DAKTRONICS MS-2002 PRODUCT SPECIFICATIONS

Optional Custom Vinyl Team Name

Or

Optional 8x32 Team Name Message Centers (TNMCs)

Optional Backlit PERIOD

Or

Optional Electronic PERIOD

This outdoor LED multisport scoreboard displays period time to 99:59, HOME and GUEST scores to 99 and PERIOD (or HALF or QTR) to nine. When period time is less than one minute, the scoreboard displays time to 1/10 of a second.

		VINYL CAPTIONS (STANDARD)	TNMCS & VINYL CAPTIONS	TNMCS & ELECTRONIC CAPTIONS	BACKLIT & VINYL CAPTIONS
POWER (120 VAC)*	Red/Amber Digits	150 Watts, 1.3 Amps	220 Watts, 1.9 Amps	255 Watts, 2.2 Amps	225 Watts, 1.9 Amps
	White Digits	320 Watts, 2.7 Amps	480 Watts, 4.0 Amps	560 Watts, 4.7 Amps	395 Watts, 3.3 Amps
UNCRATED WEIGHT		275 lb (125 kg)	355 lb (161 kg)	395 lb (179 kg)	335 lb (152 kg)
DIMENSIONS		4'-6" H x 16'-0" W x 8" D (1.37 m x 4.88 m x 203 mm)			

**Scoreboard requires a dedicated circuit. Models with 240 VAC power at half the indicated amperage are also offered (International Use Only).*

DIGITS

- Clock and score digits are 24" (610 mm) high. PERIOD digit is 18" (457 mm) high.
- Select red, amber, or white LED digits.
- Scoreboard features weather-sealed PanaView® digits (see DD2495646).
- Digits may be dimmed for night viewing.

DISPLAY COLOR

Choose a color from the Daktronics standard paint book (see SL-02730).

CONSTRUCTION

Alcoa aluminum alloy 5052 for excellent corrosion resistance

PRODUCT SAFETY APPROVAL

ETL-listed to UL 48, tested to CSA standards, and CE-labeled

CAPTIONS & STRIPING

- HOME and GUEST captions are 12" (305 mm) high. PERIOD caption is 10" (254 mm) high.
- Standard captions are vinyl, applied to the display face.
- Optional backlit captions consist of white letters on a black background. Team names are 12" (305 mm) high. All other captions are 10" (252 mm) high.
- Optional electronic PERIOD caption changes according to the sport mode, eliminating the need for caption panels. Electronic captions and TNMCs are 10.6" (269 mm) high.
- Standard captions and border striping are white vinyl. Choose another vinyl color at no additional cost (see DD2101644).

OPERATING TEMPERATURES

- Display: -22° to 122° Fahrenheit (-30° to 50° Celsius)
- Console: 32° to 130° Fahrenheit (0° to 54° Celsius)

WWW.DAKTRONICS.COM E-MAIL: SALES@DAKTRONICS.COM

201 Daktronics Drive, PO Box 5128, Brookings, SD 57006
Phone: 1-800-325-8766 or 605-692-0200 Fax: 605-697-4746

DAKTRONICS®

DAKTRONICS MS-2002 PRODUCT SPECIFICATIONS

CONTROL CONSOLE	CONTROL OPTIONS
All Sport® 1600* (see SL-04352) **May be upgraded to* ***All Sport 5000*** *(see SL-03991)*	***Wireless:*** 2.4 GHz spread spectrum radios feature 64 non-interfering channels and 8 broadcast groups (see SL-04370). This is a popular upgrade.
	Wired: Two-pair shielded cable of 22 AWG minimum is required. A cover plate with mounted connector and standard 2" x 4" x 2" (51 mm x 102 mm x 51 mm) outlet box is provided. Connector mates with signal cable from control console.
RC-200 (see DD3715714)	***Wireless*** handheld controller features 2.4 GHz spread spectrum radio with 64 non-interfering channels and 8-10 hours of operation via internal rechargeable battery.
DAK Score & MX-1 (see DD3888368)	CUSTOMER-SUPPLIED mobile device or tablet with DAK Score app installed communicates via **Bluetooth®** wireless technology to an MX-1 Interface Box that controls the scoreboard through 2.4 GHz radio or wired connection.

Note: *All Sport 5000 or DAK Score required for Team Name Message Centers and Electronic PERIOD Caption.*

SEGMENT TIMER MODE

The segment timer mode is ideal for keeping practices on schedule. The horn at the end of a segment allows coaches and athletes to focus on the practice and to listen for the horn when it is time to change drills (see SL-04004).

TIME OF DAY MODE

This scoreboard features a Time of Day (TOD) mode that allows it to act as a clock when the control console is unplugged or off. Refer to the scoreboard installation manual for instructions on how to enable the Time of Day mode.

MOUNTING

Scoreboard is typically mounted on two vertical beams or poles. Hardware to mount scoreboard on two beams is included; hardware for more beams is at additional cost. Standard mounting uses I-beam clamps. Optional mounting method using angle brackets is also offered; maximum beam width is 12" (305 mm) and maximum beam depth is 22" (559 mm). Refer to attached drawings for more information on mounting methods.

SERVICE ACCESS

Digit panels and electronics are serviced from the front of the scoreboard.

GENERAL INFORMATION

Scoreboard provides scoring capabilities for two teams. 100% solid state electronics are housed in an all aluminum cabinet. Scoreboard is shipped in one section. Scoreboard power is to be provided on a dedicated circuit to prevent loss of game information due to failure of another component on the circuit. Specifications and pricing are subject to change without notice.

ADVERTISING/IDENTIFICATION PANELS

Backlit & Non-Backlit:

1'-6" H x 16'-0" W (457 mm x 4.88 m)
2'-0" H x 16'-0" W (610 mm x 4.88 m)
2'-6" H x 16'-0" W (762 mm x 4.88 m)

For additional non-backlit panel sizes, see SL-03761.

FAN FAVORITE OPTIONS

These are the most commonly requested enhancements:

- Custom vinyl team name caption in place of HOME *or* Two Digital Team Name Message Centers (TNMCs) in place of HOME and GUEST captions (see DD1696958) *or* Backlit team name captions
- Horn

OTHER ACCESSORIES & UPGRADES

The options below are available for additional customization:

- Backlit *or* electronic PERIOD caption
- Reversible HALF and QTR caption panel
- Individual digit protective screens (see SL-04939)
- Protective netting (see DD2690927)
- Angle bracket mounting method

COMPLETE YOUR SYSTEM

Contact Daktronics about adding any of this equipment to create a unique scoring and display system:

- Advertising/identification panels
- Decorative accents
- Shot clocks
- Sportsound® Audio
- Video displays
- Live web streaming of scores and stats

FOR ADDITIONAL INFORMATION

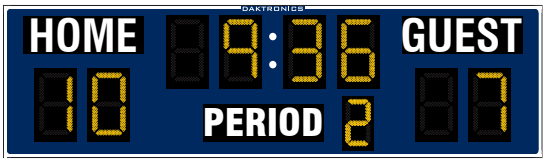
- Installation Specifications: DWG-1157188 (attached)
- Standard I-beam Mounting: DWG-1052565 (attached)
- LVX I-Beam Mounting: DWG-3918361 (attached)
- Optional Pole Mounting: DWG-1048184 (attached)
- Component Locations (Red/Amber Digits): DWG-4281933 (attached)
- Component Locations (White Digits): DWG-4281934 (attached)
- Architectural Specifications: See SL-05168

WWW.DAKTRONICS.COM E-MAIL: SALES@DAKTRONICS.COM

201 Daktronics Drive, PO Box 5128, Brookings, SD 57006
Phone: 1-800-325-8766 or 605-692-0200 Fax: 605-697-4746

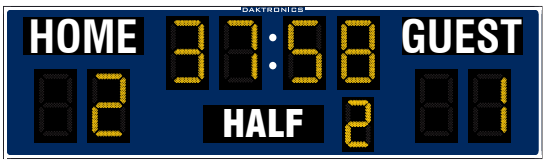
DAKTRONICS

ALTERNATE CAPTIONS & SCORING MODES



Lacrosse/Field Hockey Mode –
vinyl, backlit & electronic captions shown

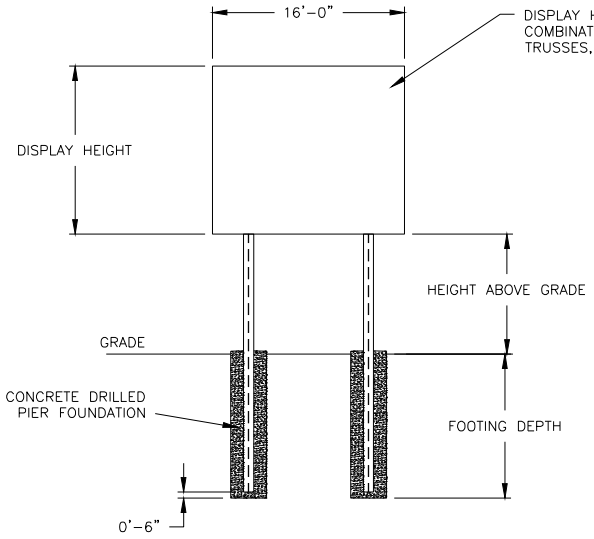
Football Mode –
vinyl*, backlit & electronic captions shown



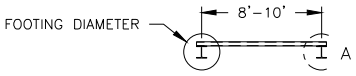
HALF/QTR Vinyl Captions applied directly to scoreboard face **OR optional Reversible Panel*

Soccer Mode –
vinyl*, backlit & electronic captions shown

DAKTRONICS

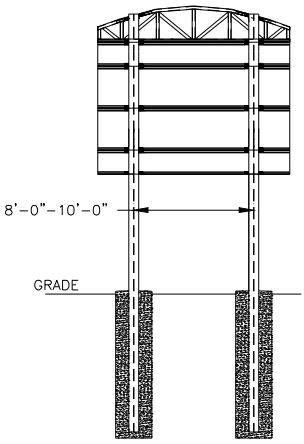


FRONT VIEW

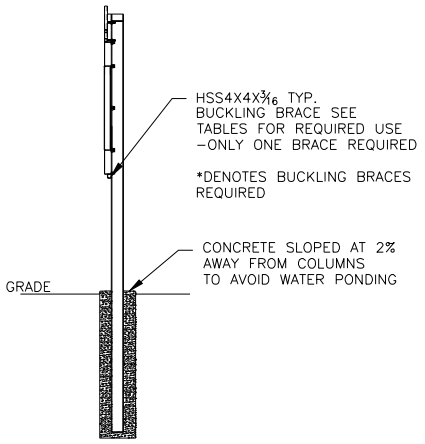


LAYOUT VIEW

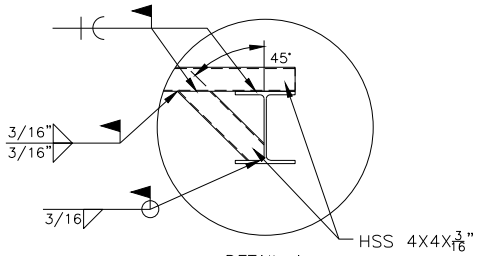
COLUMNS & FOOTING ONLY



REAR VIEW



SIDE VIEW



DETAIL A
SCALE 1:32

TABLE A – MOUNTING

EXPOSURE B

HEIGHT ABOVE GRADE = 10'						HEIGHT ABOVE GRADE = 15'					
DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY				DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY			
		115 MPH	130 MPH	150 MPH	170 MPH			115 MPH	130 MPH	150 MPH	170 MPH
6	COLUMN FOOTING	W8X18 2.0'X7.0'	W8X21 2.0'X7.5'	W10X22 3.0'X7.0'	W8X24 2.0'X9.0'	6	COLUMN FOOTING	W8X24 2.0'X8.0'	W12X26 3.0'X7.5'	W8X31 2.0'X9.5'	W10X33 3.0'X9.0'
8	COLUMN FOOTING	W10X22 2.0'X8.0'	W8X24 2.0'X8.5'	W8X28 3.0'X8.5'	W8X31 3.0'X9.0'	8	COLUMN FOOTING	W8X31 3.0'X7.5'	W8X31 2.0'X9.5'	W10X39 3.0'X9.0'	W14X43 3.0'X10.0'
10	COLUMN FOOTING	W12X26 3.0'X7.5'	W12X30 3.0'X8.5'	W10X26* 3.0'X9.0'	W12X26* 3.0'X10.0'	10	COLUMN FOOTING	W12X26* 3.0'X8.5'	W12X30* 3.0'X9.0'	W14X34* 3.0'X10.0'	W12X40* 3.0'X11.0'
12	COLUMN FOOTING	W8X31 2.0'X9.5'	W10X33 3.0'X9.0'	W12X30* 3.0'X10.0'	W14X34* 3.0'X11.0'	12	COLUMN FOOTING	W12X30* 3.0'X9.0'	W14X34* 3.0'X10.0'	W12X40* 3.0'X11.0'	W14X48* 3.0'X12.0'
14	COLUMN FOOTING	W10X26* 3.0'X9.0'	W12X26* 3.0'X10.0'	W14X34* 3.0'X11.0'	W16X36* 3.0'X12.0'	14	COLUMN FOOTING	W14X34* 3.0'X10.0'	W12X40* 3.0'X11.0'	W16X45* 3.0'X12.0'	W18X55* 3.0'X14.0'
16	COLUMN FOOTING	W12X26* 3.0'X9.5'	W14X30* 3.0'X11.0'	W14X38* 3.0'X11.5'	W14X43* 3.0'X13.0'	16	COLUMN FOOTING	W16X36* 3.0'X10.5'	W14X43* 3.0'X11.5'	W21X48* 3.0'X13.0'	W21X55* 3.0'X15.0'

FOOTING DIMENSIONS = DIAMETER X DEPTH
* DENOTES BUCKLING BRACE REQUIRED

EXPOSURE C

HEIGHT ABOVE GRADE = 10'				HEIGHT ABOVE GRADE = 15'			
DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY		DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY	
		115 MPH	140 MPH			115 MPH	140 MPH
6	COLUMN FOOTING	W8X21 2.0'X8.0'	W8X24 2.0'X9.0'	6	COLUMN FOOTING	W8X28 2.0'X9.0'	W10X33 3.0'X9.0'
8	COLUMN FOOTING	W8X24 2.0'X9.0'	W8X31 3.0'X9.0'	8	COLUMN FOOTING	W10X33 3.0'X8.5'	W14X43 3.0'X10.0'
10	COLUMN FOOTING	W8X31 2.0'X10.0'	W10X39 3.0'X10.0'	10	COLUMN FOOTING	W12X40 3.0'X9.5'	W10X49 3.0'X11.0'
12	COLUMN FOOTING	W12X26* 3.0'X9.5'	W14X34* 3.0'X11.0'	12	COLUMN FOOTING	W16X36* 3.0'X11.0'	W16X45* 3.0'X12.0'
14	COLUMN FOOTING	W12X30* 3.0'X10.0'	W16X36* 3.0'X12.0'	14	COLUMN FOOTING	W16X40* 3.0'X11.0'	W21X48* 3.0'X13.0'
16	COLUMN FOOTING	W14X34* 3.0'X11.0'	W16X40* 3.0'X13.0'	16	COLUMN FOOTING	W16X45* 3.0'X12.0'	W21X55* 3.0'X15.0'

FOOTING DIMENSIONS = DIAMETER X DEPTH
* DENOTES BUCKLING BRACE REQUIRED

NOTE:
-REFER TO NOTE 7 FOR EXPOSURE CATEGORY DEFINITIONS.

NOTES:

1. FOOTING AND COLUMN SIZES ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES. THE DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE INSTALLATION BEFORE THEY CAN BE USED FOR FABRICATION Or ERECTION.

2. INTERNATIONAL BUILDING CODE 2012 USED IN DESIGN OF COLUMNS AND FOOTINGS WITH, IMPORTANCE FACTOR=1, Kzt=1.0, Kd=0.85, G=0.85. SEISMIC DESIGN WAS NOT CONSIDERED.

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

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

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

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

7. LOCAL BUILDING OFFICIALS SHOULD BE CONTACTED TO DETERMINE THE WIND SPEED AND EXPOSURE CATEGORY FOR THE PROPOSED SIGN LOCATION. THE EXPOSURE CATEGORY C IS DEFINED AS:

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

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

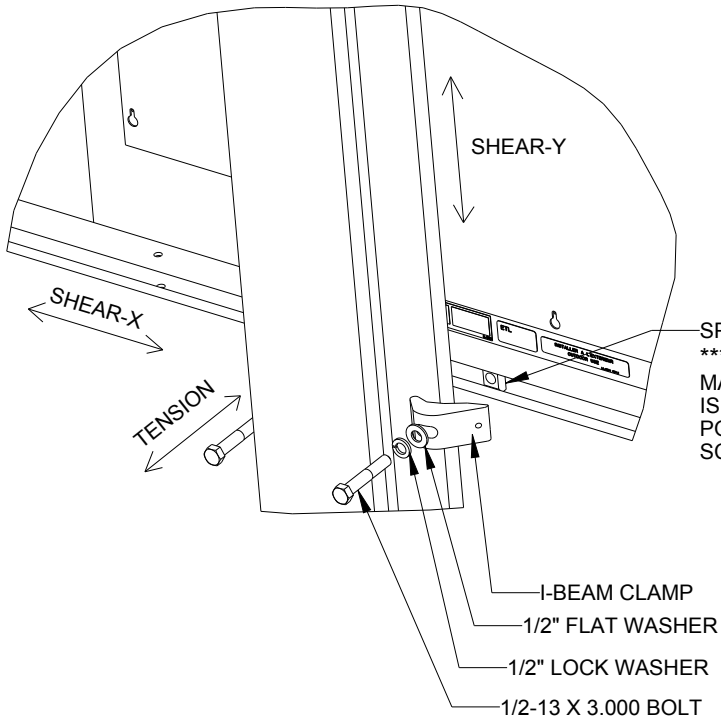
8. FOR SPECIFIC PRODUCT DETAILS ON WEIGHT, MOUNTING, ETC. REFER TO THE INDIVIDUAL PRODUCT SPECIFICATION SHEETS.

REV	DATE:		BY:	
02	27 OCT 15	UPDATED WIDE FLANGE AND FOUNDATION VALUES	AMP	
01	23 JUL 14	UPDATED CLAMPS IN REAR AND SIDE VIEWS AND ADDED 170 MPH WIND SPEC COLUMN	TJT	

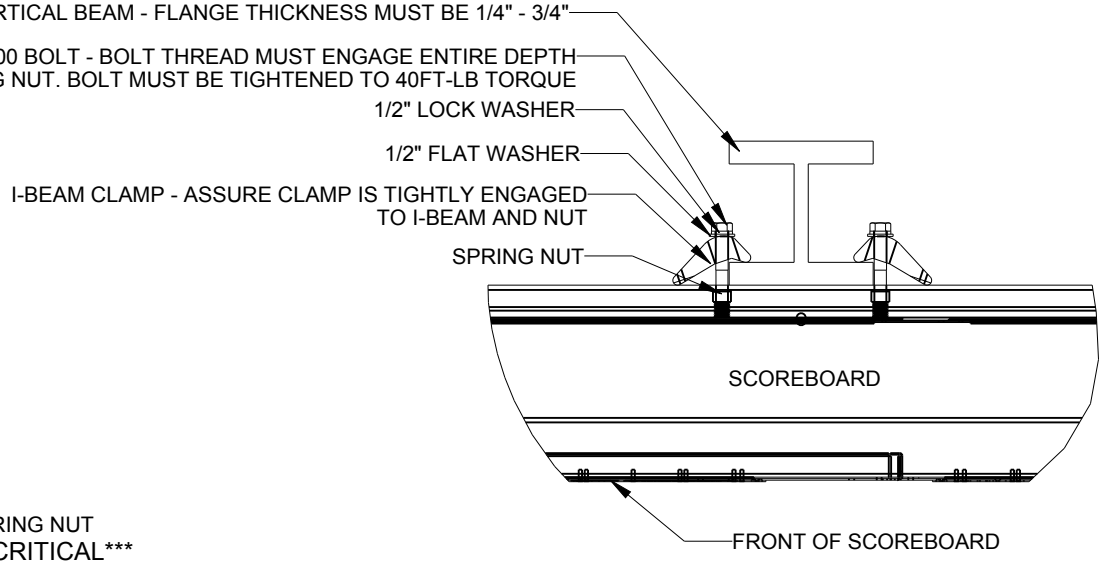
DAKTRONICS, INC.
BROOKINGS, SD 57006
DO NOT SCALE DRAWING

PROJ: OUTDOOR SCOREBOARD INSTALLATION
TITLE: 16' WIDTH SCOREBOARD INSTALLATION SPECS
DESIGN: RSCHWAR | DRAWN: RSCHWAR | DATE: 27 NOV 13
SCALE: 1/16"=1'

SHEET	REV	JOB NO:	FUNC-TYPE-SIZE	
	02	P1647	E-10-A	1157188



EXPLODED REAR ISOMETRIC VIEW



TOP VIEW

CRITICAL
DO NOT USE ANY LUBRICANT
ON ANY MOUNTING HARDWARE
OR WARRANTY WILL BE VOIDED

STANDARD MOUNTING METHOD

MOUNTING INSTRUCTIONS:
1. PLACE SPRING NUTS INTO SCOREBOARD CHANNEL IN APPROXIMATE LOCATION OF VERTICAL BEAMS
2. LIFT SCOREBOARD INTO POSITION
3. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE
4. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY
5. IF FLANGE THICKNESS IS MORE THAN 3/4" THICK LONGER BOLTS WILL BE REQUIRED AT THE CUSTOMER'S EXPENSE.

STRUCTURAL NOTES

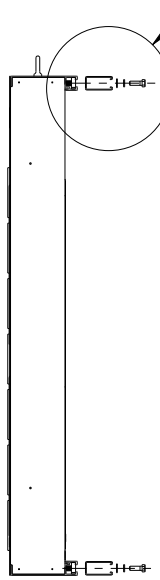
ALLOWABLE CAPACITY PER EACH CLAMP:
SHEAR = 160 LBS
TENSION = 2300 LBS

SHEAR AND TENSION LOAD
DIRECTION ARE AS INDICATED ON
REAR ISOMETRIC VIEW

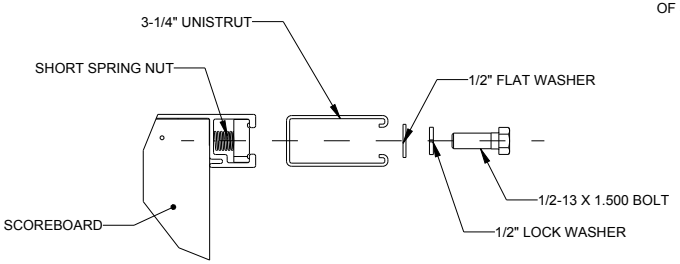
REV	DATE:		BY:	
05	22 DEC 15	PER EC-22871; ADDED LUBRICANT NOTE	PJS 18704	
04	06 JAN 14	ADDED ALLOWABLE TENSION AND SHEAR CAPACITY DETAILS	JAVA	
03	23 OCT 13	PER EC-12382; CHANGED BOLT TORQUE FROM 30 FT-LB TO 40 FT-LB	NJM	
02	07 MAR 12	ADDED STANDARD MOUNTING METHODS NOTES	KDD	
01	21 FEB 12	CHANGED ROCKER TO I-BEAM	KDD	

THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR SCOREBOARD			
TITLE:	P1647; I-BEAM CLAMP MOUNTING			
DATE: 22-DEC-15	DIM UNITS: INCHES [MILLIMETERS]		SHEET 1 OF 1	REV 05
SCALE: 1/8	DO NOT SCALE DRAWING			
DESIGN: MCARSRU	JOB NO. P1647	FUNC - TYPE - SIZE E - 07 - A	1052565	
DRAWN: MCARSRU				

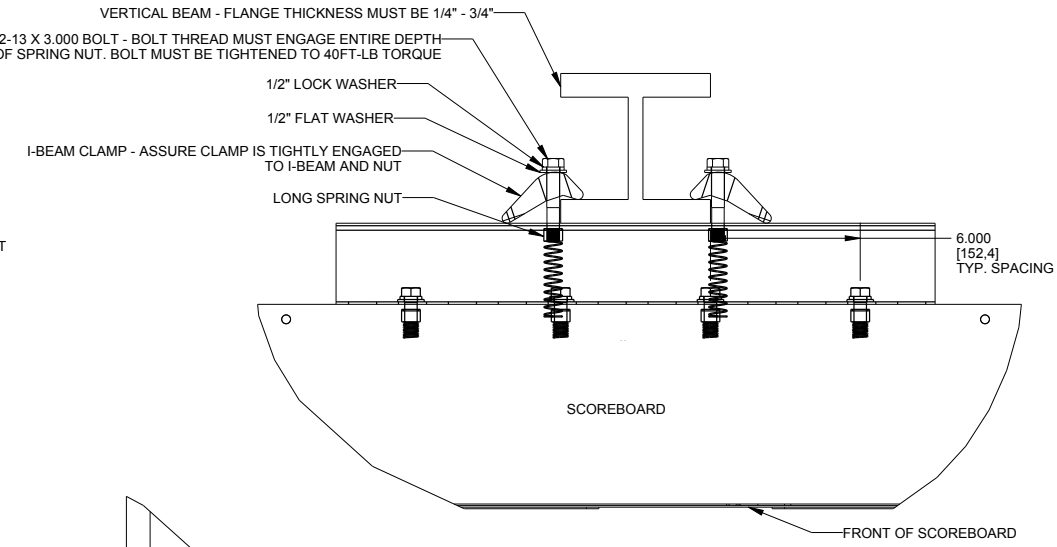


EXPLODED SIDE VIEW
UNISTRUT ATTACHMENT
SCALE 1/15

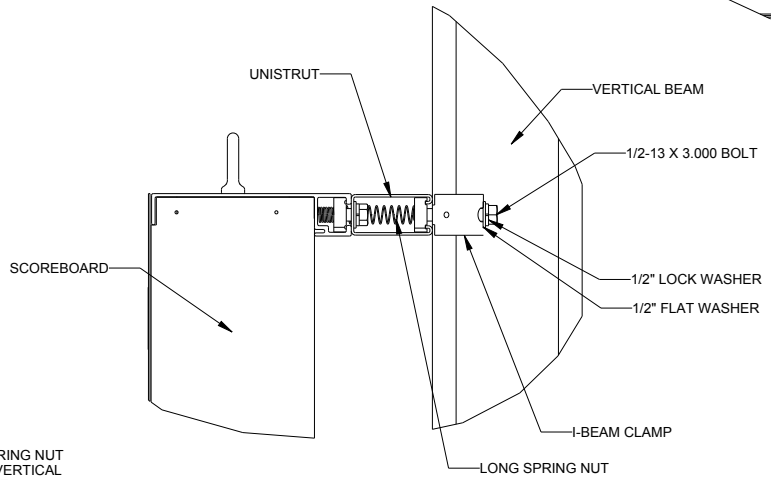


DETAIL A
SCALE 1/4

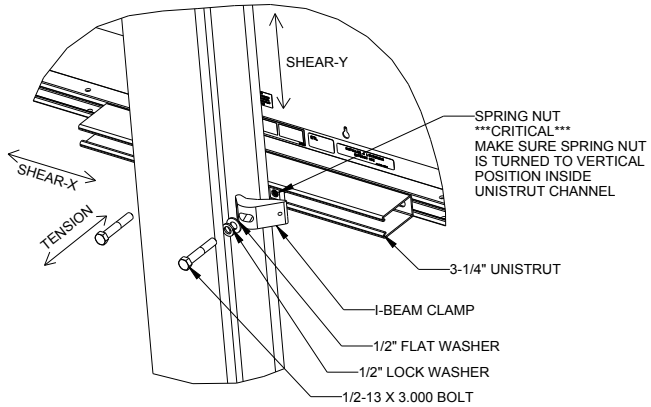
RECOMMENDED METHOD OF INSTALLATION:
- INSTALL 1 1/2" BOLT, 1/2" LOCK WASHER, 1/2" FLAT WASHER USING SHALLOW SOCKET WITH EXTENSION.
- ENTER FRO MSIDE OF UNISTRUT SECURING INSIDE BOLTS FIRST AND MOVING OUTWARD.



TOP VIEW



SIDE VIEW
SCOREBOARD ATTACHEMENT



EXPLODED REAR ROTATED VIEW

SCALE 1/8

STRUCTURAL NOTES

ALLOWABLE CAPACITY PER
COLUMN CONNECTION:
SHEAR = 185 LBS
TENSION = 2400 LBS

SHEAR AND TENSION LOAD
DIRECTION ARE AS INDICATED ON
REAR ISOMETRIC VIEW

STANDARD MOUNTING METHOD

MOUNTING INSTRUCTIONS:
1. PLACE SPRING NUTS INTO SCOREBOARD CHANNEL IN LOCATIONS SHOWN IN TOP VIEW
2. PLACE SPRING NUTS IN UNISTRUT IN APPROXIMATE LOCATION OF VERTICAL BEAMS
2. LIFT SCOREBOARD INTO POSITION
3. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE
4. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY
5. IF FLANGE THICKNESS IS MORE THAN 3/4" THICK LONGER BOLTS WILL BE REQUIRED AT THE CUSTOMER'S EXPENSE.

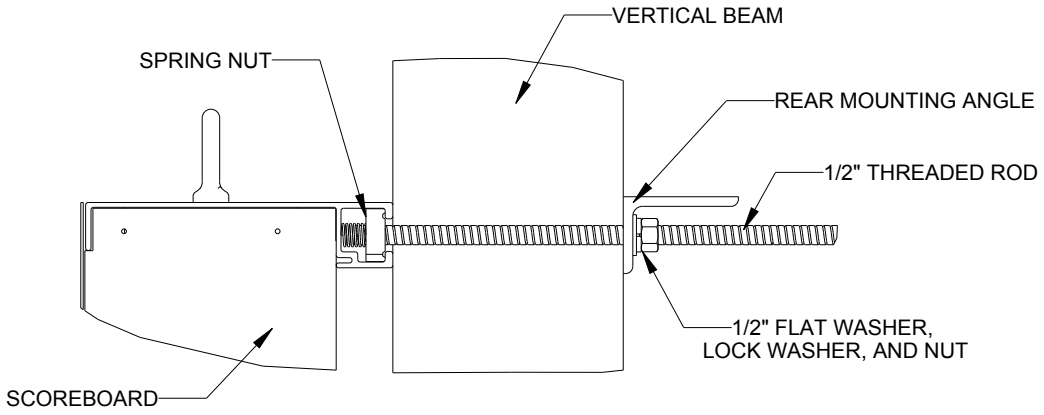
CRITICAL
DO NOT USE ANY LUBRICANT
ON ANY MOUNTING HARDWARE
OR WARRANTY WILL BE VOIDED

REV	DATE:		BY:

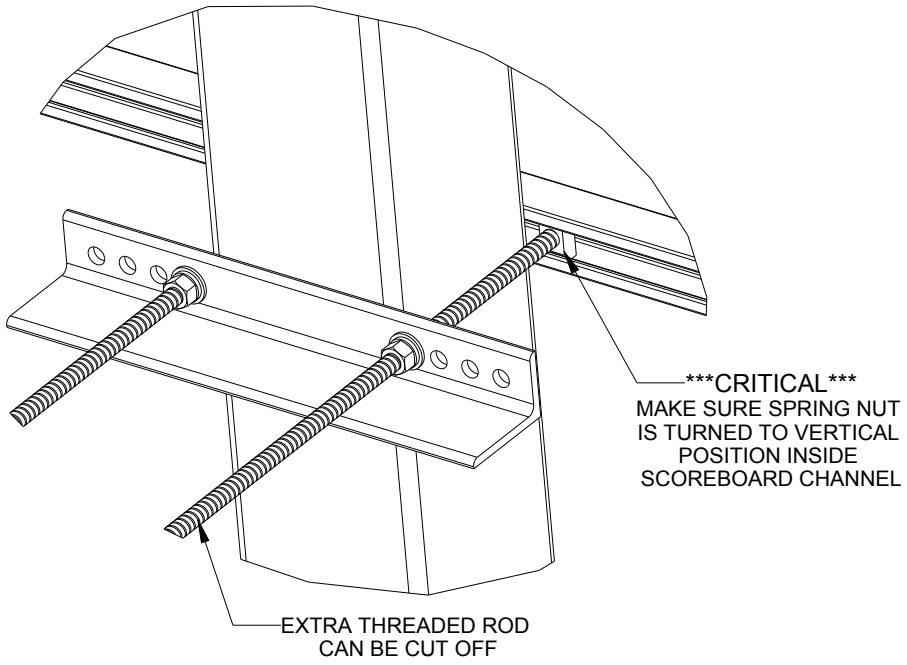
THIRD ANGLE PROJECTION

DAKTRONICS

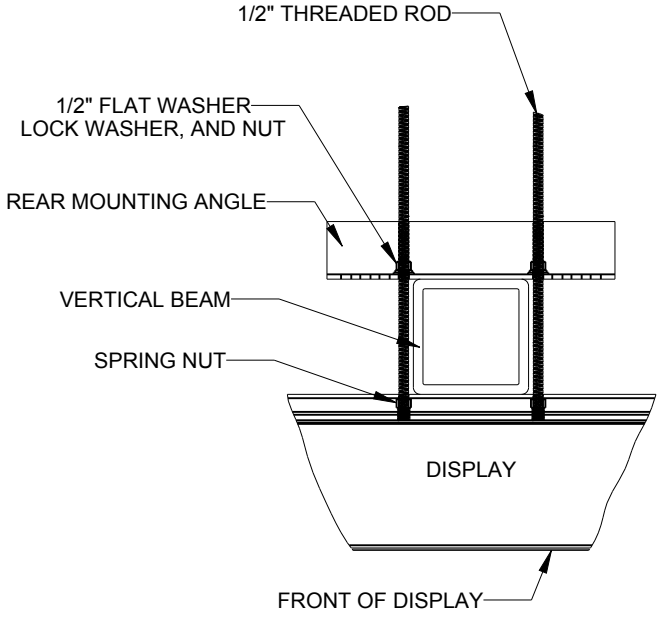
PROJECT:	OUTDOOR SCOREBOARD		
TITLE:	P1647; LVX I-BEAM CLAMP MOUNTING		
DATE: 18-MAY-18	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE: 1/5	DO NOT SCALE DRAWING	1 OF 1	00
DESIGN: KDRAGT	JOB NO. P1647	FUNC - TYPE - SIZE: E - 07 - B	3918361
DRAWN: KDRAGT			



SIDE VIEW



REAR ISOMETRIC VIEW



TOP VIEW
SCALE 1/10

CRITICAL
DO NOT USE ANY LUBRICANT
ON ANY MOUNTING HARDWARE
OR WARRANTY WILL BE VOIDED

STRUCTURAL NOTES:
- BOLT TORQUE: 30 FT-LB

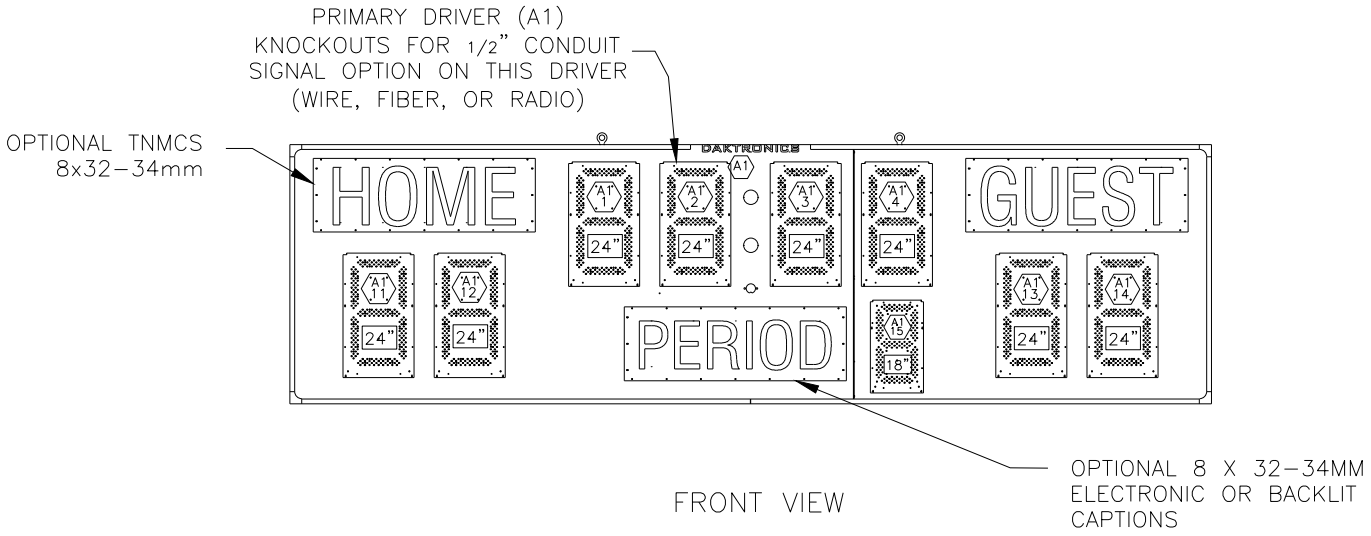
NOTES:
- THREADED RODS RUN ALONG BOTH SIDES OF BEAM
- RODS DO NOT PASS THROUGH THE FLANGES OF THE BEAM
- NO DRILLING NECESSARY
- MAKE SURE SPRING NUT IS PERPENDICULAR TO CHANNEL OPENING ON SCOREBOARD

REV	DATE:		BY:	
04	22 DEC 15	PER EC-22871; ADDED LUBRICANT WARNING	PJS 18704	
03	03 JULY 13	ADDED STRUCTURAL NOTE	TTF	
02	20 SEP 12	PER EC-7114; REMOVED CHAMFER FROM 0M-133259	LMG	
01	06 OCT 11	REPLACED VERTICAL I-BEAM WITH 6" X 6" SQUARE TUBE	JAVA	

THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR SCOREBOARDS			
TITLE:	P1647; POLE MOUNTING OPTIONS			
DATE: 22-DEC-15	DIM UNITS: INCHES [MILLIMETERS]		SHEET 1 OF 1	REV 04
SCALE: 1/5	DO NOT SCALE DRAWING			
DESIGN: DOPPELT	JOB NO. P1647	FUNC - TYPE - SIZE E - 10 - A	1048184	
DRAWN: DOPPELT				

MS-2002-R/A



FRONT VIEW

NOTES:

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

18" = DIGIT SIZE

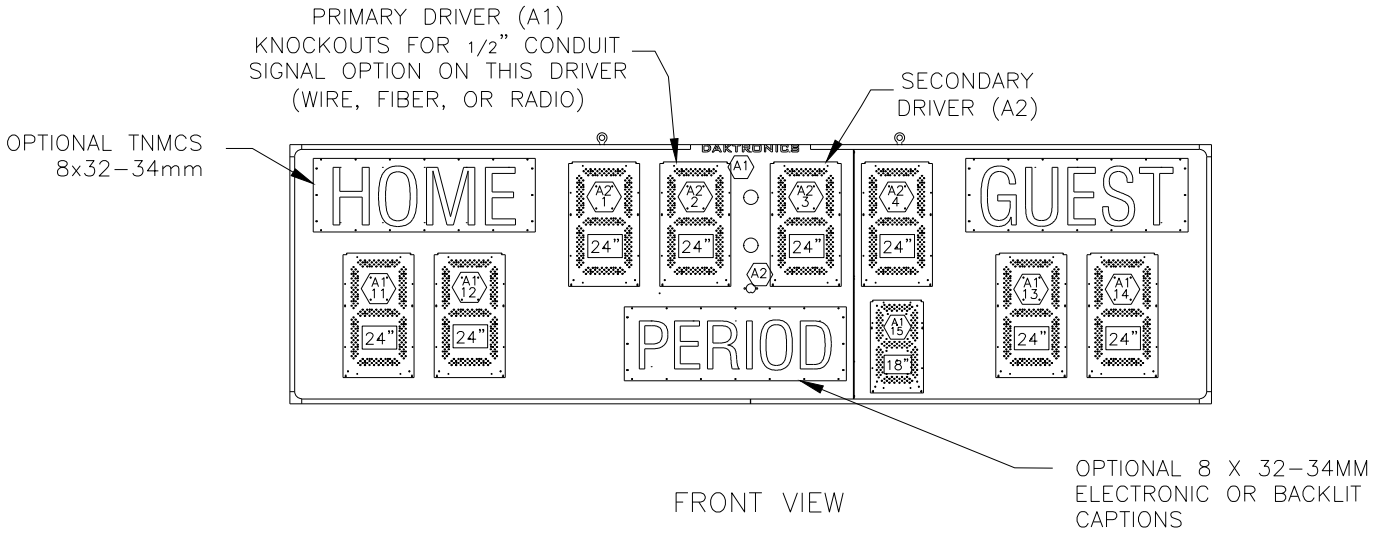
A1 = DRIVER NUMBER

REV	DATE:		BY:	
01	26 AUG 20	PER CN-108704 REMOVED LABELS TO MOVE TO NEW STANDARD	TAN	

THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR SCOREBOARDS			
TITLE:	COMPONENT LOCATION; MS-2002-201X-R/A-PV-F			
DATE: 5 SEP 19	DIM UNITS: INCHES [MILLIMETERS]		SHEET	REV
SCALE: 1=40	DO NOT SCALE DRAWING			01
DESIGN: KMILLER	JOB NO.	FUNC - TYPE - SIZE	4281933	
DRAWN: DMASON	P1647	E - 10 - A		

MS–2002–W



FRONT VIEW

NOTES:

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

[18"] = DIGIT SIZE

⟨A1⟩ = DRIVER NUMBER

REV	DATE:		BY:	
01	26 AUG 20	PER CN-108704 REMOVED LABELS TO MOVE TO NEW STANDARD	TAN	

THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR SCOREBOARDS			
TITLE:	COMPONENT LOCATION; MS-2002-201X-W-PV-F			
DATE: 5 SEP 19	DIM UNITS: INCHES [MILLIMETERS]		SHEET	REV
SCALE: 1=40	DO NOT SCALE DRAWING			01
DESIGN: KMILLER	JOB NO.	FUNC - TYPE - SIZE	4281934	
DRAWN: DMASON	P1647	E - 10 - A		