



# Request for Quotation

Page One

**THIS IS NOT AN ORDER**

**Purchasing Department | 1600 Hampton Street, Suite 606 | Columbia, SC 29208 | (803) 777-4115**

Quotation must be received no later than: <b>3:00 PM</b>	Send Quotation to above address at Attention of:	Solicitation Number:	Posting Date:
<b>7 27 2018</b>	<b>Ashley Kennedy-Shell</b>	<b>USC-RFQ-3341-AS</b>	<b>7 18 2018</b>

Please quote your lowest delivered price of the item(s) listed below. The Purchasing Department reserves the right to reject any or all quotes and to waive any or all technicalities.

1. All Quotes must be signed by the vendor's representative per the terms noted. Failure to comply with these instructions may result in disqualification of the quote.
2. Faxed (803) 777-2032 or E-mailed (abk@mailbox.sc.edu) Quotes are acceptable and preferred.
3. This solicitation conforms to the provisions of Procurement Code Section 11-35-1550.

<b>Vendor Name</b>			
<b>Vendor Address</b>			
<b>Phone Number</b>		<b>E-mail</b>	
<b>FEIN/SSN</b>		<b>SC Minority Cert No.</b>	
<b>Print Name</b>		<b>Signature</b>	

Item	Unit	Description of Services	Total Price
1	LOT	Turnkey Installation of Audio and Control System at USC Band Practice Facility at the Columbia Campus	\$
		Award will be made to one vendor. Quote only as specified. Do not include sales tax.	

**Deliveries shall be FOB Destination.** A faxed or e-mailed quote is acceptable.

**Buyer: Ashley Kennedy-Shell    Phone: (803) 777-4115    E-mail: abk@mailbox.sc.edu**

## TERMS AND CONDITIONS

All amendments to and interpretation of this RFQ shall be in writing. The procurement officer shall not be legally bound by any amendment or interpretation that is not in writing.

Any contract entered into by the University of South Carolina or its agencies resulting from this quotation shall be subject to cancellation at the end of any fiscal or appropriated year unless otherwise provided by law.

Payment will be made in accordance with Section 11-35-45 of the South Carolina Consolidated Procurement Code and Disbursement Regulations. Delay in receiving invoices, as well as errors and omissions on the invoices, will be considered just cause for withholding payment without losing discount privileges. The University reserves the right to withhold payment or make such deductions as may be necessary to protect the University from loss or damage because of defective work, claims, damages, or to pay for repair of correction of materials furnished hereunder.

Quoted prices must remain firm for a period of thirty days beyond the Request for Quotation deadline. Unit prices will govern over extended prices unless otherwise stated.

All materials and products offered must be guaranteed to meet and comply with the requirements of all specifications, terms, and conditions indicated in this solicitation.

Award will be made in accordance with Section 11-35-1550 of the South Carolina Consolidated Procurement Code.

The University reserves the right to: (1) reject any and all quotations and to cancel the solicitation; (2) waive any and all technicalities; (3) reject any quotation in which the delivery time indicated is of substantial length to cause disruption and/or delay in operation for which the item(s) is/are intended; (4) reject ambiguous quotations which are uncertain as to terms, delivery, quantity, or compliance with specifications.

The successful bidder assumes sole responsibility and shall hold harmless the University of South Carolina, its directors, officers, employees, and agents from and against any and all claims, actions, or liabilities of any nature which may be asserted against them by third parties in connection with the performance of the successful bidder, its directors, officers, employees, and agents under this agreement. The University of South Carolina agrees to accept responsibility for claims, actions, or liabilities resulting from negligent acts of its employees occurring within the scope of their employment which may be asserted against them by third parties in connection with the performance of the University of South Carolina, its members, directors, officers, employees, and agents under this agreement.

Contractor agrees not to refer to award of this contract in commercial advertising in such a manner to state or imply that the products or service provided are endorsed or preferred by the user.

Upon award of a contract under this solicitation, the person, partnership, association, or corporation to whom the award is made must comply with the laws of South Carolina that require such person or entity to be authorized and/or licensed to do business in this State. Notwithstanding the fact that applicable statutes may be exempt or exclude the successful offeror from requirements that it be authorized and/or licensed to do business in this State, by submission of this signed quote, the quoter agrees to subject itself to the jurisdiction and process of the courts of the State of South Carolina as to all matters and disputes arising or to arise under the contract and the performance thereof, including any questions as to the liability for taxes, licenses, or fees levied by the State.

The University of South Carolina requires all contractual activities to be performed in a manner that is consistent with all applicable federal, state and local laws, regulations, rules, rulings, and ordinances.

These include, but are not limited to: the Occupational safety and Health Act, The Environmental Protection Act, The South Carolina Hazardous Waste Management Act.

#### **DEFAULT**

The state may terminate this contract, or any part hereof, for cause in the event of any default by the contractor, or if the contractor fails to comply with any contract terms and conditions, or fails to provide the state, upon request, with adequate assurances of future performance. In the event of termination for cause, the state shall not be liable to the contractor for any amount for supplies or services not accepted, and the contractor shall be liable to the state for any and all rights and remedies provided by law. If it is determined that the state improperly terminated this contract for default, such termination shall be deemed a termination for convenience. In case of default by the contractor, the University of South Carolina reserves the right to purchase any or all items in default in the open market, charging the contractor with any additional costs. The defaulting contractor shall not be considered a responsible bidder until the assessed charge has been satisfied.

#### **TERMINATION FOR CONVENIENCE – SHORT FORM (JAN 2006)**

The Procurement Officer may terminate this contract in whole or in part, for the convenience of the State. In such a termination, the Procurement Officer may require the contractor to transfer title and deliver to the State in the manner and to the extent directed by the Procurement Officer: (a) any completed supplies; and (b) such partially completed supplies and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called “manufacturing material”) as the contractor has specifically produced or specially acquired for the performance of the terminated part of this contract. Upon such termination, the contractor shall (a) stop work to the extent specified, (b) terminate any subcontracts as they relate to the terminated work, and (c) be paid the following amounts without duplication, subject to the other terms of this contract: (i) contract prices for supplies or services accepted under the contract, (ii) costs incurred in performing the terminated portion of the work, and (iii) any other reasonable costs that the contractor can demonstrate to the satisfaction of the State, using its standard record keeping system, have resulted from the termination. The contractor shall not be paid for any work performed or costs incurred that reasonably could have been avoided. As a condition of payment, contractor shall submit within three months of the effective date of the termination a claim specifying the amounts due because of

the termination. The absence of an appropriate termination for convenience clause in any subcontract shall not increase the obligation of the state beyond what it would have been had the subcontract contained such a clause.

### **SHIPPING / RISK OF LOSS**

FOB Destination. Destination is the shipping dock of the University of South Carolina's designated receiving site, or other location, as specified herein.

### **HIPAA LAW**

The Contractor agrees that to the extent that some or all of the activities within the scope of this Contract are subject to the Health Insurance Portability Accountability Act of 1996, P.L. 104-91, as amended ("HIPAA"), or its implementing regulations, it will comply with the HIPAA requirements and will execute such agreements and practices as the University of South Carolina may require to ensure compliance. Additional information may be viewed at: <http://www.sa.sc.edu/shs/hipaa/>

### **PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT**

The University of South Carolina requires that all contractual activities to be in compliance with local, state and federal mandates concerning "protection of human health and the environment". In addition, the University of South Carolina is a "Drug Free Work Place" and requires all contractors to comply with South Carolina Code of Laws Section 41-15-10 ET sequence (1976 w/amendments). Any contractor doing business with the University will be required to document compliance with these mandates and to furnish specific information requested by the University's Department of Environmental Health and Safety when notified to do so. The Contractor understands and agrees that jobsites are open at all times work is being performed by the Contractor to authorized University employees who have been trained to identify unsafe work conditions. The Contractor will immediately correct any deficiencies noted by these inspections when requested by the University's Department of Environmental Health and Safety to do so. In work areas where a specific hazard is posed which includes but is not limited to lead paint and asbestos abatement projects, Contractors will be required to produce Lead Compliance Plans and Asbestos Project Designs which outline their method of work prior to the start of work. Each contractor shall designate a responsible member of the Contractor's organization to be at the site whose duty shall be the prevention of accidents. By submission of this bid, the vendor agrees to take all necessary steps to insure compliance with the requirements outlined above.

### **VENDOR IDENTIFICATION**

The University must have your Federal ID Number (company) or Social Security Number (individual) before processing any invoices for payment. Failure to provide this information will result in delay of payments until this information is received. Please include this information with your quote.

### **WARRANTY – STANDARD (JAN 2006)**

Contractor must provide the manufacture's standard written warranty upon delivery of product. Contractor warrants that manufacturer will honor the standard written warranty provided.

### STATE OFFICE CLOSINGS (JAN 2004)

If an emergency or unanticipated event interrupts normal government processes so that offers cannot be received at the government office designated for receipt of bids by the exact time specified in the solicitation, the time specified for receipt of offers will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal government processes resume. In lieu of an automatic extension, an Amendment may be issued to reschedule bid opening. If state offices are closed at the time a pre-bid or pre-proposal conference is scheduled, an Amendment will be issued to reschedule the conference. Useful information may be available at: <http://www.scemd.org/planandprepare/disasters/severe-winter-weather>

### RELATIONSHIP OF THE PARTIES (JAN 2006):

Neither party is an employee, agent, partner, or joint venturer of the other. Neither party has the right or ability to bind the other to any agreement with a third party or to incur any obligation or liability on behalf of the other party. [07-7B205-1]

### CODE OF LAWS AVAILABLE (JAN 2006):

The South Carolina Code of Laws, including the Consolidated Procurement Code, is available at: <http://www.scstatehouse.gov/code/statmast.php> The South Carolina Regulations are available at: <http://www.scstatehouse.gov/coderegs/statmast.php> [02-2A040-2]

### SITE VISIT – NON-MANDATORY (JAN 2006): See Site Visit Clause.

SITE VISIT (JAN 2006): A site visit will be held at the following date, time and location. The University assumes no responsibility for any conclusions or interpretations made by the contractor based on the information made available at the site visit. Nor does the University assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

**Date & Start Time:** July 26, 2018 at 2:00 PM  
**Location:** USC Band Field  
326 Sumter Street  
Columbia, SC 29201

### ADDITIONAL CONDITIONS

PREFERENCES - A NOTICE TO VENDORS (SEP. 2009): On June 16, 2009, the South Carolina General Assembly rewrote the law governing preferences available to in-state vendors, vendors using in-state subcontractors, and vendors selling in-state or US end products. This law appears in Section 11-35-1524 of the South Carolina Code of Laws. A summary of the new preferences is available at [www.procurement.sc.gov/preferences](http://www.procurement.sc.gov/preferences). **ALL THE PREFERENCES MUST BE CLAIMED AND ARE APPLIED BY LINE ITEM, REGARDLESS OF WHETHER AWARD IS MADE BY ITEM OR LOT. VENDORS ARE CAUTIONED TO CAREFULLY REVIEW THE STATUTE BEFORE CLAIMING ANY PREFERENCES. THE REQUIREMENTS TO QUALIFY HAVE CHANGED. IF YOU REQUEST A PREFERENCE, YOU ARE CERTIFYING THAT YOUR OFFER QUALIFIES FOR THE PREFERENCE**

**YOU'VE CLAIMED. IMPROPERLY REQUESTING A PREFERENCE CAN HAVE SERIOUS CONSEQUENCES. [11-35-1524(E)(4)&(6)]**

**PREFERENCES - RESIDENT CONTRACTOR PREFERENCE (SEP 2009):** To qualify for the RCP, you must maintain an office in this state. An office is a nonmobile place for the regular transaction of business or performance of a particular service which has been operated as such by the bidder for at least one year before the bid opening and during that year the place has been staffed for at least fifty weeks by at least two employees for at least thirty five hours a week each. In addition, you must, at the time you submit your bid, directly employ, or have a documented commitment with, individuals domiciled in South Carolina that will perform services expressly required by the solicitation and your total direct labor cost for those individuals to provide those services must exceed fifty percent of your total bid price. [11-35-1524(C)(1)(iii)] Upon request by the procurement officer, you must identify the persons domiciled in South Carolina that will perform the services involved in the procurement upon which you rely in qualifying for the preference, the services those individuals are to perform, and documentation of the your labor cost for each person identified. If requested, your failure to provide this information promptly will be grounds to deny the preference (and, potentially, for other enforcement action).

**CONTRACTOR'S LIABILITY INSURANCE - GENERAL (FEB 2015):** (a) Without limiting any of the obligations or liabilities of Contractor, Contractor shall procure from a company or companies lawfully authorized to do business in South Carolina and with a current A.M. Best rating of no less than A: VII, and maintain for the duration of the contract, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work and the results of that work by the contractor, his agents, representatives, employees or subcontractors.

(b) Coverage shall be at least as broad as:

(1) Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 12 07 covering CGL on an "occurrence" basis, including products-completed operations, personal and advertising injury, with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, the general aggregate limit shall be twice the required occurrence limit. This contract shall be considered to be an "insured contract" as defined in the policy.

(2) Auto Liability: ISO Form Number CA 00 01 covering any auto (Code 1), or if Contractor has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limits no less than \$1,000,000 per accident for bodily injury and property damage.

(3) Worker's Compensation: As required by the State of South Carolina, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.

(c) Every applicable Using Governmental Unit, and the officers, officials, employees and volunteers of any of them, must be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 and CG 20 37 if a later edition is used.

(d) For any claims related to this contract, the Contractor's insurance coverage shall be primary insurance as respects the State, every applicable Using Governmental Unit, and the officers, officials, employees and volunteers of any of them. Any insurance or self-insurance maintained by the State, every applicable Using Governmental Unit, or the officers, officials, employees and

volunteers of any of them, shall be excess of the Contractor's insurance and shall not contribute with it.

(e) Prior to commencement of the work, the Contractor shall furnish the State with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this section. All certificates are to be received and approved by the State before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The State reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by this section, at any time.

(f) Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions. In addition, the Contractor shall notify the State immediately upon receiving any information that any of the coverages required by this section are or will be changed, cancelled, or replaced.

(g) Contractor hereby grants to the State and every applicable Using Governmental Unit a waiver of any right to subrogation which any insurer of said Contractor may acquire against the State or applicable Using Governmental Unit by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation, but this provision applies regardless of whether or not the State or Using Governmental Unit has received a waiver of subrogation endorsement from the insurer.

(h) Any deductibles or self-insured retentions must be declared to and approved by the State. The State may require the Contractor to purchase coverage with a lower deductible or retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention.

(i) The State reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

#### MINORITY PARTICIPATION (JAN 2006)

Is the bidder a South Carolina Certified Minority Business?  Yes  NO

Is the bidder a Minority Business certified by another governmental entity?  Yes  NO

If so, please list the certifying governmental entity: \_\_\_\_\_

Will any of the work under this contract be performed by a SC certified Minority Business as a subcontractor?  Yes  NO

If so, what percentage of the total value of the contract will be performed by a SC certified Minority Business as a subcontractor?  Yes  NO

Will any of the work under this contract be performed by a minority business certified by another governmental entity as a subcontractor?  Yes  NO

If so, what percentage of the total value of the contract will be performed by a minority business certified by another governmental entity as a subcontractor?  Yes  NO

If a certified Minority Business is participating in this contract, please indicate all categories for which the Business is certified:

- Traditional minority
- Traditional minority, but female
- Women (Caucasian females)
- Hispanic minorities
- DOT referral (Traditional minority)
- DOT referral (Caucasian female)
- Temporary certification
- SBA 8 (a) certification referral
- Other minorities (Native American, Asian, etc.)

(If more than one minority contractor will be utilized in the performance of this contract, please provide the information above for each minority business.)



**BID SCHEDULE**

Item	Unit	Description of Services	Total Price
1	LOT	Turnkey Installation of Audio and Control System at USC Band Practice Facility at the Columbia Campus	\$
		Award will be made to one vendor. Quote only as specified. Do not include sales tax.	

**Resident Contractor Preference** \_\_\_\_\_

**Resident Sub-Contractor Preference (2%)** \_\_\_\_\_ **Number of Sub-Contractors** \_\_\_\_\_

**Resident Sub-Contractor Preference (4%)** \_\_\_\_\_ **Number of Sub-Contractors** \_\_\_\_\_

**Note:** The service preferences do not apply to a bid for an item of work by the bidder if the annual price of the bidder's work exceeds \$50,000 or the total potential price of the bidder's work exceeds \$500,000. [11-35-1524(E)(3)]

Please refer to the preference clauses listed in the additional conditions of this solicitation to ensure that you qualify to select the above preferences.

**Bidder is to submit the following for preferences requested above:**

- 1) Identify the subcontractor to perform the work:
- 2) Identify the work the subcontractor is to perform:
- 3) Bidder's factual basis for concluding that the subcontractor's work constitutes the required percentage of the work to be performed in the procurement.

**A. BIDDER REQUIREMENTS:** Successful bidder must comply with the following conditions:

**1. Summary (general description, scope of job)**

Turnkey installation of audio and control system at USC Band Practice Facility, Columbia, SC.

**2. Testing Equipment**

The following testing equipment must be available to the contractor throughout the installation and warranty periods:

Oscilloscope: 10MHz bandwidth; Sensitivity:1mV/cm.

Digital Multimeter: 1% accuracy

Function Generator: 1 MHz bandwidth; Distortion less than 1%

Real Time Analyzer: 1/3 Octave, ANSI S1.11-1971 Class II, Fourth-order, type E filter set

Pink Noise Source: 20 Hz - 20 kHz range

SMAART: Version 8 or newest available software from Rational Acoustics w/hardware

Calibrated Reference Microphone: 20 Hz - 20 kHz range

Impedance Meter: 20 Hz - 20 kHz range; 1 Ohm - 50 kOhm.

RF Analyzer: Spectrum Frequency Analyzer for Wireless Frequency Coordination (Shure Wireless Workbench or Similar w/ Hardware)

**3. Execution Time Line**

Coordinate the sequence of activities to accommodate required services with a minimum of delay.

All requirements of specifications completed within 45 days of written acceptance of contractor's proposal. Contractor will be required to work with University personnel during installation.

**4. Project Conditions**

Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures.

Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Dispose of material lawfully.

Smoking: Not permitted on Property.

## **5. Instruction/Training**

Provide two (2) hours of initial instruction to the owner's staff and an additional two (2) hours of follow up training (at owner's request) between sixty (30) and ninety (90) days after job completion. Instruction should include but not be limited to the following:

- Startup.
- Shutdown.
- Functional system overview
- User operations
- Periodic user maintenance

Note that training may be required to be conducted after normal business hours or on weekends. Contractor shall work with venue to establish a mutually agreeable time and no additional charges can apply to training outside of normal business hours. This project includes incorporation of some existing equipment. Due to the circumstances and tie-ins to such gear, contractor shall have expertise in the operation of existing equipment and include time to provide training on these items as well as newly installed items.

## **6. Warranty Requirements**

Provide complete warranty on all parts and labor for a period of one (1) year from completion of work. Manufacturer's warranty may extend beyond this period and is not voided by this statement.

**Disclaimers and Limitations:** Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturer, and subcontractors required to countersign special warranties with the Contractor.

**Related Damages and Losses:** When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

**Reinstatement of Warranty:** When Work covered by a warranty has failed and been corrected by replacement or rebuilding, the contractor shall reinstate the warranty for the duration of the original warranty period.

**Replacement Cost:** Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the work through a portion of its anticipated useful service life.

## **7. Loaner Equipment**

Contractor shall maintain a supply of standard equipment identical or similar to installed equipment. Upon warranty failure of a major component, contractor shall provide loaner equipment to Owner if needed to keep the venue operational.

## **8. Submittals**

Operation and maintenance manual submittal for each electronic/electrical item used in the system.

Operation and Maintenance Instructions: Specific system operation and maintenance

Product Data Sheets on each component installed, where applicable.

Shop Drawings: System functional diagram, wire number and termination schedules, rack layout diagrams, and system settings after system adjustment.

All digital programming, data files, equipment settings, source code, passwords, etc. utilized in setting or tuning any component in the system. These are to be delivered on USB Key or emailed. Contractors shall be required to maintain these files off site during warranty period.

Material Safety Data Sheets on equipment or supplies where required.

Form of Technical Submittals: All operation manuals, maintenance manuals, operation and maintenance instructions, product data sheets, Material Safety Data Sheets, and shop drawings shall be organized provided in digital format with appropriate indexing.

Quick Start Instruction, maintenance to be performed often or applicable information to be posted near gear shall be laminated and posted at the proper location in the building in places approved by owner.

Submit written warranties to the owner prior to the completion of work. If the Owner's request a commencement date for warranties other than the date of completion of the Work, or a designated portion of the Work, submit these written warranties upon request of the Owner.

When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the owner within 15 days of completion of that designated portion of the Work.

Form of Warranty Submittal: At final completion compile a digital copy of each required warranty properly executed by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence and deliver to owner's representative.

## 9. Quality Assurance

**General:** The system contractor shall have been in business for a minimum of 5 years and have completed at least five projects similar in size and scope to the Work of this Project within the last five years, and be familiar and experienced in the installation of and operation of sound reinforcement and control systems as they relate to the customer's needs. With the bid documents, contractor shall provide three (3) references with contact phone and email addresses for three (3) of the five (5) qualifying projects specified above. Bid documents should include statement or proof of years in business.

**Dealerships:** The contractor shall be a direct manufacturer's authorized dealer for all major installed equipment (loudspeakers, amplifiers, DSP, Control Systems, microphones, etc.) for a period of not less than 12 months prior to bid submittal.

The following contractor staff shall be assigned to the project of the successful bidder:

**Lead Installer:** An experienced AV system installer who has specialized in the installation of sound and control systems equipment similar in type and scope required for the Work of this Project. Lead Installer shall have active CTS certification.

**Project Supervisor:** Shall have completed Syn-Aud-Con sound system design training, be CTS Certified and be experienced in audio system installation, having at least ten years' experience in the design and installation of audio systems similar in type and scope required for the Work of this Project.

**Lead Rigger:** This project requires suspending equipment over people's heads and walk paths. Contractor Rigger Shall have completed ETCP, CM or similar extensive rigging training, having at least ten years' experience in the rigging and installation of AV systems similar in type and scope required for the Work of this Project.

**Programmer:** Shall be a QSC Q-SYS Level TWO Certificate holder. QSC requires authorized dealers to employ a minimum of one Q-SYS Level TWO Certificate holder in order to have access to the Q-SYS line of products.

**Lift Operator:** Shall be properly trained and possess a current aerial scissor/boom lift license.

**Contractor Facilities:** Permanent facilities for rack assembly, shop fabrication, component level repair and servicing of AV systems. These repair facilities shall be located within one hundred fifty (150) miles of the installation location.

**Regulations:** Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

- Building code requirements.
- Health and safety regulations.
- Utility company regulations.

Police, fire department, and rescue squad rules.  
Environmental protection regulations.  
Drug-Free Workplace Requirements

Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

Inspections: As required, arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits from all local authorities having jurisdiction at this site location.

## **10. Warranty and Service**

All systems and components shall be guaranteed free of defects in materials and workmanship for a period of one (1) year from the date of acceptance and shall be repaired or replaced within forty-eight (48) hours following report of such defects by the owner.

The Contractor shall be available on call 24/7 during the first year following acceptance of the system, to assist the Owner and his representatives in any problems which may arise during this initial period of operation. This telephonic support, regardless of whether the issue is user-error, shall be included as warranty work and no further billing will be allowed.

If, during the Warranty period, any component is out of service for more than three (3) consecutive days due to unavailability of parts or service, Contractor shall supply and install an identical new component. If an identical component is not available, Contractor will substitute equivalent equipment, with the approval of the Owner.

During the course of the Warranty period, the Contractor shall provide a minimum of two (2) service visits to the site for inspection and adjustment of equipment.

## **B. EQUIPMENT**

### **1. General**

Design concept: Specifications are detailed only to the extent necessary to show design intent and general functionality. It is understood and agreed by the Contractor that the work herein described shall be complete in every detail to supply a complete working system.

Equipment not mentioned herein but necessary to meet this requirement, shall be provided without claim for additional payment.

All materials and equipment shall be new and of the latest design or model offered for sale by the manufacturer. Electrical equipment, enclosures, raceways shall be UL (or equivalent) rated in the US.

Equipment models provided shall operate at the required AC line voltage and frequency.

Contractor shall provide quantities as indicated in the equipment list as required for a complete installation.

## **2. Materials**

The following equipment and supplies shall be used unless another specific item listed as equipment below conflicts with these general specifications:

### **Mic and Line level Wire and Cable:**

Material: 22 awg 2 conductor foil shield Insulated, stranded copper, West Penn 291  
Jacket: CL2 or CL3 PVC overall jacket or Plenum where required by code

### **Speaker Line and Cable:**

Material: 12 awg 2 conductor twisted pair stranded copper, West Penn 227  
Jacket: CL2 or CL3 PVC overall jacket or Plenum where required by code

Electrical wire and Cable (including grounding conductors): As follows. Where conflict exists with any codes or ordinances, such codes and ordinances shall take precedence.

Conduit (including underground conduit): Where previously installed does not reach intended install location contractor will supply all additionally needed conduit and installation labor.

Outlet Strips: Grade UL listed with appropriate surge suppression. When power distribution is needed in Racks, Outlet Strips shall be rack mountable.

### **Racks/Rack Mount Panels:**

Material: 11 gauge steel or 1/8" aluminum, minimum thickness  
Finish: Black or to match adjacent equipment  
Size: 19" wide, standard EIA mounting hole spacing, height as specified.  
Fill: All unused rack spaces shall be filled with blank panels

### **Audio Connectors:**

Material: Metal housings and connector shells where available  
Finish: Silver or black  
Brands: Neutrik, Switchcraft, or approved equal

### **3. Equipment list**

The following equipment will be provided by the owner but shall be mounted, connected and adjusted by the contractor under the same provisions of this specification (excepting warranty of these materials).

- Apple iPad, 1/8" DI Box(s), Previously installed conduit (may need to be extended by contractor).

Specifications below identify specific equipment to be included in the installation project. Some items are unique in design and purpose and are designated with the exact model and manufacturer specified (no substitutions desired). Items without a model listed can be determined by the contractor as long as item meets the minimum specifications. Proposed substitutions should be submitted for approval prior to bid due date. Bids with unapproved substitutions will not be considered.

### **C. EXECUTION:**

#### **1. Installation of Systems**

Equipment racks shall be positioned to permit full access for operation and service. Service corridor racks shall be located in front of existing junction boxes and shall be flush mounted.

Furnish and install brackets, braces and supports. Minimum fastening or support safety factor shall be at least three (3). Overhead fastening or support safety factor shall be at least five (5).

Switches, connectors, jacks, receptacles, outlets, cables and cable terminations shall be logically and permanently marked or screened.

#### **2. Installation of conduit**

All wiring shall be in conduit where required by code or where exposure may cause wear from moving people or outdoor elements. Exceptions are short runs at equipment terminations where there is no means of connecting conduit to the equipment.

Where installed exposed, conduits shall be parallel with or at right angles to walls or ceilings and shall be supported from walls or ceilings by means of approved galvanized iron clamps or hangers.

Minimum size conduit shall be 3/4 inch. All conduit shall be sized for maximum 40% fill or less if required by code.



### **3. Conduit Separation**

Wiring Groups: Sound system wiring is divided into wiring groups according to their nominal voltage levels (refer to Schedule of Terminations). The following groups must never be intermixed in a given conduit:

Group A - Microphones and other sensitive wiring. (0 to 100 millivolts).

Group B - Line level wiring. (100 millivolts to 10 volts).

Group C - Loudspeaker and control wiring. (10 or higher volts).

Group D - Telephone, video, control and digital circuits.

### **4. Electrical Power**

Verify that all AC power circuits designated for sound equipment are wired with correct polarity and ground. Report in writing any discrepancies found to the Owner for corrective action.

Provide distribution of electrical power within the equipment racks with a minimum of one spare AC receptacle for each six (6) in use per branch circuit with a minimum of one in all situations.

The University of SC (Owner) will provide electrical power to the components as needed and in the location of the equipment rack enclosure. Contractor shall submit electrical needs for installation with the bid pricing and documentation to include 3-axis location, voltage, connector type and anticipated current load. Where practical, equipment will daisy-chain and not require a receptacle for each device. For example, contractor should specify one receptacle for equipment rack to not exceed 20amps at 120VAC and utilize power distribution between equipment.

### **5. Steel Supports**

Fabricate and install any supports so that the installation does not weaken or overload the tower structure. Do not impose the weight of equipment or fixtures on supports provided for other trades or systems. No drilling or cutting of concrete beams, joists or structural steel, nor welding to structural steel, will be permitted except as authorized, in writing, by the Owner.

### **6. Wiring Methods and Practices**

Spare wire runs, equivalent to 5% (minimum of one) of those in actual use, shall be pulled to each termination location.

Splicing of cables is not permitted between terminations of specified equipment.

Do not pull wire or cable through any box fitting or enclosure where change of raceway alignment or direction occurs; do not bend conductors to tighter than manufacturer's recommended radius. Employ temporary guides, sheaves, and rollers to protect cables from excess tension, abrasion or damaging bending during installation.

Provide wire pulling lubricants and pulling tensions in accordance with the wire and cable manufacturer's recommendations.

All wires shall be permanently identified at each wire end by marking with adhesive or crimp-on markers and a chart kept of each wire's function. This applies to wire within a rack assembly as well as wire running in conduit.

Wire ends should be wrapped with heat shrink tubing. Each shield or drain wire should be covered with heat shrink to avoid unintentional connections.

Use ring or tongue lugs on all barrier strip terminals. Do not exceed two lugs per terminal. Use crimping tools which are designed for the application or solder. Do not cut strands from conductors to fit lugs or terminals.

Form, in an orderly manner, all conductors in enclosures and boxes, wire ways and wiring troughs, providing circuit and conductor identification. Tie using tie wraps of appropriate size and type.

Provide ample service loops at each termination so that plates, panels, patch bays, and equipment can be dismantled for service and inspection.

## **7. Grounding**

AV system wiring shall conform to the following procedures:

AV equipment AC ground pins shall connect to AC ground.

Audio shields between AC powered pieces of equipment shall be connected to ground at one end only for balanced audio lines.

Isolate all audio system wiring from all racks, back boxes and conduit.

All metallic conduit, boxes and enclosures shall be grounded in accordance with the current National Electrical Code.

Metallic enclosures containing active equipment shall be grounded with due regard for the minimum of electrical noise. This may include the provision of grounding conductors separate from the AC ground.

## **8. Equipment Racks**

Racks shall be installed plumb and square without twists in the frames or variations in levels between adjacent racks.

All wire, cable, terminal blocks, wall jacks, rack mounted equipment and active slots of card frame systems shall be clearly and logically labeled as to their function, circuit, or system. Labeling on manufactured equipment shall be by engraved plastic laminate or by thermal printer on adhesive tape, with white lettering on black background or dark background that is similar to panel finish.

All system components and related wiring shall be located with due regard for the minimization of induced electro-magnetic and electrostatic noise, for the minimization of wiring length, for proper ventilation, and to provide reasonable safety and convenience for the operator.

All rack mounted equipment, with front panel controls, shall be provided with security covers, locking doors or software lock-outs, to avoid tampering with preset levels or settings.

## **9. Initial Adjustment**

Verify all circuits and extensions for correct connection, continuity, and polarity. Absolute polarity shall be maintained between all points in the system. Connector polarity shall be maintained except for termination at equipment manufactured to other standards.

Polarity for XLR style connector: Pin 2 hot, pin 3 cold, and pin 1 shield.

Polarity for TRS style connector: Tip hot, ring cold, and sleeve shield.

Make all adjustments and modifications so that the system is operational.

Make all adjustments and modifications for system gain structure per recommendations of major component manufacturers and optimization of system signal to noise.

Operate system with a pink noise source at a level equal to 85db SPL at the farthest listener's position for a period of 15 minutes. Verify proper operation/ventilation and cooling of system before, during and after the test.

Confirm that all system outputs are free of spurious signals including oscillations and radio frequency signals, buzzes and rattles.

Confirm that the system is free of audible clicks, pops, and other noises when any operating control is activated, including main power up and down.

Set all system equalizers and processors (including those in existing equipment) using SMAART specified in test equipment section of these specifications.

## **10. Installation Equipment**

All necessary tools, ladders, lifts, scaffolding, or other equipment needed for the safe installation and implementation of this specification shall be provided by the contract unless

specified otherwise in this document. Bid costs shall be turnkey to include all such items needed.

#### **D. EQUIPMENT AND SPECIFICS:**

Successful bidder must provide all of the following equipment and labor as one bid to be awarded as one contract. All specific equipment items (brand and model) shall be listed on bidder's proposal. Submitted bid without brand and model for each significant component will not be considered.

As previously mentioned, specifications below identify specific equipment to be included in the installation project. Some items are unique in design and purpose and are designated with the exact model and manufacturer specified (no substitutions desired). Items without a model listed can be determined by the contractor as long as item meets the minimum specifications. Proposed substitutions should be submitted for approval prior to bid due date. Bids with unapproved substitutions will not be considered.

#### **Install New Permanently Mounted Loudspeaker and Control System to Include:**

2 qty. Fulcrum FH1596 Full Range Coaxial Loudspeaker – Weather Resistant - Black

2 qty. Rated Rigging Hardware Assembly for Fulcrum Speaker to include 5:1 Safety Factor shall be engineered and provided by Polar Focus or Adaptive Technologies.

1 qty. Stereo Amplifier. Amplifier shall provide no less than 1100 watts per channel at 8 ohms. Distortion (typical) shall be equal to or better than 20 Hz–20 kHz: 10 dB below rated power < 0.03% THD / 4Ω and 8Ω; 1.0 kHz and below: full rated power < 0.03% THD / 4Ω and 8Ω. Amplifier shall be of professional installation grade and have barrier strip inputs, terminal block outputs and rear-to-front airflow. Acceptable brands include Crown, Lab Gruppen, Powersoft, QSC, Ashly and Linea Research (assuming their amp meets all the specifications above.)

1 qty. QSC Q-SYS Core 110f Unified DSP. DSP will be utilized to provide Level 1 TQ Processing for the Fulcrum Loudspeakers and provide system control through two (2) separate UCIs. All Q-SYS programming and UCI creation shall be completed by a QSC Q-SYS Level TWO Certificate holder.

1 qty. Q-SYS Core 110 UCI Deployment Software License, Perpetual. Two (2) separate UCIs shall be developed for system control (Q-SYS Touch Screen Control mounted in rack and Apple iPad for remote control from field/tower).

1 qty. "Q-SYS 4.7" PoE Touch Screen Controller for In-Wall Mounting. This controller will be mounted to a custom 2U flanged rack panel for mounting in the equipment rack.

1 qty. QSC Qualified Q-LAN Gigabit POE Audio Switch. The Q-SYS Q-LAN network uses Layer 3 DiffServ QoS. This type of QoS deploys differently on different networks and therefore requires user intervention to set up properly. Contractor must employ IT personnel capable of

configuring this managed network switch. Only the most recent Qualified Q-LAN Audio Switch list should be used in order to insure compatibility with the latest Core 110f firmware.

1 qty. Outdoor Wireless Access Point with an outdoor antenna mounted to the exterior wall of the building. WAP shall be capable of bandwidth required for Q-SYS system control via an Apple iPad. The antenna shall be capable of providing adequate coverage at the conductor tower. WAP shall be connected to Q-LAN Gigabit POE Audio Switch.

1 qty. EIA Compliant 19" Wall-Mount Pivot Equipment Rack shall be at least 12U and 22" Deep. Weight capacity shall be equal to or greater than 150 lbs. Center section and back pan shall be 16-gauge steel, phosphate pre-treated and finished in a black textured powder coat. Rack rail shall be constructed of 11-gauge steel with tapped 10-32 mounting holes in universal EIA spacing with black e-coat finish and marked rack spaces. Rack shall be constructed to swing open for component cabling access, center section shall pivot for either left or right opening. Rack shall have 1/2", 3/4", 1" and 1-1/2" electrical knockouts. Backpan shall have, at minimum, a 10" x 10" cutout for cable pass-through. Rack shall be UL Listed in the US. Rack shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Rack shall be RoHS EU Directive 2011/65/EU compliant. Rack shall be manufactured by an ISO 9001 and ISO 14001 registered company. Rack shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the rack. Equipment rack shall be installed in location specified by University representative (to correspond with the location of existing conduit).

1 qty. Lockable black vented front door for equipment rack (minimum 60% open).

1 qty. Shure QLXD Handheld SM58 Wireless System (G50 frequency band).

3 qty. Shure QLXD Headworn Wireless System with SM35 headset (G50 frequency band).

1 qty. Shure UA844+ Antenna Distribution System with all necessary cabling to provide distribution for the above listed four (4) wireless systems. Wireless receivers shall be mounted in a side-by-side configuration [two (2) units per 1U space].

1 qty. Outdoor diversity, multi-purpose, cross-polarized, hybrid design antenna (in white) for wireless antenna distribution system. This antenna shall combine one LPDA and one dipole antenna in an orthogonal (right angle) configuration. One element shall capture vertically polarized waves, and the other horizontally polarized waves. This antenna shall be mounted to the exterior of the building.

2 qty. Premium low loss 50Ω coaxial cable with BNC male connectors for wireless antenna.

1 qty. Furman SmartSequencing 20A power conditioner shall be used for power distribution and proper equipment on/off sequencing. University to provide one (1) 20A circuit to interior of equipment rack.

1 qty. Furman lockable push-button remote control panel for sequencer shall be mounted to the left exterior of the equipment rack.

1 qty. Custom weatherized input box to be mounted at conductor tower (location determined by University representative). This box shall contain two (2) female XLR inputs. University will provide 1/8" DI Box(s) to interface with these inputs.

All cables, connectors and hardware necessary for installation shall be provided by the contractor.

The Fulcrum loudspeakers shall be mounted to the conductor tower and aimed to best cover the field area for even, direct sound levels to all areas. Contractor must calculate placement and aiming utilizing EASE modeling or other industry standard coverage prediction method. Mounting/Aiming calculations are to be included in system documentation at completions of installation. After installation and processor programming, contractor must tune system for optimum frequency response throughout the venue seating utilizing SMAART software to be operated by a Rational Acoustics certified/trained SMAART Technician.

The equipment rack specified shall house all amplifier, control, DSP, networking, wireless and sequencing components. Contractor shall supply appropriate microphone, speaker level, coax and twisted pair cable from the equipment rack to Conductor Tower and Outside Wall as follows:

Conductor Tower:	2 Speaker, 2 Microphone
Outside wall adjacent to Equipment Rack:	1 Network/WAP, 2 Coax/Antenna

All wiring and jacks shall be standard, balanced XLR F/M as per industry standards. Wiring and jacks shall be in conduit or protective enclosures where standard wear and tear could damage wiring within a reasonable period of time.

Contractor will provide all lifts, ladders or scaffolding necessary to complete installation. Contractor will also be responsible for drilling through exterior wall of building to install outdoor WAP and wireless antenna.

All freight shipping or other delivery charges shall be included in bid cost.

All labor for turnkey installation, programming and training shall be included in bid cost.