JAMES MADISON UNIVERSITY

COMMONWEALTH OF VIRGINIA
STANDARD CONTRACT

Contract No. UCPJMU5726

This contract entered into this 17th day of January 2020, by **Daktronics Inc.** hereinafter called the "Contractor" and Commonwealth of Virginia, James Madison University called the "Purchasing Agency".

WITNESSETH that the Contractor and the Purchasing Agency, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF CONTRACT: The Contractor shall provide the services to the Purchasing Agency as set forth in the Contract Documents.

PERIOD OF PERFORMANCE: From January 17, 2020 through January 16, 2022 with eight (8) one-year renewal options.

The contract documents shall consist of:

(1) This signed form;

(2) The following portions of the Request for Proposal CMJ-1055 dated September 13, 2019:
- (a) The Statement of Needs
- (b) The General Terms and Conditions
- (c) The Special Terms and Conditions together with any negotiated modifications of those Special Conditions
- (d) Addendum No. One, dated October 3, 2019
- (e) Addendum No. Two, dated October 14, 2019

(3) The Contractor's Proposal dated October 15, 2019 and the following negotiated modification to the Proposal, all of which documents are incorporated herein.
- (a) Negotiations Summary, dated January 9, 2020

IN WITNESS WHEREOF, the parties have caused this Contract to be duly executed intending to be bound thereby.

CONTRACTOR:	PURCHASING AGENCY:
By: _____ (Signature)	By: _____ (Signature)
Jay Parker (Printed Name)	Colleen Johnson (Printed Name)
Title: Vice President	Title: Buyer Specialist

Rev. 10/14/09

JAMES MADISON UNIVERSITY

RFP # CMJ-1055, Atlantic Union Bank Center LED Displays
Negotiation Summary for
Daktronics

1/9/2020

1. Contractor agrees that this Negotiation Summary modifies the Contractor's response to RFP# CMJ-1055.

2. Daktronics agrees to remove the copyright notice in their proposal to allow for reproduction and transmission of the proposal.

3. Contractor's Pricing Schedule is as follows:

    a. The attached Pricing Schedule (Attachment F) replaces the pricing schedule submitted with the Daktronics proposal dated, October 15, 2019.

    b. Warranty: Daktronics is including Enhanced (White Glove) Service for the initial 2-year warranty period in the base cost.

    c. Extended Warranty Annual Optional Coverage Options:

	Enhanced Service/ White Glove Parts & Labor	First Line of Defense Parts & Labor	Parts Only
Year 3	$33,221	$28,668	$8,689
Year 4	$34,832	$30,440	$8,995
Year 5	$36,216	$31,185	$9,279
Year 6	$37,526	$32,272	$9,563
Year 7	$39,205	$33,538	$9,942
Year 8	$40,495	$34,636	$10,168
Year 9	$41,758	$35,592	$10,458
Year 10	$44,026	$36,918	$10,474

    i. Enhanced Service/White Glove includes 24/7 full service from the Daktronics Service Line at notification of an issue; i.e. JMU places a call for support, Daktronics dispatches a field engineer to site (per specifications in RFP Attachment D #1.2.A.3. "Offeror Qualifications") to service and repair an outage and/or also handle repair and return of spare parts inventory.

    ii. First Line of Defense includes JMU making the first effort to repair. This would include swapping out the part and possible troubleshooting on the phone with Tech Support. If the troubleshooting did not fix the issue a field engineer would be dispatched to site (per specifications in RFP Attachment D #1.2.A.3. "Offeror

Qualifications") to service and repair the outage. If there is a repair by the field engineer, the field engineer shall ship the part back for repair and return to the spare parts inventory.

iii. Services provided in the parts and labor warranty.

- Account services coordination
- Help desk assistance 24/7/365
- Parts coverage
- On-site labor to diagnose and/or repair failed components
- Annual systems check
- On-site spare parts management
- Lift access for services

d. Optional additional training pricing, beyond training included in the implementation specifications (RFP CMJ-1055 Attachment D) for the term of the contract:

i. Webinar (minimum 2 hours)

1. 2 hour 1-1 with a Control Systems Specialist $525
2. An additional 2 hours would be another $525

ii. Onsite training including travel cost.

1. Total cost for 1 day onsite $4,025
2. Total cost for 2 days onsite $5,680
3. Total cost for 3 days onsite $7,335

e. Event Support

i. Event Producer services provided for Bridgeforth Stadium (as laid out in agreement C25093 in JMU3789) shall also be provided by Daktronics for the Atlantic Bank Union Center venue at no additional cost.

1. Description: A Daktronics Event Producer will provide a cohesive and professional presentation for large screen productions at Bridgeforth Stadium and the Atlantic Union Bank Center. The Event Producer's duties include but are not limited to: operation and monitoring of Daktronics equipment, coordinating content creation and production management for additional production needs provided by Daktronics.

ii. Optional Game Day Event Support:

1. $1,340 per game (inclusive of travel) for a Field Engineer to provide event support. Includes 4 hours on site arriving 2 hours prior to event start.

2. Control Systems Event support cost per game inclusive of travel. Includes a dedicated trainer to provide training or event support.

    a. Total cost for 1 day onsite $4,025
    b. Total cost for 2 days onsite $5,680
    c. Total cost for 3 days onsite $7,335

3. JMU shall have the option under this contract to renew Event Production Agreement C25093 as laid out in JMU3789 for a three year term at next expiration, June 30, 2020, at current annual cost.

    a. Event Production $20,300
    b. Event Producer $88,000
    c. Creative Services Content Package $50,000
    d. Total: $158,300/year annually for three years.

4. Optional pricing available at renewal of event production agreement C25093 that ends on June 30, 2020 as laid out in JMU3789:

    Event Production Crew Services for up to 32 basketball games each year at the Atlantic Union Bank Center at a per event cost of $2,200 for a total of $70,400 billed annually and contingent on renewal of event production agreement C25093 at the then current rates.

    Any additional events will be billed separately.

    The game day crew will include:

    a. 1 Event Producer (not included in $2,200 additional cost, included at zero additional cost see item 3.e.i.)
    b. 1 Engineer
    c. 1 Clip Server Operator
    d. 4 Camera Operators
    e. 1 Director
    f. 1 Replay Operator

5. Ad hoc Event Production Crew Rate Information:
   Description: Daktronics can provide production crew personnel to cover University events. The following rates are provided as a guide in estimating production crew costs. Pricing varies based on several factors, including but not limited to, the scope of work, the skillset required, and the length of an event.

   Pricing:
   The following rates are estimates for a 6-hour shift at the Atlantic Union Bank Center on the campus of James Madison University. These rates require that written notice is provided to the Daktronics event producer a minimum of two weeks prior to the event. The rates listed are for the most common event scenarios.* Events during holidays and events booked with less than two weeks' notice may incur a higher cost. Additional operator types are available and can be added as needed.

Event Producer	$300
Director	$375 - $475
Technical Director	$275 - $375
Camera	$200 - $400
Show Control	$200 - $300
Clip Server	$175 - $275
Grip	$150 - $250
Shader	$275 - $375

   *Events requiring specific skillsets may require custom pricing.

f. Daktronics offers 20% off list price for all future standard product purchases.

4. Attachment A: Contractor Licenses and Subcontractors Licenses are included for reference.

5. James Madison University shall make payment in arrears, not in advance, of services and goods accepted. A monthly detailed invoice shall be provided to the University by the Contractor. Payment shall be made in accordance with the Virginia Prompt Pay Act.

6. Animation creation purchased in the base package shall be launched at the start of the contract in coordination with JMU Athletics and anticipated completion for all included content from the contract shall be within the first year.

ANTHONY JAMES PARTNERS

CMJ-1055 Attachment F

LED DISPLAY AND SCORING SYSTEM

NOTE: FILL IN ONLY GRAY SHADED CELLS

ALL PRODUCTS	Daktronics Inc
CENTER HUNG VIDEO DISPLAYS	$446,549
INSTALLATION: CENTER HUNG DISPLAYS	$443,065
RIBBON BOARDS	$391,917
INSTALLATION: RIBBON DISPLAYS	$83,262
VOMITORY LED DISPLAYS	$28,952
INSTALLATION: VOMITORY DISPLAYS	$26,084
LED COURTSIDE DISPLAY 1	$81,242
LED COURTSIDE DISPLAY 2	$57,138
SCORING SYSTEM	$227,911
GENERAL CONDITIONS	$167,429
OPERATING SYSTEM	Inc
ANIMATION PACKAGE	$10,700
GRAND TOTAL BASE COST	$1,964,252

ALTERNATES 1 & 2 INCREASE RESOLUTION CENTER HUNG DISPLAYS	$197,178
ALTERNATE 3: LED CORNER DISPLAYS	$173,923

COST CLARIFICATIONS: STATE ANY EXCEPTIONS BEING TAKEN TO PRODUCT SPECS OR SCOPE OF WORK OR ANY VOLUNTARY ALTERNATES

Fixed Digit Corner Display Utilizing Daktronics Standard Components	$	(39,133.70)
Reduce 14.56' Wide Table Sections to 9.36' Wide	$	(16,527.45)
Alternate LED Option - All Base Bid Displays (Nationstar/Multicolor)	$	(89,086.23)
Assume catwalk access directly above display for power and signal drops		
Assume power is within 50' of termination point on ribbon boards, vomitory and corner boards		
Assume heavy equipment access to arena prior to court floor being installed for duration of installation		

ELECTRICAL SUBCONTRACTOR	Electrical Concepts and Technologies
INSTALLATION SUBCONTRACTOR	Hoist Sales and Service
CONTROL SYSTEM	Daktronics Show Control
LED MANUFACTURER	Daktronics
LED CHIP SUPPLIER	CREE

EXTENDED WARRANTY - PARTS AND LABOR	Daktronics Inc
YEAR 3	$33,221
YEAR 4	$34,832
YEAR 5	$36,216
YEAR 6	$37,526
YEAR 7	$39,205
YEAR 8	$40,495
YEAR 9	$41,758
YEAR 10	$44,026
EXTENDED WARRANTY PARTS ONLY	
YEAR 3	$8,689
YEAR 4	$8,995
YEAR 5	$9,279
YEAR 6	$9,563
YEAR 7	$9,942
YEAR 8	$10,168
YEAR 9	$10,458
YEAR 10	$10,474

Note: Extended warranty pricing should be based on annual payments, rather than upfront lump sum. Owner will reserve right to select option on an annual basis at provided price.

CENTER HUNG VIDEO DISPLAYS	SPECIFICATION	Daktronics Inc
Pixel Pitch	**6**	**5.9**
Quantity	**4**	**4**
Pixel Height (Physical)	608	588
Pixel Length (physical)	992	1,008
Total Pixels	603,136	592,704
System Height (F)	11.9	11.5
System Length (F)	19.3	19.7
Total Sq. FT	230	226
Pixel Density sq. FT	2,626	2,622
Total Display Price		$342,203
Processing		$32,447
Shipping		$10,327
Total System Price		**$384,977**
Cost per Sq. Ft		$379
Cost per Pixel		$0.14

Total Power Draw - Max Amps based on 208V 3P		38
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	140
Viewing Angle - Vertical	140	140

ALTERNATE 1: CENTER HUNG VIDEO DISPLAYS	SPECIFICATION	Daktronics Inc
Pixel Pitch	**4**	**3.9**
Quantity	**4**	**4**
Pixel Height (Physical)	912	896
Pixel Length (physical)	1,488	1,536
Total Pixels	1,357,056	1,376,256
System Height (F)	11.9	11.5
System Length (F)	19.5	19.7
Total Sq. FT	232	226
Pixel Density sq. FT	5,848	6,089
Total Display Price		$480,444
Processing		$37,191
Shipping		$12,036
Total System Price		**$529,671**
Cost per Sq. Ft		$531
Cost per Pixel		$0.09

Total Power Draw - Max Amps based on 208V 3P		38
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	140
Viewing Angle - Vertical	140	140

CENTER HUNG LOWER RING DISPLAY	SPECIFICATION	Daktronics Inc
Pixel Pitch	**10**	**10**
Quantity	**1**	**1**
Pixel Height (Physical)	80	64
Pixel Length (physical)	2,480	2,464
Total Pixels	198,400	157,696
System Height (F)	2.6	2.1
System Length (F)	81.0	80.1
Total Sq. FT	211	167
Pixel Density sq. FT	942	947
Total Display Price		$54,728
Processing		$5,192
Shipping		$1,653
Total System Price		**$61,573**
Cost per Sq. Ft		$329
Cost per Pixel		$0.35
Total Power Draw - Max Amps based on 208V 3P		20
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	170
Viewing Angle - Vertical	140	140

ALTERNATE 2: CENTER HUNG LOWER RING DISPLAY	SPECIFICATION	Daktronics Inc
Pixel Pitch	**6**	**5.9**
Quantity	**1**	**1**
Pixel Height (Physical)	128	168
Pixel Length (physical)	4,160	4,116
Total Pixels	532,480	691,488
System Height (F)	2.6	3.3
System Length (F)	81.2	80.4
Total Sq. FT	211	264
Pixel Density sq. FT	2,522	2,622
Total Display Price		$103,453
Processing		$8,011
Shipping		$2,593
Total System Price		**$114,056**
Cost per Sq. Ft		$392
Cost per Pixel		$0.15
Total Power Draw - Max Amps based on 208V 3P		44
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	140
Viewing Angle - Vertical	140	140

RIBBON BOARDS	SPECIFICATION	Daktronics Inc
Pixel Pitch	**10**	**10**
Quantity	**1**	**1**
Pixel Height (Physical)	64	72
Pixel Length (physical)	16,544	15,840
Total Pixels	1,058,816	1,140,480
System Height (F)	2.0	2.5
System Length (F)	542.0	541.3
Total Sq. FT	1,084	1,332
Pixel Density sq. FT	977	856
Total Display Price		$348,032
Processing		$33,290
Shipping		$10,595
Total System Price		**$391,917**
Cost per Sq. Ft		$261
Cost per Pixel		$0.31

Total Power Draw - Max Amps based on 208V 3P		126
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	160
Viewing Angle - Vertical	140	140

ALTERNATE 3: CORNER LED DISPLAYS	SPECIFICATION	Daktronics Inc
Pixel Pitch	**10**	**10**
Quantity	**4**	**4**
Pixel Height (Physical)	192	192
Pixel Length (physical)	736	736
Total Pixels	141,312	141,312
System Height (F)	6.2	6.2
System Length (F)	24.2	23.9
Total Sq. FT	150	149
Pixel Density sq. FT	942	947
Total Display Price		$193,345
Processing		$23,651
Shipping		$4,548
Total System Price		**$221,544**
Cost per Sq. Ft		$324
Cost per Pixel		$0.34

Total Power Draw - Max Amps based on 208V 3P		18
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	170
Viewing Angle - Vertical	140	140

VOMITORY LED DISPLAYS	SPECIFICATION	Daktronics Inc
Pixel Pitch	**10**	**10**
Quantity	**2**	**2**
Pixel Height (Physical)	64	64
Pixel Length (physical)	528/608	544/608
Total Pixels	33792/38912	34816/38912
System Height (F)	2.0	2.1
System Length (F)	17/20	17.68/19.76
Total Sq. FT	74	78
Pixel Density sq. FT	#VALUE!	947
Total Display Price		$25,846
Processing		$2,357
Shipping		$750
Total System Price		**$28,952**
Cost per Sq. Ft		$332
Cost per Pixel		$0.35

Total Power Draw - Max Amps based on 208V 3P		10
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	170
Viewing Angle - Vertical	140	140

LED COURTSIDE DISPLAY 1	SPECIFICATION	Daktronics Inc
Pixel Pitch	**6**	**6**
Quantity	**1**	**1**
Pixel Height (Physical)	128	96
Pixel Length (physical)	2,048	1,920
Total Pixels	262,144	184,320
System Height (F)	2.4	2.1
System Length (F)	40.0	41.6
Total Sq. FT	96	87
Pixel Density sq. FT	2,731	2,130
Total Display Price		$72,398
Processing		$6,709
Tables + Installation		Inc
Shipping		$2,135
Total System Price		**$81,242**
Cost per Sq. Ft		$837
Cost per Pixel		$0.39

Total Power Draw - Max Amps based on 208V 3P		30
SPECIFICATIONS		
Brightness (nits)	2000	1600
Viewing Angle - Horizontal	140	170
Viewing Angle - Vertical	140	140

LED COURTSIDE DISPLAY 2	SPECIFICATION	Daktronics Inc
Pixel Pitch	**6**	**6**
Quantity	**2**	**2**
Pixel Height (Physical)	128	96
Pixel Length (physical)	608	672
Total Pixels	77,824	64,512
System Height (F)	2.4	2.1
System Length (F)	12.0	14.6
Total Sq. FT	29	31
Pixel Density sq. FT	2,702	2,110
Total Display Price		$50,952
Processing		$4,693
Tables + Installation		Inc
Shipping		$1,494
Total System Price		**$57,138**
Cost per Sq. Ft		$833
Cost per Pixel		$0.39

Total Power Draw - Max Amps based on 208V 3P		16
SPECIFICATIONS		
Brightness (nits)	2000	1600
Viewing Angle - Horizontal	140	170
Viewing Angle - Vertical	140	140

INSTALLATION: GENERAL CONDITIONS	$167,429
Project Management	$23,289
Training and Event Support	$11,753
General Conditions	$48,079
Engineering, Permits, Fees	$48,232
Administrative and Legal	$7,411
Travel and Expenses	$28,666

INSTALLATION: CENTER HUNG DISPLAYS	$443,065
Structural Steel and Installation	$57,895
Hoist	$185,767
Component Installation	$73,684
Heavy Equipment Rental	Inc
Underbelly signage	$15,905
Channel Letters and Footer	$23,368
Cladding, Trim, Flashing and Finishes	$15,495
Electrical and Data	$70,951

INSTALLATION: RIBBON DISPLAYS	$83,262
Secondary Structural Steel and Installation	$3,011
Component Installation	$43,684
Heavy Equipment Rental	Inc
Cladding, Trim, Flashing and Finishes	Inc
Electrical and Data	$36,567

INSTALLATION: ALTERNATE 3 CORNER LED DISPLAYS	$115,397
Secondary Structural Steel and Installation	$18,947
Component Installation	$27,368
Heavy Equipment Rental	Inc
Chain Hoists	$27,368
Cladding, Trim, Flashing and Finishes	$6,063
Electrical and Data	$35,649

INSTALLATION: VOMITORY DISPLAYS	$26,084
Secondary Structural Steel and Installation	$2,632
Component Installation	$6,842
Heavy Equipment Rental	Inc
Cladding, Trim, Flashing and Finishes	Inc
Electrical and Data	$16,611

SCORING SYSTEM	$227,911
Corner Fixed Digit Display (Qty 4 Competition Court)	$163,018
Fixed Digit Display (Qty 1 Practice Court)	$3,255
Shot Clocks, Brackets and Strip Lights	$29,263
Locker Room Clocks	$3,663
Horns	$2,200
Scoreboard Controllers	$842
Stats Computer	$7,013
Data Distribution Panel	$18,656

Attachment A: Licenses

COMMONWEALTH of VIRGINIA
Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
12-31-2021

NUMBER
2705042397

BOARD FOR CONTRACTORS
CLASS A CONTRACTOR
CLASSIFICATIONS BSC

DAKTRONICS INC
PO BOX 5128
BROOKINGS, SD 57006-5128

DPOR

Mary Broz-Vaughan, Director

Status can be verified at http://www.dpor.virginia.gov

VOID

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
09-30-2021

NUMBER
2705139447

BOARD FOR CONTRACTORS
CLASS B CONTRACTOR
INVALID ON JOBS $120,000 OR MORE
CLASSIFICATIONS ELE

ELECTRICAL CONCEPTS AND TECHNOLOGIES LLC
1666 GRANDVIEW RD
PASADENA, MD 21122

DPOR

Mary Broz-Vaughan, Director

Status can be verified at http://www.dpor.virginia.gov

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
10-31-2020

NUMBER
2710055300

BOARD FOR CONTRACTORS
TRADESMAN

KEVIN PATRICK DOWLING
1666 GRANDVIEW RD
PASADENA, MD 21122

DPOR

Jay W. DeBoer, Director

Status can be verified at http://www.dpor.virginia.gov

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
04-30-2021

NUMBER
2705060772

BOARD FOR CONTRACTORS
CLASS C CONTRACTOR
INVALID ON JOBS $10,000 OR MORE
CLASSIFICATIONS BSC

H & M SIGNS INC
700 N HAMMONDS FERRY RD
LINTHICUM HEIGHTS, MD 21090

Mary Broz-Vaughan, Acting Director

Status can be verified at http://www.dpor.virginia.gov

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

(DETACH HERE)

COMMONWEALTH of VIRGINIA
Department of Professional and Occupational Regulation

CLASS C BOARD FOR CONTRACTORS
CONTRACTOR

CLASSIFICATIONS BSC
NUMBER: 2705060772 EXPIRES: 04-30-2021

H & M SIGNS INC
700 N HAMMONDS FERRY RD
LINTHICUM HEIGHTS, MD 21090

(FOLD)

Status can be verified at http://www.dpor.virginia.gov

DPOR-PC (02/2017)

AN INTEGRATED SOLUTION

Developed For

JAMES MADISON UNIVERSITY
ATLANTIC UNION BANK CENTER

DAKTRONICS

JAMES MADISON UNIVERSITY & DAKTRONICS

TABLE OF CONTENTS

YOUR TEAM

YOUR DAKTRONICS REPRESENTATIVE

Fran Kulas
Wilmington, Delaware
302.304.1114

SALES & MANAGEMENT

Charley Bocklet
Region Sales Manager
Poquoson, VA

Sheldon Malcom
Project Manager
Brookings, SD

Josh Howell
Project Manager
Brookings, SD

Stephanie Murphy
Sales Coordinator
Brookings, SD

Meagan Thole
Marketing Coordinator
Brookings, SD

ENGINEERING, SERVICE & SUPPORT

Eric Edens
Applications Engineer
Springboro, OH

Katie Windham
Event Producer
Timberville, VA

Jeremiah Jacinto
Field Services
Arlington, VA

Thomas Berkemeijer
Field Services
Spotsylvalia, VA

DETAILED **APPROACH**

NORFOLK SCOPE ARENA
NORFOLK, VIRGINIA

Daktronics Project Management & Methodology

Daktronics proposal is providing the highest quality LED Display System with Technical Contracting and Construction Management Services to meet or exceed James Madison University's requirements in all areas.

A Dedicated Project Manager will coordinate with all parties from contract award to completion. Daktronics team will provide detailed system and technical shop drawings for approval and signature prior to building of any equipment. This way the Customer, Daktronics, and all involved parties are in complete agreement as to what and how each display will be built. Once all drawings are approved, Daktronics will then proceed with complete detailed engineering designs. Every display provided will incorporate the newest design and product features available from Daktronics.

Upon the detailed engineering design completion, the PM will conduct a pre-build meeting with the engineering and manufacturing team at Daktronics to review each features design. The display will then be released to manufacturing for fabrication. Once the equipment is manufactured, Daktronics will inspect and test all equipment.

During the manufacturing phase, the PM will coordinate shipping details and site work with the Daktronics installation subcontractor. The displays will be shipped by truck from Brookings, SD to Harrisonburg, Virginia. The subcontractor will unload and inspect all equipment upon arrival.

Daktronics will provide an on-site installation supervisor to work directly with all parties on site and our subcontractors. Daktronics has the most comprehensive On-site Construction Management skills in the LED display business and we will address this project's construction management needs. Daktronics modular section design ensures that the display is built in the most efficient way to manage the shipping logistics and, more importantly, to maximize the display section sizes. This means that the installation will be more efficient and allowing the project to finish on time.

Daktronics Installation Supervisor will make all features operational upon installation and coordinate any required on-site operator and maintenance training with the customer. The customer will provide a signed acceptance upon project completion, once all project punch-list items are complete. Between the time that the display is installed and when it is turned over, Daktronics will take the necessary provisions to provide protection for the display. This is generally in the form of anti-static plastic, but it is also asked that all other parties are cognizant of the displays in their respective work areas. Daktronics will also provide a comprehensive inventory of 2% spare parts. Critical components will be housed in the Customer's property. This inventory is designed to provide a rapid response to all service needs and prevent down time when a service visit is needed.

Following installation, Daktronics will provide a comprehensive on-site parts and labor warranty during the 2 year warranty period. Daktronics is also capable and interested in providing long-term service agreements for the lifetime of the equipment.

PROJECT **MANAGEMENT**

EXPERIENCE BROUGHT TO YOUR PROJECT.

Daktronics project management philosophy is built on decades of successful video display systems installed around the world with a number of premier installations including the Olympics. Our team knows how to handle every installation from a standard display to never-been-done-before projects, because that's what we do. We know how to focus on the details, especially when watching the clock, to ensure every installation goes off without a hitch.

1

COMMITTED PROJECT MANAGERS

Our project managers get to know you personally and will guide you through budgeting, manufacturing, design, installation and commissioning.

2

SUCCESSFUL EXPERIENCE

Built on more than 800 years of combined experience, we have what it takes to build successful video display systems around the world.

3

ON SCHEDULE PROJECTS

We provide our clients with long-term time lines and detailed views of what's happening every two weeks.

DESIGNED, ENGINEERED & ASSEMBLED **IN THE UNITED STATES**

PROVIDING JOBS

Originally founded in Brookings, South Dakota, to provide local jobs to the community, Daktronics has grown to become a world leader in the display industry with employees and service staff that are vested in the live events industry and live in multiple communities spread across the country.

ASSEMBLED IN THE USA

Our products are not only assembled in the U.S., our capabilities also include circuit board assembly, electronics assembly, metal fabrication, welding, painting, testing and shipping—from the component level to final assembly.

BY THE NUMBERS

- More than 600,000 total square feet of space over 3 manufacturing facilities on U.S. soil
- Capacity to produce over 10,000 LED modules per week company wide
- More than 2,700 total employees
  - More than 2,450 full-time
  - 500 with engineering degrees

MANUFACTURING & **ENGINEERING**

MANUFACTURING

The process of design and manufacturing is controlled in one place, ensuring exceptional quality from the component level to final assembly. This allows us to make the necessary adjustments indicated by our in-house reliability lab. A total of 56,000 square meters (more than 600,000 square feet) of manufacturing space allows a large capacity for handling multiple projects on time, regardless of size and scope.

ENGINEERING

With Daktronics, customers are leveraging the largest engineering team in the industry which includes 500 engineers on staff out of 2,700 total employees. These experts work to create products and installations that meet and exceed the expectations of our customers. We invest 4% ($27 million last year) of our annual revenue back into research and development to ensure our products are on the cutting-edge of technology.

MANUFACTURING LEADERSHIP AWARDS
FROST & SULLIVAN
WINNER 2017

MANUFACTURING AWARD

Daktronics has been recognized as a Frost & Sullivan Manufacturing Leadership Awards winner for its outstanding achievement in Operational Excellence through the implementation of a robotic overhead rail system which streamlines productivity and on-time delivery, but also improves quality and safety in the manufacturing process.

RELIABILITY **LAB**

FOR ADDITIONAL DISPLAY INFORMATION VISIT
DAKTRONICS.COM/RELIABILITY

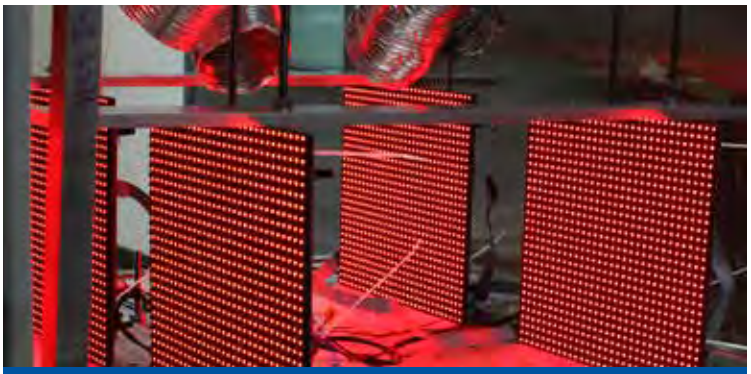
Our state-of-the-art product reliability laboratory uses the latest advancements in environmental technology to test the limits of every Daktronics product, providing valuable feedback during the product development life cycle. From punishing salt and fog chambers that exaggerate the corrosive effects of coastal precipitation to blistering environmental simulators that mimic extreme climate changes, our dedicated product reliability technicians push each Daktronics product to its absolute performance limits, using their findings to implement continued product improvements. The results are superior products built to perform for years to come.

1 MEASURING THE CORROSIVE EFFECTS OF SALTY PRECIPITATION

TESTING COMPONENTS AGAINST COLD, HEAT, AND HUMIDITY **2**

3 DISPLAY-LEVEL ENVIRONMENTAL TESTING

PROLONGED EXPOSURE TO EXTREME TEMPERATURES **4**



5 THE NEXT GENERATION IN ENVIRONMENTAL TESTING

CABINET TESTING FOR A WEATHER-READY SOLUTION **6**

DESIGN & BUILD **SERVICES**

DELIVERING YOUR CONCEPT FROM START TO FINISH

ONE PROJECT. ONE COMPANY. ONE TEAM.

We oversee design, manufacturing and installation, ensuring consistent project management. You don't have to contract out project management or be the middleman between design and construction.

DEDICATED & EXPERIENCED

Our dedicated and experienced personnel focuses exclusively on the project at hand. Your project won't be slowed down by common mistakes by inexperienced or understaffed management.

FASTER PROCESS

Design engineers collaborate with customers to find the right fit for every venue by providing shop drawings, structure analysis and control room analysis. Your facility gets the best possible fit, whether it's a retro-fit or a new build.

CUSTOM DESIGN

Faster process from concept to installation with streamlined project planning. Your completed project generates income sooner. When following the traditional bid method, costs are established early in the design process. But by following Daktronics Design Build Method, your budget will have an accurate estimate of costs from day one.

PATHWAY TO YOUR VISION

VISIONING

The first steps are working with you to understand and develop the parameters of the project. This could include style, structural analysis and preliminary budget discussions.

CONCEPTUAL DESIGN

After understanding the vision of the project, our design team will come up with multiple designs of both digital and static signage.

PRELIMINARY DRAWINGS & BUDGET CHECK

To fully understand the logistics of the project, Daktronics creates preliminary shop drawings to focus discussions towards product options and a budget review to make sure costs are kept in check when brainstorming ideas.

DETAILED SHOP DRAWINGS

Once a final design is chosen, our engineers will create shop drawings to ensure they meet the structural guidelines and your approval to progress the project. At this time, finalized pricing and a project schedule can be determined.

INSTALLATION DRAWINGS

Once construction drawings are approved, we create detailed shop drawings that are designed for installation and manufacturing.

MANUFACTURING

In South Dakota, your display will be assembled from the component level to final calibration.

INSTALLATION

Our experienced Daktronics employees will staff our project management, installation and field service team at your site through the duration of this installation.

COMMISSIONING

To ensure the display is installed correctly and all of your expectations are met, our commissioning team follows methodical testing procedures with established checklists and customer sign-offs.

BID
DOCUMENTS

TOWSON UNIVERSITY
TOWSON, MARYLAND

REQUEST FOR PROPOSAL
RFP# CMJ-1055

Issue Date: **September 13, 2019**

Title: **ATLANTIC UNION BANK CENTER - LED DISPLAYS PACKAGE**

Issuing Agency: **Commonwealth of Virginia**
James Madison University
Procurement Services MSC 5720
752 Ott Street, Wine Price Building
First Floor, Suite 1023
Harrisonburg, VA 22807

Period of Contract: From Date of Award Through One Year (Renewable)

Sealed Proposals Will Be Received Until 2:00 PM on October 17, 2019 for Furnishing The Services Described Herein.

SEALED PROPOSALS MAY BE MAILED, EXPRESS MAILED, OR HAND DELIVERED DIRECTLY TO THE ISSUING AGENCY SHOWN ABOVE.

All Inquiries For Information And Clarification Should Be Directed To: Colleen Johnson, Buyer Specialist, Procurement Services, johns9cm@jmu.edu; 540-568-3137; (Fax) 540-568-7935 not later than **October 7, 2019**.

NOTE: THE SIGNED PROPOSAL AND ALL ATTACHMENTS SHALL BE RETURNED.
In compliance with this Request for Proposal and to all the conditions imposed herein, the undersigned offers and agrees to furnish the goods/services in accordance with the attached signed proposal or as mutually agreed upon by subsequent negotiation.

Name and Address of Firm:

Daktronics, Inc.

201 Daktronics Dr.

Brookings, SD 57006

By: Seth T. Hansen
(Signature in Ink)

Name: SETH T. HANSEN
(Please Print)

Date: October 15, 2019

Title: Vice President

Web Address: www.daktronics.com/en-us

Phone: 605-692-0200

Email: Daktronics.Sales@daktronics.com

Fax #: (605)697-4746

ACKNOWLEDGE RECEIPT OF ADDENDUM: #1 SH #2 SH #3 ____ #4 ____ #5 ____ (please initial)

CONTRACTOR/SUBCONTRACTOR LICENSE REQUIREMENT: By my signature on this solicitation, I certify that this firm/individual and subcontractor is properly licensed for providing the goods/services specified. License # 2705042397 Type Class A – BCS (Billboard & Sign)

SMALL, WOMAN OR MINORITY OWNED BUSINESS:
☐ YES; X NO; *IF YES* ⇒⇒ ☐ SMALL; ☐ WOMAN; ☐ MINORITY *IF MINORITY:* ☐ AA; ☐ HA

Note: This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, § 2.2-4343.1 or against an offeror because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

ATTACHMENT A

OFFEROR DATA SHEET

TO BE COMPLETED BY OFFEROR

1. QUALIFICATIONS OF OFFEROR: Offerors must have the capability and capacity in all respects to fully satisfy the contractual requirements.

2. YEARS IN BUSINESS: Indicate the length of time you have been in business providing these types of goods and services.

   Years 50 Months 10

3. REFERENCES: Indicate below a listing of at least five (5) organizations, either commercial or governmental/educational, that your agency is servicing. Include the name and address of the person the purchasing agency has your permission to contact.

CLIENT	LENGTH OF SERVICE	ADDRESS	CONTACT PERSON/PHONE #
James Madison University	36 years	Harrisonburg, VA	Ty Phillips (540) 568-1762
Virginia Tech	22 years	Blacksburg, VA	Brian Walls (540) 231-7866
University of Virginia	28 years	Charlottesville, VA	Jason Bauman (434)996-4195
Old Dominion University	39 years	Norfolk, VA	Rick French (270) 996-8244
College of William & Mary	44 years	Williamsburg, VA	Adam Andrusyszyn (757) 206-3790

4. List full names and addresses of Offeror and any branch offices which may be responsible for administering the contract.

   Stephanie Murphy, 201 Daktronics Drive, Brookings, SD 57006

   Charley Bocklet, 16 Carroll Drive, Poquoson, VA 23662

5. RELATIONSHIP WITH THE COMMONWEALTH OF VIRGINIA: Is any member of the firm an employee of the Commonwealth of Virginia who has a personal interest in this contract pursuant to the CODE OF VIRGINIA, SECTION 2.2-3100 – 3131?

   [ ] YES [x] NO

   IF YES, EXPLAIN:

ATTACHMENT B

Small, Women and Minority-owned Businesses (SWaM) Utilization Plan

Offeror Name: Daktronics, Inc. **Preparer Name:** James Madison University

Date: 10/17/2019

Is your firm a **Small Business Enterprise** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes_____ No__x___

If yes, certification number: _____ Certification date:_____

Is your firm a **Woman-owned Business Enterprise** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes_____ No__x___

If yes, certification number: _____ Certification date:_____

Is your firm a **Minority-Owned Business Enterprise** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes____ No__x___

If yes, certification number: _____ Certification date:_____

Is your firm a **Micro Business** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes_____ No__x___

If yes, certification number: _____ Certification date: _____

Instructions: *Populate the table below to show your firm's plans for utilization of small, women-owned and minority-owned business enterprises in the performance of the contract. Describe plans to utilize SWAMs businesses as part of joint ventures, partnerships, subcontractors, suppliers, etc.*

Small Business: "Small business " means a business, independently owned or operated by one or more persons who are citizens of the United States or non-citizens who are in full compliance with United States immigration law, which, together with affiliates, has 250 or fewer employees, or average annual gross receipts of $10 million or less averaged over the previous three years.

Woman-Owned Business Enterprise: A business concern which is at least 51 percent owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership or limited liability company or other entity, at least 51 percent of the equity ownership interest in which is owned by one or more women, and whose management and daily business operations are controlled by one or more of such individuals. **For purposes of the SWAM Program, all certified women-owned businesses are also a small business enterprise.**

Minority-Owned Business Enterprise: A business concern which is at least 51 percent owned by one or more minorities or in the case of a corporation, partnership or limited liability company or other entity, at least 51 percent of the equity ownership interest in which is owned by one or more minorities and whose management and daily business operations are controlled by one or more of such individuals. **For purposes of the SWAM Program, all certified minority-owned businesses are also a small business enterprise.**

Micro Business is a certified Small Business under the SWaM Program and has no more than twenty-five (25) employees **AND** no more than $3 million in average annual revenue over the three-year period prior to their certification.

All small, women, and minority owned businesses must be certified by the Commonwealth of Virginia Department of Small Business and Supplier Diversity (SBSD) to be counted in the SWAM program. Certification applications are available through SBSD at 800-223-0671 in Virginia, 804-786-6585 outside Virginia, or online at http://www.sbsd.virginia.gov/ (Customer Service).

RETURN OF THIS PAGE IS REQUIRED

ATTACHMENT B (CNT'D)

Small, Women and Minority-owned Businesses (SWaM) Utilization Plan

Procurement Name and Number: _James Madison University – Atlantic Bank Center_ Date Form Completed: _10-14-19_____

Listing of Sub-Contractors, to include, Small, Woman Owned and Minority Owned Businesses
for this Proposal and Subsequent Contract

Offeror / Proposer:

Daktronics Inc	201 Daktronics Dr, Brookings, SD 57006	Josh Howell
Firm	Address	Contact Person/No.

Sub-Contractor's Name and Address	Contact Person & Phone Number	SBSD Certification Number	Services or Materials Provided	Total Subcontractor Contract Amount (to include change orders)	Total Dollars Paid Subcontractor to date (to be submitted with request for payment from JMU)
Electrical Concepts and Technoligies Inc 1666 Grandview Rd Pasadena, MD 21122	Arthur White 410-437-9562		Electrical and Data installation	$128,304	
Hoist Sales and Service 8672 Dolce Ln Sarasota, FL 34238	Dave Delaro 914-554-8127		Hoist and Display Installation	$139,000	

(Form shall be submitted with proposal and if awarded, again with submission of each request for payment)

RETURN OF THIS PAGE IS REQUIRED

ATTACHMENT D

SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

PART 1 GENERAL

1.1 DESCRIPTION

A. The Contractor shall be responsible for providing all displays and control equipment as described.

B. The Contractor shall be responsible for the provision and installation of all primary and secondary steel, mounting brackets/hardware, and cladding required to accommodate the new systems onto the existing structures and walls at the facility. This includes all labor, materials, equipment; tools, transportation, and project management required for a complete and fully operational system(s) on the project.

C. Contractor shall be responsible for all power and electrical distribution to the new system(s). Contractor shall provide all secondary power connections/terminations required to power new system(s). Contractor is responsible for providing stamped electrical drawings by a licensed electrical engineer in the State of Virginia.

D. All additional conduit and raceways required to complete a path to each display component shall be furnished and installed by Contractor. Contractor shall be responsible to furnish, install, and terminate all required cabling needed to make new system(s) complete and fully operational.

E. A rendering package and structural drawings (Primary Display) is provided as part of this RFP. The illustrations are to be construed as conceptual and not for construction purposes. Contractor shall be responsible for final engineering of structural and electrical components required for new system(s), including professional engineering stamp by a licensed/registered engineer in the State of Virginia. All structural and electrical engineering is subject to the University review and approval. Any modifications required are the responsibility of the Contractor.

F. Contractor is responsible for supplying a complete and fully operational system as intended by the RFP documents and any subsequent addendums.

G. Prior to entering into a contract for the project, the Offeror is responsible for notifying the University of any equipment omissions in the RFP documents that would prevent the completion of a fully operational system. If Contractor fails to notify the University of any equipment omissions, Contractor shall assume responsibility for providing the required equipment at no additional cost to the University.

H. Contractor shall field verify all work site conditions, including dimensions and site lines prior to submitting shop drawings.

I. The Contractor shall be wholly responsible for any necessary logistic, staging, planning, etc. required to access and execute the work. This includes any demolition, clearing and put back necessary to access the project or to create staging or storage areas. Contactor shall return all existing conditions and improvements to a condition equal to the condition it was found upon mobilization.

J. Contractor shall grant the University a license to use all proprietary software provided with this RFP for the life of the system.

1.2 OFFEROR QUALIFICATIONS

A. James Madison University seeks to contract with an Offeror for the full performance of the work as described in this RFP and to obtain long-term service and support for all equipment supplied by the selected Offeror. In an effort to ensure the chosen Offeror has the long-term interests of the University in mind, the following shall be required in order to submit a proposal for this project. Failure to submit acceptable responses to all of these requirements may eliminate an Offeror from consideration. The University, in its sole discretion, shall reserve the right to waive any or all of the requirements listed below.

1. Offeror shall provide a list of a minimum of three (3) facilities (facility, contact name, title, address and current phone number) where the Offeror has provided equipment and services of equivalent brand, size and scope within the last three (3) years.
2. Offeror shall provide a minimum of one (1) facility (facility, contact name, title, address and current phone number) where the Offeror has provided equipment and services of equivalent brand, size and scope that is at least five (5) years old.
3. Offeror shall have a direct service employee or certified contractor capable of providing maintenance response within two (2) hours of a call for service.

1.3 SUBMITTAL REQUIREMENTS

B. Initial Submittals and Shop Drawings

1. Contractor shall be required to provide submittals and shop drawings to the University within fifteen (15) calendar days of date shown on award notice, acknowledged with a binding letter of intent. Contractor shall be responsible to ensure that the dimensions and specifications of each component and all systems fit within the building allowances. The University must review and approve all submittal documents prior to the start of work. Contractor shall advise the University of any discrepancy that could affect installation. If Contractor fails to notify the University of any discrepancies, Contractor shall assume responsibility for providing the required equipment or correcting such discrepancies at no additional cost to the University. The following required submittals shall be defined by guidelines established by the University and shall include but not be limited to:

    a. Submit three sets of shop drawings, product data and samples together in one package within fifteen (15) calendar days of date shown on award notice to Contract and prior to ordering equipment.

    b. Submit catalogue data sheets, neatly bound with title page, space for submittal stamps, and tabbed dividers between Sections. Provide a complete list of proposed equipment with reference to its corresponding specification paragraph number or equipment title in specification paragraph order. Denote all approved substitutions.

    c. Submit fabrication shop drawings for all displays including component weight and power calculations.

    D. Submit structural engineered drawings for all primary and secondary steel framing required for this scope of work. If primary steel structure is existing or provided by others, drawings submitted shall include attachments to primary steel structure. Structural engineered drawings shall also include method of attachment for LED displays and all other signage elements required for this scope of work. A licensed/registered engineer in the State of Virginia shall stamp all structural drawings.

    d. Submit point-to-point wiring diagrams and typed wire lists identifying every connection. Include electronic devices such as switches, transformers and terminal blocks. Indicate locations of all components. Identify cables by type, color, and wire numbers.

    e. Submit conduit riser diagrams showing required conduits and junction boxes along with types of quantities of cables to be contained in each conduit. Show details of weatherproofing, lightning protection and grounding, strain relief and cable support, fire stop protection, and wall penetrations through all rated partitions.

    f. Submit rack layouts indicating the proposed arrangement of mounted equipment including power junction box location. Rack layouts shall include front and rear views.

    g. Submit detail drawings of all custom fabricated items and approved equipment modifications. Include complete parts lists, schematic diagrams, and all dimensions required for proper assembly.

h. LED population layout drawings shall be submitted for each backlit channel letter and/or signage element required under this scope of work. Photos, confirming LED and/or fluorescent lighting layout, shall be submitted for each backlit channel letter and/or signage element upon completion of fabrication and prior to shipping product to site.

i. Submittal drawings shall indicate proposed color selections and finishes for all exposed surfaces and custom fabricated items. Submit actual color/finish samples, wall plates, and custom labels.

j. Submit a list of all lower tier subcontractors and suppliers. List shall include lower tier subcontractor's qualifications indicating performance of similar work on past projects of this type and scope.

k. Submit a project schedule in Gantt chart format outlining equipment delivery dates and installation start and finish dates. Project schedule shall be broken down into sufficient detail (work task and duration) to permit the University to monitor installation progress on a daily basis.

l. Copies of all required business and contractor licenses.

m. Copies of proof of insurance.

n. Approval of submitted items indicates only the acceptance of the manufacturer and quality. Specific requirements, arrangements, and quantities shall comply with the intent of the Contract Documents as interpreted by the University unless specifically approved in writing.

o. Submittals that are incomplete, deviate significantly from the requirements of the Contract Documents, or contain numerous errors will be returned without review for rework and re-submittal, and may result in back charges to the contractor.

C. Contract Closeout Submittal

1. When the installation is substantially complete including the Testing Reports in Part 3 of this Section, Contractor shall submit two (2) complete initial hard copy sets of contract closeout submittals to the University for review. After review and approval of initial set, the University will return one (1) initial hard copy to Contractor with comments for updating. Contractor shall provide four (4) final sets of closeout submittals to the University and one (1) electronic copy in PDF format. Closeout submittals shall include, but not be limited to:

   a. Project Record Drawings (As-Built Drawings) including final screen fabrication drawings, secondary steel structural drawings, electrical drawings, system block diagrams, rack layout drawings, custom fabricated signage drawings (final fabrication version), and LED population layout drawings for custom fabricated signage.

   b. A list of all equipment provided and its location within the facility. List shall include manufacturer name, model identifier, serial number, and any other pertinent information needed to obtain service, maintenance, and/or replacement.

   c. A list of all Subcontractors who performed work for Contractor during installation. List shall include company name, physical company address, phone number, and contact person(s).

   d. Test reports from an independent testing & inspection agency certifying that bolted and/or welded connections for primary and/or secondary structural steel meet the minimum requirements of the engineered structural drawings, the governing building code, or as required by the building official; whichever is more restrictive.

   e. All testing reports as specified in Section 3.7 – Testing and Acceptance.

   f. Test reports for all new fiber optic cable installed under this scope of work. Test reports shall indicate end to end signal loss does not exceed a maximum dB loss per Section 3.4.N and/or 3.4.O.

   g. Operation & Maintenance Manual

Upon substantial completion and prior to on-site training with the University, Contractor shall provide four (4) final Operation & Maintenance Manuals (O&M Manuals). O&M Manuals shall have tab dividers and shall be logically organized to provide easy access to information without the need to research through entire manual. All documents provided in the O&M Manual shall be written in English and shall provide sufficient detail as to be understood by an individual with no knowledge of LED displays or the associated control equipment and/or operating systems. Contents of the O&M Manual shall include, but not be limited to:

1) Table of Contents
2) Description / overview of system(s) including key features and operational procedures.
3) Full start up procedure for all control room rack equipment and LED display equipment written under the assumption that all equipment was in full powered off mode.
4) Full shutdown procedure for all control room rack equipment and LED display equipment written under the assumption that the facility is in an extended power failure situation.
5) Procedure for switching to back up LED display processors and back up graphics/animation servers.
6) Troubleshooting procedures for all LED displays, LED display processors, graphics/animation servers, scoring systems, and all related equipment provided by Contractor. Troubleshooting procedures shall include demonstration photos and/or diagrams as required.
7) Maintenance procedures for all LED displays, LED display processors, graphics/animation servers, scoring systems, and all related equipment provided by Contractor. Maintenance procedures shall include demonstration photos and/or diagrams as required. Contractor shall indicate whether maintenance procedures should be performed monthly, bi-annually, or annually.
8) Owner's Manuals for all third party and/or "off-the-shelf" type equipment provided by Contractor: e.g., KVM's, fiber modems, network switches/routers, and UPS battery backups.
9) All third-party equipment and/or "off-the-shelf" equipment warranties and a notarized System Warranty.

1.4 EQUIPMENT GENERAL SPECIFICATIONS

A. All equipment and materials, except University furnished, shall be new and the latest version at the time of proposal and shall conform to applicable UL, ULC, CSA or ANSI provisions. Re-manufactured or "B" stock equipment shall not be accepted without prior written consent from the University. Evidence of unauthorized re-manufactured or "B" stock equipment on the project site shall be deemed evidence of the contractor's failure to perform the work. Contractor shall take care during installation to prevent scratches, dents, chips or disfiguration of equipment and materials supplied. All damaged equipment and/or materials shall be repaired or replaced at the University's discretion. Contractor shall perform either option selected by the University at no additional cost to the University.

B. Unless specified differently on the AJP Drawings (Attachment E), back lit channel letters and back lit fixed ad panels shall be illuminated as indicated below, which are the minimum acceptable product specifications. Contractor shall be responsible to ensure that the output of lighting is of sufficient lumens to clearly and successfully illuminate signage elements when used in the facility under event lighting conditions. Hot spots or dark spots shall not be acceptable. Consideration shall be given to match the Kelvin temperature when various combinations of illumination methods are used for different signage elements (i.e. LED illumination mixed with Fluorescent illumination).

1. LED Illumination

    a. LED's shall be Sloan LED V Series or approved equal. LED's shall be placed at a maximum of three (3) inches on center throughout the letter stroke or fixed ad cabinet.

    b. Multiple rows of LED's shall start no more than three (3) inches from returns.

    c. Electrical connections and/or electrical boxes shall not be visible to public view.

C. Cabinets for channel letters and back lit fixed ad panels shall appear from the exterior to be seamless construction. Seams shall be filled and sanded smooth prior to application of final finish color. Visible fasteners or mounting brackets shall not be acceptable. Light leaks around cabinet or between cabinet and letter face or fixed ad face shall not be acceptable.

D. All cabling [power and data] is to be labeled at each end of the cable with a description in English OR with a reference to a wire designation on a wiring diagram. This includes all cables internal to the displays, all cables between displays and control room, and all cables internal to the control room. These diagrams must be part of the Project documentation submitted to the University at time of acceptance.

E. Each device shall meet all of its published manufacturer's specifications. Verify performance as required.

F. Install all rack mounted equipment with Middle Atlantic Products HP Series truss head screws or approved equal.

G. Some rack-mounted equipment may require shaft locks, security covers, or removal of knobs; provide and install during Acceptance Testing.

H. Provide engraved self-adhesive phenolic labels at the fount and rear of all rack-mounted signal processing equipment. Mount labels on the equipment chassis and attach in a neat and permanent manner. Embossed label shall not be accepted. Label equipment with schematic enumeration reference, and with descriptive information regarding its function or area it is serving. Similarly, provide engraved labels at the rear only of equipment mounted in furniture consoles.

I. All engraving shall be 1/8" block lettering unless noted otherwise. On dark panels or pushbuttons, letters shall be white. Letters shall be black on stainless steel, brushed natural aluminum plates or light-colored pushbuttons.

J. Per IEC-268 standard, all XLR connectors not mounted on equipment shall be wired pin 2 hot (high), pin 3 low, and pin 1 screen (shield).

K. Mounting Hardware exposed to the weather shall be aluminum, brass epoxy painted galvanized steel or stainless steel. Apply corrosion inhibitor to all threaded fittings.

L. Equipment Racks shall be Middle Atlantic Products model MRK-4436, or approved equal, with accessories as noted below. Quantity of racks shall be as required to house all equipment supplied under this scope of work. Any unused rack mounting spaces shall have blank panels to full enclose the rack assembly. Multiple racks shall be anchored together using appropriate ganging hardware. Standard solid rear door shall be replaced with Middle Atlantic Products model MW-VRD-44 vented rear door.

    1. Provide two (2) side panels per individual stand-alone rack or series of racks ganged together. The intent is to have an enclosed rack system. A single stand-alone rack would have two (2) side panels and a series of three (3) racks ganged together would also have two (2) side panels. Side panels shall be Middle Atlantic Products model SPN-44-36 or approved equal.

    2. Provide Middle Atlantic Products model MW-4QFT-FC integrated fan top, or approved equal, for each rack. Fan shall be thermostatically controlled to ensure in-rack temperatures of less than 100 degrees Fahrenheit.

    3. Provide two (2) Middle Atlantic Products model LT-GN-PL gooseneck work light for each rack required for this scope of work.

    4. Provide Middle Atlantic Products model PDT-2X1020T, or approved equal, in rack vertical power strip. Power strip shall have enough receptacles to accommodate all equipment housed in the associated rack with a minimum of two spare receptacles per rack.

M. Any rear mounted rack equipment shall be placed so the equipment does not block access to the back of front mounted equipment.

N. Contractor shall exercise care when wiring racks to avoid damaging cables and equipment. Contractor shall install grommets around cut-outs and knock-outs where conduit or chase nipples are not installed.

O. Equipment Racks shall have a ground buss installed in each rack. Ground buss shall be insulated from the rack. Attach equipment rack to ground buss at one point using #4 insulated copper wire. Ground any equipment chassis without a three-conductor power cord directly to the buss bar using #12 insulated copper wire. Tie each and every power receptacle ground contact to the buss bar using #12 insulated copper wire. Interconnect signal cables shall be routed from junction boxes through metallic flexible conduit(s) (1" to 2" diameter) as appropriate. Flexible conduit shall be insulated from racks by approved insulating bushings.

P. Power wiring and signal/data wiring shall be installed on opposite sides of rack. Contractor may determine which side is using for power and which side for signal. Method shall be kept the same for entire installation, if multiple racks are required. Contractor shall exercise care when wiring racks to avoid damaging cables and equipment.

1.5 QUALITY ASSURANCE

A. All requirements of the latest published editions of the following standards shall apply, unless otherwise noted. In the event of conflict between cited or referenced standards, the more stringent shall govern.

1. National Electric Code (NEC).
2. National Electrical Manufacturers Association (NEMA)
3. Underwriters Laboratories (UL)
4. Federal Communications Commission (F.C.C.) Rules and Regulations, Part 76.
5. Society of Cable Television Engineers (S.C.T.E.)
6. Society of Motion Picture and Television Engineers (S.M.P.T.E.)
7. National Cable Television Association (N.C.T.A)
8. Electronic Industries Association (E.I.A.)
9. Telecommunications Industries Association (T.I.A.)
10. Electronic Industries Association (E.I.A.)

B. Review all architectural, civil, structural, mechanical, electrical, and other project documents relative to this work.

C. Verify all dimensions and site conditions prior to starting work.

D. Coordinate the specified work with all other trades.

E. Maintain a competent supervisor and supporting technical personnel, acceptable to the University during the entire installation. Change of supervisor during the project shall not be permitted without prior written approval from the University.

F. Provide all items not indicated on the drawings or mentioned in the specifications that are necessary, required or appropriate for this work to realize a complete and fully operational system that performs in stable and safe manner.

G. Review project documentation and continuously make known any conflicts discovered and provide all items necessary to complete this work to the satisfaction of the University without additional expense. In all cases where a device or item or equipment is referred to in singular number or without quantity, each such reference shall apply to as many such devices or items as are required to complete the work.

H. Provide additional support or positioning members as required for the proper installation and operation of equipment, materials and devices provided as part of this work as approved by the University, without additional cost to the University.

I. Regularly examine all construction, and the work of others, which may affect Contractors work to ensure proper conditions exist at site for the equipment and devices before their manufacture, fabrication or installation. Contractor shall be responsible for the proper fitting of the systems, equipment, materials, and devices provided as part of this work.

J. Promptly notify the University in writing of any difficulties that may prevent proper coordination or timely completion of this work. Failure to do so shall constitute acceptance of construction as suitable in all ways to receive this work, except for defects that may develop in the work of others after its execution.

K. After installation, submit photographs showing cable entries and terminations within equipment racks, enclosures and pedestals at the job site.

1.6 WARRANTY AND SERVICE

A. Contractor shall warrant labor and materials for twenty-four (24) months following the date of Final Acceptance.

B. During the warranty period the system shall be free of defects and deficiencies and conform to the drawings and specifications with respect to the quality, function, and characteristics stated.

C. Contractor shall repair or replace defects that occur in labor or materials within the warranty period. If repair is affected using the University's spare parts allotment, Contractor shall replenish all parts used to keep the University's inventory at the amount required by the contract.

D. On-site labor shall be included during the warranty period for any work beyond simple component replacement. Simple component replacement shall be defined as lighting unit or power supply replacement or the replacement of an internal display signal cable that does not require tools to perform the cable replacement.

E. Failed parts shall be returned to the Contractor for repair at a service facility located in North America. Contractor shall identify the location of its service facility in the documentation provided when submitting a proposal for this work.

F. The Contractor shall replace failed parts that cannot be repaired.

G. Upon receipt of a failed part, Contractor shall return a repaired or replacement part to the University within fifteen (15) business days from receipt of failed part.

H. Contractor shall supply at least one local service employee or local authorized service agent for servicing and repair of all equipment during the warranty period. Local service employee or local authorized service agent shall be located within 150 miles of the University's facility.

I. The local service employee or local authorized service agent shall be the entity responsible for providing the following emergency response availability:

1. Telephone service assistance and technical support from 8am to 11pm local time at the University's facility, 7-days per week.

2. Answer all service calls and requests for information within one (1) hour during the contract period.

3. A parts exchange program, including same day shipment of exchange parts. The manufacturer shall keep a ready stock of key assemblies available to ship out upon notice of a parts failure if part is not available in spare parts inventory at the University's facility.

4. The advance replacement should contain all of the shipping information and packaging necessary to return the defective part or assembly back to Contractor at no cost to the University.

J. Warranty shall cover all equipment, including processors, controllers, operating systems, and software.

K. Warranty shall include two annual on-site system check-ups by a qualified technician who is a full-time employee of the Contractor. Visit to occur approximately 2-3 weeks prior to the start of the second and third seasons or as determined by the University (i.e. start of Basketball Regular Season).

L. Check-up shall include all regular maintenance; including filter changes, a complete inspection of all systems, brightness level readings of LED displays, parts replacement where required and a complete written report of all findings.

M. All extended warranty pricing requested in this RFP shall include the same requirements as stated in this section.

N. In addition to the base warranty, Contractor shall provide a guarantee against systemic parts failures for a period of seven years from final acceptance. A systemic parts failure is defined as a failure of more than 5% of a particular part or component in a display, over a 12-month period. If it is determined that a systemic parts failure has occurred, Contractor shall be responsible for all costs to remedy the problem to the satisfaction of the University.

O. Furthermore, if a particular system problem that resolves without a repair, presents itself in more than two (2) consecutive events, Contractor shall be responsible for providing on-site event support as well as system diagnosis, until the problem is identified and resolved. Some examples of this would be a signal flash, flickering, module(s) outage.

1.7 SPARE PARTS

A. Contractor shall supply a spare parts inventory containing 2% spare lighting units, 2% spare power supplies, and a minimum of one (1) of every other critical component including fiber modems. Spare parts inventory shall be based on quantity of components used to manufacture the display(s). Contractor shall provide proposed spare parts inventory as part of the proposal submission.

B. At the time of final sign-off, Contractor shall supply the specified spare parts inventory regardless of spare parts used during initial “shake out”, “burn in” and/or testing of newly installed displays.

C. Manufacturer of the LED system components shall continue to make all parts necessary for the continued functioning of the system for a minimum of seven (7) years after acceptance of this project. Furthermore, upon end of life of any component used in the LED displays, that is not replaced by a “backwards compatible” component, Manufacturer shall notify the University of end of life status being given to components of this system, and shall give the University an opportunity to buy spare parts from stock or a last production run, at then commercially viable prices.

END OF PART 1 GENERAL

PART 2 PRODUCTS

2.1 CENTER HUNG VIDEO DISPLAYS

A. Quantity: Four (4) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 11.9' tall by 19.3' wide.

E. Minimum Resolution: 608 x 992 based on maximum pixel pitch of 6mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.
2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.
3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.
2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.
3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.
4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.2 ALTERNATE 1: INCREASE RESOLUTION CENTER HUNG DISPLAY

A. Quantity: Four (4) Indoor Video Displays

B. Pixel Resolution: 4mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 13.9' tall by 19.5' wide.

E. Minimum Resolution: 1056 X 1488 based on maximum pixel pitch of 4mm.

2.3 CENTER HUNG HOIST

A. Provide and install two (2) Self Climbing Vortek MD SB-8012-2 Hoists – 32,000 lb. Total Lift Capacity/24,800 lb. Live Load. Reeving 2:1.

B. 6 FPM/460VAC/(4) 3/8" Dyform 6 Cables each/Base Mounting /5 HP each/65'-0 Maximum Travel.

C. ETC Dual Sync Scoreboard Control System with MCC with local control and remote control pendant. Both with dual digital height display read outs/hold to run up/down push bottoms/E-stop/keyswitch/ 4 preset capacity with soft start/stop and leveling functionality.

D. Provide and install one (1) high voltage junction box and one (1) low voltage junction box – both located at roof steel.

E. Provide and install following features:

1. Safety horn system with tilt switch sensor.
2. Safety beacon system.
3. Remote Pendant plug-in station.
4. Blocks – four (4) dual sheave snatch blocks.

2.4 PRIMARY LED DISPLAY – PROCESSING AND CONTROLS

A. Video screen control system must provide the ability to manage: brightness (multi-level), video input, image position: size and scale, adjustable gamma correction, remote power function (power on/off), color, color temperature, contrast and sharpness.

B. Processing to allow for electronic color and brightness calibration - block to block and pixel to pixel.

C. The processor shall support the following inputs: HD-SDI video in either 720p or 1080i, SD-SDI (480p) and SDI 16x9 anamorphic signal, and DVI video.

D. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the video display from a location outside of the display housing.

E. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

2.5 PRIMARY LED DISPLAY – OPERATING SYSTEM

A. Provide a fully functional operating system capable of CG, exposure time tracking, and game operation. Systems must be capable of playing back industry standard still and animation file formats. It is understood that different operating control systems have preferred file formats. File conversion is acceptable.

B. The system must be capable of accepting a serial feed from the new scoring controller and any and all 3rd party stats and sport ticker feeds, including captioning and social media as required.

C. Image playback is to be stutter-free for both static and animated graphics.

D. Operating system is to be housed in the Scoreboard Control Room.

E. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the LED display from a location outside of the display housing.

F. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

2.6 CENTER HUNG LOWER LED RING

A. Quantity: One (1) Indoor Video Displays

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.6' tall by 81' wide.

E. Minimum Resolution: 80 x 2480 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.
2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.
3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.
2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.
3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.
4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.7 ALTERNATE 2: INCREASE RESOLUTION LED RING

A. Quantity: One (1) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.6' tall by 81.2' wide.

E. Minimum Resolution: 128 x 4160 based on maximum pixel pitch of 6mm.

2.8 RIBBON BOARDS

A. Quantity: One (1) Indoor Video Display

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2' tall by 542' wide.

E. Minimum Resolution: 64 x 16544 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the top.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, $\Delta u'v'$, within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.9 ALTERNATE 3: CORNER LED DISPLAYS (IN LIEU OF FIXED DIGIT)

A. Quantity: Four (4) Indoor Video Displays

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 6.2' tall by 24.2' wide.

E. Minimum Resolution: 192 x 736 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the rear.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum**.**

2.10 EVENT LEVEL LED VOMITORY DISPLAYS

A. Quantity: Two (2) Indoor Video Displays

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: One at 2' tall by 17' wide and One at 2' tall by 20' wide.

E. Minimum Resolution: 64 x 528 and 64 x 608 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the rear.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.11 LED COURSIDE DISPLAY 1

A. Quantity: One (1) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.4' tall by 40' wide.

E. Minimum Resolution: 128 X 2048 based on maximum pixel pitch of 6mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.12 LED COURTSIDE DISPLAY 2

A. Quantity: Two (2) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.4' tall by 12' wide.

E. Minimum Resolution: 128 X 608 based on maximum pixel pitch of 6mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.13 COURTSIDE DISPLAY TABLE SPECIFICATIONS

A. Scorer's table to include the following:

B. Upholstery quality vinyl covered padding on ends and top in a color to be determined by the University. Vinyl shall be "Naugahyde" product or equal as approved.

C. Total of six (6) Tables: Four (4) tables of 10' length and two (2) tables of 12' length.

D. Sections to be configured to allow connections for seamless display image.

E. Provide electrical and signal connections to "daisy chain" sections together.

F. Each table sections to be on locking casters and leveling feet.

G. Provide 34" maximum table height.

H. Provide 24" maximum counter depth.

I. Provide maximum of 38" total depth – display to back edge of table

J. Specific sizes may vary depending on location.

K. Provide 4" x 4" cable trough under table top with access holes every 4' minimum

L. Provide AC power connections every 12" and data connections every 24" along entire length of table and interconnections for service to connect between table sections.

M. Provide trough for installation of the University provided temporary cabling i.e. data, phone, distributed TV.

N. Protective Vinyl Covers for each table for use when tables are in storage

O. Plug strip Edison outlets on top of table should have 15a capacity per table.

P. Power to each table must have enough capacity to provide 15a 110v service to table top plug strip. Each table top plug strip should have a dedicated 15a breaker.

Q. The University will supply 3 phase 208v 5 wire power at the appropriate amperage. Table should have a Male inlet connector rated at the appropriate amperage for power input. Coordinate power needs and connector types with what the University has available to provide.

2.14 CORNER, RIBBON, VOMITORY, COURTSIDE AND MARQUEE PROCESSING AND CONTROLS

A. Video screen control system must provide the ability to manage: brightness (multi-level), video input, image position: size and scale, adjustable gamma correction, remote power function (power on/off), color, color temperature, contrast and sharpness.

B. Processing to allow for electronic color and brightness calibration - block to block and pixel to pixel.

C. The processor shall support the following inputs: HD-SDI video in either 720p or 1080i, SD-SDI (480p) and SDI 16x9 anamorphic signal, and DVI video.

D. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the video display from a location outside of the display housing.

E. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

2.15 SCORING SYSTEM: PROVIDE AND INSTALL THE FOLLOWING

A. Four (4) corner installed fixed digit displays 6.5'H x 24'W with white digits. Sizes of digits and required information are listed in the RFP rendering package, Attachment E.

B. One (1) fixed digit display (practice court) 5'H x 10'W with white digits. Score and clock digits shall be 13" tall and include period and possession indicators.

C. Shot clocks for each goal (Event court and practice court) plus one spare set (total of 5 sets). Shot clocks shall be NBA style double sided transparent (see thru) style clocks and shall display game time and shot time. A set shall include two shot clocks on each goal. Large clock mounted parallel above the backboard glass shall be a maximum of 32.4" high by 31.7" wide by 4" deep and shall have 13" tall red LED's for shot clock and 7" yellow LED's for game time. Small clock mounted on the backstop structure perpendicular to the backboard glass shall be a maximum of 22" high by 22" wide by 3.5" deep and shall have 7" tall red LED's for shot clock and 5" yellow LED's for game time. Both clocks shall include red LED strips around the perimeter that shall illuminate when time has expired. Clocks shall have camera mounting brackets.

D. New shot clock brackets for existing goals. Brackets for large shot clock shall be "fold down" style to permit storage of goals in existing location used by the University.

E. Two sets plus one spare set of red LED light strips around the perimeter of each backboard glass. The current LED light strips may be re-used if compatible with new scoring controllers.

F. Twelve (12) Locker Room Clocks – minimum 4 inch tall red fixed LED digits with a maximum overall cabinet size of 1'-8" wide by 9" tall by 4" deep. Locations – 4 Visiting Team Locker Rooms, Officials Locker Room, Women's and Men's Locker Rooms, Men and Women's Staff Locker Rooms; Courtside Lounge, Press Room, Multipurpose Room.

G. Install two (2) horns on Center Hung display.

H. Two (2) Scoreboard Controllers – (1 primary and 1 backup). Must be capable of scoring for Basketball and Volleyball.

I. One (1) Stats computer to interface with Stats crew for player stat displays.

J. Two (2) Data Distribution Panels. One (1) located in equipment rack in scoreboard control room and one (1) located at truck dock.

2.16 LED DISPLAY SIGNAGE AND AESTHETICS

A. Provide and Install custom underbelly logo as specified and depicted in the rendering package.

B. Provide and Install "ATLANTIC UNION BANK" channel letters and footer signage as specified and depicted in the rendering package.

2.17 ANIMATION PACKAGE

Provide twenty (20) custom animations with a minimum of 50% 3-D animations for all displays listed in this RFP.

END OF PART 2 PRODUCTS

EXECUTION

3.1 SCOPE OF WORK

A. The following outlines the turnkey delivery and installation responsibilities that define the project scope of work. Any and all work outlined in this section is the responsibility of the Contractor unless otherwise noted. Contractor is required to provide all labor, materials, tools, supervision and equipment to perform the following:

1. Provide and install all equipment and displays listed in Part 2 – Products, including any and all equipment not specifically listed that is required to provide a completely functional system.
2. Provide and install LED video displays, signage, and aesthetics as depicted and specified in rendering package.
3. The Contractor shall be responsible for the provision and installation of all primary and secondary steel, mounting brackets/hardware, and cladding required to accommodate the new system onto existing structures and concrete walls of the arena. This includes all labor, materials, equipment; tools, transportation, and project management required for a complete and fully operational system(s) on the project. Contractor shall provide final structural /attachment drawings per Section 3.2.
4. Contractor shall be responsible for all power and electrical distribution to the new system(s). Contractor shall provide all secondary power connections/terminations required to power new system(s). Contractor is responsible for providing stamped electrical drawings by a licensed electrical engineer in the State of Virginia.
5. Contractor to provide new signal cable to each display and may re-use existing conduit where available. Contractor is responsible for installing new conduit if required due to existing conduit being damaged or not available.
6. Provide required electrical and data cable: connect all equipment with power, signal and control wiring.
7. Coordinate with the University regarding placement of new equipment rack(s) and electrical components.
8. Provide integration with video replay system.
9. Provide all required permits and licenses.
10. Provide on-site installation supervisor per Section 1.5.E.
11. Deliver all Equipment to site and convey to appropriate locations within site as directed by the University.
12. Store all Equipment in a safe and secure manner until installed, or otherwise directed by the University.

3.2 ENGINEERING

A. The Contractor must submit drawings and calculations stamped by a professional engineer who shall be licensed/registered in the State of Virginia.

B. Contractor is responsible for taking all seismic, wind and environmental considerations into account and making structural provisions for any such requirements.

C. The University must approve all drawings in writing prior to the fabrication and installation of any equipment.

D. Engineered drawings are to include both structural and electrical.

E. The Contractor is solely responsible for verification the integrity of all engineering calculations. Contractor is responsible for verification of all information provided or implied.

3.3 STRUCTURAL CONSIDERATIONS

A. Contractor is responsible to design, engineer, build, deliver, install, integrate and commission complete turnkey displays as specified with all required structure needed to support all display components.

B. Flashing and any other related equipment shall be the responsibility of the Contractor to furnish and install.

C. Contractor is responsible for design and erection of all materials related to the new equipment.

D. Sub-structure is to be fabricated using structural steel and/or aluminum (optional). Contractor shall provide necessary protective separation when connecting dissimilar metals to prevent galvanic corrosion.

E. Bolted and/or field welded connections shall be subject to special inspection by an independent testing & inspection agency certifying that bolted and/or welded connections meet the minimum requirements of the engineered structural drawings, the governing building code, or as required by the building official; whichever is more restrictive. Inspections shall take place prior to painting any connection.

F. Documentation shall be provided to the University verifying acceptable results from all special inspections. All items failing inspection shall be repaired or replaced and re-inspected at no additional cost to the University.

G. All components to be painted and otherwise finished for exterior service conditions shall be warranted to be free of rust or other defects for a period of ten years.

H. All welders must be certified, and certificates must be on-site and available for inspection as requested.

I. To minimize fading or oxidation, all finishes must be primed and coated. All areas of the primary and secondary support structure must be primed and painted to match.

J. Secondary structure, ribbon board and signage shall be detailed to allow for expansion at contraction at the expansion joints.

K. Damage to paint to the primary structure during the installation of secondary structure, ribbon board and signage install shall be touched up by Contractor

3.4 ELECTRICAL AND DATA

A. The electrical design and installation of all branch circuits by the Contractor shall comply with NEC, provincial and local codes, as well as University regulations and guidelines.

B. Contractor shall provide remote power on/off as noted in Part 2 Products. Contractor shall provide sufficient number of switches to control all displays and signage elements. Switches to be mounted into equipment racks along with other equipment provided by Contractor. Configuration of switches shall be submitted with shop drawings to be approved by the University.

C. The Contractor shall provide electrical and data one-line diagrams.

D. Electrical design and engineering must be reviewed and approved by the University prior to any electrical work by the Contractor.

E. The Contractor shall be responsible for power distribution from the demarcation points noted on the included electrical drawing. Any additional electrical components required for a complete and fully operational system but not shown on the electrical drawings shall be the responsibility of the Contractor.

F. Contractor to provide a 4” x 4” J-Box at top/bottom of each rack with power circuit cabling terminating in 24” pig tails. Label each outlet as to which AC circuit is feeding it and provide the same information in the circuit breaker panel. The University will provide all AC power and conduit to the equipment racks and will terminate AC power circuits within the J-Boxes.

G. Contractor is responsible for all conduit and raceways as required for signal/control cable distribution. Contractor may utilize existing conduit subject to University approval.

H. The Contractor shall be responsible for termination and final connect of power to all displays. All secondary electrical panels must be clearly marked with names of the branch circuits controlled by each breaker to aid in troubleshooting or isolating problems. All electrical services, disconnects, and breaker panels are to be labeled with what they control and where they are fed from.

I. Contractor shall not use wire nuts or electrical tape for any power or signal connection or any part of the work including internal LED display power jumpers or power connections to signage elements. All connections shall use a proper terminal block and spade terminal, or terminal block and direct connection as required. Covers shall be provided for all high-power terminal blocks to prevent electrical shock.

J. The University will provide power to the disconnect switch will use rigid metal conduit and wire. The use of SO cord or rubber jacket type power cables typically used on transportable installations or used on the installation of pitch side displays shall not be permit for permanent installations. Strain relief on all connectors shall be per manufactures recommendations. Contractor shall submit manufacturers strain relief recommendations for all connectors during the submittal process.

K. The Contractor shall be responsible for providing stamped electrical drawings. A licensed/registered engineer in the State of Virginia where this project is located shall stamp all electrical drawings.

L. Any equipment not certified as required in Section 1.4.A. shall require on-site certification by a listed testing agency. All cost associated with obtaining on-site certification shall be the responsibility of the Contractor. Written proof of certification or equivalent shall be required prior to any work being performed on-site.

M. Contractor shall provide twelve (12) spare strands of fiber in addition to the total amount of fiber that is required to provide video signal and/or data communication to LED displays installed by Contractor. All fiber shall be terminated and landed in an appropriate fiber patch panel. All new fiber supplied by Contractor shall be tested and shall not exceed maximum allowable dB loss per Section 3.4.N and/or Section 3.4.O.

N. Multi-mode fiber tested shall not have a signal dB loss greater than 0.1dB per 100 feet (30m) for 850nm fiber or a loss greater than 0.1 dB per 300 feet (100m) for 1300nm fiber.

O. Single-mode fiber tested shall not have a signal dB loss greater than 0.1dB per 600 feet (200m) for 1310nm fiber or a loss greater than 0.1 dB per 750 feet (250m) for 1550nm fiber.

P. Contractor to provide all required fiber transmitters and receivers (including amplifiers where required). Contractor shall be responsible to terminate and perform final connection of all cables. Cables shall be routed from the specified control locations to the display components per Contractor's diagram once the University has approved diagram.

3.5 AESTHETIC CONSIDERATIONS

A. At the time of the release of this RFP the University is still developing certain finishes and aesthetic design elements for consideration. Contractor shall assume premium finishes on all elements not yet defined.

B. Prior to contract award, the Contractor must provide a comprehensive outline of all intended flashing and finish details for University approval. Failure to submit these details prior to contract award shall make Contractor responsible for all flashing and finishes as required by the University at no additional cost to the University.

C. No exposed bolts, inverted U channels, or unfinished edges on LED displays or signage elements shall be permitted on any surface with public view. Any part of the secondary steel frame exposed to public view shall be covered with flashing to match the edge of the LED display.

D. Unless specified differently on the AJP RFP Drawings (Attachment E), the following shall serve as a minimum standard for products and finishes. Contractor shall be responsible to ensure that the material thickness provided is sufficient to prevent warping or "oil canning" on the span or sections of material installed.

1. Metals
    a. + .040” aluminum on internal baffling
    b. + .090” aluminum on flashing
    c. + .125” aluminum on any routed or primary surface
    d. + 12ga/2.6mm stainless steel (visible)
2. Plastics
    a. + .117” thickness on thermoformed polycarbonates
    b. + .177” thickness on flat polycarbonates
    c. + .125“ thickness on flat acrylics
3. Finishes
    a. + Approved Automotive Grade Enamels
    b. + ASTM D3451-06 compliant Powder Coating
4. Vinyl Films
    a. + 3M, Avery, Oracal or other as approved.
    b. + 9oz weight for any outdoor banner (UV coated)

E. The Contractor shall not visibly display its trademarks or insignia on any of the Equipment or structural elements.

3.6 TRAINING

A. The Contractor at its own expense shall provide designated University employees’ operator and maintenance training.

B. Training shall be performed at the site by a qualified technician and shall occur either during installation of the equipment or immediately thereafter. O&M Manuals per Section 1.3.C shall be provided to University prior to training.

C. The training shall cover the operation, routine maintenance and troubleshooting of the displays and control equipment.

D. Training shall consist of at least 24 hours (over the course of 3-5 days) of instruction.

E. Contractor shall be required to have a control systems operator and LED technician on-site for the first event and continue to be on-site for three (3) consecutive problem free events at the facility, events to be selected by the University. “Problem-free” constitutes an event where the video and scoring displays, control system, and any other components installed by the Contractor are without failure during an event. Each successful event shall need to be signed off by the University until three (3) consecutive events are achieved.

F. Warranty period will commence at conclusion of the third consecutive successful event.

3.7 TESTING AND ACCEPTANCE

A. Contractor must demonstrate the full capabilities of the provided systems and prove performance meets contractual specifications.

B. Confirmation shall be required of, but not limited to the following functions: operation of each system component, including back-up systems, control functionality, integration with existing systems, diagnostic capabilities, screen brightness, color temperature and viewing angles.

C. Contractor must provide all necessary testing equipment for acceptance.

D. Upon notice from the Contractor of substantial completion and at a time to be mutually agreed upon, the Contractor shall arrange for the testing of all operations of the systems comprised in scope of work at the time of substantial completion.

E. The following items must be completed and signed off by an appropriate University official before the University will deem the system "Accepted."

1. LED Screens - Brightness and color uniformity shall be demonstrated and must meet the specification described. If the demonstration exhibits the display in noncompliance with the specifications, it will be the responsibility of the Contractor to make the necessary adjustments or to adjust, repair or replace the components necessary to meet the specifications. The University shall not be responsible for any added costs as a result of an unsuccessful acceptance test.

2. Certain LED video displays included in this RFP are required to maintain minimum parameters over a specified period of time. The University at its sole discretion may engage an independent testing agency to verify the display's specifications, at any time during the specified period of time. Cost for this testing will borne by the University, if display is complying. If the testing exhibits the display in noncompliance with the specifications, the cost of the testing shall be the responsibility of the Contractor. Contractor shall also be responsible to make the necessary adjustments or repair or replace the components necessary to meet the specifications. The University shall not be responsible for any added costs as a result of an unsuccessful test.

3. Functionality of each of the displays and their control systems, as specified, shall be demonstrated in its entirety.

4. Acceptance of the system includes, but not limited to, the completed installation of all physical components and the issuance of the Certificate of Approval for code compliance by the Code Authority having Jurisdiction. Tests of the system shall not occur until after the system has been installed, and all work completed on the display systems.

F. Document all acceptance testing, calibration and correction procedures described herein. Include the following information:

1. Performance date of the given procedure.

2. Condition of performance of procedure.

3. Type of procedure, and description.

4. Parameters measured and their values, including values measured prior to calibration or correction, as applicable.

5. The names of personnel conducting the procedure.

6. The equipment used to conduct the procedure.

G. Upon completion of initial tests and adjustments, submit written report of tests to the University along with all documents, diagrams, and recorded drawings required herein.

H. Final Procedures

1. Perform any and all "punch-list" work to correct inadequate performance or unacceptable conditions, as determined by the University, at no additional expense to the University.

2. Furnish all portable (includes spare parts) equipment to the University along with complete inventory documentation. All portable equipment shall be presented in the original manufacturers packing, complete with all included instructions, miscellaneous manuals, and additional documents.

3. Provide new acceptance testing in the same format as initial test reports.

4. Check, inspect, and if necessary, adjust all systems, equipment, devices and components specified, at the University's convenience, approximately thirty (30) days after the University's acceptance.

5. Upon completion of the Work, the University may elect to verify test data as part of acceptance procedure. Provide personnel and equipment, at the convenience of the University, to reasonably demonstrate system performance and to assist with such tests without additional cost to the University.

END OF PART 3 EXECUTION

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/08/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Marsh USA Inc.
333 South 7th Street, Suite 1400
Minneapolis, MN 55402-2400
Attn: minneapolis.certrequest@marsh.com FAX 212 948-5382

--GAWU+-19-20

CONTACT NAME: US Centralized Services
PHONE (A/C, No, Ext): 866-966-4664 **FAX (A/C, No):** 212-948-5382
E-MAIL ADDRESS: Minneapolis.CertRequest@marsh.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Travelers Indemnity Co Of CT	25682
INSURER B : Travelers Indemnity Company of America	25666
INSURER C : Travelers Property Casualty Co. of America	25674
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Daktronics, Inc.
201 Daktronics Drive
PO Box 5128
Brookings, SD 57006-5128

COVERAGES **CERTIFICATE NUMBER:** 03-009355242-00 **REVISION NUMBER:** 0

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [X] PRO-JECT [X] LOC OTHER:			HE-660-117D6882-TCT-19	10/01/19	10/01/20	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 1,000,000 $ 15,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
C	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY [ ] SCHEDULED AUTOS X HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY			HJ-CAP-117D6901-TIL-19	10/01/19	10/01/20	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
C	X **UMBRELLA LIAB** [X] OCCUR **EXCESS LIAB** [ ] CLAIMS-MADE DED [X] RETENTION $ 10000			CUP-162D3999-TIL-19	10/01/19	10/01/20	EACH OCCURRENCE AGGREGATE	$ 1,000,000 $ 1,000,000
B C	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] N / A **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below			UB-9K396901-19-I3-K (AOS) UB-9K250310-19-I3-R (AZ,MA,WI)	10/01/19 10/01/19	10/01/20 10/01/20	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
PROJECT/LOCATION OF WORK: Atlantic Union Bank Center - Daktronics Quote #706812
Additional Insured with respect to General Liability: James Madison University and The Commonwealth of Virginia

CERTIFICATE HOLDER

James Madison University
380 University Blvd.
Harrisonburg, VA 22807

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE of Marsh USA Inc.

Manashi Mukherjee Manashi Mukherjee

Issued By: Pam Schmidt

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BLANKET ADDITIONAL INSURED – AUTOMATIC STATUS IF REQUIRED BY WRITTEN CONTRACT (CONTRACTORS)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

The following is added to **SECTION II – WHO IS AN INSURED**:

Any person or organization that:

a. You agree in a written contract or agreement to include as an additional insured on this Coverage Part; and

b. Has not been added as an additional insured for the same project by attachment of an endorsement under this Coverage Part which includes such person or organization in the endorsement's schedule;

is an insured, but:

a. Only with respect to liability for "bodily injury" or "property damage" that occurs, or for "personal injury" caused by an offense that is committed, subsequent to the signing of that contract or agreement and while that part of the contract or agreement is in effect; and

b. Only as described in Paragraph **(1)**, **(2)** or **(3)** below, whichever applies:

(1) If the written contract or agreement specifically requires you to provide additional insured coverage to that person or organization by the use of:

(a) The Additional Insured – Owners, Lessees or Contractors – (Form B) endorsement CG 20 10 11 85; or

(b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10 10 01, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 10 01;

the person or organization is an additional insured only if the injury or damage arises out of "your work" to which the written contract or agreement applies;

(2) If the written contract or agreement specifically requires you to provide additional insured coverage to that person or organization by the use of:

(a) The Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization endorsement CG 20 10 07 04 or CG 20 10 04 13, the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 07 04 or CG 20 37 04 13, or both of such endorsements with either of those edition dates; or

(b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37, without an edition date of such endorsement specified;

the person or organization is an additional insured only if the injury or damage is caused, in whole or in part, by acts or omissions of you or your subcontractor in the performance of "your work" to which the written contract or agreement applies; or

(3) If neither Paragraph **(1)** nor **(2)** above applies:

(a) The person or organization is an additional insured only if, and to the extent that, the injury or damage is caused by acts or omissions of you or your subcontractor in the performance of "your work" to which the written contract or agreement applies; and

(b) Such person or organization does not qualify as an additional insured with respect to the independent acts or omissions of such person or organization.

The insurance provided to such additional insured is subject to the following provisions:

a. If the Limits of Insurance of this Coverage Part shown in the Declarations exceed the minimum limits required by the written contract or agreement, the insurance provided to the additional insured will be limited to such minimum required limits. For the purposes of determining whether

this limitation applies, the minimum limits required by the written contract or agreement will be considered to include the minimum limits of any Umbrella or Excess liability coverage required for the additional insured by that written contract or agreement. This provision will not increase the limits of insurance described in Section **III** – Limits Of Insurance.

b. The insurance provided to such additional insured does not apply to:

(1) Any "bodily injury", "property damage" or "personal injury" arising out of the providing, or failure to provide, any professional architectural, engineering or surveying services, including:

(a) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders or change orders, or the preparing, approving, or failing to prepare or approve, drawings and specifications; and

(b) Supervisory, inspection, architectural or engineering activities.

(2) Any "bodily injury" or "property damage" caused by "your work" and included in the "products-completed operations hazard" unless the written contract or agreement specifically requires you to provide such coverage for that additional insured during the policy period.

c. The additional insured must comply with the following duties:

(1) Give us written notice as soon as practicable of an "occurrence" or an offense which may result in a claim. To the extent possible, such notice should include:

(a) How, when and where the "occurrence" or offense took place;

(b) The names and addresses of any injured persons and witnesses; and

(c) The nature and location of any injury or damage arising out of the "occurrence" or offense.

(2) If a claim is made or "suit" is brought against the additional insured:

(a) Immediately record the specifics of the claim or "suit" and the date received; and

(b) Notify us as soon as practicable and see to it that we receive written notice of the claim or "suit" as soon as practicable.

(3) Immediately send us copies of all legal papers received in connection with the claim or "suit", cooperate with us in the investigation or settlement of the claim or defense against the "suit", and otherwise comply with all policy conditions.

(4) Tender the defense and indemnity of any claim or "suit" to any provider of other insurance which would cover such additional insured for a loss we cover. However, this condition does not affect whether the insurance provided to such additional insured is primary to other insurance available to such additional insured which covers that person or organization as a named insured as described in Paragraph **4.**, Other Insurance, of Section **IV** – Commercial General Liability Conditions.

TOTAL SALES IN THE LAST 12 MONTHS BY DAKTRONICS WITH VASCUPP MEMBER INSTITUTIONS

SCHOOL	AMOUNT IN USD
GEORGE MASON	170,813
JAMES MADISON	215,652
MILITARY INSTITUTE	3,625
OLD DOMINION	3,740,761
RADFORD UNIVERSITY	2,188
UNIVERSITY OF VIRGINIA	983,254
VIRGINIA COMMONWEALTH UNIVERSITY	52,763
VIRGINIA TECH	739,547
WILLIAM AND MARY	98,068
TOTAL	**6,006,669**

Company ID Number: 149017

THE E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION

MEMORANDUM OF UNDERSTANDING

ARTICLE I

PURPOSE AND AUTHORITY

This Memorandum of Understanding (MOU) sets forth the points of agreement between the Social Security Administration (SSA), the Department of Homeland Security (DHS) and **Daktronics** (Employer) regarding the Employer's participation in the Employment Eligibility Verification Program (E-Verify). E-Verify is a program in which the employment eligibility of all newly hired employees will be confirmed after the Employment Eligibility Verification Form (Form I-9) has been completed.

Authority for the E-Verify program is found in Title IV, Subtitle A, of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, 110 Stat. 3009, as amended (8 U.S.C. § 1324a note).

ARTICLE II

FUNCTIONS TO BE PERFORMED

A. RESPONSIBILITIES OF THE SSA

1. Upon completion of the Form I-9 by the employee and the Employer, and provided the Employer complies with the requirements of this MOU, SSA agrees to provide the Employer with available information that allows the Employer to confirm the accuracy of Social Security Numbers provided by all newly hired employees and the employment authorization of U.S. citizens.

2. The SSA agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. The SSA agrees to provide the Employer with names, titles, addresses, and telephone numbers of SSA representatives to be contacted during the E-Verify process.

3. The SSA agrees to safeguard the information provided by the Employer through the E-Verify program procedures, and to limit access to such information, as is appropriate by law, to individuals responsible for the verification of Social Security Numbers and for evaluation of the E-Verify program or such other persons or entities who may be authorized by the SSA as governed by the Privacy Act (5 U.S.C. § 552a), the Social Security Act (42 U.S.C. 1306(a)), and SSA regulations (20 CFR Part 401).

4. SSA agrees to establish a means of automated verification that is designed (in conjunction with DHS's automated system if necessary) to provide confirmation or tentative nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and aliens within 3 Federal Government work days of the initial inquiry.

5. SSA agrees to establish a means of secondary verification (including updating SSA records as may be necessary) for employees who contest SSA tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of U.S. citizens' employment

eligibility and accuracy of SSA records for both citizens and aliens within 10 Federal Government work days of the date of referral to SSA, unless SSA determines that more than 10 days may be necessary. In such cases, SSA will provide additional verification instructions.

B. RESPONSIBILITIES OF THE DEPARTMENT OF HOMELAND SECURITY

1. Upon completion of the Form I-9 by the employee and the Employer and after SSA verifies the accuracy of SSA records for aliens through E-Verify, DHS agrees to provide the Employer access to selected data from DHS's database to enable the Employer to conduct:

- Automated verification checks on newly hired alien employees by electronic means, and
- Photo verification checks (when available) on newly hired alien employees.

2. DHS agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. DHS agrees to provide the Employer names, titles, addresses, and telephone numbers of DHS representatives to be contacted during the E-Verify process.

3. DHS agrees to provide to the Employer a manual (the E-Verify Manual) containing instructions on E-Verify policies, procedures and requirements for both SSA and DHS, including restrictions on the use of E-Verify.. DHS agrees to provide training materials on E-Verify.

4. DHS agrees to provide to the Employer a notice, which indicates the Employer's participation in the E-Verify program. DHS also agrees to provide to the Employer anti-discrimination notices issued by the Office of Special Counsel for Immigration-Related Unfair Employment Practices (OSC), Civil Rights Division, and U.S. Department of Justice.

5. DHS agrees to issue the Employer a user identification number and password that permits the Employer to verify information provided by alien employees with DHS's database.

6. DHS agrees to safeguard the information provided to DHS by the Employer, and to limit access to such information to individuals responsible for the verification of alien employment eligibility and for evaluation of the E-Verify program, or to such other persons or entities as may be authorized by applicable law. Information will be used only to verify the accuracy of Social Security Numbers and employment eligibility, to enforce the Immigration and Nationality Act and federal criminal laws, and to ensure accurate wage reports to the SSA.

7. DHS agrees to establish a means of automated verification that is designed (in conjunction with SSA verification procedures) to provide confirmation or tentative nonconfirmation of employees' employment eligibility within 3 Federal Government work days of the initial inquiry.

8. DHS agrees to establish a means of secondary verification (including updating DHS records as may be necessary) for employees who contest DHS tentative nonconfirmations and photo non-match tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of the employees' employment eligibility within 10 Federal Government work days of the date of referral to DHS, unless DHS determines that more than 10 days may be necessary. In such cases, DHS will provide additional verification instructions.

C. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the notices supplied by DHS in a prominent place that is clearly visible to prospective employees.

2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted regarding E-Verify.

3. The Employer agrees to become familiar with and comply with the E-Verify Manual.

4. The Employer agrees that any Employer Representative who will perform employment verification queries will complete the E-Verify Tutorial before that individual initiates any queries.

   A. The employer agrees that all employer representatives will take the refresher tutorials initiated by the E-Verify program as a condition of continued use of E-Verify.

   B. Failure to complete a refresher tutorial will prevent the employer from continued use of the program.

5. The Employer agrees to comply with established Form I-9 procedures, with two exceptions:

- If an employee presents a "List B" identity document, the Employer agrees to only accept "List B" documents that contain a photo. (List B documents identified in 8 C.F.R. § 274a.2 (b) (1) (B)) can be presented during the Form I-9 process to establish identity).
- If an employee presents a DHS Form I-551 (Permanent Resident Card) or Form I-766 (Employment Authorization Document) to complete the Form I-9, the Employer agrees to make a photocopy of the document and to retain the photocopy with the employee's Form I-9. The employer will use the photocopy to verify the photo and to assist the Department with its review of photo non-matches that are contested by employees. Note that employees retain the right to present any List A, or List B and List C, documentation to complete the Form I-9. DHS may in the future designate other documents that activate the photo screening tool.

6. The Employer understands that participation in E-Verify does not exempt the Employer from the responsibility to complete, retain, and make available for inspection Forms I-9 that relate to its employees, or from other requirements of applicable regulations or laws, except for the following modified requirements applicable by reason of the Employer's participation in E-Verify: (1) identity documents must have photos, as described in paragraph 5 above; (2) a rebuttable presumption is established that the Employer has not violated section 274A(a)(1)(A) of the Immigration and Nationality Act (INA) with respect to the hiring of any individual if it obtains confirmation of the identity and employment eligibility of the individual in compliance with the terms and conditions of E-Verify ; (3) the Employer must notify DHS if it continues to employ any employee after receiving a final nonconfirmation, and is subject to a civil money penalty between $500 and $1,000 for each failure to notify DHS of continued employment following a final nonconfirmation; (4) the Employer is subject to a rebuttable presumption that it has knowingly employed an unauthorized alien in violation of section 274A(a)(1)(A) if the Employer continues to employ any employee after receiving a final nonconfirmation; and (5) no person or entity participating in E-Verify is civilly or criminally liable under any law for any

action taken in good faith on information provided through the confirmation system. DHS reserves the right to conduct Form I-9 compliance inspections during the course of E-Verify, as well as to conduct any other enforcement activity authorized by law.

7. The Employer agrees to initiate E-Verify verification procedures within 3 Employer business days after each employee has been hired (but after both sections 1 and 2 of the Form I-9 have been completed), and to complete as many (but only as many) steps of the E-Verify process as are necessary according to the E-Verify Manual. The Employer is prohibited from initiating verification procedures before the employee has been hired and the Form I-9 completed. If the automated system to be queried is temporarily unavailable, the 3-day time period is extended until it is again operational in order to accommodate the Employer's attempting, in good faith, to make inquiries during the period of unavailability. In all cases, the Employer must use the SSA verification procedures first, and use DHS verification procedures and photo screening tool only after the the SSA verification response has been given.

8. The Employer agrees not to use E-Verify procedures for pre-employment screening of job applicants, support for any unlawful employment practice, or any other use not authorized by this MOU. The Employer must use E-Verify for all new employees and will not verify only certain employees selectively. The Employer agrees not to use E-Verify procedures for re-verification, or for employees hired before the date this MOU is in effect. The Employer understands that if the Employer uses E-Verify procedures for any purpose other than as authorized by this MOU, the Employer may be subject to appropriate legal action and the immediate termination of its access to SSA and DHS information pursuant to this MOU.

9. The Employer agrees to follow appropriate procedures (see Article III.B. below) regarding tentative nonconfirmations, including notifying employees of the finding, providing written referral instructions to employees, allowing employees to contest the finding, and not taking adverse action against employees if they choose to contest the finding. Further, when employees contest a tentative nonconfirmation based upon a photo non-match, the Employer is required to take affirmative steps (see Article III.B. below) to contact DHS with information necessary to resolve the challenge.

10. The Employer agrees not to take any adverse action against an employee based upon the employee's employment eligibility status while SSA or DHS is processing the verification request unless the Employer obtains knowledge (as defined in 8 C.F.R. § 274a.1 (l)) that the employee is not work authorized. The Employer understands that an initial inability of the SSA or DHS automated verification to verify work authorization, a tentative nonconfirmation, or the finding of a photo non-match, does not mean, and should not be interpreted as, an indication that the employee is not work authorized. In any of the cases listed above, the employee must be provided the opportunity to contest the finding, and if he or she does so, may not be terminated or suffer any adverse employment consequences until and unless secondary verification by SSA or DHS has been completed and a final nonconfirmation has been issued. If the employee does not choose to contest a tentative nonconfirmation or a photo non-match, then the Employer can find the employee is not work authorized and take the appropriate action.

11. The Employer agrees to comply with section 274B of the INA by not discriminating unlawfully against any individual in hiring, firing, or recruitment or referral practices because of his or her national origin or, in the case of a protected individual as defined in section 274B(a)(3) of the INA, because of his or her citizenship status. The Employer understands that such illegal practices can include selective verification or use of E-Verify, discharging or refusing to hire eligible employees because they appear or sound "foreign", and premature termination of

employees based upon tentative nonconfirmations, and that any violation of the unfair immigration-related employment practices provisions of the INA could subject the Employer to civil penalties pursuant to section 274B of the INA and the termination of its participation in E-Verify. If the Employer has any questions relating to the anti-discrimination provision, it should contact OSC at 1-800-255-7688 or 1-800-237-2515 (TDD).

12. The Employer agrees to record the case verification number on the employee's Form I-9 or to print the screen containing the case verification number and attach it to the employee's Form I-9.

13. The Employer agrees that it will use the information it receives from the SSA or DHS pursuant to E-Verify and this MOU only to confirm the employment eligibility of newly-hired employees after completion of the Form I-9. The Employer agrees that it will safeguard this information, and means of access to it (such as PINS and passwords) to ensure that it is not used for any other purpose and as necessary to protect its confidentiality, including ensuring that it is not disseminated to any person other than employees of the Employer who are authorized to perform the Employer's responsibilities under this MOU.

14. The Employer acknowledges that the information which it receives from SSA is governed by the Privacy Act (5 U.S.C. § 552a (i) (1) and (3)) and the Social Security Act (42 U.S.C. 1306(a)), and that any person who obtains this information under false pretenses or uses it for any purpose other than as provided for in this MOU may be subject to criminal penalties.

15. The Employer agrees to allow DHS and SSA, or their authorized agents or designees, to make periodic visits to the Employer for the purpose of reviewing E-Verify -related records, i.e., Forms I-9, SSA Transaction Records, and DHS verification records, which were created during the Employer's participation in the E-Verify Program. In addition, for the purpose of evaluating E-Verify, the Employer agrees to allow DHS and SSA or their authorized agents or designees, to interview it regarding its experience with E-Verify, to interview employees hired during E-Verify use concerning their experience with the pilot, and to make employment and E-Verify related records available to DHS and the SSA, or their designated agents or designees. Failure to comply with the terms of this paragraph may lead DHS to terminate the Employer's access to E-Verify.

ARTICLE III

REFERRAL OF INDIVIDUALS TO THE SSA AND THE DEPARTMENT OF HOMELAND SECURITY

A. REFERRAL TO THE SSA

1. If the Employer receives a tentative nonconfirmation issued by SSA, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.

2. The Employer will refer employees to SSA field offices only as directed by the automated system based on a tentative nonconfirmation, and only after the Employer records the case verification number, reviews the input to detect any transaction errors, and determines that the employee contests the tentative nonconfirmation. The Employer will transmit the Social Security Number to SSA for verification again if this review indicates a need to do so. The

Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

3. If the employee contests an SSA tentative nonconfirmation, the Employer will provide the employee with a referral letter and instruct the employee to visit an SSA office to resolve the discrepancy within 8 Federal Government work days. The Employer will make a second inquiry to the SSA database using E-Verify procedures on the date that is 10 Federal Government work days after the date of the referral in order to obtain confirmation, or final nonconfirmation, unless otherwise instructed by SSA or unless SSA determines that more than 10 days is necessary to resolve the tentative nonconfirmation..

4. The Employer agrees not to ask the employee to obtain a printout from the Social Security Number database (the Numident) or other written verification of the Social Security Number from the SSA.

B. REFERRAL TO THE DEPARTMENT OF HOMELAND SECURITY

1. If the Employer receives a tentative nonconfirmation issued by DHS, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.

2. If the Employer finds a photo non-match for an alien who provides a document for which the automated system has transmitted a photo, the employer must print the photo non-match tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the finding.

3. The Employer agrees to refer individuals to DHS only when the employee chooses to contest a tentative nonconfirmation received from DHS automated verification process or when the Employer issues a tentative nonconfirmation based upon a photo non-match. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

4. If the employee contests a tentative nonconfirmation issued by DHS, the Employer will provide the employee with a referral letter and instruct the employee to contact the Department through its toll-free hotline within 8 Federal Government work days.

5. If the employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will provide the employee with a referral letter to DHS. DHS will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary.

6. The Employer agrees that if an employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will send a copy of the employee's Form I-551 or Form I-766 to DHS for review by:

- Scanning and uploading the document, or
- Sending a photocopy of the document by an express mail account (furnished and paid for by DHS).

7. The Employer understands that if it cannot determine whether there is a photo match/non-match, the Employer is required to forward the employee's documentation to DHS by scanning and uploading, or by sending the document as described in the preceding paragraph, and resolving the case as specified by the Immigration Services Verifier at DHS who will determine the photo match or non-match.

ARTICLE IV

SERVICE PROVISIONS

The SSA and DHS will not charge the Employer for verification services performed under this MOU. The Employer is responsible for providing equipment needed to make inquiries. To access the E-Verify System, an Employer will need a personal computer with Internet access.

ARTICLE V

PARTIES

This MOU is effective upon the signature of all parties, and shall continue in effect for as long as the SSA and DHS conduct the E-Verify program unless modified in writing by the mutual consent of all parties, or terminated by any party upon 30 days prior written notice to the others. Any and all system enhancements to the E-Verify program by DHS or SSA, including but not limited to the E-Verify checking against additional data sources and instituting new verification procedures, will be covered under this MOU and will not cause the need for a supplemental MOU that outlines these changes. DHS agrees to train employers on all changes made to E-Verify through the use of mandatory refresher tutorials and updates to the E-Verify manual. Even without changes to E-Verify, the Department reserves the right to require employers to take mandatory refresher tutorials.

Termination by any party shall terminate the MOU as to all parties. The SSA or DHS may terminate this MOU without prior notice if deemed necessary because of the requirements of law or policy, or upon a determination by SSA or DHS that there has been a breach of system integrity or security by the Employer, or a failure on the part of the Employer to comply with established procedures or legal requirements. Some or all SSA and DHS responsibilities under this MOU may be performed by contractor(s), and SSA and DHS may adjust verification responsibilities between each other as they may determine.

Nothing in this MOU is intended, or should be construed, to create any right or benefit, substantive or procedural, enforceable at law by any third party against the United States, its agencies, officers, or employees, or against the Employer, its agents, officers, or employees.

Each party shall be solely responsible for defending any claim or action against it arising out of or related to E-Verify or this MOU, whether civil or criminal, and for any liability wherefrom, including (but not limited to) any dispute between the Employer and any other person or entity regarding the applicability of Section 403(d) of IIRIRA to any action taken or allegedly taken by the Employer.

The employer understands that the fact of its participation in E-Verify is not confidential information and may be disclosed as authorized or required by law and DHS or SSA policy, including but not limited to, Congressional oversight, E-Verify publicity and media inquiries, and responses to inquiries under the Freedom of Information Act (FOIA).

Company ID Number: 149017

The foregoing constitutes the full agreement on this subject between the SSA, DHS, and the Employer.

The individuals whose signatures appear below represent that they are authorized to enter into this MOU on behalf of the Employer and DHS respectively.

To be accepted as a participant in E-Verify, you should only sign the Employer's Section of the signature page. If you have any questions, contact E-Verify Operations at 888-464-4218.

Employer Daktronics

Brandi Neumayr	
Name (Please type or print)	Title
Electronically Signed	**09/02/2008**
Signature	Date

Department of Homeland Security – Verification Division

USCIS Verification Division	
Name (Please type or print)	Title
Electronically Signed	**09/02/2008**
Signature	Date

Company ID Number: 149017

INFORMATION REQUIRED
FOR THE E-VERIFY PROGRAM

Information relating to your Company:

Company Name: **Daktronics**

Company Facility Address: **331 32nd Ave**
Brookings, SD 57006

Company Alternate Address:

County or Parish: **BROOKINGS**

Employer Identification Number: [redacted]

North American Industry Classification Systems Code: **334**

Parent Company: **Daktronics, Inc.**

Number of Employees: **2,500 to 4,999**

Number of Sites Verified for: **1**

Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State.

- SOUTH DAKOTA 1 site(s)

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

Name:	**Kaylene R Holland**		
Telephone Number:	**(605) 692 - 0200**	Fax Number:	**(605) 692 - 4297**
E-mail Address:	**krhollan@daktronics.com**		
Name:	**Danay E Nielsen**		
Telephone Number:	**(605) 692 - 0200**	Fax Number:	**(605) 692 - 4297**
E-mail Address:	**dnielse@daktronics.com**		
Name:	**Brandi K Neumayr**		
Telephone Number:	**(605) 692 - 0200 .ext 5678**	Fax Number:	**(605) 697 - 4297**
E-mail Address:	**bneumay@daktronics.com**		
Name:	**Erin E Bass**		
Telephone Number:	**(605) 692 - 0200**	Fax Number:	**(605) 692 - 4297**
E-mail Address:	**ebass@daktronics.com**		

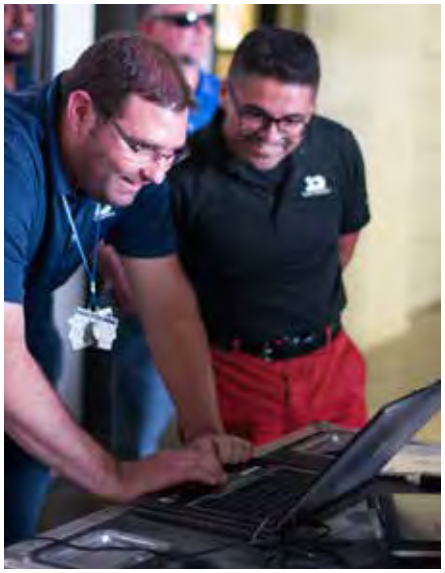
EVENT & PRODUCTION SUPPORT

NORFOLK STATE UNIVERSITY
NORFOLK, VIRGINIA

DAKTRONICS PROFESSIONAL SERVICES OFFERINGS

PROFESSIONAL SERVICES

In addition to providing the world's highest standard in video displays and control products, we offer a variety of Professional Services to assist you in maximizing your display investment and creating the ultimate game-day experience. Our Professional Services team can help ensure you are making the most of every moment.



CATALOG CONTENT

High Impact animations at low impact prices.

CONCEPTUALS

Graphic representation of a display(s) in multiple formats (2D, 3D, Virtual Reality) that can be used as a marketing tool.

CUSTOM CONTENT

Unique and original content that drives audience engagement and advertiser activation.

CUSTOM INTEGRATION

Daktronics will complete configuration and implementation of Daktronics Control Systems for use with third-party hardware or software solutions.

CONSULTING

A range of services designed to assist customers with improving their efficiency and effectiveness, this includes benchmarking, staffing evaluation and daypart selling.

CONTENT SCHEDULING

Daktronics will manage all the scheduled content running on your display.

DYNAMIC CONTENT

Content type that creates a more dynamic production that flows smoothly from element to element focused on using graphic/data transitions and the layering of content elements associated with real-time data.

EVENT PRODUCTION

Offerings available that range from full production of all events to a single operator.

GRAPHIC TOOLKITS

Building block elements that allow for skilled content creators to customize their production. Adobe AfterEffects content templates that will be provided that allow for updates to be made as needed.

OPERATOR TRAINING

Daktronics will provide comprehensive hands on training on the control equipment.

OPERATOR SUPPORT

A Control Systems expert will be onsite to support the operations team during an event.

RTD LAYOUT DESIGN

Placement and content for maximized use of display real estate and data.

SPONSORSHIP MANAGEMENT

Management of content relationship with sponsors and advertisers on behalf of the venue or team.

STANDARD INTEGRATION

Daktronics offers a list of powerful integrations to choose from for improving efficiency and enhancing your production.

SYSTEM CONSULTING

Technical, Operational or Production evaluations to provide recommendations and countermeasures to improve the overall production.

DAKTRONICS

Contact us at ProfessionalServices@Daktronics.com to learn more.

DAKTRONICS PROFESSIONAL SERVICES OFFERINGS

INTEGRATED SERVICES

It is more important than ever to find new and innovative ways to engage and interact with your audience. When people can engage with technology and content it is proven to increase brand recognition and create a memorable experience. **Click here** to see some additional information about other technologies that Daktronics Professional Services can help integrate into your venue.

ADDITIONAL SERVICES

Our Professional Services team also offers a variety of additional services to help you increase efficiency, grow your revenue generation and ultimately maximize your investment. These services are provided at no additional cost.

INDUSTRY TREND EDUCATION

Learn from Daktronics world-wide experiences to stay on the cutting edge of the industry.

NETWORKING OPPORTUNITIES

Complete access to Video Summits, User Groups and additional seminars held around the country.

WEB RESOURCES

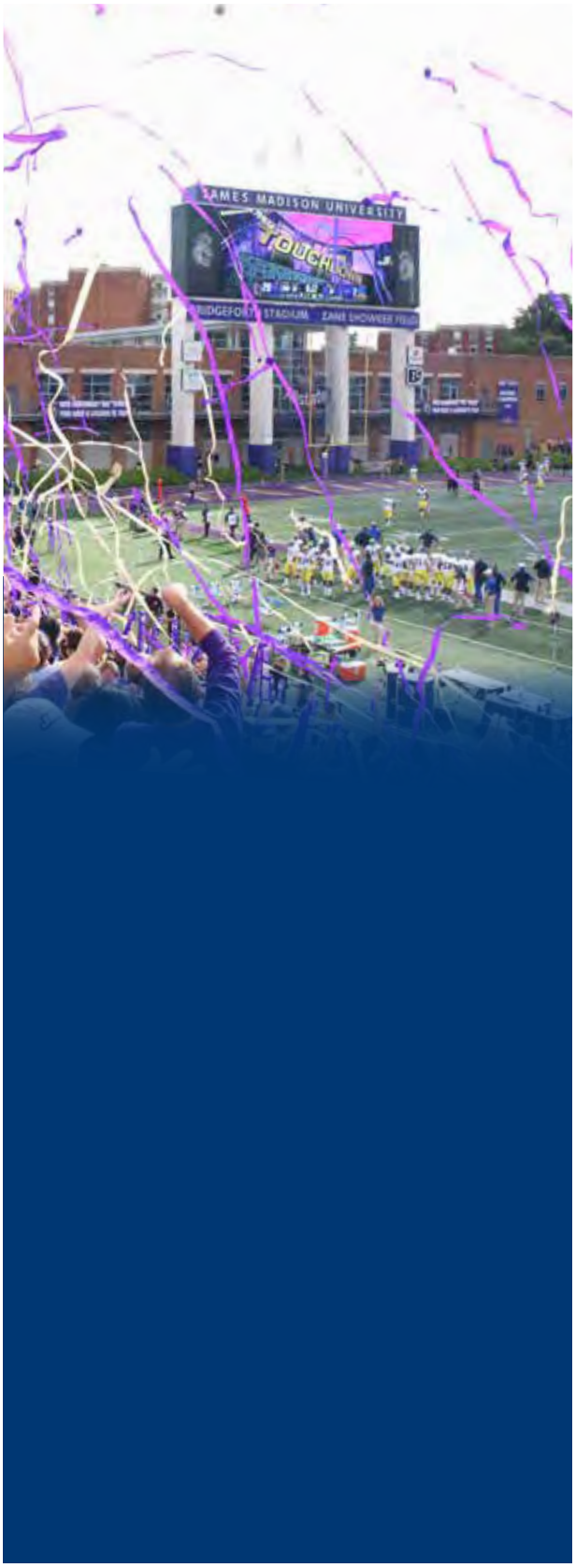
Access to online resources including: YouTube tutorials, knowledge base articles, product support pages, user group access and blog posts.

Daktronics, Inc. | Daktronics.com | 866.539.3726

DAKTRONICS

Contact us at ProfessionalServices@Daktronics.com to learn more.

CASE STUDY - PROFESSIONAL SERVICES
JAMES MADISON UNIVERSITY



THE CHALLENGE
A COMPLETE GAME-DAY SOLUTION

With a new LED video display, an advanced game-day production was needed for Dukes Football at James Madison University (JMU). This challenge included bringing together an experienced staff of production specialists coupled with engaging digital content to excite fans and create an unmatched home field advantage at Bridgeforth Stadium and Zane Showker Field.

THE SOLUTION

JMU began by selecting Daktronics for their LED video display needs and continued the partnership with Daktronics Professional Services, a trusted and comprehensive partner, to advance their overarching game-day needs. To maximize their new system, Daktronics team proposed hiring an event producer to coordinate production needs between JMU's athletics and marketing departments and those solutions provided by the Daktronics team.

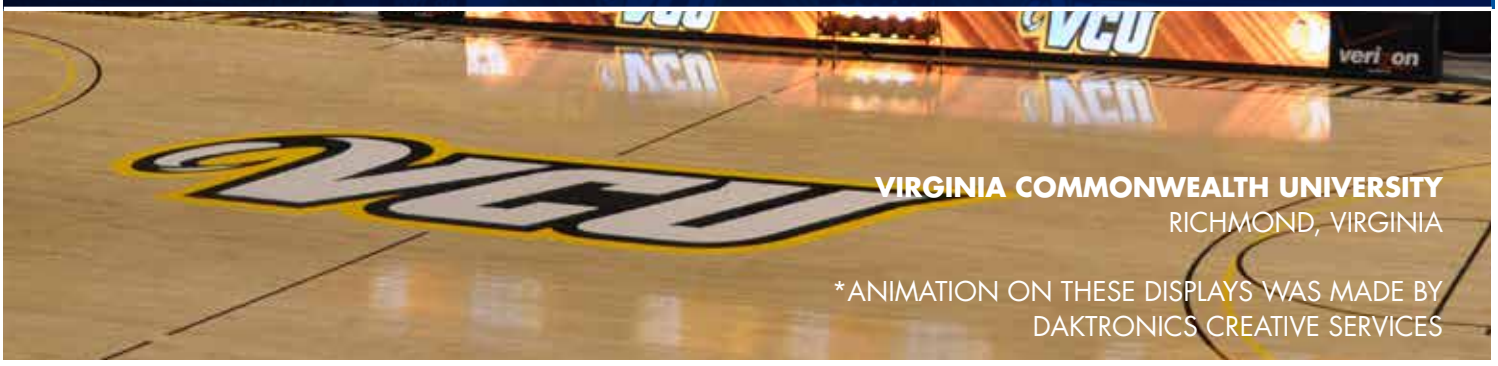
Daktronics event producers posses intimate knowledge of Daktronics hardware and software after receiving mentoring and coaching at multiple sites and venues with Daktronics equipment to grow into experts at their craft. This allowed for quick and effective communication with JMU on the capabilities and possibilities of their production ideas with Daktronics systems. The producer also leverages this extensive experience to advise best practices and expanded ideas to make an exciting presentation for the school.

Working as a liaison between JMU and Daktronics Creative Services, the producer effectively uses the relationship with the school and with Daktronics Creative Services to provide digital content that enhances the school's brand while maximizing the use of their entire production system. The producer loops in multiple departments from the university from athletics to marketing and everything in between to create and shape a university-wide, all-encompassing shared vision for a successful game-day production.

THE RESULT

The game-day productions at JMU have exceeded what they thought was possible when purchasing their system back in 2011. Over the years, the relationship between the school, the on-site producer and Daktronics Professional Services has brought their home field advantage and fan experience to an all-time high. The relationship continues to open new doors of possibility as JMU is a trendsetter among their peers at their level of competition in the college ranks.

CONTENT
ANIMATION



VIRGINIA COMMONWEALTH UNIVERSITY
RICHMOND, VIRGINIA

*ANIMATION ON THESE DISPLAYS WAS MADE BY
DAKTRONICS CREATIVE SERVICES

DAKTRONICS CREATIVE SERVICES
CATALOG INFORMATION

Thank you for your interest in Daktronics Creative Services. We look forward to working with you to maximize your display investment and contribute to an engaging and memorable game day experience for fans at every event.

ON THE FOLLOWING PAGES you will find specific information and pricing for each of our catalog libraries. Keep in mind each of these pieces can easily be resized to fit any display size.

You can click on the thumbnails below to see a quick highlight reel of what each of these packages has to offer.

Branded Catalog
(Customizable)

Standard Catalog
(Come as they are)

IN ADDITION, we offer a diverse range of creative solutions to fill any production need you may be facing. Here are some of our other popular products, please let us know if you would like additional information as we would be happy to discuss.

• **GAMES & RACES** • **FAN CAMS** • **SPONSOR CONTENT** • **CUSTOM CONTENT**

LOOK FORWARD TO YOUR Daktronics Creative Services Account Manager being in touch with you soon to review your selections and collect all of the necessary information to proceed. A quote/estimate will be provided, along with a timeline for production and delivery. Once approved, the production and review process will begin. Final files will then be delivered.

Contact us for more information.
800-325-8766
DakCreative@daktronics.com
www.daktronics.com/creativeservices

BASKETBALL
BRANDED CATALOG ANIMATIONS

The Branded Catalog is the most cost-effective solution to creating a focused game day experience. With several styles to choose from the possibilities are limitless. These animations can easily be adjusted to match your team colors, include your team logo and incorporate custom slogans or messaging. Because they're adaptable to any display size, you can create a branded takeover to elevate the moment and unite your fans. With this library the opportunity to quickly build and present a cohesive show is at your fingertips.

Previews of each style can be viewed by clicking on the thumbnails below. Animations are priced per display, see the pricing legend below for rates. (**PASSWORD FOR ALL PREVIEWS: sports-1**)

SNEAK PEEK PREVIEW


ACUITY (AC)

BROADCAST (BR)

CINEMATIC (CN)


CLEAN (CL)

ENTROPY (EN)

MODERN METAL (MM)

MODERN RIGGING (MR)

WHAT WE NEED FROM YOU...

- ☐ Event Date
- ☐ Display Specifications (size, playback, file type, etc.)
- ☐ Version of Adobe After Effects (for templates)
- ☐ Logo (vector logos are preferred)
- ☐ Style Guide (RGB values)

PRICING LEGEND ● $300 each ★ $900 each ■ $1,200 each *Indicates a template is available.

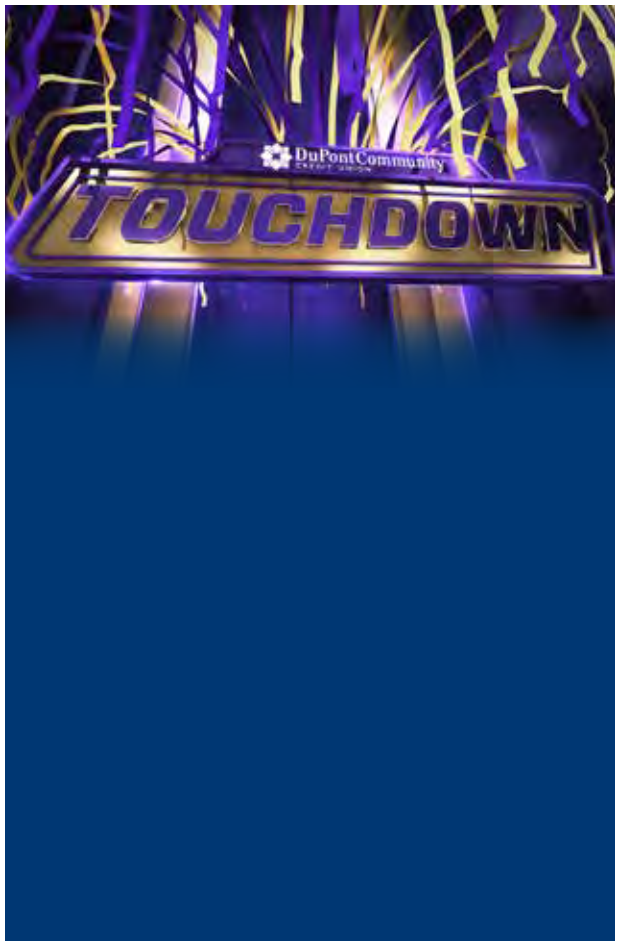
	CORE ANIMATIONS	AC	BR	CN	CL	EN	MM	MR
●	Background (static)							
★	Headshots (static)*							
■	Headshots (animated)*							
●	Logo Treatment							
●	Logo Win(s)							
●	Logo Wipe							
★	Matchups*							
●	Noisemeter							
●	Replay							
★	Sponsored Replay*							
●	Welcome							
●	Alpha Overlay							

●	SUGGESTED PROMPTS	AC	BR	CN	CL	EN	MM	MR
	2 Points							
	3 Points							
	And One							
	Defense							
	Foul							
	From Downtown							
	Great Shot							
	It's Good							
	On Fire							
	Overtime							

Daktronics Creative Services uses the latest Adobe Creative Cloud tools for all projects. If choosing the project template option, keep in mind that you must own or purchase this software in order to make updates. Our creative team does **not** provide support or training for any Adobe software and recommends using Adobe's website for all training and educational resources. Fonts, plugins/effects, audio are not included. Adobe Creative Suite 6 is the oldest platform we support.

The above are examples of common prompts, this catalog accommodates any text/phrase you would like, so just let us know. A complete list of other popular prompts is available upon request.

CASE STUDY - CREATIVE SERVICES
JAMES MADISON UNIVERSITY



THE CHALLENGE
REVAMPED GAME-DAY PRESENTATION

James Madison University (JMU) has partnered with Daktronics Creative Services since their football video display at Bridgeforth Stadium and Zane Showker Field was installed in 2011. In 2017, the Dukes looked to overhaul and improve their game-day presentation with a new look and layout - something to reflect the team's national championship victory. The updates included moving from brick elements to a shiny, reflective style for their digital content, and they took this opportunity to refine a few workflow processes as well.

THE SOLUTION

Daktronics Creative Services worked collaboratively with the university to determine a new look by providing content examples and graphic elements for consideration. The university selected a few options and elements they liked and relied on Daktronics to incorporate the school's branding and expand the inventory to provide digital content to amplify specific game moments and situations. The Daktronics team's intimate knowledge of the LED equipment at the venue and how content plays back on the displays made for a smooth process of updating to the school's new content style. Daktronics on-site event producer helped expedite the entire process by quickly conveying JMU's feedback during the production process while enabling more experimentation from Creative Services' digital artists.

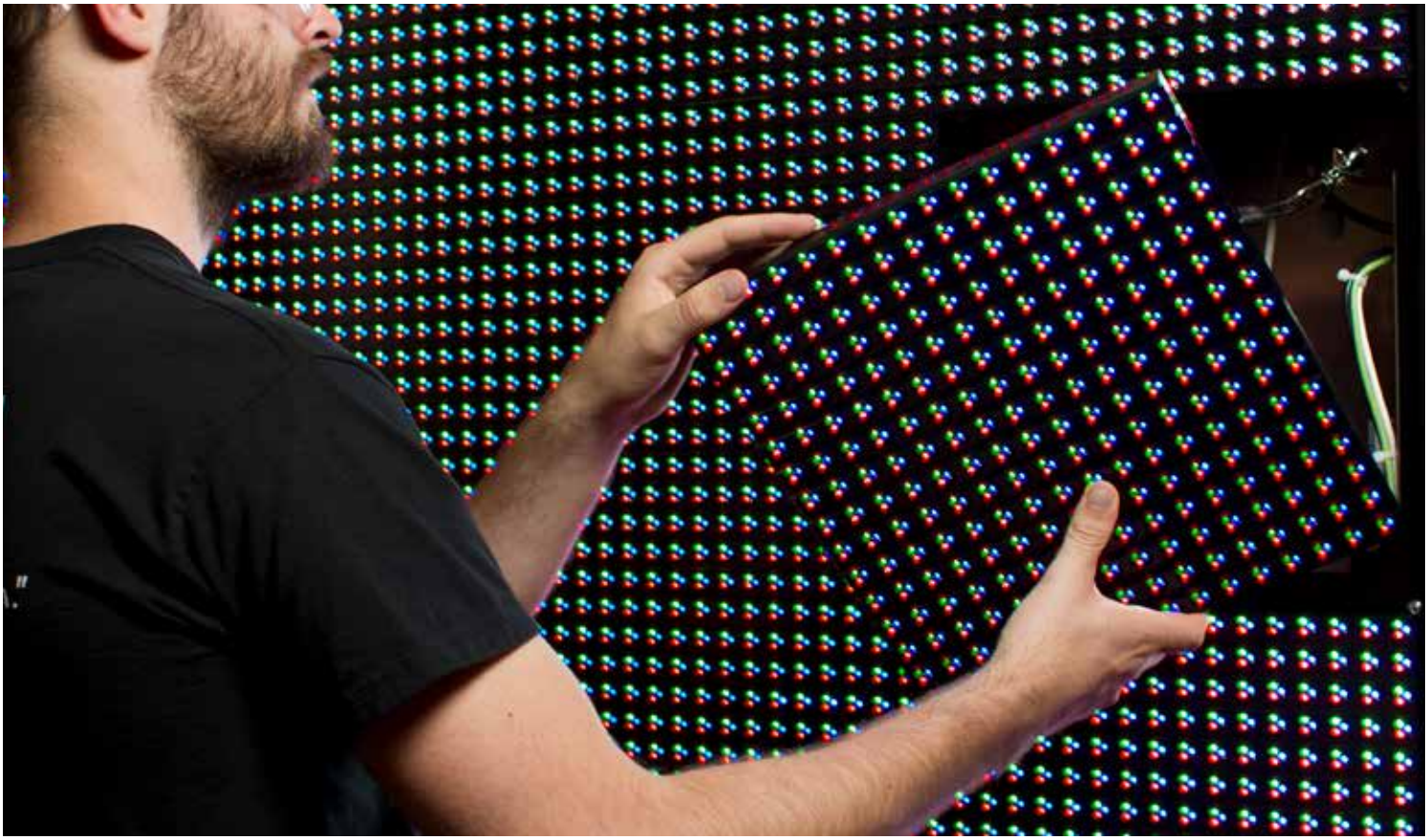
The biggest improvement can be seen in the statistical layouts and game-in-progress (GIP) information. JMU previously had a floating GIP overlay which had to be removed and placed differently within the display layout for every feature and on-field moment. The new layout includes a fixed GIP to constantly show important information without extra steps during feature moments. Daktronics Creative Services listened to the university's struggles, offered possible ways to adjust the layout and provided a new GIP solution to improve the viewing experience.

THE RESULT

The new look and layout present a very professional look as well as a more efficient workflow for the production team. Today, the upper two thirds of the display can be maximized for the game's biggest moments while still keeping fans informed and entertained during every event. The new content has helped to create a new and exciting game-day presentation for Dukes fans.

SERVICES & MAINTENANCE

HARVARD UNIVERSITY
BOSTON, MASSACHUSETTS



SERVICE SUPPORT

LIFETIME DISPLAY SUPPORT

To best serve the life of your display, Daktronics offers you a variety of service packages available to suit your needs. These packages, which can be purchased as a whole or a la carte, are provided to ensure that no matter what happens, from installation support to troubleshooting to display maintenance and upkeep, we've got you covered.

PREVENTATIVE SERVICE

Make sure your system is ready to go before each season, or tackle that yearly spring cleaning, with an annual systems check.

- A routine annual systems check.
- Everything from a visual inspection, looking for irregularities or debris build up, to inspecting power and signal wiring, to file/hard drive inspection and software updates.
- Quick and convenient replacement of stock components in need of repair.

REGIONAL SUPPORT

An account service manager listens to customer wants and needs to provide the best service option and manages the execution of services.

ON SITE FIELD SERVICE

- Our field service team becomes familiar with each site to provide the best on site, preactive and response service.

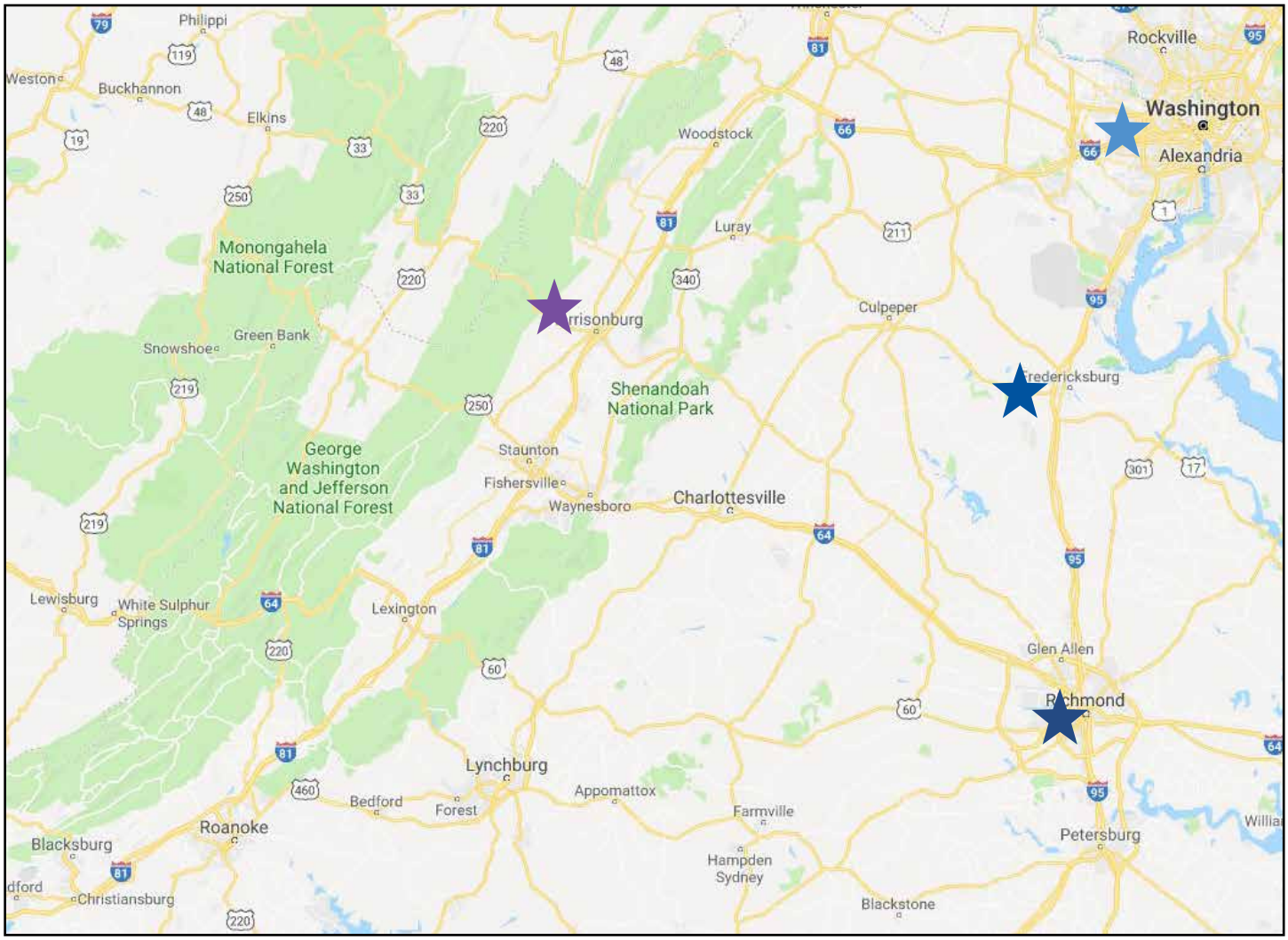
PHONE SUPPORT

- Live support available 24/7, provided by customer service representatives (CSRs) and our technical operations group (Tech Ops).

WEB SUPPORT

- Find answers to your questions at your convenience at www.daktronics.com/Support.
- Access to Daktronics MySupport, an individualized customer portal used to request service, check orders, and verify service case information.
- From online tutorials and videos to a knowledge base and product manuals.

DAKTRONICS LOCAL SERVICE MAP



DAKTRONICS SERVICES PARTNER

Industrial Control Systems Inc.
20 W Williamsburg Rd
Sandston, VA 23150
Main line 804.737.1700

DAKTRONICS EVENT PRODUCTION

Katie Windham
Timbervale, Virginia
605.695.6147
katie.windham@daktronics.com

DAKTRONICS FIELD SERVICES ENGINEERS IN VIRGINIA

Tomas Berkemeijer
Fredericksburg, VA
540.395.9040
tomas.berkemeijer@daktronics.com

Jeremiah Jacinto
Arlington, VA
202.816.0154
jeremiah.jacinto@daktronics.com

DAKTRONICS
CUSTOMER SUPPORT

AVAILABLE 24/7/365

SHIP RMA'D PARTS HERE
Daktronics Customer Service
600 East 54th Steet N.
Sioux Falls, SD 57104

ONLINE SUPPORT RESOURCES

MYSUPPORT
DAKTRONICS.COM/MYSUPPORT

View open cases & create a new case
Check order & shipping status
View expected arrival time of your technician
Verify account information

ONLINE SUPPORT
DAKTRONICS.COM/SUPPORT

Find resources to troubleshoot & fix issues
Locate guides on maintenance & preventative care
Access product manuals & how-to videos
Review technical and software training

DIRECT CONTACT
877-325-4357

SERVICE COORDINATION

Schedule on-site service
Order parts
Provide communication & status updates

TECHNICAL SUPPORT

Troubleshoot advanced issues
Remotely connect to diagnose issues
(with an internet connection & select systems)

DISPLAY & CONTROL
SYSTEM CHECKS

Regular System Checks Ensure Your System and Staff Operate at Optimal Performance

Daktronics customers holding events should strongly consider a thorough annual or pre-season system checkup.

Control System Checks

Qualified, trained service technicians will evaluate the performance level of the control system components, provide software updates if necessary, run virus scans, defrag control equipment files, test RTD formats, and work with you on content management.

Display System Checks

Pre-season/annual system checks may include display cleaning, display calibration, firmware upgrades (if applicable), filter inspection and replacement, air conditioning system checks, review of spare parts inventory, and a thorough inspection of other display components based on service level.

We realize that you are not just buying technology. You are making an investment in a complete solution and support services are a major component of that solution. We aim to exceed your expectations with great service throughout the lifetime of your Daktronics system.

CUSTOMER **REFERENCES**

UNIVERSITY OF PITTSBURGH

PETERSEN EVENT CENTER

PITTSBURGH, PENNSYLVANIA

2016, 2019

3.9mm LED centerhung displays (Qty: 2)
1152 lines of resolution x 2176 columns of resolution
14’9” X 27’10” (4.50 m x 8.50 m)

3.9mm LED centerhung displays (Qty: 2)
1152 lines of resolution x 1280 columns of resolution
14’9” X 16’5” (4.50 m x 5.00 m)

6mm LED courtside displays (Qty: 6)
96 lines of resolution x 384 columns of resolution
1’7” X 2’1” (0.63 m x 2.54 m)

10mm LED endwall displays (Qty: 2)
512 lines of resolution x 960 columns of resolution
16’7” X 31’2” (5.07 m x 9.51 m)

10mm LED ribbon displays (installed 2016)
512 lines of resolution x 960 columns of resolution
16’7” X 31’2” (5.07 m x 9.51 m)

CONTACT
Blair Dunckel
412.383.7275
bdunckel@athletics.pitt.edu

BOB CARPENTER CENTER
UNIVERSITY OF DELAWARE
NEWARK, DELAWARE

2018

6mm LED video display (Qty: 4)
432 lines of resolution x 768 columns of resolution
9'4" x 16'8" (2.85 m x 5.07 m)

6mm LED curved video display (Qty: 4)
432 lines of resolution x 240 columns of resolution
9'4" x 5'2" (2.85 m x 1.58 m)

6mm LED ring display
96 lines of resolution x 2304 columns of resolution
2'1" x 49'11" (0.63 m x 15.21 m)

CONTACT
Jake Schrum
Assistant AD, BCC Operations and Facilities
302.831.4125
jschrum@udel.edu

LAWRENCE JOEL VETERANS MEMORIAL COLISEUM
WAKE FOREST BASKETBALL
WINSTON-SALEM, NORTH CAROLINA

2017

6mm LED ring video display (Qty. 1)
96 lines of resolution x 4,800 columns of resolution
2'1" x 103'9" (0.63 m x 31.68 m)

6mm LED centerhung video display (Qty. 2)
432 lines of resolution x 816 columns of resolution
9'4" x 17'7" (2.85 m x 5.39 m)

6mm LED video concave curve centerhung display (Qty. 2)
720 lines of resolution x 1,296 columns of resolution
15'6" x 28'1" (4.75 m x 8.55 m)

15mm LED video wall mounted display (Qty. 1)
180 lines of resolution x 340 columns of resolution
9'4" x 17'7" (2.85 m x 5.39 m)

6mm LED video court level display (Qty. 6)
96 lines of resolution x 360 columns of resolution
2'1" x 7'8" (0.63 m x 2.38 m)

15mm LED video fascia display (Qty. 4)
60 lines of resolution x 160 columns of resolution
3'1" x 8'3" (0.95 m x 2.54 m)

15mm LED video fascia display (Qty. 16)
60 lines of resolution x 200 columns of resolution
3'1" x 10'4" (0.95 m x 3.17 m)

15mm LED video fascia display (Qty. 1)
56 lines of resolution x 16,192 columns of resolution
2'9" x 830'1" (0.88 m x 253.0 m)

CONTACT
James Overstreet
Assistant AD, Multimedia & Broadcast Operations
336.758.4694
overstjn@wfu.edu

OLD DOMINION UNIVERSITY
TED CONSTANT CONVOCATION CENTER
NORFOLK, VIRGINIA

2015

6mm LED video display (Qty. 4)
288 lines of resolution x 480 columns of resolution
9'0" x 15'5" (1.9 m x 3.2 m)

6mm LED video display (Qty. 4)
288 lines of resolution x 96 columns of resolution
9'0" x 4'0" (1.9 m x .6 m)

6mm LED ring display
64 lines of resolution x 1728 of resolution
1'4" x 37'6" (.4 m x 11.4 m)

10mm LED ribbon display
48 lines of resolution x 15,776 columns of resolution
1'6" x 539'2" (.5 m x 164.3 m)

10mm LED vomitory display (Qty. 4)
72 lines of resolution x 192 columns of resolution
2'6" x 6'7" (.7 m x 2.0 m)

ST-2100 (Qty. 16)

15HD curved LED marquee display
240 lines of resolution x 936 columns of resolution
12'0" x 46'8" (3.6 m x 14.3 m)

15HD curved LED marquee display
72 lines of resolution x 936 columns of resolution
3'6" x 46'8" (1.1 m x 14.3 m)

CONTACT
Mike Fryling
General Manager, Spectra
757.683.5518
mfryling@odu.edu

UNIVERSITY OF MARYLAND
XFINITY CENTER
COLLEGE PARK, MARYLAND

2014

6mm LED video display (Qty: 2)
576 lines of resolution x 1536 columns of resolution
Approx. Dimensions: 12'6" x 33'6"

6mm LED video display (Qty: 2)
432 lines of resolution x 768 columns of resolution
Approx. Dimensions: 9'6" x 16'6"

CONTACT
Josh Kaplan
Associate AD - Facilities, Operations & Events
301.314.9729
jkap@umd.edu

SUBCONTRACTORS **LIST**

AIR FORCE ACADEMY
COLORADO SPRINGS, COLORADO

PROPOSED SUBCONTRACTORS

ELECTRICAL CONCEPTS AND TECHNOLOGIES
1666 GRANDVIEW ROAD
PASADENA, MARYLAND 21122

HOIST SALES AND SERVICE
8672 DOLCE LANE
SARASOTA, FLORIDA 34238

EQUIPMENT **LIST**

MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA

DAKTRONICS.COM

201 Daktronics Drive PO Box 5128
Brookings, South Dakota 57006-5128
T 800-325-8766 605-692-0200 F 605-697-4700

BASE BID

Four (4) Indoor Daktronics LED Video Displays (Center-hung)

- Daktronics Model: DVN-3050-5.9MN-2000-BC-MA-588x1008
- Approximate Active Area: 11.48' high x 19.68' wide
- Pixel Pitch: 5.9mm
- Matrix: 588x1008

One (1) Indoor Daktronics Lower LED Ring Display (Center-hung)

- Daktronics Model: DVN-354-10MN-2000-SC-MA-64x2464
- Approximate Active Area: 2.08' high x 80.08' wide
- Pixel Pitch: 10mm
- Matrix: 64x2464

One (1) Indoor Daktronics LED Ribbon Display

- Daktronics Model: RTN-301-10MN-2000-SC-MA-72x15840
- Approximate Active Area: 2.46' high x 541.34' wide
- Pixel Pitch: 10mm
- Matrix: 72x15840

Four (4) Indoor Daktronics LED Video Displays (Corner Displays)

- Daktronics Model: DVN-304-10MN-2000-SC-MA-192x736
- Approximate Active Area: 6.24' high x 23.92' wide
- Pixel Pitch: 10mm
- Matrix: 192x736

One (1) Indoor Daktronics Event Level LED Vomitory Display

- Daktronics Model: DVN-304-10MN-2000-SC-MA-64x544
- Approximate Active Area: 2.08' high x 17.68' wide
- Pixel Pitch: 10mm
- Matrix: 64x544

One (1) Indoor Daktronics Event Level LED Vomitory Display

- Daktronics Model: DVN-304-10MN-2000-SC-MA-64x608
- Approximate Active Area: 2.08' high x 19.76' wide
- Pixel Pitch: 10mm
- Matrix: 64x608

One (1) Daktronics Scorers Tables (Courtside Display 1)

- Daktronics Model: ST-2304-6mm-96x1920
- Approximate cabinet dimensions: 2.08' high x 41.60' wide
- Matrix size: 96x1920
- Pixel Pitch: 6mm
- LEDs illuminate in red, green, and blue

Two (2) Daktronics Scorers Tables (Courtside Display 2)

- Daktronics Model: ST-2304-6mm-96x672
- Approximate cabinet dimensions: 2.08' high x 14.56' wide
- Matrix size: 96x672
- Pixel Pitch: 6mm
- LEDs illuminate in red, green, and blue

Daktronics Integrated Control Solution includes the following:

- System Level Components
    - Daktronics Control Solution is designed to provide (Content Type; Interactive or Scheduled) content. The DMP-8302 provides content playback & DI-6000 interfaces with the displays up to 2M pixels.
    - One (1) 14-port Gigabit Network Router
    - Two (2) 26-port Gigabit Network Switch
    - One (1) DSTI Rack-mounted server
    - One (1) Truck Dock data broadcast unit
    - One (1) Remote Power Control; eight (8) switches
    - One (1) Venus® Control Suite Server
    - One (1) Venus® Control Suite - Prime Package - Locally Hosted
    - One (1) Network Attached Storage Device; eight (8) terabyte
    - One (1) Show Control Single Monitor User Station
    - One (1) Show Control Rack-mounted User Station
    - Two (2) Show Control Software Licenses
    - One (1) Rack-mounted Technician User Station
    - One (1) Remote User Station; 22" LCD; one hundred (100) foot extension
    - Two (2) 40RU control rack with a caster base and vented top
    - Two (2) 1500VA Uninterruptable Power Supply (UPS); 120VAC

- CH Main Video - 5.9mm
    - Identical content configuration for displays
    - Primary/Back-up configuration of components
    - Supports four (4) external video sources
- CH Bottom Ring
    - Independent content configuration
    - Primary/Back-up configuration of components
    - Does not support any external video sources
- 10mm Ribbon
    - Independent content configuration
    - Primary/Back-up configuration of components
    - Does not support any external video sources

- Corner LED 10mm
    - Independent content configuration
    - Primary/Back-up configuration of components
    - Supports up to four (4) external video sources (SDI)
- Event Level LED Vomitory 10mm 17ft
    - Independent content configuration
    - Primary/Backup configuration of components
    - Does not support any external video sources
- Event Level LED Vomitory 10mm 20ft
    - Independent content configuration
    - Primary/Back-up configuration of components
    - Does not support any external video sources

Additional Inclusions:

Two (2) All Sport 5010 Control Kit
One (1) DSTI_Stat Crew
Two (2) TV Feeds
Two (2) Indoor 120V Enclosure with Outlets
Two (2) Trumpet Horns
Twelve (12) TI-2031 - Locker Room Clocks
Five (5) BB-2140 – Front-Facing Shot Clocks
Five (5) BB-2141 – Side-Facing Shot Clocks
Ten (10) Shot Clock Brackets
Three (3) Light Strip Kits
One (1) BB-2155 – Basketball Scoreboard (Practice)
One (1) Custom Hoist
Content Package – Bronze

ALTERNATIVE 1

Four (4) Indoor Daktronics LED Video Displays (Center-hung)

- Daktronics Model: DVN-3050-3.9MN-2000-BC-MA-1024x1536
- Approximate Active Area: 13.12' high x 19.68' wide
- Pixel Pitch: 3.9mm
- Matrix: 1024x1536
- 4mm CH Main Video
    - Identical content configuration for displays
    - Primary/Back-Up configuration of components
    - Supports four (4) external video sources

ALTERNATIVE 2

One (1) Indoor Daktronics Lower LED Ring Display (Center-hung)

- Daktronics Model: DVN-3050-5.9MN-2000-BC-MA-168x4116
- Approximate Active Area: 3.28' high x 80.38' wide
- Pixel Pitch: 5.9mm
- Matrix: 168x4116
- CH Ring 5.9mm
    - Independent content configuration
    - Primary/Back-Up configuration of components
    - Supports four (4) external video sources

PRODUCT
SPECIFICATIONS

OREGON STATE UNIVERSITY
CORVALLIS, OREGON

DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-3000-5.9MN-2000-BC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.234 inches - 5.952 millimeters
Panel Configuration - Pixels (RxC)	84 x 84 pixels
Panel Dimensions (HxW)	19.685 x 19.685 inches - 500 x 500 mm
Maximum Power per Panel[1]	160.8768 Watts
Average Power per Panel[1]	40.22 Watts
Display Weight per Panel[2]	21.472 pounds - 9.74 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Optional Factory Calibration - Full depth, LED to LED
LED Refresh Rate	3840 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	140º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	4000:1
Service Access	Front or Rear
Cabinet Depth	3.307 inches - 84 millimeters
Cabinet Construction	Die-Cast Aluminum
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	None
Data Transmission to Display	CAT 6 Cable

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

Note 5: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-3000-5.9MN-2000-BC-MA-588x1008-AUTOBR-LT-SR-FOR-PCA-CNTLRM

Active Screen Size (HxW)	11.48 feet x 19.69 feet - 3.5 meters x 6 meters
Active Screen Size (Square Dimensions)	226.04 square feet - 21 square meters
Number of Panels (HxW)	7 Panels x 12 Panels
Total Panels	84 Panels
Matrix Size (HxW)	588 pixels x 1008 pixels
Aspect Ratio	0.5833 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	1803.648 lb - 818.16 kg
Display Weight per Square Dimension	7.98 lb/sq. ft - 38.96 kg/sq. m
Total Average Power Consumed	3378.48 Watts
Total Maximum Power Consumed	13513.66 Watts
Maximum Power Consumption per Square Dimension	59.8 W/sq. ft - 643.5W/sq. m
Current Draw	58.8 amps @ 230v 1P 19.6 amps @ 230/400v 3P 56.3 amps @ 120/240v 37.5 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

201 Daktronics Drive PO Box 5128 Brookings, SD 57006-5128
800-325-8766 605-692-0200 fax 605-697-4700
www.daktronics.com email sales@daktronics.com

DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-3000-3.9MN-2000-BC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.154 inches - 3.906 millimeters
Panel Configuration - Pixels (RxC)	128 x 128 pixels
Panel Dimensions (HxW)	19.685 x 19.685 inches - 500 x 500 mm
Maximum Power per Panel[1]	160.5632 Watts
Average Power per Panel[1]	40.141 Watts
Display Weight per Panel[2]	21.472 pounds - 9.74 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Optional Factory Calibration - Full depth, LED to LED
LED Refresh Rate	3840 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	140º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	4000:1
Service Access	Front or Rear
Cabinet Depth	3.307 inches - 84 millimeters
Cabinet Construction	Die-Cast Aluminum
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	None
Data Transmission to Display	CAT 6 Cable

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

Note 5: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-3000-3.9MN-2000-BC-MA-1024x1536-AUTOBR-LT-SR-FOR-PCA-CNTLRM

Active Screen Size (HxW)	13.12 feet x 19.69 feet - 4 meters x 6 meters
Active Screen Size (Square Dimensions)	258.33 square feet - 24 square meters
Number of Panels (HxW)	8 Panels x 12 Panels
Total Panels	96 Panels
Matrix Size (HxW)	1024 pixels x 1536 pixels
Aspect Ratio	0.6667 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	2061.312 lb - 935.04 kg
Display Weight per Square Dimension	7.98 lb/sq. ft - 38.96 kg/sq. m
Total Average Power Consumed	3853.536 Watts
Total Maximum Power Consumed	15414.07 Watts
Maximum Power Consumption per Square Dimension	59.7 W/sq. ft - 642.3W/sq. m
Current Draw	67 amps @ 230v 1P 22.3 amps @ 230/400v 3P 64.2 amps @ 120/240v 42.8 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

201 Daktronics Drive PO Box 5128 Brookings, SD 57006-5128
800-325-8766 605-692-0200 fax 605-697-4700
www.daktronics.com email sales@daktronics.com

DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-304-10MN-2000-SC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.39 inches - 9.906 millimeters
Module Configuration - Pixels (RxC)	32 x 32 pixels
Module Dimensions (HxW)	12.48 x 12.48 inches - 317 x 317 mm
Maximum Power per Module[1]	45.1584 Watts
Average Power per Module[1]	11.29 Watts
Display Weight per Module[2]	7.5 pounds - 3.4 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Full depth, LED to LED
LED Refresh Rate	4800 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	170º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	2000:1
Service Access	Front or Rear
Cabinet Depth	6.929 inches - 176 millimeters
Cabinet Construction	Steel and Aluminum (corrosion resistant)
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	Power Supply Fan
Data Transmission to Display	Direct: Fiberoptic Cable Remote: Internet/Network (IP)

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

Note 5: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-304-10MN-2000-SC-MA-352x576-120BU-LT-RD-FOR-SBA-CNTLRM

Active Screen Size (HxW)	11.44 feet x 18.72 feet - 3.49 meters x 5.71 meters
Active Screen Size (Square Dimensions)	214.16 square feet - 19.93 square meters
Number of Modules (HxW)	11 Modules x 18 Modules
Total Modules	198 Modules
Matrix Size (HxW)	352 pixels x 576 pixels
Aspect Ratio	0.6111 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	1485 lb - 673.2 kg
Display Weight per Square Dimension	6.94 lb/sq. ft - 33.79 kg/sq. m
Total Average Power Consumed	2235.42 Watts
Total Maximum Power Consumed	8941.37 Watts
Maximum Power Consumption per Square Dimension	41.8 W/sq. ft - 448.7W/sq. m
Current Draw	38.9 amps @ 230v 1P 13 amps @ 230/400v 3P 37.3 amps @ 120/240v 24.8 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

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www.daktronics.com email sales@daktronics.com

DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-3000-5.9MN-2000-BC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.234 inches - 5.952 millimeters
Panel Configuration - Pixels (RxC)	84 x 84 pixels
Panel Dimensions (HxW)	19.685 x 19.685 inches - 500 x 500 mm
Maximum Power per Panel[1]	160.8768 Watts
Average Power per Panel[1]	40.22 Watts
Display Weight per Panel[2]	21.472 pounds - 9.74 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Optional Factory Calibration - Full depth, LED to LED
LED Refresh Rate	3840 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	140º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	4000:1
Service Access	Front or Rear
Cabinet Depth	3.307 inches - 84 millimeters
Cabinet Construction	Die-Cast Aluminum
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	None
Data Transmission to Display	CAT 6 Cable

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

Note 5: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-3000-5.9MN-2000-BC-MA-168x4116-AUTOBR-LT-SR-FOR-PCA-CNTLRM

Active Screen Size (HxW)	3.28 feet x 80.38 feet - 1 meters x 24.5 meters
Active Screen Size (Square Dimensions)	263.65 square feet - 24.5 square meters
Number of Panels (HxW)	2 Panels x 49 Panels
Total Panels	98 Panels
Matrix Size (HxW)	168 pixels x 4116 pixels
Aspect Ratio	0.0408 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	2104.256 lb - 954.52 kg
Display Weight per Square Dimension	7.99 lb/sq. ft - 38.96 kg/sq. m
Total Average Power Consumed	3941.56 Watts
Total Maximum Power Consumed	15765.93 Watts
Maximum Power Consumption per Square Dimension	59.8 W/sq. ft - 643.5W/sq. m
Current Draw	68.5 amps @ 230v 1P 22.8 amps @ 230/400v 3P 65.7 amps @ 120/240v 43.8 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

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DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-304-10MN-2000-SC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.39 inches - 9.906 millimeters
Module Configuration - Pixels (RxC)	32 x 32 pixels
Module Dimensions (HxW)	12.48 x 12.48 inches - 317 x 317 mm
Maximum Power per Module[1]	45.1584 Watts
Average Power per Module[1]	11.29 Watts
Display Weight per Module[2]	7.5 pounds - 3.4 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Full depth, LED to LED
LED Refresh Rate	4800 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	170º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	2000:1
Service Access	Front or Rear
Cabinet Depth	6.929 inches - 176 millimeters
Cabinet Construction	Steel and Aluminum (corrosion resistant)
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	Power Supply Fan
Data Transmission to Display	Direct: Fiberoptic Cable Remote: Internet/Network (IP)

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

Note 5: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-304-10MN-2000-SC-MA-64x2464-120BU-LT-RD-FOR-SBA-CNTLRM

Active Screen Size (HxW)	2.08 feet x 80.08 feet - 0.63 meters x 24.41 meters
Active Screen Size (Square Dimensions)	166.57 square feet - 15.38 square meters
Number of Modules (HxW)	2 Modules x 77 Modules
Total Modules	154 Modules
Matrix Size (HxW)	64 pixels x 2464 pixels
Aspect Ratio	0.026 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	1155 lb - 523.6 kg
Display Weight per Square Dimension	6.94 lb/sq. ft - 34.05 kg/sq. m
Total Average Power Consumed	1738.66 Watts
Total Maximum Power Consumed	6954.4 Watts
Maximum Power Consumption per Square Dimension	41.8 W/sq. ft - 452.2W/sq. m
Current Draw	30.2 amps @ 230v 1P 10.1 amps @ 230/400v 3P 29 amps @ 120/240v 19.3 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

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DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

RTN-301-10MN-2000-SC (72H)

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.41 inches - 10.41 millimeters
Module Column Configuration - Pixels (RxC)	72 x 48 pixels
Module Column Dimensions (HxW) (72 x 48)	29.528 x 19.685 inches - 750 x 500 mm
Maximum Power per Module Column[1]	137.2032 Watts
Average Power per Module Column[1]	34.301 Watts
Display Weight per Module Column[2]	29.41 pounds - 13.34 kilograms
Processing	22 bit (distributed)
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Full depth, LED to LED
LED Refresh Rate	4800 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	160º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	2000:1
Service Access	Front or Top
Cabinet Depth	5 inches - 127 millimeters
Cabinet Construction	Aluminum (corrosion resistant)
Ingress Protection Rating	NA
Working Temperature Rating[3]	-31º to 104º F - -35º to 40º C
Ventilation	Power Supply Fan
Data Transmission to Display	Direct: Fiberoptic Cable Remote: Internet/Network (IP)

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

Note 5: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

RTN-301-10MN-2000-SC-MA-72x15840-120BU-LT-RD-FOT-SBA-CNTLRM

Active Screen Size (HxW)	2.46 feet x 541.34 feet - 0.75 meters x 165 meters
Active Screen Size (Square Dimensions)	1331.7 square feet - 123.75 square meters
Number of Module Columns (HxW) (72 x 48)	1 module column x 330 module columns
Total Module Columns	330 module columns
Matrix Size (HxW)	72 pixels x 15840 pixels
Aspect Ratio	0.0045 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	9705.3 lb - 4402.2 kg
Display Weight per Square Dimension	7.29 lb/sq. ft - 35.58 kg/sq. m
Total Average Power Consumed	11319.33 Watts
Total Maximum Power Consumed	45277.06 Watts
Maximum Power Consumption per Square Dimension	34 W/sq. ft - 365.9W/sq. m
Current Draw	196.9 amps @ 230v 1P 65.6 amps @ 230/400v 3P 188.7 amps @ 120/240v 125.8 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

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DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-304-10MN-2000-SC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.39 inches - 9.906 millimeters
Module Configuration - Pixels (RxC)	32 x 32 pixels
Module Dimensions (HxW)	12.48 x 12.48 inches - 317 x 317 mm
Maximum Power per Module[1]	45.1584 Watts
Average Power per Module[1]	11.29 Watts
Display Weight per Module[2]	7.5 pounds - 3.4 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Full depth, LED to LED
LED Refresh Rate	4800 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	170º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	2000:1
Service Access	Front or Rear
Cabinet Depth	6.929 inches - 176 millimeters
Cabinet Construction	Steel and Aluminum (corrosion resistant)
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	Power Supply Fan
Data Transmission to Display	Direct: Fiberoptic Cable Remote: Internet/Network (IP)

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

Note 5: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-304-10MN-2000-SC-MA-192x736-120BU-LT-RD-FOR-SBA-CNTLRM

Active Screen Size (HxW)	6.24 feet x 23.92 feet - 1.9 meters x 7.29 meters
Active Screen Size (Square Dimensions)	149.26 square feet - 13.85 square meters
Number of Modules (HxW)	6 Modules x 23 Modules
Total Modules	138 Modules
Matrix Size (HxW)	192 pixels x 736 pixels
Aspect Ratio	0.2609 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	1035 lb - 469.2 kg
Display Weight per Square Dimension	6.94 lb/sq. ft - 33.88 kg/sq. m
Total Average Power Consumed	1558.02 Watts
Total Maximum Power Consumed	6231.86 Watts
Maximum Power Consumption per Square Dimension	41.8 W/sq. ft - 449.9W/sq. m
Current Draw	27.1 amps @ 230v 1P 9 amps @ 230/400v 3P 26 amps @ 120/240v 17.3 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

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DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-304-10MN-2000-SC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.39 inches - 9.906 millimeters
Module Configuration - Pixels (RxC)	32 x 32 pixels
Module Dimensions (HxW)	12.48 x 12.48 inches - 317 x 317 mm
Maximum Power per Module[1]	45.1584 Watts
Average Power per Module[1]	11.29 Watts
Display Weight per Module[2]	7.5 pounds - 3.4 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Full depth, LED to LED
LED Refresh Rate	4800 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	170º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	2000:1
Service Access	Front or Rear
Cabinet Depth	6.929 inches - 176 millimeters
Cabinet Construction	Steel and Aluminum (corrosion resistant)
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	Power Supply Fan
Data Transmission to Display	Direct: Fiberoptic Cable Remote: Internet/Network (IP)

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

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Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-304-10MN-2000-SC-MA-64x544-120BU-LT-RD-FOR-SBA-CNTLRM

Active Screen Size (HxW)	2.08 feet x 17.68 feet - 0.63 meters x 5.39 meters
Active Screen Size (Square Dimensions)	36.77 square feet - 3.4 square meters
Number of Modules (HxW)	2 Modules x 17 Modules
Total Modules	34 Modules
Matrix Size (HxW)	64 pixels x 544 pixels
Aspect Ratio	0.1176 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	255 lb - 115.6 kg
Display Weight per Square Dimension	6.94 lb/sq. ft - 34.05 kg/sq. m
Total Average Power Consumed	383.86 Watts
Total Maximum Power Consumed	1535.39 Watts
Maximum Power Consumption per Square Dimension	41.8 W/sq. ft - 452.2W/sq. m
Current Draw	6.7 amps @ 230v 1P 2.2 amps @ 230/400v 3P 6.4 amps @ 120/240v 4.3 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

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DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVN-304-10MN-2000-SC

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.39 inches - 9.906 millimeters
Module Configuration - Pixels (RxC)	32 x 32 pixels
Module Dimensions (HxW)	12.48 x 12.48 inches - 317 x 317 mm
Maximum Power per Module[1]	45.1584 Watts
Average Power per Module[1]	11.29 Watts
Display Weight per Module[2]	7.5 pounds - 3.4 kilograms
Processing	22 bit Distributed
Color Capacity	16 bit (281 Trillion Colors)
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	Full depth, LED to LED
LED Refresh Rate	4800 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	2000 nits (cd/sm)
Horizontal Viewing Angle	170º
Vertical Viewing Angle (Up/Down)	+60/-80º
Contrast Ratio	2000:1
Service Access	Front or Rear
Cabinet Depth	6.929 inches - 176 millimeters
Cabinet Construction	Steel and Aluminum (corrosion resistant)
Ingress Protection Rating	NA
Working Temperature Rating[3]	-40º to 95º F - -40º to 35º C
Ventilation	Power Supply Fan
Data Transmission to Display	Direct: Fiberoptic Cable Remote: Internet/Network (IP)

Note 1: Power draw varies depending on display ventilation.

Note 2: Display Weight per Module factors in cabinet, but not the structure.

Note 3: Temperature range is based on typical usage (100% daytime brightness, 50% content, 250W/m2 solar, no wind).

Note 4: Ventilation solution may require external supplemental A/C in some areas of the world. Please consult your Daktronics representative regarding your area.

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Note 6: See contract specific drawings for customized product weights

DISPLAY SPECIFICATION

DVN-304-10MN-2000-SC-MA-64x608-120BU-LT-RD-FOR-SBA-CNTLRM

Active Screen Size (HxW)	2.08 feet x 19.76 feet - 0.63 meters x 6.02 meters
Active Screen Size (Square Dimensions)	41.1 square feet - 3.79 square meters
Number of Modules (HxW)	2 Modules x 19 Modules
Total Modules	38 Modules
Matrix Size (HxW)	64 pixels x 608 pixels
Aspect Ratio	0.1053 (Reference - 16:9 = .5625 and 4:3 = .75)
Display Weight[6]	285 lb - 129.2 kg
Display Weight per Square Dimension	6.94 lb/sq. ft - 34.07 kg/sq. m
Total Average Power Consumed	429.02 Watts
Total Maximum Power Consumed	1716.02 Watts
Maximum Power Consumption per Square Dimension	41.8 W/sq. ft - 452.5W/sq. m
Current Draw	7.5 amps @ 230v 1P 2.5 amps @ 230/400v 3P 7.2 amps @ 120/240v 4.8 amps @ 208Y/120v 3P
Control Method	Rack Mount Control System

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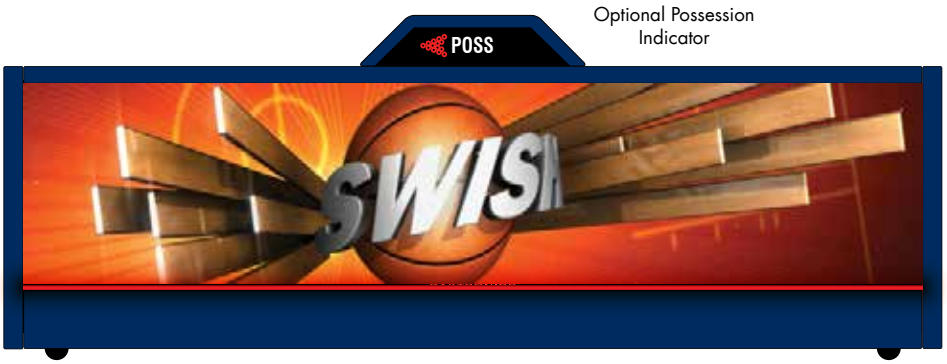
DAKTRONICS ST-2304 LED SCORER'S TABLE

CUSTOM CONFIGURABLE



Optional Possession Indicator

96 x 432 6 mm display shown with basketball animation

Optional End of Period Light Strip

Side View

This series of configurable scorer's tables contains an LED message center capable of displaying sponsor advertisements, animations, statistics and player headshots. The tables are designed to comfortably sit 4 scorers, featuring power outlets, USB ports, and optional network jacks for convenience as well as beverage holders to prevent spills. Message center modules feature SMD (3-in-1) LED packages for wider viewing angles and closer viewing distances. Table shown with optional possession indicator and End of Period (EOP) light strip. The tabletop depth may be 18" (457 mm), 12" (305 mm), or 0" (no tabletop).

LINE/COLUMN SPACING
6 mm or 10 mm

PIXEL CONFIGURATION
RGB 3-in-1 SMD

DISPLAY POWER
Varies by display size (see chart on page 2)

DISPLAY WEIGHT
Varies by display size (see chart on page 2)

PROCESSING
22 bit (distributed)

COLOR CAPACITY
16 bit (281 trillion colors)

DIMMING
256 levels

CALIBRATION
Full depth, LED to LED

LED REFRESH RATE
4,800 Hz

LED LIFETIME
100,000 hours

CALIBRATED INTENSITY
1600 nits (cd/m^2)

VIEWING ANGLE
170° horizontal, +60°/-80° vertical

SERVICE ACCESS
Front or rear

CONSTRUCTION
Durable, lightweight aluminum cabinet with polycarbonate face to protect LED modules and vinyl padding to protect players

DISPLAY COLOR
Satin black

PADDING COLOR
Choose from 26 colors of vinyl padding for the sides, top, and bottom front of the table.

TEMPERATURE RATING
40° to 90° Fahrenheit (4° to 32° Celsius)

COMMUNICATION
Cat 5E or Fiber Optic

CONTROL SOFTWARE
Show Control System, SCS-4000 (see DD1757723)

GRAPHIC CAPABILITY
Video clips, animations, advertisements, logos & text
(no live video)

OPTIONS & ACCESSORIES
- Convenience network jacks
- Logo/sponsor graphics within the dimensions of the side panels; must allow 1" (25 mm) of space around edge
- Possession indicator with 3" (76 mm) high red LED arrows and 2" (51 mm) high POSS caption
- End of Period (EOP) light strip and/or Clock-Stopped light strip with red LEDs ***(requires All Sport® 5000 controller – see SL-03991)***
- Protective cover

DAKTRONICS ST-2304 LED SCORER'S TABLE

PIXEL PITCH	MATRIX SIZE IN PIXELS		OVERALL WIDTH (WITH PADS)*		ACTIVE AREA HEIGHT x WIDTH		UNCRATED WEIGHT		POWER IN WATTS**	
Millimeters	*Rows*	*Columns*	*Feet*	*Meters*	*Feet*	*Meters*	*LB*	*KG*	*120V*	*240V*
6	96	x 336	7.70	2.35	2.08 x 7.28	0.63 x 2.22	260	118	1980	3048
10	64	x 224								
6	96	x 384	8.74	2.66	2.08 x 8.32	0.63 x 2.54	300	136	2064	3140
10	64	x 256								
6	96	x 432	9.78	2.98	2.08 x 9.36	0.63 x 2.85	340	154	2148	3209
10	64	x 288								

** All tables are 3'-1" (940 mm) tall and 3'-2" (965 mm) deep with upright 18" (457 mm) tabletop or 2'-6" (762 mm) deep with tabletop lowered for transport. ** Wattage shown includes max load placed on table including 10A for convenience power outlets.*

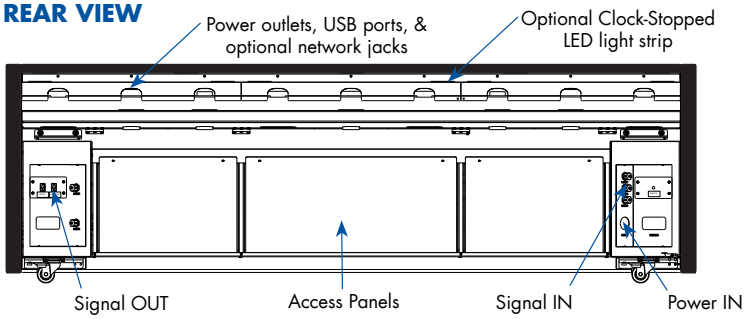
POWER CONNECTION

Scorer's table power cables feature NEMA® L5-20P twist-Lock plugs.

A mating NEMA® L5-20R receptacle ***(not provided)*** is required.

CUSTOMER SUPPLIED

REAR VIEW



CONTROL SYSTEM

PROVEN DIGITAL PROCESSING

Designed specifically for the unique demands of LED technology, Daktronics processing technology offers the highest quality color accuracy, motion reproduction and image detail.

LIVE DATA FEEDS

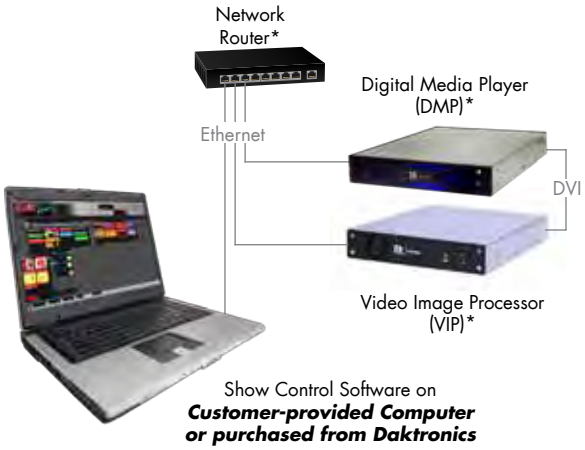
Integrate real-time data into creative media items to ensure content is fresh, informative and relevant.

Storage	240 GB Solid State Drive
Ports	USB 2.0 @2; USB 3.0 @2
Audio Output	Enabled (3-pin XLR balanced)
Weight	26 lbs (12 kg)
Power	120 VAC, 126 Watts

NOTE: The control room is to be climate controlled by the customer. Normal operating temperature should be between 40° to 90° Fahrenheit (4° to 32° Celsius). Normal operating humidity should be less than 80% non-condensing. Storage temperature should be between -10° to 105° Fahrenheit (-23° to 41° Celsius). Storage humidity should be less than 95% non-condensing. Keep computers and monitors out of direct sunlight during storage. Allow control equipment taken out of storage to return to operating temperature range prior to turning it on (24 hours recommended).

CONTROL OPTIONS

- **Embedded:** Components marked with (*) are mounted inside the display, and Cat 5E cable connects the Show Control Computer to the table.
- **Control Room:** Components marked with (*) are located remotely, and fiber optic cable connects the Processor at the control room location to the table.



FOR ADDITIONAL INFORMATION

- 6mm Architect Specifications: See DD3521287
- 10mm Architectural Specifications: See DD3521290

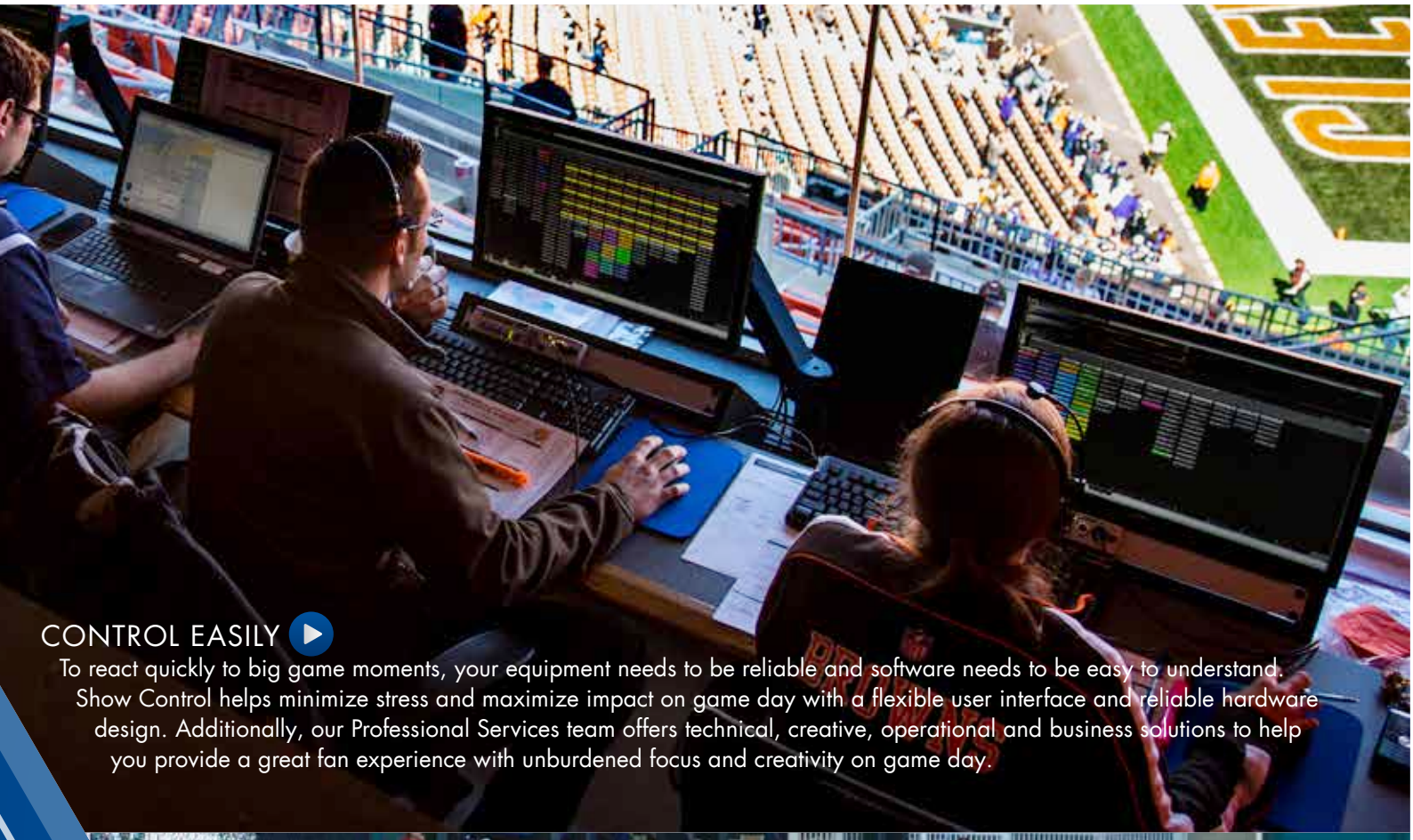
POWER UP WITH SHOW CONTROL

UNLOCK YOUR DISPLAY SYSTEM'S POSSIBILITIES

Sports entertainment teams today are challenged to deliver an in-venue experience that generates revenue and amplifies fan excitement, without surpassing the production team's capacity. When you want to unlock new possibilities, count on Daktronics Show Control.

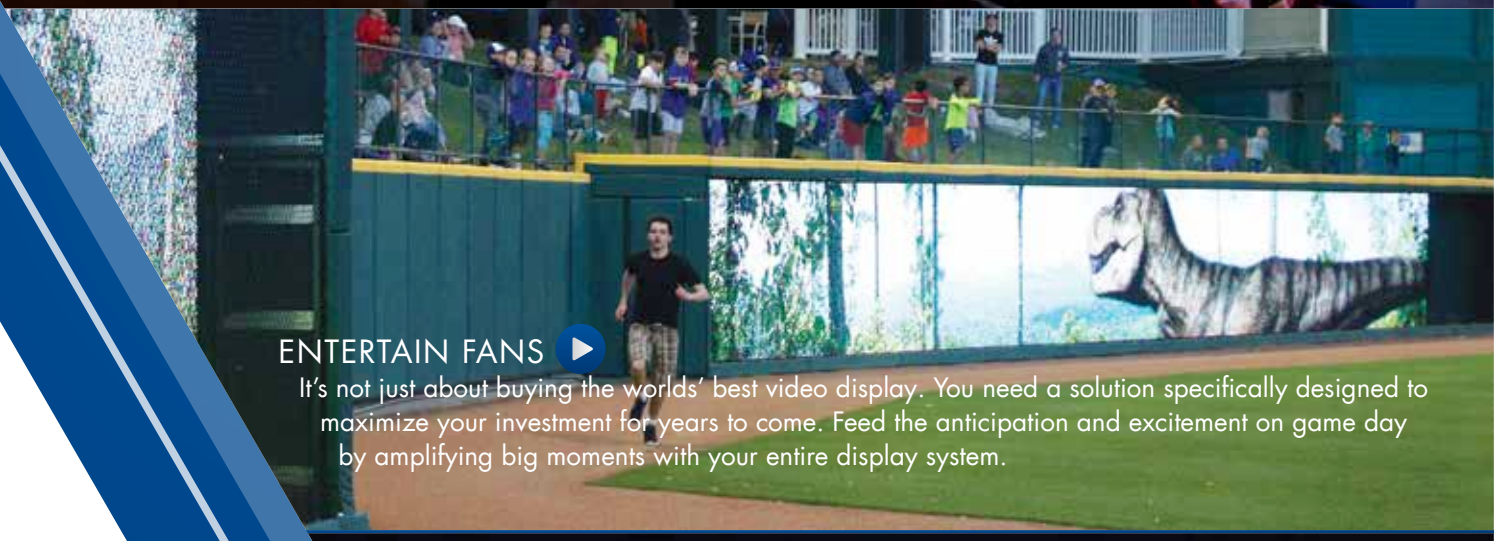
HOW OUR SOLUTION HELPS YOU

Bringing together fan engagement, revenue generation and production efficiency to create an amazing show is in our DNA. With several decades of providing innovative solutions for live events entertainment, our Show Control solution provides a powerful interconnected system designed to meet your needs now and grow with you in the future.



CONTROL EASILY

To react quickly to big game moments, your equipment needs to be reliable and software needs to be easy to understand. Show Control helps minimize stress and maximize impact on game day with a flexible user interface and reliable hardware design. Additionally, our Professional Services team offers technical, creative, operational and business solutions to help you provide a great fan experience with unburdened focus and creativity on game day.



ENTERTAIN FANS

It's not just about buying the worlds' best video display. You need a solution specifically designed to maximize your investment for years to come. Feed the anticipation and excitement on game day by amplifying big moments with your entire display system.

GENERATE REVENUE

Advertising opportunities exist all around your venue. Fans may be getting concessions, arriving late to the game, or wandering around the concourse. Show Control can put any content, anywhere, empowering you to take advantage of these digital advertising opportunities.

DAKTRONICS ALL SPORT 5000 PRODUCT SPECIFICATIONS

DIMENSIONS	WEIGHT	POWER (120/240 VAC)
4.25" H x 16.25" W x 9" D (108 mm, 413 mm, 229 mm)	7 lb (3.2 kg)	6 Watts

DISPLAY
A 32-character liquid crystal display (LCD) prompts the operator and provides vital feedback. Two lines of 16 characters provide easy viewing of game in progress information. The LCD is backlit with LEDs to allow for readability in dark areas as well as bright sunlight.
- Viewing area: 3.89" W x 0.94" H (99 mm, 24 mm)
- Characters: 0.189" W x 0.378" H (4.8 mm, 9.6 mm)

CONSTRUCTION
Heavy-duty aluminum case is the toughest line of defense against drops, static electricity, and high/low temperatures. The console's "snap-action" keyboard is sealed, making it resistant to moisture and spills. An internal beeper helps to indicate a completed keystroke.

SPORT MODES
Interchangeable sport inserts allow a single console to work for a wide variety of indoor and outdoor sports. Sport inserts reduce the confusion of having multiple functions on individual keys. On most inserts, HOME keys are color-coded green and GUEST keys are red for quick identification. The All Sport 5000 console can also be custom-programmed as needed.

NON-VOLATILE MEMORY
The most current information is automatically stored on a memory chip without the need for a battery, should there be a loss of power. The memory cannot be erased and is only overwritten once new information is entered.

PRODUCT SAFETY APPROVAL
ETL-listed, tested to CSA standards, and CE-labeled; FCC approved

OPERATING TEMPERATURES
32° to 130° Fahrenheit (0° to 54° Celsius)

GENERAL INFORMATION
Console can control multiple scoreboards and stat panels, display tenth-of-a-second times, and features Time of Day and Segment Timer modes. Console is static electricity resistant to 20,000 volts. Specifications and pricing are subject to change without notice.

OPTIONS & ACCESSORIES
- Durable carrying case (see SL-04551)
- 2.4 GHz spread spectrum radio control (see SL-04370)
- Handheld shot clock controllers
- External battery kit (see SL-04457)

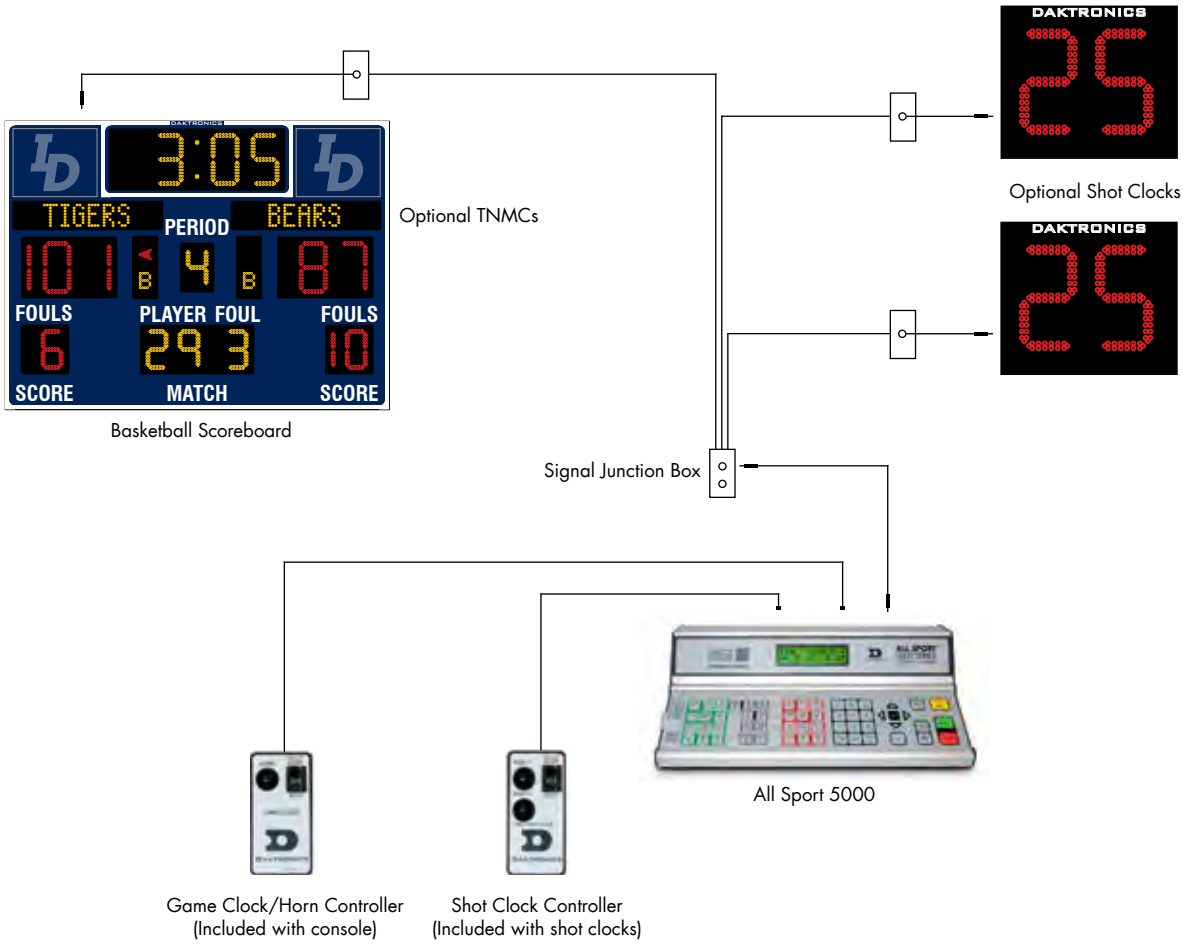
FOR ADDITIONAL INFORMATION
- Manual: See ED-11976
- Quick Guide: See DD2077845

DAKTRONICS ALL SPORT 5000 PRODUCT SPECIFICATIONS

FEATURE	BENEFIT
Cumulative memory	Saves points and fouls for up to 15 players per team in basketball mode and several user-defined player stats for volleyball for use on stat displays
Main & auxiliary scoreboard control	Control basketball shot clocks & stat displays, hockey goal lights or football delay-of-game clocks in addition to the main scoreboard from the same output signal
Real-Time Data (RTD) output	Displays game-in-progress information on electronic message displays
Track-timing interface	Displays information from automatic timing systems on standard football scoreboards
Multiple sport modes	Easily move the same console from venue to venue
TNMC control	Display custom names for each team on scoreboards that support optional programmable Team Name Message Centers (TNMCs)

TYPICAL CONTROL DIAGRAM

Refer to the diagram below for a typical layout of an All Sport 5000 controller, basketball scoreboard and optional shot clocks.



PROJECT
TIMELINE

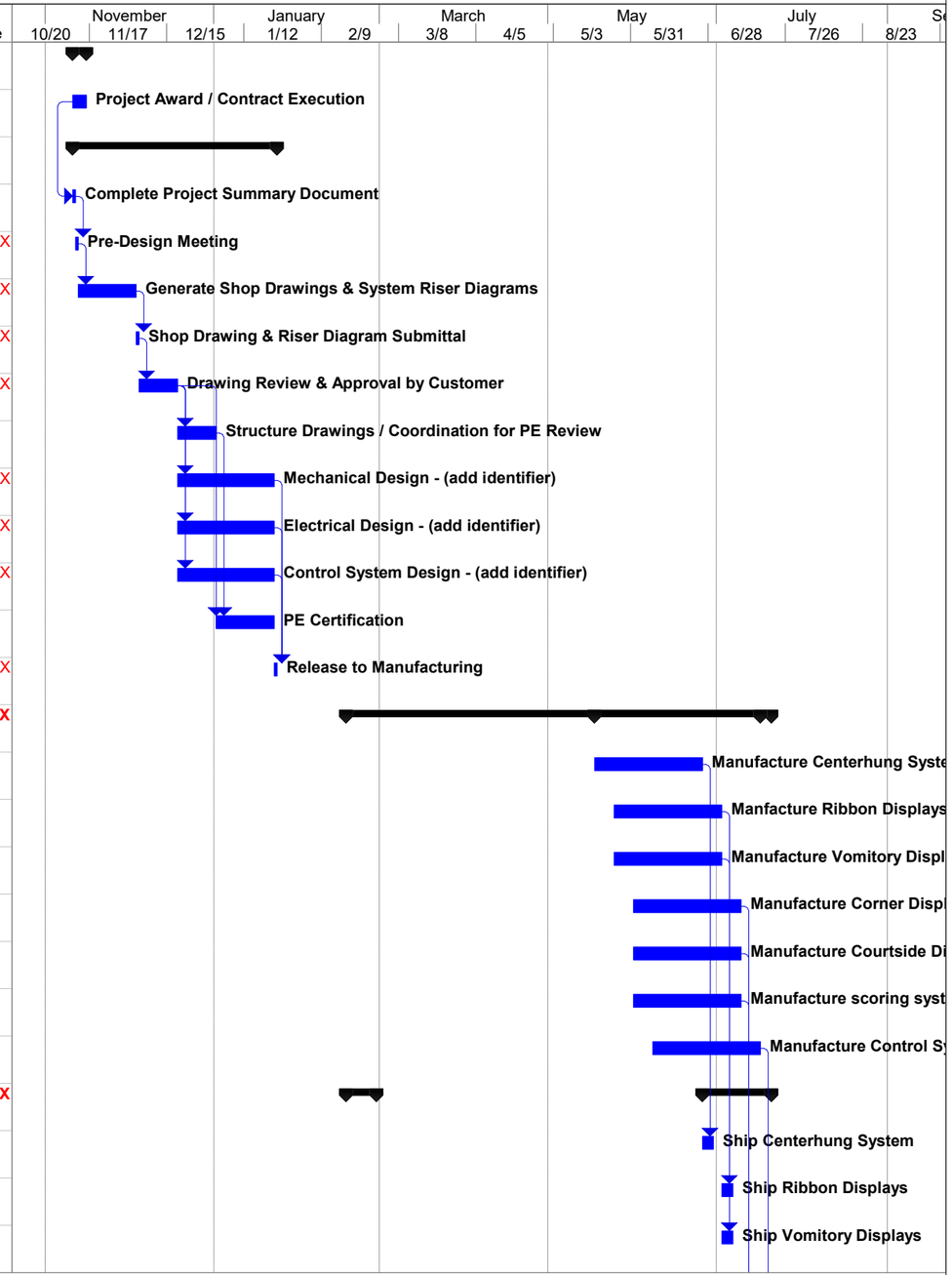
UNIVERSITY OF GEORGIA
ATHENS, GEORGIA

For questions regarding this schedule please contact:
Josh Howell - Sr. Project Manager - Daktronics, Inc.
P: 605-697-4060, C: 605-691-3626, F: 605-697-4700
Email: josh.howell@daktronics.com

James Madison University - Atlantic Bank Center

DAKTRONICS

ID	Task Name	Duration	Start	Finish	Responsibility	Task Type	Predecessors	Tracking Labels	Glovia Milestone
1	**PROJECT ADMINISTRATION**	**5 days**	**Mon 11/11/19**	**Fri 11/15/19**				**CNR**	
2	**Project Award / Contract Execution**	5 days	Mon 11/11/19	Fri 11/15/19	Dak/Customer	External		**FCE**	
3	**PRE-CONSTRUCTION**	**54 days**	**Mon 11/11/19**	**Thu 1/23/20**					
4	Complete Project Summary Document	1 day	Mon 11/11/19	Mon 11/11/19	Dak	Internal	2SS	**PSU**	
5	Pre-Design Meeting	1 day	Tue 11/12/19	Tue 11/12/19	Dak	Internal	4	**PD1**	X
6	Generate Shop Drawings & System Riser Diagrams	15 days	Wed 11/13/19	Tue 12/3/19	Dak	Both	5	**RD1**	X
7	Shop Drawing & Riser Diagram Submittal	1 day	Wed 12/4/19	Wed 12/4/19	Dak	Internal	6	**SS1**	X
8	Drawing Review & Approval by Customer	10 days	Thu 12/5/19	Wed 12/18/19	Customer	External	7	**SA1**	X
9	Structure Drawings / Coordination for PE Review	10 days	Thu 12/19/19	Wed 1/1/20	Dak	Both	8		
10	Mechanical Design - (add identifier)	25 days	Thu 12/19/19	Wed 1/22/20	Dak	Internal	8	**MD1**	X
11	Electrical Design - (add identifier)	25 days	Thu 12/19/19	Wed 1/22/20	Dak	Internal	8	**ED1**	X
12	Control System Design - (add identifier)	25 days	Thu 12/19/19	Wed 1/22/20	Dak	Internal	8	**CD1**	X
13	PE Certification	15 days	Thu 1/2/20	Wed 1/22/20	Dak	Both	8,9	**EPE,SPE**	
14	Release to Manufacturing	1 day	Thu 1/23/20	Thu 1/23/20	Dak	Both	10,11,12	**PB1**	X
15	**MANUFACTURING**	**44 days?**	**Mon 5/18/20**	**Thu 7/16/20**				**MC1**	X
16	Manufacture Centerhung System	29 days	Mon 5/18/20	Thu 6/25/20		Both			
17	Manfacture Ribbon Displays	29 days	Mon 5/25/20	Thu 7/2/20		Both			
18	Manufacture Vomitory Displays	29 days	Mon 5/25/20	Thu 7/2/20		Both			
19	Manufacture Corner Displays	29 days	Mon 6/1/20	Thu 7/9/20	Dak	Both			
20	Manufacture Courtside Displays	29 days	Mon 6/1/20	Thu 7/9/20		Both			
21	Manufacture scoring system	29 days	Mon 6/1/20	Thu 7/9/20		Both			
22	Manufacture Control System	29 days	Mon 6/8/20	Thu 7/16/20		Both			
23	**SHIPPING / FREIGHT**	**9 days**	**Tue 2/18/20**	**Fri 2/28/20**		**Both**		**SH1**	X
24	Ship Centerhung System	2 days	Fri 6/26/20	Mon 6/29/20		Both	16		
25	Ship Ribbon Displays	2 days	Fri 7/3/20	Mon 7/6/20		Both	17		
26	Ship Vomitory Displays	2 days	Fri 7/3/20	Mon 7/6/20		Both	18		



Printed Date: Mon 10/14/19

Task — Summary — Inactive Summary — Manual Summary Rollup — Finish-only
Critical Task — Inactive Task — Manual Task — Manual Summary — Progress
Milestone — Inactive Milestone — Duration-only — Start-only

Revision: 0

****Schedule is Subject to Change****

For questions regarding this schedule please contact:
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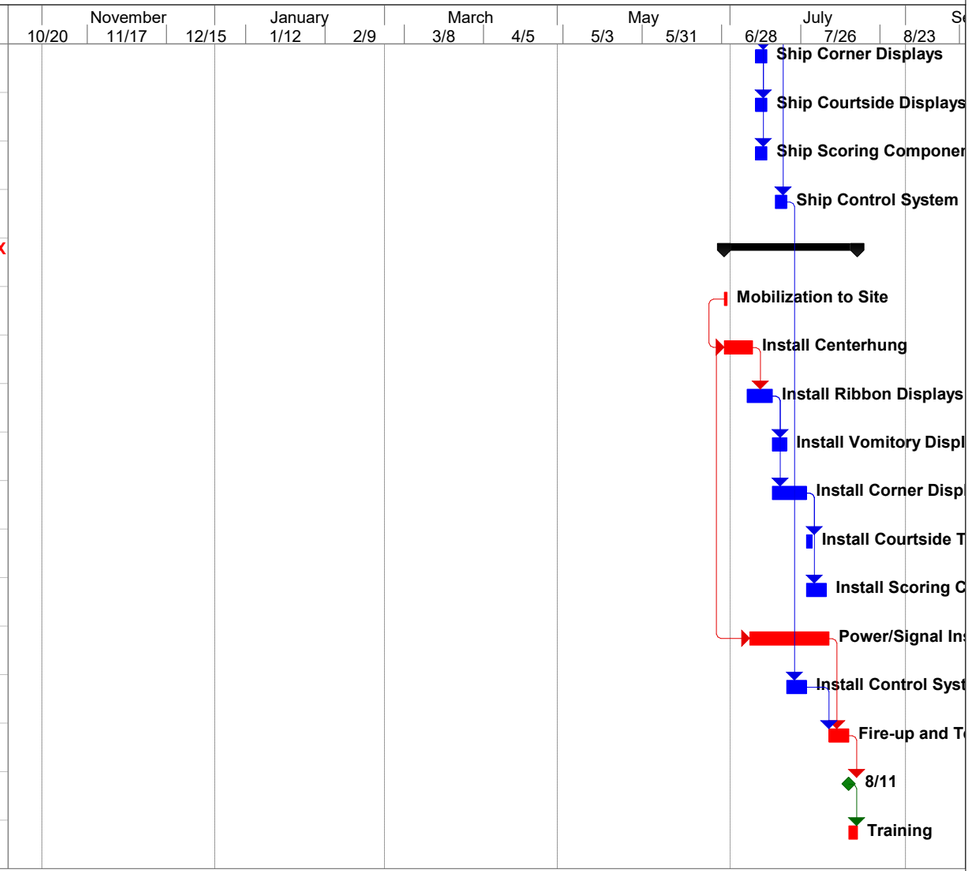
P: 605-697-4060, C: 605-691-3626, F: 605-697-4700
Email: josh.howell@daktronics.com

James Madison University - Atlantic Bank Center

DAKTRONICS

ID	Task Name	Duration	Start	Finish	Responsibility	Task Type	Predecessors	Tracking Labels	Glovia Milestone
27	Ship Corner Displays	2 days	Fri 7/10/20	Mon 7/13/20		Both	19		
28	Ship Courtside Displays	2 days	Fri 7/10/20	Mon 7/13/20	Dak	Both	20		
29	Ship Scoring Components	2 days	Fri 7/10/20	Mon 7/13/20		Both	21		
30	Ship Control System	2 days	Fri 7/17/20	Mon 7/20/20		Both	22		
31	**INSTALLATION**	**35 days**	**Mon 6/29/20**	**Fri 8/14/20**		**Both**		**INS**	X
32	Mobilization to Site	1 day	Mon 6/29/20	Mon 6/29/20	Dak/Sub	Both			
33	Install Centerhung	8 days	Mon 6/29/20	Wed 7/8/20	Dak/Sub	Both	32SS		
34	Install Ribbon Displays	7 days	Tue 7/7/20	Wed 7/15/20	Dak/Sub	Both	33FS-2 days		
35	Install Vomitory Displays	3 days	Thu 7/16/20	Mon 7/20/20		Both	34		
36	Install Corner Displays	8 days	Thu 7/16/20	Mon 7/27/20		Both	34		
37	Install Courtside Tables	2 days	Tue 7/28/20	Wed 7/29/20		Both	36		
38	Install Scoring Components	5 days	Tue 7/28/20	Mon 8/3/20		Both	36		
39	Power/Signal Installation for Video Boards	20 days	Wed 7/8/20	Tue 8/4/20	Dak/Sub	Both	33SS+7 days		
40	Install Control System	5 days	Tue 7/21/20	Mon 7/27/20	Dak/Sub	Both	30		
41	Fire-up and Testing	5 days	Wed 8/5/20	Tue 8/11/20	Dak/Customer	Both	40,39	**TRN-M**	
42	Substantial Completion	0 days	Tue 8/11/20	Tue 8/11/20	Dak/Sub	Both	41	**PSC**	
43	Training	3 days	Wed 8/12/20	Fri 8/14/20		Both	42		



Printed Date: Mon 10/14/19

Task		Summary		Inactive Summary		Manual Summary Rollup		Finish-only	
Critical Task		Inactive Task		Manual Task		Manual Summary		Progress	
Milestone		Inactive Milestone		Duration-only		Start-only			

Revision: 0

****Schedule is Subject to Change****

CUSTOMER **PRICING**

UNIVERSITY AT ALBANY
ALBANY, NEW YORK

ANTHONY JAMES PARTNERS

CMJ-1055 Attachment F

LED DISPLAY AND SCORING SYSTEM

NOTE: FILL IN ONLY GRAY SHADED CELLS

ALL PRODUCTS	Daktronics
CENTER HUNG VIDEO DISPLAYS	$495,422
INSTALLATION: CENTER HUNG DISPLAYS	$473,801
RIBBON BOARDS	$435,044
INSTALLATION: RIBBON DISPLAYS	$85,977
VOMITORY LED DISPLAYS	$32,045
INSTALLATION: VOMITORY DISPLAYS	$26,935
LED COURTSIDE DISPLAY 1	$90,007
LED COURTSIDE DISPLAY 2	$61,567
SCORING SYSTEM	$427,964
GENERAL CONDITIONS	$222,868
OPERATING SYSTEM	Included
ANIMATION PACKAGE	$11,049
GRAND TOTAL BASE BID	$2,362,679

ALTERNATES 1 & 2 INCREASE RESOLUTION CENTER HUNG DISPLAYS	$219,789
ALTERNATE 3: LED CORNER DISPLAYS	

BID CLARIFICATIONS: STATE ANY EXCEPTIONS BEING TAKEN TO PRODUCT SPECS OR SCOPE OF WORK OR ANY VOLUNTARY ALTERNATES

Assume catwalk access directly above display for power and signal drops
Assume power is within 50' of termination point on ribbon boards, vomitory and corner boards
Assume heavy equipment access to arena prior to court floor being installed for duration of installation
Hoist is operated via panel on top of catwalk or wireless controller
Pricing based off of best guess in terms of building and catwalk layout

ELECTRICAL SUBCONTRACTOR	Electrical Concepts and Techr
INSTALLATION SUBCONTRACTOR	Hoist Sales and Service
CONTROL SYSTEM	Daktronics Show Control
LED MANUFACTURER	Cree
LED CHIP SUPPLIER	Cree

EXTENDED WARRANTY - PARTS AND LABOR	Daktronics
YEAR 3	$28,668
YEAR 4	$30,440
YEAR 5	$31,185
YEAR 6	$32,272
YEAR 7	$33,538
YEAR 8	$34,636
YEAR 9	$35,592
YEAR 10	$36,918
EXTENDED WARRANTY PARTS ONLY	
YEAR 3	$13,038
YEAR 4	$13,321
YEAR 5	$13,582
YEAR 6	$13,842
YEAR 7	$14,201
YEAR 8	$14,397
YEAR 9	$14,658
YEAR 10	$14,636

Note: Extended warranty pricing should be based on annual payments, rather than upfront lump sum. Owner will reserve right to select option on an annual basis at provided price.

CENTER HUNG VIDEO DISPLAYS	SPECIFICATION	Daktronics
Pixel Pitch	**6**	**5.9**
Quantity	**4**	**4**
Pixel Height (Physical)	608	588
Pixel Length (physical)	992	1,008
Total Pixels	603,136	592,704
System Height (F)	11.9	11.5
System Length (F)	19.3	19.7
Total Sq. FT	230	226
Pixel Density sq. FT	2,626	2,622
Total Display Price		$372,143
Processing		$46,101
Shipping		$8,864
Total System Price		**$427,109**
Cost per Sq. Ft		$412
Cost per Pixel		$0.16

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

ALTERNATE 1: CENTER HUNG VIDEO DISPLAYS	SPECIFICATION	Daktronics
Pixel Pitch	**4**	**3.9**
Quantity	**4**	**4**
Pixel Height (Physical)	1,056	1,024
Pixel Length (physical)	1,488	1,536
Total Pixels	1,571,328	1,572,864
System Height (F)	13.9	13.1
System Length (F)	19.5	19.7
Total Sq. FT	271	258
Pixel Density sq. FT	5,797	6,089
Total Display Price		$472,466
Processing		$46,101
Shipping		$8,864
Total System Price		**$527,432**
Cost per Sq. Ft		$457
Cost per Pixel		$0.08

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

CENTER HUNG LOWER RING DISPLAY	SPECIFICATION	Daktronics
Pixel Pitch	**10**	**10**
Quantity	**1**	**1**
Pixel Height (Physical)	80	64
Pixel Length (physical)	2,480	2,464
Total Pixels	198,400	157,696
System Height (F)	2.6	2.1
System Length (F)	81.0	80.1
Total Sq. FT	211	167
Pixel Density sq. FT	942	947
Total Display Price		$59,518
Processing		$7,377
Shipping		$1,418
Total System Price		**$68,314**
Cost per Sq. Ft		$357
Cost per Pixel		$0.38

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

ALTERNATE 2: CENTER HUNG LOWER RING DISPLAY	SPECIFICATION	Daktronics
Pixel Pitch	**6**	**5.9**
Quantity	**1**	**1**
Pixel Height (Physical)	128	168
Pixel Length (physical)	4,160	4,116
Total Pixels	532,480	691,488
System Height (F)	2.6	3.3
System Length (F)	81.2	80.4
Total Sq. FT	211	264
Pixel Density sq. FT	2,522	2,622
Total Display Price		$178,984
Processing		$7,377
Shipping		$1,418
Total System Price		**$187,780**
Cost per Sq. Ft		$679
Cost per Pixel		$0.26

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

RIBBON BOARDS	SPECIFICATION	Daktronics
Pixel Pitch	**10**	**10**
Quantity	**1**	**1**
Pixel Height (Physical)	64	72
Pixel Length (physical)	16,544	15,840
Total Pixels	1,058,816	1,140,480
System Height (F)	2.0	2.5
System Length (F)	542.0	241.3
Total Sq. FT	1,084	594
Pixel Density sq. FT	977	1,920
Total Display Price		$378,650
Processing		$47,299
Shipping		$9,094
Total System Price		**$435,044**
Cost per Sq. Ft		$638
Cost per Pixel		$0.33

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

ALTERNATE 3: CORNER LED DISPLAYS	SPECIFICATION	Daktronics
Pixel Pitch	**10**	**10**
Quantity	**4**	**4**
Pixel Height (Physical)	192	192
Pixel Length (physical)	736	736
Total Pixels	141,312	141,312
System Height (F)	6.2	6.2
System Length (F)	24.2	23.9
Total Sq. FT	150	149
Pixel Density sq. FT	942	947
Total Display Price		$195,858
Processing		$24,422
Shipping		$4,696
Total System Price		**$224,976**
Cost per Sq. Ft		$328
Cost per Pixel		$0.35

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

VOMITORY LED DISPLAYS	SPECIFICATION	Daktronics
Pixel Pitch	**10**	**10**
Quantity	**2**	**2**
Pixel Height (Physical)	64	64
Pixel Length (physical)	528/608	544 / 608
Total Pixels	33792/38912	
System Height (F)	2.0	2.1
System Length (F)	17/20	17.68 / 19.76
Total Sq. FT	74	
Pixel Density sq. FT	#VALUE!	#DIV/0!
Total Display Price		$28,053
Processing		$3,348
Shipping		$644
Total System Price		**$32,045**
Cost per Sq. Ft		
Cost per Pixel		

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	2000
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

LED COURTSIDE DISPLAY 1	SPECIFICATION	Daktronics
Pixel Pitch	**6**	**6**
Quantity	**1**	**1**
Pixel Height (Physical)	128	96
Pixel Length (physical)	2,048	1,920
Total Pixels	262,144	184,320
System Height (F)	2.4	2.1
System Length (F)	40.0	41.6
Total Sq. FT	96	87
Pixel Density sq. FT	2,731	2,130
Total Display Price		$78,642
Processing		$9,532
Tables + Installation		inc
Shipping		$1,833
Total System Price		**$90,007**
Cost per Sq. Ft		$909
Cost per Pixel		$0.43

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

LED COURTSIDE DISPLAY 2	SPECIFICATION	Daktronics
Pixel Pitch	**6**	**6**
Quantity	**2**	**2**
Pixel Height (Physical)	128	96
Pixel Length (physical)	608	672
Total Pixels	77,824	64,512
System Height (F)	2.4	2.1
System Length (F)	12.0	14.6
Total Sq. FT	29	31
Pixel Density sq. FT	2,702	2,110
Total Display Price		$53,618
Processing		$6,668
Tables + Installation		inc
Shipping		$1,282
Total System Price		**$61,567**
Cost per Sq. Ft		$877
Cost per Pixel		$0.42

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	1600
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

INSTALLATION: GENERAL CONDITIONS	$222,868
Project Management	$32,707
Training and Event Support	$18,755
General Conditions	$60,679
Engineering, Permits, Fees	$58,022
Administrative and Legal	$9,495
Travel and Expenses	$43,211

INSTALLATION: CENTER HUNG DISPLAYS	$473,801
Structural Steel and Installation	$59,783
Hoist	$208,113
Component Installation	$76,087
Heavy Equipment Rental	Inc
Underbelly signage	$16,424
Channel Letters and Footer	$24,130
Cladding, Trim, Flashing and Finishes	$16,000
Electrical and Data	$73,264

INSTALLATION: RIBBON DISPLAYS	$85,977
Secondary Structural Steel and Installation	$3,109
Component Installation	$45,109
Heavy Equipment Rental	Included
Cladding, Trim, Flashing and Finishes	Included
Electrical and Data	$37,760

INSTALLATION: ALTERNATE 3 CORNER LED DISPLAYS	$128,250
Secondary Structural Steel and Installation	$19,565
Component Installation	$28,261
Heavy Equipment Rental	Included
Cladding, Trim, Flashing and Finishes	$6,261
Electrical and Data	$74,163

INSTALLATION: VOMITORY DISPLAYS	$26,935
Secondary Structural Steel and Installation	$2,717
Component Installation	$7,065
Heavy Equipment Rental	Included
Cladding, Trim, Flashing and Finishes	Included
Electrical and Data	$17,152

SCORING SYSTEM	$427,964
Corner Fixed Digit Display (Qty 4 Competition Court)	$361,061
Fixed Digit Display (Qty 1 Practice Court)	$3,361
Shot Clocks, Brackets and Strip Lights	$30,217
Locker Room Clocks	$3,783
Horns	$2,272
Scoreboard Controllers	$870
Stats Computer	$7,136
Data Distribution Panel	$19,265

CORPORATE
INFORMATION

THINKING **BIG**

EXTENSIVE EXPERIENCE
Nearly 50 years of researching and developing innovative customer-valued solutions.

CORPORATE STABILITY
Corporate transparency (publicly traded under DAKT on NASDAQ) and commitment to delivering the best integrated solution to your venue.

PRODUCT CONSULTING
Experienced personnel to help identify the ideal product for the right location.

CREATIVE CONSULTING
Design professional to assist with production or best-practice consulting.

TECHNICAL SUPPORT
Broad coverage from company offices, corporate headquarters and certified partners.

COOPERATION
Flexible product design and business philosophy to create
long-lasting partnerships.

ASSEMBLED IN AMERICA
Engineered to the strictest quality standards.

INVESTED IN COMMUNITY
Our employees live in your communities and have a vested interest in the success of your project.

SERVING YOU

VIDEO DISPLAYS

As a pioneer in the video display industry, Daktronics is the world's leading designer and manufacturer of large-screen, customizable, reliable display solutions, built to fit your needs.

SCORING AND TIMING SYSTEMS

From major international sports competitions to your community little league game, Daktronics scoring and timing systems communicate with millions of people in 100+ countries on six continents around the world.

MESSAGE DISPLAYS

LED electronic message centers are a flexible solution for your dynamic advertising plans or a source of community information, whether it's for your local elementary school or Interstate traffic.

PROFESSIONAL SERVICES

Daktronics Creative Services can provide you with animation solutions for commercial displays and sports venues, content in HD video and more.

AUDIO SYSTEMS

High-quality audio systems seamlessly integrate with your dynamic scoring and video displays in indoor and outdoor facilities.

TRANSPORTABLE VIDEO

The rental and staging group helps clients implement innovative portable video systems for a variety of rental, staging and touring purposes.

STATISTICS SOFTWARE

Designed to complement scoreboards and take your scoring system to a new level, Daktronics sports software is the ultimate tool for managing and displaying game, season and career statistics.

LIFETIME SYSTEM SUPPORT

From a thorough understanding of customer needs gained from four decades of work in Live Events, Daktronics is committed to providing you with world-class service and support.

ANNUAL REPORT

FINANCIAL HIGHLIGHTS—SEE SEC FILINGS FOR COMPLETE ANNUAL REPORT

	FY2014	FY2015	FY2016	FY2017	FY2018
Net Sales	$551,970	$615,942	$570,168	$586,539	$610,530
Gross Profit	141,710	144,579	121,019	140,415	145,669
Operating Expenses	105,153	113,294	118,524	124,994	133,209
Operating Income (loss)	36,557	31,285	2,495	15,421	12,460
Net Income (loss)	22,207	20,882	2,061	10,342	5,562
Gross Profit Percentage	25.7%	23.5%	21.2%	23.9%	23.9%
Operating Margin Percentage	6.6%	5.1%	0.4%	2.6%	2.0%
Weighted Average Diluted Shares Outstanding	43,762	44,443	44,456	44,303	44,873
Diluted Earnings per share	0.51	0.47	0.05	0.23	0.12
Working Capital	$140,532	$149,075	$123,714	$127,130	$132,825
Total Assets	357,451	379,478	349,948	355,433	358,800
Shareholders' Equity	203,119	212,039	201,067	198,286	197,616
Backlog	172,000	190,507	181,000	203,000	171,000
Product Design and Development	$23,375	$24,652	$26,911	$29,081	$35,530
Capital Expenditures	13,519	21,837	17,056	8,502	18,127
Depreciation & Amortization	14,501	14,968	16,856	19,392	17,784
Cash Flow from Operations	36,199	53,168	13,275	39,389	30,361
Regular Dividend per share	0.39	0.40	0.40	0.27	0.28
Special Dividend per share	-	-	-	0.04	0.00
Employees as of year-end:					
Full-time	2,278	2,419	2,470	2,405	2,405
Part-time	387	363	315	304	308
Stock Price During Fiscal Year:					
High	$15.80	$14.47	$12.24	$11.00	$10.76
Low	9.63	10.03	6.90	6.00	8.55
Stock Price at Fiscal Year End:	13.06	10.75	8.70	9.46	9.01

**Dollars in thousands, except per share and share price data.*

CORPORATE HEADQUARTERS
331 32nd Ave PO Box 5128 Brookings, SD 57006-5128
tel 605-692-0200 fax 605-697-4746
www.daktronics.com email sales@daktronics.com

THANK YOU

On behalf of Daktronics, we deeply appreciate the opportunity to present this proposal for your consideration. We would be honored to assist in providing the best possible experience to meet and exceed your every expectation.

DAKTRONICS

JAMES MADISON UNIVERSITY

Request for Proposal

RFP# CMJ-1055

ATLANTIC UNION BANK CENTER – LED DISPLAYS PACKAGE

September 13, 2019

VIRGINIA ASSOCIATION OF STATE COLLEGE & UNIVERSITY PURCHASING PROFESSIONALS

VASCUPP

REQUEST FOR PROPOSAL
RFP# CMJ-1055

Issue Date: **September 13, 2019**

Title: **ATLANTIC UNION BANK CENTER - LED DISPLAYS PACKAGE**

Issuing Agency: **Commonwealth of Virginia**
James Madison University
Procurement Services MSC 5720
752 Ott Street, Wine Price Building
First Floor, Suite 1023
Harrisonburg, VA 22807

Period of Contract: From Date of Award Through One Year (Renewable)

Sealed Proposals Will Be Received Until 2:00 PM on October 17, 2019 for Furnishing The Services Described Herein.

SEALED PROPOSALS MAY BE MAILED, EXPRESS MAILED, OR HAND DELIVERED DIRECTLY TO THE ISSUING AGENCY SHOWN ABOVE.

All Inquiries For Information And Clarification Should Be Directed To: Colleen Johnson, Buyer Specialist, Procurement Services, johns9cm@jmu.edu; 540-568-3137; (Fax) 540-568-7935 not later than **October 7, 2019**.

NOTE: THE SIGNED PROPOSAL AND ALL ATTACHMENTS SHALL BE RETURNED.
In compliance with this Request for Proposal and to all the conditions imposed herein, the undersigned offers and agrees to furnish the goods/services in accordance with the attached signed proposal or as mutually agreed upon by subsequent negotiation.

Name and Address of Firm:

_____

_____

_____

By: _____
(Signature in Ink)

Name: _____
(Please Print)

Date: _____ Title: _____

Web Address: _____ Phone: _____

Email: _____ Fax #: _____

ACKNOWLEDGE RECEIPT OF ADDENDUM: #1_____ #2_____ #3_____ #4_____ #5_____ (please initial)

CONTRACTOR/SUBCONTRACTOR LICENSE REQUIREMENT: By my signature on this solicitation, I certify that this firm/individual and subcontractor is properly licensed for providing the goods/services specified. License # _____ Type _____

SMALL, WOMAN OR MINORITY OWNED BUSINESS:

☐ YES; ☐ NO; *IF YES* ⇒⇒ ☐ SMALL; ☐ WOMAN; ☐ MINORITY ***IF MINORITY:*** ☐ AA; ☐ HA; ☐ AsA; ☐ NW; ☐ Micro

Note: This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, § 2.2-4343.1 or against an offeror because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

REQUEST FOR PROPOSAL

RFP # CMJ-1055

TABLE OF CONTENTS

I. PURPOSE

The purpose of this Request for Proposal (RFP) is to solicit sealed proposals from qualified sources to enter into a contract to provide a LED Displays Package for the Atlantic Bank Union Center for James Madison University (JMU), an agency of the Commonwealth of Virginia. Initial contract shall be for two (2) years with an option to renew for eight (8) additional one-year periods.

II. BACKGROUND

James Madison University (JMU) is a comprehensive public institution in Harrisonburg, Virginia with an enrollment of approximately 22,000 students and 4,000 faculty and staff. Further information about the University may be found at the following website: http://www.jmu.edu. The University sponsors an 18-sport intercollegiate athletics program that competes at The Division I level of the National Collegiate Athletic Association. JMU is also affiliated with the Colonial Athletic Association, of which it was a charter member in 1985, and with the Eastern College Athletic Conference.

James Madison University has invested heavily in its athletics facilities, highlighted by Bridgeforth Stadium/Zane Showker Field. In 2020, the Atlantic Union Bank Center will complete construction as the 8,500-seat home of JMU men's and women's basketball while also serving as a destination for numerous campus and community events with capacity potential for 10,000 for certain special event configurations. More details on the Atlantic Union Bank Center can be found at https://jmusports.com/feature/AtlanticUnionBankCenter.

III. SMALL, WOMAN-OWNED AND MINORITY PARTICIPATION

It is the policy of the Commonwealth of Virginia to contribute to the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities, and to encourage their participation in State procurement activities. The Commonwealth encourages contractors to provide for the participation of small businesses and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other contractual opportunities. Attachment B contains information on reporting spend data with subcontractors.

IV. STATEMENT OF NEEDS

With the upcoming debut of the Atlantic Union Bank Center, JMU seeks proposals for an LED Displays Package. Project highlights can be found at:
https://jmusports.com/feature/AtlanticUnionBankCenter.

A. GENERAL INFORMATION:

1. This represents the minimum requirements to furnish a complete turnkey package as indicated in this and accompanying documents. The Contractor shall provide the work described in the RFP Documents on a 'turnkey basis.' Unless otherwise indicated, the work contemplated in this RFP includes manufacture, supply, delivery, installation, labor, tools, engineering, supervision, licenses, insurance, permits, related services (including design) and testing of all equipment, and materials necessary to install and operate the video display, scoring system and controls as described in the RFP Documents, and more particularly in the technical specifications included in the RFP attachments.

2. Offerors responding to this RFP must provide pricing for a complete turnkey installation, including costing for the provision and installation of all items necessary to provide finished and fully operational systems. Materials, equipment and related services required for the provision and installation of such a system that are not expressly addressed in this RFP are understood to be the responsibility of the Offeror.

3. Offerors are clearly advised that any drawings, plans, charts or other materials, whether supplied by or on behalf of James Madison University, AJP, or third parties, describing aspects of the site provided as part of this document or otherwise are not to be considered as definitive or as a substitute for any information which would otherwise be obtained by the Offeror during negotiation.

4. Offerors must submit proposals for the complete package including all required equipment, installation and functional connection of all equipment as described in this document and related attachments. A proposal submitted in response to this RFP signifies the Offeror agrees to sell to the University the indicated products, in whole or in part, at the sole discretion of the University.

5. Contractor shall be responsible for day to day premises and facilities cleanup, including temporary storage, removal and disposal of debris, trash and rubbish caused by its employees, or installation material men or workmen. All tools, equipment and materials shall be secured upon completion of the day's work. Surplus materials shall be removed from the work site and stored in their appropriate location.

6. Contractor's personnel shall follow University standards and personal conduct codes while on the University's premises. A copy of those standards and codes will be provided to Contractor on request. Personnel found violating these standards or regulations will be asked to leave the work site and shall not be allowed to return.

7. It is Contractor's responsibility to guarantee that all items of hardware, services rendered or working environments meet or exceed those requirements and guidelines established by the Occupational Safety and Health Act (OSHA).

8. Contractor shall warrant and guarantee to the University, without limitations or qualification, that all equipment, components, materials, workmanship and the system as an entity shall conform to and perform in accordance with local building codes.

B. DELIVERY, STORAGE, AND SECUIRITY

1. The Contractor shall provide pricing for each item to include delivery to the site for all system components and related materials.

2. The Contractor shall coordinate delivery with the University.

3. The Contractor shall unload, uncrate, assemble, and transport each component to its desired location for installation and install the system on-site in accordance with on-site regulations.

4. The Contractor shall be responsible for the cleanup and disposal of all packaging materials and debris.

5. The Contractor shall be responsible for providing any temporary on-site storage for equipment and materials unless adequate on-site storage is available from the University.

6. The University shall not be responsible for security or insurance related to said equipment or materials, even if stored on-site at locations designated or approved by the University.

7. Any temporary storage requirements must be coordinated with the University.

C. DEFINITIONS:

1. "Substantial Completion" – shall be defined as all work under the Contract has been substantially completed in accordance with the terms of the Contract and all displays are fully operational and ready for the intended use. Systems shall be installed, all rack equipment installed, all cabling completed, system has been commissioned and tested in accordance with applicable requirements of the Technical Specifications and the Contract. The project is ready for final punch list by the University and/or the University's designated representative.

2. "Final Completion" – shall be defined as all punch list items have been completed and all work under the Contract is ready for final acceptance by the University once three (3) consecutive problem free events have been completed as defined by Section 3.6.F of the Technical Specifications.

D. RESPONSE REQUIRED BY OFFERORS

1. Describe in detail offeror's approach to provide the RFP parameters as laid out in the Scope of Work and Technical Specifications, Attachment D.

    a. Provide the following: In addition to proposing specifically for what is specified in this RFP, the Offeror is encouraged to furnish alternative solutions that may satisfy or complement the solution proposed in this RFP.

    b. Provide the following: Offerors are also encouraged to suggest alternative solutions that would reduce the overall cost without hindering the performance of the system from its intended use.

2. Describe all options for on-site event support services (and provide detailed pricing, including travel, in X. Pricing Schedule).

3. Describe any and all options for Full-Time Production Support to be located at JMU (e.g. an Event Producer).

4. Describe content and animation services available for the duration of the contract (and provide detailed pricing, including travel as applicable, in X. Pricing Schedule).

5. Describe all training options available (remote and/or on premises) for the duration of the contract in addition to training as outlined in 3.6 of Attachment D.

    a. Provide pricing for hourly and daily rates (to include travel costs for on premises training) in X. Pricing Schedule.

6. Describe the procedures for obtaining services for all types of maintenance and applicable "escalation" procedures for providing additional assistance in diagnosing a failure that is

not resolved in a timely manner, to include notification procedures and timing as well as what higher levels of assistance will be made available.

7. Provide a complete list of references for similar installations performed in the past 3 years with name of facility, photo of installation, contact name, title, address and direct phone number.

8. Provide a formal list of intended design professionals, sub-contractors and suppliers, including primary place of business, and estimated dollar amount. Contractor, subcontractors, and design professionals shall be licensed by appropriate Virginia authorities / board as appropriate and required by law. Proposals should include a statement indicating the licensing status of Contractor, subcontractors, and design professionals required to be licensed in Virginia and identified in your proposal

9. Provide an Equipment List with line item pricing.

10. Provide product cut sheets and technical data for each item proposed.

11. Specify services provided as part of the required two (2) year parts and labor warranty.

E. TENTATIVE SCHEDULE

1. The University anticipates delivery and installation will be approximately July 2019, subject to change based on overall project schedule, to be coordinated and confirmed by the awarded vendor with the University and General Contractor. Describe, in detail, your ability to meet the tentative schedule provided.

V. PROPOSAL PREPARATION AND SUBMISSION

A. GENERAL INSTRUCTIONS

To ensure timely and adequate consideration of your proposal, offerors are to limit all contact, whether verbal or written, pertaining to this RFP to the James Madison University Procurement Office for the duration of this Proposal process. Failure to do so may jeopardize further consideration of Offeror's proposal.

1. RFP Response: In order to be considered for selection, the **Offeror shall submit a complete response to this RFP**; and shall submit to the issuing Purchasing Agency:

   a. **One (1) original** and **nine (9) copies** of the entire proposal, INCLUDING ALL ATTACHMENTS. Any proprietary information should be clearly marked in accordance with 3.f. below.

   b. **One (1) electronic copy in WORD format or searchable PDF** (*CD or flash drive*) of the entire proposal, INCLUDING ALL ATTACHMENTS. **Attachment F pricing should be returned as an Excel file on a CD or flash drive.** Any proprietary information should be clearly marked in accordance with 3.f. below.

   c. Should the proposal contain **proprietary information**, provide **one (1) redacted hard copy** of the proposal and all attachments with **proprietary portions removed or blacked out**. This copy should be clearly marked "*Redacted Copy*" on the front cover.

The classification of an entire proposal document, line item prices, and/or total proposal prices as proprietary or trade secrets is not acceptable. JMU shall not be responsible for the Contractor's failure to exclude proprietary information form this redacted copy.

No other distribution of the proposal shall be made by the Offeror.

2. The version of the solicitation issued by JMU Procurement Services, as amended by an addenda, is the mandatory controlling version of the document. Any modification of, or additions to, the solicitation by the Offeror shall not modify the official version of the solicitation issued by JMU Procurement services unless accepted in writing by the University. Such modifications or additions to the solicitation by the Offeror may be cause for rejection of the proposal; however, JMU reserves the right to decide, on a case-by-case basis in its sole discretion, whether to reject such a proposal. If the modification or additions are not identified until after the award of the contract, the controlling version of the solicitation document shall still be the official state form issued by Procurement Services.

3. Proposal Preparation

   a. Proposals shall be signed by an authorized representative of the Offeror. All information requested should be submitted. Failure to submit all information requested may result in the purchasing agency requiring prompt submissions of missing information and/or giving a lowered evaluation of the proposal. Proposals which are substantially incomplete or lack key information may be rejected by the purchasing agency. Mandatory requirements are those required by law or regulation or are such that they cannot be waived and are not subject to negotiation.

   b. Proposals shall be prepared simply and economically, providing a straightforward, concise description of capabilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of content.

   c. Proposals should be organized in the order in which the requirements are presented in the RFP. All pages of the proposal should be numbered. Each paragraph in the proposal should reference the paragraph number of the corresponding section of the RFP. It is also helpful to cite the paragraph number, sub letter, and repeat the text of the requirement as it appears in the RFP. If a response covers more than one page, the paragraph number and sub letter should be repeated at the top of the next page. The proposal should contain a table of contents which cross references the RFP requirements. Information which the offeror desires to present that does not fall within any of the requirements of the RFP should be inserted at the appropriate place or be attached at the end of the proposal and designated as additional material. Proposals that are not organized in this manner risk elimination from consideration if the evaluators are unable to find where the RFP requirements are specifically addressed.

   d. As used in this RFP, the terms "must", "shall", "should" and "may" identify the criticality of requirements. "Must" and "shall" identify requirements whose absence will have a major negative impact on the suitability of the proposed solution. Items labeled as "should" or "may" are highly desirable, although their absence will not have a large impact and would be useful, but are not necessary. Depending on the overall response to the RFP, some individual "must" and "shall" items may not be fully satisfied, but it is the intent to satisfy most, if not all, "must" and "shall" requirements. The inability of an offeror to satisfy a "must" or "shall" requirement does not

automatically remove that offeror from consideration; however, it may seriously affect the overall rating of the offeror' proposal.

e. Each copy of the proposal should be bound or contained in a single volume where practical. All documentation submitted with the proposal should be contained in that single volume.

f. Ownership of all data, materials and documentation originated and prepared for the State pursuant to the RFP shall belong exclusively to the State and be subject to public inspection in accordance with the Virginia Freedom of Information Act. Trade secrets or proprietary information submitted by the offeror shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the offeror must invoke the protection of Section 2.2-4342F of the Code of Virginia, in writing, either before or at the time the data is submitted. The written notice must specifically identify the data or materials to be protected and state the reasons why protection is necessary. The proprietary or trade secret materials submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. The classification of an entire proposal document, line item prices and/or total proposal prices as proprietary or trade secrets is not acceptable and will result in rejection and return of the proposal.

4. Oral Presentation: Offerors who submit a proposal in response to this RFP may be required to give an oral presentation of their proposal to James Madison University. This provides an opportunity for the Offeror to clarify or elaborate on the proposal. This is a fact-finding and explanation session only and does not include negotiation. James Madison University will schedule the time and location of these presentations. Oral presentations are an option of the University and may or may not be conducted. Therefore, proposals should be complete.

B. SPECIFIC PROPOSAL INSTRUCTIONS

Proposals should be as thorough and detailed as possible so that James Madison University may properly evaluate your capabilities to provide the required services. Offerors are required to submit the following items as a complete proposal:

1. Return RFP cover sheet and all addenda acknowledgements, if any, signed and filled out as required.

2. Plan and methodology for providing the goods/services as described in Section IV. Statement of Needs of this Request for Proposal.

3. A written narrative statement to include, but not be limited to, the expertise, qualifications, and experience of the firm and resumes of specific personnel to be assigned to perform the work.

4. Offeror Data Sheet, included as *Attachment A* to this RFP.

5. Small Business Subcontracting Plan, included as *Attachment B* to this RFP. Offeror shall provide a Small Business Subcontracting plan which summarizes the planned utilization of Department of Small Business and Supplier Diversity (SBSD)-certified small businesses which include businesses owned by women and minorities, when they have received Department of Small Business and Supplier Diversity (SBSD) small business certification,

under the contract to be awarded as a result of this solicitation. This is a requirement for all prime contracts in excess of $100,000 unless no subcontracting opportunities exist.

6. Identify the amount of sales your company had during the last twelve months with each VASCUPP Member Institution. A list of VASCUPP Members can be found at: www.VASCUPP.org.

7. Proposed Cost. See Section X. Pricing Schedule of this Request for Proposal.

VI. EVALUATION AND AWARD CRITERIA

A. EVALUATION CRITERIA

Proposals shall be evaluated by James Madison University using the following criteria:

1. Quality of products/services offered and suitability for intended purposes
2. Qualifications and experience of Offeror in providing the goods/services
3. Specific plans or methodology to be used to perform the services
4. Participation of Small, Women-Owned, & Minority (SWaM) Businesses
5. Cost

Allocation of points for evaluation criteria will be published to the eVA solicitation posting prior to the closing date and time.

B. AWARD TO MULTIPLE OFFERORS: Selection shall be made of two or more offerors deemed to be fully qualified and best suited among those submitting proposals on the basis of the evaluation factors included in the Request for Proposals, including price, if so stated in the Request for Proposals. Negotiations shall be conducted with the offerors so selected. Price shall be considered, but need not be the sole determining factor. After negotiations have been conducted with each offeror so selected, the agency shall select the offeror which, in its opinion, has made the best proposal, and shall award the contract to that offeror. The Commonwealth reserves the right to make multiple awards as a result of this solicitation. The Commonwealth may cancel this Request for Proposals or reject proposals at any time prior to an award, and is not required to furnish a statement of the reasons why a particular proposal was not deemed to be the most advantageous. Should the Commonwealth determine in writing and in its sole discretion that only one offeror is fully qualified, or that one offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that offeror. The award document will be a contract incorporating by reference all the requirements, terms and conditions of the solicitation and the contractor's proposal as negotiated.

VII. GENERAL TERMS AND CONDITIONS

A. PURCHASING MANUAL: This solicitation is subject to the provisions of the Commonwealth of Virginia's Purchasing Manual for Institutions of Higher Education and Their Vendors and any revisions thereto, which are hereby incorporated into this contract in their entirety. A copy

of the manual is available for review at the purchasing office. In addition, the manual may be accessed electronically at http://www.jmu.edu/procurement or a copy can be obtained by calling Procurement Services at (540) 568-3145.

B. APPLICABLE LAWS AND COURTS: This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The Contractor shall comply with applicable federal, state and local laws and regulations.

C. ANTI-DISCRIMINATION: By submitting their proposals, offerors certify to the Commonwealth that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §10 of the Rules Governing Procurement, Chapter 2, Exhibit J, Attachment 1 (available for review at http://www.jmu.edu/procurement). If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. *(§6 of the Rules Governing Procurement*).

In every contract over $10,000 the provisions in 1. and 2. below apply:

1. During the performance of this contract, the contractor agrees as follows:

    a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

    b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.

    c. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting these requirements.

2. The contractor will include the provisions of 1. Above in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

D. ETHICS IN PUBLIC CONTRACTING: By submitting their proposals, offerors certify that their proposals are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other offeror, supplier, manufacturer or subcontractor in connection with their proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription,

advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

E. IMMIGRATION REFORM AND CONTROL ACT OF 1986: By entering into a written contract with the Commonwealth of Virginia, the Contractor certifies that the Contractor does not, and shall not during the performance of the contract for goods and services in the Commonwealth, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

F. DEBARMENT STATUS: By submitting their proposals, offerors certify that they are not currently debarred by the Commonwealth of Virginia from submitting proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

G. ANTITRUST: By entering into a contract, the contractor conveys, sells, assigns, and transfers to the Commonwealth of Virginia all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the Commonwealth of Virginia under said contract.

H. MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS RFPs: Failure to submit a proposal on the official state form provided for that purpose may be a cause for rejection of the proposal. Modification of or additions to the General Terms and Conditions of the solicitation may be cause for rejection of the proposal; however, the Commonwealth reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a proposal.

I. CLARIFICATION OF TERMS: If any prospective offeror has questions about the specifications or other solicitation documents, the prospective offeror should contact the buyer whose name appears on the face of the solicitation no later than **October 7, 2019**. Any revisions to the solicitation will be made only by addendum issued by the buyer.

J. PAYMENT:

1. To Prime Contractor:

    a. Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the state contract number and/or purchase order number; social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).

    b. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect offers of discounts for payment in less than 30 days, however.

    c. All goods or services provided under this contract or purchase order, that are to be paid for with public funds, shall be billed by the contractor at the contract price, regardless of which public agency is being billed.

d. The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.

e. Unreasonable Charges. Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges which appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced charges are not reasonable, the Commonwealth shall promptly notify the contractor, in writing, as to those charges which it considers unreasonable and the basis for the determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve an agency of its prompt payment obligations with respect to those charges which are not in dispute (*Rules Governing Procurement, Chapter 2, Exhibit J, Attachment 1 § 53; available for review at http://www.jmu.edu/procurement*).

2. To Subcontractors:

   a. A contractor awarded a contract under this solicitation is hereby obligated:

      (1) To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from the Commonwealth for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

      (2) To notify the agency and the subcontractors, in writing, of the contractor's intention to withhold payment and the reason.

   b. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from the Commonwealth, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of the Commonwealth.

3. Each prime contractor who wins an award in which provision of a SWAM procurement plan is a condition to the award, shall deliver to the contracting agency or institution, on or before request for final payment, evidence and certification of compliance (subject only to insubstantial shortfalls and to shortfalls arising from subcontractor default) with the SWAM procurement plan. Final payment under the contract in question may be withheld until such certification is delivered and, if necessary, confirmed by the agency or institution, or other appropriate penalties may be assessed in lieu of withholding such payment.

4. The Commonwealth of Virginia encourages contractors and subcontractors to accept electronic and credit card payments.

K. PRECENDENCE OF TERMS: Paragraphs A through J of these General Terms and Conditions and the Commonwealth of Virginia Purchasing Manual for Institutions of Higher Education and their Vendors, shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions in this solicitation, the Special Terms and Conditions shall apply.

L. QUALIFICATIONS OF OFFERORS: The Commonwealth may make such reasonable investigations as deemed proper and necessary to determine the ability of the offeror to perform the services/furnish the goods and the offeror shall furnish to the Commonwealth all such information and data for this purpose as may be requested. The Commonwealth reserves the right to inspect offeror's physical facilities prior to award to satisfy questions regarding the offeror's capabilities. The Commonwealth further reserves the right to reject any proposal if the evidence submitted by, or investigations of, such offeror fails to satisfy the Commonwealth that such offeror is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.

M. TESTING AND INSPECTION: The Commonwealth reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

N. ASSIGNMENT OF CONTRACT: A contract shall not be assignable by the contractor in whole or in part without the written consent of the Commonwealth.

O. CHANGES TO THE CONTRACT: Changes can be made to the contract in any of the following ways:

1. The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.

2. The Purchasing Agency may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give the Purchasing Agency a credit for any savings. Said compensation shall be determined by one of the following methods:

   a. By mutual agreement between the parties in writing; or

   b. By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the contractor accounts for the number of units of work performed, subject to the Purchasing Agency's right to audit the contractor's records and/or to determine the correct number of units independently; or

   c. By ordering the contractor to proceed with the work and keep a record of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by the contract. The same markup shall be used for determining a decrease in price as the result of savings realized. The contractor shall present the Purchasing Agency with all vouchers and records of expenses incurred and savings realized. The Purchasing Agency shall have the right to audit the records of the contractor as it deems necessary to determine costs or savings. Any claim for an adjustment in price under this provision must be asserted by written notice to the Purchasing Agency within thirty

(30) days from the date of receipt of the written order from the Purchasing Agency. If the parties fail to agree on an amount of adjustment, the question of an increase or decrease in the contract price or time for performance shall be resolved in accordance with the procedures for resolving disputes provided by the Disputes Clause of this contract or, if there is none, in accordance with the disputes provisions of the Commonwealth of Virginia Purchasing Manual for Institutions of Higher Education and their Vendors. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this contract shall excuse the contractor from promptly complying with the changes ordered by the Purchasing Agency or with the performance of the contract generally.

P. DEFAULT: In case of failure to deliver goods or services in accordance with the contract terms and conditions, the Commonwealth, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which the Commonwealth may have.

Q. INSURANCE: By signing and submitting a proposal under this solicitation, the offeror certifies that if awarded the contract, it will have the following insurance coverage at the time the contract is awarded. For construction contracts, if any subcontractors are involved, the subcontractor will have workers' compensation insurance in accordance with§ 25 of the Rules Governing Procurement – Chapter 2, Exhibit J, Attachment 1, and 65.2-800 et. Seq. of the Code of Virginia (available for review at http://www.jmu.edu/procurement) The offeror further certifies that the contractor and any subcontractors will maintain these insurance coverage during the entire term of the contract and that all insurance coverage will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission.

MINIMUM INSURANCE COVERAGES AND LIMITS REQUIRED FOR MOST CONTRACTS:

1. Workers' Compensation: Statutory requirements and benefits. Coverage is compulsory for employers of three or more employees, to include the employer. Contractors who fail to notify the Commonwealth of increases in the number of employees that change their workers' compensation requirement under the Code of Virginia during the course of the contract shall be in noncompliance with the contract.

2. Employer's Liability: $100,000

3. Commercial General Liability: $1,000,000 per occurrence and $2,000,000 in the aggregate. Commercial General Liability is to include bodily injury and property damage, personal injury and advertising injury, products and completed operations coverage. The Commonwealth of Virginia must be named as an additional insured and so endorsed on the policy.

4. Automobile Liability: $1,000,000 combined single limit. (*Required only if a motor vehicle not owned by the Commonwealth is to be used in the contract. Contractor must assure that the required coverage is maintained by the Contractor (or third party owner of such motor vehicle.*)

R. ANNOUNCEMENT OF AWARD: Upon the award or the announcement of the decision to award a contract over $100,000, as a result of this solicitation, the purchasing agency will publicly post such notice on the DGS/DPS eVA web site (www.eva.virginia.gov) for a minimum of 10 days.

S. DRUG-FREE WORKPLACE: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

T. NONDISCRIMINATION OF CONTRACTORS: An offeror, or contractor shall not be discriminated against in the solicitation or award of this contract because of race, religion, color, sex, national origin, age, disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because the offeror employs ex-offenders unless the state agency, department or institution has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, services, or disbursements provided pursuant to this contract objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services, or disbursements, the public body shall offer the individual, within a reasonable period of time after the date of his objection, access to equivalent goods, services, or disbursements from an alternative provider.

U. eVA BUSINESS TO GOVERNMENT VENDOR REGISTRATION, CONTRACTS, AND ORDERS: The eVA Internet electronic procurement solution, website portal www.eVA.virginia.gov, streamlines and automates government purchasing activities in the Commonwealth. The eVA portal is the gateway for vendors to conduct business with state agencies and public bodies. All vendors desiring to provide goods and/or services to the Commonwealth shall participate in the eVA Internet eprocurement solution by completing the free eVA Vendor Registration. All offerors must register in eVA and pay the Vendor Transaction Fees specified below; failure to register will result in the proposal being rejected. Vendor transaction fees are determined by the date the original purchase order is issued and the current fees are as follows:

Vendor transaction fees are determined by the date the original purchase order is issued and the current fees are as follows:

1. For orders issued July 1, 2014 and after, the Vendor Transaction Fee is:

    a. Department of Small Business and Supplier Diversity (SBSD) certified Small Businesses: 1% capped at $500 per order.

    b. Businesses that are not Department of Small Business and Supplier Diversity (SBSD) certified Small Businesses: 1% capped at $1,500 per order.

2. For orders issued prior to July 1, 2014 the vendor transaction fees can be found at www.eVA.virginia.gov.

3. The specified vendor transaction fee will be invoiced by the Commonwealth of Virginia Department of General Services approximately 60 days after the corresponding purchase order is issued and payable 30 days after the invoice date. Any adjustments (increases/decreases) will be handled through purchase order changes.

V. AVAILABILITY OF FUNDS: It is understood and agreed between the parties herein that the Commonwealth of Virginia shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.

W. PRICING CURRENCY: Unless stated otherwise in the solicitation, offerors shall state offered prices in U.S. dollars.

X. E-VERIFY REQUIREMENT OF ANY CONTRACTOR: Any employer with more than an average of 50 employees for the previous 12 months entering into a contract in excess of $50,000 with James Madison University to perform work or provide services pursuant to such contract shall register and participate in the E-Verify program to verify information and work authorization of its newly hired employees performing work pursuant to any awarded contract.

Y. TAXES: Sales to the Commonwealth of Virginia are normally exempt from State sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request. Deliveries against this contract shall usually be free of Federal excise and transportation taxes. The Commonwealth's excise tax exemption registration number is 54-73-0076K.

Z. TRANSPORTATION AND PACKAGING: By submitting their proposals, all Offerors certify and warrant that the price offered for FOB destination includes only the actual freight rate costs at the lowest and best rate and is based upon the actual weight of the goods to be shipped. Except as otherwise specified herein, standard commercial packaging, packing and shipping containers shall be used. All shipping containers shall be legibly marked or labeled on the outside with purchase order number, commodity description, and quantity.

VIII. SPECIAL TERMS AND CONDITIONS

A. ADVERTISING: In the event a contract is awarded for supplies, equipment, or services resulting from this bid/proposal, no indication of such sales or services to James Madison University will be used in product literature or advertising. The contractor shall not state in any of its advertising or product literature that James Madison University has purchased or uses any of its products or services, and the contractor shall not include James Madison University in any client list in advertising and promotional materials.

B. AUDIT: The Contractor hereby agrees to retain all books, records, systems, and other documents relative to this contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. The Commonwealth of Virginia, its authorized agents, and/or State auditors shall have full access to and the right to examine any of said materials during said period.

C. CANCELLATION OF CONTRACT: James Madison University reserves the right to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 60 days written notice to the contractor. In the event the initial contract period is for more than 12 months, the resulting contract may be terminated by either party, without penalty, after the initial 12 months

of the contract period upon 60 days written notice to the other party. Any contract cancellation notice shall not relieve the contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.

D. IDENTIFICATION OF PROPOSAL ENVELOPE: The signed proposal should be returned in a separate envelope or package, sealed and identified as follows:

From: _____

Name of Offeror | Due Date | Time

_____

Street or Box No. | RFP #

_____

City, State, Zip Code | RFP Title

Name of Purchasing Officer: _____

The envelope should be addressed as directed on the title page of the solicitation.

The Offeror takes the risk that if the envelope is not marked as described above, it may be inadvertently opened and the information compromised, which may cause the proposal to be disqualified. Proposals may be hand-delivered to the designated location in the office issuing the solicitation. No other correspondence or other proposals should be placed in the envelope.

E. LATE PROPOSALS: To be considered for selection, proposals must be received by the issuing office by the designated date and hour. The official time used in the receipt of proposals is that time on the automatic time stamp machine in the issuing office. Proposals received in the issuing office after the date and hour designated are automatically non responsive and will not be considered. The University is not responsible for delays in the delivery of mail by the U.S. Postal Service, private couriers, or the intra university mail system. It is the sole responsibility of the Offeror to ensure that its proposal reaches the issuing office by the designated date and hour.

F. UNDERSTANDING OF REQUIREMENTS: It is the responsibility of each offeror to inquire about and clarify any requirements of this solicitation that is not understood. The University will not be bound by oral explanations as to the meaning of specifications or language contained in this solicitation. Therefore, all inquiries deemed to be substantive in nature must be in writing and submitted to the responsible buyer in the Procurement Services Office. **Offerors are asked to include reference to RFP section, page, and item number in their questions when relevant.** Offerors must ensure that written inquiries reach the buyer by **October 7, 2019**. A copy of all queries and the respective response will be provided in the form of an addendum to all offerors who have indicated an interest in responding to this solicitation. Your signature on your Offer certifies that you fully understand all facets of this solicitation. These questions may be sent to the Buyer as referenced on the signature sheet.

G. RENEWAL OF CONTRACT: This contract may be renewed by the Commonwealth for a period of eight (8) successive one year periods under the terms and conditions of the original contract except as stated in 1. and 2. below. Price increases may be negotiated only at the time of renewal. Written notice of the Commonwealth's intention to renew shall be given approximately 90 days prior to the expiration date of each contract period.

1. If the Commonwealth elects to exercise the option to renew the contract for an additional one-year period, the contract price(s) for the additional one year shall not exceed the contract price(s) of the original contract increased/decreased by no more than the

percentage increase/decrease of the other services category of the CPI-W section of the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available.

2. If during any subsequent renewal periods, the Commonwealth elects to exercise the option to renew the contract, the contract price(s) for the subsequent renewal period shall not exceed the contract price(s) of the previous renewal period increased/decreased by more than the percentage increase/decrease of the other services category of the CPI-W section of the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available.

H. SUBMISSION OF INVOICES: All invoices shall be submitted within sixty days of contract term expiration for the initial contract period as well as for each subsequent contract renewal period. Any invoices submitted after the sixty day period will not be processed for payment.

I. OPERATING VEHICLES ON JAMES MADISON UNIVERSITY CAMPUS: Operating vehicles on sidewalks, plazas, and areas heavily used by pedestrians is prohibited. In the unlikely event a driver should find it necessary to drive on James Madison University sidewalks, plazas, and areas heavily used by pedestrians, the driver must yield to pedestrians. For a complete list of parking regulations, please go to www.jmu.edu/parking; or to acquire a service representative parking permit, contact Parking Services at 540.568.3300. The safety of our students, faculty and staff is of paramount importance to us. Accordingly, violators may be charged.

J. COOPERATIVE PURCHASING / USE OF AGREEMENT BY THIRD PARTIES: It is the intent of this solicitation and resulting contract(s) to allow for cooperative procurement. Accordingly, any public body, (to include government/state agencies, political subdivisions, etc.), cooperative purchasing organizations, public or private health or educational institutions or any University related foundation and affiliated corporations may access any resulting contract if authorized by the Contractor.

Participation in this cooperative procurement is strictly voluntary. If authorized by the Contractor(s), the resultant contract(s) will be extended to the entities indicated above to purchase goods and services in accordance with contract terms. As a separate contractual relationship, the participating entity will place its own orders directly with the Contractor(s) and shall fully and independently administer its use of the contract(s) to include contractual disputes, invoicing and payments without direct administration from the University. No modification of this contract or execution of a separate agreement is required to participate; however, the participating entity and the Contractor may modify the terms and conditions of this contract to accommodate specific governing laws, regulations, policies, and business goals required by the participating entity. Any such modification will apply solely between the participating entity and the Contractor.

The Contractor will notify the University in writing of any such entities accessing this contract. The Contractor will provide semi-annual usage reports for all entities accessing the contract. The University shall not be held liable for any costs or damages incurred by any other participating entity as a result of any authorization by the Contractor to extend the contract. It is understood and agreed that the University is not responsible for the acts or omissions of any entity and will not be considered in default of the contract no matter the circumstances.

Use of this contract(s) does not preclude any participating entity from using other contracts or competitive processes as needed.

K. SMALL BUSINESS SUBCONTRACTING AND EVIDENCE OF COMPLIANCE:

1. It is the goal of the Commonwealth that 42% of its purchases are made from small businesses. This includes discretionary spending in prime contracts and subcontracts. All potential offerors are required to submit a Small Business Subcontracting Plan. Unless the offeror is registered as a Department of Small Business and Supplier Diversity (SBSD)-certified small business and where it is practicable for any portion of the awarded contract to be subcontracted to other suppliers, the contractor is encouraged to offer such subcontracting opportunities to SBSD-certified small businesses. This shall not exclude SBSD-certified women-owned and minority-owned businesses when they have received SBSD small business certification. No offeror or subcontractor shall be considered a Small Business, a Women-Owned Business or a Minority-Owned Business unless certified as such by the Department of Small Business and Supplier Diversity (SBSD) by the due date for receipt of proposals. If small business subcontractors are used, the prime contractor agrees to report the use of small business subcontractors by providing the purchasing office at a minimum the following information: name of small business with the SBSD certification number or FEIN, phone number, total dollar amount subcontracted, category type (small, women-owned, or minority-owned), and type of product/service provided. **This information shall be submitted to: JMU Office of Procurement Services, Attn: SWAM Subcontracting Compliance, MSC 5720, Harrisonburg, VA 22807.**

2. Each prime contractor who wins an award in which provision of a small business subcontracting plan is a condition of the award, shall deliver to the contracting agency or institution with every request for payment, evidence of compliance (subject only to insubstantial shortfalls and to shortfalls arising from subcontractor default) with the small business subcontracting plan. **This information shall be submitted to: JMU Office of Procurement Services, SWAM Subcontracting Compliance, MSC 5720, Harrisonburg, VA 22807**. When such business has been subcontracted to these firms and upon completion of the contract, the contractor agrees to furnish the purchasing office at a minimum the following information: name of firm with the Department of Small Business and Supplier Diversity (SBSD) certification number or FEIN number, phone number, total dollar amount subcontracted, category type (small, women-owned, or minority-owned), and type of product or service provided. Payment(s) may be withheld until compliance with the plan is received and confirmed by the agency or institution. The agency or institution reserves the right to pursue other appropriate remedies to include, but not be limited to, termination for default.

3. Each prime contractor who wins an award valued over $200,000 shall deliver to the contracting agency or institution with every request for payment, information on use of subcontractors that are not Department of Small Business and Supplier Diversity (SBSD)-certified small businesses. When such business has been subcontracted to these firms and upon completion of the contract, the contractor agrees to furnish the purchasing office at a minimum the following information: name of firm, phone number, FEIN number, total dollar amount subcontracted, and type of product or service provided. **This information shall be submitted to: JMU Office of Procurement Services, Attn: SWAM Subcontracting Compliance, MSC 5720, Harrisonburg, VA 22807**.

L. AUTHORIZATION TO CONDUCT BUSINESS IN THE COMMONWEALTH: A contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law. Any business entity described above that enters into a contract with a public body shall not allow its existence

to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the contract. A public body may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.

M. PUBLIC POSTING OF COOPERATIVE CONTRACTS: James Madison University maintains a web-based contracts database with a public gateway access. Any resulting cooperative contract/s to this solicitation will be posted to the publicly accessible website. Contents identified as proprietary information will not be made public.

N. CRIMINAL BACKGROUND CHECKS OF PERSONNEL ASSIGNED BY CONTRACTOR TO PERFORM WORK ON JMU PROPERTY: The Contractor shall obtain criminal background checks on all of their contracted employees who will be assigned to perform services on James Madison University property. The results of the background checks will be directed solely to the Contractor. The Contractor bears responsibility for confirming to the University contract administrator that the background checks have been completed prior to work being performed by their employees or subcontractors. The Contractor shall only assign to work on the University campus those individuals whom it deems qualified and permissible based on the results of completed background checks. Notwithstanding any other provision herein, and to ensure the safety of students, faculty, staff and facilities, James Madison University reserves the right to approve or disapprove any contract employee that will work on JMU property. Disapproval by the University will solely apply to JMU property and should have no bearing on the Contractor's employment of an individual outside of James Madison University.

O. INDEMNIFICATION: Contractor agrees to indemnify, defend and hold harmless the Commonwealth of Virginia, its officers, agents, and employees from any claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by the use of any materials, goods, or equipment of any kind or nature furnished by the contractor/any services of any kind or nature furnished by the contractor, provided that such liability is not attributable to the sole negligence of the using agency or to failure of the using agency to use the materials, goods, or equipment in the manner already and permanently described by the contractor on the materials, goods or equipment delivered.

P. ADDITIONAL GOODS AND SERVICES: The University may acquire other goods or services that the supplier provides than those specifically solicited. The University reserves the right, subject to mutual agreement, for the Contractor to provide additional goods and/or services under the same pricing, terms, and conditions and to make modifications or enhancements to the existing goods and services. Such additional goods and services may include other products, components, accessories, subsystems, or related services that are newly introduced during the term of this Agreement. Such additional goods and services will be provided to the University at favored nations pricing, terms, and conditions.

Q. ELECTRICAL EQUIPMENT STANDARDS: All equipment/material shall conform to the latest issue of all applicable standards as established by National Electrical Manufacturer's Association (NEMA), American National Standards Institute (ANSI), and Occupational Safety & Health Administration (OSHA). All equipment and material, for which there are OSHA standards, shall bear an appropriate label of approval for use intended from a Nationally Recognized Testing Laboratory (NRTL).

R. EXTRA CHARGES NOT ALLOWED: The pricing shall be for complete installation ready for the Commonwealth's use, and shall include all applicable freight and installation charges; extra charges will not be allowed.

S. CONFIDENTIALITY (Commonwealth): The Commonwealth agrees that neither it nor its employees, representatives, or agents shall knowingly divulge any proprietary information with respect to the operation of the software, the technology embodied therein, or any other trade secret or proprietary information related thereto, except as specifically authorized by the contractor in writing or as required by the Freedom of Information Act or similar law. It shall be the contractor's responsibility to fully comply with § 11-52 D of the *Code of Virginia*. All trade secrets or proprietary information must be identified in writing or other tangible form and conspicuously labeled as "proprietary" either prior to or at the time of submission to the Commonwealth.

T. LATEST SOFTWARE VERSION: Any software product(s) provided under the contract shall be the latest version available to the general public as of the due date of this solicitation.

U. PRODUCT SUBSTITUTION: During the term of any contract resulting from this solicitation, the vendor is not authorized to substitute any item for that product and/or software identified in the solicitation without the prior written consent of the contracting officer whose name appears on the front of this solicitation, or their designee.

V. QUALIFIED REPAIR PERSONNEL: All warranty or maintenance services to be performed on the items specified in this solicitation as well as any associated hardware or software shall be performed by qualified technicians properly authorized by the manufacturer to perform such services. The Commonwealth reserves the right to require proof of certification prior to award and at any time during the term of the contract.

W. RELOCATION OF EQUIPMENT: Should it become necessary to move equipment covered by the contract to another location, the Commonwealth reserves the right to do so at its own expense. If contractor supervision is required, the Commonwealth will provide prior written notice of the move at least thirty days in advance, in which case the contractor shall provide the required services and be reasonably compensated by the Commonwealth. Both the compensation to be paid and any adjustment to the maintenance terms resulting from the move shall be as mutually agreed between the parties. Regular maintenance charges shall be suspended on the day the equipment is dismantled and resume once the equipment is again certified ready for operational use.

X. RENEWAL OF MAINTENANCE: Maintenance of the hardware or software specified in the resultant contract may be renewed by the mutual written agreement of both parties for additional one-year periods, under the terms and conditions of the original contract except as noted herein. Price changes may be negotiated at time of renewal; however, in no case shall the maintenance costs for a succeeding one-year period exceed the prior year's contract price(s), increased or decreased by more than the percentage increase or decrease in the other services category of the CPI-W section of the US Bureau of Labor Statistics Consumer Price Index, for the latest twelve months for which statistics are available.

Y. REPAIR PARTS: In the event that the performance of maintenance services under the contract results in a need to replace defective parts, such items may only be replaced by new parts. In no instance shall the contractor be permitted to replace defective items with refurbished, remanufactured, or surplus items without prior written authorization of the Commonwealth.

Z. SERVICE PERIOD (EXTENDED): Due to the criticality of the applications for which the equipment and/or software is purchased, the contractor shall provide 24 hours a day, 7 days a week, maintenance support, including state holidays. On-site response time shall be within 12-24 hours following initial notification. All necessary repairs or corrections shall be completed

within 72 hours of the initial notification.

AA. SERVICE PERIOD (ROUTINE): Contractor shall provide 24-hour toll free phone support with a 24 hour return call response time. On-site maintenance services shall carry a 12-24 hour response time following initial notification and be available during the normal working hours of 8 A.M. to 5 P.M. Monday through Friday, excluding state holidays. All necessary repairs or corrections shall be completed within 72 hours of the initial notification.

BB. SERVICE REPORTS: Upon completion of any maintenance call, the contractor shall provide the agency with a signed service report that includes, at a minimum: a general statement as to the problem, action taken, any materials or parts furnished or used, and the number of hours required to complete the repairs.

CC. SOFTWARE UPGRADES: The Commonwealth shall be entitled to any and all upgraded versions of the software covered in the contract that becomes available from the contractor. The maximum charge for upgrade shall not exceed the total difference between the cost of the Commonwealth's current version and the price the contractor sells or licenses the upgraded software under similar circumstances.

DD. SOURCE CODE: In the event the contractor ceases to maintain experienced staff and the resources needed to provide required software maintenance, the Commonwealth shall be entitled to have, use, and duplicate for its own use, a copy of the source code and associated documentation for the software products covered by the contract. Until such time as a complete copy of such material is provided, the Commonwealth shall have exclusive right to possess all physical embodiments of such contractor owned materials. The rights of the Commonwealth in this respect shall survive for a period of twenty years after the expiration or termination of the contract. All lease and royalty fees necessary to support this right are included in the initial license fee as contained in the pricing schedule.

EE. TERM OF SOFTWARE LICENSE: Unless otherwise stated in the solicitation, the software license(s) identified in the pricing schedule shall be purchased on a perpetual basis and shall continue in perpetuity. However the Commonwealth reserves the right to terminate the license at any time, although the mere expiration or termination of this contract shall not be construed as an intent to terminate the license. All acquired license(s) shall be for use at any computing facilities, on any equipment, by any number of users, and for any purposes for which it is procured. The Commonwealth further reserves the right to transfer all rights under the license to another state agency to which some or all of its functions are transferred.

FF. THIRD PARTY ACQUISITION OF SOFTWARE: The contractor shall notify the procuring agency in writing should the intellectual property, associated business, or all of its assets be acquired by a third party. The contractor further agrees that the contract's terms and conditions, including any and all license rights and related services, shall not be affected by the acquisition. Prior to completion of the acquisition, the contractor shall obtain, for the Commonwealth's benefit and deliver thereto, the assignee's agreement to fully honor the terms of the contract.

GG. TITLE TO SOFTWARE: By submitting a bid or proposal, the bidder or offeror represents and warrants that it is the sole owner of the software or, if not the owner, that it has received all legally required authorizations from the owner to license the software, has the full power to grant the rights required by this solicitation, and that neither the software nor its use in accordance with the contract will violate or infringe upon any patent, copyright, trade secret, or any other property rights of another person or organization.

HH. WARRANTY AGAINST SHUTDOWN DEVICES: The contractor warrants that the equipment and software provided under the contract shall not contain any lock, counter, CPU reference, virus, worm, or other device capable of halting operations or erasing or altering data or programs. Contractor further warrants that neither it, nor its agents, employees, or subcontractors shall insert any shutdown device following delivery of the equipment and software.

II. WARRANTY (COMMERCIAL): The contractor agrees that the goods or services furnished under any award resulting from this solicitation shall be covered by the most favorable commercial warranties the contractor gives any customer for such goods or services and that the rights and remedies provided therein are in addition to and do not limit those available to the Commonwealth by any other clause of this solicitation. A copy of this warranty should be furnished with the proposal.

JJ. NONVISUAL ACCESS TO TECHNOLOGY: All information technology which, pursuant to this Agreement, is purchased or upgraded by or for the use of any State agency or institution or political subdivision of the Commonwealth (the "Technology") shall comply with the following nonvisual access standards from the date of purchase or upgrade until the expiration of this Agreement:

(i) effective, interactive control and use of the Technology shall be readily achievable by nonvisual means;

(ii) the Technology equipped for nonvisual access shall be compatible with information technology used by other individuals with whom any blind or visually impaired user of the Technology interacts;

(iii) nonvisual access technology shall be integrated into any networks used to share communications among employees, program participants or the public; and

(iv) the technology for nonvisual access shall have the capability of providing equivalent access by nonvisual means to telecommunications or other interconnected network services used by persons who are not blind or visually impaired.

Compliance with the foregoing nonvisual access standards shall not be required if the head of the using agency, institution or political subdivision determines that (i) the Technology is not available with nonvisual access because the essential elements of the Technology are visual and (ii) nonvisual equivalence is not available.

Installation of hardware, software or peripheral devices used for nonvisual access is not required when the Technology is being used exclusively by individuals who are not blind or visually impaired, but applications programs and underlying operating systems (including the format of the data) used for the manipulation and presentation of information shall permit the installation and effective use of nonvisual access software and peripheral devices.

If requested, the Contractor must provide a detailed explanation of how compliance with the foregoing nonvisual access standards is achieved and a validation of concept demonstration.

The requirements of this Paragraph shall be construed to achieve full compliance with the Information Technology Access Act, 2.2-3500 through 2.2-3504 of the *Code of Virginia*.

All information technology which, pursuant to this Agreement, is purchased or upgraded by or for the use of any Commonwealth agency or institution or political subdivision of the Commonwealth (the "Technology") shall comply with Section 508 of the Rehabilitation Act (29 U.S.C. 794d), as amended. If requested, the Contractor must provide a detailed explanation of how compliance with Section 508 of the Rehabilitation Act is achieved and a validation of concept demonstration. (http://www.section508.gov/). The requirements of this Paragraph along with the Non-Visual Access to Technology Clause shall be construed to achieve full compliance with the Information Technology Access Act, §§2.2-3500 through 2.2-3504 of the *Code of Virginia.*

KK. AS BUILT DRAWINGS: The contractor shall provide the Commonwealth a clean set of reproducible "as built" drawings and wiring diagrams, marked to record all changes made during installation or construction. The contractor shall also provide the Commonwealth with maintenance manuals, parts lists and a copy of all warranties for all equipment. All "as built" drawings and wiring diagrams, maintenance manuals, parts lists and warranties shall be delivered to the Commonwealth upon completion of the work and prior to final payment.

LL. CONTRACTOR REGISTRATION: If a contract for construction, removal, repair or improvement of a building or other real property is for $120,000 or more, or if the total value of all such contracts undertaken by bidder/offeror within any 12-month period is $750,000 or more, the bidder/offeror is required under Title 54.1-1100, *Code of Virginia* (1950), as amended, to be licensed by the State Board of Contractors a "CLASS A CONTRACTOR." If such a contract is for $10,000 or more but less than $120,000, or if the total value of all such contracts undertaken by bidder/offeror within any 12-month period is $150,000 or more, but less than $750,000 or more, the bidder/offeror is required to be licensed as a "CLASS B CONTRACTOR." If such a contract is over $1,000 but less than $10,000, or if the contractor does less than $150,000 in business in a 12-month period, the bidder/offeror is required to be licensed as a "CLASS C CONTRACTOR." The board shall require a master tradesmen license as a condition of licensure for electrical, plumbing and heating, ventilation and air conditioning contractors. The bidder/offeror shall place on the outside of the envelope containing the bid/proposal and shall place in the bid/proposal over his signature whichever of the following notations is appropriate, inserting his contractor license number:

Licensed Class A
Virginia Contractor No. _____ Specialty _____
Licensed Class B
Virginia Contractor No. _____ Specialty _____
Licensed Class C
Virginia Contractor No. _____ Specialty _____

If the bidder/offeror shall fail to provide this information on his bid/proposal or on the envelope containing the bid/proposal and shall fail to promptly provide said contractor license number to the Commonwealth in writing when requested to do so before or after the opening of bids/proposals, he shall be deemed to be in violation of § 54.1-1115 of the *Code of Virginia* (1950), as amended, and his bid/proposal will not be considered.

If a bidder/offeror shall fail to obtain the required license prior to submission of his bid/proposal, the bid/proposal shall not be considered.

MM. DELIVERY AND STORAGE: It shall be the responsibility of the contractor to make all arrangements for delivery, unloading, receiving and storing materials in the building during

installation. The owner will not assume any responsibility for receiving these shipments. Contractor shall check with the owner and make necessary arrangements for security and storage space in the building during installation.

NN. FINAL INSPECTION: At the conclusion of the work, the contractor shall demonstrate to the authorized owner's representative that the work is fully operational and in compliance with contract specifications and codes. Any deficiencies shall be promptly and permanently corrected by the contractor at the contractor's sole expense prior to final acceptance of the work.

OO. MAINTENANCE MANUALS: The contractor shall provide with each piece of equipment an operations and maintenance manual with wiring diagrams, parts list, and a copy of all warranties.

GGG. WORK SITE DAMAGES: Any damage to existing utilities, equipment or finished surfaces resulting from the performance of this contract shall be repaired to the Commonwealth's satisfaction at the contractor's expense.

HHH. INSTALLATION: All items must be assembled and set in place, ready for use. All crating and other debris must be removed from the premises.

III. CONTRACTOR'S TITLE TO MATERIALS: No materials or supplies for the work shall be purchased by the contractor or by any subcontractor subject to any chattel mortgage or under a conditional sales or other agreement by which an interest is retained by the seller. The contractor warrants that he has clear title to all materials and supplies for which he invoices for payment.

JJJ. PRIME CONTRACTOR RESPONSIBILITIES: The contractor shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention. Subcontractors who perform work under this contract shall be responsible to the prime contractor. The contractor agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees.

KKK. SUBCONTRACTS: No portion of the work shall be subcontracted without prior written consent of the purchasing agency. In the event that the contractor desires to subcontract some part of the work specified herein, the contractor shall furnish the purchasing agency the names, qualifications and experience of their proposed subcontractors. The contractor shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of the contract.

LLL. KEYS: If the Contractor is given keys for this project, it is the Contractor's responsibility to return the keys when the contract is terminated, as well as for the safekeeping of the keys during the contract period. The Contractor shall not loan or duplicate the keys. In the event the Contractor loses the keys, they will be charged for the replacement of the keys and any locks which are rekeyed or replaced.

MMM. STANDARDS OF CONDUCT: The work site will be occupied by students and University Personnel during the times work is performed. Contractor and Contractor's personnel shall exercise a particularly high level of discipline, safety and cooperation at all times while on the job site. The Contractor shall be responsible for controlling employee conduct, for assuring

that its employees are not boisterous or rude, and assuring that they are not engaging in any destructive or criminal activity.

IX. METHOD OF PAYMENT

The contractor will be paid on the basis of invoices submitted in accordance with the solicitation and any negotiations. James Madison University recognizes the importance of expediting the payment process for our vendors and suppliers. We are asking our vendors and suppliers to enroll in the Wells Fargo Bank single use Commercial Card Number process or electronic deposit (ACH) to your bank account so that future payments are made electronically. Contractors signed up for the Wells Fargo Bank single use Commercial Card Number process will receive the benefit of being paid in Net 15 days. Additional information is available online at: http://www.jmu.edu/financeoffice/accounting-operations-disbursements/cash-investments/vendor-payment-methods.shtml

X. PRICING SCHEDULE

The offeror shall provide pricing for all products and services included in proposal indicating one-time and on-going costs.

Provide pricing for items included in Section IV Statement of Needs.

Provide a completed copy of the attached Displays and Scoring System Pricing Form (Attachment F, attached to posting as a separate Excel spreadsheet) both in print and accompanying your electronic submission (See Section V. Proposal Preparation and Submission).

Specify any associated charge card processing fees, if applicable, to be billed to the university. Vendors shall provide their VISA registration number when indicating charge card processing fees. Any vendor requiring information on VISA registration may refer to https://usa.visa.com/support/small-business/regulations-fees.html and for questions https://usa.visa.com/dam/VCOM/global/support-legal/documents/merchant-surcharging-qa-for-web.pdf.

XI. ATTACHMENTS

Attachment A: Offeror Data Sheet

Attachment B: Small, Women, and Minority-owned Business (SWaM) Utilization Plan

Attachment C: Standard Contract Sample

Attachment D: Scope of Work and Technical Specifications

Attachment E: JMU Atlantic Union Bank Center AJP RFP Drawings – attached as a separate PDF file

Attachment F: Displays and Scoring System Pricing Form - attached as a separate Excel spreadsheet ***(All Offerors are required to complete)***

ATTACHMENT A

OFFEROR DATA SHEET

TO BE COMPLETED BY OFFEROR

1. QUALIFICATIONS OF OFFEROR: Offerors must have the capability and capacity in all respects to fully satisfy the contractual requirements.

2. YEARS IN BUSINESS: Indicate the length of time you have been in business providing these types of goods and services.

   Years_____ Months_____

3. REFERENCES: Indicate below a listing of at least five (5) organizations, either commercial or governmental/educational, that your agency is servicing. Include the name and address of the person the purchasing agency has your permission to contact.

CLIENT	LENGTH OF SERVICE	ADDRESS	CONTACT PERSON/PHONE #

4. List full names and addresses of Offeror and any branch offices which may be responsible for administering the contract.

_____

_____

_____

_____

5. RELATIONSHIP WITH THE COMMONWEALTH OF VIRGINIA: Is any member of the firm an employee of the Commonwealth of Virginia who has a personal interest in this contract pursuant to the CODE OF VIRGINIA, SECTION 2.2-3100 – 3131?
   [ ] YES [ ] NO
   IF YES, EXPLAIN:_____

_____

_____

_____

ATTACHMENT B

Small, Women and Minority-owned Businesses (SWaM) Utilization Plan

Offeror Name: _____ Preparer Name: _____

Date: _____

Is your firm a **Small Business Enterprise** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes_____ No_____

If yes, certification number: _____ Certification date:_____

Is your firm a **Woman-owned Business Enterprise** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes_____ No_____

If yes, certification number: _____ Certification date:_____

Is your firm a **Minority-Owned Business Enterprise** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes____ No_____

If yes, certification number: _____ Certification date:_____

Is your firm a **Micro Business** certified by the Department of Small Business and Supplier Diversity (SBSD)? Yes_____ No_____

If yes, certification number: _____ Certification date: _____

Instructions: *Populate the table below to show your firm's plans for utilization of small, women-owned and minority-owned business enterprises in the performance of the contract. Describe plans to utilize SWAMs businesses as part of joint ventures, partnerships, subcontractors, suppliers, etc.*

Small Business: "Small business " means a business, independently owned or operated by one or more persons who are citizens of the United States or non-citizens who are in full compliance with United States immigration law, which, together with affiliates, has 250 or fewer employees, or average annual gross receipts of $10 million or less averaged over the previous three years.

Woman-Owned Business Enterprise: A business concern which is at least 51 percent owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership or limited liability company or other entity, at least 51 percent of the equity ownership interest in which is owned by one or more women, and whose management and daily business operations are controlled by one or more of such individuals. **For purposes of the SWAM Program, all certified women-owned businesses are also a small business enterprise.**

Minority-Owned Business Enterprise: A business concern which is at least 51 percent owned by one or more minorities or in the case of a corporation, partnership or limited liability company or other entity, at least 51 percent of the equity ownership interest in which is owned by one or more minorities and whose management and daily business operations are controlled by one or more of such individuals. **For purposes of the SWAM Program, all certified minority-owned businesses are also a small business enterprise.**

Micro Business is a certified Small Business under the SWaM Program and has no more than twenty-five (25) employees **AND** no more than $3 million in average annual revenue over the three-year period prior to their certification.

All small, women, and minority owned businesses must be certified by the Commonwealth of Virginia Department of Small Business and Supplier Diversity (SBSD) to be counted in the SWAM program. Certification applications are available through SBSD at 800-223-0671 in Virginia, 804-786-6585 outside Virginia, or online at http://www.sbsd.virginia.gov/ (Customer Service).

RETURN OF THIS PAGE IS REQUIRED

ATTACHMENT B (CNT'D)

Small, Women and Minority-owned Businesses (SWaM) Utilization Plan

Procurement Name and Number: _____ Date Form Completed:_____

Listing of Sub-Contractors, to include, Small, Woman Owned and Minority Owned Businesses
for this Proposal and Subsequent Contract

Offeror / Proposer:

Firm	Address	Contact Person/No.
_____	_____	_____

Sub-Contractor's Name and Address	Contact Person & Phone Number	SBSD Certification Number	Services or Materials Provided	Total Subcontractor Contract Amount (to include change orders)	Total Dollars Paid Subcontractor to date (to be submitted with request for payment from JMU)

(Form shall be submitted with proposal and if awarded, again with submission of each request for payment)

RETURN OF THIS PAGE IS REQUIRED

ATTACHMENT C

COMMONWEALTH OF VIRGINIA
STANDARD CONTRACT

Contract No._____

This contract entered into this_____day of_____20____,by _____ hereinafter called the "Contractor" and Commonwealth of Virginia, James Madison University called the "Purchasing Agency".

WITNESSETH that the Contractor and the Purchasing Agency, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF CONTRACT: The Contractor shall provide the services to the Purchasing Agency as set forth in the Contract Documents.

PERIOD OF PERFORMANCE: From_____ through_____

The contract documents shall consist of:

(1) This signed form;

(2) The following portions of the Request for Proposals dated _____:
- (a) The Statement of Needs,
- (b) The General Terms and Conditions,
- (c) The Special Terms and Conditions together with any negotiated modifications of those Special Conditions;
- (d) List each addendum that may be issued
- (e) Scope of Work and Technical Specifications

(3) The Contractor's Proposal dated _____and the following negotiated modification to the Proposal, all of which documents are incorporated herein.
- (a) Negotiations summary dated _____.

IN WITNESS WHEREOF, the parties have caused this Contract to be duly executed intending to be bound thereby.

CONTRACTOR:	PURCHASING AGENCY:
By:_____	By:_____
(Signature)	(Signature)
_____	_____
(Printed Name)	(Printed Name)
Title:_____	Title:_____

ATTACHMENT D

SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

PART 1 GENERAL

1.1 DESCRIPTION

A. The Contractor shall be responsible for providing all displays and control equipment as described.

B. The Contractor shall be responsible for the provision and installation of all primary and secondary steel, mounting brackets/hardware, and cladding required to accommodate the new systems onto the existing structures and walls at the facility. This includes all labor, materials, equipment; tools, transportation, and project management required for a complete and fully operational system(s) on the project.

C. Contractor shall be responsible for all power and electrical distribution to the new system(s). Contractor shall provide all secondary power connections/terminations required to power new system(s). Contractor is responsible for providing stamped electrical drawings by a licensed electrical engineer in the State of Virginia.

D. All additional conduit and raceways required to complete a path to each display component shall be furnished and installed by Contractor. Contractor shall be responsible to furnish, install, and terminate all required cabling needed to make new system(s) complete and fully operational.

E. A rendering package and structural drawings (Primary Display) is provided as part of this RFP. The illustrations are to be construed as conceptual and not for construction purposes. Contractor shall be responsible for final engineering of structural and electrical components required for new system(s), including professional engineering stamp by a licensed/registered engineer in the State of Virginia. All structural and electrical engineering is subject to the University review and approval. Any modifications required are the responsibility of the Contractor.

F. Contractor is responsible for supplying a complete and fully operational system as intended by the RFP documents and any subsequent addendums.

G. Prior to entering into a contract for the project, the Offeror is responsible for notifying the University of any equipment omissions in the RFP documents that would prevent the completion of a fully operational system. If Contractor fails to notify the University of any equipment omissions, Contractor shall assume responsibility for providing the required equipment at no additional cost to the University.

H. Contractor shall field verify all work site conditions, including dimensions and site lines prior to submitting shop drawings.

I. The Contractor shall be wholly responsible for any necessary logistic, staging, planning, etc. required to access and execute the work. This includes any demolition, clearing and put back necessary to access the project or to create staging or storage areas. Contactor shall return all existing conditions and improvements to a condition equal to the condition it was found upon mobilization.

J. Contractor shall grant the University a license to use all proprietary software provided with this RFP for the life of the system.

1.2 OFFEROR QUALIFICATIONS

A. James Madison University seeks to contract with an Offeror for the full performance of the work as described in this RFP and to obtain long-term service and support for all equipment supplied by the selected Offeror. In an effort to ensure the chosen Offeror has the long-term interests of the University in mind, the following shall be required in order to submit a proposal for this project. Failure to submit acceptable responses to all of these requirements may eliminate an Offeror from consideration. The University, in its sole discretion, shall reserve the right to waive any or all of the requirements listed below.

1. Offeror shall provide a list of a minimum of three (3) facilities (facility, contact name, title, address and current phone number) where the Offeror has provided equipment and services of equivalent brand, size and scope within the last three (3) years.
2. Offeror shall provide a minimum of one (1) facility (facility, contact name, title, address and current phone number) where the Offeror has provided equipment and services of equivalent brand, size and scope that is at least five (5) years old.
3. Offeror shall have a direct service employee or certified contractor capable of providing maintenance response within two (2) hours of a call for service.

1.3 SUBMITTAL REQUIREMENTS

B. Initial Submittals and Shop Drawings

1. Contractor shall be required to provide submittals and shop drawings to the University within fifteen (15) calendar days of date shown on award notice, acknowledged with a binding letter of intent. Contractor shall be responsible to ensure that the dimensions and specifications of each component and all systems fit within the building allowances. The University must review and approve all submittal documents prior to the start of work. Contractor shall advise the University of any discrepancy that could affect installation. If Contractor fails to notify the University of any discrepancies, Contractor shall assume responsibility for providing the required equipment or correcting such discrepancies at no additional cost to the University. The following required submittals shall be defined by guidelines established by the University and shall include but not be limited to:

    a. Submit three sets of shop drawings, product data and samples together in one package within fifteen (15) calendar days of date shown on award notice to Contract and prior to ordering equipment.

    b. Submit catalogue data sheets, neatly bound with title page, space for submittal stamps, and tabbed dividers between Sections. Provide a complete list of proposed equipment with reference to its corresponding specification paragraph number or equipment title in specification paragraph order. Denote all approved substitutions.

    c. Submit fabrication shop drawings for all displays including component weight and power calculations.

    D. Submit structural engineered drawings for all primary and secondary steel framing required for this scope of work. If primary steel structure is existing or provided by others, drawings submitted shall include attachments to primary steel structure. Structural engineered drawings shall also include method of attachment for LED displays and all other signage elements required for this scope of work. A licensed/registered engineer in the State of Virginia shall stamp all structural drawings.

    d. Submit point-to-point wiring diagrams and typed wire lists identifying every connection. Include electronic devices such as switches, transformers and terminal blocks. Indicate locations of all components. Identify cables by type, color, and wire numbers.

    e. Submit conduit riser diagrams showing required conduits and junction boxes along with types of quantities of cables to be contained in each conduit. Show details of weatherproofing, lightning protection and grounding, strain relief and cable support, fire stop protection, and wall penetrations through all rated partitions.

    f. Submit rack layouts indicating the proposed arrangement of mounted equipment including power junction box location. Rack layouts shall include front and rear views.

    g. Submit detail drawings of all custom fabricated items and approved equipment modifications. Include complete parts lists, schematic diagrams, and all dimensions required for proper assembly.

h. LED population layout drawings shall be submitted for each backlit channel letter and/or signage element required under this scope of work. Photos, confirming LED and/or fluorescent lighting layout, shall be submitted for each backlit channel letter and/or signage element upon completion of fabrication and prior to shipping product to site.

i. Submittal drawings shall indicate proposed color selections and finishes for all exposed surfaces and custom fabricated items. Submit actual color/finish samples, wall plates, and custom labels.

j. Submit a list of all lower tier subcontractors and suppliers. List shall include lower tier subcontractor's qualifications indicating performance of similar work on past projects of this type and scope.

k. Submit a project schedule in Gantt chart format outlining equipment delivery dates and installation start and finish dates. Project schedule shall be broken down into sufficient detail (work task and duration) to permit the University to monitor installation progress on a daily basis.

l. Copies of all required business and contractor licenses.

m. Copies of proof of insurance.

n. Approval of submitted items indicates only the acceptance of the manufacturer and quality. Specific requirements, arrangements, and quantities shall comply with the intent of the Contract Documents as interpreted by the University unless specifically approved in writing.

o. Submittals that are incomplete, deviate significantly from the requirements of the Contract Documents, or contain numerous errors will be returned without review for rework and re-submittal, and may result in back charges to the contractor.

C. Contract Closeout Submittal

1. When the installation is substantially complete including the Testing Reports in Part 3 of this Section, Contractor shall submit two (2) complete initial hard copy sets of contract closeout submittals to the University for review. After review and approval of initial set, the University will return one (1) initial hard copy to Contractor with comments for updating. Contractor shall provide four (4) final sets of closeout submittals to the University and one (1) electronic copy in PDF format. Closeout submittals shall include, but not be limited to:

   a. Project Record Drawings (As-Built Drawings) including final screen fabrication drawings, secondary steel structural drawings, electrical drawings, system block diagrams, rack layout drawings, custom fabricated signage drawings (final fabrication version), and LED population layout drawings for custom fabricated signage.

   b. A list of all equipment provided and its location within the facility. List shall include manufacturer name, model identifier, serial number, and any other pertinent information needed to obtain service, maintenance, and/or replacement.

   c. A list of all Subcontractors who performed work for Contractor during installation. List shall include company name, physical company address, phone number, and contact person(s).

   d. Test reports from an independent testing & inspection agency certifying that bolted and/or welded connections for primary and/or secondary structural steel meet the minimum requirements of the engineered structural drawings, the governing building code, or as required by the building official; whichever is more restrictive.

   e. All testing reports as specified in Section 3.7 – Testing and Acceptance.

   f. Test reports for all new fiber optic cable installed under this scope of work. Test reports shall indicate end to end signal loss does not exceed a maximum dB loss per Section 3.4.N and/or 3.4.O.

   g. Operation & Maintenance Manual

Upon substantial completion and prior to on-site training with the University, Contractor shall provide four (4) final Operation & Maintenance Manuals (O&M Manuals). O&M Manuals shall have tab dividers and shall be logically organized to provide easy access to information without the need to research through entire manual. All documents provided in the O&M Manual shall be written in English and shall provide sufficient detail as to be understood by an individual with no knowledge of LED displays or the associated control equipment and/or operating systems. Contents of the O&M Manual shall include, but not be limited to:

1) Table of Contents
2) Description / overview of system(s) including key features and operational procedures.
3) Full start up procedure for all control room rack equipment and LED display equipment written under the assumption that all equipment was in full powered off mode.
4) Full shutdown procedure for all control room rack equipment and LED display equipment written under the assumption that the facility is in an extended power failure situation.
5) Procedure for switching to back up LED display processors and back up graphics/animation servers.
6) Troubleshooting procedures for all LED displays, LED display processors, graphics/animation servers, scoring systems, and all related equipment provided by Contractor. Troubleshooting procedures shall include demonstration photos and/or diagrams as required.
7) Maintenance procedures for all LED displays, LED display processors, graphics/animation servers, scoring systems, and all related equipment provided by Contractor. Maintenance procedures shall include demonstration photos and/or diagrams as required. Contractor shall indicate whether maintenance procedures should be performed monthly, bi-annually, or annually.
8) Owner's Manuals for all third party and/or "off-the-shelf" type equipment provided by Contractor: e.g., KVM's, fiber modems, network switches/routers, and UPS battery backups.
9) All third-party equipment and/or "off-the-shelf" equipment warranties and a notarized System Warranty.

1.4 EQUIPMENT GENERAL SPECIFICATIONS

A. All equipment and materials, except University furnished, shall be new and the latest version at the time of proposal and shall conform to applicable UL, ULC, CSA or ANSI provisions. Re-manufactured or "B" stock equipment shall not be accepted without prior written consent from the University. Evidence of unauthorized re-manufactured or "B" stock equipment on the project site shall be deemed evidence of the contractor's failure to perform the work. Contractor shall take care during installation to prevent scratches, dents, chips or disfiguration of equipment and materials supplied. All damaged equipment and/or materials shall be repaired or replaced at the University's discretion. Contractor shall perform either option selected by the University at no additional cost to the University.

B. Unless specified differently on the AJP Drawings (Attachment E), back lit channel letters and back lit fixed ad panels shall be illuminated as indicated below, which are the minimum acceptable product specifications. Contractor shall be responsible to ensure that the output of lighting is of sufficient lumens to clearly and successfully illuminate signage elements when used in the facility under event lighting conditions. Hot spots or dark spots shall not be acceptable. Consideration shall be given to match the Kelvin temperature when various combinations of illumination methods are used for different signage elements (i.e. LED illumination mixed with Fluorescent illumination).

1. LED Illumination

    a. LED's shall be Sloan LED V Series or approved equal. LED's shall be placed at a maximum of three (3) inches on center throughout the letter stroke or fixed ad cabinet.

    b. Multiple rows of LED's shall start no more than three (3) inches from returns.

    c. Electrical connections and/or electrical boxes shall not be visible to public view.

C. Cabinets for channel letters and back lit fixed ad panels shall appear from the exterior to be seamless construction. Seams shall be filled and sanded smooth prior to application of final finish color. Visible fasteners or mounting brackets shall not be acceptable. Light leaks around cabinet or between cabinet and letter face or fixed ad face shall not be acceptable.

D. All cabling [power and data] is to be labeled at each end of the cable with a description in English OR with a reference to a wire designation on a wiring diagram. This includes all cables internal to the displays, all cables between displays and control room, and all cables internal to the control room. These diagrams must be part of the Project documentation submitted to the University at time of acceptance.

E. Each device shall meet all of its published manufacturer's specifications. Verify performance as required.

F. Install all rack mounted equipment with Middle Atlantic Products HP Series truss head screws or approved equal.

G. Some rack-mounted equipment may require shaft locks, security covers, or removal of knobs; provide and install during Acceptance Testing.

H. Provide engraved self-adhesive phenolic labels at the fount and rear of all rack-mounted signal processing equipment. Mount labels on the equipment chassis and attach in a neat and permanent manner. Embossed label shall not be accepted. Label equipment with schematic enumeration reference, and with descriptive information regarding its function or area it is serving. Similarly, provide engraved labels at the rear only of equipment mounted in furniture consoles.

I. All engraving shall be 1/8" block lettering unless noted otherwise. On dark panels or pushbuttons, letters shall be white. Letters shall be black on stainless steel, brushed natural aluminum plates or light-colored pushbuttons.

J. Per IEC-268 standard, all XLR connectors not mounted on equipment shall be wired pin 2 hot (high), pin 3 low, and pin 1 screen (shield).

K. Mounting Hardware exposed to the weather shall be aluminum, brass epoxy painted galvanized steel or stainless steel. Apply corrosion inhibitor to all threaded fittings.

L. Equipment Racks shall be Middle Atlantic Products model MRK-4436, or approved equal, with accessories as noted below. Quantity of racks shall be as required to house all equipment supplied under this scope of work. Any unused rack mounting spaces shall have blank panels to full enclose the rack assembly. Multiple racks shall be anchored together using appropriate ganging hardware. Standard solid rear door shall be replaced with Middle Atlantic Products model MW-VRD-44 vented rear door.

    1. Provide two (2) side panels per individual stand-alone rack or series of racks ganged together. The intent is to have an enclosed rack system. A single stand-alone rack would have two (2) side panels and a series of three (3) racks ganged together would also have two (2) side panels. Side panels shall be Middle Atlantic Products model SPN-44-36 or approved equal.

    2. Provide Middle Atlantic Products model MW-4QFT-FC integrated fan top, or approved equal, for each rack. Fan shall be thermostatically controlled to ensure in-rack temperatures of less than 100 degrees Fahrenheit.

    3. Provide two (2) Middle Atlantic Products model LT-GN-PL gooseneck work light for each rack required for this scope of work.

    4. Provide Middle Atlantic Products model PDT-2X1020T, or approved equal, in rack vertical power strip. Power strip shall have enough receptacles to accommodate all equipment housed in the associated rack with a minimum of two spare receptacles per rack.

M. Any rear mounted rack equipment shall be placed so the equipment does not block access to the back of front mounted equipment.

N. Contractor shall exercise care when wiring racks to avoid damaging cables and equipment. Contractor shall install grommets around cut-outs and knock-outs where conduit or chase nipples are not installed.

O. Equipment Racks shall have a ground buss installed in each rack. Ground buss shall be insulated from the rack. Attach equipment rack to ground buss at one point using #4 insulated copper wire. Ground any equipment chassis without a three-conductor power cord directly to the buss bar using #12 insulated copper wire. Tie each and every power receptacle ground contact to the buss bar using #12 insulated copper wire. Interconnect signal cables shall be routed from junction boxes through metallic flexible conduit(s) (1" to 2" diameter) as appropriate. Flexible conduit shall be insulated from racks by approved insulating bushings.

P. Power wiring and signal/data wiring shall be installed on opposite sides of rack. Contractor may determine which side is using for power and which side for signal. Method shall be kept the same for entire installation, if multiple racks are required. Contractor shall exercise care when wiring racks to avoid damaging cables and equipment.

1.5 QUALITY ASSURANCE

A. All requirements of the latest published editions of the following standards shall apply, unless otherwise noted. In the event of conflict between cited or referenced standards, the more stringent shall govern.

1. National Electric Code (NEC).
2. National Electrical Manufacturers Association (NEMA)
3. Underwriters Laboratories (UL)
4. Federal Communications Commission (F.C.C.) Rules and Regulations, Part 76.
5. Society of Cable Television Engineers (S.C.T.E.)
6. Society of Motion Picture and Television Engineers (S.M.P.T.E.)
7. National Cable Television Association (N.C.T.A)
8. Electronic Industries Association (E.I.A.)
9. Telecommunications Industries Association (T.I.A.)
10. Electronic Industries Association (E.I.A.)

B. Review all architectural, civil, structural, mechanical, electrical, and other project documents relative to this work.

C. Verify all dimensions and site conditions prior to starting work.

D. Coordinate the specified work with all other trades.

E. Maintain a competent supervisor and supporting technical personnel, acceptable to the University during the entire installation. Change of supervisor during the project shall not be permitted without prior written approval from the University.

F. Provide all items not indicated on the drawings or mentioned in the specifications that are necessary, required or appropriate for this work to realize a complete and fully operational system that performs in stable and safe manner.

G. Review project documentation and continuously make known any conflicts discovered and provide all items necessary to complete this work to the satisfaction of the University without additional expense. In all cases where a device or item or equipment is referred to in singular number or without quantity, each such reference shall apply to as many such devices or items as are required to complete the work.

H. Provide additional support or positioning members as required for the proper installation and operation of equipment, materials and devices provided as part of this work as approved by the University, without additional cost to the University.

I. Regularly examine all construction, and the work of others, which may affect Contractors work to ensure proper conditions exist at site for the equipment and devices before their manufacture, fabrication or installation. Contractor shall be responsible for the proper fitting of the systems, equipment, materials, and devices provided as part of this work.

J. Promptly notify the University in writing of any difficulties that may prevent proper coordination or timely completion of this work. Failure to do so shall constitute acceptance of construction as suitable in all ways to receive this work, except for defects that may develop in the work of others after its execution.

K. After installation, submit photographs showing cable entries and terminations within equipment racks, enclosures and pedestals at the job site.

1.6 WARRANTY AND SERVICE

A. Contractor shall warrant labor and materials for twenty-four (24) months following the date of Final Acceptance.

B. During the warranty period the system shall be free of defects and deficiencies and conform to the drawings and specifications with respect to the quality, function, and characteristics stated.

C. Contractor shall repair or replace defects that occur in labor or materials within the warranty period. If repair is affected using the University's spare parts allotment, Contractor shall replenish all parts used to keep the University's inventory at the amount required by the contract.

D. On-site labor shall be included during the warranty period for any work beyond simple component replacement. Simple component replacement shall be defined as lighting unit or power supply replacement or the replacement of an internal display signal cable that does not require tools to perform the cable replacement.

E. Failed parts shall be returned to the Contractor for repair at a service facility located in North America. Contractor shall identify the location of its service facility in the documentation provided when submitting a proposal for this work.

F. The Contractor shall replace failed parts that cannot be repaired.

G. Upon receipt of a failed part, Contractor shall return a repaired or replacement part to the University within fifteen (15) business days from receipt of failed part.

H. Contractor shall supply at least one local service employee or local authorized service agent for servicing and repair of all equipment during the warranty period. Local service employee or local authorized service agent shall be located within 150 miles of the University's facility.

I. The local service employee or local authorized service agent shall be the entity responsible for providing the following emergency response availability:

1. Telephone service assistance and technical support from 8am to 11pm local time at the University's facility, 7-days per week.

2. Answer all service calls and requests for information within one (1) hour during the contract period.

3. A parts exchange program, including same day shipment of exchange parts. The manufacturer shall keep a ready stock of key assemblies available to ship out upon notice of a parts failure if part is not available in spare parts inventory at the University's facility.

4. The advance replacement should contain all of the shipping information and packaging necessary to return the defective part or assembly back to Contractor at no cost to the University.

J. Warranty shall cover all equipment, including processors, controllers, operating systems, and software.

K. Warranty shall include two annual on-site system check-ups by a qualified technician who is a full-time employee of the Contractor. Visit to occur approximately 2-3 weeks prior to the start of the second and third seasons or as determined by the University (i.e. start of Basketball Regular Season).

L. Check-up shall include all regular maintenance; including filter changes, a complete inspection of all systems, brightness level readings of LED displays, parts replacement where required and a complete written report of all findings.

M. All extended warranty pricing requested in this RFP shall include the same requirements as stated in this section.

N. In addition to the base warranty, Contractor shall provide a guarantee against systemic parts failures for a period of seven years from final acceptance. A systemic parts failure is defined as a failure of more than 5% of a particular part or component in a display, over a 12-month period. If it is determined that a systemic parts failure has occurred, Contractor shall be responsible for all costs to remedy the problem to the satisfaction of the University.

O. Furthermore, if a particular system problem that resolves without a repair, presents itself in more than two (2) consecutive events, Contractor shall be responsible for providing on-site event support as well as system diagnosis, until the problem is identified and resolved. Some examples of this would be a signal flash, flickering, module(s) outage.

1.7 SPARE PARTS

A. Contractor shall supply a spare parts inventory containing 2% spare lighting units, 2% spare power supplies, and a minimum of one (1) of every other critical component including fiber modems. Spare parts inventory shall be based on quantity of components used to manufacture the display(s). Contractor shall provide proposed spare parts inventory as part of the proposal submission.

B. At the time of final sign-off, Contractor shall supply the specified spare parts inventory regardless of spare parts used during initial “shake out”, “burn in” and/or testing of newly installed displays.

C. Manufacturer of the LED system components shall continue to make all parts necessary for the continued functioning of the system for a minimum of seven (7) years after acceptance of this project. Furthermore, upon end of life of any component used in the LED displays, that is not replaced by a “backwards compatible” component, Manufacturer shall notify the University of end of life status being given to components of this system, and shall give the University an opportunity to buy spare parts from stock or a last production run, at then commercially viable prices.

END OF PART 1 GENERAL

PART 2 PRODUCTS

2.1 CENTER HUNG VIDEO DISPLAYS

A. Quantity: Four (4) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 11.9' tall by 19.3' wide.

E. Minimum Resolution: 608 x 992 based on maximum pixel pitch of 6mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.
2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.
3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.
2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.
3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.
4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.2 ALTERNATE 1: INCREASE RESOLUTION CENTER HUNG DISPLAY

A. Quantity: Four (4) Indoor Video Displays

B. Pixel Resolution: 4mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 13.9' tall by 19.5' wide.

E. Minimum Resolution: 1056 X 1488 based on maximum pixel pitch of 4mm.

2.3 CENTER HUNG HOIST

A. Provide and install two (2) Self Climbing Vortek MD SB-8012-2 Hoists – 32,000 lb. Total Lift Capacity/24,800 lb. Live Load. Reeving 2:1.

B. 6 FPM/460VAC/(4) 3/8" Dyform 6 Cables each/Base Mounting /5 HP each/65'-0 Maximum Travel.

C. ETC Dual Sync Scoreboard Control System with MCC with local control and remote control pendant. Both with dual digital height display read outs/hold to run up/down push bottoms/E-stop/keyswitch/ 4 preset capacity with soft start/stop and leveling functionality.

D. Provide and install one (1) high voltage junction box and one (1) low voltage junction box – both located at roof steel.

E. Provide and install following features:

1. Safety horn system with tilt switch sensor.
2. Safety beacon system.
3. Remote Pendant plug-in station.
4. Blocks – four (4) dual sheave snatch blocks.

2.4 PRIMARY LED DISPLAY – PROCESSING AND CONTROLS

A. Video screen control system must provide the ability to manage: brightness (multi-level), video input, image position: size and scale, adjustable gamma correction, remote power function (power on/off), color, color temperature, contrast and sharpness.

B. Processing to allow for electronic color and brightness calibration - block to block and pixel to pixel.

C. The processor shall support the following inputs: HD-SDI video in either 720p or 1080i, SD-SDI (480p) and SDI 16x9 anamorphic signal, and DVI video.

D. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the video display from a location outside of the display housing.

E. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

2.5 PRIMARY LED DISPLAY – OPERATING SYSTEM

A. Provide a fully functional operating system capable of CG, exposure time tracking, and game operation. Systems must be capable of playing back industry standard still and animation file formats. It is understood that different operating control systems have preferred file formats. File conversion is acceptable.

B. The system must be capable of accepting a serial feed from the new scoring controller and any and all 3rd party stats and sport ticker feeds, including captioning and social media as required.

C. Image playback is to be stutter-free for both static and animated graphics.

D. Operating system is to be housed in the Scoreboard Control Room.

E. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the LED display from a location outside of the display housing.

F. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

2.6 CENTER HUNG LOWER LED RING

A. Quantity: One (1) Indoor Video Displays

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.6' tall by 81' wide.

E. Minimum Resolution: 80 x 2480 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.
2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.
3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.
2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.
3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.
4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.7 ALTERNATE 2: INCREASE RESOLUTION LED RING

A. Quantity: One (1) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.6' tall by 81.2' wide.

E. Minimum Resolution: 128 x 4160 based on maximum pixel pitch of 6mm.

2.8 RIBBON BOARDS

A. Quantity: One (1) Indoor Video Display

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2' tall by 542' wide.

E. Minimum Resolution: 64 x 16544 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the top.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.9 ALTERNATE 3: CORNER LED DISPLAYS (IN LIEU OF FIXED DIGIT)

A. Quantity: Four (4) Indoor Video Displays

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 6.2' tall by 24.2' wide.

E. Minimum Resolution: 192 x 736 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the rear.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum**.**

2.10 EVENT LEVEL LED VOMITORY DISPLAYS

A. Quantity: Two (2) Indoor Video Displays

B. Pixel Resolution: 10mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: One at 2' tall by 17' wide and One at 2' tall by 20' wide.

E. Minimum Resolution: 64 x 528 and 64 x 608 based on maximum pixel pitch of 10mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the rear.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.11 LED COURSIDE DISPLAY 1

A. Quantity: One (1) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.4' tall by 40' wide.

E. Minimum Resolution: 128 X 2048 based on maximum pixel pitch of 6mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.12 LED COURTSIDE DISPLAY 2

A. Quantity: Two (2) Indoor Video Displays

B. Pixel Resolution: 6mm physical pixel resolution.

C. LED Supplier: Only Nichia or Cree LED's will be accepted.

D. Minimum Active Area of Displays: 2.4' tall by 12' wide.

E. Minimum Resolution: 128 X 608 based on maximum pixel pitch of 6mm.

F. Minimum Brightness: 2000nits (100% white with automatic color-correction "on") at startup.

G. System must maintain a minimum brightness level of 1500 nits throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

H. Display's intensity shall be adjustable to a minimum of 256 levels.

I. Minimum 4,096 levels of intensity for each color (red, blue, pure green) 14-bit processing.

J. 4,500°-9,000° Kelvin color temperature. Color temperature shall remain constant across specified horizontal and vertical viewing angles.

K. Refresh rate shall be greater than 2,000+Hz.

L. Video frame rate at or greater than 60 frames per second.

M. Contrast ratio shall be greater than 1200:1.

N. Service accessibility for all components of the displays shall be from the front.

O. Pixel to Pixel Variation

1. 95% or more of pixels within each module must have a luminance within +/- 4% of the mean luminance for the module.

2. The average luminance of a column or row of pixels at the edge of a module or panel must be within +/- 2% of the average luminance of the module or panel.

3. 95% or more of the pixels within each module must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the module.

P. Module to Module Variation

1. 100% of the modules in a screen must have a luminance within +/- 4% of the mean luminance for the screen.

2. 100% of the adjacent modules (i.e., modules sharing a border) in a screen must have a luminance within +/- 3% of each other.

3. 100% of the modules in a screen must have a chromaticity value, Δu'v', within +/- 0.006 of the mean chromaticity value for the screen.

4. 100% of the adjacent modules in a screen must have a chromaticity value, Δu'v', within +/- 0.003 of each other.

Q. All uniformity specifications above apply across all specified minimum horizontal and vertical viewing angles and are to be met for an all White, all Red, all Green, and all Blue screen display.

R. All listed specifications must be maintained throughout the first 10,000 hours of use or 36 months from the time of acceptance, whichever is longer.

S. Minimum of a 140° (±70°) horizontal viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

T. Minimum of a 140° (±70°) vertical viewing angle. Defined at 50% of full intensity, with automatic color-correction "on", at stated angle maximum.

2.13 COURTSIDE DISPLAY TABLE SPECIFICATIONS

A. Scorer's table to include the following:

B. Upholstery quality vinyl covered padding on ends and top in a color to be determined by the University. Vinyl shall be "Naugahyde" product or equal as approved.

C. Total of six (6) Tables: Four (4) tables of 10' length and two (2) tables of 12' length.

D. Sections to be configured to allow connections for seamless display image.

E. Provide electrical and signal connections to "daisy chain" sections together.

F. Each table sections to be on locking casters and leveling feet.

G. Provide 34" maximum table height.

H. Provide 24" maximum counter depth.

I. Provide maximum of 38" total depth – display to back edge of table

J. Specific sizes may vary depending on location.

K. Provide 4" x 4" cable trough under table top with access holes every 4' minimum

L. Provide AC power connections every 12" and data connections every 24" along entire length of table and interconnections for service to connect between table sections.

M. Provide trough for installation of the University provided temporary cabling i.e. data, phone, distributed TV.

N. Protective Vinyl Covers for each table for use when tables are in storage

O. Plug strip Edison outlets on top of table should have 15a capacity per table.

P. Power to each table must have enough capacity to provide 15a 110v service to table top plug strip. Each table top plug strip should have a dedicated 15a breaker.

Q. The University will supply 3 phase 208v 5 wire power at the appropriate amperage. Table should have a Male inlet connector rated at the appropriate amperage for power input. Coordinate power needs and connector types with what the University has available to provide.

2.14 CORNER, RIBBON, VOMITORY, COURTSIDE AND MARQUEE PROCESSING AND CONTROLS

A. Video screen control system must provide the ability to manage: brightness (multi-level), video input, image position: size and scale, adjustable gamma correction, remote power function (power on/off), color, color temperature, contrast and sharpness.

B. Processing to allow for electronic color and brightness calibration - block to block and pixel to pixel.

C. The processor shall support the following inputs: HD-SDI video in either 720p or 1080i, SD-SDI (480p) and SDI 16x9 anamorphic signal, and DVI video.

D. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the video display from a location outside of the display housing.

E. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

2.15 SCORING SYSTEM: PROVIDE AND INSTALL THE FOLLOWING

A. Four (4) corner installed fixed digit displays 6.5'H x 24'W with white digits. Sizes of digits and required information are listed in the RFP rendering package, Attachment E.

B. One (1) fixed digit display (practice court) 5'H x 10'W with white digits. Score and clock digits shall be 13" tall and include period and possession indicators.

C. Shot clocks for each goal (Event court and practice court) plus one spare set (total of 5 sets). Shot clocks shall be NBA style double sided transparent (see thru) style clocks and shall display game time and shot time. A set shall include two shot clocks on each goal. Large clock mounted parallel above the backboard glass shall be a maximum of 32.4" high by 31.7" wide by 4" deep and shall have 13" tall red LED's for shot clock and 7" yellow LED's for game time. Small clock mounted on the backstop structure perpendicular to the backboard glass shall be a maximum of 22" high by 22" wide by 3.5" deep and shall have 7" tall red LED's for shot clock and 5" yellow LED's for game time. Both clocks shall include red LED strips around the perimeter that shall illuminate when time has expired. Clocks shall have camera mounting brackets.

D. New shot clock brackets for existing goals. Brackets for large shot clock shall be "fold down" style to permit storage of goals in existing location used by the University.

E. Two sets plus one spare set of red LED light strips around the perimeter of each backboard glass. The current LED light strips may be re-used if compatible with new scoring controllers.

F. Twelve (12) Locker Room Clocks – minimum 4 inch tall red fixed LED digits with a maximum overall cabinet size of 1'-8" wide by 9" tall by 4" deep. Locations – 4 Visiting Team Locker Rooms, Officials Locker Room, Women's and Men's Locker Rooms, Men and Women's Staff Locker Rooms; Courtside Lounge, Press Room, Multipurpose Room.

G. Install two (2) horns on Center Hung display.

H. Two (2) Scoreboard Controllers – (1 primary and 1 backup). Must be capable of scoring for Basketball and Volleyball.

I. One (1) Stats computer to interface with Stats crew for player stat displays.

J. Two (2) Data Distribution Panels. One (1) located in equipment rack in scoreboard control room and one (1) located at truck dock.

2.16 LED DISPLAY SIGNAGE AND AESTHETICS

A. Provide and Install custom underbelly logo as specified and depicted in the rendering package.

B. Provide and Install "ATLANTIC UNION BANK" channel letters and footer signage as specified and depicted in the rendering package.

2.17 ANIMATION PACKAGE

Provide twenty (20) custom animations with a minimum of 50% 3-D animations for all displays listed in this RFP.

END OF PART 2 PRODUCTS

EXECUTION

3.1 SCOPE OF WORK

A. The following outlines the turnkey delivery and installation responsibilities that define the project scope of work. Any and all work outlined in this section is the responsibility of the Contractor unless otherwise noted. Contractor is required to provide all labor, materials, tools, supervision and equipment to perform the following:

1. Provide and install all equipment and displays listed in Part 2 – Products, including any and all equipment not specifically listed that is required to provide a completely functional system.
2. Provide and install LED video displays, signage, and aesthetics as depicted and specified in rendering package.
3. The Contractor shall be responsible for the provision and installation of all primary and secondary steel, mounting brackets/hardware, and cladding required to accommodate the new system onto existing structures and concrete walls of the arena. This includes all labor, materials, equipment; tools, transportation, and project management required for a complete and fully operational system(s) on the project. Contractor shall provide final structural /attachment drawings per Section 3.2.
4. Contractor shall be responsible for all power and electrical distribution to the new system(s). Contractor shall provide all secondary power connections/terminations required to power new system(s). Contractor is responsible for providing stamped electrical drawings by a licensed electrical engineer in the State of Virginia.
5. Contractor to provide new signal cable to each display and may re-use existing conduit where available. Contractor is responsible for installing new conduit if required due to existing conduit being damaged or not available.
6. Provide required electrical and data cable: connect all equipment with power, signal and control wiring.
7. Coordinate with the University regarding placement of new equipment rack(s) and electrical components.
8. Provide integration with video replay system.
9. Provide all required permits and licenses.
10. Provide on-site installation supervisor per Section 1.5.E.
11. Deliver all Equipment to site and convey to appropriate locations within site as directed by the University.
12. Store all Equipment in a safe and secure manner until installed, or otherwise directed by the University.

3.2 ENGINEERING

A. The Contractor must submit drawings and calculations stamped by a professional engineer who shall be licensed/registered in the State of Virginia.

B. Contractor is responsible for taking all seismic, wind and environmental considerations into account and making structural provisions for any such requirements.

C. The University must approve all drawings in writing prior to the fabrication and installation of any equipment.

D. Engineered drawings are to include both structural and electrical.

E. The Contractor is solely responsible for verification the integrity of all engineering calculations. Contractor is responsible for verification of all information provided or implied.

3.3 STRUCTURAL CONSIDERATIONS

A. Contractor is responsible to design, engineer, build, deliver, install, integrate and commission complete turnkey displays as specified with all required structure needed to support all display components.

B. Flashing and any other related equipment shall be the responsibility of the Contractor to furnish and install.

C. Contractor is responsible for design and erection of all materials related to the new equipment.

D. Sub-structure is to be fabricated using structural steel and/or aluminum (optional). Contractor shall provide necessary protective separation when connecting dissimilar metals to prevent galvanic corrosion.

E. Bolted and/or field welded connections shall be subject to special inspection by an independent testing & inspection agency certifying that bolted and/or welded connections meet the minimum requirements of the engineered structural drawings, the governing building code, or as required by the building official; whichever is more restrictive. Inspections shall take place prior to painting any connection.

F. Documentation shall be provided to the University verifying acceptable results from all special inspections. All items failing inspection shall be repaired or replaced and re-inspected at no additional cost to the University.

G. All components to be painted and otherwise finished for exterior service conditions shall be warranted to be free of rust or other defects for a period of ten years.

H. All welders must be certified, and certificates must be on-site and available for inspection as requested.

I. To minimize fading or oxidation, all finishes must be primed and coated. All areas of the primary and secondary support structure must be primed and painted to match.

J. Secondary structure, ribbon board and signage shall be detailed to allow for expansion at contraction at the expansion joints.

K. Damage to paint to the primary structure during the installation of secondary structure, ribbon board and signage install shall be touched up by Contractor

3.4 ELECTRICAL AND DATA

A. The electrical design and installation of all branch circuits by the Contractor shall comply with NEC, provincial and local codes, as well as University regulations and guidelines.

B. Contractor shall provide remote power on/off as noted in Part 2 Products. Contractor shall provide sufficient number of switches to control all displays and signage elements. Switches to be mounted into equipment racks along with other equipment provided by Contractor. Configuration of switches shall be submitted with shop drawings to be approved by the University.

C. The Contractor shall provide electrical and data one-line diagrams.

D. Electrical design and engineering must be reviewed and approved by the University prior to any electrical work by the Contractor.

E. The Contractor shall be responsible for power distribution from the demarcation points noted on the included electrical drawing. Any additional electrical components required for a complete and fully operational system but not shown on the electrical drawings shall be the responsibility of the Contractor.

F. Contractor to provide a 4” x 4” J-Box at top/bottom of each rack with power circuit cabling terminating in 24” pig tails. Label each outlet as to which AC circuit is feeding it and provide the same information in the circuit breaker panel. The University will provide all AC power and conduit to the equipment racks and will terminate AC power circuits within the J-Boxes.

G. Contractor is responsible for all conduit and raceways as required for signal/control cable distribution. Contractor may utilize existing conduit subject to University approval.

H. The Contractor shall be responsible for termination and final connect of power to all displays. All secondary electrical panels must be clearly marked with names of the branch circuits controlled by each breaker to aid in troubleshooting or isolating problems. All electrical services, disconnects, and breaker panels are to be labeled with what they control and where they are fed from.

I. Contractor shall not use wire nuts or electrical tape for any power or signal connection or any part of the work including internal LED display power jumpers or power connections to signage elements. All connections shall use a proper terminal block and spade terminal, or terminal block and direct connection as required. Covers shall be provided for all high-power terminal blocks to prevent electrical shock.

J. The University will provide power to the disconnect switch will use rigid metal conduit and wire. The use of SO cord or rubber jacket type power cables typically used on transportable installations or used on the installation of pitch side displays shall not be permit for permanent installations. Strain relief on all connectors shall be per manufactures recommendations. Contractor shall submit manufacturers strain relief recommendations for all connectors during the submittal process.

K. The Contractor shall be responsible for providing stamped electrical drawings. A licensed/registered engineer in the State of Virginia where this project is located shall stamp all electrical drawings.

L. Any equipment not certified as required in Section 1.4.A. shall require on-site certification by a listed testing agency. All cost associated with obtaining on-site certification shall be the responsibility of the Contractor. Written proof of certification or equivalent shall be required prior to any work being performed on-site.

M. Contractor shall provide twelve (12) spare strands of fiber in addition to the total amount of fiber that is required to provide video signal and/or data communication to LED displays installed by Contractor. All fiber shall be terminated and landed in an appropriate fiber patch panel. All new fiber supplied by Contractor shall be tested and shall not exceed maximum allowable dB loss per Section 3.4.N and/or Section 3.4.O.

N. Multi-mode fiber tested shall not have a signal dB loss greater than 0.1dB per 100 feet (30m) for 850nm fiber or a loss greater than 0.1 dB per 300 feet (100m) for 1300nm fiber.

O. Single-mode fiber tested shall not have a signal dB loss greater than 0.1dB per 600 feet (200m) for 1310nm fiber or a loss greater than 0.1 dB per 750 feet (250m) for 1550nm fiber.

P. Contractor to provide all required fiber transmitters and receivers (including amplifiers where required). Contractor shall be responsible to terminate and perform final connection of all cables. Cables shall be routed from the specified control locations to the display components per Contractor's diagram once the University has approved diagram.

3.5 AESTHETIC CONSIDERATIONS

A. At the time of the release of this RFP the University is still developing certain finishes and aesthetic design elements for consideration. Contractor shall assume premium finishes on all elements not yet defined.

B. Prior to contract award, the Contractor must provide a comprehensive outline of all intended flashing and finish details for University approval. Failure to submit these details prior to contract award shall make Contractor responsible for all flashing and finishes as required by the University at no additional cost to the University.

C. No exposed bolts, inverted U channels, or unfinished edges on LED displays or signage elements shall be permitted on any surface with public view. Any part of the secondary steel frame exposed to public view shall be covered with flashing to match the edge of the LED display.

D. Unless specified differently on the AJP RFP Drawings (Attachment E), the following shall serve as a minimum standard for products and finishes. Contractor shall be responsible to ensure that the material thickness provided is sufficient to prevent warping or "oil canning" on the span or sections of material installed.

1. Metals
    a. + .040” aluminum on internal baffling
    b. + .090” aluminum on flashing
    c. + .125” aluminum on any routed or primary surface
    d. + 12ga/2.6mm stainless steel (visible)
2. Plastics
    a. + .117” thickness on thermoformed polycarbonates
    b. + .177” thickness on flat polycarbonates
    c. + .125“ thickness on flat acrylics
3. Finishes
    a. + Approved Automotive Grade Enamels
    b. + ASTM D3451-06 compliant Powder Coating
4. Vinyl Films
    a. + 3M, Avery, Oracal or other as approved.
    b. + 9oz weight for any outdoor banner (UV coated)

E. The Contractor shall not visibly display its trademarks or insignia on any of the Equipment or structural elements.

3.6 TRAINING

A. The Contractor at its own expense shall provide designated University employees’ operator and maintenance training.

B. Training shall be performed at the site by a qualified technician and shall occur either during installation of the equipment or immediately thereafter. O&M Manuals per Section 1.3.C shall be provided to University prior to training.

C. The training shall cover the operation, routine maintenance and troubleshooting of the displays and control equipment.

D. Training shall consist of at least 24 hours (over the course of 3-5 days) of instruction.

E. Contractor shall be required to have a control systems operator and LED technician on-site for the first event and continue to be on-site for three (3) consecutive problem free events at the facility, events to be selected by the University. “Problem-free” constitutes an event where the video and scoring displays, control system, and any other components installed by the Contractor are without failure during an event. Each successful event shall need to be signed off by the University until three (3) consecutive events are achieved.

F. Warranty period will commence at conclusion of the third consecutive successful event.

3.7 TESTING AND ACCEPTANCE

A. Contractor must demonstrate the full capabilities of the provided systems and prove performance meets contractual specifications.

B. Confirmation shall be required of, but not limited to the following functions: operation of each system component, including back-up systems, control functionality, integration with existing systems, diagnostic capabilities, screen brightness, color temperature and viewing angles.

C. Contractor must provide all necessary testing equipment for acceptance.

D. Upon notice from the Contractor of substantial completion and at a time to be mutually agreed upon, the Contractor shall arrange for the testing of all operations of the systems comprised in scope of work at the time of substantial completion.

E. The following items must be completed and signed off by an appropriate University official before the University will deem the system "Accepted."

1. LED Screens - Brightness and color uniformity shall be demonstrated and must meet the specification described. If the demonstration exhibits the display in noncompliance with the specifications, it will be the responsibility of the Contractor to make the necessary adjustments or to adjust, repair or replace the components necessary to meet the specifications. The University shall not be responsible for any added costs as a result of an unsuccessful acceptance test.

2. Certain LED video displays included in this RFP are required to maintain minimum parameters over a specified period of time. The University at its sole discretion may engage an independent testing agency to verify the display's specifications, at any time during the specified period of time. Cost for this testing will borne by the University, if display is complying. If the testing exhibits the display in noncompliance with the specifications, the cost of the testing shall be the responsibility of the Contractor. Contractor shall also be responsible to make the necessary adjustments or repair or replace the components necessary to meet the specifications. The University shall not be responsible for any added costs as a result of an unsuccessful test.

3. Functionality of each of the displays and their control systems, as specified, shall be demonstrated in its entirety.

4. Acceptance of the system includes, but not limited to, the completed installation of all physical components and the issuance of the Certificate of Approval for code compliance by the Code Authority having Jurisdiction. Tests of the system shall not occur until after the system has been installed, and all work completed on the display systems.

F. Document all acceptance testing, calibration and correction procedures described herein. Include the following information:

1. Performance date of the given procedure.

2. Condition of performance of procedure.

3. Type of procedure, and description.

4. Parameters measured and their values, including values measured prior to calibration or correction, as applicable.

5. The names of personnel conducting the procedure.

6. The equipment used to conduct the procedure.

G. Upon completion of initial tests and adjustments, submit written report of tests to the University along with all documents, diagrams, and recorded drawings required herein.

H. Final Procedures

1. Perform any and all "punch-list" work to correct inadequate performance or unacceptable conditions, as determined by the University, at no additional expense to the University.

2. Furnish all portable (includes spare parts) equipment to the University along with complete inventory documentation. All portable equipment shall be presented in the original manufacturers packing, complete with all included instructions, miscellaneous manuals, and additional documents.

3. Provide new acceptance testing in the same format as initial test reports.

4. Check, inspect, and if necessary, adjust all systems, equipment, devices and components specified, at the University's convenience, approximately thirty (30) days after the University's acceptance.

5. Upon completion of the Work, the University may elect to verify test data as part of acceptance procedure. Provide personnel and equipment, at the convenience of the University, to reasonably demonstrate system performance and to assist with such tests without additional cost to the University.

END OF PART 3 EXECUTION

CMJ-1055 Attachment E

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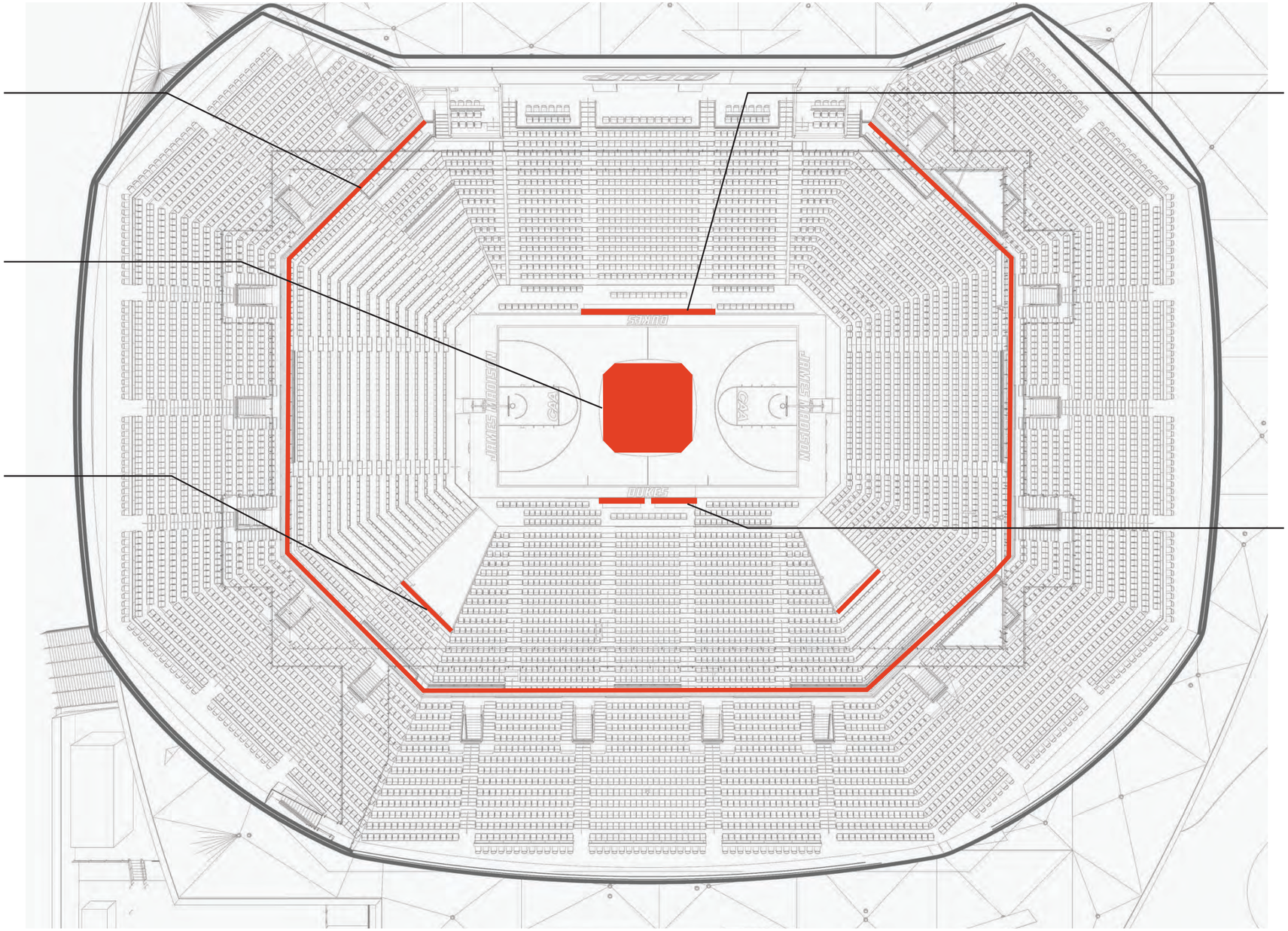
OWNER'S REPRESENTATIVE | AV CONSULTANT

JAMES MADISON UNIVERSITY, ATLANTIC UNION BANK CENTER RFP DRAWINGS

07.03.19



ASSET MAP

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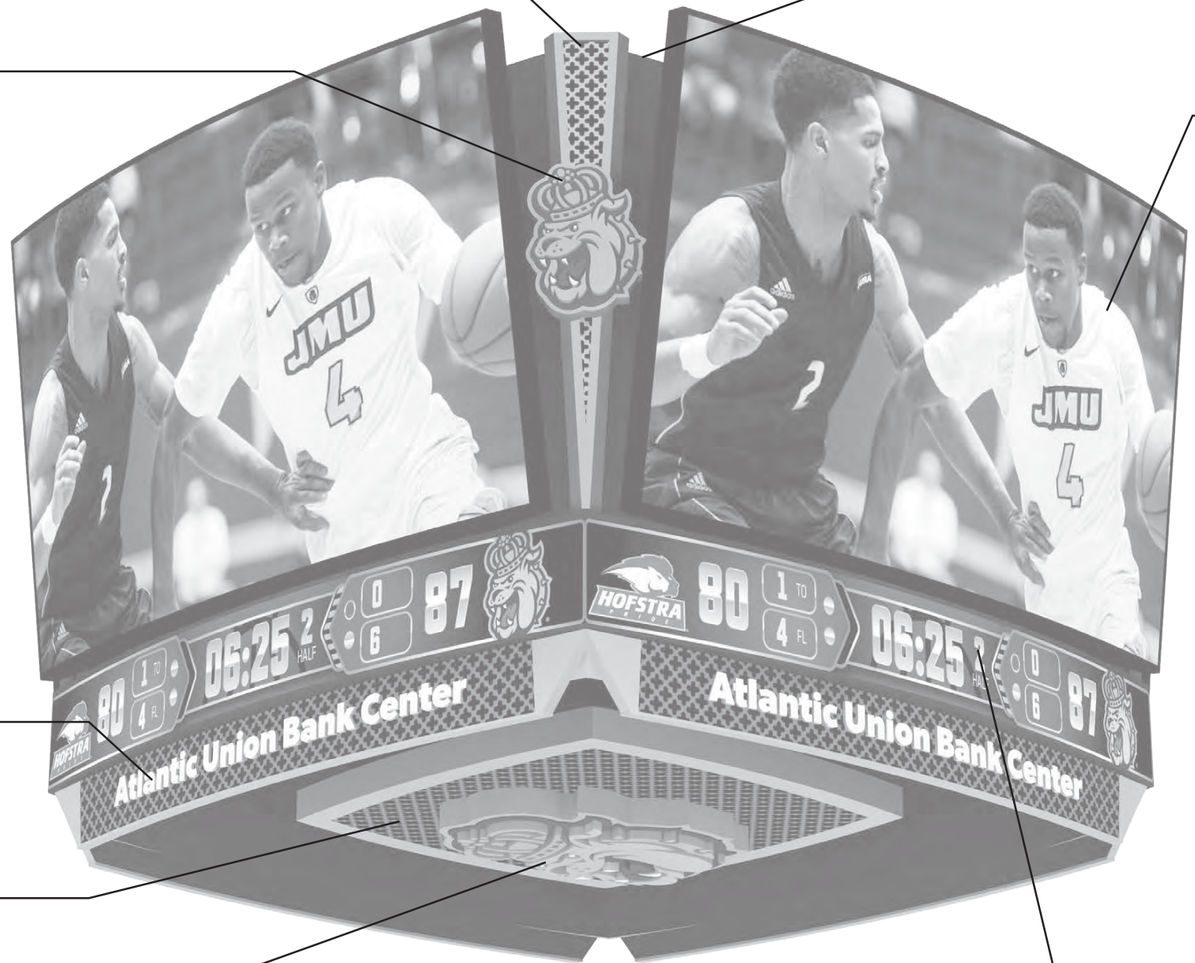

CENTER HUNG SCOREBOARD COMPONENT OVERVIEW

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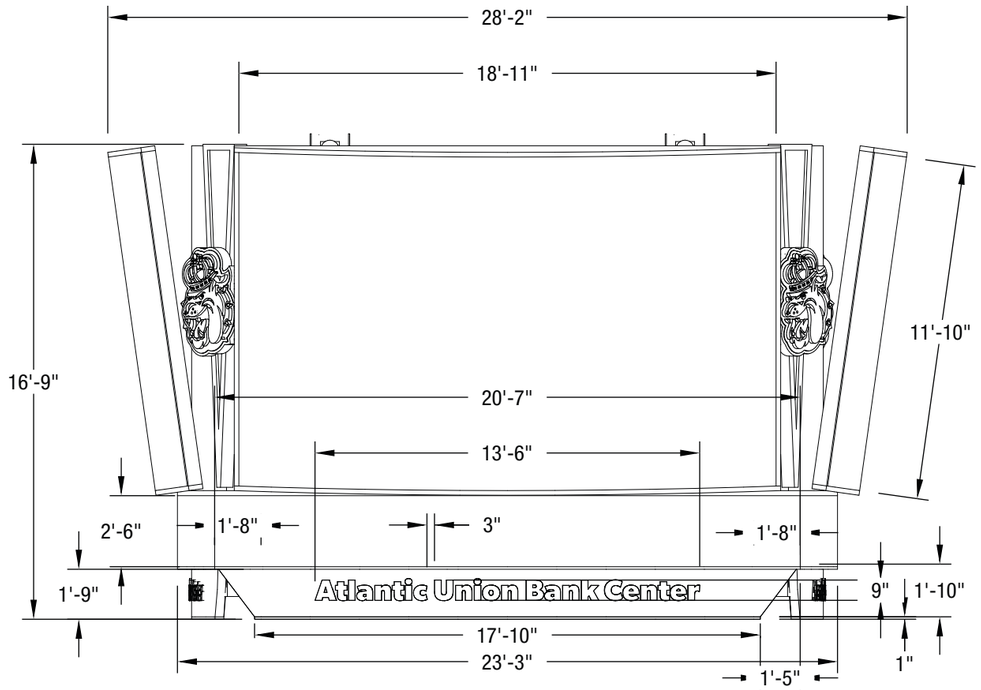

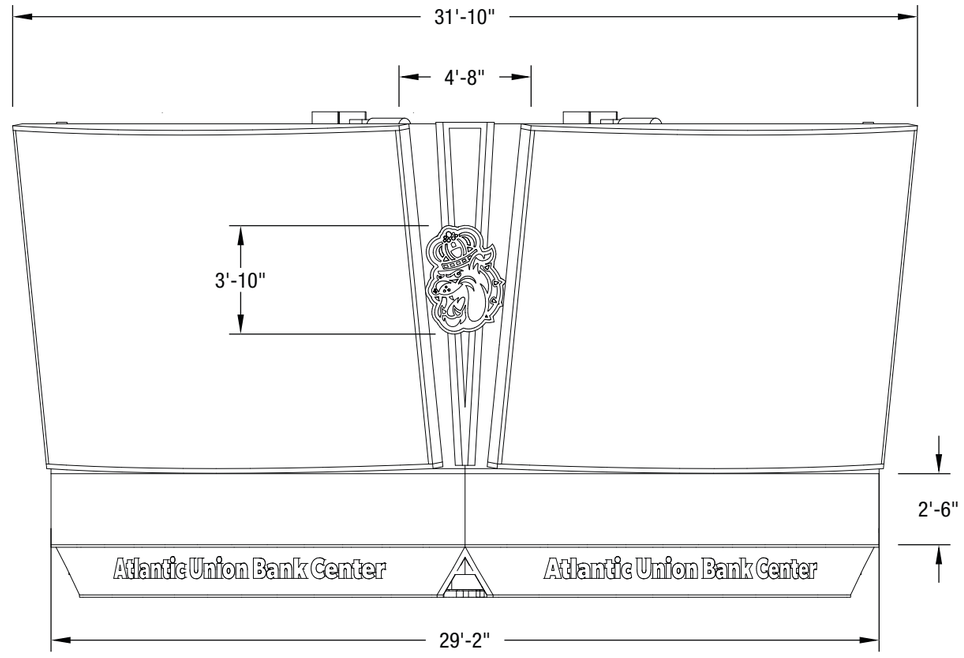

CENTER HUNG SCOREBOARD ELEVATION VIEWS (HEAD-ON AND CORNER)

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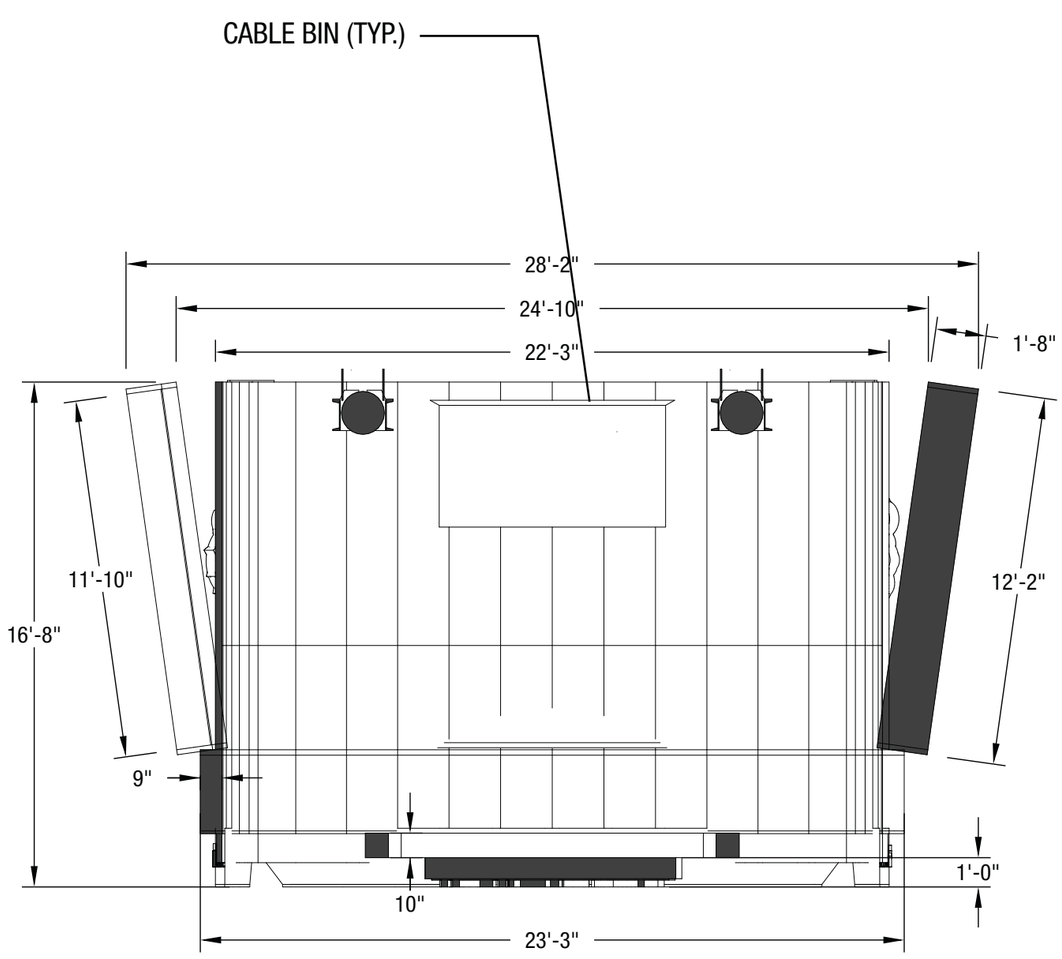
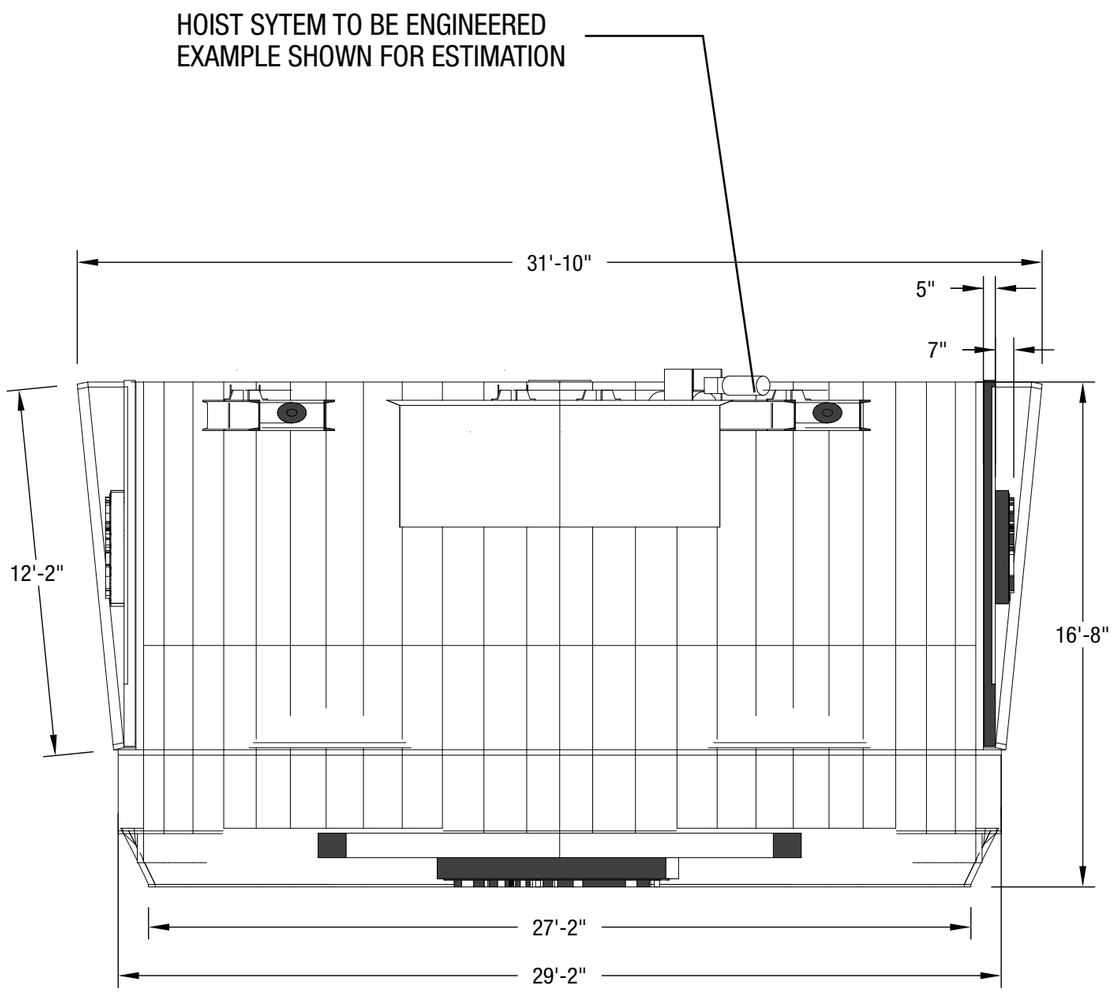
CONCEPT RENDERING





CENTER HUNG SCOREBOARD SECTION DETAILS

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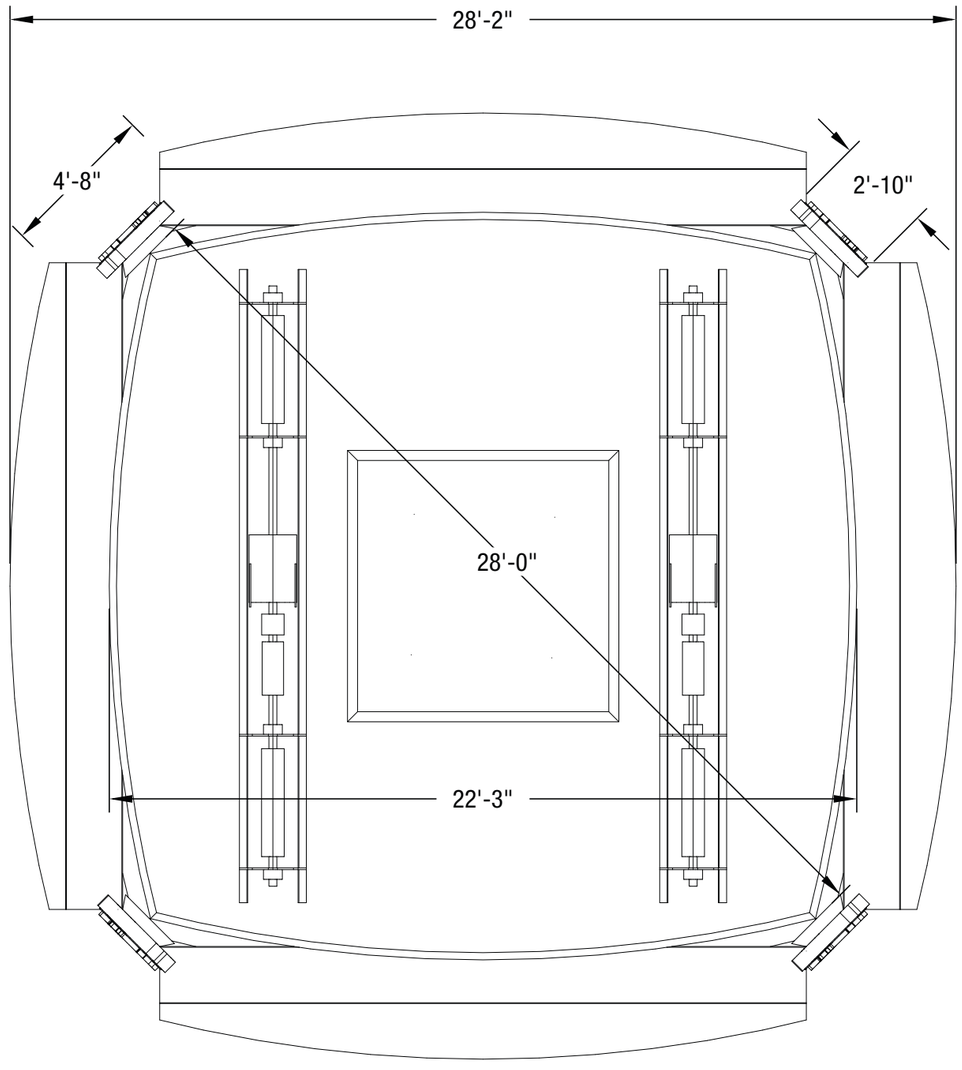

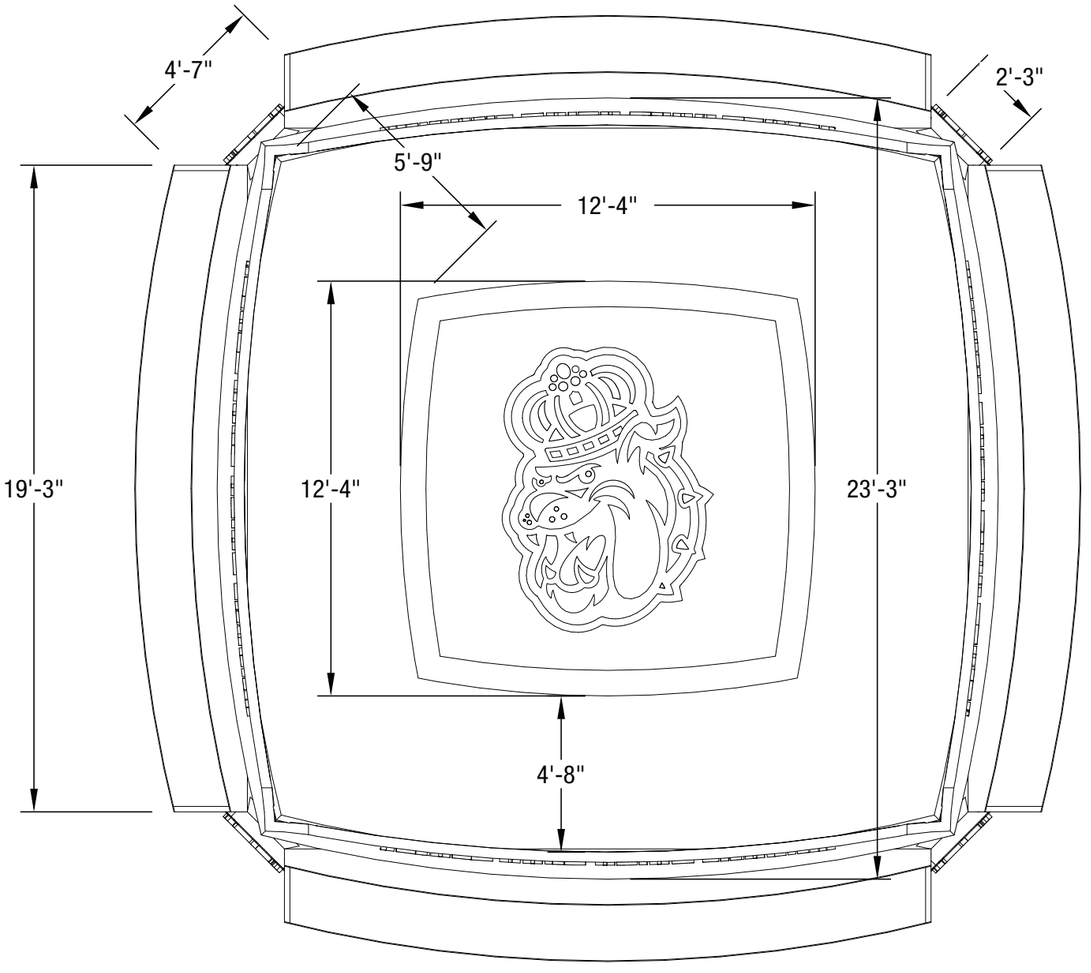

CENTER HUNG SCOREBOARD PLAN & REVERSE PLAN VIEW

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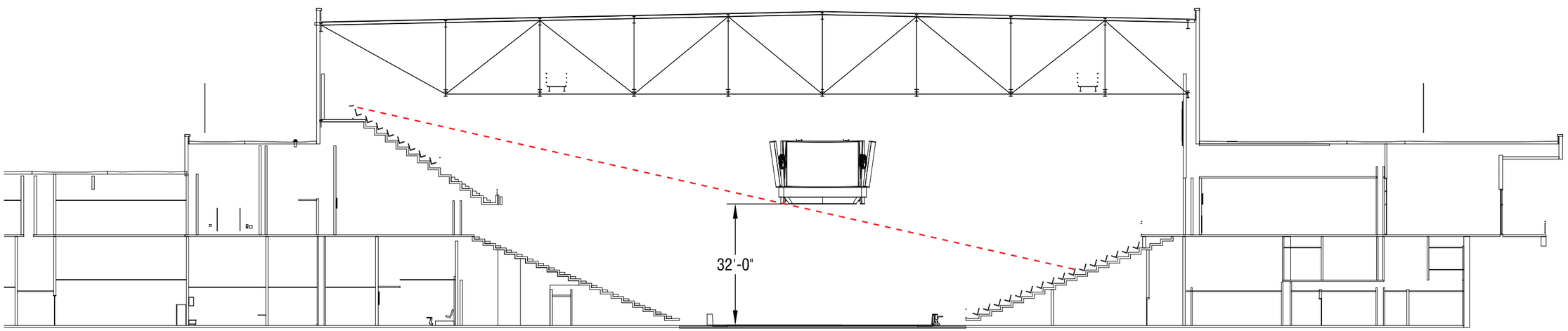

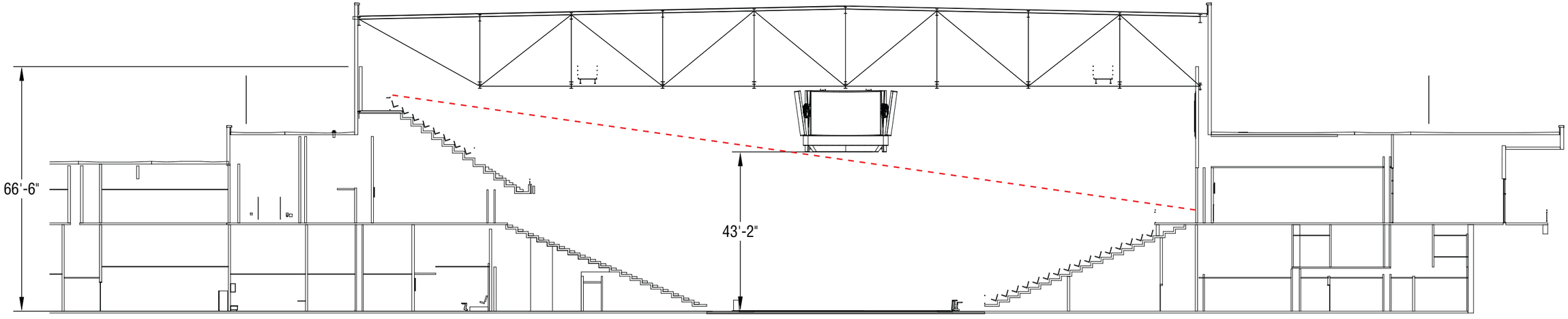

CENTER HUNG SCOREBOARD SIDE SIGHTLINE - RAISED / LOWERED

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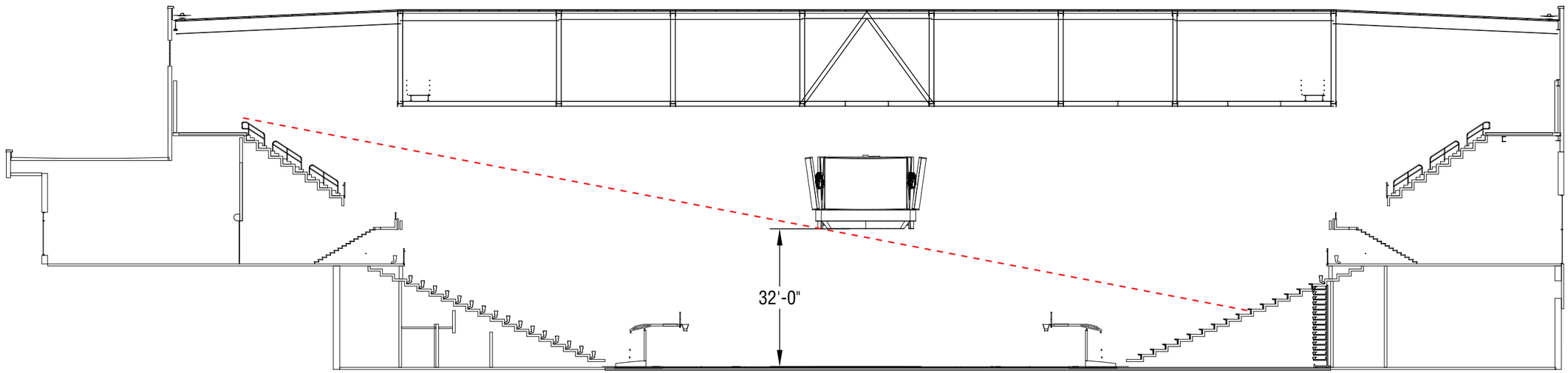
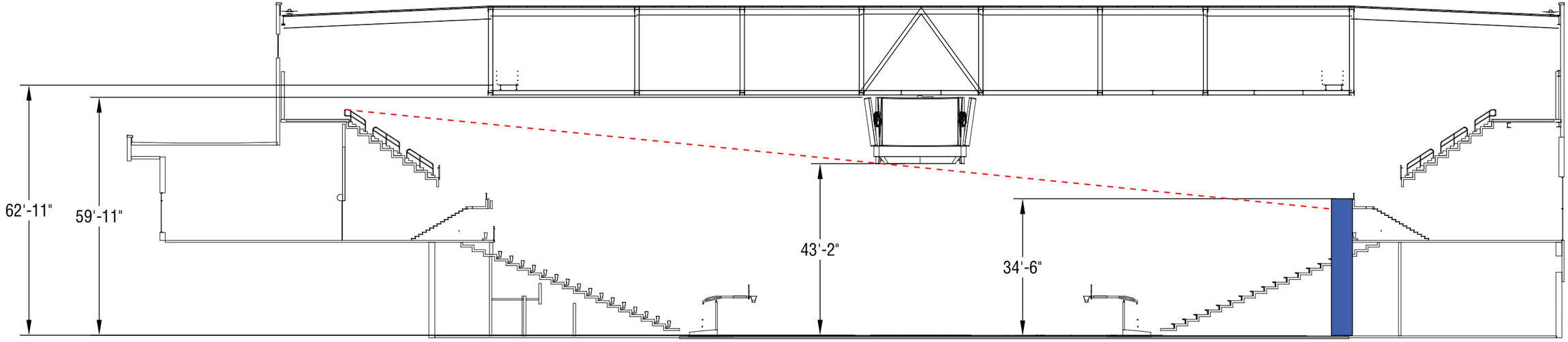
RFP RENDERINGS





CENTER HUNG SCOREBOARD CROSS COURT SIGHTLINE - RAISED / LOWERED

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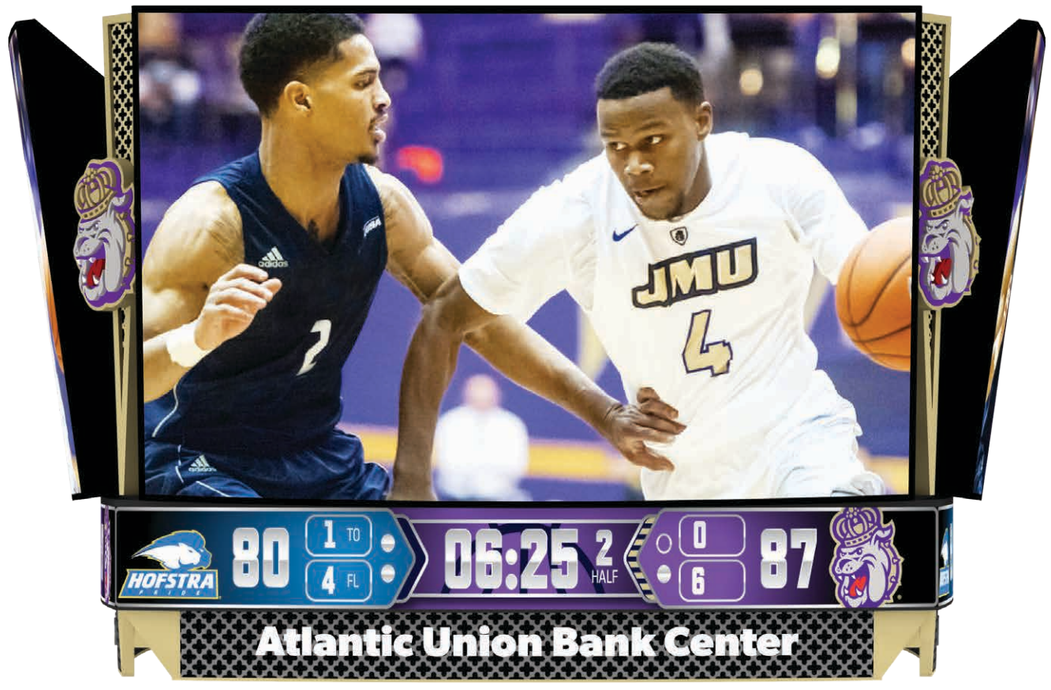
RFP RENDERINGS



CENTER HUNG SCOREBOARD ISOLATED RENDERINGS

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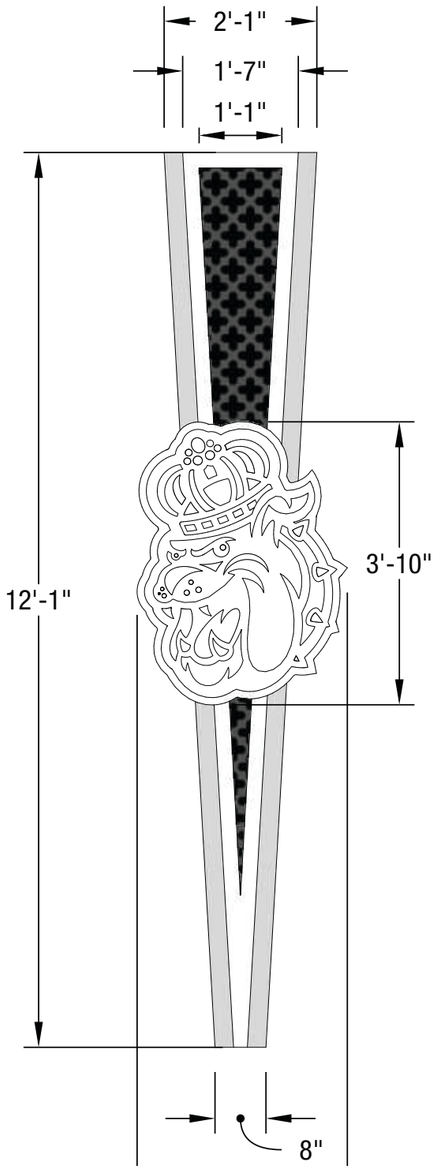

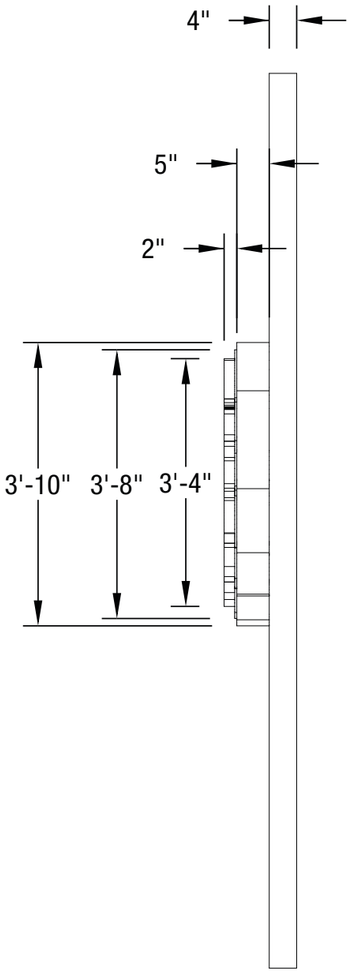

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3	JMU DARK GOLD / PMS 4505 3M GOLD NUGGET #3630-141
4	JMU GREY / PMS CG8 3M SILVER GREY #3630-51
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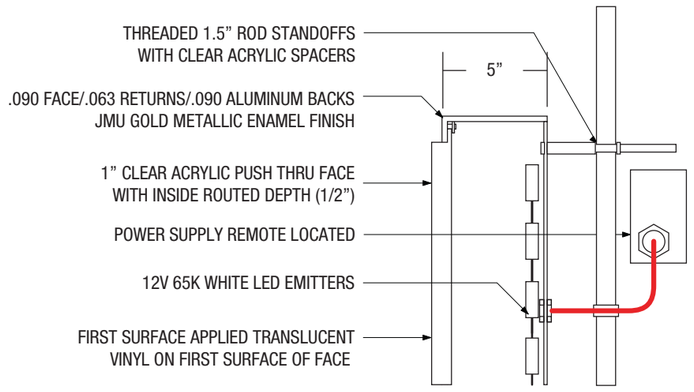
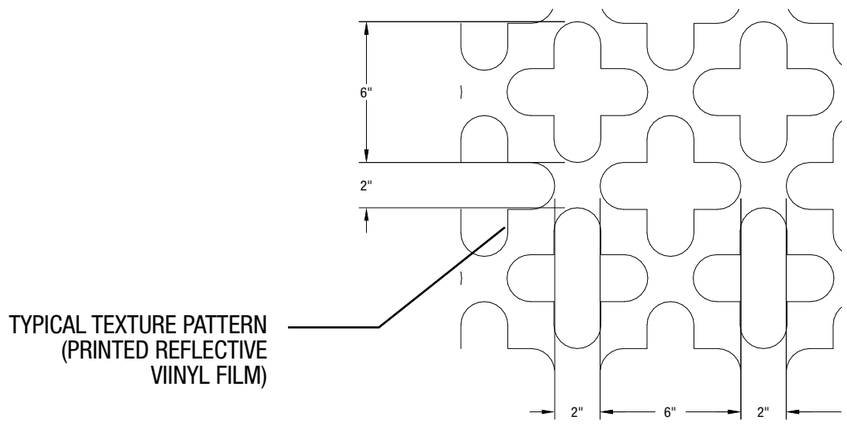


CORNER LOGO DETAIL
NTS



CENTER HUNG SCOREBOARD CORNER WEDGE SIGN DETAIL

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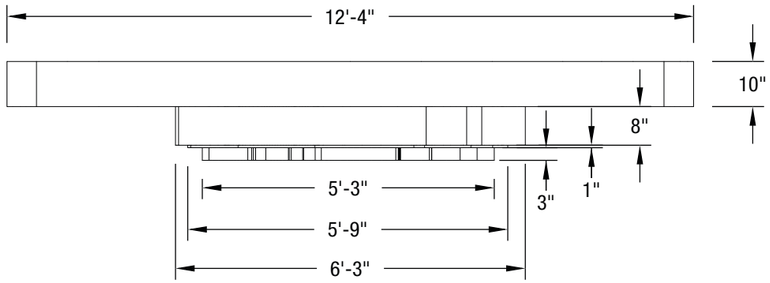

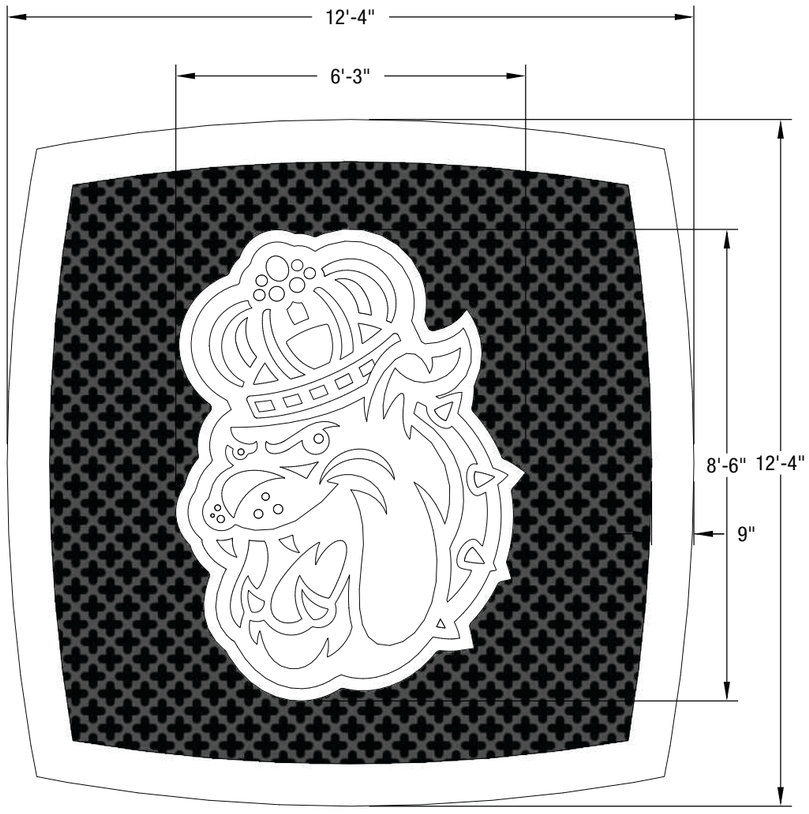

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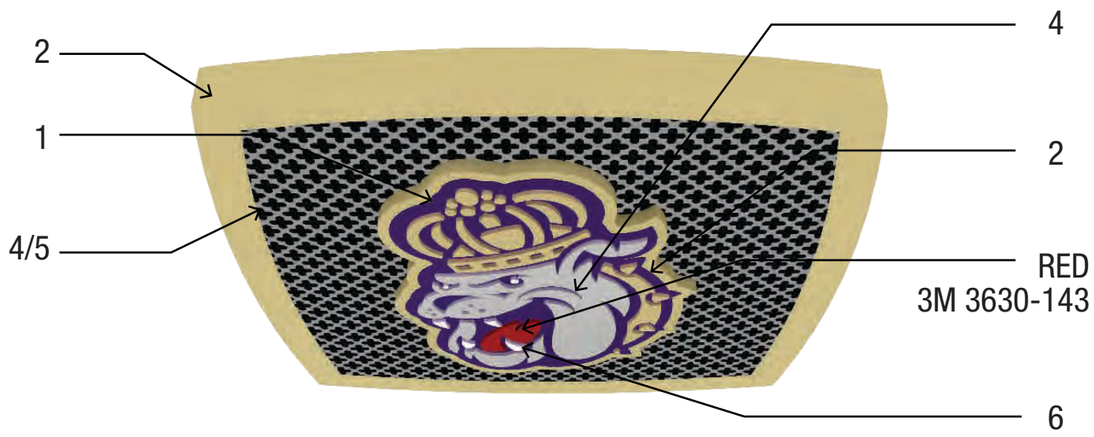

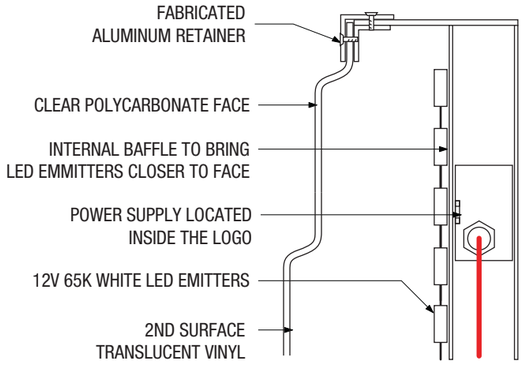

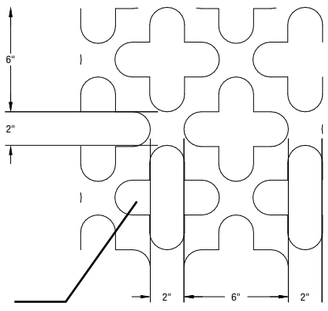

TYPICAL TEXTURE PATTERN
(PRINTED REFLECTIVE
VIINYL FILM)

UNDERBELLY LOGO DETAIL
NTS

CENTER HUNG SCOREBOARD UNDERBELLY SIGN DETAIL

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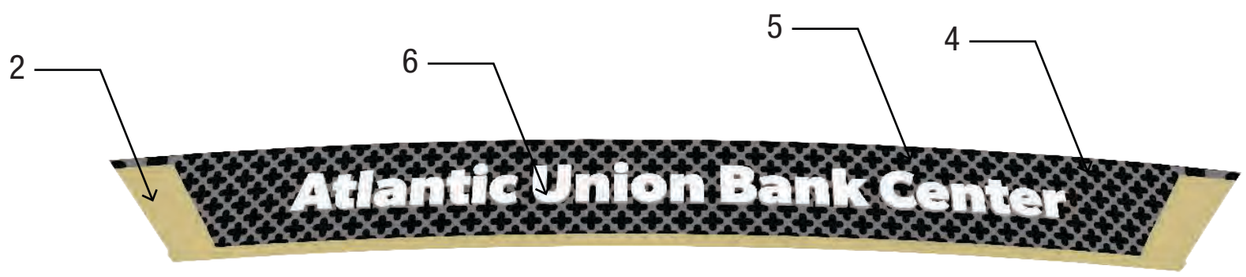

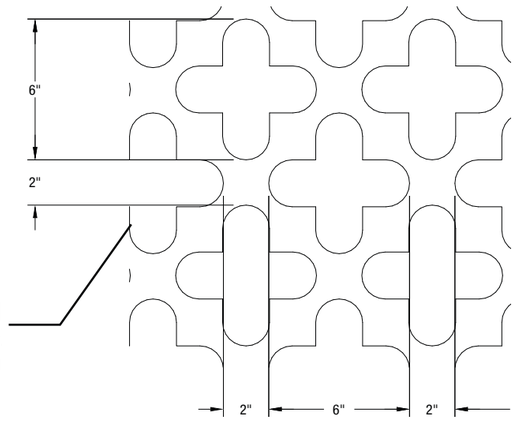

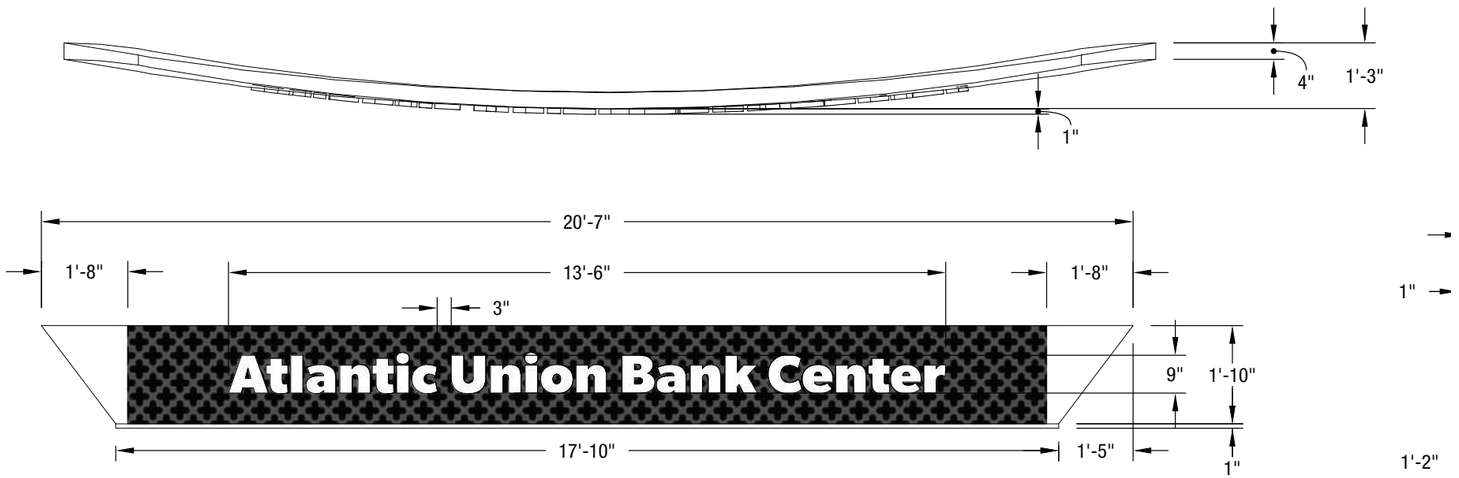

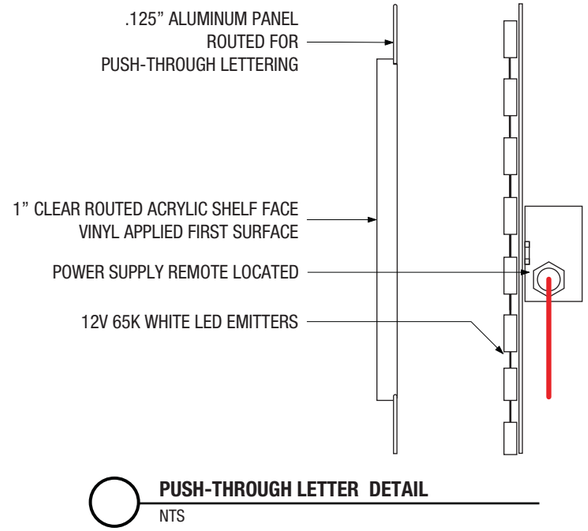

PUSH-THROUGH LETTER DETAIL
NTS

CENTER HUNG SCOREBOARD FOOTER SIGN DETAIL

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CONCEPT RENDERING

CENTER HUNG SCOREBOARD CONTEXT RENDERING

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CENTER HUNG SCOREBOARD CONTEXT RENDERING

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CONCEPT RENDERING

CENTER HUNG SCOREBOARD CONTEXT RENDERING

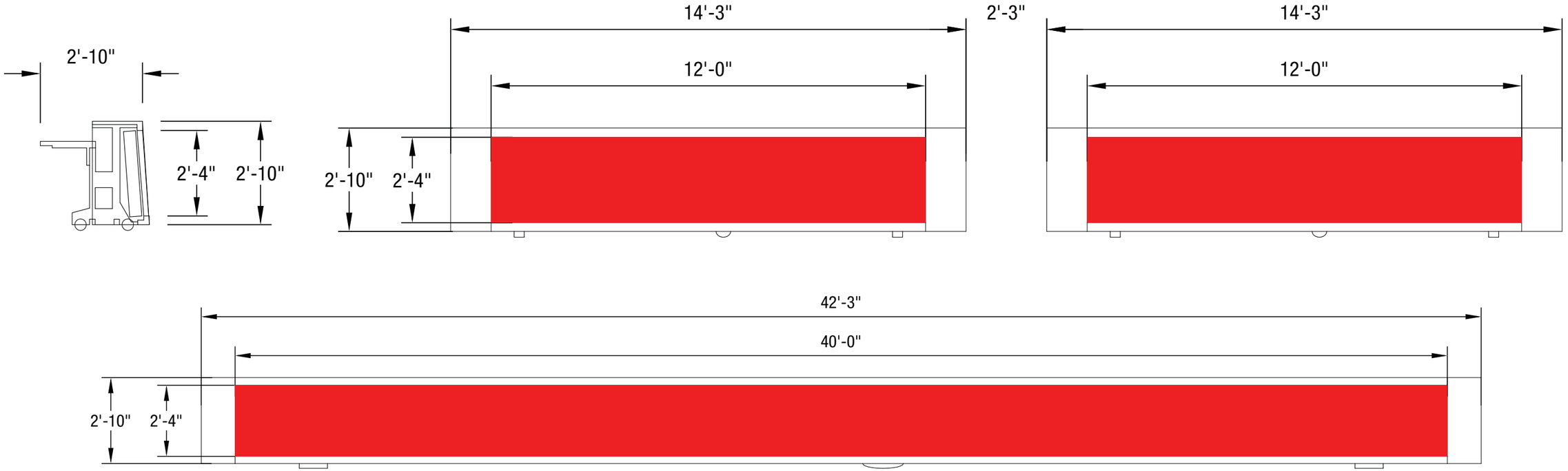
ANTHONY JAMES PARTNERS

3900 WESTERRE PARKWAY, SUITE 300
RICHMOND, VIRGINIA 23233

804.727.0070
www.anthonyjamespartners.com

COURTSIDE SCORER'S TABLE

PORTABLE LED COURTSIDE TABLES WITH FOLD-UP DESK, INTEGRATED 110V SUPPLY PORTS, CASTERS AND PADDING AS REQUIRED. ALL EXTERNAL FINISHES PMS PURPLE #2685, ALL DESK, WIRING AND STRUCTURAL COMPONENTS SEMI-GLOSS BLACK.



COURTSIDE LED TABLES 40' / 12' LENGTH

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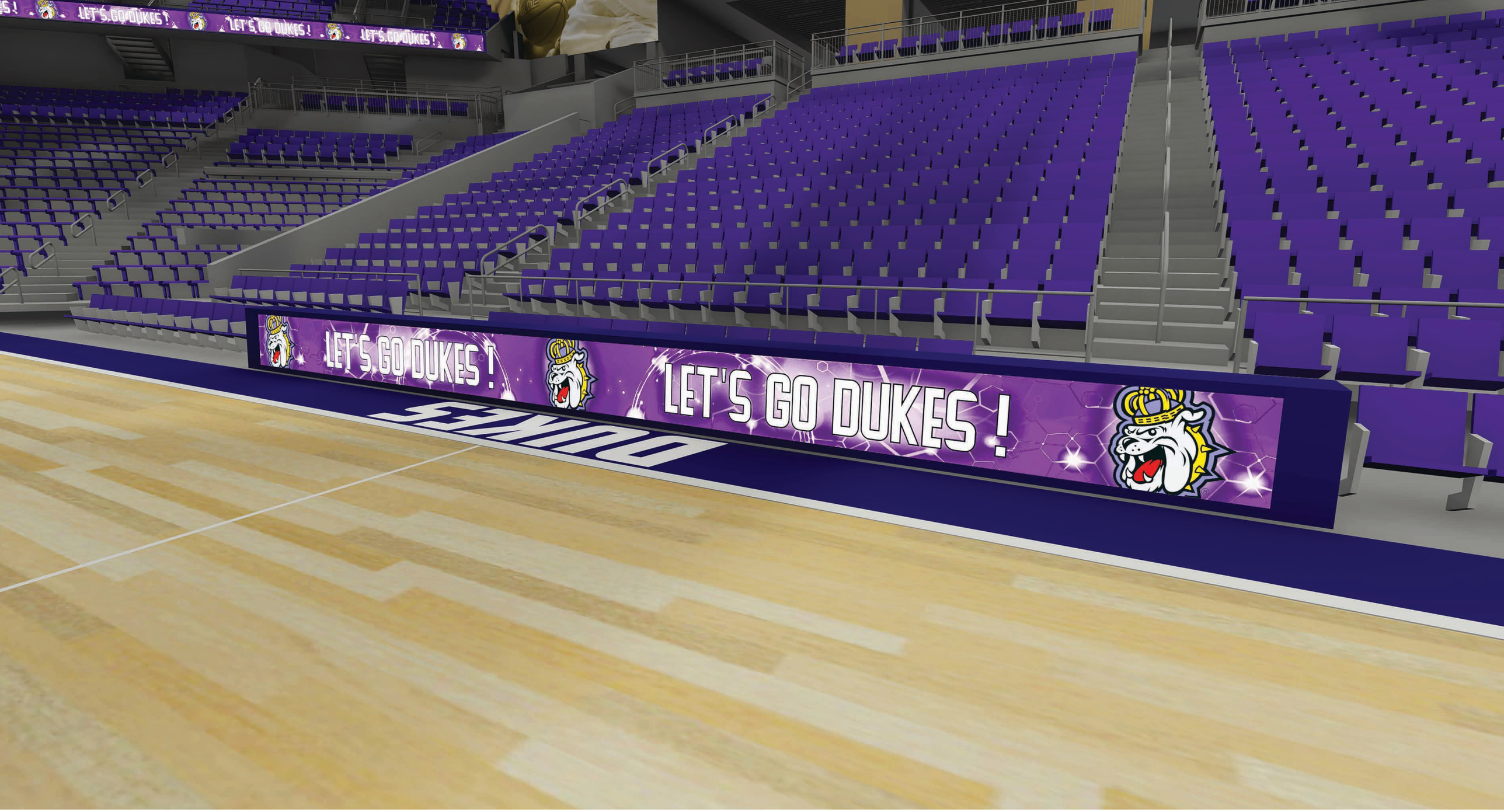

COURTSIDE LED SCORER'S TABLE 40' LENGTH

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COURTSIDE LED RADIO/TALENT TABLE 12’ LENGTH

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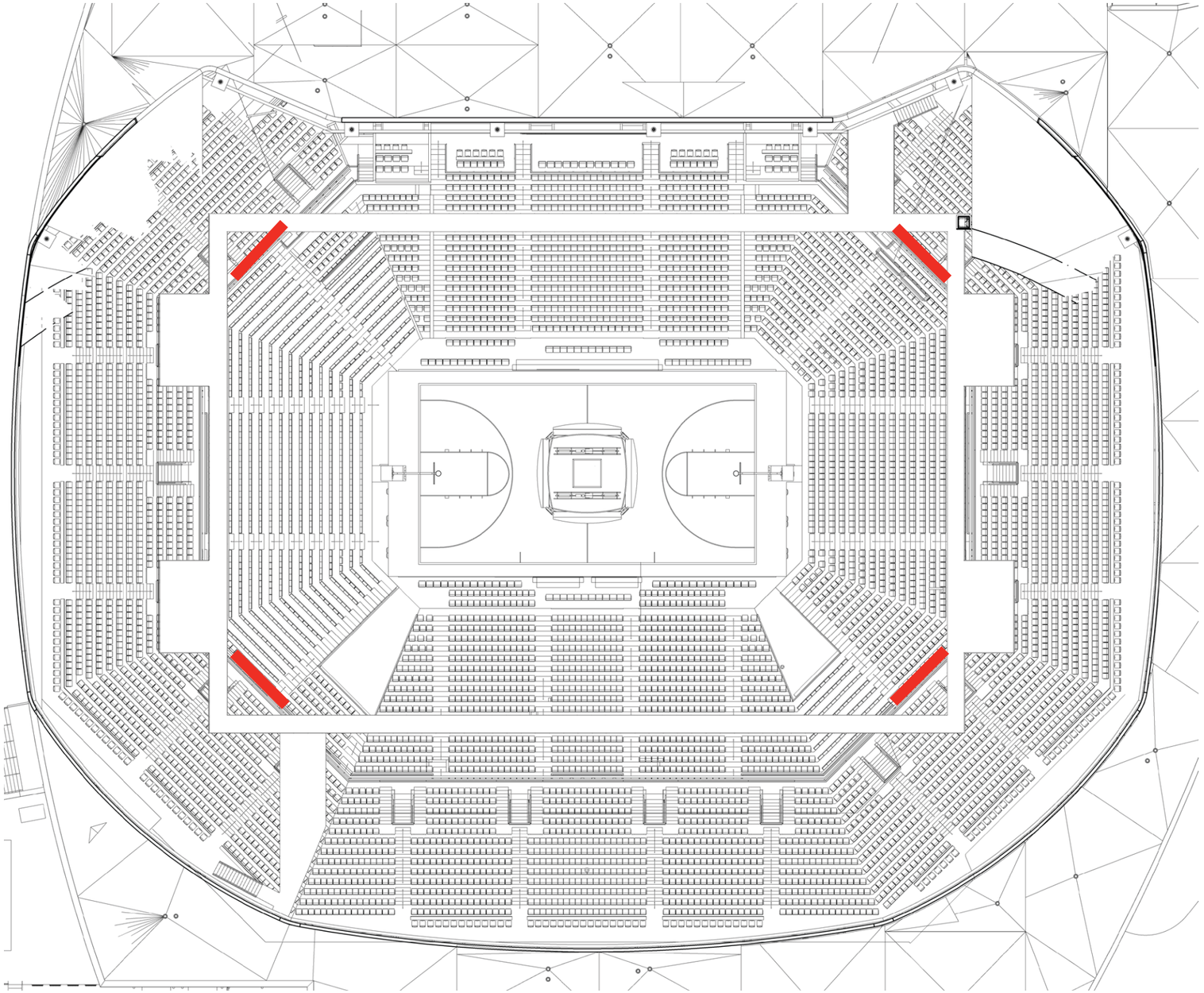

CORNER BOARDS FIXED DIGIT

ANTHONY JAMES PARTNERS

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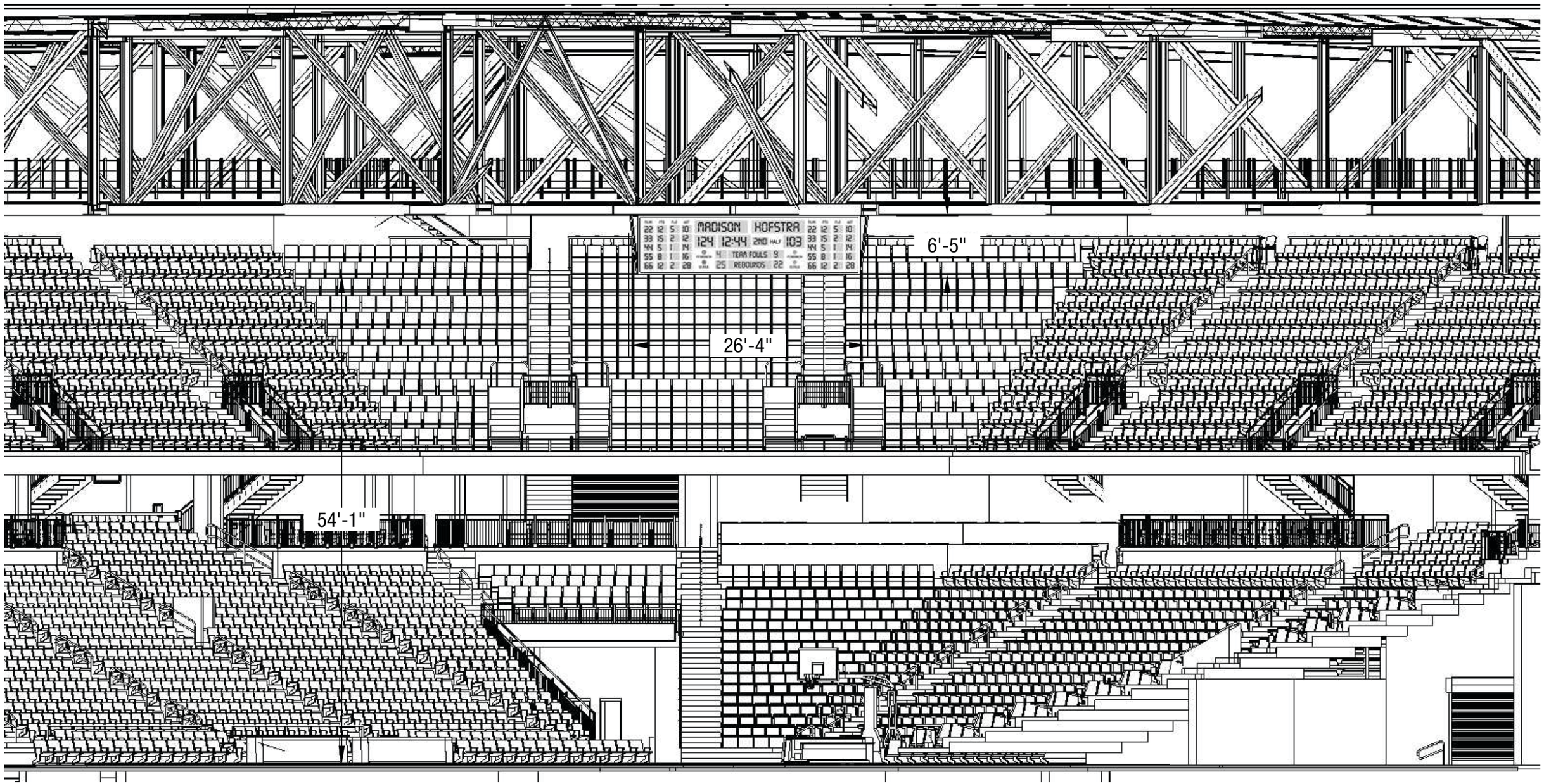
CONCEPT RENDERING



CORNER BOARDS FIXED DIGIT

ANTHONY JAMES PARTNERS

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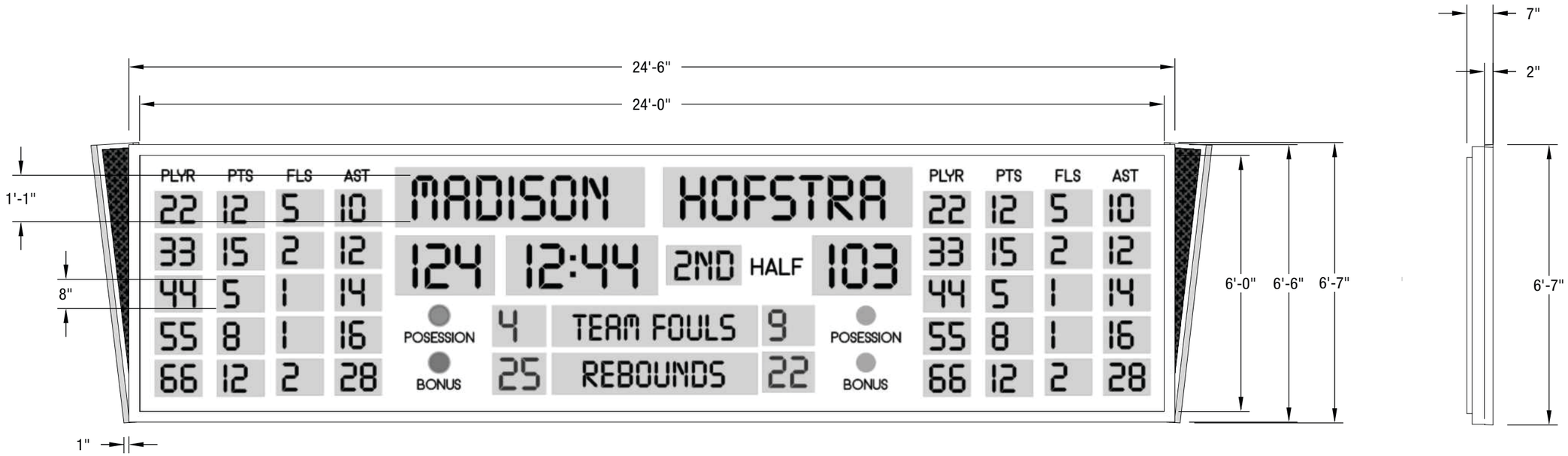
CORNER BOARDS

PORTABLE EXTRUDED ALUMINUM CABINET PAINTED PMS PURPLE #2685 WITH BLEED FACE, PAINTED SEMI-GLOSS BLACK; ROUTED FOR CUSTOM FIXED DIGIT DISPLAY. WHITE LED ALPHANUMERIC CHARACTERS FROM 8” TO 13”, REFLECTIVE WHITE VINYL CAPTIONS, GREEN/ RED BONUS INDICATORS. TWO PROGRAMMABLE HUSTLEBOARD ALPHANUMERIC PANELS (WHITE/AMBER) SHOWING VARIED STATISTICS. CORNER SECTIONS FABRICATED TO MATCH CENTER HUNG SCOREBOARD WEDGE FINISHES, AT REDUCED SCALE.



CORNER BOARDS FIXED DIGIT

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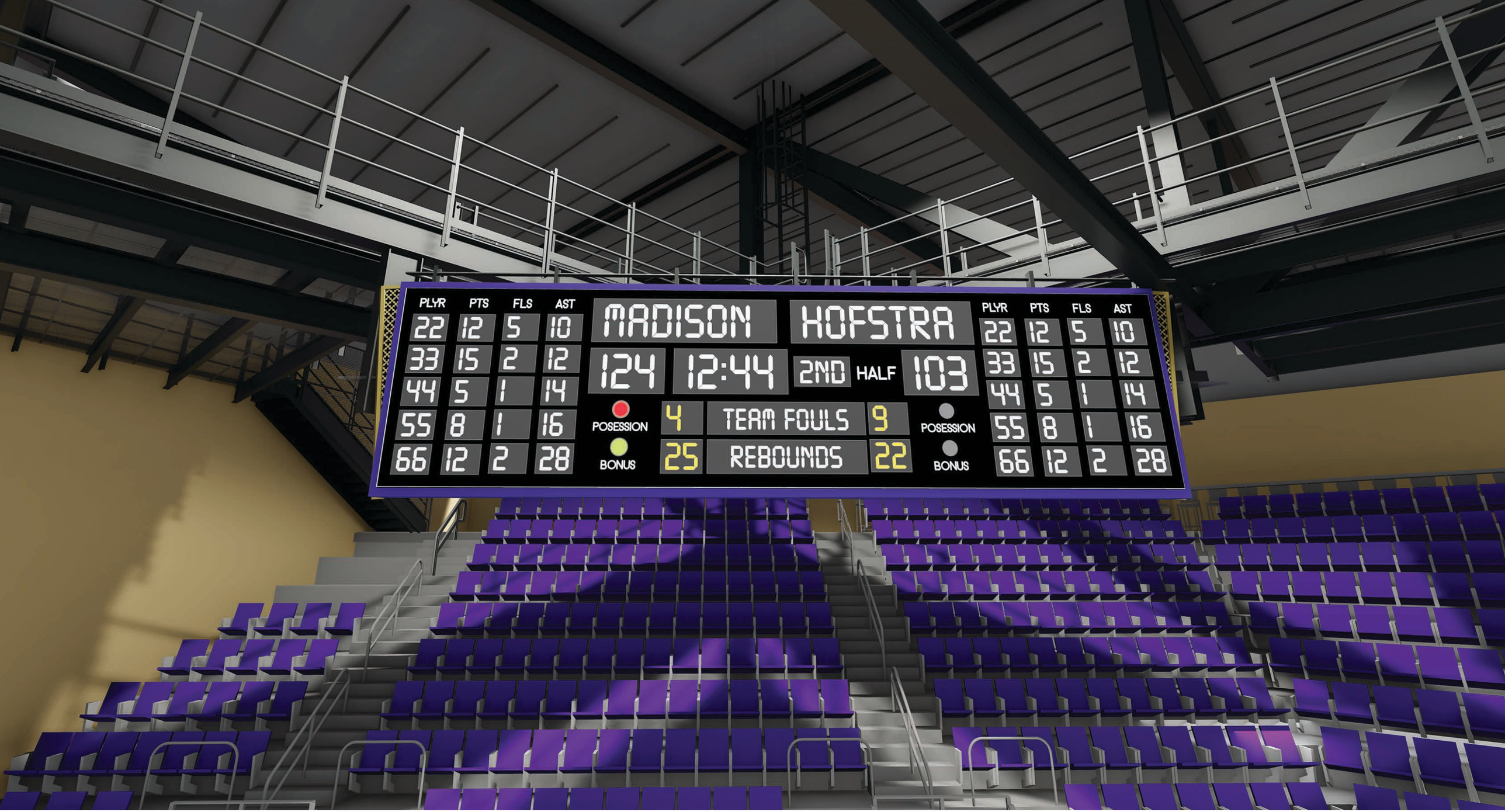

CORNER BOARDS FIXED DIGIT

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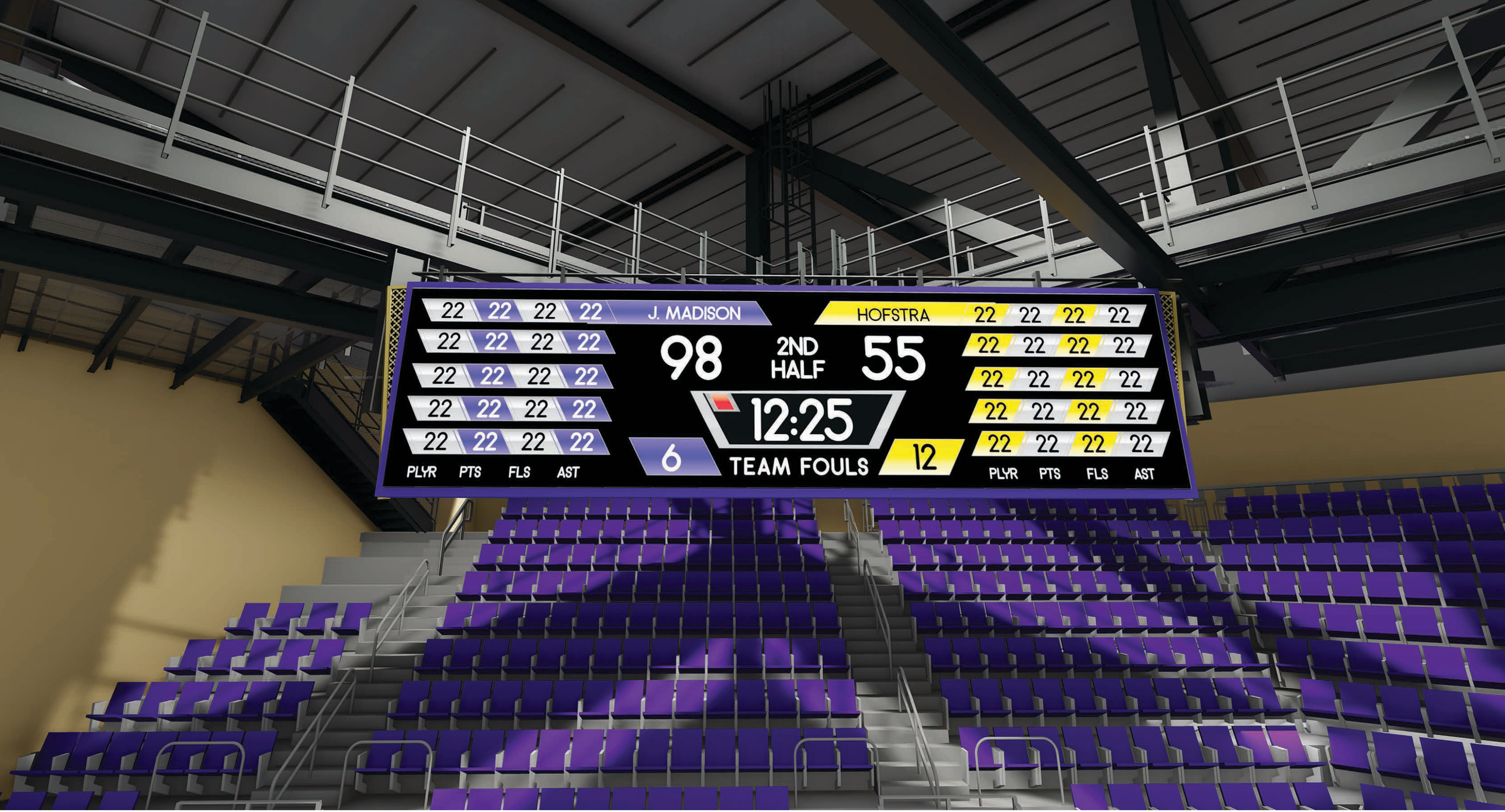
RFP RENDERINGS



CORNER BOARDS LED VIDEO ALTERNATE

ANTHONY JAMES PARTNERS

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RICHMOND, VIRGINIA 23233

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RFP RENDERINGS

CORNER BOARDS LED VIDEO ALTERNATE

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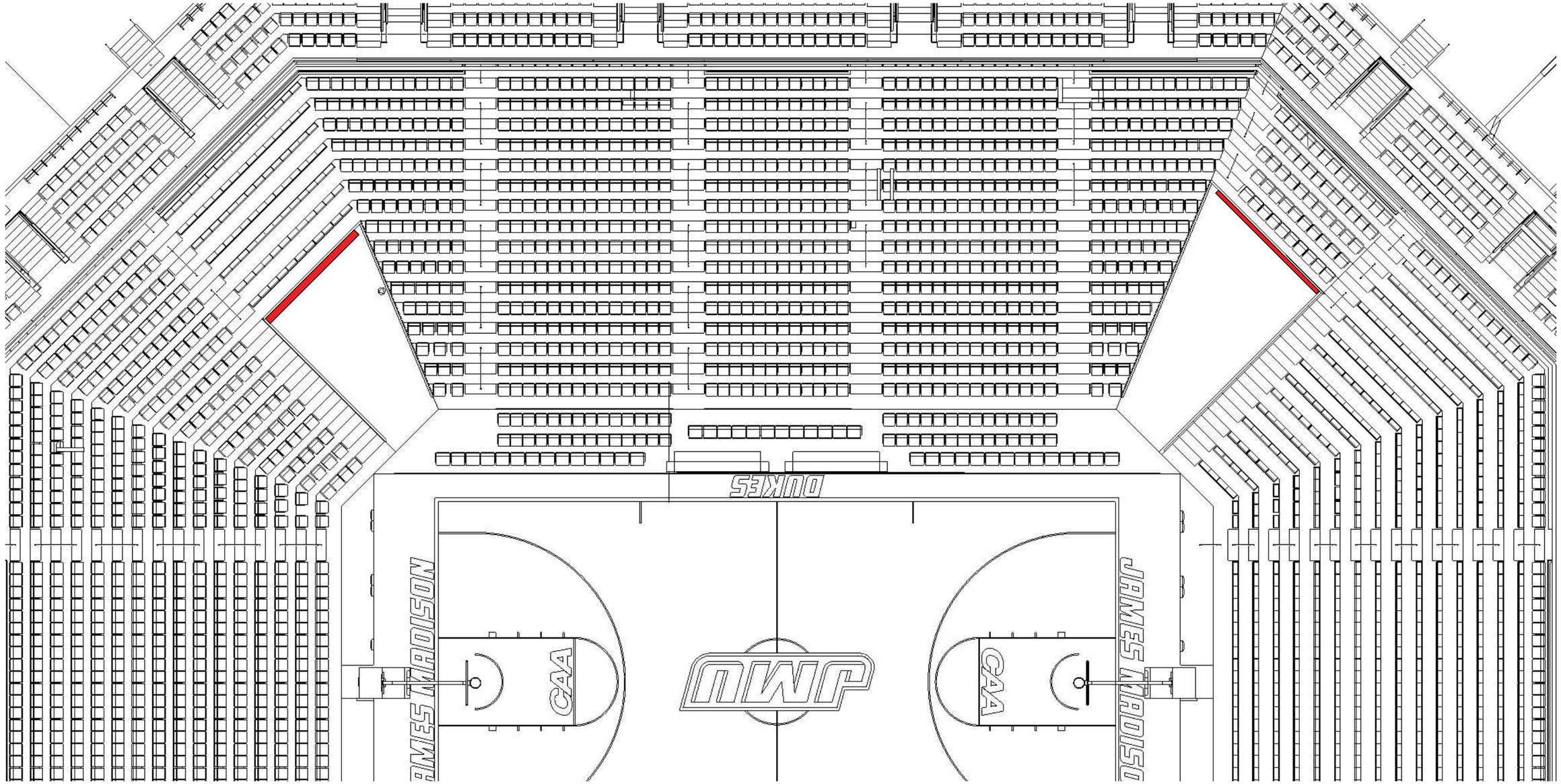
RFP RENDERINGS



VOMITORY LED DISPLAYS EVENT LEVEL

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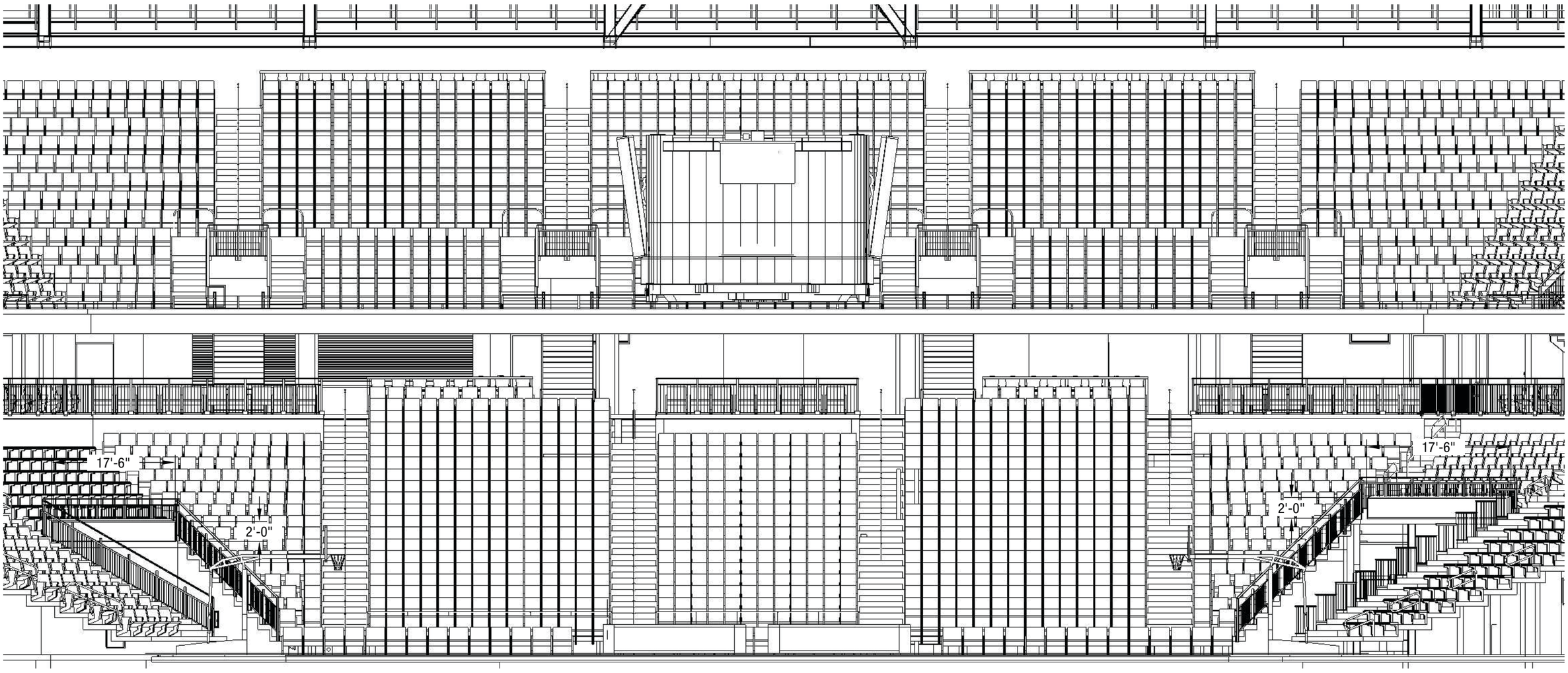
CONCEPT RENDERING



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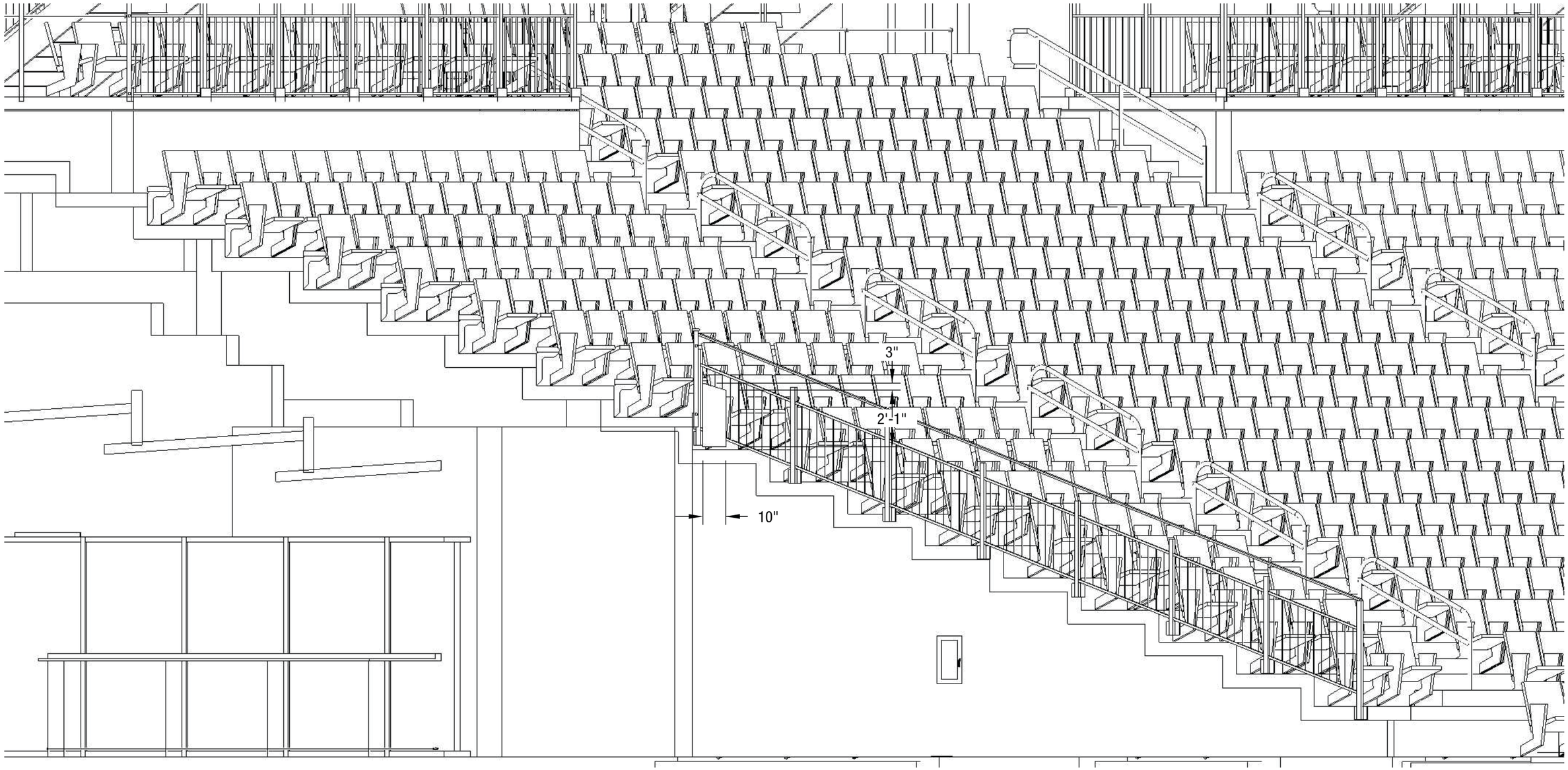
RFP RENDERINGS



VOMITORY LED DISPLAYS EVENT LEVEL

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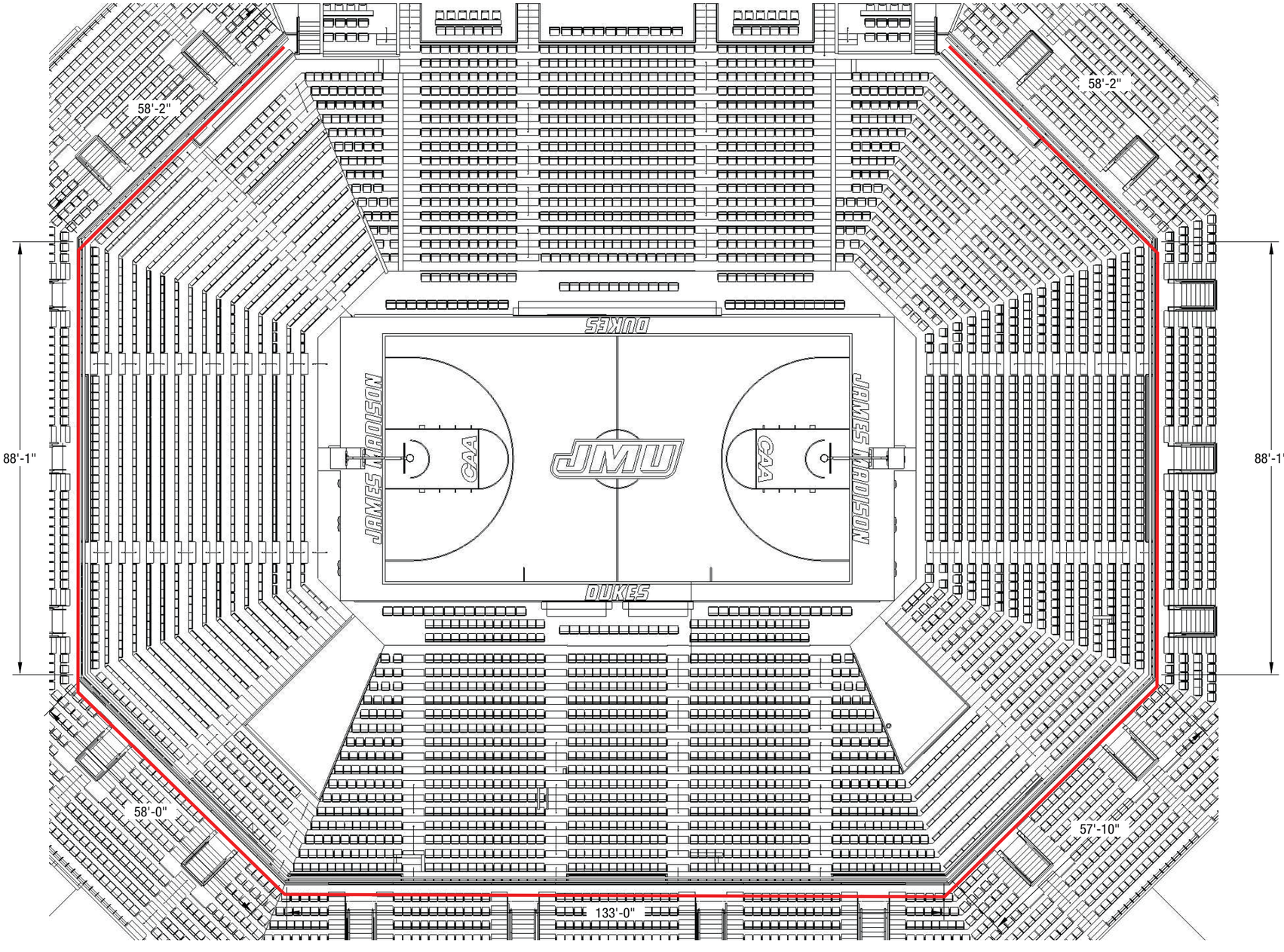
RFP RENDERINGS



LED RIBBON BOARD DISPLAYS

ANTHONY JAMES PARTNERS

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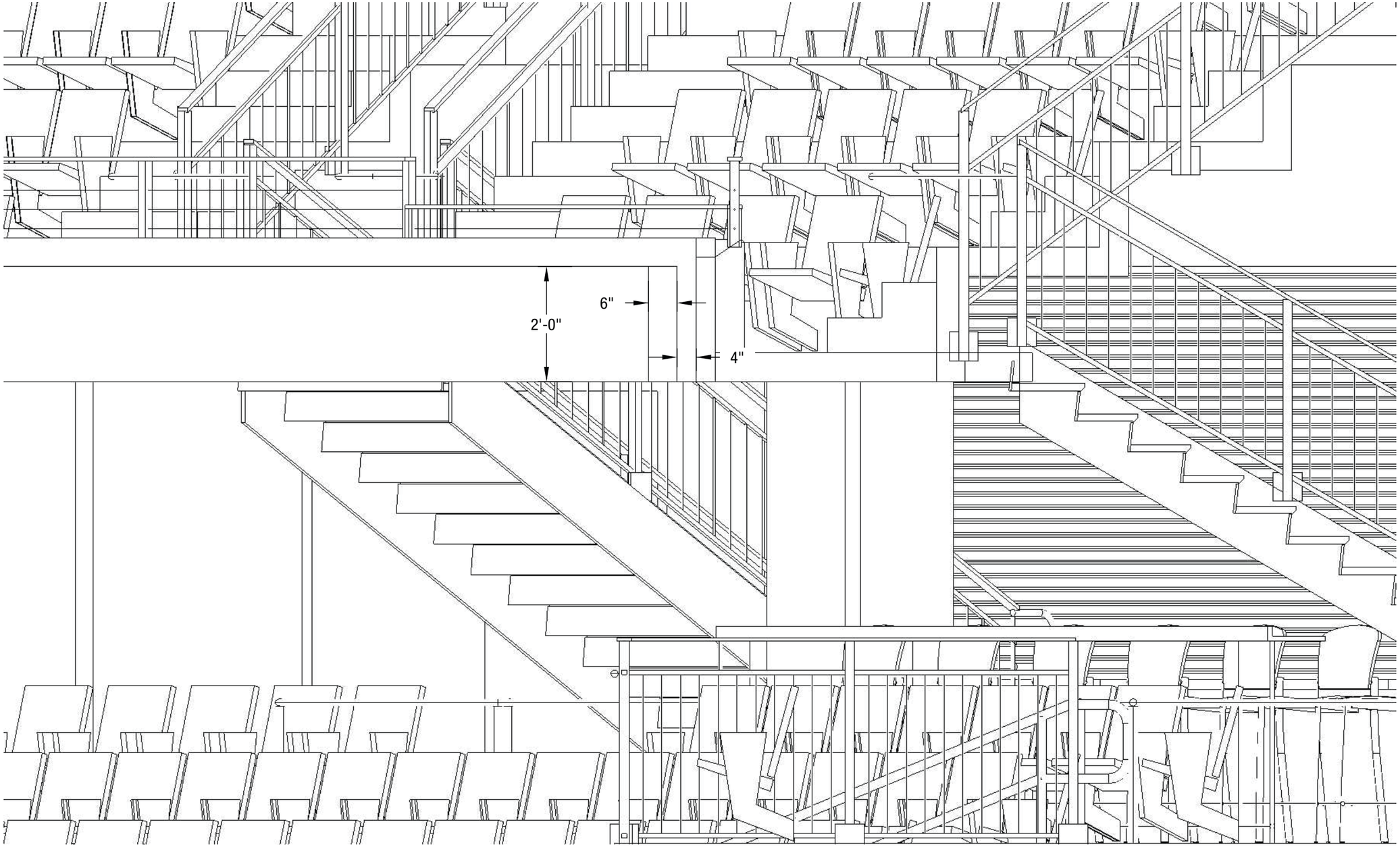
CONCEPT RENDERING



LED RIBBON BOARD DISPLAYS

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LED RIBBON BOARD DISPLAYS

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RFP RENDERINGS

ANTHONY JAMES PARTNERS

CMJ-1055 Attachment F

LED DISPLAY AND SCORING SYSTEM

NOTE: FILL IN ONLY GRAY SHADED CELLS

ALL PRODUCTS	BIDDER NAME
CENTER HUNG VIDEO DISPLAYS	$0
INSTALLATION: CENTER HUNG DISPLAYS	$0
RIBBON BOARDS	$0
INSTALLATION: RIBBON DISPLAYS	$0
VOMITORY LED DISPLAYS	$0
INSTALLATION: VOMITORY DISPLAYS	$0
LED COURTSIDE DISPLAY 1	$0
LED COURTSIDE DISPLAY 2	$0
SCORING SYSTEM	$0
GENERAL CONDITIONS	$0
OPERATING SYSTEM	
ANIMATION PACKAGE	
GRAND TOTAL BASE BID	$0

ALTERNATES 1 & 2 INCREASE RESOLUTION CENTER HUNG DISPLAYS	$0
ALTERNATE 3: LED CORNER DISPLAYS	$0

BID CLARIFICATIONS: STATE ANY EXCEPTIONS BEING TAKEN TO PRODUCT SPECS OR SCOPE OF WORK OR ANY VOLUNTARY ALTERNATES

ELECTRICAL SUBCONTRACTOR	
INSTALLATION SUBCONTRACTOR	
CONTROL SYSTEM	
LED MANUFACTURER	
LED CHIP SUPPLIER	

EXTENDED WARRANTY - PARTS AND LABOR	BIDDER NAME
YEAR 3	
YEAR 4	
YEAR 5	
YEAR 6	
YEAR 7	
YEAR 8	
YEAR 9	
YEAR 10	
EXTENDED WARRANTY PARTS ONLY	
YEAR 3	
YEAR 4	
YEAR 5	
YEAR 6	
YEAR 7	
YEAR 8	
YEAR 9	
YEAR 10	

Note: Extended warranty pricing should be based on annual payments, rather than upfront lump sum. Owner will reserve right to select option on an annual basis at provided price.

CENTER HUNG VIDEO DISPLAYS	SPECIFICATION	BIDDER NAME
Pixel Pitch	6	
Quantity	4	4
Pixel Height (Physical)	608	
Pixel Length (physical)	992	
Total Pixels	603,136	0
System Height (F)	11.9	
System Length (F)	19.3	
Total Sq. FT	230	0
Pixel Density sq. FT	2,626	#DIV/0!
Total Display Price		
Processing		
Shipping		
Total System Price		$0
Cost per Sq. Ft		#DIV/0!
Cost per Pixel		#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

ALTERNATE 1: CENTER HUNG VIDEO DISPLAYS	SPECIFICATION	BIDDER NAME
Pixel Pitch	4	
Quantity	4	4
Pixel Height (Physical)	1,056	
Pixel Length (physical)	1,488	
Total Pixels	1,571,328	0
System Height (F)	13.9	
System Length (F)	19.5	
Total Sq. FT	271	0
Pixel Density sq. FT	5,797	#DIV/0!
Total Display Price		
Processing		
Shipping		
Total System Price		$0
Cost per Sq. Ft		#DIV/0!
Cost per Pixel		#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

CENTER HUNG LOWER RING DISPLAY	SPECIFICATION	BIDDER NAME
Pixel Pitch	**10**	
Quantity	**1**	**1**
Pixel Height (Physical)	80	
Pixel Length (physical)	2,480	
Total Pixels	198,400	0
System Height (F)	2.6	
System Length (F)	81.0	
Total Sq. FT	211	0
Pixel Density sq. FT	942	#DIV/0!
Total Display Price		
Processing		
Shipping		
Total System Price		**$0**
Cost per Sq. Ft		#DIV/0!
Cost per Pixel		#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

ALTERNATE 2: CENTER HUNG LOWER RING DISPLAY	SPECIFICATION	BIDDER NAME
Pixel Pitch	**6**	
Quantity	**1**	**1**
Pixel Height (Physical)	128	
Pixel Length (physical)	4,160	
Total Pixels	532,480	0
System Height (F)	2.6	
System Length (F)	81.2	
Total Sq. FT	211	0
Pixel Density sq. FT	2,522	#DIV/0!
Total Display Price		
Processing		
Shipping		
Total System Price		**$0**
Cost per Sq. Ft		#DIV/0!
Cost per Pixel		#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

RIBBON BOARDS	SPECIFICATION	BIDDER NAME
Pixel Pitch	**10**	
Quantity	**1**	**1**
Pixel Height (Physical)	64	
Pixel Length (physical)	16,544	
Total Pixels	1,058,816	0
System Height (F)	2.0	
System Length (F)	542.0	
Total Sq. FT	1,084	0
Pixel Density sq. FT	977	#DIV/0!
Total Display Price		
Processing		
Shipping		
Total System Price		**$0**
Cost per Sq. Ft		#DIV/0!
Cost per Pixel		#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

ALTERNATE 3: CORNER LED DISPLAYS	SPECIFICATION	BIDDER NAME
Pixel Pitch	**10**	
Quantity	**4**	**4**
Pixel Height (Physical)	192	
Pixel Length (physical)	736	
Total Pixels	141,312	0
System Height (F)	6.2	
System Length (F)	24.2	
Total Sq. FT	150	0
Pixel Density sq. FT	942	#DIV/0!
Total Display Price		
Processing		
Shipping		
Total System Price		**$0**
Cost per Sq. Ft		#DIV/0!
Cost per Pixel		#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

VOMITORY LED DISPLAYS	SPECIFICATION	BIDDER NAME
Pixel Pitch	**10**	
Quantity	**2**	**2**
Pixel Height (Physical)	64	
Pixel Length (physical)	528/608	
Total Pixels	33792/38912	
System Height (F)	2.0	
System Length (F)	17/20	
Total Sq. FT	74	
Pixel Density sq. FT	#VALUE!	#DIV/0!
Total Display Price		
Processing		
Shipping		
Total System Price		**$0**
Cost per Sq. Ft		
Cost per Pixel		

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

LED COURTSIDE DISPLAY 1	SPECIFICATION	BIDDER NAME
Pixel Pitch	6	
Quantity	1	1
Pixel Height (Physical)	128	
Pixel Length (physical)	2,048	
Total Pixels	262,144	0
System Height (F)	2.4	
System Length (F)	40.0	
Total Sq. FT	96	0
Pixel Density sq. FT	2,731	#DIV/0!

Total Display Price	
Processing	
Tables + Installation	
Shipping	
Total System Price	$0
Cost per Sq. Ft	#DIV/0!
Cost per Pixel	#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

LED COURTSIDE DISPLAY 2	SPECIFICATION	BIDDER NAME
Pixel Pitch	**6**	
Quantity	**2**	**2**
Pixel Height (Physical)	128	
Pixel Length (physical)	608	
Total Pixels	77,824	0
System Height (F)	2.4	
System Length (F)	12.0	
Total Sq. FT	29	0
Pixel Density sq. FT	2,702	#DIV/0!

Total Display Price	
Processing	
Tables + Installation	
Shipping	
Total System Price	**$0**
Cost per Sq. Ft	#DIV/0!
Cost per Pixel	#DIV/0!

Total Power Draw - Max Amps based on 208V 3P		
SPECIFICATIONS		
Brightness (nits)	2000	
Viewing Angle - Horizontal	140	
Viewing Angle - Vertical	140	

INSTALLATION: GENERAL CONDITIONS	$0
Project Management	
Training and Event Support	
General Conditions	
Engineering, Permits, Fees	
Administrative and Legal	
Travel and Expenses	

INSTALLATION: CENTER HUNG DISPLAYS	$0
Structural Steel and Installation	
Hoist	
Component Installation	
Heavy Equipment Rental	
Underbelly signage	
Channel Letters and Footer	
Cladding, Trim, Flashing and Finishes	
Electrical and Data	

INSTALLATION: RIBBON DISPLAYS	$0
Secondary Structural Steel and Installation	
Component Installation	
Heavy Equipment Rental	
Cladding, Trim, Flashing and Finishes	
Electrical and Data	

INSTALLATION: ALTERNATE 3 CORNER LED DISPLAYS	$0
Secondary Structural Steel and Installation	
Component Installation	
Heavy Equipment Rental	
Cladding, Trim, Flashing and Finishes	
Electrical and Data	

INSTALLATION: VOMITORY DISPLAYS	$0
Secondary Structural Steel and Installation	
Component Installation	
Heavy Equipment Rental	
Cladding, Trim, Flashing and Finishes	
Electrical and Data	

SCORING SYSTEM	$0
Corner Fixed Digit Display (Qty 4 Competition Court)	
Fixed Digit Display (Qty 1 Practice Court)	
Shot Clocks, Brackets and Strip Lights	
Locker Room Clocks	
Horns	
Scoreboard Controllers	
Stats Computer	
Data Distribution Panel	

JAMES MADISON UNIVERSITY.

October 3, 2019

ADDENDUM NO.: One

TO ALL OFFERORS:

REFERENCE:	Request for Proposal No:	**RFP# CMJ-1055**
	Dated:	September 13, 2019
	Commodity:	Atlantic Union Bank Center – LED Displays Package
	RFP Closing On:	**October 17, 2019 at 2:00pm**

Please note the clarifications and/or changes made on this proposal program:

1. **QUESTION: in regards to your RFP# CMJ-1055, would this Bid be open to a substitution in regards to its LED's?**

   ANSWER: The following is specified within the RFP: "LED Supplier: Only Nichia or Cree LED's will be accepted."

2. **QUESTION: Please provide construction drawings showing power demarcations, conduit runs, and structure steel.**

   ANSWER: CAD drawings will be provided to the awarded vendor.

3. **QUESTION:** ***2.14 – C - The processor shall support the following inputs: HD-SDI video in either 720p or 1080i, SD-SDI (480p) and SDI 16x9 anamorphic signal, and DVI video.*** **Is the need to support SDI video inputs for these: (Corner, Ribbon, Vomitory, Courtside) accurate, as they will not be showing live video?**

   ANSWER: All displays processing will need the capability of accepting an HD-SDI input.

4. **QUESTION:** ***2.15 – I - One (1) Stats computer to interface with Stats crew for player stat displays.*** **Will the school be utilizing Stat Crew or NCAA LiveStats?**

   ANSWER: Stat Crew will be used.

5. **QUESTION: Under section 1.4 General Equipment Specifications: All equipment and materials, except University furnished, shall be new and the latest version at the time of proposal and shall conform to applicable UL, ULC, CSA, or ANSI provisions: Will a component that is ETL listed be acceptable?**

   ANSWER: ETL is acceptable.

MSC 5720
752 Ott Street, Room 1042
Wine Price Building
Harrisonburg, VA 22807
Office of 540.568.3145 Phone
PROCUREMENT SERVICES 540.568.7936 Fax

6. **QUESTION: Please provide (or grant access to) project architectural, structural, electrical and AV drawings.**

   ANSWER: CAD drawings will be provided to the awarded vendor.

7. **QUESTION: Please provide the project schedule as defined by the CM.**

   ANSWER: PER RFP item IV.E. anticipated delivery and install will be approximately July 2019, additional schedule information will be provided to awarded vendor.

8. **QUESTION: *Attachment D, Section 2.15.H* – Shall a third scoring controller be required to permanently operate in the practice gym?**

   ANSWER: Yes, there should be a dedicated scoring controller for the practice court in addition to the primary and backup.

9. **QUESTION: *Attachment D, Section 3.1.8* – Please provide drawings of the video front end system that we are to integrate to.**

   ANSWER: The requirement for the front end system will fall under this scope of work. The following language is added as an addendum to Section 2 – Products.

   2.15 CENTER HUNG LED DISPLAYS – OPERATING SYSTEM

   A. Contractor shall provide a fully functional operating system capable of production, CG and game operation.

   B. The system must have the ability to support DVE moves, enabling dynamic switching between full screen and vectored views with areas for sponsor ads, statistics, social media, closed caption and game in progress data for the scoring system.

   C. The system must provide ability to display still and animated overlays, crawl text, and manipulate graphics.

   D. The system must be capable of accepting and displaying a serial feed from the scoring system and any and all 3rd party stats, social media, closed caption and sport ticker feeds as required.

   E. Contractor shall provide a remote user station.

   F. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the video display from a location outside of the display housing.

   G. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

   2.16 LED RIBBON DISPLAY AND COURTSIDE DISPLAYS OPERATING SYSTEM

   A. Provide a fully functional operating system capable of CG, exposure time tracking, and game operation. Systems must be capable of playing back industry standard still and animation file formats. It is understood that different operating control systems have preferred file formats. File conversion is acceptable.

B. The system must be capable of accepting a serial feed from the scoring controller and any and all 3rd party stats and sport ticker feeds as required.

C. Image playback is to be stutter-free for both static and animated graphics.

D. System must have hot key functionality providing the ability for all new displays in this package to be triggered with a single button.

E. Contractor shall provide a remote user station.

F. Contractor is responsible for providing all required components, racks and wiring necessary to manage and control the LED display from a location outside of the display housing.

G. System architecture must allow for 100% processing and control redundancy. Back up units shall be installed in the equipment racks and shall be hot swappable.

10. **QUESTION: Attachment D, Section 3.1.9 – Please state whether any permits are required for this work.**

    ANSWER: The main project permit should cover all work.

11. **QUESTION: Attachment E, pages 23–25 – Has the primary structure been engineered to support the live loads of a catwalk to facilitate rear service?**

    ANSWER: The displays referenced in Attachment E on page 23 and 25 are intended to be front service from a lift. There is no requirement for catwalks.

12. **Question: RFP, Section VII.Y Taxes – It states that the Commonwealth is "normally" exempt from State sales tax and "usually" free of Federal excise and transportation tax. Please confirm that the project is exempt from collecting all taxes.**

    ANSWER: JMU believes that the University will be exempt from taxes for this project but cannot confirm 100% without specific details on the taxes in question and a chance to research internally.

13. **QUESTION: Please advise if the remainder of the AV package has been released. If it has not yet been released, please provide an approx. date when it will be.**

    ANSWER: Opportunities are posted on the eVA VBO system as needed by JMU (https://m.vendor.epro.cgipdc.com/Vendor/public/AllOpportunities).

Signify receipt of this addendum by initialing *"Addendum #1_____"* on the signature page of your proposal.

Sincerely,

Colleen Johnson
Buyer Specialist
Phone: (540-568-3137)

JAMES MADISON UNIVERSITY

October 14, 2019

ADDENDUM NO.: Two

TO ALL OFFERORS:

REFERENCE:	Request for Proposal No:	**RFP# CMJ-1055**
	Dated:	September 13, 2019
	Commodity:	Atlantic Union Bank Center – LED Displays Package
	RFP Closing On:	**October 17, 2019 at 2:00pm**

Please note the clarifications and/or changes made on this proposal program:

1. **Tentative install schedule listed in RFP item IV.E. and Addendum One should be as follows:**

   The University anticipates delivery and installation will be approximately **July 20202~~2019~~**, subject to change based on overall project schedule, to be coordinated and confirmed by the awarded vendor with the University and General Contractor. Describe, in detail, your ability to meet the tentative schedule provided.

2. **Ability to perform a site survey.**

   The building is under construction. No site visits are available for the facility prior to RFP response deadline.

Signify receipt of this addendum by initialing *"Addendum #2_____"* on the signature page of your proposal.

Sincerely,

Colleen Johnson
Buyer Specialist
Phone: (540-568-3137)

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