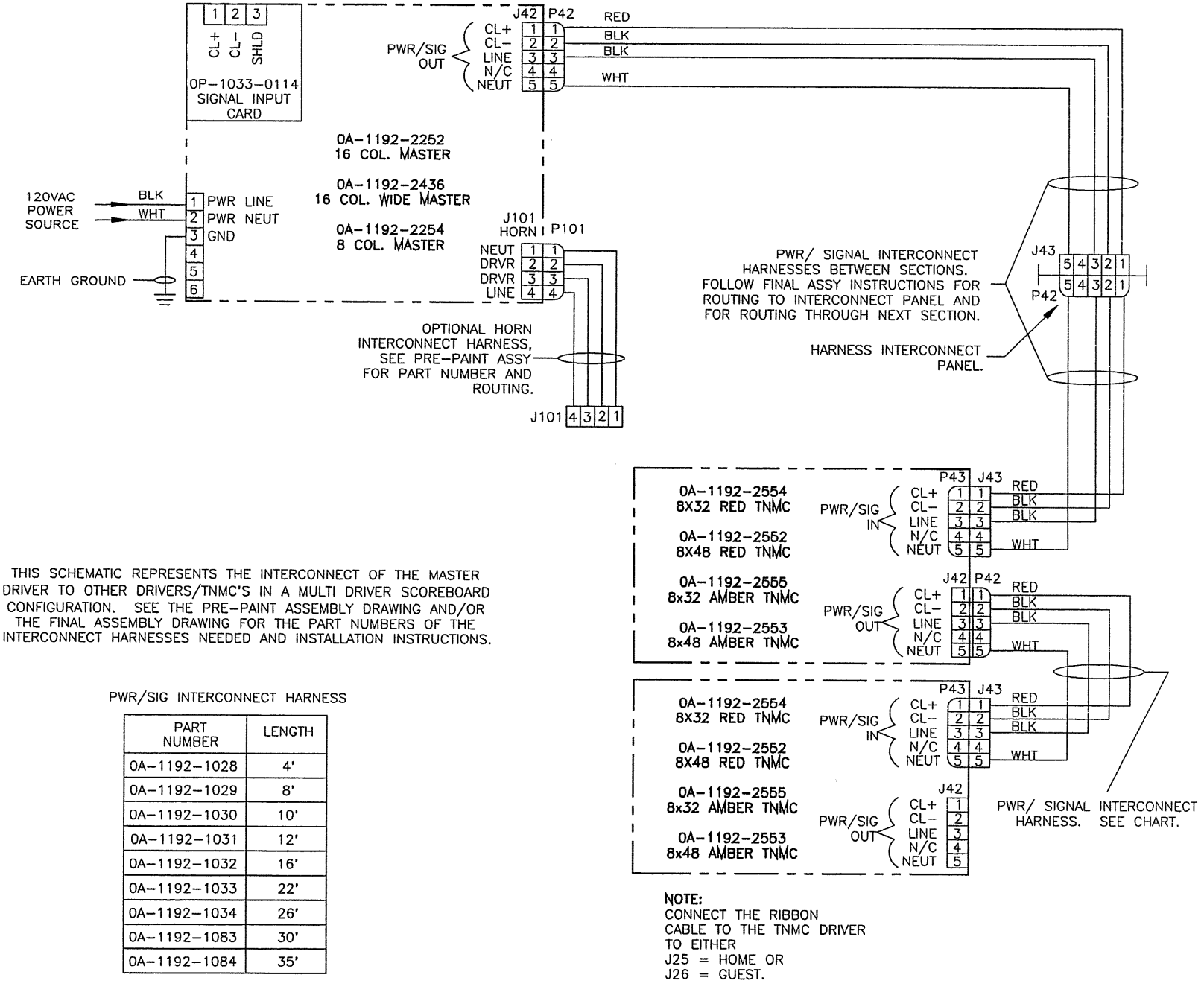
TITLE: COMPONENT LOCATIONS; BA-1518-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 09DEC02

REVISION 00 APPR. BY: SCALE: 1=35

1192-R08A-179745

REV.	DATE	DESCRIPTION	BY	APPR.



THIS SCHEMATIC REPRESENTS THE INTERCONNECT OF THE MASTER DRIVER TO OTHER DRIVERS/TNMC'S IN A MULTI DRIVER SCOREBOARD CONFIGURATION. SEE THE PRE-PAINT ASSEMBLY DRAWING AND/OR THE FINAL ASSEMBLY DRAWING FOR THE PART NUMBERS OF THE INTERCONNECT HARNESSES NEEDED AND INSTALLATION INSTRUCTIONS.

PWR/SIG INTERCONNECT HARNESS

PART NUMBER	LENGTH
0A-1192-1028	4'
0A-1192-1029	8'
0A-1192-1030	10'
0A-1192-1031	12'
0A-1192-1032	16'
0A-1192-1033	22'
0A-1192-1034	26'
0A-1192-1083	30'
0A-1192-1084	35'

NOTE:
CONNECT THE RIBBON CABLE TO THE TNMC DRIVER TO EITHER
J25 = HOME OR
J26 = GUEST.

REV.	DATE	DESCRIPTION	BY	APPR.
02	08 MAY-03	CHANGED TNMC TEXT TO NEW GEN 3 AND ADDED NOTE.	TAS	MWM
01	20 FEB 03	ADDED 16 COL. WIDE PART NUMBER AND CORRECTED SPELLING ON NEUT	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: SCHEMATIC; GEN III, OD LED, 1 DRV W/ TNMC

DES. BY:

DRAWN BY: ALINDHO

DATE: 17 DEC 02

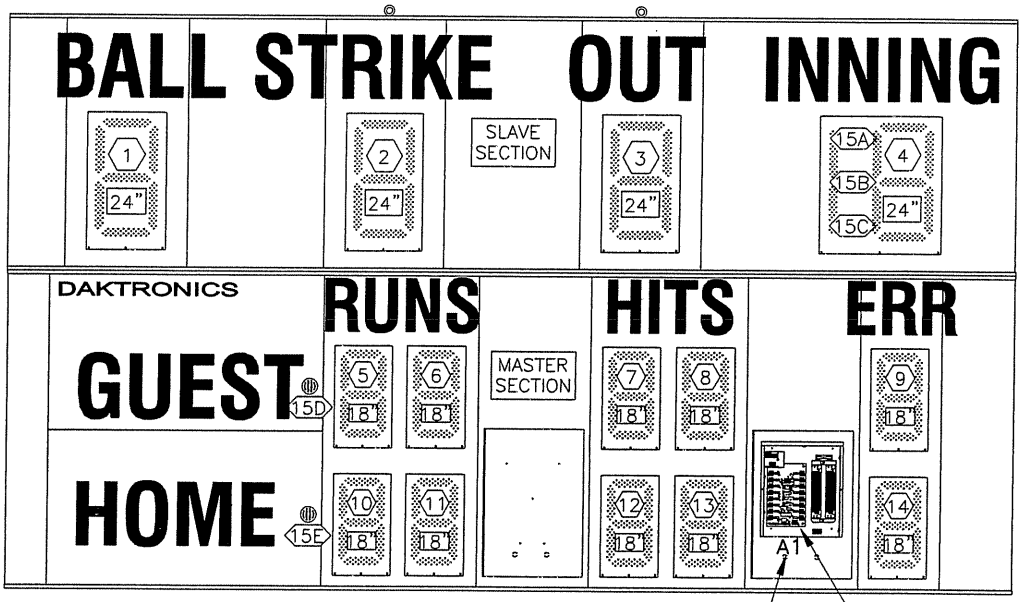
APPR. BY:

SCALE: NONE

REVISION

1192-R01A-17979O

BA-1524-11/-21

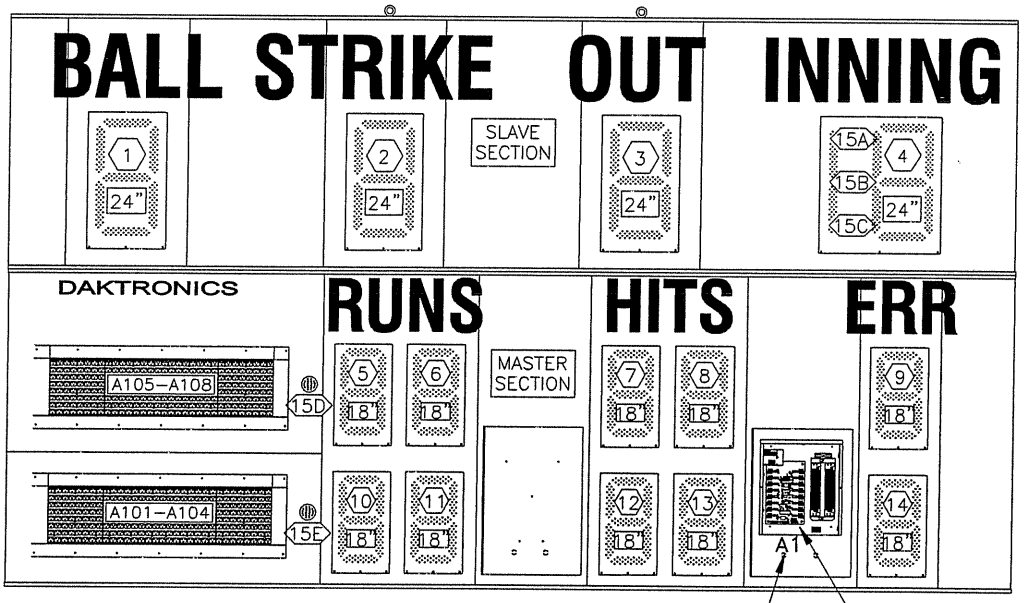


FRONT VIEW

KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

BA-1524-11/-21 W/ LED TNMC



FRONT VIEW

KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

(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 THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

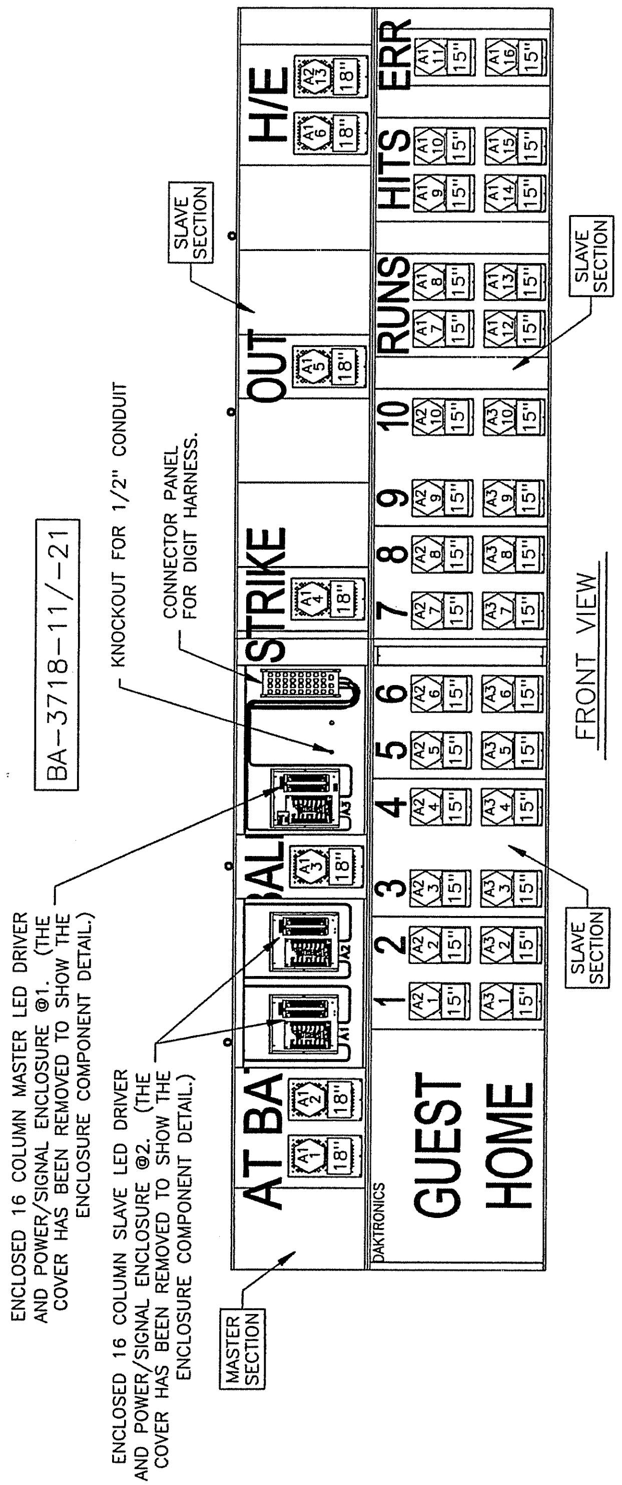
TITLE: COMPONENT LOCATIONS; BA-1524-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 11DEC02

REVISION 00 APPR. BY: SCALE: 1=35

1192-R08A-179869

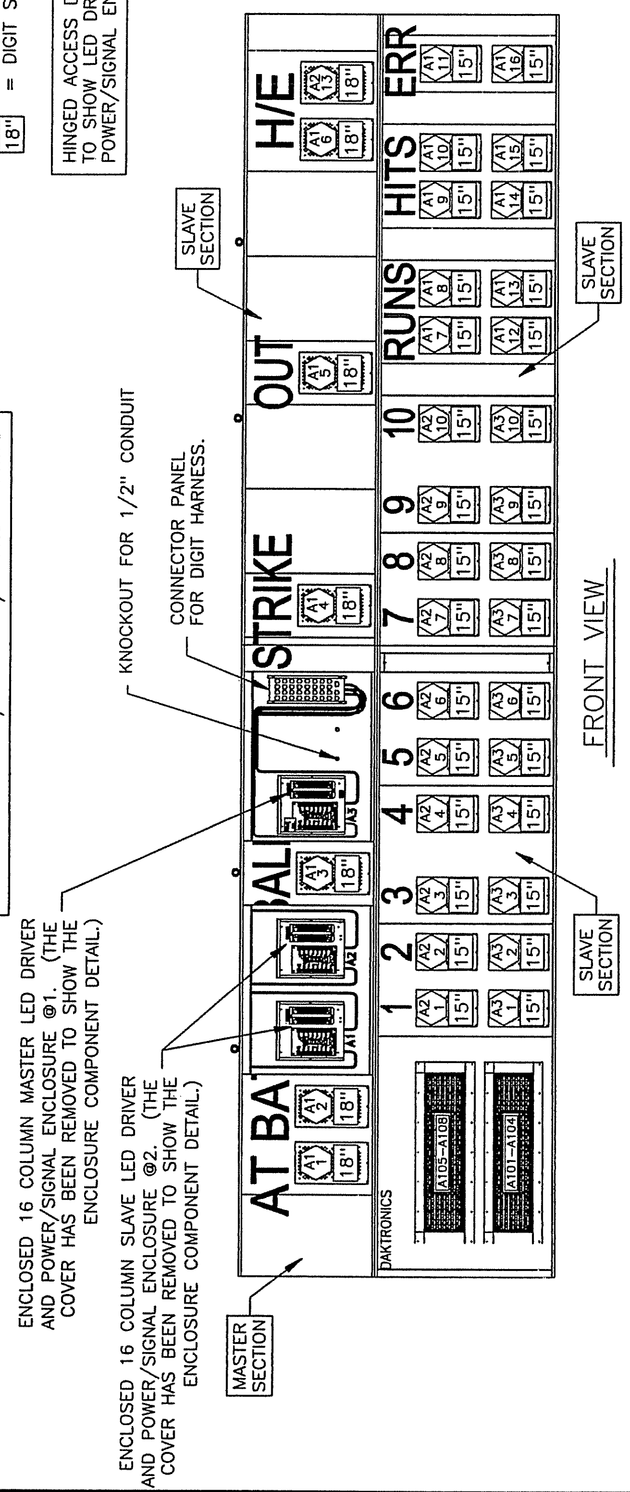
REV.	DATE	DESCRIPTION	BY	APPR.



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

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-3718-11/-21, G3

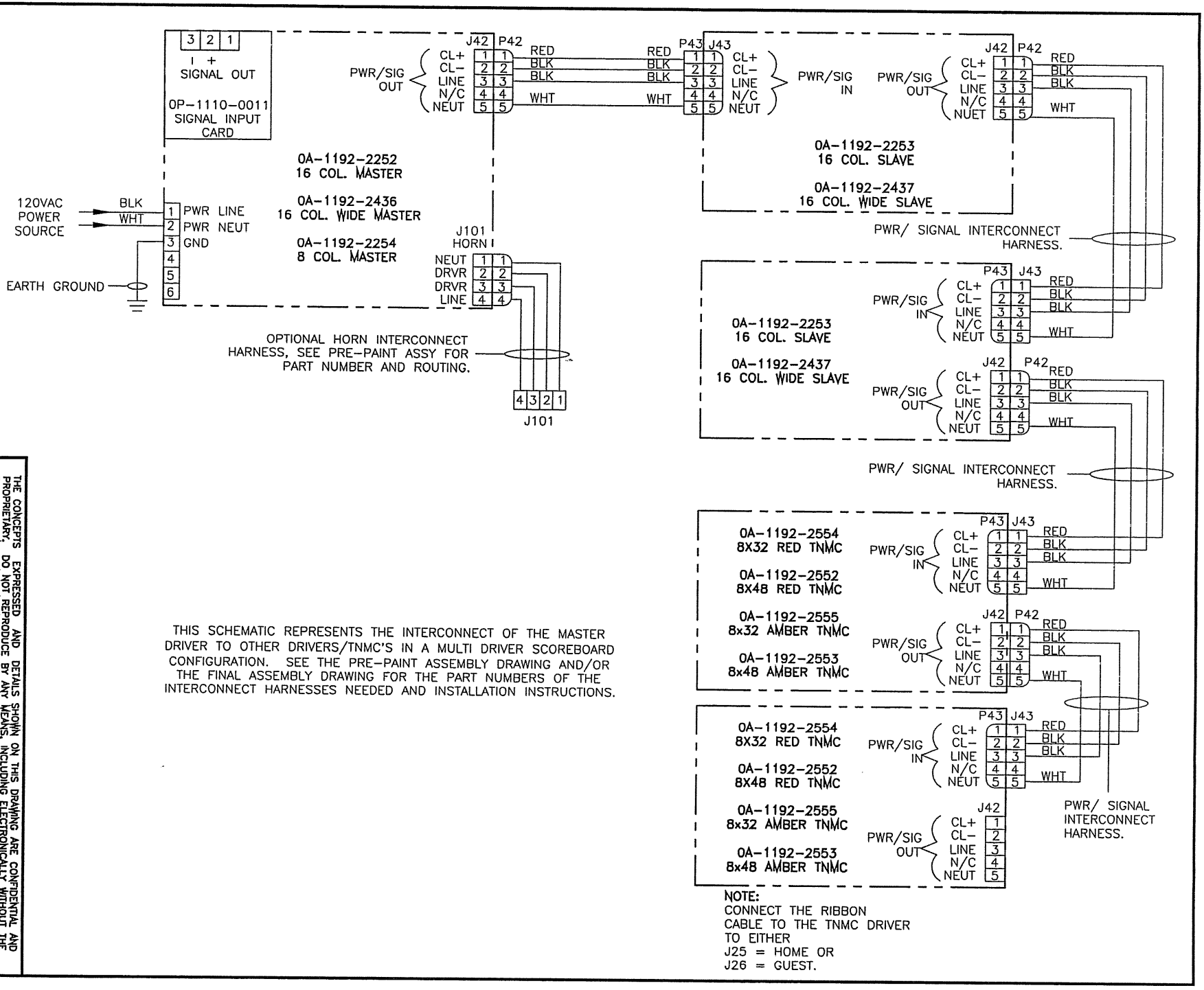
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 16DEC02

REVISION APPR. BY:

SCALE: 1=50

1192-R08A-180070

REV.	DATE	DESCRIPTION	BY	APPR.



THIS SCHEMATIC REPRESENTS THE INTERCONNECT OF THE MASTER DRIVER TO OTHER DRIVERS/TNMC'S IN A MULTI DRIVER SCOREBOARD CONFIGURATION. SEE THE PRE-PAINT ASSEMBLY DRAWING AND/OR THE FINAL ASSEMBLY DRAWING FOR THE PART NUMBERS OF THE INTERCONNECT HARNESSES NEEDED AND INSTALLATION INSTRUCTIONS.

REV.	DATE	DESCRIPTION	BY	APPR.
02	08 MAY-03	CHANGED TNMC TEXT TO NEW GEN 3 AND ADDED NOTE.	TAS	MWM
01	20 FEB 03	CORRECTED SPELLING ON NEUT. ADDED 16 COL. WIDE PART NUMBERS.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: SCHEMATIC; GEN III, OD LED, 3 DRV W/ TNMC

DES. BY:

DRAWN BY: ALINDHO

DATE: 18 DEC 02

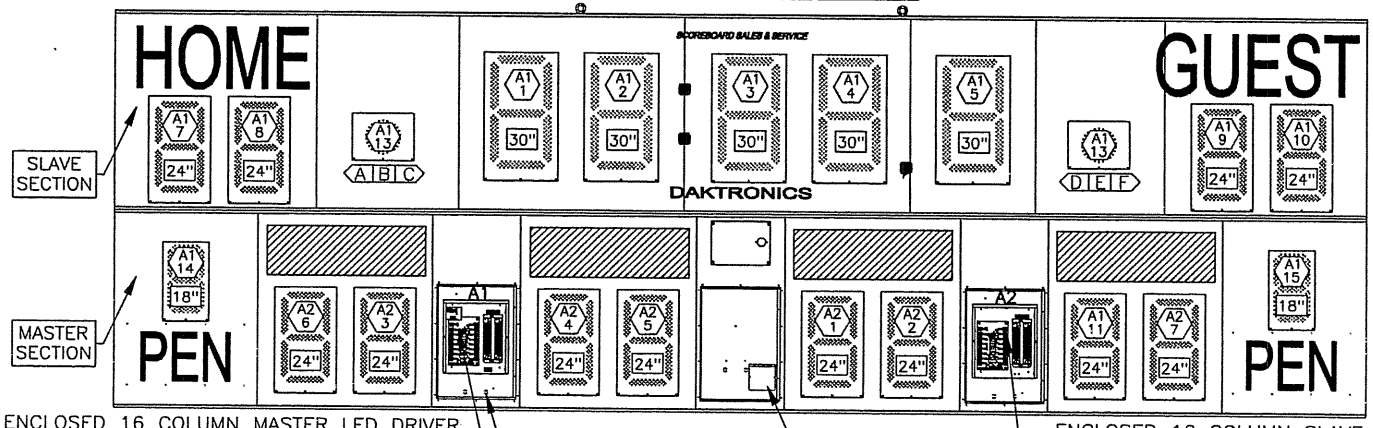
APPR. BY:

SCALE: NONE

REVISION

1192-R10A-180081

SO-1930-11/-21



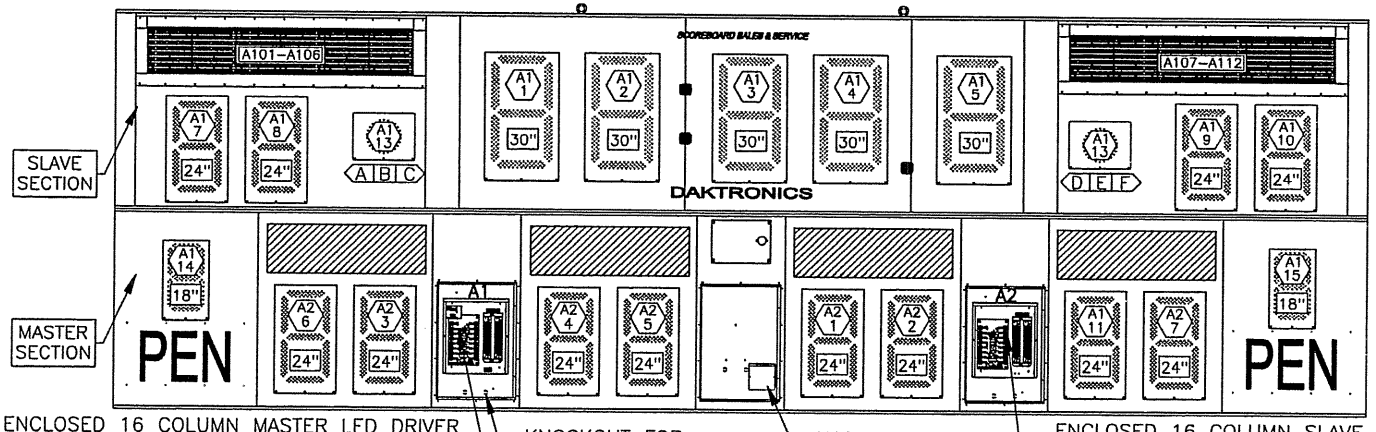
ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

SO-1930-11/-21 W/ LED TNMC



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-1930-11/-21

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 23DEC02

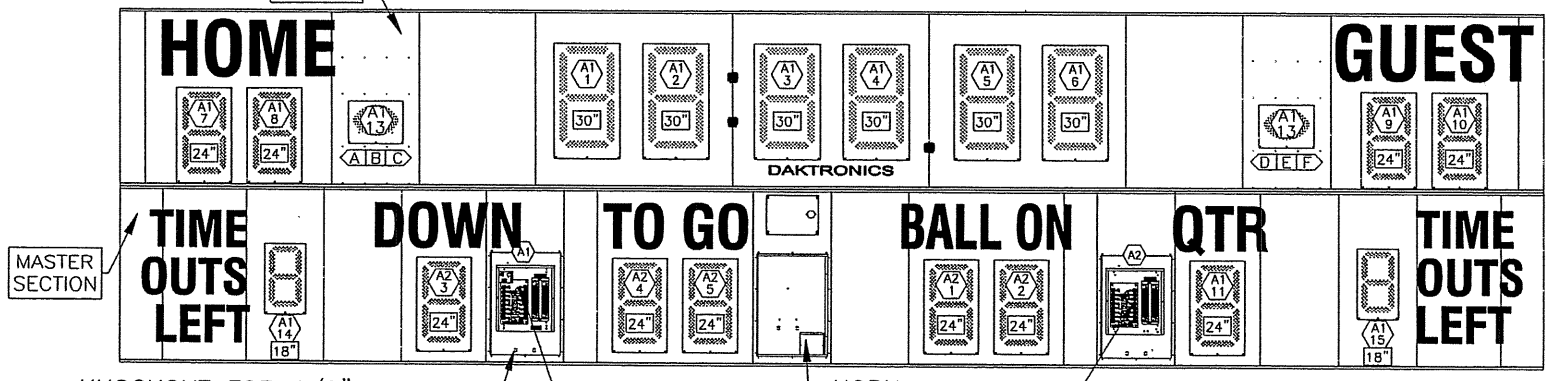
APPR. BY:

SCALE: 1=45

REVISION

1192-R08A-180366

FB-1830L-11/-21



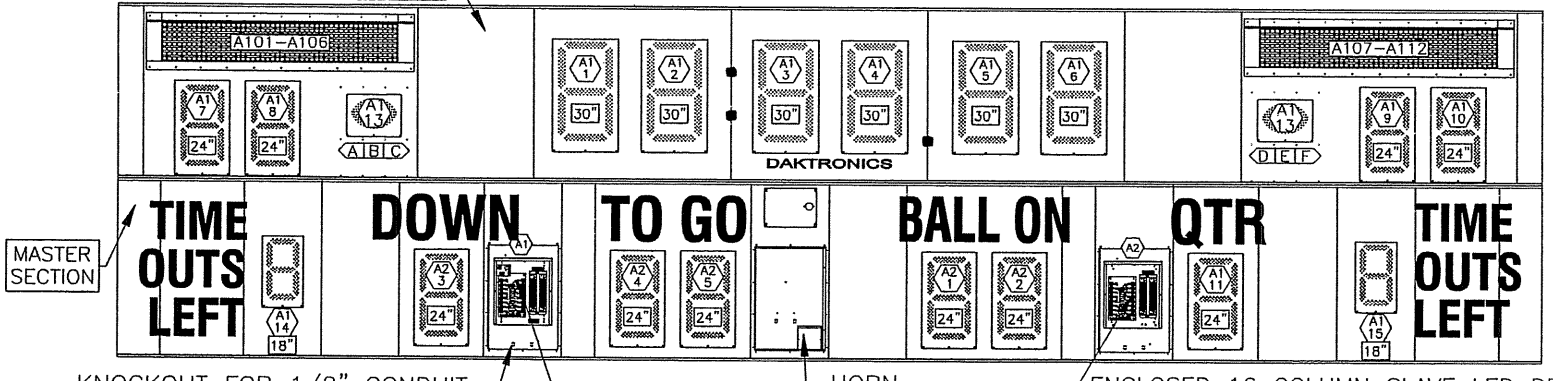
KNOCKOUT FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

FB-1830L-11/-21 W/ TNMC



KNOCKOUT FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

⟨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 THE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION	APPR.	BY:
SCALE: 1=50		

1192-R08A-180441

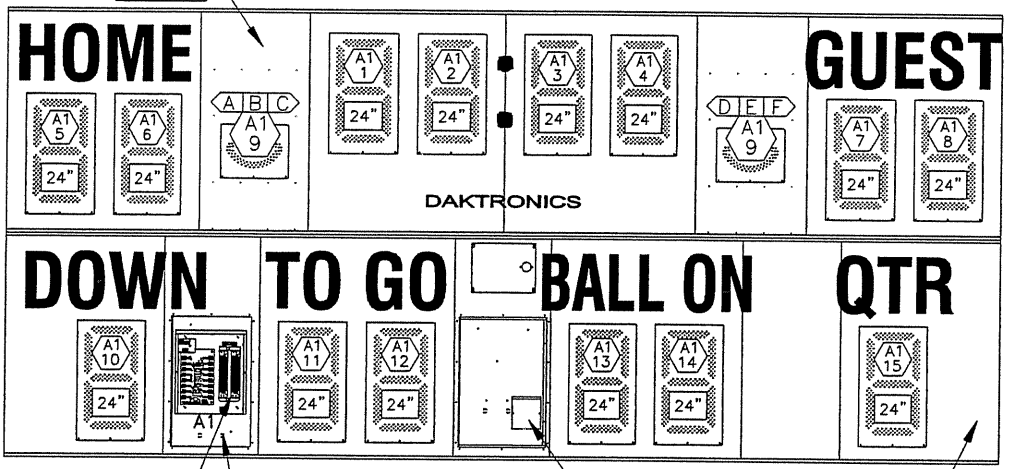
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-1830L-11/-21, G3

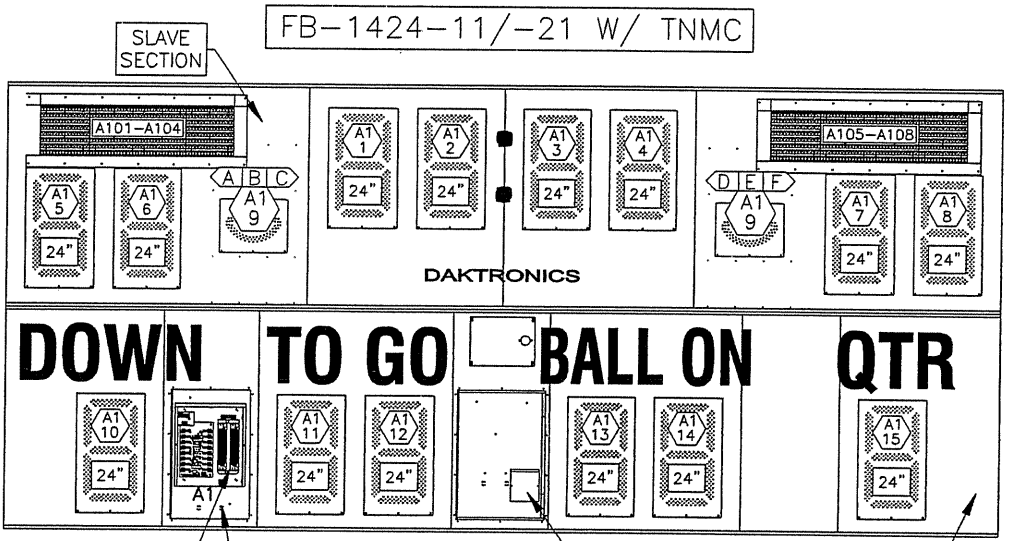
DES: BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 10APR03

FB-1424-11/-21



FRONT VIEW

FB-1424-11/-21 W/ TNMC



FRONT VIEW

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 THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

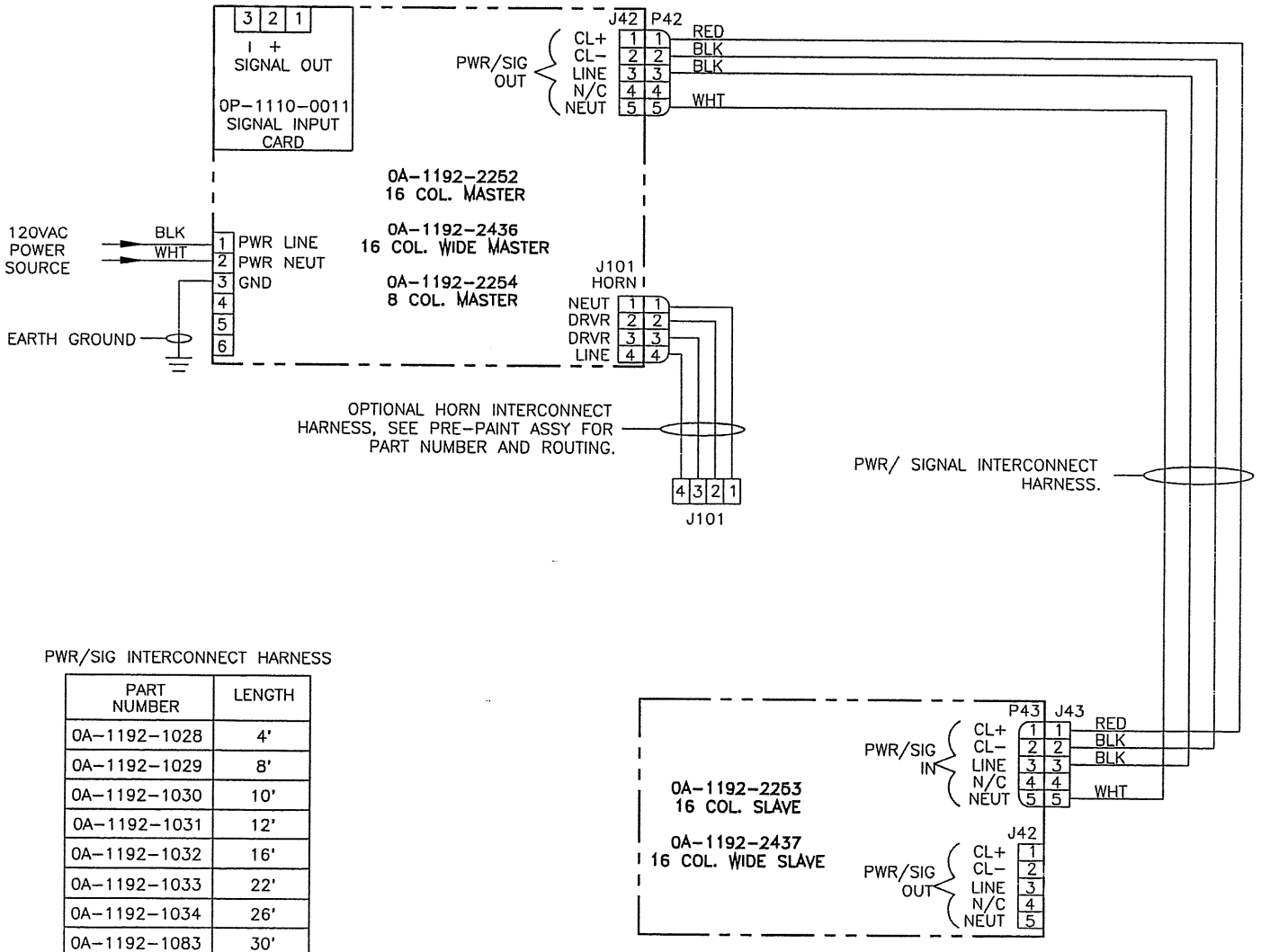
TITLE: COMPONENT LOCATIONS; FB-1424-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 30DEC02

REVISION 00 APPR. BY: SCALE: 1=40

1192-R08A-180606

REV.	DATE	DESCRIPTION	BY	APPR.



PWR/SIG INTERCONNECT HARNESS

PART NUMBER	LENGTH
0A-1192-1028	4'
0A-1192-1029	8'
0A-1192-1030	10'
0A-1192-1031	12'
0A-1192-1032	16'
0A-1192-1033	22'
0A-1192-1034	26'
0A-1192-1083	30'
0A-1192-1084	35'

THIS SCHEMATIC REPRESENTS THE INTERCONNECT OF THE MASTER DRIVER TO OTHER DRIVERS/TNMC'S IN A MULTI DRIVER SCOREBOARD CONFIGURATION. SEE THE PRE-PAINT ASSEMBLY DRAWING AND/OR THE FINAL ASSEMBLY DRAWING FOR THE PART NUMBERS OF THE INTERCONNECT HARNESSES NEEDED AND INSTALLATION INSTRUCTIONS.

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 FEB 03	CORRECTED SPELLING ON NEUT. ADDED 16 COL. WIDE PART NUMBERS.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; GEN III, O.D. LED, 2 DRVR DISPLAY

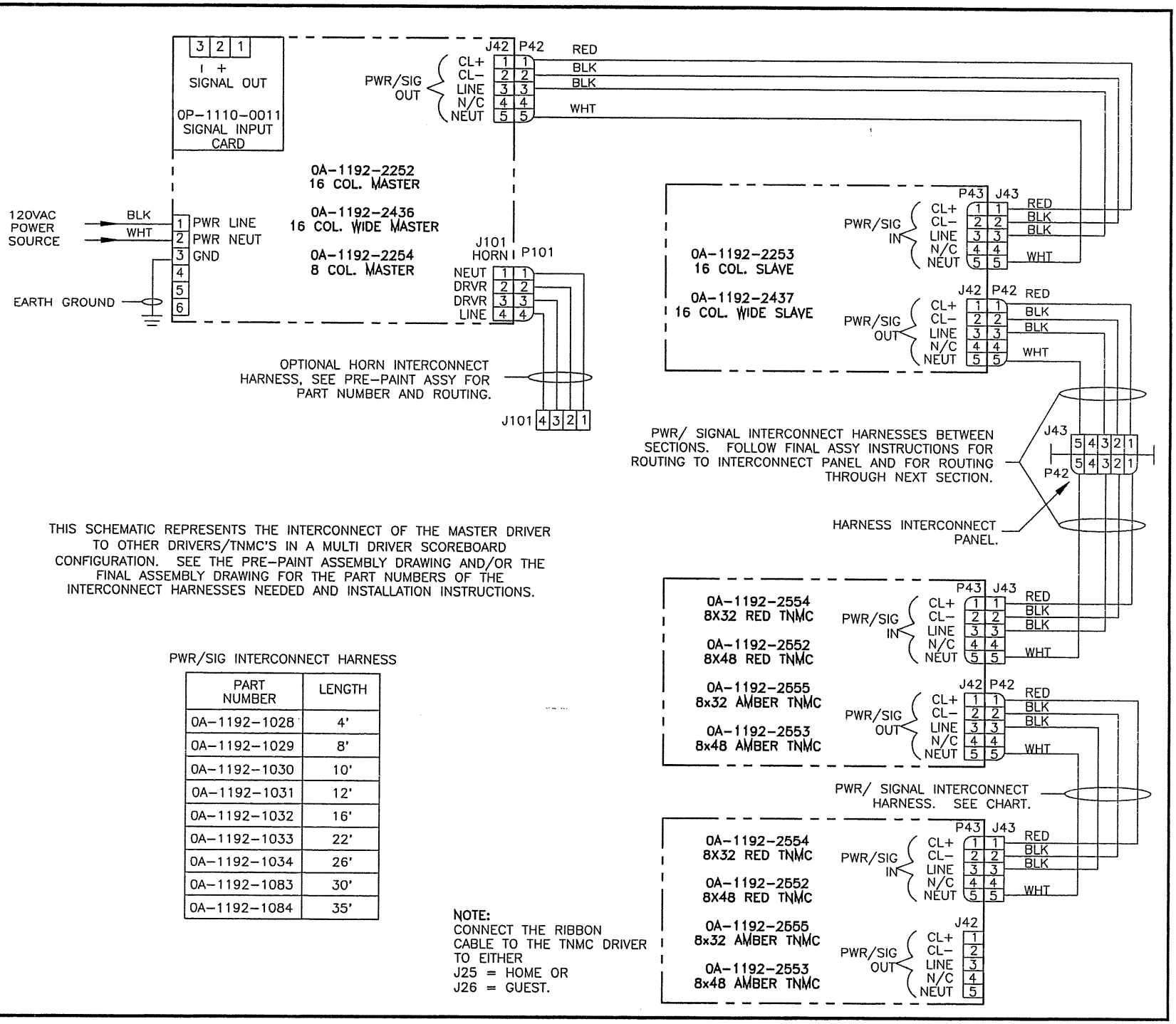
DES. BY: MMILLER DRAWN BY: MMILLER DATE: 03 JAN 02

APPR. BY:

SCALE: NONE

REVISION

1192-R10A-180637



PWR/SIG INTERCONNECT HARNESS

PART NUMBER	LENGTH
0A-1192-1028	4'
0A-1192-1029	8'
0A-1192-1030	10'
0A-1192-1031	12'
0A-1192-1032	16'
0A-1192-1033	22'
0A-1192-1034	26'
0A-1192-1083	30'
0A-1192-1084	35'

NOTE:
CONNECT THE RIBBON
CABLE TO THE TNMC DRIVER
TO EITHER
J25 = HOME OR
J26 = GUEST.

REV.	DATE	DESCRIPTION	BY	APPR.
02	08 MAY-03	CHANGED TNMC TEXT TO NEW GEN 3 AND ADDED NOTE.	TAS	MWM
01	20 FEB 03	CORRECTED SPELLING ON NEUT. ADDED 16 COL. WIRE PART NUMBERS.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; GEN III, OD LED, 2 DRVR /W TNMC

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 03 JAN 03

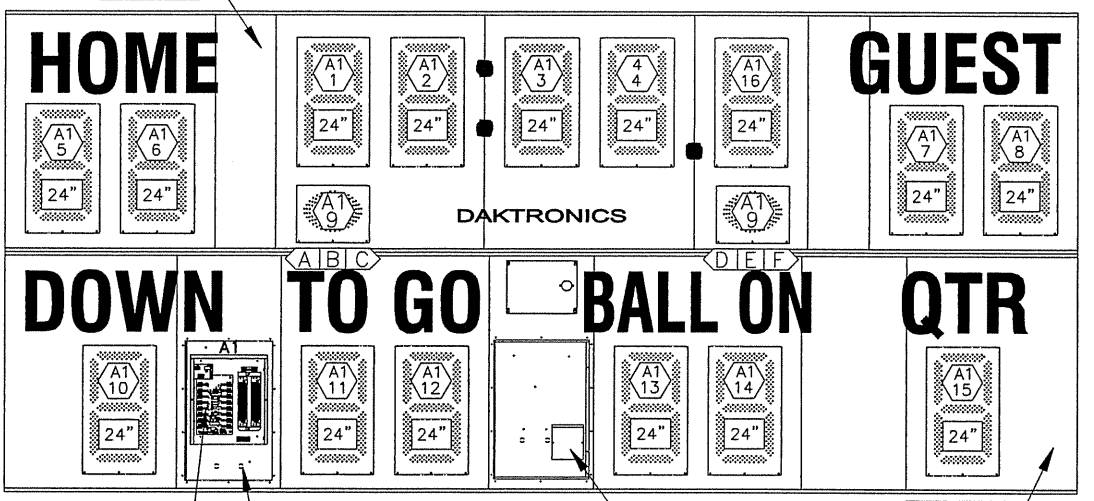
APPR. BY:

SCALE: NONE

REVISION

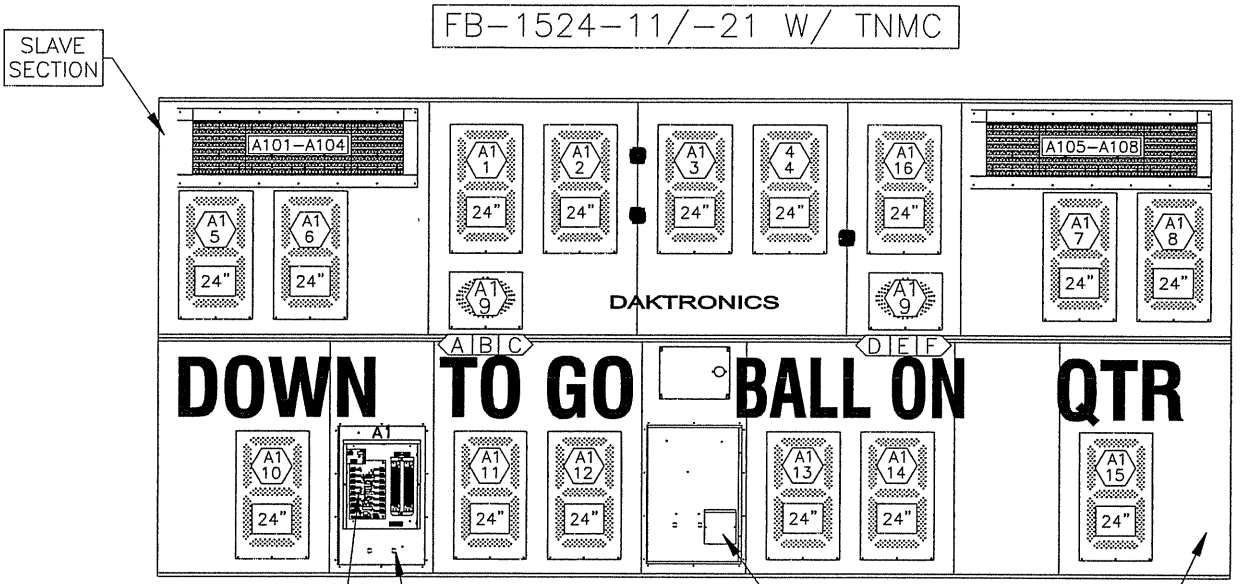
1192-R10A-180688

FB-1524-11/-21



FRONT VIEW

FB-1524-11/-21 W/ TNMC



FRONT VIEW

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 THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-1524-11/-21, G3

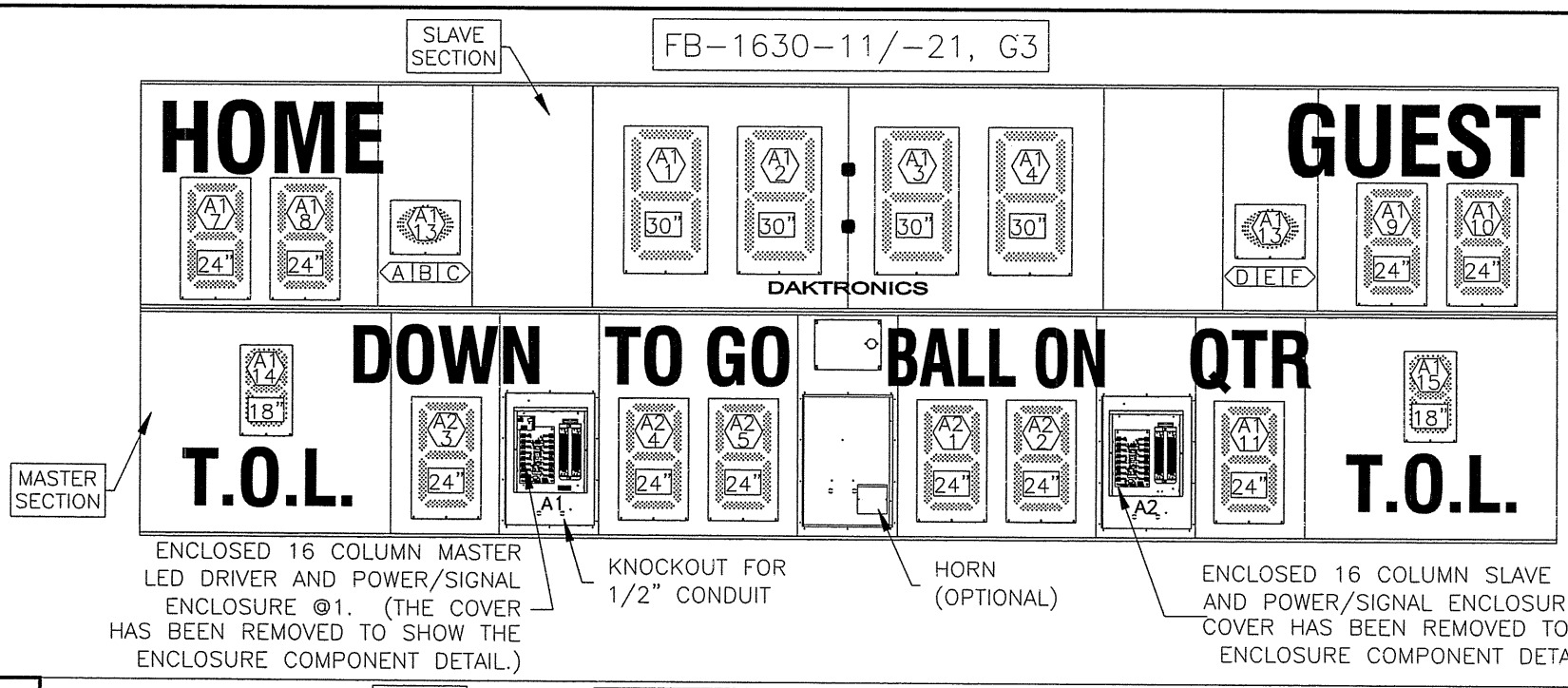
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 20JAN03

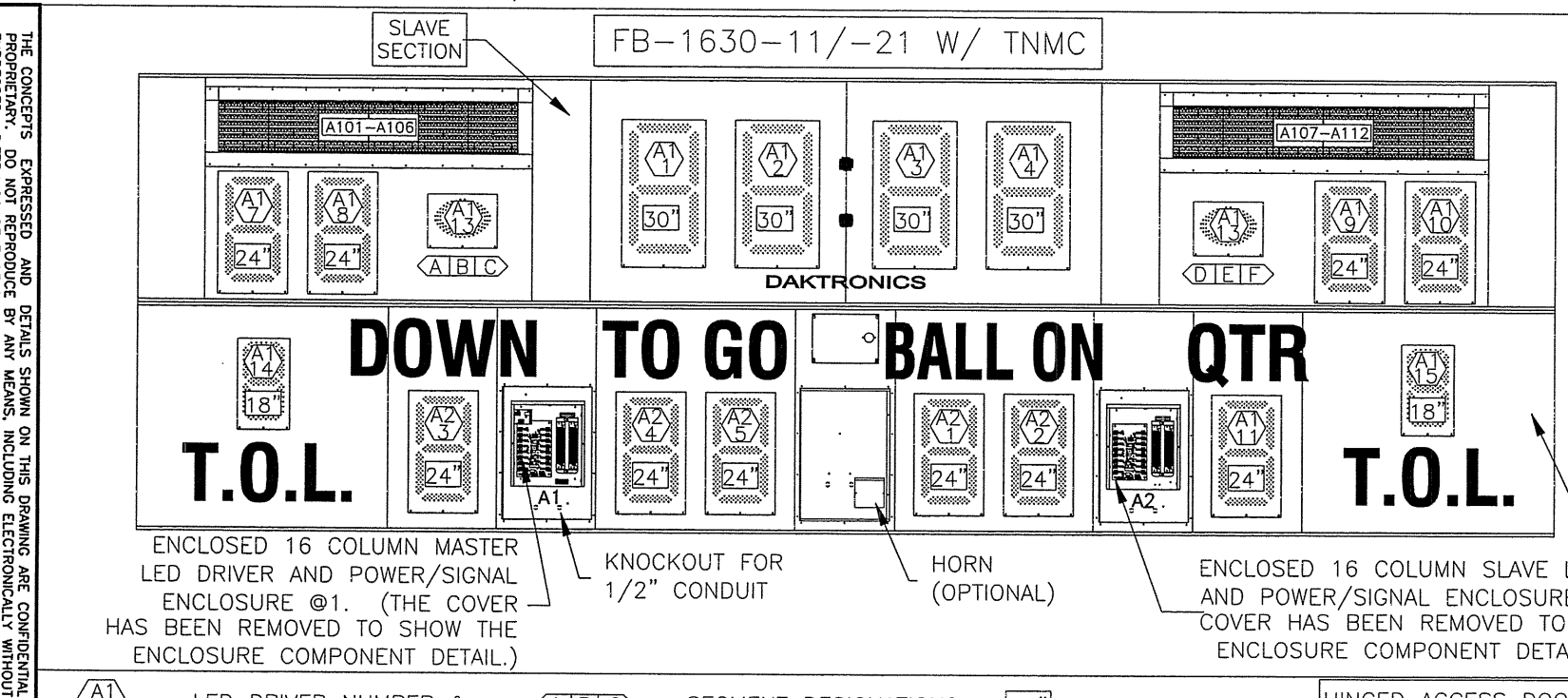
REVISION APPR. BY:

SCALE: 1=40

1192-R08A-181757

REV.	DATE	DESCRIPTION	BY	APPR.





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 ANDTHE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-1630-11/-21, G3

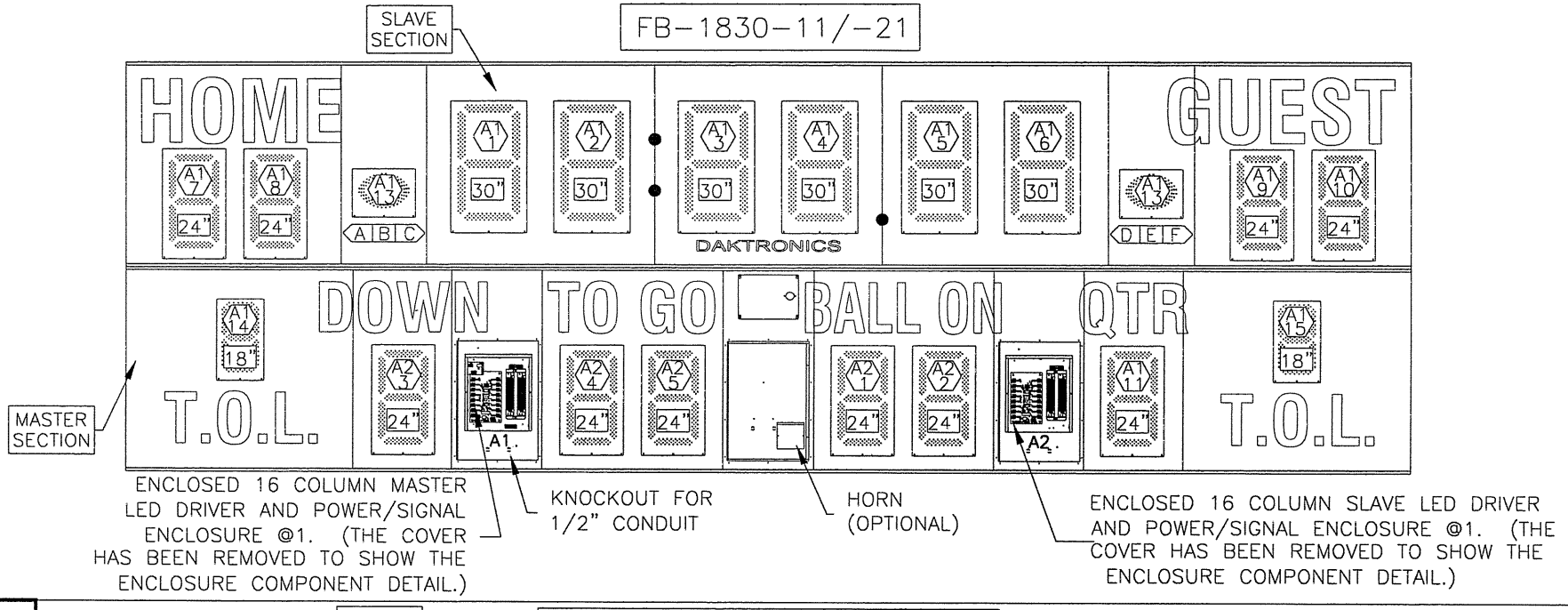
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 20JAN03

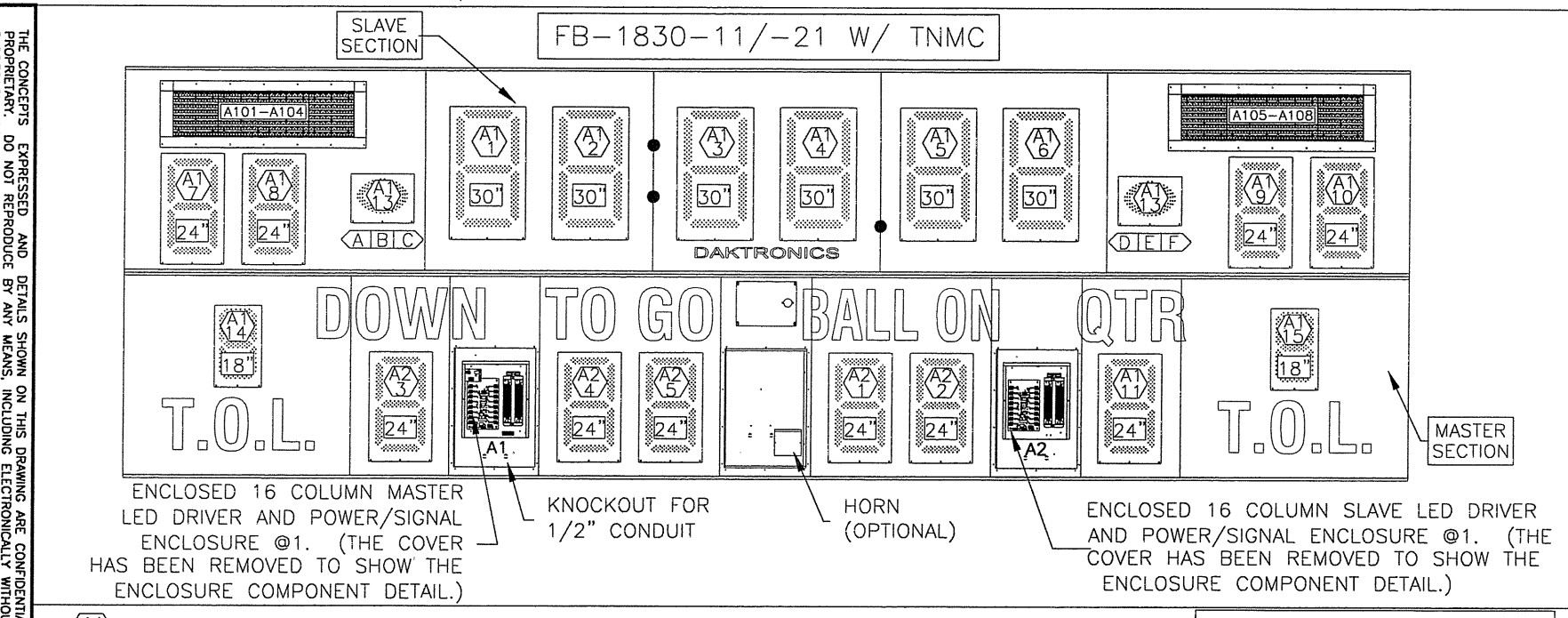
REVISION

APPR. BY:

SCALE: 1=40

1192-R08A-181807





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 ANDTHE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
00				

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

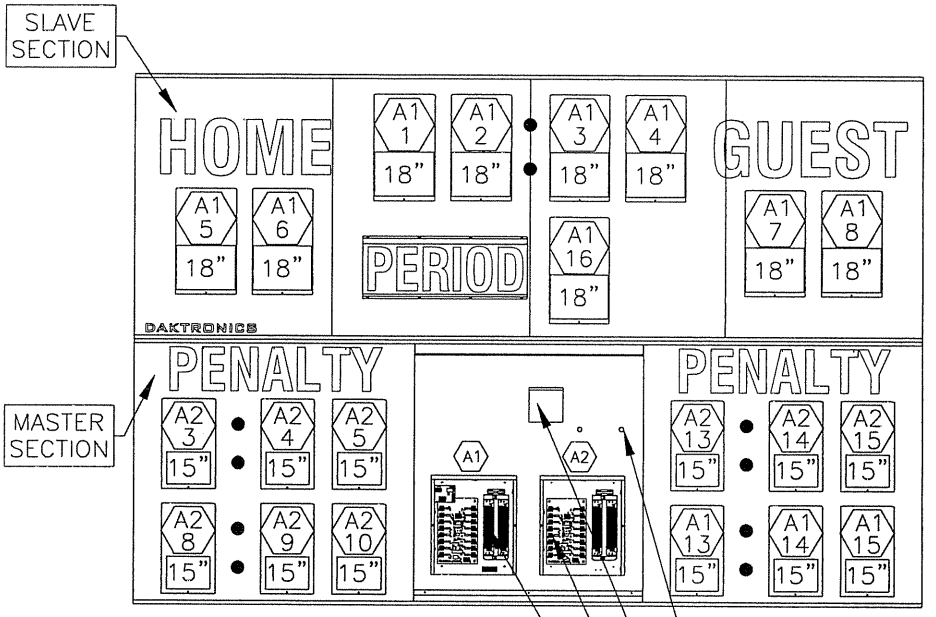
TITLE: COMPONENT LOCATIONS; FB-1830-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 20JAN03

SCALE: 1=40 APPR. BY:

1192-R08A-181940

MS-2118-11/-21



FRONT VIEW

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

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

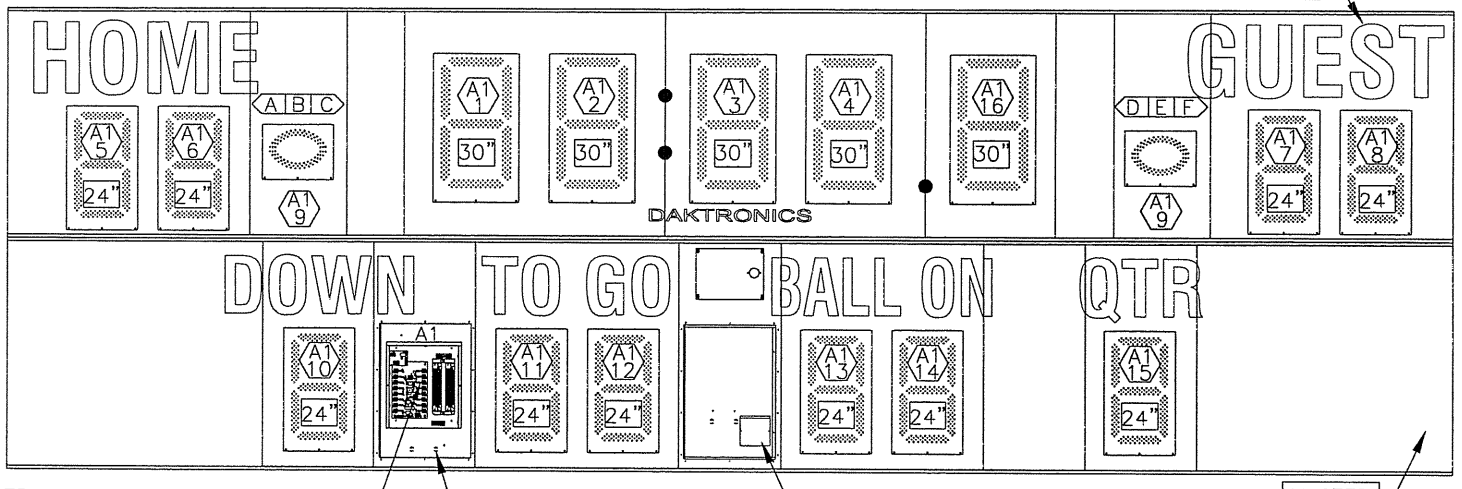
TITLE: COMPONENT LOCATIONS; MS-2118-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 23JAN03

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 | APPR. BY: | SCALE: 1=35

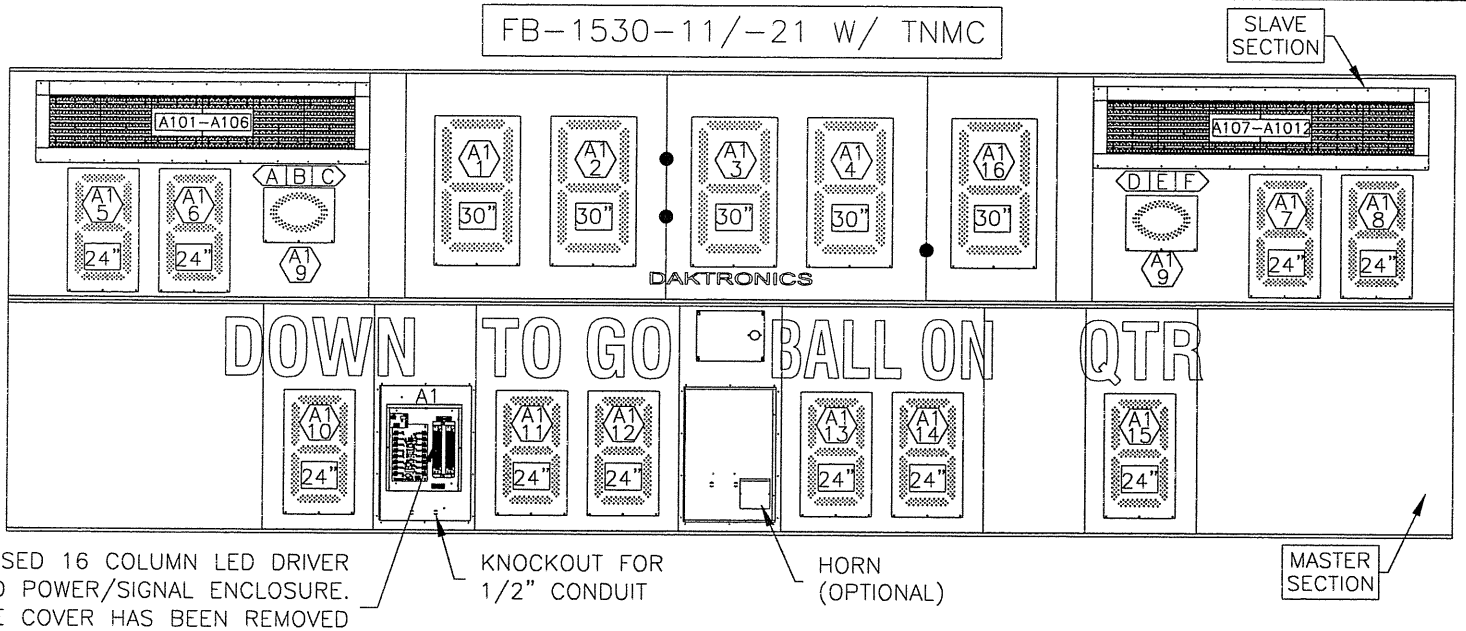
1192-R08A-182031



ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)



ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

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.
00				

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

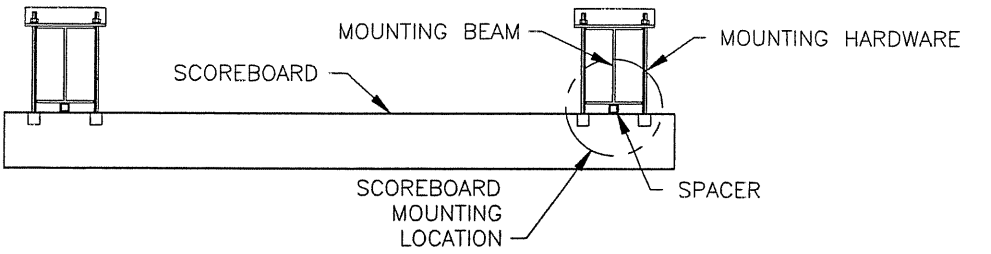
TITLE: COMPONENT LOCATIONS; FB-1530-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 31JAN03

REVISION

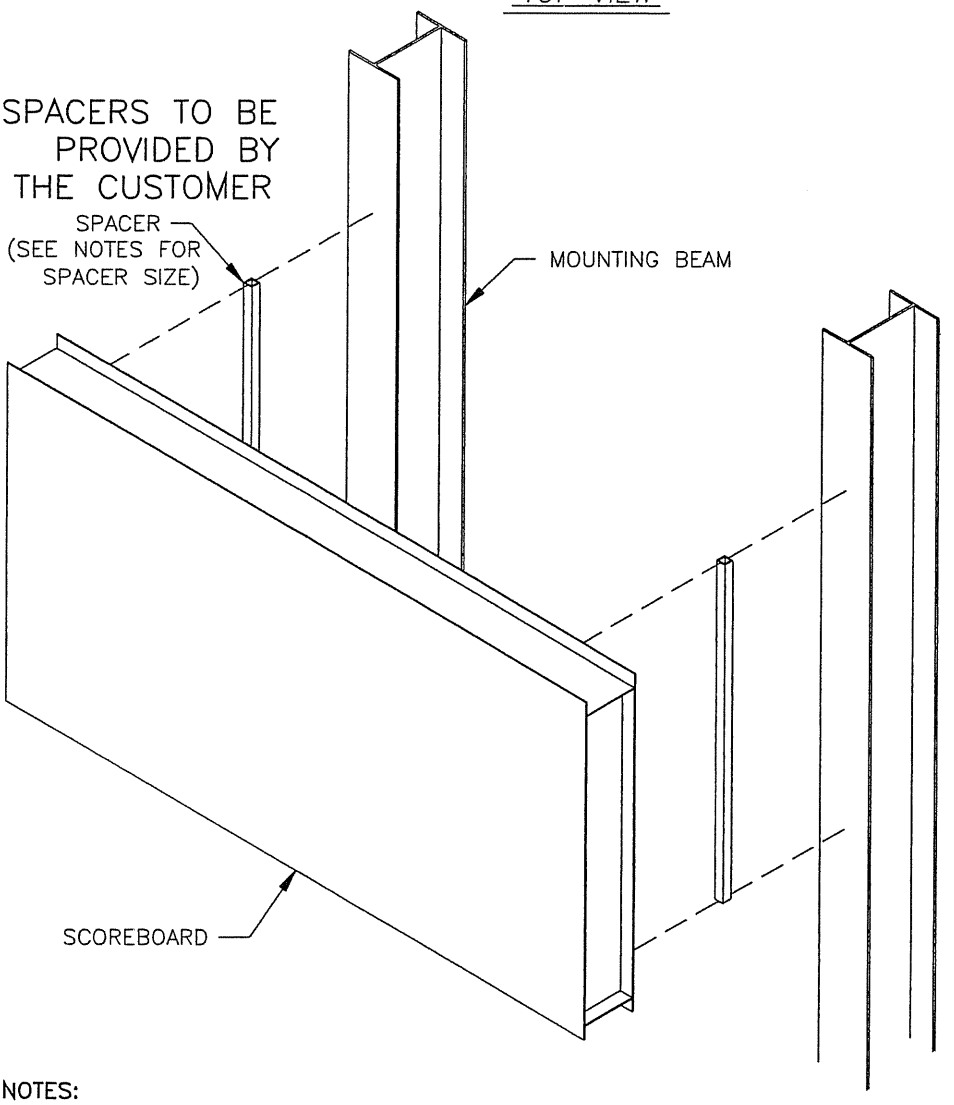
SCALE: 1=40 APPR. BY:

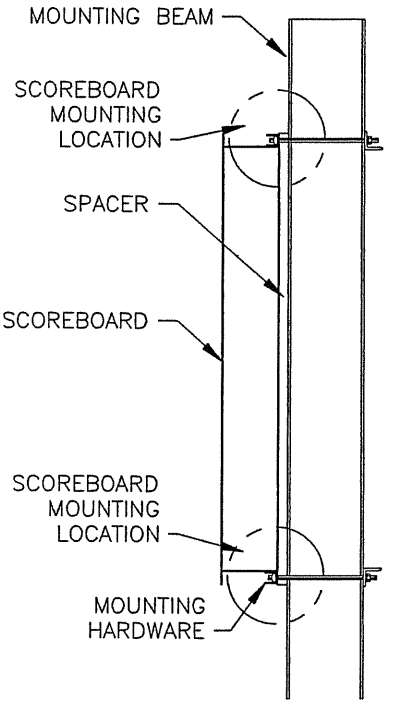
1192-R08A-182405



TOP VIEW

SPACERS TO BE PROVIDED BY THE CUSTOMER





SIDE VIEW

NOTES:
-SPACER SIZE CANNOT EXCEED THE HEIGHT OF THE SCOREBOARD BUT DOES NOT HAVE TO BE THE SAME HEIGHT AS THE SCOREBOARD. SMALLER LENGTHS OF SPACER MATERIAL MAY BE USED AS LONG AS THEY ARE USED AT THE TOP AND BOTTOM SCOREBOARD MOUNTING LOCATIONS. SPACERS SHOWN ABOVE ARE 1"X1". TYPICALLY, THE SPACER DEPTH WILL BE DETERMINED BY THE DIFFERENCE IN DEPTH OF THE SCOREBOARD AND THE AD PANEL (AD PANEL DEPTH - SCOREBOARD DEPTH = SPACER DEPTH).
-THE SPACERS ARE TO BE PROVIDED BY THE CUSTOMER.
-THE SPACERS ARE TO BE PLACED BETWEEN THE SCOREBOARD AND THE MOUNTING POLE.
-THE SPACERS DO NOT NEED TO BE MECHANICALLY ATTACHED TO THE SCOREBOARD OR THE MOUNTING BEAM. THEY WILL BE COMPRESSED BETWEEN THE SCOREBOARD AND THE MOUNTING BEAM WHEN THE SCOREBOARD IS MOUNTED.
-REFER TO THE SCOREBOARD MANUAL FOR THE SCOREBOARD MOUNTING HARDWARE AND OTHER SCOREBOARD MOUNTING DETAILS.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: SCOREBOARD MTG; SCOREBOARD WITH SPACERS

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 07FEB03

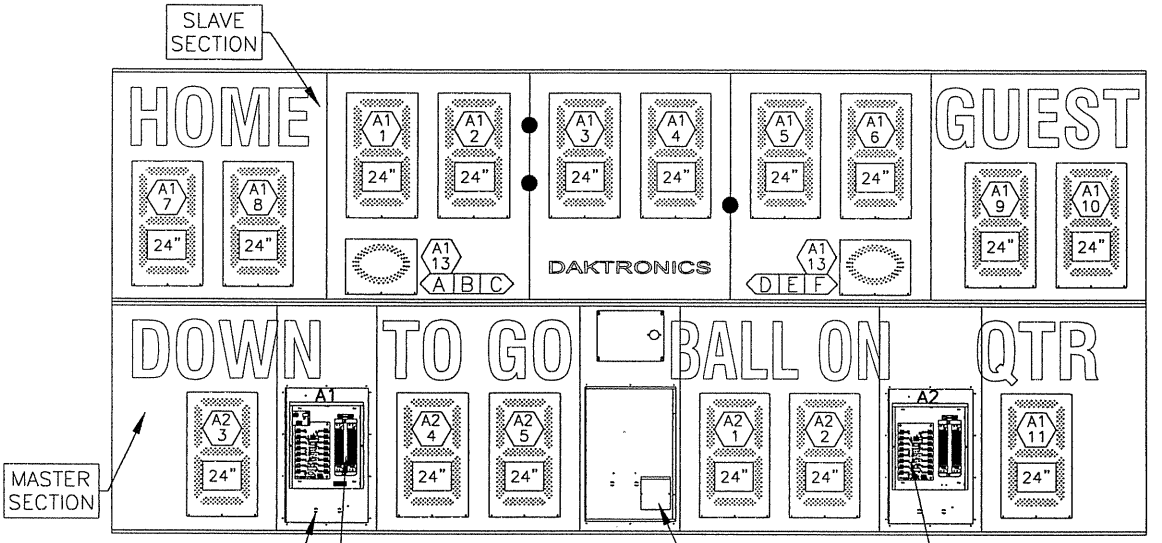
REV.	DATE	DESCRIPTION	BY	APPR.

REVISION APPR. BY:

SCALE: 1=20

1192-R08A-182909

FB-1624-11/-21



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

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 THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-1624-11/-21, G3

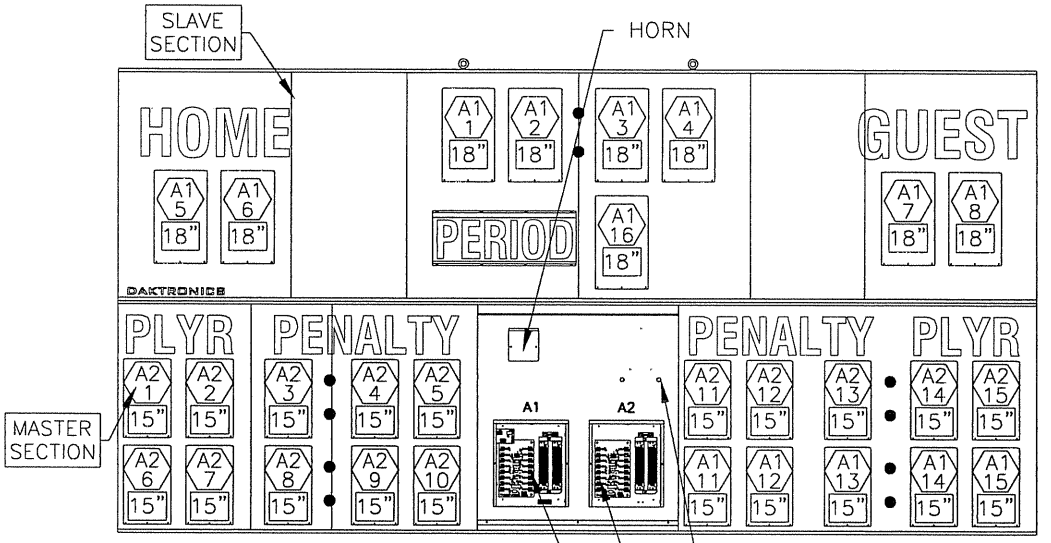
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 10FEB03

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 | APPR. BY: | SCALE: 1=40

1192-R08A-183010

MS-2918-11/-21



FRONT VIEW

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

[24"] = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
01	24OCT	MOVED TOP SET OF DIGITS ON BOTTOM SECTION DOWN 1.000"	03	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2918-11/-21, G3

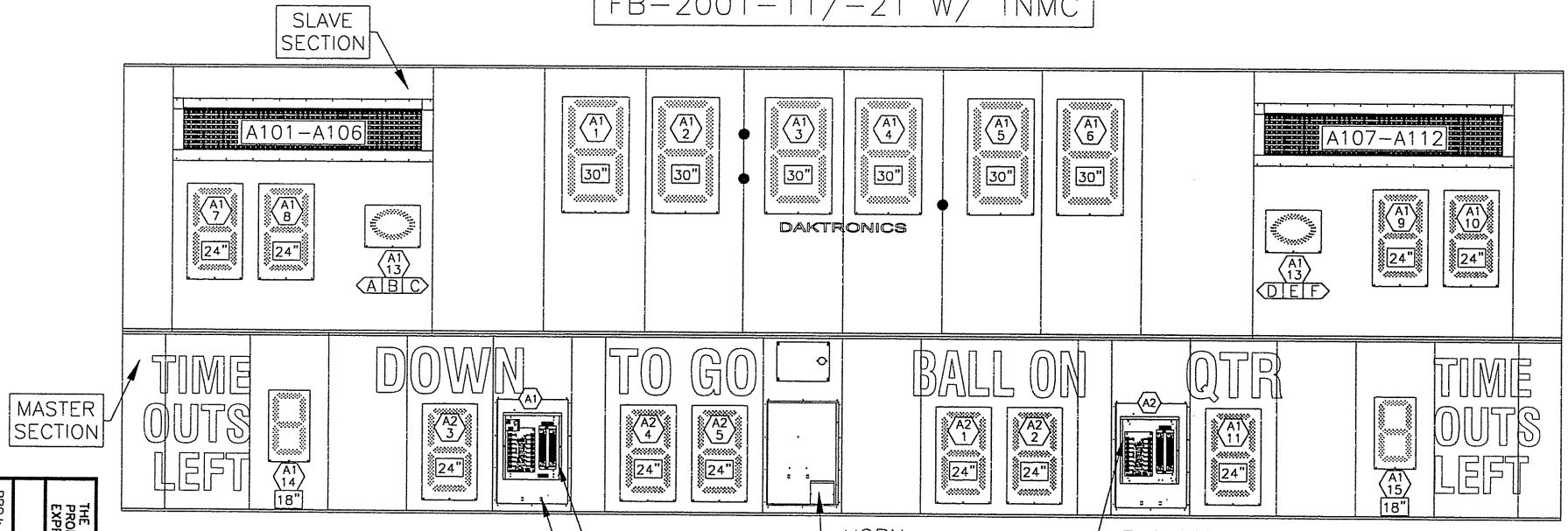
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 10FEB03

REVISION 01 APPR. BY:

SCALE: 1=40

1192-R08A-183029

FB-2001-11/-21 W/ 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 THE POWER AND SIGNAL ENVLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
01	07AUG03	UPDATED TNMC COMPONENTS	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2001-11/-21 W/ TNMC, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 12MAR03

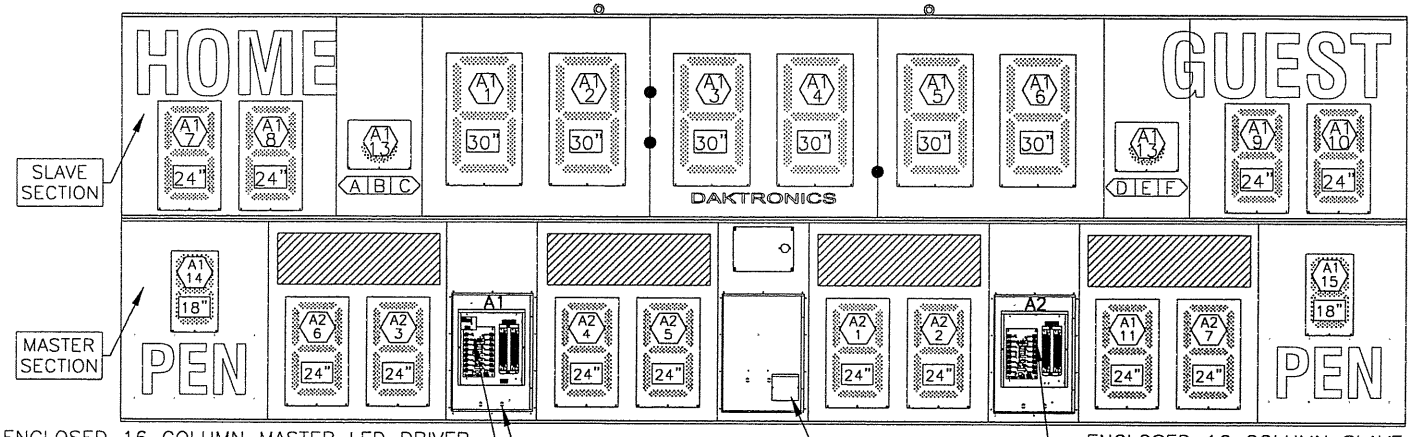
APPR. BY:

SCALE: 1=45

REVISION 01

1192-R08A-18837

SO-2030-11/-21



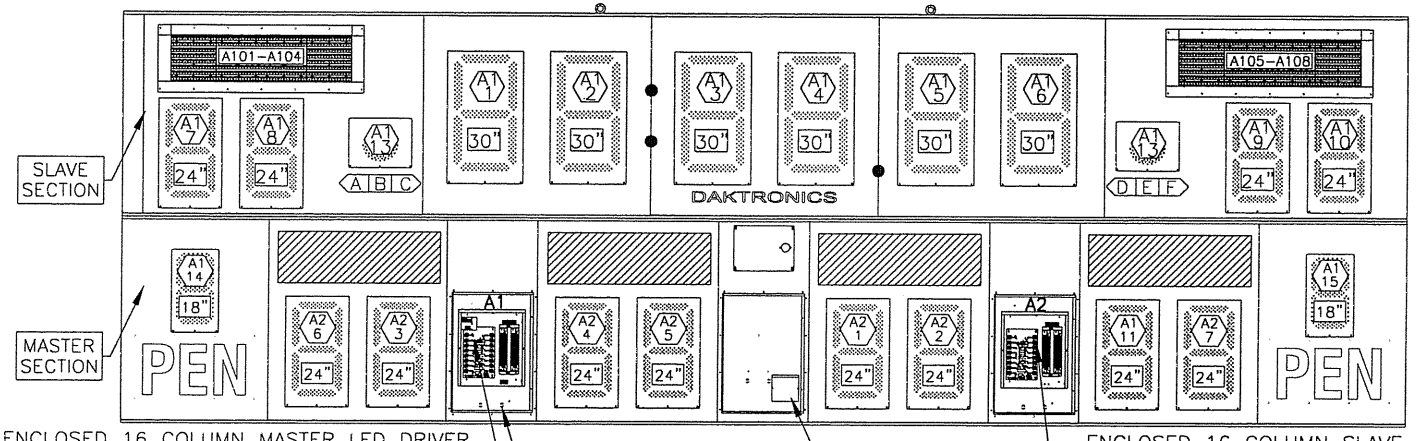
ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

SO-2030-11/-21 W/ TNMC



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

(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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-2030-11/-21

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 13MAR03

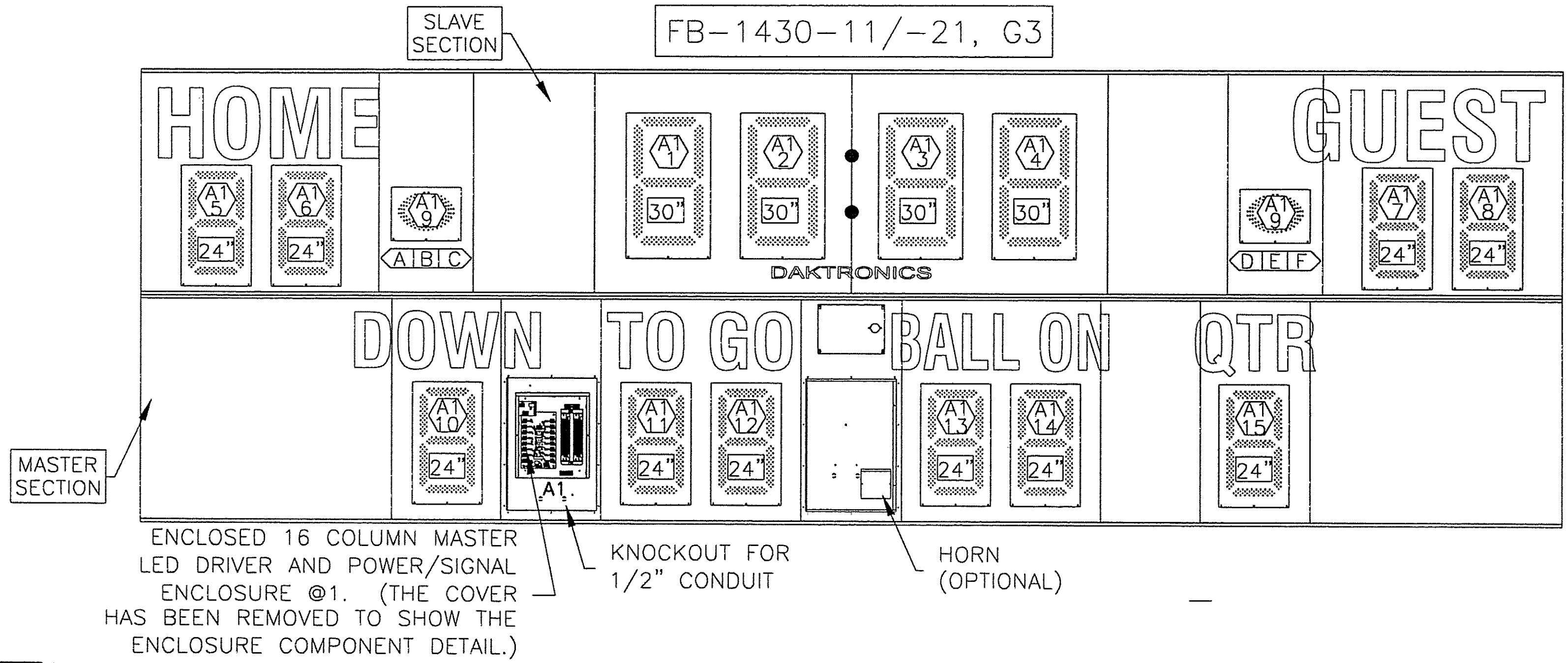
APPR. BY:

SCALE: 1=45

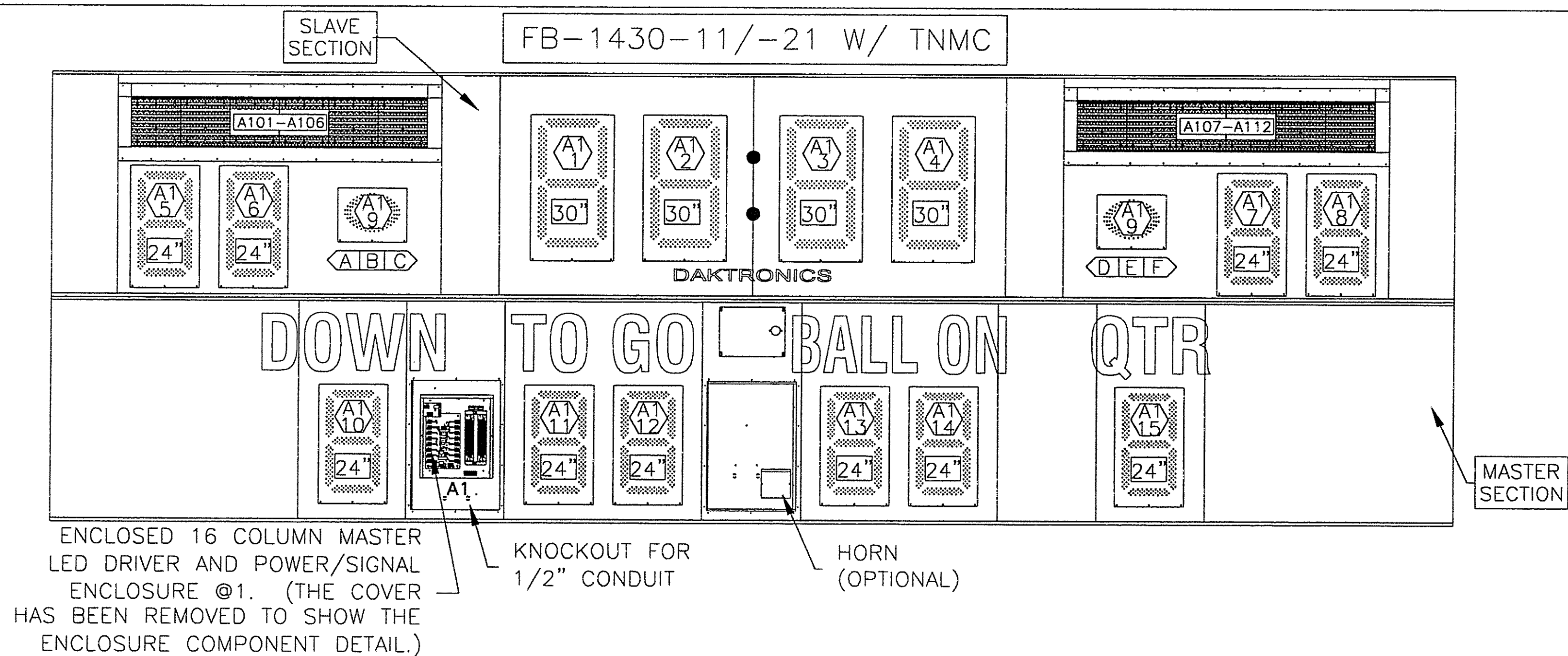
REVISION 00

1192-R08A-184900

FB-1430-11/-21, G3



FB-1430-11/-21 W/ 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 ANDTHE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

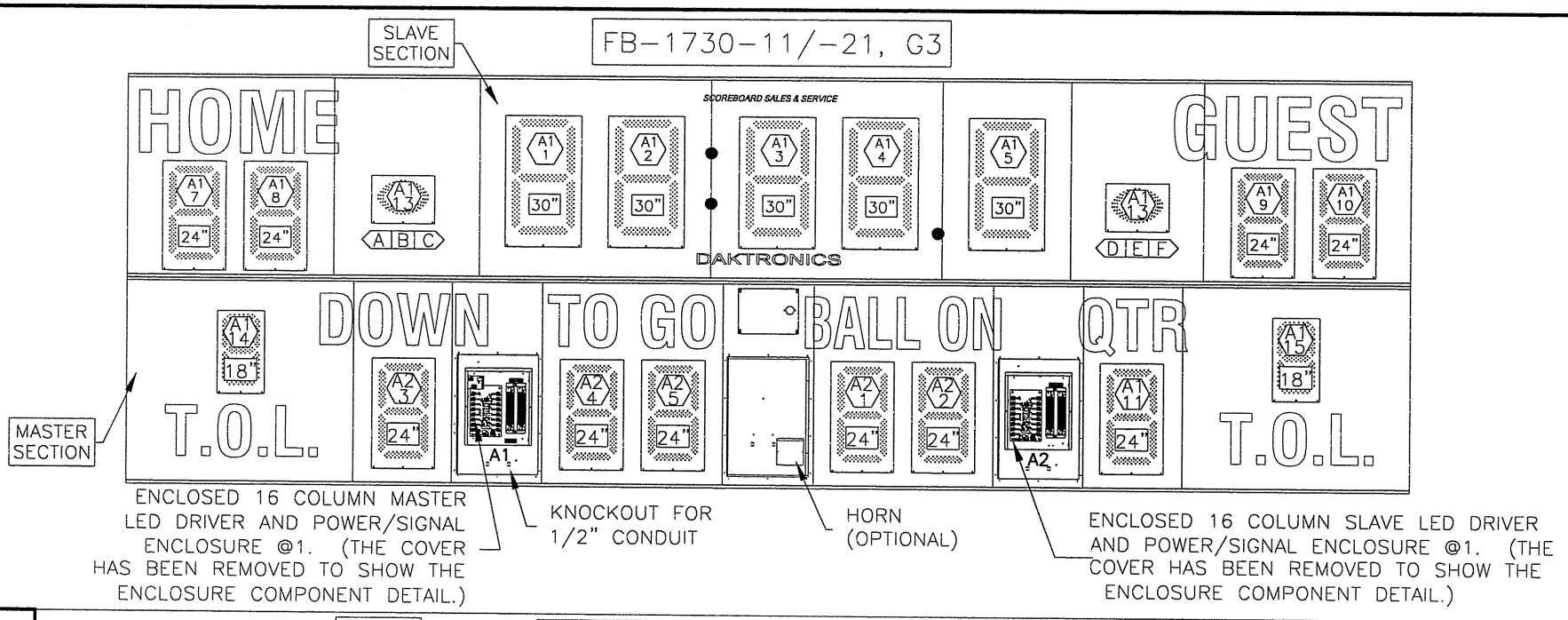
PROJ: OUTDOOR LED SCOREBOARDS

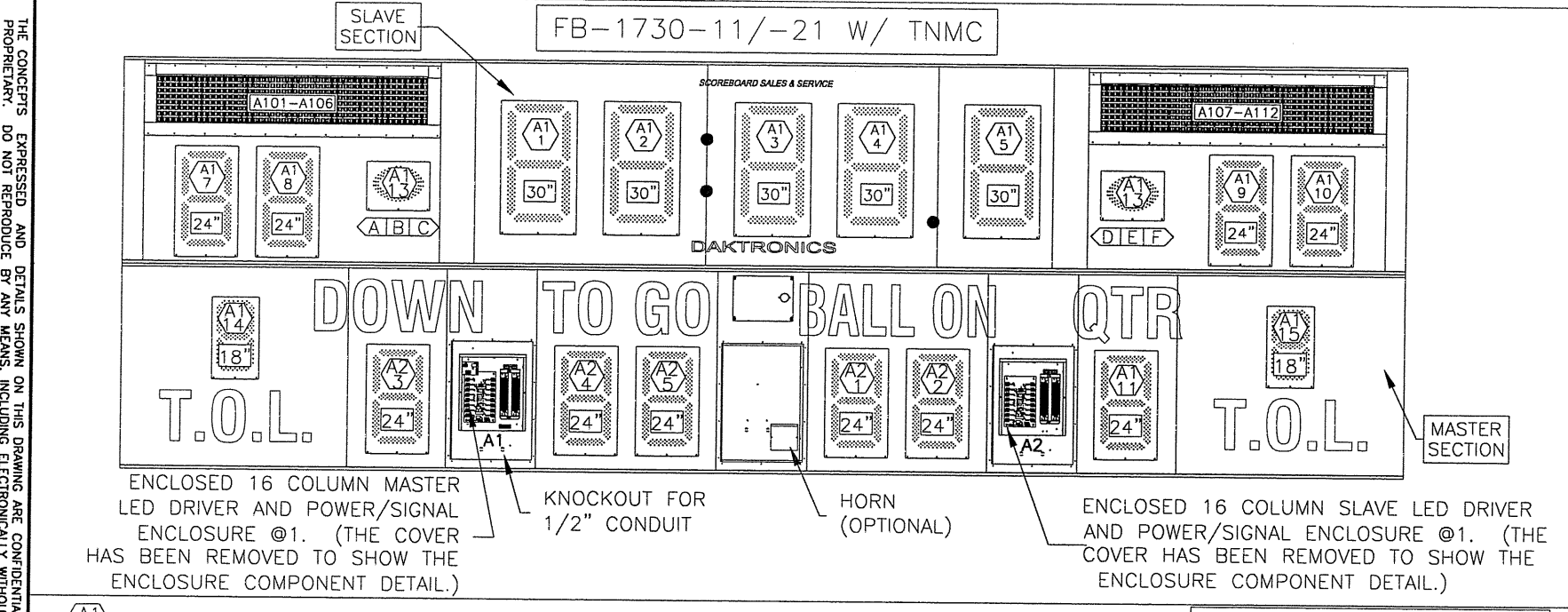
TITLE: COMPONENT LOCATIONS; FB-1430-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 21MAR03

REVISION 00 APPR. BY: SCALE: 1=40

1192-R08A-185439





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 ANDTHE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
00				

REVISION

SCALE: 1=40

APPR. BY:

DRAWN BY: MCOPLAN

DATE: 21MAR03

DES. BY: MCOPLAN

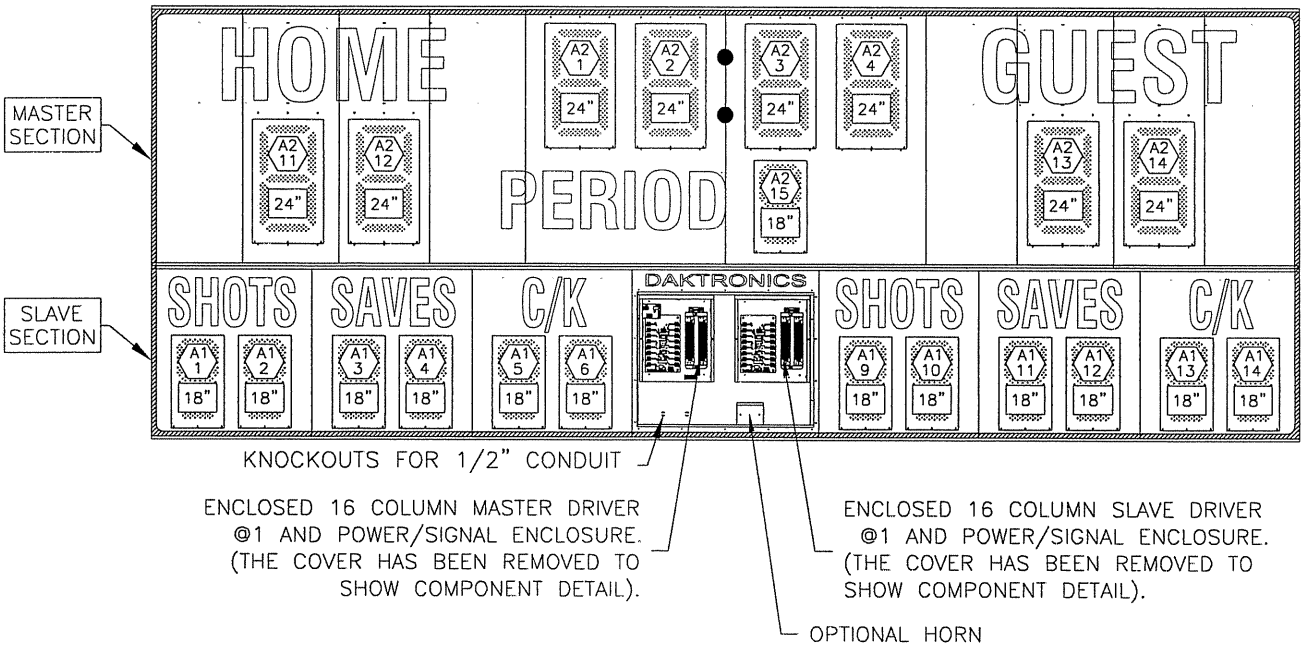
TITLE: COMPONENT LOCATIONS; FB-1730-11/-21, G3

PROJ: OUTDOOR LED SCOREBOARDS

DAKTRONICS, INC. BROOKINGS, SD 57006

1192-R08A-18544 6

SO-2011-11/-21



FRONT VIEW

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

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

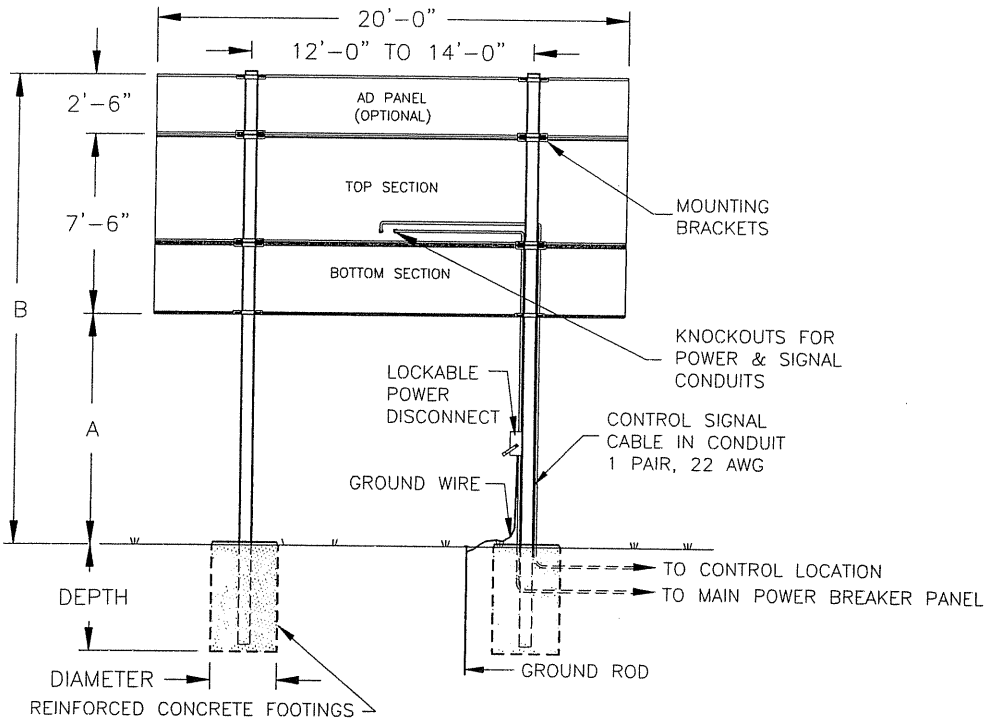
TITLE: COMPONENT LOCATIONS; SO-2011-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 21APR03

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 | APPR. BY: | SCALE: 1=40

1192-R08A-186096



REAR VIEW

ELECTRICAL

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

SO-2011

VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY 70 MPH	80 MPH	90 MPH	100 MPH
10 FT	NONE	17'-6"	BEAM	W6X20	W8X24	W8X24	W12X26
			FOOTING	2.0'X6.7'	2.0'X8.2'	2.0'X8.9'	2.0'X9.7'
	2'-6"	20'-0"	BEAM	W12X26	W14X30	W8X31	W10X33
			FOOTING	2.0'X8.4'	2.5'X8.5'	2.5'X9.3'	2.5'X10.1'
14 FT	NONE	21'-6"	BEAM	W12X26	W14X30	W8X31	W10X33
			FOOTING	2.5'X7.4'	2.5'X8.2'	2.5'X9.0'	2.5'X9.7'
	2'-6"	24'-0"	BEAM	W8X31	W14X38	W10X39	W14X43
			FOOTING	2.5'X8.4'	2.5'X9.3'	2.5'X10.1'	2.5'X10.9'
18FT	NONE	25'-6"	BEAM	W10X31	W10X39	W10X39	W14X47
			FOOTING	2.5'X8.1'	2.5'X8.9'	2.5'X9.7'	2.5'X10.5'
	2'-6"	28'-0"	BEAM	W10X39	W12X45	W10X49	W12X53
			FOOTING	2.5'X9.0'	2.5'X9.9'	2.5'X10.8'	2.5'X11.7'

FOOTING = DIAMETER X DEPTH

ASSUMPTIONS:
-UBC 97 BUILDING CODE
-SOIL CLASS 4 (200 psf X 2 ALLOWABLE LATTERAL BEARING PRESSUDE)

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.

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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANCESCENT SCOREBOARDS

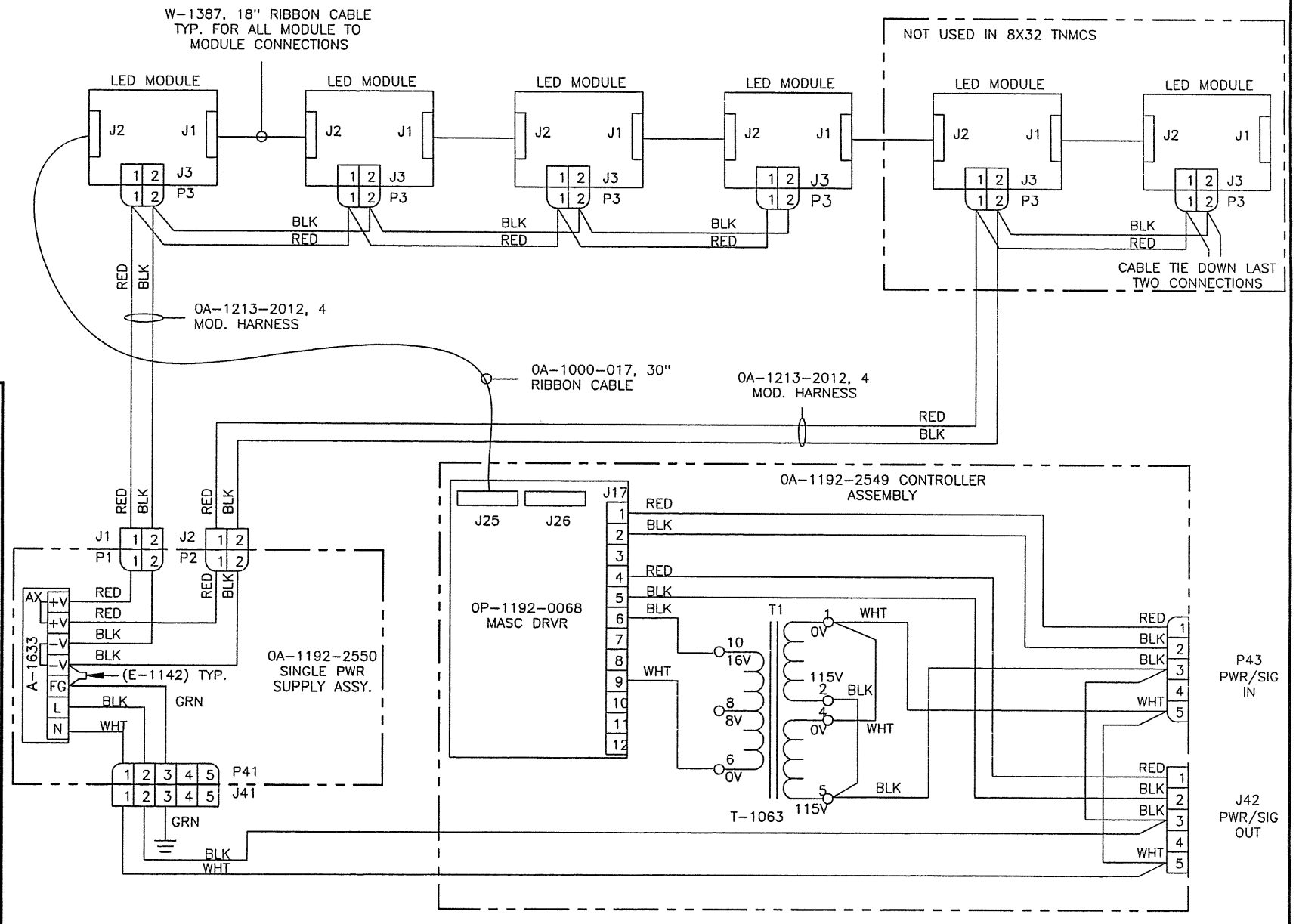
TITLE: INSTALLATION SPECIFICATIONS, SO-2011

DES. BY: MCOPL/RNEYENS DRAWN BY: MCOPL DATE: 16APR03

REVISION | APPR. BY: | SCALE: 1/8"=1' | 1091-E10A-187149

REV.	DATE	DESCRIPTION	BY	APPR.

0A-1192-2554 – 8X32 RED LED TNMC, GEN III
0A-1192-2552 – 8X48 RED LED TNMC, GEN III



REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

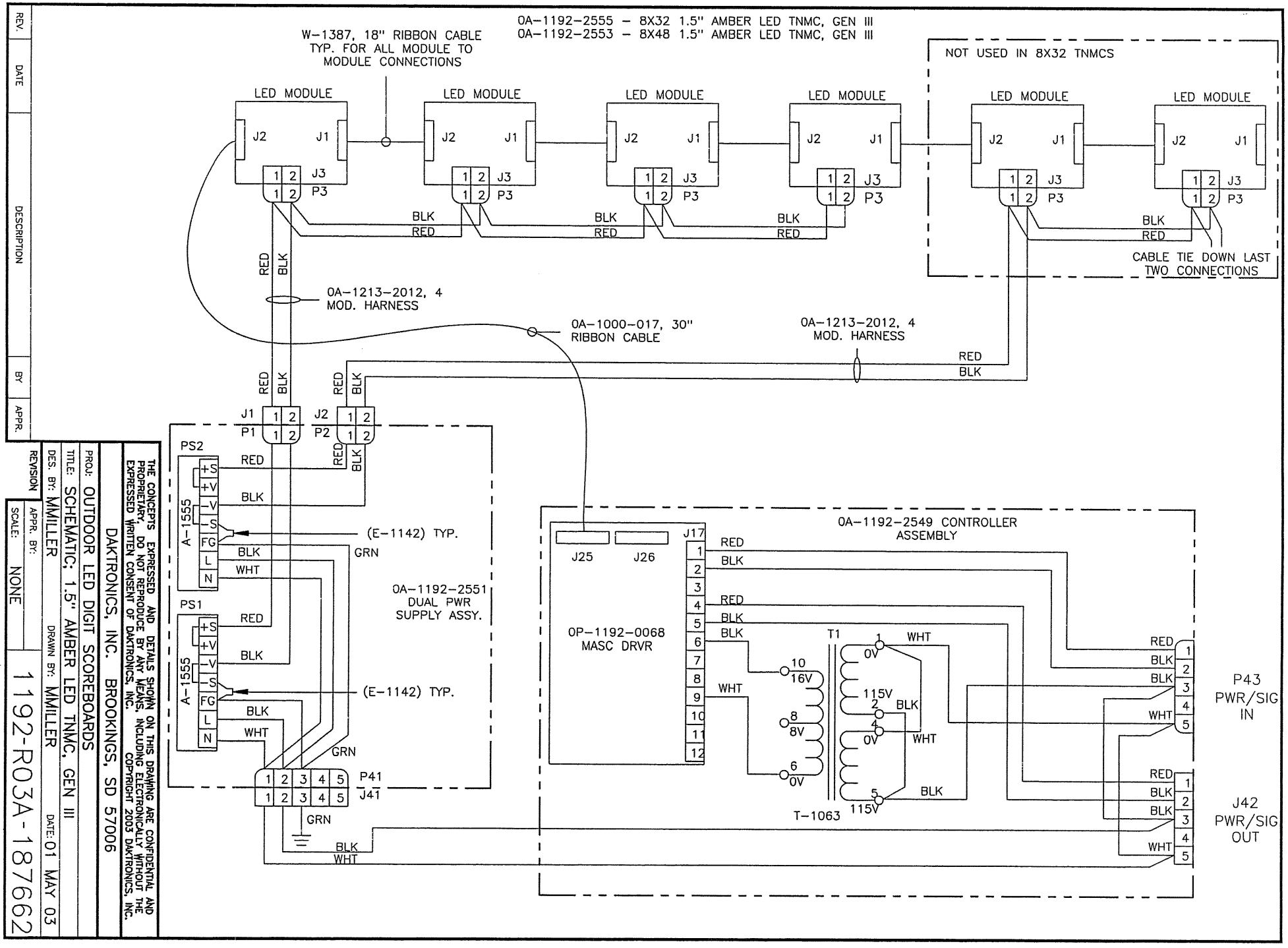
TITLE: SCHEMATIC; RED LED TNMC, GEN III

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 21 APR 03

REVISION

SCALE: NONE APPR. BY:

1192-R03A-187661



REV.	DATE	DESCRIPTION	BY	APPR.

REVISION

SCALE: NONE APPR. BY:

1192-R03A-187662

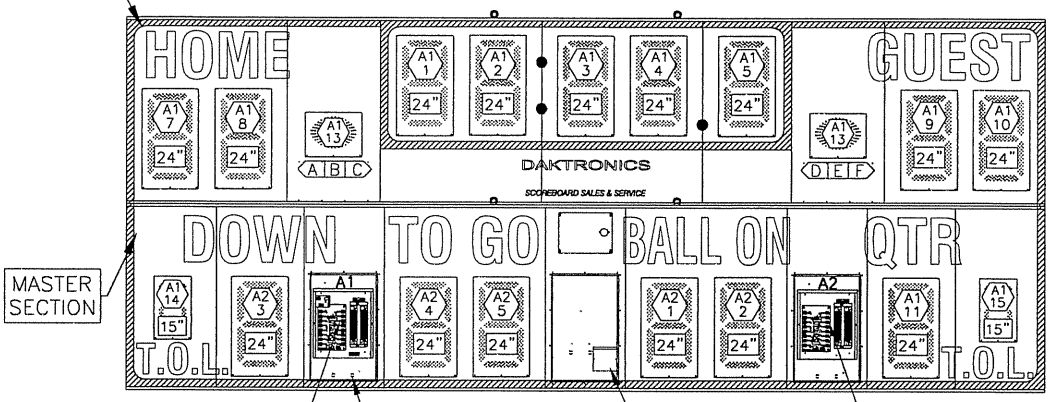
DES. BY: MMILLER DRAWN BY: MMILLER DATE: 01 MAY 03

TITLE: SCHEMATIC; 1.5" AMBER LED TNMC, GEN III

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

DAKTRONICS, INC. BROOKINGS, SD 57006

FB-2003-11/-21



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

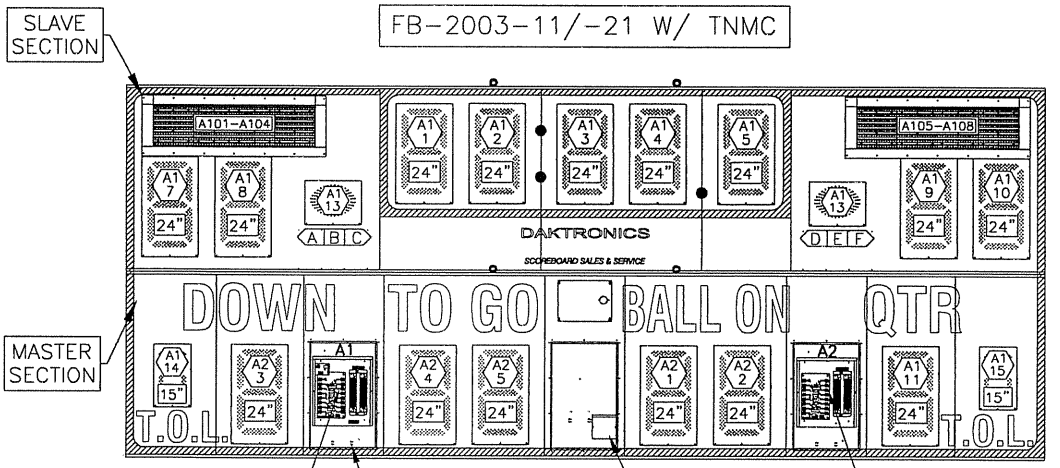
KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

FB-2003-11/-21 W/ TNMC



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

(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 THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
01	19MAY04	CHANGED DOWN DIGIT ON BOTTOM FROM A1-3 TO A2-3 PER ECO# 42629	JML	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2003-11/-21, G3

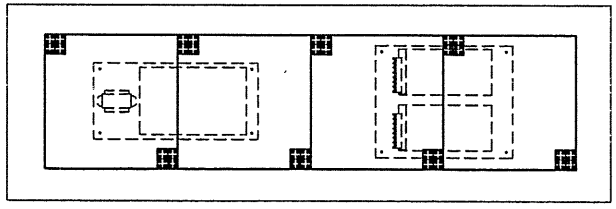
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 30APR03

REVISION 01 | APPR. BY: | SCALE: 1=50

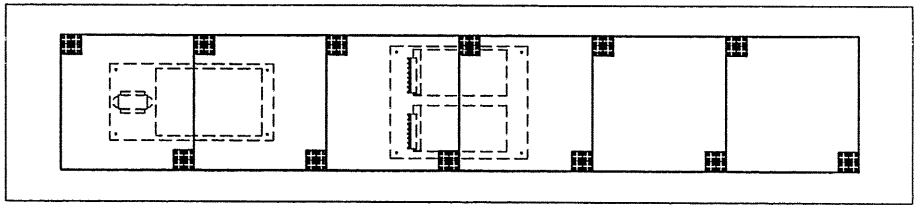
1192-R08A-187933

REV.	DATE	DESCRIPTION	BY	APPR.

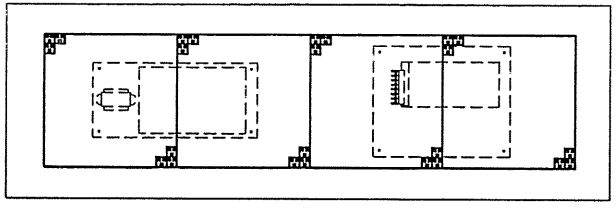
832 AMBER LED TNMC
0A-1192-2555



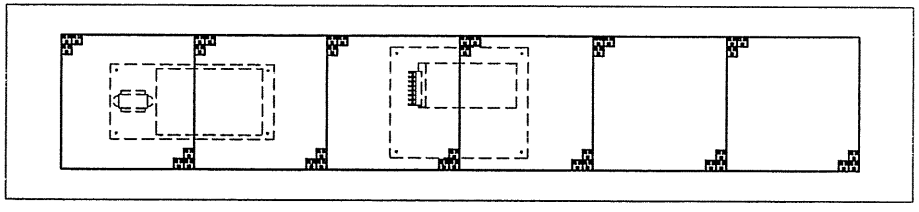
848 AMBER LED TNMC
0A-1192-2553

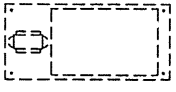


832 RED LED TNMC
0A-1192-2554

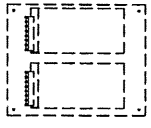


848 RED LED TNMC
0A-1192-2552

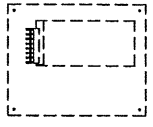




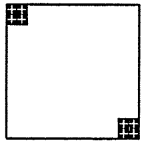
TNMC CONTROLLER
0A-1192-2549
USED IN RED & AMBER LED TNMCs



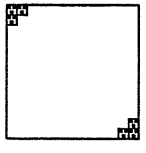
DOUBLE POWER SUPPLY ASSEMBLY
0A-1192-2551
USED IN AMBER LED TNMCs



SINGLE POWER SUPPLY ASSEMBLY
0A-1192-2550
USED IN RED LED TNMCs



AMBER LED TNMC MODULE
0A-1208-3005
USED IN AMBER LED TNMCs



RED LED TNMC MODULE
0A-1208-3006
USED IN RED LED TNMCs

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; 832/842 RED/AMB LED TNMC, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 01MAY03

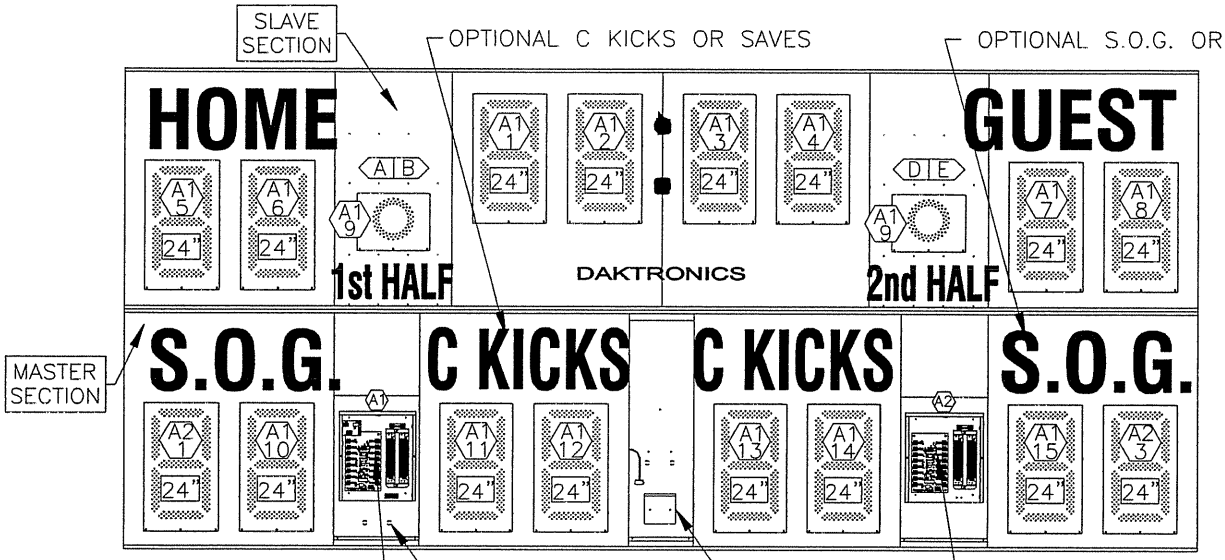
APPR. BY:

SCALE: 1=15

REVISION

1192-R08A-187987

SO-1624-11/-21



16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

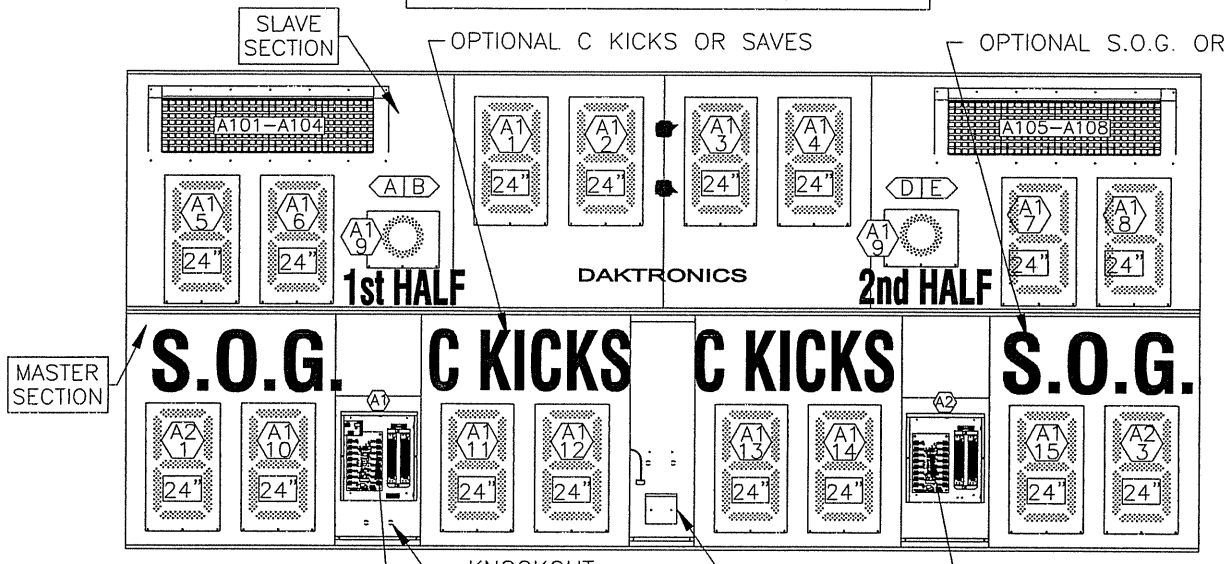
KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

FRONT VIEW

SO-1624-11/-21 W/ TNMC



16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

FRONT VIEW

A2/1 = 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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-1624-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 06MAY03

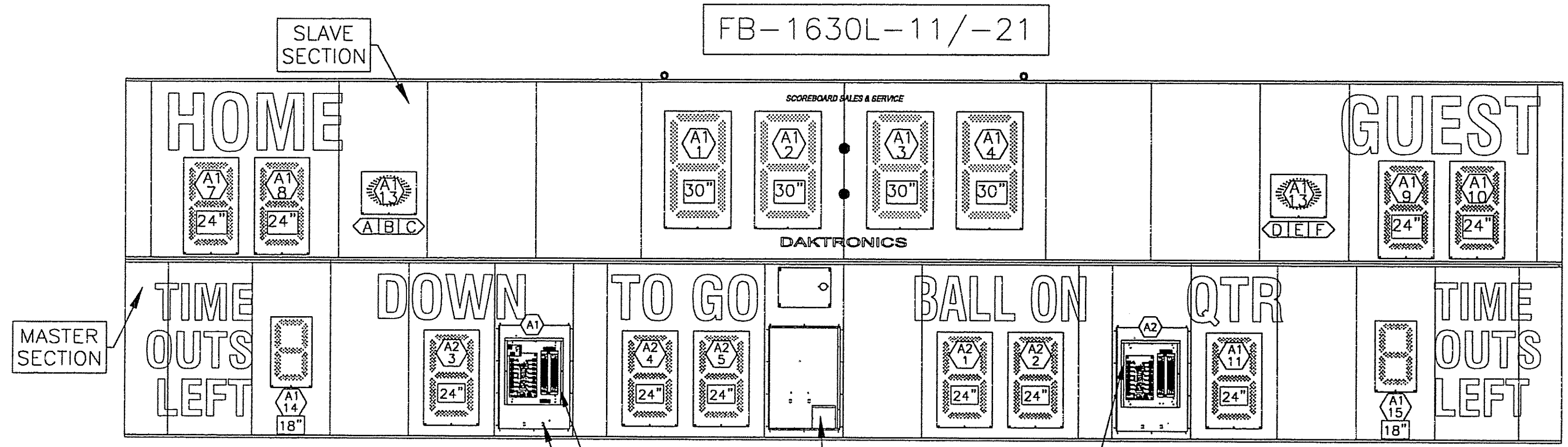
REV.	DATE	DESCRIPTION	BY	APPR
REVISION				

APPR. BY:

SCALE: 1=40

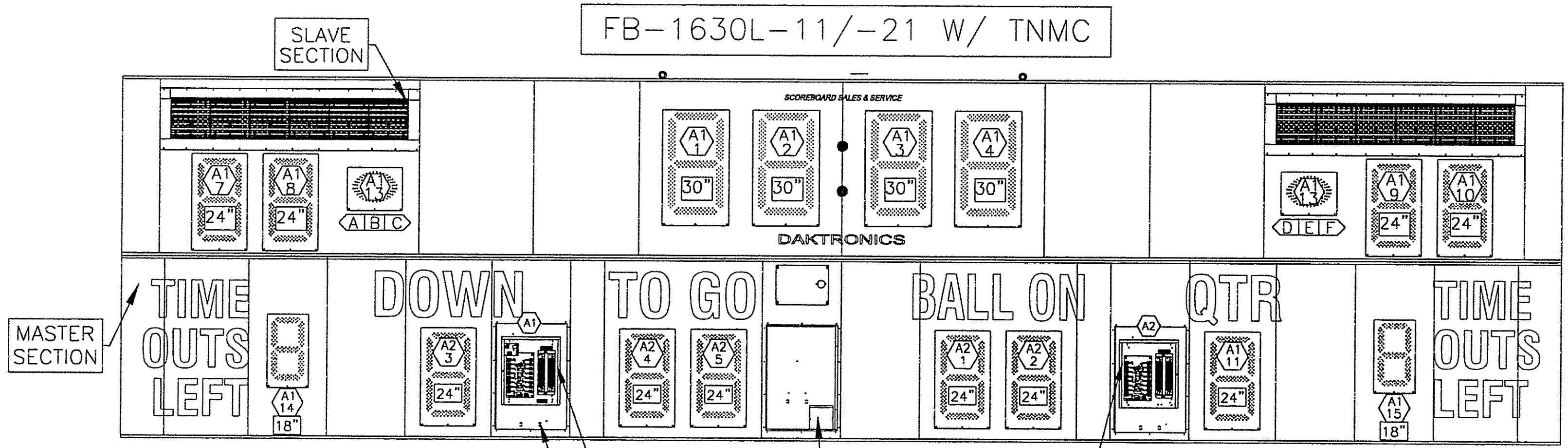
1192-R08A-188178

FB-1630L-11/-21



FRONT VIEW

FB-1630L-11/-21 W/ TNMC



FRONT VIEW

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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

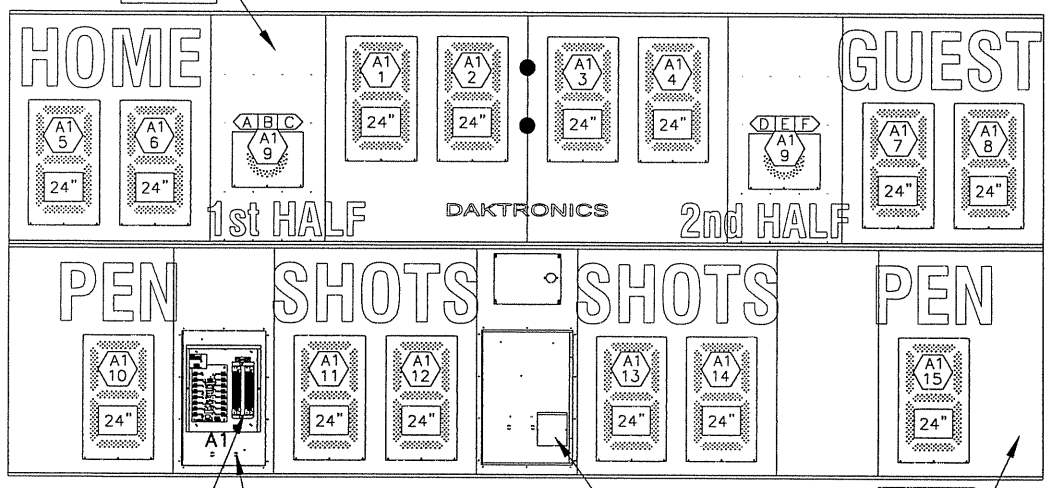
TITLE: COMPONENT LOCATIONS; FB-1630L-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 14MAY03

REVISION 00 APPR. BY: SCALE: 1=50

1192-R08A-188581

SO-1424-11/-21



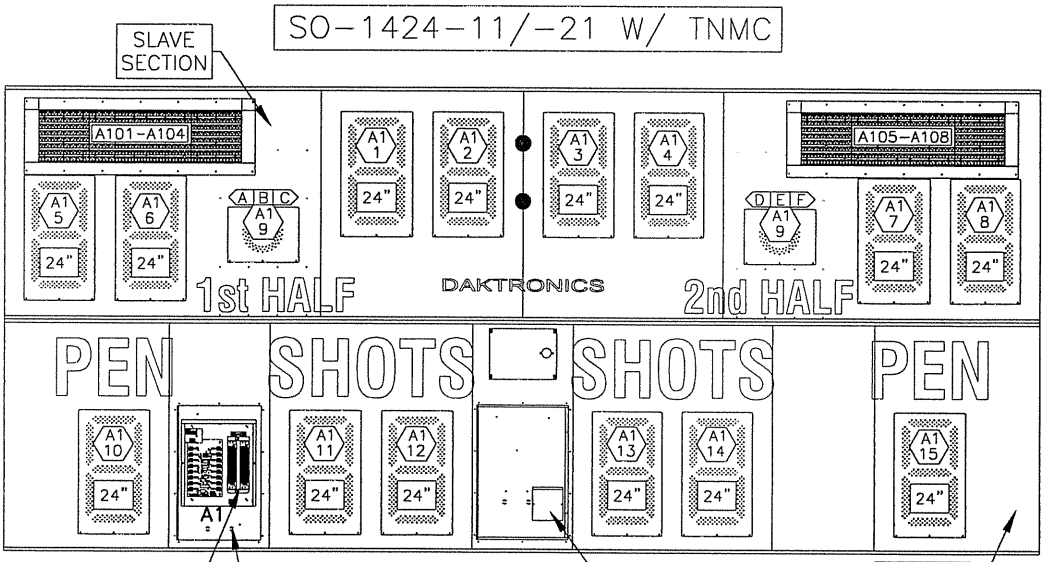
ENCLOSED 16 COLUMN DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW COMPONENT DETAIL).

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

FRONT VIEW

SO-1424-11/-21 W/ TNMC



ENCLOSED 16 COLUMN DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW COMPONENT DETAIL).

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

FRONT VIEW

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 THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-1424-11/-21, G3

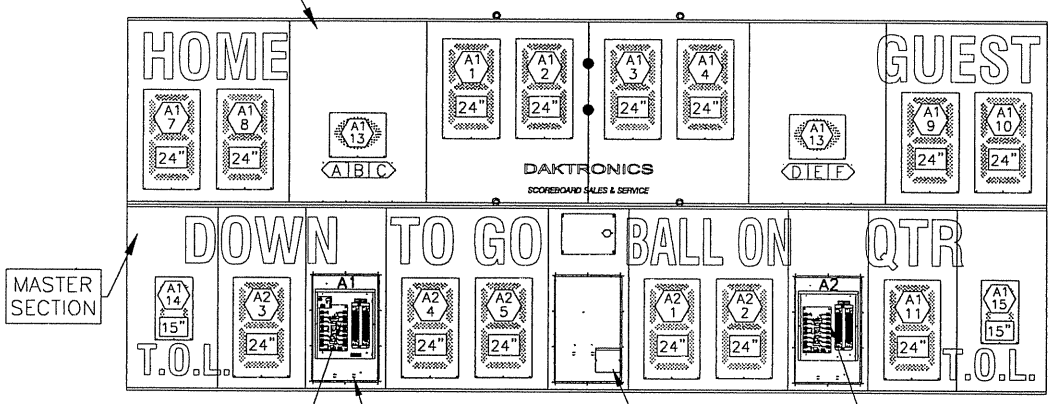
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 16MAY03

REVISION 00 APPR. BY: SCALE: 1=40

1192-R08A-188778

REV.	DATE	DESCRIPTION	BY	APPR.

FB-2002-11/-21



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

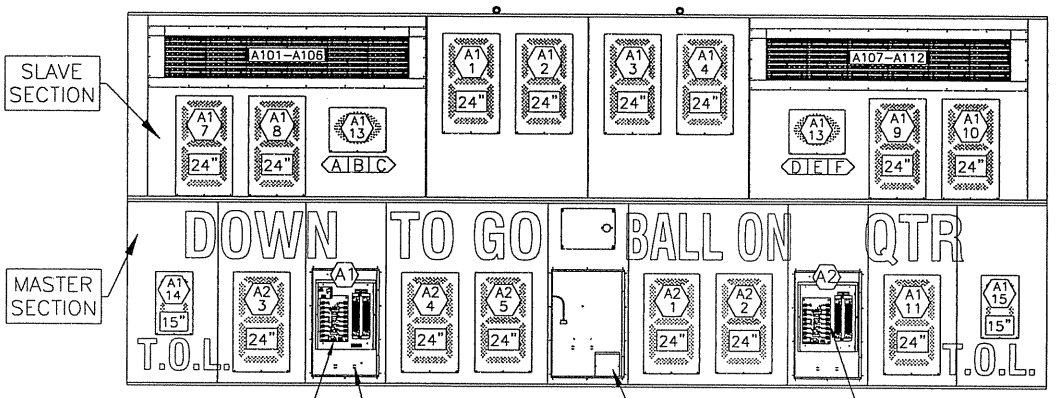
KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

FB-2002-11/-21 W/ TNMC



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

(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 THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
02	19 APR 04	CHANGED "DOWN" HARNESS ASSINGMENT TO A2-3 PER ECO-42471	RWD	TWEB
01	04MAR04	ADDED MODEL FB-2002 W/ TNMC	CCAIN	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2002-11/-21, G3

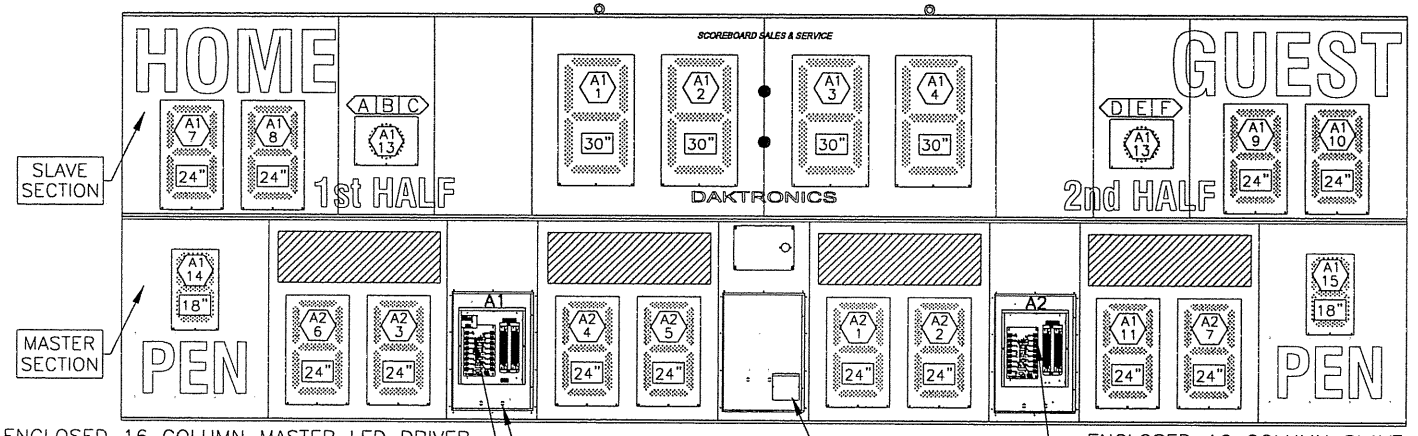
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 19MAY03

REVISION 02 APPR. BY:

SCALE: 1=50

1192-R08A-188811

SO-1830-11/-21



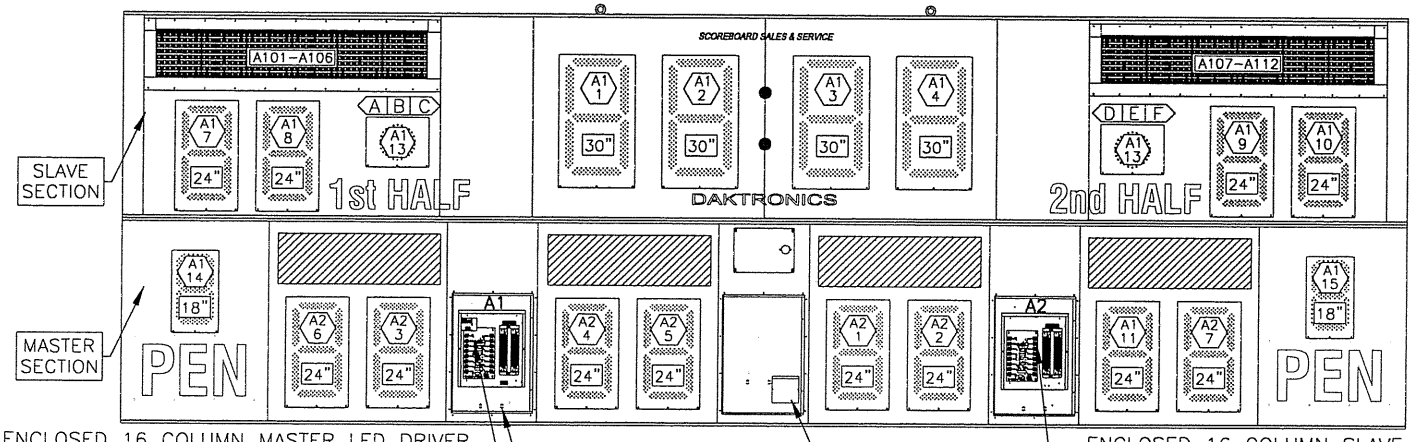
ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

SO-1830-11/-21 W/ LED TNMC



ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

(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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-1830-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 19MAY03

APPR. BY:

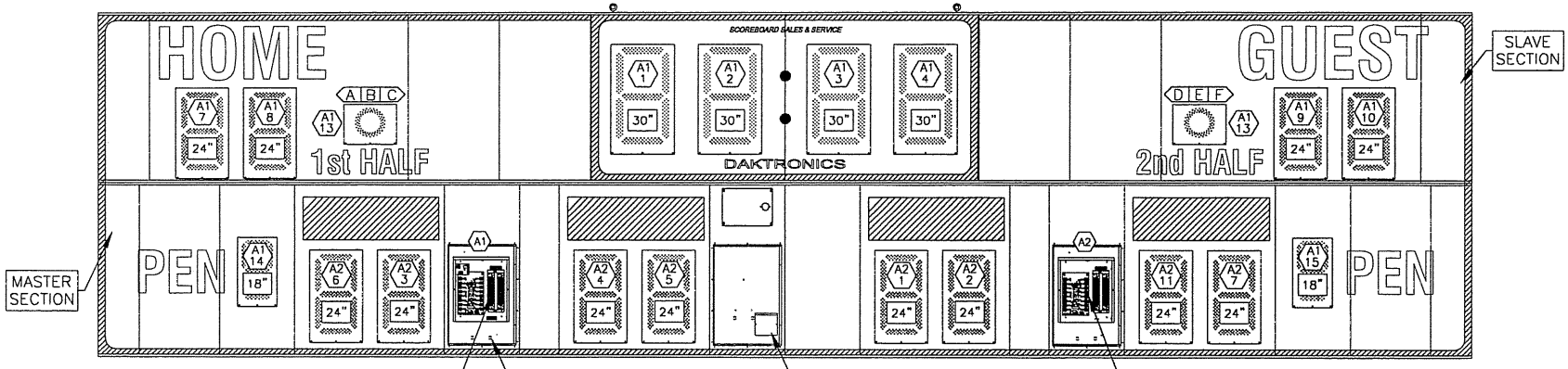
SCALE: 1=45

REVISION 00

1192-R08A-188831

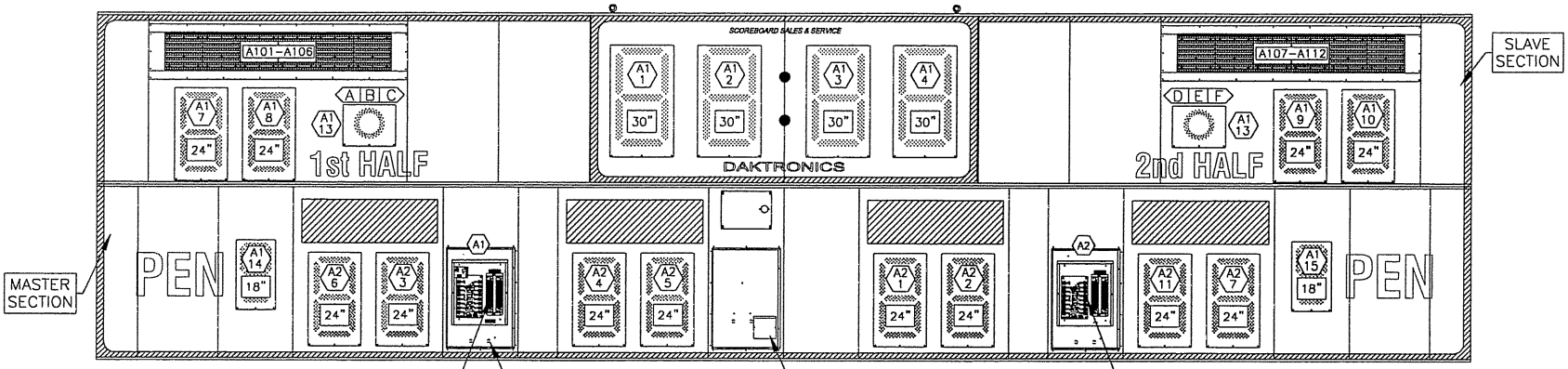
REV.	DATE	DESCRIPTION	BY	APPR.

SO-1830L-11/-21



FRONT VIEW

SO-1830L-11/-21 W/ TNMC



FRONT VIEW

(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-1830L-11/-21, G3

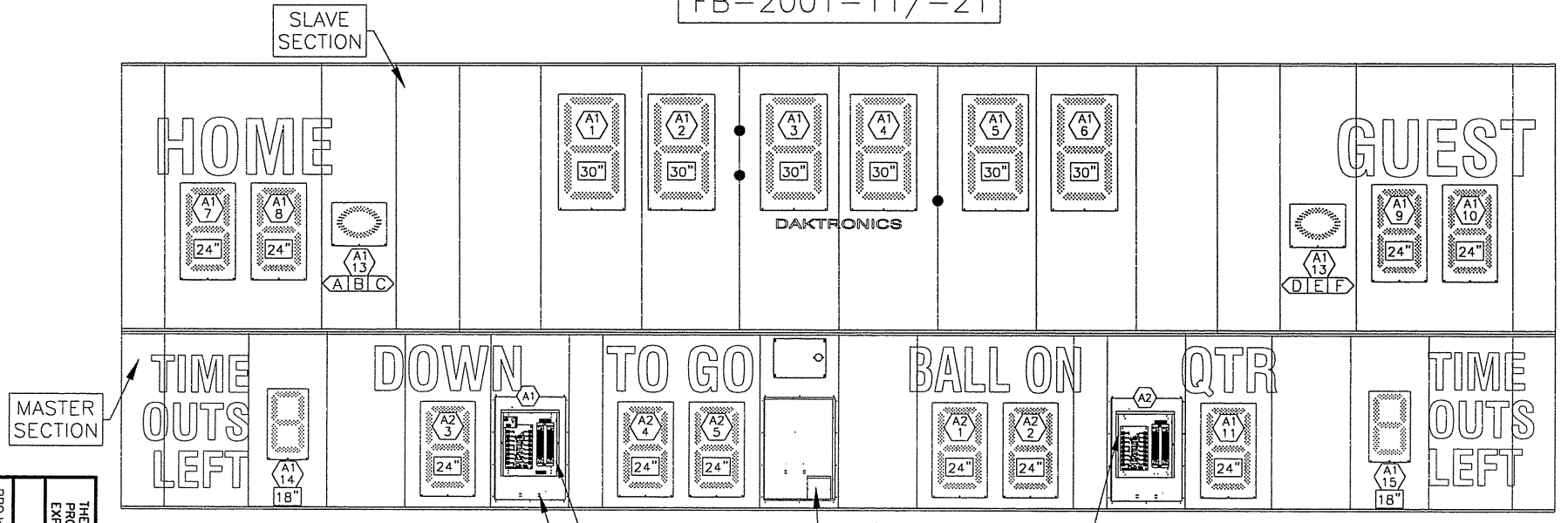
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 21MAY03

SCALE: 1=50 APPR. BY:

REVISION 00

1192-R08A-188988

FB-2001-11/-21



KNOCKOUT FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

HORN (OPTIONAL)

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

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 THE POWER AND SIGNAL ENVLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
00				

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2001-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 27MAY03

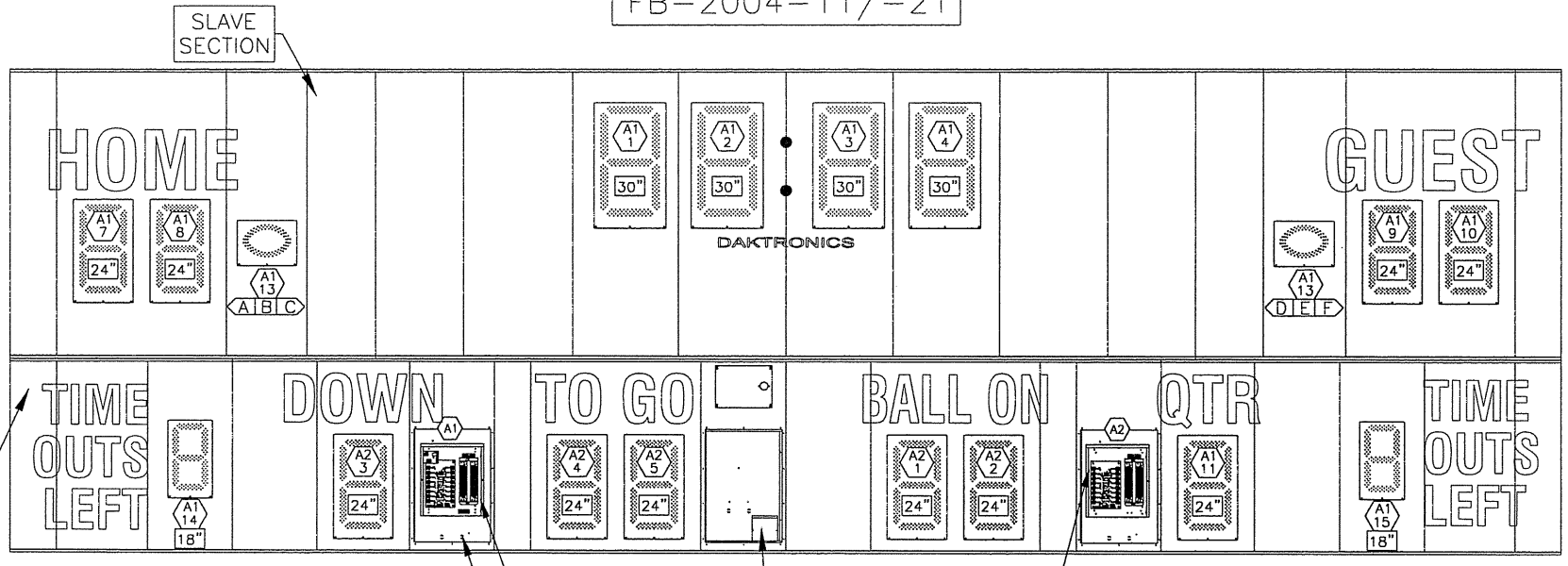
APPR. BY:

SCALE: 1=45

REVISION

1192-R08A-189150

FB-2004-11/-21



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 THE POWER AND SIGNAL ENVLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
00		REVISION		

SCALE: 1=45 APPR. BY:

1192-R08A-189160

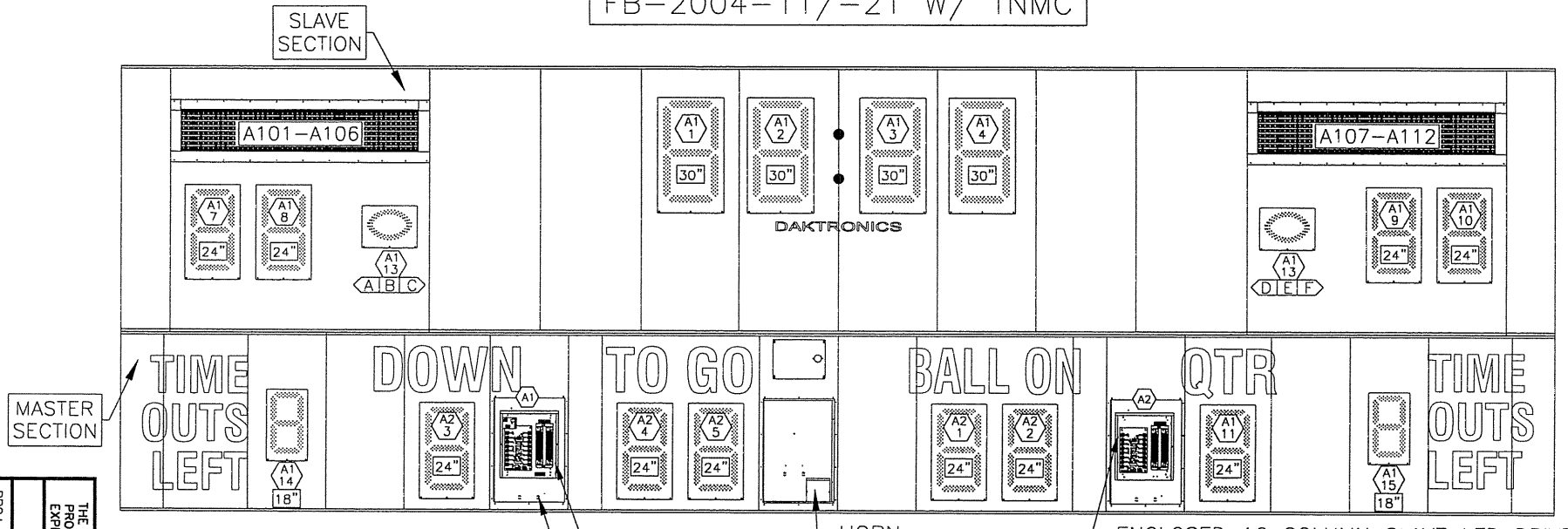
PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2004-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 27MAY03

DAKTRONICS, INC. BROOKINGS, SD 57006

FB-2004-11/-21 W/ TNMC



FRONT VIEW

(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 THE POWER AND SIGNAL ENVLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
00		REVISION	APPR. BY:	

SCALE: 1=45

DAKTRONICS, INC. BROOKINGS, SD 57006

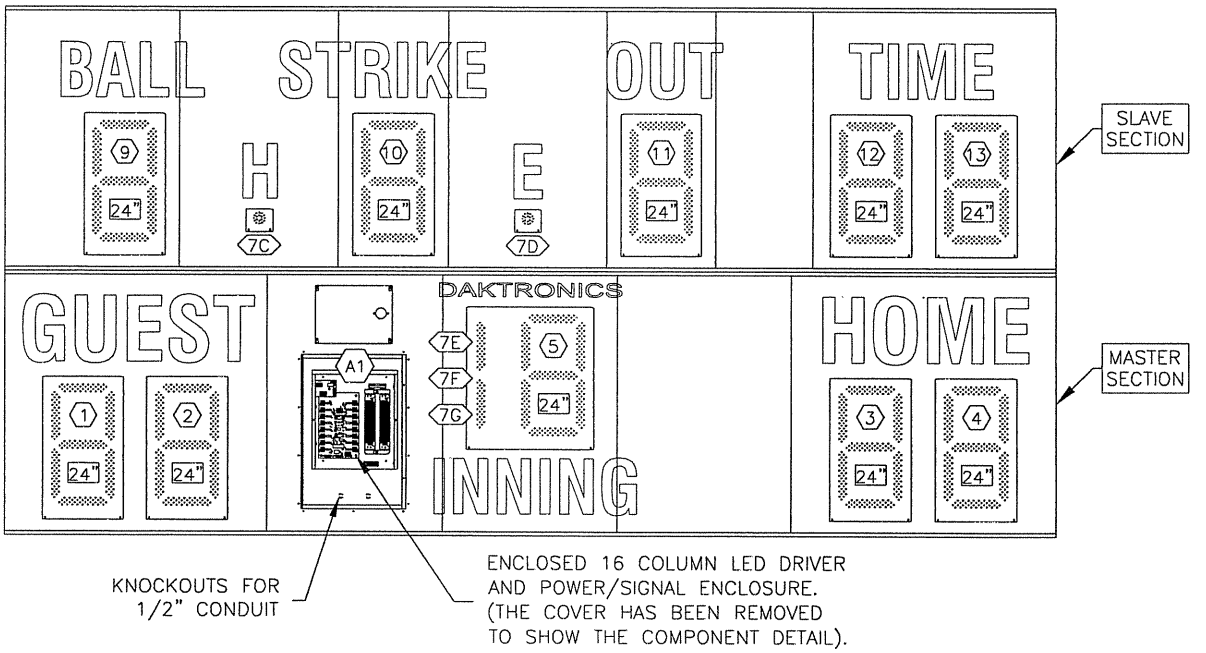
PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2004-11/-21 W/ TNMC, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 07AUG03

1192-R08A-19436

BA-2012-11/-21



FRONT VIEW

⟨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 THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-2012-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 15JAN04

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 APPR. BY:

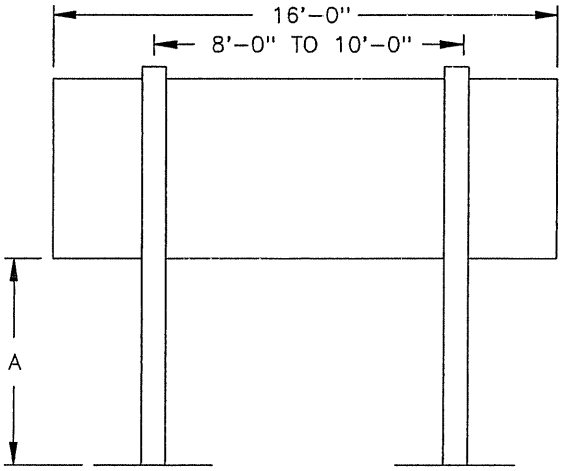
SCALE: 1=35

1192-R08A-202673

MODEL BA-2012

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)*



REAR VIEW

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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: FOOTBALL SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, BA-2012

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 19JAN04

REVISION 00 APPR. BY: SCALE: NONE

1192-R08A-202766

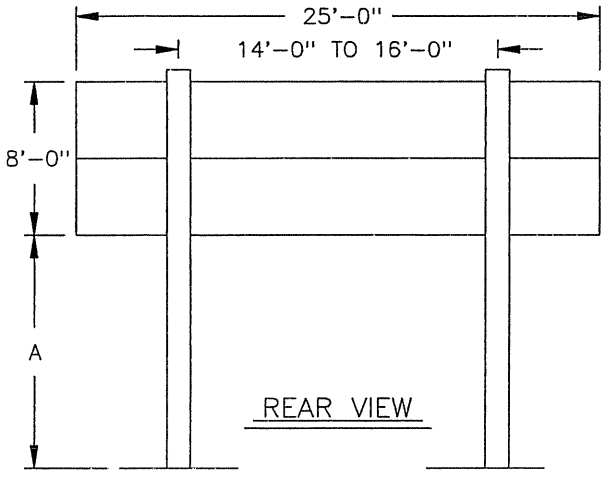
REV.	DATE	DESCRIPTION	BY	APPR.

MODELS FB-1430, FB-1530, FB-1630, FB-1730, & FB-1830 W/ 2 POLE MOUNTING

DISTANCE TO BOTTOM OF SCOREBOARD (FT) A	DOES SCOREBOARD HAVE ATTACHED AD PANEL?	DESIGN WIND VELOCITY (MPH) 70	80	90
10	NO	W12X26 *3.00 X 7.10*	W14X30 *3.00 X 7.80*	W10X33 *3.00 X 8.50*
	YES	W10X39 *3.00 X 8.50*	W10X39 *3.00 X 9.40*	W12X45 *3.00 X 10.30*
12	NO	W14X30 *3.00 X 7.40*	W10X33 *3.00 X 8.10*	W10X33 *3.00 X 8.90*
	YES	W10X39 *3.00 X 8.90*	W12X45 *3.00 X 9.80*	W12X50 *3.00 X 10.70*
14	NO	W10X33 *3.00 X 7.80*	W10X39 *3.00 X 8.50*	W12X40 *3.00 X 9.30*
	YES	W12X45 *3.00 X 9.20*	W12X50 *3.00 X 10.20*	W12X53 *3.00 X 11.10*
16	NO	W10X39 *3.00 X 8.00*	W10X39 *3.00 X 8.90*	W12X45 *3.00 X 9.70*
	YES	W12X50 *3.00 X 9.50*	W12X53 *3.00 X 10.50*	W14X61 *3.00 X 11.40*
18	NO	W10X39 *3.00 X 8.30*	W12X45 *3.00 X 9.10*	W12X50 *3.00 X 10.00*
	YES	W12X53 *3.00 X 9.80*	W12X58 *3.00 X 10.80*	W16X67 *3.00 X 11.80*
20	NO	W12X45 *3.00 X 8.60*	W12X50 *3.00 X 9.50*	W12X53 *3.00 X 10.30*
	YES	W12X53 *3.00 X 10.10*	W16X67 *3.00 X 11.20*	W14X74 *3.00 X 12.30*

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.



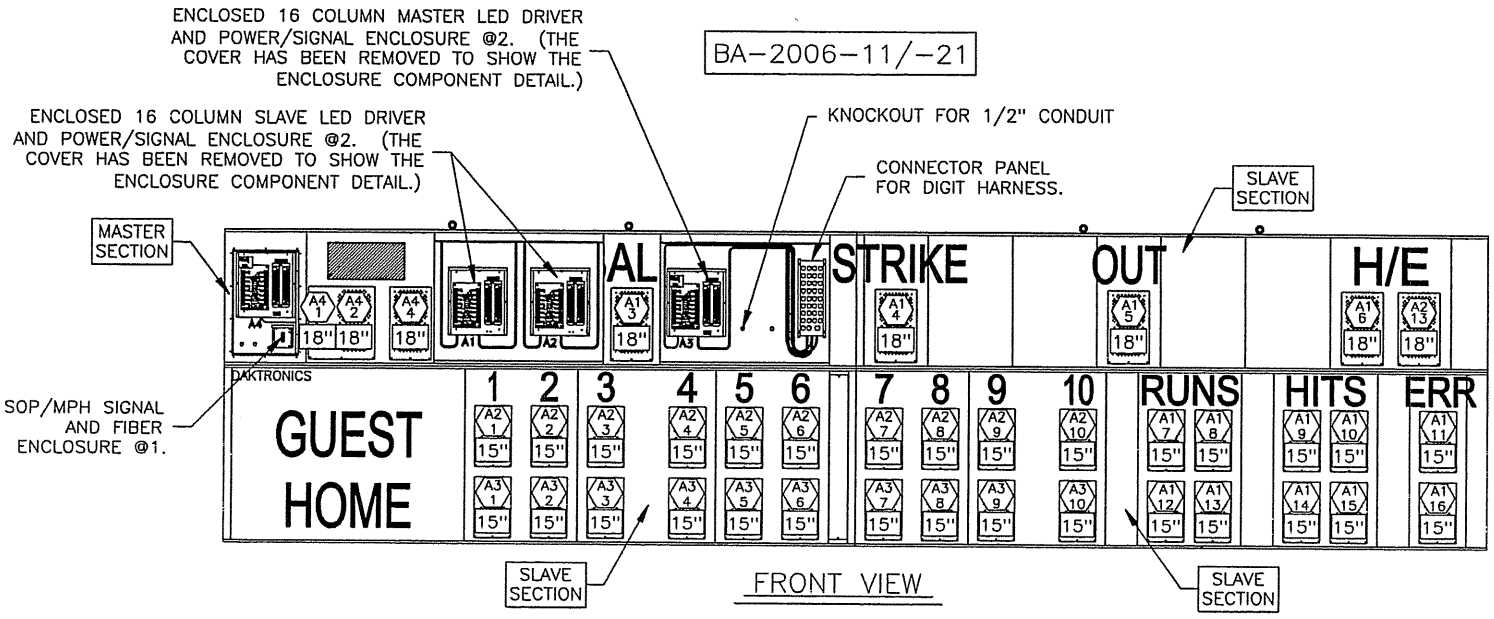
INFORMATION GIVEN IS FOR ESTIMATING PURPOSES ONLY. COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

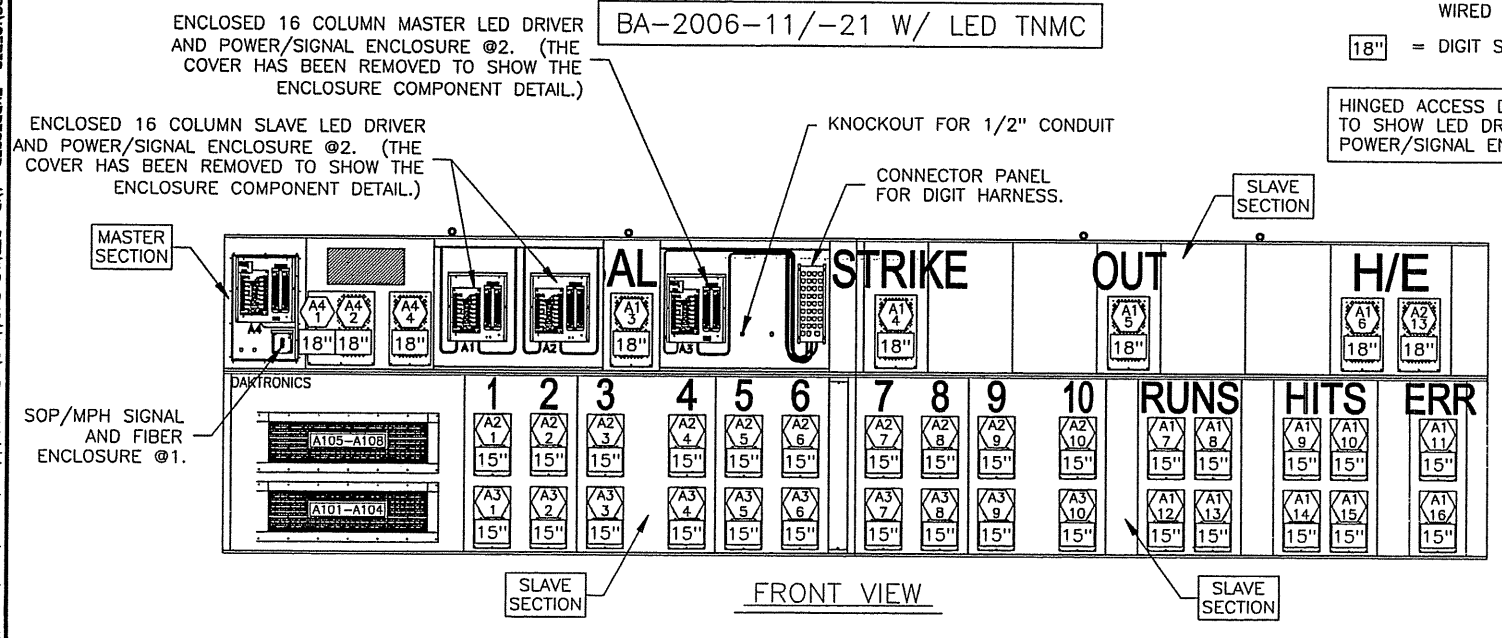
2 POLE MOUNTING APPROVED FOR WIND ZONES BELOW 90mph. A GENERAL WIND SPEED CHART IS AVAILABLE. CHECK WITH LOCAL BUILDING OFFICIALS FOR BUILDING CODE REQUIREMENTS. FOR WIND SPEEDS GREATER THAN 90mph, REFER TO DRAWING A-44515

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: FOOTBALL SCOREBOARDS
TITLE: BEAM & FOOTING RECOMMENDATIONS, FB-XX30, 2 POLE
DES. BY: MCOPL/RNEYENS DRAWN BY: MCOPLAN DATE: 23MAR04
REVISION 01 APPR. BY: SCALE: NONE
1192-R08A-207019

REV.	DATE	DESCRIPTION	BY	APPR.
01	20MAY04	ADDED TEXT FOR MPH ZONE, REMOVED 100MPH CALCULATIONS FROM CHART	MCOPL	





DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-2006-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 27APR04

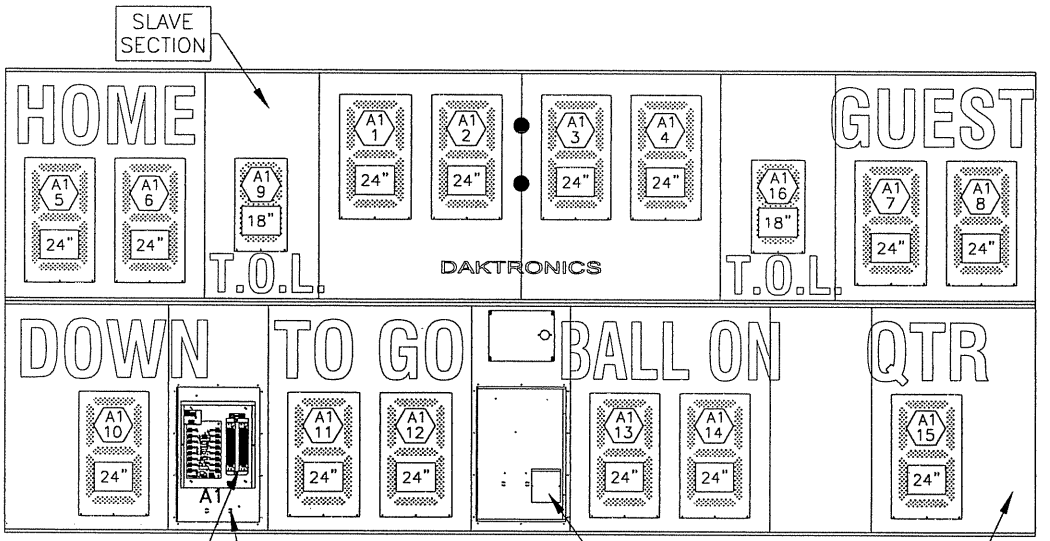
SCALE: 1=50 APPR. BY:

REVISION 00

1192-R08A-21014O

REV.	DATE	DESCRIPTION	BY	APPR.

FB-2007-11/-21



FRONT VIEW

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

24" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; FB-2007-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 07MAY04

REVISION 00 APPR. BY: SCALE: 1=40

1192-R08A-211011

REV.	DATE	DESCRIPTION	BY	APPR.

SO-2014-11/-21

FRONT VIEW

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS: SO-2014-11/-21, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 28JUL04

REVISION 00 APPR. BY: SCALE: 1=50

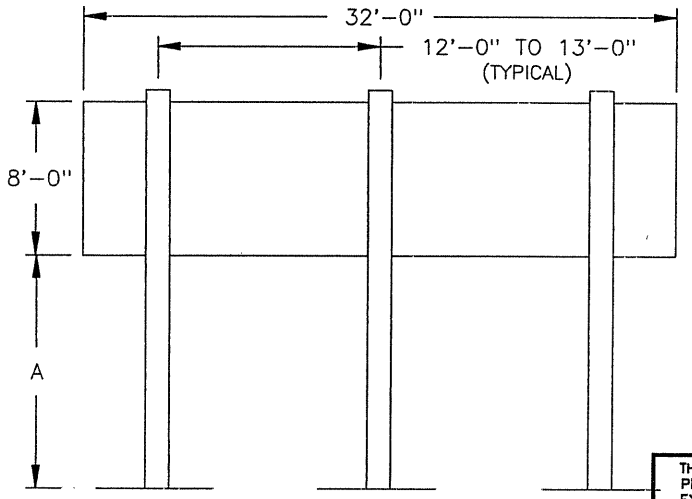
1192-R08A-219727

REV.	DATE	DESCRIPTION	BY	APPR.

8' X 32' SCOREBOARD MODELS, 3-POLE				
DISTANCE TO BOTTOM OF SCOREBOARD (FT) A	DOES SCOREBOARD HAVE ATTACHED AD PANEL?	DESIGN WIND VELOCITY (MPH)		
		70	80	100
10	NO	W12X26 *3.0 X 6.4*	W12X26 *3.0 X 7.1*	W10x33 *3.0 X 8.4*
	YES	W14X30 *3.0 X 7.3*	W10X33 *3.0 X 8.0*	W10X39 *3.0 X 9.5*
12	NO	W12X26 *3.0 X 6.7*	W12X30 *3.0 X 7.4*	W10X33 *3.0 X 8.7*
	YES	W10X33 *3.0 X 7.6*	W10X39 *3.0 X 8.4*	W14X43 *3.0 X 9.9*
14	NO	W8X31 *3.0 X 7.0*	W10X33 *3.0 X 7.8*	W10X39 *3.0 X 9.2*
	YES	W10X39 *3.0 X 7.9*	W10X39 *3.0 X 8.7*	W12X50 *3.0 X 10.2*
16	NO	W10X33 *3.0 X 7.4*	W10X39 *3.0 X 8.1*	W14X43 *3.0 X 9.5*
	YES	W10X39 *3.0 X 8.2*	W12X45 *3.0 X 9.0*	W12X53 *3.0 X 10.6*
18	NO	W10X39 *3.0 X 7.6*	W10X39 *3.0 X 8.4*	W12X50 *3.0 X 9.8*
	YES	W14X43 *3.0 X 8.4*	W12X50 *3.0 X 9.3*	W12X58 *3.0 X 11.0*
20	NO	W10X39 *3.0 X 7.9*	W12X45 *3.0 X 8.7*	W12X53 *3.0 X 10.2*
	YES	W14X48 *3.0 X 8.7*	W12X53 *3.0 X 9.6*	W14X61 *3.0 X 11.3*

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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: BEAM & FOOTINGS; 8'X32' SCOREBOARDS, 3-POLE

DES. BY: MCOPL/RNEYEN DRAWN BY: MCOPLAN DATE: 05AUG04

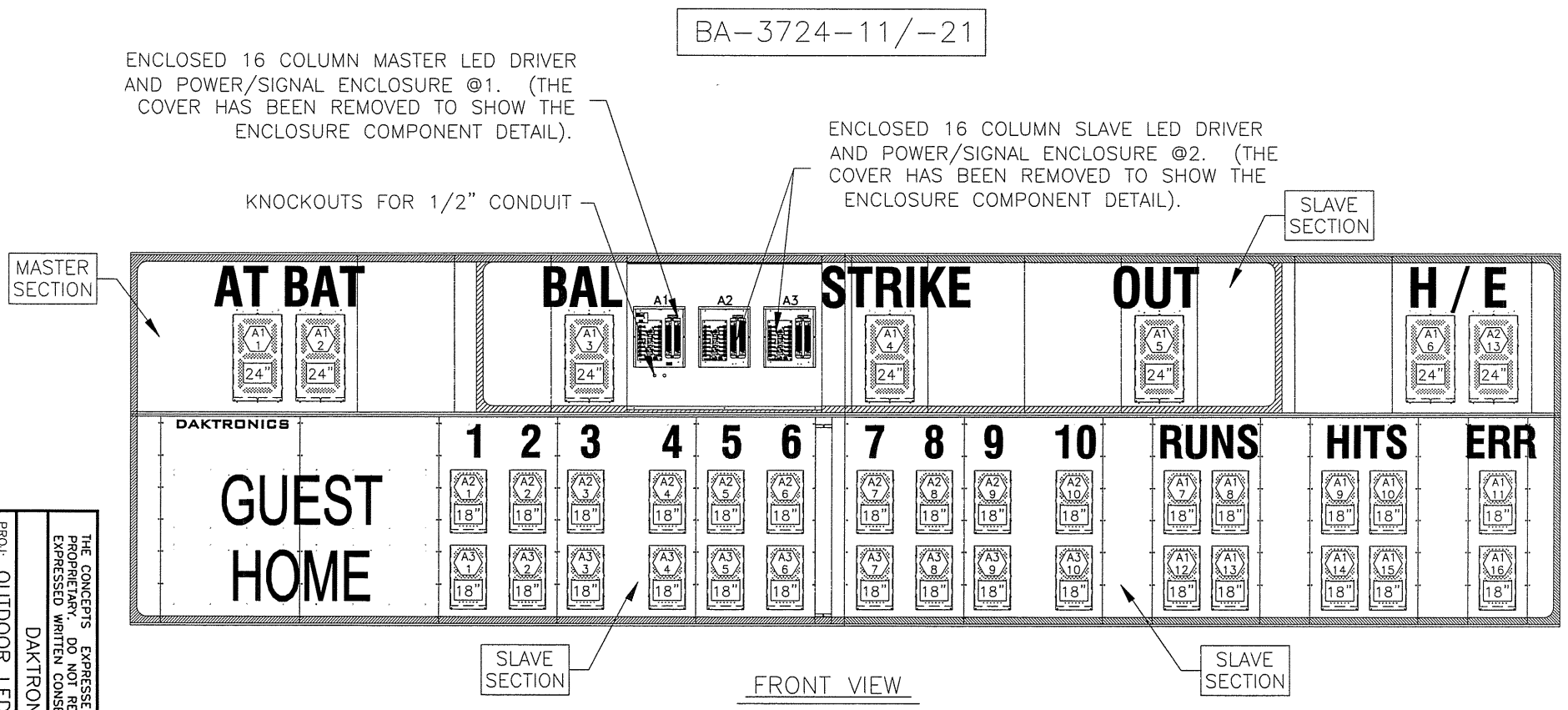
REV.	DATE	DESCRIPTION	BY	APPR.
REVISION 00				

APPR. BY:

SCALE: NONE

1091-R08A-220526

BA-3724-11/-21



FRONT VIEW

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

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
01	09 DEC 04	CORRECTED DIGIT DESTINATION	CAC	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-3724-11/-21, FD, G3

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 22NOV04

SCALE: 1=50 APPR. BY:

REVISION 01

1192-R08A-228330

REV	DATE	DESCRIPTION	BY	APPR.
01	09 DEC 04	CORRECTED DIGIT DESIGNATION	CAC	

BA-3724-11/-21 W/ TNMC

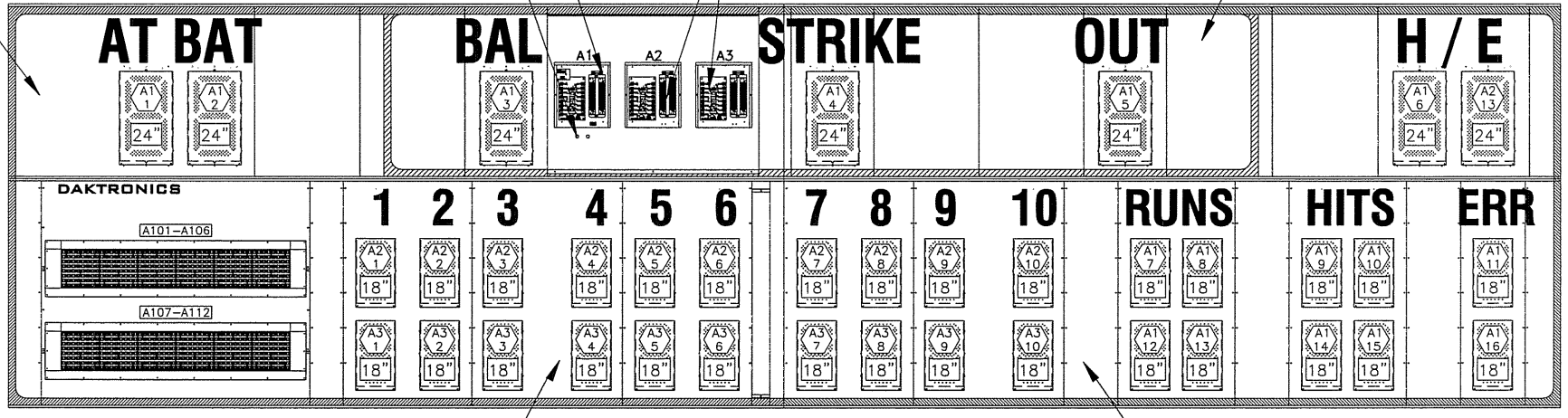
ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).

KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @2. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).

MASTER SECTION

SLAVE SECTION



SLAVE SECTION

SLAVE SECTION

FRONT VIEW

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

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-3724-11/-21 W/ TNMC, FD,

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 07DEC04

REVISION 01

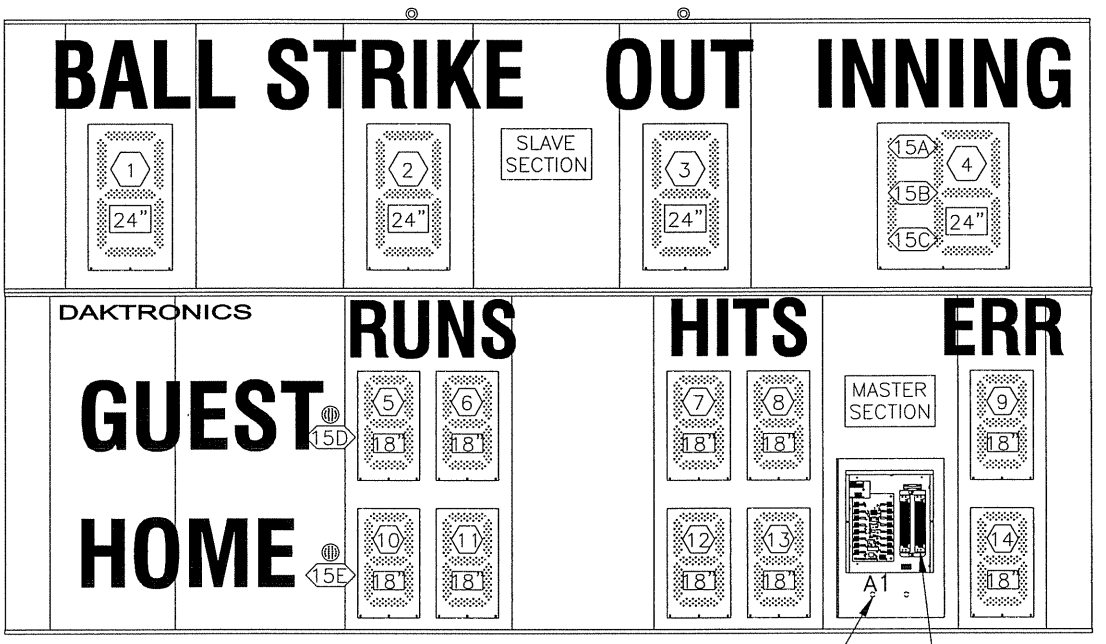
APPR. BY:

SCALE: 1=50

1192-R08A-229073

G3

BA-1524-11/-21



KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

⟨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 THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-1524-11/-21, FD, G3

DES. BY: KBRICKER DRAWN BY: KBRICKER DATE: 09DEC04

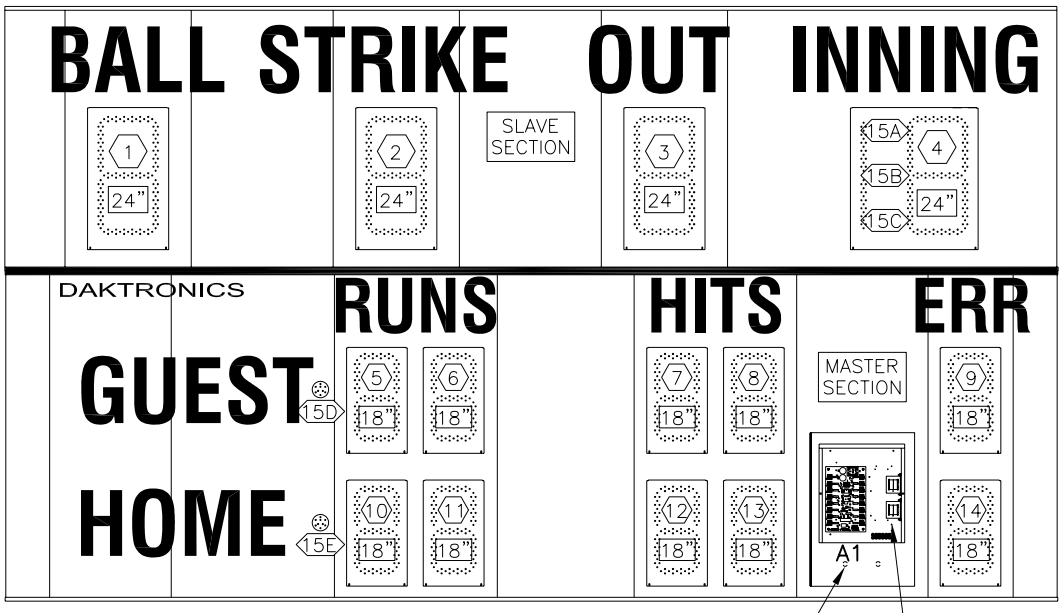
REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 APPR. BY:

SCALE: 1=35

1192-R08A-229211

BA-1524-31



KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

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

[18"] = DIGIT SIZE

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

HINGED ACCESS DOORS REMOVED TO SHOW THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-1524-31, FD, G3

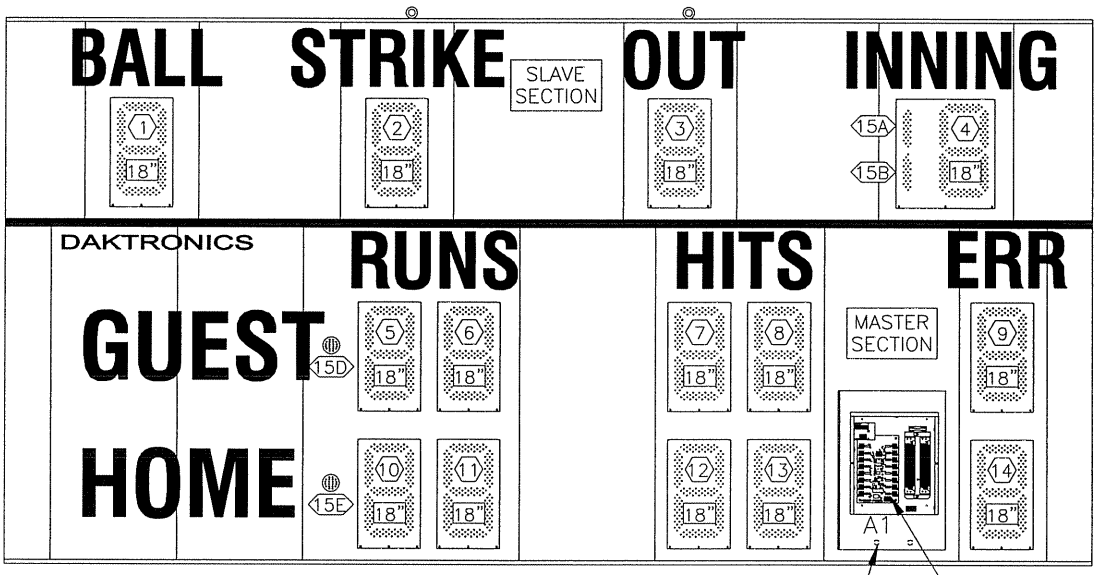
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 10DEC04

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 APPR. BY: SCALE: 1=35

1192-R08A-229300

BA-1518-11/-21



KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

⟨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 THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

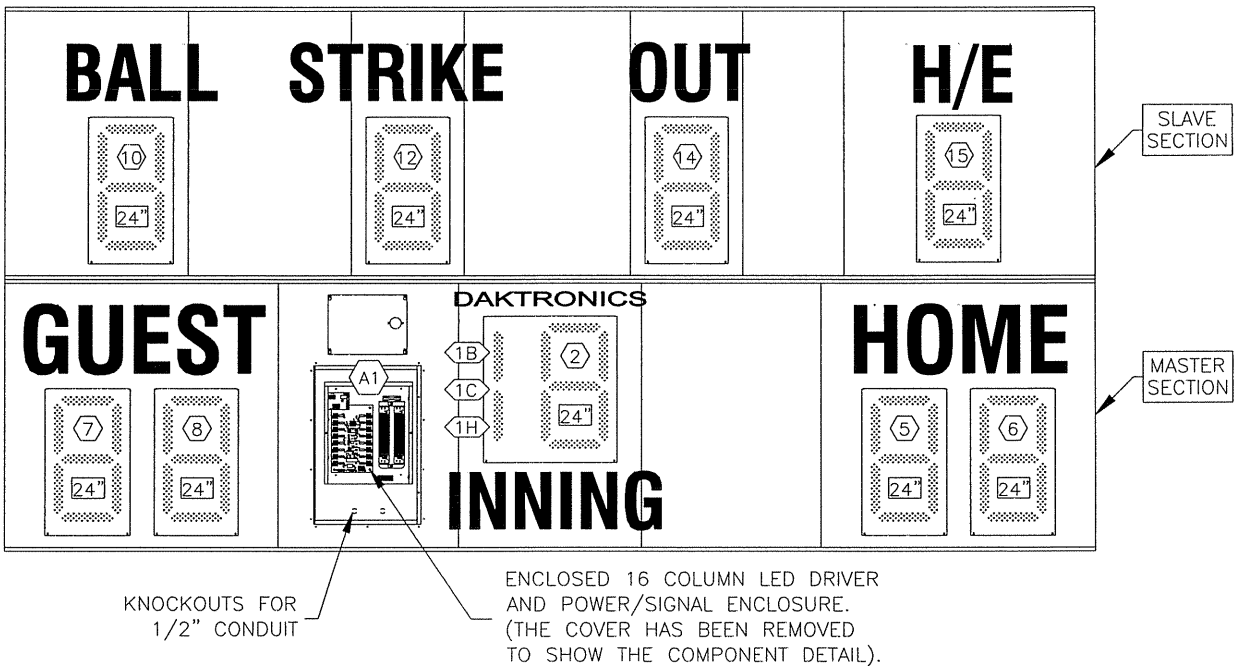
TITLE: COMPONENT LOCATIONS; BA-1518-11/-21, FD, G3

DES. BY: KBRICKER DRAWN BY: KBRICKER DATE: 13 DEC 04

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 | APPR. BY: | SCALE: 1=35 | 1192-R08A-229343

BA-2020-11/-21



FRONT VIEW

⟨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 THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

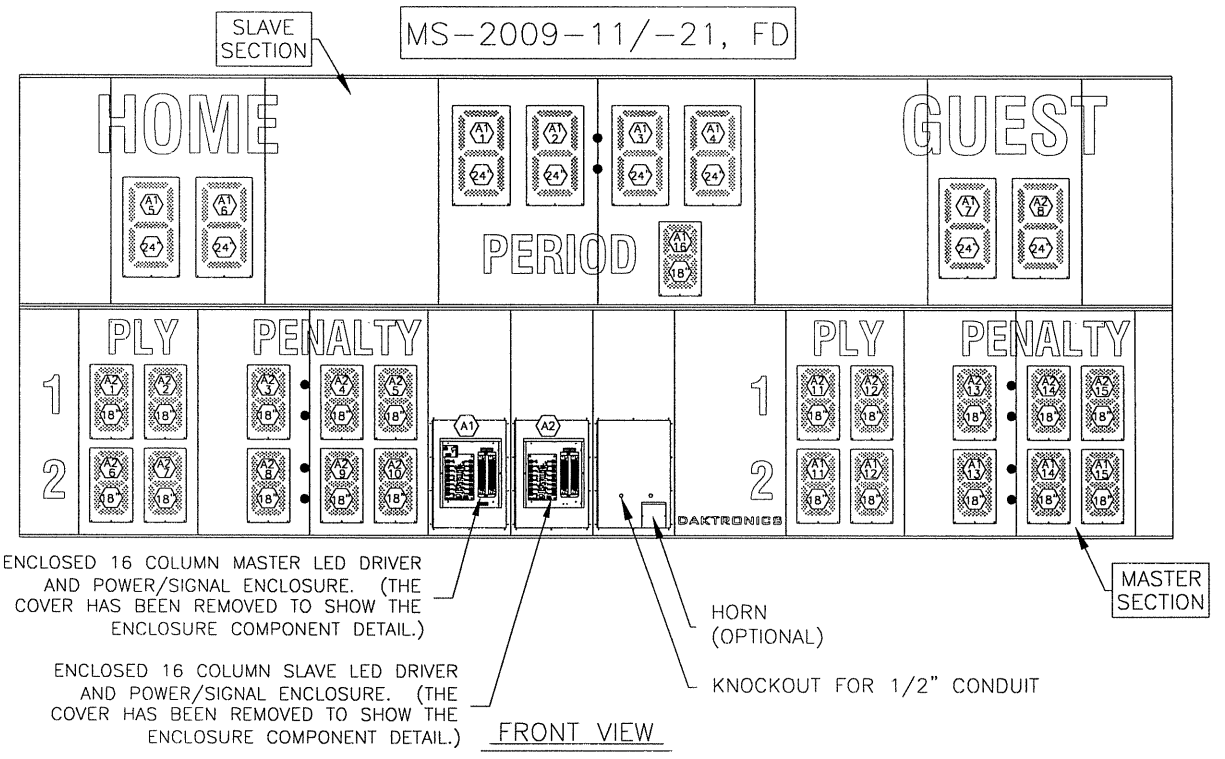
TITLE: COMPONENT LOCATIONS; BA-2020-11/-21, G3

DES. BY: TWEBER DRAWN BY: CSTRIPLING DATE: 11 FEB 05

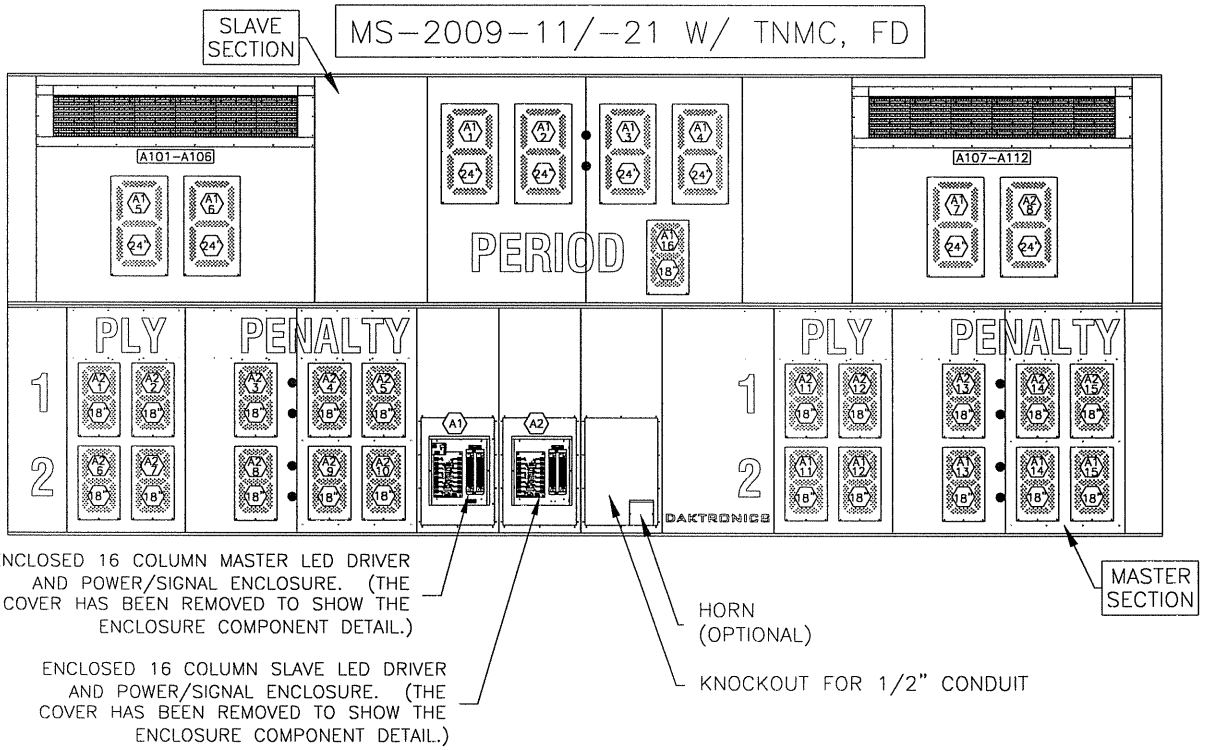
REV	DATE	DESCRIPTION	BY	APPR.

REVISION 00 | APPR. BY: | SCALE: 1=35

1192-R08A-234140



FRONT VIEW



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

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

18 = DIGIT SIZE

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONET LOCATIONS; MS-2009-11/-21, G3, FD

DES. BY: CCAIN DRAWN BY: CCAIN DATE: 17 FEB 05

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 APPR. BY: SCALE: 1=50

1192-R08A-234590

BA-2007-11/-21 W/ TNMC, FD

ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).

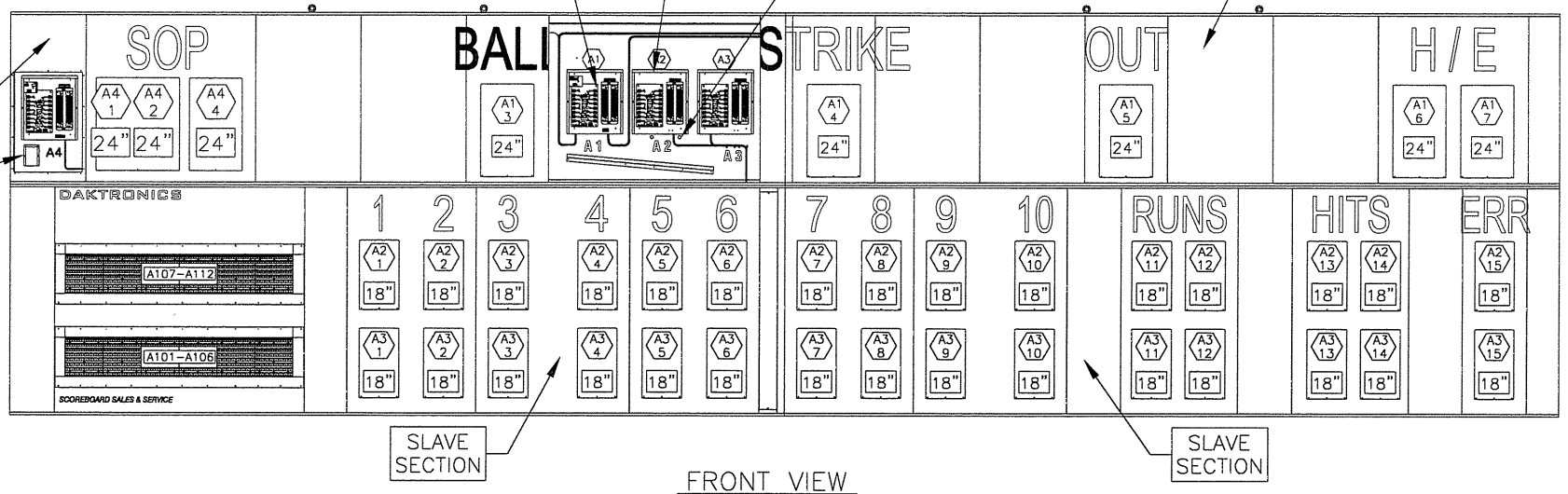
ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @3. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).

KNOCKOUT FOR 1/2" CONDUIT

SLAVE SECTION

MASTER SECTION

SOP SIGNAL ENCLOSURE



SLAVE SECTION

SLAVE SECTION

FRONT VIEW

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

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMP. LOCATIONS; BA-2007-11/-21 W/ TNMC, G3, FD

DES BY: CCAIN DRAWN BY: CCAIN DATE: 17 FEB 05

SCALE: 1=50 APPR. BY:

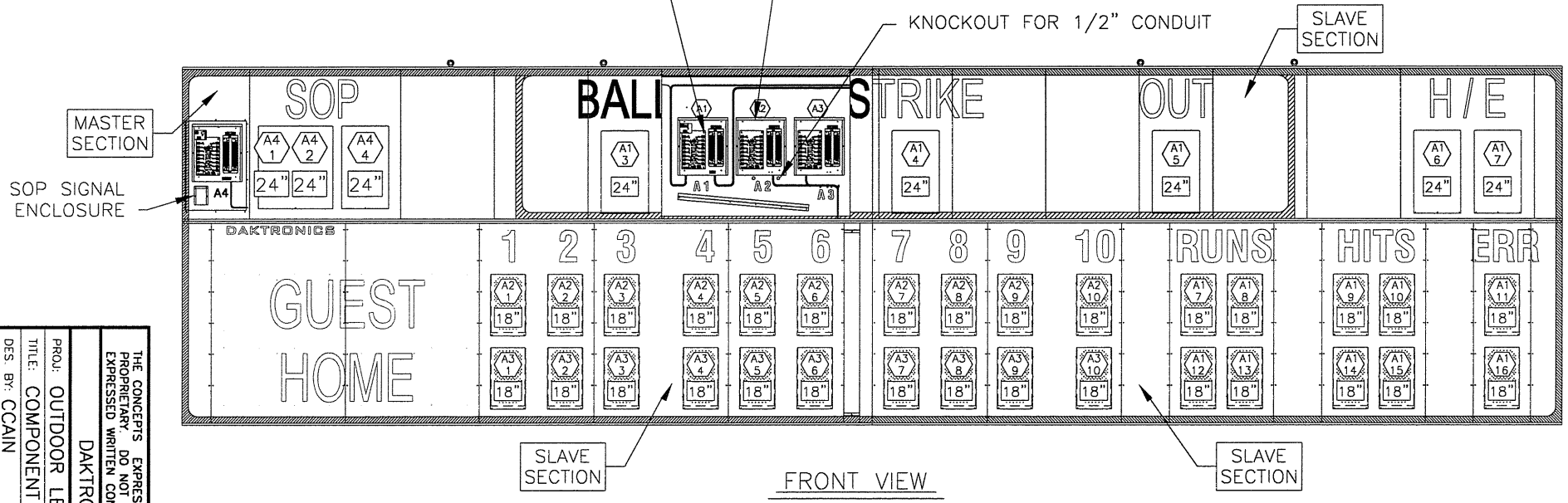
1192-R08A-234593

REV.	DATE	DESCRIPTION	BY	APPR.
REVISION				

BA-2007-11/-21, FD

ENCLOSED 16 COLUMN MASTER LED DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).

ENCLOSED 16 COLUMN SLAVE LED DRIVER AND POWER/SIGNAL ENCLOSURE @3. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).



FRONT VIEW

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

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

REV	DATE	DESCRIPTION	BY	APPR
01				

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

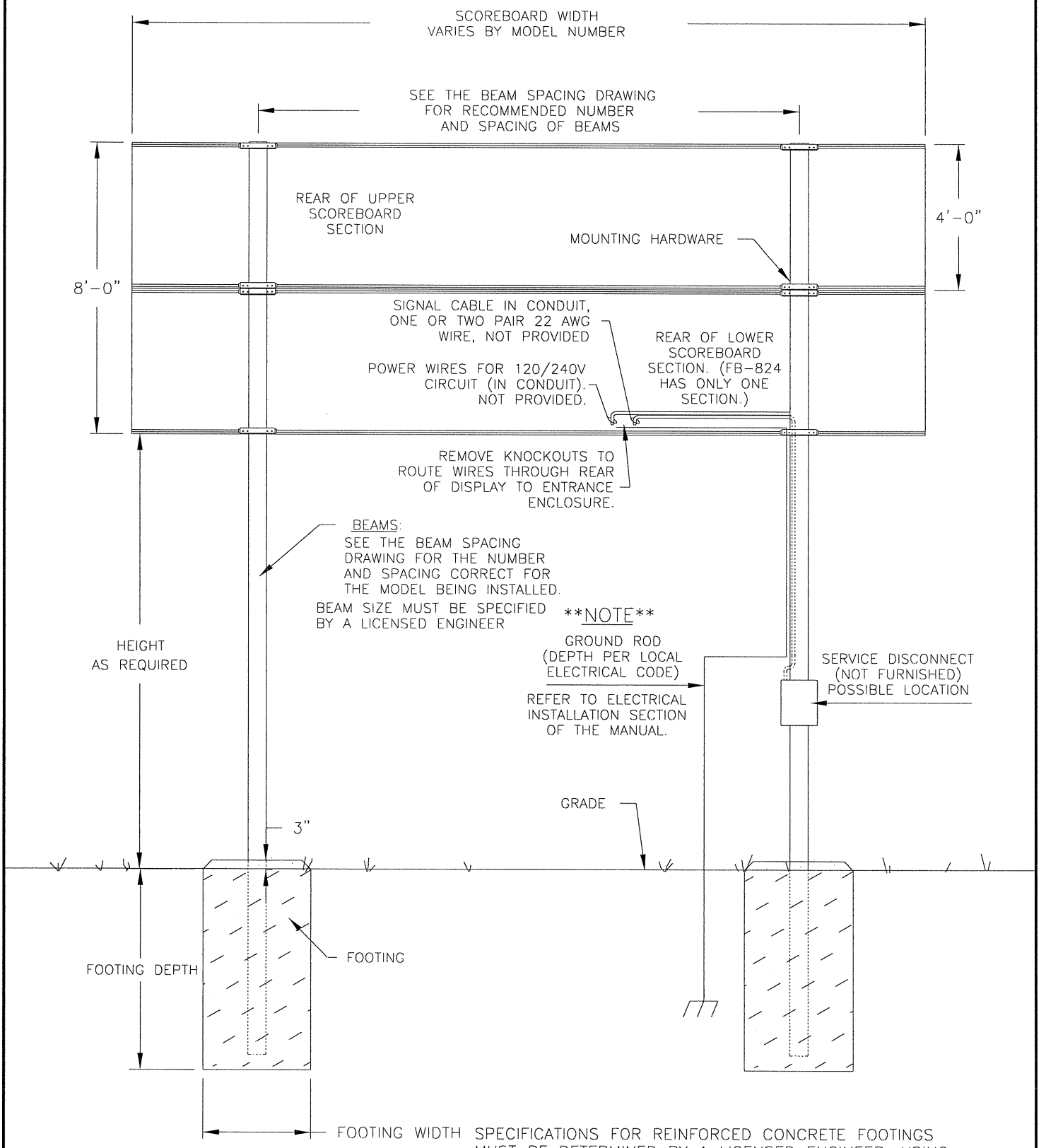
TITLE: COMPONENT LOCATIONS; BA-2007, FD, G3

DES. BY: CCAIN DRAWN BY: CCAIN DATE: 18 FEB 05

APPR. BY:

SCALE: 1=50

1192-R08A-234661



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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: FOOTBALL SCOREBOARDS

TITLE: STRUCTURE, FOOTBALL, 2 POLE

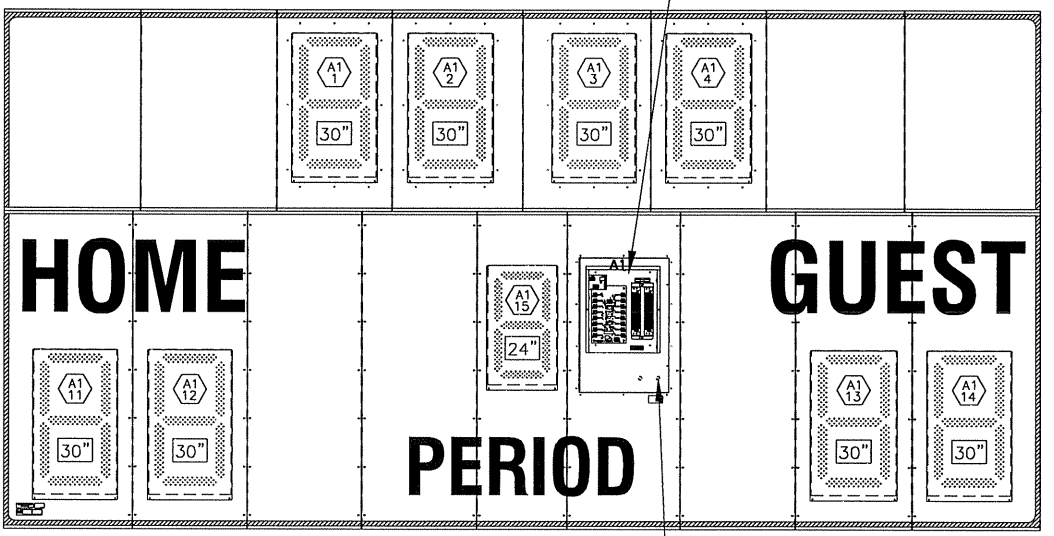
DES. BY: JHEIDERSCHEIDT DRAWN BY: TJOHNSON DATE: 24FEB05

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 | APPR. BY: | SCALE: 1=45 | 1192-R10A-235127

MS-2020-11/-21

ENCLOSED 16 COLUMN MASTER DRIVER AND POWER/SIGNAL ENCLOSURE @1. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).



KNOCKOUTS FOR CONDUIT PROVIDED IN REAR OF SCBD @2

FRONT VIEW

HINGED ACCESS DOORS REMOVED TO SHOW THE LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

18" = DIGIT SIZE

5 = LED DRIVER CONNECTOR

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

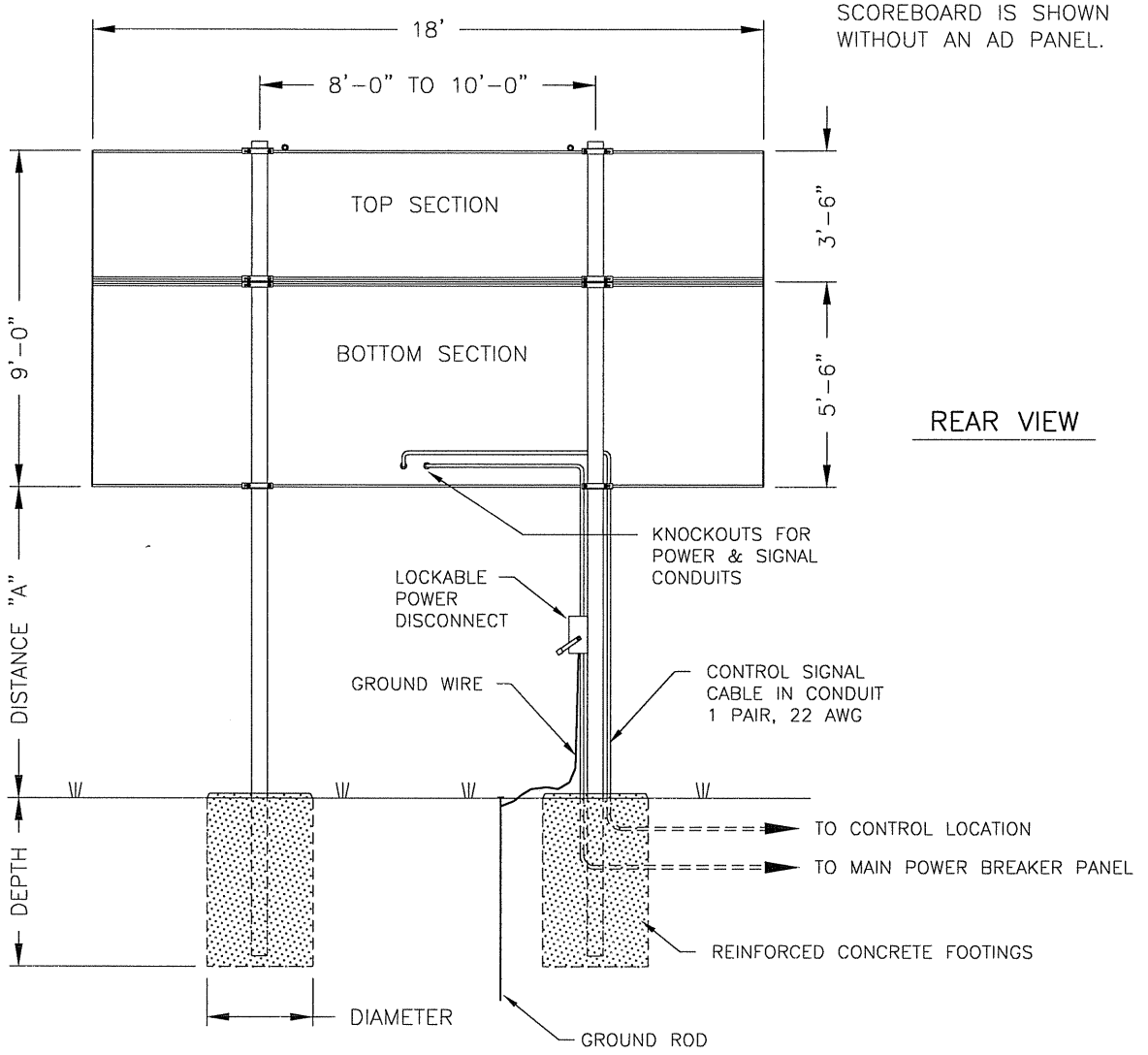
TITLE: COMPONENT LOCATIONS; MS-2020-11/-21, FD, G3

DES. BY: CCAIN DRAWN BY: CCAIN DATE: 11 MAY 05

REVISION 01 APPR. BY: SCALE: 1=40

1192-R08A-241550

REV.	DATE	DESCRIPTION	BY	APPR.



MODEL MS-2020 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	18'-0" x 9'-0"	BEAM	W12x26	W14x30	W10x33
		FOOTING	*2.0' x 6.9'*	*2.0' x 7.7'*	*2.0' x 9.1'*
12'-0"	18'-0" x 9'-0"	BEAM	W14x30	W8x31	W10x39
		FOOTING	*2.0' x 7.2'*	*2.0' x 8.0'*	*2.0' x 9.4'*
14'-0"	18'-0" x 9'-0"	BEAM	W8x31	W10x33	W12x40
		FOOTING	*2.0' x 7.6'*	*4.0' x 8.4'*	*2.0' x 9.9'*

MODEL MS-2020 WITH 30"-HIGH AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	18'-0" x 11'-6"	BEAM	W8x31	W10x33	W10x39
		FOOTING	*2.0' x 7.8'*	*2.0' x 8.6'*	*2.0' x 10.1'*
12'-0"	18'-0" x 11'-6"	BEAM	W10x33	W10x39	W12x45
		FOOTING	*2.0' x 8.1'*	*2.0' x 8.9'*	*2.0' x 10.5'*
14'-0"	18'-0" x 11'-6"	BEAM	W10x39	W12x40	W10x49
		FOOTING	*2.0' x 8.4'*	*2.0' x 9.3'*	*2.0' x 11.0'*

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.

DAKTRONICS, INC. BROOKINGS, SD 57006

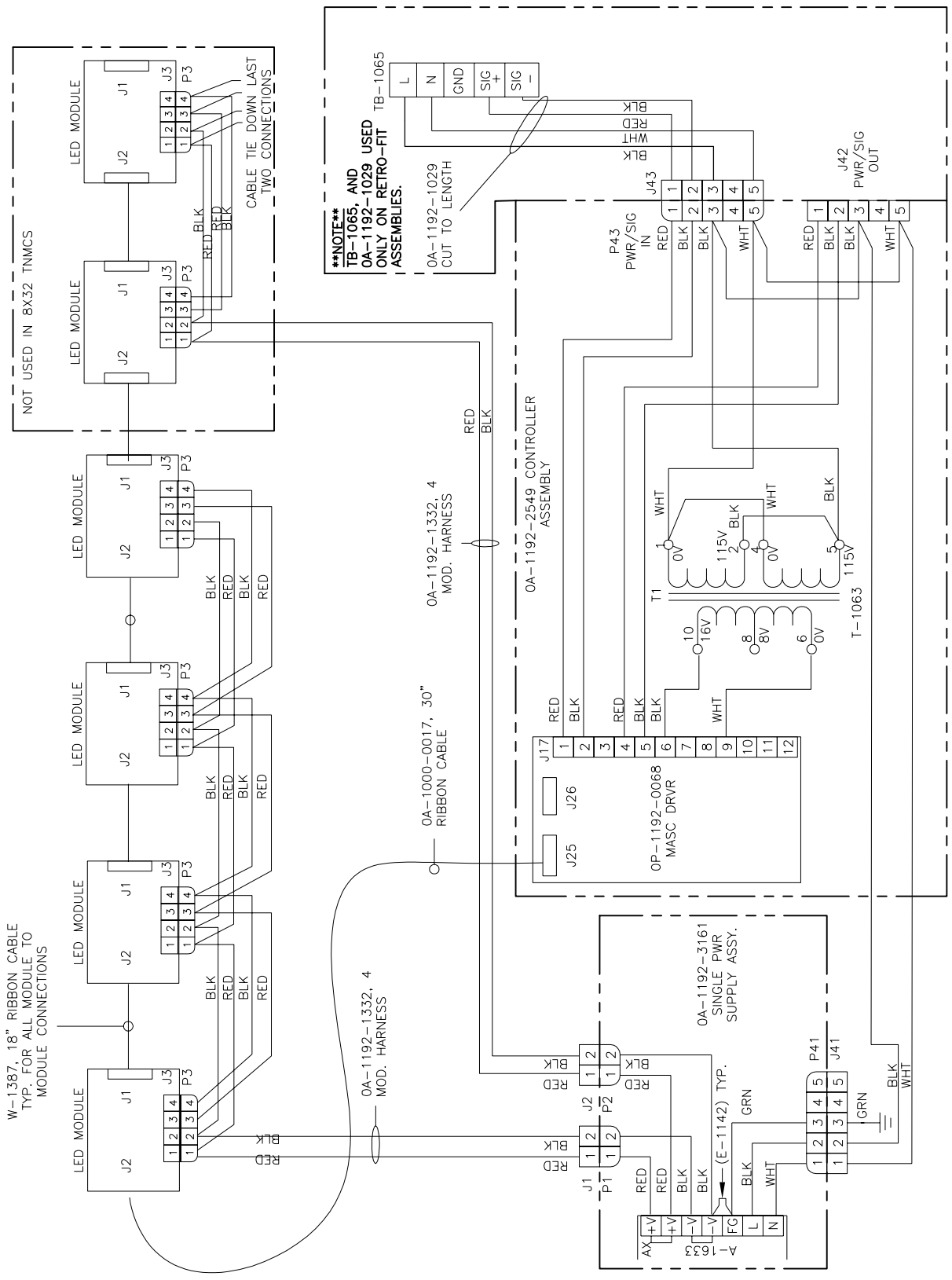
PROJ: OUTDOOR SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, MS-2020

DES. BY: TWEBER DRAWN BY: CCAIN DATE: 12 MAY 05

REVISION 00 | APPR. BY: | SCALE: 1=60

1192-R10A-241622



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

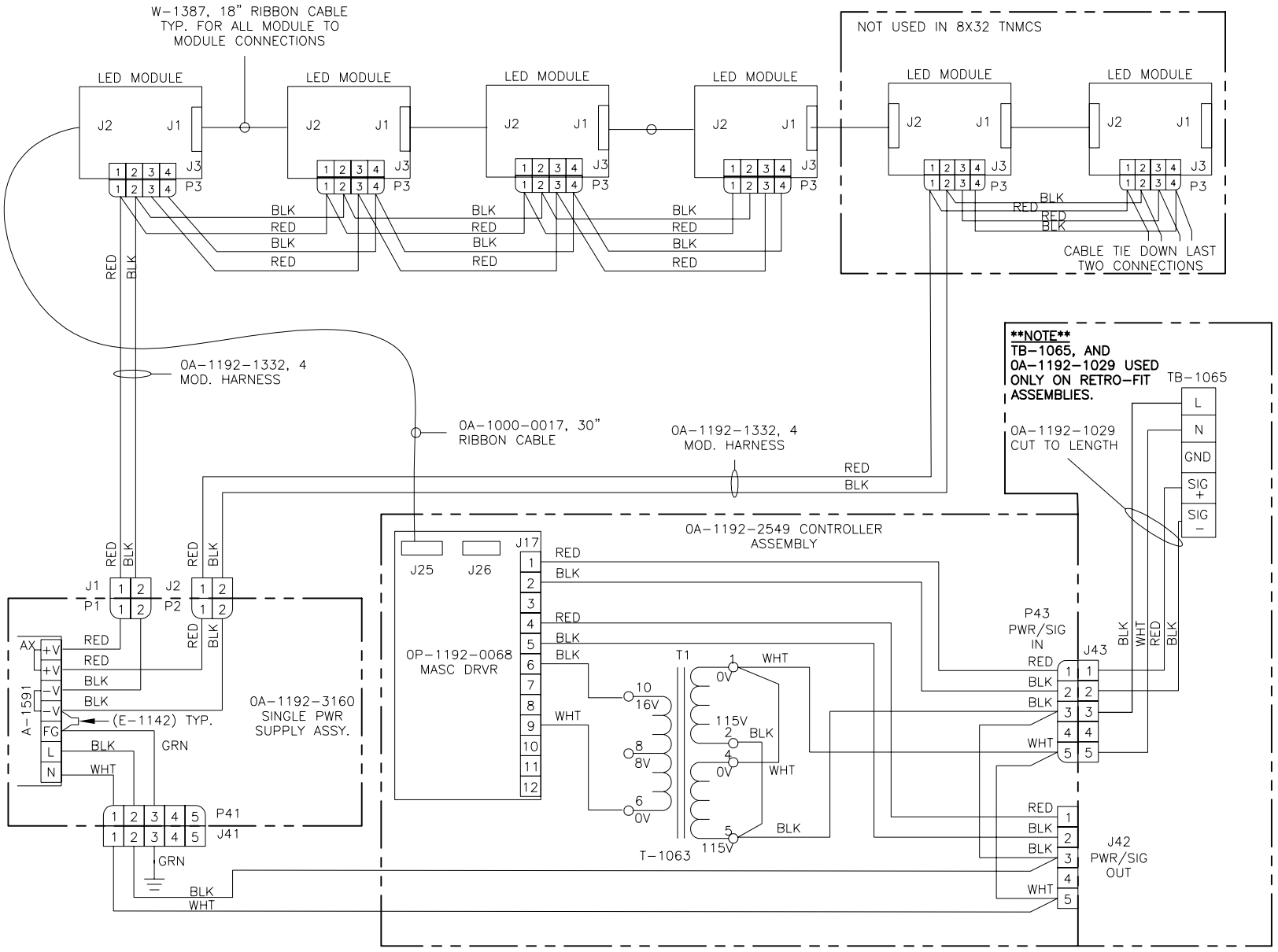
TITLE: SCHEMATIC; AMBER TNMC GEN IV

DES. BY: MMILLER DRAWN BY: DDINING DATE: 31 AUG 05

REVISION 00 | APPR. BY: | SCALE: NONE

1192-R01A-252645

REV.	DATE	DESCRIPTION	BY	APPR.
01	01 DEC 05	CHANGED MOD PWR HARNESS FROM 2 PIN TO 4 PIN HARNESS	SJC	



REV.	DATE	DESCRIPTION	BY	APPR.
01	01 DEC 05	CHANGE POWER HARNESS TO MOD FROM 2 PIN TO 4 PIN	SJC	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; RED TNMC GEN IV

DES. BY: DRAWN BY: DDINING DATE: 30 AUG 05

APPR. BY:

SCALE:

REVISION 00

1192-R01A-252681

832 AMBER LED TNMC
0A-1192-3165

848 AMBER LED TNMC
0A-1192-3166

832 RED LED TNMC
0A-1192-3164

848 RED LED TNMC
0A-1192-3167

TNMC CONTROLLER
0A-1192-2549
USED IN RED & AMBER LED TNMCs

SINGLE POWER SUPPLY ASSEMBLY
0A-1192-3161
USED IN AMBER LED TNMCs

SINGLE POWER SUPPLY ASSEMBLY
0A-1192-3160
USED IN RED LED TNMCs

AMBER LED TNMC MODULE
0A-1208-4001
USED IN AMBER LED TNMCs

RED LED TNMC MODULE
0A-1208-4000
USED IN RED LED TNMCs

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; 832/842 RED/AMB LED TNMC, G4

DES. BY: KBRICKER DRAWN BY: KBRICKER DATE: 08NOV05

APPR. BY:

SCALE: 1=15

REVISION 00

1192-R08A-257029

BA-2013-11/-21 W/ TNMC

ENCLOSED 16 COLUMN SLAVE LED DRIVER @5. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).

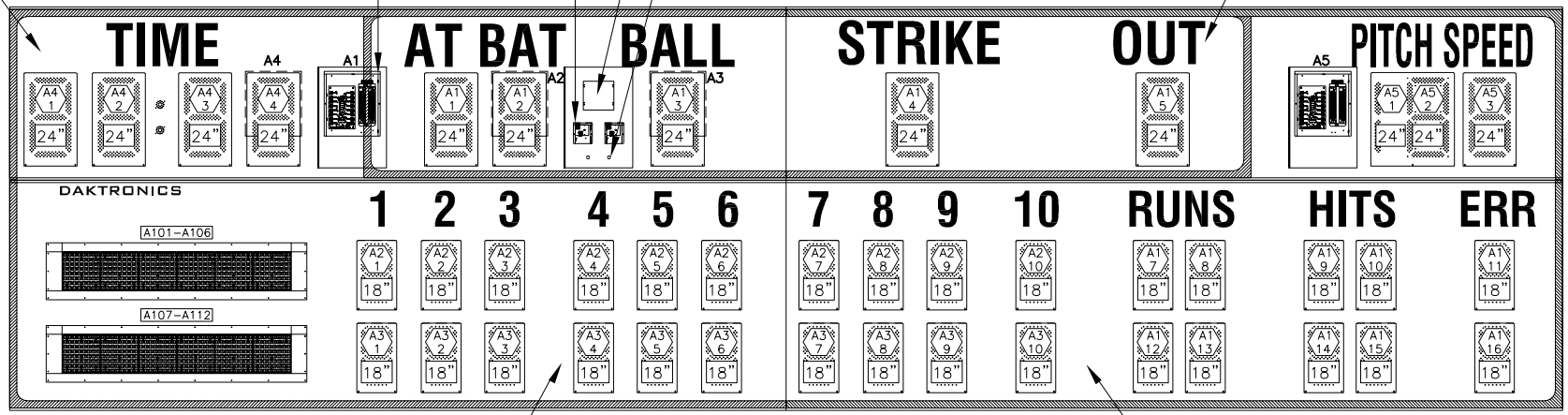
ENCLOSED SINGAL TERMINATION PANEL @2.

ENCLOSED POWER TERMINATION PANEL @1.

KNOCKOUTS FOR 1/2" CONDUIT

MASTER SECTION

SLAVE SECTION



SLAVE SECTION

SLAVE SECTION

FRONT VIEW

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

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
01				

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMP. LOCATION; BA-2013-11/-21 W/TNMC, FD, G4

DES. BY: TJOHNSON DRAWN BY: KBRICKER DATE: 30DEC05

APPR. BY:

SCALE: 1=50

REVISION

1192-R08A-260830

BA-2013-11/-21

ENCLOSED 16 COLUMN SLAVE LED DRIVER @5. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL).

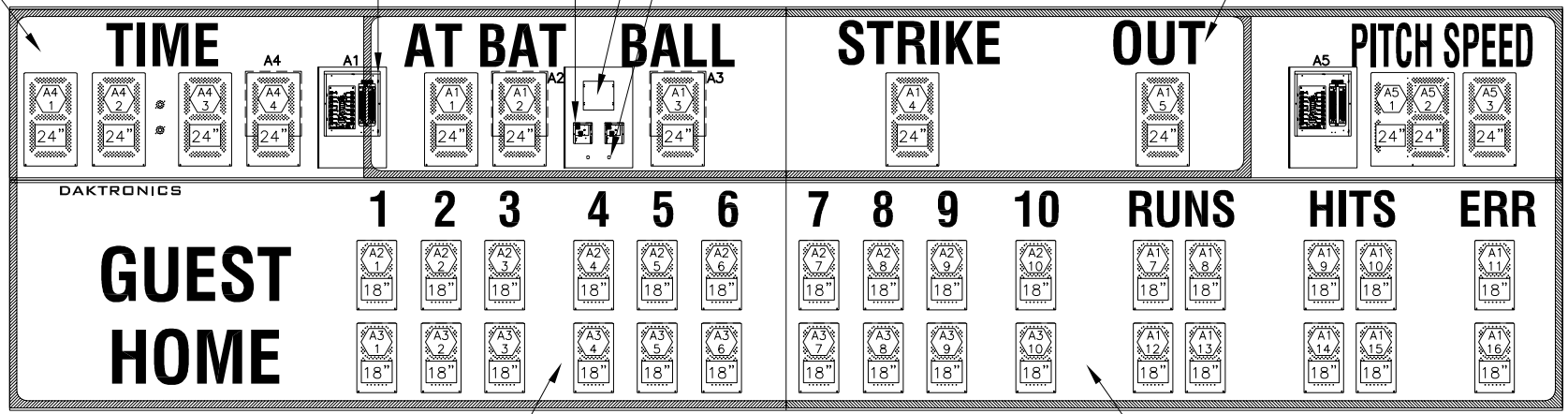
ENCLOSED SINGAL TERMINATION PANEL @2.

ENCLOSED POWER TERMINATION PANEL @1.

KNOCKOUTS FOR 1/2" CONDUIT

MASTER SECTION

SLAVE SECTION



SLAVE SECTION

SLAVE SECTION

FRONT VIEW

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

18" = DIGIT SIZE

HINGED ACCESS DOORS REMOVED TO SHOW LED DRIVER AND THE POWER/SIGNAL ENCLOSURE.

REV.	DATE	DESCRIPTION	BY	APPR.
01				

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-2013-11/-21, FD, G4

DES. BY: TJOHNSON DRAWN BY: KBRICKER DATE: 30DEC05

APPR. BY:

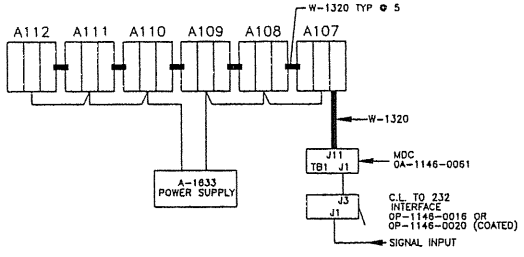
SCALE: 1=50

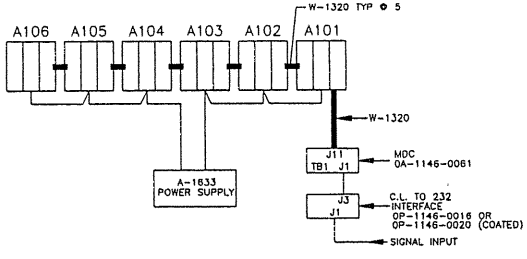
1192-R08A-260862

GUEST

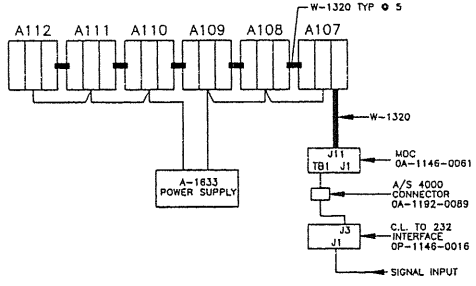
HOME

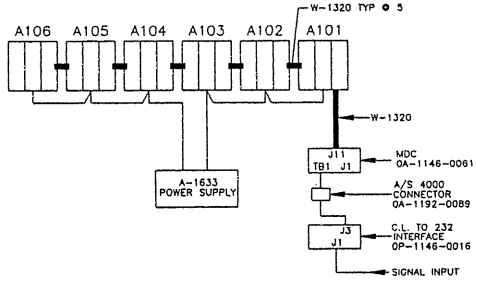
AS-5000 MASTER-MASTER LAYOUT





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

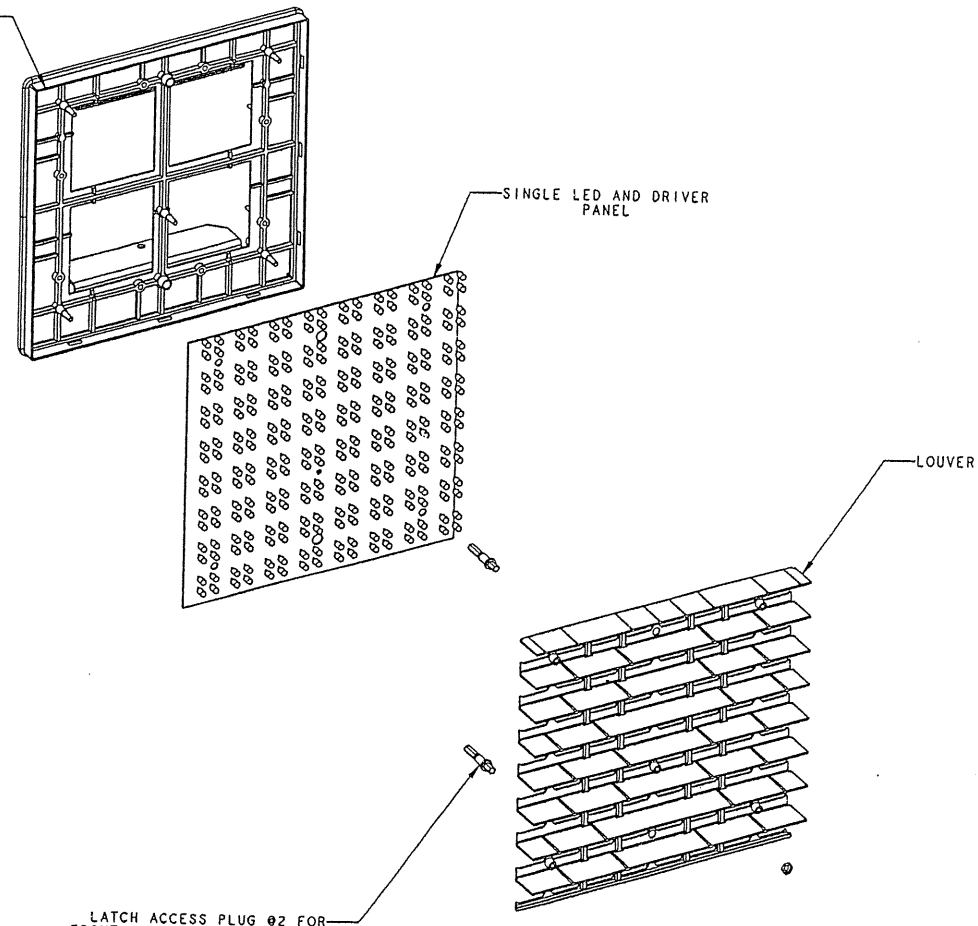
TITLE: CONTROL LAYOUT; OUTDOOR LED TNMC

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

REVISION APPR. BY:

SCALE: 1=1

1192-E10B-107507

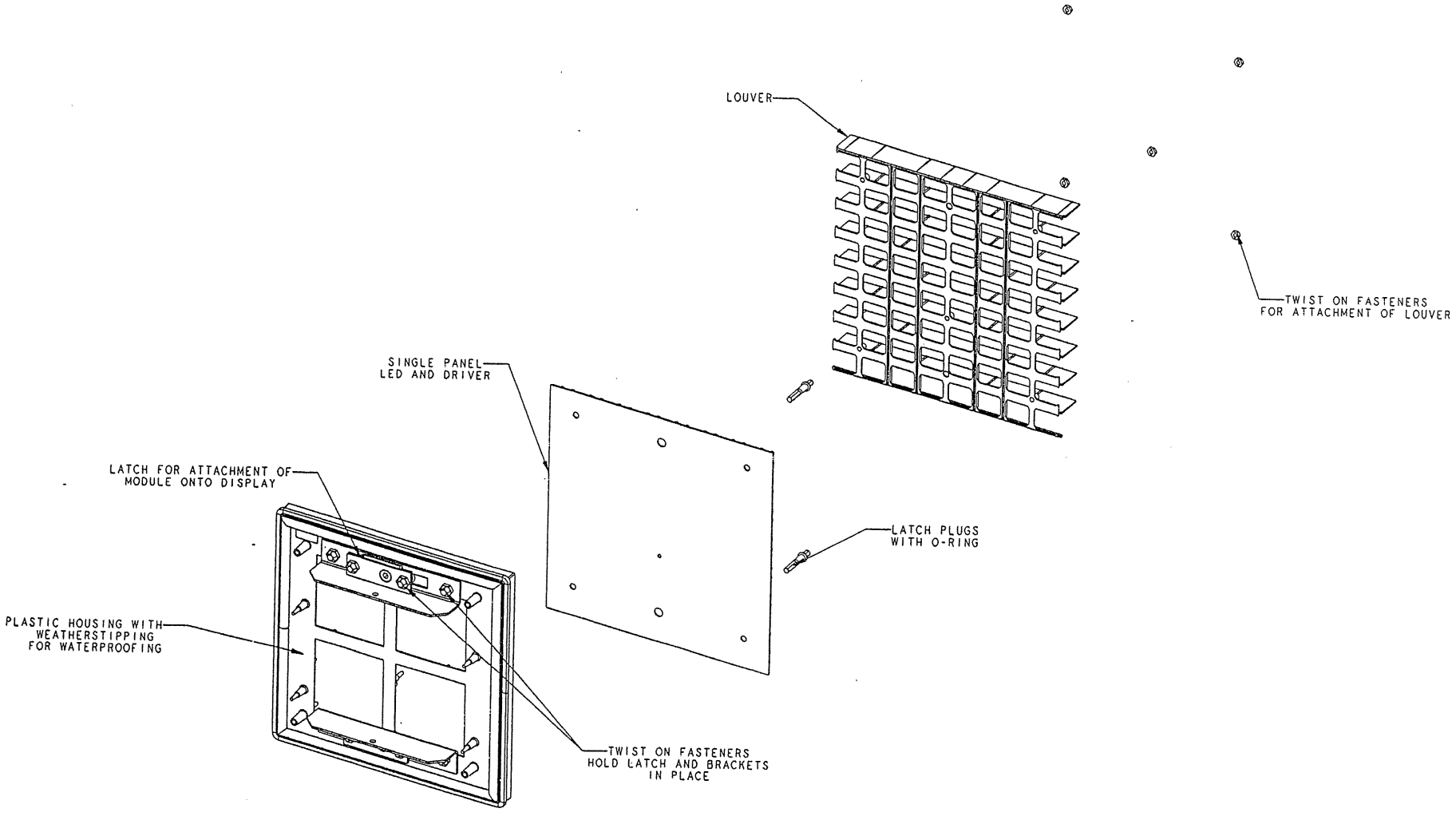


REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

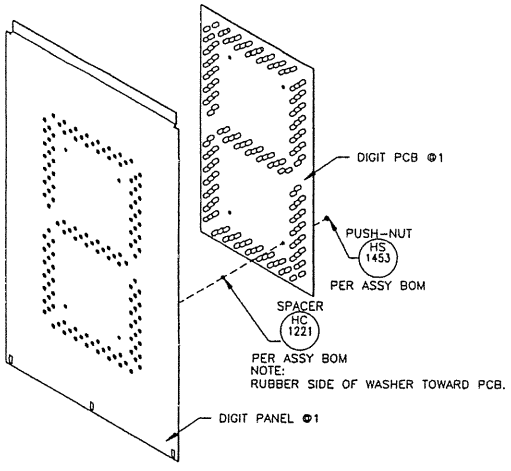
PROJ:	34MM OUTDOOR GALAXY
TITLE:	EXPLODED FRONT VIEW; SINGLE PANEL MODULE
DES. BY:	NANDAL
DRAWN BY:	DNUGTEREN
DATE:	10JAN00
SHEET 1 OF DWG 126111	
SCALE:	1=2

1208-E10B-126111



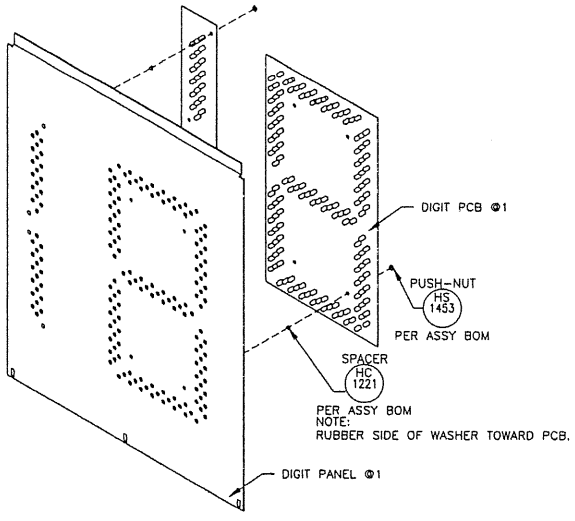
REV.	DATE	DESCRIPTION	BY	APPR.

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	1208 - E10B - 126112
SCALE: 1=2	



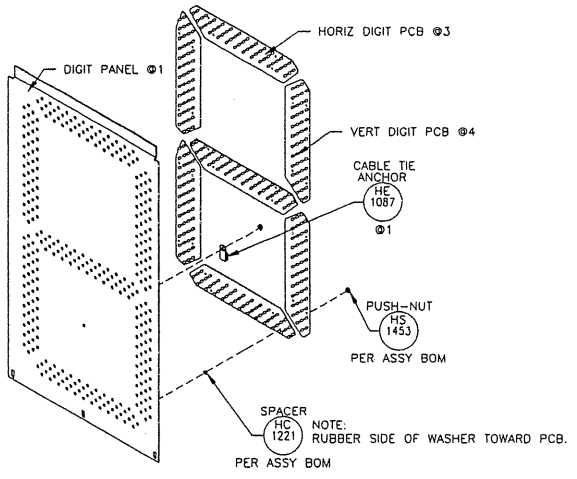
DETAIL: A

REFER TO THIS DETAIL FOR THE FOLLOWING RED/ORG, GRN, AND AMBER LED DIGIT ASSEMBLY SIZES:
-5", 7", 10", 15", 18", SMALL FB IND, AND LARGE FB IND (NOTE THAT THE FB INDICATORS DO NOT LOOK LIKE THE DIGIT IN THE ABOVE DETAIL. THESE INDICATORS ARE ASSEMBLED WITH THE SAME METHOD AS THE DIGIT SHOWN IN THE ABOVE DETAIL.)



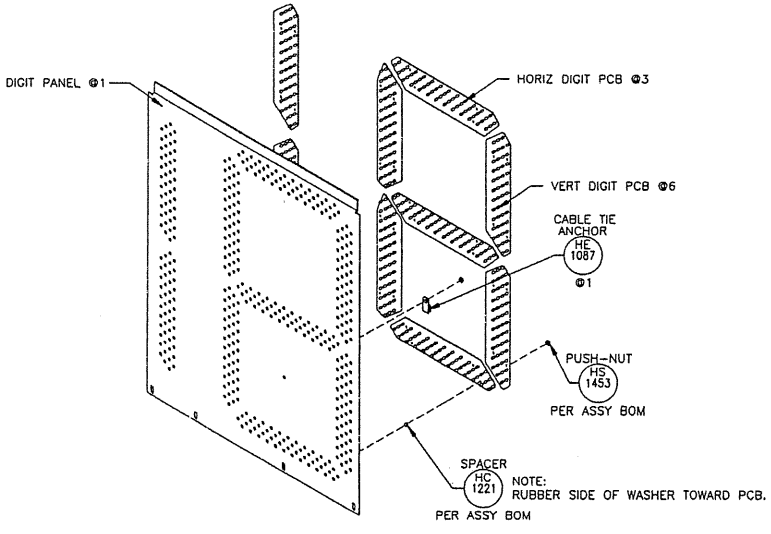
DETAIL: B

REFER TO THIS DETAIL FOR THE FOLLOWING RED/ORG, GRN, AND AMBER LED DIGIT ASSEMBLY SIZES:
-15"+1, AND 18"+1



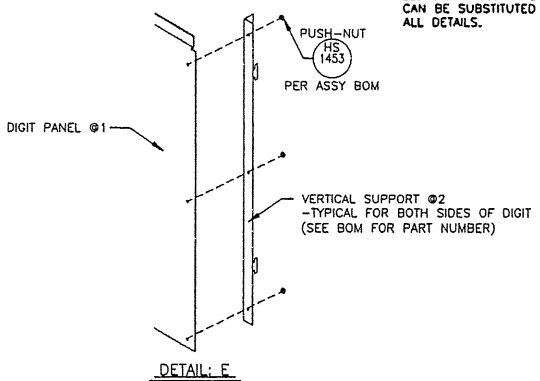
DETAIL: C

REFER TO THIS DETAIL FOR THE FOLLOWING RED/ORG, GRN, AND AMBER LED DIGIT ASSEMBLY SIZES:
-24", 24" WIDE, 30", 30" WIDE, 36", 42", AND 48"
*SEE ALSO DETAIL F FOR HARNESS CONNECTIONS.



DETAIL: D

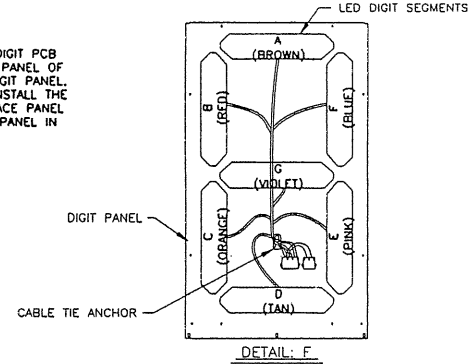
REFER TO THIS DETAIL FOR THE FOLLOWING RED/ORG, GRN, AND AMBER LED DIGIT ASSEMBLY SIZES:
-24"+1, 30"+1, 36"+1, 42"+1, AND 48"+1
*SEE ALSO DETAIL F FOR HARNESS CONNECTIONS.



DETAIL: E

REFER TO THIS DETAIL FOR THE FOLLOWING RED/ORG, GRN, AND AMBER LED DIGIT ASSEMBLY SIZES:
-30", 30"+1, 30" WIDE, 48", AND 48"+1

NOTE: IN SOME APPLICATIONS, THE LED DIGIT PCB MAY BE MOUNTED DIRECTLY TO THE FACE PANEL OF THE SCOREBOARD INSTEAD OF THE LED DIGIT PANEL. THE SAME HARDWARE WILL BE USED TO INSTALL THE LED DIGIT PCB. THE LED SCOREBOARD FACE PANEL CAN BE SUBSTITUTED FOR THE LED DIGIT PANEL IN ALL DETAILS.



DETAIL: F
DIGIT REAR VIEW

REFER TO THIS DETAIL WHEN ASSEMBLING INDIVIDUAL SEGMENTED LED DIGITS SUCH AS IN DETAILS C AND D. ATTACH LED DIGIT SEGMENT HARNESS (SEE BOM FOR PART NUMBER) AS SHOWN ABOVE. WHEN ATTACHING LED DIGIT SEGMENT HARNESS, MATCH THE COLORED HARNESS TO THE CORRESPONDING LED DIGIT SEGMENTS AS SHOWN ABOVE AND CABLE TIE WHERE NEEDED USING CABLE TIES AND CABLE TIE ANCHOR. TRY TO BUNDLE CABLES TOGETHER TO MAKE HARNESS LOOK LIKE ABOVE WHEN COMPLETE.

REV.	DATE	DESCRIPTION	BY	APPR.
03	01JAN03	CHANGE LETTER FOR VIOLET TO G ON DETAIL F	CME	
02	31 DEC 02	ADDED HARNESS TO DETAIL "F" TO SHOW HOW TO CABLE TIE.	CJB	
01	03 DEC 02	REPLACED SPACER HE-1376 WITH HC-1221	ATB	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

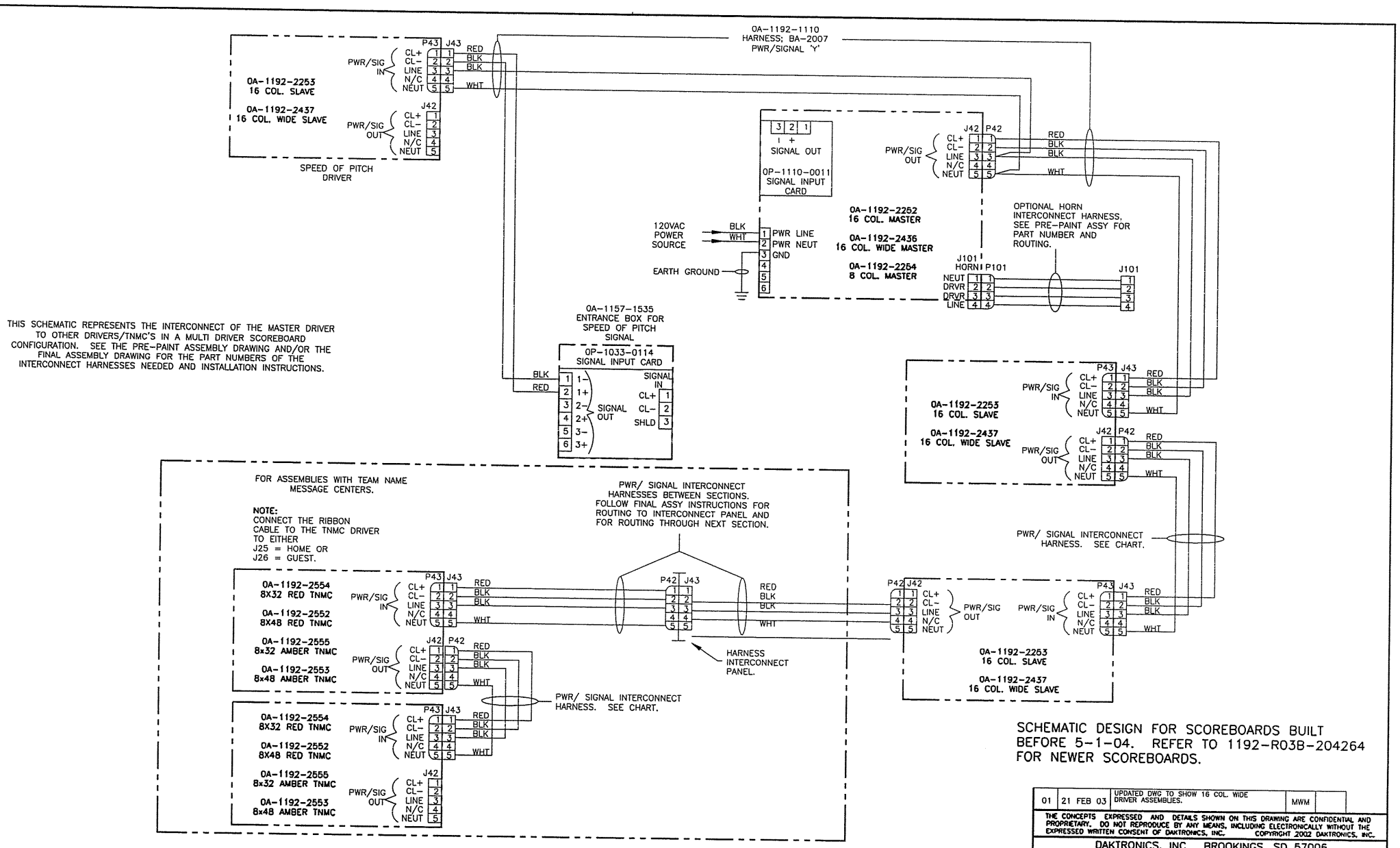
TITLE: DIGIT ASSEMBLIES; GEN III LED DIGITS

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 30OCT02

REVISION APPR. BY:

SCALE: 1=6

1192-E10B-177679



SCHEMATIC DESIGN FOR SCOREBOARDS BUILT BEFORE 5-1-04. REFER TO 1192-R03B-204264 FOR NEWER SCOREBOARDS.

REV.	DATE	DESCRIPTION	BY	APPR.
03	26 APR 04	DESIGN HAS BEEN UPDATED, SEE DWG-204264	MWM	
02	08 MAY 03	CHANGED TNMC TEXT TO NEW GEN 3 AND ADDED NOTE.	TAS	MWM
01	21 FEB 03	UPDATED DWG TO SHOW 16 COL. WIDE DRIVER ASSEMBLIES.	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

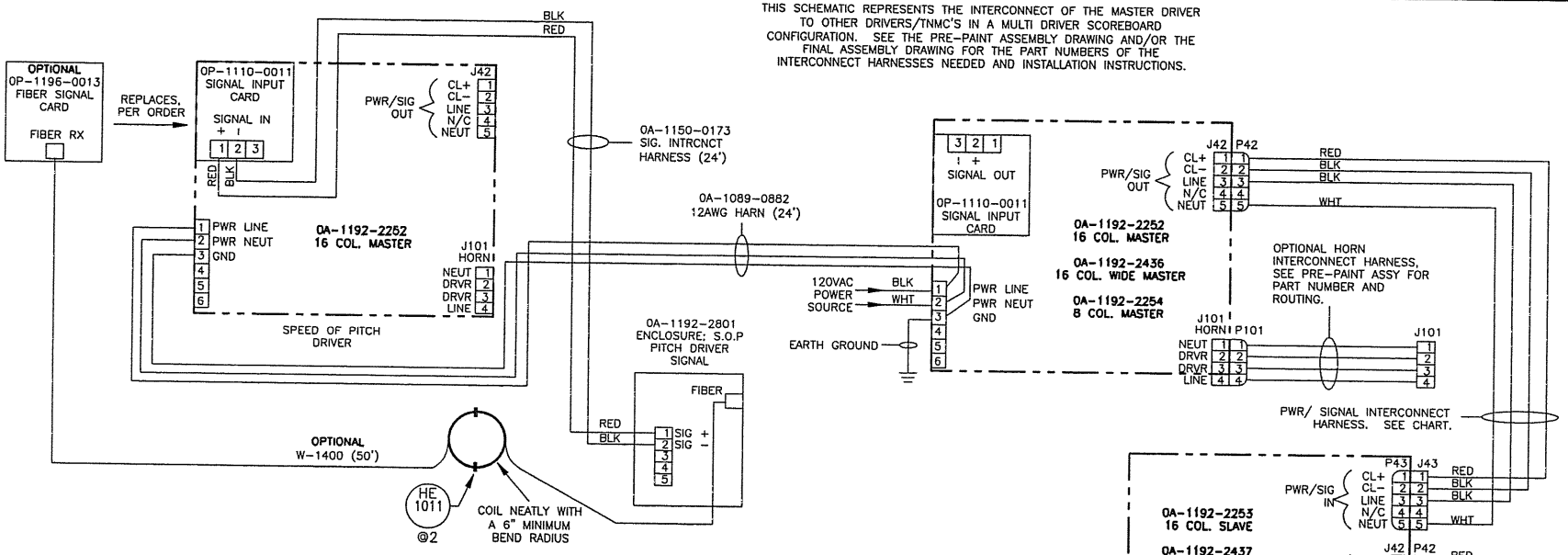
TITLE: SCHEMATIC; BA-2011/BA-2007, GEN III, OPTIONAL TNMC

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 20 JAN 03

REVISION 03 APPR. BY: SCALE: NONE

1192-R03B-181354

THIS SCHEMATIC REPRESENTS THE INTERCONNECT OF THE MASTER DRIVER TO OTHER DRIVERS/TNMC'S IN A MULTI DRIVER SCOREBOARD CONFIGURATION. SEE THE PRE-PAINT ASSEMBLY DRAWING AND/OR THE FINAL ASSEMBLY DRAWING FOR THE PART NUMBERS OF THE INTERCONNECT HARNESSES NEEDED AND INSTALLATION INSTRUCTIONS.



SCHEMATIC DESIGN FOR SCOREBOARDS BUILT AFTER 5-1-04. REFER TO DWG 1192-R03B-181354 FOR OLDER SCHEMATIC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

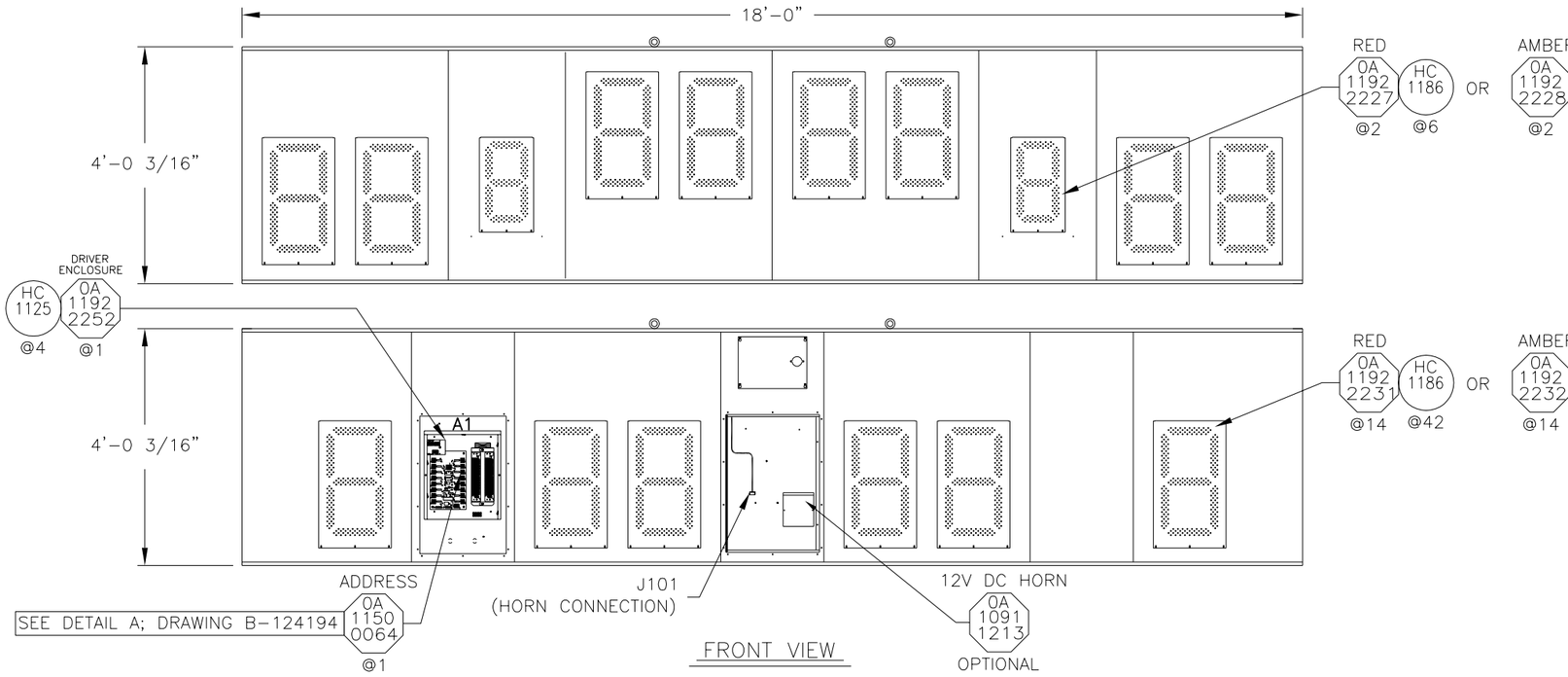
TITLE: SCHEMATIC; BASEBALL W/ S.O.P, GEN III, OPTIONAL TNMC

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 13 FEB 04

REVISION 00 APPR. BY: SCALE: NONE

1192-R03B-204264

REV.	DATE	DESCRIPTION	BY	APPR.

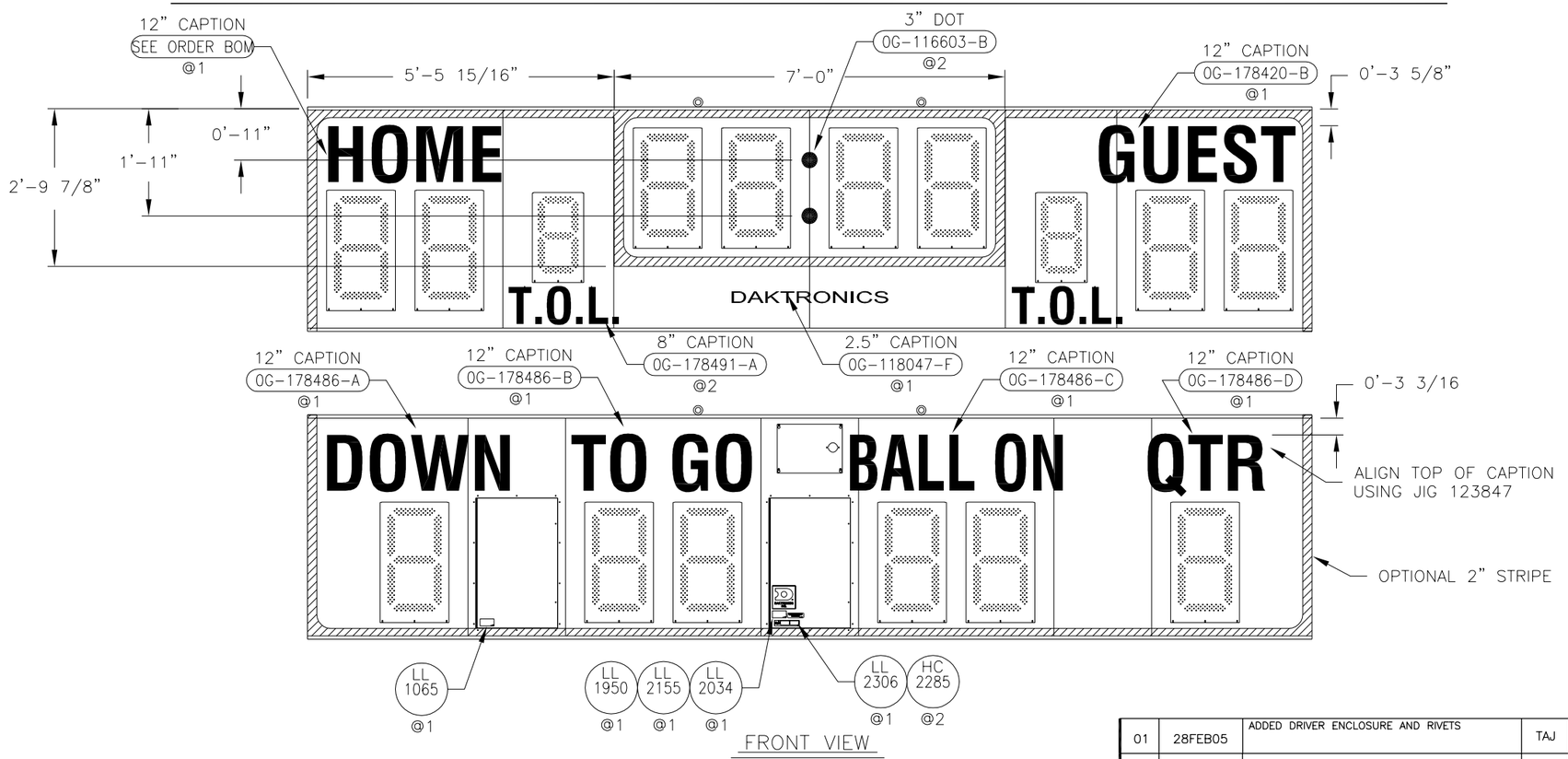


ADDRESS SETTINGS:
DRIVER: A1
ADDRESS PLUG: 0A-1150-0064
ADDRESS: 18
NOTES: CUT ALL BUT THE PINK & RED WIRES.

FB-2007-11
SPECIFICATIONS FOR LL-2036
MODEL: FB-2007-11
VOLTS: 120V AC
AMPS: 2.5
MAX WATTS: 300

OR

FB-2007-21
SPECIFICATIONS FOR LL-2306
MODEL: FB-2007-21
VOLTS: 120V AC
AMPS: 2.5
MAX WATTS: 300



NOTE: CAPTION PART NUMBERS LISTED ON THIS DRAWING ARE FOR WHITE VINYL CAPTIONS. COLORED CAPTION NUMBERS MAY BE SUBSTITUTED BY ADDING ANOTHER PART LETTER. FOR EXAMPLE, "-B" FOR WHITE CAPTION AND "-BB" FOR A COLORED CAPTION.

ASSEMBLY PACKET

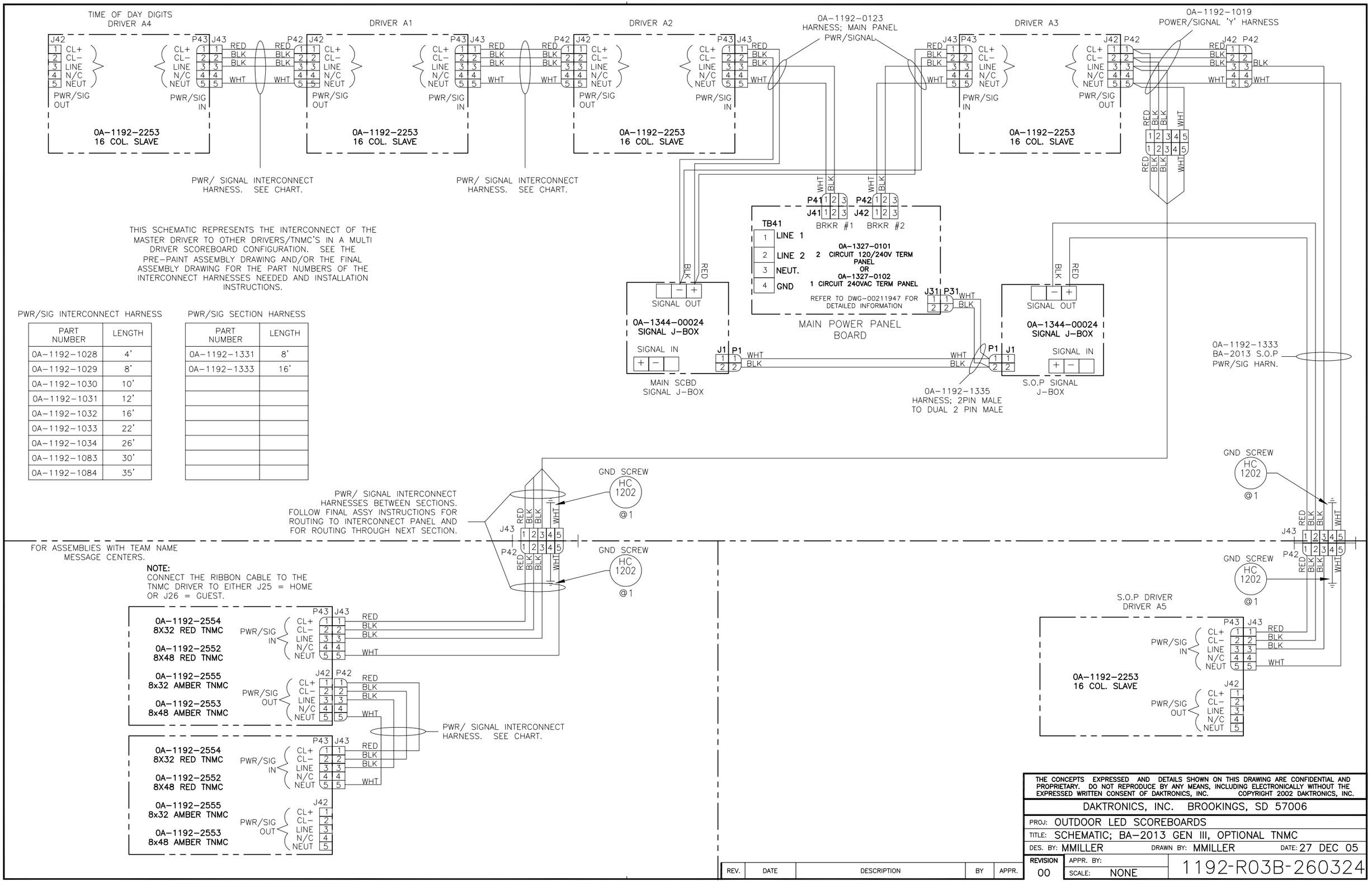
0A-1192-2818.....F. ASSY; FB-2007-11, G3
0A-1192-2819.....F. ASSY; FB-2007-21, G3

REV.	DATE	DESCRIPTION	BY	APPR.
01	28FEB05	ADDED DRIVER ENCLOSURE AND RIVETS	TAJ	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS
TITLE: F. ASSY; FB-2007-11/-21, G3
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 07MAY04
REVISION 01 APPR. BY:
SCALE: 1=30

1192-E10B-211007



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

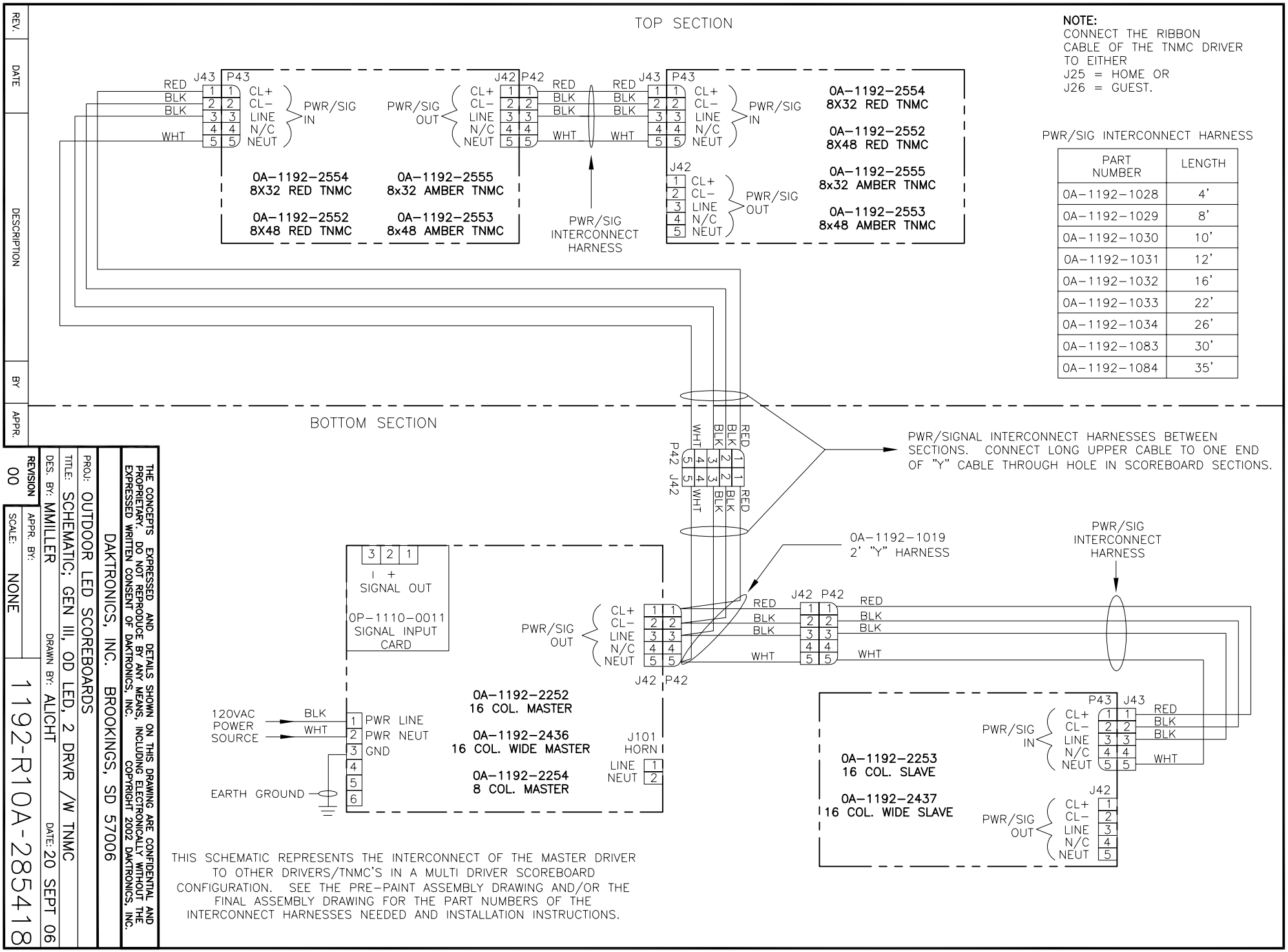
TITLE: SCHEMATIC; BA-2013 GEN III, OPTIONAL TNMC

DES. BY: MMILLER DRAWN BY: MMILLER DATE: 27 DEC 05

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION 00 | APPR. BY: | SCALE: NONE

1192-R03B-260324



REV. | DATE | DESCRIPTION | BY | APPR.

00

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; GEN III, OD LED, 2 DRVR /W TNMC

DES. BY: MMILLER DRAWN BY: ALICHT DATE: 20 SEPT 06

APPR. BY:

SCALE: NONE

REVISION

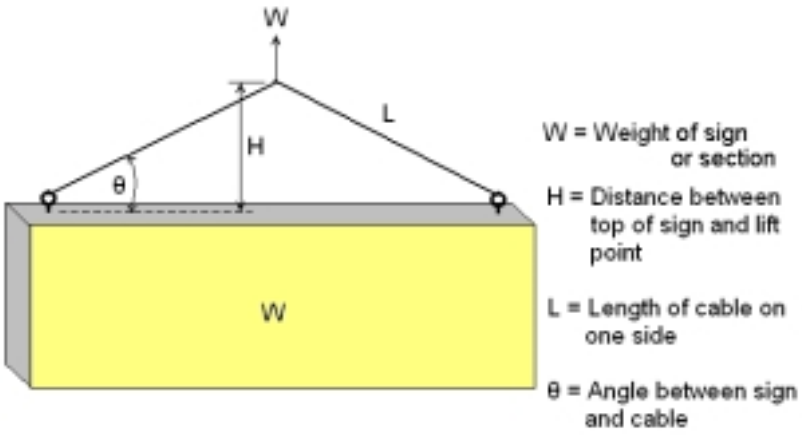
1192-R10A-285418

Appendix B: Eyebolts

Eyebolts

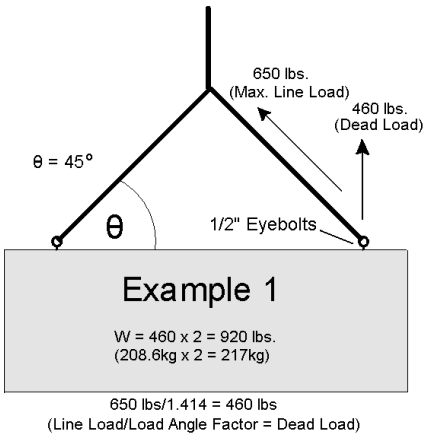
Almost every display that leaves Daktronics is equipped with eyebolts for lifting the display. There are two standard sizes of eyebolts: ½″ and ⅝″.

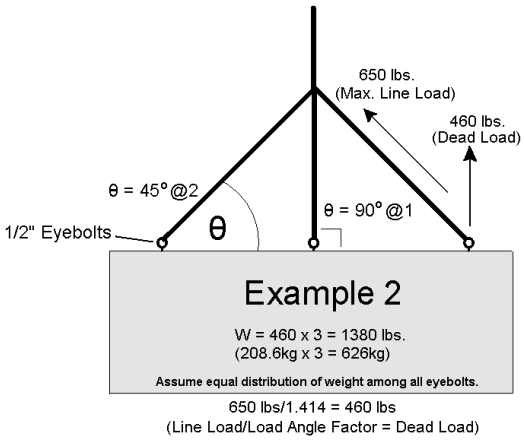
Load Increase Factor: The load increases as the lift angle (θ) decreases. The allowable load on the eyebolts also decreases with the lift angle due the bending stress on the eyebolts. In sum, the smaller the angle between the cable and the top of the display, the lighter the sign must be to safely lift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

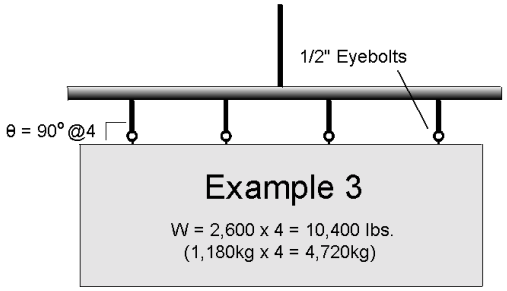


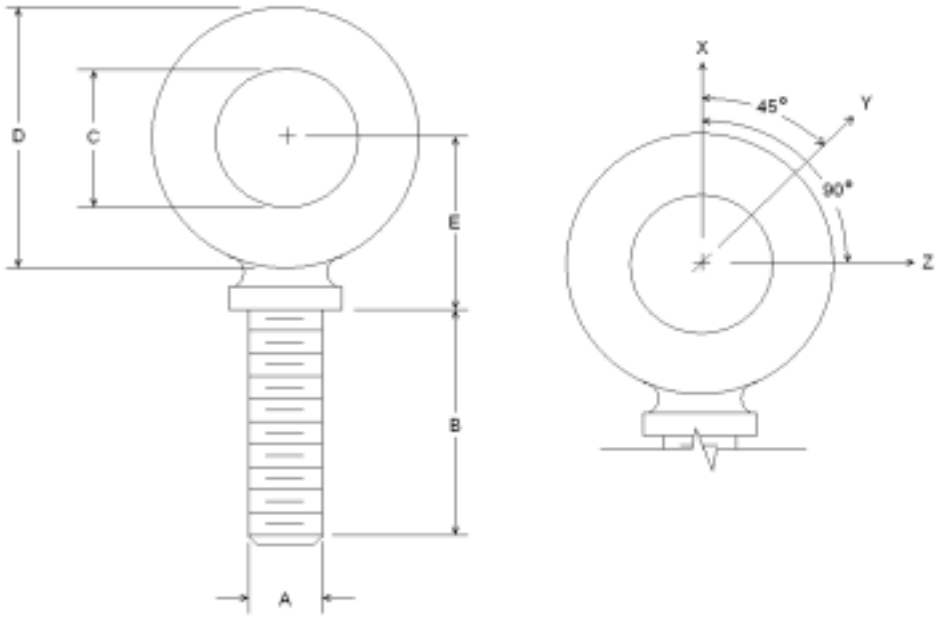
Horizontal Angle	Load Angle Factor (L/H)
90	1.00
60	1.155
50	1.305
45	1.414
30	2.00

	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.