

# Single-Section Outdoor LED Scoreboards

## Installation, Specifications, and Maintenance Manual

ED13038

*All Sport® is a registered trademark of Daktronics, Inc.*

### Models\*

BA-515	BA-718	BA-2005	FB-824	MS-2002	SO-918	TI-218
BA-518	BA-1018	BA-2010	FB-2005	MS-2004	SO-2008	TI-418
BA-618	BA-2003	CT-2001	MS-915	MS-2006	SO-2009	TI-2003
BA-624	BA-2004	CT-2002	MS-918	MS-2012	SO-2010	TI-2019

*\*All models carry a suffix of -11 or -21, indicating power and digit style.*

**ED13038**

**Product 1192**

**Rev 7 – 09 December 2002**

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

Scoreboard Serial No. \_\_\_\_\_

Scoreboard Model No. \_\_\_\_\_

Date Installed \_\_\_\_\_



**DAKTRONICS**

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# Section 1: Introduction

## 1.1 How To Use This Manual

This manual explains the installation of *Daktronics Single-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 Help Desk telephone numbers are listed on the cover page of this manual.

### *Important Safeguards:*

1. Read and understand these instructions before installing the display.
2. Do not drop the control console or allow it to get wet.
3. Properly ground the scoreboard with a grounding electrode at the scoreboard location.
4. **Disconnect power when the scoreboard is not in use.**
5. **Disconnect power when servicing the scoreboard.**
6. 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 the drawing number (7087-P08A-69945 in the example), which is located in the lower right corner of the drawing. This manual refers to drawings by their last set of digits and the letter preceding them. The example would be **Drawing A-69945**.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: BASKETBALL		
TITLE: SEGMENTATION, 7 SEG BAR DIGIT		
DES. BY: BPETERSON    DRAWN BY: TNELSON    DATE: 8 JUL 02		
APPR. BY: AVB	7087-P08A-69945	
SCALE: 1 = 4		

**Figure 1:** Daktronics Drawing Label

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

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

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

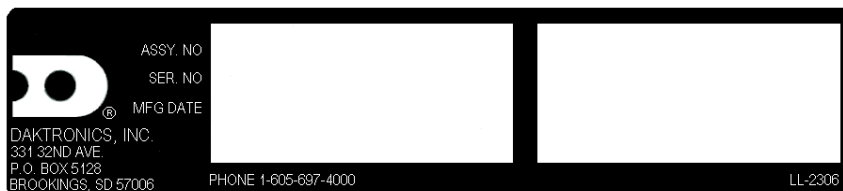
All references to drawing numbers, appendices, figures, or other manuals are presented in **bold** typeface, as in this example: "Refer to **Drawing A-114667** for the location of the driver enclosure." Additionally, any drawings referenced within a particular subsection are listed at the beginning of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

### **Reference Drawing:**

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

Daktronics identifies 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 **ED13038**.

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



**Figure 2: Scoreboard Label**

Daktronics displays are built for long life and require little maintenance. However, from time to time, certain display components will have to be replaced. The Replacement Parts List in **Section 8** 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

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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 Manual Overview

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This manual details outdoor, single-section scoreboards with LED digits and characters. It is divided into the following sections:

- Section 1:** Provides an overview of the product, product safety information, and labeling and numbering descriptions.
- Section 2:** Lists the drawing or drawings needed to determine scoreboard model numbers.
- Section 3:** Contains tables that show all of the mechanical specifications, circuit specifications, and power requirements for each model.
- Section 4:** Lists drawings needed to determine the location of scoreboard components.
- Section 5:** Lists the electrical schematic drawing and drivers for each model.
- Section 6:** Contains mechanical installation information for each model.
- Section 7:** Contains electrical installation information for each model.
- Section 8:** Contains scoreboard service information and explains the Daktronics Exchange and Repair and Return Programs.
- Section 9:** Contains information for installation and maintenance of team name message centers (TNMCs).
- Section 10:** Contains descriptions and installation instructions for scoreboard options.
- Appendix A:** Contains all drawings referenced in this manual.
- Appendix B:** Contains ED7244, a detailed instruction on scoreboard lifting and eyebolts.

### 1.4 Product Overview

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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 10" to 36" tall, the boards 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-orange 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 100 W to a maximum of 475 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 number and electrical requirements can be found on a label on the scoreboard entrance panel.

Cabinets for the displays 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.

**K 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:

- **ED12126:** All Sport 3000 Series Control Console Operation Manual
- **ED11976:** All Sport 5000 Series Control Console Operation Manual

## 1.5 Model Names

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### Reference Drawings:

Single-Section LED Scoreboard Models.....	<b>Drawing A-142912</b>
Single-Section LED Scoreboard Models.....	<b>Drawing A-152950</b>
Single-Section LED Scoreboard w/LED TNMC .....	<b>Drawing A-152936</b>
Component Locations; SO-2009-XX.....	<b>Drawing A-167304</b>
Component Locations; SO-2010-XX.....	<b>Drawing A-167352</b>

Daktronics scoreboards are differentiated by their model numbers: *BA-1018*, for example, designates a specific baseball scoreboard. The two-letter prefixes for scoreboards in this manual include the following: **BA** – baseball; **CT** – counter; **FB** – football; **MS** – multisport; **SO** – soccer; and **TI** – timer.

In the outdoor LED scoreboard series, the first number or first two numbers following the prefix simply identify the scoreboard line, while the second set of numbers often refers to digit size. With the *BA-1018* scoreboard, "10" identifies the product line, and "18" signifies that the board's primary digits are a nominal 18" tall. Not all scoreboard lines follow this identification feature, however, and the three or four numbers following the prefix may simply identify the specific model.

Most Daktronics scoreboards also carry a two-number suffix that refers to indoor-outdoor status, power supply, and digit color: *-11* and *-12* are outdoor scoreboards, 120 V and 230 V respectively, and they feature red-orange digits; *-21* and *-22* are outdoor scoreboards, 120 V and 230 V respectively, and feature amber digits. Models that operate with 230 V power are also available.

Individual scoreboard models are identified in the drawings listed above.

## 1.6 Product Safety Approval

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



## Section 2: Model Identification

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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.

### Reference Drawings:

Single-Section Scoreboard Models .....	<b>Drawing A-142912</b>
Single Section LED Scoreboard w/LED TNMC.....	<b>Drawing A-152936</b>
Single Section LED Scoreboard Models .....	<b>Drawing A-152950</b>
Component Locations; SO-2009-XX.....	<b>Drawing A-167304</b>
Component Locations; SO-2010-XX.....	<b>Drawing A-167352</b>



## **Section 3: Specifications**

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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.



### 3.1 Single-Section Scoreboards

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-orange digits and indicators; suffixes -21 and -22 indicate amber digits

Model	Dimensions Height, Width, Depth	Weight	Digit Size	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
		Uncrated					
BA-515-11	H3'-0", W6'-0", D11" (914 mm, 1829 mm, 279 mm)	92 lb (42 kg)	15" (381 mm)	150 W	120 V AC	1.3 A	A1 61
		175 lb (79 kg)	Red-orange				
BA-518-11	H4'-0", W9'-0", D6" (1219 mm, 2743 mm, 152 mm)	96 lb (44 kg)	18" (457 mm)	150 W	120 V AC	1.3 A	A1 61
		182 lb (83 kg)	Red-orange				
BA-618-11	H5'-0", W14'-0", D6" (1524 mm, 4267 mm, 152 mm)	200 lb (91 kg)	18" (457 mm)	150 W	120 V AC	1.3 A	A1 61
		380 lb (172 kg)	Red-orange				
BA-624-11	H6'-0", W16'-0", D6" (1829 mm, 4877 mm, 152 mm)	300 lb (136 kg)	24" (610 mm)	150 W	120 V AC	1.3 A	A1 61
		570 lb (259 kg)	Red-orange				

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Model	Dimensions Height, Width, Depth	Weight	Digit Size	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
		Uncrated					
BA-718-11	H4'-0", W12'-0", D6" (1219 mm, 3658 mm, 152 mm)	128 lb (58 kg)	18" (457 mm)	150 W	120 V AC	1.3 A	A1 62
		243 lb (110 kg)	Red-orange				
BA-1018-11	H6'-0", W14'-0", D6" (1829 mm, 4267 mm, 152 mm)	216 lb (98 kg)	18" (457 mm)	300 W	120 V AC	25 A	A1 12
		410 lb (186 kg)	Red-orange				
BA-2003-11	H4'-6", W10'-0", D8" (1372 mm, 3048 mm, 203 mm)	200 lb (91 kg)	36" (914 mm)	150 W	120 V AC	1.3 A	A1 11
		380 lb (172 kg)	Red-orange				
BA-2004-11	H6'-6", W20'-0", D6" (1981 mm, 6096 mm, 152 mm)	600 lb (272 kg)	<ul style="list-style-type: none"> <li>▪ Time, ball, strike, out: 18" (457 mm)</li> <li>▪ Inning, runs: 15" (381 mm)</li> </ul>	450 W	120 V AC	3.8 A	A1 67 A2 69
		1,100 lb (499 kg)		Red-orange			

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Model	Dimensions Height, Width, Depth	Weight Uncrated  Crated	Digit Size  Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-2005-11	H6'-6", W20'-0", D6" (1981 mm, 6096 mm, 152 mm)	600 lb (272 kg)  1,100 lb (499 kg)	<ul style="list-style-type: none"> <li>▪ Time, ball, strike, out: 18" (457 mm)</li> <li>▪ Inning, runs: 15" (381 mm)</li> </ul> Red-orange	900 W	120 V AC	7.5 A	A1 67 A2 68 A3 69
BA-2005-11 w/TNMC	H6'-6", W20'-0", D6" (1981 mm, 6096 mm, 152 mm)	720 lb (327 kg)  1,368 lb (621 kg)	<ul style="list-style-type: none"> <li>▪ Time, ball, strike, out: 18" (457 mm)</li> <li>▪ Inning, runs: 15" (381 mm)</li> </ul> Red-orange	1200 W	120 V AC	10.0 A	A1 67 A2 68 A3 69
BA-2010-11 or BA-2010-21	H6'-0", W8'-0", D6" (1829 mm, 2438 mm, 152 mm)	180 lb (82 kg)  342 lb (155 kg)	<ul style="list-style-type: none"> <li>▪ Digits: 18" (457 mm)</li> <li>▪ H/E indicators: circular</li> </ul> -11: red-orange -21: amber	300 W	120 V AC	2.5 A	A1 13
CT-2001-11	H2'-0", W6'-0", D11" (610 mm, 1829 mm, 279 mm)	40 lb (18 kg)  76 lb (34 kg)	18" (457 mm)  Red-orange	150 W	120 V AC	1.3 A	A1 1

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Model	Dimensions Height, Width, Depth	Weight	Digit Size	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
		Uncrated  Crated					
CT-2002-11	H2'-7", W7'-0", D11" (787 mm, 2134 mm, 279 mm)	52 lb (24 kg)  99 lb (45 kg)	24" (610 mm)  Red-orange	150 W	120 V AC	1.3 A	A1 1
FB-824-11	H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)	200 lb (91 kg)  380 lb (172 kg)	24" (610 mm)  Red-orange	300 W	120 V AC	2.5 A	A1 11
FB-2005-11	H5'-0", W10'-0", D6" (1524 mm, 3048 mm, 152 mm)	180 lb (82 kg)  342 lb (156 kg)	18" (457 mm)  Red-orange	300 W	120 V AC	2.5 A	A1 11
MS-915-11	H4'-0", W8'-0", D11" (1219 mm, 2438 mm, 279 mm)	88 lb (40 kg)  167 lb (76 kg)	15" (381 mm)  Red-orange	300 W	120 V AC	2.5 A	A1 11
MS-918-11	H5'-0", W14'-0", D6" (1524 mm, 4267 mm, 152 mm)	220 lb (100 kg)  418 lb (190kg)	<ul style="list-style-type: none"> <li>▪ Clock, scores: 18" (457 mm)</li> <li>▪ Inning: 15" (381 mm)</li> </ul> Red-orange	300 W	120 V AC	2.5 A	A1 11

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Model	Dimensions Height, Width, Depth	Weight Uncrated  Crated	Digit Size  Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
MS-2002-11	H4'-6", W16'-0", D6" (1372 mm, 4877 mm, 152 mm)	200 lb (91 kg)  380 lb (172 kg)	24" (610 mm)  Red-orange	300 W	120 V AC	2.5 A	A1 11
MS-2004-11	H5'-0", W18'-0", D6" (1524 mm, 5486 mm, 152 mm)	300 lb (136 kg)  570 lb (259 kg)	18" (457 mm)  Red-orange	600 W	120 V AC	5.0 A	A1 74 A1 75
MS-2006-11	H7'-0", W25'-0", D6" (2134 mm, 7620 mm, 152 mm)	560 lb (254 kg)  1,064 lb (483 kg)	<ul style="list-style-type: none"> <li>▪ Clock, scores: 30" (762 mm)</li> <li>▪ Period: 24" (610 mm)</li> </ul> Red-orange	300 W	120 V AC	2.5 A	A1 11
MS-2006-11 w/TNMC	H7'-0", W25'-0", D6" (2134 mm, 7620 mm, 152 mm)	680 lb (308 kg)  1,292 lb (586 kg)	<ul style="list-style-type: none"> <li>▪ Clock, scores: 30" (762 mm)</li> <li>▪ Period: 24" (610 mm)</li> </ul> Red-orange	600 W	120 V AC	5.0 A	A1 11
MS-2012-11	H5'-0", W25'-0", D6" (1524 mm, 7620 mm, 152 mm)	400 lb (181 kg)  760 lb (345 kg)	18" (457 mm)  Red-orange	600 W	120 V AC	5 A	A1 74 A1 75

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Model	Dimensions Height, Width, Depth	Weight Uncrated  Crated	Digit Size  Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
SO-918-11	H4'-0", W12'-0", D6" (1219 mm, 3658 mm, 152 mm)	180 lb (81 kg)  410 lb (185 kg)	18" (457 mm)  Red-orange	300 W	120 V AC	2.5 A	A1 11
SO-2008-11	H5'-6", W16'-0", D6" (1676 mm, 4877 mm, 152 mm)	240 lb (109 kg)  456 lb (207 kg)	18" (457 mm)  Red-orange	300 W	120 V AC	2.5 A	A1 17
SO-2009-11 or SO-2009-21	H4'-0", W12'-0", D6" (1219 mm, 3658 mm, 152 mm)	180 lb (81 kg)  410 lb (185 kg)	<ul style="list-style-type: none"> <li>▪ Clock, scores: 18" (457 mm)</li> <li>▪ Half: 15" (381 mm)</li> </ul> -11: red-orange -21: amber	300 W	120 V AC	2.5 A	A1 11
SO-2010-11 or SO-2010-21	H4'-0", W12'-0", D6" (1219 mm, 3658 mm, 152 mm)	180 lb (81 kg)  410 lb (185 kg)	<ul style="list-style-type: none"> <li>▪ Clock, scores: 18" (457 mm)</li> <li>▪ Half: 10" (253 mm)</li> </ul> -11: red-orange -21: amber	300 W	120 V AC	2.5 A	A1 11

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Model	Dimensions Height, Width, Depth	Weight Uncrated  Crated	Digit Size  Digit Color	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
TI-218-11	H2'-0", W3'-0", D11" (610 mm, 914 mm, 279 mm)	16 lb (7 kg)  53 lb (24 kg)	18" (457 mm)  Red-orange	150 W	120 V AC	1.3 A	A1 2
TI-418-11	H2'-0", W6'-0", D11" (610 mm, 1829 mm, 279 mm)	40 lb (18 kg)  77 lb (35 kg)	18" (457 mm)  Red-orange	150 W	120 V AC	1.3 A	A1 1
TI-2003-11	H3'-0", W4'-0", D11" (914 mm, 1219 mm, 279 mm)	88 lb (40 kg)  167 lb (76 kg)	30" (762 mm)  Red-orange	150 W	120 V AC	1.3 A	A1 2
TI-2019-11	H6'-0", W2'-0", D6" (457 mm, 610 mm, 152 mm)	40 lb (18 kg)  77 lb (35 kg)	18" (457 mm)  Red-orange	150 W	120 V AC	1.3 A	A1 1



## 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.

Model	Drawing Title	Drawing
BA-515-11	Component Locations; BA-515-11	A-154859
BA-518-11	Component Locations; BA-518-11	A-155130
BA-618-11	Component Locations; BA-618-11	A-155137
BA-624-11	Component Locations; BA-624-11	A-155161
BA-718-11	Component Locations; BA-718-11	A-155178
BA-1018-11	Component Locations; BA-1018-11	A-157512
BA-2003-11	Component Locations, BA-2003-11	A-158302
BA-2004-11	Component Locations, BA-2004-11	A-159989
BA-2005-11	Component Locations, BA-2005-11	A-159997
BA-2005-11 TNMC	Component Locations, BA-2005-11	A-159997
BA-2010-11 and -21	Component Locations; BA-2010-11	A-179193
CT-2001-11	Component Locations, CT-2001-11	A-168049
CT-2002-11	Component Locations, CT-2002-11	A-168058
FB-824-11	Component Locations; FB-824-11	A-160095
FB-2005-11	Component Locations; FB-2005-11	A-162879
MS-915-11	Component Locations; MS-915-11	A-156025
MS-918-11	Component Locations; MS-918-11	A-155878
MS-2002-11	Component Locations, MS-2002-11	A-163316
MS-2004-11	Component Locations, MS-2004-11	A-163343
MS-2006-11	Component Locations, MS-2006-11	A-163410
MS-2006-11 TNMC	Component Locations, MS-2006-11	A-163410
MS-2012-11	Component Locations; MS-2012-11	A-163801
SO-918-11	Component Locations; SO-918-11	A-161792
SO-2008-11	Component Locations; SO-2008-11	A-163035
SO-2009-11 and -21	Component Locations, SO-2009-XX	A-167304
SO-2010-11 and -21	Component Locations, SO-2010-XX	A-163352
TI-218-11	Component Locations, TI-218-11	A-158743

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<b>Model</b>	<b>Drawing Title</b>	<b>Drawing</b>
TI-418-11	Component Locations, TI-418-11	A-158764
TI-2003-11	Component Locations; TI-2003-11	A-161867
TI-2019-11	Component Locations; TI-2019-11	A-168199

# Section 5: Schematics

## Reference Drawings:

Schematic, Gen II Outdoor Driver, 8 Column Driver .....	<b>Drawing A-156750</b>
Schematic; Gen II Outdoor LED, 16 Column Drvr .....	<b>Drawing A-154330</b>
Schematic; Gen II, OD LED, 2 Drvr Display.....	<b>Drawing A-159999</b>
Schematic; Gen II OD LED, 3 Drvr Display.....	<b>Drawing A-159920</b>
Driver; 8 Col Outdoor LED, Gen II .....	<b>Drawing A-155742</b>
Driver; 16 Col Outdoor LED, Gen II .....	<b>Drawing A-154792</b>
Schematic; Gen II, OD LED, 1 Drvr Display & TNMC.....	<b>Drawing A-159419</b>

Use the following table to determine the correct driver and schematic for your scoreboard model. Individual 8- and 16-column drivers are illustrated in **Drawings A-155742** and **A-154792**. Wiring diagrams for both drivers, in master and slave configurations, are shown on the schematics, **Drawings A-156750, A-154330, A-159999, and A-159920**.

Model	Driver	Driver Drawing	Schematic
BA-515-11	8-column driver	A-155742	A-156750
BA-518-11	8-column driver	A-155742	A-156750
BA-618-11	8-column driver	A-155742	A-156750
BA-624-11	8-column driver	A-155742	A-156750
BA-718-11	8-column driver	A-155742	A-156750
BA-1018-11	16-column driver	A-154792	A-154330
BA-2003-11	8-column driver	A-155742	A-156750
BA-2004-11	16-column driver/slaves	A-154792	A-159920
BA-2005-11	16-column driver/slaves	A-154792	A-159920
BA-2005-11 TNMC	16-column driver/slaves	A-154792	A-159419
BA-2010-11 and -21	16-column driver	A-154792	A-154330
CT-2001-11	8-column driver	A-155742	A-156750
CT-2002-11	8-column driver	A-155742	A-156750
FB-824-11	16-column driver	A-154792	A-154330
FB-2005-11	16-column driver	A-154792	A-154330
MS-915-11	16-column driver	A-154792	A-154330
MS-918-11	16-column driver	A-154792	A-154330
MS-2002-11	16-column driver	A-154792	A-154330
MS-2004-11	16-column driver/slave	A-154792	A-159999
MS-2006-11	16-column driver	A-154792	A-154330
MS-2006-11 TNMC	16-column driver	A-154792	A-159419

(Continued on next page)

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<b>Model</b>	<b>Driver</b>	<b>Driver Drawing</b>	<b>Schematic</b>
MS-2012-11	16-column driver/slave	A-154792	A-159999
SO-918-11	16-column driver	A-154792	A-154330
SO-2008-11	16-column driver	A-154792	A-154330
SO-2009-11 and -21	16-column driver	A-154792	A-154330
SO-2010-11 and -21	16-column driver	A-154792	A-154330
TI-218-11	8-column driver	A-155742	A-156750
TI-418-11	8-column driver	A-155742	A-156750
TI-2003-11	8-column driver	A-155742	A-156750
TI-2019-11	8-column driver	A-155742	A-156750



# Section 6: Mechanical Installation

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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

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

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

## 6.2 Footings and Beams

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Use the following drawings to determine the correct installation drawing for your scoreboard. 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	Drawing
BA-515-11	Installation Specifications, BA-515	A-55003
BA-518-11	Installation Specifications, BA-518	A-55004
BA-618-11	Installation Specifications, BA-618	A-55006
BA-624-11	Installation Specifications, BA-624	A-55007
BA-718-11	Installation Specifications, BA-718	A-55005
BA-1018-11	Installation Specifications, BA-1018	A-61904
BA-2003-11	Installation Specifications, BA-2003	A-158322
BA-2004-11	Installation Specifications, BA-2004 & BA-2005	A-152777
BA-2005-11	Installation Specifications, BA-2004 & BA-2005	A-152777
BA-2005-11 TNMC	Installation Specifications, BA-2004 & BA-2005	A-152777
BA-2010-11 and -21	Installation Specifications, BA-2010-11	A-179304
FB-824-11	Installation Specifications, FB-824 & SO-824	A-127287
FB-2005-11	Installation Specifications, FB-2005	A-162889
MS-915-11	Installation Specifications, MS-915	A-113568
MS-918-11	Installation Specifications, MS-918	A-55009
MS-2002-11	Installation Specifications, MS-2002	A-127195
MS-2004-11	Installation Specifications, MS-2004	A-176286

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Model	Drawing Title	Drawing
MS-2006-11	Installation Specifications, MS-2006	A-135575
MS-2006-11 TNMC	Installation Specifications, MS-2006	A-135575
MS-2012-11	Installation Specifications, MS-2012	A-152790
SO-918-11	Installation Specifications, SO-918, SO-2009, SO-2010	A-55010
SO-2008-11	Installation Specifications, SO-2008	A-149074
SO-2009-11 and -21	Installation Specifications, SO-918, SO-2009, SO-2010	A-55010
SO-2010-11 and -21	Installation Specifications, SO-918, SO-2009, SO-2010	A-55010
TI-218	Installation Specifications, TI-218	A-169367
TI-418	Installation Specifications, TI-418	A-169380
TI-2003	Installation Specifications, TI-2003	A-169376

Refer to the installation specification drawings listed in the chart on the previous page 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 and under various wind speed conditions. All of the beam specifications illustrate W-shape steel beams (wide-flange I-beams). The first number indicates the front-to-rear depth of the beam, and the second number indicates the weight in pounds per foot of length.

The column and footing size dimensions provided assist with estimating installation costs. 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 the scoreboard will be installed. ***Daktronics does not assume any liability for any installation derived from the information provided in this manual or installations designed and installed by others.***

### 6.3 Lifting the Scoreboard

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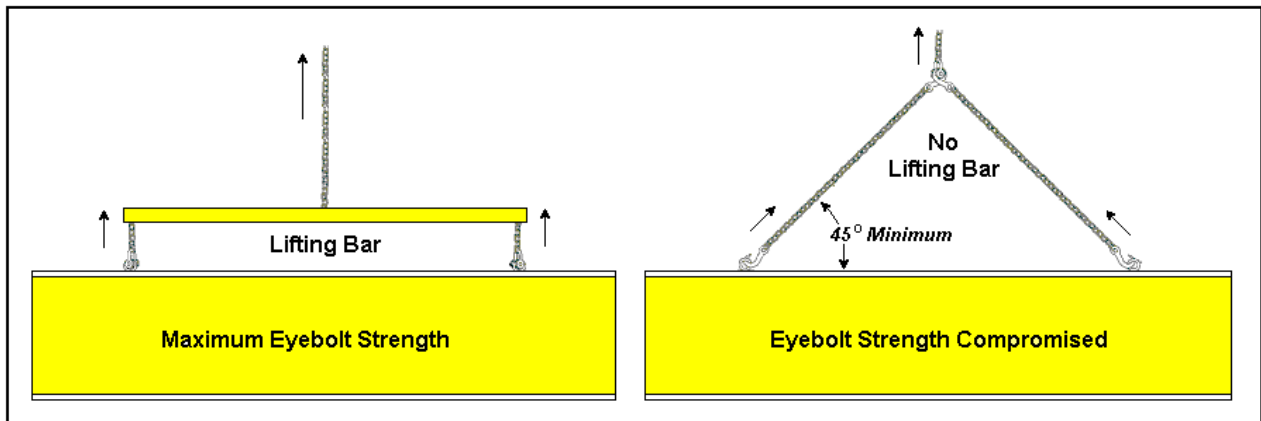
#### Reference Drawings:

- Lifting Scoreboard..... **Drawing A-44548**
- Lifting Small Baseball Scoreboard ..... **Drawing A-58668**

Small Daktronics scoreboards are not equipped with eyebolts. Refer to **Drawing A-58668** for lifting details.

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

**Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display.** Using a spreader bar ensures that the force on the 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 **ED7244, Eyebolts**, to determine allowable loads and load angles for the lifting hardware. **ED7244** 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  $\frac{1}{2}$ " and  $\frac{5}{8}$ " shoulder-type eyebolts mounted to a  $\frac{1}{8}$ " 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 45°.

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

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

In installations in which an ad panel or some other scoreboard section may be added to the base display, the lower scoreboard section is installed first and secured to the support beams, and then the upper section is 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

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Use the following tables to determine the mounting method required for your scoreboard:

Method 1			
BA-618-11	BA-2005-11	MS-918-11	SO-2008-11
BA-624-11	BA-2005-11 TNMC	MS-2002-11	SO-2009-11 and -21
BA-1018-1	BA-2010-11 and -21	MS-2004-11	SO-2010-11 and -21
BA-2003-1	FB-824-11	MS-2012-11	
BA-2004-1	FB-2005-11	SO-918-11	

Method 2			
BA-515-11	CT-2001-11	MS-2006-11	TI-418-11
BA-518-11	CT-2002-11	MS-2006-11 TNMC	TI-2003-11
BA-718-11	MS-915-11	TI-218-11	TI-2019-11

### Method 1

#### Reference Drawings:

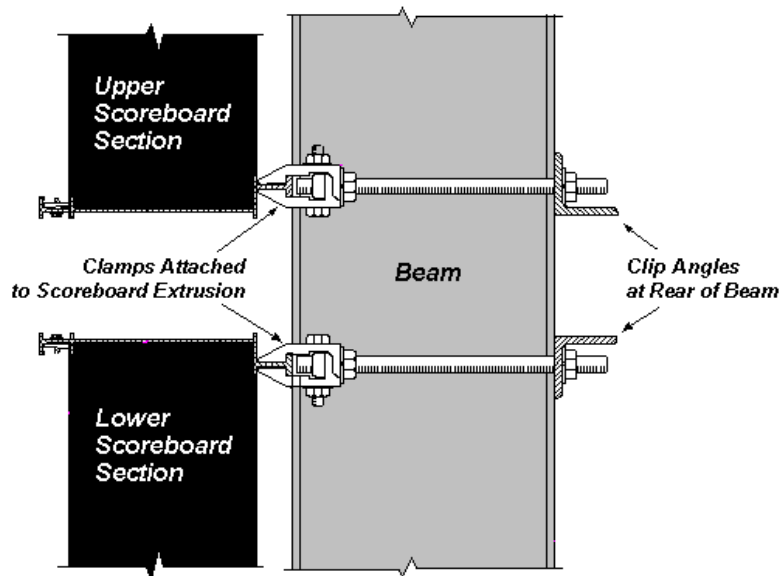
Display Mounting .....	<b>Drawing A-44412</b>
Ad Panel Mounting .....	<b>Drawing A-52187</b>

**Drawing A-44412** shows the hardware used for mounting the scoreboard to the beams. Mounting hardware includes inner and outer mounting clamps, clip angles,  $\frac{1}{2}$ -13 x 15" threaded rods,  $\frac{3}{8}$ -16 x 2" bolts, hex nuts and split lockwashers, and  $\frac{1}{2}$ " square nuts, hex nuts, and split lockwashers. 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.

Refer to the installation specifications drawing for your scoreboard model (listed in **Section 6.2**) to determine the center-to-center distance of the poles for each model.

Review the illustration of the mounting hardware in **Drawing A-44412**, or refer to **Figure 4**, and then use the following procedure for each section.

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



**Figure 4:** Clamp Mounting Method, Side View

## **Method 2**

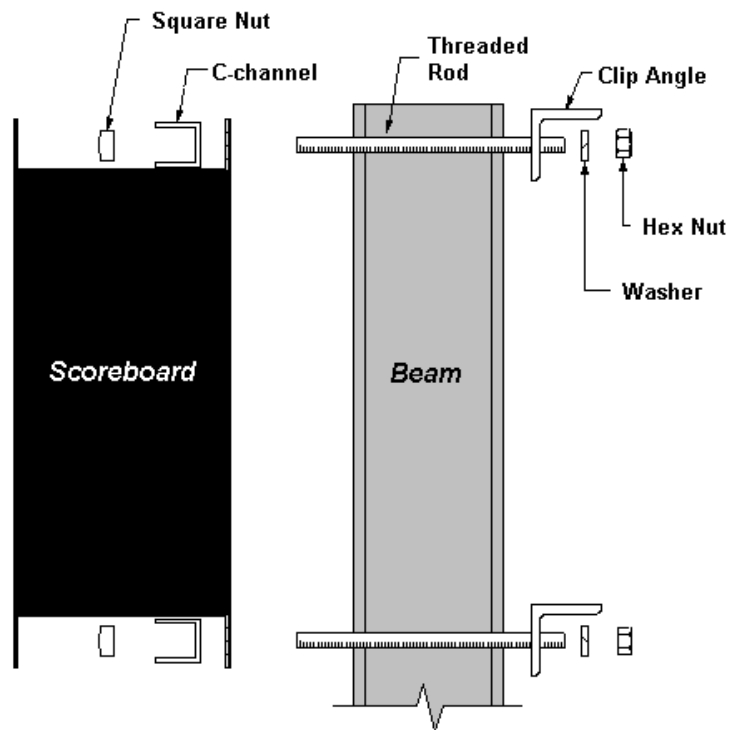
### **Reference Drawing:**

Scoreboard Mounting ..... **Drawing A-55101**

These scoreboard models use an inverted channel mounting, illustrated in **Drawing A-55101**. Refer to any installation specifications drawing (listed in **Section 6.2**) for your model to determine the center-to-center distance of the poles.

The installation uses C-channel; mounting angles,  $\frac{1}{2}$ -13" threaded rod, and  $\frac{1}{2}$ " square nuts, hex nuts, and lockwashers. Mount the scoreboard as follows:

1. Place the C-channel against the upper and lower rear flanges of the scoreboard cabinet, as shown in **Drawing A-55101** and **Figure 5**.
2. Use the mounting channel to determine the appropriate hole combination to use. Be sure to keep the bolts as close to the beam as possible.
3. Using the mounting channel as a template, drill  $\frac{9}{16}$ " holes in the upper and lower rear flanges of the scoreboard where the supports will be placed.
4. Place the  $\frac{1}{2}$ " square nuts inside the C-channel and thread the  $\frac{1}{2}$ -13" bolts through the channel and the back flange of the display cabinet.
5. Lift the scoreboard into position with the **bolts** still in place. Position the scoreboard at the front of the beams with the threaded rods extending from the rear flanges of the display.
6. With the threaded rod straddling the beams, place mounting angles over each pair of bolts and secure with  $\frac{1}{2}$ " lockwashers and hex nuts.
7. Make final adjustments in the position of the scoreboard, and after verifying that the threaded rods are perpendicular to the display, firmly tighten all of the  $\frac{1}{2}$ " hex nuts.



**Figure 5:** Mounting with C-channel, Side View

## 6.5 Ad Panel Mounting

### Reference Drawings:

Ad Panel Mounting.....	<b>Drawing A-52187</b>
Assembly, Ad Panel, BA-515.....	<b>Drawing A-52585</b>
Ad Panel Mounting, BA-518.....	<b>Drawing A-52811</b>

Refer to **Drawing A-52187** for mounting details. The installation uses C-channel, mounting angles,  $\frac{1}{2}$ -13" threaded rod, and  $\frac{1}{2}$ " square nuts, hex nuts, and lockwashers.

Mount the ad panel or 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  $\frac{9}{16}$ " holes in the upper and lower rear flange of the ad panel where the C-channel supports will be placed.
3. Position the C-channel *inside* the ad panel cabinet along the upper and lower back flanges.
4. Place square nuts inside the channel and thread the long rods through both the C-channel and the flange.
5. Lift the ad panel into position with the rods still in place.

6. With the threaded rod straddling the beams, place mounting angles over each pair of bolts and secure with  $\frac{1}{2}$ " lockwashers and hex nuts.
7. When the panel is adjusted to the final desired position, tighten hex nuts firmly.

Some ad panels have back sheets that must be removed before the display can be installed. After marking and drilling holes in the upper and lower rear flanges of the ad panel, remove the back sheets above and below the hole locations. Position the C-channel inside the cabinet and attach the square nuts to the threaded rods as described above. Be sure to replace the back sheets after placing the square nuts inside the channel and threading the rods through the holes in the upper and lower flanges.

***Models BA-515-11 and BA-518-11***

With Models BA-515-11 and BA-518-11, ad panels can be mounted directly to the end of the scoreboard. Refer to **Drawings A-52585** and **A-52811** for mounting details.





# Section 7: Electrical Installation

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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.

**K** *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

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### Reference Drawings:

Schematic; Gen II Outdoor LED, 16 Column Drvr .....	<b>Drawing A-154330</b>
Schematic; Gen II Outdoor LED, 8 Column Drvr .....	<b>Drawing A-156750</b>
Schematic; Gen II, OD LED, 1 Drvr Display & TNMC .....	<b>Drawing A-159419</b>

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 single-section outdoor scoreboards require a dedicated, 120 V circuit for incoming power. The display itself has no breakers or fuses.

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

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

## Grounding

### Reference Drawings:

Schematic; Gen II Outdoor LED, 16 Column Drvr.....	<b>Drawing A-154330</b>
Schematic; Gen II Outdoor LED, 8 Column Drvr.....	<b>Drawing A-156750</b>
Schematic; Gen II, OD LED, 1 Drvr Display & TNMC .....	<b>Drawing A-159419</b>

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

*The electrical contractor performing the electrical installation can verify ground resistance. Scoreboard 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. ***The display must be properly grounded, or the warranty will be void.*** Refer to the schematics, **Drawings A-154330, A-159419, and A-156750**, for information about ground wire connection. Termination at the duplex receptacle is illustrated in the lower sections of the drawings.

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. In this circumstance, *do not* connect neutral to ground at the disconnect or at the display. ***This would violate electrical codes and void the warranty.*** Use a disconnect so that all hot lines and neutral can be disconnected. The National Electrical Code requires the use of a lockable power disconnect within sight of or at the display.

#### 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:

Driver; 16 Col Outdoor LED, Gen II	<b>Drawing A-154792</b>
Driver; 8 Col Outdoor LED, Gen II .....	<b>Drawing A-155742</b>
Schematic; Gen II Outdoor LED, 16 Column Drvr .....	<b>Drawing A-154330</b>
Schematic; Gen II Outdoor LED, 8 Column Drvr .....	<b>Drawing A-156750</b>
Schematic; Gen II, OD LED, 1 Drvr Display & TNMC .....	<b>Drawing A-159419</b>

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. **Drawings A-154792** and **A-155742** illustrate the 16- and 8-column drivers 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.

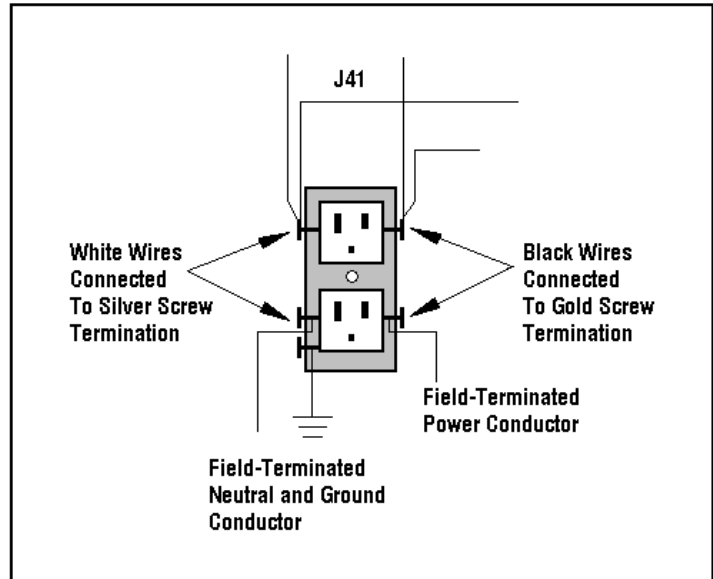
Connect power and signal cables at the appropriate locations on the driver enclosure panel, shown in **Drawings A-154792** and **A-155742**.

The conventional power termination panel has been eliminated from the Daktronics outdoor scoreboards; the power feeder circuit now connects directly to a receptacle in the driver enclosure, as shown in **Figure 6**. The receptacle is located in the lower right corner of the enclosure. Refer to the driver illustration and the schematics, **Drawings A-154330**, **A-159419**, and **A-156750**, for wiring details. The schematics include a detailed illustration of the power termination.

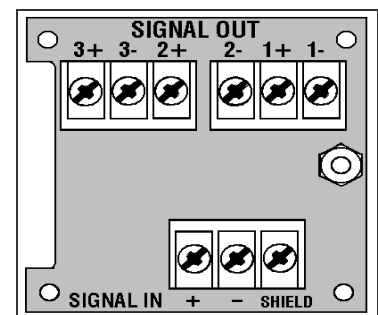
Route signal cabling to the terminal block in the upper left corner of the enclosure. The connections are labeled to permit easy installation. At the Signal In terminal block, connect the red signal wire to the positive terminal, the black to the negative terminal, and the shield (silver) wire to the shield terminal. *It is important that the shield wire is properly connected to the shield terminal on the signal surge arrestor card.* **Figure 7** 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.

For additional information on signal connection, refer to the All Sport 5000 Series or All Sport 3000 Series control console operation manuals, **ED11976** and **ED12126**.



**Figure 6:** 120 V Power Receptacle in Driver Enclosure



**Figure 7:** Signal Surge Arrestor Card

### ***Multiple Driver Connections***

Some models in the single-section outdoor scoreboard line 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 receptacle and signal surge suppression card. The two drivers have been designed to simply plug into one other via an interconnect harness, the slave receiving 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 digits have also 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.**

*K 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

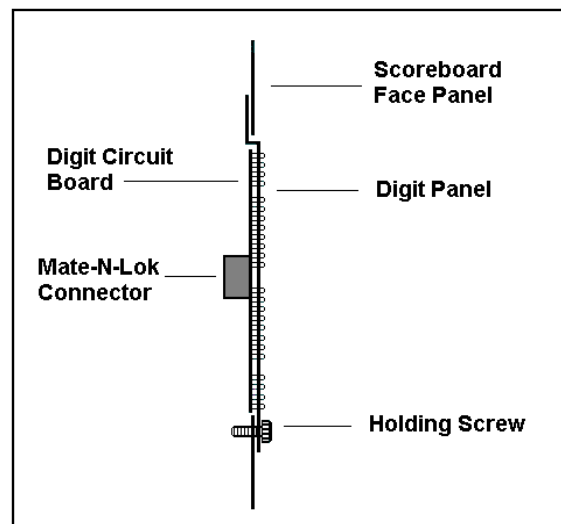
Cabinets for the Daktronics outdoor LED scoreboards are constructed of heavy-gauge aluminum. Exact dimensions and weights for each model are listed in the chart in **Section 3**. Removable panels for digits and indicators and for component access are detailed in each model's component locations drawing,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

## 8.2 Component Location and Access

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 a single screw at the bottom, as shown in **Figure 8**. Open the scoreboard with care. Hold the digit panel in place by putting hand pressure on it while removing the screw, and carefully lift it from the board, sliding it down and out. If the panel is not held in place, it will drop immediately when the screw is removed, possibly damaging LEDs or the digit harness.

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



**Figure 8:** LED Digit Panel (Not to Scale)

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.

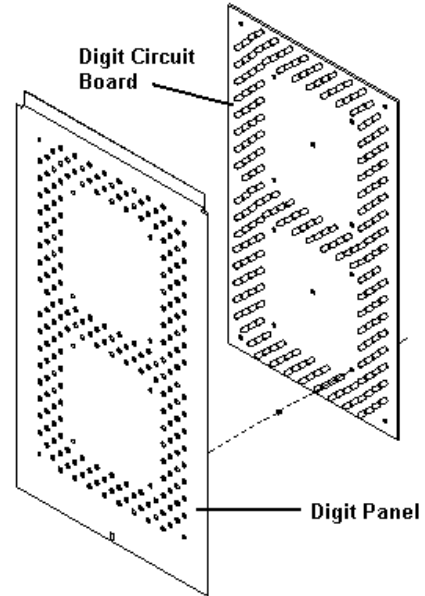
*K Note: **Disconnect power before servicing the display!*** Disconnect power, too, when the display is not in use. Prolonged power-on may shorten the life of some electronic components.

## Replacing a Digit

The digit circuit board, the platform for the LEDs, is mounted to the back of the digit panel. See **Figure 9** at right. Do not attempt to remove individual LEDs. In the case of a malfunctioning board, replace the entire digit panel.

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 screws, standoffs (spacers), and nuts. Remove the #8 nuts and lift the digit off the screws.
4. Position a new digit over the screws and tighten the nuts.
5. Reconnect the power/signal connector. **Note:** *This is a keyed connector B it will attach in one way only. Do not attempt to force the connection!*
6. Close and secure the digit panel and test the scoreboard.



**Figure 9:** Digit Assembly

## Replacing a Digit Segment

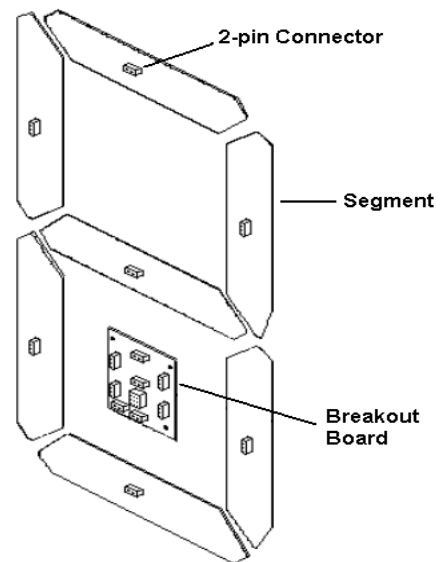
### Reference Drawing:

30" Amber LED Digit Assembly..... **Drawing A-161254**

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 (see **Figure 10**), 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. *Do not attempt to remove individual LEDs.* Refer to **Drawing A-161254**.

To remove a digit segment, follow these steps:

1. Open the digit panel as described above.
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 segments are secured to the inside of the panel with standoff bolts, spacers, and nuts. Remove the #8 nuts and lift the segment off the standoff bolts.



**Figure 10:** Segmented Digit Panel (Rear View)

4. Position a new segment over the bolts and tighten the nuts.
5. Reconnect the power/signal connector. **Note:** *This is a keyed connector B it will attach in one way only. Do not attempt to force the connection!*
6. Close and secure the digit panel and test the scoreboard.

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

### **Replacing a Breakout Board**

The digit breakout board, the central signal/power termination for segmented digits, is mounted to the back of the digit panel. If the entire digit is malfunctioning, replace the breakout board. See **Figure 9** and refer to **Drawing A-161254**.

To remove a digit breakout board, follow these steps:

1. Open the digit panel as described in the previous section.
2. Disconnect all of the 2-pin and 9-pin power/signal connectors from the back of the breakout board. Release the connectors by squeezing together the locking tabs as you pull the connector free.
3. The breakout boards are secured to the inside of the panel with standoff bolts, spacers, and nuts. Remove the #8 nuts and lift the breakout board off the standoff bolts.
4. Position a new breakout board over the bolts and tighten the nuts.
5. Reconnect the power/signal connectors. **Note:** *These are keyed connectors B they will attach in one way only. Do not attempt to force the connection!*
6. Close and secure the digit panel and test the scoreboard.

### **Replacing a Driver**

Drivers are typically mounted inside the scoreboard and immediately behind a digit, but location and mounting varies with the model of the scoreboard. Refer to the component locations drawings in **Section 4** for the location of your scoreboard driver. Note that drivers for scoreboard BA-515-11 can be reached by removing a back panel (rear access); all other scoreboards in this manual are front-accessible.

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

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

### 8.3 Schematic

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#### Reference Drawings:

Schematic; Gen II Outdoor LED, 16 Col Drvr .....	<b>Drawing A-154330</b>
Schematic; Gen II Outdoor Driver, 8 Column Driver .....	<b>Drawing A-156750</b>
Schematic; Gen II, OD LED, 1 Drvr Display & TNMC .....	<b>Drawing A-159419</b>

**Drawings A-154330, A-159419, and A-156750** are the schematic diagrams for the 8- and 16-column drivers used in the outdoor single-section scoreboards. 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, their drivers, and the appropriate schematic.

### 8.4 LED Drivers

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#### Reference Drawings:

Driver; 16 Col Outdoor LED, Gen II .....	<b>Drawing A-154792</b>
Driver; 8 Col Outdoor LED, Gen II .....	<b>Drawing A-155742</b>
16 Column LED Driver II Specifications .....	<b>Drawing A-134371</b>
8 Column LED Driver II Specifications .....	<b>Drawing A-134372</b>
Address Table, 1 Through 128.....	<b>Drawing A-115078</b>

In the scoreboard, the LED drivers perform the task of switching digits on and off. Refer to **Drawings A-154792 and A-155742**. 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:

8-Column LED Driver	
<i>Connector No.</i>	<i>Function</i>
1 – 8	Output to digits and indicators
17	Controls power/signal

16-Column LED Driver	
<i>Connector No.</i>	<i>Function</i>
1 – 16	Output to digits and indicators
17	Controls power/signal

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. **Drawings A-134371 and A-134372** detail the specifications for both the 16- and the 8-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

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### 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 shown in hexagons in the upper half of each digit indicate which connector is wired to that digit.

## 8.6 Lightning Protection

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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 Replacement Parts

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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
Driver, 8 col, outdoor, LED	Driver enclosure	0P-1192-0012
Power supply, 24 V, 150W, 86-132 V input	Driver enclosure	A-1720
Signal surge arrestor	Driver enclosure	0P-1033-0114
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

(Continued on next page)

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<b>Description</b>	<b>Location</b>	<b>Daktronics Part No.</b>
Digit, 10", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0049
Digit, 10", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0083
Digit, 15", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0009
Digit, 15", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0071
Digit, 18", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0008
Digit, 18", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0036
Digit, 18" ones, 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0013
Digit, 18" ones, 7-seg outdoor LED, amber	Scoreboard	0P-1192-0038
Digit, 24" ones, outdoor LED, red-orange	Scoreboard	0P-1192-0014
Digit segment, 24" outdoor LED, red-orange	Scoreboard	0P-1192-0040
Digit segment, 24" outdoor LED, amber (horizontal)	Scoreboard	0P-1192-0050
Digit segment, 24" outdoor LED, amber (vertical)	Scoreboard	0P-1192-0051
Digit segment, 30" outdoor LED, red-orange	Scoreboard	0P-1192-0020
Digit segment, 30" outdoor LED, amber (horizontal)	Scoreboard	0P-1192-0034
Digit segment, 30" outdoor LED, amber (vertical)	Scoreboard	0P-1192-0043
Digit segment, 36" outdoor LED, red-orange	Scoreboard	0P-1192-0024
Digit segment, 36" outdoor LED, amber (horizontal)	Scoreboard	0P-1192-0052
Digit segment, 36" outdoor LED, amber (vertical)	Scoreboard	0P-1192-0053
Indicator, 2" circular, outdoor LED, red-orange	Scoreboard	0P-1192-0010
Indicator, 2" circular, outdoor LED, amber	Scoreboard	0P-1192-0037
Segment breakout board, 24" (and 30")	Scoreboard (Digit circuit board)	0P-1192-0019
Segment breakout board, 36"	Scoreboard (Digit circuit board)	0P-1192-0023

## **8.8 Troubleshooting**

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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
<i>Scoreboard will not light</i>	<ul style="list-style-type: none"> <li>▪ Console not connected or poor connection</li> <li>▪ No power to control console</li> <li>▪ No power to the scoreboard</li> </ul>
<i>Garbled display</i>	<ul style="list-style-type: none"> <li>▪ Internal driver logic malfunction</li> <li>▪ Control console malfunction</li> </ul>
<i>Digit will not light</i>	<ul style="list-style-type: none"> <li>▪ Black wire to digit broken</li> <li>▪ Poor contact at driver connection.</li> <li>▪ Driver malfunction</li> </ul>
<i>Segment will not light</i>	<ul style="list-style-type: none"> <li>▪ Broken LED or connection</li> <li>▪ Driver shift register failure</li> <li>▪ Broken wire between driver and digit</li> <li>▪ Poor contact at driver connector</li> </ul>
<i>Segment stays lit</i>	<ul style="list-style-type: none"> <li>▪ Driver shift register failure</li> <li>▪ Short circuit on digit</li> </ul>
<i>Date appears in the wrong place on the scoreboard</i>	<ul style="list-style-type: none"> <li>▪ Incorrect address settings on drivers (consult tables and set correct addresses)</li> </ul>

## 8.9 Daktronics Exchange and Repair and Return Programs

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

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

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

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

If you do not ship the defective equipment Daktronics within 30 working days from the invoice date, Daktronics assumes you are purchasing the replacement part outright (with no exchange), and you will be invoiced for it. This second invoice represents the difference between the exchange price and the full purchase price of the equipment. The balance is due when you receive the second invoice.

If you return the exchange equipment after 30 working days from the invoice date, you will be credited for the amount on the second invoice, minus a restocking fee. ***To avoid a restocking charge, you must return the defective equipment within 30 days from the invoice date.***

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

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

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

***This is how to reach us:***

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

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

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

***E-mail:*** [helpdesk@daktronics.com](mailto:helpdesk@daktronics.com)

# Section 9: Team Name Message Center Maintenance

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## **IMPORTANT NOTES:**

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

## **9.1 Team Name Message Center System Overview**

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

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

Although TNMCs customarily are used for team names, 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**

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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.

This section provides the following TNMC information:

- **Signal Routing Summary:** provides a basic explanation of the signal travel through the TNMC display.
- **Power Routing Summary:** provides a basic explanation of the power travel through the display.
- **Service and Diagnostics:** provides instructions for removing various display components and explains the functions of circuit board connectors and the meanings of any diagnostic LEDs.
- **Maintenance:** lists a number of steps to take to keep the team name message centers in safe, working order.
- **Troubleshooting:** lists possible display malfunctions and suggests a number of causes and corrections for each malfunction.
- **Replacement Parts List:** includes the part description and number of display components that may have to be replaced during the life of this display.

## **9.3 Signal Summary**

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

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

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

## 9.4 Power Summary

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### Reference Drawing:

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

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

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

## 9.5 Service and Diagnostics

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### Reference Drawings:

Control Layout; Outdoor LED TNMC. .... **Drawing B-107507**  
Exploded Front, Module ..... **Drawing B-126111**  
Exploded Rear, Module..... **Drawing B-126112**  
F. Assy; 832 LED TNMC ..... **Drawing B-159055**  
F. Assy; 848 LED TNMC ..... **Drawing B-159081**  
Component Layout; 832/848 LED TNMC ..... **Drawing A-145045**  
Schematic; LED TNMC, Gen II ..... **Drawing A-158552**

The following subsections address servicing of these display components:

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

The subsections also address any diagnostic LEDs, fuses, and signal/power connectors found on the MDC unit. On **Drawings B-159055**, **B-159081**, and **A-145045**, the TNMC components are denoted as follows:

Component	Part Number	Location
TNMC CLI card	0A-1146-0020	Behind modules, on TNMC back panel (refer to <b>Drawing A-145045</b> )
TNMC controller	0A-1146-0061	Behind modules, on TNMC back panel (refer to <b>Drawing A-145045</b> )
Modules	0A-1208-3002	Over entire face of the TNMC (refer to <b>Drawings B-159055 and B-159081</b> )
Power supplies	0A-1213-4013	Behind modules and attached to power supply assembly 0A-1213-4013 on the back panel (refer to <b>Drawing A-145045</b> )

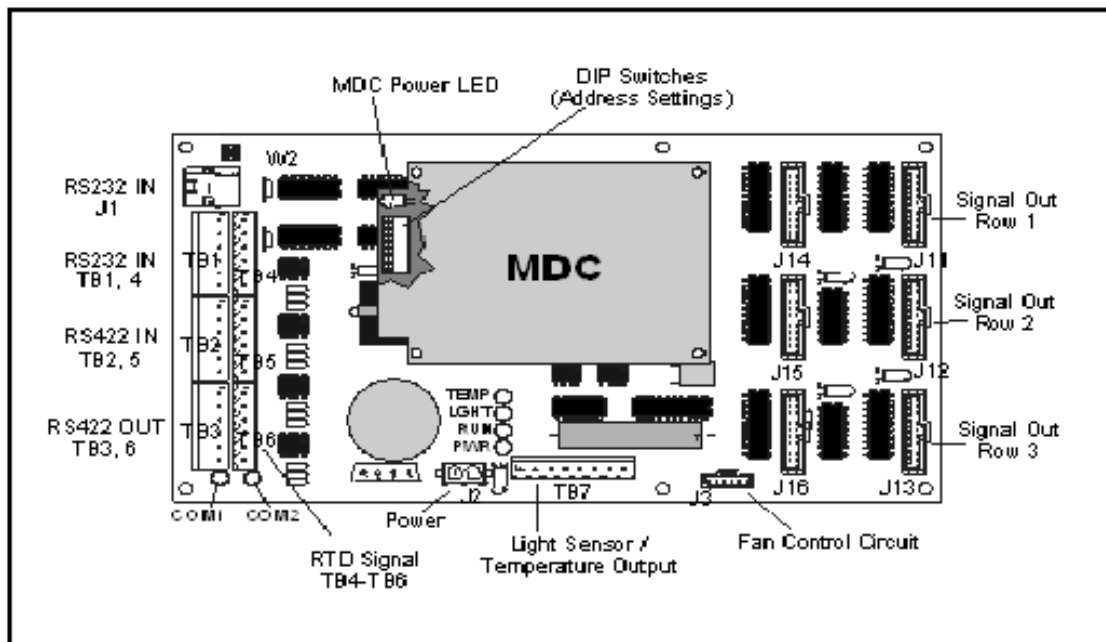
**K Remember: Disconnect power before servicing internal components!**

### ***TNMC Current Loop Interface (CLI) Card***

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

### ***TNMC Controller***

The controller, located on the rear-access panel, receives signal from the CLI and sends data to the modules. Refer to the signal summary in **Section 9.3** for more information and to **Drawing A-145045** for the position of the controller board. **Figure 11**, below, illustrates a typical controller.



**Figure 11:** Controller Component Layout

DIP switches are located on the controller's MDC (see **Figure 9**). These DIP switches set the hardware address that the software uses to identify that particular display. When replacing a controller board, be sure to set the DIP switches in the same address configuration as the defective controller.

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

Switch Number								Mode
8	7	6	5	4	3	2	1	
Off	Off	Off	Off	Off	Off	Off	Off	<b>Test Mode</b>
Off	Off	Off	Off	Off	Off	Off	On	<b>1 (Home)</b>
Off	Off	Off	Off	Off	Off	On	Off	<b>2 (Guest)</b>

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

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



## Removing/Changing the Controller

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

1. To access the controller from the front, unlatch the latch fasteners on the LED module. (The fasteners may be referred to as "latch plugs" on the drawings). One is centered below the top row of pixels and one is centered above the bottom row. Using a  $\frac{7}{32}$ " 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.

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To access the controller from the rear of the TNMC, remove the right rear-access panel from the TNMC by loosening all four of the screws. Slide the access panel 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.

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

## Modules and Drivers

The module and driver board are a single, functional unit.

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

## Removing/Changing a Module

### Reference Drawings:

Exploded Front, Module ..... **Drawing B-126111**  
Exploded Rear, Module ..... **Drawing B-126112**

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 module. One is centered below the top row of pixels and one is centered above the bottom row.
2. Unlatch the latch fasteners by turning them a quarter-turn using a  $\frac{7}{32}$ " 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.

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To access the controller from the rear of the TNMC, remove the right rear-access panel from the TNMC by loosening all four of the screws. Slide the access panel up to the larger keyhole and carefully lift it off the TNMC. Take care not to drop the panel, and remember that the module controller is attached to the panel. With a  $\frac{7}{32}$ " nut driver, turn the latch-access fasteners a quarter-turn. Turn the top latch counter-clockwise and the bottom latch clockwise.

---

3. If you are accessing the unit from the rear, follow this procedure: 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. Then 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.

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

### **Removing the Louver Assembly**

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

### **Removing/Changing a Louver**

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

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

## **Power Supplies**

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

### **Removing/Changing a Power Supply**

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

1. See the directions 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**

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

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

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

## 9.7 Troubleshooting

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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
<i>One or more LEDs on a single module fails to light</i>	<ul style="list-style-type: none"><li>▪ Check/replace the ribbon cables on the module.</li><li>▪ Replace the module.</li></ul>
<i>One or more LEDs on a single module fails to turn off</i>	<ul style="list-style-type: none"><li>▪ Check/replace the ribbon cables on module.</li><li>▪ Replace the module.</li></ul>
<i>A section of the display is not working; the section extends all the way to the right side of the display</i>	<ul style="list-style-type: none"><li>▪ Replace the first module/driver on the left side of the first module that is not working.</li><li>▪ Replace the second module that is not working.</li><li>▪ Replace the power supply assembly on the first module that is not working.</li><li>▪ Replace the ribbon cable.</li></ul>
<i>One row of modules does not work or is garbled</i>	<ul style="list-style-type: none"><li>▪ Replace the first module.</li><li>▪ Replace the controller.</li></ul>
<i>A group of modules which share the same power supply assembly fails to work</i>	<ul style="list-style-type: none"><li>▪ Replace the power supply assembly.</li></ul>
<i>Entire display fails to work</i>	<ul style="list-style-type: none"><li>▪ Check for proper line voltage into the power termination panel.</li><li>▪ Check/replace the ribbon cable from the controller to the modules.</li><li>▪ Check the voltage settings on the power supplies.</li><li>▪ Check/replace the signal cable to the controller.</li><li>▪ Replace the controller.</li><li>▪ Verify proper use of the software in the operation manual.</li></ul>

## 9.8 Initialization Information at Startup

---

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

## 9.9 Replacement Parts List

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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 also have attached part number labels.

Part Description	Part Number
Controller II, MDC, outdoor LED, TNMC	0A-1146-0061
Current loop interface card, coated	0P-1146-0020
Module; 3R, 8x8 coated type 1 (red, 3 LED/pixel)	0A-1208-3002
Power supply assembly (A-1633)	0A-1213-4013
Modem jack; 6-pin female	J-1094
Cable; 36" RJ-11; 6-conductor	0A-1120-0134
Ribbon cable; 40-conductor, 30 AWG (controller to module, module to module)	W-1412
Cable; 22 AWG	W-1234
Electrical contact cleaner/lubricant (CaiLube)	CH-1019

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

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The following options are available for the Daktronics single-section scoreboards to make them more adaptable to individual scoring and timing needs:

- Team name caption kits for certain models
- Trumpet horn for football and soccer
- Radio control
- Portable Power Pack

## 10.1 Team Name Captions: Model BA-624-11

---

### Reference Drawing:

Caption Changing ..... **Drawing A-44549**

The team name caption kit contains hardware for one caption only and consists of an upper caption retainer, a lower caption retainer, a changeable caption panel, and screws.

The standard Guest and Home captions are applied directly to the face of the scoreboard. Team name captions are on changeable panels that fit into retainers mounted above and below the Home and Guest captions. If retainers are not already present on your scoreboard, attach the retainers included with the caption kit as shown on **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.

Reverse this procedure to remove the caption panel.

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

### CAUTION

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

## 10.2 Trumpet Horn

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### Reference Drawings:

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

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

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

### **120 V Trumpet Horn Installation (Internally Mounted)**

**Caution: Disconnect scoreboard power before installing the horn!**

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

1. Unscrew and remove the trumpet from the horn body.
2. Mount the horn body to the bracket with the  $\frac{1}{4}$ " 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)**

**Caution: Disconnect scoreboard power before installing the horn!**

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

1. Locate the horn panel near the top of the scoreboard. Refer to the component locations drawings listed in **Section 4**. Note that there is a 2" knockout in this panel.



2. Loosen the screws securing the bottom of the panel and swing it open.
3. *Note: This step and the next two are not required if the horn is ordered as original equipment; these procedures will be completed at the factory.* In the interior back panel of the scoreboard, drill two  $\frac{5}{32}$ " holes 4" apart. These screw holes will be used to attach the horn power enclosure assembly, so they should be located within reach of the 2" knockout in the horn panel. Refer to the **Figure 3** detail on **Drawing A-162102**.
4. Attach the horn power enclosure assembly to the inside of the scoreboard, using #10 tapping screws in the  $\frac{5}{32}$ " 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  $\frac{7}{32}$ " 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  $\frac{3}{8}$ " hole in the mounting angle.
10. Place the horn/angle assembly over the 2" knockout and  $\frac{7}{32}$ " holes in the front panel of the scoreboard. Attach the assembly using the #10 hardware provided.
11. Open the front panel and remove the cover from the horn enclosure.
12. Use the wire nuts provided to attach one gray wire from the horn to the black wire from the plate assembly. Connect the second gray wire from the horn to the red wire from the plate assembly.
13. Connect the wires with a white plug to the mating jack on the horn interconnect harness. The interconnect cable itself extends from the jack marked **HORN** or **J101** on the right side of the driver enclosure.
14. Close and secure the access panel.
15. Connect to power 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.

### 10.3 Radio Control

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

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

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

### 10.4 Portable Power Pack

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#### Reference Drawing:

Installation, Portable Powered Scoreboards ..... **Drawing A-166787**

Another option is the portable power pack, which permits operation of the scoreboard via battery. The power pack, self-contained and mounted on a wheeled cart, includes batteries, charger, and a 120 V AC power inverter. Refer to Drawing **A-166787** for information on installation procedures.



# Appendix A: Reference Drawings

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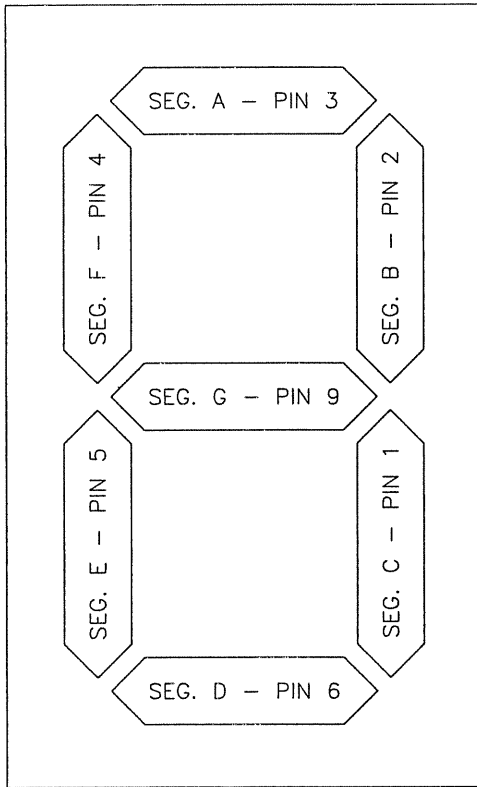
## *A Drawings*

Segmentation, 7 Segment Bar Digit.....	Drawing A-38532
Display Mounting .....	Drawing A-44412
Lifting Scoreboard.....	Drawing A-44548
Caption Changing .....	Drawing A-44549
Ad Panel Mounting .....	Drawing A-52187
Assembly, Ad Panel, BA-515.....	Drawing A-52585
Ad Panel Mounting, BA-518.....	Drawing A-52811
Installation Specifications, BA-515.....	Drawing A-55003
Installation Specifications, BA-518.....	Drawing A-55004
Installation Specifications, BA-718.....	Drawing A-55005
Installation Specifications, BA-618.....	Drawing A-55006
Installation Specifications, BA-624.....	Drawing A-55007
Installation Specifications, MS-918 .....	Drawing A-55009
Installation Specificatons, SO-918, SO-2009 and SO-2010 .....	Drawing A-55010
Scoreboard Mounting.....	Drawing A-55101
Lifting Small Baseball Scoreboard .....	Drawing A-58668
Installation Specifications, BA-1018.....	Drawing A-61904
Installation Specifications, MS-915 .....	Drawing A-113568
Address Table, 1 Through 128 .....	Drawing A-115078
Installation Specifications, FB-824 & SO-824 .....	Drawing A-127287
Schematic, Outdoor Scbd 12VDC Trumpet Horn AS5K .....	Drawing A-128938
Schematic; 120VAC Trumpet Horn.....	Drawing A-132173
16 Column LED Driver II Specifications.....	Drawing A-134371
8 Column LED Driver II Specifications .....	Drawing A-134372
Single Section Scoreboard Models.....	Drawing A-142912
Component Layout; 832/848 LED TNMC .....	Drawing A-145045
Installation Specifications, SO-2008 .....	Drawing A-149074
Installation Specifications; BA-2004 & BA-2005 .....	Drawing A-152777
Installation Specifications; MS-2012 .....	Drawing A-152790
Single Section LED Scoreboard w/ LED TNMC.....	Drawing A-152936
Single Section LED Scoreboard Models.....	Drawing A-152950
Schematic; Gen II Outdoor LED, 16 Column Drvr .....	Drawing A-154330
Driver; 16 Col Outdoor LED, Gen II .....	Drawing A-154792
Component Locations; BA-515-11 .....	Drawing A-154859
Component Locations; BA-518-11 .....	Drawing A-155130
Component Locations; BA-618-11 .....	Drawing A-155137
Component Locations; BA-624-11.....	Drawing A-155161
Component Locations; BA-718-11 .....	Drawing A-155178
Driver; 8 Col Outdoor LED, Gen II .....	Drawing A-155742
Component Locations; MS-918-11 .....	Drawing A-155878
Component Locations; MS-915-11 .....	Drawing A-156025
Schematic, Gen II Outdoor Driver, 8 Column Driver.....	Drawing A-156750
Component Locations; BA-1018-11.....	Drawing A-157512
Component Locations, BA-2003-11 .....	Drawing A-158302
Installation Specifications, BA-2003.....	Drawing A-158322

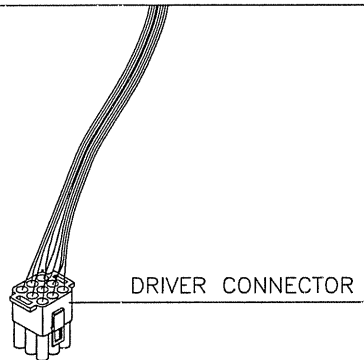
Schematic; LED TNMC, Gen II .....	Drawing A-158552
Component Locations; TI-218-11 .....	Drawing A-158743
Component Locations; TI-418-11 .....	Drawing A-158764
Schematic; Gen II, OD LED, 1 Drvr Display & TNMC.....	Drawing A-159419
Schematic; Gen II OD LED, 3 Drvr Display.....	Drawing A-159920
Component Locations, BA-2004-11 .....	Drawing A-159989
Component Locations, BA-2005-11 .....	Drawing A-159997
Schematic; Gen II, OD LED, 2 Drvr Display.....	Drawing A-159999
Component Locations; FB-824-11 .....	Drawing A-160095
30" Amber LED Digit Assembly .....	Drawing A-161254
Component Locations; SO-918-11 .....	Drawing A-161792
Component Locations; TI-2003-11 .....	Drawing A-161867
Horn Installation; 120 V DC .....	Drawing A-162100
Horn Installation; 12 V DC .....	Drawing A-162102
Component Locations; FB-2005-11 .....	Drawing A-162879
Installation Specifications; FB-2005-11.....	Drawing A-162889
Component Locations; SO-2008-11 .....	Drawing A-163035
Component Locations; MS-2002-11 .....	Drawing A-163316
Component Locations; MS-2004-11 .....	Drawing A-163343
Component Locations; MS-2006-11 .....	Drawing A-163410
Component Locations; MS-2012-11 .....	Drawing A-163801
Installation, Portable Powered Scoreboards.....	Drawing A-166787
Component Locations; SO-2009-XX.....	Drawing A-167304
Component Locations; SO-2010-XX.....	Drawing A-167352
Component Locations; CT-2001-11 .....	Drawing A-168049
Component Locations; CT-2002-11 .....	Drawing A-168058
Component Locations; TI-2019-11 .....	Drawing A-168199
Installation Specifications, TI-2003 .....	Drawing A-169367
Installation Specifications, TI-218 .....	Drawing A-169376
Installation Specifications, TI-418 .....	Drawing A-169380
Installation Specifications; MS-2004 .....	Drawing A-176286
Component Locations; BA-2010-11 .....	Drawing A-179193
Installation Specifications, BA-2010-11 .....	Drawing A-179304

## ***B Drawings***

Control Layout; Outdoor LED TNMC. ....	Drawing B-107507
Exploded Front, Module.....	Drawing B-126111
Exploded Rear, Module .....	Drawing B-126112
F. Assy; 832 LED TNMC.....	Drawing B-159055
F. Assy; 848 LED TNMC.....	Drawing B-159081
F. Assy; TI-2019-11 .....	Drawing B-168198

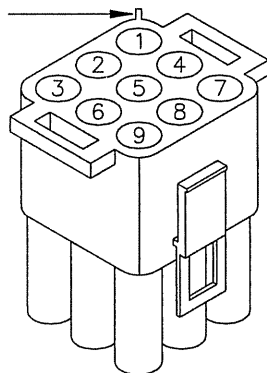


7 SEGMENT BAR DIGIT  
FRONT VIEW



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



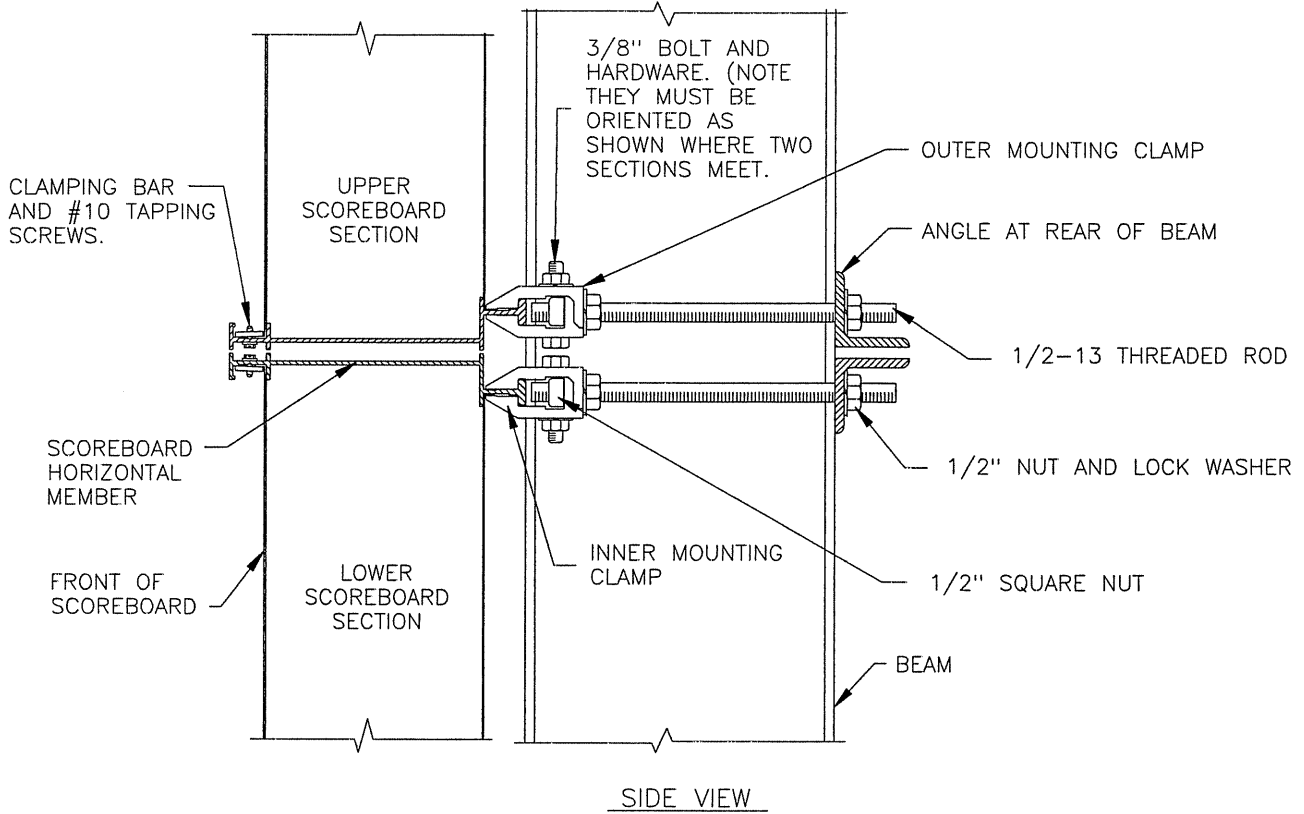
NOTE: "H" SEGMENT, GRAY WIRE IS NOT USED ON 7 SEGMENT BAR DIGIT.

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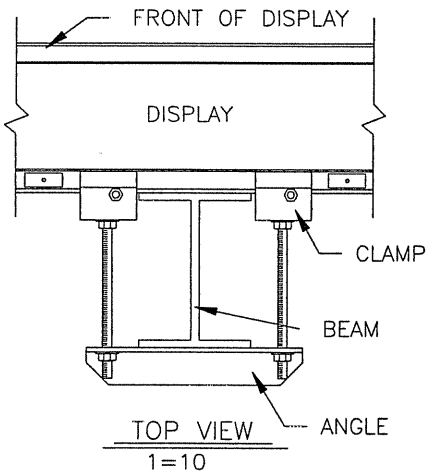
DAKTRONICS, INC. BROOKINGS, SD 57006

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	

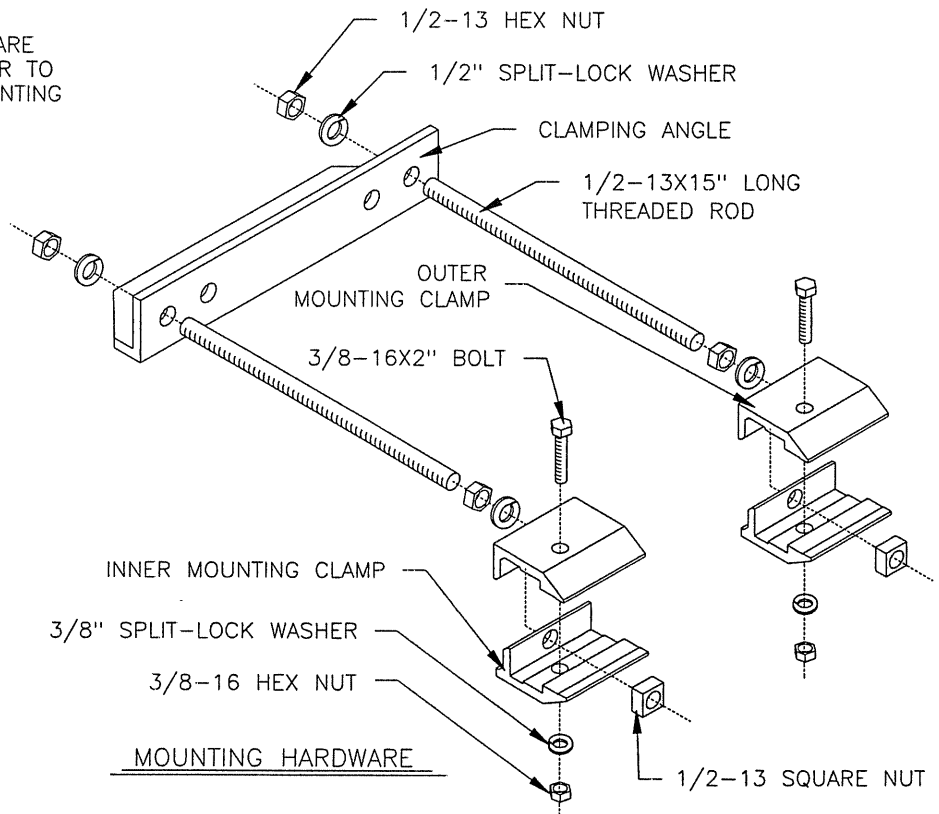
PROJ: BASKETBALL	
TITLE: SEGMENTATION, 7 SEGMENT BAR DIGIT	
DES. BY:	DRAWN BY: HEIDERSCHIEDT DATE: 5 JUN 89
REVISION	APPR. BY: AVB
02	SCALE: 1=4
1009-R04A-38532	



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



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



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: DISPLAY MOUNTING

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

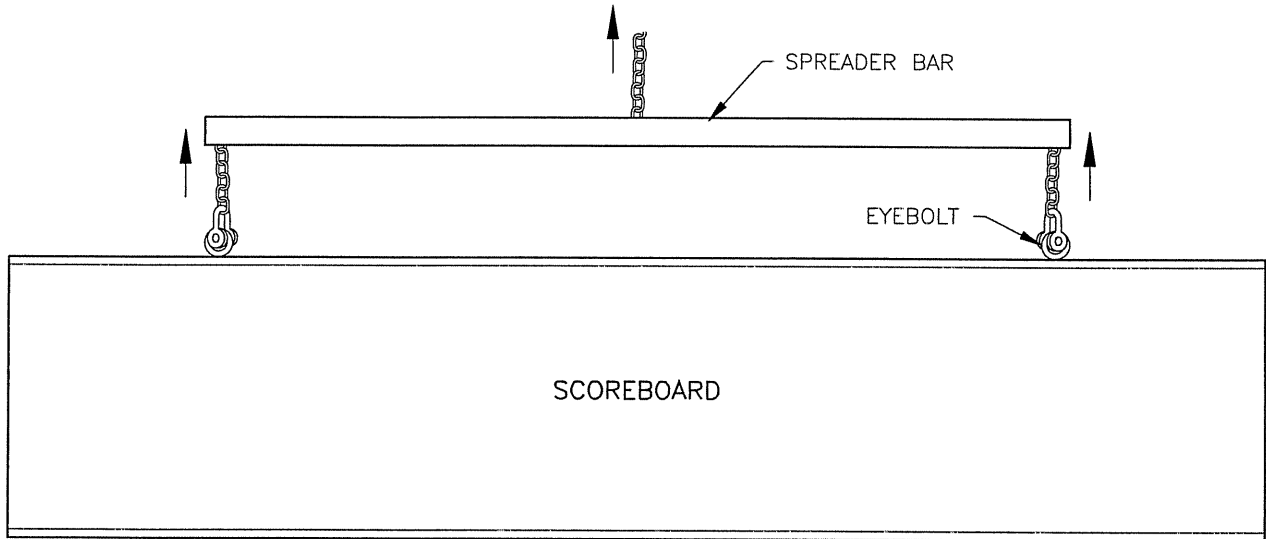
REVISION

APPR. BY:

SCALE: 1=5

1091-R10A-44412

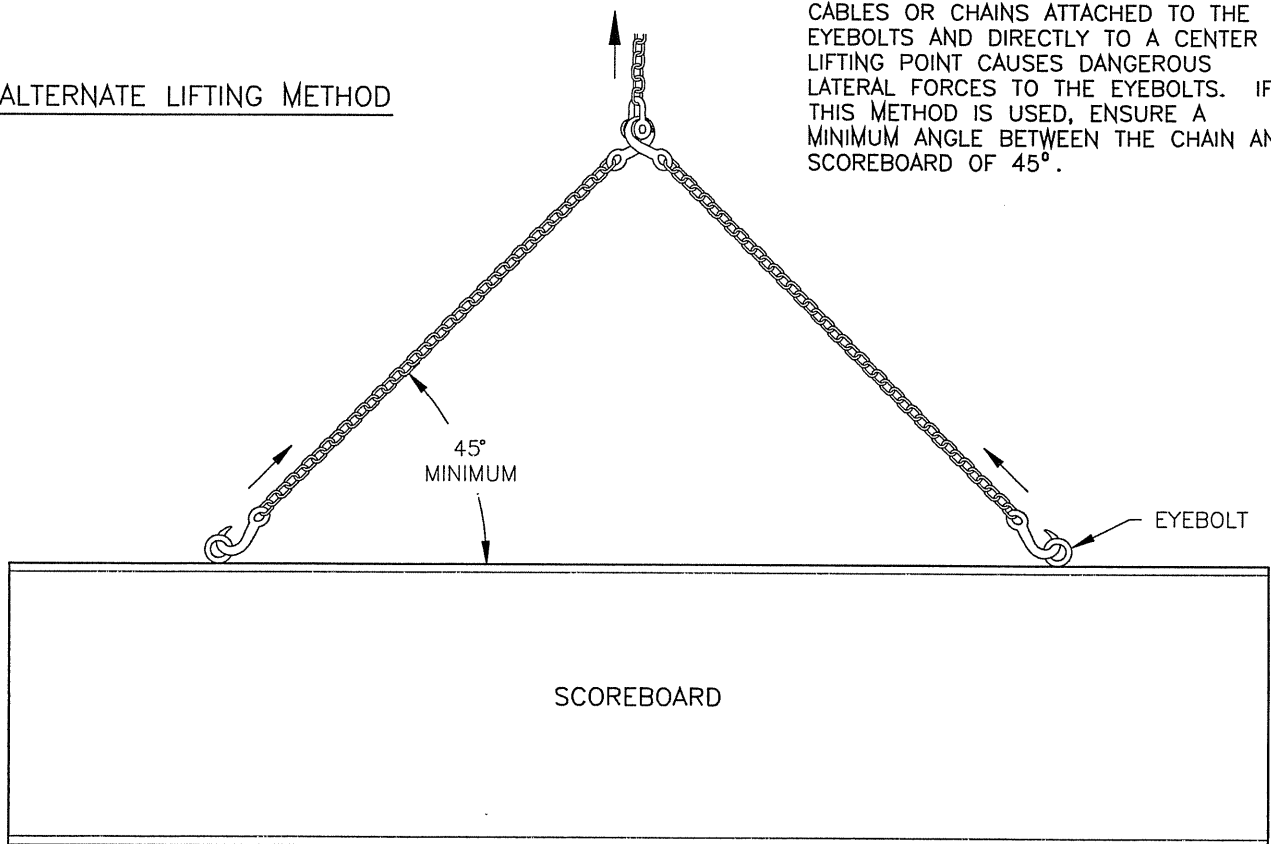
REV.	DATE	DESCRIPTION	BY	APPR.



PREFERRED LIFTING METHOD

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

ALTERNATE LIFTING METHOD

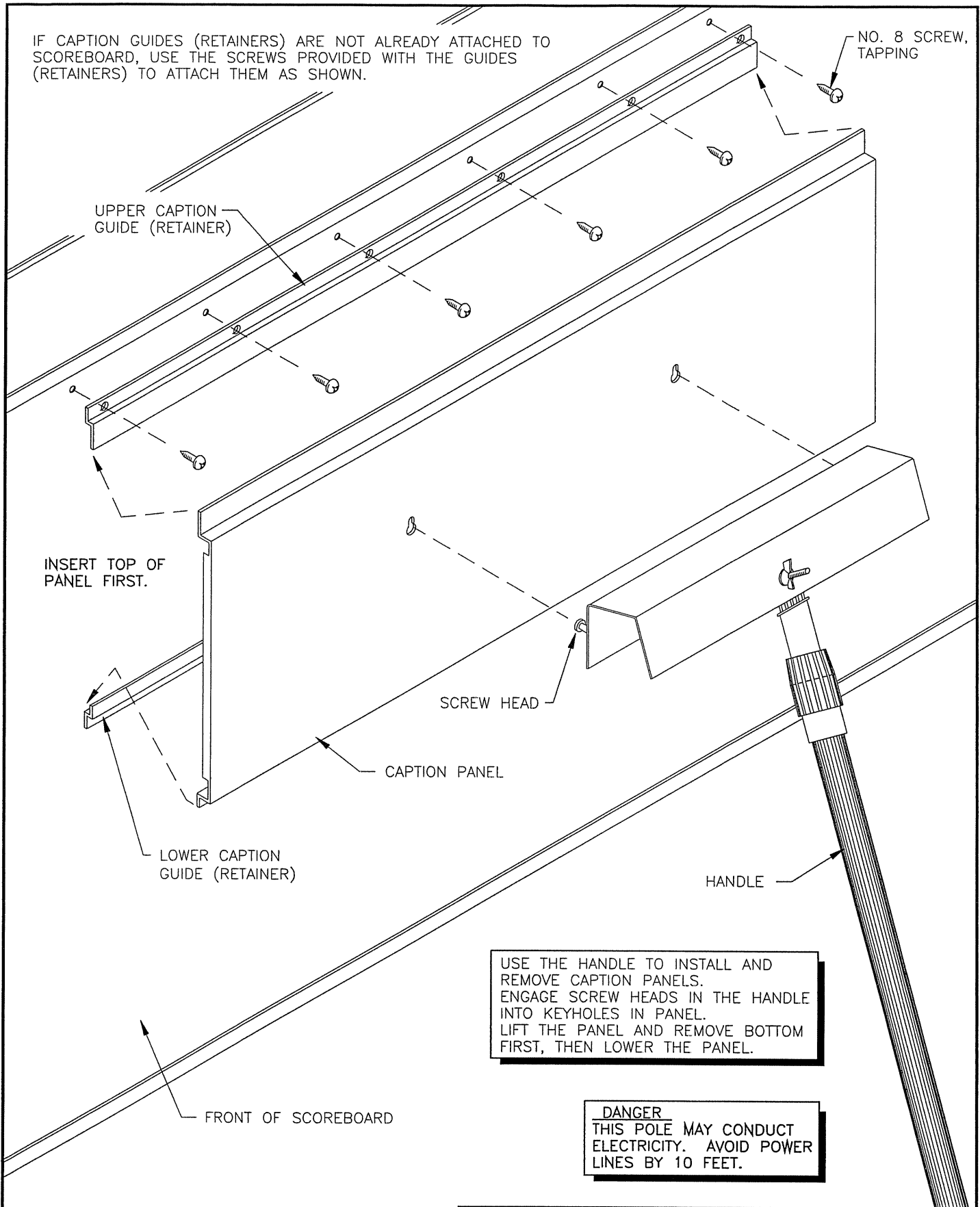


CABLES OR CHAINS ATTACHED TO THE EYEBOLTS AND DIRECTLY TO A CENTER LIFTING POINT CAUSES DANGEROUS LATERAL FORCES TO THE EYEBOLTS. IF THIS METHOD IS USED, ENSURE A MINIMUM ANGLE BETWEEN THE CHAIN AND SCOREBOARD OF 45°.

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	17 MAY 01	ADDED MINIMUM ANGLE TO ALTERNATE LIFTING METHOD; CHANGED CORRECT TO PREFERRED METHOD AND WRONG TO ALTERNATE METHOD	TWEBER	

IF CAPTION GUIDES (RETAINERS) ARE NOT ALREADY ATTACHED TO SCOREBOARD, USE THE SCREWS PROVIDED WITH THE GUIDES (RETAINERS) TO ATTACH THEM AS SHOWN.



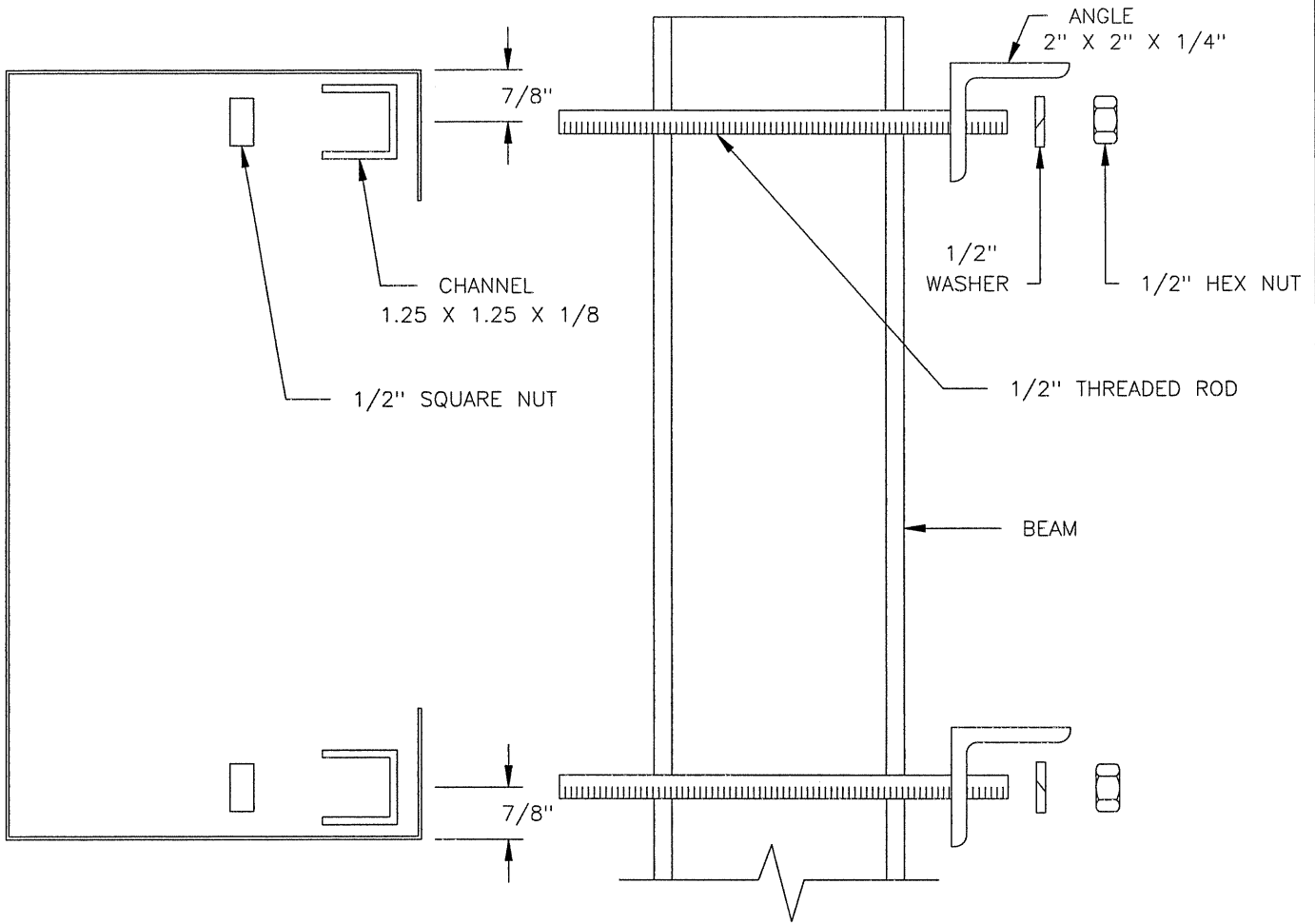
USE THE HANDLE TO INSTALL AND REMOVE CAPTION PANELS. ENGAGE SCREW HEADS IN THE HANDLE INTO KEYHOLES IN PANEL. LIFT THE PANEL AND REMOVE BOTTOM FIRST, THEN LOWER THE PANEL.

**DANGER**  
THIS POLE MAY CONDUCT ELECTRICITY. AVOID POWER LINES BY 10 FEET.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR SCOREBOARDS			
TITLE: CAPTION CHANGING			
DES. BY:	DRAWN BY: AVB	DATE: 19SEP90	
REVISION	APPR. BY:	1091-E10A-44549	
	SCALE: NONE		

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





**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.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: AD PANEL MOUNTING

DES. BY: .

DRAWN BY: MGUNDERSON

DATE: 09JUL92

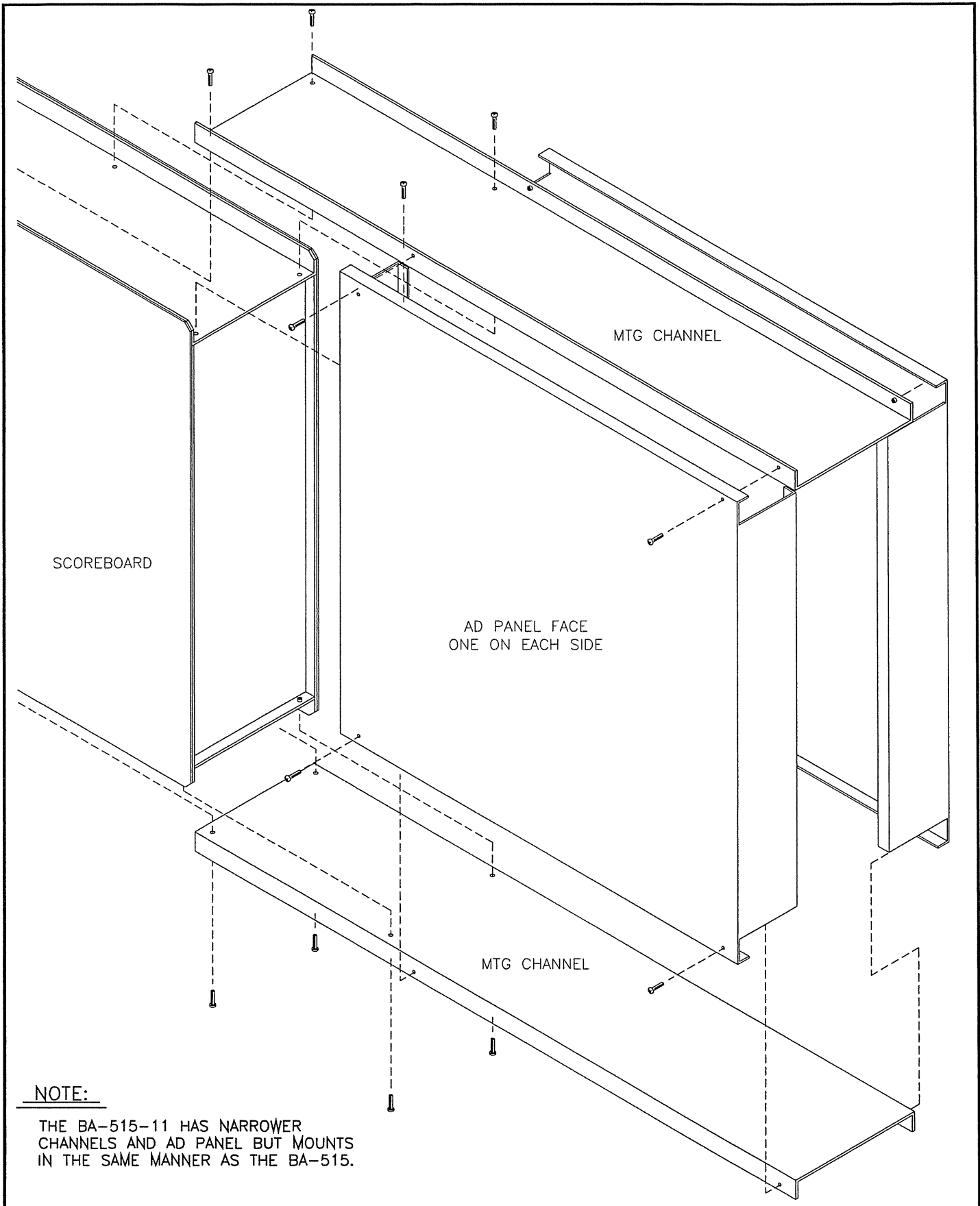
REVISION

APPR. BY:

SCALE: NONE

1091-R10A-52187

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

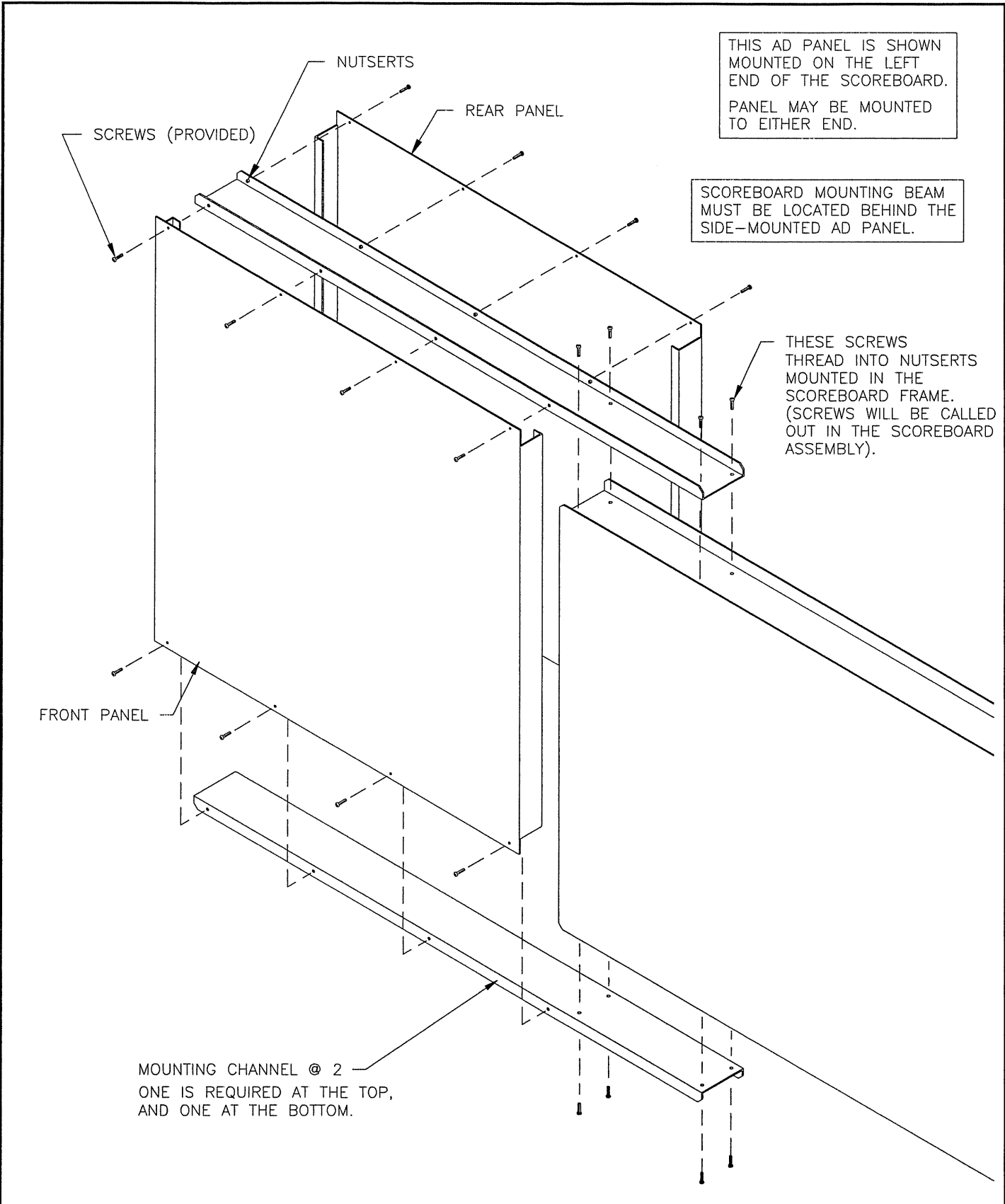


NOTE:

THE BA-515-11 HAS NARROWER CHANNELS AND AD PANEL BUT MOUNTS IN THE SAME MANNER AS THE BA-515.

03	21AUG01	ADDED NOTE FOR BA-515-11	MCOPL	
2	02JUN95	ADDED BACK SIDE AD PANEL FACE.	MGG	
1	29 JUNE 94	MADE FLANGES 0.5 DEEPER.	NJA	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: BASEBALL SCOREBOARDS			
TITLE: ASSEMBLY, AD PANEL, BA-515 / BA-515-11			
DES. BY: MGUNDE		DRAWN BY: MGUNDE	
		DATE: 07AUG92	
REVISION	APPR. BY:	1091-R10A-52585	
	SCALE: 1 = 10		



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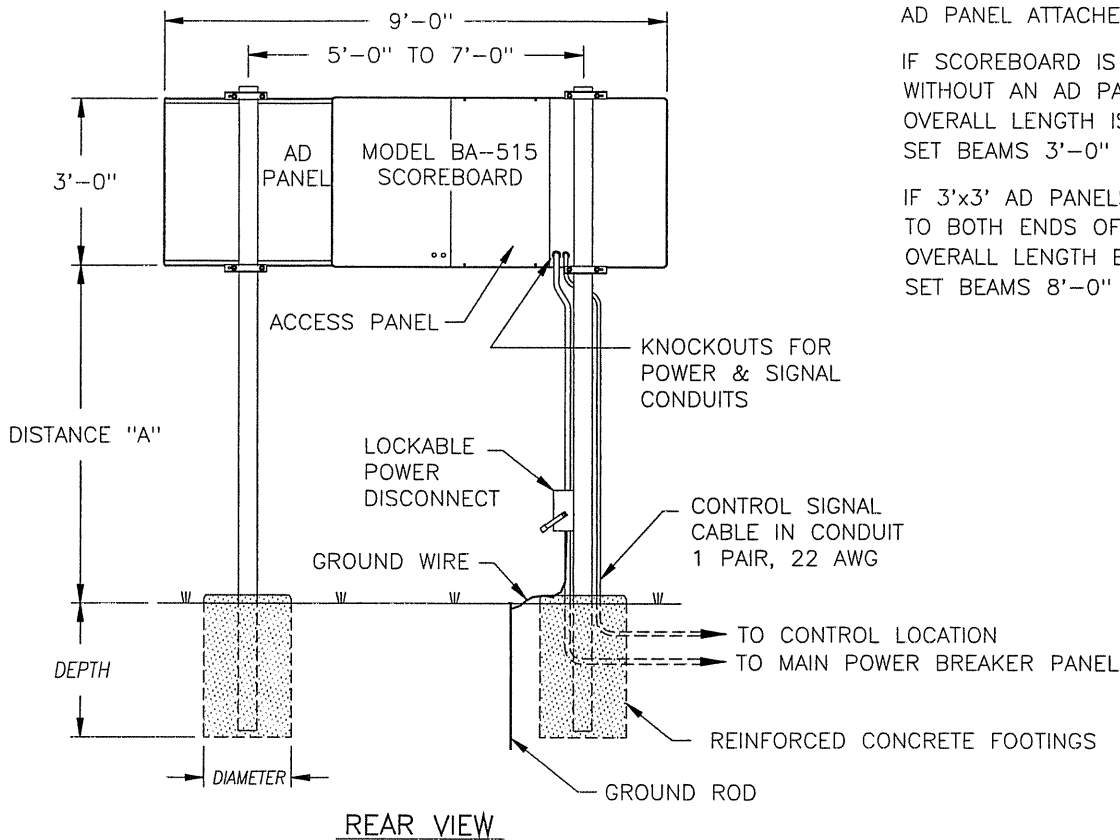
03	17MAR04	ADDED MISC. TEXT	MCOPL	
2	08MAY95	ADDED REAR PANEL, INCREASED FLANGE DEPTH.	AVB	AVB
1	6 JAN 93	REMOVE TOP AND BOTTOM FLANGES ON PANEL. CHANGED FROM 6 SCREWS TO 8 TO ATTACH AD PANEL TO MTG CHANNELS.	C FICK	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: BASEBALL			
TITLE: AD PANEL MOUNTING, BA-518			
DES. BY:	DRAWN BY: C FICKBOHM	DATE: 25 AUG 92	
REVISION	APPR. BY:	1091-E10A-52811	
03	SCALE: 1=15		

SCOREBOARD IS SHOWN WITH A 3' X 3' AD PANEL ATTACHED TO ONE END.

IF SCOREBOARD IS INSTALLED WITHOUT AN AD PANEL, OVERALL LENGTH IS 6'-0". SET BEAMS 3'-0" TO 5'-0" C-C.

IF 3'x3' AD PANELS ARE ATTACHED TO BOTH ENDS OF THE SCOREBOARD, OVERALL LENGTH BECOMES 12'-0". SET BEAMS 8'-0" TO 10'-0" C-C.



MODEL BA-515 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	6'-0" x 3'-0"	BEAM FOOTING	W6x9 2.0' x 3.2'	W10x12 2.5' x 3.3'	W4x13 2.5' x 3.9'
12'-0"	6'-0" x 3'-0"	BEAM FOOTING	W6x12 2.5' x 3.2'	W10x15 2.5' x 3.5'	W6x15 2.5' x 4.1'
14'-0"	6'-0" x 3'-0"	BEAM FOOTING	W4x13 2.5' x 3.4'	W6x15 2.5' x 3.8'	W5x16 2.5' x 4.4'

MODEL BA-515 WITH 3'x3' AD PANEL ON ONE END					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	9'-0" x 3'-0"	BEAM FOOTING	W10x12 2.5' x 3.3'	W10x12 2.5' x 3.7'	W10x15 2.5' x 4.3'
12'-0"	9'-0" x 3'-0"	BEAM FOOTING	W6x12 2.5' x 3.5'	W10x15 2.5' x 3.9'	W10x15 2.5' x 4.6'
14'-0"	9'-0" x 3'-0"	BEAM FOOTING	W6x15 2.5' x 3.8'	W6x15 2.5' x 4.2'	W8x18 2.5' x 4.9'

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<sup>2</sup>

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.

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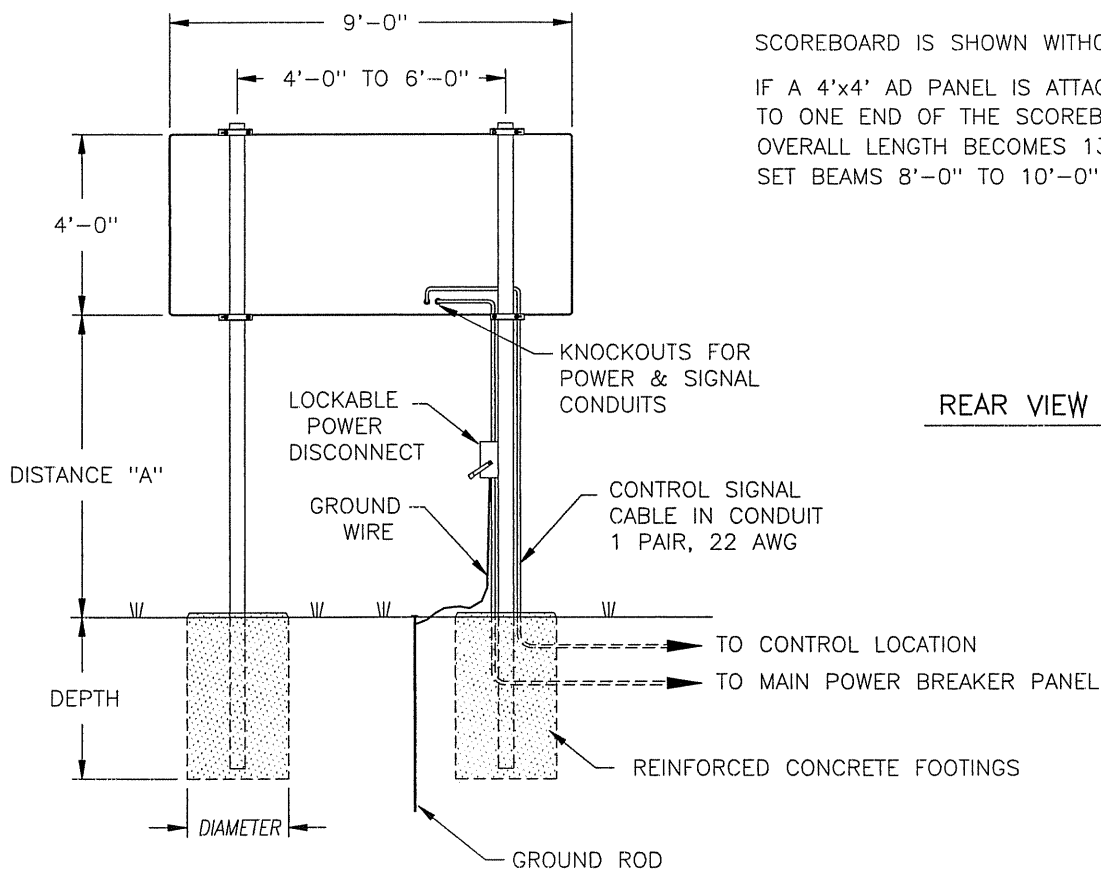
MODEL BA-515 WITH 3'x3' AD PANELS ON BOTH ENDS					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	12'-0" x 3'-0"	BEAM FOOTING	W6x12 2.5' x 3.6'	W4x13 2.5' x 4.0'	W6x15 2.5' x 4.7'
12'-0"	12'-0" x 3'-0"	BEAM FOOTING	W4x13 2.5' x 3.8'	W6x15 2.5' x 4.2'	W5x19 2.5' x 4.9'
14'-0"	12'-0" x 3'-0"	BEAM FOOTING	W6x15 2.5' x 4.1'	W8x18 2.5' x 4.5'	W8x24 2.5' x 5.3'

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DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
02	02JUL04	CHANGED SEVERAL BEAM SIZES	MCOP	
1	14DEC00	REVISED COLUMN SECTIONS & FOOTINGS	MVD	

PROJ: OUTDOOR SCOREBOARDS
TITLE: INSTALLATION SPECIFICATIONS, BA-515
DES. BY: AVB      DRAWN BY: A VANBEMMEL      DATE: 05FEB93
REVISION      APPR. BY:      1091-R10A-55003
02      SCALE: 1=40



SCOREBOARD IS SHOWN WITHOUT AD PANEL.

IF A 4'x4' AD PANEL IS ATTACHED TO ONE END OF THE SCOREBOARD, OVERALL LENGTH BECOMES 13'-0". SET BEAMS 8'-0" TO 10'-0" C-C.

REAR VIEW

MODEL BA-518 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	9'-0" x 4'-0"	BEAM FOOTING	W6x12 3.0' x 3.4'	W4x13 3.0' x 3.8'	W5x16 3.0' x 4.4'
12'-0"	9'-0" x 4'-0"	BEAM FOOTING	W4x13 3.0' x 3.6'	W6x15 3.0' x 4.0'	W5x19 3.0' x 4.7'
14'-0"	9'-0" x 4'-0"	BEAM FOOTING	W6x15 3.0' x 3.9'	W5x19 3.0' x 4.3'	W8x24 3.0' x 5.0'

MODEL BA-518 WITH 30"-HIGH HORIZONTAL AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	9'-0" x 6'-6"	BEAM FOOTING	W5x16 3.0' x 4.1'	W5x19 3.0' x 4.5'	W8x24 3.0' x 5.3'
12'-0"	9'-0" x 6'-6"	BEAM FOOTING	W5x19 3.0' x 4.3'	W8x24 3.0' x 4.8'	W8x28 3.0' x 5.6'
14'-0"	9'-0" x 6'-6"	BEAM FOOTING	W8x24 3.0' x 4.5'	W8x24 3.0' x 5.0'	W8x31 3.0' x 5.9'

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<sup>2</sup>

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.

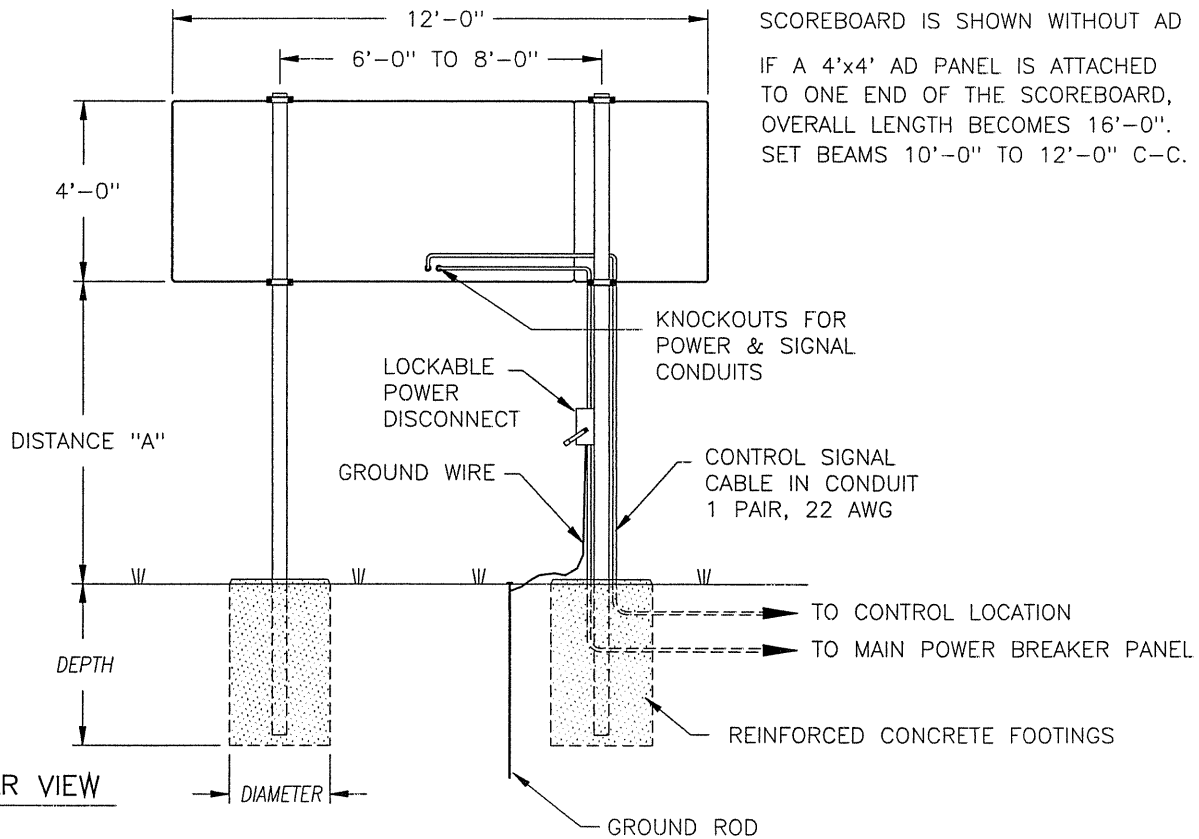
DAKTRONICS, INC. IS NOT RESPONSIBLE FOR STRUCTURES DESIGNED AND INSTALLED BY OTHERS.

MODEL BA-518 WITH 4' SQUARE AD PANEL AT ONE END					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	13'-0" x 4'-0"	BEAM FOOTING	W4x13 3.0' x 3.8'	W6x15 3.0' x 4.2'	W5x19 3.0' x 5.0'
12'-0"	13'-0" x 4'-0"	BEAM FOOTING	W6x15 3.0' x 4.0'	W5x19 3.0' x 4.4'	W8x24 3.0' x 5.2'
14'-0"	13'-0" x 4'-0"	BEAM FOOTING	W5x19 3.0' x 4.3'	W6x20 3.0' x 4.7'	W8x28 3.0' x 5.6'

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS		
TITLE: INSTALLATION SPECIFICATIONS, BA-518		
DES. BY: AVB	DRAWN BY: A VANBEMMEL	DATE: 05FEB93
REVISION	APPR. BY:	
	SCALE: 1=50	1091-R10A-55004

REV.	DATE	DESCRIPTION	BY	APPR.
2	19DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	
1	06MAY94	CHANGED HEIGHT OF DISPLAY WITH 30" AD PANEL TO 6'-6".	AVB	AVB



MODEL BA-718 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	12'-0" x 4'-0"	BEAM FOOTING	W4x13 3.0' x 3.7'	W6x15 3.0' x 4.1'	W5x19 3.0' x 4.8'
12'-0"	12'-0" x 4'-0"	BEAM FOOTING	W6x15 3.0' x 3.9'	W8x18 3.0' x 4.3'	W8x24 3.0' x 5.1'
14'-0"	12'-0" x 4'-0"	BEAM FOOTING	W5x19 3.0' x 4.2'	W6x20 3.0' x 4.6'	W8x24 3.0' x 5.4'

MODEL BA-718 WITH 30"-HIGH HORIZONTAL AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	12'-0" x 6'-6"	BEAM FOOTING	W5x19 3.0' x 4.5'	W6x20 3.0' x 5.0'	W8x28 3.0' x 5.8'
12'-0"	12'-0" x 6'-6"	BEAM FOOTING	W8x24 3.0' x 4.7'	W8x24 3.0' x 5.2'	W8x31 3.0' x 6.1'
14'-0"	12'-0" x 6'-6"	BEAM FOOTING	W8x24 3.0' x 5.0'	W8x28 3.0' x 5.5'	W10x33 3.0' x 6.4'

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<sup>2</sup>

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.

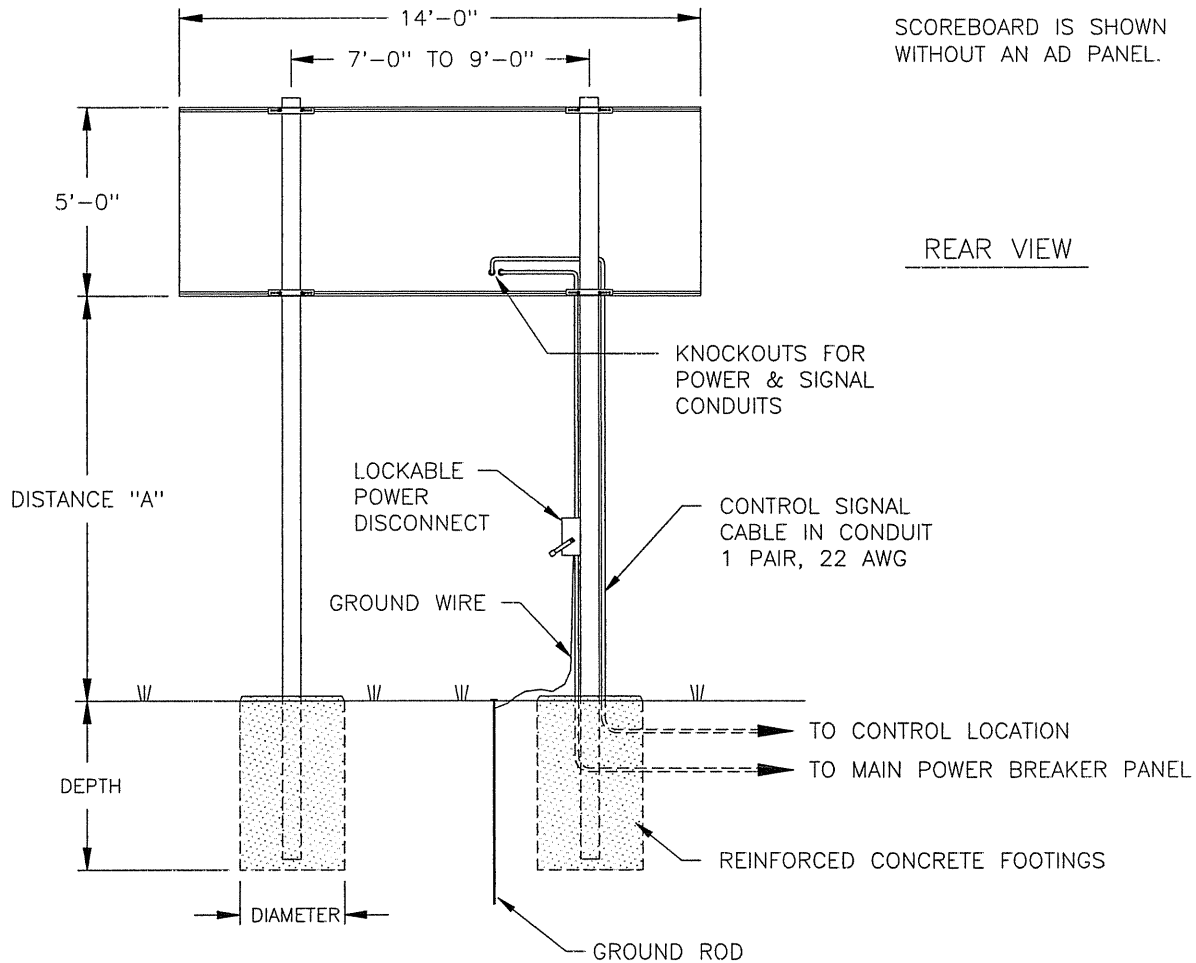
DAKTRONICS, INC. IS NOT RESPONSIBLE FOR STRUCTURES DESIGNED AND INSTALLED BY OTHERS.

MODEL BA-718 WITH 4' SQUARE AD PANEL AT ONE END					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	16'-0" x 4'-0"	BEAM FOOTING	W6x15 3.0' x 4.1'	W5x16 3.0' x 4.5'	W6x20 3.0' x 5.3'
12'-0"	16'-0" x 4'-0"	BEAM FOOTING	W8x18 3.0' x 4.3'	W5x19 3.0' x 4.7'	W8x24 3.0' x 5.6'
14'-0"	16'-0" x 4'-0"	BEAM FOOTING	W6x20 3.0' x 4.6'	W8x24 3.0' x 5.0'	W8x28 3.0' x 5.9'

DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
2	19DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	
1	06MAY94	CHANGED HEIGHT OF DISPLAY WITH 30" AD PANEL TO 6'-6".	AVB	

PROJ: OUTDOOR SCOREBOARDS	
TITLE: INSTALLATION SPECIFICATIONS, BA-718	
DES. BY: AVB	DRAWN BY: A VANBEMMEL DATE: 04JAN93
REVISION	APPR. BY:
	SCALE: 1=50
1091-R10A-55005	



MODEL BA-618 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	14'-0" x 5'-0"	BEAM FOOTING	W5x16 3.0' x 4.3'	W5x19 3.0' x 4.7'	W8x24 3.0' x 5.5'
12'-0"	14'-0" x 5'-0"	BEAM FOOTING	W5x19 3.0' x 4.5'	W8x24 3.0' x 5.0'	W8x28 3.0' x 5.8'
14'-0"	14'-0" x 5'-0"	BEAM FOOTING	W8x24 3.0' x 4.7'	W8x24 3.0' x 5.2'	W8x31 3.0' x 6.1'

MODEL BA-618 WITH 30"-HIGH AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	14'-0" x 7'-6"	BEAM FOOTING	W8x24 3.0' x 5.0'	W6x25 3.0' x 5.5'	W8x31 3.0' x 6.5'
12'-0"	14'-0" x 7'-6"	BEAM FOOTING	W8x28 3.0' x 5.3'	W8x31 3.0' x 5.8'	W8x35 3.0' x 6.8'
14'-0"	14'-0" x 7'-6"	BEAM FOOTING	W8x31 3.0' x 5.5'	W8x31 3.0' x 6.1'	W8x40 3.0' x 7.1'

FOOTING = DIAMETER X DEPTH

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FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT<sup>2</sup>

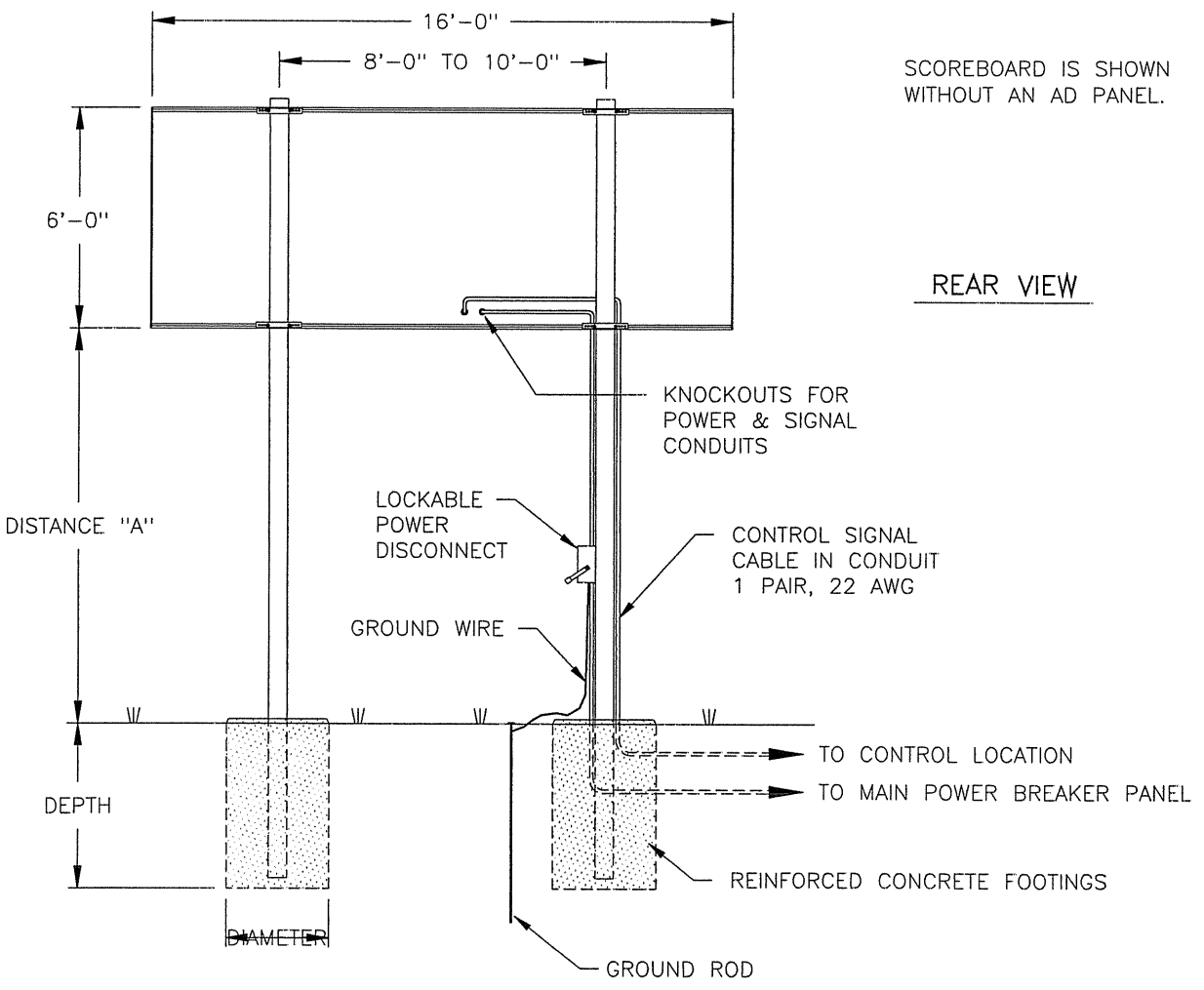
ACTUAL FOOTING DEPTH AND DIAMETER FOR A PARTICULAR INSTALLATION MUST BE DETERMINED BY A QUALIFIED STRUCTURAL ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

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DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
2	19DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	
1	25NOV97	REPLACED BA-618L WITH BA-618.	TWEBER	

PROJ: OUTDOOR SCOREBOARDS	
TITLE: INSTALLATION SPECIFICATIONS, BA-618	
DES. BY: AVB	DRAWN BY: A VANBEMMEL DATE: 12FEB93
REVISION	APPR. BY:
SCALE: 1=60	1091-R10A-55006



SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.

REAR VIEW

MODEL BA-624 & SO-2013 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	16'-0" x 6'-0"	BEAM FOOTING	W5x19 3.0' x 4.8'	W8x24 3.0' x 5.3'	W8x28 3.0' x 6.2'
12'-0"	16'-0" x 6'-0"	BEAM FOOTING	W8x24 3.0' x 5.0'	W8x28 3.0' x 5.6'	W8x31 3.0' x 6.5'
14'-0"	16'-0" x 6'-0"	BEAM FOOTING	W8x28 3.0' x 5.3'	W8x31 3.0' x 5.8'	W8x35 3.0' x 6.8'

MODEL BA-624 & SO-2013 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 8'-6"	BEAM FOOTING	W8x28 3.0' x 5.5'	W8x31 3.0' x 6.1'	W8x35 3.0' x 7.2'
12'-0"	16'-0" x 8'-6"	BEAM FOOTING	W8x31 3.0' x 5.8'	W10x33 3.0' x 6.4'	W8x40 3.0' x 7.5'
14'-0"	16'-0" x 8'-6"	BEAM FOOTING	W10x33 3.0' x 6.1'	W10x39 3.0' x 6.7'	W8x48 3.0' x 7.9'

FOOTING = DIAMETER X DEPTH

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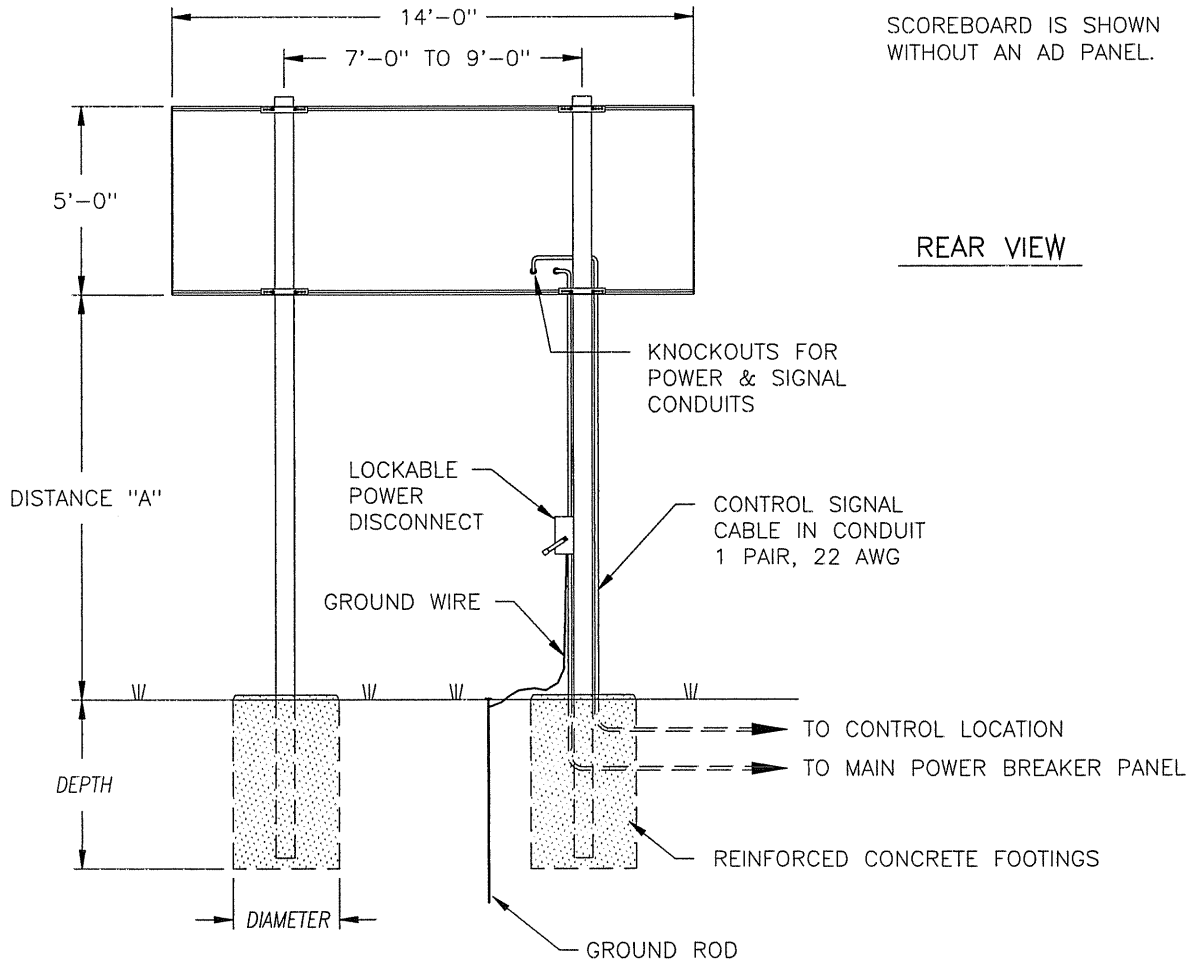
ACTUAL FOOTING DEPTH AND DIAMETER FOR A PARTICULAR INSTALLATION MUST BE DETERMINED BY A QUALIFIED STRUCTURAL ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

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

REV.	DATE	DESCRIPTION	BY	APPR.
03	21 SEPT 04	ADDED MODEL SO-2013	CAC	
2	19DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	
1	25NOV97	REPLACED BA-624L WITH BA-624.	TWEBER	

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	OUTDOOR SCOREBOARDS
TITLE:	INSTALLATION SPECIFICATIONS, BA-624 & SO-2013
DES. BY:	AVB
DRAWN BY:	A VANBEMMEL
DATE:	15FEB93
REVISION	03
APPR. BY:	
SCALE:	1=60
1091-R10A-55007	





MODEL MS-918 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	14'-0" x 5'-0"	BEAM FOOTING	W5x16 3.0' x 4.3'	W5x19 3.0' x 4.7'	W8x24 3.0' x 5.5'
12'-0"	14'-0" x 5'-0"	BEAM FOOTING	W5x19 3.0' x 4.5'	W8x24 3.0' x 5.0'	W8x28 3.0' x 5.8'
14'-0"	14'-0" x 5'-0"	BEAM FOOTING	W8x24 3.0' x 4.7'	W8x24 3.0' x 5.2'	W8x31 3.0' x 6.1'

MODEL MS-918 WITH 30"-HIGH AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	14'-0" x 7'-6"	BEAM FOOTING	W8x24 3.0' x 5.0'	W6x25 3.0' x 5.5'	W8x31 3.0' x 6.5'
12'-0"	14'-0" x 7'-6"	BEAM FOOTING	W8x28 3.0' x 5.3'	W8x31 3.0' x 5.8'	W8x35 3.0' x 6.8'
14'-0"	14'-0" x 7'-6"	BEAM FOOTING	W8x31 3.0' x 5.5'	W8x31 3.0' x 6.1'	W8x40 3.0' x 7.1'

FOOTING = DIAMETER X DEPTH

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, MS-918

DES. BY: AVB

DRAWN BY: A VANBEMMEL

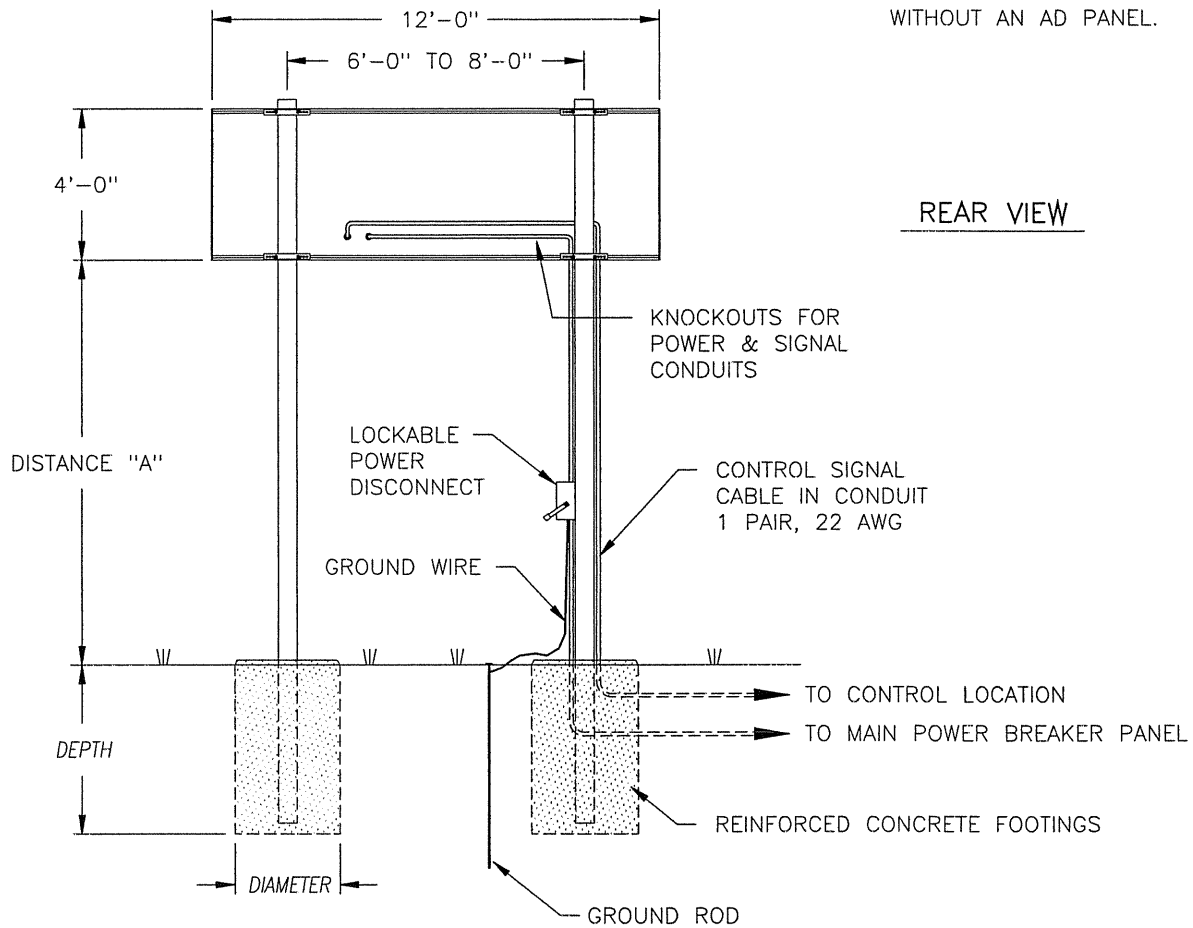
DATE: 15FEB93

REV.	DATE	DESCRIPTION	BY	APPR.
1	20DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	

REVISION	APPR. BY:
	SCALE: 1=60

1091-R10A-55009

SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.



REAR VIEW

MODEL SO-918 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	12'-0" x 4'-0"	BEAM FOOTING	W4x13 3.0' x 3.7'	W6x15 3.0' x 4.1'	W5x19 3.0' x 4.8'
12'-0"	12'-0" x 4'-0"	BEAM FOOTING	W6x15 3.0' x 3.9'	W8x18 3.0' x 4.3'	W8x24 3.0' x 5.1'
14'-0"	12'-0" x 4'-0"	BEAM FOOTING	W5x19 3.0' x 4.2'	W6x20 3.0' x 4.6'	W8x24 3.0' x 5.4'

MODEL SO-918 WITH 30"-HIGH AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	12'-0" x 6'-6"	BEAM FOOTING	W8x18 3.0' x 5.1'	W6x20 3.0' x 5.6'	W8x24 3.0' x 6.6'
12'-0"	12'-0" x 6'-6"	BEAM FOOTING	W6x20 3.0' x 5.4'	W6x20 3.0' x 5.9'	W12x26 3.0' x 6.9'
14'-0"	12'-0" x 6'-6"	BEAM FOOTING	W12x26 3.0' x 5.6'	W12x26 3.0' x 6.2'	W14x30 3.0' x 7.2'

FOOTING = DIAMETER X DEPTH

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FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT<sup>2</sup>

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.

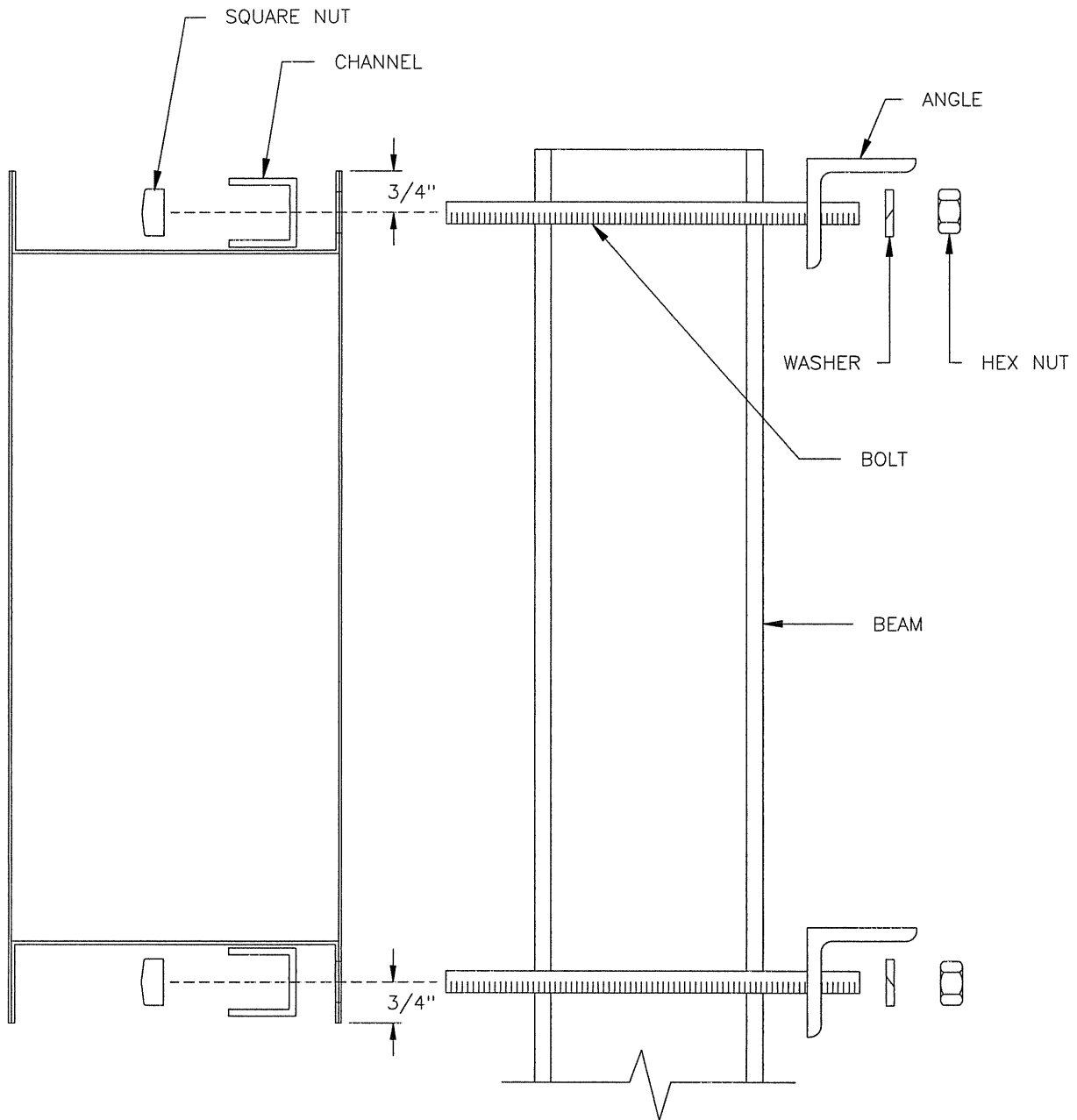
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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS	
TITLE: INSTALLATION SPECS, SO-918, SO-2009 and SO-2010	
DES. BY: AVB	DRAWN BY: A VANBEMMEL DATE: 15FEB93
REVISION 03	APPR. BY: SCALE: 1=60
1091-R10A-55010	

REV.	DATE	DESCRIPTION	BY	APPR.
3	23 FEB 04	ADDED 6'-6" SIZE HEIGHT & NEW COLUMN AND FOOTING SIZES	JLB	
2	30 MAY 02	ADDED MODELS SO-2009 & SO-2010 TO TITLE.	TWEBER	
1	20DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	

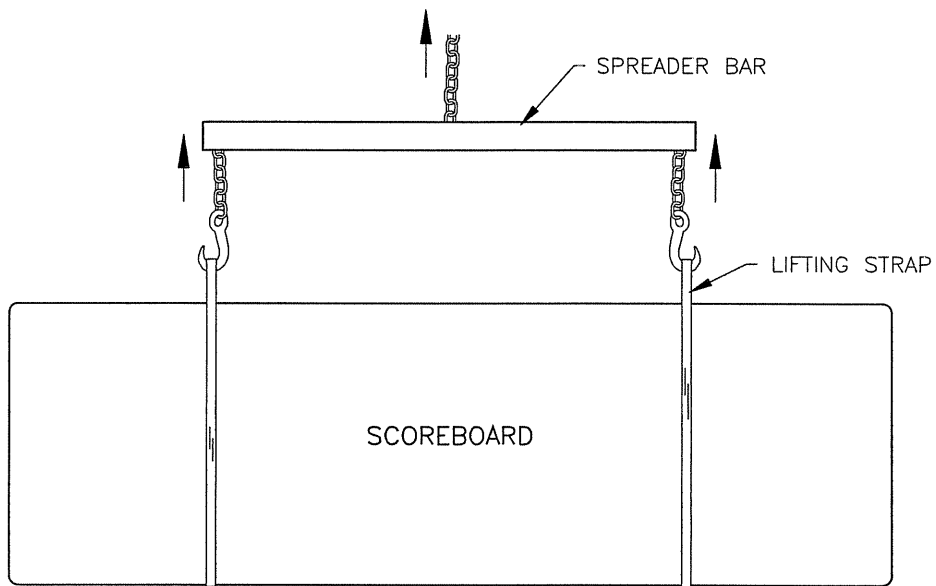


MOUNTING INSTRUCTIONS:

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.

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	

REV.	DATE	DESCRIPTION	BY	APPR.



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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: LIFTING SMALL BASEBALL SCOREBOARD

DES. BY:

DRAWN BY: C FICKBOHM

DATE: 29 SEP 93

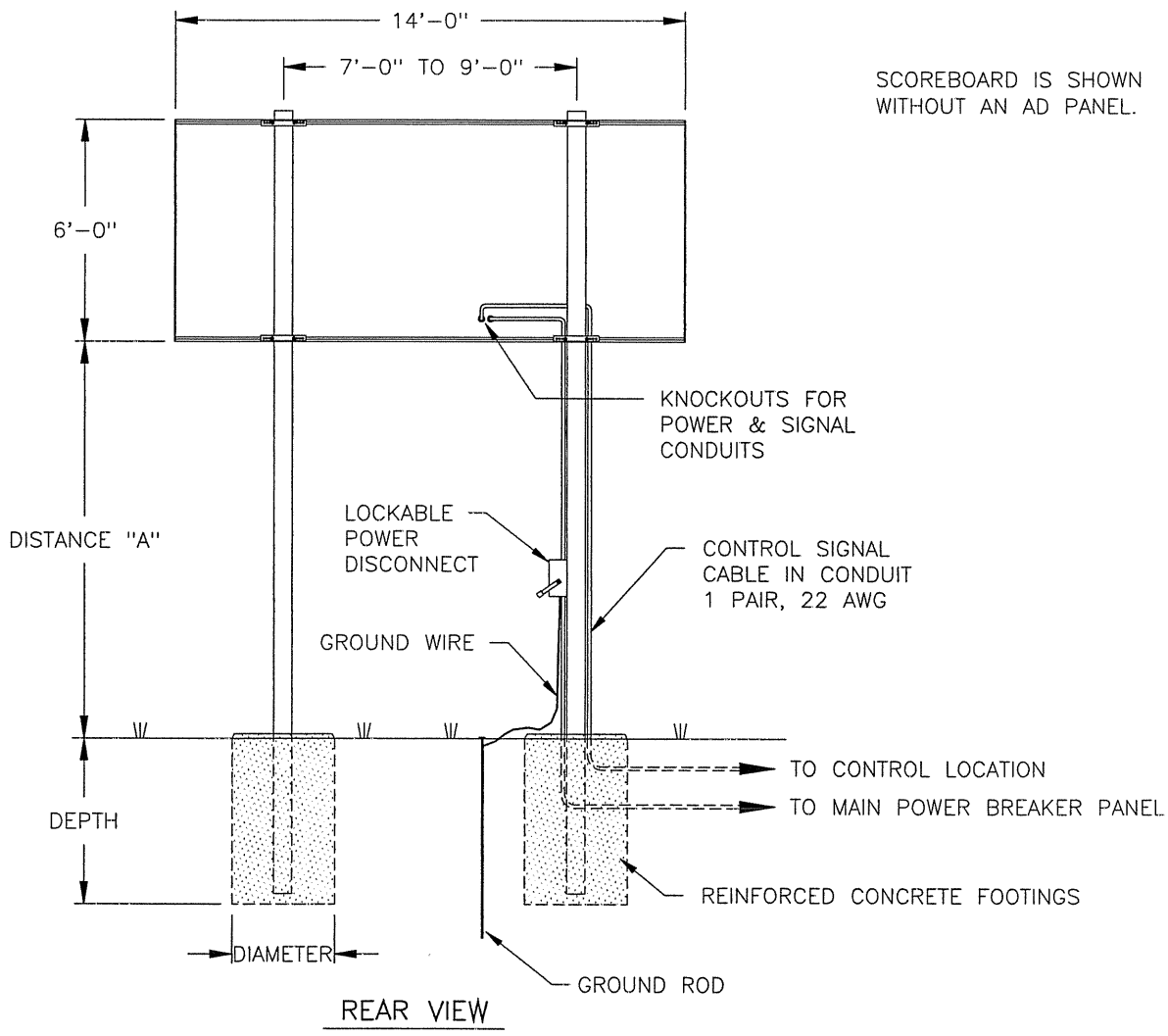
REV	DATE	DESCRIPTION	BY	APPR.

REVISION

APPR. BY:

SCALE: NONE

1091-R10A-58668



MODEL BA-1018 OR BA-2016 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	14'-0" x 6'-0"	BEAM FOOTING	W5x19 3.0' x 4.6'	W6x20 3.0' x 5.0'	W8x28 3.0' x 5.9'
12'-0"	14'-0" x 6'-0"	BEAM FOOTING	W8x24 3.0' x 4.8'	W8x24 3.0' x 5.3'	W8x31 3.0' x 6.3'
14'-0"	14'-0" x 6'-0"	BEAM FOOTING	W8x24 3.0' x 5.0'	W8x28 3.0' x 5.5'	W8x35 3.0' x 6.5'

MODEL BA-1018 OR BA-2016 WITH 30"-HIGH AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	14'-0" x 8'-6"	BEAM FOOTING	W8x24 3.0' x 5.3'	W8x28 3.0' x 5.8'	W8x35 3.0' x 6.9'
12'-0"	14'-0" x 8'-6"	BEAM FOOTING	W8x28 3.0' x 5.6'	W8x31 3.0' x 6.1'	W10x39 3.0' x 7.2'
14'-0"	14'-0" x 8'-6"	BEAM FOOTING	W8x31 3.0' x 5.8'	W8x35 3.0' x 6.4'	W12x45 3.0' x 7.5'

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<sup>2</sup>

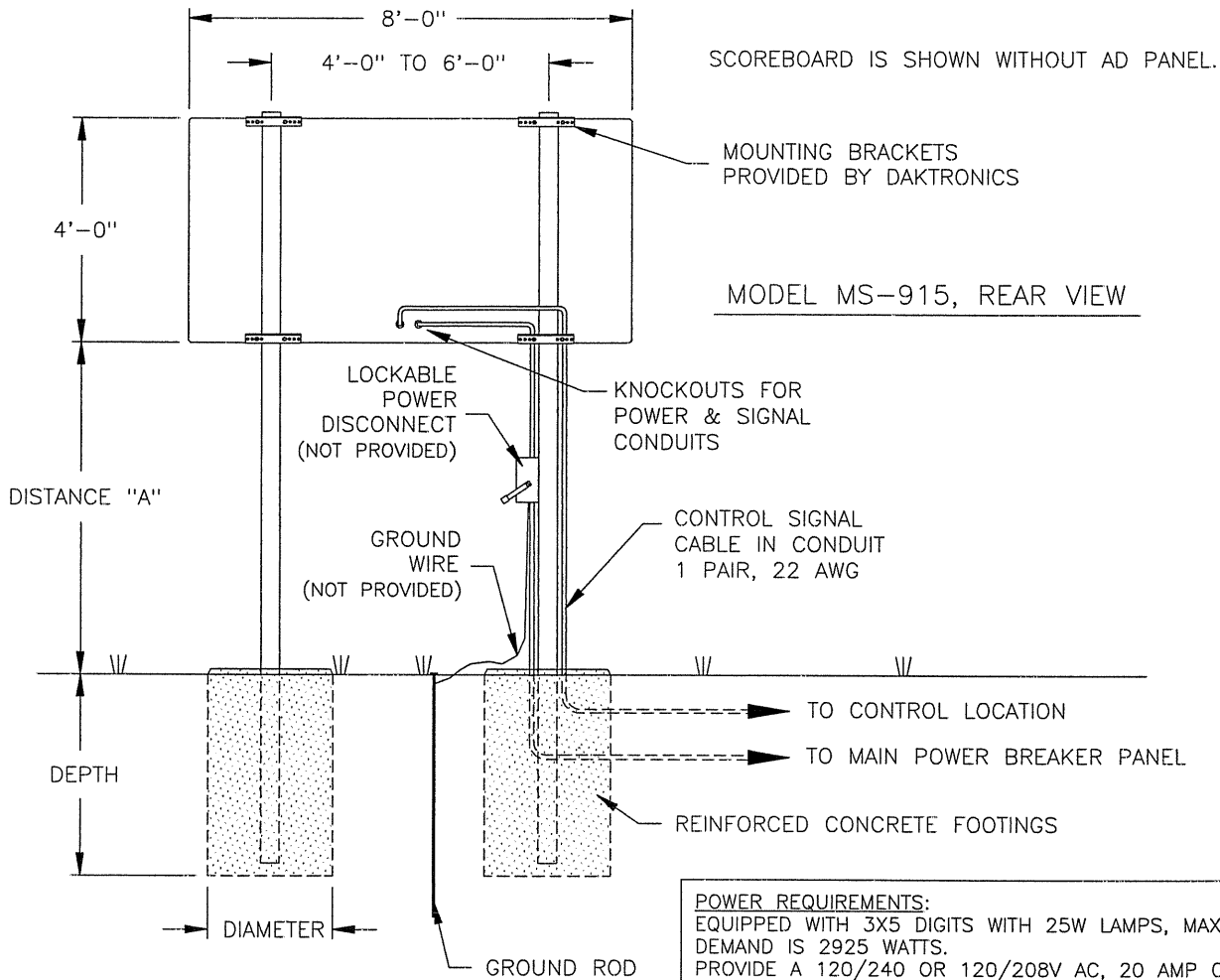
ACTUAL FOOTING DEPTH AND DIAMETER FOR A PARTICULAR INSTALLATION MUST BE DETERMINED BY A QUALIFIED STRUCTURAL ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

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

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REV.	DATE	DESCRIPTION	BY	APPR.
03	05MAY04	ADDED MODEL BA-2016	MCOP	
2	20DEC00	REVISED COLUMN SECTIONS & FOOTINGS	MVD	
1	21MAR94	CORRECTED DISPLAY HEIGHT ON FIGURE.	AVB	AVB

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR SCOREBOARDS	
TITLE: INSTALLATION SPECIFICATIONS, BA-1018	
DES. BY: AVB	DRAWN BY: A VANBEMMEL DATE: 17MAR94
REVISION 03	APPR. BY: SCALE: 1=60
1091-R10A-61904	



**POWER REQUIREMENTS:**  
EQUIPPED WITH 3X5 DIGITS WITH 25W LAMPS, MAX POWER DEMAND IS 2925 WATTS.  
PROVIDE A 120/240 OR 120/208V AC, 20 AMP CIRCUIT.  
**SIGNAL:** 1 SHIELDED PAIR, 22 AWG MIN.

MODEL MS-915 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			60 MPH	80 MPH	100 MPH
10'-0"	8'-0" x 4'-0"	BEAM FOOTING	W6x12 1.5' x 3.5'	W6x12 1.5' x 4.75'	W6x12 2' x 5'
12'-0"	8'-0" x 4'-0"	BEAM FOOTING	W6x12 1.5' x 3.75'	W6x12 2' x 4.5'	W6x12 2' x 5.5'
14'-0"	8'-0" x 4'-0"	BEAM FOOTING	W6x15.5 1.5' x 4'	W6x15.5 2' x 4.75'	W6x15.5 2' x 6'

MODEL MS-915 WITH 24"-HIGH HORIZONTAL AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			60 MPH	80 MPH	100 MPH
10'-0"	8'-0" x 6'-0"	BEAM FOOTING	W6x12 1.5' x 4'	W6x12 2' x 5'	W8x15 2' x 6'
12'-0"	8'-0" x 6'-0"	BEAM FOOTING	W6x12 1.5' x 4.5'	W6x15.5 2' x 5.25'	W8x17 2.5 x 6'
14'-0"	8'-0" x 6'-0"	BEAM FOOTING	W6x15.5 2' x 4.25'	W6x15.5 2' x 5.75'	W8x20 2.5' x 6.5'

BEAM SPEC EXAMPLE: W6X12 MEANS WIDE-FLANGE I-BEAM 6" DEEP, 12 LB PER FOOT.  
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 3000 LB/SQ FT.  
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

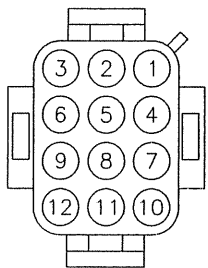
PROJ:			
TITLE:	INSTALLATION SPECIFICATIONS, MS-915		
DES. BY:	DRAWN BY:	A VANBEMMEL	DATE: 17 MAR 99
REVISION	APPR. BY:		
	SCALE:	1=40	

1091-R08A-113568

REV.	DATE	DESCRIPTION	BY	APPR.

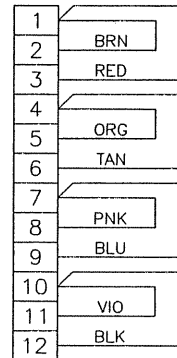
KEY: 0 = WIRE NOT CONNECTED 1 = WIRE IS CONNECTED

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	0	1
3	0	0	0	0	0	0	0	1
4	0	0	0	0	0	0	1	0
5	0	0	0	0	0	0	1	0
6	0	0	0	0	0	0	1	0
7	0	0	0	0	0	0	1	0
8	0	0	0	0	0	0	1	0
9	0	0	0	0	0	0	1	0
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126	0	0	0	0	0	0	0	1
127	0	0	0	0	0	0	0	1
128	0	0	0	0	0	0	0	1



ADDRESS PLUG  
WIRE SIDE

WIRING DIAGRAM  
ADDRESS PLUG  
WITH ALL WIRES  
CONNECTED

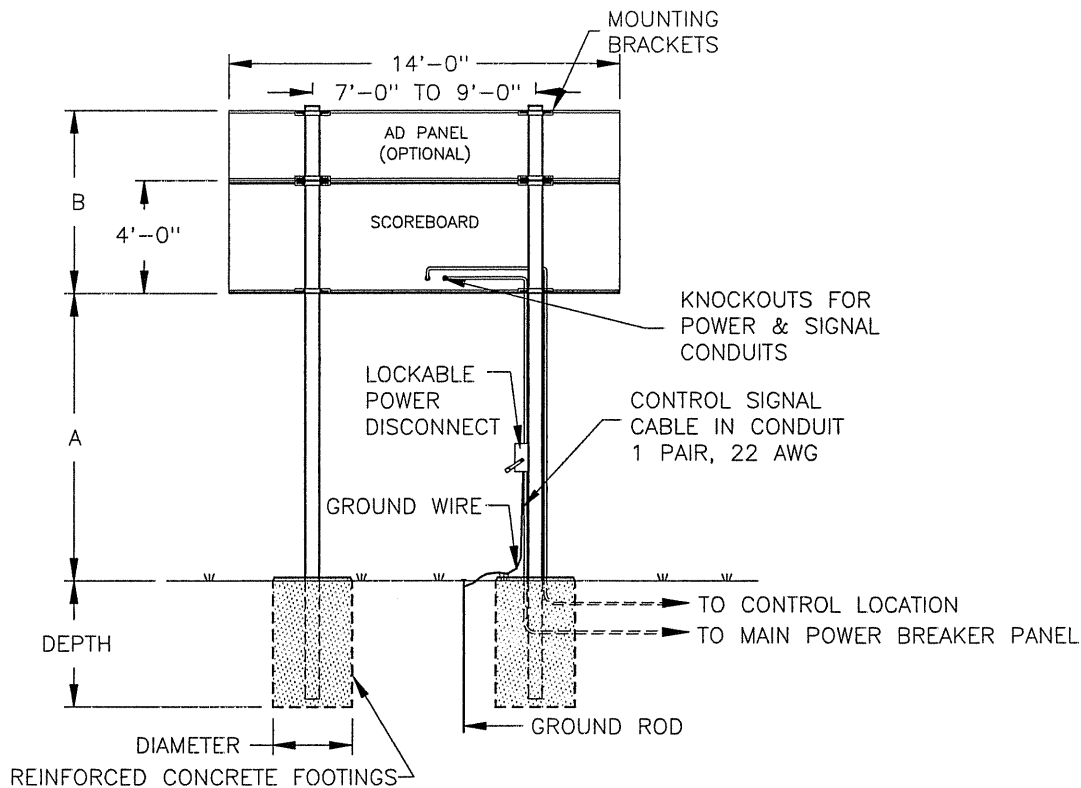


DAKTRONICS, INC. BROOKINGS, SD 57006

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



REAR VIEW

FB-824 & SO-824

ELECTRICAL

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

MODEL FB-824 & SO-824						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	4'-0"	BEAM	W6x15	W6x15	W5x19
			FOOTING	3.0'x3.9'	3.0'x4.3'	3.0'x5.1'
	2 FT	6'-0"	BEAM	W6x19	W6x20	W8x28
			FOOTING	3.0'x4.6'	3.0'x5.0'	3.0'x5.9'
4 FT	8'-0"	BEAM	W8x24	W8x28	W8x31	
		FOOTING	3.0'x5.2'	3.0'x5.7'	3.0'x6.7'	
12 FT	NONE	4'-0"	BEAM	W6x16	W5x19	W8x24
			FOOTING	3.0'x4.1'	3.0'x4.5'	3.0'x5.3'
	2 FT	6'-0"	BEAM	W8x24	W8x24	W8x31
			FOOTING	3.0'x4.8'	3.0'x5.3'	3.0'x6.3'
	4 FT	8'-0"	BEAM	W8x28	W8x31	W10x39
			FOOTING	3.0'x5.4'	3.0'x5.9'	3.0'x7.0'
14 FT	NONE	4'-0"	BEAM	W6x19	W6x24	W8x28
			FOOTING	3.0'x4.4'	3.0'x4.8'	3.0'x5.7'
	2 FT	6'-0"	BEAM	W8x24	W8x28	W8x35
			FOOTING	3.0'x5.0'	3.0'x5.5'	3.0'x6.5'
	4 FT	8'-0"	BEAM	W8x31	W8x35	W12x45
			FOOTING	3.0'x5.7'	3.0'x6.2'	3.0'x7.3'

FOOTING = DIAMETER X DEPTH

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

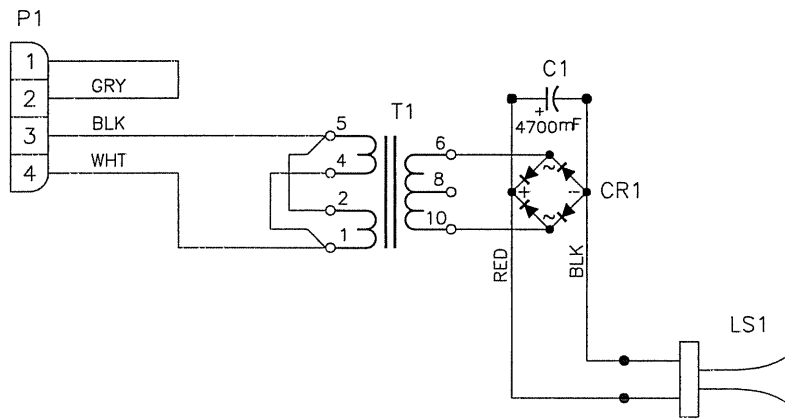
COLUMNS AND FOOTINGS MUST BE DESIGNED BY A STATE LICENCED ENGINEER. DAKTRONICS DOES NOT ASSUME ANY LIABILITY FOR ANY INSTALLATIONS DERIVED FROM THIS INFORMATION OR DESIGNED AND INSTALLED BY OTHERS.

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.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS, FB-824 & SO-824			
DES. BY: BPETERSON		DRAWN BY: BPETERSON	
DATE: 02FEB00		DATE: 02FEB00	
1	20DEC00	REVISED COLUMN SECTIONS & FOOTINGS	MVD
REV.	DATE	DESCRIPTION	BY APPR.
REVISION		APPR. BY:	SCALE: 1=80
			1091-R10A-127287





0A-1091-1214

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: STANDARD SCOREBOARDS

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

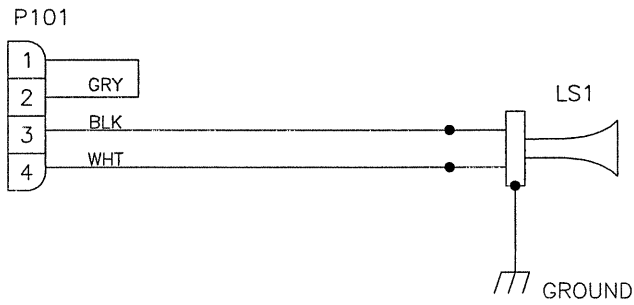
DES. BY: DRAWN BY: JCM

DATE: 06 MAR 00

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

REVISION	APPR. BY:
01	NONE

1091-R03A-128938



0A-1091-0470

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: STANDARD OUTDOOR SCOREBOARDS

TITLE: SCHEMATIC; 120VAC TRUMPET HORN

DES. BY:

DRAWN BY: RASMUS

DATE: 16MAY00

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

REVISION

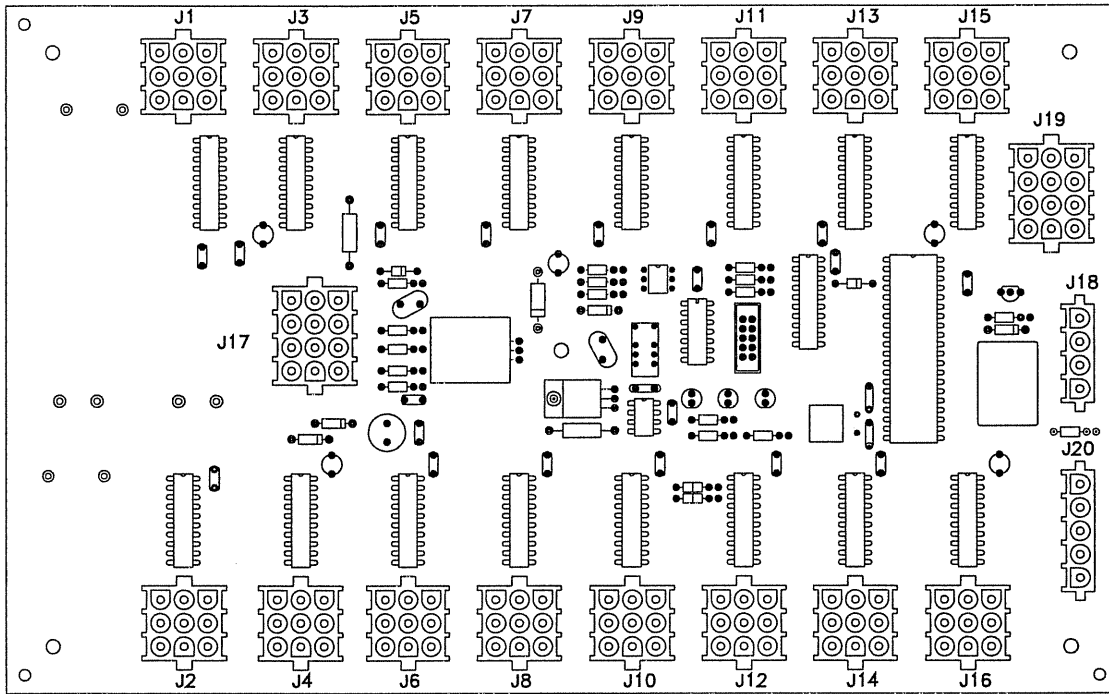
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APPR. BY:

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
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	PRO-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)

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: 16 COLUMN LED DRIVER II SPECIFICATIONS

DES. BY: EB

DRAWN BY: NWRIEDT

DATE: 11 JAN 01

REVISION

APPR. BY:

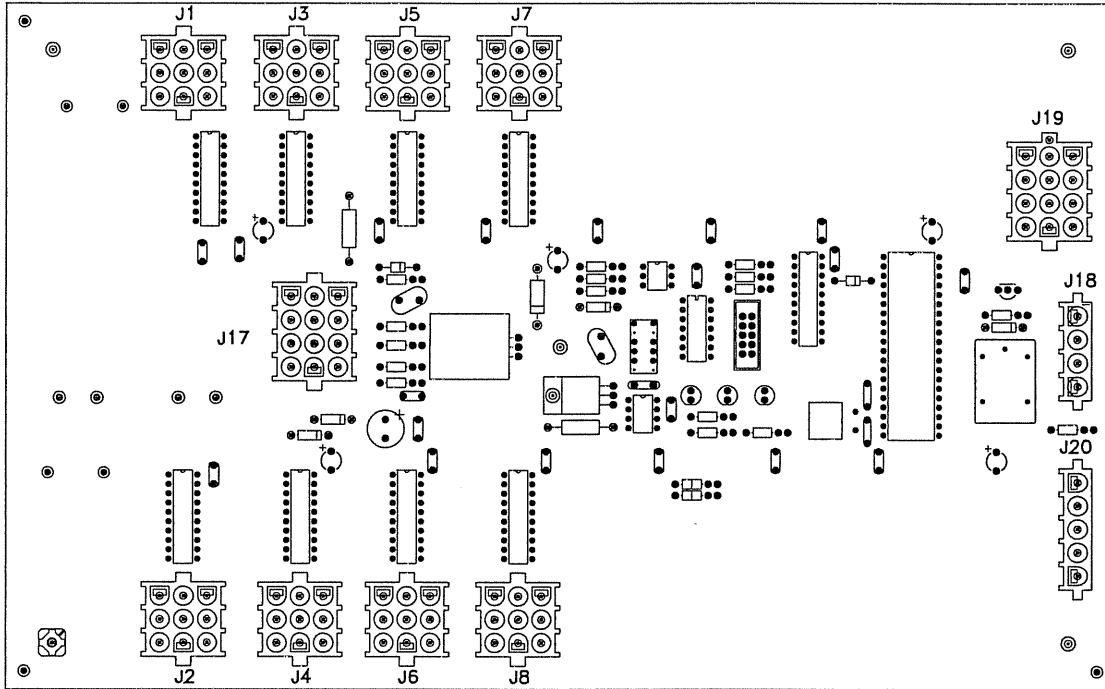
00

SCALE: NONE

1192-R07A-134371

REV.	DATE	DESCRIPTION	BY	APPR.

OP-1192-0012 8 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	PRO-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)

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: 8 COLUMN LED DRIVER II SPECIFICATIONS

DES. BY: EB

DRAWN BY: NWRIEDT

DATE: 11 JAN 01

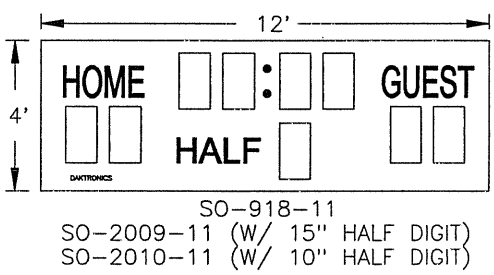
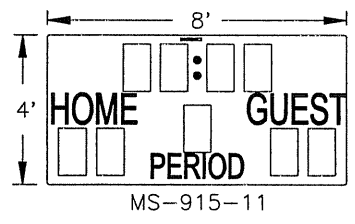
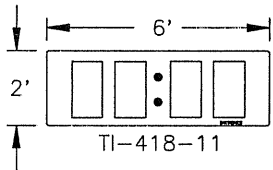
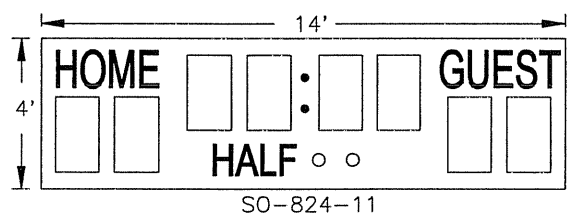
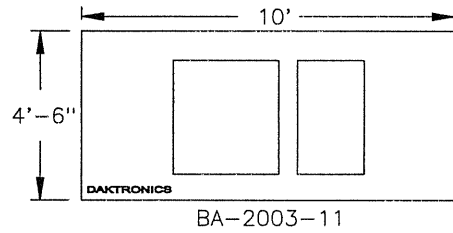
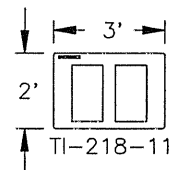
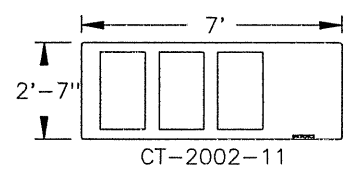
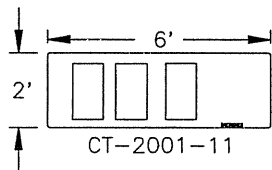
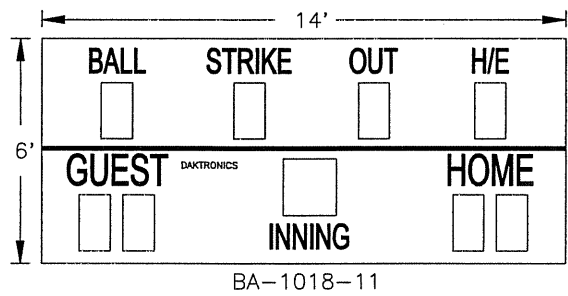
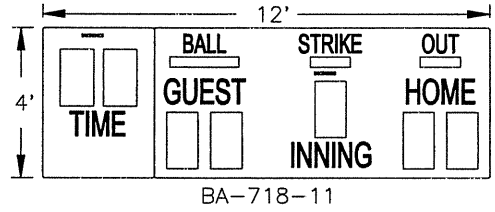
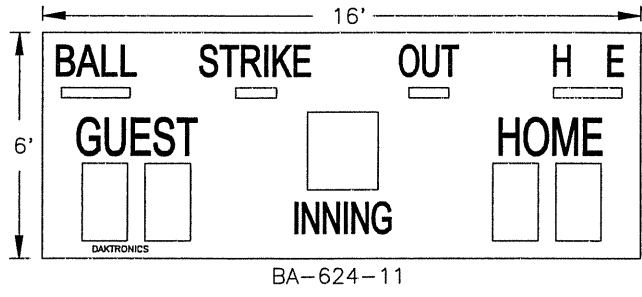
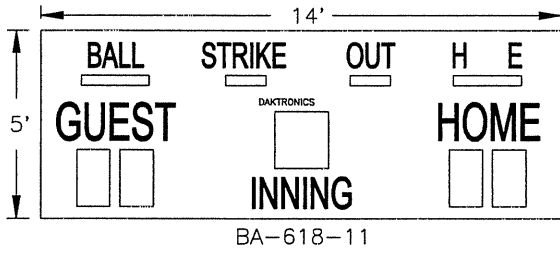
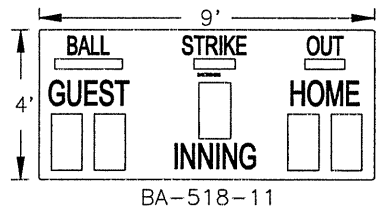
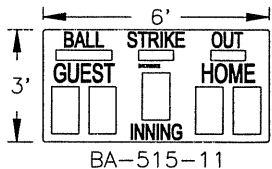
REVISION

APPR. BY:

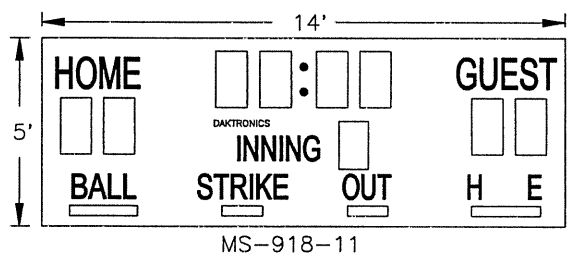
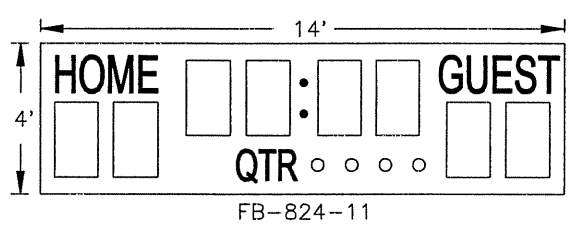
SCALE: NONE

1192-R07A-134372

REV.	DATE	DESCRIPTION	BY	APPR.



SO-2009-11 (W/ 15" HALF DIGIT)  
 SO-2010-11 (W/ 10" HALF DIGIT)



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. COPYRIGHT 2002 DAKTRONICS, INC.

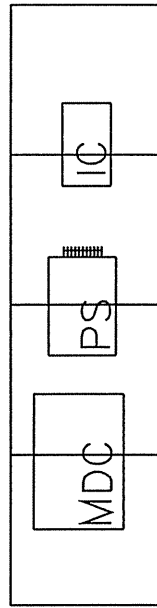
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS  
 TITLE: SINGLE SECTION LED SCOREBOARD MODELS  
 DES. BY: BPIETERSON DRAWN BY: JNILSEN DATE: 09JAN01

REVISION	APPR. BY:	1192-E10A-142912
	SCALE: 1=60	

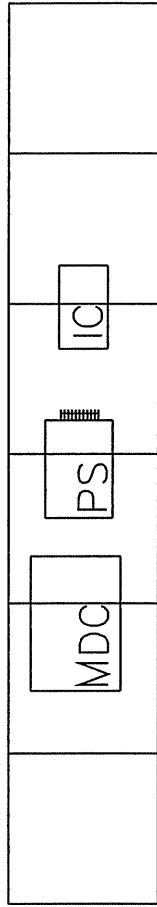
REV.	DATE	DESCRIPTION	BY	APPR.
03	29AUG02	ADDED MODEL BA-2003-11	MCOPL	
02	20AUG02	ADDED MODELS SO-2009-11 AND SO-2010-11	MCOPL	
01	24JULY01	ADDED "-11" TO MODEL NUMBERS	MCOPL	

832 LED TNMC

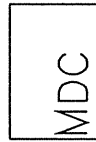


FRONT VIEW

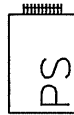
848 LED TNMC



FRONT VIEW



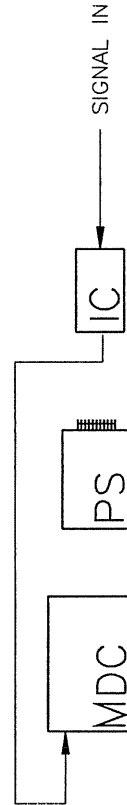
MDC CONTROLLER  
0A-1146-0061  
MOUNTED TO BACK



POWER SUPPLY  
0A-1213-4013  
MOUNTED TO BACK

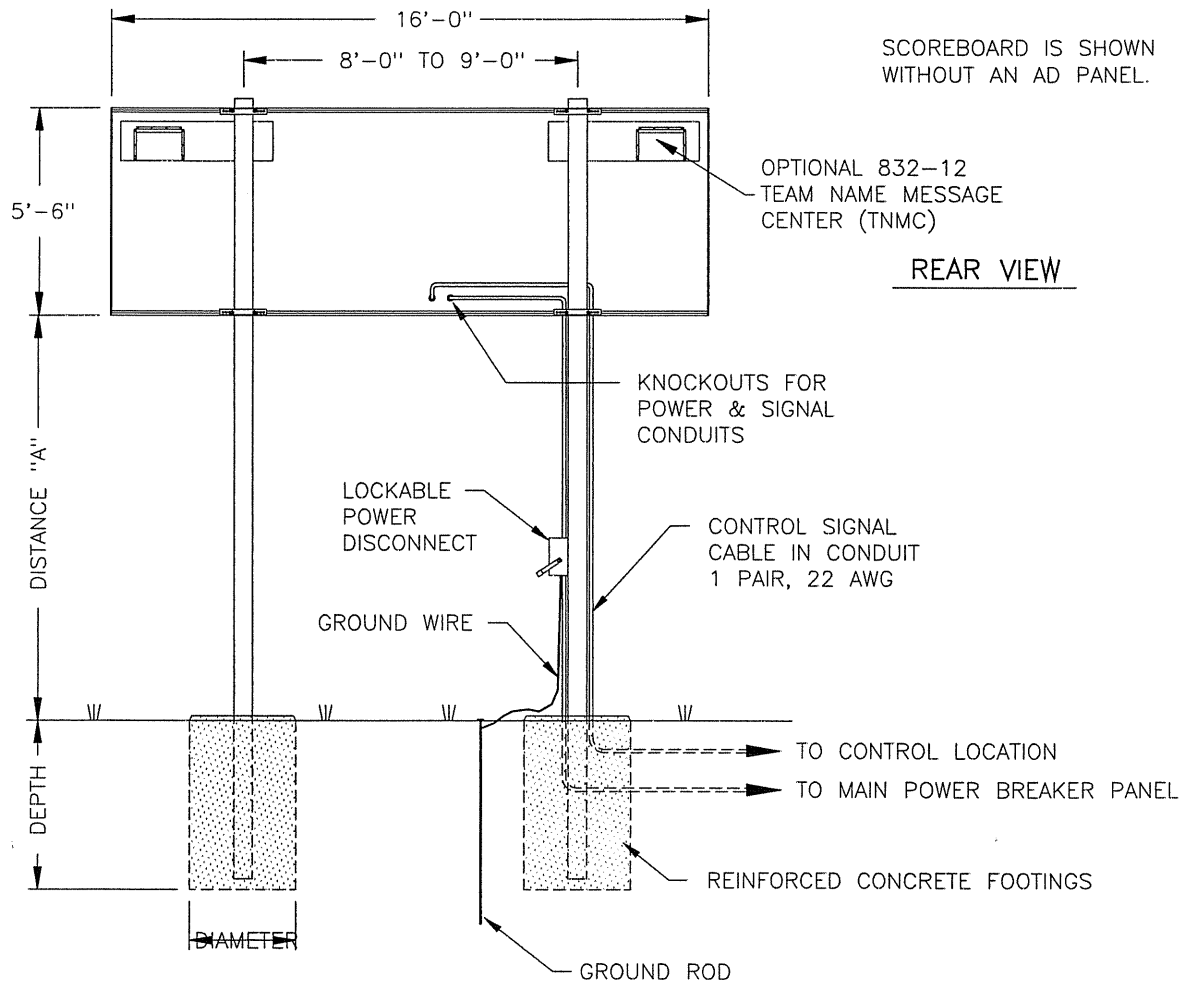


TNMC INTERFACE CARD  
0P-1146-0020  
MOUNTED TO BACK



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

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: COMPONENT LAYOUT; 832/848 LED TNMC	
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN
DATE: 22FEB01	
REVISION	APPR. BY:
	SCALE: NONE
1192-E07A-145045	



MODEL SO-2008 WITHOUT AD PANEL					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	16'-0" x 5'-6"	BEAM FOOTING	W6x15 2.0' x 6.2'	W8x18 2.0' x 6.9'	W8x18 2.0' x 8.1'
12'-0"	16'-0" x 5'-6"	BEAM FOOTING	W8x18 2.0' x 6.5'	W8x18 2.0' x 7.2'	W10x22 2.5' x 7.8'
14'-0"	16'-0" x 5'-6"	BEAM FOOTING	W8x21 2.0' x 7.4'	W10x22 2.5' x 7.5'	W12x26 2.5' x 8.9'

MODEL SO-2008 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 8'-6"	BEAM FOOTING	W8x18 2.0' x 7.3'	W8x21 2.0' x 8.0'	W12x26 2.5' x 8.9'
12'-0"	16'-0" x 8'-6"	BEAM FOOTING	W10x22 2.5' x 7.0'	W8x24 2.5' x 7.7'	W14x30 2.5' x 9.1'
14'-0"	16'-0" x 8'-6"	BEAM FOOTING	W8x24 2.5' x 7.3'	W12x26 2.5' x 8.1'	W10x33 2.5' x 9.5'

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<sup>2</sup> AND UBC WIND CODE.

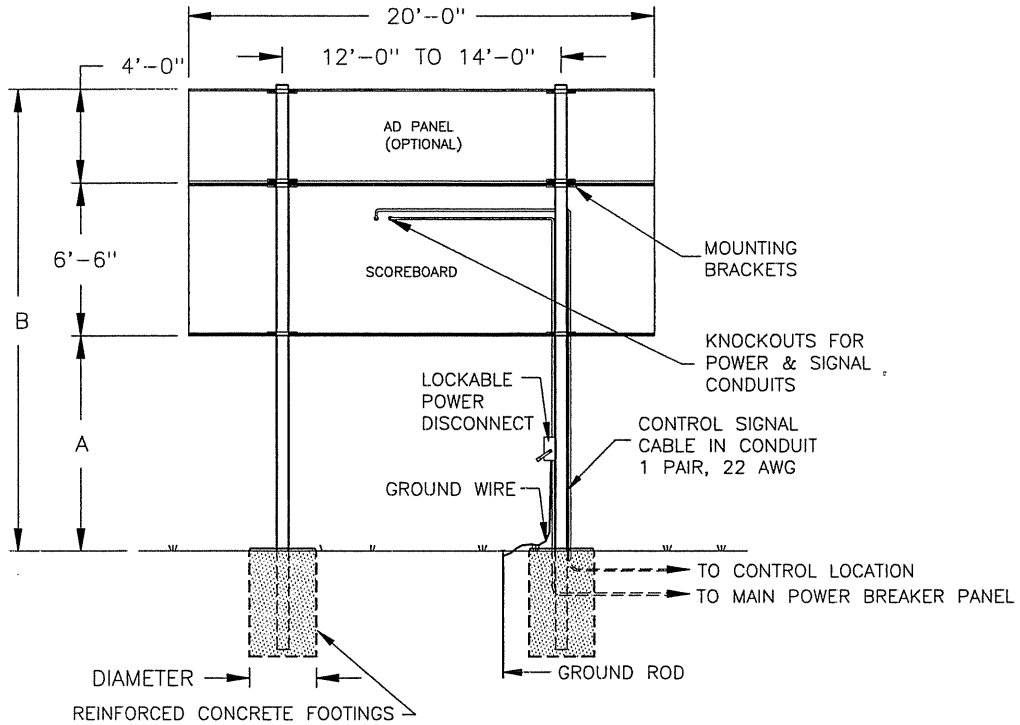
ACTUAL FOOTING DEPTH AND DIAMETER FOR A PARTICULAR INSTALLATION MUST BE DETERMINED BY A QUALIFIED STRUCTURAL ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

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

DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
02	14JUN01	CHANGED 832-10 TNMC TO 832-12 TNMC	DUSWH	
01	06JUN01	ADDED TNMC CHANGED SPACING ON BEAMS FROM A MAX 10' TO A MAX 9' TO MAKE ROOM FOR TNMC	MCOPL	

PROJ: OUTDOOR SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS, SO-2008			
DES. BY: RNEYENS	DRAWN BY: DUSWH	DATE: 5-17-01	
REVISION	APPR. BY:	1192-E07A-149074	
	SCALE: 1=60		



**ELECTRICAL**

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

**REAR VIEW**

BA-2004, BA-2005, & BA-2011							
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY			
				70 MPH	80 MPH	90 MPH	100 MPH
10 FT	NONE	16'-6"	BEAM	W8X18	W8X21	W10X22	W8X24
			FOOTING	2.5'X6.6'	2.5'X7.3'	2.5'X8.0'	2.5'X8.7'
12 FT	4 FT	20'-6"	BEAM	W12X26	W14X30	W10X33	W12X35
			FOOTING	2.5'X8.2'	2.5'X9.1'	2.5'X9.9'	2.5'X10.8'
14 FT	NONE	18'-6"	BEAM	W8X21	W10X22	W12X26	W12X26
			FOOTING	2.5'X7.0'	2.5'X7.7'	2.5'X8.4'	2.5'X9.1'
16 FT	4 FT	22'-6"	BEAM	W14X30	W10X33	W14X38	W12X40
			FOOTING	3.0'X8.0'	3.0'X8.8'	3.0'X9.6'	3.0'X10.4'
18 FT	NONE	20'-6"	BEAM	W10X22	W12X26	W12X26	W14X30
			FOOTING	3.0'X6.8'	3.0'X7.5'	3.0'X8.2'	3.0'X8.8'
20 FT	4 FT	24'-6"	BEAM	W10X33	W14X38	W12X40	W14X43
			FOOTING	3.0'X8.3'	3.0'X9.1'	3.0'X10.0'	3.0'X10.8'
16 FT	NONE	22'-6"	BEAM	W12X26	W14X30	W10X33	W12X35
			FOOTING	3.0'X7.1'	3.0'X7.8'	3.0'X8.5'	3.0'X9.2'
18 FT	4 FT	26'-6"	BEAM	W14X38	W12X46	W14X43	W14X48
			FOOTING	3.0'X8.6'	3.0'X9.5'	3.0'X10.4'	3.0'X11.2'
20 FT	NONE	24'-6"	BEAM	W14X30	W10X33	W12X35	W16X40
			FOOTING	3.0'X7.3'	3.0'X8.1'	3.0'X8.8'	3.0'X9.5'
18 FT	4 FT	28'-6"	BEAM	W12X40	W14X43	W14X48	W14X53
			FOOTING	3.0'X8.9'	3.0'X9.8'	3.0'X10.7'	3.0'X11.5'
20 FT	NONE	26'-6"	BEAM	W10X33	W12X35	W16X40	W12X40
			FOOTING	3.0'X7.6'	3.0'X8.4'	3.0'X9.1'	3.0'X9.9'
16 FT	4 FT	30'-6"	BEAM	W12X40	W12X48	W14X53	W14X61
			FOOTING	3.0'X9.2'	3.0'X10.1'	3.0'X11.0'	3.0'X11.9'

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:**

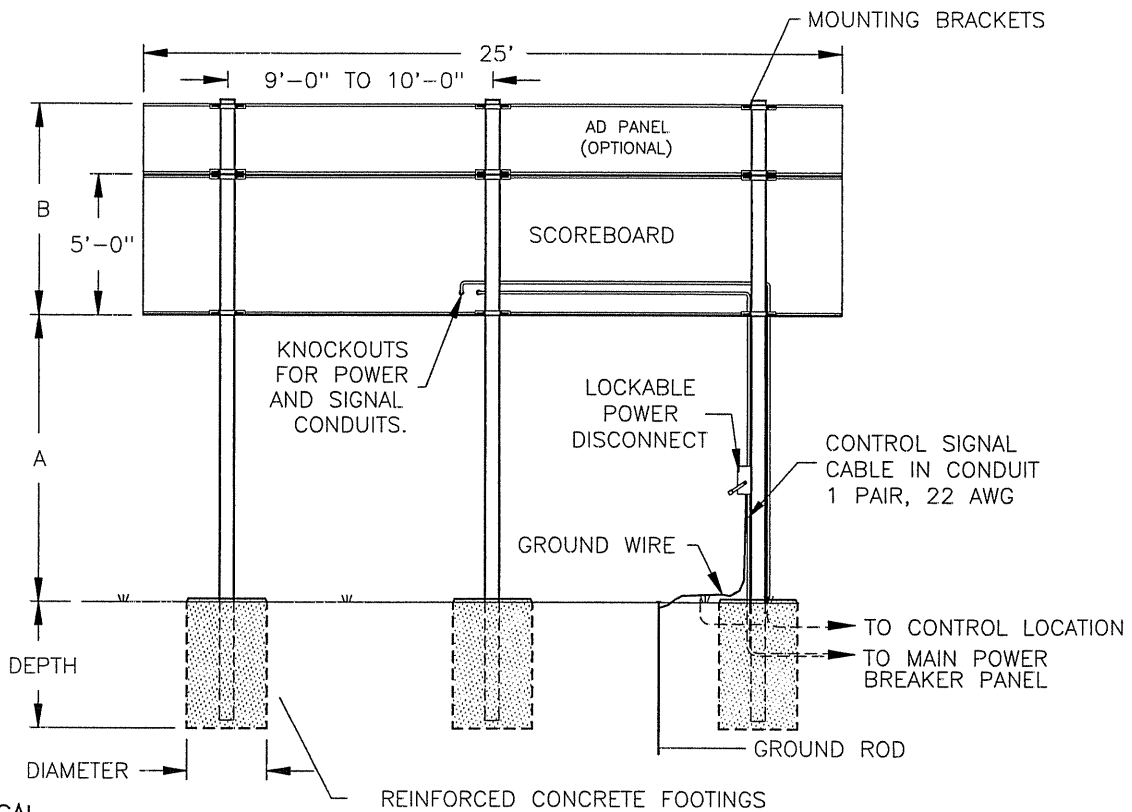
For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 8 to 14 inches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

FOOTING = DIAMETER X DEPTH

02	15JAN03	ADDED BA-2011 IN TEXT	MCOPL	
01	08AUG01	ADDED BA-2005 IN TEXT	MCOPL	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS; BA-2004/2005/2011			
DES. BY: MCOPLAN		DRAWN BY: MCOPLAN	
DATE: 23JULY01		REVISION	
APPR. BY:		SCALE: 1=96	
1091-R10A-152777			





**ELECTRICAL**

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

REINFORCED CONCRETE FOOTINGS

**MS-212**

**REAR VIEW**

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.

MS-212						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	10'-0"	BEAM	W6X15	W8X18	W8X18
			FOOTING	2.0'X6.5'	2.0'X7.1'	2.8'X8.4'
	2 FT	12'-0"	BEAM	W8X18	W8X21	W12X26
			FOOTING	2.6'X7.5'	2.0'X8.2'	2.9'X9.1'
4 FT	14'-0"	BEAM	W10X22	W12X26	W14X30	
		FOOTING	2.0'X8.4'	2.5'X8.4'	2.5'X10.0'	
12 FT	NONE	10'-0"	BEAM	W8X18	W8X18	W10X22
			FOOTING	2.5'X6.3'	2.5'X6.9'	2.5'X8.2'
	2 FT	12'-0"	BEAM	W10X22	W8X24	W14X30
			FOOTING	2.5'X7.1'	2.5'X7.9'	2.5'X9.3'
	4 FT	14'-0"	BEAM	W12X26	W14X30	W12X35
			FOOTING	2.5'X8.0'	2.5'X8.8'	2.5'X10.4'
14 FT	NONE	10'-0"	BEAM	W8X18	W10X22	W12X26
			FOOTING	2.5'X6.6'	2.5'X7.2'	2.5'X8.5'
	2 FT	12'-0"	BEAM	W8X24	W12X26	W10X33
			FOOTING	2.5'X7.5'	2.5'X8.3'	2.5'X9.8'
	4 FT	14'-0"	BEAM	W10X30	W10X33	W16X40
			FOOTING	2.5'X8.3'	2.5'X9.2'	2.5'X10.1'

FOOTING = DIAMETER X DEPTH

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS; MS-212

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 23JULY01

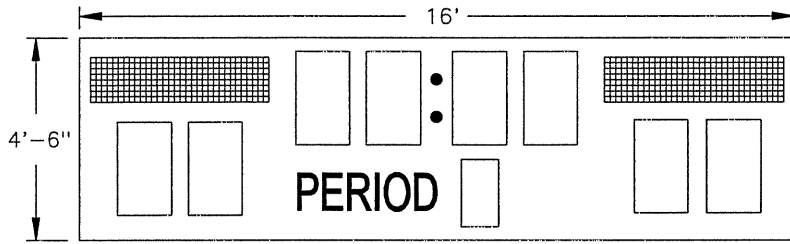
REVISION

APPR. BY:

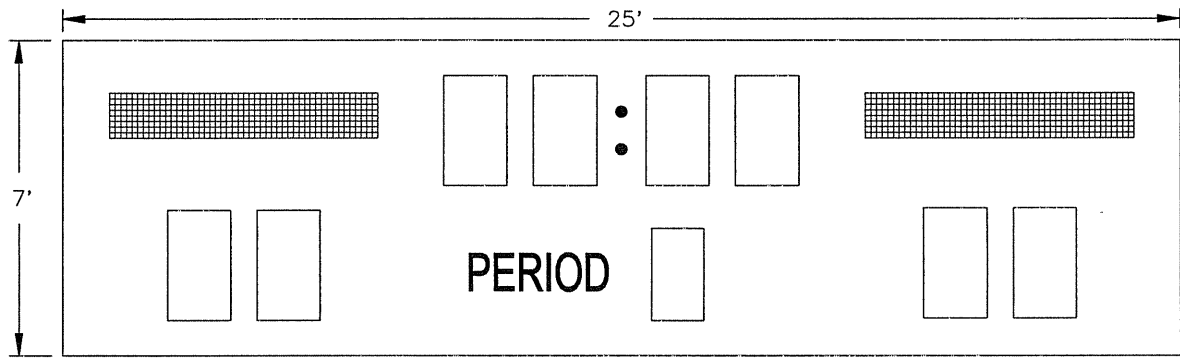
SCALE: 1=80

1192-R10A-152790

REV.	DATE	DESCRIPTION	BY	APPR.



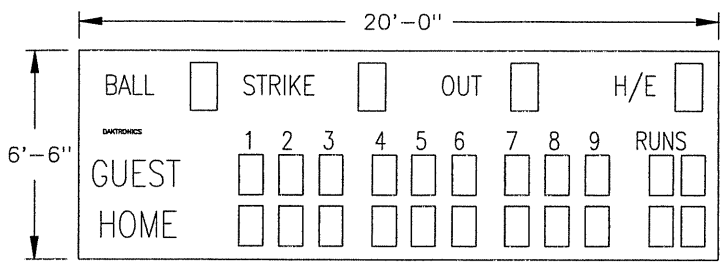
MS-2002-11 WITH 832-10 LED TNMC



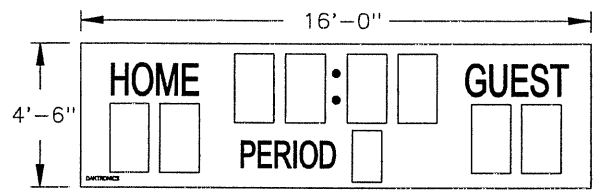
MS-2006-11 WITH 848-10 LED TNMC

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: SINGLE SECTION LED SCOREBOARD W/ LED TNMC	
DES. BY: MCOPLAN	DATE: 24JULY01
REVISION	APPR. BY:
	SCALE: 1=50
1192-E07A-152936	

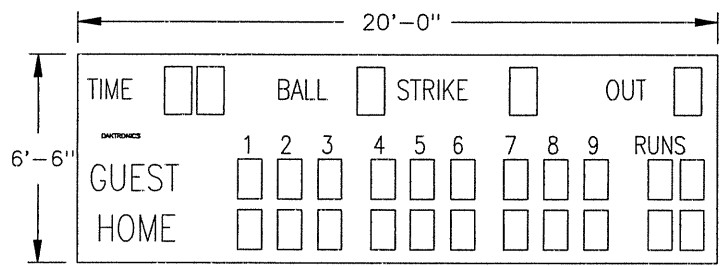
REV.	DATE	DESCRIPTION	BY	APPR.



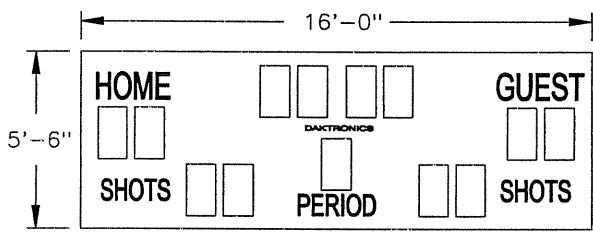
BA-2004-11



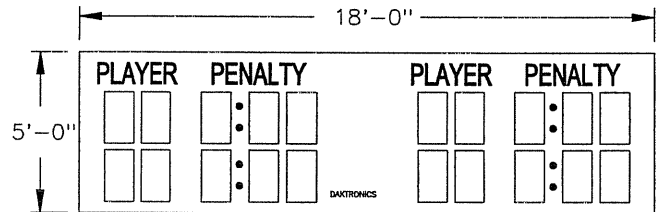
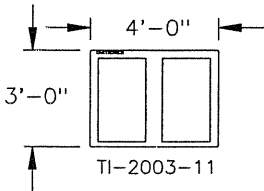
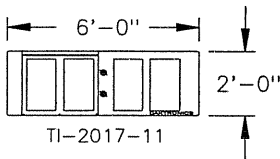
MS-2002-11



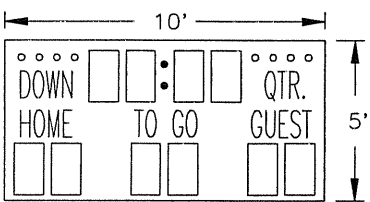
BA-2005-11



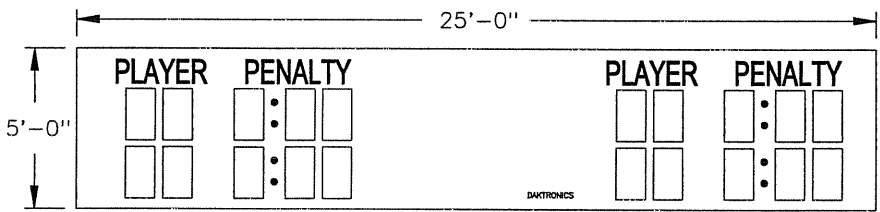
SO-2008-11



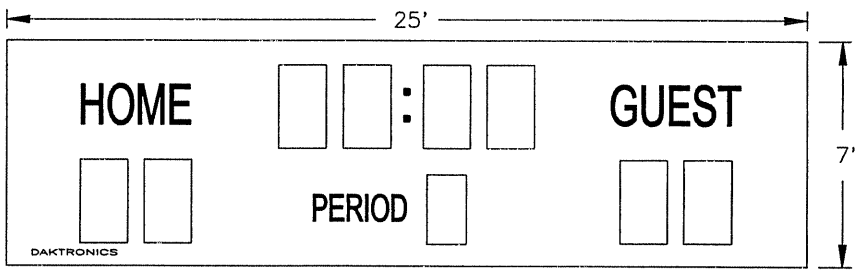
MS-2004-11



FB-2005-11



MS-2012-11



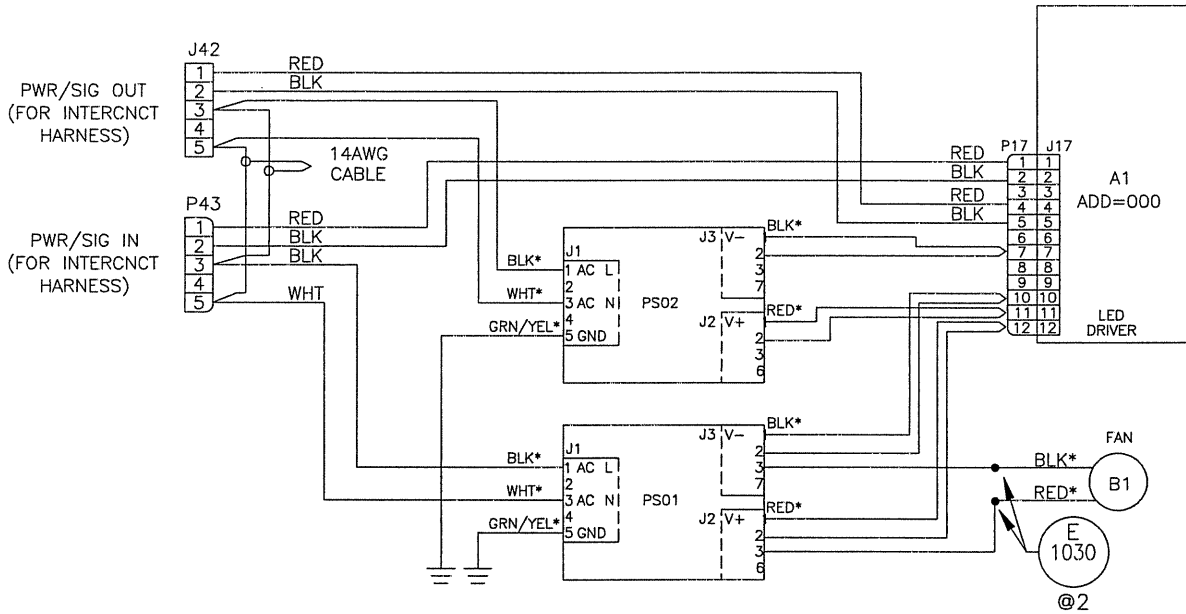
MS-2006-11

DAKTRONICS, INC. BROOKINGS, SD 57006

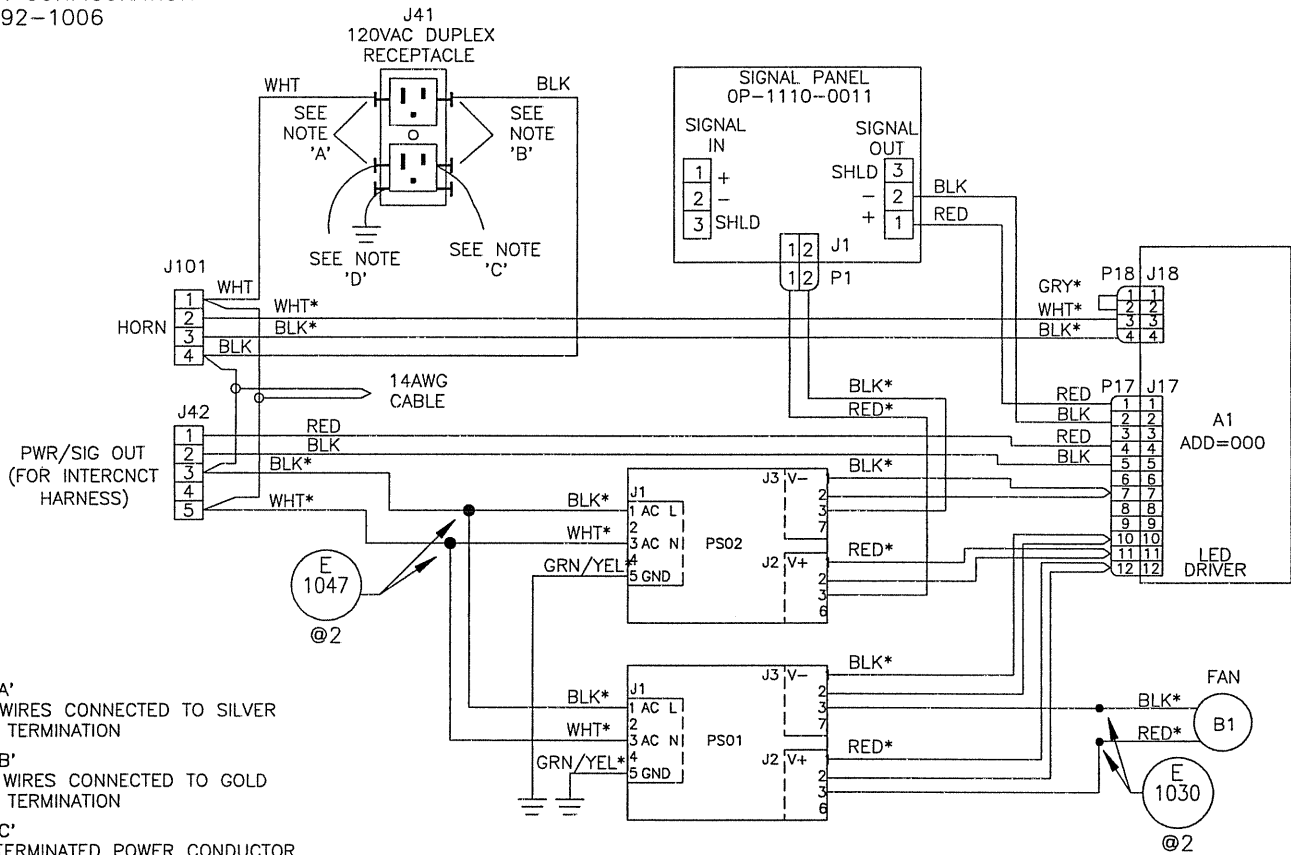
REV.	DATE	DESCRIPTION	BY	APPR.
02	29AUG02	ADDED MODELS MS-2006-11, FB-2005-11	MCOPL	
01	08AUG01	ADDED MODEL TI-2017-11	MCOPL	

PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: SINGLE SECTION LED SCOREBOARD MODELS	
DES. BY: MCOPLAN	DATE: 24JULY01
REVISION	APPR. BY:
SCALE: 1=70	1192-E07A-152950

SLAVE CONFIGURATION  
OA-1192-1007



MASTER CONFIGURATION  
OA-1192-1006



NOTES:

NOTE 'A'  
WHITE WIRES CONNECTED TO SILVER SCREW TERMINATION

NOTE 'B'  
BLACK WIRES CONNECTED TO GOLD SCREW TERMINATION

NOTE 'C'  
FIELD TERMINATED POWER CONDUCTOR

NOTE 'D'  
FIELD TERMINATED NEUTRAL AND GROUND CONDUCTOR

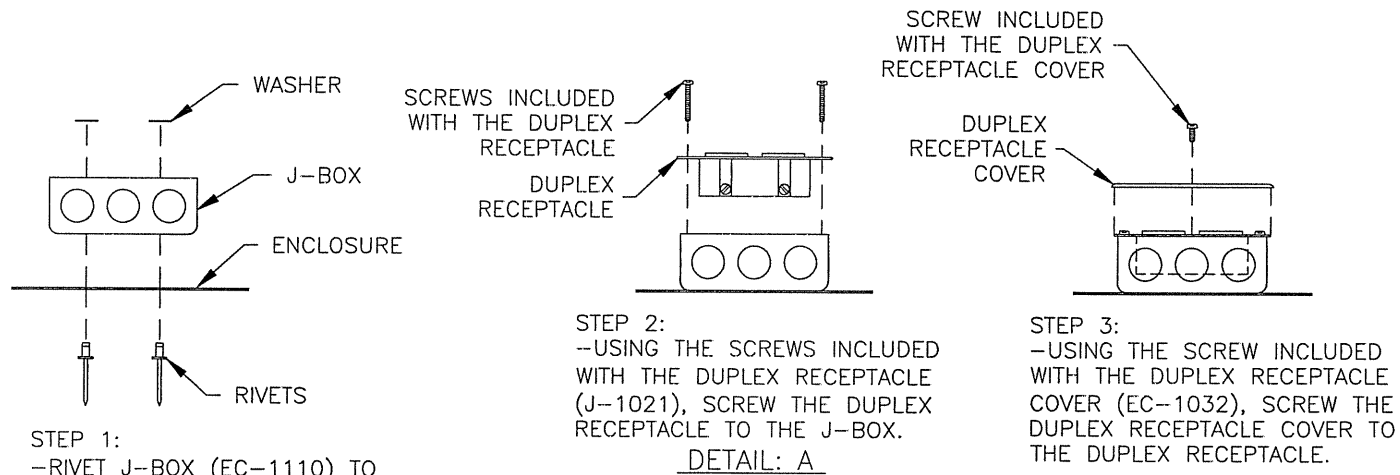
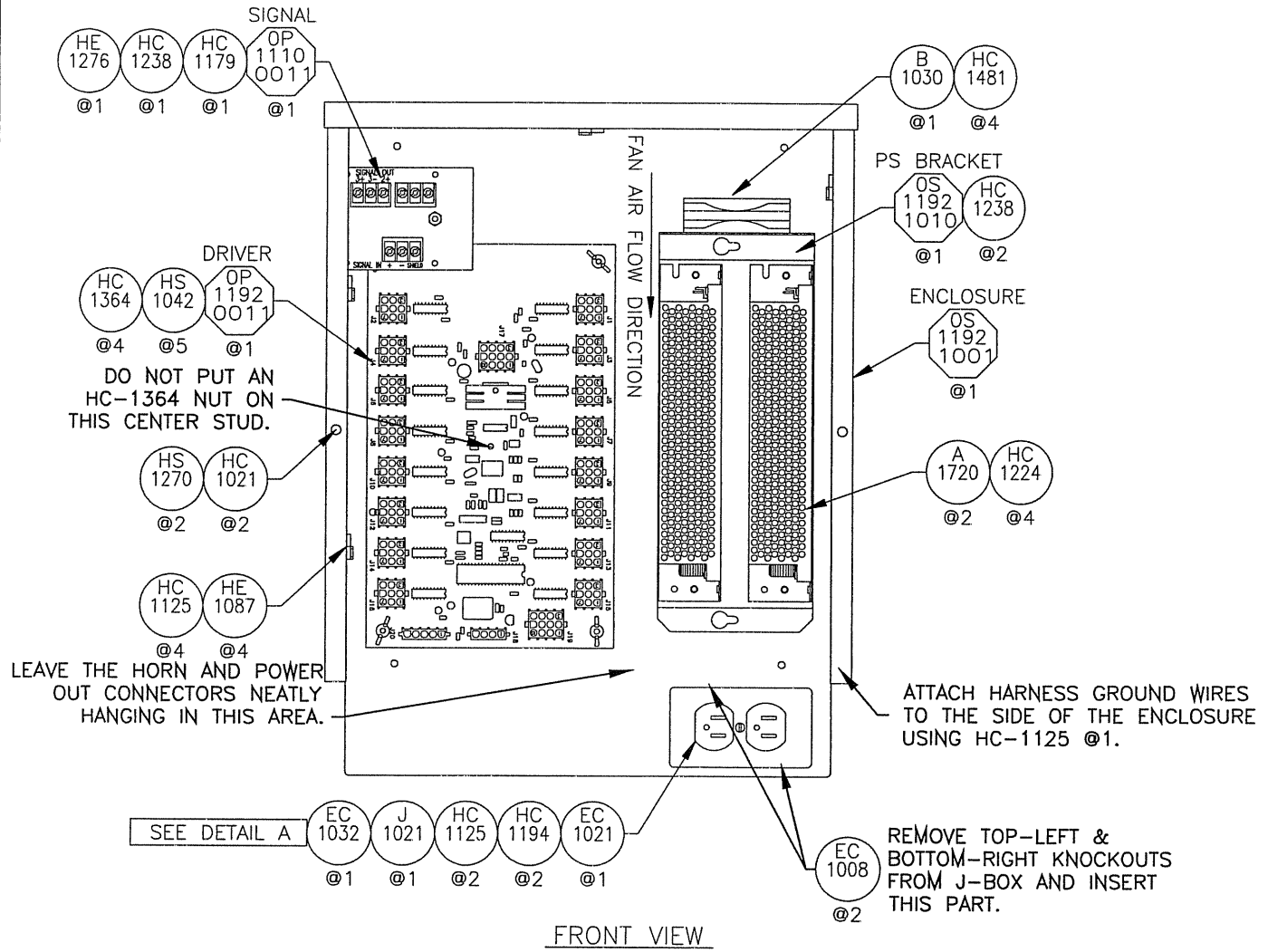
ALL POWER CONDUCTORS ARE 14AWG EXCEPT \* INDICATES 18AWG CONDUCTORS.

ALL SIGNAL CONDUCTORS ARE 22AWG CONDUCTORS.

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

REV.	DATE	DESCRIPTION	BY	APPR.
4	26 JUN 02	CHANGED SIGNAL CONNECTION FOR CABLE COMING OUT OF J101-1 AND -2	NMB	
03	14 MAY 02	REMOVED P43 PWR/SIG INPUT FROM MASTER ASSY. REMOVED HORN FROM SLAVE ASSY. REDID ALL THE WIRING.	MWM	
02	15 JAN 02	ADDED IWRES COMING FROM PS02 J3-3 AND J2-3 INTO THE SIGNAL PANEL	NMB	
01	17 OCT 01	UPDATED DWG TO SHOW FAN BUTT CONNECTORS. UPDATED PWS CONNECTIONS. UPDATED TITLE. MOVED WHT & BLK TO NEW PINS ON J42 & P43	MWM	

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: SCHEMATIC; GEN II OUTDOOR LED, 16 COLUMN DRVR			
DES. BY:	DRAWN BY: CMCADAM		DATE: 13AUG01
REVISION	APPR. BY:	1192-R03A-154330	
SCALE: 1=1			



**DETAIL: A**  
(ASSEMBLY OF DUPLEX RECEPTACLE)

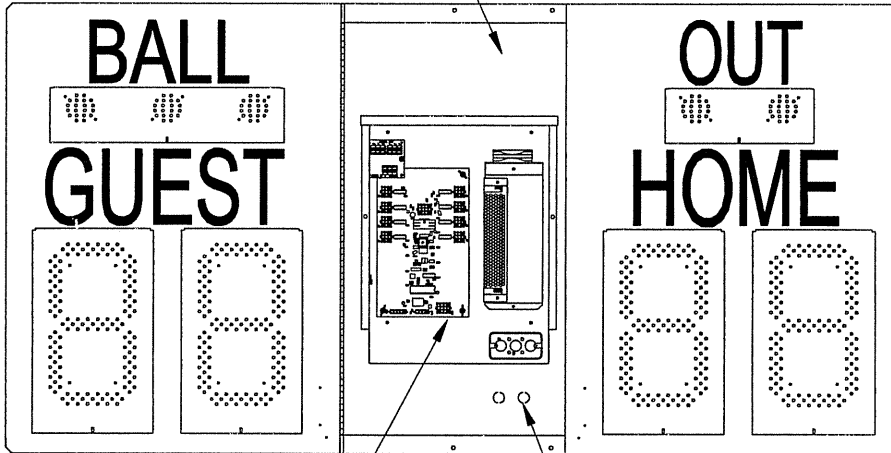
02	27NOV01	REMOVED HE-1071 @4 AND HS-1088 @1 ADDED HS-1042 @5 AND TEXT FOR CENTER DRIVER STUD, ADDED OS-1192-1010	MCOPL
01	18OCT01	ADDED DETAIL A FOR DUPLEX RECEPTACLE ASSY	MCOPL

REV.	DATE	DESCRIPTION	BY	APPR.
05	28 AUG 02	ADDED FAN AIR FLOW DIRECTION	MRB	
04	19JUN02	REPLACED EC-1110 WITH EC-1021	MCOPL	
03	27 MAR 02	REPLACED OP-1033-0114 W/ OP-1110-0011	CJB	

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>			
PROJ: <b>OUTDOOR LED SCOREBOARDS</b>			
TITLE: <b>DRIVER; 16 COL OUTDOOR LED, GEN II</b>			
DES. BY: <b>MCOPLAN</b>		DRAWN BY: <b>MCOPLAN</b> DATE: <b>06SEP01</b>	
REVISION	APPR. BY:	<b>1192-E10A-154792</b>	
05	SCALE: 1=5		

BA-515-11

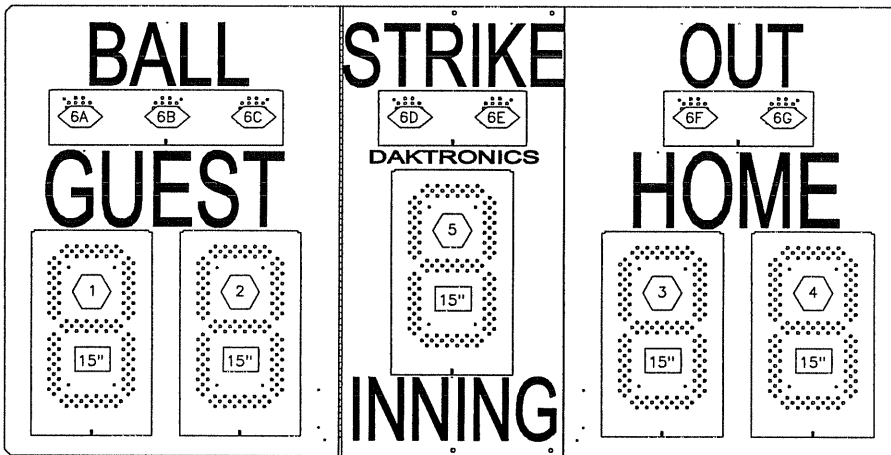
NOTE THAT THE DOOR HAS BEEN REMOVED TO SHOW INTERNAL COMPONENT DETAIL.






ENCLOSED 8 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW COMPONENT DETAIL)

KNOCKOUTS FOR CONDUIT

FRONT VIEW  
(COMPONENT DETAIL)



FRONT VIEW  
(DIGIT DESIGNATION)

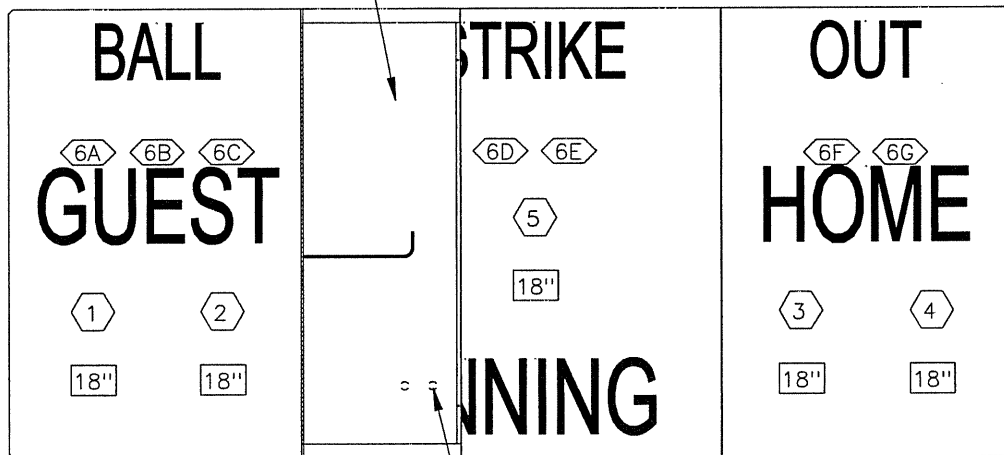
-  = DRIVER CONNECTOR WIRED TO THAT DIGIT
-  = DIGIT SIZE
-  = DRIVER CONNECTOR AND SEGMENT (PIN) NUMBER WIRED TO THAT DIGIT

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: COMPONENT LOCATIONS; BA-515-11	
DES. BY: MCOPLAN	DATE: 21AUG01
REVISION	APPR. BY:
SCALE: 1=15	1192-E07A-154859

REV.	DATE	DESCRIPTION	BY	APPR.




BA-518-11

ENCLOSED 8 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW COMPONENT DETAIL).



— KNOCKOUTS FOR 1/2" CONDUIT

FRONT VIEW

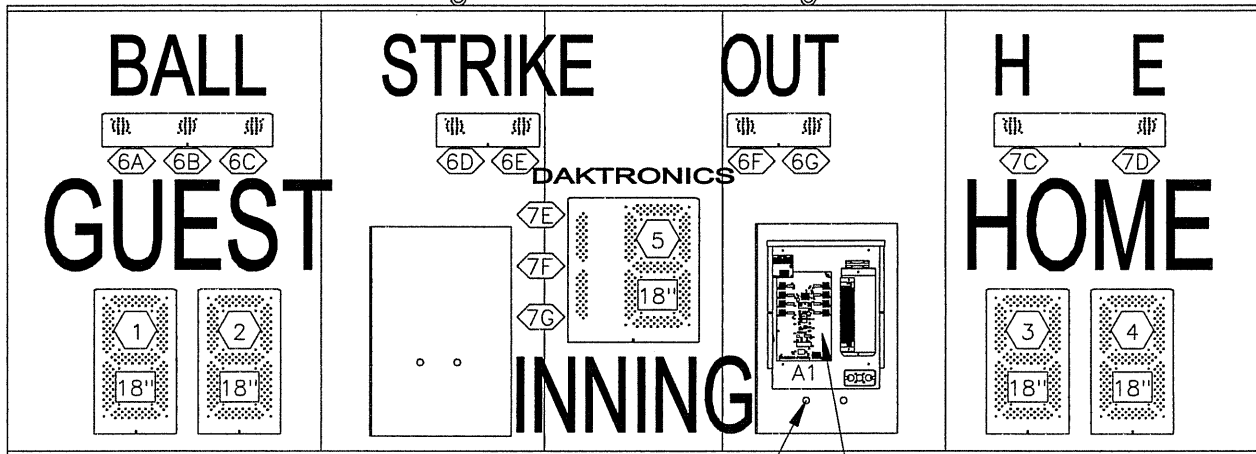
-  = DRIVER CONNECTOR WIRED TO THAT DIGIT.
-  = DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR
-  = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: COMPONENT LOCATIONS; BA-518-11	
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN DATE: 24AUG01
REVISION	APPR. BY:
	SCALE: 1=20
1192-E07A-155130	

REV.	DATE	DESCRIPTION	BY	APPR.

BA-618-11



KNOCKOUTS FOR  
1/2" CONDUIT

ENCLOSED 8 COLUMN LED DRIVER  
AND POWER/SIGNAL ENCLOSURE.  
(THE COVER HAS BEEN REMOVED  
TO SHOW COMPONENT DETAIL).

FRONT VIEW

- 12 = DRIVER CONNECTOR  
WIRED TO THAT DIGIT.
- 6A = 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-618-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 24AUG01

REVISION

APPR. BY:

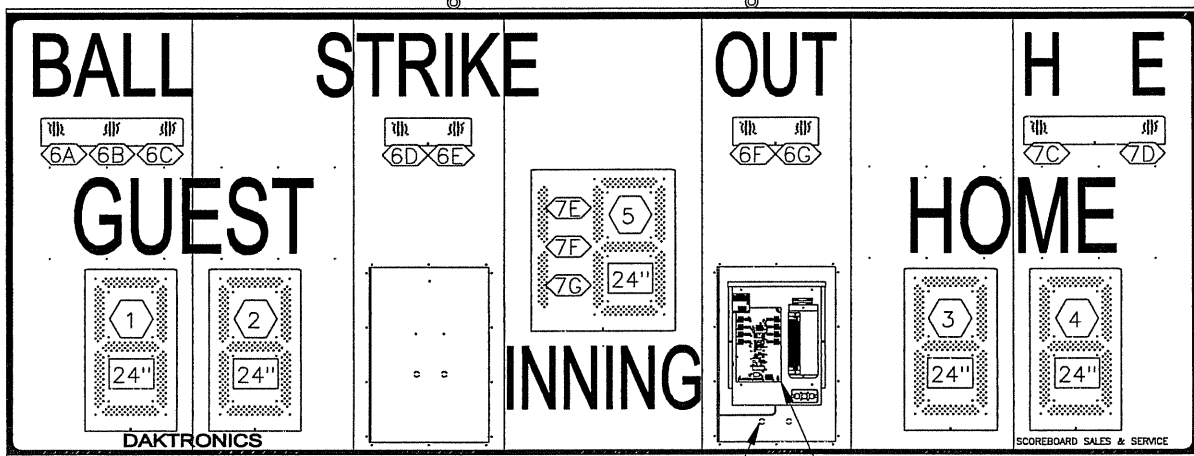
SCALE: 1=25

1192-E07A-155137

REV.	DATE	DESCRIPTION	BY	APPR.



BA-624-11



KNOCKOUTS FOR  
1/2" CONDUIT.

ENCLOSED 8 COLUMN LED DRIVER  
AND POWER/SIGNAL ENCLOSURE.  
(THE COVER HAS BEEN REMOVED  
TO SHOW THE COMPONENT DETAIL).

FRONT VIEW

- ① = LED DRIVER CONNECTOR  
WIRED TO THAT DIGIT.
- ◁6A▷ = LED DRIVER CONNECTOR  
AND SEGMENT (PIN) NO.  
WIRED TO THAT INDICATOR
- 24" = 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-624-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 27AUG01

REVISION

APPR. BY:

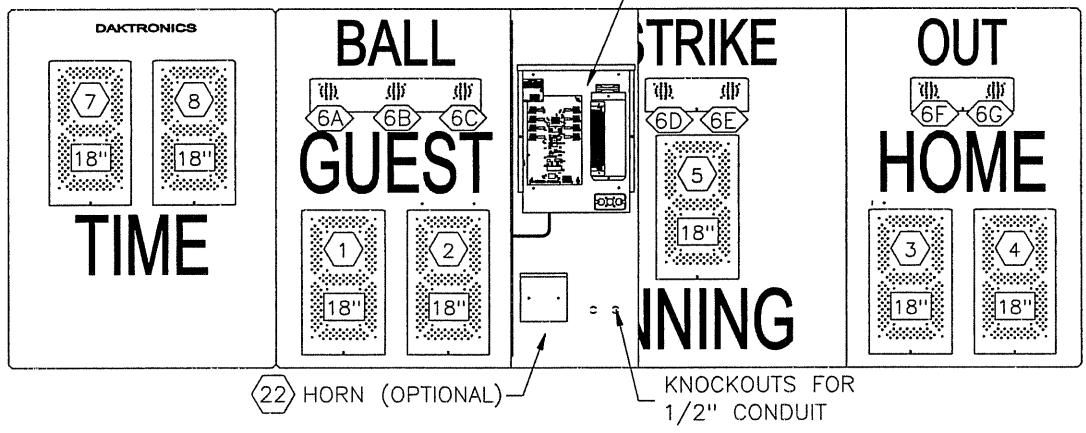
SCALE: 1=30

1192-E07A-155161

REV.	DATE	DESCRIPTION	BY	APPR.

BA-718-11

ENCLOSED 8 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE.  
(THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).



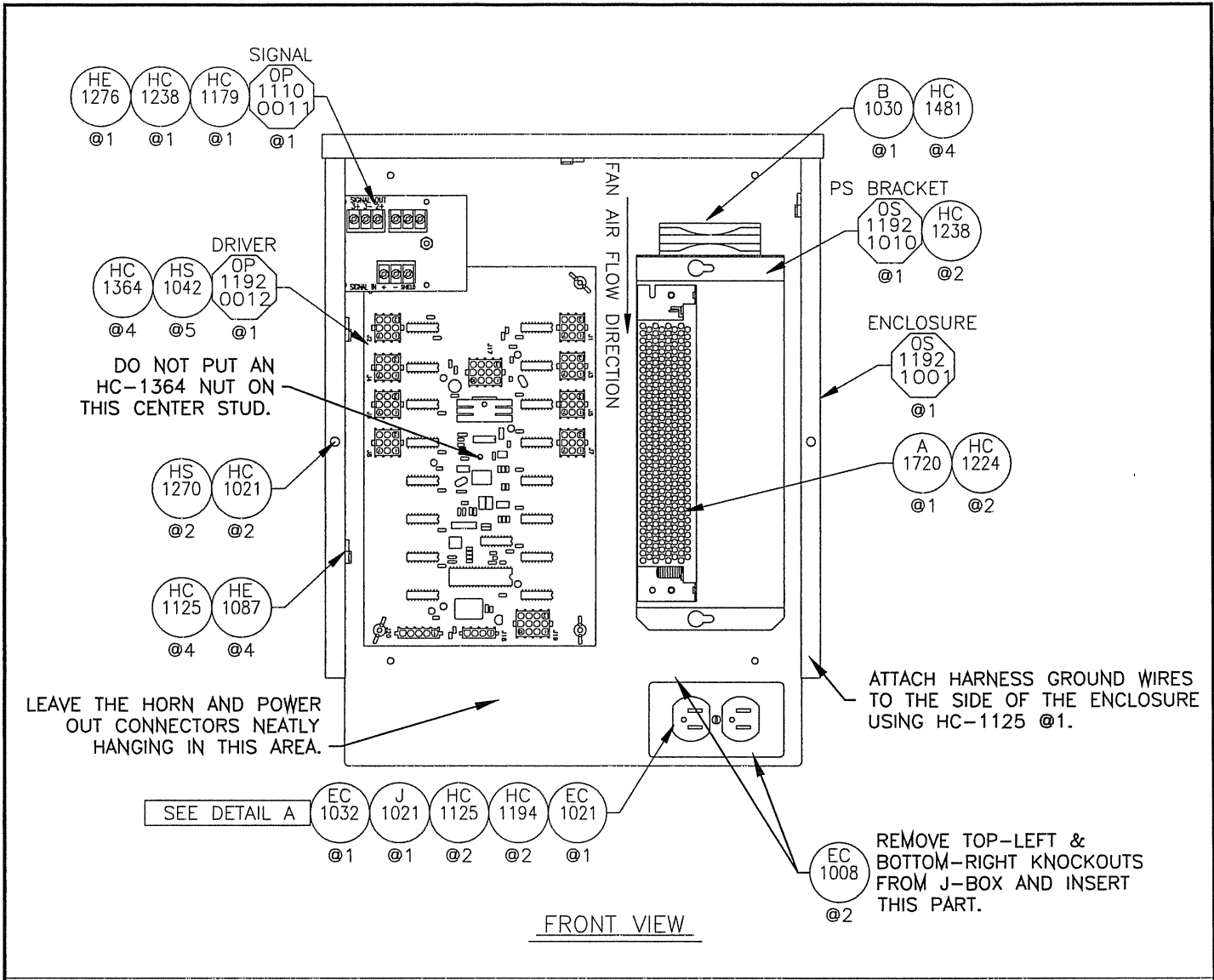
FRONT VIEW

- 5 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.
- 6A = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR
- 18" = DIGIT SIZE

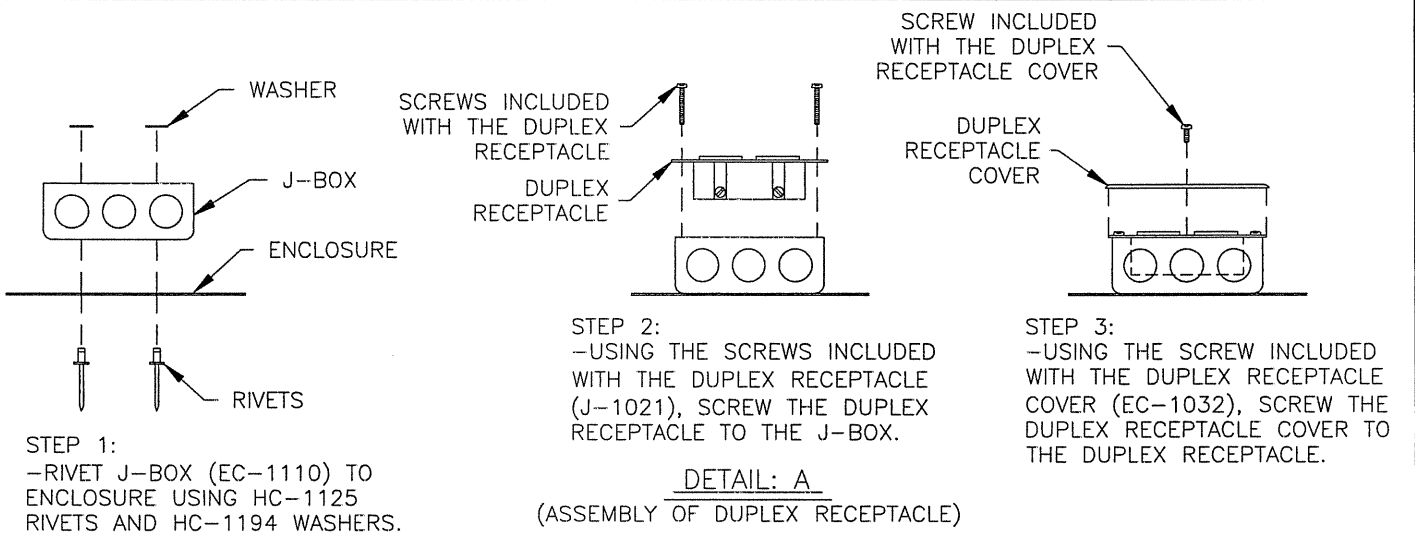
HINGED ACCESS DOOR REMOVED TO SHOW THE LED DRIVER AND POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; BA-718-11			
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN	DATE: 27AUG01	
REVISION	APPR. BY:	1192-E07A-155178	
	SCALE: 1=25		

01	27DEC01	CHANGED TITLE NAME OF SCOREBOARD	MCOPL	
REV.	DATE	DESCRIPTION	BY	APPR.



FRONT VIEW

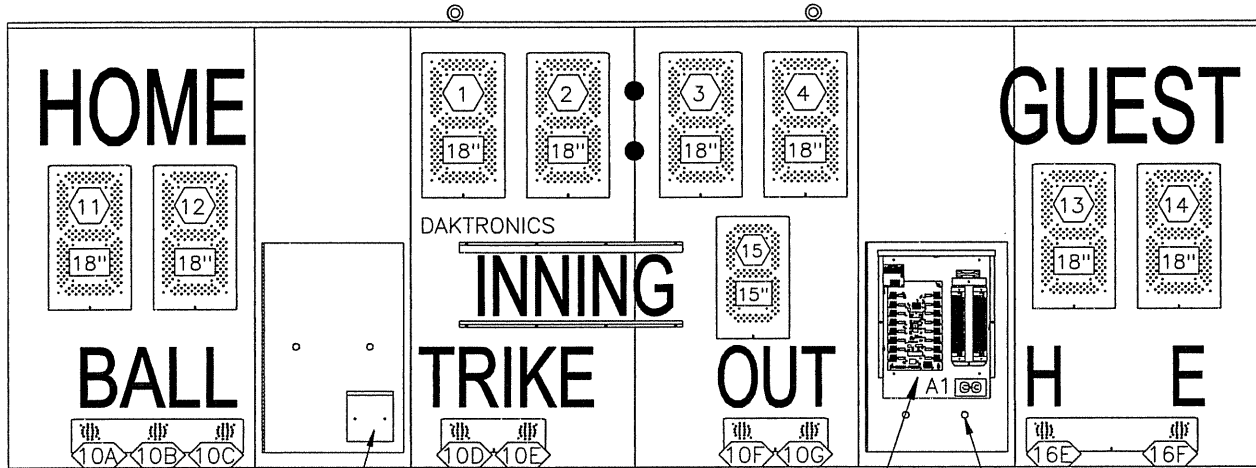


DETAIL: A

(ASSEMBLY OF DUPLEX RECEPTACLE)

05	28 AUG 02	ADDED FAN AIR FLOW DIRECTION	MRB	01	18OCT01	ADDED DETAIL FOR DUPLEX RECEPTACLE ASSY	MCOPL
04	19JUN02	REPLACED EC-1110 WITH EC-1021	MCOPL	<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>			
03	27 MAR 02	REPLACED OP-1033-0114 WITH OP-1110-0011.	CJB	PROJ: <b>OUTDOOR LED SCOREBOARDS</b>			
02	27NOV01	REMOVED HE-1071 @4 AND HS-1088 @1 ADDED HS-1042 @5 AND TEXT FOR CENTER DRIVER STUD, ADDED OS-1192-1010	MCOPL	TITLE: <b>DRIVER; 8 COL OUTDOOR LED, GEN II</b>			
REV.	DATE	DESCRIPTION	BY	APPR.	DES. BY:	DRAWN BY:	DATE:
					MCOPLAN	MCOPLAN	10SEP01
					REVISION	APPR. BY:	
					SCALE:	1=5	1192-E10A-155742

MS-918-11



HORN (OPTIONAL)

22

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

KNOCKOUTS FOR 1/2" CONDUIT

FRONT VIEW

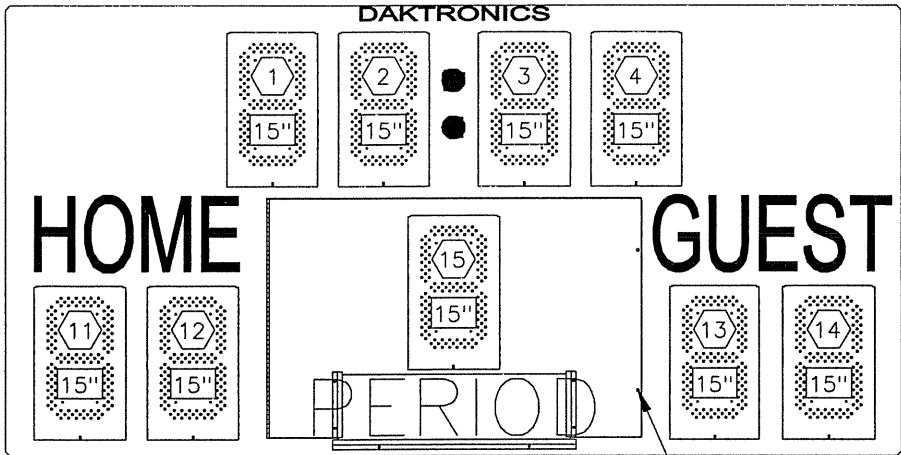
- 12 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.
- 10H = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR
- 18" = DIGIT SIZE

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; MS-918-11			
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN	DATE: 13SEP01	
REVISION	APPR. BY:	1192-E07A-155878	
	SCALE: 1=25		

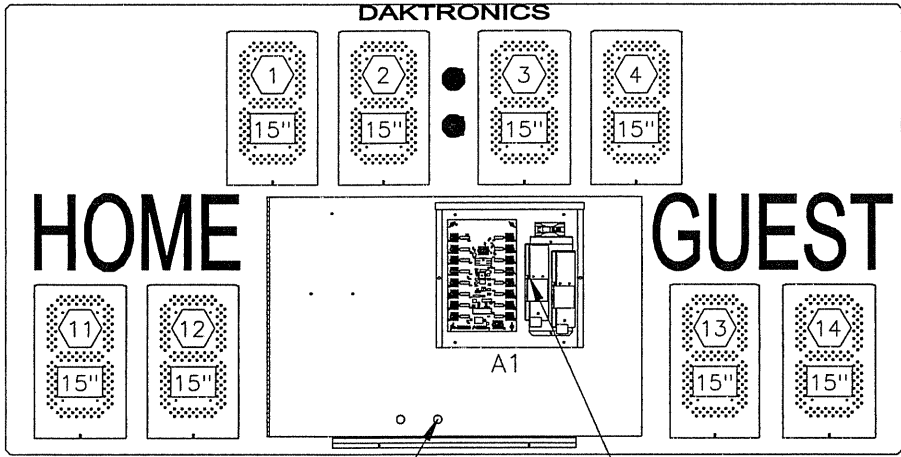
REV.	DATE	DESCRIPTION	BY	APPR.

MS-915-11



FRONT VIEW

REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE



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).

① = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

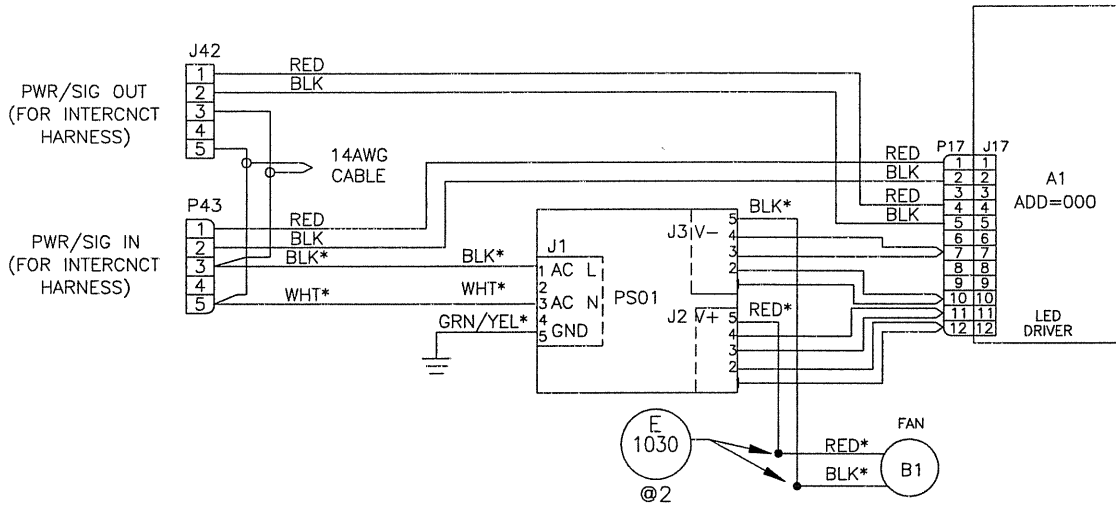
15" = DIGIT SIZE

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

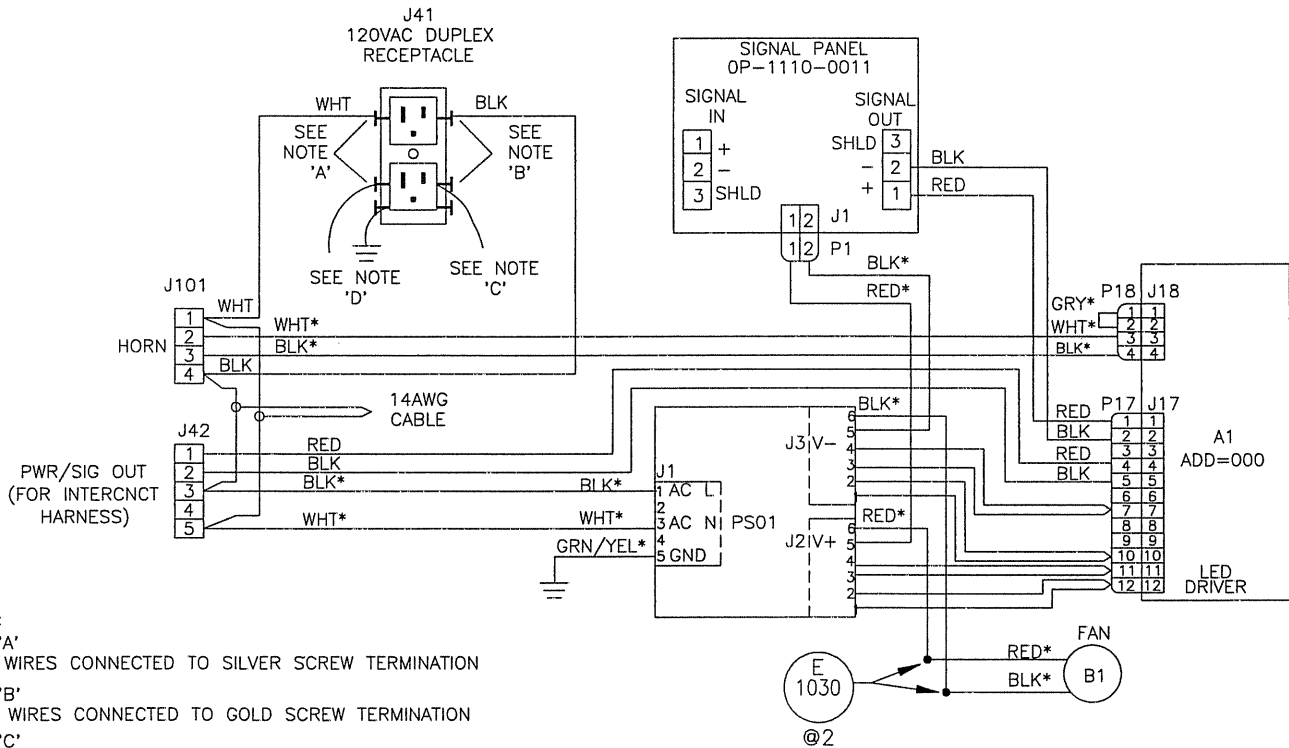
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; MS-915-11			
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN	DATE: 17SEP01	
REVISION	APPR. BY:	1192-E07A-156025	
	SCALE: 1=20		

REV.	DATE	DESCRIPTION	BY	APPR.

SLAVE CONFIGURATION  
0A-1192-1036



MASTER CONFIGURATION  
0A-1192-1010



- NOTES:  
 NOTE 'A'  
 WHITE WIRES CONNECTED TO SILVER SCREW TERMINATION  
 NOTE 'B'  
 BLACK WIRES CONNECTED TO GOLD SCREW TERMINATION  
 NOTE 'C'  
 FIELD TERMINATED POWER CONDUCTOR  
 NOTE 'D'  
 FIELD TERMINATED NEUTRAL AND GROUND CONDUCTOR

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.

REV.	DATE	DESCRIPTION	BY	APPR.
5	26 JUN 02	CHANGED THE WIRE CONNECTION ON THE CABLE FROM J101-1 AND -2	NMB	
04	14 MAY 02	REMOVED P43 PWR/SIG INPUT FROM MASTER ASSY. REMOVED HORN FROM SLAVE ASSY. REDID ALL THE WIRING.	MWM	
03	14 FEB 02	UPDATED FIELD TERMINATED CONDUCTOR NOTES	CMC	
02	15JAN02	ADDED WIRES FROM PS01 P2-5 AND P3-5 TO SIGNAL PANEL	NMB	
01	23 OCT 01	UPDATED DWG WITH FAN CONNECTION, J1, J2, AND J3 PWS PIN OUT	MWM	
REV.	DATE	DESCRIPTION	BY	APPR.

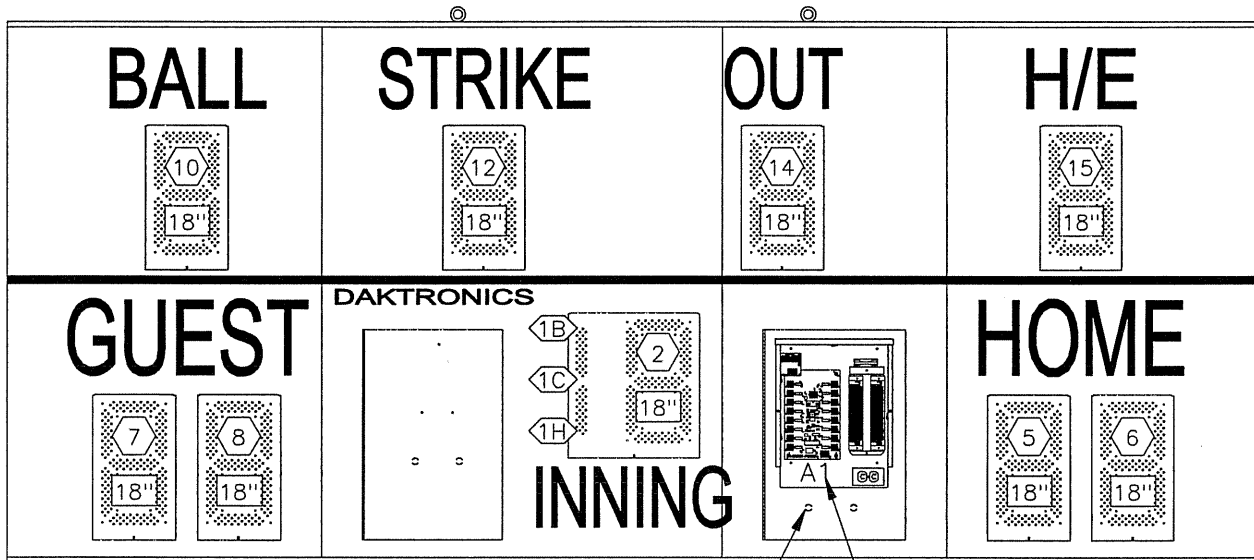
**DAKTRONICS, INC. BROOKINGS, SD 57006**

PROJ: OUTDOOR LED SCOREBOARDS  
 TITLE: SCHEMATIC, GEN II OUTDOOR DRIVER, 8 COLUMN DRIVER  
 DES. BY: DRAWN BY: CMCADAM DATE: 02OCT01

REVISION APPR. BY: SCALE: 1=1

1192-R01A-156750




BA-1018-11



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

-  = LED DRIVER CONNECTOR  
WIRED TO THAT DIGIT.
-  = LED DRIVER CONNECTOR  
AND SEGMENT (PIN) NO.  
WIRED TO THAT INDICATOR
-  = 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-1018-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 16OCT01

REVISION

APPR. BY:

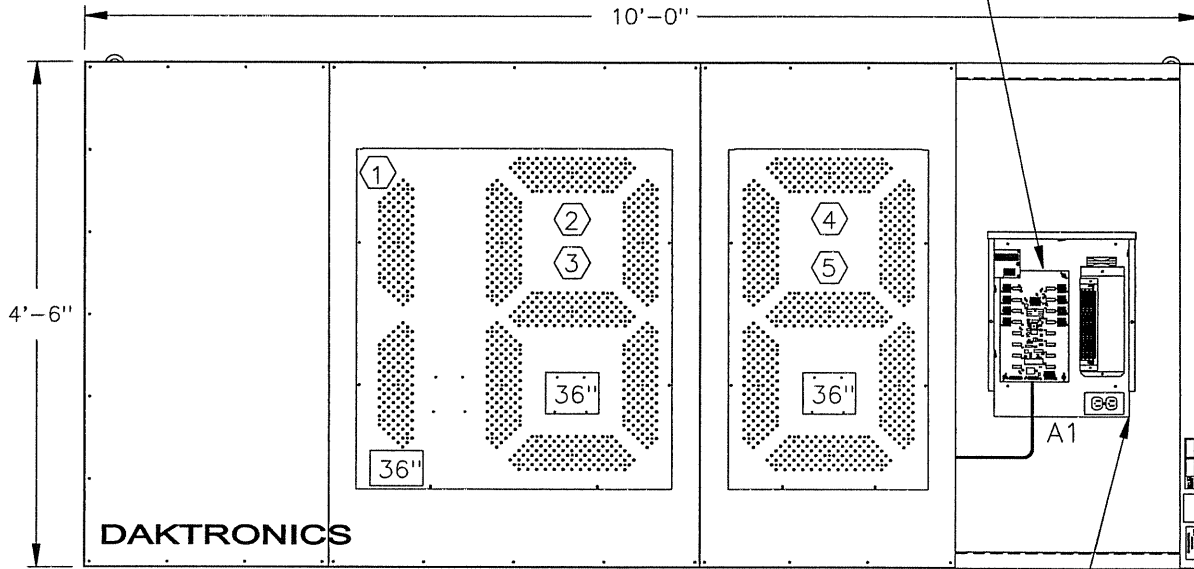
SCALE: 1=25

1192-E07A-157512

REV.	DATE	DESCRIPTION	BY	APPR.

BA-2003-11

ENCLOSED 8 COLUMN  
DRIVER. (DOOR COVER  
REMOVED TO SHOW  
INTERNAL COMPONENTS.)



FRONT VIEW

① = DRIVER CONNECTOR WIRED  
TO THAT DIGIT.

36" = DIGIT SIZE

HINGED ACCESS DOOR SHOWN  
REMOVED TO SHOW INTERNAL  
ELECTRICAL COMPONENTS.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-2003-11

DES. BY: KBRICKER

DRAWN BY: KBRICKER

DATE: 01 NOV 01

REVISION

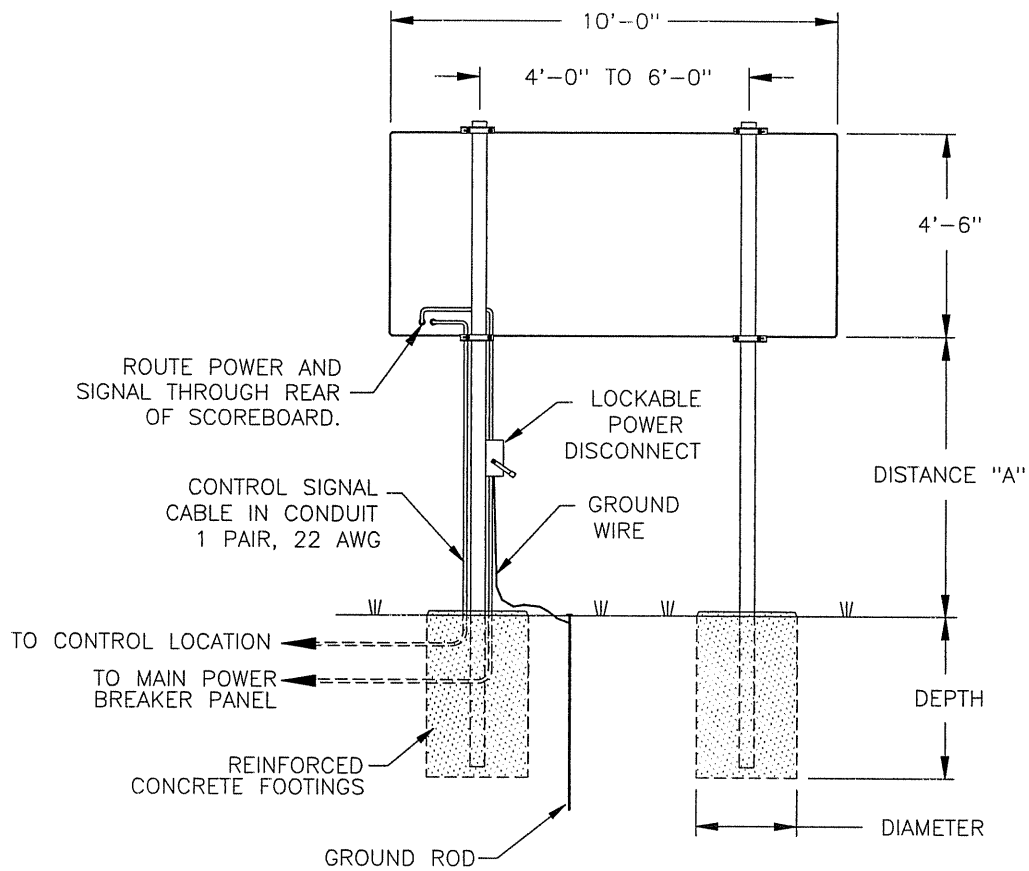
APPR. BY:

SCALE: 1=20

1192-E10A-158302

REV.	DATE	DESCRIPTION	BY	APPR.





REAR VIEW

MODEL BA-2003					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	10'-0" x 4'-6"	BEAM FOOTING	W8x10 2.0' x 8.9'	W10x12 2.5' x 5.0'	W10x15 2.5' x 5.9'
12'-0"	10'-0" x 4'-6"	BEAM FOOTING	W10x15 2.5' x 5.2'	W6x15 2.5' x 5.8'	W8x18 2.5' x 6.8'
14'-0"	10'-0" x 4'-6"	BEAM FOOTING	W6x16 2.5' x 5.8'	W8x18 2.5' x 6.4'	W8x21 2.5' x 7.6'

FOOTING = DIAMETER X DEPTH

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

UBC 97 CODE USED WITH SOIL CLASS 3.

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 LED DIGIT SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, BA-2003

DES. BY:

DRAWN BY: KBRICKER

DATE: 01 NOV 01

REVISION

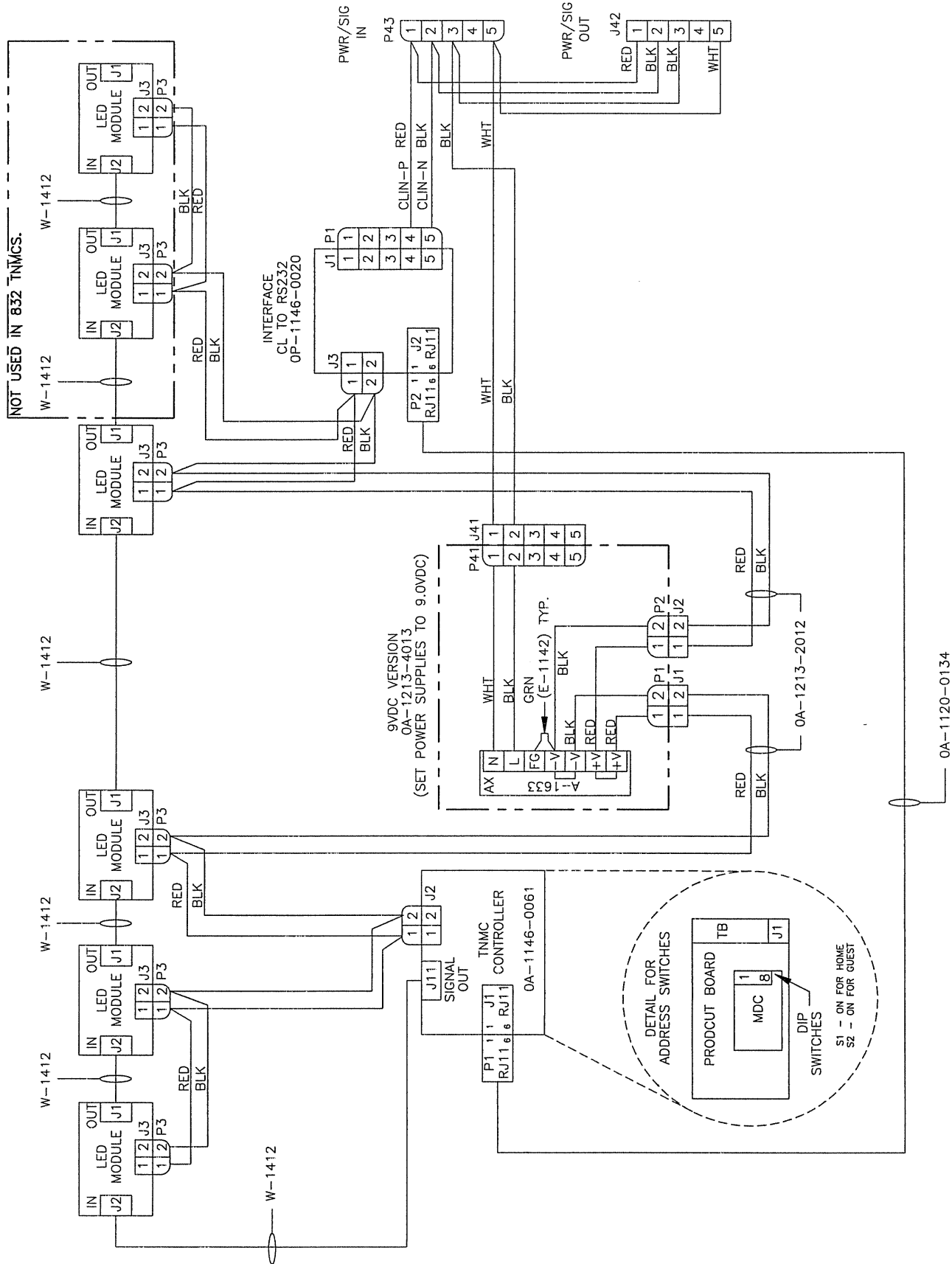
APPR. BY:

SCALE: 1=50

1192-E10A-158322

REV.	DATE	DESCRIPTION	BY	APPR.

OA-1192-1079 - 8X32 RED LED TNMC  
 OA-1192-1080 - 8X48 RED LED TNMC



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: SHCEMATIC; LED TNMC, GEN II

DES. BY: MMILLER

DRAWN BY: MMILLER

DATE: 07 NOV 01

01 19 NOV 01

CHANGED PART NUMBER FOR RJ11 CABLE FROM J2 ON INTERFACE TO J1 ON TNMC CONTROLLER

MWM

REVISION

APPR. BY:

1192-R03A-158552

SCALE: 1=1

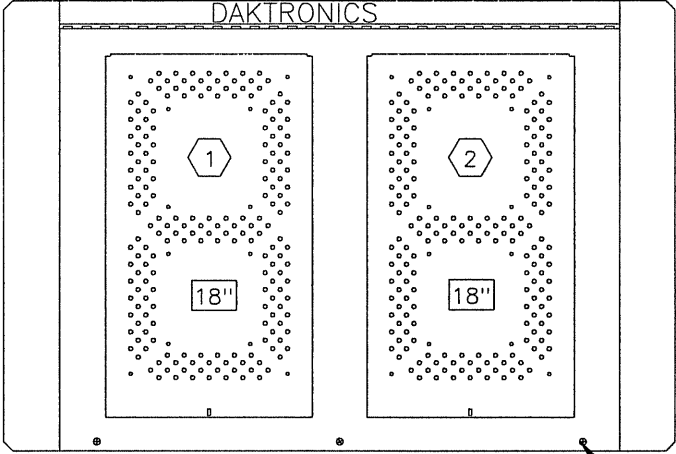
REV. DATE

DESCRIPTION

BY

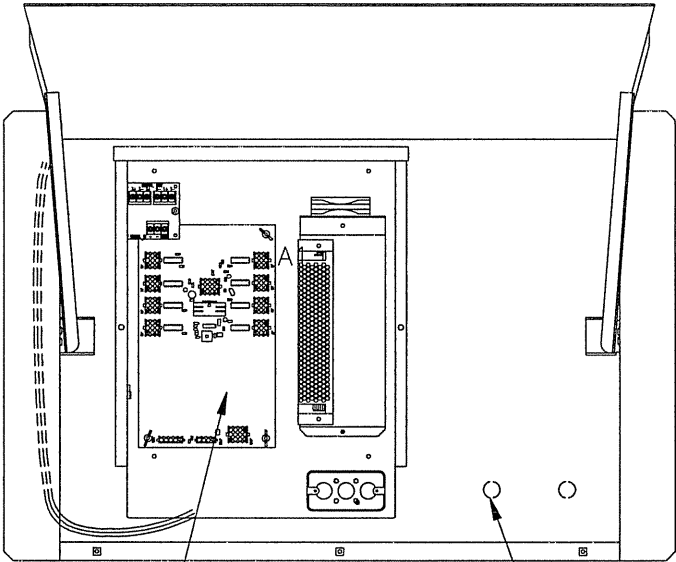
APPR.

TI-218-11



FRONT VIEW

REMOVE SCREWS TO ACCESS LED DRIVER AND POWER/SIGNAL ENCLOSURE



FRONT VIEW  
ACCESS DOOR OPEN

ENCLOSED 8 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

KNOCKOUTS FOR 1/2" CONDUIT

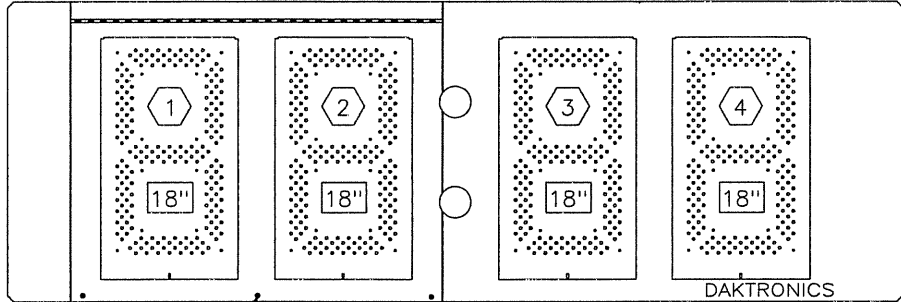
① = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; TI-218-11			
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN	DATE: 09NOV01	
REVISION	APPR. BY:	1192-E07A-158743	
	SCALE: 1=10		

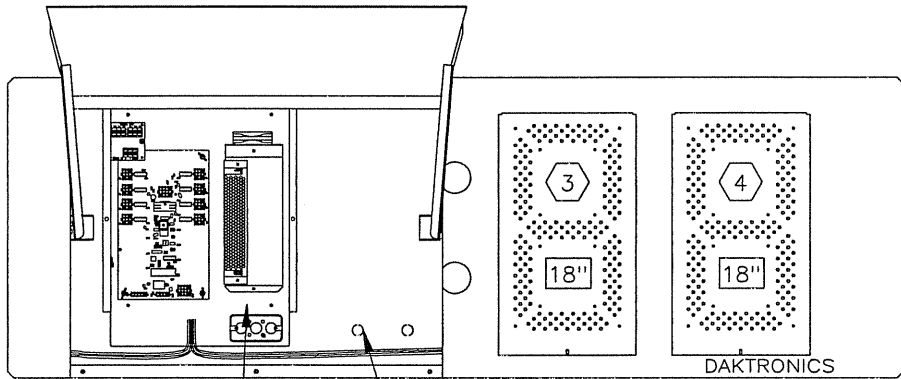
REV.	DATE	DESCRIPTION	BY	APPR.

TI-418-11



REMOVE THE SCREWS TO ACCESS LED DRIVER & PWR/SIG ENCLOSURE.

FRONT VIEW



ENCLOSED 8 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW COMPONENT DETAIL).

KNOCKOUTS FOR 1/2" CONDUIT

FRONT VIEW  
ACCESS DOOR OPEN

1 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; TI-418-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 09NOV01

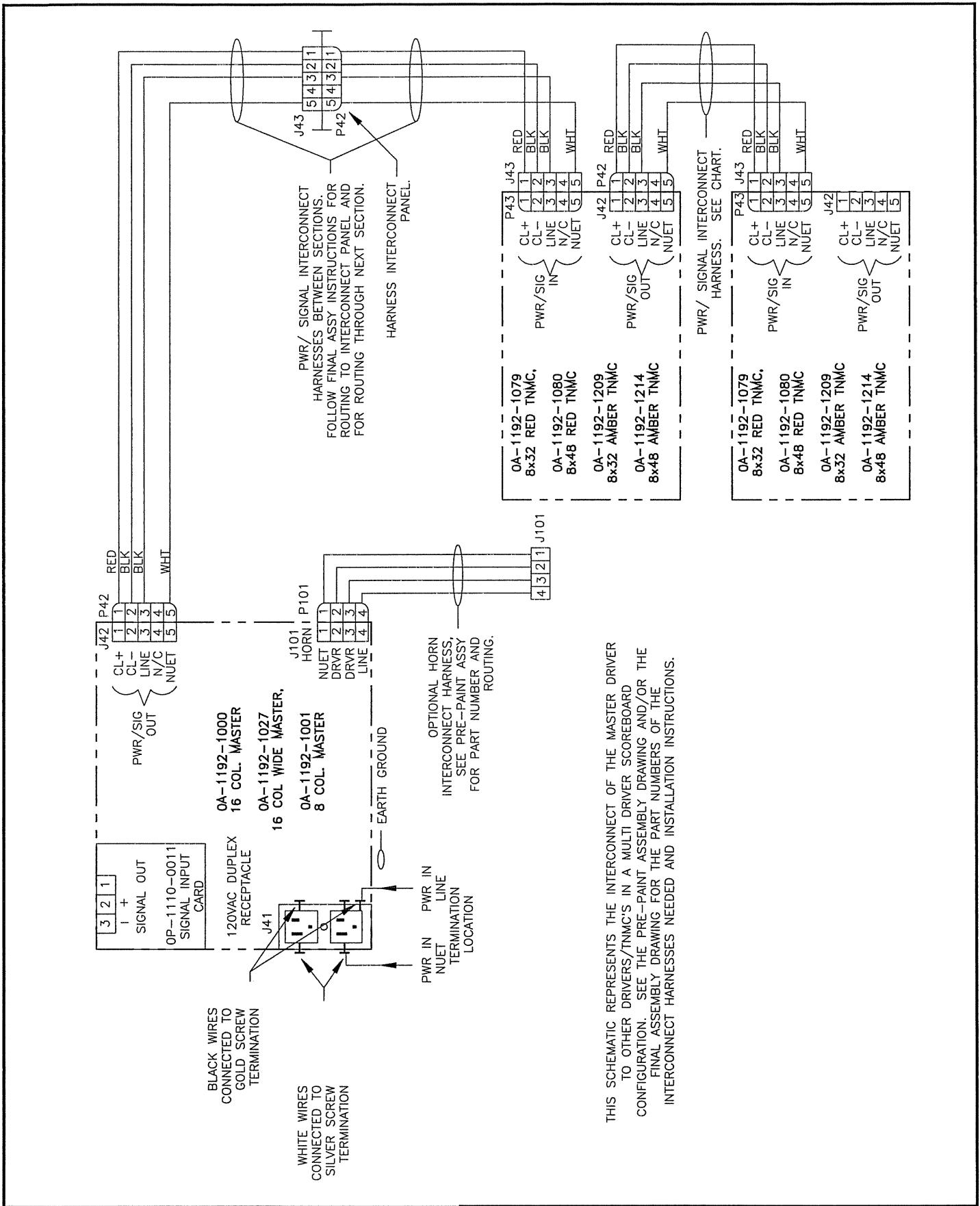
REVISION

APPR. BY:

SCALE: 1=15

1192-E07A-158764

REV.	DATE	DESCRIPTION	BY	APPR.



REV	DATE	DESCRIPTION	BY	APPR.
03	17 MAY 02	REPLACED OP-1033-0114 WITH OP-1110-0011. REMOVED J101 HORN JACK.	THS	
02	21 JAN 02	ADDED WIRE CABLE COLORS CORRECTED WIRE CONNECTION	THS	
01	26 DEC 01	ADDED HORN INTERCONNECT AND HARNESS INTERCONNECT PANEL.	MWM	

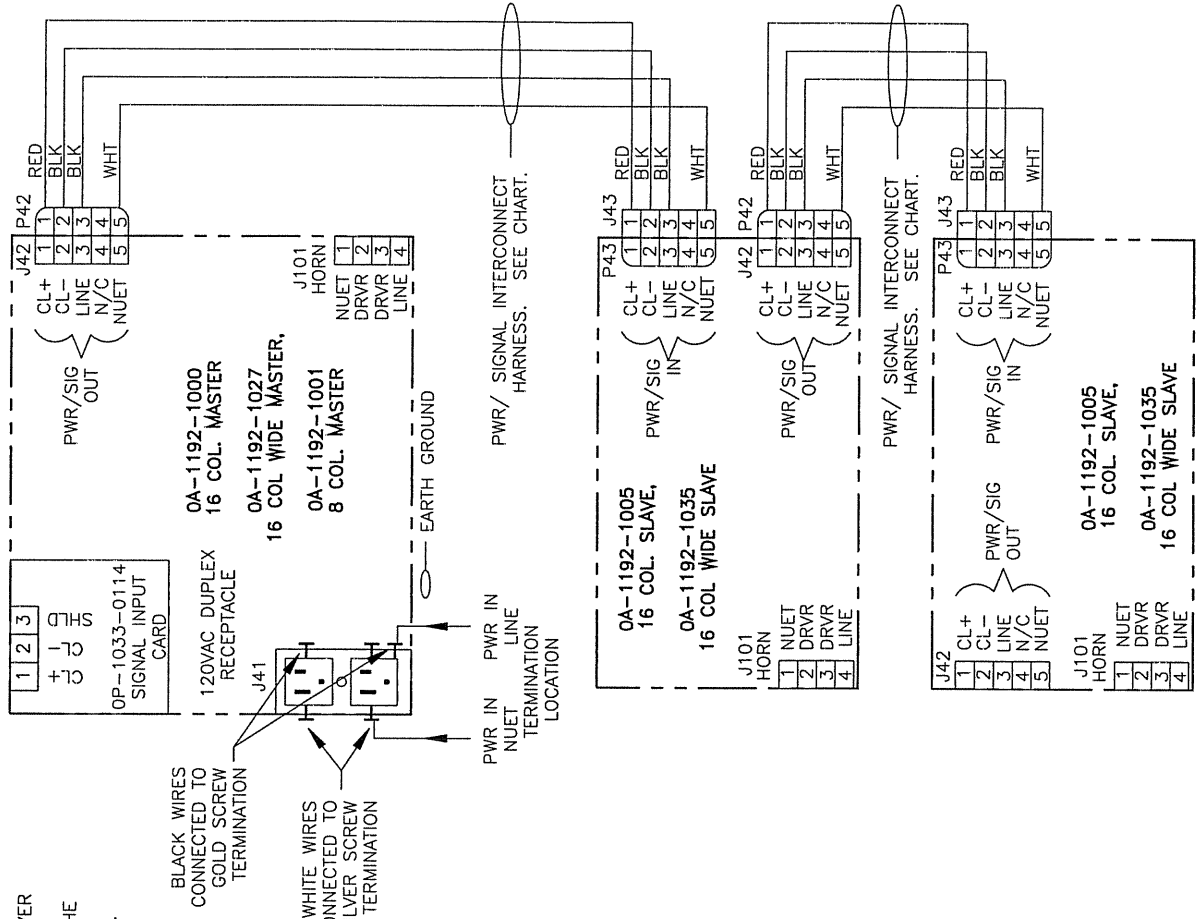
DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: SCHEMATIC; GEN II, OD LED, 1 DRVR DISPLAY & TNMC	
DES. BY: MILLER	DRAWN BY: MILLER
DATE: 27 NOV 01	
REVISION	APPR. BY:
SCALE: 1 = 1	
1192-R01A-159419	

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.

THIS SCHEMATIC REPRESENTS THE INTERCONNECT OF THE MASTER DRIVER TO OTHER DRIVERS/TNMC'S IN A MULTI DRIVER SCOREBOARD CONFIGURATION. SEE THE PRE-PRINT 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'



01	22JAN02	ADDED WIRE CABLE COLORS	THS	
REV.	DATE	DESCRIPTION	BY	APPR.

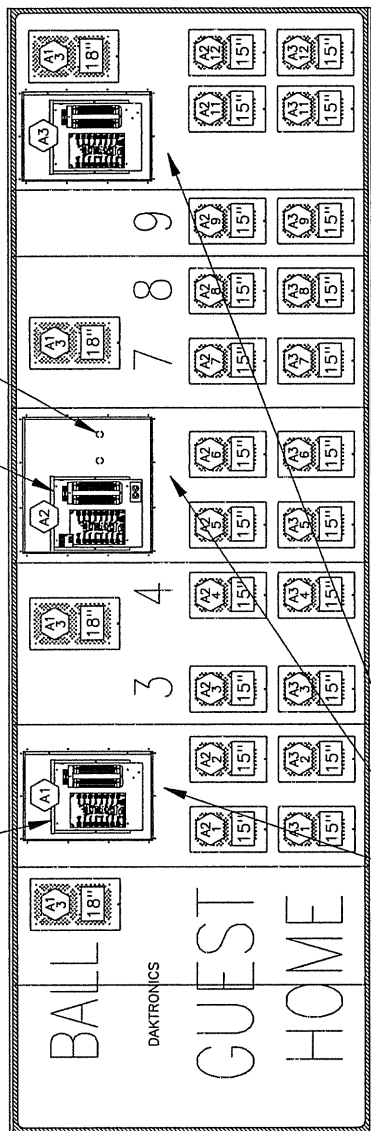
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: SCHEMATIC; GEN II OD LED, 3 DRVR DISPLAY			
DES. BY: MMILLER		DRAWN BY: MMILLER	
		DATE: 17 DEC 01	
REVISION	APPR. BY:	1192-R10A-159920	
	SCALE: 1=1		

BA-2004-11

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

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

KNOCKOUTS FOR 1/2" CONDUIT



FRONT VIEW

- ⑤ = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.
- ①C = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR
- 18" = DIGIT SIZE

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

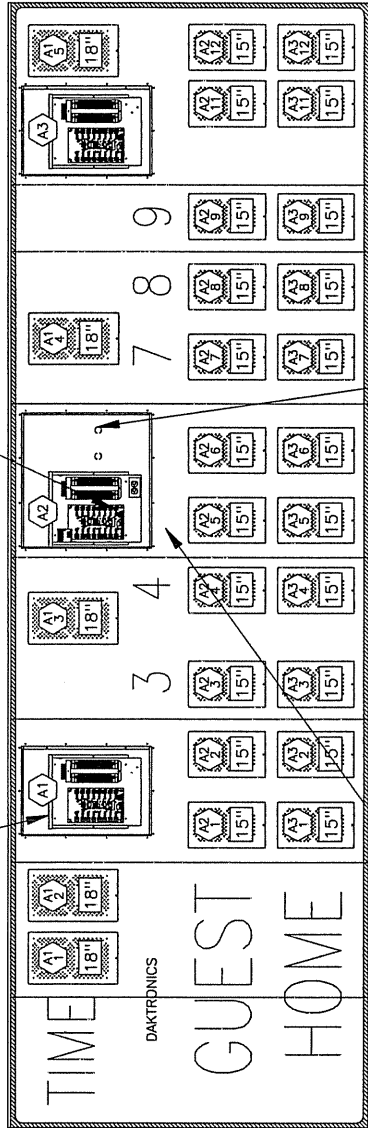
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; BA-2004-11			
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN	DATE: 11DEC01	
REVISION	APPR. BY:	1192-E07A-159989	
SCALE: 1=40			

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

BA-2005-11

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



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

5 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

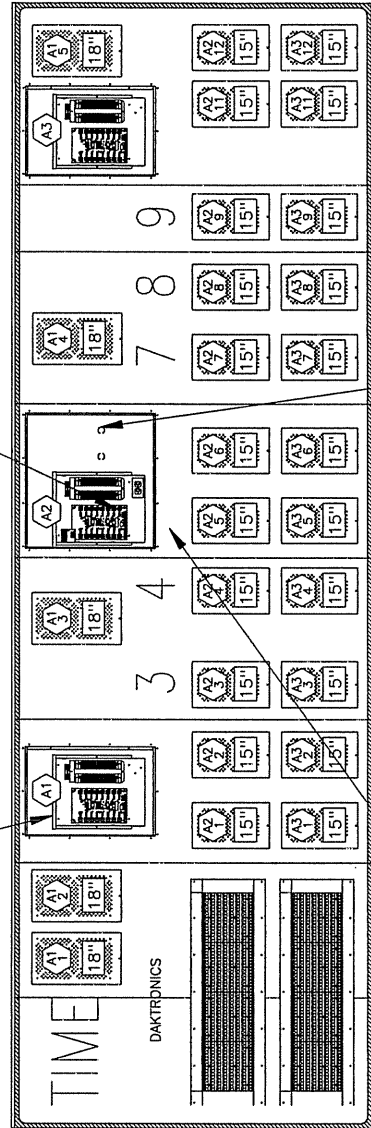
NOTE: SOME CAPTIONS HAVE BEEN REMOVED TO SHOW DETAIL

FRONT VIEW

— KNOCKOUTS FOR 1/2" CONDUIT

BA-2005-11 W/ 832-10 LED TNMC

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



NOTE: SOME CAPTIONS HAVE BEEN REMOVED TO SHOW DETAIL

FRONT VIEW

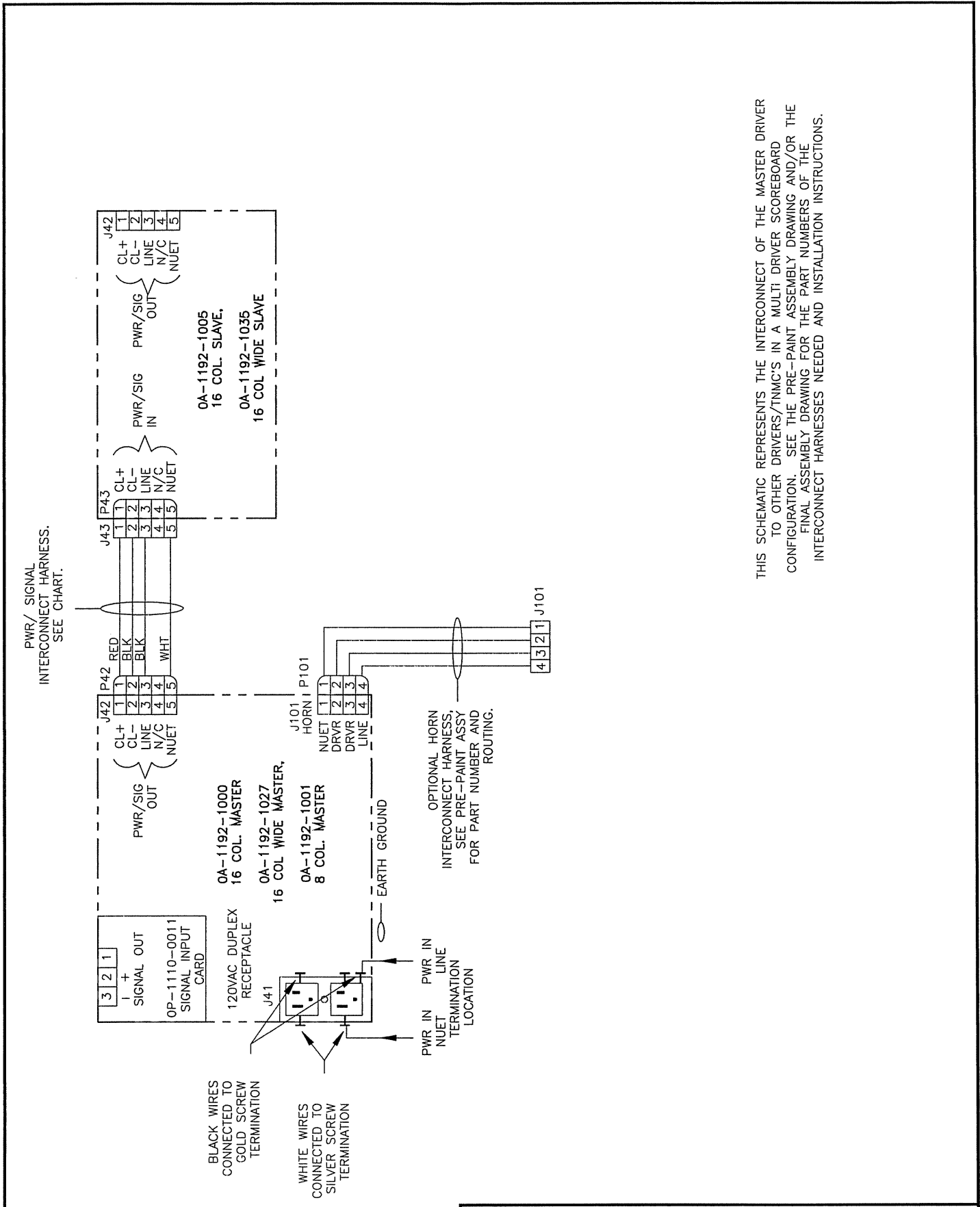
— KNOCKOUTS FOR 1/2" CONDUIT

DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
02	07NOV02	ADDED BA-2005-11 W/ LED TNMC	MCOPL	
01	14 JUN 02	CORRECTED DIGIT/DRIVER DESIGNATION PER ECO 23026.	MRB	

PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: COMPONENT LOCATIONS; BA-2005-11	
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN DATE: 11DEC01
REVISION	APPR. BY:
	SCALE: 1=40
1193-E07A-159997	





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.

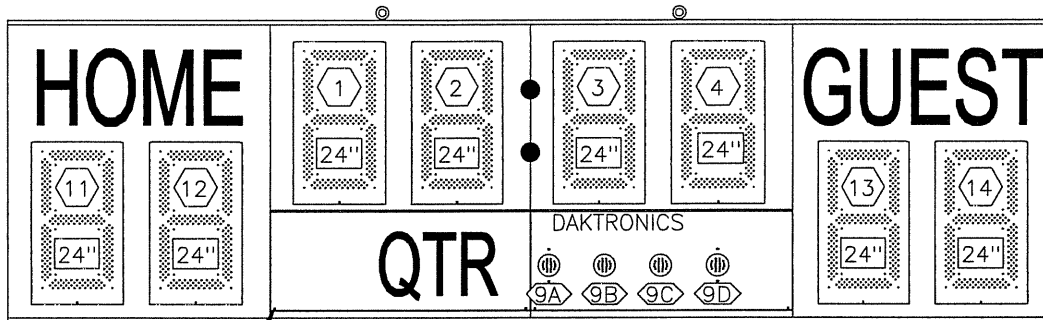
REV.	DATE	DESCRIPTION	BY	APPR.
02	17 MAY 02	REPLACED OP-1033-0114 WITH OP-1110-0011. REMOVED J101 HORN JACK AND HARNESS TABLE.	THS	
01	22JAN02	ADDED WIRE CABLE COLORS CORRECTED WIRE CONNECTION	THS	

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: SCHEMATIC; GEN II, OD LED, 2 DRVR DISPLAY	
DES. BY: MILLER	DRAWN BY: MILLER
DATE: 26 DEC 01	
REVISION	APPR. BY:
SCALE: 1=1	
1192-R10A-159999	

FB-824-11

OR

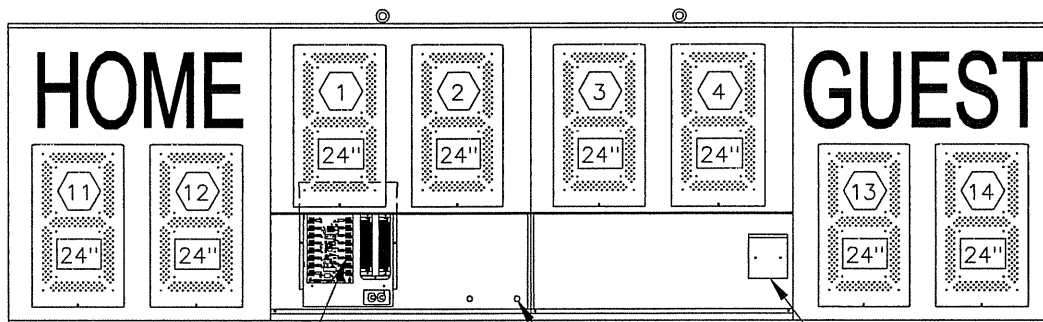
SO-824-21



REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE

FRONT VIEW

(SHOWN WITH DOORS CLOSED)



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

A1

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

FRONT VIEW

(SHOWN WITH DOORS OPEN)

① = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

⑥A = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR

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-824-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 14DEC01

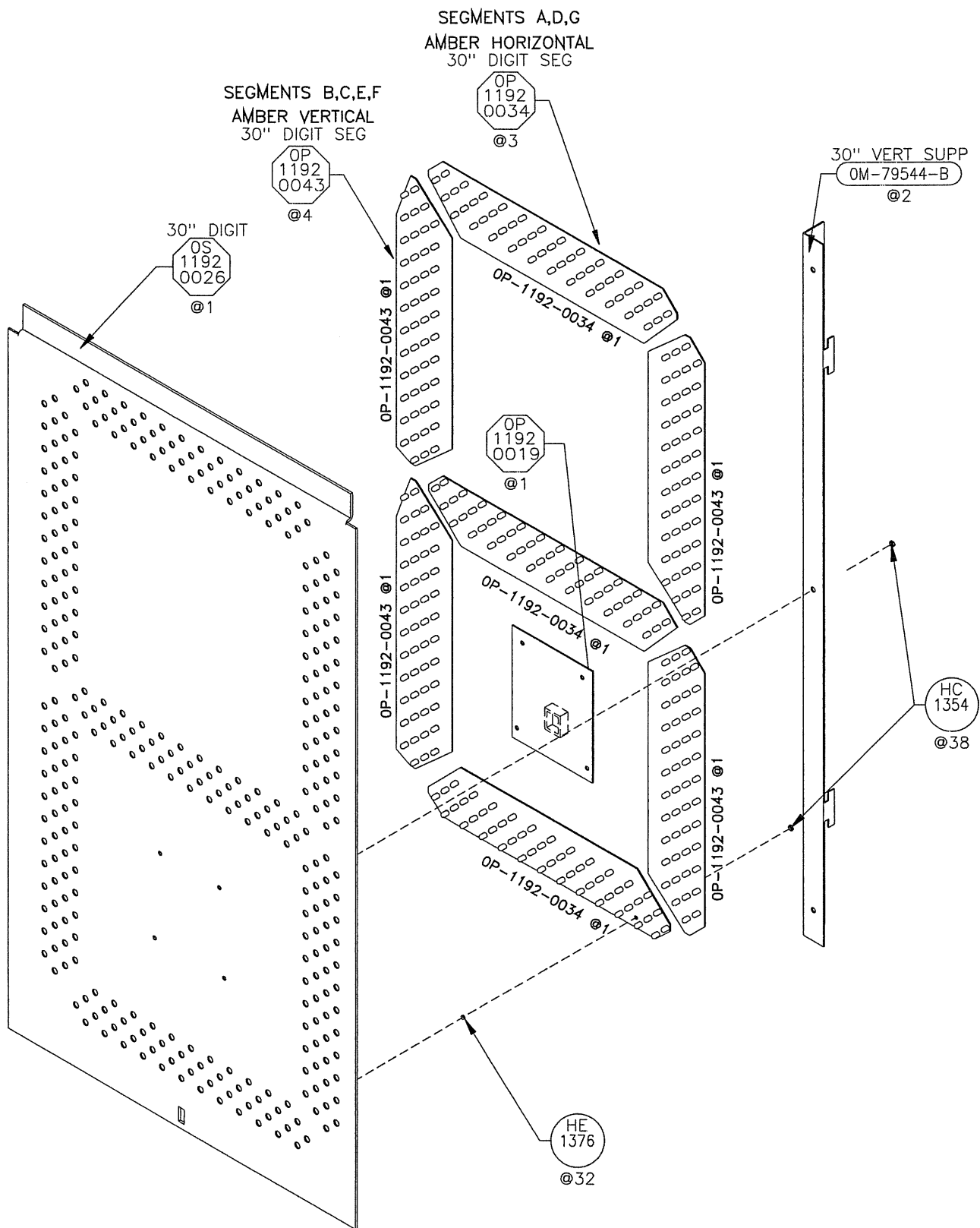
REVISION

APPR. BY:

SCALE: 1 = 30

1192-E07A-160095

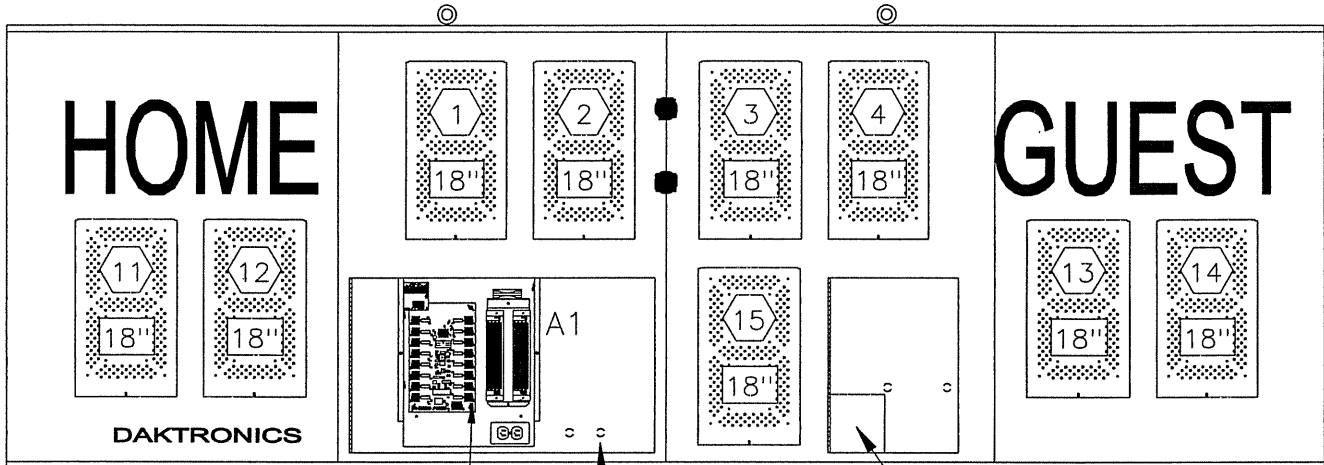
REV.	DATE	DESCRIPTION	BY	APPR.



DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED DIGIT SCOREBOARDS			
TITLE: 30" AMBER LED DIGIT ASSEMBLY			
DES. BY: EBRAVEK		DRAWN BY: EBRAVEK	
REVISION		DATE: 11 JAN 02	
APPR. BY:		SCALE: 1=6	
1192-E10A-161254			

01	28AUG02	REPLACED HE-1357 WITH HE-1376	MCOPL	
REV	DATE	DESCRIPTION	BY	APPR.

SO-918-11



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

KNOCKOUTS FOR 1/2" CONDUIT

HORN (OPTIONAL)

FRONT VIEW

⬡12 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

⬡18" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-918-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 24JAN02

REV.	DATE	DESCRIPTION	BY	APPR.

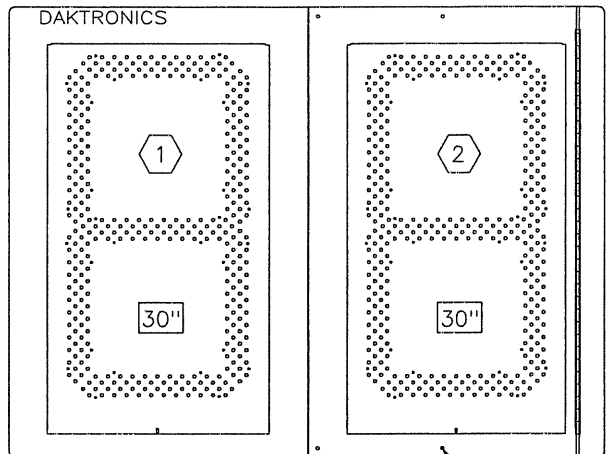
REVISION

APPR. BY:

SCALE: 1=20

1192-E07A-161792

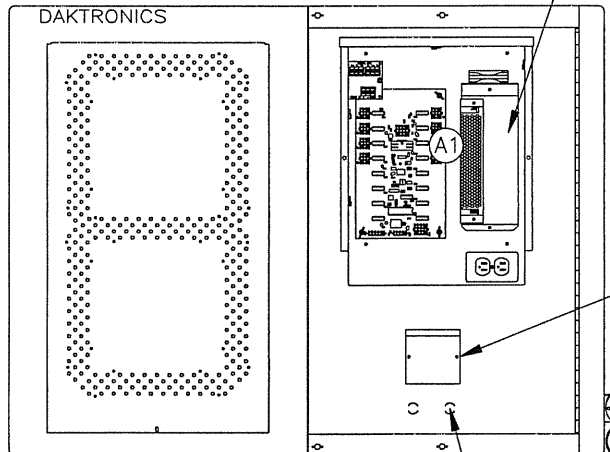
TI-2003-11



FRONT VIEW

REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE

ENCLOSED 8 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE. (THE DOOR IS OPEN AND THE ENCLOSURE COVER HAS BEEN REMOVED TO SHOW COMPONENT DETAIL.)



FRONT VIEW

ACCESS DOOR OPEN

HORN (OPTIONAL)

KNOCKOUT FOR 1/2" CONDUIT

1 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

30" = DIGIT SIZE

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; TI-2003-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 25JAN02

REV.	DATE	DESCRIPTION	BY	APPR.
01	05AUG02	ADDED HORN TO RIGHT SIDE OF DISPLAY	MCOPL	

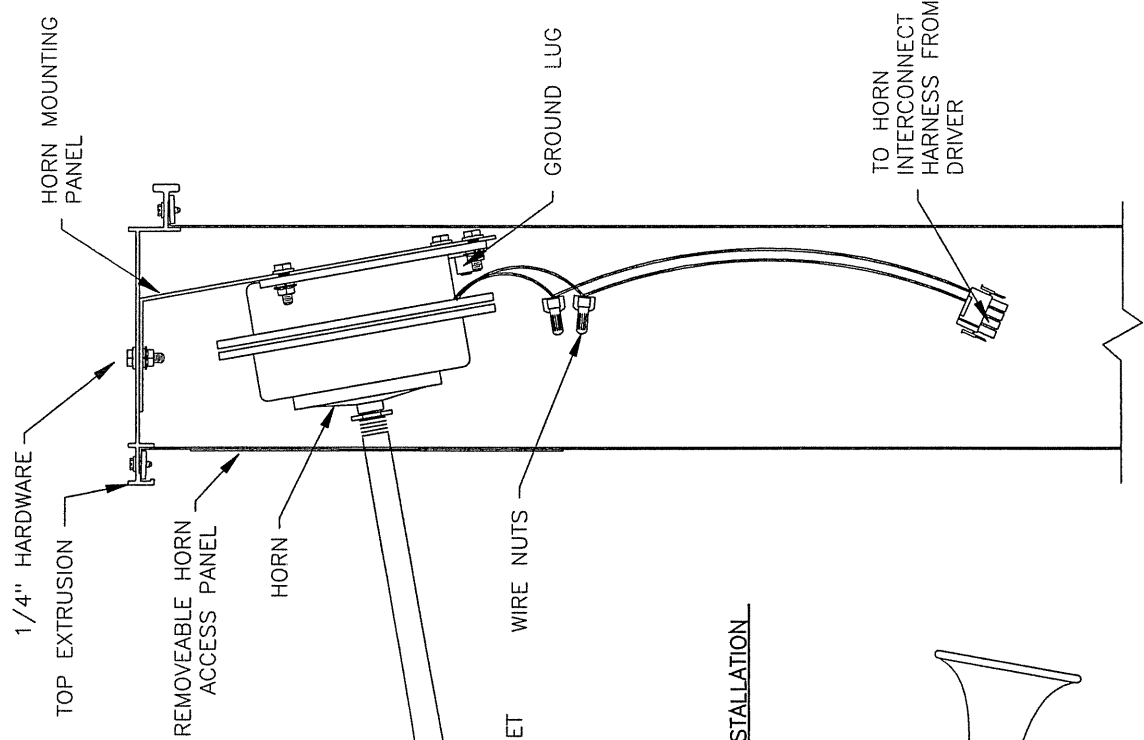
REVISION

APPR. BY:

SCALE: 1=15

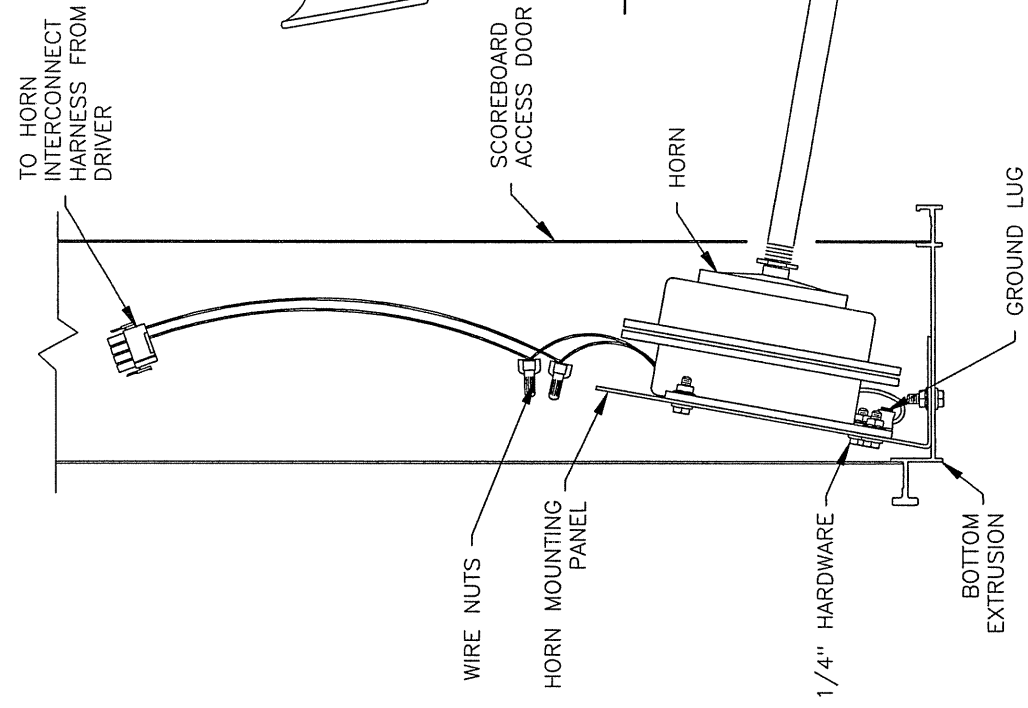
1192-E07A-161867

120V HORN MOUNTING FOR UPPER EXTRUSION



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

120V HORN MOUNTING FOR BOTTOM EXTRUSION

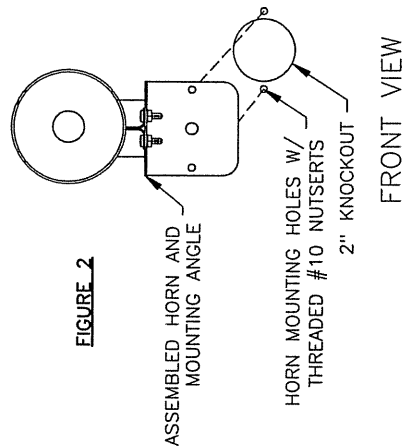
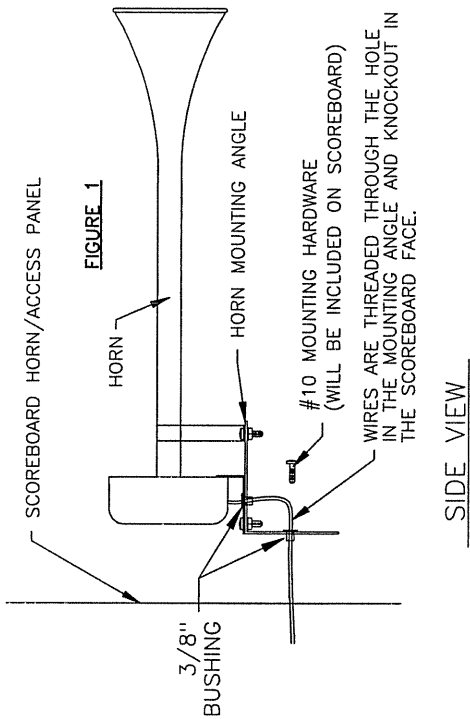


NOTE:  
HORN IS TO BE MOUNTED BEHIND ACCESS DOOR THAT HAS 2" DIAMETER KNOCKOUT.

SIDE VIEW OF HORN INSTALLATION

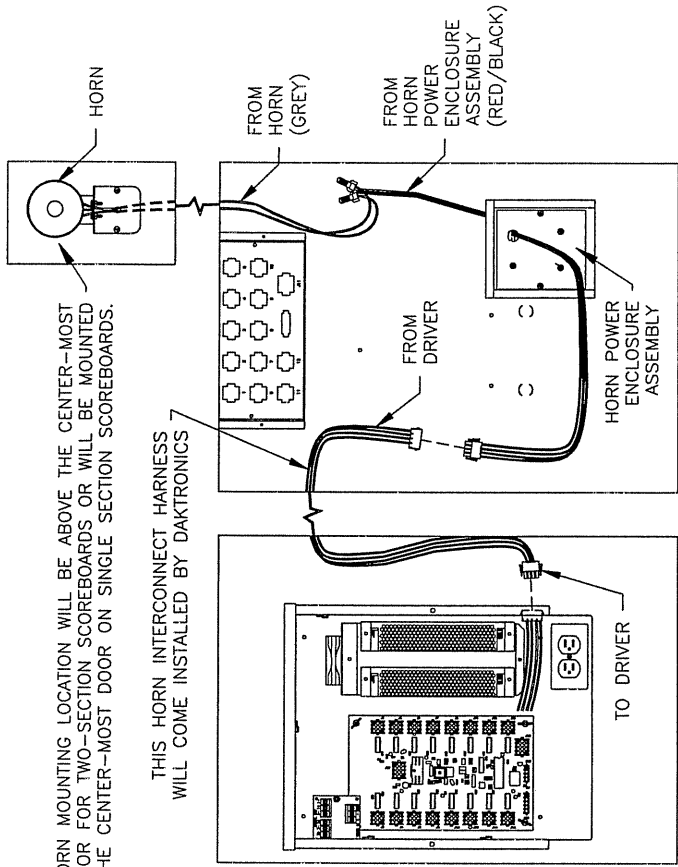
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: 120V DC HORN MOUNTING			
DES. BY: MCOPLAN		DRAWN BY: MCOPLAN	
DATE: 31JAN02			
REVISION	APPR. BY:	1192-E10A-162100	
	SCALE: 1=5		

REV.	DATE	DESCRIPTION	BY	APPR.



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

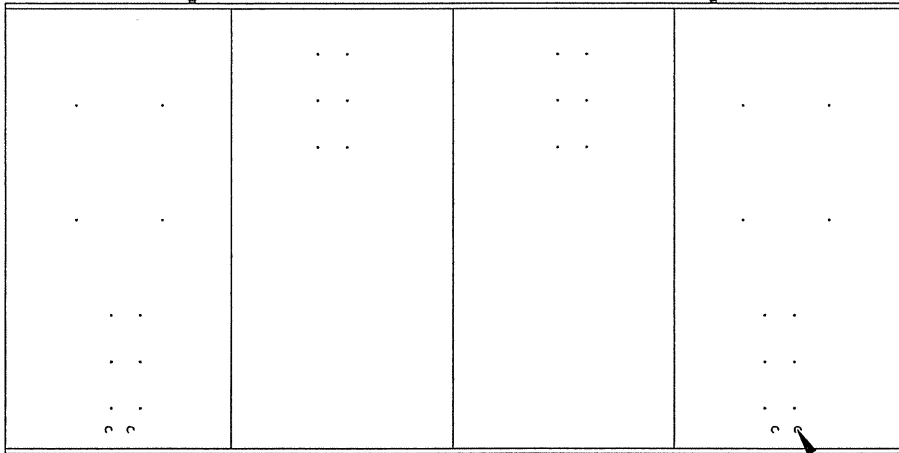
- 1) THE KNOCKOUT ON THE SCOREBOARD HAS BEEN REMOVED AND THE HORN POWER ENCLOSURE ASSEMBLY HAS BEEN INTERNALLY MOUNTED BY DAKTRONICS. THE HORN MOUNTING ANGLE HAS BEEN ATTACHED TO THE HORN BY DAKTRONICS.
  - 2) THE HORN HAS BEEN PACKAGED IN BUBBLE WRAP AND WILL BE LOCATED INSIDE THE SCOREBOARD BEHIND 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 REMOVABLE 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.



REV.	DATE	DESCRIPTION	BY	APPR.

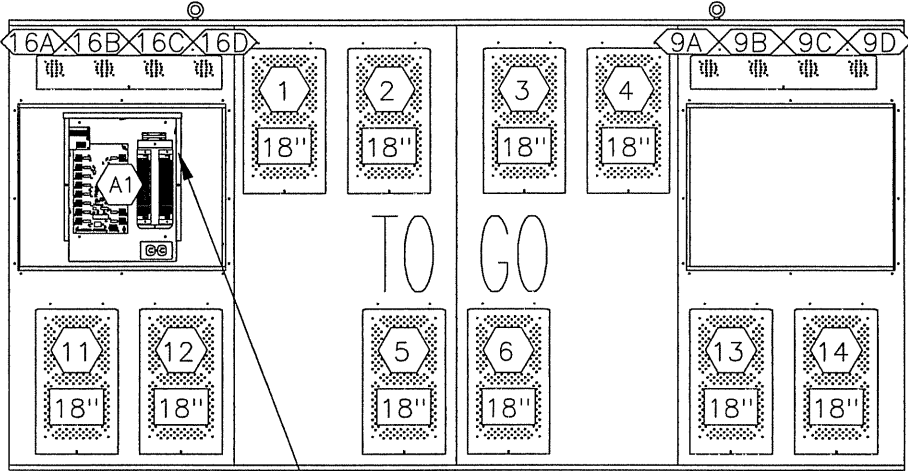
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: HORN INSTALLATION; 12V DC			
DES. BY: MCOPLAN		DRAWN BY: MCOPLAN	
DATE: 31JAN02			
REVISION	APPR. BY:	1192-E10A-162102	
SCALE: 1=12			

FB-2005-11



REAR VIEW

KNOCKOUT FOR  
1/2" CONDUIT



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

FRONT VIEW

(DOORS SHOWN OPEN)

- ① = LED DRIVER CONNECTOR  
WIRED TO THAT DIGIT.
- ⑥A = LED DRIVER CONNECTOR  
AND SEGMENT (PIN) NO.  
WIRED TO THAT INDICATOR
- 24" = DIGIT SIZE

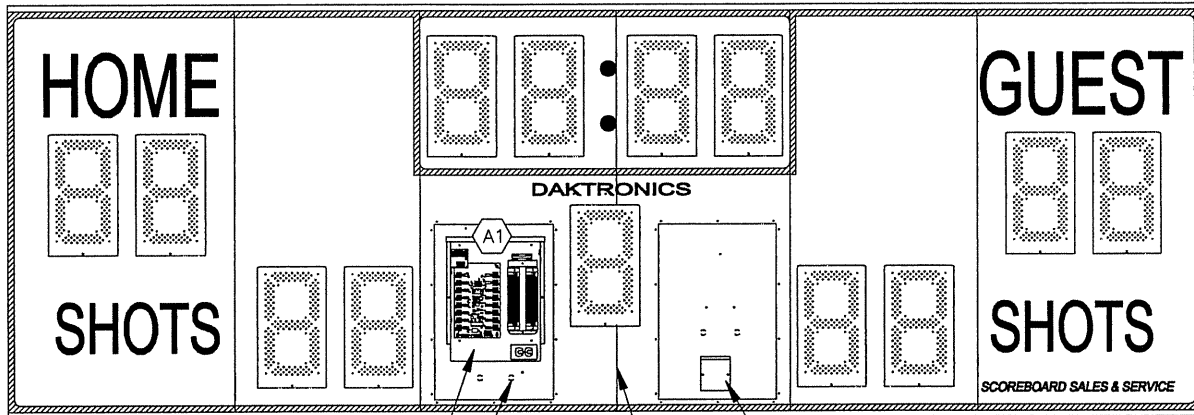
HINGED ACCESS DOORS REMOVED  
TO SHOW THE LED DRIVER AND  
THE POWER/SIGNAL ENCLOSURE.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; FB-2005-11			
DES. BY: KBRICKER		DRAWN BY: MCOPLAN	DATE: 18FEB02
REVISION	APPR. BY:	1192-E07A-162879	
	SCALE: 1=25		

REV.	DATE	DESCRIPTION	BY	APPR.



SO-2008-11



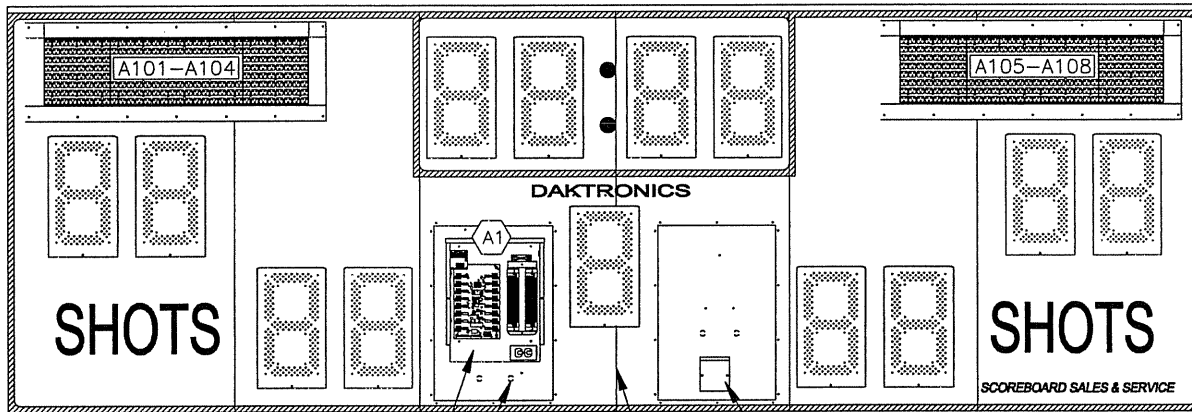
ENCLOSED 16 COLUMN LED DRIVER AND POWER AND SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE LED DRIVER).

HORN (OPTIONAL)

NOTE THAT THE PERIOD CAPTION AND ACCESS DOORS HAVE BEEN REMOVED TO SHOW DETAIL.

KNOCKOUT FOR 1/2" CONDUIT

SO-2008-11 W/ 832-10 LED TNMC



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

HORN (OPTIONAL)

NOTE THAT THE PERIOD CAPTION AND ACCESS DOORS HAVE BEEN REMOVED TO SHOW DETAIL.

KNOCKOUT FOR 1/2" CONDUIT

24" = DIGIT SIZE

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-2008-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

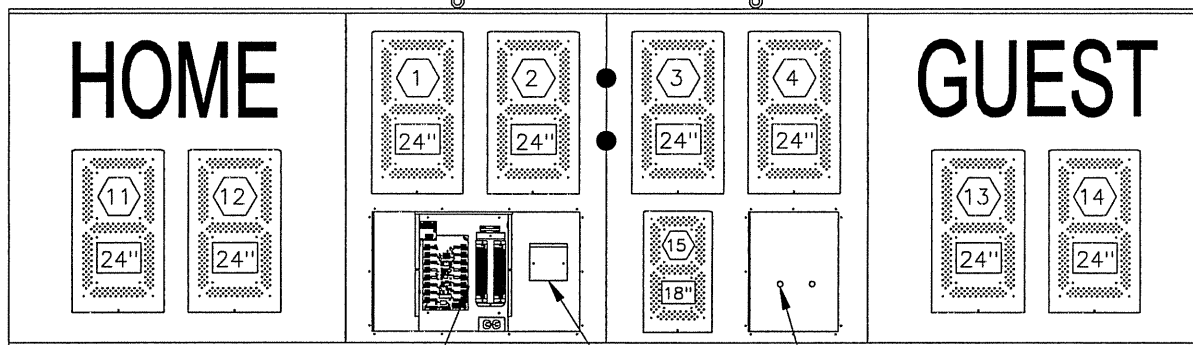
DATE: 19FEB02

REV.	DATE	DESCRIPTION	BY	APPR.
01	09AUG02	ADDED SO-2008-11 W/ 832-10 LED TNMC	MCOPL	

REVISION	APPR. BY:
	SCALE: 1=30

1192-E07A-163035

MS-2002-11



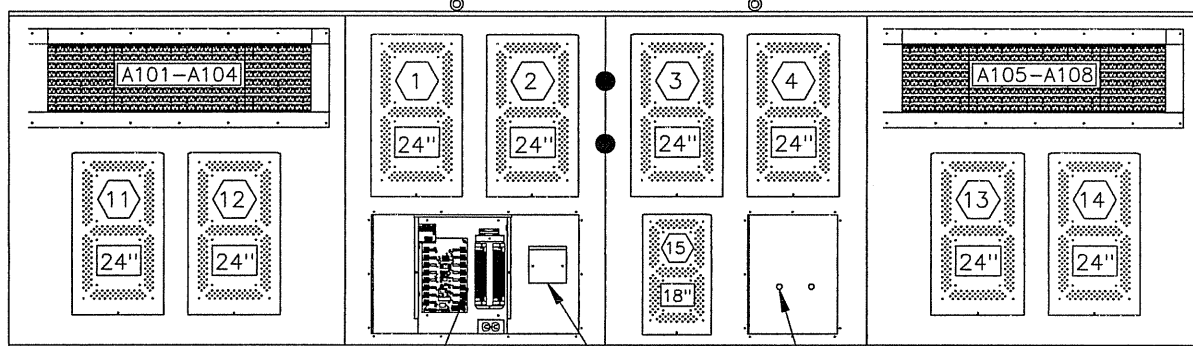
ENCLOSED 16 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)

HORN (OPTIONAL)

KNOCKOUT FOR 1/2" CONDUIT

FRONT VIEW  
(SHOWN WITH DOORS OPEN)

MS-2002-11 W/ 832-10 LED TNMC



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

HORN (OPTIONAL)

KNOCKOUT FOR 1/2" CONDUIT

FRONT VIEW  
(SHOWN WITH DOORS OPEN)

① = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

24" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2002-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 26FEB02

REVISION

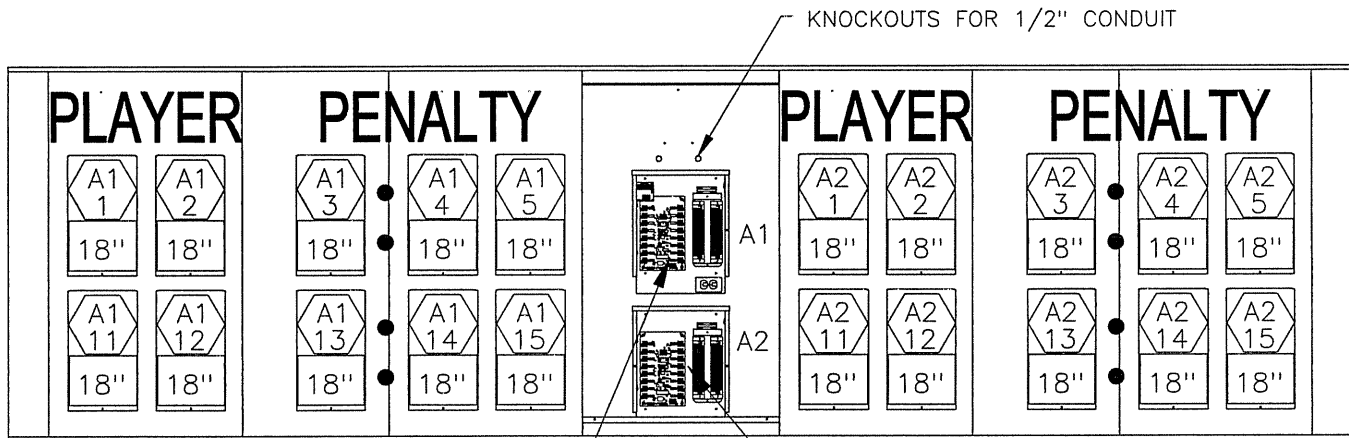
APPR. BY:

SCALE: 1=30

1192-E07A-163316

REV.	DATE	DESCRIPTION	BY	APPR.


MS-2004-11



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 @1. (THE COVER HAS BEEN REMOVED TO SHOW THE ENCLOSURE COMPONENT DETAIL.)

FRONT VIEW

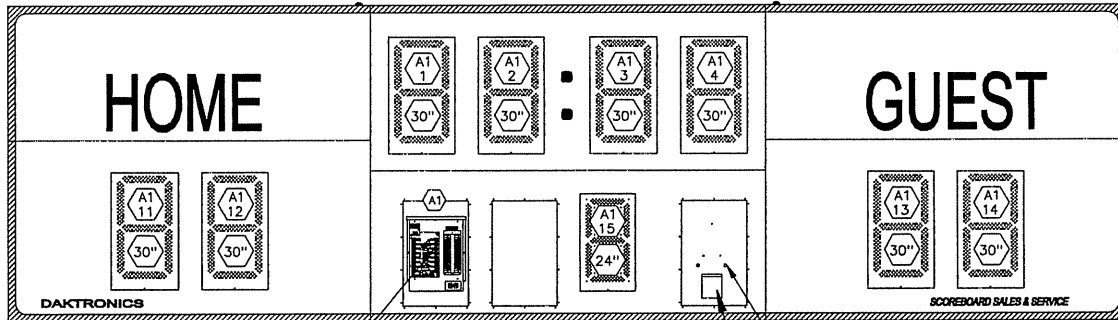
 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

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

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; MS-2004-11			
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN	DATE: 26FEB02	
REVISION	APPR. BY:	1192-E07A-163343	
	SCALE: 1=30		

REV.	DATE	DESCRIPTION	BY	APPR.

MS-2006-11



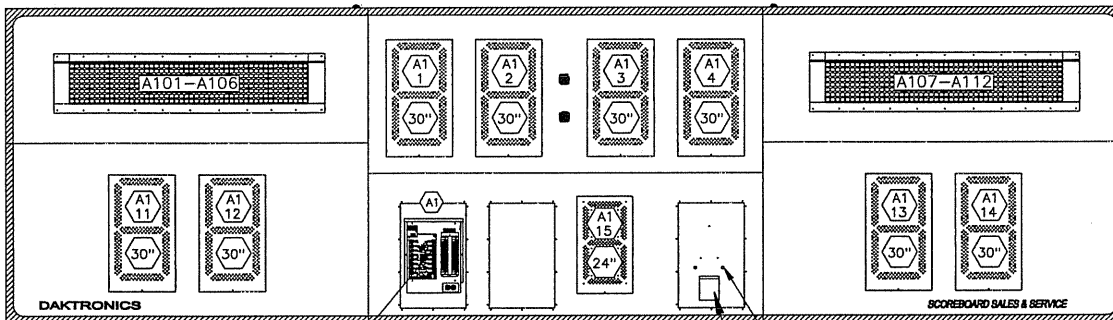
ENCLOSED 16 COLUMN LED DRIVER AND POWER AND SIGNAL ENCLOSURE. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)

FRONT VIEW

— KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

MS-2006-11 W/ 848-10 LED TNMC



ENCLOSED 16 COLUMN LED DRIVER AND POWER AND SIGNAL ENCLOSURE. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)

FRONT VIEW

— KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

⬡ = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2006-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 27FEB02

REVISION

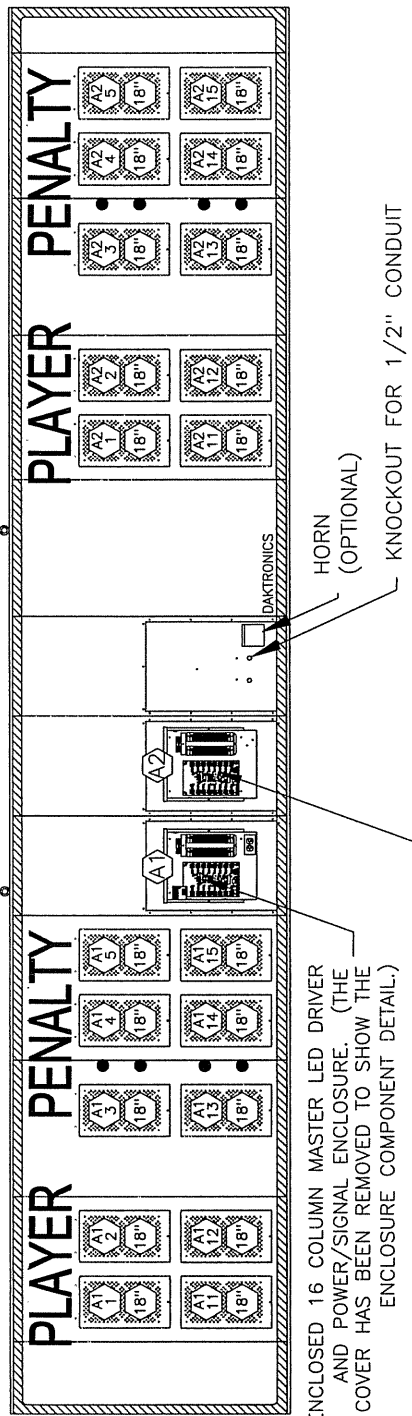
APPR. BY:

SCALE: 1=50

1192-E07A-163410

REV.	DATE	DESCRIPTION	BY	APPR.

MS-2012-11



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

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

HORN (OPTIONAL)  
 KNOCKOUT FOR 1/2" CONDUIT

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

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

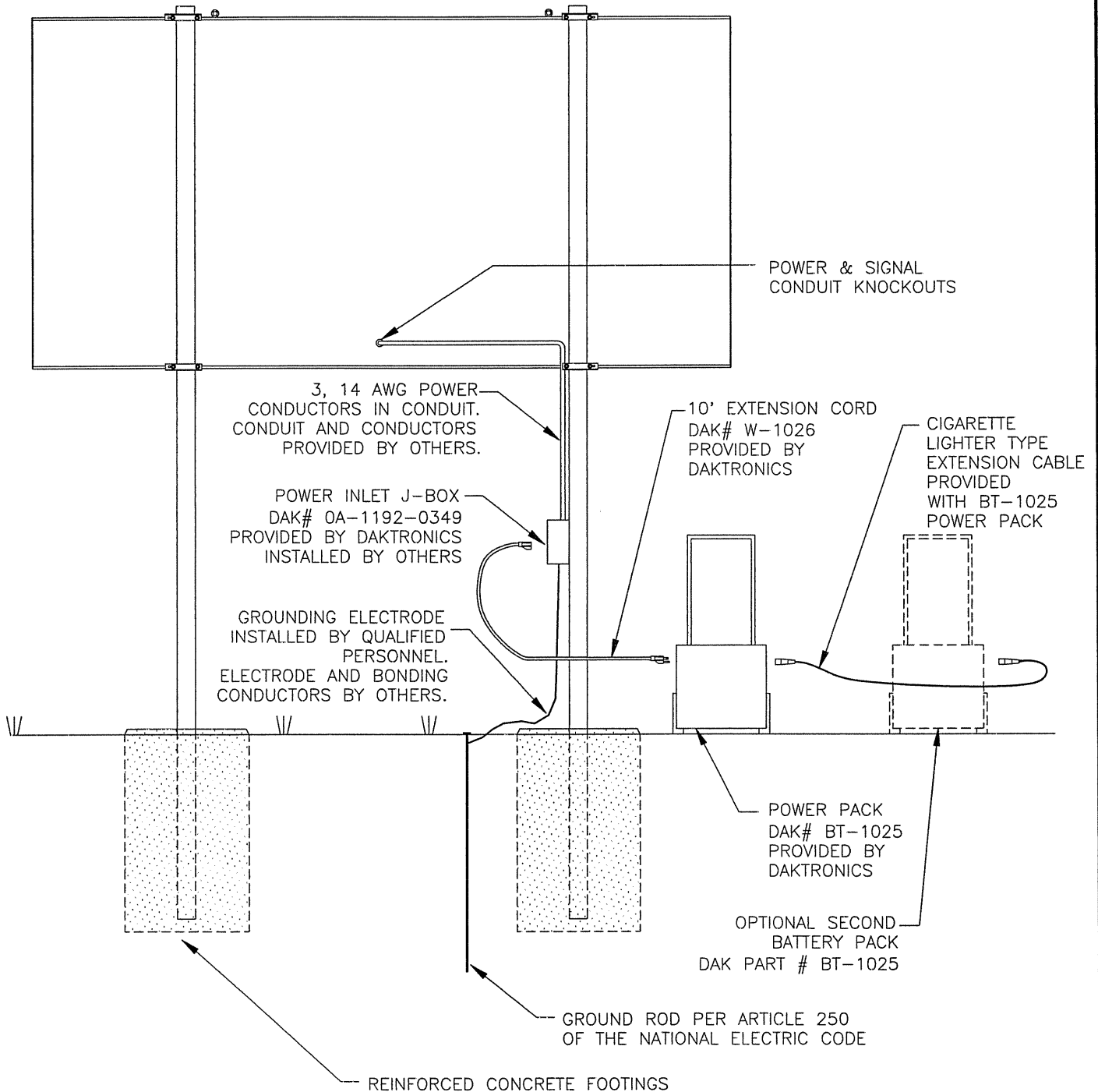
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; MS-2012-11			
DES. BY: MCOPLAN		DRAWN BY: MCOPLAN	
DATE: 07MAR02			
REVISION	APPR. BY:	1192-E07A-163801	
	SCALE: 1=40		

REV.	DATE	DESCRIPTION	BY	APPR.

**\*\* NOTE \*\***

1. ALL ELECTRICAL INSTALLATIONS MUST MEET LOCAL AND NATIONAL ELECTRICAL CODES. INSTALLATION MUST BE PERFORMED BY QUALIFIED PERSONNEL
2. BE SURE TO CHARGE BATTERIES IN POWER PACK COMPLETELY BEFORE FIRST USE.
3. CHARGE BATTERY COMPLETELY AFTER EACH USE
4. POWER PACK INTENDED FOR TEMPORARY POWER FOR SCOREBOARDS, DO NOT LEAVE OUTSIDE, STORE IN A COOL, DRY AREA.

**REAR VIEW**



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. COPYRIGHT 2002 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: INSTALLATION, PORTABLE POWERED SCOREBOARDS

DES. BY: EBRAVEK

DRAWN BY: EBRAVEK

DATE: 4 JUNE 02

REVISION

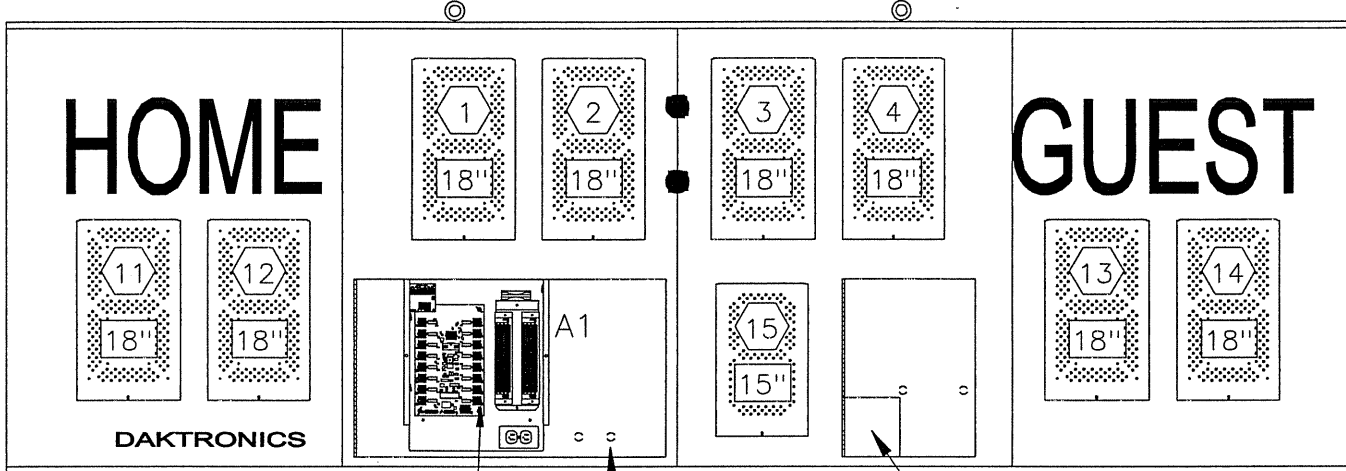
APPR. BY:

SCALE: 1=40

1192-E07A-166787

REV.	DATE	DESCRIPTION	BY	APPR.

SO-2009-11 OR SO-2009-21



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

KNOCKOUTS FOR 1/2" CONDUIT

HORN (OPTIONAL)

FRONT VIEW

⬡ = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-2009-XX

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 17MAY02

REVISION

APPR. BY:

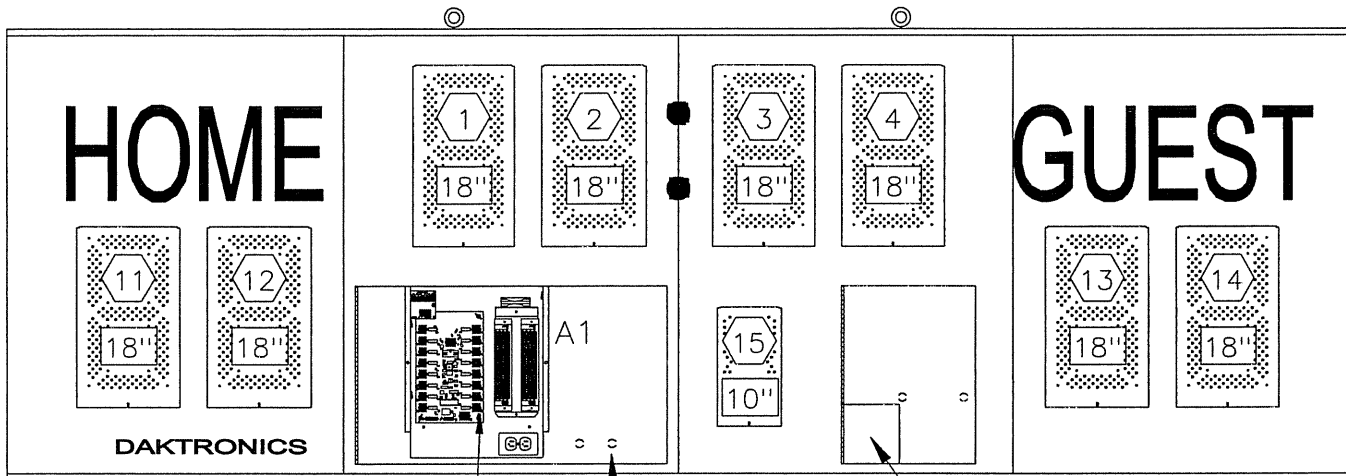
00

SCALE: 1=20

1192-E07A-167304

REV.	DATE	DESCRIPTION	BY	APPR.

SO-2010-11 OR SO-2010-21



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

KNOCKOUTS FOR 1/2" CONDUIT

HORN (OPTIONAL)

FRONT VIEW

⬡12 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-2010-XX

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 20MAY02

REVISION 00

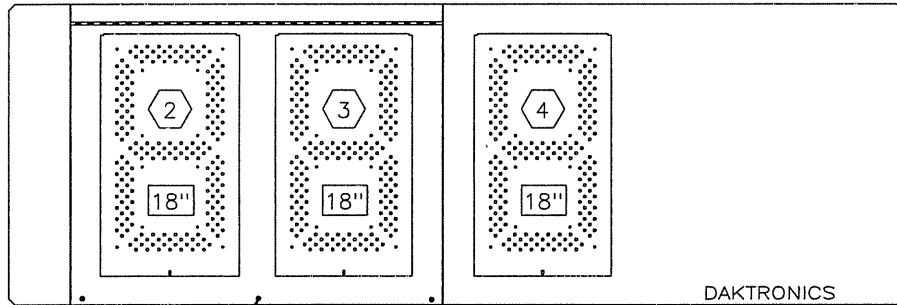
APPR. BY: SCALE: 1=20

1192-E07A-167352

REV.	DATE	DESCRIPTION	BY	APPR.

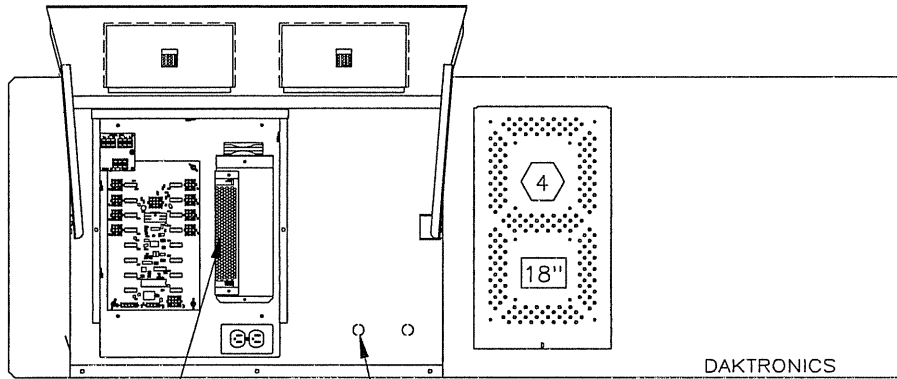


CT-2001-11



REMOVE THE SCREWS TO ACCESS LED DRIVER & PWR/SIG ENCLOSURE.

FRONT VIEW



ENCLOSED 8 COLUMN LED DRIVER AND POWER & SIGNAL ENCLOSURE. (THE COVER HAS BEEN REMOVED TO SHOW THE DRIVER ENCLOSURE DETAIL).

KNOCKOUTS FOR 1/2" CONDUIT

FRONT VIEW

ACCESS DOOR OPEN

① = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; CT-2001-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 31MAY02

REVISION

APPR. BY:

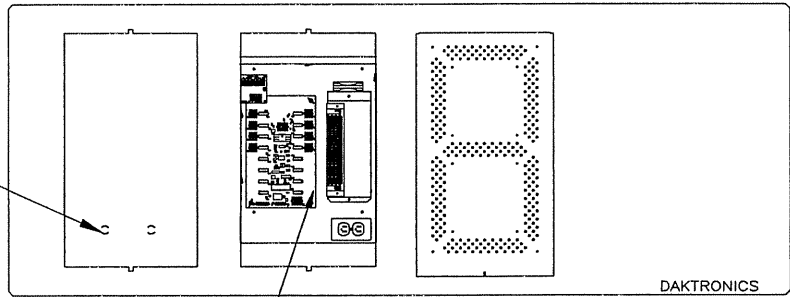
SCALE: 1=15

1192-E07A-168049

REV.	DATE	DESCRIPTION	BY	APPR.

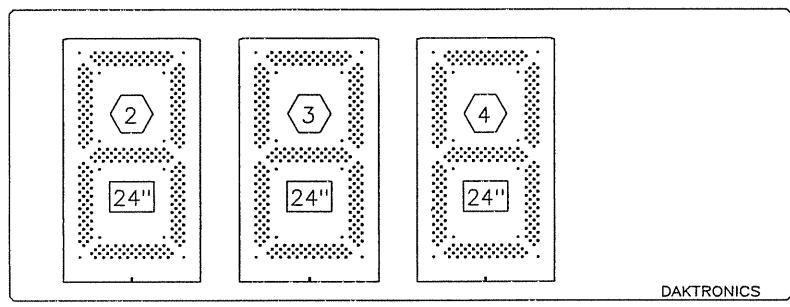
CT-2002-11

KNOCKOUTS FOR  
1/2" CONDUIT





ENCLOSED 8 COLUMN LED DRIVER  
AND POWER & SIGNAL ENCLOSURE.  
(THE COVER HAS BEEN REMOVED TO  
SHOW THE DRIVER ENCLOSURE  
DETAIL).

FRONT VIEW  
FIRST TWO DIGITS REMOVED



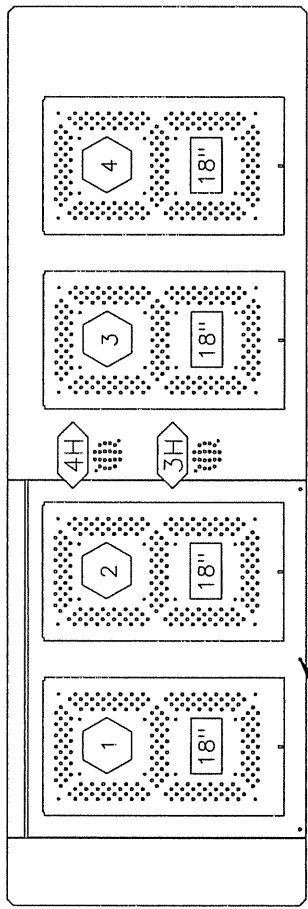
FRONT VIEW

-  = LED DRIVER CONNECTOR  
WIRED TO THAT DIGIT.
-  = DIGIT SIZE

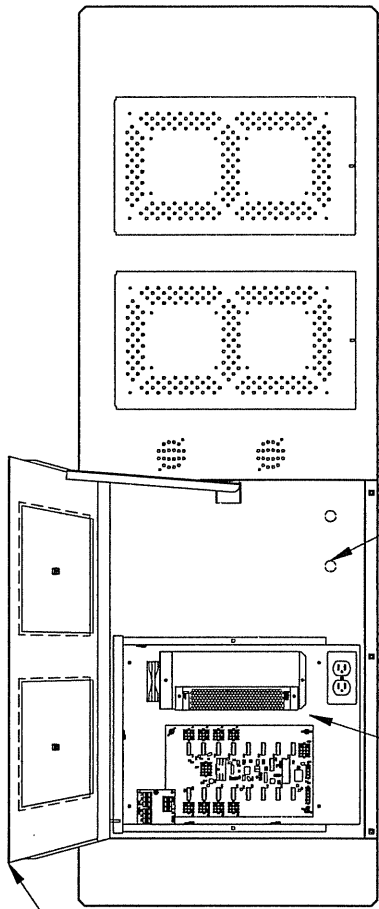
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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; CT-2002-11			
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN	DATE: 31MAY02	
REVISION	APPR. BY:	1192-E07A-168058	
	SCALE: 1=20		

REV.	DATE	DESCRIPTION	BY	APPR.

TI-2019-11



DOOR SHOWN CLOSED. REMOVE SCREWS @3 TO ACCESS THE DRIVER AND THE POWER & SIGNAL ENCLOSURE.



DOOR IS SHOWN OPEN TO SHOW COMPONENT DETAIL.

ENCLOSED 8 COLUMN LED DRIVER AND POWER & SIGNAL ENCLOSURE. (THE DRIVER COVER HAS BEEN REMOVED TO SHOW THE COMPONENT DETAIL).

- = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.
- = LED DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR
- = DIGIT SIZE

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. COPYRIGHT 2002 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

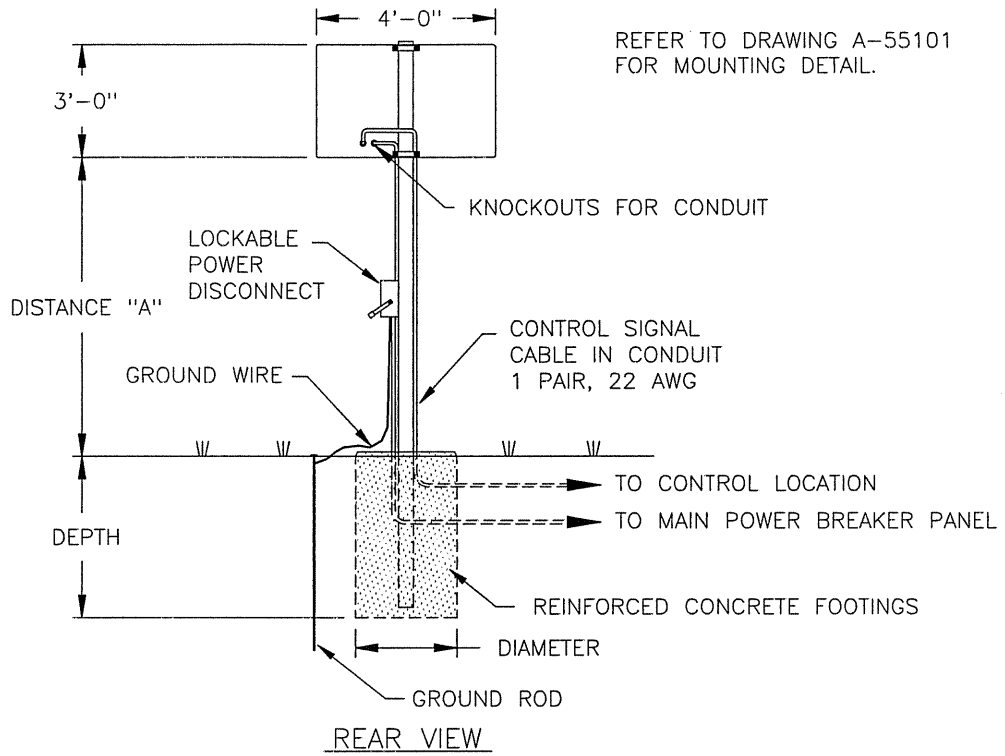
TITLE: COMPONENT LOCATIONS; TI-2019-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 04JUN02

REVISION APPR. BY: SCALE: 1=15

1192-E07A-168199

REV.	DATE	DESCRIPTION	BY	APPR.
01	19SEP02	CHANGED MODEL FROM TI-2017 TO TI-2019	MCOPL	



MODEL TI-2003					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	4'-0" x 3'-0"	BEAM	TS4x4x3/16	TS4x4x3/16	TS4x4x3/16
		FOOTING	2.0' x 3.6'	2.0' x 3.9'	2.0' x 4.6'
12'-0"	4'-0" x 3'-0"	BEAM	TS4x4x3/16	TS4x4x3/16	TS4x4x3/16
		FOOTING	2.0' x 3.8'	2.0' x 4.2'	2.0' x 4.9'
14'-0"	4'-0" x 3'-0"	BEAM	TS4x4x3/16	TS4x4x3/16	TS4x4x3/16
		FOOTING	2.0' x 4.0'	2.0' x 4.4'	2.0' x 5.2'

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<sup>2</sup>

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.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS; TI-2003

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 18JUN02

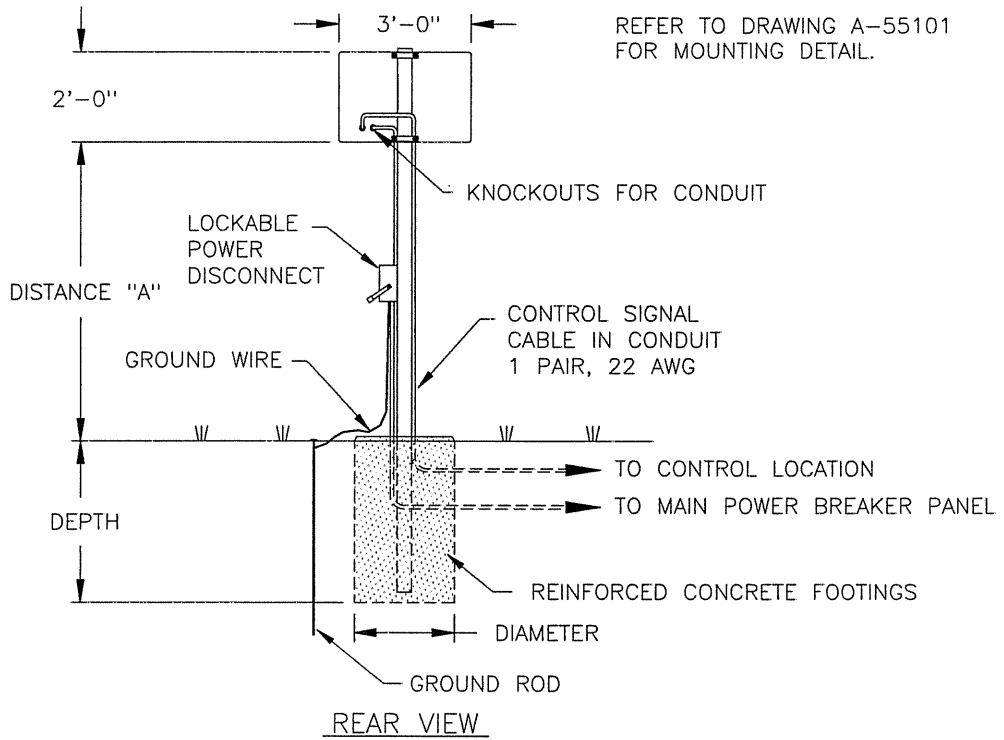
REVISION

APPR. BY:

SCALE: 1=50

1091-E10A-169367

REV.	DATE	DESCRIPTION	BY	APPR.



MODEL TI-218					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	2'-0" x 3'-0"	BEAM	TS4x4x3/16	TS4x4x3/16	TS4x4x3/16
		FOOTING	2.0' x 2.9'	2.0' x 3.2'	2.0' x 3.7'
12'-0"	2'-0" x 3'-0"	BEAM	TS4x4x3/16	TS6x4x3/16	TS6x4x3/16
		FOOTING	2.0' x 3.1'	2.0' x 3.4'	2.0' x 4.0'
14'-0"	2'-0" x 3'-0"	BEAM	TS6x4x3/16	TS6x4x3/16	TS6x4x3/16
		FOOTING	2.0' x 3.3'	2.0' x 3.7'	2.0' x 4.3'

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<sup>2</sup>

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.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS; TI-218

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 18JUN02

REVISION

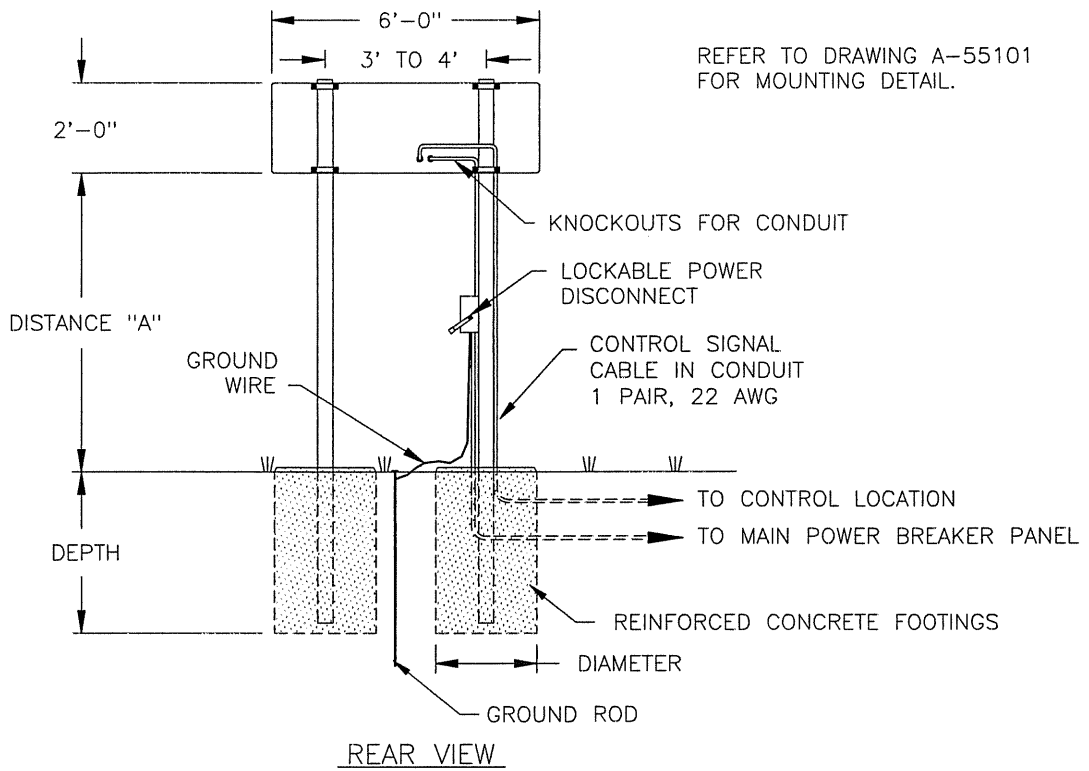
APPR. BY:

00

SCALE: 1=50

1091-E10A-169376

REV.	DATE	DESCRIPTION	BY	APPR.



MODEL TI-418, RO-2011, CT-2001, TI-2019					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	2'-0" x 6'-0"	BEAM FOOTING	W10x8 2.0 X 2.9	W10x8 2.0 X 3.2	W10x9 2.0 X 3.7
12'-0"	2'-0" x 6'-0"	BEAM FOOTING	W10x9 2.0 X 3.1	W6x9 2.0 X 3.4	W6x9 2.0 X 4.0
14'-0"	2'-0" x 6'-0"	BEAM FOOTING	W6x9 2.0 X 3.3	W6x9 2.0 X 3.7	W10x12 2.0 X 4.3

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<sup>2</sup>

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.

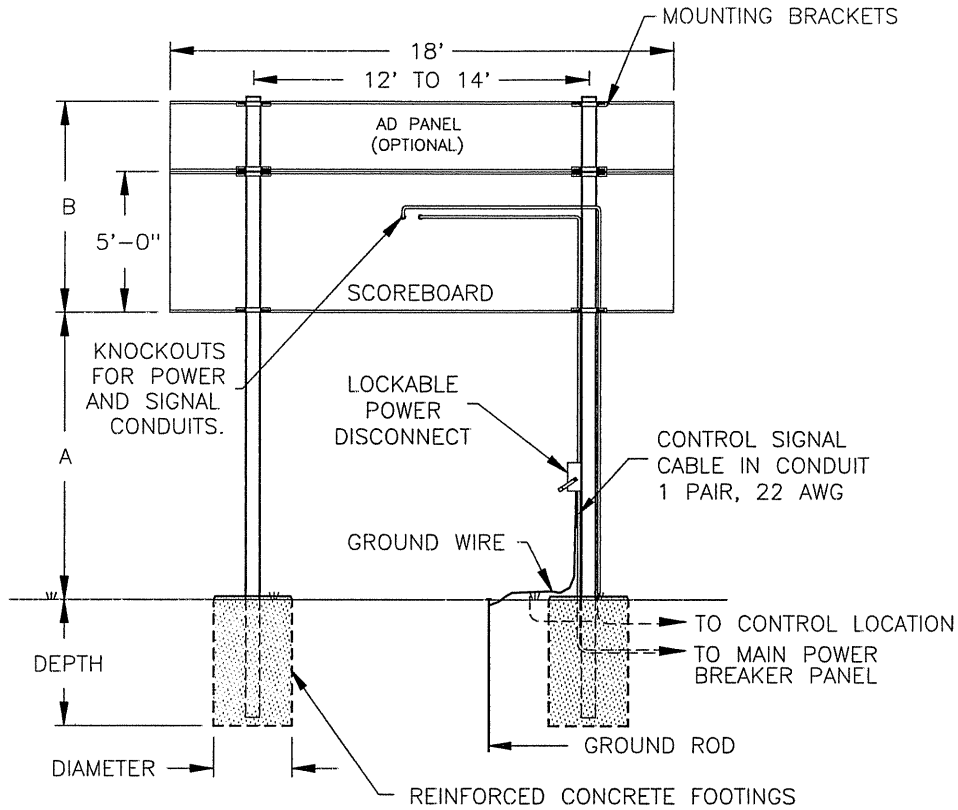
DAKTRONICS, INC. IS NOT RESPONSIBLE FOR STRUCTURES DESIGNED AND INSTALLED BY OTHERS.

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DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
02	22MAY03	ADDED MODEL CT-2001	MCOPL	
1	14 FEB 03	ADDED MODEL RO-2011 AND TI-2019.	TWEBER	

PROJ: OUTDOOR SCOREBOARDS			
TITLE: INSTALLATION SPECS; TI-418/RO-2011/CT-2001/TI-2019			
DES. BY: MCOPLAN		DRAWN BY: MCOPLAN	
DATE: 18JUN02			
REVISION	APPR. BY:		
	SCALE: 1=50	1091-E10A-169380	



**MS-2004**

**REAR VIEW**

MS-2004						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	5'-0"	BEAM	W6X15	W6X15	W8X18
			FOOTING	2.0X5.4	2.0X5.9	2.5X6.4
	2'-0"	7'-0"	BEAM	W8X18	W6X20	W8X24
			FOOTING	2.5X5.7	2.5X6.3	2.5X7.4
12 FT	NONE	5'-0"	BEAM	W6X15	W8X18	W10X22
			FOOTING	2.5X5.2	2.5X5.7	2.5X6.8
	2'-0"	7'-0"	BEAM	W6X20	W10X22	W12X26
			FOOTING	2.5X5.9	2.5X6.5	2.5X7.7
14 FT	NONE	5'-0"	BEAM	W8X18	W10X22	W8X24
			FOOTING	2.5X5.5	2.5X6.0	2.5X7.1
	2'-0"	7'-0"	BEAM	W8X24	W8X24	W8X31
			FOOTING	2.5X6.2	2.5X6.9	2.5X8.1

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

$FOOTING = DIAMETER \times DEPTH$

FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT<sup>2</sup>

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.

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. COPYRIGHT 2002 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS; MS-2004

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 03OCT02

REVISION

APPR. BY:

SCALE: 1=80

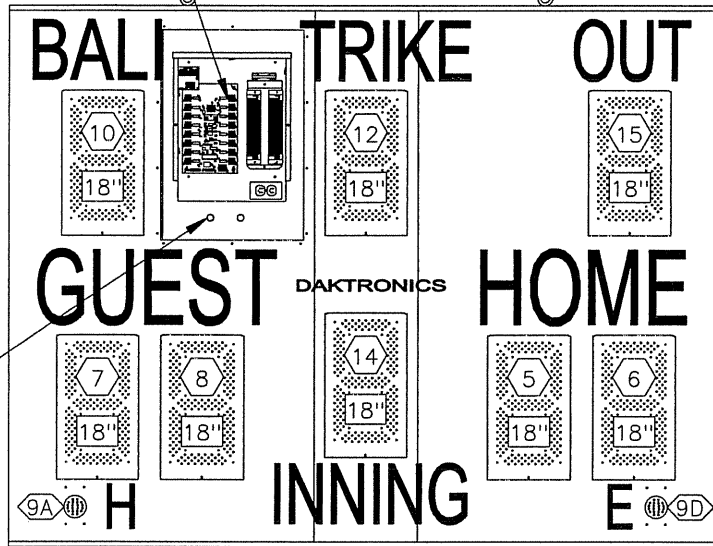
1192-R10A-176286

REV.	DATE	DESCRIPTION	BY	APPR.

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

BA-2010-11

KNOCKOUTS FOR 1/2" CONDUIT



FRONT VIEW

- ⑤ = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.
- ①C = 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.

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. COPYRIGHT 2002 DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; BA-2010-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 22NOV02

REVISION

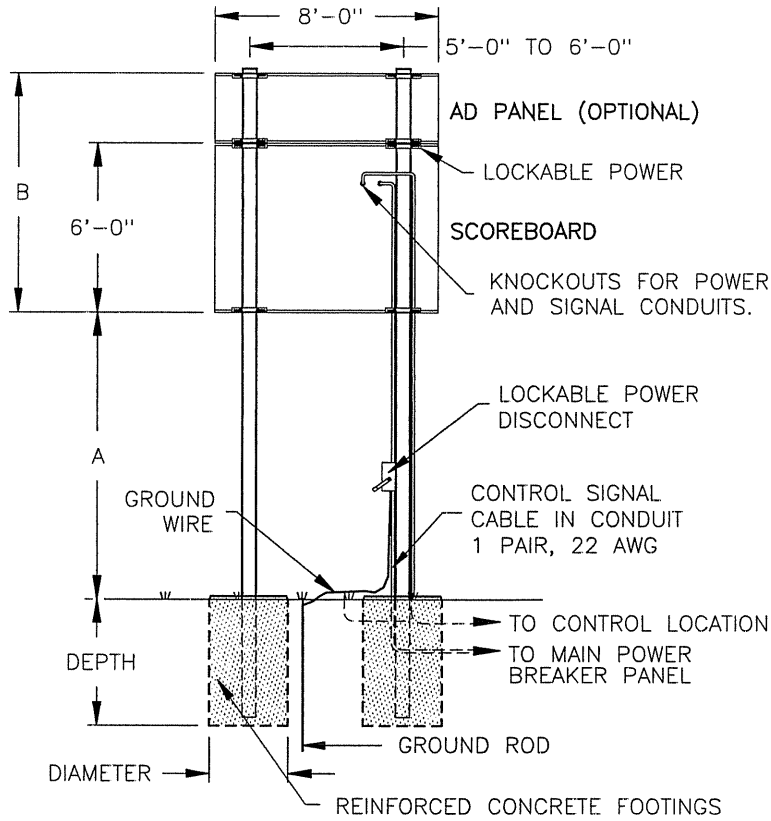
APPR. BY:

SCALE: 1=25

1192-E07A-179193

REV.	DATE	DESCRIPTION	BY	APPR.





**BA-2010**

**REAR VIEW**

BA-2010						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	6'-0"	BEAM	W6X12	W10X15	W6X15
			FOOTING	2.0X5.0	2.0X5.5	2.0X6.5
	2'-0"	8'-0"	BEAM	W6X15	W6X15	W6X20
			FOOTING	2.0X5.6	2.0X6.2	2.0X7.3
12 FT	NONE	6'-0"	BEAM	W6X15	W6X15	W8X18
			FOOTING	2.0X5.3	2.0X5.9	2.0X6.9
	2'-0"	8'-0"	BEAM	W6X15	W8X18	W8X24
			FOOTING	2.0X5.9	2.0X6.5	2.0X7.6
14 FT	NONE	6'-0"	BEAM	W6X15	W8X18	W10X22
			FOOTING	2.0X5.6	2.0X6.1	2.0X7.2
	2'-0"	8'-0"	BEAM	W6X20	W6X20	W8X24
			FOOTING	2.0X6.2	2.0X6.8	2.0X8.0

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

FOOTING = DIAMETER X DEPTH

FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT<sup>2</sup>

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.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS; BA-2010

DES. BY: MCOPL/RNEYEN

DRAWN BY: MCOPLAN

DATE: 27NOV02

REVISION

APPR. BY:

SCALE: 1=80

1192-R10A-179304

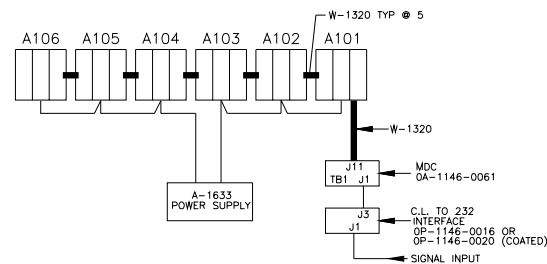
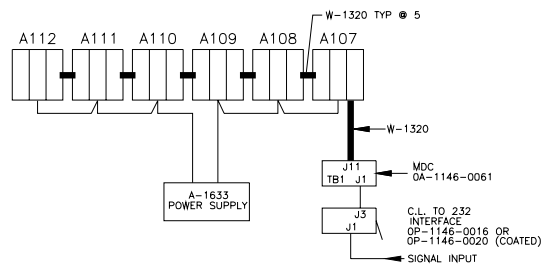
REV.	DATE	DESCRIPTION	BY	APPR.



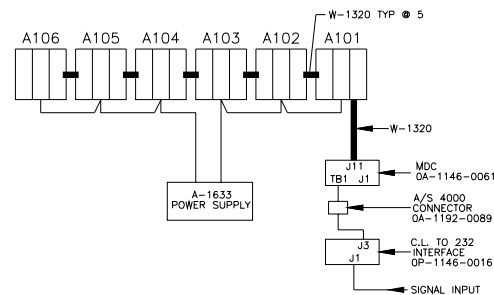
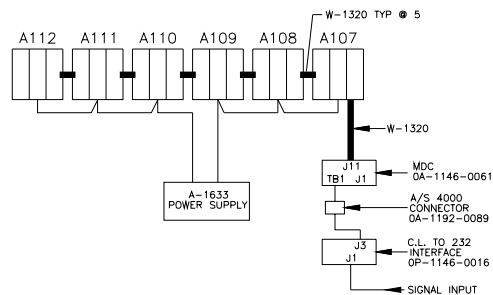
# GUEST

# HOME

## AS-5000 MASTER-MASTER LAYOUT



## AS-4000 MASTER-MASTER LAYOUT



**NOTE:**

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

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

USE THE FOLLOWING ADAPTER FOR A/S 4000 APPLICATIONS  
OA-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

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

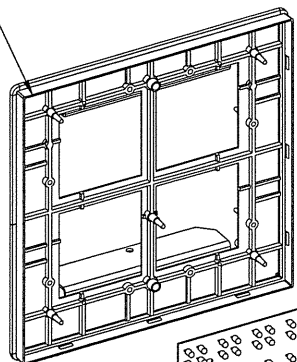
TITLE: CONTROL LAYOUT; OUTDOOR LED TNMC

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

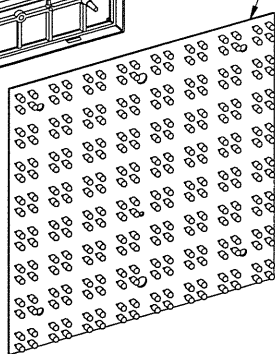
REV.	DATE	DESCRIPTION	BY	APPR.
01	24 JUN 02	ADDED OP-1146-0020 TO CL TO RS232 INTERFACE PART.	MWM	

REVISION APPR. BY: SCALE: 1=1 1192-E10B-107507

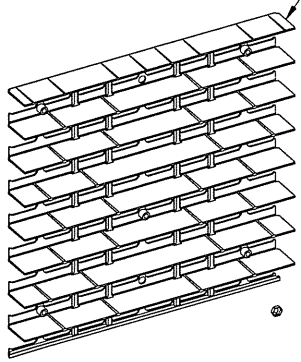
PLASTIC HOUSING WITH WEATHERSTRIPPING FOR WATERPROOFING



SINGLE LED AND DRIVER PANEL



LOUVER



LATCH ACCESS PLUG #2 FOR FRONT AND REAR MODULE ACCESS AND WATERPROOFING



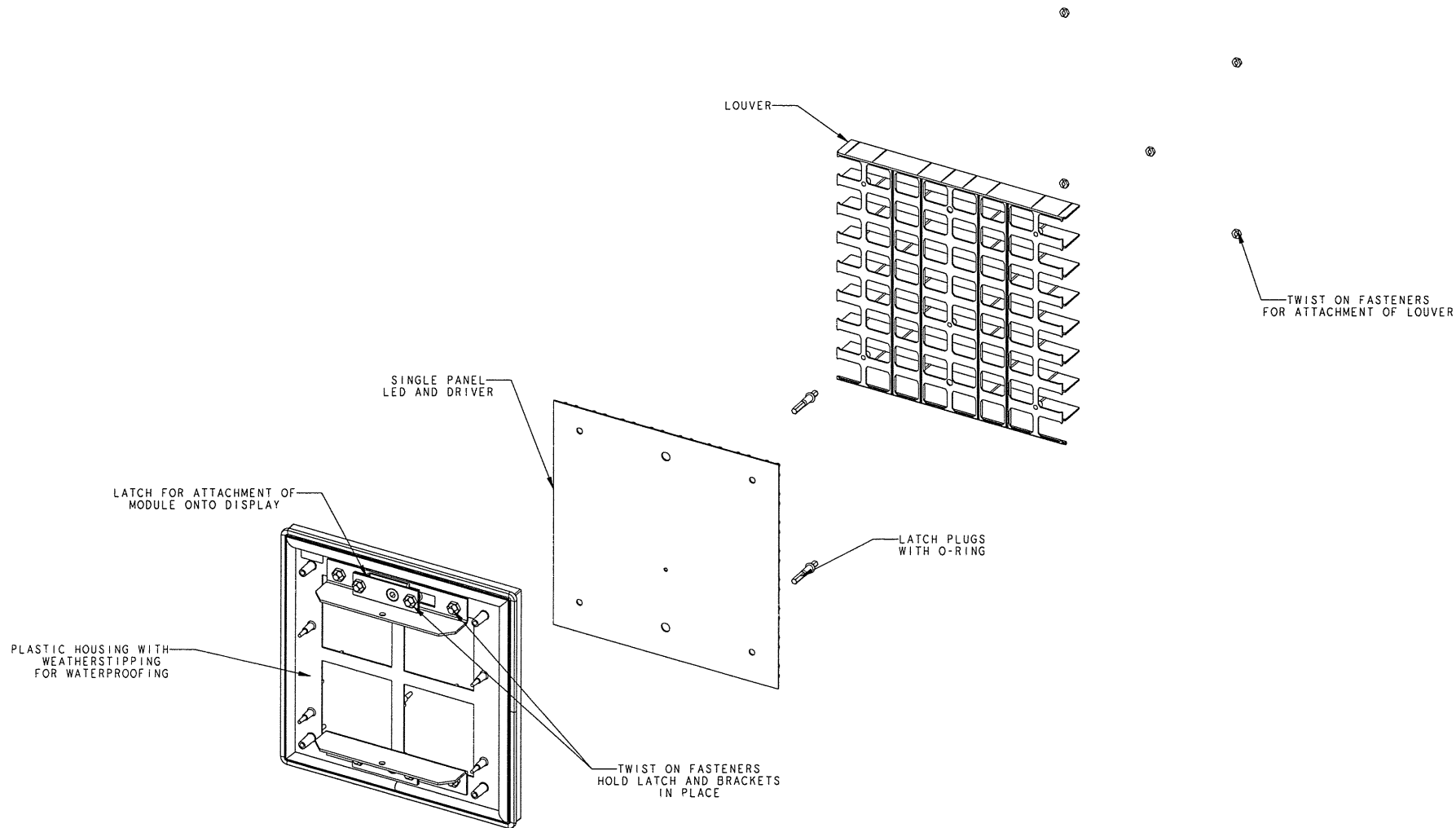
TWIST ON FASTENERS #5 FOR ATTACHMENT OF LOUVER



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

REV.	DATE	DESCRIPTION	BY	APPR.

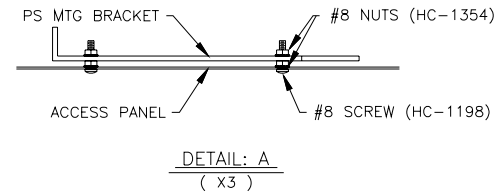
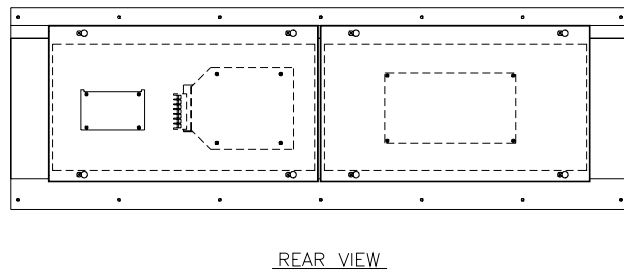
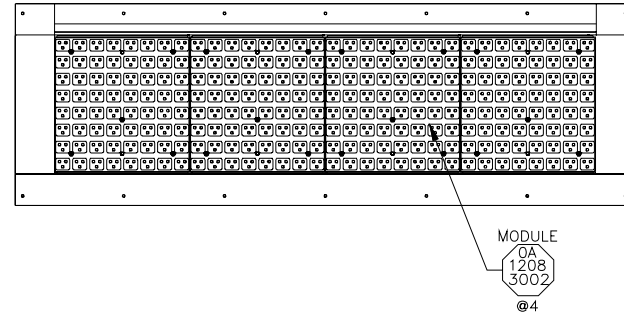
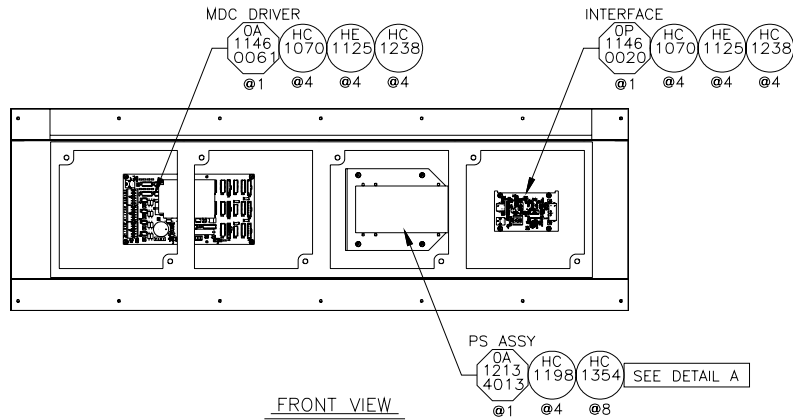
1208-E10B-126111



DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	34MM OUTDOOR GALAXY
TITLE:	EXPLODED REAR VIEW; SINGLE PANEL MODULE
DES. BY:	NANDAL
DRAWN BY:	DNUGTEREN
DATE:	10 JAN 00
REVISION	SHEET 1 OF DWG 126112
SCALE:	1=2

REV.	DATE	DESCRIPTION	BY	APPR.

1208 - E10B - 126112

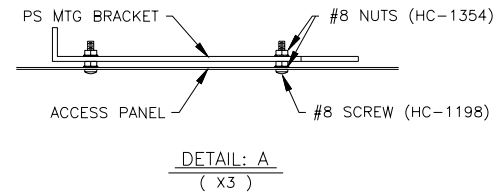
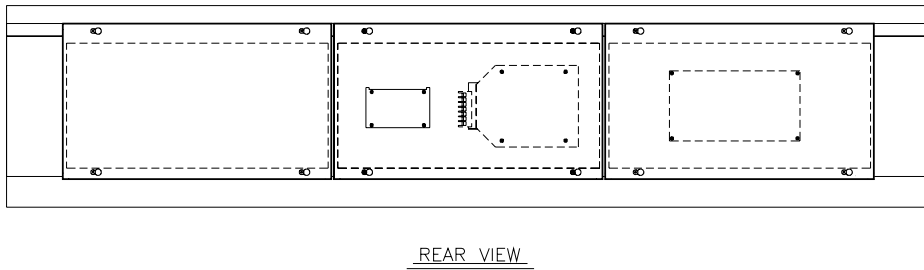
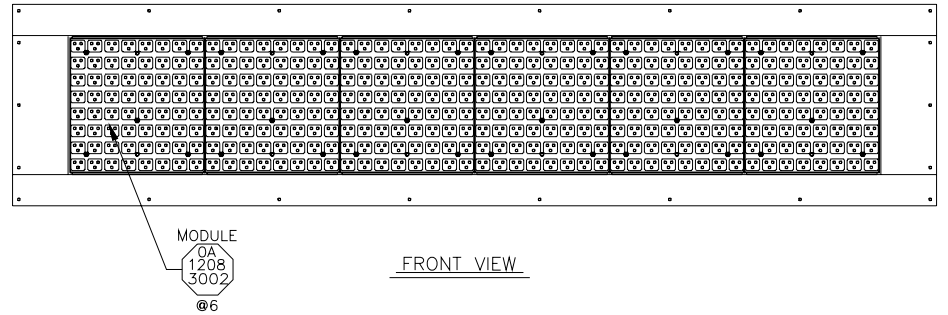
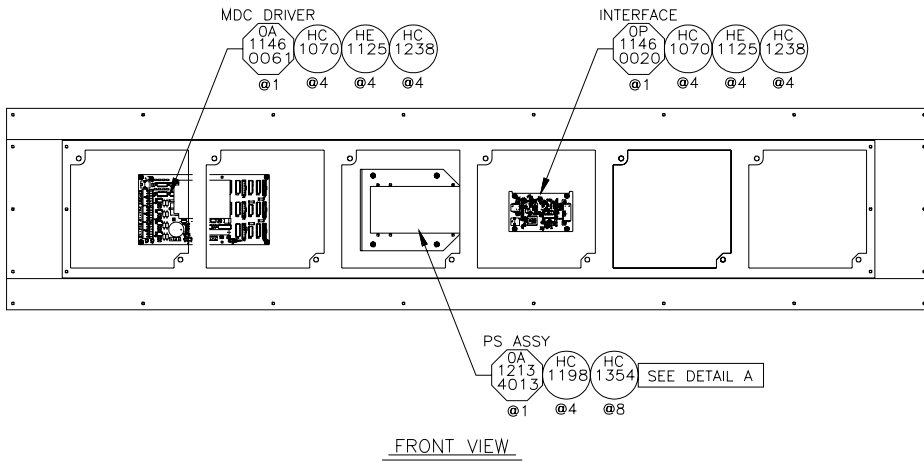


ASSEMBLY PACKET

OA-1192-1079.....F. ASSY; 832 LED TNMC, RED

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: F. ASSY; 832 LED TNMC, RED	
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN DATE: 15NOV01
REVISION	APPR. BY: 1192-E10B-159055
SCALE: 1=10	

REV.	DATE	DESCRIPTION	BY	APPR.
01	26DEC01	INCREASED WIDTH OF ASSEMBLY	MCOPL	

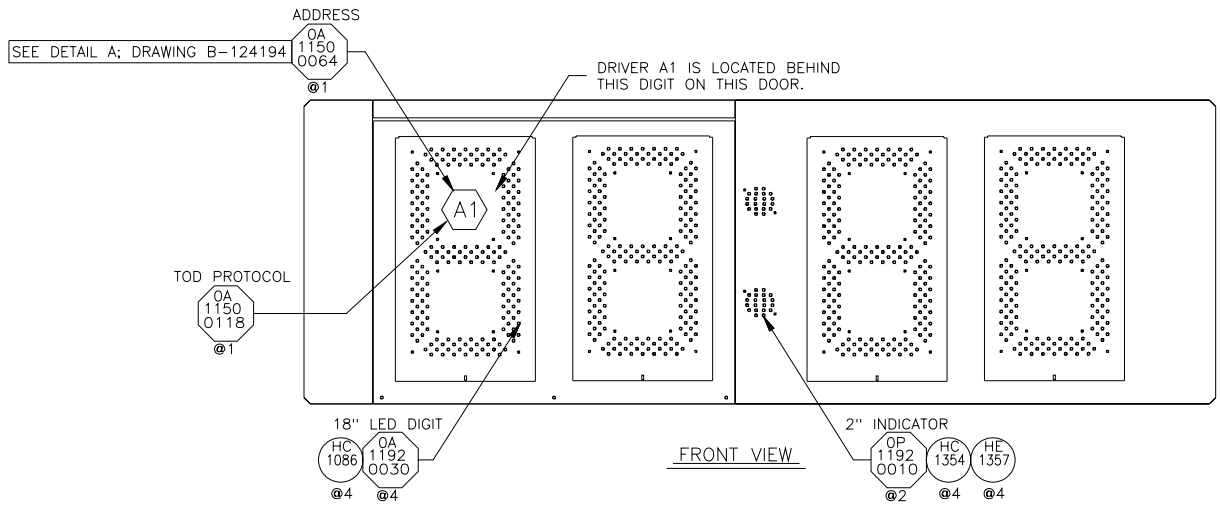


ASSEMBLY PACKET

OA-1192-1080.....F. ASSY; 848 LED TNMC, RED

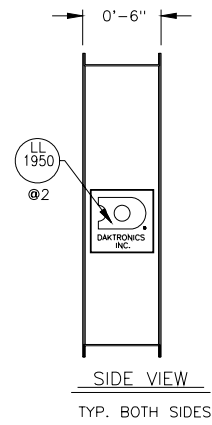
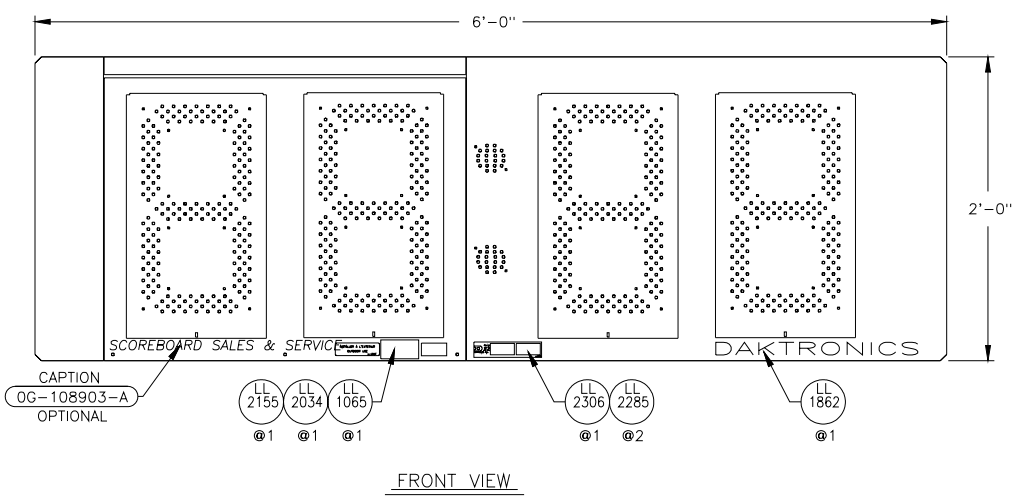
DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: F. ASSY; 848 LED TNMC, RED	
DES. BY: MCOPLAN	DATE: 15NOV01
DRAWN BY: MCOPLAN	
REVISION	APPR. BY:
	SCALE: 1=10
1192-E10B-159081	

REV.	DATE	DESCRIPTION	BY	APPR.



ADDRESS SETTINGS:
DRIVER: A1
ADDRESS PLUG: OA-1150-0064
ADDRESS: 1
NOTES: CUT THE BLACK, VIOLET, BLUE, PINK, TAN, ORANGE & RED WIRES.

TI-2019-11 WITH LED DIGITS	
SPECIFICATIONS	
MODEL:	TI-2019-11
VOLTS:	120V AC
AMPS:	1.25
MAX WATTS:	150



ASSEMBLY PACKET

OA-1192-1200....F. ASSY; TI-2019-11

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DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	OUTDOOR LED SCOREBOARDS
TITLE:	F. ASSY; TI-2019-11
DES. BY:	MCOPLAN
DRAWN BY:	MCOPLAN
DATE:	05JUN02
REVISION	APPR. BY:
SCALE:	1=10
1192-E10B-168198	

REV.	DATE	DESCRIPTION	BY	APPR.
02	16 JAN 03	ADDED TOD PROTOCOL IDENTIFIER	AJL	
01	19SEP02	CHANGED MODEL FROM TI-2017 TO TI-2019	MCOPL	



# Appendix B: Eyebolts

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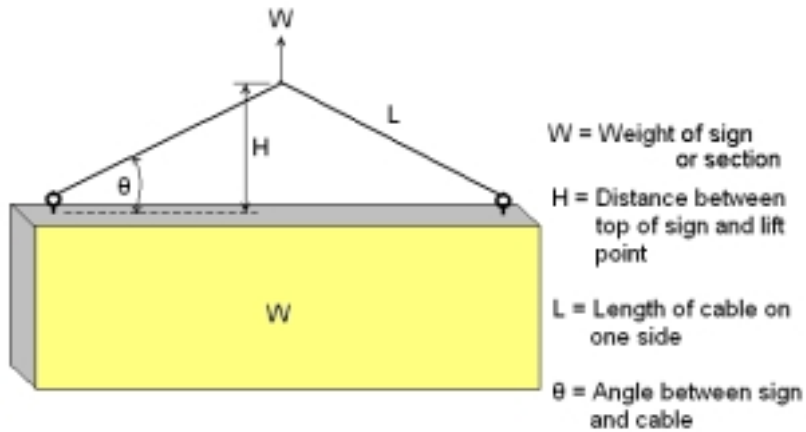
Eyebolts ..... ED7244



# Eyebolts

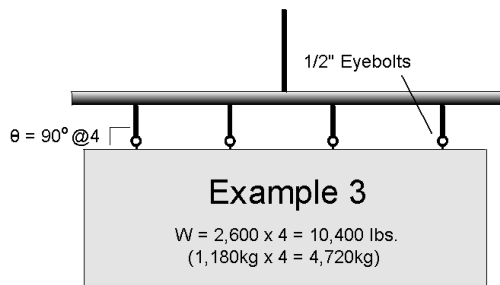
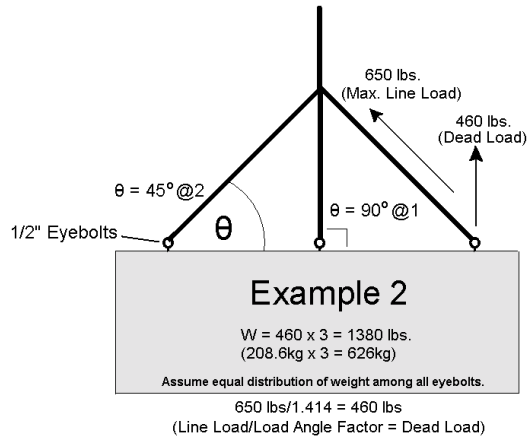
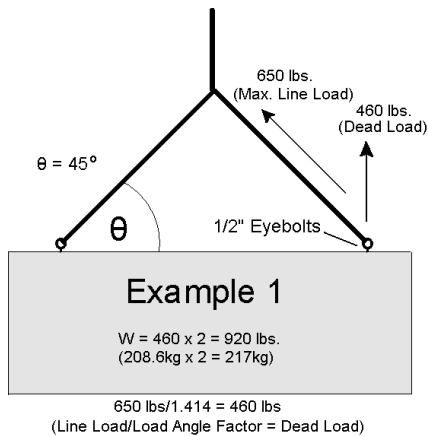
Almost every display that leaves Daktronics is equipped with eyebolts for lifting the display. There are two standard sizes of eyebolts: 1/2" and 5/8".

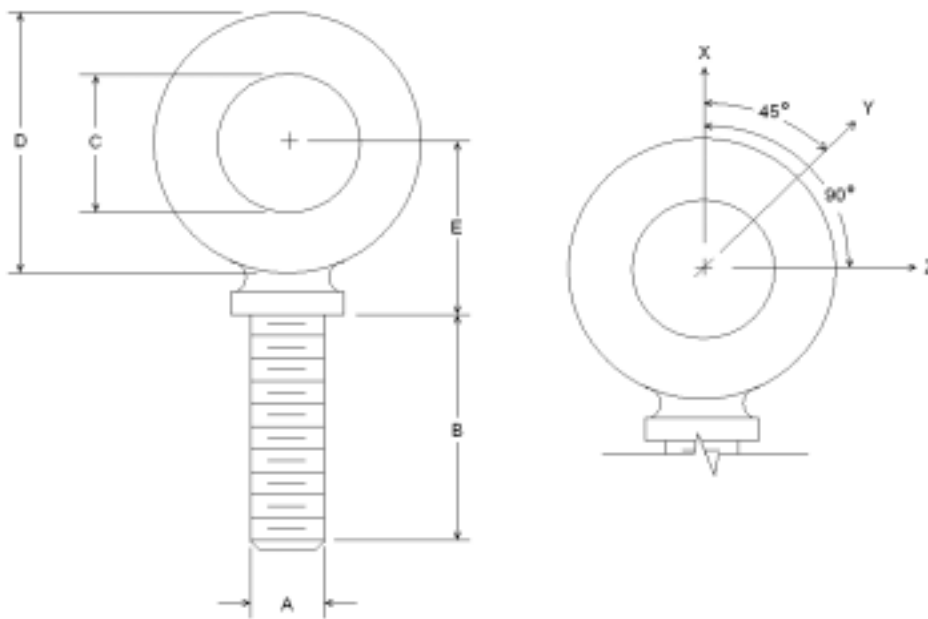
**Load Increase Factor:** The load increases as the lift angle ( $\theta$ ) decreases. The allowable load on the eyebolts also decreases with the lift angle due the bending stress on the eyebolts. In sum, the smaller the angle between the cable and the top of the display, the lighter the sign must be 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

$\theta$	1/2"		5/8"	
	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
<b>1/2</b>	<b>1-1/2</b>	<b>1-3/16</b>	<b>2-1/16</b>	<b>1-13/32</b>	<b>25</b>	<b>3,900</b>	<b>9,200</b>	<b>Blank 1/2-13</b>	<b>1-11/32</b>	<b>2,600</b>	<b>650</b>	<b>520</b>
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
<b>5/8</b>	<b>1-3/4</b>	<b>1-3/8</b>	<b>2-1/2</b>	<b>1-11/16</b>	<b>27</b>	<b>6,000</b>	<b>14,700</b>	<b>Blank 5/8-11</b>	<b>1-9/16</b>	<b>4,000</b>	<b>1,000</b>	<b>800</b>
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.