

**METROPOLITAN ENTERTAINMENT & CONVENTION AUTHORITY
REQUEST FOR PROPOSAL 25048
STADIUM LED DISPLAY SYSTEMS
JANUARY 8, 2025**

PART I - INTRODUCTION

The Metropolitan Entertainment & Convention Authority (“MECA”) is requesting proposals from qualified LED display manufacturers and direct sales representatives/organizations interested in performing all services necessary to remove and replace existing, as well as add to LED Display Systems at Charles Schwab Field Omaha (“CSFO”). MECA is responsible for managing the operations of this Facility.

The Facility is in downtown Omaha, NE. CSFO overall is 494,397 square feet (excluding playing field) and includes a 24,500-seating bowl.

1. Anticipated RFP Schedule

This Request for Proposal (RFP) and the guidelines set forth for responses hereto are intended to provide MECA with significant substantive information early in the negotiating process so that final agreement can be reached quickly. MECA has therefore established the following schedule (times are CST):

| | |
|-----------------------------|--|
| RFP Issued | Wednesday, January 8, 2025 |
| * MANDATORY Pre-bid Meeting | Wednesday, January 15, 2025, at 1:00pm |
| Final Questions | Wednesday, January 22, 2025, at 1:00pm |
| Due/Public Opening (time) | Friday, February 7, 2025, at 10:00am |
| Post Bid Interviews | Will be scheduled February 19-21, 2025 |

* This is a mandatory pre-bid meeting. All Bidders who may wish to provide a Proposal must be present at this meeting. Bidders must notify MECA at kshiers@omahameca.com of their intention to attend this meeting no later than 2:00 pm Tuesday, January 14, 2025.

2. Bidder Inquiries

All inquiries regarding this RFP must be made in writing and addressed to kshiers@omahameca.com. Oral explanations or answers shall not be valid. Revisions, clarifications, and/or additional information will be issued to all Bidders in the form of an RFP addendum. All or any RFP addenda issued to the Bidders prior to the bid due date shall become a part of the bidding documents and the cost of such work shall be included in the bids.

3. Delivery of Proposals

Two printed copies and one electronic copy of proposals must be submitted and signed by an officer of the company, and delivered before the time set forth in Section 1 to MECA’s offices:

MECA
RE: Bid on Stadium LED Display Systems 25048
455 North 10th Street
Omaha, NE 68102

All proposals received will be publicly opened at MECA's offices at the time set forth in Section 1. Bidders may attend; however, attendance is not required. MECA reserves the right to accept or reject late proposals or to extend the time for response for one or more respondents. If sending a bid electronically, email to: RFP@omahameca.com. Bid will not be accepted to a personal email box.

4. Criteria for Evaluation of Proposals

4.1 Evaluation of Compliance with RFP Guidelines

Each proposal received will be evaluated to determine whether it generally supplies the information requested in this RFP. MECA may (at its sole discretion) disqualify any proposal, which it deems incomplete or non-compliant. All proposals shall be valid for acceptance for a period of ninety (90) calendar days.

4.2 Evaluation of Proposals

Proposals will be evaluated based on the following criteria: (a) the company profile, background, experience, and references of the proposing party; (b) service and support; (c) ability to agree to the requested contractual terms and conditions; and (d) financial considerations. Other criteria may be considered by MECA based on the nature of the proposals received.

4.3 Selection of Respondents

Based on the foregoing criteria, MECA will select one or more entities for further negotiations. It is possible that based on the responses, MECA will elect to negotiate with more than one respondent. In such event, all selected entities will be informed that others have also been selected for negotiation, although MECA reserves the right to not disclose the identity of the other selected respondents.

MECA will notify the successful Bidder of the acceptance of its proposal. Such notice will be sent to the name and email address of the bidder as stated in its proposal.

4.4 Reservations

MECA reserves the unqualified right to reject any or all proposals, extend the time for receipt of proposals from all Bidders, waive defects or technicalities, correct discrepancies, advertise for new proposals, or to take any other action that MECA determines, at its sole discretion, to be in its best interest. MECA reserves the right to award the contract to other than the low bidder. Any such determinations or actions may be made without notice. All costs of preparation and submission of a proposal shall be at the risk and expense of the respondent. MECA shall have no liability in connection with a proposal or any respondent.

4.5 Proposals

All bids and proposals submitted by the various Bidders for this work become the property of MECA. Neither MECA nor the Bidders shall disclose the contents of any proposal to the other parties prior to the announcement of the award.

5. Contractual Terms and Conditions

Review and provide a detailed response whether the following contractual terms and conditions are agreeable. The Bidder's Proposal shall specifically note any requested modifications to this section, which MECA may take into consideration during the review process, at MECA's discretion.

5.1 Purchase Agreement and Payment

The successful Bidder will be required to execute a MECA Purchase Agreement prior to performing any portion of work required within the specifications of this RFP. A sample MECA Purchase Agreement is available upon request.

Payment terms will be Net 30 days from installation and acceptance by MECA.

5.2 Termination

The Agreement is terminable by MECA upon minimum sixty (60) days written notice, without penalty or cause.

5.3 Insurance

The successful Bidder must provide evidence of the following types of insurance during the term of the Agreement. For the avoidance of doubt, such coverage and limits are minimum requirements and shall not be deemed as a limitation on vendor's liability under any provision of any agreement. Approval of the insurance by MECA shall not relieve or decrease the liability of the vendor hereunder. Note any available insurance proceeds in excess of the specified minimum limits and coverage shall be available to an additional insured.

Commercial General Liability Insurance (including premises operation liability, contractual liability and product/completed operations liability) and Automobile Liability coverage (owned, non-owned and hired coverages) with minimum limits of \$1,000,000 Combined Single Limit (Auto Liability), and \$1,000,000 Per Occurrence, and \$2,000,000 General Aggregate. Commercial General Liability aggregate limit will apply on a "per location" basis. The insurance must protect the Bidder and MECA from claims for personal injury (including bodily injury and death) and property damage which may arise from or in connection with the performance of the Bidder's services hereunder or from or out of any negligent act or omission of the Bidder, its officers, directors, agents or employees.

Workers' Compensation Insurance as required by applicable law. Policy shall be endorsed to include Waiver of Subrogation against MECA, the City of Omaha, their employees, officers and legal representatives.

Employer's Liability Insurance with minimum limits of:

\$500,000 Each Accident—Bodily Injury by Accident

\$1,000,000 Policy Limit—Bodily Injury by Disease

\$500,000 Each Employee—Bodily Injury by Disease

Umbrella or Excess Liability: additional \$5,000,000. Coverage is to apply to excess of Commercial General, Employer's Liability, and Automobile Liability policies.

All such insurance required above shall be with companies and on forms acceptable to MECA and shall provide that the coverage thereunder may not be reduced or canceled unless thirty (30) days unrestricted prior written notice thereof is furnished to MECA. All insurance shall be primary and not contributory. All insurance shall be written by companies with a Best's Key Rating Guide (Property-Casualty, United States) rating of A or better and a Best's Financial Size Category of Class VI or better. Within thirty (30) days

of the date on which coverage is to be provided hereunder, the successful Bidder shall furnish to MECA certificates of insurance along with copies of endorsements evidencing compliance to the above requirements. Such certificates and insurance policies shall name MECA and the City of Omaha as additional insureds on a primary basis, and contain a waiver of subrogation, in which the insurer waives any claim or right to recover against MECA, the City of Omaha, their officers, agents or employees. The additional insured requirement does not apply to Workers' Compensation.

5.3 Indemnification

Bidder does hereby covenant and agree to indemnify, defend and hold harmless MECA, and the City of Omaha, their officers, directors, employees, agents and representatives, from and against all claims, demands, losses, suits, damages, liabilities, costs and expenses (including reasonable attorneys' fees) arising out of or relating to any claim, demand or judgment for property loss or damage (including loss of use of the Facilities), and/or personal injury, including death, arising out of the Products and Services furnished hereunder by Bidder and Bidder's Personnel except to the extent same is caused by the negligence or reckless conduct of MECA or its employees or agents.

MECA is not responsible for any equipment, furnishings, supplies or other property or products owned by Bidder and used or stored at the Facilities, nor is it responsible for damage resulting from power failure, flood, fire, explosion or other similar causes. In no event is MECA responsible for consequential damages.

The provisions requiring the furnishing of personal injury liability or property damage liability insurance shall not be construed to affect or impair the generality of the forgoing.

The successful Bidder shall represent and warrant in the contract that the components of this RFP to be purchased for the Facilities shall not violate or infringe upon any patent, copyright, trademark, trade secret or other intellectual or proprietary right of any third party. The Bidder shall agree to defend, protect and hold harmless MECA and its related parties from and against any and all liabilities, actions, losses, awards, damages, costs, claims or expenses including reasonable attorneys' fees incurred by them as a result of any claim that the components of this RFP to be purchased for the Facilities are illegal or infringe upon any third party patent, copyright, trademark, trade secret or other intellectual or proprietary right.

5.4 RFP and Bidder's Proposal

This RFP and the Bidder's proposal thereto shall become part of any contract that may be entered as a result of this RFP.

5.5 Warranty

The Bidder shall warrant in the contract that the components of this RFP to be purchased for the Facilities shall be new and of good and workmanlike quality and fit for the use intended. The Bidder shall further warrant that during the manufacturer's warranty period that the components will operate in accordance with the manufacturer's specifications. The manufacturer's warranty period shall be specified on the Bidder's proposal and shall begin on the date of MECA's acceptance of the installation. All other specific promises and warranties made by Bidder in the RFP Response or bid process generally shall also be included in the final contract.

5.6 Scope, Quality of Work Guarantee

The successful Bidder shall furnish all equipment, labor, and personnel necessary to perform and complete the work.

5.7 Conduct of Personnel

No business, other than that specifically outlined in the RFP, may be conducted by personnel of the Bidder while on the premises of the Facilities.

The Bidder shall be responsible for all actions of its employees, while they are assigned to the Facilities. The employees shall at all times comply with applicable laws, ordinances, and regulations of local, state, and federal agencies, along with all regulations, policies, and procedures of MECA.

Bidder certifies and agrees that, with respect to its staff and employees who will participate in the performance of this Agreement, the Bidder shall maintain a workplace free of drugs and alcohol during the term of this contract.

If, for whatever reason, MECA determines that personnel assigned to the Facilities are unsatisfactory, the Bidder shall replace the individual immediately or as mutually agreed upon.

5.8 Sales Tax

All federal, state and local taxes, including without limitation sales, use, excise, privilege, transactional, gross receipts, ad valorem or any other transactional tax or customs and duties ("Tax" or "Taxes") paid or payable by Bidder, however designated, levied or based on amounts payable to Bidder under or in connection with the RFP have been included in the pricing set forth on Attachment A – Proposal Form as required by the relative taxing authorities.

MECA is a sales taxable entity and as such, Bidder warrants that sales tax is included in the price provided on Attachment A – Proposal Form. Notwithstanding anything in the Agreement to the contrary, the successful Bidder shall indemnify defend and hold harmless, MECA for any sales tax audit assessment against MECA relating to the amount of Nebraska sales tax charged under this Agreement.

PART II - SCOPE OF PROJECT

Section 1 - Overview

1.1 ATTACHMENTS

- A. Proposal Form
- B. Performance Standard (complete one per display being proposed)
- C. Structural Drawings
- D. Existing Video Display Drawings

Attachments B through F will be provided via a link to bidders who have confirmed they will be in attendance at the pre-bid meeting.

- E. Currently Available Amperages and Drawings
- F. Left Field Tower Study

1.2 REFERENCES

- A. National Fire Protection Association (N.F.P.A.).
- B. American National Safety Institute (A.N.S.I.).
- C. National Electrical Code (N.E.C.).
- D. Underwriters Laboratories (U.L.).
- E. Electronics Industries Association (E.I.A).
- F. Standard for Electric Signs, UL-48.
- G. Standard for Control Centers for Changing Message Type Signs, UL-1433.
- H. Federal Communications Commission Regulation Part 15.
- I. Project Drawings

1.3 DEFINITION OF TERMS AND ABBREVIATIONS

- A. Provide: to supply and install.
- B. Supply: to supply but not install.
- C. Install: to install but not supply.
- D. OFE: Owner furnished (supplied) equipment. Equipment will be provided to contractor for installation.
- E. NIC: Not In Contract. Refers to items that are not included in the scope of work outlined in this section but may be shown for coordination purposes or reference.
- F. Future: Equipment that will be provided by owner at a later date. Accommodations shall be provided for future equipment as shown on the drawings.
- G. Contract Documents: This RFP and included conceptual display drawings
- H. Owner: MECA
- I. VM: Value Management

1.4 RESPONSIBILITY AND RELATED WORK

- A. Coordinate scheduling of work with the Owner.

- B. The systems described in this section will be called the “Display Systems” and the installer will be named “The Contractor.” The Contractor will provide all labor, materials, equipment, necessary tools, test equipment, hoisting, transportation, supervision and coordination necessary to complete the installation of the “Display Systems” as described in the construction documentation.
- C. The Contract Documents are intended to include or imply all items required for the proper execution and completion of the work.
- D. The Display Systems consist of the materials, equipment and systems described in this specification, related drawing details, and any schedules that are part of the contract documents. This Contract is for equipment, material, installation and training. The work of this section includes complete and operational Display Systems.
- E. The Contractor will provide minor accessories, such as connectors, adapters, matching devices and equipment items needed for a complete system, even if not specifically mentioned herein or on the drawings, without claim for additional payment.
- F. The Contractor shall provide complete, turnkey Display Systems, fully tested and ready for intended use according to the design intent of the contract documents.
- G. Obtain all insurance, bonding, licenses and permits necessary to complete the work, and for operation by the Owner.
- H. Contractor will comply with all union jurisdiction and prevailing wage requirements for the completion of the project.
- I. If a conflict is identified between the Contract Documents and the appropriate codes and is reported to the Owner and confirmed prior to contract award, a MECA representative will prepare the necessary clarification or revision. When a conflict is reported after contract award, the Contractor will propose a resolution of the conflict and, upon approval, perform related work.
- J. Coordinate with other Contractors as required and in a timely fashion to convey all information (scheduling, structural, electrical, technical or otherwise) necessary to complete the project.
- K. The Contractor shall be responsible for:
 - 1. Verification of dimensions and conditions at the project for the display and control equipment locations prior to ordering/manufacturing.
 - 2. Submittal of State registered structural stamped designs and calculations with the shop drawing submittals. This will be for the final connection from the provided steel tubing to the display only.
 - 3. Provision of all transportation and hoisting.
 - 4. Furnish protective covering during construction/installation to prevent damage or entrance of foreign matter.
 - 5. Replace at no expense to Owner/project, product damaged during delivery, storage or handling.
 - 6. Provision of safe and protected storage. The owner takes no responsibility for damage or theft relating to negligence in failure to secure equipment by The Contractor.

7. Installation in accordance with the Contract Documents, manufacturer's recommendations, and all applicable code requirements.
8. Provision of complete assemblies (sub-structure, enclosure, and finishes) and all necessary attachment hardware, and framing.
9. Provision, termination and testing of all necessary electrical power, signal cabling, motor control cabling and remote operation control cabling. All panel and branch circuit distribution is by others.
10. Provision of all transmission, processing, receiver electronics to distribute control signals to the display.
11. Coordination of any installation of rack mounted devices into equipment racks (provided by others) with other related trades with equipment in the same space.
12. Connecting ground point to all equipment in accordance with NEC code and standards specified. Coordinate with Division 26.
13. Provision of a dielectrically insulated ground joint connection that will isolate any conduit systems from the chassis of the rack where conduits enter any equipment racks furnished under this section.
14. UL Certification of all pertinent equipment including control and display systems attached with identification labels. If any equipment requiring certification is not UL Certified, then The Contractor shall arrange onsite inspections and certification at no additional expense to the contract/project.
15. All control equipment to operate the display shall be located in the facilities' control room. Any necessary signal/control conduit and cable raceways for cable runs to and from display components will be provided by others.
16. All submittals detailed within the Contract Documents
17. Initial tests and adjustments
18. Final performance testing, calibration and adjustment prior to first use.
19. Maintenance services contract, warranty for equipment and workmanship.
20. Provision of required shelving and inventory labels for all spare equipment.
21. Provisions of pre-event cleaning of the displays within 14 days of the first event held in facility for the first year.
22. Provide protection for the existing finishes during installation. Any damage caused during construction is the full responsibility of the Contractor to repair or replace at no additional cost.
23. Contractor to remove/dismantle all existing displays. Coordinate with Owner for repurpose or disposal. This contract should not include labor for repurposing, just the removal.

1.5 PROJECT SCHEDULE

- A. All work must be scheduled with MECA to accommodate the event schedule. This may require that the work be completed in phases, including evenings and weekends. This is a lump sum, not-to-exceed, agreement. At no time will MECA pay additional fees for overtime or non-business hours worked.
- B. It is anticipated that an agreement will be in place by March 11, 2025. The current timeframe for work to be completed is June and July of 2025. MECA will work with the awarded Bidder to develop a more detailed project schedule and extend working dates, if needed. However, all work pertaining to this contract to be complete by December 1, 2025.

- C. Liquidated damages of \$500.00 per day after December 1, 2025 will be assessed if project is not complete unless discussed and approved with MECA.

1.6 SYSTEMS DESCRIPTIONS

A. CSFO Displays

1. It is understood that the Contractor's manufacturing processes, electronics, enclosure requirements and display module sizes may dictate the final manufacturer's offering. Dimensions indicated are active video area unless otherwise noted.
2. The Right Field display system work includes (RF):
 - a. One (1) 60' W x 43.2' H display. Not to exceed 10mm (physical pixel-to-pixel density) resolution, must be black package SMD LED, rear serviceable, must be capable of full screen pixel for pixel output from a media player, shall accept 2 high definition 720p60, 1080p video inputs via existing router and then scale to the displays native resolution. With the ability to create multiple windows and layers, full color LED pixel large screen display system including miscellaneous structure and all related control and processing systems required to make a "complete operating system" as detailed in Section 2. Conceptual Drawing is available, See Attachment C.
 - b. Removal of existing video boards and fixed digit scoreboard.
 - c. LED must be outdoor rated and waterproof.
 - d. Modules must be rear serviceable via weatherproof cabinets.
 - e. Display must be capable of Key/Fill type layering from the media player on top of video sources.
 - f. Brightness should be 8000 nits minimum. With the ability to adjust illumination by 10% increments.
 - g. Provide the main structure to support display in this section. The main structure will attach to steel beams.
 - h. Existing catwalks will need to be extended to service entire wider display.
 - i. Existing speakers, DAS antenna and mast holding Clearcom and ABonAir Transceivers must be remounted to maintain line of sight.
3. The Left Field display system work includes (LF):
 - a. There is currently no existing video board.
 - b. Provide the main structure to support display in this section. Including steel braces, electrical, data cabling, conduit, catwalks and ladders.
 - c. One (1) 60' W x 43.2' H display. Not to exceed 10mm (physical pixel-to-pixel density) resolution, must be black package SMD LED, rear serviceable, must be capable of full screen pixel for pixel output from a media player, shall accept 2 high definition 720p60, 1080p video inputs via existing router and then scale to the displays native resolution. With the ability to create multiple windows and layers, full color LED pixel large screen display system including miscellaneous structure and all related control and processing systems required to make a "complete operating system" as detailed in Section 2. Conceptual Drawing is available, See Attachment C.
 - d. LED must be outdoor rated and waterproof.
 - e. Modules must be rear serviceable via weatherproof cabinets.

- f. Display must be capable of Key/Fill type layering from the media player on top of video sources.
 - g. Brightness should be 8000 nits minimum. With the ability to adjust illumination by 10% increments.
 - h. Manual and Automatic dimming using a photo eye sensor.
 - i. Existing security camera conduit will need to be adjusted to accommodate video board structure.
4. The Bowl fascia (ribbon) display systems work includes (FD):
- a. 822'W x 3.6'H fascia display. Not to exceed 10mm (physical pixel-to-pixel density) resolution, top serviceable, must be black package SMD LED, must be capable of full screen pixel for pixel output from a media player, full color LED pixel screen display system including miscellaneous structure and all related control and processing systems required to make a "complete operating system" as detailed in Section 2.
 - b. Removal of existing scoreboard and back lit signage.
 - c. Fascia needs the ability to create multiple windows and layers. For example, scoreboard graphics and out of town scoring graphics and data.
 - d. Brightness should be 8000 nits minimum. With the ability to adjust illumination by 10% increments.
 - e. LED must be outdoor rated and waterproof.
5. The outdoor marquee work includes (OM):
- a. Two (2) 12' x 19'-2 3/8"H outdoor displays. Not to exceed 8mm (physical pixel-to-pixel density) resolution, rear serviceable, must be black package SMD LED, must be capable of full screen pixel for pixel output from a media player, full color LED pixel large screen display system including miscellaneous structure and all related control and processing systems required to make a "complete operating system" as detailed in Section 2. The outdoor marquee will only show still slides, no moving video or animated clips.
 - b. Must have capacity to schedule content.
 - c. LED must be outdoor rated and waterproof.
 - d. Brightness should be 8000 nits minimum. With the ability to adjust illumination by 10% increments.
 - e. Manual and Automatic dimming using a photo eye sensor.
6. Television Overlay
- a. Two (2) Computers that can accept 720p60 video input. Can play video and still images. Can overlay graphics with alpha channel. Can incorporate data. Can be controlled from the same controller as the rest of the LED displays.
7. Creative Services – Content Package equal to a \$25,000.00 value.
8. Provide pricing to upgrade system to accept 12g-SDI for futureproofing if not already included.
- B. Full System Warranty, 2 Years, to include, but not limited to hardware, software, remote and/or on-site support, and systems/software upgrades. Provide options for 5,7 and 10 years.

C. Event Controller

1. The event controller is to be a computer-based software platform capable of:
 - a. Controlling multiple displays simultaneously.
 - b. Deliver unique content to individual displays simultaneously.
 - c. Upload and distribute *.mpeg, *.mov, jpeg, png and other common video and image formats to the various playout servers.
 - d. Ability to show 2 separate upstream video signals via existing router.
 - e. Equipment must take Ross Talk Commands to trigger content.
 - f. Triggering events via GPI, RS-422, and TCP/IP to external devices. Including future Musco Lighting Systems.
 - g. Scheduling events for auto-run or based on external triggers.
 - h. Reading, parsing, and displaying stats from third party data sources. Including Genius Stats, NCAA Live Stats, STATS Out of Town Scores, and other common data sources.
 - i. Real time rendered playback of keyframed animations.
 - j. Ability to write data-based logic within the content to automate pieces of the production.
 - k. Ability to perform data visualizations such as bar charts, donut charts and heat maps using real time data.
 - l. Control of brightness of displays.
 - m. Control of remote power to displays.
 - n. Ability to preview content via thumbnail.
 - o. Provide a primary and back up baseball scoring interface that will work with proposed system.

1.7 SUBMITTALS

A. Bid Submittals

1. Bidder must complete, sign and submit the Proposal Form, Attachment A.
2. Bidder must have previously installed at least five jobs using a similar product to the job described in the RFP. The jobs of similar product must have been completed within the last three years within the USA. In the proposal, submit the name, phone number, and current email address of the contact person for each representative project reference. Also, in the proposal, identify at least one such completed job available for inspection by MECA Representatives.
3. In its proposal, Bidder will confirm in writing that it has at least five years of experience with equipment and systems of the types specified in the RFP, that it maintains a fully staffed and equipped service facility in the region of the United States that includes Nebraska, and that it is franchised dealer and authorized service facility for any equipment used on the contract project not manufactured by the Bidder, and that the Bidder is properly licensed to work in the project home state (Nebraska).
4. In its proposal, Bidder must summarize their process to include but not limited to procurement of LEDs, module assembly, cabinet assembly, quality control points and final testing procedures.
5. In its proposal, Bidder will confirm in writing that any Sub-contractor it uses in performance of the contract has five years of experience with the primary contractor's / Bidder's equipment and systems and that the subcontractor's company is properly licensed to work in the project home state (Nebraska). In its proposal, Bidder will identify all Subcontractors on the Proposal Response team

and provide a detailed scope of work for each Subcontractor it plans to use in performance of the contract.

6. In its proposal, Bidder will submit resumes of its project manager, lead engineer and lead installers that will be working on the contract project. This will include key team members of any Subcontractor that the Bidder plans to use in performance of the contract. Resumes must be submitted with Bidder's proposal response.
 7. In its proposal, Bidder will submit preliminary power requirements for its proposed display, submit viewable dimensions and horizontal/vertical physical pixel count of its proposed display, submit preliminary total weight and structural calculations for its proposed display.
 8. In its proposal, Bidder will submit a schedule to indicate durations for shop drawing submittal, procurement, and fabrication, shipping requirements, installation timelines for each major system and test and commissioning sessions. Coordinate these milestone dates in the schedule with project schedule and intended completion dates for the contract project in the RFP.
 9. In its Cost Proposal, Bidder will submit Schedule of Values for each item listed in Sub-Part 1.7. Breakout equipment and labor costs for each display system. Breakout system cabling cost and provide a per foot unit cost for additional cable that may be required once construction starts.
 10. In its Cost Proposal, Bidder will include tax at a rate of 7%.
 11. Union labor is not required.
- B. Product Data Submittal
1. Contractor shall submit manufacturer's product data sheets for each item of equipment to be used for the contract project in electronic form via email as PDF electronic files.
- C. Shop Drawings Submittal
1. Contractor shall indicate complete details and dimensions of work to be performed and indicate types and locations of equipment, fabricated equipment, and other details to completely describe work to be performed. Contractor shall submit the above information via email as PDF electronic files for review and distribution to the MECA. There shall be no contract work authorized on site without the prior submittal of a complete set of shop drawings. Any exceptions to this contractual requirement must be in writing and approved by MECA. Details to include the following:
 - a. Plan, Elevation and Section Views of the displays.
 - b. Drawings showing the connections of the installer supplied equipment to the structure at each different location.
 - c. Wiring diagrams. Complete, detailed wiring diagrams for all systems including cable types, identification and color codes, and detailed wiring of connections, both at equipment and between equipment racks and wiring in conduit.
 - d. Location of all equipment in racks, consoles, millwork, enclosures with dimensions; wire routing and cabling within housings; AC power outlets, terminal strip and UPS locations.
 - e. Conduit riser diagrams for all systems.
 - f. Schematic drawings of any custom circuitry or equipment modifications, including connector pinouts and component lists.
 - g. Rack Layout and Location Diagrams with overall dimensions.

- h. Schedule of terminations for all systems.
 - i. Coordinate rack AC Power Schedule and circuiting information with the Owner.
 - j. Terminal strip layouts for all proposed terminal strips to be used in junction boxes or in the equipment racks.
 - k. Panel Fabrication Details.
 - l. Power consumption at 50 % and 100 % illumination levels for each display.
 - m. Final cooling requirements based on equipment and solar heat gain.
- D. Custom Control Software Programming and User Interface Submittal.
- 1. Contractor shall submit for approval at least 6 weeks prior to system commissioning hard printed copies of all user interfaces and control logic flow diagrams. It is the Contractor's responsibility to provide any and all custom software interface programming for the systems furnished under this section. Contractor's coordination with the Owner is required for the development of all user interfaces and control logic.
- E. Contract Closeout Submittals
- 1. Contractor shall keep a single complete set of approved shop drawings on the project site for the full duration of the project until after the final system commissioning. Non-approved shop drawings will not be allowed on the job site. Contractor shall note any changes made during installation on these single set of drawings. Contractor shall submit three corrected sets of reproducible drawings showing work as installed. All "as-built" drawings are to be submitted both in electronic form (ACAD 2009 or later) and in hard copy (42"x30").
 - 2. Owner Reference Manual: Before owner training commences, Contractor shall submit the following as Adobe .pdf on USB drives and as hard-copy in a single 3 ring binder with project title. Contractor shall submit individual sub-directories/tabular dividers with the following headings:
 - a. A legend with acronyms and abbreviations.
 - b. A catalog of all equipment, organized by manufacturer, model, serial number, including the room and rack number where the device is located.
 - c. System Operation Instructions: Narrative verbiage with photographs and diagrams detailing operational procedures for all equipment as a system.
 - d. Manufacturer's User Manuals for all equipment.
 - e. Warranty Information for all equipment. Include warranty period and service department contact information.
 - f. System Maintenance Instructions: Narrative verbiage with photographs and diagrams detailing Owner's responsibilities for preventative maintenance to include schedules and any specific products, procedures or specialized/custom tools required for maintenance of the display system.
 - g. Battery Replacement Schedule: Schedule of dates/intervals for replacement of all batteries. This is to include UPS, and control systems.
 - h. As-Built Drawings fully legible at C size (24"x18") bond folded appropriately for binder.
 - i. A list of all test results performed on the systems as outlined in Section 3.4 proving the systems to be in full compliance.
 - 3. As-Built Drawings are to be fully legible at C size (24"x18") bond. Each page to be individually laminated. Set is to be loosely bound using a minimum of two binder rings.

4. Contractor shall submit a complete list of spares in inventory to include quantity, manufacturer, model number, and serial number.
5. Asbestos and PCB Certification: After completion of installation, but prior to Substantial Completion, Contractor will certify in writing that products and materials installed, and processes used, do not contain asbestos or polychlorinated biphenyls (PCB).

1.8 CODE COMPLIANCE

- A. All work performed by the Contractor and materials used by the Contractor in performance to the contract shall comply with all applicable codes and regulations to meet or exceed Federal, State, City, and Local Building Codes and Regulations (including seismic). Contractor shall advise the General Contractor if anything in the Drawings or Specifications is out of compliance with codes and/or laws prior to proposal submission.

1.9 PROJECT CONDITIONS

- A. Contractor shall notify the Owner in writing of any issues on the job site negatively affecting the contractor's pursuance of work under their scope. Contractor shall submit recommendations for resolution and assist in coordinating solutions with other trades.
- B. Contractor shall verify position and elevation of structure and its layout for display equipment. Contractor shall verify dimensions by field measurements.
- C. Contractor shall verify mounting structure is capable of supporting the display system weight loads in addition to any required attachment and structural support metals.
 1. Existing steel beams are planned to be re-used for the Right Field display.
 2. A new structure will need to be built for Left Field display.

1.10 GUARANTEES

- A. Contractor shall warrant labor and materials on the display systems for two (2) years following the date of Substantial Completion as base offering.
- B. Within the warranty period, Contractor shall:
 1. Make available an exchange program to supply replacement parts for components that fail during the coverage period. To minimize downtime, the exchange parts will be shipped on the same day the order is received or on the following day. The manufacturer will also enclose an air bill for the return of the defective components.
 2. Make available a help desk staffed by experienced technicians and coordinators who are thoroughly familiar with the display system products and available for technical support. This contractor help desk staff must be available at no additional cost to the customer and provide an "on-call" service 24/7/365.
 3. Make available access to an Authorized Service Company located within 250 miles that can repair or replace any faulty item within 24 hours, including parts and labor and assist owner's staff in replacing, reprogramming, or recalibrating this equipment to make entire system functional.

- C. This warranty shall not void specific warranties issued by manufacturers for greater periods of time. Nor shall it void any rights guaranteed to the Owner by law.
- D. Contractor will make available to Owner the exact beginning and ending dates of the warranty period. Include the name of the person to call for service and telephone number. This information is to be part of Project Record Set.
- E. Contractor shall submit alternate pricing for extended maintenance contracts on displays and control systems based on the above criteria.

Section 2 - Product

2.1 MANUFACTURERS

- A. All equipment supplied will be new and meet the latest published specifications of that product. Take care during installation to prevent scratches, dents, chips, etc.
- B. If product is discontinued and/or no longer publicly advertised as a part of a manufacturer's current product line-up at time of installation, MECA reserves the right to request a substitution of product for new and currently offered product of like function fulfilling the design intent. Substitution value will be based on fair market value of original product at time of bid.

2.2 SYSTEM REQUIREMENTS

- A. Technical and Engineering Standards
 - 1. General
 - a. Large format display systems shall allow repair from the rear, front or top and shall allow "hot" repair while the system is operating.
 - 2. Control and Signal Processing/Distribution Systems.
 - a. The Contractor shall provide all user interface, transmission, and processing software; all electronics; and all cabling to independently place, size, tile, layer, and control High-Definition video, and Graphic input signals on the displays.
 - b. All control equipment to operate and provide content to the displays shall be located in the production equipment room. The Contractor shall provide any required connections, cabling, and terminations between display, operating equipment, and the production equipment room.
 - c. The Contractor will provide systems for remote power up and shut down of the displays, systems will allow displays to be turned on and off from the video production equipment room in addition to within the displays.
 - d. The Contractor shall provide one remote control user interface station at the front row facing the glass overlooking the stadium to provide complete control of system, content, display power up/down, freeze, position, size, aspect ratio, color, hue, contrast, and brightness for use in setup, testing and operation.
 - e. The Contractor shall provide one remote control user rack mounted interface to provide complete control of system, content, display power up/down, freeze, position, size, aspect ratio, color, hue, contrast, and brightness for use in setup, testing and operation.

- f. Display Systems KVM system shall have access to all display system computers.
 - g. Processing and control equipment to receive an emergency contact closure and to display an emergency message independent of any video production control equipment.
 - h. The Contractor will provide backup processing and transmission equipment in duplication of primary systems with equipment for manual switchover, distribution amplification, and/or splitting of all necessary control, data and signal cabling.
 - i. The Contractor shall provide Diagnostic Software to assist the Owner in diagnosing, isolating and repairing deficiencies in the display and control system, including defective elements.
 - j. The Contractor shall provide uninterruptible power supply systems for all computer interface and computer processing systems sufficient to allow proper shut down of operating systems in a power outage.
 - 1) APC Smart-UPS 1500VA RM 2RU LCD 120V
 - k. The Contractor shall provide backups of all software manuals and license certificates for all software loaded on all control systems.
 - l. The Contractor shall provide a primary and backup baseball scoreboard controller.
 - m. The Contractor is to integrate with Genius Stats, STATS Out of Town Scoring data and other common data sources to display statistics and timing on all displays excluding marquee.
 - n. The Contractor shall provide a stats interface to a broadcast character generator (by others) that will port data and be displayed on the main screens via the broadcast switcher.
 - o. The Contractor shall provide a stats interface to feed the truck dock.
3. Control and Signal Processing/Distribution Cabling
- a. Bidder responsible for any additional requirements.
 - b. Installation shall include all required and operationally necessary low voltage control and fiber optic cabling in unbroken/unspliced home runs from the Control Room to each display component.
 - c. The Contractor will verify all connector details required for installation of equipment, including make, model, connector sex, attachment configuration, pin-outs, and cable clamp accessories.
 - d. The following cables will be used by Video Contractor for all wiring within the production areas:

| Signal Type | Manufacturer | Cable Part | Color |
|------------------------|--------------|------------|--------|
| HD Video | Belden | 1505A | Violet |
| SDI Video | Belden | 1505A | Blue |
| Analog Video | Belden | 1505A | Green |
| Sync/Reference | Belden | 1505A | White |
| RS-232/422/485 Control | Belden | 1419A | Chrome |
| Network 10/100bT | Belden | 1700A | Yellow |
| Network 1000bT | Belden | 7851A | Red |

| | | | |
|-----|--------|-------|------------|
| KVM | Belden | 1700A | Light Blue |
|-----|--------|-------|------------|

4. Equipment Racks:
 - a. Contractor shall utilize Middle Atlantic VRK Series Gangable Racks provided by others. The Contractor will be allotted (1) 45RU racks for display processing.
5. Structural Engineering
 - a. The display systems shall be designed, fabricated and installed by the Contractor in their entirety.
 - b. Contractor is responsible for the sub structure to be utilized to mount existing wireless access points, speakers and transceivers.
 - c. All necessary structure, catwalks, stairways, access doors and access ladders (including fall arrest systems to code) are a part of the Contractor's scope of work. For display systems that are to attach to facility structure, reference project drawings. The Contractor shall be responsible for field verification and submittal of stamped structural details for final connection meeting all state structural and seismic criteria for final approval prior to any work being performed on site.
 - d. Provide electrolytic protection between different adjoining metals.
6. Electrical
 - a. Any existing electrical cabling, circuits, etc. may be reused.
 - b. Bidder responsible for any additional requirements.
 - c. All power distribution from the feeder to individual disconnects will be provided by others.
 - d. If applicable interior convenience outlets on each catwalk for maintenance of the displays will be provided by others.
 - e. If applicable interior lighting shall be provided by others to maintain uniform coverage throughout interior of displays with switch mounted near enclosure entrance point.
7. Cooling / Ventilation
 - a. Provide natural, forced ventilation with thermostatic and manual override control as required for operation of all components as recommended by manufacturer for maximum display life. Provide any/all necessary environmental filtration for the ventilation system.
 - b. Background noise levels attributed to this ventilation and all system components shall not exceed RC-35 at nearest regularly occupied public seating. Contractor will submit noise measurements using Type 1 Integrating Sound Level Meter meeting all requirements of ANSI:S14-1983, Type S(1) standards.
8. Spares
 - a. Assure back-up cabling to displays is available.
 - b. Supply 2% spare parts of all critical components of the display system equipment, to include but not limited to LED modules, data and signal distribution components, and printed circuit boards for any electronic driver or control located within enclosures.

Section 4 - Execution

4.1 GENERAL

- A. Coordinate work with other trades to avoid causing delays in construction schedule.
- B. Mount equipment and enclosures plumb and square. Permanently installed equipment to be firmly and safely held in place.
- C. Cover edges of cable pass-through holes in enclosures, chassis, racks, boxes, etc., with rubber grommets or Brady GRNY nylon grommeting. Adhesive-backed electrical tape and friction tape is not acceptable for insulating or protective purposes.
- D. All rack and console dimensions must be verified against field conditions prior to fabrication and again prior to installation.
- E. Where possible, mount equipment and fully wire and test before delivery to job site. If field conditions prevent prior assembly, notify MECA in writing that systems shall be fabricated on site and the reasons for the change.
- F. Inspect all racks, consoles, and enclosures prior to installation. All rough or sharp edges that may cause injury to personnel must be deburred or a permanent protective coating applied.
- G. Provide ventilation adequate to keep temperature within equipment racks below 85 degrees Fahrenheit. Provide whisper type ventilation fan in each rack if temperature in rack rises above 85 degrees. This ventilation system must be temperature actuated.
- H. Provide blank rack-mount panels installed in all rack openings not occupied by equipment. Blank filler panels will not exceed five rack units in size. Custom rack panels shall be 1/8 inch thick aluminum, standard EIA sizes, brushed black anodized finish unless otherwise noted. (Brush in direction of aluminum grain only.) Verify plate finish with the MECA. Plastic and or wood plates or panels shall not be accepted.
- I. Install rack mounted equipment with black 10-32 Phillips head machine screws.
- J. Panels or equipment mounted on the rear rack rails must not block access to any front mounted components. Front mounted equipment will be given ample space to allow for access to rear connection.
- K. The process of acceptance testing the System may necessitate moving and adjusting certain component parts - e.g., video monitors.
- L. Provide security covers on non-user operated equipment having front panel controls. Install covers at the conclusion of Acceptance Testing.
- M. AC Power and Grounding
 - 1. Coordinate final connection of power and ground wiring to racks. Hardwire power wiring directly to power contacts or internal AC receptacles to ensure uninterrupted operation.

4.2 CABLING

- A. Execute wiring in strict adherence to "standard broadcast practices," as excerpted from "Recommended Wiring Practices," Broadcast Audio Equipment for AM, FM, Television (5th Edition), Radio Corporation of America (RCA), Camden, N.J. 1962, and Appendix II, "Recommended Wiring Practices", Sound System Engineering, (2nd Edition), D. Davis, and performed in accordance with standard professional practice.
- B. Take precautions to prevent and guard against electromagnetic and electrostatic hum.
- C. Exercise care in wiring; damaged cables or equipment shall not be accepted. Isolate cables of different signals or different levels; and separate, organize, and route to restrict channel crosstalk or feedback oscillation.
- D. Wiring entering equipment racks and enclosures will be run directly to equipment. Use of splices or connectors to extend cabling to equipment will not be accepted. All signal wiring will be continuous and unbroken from connector plate/chassis to chassis/patch panel. Use of intermediate connections for inter rack cables is not acceptable. Use of splices or connectors to extend cabling to equipment is not acceptable.
- E. Make joints and connections with rosin-core solder or with mechanical connectors approved by the Owner. Where spade lugs and BNC terminations are used, trim cable using manufacturer recommendations and crimp properly with ratchet type tools. Spade lugs mounted on 22 gauge or smaller cable to be soldered after crimping.
- F. Wiring and connections will be completely visible and labeled in equipment racks and enclosures.
- G. All power cables will run on the left side of the equipment rack, as viewed from the rear. All other cables will be run on the right side on the equipment rack, as viewed from the rear. Where signal cabling and any cabling types carrying power must cross, they will do so at right angles. Vertical wiring will be run with a bundling and support system, to maintain a clear and organized appearance.
- H. Horizontally routed wiring to equipment will be neatly tied in manageable bundles with cable lengths cut to minimize excess but still allow ready access for service and testing. Provide horizontal support bars if cable bundles sag
- I. For equipment mounted on slides, additional service loops will be provided to accommodate the full range of travel of the slides. This includes all power, ground, control and signal cables.
- J. Neatly bundle excess AC power cables from rack-mounted equipment with plastic cable ties. Rack wiring to be bundled with plastic cable ties or lacing twine. Electrical tape and adhesive backed cable tie anchors are not acceptable. Cable tie and lacing installation will be accomplished using hand tools specifically designed to apply proper tension to the cable tie, and to cut it off flush with no protruding sharp edges. Cable ties will not be applied with excessive force, which may damage or deform sensitive and fragile cables.

- K. All cables in cable trays shall be neatly installed with maintaining separation of the different cable types.
- L. Screw Connections: Only insulated crimp on spade terminals will be used for application to barrier strips. Multiple gang lugs or ring lugs are not acceptable for this purpose.
 - 1. This is only applicable to stranded conductor wires. Solid conductors will be attached directly to the barrier strip.
 - 2. All conductors will be stripped prior to installation underneath screws on terminals. Provide crimp lugs on stranded control cables, solid conductor wire will not require crimp lugs on individual conductors. All screw terminated solid conductors will be wrapped in the same direction as screw rotation during tightening.
- M. Multiconductor Cables: Follow a uniform application of color codes for multiconductor cables throughout the Facility. Where there are unused conductors or pairs in a cable assembly, they can be insulated as a group, left long enough for future termination, and folded into the connector hood. Where this is impractical, they may be folded back along the outer jacket of the cable and covered with heat-shrinkable tubing.
- N. Multipin Connectors: Where jumpers are indicated between pins of the same connector, they will be installed internal to the connector shell and will not have any cable number designations applied to the jumper.

4.3 LABELING

- A. General
 - 1. The attachment method for equipment identification plates will be designed for permanency unless otherwise described. All labels will be protected prior to installation, and will not be installed if damaged or scratched. Follow manufacturer's recommended procedure for surface preparation, which must be free of any dust, dirt or film. Wiping with a manufacturer-approved solvent is required. If a label is in a place that might be susceptible to damage, it will be protected with a layer of clear plastic, 1/16" or thicker, taped down. Internal labels will be replaced only if they become illegible. External labels will be replaced if they become scratched or marred.
 - 2. On black lamicoid panels or pushbuttons, letters shall be white; on stainless steel or brushed natural aluminum plates, or light-colored pushbuttons, letters shall be black.
 - 3. Embossed labels are not acceptable.
 - 4. Mount labels in a neat, plumb and permanent manner except where indicated.
 - 5. Text heights will be as follows:
 - a. Rack and Display Module Back Panel designation labels will have 1" high block sans serif text.
 - b. Equipment labels will be 3/4" high block sans serif text.
 - c. Operator Control labels will be 1/4" high block sans serif text, this may be adjusted to fit available space.
 - d. Panel labels will be 1/8" high block sans serif text.
 - e. Patchbay, Cable and Connector labeling will be 10 point block sans serif text, this may be adjusted to fit available space.

B. Equipment Labels

1. Provide engraved lamincoid labels on the front and rear of active equipment mounted in racks. Equipment labels to have one line of engraving, giving the schematic reference of the device, and/or its production function, i.e. "VTR #4", "PA-29A".
2. Unless equipment manufacturer has clearly labeled functions, provide an engraved label over each user-operated control that describes the function or purpose of the control.
3. If the manufacturer provides a protected labeling strip such as those used for switcher control panels and patch bays, then patch/routing point labels may be typed clearly on 80 pound paper stock.

C. Cable Labels

1. Cables and wiring to be logically, legibly and permanently labeled for easy identification. Labels on cables to be adhesive strip type covered with clear heat-shrink tubing. Factory stamped heat shrink tubing may be used in lieu of the adhesive strip style label. Hand-written or self-laminating type labels are not acceptable.
2. Wiring designations to be an alphanumeric code that is unique for each cable. Locate the cable designation at the start and end of each cable run and within 2 inches of the point of termination or connection. For cable runs that have intermediate splice points, the cable shall have the same designation throughout with an additional suffix to indicate each segment of the run. Actual cable designation assignments to be determined by Contractor. Add cable designation codes to system schematic drawings included with Project Record Drawings.
3. Provide adhesive labels on the rear of equipment where cables attach to indicate the designation of the cable connected at that point.

4.4 ACCEPTANCE

- A. Submit a pre-commissioning systems report to MECA two weeks prior to the scheduled systems commissioning proving all systems to be in full compliance. Report shall include test results, date of each test, pertinent conditions such as control settings, etc., and test equipment employed. In addition, submit written notification that the installation has been completed in accordance with the requirements of the Contract Documents, and is ready for acceptance testing.
- B. Acceptance testing will include operation of each major system and any other components deemed necessary. Contractor will assist in this testing and supply required test equipment. Contractor will make available at least three technicians familiar with installation, available for the entire testing period (day and night), to assist in tests, adjustments, and final modifications. Tools and material required to make any necessary repairs, corrections, or adjustments will be submitted by the Contractor. The Contractor will keep a running list of all acceptance tests performed and submit a final copy of the results with the closeout submittals as listed in Part 1.6. Testing process is estimated to take 1 day up to 10 hours and may require multiple crews / shifts.
- C. During all walkthroughs, the project manager will be present.

- D. If during acceptance testing it becomes evident that further adjustment or work may be required to bring the system into compliance, the Contractor will continue to work until the system is acceptable at no additional charge over the contract price. If approval is delayed because of defective equipment, poor installation, or failure of equipment to meet the requirements of these specifications, the Contractor will pay for additional time and expenses during any extension of the acceptance testing period. The Contractor will provide rental or loaner equipment to make the system operational in critical cases of equipment failure prior to contract completion.
- E. Preparation for Acceptance, prior to final inspection:
1. Temporary facilities and utilities shall be properly disconnected, removed and disposed of off-site.
 2. All systems, equipment and devices shall be in full and proper adjustment and operation, and properly labeled and identified.
 3. All materials shall be neat, clean and unmarred and parts securely attached.
 4. All damage occurring to the facility, including broken glass, walls, doors, etc. shall be replaced or properly repaired and debris cleaned up and discarded.
 5. All extra materials, portable equipment, and spares shall be delivered and stored at the premises as directed.
- F. Verify the following before beginning actual tests and adjustments on the system:
1. Electronic devices are properly grounded.
 2. Powered devices have AC power from the proper circuit and hot, neutral, and ground conductors are connected correctly.
 3. Insulation and shrink tubing are present where required.
 4. Dust, debris, solder, splatter, etc. is removed.
 5. Cable is dressed, routed, and labeled; connections are consistent with regard to polarity.
- G. Cabling Tests.
1. Submit printed test reports proving the systems to be in full compliance as part of the pre-commissioning systems report.
 2. After installation, and before termination, all wiring and cabling shall be checked and tested with a megohmmeter to ensure there are no grounds, opens, or shorts on any conductor or shields.
 3. Test all CAT5E cables to verify they meet full CAT5E specifications. Tests will use a certified tester that will confirm bandwidth, cable distance, and error and bit rate detection.
 4. Optical Fiber Cable Testing
 - a. Test all fiber optic cable strands for continuity and performance.
 - b. Notify the owner of all fibers that are broken or damaged.
- H. System Tests
1. The following procedures will be performed prior to testing of System:
 - a. Control functions shall be checked for proper operation, from controlling devices to controlled devices.
 - b. Adjust, balance, and align equipment for optimum quality including brightness, viewing angles, brightness uniformity, black level uniformity, color uniformity, hue uniformity, pixel mapping, scaling and resolution of video image to meet the manufacturer's published specifications.

- c. Allow for a continuous 48 hour period of "Burn In" running a looped test signal including equal intervals of Black, Green, Red, Blue and 100% White.
2. Display Power Down And Up Again:
 - a. Display shall be adjusted to 6500K color temperature.
 - b. Display shall be set at full brightness level with a standard 100 IRE white signal as its source. Screen will be allowed to stabilize and display controls shall be adjusted for a uniform brightness across the display.
 - c. Both display and processing platform will be powered down together completely and then immediately powered up again.
 - d. This procedure will be performed twice more in succession.
3. Uniformity At All Viewing Angles:
 - a. Display shall be set at a brightness level appropriate for the facility. Screen will be allowed to stabilize and display controls shall be adjusted for a uniform brightness across the display.
 - b. A signal generator will be used to generate each of the following colors for examination
 - 1) White (100 IRE)
 - 2) Black (7.5 IRE)
 - 3) Green
 - 4) Red
 - 5) Blue
 - 6) Cyan
 - 7) Magenta
 - c. A "walk around" will be performed viewing the display at all possible angles of the display for each of the colors.
 - d. Display (and overall processing) will be examined for module to module uniformity and pixel to pixel uniformity.
 - e. Display will be measured using a spot photometer to verify manufacturer brightness and viewing angles.
4. High Contrast Image Performance:
 - a. Display will be viewed in many lighting conditions.
 - b. Display shall be set at a brightness level appropriate for each lighting condition. Screen will be allowed to stabilize and display controls shall be adjusted for a uniform brightness across the display.
 - c. Display (and overall processing) will be examined for trueness of team colors, gama and contrast handling.
5. Control functions shall be checked for proper operation, from controlling devices to controlled devices.
6. Installed, loose and spare equipment shall be inventoried for correct quantity.
7. Any other test on any piece of equipment or system deemed appropriate by MECA.
8. The omission of a description of a device, function, signal path, or test in this document shall not exempt the Contractor from responsibility for checking all devices and signal paths for appropriate compliance with Industry Performance Standards and making corrections necessary to bring system(s) into compliance with the applicable standards.

4.5 TEST EQUIPMENT

- A. Make available the following equipment on site for final acceptance testing. Test equipment to be available for the entire period through final system acceptance. Prior to start of testing, submit a list to the MECA of test equipment make and model numbers that will be used.
 - 1. Megohmmeter.
 - 2. Multimeter: Measurement range, DC to 20,000 Hz, 100 mV to 300 V, 10 ma to 10A.
 - 3. Spot Photometer.
 - 4. CAT5E cable tester.

4.6 INSTRUCTION OF OWNER PERSONNEL

- A. Upon completion of the installation of the specified display systems, and prior to any facility events, make available designated operating personnel training on the equipment operation. This training will be performed at the site by the Contractor's and the manufacturer's education staff.
- B. The System Reference Manuals must be complete and on-site prior to the time of the first instruction.
- C. Make available trained personnel (two technicians) to be present during a minimum of two Owner designated events. More events may be added at no charge to the Owner if the system is not functioning appropriately.
- D. Coordinate schedule of instruction with the Owner subject to availability of Owner's personnel. This may require scheduling instruction during weekends or evenings.
- E. Training will be provided in a series of classes to operations personnel to review all aspects of operation and maintenance of the system. Follow-up sessions to better enhance the operator's ability to expand or maximize the system will be made available.
- F. The system training will include five (5) days or forty (40) hours of technical training covering the explanation of the system, including documentation, configuration, interfacing and diagnostics. Training hours do not expire. Make available training of the system operators and maintenance personnel as follows:
 - 1. System Overview: Explanation of system includes documentation, configuration, interfacing and basic diagnosis.
 - 2. Operator Training: Training in the use of system devices including powering and general operation of overall systems.
 - 3. Maintenance/Trouble Shooting: Advanced training in display and control system troubleshooting and maintenance. Manufacturer's representative will conduct scenario based training creating isolated system failures requiring owner to investigate and solve system failure problems as a means of gaining hands on knowledge of the systems.

PART III - Information to be Supplied by Bidder

For ease of evaluation and given the fast-track that MECA desires to pursue to reach final agreement, MECA requests that each proposal submitted incorporate the same general structure. Proposals must include the following sections:

1. Attachment A - Proposal Form
Attachment A – Proposal Form, must be completed, signed and submitted as the first page of the Proposal. Proposal must include all costs associated with a complete, turn-key installation.
2. Attachment B – Performance Standard
3. Company Profile
The Bidder should provide information about the company, including the following information:
 - A. Company name, address, telephone number and contact person.
 - B. Brief company history, which can be in the form of a company brochure.
4. Subcontractors
A minimum of 50% of the scope of work must be performed by the Bidding Company. MECA will not accept bids where more than 50% of the work is being Subcontracted. In order that MECA may be assured that only qualified and competent subcontractors will be retained for the service, each Bidder shall submit with his/her name a list of all subcontractors that the Bidder intends to use and the portions of the scope the subcontractor will perform. No change shall be made in the list of subcontractors after the receipt of proposals, unless agreed to in writing by MECA.
5. References
Bidders shall supply a list of three references that you have provided similar product/service for, including names, email address, and telephone numbers of the customer's contact person. Provide a brief description of product/service for each reference listed.
6. Resumes
Bidder shall provide resumes or bios of key staff assigned to the project highlighting qualifications and experience. Information must include all relevant certifications and/or training.
7. Project Narrative
For Scope of Project listed in Part II, Bidder shall provide detailed information including a project timeline listing major milestones, procurement of LEDs, module assembly, cabinet assembly, quality control points and final testing procedures, a schedule to indicate durations for shop drawing submittal, procurement, and fabrication, shipping requirements, installation timelines for each major system and test and commissioning sessions.
8. Specification Sheets
Bidder shall provide manufacturer's product data sheets for each item of equipment to be used for the contract project in electronic form via email as PDF electronic files. Bidder will submit preliminary power requirements for its proposed display, submit viewable dimensions and horizontal/vertical physical pixel count of its proposed display, submit preliminary total weight and structural calculations for its proposed display.

9. Warranty and Support Information

Bidders must provide warranty information for equipment and services.

10. Deviations from Scope of Project

Bidders must document all deviations from the specifications outlined in the Scope of Project in Part II.

11. Contractual Terms and Conditions

The Bidder shall review and provide a response whether the contractual terms and conditions set forth in Part 1, Section 5 are agreeable. A detailed response is required if a bidder is not agreeable to one or more of the terms and conditions set forth in Part 1, Section 5.

12. Bidder's Nebraska Contractor Option Number.

Bidder must indicate their Nebraska Contractor Option number (1, 2 or 3) on Attachment A – Proposal Form. Bidder warrants that sales tax has been incorporated in its bid amounts as required by the State of Nebraska in accordance with its Contractor Option.