

SECTION 10 14 63
DIGITAL EXTERIOR MARQUEE SIGN

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 specification section, apply to work of this section.

1.2 SECTION INCLUDES

- A. Cabinet, face, and message area of exterior marquee sign specifications.
- B. Lighting
- C. Structural support
- D. LED Digital sign

1.3 RELATED SECTIONS

- A. Section 03 20 00 Cast-in-place Concrete
- B. Section 05 50 00 Metal Fabrications
- C. Divisions 26 and 27

1.4 REFERENCES

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel
- B. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
- C. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Structural Tubing in Rounds and Shapes
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement
- E. ASTM C33/C33M - Standard Specification for Concrete Aggregates
- F. ASTM C150/C150M - Standard Specification for Portland Cement
- G. ASTM C270 Standard Specification for Mortar for Unit Masonry
- H. FBC - Florida Building Code
- I. ASCE 7 Minimum Design Loads for Buildings and Other Structures
- J. UL Underwriters Laboratories, Inc
- K. NEMA Standards

1.5 SUBMITTALS

- A. Submit shop drawings under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's product literature including components and accessories
 - 1. Preparation instructions and recommendations
 - 2. Storage and handling requirements and recommendations
 - 3. Printed installation and maintenance instructions
 - 4. Programming Instructions and directions for access to online training
 - 5. Provide training as outlined in 3.2.
- C. Shop Drawings shall indicate sign styles, lettering font, foreground and background colors, locations, overall dimensions of each sign and anchorage for Architects and District Design Coordinators review and approval.
 - 1. Anchorage shall include as a minimum an engineered foundation plans/details, structural components and connections to each other, the sign cabinet, sign face, and the foundation in compliance with FBC.
 - 2. Submit structural shop drawings to the School District Building Department in addition to the Architect.
- D. Provide color samples for Architects and District Design Coordinators selection.

- E. Submit graphics being applied to the sign for Architects and District Design Coordinators approval.
- F. Submit closeout information on operation and maintenance data for installed products.
- G. Submit executed warranty as specified to Owner.

1.6 QUALIFICATIONS

- A. Obtain all products in this section from single supplier.
- B. Manufacturing company specializing in manufacturing the products specified in this section with minimum 5-years documented experience.
- C. Installation by installer specializing and with minimum 5-years of experience in the installation of products specified in this section.
- D. Design Work under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Florida.

1.7 WARRANTY

- A. Non LED Electronic Display warranty
 - 1. Minimum warranty for 10-years against defects in workmanship and materials, warranty does not cover lightning, lamps or damage from vandalism.
 - 2. Sign Structure and Identification Cabinet: Under Normal use and service should the sign structure or sign malfunction due to defects in workmanship or materials, the Manufacturer will repair or replace any of the defective materials, except as limited below for ballasts.
 - a. Faulty ballasts will be exchanged for new ballasts for a period of three years
 - b. The warranty also includes refinishing and reinstallation, which may be required due to repair or replacement of defective sign where defect was not apparent prior to installation.
 - 3. Contractor is responsible for replacement or refinishing of sign where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.
- B. LED Electronic Display warranty
 - 1. Manufacturer shall warrant the LED Electronic Display to be free from defects in workmanship or materials for a period of 5-years from the date of Substantial Completion.
 - 2. Damage caused by abuse, misuse, misapplication or accidental damage outside the control of the Manufacturer (including Lightning), and any consequential or contingent liability is excluded from the warranty.
 - 3. Manufacturer will repair or replace malfunctioning or defective parts.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site per manufactures requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Warranty
 - 1. All purchased materials shall individually have a minimum 5 year warranty period.
- B. LED Signage
 - 1. Provide product in compliance with UL or other approved agency.
 - 2. Expected LED life expectancy is 100,000 hours.
 - 3. Provide LED display on both sides of sign.
 - 4. Minimum of two LEDs per Pixel with a 20mm pitch
 - 5. Provide temperature probe
 - 6. Approximate cabinet size 4' x 10'; as per plans or by architect

7. Top of sign height maximum 16', as per plans or by architect
8. Mounting option as per plans or by architect
9. Decorative trim as indicated on plans or by architect.
- C. Cabinet Specifications
 1. Double sided extruded aluminum and sized as indicated on plans
 2. Heliarc welded and mitered at corners
 3. Powder coated color finish: 3.0 to 4.0 mils thick electrostatically applied and permanently bonded guaranteed non-fading.
- D. Cabinet Face Specifications
 1. Provide vandal resistant clear UV solar grade high impact resistant polycarbonate cover with stainless steel hinges secured with dual compression tubular locks.
 2. Powder coat covers to match cabinet.
- E. Lighting Specifications
 1. All electrical components shall be UL listed and approved.
 2. Lighting: High output instant start T-8 fluorescent tubes spaced to provide uniform night lighting over entire face of the sign.
 3. Install per current NEC edition.
- F. Support Structure Specifications
 1. Design the support structure to withstand wind loads of as required by ASCE 7 & FBC.
 2. Legs: Cover on both sides if indicated on plans and anchor to foundation as indicated on engineered plans.
 3. Side frames painted in color approved by the Architect and District Design Coordinator.
 4. Provide signed and sealed (by Florida licensed PE) engineered shop drawings and structural calculations for approval by District Building Department.
- G. Provide 6" high numbers for the street address on the marquee, both sides if they are viewable from the street.
- H. LED Display Cabinets:
 1. Heavy Gauge Formed Aluminum Cabinets:
 - a. Serviceability: LED cabinets serviceable from front
 - b. Protective Covers: Polycarbonate lens protecting LED display area.
 - c. Lifts: Gas cylinder assist lifts, one on each end of LED covers.
 2. Double Sided: Each side is one self-contained LED Display.
 - a. Function: Each side of LED display to contain its own processor and be capable of displaying different independent messages at the same time
 - b. Weather resistant cabinets designed to meet the classification requirements of NEMA 4X construction.
 - c. Closure Panels: Matching aluminum ventilated closure panels join two cabinets aesthetically together.
 - d. Cabinet Finish: Industrial, graffiti resistant coating, DGHS Polyurethane by PPG or Architect approved equal.
 - e. Climate Controlled Interior: By thermostat, controlling heaters bars, fans.
 - f. Ventilation: With side ventilation/water diverters forced air ventilated design with an air exchange rate of four complete air changes per minute.
 3. Service: Serial port provided within Electronic Message Center for troubleshooting by direct connection to PC.
 4. Controller (CPU) Central Processing Unit:

- a. The central processing unit provided in each display is a microprocessor based circuit board assembly.
 - b. Unit is 10 MHz device with minimum of 2-MB battery backed static RAM memory and 128K bytes Flash ROM with on board programmability.
 - c. Provide 1 GB compact flash memory for message storage.
 - d. Provide one RS-232, RS-485/422 input/output serial port jumper selectable.
 - e. Function: CPU assembly provides automatic memory and program testing at power up, diagnostics, and full talk back.
 - f. Network Interface: Contact the District's IT department to obtain the latest specifications.
5. System Software Requirements
- a. Scheduling made in 12 or 24-hour formats.
 - b. Scheduler: Resides within LED display cabinet as onboard processor; does not require PC to operate messaging schedule.
 - c. Schedule Storage: System software and program sequence and schedules, can be stored on removable storage or fixed storage device.
 - d. Provide advance scheduling or pre-programming for more than 1 year in advance.
 - e. Screen Helps: Excerpts from the Owner's Manual.
 - f. Bad Word Checker: Prevents display of unacceptable words.
 - g. Library of words is password protected.
 - h. Library is fully editable for adding or deleting words.
 - i. Control: Menu guided control.
 - j. Editing and Display: Simultaneous display and edit capability.
 - k. Automatic Rebooting: Of system disk, after power outage:
 - i) System clock and calendar will continue to function during power failure.
 - ii) Message display holds memory for up to 60 days without power.
 - l. Provide all operating software to Owner along with required usage licenses and software updates.
 - m. Text Modules: Provide various with scalable fonts and traveling text.
 - n. Provide remote or on-site programming with appropriate connection.
 - o. Software Menu: User-friendly menu and icon-based software.
 - p. Provide password protection capability.
6. Power Supplies:
- a. Verify the line voltage to the sign on existing school.
 - b. New power line from the building shall be in conduit sized and installed per the NEC and division 26 of the specifications.
 - c. Provide the electronic switching power supplies with short circuit and surge protection.
 - i) Protect the electronic switching power supplies by an overload allowance ranging from 105 percent up to 150 percent.
 - d. Power the LED display by multiple solid-state electronic switching power supplies.
 - i) Provide a separate power supply for the CPU to isolate the processor power from the LED drive power.

The School District of Palm Beach County

Project Name

SDPBC Project No.

7. Information Transmission Method:
 - a. The data transmission method must be approved by the District's Information Technology Department.
 - i) Approved methods are constantly changing.
 - b. Coordinate with the District Information Technology Department and obtain the Department's written acceptance of the data transmission method prior to bid.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install signs in strict accordance with manufacturer's instructions, District Design Standards, District Master Specifications, and FBC requirements.
- B. Install signs at location and height as shown on the permitted site plan issued by the District Building Department.

3.2 TRAINING

- A. Provide for training by one of the three options:
 1. Online training provided at no charge through secure access log-in at the vendor's or the manufacturer's web site.
 2. Provide (2) DVD training disks, one to the School and one to Facilities Services Department.
 3. Provide onsite training of at least two school staff members by the vendor.

3.3 CLEANING

- A. After installation, thoroughly clean all exposed surfaces and restore all damaged material to its original condition or replaced with new material.

END OF SECTION