

BID # 15-28

INSTALLATION OF LED CAMPUS MESSAGE BOARDS
2015

SECTION "C" TECHNICAL SPECIFICATIONS

OWNER

Board of Trustees
Middlesex County College
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PREPARED BY

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January 29, 2015

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SECTION C - TECHNICAL SPECIFICATIONS

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I. SCOPE OF WORK

- A. The purpose of these specifications is to provide and install two (2) exterior LED Message Boards on campus. This work will be performed at the main Middlesex County College (MCC) campus in Edison, New Jersey.
- B. Message Board 'A' will be a 2-sided LED display sign, with an illuminated sign cabinet above, located at the main college entrance on Woodbridge Avenue. Message Board 'A' consists of new footings, steel posts, and decorative caps to match the existing MCC campus signage. The LED display sign will be oriented so messages are visible in both driving directions on Woodbridge Avenue.
- C. Message Board 'B' will be a 1-sided LED display sign located on College Drive East, adjacent to the Gateway Building, upon entering the campus from Woodbridge Avenue. Message Board 'B' consists of new footings, aluminum posts and caps to match the existing MCC campus signage. The LED display sign will be oriented perpendicular to College Drive East so it may be visible only upon entering campus.
- D. Alternate Bid #1 – Provide full color LED display signs, as specified in this document, for Message Boards 'A' and 'B' in lieu of the base bid display signs.
- E. The contractor shall provide all of the necessary labor, materials, tools and equipment required to complete the work described on the drawings and in these specifications as follows:
1. Installation of footings, frames, posts, finishes, LED display signs, and illuminated cabinets in their entirety.
 2. Installation of underground conduit, electrical, and data; tied in at the adjacent Gateway Building and trenched out to the new display signs.
 3. Installation of new LED display software on two (2) designated PC's on campus, including all required training. The software shall allow for remote access from off campus.
- F. The College Campus in Edison, New Jersey is located on a section of the Former Paritan Arsenal (FRA) which operated from 1918 through 1963. The Army Corps of Engineers (ACE) has completed investigations and remediation activities related to unexploded ordnance (UXO) materials on the campus. While there are no known UXO's at this time, there remains a possibility that they can be discovered when excavating on campus. The ACE has provided an information safety sheet which advises anyone excavating on the FRA to practice the "3R's". They are **Recognize, Retreat and Report**. If any material is discovered that appears to be ordnance, the contractor shall immediately stop work, leave the area, call 911, and notify the College. A procedure has been established for emergency responders and military personnel to safely address such a situation.

- G. The contractor shall apply for and secure all required building permits from Edison Township. The building permit fee will be waived by Edison when a letter provided by MCC is submitted with the permit application. As part of the permit process, Edison also requires a Contractor's License. The contractor license fee is the responsibility of the contractor.
- H. The contractor is also responsible for coordinating and obtaining all inspections, approvals and the final Certificate of Approval. Final payment will not be made until all work is completed and the final Certificate and all close-out documents described in these specifications are received.
- I. The contractor shall be required to attend a pre-construction meeting on campus upon award of the contract, and other job progress meetings as required by MCC.
- J. The following is a list of drawings and attachments which are a part of these specifications and contract:
1. CAMPUS SITE PLAN
 2. A-1 CAMPUS SIGNAGE: SITE PLAN
 3. A-2 SIGN 'A' - ENLARGED SITE PLAN
 4. A-3 SIGN 'A' - ELEVATION AND SECTION
 5. A-4 SIGN 'B' - ENLARGES SITE PLAN
 6. A-5 SIGN 'B' - ELEVATION
 7. A-6 GATEWAY BUILDING FLOOR PLAN

II. SUBMITTALS

- A. Provide a detailed schedule with lead times, start dates and end dates for each activity.
- B. Provide Product Data for all materials, electrical, manufactured components, and finishes which have been selected to meet the specifications.
- C. Provide finish chart for final color approval by MCC.
- D. Provide maintenance data for all electrical and manufactured components.
- E. Provide installation and service documentation, as well as maintenance and cleaning manuals for all message boards.

- F. Provide Shop Drawings indicating all materials, sizes, configurations, dimensions, mounting locations, hardware and connections.
- G. Submit a color rendering (8.5" x 11") of each sign for final approval by MCC.
- H. Provide artwork for illuminated sign cabinet graphics, for final approval by MCC.

III. MATERIALS

A. BASE BID - Sign 'A' LED Message Board

- 1. Double-faced Monochrome LED message display board.
- 2. Manufacturer: Daktronics, www.daktronics.com (Basis of Design)
 - a. Model: Galaxy 3500 20mm Monochrome
 - b. Size: 46" high x 120" wide x 12" deep
 - c. Pixel Color: Amber
 - d. Lines and Columns: 48 x 144
 - e. Character Height: 6" – 37"
 - f. Line Spacing: 20mm
 - g. Warranty: 5 years
- 3. Or Approved Equal.

B. BASE BID - Sign 'B' LED Message Board

- 1. Single-faced Monochrome LED message display board.
- 2. Manufacturer: Daktronics, www.daktronics.com (Basis of Design)
 - a. Model: Galaxy 3500 20mm Monochrome
 - b. Size: 33" high x 57" wide x 8" deep
 - c. Pixel Color: Amber
 - d. Lines and Columns: 32 x 64
 - e. Character Height: 5" – 25"
 - f. Line Spacing: 20mm
 - g. Warranty: 5 years
- 3. Or Approved Equal.

C. ALTERNATE BID #1 - Sign 'A' LED Message Board

- 1. Double-faced Full Color LED message display board.
- 2. Manufacturer: Daktronics, www.daktronics.com (Basis of Design)
 - a. Model: Galaxy 3550 20mm Full-Color
 - b. Size: 46" high x 120" wide x 12" deep
 - c. Pixel Color: Full Color RGB (1 red, 1 green, 1 blue)
 - d. Lines and Columns: 48 x 144
 - e. Character Height: 6" – 37"

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- f. Line Spacing: 20mm
- g. Warranty: 5 years

3. Or Approved Equal.

D. ALTERNATE BID #1 - Sign 'B' LED Message Board

- 1. Single-faced Full Color LED message display board.
- 2. Manufacturer: Daktronics, www.daktronics.com (Basis of Design)
 - a. Model: Galaxy 3550 20mm Full-Color
 - b. Size: 33" high x 57" wide x 8" deep
 - c. Pixel Color: Full Color RGB (1 red, 1 green, 1 blue)
 - d. Lines and Columns: 32 x 64
 - e. Character Height: 5" – 25"
 - f. Line Spacing: 20mm
 - g. Warranty: 5 years

3. Or Approved Equal.

E. LED Message Board Components

- 1. LED's shall be configured in a continuous full matrix. The sign shall be capable of displaying texts, graphics, basic animation, multiple font styles and sizes.
- 2. LED display modules shall be uniform, consistent, and interchangeable throughout the matrix.
- 3. LED's shall have a lifetime rating (.5 brightness) of 100,000 hours.
- 4. Display cabinet shall be manufactured of all aluminum, for exterior reliability. Display cabinet shall have front access for ease of serviceability and access for all modular assemblies, components, wiring, and all internal components located within the housing.
- 5. Electronic boards shall be watertight, or coated, to protect all circuit boards from moisture and condensation.
- 6. Display cabinet faces shall contain air intake and exhausts. All air intakes shall be filtered to provide proper display ventilation.
- 7. Display shall include a light sensor, with the capability of display dimming levels, including automatic dimming, scheduled dimming, or manual dimming controls.
- 8. Display cabinets shall contain Speed Selectable Media Converters as

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required for use with the new Fiber Ethernet cable runs. If the media converters are not contained within the new LED Message Board, it is the responsibility of the contractor to provide and install as part of the complete LED Message Board bid.

- a. Manufacturer: Transition Networks, Inc. (Basis of Design)
- b. Model: SSEFE10xx – 10x
- c. Or Approved Equal.

9. Display cabinets shall be connected to the network with ceramic, multimode, 62-5 micron fiber optic cable runs.
 - a. Manufacturer: Hubbell Premise Wiring. (Basis of Design)
 - b. Or Approved Equal.
 - c. Cables shall be pre-terminated.
 - d. Cables shall have ST to ST ceramic connectors as required for use with the media converters.
 - e. Final connections and termination within the rack shall be the responsibility of the contractor.
 - f. Refer to documents for location and cable run lengths.. Contractor shall coordinate with MCC Information Technology Department for access to the Gateway Building rack.

E. LED Message Software

1. Venus 1500 version 4 Software, provided by Daktronics, www.daktronics.com (Basis of Design)
2. Or Approved Equal Software must be compatible with LED Message boards installed and approved by LED message board manufacturer.
3. Software licensing must be included for the life of the computer.
4. Software shall have message display capable of:
 - a. Single message scheduled one at a time.
 - b. Several messages, graphics, animations grouped together in a playlist.
 - c. Content previews for review prior to display.
 - d. Capability to save existing display messages and create a message library.
5. Installation:
 - a. The software shall be installed on two (2) designated computers (users) on campus; the MCC Information Technology department will allow access for software installation during completion of construction.
 - b. The software shall be installed so that it, and its message library, it accessible remotely while off campus.

6. Software shall have the capability of importing:
 - a. Graphic files (.png, .bmp, .gif, .jpg, .tif, .tiff, .psd)
 - b. Animation files (.avi, .mpg, .mp4, .mov)
 - c. Data feed files (time, temp, RSS, Atom, .XML)
7. Training:
 - a. Provide in person training on campus upon completion of initial startup and troubleshooting.
 - b. Provide up to 4 man hours of training on site (campus).
 - c. Training shall be provided by a representative of the software manufacturer.
 - d. Provide access, at no additional cost, to online/webinar tutorials for future advanced training.

F. Illuminated Sign Cabinet

1. 12" high X 120" wide X 13" deep, double-faced illuminated sign cabinet.
2. Sign Cabinet:
 - a. Seamless welded extruded aluminum frame.
 - b. Extruded aluminum containing electrical components and top receiving hinge for panel.
 - c. 1-1/2" steel channel fastened to extruded aluminum internally for additional reinforcing.
 - d. Outdoor LED lighting per sign cabinet manufacturer's recommendations:
 1. Channeling strips fastened to aluminum cabinet frame, top and bottom with outdoor White LED strip lighting installed in channeling. Provide outdoor LED power supply, driver, and associated accessories installed inside sign cabinet.
 2. Two (2) 48" T8 LED tubes, installed per run, top and bottom. Provide outdoor LED power supply, driver, and associated accessories installed inside sign cabinet.
 - e. Provide PVC conduit from internal raceway to base of post/j-box, contractor to coordinate wiring and final connection.
 - f. Aluminum Finish: Black Anodized
3. Sign Panel Face:
 - a. Seamless Lexan solar grade polycarbonate, or seamless fiber-reinforced polyester (FRP) with translucent resin.
 - b. Background: White Translucent to match existing on campus.
 - c. Logo Color/Graphic: Middlesex County College will provide the artwork during the shop drawing phase. MCC is in the process of updating the schools current logo.
4. Accessories:

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- a. Provide mounting brackets, hardware, sealant, and items for installation of sign modules.

G. Posts

- 1. 8" x 8" x 0.25" (thickness) structural tube steel post.
 - a. Provide ½" steel mounting bracket for installation of LED cabinet.
 - b. Finish: Paint Satin Black to match existing finish on campus.
- 2. 6" square extruded aluminum alloy 6063 T-5, 0.188 thickness minimum.
 - a. Provide ½" steel mounting bracket for installation of LED cabinet.
 - b. Aluminum Finish: Black Anodized
- 3. Exterior Paint for structural tube steel post.
 - a. Remove rust, loose mill scale, and shop primer if any.
 - b. Apply 2 coats of a rust inhibitive, corrosion resistant acrylic primer directly to bare steel.
 - 1. Manufacturer: Sherwin-Williams Pro Industrial Pro-Cryl Universal Acrylic Primer. (Basis of Design)
 - 2. Benjamin Moore
 - 3. PPG Industries
 - c. Apply 2 coats of a durable moisture and corrosion resistant acrylic coating (Satin/Semi-gloss).
 - 1. Manufacturer: Sherwin-Williams Pro Industrial DTM Acrylic Coating. (Basis of Design)
 - 2. Benjamin Moore
 - 3. PPG Industries

V. EXECUTION

A. Examination

- 1. The contractor shall examine areas to receive sign modules. Verify correct location for footings, exterior conduit runs, pull boxes, and above ceiling power and data runs.
- 2. The contractor shall confirm the New Jersey One Call utility mark-out notification (UMO). MCC will mark out the remaining utilities in the vicinity of the Gateway Building and location of new sign modules.
- 3. The contractor shall consult with MCC prior to removing, altering, or disturbing any shrub, bush, fence, sidewalk, asphalt driveway, or any other building element encountered in the work area.

B. Installation

- 1. The contractor shall install 48" wooden stakes at each post, for each sign

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location, positioned to the final orientation of the sign modules. Final orientation will be approved by MCC on site, prior to installation of permanent structural posts.

2. Install new power and data conduit runs according to the bid documents. Bore horizontally/laterally under existing walkways and driveways, as to not cut or jackhammer the existing asphalt and concrete.
3. Bore required holes for installation of footings and structural posts. Set and install posts square, plumb, and level. Fill and compact space around posts with properly mixed concrete.
4. Install message board on posts square, plumb, and level in accordance with the approved shop drawings.
5. Install new power conduit in the Gateway building. Fasten new conduit to existing interior wall and run to existing panel. Install new fiber data cabling in the Gateway building on new J-hooks located above the existing acoustical ceiling, and run to existing rack.
6. All power, data, final connections and startup are the responsibility of the Contractor.
7. All surfaces which have been disturbed or damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they were found immediately before work was begun at no cost to MCC.

C. Cleaning

1. Clean exposed surfaces not more than 48 hours prior to the Date of Substantial Completion in accordance with the manufacturer's written cleaning instructions.
2. Remove all excess concrete and concrete residue from all exposed sign surfaces at time of installation.

D. Training

1. Upon installation of display software and start up, provide in person training on campus to approved MCC personnel. Training shall be provided by a representative of the software manufacturer.

VI. COMPLIANCE

- A. The Contractor shall comply with all of MCC's safety and work rules when performing work on their site.

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- B. All contractor employees, subcontractors, etc. shall sign-in daily at the Facilities Management Building upon arrival on campus to be issued a contractor's identification badge. It is expected that all contractor employees will conduct themselves in a professional manner.
- C. Middlesex County College is a smoke-free campus. Smoking is only permitted inside a person's personal vehicle. Smoking is not permitted anywhere else on campus or in any construction equipment. The College Police will issue summonses with fines to anyone found in violation of this policy.

VII. TIME CONSTRAINTS

- A. If the Board of Trustees of Middlesex County College has approved an award on approximately March 25, 2015, the contractor shall complete the work between May 1, 2015 and August 14, 2015. If the Board has not approved the award by this time, then MCC will advise the contractor of an alternate start date.

VIII. WORK HOURS

- A. All work is to be performed during normal work hours 8:00 am to 4:30 pm, Monday through Friday. If additional work hours are required, they shall be included in the contractor's bid price and approval of the College shall be requested by the contractor in writing 48 hours prior to the desired work date.
- B. The work hours in this section take precedent over, and will supersede any conflicting references to hours of work elsewhere in these plans and specifications.

IX. ALTERNATE #1

- A. Alternate No.1 – Full Color LED Message Board ‘A’ and ‘B’ – Provide and install full color LED display boards, for **both** boards (‘A’ and ‘B’) as specified in this document. Full color message boards shall be provided and installed **in lieu** of the base bid display boards specified in this document. The Alternate No. 1 amount shall include **all** costs, including Overhead and Profit, for providing the full color LED display boards.

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X. ADDITIONAL INFORMATION

A. Additional information may be obtained from the following individuals:

Facility/specifications:

Dennis Vliet
Manager, Facilities Projects
732-906-2611
732-906-4199 Fax
DVliet@MiddlesexCC.edu

Proposal:

David Fricke
Director, Purchasing & Inventory
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DFricke@MiddlesexCC.edu

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