

Outdoor LED Tennis Scoreboards

Display Manual

ED-16442

Rev 5 – 9 August 2011

DAKTRONICS

Models			
*	TN-2016		TN-2650
	TN-2601		TN-2651
	TN-2603		TN-2652
	TN-2604		TN-2653
	TN-2605		TN-2654
	TN-2606		TN-2655
	TN-2607		TN-2656
			TN-2657

* Discontinued

Note: For scoreboards built after January 2012,
refer to DD2157207, available online at
www.daktronics.com/manuals.

Please fill in the information below to use for reference when calling Daktronics for assistance.

Display Serial No. _____

Display Model No. _____

Date Installed _____

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Section 1: Introduction

This manual explains the installation of Daktronics outdoor LED tennis scoreboards and provides details for maintenance and troubleshooting. For additional information regarding the safety, installation, operation, or service of this system, refer to the telephone numbers listed in **Section 7**. This manual is not specific to a particular installation. Project-specific information takes precedence over any other general information found in this manual.

IMPORTANT SAFEGUARDS:

- Please read and understand all instructions before beginning the installation process.
- Do not drop control equipment or allow it to get wet.
- Do not disassemble control equipment or electronic controls of the display; failure to follow this safeguard will make the warranty null and void.
- Disconnect display power when not in use or when servicing.
- Disconnect display power before servicing power supplies to avoid electrical shock. Power supplies run on high voltage and may cause physical injury if touched while powered.
- Do not modify the scoreboard structure or attach any panels or coverings to the scoreboard without the express written consent of Daktronics, Inc.

1.1 Scoreboard Controllers

Daktronics outdoor tennis scoreboards are designed for use with the RC-100 handheld controller. Single-court scoreboards with optional Team Name Message Centers (TNMCs) require an All Sport® 5000 series control console, while multi-court models require a computer running DakTennis™ control software. All controllers use keyboard overlays (sport inserts) to control numerous sports and scoreboard models. Refer to the following manuals for operating instructions:

- **Remote Control System RC-100 Operational Overview (ED-15133)**
- **All Sport 5000 Series Control Console Operation Manual (ED-11976)**
- **DakTennis Version 3 Installation & Operation Manual (DD1965926)**

These control console manuals are available online at www.daktronics.com/manuals.

1.2 Resources

Figure 1 illustrates a Daktronics drawing label. The drawing number is located in the lower-right corner of a drawing. This manual refers to drawings by listing the last set of digits and the letter preceding them. In the example, the drawing would be referred to as **Drawing C-325405**.

THE CONCEPTS EXPRESSED AND DETAILS SHOWN IN THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY, WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2008 DAKTRONICS, INC.			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: DAKTRONICS UNIVERSITY			
TITLE: SYSTEM RISER DIAGRAM			
DES. BY: AORMESH		DRAWN BY: AORMESH	DATE: 15 JAN 08
REVISION	APPR BY-	14963-R01	
00	SCALE: NONE	C-325405	

Drawing Number

Figure 1: Daktronics Drawing Label

Reference Drawing:

System Riser Diagram **Drawing C-325405**

Daktronics identifies manuals by the DD or ED number located on the cover page of each manual. For example, this manual would be referred to as **ED-16442**.

1.3 Daktronics Nomenclature

Serial and model numbers can be found on the ID label on the display as shown in **Figure 2**.

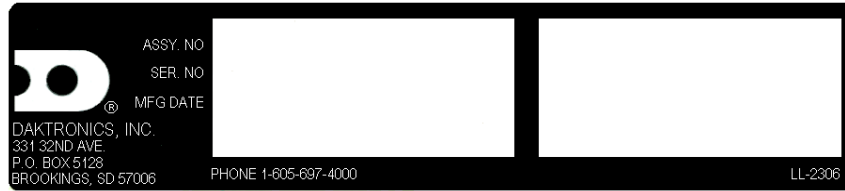


Figure 2: Scoreboard ID Label

Please list the model number, display serial number, and the date this display became operational in the blanks provided on the second page of this manual. When calling Daktronics customer service, please have this information available to ensure the request is serviced as quickly as possible.

Most components within this display carry a white label that lists the part number of the unit. If a component is not found in the Replacement Parts List in **Section 5.11**, use the label to order a replacement. **Figure 3** illustrates a typical label. The part number is in bold.

Main Component Labels	
Part Type	Part Number
Individual circuit board	0P-XXXX-XXXX
Assembly; a collection of circuit boards	0A-XXXX-XXXX
Wire or cable	W-XXXX
Fuse	F-XXXX
Transformer	T-XXXX
Metal part	M-XXX
Fabricated metal assembly	0S-XXXXXX
Specially ordered part	PR-XXXXX-X

Accessory Labels	
Component	Label
Termination block for power or signal cable	TBXX
Grounding point	EXX
Power or signal jack	JXX
Power or signal plug for the opposite jack	PXX

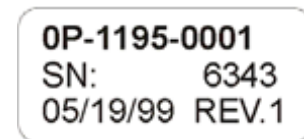


Figure 3: Typical Label

Following the Replacement Parts List is the Daktronics Exchange Policy and the Repair & Return Program. Refer to these instructions if replacing or repairing any display component.

1.4 Product Safety Approval

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

Section 2: Specifications

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

Notes:

- 1) All displays require a 120 V AC, 15 A circuit. Displays with a 240 V A C power requirement are also available.
- 2) Signal wire must be minimum of 22 AWG with shield. Daktronics recommends W-1234.
- 3) TNMC LEDs are typically the same color as the LED digits on the scoreboard.

Model & Options	Number of Sections	Dimensions: Height, Width, Depth	Weight:	Watts	Amps 120 / 240 V AC	Driver # & Address
TN-2016	1 Total	H 1'-9", W 2'-0", D 7" (533 mm, 610 mm, 178 mm)	30 lb (14 kg)	300 W	2.5 A (120 V AC only)	A1: 11
TN-2601	1 Total	H 1'-6", W 4'-0", D 6" (457 mm, 1219 mm, 152 mm)	24 lb (11 kg)	300 W	2.5 A / 1.25 A	A1 : 11
TN-2603	1 Total	H 3'-6", W 8'-0", D 8" (1067 mm, 2438 mm, 203 mm)	112 lb (51 kg)	300 W	2.5 A / 1.25 A	A1: 11
w/TNMC	(same)	(same)	192 lb (87 kg)	600 W	5 A / 2.5 A	TNMC: 221
TN-2604	1 Total	H 3'-6", W 9'-0", D 8" (1067 mm, 2743 mm, 203 mm)	126 lb (57 kg)	300 W	2.5 A / 1.25 A	A1: 11
w/TNMC	(same)	(same)	206 lb (93 kg)	600 W	5 A / 2.5 A	TNMC: 221
TN-2605	1 Total	H 2'-0", W 11'-0", D 8" (610 mm, 3353 mm, 203 mm)	88 lb (40 kg)	300 W	2.5 A / 1.25 A	A1: 20
w/TNMC	(same)	(same)	168 lb (76 kg)	600 W	5 A / 2.5 A	TNMC: 221
TN-2606	1 Total	H 3'-6", W 11'-0", D 8" (1067 mm, 3353 mm, 203 mm)	154 lb (70 kg)	300 W	2.5 A / 1.25 A	A1: 11
w/TNMC	(same)	(same)	234 lb (106 kg)	600 W	5 A / 2.5 A	TNMC: 221
TN-2607	1 Total	H 3'-6", W 11'-0", D 8" (1067 mm, 3353 mm, 203 mm)	154 lb (70 kg)	300 W	2.5 A / 1.25 A	A1: 11
w/TNMC	(same)	(same)	234 lb (106 kg)	600 W	5 A / 2.5 A	TNMC: 221

Model & Options	Number of Sections	Dimensions: Height, Width, Depth	Weight:	Watts	Amps 120 / 240 V AC	Driver # & Address
TN-2650	3 Total Top Middle & Bottom	H 9'-0", W 24'-0", D 8" (2743 mm, 7315 mm, 203 mm) H 2'-0", W 24'-0", D 8" (607 mm, 7315 mm, 203 mm) H 3'-6", W 24'-0", D 8" (1067 mm, 7315 mm, 203 mm)	864 lb (392 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1424 lb (646 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230
TN-2651	3 Total Top Middle & Bottom	H 9'-0", W 27'-0", D 8" (2743 mm, 8230 mm, 203 mm) H 2'-0", W 27'-0", D 8" (607 mm, 8230 mm, 203 mm) H 3'-6", W 27'-0", D 8" (1067 mm, 8230 mm, 203 mm)	972 lb (441 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1532 lb (695 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230
TN-2652	4 Total Top Other 3	H 12'-6", W 16'-0", D 8" (3810 mm, 4877 mm, 203 mm) H 2'-0", W 16'-0", D 8" (607 mm, 4877 mm, 203 mm) H 3'-6", W 16'-0", D 8" (1067 mm, 4877 mm, 203 mm)	800 lb (363 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1360 lb (617 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230
TN-2653	4 Total Top Other 3	H 12'-6", W 18'-0", D 8" (3810 mm, 5486 mm, 203 mm) H 2'-0", W 18'-0", D 8" (607 mm, 5486 mm, 203 mm) H 3'-6", W 18'-0", D 8" (1067 mm, 5486 mm, 203 mm)	900 lb (408 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1460 lb (662 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230

Model & Options	Number of Sections	Dimensions: Height, Width, Depth	Weight:	Watts	Amps 120 / 240 V AC	Driver # & Address
TN-2654	3 Total Top Middle & Bottom	H 10'-0", W 27'-0", D 8" (3048 mm, 8230 mm, 203 mm) H 2'-0", W 27'-0", D 8" (607 mm, 8230 mm, 203 mm) H 4'-0", W 27'-0", D 8" (1219 mm, 8230 mm, 203 mm)	1175 lb (533 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1735 lb (787 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230
TN-2655	3 Total Top Middle & Bottom	H 10'-6", W 33'-0", D 8" (3200 mm, 10058 mm, 203 mm) H 2'-6", W 33'-0", D 8" (762 mm, 10058 mm, 203 mm) H 4'-0", W 33'-0", D 8" (1219 mm, 10058 mm, 203 mm)	1320 lb (599 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1880 lb (853 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230
TN-2656	4 Total Top Other 3	H 14'-6", W 18'-0", D 8" (4420 mm, 5486 mm, 203 mm) H 2'-6", W 18'-0", D 8" (762 mm, 5486 mm, 203 mm) H 4'-0", W 18'-0", D 8" (1219 mm, 5486 mm, 203 mm)	1080 lb (490 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1640 lb (744 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230
TN-2657	4 Total Top Other 3	H 14'-6", W 22'-0", D 8" (4420 mm, 6706 mm, 203 mm) H 2'-6", W 22'-0", D 8" (762 mm, 6706 mm, 203 mm) H 4'-0", W 22'-0", D 8" (1219 mm, 6706 mm, 203 mm)	1232 lb (559 kg)	2100 W	8.8 A High Leg (120/240 V AC Single Phase)	A1-A6: 11-16 A7: 20
w/TNMC	(same)	(same)	1792 lb (813 kg)	4200 W	17.5 A High Leg (120/240 V AC Single Phase)	TNMC 1-6: 221-226 TNMC 7: 230

Section 3: Mechanical Installation

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

3.1 Footings & Beams

The installation specification drawings listed in **Appendix A** show the recommended number of beams and spacing between them. The drawings also indicate the size of beams required to support the scoreboard at different heights and at various wind speeds. Use the following table to determine which drawings provide the installation specifications for each model:

Models	Drawing Title	Number
TN-2016	Beam and Footing Recommendations, TN-2016-11	A-175784
TN-2601	To Be Determined	N/A
TN-2603	To Be Determined	N/A
TN-2604	Shop DWG: TN-2604 –(11/21) w/ ID Panels	B-297728
TN-2605	To Be Determined	N/A
TN-2606	To Be Determined	N/A
TN-2607	To Be Determined	N/A
TN-2650	To Be Determined	N/A
TN-2651	Shop DWG, TN-2651–(11/21) w/ ID Panels	B-274857
TN-2652	16' Width Scoreboard Installation Specs.	A-298975
TN-2653	18' Width Scoreboard Installation Specs.	A-302416
TN-2654	To Be Determined	N/A
TN-2655	Shop DWG, TN-2655–(11/21) w/ ID Panels	B-297726
TN-2656	18' Width Scoreboard Installation Specs.	A-302416
TN-2657	To Be Determined	N/A

The column and footing size dimensions are to assist with estimating installation costs. They are estimates only and are not intended for actual construction purposes. Be sure that the installation complies with local building codes and is suitable for the particular soil and wind conditions. The columns, footings, and all connection details must be designed and certified by a professional engineer licensed to practice in the state of the scoreboard installation.

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

3.2 Lifting the Scoreboard

Larger scoreboard sections and message centers are shipped equipped with eyebolts used to lift them. The eyebolts are located along the top of the cabinet for each scoreboard or scoreboard section. Daktronics scoreboards use $\frac{1}{2}$ " and $\frac{5}{8}$ " shoulder-type eyebolts mounted to a $\frac{1}{8}$ " aluminum plate or steel nut plate.

Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display. Spreader bars ensure the force on the eyebolts remains straight up, minimizing lifting stress.

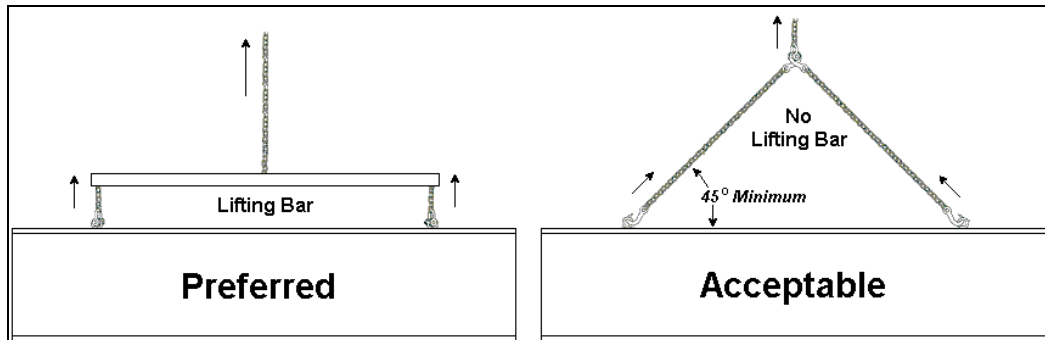


Figure 4: Lifting Methods

Figure 4 illustrates the preferred scoreboard lifting method on the left and an acceptable alternative lifting method on the right. When lifting the display:

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

Cables and chains attached to the eyebolts and directly to a center lifting point, as shown in the right-hand example in **Figure 4**, can create a dangerous lateral force on the eyebolts and may cause the eyebolts to fail. The smaller the angle between the cable and the top of the display, the lighter the sign must be to safely lift it. If this method must be used, ensure a minimum angle between the chain and scoreboard of at least 45 degrees.

Do NOT attempt to lift the display if the angle is less than 45 degrees. Exceeding load angles or weight limits could cause the bolts in the scoreboard cabinet to buckle, resulting in serious damage to the scoreboard or injury to personnel. Also, loads should be applied directly in the plane of the eyebolt as shown in **Figure 5**.

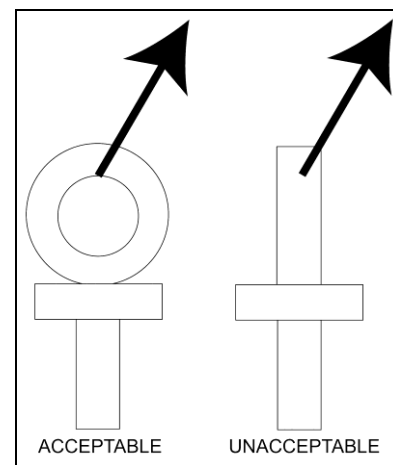


Figure 5: Eyebolt Plane Load

Note: Daktronics assumes no liability for damages resulting from incorrect setup or lifting methods. Eyebolts are intended for lifting only. Do not attempt to permanently support the display by the eyebolts.

Small Daktronics scoreboards are not equipped with eyebolts, and instead use two lifting straps that encircle the scoreboard. It is recommended to use a spreader bar with the straps.

In typical multi-section installations, the lower scoreboard sections are installed first and secured to the support beams. The other sections are then placed above the lower section(s) and attached to the beams. Refer to **Section 4.4** for more information on the power/signal connections between sections.

If installers remove the eyebolts, plug the holes with bolts and the rubber washers that are used with the eyebolts. Apply silicone or another waterproof sealant to the eyebolt openings. Also 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.

3.3 Scoreboard Mounting

An inverted channel mounting installation uses C-channels; clip angles; 1/2-13" threaded rods; and 1/2" square nuts, hex nuts, lock washers, and optional spacers. Refer to **Figure 6** and **Drawing A-55101** in **Appendix A**.

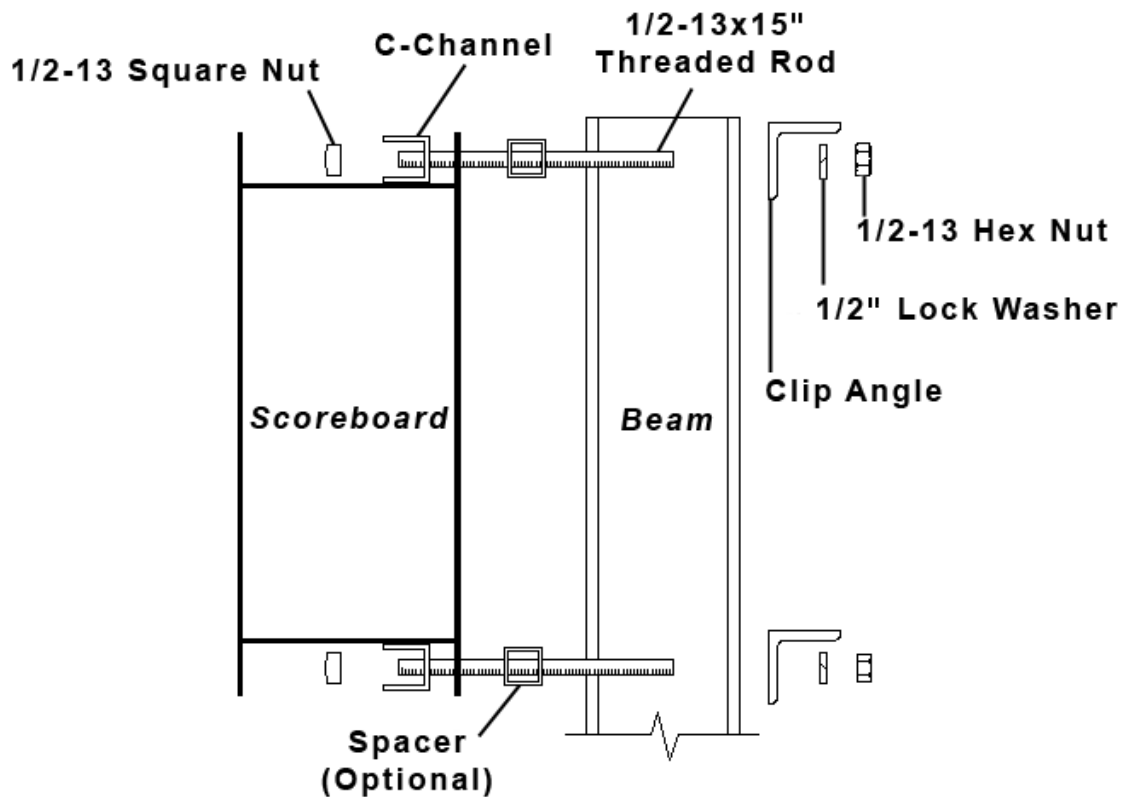


Figure 6: C-channel Mounting Method, Side View

Mount the scoreboard as follows:

1. Place the C-channel against the upper and lower rear flanges of the scoreboard.
2. Use the width of the beam to determine the appropriate hole combination to use for the bolts. The bolts should be kept as close to the beam as possible.
3. With the C-channel as a template, use a $\frac{9}{16}$ " bit to drill holes in the upper and lower rear flanges of the scoreboard cabinet where the bolts will pass through.
4. Place the $\frac{1}{2}$ " square nuts inside the C-channel and thread the $\frac{1}{2}$ -13" rods through the C-channel, rear flange of the scoreboard cabinet, and spacer (if used).
5. Lift the scoreboard into position with the bolts still in place. Position the scoreboard at the front of the beams with the threaded rods extending from the rear flanges.
6. With the threaded rod straddling the beams, place mounting angles over each pair of bolts and secure with $\frac{1}{2}$ " lock washers and hex nuts.
7. Make final adjustments in the positioning of the scoreboard.
8. Make sure that the threaded rods are perpendicular to the scoreboard, and tighten all of the $\frac{1}{2}$ " hex nuts.

Scoreboard Mounting Using Vertical Spacers

Many customers add message centers or advertising panels to the top or bottom of their scoreboards, and in some cases the depth of the add-on component may not match the depth of the scoreboard. This will typically be scoreboards that are 8" deep.

To create a uniform appearance for the overall display, Daktronics recommends using vertical spacers behind the scoreboard so that the front face of the display lines up evenly with the front face of the added component. The concept is illustrated in **Figure 7** and **Drawing A-182909** in **Appendix A**.

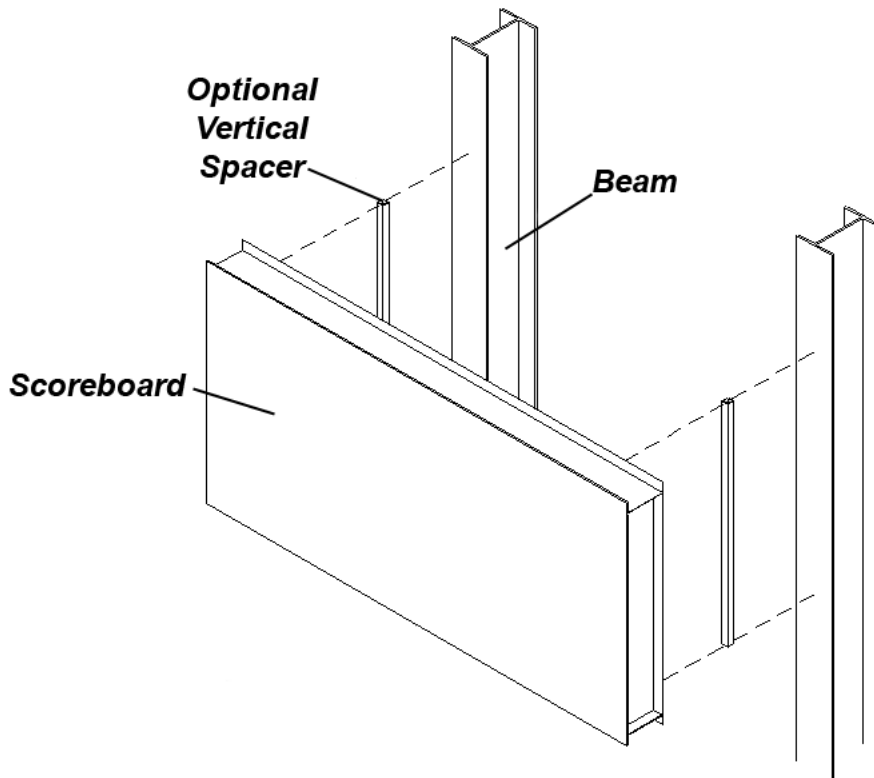


Figure 7: Mounting with Vertical Spacers

During the installation, spacers are placed between the mounting beams and the back of the scoreboard cabinet. Spacer size is determined by the height and the extra depth required for the front surface of the scoreboard to match that of the optional message center or ad panel.

Note: Daktronics does not provide these spacers.

3.4 TN-2016 Mounting

Follow this procedure for mounting the TN-2016:

1. Attach the mounting brackets to the rear of the display using the included $\frac{1}{4}$ " hardware. Holes are provided in the mounting brackets and in the back of the display.
2. Position the display (with attached mounting brackets) against the beams and secure to the beam with the provided $\frac{1}{2}$ " bolts, washers, and nuts. The square nuts go inside the bracket, and the hex nuts and washers are used inside the rear angle at the back of the beam. Use a $\frac{3}{4}$ " socket to tighten.

Refer **Drawings A-175677** and **A-175696** in **Appendix A** for further details.

3.5 Ad Panel Mounting

The installation uses C-channels; clip angles; $\frac{1}{2}$ -13" threaded rods; and $\frac{1}{2}$ " square nuts, hex nuts, lock washers, and optional spacers. Refer to **Figure 8** and **Drawing A-52187** in **Appendix A**.

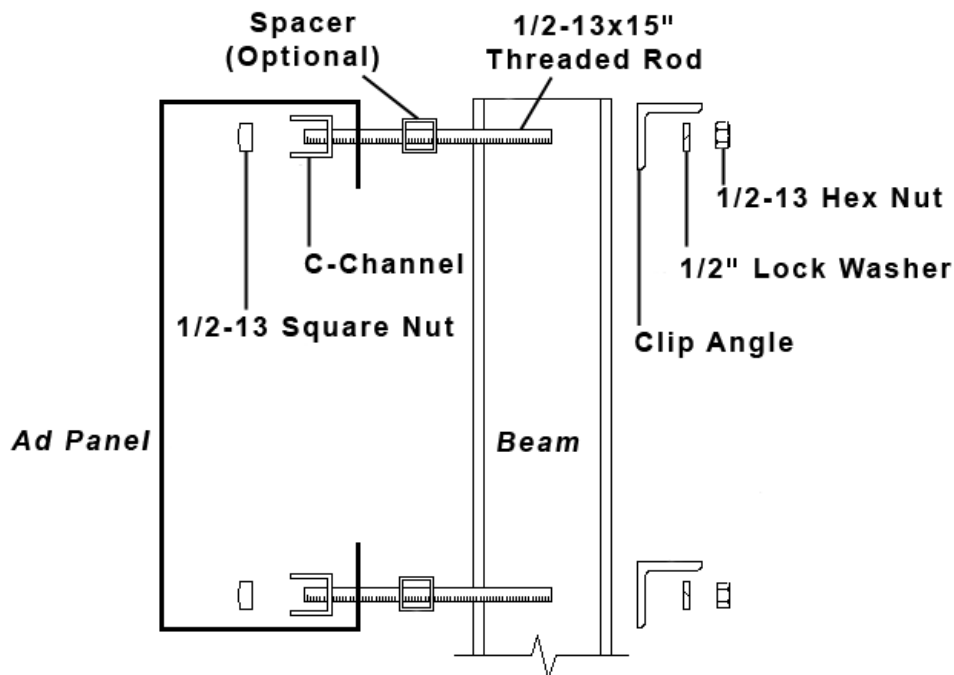


Figure 8: Ad Panel Mounting with C-channel, Side View

Mount the ad panel(s) as follows:

1. Use the width of the beam to determine which hole combination to use for the bolts. Be sure to keep the bolts as close to the beam as possible.
2. Using the clip angle as a template, use a $\frac{9}{16}$ " bit to drill holes in the upper and lower rear flange of the ad panel where the C-channel supports will be placed.
3. Position the C-channel *inside* the ad panel cabinet along the upper and lower rear flanges as shown in **Figure 8**.
4. Place $\frac{1}{2}$ " square nuts inside the channel and thread the $\frac{1}{2}$ -13" rods through the C-channel, rear flange of the ad panel, and spacer (if used).
5. Lift the ad panel into position with the rods still in place.
6. With the threaded rod straddling the beams, place mounting angles over the ends of each pair of bolts and secure with $\frac{1}{2}$ " lock washers and hex nuts.
7. Make final adjustments in the positioning of the ad panel.
8. Make sure that the threaded rods are perpendicular to the ad panel, and tighten all of the $\frac{1}{2}$ " hex nuts.

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

3.6 Scoreboard Protective Devices

Daktronics makes optional protective devices, including screens and netting, to help prevent damage to the scoreboard due to normal ball impacts.

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.

Section 4: Electrical Installation

CAUTION: Only qualified individuals should terminate power and signal cable and access the electrical components of the display and its associated equipment. It is the responsibility of the electrical contractor to ensure that all electrical work meets or exceeds local and national codes.

Daktronics engineering staff must approve all changes or the warranty will be void.

4.1 Installation Overview

The diagram shown in **Figure 9** illustrates a typical wireless setup between a single-court tennis scoreboard and the control system. Daktronics part numbers are shown in parentheses. **Drawings A-177098** and **A-252412** in **Appendix A** also show power and signal layouts. Refer to **Section 8.1** for more information about the wireless radio option.

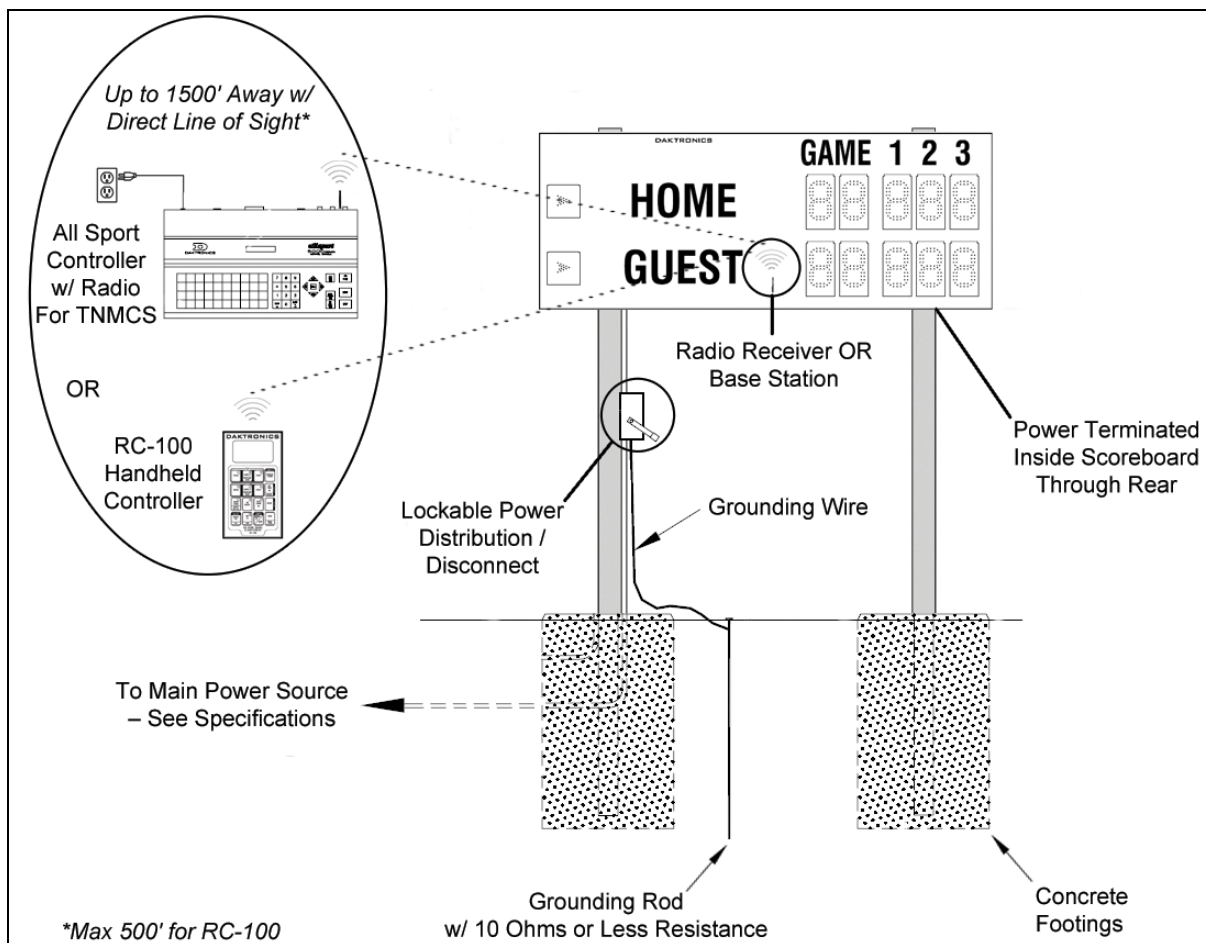


Figure 9: Wireless Installation

The diagram shown in **Figure 10** illustrates a typical wired setup between a single-court tennis scoreboard and the control system. Daktronics part numbers are shown in parentheses.

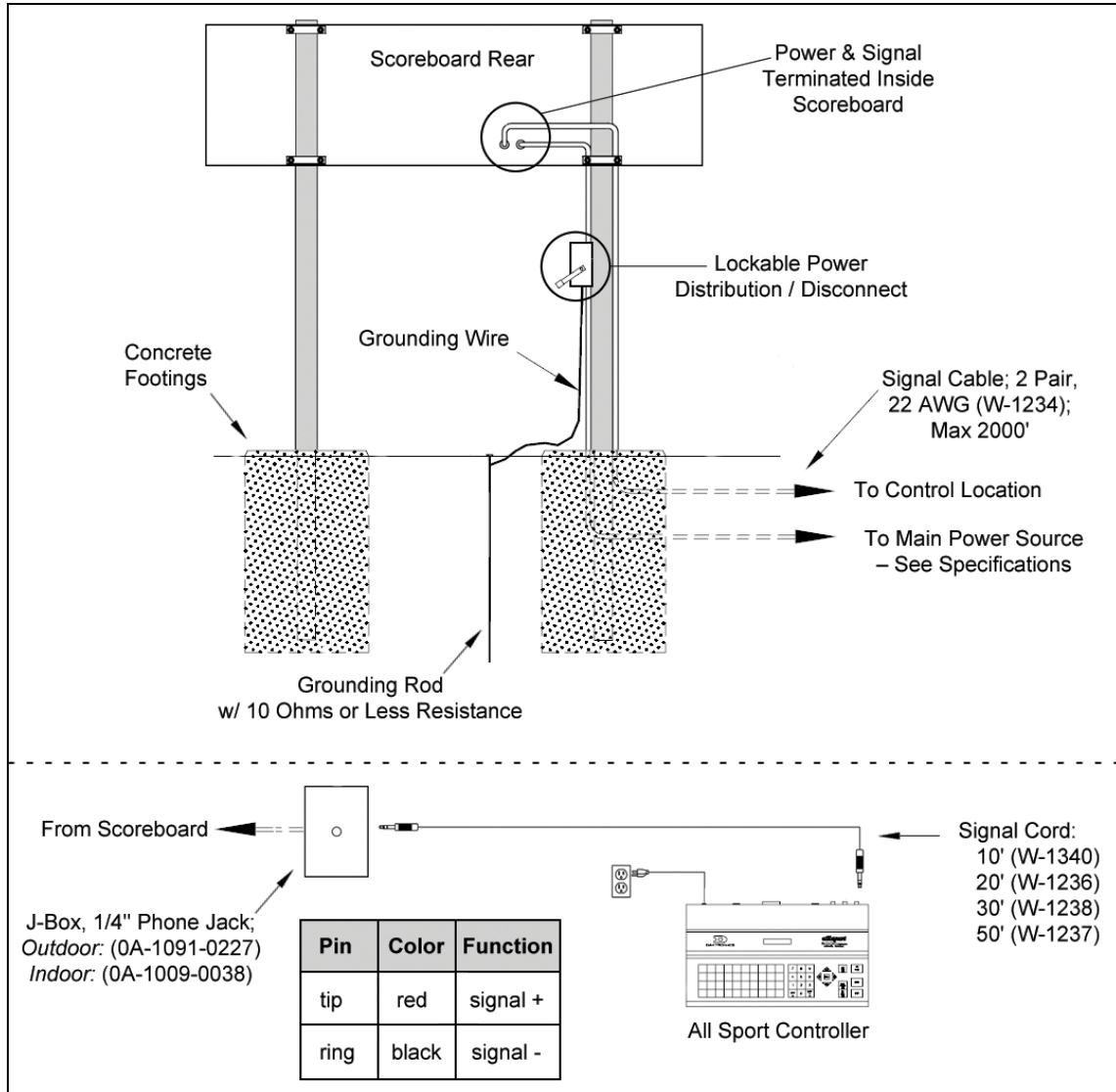


Figure 10: Wired Installation

The diagram shown in **Figure 11** illustrates a typical wireless setup between a multi-court scoreboard and the control system. Daktronics part numbers are shown in parentheses.

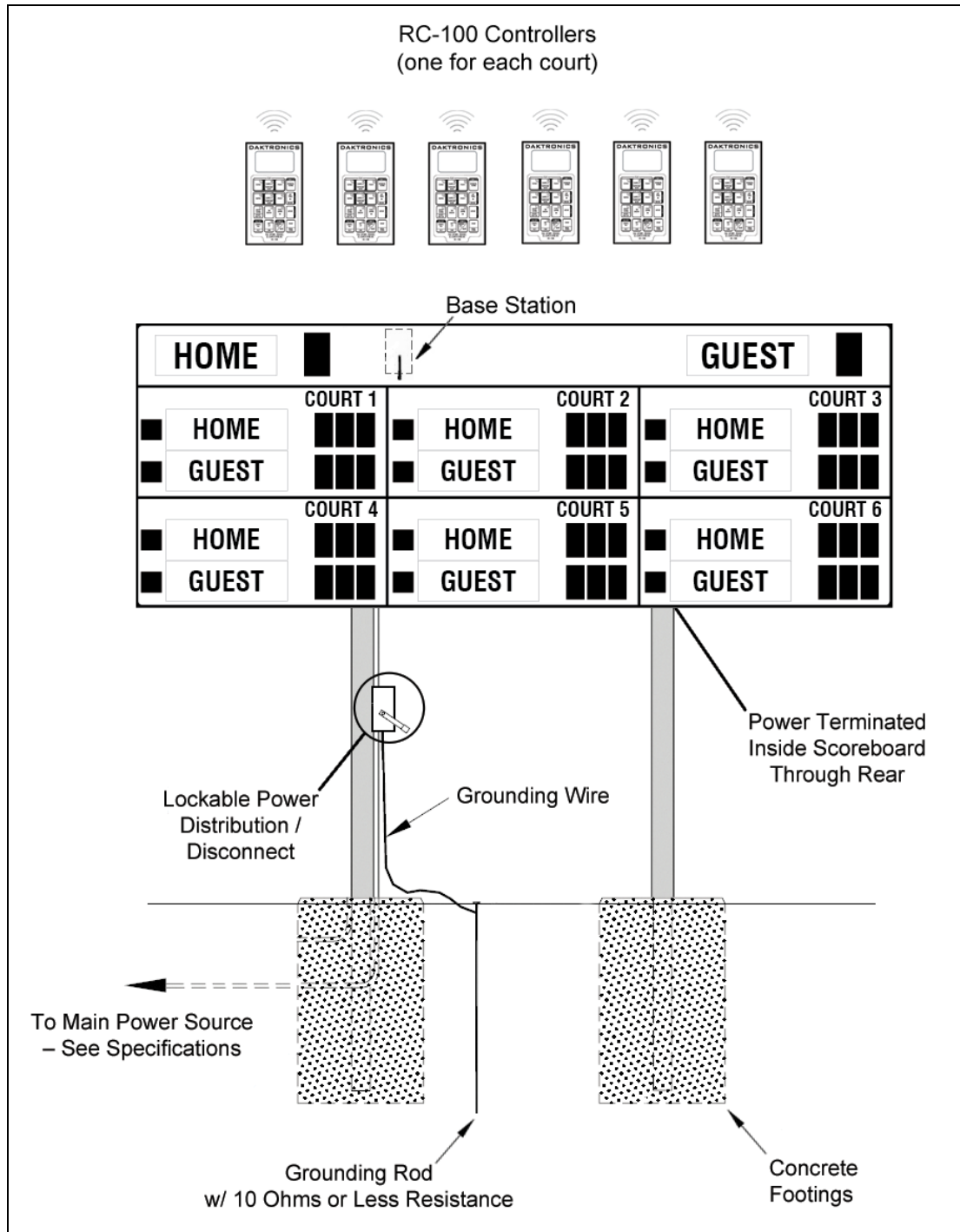


Figure 11: Multi-Court Installation

The diagram shown in **Figure 12** illustrates a typical setup between a multi-court scoreboard, optional single-court scoreboards, and the DakTennis control system when using optional team name message centers (TNMCs). Daktronics part numbers are shown in parentheses.

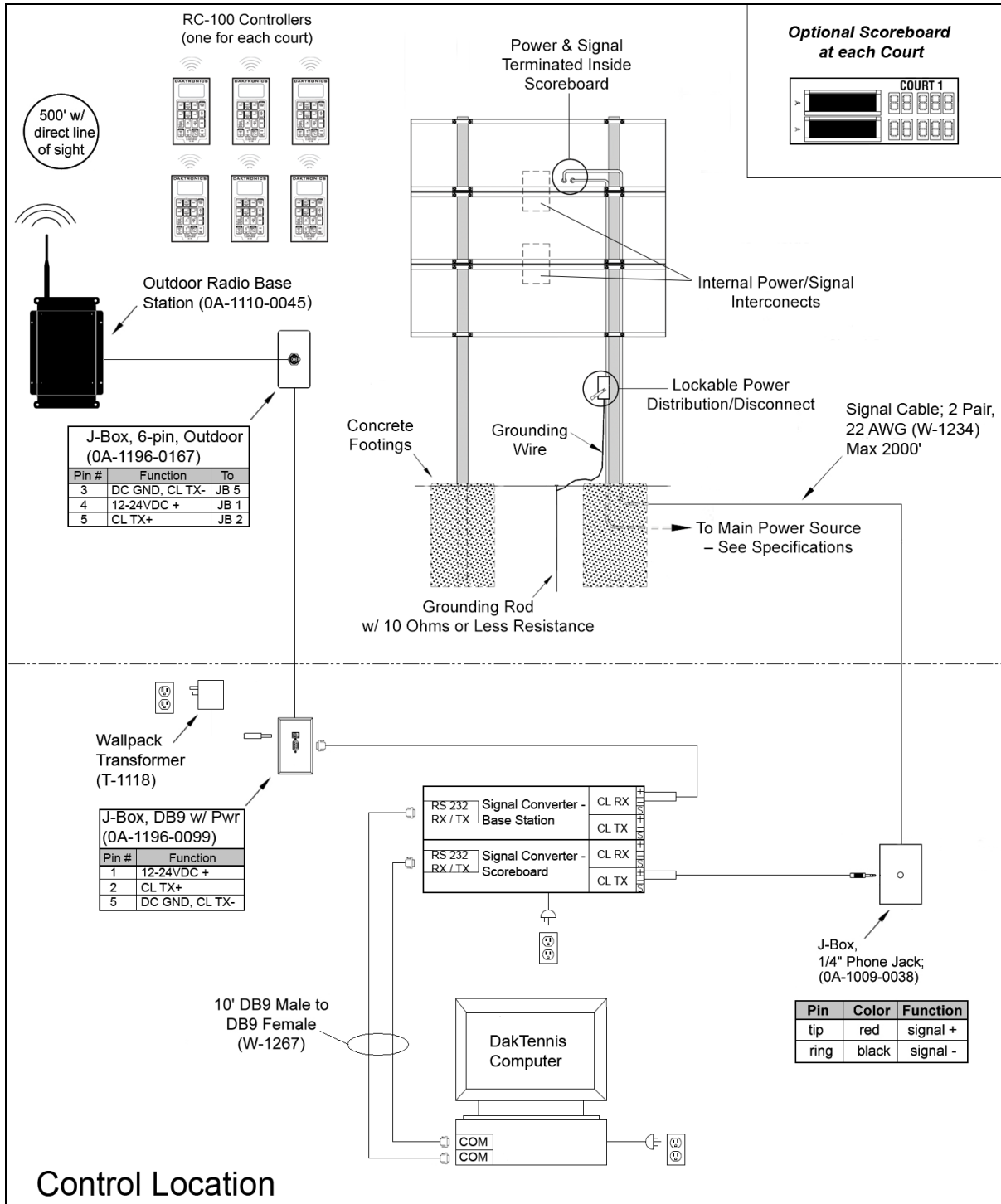


Figure 12: Multi-Court Installation w/ TNMCs

Note: When each court will also have its own scoreboard controlled by the DakTennis system, the scoreboards must be set to specific driver addresses. Refer to **Section 5.6** for more information about setting driver addresses and **Drawing B-1054089** in **Appendix A** for addressing information.

4.2 Power

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

Multi-section outdoor scoreboards require a dedicated 120 V, 240 V, or 120/240 V split phase circuit for incoming power (refer to the Specifications in **Section 2**).

WARNING: It is critical that 120 V scoreboard circuits be fused at 15 A and that all conductors used must be designed to pass a 15 A current in normal operation. For 240 V scoreboards, consult local electrical codes. Failure to meet wiring and overcurrent protection device requirements will void the scoreboard warranty.

Grounding

The display must be properly grounded according to local and national codes or the warranty will be void. Proper grounding is necessary for reliable equipment operation and protects the equipment from damaging destructive disturbances and lightning.

Daktronics recommends a resistance-to-ground of 10 ohms or less. The electrical contractor performing the electrical installation can verify ground resistance. Daktronics Sales and Service personnel can also provide this service.

The display system must be earth-ground. The material for an earth-ground electrode differs from region to region and may vary according to conditions present at the site. Consult local and national electrical codes.

Daktronics does not recommend using the support structure as an earth-ground electrode; concrete, primer, corrosion, and other factors make the support structure a poor ground.

Note: The support structure may be used as an earth-ground electrode only if designed to do so. A qualified inspector must approve the support structure and grounding methods.

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

Installation with Ground and Neutral Conductors Provided

For this type of installation, the power circuit must contain an isolated earth-ground conductor. In this circumstance, do not connect neutral to ground at the disconnect or at the display as this would violate electrical codes and void the warranty.

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

Installation with Only a Neutral Conductor Provided

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

- Connect the grounding electrode cable at the local disconnect, never at the display driver/power enclosure.
- Use a disconnect that opens all of the ungrounded phase conductors.

Single-Court Power Connection

Both power and signal cables are routed into the scoreboard from the rear through two plastic plugs for conduit connection. All power and signal wiring terminates at the master driver enclosure. Note that systems with radio control do not require external signal wiring.

Look for a warning label similar to **Figure 13** to locate the front access panel to the driver enclosure. Remove the screws or loosen the latches to open the access door panel. Remove the metal cover of the driver enclosure to expose the driver components (**Figure 14**).

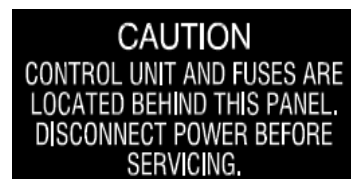
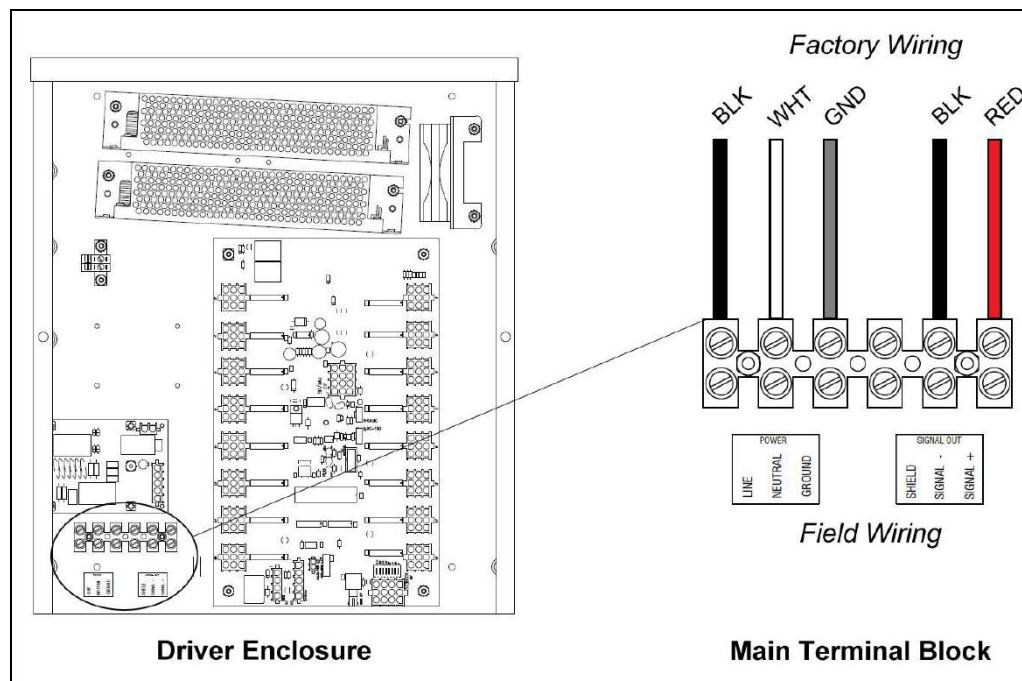


Figure 13: Power Warning Label

Refer to the component location drawings in **Appendix A** for precise power/signal termination location for each model.

Connect the appropriate wires coming through the rear of the scoreboard to the power terminal block, as shown in **Figure 14**.



Note: If a power receptacle is needed to operate the control console at the scoreboard for troubleshooting, Daktronics recommends that an installation electrician provides a 120 V outlet close to the disconnect box specifically for this purpose.

Multi-Court Scoreboard Power Connection

Multi-court models have a built-in breaker for power termination. Refer to **Figure 15**.

1. Route the power cables via conduit into rear of scoreboard.
2. Look for a warning label similar to **Figure 13** to locate the appropriate access panel to the power breaker enclosure.
3. Loosen the screws or latches to open the access panel.
4. Route the power cables up through the bottom of the enclosure.
5. Use a flathead screwdriver to rotate the two latches $\frac{1}{4}$ turn, and then remove the enclosure cover.
6. Connect the power cables as follows:
 - neutral (white) wire to NEUT.
 - live wires to LINE 1 (black) and LINE 2 (red)
 - ground wire (green/ yellow) to the grounding buss bar, E41
7. Reattach the metal enclosure cover and secure the access panel.

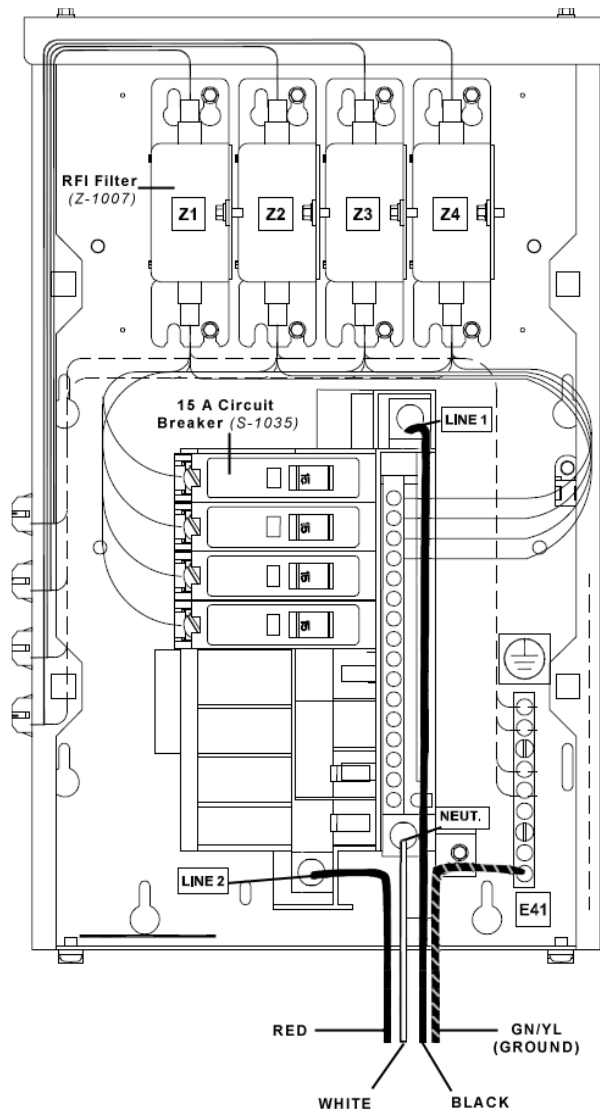


Figure 15: Multi-Court Power Termination (120/240 V)

4.3 Power-On Self-Test (POST)

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. Each scoreboard self-test pattern will vary depending on the scoreboard model, the number of drivers and types of digits. **Figure 16** shows an example of the LED bar test pattern that each digit performs.

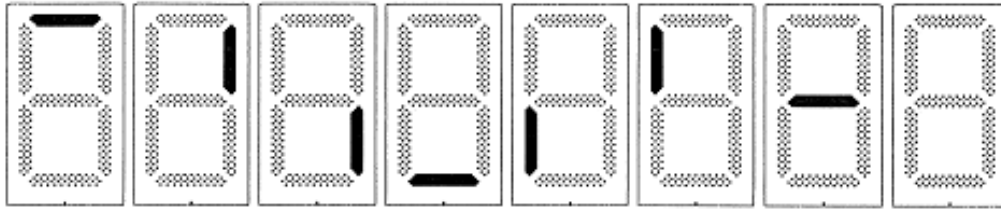


Figure 16: Digit Segment POST

Radio Settings

If an All Sport radio receiver (see **Section 5.8**) is installed, the radio broadcast settings (“b1”) and the channel settings (“C1”) will be displayed in the game/set score digits during the POST. These values must match the settings in the control console (refer to the appropriate control console manual listed in **Section 1.1**).

Note: Scoreboards using the RC-100 controller will only display the channel settings.

4.4 Signal Connection

For scoreboards using a wired setup, route signal cable through the conduit knockout on the rear of the scoreboard to the signal surge arrester card (**Figure 17**), located just above the power termination block in the driver enclosure.

At the SIGNAL IN terminal block, connect the red signal wire to the positive terminal and the black wire to the negative terminal.

Note: Be sure to properly connect the shield (silver) wire to the SHIELD terminal.

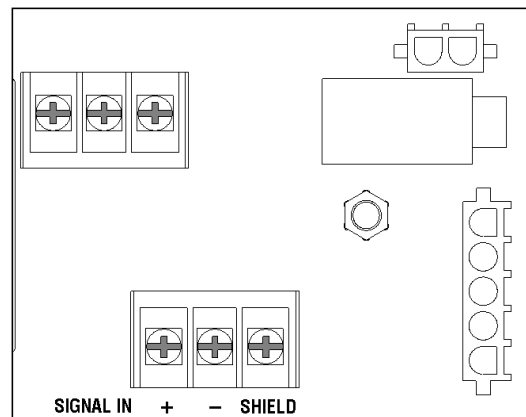


Figure 17: Signal Surge Arrester Card

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

Fiber Optic

Another common signal communication method is fiber optic cabling. A minimum cabling of multi-mode, 62.5/125 um, and 2-core fiber cable is recommended (part number W-1242). See **Figure 18** for the location of the fiber connector on a 16-column driver. This method requires a signal converter between the All Sport console's scoreboard output and the fiber optic cable (not provided by Daktronics).

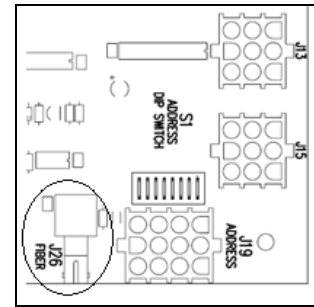


Figure 18: Driver Fiber Connection Location

4.5 Multi-Court Scoreboard Signal Connection

For multi-court scoreboards using team name message centers (TNMCs), signal installation also requires a wireless base station to receive the signal from the handheld RC-100 controllers, a computer running DakTennis™ software, and a signal converter to send the wired signal to the display. **Figure 11**, **Figure 12**, and **Drawing A-231298** in **Appendix A** provide setup diagrams and **Section 4.4** details wired signal connection inside the display.

Power/Signal Connections Between Sections

Multi-court scoreboard models require multiple drivers in each scoreboard section, and use a master/slave driver system. Master and slave drivers function identically, but slave units lack the power termination block and signal surge suppression card. When one section has multiple drivers, they simply plug into one another, and this is done at the factory. Drivers between sections, however, require additional on-site connection as described below.

Three-Section Models

The primary driver will be located in the middle section, inside the Court 1 scoreboard. Refer to the component location drawings in **Appendix A** for exact driver locations. Two interconnect cables will extend from the middle section. Open access panels as needed to locate the bundles of interconnect cable coming from the driver, route the cables into the appropriate sections, and connect each jack (J42) to the corresponding plug (P42). Refer to **Section 5.10** for a list of detailed wiring schematics.

Four-Section Models

The primary driver will be located in the third section from the top (section C), inside the Court 3 scoreboard. Refer to the component location drawings in **Appendix A** for exact driver locations. Two interconnect cables will extend from section C. Open access panels as needed to locate the bundles of interconnect cable coming from the driver, route the cables into the appropriate sections, and connect each jack (J42) to the corresponding plug (P42). The top section (section A) will also have its own cables that must connect to the A7 driver in the second section from the top (section B). Refer to **Section 5.10** for a list of detailed wiring schematics.

4.6 Lightning Protection

The use of a disconnect near the scoreboard to completely cut all current-carrying lines significantly protects the circuits against lightning damage. In order for this system to provide protection, the power must be disconnected when the scoreboard is not in use.

The control console should also be disconnected from power and from the signal junction box when the system is not in use. The same surges that may damage the scoreboard's driver can also damage the console's circuitry.

Section 5: Scoreboard Troubleshooting

IMPORTANT NOTES:

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

Note: For assistance in the maintenance of team name message centers (TNMCs) or other optional scoreboard message centers, refer to **Section 6** or the service manual that accompanies those units.

5.1 Troubleshooting Table

The table below lists potential problems with the scoreboard and indicates possible causes and corrective actions. This list does not include every symptom that may be encountered, but it does present several of the most common situations that may occur.

Many of the solutions offered below provide references to other sections within this manual or to supplemental product manuals with further detail on how to fix the problem.

If a problem occurs that is not listed or that cannot be resolved using the solutions in the following table, contact Daktronics using the information provided in **Section 7**.

Problem	Possible Cause	Solution/Items to Check
Scoreboard doesn't light and console doesn't work	No power to the scoreboard	Check that the main circuit breaker for the scoreboard is on.
		Check that the scoreboard is receiving the correct 120 (or 240) V AC power (see Section 2).
	No power to console	Ensure the console is plugged into a 120 (or 240) V AC power supply.
		Swap the console with one known to work correctly, and enter the proper sport code and/or radio settings to test. Replace console if necessary.
Scoreboard digits don't light, but console works	No wired signal from console	Check that the scoreboard is receiving the correct 120 (or 240) V AC power (see Section 2).
		Check that the red DS2 LED on the driver lights up when sending commands from the control console (see Section 5.6).
	No radio signal from console	Cycle power to the scoreboard and watch for radio receiver broadcast/channel settings (see Section 5.8).

Problem	Possible Cause	Solution/Items to Check
		Check that the green POWER and amber RADIO IN RANGE indicators on the radio receiver in the scoreboard light up when the control console is powered on (see Section 5.8). Keep the console between 20 to 1500 feet from the scoreboard.
		Move the console 20-30 feet from the scoreboard and test again. Verify that both the console and scoreboard antennae are securely tightened and in a vertical position.
		Replace the radio receiver.
	No signal to driver	Check that the scoreboard is receiving the correct 120 (or 240) V AC power (see Section 2).
		Check that the red DS2 LED on the driver lights up when sending commands from the control console (see Section 5.6).
		Swap the driver with one known to work correctly and with the same part number to verify the problem. Replace if necessary (Section 5.6).
No power to driver	Check that the green DS1 LED on the driver is always lit up when the scoreboard is powered on (see Section 5.6).	
Scoreboard digits light, but not in the correct order	Incorrect sport code	Ensure the correct sport code is being used for the scoreboard model. Refer to the operation manual for the console being used (see Section 1.1).
	Incorrect driver address	Check that the scoreboard driver(s) are set to the correct address(es) (see Section 5.6)
Scoreboard digits light, console works, but no display on scoreboard	No wired signal from console	(See solution on previous page)
	No radio signal from console	(See solution on previous page)
	Bad/damaged field wiring	Check that the red DS2 LED on the driver lights up when sending commands from the control console (see Section 5.6)
Scoreboard works, but some LEDs always stay on	Short in digit, segment, or indicator circuit	Swap the digit/indicator with one known to work correctly to verify the problem. Replace if necessary (see Sections 5.4-5.5).

Problem	Possible Cause	Solution/Items to Check
Scoreboard works, but some LEDs do not light or they blink	Bad connection	Verify the Mate-N-Lok connector on the back of the digit circuit board is secure (see Section 5.3). Verify power/signal interconnect(s) between scoreboard sections properly connected (see Section 4.4)
	Bad digit or driver	Swap the digit/driver with one known to work correctly to verify the problem. Replace if necessary (see Sections 5.4-5.5 for digits or Section 5.6 for drivers).
Scoreboard works, but some digits do not light	Bad digit or driver	(see solution above)
	Incorrect sport code	(see solution on previous page)
	Incorrect driver address	(see solution on previous page)
	Wrong console controlling scoreboard	Another console's radio signal could be transmitting to the scoreboard. An example would be football and baseball scoreboards that are within 1500 feet of each other (see Section 5.8).
	Radio interference	There may be other radio transmissions in the area that overpower the console. If it is not possible to disable the interfering device, It may be necessary to run a wired signal connection instead.
Scoreboard works, but a certain section of digits do not light	Bad multi-section connection	Verify power/signal interconnect(s) between scoreboard sections properly connected (see Section 4.5)
	Bad power supply	Swap the power supply with one known to work correctly to verify the problem. Replace if necessary (see Section 5.7).

5.2 Component Locations

Component location varies with each scoreboard model. Refer to the component location drawings in **Appendix A**. Drivers and power and signal components are typically mounted inside the scoreboard behind a digit or access panel. There are several ways to locate the access panels:

Power Warning Label

Look for a power warning label toward the bottom of the access panel (**Figure 13**). This is the location of the master driver. Refer to the component locations drawings to determine the number of drivers for a particular scoreboard model.

Panel Hinges

Access panels typically have raised hinges to allow them to easily swing open.

Conduit Knockouts

Most scoreboards have knockouts for the electrical and signal conduits on the rear that will match up with an access panel on the front. Conduits will only run to the master driver.

5.3 Component Access

For front-access scoreboards, all internal electronic components and digits are reached by opening an access door or a digit panel on the front of the display.

Digit panels are held in place on the scoreboard face by an offset flange across the top and by screws at the bottom, as shown in **Figure 19**.

To open a digit panel:

1. Hold the digit panel in place by putting hand pressure on it and remove the holding screws.
2. Carefully lift the panel away from the scoreboard, sliding it out and down.

Note: If the panel is not held in place when the screws are removed, it could drop and possibly damage LEDs or the digit harness.

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: When closing the access panel, make sure all latches/screws are holding the door firmly in place to prevent moisture and debris from entering the scoreboard.

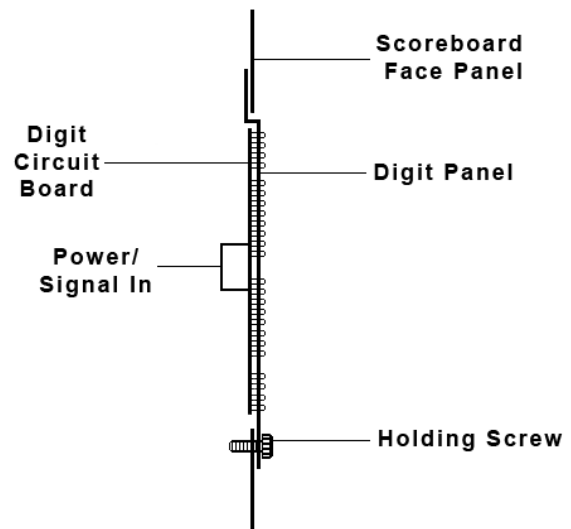


Figure 19: LED Digit Panel

5.4 Replacing Digits

LEDs are embedded in a circuit board that is mounted to the back of the digit panel, as shown in **Figure 20**. Do not attempt to remove individual LEDs. In the case of a malfunctioning LED or digit segment, replace the entire digit circuit board.

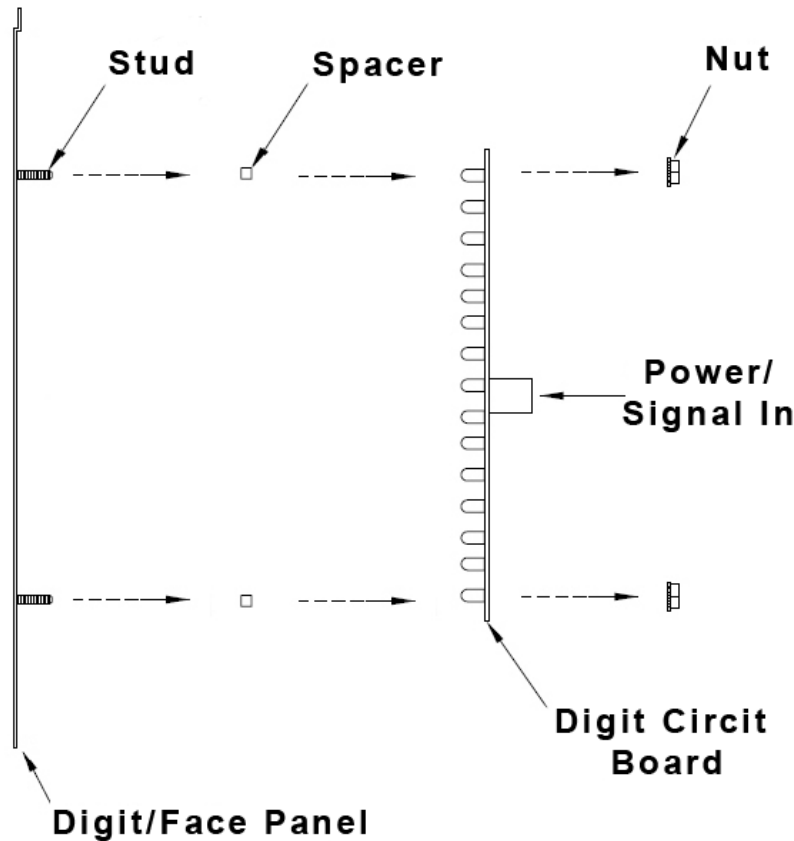


Figure 20: Digit Assembly

To replace a digit circuit board:

1. Open the digit panel as described in **Section 5.3**.
2. Disconnect the power/signal plug from the back of the digit by squeezing together the locking tabs and pulling the connector free.
3. Use a $\frac{9}{32}$ " nut driver to remove the nuts securing the digits to the inside of the panel, and then lift the digit off the standoff studs.
4. Position a new digit over the studs, making sure the rubber side of the rubber-backed spacer is facing the digit circuit board.
5. Tighten the nuts.
6. Reconnect the power/signal connector.

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

7. Close and secure the digit panel, then power up and test the scoreboard to see if changing the digit has resolved the problem.

5.5 Replacing Indicators

As with smaller digits, indicator circuit boards are mounted to the back of the digit panel. Do not attempt to remove individual LEDs.

To replace an indicator:

1. Open the digit panel as described in **Section 5.3**.
2. Disconnect the power/signal connectors from the back of the indicator by squeezing together the locking tabs and pulling the connector free.
3. Indicators are secured to the inside of the panel with fixed machine screws, spacers, and push nuts. The push nuts can be removed in several ways, but a $\frac{9}{32}$ " nut driver is recommended. Remove the nuts and lift the circuit board off the standoff studs.
4. Position a new indicator over the screws and tighten the nuts.
5. Reconnect the power/signal connector.

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

6. Close and secure the digit panel, then power up and test the scoreboard to see if changing the indicator has resolved the problem.

5.6 LED Drivers

The LED drivers perform the task of switching digits on and off within the scoreboard. LED drivers are located inside of a driver enclosure. Refer to **Figure 21** to view the location and components of a driver enclosure.

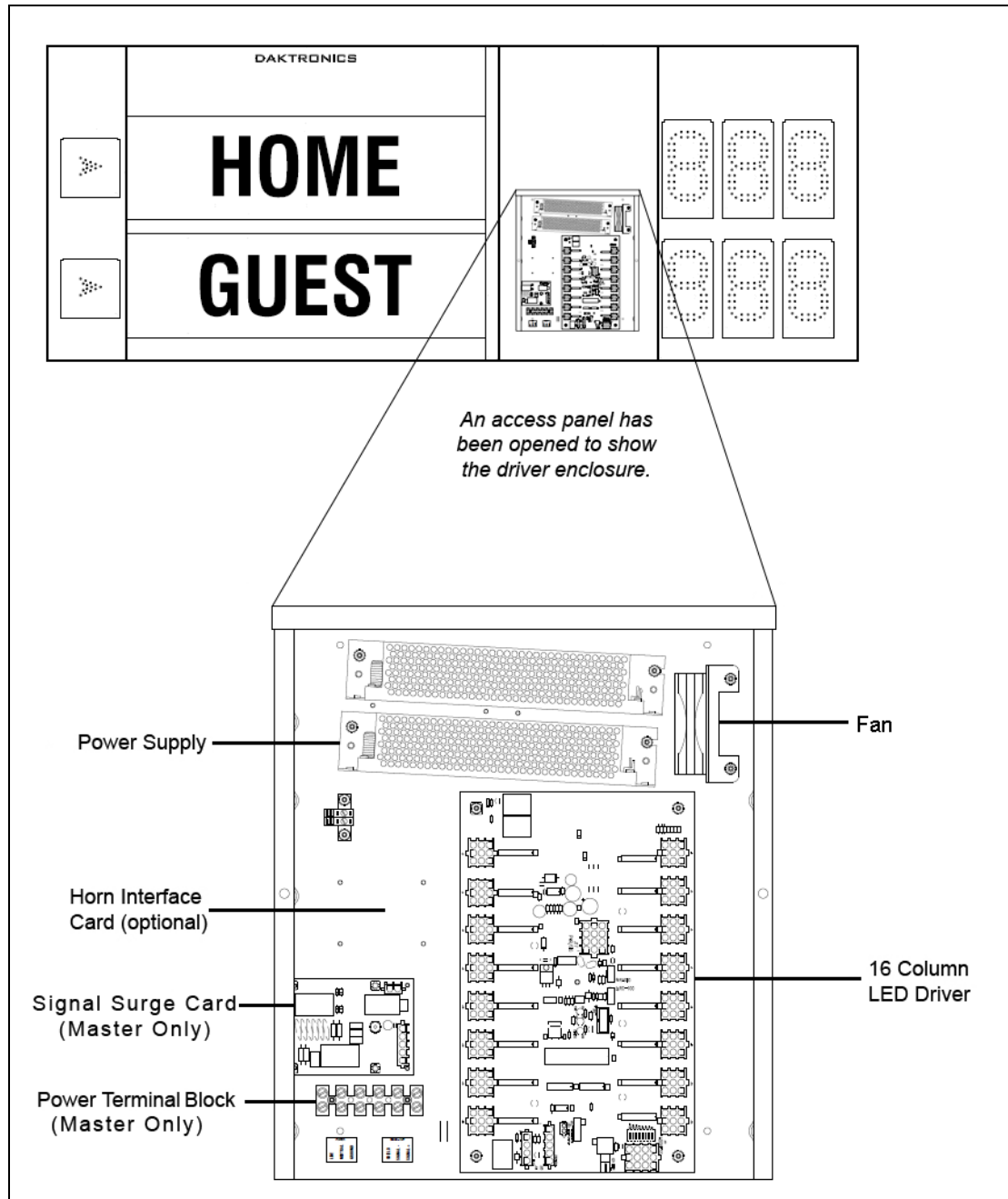


Figure 21: Driver Enclosure Location & Components

Refer to the component location drawings in **Appendix A** to determine the number and location of all drivers in a particular scoreboard model. Also refer to **Section 5.10** to locate the appropriate schematic drawings for the number of drivers in the model.

When troubleshooting driver problems, three LEDs labeled **DS1**, **DS2**, and **DS3** in **Figure 22**, provide the following diagnostic information:

LED	Color	Function	Operation	Summary
DS1	Green	Power	Steady on	DS1 will be on and steady to indicate the driver has power.
DS2	Red	Signal RX	Steady on or blinking	DS2 will be on or blinking when the driver is receiving a signal and off when there is no signal.
DS3	Amber	Status	Blinking	DS3 will be blinking at one second intervals to indicate the driver is running.

Note: While it is necessary to have the scoreboard powered on to check the LED indicators, always disconnect scoreboard power before servicing.

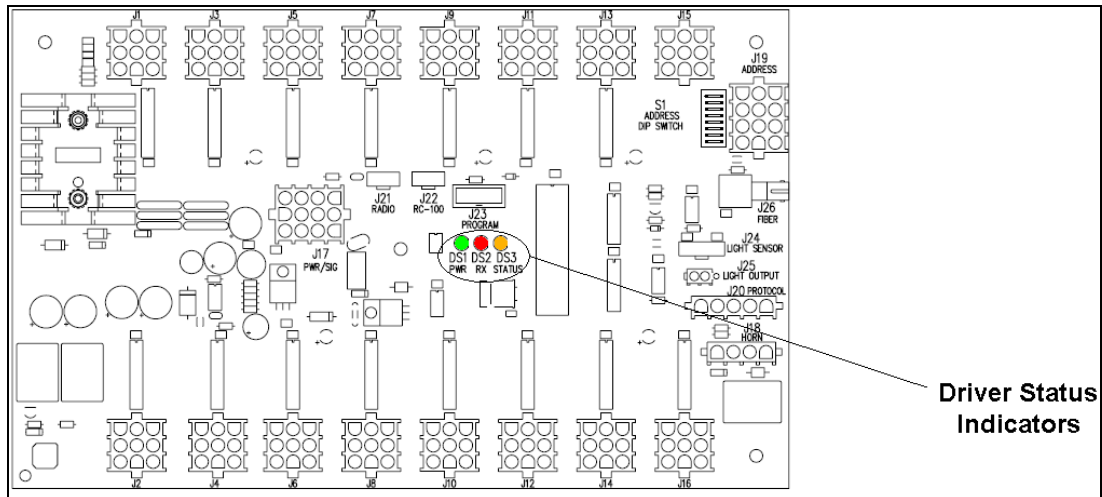


Figure 22: Driver Status Indicators

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 **Section 5.2** to locate the driver enclosure.

To replace a driver:

1. Open the digit panel as described in **Section 5.3**.
2. Loosen the wing nuts to remove metal cover from the driver enclosure.
3. Disconnect all connectors from the driver by squeezing together the locking tabs and pulling the connectors free.

Note: It may be helpful to label the cables to know which cable goes to which connector when reattaching the driver.

4. Remove the screws or 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. Position a new driver over the screws and tighten the nuts.
7. Reconnect all power/signal connectors.

Note: The connectors are keyed and will attach in one way only. Do not attempt to force the connections.

8. Ensure the driver is set to the correct address (refer to **Setting the Driver Address**).
9. Close and secure the digit panel, then power up and test the scoreboard to see if changing the driver has resolved the problem.

Setting the Driver Address

Since the same LED drivers can be used for many scoreboard models, each driver must be set to receive the correct signal input, or address, for the model being used. Addresses are set through the S1 dip switch on the driver (**Figure 23**) using a pen or small, pointed object.

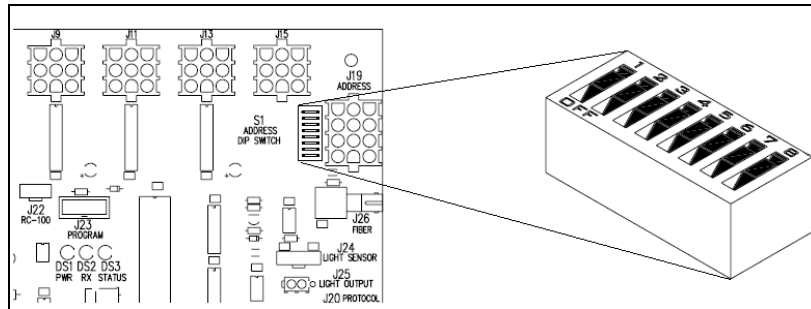


Figure 23: Driver Address Dip Switch

Refer to the specifications table in **Section 2** to determine the correct address setting of the driver(s) in a particular scoreboard model and see **Drawing B-1054089** in **Appendix A** for addressing information for up to 12 courts, including TNMCs.

Multiple Drivers

Scoreboards with multiple drivers operate using a master/slave driver configuration. If it appears as though only a certain group of digits on the scoreboard is not functioning, there may be a problem with the slave driver(s) or the power/signal connection from the other driver(s). Refer to **Section 4.4** for more information about these connections.

5.7 Power Supplies

Scoreboards with 16-column driver enclosures require a dual 150 W power supply assembly. If a certain group of digits is not lighting up, the power supply they are all connected to may need to be replaced.

Replacing a Power Supply

1. Use the component location drawings listed in **Appendix A** to locate the enclosure.
2. Open an access panel as described in **Section 5.3**.
3. Loosen the wing nuts to remove metal cover from the enclosure.
4. Locate the power supply (**Figure 21**) and disconnect all wires connected to it.
5. Use a 9/32" nut driver to remove the hardware securing the power supply.
6. Fasten the new power supply in place and reconnect all wires.

5.8 Radio Connections

To determine the settings for radio connections between the scoreboard and control console:

1. Power off any radio-equipped consoles in the area.
2. Cycle power to the scoreboard, and watch for the radio settings (**Figure 24**).



Figure 24: Radio Settings in Game/Set Digits

The first values are the broadcast settings (“b1”), and the second are the channel settings (“C1”). These values must match the settings within the console.

Note: If these settings do not appear, the radio receiver(s) may need to be repaired/replaced.

To make sure the current radio settings match the receiver in the scoreboard, refer to the appropriate control console manual (see **Section 1.1**).

Radio Interference

If it has been determined that a nearby scoreboard’s radio signal is interfering, the broadcast and channel settings of the radio receiver inside the scoreboard(s) must be changed.

For more information, refer to the **Gen V Radio Installation Manual ED-13831**, available online at www.daktronics.com/manuals.

1. To locate the radio receiver, look for the antenna sticking out the front of the scoreboard (**Figure 25**). Refer to the component location drawings in **Appendix A** for exact location of the radio for a particular scoreboard.



Figure 25: Radio Receiver Location

2. Open the access panel to which the receiver is attached as described in **Section 5.3**.

3. The radio receiver has a plastic cover (**Figure 26**).

Note: While it is necessary to have the scoreboard powered on to check the LED indicators, always disconnect scoreboard power before servicing.

4. Remove the four screws using a #2 Philips screwdriver and lift off the cover.
5. Inside the receiver are a channel switch (S1) and two broadcast jacks (J4, J5) with a jumper.

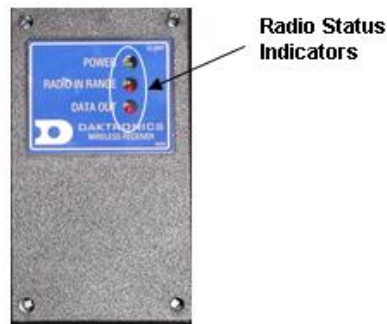


Figure 26: Radio Receiver w/ Cover

Figure 27 shows the different configurations for the small jumper wire that sets the radio broadcast (BCAST) mode. Move the jumper wire to the desired broadcast location.

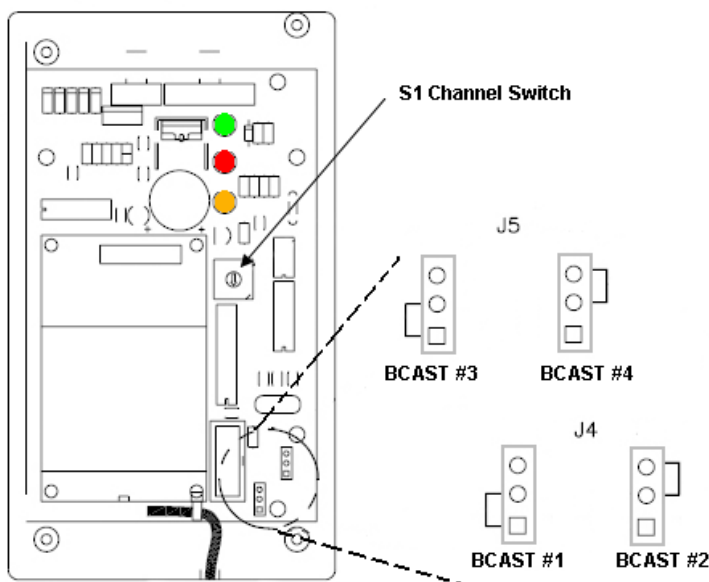


Figure 27: Radio Receiver w/o Cover

6. Use a small flathead screwdriver to set the S1 switch to the desired channel (1-8).
7. Screw the cover back on and securely close the access panel.
8. Enter the correct sport code and new radio settings into the console to test the radio control (refer to **Section 1.1** for controller manuals).

5.9 Segmentation and Digit Designation

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

The component location drawings in **Appendix A** also 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.

5.10 Schematics

For advanced scoreboard troubleshooting and repair, it may be necessary to consult the schematic drawings. These drawings, located in **Appendix A**, show detailed power and signal wiring diagrams of internal display components such as drivers and transformers as well as optional components like TNMCs and radio receivers. Use the following tables to determine the driver schematics for a particular model:

16 Column Driver (x 1)

Model	Drawing Number
TN-2016 TN-2601	A-285779
TN-2603 TN-2605	A-752372
TN-2604 TN-2607	A-179790
TN-2606	To Be Determined

16 Column Driver (x 7), 3 Section

Model	Drawing Number
TN-2650 TN-2651	B-271666 (top section) C-854321 (bottom & middle sections)
TN-2654	B-739765 (top section) C-739979 (bottom & middle sections)
TN-2655	B-309614 (top section) C-858107 (bottom & middle sections)

16 Column Driver (x 7), 4 Section

Model	Drawing Number
TN-2652	C-326946 (sections A & B) C-852306 (sections C & D)
TN-2653	C-350622 (sections A & B) C-852306 (sections C & D)
TN-2656	To Be Determined
TN-2657	To Be Determined

5.11 Replacement Parts

Refer to the following table for common Daktronics scoreboard replacement parts:

Description	Location	Daktronics Part #
J-Box, 1/4" phone, indoor	Signal	0A-1009-0038
J-Box, 1/4" phone, outdoor	Signal	0A-1091-0227
Signal surge board	Driver enclosure	0P-1110-0011
RC-100 Handheld Controller	Signal	0A-1110-0053
RC-100 Base Station, Scoreboard Receiver	Signal	0A-1110-0035
RC-100 Base Station, Serial COM	Signal	0A-1110-0037
RC-100 Base Station, Outdoor Enclosure	Signal	0A-1110-0045
Digit, 15", 7-seg outdoor LED, red	Scoreboard	0P-1192-0200
Digit, 18", 7-seg outdoor LED, red	Scoreboard	0P-1192-0202
Digit, 15", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0214
Digit, 18", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0216
3" arrow, red	Scoreboard	0P-1192-0249
3" arrow, amber	Scoreboard	0P-1192-0250
Digit, 10" 7-seg outdoor LED, red	Scoreboard	0P-1192-0255
Digit, 10" 7-seg outdoor LED, amber	Scoreboard	0P-1192-0256
Digit, 5", 7-seg outdoor LED, red	Scoreboard	0P-1192-0284
Digit, 5", 7-seg outdoor LED, amber	Scoreboard	0P-1192-0285
Driver, 16 col, outdoor, LED	Driver enclosure	0P-1192-0383
Power supply, 24 V, 150W (120 V AC)	Driver enclosure	A-1720
Power Supply; 24 V, 150W (240 V AC)	Driver enclosure	A-1733
Fan, 32 cfm, 24 V DC, 3.15 sq. in	Driver enclosure	B-1030
Plug, 1/4" phone	Signal	P-1003
Circuit Breaker; 15 A, 120/240 V AC	Multi-Court Breaker Box	S-1035
Signal cord; 1/4" phone 20'	Signal	W-1236
Signal cord; 1/4" phone 50'	Signal	W-1237
Signal cord; 1/4" phone 30'	Signal	W-1238
Signal cord; 1/4" phone 10'	Signal	W-1340
RFI Filter	Multi-Court Breaker Box	Z-1007

See **Section 7** for information on Daktronics Exchange and Repair and Return program.

Section 6: TNMC Troubleshooting & Maintenance

IMPORTANT NOTES:

1. Always disconnect scoreboard power before doing any repair/maintenance work on the message centers.
2. Permit only qualified service personnel to access internal display electronics.
3. Disconnect power when not using the scoreboard.

6.1 Display Overview

Team name message centers (TNMCs) use amber, red, or white LEDs to display team names (home and guest) in place of vinyl captions (Figure 28). TNMCs are available with three different pixel dimensions: 8x32, 8x48, and 8x64. Characters are shown on one line using single- or double-stroke fonts up to 10" high (254 mm) and 14" (355 mm) for 34 mm and 46 mm TNMC units, respectively.

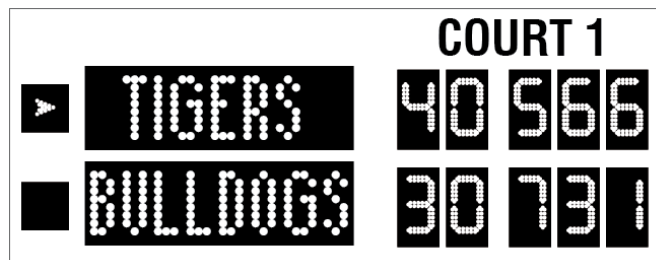


Figure 28: Tennis Scoreboard with Team Name Message Centers

Matrix Size	# of modules	Pixel Spacing	Active Display Area	Weight*
8x32	4	34 mm (1.3")	10.6" x 42.5" (269 mm x 1080 mm)	40 lb (18 kg)
8x48	6	34 mm (1.3")	10.6" x 63.8" (269 mm x 1621 mm)	60 lb (27 kg)
8x64	8	34 mm (1.3")	10.6" x 85.1" (269 mm x 2162 mm)	80 lb (36 kg)
8x32	4	46 mm (1.8")	14.4" x 57.6" (366 mm x 1463 mm)	50 lb (23 kg)
8x48	6	46 mm (1.8")	14.4" x 86.4" (366 mm x 2195 mm)	70 lb (32 kg)

* TNMCs are typically installed in pairs; double this value to find the total added weight.

6.2 Initialization Information at Startup

Every time the display is powered up and there is no All Sport[®] signal present, the display will run through an initialization process, during which it will test all LEDs and addresses. First, the message center will display the proper address number.

If the entire display fails at startup, power may not be properly connected, or the address setting may not be correct on the display driver. Check both in the event of a failure.

6.3 Display Troubleshooting Table

The table below lists potential problems with the display and indicates possible causes and corrective actions. This list does not include every symptom that may be encountered, but it does present several of the most common situations that may occur.

Many of the solutions offered below provide references to other sections within this manual with further detail on how to fix the problem.

If a problem occurs that is not listed or that cannot be resolved using the solutions in the following table, contact Daktronics using the information provided in **Section Section 7:**.

Symptom/Condition	Possible Remedy
One or more LEDs on a single module fails to light	Check/replace the ribbon cables on the module.
	Replace the module (see Section 6.7).
One or more LEDs on a single module fails to turn off	Check/replace the ribbon cables on module.
	Replace the module (see Section 6.7).
A section of the display not working; section extends all the way to the right side of the display	Check/replace the ribbon cables running to the first module that is not working.
	Replace the first module/driver on the left side of the first module that is not working (see Section 6.7).
	Replace the second module that is not working (see Section 6.7).
	Replace the power supply assembly on the first module that is not working (see Section 6.8).
One row of modules does not work or is garbled	Replace the first module (see Section 6.7).
	Replace the display driver (see Section 6.6).
A group of modules that share the same power supply assembly fails to work	Replace the power supply assembly (see Section 6.8).
Entire display fails to work	Check for proper line voltage into the power termination panel (see Section 4.2).
	Check/replace the ribbon cable from the display driver to the modules.
	Check the voltage settings on the power supplies.
	Check/replace the signal cable to the driver.
	Repair/replace the driver (see Section 6.6).

6.4 Power & Signal Summary

Reference Drawings:

Schematic, Amber TNMC, GEN IV	Drawing A-252645
Schematic, Red TNMC, GEN IV	Drawing A-252681
Schematic; 832 / 848 / 864 Red TNMC GEN IV, 240V.....	Drawing A-294858
Schematic; 832 / 848 / 864 Amber GEN IV, 240V	Drawing A-294919
Schematic, OD, 3500, 34mm TNMC, Red/Amb	Drawing B-783938
Schematic, OD, 3500, 34mm TNMC, Wht.....	Drawing B-906385
Schematic, OD, 3500, 46mm, Amb/Wht.....	Drawing B-923940
Schematic, OD, 3500, 46mm, Red/Amb.....	Drawing B-923941
Schematic, OD, 3500, 46mm, Wht.....	Drawing B-1036125

Refer to **Drawings B-783938, B-906385, B-923941, or B-1036125** for detailed schematics about display power and signal routing.

Notes:

- 1) For displays built before September 2009, refer instead to **Drawings A-252645, A-252681, A-294858, or A-294919**.
- 2) For amber 46mm displays built between September 2009 and November 2010, refer to Drawing **B-923940**.

Display signal routing can be summarized as follows:

1. Data from the All Sport[®] controller travels via cable harness into the scoreboard.
2. The signal travels to the driver/power enclosure through the J1 connector on the signal surge arrestor card.
3. Data exits at J42 via current loop harness, and connects with P43 at the driver assembly. A power/signal interconnect (ribbon cable) carries the signal to the first module, and the signal relays from module to module, in daisy-chain style, until it reaches the last module on the message center.

Display power routing can be summarized as follows:

1. Incoming power terminates at the terminal block in the scoreboard driver enclosure. Using the same harness and J42-P43 connections as signal, power is then routed to the display driver where it then travels to the power supply assembly.
1. From the power supply assembly, power is relayed to the first module, and then from module to module.
2. The modules and display driver draw their power directly from the power supply assemblies (3-12.5 VDC). The power supply voltage is set by a resistor loaded on the module (via J4).

Note: In displays built before September 2009, modules draw their power directly from the power supply assemblies (6.5 V for red LED modules, 9 V for amber), while the display driver receives 16 V power from a transformer on the driver tray.

6.5 Component Locations & Access

Reference Drawings:

- Component Locations; 832/848/864 Red/Amb LED, TNMC, G4 **Drawing A-257029**
- Component Loc.; 34mm Red/Amb/Wht LED TNMC G4 **Drawing B-975100**
- Component Loc.; 46mm Red/Amb/Wht LED TNMC G4 **Drawing B-975635**

Figure 29 illustrates the component locations of an 8x48-34mm display with all modules removed. This layout will be similar for 8x32-34mm cabinets as well. The 8x64-34mm cabinets require an additional power supply behind the sixth module. Refer to **Drawing B-975100**.

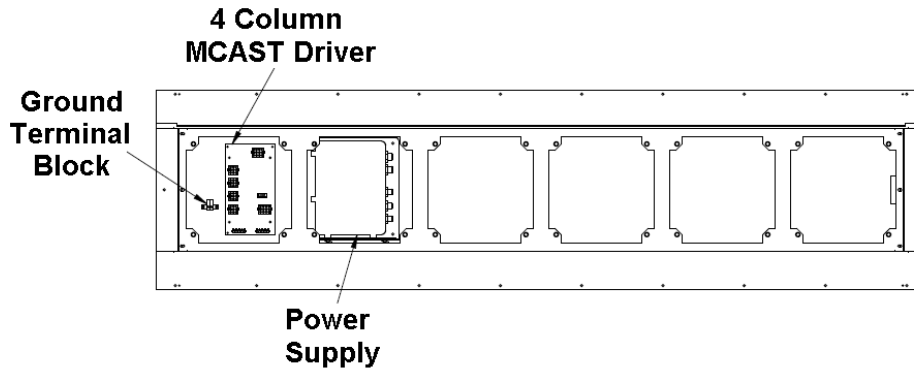


Figure 29: 8x48-34 Display with Modules Removed

Figure 30 illustrates the component locations of an 8x48-46mm display, and this layout will also be similar for 8x32-46mm cabinets. Note that 8x48-46mm displays featuring white LEDs require an additional power supply behind the fourth module. Refer to **Drawing B-975635**.

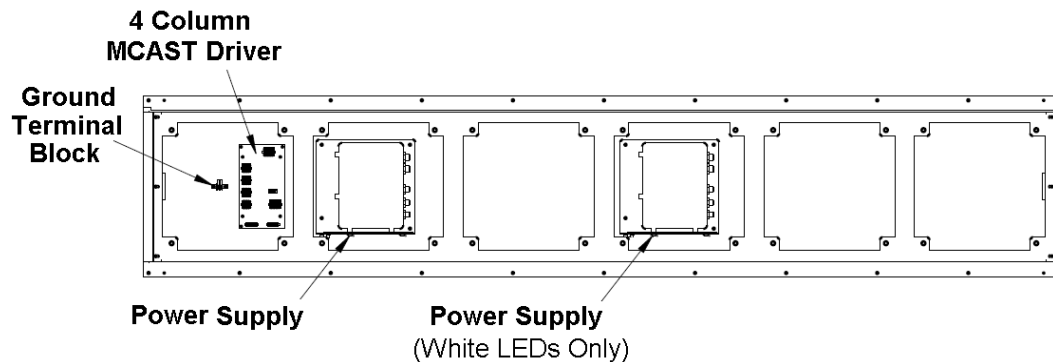


Figure 30: 8x48-46 Display with Modules Removed

For Displays Built Before September 2009

Figure 31 illustrates the component locations of an older 8x48-34mm display, and this layout will also be similar for 8x32-34mm and 8x64-34mm cabinets. Refer to **Drawing A-257029**.

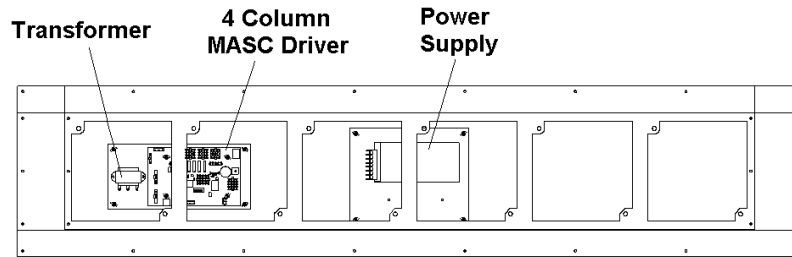


Figure 31: Discontinued 8x48-34mm Display with Modules Removed

Figure 32 illustrates the component locations of an older 8x48-46mm display. The 8x32-46mm cabinets only include a single power supply assembly.

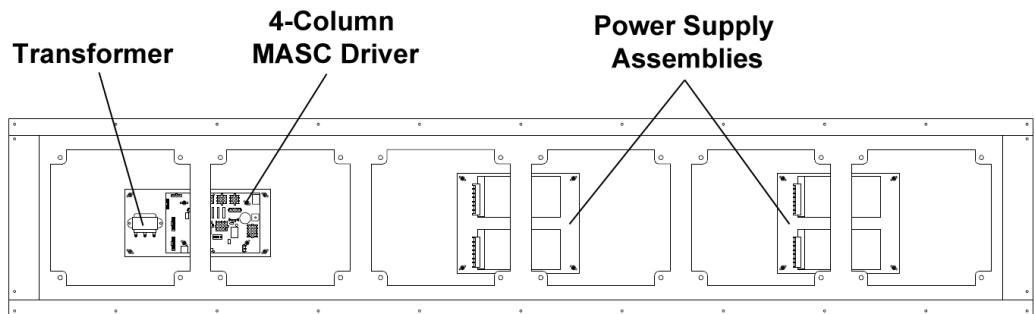


Figure 32: Discontinued 8x48-46mm Display with Modules Removed

Standard Daktronics outdoor LED scoreboards are typically front-accessible, but some models may be ordered with rear service access. For that reason, TNMCs have been designed so that they may be accessed from both the front and rear.

Front Access

1. Loosen the latch fasteners on the front face the LED module using a 1/8" hex wrench (or 7/32" nut driver for displays installed prior to 11/29/05). One latch fastener is centered below the top row of pixels and one is centered above the bottom row (**Figure 33**).
2. Turn each fastener a quarter-turn counter-clockwise (if using a nut driver, turn the top latch clockwise and the bottom latch counterclockwise).

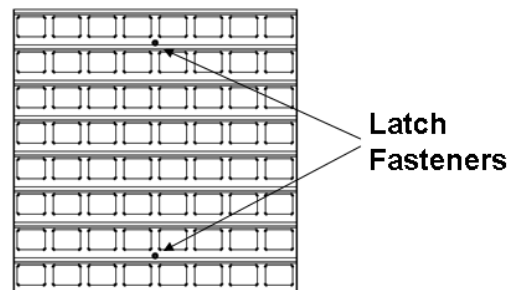


Figure 33: Module, Front View

Note: Do not over turn the fastener!

3. Carefully remove the module from the face of the display.

Rear Access

1. To access the internal components from the rear, remove the appropriate rear-access panel from the display cabinet by loosening all four of the screws.
2. Slide the access panel sideways to the larger part of the keyhole and carefully lift it off the display cabinet.

Note: Be careful when removing and handling the access panels as internal display components may still be attached to them.

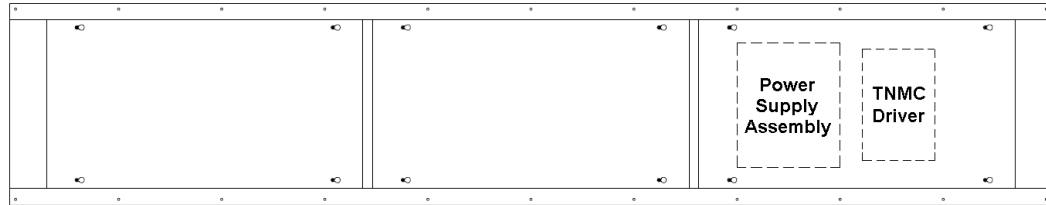


Figure 34: Display Cabinet Rear Access

The display driver and primary power supply will always be located behind the first access panel on the right, when viewing the display from behind. Any additional power supplies are noted in the appropriate component location drawings.

Note: In displays built before September 2009, the driver is located behind the first access panel and the primary power supply is located behind the second access panel.

6.6 Display Drivers

Reference Drawings:

4 Column MASC LED Driver Specifications	Drawing A-166216
Specifications; Driver, MCAST, 4 Col.....	Drawing A-793970

The display driver receives signal from the control console via a signal surge arrestor card and sends data to the modules. Refer to **Section 6.4** for more information on signal routing. The driver itself is detailed in **Drawing A-793970** in **Appendix A**. **Figure 35** illustrates some of the primary jacks and switches on the 4 Column MCAST display driver.

The S2 DIP switch controls Home and Guest display. When the #5 switch is ON, the TNMC sends guest team information to the matrix display. In the opposite message center, the switch would be set to OFF, and home information would be displayed.

Note that the S2 DIP switch is also the component for setting the address (switches #1-4). With switches 1-4 off, the address setting for a TNMC is preset at "221". Multi-court scoreboards (and single-court scoreboards controlled by DakTennis) with TNMCs will require different addresses. Refer to **Drawing B-1054089** in **Appendix A**.

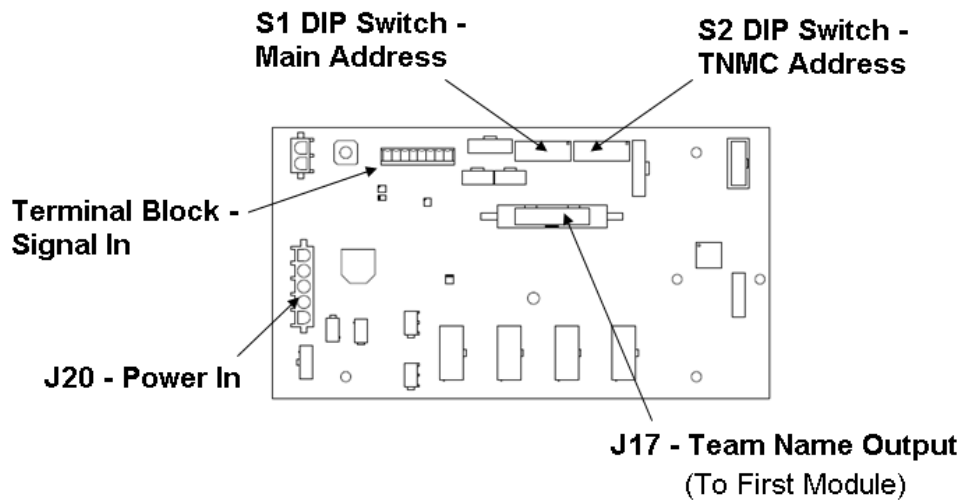


Figure 35: 4 Column MCAST Driver

For Displays Built Before September 2009

The display driver receives signal from the control console via a signal surge arrestor card and sends data to the modules. Refer to **Section 6.4** for more information on signal routing. The driver itself is detailed in **Drawing A-166216** in **Appendix A**. **Figure 36** illustrates a display control assembly with a 4-column MASC driver.

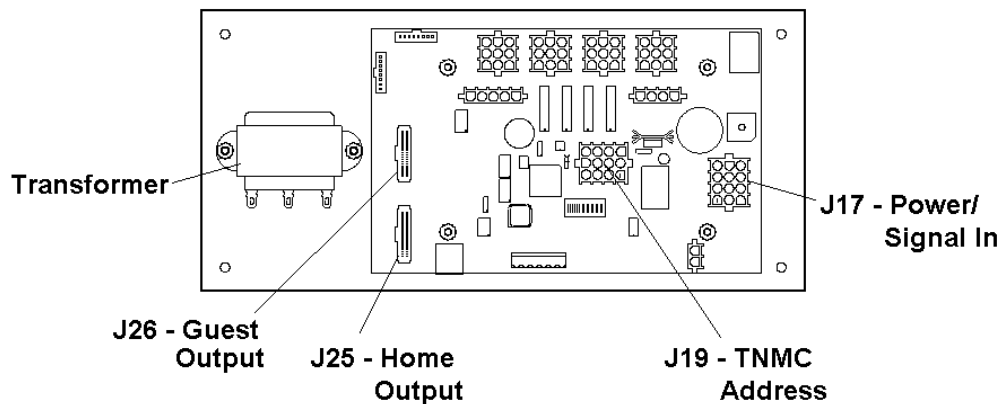


Figure 36: Control Assembly (4 Column MASC Driver)

Connectors J25 and J26 control Home and Guest displays. When the ribbon cable is plugged into J25, the TNMC displays home team information. In the opposite message center, the signal cable should be plugged into the J26 connector to display guest information.

J19 is the connector for the address plug. The address setting for a TNMC will always be 221. Multi-court scoreboards (and single-court scoreboards controlled by DakTennis) with TNMCs will require different addresses.

Diagnostic LEDs

The following table explains the functions of the primary diagnostic LEDs on the 4 Column MASC/MCAST drivers:

LED Name	Color	Illumination Summary
(CL) RX	Red	Steady on or blinking when the driver is receiving signal and off when there is no signal
(CL) TX	Green	Steady on or blinking when the driver is transmitting and off when there is no signal
Power	Green	Steady on to indicate the driver has power
Status	Amber	Blinking to indicate driver is running

Replacing a Driver

1. Access the internal components using the appropriate **Front/Rear Access** method described in **Section 6.5**.
2. Disconnect all power and signal connectors from the driver by squeezing together the locking tabs and pulling the connectors free.

Note: It may be helpful to label the cables to know which cable goes to which connector when reattaching a driver.

3. Remove the four nuts holding the driver in place.
4. Position a new driver over the screws and tighten the nuts.
5. Reconnect all power/signal connectors.
6. Ensure the driver is set to the correct address.
7. Power up and test the scoreboard/display to see if changing the driver has resolved the problem.

6.7 Modules

Each module assembly is made up of a module housing (containing LEDs and the driver) and a louver assembly. Individual components such as louvers can be removed for service, but Daktronics recommends that the module be kept intact and that the entire assembly be sent in for repair or replacement.

Replacing Modules

To replace a module from the front:

1. Follow the steps in the **Front Access** method described in **Section 6.5**.
2. Carefully disconnect all power and signal cables. It may be helpful to label the cables to know which cable goes to which connector when reattaching.
3. Position a new module on the front of the display frame and reconnect all power and signal cables.
4. Re-latch the fasteners.
5. Power up and test the scoreboard/display to see if changing the module has resolved the problem.

To replace a module from the rear:

1. Follow the steps in the **Rear Access** method described in **Section 6.5**.
2. Use a 1/8" hex wrench or 7/32" nut driver to loosen the latch fastener assembly (**Figure 37**). Turn each fastener a quarter-turn clockwise (if using a nut driver, turn the top latch counter-clockwise and the bottom latch clockwise).

Note: Do not over turn the fastener!

3. While holding onto the module, push it out and turn it in such a manner (generally a sideways, diagonal turn) that it can be pulled back through the frame opening.
4. Carefully disconnect all power and signal cables. It may be helpful to label the cables to know which cable goes to which connector when reattaching.
5. Reconnect all power and signal cables to the new module and push it back through and out the front of the display frame.
6. Re-latch the fasteners.
7. Power up and test the scoreboard/display to see if changing the module has resolved the problem.

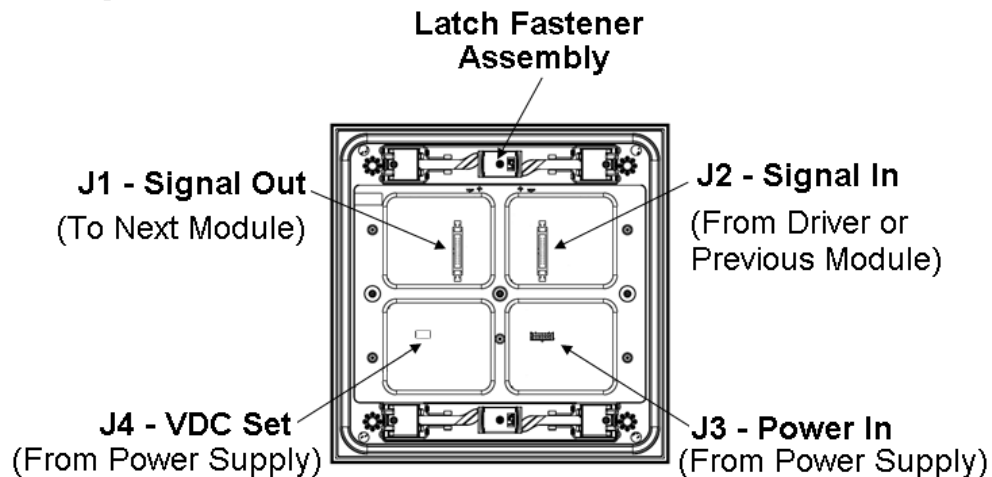


Figure 37: Module, Rear View

Weather-stripping

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

When installing a new module, take note of the following points:

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

6.8 Power Supplies

Power supply configurations will vary depending on the number and/or color of modules.

Replacing a Power Supply

To remove a power supply from the display:

1. Access the internal components using the appropriate **Front/Rear Access** method described in **Section 6.5**.
2. Disconnect all the wires connected to the power supply.
3. Loosen the screw securing the power supply and slide it out of the display cabinet.

Note: In displays built before September 2009, use a 9/32" nut driver to remove the hardware securing the power supply.

4. Fasten the new power supply in place and reconnect all wires.

6.9 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:** It may be necessary to occasionally 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 weather-stripping 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.

Note: If any of the preceding conditions are discovered, make the necessary repairs or take corrective action immediately.

6.10 Replacement Parts List

The following tables contain TNMC components that may have to be replaced. Many of the components within the display itself have attached part number labels.

Part Description	Part Number
Module; 8X8-34, Red	0A-1208-5005
Module; 8X8-34, Red (<i>Sep 2009 – Nov 2010 only</i>)	0A-1208-5002
Module; 8X8-34, Amber	0A-1208-5008
Module; 8X8-34, White	0A-1208-5004
Module; 8X8-46, Red	0A-1541-5005
Module; 8X8-46, Amber	0A-1541-5009
Module; 8X8-46, Amber (<i>Sep 2009 – Nov 2010 only</i>)	0A-1541-5007
Module; 8X8-46, White	0A-1541-5006
Driver; MCAST, 4 Column	0P-1388-0201
Power Supply; 3-6.5V, 90-264V AC (<i>all 34mm LED colors, amber 46mm after Nov 2010 & red 46mm after Sep 2009</i>)	A-2307
Power Supply; 8.5-12.5V, 90-264V AC (<i>white 46mm, amber 46mm between Sep 2009 – Nov 2010</i>)	A-2481
Cable; 20 pos, Ribbon, 36"	W-1495
Cable; 20 pos, Ribbon, 18"	W-1387
Electrical contact lubricant (CaiLube®)	CH-1019

For Displays Built Before September 2009

Part Description	Part Number
Ribbon Cable, 18" (module to module)	0A-1000-0015
Ribbon Cable, 30" (TNMC driver to first module)	0A-1000-0017
4-col MASC Driver	0P-1192-0068
<ul style="list-style-type: none"> ▪ Transformer; 115/230 V pri, 16 V sec @ 2 A 	T-1063
Power Supply Assembly; Red TNMC	0A-1192-3160
<ul style="list-style-type: none"> ▪ Power Supply; 6.5V, 15A, 85-264 V AC 	A-1591
Power Supply Assembly; Amber TNMC	0A-1192-3161
<ul style="list-style-type: none"> ▪ Power Supply; 9V, 17A, 85-265 V AC 	A-1633
Red 8x8 34mm Module Assembly	0A-1208-4004
Amber 8x8 34mm Module Assembly	0A-1208-4005
Red 8x8 46mm Module Assembly	0A-1342-4004
Amber 8x8 46mm Module Assembly	0A-1342-4005

See **Section 7** for information on Daktronics Exchange and Repair and Return program.

Section 7: Daktronics Exchange and Repair & Return Programs

7.1 Exchange Program

The Daktronics Exchange Program is a service for quickly replacing key components in need of repair. If a component fails, Daktronics sends a replacement part to the customer who, in turn, returns the failed component to Daktronics. This decreases equipment downtime. Customers who follow the program guidelines explained below will receive this service.

Before Contacting Daktronics

Identify these important numbers:

Display Serial Number: _____
Display Model Number: _____
Job/Contract Number: _____
Date Installed: _____
Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps.

1. Call Daktronics Customer Service.

Market Description	Customer Service Number
Schools (including community/junior colleges), religious organizations, municipal clubs and community centers	877-605-1115
Universities and professional sporting events, live events for auditoriums and arenas	866-343-6018

2. When the new exchange part is received, mail the old part to Daktronics.

If the replacement part fixes the problem, send in the problem part being replaced.

- a. Package the old part in the same shipping materials in which the replacement part arrived.
- b. Fill out and attach the enclosed UPS shipping document.
- c. Ship the part to Daktronics.

3. The defective or unused parts must be returned to Daktronics within 5 weeks of initial order shipment.

If any part is not returned within five (5) weeks, a non-refundable invoice will be presented to the customer for the costs of replenishing the exchange parts inventory with a new part.

Daktronics reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

7.2 Repair & Return Program

For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

1. **Call or fax Daktronics Customer Service:**
Refer to the appropriate market number in the chart listed on the previous page.
Fax: 605-697-4444
2. **Receive a case number before shipping.**
This expedites repair of the part.
3. **Package and pad the item carefully to prevent damage during shipment.**
Electronic components, such as printed circuit boards, should be placed in an antistatic bag before boxing. Daktronics does not recommend using packing 'peanuts' when shipping.
4. **Enclose:**
 - name
 - address
 - phone number
 - the case number
 - a clear description of symptoms

Shipping Address

Daktronics Customer Service
[Case #]
201 Daktronics Drive, Dock E
Brookings, SD 57006

7.3 Daktronics Warranty and Limitation of Liability

The Daktronics Warranty and Limitation of Liability is located in **Appendix B**. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.

Section 8: Scoreboard Options

8.1 Radio Control

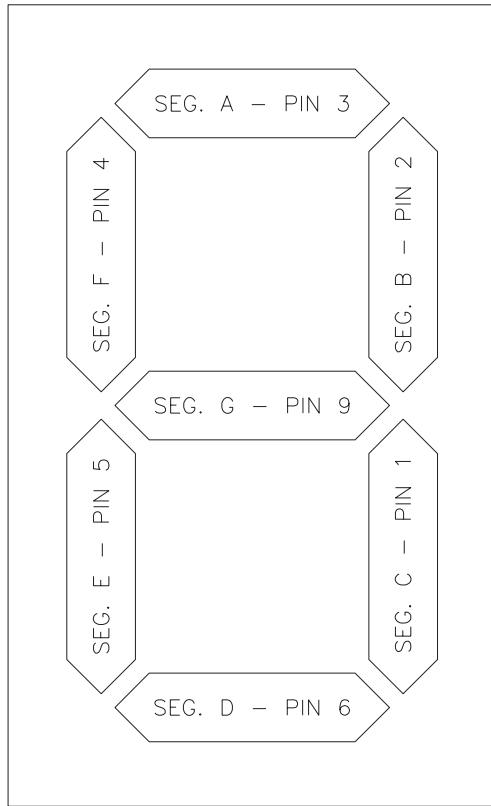
Radio control is an option for all Daktronics outdoor LED scoreboards. The system provides scoreboard control via a 2.4 GHz, extra-high frequency FM signal. The radio transmitter and receiver are not standard. This setup requires a control console equipped with radio output as well as a radio receiver plugged into the power terminal block in the driver/power enclosure and mounted internally to the front panel of the scoreboard.

For additional information about this option, contact a Daktronics representative; for complete information on setting up radio communication control, refer to the **Gen V Radio Installation Manual (ED-13831)**, available online at www.daktronics.com/manuals.

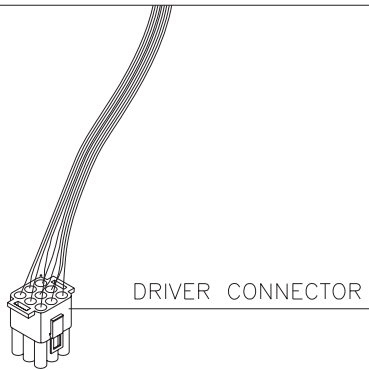
Appendix A: Reference Drawings

Segmentation, 7 Segment Bar Digit	A-38532
Ad Panel Mounting.....	A-52187
Scoreboard Mounting	A-55101
4 Column MASC LED Driver Specifications	A-166216
Beam Mounting Procedure; TN-2016-11.....	A-175677
Beam Mounting; Side View, TN-2016-11	A-175696
Beam and Footing Recommendations, TN-2016-11	A-175784
System Riser; Tennis; Single Court w/ TNMC.....	A-177098
Schematic; GEN III & IV, OD LED, 1 DRV w/TNMC	A-179790
Scoreboard Mtg; Scoreboard with Spacers	A-182909
Component Locations; TN-2016-11, G3.....	A-195593
System Riser; Tennis; Indoor Multi-Court, DakTennis, CG	B-231298
System Riser; Tennis; Multi-Court, RC-100 Direct	B-233254
System Riser: Tennis; Indoor/Outdoor Single Court, RC-100	A-252412
Schematic; Amber TNMC GEN IV.....	A-252645
Schematic; Red TNMC GEN IV.....	A-252681
Component Locations; 832/848/864 Red/Amb LED, TNMC, G4	A-257029
Schematic: TN-2650/2651- Top Section- w/ TNMCs	B-271666
Shop DWG, TN-2651-(11/21) w/ ID Panels.....	B-274857
Schematic; GEN IV Outdoor LED, 16 Col Driver.....	A-285779
Specifications; LED Driver IV, 16 Col	A-288137
Schematic; 832/864 RED TNMC GEN IV, 240V	A-294858
Schematic; 832/848/864 Amber GEN IV, 240V.....	A-294919
Shop DWG, TN-2655-(11/21) w/ ID Panels.....	B-297726
Shop DWG: TN-2604 -(11/21) w/ ID Panels.....	B-297728
16' Width Scoreboard Installation Specs	A-298975
Component Location; TN-2601-11/-21, G4	A-300388
18' Width Scoreboard Installation Specs	A-302416
Schematic: TN-2655- Top Section- w/ TNMCs	B-309614
Component Location; TN-2603-11/-21, G4	A-325294
Component Location; TN-2604-11/-21, G4	A-325295
Schematic: TN-2652- Section A and B.....	C-326946
Component Location: TN-2653.....	A-331459
Schematic; TN-2653, Section A & B.....	C-350622
Component Location; TN-2650.....	A-350649
Component Location; TN-2652.....	A-350683
Component Location; TN-2651.....	A-350687
Component Location; TN-2605.....	A-583550
Schematic; TN-2654, Top Section, w/ TNMCs.....	B-739765
Schematic; TN-2654, Middle/Bottom Sec. w/ TNMCs.....	C-739979
Schematic; 1 DRVR, TNMC, Gen IV	A-752372
Component Location; TN-2654.....	A-765558
Component Locations; TN-2655.....	A-765563
Schematic, OD, 3500, 34mm TNMC, Red/Amb	B-783938
Specifications; Driver, MCAST, 4 Col	A-793970
Component Location; TN-2607-11/-21, G4	A-839312
Schematic; TN-2652 & TN-2653 Section C&D.....	C-852306
Schematic; TN-2650, TN-2651 Mid / Bottom Sections.....	C-854321

Schematic ; TN-2655 Mid Section.....	C-858107
Schematic, OD, 3500, 34mm TNMC, Wht.....	B-906385
Schematic, OD, 3500, 46mm, Amb/Wht.....	B-923940
Schematic, OD, 3500, 46mm, Red/Amb.....	B-923941
Component Loc.; 34mm Red/Amb/Wht LED TNMC G4.....	B-975100
Component Loc.; 46mm Red/Amb/Wht LED TNMC G4.....	B-975635
Schematic, OD, 3500, 46mm, Wht	B-1036125
Address Details; Outdoor Tennis Scoreboards.....	B-1054089



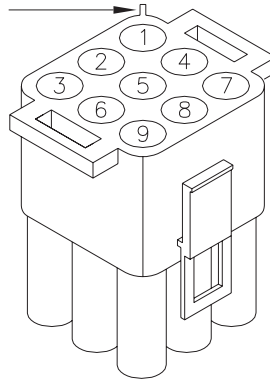
7 SEGMENT BAR DIGIT
FRONT VIEW



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

CONNECTOR PIN NUMBERING

NOTE SPLINE NEAR NO. 1



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

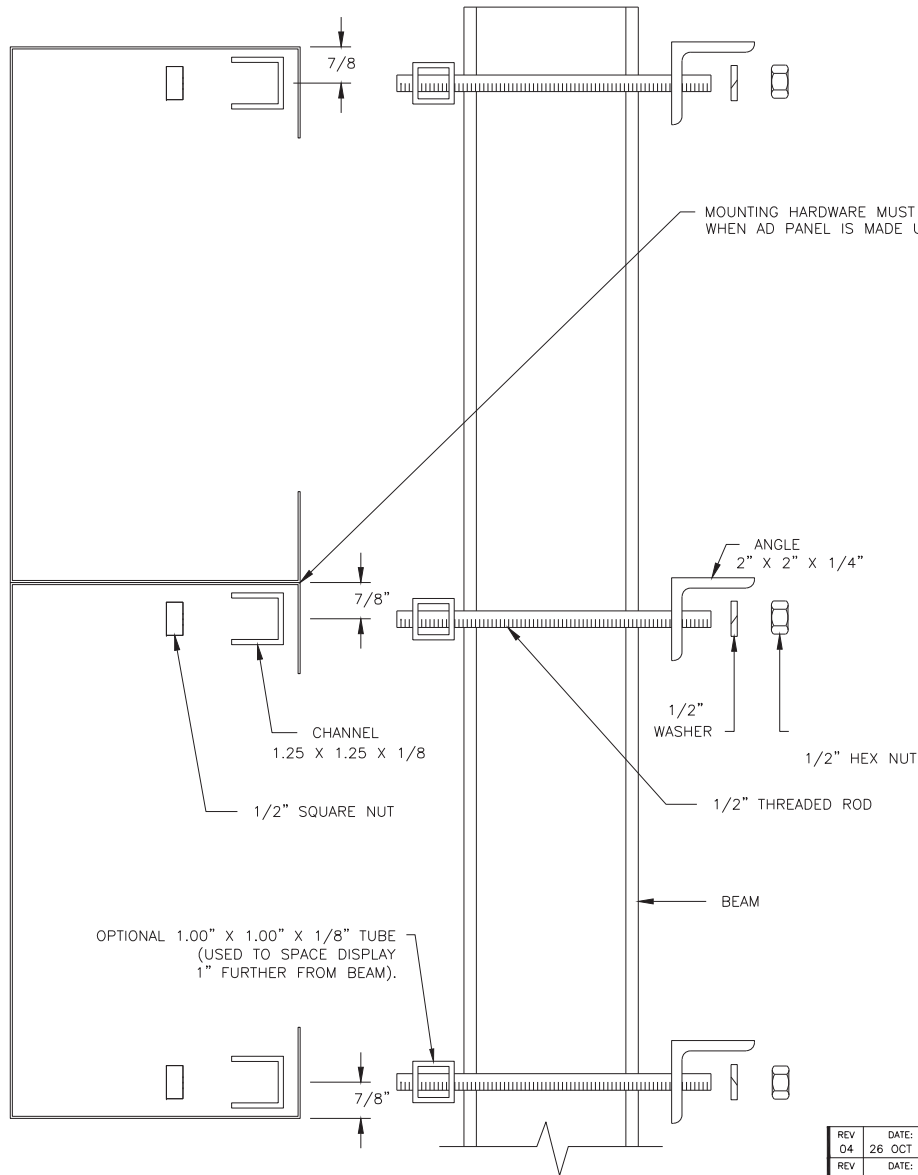
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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: BASKETBALL
TITLE: SEGMENTATION, 7 SEGMENT BAR DIGIT
DES. BY: HEIDERSCHIEDT DATE: 5 JUN 89

REVISION 02 APPR. BY: AVB SCALE: 1=4 1009-R04A-38532

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	



MOUNTING HARDWARE MUST BE USED AT ALL AD PANEL SPLICES WHEN AD PANEL IS MADE UP OF MULTIPLE SECTIONS

MOUNTING INSTRUCTIONS:

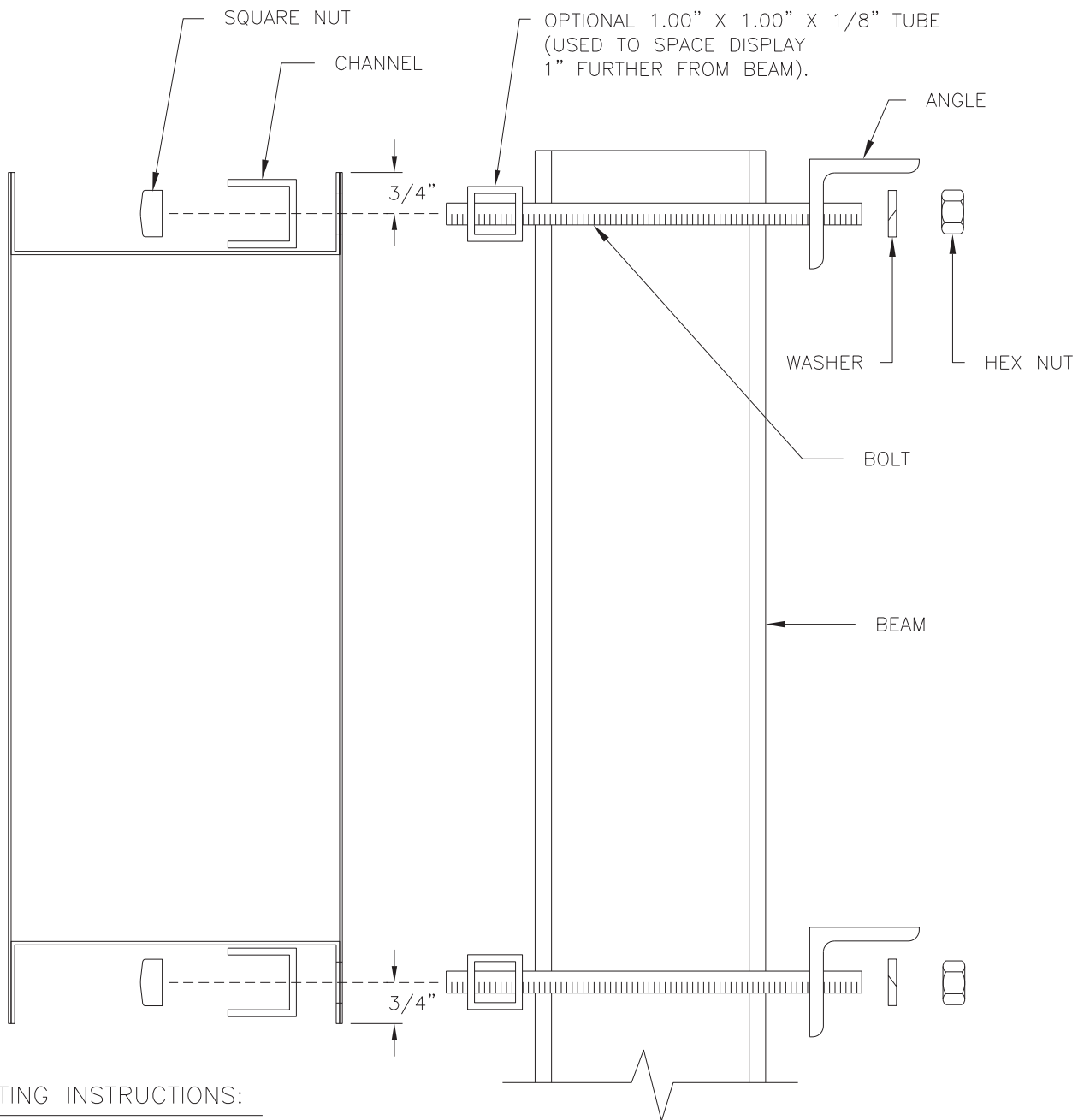
1. USE THE MOUNTING CHANNEL TO DETERMINE WHICH HOLE COMBINATION SHOULD BE USED. BE SURE TO KEEP THE BOLTS AS CLOSE TO THE BEAM AS POSSIBLE.
2. USING THE MOUNTING CHANNEL AS A TEMPLATE, DRILL 9/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF AD PANEL WHERE THE SUPPORTS WILL GO.
3. PLACE SQUARE NUTS INSIDE 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 04	DATE: 26 OCT 11	ADDED NOTE FOR USING MOUNTING HARDWARE AT AD PANEL SPLICES	BY: MBC
REV 03	DATE: 12 APR 10	ADDED 1" TUBE SPACER	BY: KDD
REV 02	DATE: 13 AUG 97	INCLUDED INSTRUCTIONS FOR AD PANELS WITH BACKSHEETS	BY: JAA
REV 01	DATE: 26 MAY 93	ADDED DESCRIPTION TEXT TO PARTS.	BY: MGG

DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2011 DAKTRONICS, INC.
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS TITLE: AD PANEL MOUNTING		
DESIGN:	DRAWN: MGUNDEPERSON	DATE: 09 JUL 92
SCALE: NONE		
SHEET	REV 04	JOB NO: P1091
		FLUNC-TYPE-SIZE R-10-B
		52187



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.

<small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.</small>			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: SCOREBOARD MOUNTING			
DES. BY:	DRAWN BY: A VANBEMMEL	DATE: 10FEB93	
REVISION	APPR. BY:	1091-R10A-55101	
01	SCALE: NONE		

01	12 APR 10	ADDED 1" TUBE SPACER	KDD	
REV.	DATE	DESCRIPTION	BY	APPR.

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

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

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

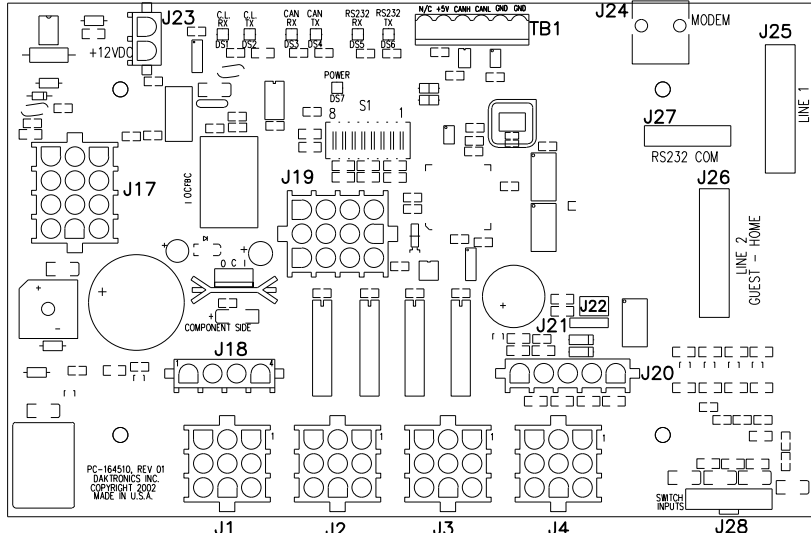
TB1 CAN	
PIN	FUNCTION
1	N/C
2	+5V-P
3	CANH-P
4	CANL-P
5	GND-N
6	GND-N

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

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

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

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



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

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

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

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

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

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

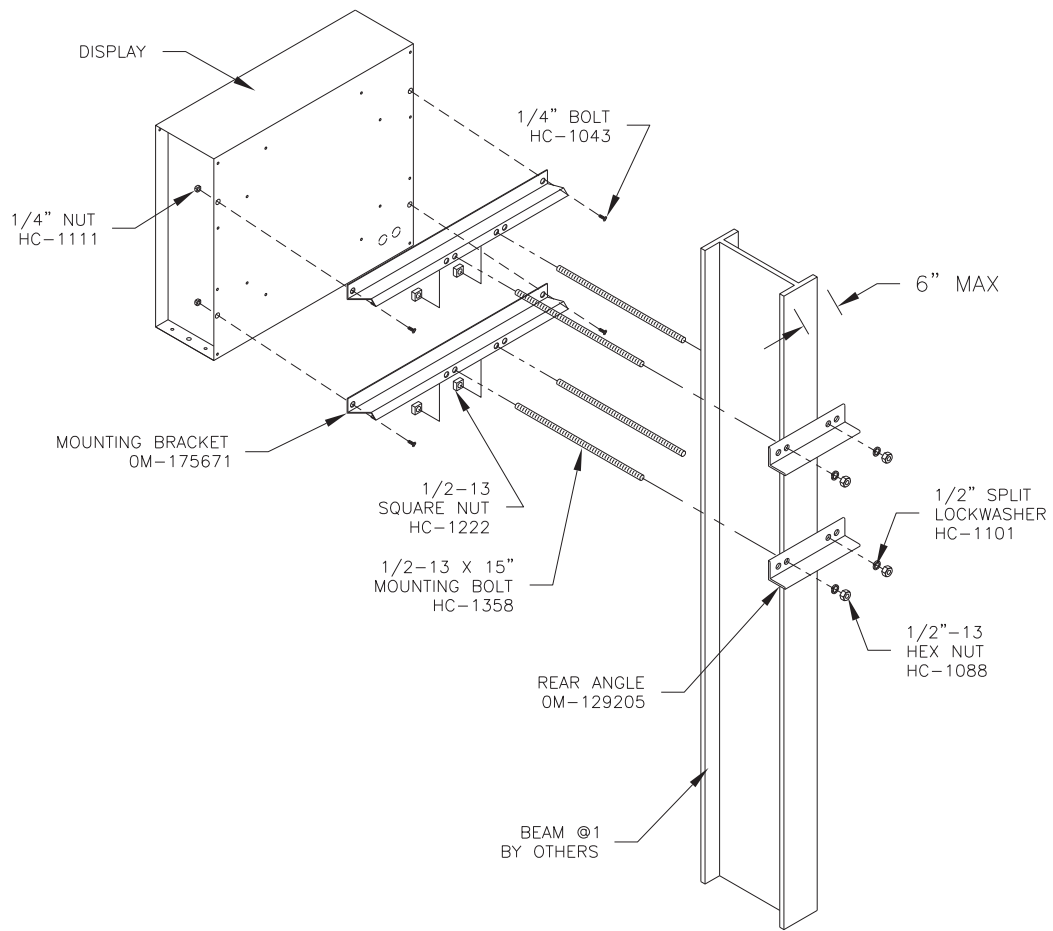
J22 ISP	
PIN	FUNCTION
1	BKD-P
2	GND-N
3	N/C
4	RESET-P
5	VFP-P
6	+5V-P

NOTE:

- RED LED CL RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL
- GREEN LED CL TX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH CL
- RED LED CAN RX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN
- GREEN LED CAN TX WILL BE BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND ON WHEN THERE IS NO SIGNAL WITH CAN
- IF THERE IS NOT A CAN DEVICE CONNECTED TO TB1, CAN RX AND TX LEDS WILL BE ON AND STEADY.
- RED LED RS232 RX WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232
- GREEN LED RS232 TX6 WILL BE ON OR BLINKING WHEN THE DRIVER IS RECEIVING SIGNAL AND OFF WHEN THERE IS NO SIGNAL WITH RS232
- GREEN LED POWER INDICATES THE DRIVER HAS POWER

REV	DATE:	CORRECTED S1 PINOUT	BY:
04	01 FEB 13		RBN
3	27 NOV 04	UPDATE DRIVER J-27 FOR CORRECT PIN OUT	BY:
2	16 MAY 03	UPDATE DRIVER FOR LATEST REVISION OF MASC DRIVER.	BY:
1	06 JUN 02	ADDED LED LABELS ADDED NEW NOTES	BY:

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	<p>DO NOT SCALE DRAWING</p>	
<p>PROJ: OUTDOOR LED SCOREBOARDS</p>		
<p>TITLE: 4 COLUMN MASC LED DRIVER SPECIFICATIONS</p>		
DESIGN:	DRAWN: JSPAHR	DATE: 29 APR 02
SCALE: 1=2		
SHEET	REV	JOB NO:
	04	P 1192
		FUNC -TYPE-SIZE
		R - 07 - A
		166216



BEAM MOUNTING PROCEDURE:

1. ATTACH THE MOUNTING BRACKETS @2 TO THE REAR OF THE DISPLAY USING THE INCLUDED 1/4" HARDWARE. HOLES ARE PROVIDED IN THE MOUNTING BRACKETS AND IN THE BACK OF THE DISPLAY.

2. POSITION THE DISPLAY (WITH ATTACH MOUNTING BRACKETS) AGAINST THE BEAMS AND SECURE TO THE BEAM WITH THE 1/2" BOLTS, WASHERS, AND NUTS PROVIDED. THE SQUARE NUTS GO INSIDE THE BRACKET, AND THE HEX NUTS AND WASHERS ARE USED INSIDE THE REAR ANGLE AT THE BACK OF THE BEAM. USE A 3/4" SOCKET TO TIGHTEN.

CAUTION: DO NOT OVERTIGHTEN AND DEFORM THE BRACKET OR ANGLES.

SEE DRAWING 1192-R10A-175696 FOR A SIDE VIEW AND DETAILS.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: BEAM MOUNTING PROCEDURE; TN-2016-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 24SEP02

REVISION

APPR. BY:

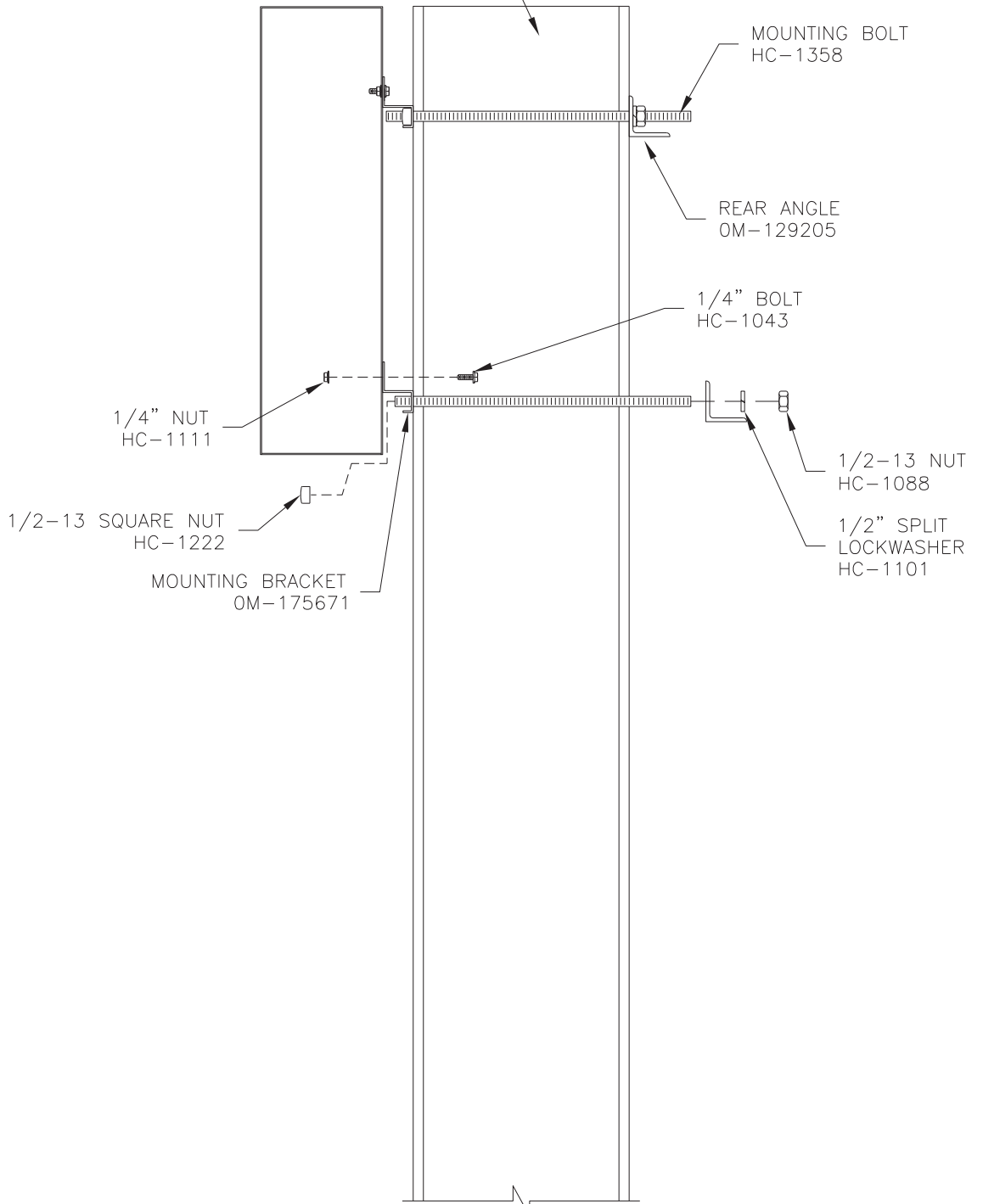
SCALE: 1=20

1164-R10A-175677

REV.	DATE	DESCRIPTION	BY	APPR.

SUPPORT BEAM
BY OTHERS
MAX. 6" WIDE
MAX. 13" DEEP

MOUNTING BOLTS DO NOT GO
THROUGH THE BEAM, BUT
PASS ALONG EITHER SIDE.
NO DRILLING REQUIRED.



SIDE VIEW

SEE DRAWING 1192-R10A-175677 FOR A VIEW
FROM THE REAR OF THE DISPLAY, AND STEP BY
STEP PROCEDURE.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: BEAM MOUNTING; SIDE VIEW, TN-2016-11

DES. BY: MCOPLAN

DRAWN BY: MCOPLAN

DATE: 24SEP02

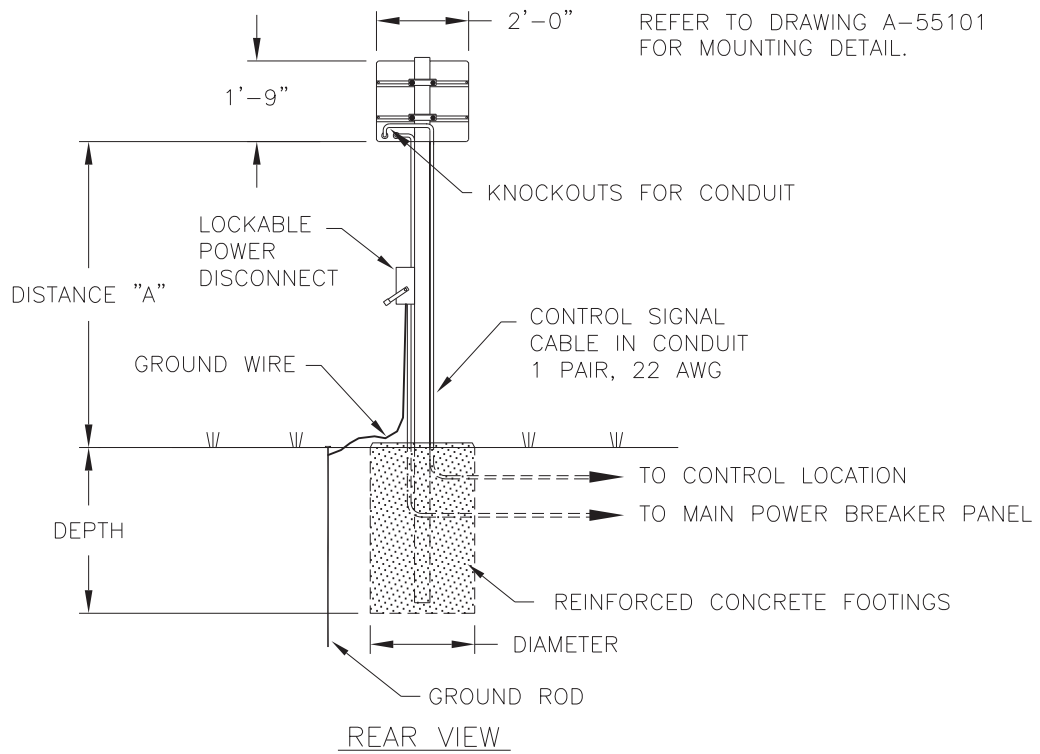
REVISION

APPR. BY:

SCALE: 1=8

1164-R10A-175696

REV.	DATE	DESCRIPTION	BY	APPR.



MODEL TN-2016-11					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			70 MPH	80 MPH	100 MPH
10'-0"	2'-0" x 1'-9"	BEAM FOOTING	HSS4X4X3/16 2.0X4.0	HSS4X4X3/16 2.0X4.0	HSS4X4X3/16 2.0X4.0
12'-0"	2'-0" x 1'-9"	BEAM FOOTING	HSS4X4X3/16 2.0X4.0	HSS4X4X3/16 2.0X4.0	HSS4X4X3/16 2.0X4.0
14'-0"	2'-0" x 1'-9"	BEAM FOOTING	HSS4X4X3/16 2.0X4.0	HSS4X4X3/16 2.0X4.0	HSS4X4X1/4 2.0X4.0

FOOTING = DIAMETER X DEPTH

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

FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT²

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

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

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS

TITLE: BEAM AND FOOTING RECOMMENDATIONS; TN-2016-11

DES. BY: MCOPL/RNEYEN DRAWN BY: MCOPLAN DATE: 25SEP02

REVISION

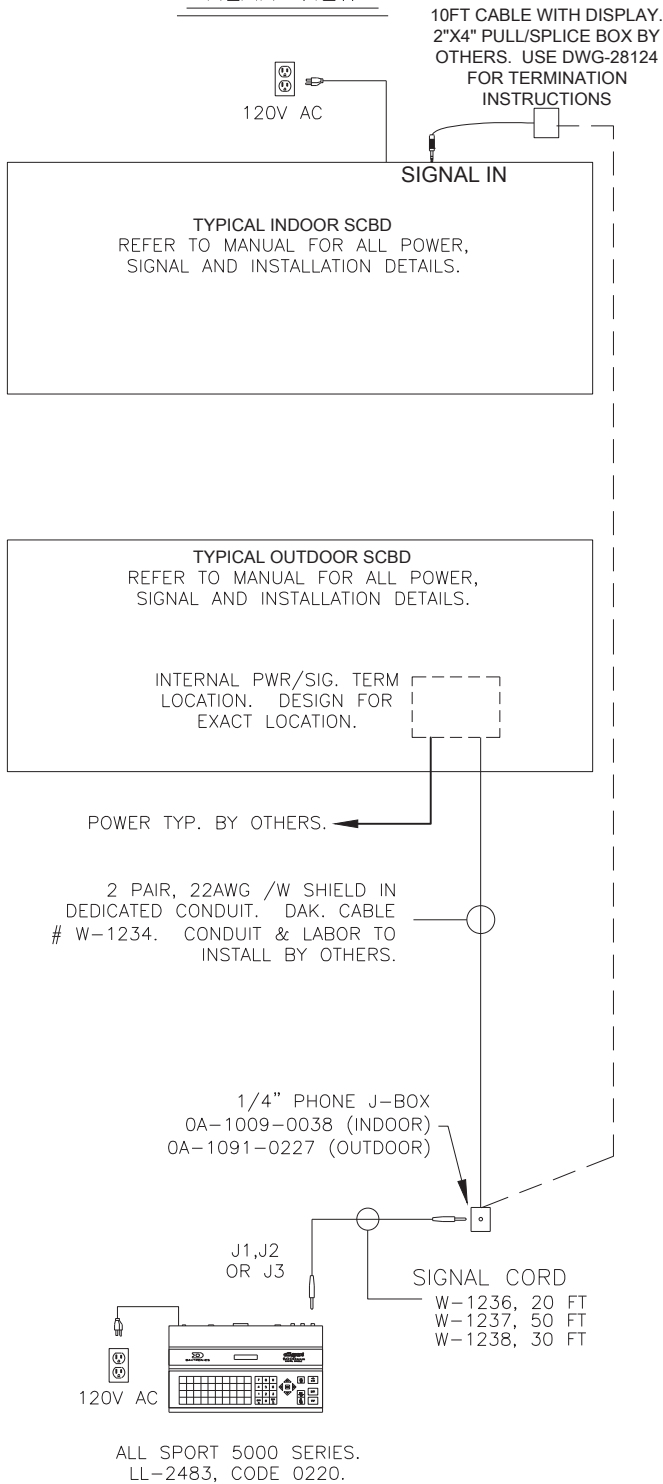
APPR. BY:

SCALE: 1=50

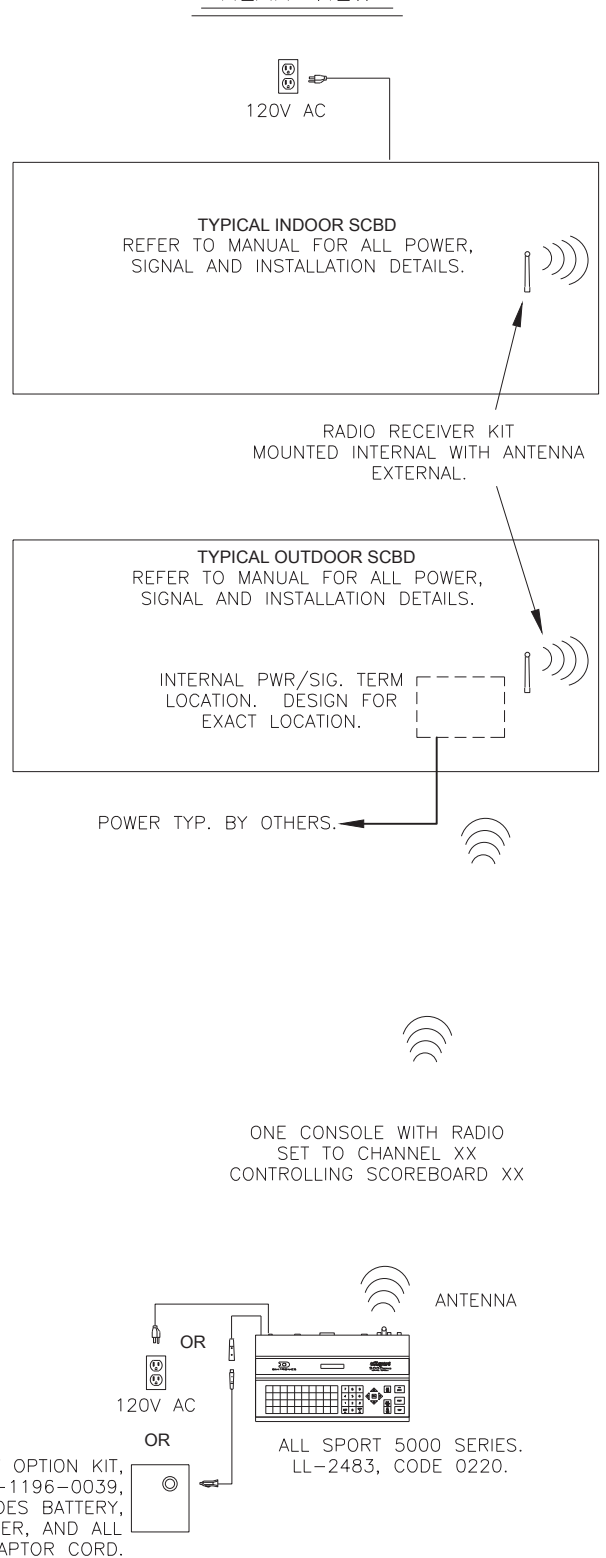
1192-R10A-175784

REV.	DATE	DESCRIPTION	BY	APPR.

WIRE COMMUNICATION
REAR VIEW



RADIO COMMUNICATION
REAR VIEW



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	DO NOT SCALE DRAWING	

REV 03	DATE: 26 SEP 12	UPDATED BOARD AND TITLE BLOCK REMOVED PART NUMBER FROM THE RADIO RECIEVER TAG SO WE CAN USE MORE GENERATIONS	BY: MWM
REV 02	DATE: 23AUG05	REMOVED ALL SPORT 1600 SERIES CONTOLLER CHANGED NAME OF DRAWING	BY: TAJ
REV 01	DATE: 28 MAY 03	SEPERATED THE WIRE AND THE RADIO ILLUSTRATIONS.	BY: MWM

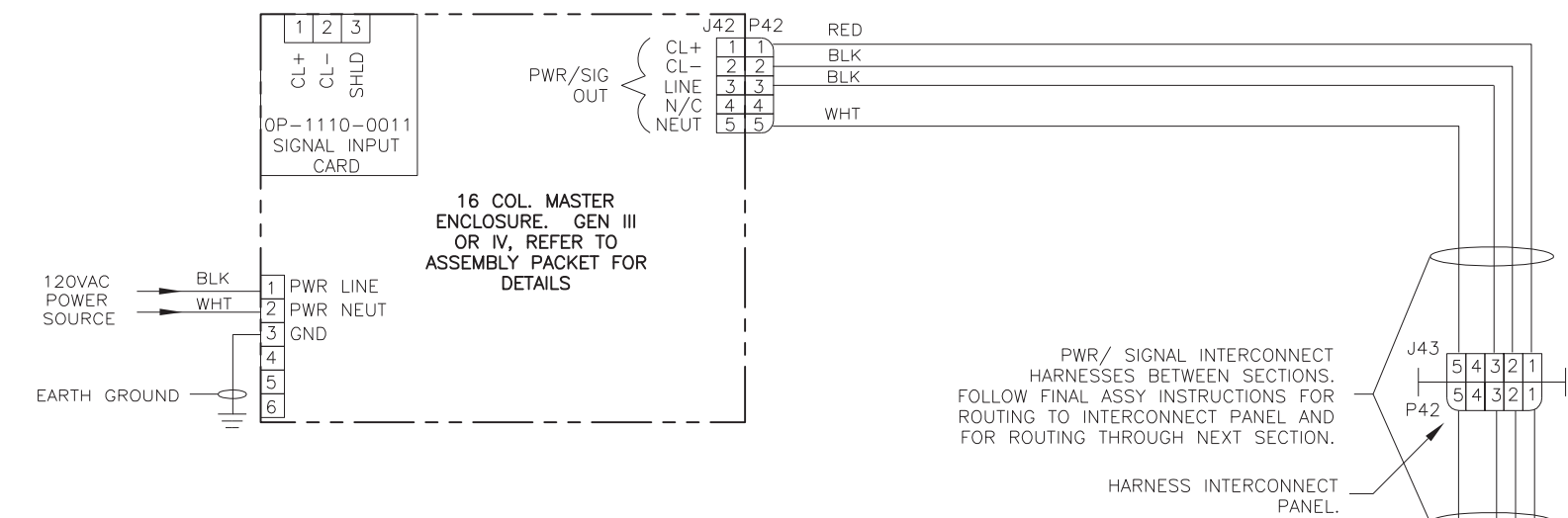
PROJ: TENNIS SCOREBOARDS			
TITLE: SYSTEM RISER; TENNIS; SINGLE COURT W/ TNMC, AS 5000			
DESIGN: MMILLER		DRAWN: MMILLER	
SCALE: NONE			
SHEET	REV	JOB NO:	FUNC -TYPE-SIZE
	03	P 1164	R - 01 - A
			177098

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

PROJ:	OUTDOOR LED DIGIT SCOREBOARDS
TITLE:	SCHEMATIC; GEN III & IV OD LED, 1 DRV W/ TNMC
DES. BY:	ALINDHO
DATE:	17 DEC 02
REVISION	APPR. BY:
02	NONE
1192-R01A-179790	

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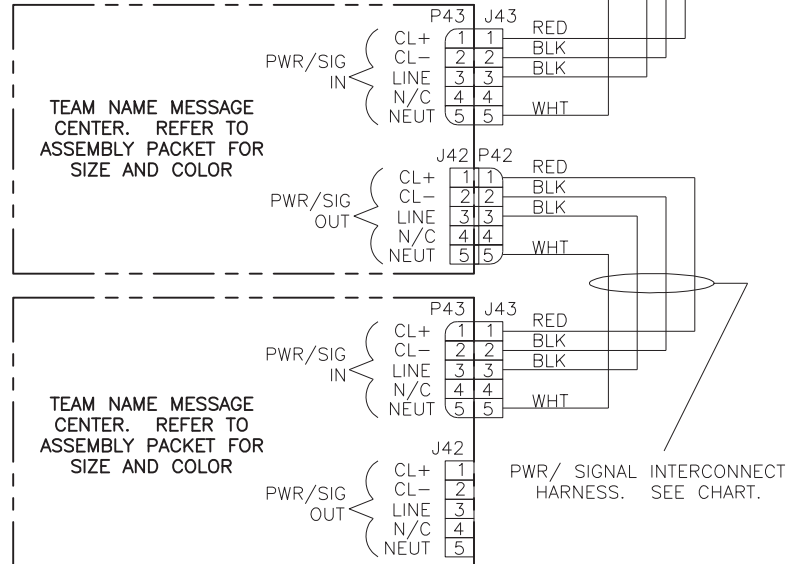
DAKTRONICS, INC. BROOKINGS, SD 57006



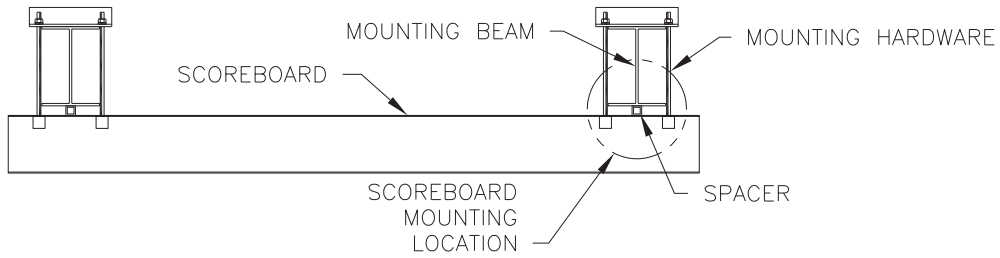
THIS SCHEMATIC REPRESENTS THE INTERCONNECT OF THE MASTER DRIVER TO OTHER DRIVERS/TNMC'S IN A MULTI DRIVER SCOREBOARD CONFIGURATION. SEE THE PRE-PAINT ASSEMBLY DRAWING AND/OR THE FINAL ASSEMBLY DRAWING FOR THE PART NUMBERS OF THE INTERCONNECT HARNESSES NEEDED AND INSTALLATION INSTRUCTIONS.

PWR/SIG INTERCONNECT HARNESS

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

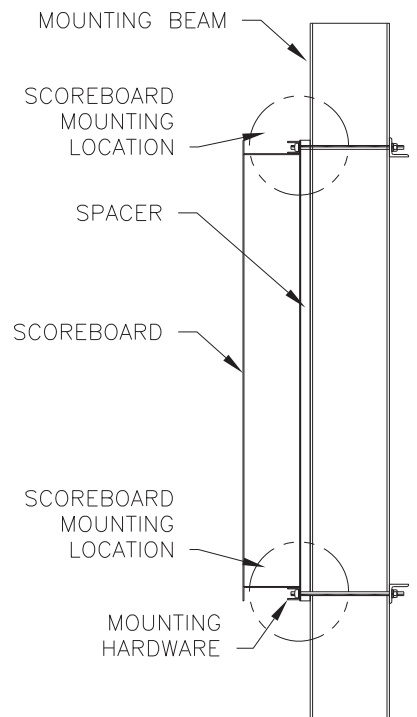
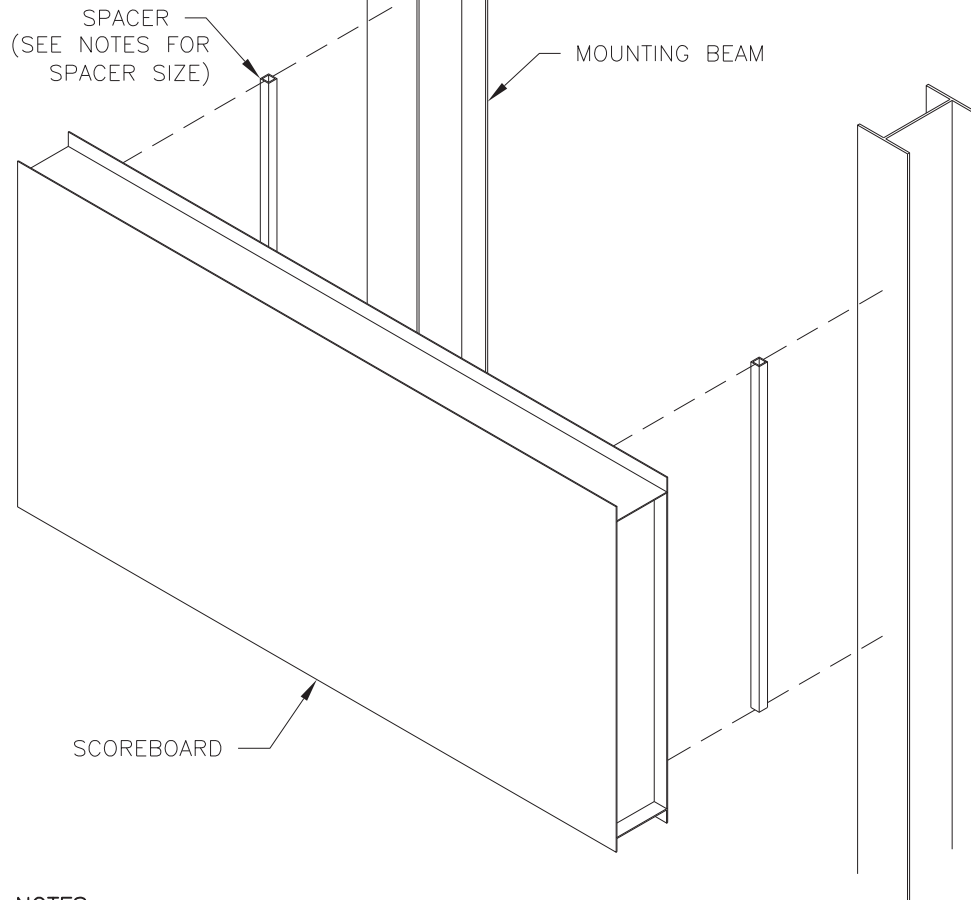


NOTE:
CONNECT THE RIBBON CABLE TO THE TNMC DRIVER TO EITHER
J25 = HOME OR
J26 = GUEST.



TOP VIEW

SPACERS TO BE PROVIDED BY THE CUSTOMER



SIDE VIEW

NOTES:

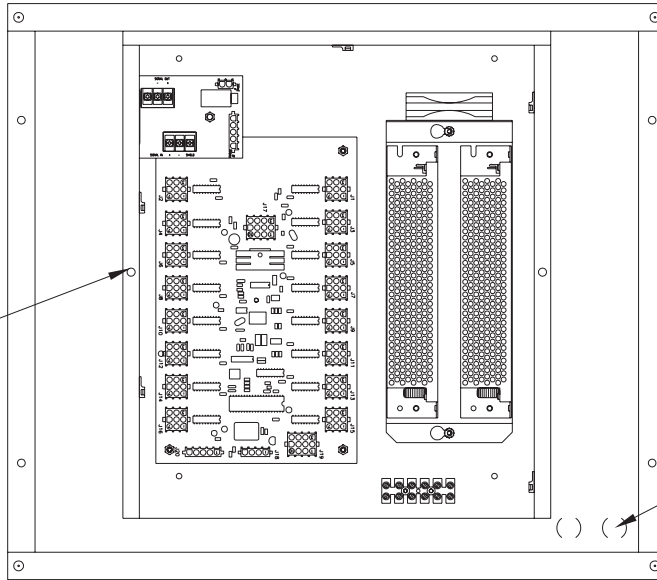
- SPACER SIZE CANNOT EXCEED THE HEIGHT OF THE SCOREBOARD BUT DOES NOT HAVE TO BE THE SAME HEIGHT AS THE SCOREBOARD. SMALLER LENGTHS OF SPACER MATERIAL MAY BE USED AS LONG AS THEY ARE USED AT THE TOP AND BOTTOM SCOREBOARD MOUNTING LOCATIONS. SPACERS SHOWN ABOVE ARE 1"X1". TYPICALLY, THE SPACER DEPTH WILL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

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DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR SCOREBOARDS	
TITLE: SCOREBOARD MTG; SCOREBOARD WITH SPACERS	
DES. BY: MCOPLAN	DRAWN BY: MCOPLAN
	DATE: 07FEB03
REVISION	APPR. BY:
	SCALE: 1=20
1192-R08A-182909	

REV.	DATE	DESCRIPTION	BY	APPR.

TN-2016-11

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

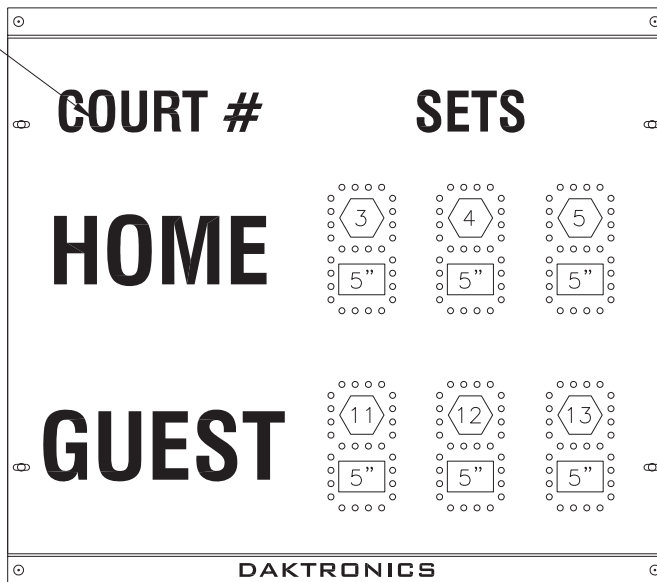


KNOCKOUTS FOR CONDUIT

FRONT VIEW

DISPLAY FACE PANEL HAS BEEN REMOVED

OPTIONAL COURT NUMBER CAPTION (SEE ORDER BOM FOR DETAILS)



FRONT VIEW

⬡ 1 = LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

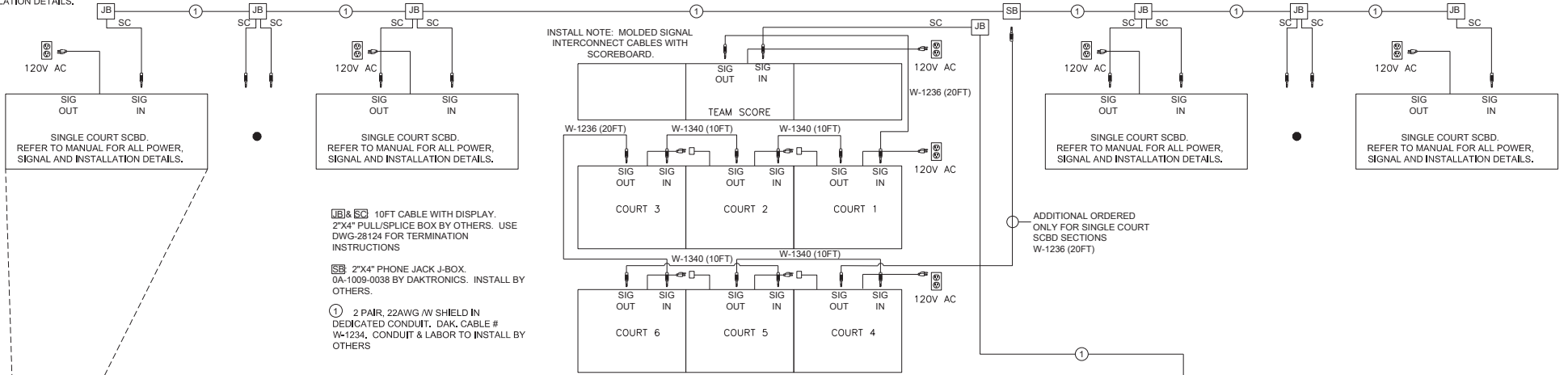
⬢ 5" = DIGIT SIZE

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR TENNIS SCOREBOARDS			
TITLE: COMPONENT LOCATIONS; TN-2016-11, G3			
DES. BY: MCOPLAN		DRAWN BY: MCOPLAN	
		DATE: 25AUG03	
REVISION	APPR. BY:	1164-R08A-195593	
00	SCALE: 1=7		

REV.	DATE	DESCRIPTION	BY	APPR.

INDOOR SCOREBOARD LAYOUT
REFER TO MANUAL FOR ALL POWER, SIGNAL AND
INSTALLATION DETAILS.

REAR VIEW



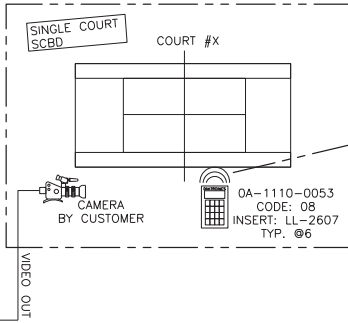
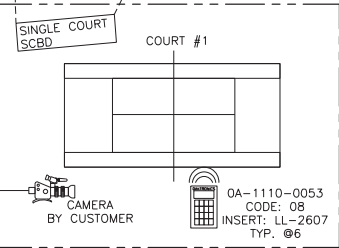
W-1236 10FT CABLE WITH DISPLAY.
2"x4" PULL/SPLICE BOX BY OTHERS. USE
DWG-28124 FOR TERMINATION
INSTRUCTIONS

SB 2"x4" PHONE JACK J-BOX.
0A-1009-0038 BY DAKTRONICS. INSTALL BY
OTHERS.

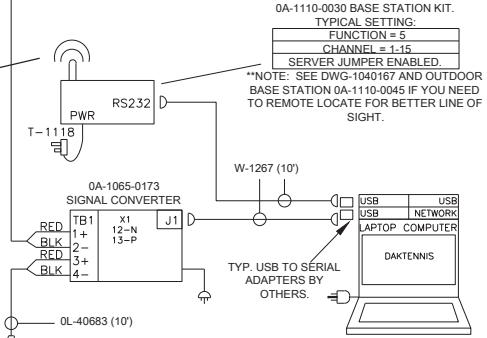
1 2 PAIR, 22AWG W SHIELD IN
DEDICATED CONDUIT. DAK. CABLE #
W-1234. CONDUIT & LABOR TO INSTALL BY
OTHERS

ONLY FOR SINGLE
COURT SCBDS

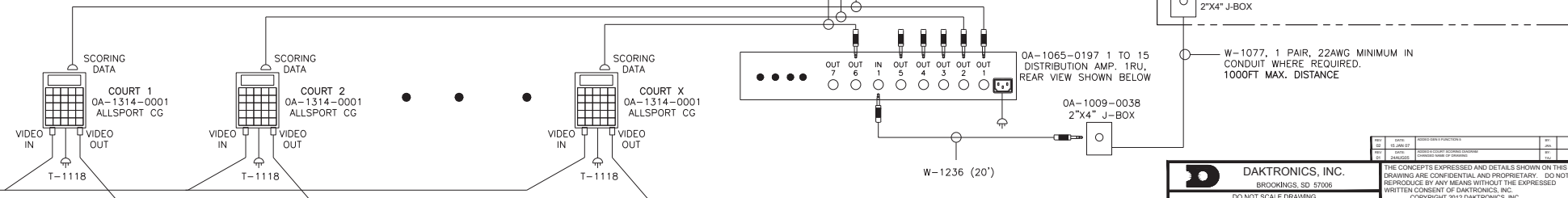
ADDITIONAL ORDERED
ONLY FOR SINGLE COURT
SCBD SECTIONS
W-1236 (20FT)



DAKTENNIS CONTROL LOCATION
CLEAR LINE OF SIGHT REQUIRED.



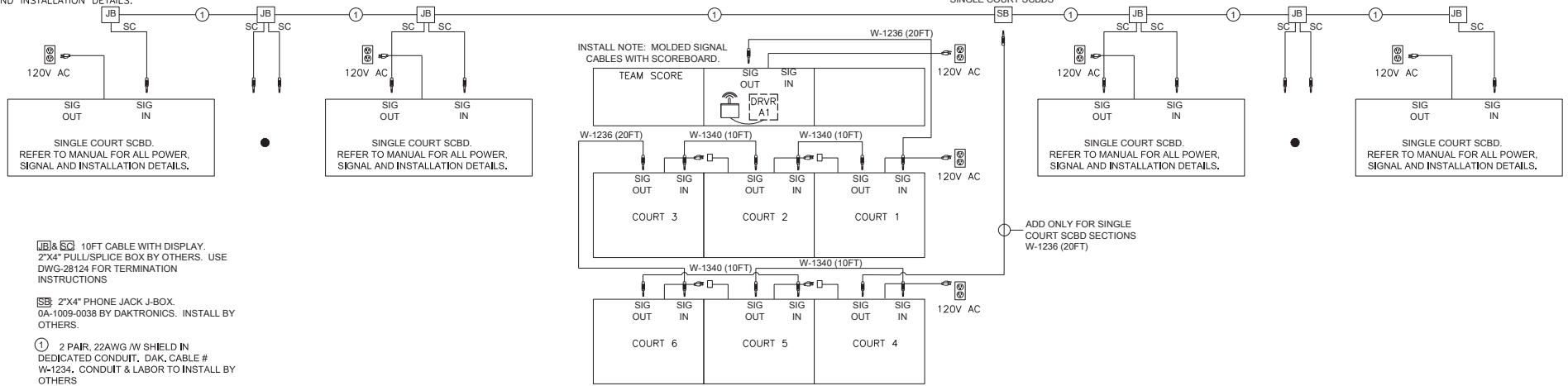
PRODUCTION LOCATION
ALLSPORT CG SETUP



REV 05	DATE: 02 DEC 13	MOVED POWER AND SIGNAL CABLES TO THE MIDDLE SECTION OF THE TOP TEAM SCORE SCOREBOARD	BY: ACB
REV 04	DATE: 08 OCT 12	UPDATED BOARD TO B SIZED. ADDED DETAILS TO SHOW INDOOR SCOREBOARD LAYOUT	BY: MWM
REV 03	DATE: 27 APR 12	UPDATED RC-100 HANDHELD PARTNUMBER UPDATED BOARDER AND TITLE BLOCK	BY: JFL

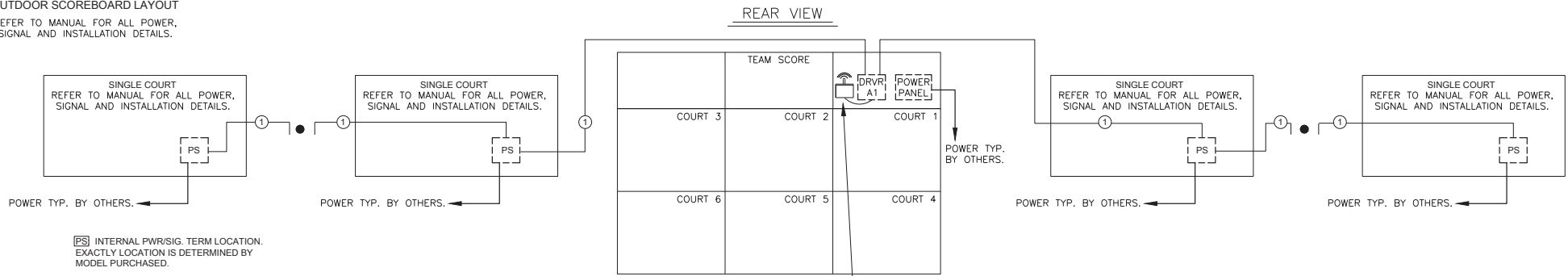
		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC.
DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		
PROJ: TENNIS SCOREBOARDS TITLE: SYSTEM RISER; TENNIS; INDOOR MULTI-COURT; DAKTENNIS, CG DESIGN: _____ DRAWN: RTAGTOW SCALE: NONE SHEET: 05 REV: P1164 JOB NO: _____ FUNC-TYPE-SIZE: R-01-B		
		231298

INDOOR SCOREBOARD LAYOUT
REFER TO MANUAL FOR ALL POWER,
SIGNAL AND INSTALLATION DETAILS.



- JB & SC 10FT CABLE WITH DISPLAY. 2"x4" PULL/SPLICE BOX BY OTHERS. USE DWG-28124 FOR TERMINATION INSTRUCTIONS
- SB 2"x4" PHONE JACK J-BOX. 0A-1009-0038 BY DAKTRONICS. INSTALL BY OTHERS.
- ① 2 PAIR, 22AWG W/ SHIELD IN DEDICATED CONDUIT. DAK. CABLE # W-1234. CONDUIT & LABOR TO INSTALL BY OTHERS

OUTDOOR SCOREBOARD LAYOUT
REFER TO MANUAL FOR ALL POWER,
SIGNAL AND INSTALLATION DETAILS.

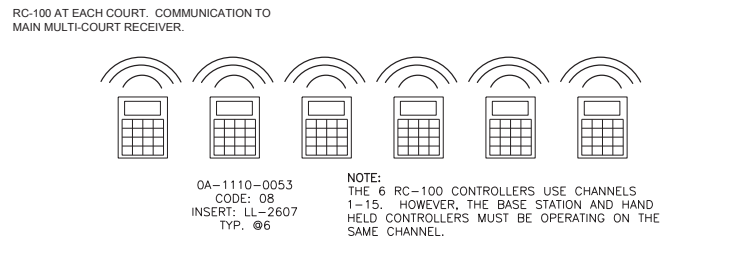


- PS INTERNAL PWR/SIG. TERM LOCATION. EXACTLY LOCATION IS DETERMINED BY MODEL PURCHASED.
- ① 2 PAIR, 22AWG W/ SHIELD IN DEDICATED CONDUIT. DAK. CABLE # W-1234. CONDUIT & LABOR TO INSTALL BY OTHERS

0A-1110-0035
FUNCTION SETTING = 5

NOTE: RC-100 SCOREBOARD RECEIVER BASE STATION IS TYPICALLY LOCATED BEHIND THE FRONT ACCESS LOCATION OF DISPLAY FOR BOTH INDOOR AND OUTDOOR.

FUNCTION NUMBER	DESCRIPTION
0	DEFAULT FUNCTION (LAST POWER UP FUNCTION) CAN HAND HELD (JUDGES) CONSOLE
2	BASEBALL/TENNIS SCOREBOARD CONTROLLER GEN I (ALLSPORT)
3	DATETIME/DATAMASTER DISPLAY CONTROL
5	BASEBALL/TENNIS SCOREBOARD CONTROLLER GEN II (ALLSPORT)



REV	DATE	DESCRIPTION	BY
05	02 DEC 13	MOVED POWER AND SIGNAL CABLES TO THE MIDDLE SECTION OF THE TOP TEAM SCORE SCOREBOARD	ACB
04	08 OCT 12	UPDATE BOARD TO B-SIZE. SHOW INDOOR AND OUTDOOR DETAIL UPDATES	MWM
03	27 APR 12	UPDATED RC-100 HANDHELD PART NUMBER UPDATED BOARDER AND TITLE BLOCK	JFL
02	15 JAN 07	ADDED FUNCTION 5 GEN II	JRA
01	23AUG05	ADDED 6 COURT SCORING DIAGRAM CHANGED NAME OF DRAWING	TAJ

DAKTRONICS, INC.
BROOKINGS, SD 57006

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DO NOT SCALE DRAWING

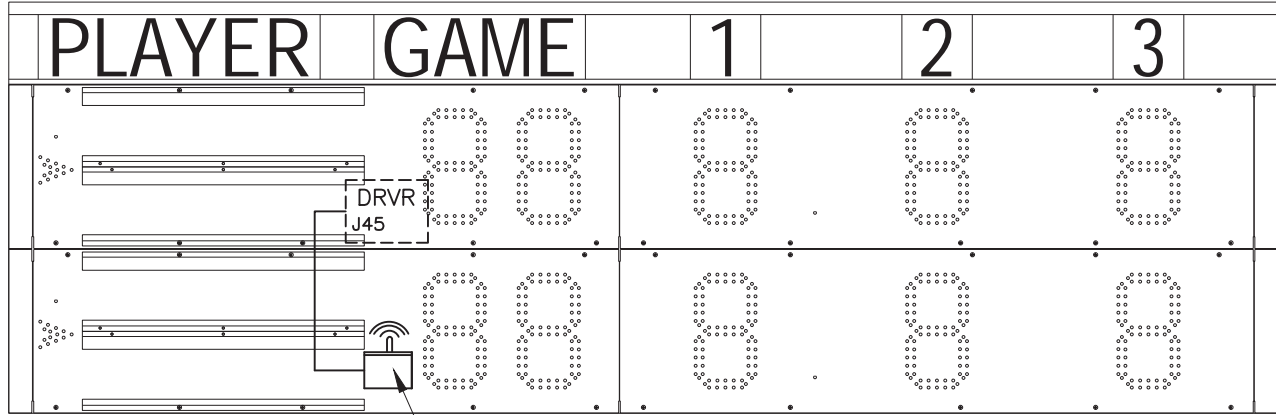
PROJ: TENNIS SCORBOARDS
TITLE: SYSTEM RISER; TENNIS; MULTI-COURT, RC-100 DIRECT
DESIGN: DRAWN: RTAGTOW DATE: 02 FEB 05

SCALE: NONE

SHEET	REV	JOB NO.	FUNC-TYPE-SIZE
	05	P1164	R-01-B

233254

NOTE:
 SAMPLE SCOREBOARD MODEL SHOWN. SEE
 SPECIFICATION MATERIAL ON MODEL PURCHASED.



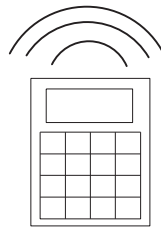
0A-1110-0035
 FUNCTION SETTING = 5

NOTE: RC-100 SCOREBOARD RECEIVER
 BASE STATION IS LOCATED BEHIND THE
 FRONT ACCESS PANEL OF DISPLAY.


NOTE:
 THE WIRELESS BASE STATION COMES PRE-SET TO
 CHANNEL 1. HOWEVER, CHANNELS 1-15 CAN BE
 USED.

FUNCTION TABLE

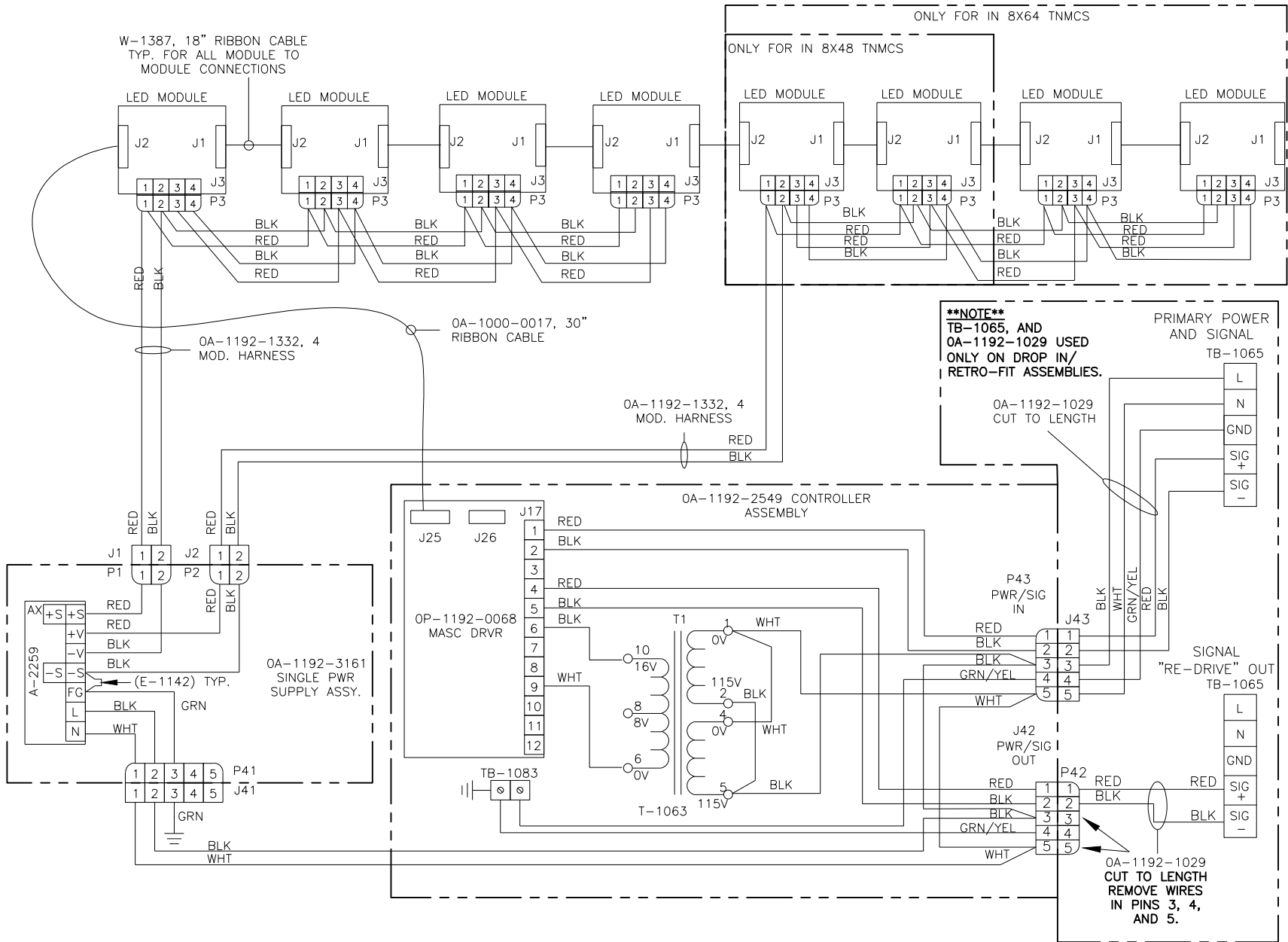
FUNCTION NUMBER	DESCRIPTION
0	DEFAULT FUNCTION (LAST POWER UP FUNCTION)
1	CAN HAND HELD (JUDGES) CONSOLE
2	BASEBALL/TENNIS SCOREBOARD CONTROLLER GEN I (ALLSPORT)
3	DATETIME/DATAMASTER DISPLAY CONTROL
5	BASEBALL/TENNIS SCOREBOARD CONTROLLER GEN II (ALLSPORT)



0A-1110-0053
 INSERT: LL-2607 (TENNIS) CODE 08

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	DO NOT SCALE DRAWING	
PROJ: TENNIS SCOREBOARDS TITLE: SYSTEM RISER; TENNIS; INDOOR/OUTDOOR SINGLE COURT, RC-100		
DESIGN: SCALE: NONE	DRAWN: TJOHNSON SHEET: 02	DATE: 29AUG05 JOB NO: P1164 FUNC-TYPE-SIZE: R-01-A
		252412

REV 02	DATE: 27 APR 12	UPDATED RC-100 HANDHELD PART NUMBER UPDATED BOARDER AND TITLE BLOCK	BY: JFL
01	22 OCT 09	UPDATED FUNCTION SETTING AND TABLE. ALSO ADDED NOTE ABOUT SCOREBOARD.	EJS



- OA-1192-3165 8X32 34MM AMBER TNMC G4
- OA-1192-3167 8X48 34MM AMBER TNMC G4
- OA-1192-XXX 8X64 34MM AMBER TNMC G4
- OA-1192-3229 8X32 34MM DROP IN/RETROFIT TNMC G4
- OA-1192-3231 8X48 34MM DROP IN/RETROFIT TNMC G4
- OA-1192-XXXX 8X64 34MM DROP IN/RETROFIT TNMC G4

REV	DATE	DESCRIPTION	BY	CHKD
REV 06	10 JUN 16	PER EC-2142, REPLACED A-1633 W/ A-2259	BY: KEO	
REV 05	16 SEP 09	ADDED MORE DETAIL TO POWER SUPPLY PER ECO 96884	BY: MWM	
REV 04	10 APR 07	ADDED TB-1083 GND TERMINAL BLOCK AND GROUND WIRES	BY: DMD	
REV 03	07 NOV 06	UPDATED TITLE TO INCLUDE 34 MM	BY: SAL	
REV 02	14 FEB 06	UPDATED PART NUMBERS AND EXPANDED DRAWING TO COVER 8MM OPTION	BY: MWM	
REV 01	01 DEC 05	CHANGED MOD PWR HARNESS FROM 2 PIN TO 4 PIN HARNESS	BY: SAC	

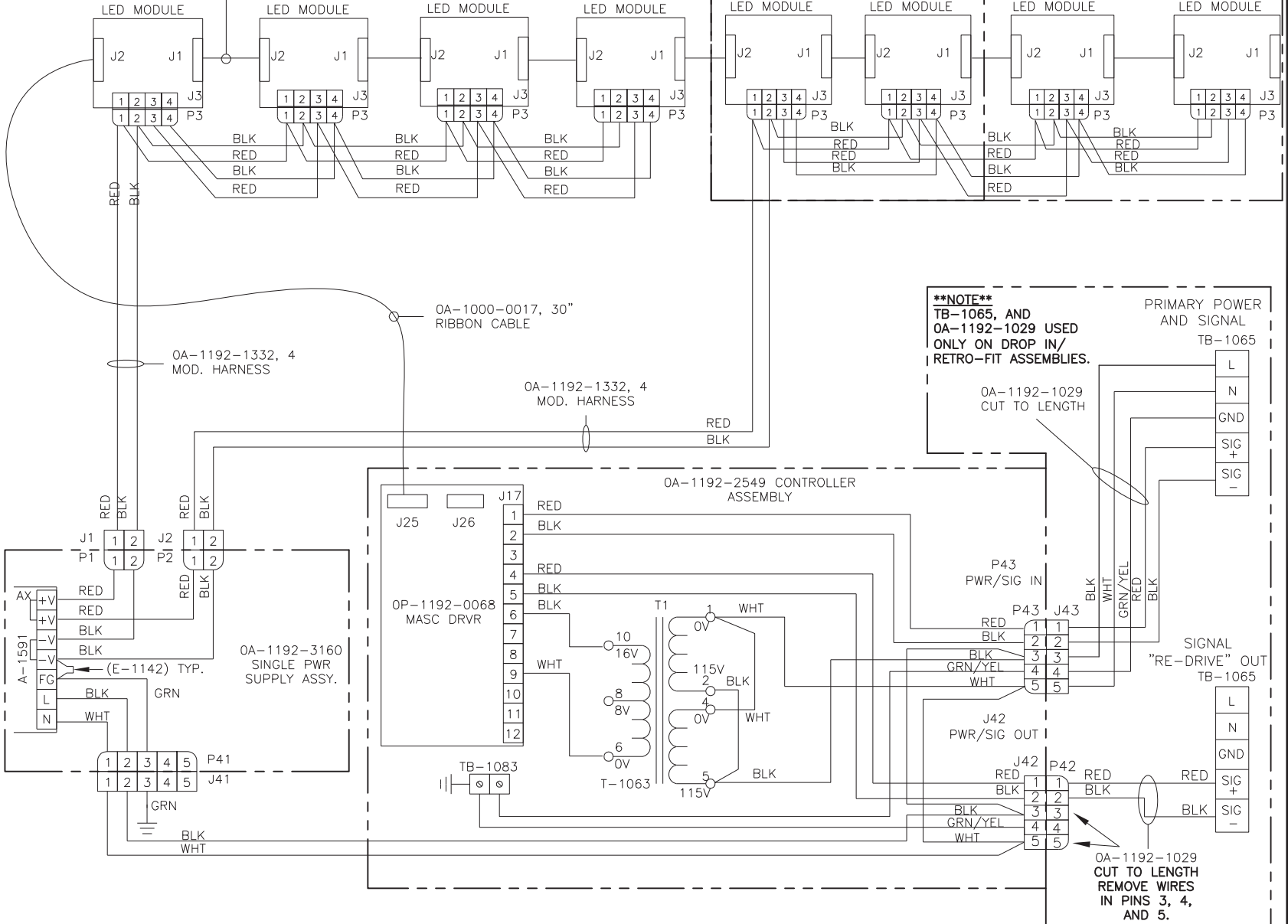
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THIRD ANGLE PROJECTION

PROJECT: OUTDOOR LED DIGIT SCOREBOARDS			
TITLE: SCHEMATIC: 34 MM AMBER TNMC GEN IV			
DATE: 31 AUG 05	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV 06
SCALE: NONE		DO NOT SCALE DRAWING	
DESIGN: MMILLER	JOB NO. P1192	FUNC - TYPE - SIZE R - 01 - A	
DRAWN: DDINING		252645	

- 0A-1192-3164 8X32 34MM RED TNMC G4
- 0A-1192-3166 8X48 34MM RED TNMC G4
- 0A-1192-XXX 8X64 34MM RED TNMC G4
- 0A-1192-3228 8X32 34MM DROP IN/RETROFIT TNMC G4
- 0A-1192-3230 8X48 34MM DROP IN/RETROFIT TNMC G4
- 0A-1192-XXXX 8X64 34MM DROP IN TNMC G4

W-1387, 18" RIBBON CABLE
TYP. FOR ALL MODULE TO
MODULE CONNECTIONS



****NOTE****
TB-1065, AND
OA-1192-1029 USED
ONLY ON DROP IN/
RETRO-FIT ASSEMBLIES.

PRIMARY POWER
AND SIGNAL
TB-1065

SIGNAL
"RE-DRIVE" OUT
TB-1065

OA-1192-1029
CUT TO LENGTH
REMOVE WIRES
IN PINS 3, 4,
AND 5.

04	09 APR 07	ADDED TB-1065 AND GND ON J42, & P43	DMD
03	07 NOV 06	UPDATED TITLE TO INCLUDE 34 MM	SAL
02	08 MAR 06	UPDATED DETAILS TO SHOW 64 LONG	MMM
01	01 DEC 05	CHANGE POWER HARNESS TO MOD FROM 2 PIN TO 4 PIN	SJC
REV.	DATE	DESCRIPTION	BY

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PROJ: OUTDOOR LED SCOREBOARDS
DAKTRONICS, INC. BROOKINGS, SD 57006

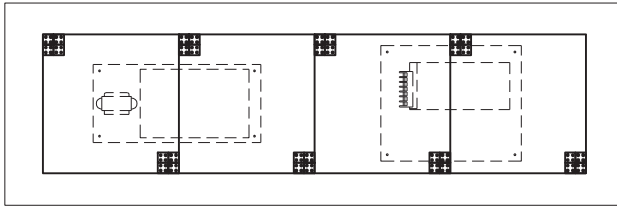
TITLE: SCHEMATIC; 34 MM RED TNMC GEN IV

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

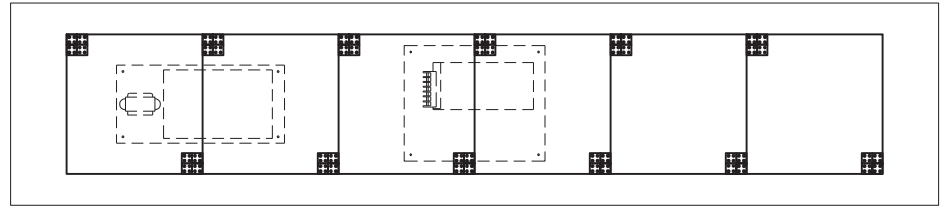
REVISION 04 APPR. BY: SCALE: 1192-R01A-252681

REV.	01	DATE	20 DEC 07	DESCRIPTION	UPDATED DRAWING TO SHOW 864 TNMC MODELS.	BY	MMM	APPR.	
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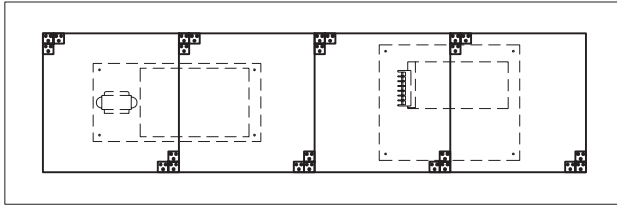
832 AMBER LED TNMC
OA-1192-3165



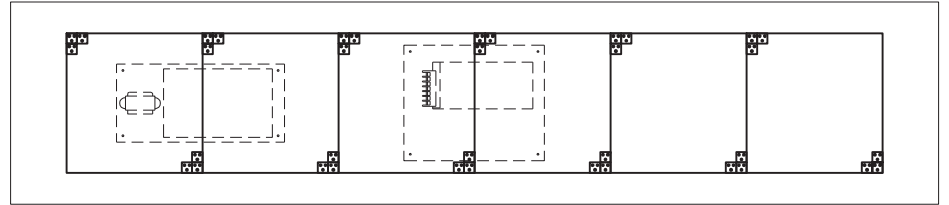
848 AMBER LED TNMC
OA-1192-3166



832 RED LED TNMC
OA-1192-3164

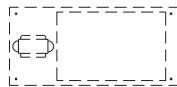
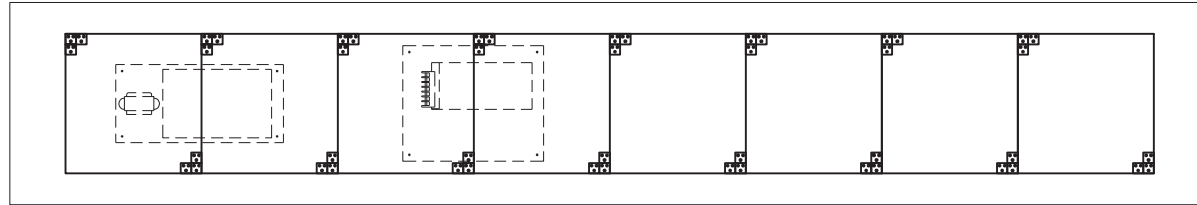


848 RED LED TNMC
OA-1192-3167



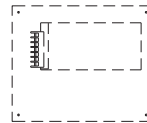
864 AMBER LED TNMC
OA-1192-3295

864 RED LED TNMC
OA-1192-3294



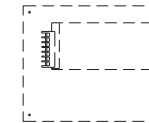
TNMC CONTROLLER
OA-1192-2549

USED IN RED & AMBER LED TNMCs



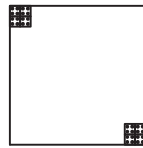
SINGLE POWER SUPPLY ASSEMBLY
OA-1192-3161

USED IN AMBER LED TNMCs

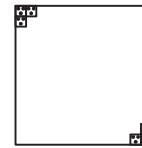


SINGLE POWER SUPPLY ASSEMBLY
OA-1192-3160

USED IN RED LED TNMCs



AMBER LED TNMC MODULE
OA-1208-4001
USED IN AMBER LED TNMCs



RED LED TNMC MODULE
OA-1208-4000
USED IN RED LED TNMCs

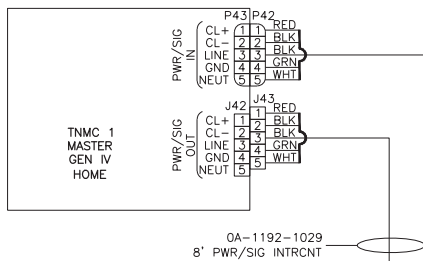
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PROJ.: OUTDOOR LED SCOREBOARDS
DAKTRONICS, INC. BROOKINGS, SD 57006

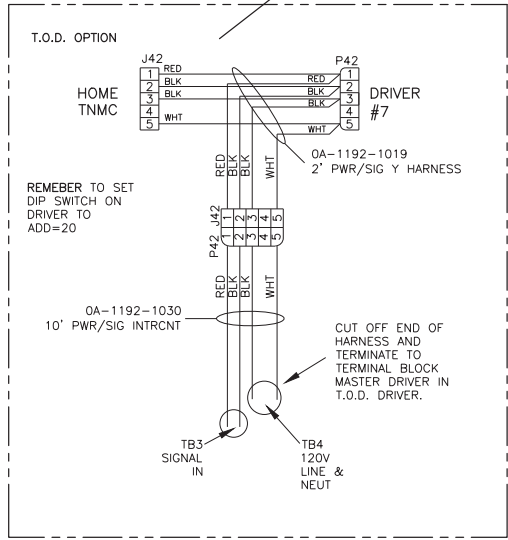
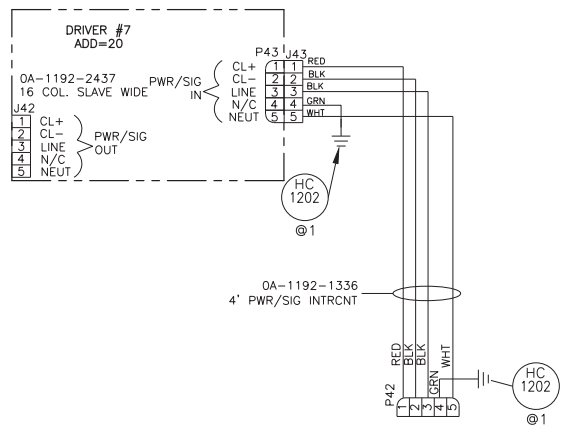
TITLE: COMPONENT LOC.: 832/842/864 RED/AMB LED TNMC G4

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

REVISION 01 APPR. BY: SCALE: 1=15 1192-R08A-257029



OPTIONAL TEAM SCORE AND T.O.D. AFTER JAN 2008



NEW 3500 SERIES TNMC, S2 SETTINGS, TYP

DIP SWITCH ADDRESS SETTING	
SW	SETTING
1	0
2	0
3	0
4	0
5	0

HOME [221] NC NC NC 0 0 0 0 0

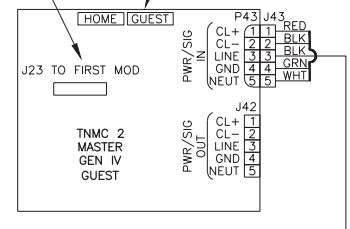
S2, SW1-4 ALL OFF = 221

OLDER GEN IV TNMC - BEFORE NOV 2009, TYP

J19 ADDRESS PLUG	
PIN	ADDRESS
12	1
11	1
8	1
6	1
5	1
4	1
3	1
2	1

HOME [221] 1 1 0 1 1 1 0 1 1

CONNECT FOR HOME OR GUEST TNMC (OLDER GEN IV MODELS ONLY)



T.O.D. / TEAM SCORE DRVR A7 HOME/GUEST TNMC

SWITCH	8	7	6	5	4	3	2	1
20	0	0	0	1	0	1	0	0
230	1	1	1	0	0	1	1	0

(NOTE)
FOR SCOREBOARDS BUILT PRIOR TO JAN 2008

ADDRESS TABLE

	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
TEAM SCORE DRVR A7	0	0	0	1	0	1	0	0
T.O.D. DRVR A8	0	0	0	1	0	1	0	0

TNMC ADDRESS TABLE

	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
HOME/GUEST TNMC	230	1	1	1	0	0	1	1

TEST CODE: 229

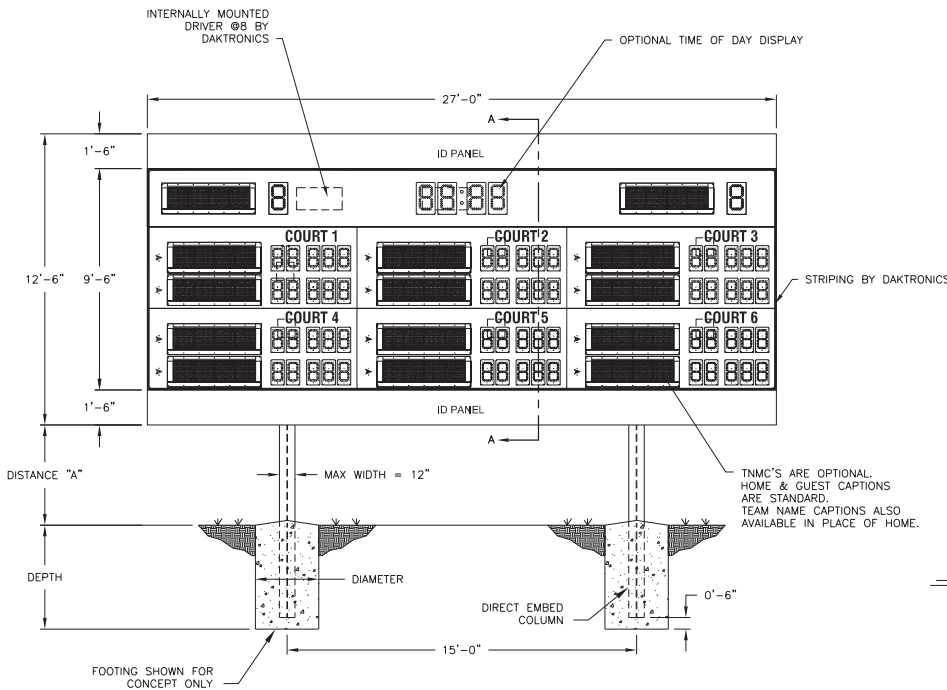
DAKTRONICS, INC.
BROOKINGS, SD 57006
DO NOT SCALE DRAWING

PROJ: TENNIS SCOREBOARDS
TITLE: SCHEMATIC: TN-2650/2651- TOP SECTION- W/ TNMCS
DESIGN: APAGE DRAWN: APAGE DATE: 9 MAY 06
SCALE: NONE

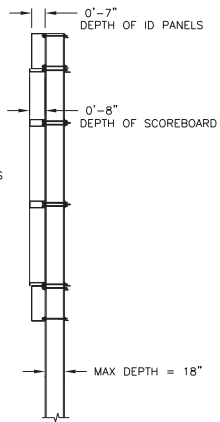
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REV	DATE	UPDATE TNMCS TO SHOW NEW STYLE	BY:
03	03 AUG 10		KZB
02	5 JAN 09	ADDED DIPSWITCH SETTINGS AND NOTES.	BWJ
01	26 OCT 07	ADDED TEST CODE NOTE	BWJ

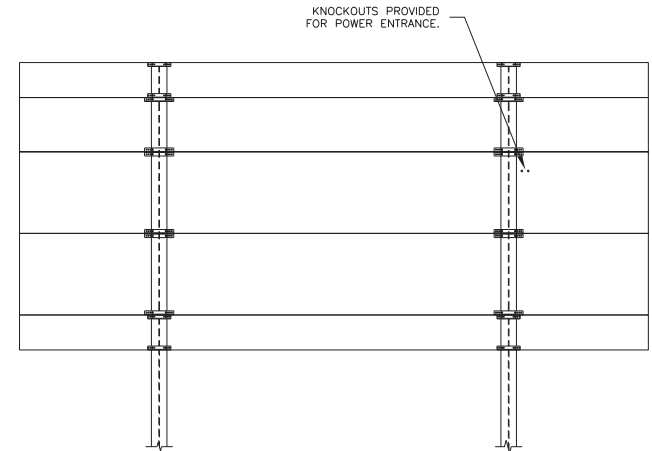
271666



FRONT VIEW



VIEW A-A



REAR VIEW

NOTES:

- REFER TO DAKTRONICS PROPOSAL DRAWING FOR ADDITIONAL DISPLAY SPECIFICATIONS.
- DISPLAY SECTIONS ARE ALL ALUMINUM CONSTRUCTION.
- SCOREBOARD IS FRONT SERVICE ACCESSIBLE FOR DIGITS AND ELECTRONICS.
- LIFT EYES PROVIDED IN TOP OF EACH SECTION BY DAKTRONICS.
- ALL SIGNAL CABLE SUPPLIED BY DAKTRONICS. ALL POWER CABLE SUPPLIED BY CUSTOMER'S INSTALLATION CONTRACTOR. ALL CONDUIT AND LABOR TO PULL POWER AND SIGNAL CABLE SUPPLIED BY CUSTOMER'S INSTALLATION CONTRACTOR.
- INSTALLATION CONTRACTOR IS RESPONSIBLE FOR ANY TEMPORARY BRACING USED IN THE INSTALLATION OF SYSTEM.
- ALL WORK TO BE DONE IN ACCORDANCE WITH OSHA AND ALL LOCAL CODES THAT APPLY.
- FOOTING DESIGN, STRUCTURAL DESIGN, FABRICATION AND CERTIFICATION RESPONSIBILITY OF THE CUSTOMER.
- TNMC'S AND TIME OF DAY ARE OPTIONAL FEATURES.
- OPTIONAL RADIO CONTROLLERS ARE ALSO AVAILABLE.
- DISPLAY WILL BE SHIPPED IN FIVE (5) SECTIONS.
- APPROXIMATE DISPLAY WEIGHTS ARE AS FOLLOWS:

TOP ID PANEL	70 LBS
SCBD SECTION	980 LBS
BTM ID PANEL	70 LBS
	1120 LBS

TN-2651 TENNIS SCOREBOARD* ASCE7					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			90 MPH	100 MPH	120 MPH
10'-0"	9'-6"	BEAM	W12x45	W8x48	W12x58
	27'-0"	FOOTING	3.0' x 9.5'	3.0' x 10.0'	3.0' x 12.0'
12'-0"	9'-6"	BEAM	W8x48	W10x49	W14x61
	27'-0"	FOOTING	3.0' x 10.0'	3.0' x 10.5'	3.0' x 12.0'
14'-0"	9'-6"	BEAM	W10x49	W10x54	W12x65
	27'-0"	FOOTING	3.0' x 10.5'	3.0' x 11.0'	3.0' x 13.0'

FOOTING = DIAMETER X DEPTH

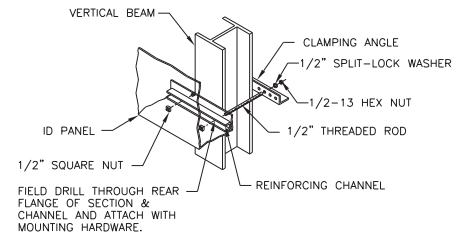
TN-2651 W/ OPTIONAL 3' ID PANEL* ASCE7					
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE		DESIGN WIND VELOCITY		
			90 MPH	100 MPH	120 MPH
10'-0"	12'-6"	BEAM	W12x53	W12x58	W12x72
	27'-0"	FOOTING	3.0' x 11.0'	3.0' x 11.5'	3.0' x 14.5'
12'-0"	12'-6"	BEAM	W10x54	W12x65	W18x76
	27'-0"	FOOTING	3.0' x 11.0'	3.0' x 12.0'	3.0' x 15.0'
14'-0"	12'-6"	BEAM	W12x58	W12x65	W14x82
	27'-0"	FOOTING	3.0' x 11.5'	3.0' x 13.0'	3.0' x 16.0'

FOOTING = DIAMETER X DEPTH

* FOOTING DIMENSIONS & COLUMN SIZES ARE SUGGESTIONS ONLY. PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES. COLUMN AND FOOTING ESTIMATES ARE DESIGNED WITH THE FOLLOWING ASSUMPTIONS: IBC 2003, EXPOSURE C, IMPORTANCE FACTOR = 1, SOIL CLASS 4, TERRAIN IS FLAT.

ACTUAL FOOTING DEPTH AND DIAMETER & COLUMN SIZES INSTALLATION MUST BE DETERMINED BY A QUALIFIED, STATE LICENSED, STRUCTURAL ENGINEER. OWNER (CUSTOMER) IS RESPONSIBLE FOR INSTALLATION & ADEQUACY OF STRUCTURE AND FOOTINGS.

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

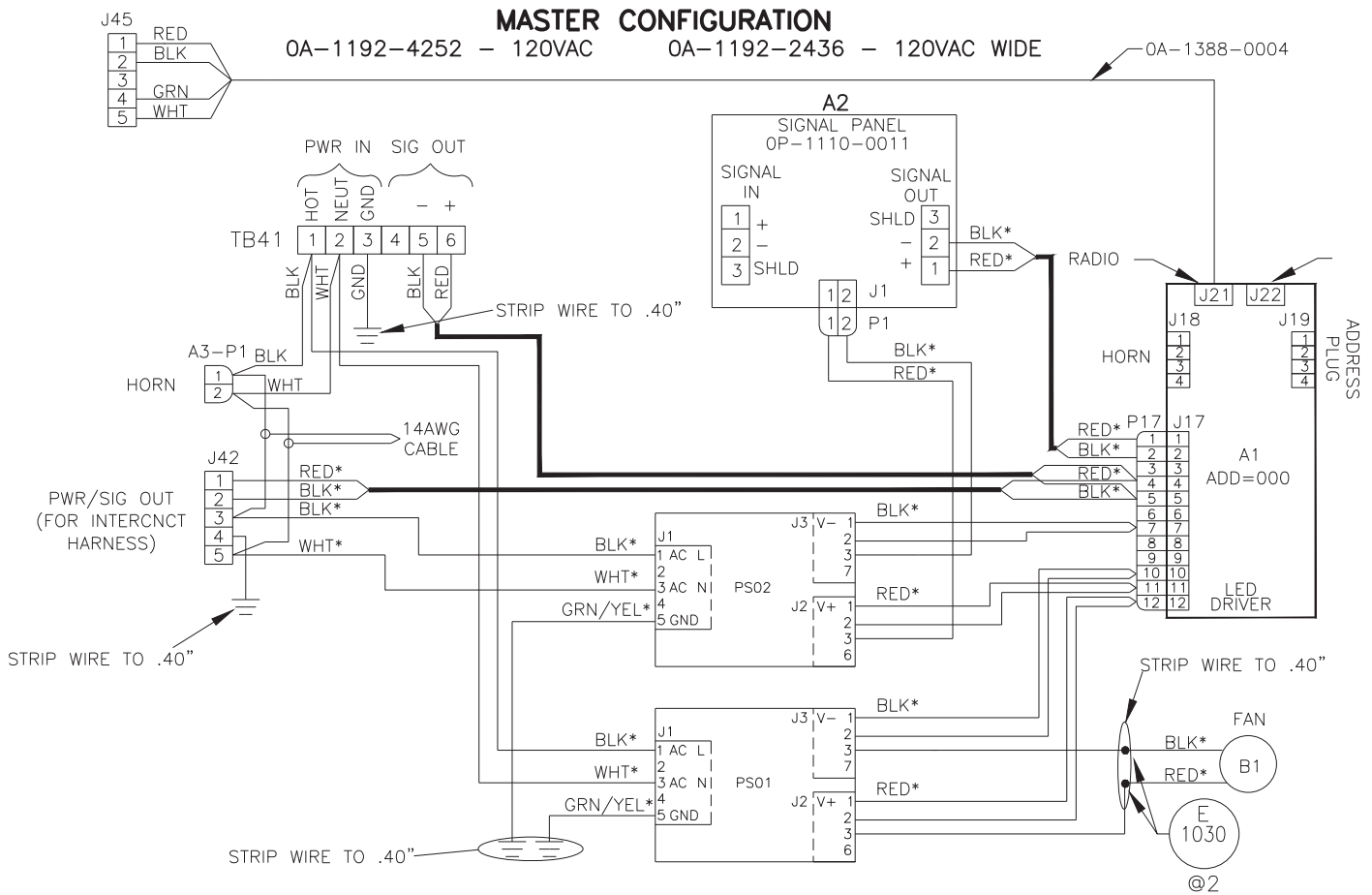


MOUNTING HARDWARE
SUPPLIED BY DAKTRONICS

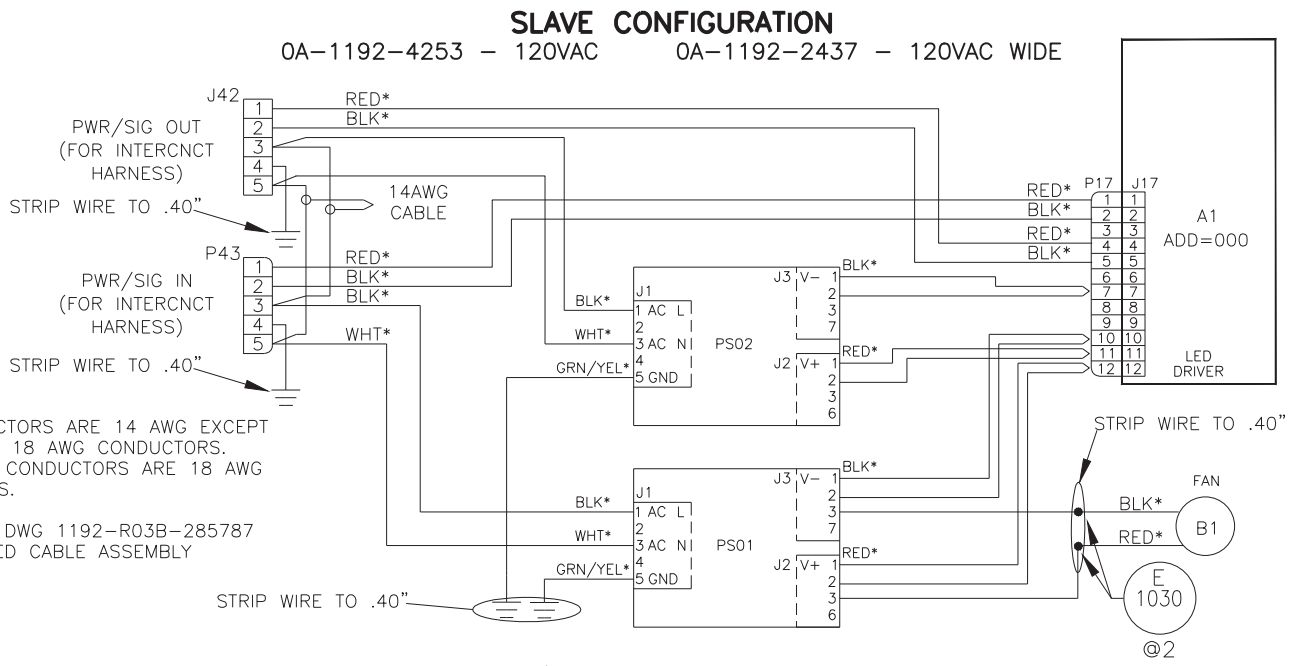
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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:	OUTDOOR TENNIS DISPLAYS		
TITLE:	SHOP DWG, TN-2651-(11/21) W/ID PANELS		
DES. BY:	BCURTIS	DRAWN BY:	BCURTIS
DATE:	14 JUN 06		
REVISION	APPR. BY:	SCALE:	1164-E10B-274857
01	27 SEP 07	INCREASED HEIGHT OF CLOCK SECTION 6"	MJK
REV.	DATE	DESCRIPTION	BY



ALL CONDUCTORS ARE 14 AWG EXCEPT * INDICATES 18AWG CONDUCTORS.
 ALL SIGNAL CONDUCTORS ARE ALSO 18 AWG CONDUCTORS.
 REFERENCE DWG 1192-R03C-285776 FOR DETAILED CABLE ASSEMBLY DIAGRAM.



ALL CONDUCTORS ARE 14 AWG EXCEPT * INDICATES 18 AWG CONDUCTORS.
 ALL SIGNAL CONDUCTORS ARE 18 AWG CONDUCTORS.
 REFERENCE DWG 1192-R03B-285787 FOR DETAILED CABLE ASSEMBLY DIAGRAM.

REV 06	DATE: 17 OCT 10	STRIP LENGTH OF LOOSE-END WIRES ADJUSTED TO .40 INCHES, PER ECO 65629.	BY: SMB
REV 05	DATE: 05 NOV 07	REMOVED 240V FROM THIS DWG AND MADE NEW 324504 DWG FOR 240V SETUP.	BY: AMG
REV 04	DATE: 9 APR 07	ADDED GND WIRES TO P43, & J42	BY: DMD
REV 03	DATE: 11 MAR 07	ADDED TB41 FOR SIGNAL RE-DRIVE	BY: DMD
REV 02	DATE: 11 JAN 07	UPDATED 240V OA PACKET INFORMATION	BY: JDD

DAKTRONICS, INC. BROOKINGS, SD 57006		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.	
DO NOT SCALE DRAWING			
PROJ.: OUTDOOR LED SCOREBOARDS			
TITLE: SCHEMATIC: GEN IV OUTDOOR LED- 16 COL DRIVER			
DESIGN:	DRAWN: DDINING		DATE: 25 SEP 06
SCALE: NONE			
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
	06	1192	R-03-A
			285779

LED DRIVER IV
 OP-1192-0383, 16 COL
 OP-1192-0384, 16 COL, AC

REFER TO DWGS
 A-115078 & A-115079
 FOR ADDRESS SETTINGS

REFER TO DWGS
 A-290261 & A-290689

S1 ADDRESS
 DIP SWITCH PACKAGE

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

SW #	FUNCTION
1	ADD0
2	ADD1
3	ADD2
4	ADD3
5	ADD4
6	ADD5
7	ADD6
8	ADD7

J17 PWR/SIG

PIN	FUNCTION
1	SIG-P
2	SIG-N (232-IN)
3	SIG 2-P(232-GND)
4	CLOUT-P
5	CLOUT-N
6	16VAC-N
7	GND-N
8	EARTH-N
9	16VAC-P
10	GND-N
11	+VDD-P
12	+VBB-P

J22 RC-100 RADIO

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	RX_INPUT-P

J23 PROGRAM

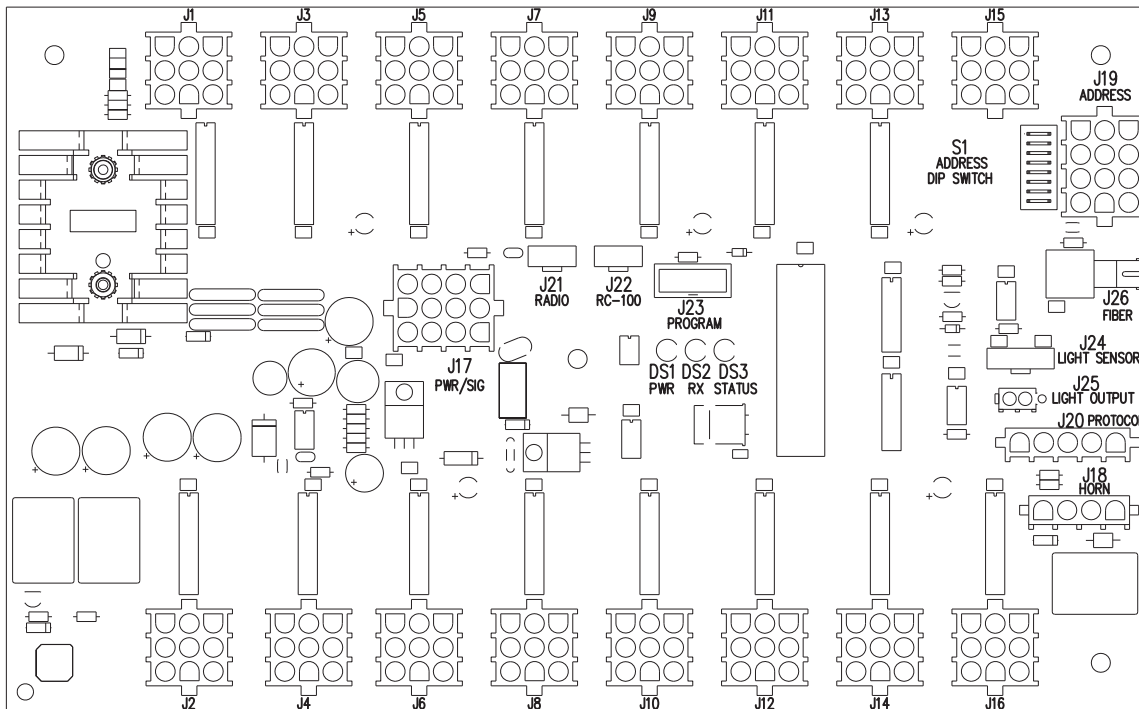
PIN	FUNCTION
1	DATA
2	/RESET
3	N/C
4	GND-N
5	CLK
6	GND-N
7	N/C
8	+5V-P
9	N/C
10	+5V-P

J21 2.4GHz RADIO

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	RX_INPUT-P

J1-16 DIGIT JACKS

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



J26 FIBER RX

PIN	FUNCTION
1	N/C
2	+5V-P
3	GND-N
4	N/C
5	N/C
6	RX_INPUT-P
7	GND-N
8	N/C

J24 LIGHT SENSOR

PIN	FUNCTION
1	LIGHT_IN-P
2	LIGHT_IN-N
3	+5V-P
4	GND-N
5	GND-N
6	N/C

J25 LIGHT OUT- NEXT DRIVER

PIN	FUNCTION
1	LIGHT_OUT-P
2	LIGHT_OUT-N

REFER TO DWG A-115081
 FOR PROTOCOL SETTINGS

J20 PROTOCOL

PIN	FUNCTION
1	GND-N
2	PRO-N
3	PR1-N
4	PR2-N
5	PR3-N (TOD)

J18 HORN

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

NOTES:

- WITH NO ADDRESS SELECTED, DRIVER WILL DEFAULT TO A/S 4000 PROTOCOL.
- GREEN LED DS1 INDICATES THAT THE DRIVER HAS POWER.
- RED LED DS2 WILL FLICKER WHEN THE DRIVER RECEIVES SIGNAL.
- AMBER LED DS3 WILL BLINK WHEN THE DRIVER IS RUNNING.
- IF DS3 IS ON OR OFF CONTINUOUSLY THE MICROCONTROLLER IS NOT WORKING.
- REFER TO DRAWING A-128429 FOR CURRENT LOOP REDRIVE SPECIFICATIONS.
- REFER TO DRAWING A-115081 FOR J20 PROTOCOL SETTINGS.
- REFER TO DRAWINGS A-115078,115079 FOR J19 ADDRESS SETTINGS.

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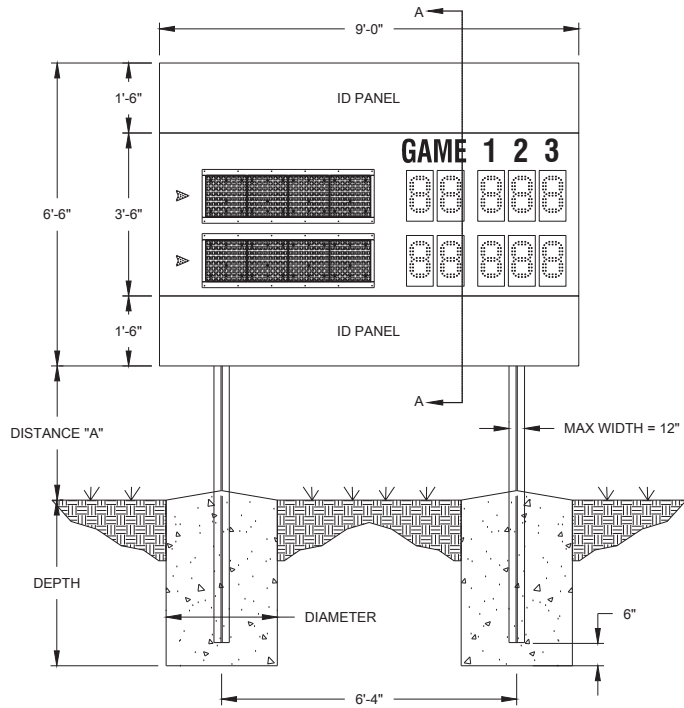
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: _____
 TITLE: SPECIFICATIONS; LED DRIVER IV, 16 COL
 DES. BY: _____ DRAWN BY: DULSCHM DATE: 09 OCT 06

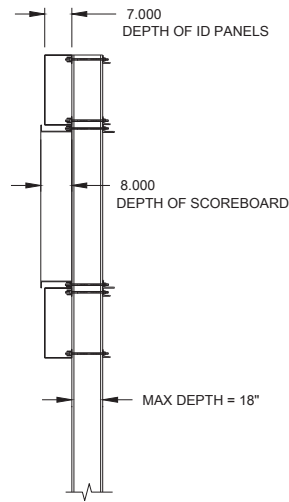
REVISION 02 APPR. BY: _____ SCALE: 1 = 2

1192-R04A-288137

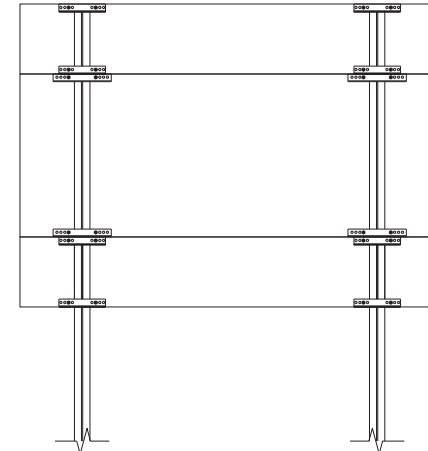
REV.	DATE	DESCRIPTION	BY	APPR.
02	30 NOV 06	ADDED ADDRESS SWITCH S1 TO DRAWING	DJU	
01	26 OCT 06	RESIZED TEXT SO THAT IT WAS EASIER TO READ, AND CLARIFIED FUNCTIONS OF EACH JACK.	AFL	



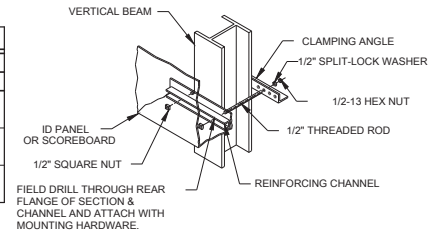
FRONT VIEW



SECTION: A-A



REAR VIEW



MOUNTING HARDWARE
SUPPLIED BY DAKTRONICS

NOTE: INSTALL THREADED ROD AS CLOSE TO COLUMN AS POSSIBLE.

NOTES:

- REFER TO DAKTRONICS PROPOSAL DRAWING FOR ADDITIONAL DISPLAY SPECIFICATIONS.
- DISPLAY SECTIONS ARE ALL ALUMINUM CONSTRUCTION.
- SCOREBOARD IS FRONT SERVICE ACCESSIBLE FOR DIGITS AND ELECTRONICS.
- LIFT EYES PROVIDED IN TOP OF EACH SECTION BY DAKTRONICS.
- ALL SIGNAL CABLE SUPPLIED BY DAKTRONICS. ALL POWER CABLE SUPPLIED BY CUSTOMER'S INSTALLATION CONTRACTOR. ALL CONDUIT AND LABOR TO PULL POWER AND SIGNAL CABLE SUPPLIED BY CUSTOMER'S INSTALLATION CONTRACTOR.
- INSTALLATION CONTRACTOR IS RESPONSIBLE FOR ANY TEMPORARY BRACING USED IN THE INSTALLATION OF SYSTEM.
- ALL WORK TO BE DONE IN ACCORDANCE WITH OSHA AND ALL LOCAL CODES THAT APPLY.
- FOOTING DESIGN, STRUCTURAL DESIGN, FABRICATION AND CERTIFICATION RESPONSIBILITY OF THE CUSTOMER.
- TNMC'S AND TIME OF DAY ARE OPTIONAL FEATURES.
- OPTIONAL RADIO CONTROLLERS ARE ALSO AVAILABLE.
- DISPLAY WILL BE SHIPPED IN FIVE (5) SECTIONS.
- APPROXIMATE DISPLAY WEIGHTS ARE AS FOLLOWS:

TOP ID PANEL	23 LBS
SCBD SECTION	130 LBS
BTM ID PANEL	23 LBS
176 LBS	

TN-2604 TENNIS SCOREBOARD* ASCE7						
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE	DESIGN WIND VELOCITY				
		90 MPH	100 MPH	120 MPH	150 MPH	
10'-0"	6'-6" x 9'-0"	BEAM W8x13	W8x15	W10x17	W8x18	
	FOOTING	3.0' x 4.5'	3.0' x 5.0'	3.0' x 6.0'	3.0' x 7.0'	
12'-0"	6'-6" x 9'-0"	BEAM W8x15	W10x17	W8x18	W8x21	
	FOOTING	3.0' x 5.0'	3.0' x 5.5'	3.0' x 6.0'	3.0' x 7.5'	
14'-0"	6'-6" x 9'-0"	BEAM W8x18	W8x18	W8x21	W8x24	
	FOOTING	3.0' x 5.5'	3.0' x 6.0'	3.0' x 6.5'	3.0' x 8.0'	

FOOTING = DIAMETER X DEPTH

TN-2604 W/ OPTIONAL 3' ID PANEL* ASCE7						
DISTANCE "A" (SEE FIGURE)	TOTAL DISPLAY SIZE	DESIGN WIND VELOCITY				
		90 MPH	100 MPH	120 MPH	150 MPH	
10'-0"	9'-6" x 9'-0"	BEAM W8x18	W8x21	W8x24	W12x26	
	FOOTING	3.0' x 6.0'	3.0' x 6.5'	3.0' x 7.5'	3.0' x 9.0'	
12'-0"	9'-6" x 9'-0"	BEAM W8x21	W10x22	W8x24	W8x31	
	FOOTING	3.0' x 6.5'	3.0' x 7.0'	3.0' x 8.0'	3.0' x 9.5'	
14'-0"	9'-6" x 9'-0"	BEAM W8x24	W8x24	W8x31	W10x39	
	FOOTING	3.0' x 6.5'	3.0' x 7.5'	3.0' x 8.5'	3.0' x 10.0'	

FOOTING = DIAMETER X DEPTH

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COLUMN AND FOOTING ESTIMATES ARE DESIGNED WITH THE FOLLOWING ASSUMPTIONS:
IBC 2006, EXPOSURE C, IMPORTANCE FACTOR = 1, SOIL CLASS 4, TERRAIN IS FLAT.

ACTUAL FOOTING DEPTH AND DIAMETER & COLUMN SIZES MUST BE DETERMINED BY A QUALIFIED, STATE LICENSED, STRUCTURAL ENGINEER.

OWNER (CUSTOMER) IS RESPONSIBLE FOR PROVIDING, INSTALLING & ENGINEERING OF STRUCTURE AND FOOTINGS.

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

REV 02	DATE 12 DEC 12	UPDATED TOTAL DISPLAY SIZE	BY: KDD
REV 01	DATE 04 JUN 09	CHANGED TN-2651 TO TN-2604	BY: CJH

		BROOKINGS, SD 57006 DO NOT SCALE DRAWING	
PROJECT: OUTDOOR TENNIS DISPLAYS TITLE: SHOP DWG: TN-2604 - (11/21) W/ID PANELS DESIGN: BCURTIS DRAWN: BCURTIS DATE: 23 FEB 07			
SCALE: 1"=3/8"		SHEET 02 REV 02 JOB NO. P1164 FLUNC-TYPE-SIZE E-10-B	
			297728

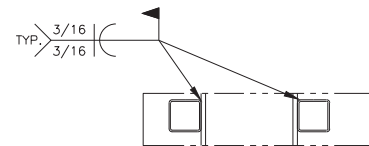
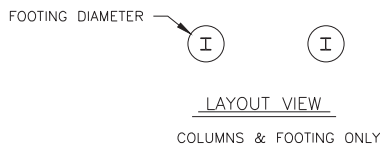
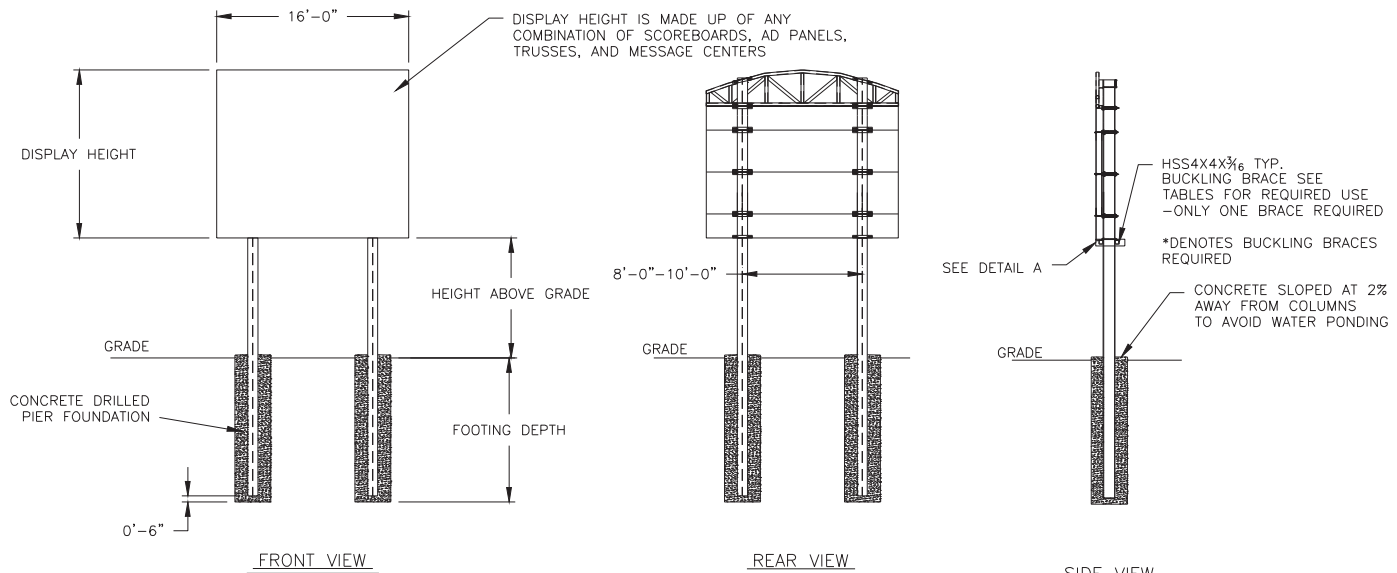


TABLE A - MOUNTING

EXPOSURE B

HEIGHT ABOVE GRADE = 10'				HEIGHT ABOVE GRADE = 15'					
DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY		DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY			
		90 MPH	110 MPH			130 MPH	90 MPH	110 MPH	130 MPH
6	COLUMN FOOTING	W8X18 3.0'X6.0'	W8X21 3.0'X7.0'	W8X24 3.0'X8.0'	6	COLUMN FOOTING	W8X28 3.0'X7.0'	W8X28 3.0'X8.0'	W10X33 3.0'X9.0'
8	COLUMN FOOTING	W10X22 3.0'X7.0'	W12X26 3.0'X8.0'	W8X31 3.0'X9.0'	8	COLUMN FOOTING	W8X31 3.0'X7.5'	W8X35 3.0'X9.0'	W14X43 3.0'X10.0'
10	COLUMN FOOTING	W8X28 3.0'X7.5'	W8X31 3.0'X9.0'	W10X39 3.0'X10.0'	10	COLUMN FOOTING	W8X35 3.0'X8.5'	W14X43 3.0'X10.0'	W12X53 3.0'X11.0'
12	COLUMN FOOTING	W8X31 3.0'X8.5'	W10X39 3.0'X9.5'	W12X45 3.0'X11.0'	12	COLUMN FOOTING	W10X49 3.0'X9.0'	W12X58 3.0'X10.5'	W12X58 3.0'X12.0'
14	COLUMN FOOTING	W10X39 3.0'X9.0'	W10X45 3.0'X10.5'	W12X53 3.0'X12.0'	14	COLUMN FOOTING	W14X34* 3.0'X10.0'	W14X43* 3.0'X11.5'	W21X48* 3.0'X13.5'
16	COLUMN FOOTING	W14X43 3.0'X9.5'	W12X53 3.0'X11.0'	W14X61 3.0'X13.0'	16	COLUMN FOOTING	W12X40* 3.0'X10.5'	W21X48* 3.0'X12.0'	W21X55* 3.0'X15.0'

FOOTING DIMENSIONS = DIAMETER X DEPTH
*DENOTES BUCKLING BRACE REQUIRED

DETAIL A
(8 X SCALE)

NOTES:

- FOOTING AND COLUMN SIZES ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES. THE DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE INSTALLATION BEFORE THEY CAN BE USED FOR FABRICATION OR ERECTION.
- INTERNATIONAL BUILDING CODE 2006 USED IN DESIGN OF COLUMNS AND FOOTINGS WITH IMPORTANCE FACTOR=1, Kzt=1.0, Kd=0.85, G=0.85. SEISMIC DESIGN WAS NOT CONSIDERED.
- FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL CLASS 4 (ALLOWABLE LATERAL BEARING PRESSURE OF 150 psf).
- STRUCTURAL STEEL IS GRADE A992 (50 ksi) STEEL. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 psi.
- THE AVERAGE DISPLAY WEIGHT FOR A LAYOUT CAN NOT EXCEED 8 PSF.
- DAKTRONICS INC. IS NOT RESPONSIBLE FOR STRUCTURES DESIGNED AND INSTALLED BY OTHERS.
- REFER TO DAKTRONICS DRAWING 1407-E07B-299257 FOR DETAILS OF DISPLAY MOUNTING TO COLUMNS.
- LOCAL BUILDING OFFICIALS SHOULD BE CONTACTED TO DETERMINE THE WIND SPEED AND EXPOSURE CATEGORY FOR THE PROPOSED SIGN LOCATION. THE EXPOSURE CATEGORIES B AND C ARE DEFINED AS:

EXPOSURE B - URBAN AND SUBURBAN AREAS, WOODED AREAS, OR OTHER TERRAIN WITH NUMEROUS CLOSELY SPACED OBSTRUCTIONS HAVING THE SIZE OF SINGLE-FAMILY DWELLINGS OR LARGER. THESE CONDITIONS MUST PREVAIL FOR A DISTANCE FROM THE SIGN OF AT LEAST 2,600 FT OR 20 TIMES THE SIGN HEIGHT, WHICHEVER IS GREATER

EXPOSURE C - OPEN TERRAIN WITH SCATTERED OBSTRUCTIONS HAVING HEIGHTS GENERALLY LESS THAN 30 FT. THIS CATEGORY INCLUDES FLAT OPEN COUNTRY, GRASSLANDS, AND ALL WATER SURFACES IN HURRICANE PRONE REGIONS.
- FOR SPECIFIC PRODUCT DETAILS ON WEIGHT, MOUNTING, ETC. REFER TO THE INDIVIDUAL PRODUCT SPECIFICATION SHEETS.

EXPOSURE C

HEIGHT ABOVE GRADE = 10'				HEIGHT ABOVE GRADE = 15'			
DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY		DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY	
		90 MPH	110 MPH			90 MPH	110 MPH
6	COLUMN FOOTING	W8X21 3.0'X7.0'	W8X24 3.0'X8.0'	6	COLUMN FOOTING	W8X28 3.0'X7.5'	W10X33 3.0'X9.0'
8	COLUMN FOOTING	W12X26 3.0'X8.0'	W10X33 3.0'X9.0'	8	COLUMN FOOTING	W10X33 3.0'X8.5'	W14X43 3.0'X10.0'
10	COLUMN FOOTING	W8X31 3.0'X8.5'	W10X39 3.0'X10.0'	10	COLUMN FOOTING	W14X43 3.0'X9.5'	W12X53 3.0'X11.0'
12	COLUMN FOOTING	W10X39 3.0'X9.5'	W14X48 3.0'X11.0'	12	COLUMN FOOTING	W10X49 3.0'X10.5'	W12X58 3.0'X12.0'
14	COLUMN FOOTING	W10X45 3.0'X10.0'	W12X53 3.0'X12.0'	14	COLUMN FOOTING	W14X53* 3.0'X11.0'	W18X55* 3.0'X13.5'
16	COLUMN FOOTING	W10X49 3.0'X11.0'	W14X61 3.0'X13.0'	16	COLUMN FOOTING	W14X48* 3.0'X12.0'	W21X55* 3.0'X15.0'

FOOTING DIMENSIONS = DIAMETER X DEPTH
*DENOTES BUCKLING BRACE REQUIRED

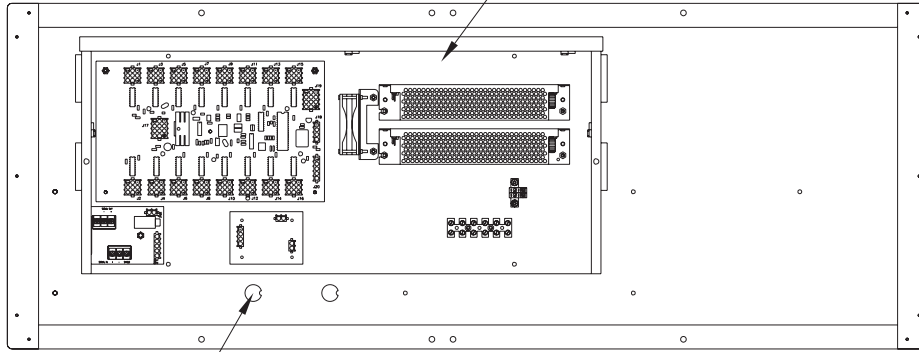
NOTE:
-REFER TO NOTE 8 FOR EXPOSURE CATEGORY DEFINITIONS.

		BROOKINGS, SD 57006	
		DO NOT SCALE DRAWING	
PROJ.: OUTDOOR SCOREBOARD INSTALLATION			
TITLE: 16' WIDTH SCOREBOARD INSTALLATION SPECS.			
DESIGN: SVANHOV		DRAWN: SVANHOV	
SCALE: 1/16" = 1'		DATE: 14 MAR 07	
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
04	P1538	E-10-A	298975

REV 04	DATE: 26 OCT 11	ADDED "ONLY ONE BRACE REQUIRED" NOTE	BY: KDD
REV 03	DATE: 10 DEC 08	REMOVED PRODUCT TABLE AND CHANGED DRAWING TO A SIZE	BY: JKU
REV 02	DATE: 17 NOV 08	UPDATED CHARTS	BY: JDB
REV 01	DATE: 27 SEPT 07	ADDED TN-2652 TO TABLE B	BY: AJW

TN-2601-11/-21

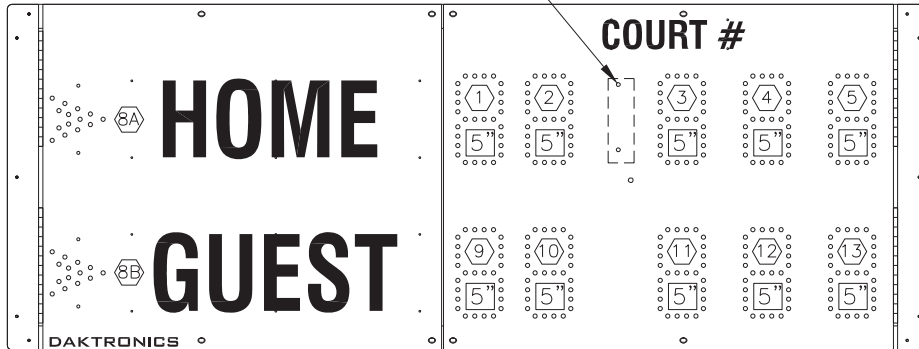
ENCLOSED 16 COLUMN LED DRIVER AND POWER/SIGNAL ENCLOSURE.



KNOCKOUTS FOR CONDUIT

FRONT VIEW
SHOWN WITH ACCESS
PANELS OPEN.

OPTIONAL RADIO CONTROL



FRONT VIEW

① = DRIVER COLUMN NUMBER
WIRED TO THAT DIGIT.

5" = DIGIT SIZE

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR TENNIS SCOREBOARDS			
TITLE: COMPONENT LOCATION; TN-2601-11/-21, G4			
DES. BY: BCURTIS		DRAWN BY: BCURTIS	DATE: 27 MAR 07
REVISION	APPR. BY:	1164-E08A-300388	
00	SCALE: 1=10		

REV.	DATE	DESCRIPTION	BY	APPR.

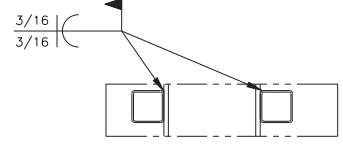
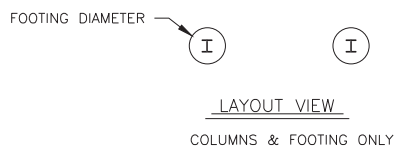
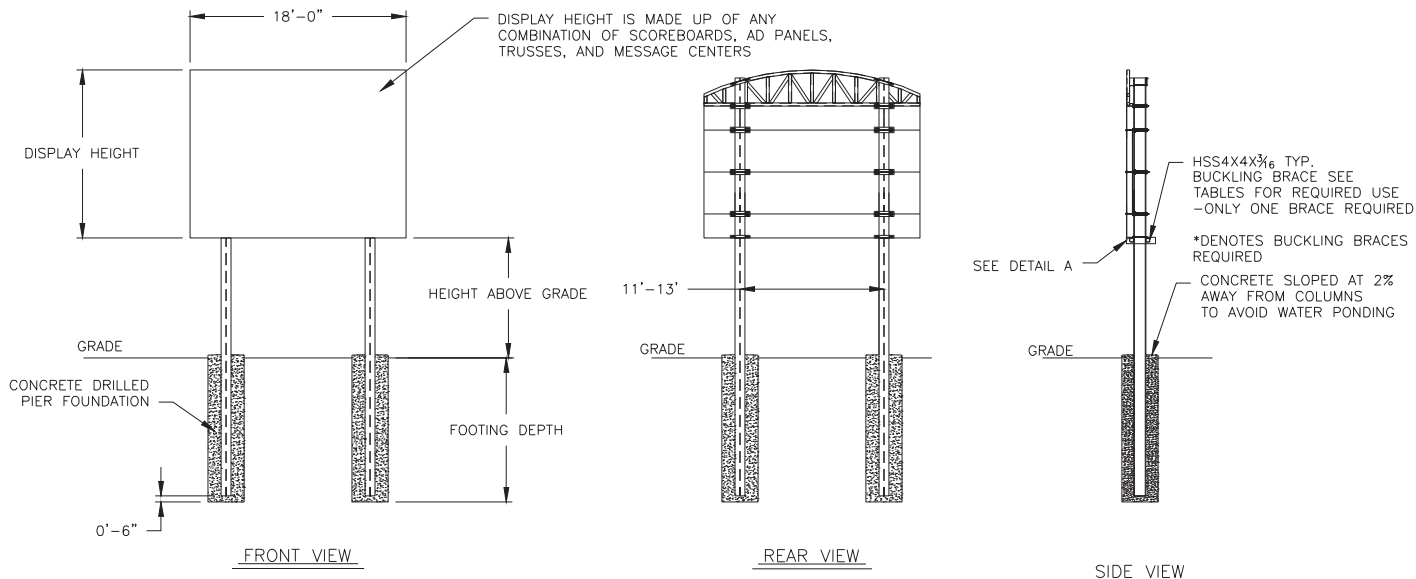


TABLE A - MOUNTING

EXPOSURE B				EXPOSURE C			
HEIGHT ABOVE GRADE = 10'				HEIGHT ABOVE GRADE = 15'			
DISPLAY HEIGHT (FT)	COLUMN FOOTING	DESIGN WIND VELOCITY		DISPLAY HEIGHT (FT)	COLUMN FOOTING	DESIGN WIND VELOCITY	
		90 MPH	110 MPH			90 MPH	110 MPH
8	W8X24 3.0'X7.0'	W8X28 3.0'X8.5'	W10X33 3.0'X9.5'	8	W8X31 3.0'X8.0'	W10X39 3.0'X9.5'	W10X45 3.0'X10.5'
10	W8X28 3.0'X8.0'	W10X33 3.0'X9.0'	W12X40 3.0'X10.5'	10	W10X39 3.0'X9.0'	W10X48 3.0'X10.0'	W12X53 3.0'X11.5'
12	W10X33 3.0'X8.5'	W12X40 3.0'X10.0'	W14X48 3.0'X11.5'	12	W10X45 3.0'X9.5'	W12X53 3.0'X11.0'	W14X61 3.0'X12.5'
14	W10X39 3.0'X9.5'	W14X48 3.0'X11.0'	W12X58 3.0'X12.5'	14	W16X36* 3.0'X10.5'	W14X48* 3.0'X12.0'	W21X55* 3.0'X14.5'
16	W10X45 3.0'X10.0'	W12X53 3.0'X11.5'	W12X65 3.0'X14.0'	16	W16X40 3.0'X11.0'	W21X48* 3.0'X13.0'	W21X62* 3.0'X16.0'
18	W10X39* 3.0'X10.5'	W12X53* 3.0'X12.5'	W14X61* 3.0'X15.5'	18	W12X53* 3.0'X11.5'	W14X61* 3.0'X14.5'	W18X76 3.0'X17.5'

FOOTING DIMENSIONS = DIAMETER X DEPTH
* DENOTES BUCKLING BRACE REQUIRED

NOTES:
1. FOOTING AND COLUMN SIZES ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES. THE DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE INSTALLATION BEFORE THEY CAN BE USED FOR FABRICATION OR ERECTION.
2. INTERNATIONAL BUILDING CODE 2006 USED IN DESIGN OF COLUMNS AND FOOTINGS WITH IMPORTANCE FACTOR=1, Kzt=1.0, Kd=0.85, G=0.85. SEISMIC DESIGN WAS NOT CONSIDERED.

3. FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL CLASS 4 (ALLOWABLE LATERAL BEARING PRESSURE OF 150 psf).

4. STRUCTURAL STEEL IS GRADE A992 (50 ksi) STEEL. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 psi.

5. THE AVERAGE DISPLAY WEIGHT FOR A LAYOUT CAN NOT EXCEED 8 PSF.

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

7. REFER TO DAKTRONICS DRAWING 1407-E07B-299257 FOR DETAILS OF DISPLAY MOUNTING TO COLUMNS.

8. LOCAL BUILDING OFFICIALS SHOULD BE CONTACTED TO DETERMINE THE WIND SPEED AND EXPOSURE CATEGORY FOR THE PROPOSED SIGN LOCATION. THE EXPOSURE CATEGORIES B AND C ARE DEFINED AS:

EXPOSURE B - URBAN AND SUBURBAN AREAS, WOODED AREAS, OR OTHER TERRAIN WITH NUMEROUS CLOSELY SPACED OBSTRUCTIONS HAVING THE SIZE OF SINGLE-FAMILY DWELLINGS OR LARGER. THESE CONDITIONS MUST PREVAIL FOR A DISTANCE FROM THE SIGN OF AT LEAST 2,600 FT OR 20 TIMES THE SIGN HEIGHT, WHICHEVER IS GREATER

EXPOSURE C - OPEN TERRAIN WITH SCATTERED OBSTRUCTIONS HAVING HEIGHTS GENERALLY LESS THAN 30 FT. THIS CATEGORY INCLUDES FLAT OPEN COUNTRY, GRASSLANDS, AND ALL WATER SURFACES IN HURRICANE PRONE REGIONS.

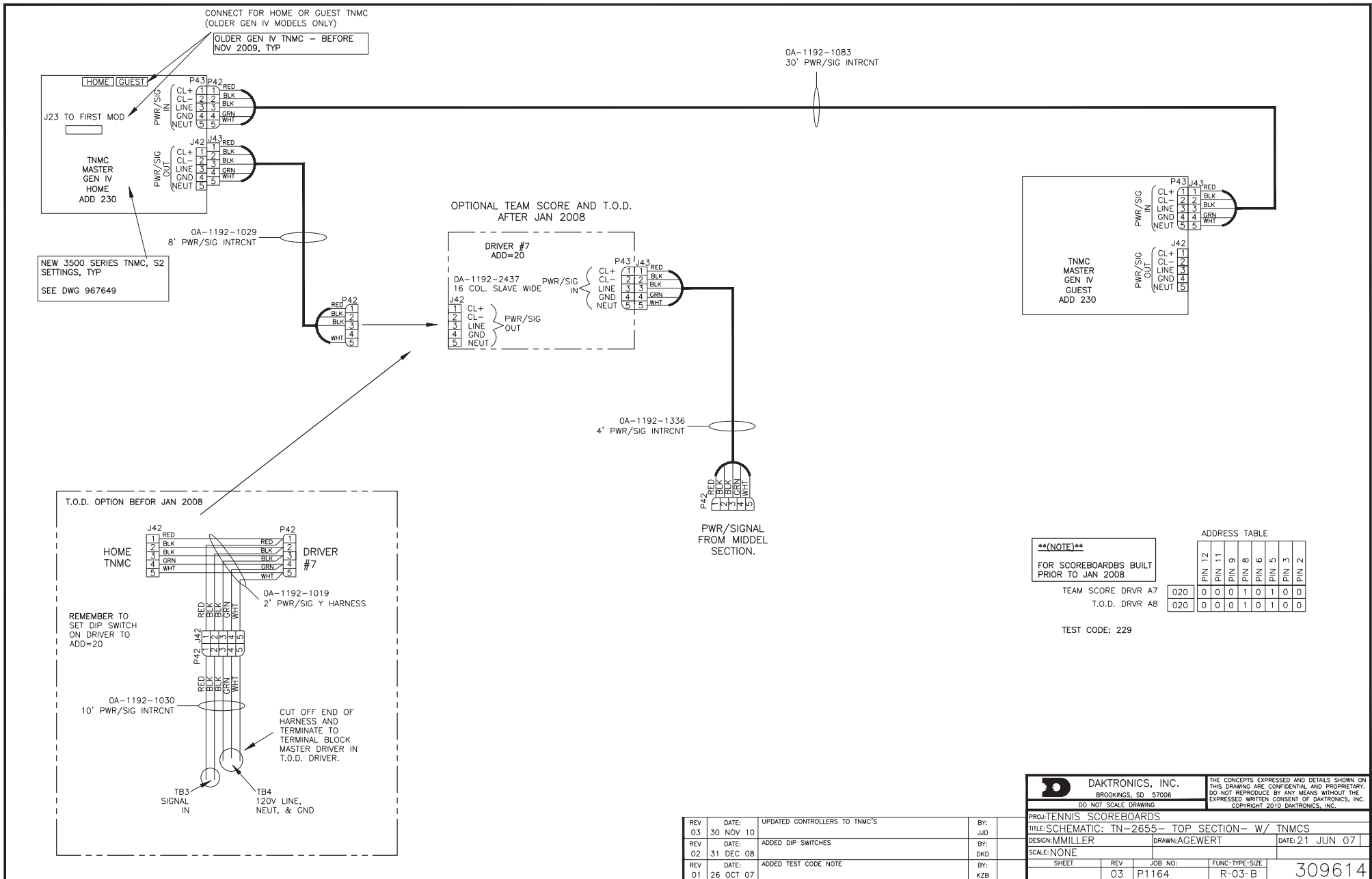
9. FOR SPECIFIC PRODUCT DETAILS ON WEIGHT, MOUNTING, ETC. REFER TO THE INDIVIDUAL PRODUCT SPECIFICATION SHEETS.

EXPOSURE B				EXPOSURE C			
HEIGHT ABOVE GRADE = 10'				HEIGHT ABOVE GRADE = 15'			
DISPLAY HEIGHT (FT)	COLUMN FOOTING	DESIGN WIND VELOCITY		DISPLAY HEIGHT (FT)	COLUMN FOOTING	DESIGN WIND VELOCITY	
		90 MPH	110 MPH			90 MPH	110 MPH
8	W8X28 3.0'X8.0'	W10X33 3.0'X9.5'	W12X40 3.0'X10.5'	8	W10X39 3.0'X9.0'	W14X45 3.0'X10.5'	W12X53 3.0'X11.5'
10	W10X33 3.0'X9.0'	W12X40 3.0'X10.5'	W14X48 3.0'X11.5'	10	W10X45 3.0'X10.0'	W12X53 3.0'X11.5'	W14X61 3.0'X12.5'
12	W10X39 3.0'X9.5'	W14X48 3.0'X11.0'	W12X58 3.0'X12.5'	12	W12X53 3.0'X11.0'	W14X61 3.0'X12.5'	W16X45* 3.0'X13.5'
14	W14X48 3.0'X10.5'	W12X58 3.0'X12.5'	W12X65 3.0'X14.0'	14	W16X45* 3.0'X11.5'	W21X55* 3.0'X14.5'	W21X62* 3.0'X16.0'
16	W12X53 3.0'X11.5'	W12X65 3.0'X14.0'	W14X61* 3.0'X15.5'	16	W21X48* 3.0'X13.0'	W21X62* 3.0'X16.0'	W18X76 3.0'X17.5'
18	W12X53* 3.0'X12.0'	W14X61* 3.0'X15.5'		18	W14X61* 3.0'X13.5'	W18X76* 3.0'X17.5'	

FOOTING DIMENSIONS = DIAMETER X DEPTH
* DENOTES BUCKLING BRACE REQUIRED

NOTE:
-REFER TO NOTE 8 FOR EXPOSURE CATEGORY DEFINITIONS.

REV 05	DATE: 26 OCT 11	ADDED "ONLY ONE BRACE REQUIRED" NOTE	BY: KDD	<p>DAKTRONICS, INC. BROOKINGS, SD 57006</p>	<p>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2011 DAKTRONICS, INC.</p>
REV 04	DATE: 10 DEC 08	REMOVED PRODUCT TABLE AND CHANGED DRAWING TO A SIZE	BY: JKU		
REV 03	DATE: 20 NOV 08	CHARTS UPDATED	BY: JRK	<p>DO NOT SCALE DRAWING</p>	
REV 02	DATE: 18 NOV 08	ASYMETRICAL TRUSS REMOVED	BY: JRK	<p>PROJ: OUTDOOR SCOREBOARD INSTALLATION</p>	
REV 01	DATE: 13 NOV 08	BRACED COLUMN SIZED ADDED MODEL NUMBERS CHANGED CROWNED TRUSS REMOVED	BY: JRK	<p>TITLE: 18' WIDTH SCOREBOARD INSTALLATION SPECS.</p>	
			SCALE: 1/16" = 1'	DESIGN: SVANHOV	DRAWN: SVANHOV
			SHEET	REV	JOB NO:
			05	P1538	FUNC-TYPE-SIZE
					E-10-A
					302416
					DATE: 14 MAR 07



****NOTE****
FOR SCOREBOARDS BUILT PRIOR TO JAN 2008

TEAM SCORE DRVR A7
T.O.D. DRVR A8

ADDRESS TABLE

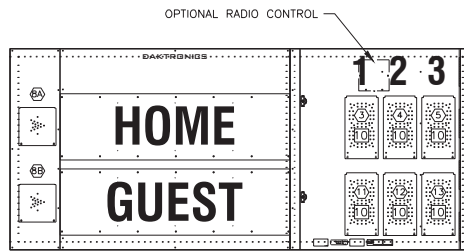
	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
TEAM SCORE DRVR A7	020	0	0	0	1	0	1	0
T.O.D. DRVR A8	020	0	0	0	1	0	1	0

TEST CODE: 229

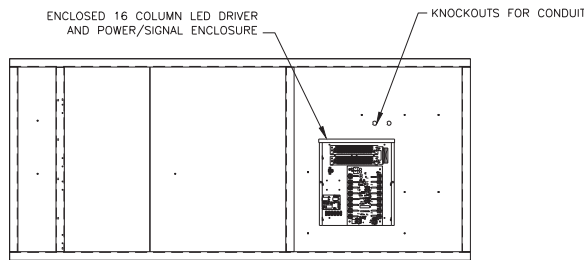
DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.	
PROJ: TENNIS SCOREBOARDS TITLE: SCHEMATIC: TN-2655- TOP SECTION- W/ TNMCS DESIGN: MILLER DRAWN: AGEWERT DATE: 21 JUN 07			
SCALE: NONE			
SHEET	REV	JOB NO.	FLUNC-TYPE-SIZE
	03	P1164	R-03-B
			309614

REV 03	DATE: 30 NOV 10	UPDATED CONTROLLERS TO TNMC'S	BY: JUD
REV 02	DATE: 31 DEC 08	ADDED DIP SWITCHES	BY: DWG
REV 01	DATE: 26 OCT 07	ADDED TEST CODE NOTE	BY: KZB

TN-2603-11/-21

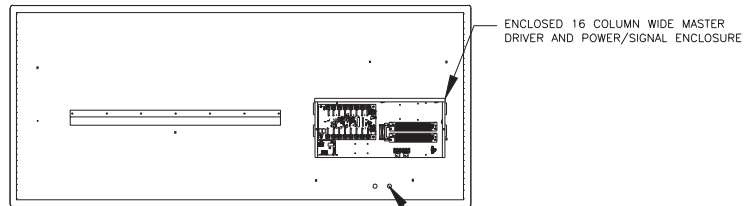


FRONT VIEW



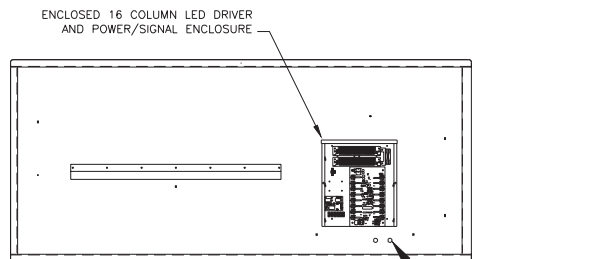
FRONT VIEW

SHOWN WITH FRONTSHEETS
OFF TO SHOW DRIVER.
PRIOR TO MAY 2011



FRONT VIEW

SHOWN WITH FRONTSHEETS
OFF TO SHOW DRIVER.
MAY 2011 - AUG 2011



FRONT VIEW

SHOWN WITH FRONTSHEETS
OFF TO SHOW DRIVER.
AFTER AUG 2011

① = DRIVER COLUMN NUMBER
WIRED TO THAT DIGIT.

☐ = DIGIT SIZE
ALL DIGITS ARE 10" HIGH



DAKTRONICS, INC.

BROOKINGS, SD 57006

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COPYRIGHT 2011 DAKTRONICS, INC.

PROJ: OUTDOOR TENNIS SCOREBOARDS

TITLE: COMPONENT LOCATION: TN-2603-11/-21 - G4

DESIGN: KDRAGT

DRAWN: KDRAGT

DATE: 13 NOV 07

SCALE: 1 = 40

SHEET

REV

JOB NO:

FUNC-TYPE-SIZE

1 OF 1

02

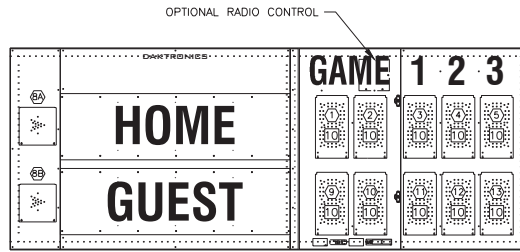
P1164

E-08-A

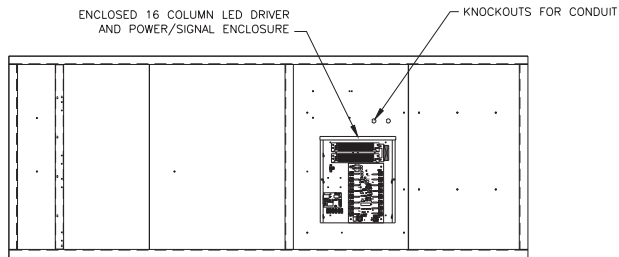
325294

REV 02	DATE: 11 JAN 12	ADDED UPDATED FRONT VIEW	BY: JDP
REV 01	DATE: 19 JUL 11	ADDED FRONT VIEW WITH NEW DRIVER	BY: MBJ

TN-2604-11/-21

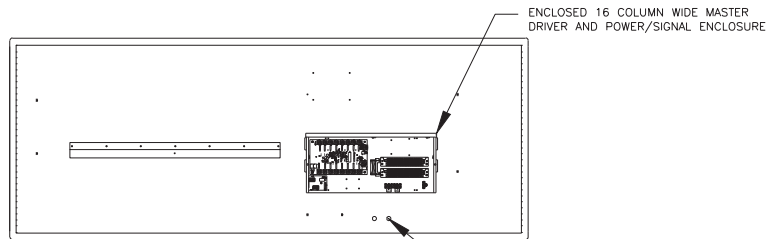


FRONT VIEW



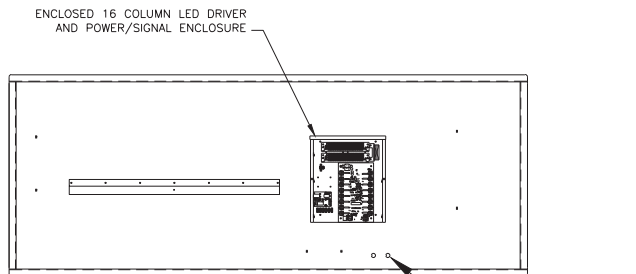
FRONT VIEW

SHOWN WITH FRONTSHEETS OFF TO SHOW DRIVER.
PRIOR TO MAY 2011



FRONT VIEW


SHOWN WITH FRONTSHEETS OFF TO SHOW DRIVER.
MAY 2011 TO AUG 2011



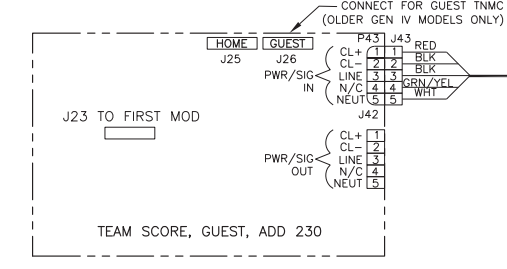
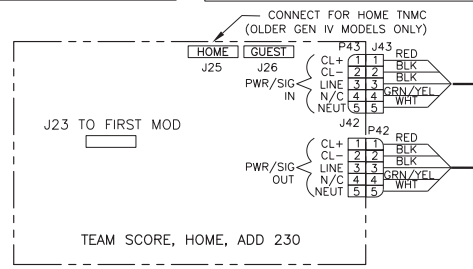
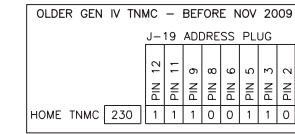
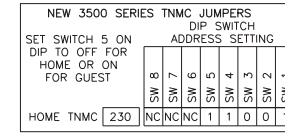
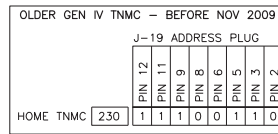
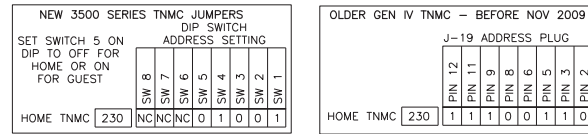
FRONT VIEW

SHOWN WITH FRONTSHEETS OFF TO SHOW DRIVER.
AFTER AUG 2011

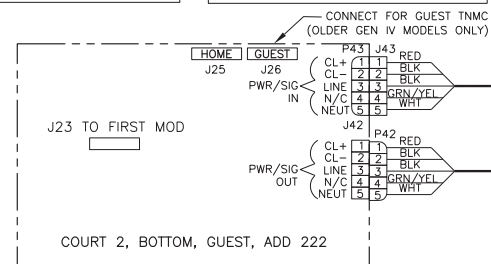
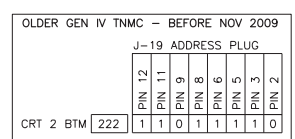
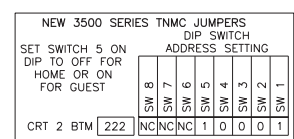
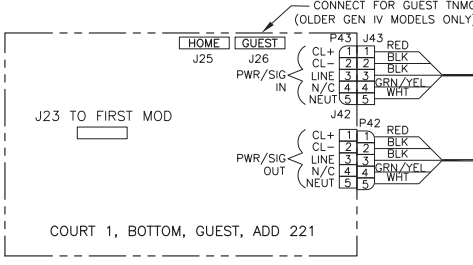
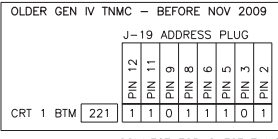
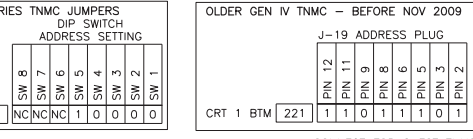
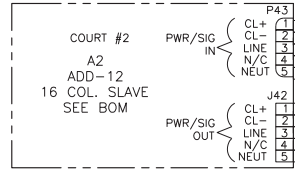
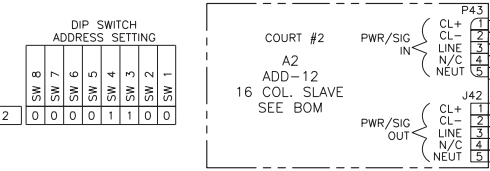
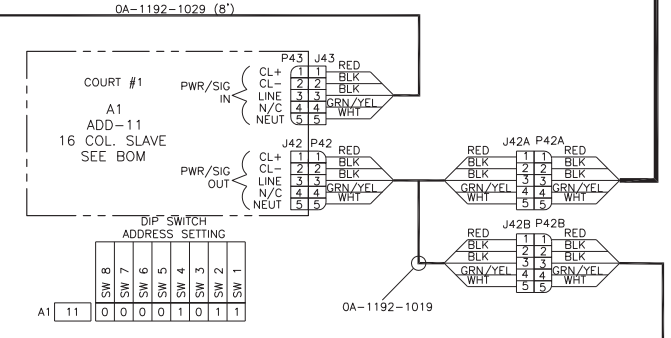
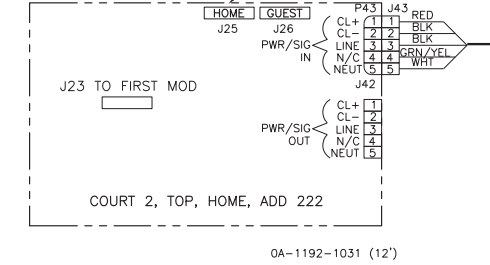
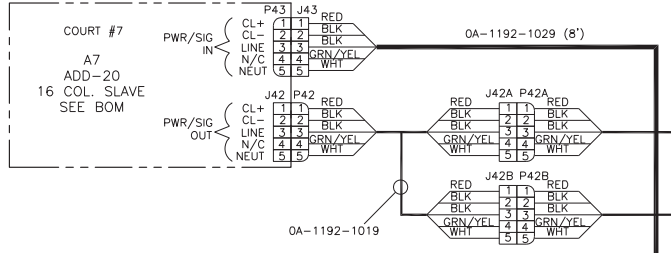
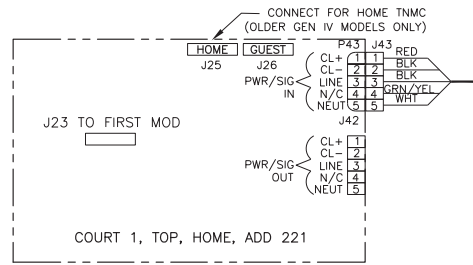
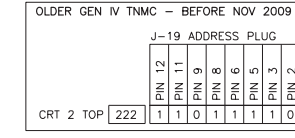
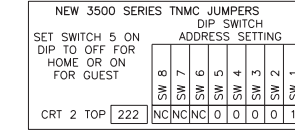
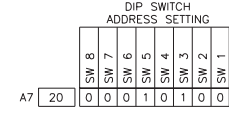
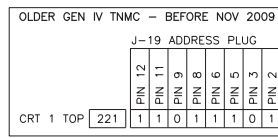
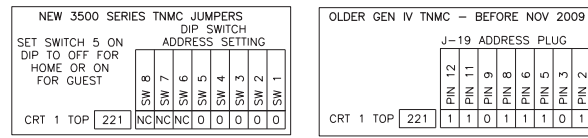
① = DRIVER COLUMN NUMBER WIRED TO THAT DIGIT.
10 = DIGIT SIZE ALL DIGITS ARE 10" HIGH

 DAKTRONICS, INC. BROOKINGS, SD 57006	THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2011 DAKTRONICS, INC.	
	DO NOT SCALE DRAWING	
PROJ.: OUTDOOR TENNIS SCOREBOARDS TITLE: COMPONENT LOCATION: TN-2604-11/-21- G4		
DESIGN: KDRAGT SCALE: 1 = 40	DRAWN: KDRAGT	DATE: 13 NOV 07
SHEET 1 OF 1	REV 02	JOB NO: P1164
FUNC-TYPE-SIZE E-08-A	325295	

REV 02	DATE: 11 JAN 12	ADDED UPDATED FRONT VIEW	BY: JDP
REV 01	DATE: 19 JUL 11	ADDED FRONT VIEW WITH NEW DRIVER	BY: MBJ



DISCONNECT PWR/SIGNAL HARNESS AND COIL
HEAR FOR SHIPPING.



LEAVE AT BOTTOM
INTERCONNECT HOLE
ON SCOREBOARD, TO
THE POWER PANEL
HARNESS FROM NEXT
SECTION.

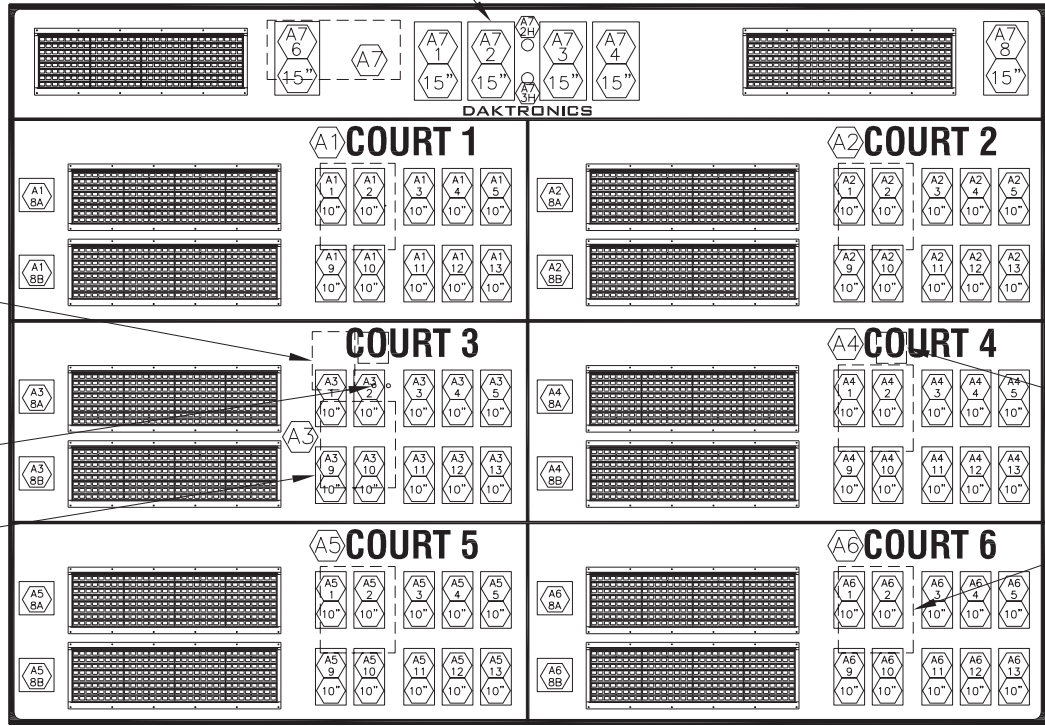
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DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: TENNIS SCOREBOARDS	
TITLE: SCHEMATIC: TN-2652- SECTION A AND B	
DES. BY: DKD	DRAWN BY: AGEWERT
DATE: 05 DEC 07	
REVISION: 02	APPR. BY: []
SCALE:	1164-R03C-326946

REV.	DATE	DESCRIPTION	BY	APPR.
02	15 OCT 09	EDITED CONTROLLER ASSEMBLIES TO BE MORE GENERIC	EJS	
01	8 JUN 09	RE-LABELLED PLUG THAT WENT TO LOWER CABINET FROM P42 TO P50.	DKD	

TN-2653-11/-21

OPTIONAL TIME OF DAY DISPLAY



OPTIONAL RADIO BRACKET @2

16 COLUMN SLAVE DRIVER @6

FRONT VIEW

POWER PANEL

KNOCKOUTS FOR 1/2" CONDUIT

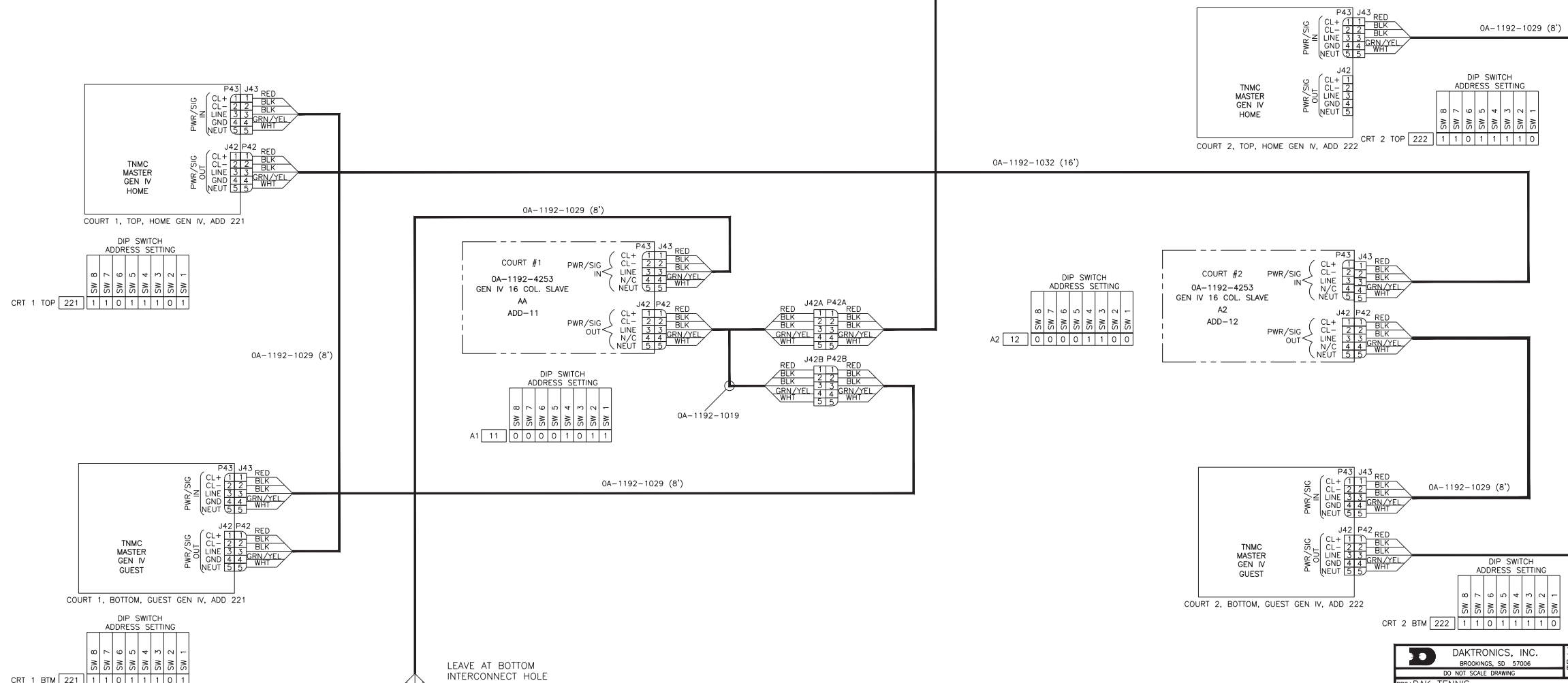
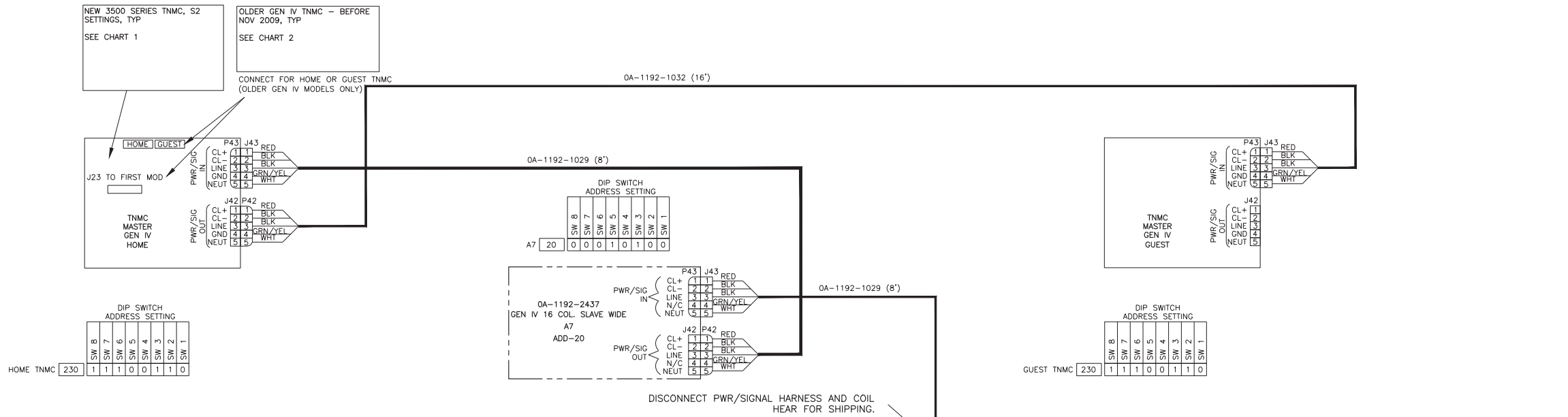
16 COLUMN MASTER DRIVER

A3 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

10" = DIGIT SIZE

REV.	01	30 JAN 08	CHANGED SIZE OF DRAWING FROM B TO A
DATE			
DESCRIPTION			
BY	KDD		
APPR.			

PROJ.	TENNIS SCOREBOARDS		
TITLE:	COMPONENT LOCATION: TN-2653		
DES. BY:	KDRAGT	DRAWN BY:	KDRAGT
DATE:	23 JAN 08		
REVISION	01	SCALE:	1=40
APPR. BY:			
			1164-E08A-331459
			DAKTRONICS, INC. BROOKINGS, SD 57006
			THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2008 DAKTRONICS, INC.



LEAVE AT BOTTOM INTERCONNECT HOLE ON SCOREBOARD. TO THE POWER PANEL HARNESS FROM NEXT SECTION.

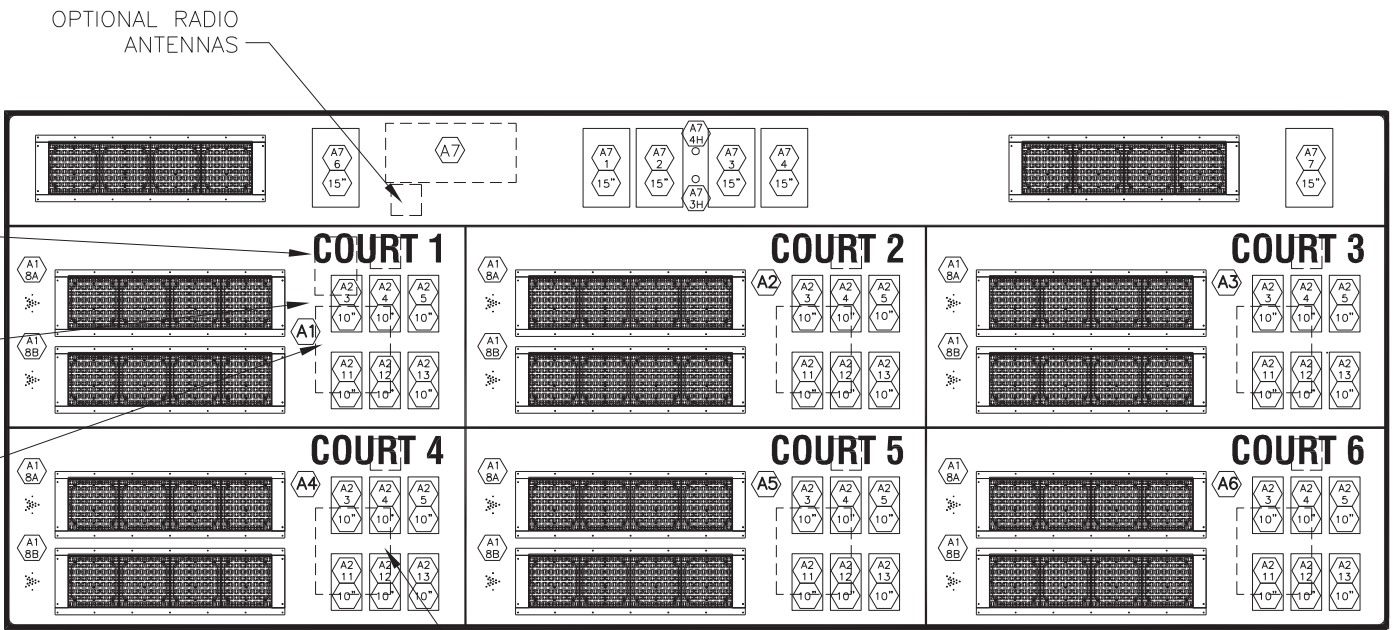
DAKTRONICS, INC.
BROOKINGS, SD 57006
DO NOT SCALE DRAWING

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REV 02	DATE: 21 OCT 10	UPDATED THE TNMC MASTER GEN IV'S	BY: JJD
REV 01	DATE: 8 JUN 09	RE-LABELED JACK GOING TO LOWER SECTION FROM J42 TO J40	BY: DKD


PROJ: DAK TENNIS	TITLE: SCHEMATIC; TN-2653, SECTION A & B	DATE: 29 JAN 08
DESIGN: MILLER	DRAWN: MILLER	
SCALE: NONE	SHEET 02	REV P1164
JOB NO: R-03-C	FUNC-TYPE-SIZE: 350622	

TN-2650-11/-21



16 COLUMN
SLAVE DRIVER
⊙6

FRONT VIEW

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

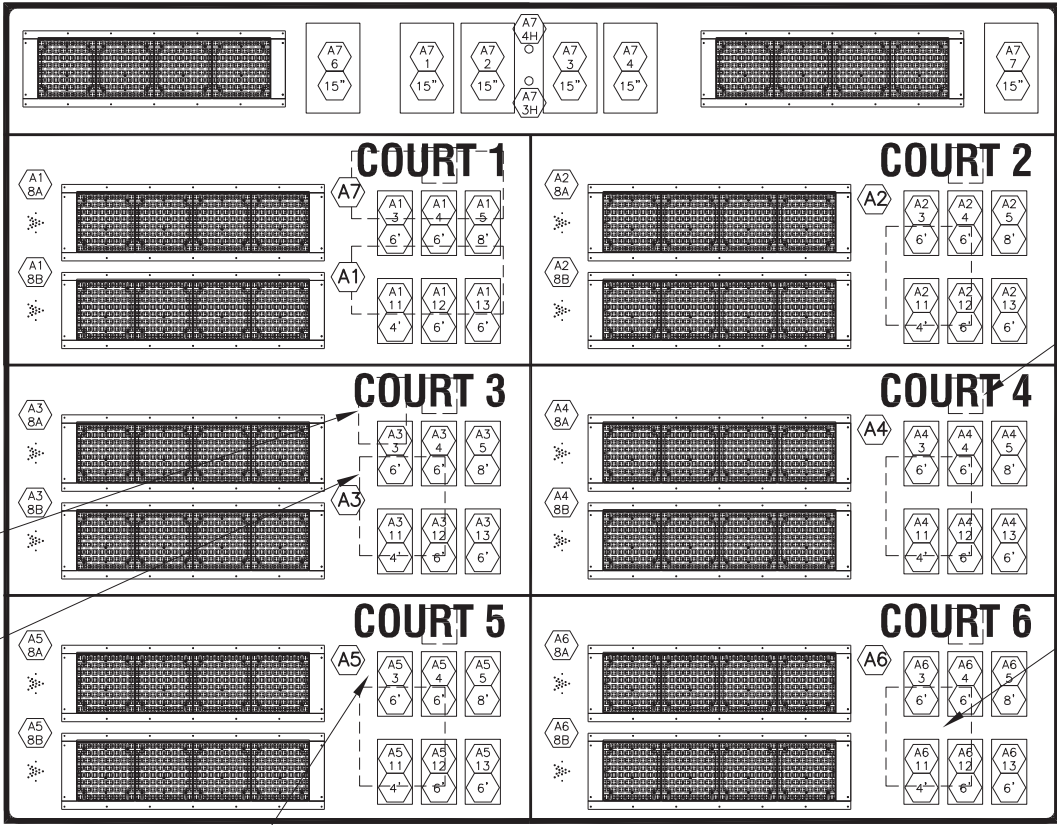
REV.	01	30 JAN 08	CHANGED SIZE FROM B TO A
DATE			
DESCRIPTION			
BY	KDD		
APPR.			

PROJ.	TENNIS SCOREBOARD
TITLE:	COMPONENT LOCATION: TN-2650
DES. BY:	KDRAGT
DRAWN BY:	KDRAGT
DATE:	29 JAN 08
REVISION	01
APPR. BY:	
SCALE:	1=40
	1164-E08A-350649

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PROJ.: TENNIS SCOREBOARD
DAKTRONICS, INC. BROOKINGS, SD 57006

TN-2652-11/-21



FRONT VIEW

POWER PANEL
16 COLUMN MASTER DRIVER

OPTIONAL RADIO ANTENNAS

16 COLUMN SLAVE DRIVER @6

KNOCKOUTS FOR 1/2" CONDUIT

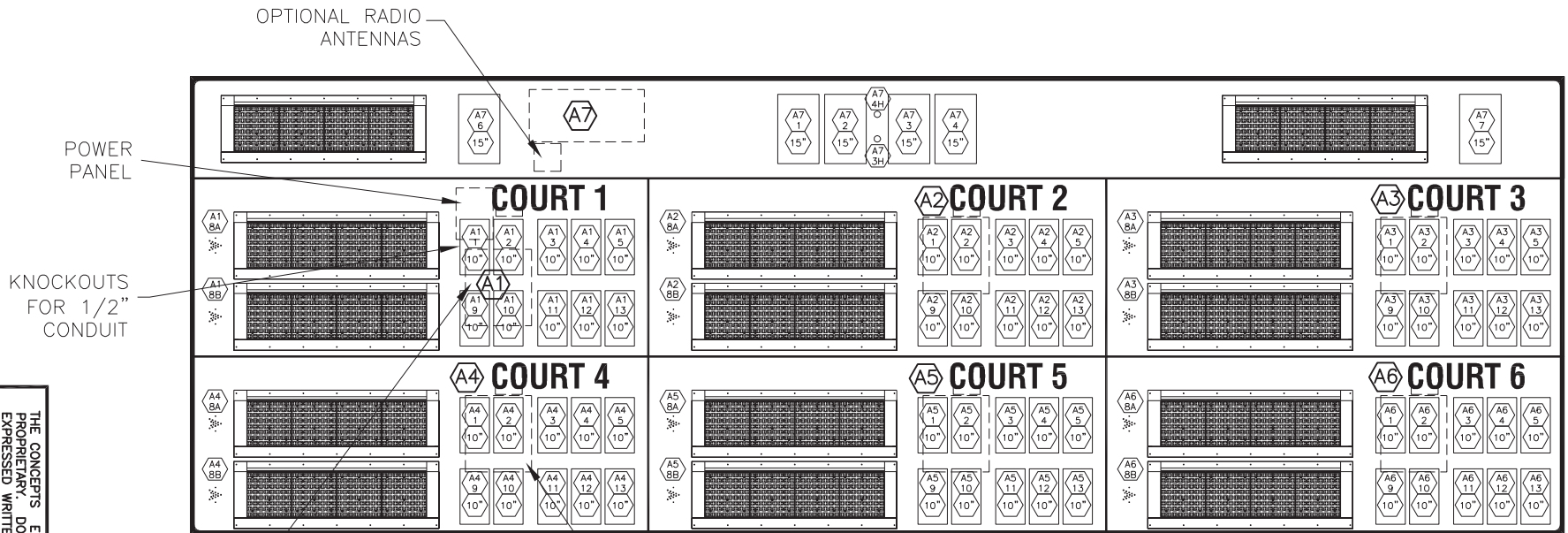
A1 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.
10" = DIGIT SIZE

REV.	01	30 JAN 08	CHANGED DRAWING SIZE FROM B TO A	KDD
DATE			DESCRIPTION	BY
				APPR.

REVISION	01	APPR. BY:	KDRAGT	DATE:	29 JAN 08
DES. BY:	KDRAGT	DRAWN BY:	KDRAGT		
TITLE: COMPONENT LOCATION: TN-2652					
PROJ: TENNIS SCOREBOARD					
DAKTRONICS, INC. BROOKINGS, SD 57006					
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SCALE:	1=35	1 164-E08A-350683			

REV.	01	30 JAN 08	CHANGED DRAWING SIZE FROM B TO A
DATE			
DESCRIPTION			
BY	KDD		
APPR.			


TN-2651-11/-21



16 COLUMN MASTER DRIVER

16 COLUMN SLAVE DRIVER @6

FRONT VIEW

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

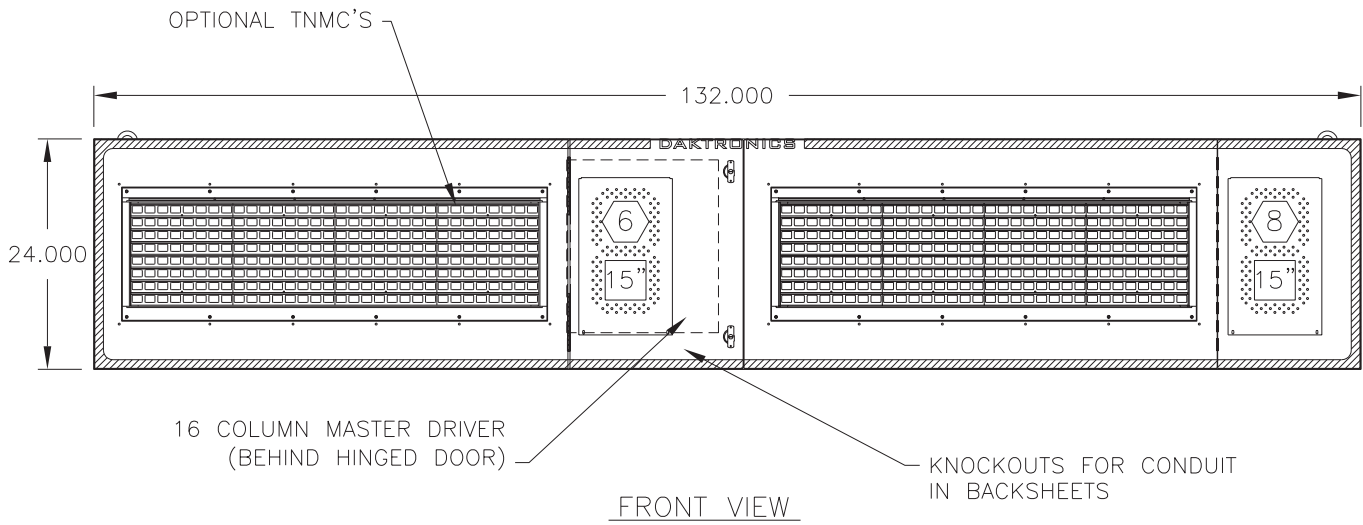
= DIGIT SIZE

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PROJ: TENNIS SCOREBOARDS
 TITLE: COMPONENT LOCATION: TN-2651
 DES. BY: KDRAGT DRAWN BY: KDRAGT DATE: 29 JAN 08
 REVISION 01 APPR. BY: 1164-E08A-350687
 SCALE: 1=40

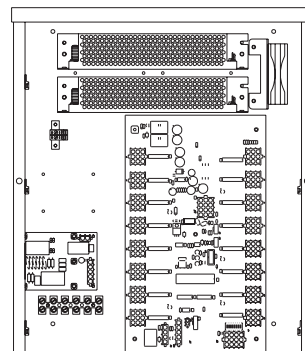
DAKTRONICS, INC. BROOKINGS, SD 57006

TN-2605-11/-21



⬡ = DRIVER COLUMN NUMBER WIRED TO THAT DIGIT.

□ = DIGIT SIZE



DRIVER DETAIL

SCALE X 2

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR LED TENNIS SCOERBOARDS

TITLE: COMPONENT LOCATION; TN-2605

DES. BY: KDRAGT

DRAWN BY: KDRAGT

DATE: 28 DEC 08

REV.	DATE	DESCRIPTION	BY	APPR.
00				

REVISION
00

APPR. BY:

SCALE: 1=20

1164-E10A-583550

NEW 3500 SERIES TNMC, S2 SETTINGS, TYP
SEE CHART 1

OLDER GEN IV TNMC - BEFORE NOV 2009, TYP
SEE CHART 2

CONNECT FOR HOME OR GUEST TNMC (OLDER GEN IV MODELS ONLY)

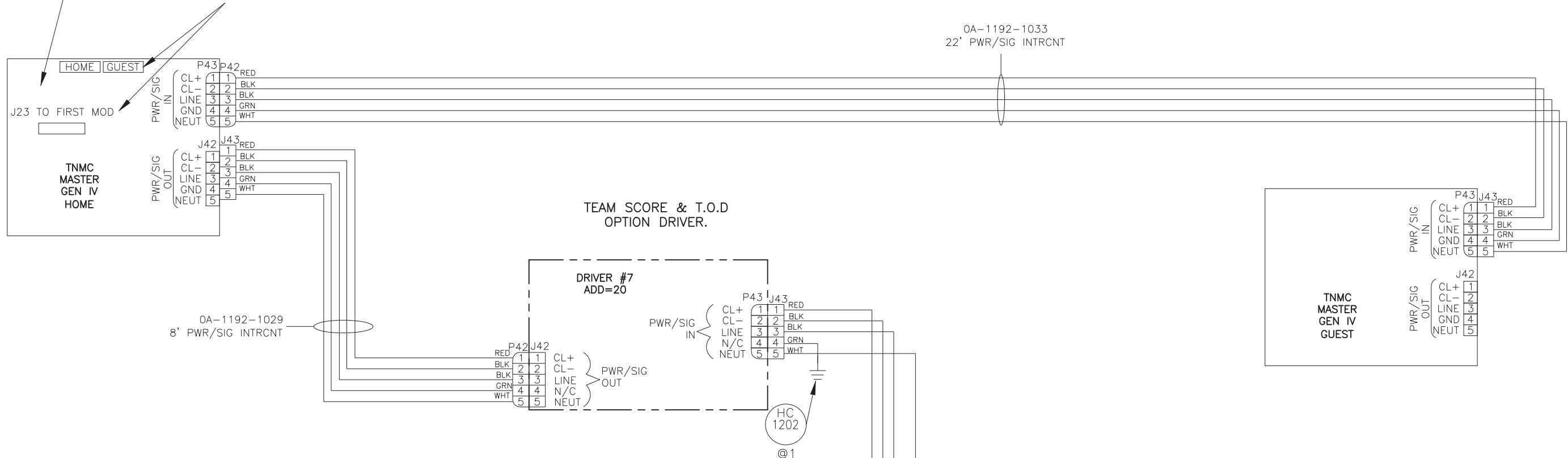


CHART 1

TNMC ADDRESS TABLE
DIP SWITCH S2
ADDRESS SETTING

TNMC	SW 8	SW 7	SW 6	SW 5	SW 4	SW 3	SW 2	SW 1
230	NC	NC	NC	*	1	0	1	0

*NOTE: (HOME= 5 0(OFF)) & (GUEST= 5 1(ON))

CHART 2

TNMC ADDRESS TABLE

J19 WIRE PLUG TNMC ADDRESS TABLE

HOME/GUEST TNMC	PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
230	1	1	1	0	0	1	1	0

DIP SWITCH ADDRESS SETTING

SW 8	SW 7	SW 6	SW 5	SW 4	SW 3	SW 2	SW 1
0	0	0	1	0	1	0	0

TEAM SCORE DRVR A7 20

OR

J19 WIRE PLUG ADDRESS TABLE

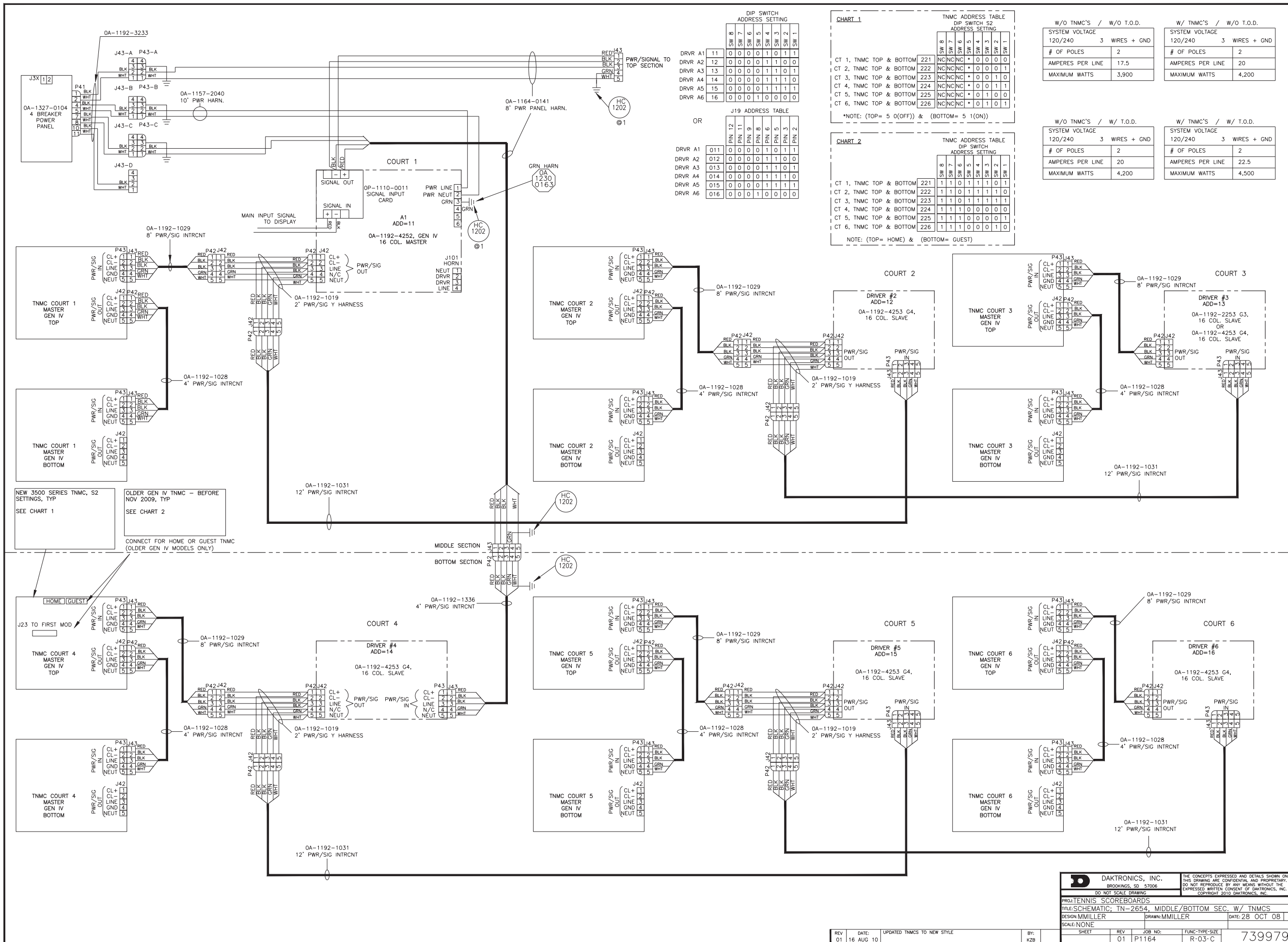
PIN 12	PIN 11	PIN 9	PIN 8	PIN 6	PIN 5	PIN 3	PIN 2
0	0	0	1	0	1	0	0

TEAM SCORE DRVR A7 020

NOTE: WITH TIME OF DAY OPTION ASSEMBLY, A PROTOCOL PLUG NEEDS TO BE CONNECTED TO J20 ON DRIVER.

TEST CODE: 229

REV 01	DATE: 17 AUG 10	UPDATED TO NEW TNMCS	BY: KZB
DAKTRONICS, INC. BROOKINGS, SD 57006 <small>DO NOT SCALE DRAWING</small>		<small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.</small>	
PROJ: TENNIS SCOREBOARDS TITLE: SCHEMATIC; TN-2654, TOP SECTION, W/ TNMCS			
DESIGN: MMILLER		DRAWN: MMILLER	
SCALE: NONE		DATE: 28 OCT 08	
SHEET	REV 01	JOB NO: P1164	FUNC-TYPE-SIZE R-03-B
			739765



W/O TNMC'S / W/O T.O.D.		W/ TNMC'S / W/ T.O.D.	
SYSTEM VOLTAGE	120/240	SYSTEM VOLTAGE	120/240
# OF POLES	3	# OF POLES	3
AMPERES PER LINE	17.5	AMPERES PER LINE	20
MAXIMUM WATTS	3,900	MAXIMUM WATTS	4,200

W/O TNMC'S / W/ T.O.D.		W/ TNMC'S / W/ T.O.D.	
SYSTEM VOLTAGE	120/240	SYSTEM VOLTAGE	120/240
# OF POLES	2	# OF POLES	2
AMPERES PER LINE	20	AMPERES PER LINE	22.5
MAXIMUM WATTS	4,200	MAXIMUM WATTS	4,500

DAKTRONICS, INC.
BROOKINGS, SD 57006
DO NOT SCALE DRAWING

PROJ: TENNIS SCOREBOARDS
TITLE: SCHEMATIC; TN-2654, MIDDLE/BOTTOM SEC. W/ TNMCS
DESIGN: MMILLER DRAWN: MMILLER DATE: 28 OCT 08
SCALE: NONE

01	24 FEB 09	ADDED BACKLIT CAPTION
02	29 JUL 09	UPDATED BLOCKS
03	10 OCT 09	UPDATED TNMCS
04	20 NOV 09	UPDATED TNMCS TO NEWER STYLE
05	25 AUG 11	UPDATES NOTES SECTION

DAKTRONICS, INC.
BROOKINGS, SD 57006

PROJ: OUTDOOR LED SCOREBOARDS
TITLE: SCHEMATIC; 1 DRYR, TNMG, GEN IV
DESIGN: KBIERBA
DRAWN: KBIERBA
SCALE:

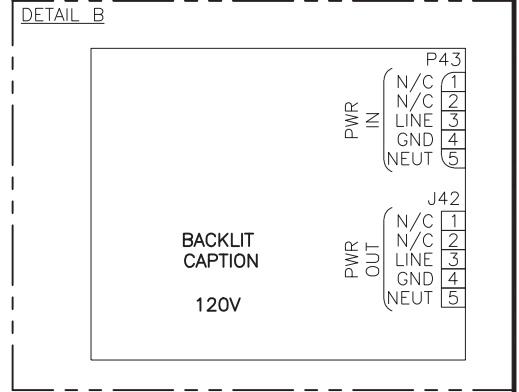
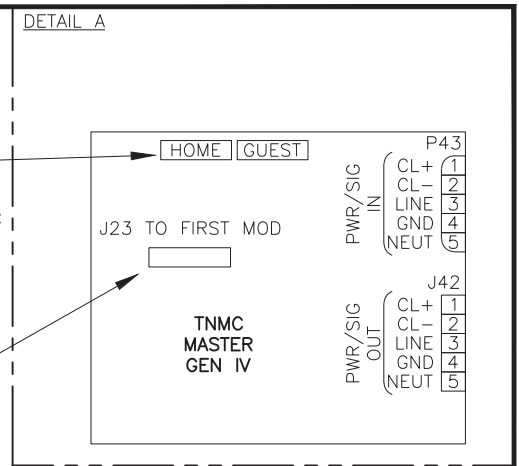
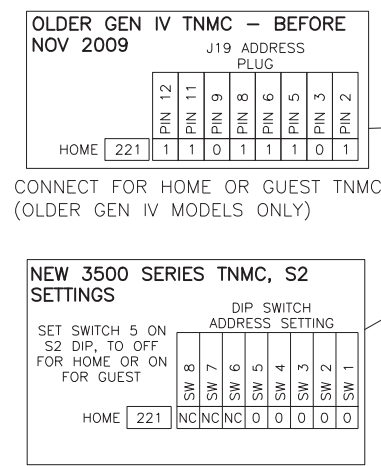
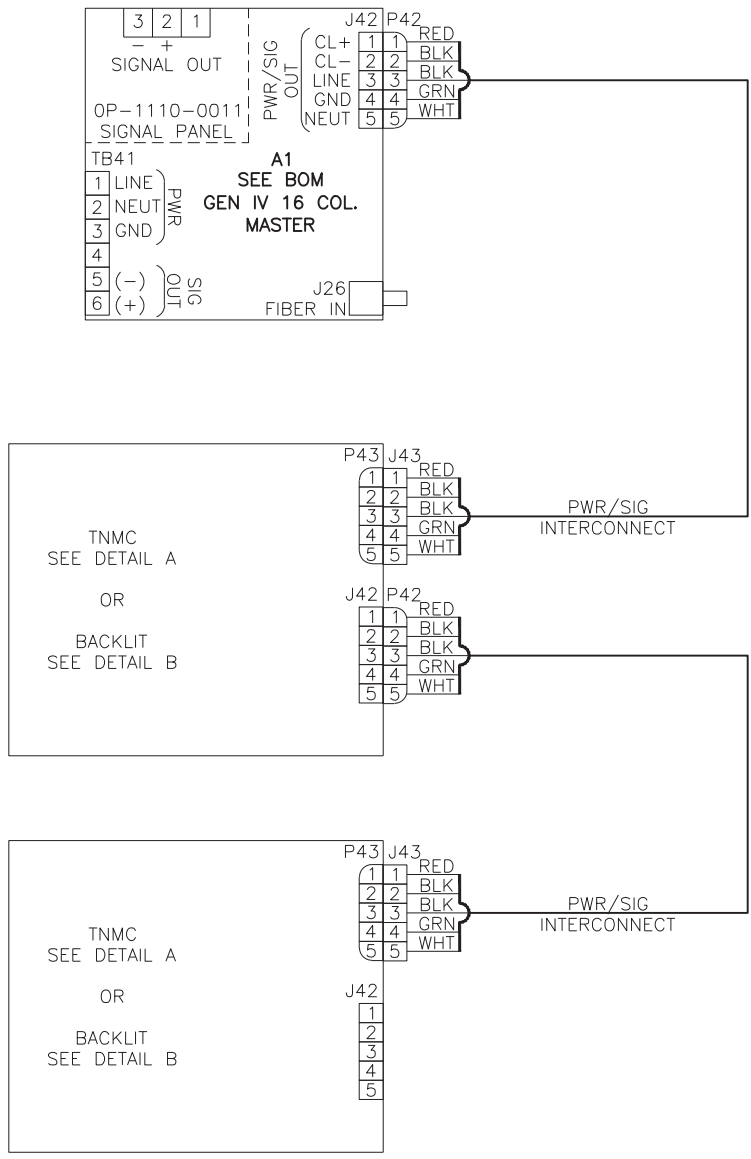
SHEET: 05 REV: P1407 JOB NO: E-03-A

DATE: 11 NOV 08

752372

DO NOT SCALE DRAWING

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-FOR ADDRESS/PWR SPECS SEE DWG IN PACKET
-SEE HARNESS STAGE DWG FOR PWR/SIG HARNESS LENGTH & PART NUMBERS

TN-2654-11/-21

REV. DATE DESCRIPTION BY APPR.

OPTIONAL RADIO BRACKET POWER PANEL

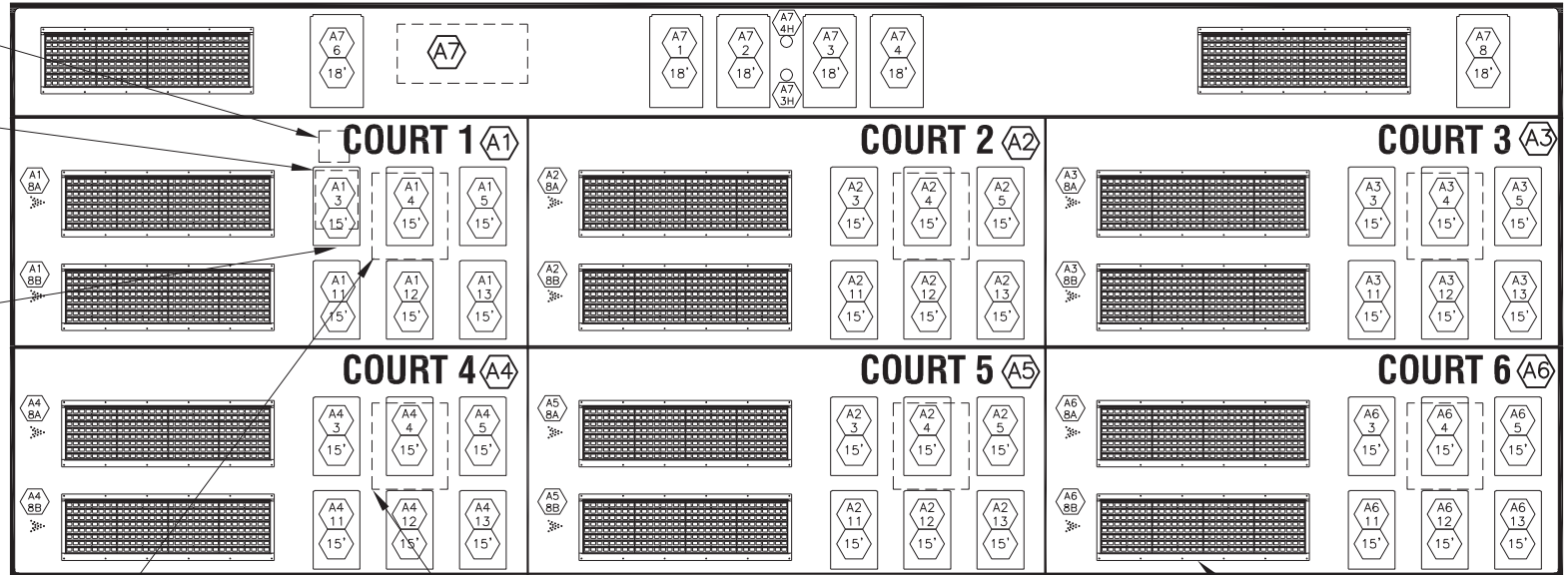
KNOCKOUTS FOR 1/2" CONDUIT


16 COLUMN MASTER DRIVER


16 COLUMN SLAVE DRIVER @6

FRONT VIEW

OPTIONAL TEAM NAME MESSAGE CENTERS



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

 = DIGIT SIZE

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PROJ: TENNIS SCOREBOARDS
DAKTRONICS, INC. BROOKINGS, SD 57006

TITLE: COMPONENT LOCATION; TN-2654

DES. BY: TWEBER

DRAWN BY: BLERICKS

DATE: 29 NOV 08

REVISION 00

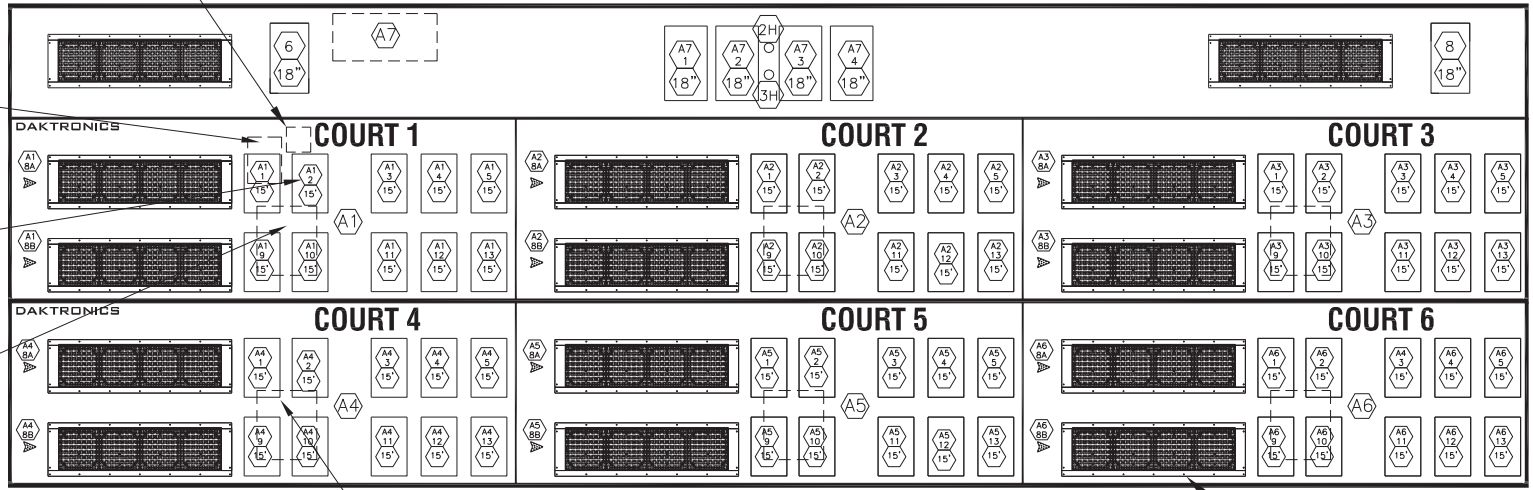
SCALE: 1=40

1164-E08A-765558


TN-2655-11/-21


REV. DATE DESCRIPTION BY APPR.

OPTIONAL RADIO BRACKET
 POWER PANEL
 KNOCKOUTS FOR 1/2" CONDUIT
 16 COLUMN MASTER DRIVER



FRONT VIEW

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

 = DIGIT SIZE

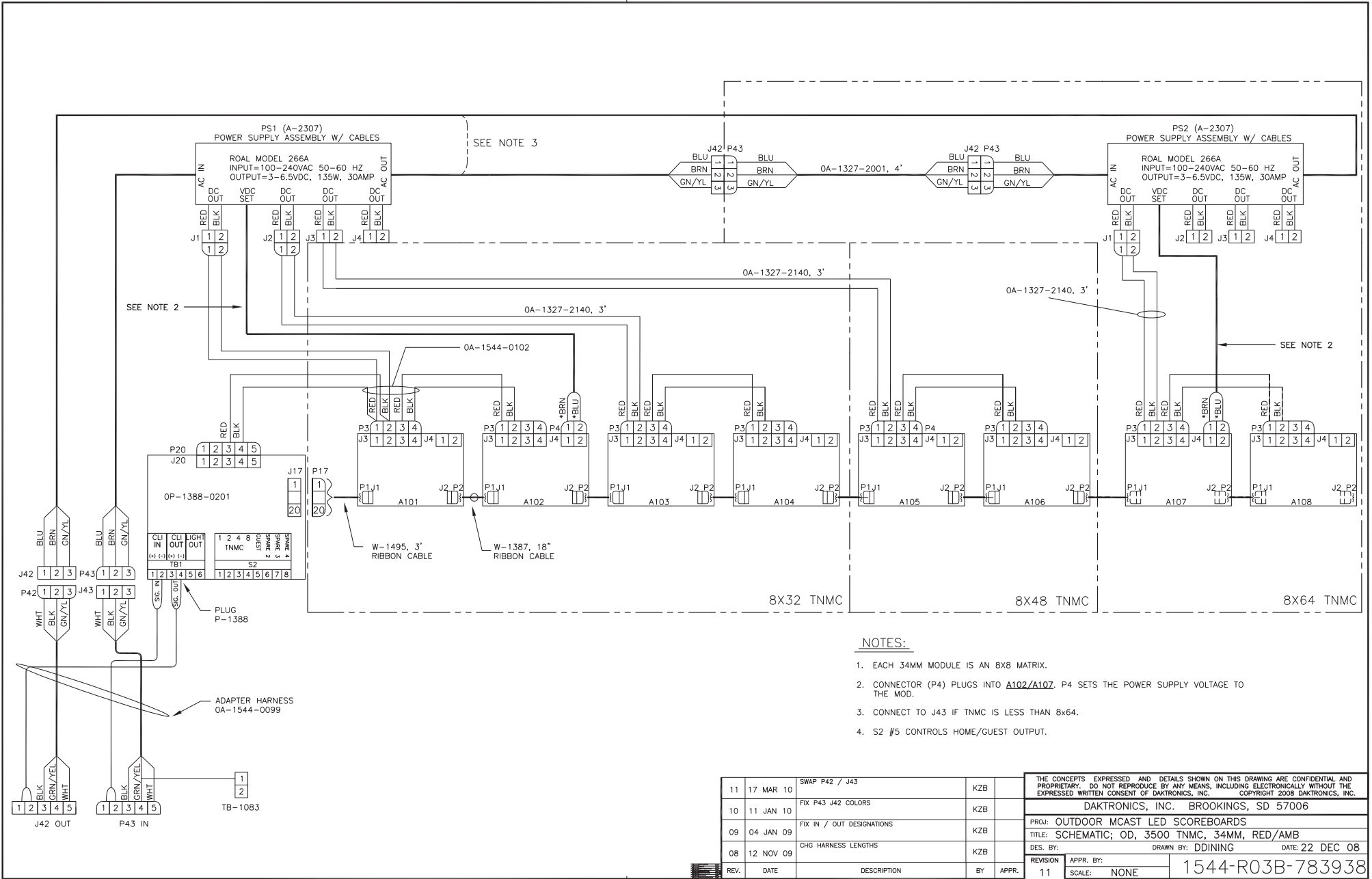
PROJ: TENNIS SCOREBOARD
 TITLE: COMPONENT LOCATIONS: TN-2655
 DES. BY: WEBER
 DRAWN BY: BLERICKS
 DATE: 26 NOV 08

REVISION 00 SCALE: 1=50

1164-E08A-765563

DAKTRONICS, INC. BROOKINGS, SD 57006

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PS1 (A-2307)
POWER SUPPLY ASSEMBLY W/ CABLES
ROAL MODEL 266A
INPUT=100-240VAC 50-60 HZ
OUTPUT=3-6.5VDC, 135W, 30AMP

PS2 (A-2307)
POWER SUPPLY ASSEMBLY W/ CABLES
ROAL MODEL 266A
INPUT=100-240VAC 50-60 HZ
OUTPUT=3-6.5VDC, 135W, 30AMP

SEE NOTE 3

SEE NOTE 2

SEE NOTE 2

NOTES:

1. EACH 34MM MODULE IS AN 8X8 MATRIX.
2. CONNECTOR (P4) PLUGS INTO A102/A107. P4 SETS THE POWER SUPPLY VOLTAGE TO THE MOD.
3. CONNECT TO J43 IF TNMC IS LESS THAN 8x64.
4. S2 #5 CONTROLS HOME/GUEST OUTPUT.

REV.	DATE	DESCRIPTION	BY	APPR.
11	17 MAR 10	SWAP P42 / J43	KZB	
10	11 JAN 10	FIX P43 J42 COLORS	KZB	
09	04 JAN 09	FIX IN / OUT DESIGNATIONS	KZB	
08	12 NOV 09	CHG HARNESS LENGTHS	KZB	

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DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	OUTDOOR MCAST LED SCOREBOARDS
TITLE:	SCHEMATIC; OD, 3500 TNMC, 34MM, RED/AMB
DES. BY:	DDINING
DATE:	22 DEC 08
REVISION	APPR. BY:
11	SCALE: NONE
1544-R03B-783938	

DRIVER_MCAST_4_COL
OP-1388-0201



SW8 - T.O.D. ON ENABLED

SW5 - HOME OR GUEST SELECT
OFF = HOME
ON = GUEST

J24 LIGHT SENSOR

PIN	FUNCTION
1	LIGHT_IN-P
2	LIGHT_IN-N
3	+5V-P
4	GND-N
5	GND-N
6	232_IN-P

TB1 SIGNAL

PIN	FUNCTION
1	SIG-P
2	SIG-N
3	CLOUT-P
4	CLOUT-N
5	LIGHT_0-P
6	LIGHT_0-N
7	232_IN-P
8	GND-N

J30 RADIO (MAIN)

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	INPUT-P

J31 RADIO (AUX)

PIN	FUNCTION
1	+UNREG-P
2	GND-N
3	GND-N
4	INPUT-P

J29 SW INPUTS

PIN	FUNCTION
1	SW_IN0-P
2	GND-N
3	SW_IN1-P
4	GND-N
5	SW_IN2-P
6	GND-N
7	SW_IN3-P
8	GND-N

J19 PROGRAM JACK

PIN	FUNCTION
1	PGC
2	/MCLR
3	N/C
4	GND-N
5	PGD
6	GND-N
7	PGM
8	+5V-P
9	N/C
10	N/C

J25 (AUX 5)

PIN	FUNCTION
1	120VAC SW P
2	120VAC SW N

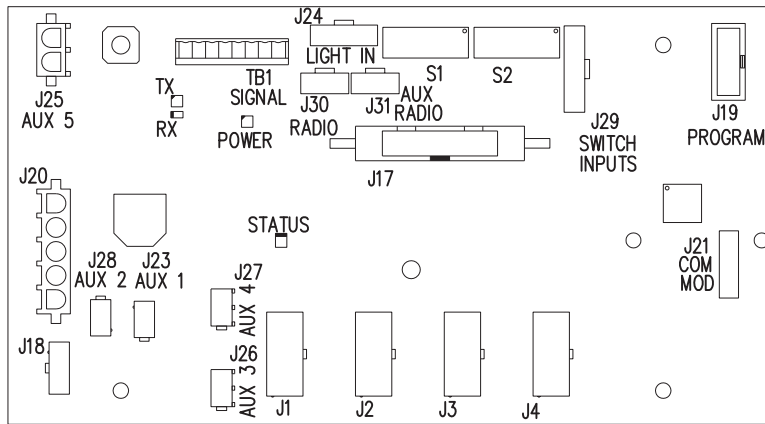
120VAC SWITCHED
AUX OUT
(1.25A MAX)

J20 POWER IN

PIN	FUNCTION
5	+VDD-P
4	GND-N
3	XFMR-CT
2	GND-N
1	+VBB-P

J18 PWR OUT

PIN	FUNCTION
1	20VDC
2	10VDC
3	GND-N



J21 COM MOD HEADER

FUNCTION	PIN	PIN	FUNCTION
N/C	A	1	N/C
N/C	B	2	MOD_TX
N/C	C	3	MOD_RX
GND-N	D	4	GND-N
GND-N	E	5	GND-N
+5V	F	6	N/C
N/C	H	7	+5V

J23,28 (AUX 1 - 2)

PIN	FUNCTION
1	SWITCHED AC V
2	GND-N

SECONDARY VOLTAGE
SWITCHED GND
200ma MAX

J26-27 (AUX 3 - 4)

PIN	FUNCTION
1	SWITCHED DC V
2	GND-N

AUX 3&4 MAX OUTPUT
INDOOR=2A
OUTDOOR 1.5A

J1-4 DIGITS

PIN	FUNCTION
1	SEGA-N
2	SEGB-N
3	SEGC-N
4	SEGD-N
5	SEGE-N
6	SEGF-N
7	SEGG-N
8	SEGH-N
9	+V1
10	+V2

200mA MAX / SEGMENT
12.8A MAX LOAD FOR
EVEN OR ODD COLUMNS

J17 TEAM NAME OUTPUT

FUNCTION	PIN	PIN	FUNCTION
GND4-P	11	10	ID3
RED4-P	12	9	ID2
GND3-P	13	8	GND-N
MTRX_CLK	14	7	GND-N
RED3-P	15	6	GRN2-P
RED2-P	16	5	GND-N
MTRX_DIM	17	4	GND-N
MTRX_LT	18	3	GND-N
GND1-P	19	2	ID1
RED1-P	20	1	ID0

NOTES:

- GREEN POWER LED INDICATES THAT THE DRIVER HAS POWER.
- RED RX LED IS ON WHEN INPUT SIGNAL IS CONNECTED BUT IDLE AND BLINKS WHEN DATA IS RECEIVED. IF RED RX LED IS OFF, THERE IS NO CONNECTION.
- TX LED IS ON WHEN SIGNAL IS DISCONNECTED AND OFF WHEN INPUT IS IDLE. THE TX LED BLINKS WHEN DATA IS TRANSMITTED.
- AMBER STATUS LED WILL BLINK WHEN THE DRIVER IS RUNNING.
- IF STATUS LED IS ON OR OFF CONTINUOUSLY THE MICROCONTROLLER IS NOT WORKING.
- REFER TO THE FOLLOWING DRAWINGS FOR ADDRESS AND SWITCH SETTINGS:

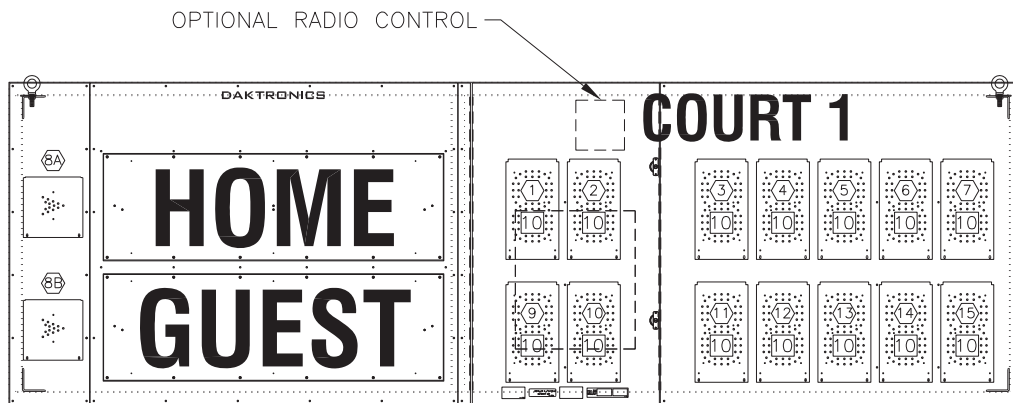
ADDRESS SWITCH (S1) A-328273

TNMC ADD SWITCH (S2) A-328274

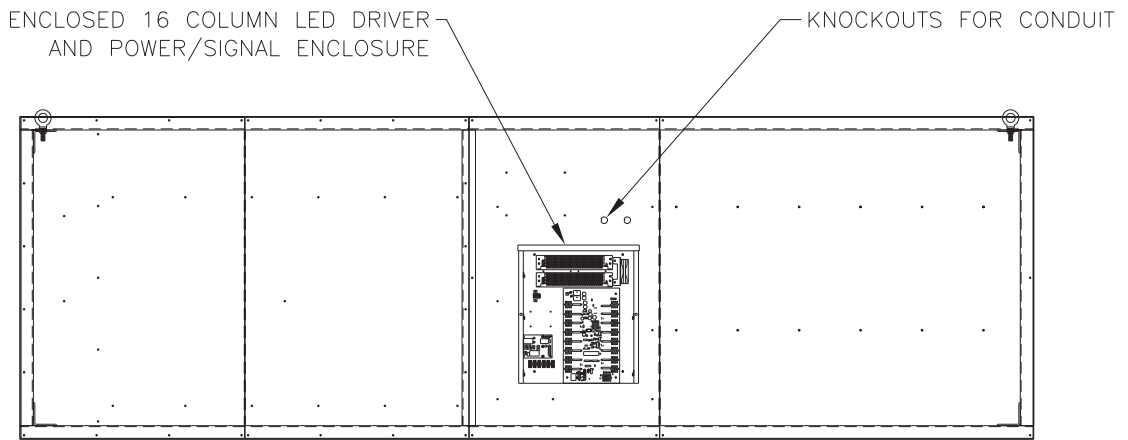
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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ:			
TITLE: SPECIFICATIONS; DRIVER, MCAST, 4 COL			
DES. BY: KKASKI		DRAWN BY: DULSCHM	
DATE: 23 JAN 09			
REVISION	APPR. BY:	1388-E07A-793970	
01	SCALE: 1 = 2		

REV.	DATE	DESCRIPTION	BY	APPR.
01	21 SEP 09	UPDATED SWITCH DRAWING NUMBERS	DJU	

TN-2607-11/-21



FRONT VIEW



FRONT VIEW

SHOWN WITH FRONTSHEETS OFF TO SHOW DRIVER

① = DRIVER COLUMN NUMBER WIRED TO THAT DIGIT.

⑩ = DIGIT SIZE ALL DIGITS ARE 10" HIGH.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR TENNIS SCOREBOARDS			
TITLE: COMPONENT LOCATION; TN-2607-11/-21, G4			
DES. BY: VSHIRAL		DRAWN BY: VSHIRAL	
		DATE: 06 MAY 09	
REVISION	APPR. BY:	1164-E08A-839312	
00	SCALE: 1=25		

REV.	DATE	DESCRIPTION	BY	APPR.

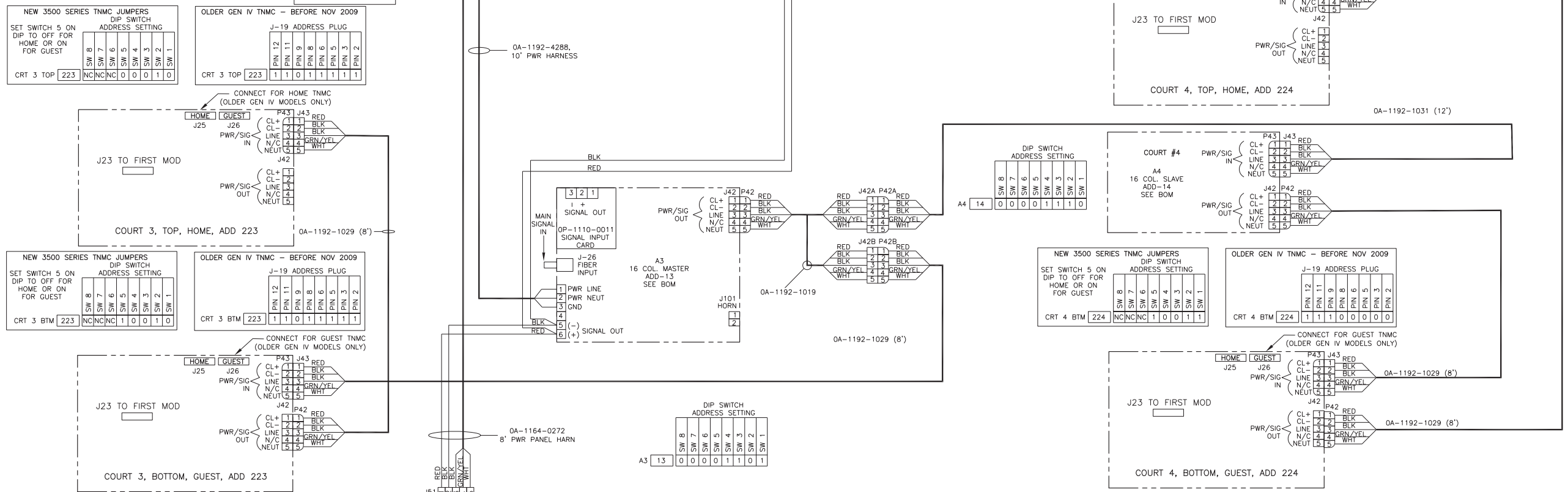
SECTION C

SYSTEM OPERATION REQUIREMENTS

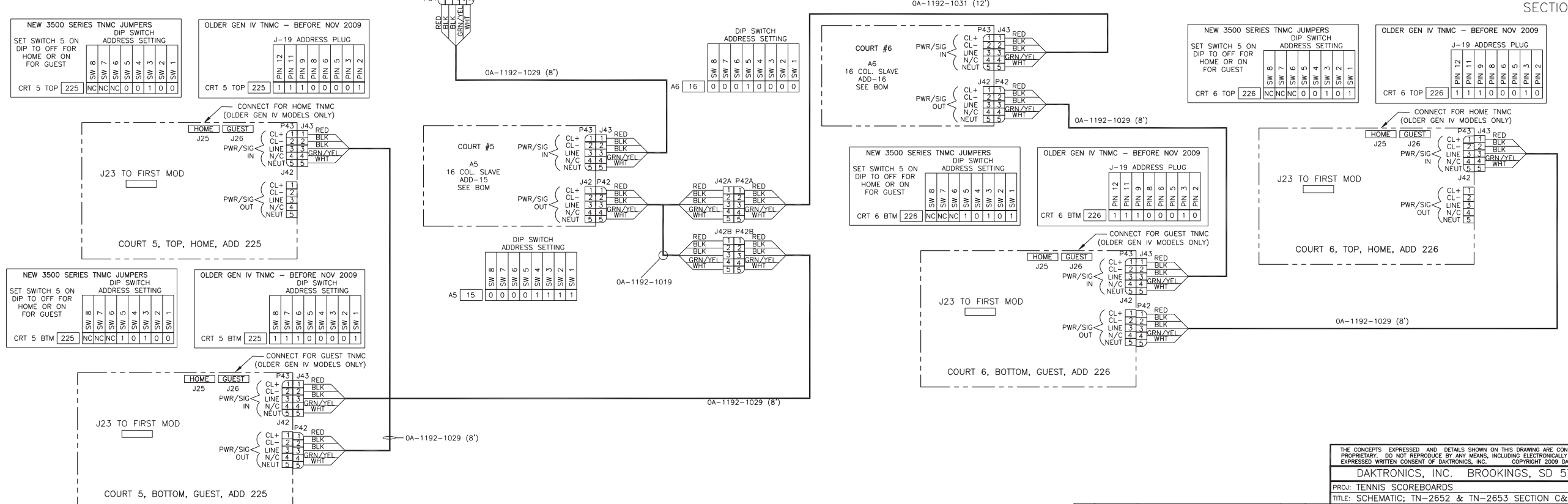
SYSTEM CONTROL CONSOLE	A/S 5010	OA-1196-0001
SYSTEM RISER #		N/A
DISPLAY F ASSY DWG		MULTIPLE
SYSTEM VOLTAGE		120/240VAC
HIGH LEG (AMPS)		20
MAXIMUM WATTS		3900
SPORT INSERT #		OG-132100
OPERATING CODE #		0229

OA-1327-0137
4 BREAKER
POWER
PANEL

J41	P41	GRN	3
J42	P42	GRN	2
J43	P43	GRN	1
J44	P44	GRN	1
J45	P45	GRN	1
J46	P46	GRN	1
J47	P47	GRN	1
J48	P48	GRN	1
J49	P49	GRN	1
J50	P50	GRN	1



SECTION D

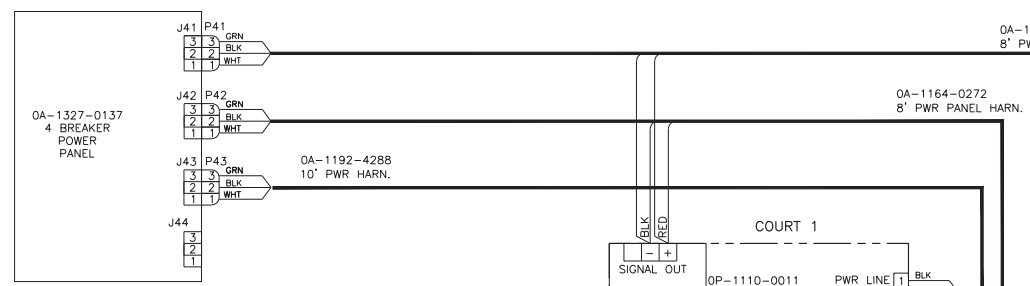


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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: TENNIS SCOREBOARDS
TITLE: SCHEMATIC; TN-2652 & TN-2653 SECTION C&D
DES. BY: DRAWN BY: DDJNING DATE: 8 JUN 09

01	16 OCT 09	EDITED CONTROLLER ASSEMBLIES TO BE MORE GENERIC	EJS	APPR.	01	SCALE: NONE	1164-E03C-852306
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DIP SWITCH ADDRESS SETTING

DRVR	A1	A2	A3	A4	A5	A6
DRVR A1	011	12	11	9	8	8
DRVR A2	012	0	0	0	1	1
DRVR A3	013	0	0	0	1	1
DRVR A4	014	0	0	0	1	1
DRVR A5	015	0	0	0	1	1
DRVR A6	016	0	0	0	1	1

CHART 1

CT	1	2	3	4	5	6
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226

*NOTE: (TOP= 5 0(OFF)) & (BOTTOM= 5 1(ON))

CHART 2

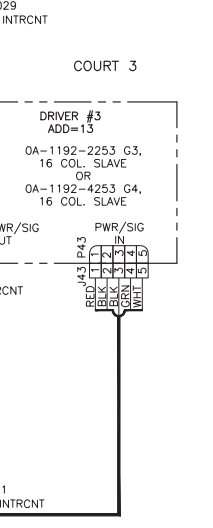
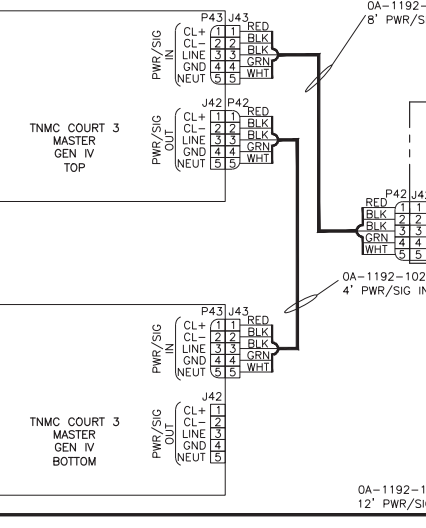
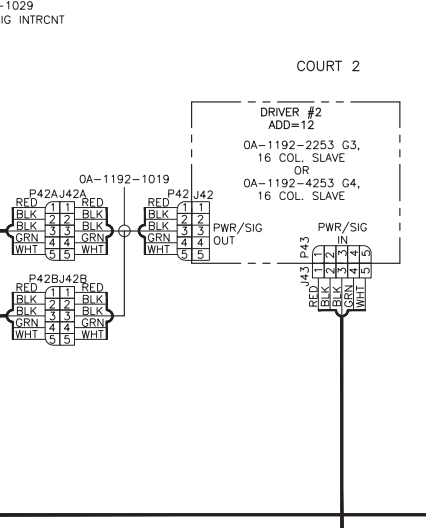
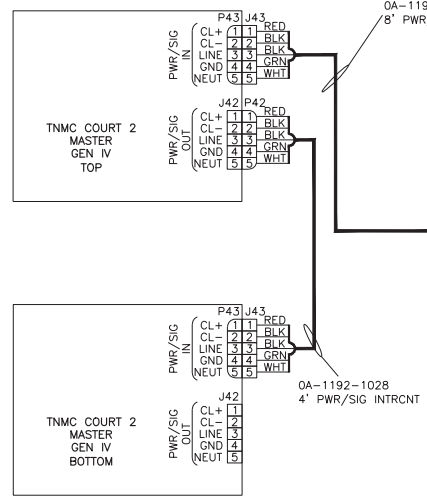
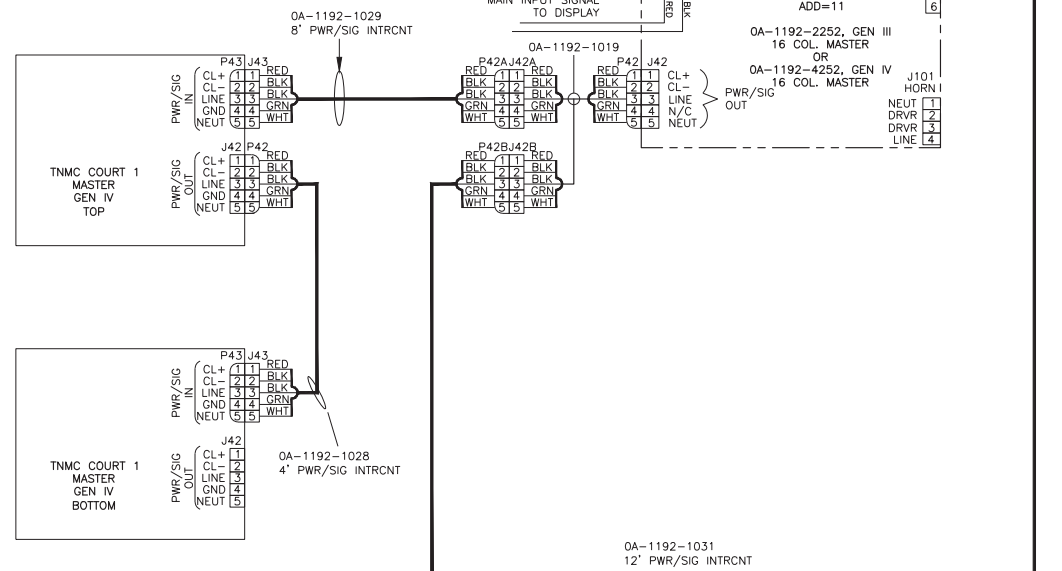
CT	1	2	3	4	5	6
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226
TNMC TOP & BOTTOM	221	222	223	224	225	226

*NOTE: (TOP= HOME) & (BOTTOM= GUEST)

WITH TNMC'S

SYSTEM VOLTAGE	120/240	3 WIRES + GND
# OF POLES	2	
AMPERES PER LINE	17.5	
MAXIMUM WATTS	3,900	

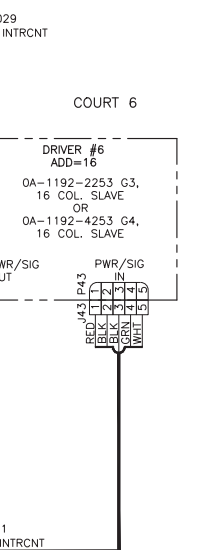
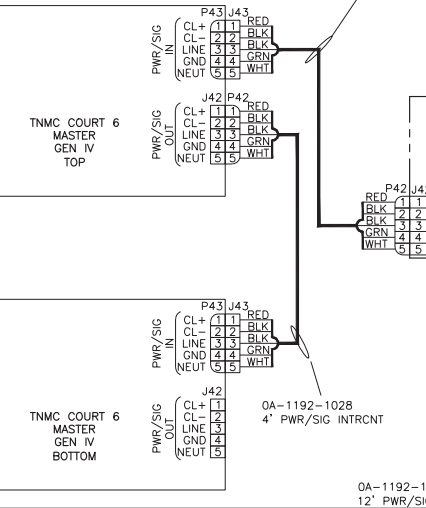
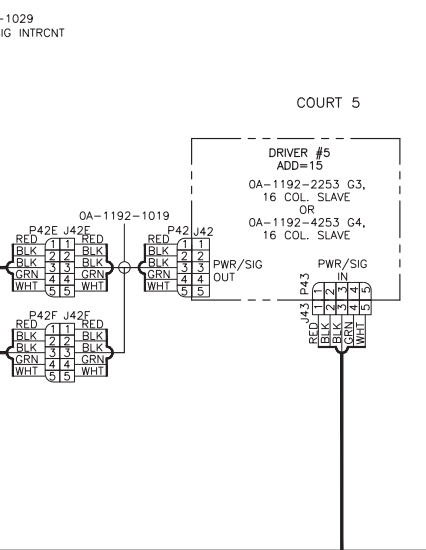
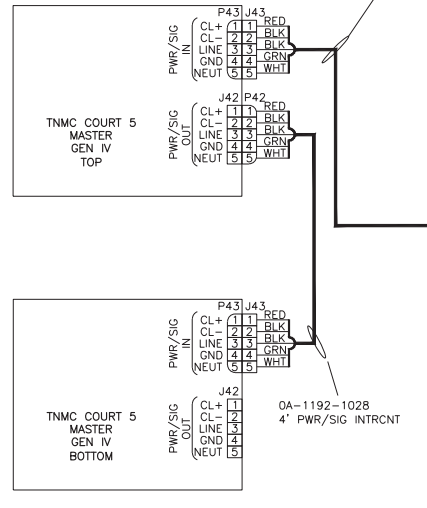
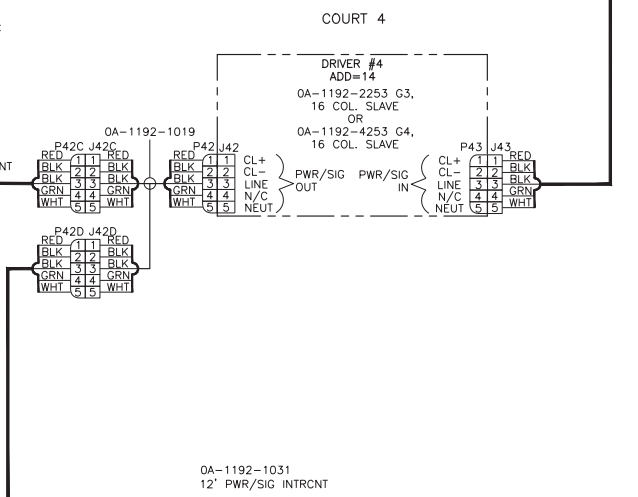
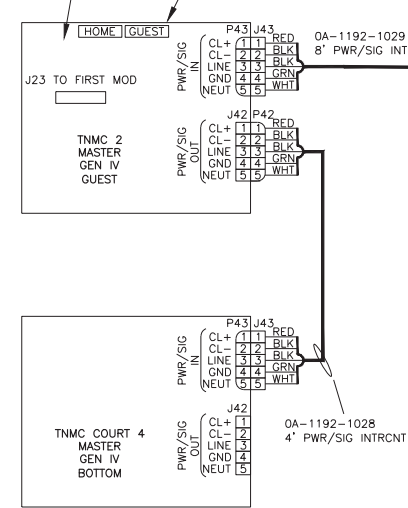
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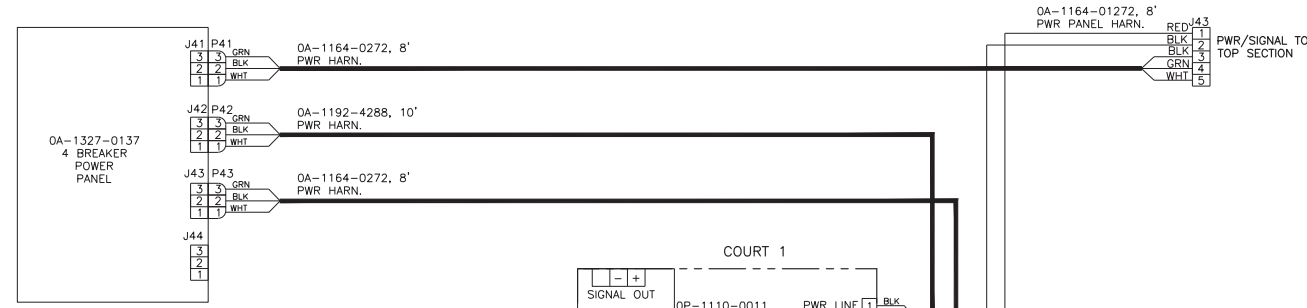
NEW 3500 SERIES TNMC, S2 SETTINGS, TYP
SEE CHART 1

OLDER GEN IV TNMC -- BEFORE NOV 2009, TYP
SEE CHART 2

CONNECT FOR HOME OR GUEST TNMC (OLDER GEN IV MODELS ONLY)

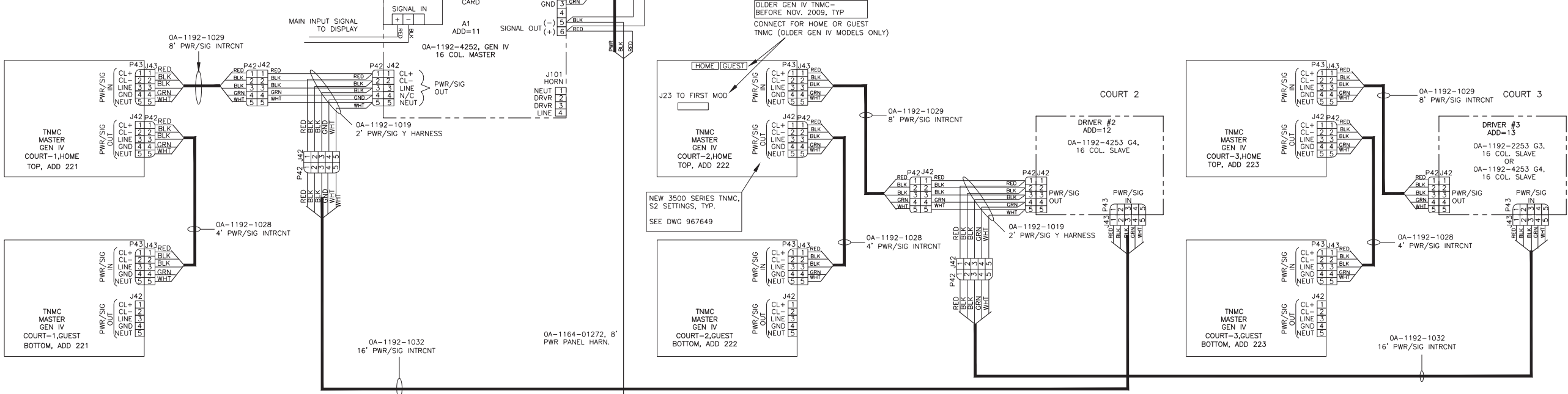


REV 01	DATE: 03 AUG 10	UPDATED TO NEWER TNMC	BY: K2B
		<small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.</small>	
PROJ: TENNIS SCOREBOARD TITLE: SCHEMATIC; TN-2650, TN-2651 MID / BOTTOM SECTIONS DESIGN: DDING DATE: 09 JUN 09			
SCALE: NONE			
SHEET 01	REV P1164	JOB NO: R-03-C	854321

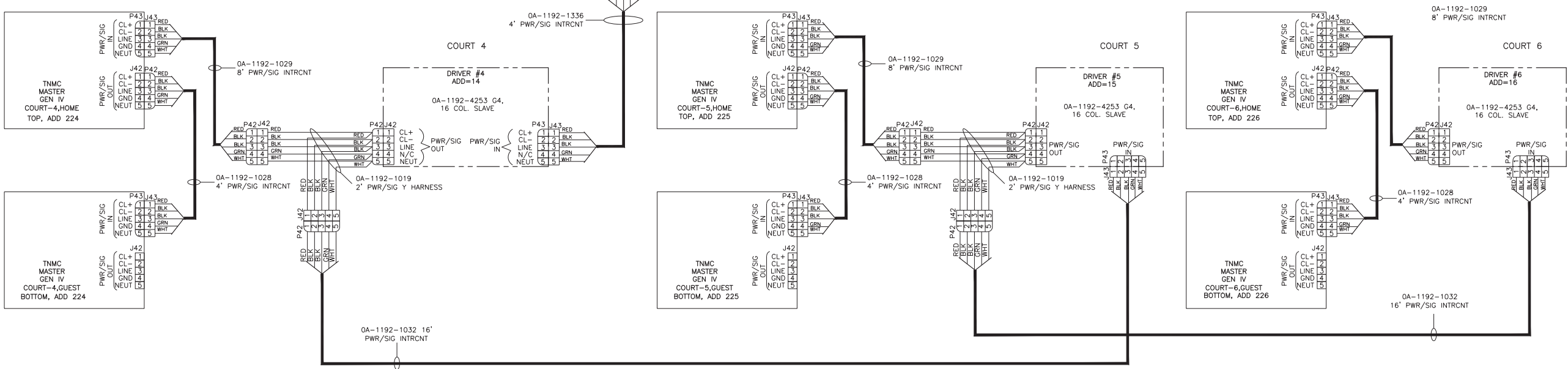


W/O TNMC'S / W/O T.O.D.		W/ TNMC'S / W/ T.O.D.	
SYSTEM VOLTAGE	120/240	SYSTEM VOLTAGE	120/240
# OF POLES	3	# OF POLES	3
AMPERES PER LINE	17.5	AMPERES PER LINE	20
MAXIMUM WATTS	3,900	MAXIMUM WATTS	4,200

W/O TNMC'S / W/ T.O.D.		W/ TNMC'S / W/ T.O.D.	
SYSTEM VOLTAGE	120/240	SYSTEM VOLTAGE	120/240
# OF POLES	3	# OF POLES	3
AMPERES PER LINE	20	AMPERES PER LINE	22.5
MAXIMUM WATTS	4,200	MAXIMUM WATTS	4,500



MIDDLE SECTION
BOTTOM SECTION

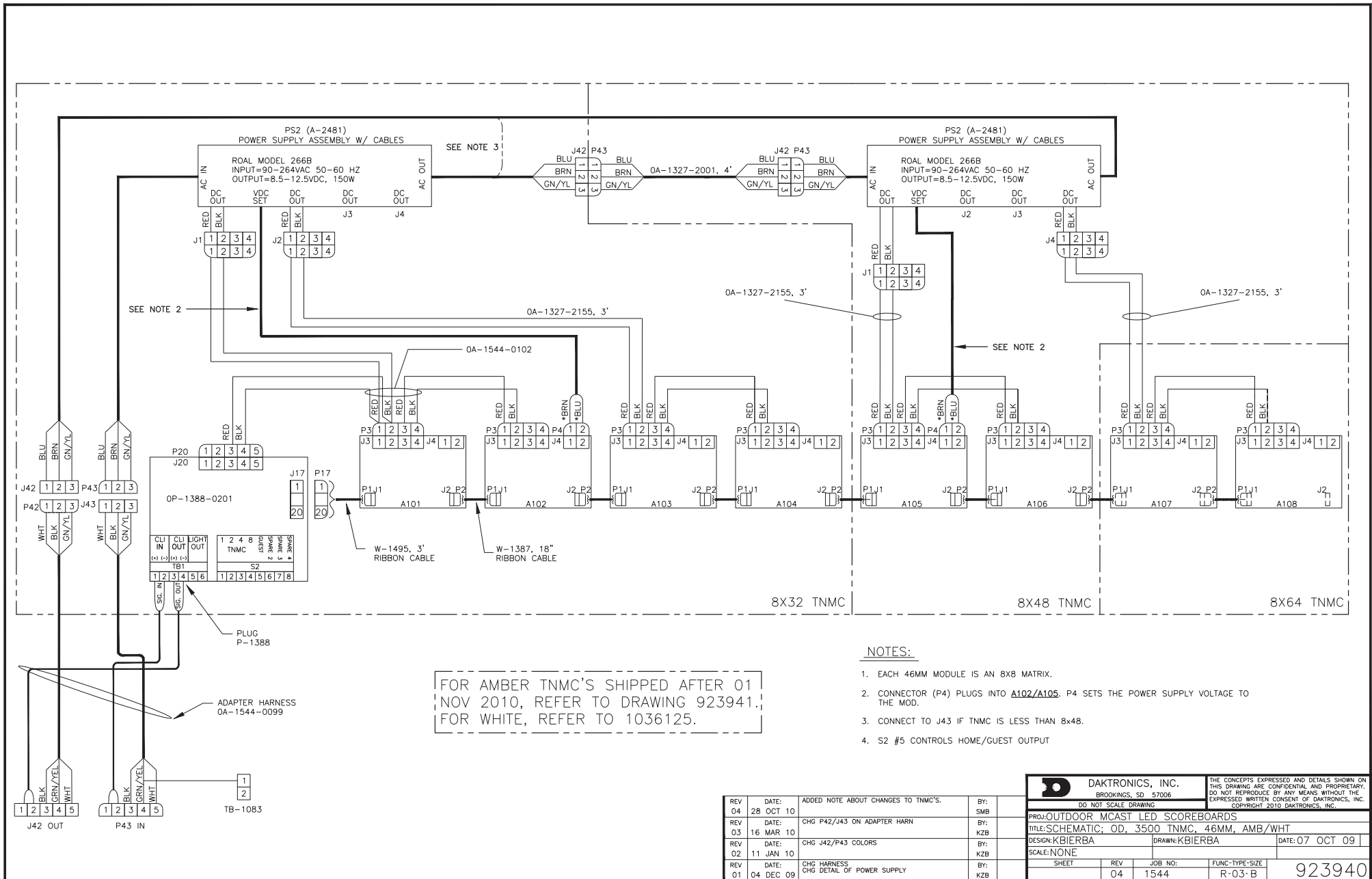


DAKTRONICS, INC.
BROOKINGS, SD 57006
DO NOT SCALE DRAWING

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.

PROJ: TENNIS SCOREBOARDS
TITLE: SCHEMATIC ; TN-2655 MID SECTION
DESIGN: DRAWN: DDING DATE: 11 JUN 09
SCALE: NONE

REV 01	DATE: 30 NOV 10	UPDATED CONTROLLERS TO TNMC'S	BY: JJD	SHEET 01	REV P1164	JOB NO: E-03-C	FUNC-TYPE-SIZE	858107
--------	-----------------	-------------------------------	---------	----------	-----------	----------------	----------------	--------



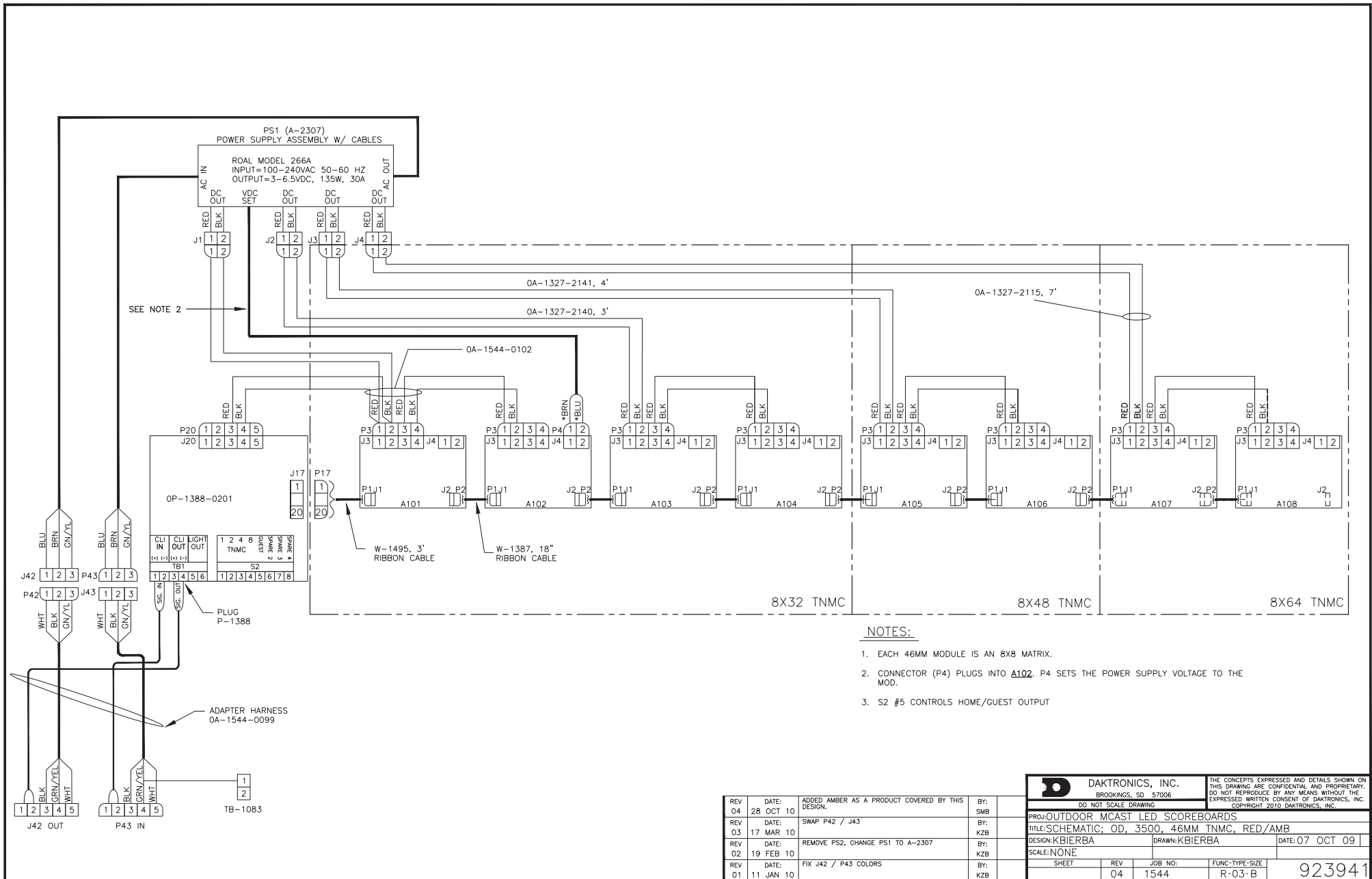
FOR AMBER TNMC'S SHIPPED AFTER 01 NOV 2010, REFER TO DRAWING 923941. FOR WHITE, REFER TO 1036125.

NOTES:

1. EACH 46MM MODULE IS AN 8X8 MATRIX.
2. CONNECTOR (P4) PLUGS INTO **A102/A105**. P4 SETS THE POWER SUPPLY VOLTAGE TO THE MOD.
3. CONNECT TO J43 IF TNMC IS LESS THAN 8x48.
4. S2 #5 CONTROLS HOME/GUEST OUTPUT

REV	DATE	ADDED NOTE ABOUT CHANGES TO TNMC'S.	BY:
04	28 OCT 10		SMB
03	16 MAR 10	CHG P42/J43 ON ADAPTER HARN	KZB
02	11 JAN 10	CHG J42/P43 COLORS	KZB
01	04 DEC 09	CHG HARNESS CHG DETAIL OF POWER SUPPLY	KZB

DAKTRONICS, INC. BROOKINGS, SD 57006		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.
DO NOT SCALE DRAWING		
PROJ: OUTDOOR MCAST LED SCOREBOARDS TITLE: SCHEMATIC; OD, 3500 TNMC, 46MM, AMB/WHT DESIGN: KBIERBA DRAWN: KBIERBA DATE: 07 OCT 09		
SCALE: NONE SHEET REV JOB NO. FLUNC-TYPE-SIZE		
04 1544 R-03-B 923940		



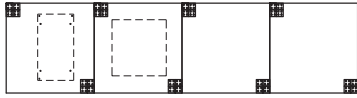
NOTES:

1. EACH 46MM MODULE IS AN 8X8 MATRIX.
2. CONNECTOR (P4) PLUGS INTO A102. P4 SETS THE POWER SUPPLY VOLTAGE TO THE MOD.
3. S2 #5 CONTROLS HOME/GUEST OUTPUT

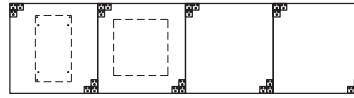
REV 04	DATE: 28 OCT 10	ADDED AMBER AS A PRODUCT COVERED BY THIS DESIGN.	BY: SMB
REV 03	DATE: 17 MAR 10	SWAP P42 / J43	BY: KZB
REV 02	DATE: 19 FEB 10	REMOVE PS2, CHANGE PS1 TO A-2307	BY: KZB
REV 01	DATE: 11 JAN 10	FIX J42 / P43 COLORS	BY: KZB

DAKTRONICS, INC. BROOKINGS, SD 57006		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.	
DO NOT SCALE DRAWING			
PROJ: OUTDOOR MCAST LED SCOREBOARDS			
TITLE: SCHEMATIC; OD, 3500, 46MM TNMC, RED/AMB			
DESIGN: KBIERBA		DRAWN: KBIERBA	
SCALE: NONE		DATE: 07 OCT 09	
SHEET	REV	JOB NO.	FLUNC-TYPE-SIZE
04	04	1544	R-03-B
			923941

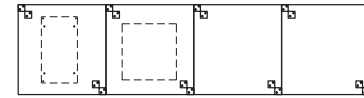
8x32- 34MM AMBER LED TNMC



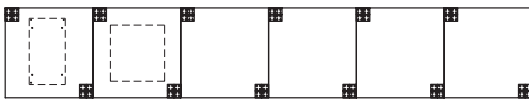
8x32- 34MM RED LED TNMC



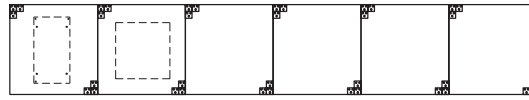
8x32- 34MM WHITE LED TNMC



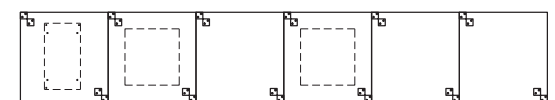
8x48- 34MM AMBER LED TNMC



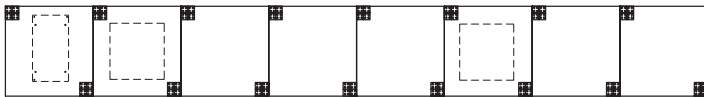
8x48- 34MM RED LED TNMC



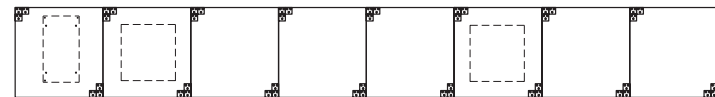
8x48- 34MM WHITE LED TNMC



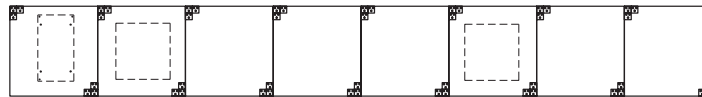
8x64- 34MM AMBER LED TNMC



8x64- 34MM RED LED TNMC



8x64- 34MM WHITE LED TNMC



AMBER LED TNMC MODULE



RED LED TNMC MODULE



WHITE LED TNMC MODULE



DRIVER

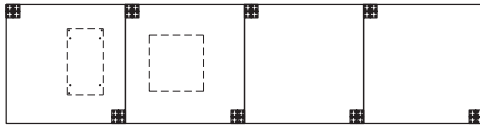


POWER SUPPLY

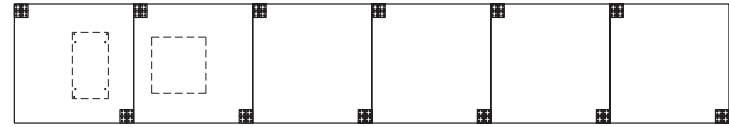
DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.	
		PROJ: OUTDOOR LED SCOREBOARDS TITLE: COMPONENT LOC.: 34MM RED/AMB/WHT LED TNMC G4	
DESIGN: KDRAGT		DRAWN: KOLSON	
SCALE: 1=15		DATE: 18 FEB 10	
SHEET	REV	JOB NO.	FLUNC-TYPE-SIZE
	02	P1544	R-08-B
			975100

REV	DATE	ADDED 1 P.S. TO 8X48-34MM WHITE (TWO REQUIRED). ADDED 8X64-34MM WHITE LAYOUT.	BY:
02	11 SEP 12		SMB
REV	DATE	MADE DRAWING GENERIC	BY:
01	04 NOV 10		SAG

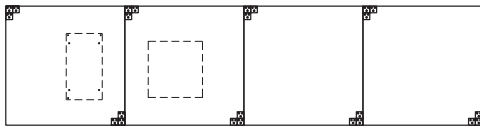
8X32- 46MM AMBER LED TNMC



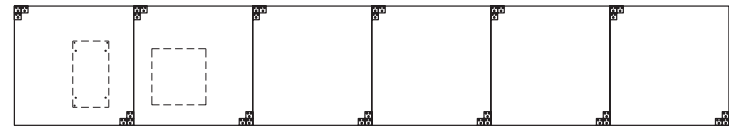
8X48- 46MM AMBER LED TNMC



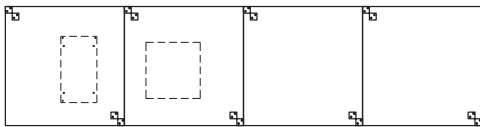
8X32- 46MM RED LED TNMC



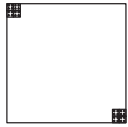
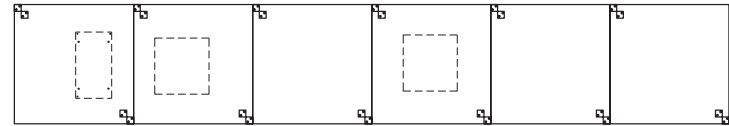
8X48- 46MM RED LED TNMC



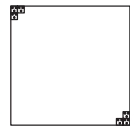
8X32- 46MM WHITE LED TNMC



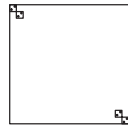
8X48- 46MM WHITE LED TNMC



AMBER LED TNMC MODULE



RED LED TNMC MODULE




WHITE LED TNMC MODULE



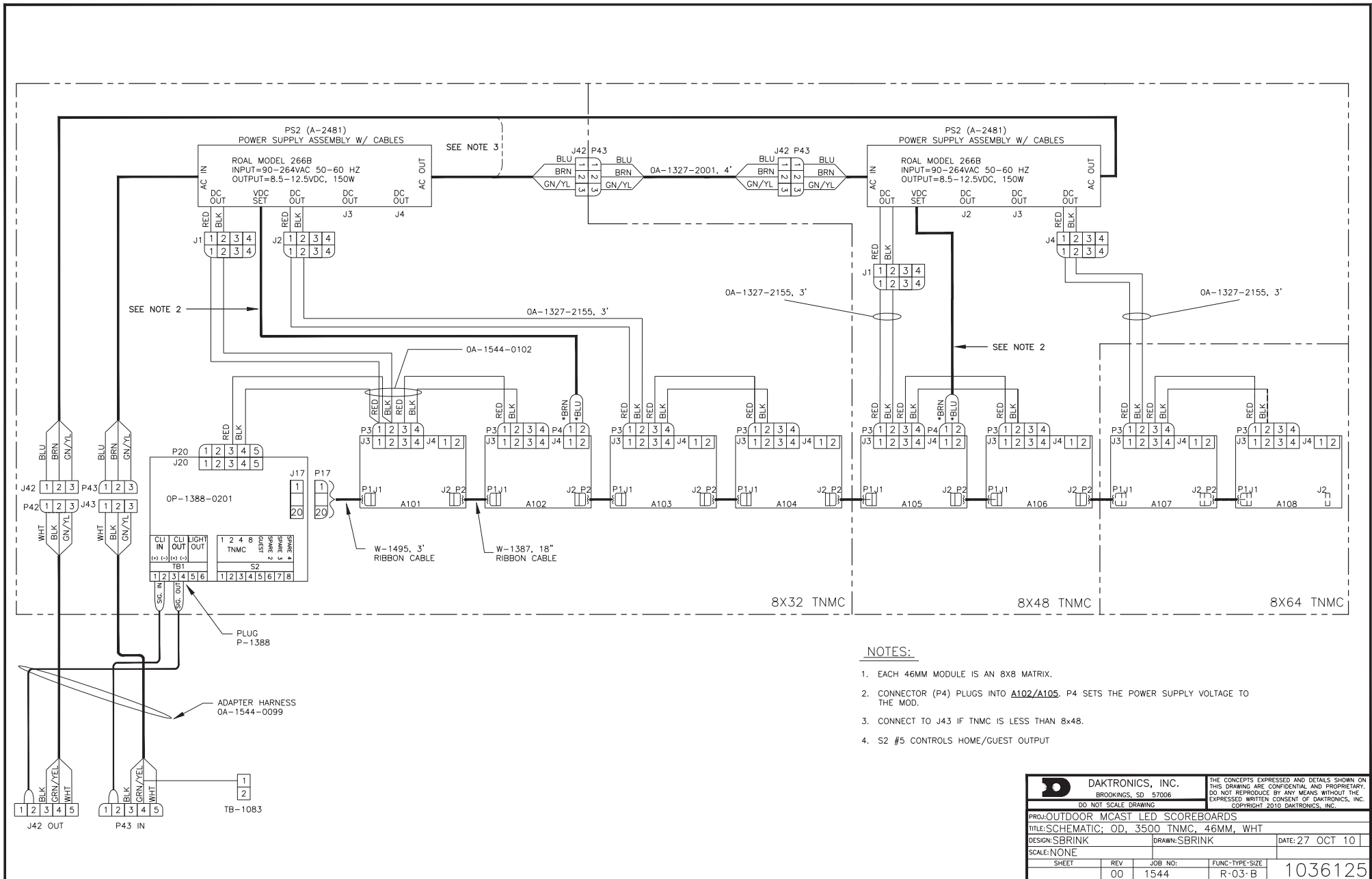
DRIVER



POWER SUPPLY

 DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.				
		PROJ: OUTDOOR LED SCOREBOARDS TITLE: COMPONENT LOC.: 46MM RED/AMB/WHT LED TNMC G4 DESIGN: KDRAGT DRAWN: KOLSON DATE: 19 FEB 10				
SCALE: 1=15		SHEET	REV 01	JOB NO. P1544	FLUNC-TYPE-SIZE R-08-B	975635

REV	DATE	MADE DRAWING GENERIC	BY:
01	04 NOV 10		SAG



NOTES:

1. EACH 46MM MODULE IS AN 8X8 MATRIX.
2. CONNECTOR (P4) PLUGS INTO A102/A105. P4 SETS THE POWER SUPPLY VOLTAGE TO THE MOD.
3. CONNECT TO J43 IF TNMC IS LESS THAN 8X48.
4. S2 #5 CONTROLS HOME/GUEST OUTPUT

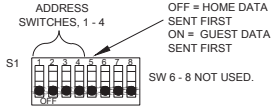
DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.	
		PROJ: OUTDOOR MCAST LED SCOREBOARDS TITLE: SCHEMATIC; OD, 3500 TNMC, 46MM, WHT DESIGN: SBIRNK DRAWN: SBIRNK DATE: 27 OCT 10	
SCALE: NONE			
SHEET	REV	JOB NO.	FLUNC-TYPE-SIZE
	00	1544	R-03-B
			1036125

FOR THE LED DRIVER, CONTROLS THE DIGITS



● = DEPRESSED SIDE OF SWITCH

FOR THE TNMC CONTROLLER



KEY: 0 = SWITCH OFF
1 = SWITCH ON

		SWITCH 8	SWITCH 7	SWITCH 6	SWITCH 5	SWITCH 4	SWITCH 3	SWITCH 2	SWITCH 1
(DRIVER) COURT 1	11	0	0	0	0	1	0	1	1
COURT 2	12	0	0	0	0	1	1	0	0
COURT 3	13	0	0	0	0	1	1	0	1
COURT 4	14	0	0	0	0	1	1	1	0
COURT 5	15	0	0	0	0	1	1	1	1
COURT 6	16	0	0	0	1	0	0	0	0
COURT 7	17	0	0	0	1	0	0	0	1
COURT 8	18	0	0	0	1	0	0	1	0
COURT 9	29	0	0	0	1	1	1	0	1
COURT 10	30	0	0	0	1	1	1	1	0
COURT 11	31	0	0	0	1	1	1	1	1
COURT 12	32	0	0	1	0	0	0	0	0
COURT 13	33	0	0	1	0	0	0	0	1
COURT 14	34	0	0	1	0	0	0	1	0
COURT 15	35	0	0	1	0	0	0	1	1
COURT 16	36	0	0	1	0	0	1	0	0
COURT 17	37	0	0	1	0	0	1	0	1
COURT 18	38	0	0	1	0	0	1	1	0

DUAL 1 TOD/TEAM SCORE	20	0	0	0	1	0	1	0	0
DUAL 2 TOD/TEAM SCORE	21	0	0	0	1	0	1	0	1
DUAL 3 TOD/TEAM SCORE	23	0	0	0	1	0	1	1	0

NOTE: ADD 22 IS NOTE USED, RESERVED FOR OTHER THINGS

NOTES

A SINGLE COURT SCOREBOARD, SOLD AS COURT 1 ONLY, SHOULD BE SET WITH ADDRESS 11 (DRIVER) AND 221 (TNMC) IN MANUFACTURING.

IF SEVERAL SINGLE COURT SCOREBOARDS ARE SOLD, THEY WILL NEED TO BE DESIGNATED COURT 1, 2, 3, ETC. THEN SET THE ADDRESSES FOR THE SCOREBOARDS AND OPTIONAL TNMCS, TO MATCH THE COURT NUMBER, IN MANUFACTURING.

		SWITCH SP4	SWITCH SP3	SWITCH SP2	SWITCH GST	SWITCH 8	SWITCH 4	SWITCH 2	SWITCH 1
(TNMC) COURT 1	221	/	/	/	/	0	0	0	0
COURT 2	222	/	/	/	/	0	0	0	1
COURT 3	223	/	/	/	/	0	0	0	1
COURT 4	224	/	/	/	/	0	0	0	1
COURT 5	225	/	/	/	/	0	1	0	0
COURT 6	226	/	/	/	/	0	1	0	1
COURT 7	227	/	/	/	/	0	1	1	0
COURT 8	228	/	/	/	/	0	1	1	1
COURT 9	229	/	/	/	/	1	0	0	0
COURT 10	231	/	/	/	/	1	0	1	0
COURT 11	232	/	/	/	/	1	0	1	1
COURT 12	233	/	/	/	/	1	1	0	0
DUAL 1 TOD/TEAM SCORE	230	/	/	/	/	1	1	0	0
DUAL 2 TOD/TEAM SCORE	234	/	/	/	/	1	1	1	0

SELECTS HOME (0) OR GUEST (1)

NOTE: COURTS ABOVE 13 DO NOT SUPPORT TNMCS

MODEL	ADDRESS	VOLTAGE	VINYL CAPTIONS		8X32/8X48/8X64 34MM TNMC	
			WATTS ALL COLOR	AMPS ALL COLOR	WATTS ALL COLOR	AMPS ALL COLOR
TN-2016	A1	*11	120 240	300	2.5 1.3	-
TN-2601	A1	*11	120 240	300	2.5 1.3	-
TN-2603, 2604, 2606, 2607	A1	*11	120 240	300	2.5 1.3	600 2.5
TN-2650, 2652, 2653, 2654, 2655, 2656, 2657	SEE SCHEMATIC					

NOTES

A SINGLE COURT SCOREBOARD, SOLD AS COURT 1 ONLY, SHOULD BE SET WITH ADDRESS 11 (DRIVER) AND 221 (TNMC) IN MANUFACTURING.

IF SEVERAL SINGLE COURT SCOREBOARDS ARE SOLD, THEY WILL NEED TO BE DESIGNATED COURT 1, 2, 3, ETC. THEN SET THE ADDRESSES FOR THE SCOREBOARDS AND OPTIONAL TNMCS, TO MATCH THE COURT NUMBER, IN MANUFACTURING.

MODEL	ADDRESS	VOLTAGE	VINYL CAPTIONS		8X32/8X48/8X64 34MM TNMC	
			WATTS ALL COLOR	AMPS ALL COLOR	WATTS ALL COLOR	AMPS ALL COLOR
TN-2605	A1	20	120V	300	2.5	600
	TNMC	230	240V	300	1.3	600
TEAM SCORE, OPT. TOD	A1	20	120V	300	2.5	600
	TNMC	230	240V	300	1.3	600

BEFORE SEPT OF 2013, THIS CHART WAS USED, PREVIOUSLY LISTED ON DWG-967649, FOR THE SETTINGS OF EXISTING PRODUCT IN THE FIELD.

MODEL	ADDRESS	VOLTAGE	VINYL CAPTIONS		8X32/8X48/8X64 34MM TNMC	
			WATTS ALL COLOR	AMPS ALL COLOR	WATTS ALL COLOR	AMPS ALL COLOR
TN-2016	A1	11	120 240	300	2.5 1.3	-
TN-2601	A1	11	120 240	300	2.5 1.3	-
TN-2603	A1	11	120 240	300	2.5 1.3	600 5
TN-2604	A1	11	120 240	300	2.5 1.3	600 2.5
TN-2605	A1	11	120 240	300	2.5 1.3	600 2.5
TN-2650, 2652, 2653, 2654, 2655	SEE SCHEMATIC					

SERVICES NOTE: BEFORE 2009, TNMC CONTROLLER USE ADDRESS PLUGS OR A DIP PACKAGE. THE RIBBON CABLE IS ON EITHER J25 OR J26 FOR THE HOME/GUEST SIDE SELECT.

REFER TO THOSE ASSYS FOR ALL INFORMATION.

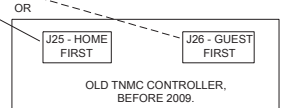
OLD ADDRESS SETTINGS.

221	1	1	0	1	1	1	0	1
222	1	1	0	1	1	1	1	0
223	1	1	0	1	1	1	1	1
224	1	1	1	0	0	0	0	1



228	1	1	1	0	0	1	0	0
229	1	1	1	0	0	1	0	1
230	1	1	1	0	0	1	1	0

TO FIRST MOD.



REV 01	DATE: 09 SEP 13	UPDATED DRAWING TO BE THE POWER AND ADDRESS DOCUMENT FOR OUTDOOR TENNIS SCOREBOARDS.	BY: MWM
DAKTRONICS, INC. BROOKINGS, SD 57006		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2013 DAKTRONICS, INC.	
PROJ: TENNIS SCOREBOARDS			
TITLE: POWER AND ADDRESS DETAILS; OUTDOOR TENNIS SCOREBOARDS			
DESIGN: KBIERBA	DRAWN: KBIERBA	DATE: 20 MAY 11	
SCALE: NONE			
SHEET	REV 01	JOB NO. P1164	FLWC-TYPE-SIZE E-03-B
			1054089

Appendix B: Daktronics Warranty and Limitation of Liability

**DAKTRONICS
WARRANTY AND LIMITATION OF LIABILITY**

This Warranty and Limitation of Liability (the "Warranty") sets forth the warranty provided by Daktronics with respect to the Equipment. By accepting delivery of the Equipment, Purchaser agrees to be bound by and accept these terms and conditions. All defined terms within the Warranty shall have the same meaning and definition as provided elsewhere in the Agreement.

DAKTRONICS WILL ONLY BE OBLIGATED TO HONOR THE WARRANTY SET FORTH IN THESE TERMS AND CONDITIONS UPON RECEIPT OF FULL PAYMENT FOR THE EQUIPMENT.

1. Warranty Coverage

A. Daktronics warrants to the original end-user that the Equipment will be free from Defects (as defined below) in materials and workmanship for a period of one (1) year (the "Warranty Period"). The warranty period shall commence on the earlier of: (i) four weeks from the date that the equipment leaves Daktronics' facility; or (ii) Substantial Completion as defined herein. The warranty period shall expire on the first anniversary of the commencement date.

"Substantial Completion" means the operational availability of the Equipment to the Purchaser in accordance with the Equipment's specifications, without regard to punch-list items, or other non-substantial items which do not affect the operation of the Equipment.

B. Daktronics' obligation under this Warranty is limited to, at Daktronics' option, replacing or repairing, any Equipment or part thereof that is found by Daktronics not to conform to the Equipment's specifications. Unless otherwise directed by Daktronics, any defective part or component shall be returned to Daktronics for repair or replacement. Daktronics may, at its option, provide on-site warranty service. Daktronics shall have a reasonable period of time to make such replacements or repairs and all labor associated therewith shall be performed during regular working hours. Regular working hours are Monday through Friday between 8:00 a.m. and 5:00 p.m. at the location where labor is performed, excluding any holidays observed by either Purchaser or Daktronics.

C. Daktronics shall pay ground transportation charges for the return of any defective component of the Equipment. If returned Equipment is repaired or replaced under the terms of this warranty, Daktronics will prepay ground transportation charges back to Purchaser; otherwise, Purchaser shall pay transportation charges to return the Equipment back to the Purchaser. All returns must be pre-approved by Daktronics before shipment. Daktronics shall not be obligated to pay freight for any unapproved return. Purchaser shall pay any upgraded or expedited transportation charges.

D. Any replacement parts or Equipment will be new or serviceably used, comparable in function and performance to the original part or Equipment, and warranted for the remainder of the Warranty Period. Purchasing additional parts or Equipment from the Seller does not extend this Warranty Period.

E. Defects shall be defined as follows. With regard to the Equipment (excepting LEDs), a "Defect" shall refer to a material variance from the design specifications that prohibit the Equipment from operating for its intended use. With respect to LEDs, "Defects" are defined as LED pixels that cease to emit light. The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for partial LED pixel degradation. Nor does the limited warranty provide for the replacement or installation of communication methods including but not limited to, wire, fiber optic cable, conduit, trenching, or for the purpose of overcoming local site interference radio equipment substitutions.

THIS LIMITED WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THE EQUIPMENT AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SPECIFICALLY, EXCEPT AS PROVIDED HEREIN, THE SELLER UNDERTAKES NO RESPONSIBILITY FOR THE QUALITY OF THE EQUIPMENT OR THAT THE EQUIPMENT WILL BE FIT FOR ANY PARTICULAR PURPOSE FOR WHICH PURCHASER MAY BE BUYING THE EQUIPMENT. ANY IMPLIED WARRANTY IS LIMITED IN DURATION TO THE WARRANTY PERIOD. NO ORAL OR WRITTEN INFORMATION, OR ADVICE GIVEN BY THE COMPANY, ITS AGENTS OR EMPLOYEES, SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS LIMITED WARRANTY.

THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

2. Exclusion from Warranty Coverage

The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for:

A. Any damage occurring, at any time, during shipment of Equipment unless otherwise provided for in the Agreement. When returning Equipment to Daktronics for repair or replacement, Purchaser assumes all risk of loss or damage, and agrees to use any shipping containers that might be provided by Daktronics and to ship the Equipment in the manner prescribed by Daktronics;

B. Any damage caused by the unauthorized adjustment, repair or service of the Equipment by anyone other than personnel of Daktronics or its authorized repair agents;



C. Damage caused by the failure to provide a continuously suitable environment, including, but not limited to: (i) neglect or misuse, (ii) a failure or sudden surge of electrical power, (iii) improper air conditioning or humidity control, or (iv) any other cause other than ordinary use;

D. Damage caused by fire, flood, earthquake, water, wind, lightning or other natural disaster, strike, inability to obtain materials or utilities, war, terrorism, civil disturbance or any other cause beyond Daktronics' reasonable control;

E. Failure to adjust, repair or replace any item of Equipment if it would be impractical for Daktronics personnel to do so because of connection of the Equipment by mechanical or electrical means to another device not supplied by Daktronics, or the existence of general environmental conditions at the site that pose a danger to Daktronics personnel;

F. Any statements made about the product by salesmen, dealers, distributors or agents, unless such statements are in a written document signed by an officer of Daktronics. Such statements as are not included in a signed writing do not constitute warranties, shall not be relied upon by Purchaser and are not part of the contract of sale;

G. Any damage arising from the use of Daktronics products in any application other than the commercial and industrial applications for which they are intended, unless, upon request, such use is specifically approved in writing by Daktronics; or

H. Any performance of preventive maintenance.

3. **Limitation of Liability**

Daktronics shall be under no obligation to furnish continued service under this Warranty if alterations are made to the Equipment without the prior written approval of Daktronics.

It is specifically agreed that the price of the Equipment is based upon the following limitation of liability. In no event shall Daktronics (including its subsidiaries, affiliates, officers, directors, employees, or agents) be liable for any special, consequential, incidental or exemplary damages arising out of or in any way connected with the Equipment or otherwise, including but not limited to damages for lost profits, cost of substitute or replacement equipment, down time, lost data, injury to property or any damages or sums paid by Purchaser to third parties, even if Daktronics has been advised of the possibility of such damages. The foregoing limitation of liability shall apply whether any claim is based upon principles of contract, tort or statutory duty, principles of indemnity or contribution, or otherwise.

In no event shall Daktronics be liable to Purchaser or any other party for loss, damage, or injury of any kind or nature arising out of or in connection with this Warranty in excess of the purchase price of the Equipment actually delivered to and paid for by the Purchaser. The Purchaser's remedy in any dispute under this Warranty shall be ultimately limited to the Purchase Price of the Equipment to the extent the Purchase Price has been paid.

4. **Assignment of Rights**

The Warranty contained herein extends only to the original end-user (which may be the Purchaser) of the Equipment and no attempt to extend the Warranty to any subsequent user-transferee of the Equipment shall be valid or enforceable without the express written consent of Daktronics.

5. **Dispute Resolution**

Any dispute between the parties will be resolved exclusively and finally by arbitration administered by the American Arbitration Association ("AAA") and conducted under its rules, except as otherwise provided below. The arbitration will be conducted before a single arbitrator. The arbitration shall be held in Brookings, South Dakota. Any decision rendered in such arbitration proceedings will be final and binding on each of the parties, and judgment may be entered thereon in any court of competent jurisdiction. This arbitration agreement is made pursuant to a transaction involving interstate commerce, and shall be governed by the Federal Arbitration Act.

6. **Governing Law**

The rights and obligations of the parties under this warranty shall not be governed by the provisions of the United Nations Convention on Contracts for the International Sales of Goods of 1980. Both parties consent to the application of the laws of the State of South Dakota to govern, interpret, and enforce all of Purchaser and Daktronics rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Warranty, without regard to conflict of law principles.

7. **Availability of Extended Service Agreement**

For Purchaser's protection, in addition to that afforded by the warranties set forth herein, Purchaser may purchase extended warranty services to cover the Equipment. The Extended Service Agreement, available from Daktronics, provides for electronic parts repair and/or on-site labor for an extended period from the date of expiration of this warranty. Alternatively, an Extended Service Agreement may be purchased in conjunction with this warranty for extended additional services. For further information, contact Daktronics Customer Service at 1-800-DAKTRONics (1-800-325-8766).