

# Multi-Section Outdoor Incandescent Scoreboards

## Installation, Maintenance, and Specifications Manual

ED11973

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Model Numbers				
BA-1518	FB-1430	FB-1630L	FB-2002	SO-1424
BA-1524	FB-1524	FB-1730	FB-2003	SO-1624
BA-3718	FB-1530	FB-1830	FB-2004	SO-1830
BA-3724	FB-1624	FB-1830L	MS-2009	SO-1930
FB-1424	FB-1630	FB-2001	MS-2118	SO-2030

**ED11973**  
**Product 1091**  
**Rev 7 – 23 September 2002**

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

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

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

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



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# Section 1: Introduction

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## 1.1 How To Use This Manual

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This manual explains the installation of Daktronics multi-section outdoor incandescent scoreboards and provides details for display maintenance. For questions regarding the safety, installation, operation, or service of this system, please refer to the telephone numbers listed on the cover page of this manual. This manual would be referred to as ED11973.

### Important Safeguards:

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

The box at right illustrates the Daktronics drawing numbering system. The drawing number is located in the lower-right corner of the drawing label (in the example, 7087-P08A-69945). In this manual, drawings are referenced by their last set of digits and the letter preceding them. In **Figure 1**, the drawing would be referred to as **Drawing A-69945**. Drawings are inserted in alphanumeric order in the **Appendix**.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: BASKETBALL		
TITLE: SEGMENTATION, 7 SEG BAR DIGIT		
DES. BY: BPETERSON	DRAWN BY: TNELSON	DATE: 8 JUL 01
APPR. BY: AVB	7087-P08A-69945	
SCALE: 1 = 4		

Figure 1: Daktronics Drawing Label

## 1.2 Product Safety Approval

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

## 1.3 Manual Overview

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The Daktronics Multi-Section Outdoor Incandescent Scoreboard Manual is divided into the following sections:

- Section 1:** Provides an overview of this manual, product safety information, and an explanation of the Daktronics drawing numbering system.
- Section 2:** Lists drawings needed to determine the scoreboard model numbers.
- Section 3:** Contains tables that show all of the mechanical specifications, circuit specifications, and maximum power requirements for each model.
- Section 4:** Lists drawings needed to determine the location of scoreboard components.
- Section 5:** Lists the electrical schematic drawings for each model.
- Section 6:** Contains information needed to perform the mechanical installation for each model.

- Section 7:*** Contains information needed to perform the electrical installation for each model.
- Section 8:*** Contains scoreboard service information.
- Section 9:*** Contains team name message center service information.
- Section 10:*** Describes scoreboard options and provides installation instructions.
- Appendix A:*** Contains all drawings referenced in this manual.
- Appendix B:*** Contains ED7244, a detailed instruction on scoreboard lifting and eyebolts.

## Section 2: Model Identification

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Use the following drawings to determine your scoreboard model number. The drawings are inserted in **Appendix A** in alphanumeric order.

Multi-Section Baseball Scoreboards.....	<b>Drawing A-126086</b>
Multi-Section Baseball Scoreboards, w/TNMC .....	<b>Drawing A-126362</b>
Multi-Section Football Scoreboards.....	<b>Drawing A-42148</b>
Multi-Section Football Scoreboards w/TNMC.....	<b>Drawing A-84233</b>
Multi-Section Soccer Scoreboards .....	<b>Drawing A-98161</b>
Multi-Section Soccer Scoreboards w/TNMC .....	<b>Drawing A-128172</b>
Multiple Section Multisport Scbd Models .....	<b>Drawing A-128203</b>



## Section 3: Specifications

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



### 3.1 Multi-Section Scoreboards

**Note 1:** Signal wires must be a minimum of 22-gauge with shield. Daktronics recommends using W-1234.

**Note 2:** 120/240V AC or 2 lines of 120V AC from a 120/208 WYE service.

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix	Wattage		Power (See Note 2)	Amps per Line (Single Phase)	Driver Number and Address
					Lamp	Maximum			
BA-1518	2 Total	H8'-0", W16'-0", D6" (2438 mm, 4877 mm, 152 mm)	500 lb 227 kg (857 lb) (388 kg)	18" 3x5 (457 mm)	25 W	4,755 W	120/240 or 120/208 V AC	L1 22 L2 18	A1 63
	Top	H3'-0", W16'-0", D6" (914 mm, 4877 mm, 152 mm)		18" 4x7 (457 mm)	25 W	7,255 W		L1 34 L2 28	
	Bottom	H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)		Indicators	40 W				
BA-1518 w/TNMC	2 Total	H8'-0", W16'-0", D6" (2438 mm, 4877 mm, 152 mm)	600 lb 273 kg (1,140 lb) (519 kg)	18" 3x5 (457 mm)	25 W	7,080 W	120/240 or 120/208 V AC	L1 32 L2 27	A1 63
	Top	H3'-0", W16'-0", D6" (914 mm, 4877 mm, 152 mm)		18" 4x7 (457 mm)	25 W	9,600 W		L1 43 L2 37	
	Bottom	H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)		Indicators	40 W				
BA-1524	2 Total	H9'-0", W16'-0", D6" (2743 mm, 4877 mm, 152 mm)	600 lb 273 kg (1,140 lb) (519 kg)	Runs, Hits, Errors 18" 3x5 (457 mm)	25 W	5,505 W	120/240 or 120/208 V AC	L1 27 L2 17	A1 63
	Top	H4'-0", W16'-0", D6" (1219 mm, 4877 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W	7,255 W		120/240 or 120/208 V AC	
	Bottom	H5'-0", W16'-0", D6" (1524 mm, 4877 mm, 152 mm)		Indicators	40 W				

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix	Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number and Address	
					Lamp	Maximum		L1	L2	A1	A2
BA-3718	4 Total	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm)	800 lb 364 kg	Innings, Runs, Hits, Err 15" 3x5 (381 mm)	All Digits 25 W	12,025 W	120/240 or 120/208V AC	L1 57 L2 44	A1 64 A2 65 A3 66		
	2 Top	H3'-0", W14'-0", D6" (914 mm, 8534 mm, 152 mm)	2 crates (925 lb) (419 kg) (585 lb) (265 kg)	All Others 18" 3x5 (457 mm)							
	2 Bottom	H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)									
BA-3718 w/TNMC	4 Total	H7'-0", W28'-0", D6" (2134 mm, 8534 mm, 152 mm)	900 lb 409 kg	Innings, Runs, Hits, Err 15" 3x5 (381 mm)	All Digits 25 W	13,945 W	120/240 or 120/208V AC	L1 65 L2 51	A1 64 A2 65 A3 66		
	2 Top	H3'-0", W14'-0", D6" (914 mm, 4267 mm, 152 mm)	2 crates (932 lb) (419 kg)								
	2 Bottom	H4'-0", W14'-0", D6" (1219 mm, 4267 mm, 152 mm)	(585 lb) (265 kg)	All Others 18" 3x5 (457 mm)							
BA-3724	4 Total	H9'-4", W36'-0", D6" (2845 mm, 10 973 mm, 152 mm)	1050 lb 477 kg	Innings, Runs, Hits, Err 18" 3x5 (457 mm)	All Digits 25 W	13,250 W	120/240 or 120/208V AC	L1 53 L2 58	A1 64 A2 65 A3 66		
	2 Top	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	2 crates (805 lb) (365 kg)	All Others 24" 4x7 (610 mm)							
	2 Bottom	H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)	(1,230 lb) (558 kg)	All Digits 4x7						All Digits 25 W	18,500 W

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix	Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number	
					Lamp	Maximum		L1	L2	A1	A2
BA-3724 w/TNMC	4 Total	H9'-4", W36'-0", D6" (2845 mm, 10,973 mm, 152 mm)	1,200 lb (545 kg)	Innings, Runs, Hits, Err 18" 3x5 (457 mm)	All Digits 25 W	16,130 W	120/240 or 120/208 V AC	L1 74 L2 61	A1 64 A2 65 A3 66		
	2 Top	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)	2 crates (1,070 lb) (485 kg)	All Others 24" 4x7 (610 mm)							
	2 Bottom	H5'-4", W18'-0", D6" (1626 mm, 5486 mm, 152 mm)	(1,390 lb) (630 kg)	All Digits 4x7	All Digits 25 W	21,380 W	120/240 or 120/208 V AC	L1 87 L2 91			
FB-1424	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	500 lb 227 kg (905 lb) (410 kg)	24" 4x7 (610 mm)	25 W	7,400 W	120/240 V AC	L1 34 L2 29	A1 12		
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W						
FB-1424 w/TNMC	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	650 lb 295 kg (1,055 lb) (478 kg)	24" 4x7 (610 mm)	25 W	9,635 W	120/240 V AC	L1 43 L2 38	A1 12		
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W						
FB-1430	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	700 lb 381 kg (1,260 lb) (571 kg)	Clock 30" 4x7 (457 mm)	25 W	7,400 W	120/240 or 120/208 V AC	L1 28 L2 20	A1 12		
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W						
				Indicators	25 W						
FB-1430 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	850 lb 386 kg (1,410 lb) (639 kg)	Clock 30" 4x7 (457 mm)	25 W	10,280 W	120/240 or 120/208 V AC	L1 42 L2 34	A1 12		
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W						
				Indicators	25 W						

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix	Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number	
					Lamp	Maximum		L1	L2	A1	A2
FB-1524	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	500 lb 227 kg (905 lb) (410 kg)	24" 4x7 (610 mm)	25 W	7,900 W	120/240 V AC	L1 34	L2 33	A1 12	
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W						
FB-1524 w/TNMC	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	650 lb 294 kg (1,055 lb) (478 kg)	24" 4x7 (610 mm)	25 W	9,820 W	120/240 V AC	L1 43	L2 42	A1 12	
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W						
FB-1530	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	725 lb 330 kg (1,250 lb) (567 kg)	Clock 30" 4x7 (762 mm)	25 W	7,900 W	120/240 or 120/208 V AC	L1 34	L2 33	A1 12	
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W						
				Indicators	25 W						
FB-1530 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	875 lb 330 kg (1,250 lb) (567 kg)	Clock 30" 4x7 (762 mm)	25 W	10,780 W	120/240 or 120/208 V AC	L1 46	L2 45	A1 12	
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W						
				Indicators	25 W						
FB-1624	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	550 lb 250 kg (1,015 lb) (460 kg)	24" 4x7 (610 mm)	25 W	8,400 W	120/240 or 120/208 V AC	L1 34	L2 37	A1 15	
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W			A2 16			

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix	Wattage		Power (See Note 2)	Amps per Line (Single Phase)	Driver Number and Address
					Lamp	Maximum			
FB-1630	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	750 lb 340 kg (1,230 lb) (557 kg)	Clock 30" 4x7 (762 mm)	25 W	8,050 W	120/240 V AC	L1 25 L2 42	A1 15 A2 16
				TOL 18" 3x5 (457 mm)	25 W				
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W				
		Indicators		25 W					
FB-1630 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	900 lb 409 kg (1,475 lb) (670 kg)	Clock 30" 4x7 (762 mm)	25 W	10,930 W	120/240 V AC	L1 46 L2 45	A1 15 A2 16
				TOL 18" 3x5 (457 mm)	25 W				
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W				
		Indicators		25 W					
FB-1630 w/40W Lamps	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	750 lb 340 kg (1,230 lb) (557 kg)	Clock 30" 4X7(4X9?) (762 mm)	40 W	12,880 W	120/140 V AC	L1 45 L2 50	A1 15 A2 16
				TOL 18" 3x5 (457 mm)	40 W				
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others (610 mm)	40 W				
		Indicators		40 W					

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix		Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number and Address	
				Lamp	Maximum	Lamp	Maximum		L1	L2	A1	A2
FB-1630L	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	900 lb 409 kg (1,676 lb) (760 kg)	Clock 30" 4x7 (762 mm)	25 W	8,050 W	120/240 or 120/208 V AC	L1 25 L2 42	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							
FB-1630L w/TNMC	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	1,050 lb 477 kg (1,875 lb) (850 kg)	Clock 30" 4x7 (762 mm)	25 W	10,930 W	120/240 or 120/208 V AC	L1 46 L2 45	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							
FB-1730	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	775 lb 352 kg (1,275 lb) (578 kg)	Clock 30" 4x7 (762 mm)	25 W	8,550 W	120/240 or 120/208 V AC	L1 29 L2 42	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix		Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number and Address	
						Lamp	Maximum					
FB-1730 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	925 lb 419 kg (1,525 lb) (691 kg)	Clock 30" 4x7 (762 mm)	25 W	11,430 W	120/240 or 120/208 V AC	L1 50 L2 45	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							
FB-1830	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	800 lb 364 kg (1,275 lb) (578 kg)	Clock 30" 4x7 (762 mm)	25 W	9,050 W	120/240 or 120/208 V AC	L1 33 L2 46	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							
FB-1830 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	950 lb 432 kg (1,550 lb) (703 kg)	Clock 30" 4x7 (762 mm)	25 W	10,970 W	120/240 or 120/208 V AC	L1 54 L2 45	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix		Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number and Address	
						Lamp	Maximum					
FB-1830L	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	975 lb 443 kg (1,676 lb) (760 kg)	Clock 30" 4x7 (762 mm)	25 W	9,050 W	120/240 or 120/208 V AC	L1 33 L2 42	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
Indicators			25 W									
FB-1830L w/TNMC	2 Total	H8'-0", W32'-0", D6" (2438 mm, 9754 mm, 152 mm)	1,125 lb 511 kg (1,875 lb) (850 kg)	Clock 30" 4x7 (762 mm)	25 W	11,930 W	120/240 or 120/208 V AC	L1 54 L2 45	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
Indicators			25 W									
FB-2001	2 Total	H10'-0", W32'-0", D6" (3048, 9754 mm, 152 mm)	1,175 lb 534 kg (1,976 lb) (896 kg)	Clock 30" 4x7 (762 mm)	25 W	9,050 W	120/240 or 120/208 V AC	L1 33 L2 42	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top	H6'-0", W32'-0", D6" (1829, 9754 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)	Indicators	25 W									
FB-2002	2 Total	H8'-0", W20'-0", D6" (2438, 6096 mm, 152 mm)	650 lb 259 kg (925 lb) (1254 kg)	TOL 15" 3x5 (381 mm)	25 W	8,050 W	120/240 V AC	L1 25 L2 43	A1 15 A2 16			
				All Others 24" 4x7 (610 mm)	25 W							
	Top and Bottom	H4'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)		Indicators	25 W							

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix	Wattage		Power (See Note 2)	Amps per Line (Single Phase)	Driver Number and Address				
					Lamp	Maximum							
FB-2003	2 Total	H8'-0", W20'-0", D6" (2438, 6096 mm, 152 mm)	675 lb 307 kg (950 lb) (1330 kg)	TOL 15" 3x5 (381 mm)	25 W	8,600 W	120/240 or 120/208 V AC	L1 29 L2 43	A1 15 A2 16				
	Top and Bottom	H4'-0", W20'-0", D6" (1219 mm, 6096 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W								
				Indicators	25 W								
FB-2004	2 Total	H10'-0", W32'-0", D6" (3048, 9754 mm, 152 mm)	1,175 lb 534 kg (1,976 lb) (896 kg)	Clock 30" 4x7 (762 mm)	25	8,050 W	120/240 or 120/208 V AC	L1 25 L2 42	A1 15 A2 16				
	Top	H6'-0", W32'-0", D6" (1829, 9754 mm, 152 mm)		TOL 18" 3x5 (457 mm)	25								
				All Others 24" 4x7 (610 mm)	25								
				Indicators	25								
Bottom	H4'-0", W32'-0", D6" (1219 mm, 9754 mm, 152 mm)												
MS-2009	2 Total	H10'-0", W25'-0", D6" (3048 mm, 3048 mm, 152 mm)	900 lbs 408 kg (1,676 lb) (760 kg)	Clock and Score 24" 4x7 All Others 18" 4x7	25 W	14,500 W	120/240 or 120/208 V AC	L1 67 L2 54	A1 71 A2 72				
	Top and Bottom	H5'-0", W25'-0", D6" (1524 mm, 3048 mm, 152 mm)											
				Indicators	25 W								
MS-2118	2 Total	H8'-0", W12'-0", D6" (2438 mm, 3658 mm, 152 mm)	275 lb 125 kg (390 lb) (176 kg)	Clock, Score, Period 18" 3x5 (457 mm) Penalty 15" 3x5 (381 mm)	25 W	6,825 W	120/240 or 120/208 V AC	L1 33 L2 25	A1 71 A2 72				
	Top and Bottom	H4'-0", W12'-0", D6" (1219 mm, 5486 mm, 152 mm)		Clock, Score, Period 18" 4x7 (457 mm) Penalty 15" 4x7 (381 mm)	25 W					11,700 W	120/240 or 120/208 V AC	L1 53 L2 44	A1 71 A2 72
					30 W								

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix		Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number and Address	
				Lamp	Maximum							
SO-1424	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	500 lb 227 kg (905 lb) (410 kg)	24" 4x7 (610 mm)	25 W	7,400 W	120/240 V AC	L1 34	A1 12	L2 29		
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W							
SO-1424 w/TNMC	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	650 lb 294 kg (1055 lb) (478 kg)	24" 4x7 (610 mm)	25 W	9,250 W	120/240 V AC	L1 41	A1 12	L2 36		
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W							
SO-1624	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	550 lb 250 kg (1,015 lb) (460 kg)	24" 4x7 (610 mm)	25 W	8,400 W	120/240 or 120/208 V AC	L1 33	A1 13 A2 14	L2 37		
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W							
SO-1624 w/TNMC	2 Total	H8'-0", W18'-0", D6" (2438 mm, 5486 mm, 152 mm)	700 lb 319 kg (1,165 lb) (528 kg)	24" 4x7 (610 mm)	25 W	10,250 W	120/240 or 120/208 V AC	L1 42	A1 13 A2 14	L2 44		
	Top and Bottom	H4'-0", W18'-0", D6" (1219 mm, 5486 mm, 152 mm)		Indicators	25 W							
SO-1830	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	700 lb 318 kg (1,275 lb) (578 kg)	Clock 30" 4x7 (762 mm)	25 W	9,050 W	120/240 or 120/208 V AC	L1 25	A1 15 A2 16	L2 50		
				TOL 18" 3x5 (457 mm)	25 W							
				All Others 24" 4x7 (610 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)	Indicators	25 W								

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix		Wattage		Power (See Note 2)	Amps per Line (Single Phase)		Driver Number and Address	
				Lamp	Maximum	Lamp	Maximum		L1	L2	A1	A2
SO-1830 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	950 lb 432 kg (1,550 lb) (703 kg)	Clock 30" 4x7 (762 mm)	25 W	11,830 W	120/240 or 120/208 V AC	L1 54 L2 45	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							
SO-1930	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	700 lb 318 kg (1,275 lb) (578 kg)	Clock 30" 4x7 (762 mm)	25 W	9,550 W	120/240 or 120/208 V AC	L1 29 L2 50	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							
SO-1930 w/TNMC	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	950 lb 432 kg (1,550 lb) (703 kg)	Clock 30" 4x7 (762 mm)	25 W	12,903 W	120/240 or 120/208 V AC	L1 58 L2 46	A1 15 A2 16			
				TOL 18" 3x5 (457 mm)	25 W							
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W							
				Indicators	25 W							

Model	Number of Sections	Dimensions (Height, Width, Depth)	Weight Uncrated (Crated)	Digit Size and Matrix	Wattage		Power (See Note 2)	Amps per Line (Single Phase)	Driver Number and Address
					Lamp	Maximum			
SO-2030	2 Total	H8'-0", W25'-0", D6" (2438 mm, 7620 mm, 152 mm)	750 lb 340 kg (1,325 lb) (601 kg)	Clock 30" 4x7 (762 mm)	25 W	10,050 W	120/240 or 120/208 V AC	L1 33 L2 50	A1 15 A2 16
				TOL 18" 3x5 (457 mm)	25 W				
	Top and Bottom	H4'-0", W25'-0", D6" (1219 mm, 7620 mm, 152 mm)		All Others 24" 4x7 (610 mm)	25 W				
				Indicators	25 W				



## Section 4: Component Locations

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

<b>Model</b>	<b>Drawing Title</b>	<b>Drawing</b>
BA-1518	Component Locations, BA-1518	<b>A-126422</b>
BA-1518, w/TNMC	Component Locations, BA-1518, w/TNMC	<b>A-126426</b>
BA-1524	Component Locations, BA-1524	<b>A-126423</b>
BA-3718	Component Locations, BA-3718	<b>A-126424</b>
BA-3718, w/TNMC	Component Locations, BA-3718, w/TNMC	<b>A-126427</b>
BA-3724	Component Locations, BA-3724	<b>A-126425</b>
BA-3724, w/TNMC	Component Locations, BA-3724, w/TNMC	<b>A-126428</b>
FB-1424	Component Locations, FB-1424	<b>A-127913</b>
FB-1424, w/TNMC	Component Locations, FB-1424, w/TNMC	<b>A-127913</b>
FB-1430	Component Locations, FB-1430	<b>A-127925</b>
FB-1430, w/TNMC	Component Locations, FB-1430, w/TNMC	<b>A-127925</b>
FB-1524	Component Locations, FB-1524	<b>A-127917</b>
FB-1524, w/TNMC	Component Locations, FB-1524, w/TNMC	<b>A-127917</b>
FB-1530	Component Locations, FB-1530	<b>A-127928</b>
FB-1530, w/TNMC	Component Locations, FB-1530, w/TNMC	<b>A-127928</b>
FB-1624	Component Locations, FB-1624	<b>A-127919</b>
FB-1630	Component Locations, FB-1630	<b>A-127855</b>
FB-1630, w/TNMC	Component Locations, FB-1630, w/TNMC	<b>A-127855</b>
FB-1630 w/40W Lamp	Component Locations, FB-1630 w/40W Lamps	<b>A-138896</b>
FB-1630L	Component Locations, FB-1630L	<b>A-128113</b>
FB-1630L, w/TNMC	Component Locations, FB-1630L, w/TNMC	<b>A-128113</b>
FB-1730	Component Locations, FB-1730	<b>A-127867</b>
FB-1730, w/TNMC	Component Locations, FB-1730, w/TNMC	<b>A-127867</b>
FB-1830	Component Locations, FB-1830	<b>A-127870</b>
FB-1830, w/TNMC	Component Locations, FB-1830, w/TNMC	<b>A-127870</b>
FB-1830L	Component Locations, FB-1830L	<b>A-128118</b>
FB-1830L, w/TNMC	Component Locations, FB-1830L, w/TNMC	<b>A-128118</b>
FB-2001	Component Locations, FB-2001	<b>A-128120</b>
FB-2002	Component Locations, FB-2002	<b>A-129642</b>
FB-2003	Component Locations, FB-2003	<b>A-129643</b>
FB-2004	Component Locations, FB-2004	<b>A-151178</b>
MS-2009	Component Locations, MS-2009	<b>A-144652</b>
MS-2118	Component Locations, MS-2118	<b>A-127929</b>
SO-1424	Component Locations, SO-1424	<b>A-127946</b>
SO-1424, w/TNMC	Component Locations, SO-1424, w/TNMC	<b>A-127946</b>
SO-1624	Component Locations, SO-1624	<b>A-127950</b>
SO-1624, w/TNMC	Component Locations, SO-1624, w/TNMC	<b>A-127950</b>
SO-1830	Component Locations, SO-1830	<b>A-127874</b>

<b>Model</b>	<b>Drawing Title</b>	<b>Drawing</b>
SO-1830, w/TNMC	Component Locations, SO-1830, w/TNMC	<b>A-127874</b>
SO-1930	Component Locations, SO-1930	<b>A-127875</b>
SO-1930, w/TNMC	Component Locations, SO-1930, w/TNMC	<b>A-127875</b>
SO-2030	Component Locations, SO-2030	<b>A-128111</b>

## Section 5: Schematics

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

Model	Schematic Title	Drawing
BA-1518	Schematic, 1 Driver	A-124293
BA-1518 w/TNMC	Schematic, 1 Drvr with 32 or 48-12 TNMC	B-127394
BA-1524	Schematic, 1 Driver	A-124293
BA-3718	Schematic, 3 Drivers	B-124327
BA-3718 w/TNMC	Schematic, 3 Drvrs with 32 or 48-12 TNMC	B-124327
BA-3724	Schematic, 3 Drivers	B-124327
BA-3724 w/TNMC	Schematic, 3 Drvrs with 32 or 48-12 TNMC	B-124327
FB-1424	Schematic, 1 Driver	A-124293
FB-1424, w/TNMC	Schematic, 1 Drvr with 32 or 48-12 TNMC	B-125886
FB-1430	Schematic, 1 Driver	A-124293
FB-1430, w/TNMC	Schematic, 1 Drvr with 32 or 48-12 TNMC	B-125886
FB-1524	Schematic, 1 Driver	A-124293
FB-1524, w/TNMC	Schematic, 1 Drvr with 32 or 48-12 TNMC	B-125886
FB-1530	Schematic, 1 Driver	A-124293
FB-1530, w/TNMC	Schematic, 1 Drvr with 32 or 48-12 TNMC	B-125886
FB-1624	Schematic, 2 Drivers	A-124291
FB-1630	Schematic, 2 Drivers	A-124291
FB-1630, w/TNMC	Schematic, 2 Drvrs with 32 or 48-12 TNMC	B-124294
FB-1630, w/40W Lamps	Schematic, 4 Driver (FB-1630 40W)	B-137843
FB-1630L	Schematic, 2 Drivers	A-124291
FB-1630L, w/TNMC	Schematic, 2 Drvrs with 32 or 48-12 TNMC	B-124294
FB-1730	Schematic, 2 Drivers	A-124291
FB-1730, w/TNMC	Schematic, 2 Drvrs with 32 or 48-12 TNMC	B-124294
FB-1830	Schematic, 2 Drivers	A-124291
FB-1830, w/TNMC	Schematic, 2 Drvrs with 32 or 48-12 TNMC	B-124294
FB-1830L	Schematic, 2 Drivers	A-124291
FB-1830L, w/TNMC	Schematic, 2 Drvrs with 32 or 48-12 TNMC	B-124294
FB-2001	Schematic, 2 Drivers	A-124291
FB-2002	Schematic, 2 Drivers	A-124291
FB-2003	Schematic, 2 Drivers	A-124291
FB-2004	Schematic, 2 Drivers	A-124291
MS-2009	Schematic, 2 Drivers	B-131295
MS-2118	Schematic, 2 Drivers	B-124291
SO-1424	Schematic, 1 Driver	A-124293
SO-1424, w/TNMC	Schematic, 1 Drvr with 32 or 48-12 TNMC	B-125886

<b>Model</b>	<b>Schematic Title</b>	<b>Drawing</b>
SO-1624	Schematic, 2 Drivers	A-124291
SO-1624, w/TNMC	Schematic, 2 Drvrs with 32 or 48-12 TNMC	B-124294
SO-1830	Schematic, 2 Drivers	A-124291
SO-1830, w/TNMC	Schematic, 2 Drvrs with 32 or 48-12 TNMC	B-124294
SO-1930	Schematic, 2 Drivers	A-124291
SO-2030	Schematic, 2 Drivers	A-124291
TNMC, 832-12	Schematic, 832-12 TNMC	A-125214
TNMC, 848-12	Schematic, 848-12 TNMC	A-125216

## Section 6: Mechanical Installation

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

### 6.1 Footings and Beams

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

Models	Reference Drawings
BA-1518	Installation Specifications, BA-1518 A-55008
BA-1524	Installation Specifications, BA-1524 A-120972
BA-3718	Installation Specifications, BA-3718 A-126455
BA-3724	Installation Specifications, BA-3724 A-126445
MS-2009	Installation Specifications, MS-2009 A-144415
MS-2118	Installation Specifications, MS-2118 A-128206

Models Without Team Name Message Center	Reference Drawings
FB-1424, FB-1524, FB-1624, SO-1424, SO-1624	Beam/Footing Recommend, FB-XX24 A-44514 Beam Spacings, FB/Track/Soc A-70089 Structure, Football A-44556
FB-1430, FB-1530, FB-1630, FB-1730, FB-1830, SO-1830, SO-1930, SO-2030	Beam/Footing Recommend, FB-XX30 A-44515 Beam Spacings, FB/Track/Soc A-70089 Structure, Football A-44556
FB-1630L, FB-1830L, FB-2001, FB- 2004	Beam/Footing Recommend, FB-XX30L A-44516 Beam Spacings, FB/Track/Soc A-70089 Structure, Football A-44556
FB-2002, FB-2003	Installation Specifications, FB-2002 & FB 2003 A-128044 Beam Spacings, FB/Track/Soc A-70089 Structure, Football A-44556

Models With Team Name Message Center	Reference Drawings
FB- 1424, FB-1524, SO-1424, SO-1624	Beam/Footing Recommend, FB-XX24 A-44514 Beam Spacings, FB/Track/Soc A-84292 Structure, Football A-44556
FB-1430, FB-1530, FB-1630, FB-1730, FB-1830, SO-1830	Beam/Footing Recommend, FB-XX30 A-44515 Beam Spacings, FB/Track/Soc A-84292 Structure, Football A-44556
FB-1630L, FB-1830L	Beam/Footing Recommend, FB-XX30L A-44516 Beam Spacings, FB/Track/Soc A-84292 Structure, Football A-44556

The preceding drawings specify the number of beams and the recommended spacing between them. It is critical that these dimensions be adhered to for scoreboards *with* team name message centers because of the ventilation hoods located on the rear of the displays.

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

The column and footing size dimensions provided with the drawings are intended to help with estimating installation costs. They are estimates only and are not intended for construction purposes. Be sure that your installation complies with local building codes and is suitable for your particular soil and wind conditions.

The columns and footings and all connection details must be designed and certified by a professional engineer licensed to practice in the state in which scoreboard will be installed. *Daktronics does not assume any liability for any installation derived from the information provided in the manual text or drawings, or for scoreboard installations designed and completed by others.*

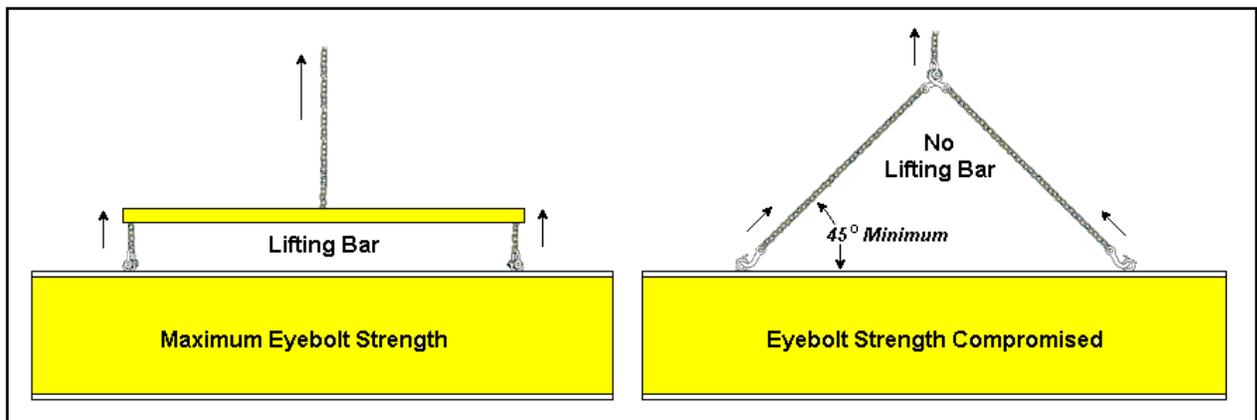
## 6.2 Lifting The Scoreboard or Optional One- or Two-Line Message Center

### Reference Drawing:

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

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

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



**Figure 2:** Lifting the Display

**Figure 2** above illustrates both the preferred method (left example) and an alternative method (right example) for lifting a scoreboard. When lifting the display:

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

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

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

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

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

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

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

### 6.3 Scoreboard Mounting

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#### Reference Drawings:

Installation Method .....	<b>Drawing A-44412</b>
Panel Mounting Method .....	<b>Drawing A-52187</b>
Installation Specifications, BA-1518 .....	<b>Drawing A-55008</b>
Installation Specifications, BA-1524 .....	<b>Drawing A-120972</b>
Installation Specifications, BA-3718 .....	<b>Drawing A-126455</b>
Installation Specifications, BA-3724 .....	<b>Drawing A-126445</b>
Installation Specifications, FB-2002 & FB-2003 .....	<b>Drawing A-128044</b>
Installation Specifications, MS-2009 .....	<b>Drawing A-144415</b>
Installation Specifications, MS-2118 .....	<b>Drawing A-128206</b>
Display Mounting Straps, BA-3718 .....	<b>Drawing A-114415</b>
Mounting Detail; 2 1/2" Matrix .....	<b>Drawing A-115882</b>

Scoreboards can be mounted on two, three, or four poles. Refer to **Section 6.1** to determine the center-to-center distance of the poles for each model.

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

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

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

## 6.4 Ad Panel Mounting

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### Reference Drawing:

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

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

Mount the ad panel(s) as follows:

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

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

## 6.5 Optional 1 or 2-Line Message Center Mounting

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### Reference Drawing:

Mounting Detail;  $2\frac{1}{2}$ " Matrix ..... **Drawing A-115882**

Refer to the manual provided with the message center for instructions on how to mount the message center to the beams using the clamping method.

**Drawing A-115882** shows the mounting method for the  $2\frac{1}{2}$ " matrix displays.

# Section 7: Electrical Installation

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Electrical installation consists of the following processes:

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

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

## 7.1 Power Requirements

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### Reference Drawings:

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

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

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

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

### **Grounding**

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

The display system *must* be connected to earth-ground. Proper grounding is necessary for reliable equipment operation. It also protects the equipment from damaging electrical disturbances and lightning. ***The display must be properly grounded or the warranty will be void.***

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

### **Branch Circuit Grounding**

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

## Power Installation

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

### Installation with Ground and Neutral Conductors Provided

For this type of installation, the power cable *must* contain an isolated earth-ground conductor.

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

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

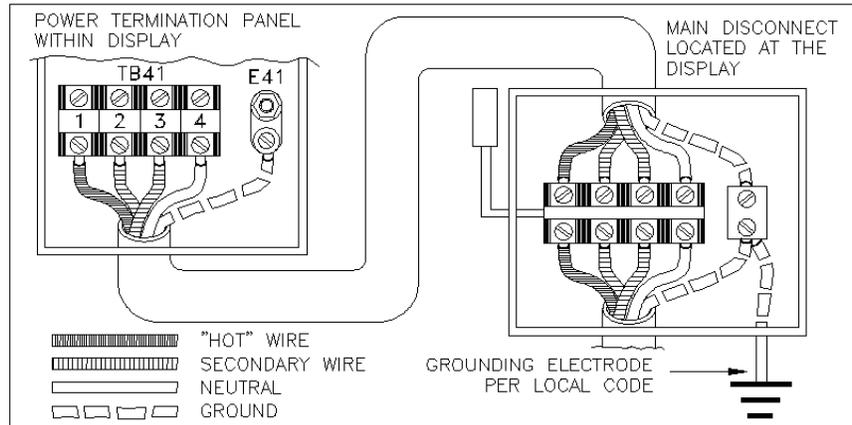


Figure 3: Installation with Ground and Neutral Provided

### Installation with Only a Neutral Conductor Provided

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

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

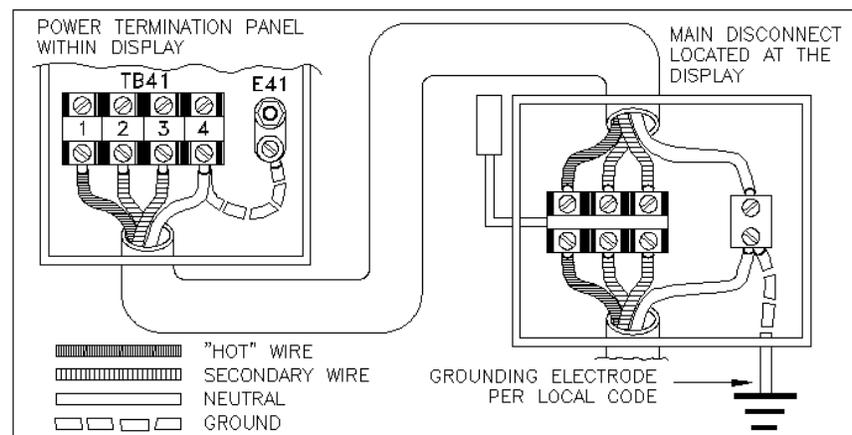


Figure 4: Installation with Only Neutral Provided

## 7.2 Power and Signal Connection

### Reference Drawings:

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

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

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

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

### Connections Between Sections

There are several cables in the echo, or slave, sections of the scoreboard that must be connected to a panel in the master section (refer to **Section 4**). Route these cables through the 2<sup>1</sup>/<sub>2</sub>" holes in the mating sides of the various sections when mounting the scoreboard.

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

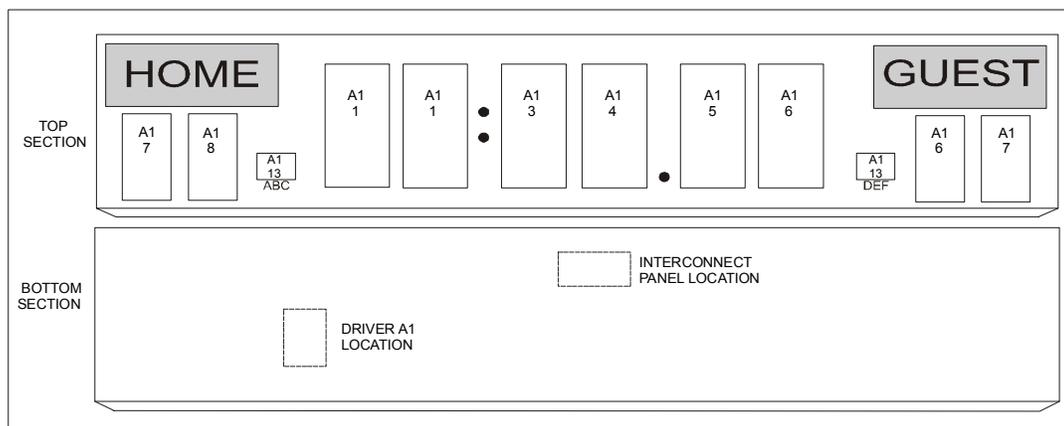
Pull the cables from the other sections and route them to the bottom of the interconnect panel. Connect the plugs on the cables to the mating jacks in the interconnect panel. Match the numbers on the plugs with the numbers on the jacks and insert.

### Interconnect Panel Connections

#### Reference Drawing:

Interconnect Panel Digit Designation .....	<b>Drawing A-174754</b>
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All multi-section football and soccer scoreboards use an interconnect panel as a connection between the digits of the top section and their corresponding driver. Because both drivers are located in the bottom section, only the top section digits use an interconnect panel. See Figure 5 for an illustration. For detailed digit designation and the resulting interconnect panel and then driver designation refer to **Drawing A-174754**.



**Figure 5:** Interconnect Panel Digit Designation



# Section 8: Numeric Scoreboard Maintenance and Troubleshooting

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## **IMPORTANT NOTES:**

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

*For assistance in the maintenance of the team name message centers, refer to **Section 9**. For assistance in the maintenance of an optional message center, refer to the manual that accompanies the message center.*

## **8.1 Component Access**

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### **Reference Drawing:**

Digit Access ..... **Drawing A-27674**

### **Lamp Driver Access**

Refer to the component locations drawings in **Section 4** for the location of the lamp drivers. To access a lamp driver:

**Important:** *When the lamp drivers are replaced, plugs P25 and P26 (if present) must be removed from the old driver and plugged into the new driver.*

1. Open the access panel by turning the  $\frac{1}{4}$ -turn screws. The door will swing open.
2. Remove the driver enclosure cover.
3. Disconnect the plugs.
4. Remove the wing nuts securing the lamp driver to the enclosure.
5. Carefully pull out the lamp driver and set it on a clean flat surface.

### **Digit Access**

Use the following instructions to remove a digit from the front of the scoreboard.

**Note:** The digit does not need to be removed to change the lamps.

1. Remove the screws securing the screen (refer to **Drawing A-27674**).
2. Carefully pull the digit out part way so that the ground wire can be unscrewed and the harness unplugged.
3. Place the digit on a clean, level surface.

## 8.2 Lamp Replacement

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### Reference Drawing:

Digit Access ..... **Drawing A-27674**

The primary service required for Daktronics baseball scoreboards is to periodically replace bad lamps. Refer to the table in **Section 3** to determine which wattage the scoreboard uses. Refer to **Section 8.8** to determine the part numbers. Do not use higher wattage lamps or damage to the circuit may result. Refer to **Drawing A-27674** to access a digit.

## 8.3 Lamp Drivers

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### Reference Drawings:

Layout, 16 Column Driver ..... **Drawing A-123940**

Layout, 8 Column Driver ..... **Drawing A-123941**

***Important:** When the lamp drivers are replaced, plugs P25 and P26 (if present) must be removed from the old driver and plugged into the new driver.*

In the scoreboard, the lamp drivers perform the task of switching digit lamps on and off (refer to **Drawings A-123940** and **A-123941**).

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

8-Column Lamp Driver	
Connector No.	Function
1 – 8	Outputs to digits and indicators
17	Control signal input
18	Power input for outputs 1 – 8
19	Power input (120V) for driver

16-Column Lamp Driver	
Connector No.	Function
1 – 16	Outputs to digits and indicators
17	Control signal input
18	Power input for outputs 1 – 8
19	Power input (120V) for driver
20	Power input for outputs 9 - 16

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

## 8.4 Fuses

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### Reference Drawings:

Layout, 16 Column Driver ..... **Drawing A-123940**

Layout, 8 Column Driver ..... **Drawing A-123941**

The digit lamp driver has 17 fuses. There is one fuse to protect each digit circuit. F1 through F16 are located near each output connector under the driver's metal cover. The lamp driver's other fuse, F17 protects the driver's logic circuit and fan. Refer to **Drawings A-123940** and **A-123941** for an illustration of the driver and these fuses. Refer to **Section 8.8** to determine the part numbers for replacement fuses.

## 8.5 Segmentation

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### Reference Drawings:

Digit Segments, 3x5 and 4x7 .....	<b>Drawing A-46653</b>
Segmentation, 4x7 Digit.....	<b>Drawing A-143233</b>
Interconnect Panel Digit Designation; FB Displays .....	<b>Drawing A-174754</b>

In each digit, certain lamps always go on and off together. These groupings of lamps are referred to as *segments*. **Drawings A-46653** and **A-143233** show the segmentation of 3x5 and 4x7 digits, including the number of the connector pin wired to each digit segment and the wiring color code used in all driver-to-lamp connections.

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

## 8.6 Power On Self-Test

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### Reference Drawings:

Incandescent Driver Power Up Self-Test .....	<b>Drawing A-128283</b>
Power Up Self Test On a FB-1424 .....	<b>Drawing A-128301</b>

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

The self-test runs in three cycles or phases. The pattern of the self-test varies depending on the model of the scoreboard, the number of drivers, and the type of digits.

- **Drawing A-128283** shows how the test pattern displays in the digits when the address (P25) and protocol (P26) plugs are not plugged into the lamp drivers.
- **Drawing A-128302** shows the test pattern displayed on a scoreboard that has one lamp driver with the address (P25) plugged in.

<b>Cycle 1:</b>	Displays the protocol in the digits that are controlled by lamp driver A1. P0 is always displayed when P26 is not installed.
<b>Cycle 2:</b>	Displays the driver number and address in the digits that are controlled by each driver. A000 is always displayed when P25 is not installed.
<b>Cycle 3:</b>	Displays a rotating pattern in all digits. The pattern starts in row 1 and rotates through row 8 (refer to <b>Drawing A-128283</b> ).

## 8.7 Lightning Protection

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

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

## 8.8 Replacement Parts

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Refer to the following table for Daktronics baseball scoreboard replacement parts. Refer to **Section 9.14** for a listing of parts required for the service of the team name message centers. Refer to **Section 9.15** for a description of Daktronics Exchange and Repair and Return Programs. **Important:** *When the lamp drivers are replaced, plugs P25 and P26 (if present) must be removed from the old driver and plugged into the new driver.*

Description	Location	Daktronics Part No.
Fuse; AGC-1/2	F17 in lamp driver	F-1000
Fuse; AGC-10	F1 - F16 in lamp driver(s)	F-1006
Lamp, 25W, 120 V	3x5 and 24" digits, 15" and 18" 4x7	DS-1029
Lamp, 30W, 130 V	15" and 18" 4x7 digits	DS-1182
Lamp, 40W, 120 V	Indicators	DS-1163
Lamp, 25A19, 230 V frosted	Digits and indicators	DS-1363
Plug, 1/4" phone	Signal	P-1003
Socket, lamp, med. base	All lamps	X-1301
Socket*, lamp, med. base, insulation displacement	All lamps	X-1294*
J-box, 1/4" phone, indoor	Signal	0A-1009-0038
J-box, 1/4" phone, outdoor	Signal	0A-1091-0227
Signal surge arrestor	Power/signal entrance enclosure	0P-1033-0114
12V DC trumpet horn asm.	Scoreboard	0A-1091-1213
Lamp driver, 8-column	Scoreboard	0A-1033-0126
Lamp driver, 16-column	Scoreboard	0A-1033-0125
Lamp driver, 230 V 8-col.	Scoreboard	0A-1033-0130
Lamp driver, 230 V 16-col.	Scoreboard	0A-1033-0129
Signal cord; 1/4" phone 20'	N/A	W-1236
Signal cord; 1/4" phone 30'	N/A	W-1238
Signal cord; 1/4" phone 50'	N/A	W-1237
18" 4x7 shade screen	18" 4x7 digits or 3x5 digits	0S-1064-0001
24" 4x7 shade screen	24" 4x7 digits	0S-1064-0002
15" 4x7 shade screen	15" 4x7 digits or 3x5 digits	0S-1064-0074
30" 4x7 shade screen	30" 4x7 digits	0S-1091-0002

*\*This part, X-1294, is intended for use with scoreboards shipped after October, 2001. Models shipped prior to that date will continue to use original equipment.*

## 8.9 Troubleshooting

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This section lists potential problems with the scoreboard and indicates possible causes and corrective actions. This list does not include every possible problem, but does represent some of the more common situations that may occur. Refer to **Section 9.13** for a list of potential problems with Team Name Message Centers.

**Important:** *When the lamp drivers are replaced, plugs P25 and P26 (if present) must be removed from the old driver and plugged into the new driver.*

Symptom/Condition	Possible Cause or Corrective Action
<i>Scoreboard will not light</i>	<ul style="list-style-type: none"><li>• Console not connected or poor connection</li><li>• No power to the control console</li><li>• No power to the scoreboard</li><li>• Bad relay or poor relay connection in signal circuit</li><li>• Driver logic fuse (F17) blown</li><li>• P17, P19 or P20 unplugged</li></ul>
<i>Half of the scoreboard will not light</i>	<ul style="list-style-type: none"><li>• Circuit breaker tripped at service panel</li><li>• Driver malfunction</li><li>• Poor signal contact at main power connection</li></ul>
<i>Garbled display</i>	<ul style="list-style-type: none"><li>• Control console malfunction</li><li>• Internal lamp driver malfunction</li></ul>
<i>Digit will not light</i>	<ul style="list-style-type: none"><li>• Fuse blown in driver</li><li>• Black wire to the digit damaged</li><li>• Poor contact at driver connector</li></ul>
<i>Segment will not light</i>	<ul style="list-style-type: none"><li>• Lamps burned out</li><li>• Driver malfunction (bad triac)</li><li>• Broken wire between lamp driver and digit</li><li>• Poor contact at driver connector</li></ul>
<i>Segment stays lit</i>	<ul style="list-style-type: none"><li>• Driver malfunction (bad triac)</li><li>• Segment neutral wire touching case</li></ul>



# Section 9: Team Name Message Centers Maintenance and Troubleshooting

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## **IMPORTANT NOTES:**

- 1. Power must be turned off before any repair or maintenance work is done on the display!**
- 2. Allow only qualified service personnel to access any internal display electronics.**
- 3. Do not operate the display with the back sheets removed!** The cabinet is positively pressurized directing adequate airflow around the lamps and out through the lenses. Display operation without the back sheets in place and fans running could cause damage to the display and will void the warranty. *Make certain the back sheets are fastened securely into place.*
- 4. Dirt and contaminants may enter the display if it is operated without the fan filters in place or with dirty fan filters.** These contaminants may cause premature failure of the electronic components. *Operating the display with dirty fan filters or without fan filters will void the warranty.*
- 5. The Daktronics product managers engineering staff must approve any changes that may affect the weather-tightness of the display.** This is to include, but is not limited to, border shrouding, back sheets, cooling fans, fan filter and filler panels. *If ANY modifications are made to the weather tightness of the display, detailed drawings MUST be submitted to our engineering staff for evaluation and approval or the warranty will be null and void.*
- 6. Turning the power off when the display is not in use extends the life of some components.**

The team name message centers for standard (not modified for an individual customer) scoreboards are *front-accessible* for service. Custom scoreboards may be accessed from the front *or* rear. This manual applies to team name message centers that are used in *standard* scoreboards.

## **9.1 TNMC Schematics**

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### **Reference Drawings:**

Schematic, 832-12 TNMC .....	<b>Drawing A-125214</b>
Schematic, 848-12 TNMC .....	<b>Drawing A-125216</b>

Refer to the team name message center schematic drawings **A-125214** and **A-125216** located in **Appendix A**.

## 9.2 Service Procedures

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### Reference Drawings:

Lens Removal, Front Access.....	<b>Drawing A-99898</b>
Lens Assy Removal, Front.....	<b>Drawing A-99899</b>
Correct Lens Position, 1 2" .....	<b>Drawing A-75204</b>

### **Removing a Module**

For many maintenance or repair procedures, the first step is to remove a module. Each 8x16 lens assembly is secured to the frame by two spring-loaded latches, one on each side. Follow these instructions for access to these latches:

1. Remove the lens from row 4, column 1, and the lens from row 4, column 16 of the lens assembly. Refer to **Drawing A-99898**.
2. Place the front access tool into the latch access hole. The angled edge of the tool should be down so it wedges the latch pin down as it is pushed further into the access hole. Refer to **Section 9.14** for the part number of the access tool.
3. When the front access tool is fully inserted, the module latches should be released (refer to **Figure 6**).



**Figure 6:** Removing a Module

4. With the latch released, pull the lens assembly slightly away (about a half-inch) from the display. This will prevent it from re-latching. Refer to **Drawing A-99899**.
5. Repeat this procedure with the remaining side.
6. With both sides unlatched, the assembly should pull away from the display far enough so the signal and power harness can be disconnected from the lampbank. When the signal and power harnesses are removed, the module can be removed from the display.

*Note:* A  $3/16$ " slotted screwdriver may be used in place of the access tool.

### **Removing a Lampbank**

The lampbank is attached to the lens assembly with a metal tab at each corner. To remove the lampbank:

1. Push in the clips while gently pulling the lampbank out.
2. Repeat this step for the three remaining corners. Lampbanks should be serviced in a static-free area to prevent static electricity from damaging the components.

### **Replacing a Lampbank**

When lampbanks are reattached to the lens assemblies, be sure the lamp sockets are seated tightly against the reflectors. All four tabs, one in each corner, must be snapped securely onto the lampbank. If the lampbank is not secured properly to the lens assembly, the lamp filament will not be at the focal point of the reflector and parts of that lens assembly will appear dim.

### **Replacing the Module**

To reinstall a lens assembly in the display, refer to **Drawing A-75204**:

1. Reconnect power and signal connections to the lampbank.
2. Tilt the module about 30 degrees and place the bottom corners of the side brackets to the inside of the frame verticals.
3. Push the lens assembly firmly back into place until the latches snap into place and the lens assembly is secured to the display. It may be necessary to use a solid object, such as a short length of two-by-four, to properly seat the assembly. Place the two-by-four across the louvers so the pressure on them is evenly distributed and strike the board with the heel of your hand. This should drive the assembly in place.
4. Pull firmly on the assembly to ensure that it is fully in place and secured to the display. The lens assemblies must fit together tightly enough so the weatherstripping forms a seal and prevents water from leaking between the lens assemblies and into the display. The seal between the assemblies should be checked with a 0.032" feeler gauge.
5. Snap the lenses back into the faceplate of the lens assembly. If a lens is not replaced properly, it is easily noticed. The lens removal tab or the lens itself will not be in alignment with the other lenses or lens tabs.
6. Ensure that the rows of louvers on the lens assembly are in proper alignment.

## **9.3 Lamp Testing and Replacement**

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### **Reference Drawing:**

Lens Removal, Front Access..... **Drawing A-99898**

This display is designed for easy lamp replacement with front access. Non-functioning lamps should always be replaced prior to scheduled events, or as soon as possible, for best viewing.

A 3.58-watt lamp is positioned behind each lens. Use the controller lamp test to locate bad lamps. Refer to **Section 9.14** for the part numbers of replacement lamps and lenses.

- **Display power must be OFF for lamp replacement.**
- **Always use Daktronics-approved lamps.** Daktronics-approved 3.58-watt lamps have an estimated life of 17,000 hours if operated at 11.0 volts. Lamps purchased from Daktronics are built to tighter specifications than similar lamps built in standard production. The recommended lamps give the sufficient intensity and beam spread to match the display design. Lamps not built to Daktronics specifications will not perform as well, will not give the intended results, and will adversely affect the beauty of the display.
- A qualified individual who is capable of operating the controller equipment should do lamp testing.

### **Individual Lamp Replacement**

1. Grasp the tab on the top center of the lens with the lamp-extracting tool (refer to **Drawing A-99898**).
2. Pull out and down on the tab, while using your other hand to *lightly* press up on the louver *directly above* the lens to be removed. *Do not press up on the louver any further than necessary or the louver may become deformed.*
3. Remove the defective lamp using the lamp-extracting tool.
4. *Replace defective lamps with Daktronics approved lamps of the same wattage.* Refer to **Section 9.14** for the correct replacement lamps.
5. Noting proper lens orientation, snap the lens back into the lens/reflector assembly (refer to **Section 9.4**)

## **9.4 Lens Position and Sequence**

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### **Reference Drawing:**

Lens Removal, Front Access..... **Drawing A-99898**

The slot in the bottom of the reflector accommodates the lens indexing tabs. To insert a lens, set the lens tabs into the reflector slots and snap the lens up into the vertical position. *Make sure that the lens is snapped in and behind the upper louver offset*

Inspect the profile of the lenses to ensure that all lenses are secured properly. Lenses that are not secured properly can be easily noticed, as the lens removal tab or the lens itself will not be in alignment with the other lenses or lens tabs in that row. Refer to **Drawing A-99898**.

## **9.5 Lens/Reflector Assembly Maintenance**

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### **Reference Drawing:**

Lens Assy, Weather Stripping ..... **Drawing A-91100**

The lens/reflector assemblies are maintenance free; however, each time an assembly is removed from the display the pile weatherstripping should be checked for signs of deterioration. The weatherstripping runs along the top and sides of each lens/reflector assembly. In addition, over time, the louvers on the front of lens/reflector assembly may become damaged and need replacing. Weatherstripping and louver replacement are addressed in the next two subsections.

### **Weatherstripping Maintenance**

The top and bottom of each 8x16 lens assembly has a strip of pile weatherstripping (refer to **Section 9.14** for the part number). There is tape weatherstripping between each louver assembly (refer to **Section 9.14** for the part number). The weatherstripping helps keep moisture out of the display and maintains the positive air pressure necessary for proper display cooling. When doing routine display maintenance, which involves removing the 8x16 lens assemblies, make sure the weatherstripping is intact. If any weatherstripping appears damaged, replace it. Refer to the following instructions and **Drawing A-91100**.

1. Once the old weatherstripping has been removed, clean the top and bottom of the lens assembly with an adhesive remover so the new weatherstripping will adhere.
2. The weatherstripping should be applied in one continuous strip on both the top and bottom of the lens assembly.
3. When finished, the stripping should be flush at the bottom. If the weatherstripping is not tight or buckles anywhere on the lens assembly, it will be difficult to reinstall it in the display, and it will allow water to enter the display and damage the electrical components.
4. Check the module spacing and weatherstripping tightness with the 0.032" feeler gauge.

### **Louver Maintenance**

If display louvers become bent or damaged, they must be replaced. The lens/reflector assembly containing the damaged louvers should be returned to Daktronics for repair or replacement.

## **9.6 Lamp Module Transformer**

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Displays with team name message centers are shipped with transformers which, when wired to the 120 volt tap with a line voltage of 120 volts, will deliver 11.0 volts to the lamp. Lamp life is estimated to be 17,000 hours with this transformer. Refer to **Section 9.14** for the correct part number for the replacement transformer

Due to input line voltage variations from site to site, the resultant lamp voltages may vary, which may greatly alter lamp life.

If the measured input line voltage is over the particular transformer rated input voltage, increased voltage will be delivered to the lamp, which will greatly reduce lamp life.

The transformer is capable of adjustment both up and down if line voltage varies enough to greatly alter lamp life/lamp brightness.

If adjustments to the transformer are required, contact Daktronics Customer Service.

## **9.7 Fan Filters**

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### **Reference Drawing:**

Filter Removal; 250 CFM Fan..... **Drawing A-113986**

Shrouds are provided on the rear of the display to house the fan filters and shed rain. Filters must be checked every 1500 hours of operation for accumulation of debris that could restrict airflow.

Check filters after the display has been in operation for 1500 hours—and every 1500 hours after that—to ensure that the display is being cooled properly. Filters should be checked more often if the display is located in a dusty or harsh weather environment (i.e. along a gravel road with dust-laden air).

1500 hours is equivalent to 83 days if the display is operated for 18 hours a day and the power to the display is turned off when not in use to ensure that the fans are not operating when the display is not running. 1500 hours is equivalent to 72 days if the display is on running non-stop, 24 hours a day.

It is recommended that spare filters be kept on hand at all times. Ideally, all filters should be replaced during routine maintenance. If a filter media shows evidence of damage or wear, replace the filter with a Daktronics filter. If a filter other than the Daktronics standard filter is used, follow these criteria: refer to **Section 9.14** for the part number of the filter.

1. Effective filter area should be no less than 2.3 square feet per 1.0 square feet of face area; and
2. Filter media to have an average arrestance of 90-92 percent.

Once the filters have been replaced, turn power back on. Note if the fans are turning properly.

**☞ Turn the power OFF when you have finished checking the fans.**

Periodically check airflow through the lenses to ensure that there are no obstructions in the lens exhaust holes. Airflow is necessary to cool the lenses and lamps adequately. The interior of the module should be kept clean to prevent a buildup of dust on the lenses. Use an air hose and a vacuum cleaner to keep the display clean. Inspect the cabinet seal periodically to make certain it is sealing properly. If leaks are detected, repair or replace the pile weatherstripping seal around the edges of the cover.

A method for checking both the airflow through the lenses and the cabinet seal is as follows: Direct smoke toward the fan inlet and note where the smoke exits. Check all around the cabinet and the lenses. If smoke does not exit a particular group of lenses, remove the lenses to clean out any debris, replace the lenses and retest.

## 9.8 Filter Removal

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### Reference Drawing:

Filter Removal; 250 CFM Fan..... **Drawing A-113986**

Follow the steps on **Drawing A-113986** to remove the filter from the scoreboard. Check the fan as follows:

1. Inspect the filter and determine if it should be replaced or cleaned.
2. Inspect the filter assembly perimeter gasket for evidence of deterioration or air leaking around or through the gasket. The factory-applied gasket is at the top of the rain shield assembly and to the front of the filter holder. The gasket is also on the 16-inch sides of the filter. If any part of the gasket material is damaged and needs to be replaced, refer to **Section 9.14** for the part number of the gasket material.
3. Insert a filter into the filter holder.
4. Inspect the filter assembly. Make certain that the filter is touching the inside of the frame throughout its entire length and that no air gaps exist. Ensure that the filter assembly is set inside the channel on the topside and is resting in the filter holder. Make sure that the filter wire side is up.
5. Inspect the filter holder to ensure the weather-stripping is providing a tight fit around the perimeter of the rain shield.
6. Replace the filter cover plate if that was removed (front access).

## 9.9 Fans

Fans are provided to control the heat buildup generated by the electronic components. One cooling fan is provided for three modules (8x16 display modules).

Check fans after the display has been in operation for 1,500 hours—and every 1,500 hours thereafter—to ensure the display is being cooled properly. Fans should be checked more often if the display is located in a dusty or harsh environment (i.e., along a gravel road with dust-laden air).

1,500 hours is equivalent to 83 days if the display is operated for 18 hours a day and the power to the display is turned off when not in use to ensure that the fans are not operating when the display is not running. 1,500 hours is equivalent to 62 days if the display is on running non-stop, 24 hours a day.

Each time a module is removed, take time to inspect the fans.

1. Check the fan blades for dirt and debris. If the fan blades have a large accumulation of dirt and debris, this indicates that the filters need to be changed more often. Fan blades must be kept clean to maintain fan efficiency and ensure proper cooling.
2. Spin the fan blades with a pen or pencil to ensure that the bearings are free and the fan is still in balance.

After 10% of the fans have been replaced, we recommend replacing all fans to reduce associated maintenance costs that may incur with increased heat buildup from fan failure.

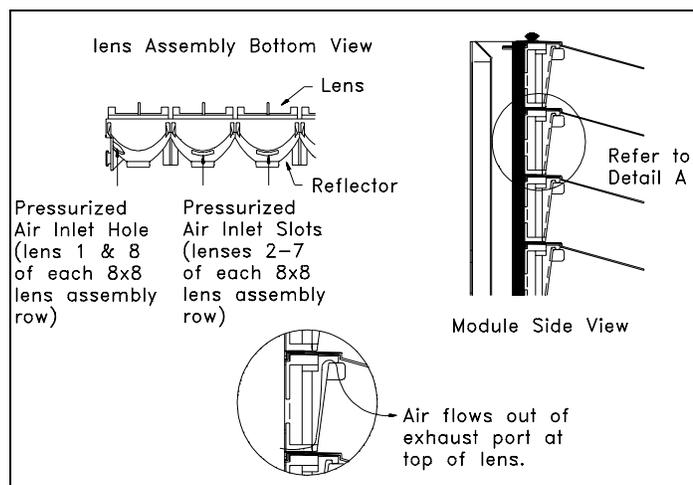
A fan testing power cord is available for checking fan operation. Plug the test cord into the questionable fan and plug the other end into a 110-volt outlet. If the fan does not turn or does not operate smoothly, replace it. *Use extreme caution during this testing, since the fan blades are exposed!*

☛ **Note:** If the display is not in operation, turn power off to conserve energy and extend the life of both the fans and electronic components.

## 9.10 Lens Airflow

Check airflow through the lenses periodically to ensure there are no obstructions in the lens exhaust holes. Airflow is necessary to cool the lenses and lamps adequately (refer to **Figure 7**). The interior of the module should be kept clean to prevent a buildup of dust on the lenses. Use an air hose and a vacuum cleaner to keep the display clean.

Inspect the cabinet seal periodically to make certain it is sealing properly. If leaks are detected, repair or replace the pile weatherstripping seal in the area where the leak occurred. Use the following method to check both the airflow through the lenses and the cabinet seal:



**Figure 7:** Lens Airflow

1. Direct smoke toward the fan inlet and observe where the smoke exits.
2. Check all around the cabinet and the lenses.
3. If smoke does not exit a particular group of lenses, remove the lenses to clean out any debris, replace the lenses and re-test.

## 9.11 Structural Inspection

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Visual inspection should be done annually to check the paint and look for possible corrosion, especially at footings, structural tie points, and ground rods. Fasteners should be checked and tightened or replaced as required.

At least once a year, check the inside of the display for signs of water intrusion (e.g., water stain marks). Water can enter a display where weatherstripping has come loose or deteriorated. Fasteners may have come loose, allowing moisture to enter through seams in the display. Also check the top of the display around the eyebolts to insure that no moisture may enter through loosened fixtures. Check electronic components closely for signs of corrosion.

## 9.12 Cleaning the Signal Connectors

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If it becomes necessary to remove or replace a signal cable, clean the plugs and the circuit board jacks with Deoxit™ (refer to **Section 9.14** for the part number). Inspect and clean the jacks and plugs thoroughly to ensure the absence of any foreign matter. The presence of dirt or water may cause signal interconnect problems.

After the parts are cleaned, push the plug into a jar of Cailube™ (refer to **Section 9.14** for the part number), ensuring that the paste wets the plug to a depth of at least  $\frac{1}{8}$ " on all four sides. Also check to make sure that all of the pin holes of the plug are filled with paste and that sufficient paste is present to form a "V" on the end of the plug. There should be enough paste on the end of the plug to form a weatherproof seal (from paste pushed out around the jack) when the plug is inserted into the circuit board jack.

Deoxit is the electrical contact cleaner in an aerosol can and Cailube is the electrical contact lubricant and protector paste in a 1 oz. jar. Both can be found in the *Tool Kit Accessories* package. Cailube also comes in an 8 oz. jar (refer to **Section 9.14** for the part number). If additional supplies are needed, contact Customer Service for ordering information.

## 9.13 Troubleshooting

This section contains some symptoms that may be encountered in a Team Name Message Centers. For these symptoms, possible causes and corrective actions are given. This list does not include every possible problem, but does represent some of the more common situations that may occur. Refer to **Section 8.9** for a list of potential problems with a scoreboard.

Symptom/Condition	Possible Cause/Remedy
<i>One or more lamps on display will not light.</i>	<ul style="list-style-type: none"> <li>• Replace lamp</li> <li>• Replace socket</li> <li>• Replace lampbank</li> </ul>
<i>One or more lamps will not turn off.</i>	<ul style="list-style-type: none"> <li>• Check for foreign objects on PC board</li> <li>• Replace lampbank</li> </ul>
<i>Entire module does not work.</i>	<ul style="list-style-type: none"> <li>• Check signal connection (ribbon cable)</li> <li>• Check power connections</li> <li>• Check transformer fuse on panel</li> <li>• Replace lampbank</li> </ul>
<i>Section of display does not work.</i>	<ul style="list-style-type: none"> <li>• Check appropriate main fuse or breaker</li> </ul>
<i>Entire display does not work.</i>	<ul style="list-style-type: none"> <li>• Check 120 VAC input power to sign</li> <li>• Check all signal connections</li> <li>• Check controller output</li> </ul>

## 9.14 Replacement Parts List

Refer to the following table for Daktronics baseball scoreboard replacement parts. Refer to **Section 8.8** for a listing of parts required for the service of the scoreboards.

Refer to **Section 9.15** for a description of Daktronics Exchange and Repair and Return Programs.

Part Description	Daktronics Part No.
Monochrome lens/reflective assembly	0A-1176-0002
Vertical shift interface board (Attached to master module; operated by All Sport <sup>®</sup> controller)	0P-1176-0006
Current loop interface (CLI) board (Attached to master module; operated by ProSport <sup>®</sup> controller)	0P-1176-0004
Controller board	0A-1146-0007
Electrical contact lubricant and protector (paste) 8oz jar	CH-1021
Fan, 120V, 250 cfm	B-1019
Fan filter	L-98614
Fuse, MDL-7, 1/4" by 1 1/4", Slow-Blo	F-1031
Lamp; T-3 1/4, wedge base, xenon-filled	DS-1241
8x16-10 lampbank; 1.5" S1600 monochrome	0P-1176-0002

Lens, mono white	DS-1235
Socket; T-3 1/4, wedge	X-1209
Tool kit accessories (includes the following)	0A-1176-0008
Electrical contact cleaner (spray can)	CH-1015
Electrical contact lubricant and protector (paste) 1oz jar	CH-1019
Front access module remover tool	0M-95442
Lamp extractor	TH-1032
Lamp voltage tester	0P-1089-0010
Rear access module remover tool	0M-95441
0.032 feeler gauge, weatherstripping	OM-69133
Transformer, 120V	T-1107
Weatherstripping, pile	HS-1149
Weatherstripping, tape	HS-1051
Weatherstripping, open cell, filter assembly	HS-1039

## 9.15 Daktronics Exchange and Repair and Return Programs

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To serve customers' repair and maintenance needs, Daktronics offers both an Exchange program and a Repair and Return Program.

Daktronics' unique Exchange Program is a quick, economical service for replacing key components in need of repair. If a component fails, Daktronics sends the customer a replacement, and the customer, in turn, sends the failed component to Daktronics. This not only saves money but also decreases scoreboard downtime. This service is provided to qualified customers who follow the program guidelines explained below.

Daktronics provides this service to ensure users get the most from their Daktronics products. Please call the Help Desk – (877) 605-1115 – if you have questions regarding the exchange program or any other Daktronics service.

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

If the replacement part fixes the problem, package the defective part in the same box and wrapping in which the replacement part arrived, fill out and attach the enclosed UPS shipping document, and *RETURN THE PART TO DAKTRONICS*.

In most circumstances, you will be invoiced for the replacement part at the time it is shipped. This bill is due when you receive it.

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

*If the defective equipment is not shipped to Daktronics within 30 working days from the invoice date, it is assumed you are purchasing the replacement part, and you will be invoiced for it.* This second invoice represents the difference between the exchange price and the full purchase price of the equipment. The balance is due when you receive the second invoice. If you return the exchange equipment after 30 working days from the invoice date, you will be credited for the amount on the

second invoice, minus a restocking fee.

☹ **To avoid a restocking charge, please return the defective equipment within 30 days from the invoice date.**

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

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

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

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

**Mail:** Customer Service  
Daktronics, Inc.  
P.O. Box 5128  
331 32nd Avenue  
Brookings, SD 57006

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

**Fax:** 1 (605) 697-4444

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



# Section 10: Scoreboard Options

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

- Caption kits for additional sports
- Trumpet horn for football and soccer
- Remote start/stop console

## 10.1 Captions for Other Sports

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### Reference Drawings:

Caption Options, Baseball & Softball.....	<b>Drawing A-44431</b>
Caption Options, Track .....	<b>Drawing A-44432</b>
Caption Options, Soccer .....	<b>Drawing A-101442</b>
Caption Options, Football .....	<b>Drawing A-128281</b>
Caption Changing .....	<b>Drawing A-44549</b>

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

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

### ***Installing and Changing Captions***

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

To install a changeable panel:

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

An optional caption changer is available for installing and removing panels from the ground. Each panel is punched with keyholes. Screw-heads on the crossbar at the top of the caption changer fit into the keyholes. The caption changer pole consists of three sections. A ring may be loosened to allow adjustment of pole length. After extending the pole to the desired length, tighten the ring.

## CAUTION

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

## 10.2 Trumpet Horn

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### Reference Drawings:

Horn Installation .....	<b>Drawing A-44197</b>
Final Assembly, 12V DC Horn Mounting .....	<b>Drawing A-83333</b>
Schematic, Football Trumpet Horn .....	<b>Drawing A-83329</b>

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

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

### ***AC Trumpet Horn Installation (Internally Mounted)***

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

Refer to **Drawing A-44197**.

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

## **DC Trumpet Horn Installation (Externally Mounted)**

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

Refer to **Drawing A-83333**.

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



# Appendix A: Reference Drawings

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## A Drawings

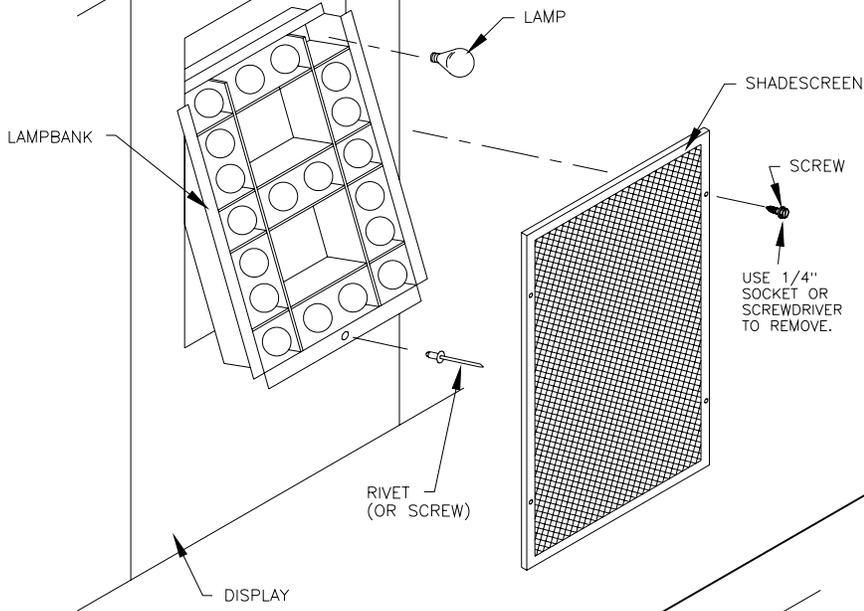
Digit Service .....	Drawing A-27674
Multiple Section Football Scbd Models .....	Drawing A-42148
Horn Installation .....	Drawing A-44197
Display Mounting .....	Drawing A-44412
Caption Options, Baseball & Softball .....	Drawing A-44431
Caption Options, Track .....	Drawing A-44432
Beam & Footing Recommendations, FB-XX24 .....	Drawing A-44514
Beam & Footing Recommendations, FB-XX30 .....	Drawing A-44515
Beam & Footing Recommendations, FB-XX30L .....	Drawing A-44516
Lifting Scoreboard .....	Drawing A-44548
Caption Changing .....	Drawing A-44549
Structure, Football .....	Drawing A-44556
Digit Segments, 3x5 and 4x7 .....	Drawing A-46653
Ad Panel Mounting .....	Drawing A-52187
Installation Specifications, BA-1518 .....	Drawing A-55008
Beam Spacings, Football/Track/Soccer .....	Drawing A-70089
Correct Lens Position, 1-1.2" .....	Drawing A-75204
Schematic, Football Trumpet Horn .....	Drawing A-83329
Final Assembly, 12V DC Horn Mounting .....	Drawing A-83333
Multiple Section Football Scbd Models w/TNMC .....	Drawing A-84233
Beam Spacing; Displays w/TNMC .....	Drawing A-84292
Lens Assy, Weatherstripping Location, for Manual .....	Drawing A-91100
Multiple Section Soccer Scbd Models .....	Drawing A-98161
Lens Removal, Front Access, for Manual Use .....	Drawing A-99898
Lens Assy Removal, Front Access, for Manual Use .....	Drawing A-99899
Caption Options, Soccer .....	Drawing A-101442
Components 8/16 Pos Power and Signal Entrance .....	Drawing A-109114
Filter Removal; 250 CFM Fan .....	Drawing A-113986
Display Mounting Straps, BA-3718 .....	Drawing A-114415
Mounting Detail; 2-1/2O Matrix .....	Drawing A-115882
Installation Specifications, BA-1524 .....	Drawing A-120972
Layout; 16 Column Driver III .....	Drawing A-123940
Layout; 8 Column Driver III .....	Drawing A-123941
Schematic; 2 Drivers .....	Drawing A-124291
Schematic; 1 Drivers .....	Drawing A-124293
Schematic; 832-12 TNMC .....	Drawing A-125214
Schematic; 848-12 TNMC .....	Drawing A-125216
Components 2/4 Pos Power and Signal Entrance .....	Drawing A-125977
Multiple Section Baseball Scoreboard Models .....	Drawing A-126086
Multiple Section Baseball Scbd Models w/TNMC .....	Drawing A-126362
Component Locations, BA-1518 .....	Drawing A-126422
Component Locations, BA-1524 .....	Drawing A-126423
Component Locations, BA-3718 .....	Drawing A-126424
Component Locations, BA-3724 .....	Drawing A-126425
Component Locations, BA-1518 w/TNMC .....	Drawing A-126426
Component Locations, BA-3718 w/TNMC .....	Drawing A-126427

Component Locations, BA-3724 w/TNMC.....	Drawing A-126428
Installation Specifications, BA-3724 .....	Drawing A-126445
Installation Specifications, BA-3718 .....	Drawing A-126455
Component Locations, FB-1630 (Incl FB-1630 w/TNMC).....	Drawing A-127855
Component Locations, FB-1730 (Incl FB-1730 w/TNMC).....	Drawing A-127867
Component Locations, FB-1830 (Incl FB-1830 w/TNMC).....	Drawing A-127870
Component Locations, SO-1830 (Incl SO-1830 w/TNMC) .....	Drawing A-127874
Component Locations, SO-1930 (Incl SO-1930, w/TNMC) .....	Drawing A-127875
Component Locations, FB-1424 (Incl FB-1424 w/TNMC).....	Drawing A-127913
Component Locations, FB-1524 (Incl FB-1524 w/TNMC).....	Drawing A-127917
Component Locations, FB-1624 .....	Drawing A-127919
Component Locations, FB-1430 (Incl FB-1430 w/TNMC).....	Drawing A-127925
Component Locations, FB-1530 (Incl FB-1530 w/TNMC).....	Drawing A-127928
Component Locations, MS-2118 .....	Drawing A-127929
Component Locations, SO-1424 (Incl SO-1424 w/TNMC) .....	Drawing A-127946
Component Locations, SO-1624 (Incl SO-1624 w/TNMC) .....	Drawing A-127950
Installation Specifications, FB-2002 & FB-2003 .....	Drawing A-128044
Component Locations, SO-2030, .....	Drawing A-128111
Component Locations, FB-1630L (Incl FB-1630L w/TNMC).....	Drawing A-128113
Component Locations, FB-1830L (Incl FB-1830L w/TNMC).....	Drawing A-128118
Component Locations, FB-2001 .....	Drawing A-128120
Multiple Section Soccer Scbd Models w/TNMC .....	Drawing A-128172
Multiple Section Multisport Scbd Models .....	Drawing A-128203
Installation Specifications, MS-2118.....	Drawing A-128206
Caption Options, Football .....	Drawing A-128281
Incandescent Driver Power Up Self-Test .....	Drawing A-128283
Power Up Self Test on a FB-1424 .....	Drawing A-128301
Component Locations, FB-2002 .....	Drawing A-129642
Component Locations, FB-2003 .....	Drawing A-129643
Schematic; 2 Drivers Fully Loaded .....	Drawing A-131295
Component Locations, FB-1630 w/40W Lamps.....	Drawing A-138896
Segmentation, 4x7, 2 plug .....	Drawing A-143233
Installation Specifications, MS-2009.....	Drawing A-144415
Component Locations, MS-2009 .....	Drawing A-144652
Component Locations, FB-2004 .....	Drawing A-151178
Beam and Footing Recommendations, FB-XX30L .....	Drawing A-158779
Beam and Footing Recommendations, FB-200X.....	Drawing A-160931
Interconnect Panel Digit Designation .....	Drawing A-174754

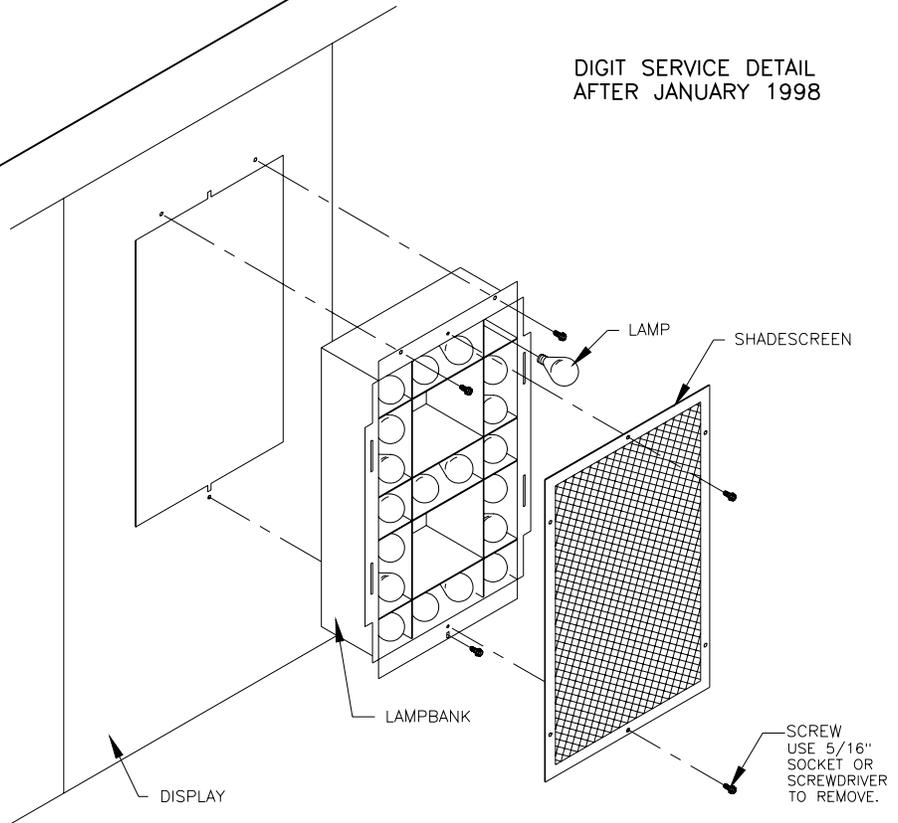
## ***B Drawings***

Schematic; 2 Drvrs with 32 or 48-10TNMC Sectional .....	Drawing B-124294
Schematic; 3 Drvrs with 32 or 48-10TNMC Sectional .....	Drawing B-124327
Schematic, 1 Drvr with 32 or 48-10TNMC Sectional .....	Drawing B-125886
Schematic, 1 Drvr with 32 or 48-10 TNMC .....	Drawing B-127394
Schematic; 4 Driver (FB-1630 40W).....	Drawing B-137843

DIGIT SERVICE DETAIL  
BEFORE JANUARY 1998



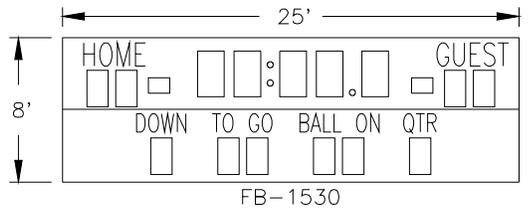
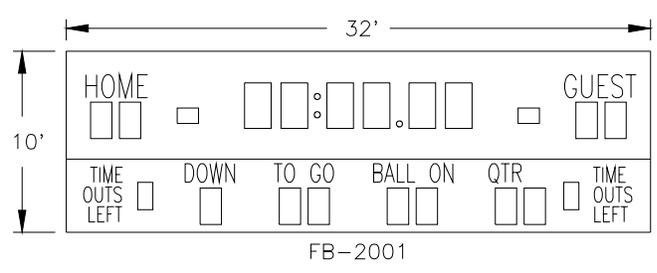
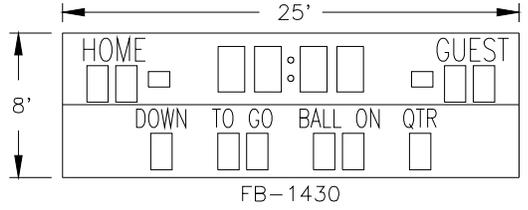
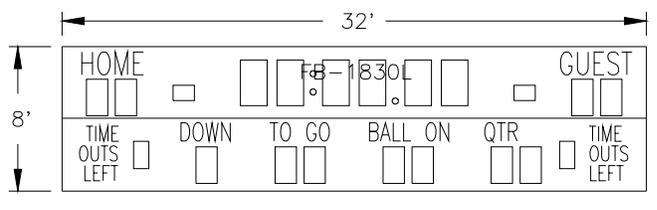
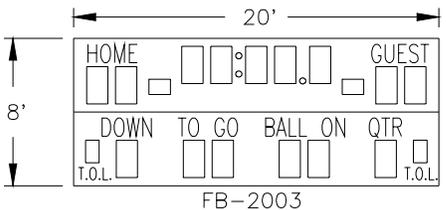
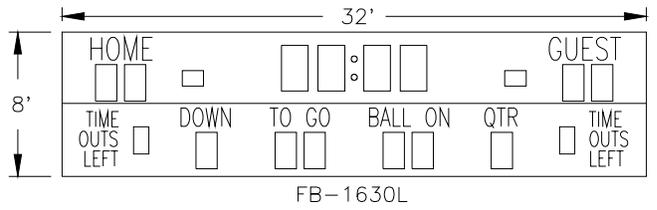
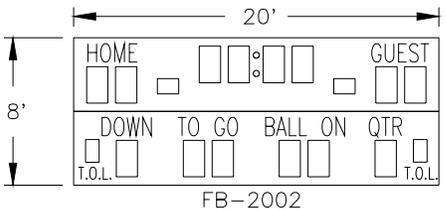
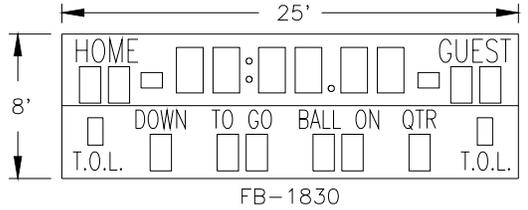
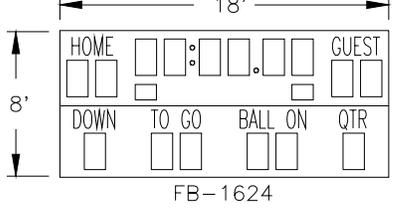
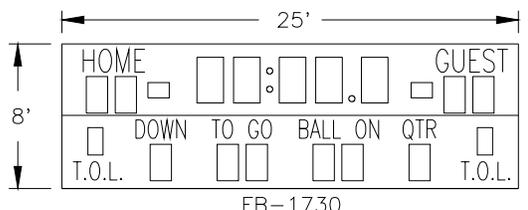
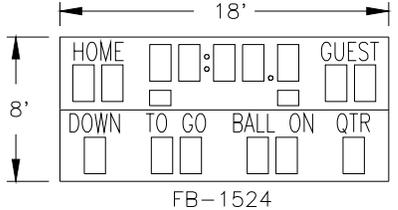
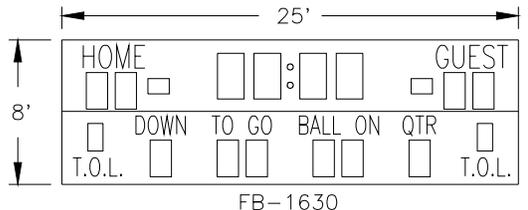
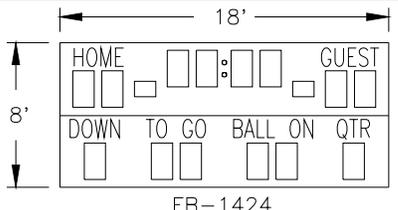
DIGIT SERVICE DETAIL  
AFTER JANUARY 1998



DAKTRONICS, INC. BROOKINGS, SD 57006

REV.	DATE	DESCRIPTION	BY	APPR.
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1	5 MAR 91	CHANGED FROM "B" TO "A" SIZE DWG.	CF	

PROJ:	OUTDOOR SCOREBOARDS		
TITLE:	DIGIT SERVICE		
DES. BY:	DRAWN BY:	TERRY P.	DATE: 31 JULY 86
REVISION	APPR. BY:	1064-E10A-27674	
	SCALE:	1=15	



5	06APR98	CHANGED INDICATORS ON FB-1524	BDP	
4	03 NOV 97	REMOVED MODELS SO-824, SO-1424, AND SO-1624.	MWJ	
3	12APR95	ADDED MODELS SO-824, SO-1424, AND SO-1624.	AVB	AVB
2	23FEB94	ADDED FB-1624.	CFICK	
1	23AUG90	CHANGED POSS INDICATOR ON FB-1524 TO THREE LAMPS EACH. CHANGED ALL POSS INDICATORS TO SHOW LAMPS.	AVB	

8	16MAR00	ADDED FB-2002 AND FB-2003	GBREE	
7	22FEB00	REMOVED FB-824	BDP	
6	16JUL98	ADDED FB-2001	JLK	
REV.	DATE	DESCRIPTION	BY	APPR.

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

PROJ: **OUTDOOR INCANDESCENT SCOREBOARDS**

TITLE: **MULTIPLE SECTION FOOTBALL SCBD MODELS**

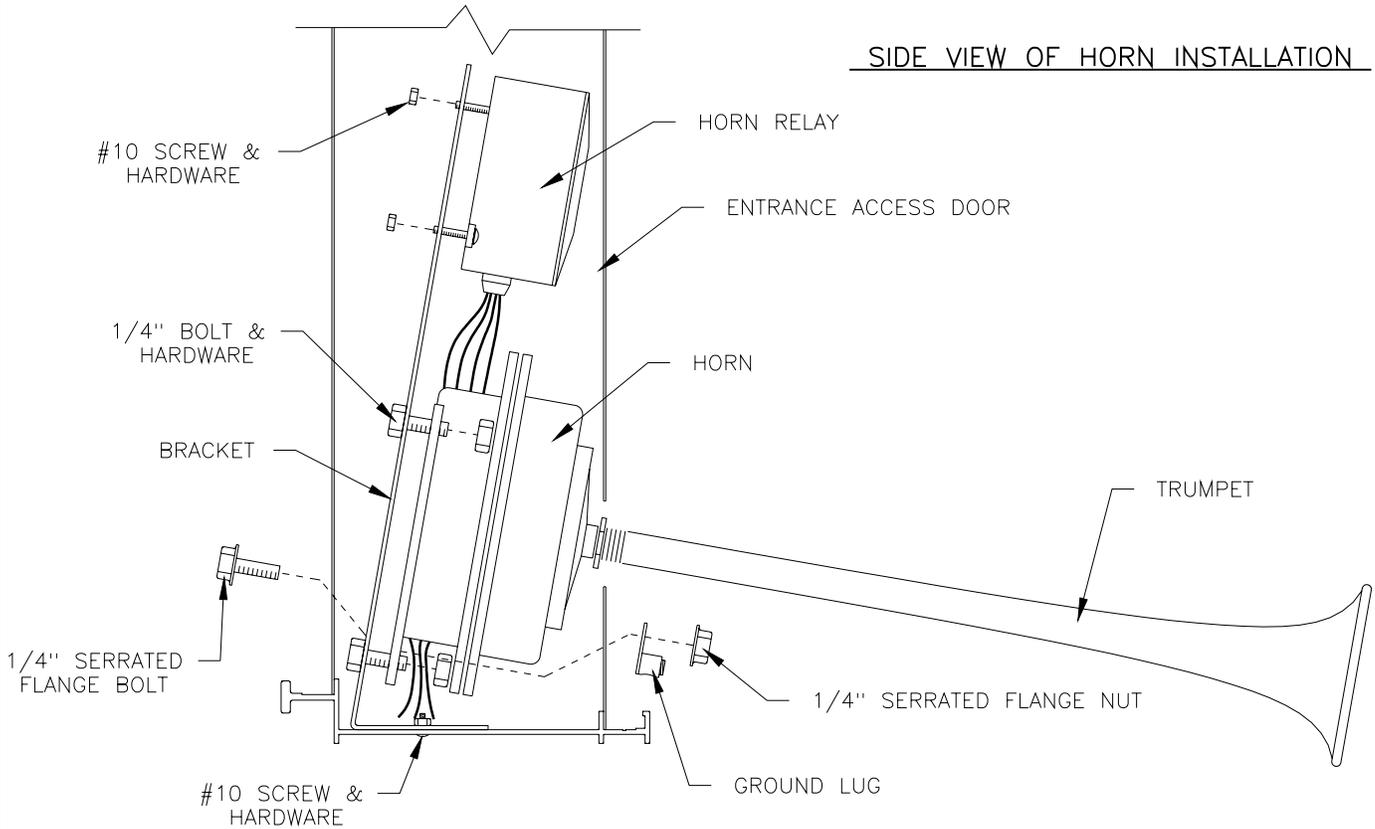
DES. BY: \_\_\_\_\_ DRAWN BY: **AVB** DATE: **06AUG90**

REVISION APPR. BY: \_\_\_\_\_

SCALE: **1=120**

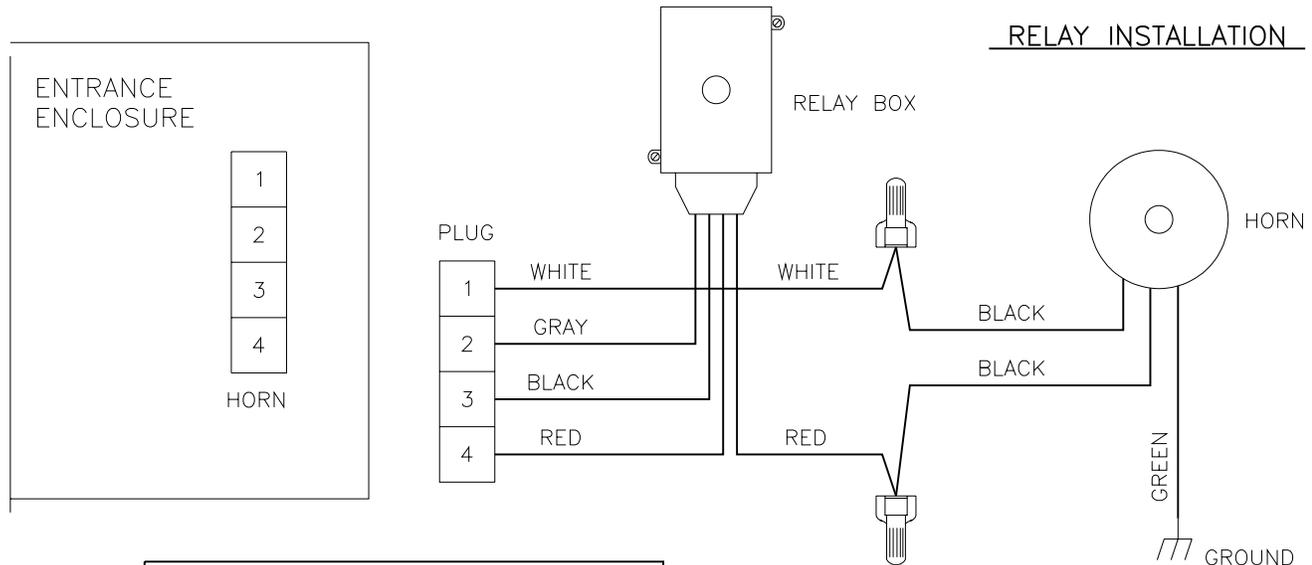
**1091-R08A-42148**

SIDE VIEW OF HORN INSTALLATION



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

RELAY INSTALLATION



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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: HORN INSTALLATION

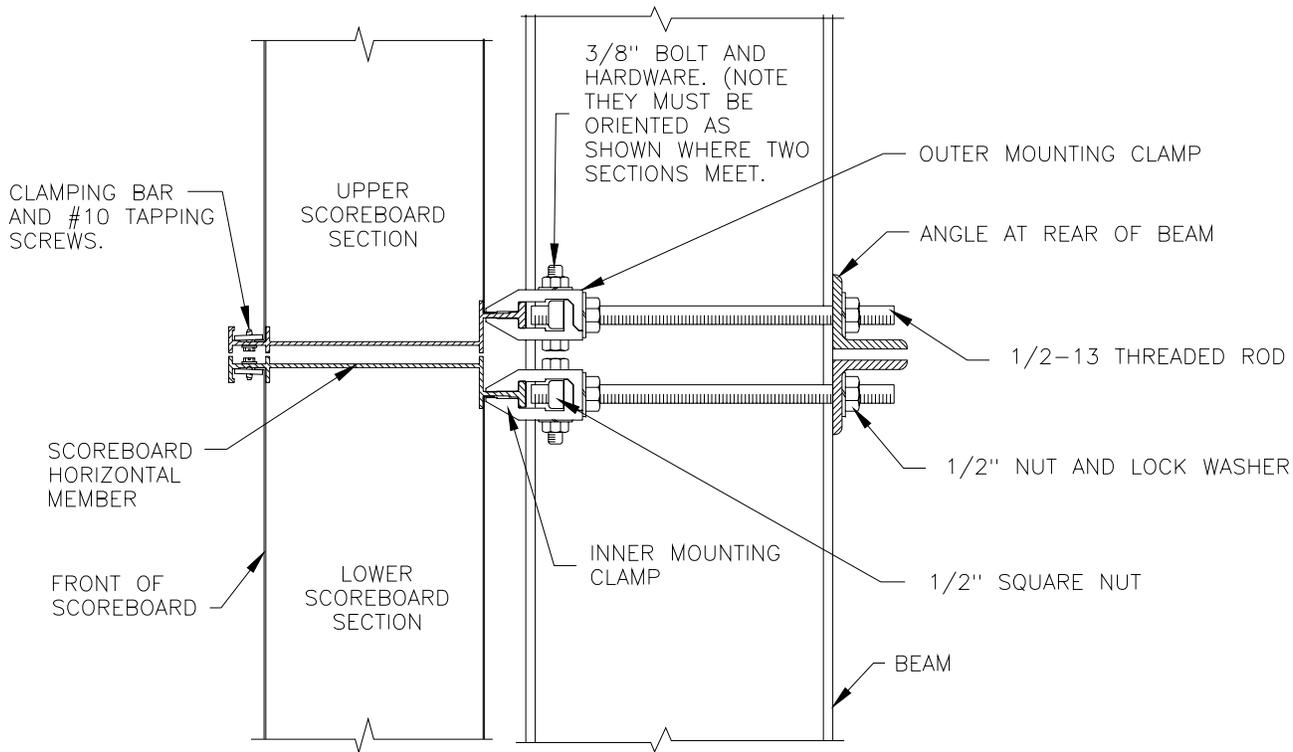
DES. BY: JHEIDERSCHIEDT DRAWN BY: JHEIDERSCHIEDT DATE: 16AUG90

REVISION APPR. BY: AVB

SCALE: 1=4

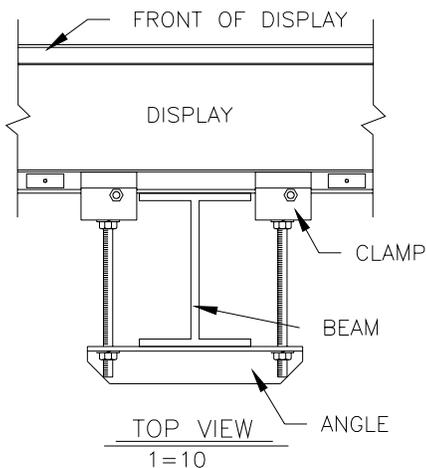
1091-E10A-44197

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



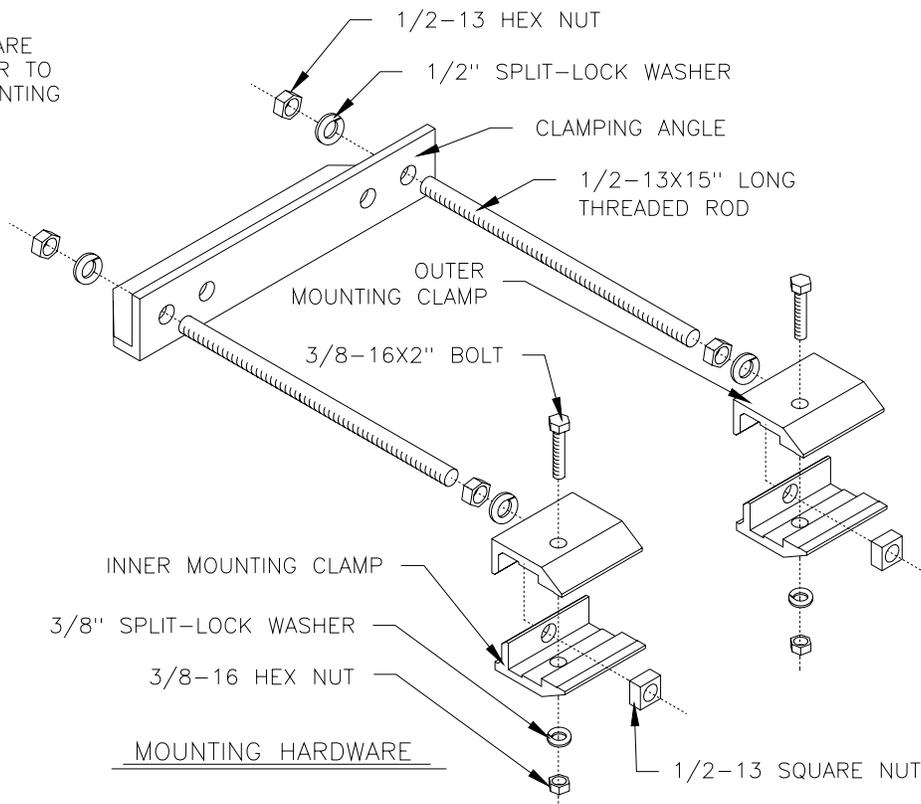
SIDE VIEW

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



TOP VIEW  
1=10

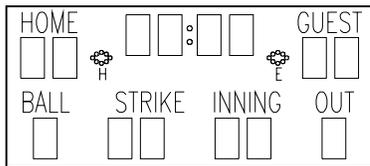
- THREADED RODS RUN ALONG BOTH SIDES OF BEAM.
- THEY DO NOT PASS THROUGH THE FLANGES OF THE BEAM.
- NO DRILLING IS NECESSARY.



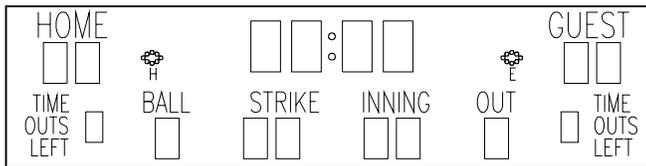
MOUNTING HARDWARE

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

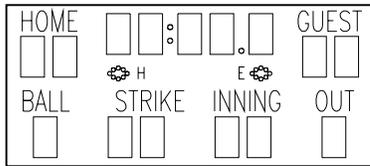
REV.	DATE	DESCRIPTION	BY	APPR.



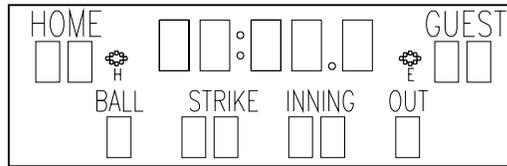
FB-1424



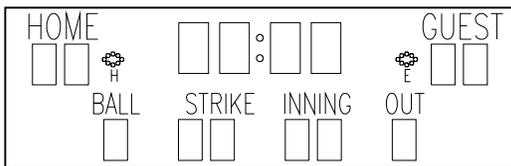
FB-1630L



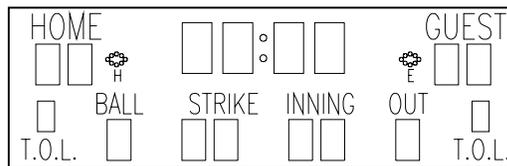
FB-1524



FB-1530

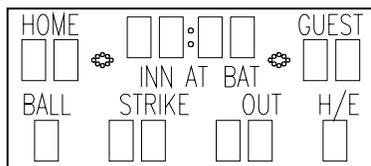


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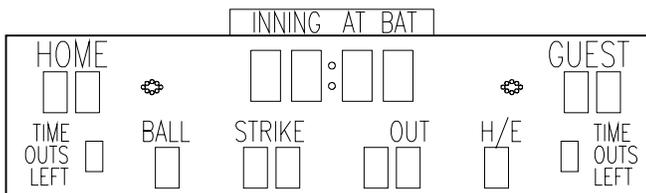


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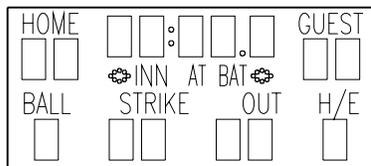
DISPLAYS SHOWN WITH BASEBALL/SOFTBALL CAPTIONS WITH CLOCK OPTION



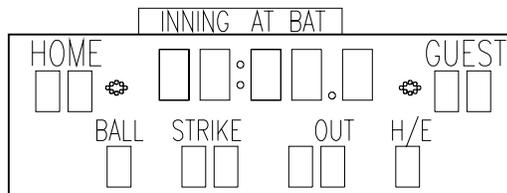
FB-1424



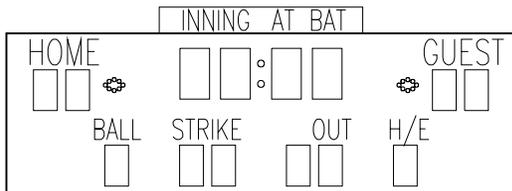
FB-1630L



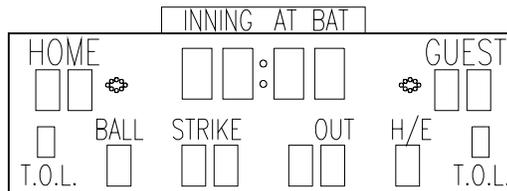
FB-1524



FB-1530



FB-1430



FB-1630

DISPLAYS SHOWN WITH BASEBALL/SOFTBALL CAPTIONS WITHOUT CLOCK

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

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DAKTRONICS, INC. BROOKINGS, SD 57006

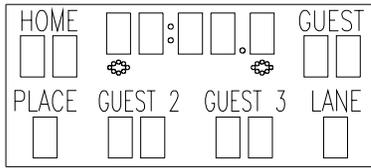
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: CAPTION OPTIONS, BASEBALL & SOFTBALL

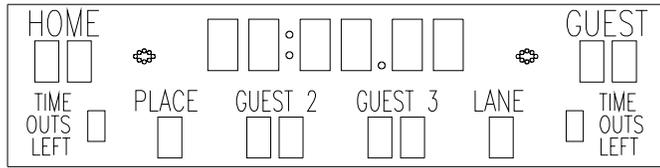
DES. BY: DRAWN BY: JHEIDERSCHIEDT DATE: 30AUG90

REVISION 05 APPR. BY: SCALE: 1=110

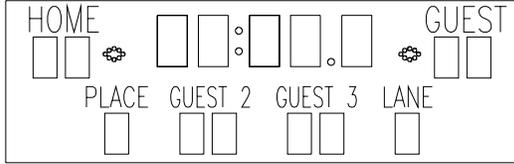
1091-R08A-44431



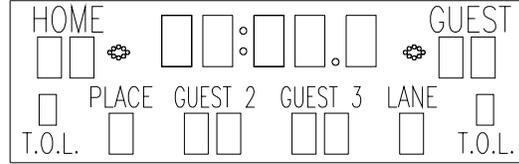
FB-1524



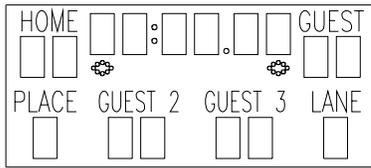
FB-1830L



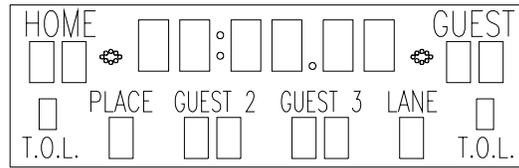
FB-1530



FB-1730 AND FB-2003

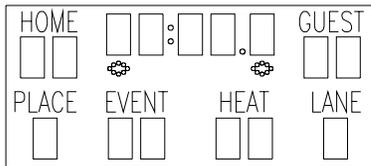


FB-1624

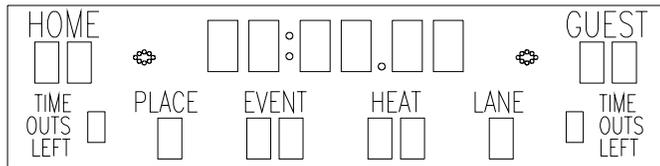


FB-1830

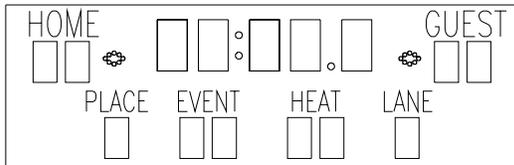
DISPLAYS SHOWN WITH GUEST 2/GUEST 3 TRACK CAPTIONS



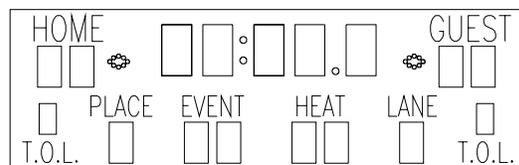
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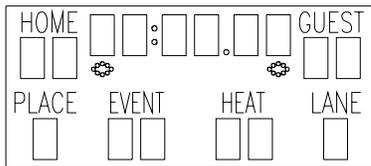
FB-1830L



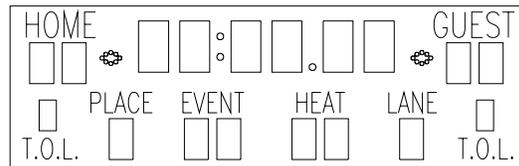
FB-1530



FB-1730 AND FB-2003



FB-1624



FB-1830

DISPLAYS SHOWN WITH EVENT/HEAT TRACK CAPTIONS

5	17MAR00	ADDED FB-2003	GBREE	
4	21FEB00	REMOVED CODES.	BDP	
3	22OCT98	UPDATED FB-1524 INDICATORS	BDP	
2	19APR96	CORRECTED "HEAT" CAPTION ON FB-1624.	AVB	AVB
REV.	DATE	DESCRIPTION	BY	APPR.

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

PROJ: **OUTDOOR INCANDESCENT SCOREBOARDS**

TITLE: **CAPTION OPTIONS, TRACK**

DES. BY: \_\_\_\_\_ DRAWN BY: **JHEIDERSCHIEDT** DATE: **30AUG90**

REVISION \_\_\_\_\_ APPR. BY: \_\_\_\_\_

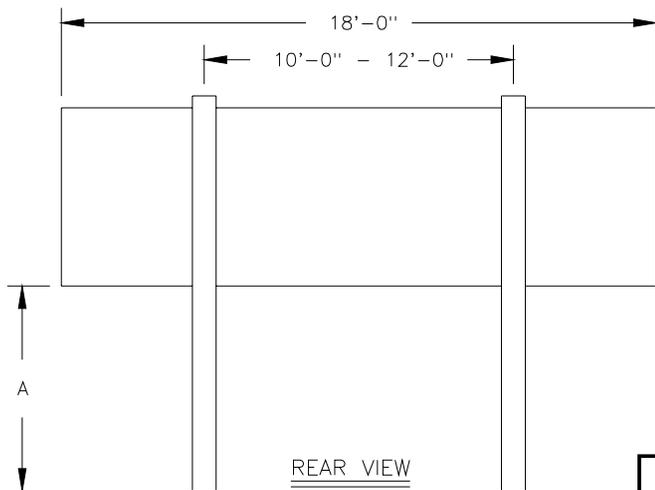
SCALE: **1 = 110**

**1091-R08A-44432**

# MODELS FB-1424/1524/1624/2007

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

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



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

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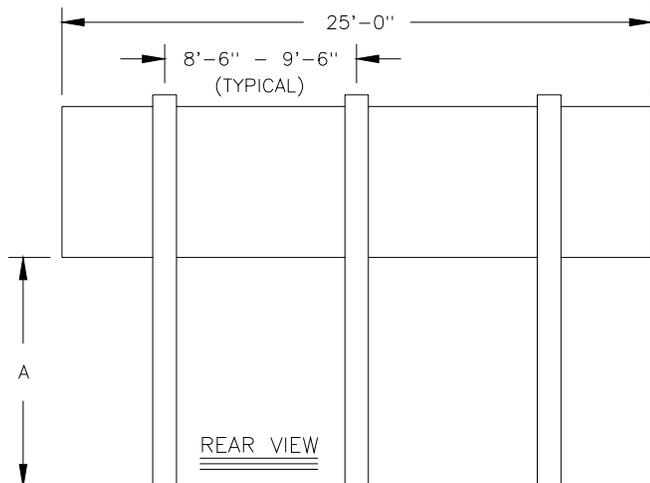
**DAKTRONICS, INC. BROOKINGS, SD 57006**

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

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

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

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



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

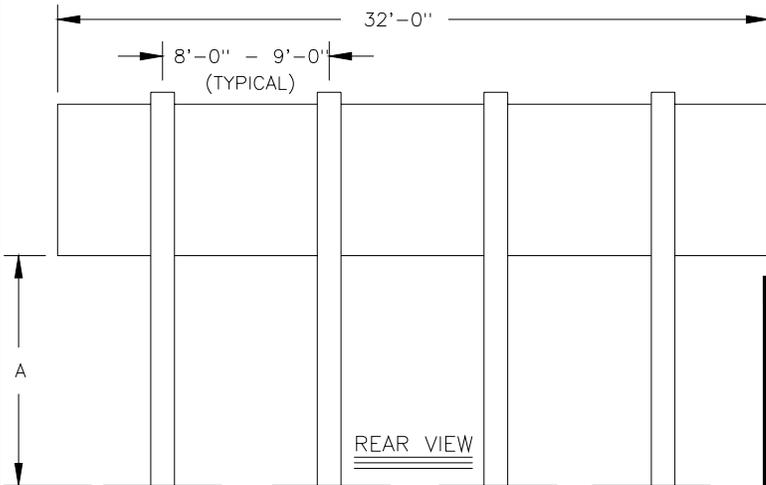
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 MUST BE DESIGNED BY A STATE LICENCED  
 ENGINEER. DAKTRONICS DOES NOT ASSUME  
 ANY LIABILITY FOR ANY INSTALLATIONS  
 DERIVED FROM THIS INFORMATION OR  
 DESIGNED AND INSTALLED BY OTHERS.

DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: FOOTBALL SCOREBOARDS				
TITLE: BEAM & FOOTING RECOMMENDATIONS, FB-XX30				
DES. BY: JHEIDERSCHIEDT DRAWN BY: JHEIDERSCHIEDT DATE: 08SEP90				
REV.	DATE	DESCRIPTION	BY	APPR.
2	13JUL00	REVISED BEAM SECTIONS & FOOTINGS.	MVD	
1	23MAR98	ADDED DISCLAIMER ABOUT FOOTING AND BEAM LIABILITY.	TWEBER	
REVISION		APPR. BY:	1091-R08A-44515	
		SCALE: NONE		

# MODELS FB-1630L & FB-1830L

DISTANCE TO BOTTOM OF SCOREBOARD (FT)	DOES SCOREBOARD HAVE ATTACHED AD PANEL?	DESIGN WIND VELOCITY (MPH)			
		70	80	90	100
<b>A</b>					
<b>10</b>	NO	W8x28 3.00 X 5.60	W8x31 3.00 X 6.20	W10x33 3.00 X 6.80	W8x35 3.00 X 7.30
	YES	W10x39 3.00 X 6.80	W12x45 3.00 X 7.50	W8x48 3.00 X 8.20	W12x53 3.00 X 8.80
<b>12</b>	NO	W8x31 3.00 X 5.90	W10x33 3.00 X 6.50	W10x39 3.00 X 7.10	W8x40 3.00 X 7.60
	YES	W12x45 3.00 X 7.00	W8x48 3.00 X 7.80	W12x53 3.00 X 8.50	W12x58 3.00 X 9.20
<b>14</b>	NO	W8x35 3.00 X 6.20	W10x39 3.00 X 6.80	W12x45 3.00 X 7.40	W8x48 3.00 X 8.00
	YES	W8x48 3.00 X 7.40	W12x53 3.00 X 8.10	W12x58 3.00 X 8.80	W12x65 3.00 X 9.60
<b>16</b>	NO	W10x39 3.00 X 6.40	W12x45 3.00 X 7.10	W8x48 3.00 X 7.70	W12x53 3.00 X 8.30
	YES	W10x49 3.00 X 7.60	W12x58 3.00 X 8.40	W12x65 3.00 X 9.10	W12x72 3.00 X 9.80
<b>18</b>	NO	W12x45 3.00 X 6.60	W8x48 3.00 X 7.30	W12x53 3.00 X 8.00	W12x58 3.00 X 8.60
	YES	W10x54 3.00 X 7.80	W12x65 3.00 X 8.60	W12x72 3.00 X 9.40	W10x77 3.00 X 10.10
<b>20</b>	NO	W8x48 3.00 X 6.90	W10x49 3.00 X 7.60	W12x58 3.00 X 8.30	W12x65 3.00 X 8.90
	YES	W10x60 3.00 X 8.10	W10x68 3.00 X 8.90	W10x77 3.00 X 9.70	W12x87 3.00 X 10.50

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



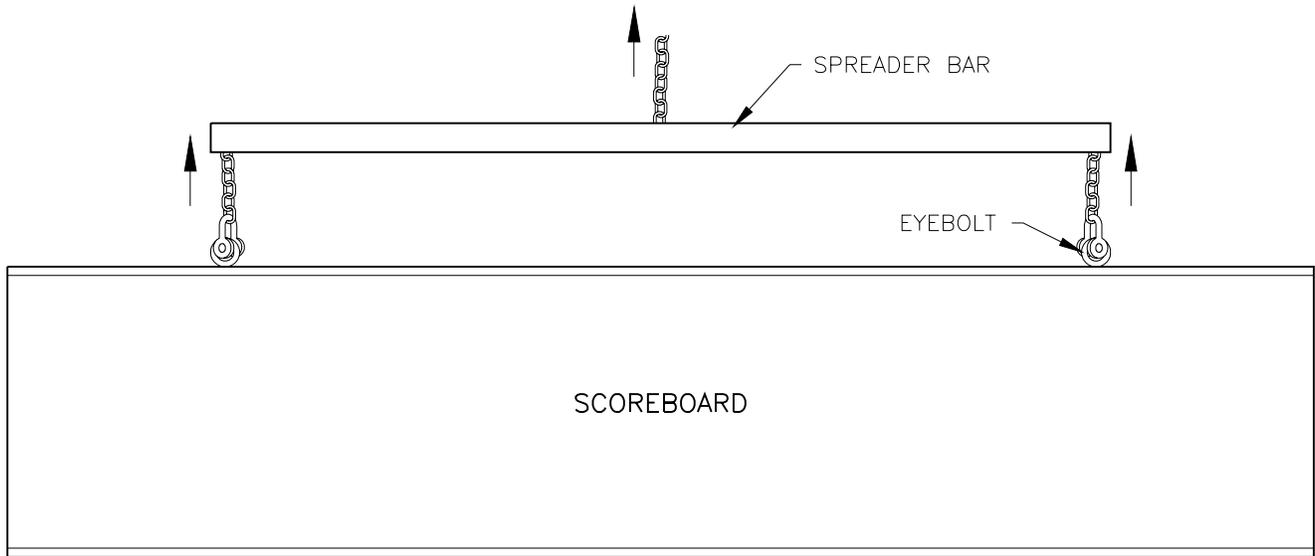
**NOTE:**  
RECOMMENDATIONS FOR A DISPLAY WITH AN ATTACHED AD PANEL WERE CALCULATED USING A 48" TALL AD PANEL.

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

REV.	DATE	DESCRIPTION	BY	APPR.
2	17JUL00	REVISED BEAM SECTIONS & FOOTINGS.	MVD	
1	23MAR98	ADDED DISCLAIMER ABOUT FOOTING AND BEAM LIABILITY.	TWEBER	

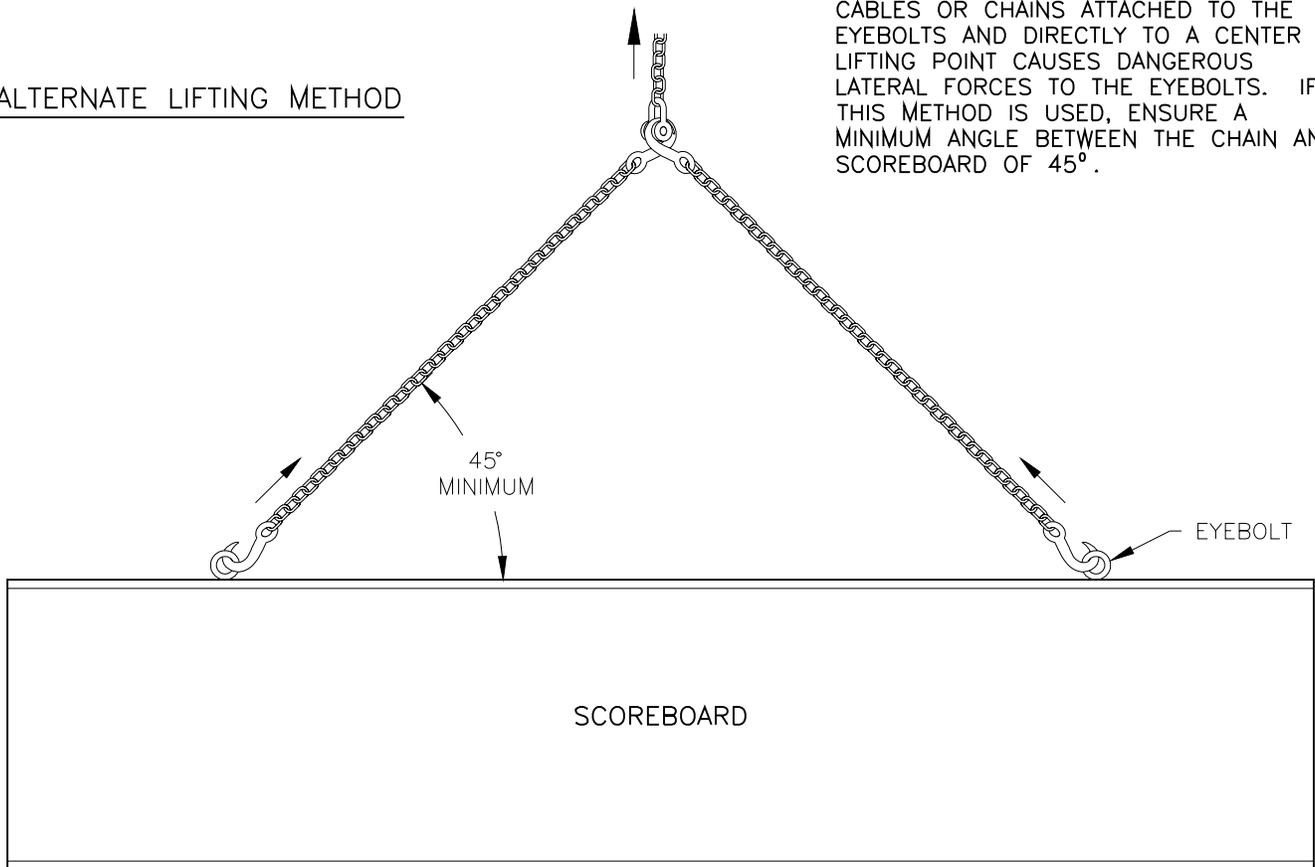
PROJ: FOOTBALL SCOREBOARDS	
TITLE: BEAM & FOOTING RECOMMENDATIONS, FB-XX30L	
DES. BY: JHEIDERSCHIEDT	DRAWN BY: JHEIDERSCHIEDT DATE: 08SEP90
REVISION	APPR. BY:
SCALE: NONE	1091-R08A-44516



PREFERRED LIFTING METHOD

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

ALTERNATE LIFTING METHOD

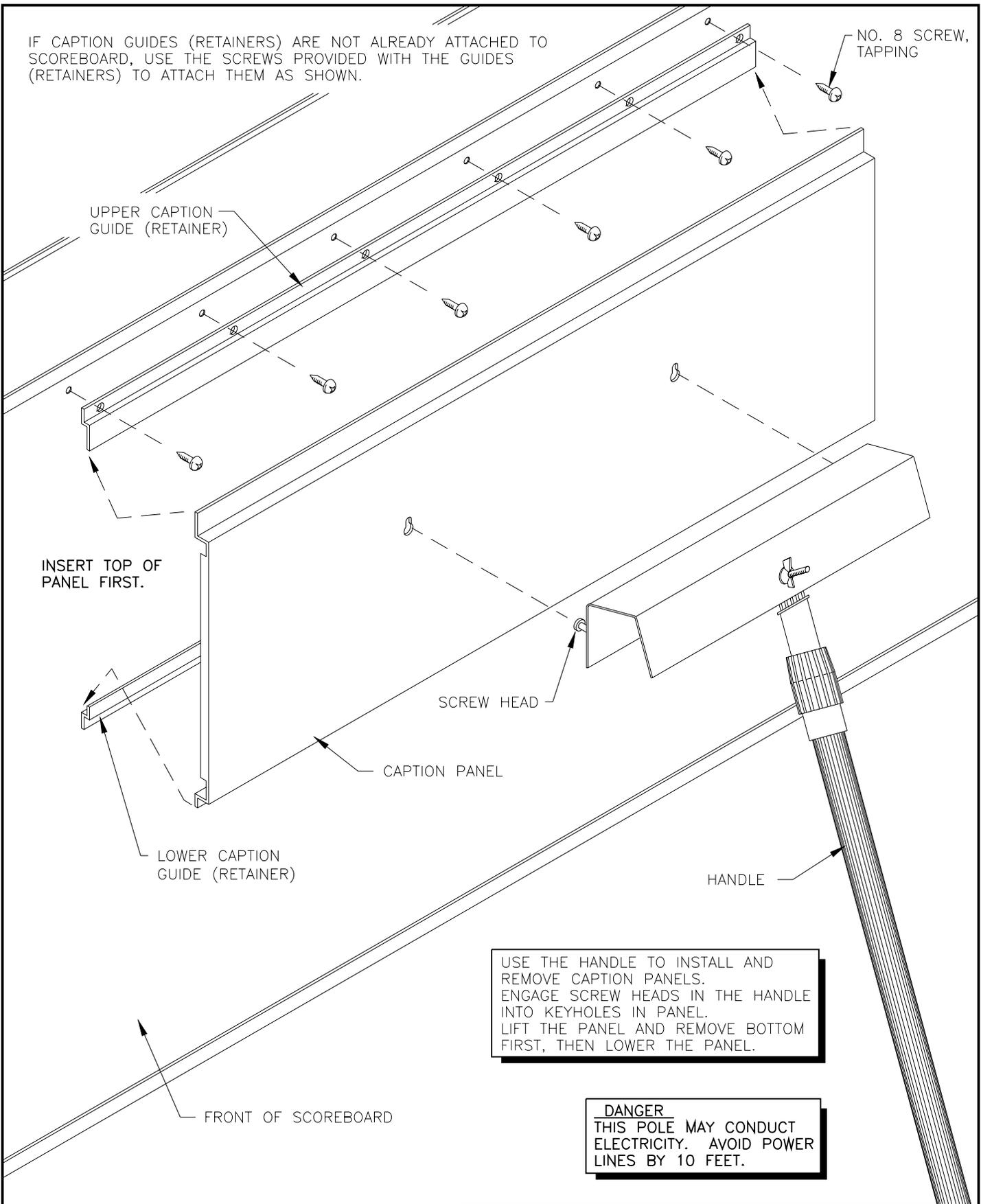


CABLES OR CHAINS ATTACHED TO THE EYEBOLTS AND DIRECTLY TO A CENTER LIFTING POINT CAUSES DANGEROUS LATERAL FORCES TO THE EYEBOLTS. IF THIS METHOD IS USED, ENSURE A MINIMUM ANGLE BETWEEN THE CHAIN AND SCOREBOARD OF 45°.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR SCOREBOARDS			
TITLE: LIFTING SCOREBOARD			
DES. BY:		DRAWN BY: AVB	DATE: 12SEP90
REVISION	APPR. BY:	1091-R10A-44548	
	SCALE: NONE		

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

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



NO. 8 SCREW, TAPPING

UPPER CAPTION GUIDE (RETAINER)

INSERT TOP OF PANEL FIRST.

SCREW HEAD

CAPTION PANEL

LOWER CAPTION GUIDE (RETAINER)

HANDLE

FRONT OF SCOREBOARD

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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: CAPTION CHANGING

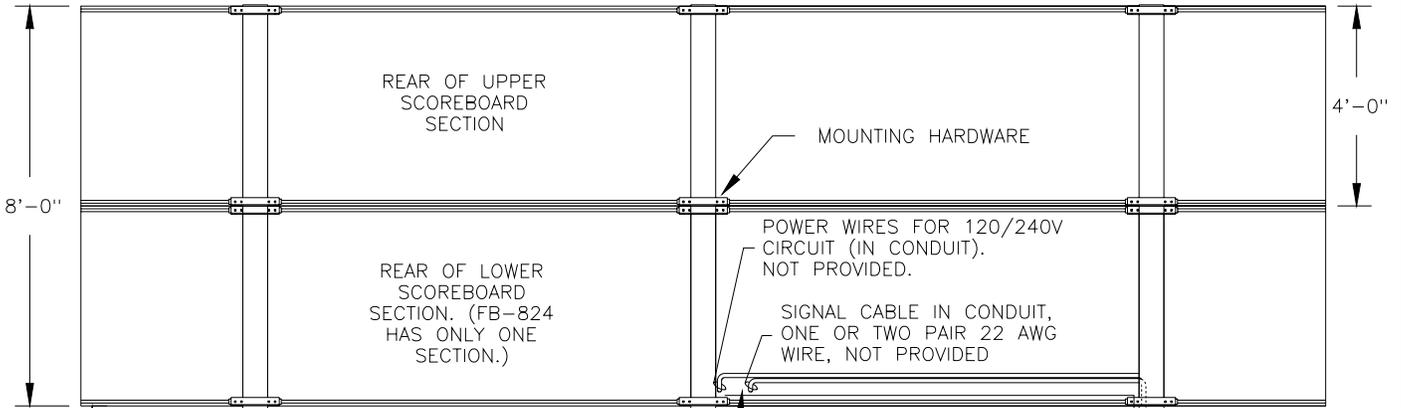
DES. BY: DRAWN BY: AVB DATE: 19SEP90

REVISION APPR. BY: SCALE: NONE 1091-E10A-44549

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

SCOREBOARD WIDTH  
VARIES BY MODEL NUMBER

SEE THE BEAM SPACING DRAWING  
FOR RECOMMENDED NUMBER  
AND SPACING OF BEAMS



HEIGHT  
AS REQUIRED

**BEAMS:**  
SEE THE BEAM SPACING  
DRAWING FOR THE NUMBER  
AND SPACING CORRECT FOR  
THE MODEL BEING INSTALLED.  
BEAM SIZE MUST BE SPECIFIED  
BY A LICENSED ENGINEER

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

GROUND ROD  
(DEPTH PER LOCAL  
ELECTRICAL CODE)  
REFER TO ELECTRICAL  
INSTALLATION SECTION  
OF THE MANUAL.

SERVICE DISCONNECT  
(NOT FURNISHED)  
POSSIBLE LOCATION

GRADE

FOOTING

FOOTING DEPTH

3"

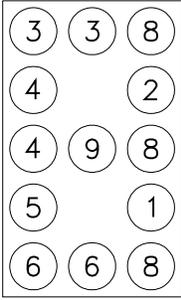
FOOTING WIDTH

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

DAKTRONICS, INC. BROOKINGS, SD 57006

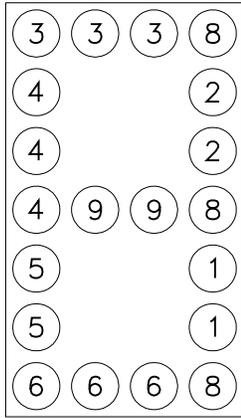
REV.	DATE	DESCRIPTION	BY	APPR.
2	28APR95	ADDED NOTE THAT SPECIFICATIONS MUST BE MADE BY A LICENSED ENGINEER.	AVB	AVB
1	17SEP90	CORRECTED WIRE SPECIFICATIONS. ADDED GROUNDING ROD REFERENCE.	JLH	

PROJ: FOOTBALL SCOREBOARDS	
TITLE: STRUCTURE, FOOTBALL	
DES. BY: JHEIDERSCHEIDT DRAWN BY: JHEIDERSCHEIDT DATE: 12SEP90	
REVISION	APPR. BY:
SCALE: 1=45	1091-R10A-44556



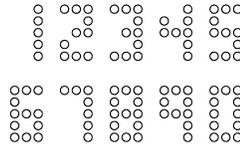
3x5 NUMERAL DIGIT

15" OR 18"

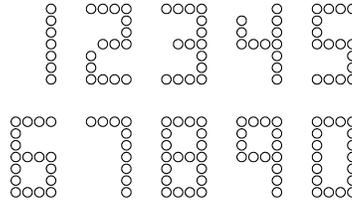


4x7 NUMERAL DIGIT

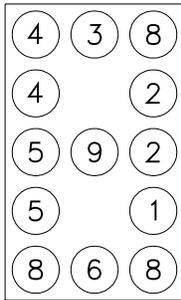
24"



3x5 NUMERALS

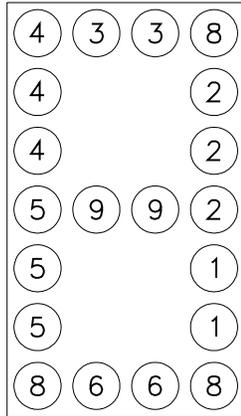


4x7 NUMERALS



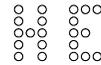
3x5 H/E DIGIT

15" OR 18"

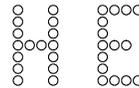


4x7 H/E DIGIT

24"



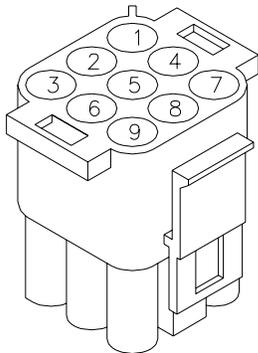
3x5 H & E



4x7 H & E

COLOR CODE

PIN NUMBER	WIRE COLOR	DRIVER SEGMENT
1	ORANGE	C
2	RED	B
3	BROWN	A
4	BLUE	F
5	PINK	E
6	TAN	D
7	BLACK	COMMON
8	GRAY	H
9	VIOLET	G



**LAMP DRIVER CONNECTOR**

EACH DIGIT IS WIRED TO ONE CONNECTOR PER THE COLOR CODE AT RIGHT

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: BASEBALL SCOREBOARDS

TITLE: DIGIT SEGMENTS, 3x5 AND 4x7

DES. BY:

DRAWN BY: AVB

DATE: 20MAR91

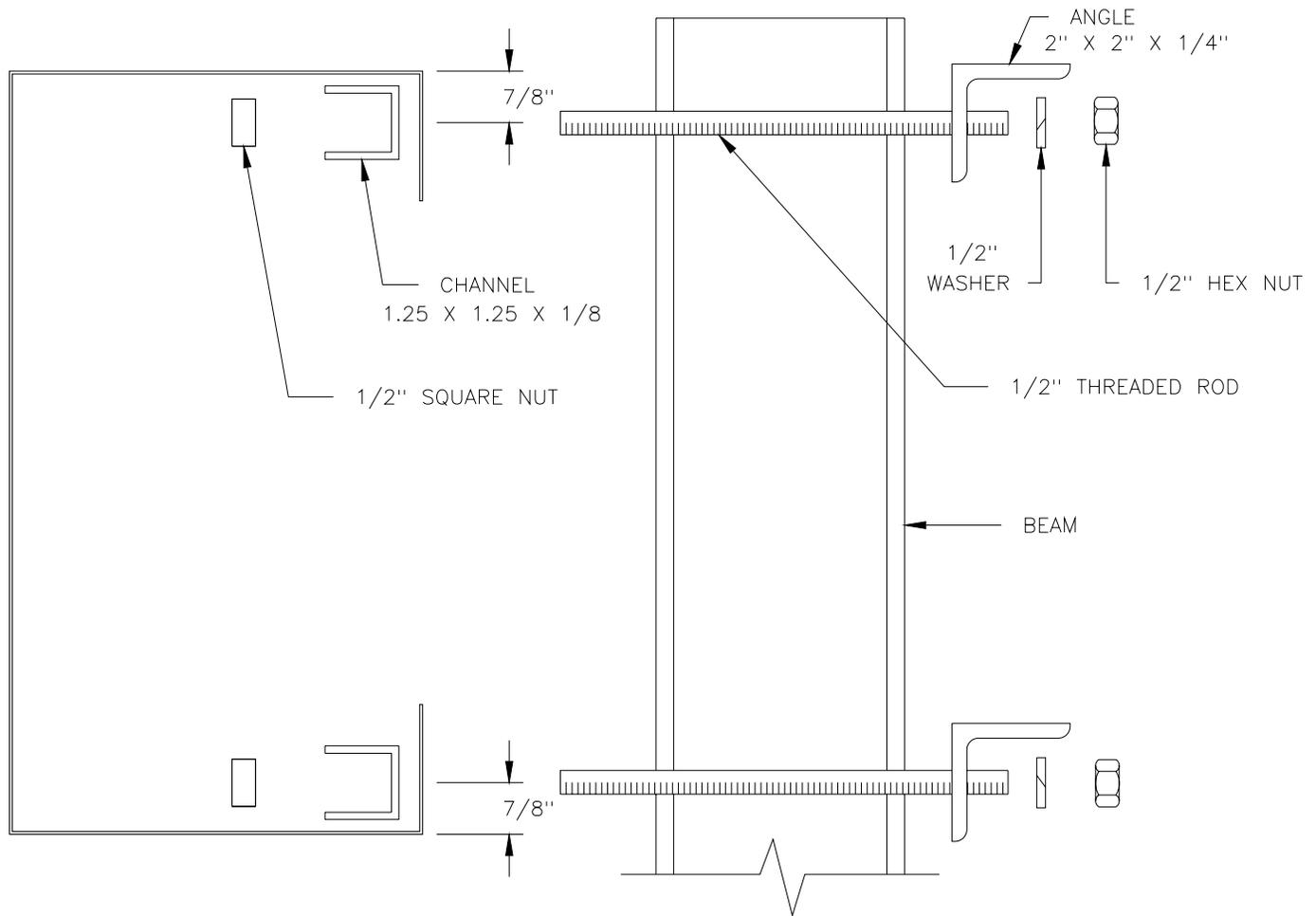
REVISION

APPR. BY:

SCALE: NONE

1091-R04A-46653

REV.	DATE	DESCRIPTION	BY	APPR.



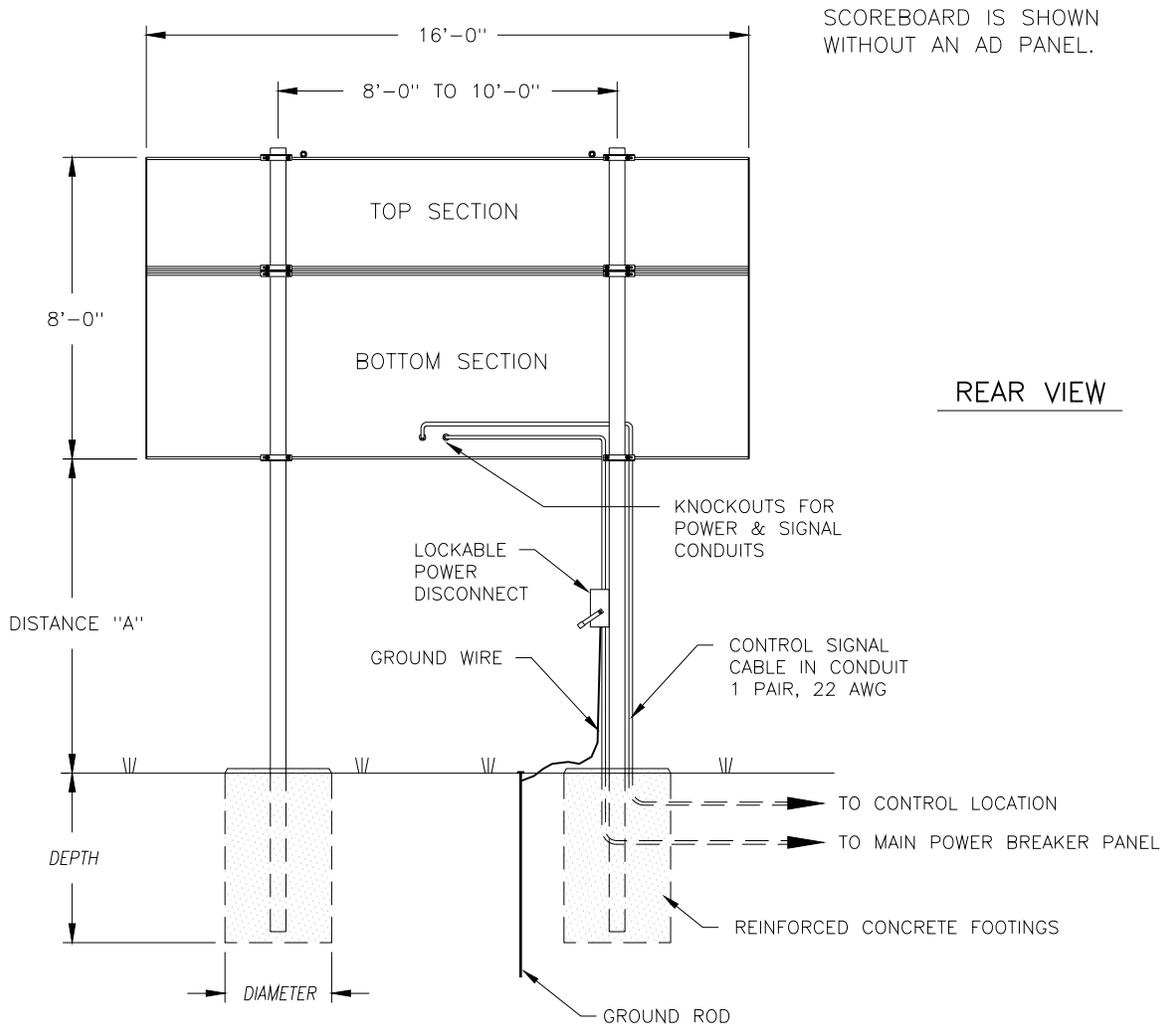
**MOUNTING INSTRUCTIONS:**

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

**MOUNTING INSTRUCTIONS: FOR AD PANELS WITH BACKSHEETS.**

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

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>														
2		13AUG97	INCLUDED INSTRUCTIONS FOR AD PANELS WITH BACKSHEETS.	JAA										
1		26MAY93	ADDED DESCRIPTION TEXT TO PARTS.	MGG										
REV.	DATE	DESCRIPTION		BY										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">PROJ: <b>OUTDOOR SCOREBOARDS</b></td> </tr> <tr> <td colspan="2" style="text-align: center;">TITLE: <b>AD PANEL MOUNTING</b></td> </tr> <tr> <td style="width: 50%;">DES. BY: .</td> <td style="width: 50%;">DRAWN BY: <b>MGUNDERSON</b>    DATE: <b>09JUL92</b></td> </tr> <tr> <td style="text-align: center;"><b>REVISION</b></td> <td style="text-align: center;">APPR. BY:</td> </tr> <tr> <td style="text-align: center;">SCALE: <b>NONE</b></td> <td style="text-align: center;"><b>1091-R10A-52187</b></td> </tr> </table>					PROJ: <b>OUTDOOR SCOREBOARDS</b>		TITLE: <b>AD PANEL MOUNTING</b>		DES. BY: .	DRAWN BY: <b>MGUNDERSON</b> DATE: <b>09JUL92</b>	<b>REVISION</b>	APPR. BY:	SCALE: <b>NONE</b>	<b>1091-R10A-52187</b>
PROJ: <b>OUTDOOR SCOREBOARDS</b>														
TITLE: <b>AD PANEL MOUNTING</b>														
DES. BY: .	DRAWN BY: <b>MGUNDERSON</b> DATE: <b>09JUL92</b>													
<b>REVISION</b>	APPR. BY:													
SCALE: <b>NONE</b>	<b>1091-R10A-52187</b>													



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

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

FOOTING = DIAMETER X DEPTH

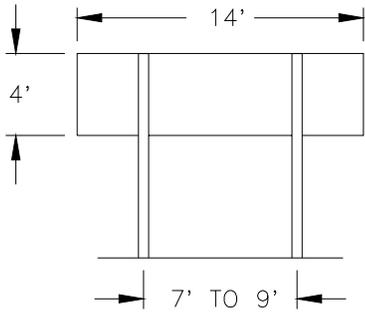
FOOTING DIMENSIONS ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.

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

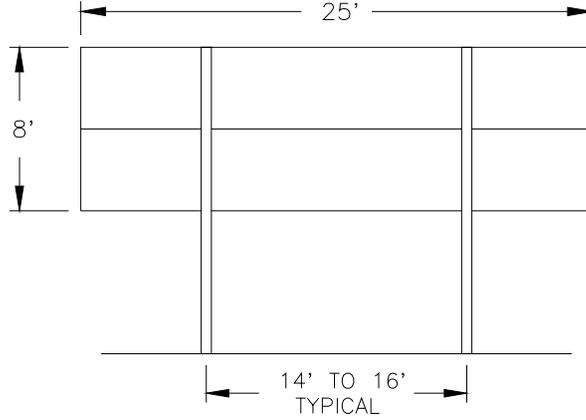
ACTUAL FOOTING DEPTH AND DIAMETER FOR A PARTICULAR INSTALLATION MUST BE DETERMINED BY A QUALIFIED STRUCTURAL ENGINEER, USING DATA FROM A SOIL SAMPLE TEST AT THE SITE.

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

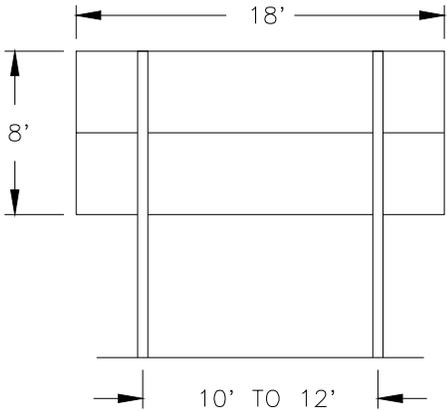
<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>				
PROJ: <b>OUTDOOR SCOREBOARDS</b>				
TITLE: <b>INSTALLATION SPECIFICATIONS, BA-1518</b>				
DES. BY: <b>AVB</b>		DRAWN BY: <b>A VANBEMMEL</b>		DATE: <b>04FEB93</b>
REV.	DATE	DESCRIPTION	BY	APPR.
2	19DEC00	REVISED COLUMN SECTIONS & FOOTINGS.	MVD	
1	01 SEPT 99	UPDATE FOOTING AND BEAM SPECS FOR 2000 LB/FT <sup>2</sup> .	JNILSE	
REVISION		APPR. BY:	<b>1091-R10A-55008</b>	
		SCALE: <b>1=60</b>		



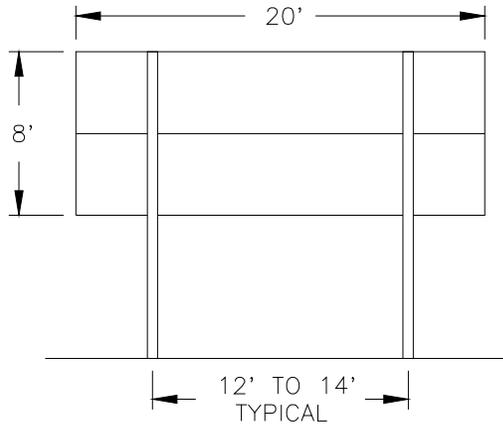
MODELS FB-824, SO-824



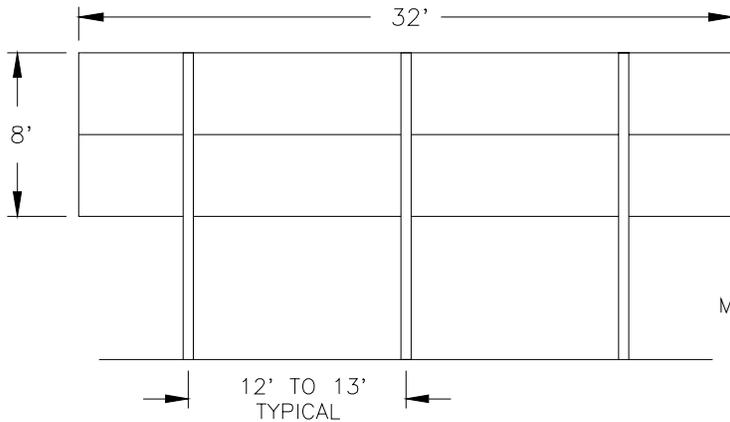
MODELS FB-1430, FB-1530,  
FB-1630, FB-1730,  
FB-1830, SO-1830, SO-1930  
SO-2030



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



MODELS FB-2002, FB-2003



MODELS FB-1630L, FB-1830L

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

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

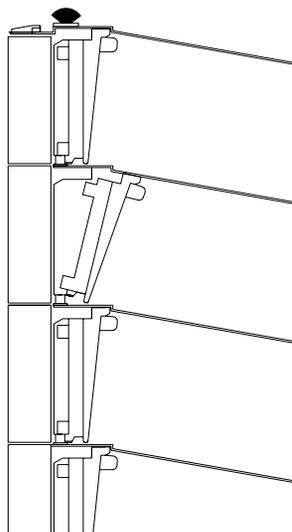
PROJ: **OUTDOOR SCOREBOARDS**

TITLE: **BEAM SPACINGS, FOOTBALL/TRACK/SOCCER**

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

REVISION **05** APPR. BY: SCALE: **1=100**

**1091-R08A-70089**



TILT LENS, SET BEHIND LOUVER OFFSET, AND SNAP UP INTO THE VERTICAL POSITION. LENS MUST BE SNAPPED UP IN AND BEHIND UPPER LOUVER OFFSET.

SIDE VIEW

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: 1500 SERIES MESSAGE CENTERS, 1 1/2"

TITLE: CORRECT LENS POSITION, 1 1/2"

DES. BY: DRAWN BY: MMEISS DATE: 09-26-95

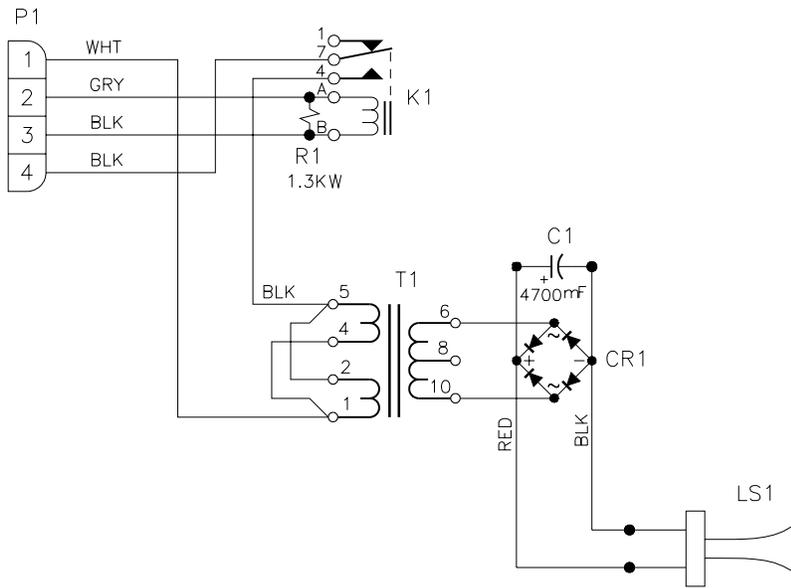
REVISION

APPR. BY:

SCALE: 1=2

7000-P08A-75204

1	8DEC97	CORRECTED DWG TO CORRECT SCALE	JRT	
REV.	DATE	DESCRIPTION	BY	APPR.



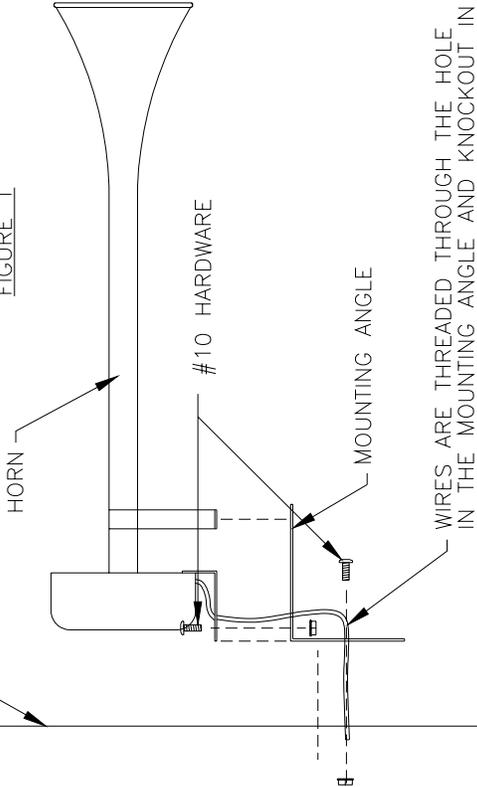
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: STANDARD SCOREBOARDS			
TITLE: SCHEMATIC, FOOTBALL TRUMPET HORN			
DES. BY: AVB		DRAWN BY: AVB	
		DATE: 18 JUN 96	
REVISION	APPR. BY:	1091-R03A-83329	
	SCALE: NONE		

FOR COMPLETE INSTALLATION INSTRUCTIONS, REFER TO ED-10006.  
 LOCATE HORN PANEL OF THE SCOREBOARD.

SCOREBOARD HORN/ACCESS PANEL

FIGURE 1



WIRES ARE THREADED THROUGH THE HOLE IN THE MOUNTING ANGLE AND KNOCKOUT IN THE SCOREBOARD FACE.

SIDE VIEW

SCALE 1=5

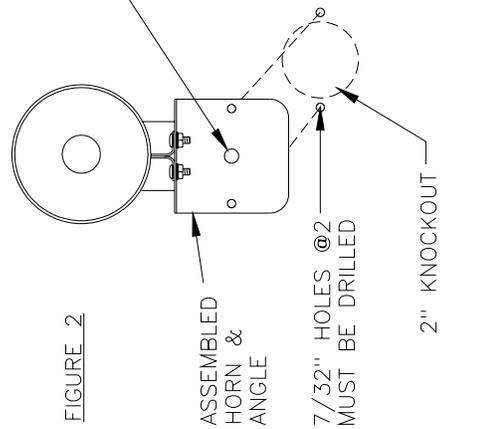


FIGURE 2

ASSEMBLED HORN & ANGLE

7/32" HOLES @2" MUST BE DRILLED

2" KNOCKOUT

FRONT VIEW

SCALE 1=5

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

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

MOUNTING HORN TO SCOREBOARD FACE

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

(SEE FIGURE 2).

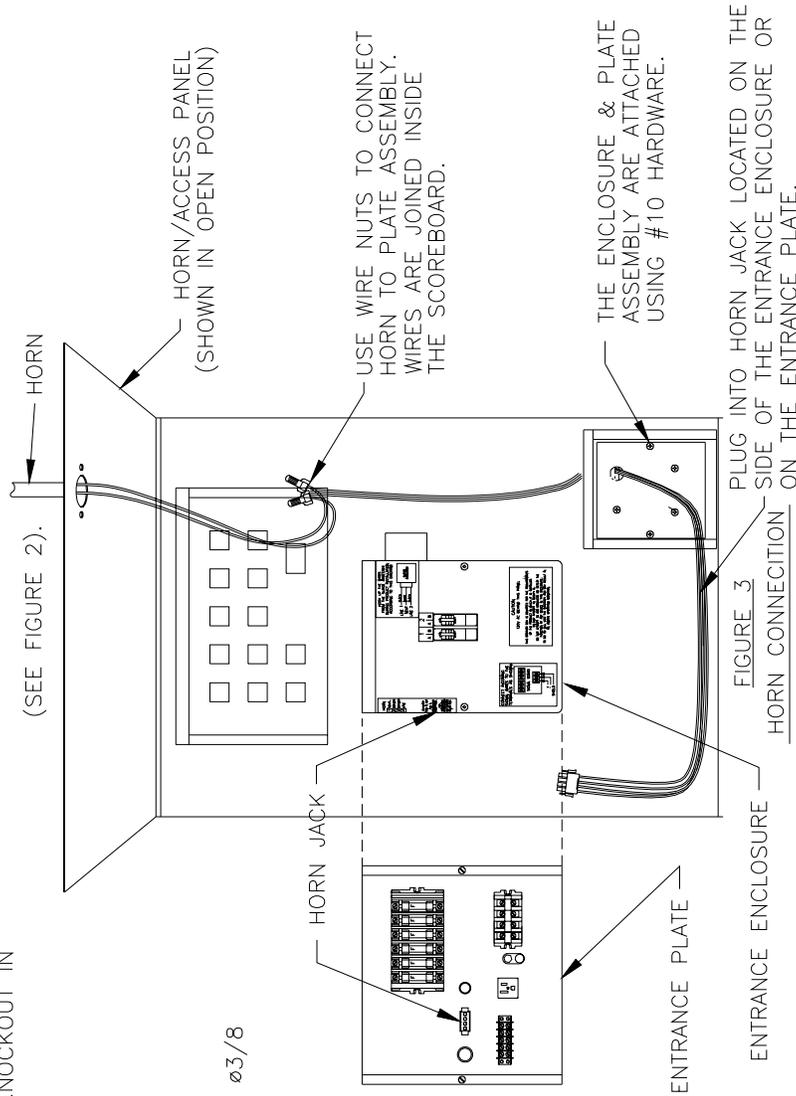


FIGURE 3

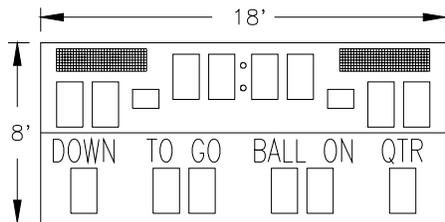
PLUG INTO HORN JACK LOCATED ON THE SIDE OF THE ENTRANCE ENCLOSURE OR HORN CONNECTION ON THE ENTRANCE PLATE.

USE WIRE NUTS TO CONNECT HORN TO PLATE ASSEMBLY. WIRES ARE JOINED INSIDE THE SCOREBOARD.

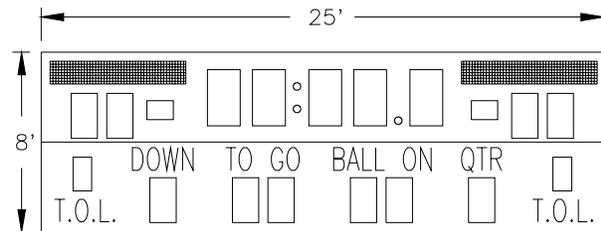
THE ENCLOSURE & PLATE ASSEMBLY ARE ATTACHED USING #10 HARDWARE.

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

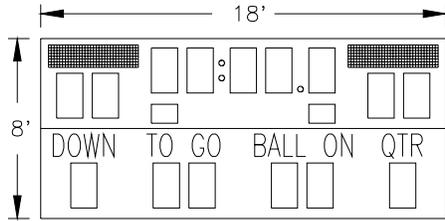
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: STANDARD SCOREBOARDS			
TITLE: FINAL ASSEMBLY, 12V DC HORN MOUNTING			
DES. BY:		DRAWN BY: JMOEN	
DATE: 20 JUN 96			
REVISION	APPR. BY:	1091-E10A-83333	
SCALE: 1=10			



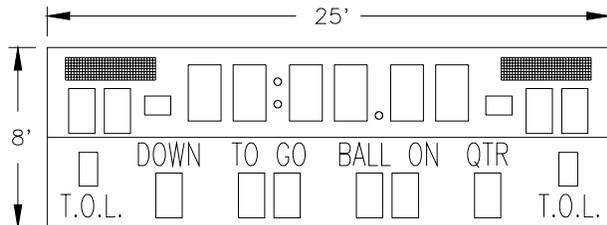
SO-1424 WITH 832-12 TNMC



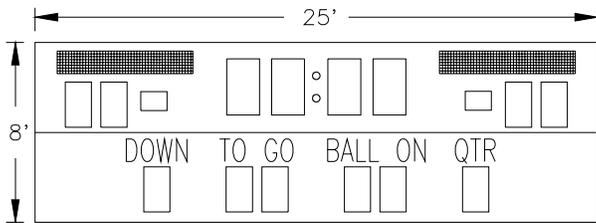
FB-1730 WITH 848-12 TNMC



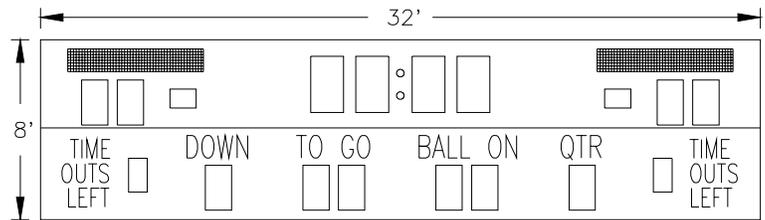
FB-1524 WITH 832-12 TNMC



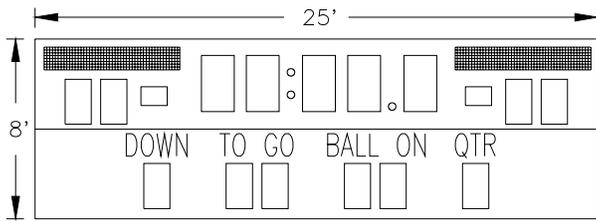
FB-1830 WITH 832-12 TNMC



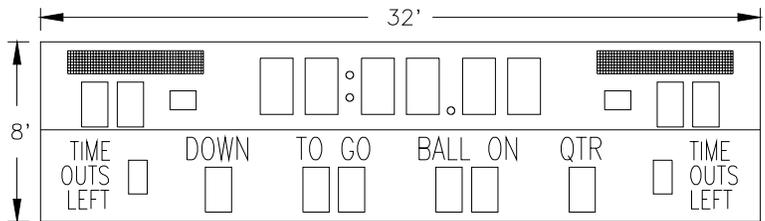
FB-1430 WITH 848-12 TNMC



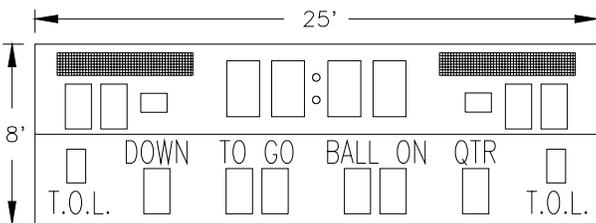
FB-1630L WITH 848-12 TNMC



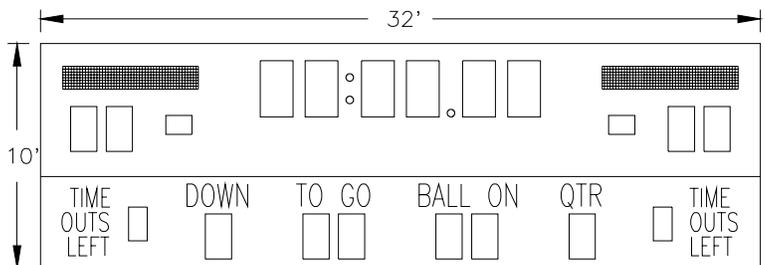
FB-1530 WITH 848-12 TNMC



FB-1830L WITH 848-12 TNMC



FB-1630 WITH 848-12 TNMC



FB-2001 WITH 848-12 TNMC

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

2	05FEB97	ADDED MODEL FB-1830L.	BDP	
1	03OCT96	ADDED MODELS SO-1624 AND FB-1430.	AVB	AVB

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ.: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: MULTIPLE SECTION FOOTBALL SCBD MODELS W/TNMC

DES. BY: JOSBAH

DRAWN BY: BYOUNG

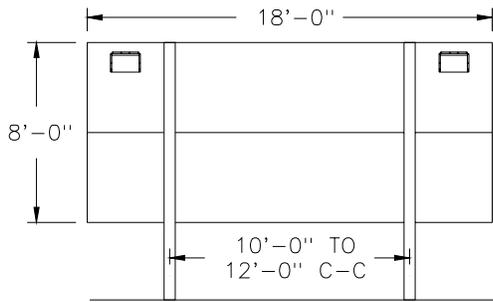
DATE: 18AUG97

REVISION

APPR. BY:

SCALE: 1 = 100

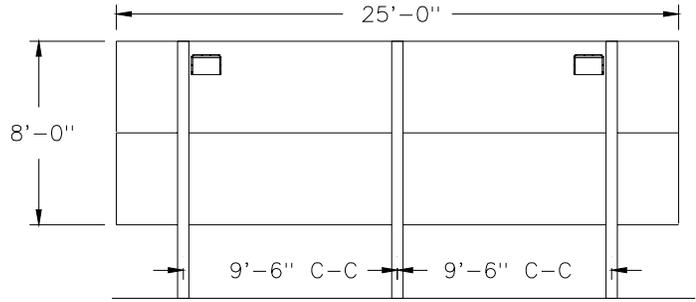
1091-R08A-84233



REAR VIEW

MODEL SO-1624 WITH 832-12 TNMC  
 MODEL FB-1424 WITH 832-12 TNMC  
 MODEL FB-1524 WITH 832-12 TNMC  
 MODEL SO-1424 WITH 832-12 TNMC

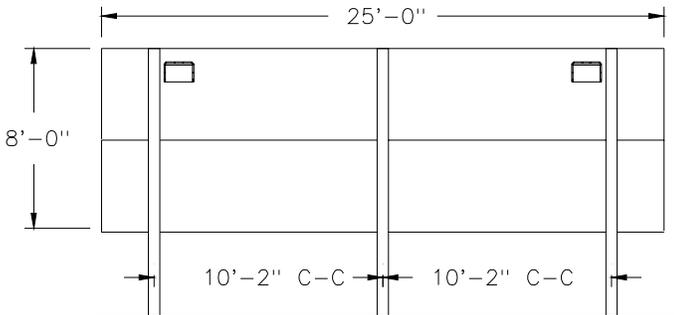
BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.



REAR VIEW

MODEL FB-1430 WITH 848-12 TNMC  
 MODEL FB-1630 WITH 848-12TNMC  
 MODEL SO-1830 WITH 848-12 TNMC

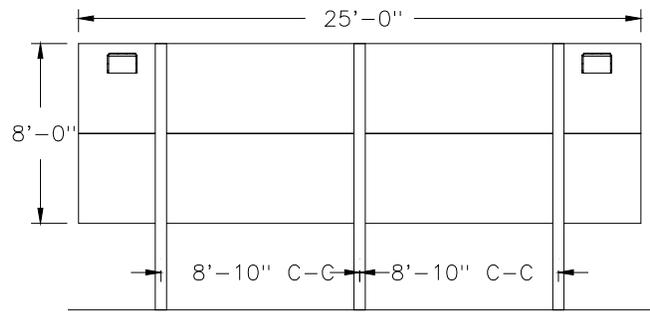
BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.



REAR VIEW

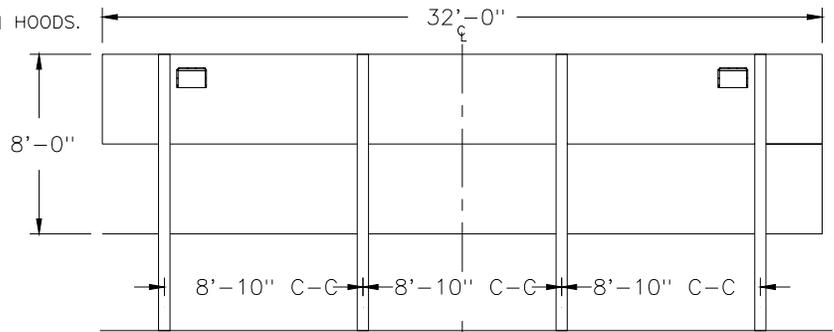
MODEL FB-1530 WITH 848-12 TNMC  
 MODEL FB-1730 WITH 848-12 TNMC  
 MODEL SO-1930 WITH 848-12 TNMC

BEAM SPACING IS CRITICAL TO CLEAR VENTILATION HOODS.



REAR VIEW

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



REAR VIEW

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

REV.	DATE	DESCRIPTION	BY	APPR.
11	24OCT03	CHANGED POLE SPACING ON FB-XX24 AND SO-XX24 MODELS WITH 832-12 TNMC	MCOPL	
10	28MAR00	ADDED FB-1424, SO-1424 WITH 832-12TNMC. ADDED FB-1530, SO-1930 WITH 848-10TNMC.	GBREE	
9	02 SEPT 99	ADDED SO-1630 WITH 848-10TNMC.	JNILSE	
8	26JUL99	ADD SO-1830 W/TNMC	BDP	
7	08DEC98	UPDATED TO SHOP FAN HOODS FOR 1600 SERRIES TNMC FAN HOODS.	BDP	
6	22OCT98	ADDED FB-1730 & FB-1524	BDP	
5	20AUG97	ADDED FB-1830	BDP	

4	14 FEB 97	CORRECTED MODEL NUMBER FB-1430L TO FB-1430.	AVB	AVB
3	05FEB97	ADDED MODEL FB-1830L WITH MODEL FB-1630L	BDP	
2	16 SEPT 96	ADDED MODEL FB-1430L	JEM	
1	16 AUG 96	ADDED REAR VIEW OF SO-1624	BPETER	

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: FOOTBALL SCOREBOARDS

TITLE: BEAM SPACING; DISPLAYS W/ TNMC

DES. BY: JOSBAH

DRAWN BY: JOSBAH

DATE: 15 JULY 96

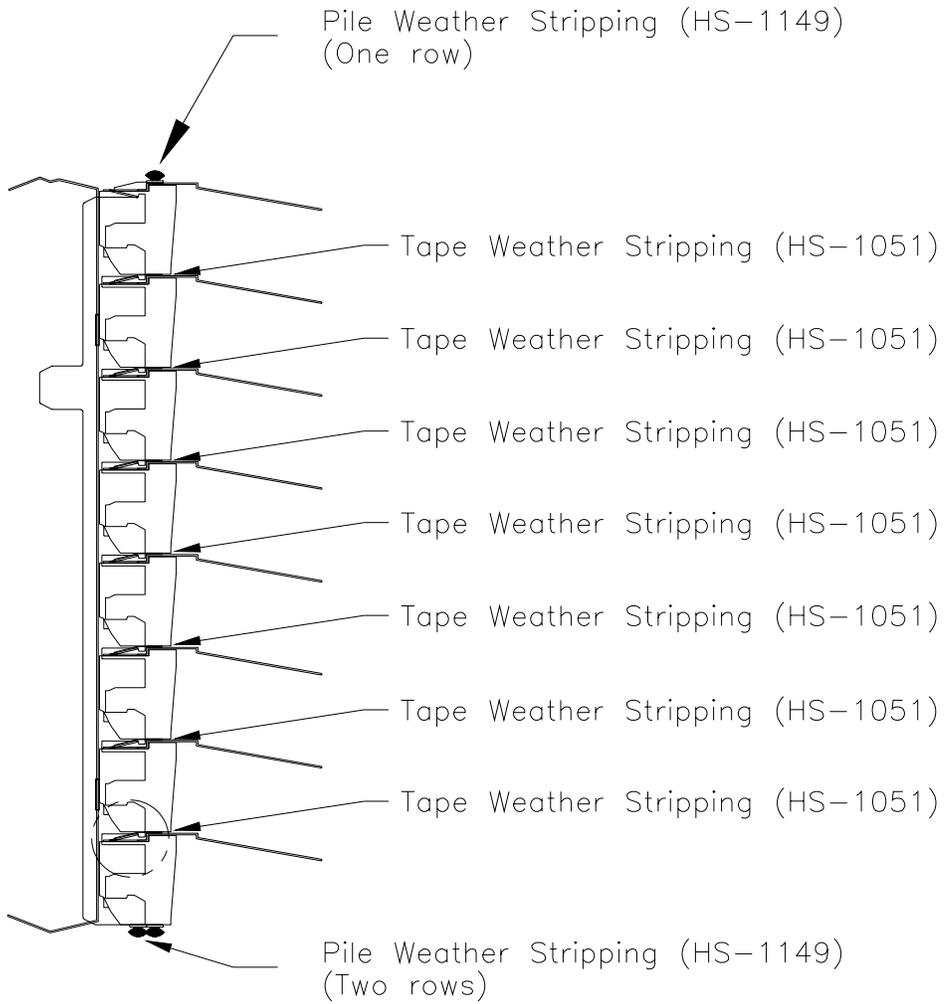
REVISION

APPR. BY:

11

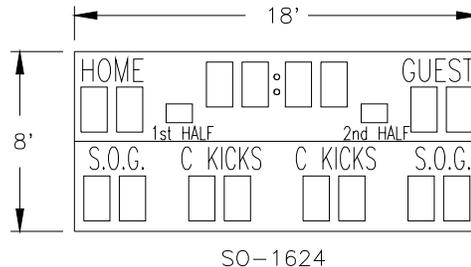
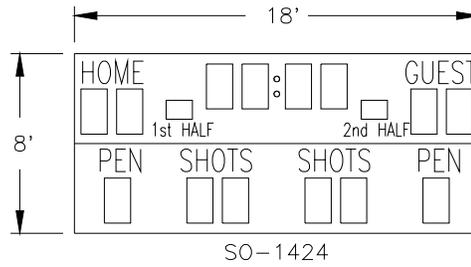
SCALE: 1 = 100

1091-R08A-84292

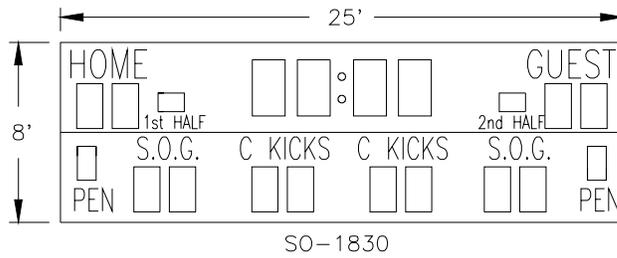


SIDE VIEW OF LENS/REFLECTOR ASSY

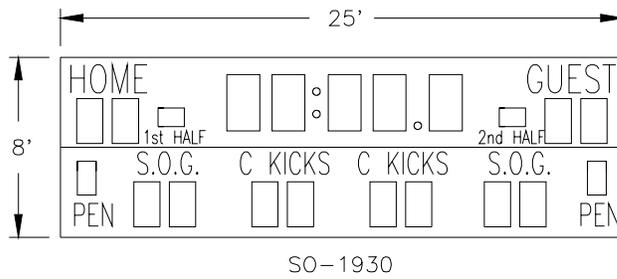
DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: 1600 SERIES MESSAGE BOARDS, 1 1/2"				
TITLE: LENS ASSY, WEATHERSTRIPPING LOCATION, FOR MANUAL				
DES. BY:		DRAWN BY: JRT		DATE: 15JAN98
REV.	DATE	DESCRIPTION	BY	APPR.
REVISION			APPR. BY:	1176-R10A-91100
			SCALE: 1=3	



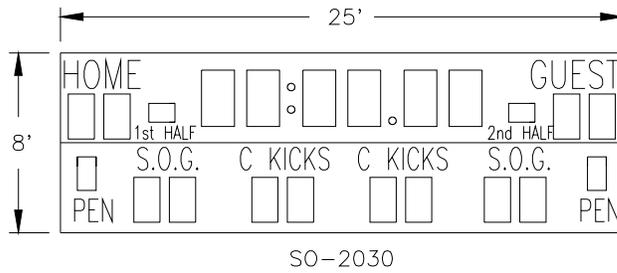
(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)



(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)

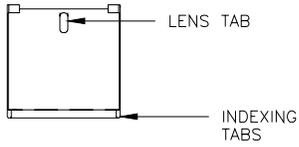


(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)

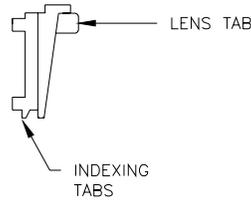


(OPTIONAL SAVES CAPTION CAN REPLACE C KICKS)

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>				
PROJ: <b>OUTDOOR INCANDESCENT SCOREBOARDS</b>				
TITLE: <b>MULTIPLE SECTION SOCCER SCBD MODELS</b>				
DES. BY: <b>AVB</b>		DRAWN BY: <b>MJORDAN</b>		DATE: <b>03 NOV 97</b>
REV. 1	DATE 29OCT98	DESCRIPTION REPOSITIONED 1ST HALF AND 2ND HALF ON MODELS SO-1424, 1830, 1930 & 2030; ADDED SAVES CAPTION OPTION TO SO-1624.	BY TWEBER	APPR.
REVISION		APPR. BY:		<b>1091-R08A-98161</b>
		SCALE: <b>1=100</b>		

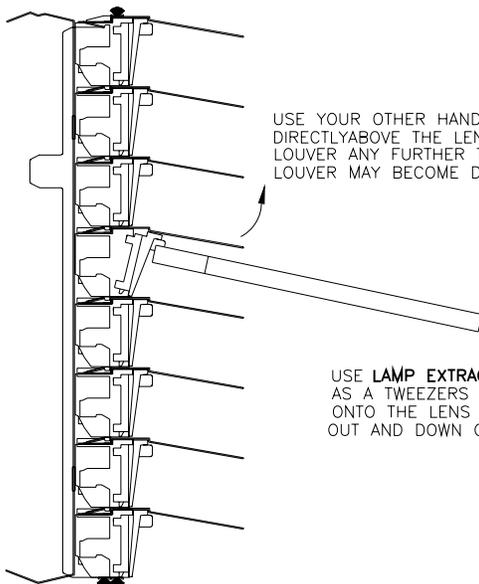


FRONT VIEW



SIDE VIEW

**INDEXING TABS:** THE SLOTS IN THE BOTTOM OF THE REFLECTOR ACCOMMODATE THE LENS INDEXING TABS. TO INSERT A LENS, SET THE TABS INTO THE REFLECTOR SLOTS AND SNAP THE LENS UP INTO THE VERTICAL POSITION.



USE YOUR OTHER HAND TO LIFT UP ON THE LOUVER DIRECTLY ABOVE THE LENS (**DO NOT** PRESS UP ON THE LOUVER ANY FURTHER THAN NECESSARY OR THE LOUVER MAY BECOME DEFORMED).

USE **LAMP EXTRACTING TOOL** AS A TWEEZERS TO GRASP ONTO THE LENS TAB. PULL OUT AND DOWN ON THE TAB.



RUBBER-TIPPED  
LAMP EXTRACTING TOOL  
DAK PART No. TH-1032

SIDE VIEW OF LENS/REFLECTOR ASSY

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: 1600 SERIES MESSAGE BOARDS, 1 1/2"

TITLE: LENS REMOVAL, FRONT ACCESS, FOR MANUAL USE

DES. BY:

DRAWN BY: JRT

DATE: 15JAN98

REVISION

APPR. BY:

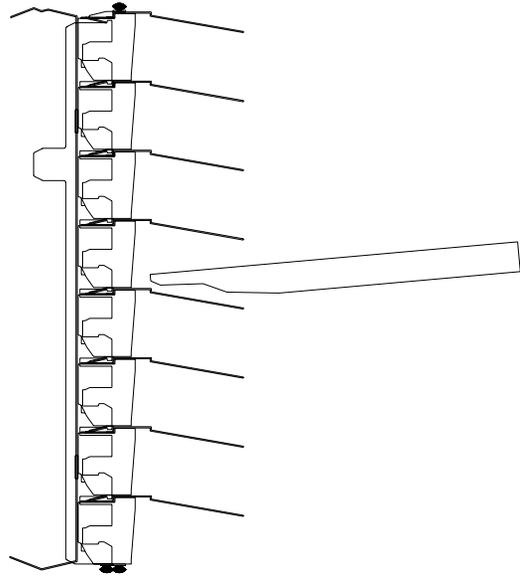
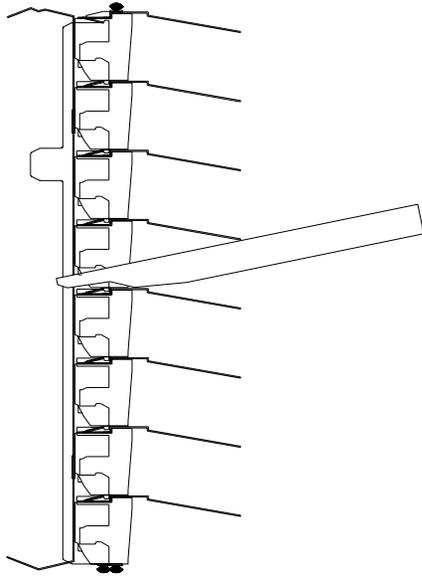
SCALE: 1=4

1176-R19A-99898

1	27APR98	CORRECTED DWG TITLE FROM "LENS ASSY REMOVAL" TO "LENS REMOVAL".	JRT	
REV.	DATE	DESCRIPTION	BY	APPR.

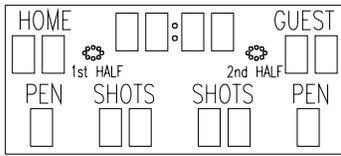


FRONT ACCESS REMOVAL TOOL  
DAK PART No. OM-95442

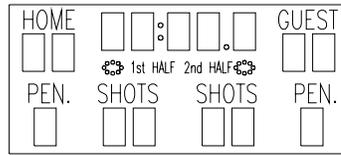


SIDE VIEW OF LENS/REFLECTOR ASSY

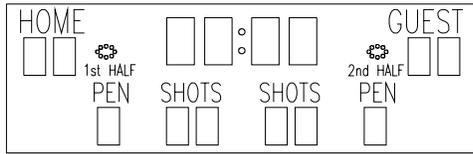
DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: 1600 SERIES MESSAGE BOARDS, 1 1/2"				
TITLE: LENS ASSY REMOVAL, FRONT ACCESS, FOR MANUAL USE				
DES. BY:		DRAWN BY: JRT		DATE: 15JAN98
REV.	DATE	DESCRIPTION	BY	APPR.
REVISION			APPR. BY:	1176-R10A-99899
			SCALE: 1=4	



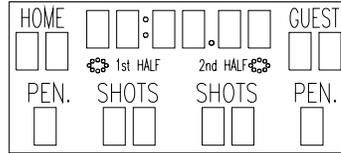
FB-1424



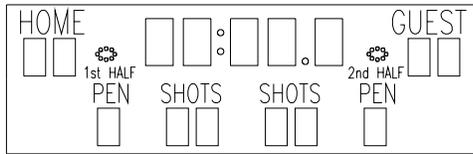
FB-1524



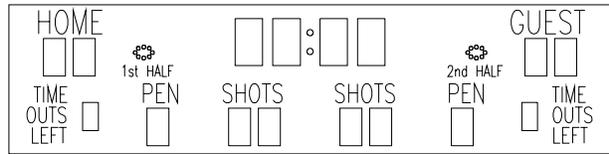
FB-1430



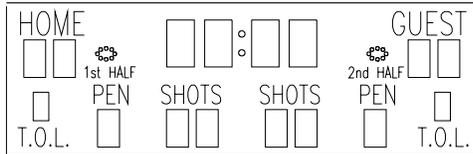
FB-1624



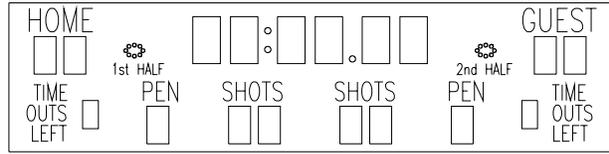
FB-1530



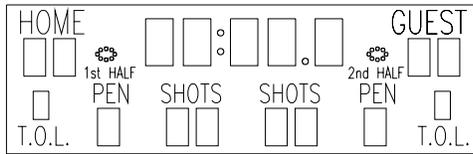
FB-1630L



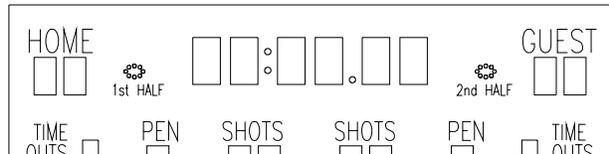
FB-1630 AND FB-2002



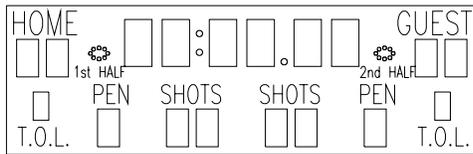
FB-1830L



FB-1730 AND FB-2003



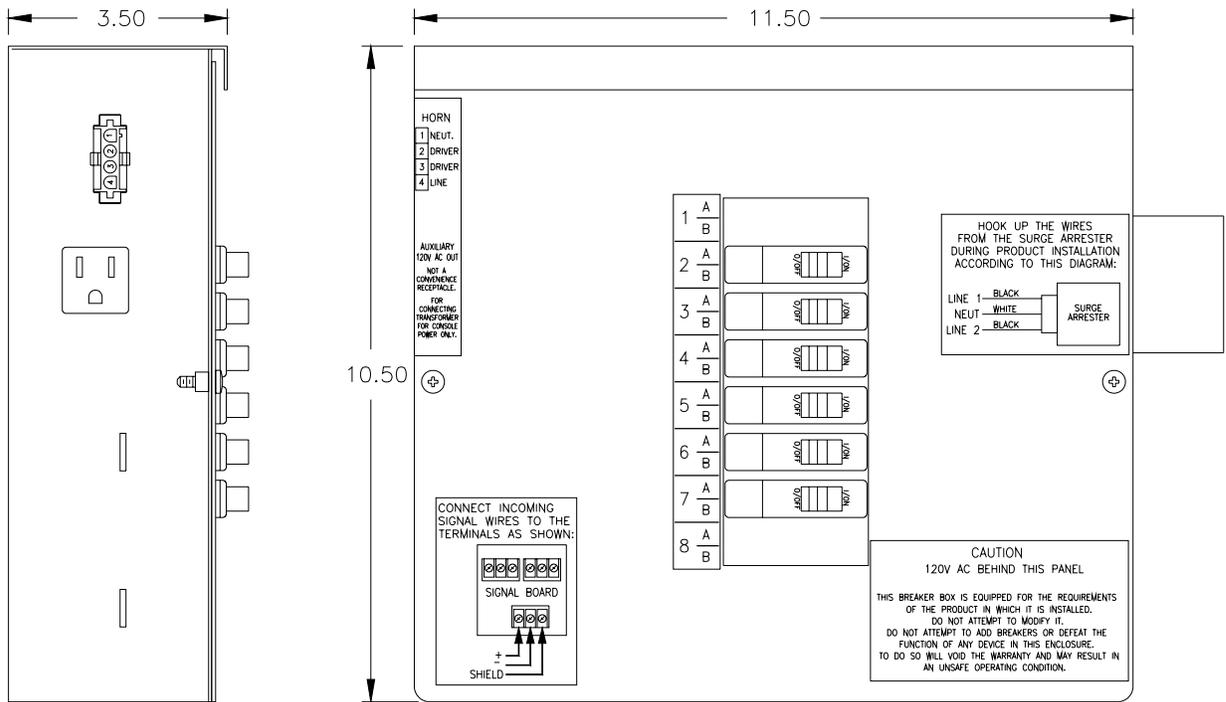
FB-2001



FB-1830

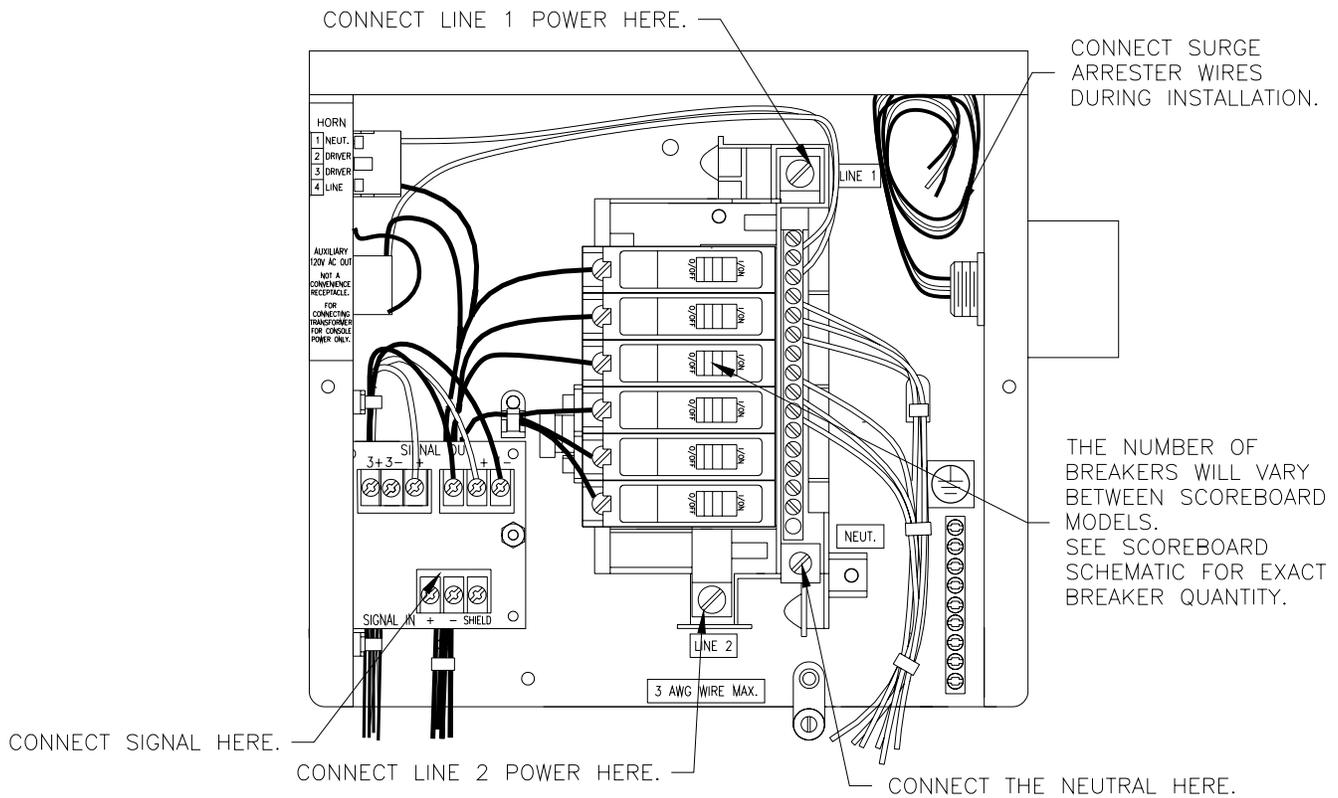
03	26JULY01	ADDED FB-1524 AND FB-1624	MCOPL	
02	17MAR00	ADDED FB-2002 & FB-2003	GBREE	
01	21FEB00	UPDATED TO CAPTION OPTIONS, SOCCER	BDP	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS	
TITLE: CAPTION OPTIONS, SOCCER	
DES. BY: BPETERSON	DRAWN BY: BPETERSON DATE: 09APR98
REVISION	APPR. BY:
	SCALE: 1 = 120
1091-R08A-101442	



LEFT SIDE

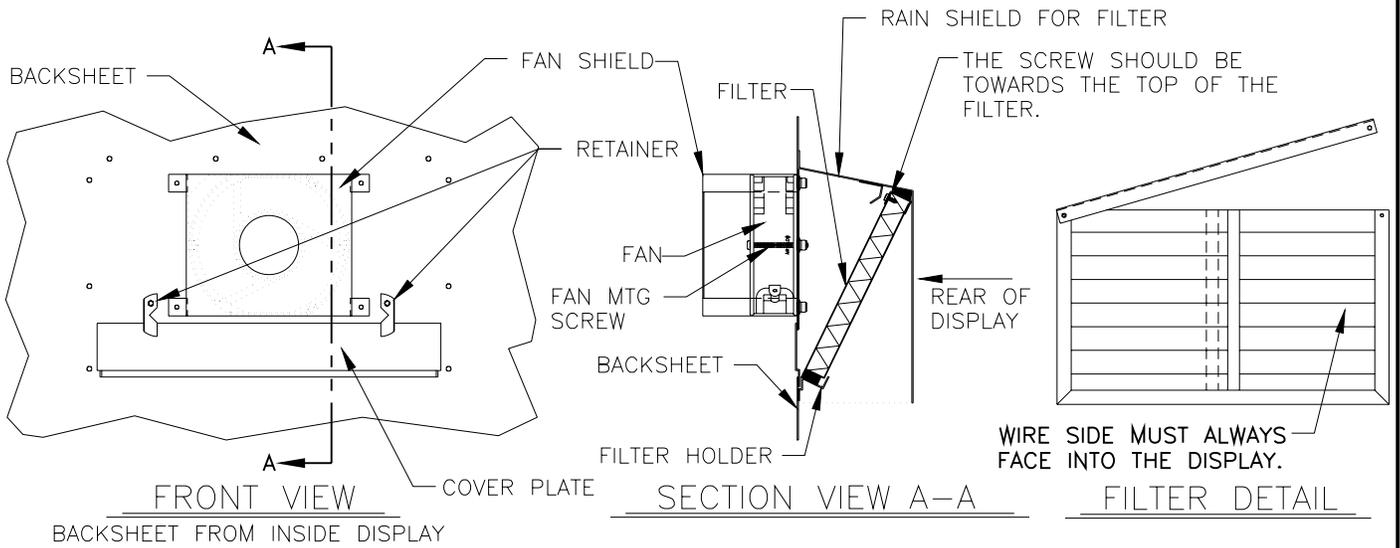
FRONT VIEW



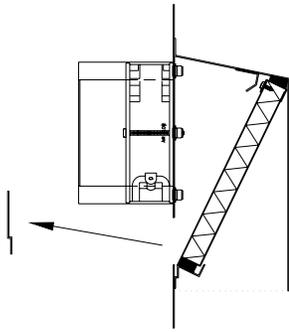
FRONT VIEW

(WITH COVER REMOVED)

DAKTRONICS, INC. BROOKINGS, SD 57006				
02	18JAN01	ADDED TB-1037 AND GROUND LUG AND DECREASED SIZE OF LEFT MOUNTING HOLE	MCOPL	PROJ: OUTDOOR INCANDESCENT SCOREBOARDS
01	16 OCT 00	REMOVED GROUND LUG AND INCREASED THE SIZE OF THE LOWER MTG HOLES TO 5/16ø.	JNILSE	TITLE: COMPONENTS, 8/16 POS POWER AND SIGNAL ENTRANCE
REV.	DATE	DESCRIPTION	BY	DES. BY: BPETERSON DRAWN BY: BPETERSON DATE: 16DEC99
			APPR.	REVISION APPR. BY: SCALE: 1=3
				1091-E10A-109114

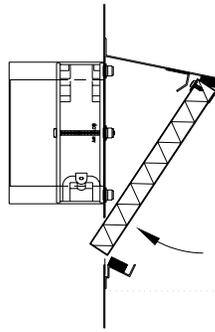


### FILTER REMOVAL FROM THE FRONT



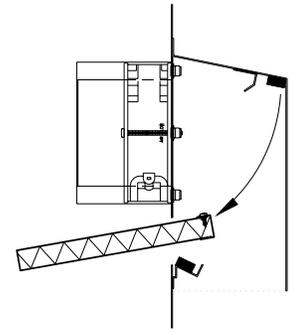
STEP #1

REMOVE COVER PLATE.



STEP #2

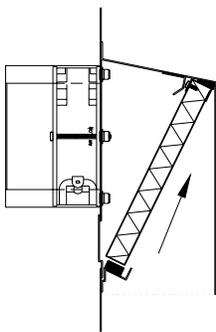
ROTATE FILTER TOWARDS OPENING.



STEP #3

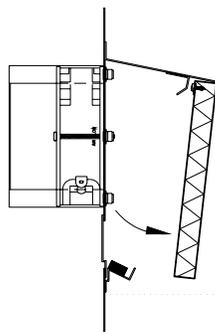
PULL FILTER OUT THROUGH OPENING.

### FILTER REMOVAL FROM THE REAR



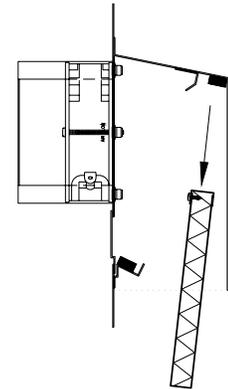
STEP #1

PUSH FILTER UP.



STEP #2

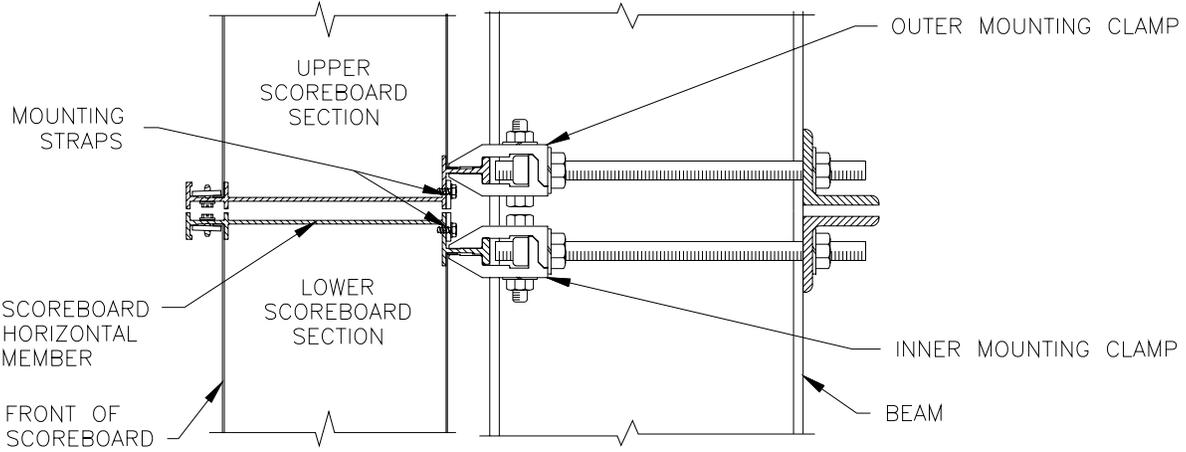
ROTATE FILTER OVER LIP OF FILTER HOLDER.



STEP #3

PULL FILTER OUT THROUGH OPENING.

DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: OUTDOOR INTEGRATED SCOREBOARDS				
TITLE: FILTER REMOVAL; 250 CFM FAN				
DES. BY: BPETERSON		DRAWN BY: BPETERSON		DATE: 29MAR99
REV.	DATE	DESCRIPTION	BY	APPR.
REVISION		APPR. BY:		1157-E10A-113986
		SCALE: 1=8		



SIDE VIEW

STRAP INSTALLATION PROCEDURE

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

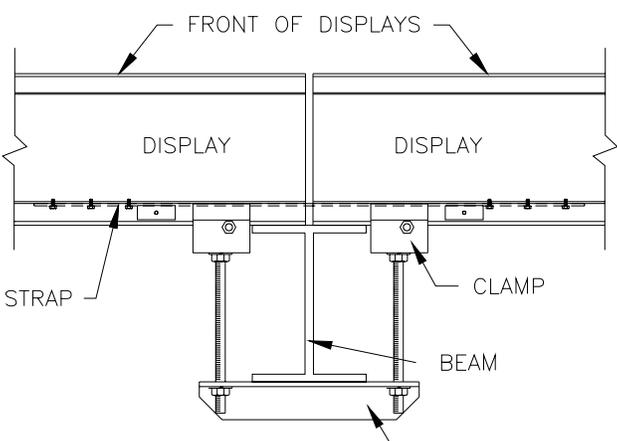
THIS IS ACHIEVED USING FOUR MOUNTING STRAPS (1/8" X 3/4" X 29" LONG) AND #10 HEX HEADED SCREWS.

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

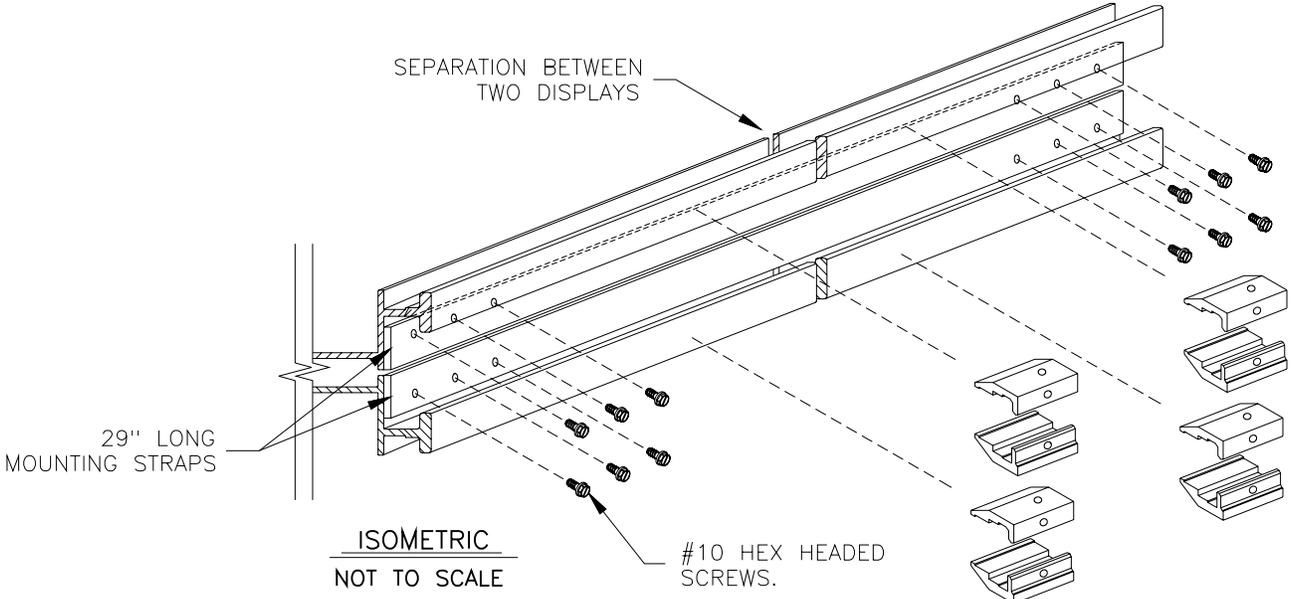
ATTACH SIX SCREWS TO EACH STRAP.

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

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



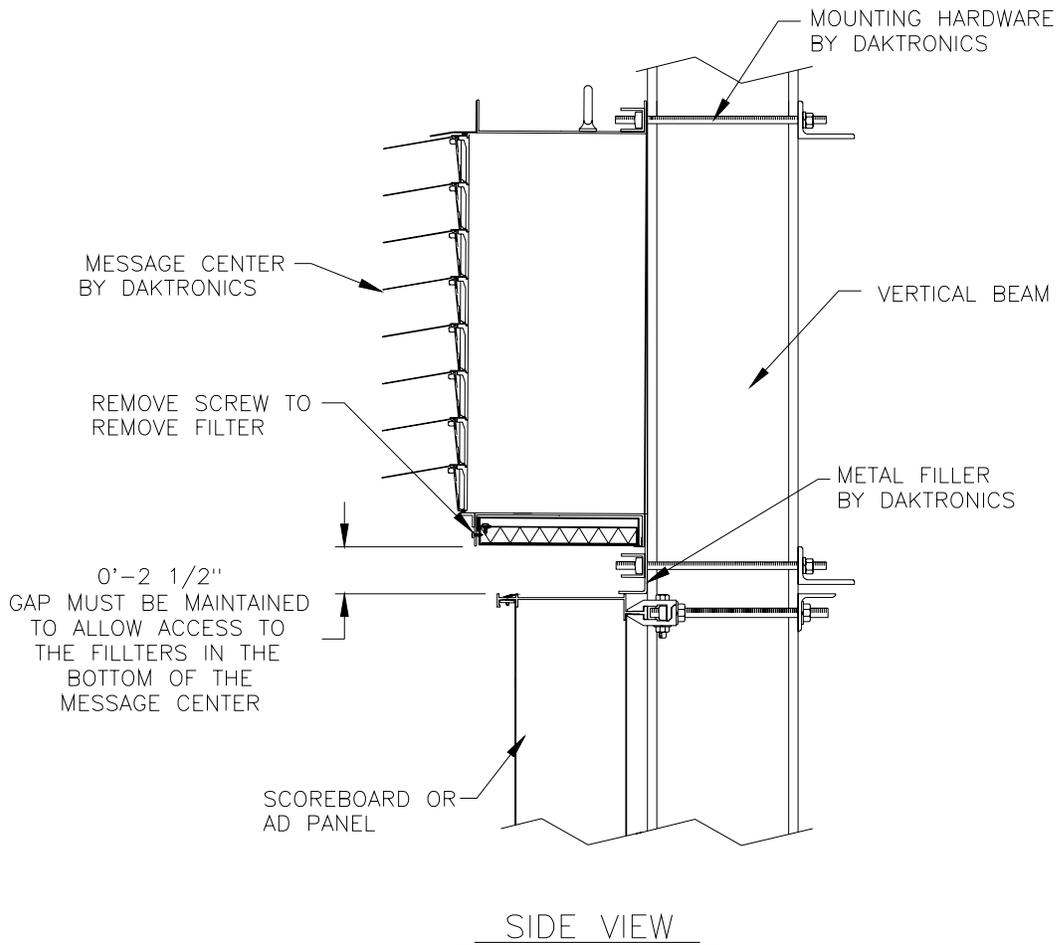
TOP VIEW  
1=10



ISOMETRIC  
NOT TO SCALE

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR SCOREBOARDS			
TITLE: DISPLAY MOUNTING STRAPS, BA-3718			
DES. BY: TWEBER	DRAWN BY: PLACHER	DATE: 09APR99	
REVISION	APPR. BY:	1091-E10A-114415	
	SCALE: 1=5		

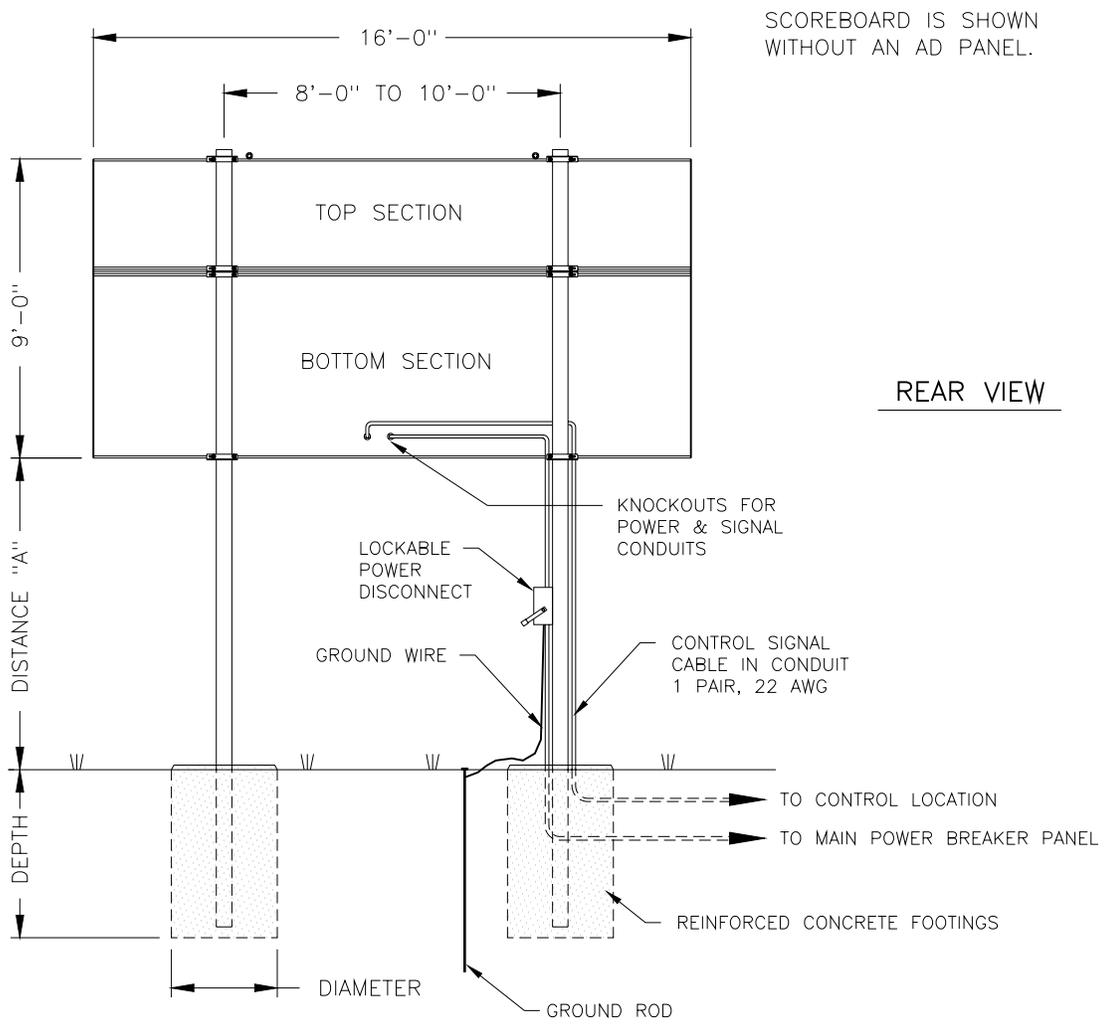
REV.	DATE	DESCRIPTION	BY	APPR.



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

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

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



SCOREBOARD IS SHOWN WITHOUT AN AD PANEL.

REAR VIEW

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

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

FOOTING = DIAMETER X DEPTH

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

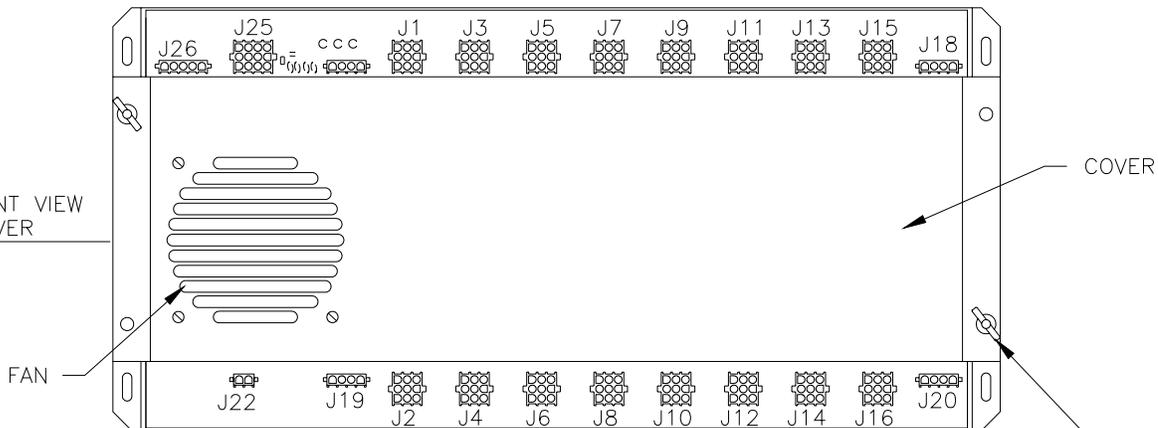
FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL BEARING PRESSURE OF 2000 LB/FT<sup>2</sup>

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

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

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>				
PROJ: OUTDOOR SCOREBOARDS				
TITLE: INSTALLATION SPECIFICATIONS, BA-1524				
DES. BY: TWEBER	DRAWN BY: JNILSEN		DATE: 26 AUG 99	
REVISION	APPR. BY:	1091-R10A-120972		
	SCALE: 1=60			
REV.	DATE	DESCRIPTION	BY	APPR.
2	15AUG01	CORRECTED VERTICAL DIMENSION OF SCBD FROM 8'-0" TO 9'-0".	KJB	
1	20DEC00	REVISED COLUMN SECTIONS & FOOTINGS	MVD	

DRIVER FRONT VIEW WITH COVER



REMOVE TWO WING NUTS TO REMOVE COVER AND GAIN ACCESS TO FUSES.

J25

PIN	FUNCTION	PIN	FUNCTION
1	GND	7	GND
2	ADDR 0 -	8	ADDR 4 -
3	ADDR 1 -	9	ADDR 5 -
4	GND	10	GND
5	ADDR 2 -	11	ADDR 6 -
6	ADDR 3 -	12	CLMN SWAP

J1 - J16

PIN	FUNCTION
1	SEG C
2	SEG B
3	SEG A
4	SEG F
5	SEG E
6	SEG D
7	COMMON
8	SEG H
9	SEG G

J18

PIN	FUNCTION
1	LAMP NEUT
2	LAMP NEUT
3	LAMP HOT 1, 3, 5, 7
4	LAMP HOT 2, 4, 6, 8

J17

PIN	FUNCTION
1	SIG IN +
2	SIG IN -
3	SIG OUT +
4	SIG OUT -

J26

PIN	FUNCTION
1	GND
2	PROT 0 -
3	PROT 1 -
4	PROT 2 -
5	TOD-N

DRIVER FRONT VIEW WITH COVER REMOVED

J23

PIN	FUNCTION
1	FAN SW HOT
2	NEUT
3	FAN HOT
4	NEUT

J22

PIN	FUNCTION
1	NORM OPEN
2	COMMON

PLUG FROM FAN IN COVER CONNECTS TO J23

J19

PIN	FUNCTION
1	NEUTRAL
2	NEUTRAL
3	120V HOT
4	120V HOT

J20

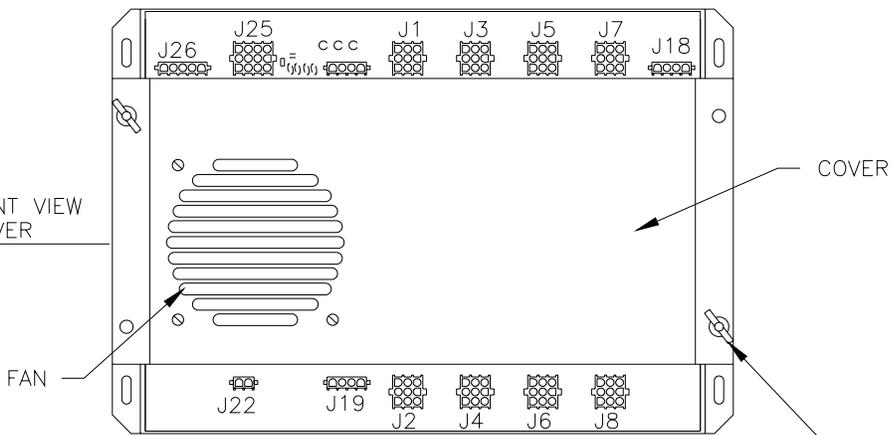
PIN	FUNCTION
1	LAMP NEUT
2	LAMP NEUT
3	LAMP HOT 9,11,13,15
4	LAMP HOT 10,12,14,16

F1 THRU F16 ARE TYPE AGC-10, DAKTRONICS PART NUMBER F-1006.  
F17 ARE TYPE AGC-1/2, DAKTRONICS PART NUMBER F-1000

REV.	DATE	DESCRIPTION	BY	APPR.
5	17 JAN 02	CHANGED ADD 7 TO CLMN SWAP ON J25	JJS	
4	2 OCT 00	CHANGED J25 & J26 TEXT -5 V TO GND	NSW	
3	29 SEP 00	CORRECTED J25 TABLE, CHANGED J26 TABLE PIN 5 FROM PROT 3 TO T.O.D.	AVB	
2	2 JUNE 00	CORRECTED J26 PINOUT TABLE	EB	

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>	
PROJ:	
TITLE:	<b>LAYOUT; 16 COLUMN DRIVER III</b>
DES. BY:	<b>EB</b>
DRAWN BY:	<b>EB</b>
DATE:	<b>11 NOV 99</b>
REVISION	APPR. BY:
SCALE:	<b>1=5</b>
<b>1033-R04A-123940</b>	

DRIVER FRONT VIEW WITH COVER



REMOVE TWO WING NUTS TO REMOVE COVER AND GAIN ACCESS TO FUSES.

J25

PIN	FUNCTION	PIN	FUNCTION
1	GND	7	GND
2	ADDR 0 -	8	ADDR 4 -
3	ADDR 1 -	9	ADDR 5 -
4	GND	10	GND
5	ADDR 2 -	11	ADDR 6 -
6	ADDR 3 -	12	CLMN SWAP

J1 - J8

PIN	FUNCTION
1	SEG C
2	SEG B
3	SEG A
4	SEG F
5	SEG E
6	SEG D
7	COMMON
8	SEG H
9	SEG G

J17

PIN	FUNCTION
1	SIG IN +
2	SIG IN -
3	SIG OUT +
4	SIG OUT -

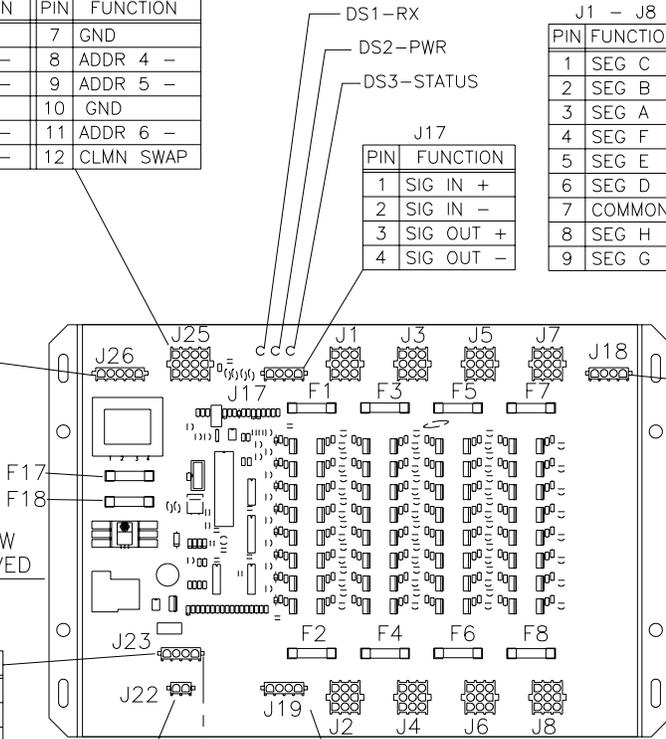
J26

PIN	FUNCTION
1	GND
2	PROT 0 -
3	PROT 1 -
4	PROT 2 -
5	TOD-N

J18

PIN	FUNCTION
1	LAMP NEUT
2	LAMP NEUT
3	LAMP HOT 1, 3, 5, 7
4	LAMP HOT 2, 4, 6, 8

DRIVER FRONT VIEW WITH COVER REMOVED



J23

PIN	FUNCTION
1	FAN SW HOT
2	NEUT
3	FAN HOT
4	NEUT

J22

PIN	FUNCTION
1	NORM OPEN
2	COMMON

J19

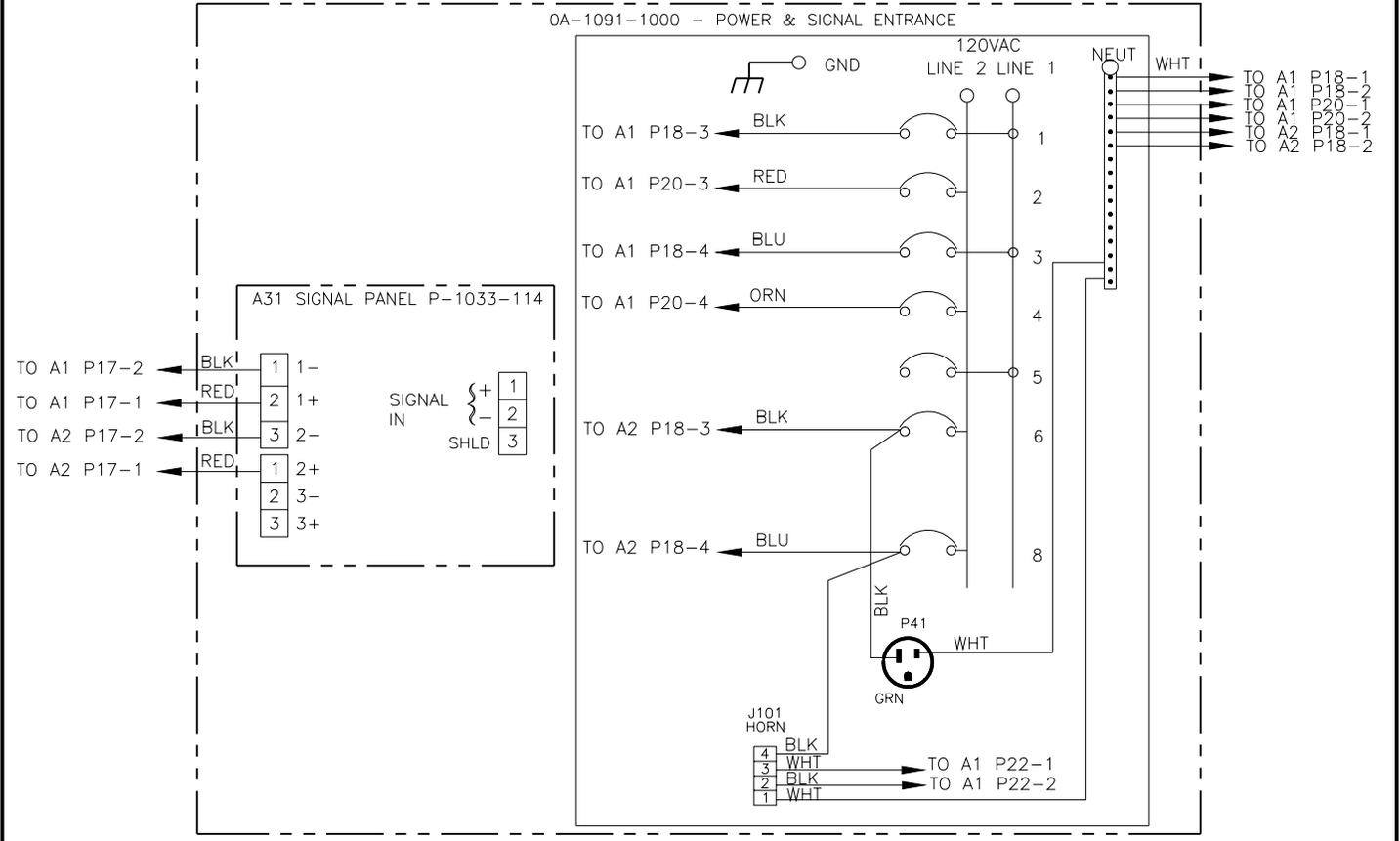
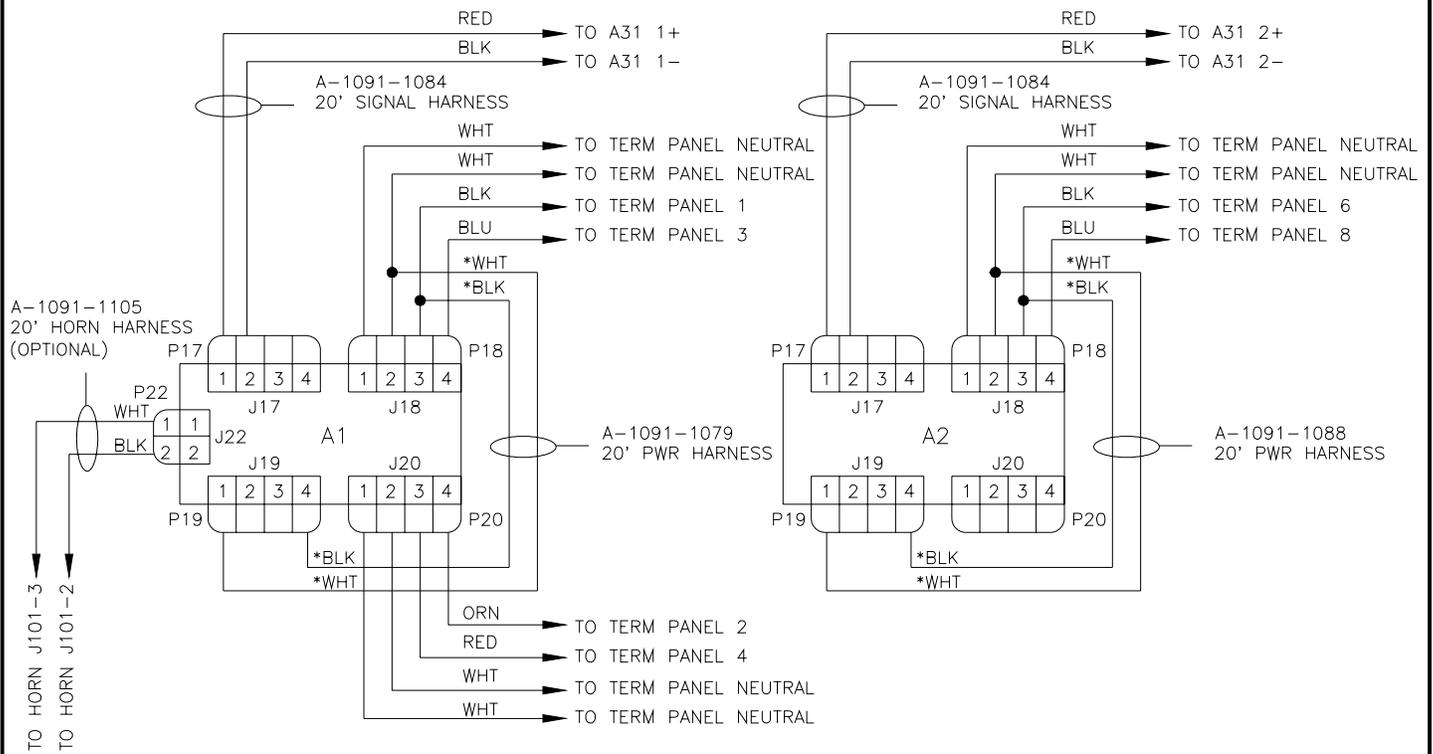
PIN	FUNCTION
1	NEUTRAL
2	NEUTRAL
3	120V HOT
4	120V HOT

PLUG FROM FAN IN COVER CONNECTS TO J23

F1 THRU F8 ARE TYPE AGC-10, DAKTRONICS PART NUMBER F-1006.  
F17 THRU F18 ARE TYPE AGC-1/2, DAKTRONICS PART NUMBER F-1000

REV.	DATE	DESCRIPTION	BY	APPR.
4	2 OCT 00	CHANGED J25 & J26 TEXT -5 V TO GND	NSW	
3	29 SEP 00	CORRECTED J25 TABLE, CHANGED J26 TABLE PIN 5 FROM PROT 3 TO T.O.D.	AVB	
2	2 JUNE 00	CORRECTED J26 PINOUT TABLE	EB	
1	30 NOV 99	REMOVED DIMMING HEADER AND TABLE	EB	

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>	
PROJ:	
TITLE:	LAYOUT; 8 COLUMN DRIVER III
DES. BY:	EB
DRAWN BY:	EB
DATE:	11 NOV 99
REVISION	APPR. BY:
	SCALE: 1=5
<b>1033-R04A-123941</b>	

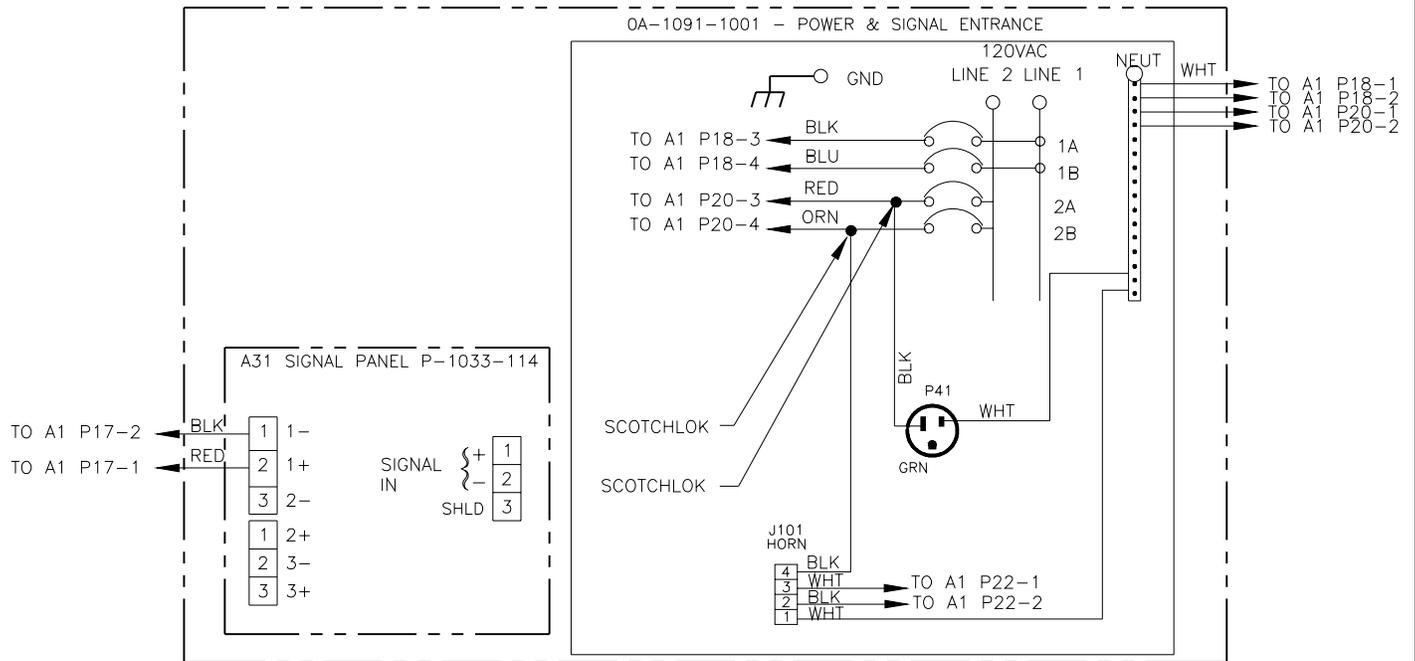
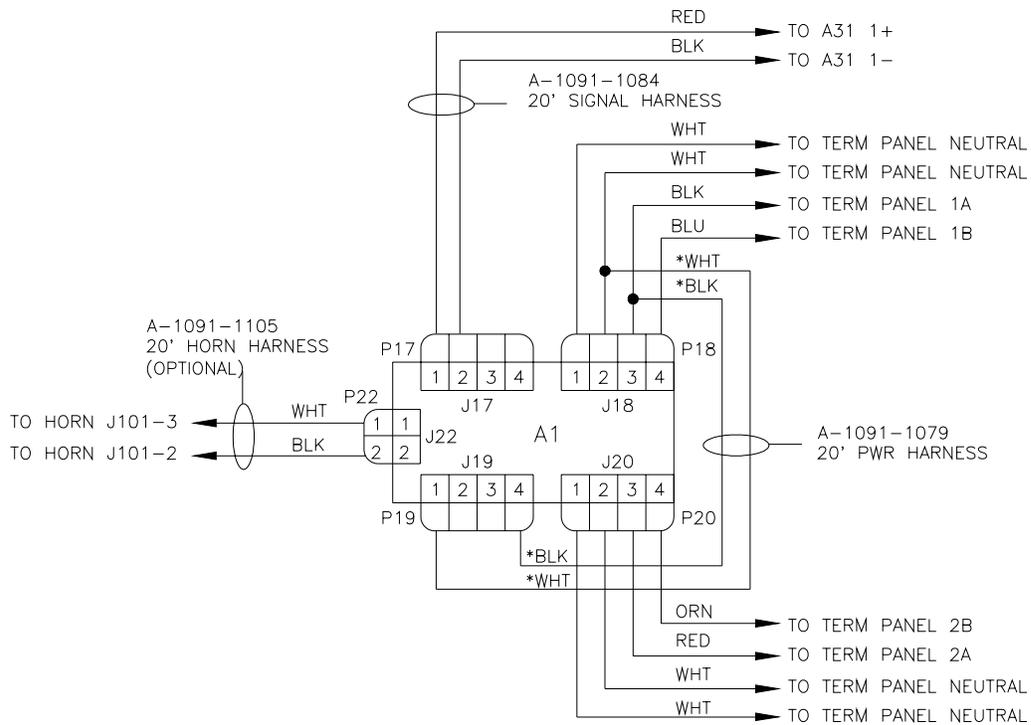


NOTE:  
ALL WIRE IS 12 AWG, EXCEPT \* IS 14 AWG & SIGNAL PAIR IS 22 AWG.  
ALL BREAKERS ARE 20 AMP.

4	17AUG00	UPDATED PANEL SCHEDULE MOVED A1 P18 TO 1&3 AND A1 P20 TO 2&4	CMC	
3	15MAY00	UPDATED POWER & SIGNAL ENTRANCE	RASMUS	
2	31JAN00	CHANGED POWER JACK & HORN JACK LAYOUT & UPDATED LAYOUT OF ENTRANCE ENCLOSURE	RASMUS	
1	13JAN2000	ADDED HORN INFORMATION	RASMUS	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	OUTDOOR INCANDESCENT SCOREBOARDS
TITLE:	SCHEMATIC; 2 DRIVERS
DES. BY:	RASMUS
DRAWN BY:	RASMUS
DATE:	31DEC99
REVISION	APPR. BY:
SCALE:	1 = 1

1091-R03A-124291



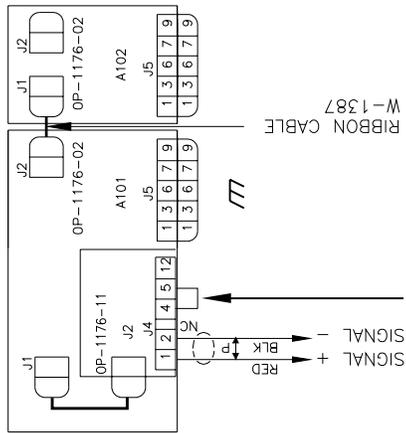
NOTE:  
ALL WIRE IS 12 AWG, EXCEPT \* IS 14 AWG &  
SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE  
20 AMP.

REV.	DATE	DESCRIPTION	BY	APPR.
5	30MAY00	UPDATED COLOR CODE ON P-1033-114	RASMUS	
4	15MAY00	UPDATED POWER & SIGNAL ENTRANCE	RASMUS	
3	10MAY00	UPDATED LABELING OF SIGNAL	RASMUS	
2	31JAN00	UPDATED LAYOUT OF ENTRANCE ENCLOSURE	RASMUS	
1	13JAN2000	ADDED HORN INFORMATION	RASMUS	

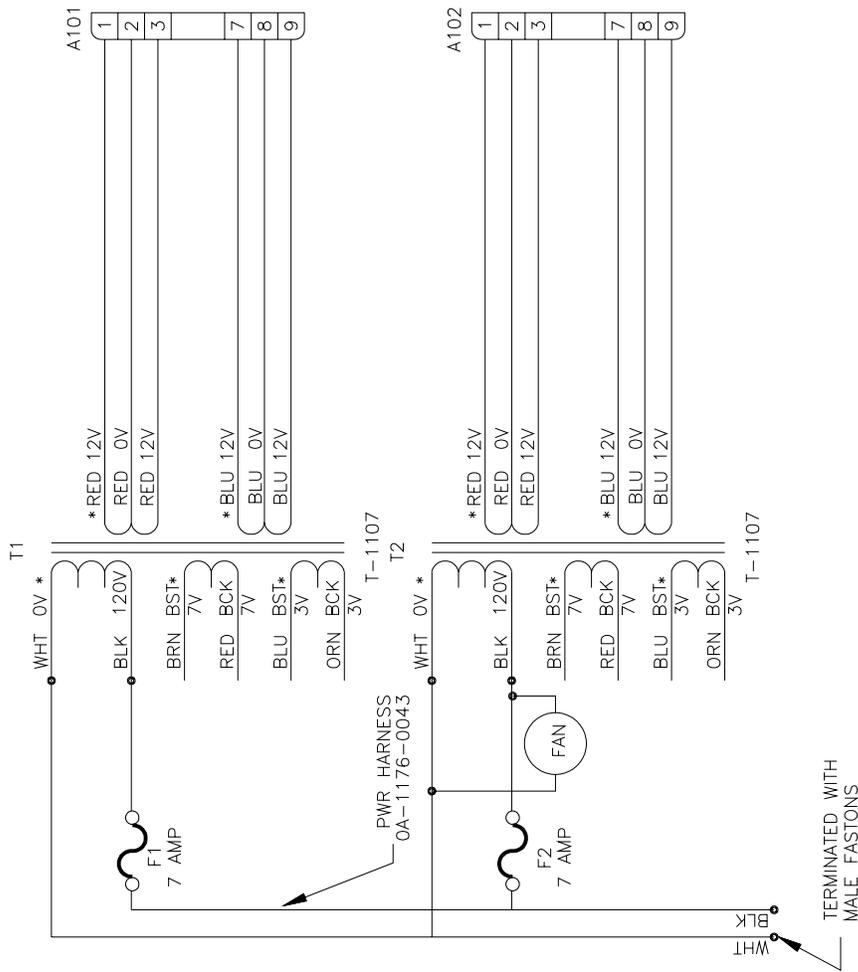
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: SCHEMATIC; 1 DRIVERS			
DES. BY: RASMUS		DATE: 31DEC99	
REVISION	APPR. BY:	1091-R03A-124293	
SCALE: 1=1			

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	LARGE OUTDOOR SCOREBOARDS
TITLE:	SCHEMATIC; 832-10TNMC
DES. BY:	DRAWN BY: RASMUS
	DATE: 3JAN00
REVISION	APPR. BY:
	SCALE: 1 = 1
1157-R03A-125214	

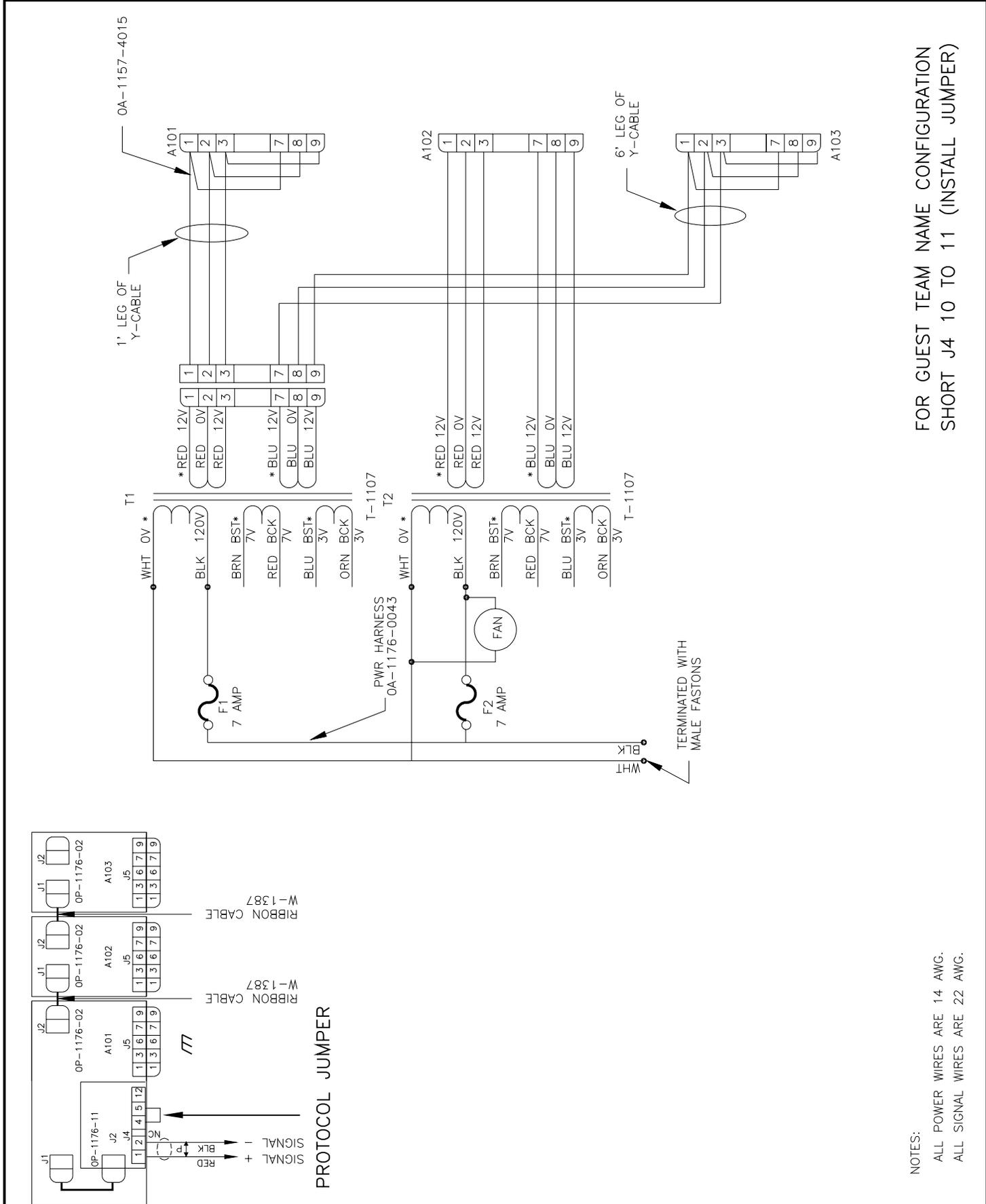


**PROTOCOL JUMPER**



FOR GUEST TEAM NAME CONFIGURATION  
SHORT J4 10 TO 11 (INSTALL JUMPER)

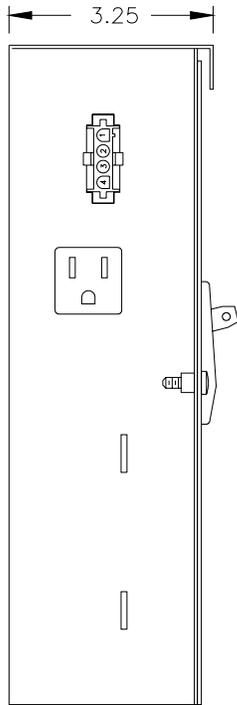
NOTES:  
ALL POWER WIRES ARE 14 AWG.  
ALL SIGNAL WIRES ARE 22 AWG.



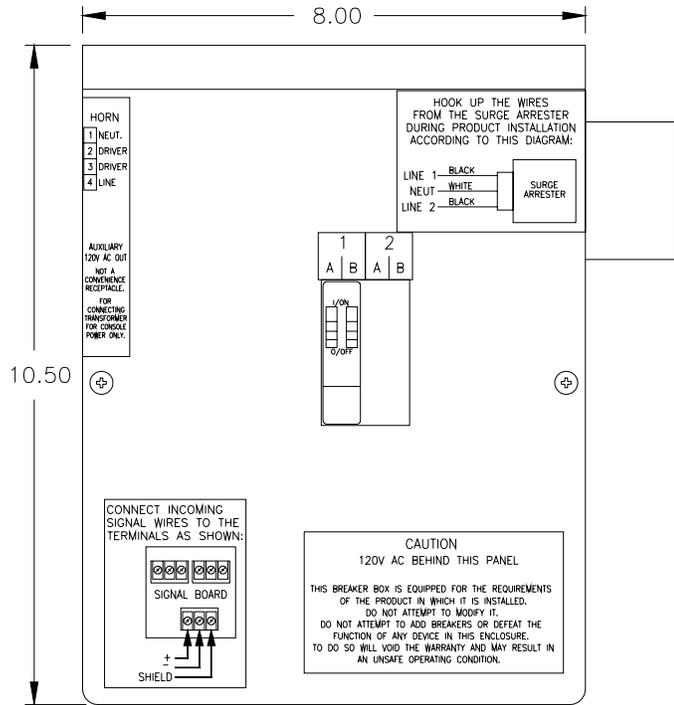
FOR GUEST TEAM NAME CONFIGURATION  
 SHORT J4 10 TO 11 (INSTALL JUMPER)

NOTES:  
 ALL POWER WIRES ARE 14 AWG.  
 ALL SIGNAL WIRES ARE 22 AWG.

1					7MAR00					CHANGED Y CABLE FROM HAVING SCOTCHLOKS TO DOUBLE CRIMPS					RASMUS											
REV.	DATE	DESCRIPTION								BY	APPR.	DES. BY: RASMUS					DRAWN BY: RASMUS					DATE: 27DEC99				
REVISION										APPR. BY:					1157-R03A-125216											
SCALE: 1=1																										



LEFT SIDE

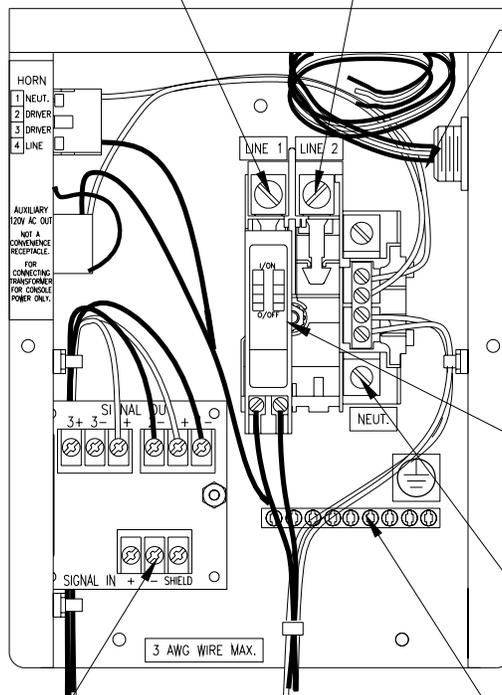


FRONT VIEW

CONNECT LINE 1 POWER HERE.

CONNECT LINE 2 POWER HERE.

CONNECT SURGE ARRESTER WIRES DURING INSTALLATION.



FRONT VIEW

(WITH COVER REMOVED)

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

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

DES. BY: B.PETERSON

DRAWN BY: B.PETERSON

DATE: 04JAN00

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

REVISION

APPR. BY:

SCALE: 1=3

1091-E10A-125977

	16'			
8'	<b>BALL</b>	<b>STRIKE</b>	<b>OUT</b>	<b>INNING</b>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<small>DAKTRONICS</small>			
	<b>GUEST</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>
	<b>HOME</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>

BA-1518

	16'			
9'	<b>BALL</b>	<b>STRIKE</b>	<b>OUT</b>	<b>INNING</b>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<small>DAKTRONICS</small>			
	<b>GUEST</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>
	<b>HOME</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>

BA-1524

	28'													
7'	<b>AT BAT</b>	<b>BALL</b>			<b>STRIKE</b>			<b>OUT</b>		<b>H/E</b>				
	<input type="text"/>	<input type="text"/>			<input type="text"/>			<input type="text"/>		<input type="text"/>				
	<small>DAKTRONICS</small>													
	<b>GUEST</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
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	<b>HOME</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>

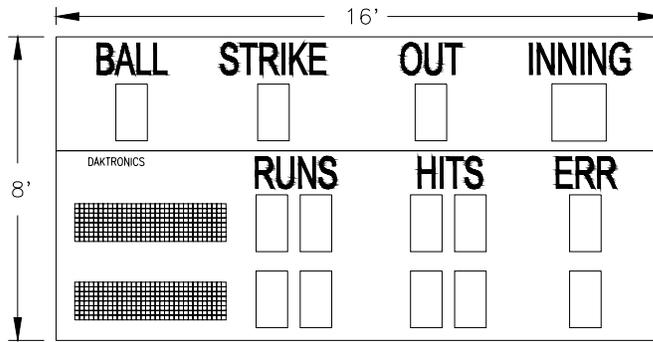
BA-3718

	36'													
9'-4"	<b>AT BAT</b>	<b>BALL</b>			<b>STRIKE</b>			<b>OUT</b>		<b>H/E</b>				
	<input type="text"/>	<input type="text"/>			<input type="text"/>			<input type="text"/>		<input type="text"/>				
	<small>DAKTRONICS</small>													
	<b>GUEST</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
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	<b>HOME</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>RUNS</b>	<b>HITS</b>	<b>ERR</b>
	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>	○ <input type="text"/>

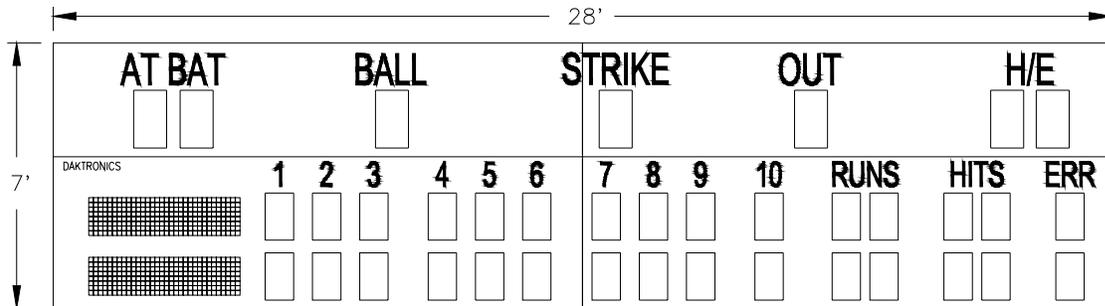
BA-3724

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: MULTIPLE SECTION BASEBALL SCOREBOARD MODELS			
DES. BY: BPETERSON		DRAWN BY: BPETERSON	
		DATE: 09DEC99	
<b>REVISION</b>	APPR. BY:	1091-E10A-126086	
	SCALE: 1=50		

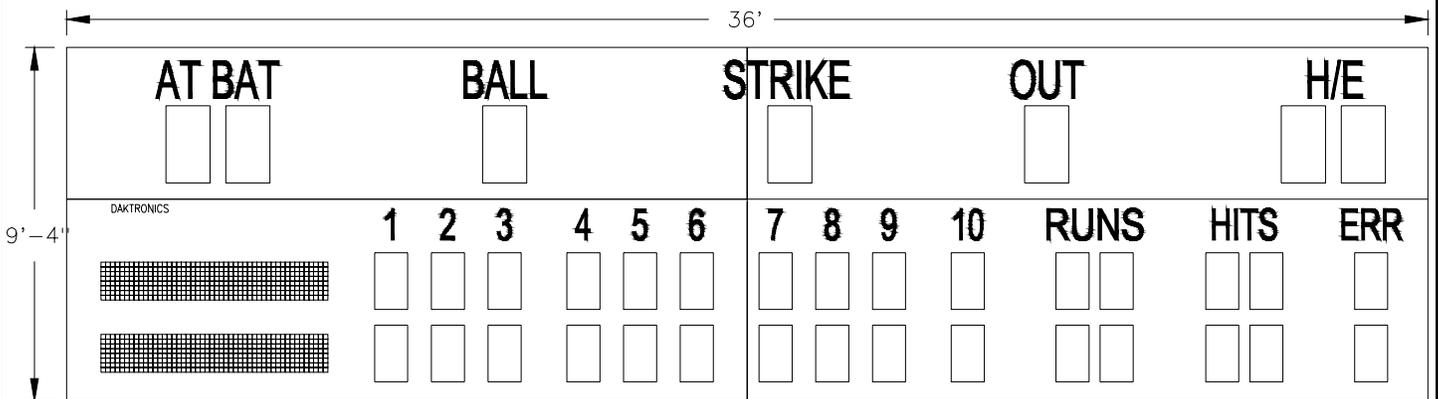
REV.	DATE	DESCRIPTION	BY	APPR.
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BA-1518 WITH 832-12 TNMC



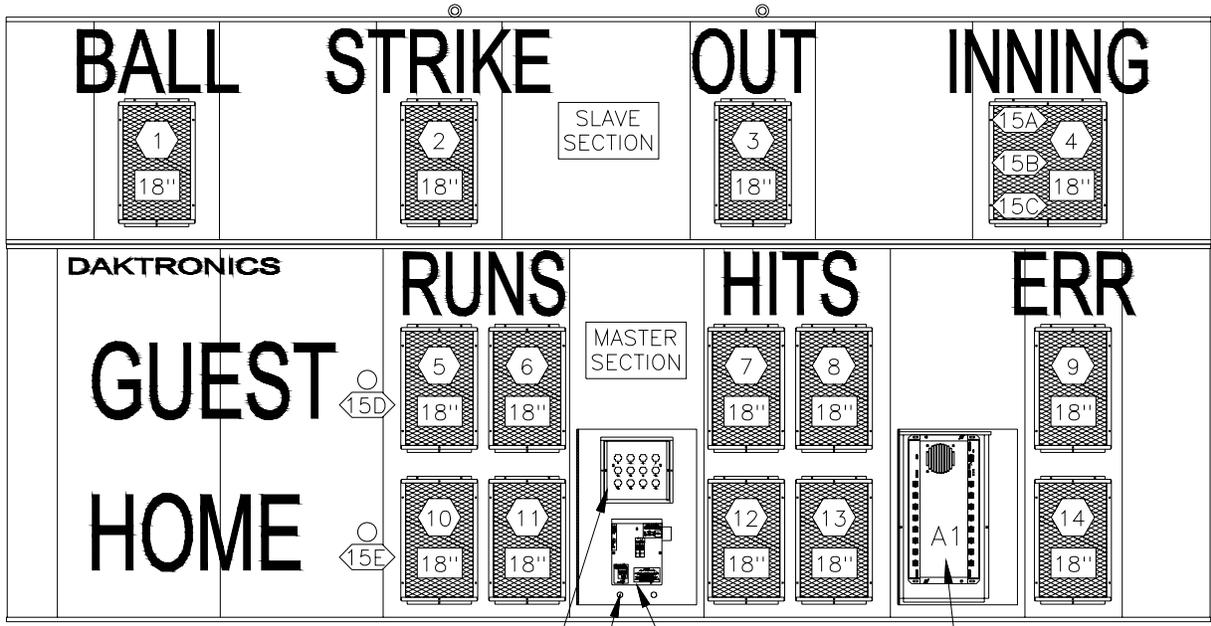
BA-3718 WITH 832-12 TNMC



BA-3724 WITH 848-12 TNMC

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

BA-1518



CONNECTOR PANEL FOR DIGIT HARNESS FROM UPPER DISPLAY SECTION.

POWER & SIGNAL ENTRANCE  
KNOCKOUT FOR 1/2" CONDUIT

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

- 12 = LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.
- 15A = LAMP DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR
- 18" = DIGIT SIZE

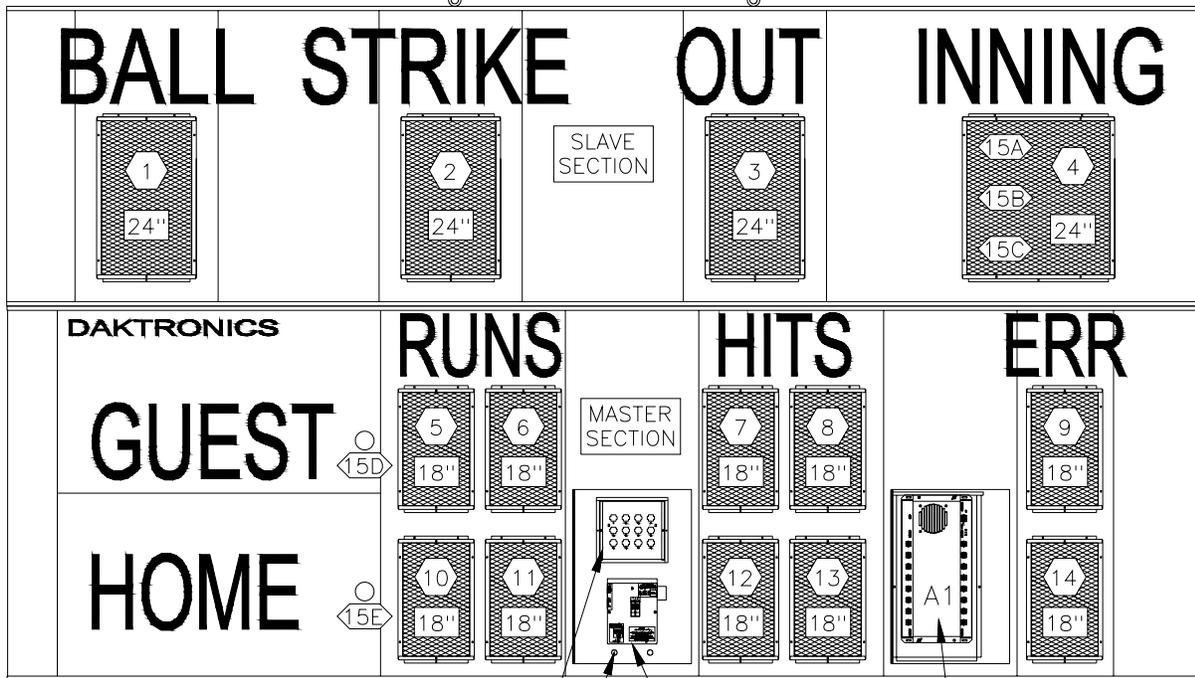
HINGED ACCESS DOORS REMOVED TO SHOW LAMP DRIVER AND POWER AND SIGNAL ENTRANCE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS	
TITLE: COMPONENT LOCATIONS, BA-1518	
DES. BY: BPIETERSON	DATE: 13JAN00
REVISION	APPR. BY:
SCALE: 1=30	1091-E10A-126422

1	17JUL00	UPDATED FACESHEET LAYOUT	MRB	
REV.	DATE	DESCRIPTION	BY	APPR.

BA-1524



CONNECTOR PANEL FOR DIGIT HARNESS FROM UPPER DISPLAY SECTION.

POWER & SIGNAL ENTRANCE

— KNOCKOUT FOR 1/2" CONDUIT

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

⬡12 = LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.

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

⬡18" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, BA-1524

DES. BY: BPETERSON

DRAWN BY: RNIELSEN

DATE: 13JAN00

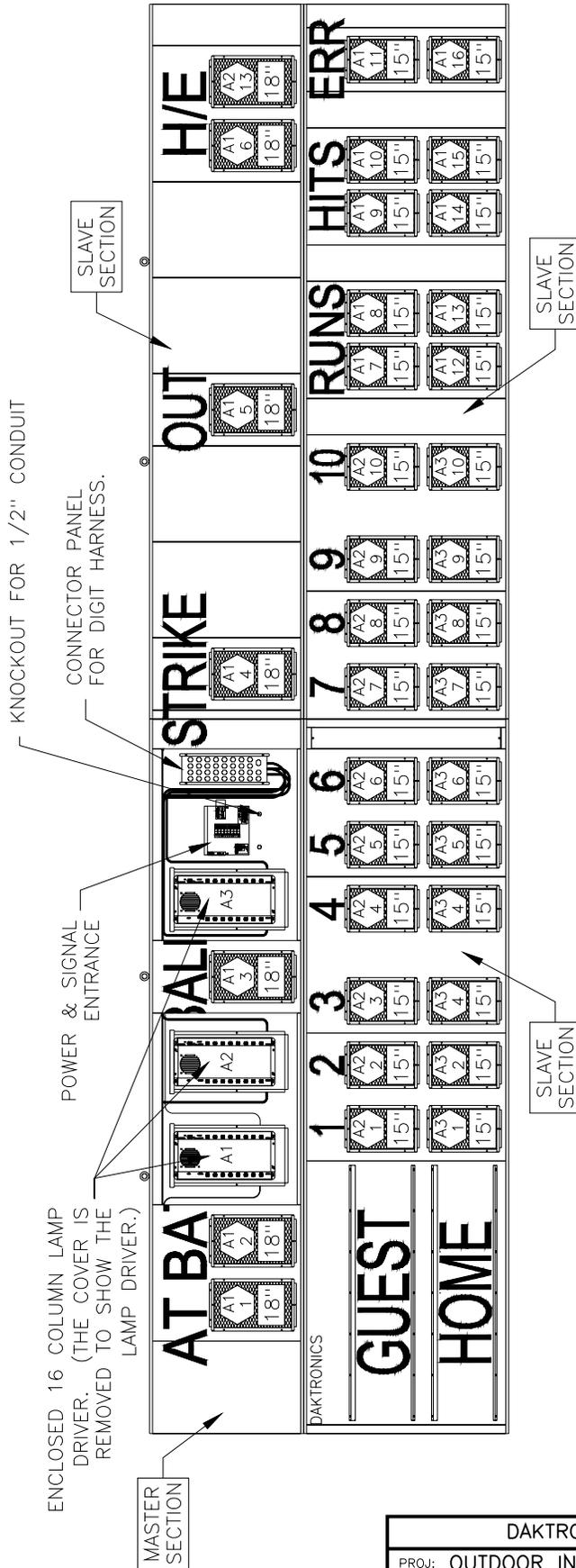
REVISION APPR. BY:

SCALE: 1=30

1091-E10A-126423

REV.	DATE	DESCRIPTION	BY	APPR.

BA-3718



$\triangle$  A1 1 = LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.

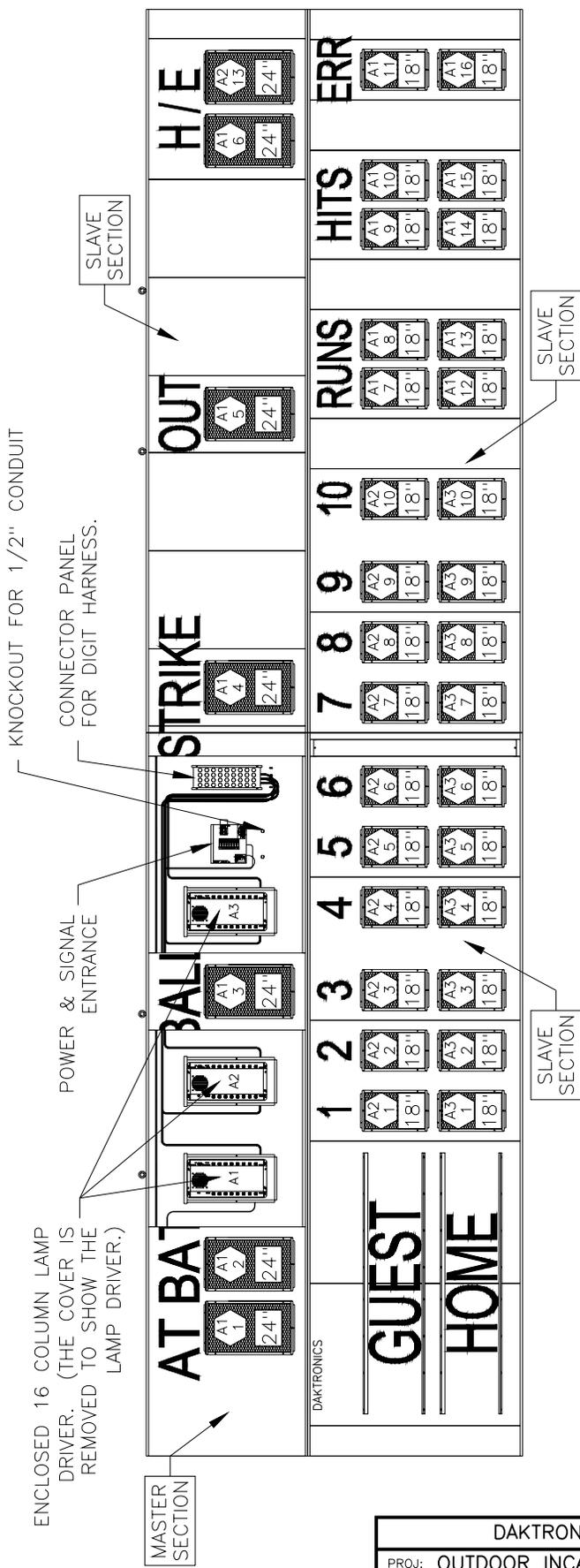
$\square$  18" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS	
TITLE: COMPONENT LOCATIONS, BA-3718	
DES. BY: BPETERSON	DRAWN BY: RNIELSEN
DATE: 13JAN00	
REVISION	APPR. BY:
SCALE: 1=40	1091-E10A-126424

BA-3724



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

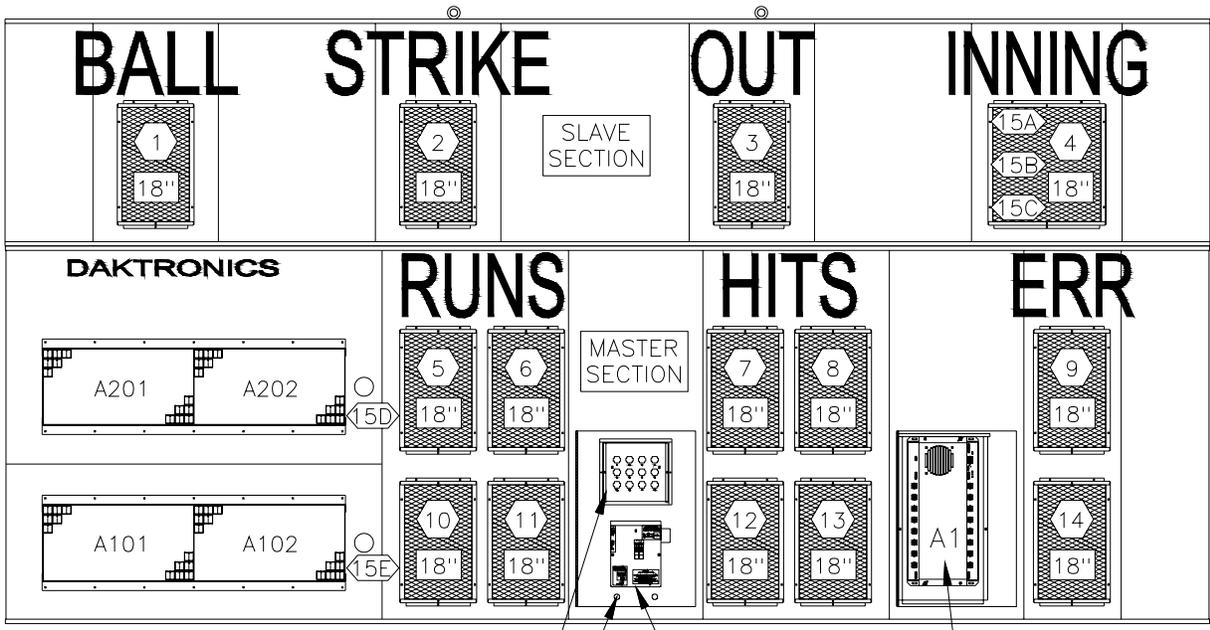
= DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS	
TITLE: COMPONENT LOCATIONS, BA-3724	
DES. BY: BPETERSON	DRAWN BY: RNIELSEN
DATE: 13JAN00	
REVISION	APPR. BY:
SCALE: 1=50	1091-E10A-126425

REV.	DATE	DESCRIPTION	BY	APPR.

BA-1518 W/832-12 TNMC



CONNECTOR PANEL FOR DIGIT HARNESS FROM UPPER DISPLAY SECTION.

POWER & SIGNAL ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

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

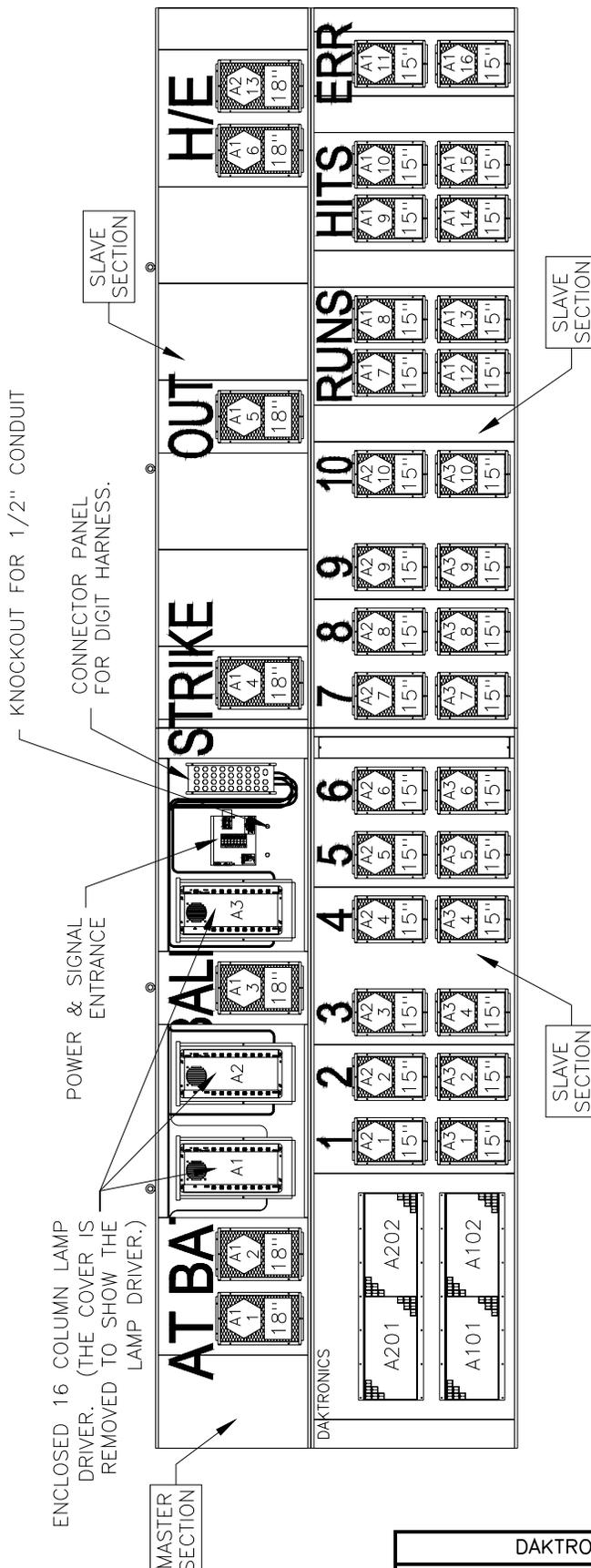
- ⬡12 = LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.
- ⬡15A = LAMP DRIVER CONNECTOR AND SEGMENT (PIN) NO. WIRED TO THAT INDICATOR
- ⬡18" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, BA-1518 W/TNMC			
DES. BY: BPETERSON		DRAWN BY: RNIELSEN	
		DATE: 13JAN00	
<b>REVISION</b>	APPR. BY:	1091-E10A-126426	
	SCALE: 1=30		

1	25JUL00	ADDED AT BAT INDICATORS	GDB		
REV.	DATE	DESCRIPTION	BY	APPR.	

BA-3718 W/832-12 TNMC



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

= DIGIT SIZE

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

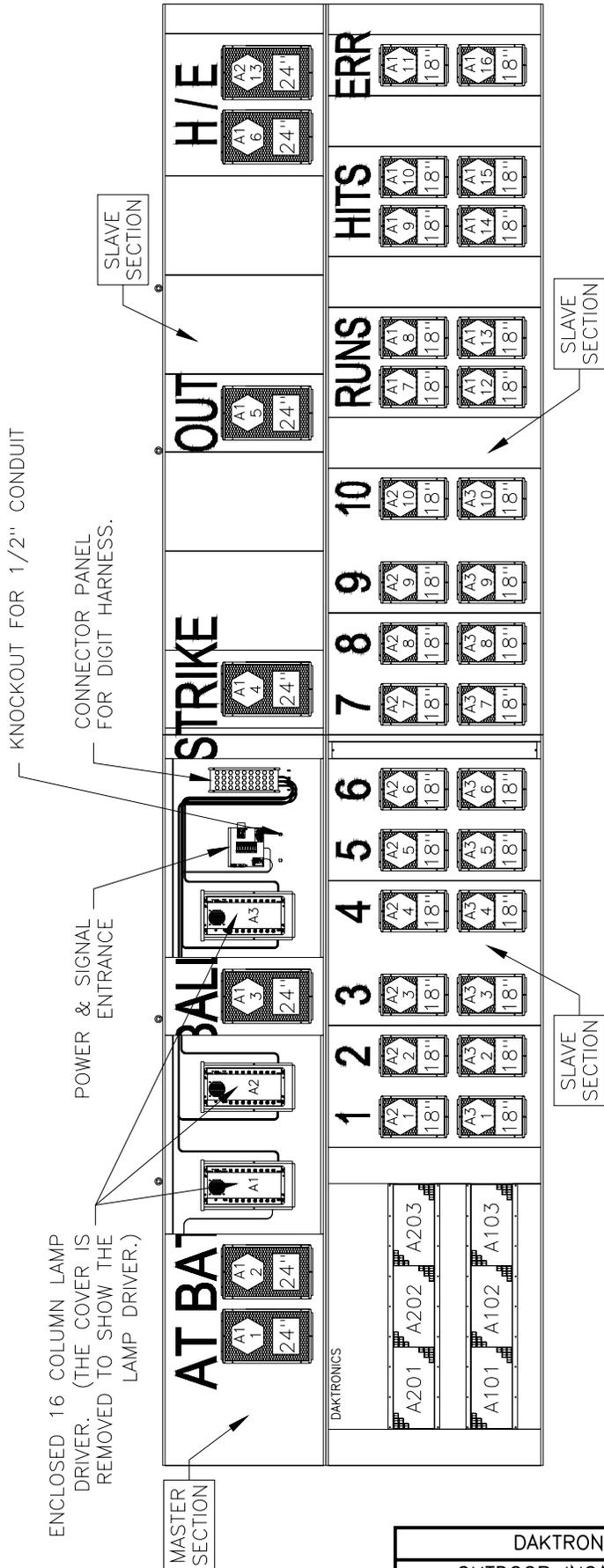
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:	OUTDOOR INCANDESCENT SCOREBOARDS
TITLE:	COMPONENT LOCATIONS, BA-3718 W/TNMC
DES. BY:	BPETERSON
DRAWN BY:	RNIELSEN
DATE:	13JAN00

REVISION	APPR. BY:	1091-E10A-126427
	SCALE: 1=40	

REV.	DATE	DESCRIPTION	BY	APPR.

BA-3724 W/848-12 TNMC



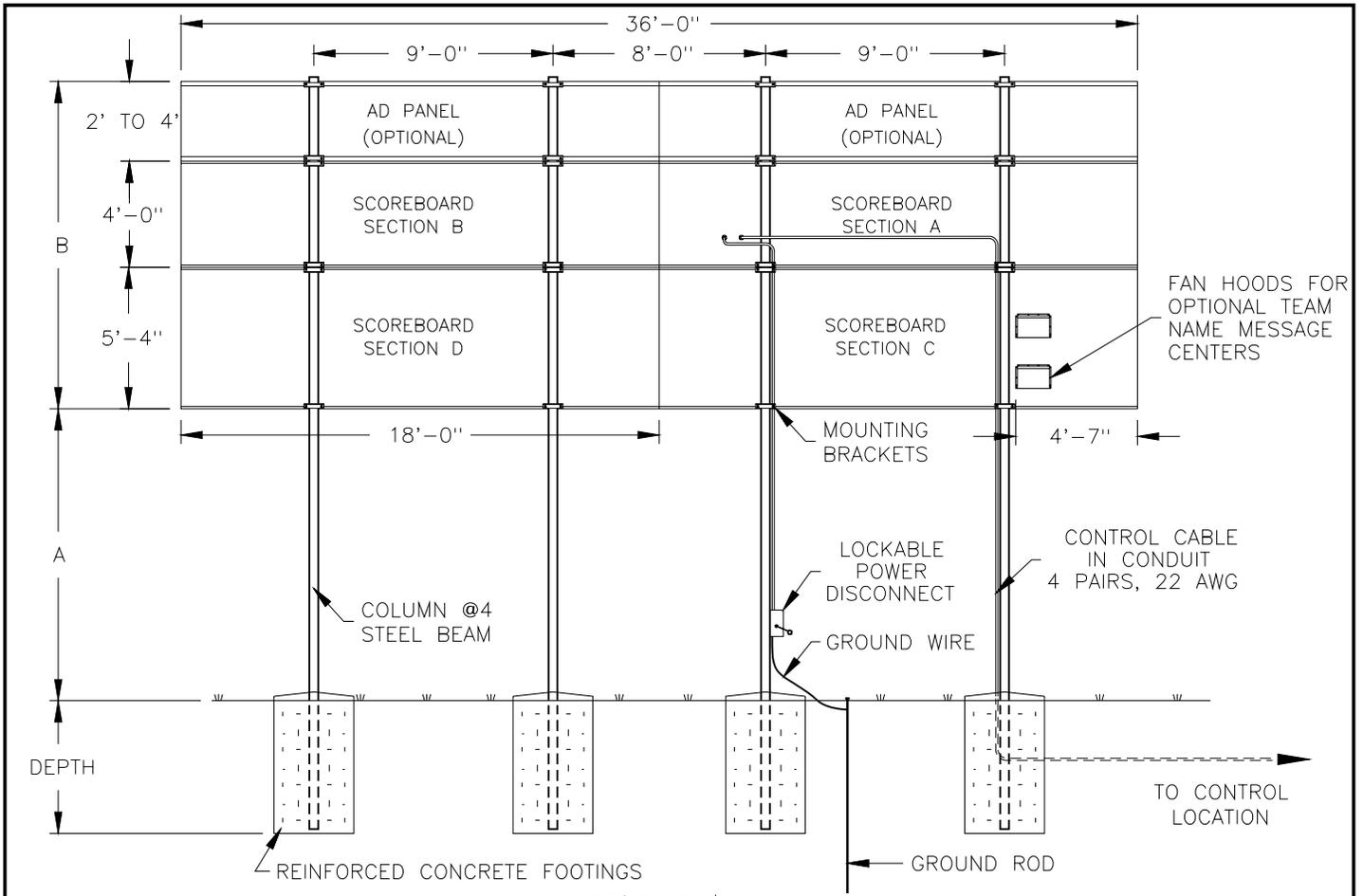
⬡ A1 = LAMP DRIVER NUMBER &  
 ⬡ A2 = LAMP DRIVER NUMBER &  
 ⬡ A3 = LAMP DRIVER NUMBER &  
 = LAMP DRIVER CONNECTOR  
 WIRED TO THAT DIGIT.

18" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, BA-3724 W/TNMC			
DES. BY: BPETERSON	DRAWN BY: RNIELSEN	DATE: 13JAN00	
REVISION	APPR. BY:	1091-E10A-126428	
SCALE: 1=50			



**REAR VIEW**  
BA-3724

**ELECTRICAL**

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

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

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

**A NOTE ABOUT BEAM NOMENCLATURE:**

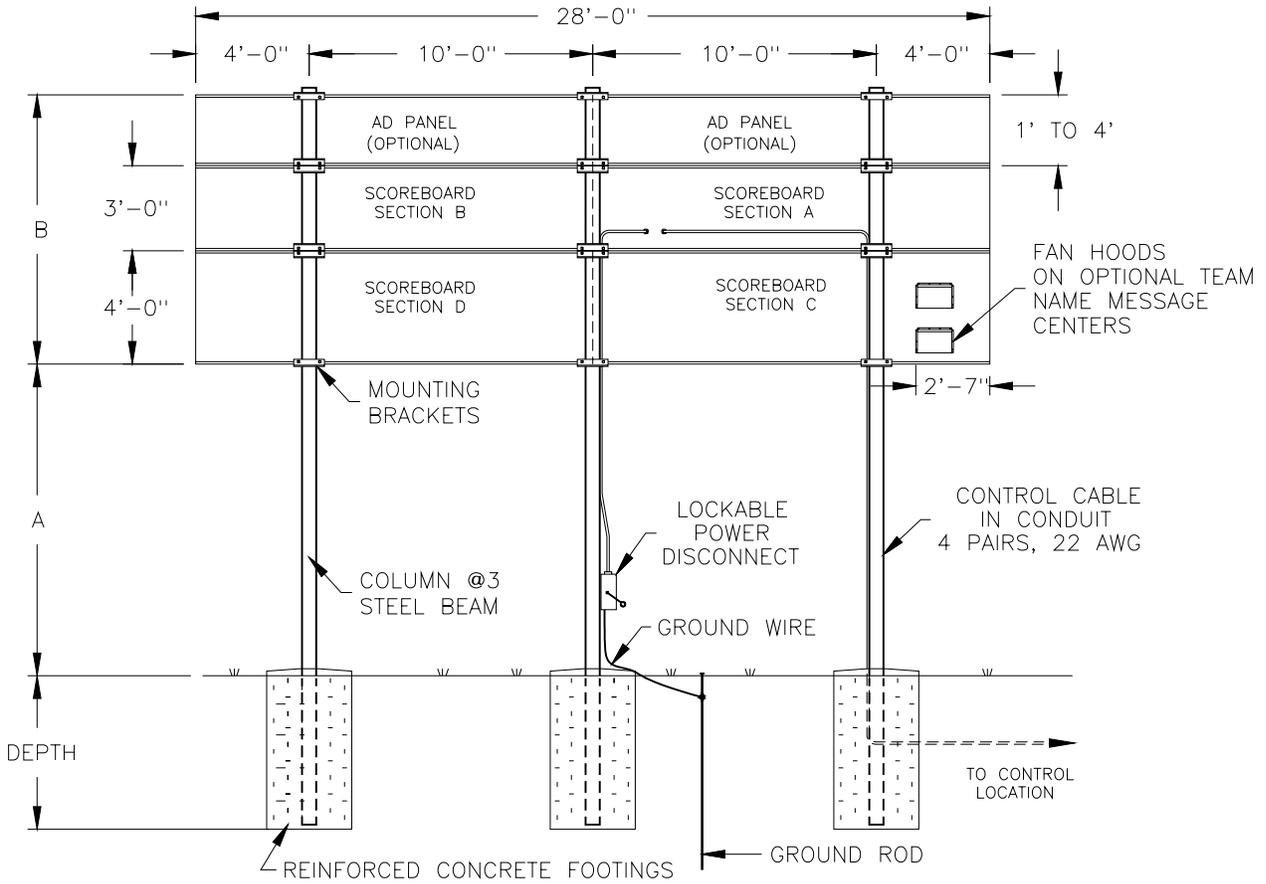
For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 5 to 10 inches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

MODEL BA-3724						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	9'-4"	BEAM	W8x31	W10x33	W8x40
			FOOTING	3.5'x5.6'	3.5'x6.2'	3.5'x7.3'
	2 FT	11'-4"	BEAM	W8x35	W10x39	W8x48
			FOOTING	3.5'x6.1'	3.5'x6.7'	3.5'x8.0'
	4 FT	13'-4"	BEAM	W8x40	W8x48	W12x58
			FOOTING	3.5'x6.6'	3.5'x7.3'	3.5'x8.6'
14 FT	NONE	9'-4"	BEAM	W10x39	W12x45	W10x49
			FOOTING	3.5'x6.1'	3.5'x6.7'	3.5'x7.9'
	2 FT	11'-4"	BEAM	W12x45	W8x48	W10x60
			FOOTING	3.5'x6.6'	3.5'x7.3'	3.5'x8.6'
	4 FT	13'-4"	BEAM	W10x49	W12x58	W10x68
			FOOTING	3.5'x7.1'	3.5'x7.8'	3.5'x9.2'
18 FT	NONE	9'-4"	BEAM	W10x49	W10x54	W10x68
			FOOTING	3.5'x7.1'	3.5'x7.8'	3.5'x9.2'
	2 FT	11'-4"	BEAM	W12x58	W12x65	W12x79
			FOOTING	3.5'x7.6'	3.5'x8.4'	3.5'x9.9'
	4 FT	13'-4"	BEAM	W12x65	W12x72	W14x90
			FOOTING	3.5'x8.1'	3.5'x8.9'	3.5'x10.5'

FOOTING = DIAMETER X DEPTH

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

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS, BA-3724			
DES. BY: BPETERSON		DRAWN BY: MVANDYK	
		DATE: 12JAN00	
REVISION	APPR. BY:	1091-R10A-126445	
	SCALE: 1=80		



REAR VIEW  
BA-3718

ELECTRICAL

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

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

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

A NOTE ABOUT BEAM NOMENCLATURE:

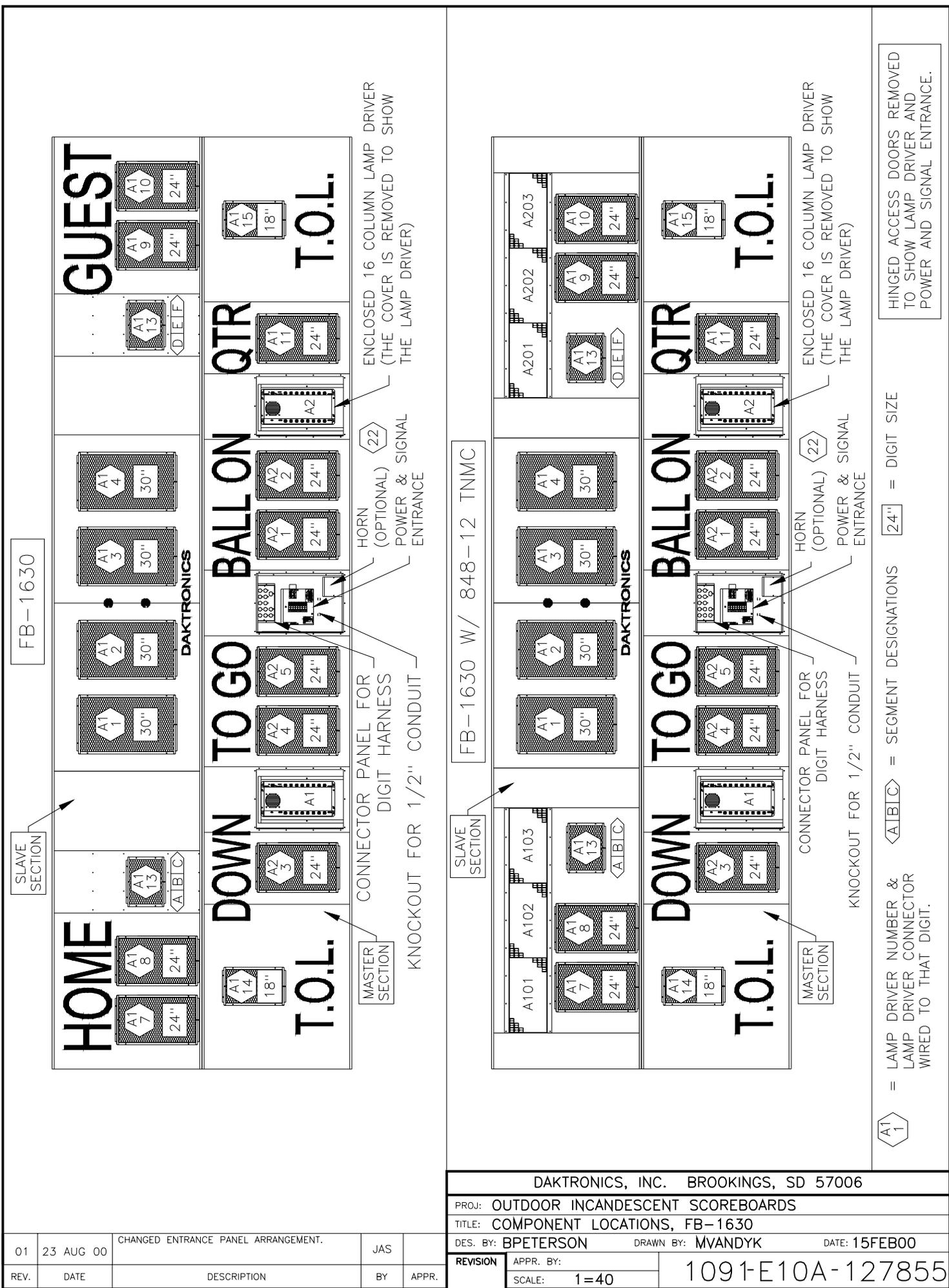
For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 4 to 8 inches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

MODEL BA-3718						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	7 FT	BEAM	W8x24	W8x28	W8x35
			FOOTING	3'x5.5'	3'x6.1'	3'x7.2'
	2 FT	9 FT	BEAM	W8x31	W8x35	W12x45
			FOOTING	3'x6.2'	3'x6.8'	3'x8.0'
	4 FT	11 FT	BEAM	W8x35	W8x40	W10x49
			FOOTING	3'x6.8'	3'x7.5'	3'x8.8'
14 FT	NONE	7 FT	BEAM	W8x31	W8x35	W10x45
			FOOTING	3'x6.1'	3'x6.7'	3'x7.9'
	2 FT	9 FT	BEAM	W10x39	W12x45	W12x53
			FOOTING	3'x6.7'	3'x7.4'	3'x8.8'
	4 FT	11 FT	BEAM	W10x45	W10x49	W10x65
			FOOTING	3'x7.3'	3'x8.0'	3'x9.5'
18 FT	NONE	7 FT	BEAM	W10x39	W10x45	W10x54
			FOOTING	3'x6.5'	3'x7.2'	3'x8.4'
	2 FT	9 FT	BEAM	W8x48	W12x53	W12x65
			FOOTING	3'x7.2'	3'x8.0'	3'x9.4'
	4 FT	11 FT	BEAM	W10x54	W10x60	W10x77
			FOOTING	3'x7.8'	3'x8.6'	3'x10.1'

FOOTING = DIAMETER X DEPTH

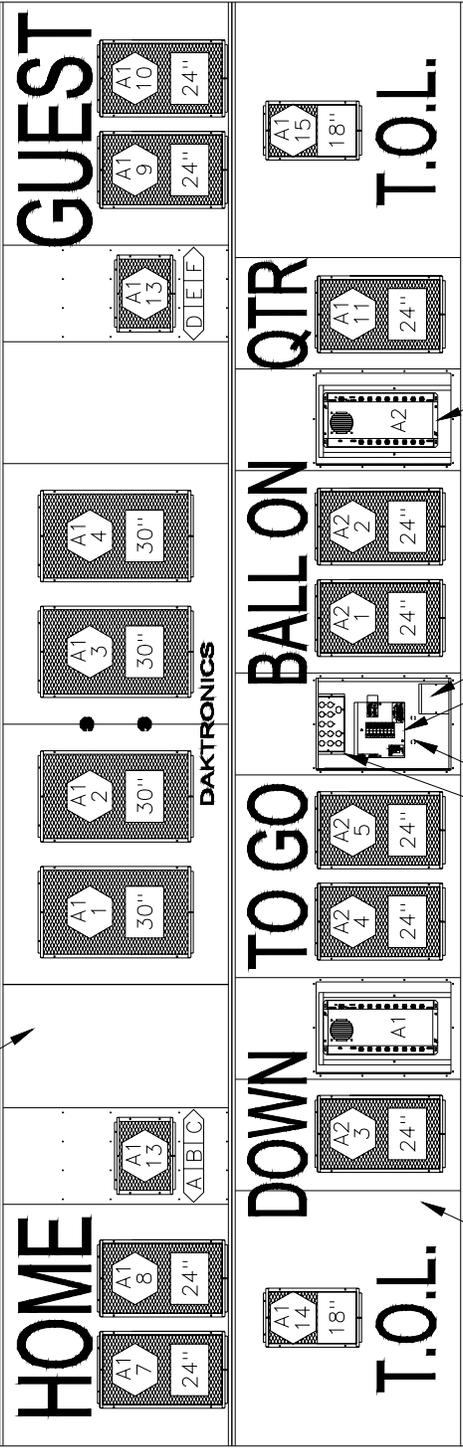
1	17JUL00	REVISED BEAM SECTIONS & FOOTINGS.	MVD	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS, BA-3718			
DES. BY: BPETERSON	DRAWN BY: MVDANDYK	DATE: 12JAN00	
REVISION	APPR. BY:	1091-R10A-126455	
	SCALE: 1=80		



FB-1630

SLAVE SECTION



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

CONNECTOR PANEL FOR DIGIT HARNESS

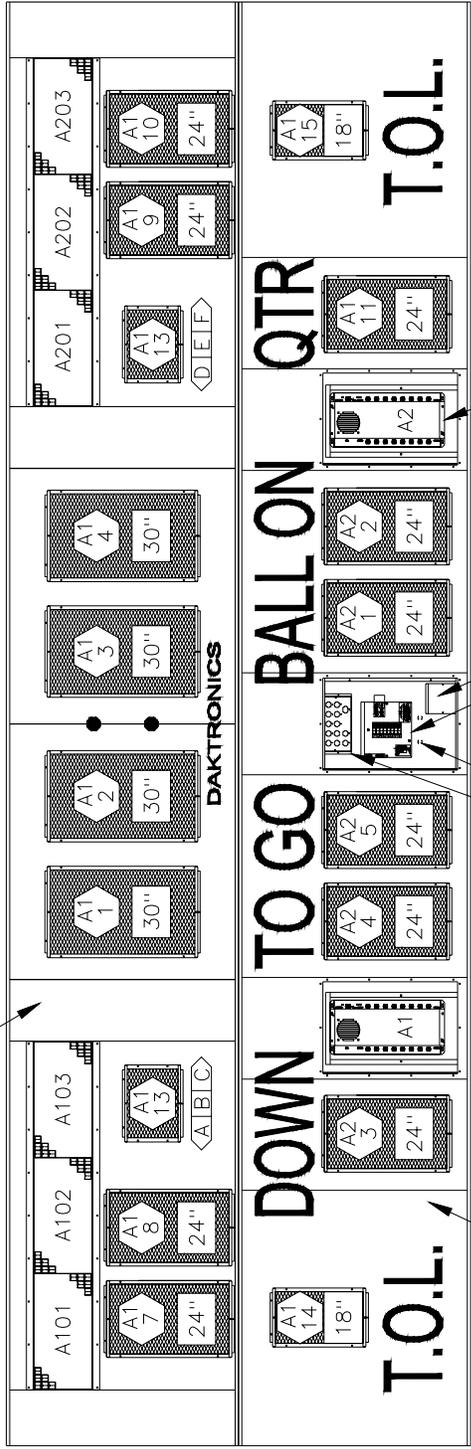
KNOCKOUT FOR 1/2" CONDUIT

MASTER SECTION

SLAVE SECTION

FB-1630 W/ 848-12 TNMC

SLAVE SECTION



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

CONNECTOR PANEL FOR DIGIT HARNESS

KNOCKOUT FOR 1/2" CONDUIT

MASTER SECTION

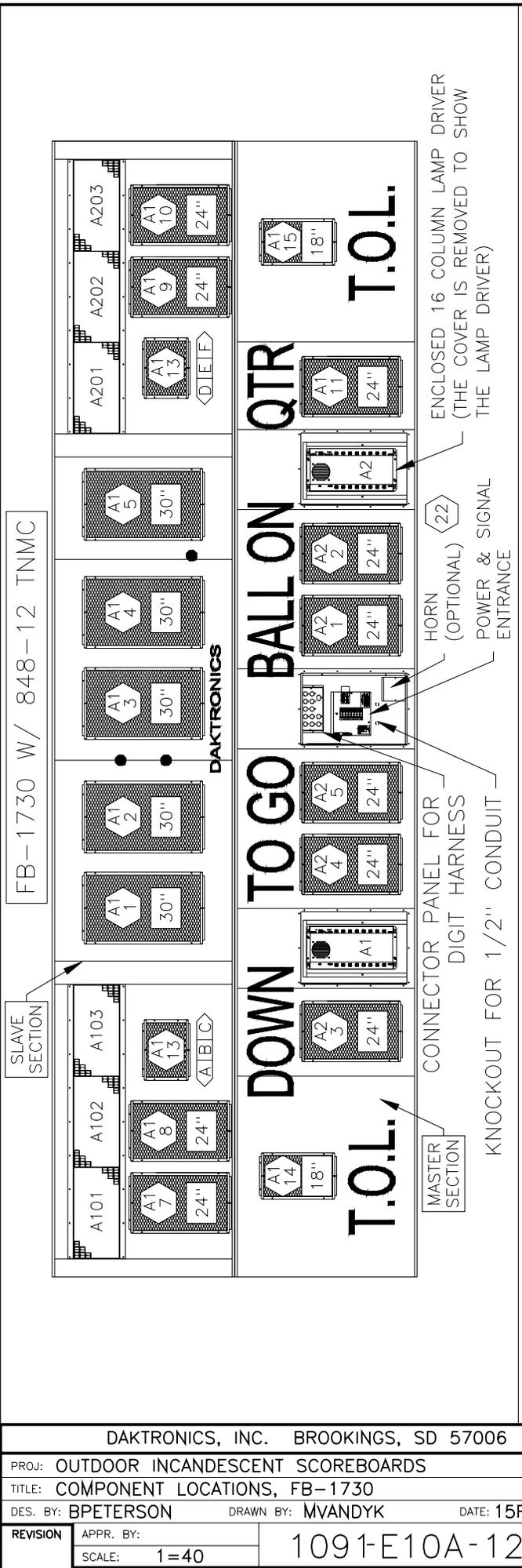
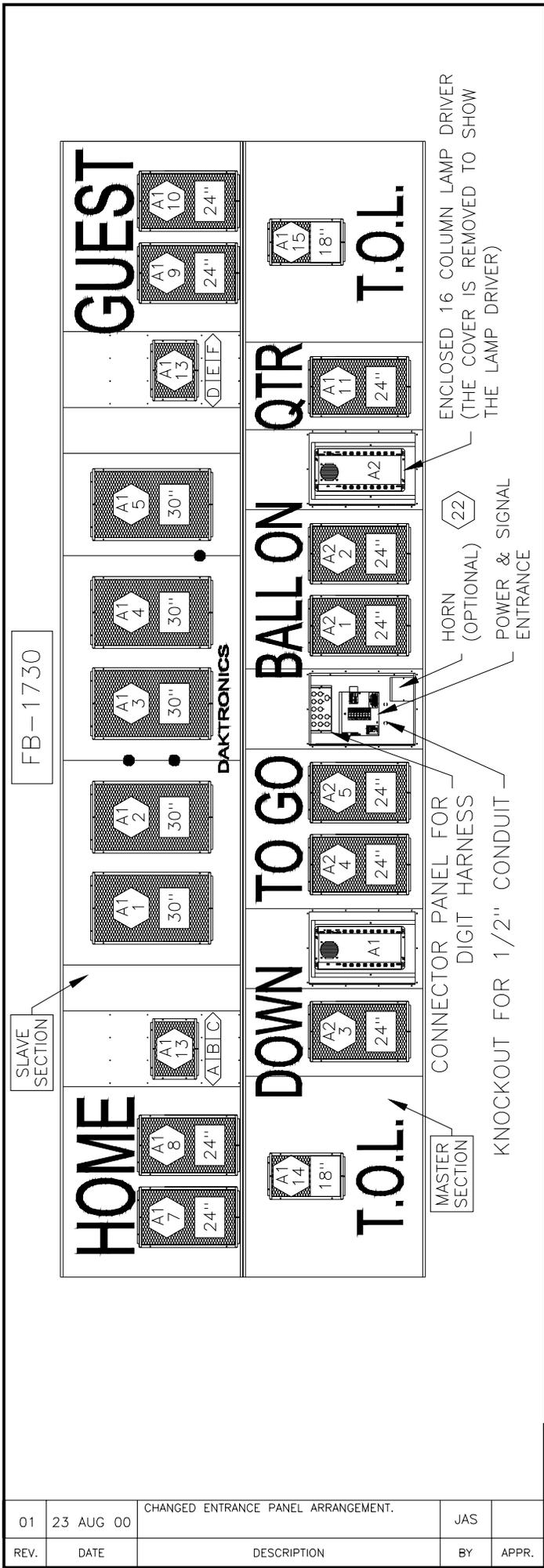
SLAVE SECTION

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

A1 1 = LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.  
A1B/C = SEGMENT DESIGNATIONS   24" = DIGIT SIZE

01	23 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, FB-1630			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 15FEB00	
REVISION	APPR. BY:	1091-E10A-127855	
	SCALE: 1=40		



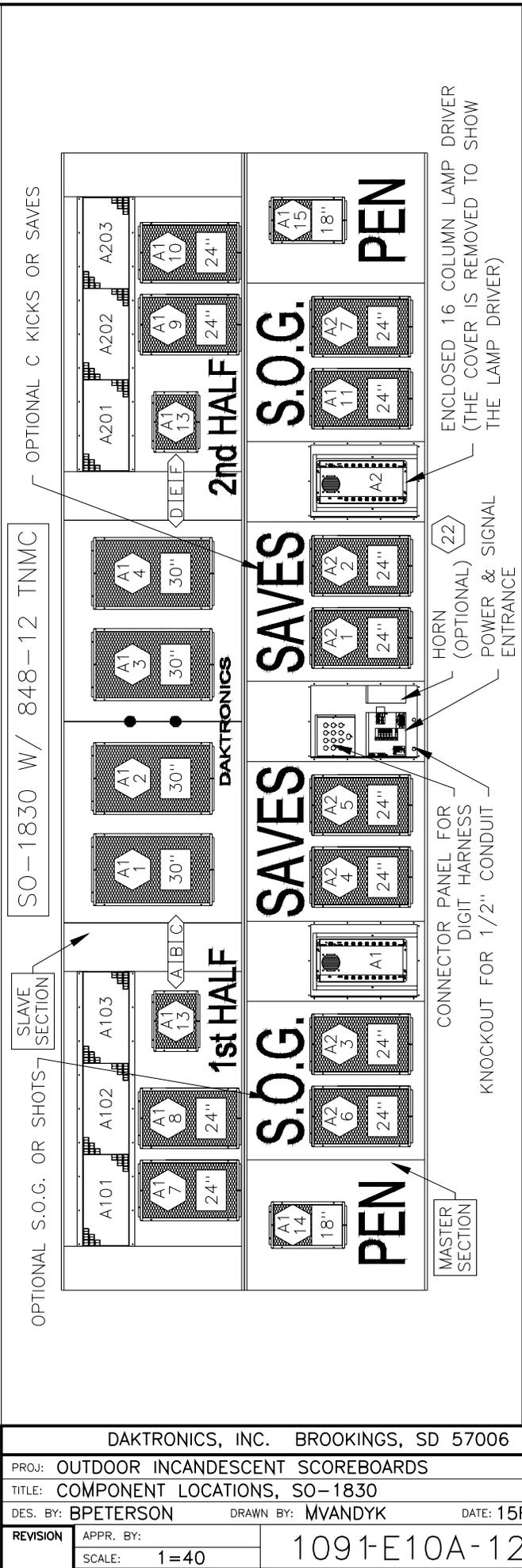
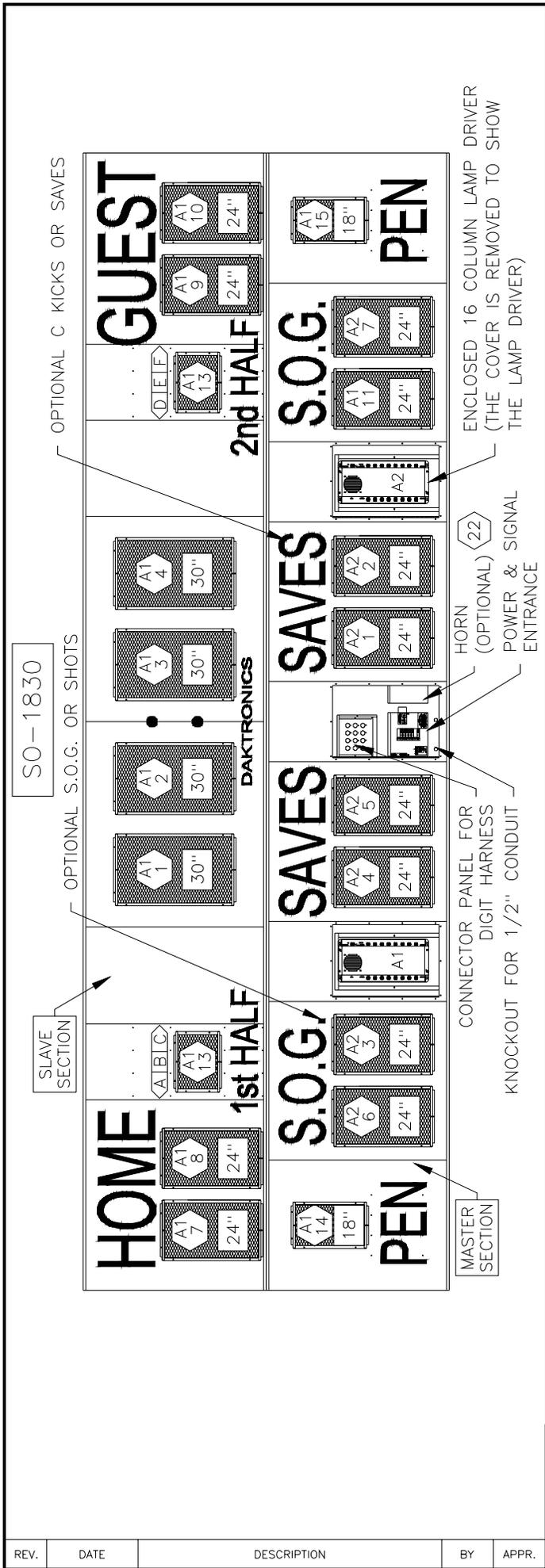
HINGED ACCESS DOORS REMOVED TO SHOW LAMP DRIVER AND POWER AND SIGNAL ENTRANCE.

A1 1 = LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.  
A1 B C = SEGMENT DESIGNATIONS  
24" = DIGIT SIZE

REV.	DATE	DESCRIPTION	BY	APPR.
01	23 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, FB-1730			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 15FEB00	
REVISION	APPR. BY:	1091-E10A-127867	
	SCALE: 1=40		





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

OPTIONAL C KICKS OR SAVES

OPTIONAL S.O.G. OR SHOTS

OPTIONAL S.O.G. OR SHOTS

OPTIONAL S.O.G. OR SHOTS

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

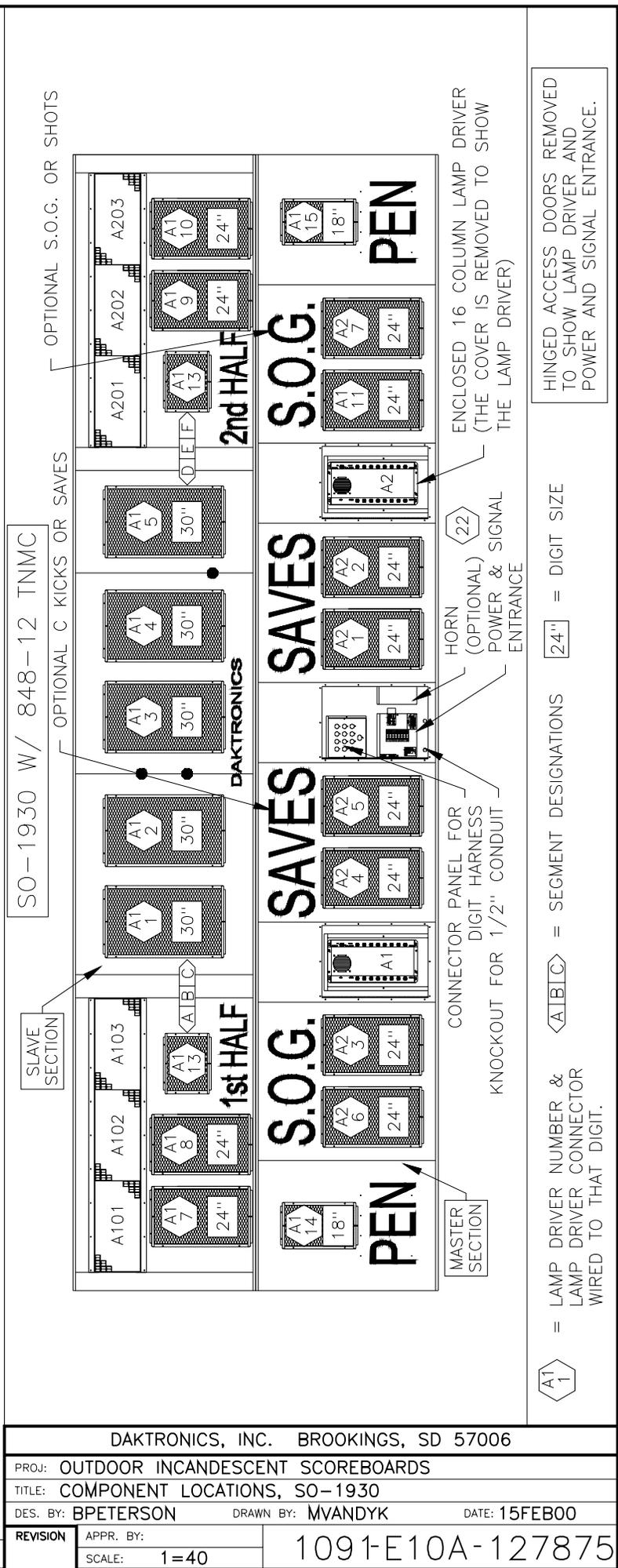
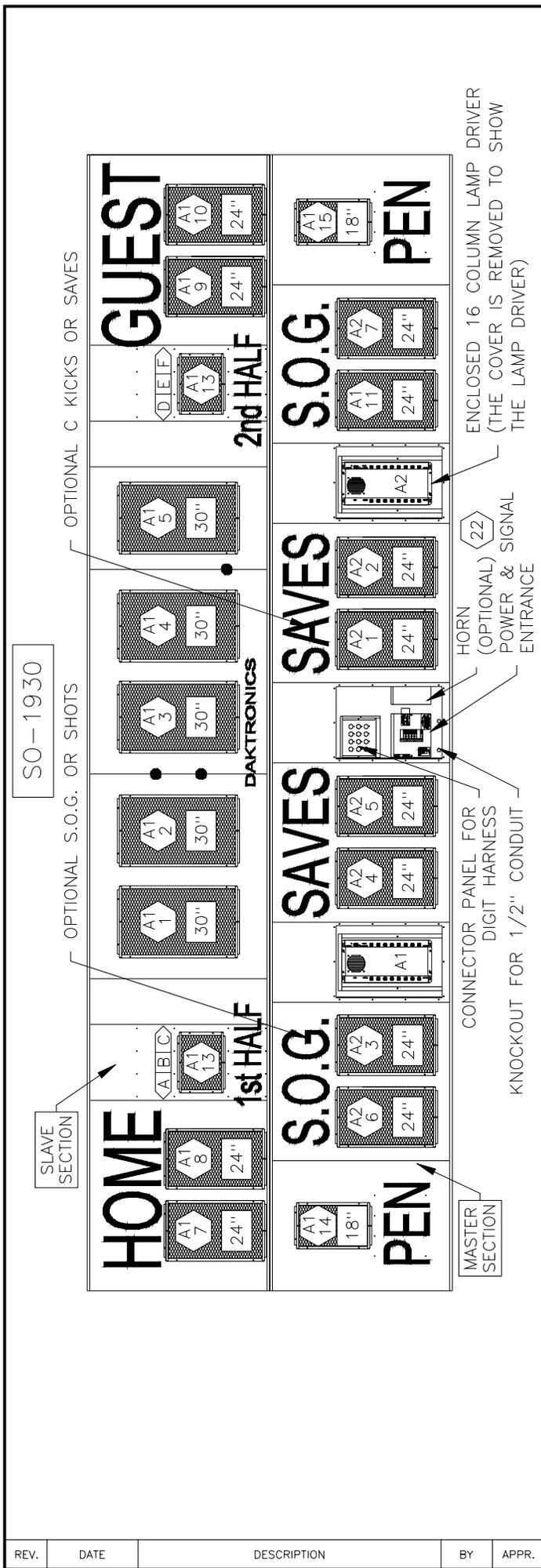
TITLE: COMPONENT LOCATIONS, SO-1830

DES. BY: BPETERSON DRAWN BY: MVANDYK DATE: 15FEB00

REVISION APPR. BY: SCALE: 1=40

1091-E10A-127874

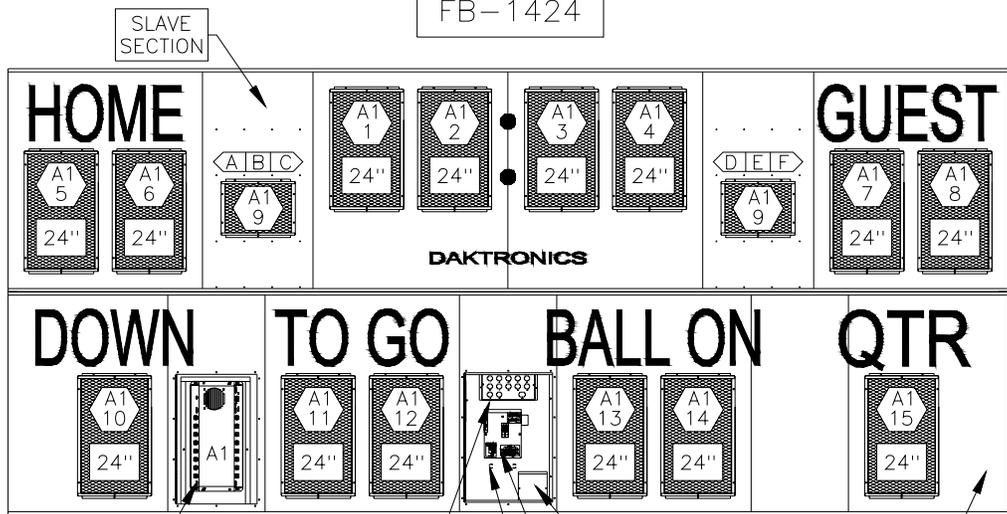
REV.	DATE	DESCRIPTION	BY	APPR.



REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, SO-1930			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 15FEB00	
REVISION	APPR. BY:	1091-E10A-127875	
SCALE: 1=40			

FB-1424



ENCLOSED 16 COLUMN LAMP DRIVER (THE COVER IS REMOVED TO SHOW THE LAMP DRIVER)      CONNECTOR PANEL FOR DIGIT HARNESS      HORN (OPTIONAL)      MASTER SECTION

KNOCKOUT FOR 1/2" CONDUIT      POWER & SIGNAL ENTRANCE

FB-1424 W/ 832-12 TNMC



ENCLOSED 16 COLUMN LAMP DRIVER (THE COVER IS REMOVED TO SHOW THE LAMP DRIVER)      CONNECTOR PANEL FOR DIGIT HARNESS      HORN (OPTIONAL)      MASTER SECTION

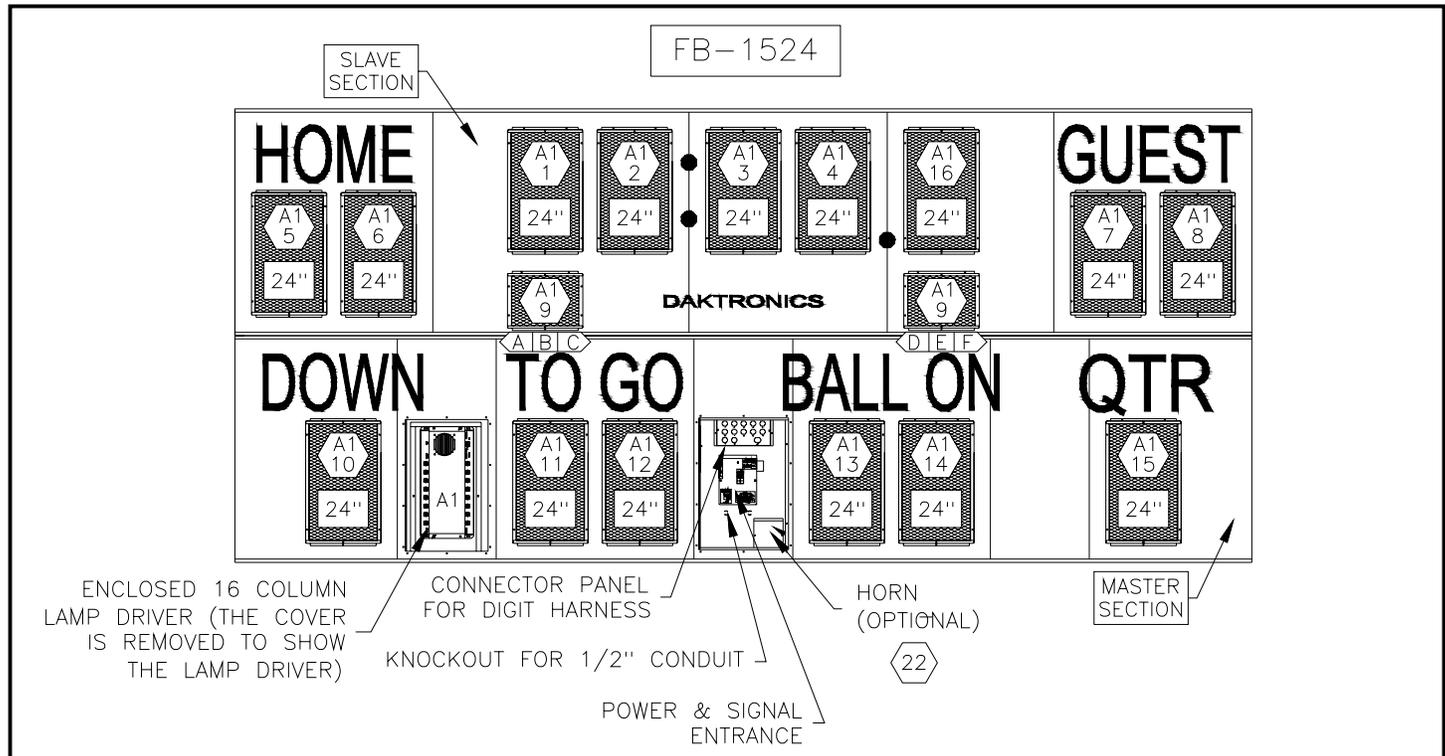
KNOCKOUT FOR 1/2" CONDUIT      POWER & SIGNAL ENTRANCE

**A1 1** = LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.      **A|B|C** = SEGMENT DESIGNATIONS      **24"** = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, FB-1424			
DES. BY: BPETERSON		DRAWN BY: MVANDYK	
DATE: 16FEB00			
REVISION	APPR. BY:	1091-E10A-127913	
SCALE: 1=40			

REV.	DATE	DESCRIPTION	BY	APPR.
01	24 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JNILSE	



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

CONNECTOR PANEL FOR DIGIT HARNESS

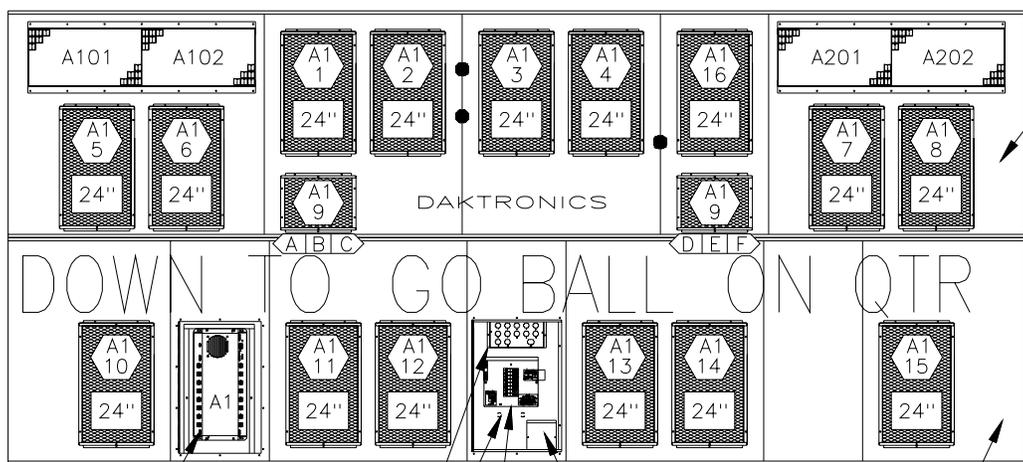
KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

MASTER SECTION

POWER & SIGNAL ENTRANCE

FB-1524 W/ 832-12 TNMC



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

CONNECTOR PANEL FOR DIGIT HARNESS

KNOCKOUT FOR 1/2" CONDUIT

HORN (OPTIONAL)

MASTER SECTION

POWER & SIGNAL ENTRANCE

SLAVE SECTION

A1 1

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

A B C

= SEGMENT DESIGNATIONS

24"

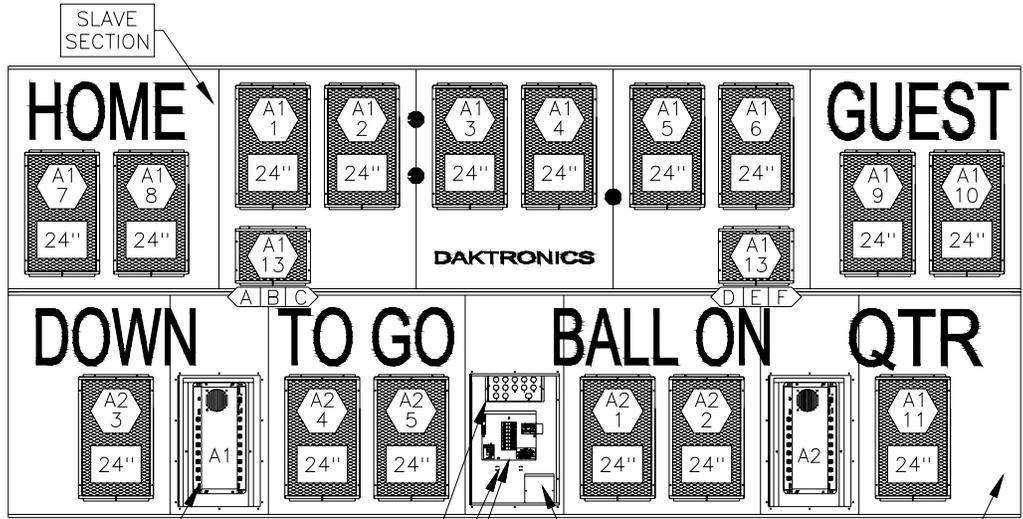
= DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, FB-1524			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 16FEB00	
REVISION	APPR. BY:	1091-E10A-127917	
	SCALE: 1=40		

01	24 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JNILSE	
REV.	DATE	DESCRIPTION	BY	APPR.

FB-1624



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

CONNECTOR PANEL FOR DIGIT HARNESS

HORN (OPTIONAL)

MASTER SECTION

KNOCKOUT FOR 1/2" CONDUIT

POWER & SIGNAL ENTRANCE

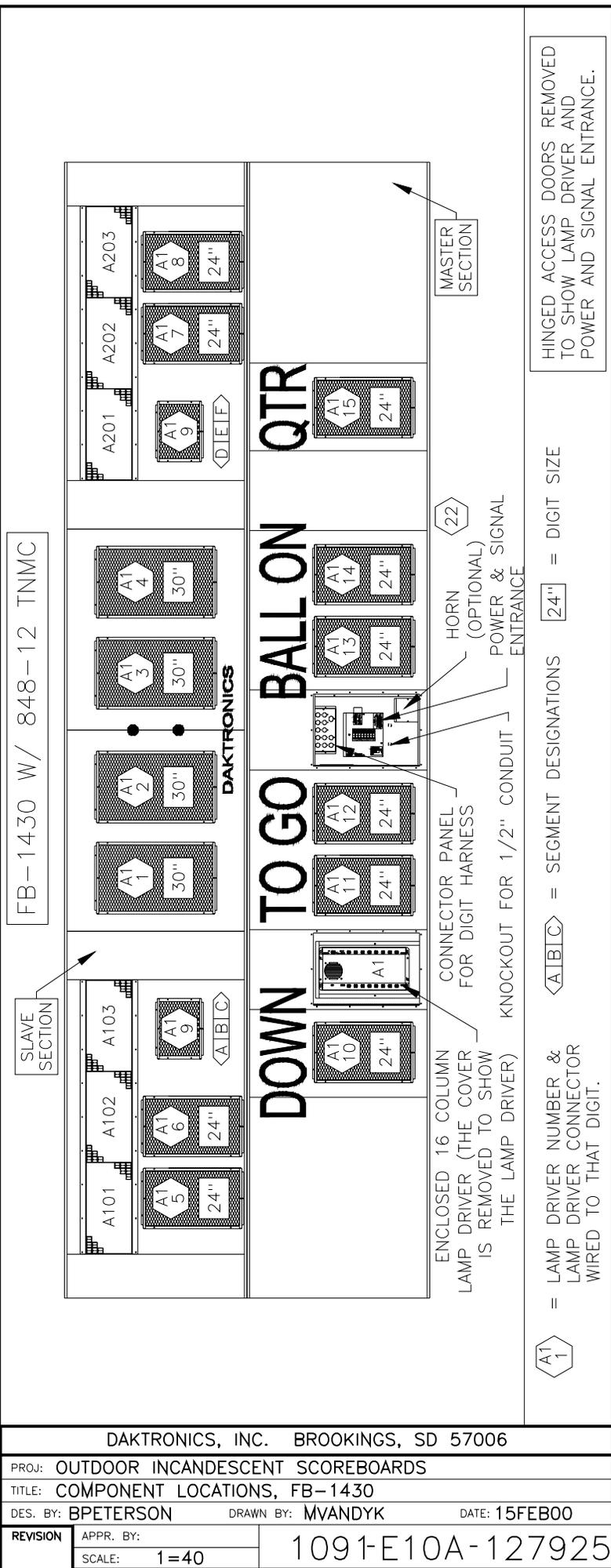
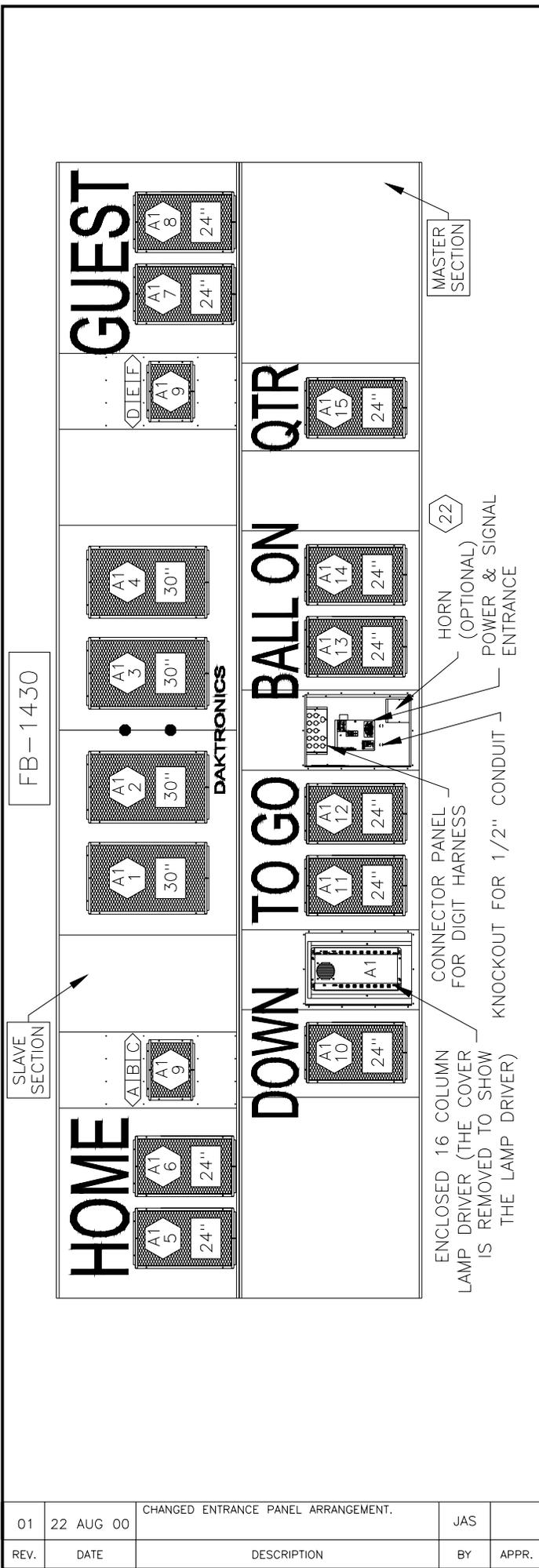
 = LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.

 = SEGMENT DESIGNATIONS

 = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS				
TITLE: COMPONENT LOCATIONS, FB-1624				
01	24 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JNILSE	
DES. BY:	BPETERSON	DRAWN BY:	MVANDYK	DATE: 16FEB00
REVISION	APPR. BY:			1091-E10A-127919
	SCALE: 1=40			



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

= LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.  
 <A1B1C> = SEGMENT DESIGNATIONS [24"] = DIGIT SIZE  
 22 = HORN (OPTIONAL) POWER & SIGNAL ENTRANCE

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

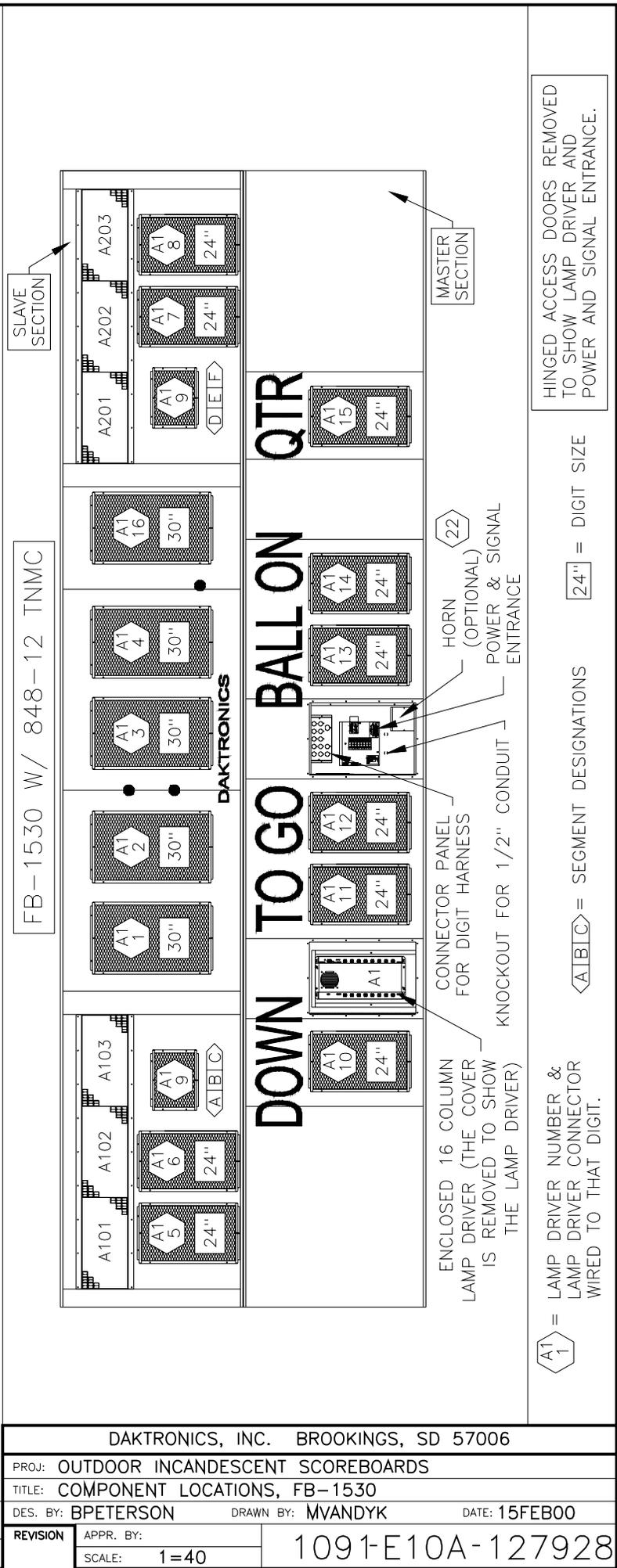
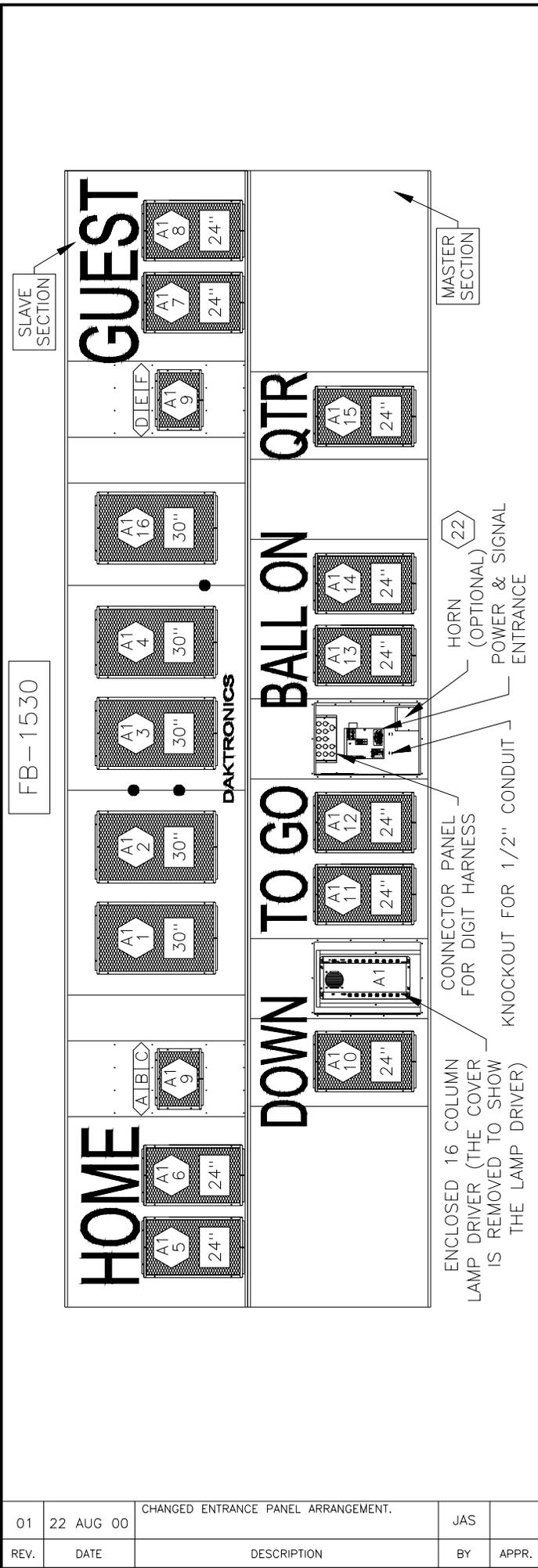
TITLE: COMPONENT LOCATIONS, FB-1430

DES. BY: BPETERSON DRAWN BY: MVANDYK DATE: 15FEB00

REVISION APPR. BY: SCALE: 1=40

1091-E10A-127925

REV.	DATE	DESCRIPTION	BY	APPR.
01	22 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	



REV.	DATE	DESCRIPTION	BY	APPR.
01	22 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, FB-1530			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 15FEB00	
REVISION	APPR. BY:	1091-E10A-127928	
	SCALE: 1=40		

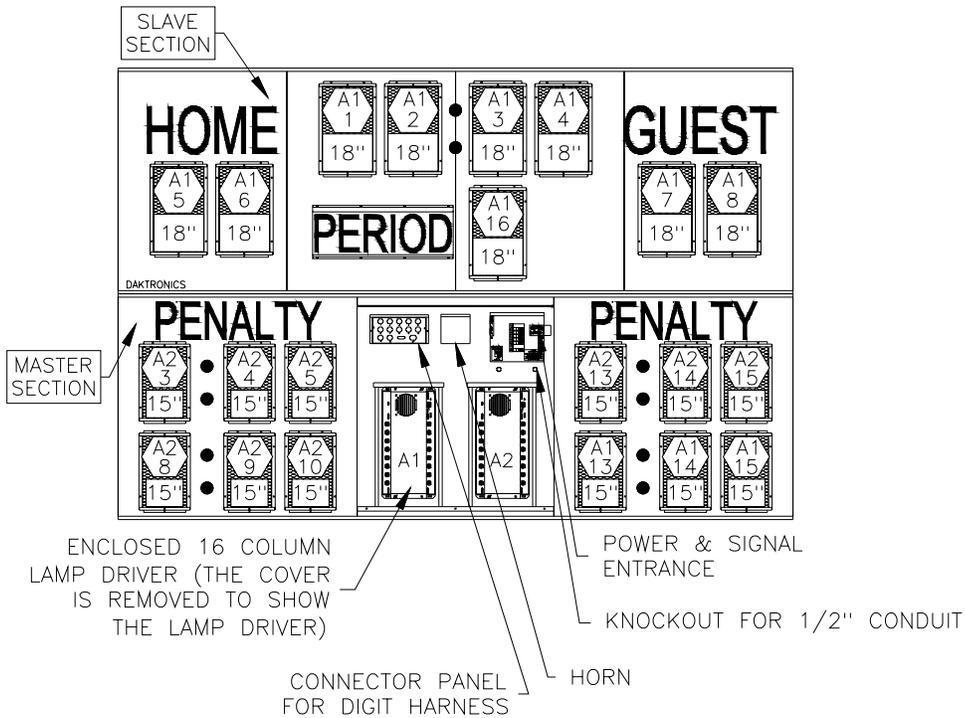
HINGED ACCESS DOORS REMOVED TO SHOW LAMP DRIVER AND POWER AND SIGNAL ENTRANCE.

24" = DIGIT SIZE

<A1B1C> = SEGMENT DESIGNATIONS

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

MS-2118



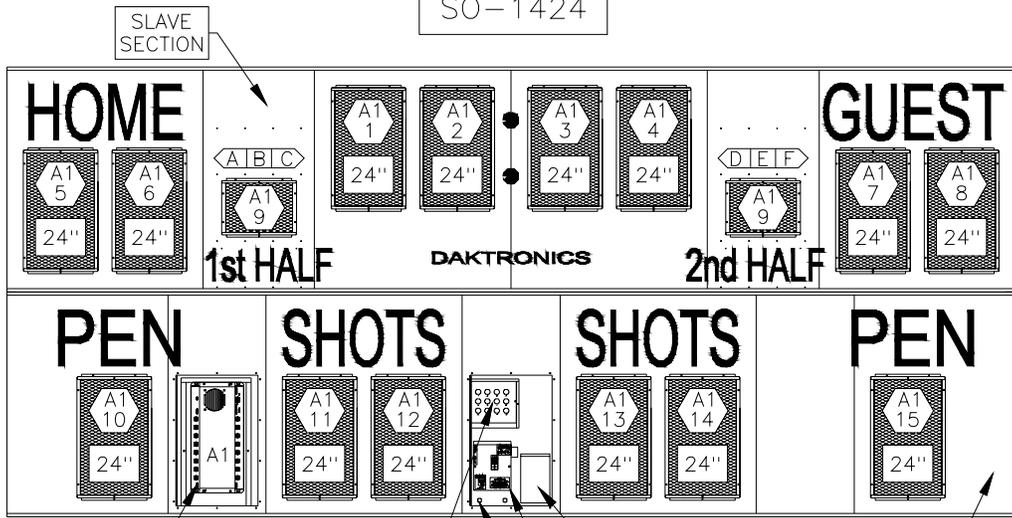
$\text{A1}$   
1 = LAMP DRIVER NUMBER &  
LAMP DRIVER CONNECTOR  
WIRED TO THAT DIGIT.

24" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS				
TITLE: COMPONENT LOCATIONS, MS-2118				
01	05MAR02	REMOVED THE 22 SEGMENT FROM THE HORN	MCOPL	
DES. BY:	BPETERSON	DRAWN BY:	MVANDYK	DATE: 16FEB00
REVISION	APPR. BY:	1091-E10A-127929		
SCALE:	1=40			
REV.	DATE	DESCRIPTION	BY	APPR.

SO-1424



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

CONNECTOR PANEL FOR DIGIT HARNESS

KNOCKOUT FOR 1/2" CONDUIT

POWER & SIGNAL ENTRANCE

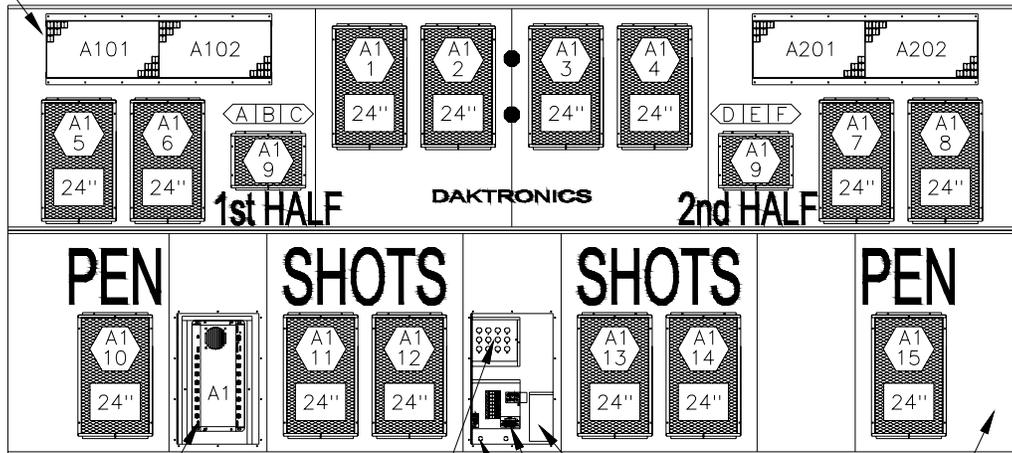
HORN (OPTIONAL)

MASTER SECTION



SO-1424 W/ 832-12 TNMC

SLAVE SECTION



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

CONNECTOR PANEL FOR DIGIT HARNESS

KNOCKOUT FOR 1/2" CONDUIT

POWER & SIGNAL ENTRANCE

HORN (OPTIONAL)

MASTER SECTION



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

= SEGMENT DESIGNATIONS

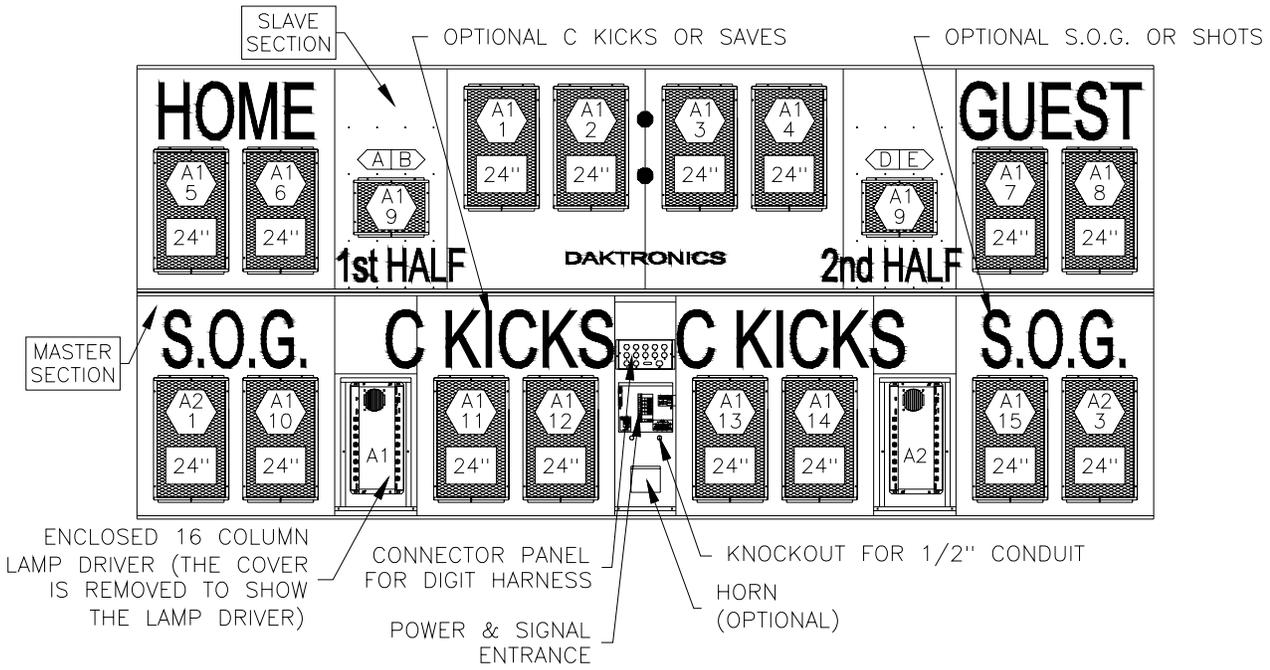
= DIGIT SIZE

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

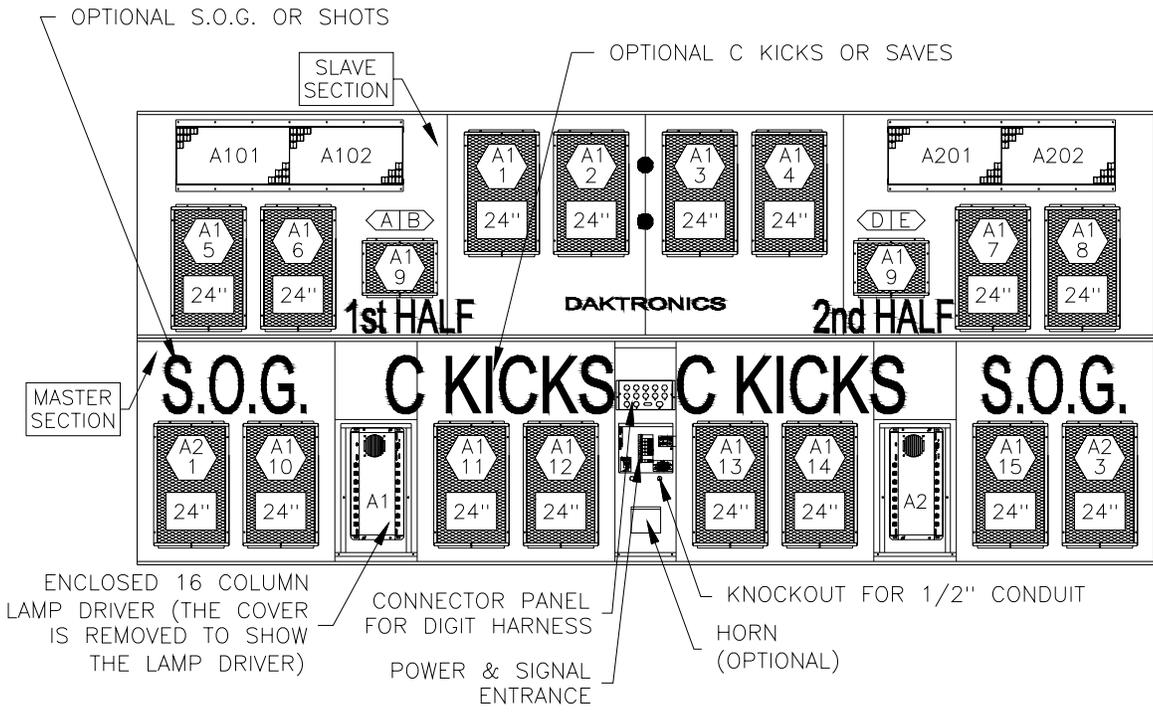
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, SO-1424			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 16FEB00	
REVISION	APPR. BY:	1091-E10A-127946	
	SCALE: 1=40		

REV.	DATE	DESCRIPTION	BY	APPR.

SO-1624



SO-1624 W/ 832-12 TNMC

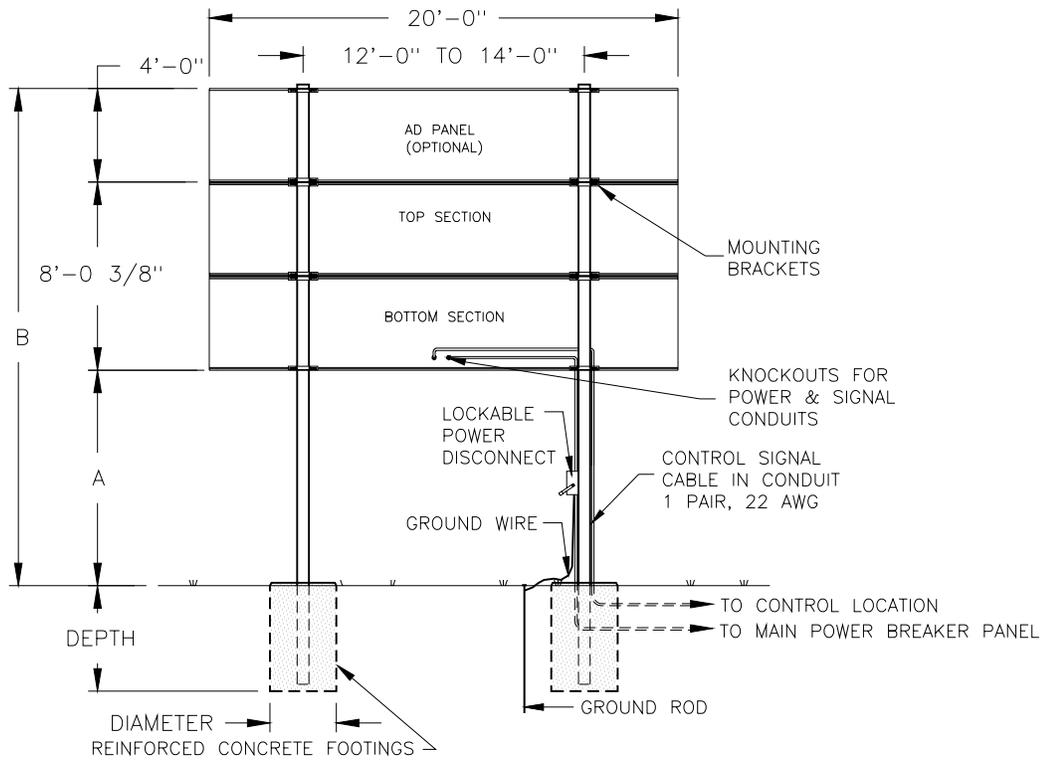


A1  
1 = LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.
 <A1B> = SEGMENT DESIGNATIONS
24" = DIGIT SIZE

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

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, SO-1624			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 16FEB00	
REVISION	APPR. BY:	1091-E10A-127950	
	SCALE: 1=40		

01	13FEB02	UPDATED COMPONENTS PER CURRENT DESIGN	MCOPL	
REV.	DATE	DESCRIPTION	BY	APPR.



**ELECTRICAL**

**REAR VIEW**

FB-2002 & FB-2003

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

**FB-2002 & FB-2003**

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

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

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

**A NOTE ABOUT BEAM NOMENCLATURE:**

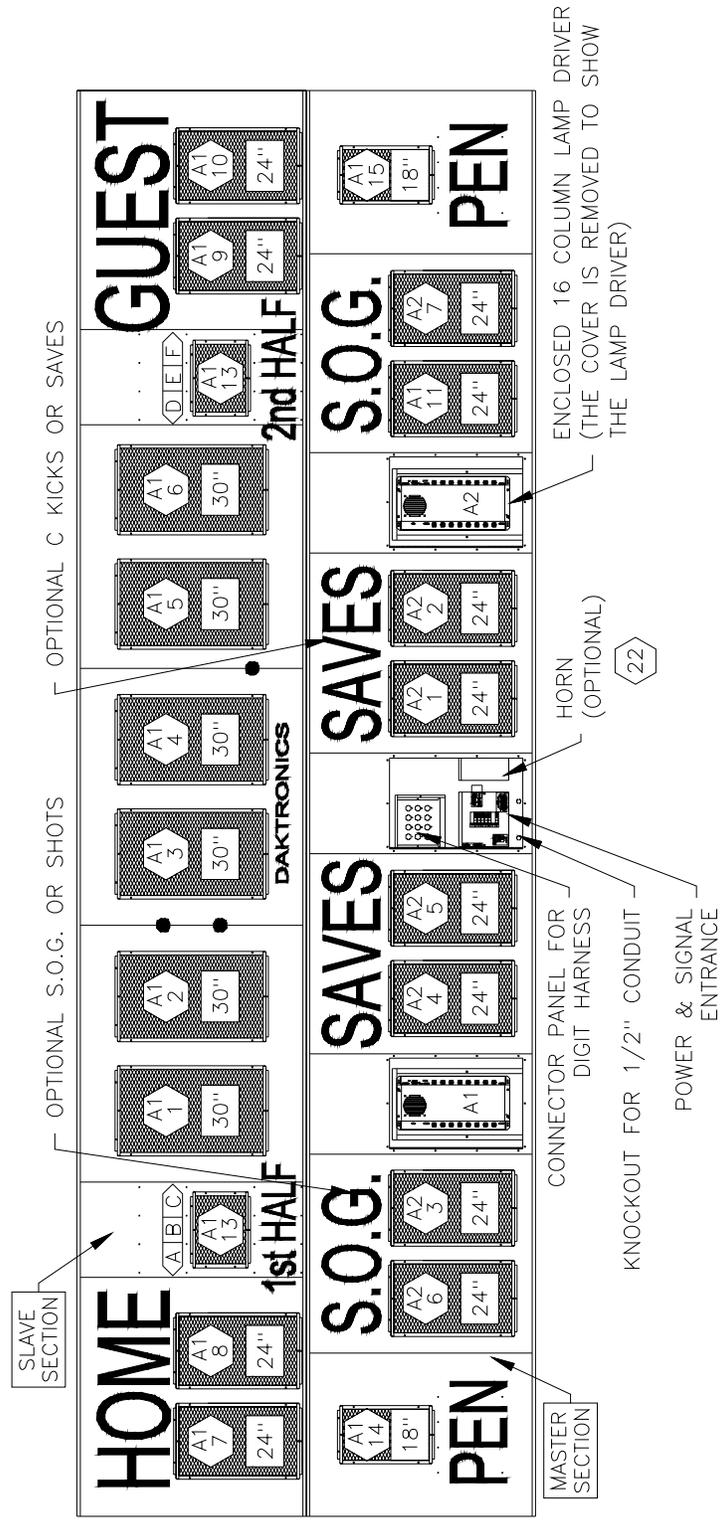
For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 8 to 14 inches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

FOOTING = DIAMETER X DEPTH

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

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS, FB-2002 & FB-2003			
DES. BY: MVANDYK	DRAWN BY: MVANDYK	DATE: 15JAN01	
REVISION	APPR. BY:	1/8" = 1'	
			1091-E10A-128044

SO-2030



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

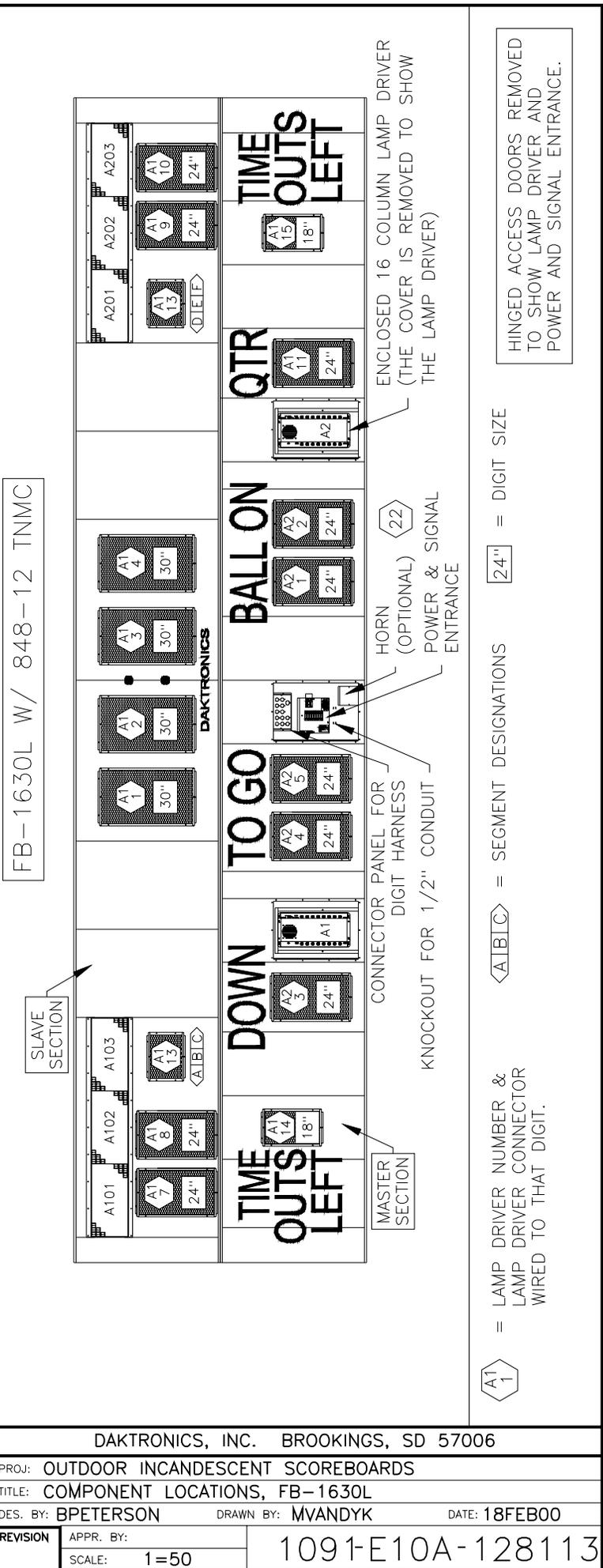
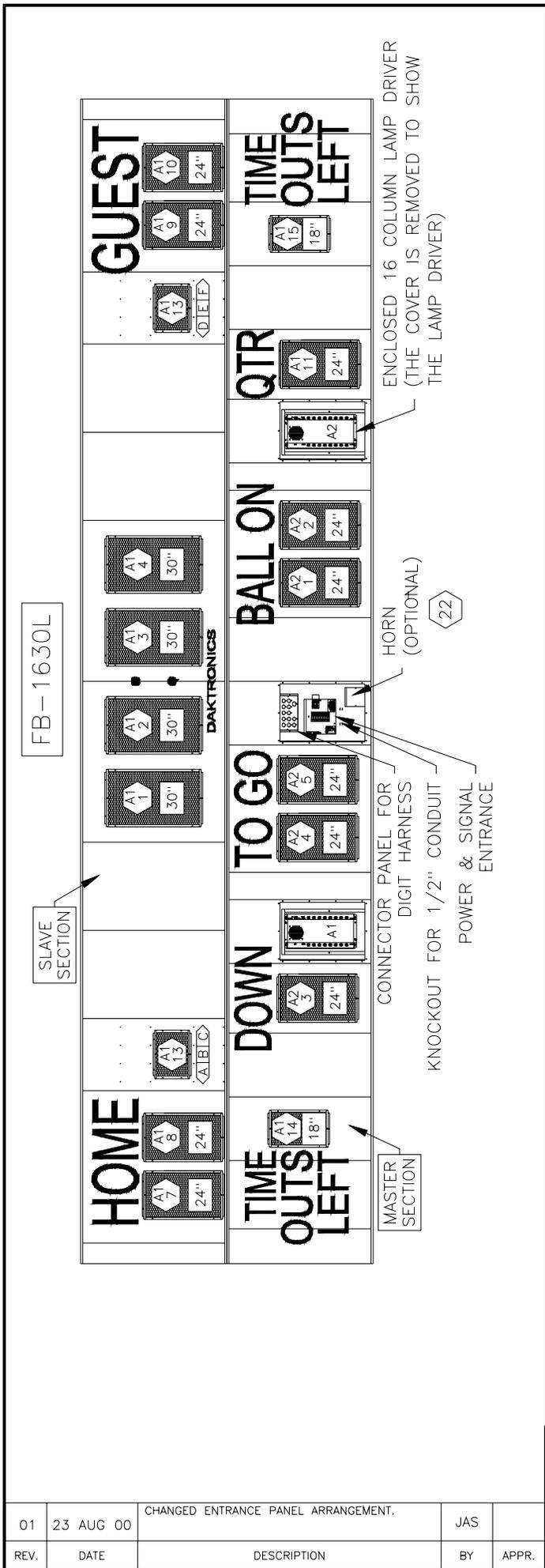
A1B1C = SEGMENT DESIGNATIONS

24" = DIGIT SIZE

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

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS	
TITLE: COMPONENT LOCATIONS, SO-2030	
DES. BY: BPETERSON	DATE: 18FEB00
DRAWN BY: MVANDYK	
REVISION	APPR. BY:
SCALE: 1=40	
1091-E10A-128111	



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

24" = DIGIT SIZE

22" = SEGMENT DESIGNATIONS

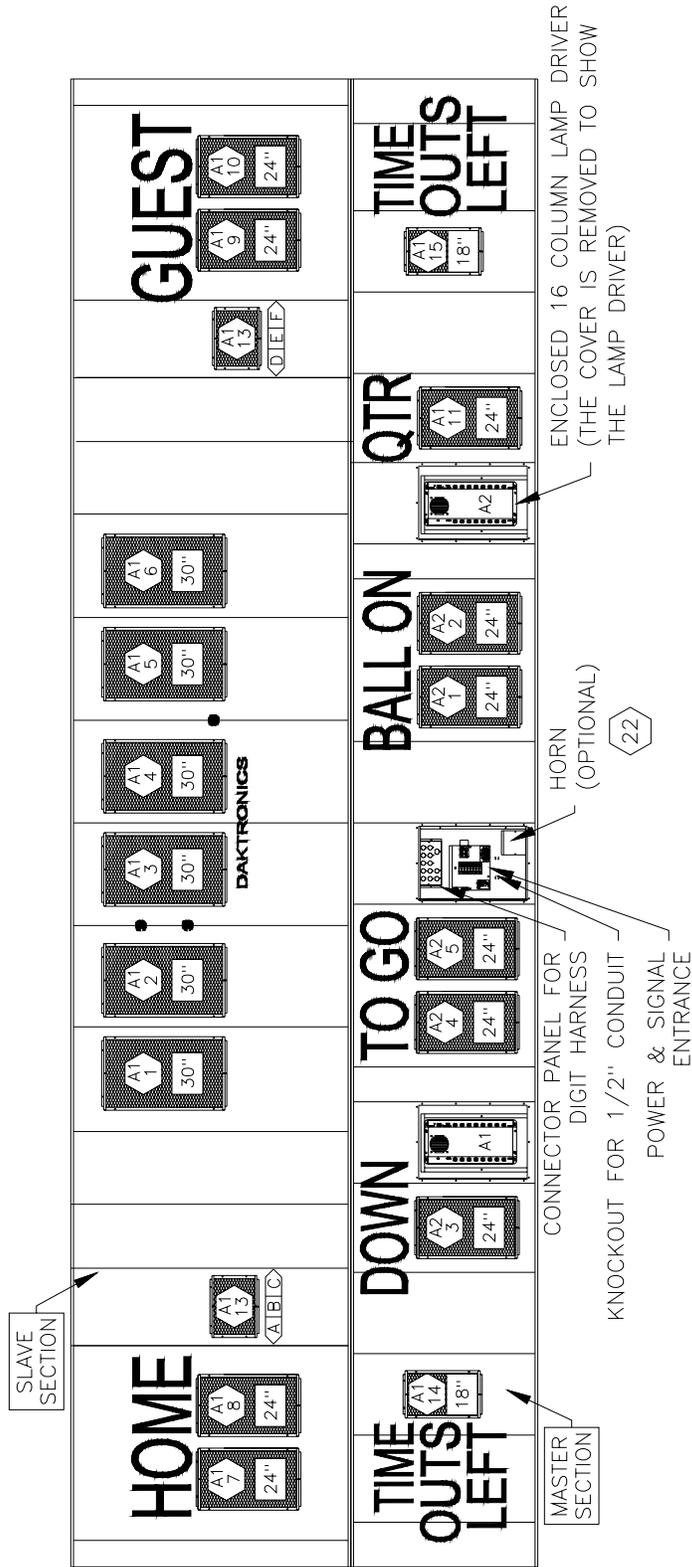
A1 1 = LAMP DRIVER NUMBER & LAMP DRIVER CONNECTOR WIRED TO THAT DIGIT.

01	23 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: COMPONENT LOCATIONS, FB-1630L			
DES. BY: BPETERSON	DRAWN BY: MVANDYK	DATE: 18FEB00	
REVISION	APPR. BY:	1091-E10A-128113	
	SCALE: 1=50		



FB-2001



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

$\text{A1} \begin{array}{|c|} \hline 1 \\ \hline \end{array}$  = LAMP DRIVER NUMBER &  
LAMP DRIVER CONNECTOR  
WIRED TO THAT DIGIT.

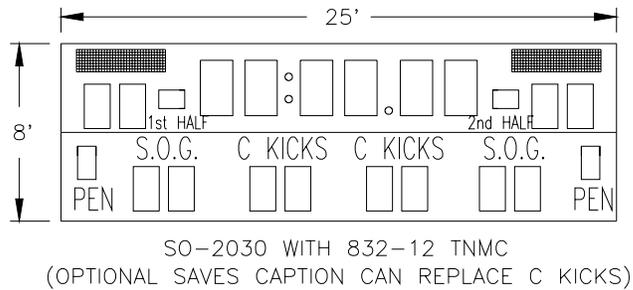
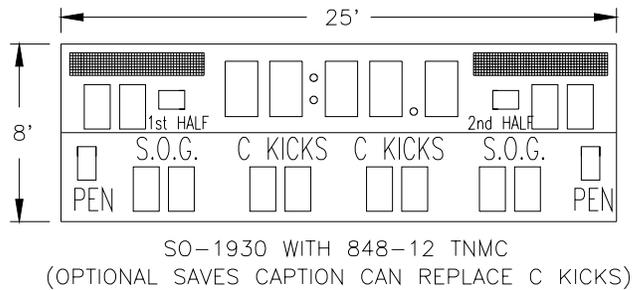
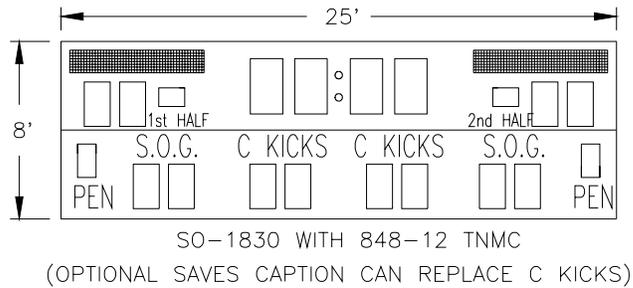
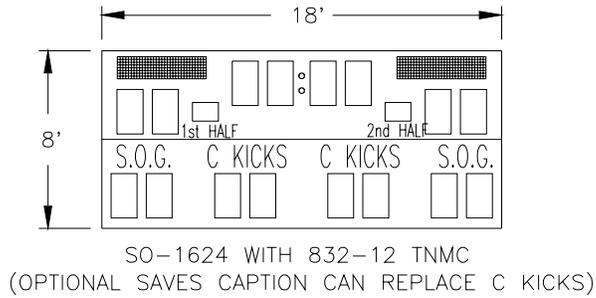
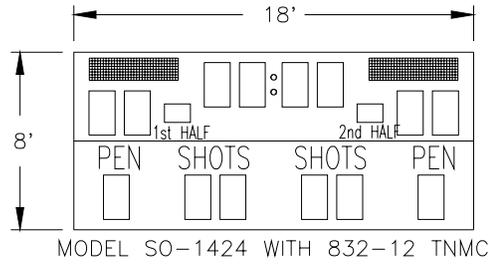
$\text{A|B|C}$  = SEGMENT DESIGNATIONS

$\text{24"}$  = DIGIT SIZE

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

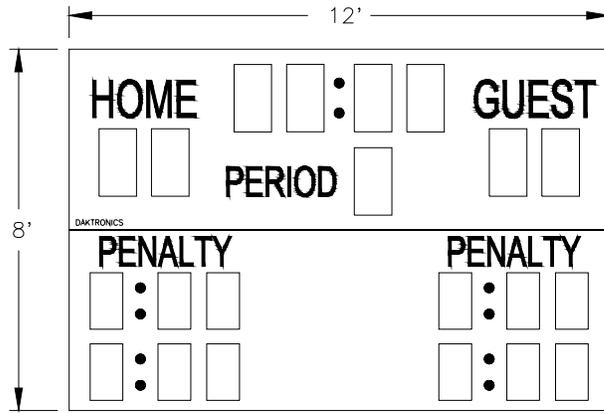
REV.	DATE	DESCRIPTION	BY	APPR.
02	21JUN01	MOVED CLOCK DIGITS UP 12" AND MOVED INDICATOR PANELS NEXT TO SCORE DIGITS	MCOPL	
01	23 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	OUTDOOR INCANDESCENT SCOREBOARDS
TITLE:	COMPONENT LOCATIONS, FB-2001
DES. BY:	BPETERSON
DRAWN BY:	MVANDYK
DATE:	18FEB00
REVISION	APPR. BY:
SCALE:	1=50
1091-E10A-128120	

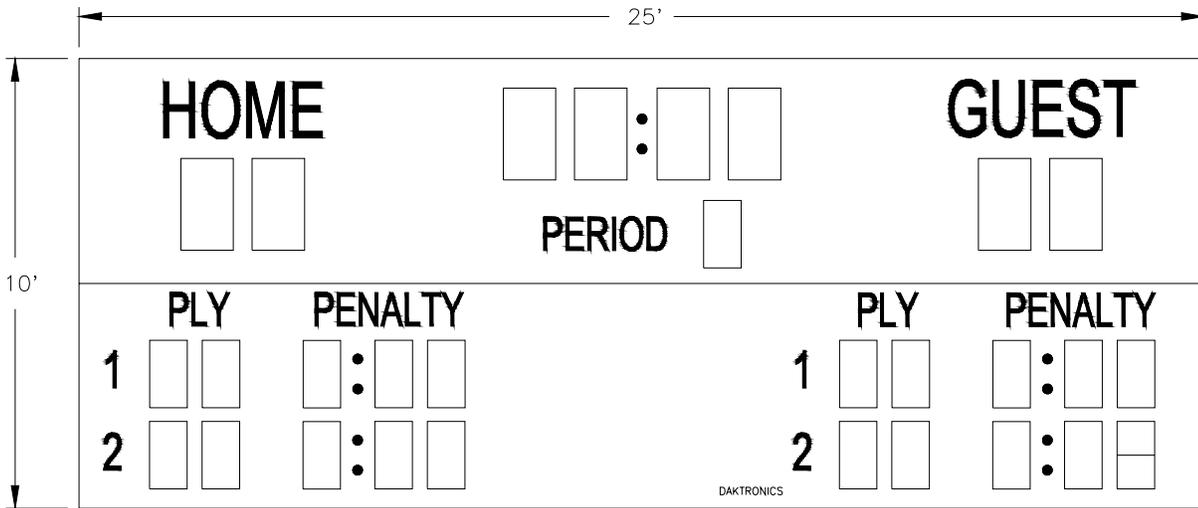


01	13MAR03	ADDED MODEL SO-2030	MCOPL	
REV.	DATE	DESCRIPTION	BY	APPR.

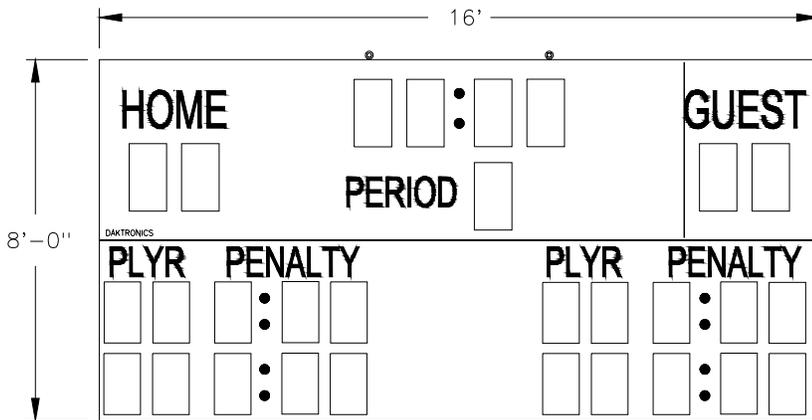
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: MULTIPLE SECTION SOCCER SCBD MODELS W/TNMC			
DES. BY: BPETERSON		DRAWN BY: BPETERSON	
		DATE: 21FEB00	
REVISION	APPR. BY:	1091-E10A-128172	
	SCALE: 1=100		



MS-2118



MS-2009



MS-2918

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: MULTIPLE SECTION MULTISPORT SCBD MODELS

DES. BY: BPETERSON

DRAWN BY: BPETERSON

DATE: 22FEB00

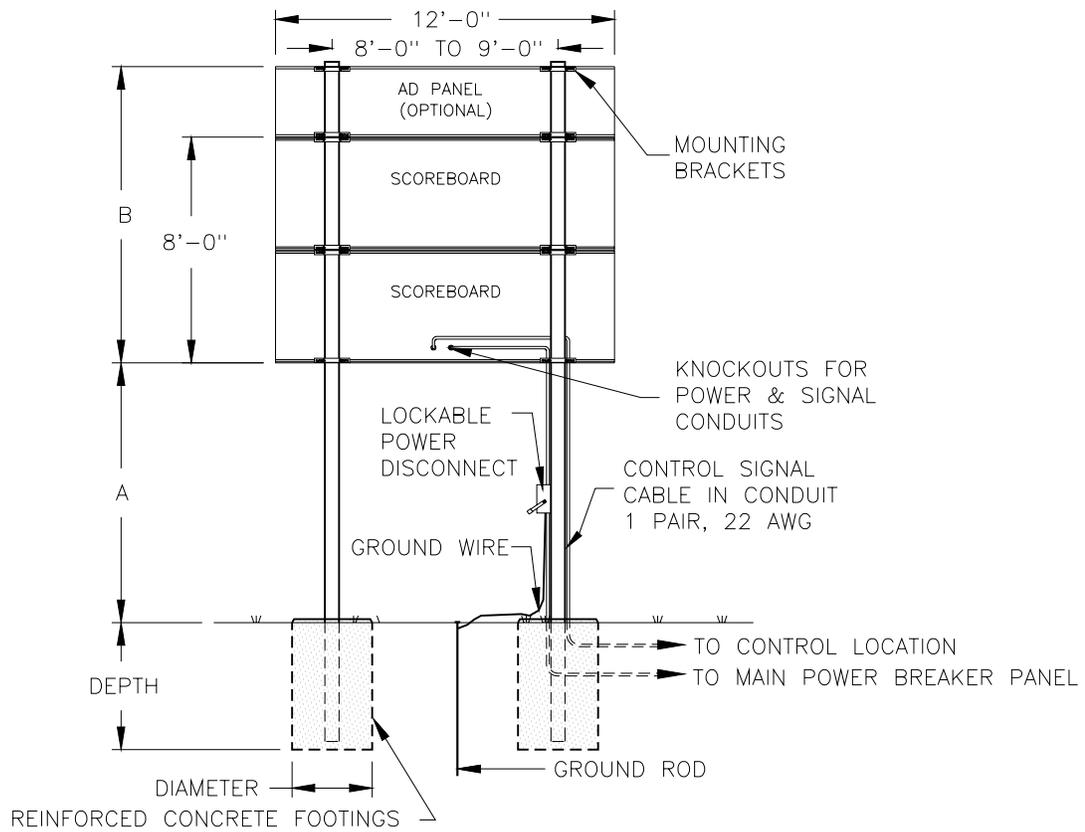
REVISION

APPR. BY:

SCALE: 1=50

1091-E10A-128203

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



**ELECTRICAL**

**REAR VIEW**

MS-2118

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

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

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

FOOTING = DIAMETER X DEPTH

**A NOTE ABOUT BEAM NOMENCLATURE:**

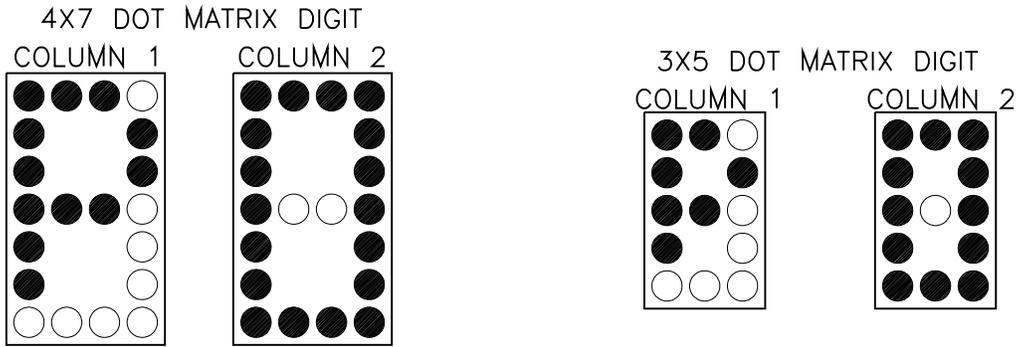
For a typical beam, W12x30 for example, "W" stands for "Wide-Flange Beam". The first number (12) is the approximate front to rear dimension of the beam in inches. The second number (30) is the weight per foot in pounds. This numbering is standard in the steel industry. Widths vary from 4 to 8 inches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

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

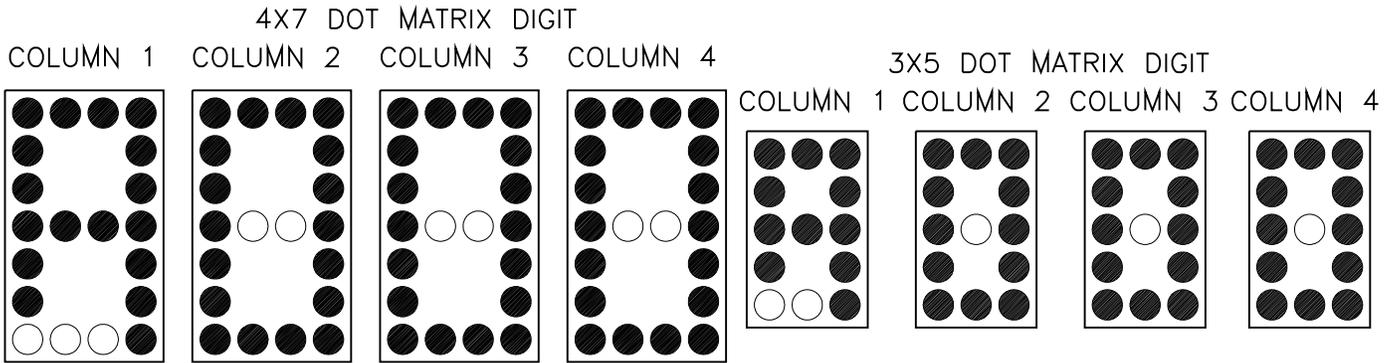
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS, MS-2118			
DES. BY: BPETERSON	DRAWN BY: BPETERSON	DATE: 22FEB00	
REVISION	APPR. BY:	1091-R10A-128206	
	SCALE: 1=80		



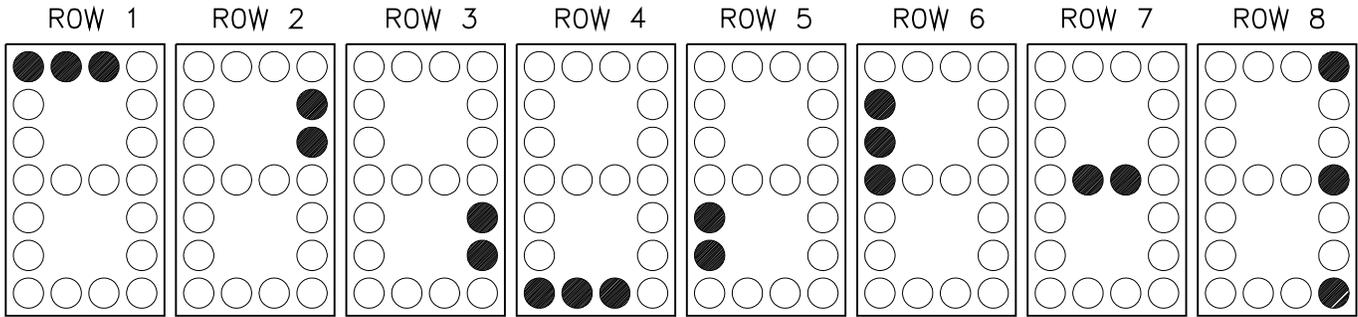
1ST CYCLE OF SELF TEST PATTERN SHOWN WITH NO PROTOCOL PINS SET ON J26



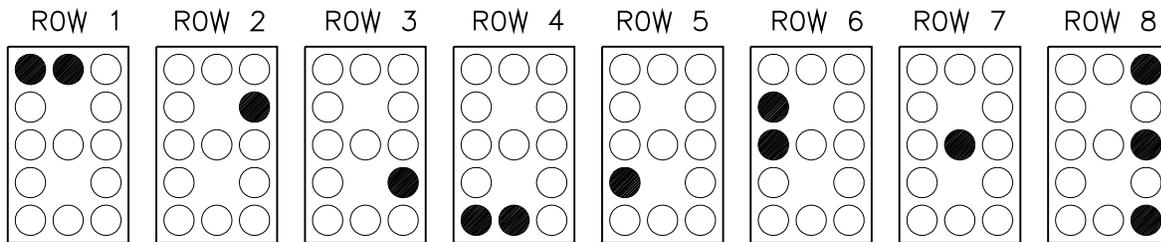
2ND CYCLE OF SELF TEST PATTERN SHOWN WITH NO ADDRESS PINS SET ON J25



3RD CYCLE OF SELF TEST PATTERN ON 4X7 DIGITS STARTING WITH ROW1 GOING TO ROW 8



3RD CYCLE OF SELF TEST PATTERN ON 3X5 DIGITS STARTING WITH ROW1 GOING TO ROW 8



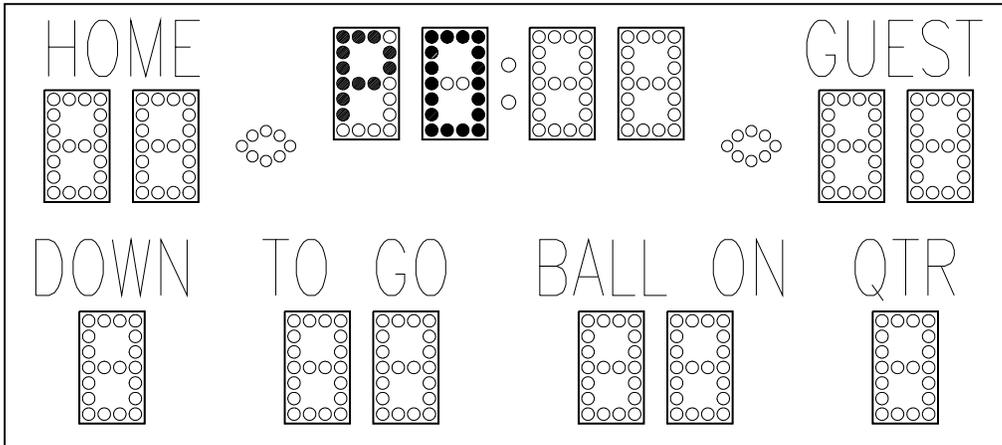
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: \_\_\_\_\_  
 TITLE: INCANDESCENT DRIVER POWER UP SELF TEST  
 DES. BY: \_\_\_\_\_ DRAWN BY: E BRAVEK DATE: 23 FEB 00

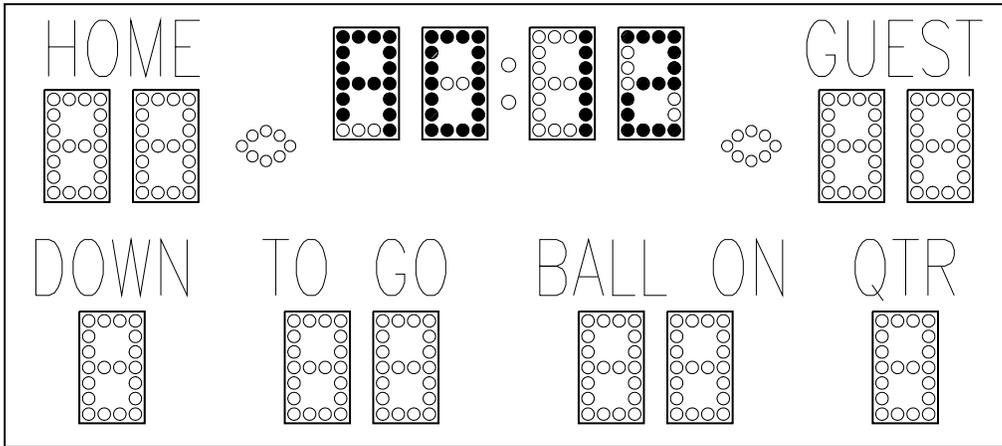
REVISION    APPR. BY: \_\_\_\_\_  
 SCALE: NONE      1033-E07A-128283

REV.	DATE	DESCRIPTION	BY	APPR.

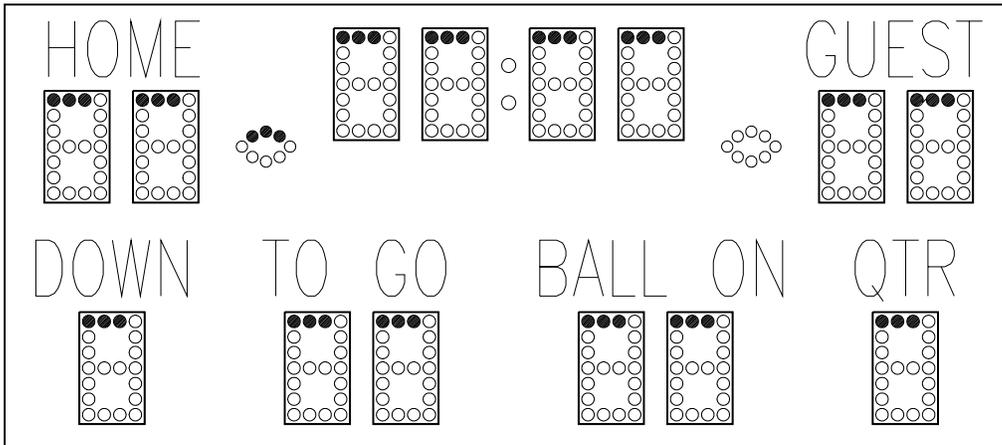
1ST CYCLE OF THE SELF TEST PATTERN WITH THE NO PROTOCOL PINS SET FOR A FB-1424



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



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



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

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: POWER UP SELF TEST ON A FB-1424

DES. BY:

DRAWN BY: E BRAVEK

DATE: 23 FEB 00

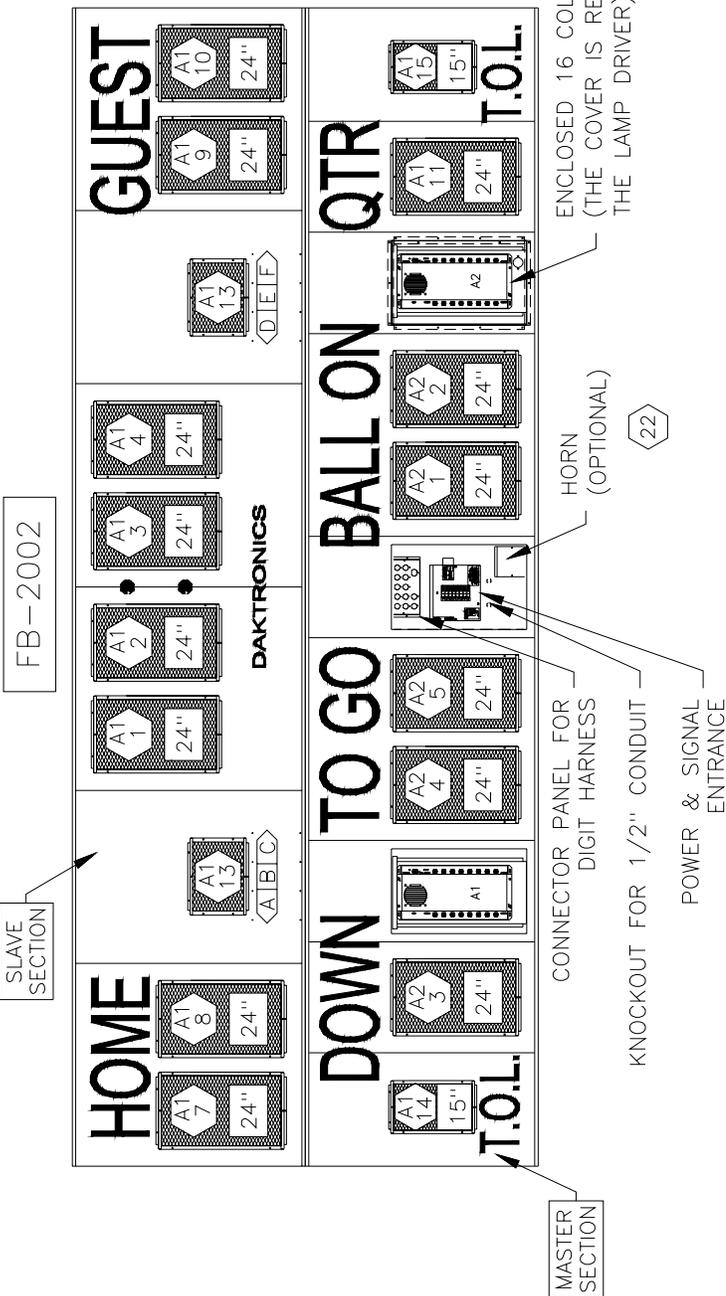
REVISION

APPR. BY:

SCALE: NONE

1033-E07A-128301

REV.	DATE	DESCRIPTION	BY	APPR.



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

HORN  
(OPTIONAL)

CONNECTOR PANEL FOR  
DIGIT HARNESS  
KNOCKOUT FOR 1/2" CONDUIT  
POWER & SIGNAL  
ENTRANCE

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

[A1 B C] = SEGMENT DESIGNATIONS [24"] = DIGIT SIZE

[A1 1] = LAMP DRIVER NUMBER &  
LAMP DRIVER CONNECTOR  
WIRED TO THAT DIGIT.

01	23 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

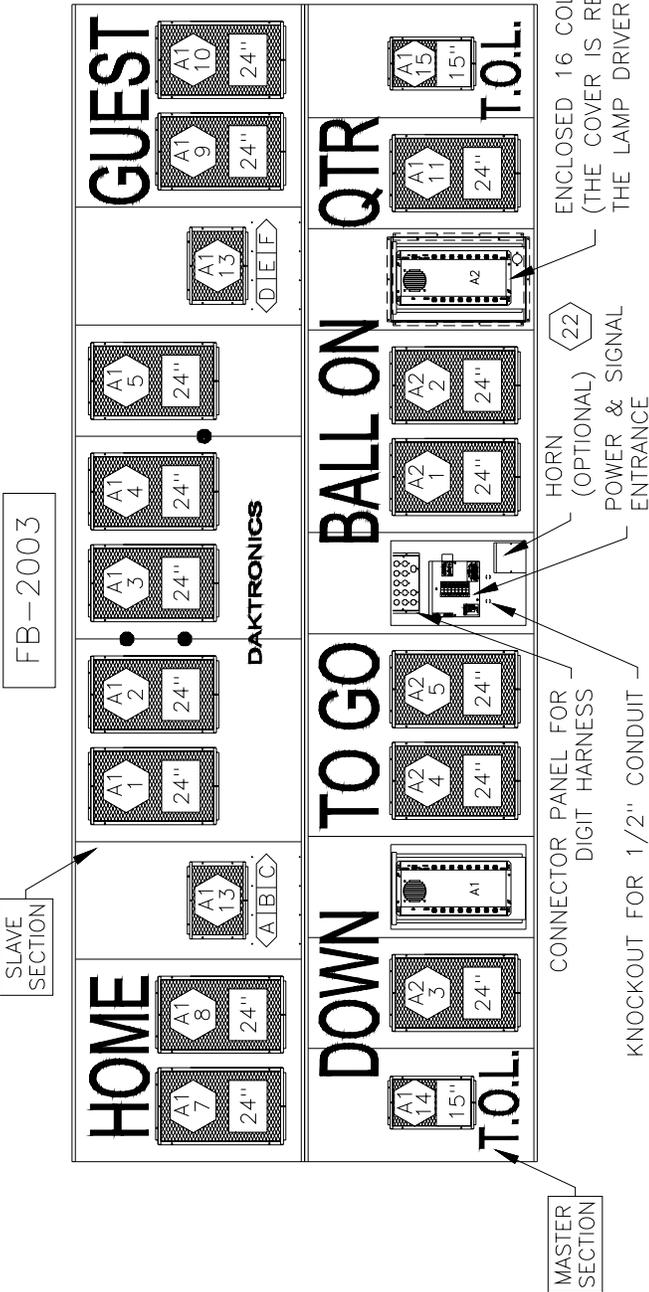
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, FB-2002

DES. BY: GBREEN DRAWN BY: GBREEN DATE: 16MAR00

REVISION APPR. BY: SCALE: 1=40

1091-E10A-129642



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

HORN  
(OPTIONAL)  
POWER & SIGNAL  
ENTRANCE

CONNECTOR PANEL FOR  
DIGIT HARNESS

KNOCKOUT FOR 1/2" CONDUIT

FB-2003

SLAVE  
SECTION

MASTER  
SECTION

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

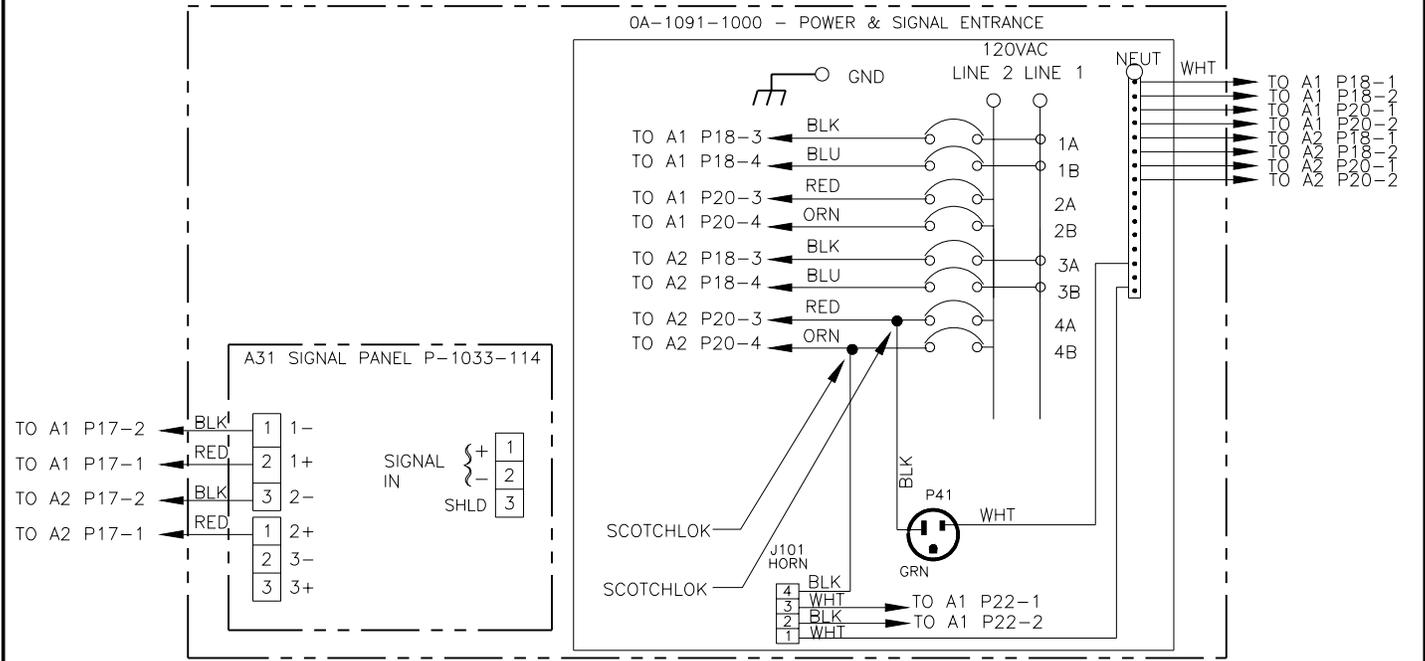
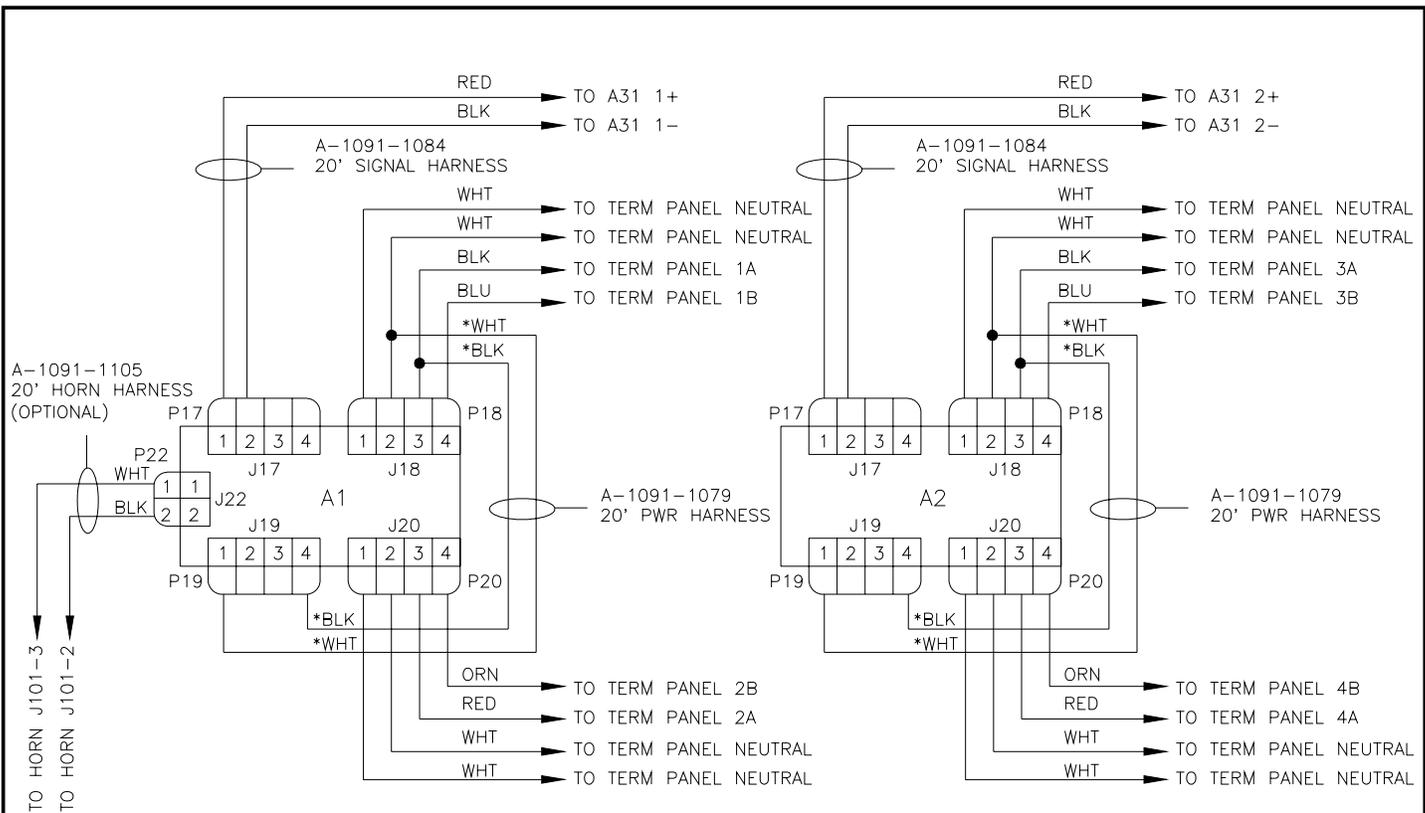
A1 1 = LAMP DRIVER NUMBER &  
A1 B C = SEGMENT DESIGNATIONS 24" = DIGIT SIZE  
A2 22 = DIGIT SIZE  
A1 1 = LAMP DRIVER NUMBER &  
A1 B C = SEGMENT DESIGNATIONS 24" = DIGIT SIZE  
A2 22 = DIGIT SIZE  
 WIRED TO THAT DIGIT.

REV.	DATE	DESCRIPTION	BY	APPR.
2	23 AUG 00	CHANGED ENTRANCE PANEL ARRANGEMENT.	JAS	
1	16MAY00	UPDATED LAMP DRIVER NUMBERS	GBREE	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS  
 TITLE: COMPONENT LOCATIONS, FB-2003  
 DES. BY: GBREEN      DRAWN BY: GBREEN      DATE: 16MAR00

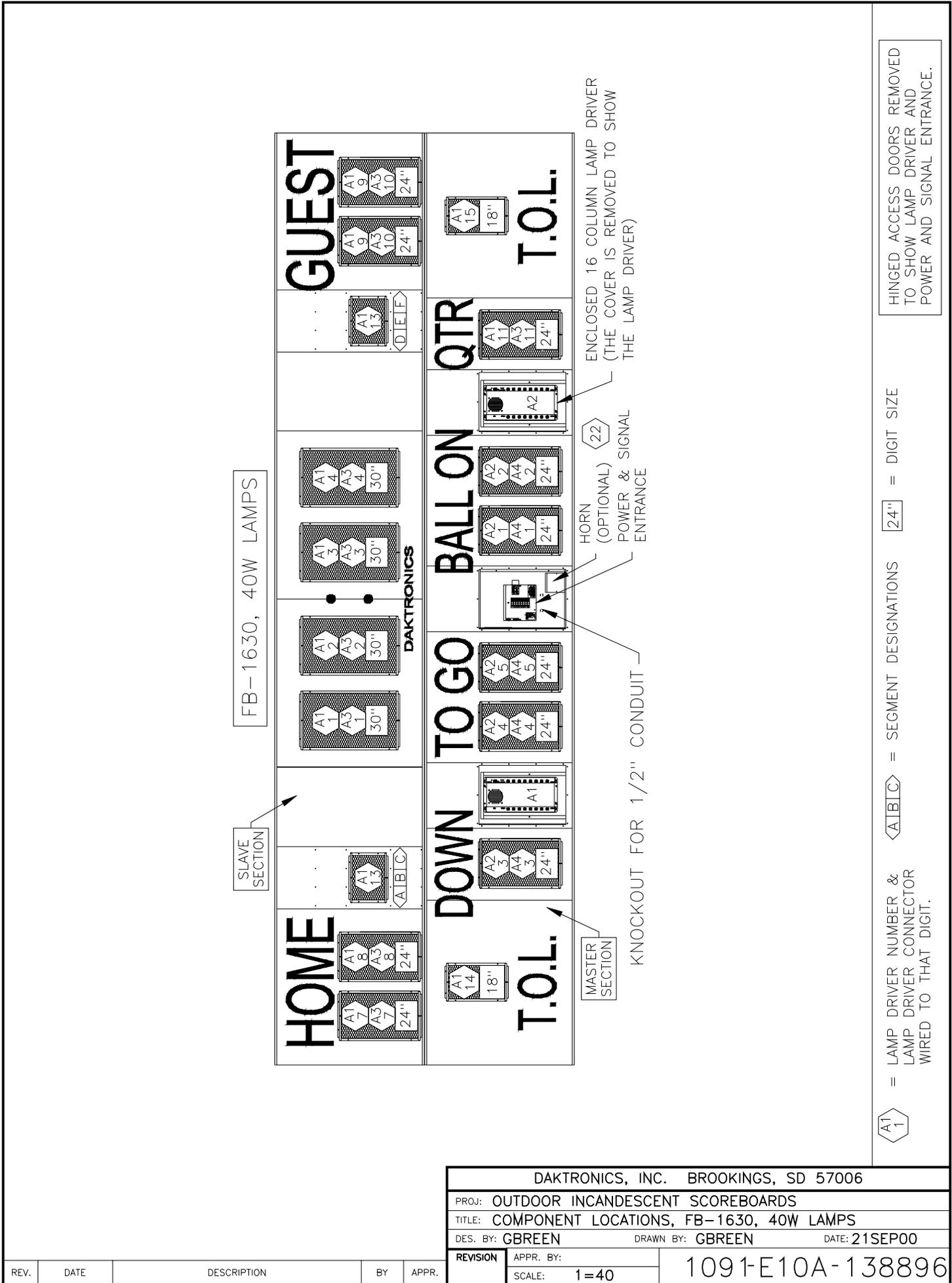
REVISION	APPR. BY:	1091-E10A-129643
SCALE:	1=40	



NOTE:  
 ALL WIRE IS 12 AWG, EXCEPT \* IS 14 AWG & SIGNAL PAIR IS 22 AWG.  
 ALL BREAKERS ARE 20 AMP.

<b>DAKTRONICS, INC. BROOKINGS, SD 57006</b>			
PROJ: <b>OUTDOOR INCANDESCENT SCOREBOARDS</b>			
TITLE: <b>SCHEMATIC; 2 DRIVERS FULLY LOADED</b>			
DES. BY: <b>RASMUS</b>		DRAWN BY: <b>RASMUS</b>	
		DATE: <b>20APR00</b>	
<b>REVISION</b>	APPR. BY:	<b>1091-R03A-131295</b>	
	SCALE: <b>1=1</b>		

1	17OCT01	CHANGED FROM AN B TO A SIZE	MRV	CMC
REV.	DATE	DESCRIPTION	BY	APPR.



FB-1630, 40W LAMPS

SLAVE SECTION

**GUEST**

A1 9 18"  
A3 10 24"  
A1 13 18"  
DIE F

A1 4 30"  
A3 4 30"  
A1 3 30"  
A3 3 30"  
A1 2 30"  
A3 2 30"  
A1 1 30"  
A3 1 30"  
DAKTRONICS

A1 13 24"  
A1 7 24"  
A3 8 24"  
A1 14 18"

A1 13 24"

A1 14 18"  
A1 7 24"  
A3 8 24"

**T.O.L.**

A1 15 18"

A1 11 24"  
A3 11 24"

A2 2 24"  
A4 2 24"

A2 1 24"  
A4 1 24"

A2 5 24"  
A4 5 24"

A2 4 24"  
A4 4 24"

A1 1 24"

A2 3 24"  
A4 3 24"

A2 3 24"  
A4 3 24"

A1 14 18"

**T.O.L.**

A1 14 18"

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

HORN  
(OPTIONAL)  
POWER & SIGNAL  
ENTRANCE

KNOCKOUT FOR 1/2" CONDUIT

MASTER SECTION

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

24" = DIGIT SIZE

A1B1C = SEGMENT DESIGNATIONS

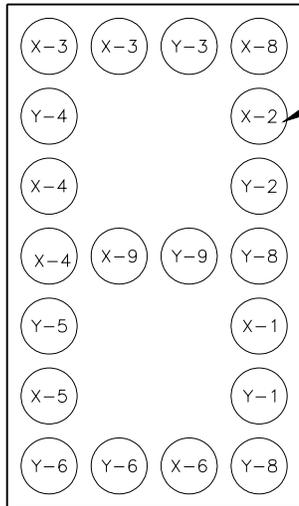
A1 = LAMP DRIVER NUMBER &  
LAMP DRIVER CONNECTOR  
WIRED TO THAT DIGIT.

A1 1

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS	
TITLE: COMPONENT LOCATIONS, FB-1630, 40W LAMPS	
DES. BY: GBREEN	DATE: 21SEP00
DRAWN BY: GBREEN	
REVISION	APPR. BY:
SCALE: 1=40	
1091-E10A-138896	

REV.	DATE	DESCRIPTION	BY	APPR.

FRONT VIEW



DIGIT LAMP

THE NUMBERS IN THE CIRCLES REPRESENT THE LAMP DRIVER CONNECTOR PIN NUMBER WIRED TO EACH LAMP.

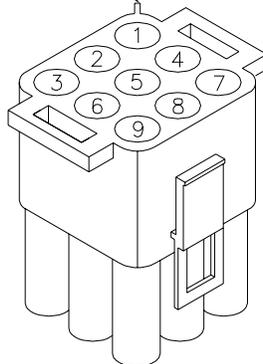
4X7 DOT MATRIX DIGIT

LAMP DRIVER X CONNECTOR

LAMP DRIVER Y CONNECTOR

CONNECTOR PIN NUMBERING

NOTE SPLINE NEAR NO. 1



COLOR CODE		
PIN NO.	WIRE COLOR	DRIVER SEGMENT
1	ORANGE	C
2	RED	B
3	BROWN	A
4	BLUE	F
5	PINK	E
6	TAN	D
7	BLACK	COMMON
8	GRAY	H
9	VIOLET	G

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARD

TITLE: SEGMENTATION, 4X7 DIGIT

DES. BY:

DRAWN BY: GSCHIEF

DATE: 18 JAN 01

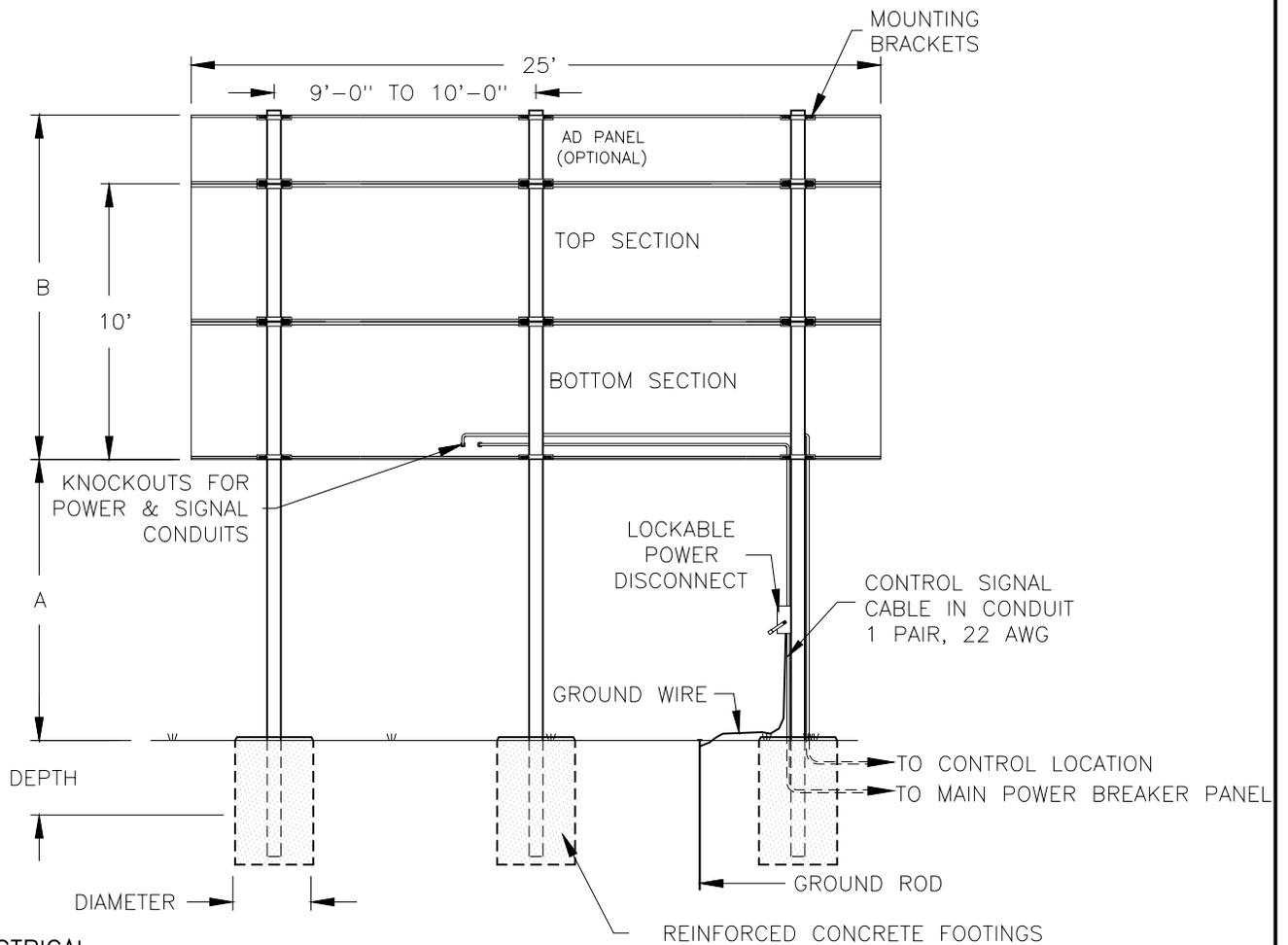
REVISION

APPR. BY:

SCALE: NONE

1158-R04A-143233

REV.	DATE	DESCRIPTION	BY	APPR.



**ELECTRICAL**

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

REAR VIEW

MS-2009

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

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

A NOTE ABOUT BEAM NOMENCLATURE:

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

MODEL MS-2009						
VERTICAL DISTANCE (A)	AD PANEL HEIGHT	COMBINED HEIGHT (B)		DESIGN WIND VELOCITY		
				70 MPH	80 MPH	100 MPH
10 FT	NONE	10'-0"	BEAM	W12X26	W12X26	W10x33
			FOOTING	3'x7.5'	3'x8.2'	3'x9.8'
	2 FT	12'-0"	BEAM	W14X30	W10X33	W12X40
			FOOTING	3'x8.2'	3'x9.0'	3'x10.7'
	4 FT	14'-0"	BEAM	W10X33	W10X39	W12X45
			FOOTING	3'x8.8'	3'x9.7'	3'x11.5'
12 FT	NONE	10'-0"	BEAM	W14X30	W10X33	W12X40
			FOOTING	3'x7.8'	3'x8.6'	3'x10.2'
	2 FT	12'-0"	BEAM	W10X33	W14X38	W14X43
			FOOTING	3'x8.5'	3'x9.4'	3'x11.1'
	4 FT	14'-0"	BEAM	W10X39	W12X40	W14X53
			FOOTING	3'x9.1'	3'x10.1'	3'x11.9'
14 FT	NONE	10'-0"	BEAM	W10X33	W10X35	W12X40
			FOOTING	3'x8.1'	3'x9.0'	3'x10.6'
	2 FT	12'-0"	BEAM	W10X38	W12X40	W14X48
			FOOTING	3'x8.8'	3'x9.7'	3'x11.5'
	4 FT	14'-0"	BEAM	W12X40	W12X45	W14X61
			FOOTING	3'x9.5'	3'x10.4'	3'x12.4'

FOOTING = DIAMETER X DEPTH

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

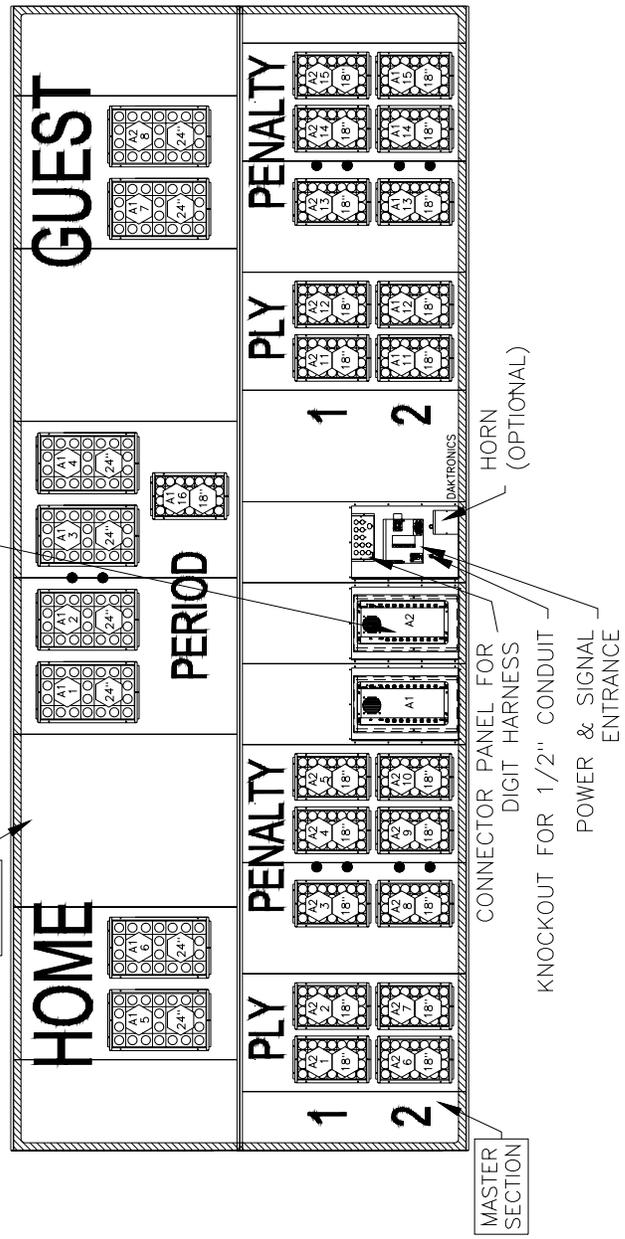
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: INSTALLATION SPECIFICATIONS, MS-2009			
DES. BY: RNEYENS		DRAWN BY: RNEYENS	
		DATE: 9FEB01	
REVISION	APPR. BY:	1091-R10A-144415	
	SCALE: 1=80		

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

MS-2009

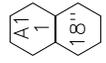
ENCLOSED 16 COLUMN LAMP DRIVER  
(THE COVER IS REMOVED TO SHOW  
THE LAMP DRIVER)

SLAVE  
SECTION



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

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



1	27FEB01	CHANGED HARNESS LENGTHS TO DIGIT SIZE.	TWEBER	
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: COMPONENT LOCATIONS, MS-2009

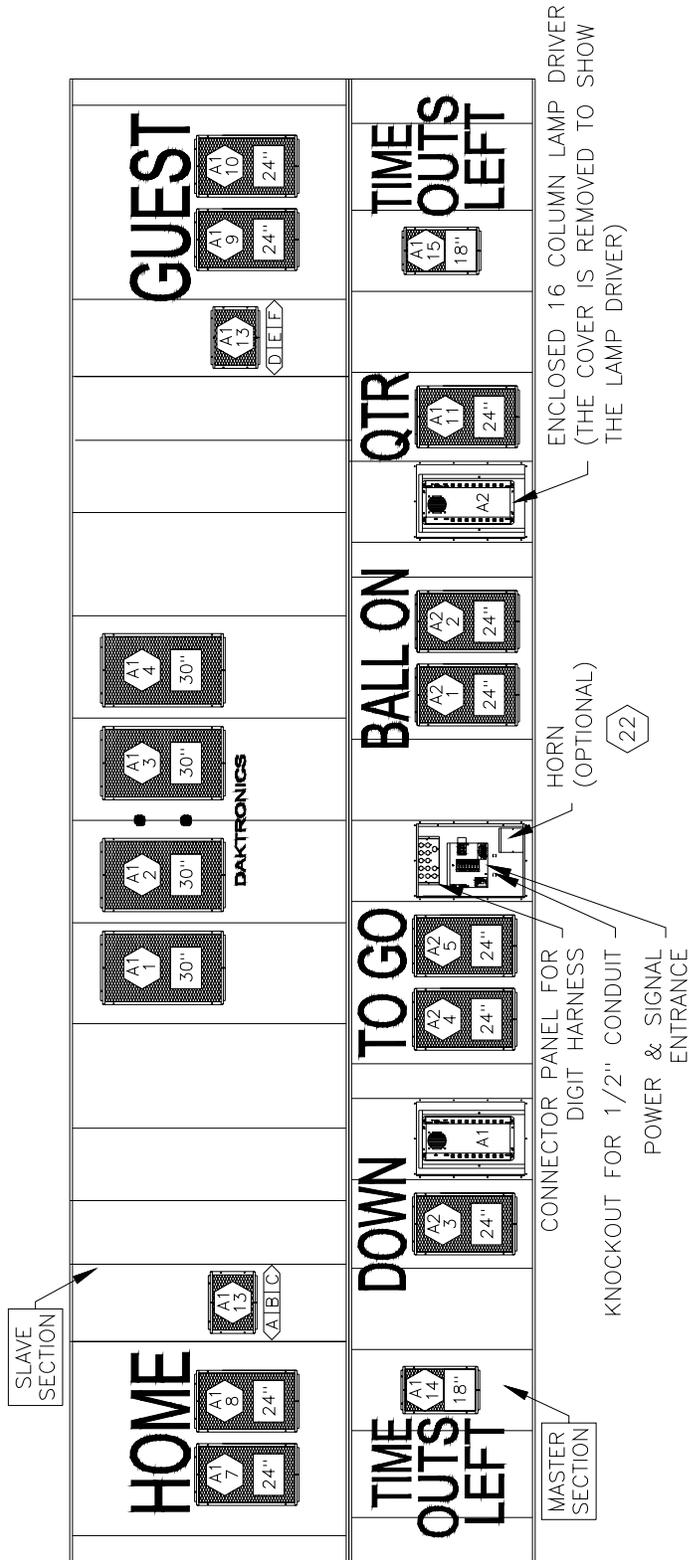
DES. BY: TWEBER DRAWN BY: JNILSEN DATE: 14FEB01

REVISION APPR. BY:

SCALE: 1=50

1091-E10A-144652

FB-2004



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

$\langle A1 \rangle 1$  = LAMP DRIVER NUMBER &  
LAMP DRIVER CONNECTOR  
WIRED TO THAT DIGIT.

$\langle A \rangle B \langle C \rangle$  = SEGMENT DESIGNATIONS

$\square 24''$  = DIGIT SIZE

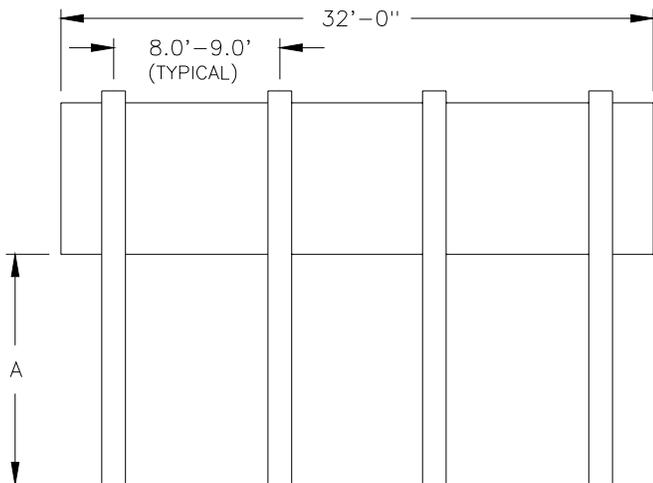
HINGED ACCESS DOORS REMOVED  
TO SHOW LAMP DRIVER AND  
POWER AND SIGNAL ENTRANCE.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: OUTDOOR INCANDESCENT SCOREBOARDS	
TITLE: COMPONENT LOCATIONS; FB-2004	
DES. BY: MCOPLAN	DATE: 27JUN01
REVISION	APPR. BY:
SCALE: 1=50	1091-E07A-151178

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

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



REAR VIEW

NOTE:  
 RECOMMENDATIONS FOR A DISPLAY WITH AN ATTACHED AD PANEL WERE CALCULATED USING A 48" TALL AD PANEL.  
 UBC 97 CODE USED WITH SOIL CLASS 3.

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

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

TITLE: BEAM AND FOOTING RECOMMENDATIONS, FB-XX30L

DES. BY: MCOPL/RNEYEN

DRAWN BY: MCOPLAN

DATE: 04JAN02

REVISION

APPR. BY:

SCALE: NONE

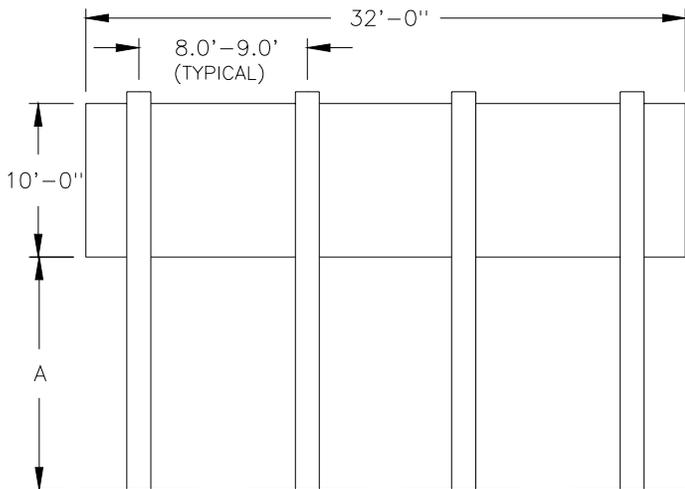
1091-R08A-158779

REV.	DATE	DESCRIPTION	BY	APPR.

MODELS FB-2001 & FB-2004

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

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



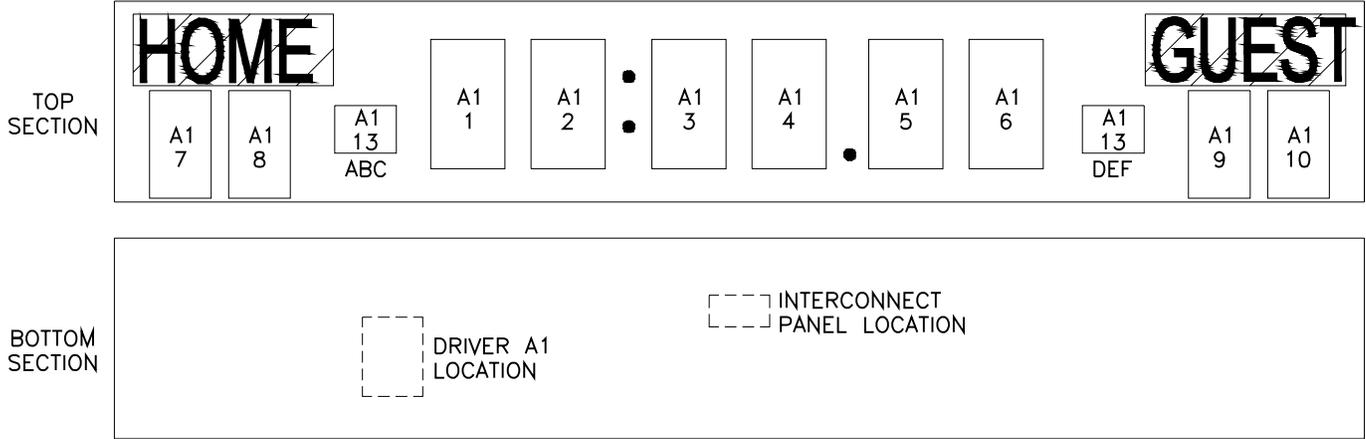
NOTE:  
 RECOMMENDATIONS FOR A DISPLAY WITH AN ATTACHED AD PANEL WERE CALCULATED USING A 48" TALL AD PANEL.  
 UBC 97 CODE USED WITH SOIL CLASS 3.

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

REAR VIEW

DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: OUTDOOR SCOREBOARDS				
TITLE: BEAM AND FOOTING RECOMMENDATIONS, FB-200X				
DES. BY: MCOPL/RNEYEN		DRAWN BY: MCOPLAN		DATE: 04JAN02
01	07 APR 03	ADDED 10'-0" DIMENSION TO LEFT OF SCOREBOARD.	JJS	
REV.	DATE	DESCRIPTION	BY	APPR.
REVISION		APPR. BY:	1091-R08A-160931	
		SCALE: NONE		

 = LOCATION OF TNMC



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

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

} SEE SCHEMATIC

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR SCOREBOARDS

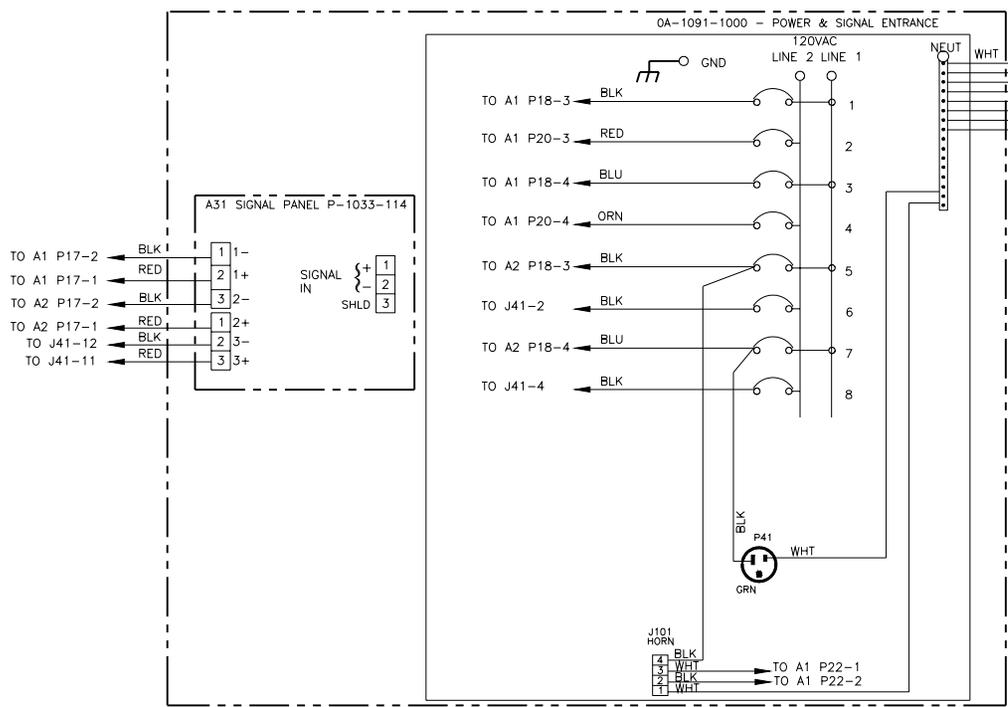
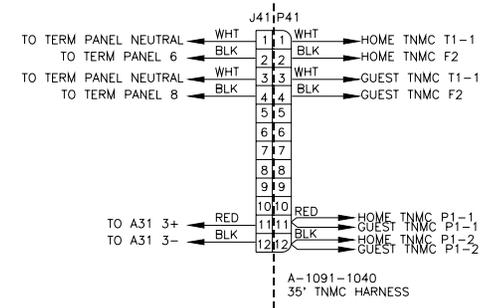
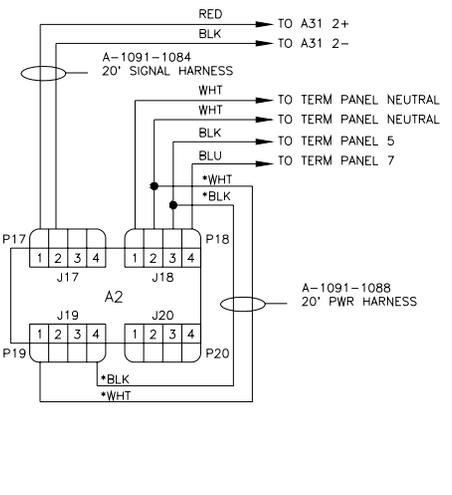
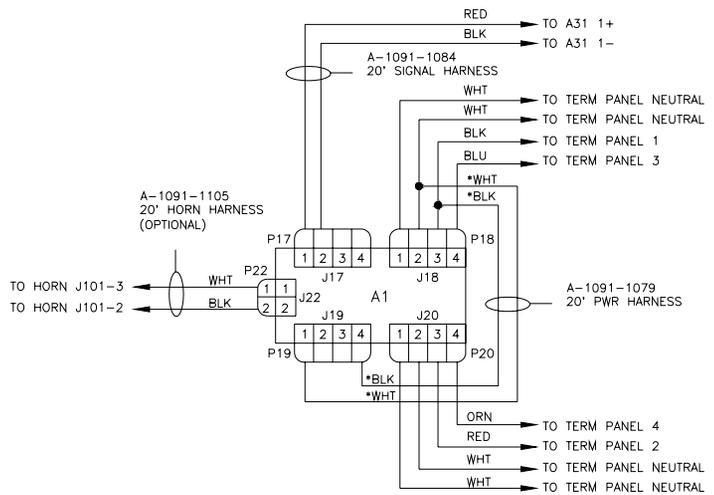
TITLE: INTERCONNECT PANEL DIGIT DESIGNATION; FB DISPLAYS

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

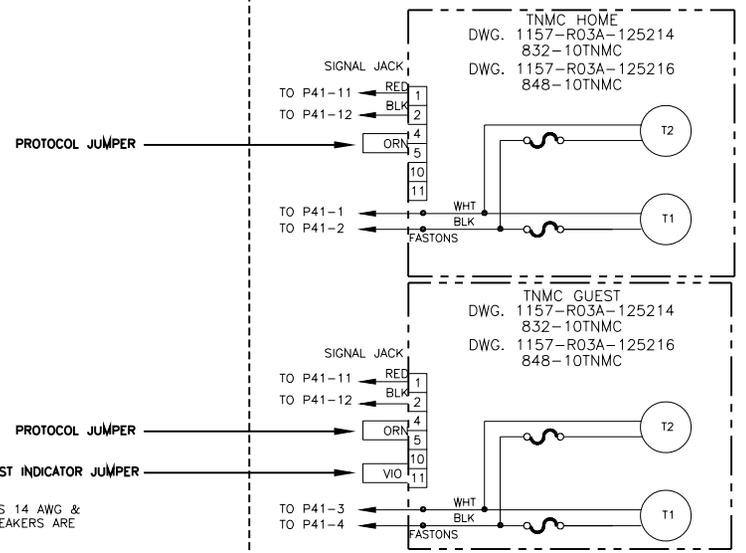
REVISION APPR. BY: SCALE: NONE

1091-E07A-174754

REV.	DATE	DESCRIPTION	BY	APPR.



NOTE:  
ALL WIRE IS 12 AWG, EXCEPT \* IS 14 AWG &  
SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE  
20 AMP.



REV.	DATE	DESCRIPTION	BY	APPR.
05	29 JUN 01	CORRECTED HORN HARNESS ASSEMBLY NUMBER, FROM 0A-1091-1104 TO 0A-1091-1105 PER ECO 29155.	MRB	
4	30MAY00	UPDATED POWER & SIGNAL ENTRANCE	RASMUS	
3	9FEB00	UPDATED TNMC INFORMATION TO INCLUDE BOTH SIZES.	RASMUS	
2	31JAN00	UPDATED LAYOUT OF ENTRANCE ENCLOSURE	RASMUS	
1	14JAN2000	ADDED HORN INFORMATION	RASMUS	

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

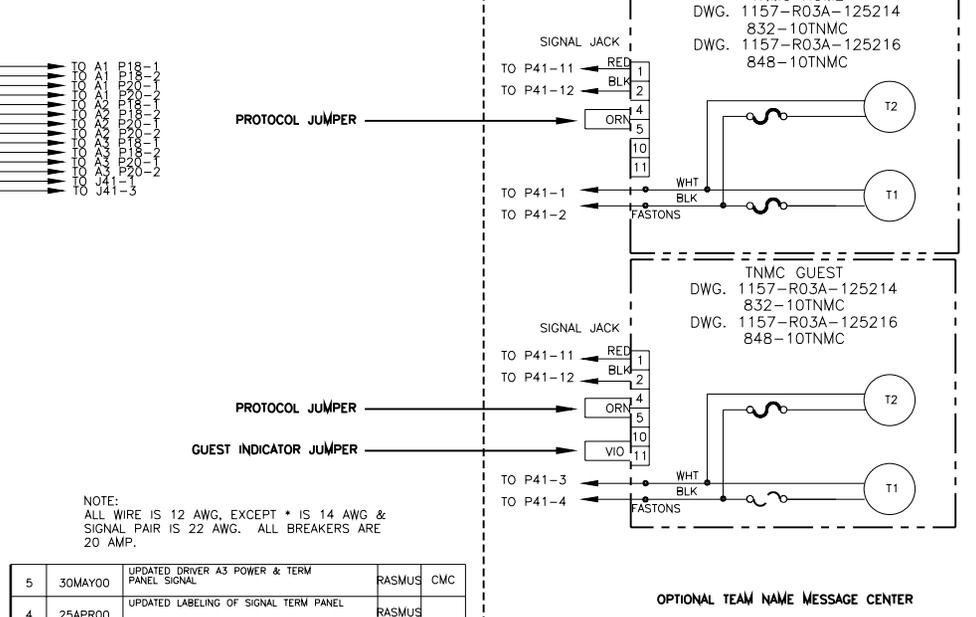
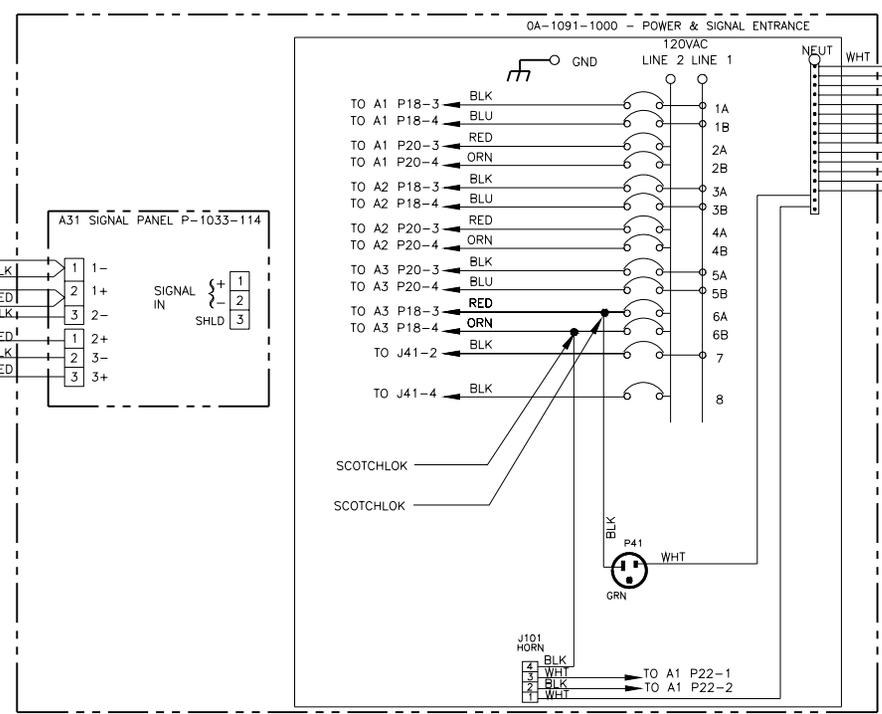
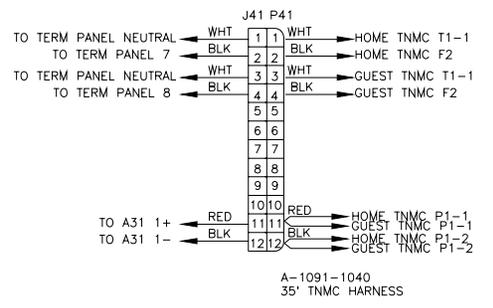
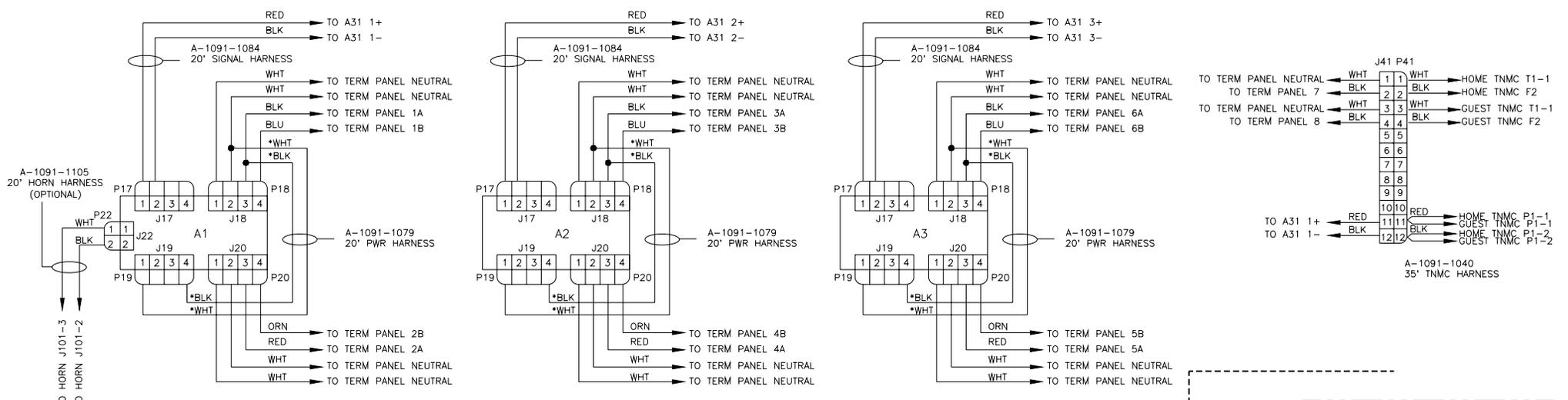
PROJ: **OUTDOOR INCANDESCENT SCOREBOARDS**

TITLE: **SCHEMATIC; 2 DRVRS WITH 32 OR 48-10TNMC SECTIONAL**

DES. BY: **RASMUS** DRAWN BY: **RASMUS** DATE: **30DEC99**

REVISION APPR. BY: **1=1**

**1091-R03B-124294**



NOTE:  
ALL WIRE IS 12 AWG, EXCEPT \* IS 14 AWG &  
SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE  
20 AMP.

REV.	DATE	DESCRIPTION	BY	APPR.
5	30MAY00	UPDATED DRIVER A3 POWER & TERM PANEL SIGNAL	RASMUS	CMC
4	25APR00	UPDATED LABELING OF SIGNAL TERM PANEL	RASMUS	
3	9FEB00	UPDATED TNMC INFORMATION TO INCLUDE BOTH SIZES	RASMUS	
2	26JAN00	CHANGED WIRES FOR P41 & J101 & ADDED SCOTCHLOK LABELING	RASMUS	
1	14JAN2000	ADDED HORN INFORMATION	RASMUS	

OPTIONAL TEAM NAME MESSAGE CENTER

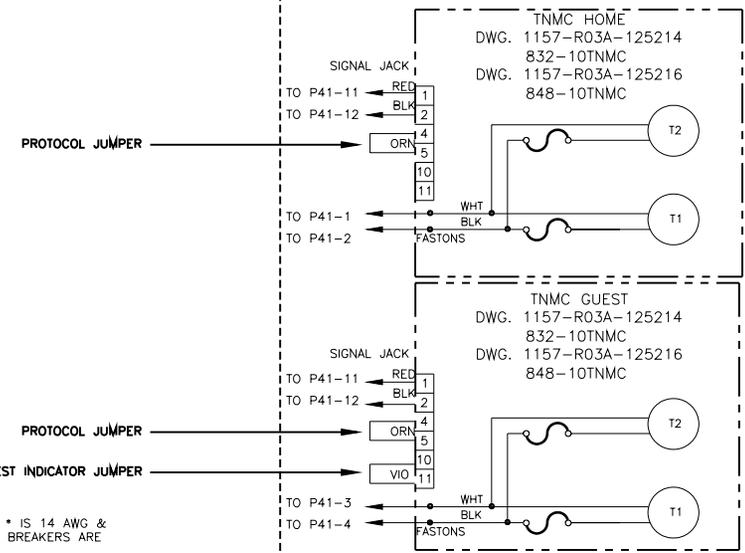
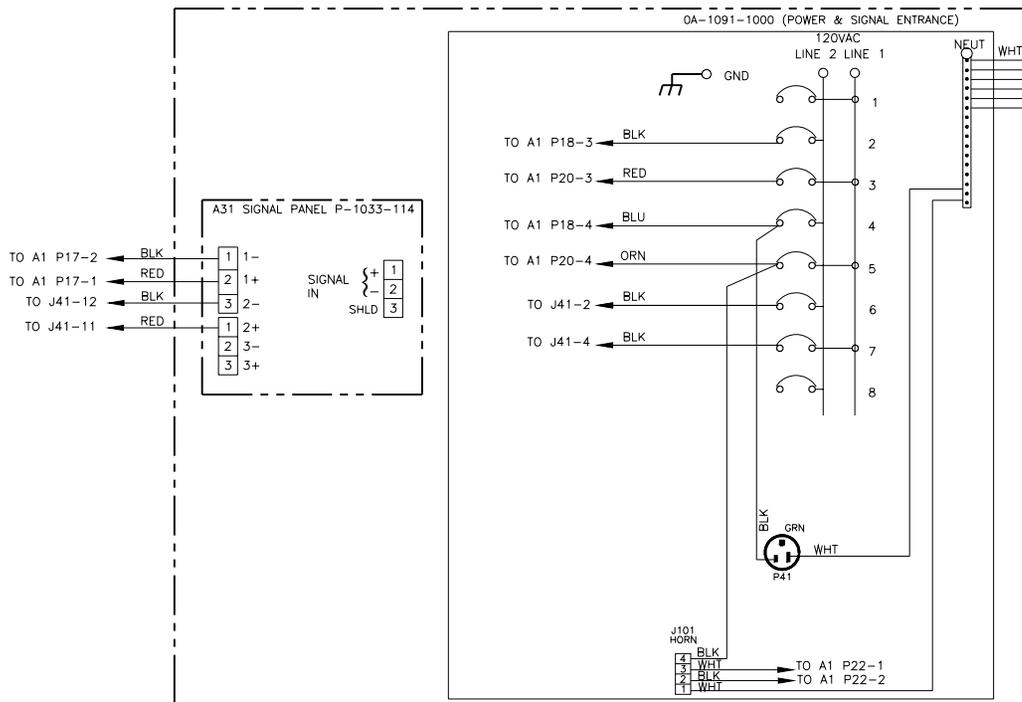
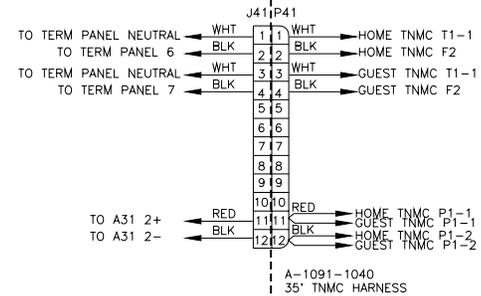
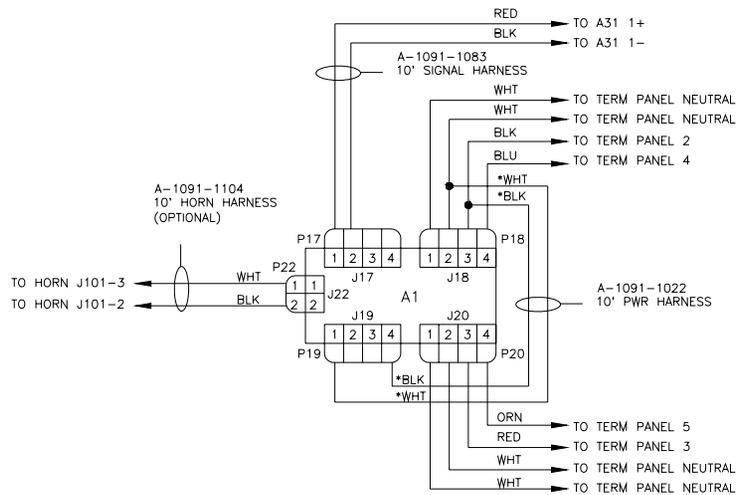
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR INCANDESCENT SCOREBOARDS

TITLE: SCHEMATIC; 3 DRVRS WITH 32 OR 48-10TNMC SECTIONAL

DES. BY: RASMUS DRAWN BY: RASMUS DATE: 27DEC99

REVISION 05 APPR. BY: SCALE: 1=1 1091-R03B-124327



NOTE:  
ALL WIRE IS 12 AWG, EXCEPT \* IS 14 AWG &  
SIGNAL PAIR IS 22 AWG. ALL BREAKERS ARE  
20 AMP.

REV.	DATE	DESCRIPTION	BY	APPR.
5	24JAN2001	ROTATED AC OUTLET	OSCHIEF	
4	30MAY00	UPDATED TERM PANEL LAYOUT & SWITCHED PLUG & JACK ON TNMC	RASMUS	
3	9FEB00	UPDATED TNMC INFORMATION TO INCLUDE BOTH SIZES	RASMUS	
2	31JAN00	UPDATED LAYOUT OF ENTRANCE ENCLOSURE	RASMUS	
1	14JAN2000	ADDED HORN INFORMATION	RASMUS	

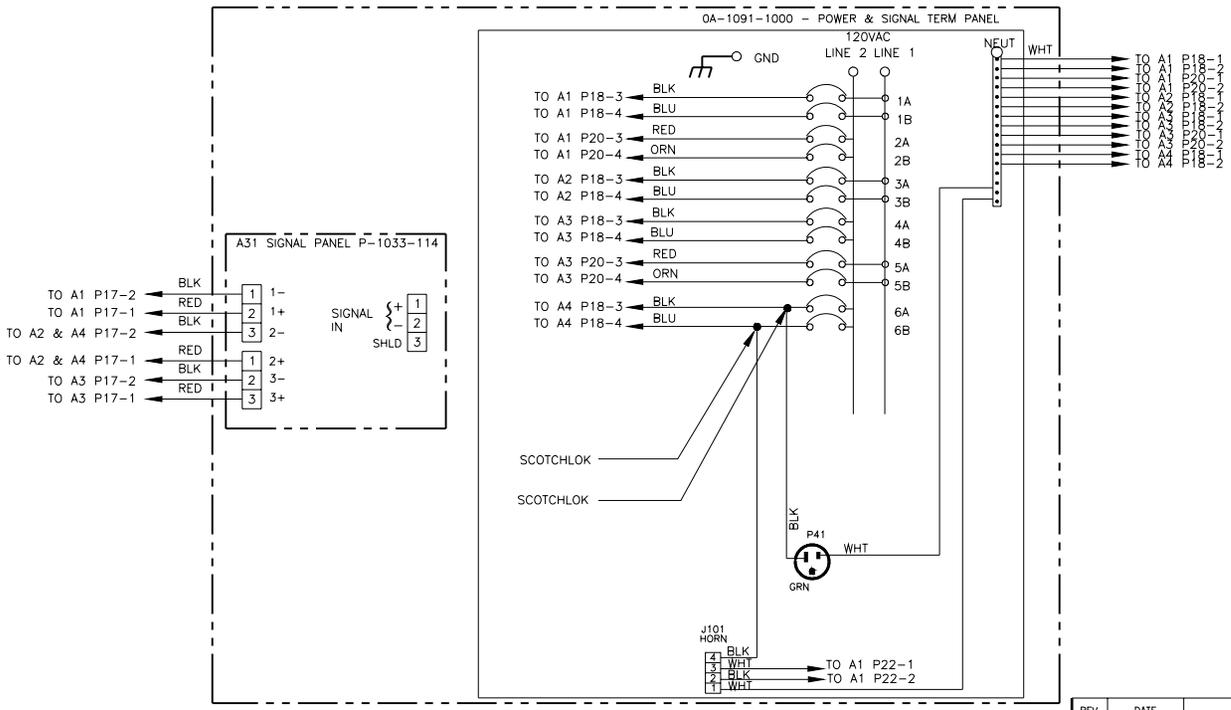
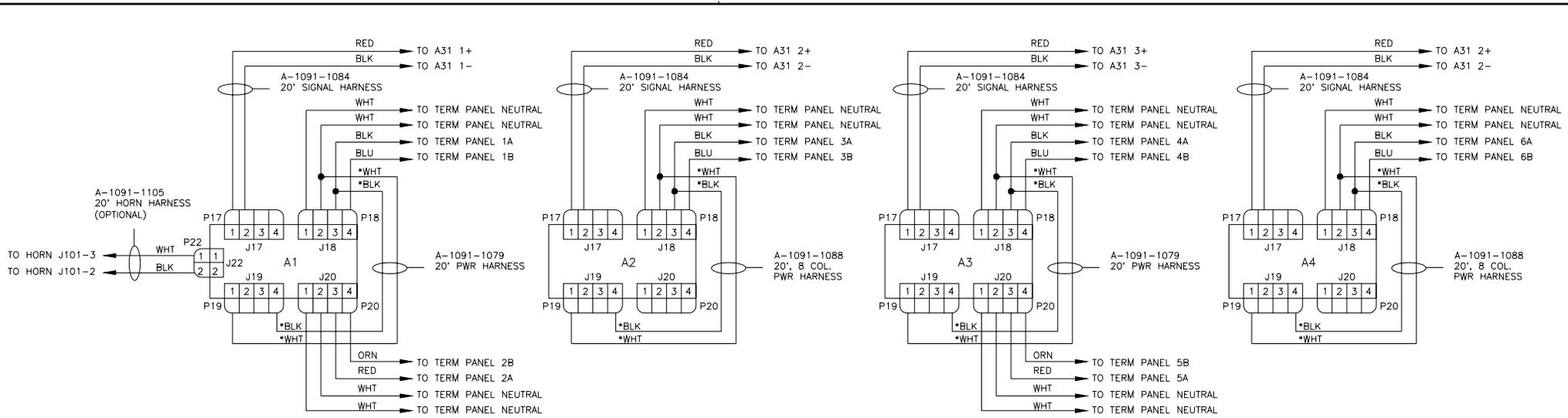
**DAKTRONICS, INC. BROOKINGS, SD 57006**

PROJ: **OUTDOOR INCANDESCENT SCOREBOARDS**  
 TITLE: **SCHEMATIC; 1 DRVW WITH 32 OR 48-10TNMC SECTIONAL**  
 DES. BY: **RASMUS** DRAWN BY: **RASMUS** DATE: **31DEC99**

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

**1091-R03B-125886**





NOTE:  
ALL WIRE IS 12 AWG, EXCEPT \* IS 14 AWG & SIGNAL PAIR IS 22 AWG.  
ALL BREAKERS ARE 20 AMP.

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ.: OUTDOOR INCANDESCENT SCOREBOARDS			
TITLE: SCHEMATIC; 4 DRIVER (FB-1630 40W)			
DES. BY: CBRECZI		DRAWN BY: CBRECZI	
		DATE: 28 AUG 00	
REVISION	APPR. BY:	1091-R03B-137843	
	SCALE: 1=1		

REV.	DATE	DESCRIPTION	BY	APPR.

# Appendix B: Eyebolts

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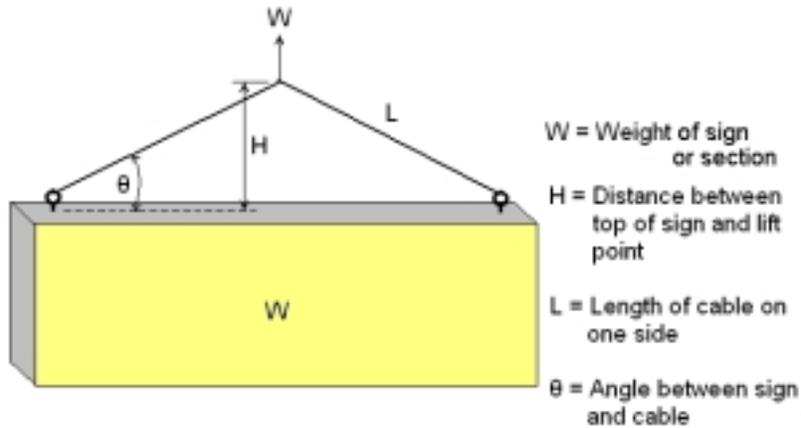
Eyebolts ..... ED7244



# Eyebolts

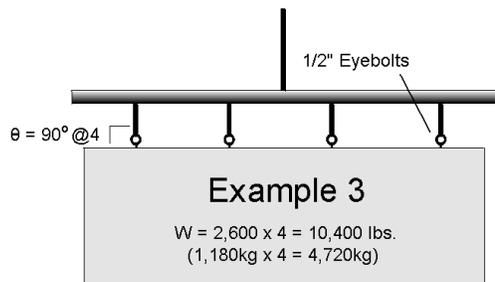
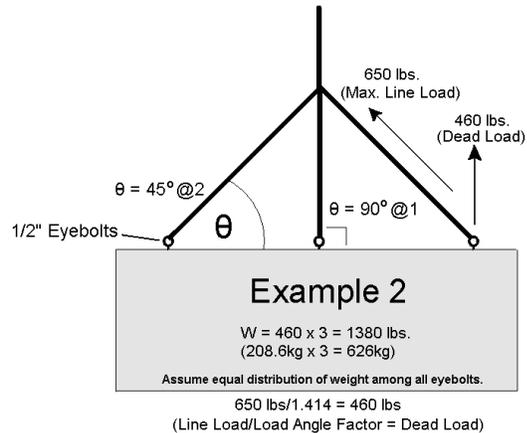
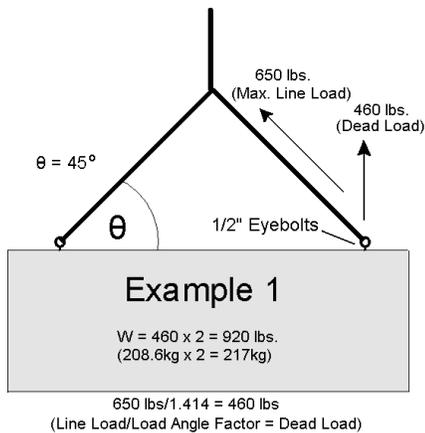
Almost every display that leaves Daktronics is equipped with eyebolts for lifting the display. There are two standard sizes of eyebolts: 1/2" and 5/8".

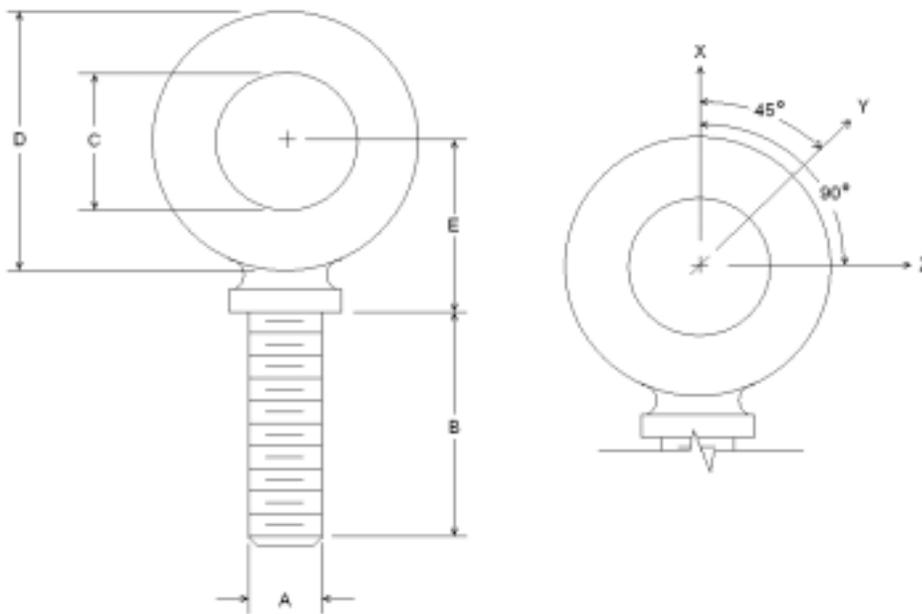
**Load Increase Factor:** The load increases as the lift angle ( $\theta$ ) decreases. The allowable load on the eyebolts also decreases with the lift angle due the bending stress on the eyebolts. In sum, the smaller the angle between the cable and the top of the display, the lighter the sign must be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



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

$\theta$	1/2"		5/8"	
	Line Load	Weight/Anchor	Line Load	Weight/Anchor
90	2600	2600	4000	4000
60	1500	1299	3300	2858
45	650	460	1000	707
30	520	260	800	400





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

- A. Do not use eyebolts on angular lifts unless absolutely necessary. For angular lifts, the shoulder pattern eyebolt is preferred.
- B. Load should always be applied to eyebolts in the plane of the eye, not at some angle to this plane.
- C. Shoulder eyebolts must be properly seated (should bear firmly against the mating part), otherwise the working loads must be reduced to those indicated for regular eyebolts. A washer or spacer may be required to put the plane of the eye in the direction of the load when the shoulder is seated.
- D. No load greater than the safe working load listed in the data table should be used.
- E. To obtain the greatest strength from the eyebolt, it must fit reasonably tight in its mounting hole to prevent accidental unscrewing due to twist of cable.
- F. Eyebolts should never be painted or otherwise coated when used for lifting. Such coatings may cover potential flaws in the eyebolt.
- G. To attain the safe working loads listed for regular eyebolts, 90% of the thread length must be engaged.