Single-Section Outdoor LED Scoreboards

Installation, Maintenance, and Specifications Manual

ED12561

MODELS

BA-515-11	BA-1018-11	CT-2002-11	MS-2004-11	SO-2008-11
BA-518-11	BA-2003-11	FB-824-11	MS-2006-11	TI-218-11
BA-618-11	BA-2004-11	MS-915-11	MS-2012-11	TI-418-11
BA-624-11	BA-2005-11	MS-918-11	SO-824-11	TI-2003-11
BA-718-11	CT-2001-11	MS-2002-11	SO-918-11	TI-2017-11

ED12561
Product 1192
Rev 3 – 8 February 2002

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

Scoreboard Serial No. _____

*Scoreboard Model No.*_____

*Date Installed*_____

DAKTRONICS

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Table of Contents

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 this system, 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 your scoreboard.
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 not using the scoreboard.***
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.

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

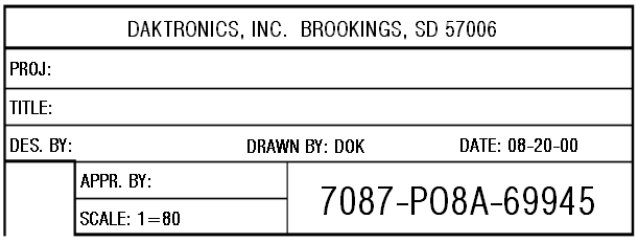


Figure 1: Daktronics Drawing Label

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

The serial and model number of a Daktronics scoreboard can be found on the ID label, located on the display. This 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.

Figure 2: Scoreboard ID Label

1.2 Manual Overview

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 (TNMC).
Section 10:	Contains descriptions and installation instructions for scoreboard options.
Appendix A:	Contains all drawings referenced in this manual.
Appendix B:	Contains ED-7244, a detailed instruction on scoreboard lifting and eyebolts.

1.3 Product Overview

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

Featuring large, highly visible digits, the boards use light emitting diodes to illuminate the display. (An LED is a tiny, solid-state device made of a semiconductor material that transforms electrical current into light.) Scoreboards in this series typically use red-orange LEDs for best outdoor display. Because of their LED technology, the scoreboards consume little power – barely more than a single household lamp. (Maximum power usage for the largest scoreboard in this series is 560 watts.)

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

1.4 Model Identification

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

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-1518* scoreboard, "15" 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 and power supply: *–9* and *-10* are indoor displays, 120 V and 230 V respectively; and *-11* and *-12* are outdoor scoreboards, 120 V and 230 V. All of the LED scoreboards in this manual carry the *-11* suffix, signifying that they have been designed and manufactured for outdoor use and have a 120 V AC power requirement.

1.5 Product Safety Approval

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

Use the following drawings to determine your scoreboard's model number. The drawings, located in the **Appendix**, are grouped with others in alphanumeric order by drawing number. Individual scoreboard drawings are also grouped in the **Appendix**.

Reference Drawings:

Single-Section Scoreboard Models ..... **Drawing A-142912**
Single Section LED Scoreboard w/LED TNMC ..... **Drawing A-152936**
Single Section LED Scoreboard Models ..... **Drawing A-152950**

Section 3: Specifications

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

3.1 Single-Section Scoreboards

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

Model	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-515-11	H3’-0”, W6’-0”, D11” (914 mm, 1829 mm, 279 mm)	92 lbs 42 kg (95 lb) (44 kg)	15” (381 mm)	100 W	120 V AC	1 A	A1 61
BA-518-11	H4’-0”, W9’-0”, D6” (1219 mm, 2743 mm, 152 mm)	96 lb 44 kg (128 lb) (59 kg)	18” (457 mm)	100 W	120 V AC	1 A	A1 61
BA-618-11	H5’-0”, W14’-0”, D6” (1524 mm, 4267 mm, 152 mm)	200 lb 91 kg (530 lb) (240 kg)	18” (457 mm)	110 W	120 V AC	1 A	A1 61
BA-624-11	H6’-0”, W16’-0”, D6” (1829 mm, 4877 mm, 152 mm)	300 lb 136 kg (695 lb) (316 kg)	24” (610 mm)	140 W	120 V AC	1.2 A	A1 61
BA-718-11	H4’-0”, W12’-0”, D6” (1219 mm, 3658 mm, 152 mm)	128 lbs 58 kg (458 lb) (207 kg)	18” (457 mm)	135 W	120 V AC	1.2 A	A1 62
BA-1018-11	H6’-0”, W14’-0”, D6” (1829 mm, 4267 mm, 152 mm)	216 lb 98 kg (567 lb) (257 kg)	18” (457 mm)	165 W	120 V AC	1.4 A	A1 12
BA-2003-11	H4'-6", W10'-0", D8" (1372 mm, 3048 mm, 203 mm)	200 lb 91 kg (380 lb) (172 kg)	36" (914 mm)	115 W	120 V AC	1 A	A1 11

Model	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
BA-2004-11	H6'-6", W20'-0", D6" (1981 mm, 6096 mm, 152 mm)	600 lb 272 kg (1,100 lb) (499 kg)	Ball, strike, out, hit/error 18" (457 mm) Inning, runs 15" (381 mm)	458 W	120 V AC	3.9 A	A1 67 A2 68 A3 69
BA-2005-11	H6'-6", W20'-0", D6" (1981 mm, 6096 mm, 152 mm)	600 lb 272 kg (1,100 lb) (499 kg)	Time, ball, strike, out, 18" (457 mm) Inning, runs 15" (381 mm)	476 W	120 V AC	4 A	A1 67 A2 68 A3 69
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)	55 W	120 V AC	.5 A	A1 1
CT-2002-11	H2'-7", W7'-0", D11" (787 mm, 2134 mm, 279 mm)	52 lb 24 kg (99 lb) (45 kg)	24"	70 W	120 V AC	.6 A	A1 1
FB-824-11	H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)	200 lb 92 kg (510 lb) (232 kg	24"	65 W	120 V AC	.6 A	A1 11
MS-915-11	H4'-0", W8'-0", D11" (1219 mm, 2438 mm, 279 mm)	88 lbs 40 kg (163 lb) (74 kg)	15" (381 mm)	160 W	120 V AC	1.4 A	A1 11
MS-918-11	H5'-0", W14'-0", D6" (1524 mm, 4267 mm, 152 mm)	220 lb 100 kg (585 lb) (265 kg)	Clock, scores: 18" (457 mm) Inning 15" (381 mm)	160 W	120 V AC	1.4 A	A1 11

Model	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	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)	205 W	120 V AC	1.7 A	A1 11
MS-2002-11 w/832-10 TNMC	H4’-6", W16’-0", D6" (1372 mm, 4877 mm, 152 mm)	280 lb 127 kg 532 lb 242 kg	24" (610 mm)	505 W	120 V AC	4.2 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)	360 W	120 V AC	3 A	A1 74 A2 75
MS-2006-11	H7'-0", W25'-0", D6" (2134 mm, 7620 mm, 152 mm)	560 lb 254 kg (1,064 lb) (483 kg)	Clock, scores 30" (762 mm) Period 24" (610 mm)	260 W	120 V AC	2.15 A	A1 11
MS-2006-11 w/848-10 TNMC	H7'-0", W25'-0", D6" (2134 mm, 7620 mm, 152 mm)	640 lb 290 kg (1,216 lb) (552 kg	Clock, scores 30" (762 mm) Period 24" (610 mm)	560 W	120 V AC	4.2 A	A1 11
MS-2012-11	H5'-0", W25'-0", D6" (1524 mm, 7620 mm, 152 mm)	300 lb 136 kg (695 lb) (315 kg)	18" (457 mm)	350 W	120 V AC	3 A	A1 74 A2 75
SO-824-11	H4'-0", W14'-0", D6" (1219 mm, 4877 mm, 152 mm)	200 lb 92 kg (510 lb) (232 kg)	24" (610 mm)	65 W	120 V AC	.6 A	A1 11
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)	50 W	120 V AC	.4 A	A1 11

Model	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size	Maximum Wattage	Power	Amps per Line (Single Phase)	Driver Number and Address
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)	230 W	120 V AC	2 A	A1 17
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)	35 W	120 V AC	.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)	75 W	120 V AC	.6 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)	60 W	120 V AC	.5 A	A1 2
TI-2017-11	H2'-0", W6'-0", D11" (610 mm, 1829 mm, 279 mm)	40 lb 18 kg (77 lb) 35 kg	18" (457 mm)	71 W	120 V AC	.6 A	A1 1

Section 4: Component Locations

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

Model	Drawing Title	Drawing
BA-515-11	Component Locations, BA-515-11	A-141284
BA-518-11	Component Locations, BA-518-11	A-129868
BA-618-11	Component Locations, BA-618-11	A-129899
BA-624-11	Component Locations, BA-624-11	A-141489
BA-718-11	Component Locations, BA-718-11	A-129903
BA-1018-11	Component Locations, BA-1018-11	A-141589
BA-2003-11	Component Locations, BA-2003-11	A-158302
BA-2004-11	Component Locations, BA-2004-11	A-152749
BA-2005-11	Component Locations; BA-2005-11	A-152929
CT-2001-11	Component Locations; CT-2001-11	A-149847
CT-2002-11	Component Locations; CT-2002-11	A-149866
FB-824-11	Component Locations, FB-824-11	A-142670
MS-915-11	Component Locations, MS-915-11	A-129900
MS-918-11	Component Locations, MS-918-11	A-141427
MS-2002-11	Component Locations; MS-2002-11	A-142624
MS-2004-11	Component Locations; MS-2004-11	A-142627
MS-2006-11	Component Locations; MS-2006-11	A-149788
MS-2012-11	Component Locations; MS-2012-11	A-152199
SO-824-11	Component Locations, SO-824-11	A-142888
S0-918-11	Component Locations, SO-918-11	A-142737
SO-2008-11	Component Locations; SO-2008-11	A-149091
TI-218-11	Component Locations, TI-218-11	A-142031
TI-418-11	Component Locations, TI-418-11	A-142034
TI-2003-11	Component Locations, TI-2003-11	A-145239
TI-2017-11	Component Locations; TI-2017-11	A-153777

Section 5: Schematics

Reference Drawings:

Schematic; 8 and 16 Col. O.D. LED Drvr and TNMC..... **Drawing A-141797**
Schematic; 1 Driver..... **Drawing A-141799**
Schematic; 1 Driver w/TNMC..... **Drawing A-141806**
Schematic; 2 Drivers..... **Drawing A-141807**
Schematic; 3 Drivers..... **Drawing A-142358**

Use the following table to determine the correct driver and schematic for your scoreboard model. Individual drivers (both 8- and 16-column drivers as well as team name message center drivers) are shown on the schematic, **Drawing A-141797**.

Model	Driver (Number)	Drawing
BA-515-11	8-column driver (1)	A-141799
BA-518-11	8-column driver (1)	A-141799
BA-618-11	8-column driver (1)	A-141799
BA-624-11	8-column driver (1)	A-141799
BA-718-11	8-column driver (1)	A-141799
BA-1018-11	16-column driver (1)	A-141799
BA-2003-11	8-column driver (1)	A-141799
BA-2004-11	16-column driver (3)	A-142358
BA-2005-11	16-column driver (3)	A-142358
CT-2001-11	8-column driver (1)	A-141799
CT-2002-11	8-column driver (1)	A-141799
FB-824-11	16-column driver (1)	A-141799
MS-915-11	16-column driver (1)	A-141799
MS-918-11	16-column driver (1)	A-141799
MS-2002-11	16-column driver (1)	A-141799
MS-2002-11 w/832-10 TNMC	16-column driver (1 w/TNMC)	A-141806
MS-2004-11	16-column driver (2)	A-141807
MS-2006-11	16 column driver (1)	A-141799
MS-2006-11 w/832-10 TNMC	16 column-driver (1 w/TNMC)	A-141806
MS-2012-11	16-column driver (2)	A-141807
SO-824-11	16-column driver (1)	A-141799
SO-918-11	16-column driver (1)	A-141799
SO-2008-11	16-column driver (1)	A-141799
TI-218-11	8-column driver (1)	A-141799
TI-418-11	8-column driver (1)	A-141799
TI-2003-11	8-column driver (1)	A-141799
TI-2017-11	8-column driver (1)	A-141799

Section 6: Mechanical Installation

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

6.1 Scoreboard Protective Devices

☛ ***Note: Some users install devices to protect the scoreboard from projectiles. 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

Reference Drawings:

Installation Specifications, BA-515 ..... **Drawing A-55003**
Installation Specifications, BA-518 ..... **Drawing A-55004**
Installation Specifications, BA-618 ..... **Drawing A-55006**
Installation Specifications, BA-624 ..... **Drawing A-55007**
Installation Specifications, BA-718 ..... **Drawing A-55005**
Installation Specifications, BA-1018 ..... **Drawing A-61904**
Installation Specifications, BA-2003 ..... **Drawing A-158322**
Installation Specifications; BA-2004 & BA-2005..... **Drawing A-152777**
Installation Specifications, MS-915..... **Drawing A-113568**
Installation Specifications, MS-918..... **Drawing A-55009**
Installation Specifications, MS-2002..... **Drawing A-127195**
Installation Specifications, MS-2004..... **Drawing A-128788**
Installation Specifications, MS-2006..... **Drawing A-135575**
Installation Specifications; MS-2012..... **Drawing A-152790**
Installation Specifications, SO-918..... **Drawing A-55010**
Installation Specifications, SO-2008..... **Drawing A-149074**

Refer to the installation specification drawings listed above for the rear view of each of the models.

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

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 the illustration below and in **Drawing A-44548**.

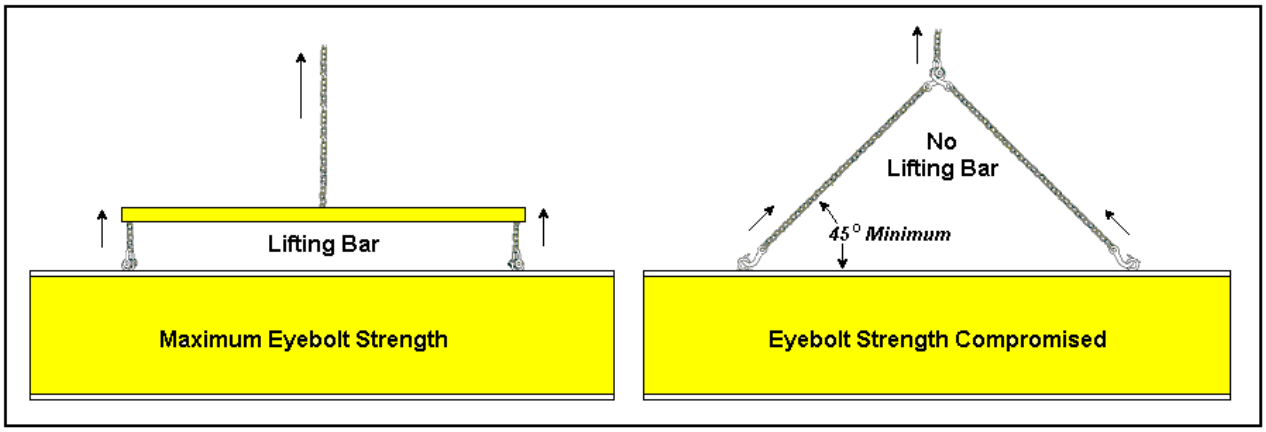


Figure 3: Lifting the Display

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

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

Take special care to ensure the rated load of the eyebolts is not exceeded. Refer to **ED-7244**, **Eyebolts**, to determine allowable loads and load angles for the lifting hardware. **ED-7244** is located in the **Appendix** of this manual.

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

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

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

In typical multi-section installations, the lower scoreboard section is installed first and secured to the support beams, and 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 the lift eyebolts are removed, plug the holes with bolts and the rubber sealing washers that were removed with the eyebolts. Apply silicone or another waterproof sealant to the eyebolt openings. Inspect the top and sides of the display for any other holes or openings that may allow moisture to enter the display, and plug and seal those openings as well.

6.4 Scoreboard Mounting

Use the following table to determine the mounting method required for your scoreboard.

Method 1	BA-618-11, BA-624-11, BA-1018-11, BA-2003-11, BA-2004-11, BA-2005-11, FB-824-11, MS-918-11, MS-2002-11, MS-2004-11, MS-2012-11, SO-824-11, SO-918-11, SO-2008-11
Method 2	BA-515-11, BA-518-11, BA-718-11, CT-2001-11, CT-2002-11, MS-915-11, MS-2006-11, TI-218-11, TI-418-11, TI-2003-11, TI-2017-11

Method 1

Reference Drawings:

Display Mounting..... **Drawing A-44412**
Ad Panel Mounting..... **Drawing A-52187**
Installation Specifications, BA-618 ..... **Drawing A-55006**
Installation Specifications, BA-624 ..... **Drawing A-55007**
Installation Specifications, BA-1018 ..... **Drawing A-61904**
Installation Specifications, BA-2003 ..... **Drawing A-158322**
Installation Specifications; BA-2004 & BA-2005..... **Drawing A-152777**
Installation Specifications, MS 918 ..... **Drawing A-55009**
Installation Specifications, MS-2002..... **Drawing A-127195**
Installation Specifications, MS-2004..... **Drawing A-128788**
Installation Specifications; MS-2012..... **Drawing A-152790**
Installation Specifications, SO-918..... **Drawing A-55010**
Installation Specifications, SO-2008..... **Drawing A-149074**

Drawing A-44412 shows the hardware used for mounting the scoreboard to the beams. Each section of the scoreboard attaches at the top and the bottom to all the beams. **Drawing A-44412** 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 model to determine the center-to-center distance of the poles for each model.

Review the illustrations of the mounting hardware in **Drawing A-44412**, then use the following procedure for each section.

1. Using 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 $^1/_2$" square nut into each mounting clamp. Screw a threaded rod into each of the nuts from the rear.
3. Position the scoreboard at the front of the beams with the threaded rods extending from the rear of the clamps, straddling the beams. Raise the scoreboard section to the desired height.
4. Slide clamping angles over the ends of the rods and loosely install the washers and nuts.
5. Make final adjustments in the positioning of the scoreboard. Tighten the $^3/_8$" bolts in the mounting clamps.
6. Make sure that the threaded rods are perpendicular to the scoreboard and tighten all of the $^1/_2$" nuts.

Method 2

Reference Drawings:

Scoreboard Mounting..... **Drawing A-55101**
Installation Specifications, BA 515 ..... **Drawing A-55003**
Installation Specifications, BA 518 ..... **Drawing A-55004**
Installation Specifications, BA 718 ..... **Drawing A-55005**
Installation Specifications, MS-915..... **Drawing A-113568**
Installation Specifications, MS-2006..... **Drawing A-135575**

Refer to **Drawing A-55101** for mounting details. Refer to the **Installation Specifications** drawing for your model to determine the center-to-center distance of the poles for each model.

Mount the scoreboard as follows:

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

6.5 Ad Panel Mounting

Reference Drawings:

Ad Panel Mounting..... **Drawing A-52187**
Assembly, Ad Panel, BA-515..... **Drawing A-52585**
Ad Panel Mounting, BA-518 ..... **Drawing A-52811**

Refer to **Drawing A-52187** for mounting details. 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 $^9/_{16}$" holes in the upper and lower rear flange of the ad panel where the supports will go.
3. Place square nuts inside the channel and thread the bolts through.

4. Lift the ad panel into position with the bolts still in place.
5. Place mounting angles over each pair of bolts and secure with lock washers and hex nuts.
6. When the panel is adjusted to the final desired position, tighten hex nuts firmly.

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

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

Ad panels can be mounted directly to the scoreboard for models BA-515-11 and BA-518-11. Refer to **Drawings A-52585** and **A-52811** for mounting details.

Section 7: Electrical Installation

Electrical installation consists of the following processes:

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

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

7.1 Power Requirements

Reference Drawings:

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

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

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

Proper power installation is imperative for proper display operation. The following subsections give details of display power installation.

Grounding

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

The display system *must* be connected to earth-ground. 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.***

The material of 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.

Branch Circuit Grounding

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

Power Installation

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

Installation with Ground and Neutral Conductors Provided

For this type of installation, the power cable *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. (Daktronics recommends a lockable, knife-switch disconnect at the scoreboard location so that all power lines can be completely disconnected. Use a multi-conductor disconnect so that all hot lines and the neutral can all be disconnected. This is important in protecting the scoreboard against lightning.)

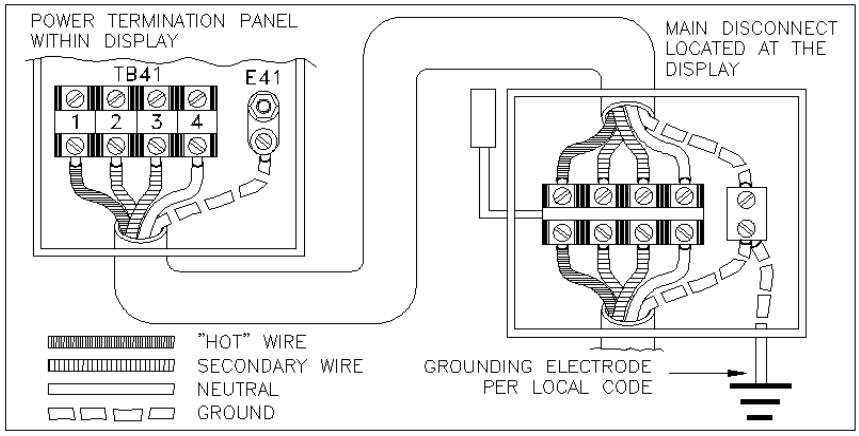


Figure 4: Installation with Ground and Neutral Provided

Installation with Only a Neutral Conductor Provided

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

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

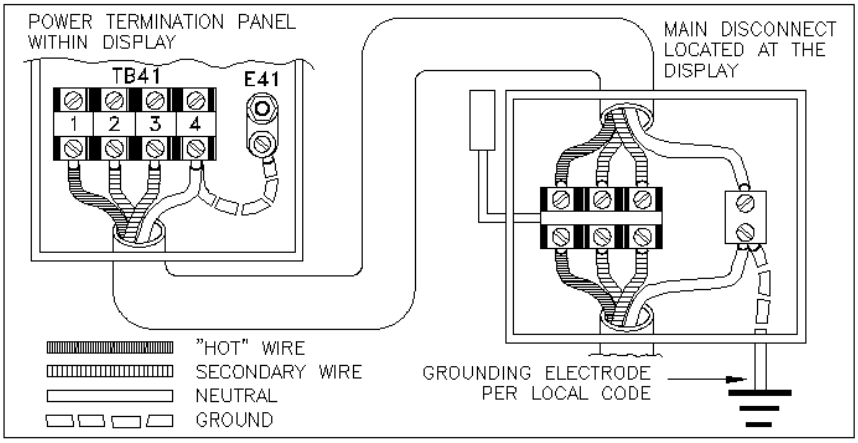


Figure 5: Installation with Only Neutral Provided

7.2 Power and Signal Connection

Reference Drawings:

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

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

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

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

Connections Between Sections

There are several cables in the echo, or slave, sections of the scoreboard which must be connected to a panel in the master section (refer to the drawings listed in **Section 4)**. Route these cables through the $2^1/_2$" holes in the mating sides of the various sections when mounting the scoreboard.

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

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

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.**

8.1 Cabinet Specifications

Cabinets for the Daktronics outdoor LED scoreboards are of all-aluminum construction. 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. 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.

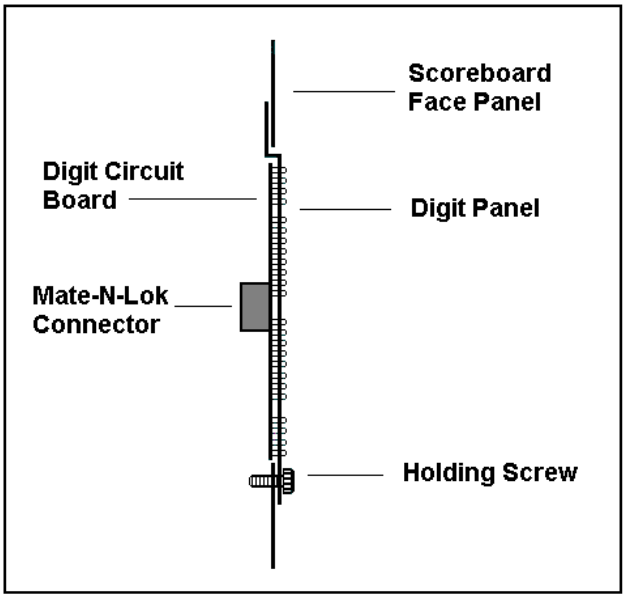


Figure 6: LED Digit Panel (Not to Scale)

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.

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

Replacing a Digit

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

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 – it will attach in one way only. Do not attempt to force the connection!*
6. Close and secure the digit panel and test the scoreboard.

Replacing a 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 transformer 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

Reference Drawings:

Schematic; 8 and 16 Col. O.D. LED Drvr and TNMC..... **Drawing A-141797**
Schematic; 1 Driver..... **Drawing A-141799**
Schematic; 1 Driver w/TNMC..... **Drawing A-141806**
Schematic; 2 Drivers..... **Drawing A-141807**
Schematic; 3 Drivers..... **Drawing A-142358**

Drawing A-141797 is the schematic diagram for the 8- and 16-column drivers used in the outdoor single-section scoreboards, and it also illustrates the driver for the optional team name message centers. The other schematic drawings listed above 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

Reference Drawings:

16 Column LED Driver II Specifications ..... **Drawing A-134371**
8 Column LED Driver II Specifications ..... **Drawing A-134372**

In the scoreboard, the task of switching digits on and off is performed by the LED drivers (refer to **Drawings A-134371** and **A-124372**).

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

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

16-Column LED Driver	
Connector No.	*Function*
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.

8.5 Segmentation and Digit Designation

Reference Drawing:

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

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

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

8.6 Power-On Self-Test

Reference Drawings:

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

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

The self-test runs in three cycles or phases. Each scoreboard self-test pattern will vary depending on the scoreboard model, the number of drivers and types of digits.

- **Drawing A-133350** shows how the test pattern displays in the digits with no protocol pins set on J26 of the LED drivers.
- **Drawing A-133351** shows a sample of test pattern displayed on a scoreboard.

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

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

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

8.7 Lightning Protection

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

The use of a disconnect near the scoreboard to completely cut all current-carrying lines significantly protects the circuits against lightning damage. It is also required by the National Electrical Code. In order for this 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 J-box when the system is not in use. The same surges that may damage the scoreboard's driver can also damage the console's circuit.

8.8 Replacement Parts

Refer to the following table for Daktronics scoreboard replacement parts.

Description	Location	Daktronics Part No.
LED Driver, 16 column	Scoreboard	0P-1192-0011
LED driver, 8 column	Scoreboard	0P-1192-0012
Power supply, 24 V @ 7.2 A, 120 V AC	Driver enclosure	A-1505
Plug, $^1/_4$" phone	Signal	P-1003
J-Box, $^1/_4$" phone, Indoor	Signal	0A-1009-0038
J-Box, $^1/_4$" Phone, outdoor	Signal	0A-1091-0227
Signal surge arrestor	Power/signal entrance enclosure	0P-1033-0114
12V DC trumpet horn asm.	Scoreboard	0A-1091-1213
Signal cord; $^1/_4$" phone 20'	N/A	W-1236
Signal cord; $^1/_4$" phone 30'	N/A	W-1238
Signal cord; $^1/_4$" phone 50'	N/A	W-1237
Digit, 15", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0009

Description	Location	Daktronics Part No.
Digit, 18", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0008
Digit, 24", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0003
Digit, 30", 7-seg outdoor LED, red-orange	Scoreboard	0P-1192-0020
Indicator, 2" circular, outdoor LED, red-orange	Scoreboard	0P-1192-0010
Indicator, football poss, outdoor LED, red-orange	Scoreboard	0P-1192-0018
Indicator, soccer poss, outdoor LED, red-orange	Scoreboard	OP-1192-0022
Segment breakout board (30" LED only)	Scoreboard	0P-1192-0019

8.9 Troubleshooting

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

Symptom/Condition	Possible Cause
Scoreboard will not light	▪ Console not connected or poor connection ▪ No power to control console ▪ No power to the scoreboard
Garbled display	▪ Internal driver logic malfunction ▪ Control console malfunction
Digit will not light	▪ Black wire to digit broken ▪ Poor contact at driver connection. ▪ Driver malfunction
Segment will not light	▪ Broken LED or connection ▪ Driver shift register failure ▪ Broken wire between driver and digit ▪ Poor contact at driver connector.
Segment stays lit	▪ Driver shift register failure ▪ Short circuit on digit
Date appears in the wrong place on the scoreboard	▪ Incorrect address settings on drivers (consult tables and set correct addresses)

8.10 Daktronics Exchange and Repair and Return Programs

To serve customers' repair and maintenance needs, 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 decreases scoreboard downtime. This service is provided to qualified customers who follow the program guidelines explained below.

Daktronics provides this service to ensure users get the most from their Daktronics products. 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 Daktronics 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 exchange 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 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 the defective equipment is not shipped to Daktronics within 30 working days from the invoice date, it is assumed you are purchasing the replacement part, 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, please 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.
P.O. Box 5128
331 32nd Avenue
Brookings, SD 57006

Phone: Daktronics Help Desk: 1 (877) 605-1115 (toll free)
or 1 (605) 697-4036

Fax: 1 (605) 697-4444

E-mail: helpdesk@daktronics.com

Section 9: Team Name Message Center Maintenance

IMPORTANT NOTES:

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

9.1 Team Name Message Center System Overview

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

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

9.2 Maintenance and Troubleshooting Overview

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

This section provides the following TNMC information:

- **Signal Routing Summary:** provides a basic explanation of the signal travel through the TNMC display.
- **Power Routing Summary:** provides a basic explanation of the power travel through the display.
- **Service and Diagnostics:** provides instructions for removing various display components and explains the functions of circuit board connectors and the 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 require replacement during the life of this display.
- **Daktronics Exchange and Repair and Return Programs:** explains the Daktronics component return policy.

9.3 Signal Summary

Reference Drawing:

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

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

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

9.4 Power Summary

Reference Drawing:

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

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

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

9.5 Service and Diagnostics

Reference 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 A-143808**
F. Assy; 848 LED TNMC ..... **Drawing A-144323**
Component Layout; 832/848 LED TNMC ..... **Drawing A-145045**
Schematic; Red LED TNMC ..... **Drawing A-145620**

The following subsections address servicing of the following display components:

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

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

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

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

TNMC Current Loop Interface (CLI) Card

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

TNMC Controller

The controller, located on the rear-access panel, receives signal from the CLI and sends data to the modules. Refer to the signal summary in **Section 9.3** for more information and to **Drawing A-145045** for the position of the controller board. **Figure 7**, below, illustrates a typical controller.

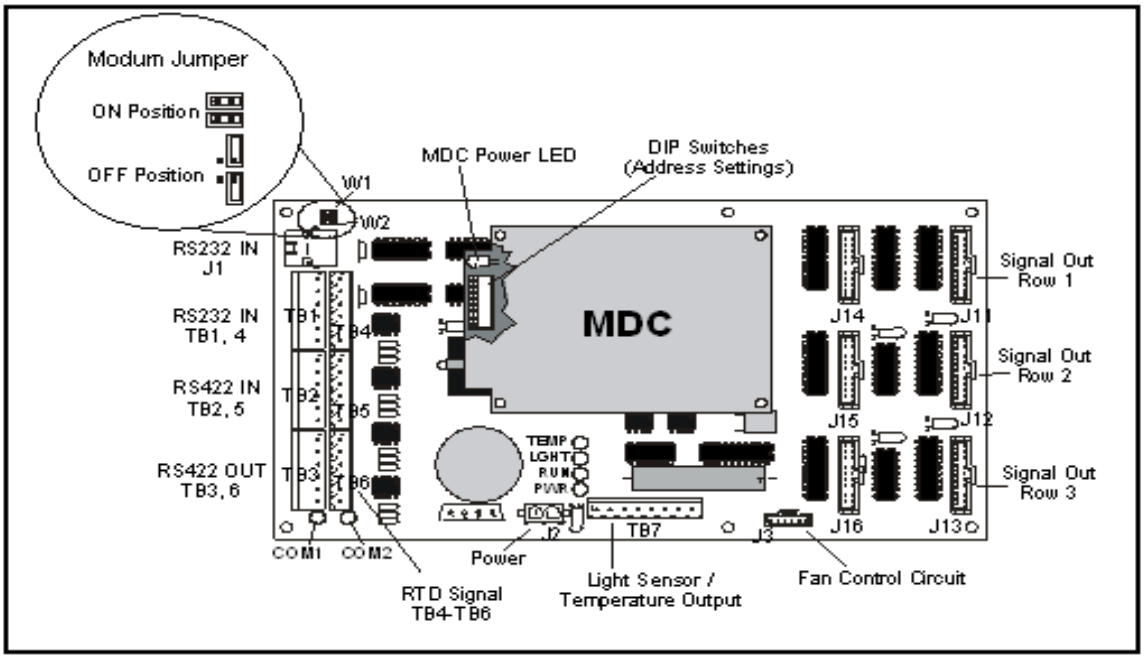


Figure 7: Controller Component Layout

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

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

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

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

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

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

Removing/Changing the Controller

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

1. To access the controller from the front, unlatch the latch fasteners (referred to as "latch plugs" on the drawings) at the top and bottom center of the module by turning them a quarter-turn. Use a $^{7}/_{32}$" nut driver. Turn the top latch clockwise and the bottom latch counterclockwise. Carefully remove the module and detach the ribbon cables. It may be helpful to label the cables to know which cable goes to which connector when reattaching.

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

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

Modules and Drivers

The module and driver board are a single functional unit.

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

Removing/Changing a Module

To remove 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 $^{7}/_{32}$" nut driver. Turn the top latch clockwise and the bottom latch counterclockwise. Carefully remove the module and detach the ribbon cables. Label the cables, indicating which cable was removed from which connector; the labeling will be helpful when you replace the board.

   To access the controller from the rear of the TNMC, remove the right rear-access panel from the TNMC by loosening all four of the screws. Slide the access panel up to the larger keyhole and carefully lift it off the TNMC. Take care not to drop the panel, and remember that the module controller is attached to the panel. With a $^{7}/_{32}$" 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 fame. 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 if it is to prevent water from seeping into the display.
- Module latches must be fully engaged to create a watertight seal around the edge of the module. The module should be firmly seated against the display when the latches are fully engaged.

Each module assembly contains a module housing (containing LEDs and the driver board) and a louver assembly. **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 subsection explains how to disassemble a module.

Removing the Louver Assembly

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

Removing/Changing a Louver

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

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

Power Supplies

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

Removing/Changing a Power Supply

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

1. See the directions 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 provided around the entire display and around each module. It is important that the weatherstripping is installed properly at all times or water may leak into the display and damage the components.

9.6 TNMC Display Maintenance

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

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

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

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

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

9.8 Initialization Information at Startup

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

9.9 Replacement Parts List

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

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

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

9.10 TNMC Exchange and Repair and Return Programs

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

Section 10: Scoreboard Options

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

- Team name caption kits for certain models
- Trumpet horn for football and soccer

10.1 Team Name Captions: Models BA-624-11, BA-1518-11 and BA-1524-11

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

Reference Drawings:

Horn Installation ..... **Drawing A-44197**
Final Assembly, 12V DC Horn Mounting ..... **Drawing A-83333**
Schematic, Outdoor Scbbd 12VDC Trumpet Horn AS5K ..... **Drawing A-128938**
Schematic; 120VAC Trumpet Horn ..... **Drawing A-132173**

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

- Internally mounted AC trumpet horn.
- Externally mounted DC trumpet horn

AC Trumpet Horn Installation (Internally Mounted)

Caution: Disconnect the power before installing the horn!

Refer to **Drawings A-44197 and A-132173**.

1. Unscrew and remove the trumpet from the horn body.
2. Mount the horn body to the bracket with the $^1/_4$" bolts and nuts provided. Be sure that the horn is oriented so that the wire opening is at the bottom.
3. Attach the relay to the bracket with the #10 hardware.
4. Mount the ground lug below the horn with a $^1/_4$" bolt and nut.
5. Insert the green wire from the horn into the ground lug and tighten.
6. Connect one black wire from the horn to the white wire from the relay.
7. Connect the other black wire to the red wire from the relay. Use the wire nuts provided to make this connection.
8. Locate the horn panel in the scoreboard. Refer to the **Component Locations** drawings listed in **Section 4**. Note that there is a 2" knockout in this panel.
9. Loosen the screws securing the bottom of the panel and swing it open.
10. Mount the bracket to the bottom frame member using #10 screws. There are two holes in the frame for this purpose.
11. Connect the wires with a white plug to the mating jack marked **HORN** on the left side of the entrance enclosure.
12. Close and secure the access panel.
13. Screw the trumpet into the horn body. The trumpet will tilt down about 10 degrees to allow moisture drainage.
14. Connect to power to the scoreboard.
15. Connect the control console to the scoreboard.
16. Test the horn by pressing the key labeled **HORN** on the control console.

DC Trumpet Horn Installation (Externally Mounted)

Caution: Disconnect the power before installing the horn!

Refer to **Drawings A-128938** and **A-83333**.

1. Locate the horn panel in 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. Drill two $^{5}/_{32}$" holes 4" apart near the entrance enclosure.
4. Attach the horn enclosure to the inside of the scoreboard over the $^{5}/_{32}$" holes using #10 tapping screws.
5. Attach the plate assembly to the horn enclosure using the #10 hardware provided.
6. Remove the 2" knockout in the horn panel.
7. Drill two $^{7}/_{32}$" on either side of the knockout using the template drawing A-83502. If no knockout exists, use the template to drill one $^{8}/_{32}$" hole and two $^{7}/_{32}$" holes in the panel.
8. Thread the two gray wires from the horn through the top of the mounting angle.
9. Attach the horn to the mounting angle using the #10 hardware provided
10. Insert the bushing into the $^{3}/_{8}$" hole in the mounting angle.
11. Attach the horn/angle assembly to the panel over the 2" knockout and $^{7}/_{32}$" holes using the #10 hardware provided.
12. Open the panel and remove the cover from the horn enclosure.
13. Use the wire nuts provided to one gray wire from the horn to the black wire form the plate assembly. Connect the second gray wire from the horn to the red wire from the plate assembly.
14. Connect the wires with a white plug to the mating jack marked **HORN** on the left side of the entrance enclosure.
15. Close and secure the access panel.
16. Connect to power to the scoreboard.
17. Connect the control console to the scoreboard.
18. Test the horn by pressing the key labeled **HORN** on the control console.

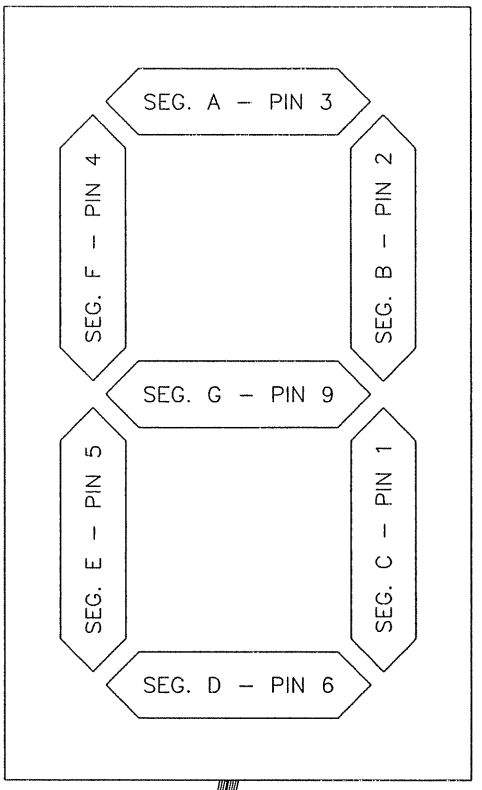
Appendix A: Reference Drawings

A Drawings

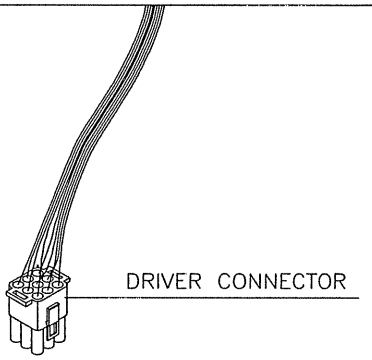
Component Locations; MS-2004-11 ..... **Drawing A-142627**
Component Locations, FB-824-11 ..... **Drawing A-142670**
Component Locations, SO-918 ..... **Drawing A-142737**
Component Locations, SO-824-11 ..... **Drawing A-142888**
Single Section Scoreboard Models ..... **Drawing A-142912**
F. Assy; 832 LED TNMC ..... **Drawing A-143808**
F. Assy; 848 LED TNMC ..... **Drawing A-144323**
Component Layout; 832/848 LED TNMC ..... **Drawing A-145045**
Component Locations, TI-2003-11 ..... **Drawing A-145239**
Schematic; Red LED TNMC ..... **Drawing A-145620**
Installation Specifications, SO-2008 ..... **Drawing A-149074**
Component Locations; S0-2008-11 ..... **Drawing A-149091**
Component Locations; MS-2006-11 ..... **Drawing A-149788**
Component Locations; CT-2001-11 ..... **Drawing A-149847**
Component Locations; CT-2002-11 ..... **Drawing A-149866**
Component Locations; MS-2012-11 ..... **Drawing A-152199**
Component Locations; BA-2004-11 ..... **Drawing A-152749**
Installation Specifications; BA-2004 & BA-2005 ..... **Drawing A-152777**
Installation Specifications; MS-2012 ..... **Drawing A-152790**
Component Locations; BA-2005-11 ..... **Drawing A-152929**
Single Section LED Scoreboard w/ LED TNMC ..... **Drawing A-152936**
Single Section LED Scoreboard Models ..... **Drawing A-152950**
Component Locations; TI-2017-11 ..... **Drawing A-153777**
Component Locations, BA-2003-11 ..... **Drawing A-158302**
Installation Specifications, BA-2003 ..... **Drawing A-158322**

B Drawings

Control Layout; Outdoor LED TNMC. ..... **Drawing B-107507**
Exploded Front, Module ..... **Drawing B-126111**
Exploded Rear, Module ..... **Drawing B-126112**



7 SEGMENT BAR DIGIT
FRONT VIEW

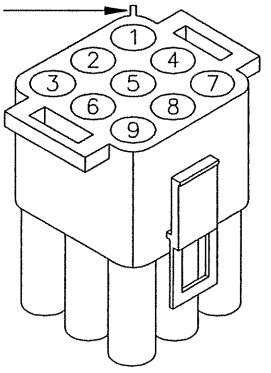


DRIVER CONNECTOR

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

CONNECTOR PIN NUMBERING

NOTE SPLINE NEAR NO. 1



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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: BASKETBALL

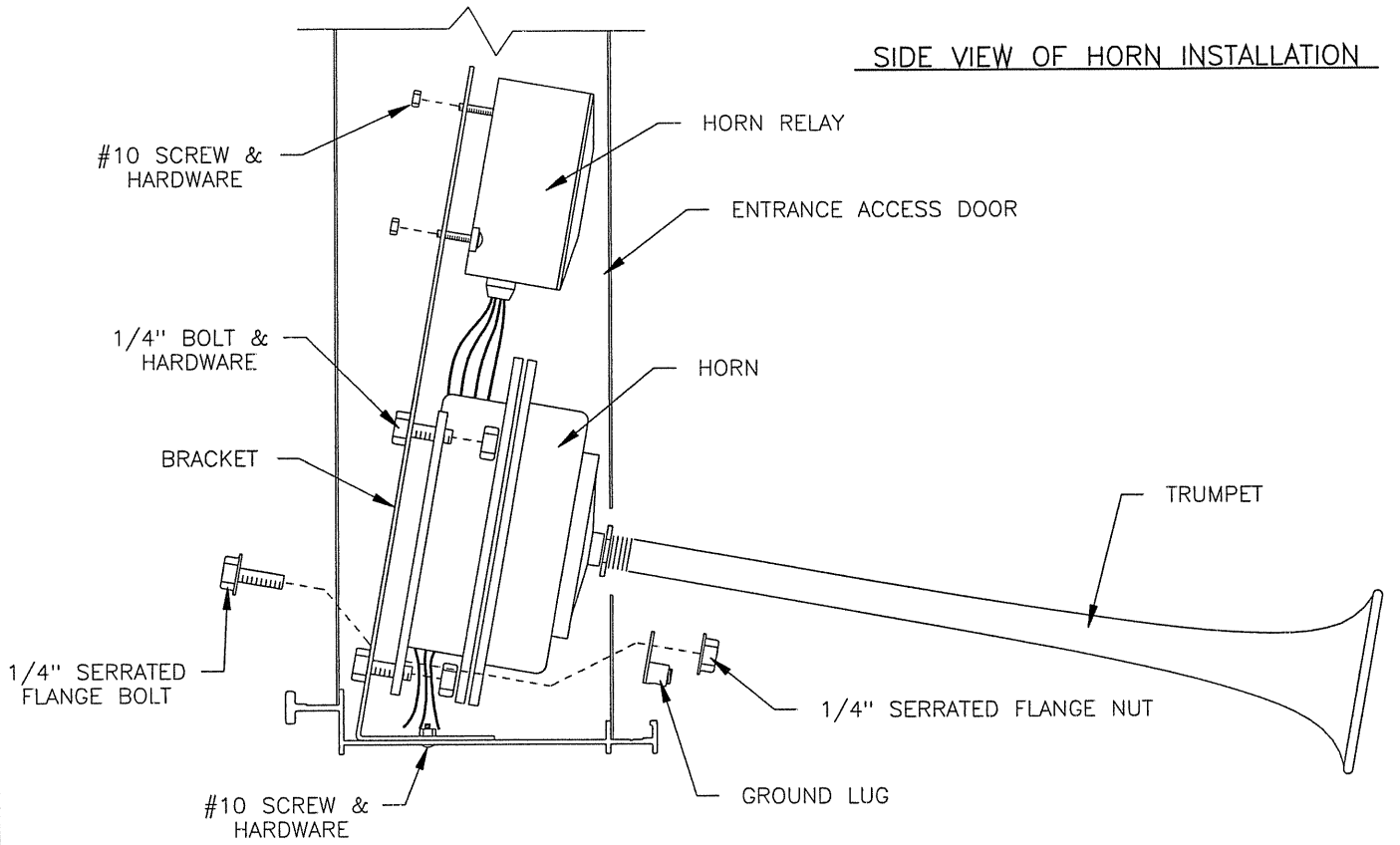
TITLE: SEGMENTATION, 7 SEGMENT BAR DIGIT

DES. BY: DRAWN BY: HEIDERSCHEIDT DATE: 5 JUN 89

REVISION 02 | APPR. BY: AVB | SCALE: 1=4

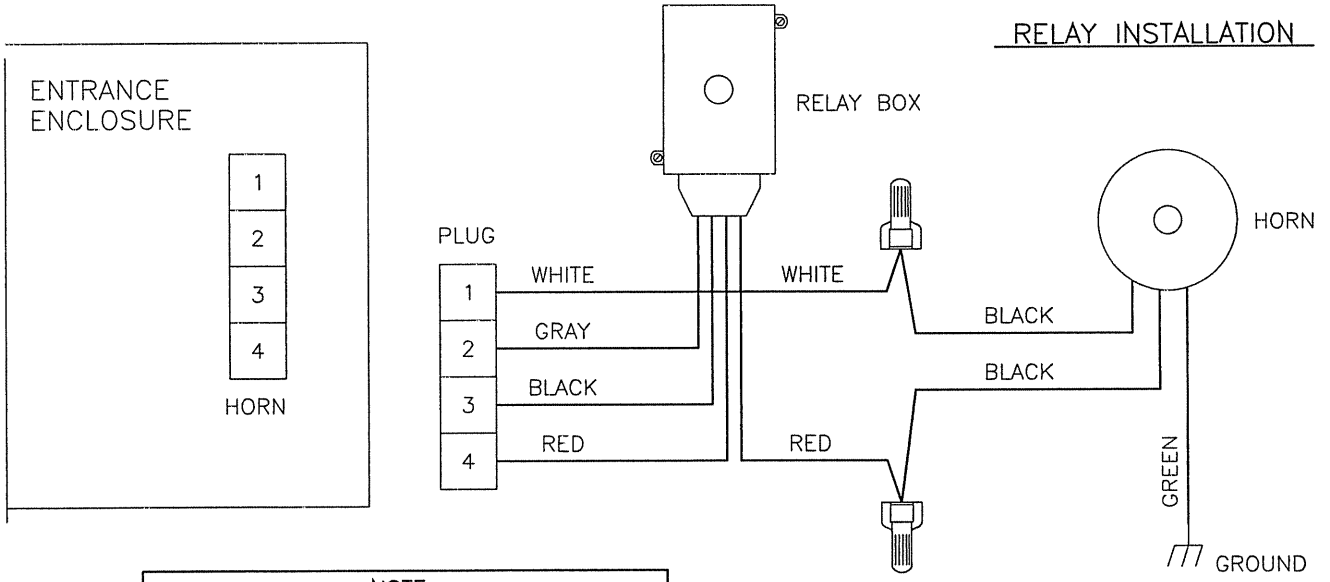
1009-R04A-38532

SIDE VIEW OF HORN INSTALLATION



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

RELAY INSTALLATION



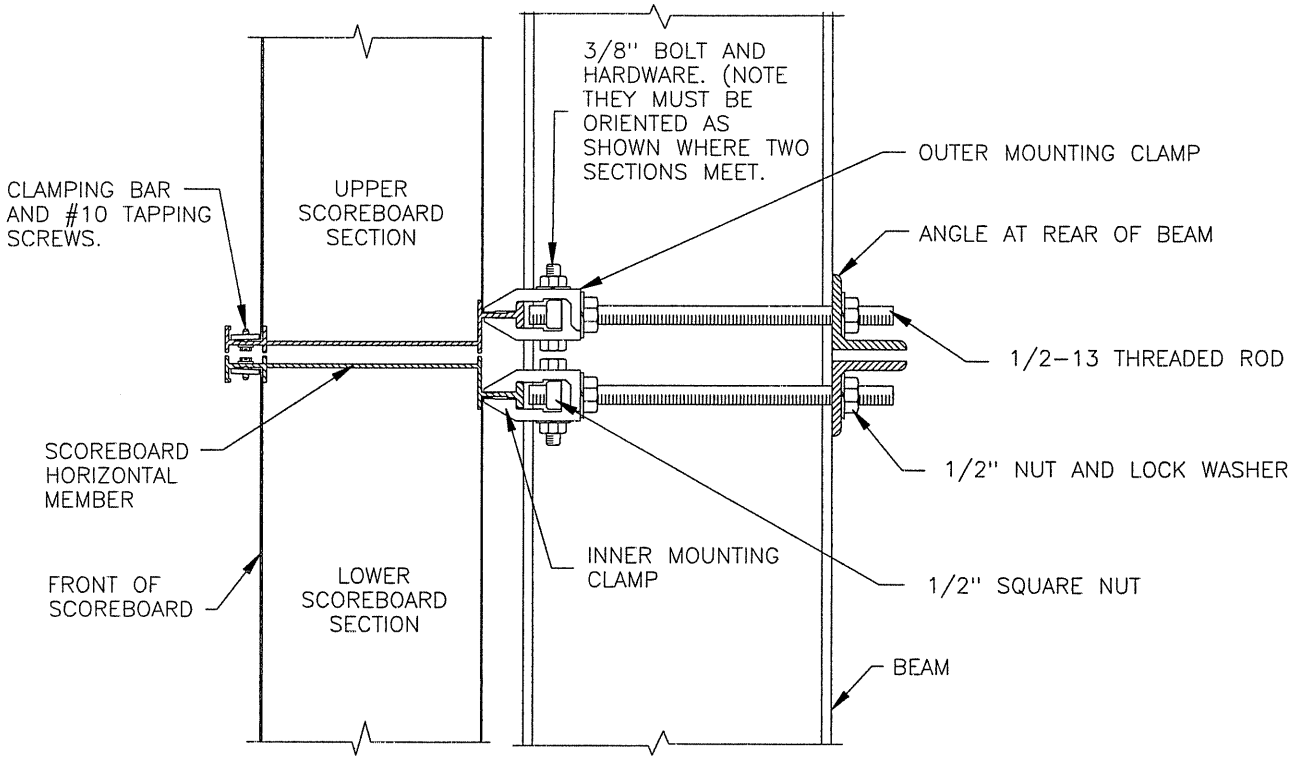
NOTE:
HORN IS TO BE MOUNTED BEHIND ACCESS DOOR THAT HAS 2" DIAMETER KNOCKOUT.

REV.	DATE	DESCRIPTION	BY	APPR.
01	11JAN01	ADDED NOTE ABOUT AS 5000 PROTOCOL RELATING TO SCHEMATIC	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

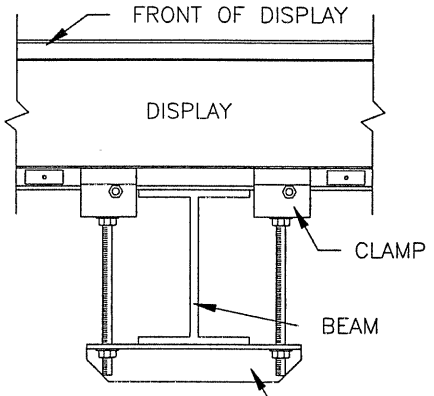
PROJ: OUTDOOR SCOREBOARDS
TITLE: HORN INSTALLATION
DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 16AUG90
REVISION APPR. BY: AVB
SCALE: 1=4

1091-E10A-44197

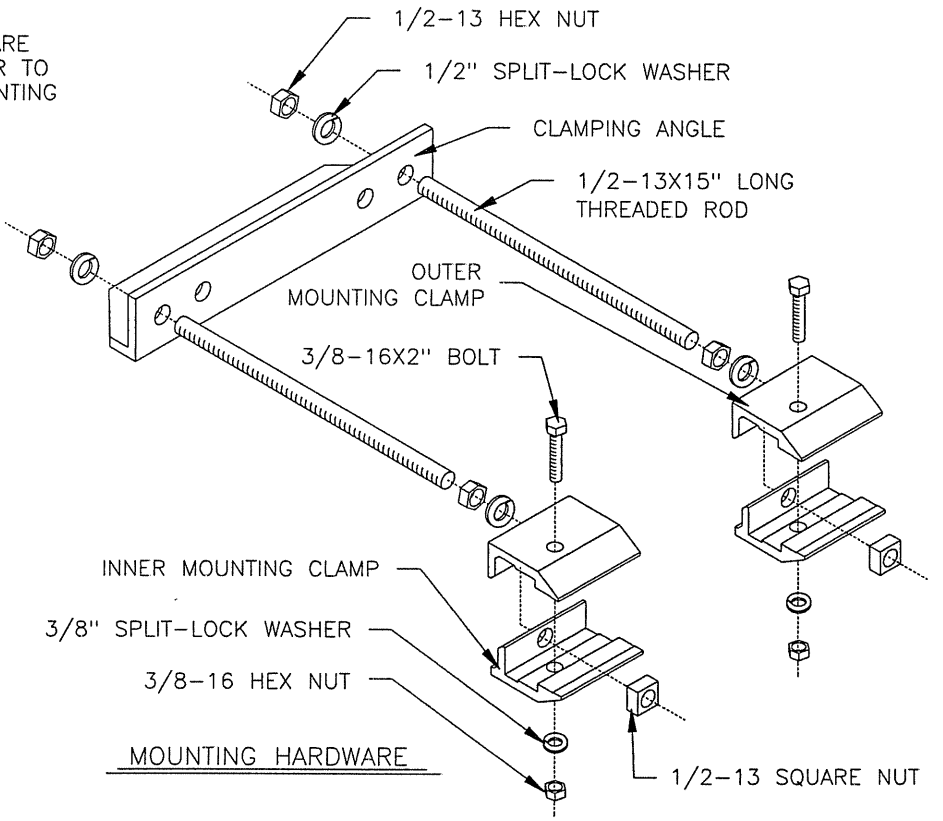


SIDE VIEW

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



TOP VIEW
1=10



MOUNTING HARDWARE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

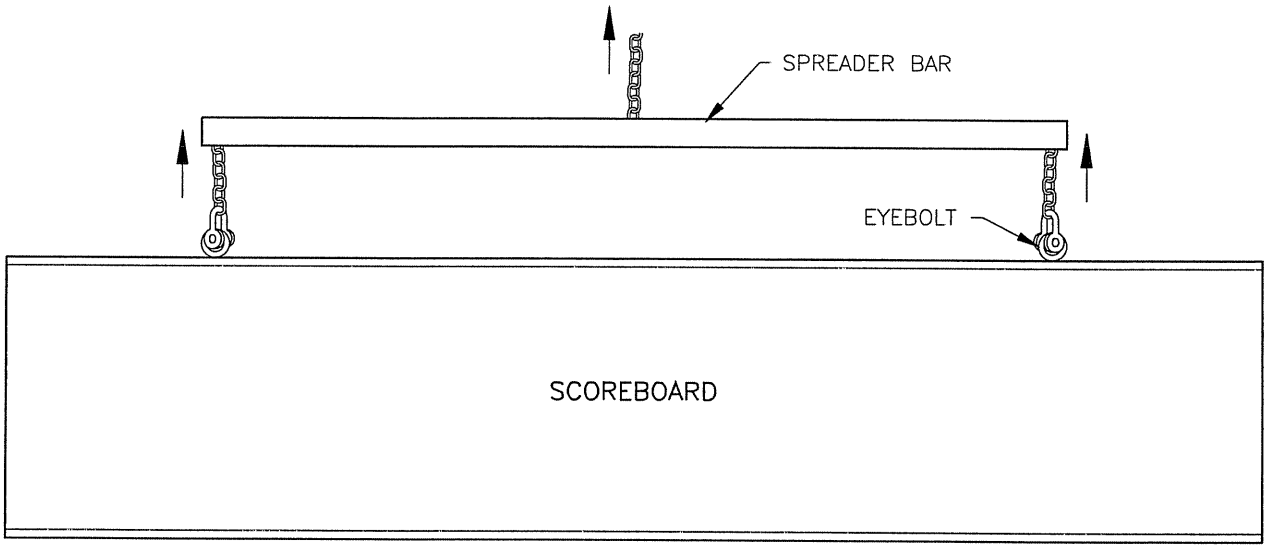
TITLE: DISPLAY MOUNTING

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

REVISION | APPR. BY:

SCALE: 1=5

1091-R10A-44412

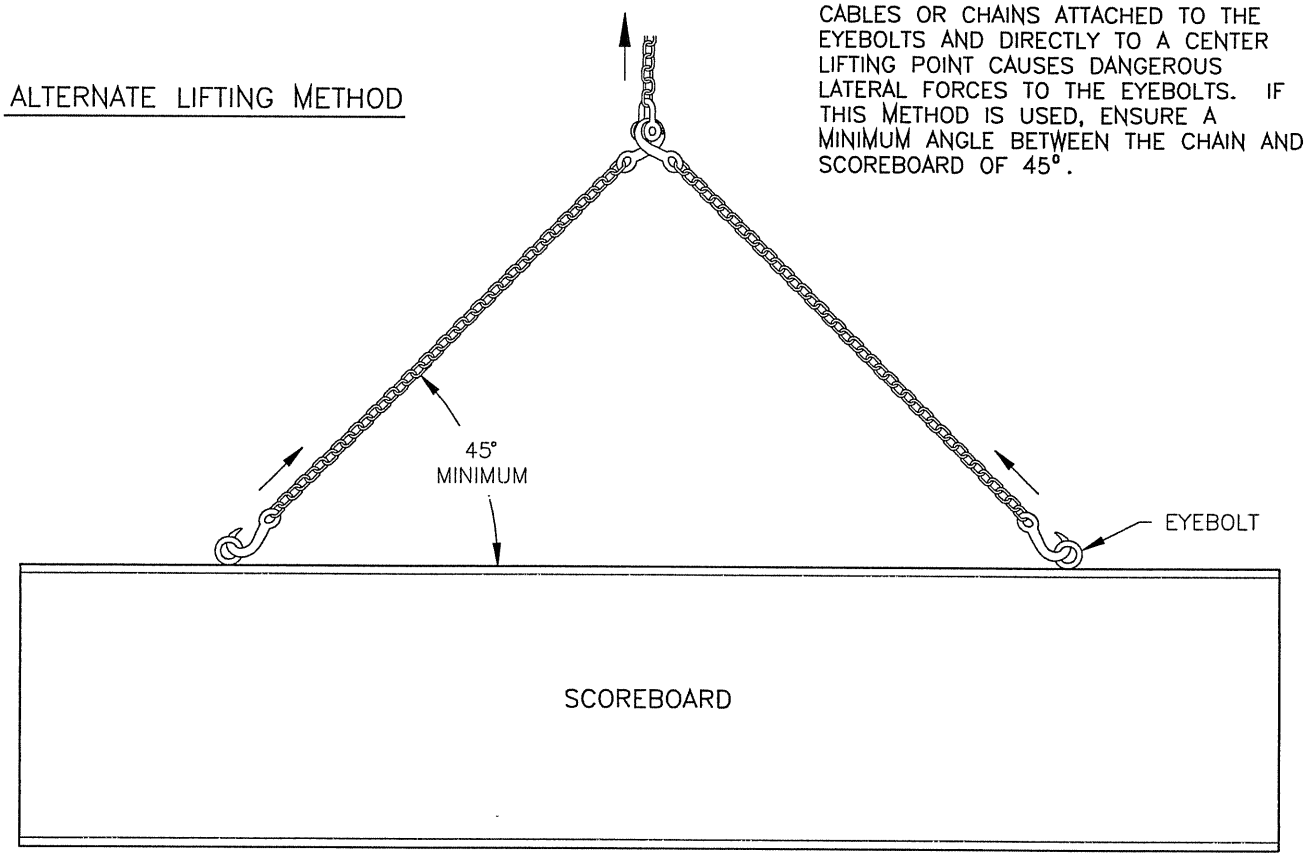


PREFERRED LIFTING METHOD

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

ALTERNATE LIFTING METHOD

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



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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

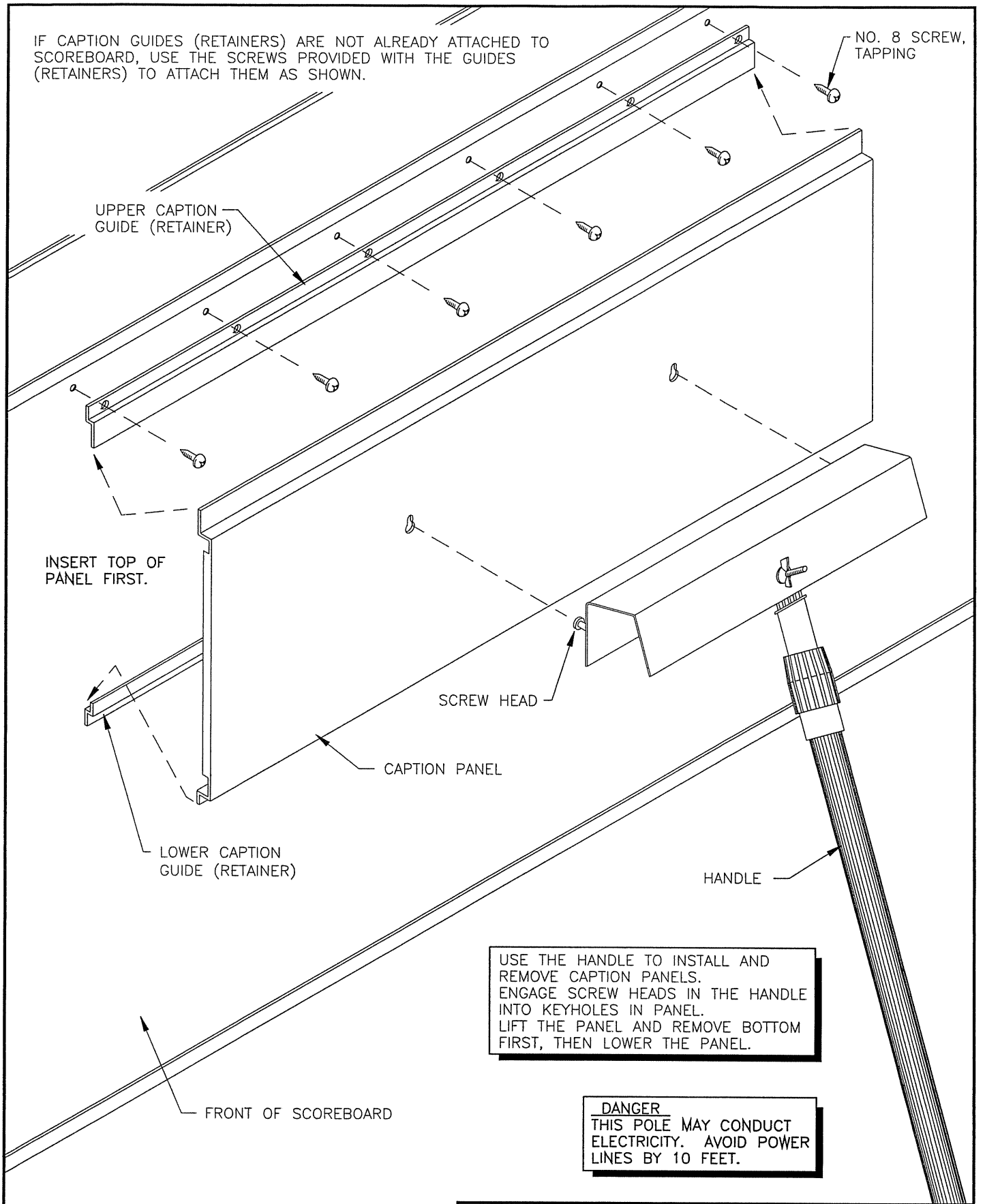
TITLE: LIFTING SCOREBOARD

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

REVISION APPR. BY:

SCALE: NONE

1091-R10A-44548



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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

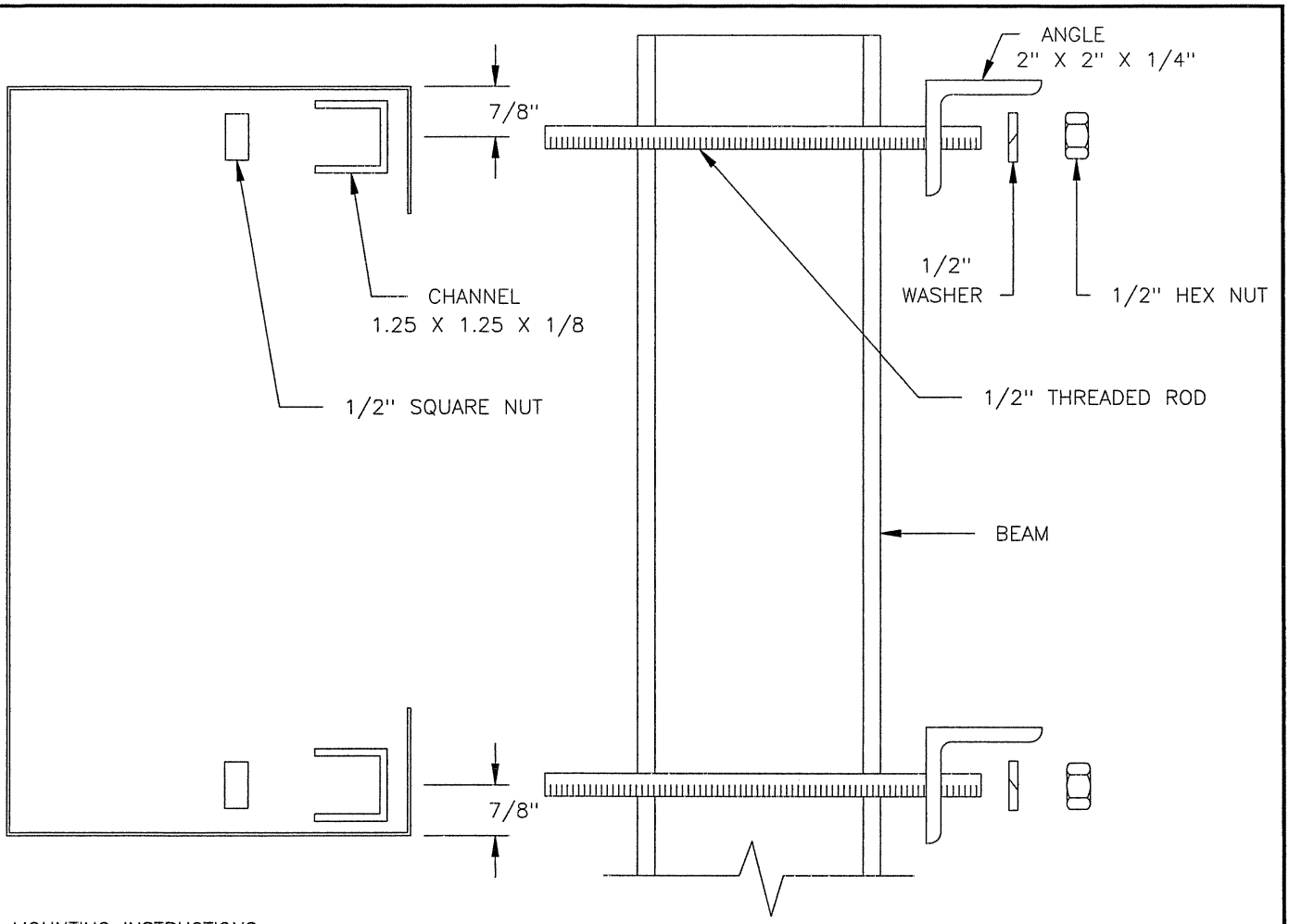
TITLE: CAPTION CHANGING

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

REVISION APPR. BY:

SCALE: NONE

1091-E10A-44549



MOUNTING INSTRUCTIONS:

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

MOUNTING INSTRUCTIONS: FOR AD PANELS WITH BACKSHEETS.

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

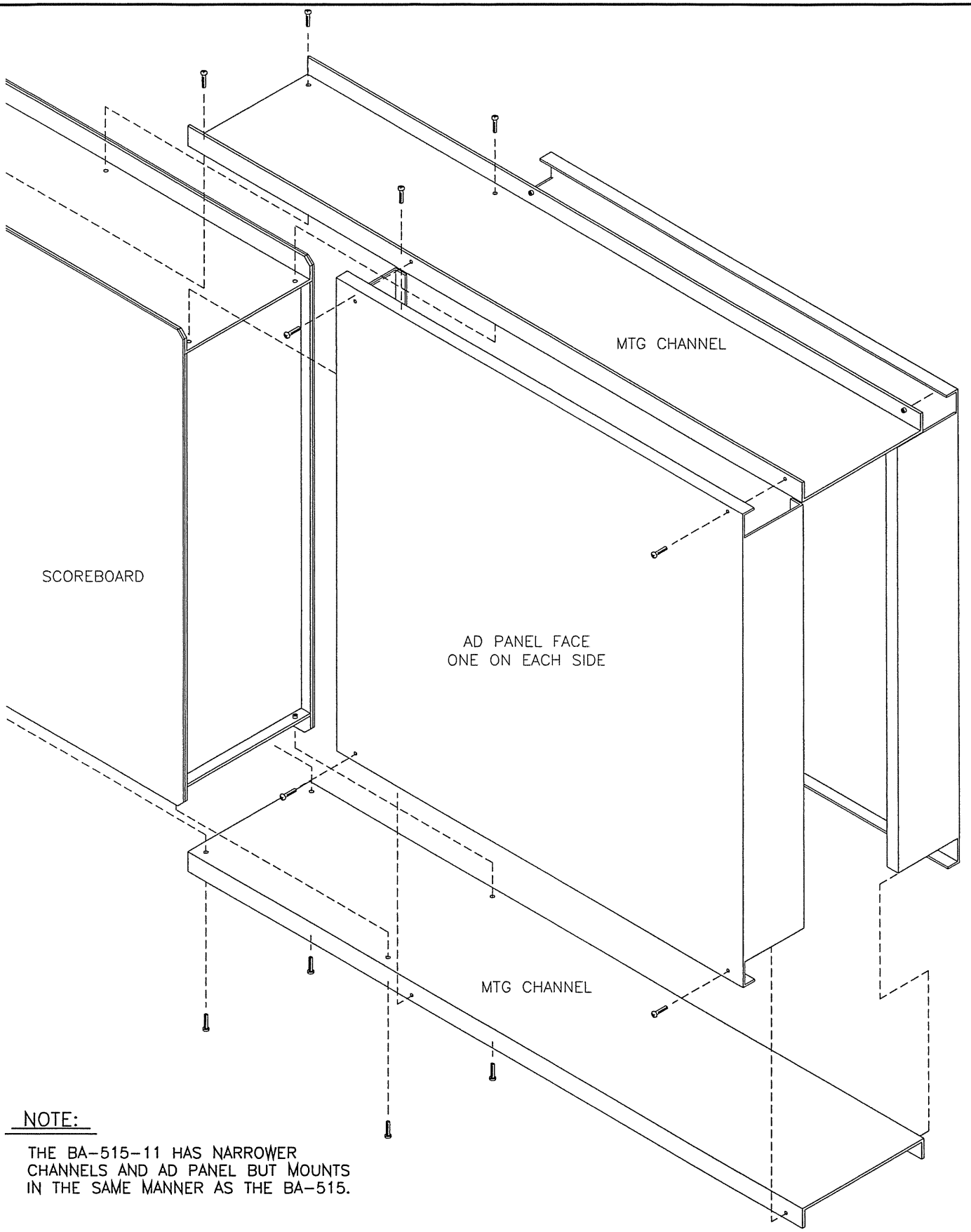
TITLE: AD PANEL MOUNTING

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

REVISION APPR. BY:

SCALE: NONE

1091-R10A-52187



NOTE:

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

REV.	DATE	DESCRIPTION	BY	APPR.
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	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: BASEBALL SCOREBOARDS

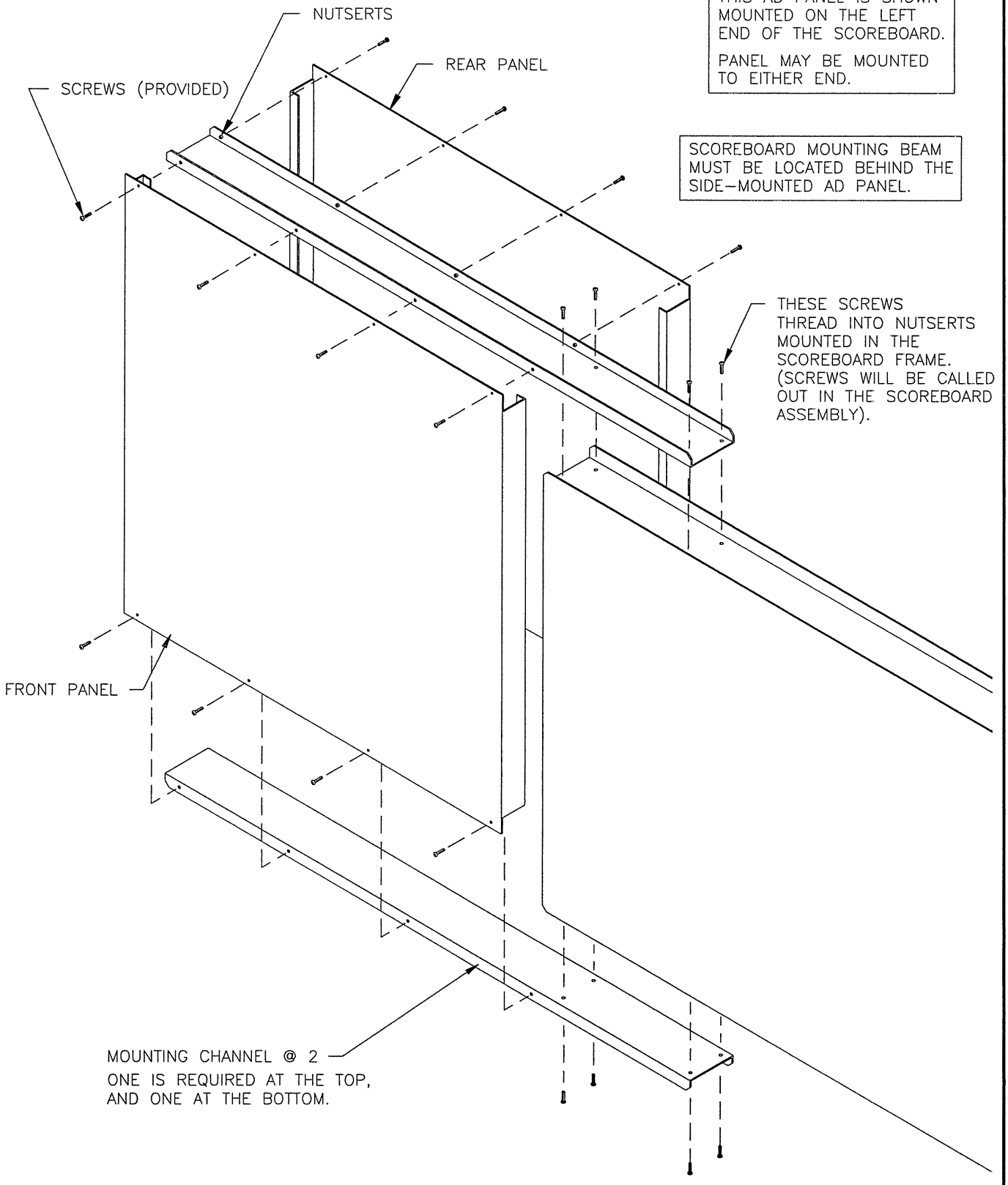
TITLE: ASSEMBLY, AD PANEL, BA-515 / BA-515-11

DES. BY: MGUNDE DRAWN BY: MGUNDE DATE: 07AUG92

REVISION APPR. BY:

SCALE: 1 = 10

1091-R10A-52585



REV.	DATE	DESCRIPTION	BY	APPR.
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	

DAKTRONICS, INC. BROOKINGS, SD 57006

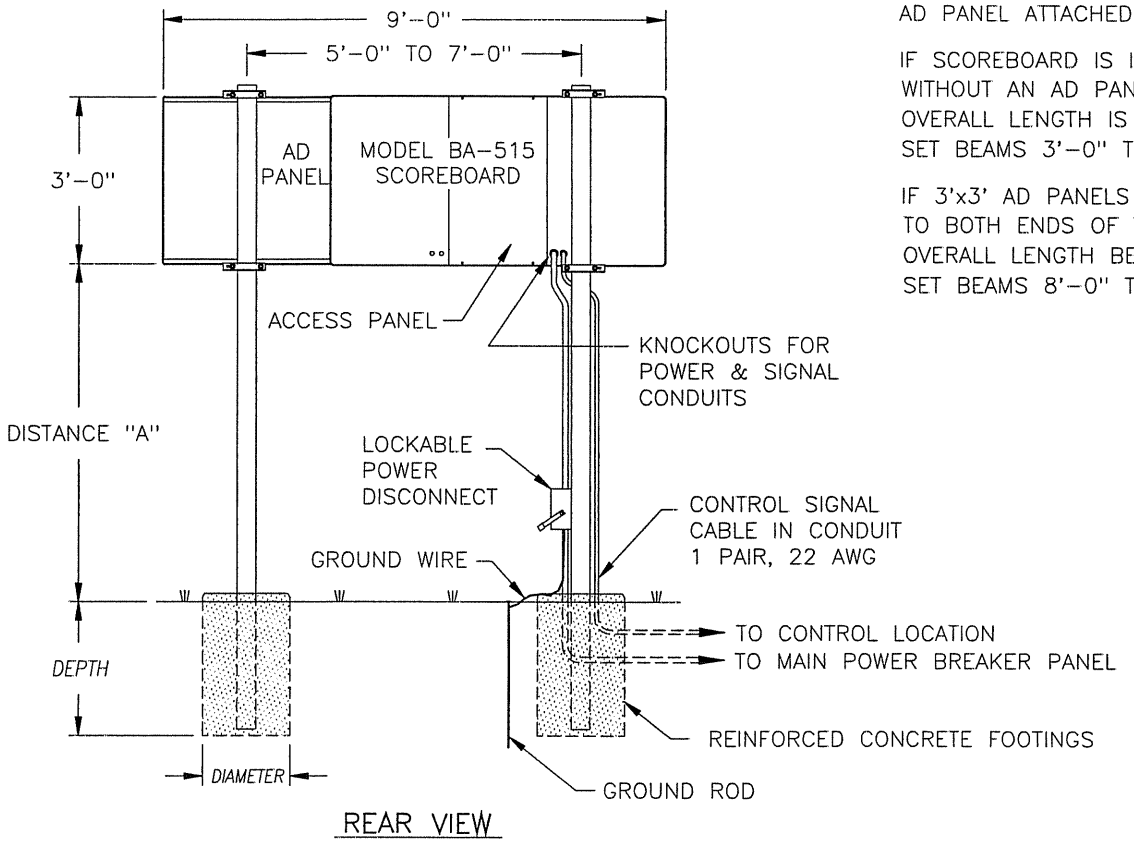
PROJ: BASEBALL

TITLE: AD PANEL MOUNTING, BA-518

DES. BY: DRAWN BY: C FICKBOHM DATE: 25 AUG 92

REVISION 03 | APPR. BY: | SCALE: 1=15

1091-E10A-52811



REAR VIEW

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	W6x9	W10x12	W4x13
		FOOTING	*2.0' x 3.2'*	*2.5' x 3.3'*	*2.5' x 3.9'*
12'-0"	6'-0" x 3'-0"	BEAM	W6x12	W10x15	W6x15
		FOOTING	*2.5' x 3.2'*	*2.5' x 3.5'*	*2.5' x 4.1'*
14'-0"	6'-0" x 3'-0"	BEAM	W4x13	W6x15	W5x16
		FOOTING	*2.5' x 3.4'*	*2.5' x 3.8'*	*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	W10x12	W10x12	W10x15
		FOOTING	*2.5' x 3.3'*	*2.5' x 3.7'*	*2.5' x 4.3'*
12'-0"	9'-0" x 3'-0"	BEAM	W6x12	W10x15	W10x15
		FOOTING	*2.5' x 3.5'*	*2.5' x 3.9'*	*2.5' x 4.6'*
14'-0"	9'-0" x 3'-0"	BEAM	W6x15	W6x15	W8x18
		FOOTING	*2.5' x 3.8'*	*2.5' x 4.2'*	*2.5' x 4.9'*

FOOTING = DIAMETER X DEPTH

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	W6x12	W4x13	W6x15
		FOOTING	*2.5' x 3.6'*	*2.5' x 4.0'*	*2.5' x 4.7'*
12'-0"	12'-0" x 3'-0"	BEAM	W4x13	W6x15	W5x19
		FOOTING	*2.5' x 3.8'*	*2.5' x 4.2'*	*2.5' x 4.9'*
14'-0"	12'-0" x 3'-0"	BEAM	W6x15	W8x18	W8x24
		FOOTING	*2.5' x 4.1'*	*2.5' x 4.5'*	*2.5' x 5.3'*

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

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

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

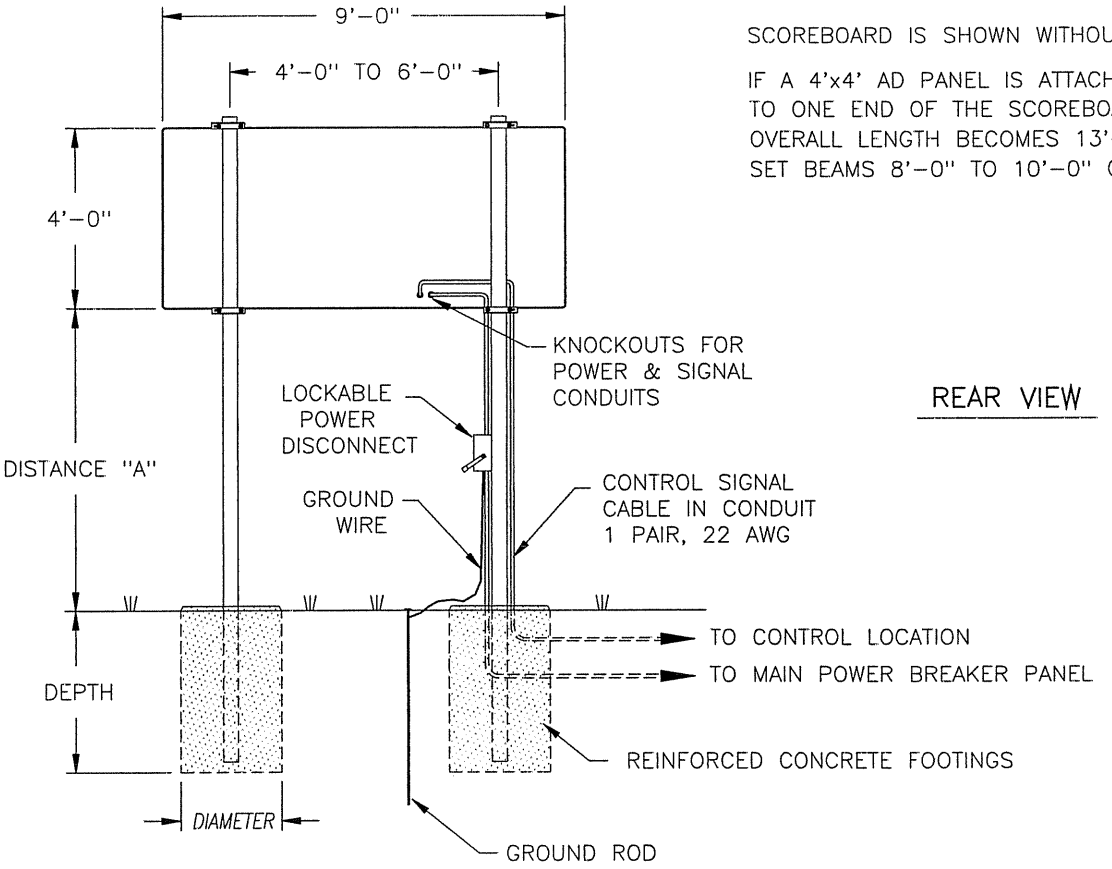
TITLE: INSTALLATION SPECIFICATIONS, BA-515

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 05FEB93

REVISION 02 APPR. BY: SCALE: 1=40

1091-R10A-55003

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



REAR VIEW

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.

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	W6x12	W4x13	W5x16
		FOOTING	*3.0' x 3.4'*	*3.0' x 3.8'*	*3.0' x 4.4'*
12'-0"	9'-0" x 4'-0"	BEAM	W4x13	W6x15	W5x19
		FOOTING	*3.0' x 3.6'*	*3.0' x 4.0'*	*3.0' x 4.7'*
14'-0"	9'-0" x 4'-0"	BEAM	W6x15	W5x19	W8x24
		FOOTING	*3.0' x 3.9'*	*3.0' x 4.3'*	*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	W5x16	W5x19	W8x24
		FOOTING	*3.0' x 4.1'*	*3.0' x 4.5'*	*3.0' x 5.3'*
12'-0"	9'-0" x 6'-6"	BEAM	W5x19	W8x24	W8x28
		FOOTING	*3.0' x 4.3'*	*3.0' x 4.8'*	*3.0' x 5.6'*
14'-0"	9'-0" x 6'-6"	BEAM	W8x24	W8x24	W8x31
		FOOTING	*3.0' x 4.5'*	*3.0' x 5.0'*	*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^2

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

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

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	W4x13	W6x15	W5x19
		FOOTING	*3.0' x 3.8'*	*3.0' x 4.2'*	*3.0' x 5.0'*
12'-0"	13'-0" x 4'-0"	BEAM	W6x15	W5x19	W8x24
		FOOTING	*3.0' x 4.0'*	*3.0' x 4.4'*	*3.0' x 5.2'*
14'-0"	13'-0" x 4'-0"	BEAM	W5x19	W6x20	W8x28
		FOOTING	*3.0' x 4.3'*	*3.0' x 4.7'*	*3.0' x 5.6'*

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

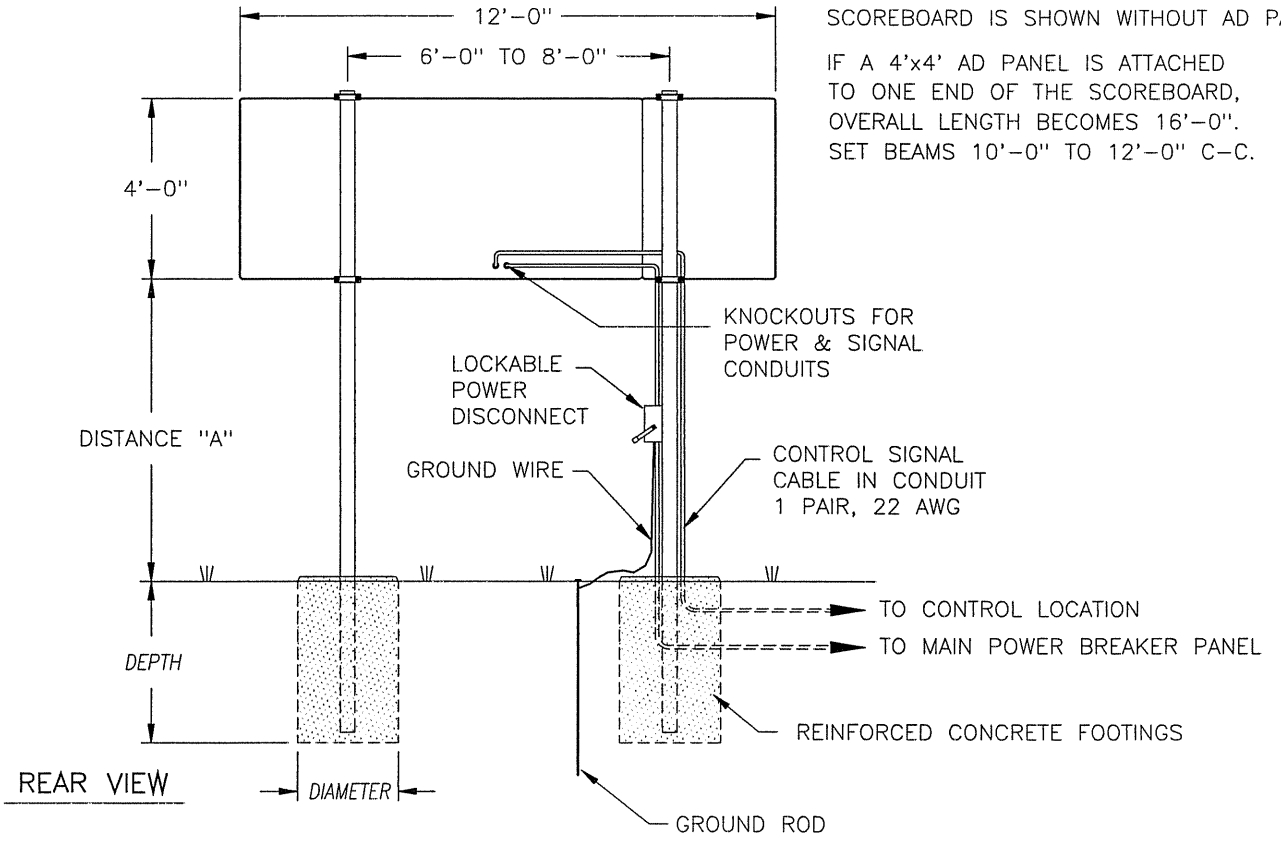
TITLE: INSTALLATION SPECIFICATIONS, BA-518

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 05FEB93

REVISION APPR. BY:

SCALE: 1=50

1091-R10A-55004



SCOREBOARD IS SHOWN WITHOUT AD PANEL.

IF A 4'x4' AD PANEL IS ATTACHED TO ONE END OF THE SCOREBOARD, OVERALL LENGTH BECOMES 16'-0". SET BEAMS 10'-0" TO 12'-0" C-C.

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	W4x13	W6x15	W5x19
		FOOTING	*3.0' x 3.7'*	*3.0' x 4.1'*	*3.0' x 4.8'*
12'-0"	12'-0" x 4'-0"	BEAM	W6x15	W8x18	W8x24
		FOOTING	*3.0' x 3.9'*	*3.0' x 4.3'*	*3.0' x 5.1'*
14'-0"	12'-0" x 4'-0"	BEAM	W5x19	W6x20	W8x24
		FOOTING	*3.0' x 4.2'*	*3.0' x 4.6'*	*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	W5x19	W6x20	W8x28
		FOOTING	*3.0' x 4.5'*	*3.0' x 5.0'*	*3.0' x 5.8'*
12'-0"	12'-0" x 6'-6"	BEAM	W8x24	W8x24	W8x31
		FOOTING	*3.0' x 4.7'*	*3.0' x 5.2'*	*3.0' x 6.1'*
14'-0"	12'-0" x 6'-6"	BEAM	W8x24	W8x28	W10x33
		FOOTING	*3.0' x 5.0'*	*3.0' x 5.5'*	*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^2

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

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

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	W6x15	W5x16	W6x20
		FOOTING	*3.0' x 4.1'*	*3.0' x 4.5'*	*3.0' x 5.3'*
12'-0"	16'-0" x 4'-0"	BEAM	W8x18	W5x19	W8x24
		FOOTING	*3.0' x 4.3'*	*3.0' x 4.7'*	*3.0' x 5.6'*
14'-0"	16'-0" x 4'-0"	BEAM	W6x20	W8x24	W8x28
		FOOTING	*3.0' x 4.6'*	*3.0' x 5.0'*	*3.0' x 5.9'*

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	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

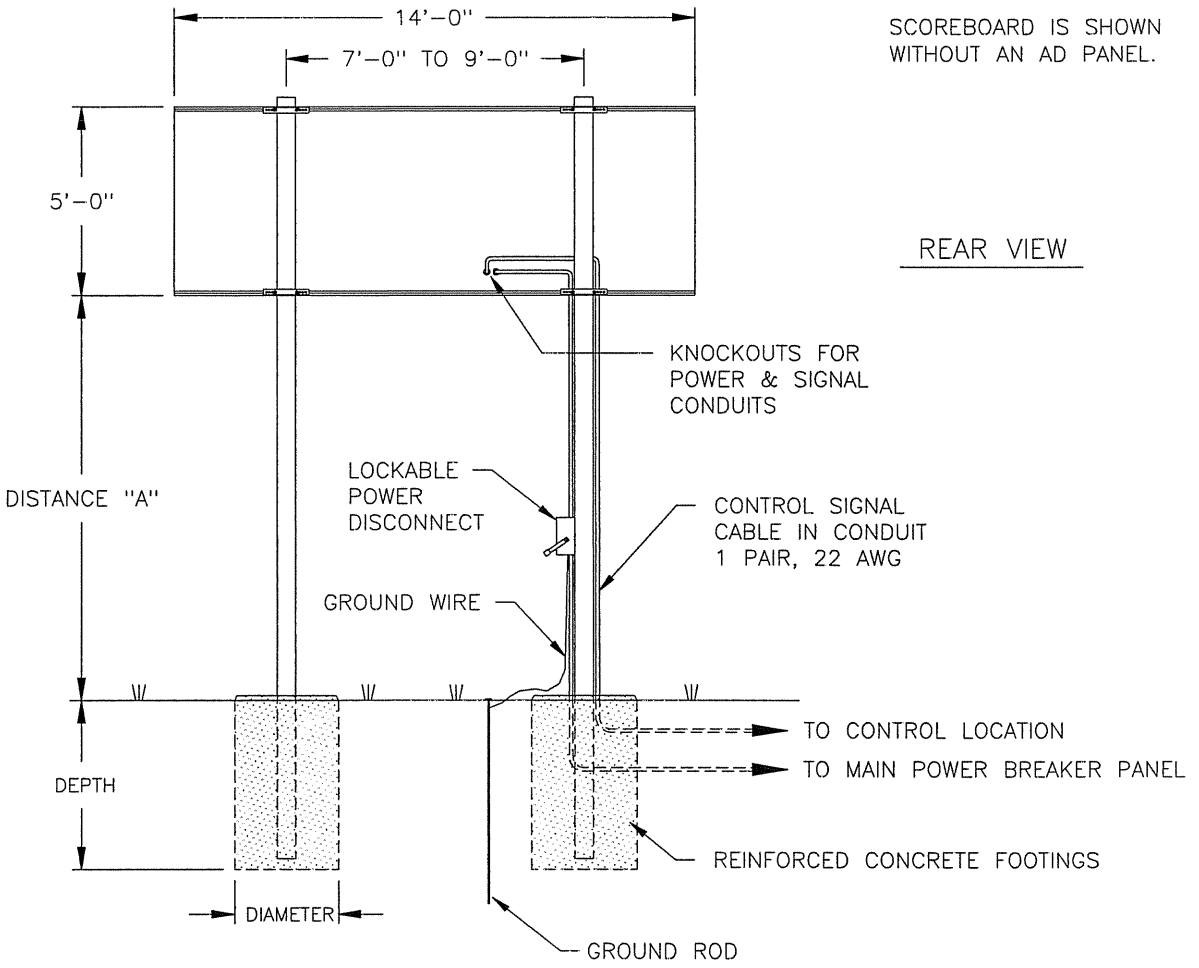
TITLE: INSTALLATION SPECIFICATIONS, BA-718

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 04JAN93

REVISION APPR. BY:

SCALE: 1=50

1091-R10A-55005



SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.

REAR VIEW

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^2

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

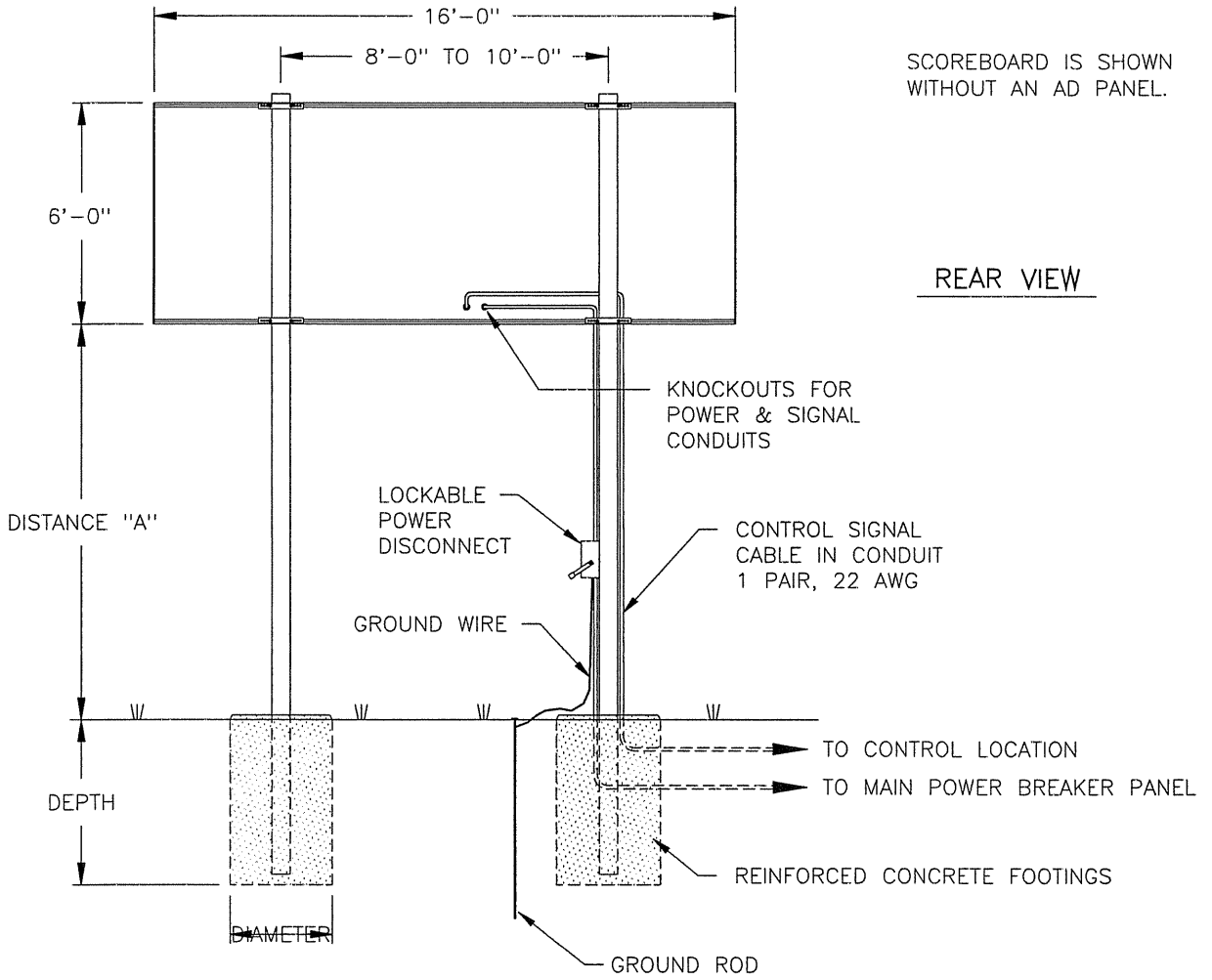
TITLE: INSTALLATION SPECIFICATIONS, BA-618

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	W5x19	W8x24	W8x28
		FOOTING	*3.0' x 4.8'*	*3.0' x 5.3'*	*3.0' x 6.2'*
12'-0"	16'-0" x 6'-0"	BEAM	W8x24	W8x28	W8x31
		FOOTING	*3.0' x 5.0'*	*3.0' x 5.6'*	*3.0' x 6.5'*
14'-0"	16'-0" x 6'-0"	BEAM	W8x28	W8x31	W8x35
		FOOTING	*3.0' x 5.3'*	*3.0' x 5.8'*	*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	W8x28	W8x31	W8x35
		FOOTING	*3.0' x 5.5'*	*3.0' x 6.1'*	*3.0' x 7.2'*
12'-0"	16'-0" x 8'-6"	BEAM	W8x31	W10x33	W8x40
		FOOTING	*3.0' x 5.8'*	*3.0' x 6.4'*	*3.0' x 7.5'*
14'-0"	16'-0" x 8'-6"	BEAM	W10x33	W10x39	W8x48
		FOOTING	*3.0' x 6.1'*	*3.0' x 6.7'*	*3.0' x 7.9'*

FOOTING = DIAMETER X DEPTH

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

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

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

REV.	DATE	DESCRIPTION	BY	APPR.
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

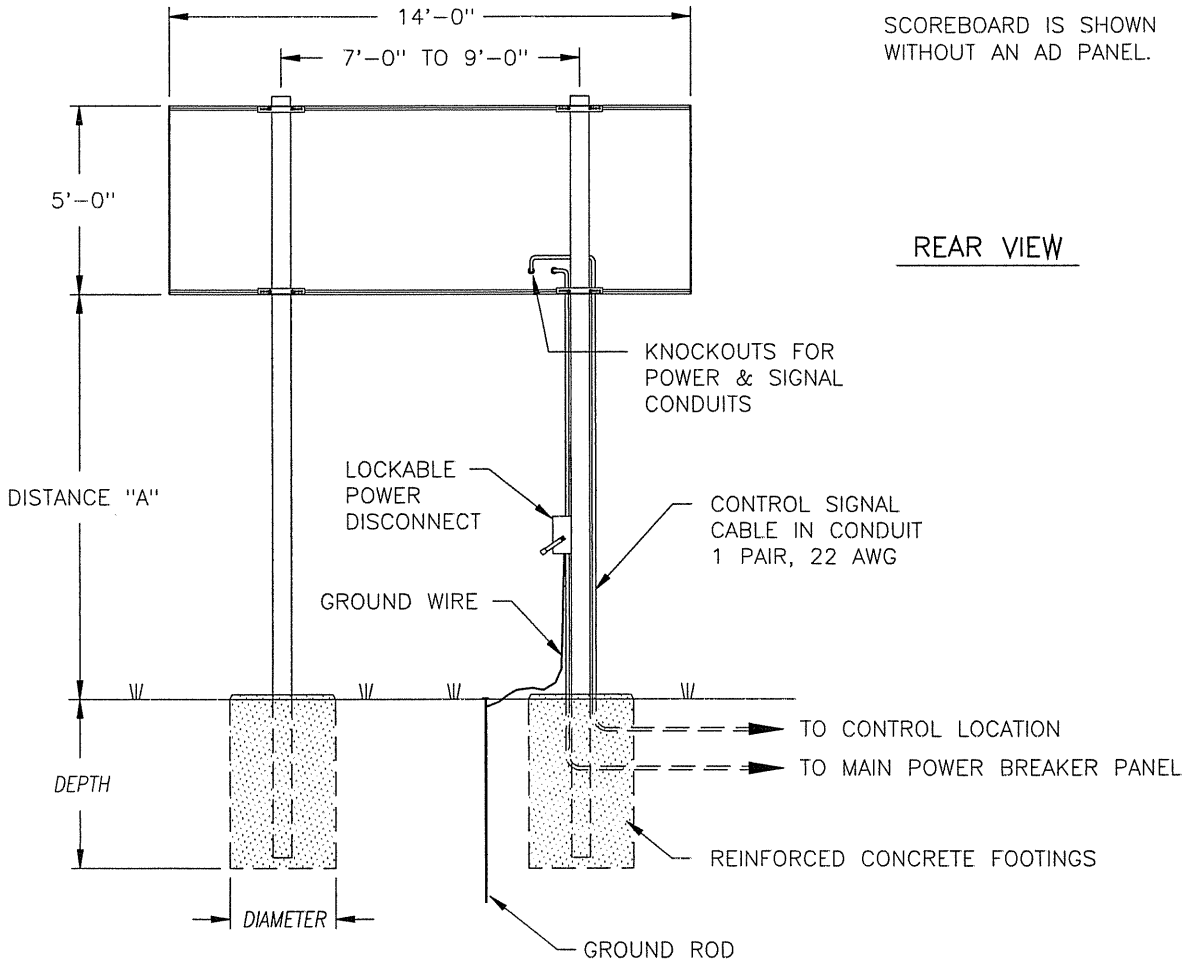
PROJ: OUTDOOR SCOREBOARDS

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



SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.

REAR VIEW

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	W5x16	W5x19	W8x24
		FOOTING	*3.0' x 4.3'*	*3.0' x 4.7'*	*3.0' x 5.5'*
12'–0"	14'–0" x 5'–0"	BEAM	W5x19	W8x24	W8x28
		FOOTING	*3.0' x 4.5'*	*3.0' x 5.0'*	*3.0' x 5.8'*
14'–0"	14'–0" x 5'–0"	BEAM	W8x24	W8x24	W8x31
		FOOTING	*3.0' x 4.7'*	*3.0' x 5.2'*	*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	W8x24	W6x25	W8x31
		FOOTING	*3.0' x 5.0'*	*3.0' x 5.5'*	*3.0' x 6.5'*
12'–0"	14'–0" x 7'–6"	BEAM	W8x28	W8x31	W8x35
		FOOTING	*3.0' x 5.3'*	*3.0' x 5.8'*	*3.0' x 6.8'*
14'–0"	14'–0" x 7'–6"	BEAM	W8x31	W8x31	W8x40
		FOOTING	*3.0' x 5.5'*	*3.0' x 6.1'*	*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 ^{2}

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

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, MS–918

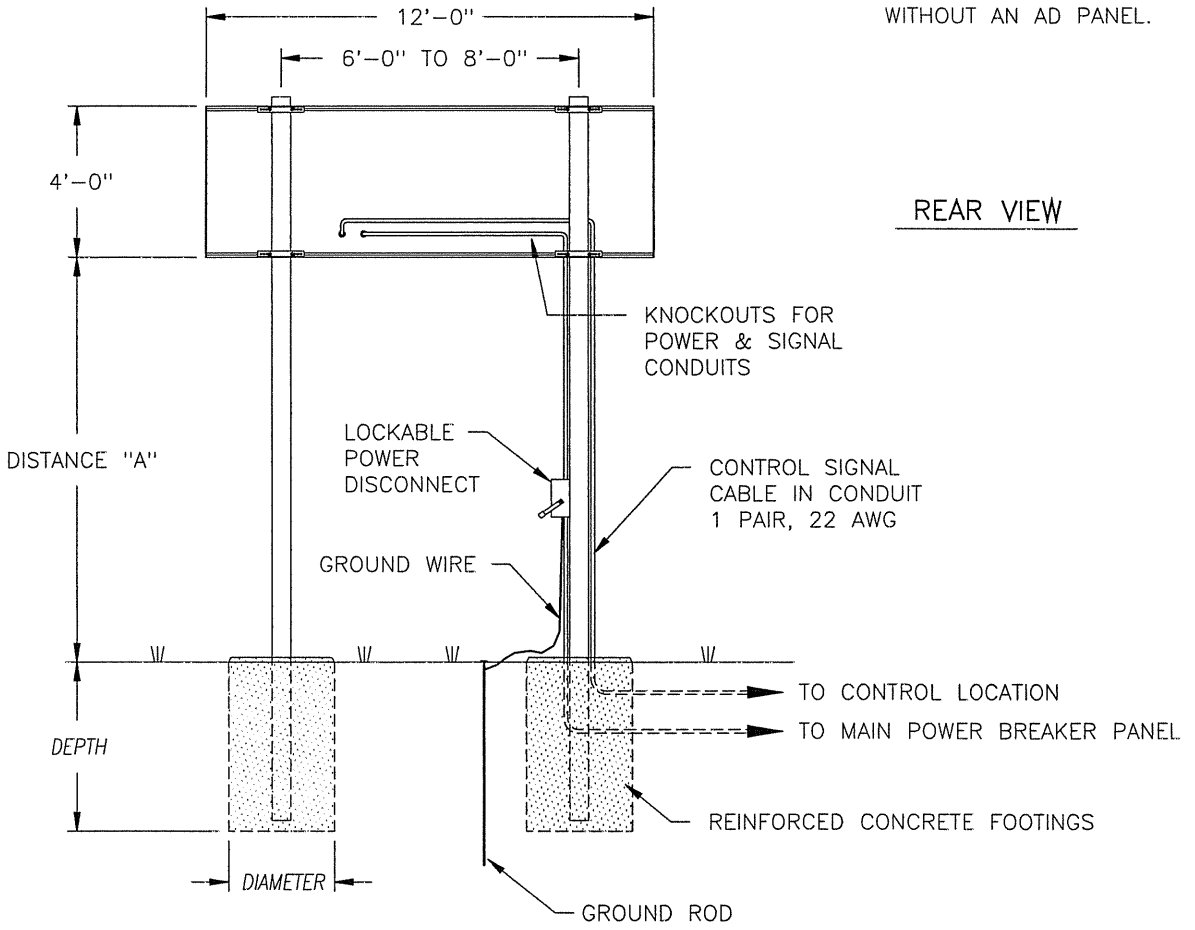
DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 15FEB93

REVISION APPR. BY:

SCALE: 1=60

1091-R10A-55009

SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.



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

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

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

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

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

REV.	DATE	DESCRIPTION	BY	APPR.
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	

DAKTRONICS, INC. BROOKINGS, SD 57006

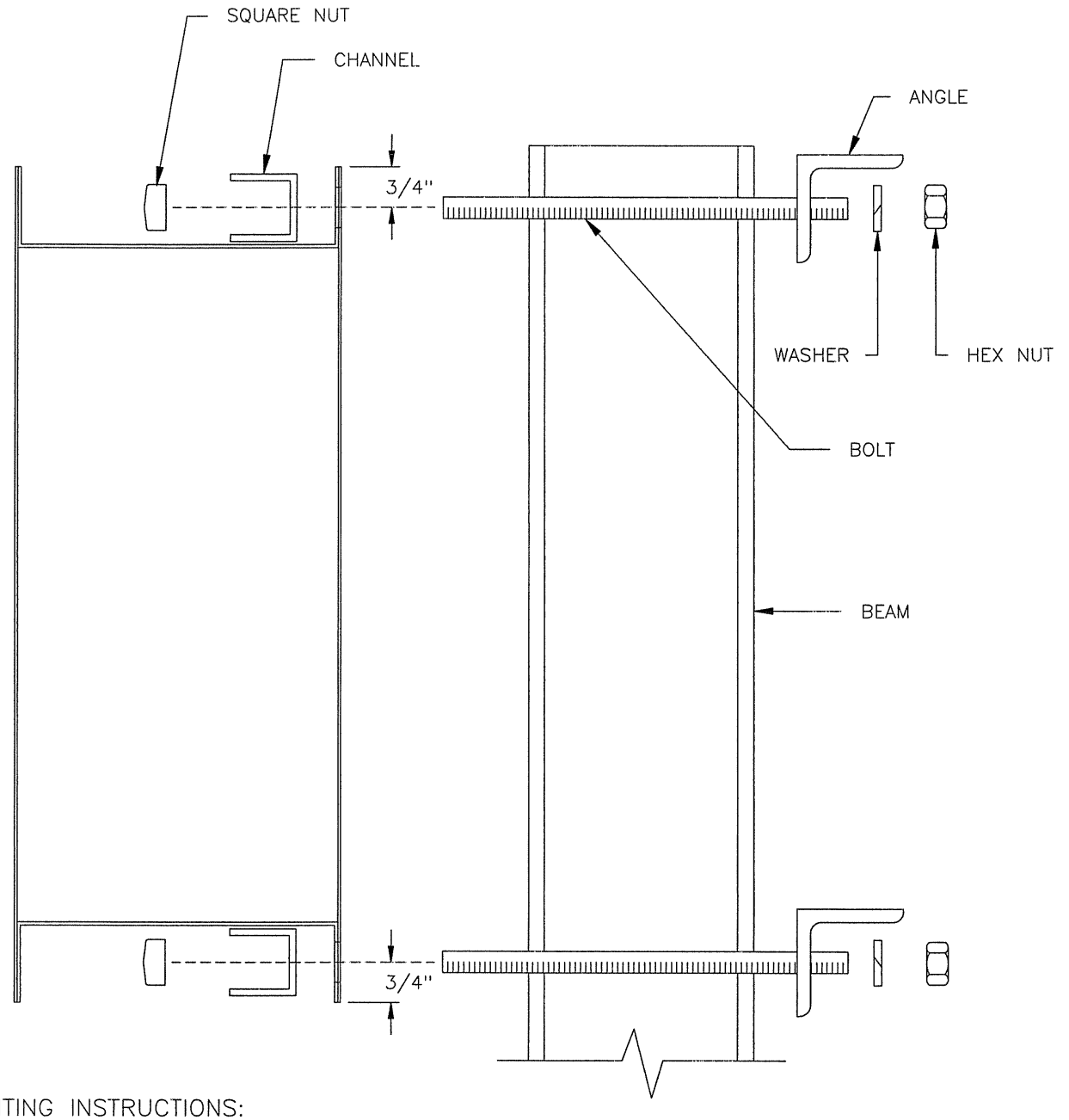
PROJ: OUTDOOR SCOREBOARDS

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



MOUNTING INSTRUCTIONS:

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

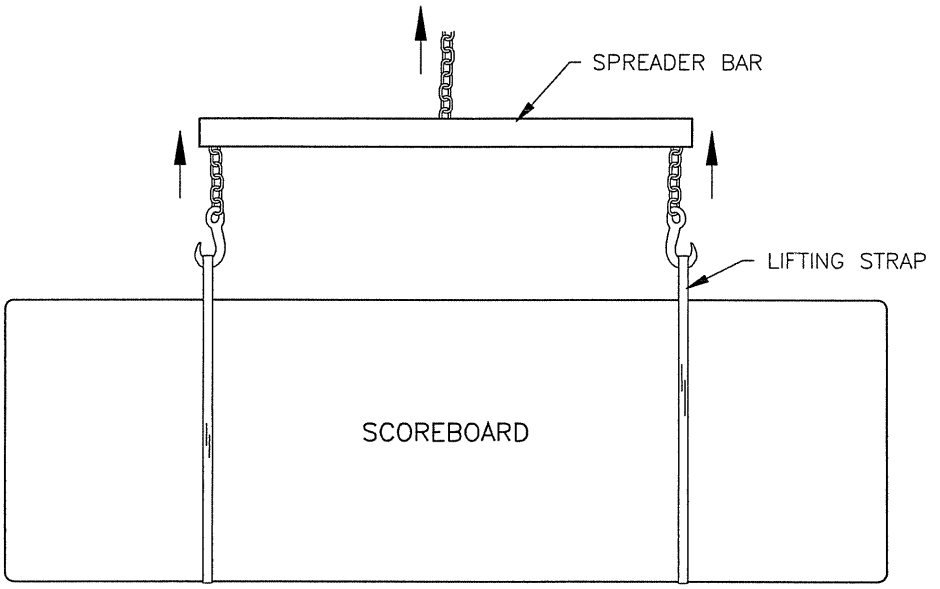
TITLE: SCOREBOARD MOUNTING

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

REVISION APPR. BY:

SCALE: NONE

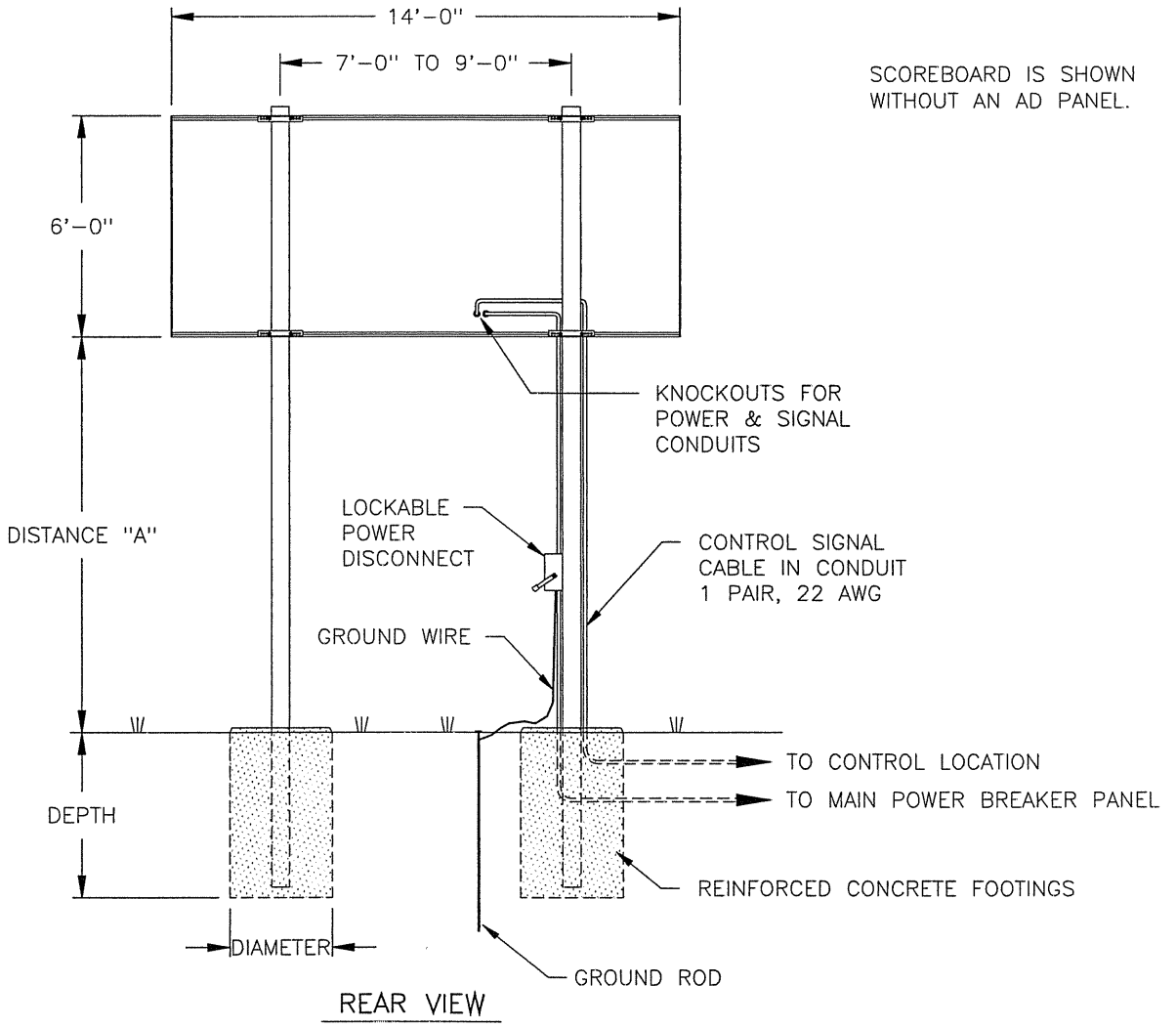
1091-R10A-55101



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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: OUTDOOR SCOREBOARDS		
TITLE: LIFTING SMALL BASEBALL SCOREBOARD		
DES. BY:	DRAWN BY: C FICKBOHM	DATE: 29 SEP 93
REVISION	APPR. BY:	1091-R10A-58668
	SCALE: NONE	



REAR VIEW

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	W5x19	W6x20	W8x28
		FOOTING	*3.0' x 4.6'*	*3.0' x 5.0'*	*3.0' x 5.9'*
12'–0"	14'–0" x 6'–0"	BEAM	W8x24	W8x24	W8x31
		FOOTING	*3.0' x 4.8'*	*3.0' x 5.3'*	*3.0' x 6.3'*
14'–0"	14'–0" x 6'–0"	BEAM	W8x24	W8x28	W8x35
		FOOTING	*3.0' x 5.0'*	*3.0' x 5.5'*	*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	W8x24	W8x28	W8x35
		FOOTING	*3.0' x 5.3'*	*3.0' x 5.8'*	*3.0' x 6.9'*
12'–0"	14'–0" x 8'–6"	BEAM	W8x28	W8x31	W10x39
		FOOTING	*3.0' x 5.6'*	*3.0' x 6.1'*	*3.0' x 7.2'*
14'–0"	14'–0" x 8'–6"	BEAM	W8x31	W8x35	W12x45
		FOOTING	*3.0' x 5.8'*	*3.0' x 6.4'*	*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 ^{2}

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

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

REV.	DATE	DESCRIPTION	BY	APPR.
03	05MAY04	ADDED MODEL BA–2016	MCOPL	
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

REV.	DATE	DESCRIPTION	BY	APPR.
3	19JUL00	UPDATED HORN ENCLOSURE IN FIGURE 3	GDB	
2	14FEB00	ADDED ENTRANCE ENCLOSURE TO FIGURE 3	BDP	
1	23 SEPT 96	CHG SCALE OF FIGURES 1 & 2 SWITCHED POSITIONS OF FIGURES 1 & 2	JEM	

REVISION

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: STANDARD SCOREBOARDS

TITLE: FINAL ASSEMBLY, 12V DC HORN MOUNTING

DES. BY: DRAWN BY: JMOEN DATE: 20 JUN 96

APPR. BY:

SCALE: 1=10

1091-E10A-83333

FOR COMPLETE INSTALLATION INSTRUCTIONS, REFER TO ED-10006.

LOCATE HORN PANEL OF THE SCOREBOARD.

MOUNTING ENCLOSURE TO INSIDE OF SCOREBOARD

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

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

MOUNTING HORN TO SCOREBOARD FACE

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

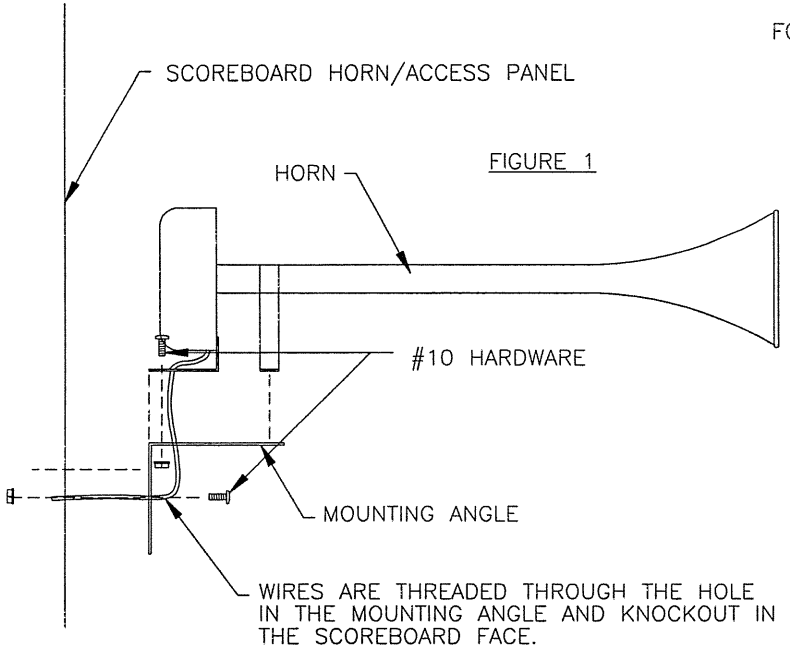


FIGURE 1

SIDE VIEW

SCALE 1=5

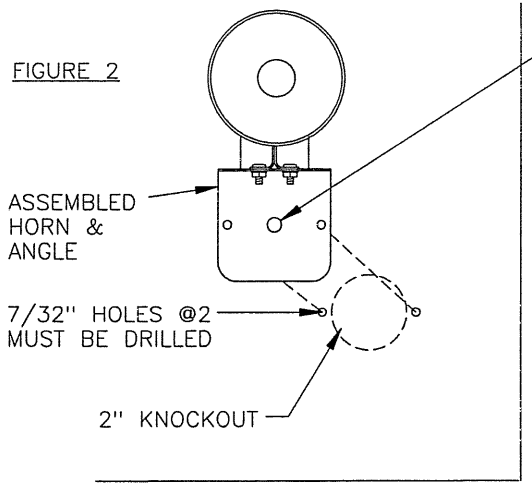


FIGURE 2

FRONT VIEW

SCALE 1=5

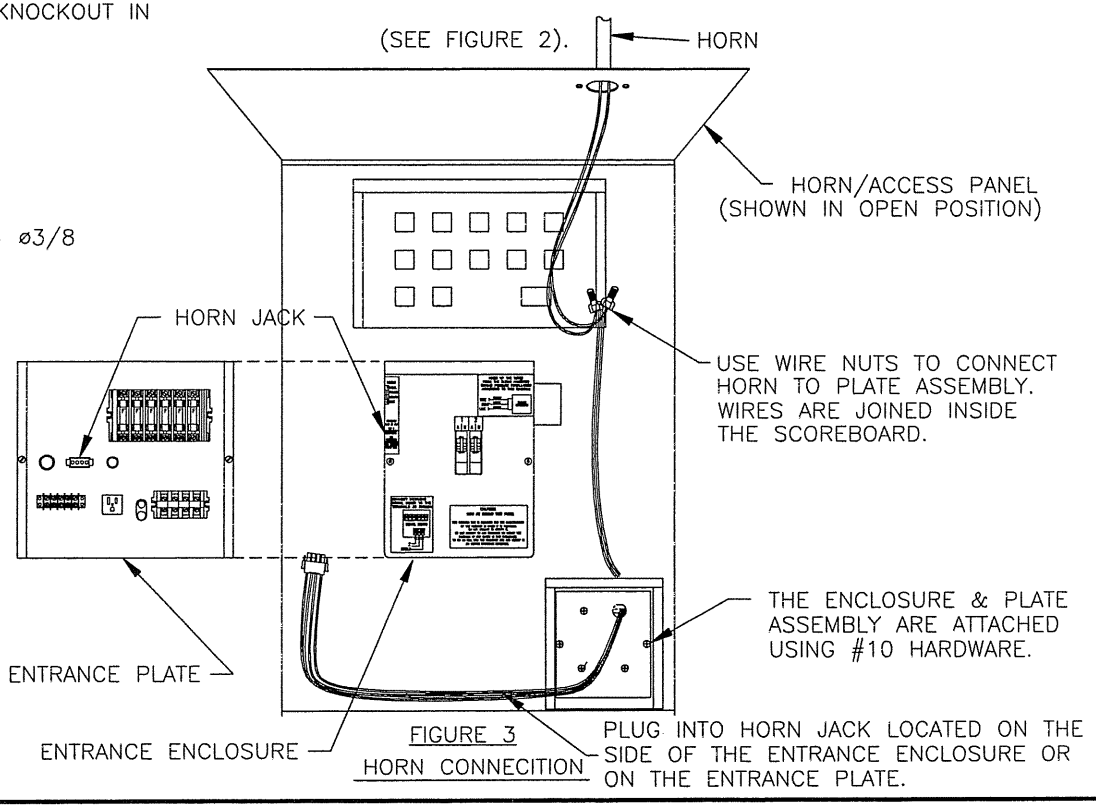
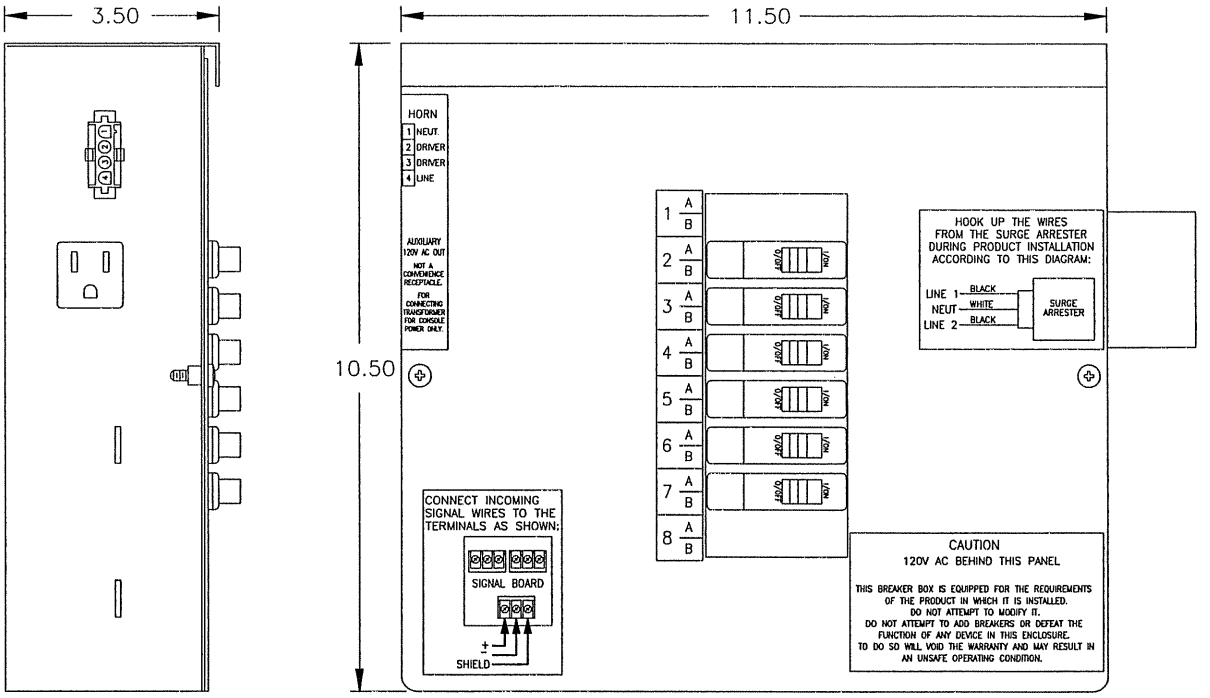


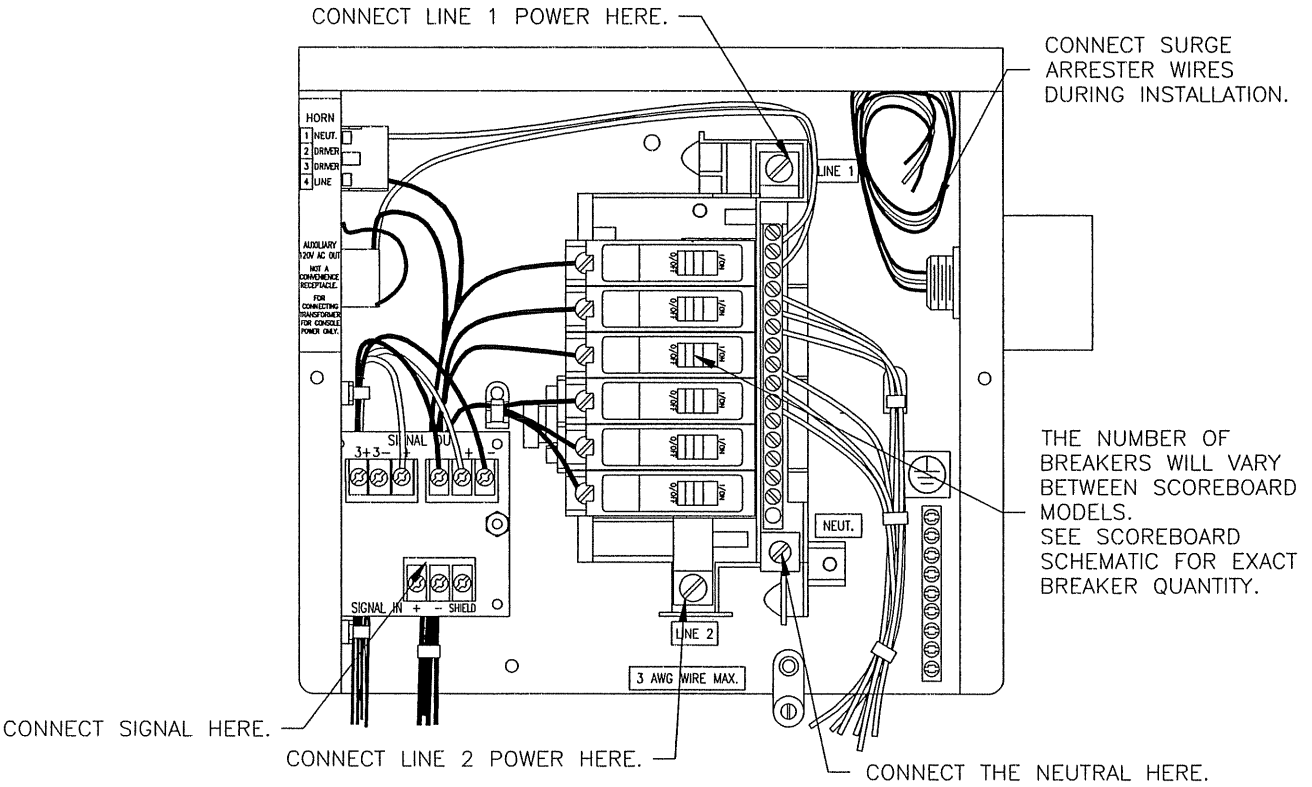
FIGURE 3

HORN CONNECITION



LEFT SIDE

FRONT VIEW



FRONT VIEW

(WITH COVER REMOVED)

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

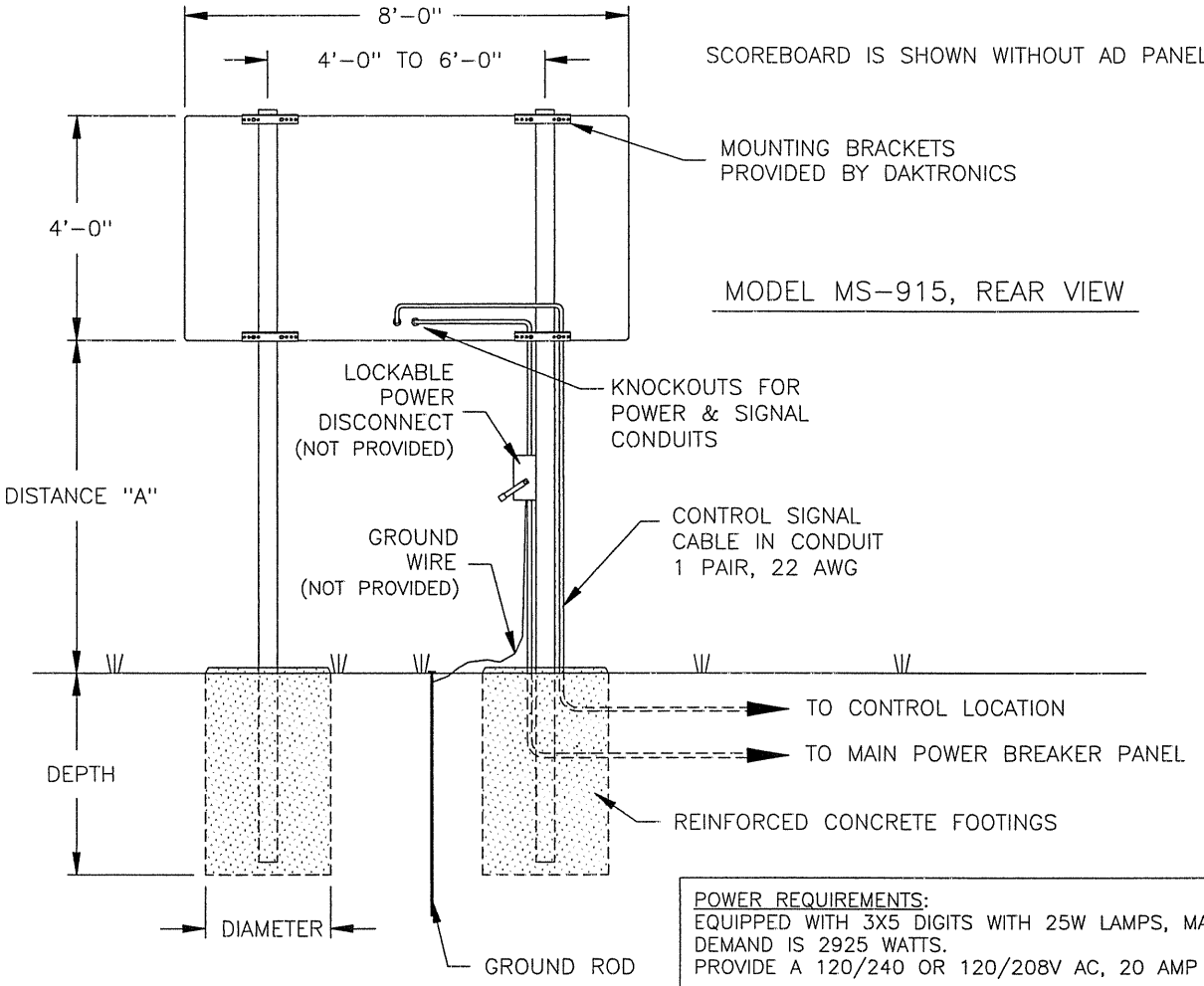
TITLE: COMPONENTS, 8/16 POS POWER AND SIGNAL ENTRANCE

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

REVISION APPR. BY:

SCALE: 1=3

1091-E10A-109114



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' x4'*	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.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

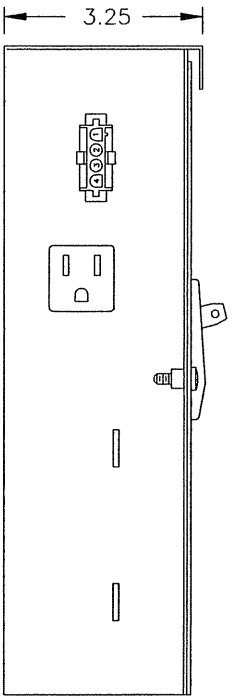
TITLE: INSTALLATION SPECIFICATIONS, MS-915

DES. BY: DRAWN BY: A VANBEMMEL DATE: 17 MAR 99

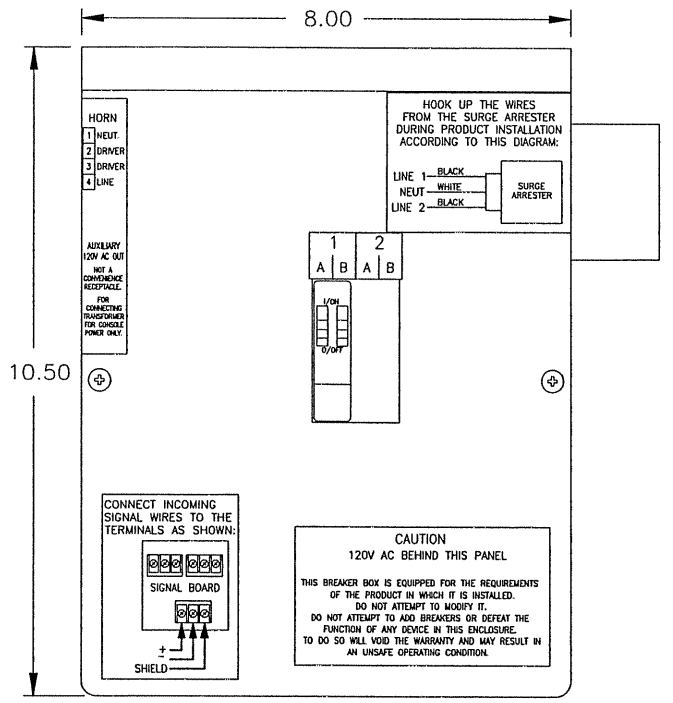
REVISION APPR. BY:

SCALE: 1=40

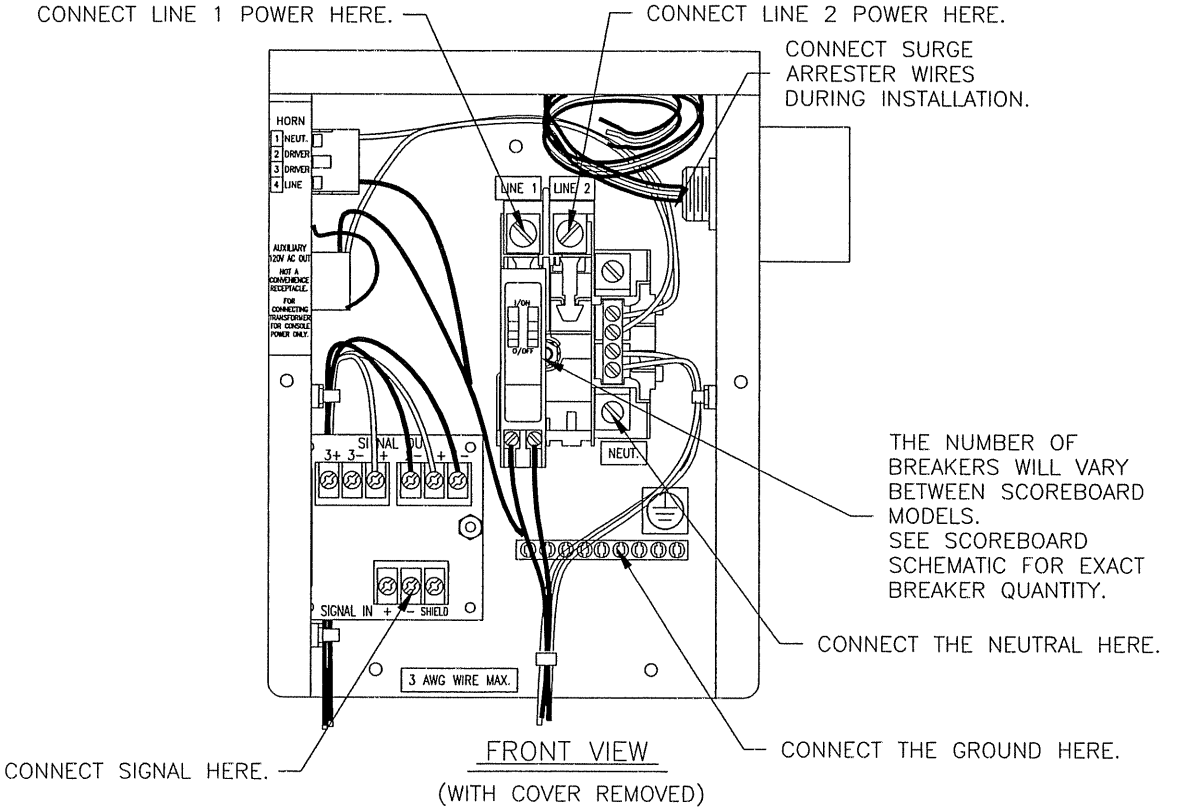
1091-R08A-113568



LEFT SIDE



FRONT VIEW



FRONT VIEW
(WITH COVER REMOVED)

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

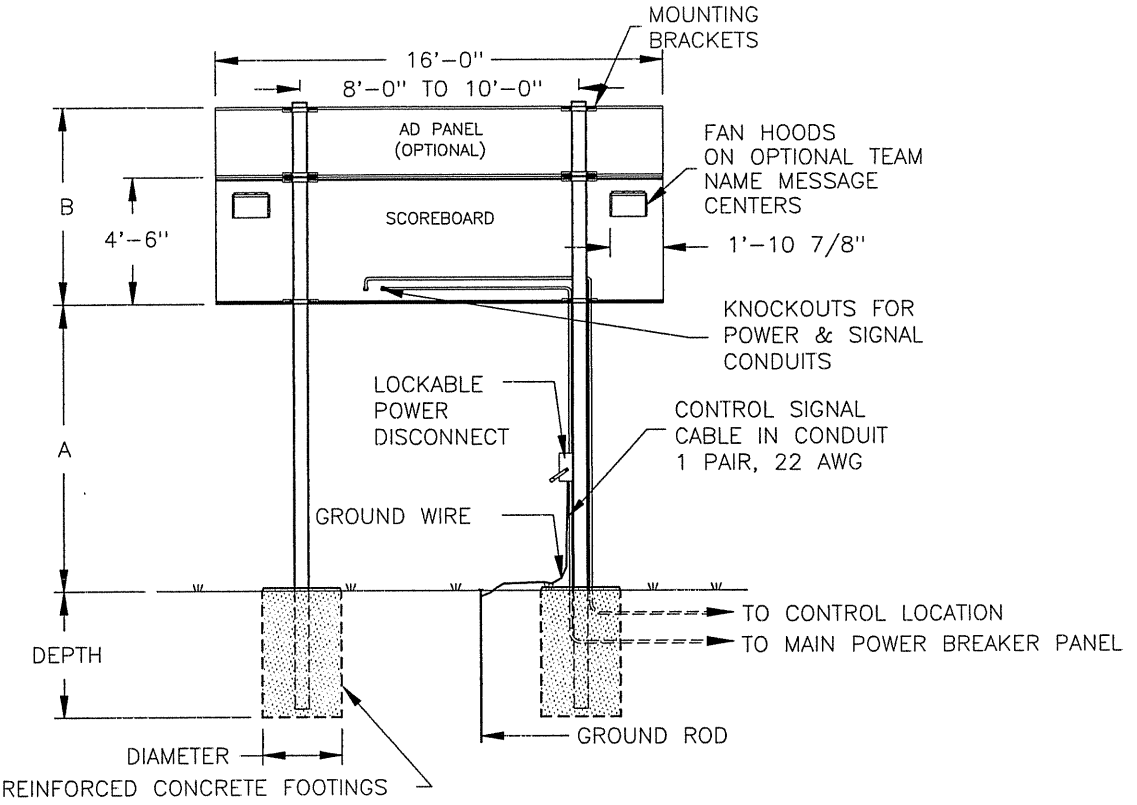
TITLE: COMPONENTS, 2/4 POS, POWER AND SIGNAL ENTRANCE

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

REVISION APPR. BY:

SCALE: 1=3

1091-E10A-125977



REAR VIEW

MS-2002

ELECTRICAL

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

MODEL MS-2002

VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY 70 MPH	80 MPH	100 MPH
10 FT	NONE	4'-6"	BEAM	W6x15	W5x19	W8x24
			FOOTING	3.0'x4.3'	3.0'x4.7'	3.0'x5.6'
	2 FT	6'-6"	BEAM	W6x20	W8x24	W8x31
			FOOTING	3.0'x5.0'	3.0'x5.5'	3.0'x6.4'
	4 FT	8'-6"	BEAM	W8x28	W8x31	W8x35
			FOOTING	3.0'x5.5'	3.0'x6.1'	3.0'x7.2'
12 FT	NONE	4'-6"	BEAM	W5x19	W8x24	W8x28
			FOOTING	3.0'x4.5'	3.0'x5.0'	3.0'x5.9'
	2 FT	6'-6"	BEAM	W8x24	W8x28	W10x33
			FOOTING	3.0'x5.2'	3.0'x5.7'	3.0'x6.8'
	4 FT	8'-6"	BEAM	W8x31	W10x33	W8x40
			FOOTING	3.0'x5.8'	3.0'x6.4'	3.0'x7.5'
14 FT	NONE	4'-6"	BEAM	W8x24	W8x24	W8x31
			FOOTING	3.0'x4.8'	3.0'x5.2'	3.0'x6.2'
	2 FT	6'-6"	BEAM	W8x28	W8x31	W10x39
			FOOTING	3.0'x5.4'	3.0'x6.0'	3.0'x7.0'
	4 FT	8'-6"	BEAM	W10x33	W10x39	W8x48
			FOOTING	3.0'x6.1'	3.0'x6.7'	3.0'x7.9'

FOOTING = DIAMETER X DEPTH

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

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

A NOTE ABOUT BEAM NOMENCLATURE:

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

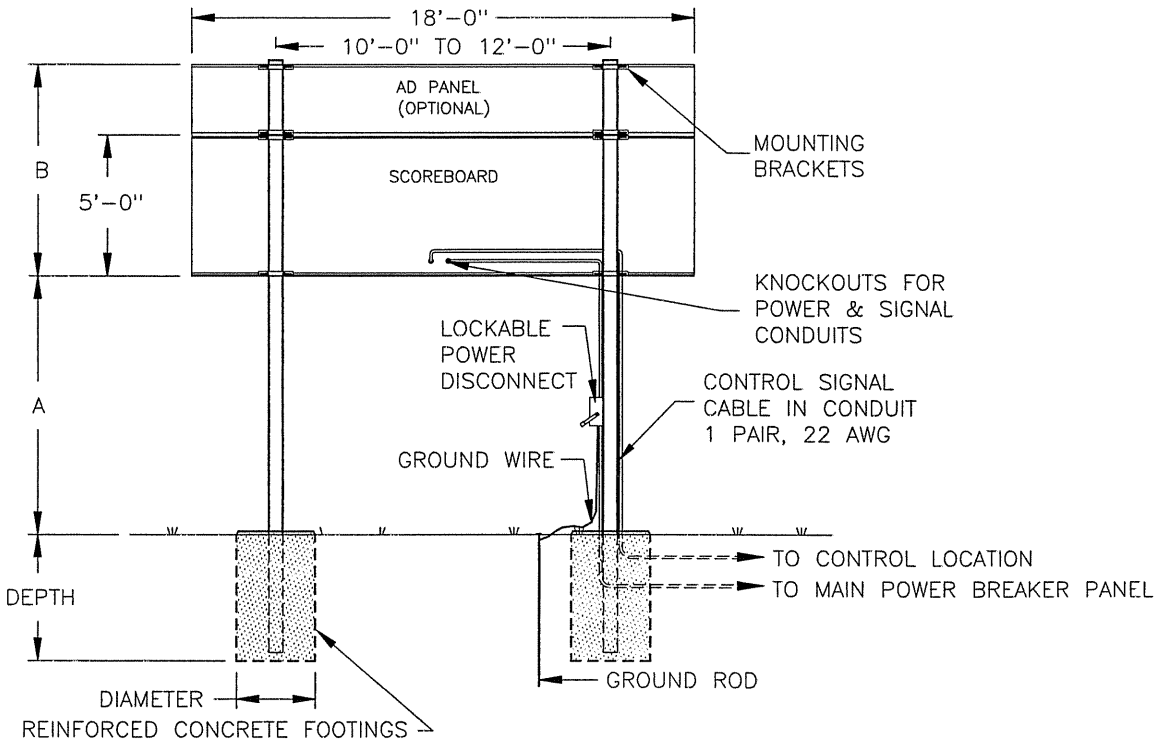
TITLE: INSTALLATION SPECIFICATIONS, MS-2002

DES. BY: BPETERSON DRAWN BY: MVANDYK DATE: 31JAN00

REVISION APPR. BY:

SCALE: 1=80

1091-R10A-127195



REAR VIEW

MS-2004

ELECTRICAL

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

MODEL 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	W6x16	W6x20	W8x24
			FOOTING	2'x5.4'	2'x6.6'	2'x7.8'
	2 FT	7'-0"	BEAM	W8x24	W8x28	W8x31
			FOOTING	2'x6.8'	2'x7.5	2'x8.9'
	4 FT	9'-0"	BEAM	W8x28	W8x31	W10x30
			FOOTING	2'x7.6'	2'x8.4'	2'x10'
12 FT	NONE	5'-0"	BEAM	W6x20	W8x24	W8x31
			FOOTING	2'x6.2'	2'x6.8'	2'x8'
	2 FT	7'-0"	BEAM	W8x28	W8x31	W10x39
			FOOTING	2'x7.1'	2'x7.8'	2.2'x8.9'
	4 FT	9'-0"	BEAM	W8x31	W10x39	W10x45
			FOOTING	2'x8'	2.2'x8.5'	2.2'x10'
14 FT	NONE	5'-0"	BEAM	W8x24	W8x28	W8x31
			FOOTING	2'x6.5'	2'x7.2'	2'x8.4'
	2 FT	7'-0"	BEAM	W8x31	W8x35	W12x45
			FOOTING	2'x7.5'	2'x8.3'	2.2'x10.5'
	4 FT	9'-0"	BEAM	W10x39	W12x45	W12x50
			FOOTING	2.2'x8.1'	2'x9'	2.2'x10.8'

FOOTING = DIAMETER X DEPTH

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

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

A NOTE ABOUT BEAM NOMENCLATURE:

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

REV.	DATE	DESCRIPTION	BY	APPR.
01	30JUN00	REVISED DESIGN WIND VELOCITY CHART	TJV	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

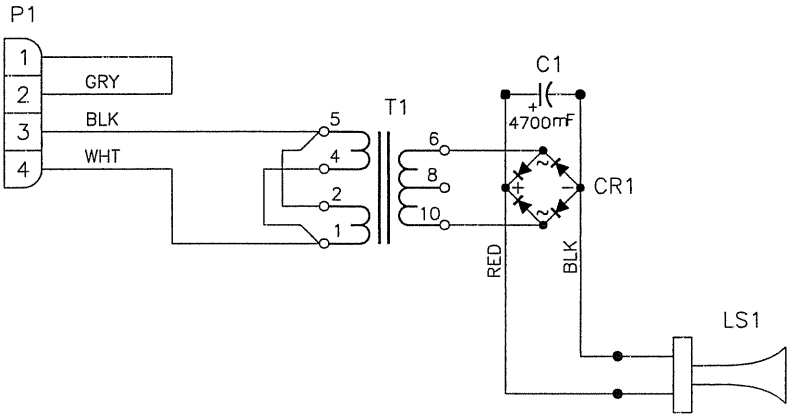
TITLE: INSTALLATION SPECIFICATIONS, MS-2004

DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 02MAR00

REVISION APPR. BY:

SCALE: 1=80

1091-R10A-128788



0A-1091-1214

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: STANDARD SCOREBOARDS

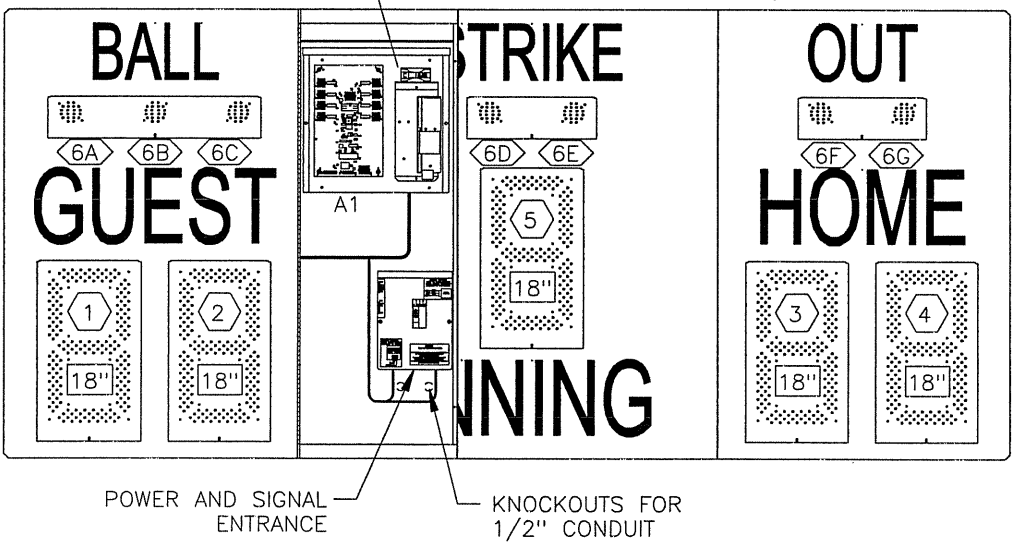
TITLE: SCHEMATIC, OUTDOOR SCBD 12VDC TRUMPET HORN, AS5K

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

REVISION 01 | APPR. BY: | SCALE: NONE

1091-R03A-128938

BA-518-11



FRONT VIEW

(1) = DRIVER CONNECTOR WIRED TO THAT DIGIT.

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

18" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.
01	01AUG01	CHANGED PROJECT DESCRIPTION	DUSWH	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-518-11

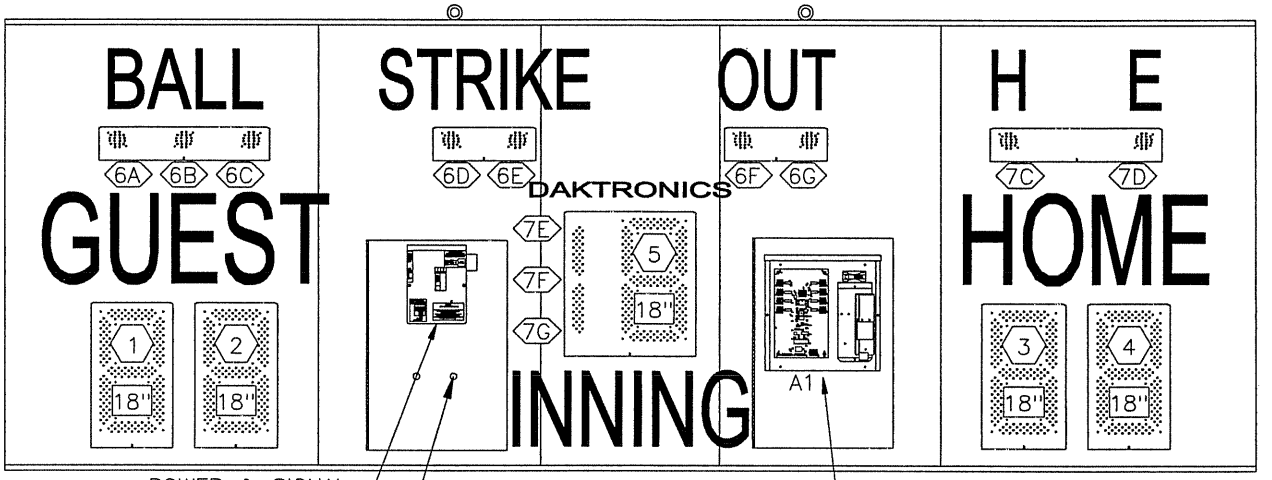
DES. BY: GBREEN DRAWN BY: GBREEN DATE: 16NOV00

REVISION APPR. BY:

SCALE: 1=20

1192-E10A-129868

BA-618-11



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 LAMP DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.
01	01AUG01	CHANGED PROJECT DESCRIPTION	DUSWH	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-618-11

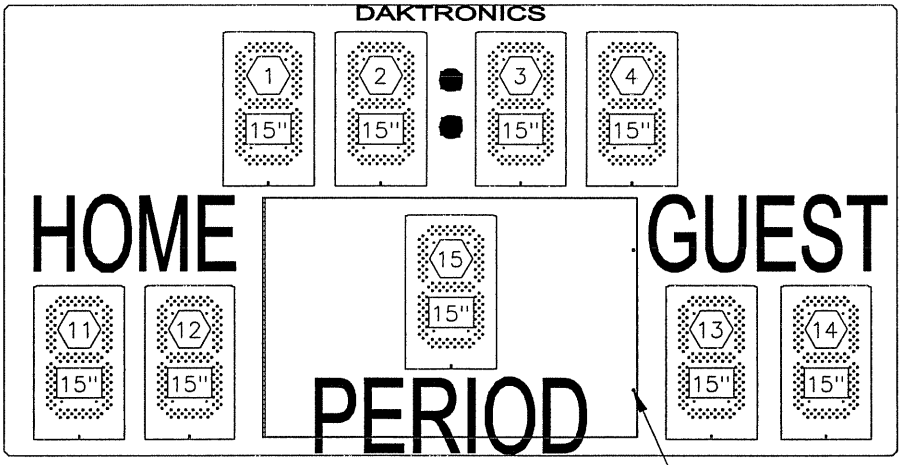
DES. BY: GBREEN DRAWN BY: GBREEN DATE: 16NOV00

REVISION APPR. BY:

SCALE: 1=25

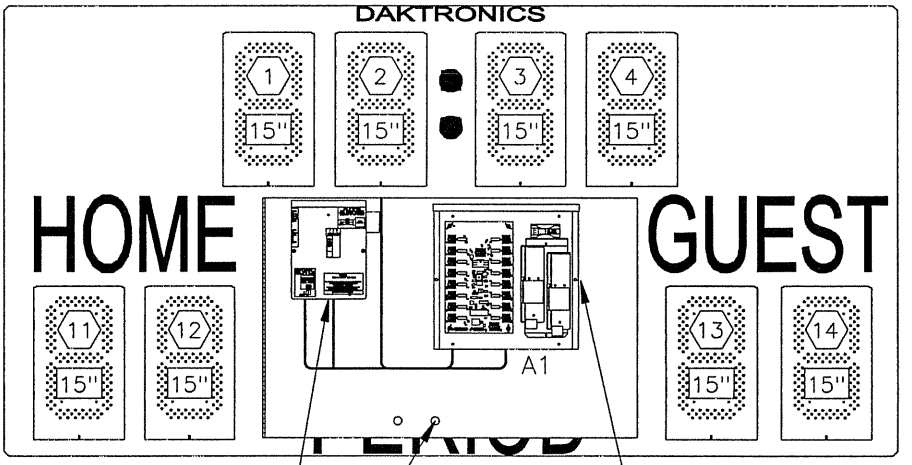
1192-E10A-129899

MS-915-11



FRONT VIEW

REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE



POWER & SIGNAL ENTRANCE

KNOCKOUTS FOR 1/2" CONDUIT

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

FRONT VIEW

(1) = LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.

15" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, MS-915-11

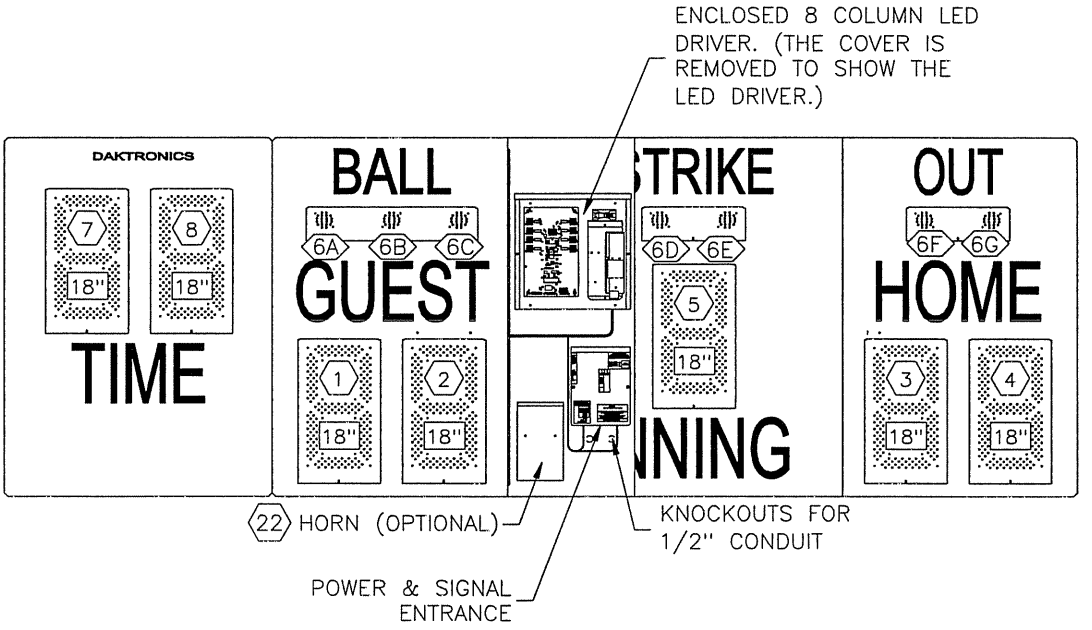
DES. BY: GBREEN DRAWN BY: GBREEN DATE: 19DEC00

REVISION APPR. BY:

SCALE: 1=20

1192-E10A-129900

BA-718-11



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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

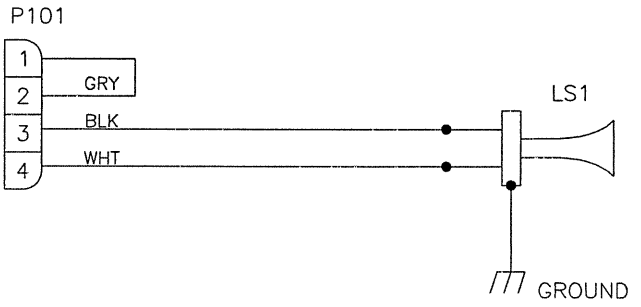
TITLE: COMPONENT LOCATIONS, BA-718-11

DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 11NOV00

REVISION APPR. BY:

SCALE: 1=25

1192-E10A-129903



0A-1091-0470

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: STANDARD OUTDOOR SCOREBOARDS

TITLE: SCHEMATIC; 120VAC TRUMPET HORN

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

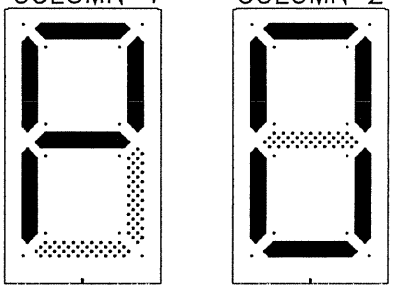
REVISION 01 | APPR. BY: | SCALE: 1=1

1091-R03A-132173

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

LED BAR DIGIT

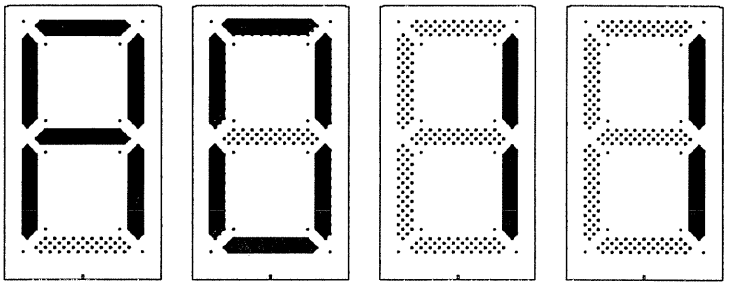
COLUMN 1 COLUMN 2



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

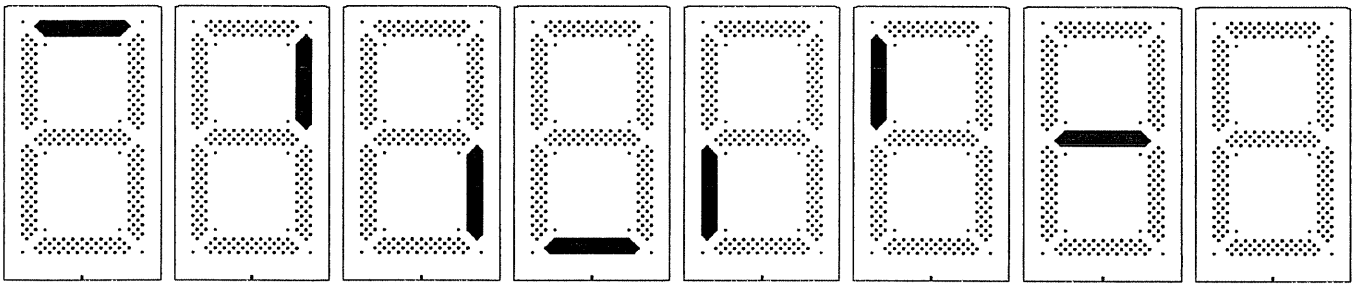
LED BAR DIGIT

COLUMN 1 COLUMN 2 COLUMN 3 COLUMN 4



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

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



REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: OUTDOOR LED POWER UP SELF TEST

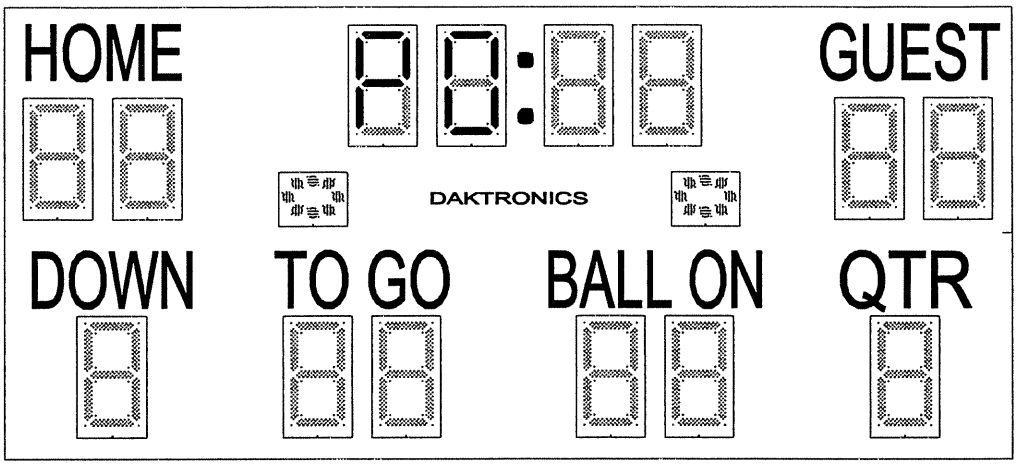
DES. BY: DRAWN BY: N WRIEDT DATE: 10 JAN 01

REVISION APPR. BY:

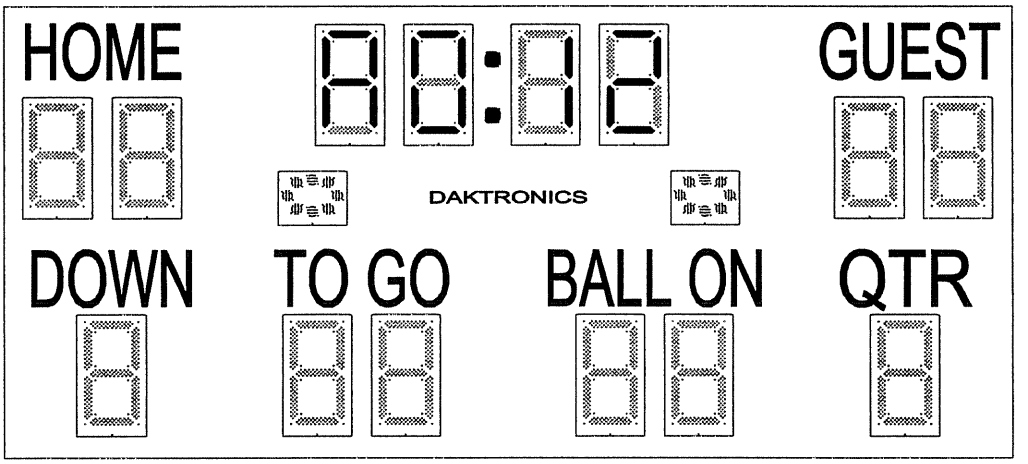
SCALE: NONE

1192-E07A-133350

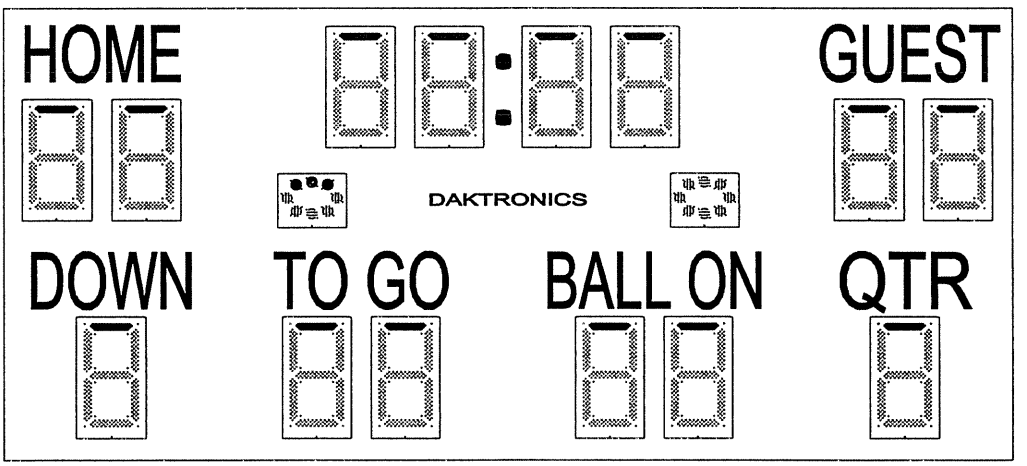
1ST CYCLE OF THE SELF TEST PATTERN WITH THE NO PROTOCOL PINS SET



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



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



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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: LED BAR DIGIT POWER UP SELF TEST

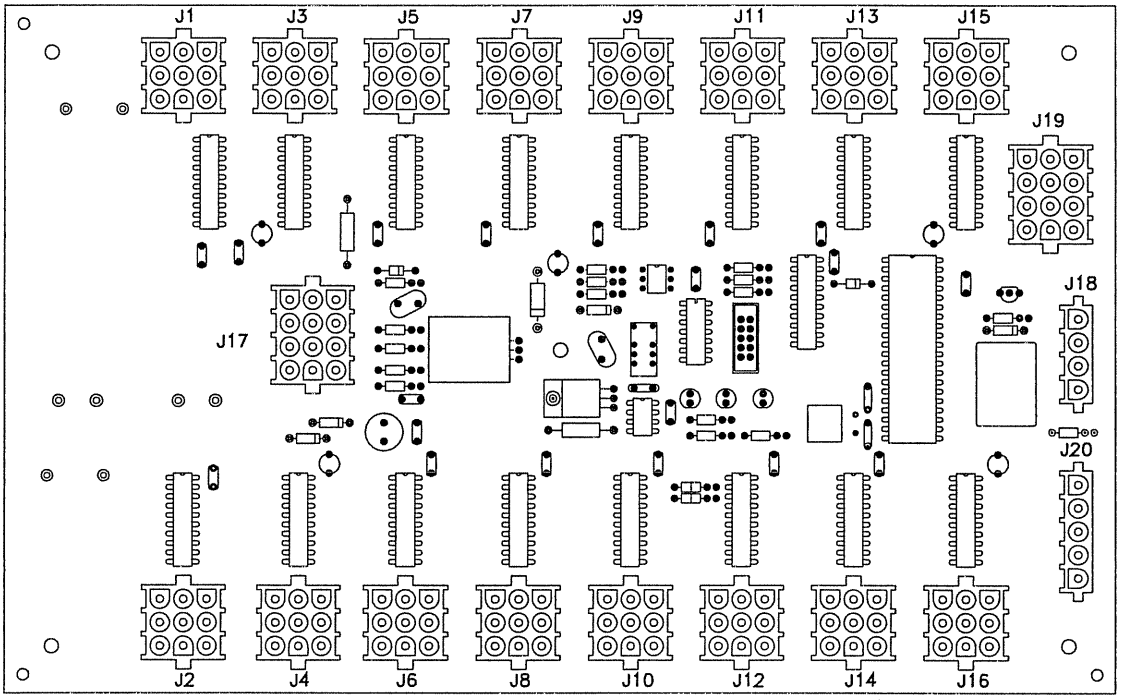
DES. BY: DRAWN BY: N WRIEDT DATE: 11 JAN 01

REVISION APPR. BY:

SCALE: NONE

1192-E07A-133351

OP-1192-0011 16 COLUMN LED DRIVER II



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

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

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

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

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

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

-GREEN LED INDICATES THE DRIVER HAS POWER

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

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

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

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

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: 16 COLUMN LED DRIVER II SPECIFICATIONS

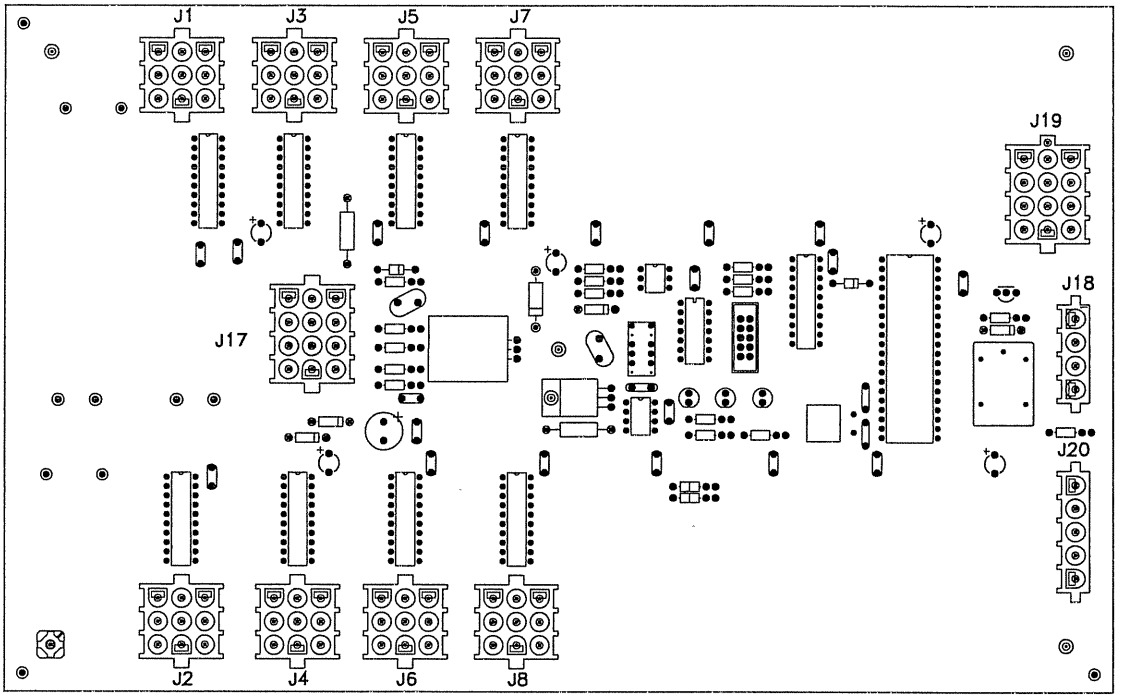
DES. BY: EB DRAWN BY: NWRIEDT DATE: 11 JAN 01

REVISION 00 APPR. BY:

SCALE: NONE

1192-R07A-134371

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	PR0-N
3	PR1-N
4	PR2-N
5	TOD-N

NOTE

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

-GREEN LED INDICATES THE DRIVER HAS POWER

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

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

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

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

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

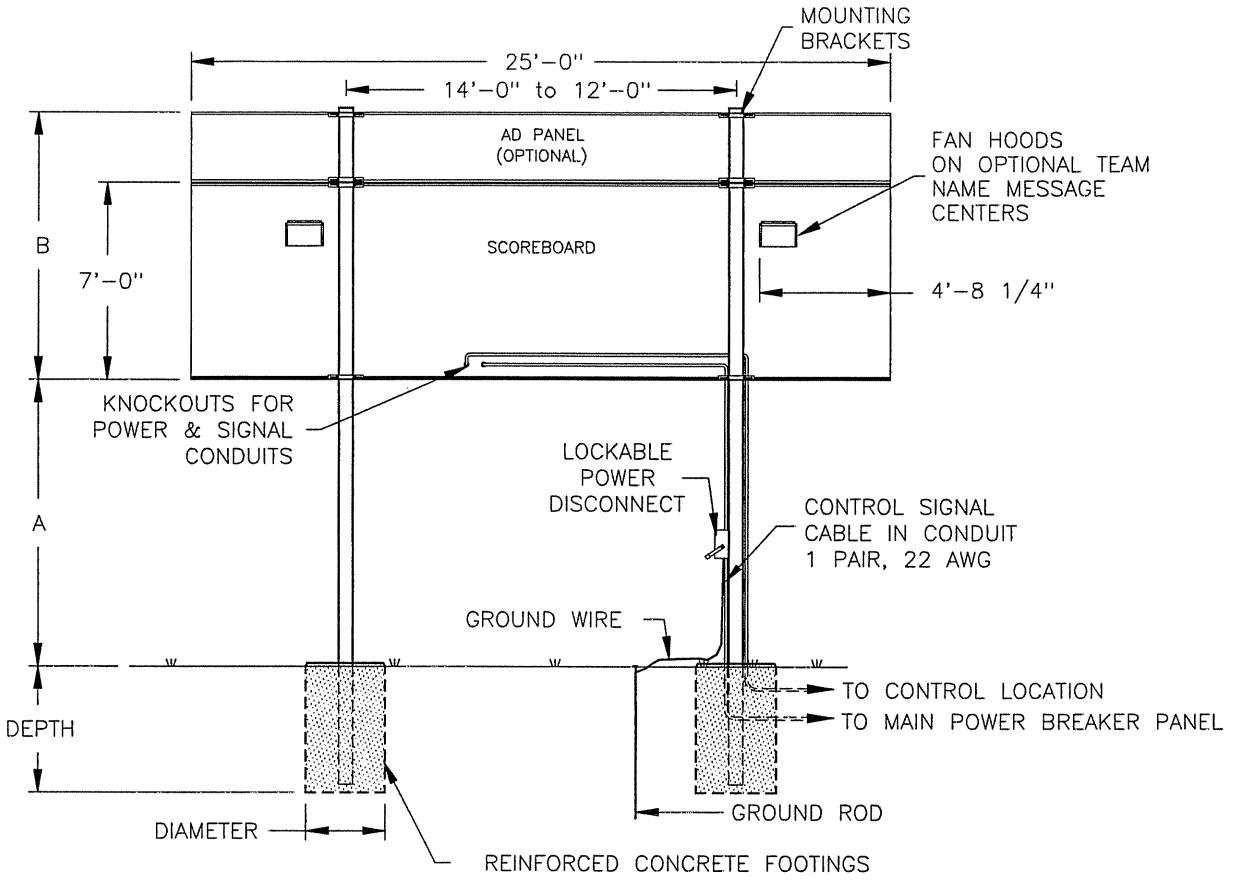
TITLE: 8 COLUMN LED DRIVER II SPECIFICATIONS

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

REVISION APPR. BY:

SCALE: NONE

1192-R07A-134372



REAR VIEW

MS-2006

ELECTRICAL

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

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

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

MODEL MS-2006

VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY 70 MPH	80 MPH	100 MPH
10 FT	NONE	7'-0"	BEAM	W8x28	W8x31	W10x39
			FOOTING	3'x6'	3'x6.6'	3'x7.8'
	2 FT	9'-0"	BEAM	W10x33	W10x39	W8x48
			FOOTING	3'x6.7'	3'x7.4'	3'x8.7'
	4 FT	11'-0"	BEAM	W8x40	W8x48	W10x54
			FOOTING	3'x7.3'	3'x8.1'	3'x9.6'
12 FT	NONE	7'-0"	BEAM	W8x31	W8x35	W12x45
			FOOTING	3'x6.2'	3'x6.9'	3'x8.1'
	2 FT	9'-0"	BEAM	W10x39	W12x45	W12x53
			FOOTING	3'x7'	3'x7.7'	3'x9'
	4 FT	11'-0"	BEAM	W10x45	W10x49	W12x65
			FOOTING	3'x7.6'	3'x8.4'	3'x9.9'
14 FT	NONE	7'-0"	BEAM	W8x35	W8x40	W8x48
			FOOTING	3'x6.5'	3'x7.2'	3'x8.5'
	2 FT	9'-0"	BEAM	W12x45	W8x48	W10x60
			FOOTING	3'x7.3'	3'x8'	3'x9.5'
	4 FT	11'-0"	BEAM	W10x49	W12x58	W12x72
			FOOTING	3'x7.9'	3'x8.7'	3'x10.3'

FOOTING = DIAMETER X DEPTH

A NOTE ABOUT BEAM NOMENCLATURE:

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, MS-2006

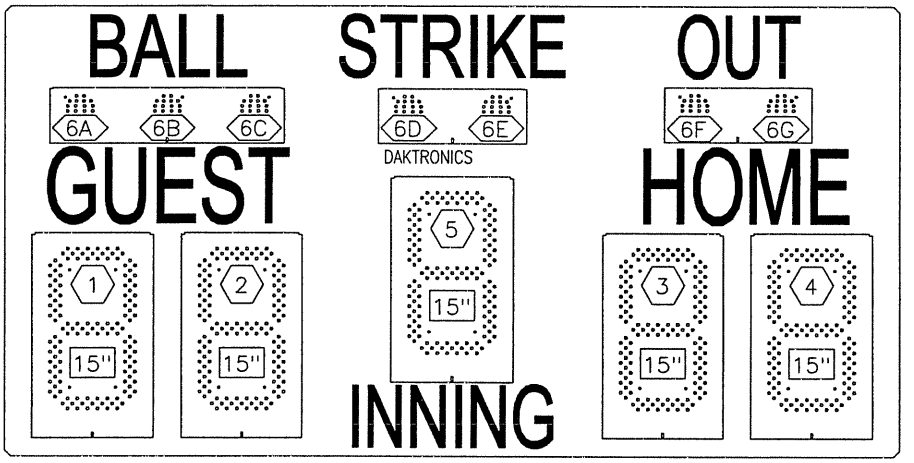
DES. BY: GBREEN DRAWN BY: GBREEN DATE: 21JUL00

REVISION APPR. BY:

SCALE: 1=80

1091-R10A-135575

BA-515-11

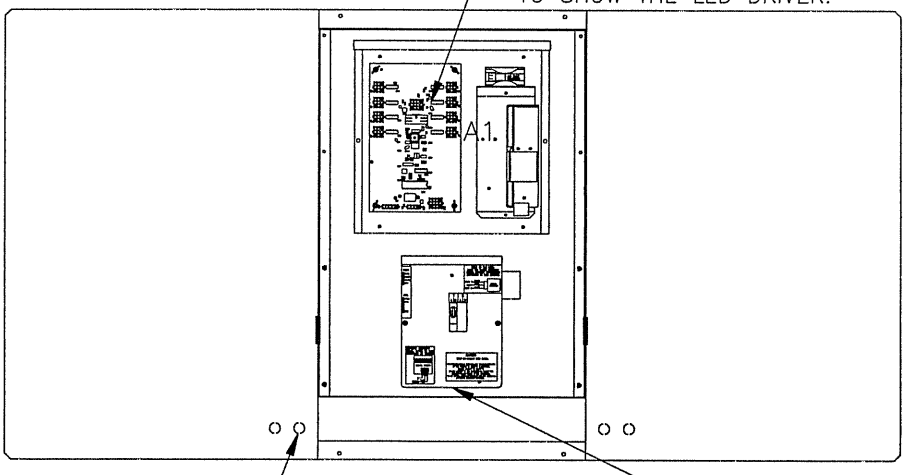


FRONT VIEW

(1) = LED DRIVER CONNECTOR WIRED TO THAT DIGIT

(6A) = LED DRIVER CONNECTOR AND SEGMENT (PIN) NUMBER WIRED TO THAT INDICATOR

15" = DIGIT SIZE



REAR VIEW

ACCESS PANEL REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-515-11

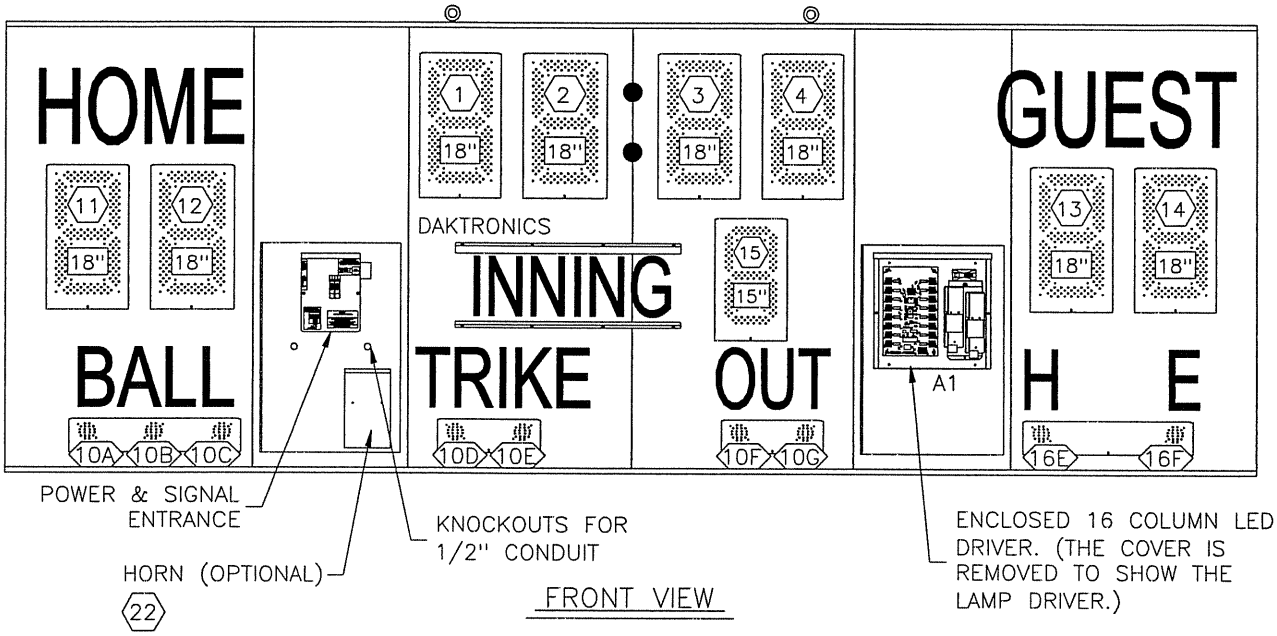
DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 17 NOV 00

REVISION APPR. BY:

SCALE: 1=15

1192-E10A-141284

MS-918-11



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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, MS-918-11

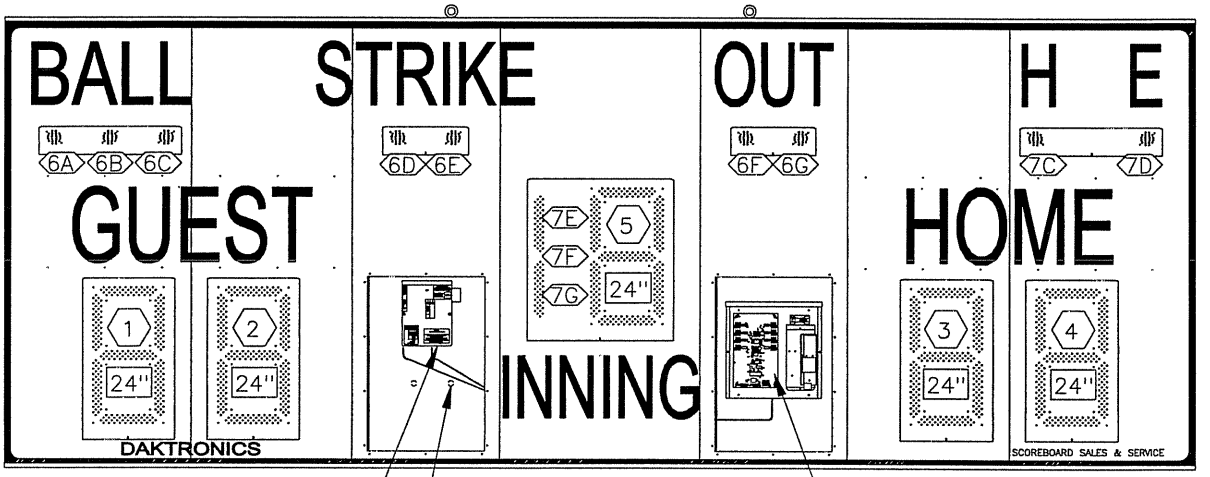
DES. BY: GBREEN DRAWN BY: GBREEN DATE: 12DEC00

REVISION APPR. BY:

SCALE: 1=25

1192-E10A-141427

BA-624-11



POWER AND SIGNAL ENTRANCE

KNOCKOUTS FOR 1/2" CONDUIT

ENCLOSED 8 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LAMP DRIVER.)

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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-624-11

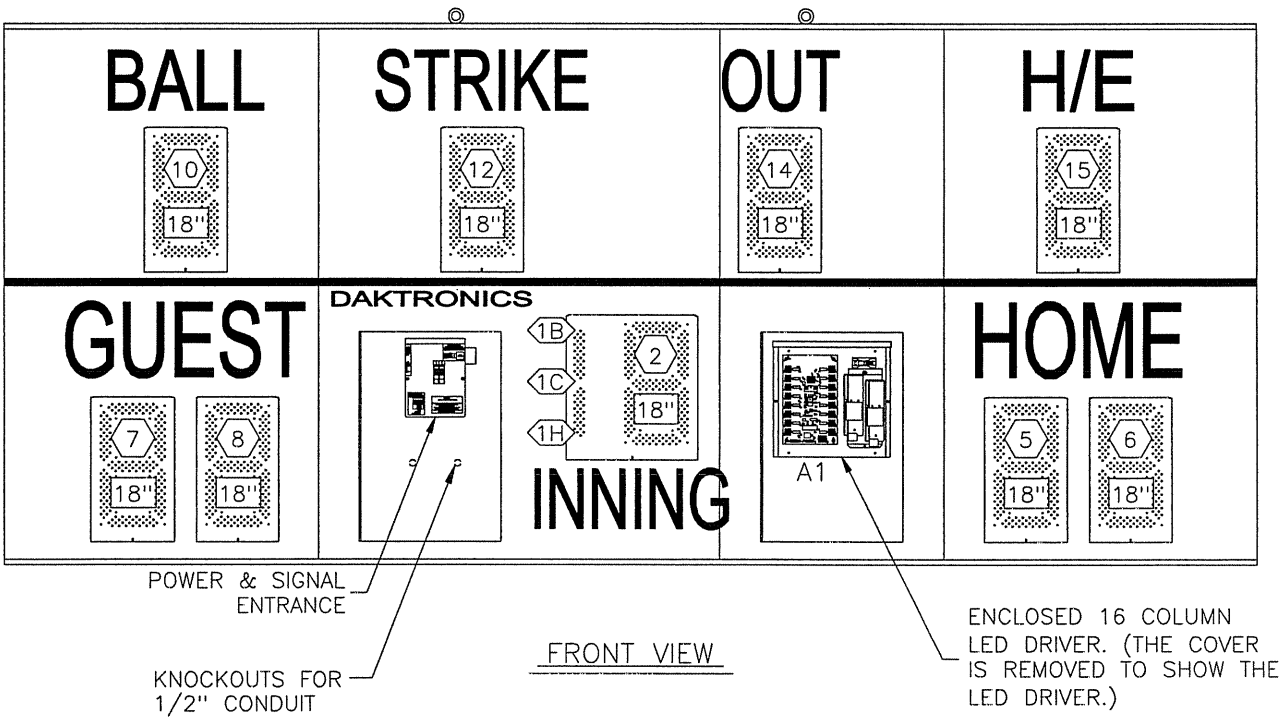
DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 28NOV00

REVISION APPR. BY:

SCALE: 1=30

1192-E10A-141489

BA–1018–11



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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA–1018–11

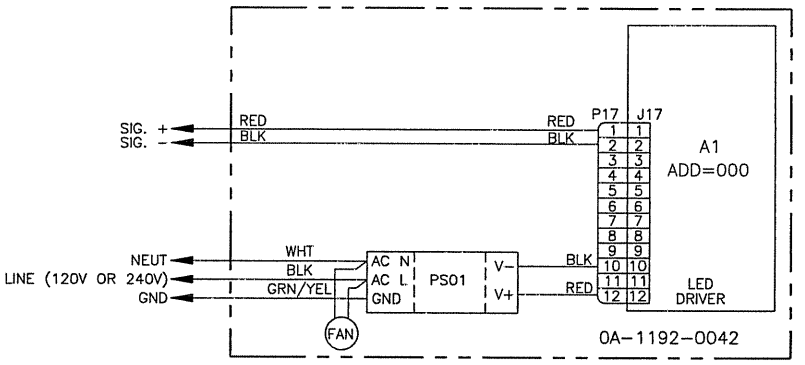
DES. BY: GBREEN DRAWN BY: JNILSEN DATE: 29NOV00

REVISION APPR. BY:

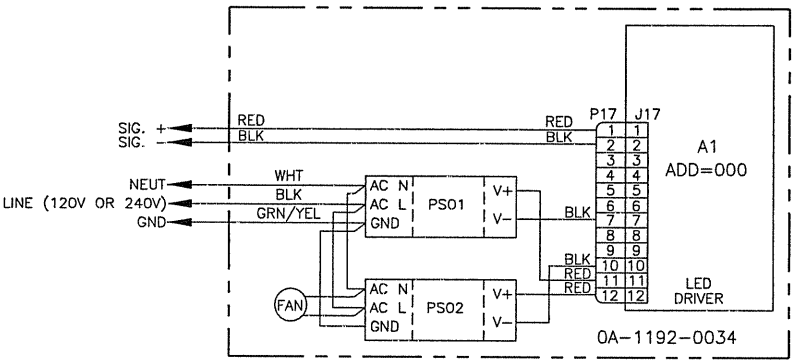
SCALE: 1=25

1192-E10A-141589

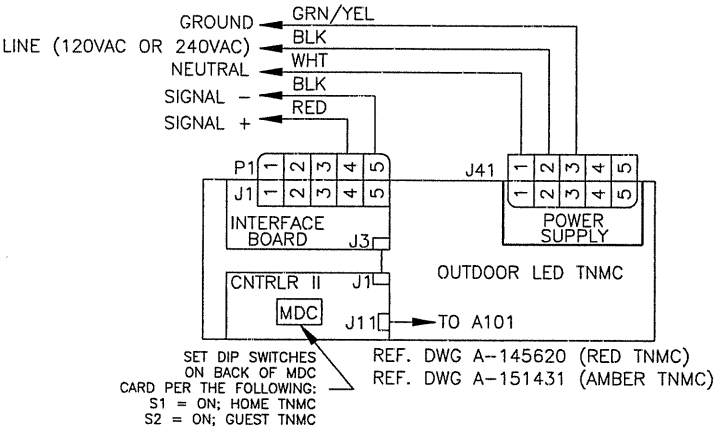
8 COLUMN DRIVER



16 COLUMN DRIVER



TEAM NAME



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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

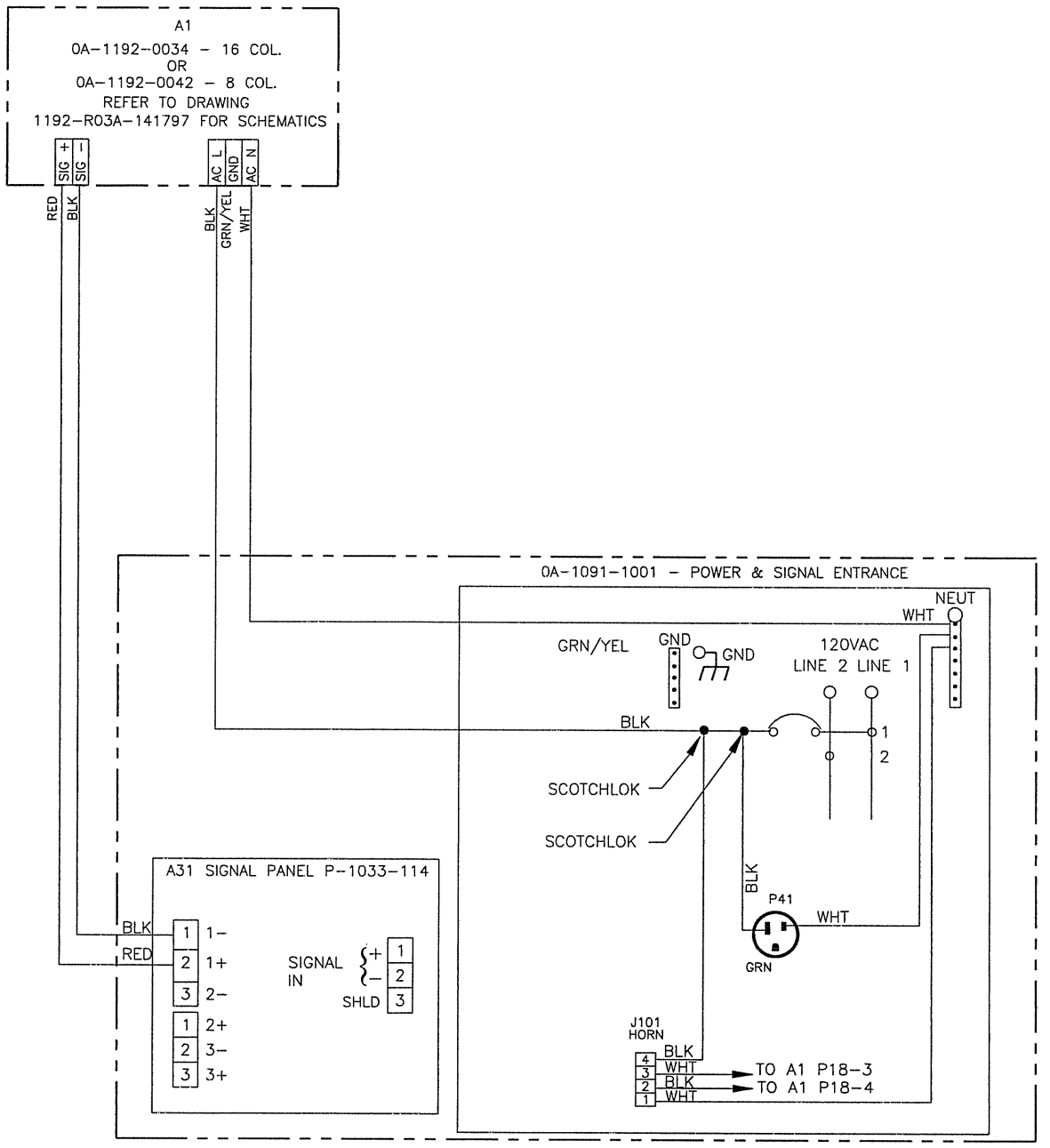
TITLE: SCHEMATIC; 8 AND 16 COL. O.D. LED DRVR AND TNMC

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

REVISION APPR. BY:

SCALE: 1=1

1192-R03A-141797



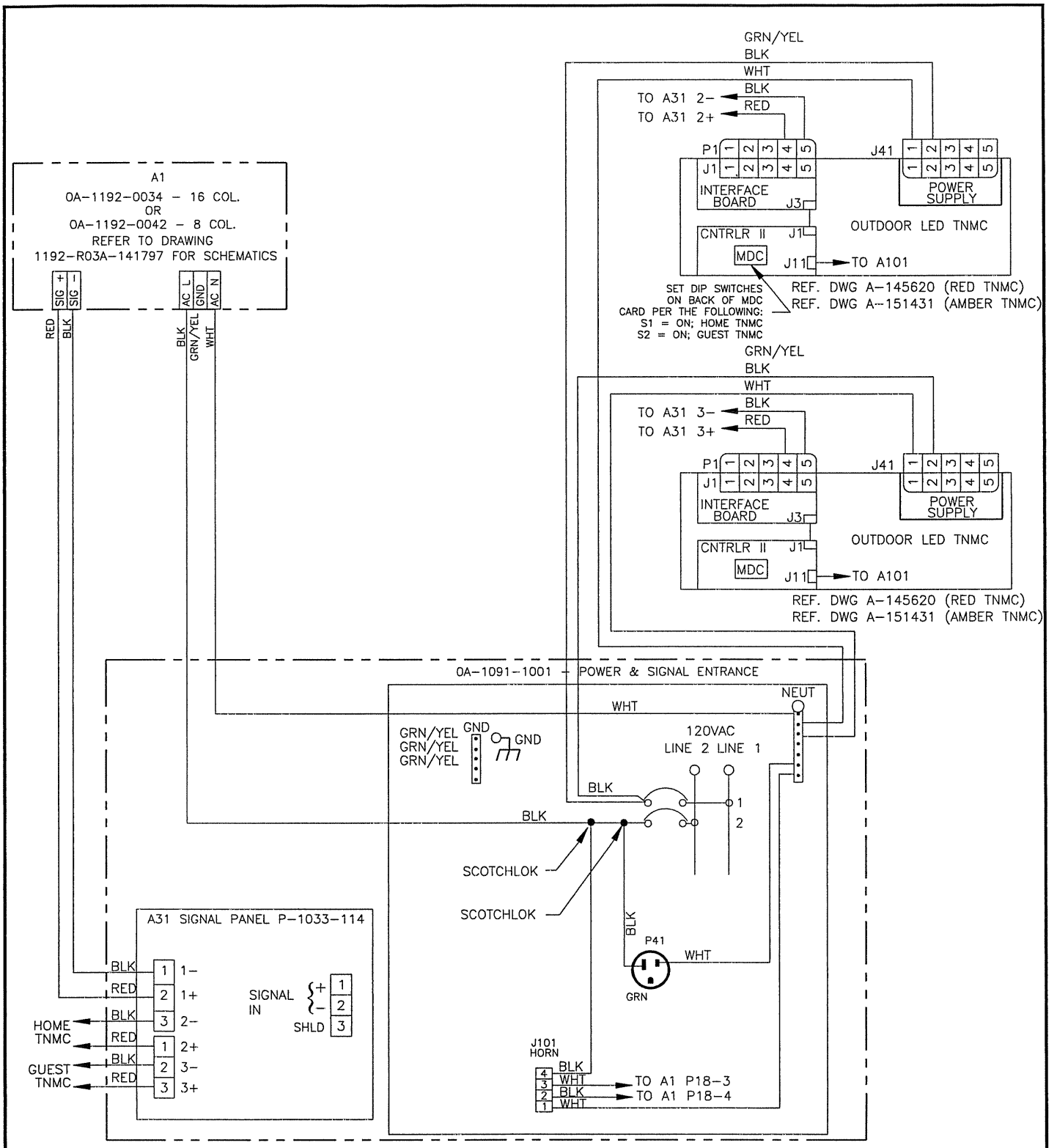
NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

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

DAKTRONICS, INC. BROOKINGS, SD 57006

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

1192-R03A-141799



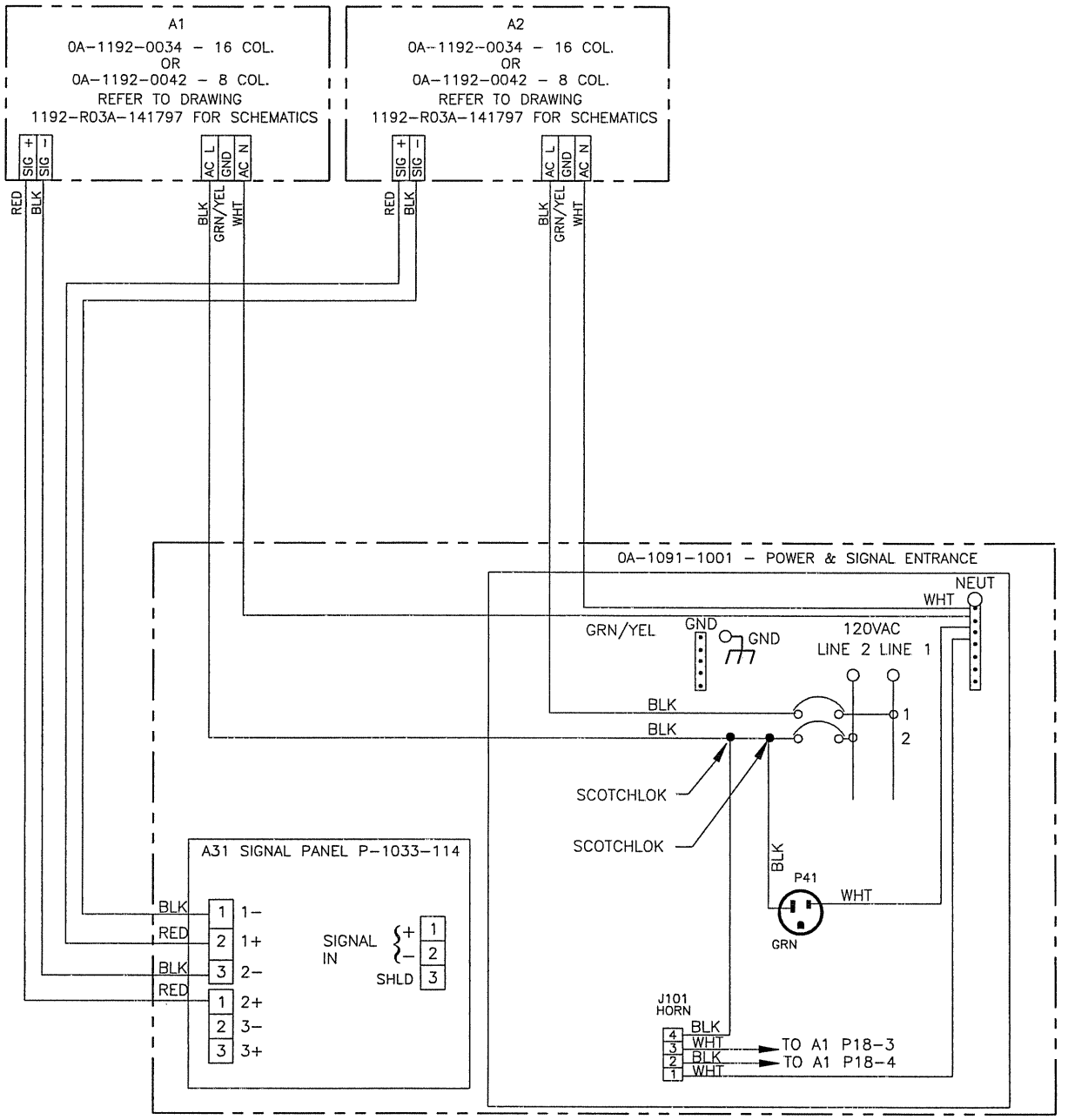
NOTE:
ALL WIRE IS 14 AWG, EXCEPT SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE 15 AMP (S-1035).

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

DAKTRONICS, INC. BROOKINGS, SD 57006

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

1192-R03A-141806



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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SCHEMATIC; 2 DRIVERS

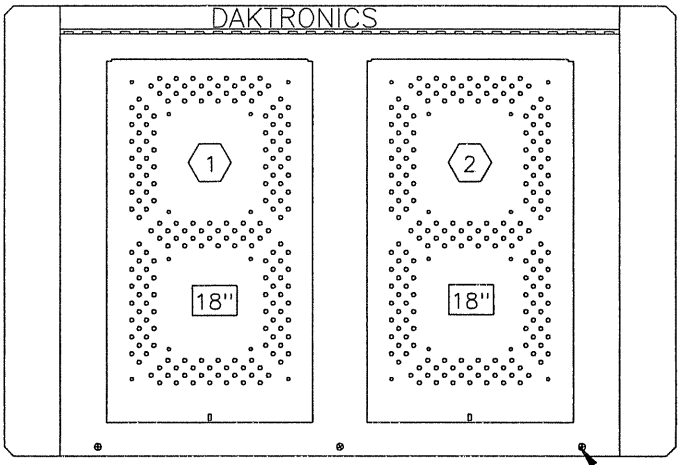
DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 06 DEC 00

REVISION APPR. BY:

SCALE: 1=1

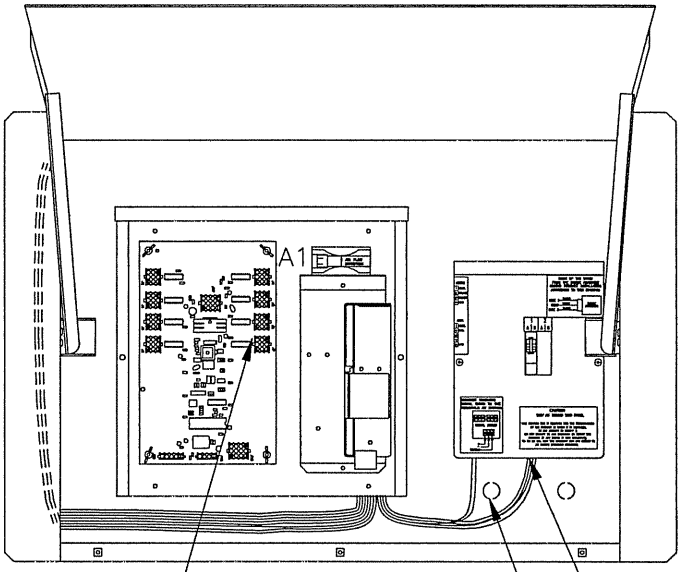
1192-R03A-141807

TI-218-11



FRONT VIEW

REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE



ENCLOSED 8 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)

FRONT VIEW
ACCESS DOOR OPEN

POWER & SIGNAL ENTRANCE

KNOCKOUTS FOR 1/2" CONDUIT

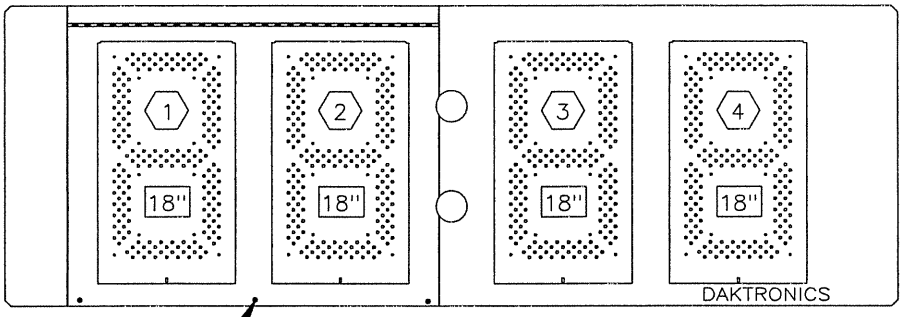
(1) = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

REV.	DATE	DESCRIPTION	BY	APPR.

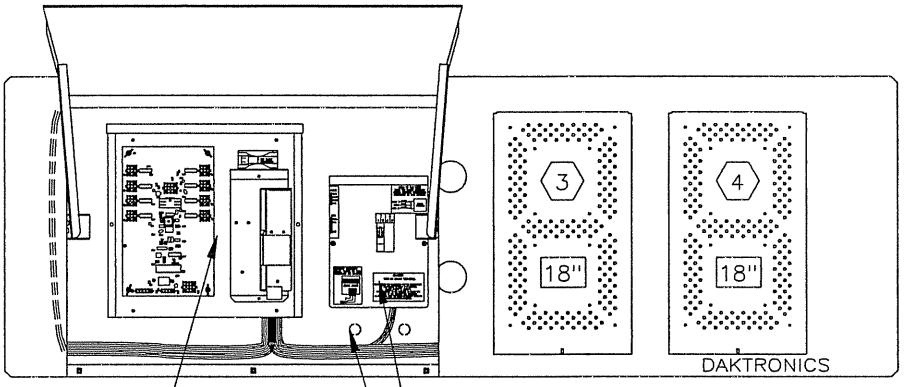
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED DIGIT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, TI-218-11			
DES. BY: GBREEN	DRAWN BY: JNILSEN	DATE: 13DEC00	
REVISION	APPR. BY:	1192-E10A-142031	
	SCALE: 1=10		

TI-418-11



REMOVE SCREWS TO ACCESS LAMP DRIVER & ENTRANCE

FRONT VIEW



ENCLOSED 8 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)

POWER & SIGNAL ENTRANCE

KNOCKOUTS FOR 1/2" CONDUIT

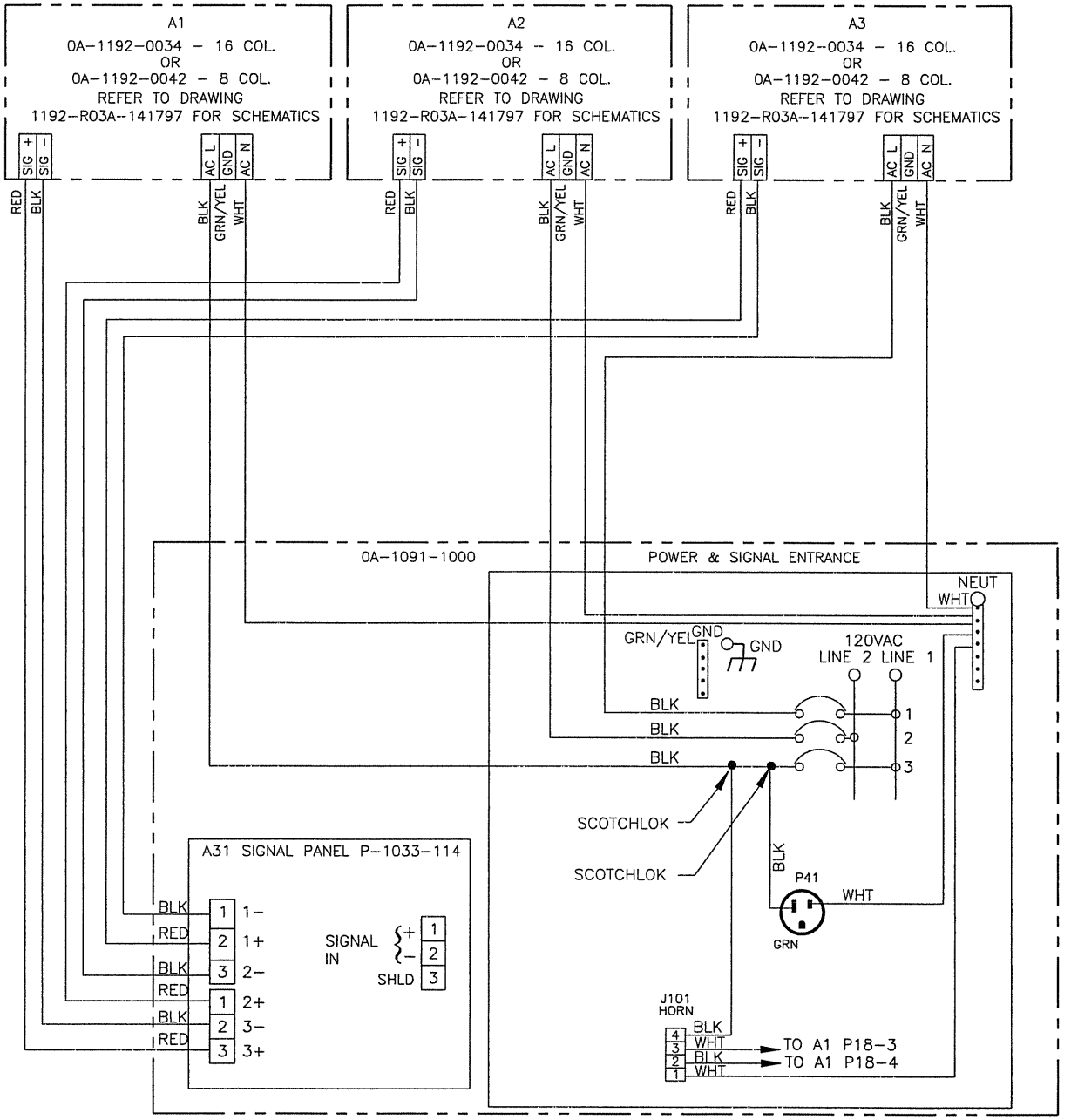
FRONT VIEW
ACCESS DOOR OPEN

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

[18"] = DIGIT SIZE

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: OUTDOOR LED DIGIT SCOREBOARDS		
TITLE: COMPONENT LOCATIONS, TI-418-11		
DES. BY: GBREEN	DRAWN BY: JNILSEN	DATE: 16DEC00
REVISION	APPR. BY:	1192-E10A-142034
	SCALE: 1=15	



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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: LED OUTDOOR SCOREBOARDS

TITLE: SCHEMATIC; 3 DRIVER

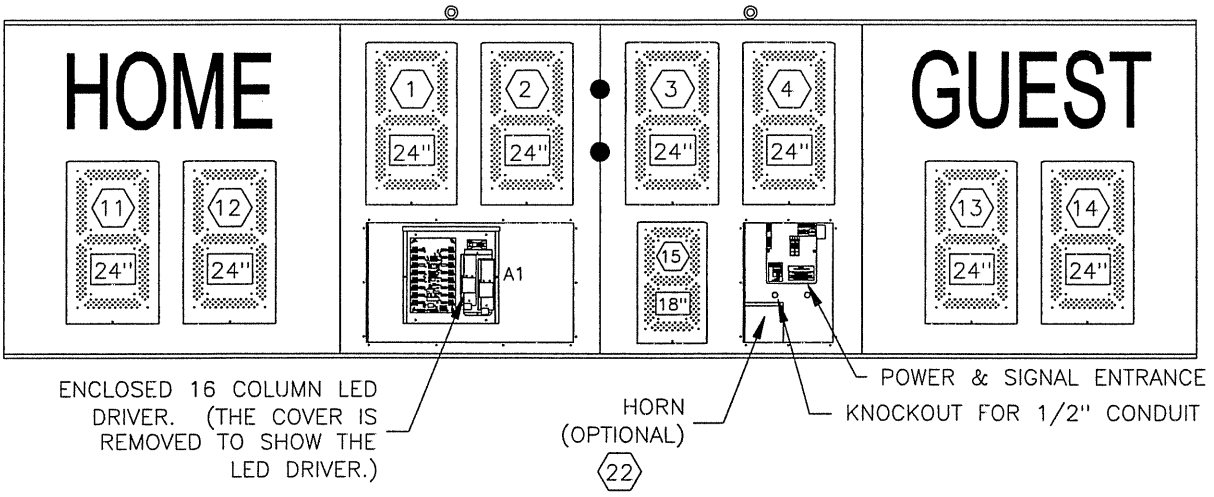
DES. BY: CBRECZI DRAWN BY: CBRECZI DATE: 20 DEC 00

REVISION APPR. BY:

SCALE: 1=1

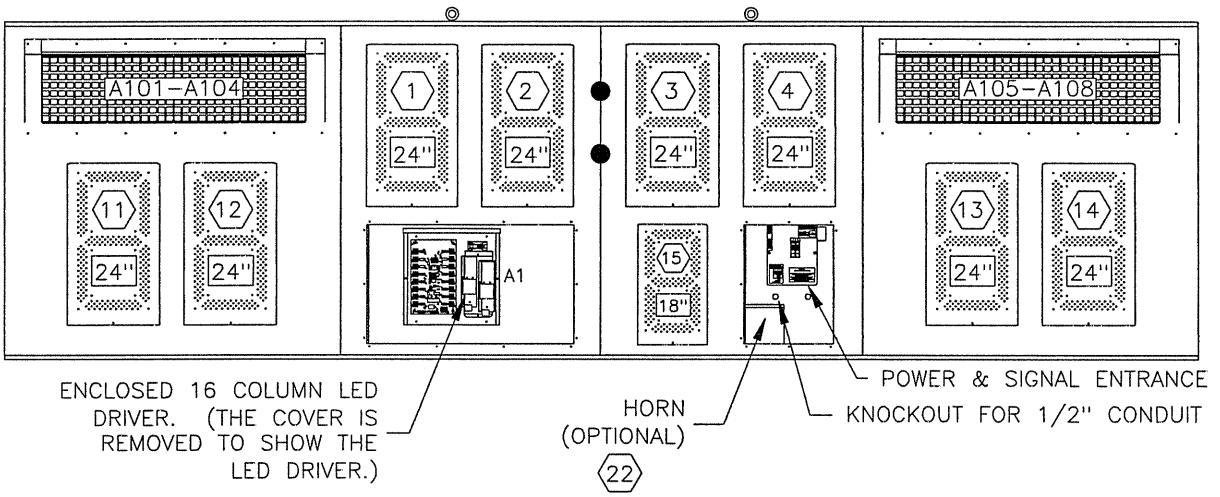
1192-R03A-142358

MS-2002-11



FRONT VIEW
(SHOWN WITH DOORS OPEN)

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



FRONT VIEW
(SHOWN WITH DOORS OPEN)

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

24" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.
01	25MAY01	ADDED TNMC VERSION TO DWG	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2002-11

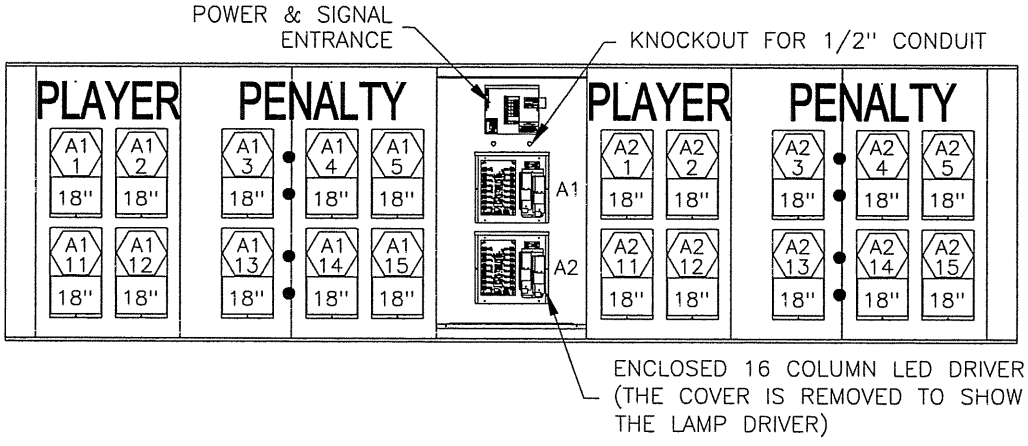
DES. BY: DRAWN BY: MCOPLAN DATE: 02JAN01

REVISION APPR. BY:

SCALE: 1=30

1192-E10A-142624

MS-2004-11



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

24" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2004-11

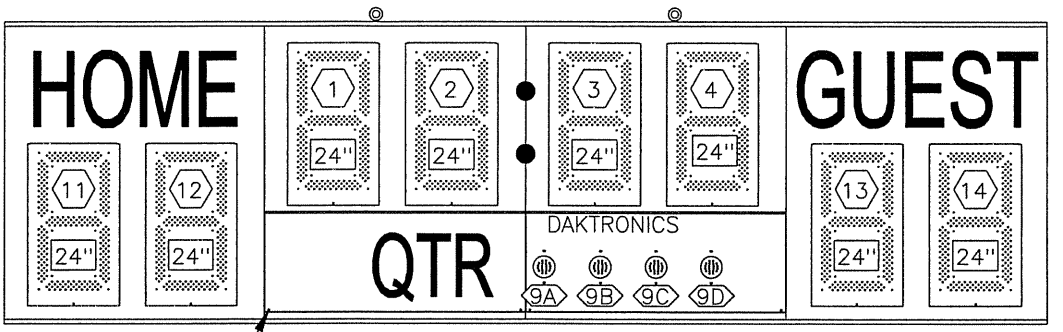
DES. BY: BPETERSON DRAWN BY: MCOPLAN DATE: 02JAN01

REVISION APPR. BY:

SCALE: 1=40

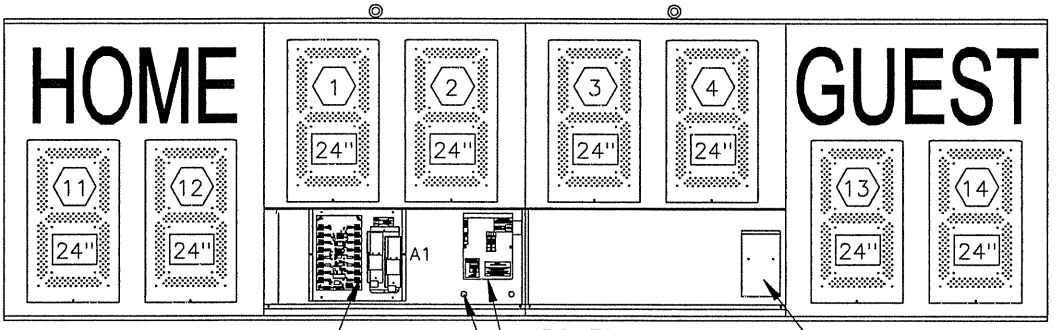
1192-E10A-142627

FB-824-11



REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE

FRONT VIEW



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

POWER & SIGNAL ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL) 22

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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB-824-11

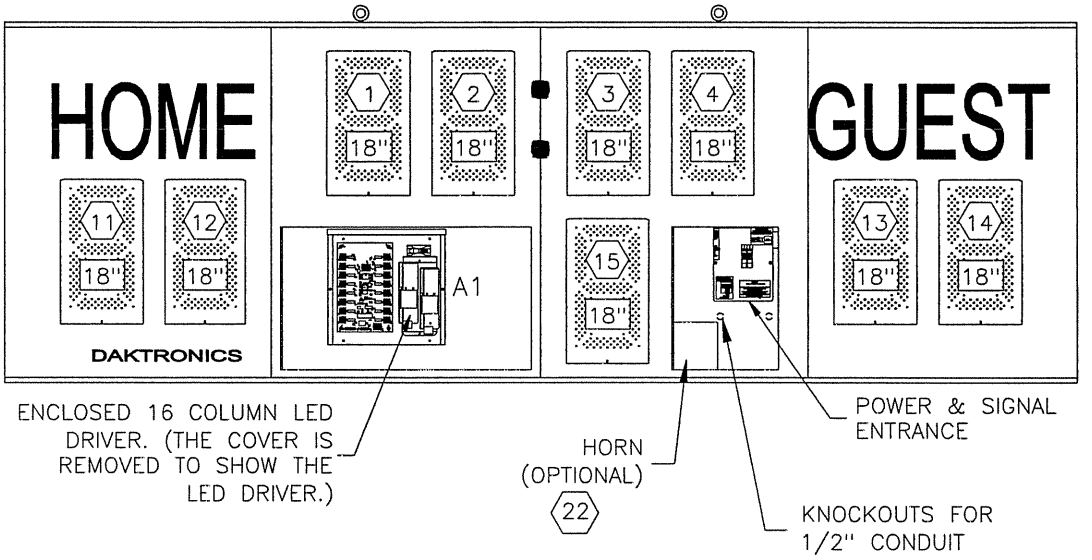
DES. BY: DRAWN BY: MCOPLAN DATE: 02JAN01

REVISION APPR. BY:

SCALE: 1=30

1192-E10A-142670

SO-918-11



FRONT VIEW

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

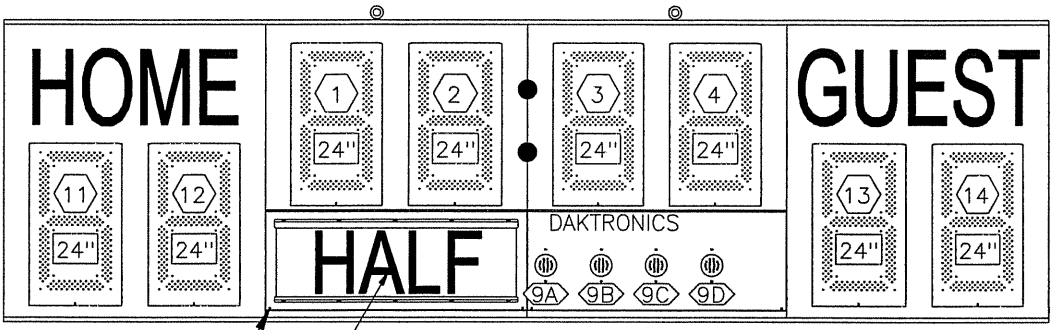
18" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR LED DIGIT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, SO-918			
DES. BY: GBREEN	DRAWN BY: JNILSEN	DATE: 03JAN01	
REVISION	APPR. BY:	SCALE: 1=25	1192-E10A-142737

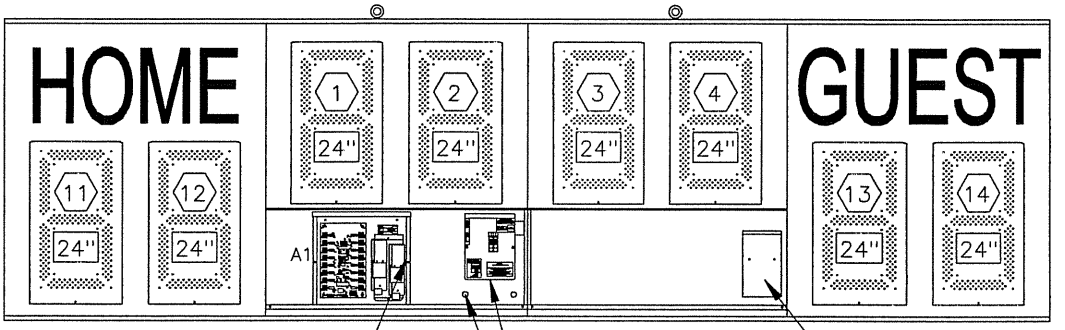
SO-824-11



REMOVE SCREWS TO ACCESS LAMP DRIVER & ENTRANCE

REVERSIBLE "HALF" & "PERIOD" CAPTION PANEL

FRONT VIEW



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

POWER & SIGNAL ENTRANCE

HORN (OPTIONAL) (22)

KNOCKOUT FOR 1/2" CONDUIT

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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

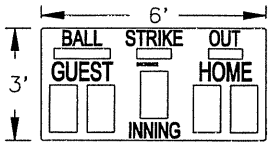
TITLE: COMPONENT LOCATIONS, SO-824-11

DES. BY: DRAWN BY: JNILSEN DATE: 08JAN01

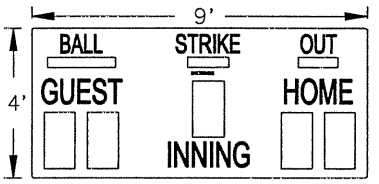
REVISION APPR. BY:

SCALE: 1=30

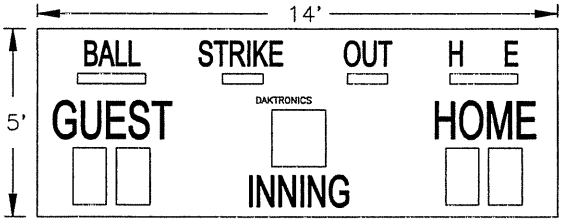
1192-E10A-142888



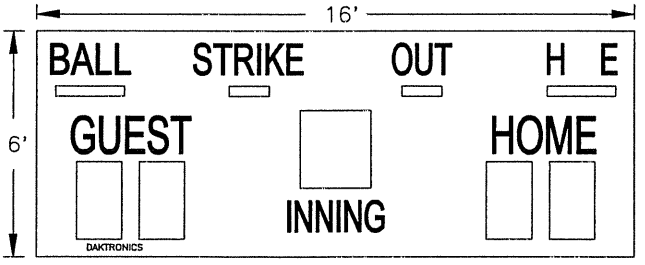
BA--515-11



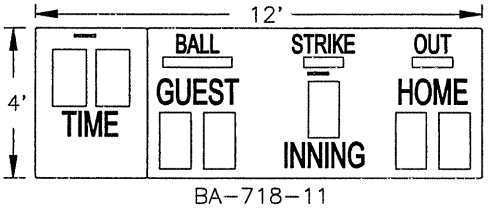
BA-518-11



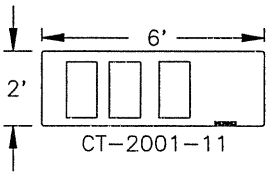
BA-618-11



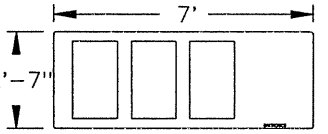
BA-624-11



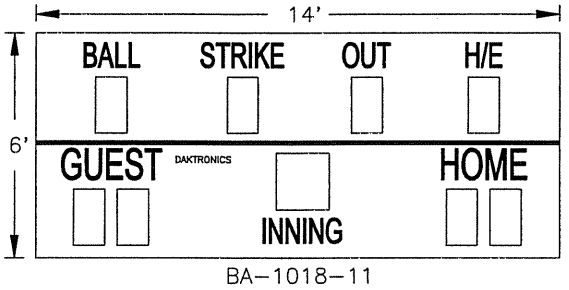
BA-718-11



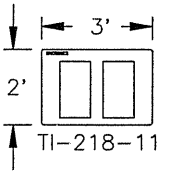
CT-2001-11



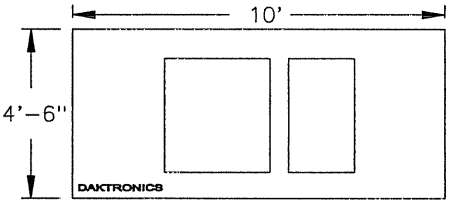
CT-2002-11



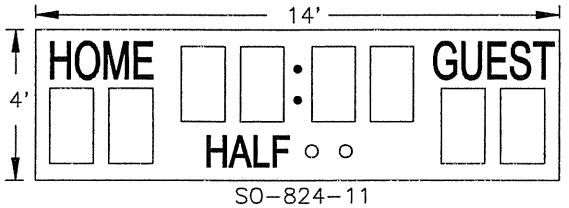
BA-1018-11



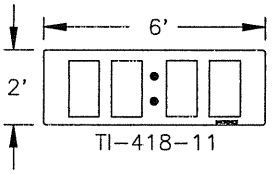
TI-218-11



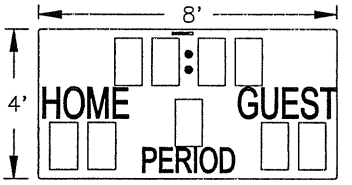
BA-2003-11



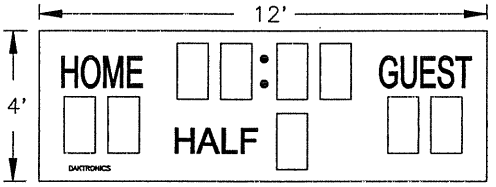
SO-824-11



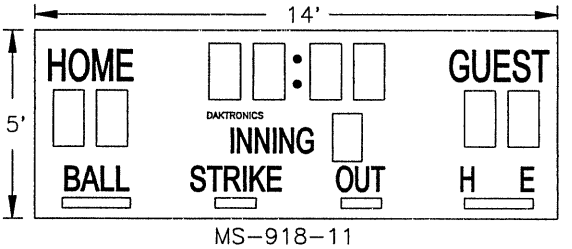
TI-418-11



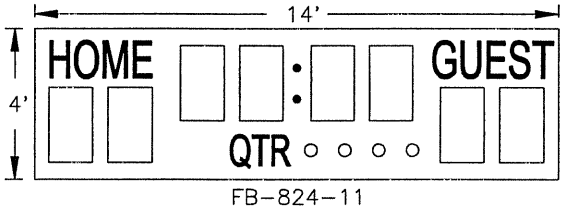
MS-915-11



SO-918-11
SO-2009-11 (W/ 15" HALF DIGIT)
SO--2010-11 (W/ 10" HALF DIGIT)



MS-918-11



FB-824-11

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	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

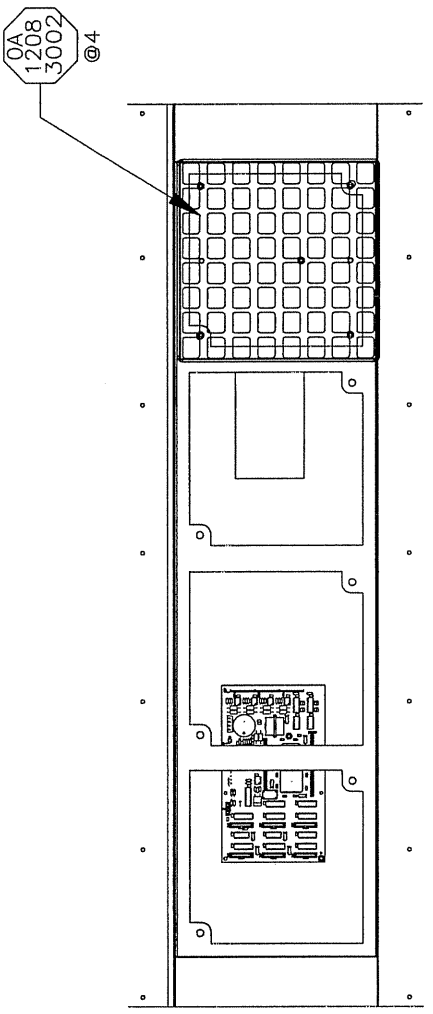
TITLE: SINGLE SECTION LED SCOREBOARD MODELS

DES. BY: BPETERSON DRAWN BY: JNILSEN DATE: 09JAN01

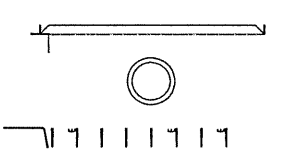
REVISION APPR. BY:

SCALE: 1=60

1192-E10A-142912



FRONT VIEW



SIDE VIEW

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

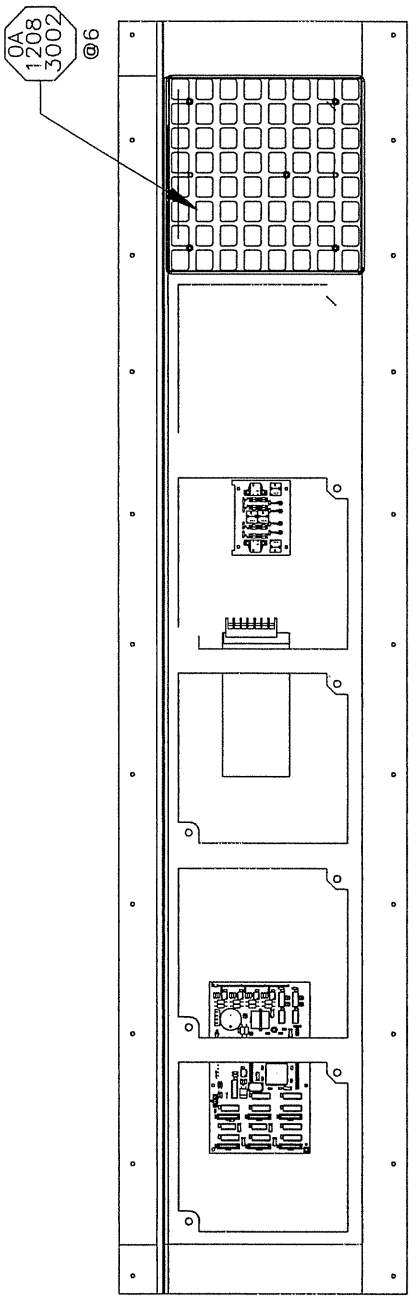
TITLE: F. ASSY; 832 LED TNMC

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

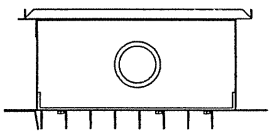
REVISION | APPR. BY:

SCALE: 1=10

1192-E10A-143808



FRONT VIEW



SIDE VIEW

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: F. ASSY; 848 LED TNMC

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

REVISION APPR. BY:

SCALE: 1=10

1192-E10A-144323

REV.	DATE	DESCRIPTION	BY	APPR.
03	22JAN02	CHANGED PART 0P-1146-0016 TO 0P-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

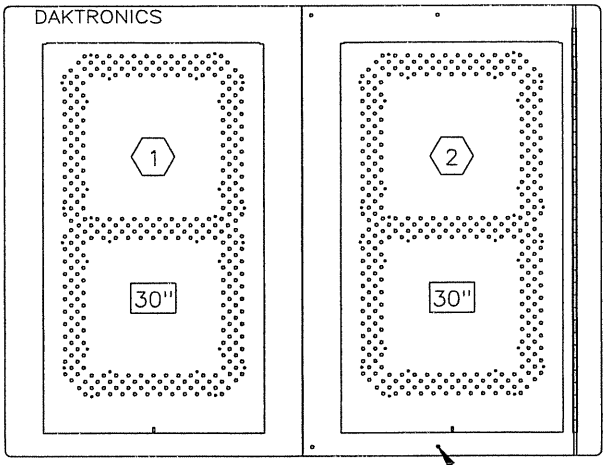
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 22FEB01

REVISION APPR. BY:

SCALE: NONE

1192-E07A-145045

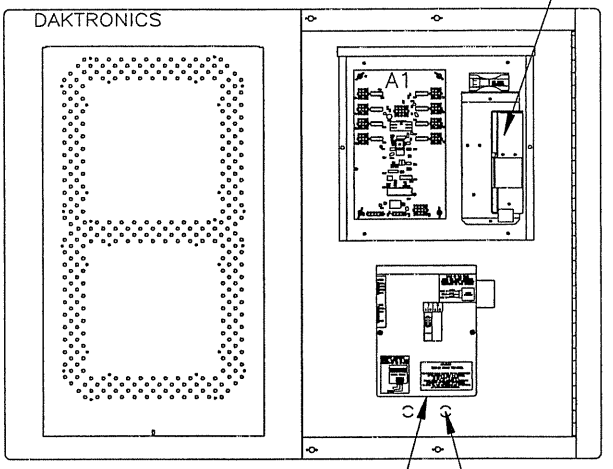
TI-2003-11



FRONT VIEW

REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE

ENCLOSED 8 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)



POWER & SIGNAL ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

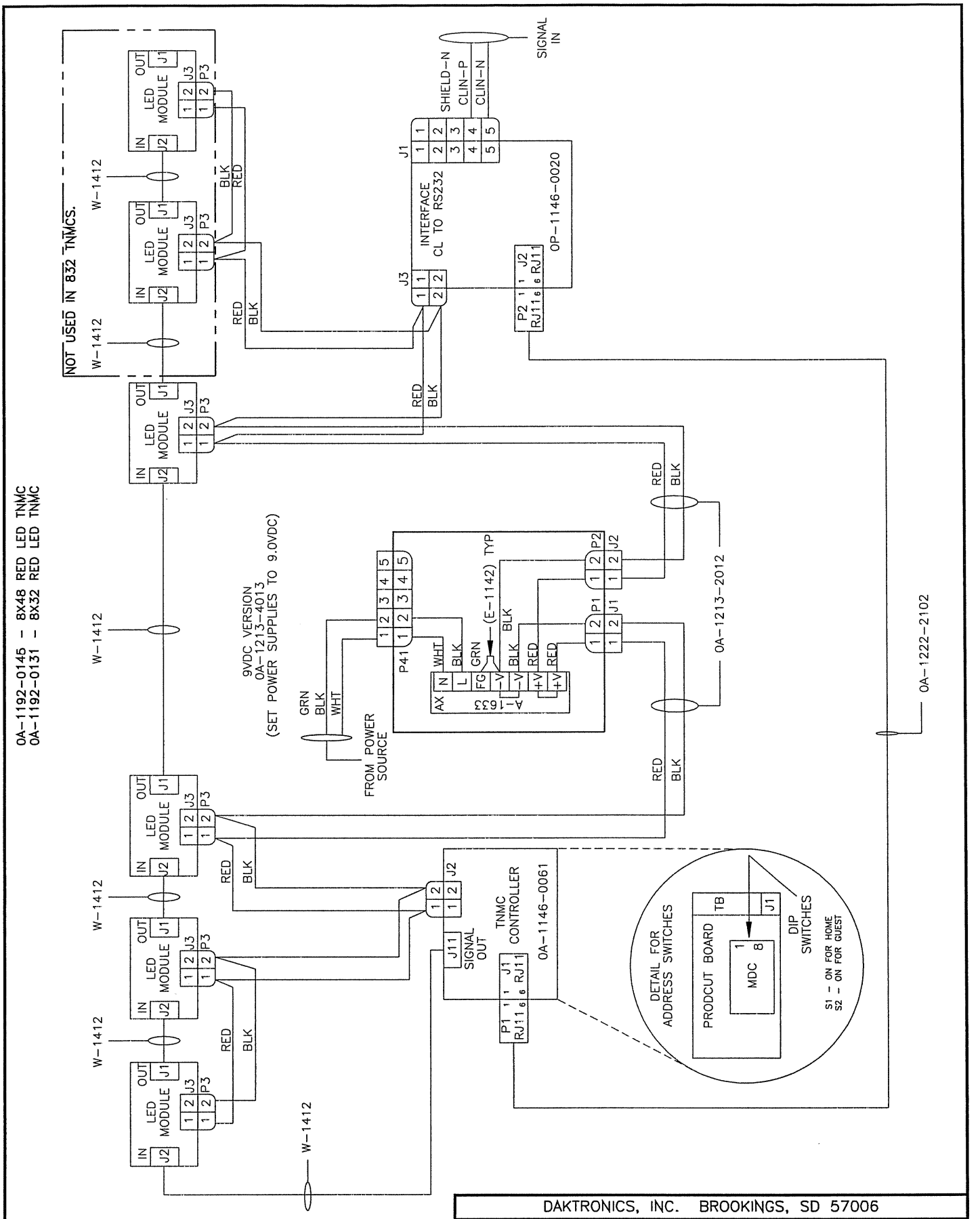
FRONT VIEW
ACCESS DOOR OPEN

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

30" = DIGIT SIZE

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: OUTDOOR LED DIGIT SCOREBOARDS		
TITLE: COMPONENT LOCATIONS, TI-2003-11		
DES. BY: TWEBER	DRAWN BY: JNILSEN	DATE: 27FEB01
REVISION	APPR. BY:	1192-E10A-145239
	SCALE: 1=15	



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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

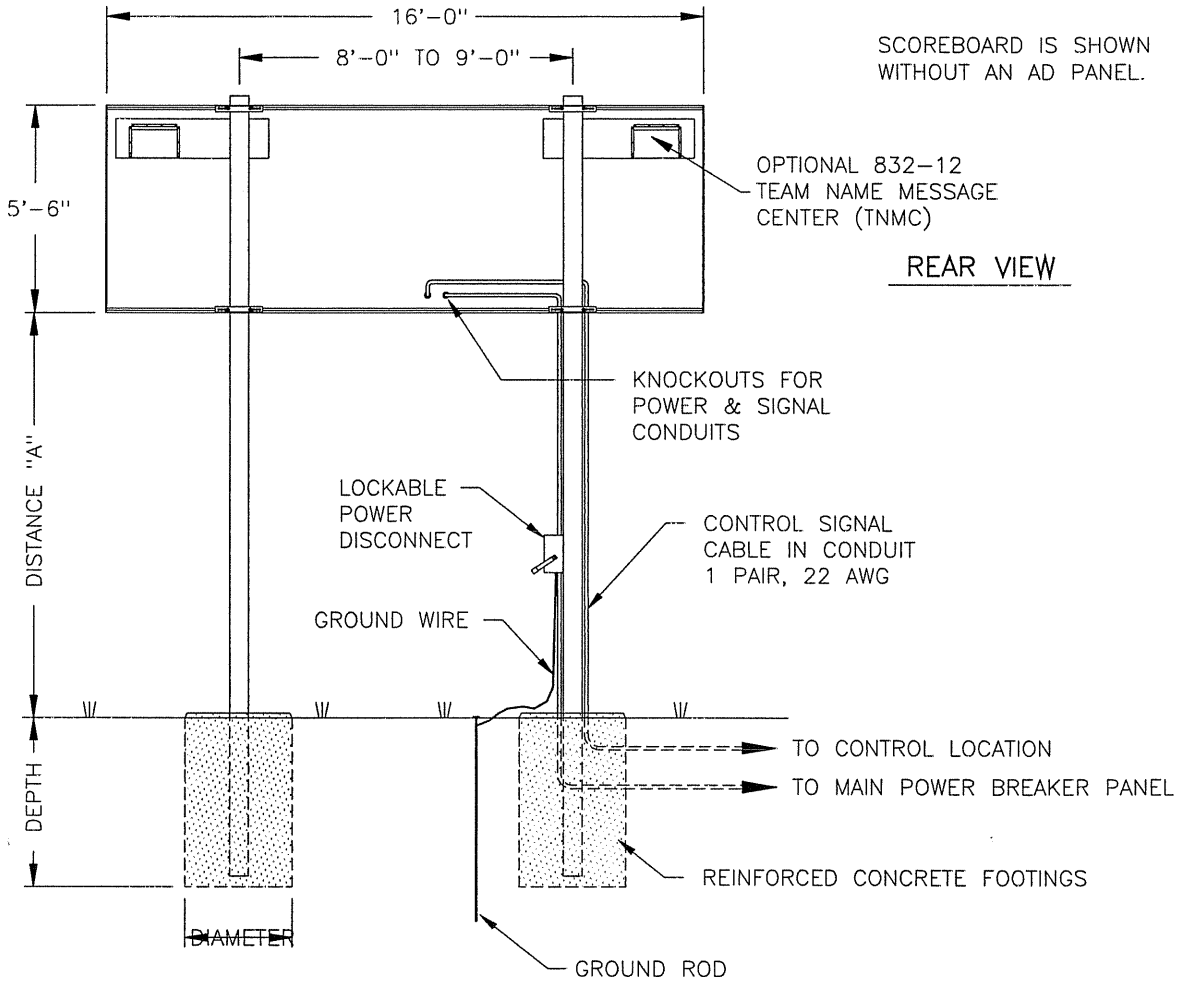
TITLE: SCHEMATIC; RED LED TNMC

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

REVISION APPR. BY:

SCALE: 1=1

1192-R03A-145620



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	W6x15	W8x18	W8x18
		FOOTING	*2.0' x 6.2'*	*2.0' x 6.9'*	*2.0' x 8.1'*
12'-0"	16'-0" x 5'-6"	BEAM	W8x18	W8x18	W10x22
		FOOTING	*2.0' x 6.5'*	*2.0' x 7.2*	*2.5' x 7.8'*
14'-0"	16'-0" x 5'-6"	BEAM	W8x21	W10x22	W12x26
		FOOTING	*2.0' x 7.4'*	*2.5' x 7.5'*	*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	W8x18	W8x21	W12x26
		FOOTING	*2.0' x 7.3'*	*2.0' x 8.0'*	*2.5' x 8.9'*
12'-0"	16'-0" x 8'-6"	BEAM	W10x22	W8x24	W14x30
		FOOTING	*2.5' x 7.0'*	*2.5' x 7.7'*	*2.5' x 9.1'*
14'-0"	16'-0" x 8'-6"	BEAM	W8x24	W12x26	W10x33
		FOOTING	*2.5' x 7.3'*	*2.5' x 8.1'*	*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^2 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.

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	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS, SO-2008

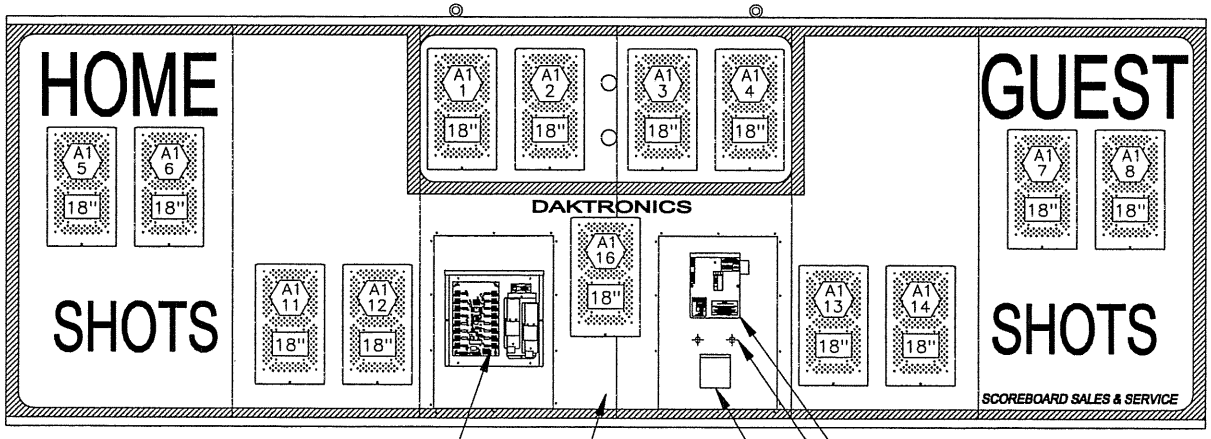
DES. BY: RNEYENS DRAWN BY: DUSWH DATE: 5-17-01

REVISION APPR. BY:

SCALE: 1=60

1192-E07A-149074

SO-2008-11



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

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

POWER & SIGNAL ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

22

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

24" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.

REVISION

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; SO-2008-11

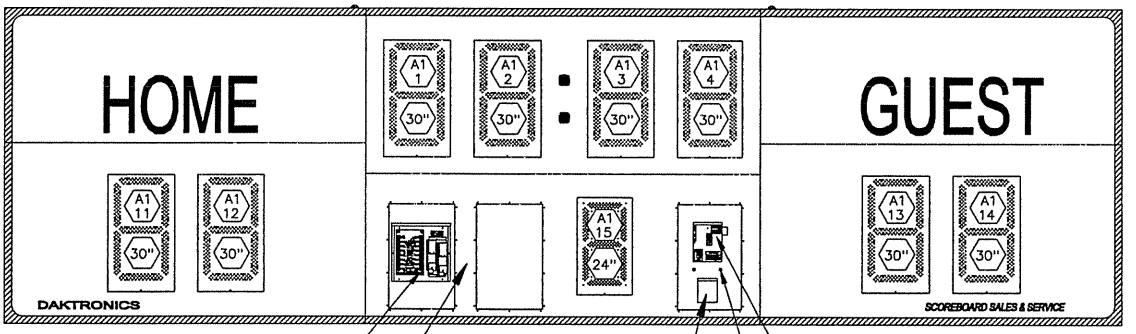
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 18MAY01

APPR. BY:

SCALE: 1=30

1192-E07A-149091

MS-2006-11



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

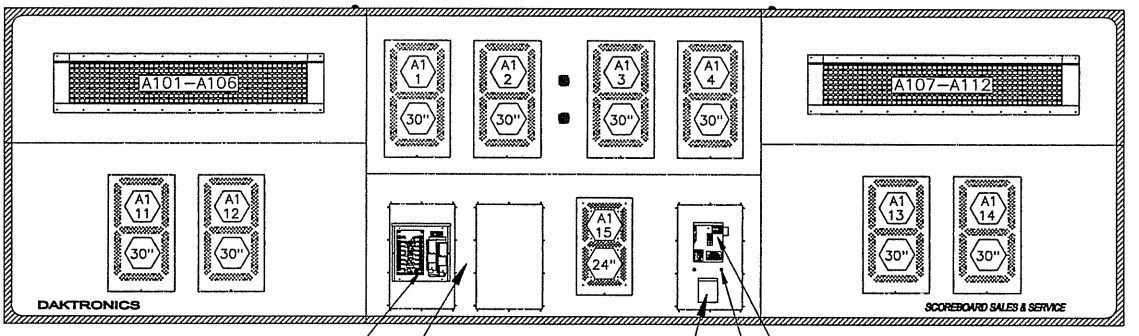
THE PERIOD CAPTION HAS BEEN REMOVED TO SHOW DETAIL.

HORN (OPTIONAL) 22

POWER & SIGNAL ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

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



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

THE PERIOD CAPTION HAS BEEN REMOVED TO SHOW DETAIL.

HORN (OPTIONAL) 22

POWER & SIGNAL ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

12 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.
01	09AUG01	CHANGED SCBD TITLE TEXT	MCOPL	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2006-11

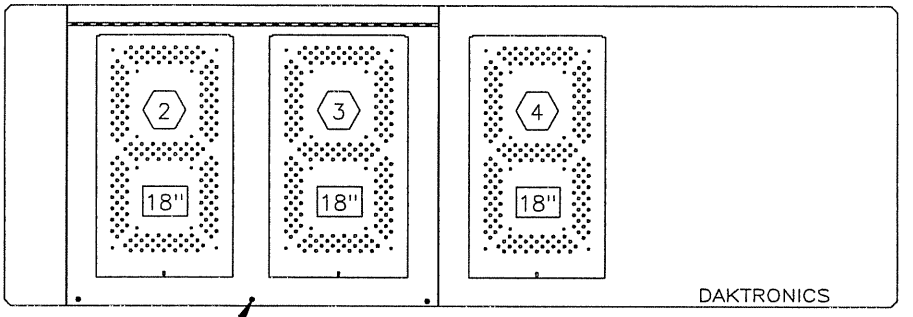
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 01JUN01

REVISION APPR. BY:

SCALE: 1=50

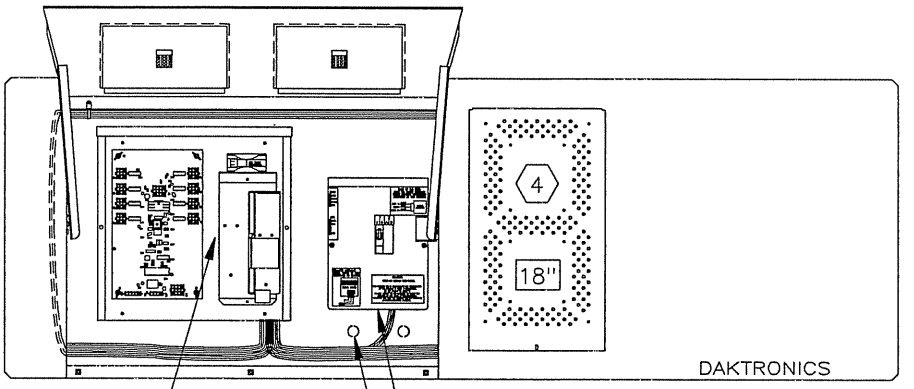
1192-E07A-149788

CT-2001-11



REMOVE SCREWS TO ACCESS LED DRIVER & ENTRANCE

FRONT VIEW



ENCLOSED 8 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)

POWER & SIGNAL ENTRANCE

KNOCKOUTS FOR 1/2" CONDUIT

FRONT VIEW
ACCESS DOOR OPEN

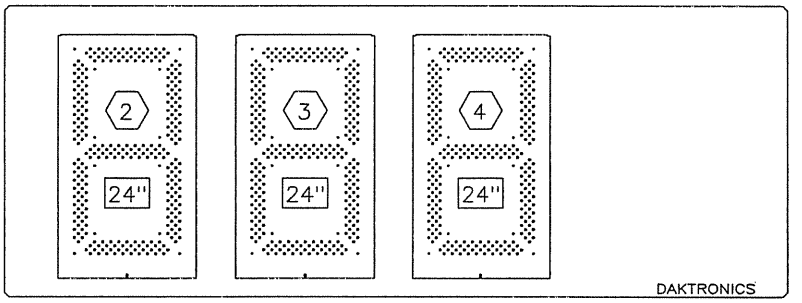
(1) = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

REV.	DATE	DESCRIPTION	BY	APPR.

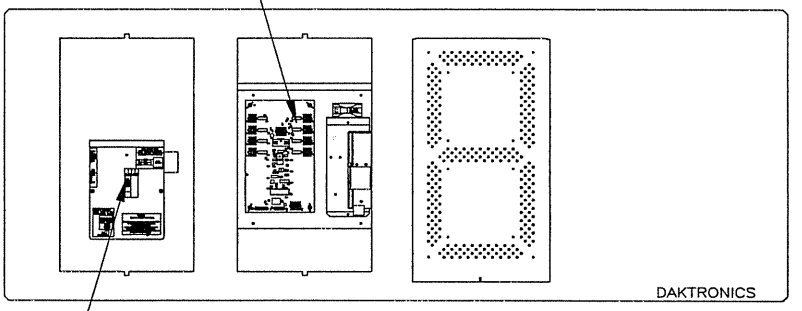
DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: COMPONENT LOCATIONS; CT-2001-11	
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN DATE: 01JUN01
REVISION APPR. BY:	1192-E07A-149847
SCALE: 1=15	

CT-2002-11



FRONT VIEW

ENCLOSED 8 COLUMN LED DRIVER. (THE COVER IS REMOVED TO SHOW THE LED DRIVER.)



POWER AND SIGNAL ENTRANCE

FRONT VIEW
FIRST TWO DIGITS REMOVED

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

24" = DIGIT SIZE

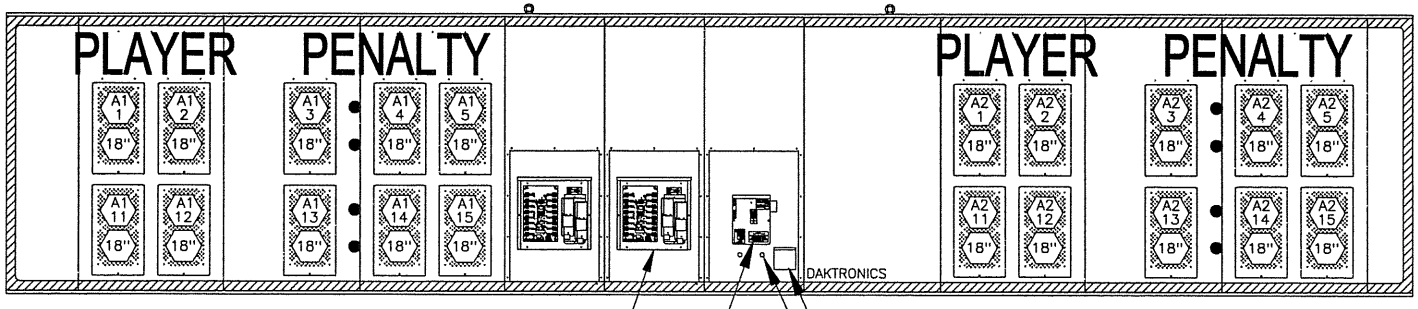
FIRST TWO DIGITS ARE REMOVED TO SHOW LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR LED SCOREBOARDS	
TITLE: COMPONENT LOCATIONS; CT-2002-11	
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN DATE: 01JUN01
REVISION APPR. BY:	1192-E07A-149866
SCALE: 1=20	

REV.	DATE	DESCRIPTION	BY	APPR.

MS-2012-11



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

POWER & SIGNAL ENTRANCE

HORN (OPTIONAL)

KNOCKOUT FOR 1/2" CONDUIT

A1 / 1 / 18" = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

18" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: COMPONENT LOCATIONS; MS-2012-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 13JULY01

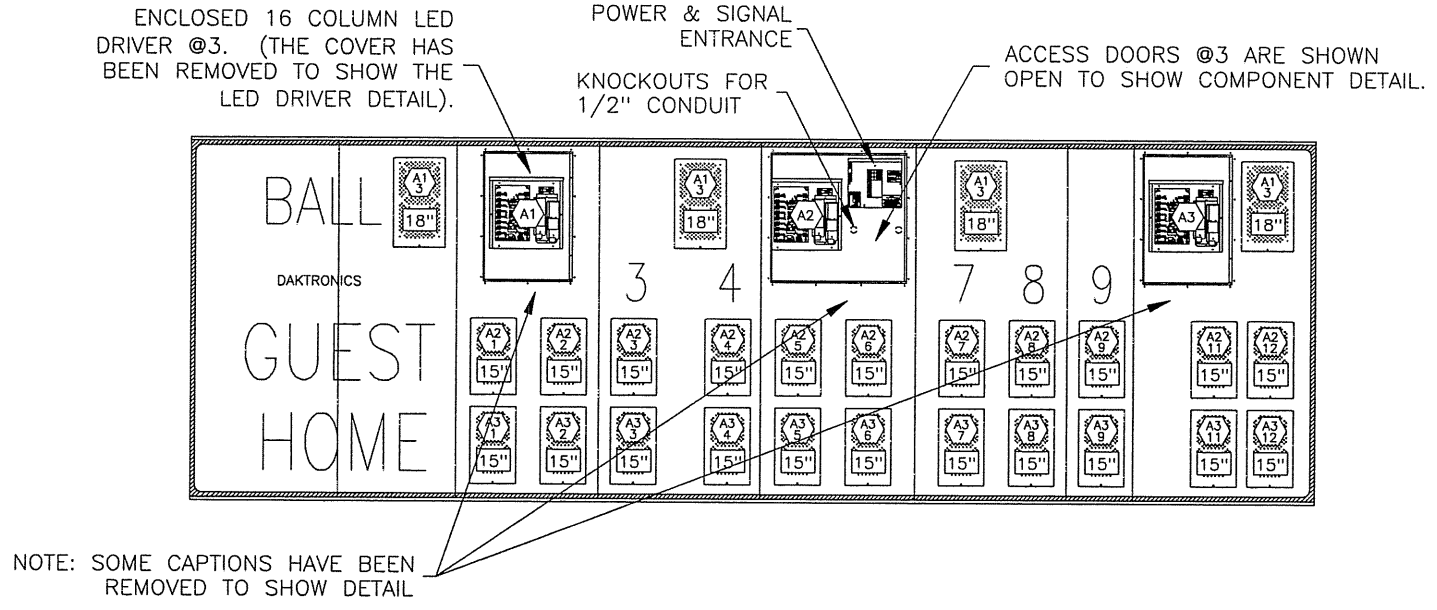
REVISION APPR. BY:

SCALE: 1=40

1192-E07A-152199

REV.	DATE	DESCRIPTION	BY	APPR.
01	23JULY01	REMOVED 6" FROM RIGHT END OF DISPLAY AND ADDED 6" TO LEFT END OF DISPLAY	MCOPL	

BA-2004-11



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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

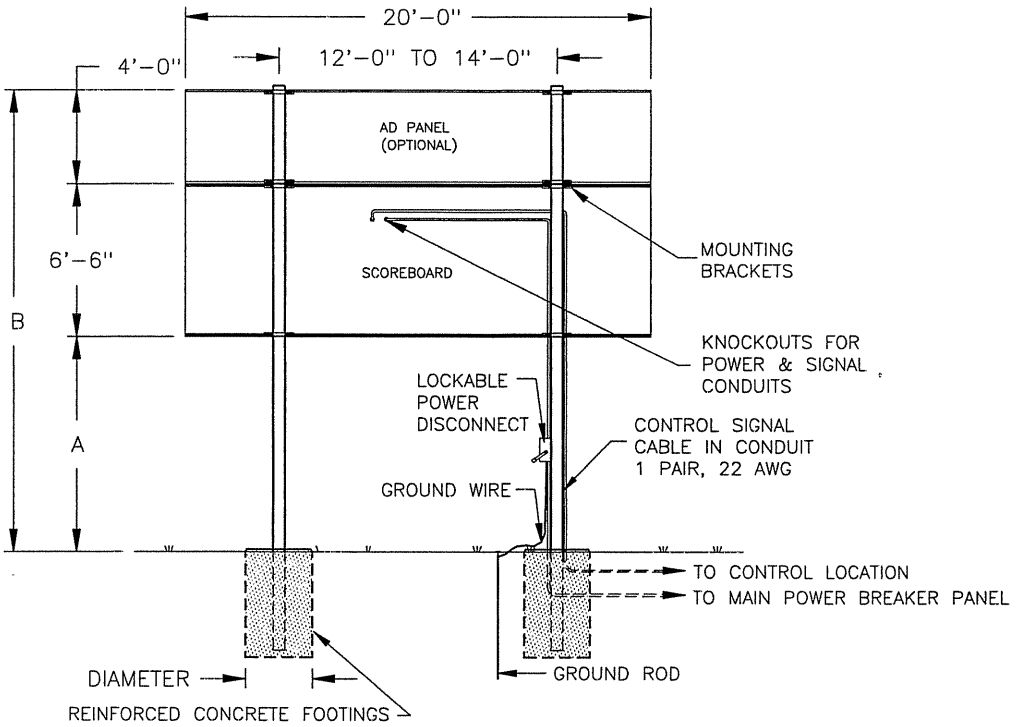
TITLE: COMPONENT LOCATIONS; BA-2004-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 20JULY01

REVISION APPR. BY:

SCALE: 1=40

1192-E07A-152749



REAR VIEW

ELECTRICAL

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

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'
	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'
12 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'
	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'
14 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'
	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'
	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'
18FT	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'
	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'
	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 = DIAMETER X DEPTH

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

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

A NOTE ABOUT BEAM NOMENCLATURE:

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

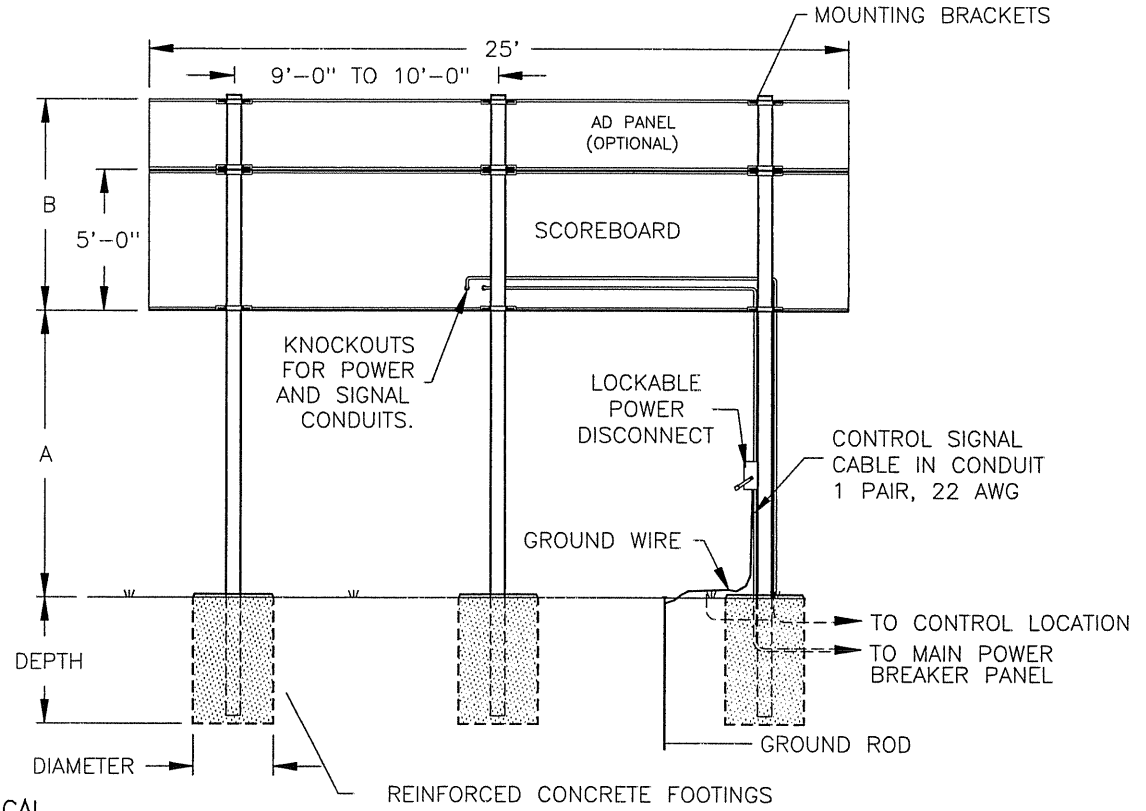
TITLE: INSTALLATION SPECIFICATIONS; BA-2004/2005/2011

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 23JULY01

REVISION APPR. BY:

SCALE: 1=96

1091-R10A-152777



MS-2012

REAR VIEW

ELECTRICAL

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

MS-2012						
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	2.5X6.3'	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

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

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

A NOTE ABOUT BEAM NOMENCLATURE:

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: INSTALLATION SPECIFICATIONS; MS-2012

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 23JULY01

REVISION APPR. BY:

SCALE: 1=80

1192-R10A-152790

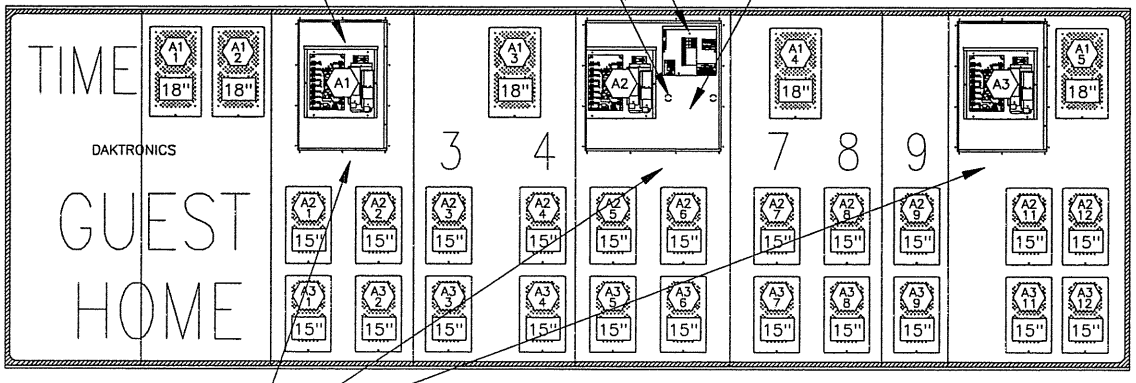
BA–2005–11

ENCLOSED 16 COLUMN LED DRIVER @3. (THE COVER HAS BEEN REMOVED TO SHOW THE LED DRIVER DETAIL).

POWER & SIGNAL ENTRANCE

KNOCKOUTS FOR 1/2" CONDUIT

ACCESS DOORS @3 ARE SHOWN OPEN TO SHOW COMPONENT DETAIL.



NOTE: SOME CAPTIONS HAVE BEEN REMOVED TO SHOW DETAIL

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 LED DRIVER AND POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

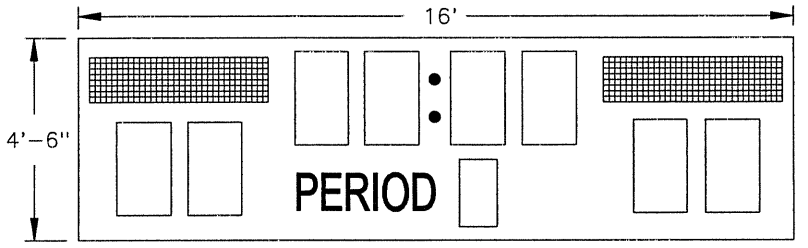
TITLE: COMPONENT LOCATIONS; BA–2005–11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 24JULY01

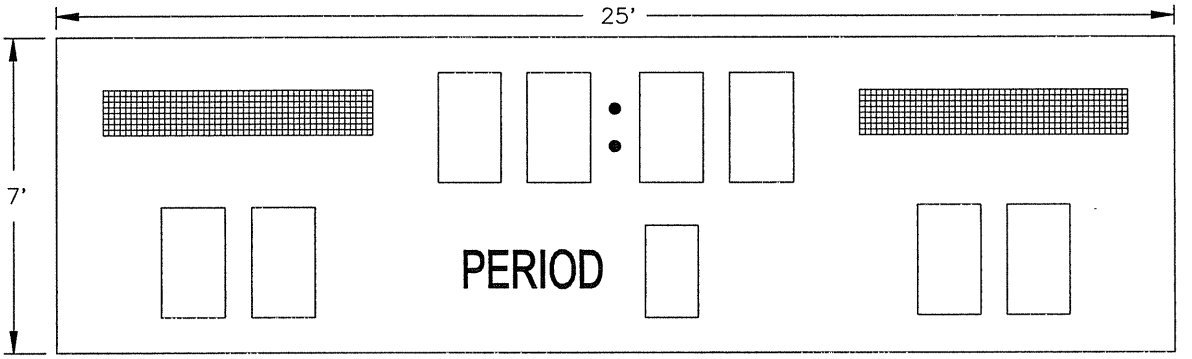
REVISION APPR. BY:

SCALE: 1=40

1192-E07A-152929



MS-2002-11 WITH 832-10 LED TNMC



MS-2006-11 WITH 848-10 LED TNMC

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

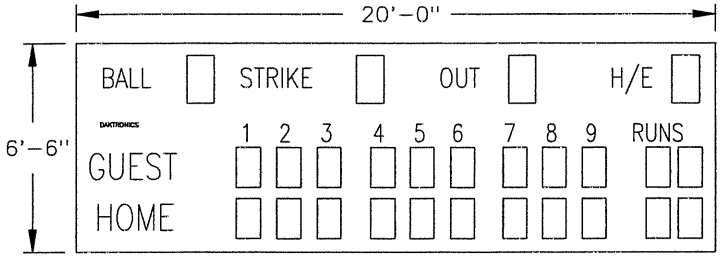
TITLE: SINGLE SECTION LED SCOREBOARD W/ LED TNMC

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 24JULY01

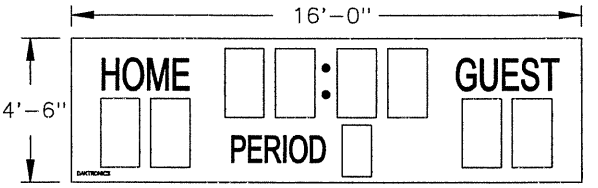
REVISION APPR. BY:

SCALE: 1=50

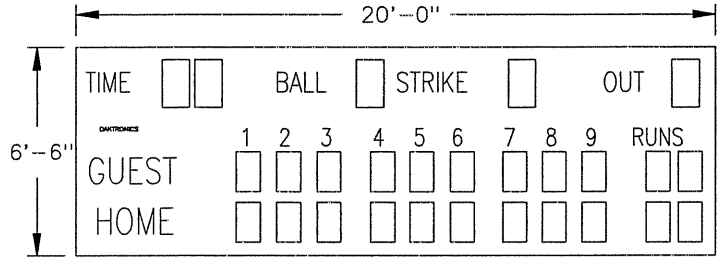
1192-E07A-152936



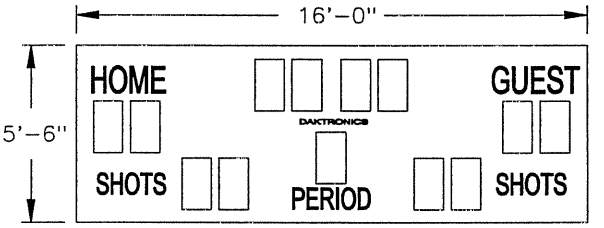
BA-2004-11



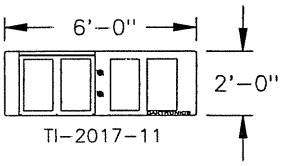
MS-2002-11



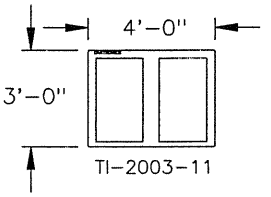
BA-2005-11



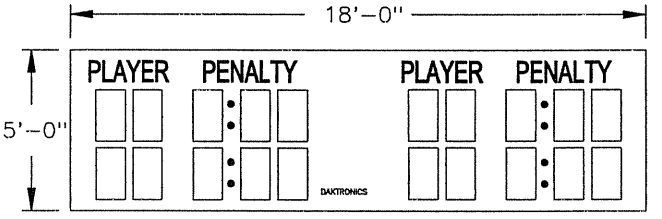
SO-2008-11



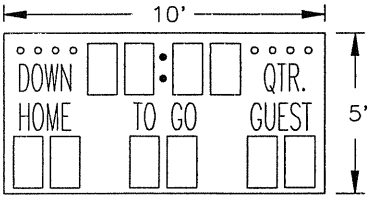
TI-2017-11



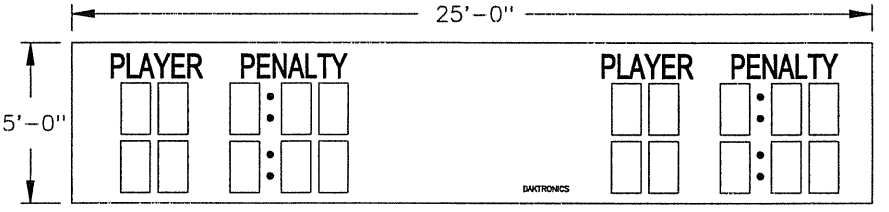
TI-2003-11



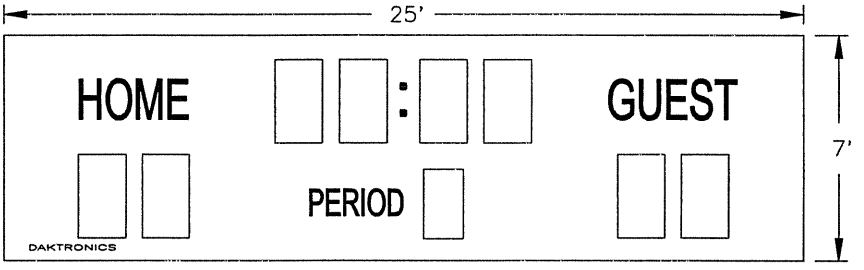
MS-2004-11



FB-2005-11



MS-2012-11



MS-2006-11

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: SINGLE SECTION LED SCOREBOARD MODELS

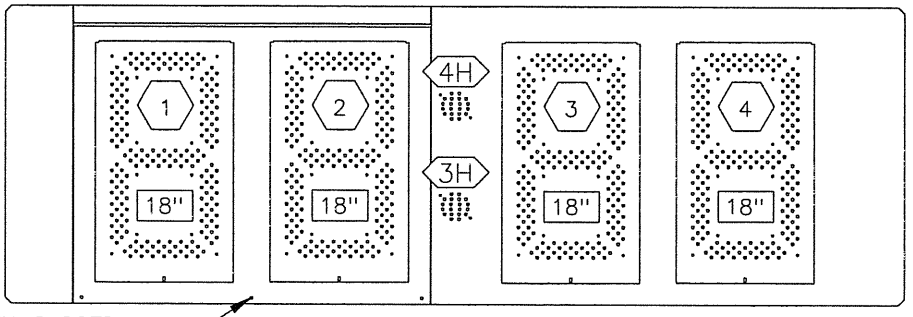
DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 24JULY01

REVISION APPR. BY:

SCALE: 1=70

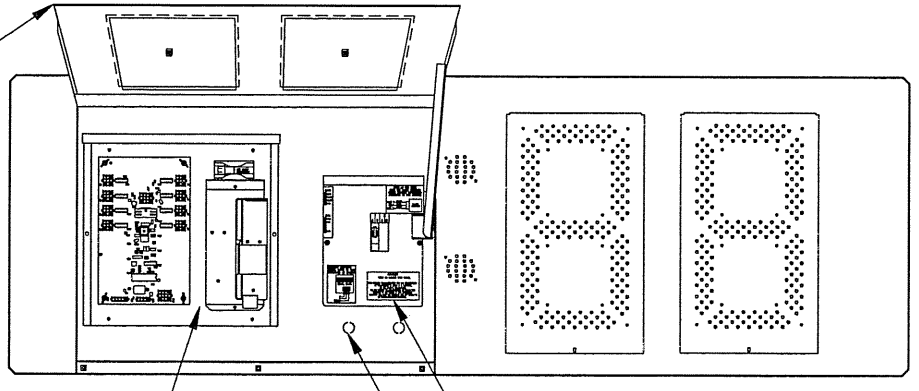
1192-E07A-152950

Ti-2017-11



DOOR SHOWN CLOSED. REMOVE SCREWS @3 TO TO ACCESS DRIVER AND ENTRANCE PANEL.

DOOR SHOWN OPEN TO SHOW DRIVER AND POWER AND SIGNAL ENTRANCE PANEL DETAIL.



ENCLOSED 8 COLUMN LED DRIVER (THE DRIVER COVER HAS BEEN REMOVED TO SHOW THE LED DRIVER DETAIL).

POWER AND SIGNAL ENTRANCE PANEL

KNOCKOUT FOR 1/2" CONDUIT

---

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

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

[18"] = DIGIT SIZE

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

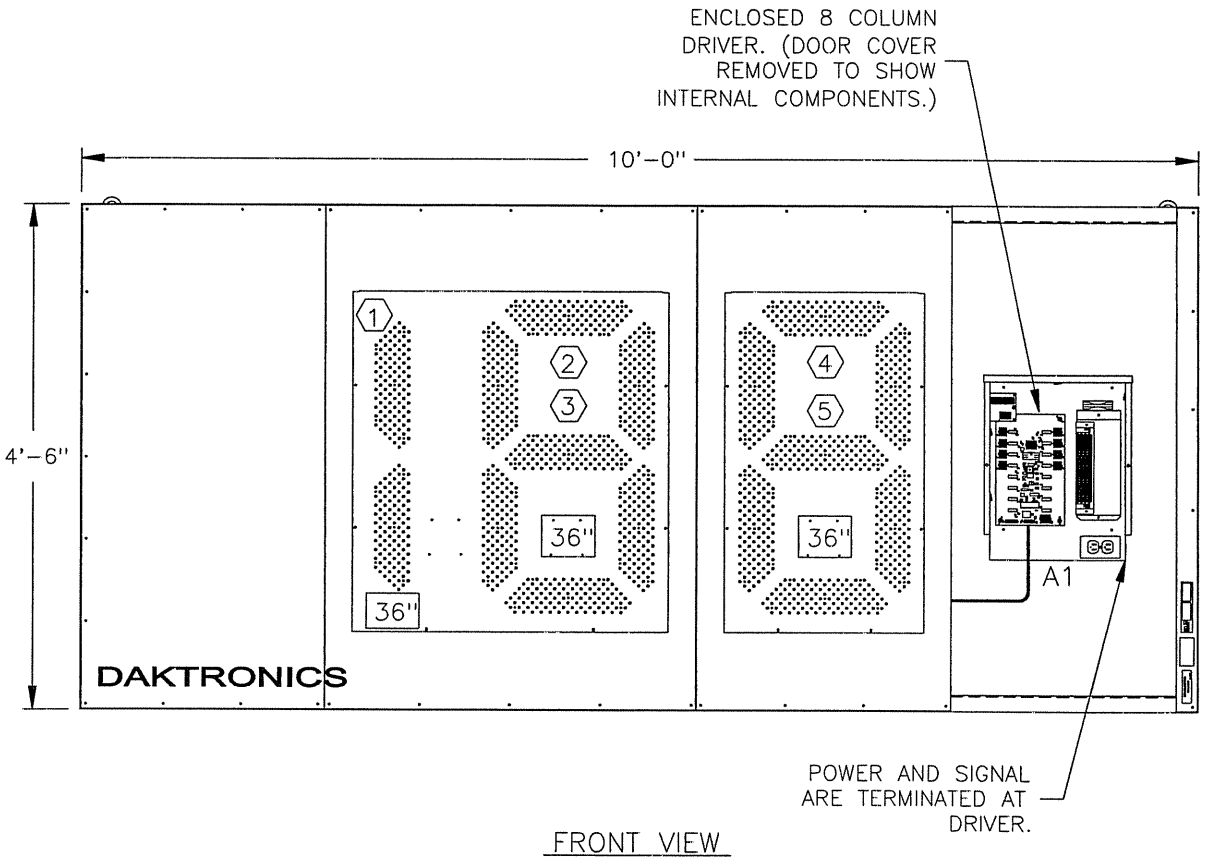
TITLE: COMPONENT LOCATIONS; TI-2017-11

DES. BY: MCOPLAN DRAWN BY: MCOPLAN DATE: 02AUG01

REVISION APPR. BY: SCALE: 1=15

1192-E07A-153777

BA-2003-11



FRONT VIEW

(1) = DRIVER CONNECTOR WIRED TO THAT DIGIT.

36" = DIGIT SIZE

HINGED ACCESS DOOR SHOWN REMOVED TO SHOW INTERNAL ELECTRICAL COMPONENTS.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED DIGIT SCOREBOARDS

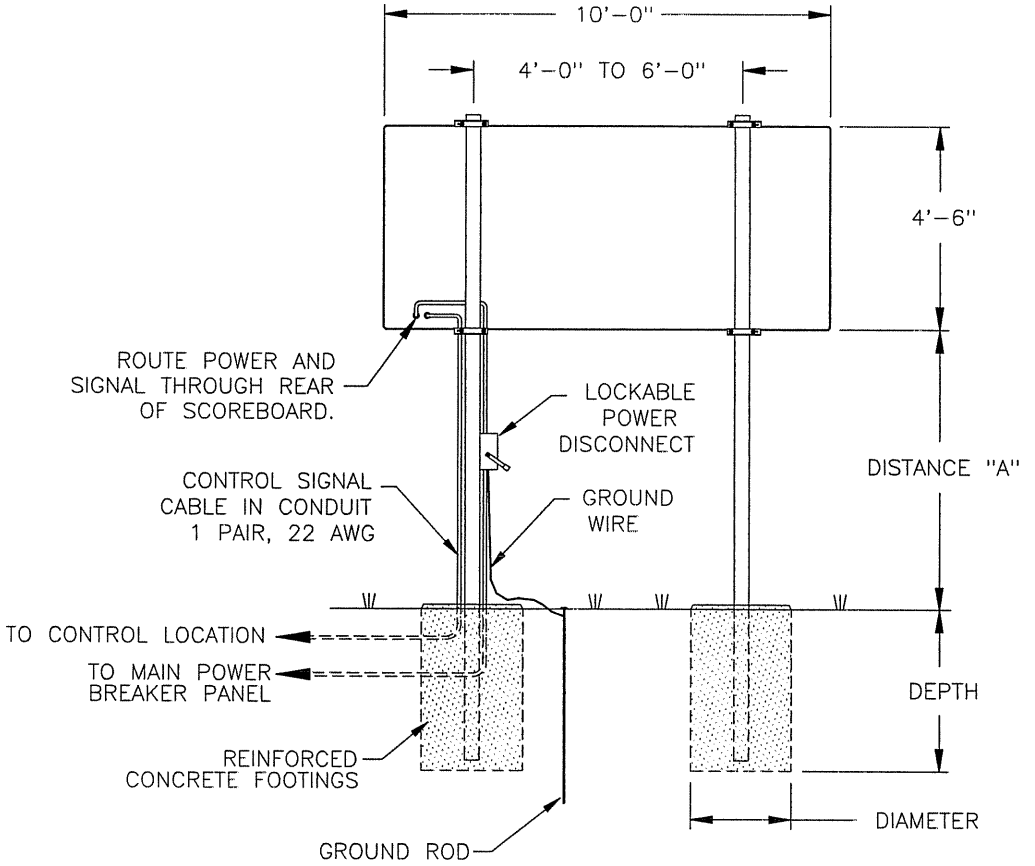
TITLE: COMPONENT LOCATIONS, BA-2003-11

DES. BY: KBRICKER DRAWN BY: KBRICKER DATE: 01 NOV 01

REVISION APPR. BY:

SCALE: 1=20

1192-E10A-158302



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.

REV.	DATE	DESCRIPTION	BY	APPR.

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:

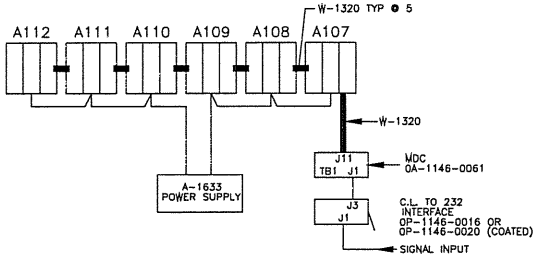
SCALE: 1=50

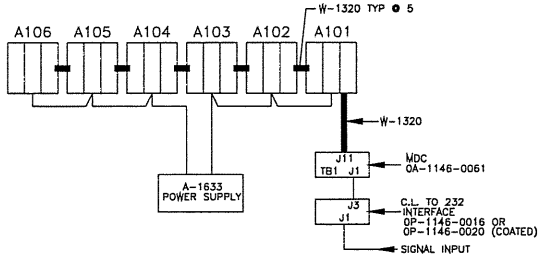
1192-E10A-158322

GUEST

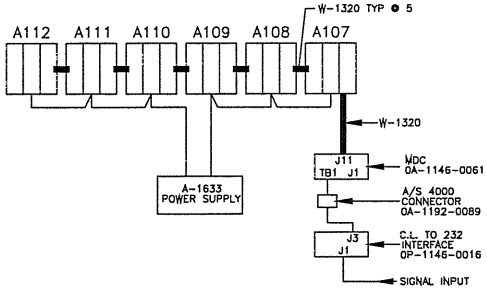
HOME

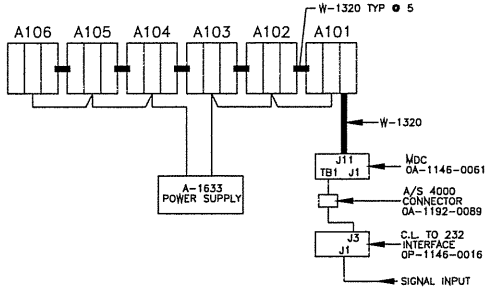
AS-5000 MASTER-MASTER LAYOUT





AS-4000 MASTER-MASTER LAYOUT





NOTE:

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

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

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

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

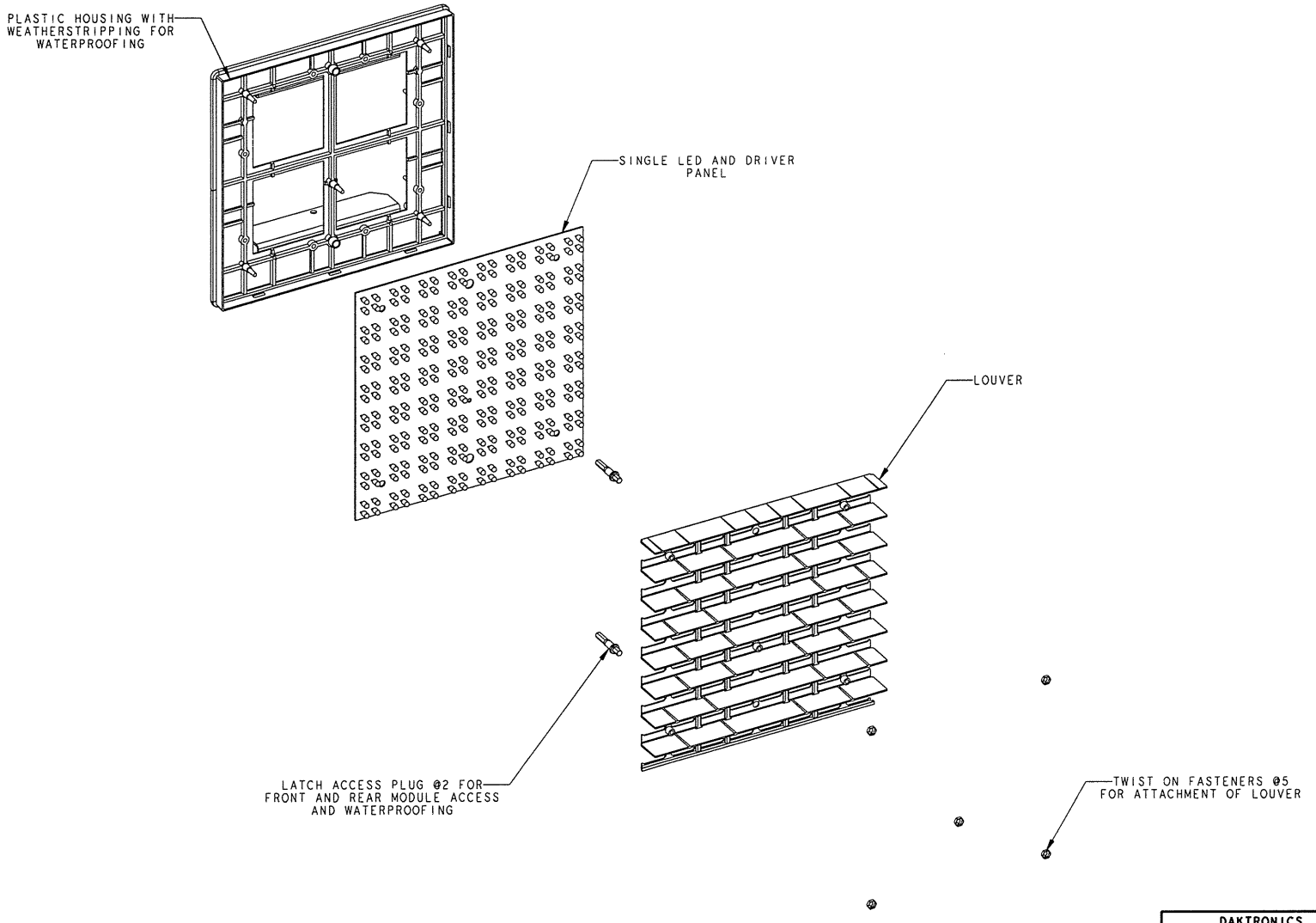
TITLE: CONTROL LAYOUT; OUTDOOR LED TNMC

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

REVISION APPR. BY:

SCALE: 1=1

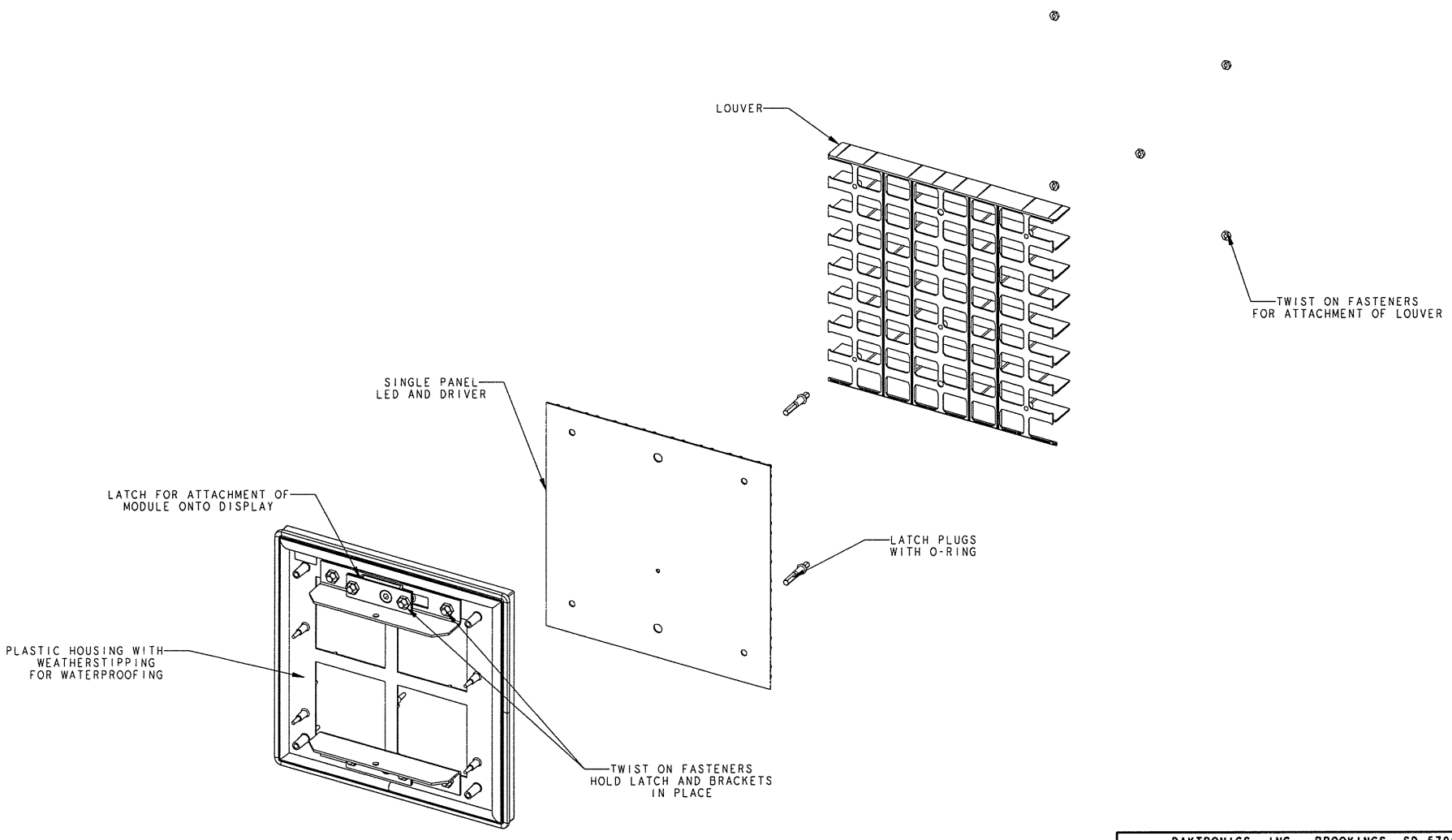
1192-E10B-107507



REV.	DATE	DESCRIPTION	BY	APPR.

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

1208-E10B-126111



REV.	DATE	DESCRIPTION	BY	APPR.

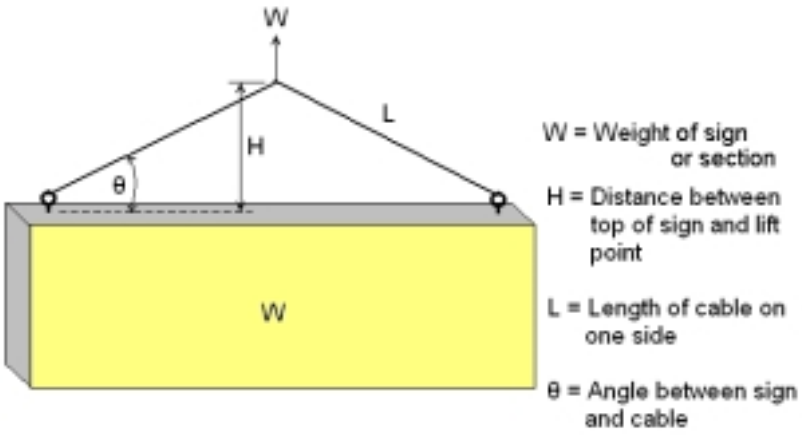
DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	34MM OUTDOOR GALAXY
TITLE:	EXPLODED REAR VIEW; SINGLE PANEL MODULE
DES. BY: NANDAL	DRAWN BY: DNUGTEREN DATE: 10JAN00
REVISION	SHEET 1 OF DWG 126112
SCALE: 1=2	1208 - E10B - 126112

Appendix B: Eyebolts

Eyebolts

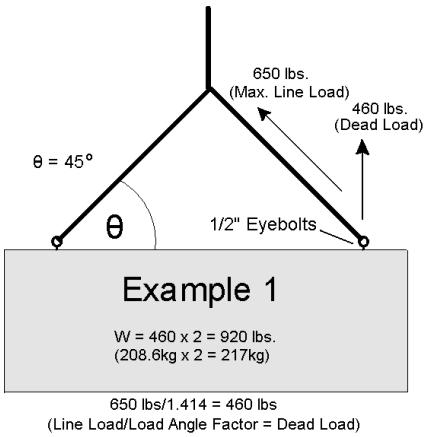
Almost every display that leaves Daktronics is equipped with eyebolts for lifting the display. There are two standard sizes of eyebolts: ½″ and ⅝″.

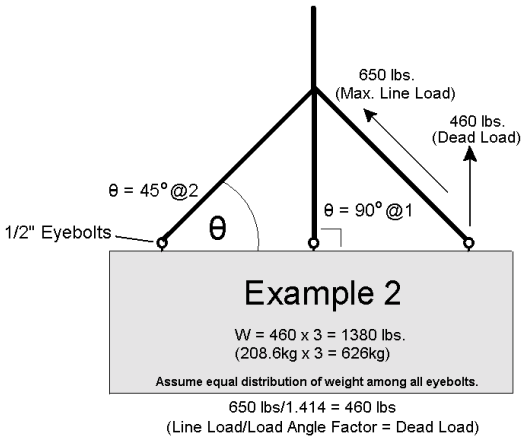
Load Increase Factor: The load increases as the lift angle (θ) decreases. The allowable load on the eyebolts also decreases with the lift angle due the bending stress on the eyebolts. In sum, the smaller the angle between the cable and the top of the display, the lighter the sign must be to safely lift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

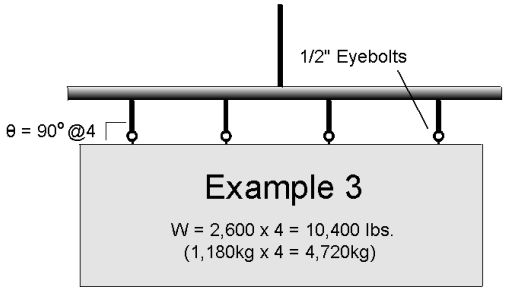


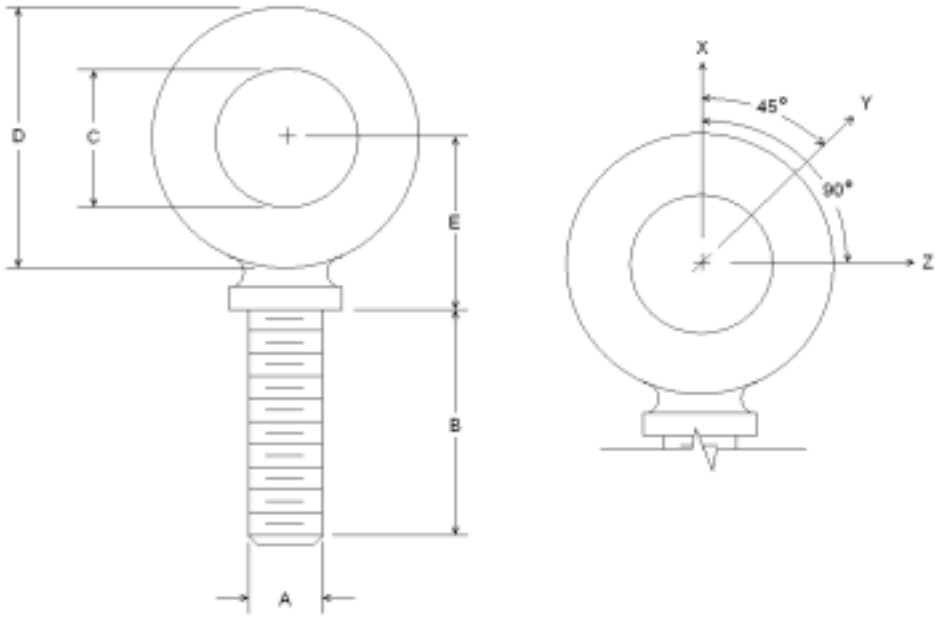
Horizontal Angle	Load Angle Factor (L/H)
90	1.00
60	1.155
50	1.305
45	1.414
30	2.00

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









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

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

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

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

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

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

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

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