Contract Documents and Specifications

For

WBS Videoboard Installation – Fire Protection for Control Room

For

University of South Carolina

State project # H27-6089-MJ-C

May 14, 2012

Design Team:

Swygert and Associates

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Project Name: WBS Videoboard Installation – Fire Protection for Control Room

SE-311
Invitation for Minor Construction Quotes

SCBO NOTES 2, 4 and 5 APPLY TO THIS INVITATION FOR QUOTES

PROJECT NAME: WBS Videoboard Installation - Fire Protection for Control Room

PROJECT NUMBER: H27-6089-MJ-C **PROJECT LOCATION:** Williams Brice Stadium

BID SECURITY REQUIRED? Yes ☐ No ☑

PERFORMANCE BOND REQUIRED? Yes ☐ No ☑

PAYMENT BOND REQUIRED? Yes ☐ No ☑ **CONSTRUCTION COST RANGE:** < $ 50,000

DESCRIPTION OF PROJECT:
Provide and install fire protection for new video control room area. Systems consist of a wet system, a preaction system and a clean agent system. Small and minority business participation is encouraged. Vendors are responsible for checking the USC purchasing website for updates and addendums for this project. Website: http://purchasing.sc.edu Facilities and Construction Solicitations and Awards

A/E NAME: Swygert and Associates **A/E CONTACT:** Todd Swygert

ADDRESS: PO Box 11686 **PHONE:** 803-791-9300 **Fax:** 803-791-0830

CITY: Columbia **STATE:** sc **ZIP:** 29211 **E-MAIL:** todd@swygert-associates.com

PLANS ON FILE AT: **AGC:**
DODGE:
OTHER:

PLANS MAY BE OBTAINED FROM: http://purchasing.sc.edu See Facilities and Construction Solicitations/Awards

PLAN DEPOSIT AMOUNT: $ 0 **IS DEPOSIT REFUNDABLE?** Yes ☐ No ☐

PRE-QUOTE CONFERENCE? ☑ Yes ☐ No **MANDATORY ATTENDANCE?** ☐ Yes ☑ No

DATE: 5/30/12 **TIME:** 11am **PLACE:** 743 Greene St, Cola.,SC 29208, Conf Rm 53

AGENCY: University of South Carolina

NAME AND TITLE OF AGENCY COORDINATOR: Kay Keisler

ADDRESS: 743 Greene St **PHONE:** 803-777-5812 **Fax:** 803-777-8739

CITY: Columbia **STATE:** sc **ZIP:** 29208 **E-MAIL:** kkeisler@fmc.sc.edu

IFQ CLOSING DATE: 6/6/12 **TIME:** 3:00pm **LOCATION:** 743 Greene St,Cola,SC29208CR53

IFQ DELIVERY ADDRESSES:

HAND-DELIVERY:
743 Greene Street
Columbia, SC 29208
Attn: Kay Keisler

MAIL SERVICE:
743 Greene St
Columbia, SC 29208
Attn: Kay Keisler

IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICATION? *(Agency MUST check one)* ☑ YES ☐ NO

APPROVED BY: _____ _____
(State Engineer) *(Date)*

SE-331
Quote Form

2011 Edition

Quotes shall be submitted only on SE-331

QUOTE SUBMITTED BY: _____
(Offeror's Name)

QUOTE SUBMITTED TO: University of South Carolina
(Agency Name)

FOR PROJECT: H27-6089-MJ-C *(Number)* WBS Videoboard Installation - Fire Protection, Control Room *(Name)*

OFFER

1. In response to the Form SE-311, *Request for Minor Construction Quotes*, and in compliance with the *Instructions to Bidders* for the above-named Project, the undersigned **OFFEROR** proposes and agrees, if this Quote is accepted, to enter into a Contract with the AGENCY in the form included in the Solicitation Documents, and to perform all Work as specified or indicated in the Solicitation Documents, for the prices and within the time frames indicated in the Solicitation and in accordance with the other terms and conditions stated.
2. Pursuant to Section 11-32-3030(1) of the SC Code of Laws, as amended, **OFFEROR** has submitted Bid Security as follows in the amount and form required by the Solicitation Documents:

☐ Bid Bond with Power of Attorney ☐ Electronic Bid Bond ☐ Cashier's Check
(OFFEROR check one, if Bid Security is required)

3. **OFFEROR** acknowledges the receipt of the following Addenda to the Solicitation documents and has incorporated the effects of said Addenda into its Quote:

ADDENDUM No: _____

4. **OFFEROR** agrees that this Quote, including all bid alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of 60 Days following the Quote Date, or for such longer period of time that **OFFEROR** may agree to in writing upon request of the **AGENCY**.
5. **OFFEROR** agrees that from the compensation to be paid, the **AGENCY** shall retain as Liquidated Damages the amount of for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted Contract Time for Substantial Completion, as provided in the Contract Documents.
6. **OFFEROR** herewith submits its offer to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fee, permits, licenses and applicable taxes necessary to complete the following items of construction work:

6.1 BASE BID _____
(enter BASE BID in figures only)

6.2 ALTERNATE NO. 1 _____ **to be ADDED/DEDUCTED from BASE BID.**
(circle one)

6.3 ALTERNATE NO. 2 _____ **to be ADDED/DEDUCTED from BASE BID.**
(circle one)

FEIN/SSN: _____

SC Contractor's License Number: _____

Address: _____

Telephone/Fax _____

E-mail _____

This Quote is hereby submitted on behalf of the Offeror named above.

BY: _____
(Signature of Offeror's Representative)

_____
(Print or Type Name of Offeror's Rpresentative)

ITS: _____

USC SUPPLEMENTAL GENERAL CONDITIONS
FOR CONSTRUCTION PROJECTS

1. Contractor's employees shall take all reasonable means not to interrupt the flow of student traffic in building corridors, lobbies and stairs. All necessary and reasonable safety precautions shall be taken to prevent injury to building occupants while transporting materials and equipment through the building to the work area. Providing safe, accessible, plywood pedestrian ways around construction may be required if a suitable alternative route is not available.

2. Fraternization between Contractor's employees and USC students, faculty or staff is strictly prohibited-zero tolerance!

3. USC will not tolerate rude, abusive or degrading behavior on the job site. Heckling and cat-calling directed toward students, faculty or staff or any other person on USC property is strictly prohibited. Any contractor whose employees violate this requirement will be assessed a fine of up to $500 per violation.

4. Contractor's employees must adhere to the University's policy of maintaining a drug-free and smoke-free/tobacco free workplace.

5. Contractor must sign a Contractor Key Receipt/Return form before any keys are issued. Keys must be returned immediately upon the completion of the work. The Contractor will bear the cost of any re-keying necessary due to the loss of or failure to return keys.

6. A welding permit must be issued by the University Fire Marshall before any welding can begin inside a building. Project Manager will coordinate.

7. Contractor must notify the University immediately upon the discovery of suspect material such as those potentially containing asbestos or other such hazardous materials. These materials **must not** be disturbed until approved by the USC Project Manager.

8. At the beginning of the project, the USC Project Manager will establish the Contractor=s lay-down area. This area will also be used for the Contractor=s work vehicles. No personal vehicles will be allowed in this area, or in any areas surrounding the construction site that are not regular or authorized parking lots. Personal vehicles must be parked in the perimeter parking lots. Parking permits can be obtained at the USC Parking Office located in the Pendleton Street parking garage. The lay down area will be clearly identified to the contractor by the PM, with a sketch or drawing provided to Parking. In turn, the contractor will mark off this area with a sign containing the project name, PM name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the PM. The area will be maintained in a neat and orderly fashion. Vehicles parked in the lay down area (or designated parking areas) will be clearly marked or display a CPC furnished placard for identification.

Updated: July 15, 2011

9. Contractor will be responsible for providing its own temporary toilet facilities, unless prior arrangements are made with the USC Project Manager.

10. Use of USC communications facilities (telephones, computers, etc.) by the Contractor is prohibited, unless prior arrangements are made with the USC Project Manager.

11. For all projects over $100,000, including IDC's, an SE-395, Contractor Performance Evaluation, will be completed by the USC Project Manager and reviewed with the GC at the beginning of the project and a copy given to the GC. At the end of the project the form will be completed and a Construction Performance rating will be established.

12. Contractor is responsible for removal of all debris from the site, and is required to provide the necessary dumpsters which will be emptied at least ___1___ times per week. Construction waste must not be placed in University dumpsters. THE CONSTRUCTION SITE MUST BE THOROUGHLY CLEANED WITH ALL TRASH PICKED UP AND PROPERLY DISPOSED OF ON A DAILY BASIS AND THE SITE MUST BE LEFT IN A SAFE AND SANITARY CONDITION EACH DAY. THE UNIVERSITY WILL INSPECT JOB SITES REGULARLY AND WILL FINE ANY CONTRACTOR FOUND TO BE IN VIOLATION OF THIS REQUIREMENT AN AMOUNT OF UP TO $1,000 PER VIOLATION.

13. **Contractor must provide all O&M manuals, as-built drawings, and training of USC personnel on new equipment, controls, etc. prior to Substantial Completion. Final payment will not be made until this is completed.**

14. The contractor will comply with all regulations set forth by OSHA and SCDHEC. Contractor must also adhere to USC's internal policies and procedures (available by request). As requested, the contractor will submit all Safety Programs and Certificates of Insurance to the University for review.

15. Tree protection fencing is required to protect existing trees and other landscape features to be preserved within a construction area. The limits of this fence will be evaluated for each situation with the consultant, USC Arborist and USC Project Manager. The tree protection fence shall be 5' high chain link fence unless otherwise approved by USC Project Manager. No entry or materials storage will be allowed inside the tree protection zone. A 4" layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone.

16. Where it is necessary to cross walks, tree root zones (i.e., under canopy) or lawns the following measures shall be taken: For single loads up to 9,000 lbs., a 3/4" minimum plywood base shall be placed over areas impacted. For single loads over 9,000 lbs., two layers of 3/4" plywood is required.

17. For projects requiring heavy loads to cross walks tree root zones or lawns. A construction entry road consisting of 10' X 16' oak logging mates on 12" coarse, chipped, hardwood base. Mulch and logging mats shall be supplemented throughout the project to keep

matting structurally functional.

18. Any damage to existing landscaping (including lawn areas) will be remediated before final payment is made.

19. Orange safety fence to be provided by the contractor. (USC Arborist, Kevin Curtis may be contacted at 777-0033 or 315-0319)

Campus Vehicle Expectations

1. All motorized vehicles on the University campus are expected to travel and park on roadways and/or in parking stalls.

2. All motorized vehicle traffic on USC walkways must first receive the Landscape Manager=s authorization. Violators may be subject to fines and penalties.

3. All motorized vehicles that leak or drip liquids are prohibited from traveling or parking on walks or landscaped areas.

4. Contractors, vendors, and delivery personnel are required to obtain prior parking authorization before parking in a designated space. Violators may be subject to fines and/or penalties. See Item 10 below.

5. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held personally responsible for damages and restoration expense.

6. Vehicle drivers who park on landscape or drives must be able to produce written evidence of need or emergency requiring parking on same.

7. All vehicles parked on landscape, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.

8. All drivers of equipment and vehicles will be respectful of University landscape, equipment, structures, fixtures and signage.

9. All incidents of property damage will be reported to Parking Services or the Work Management Center.

10. Parking on campus is restricted to spaces designated by Parking Services at the beginning of the project. Once the project manager and contractor agree on how many spaces are needed, the project manager will obtain a placard for each vehicle. This placard must be hung from the mirror of the vehicle, otherwise a ticket will be issued and these tickets cannot be "fixed". Parking spaces are restricted to work vehicles only; no personal vehicles.

Project Name: WBS Videoboard Installation – Fire Protection for Control Room

Project Number: H27-6089-MJ-C

University of South Carolina

CONTRACTOR'S ONE YEAR GUARANTEE

STATE OF _____

COUNTY OF _____

WE _____
as General Contractor on the above-named project, do hereby guarantee that all work executed under the requirements of the Contract Documents shall be free from defects due to faulty materials and /or workmanship for a period of one (1) year from date of acceptance of the work by the Owner and/or Architect/Engineer; and hereby agree to remedy defects due to faulty materials and/or workmanship, and pay for any damage resulting wherefrom, at no cost to the Owner, provided; however, that the following are excluded from this guarantee;

Defects or failures resulting from abuse by Owner.

Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

_____
[Name of Contracting Firm]

*By_____

Title_____

*Must be executed by an office of the Contracting Firm.

SWORN TO before me this
_____ day of _____, 2____ (seal)

_____State

My commission expires _____

TECHNICAL SPECIFICATIONS

SECTION 15500 - FIRE PROTECTION

PART 1 - GENERAL

RELATED DOCUMENTS:

This section of the specifications describes requirements pertaining to Fire Protection. All work shall comply with the South Carolina Fire Protection Sprinkler Act, NFPA 13 – 2010 Edition, NFPA 20 – 2010 Edition and NFPA 2001 – 2008 Edition – Clean Agent Fire Extinguishing Systems.

SCOPE:

This section of these specifications are intended to describe for furnishing labor, material, and equipment for the installation of a wet pipe automatic sprinkler system, preaction system, and clean agent fire extinguishing system in the areas indicated on the plans.

In all areas, equipment and piping shall be installed so it will not interfere with the air conditioning, heating, ventilating and electrical systems that must occupy the same general areas.

Contractor shall design an automatic wet system for the areas indicated. All piping shall be sized based on hydraulic calculations indicated on the attached Fire Protection Sprinkler System Specification Sheet.

The design, equipment, installation, testing and maintenance of the systems shall comply with the requirements of the following codes and standards:

- International Building Codes – 2009 Edition
- State Engineer's Manual – Latest Edition
- NFPA 13 – Standard for Installation of Sprinkler Systems - 2010 Edition
- NFPA 20 – Standard for the Installation of Stationary Pumps for Fire Protection - 2010 Edition
- NFPA 2001 – Clean Agent Fire Extinguishing Systems – 2008 Edition
- NFPA 70 – National Electric Code – 2006 Edition
- NFPA 72 – Standard for Protective Signaling – 2007 Edition
- International Fire Code – 2009 Edition
- Manufacturer's Listing and Installation Instructions.

SHOP DRAWINGS:

FIRE SPRINKLER:
Detailed drawings, including proposed head layouts, shall be prepared by the Fire Protection Contractor. These drawings shall be submitted to the Engineer for approval. Upon approval by the engineer, it shall be the responsibility of this contractor to submit the approved shop drawings to the Office of the State Fire Marshal for their approval. All approvals shall be received prior to starting work.

Upon completion of the indicated work, one (1) additional set of approved reproducible drawings showing the entire installation "as built" shall be furnished to the Owner for his files.

FM200:
The installing contractor shall submit sealed, working plans per NFPA 2001 – 5.1.2 with the following design information and drawings for approval by the engineer of record before starting work on this project or submitting to any authority having jurisdiction:

- Field installation layout drawings having a scale of not less than ¼" = 1'-0".
- Auxiliary details and information such as equipment shutdown.
- Fire alarm shop drawings shall show the location of all devices and include point-to-point wiring.
- Provide an internal control panel wiring diagram which shall include power supply requirements and field wiring termination points.
- A legend identifying all symbols used.
- Complete hydraulic flow calculations, from a UL listed computer program, shall be provided. Calculation sheets must include the manufacturers name and UL listing number for verification. The individual sections of pipe and all fittings, as shown on the isometrics, must be identified and included in the calculation. Total agent discharge time must be shown.
- Provide calculations for the battery stand-by power supply taking into consideration the power requirements of all alarms, initiating devices and auxiliary components under full load conditions.
- The contractor shall include a copy of all authority having jurisdiction approvals and as built drawings (per NFPA 2001 – 5.1.2.5.3) as part of their project close out documents. These documents shall be placed in a binder.

SYSTEM DESCRIPTION & OPERATION (FM200):

System description and operation shall include the following:

- The system shall be a total flood FM-200 Fire Suppression System.
- The system shall provide a FM-200 minimum design concentration of 6.4% (UL) or 7.2% (FM) by volume for Class A hazards and 9.0% by volume for Class B hazards, in all areas and/or protected spaces, at the minimum anticipated temperature within the protected area. System design shall not exceed 10.5% for normally occupied spaces, adjusted for maximum space temperature anticipated, with provisions for room evacuation before agent release.
- The system shall be complete in all ways. It shall include all mechanical and electrical installation, all detection and control equipment, agent storage containers, Clean Agent, discharge nozzles, pipe and fittings, manual release and abort stations, audible and visual alarm devices, auxiliary devices and controls, shutdowns, alarm interface, caution/advisory signs, functional checkout and testing, training and all other operations necessary for a functional, UL listed and/or FM approved Clean Agent Suppression System.
- Provide two inspections during the first year of service. Inspections shall be made at 6 month intervals commencing when the system is first placed into normal service.

- The system shall be actuated by a photoelectric detectors installed for maximum area coverage of 250 square feet per detector in the room and under floor protected spaces.
- The system shall use cross-zoned detection requiring two detectors to be in alarm before release.
- Automatic operation of the protected area shall be as follows:
    - Actuation of one detector, within the system, shall:
        - Illuminate the "Alarm" lamp on the control panel face.
        - Energize audible and visual indicator.
        - Transfer Auxiliary contacts which shall:
            - Transmit a signal to a fire alarm system, and
            - Shutdown HVAC Equipment
    - Actuation of a 2nd detector, with the system, shall:
        - Illuminate the "Pre-Discharge" lamp on the control panel face.
        - Energize pre-discharge audible and visual devices that are a distinctly different signal than the "Alarm" above.
        - System abort sequence is enabled at this time.
        - Time delay of the system activation is not permitted.
    - The Clean Agent system shall discharge and the following shall occur:
        - Illuminate a "System Fired" lamp on the control panel face.
        - Shutdown of all power to high-voltage equipment.
        - Energize a visual indicator outside the hazard in which the discharge occurred.
        - Energize a "System Fired" audible device that is distinctly different signal than the "Pre-Discharge and Alarm" signals above.
    - The system shall be capable of being actuated by manual discharge devices located at each exit from the room. Operation of a manual device shall duplicate the sequence description above except the abort functions shall be bypassed. The manual discharge station shall be of the electrical actuation type and shall be supervised at the main control panel.
- The FM200 installer shall be responsible for providing the "Fire Enclosure Integrity Test" to establish retention time. Test shall be done in conjunction with general contractor's work.

EQUIPMENT REQUIREMENTS:

Materials, sprinkler devices, steel pipe and fittings, valves and hangers used in the system installation shall be on the approved or acceptable list of the current issue of Inspected Fire Protection Equipment and Materials as published by the Underwriter's Laboratories, Inc. and shall be NFPA approved.

The Contractor shall obtain all required approvals before installing any equipment.

SEISMIC REQUIREMENTS:

Complete installation of fire protection system shall meet the seismic requirements including longitudinal bracing, sway bracing, and four way bracing as required by the International Building Code, NFPA 13 and NFPA 2001.

PART 2 - PRODUCTS

Fire Sprinkler:
Sprinkler heads shall be spray type, having 1/2" discharge orifice, with temperature ratings in accordance with Underwriter's specifications unless otherwise noted. Sprinkler heads shall be flat plate concealed type sprinklers, adjustable decorative/glass bulb type as manufactured by the Reliable Automatic Sprinkler Company, or approved equal by Viking or Victaulic. All heads shall have a white finish.

All piping 2-1/2" and larger shall be Schedule 10 steel piping and all piping smaller than 2-1/2" shall be schedule 40 steel piping.

Heat Trace:
Heat trace tape shall be Thermon, or approved equal, Model 5FLX-1-OJ-CL with ambient sensing control (B4X-15140). Heat tape shall be rated at 120 volts with polyolefin outer jacket and "electric heat tracing" label securely attached. Heat trace system shall connect to the existing system.

FM200:
The FM-200 Clean Agent System materials and equipment shall be standard products of the suppliers latest design.

The system shall be complete with its own supply of clean agent. The agent shall be stored in a container super pressurized with dry nitrogen to an operating pressure of 360 psi @ 170 degrees. Container shall be of high strength low alloy steel construction and shall conform to NFPA 2001.

Container shall be activated by a resettable electric actuator with mechanical override. Container shall have a pressure gauge and low pressure switch to provide visual and electrical supervision of the container pressure. The low pressure switch shall be wired to the control panel to provide an audible and visual alarm in the event that the pressure drops below 247 psi. The pressure gauge shall be color coded. The container shall have a pressure relief provision that automatically operates before the internal pressure exceeds 750 psi.

Discharge nozzles shall be provided throughout the space to provide proper agent quantity and distribution. Nozzles shall be available in sizes 3/8" to 2" and in 180 degree and 360 degree distribution patterns. Ceiling plates shall be used with the nozzles to conceal pipe holes in ceiling tiles.

Distribution piping shall be adequately supported and anchored at all directional changes and nozzle locations. All piping shall be reamed, blown clear and swabbed with suitable solvents to remove burrs, mill varnish and cutting oils before assembly. All pipe threads shall be sealed with Teflon tape pipe sealant applied to the mail thread only.

The control panel shall be UL listed and FM approved for use with the clean agent system. The control panel shall perform all functions necessary to operate the system detection, actuation and auxiliary functions. The control system shall include battery standby power to support 24 hours in standby and five minutes in alarm. Control panel shall be capable of being monitored by the fire alarm system installed by others. Panel shall contain a set of auxiliary contacts that initiate the alarm upon alarm or activation of the system.

The detectors shall be spaced and installed in accordance with the manufacturer's specifications and the guidelines of NFPA 72.

Signs shall be provided to comply with NFPA 2001 – 2008 Edition.

All system and control wiring shall be furnished and installed by the contractor. All wiring shall be installed in EMT, or conduit, and must be installed and kept separate from all other building wiring. All wiring shall be installed by qualified individuals to conform to the National Electric Code and all local and state codes.

PART 3 - EXECUTION

INSTALLATION:

Equipment, materials, installation, and workmanship shall be in accordance with NFPA 13 - 2010 Edition, NFPA 20 – 2010 Edition, NFPA 2001 – 2008 Edition, and the International Building Codes – 2009 Edition.

FIELD TESTING:

Fire Sprinkler:
Preliminary Tests: Hydrostatically test system at 200 psig for a period of two hours. Flush piping in accordance with NFPA 13. Piping above suspended ceilings shall be tested, inspected, and approved before installation of ceilings. Test the alarms and other devices. Test the water flow alarms by flowing water through the inspector's test connection. When tests have been completed and corrections made, submit a signed and dated certificate, similar to that specified in NFPA 13, with a request for a formal inspection and tests.

FM200:
After the system installation has been completed, the entire system shall be checked out, inspected and functionally tested by qualified, trained personnel, in accordance with the manufacturer's recommended procedures and NFPA standards.

TRAINING REQUIREMENTS:

FM200:
Prior to final acceptance, the installing contractor shall provide operational training to the owners personnel. Training session shall include control panel operation, trouble procedures, supervisory procedures, auxiliary functions, and emergency procedures.

SYSTEM INSPECTIONS (FM200):

The installing contractor shall provide two inspections during the one-year warranty period. The first at the six month interval, and the second at the twelve month interval. Inspections shall be conducted in accordance with the manufacturer's guidelines and the recommendations of NFPA 2001 – 2008 Edition.

End of Section 15500