

 UNIVERSITY OF SOUTH CAROLINA	INVITATION FOR BID	Solicitation Number	USC-IFB-2372-KS
		Date Issued	March 28th, 2013
		Date Posted	March 28th, 2013
		Procurement Officer	Kevin Sanders
		Phone	803.777.1015
E-Mail Address	ksanders@mailbox.sc.edu		

DESCRIPTION: Furnish and install Audio Visual System at Moore School building

USING GOVERNMENT AGENCY: UNIVERSITY OF SOUTH CAROLINA

The Term "Offer" Means Your "Bid" or "Proposal".

SUBMIT OFFER BY: April 29th, 2013
2:30pm

See "Deadline for Submission of Offer" provision

QUESTIONS MUST BE RECEIVED

BY: April 17th, 2013 12:00 noon

See "Questions From Offerors" provision

NUMBER OF COPIES TO BE

SUBMITTED: 1 Original (marked Original)
and 1 copy

Offers must be submitted in a sealed package. Solicitation Number & Opening Date must appear on package exterior.

SUBMIT YOUR SEALED OFFER TO EITHER OF THE FOLLOWING ADDRESSES:

MAILING ADDRESS:	PHYSICAL ADDRESS:
University of South Carolina – Purchasing Dept. 1600 Hampton St., Suite 606 Columbia, SC 29208	University of South Carolina – Purchasing Dept. 1600 Hampton St., Suite 606 Columbia, SC 29208

See "Submitting Your Offer" provision

CONFERENCE TYPE: Pre-Bid DATE & TIME: April 16 th , 2013 11:00AM Site Visit will follow Pre Bid Conference As appropriate, see "Conferences-Pre-Bid/Proposal" & "Site Visit" provisions		LOCATION: University of South Carolina Facilities Office 743 Green Street Columbia, SC 29208
AWARD & AMENDMENTS	Award will be posted at the Physical Address stated above on _____. The award, this solicitation, and any amendments will be posted at the following web address: http://purchasing.sc.edu	
You must submit a signed copy of this form with Your Offer. By submitting a bid or proposal, You agree to be bound by the terms of the Solicitation. You agree to hold Your Offer open for a minimum of thirty (30) calendar days after the Opening Date.		
NAME OF OFFEROR <small>(Full legal name of business submitting the offer)</small>	OFFEROR'S TYPE OF ENTITY: <small>(Check one)</small> <input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporate entity (not tax-exempt) <input type="checkbox"/> Tax –exempt corporate entity <input type="checkbox"/> Government entity (federal, state, or local) <input type="checkbox"/> Other _____	
AUTHORIZED SIGNATURE <small>(Person signing must be authorized to submit binding offer to enter contract on behalf of Offeror named above.)</small>	<small>(See "Signing Your Offer" provision.)</small>	
TITLE <small>(Business title of person signing above)</small>		
PRINTED NAME <small>(Printed name of person signing above)</small>	DATE SIGNED	
Instructions regarding Offeror's name: Any award issued will be issued to, and the contract will be formed with, the entity identified as the offeror above. An offer may be submitted by only one legal entity. The entity named as the offeror must be a single and distinct legal entity. Do not use the name of a branch office or a division of a larger entity if the branch or division is not a separate legal entity, <i>i.e.</i> , a separate corporation, partnership, sole proprietorship, etc.		
STATE OF INCORPORATION <small>(If offeror is a corporation, identify the state of Incorporation.)</small>		
TAXPAYER IDENTIFICATION NO. <small>(See "Taxpayer Identification Number" provision)</small>		

PAGE TWO

(Return Page Two with Your Offer)

HOME OFFICE ADDRESS (Address for offeror's home office / principal place of business) 	NOTICE ADDRESS (Address to which all procurement and contract related notices should be sent.) (See "Notice" clause) _____ Area Code - Number - Extension Facsimile _____ E- mail Address
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PAYMENT ADDRESS (Address to which payments will be sent.) (See "Payment" clause) _____ Payment Address same as Home Office Address _____ Payment Address same as Notice Address (check only one)	ORDER ADDRESS (Address to which purchase orders will be sent) (See "Purchase Orders and "Contract Documents" clauses) _____ Order Address same as Home Office Address _____ Order Address same as Notice Address (check only one)
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ACKNOWLEDGMENT OF AMENDMENTS
 Offerors acknowledges receipt of amendments by indicating amendment number and its date of issue. (See "Amendments to Solicitation" Provision)

Amendment No.	Amendment Issue Date	Amendment No.	Amendment Issue Date	Amendment No.	Amendment Issue Date	Amendment No.	Amendment Issue Date

DISCOUNT FOR PROMPT PAYMENT (See "Discount for Prompt Payment" clause)	10 Calendar Days (%)	20 Calendar Days (%)	30 Calendar Days (%)	_____ Calendar Days (%)
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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. ***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 - ADDRESS AND PHONE OF IN-STATE OFFICE: Please provide the address and phone number for your in-state office in the space provided below. An in-state office is necessary to claim either the Resident Vendor Preference (11-35-1524(C)(1)(i)&(ii)) or the Resident Contractor Preference (11-35-1524(C)(1)(iii)). Accordingly, you must provide this information to qualify for the preference. An in-state office is not required, but can be beneficial, if you are claiming the Resident Subcontractor Preference (11-35-1524(D)).

_____ In-State Office Address same as Home Office Address
 _____ In-State Office Address same as Notice Address (check only one)

Solicitation Outline

- I. Scope of Solicitation
- II. Instructions to Offerors
 - A. General Instructions
 - B. Special Instructions
- III. Scope of Work / Specifications
May be blank if Bidding Schedule / Cost Proposal attached
- IV. Information for Offerors to Submit
- V. Qualifications
- VI. Award Criteria
- VII. Terms and Conditions
 - A. General
 - B. Special
- VIII. Bidding Schedule / Cost Proposal
- IX. Attachments to Solicitation

I. Scope Of Solicitation

ACQUIRE SERVICES & SUPPLIES / EQUIPMENT (JAN 2006): The purpose of this solicitation is to acquire services and supplies or equipment complying with the enclosed description and/or specifications and conditions.

It is the intent of the University of South Carolina to solicit bids from qualified sources of supply to perform Furnish and install audio visual system services for the Moore School of Business of the University of South Carolina Columbia campus in accordance with all requirements stated herein.

II. Instructions To Offerors - A. General Instructions

DEFINITIONS (JANUARY 2006) EXCEPT AS OTHERWISE PROVIDED HEREIN, THE FOLLOWING DEFINITIONS ARE APPLICABLE TO ALL PARTS OF THE SOLICITATION.

AMENDMENT – means a document issued to supplement the original solicitation document.

BUYER – means the Procurement Officer.

CHANGE ORDER - means any written alteration in specifications, delivery point, rate of delivery, period of performance, price, quantity, or other provisions of any contract accomplished by mutual agreement of the parties to the contract.

CONTRACT - See clause entitled “Contract Documents & Order of Precedence.”

CONTRACT MODIFICATION – means a written order signed by the Procurement Officer, directing the contractor to make changes which the changes clause of the contract authorizes the Procurement Officer to order without the consent of the contractor.

CONTRACTOR - means the Offeror receiving an award as a result of this solicitation.

COVER PAGE – means the top page of the original solicitation on which the solicitation is identified by number. Offerors are cautioned that Amendments may modify information provided on the Cover Page.

OFFER – means the bid or proposal submitted in response this solicitation. The terms “Bid” and “Proposal” are used interchangeably with the term “Offer.”

OFFEROR – means the single legal entity submitting the offer. The term “Bidder” is used interchangeably with the term “Offeror.” See bidding provisions entitled “Signing Your Offer” and “Bid/Proposal As Offer To Contract.”

ORDERING ENTITY - Using Governmental Unit that has submitted a Purchase Order.

PAGE TWO – means the second page of the original solicitation, which is labeled Page Two.

PROCUREMENT OFFICER – means the person, or his successor, identified as such on the Cover Page.

YOU and YOUR – means Offeror.

SOLICITATION – means this document, including all its parts, attachments, and any Amendments.

STATE – means the Using Governmental Unit(s) identified on the Cover Page.

SUBCONTRACTOR – means any person having a contract to perform work or render service to Contractor as a part of the Contractor’s agreement arising from this solicitation.

USING GOVERNMENTAL UNIT – means the unit(s) of government identified as such on the Cover Page. If the Cover Page names a “Statewide Term Contract” as the Using Governmental Unit, the Solicitation seeks to establish a Term Contract [11-35-310(35)] open for use by all South Carolina Public Procurement Units [11-35-4610(5)].

WORK - means all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations under the Contract.

AMENDMENTS TO SOLICITATION (JANUARY 2006) (a) The Solicitation may be amended at any time prior to opening. All actual and prospective Offerors should monitor the following web site for the issuance of Amendments: <http://purchasing.sc.edu>. (b) Offerors shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on Page

Two, (3) by letter, or (4) by submitting a bid that indicates in some way that the bidder received the amendment. (c) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

AWARD NOTIFICATION (NOV 2007): Notice regarding any award or cancellation of award will be posted at the location specified on the Cover Page. If the contract resulting from this Solicitation has a total or potential value of fifty thousand dollars or more, such notice will be sent to all Offerors responding to the Solicitation. Should the contract resulting from this Solicitation have a total or potential value of one hundred thousand dollars or more, such notice will be sent to all Offerors responding to the Solicitation and any award will not be effective until the eleventh day after such notice is given. [02-2A010-1]

BID / PROPOSAL AS OFFER TO CONTRACT (JANUARY 2006) By submitting Your Bid or Proposal, You are offering to enter into a contract with the Using Governmental Unit(s). Without further action by either party, a binding contract shall result upon final award. Any award issued will be issued to, and the contract will be formed with, the entity identified as the Offeror on the Cover Page. An Offer may be submitted by only one legal entity; "joint bids" are not allowed.

BID ACCEPTANCE PERIOD (JANUARY 2006) In order to withdraw Your Offer after the minimum period specified on the Cover Page, You must notify the Procurement Officer in writing.

BID IN ENGLISH & DOLLARS (JANUARY 2006) Offers submitted in response to this solicitation shall be in the English language and in US dollars, unless otherwise permitted by the Solicitation.

CERTIFICATION REGARDING DEBARMENT AND OTHER RESPONSIBILITY MATTERS (JANUARY 2006)

(a)(1) By submitting an Offer, Offeror certifies, to the best of its knowledge and belief, that-

(i) Offeror and/or any of its Principals-

(A) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any state or federal agency;

(B) Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) Offeror has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any public (Federal, state, or local) entity.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

(b) Offeror shall provide immediate written notice to the Procurement Officer if, at any time prior to contract award, Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) If Offeror is unable to certify the representations stated in paragraphs (a)(1), Offer must submit a written explanation regarding its inability to make the certification. The certification will be considered in connection with a review of the Offeror's responsibility. Failure of the Offeror to furnish additional information as requested by the Procurement Officer may render the Offeror nonresponsive.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly or in bad faith rendered an erroneous certification, in addition to other remedies available to the State, the Procurement Officer may terminate the contract resulting from this solicitation for default.

CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (MAY 2008)

GIVING FALSE, MISLEADING, OR INCOMPLETE INFORMATION ON THIS CERTIFICATION MAY RENDER YOU SUBJECT TO PROSECUTION UNDER SECTION 16-9-10 OF THE SOUTH CAROLINA CODE OF LAWS AND OTHER APPLICABLE LAWS.

(a) By submitting an offer, the offeror certifies that-

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to-

- (i) Those prices;
- (ii) The intention to submit an offer; or
- (iii) The methods or factors used to calculate the prices offered.

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory-

(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; or

(2)(i) Has been authorized, in writing, to act as agent for the offeror's principals in certifying that those principals have not participated, and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification [As used in this subdivision (b)(2)(i), the term "principals" means the person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal];

(ii) As an authorized agent, does certify that the principals referenced in subdivision (b)(2)(i) of this certification have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification.

CLARIFICATION (NOV 2007)Pursuant to Section 11-35-1530(6), the Procurement Officer may elect to communicate with you after opening for the purpose of clarifying either your offer or the requirements of the solicitation. Such communications may be conducted only with offerors who have submitted an offer which obviously conforms in all material aspects to the solicitation. Clarification of an offer must be documented in writing and included with the offer. Clarifications may not be used to revise an offer or the solicitation. [Section 11-35-1530(6); R.19-445.2080] [02-2B055-1]

CODE OF LAWS AVAILABLE (JAN 2006): The South Carolina Code of Laws, including the Consolidated Procurement Code, is available at <http://www.scstatehouse.net/code/statmast.htm>. The South Carolina Regulations are available at: <http://www.scstatehouse.net/coderegs/statmast.htm>.

COMPLETION OF FORMS / CORRECTION OF ERRORS (JAN 2006): All prices and notations should be printed in ink or typewritten. Errors should be crossed out, corrections entered and initialed by the person signing the bid. Do not modify the solicitation document itself (including bid schedule). (Applicable only to offers submitted on paper.)

DEADLINE FOR SUBMISSION OF OFFER (JANUARY 2006) Any offer received after the Procurement Officer of the governmental body or his designee has declared that the time set for opening has arrived, shall be rejected unless the offer has been delivered to the designated purchasing office or the governmental bodies' mail room which services that purchasing office prior to the bid opening. [R.19-445.2070(H)]

DISCLOSURE OF CONFLICTS OF INTEREST OR UNFAIR COMPETITIVE ADVANTAGE (MAY 2011): You warrant and represent that your offer identifies and explains any unfair competitive advantage you may have in competing for the proposed contract and any actual or potential conflicts of interest that may arise from your participation in this competition or your receipt of an award. The two underlying principles are (a) preventing the existence of conflicting roles that might bias a contractor's judgment, and (b) preventing an unfair competitive advantage. If you have an unfair competitive advantage or a conflict of interest, the state may withhold award. Before withholding award on these grounds,

an offeror will be notified of the concerns and provided a reasonable opportunity to respond. Efforts to avoid or mitigate such concerns, including restrictions on future activities, may be considered.

DISCUSSIONS and NEGOTIATIONS (NOV 2007): Submit your best terms from a cost or price and from a technical standpoint. Your proposal may be evaluated and your offer accepted without any discussions, negotiations, or prior notice. Ordinarily, nonresponsive proposals will be rejected outright. Nevertheless, the State may elect to conduct discussions, including the possibility of limited proposal revisions, but only for those proposals reasonably susceptible of being selected for award. If improper revisions are submitted, the State may elect to consider only your unrevised initial proposal. [11-35-1530(6); R.19-445.2095(I)] The State may also elect to conduct negotiations, beginning with the highest ranked offeror, or seek best and final offers, as provided in Section 11-35-1530(8). If negotiations are conducted, the State may elect to disregard the negotiations and accept your original proposal. [02-2B060-1]

DRUG FREE WORK PLACE CERTIFICATION (JANUARY 2006) By submitting an Offer, Contractor certifies that, if awarded a contract, Contractor will comply with all applicable provisions of The Drug-free Workplace Act, Title 44, Chapter 107 of the South Carolina Code of Laws, as amended.

DUTY TO INQUIRE (JANUARY 2006) Offeror, by submitting an Offer, represents that it has read and understands the Solicitation and that its Offer is made in compliance with the Solicitation. Offerors are expected to examine the Solicitation thoroughly and should request an explanation of any ambiguities, discrepancies, errors, omissions, or conflicting statements in the Solicitation. Failure to do so will be at the Offeror's risk. Offeror assumes responsibility for any patent ambiguity in the Solicitation that Offeror does not bring to the State's attention.

ETHICS CERTIFICATE (May 2008): By submitting an offer, the offeror certifies that the offeror has and will comply with, and has not, and will not, induce a person to violate Title 8, Chapter 13 of the South Carolina Code of Laws, as amended (ethics act). The following statutes require special attention: Section 8-13-700, regarding use of official position for financial gain; Section 8-13-705, regarding gifts to influence action of public official; Section 8-13-720, regarding offering money for advice or assistance of public official; Sections 8-13-755 and 8-13-760, regarding restrictions on employment by former public official; Section 8-13-775, prohibiting public official with economic interests from acting on contracts; Section 8-13-790, regarding recovery of kickbacks; Section 8-13-1150, regarding statements to be filed by consultants; and Section 8-13-1342, regarding restrictions on contributions by contractor to candidate who participated in awarding of contract. The state may rescind any contract and recover all amounts expended as a result of any action taken in violation of this provision. If contractor participates, directly or indirectly, in the evaluation or award of public contracts, including without limitation, change orders or task orders regarding a public contract, contractor shall, if required by law to file such a statement, provide the statement required by Section 8-13-1150 to the procurement officer at the same time the law requires the statement to be filed. [02-2A075-2]

INDEMNIFICATION -- THIRD PARTY CLAIMS (NOV 2011)

Notwithstanding any limitation in this agreement, and to the fullest extent permitted by law, Contractor shall defend and hold harmless Indemnitees for and against any and all suits or claims of any character (and all related damages, settlement payments, attorneys' fees, costs, expenses, losses or liabilities) by a third party which are attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property arising out of or in connection with the goods or services acquired hereunder or caused in whole or in part by any act or omission of contractor, its subcontractors, their employees, workmen, servants, agents, or anyone directly or indirectly employed by them or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by an Indemnitee, and whether or not such claims are made by a third party or an Indemnitee; however, if an Indemnitee's negligent act or omission is subsequently determined to be the sole proximate cause of a suit or claim, the Indemnitee shall not be entitled to indemnification hereunder. Contractor shall be given timely written notice of any suit or claim. Contractor's obligations hereunder are in no way limited by any protection afforded under workers' compensation acts, disability benefits acts, or other employee benefit acts. This clause shall not negate, abridge, or reduce any other rights or obligations of indemnity which would otherwise exist. The obligations of this paragraph shall survive termination, cancelation, or expiration of the parties' agreement. This provision shall be construed fairly and reasonably, neither strongly for nor against either party, and without regard to any clause regarding insurance. As used in this clause, "Indemnitees" means the State of South Carolina, its instrumentalities, agencies, departments, boards, political subdivisions and all their respective officers, agents and employees. [07-7B100-2]

ILLEGAL IMMIGRATION CLAUSES (2008)

Procurement Code Transactions: Non-Construction

ILLEGAL IMMIGRATION (NOV. 2008): (An overview is available at www.procurement.sc.gov) By signing your offer, you certify that you will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agree to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter

14 is inapplicable to you and your subcontractors or sub-subcontractors; or (b) that you and your subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." You agree to include in any contracts with your subcontractors language requiring your subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. [07-7B097-1]

Procurement Code Transactions: Construction

By signing its bid or proposal, Contractor certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agrees to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable both to Contractor and its subcontractors or sub-subcontractors; or (b) that Contractor and its subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring its subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. (An overview is available at www.procurement.sc.gov)

Other Transactions

By submitting an offer, Contractor certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws (originally enacted as Section 3 of The South Carolina Illegal Immigration Reform Act, 2008 S.C. Act No. 280) and agrees to provide upon request any documentation required to establish either: (a) the applicability of Title 8, Chapter 14 to Contractor and any subcontractors or sub-subcontractors; or (b) the compliance with Title 8, Chapter 14 by Contractor and any subcontractor or sub-subcontractor. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring the subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in any contracts with the sub-subcontractors language requiring the sub-subcontractor to comply with the applicable requirements of Title 8, Chapter 14.

OMIT TAXES FROM PRICE (JANUARY 2006): Do not include any sales or use taxes in Your price that the State may be required to pay.

PROCUREMENT AGENT (AUG 2004) Authorized Agent. All authority regarding the conduct of this procurement is vested solely with the responsible Procurement Officer. Unless specifically delegated in writing, the Procurement Officer is the only government official authorized to bind the government with regard to this procurement.

PROTESTS (JUNE 2006) Any prospective bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the solicitation of a contract shall protest within fifteen days of the date of issuance of the applicable solicitation document at issue. Any actual bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the intended award or award of a contract shall protest within ten days of the date notification of award is posted in accordance with this code. A protest shall be in writing, shall set forth the grounds of the protest and the relief requested with enough particularity to give notice of the issues to be decided, and must be received by the appropriate Chief Procurement Officer within the time provided. See clause entitled "Protest-CPO". [~ 11-35-4210]

PUBLIC OPENING (JANUARY 2006) Offers will be publicly opened at the date / time and at the location identified on the Cover Page, or last Amendment, whichever is applicable

QUESTIONS FROM OFFERORS (JANUARY 2006): (a) Any prospective offeror desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing. Questions must be received by the Procurement Officer no later than five (5) days prior to opening unless otherwise stated on the Cover Page. Label any communication regarding your questions with the name of the procurement officer, and the solicitation's title and number. Oral explanations or instructions will not be binding. Any information given a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offerors as an Amendment to the solicitation, if that information is necessary for submitting offers or if the lack of it would be prejudicial to other prospective offerors. (b) The State seeks to permit maximum practicable competition. Offerors are urged to advise the Procurement Officer – as soon as possible – regarding any aspect of this procurement, including any aspect of the Solicitation that unnecessarily or inappropriately limits full and open competition.

REJECTION/CANCELLATION (JAN 2004) The State may cancel this solicitation in whole or in part. The State may reject any or all proposals in whole or in part. [SC Code Section 11-35-1710 & R.19-445.2065.]

RESPONSIVENESS / IMPROPER OFFERS (JANUARY 2006)

(a) Bid as Specified. Offers for supplies or services other than those specified will not be considered unless authorized by the Solicitation.

(b) Multiple Offers. Offerors may submit more than one Offer, provided that each Offer has significant differences other than price. Each separate Offer must satisfy all Solicitation requirements. If this solicitation is an Invitation for Bids, each separate offer must be submitted as a separate document. If this solicitation is a Request for Proposals, multiple offers may be submitted as one document, provided that you clearly differentiate between each offer and you submit a separate cost proposal for each offer, if applicable.

(c) Responsiveness. Any Offer which fails to conform to the material requirements of the Solicitation may be rejected as nonresponsive. Offers which impose conditions that modify material requirements of the Solicitation may be rejected. If a fixed price is required, an Offer will be rejected if the total possible cost to the State cannot be determined. Offerors will not be given an opportunity to correct any material nonconformity. Any deficiency resulting from a minor informality may be cured or waived at the sole discretion of the Procurement Officer. [R.19-445.2070 and Section 11-35-1520(13)]

(d) Price Reasonableness: Any offer may be rejected if the Procurement Officer determines in writing that it is unreasonable as to price. [R. 19-445.2070].

(e) Unbalanced Bidding. The State may reject an Offer as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the State even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

RESTRICTIONS APPLICABLE TO OFFERORS (JANUARY 2006) Violation of these restrictions may result in disqualification of your offer, suspension or debarment, and may constitute a violation of the state Ethics Act. (a) After issuance of the solicitation, ***you agree not to discuss this procurement activity in any way with the Using Governmental Unit or its employees, agents or officials.*** All communications must be solely with the Procurement Officer. This restriction may be lifted by express written permission from the Procurement Officer. This restriction expires once a contract has been formed. (b) Unless otherwise approved in writing by the Procurement Officer, ***you agree not to give anything to any Using Governmental Unit***

SIGNING YOUR OFFER (JANUARY 2006) Every Offer must be signed by an individual with actual authority to bind the Offeror. (a) If the Offeror is an individual, the Offer must be signed by that individual. If the Offeror is an individual doing business as a firm, the Offer must be submitted in the firm name, signed by the individual, and state that the individual is doing business as a firm. (b) If the Offeror is a partnership, the Offer must be submitted in the partnership name, followed by the words "by its Partner," and signed by a general partner. (c) If the Offeror is a corporation, the Offer must be submitted in the corporate name, followed by the signature and title of the person authorized to sign. (d) An Offer may be submitted by a joint venturer involving any combination of individuals, partnerships, or corporations. If the Offeror is a joint venture, the Offer must be submitted in the name of the Joint Venture and signed by every participant in the joint venture in the manner prescribed in paragraphs (a) through (c) above for each type of participant. (e) If an Offer is signed by an agent, other than as stated in subparagraphs (a) through (d) above, the Offer must state that it has been signed by an Agent. Upon request, Offeror must provide proof of the agent's authorization to bind the principal.

STATE OFFICE CLOSINGS (JANUARY 2006) 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/scgovweb/weather_alert.htm.

SUBMITTING CONFIDENTIAL INFORMATION (AUG 2002): (An overview is available at www.procurement.sc.gov) For every document Offeror submits in response to or with regard to this solicitation or request, Offeror must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that Offeror contends contains information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a)(1), or (b) privileged and confidential, as that phrase is used in Section 11-35-410. For every document Offeror submits in response to or with regard to this solicitation or request, Offeror must separately mark with the words "TRADE SECRET" every page, or portion thereof, that Offeror contends contains a trade secret as that term is defined by Section 39-8-20 of the Trade Secrets

Act. For every document Offeror submits in response to or with regard to this solicitation or request, Offeror must separately mark with the word "PROTECTED" every page, or portion thereof, that Offeror contends is protected by Section 11-35-1810. All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. Do not mark your entire response (bid, proposal, quote, etc.) as confidential, trade secret, or protected! If your response, or any part thereof, is improperly marked as confidential or trade secret or protected, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are subject to some protection, do not mark the entire page. By submitting a response to this solicitation or request, Offeror (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a response, documents submitted to clarify a response, and documents submitted during negotiations), unless the page is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL" or "PROTECTED", (2) agrees that any information not marked, as required by these bidding instructions, as a "Trade Secret" is not a trade secret as defined by the Trade Secrets Act, and (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure. In determining whether to release documents, the State will detrimentally rely on Offeror's marking of documents, as required by these bidding instructions, as being either "Confidential" or "Trade Secret" or "PROTECTED". By submitting a response, Offeror agrees to defend, indemnify and hold harmless the State of South Carolina, its officers and employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney's fees, arising out of or resulting from the State withholding information that Offeror marked as "confidential" or "trade secret" or "PROTECTED". (All references to S.C. Code of Laws.)

SUBMITTING REDACTED OFFERS (FEB 2007): You are required to mark the original copy of your offer to identify any information that is exempt from public disclosure. You must do so in accordance with the clause entitled "Submitting Confidential Information." In addition, you must also submit one complete copy of your offer from which you have removed any information that you marked as exempt, i.e., a redacted copy. The information redacted should mirror in every detail the information marked as exempt from public disclosure. The redacted copy should (i) reflect the same pagination as the original, (ii) show the empty space from which information was redacted, and (iii) be submitted on magnetic media. (See clause entitled "Magnetic Media Required Format.") Except for the redacted information, the CD must be identical to the original hard copy. Portable Document Format (.pdf) is preferred. [04-4030-1]

SUBMITTING YOUR OFFER OR MODIFICATION (JANUARY 2006) (a) Offers and offer modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) – (1) Addressed to the office specified in the Solicitation; and (2) Showing the time and date specified for opening, the solicitation number, and the name and address of the bidder. (b) If you are responding to more than one solicitation, each offer must be submitted in a different envelope or package. (c) Each Offeror must submit the number of copies indicated on the Cover Page. (d) Offerors using commercial carrier services shall ensure that the Offer is addressed and marked on the outermost envelope or wrapper as prescribed in paragraphs (a)(1) and (2) of this provision when delivered to the office specified in the Solicitation. (e) Facsimile or e-mail offers, modifications, or withdrawals, will not be considered unless authorized by the Solicitation. (f) Offers submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

TAX CREDIT FOR SUBCONTRACTING WITH DISADVANTAGED SMALL BUSINESSES (JAN 2008): Pursuant to Section 12-6-3350, a taxpayer having a contract with this State who subcontracts with a socially and economically disadvantaged small business is eligible for an income tax credit equal to four percent of the payments to that subcontractor for work pursuant to the contract. The subcontractor must be certified as a socially and economically disadvantaged small business as defined in Section 11-35-5010 and regulations pursuant to it. The credit is limited to a maximum of fifty thousand dollars annually. A taxpayer is eligible to claim the credit for ten consecutive taxable years beginning with the taxable year in which the first payment is made to the subcontractor that qualifies for the credit. After the above ten consecutive taxable years, the taxpayer is no longer eligible for the credit. A taxpayer claiming the credit shall maintain evidence of work performed for the contract by the subcontractor. The credit may be claimed on Form TC-2, "Minority Business Credit." A copy of the subcontractor's certificate from the Governor's Office of Small and Minority Business (OSMBA) is to be attached to the contractor's income tax return. Questions regarding the tax credit and how to file are to be referred to: SC Department of Revenue, Research and Review, Phone: (803) 898-5786, Fax: (803) 898-5888. Questions regarding subcontractor certification are to be referred to: Governor's Office of Small and Minority Business Assistance, Phone: (803) 734-0657, Fax: (803) 734-2498. [02-2A135-1]

TAXPAYER IDENTIFICATION NUMBER (JANUARY 2006): (a) If Offeror is owned or controlled by a common parent as defined in paragraph (b) of this provision, Offeror shall submit with its Offer the name and TIN of common parent. (b) Definitions: "Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member. "Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(c) If Offeror does not have a TIN, Offeror shall indicate if either a TIN has been applied for or a TIN is not required. If a TIN is not required, indicate whether (i) Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States; (ii) Offeror is an agency or instrumentality of a state or local government; (iii) Offeror is an agency or instrumentality of a foreign government; or (iv) Offeror is an agency or instrumentality of the Federal Government.

WITHDRAWAL OR CORRECTION OF OFFER (JANUARY 2006) Offers may be withdrawn by written notice received at any time before the exact time set for opening. If the Solicitation authorizes facsimile offers, offers may be withdrawn via facsimile received at any time before the exact time set for opening. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid. The withdrawal and correction of Offers is governed by S.C. Code Section 11-35-1520 and Regulation 19-445.2085.

II. Instructions To Offerors - B. Special Instructions

SUBMISSION OF QUESTIONS

Mark envelopes on questions mailed:

QUESTIONS: USC-IFB-2372-KS

Title: Furnish and Install Audio Visual system at Moore School

Attn.: Kevin Sanders

QUESTIONS MAY BE E-MAILED TO: ksanders@mailbox.sc.edu

FAXED TO: 803-777-2032

CONFERENCE - PRE-BID/PROPOSAL (JAN 2006): Due to the importance of all offerors having a clear understanding of the specifications and requirements of this solicitation, a conference of potential offerors will be held on the date specified on the cover page. Bring a copy of the solicitation with you. Any changes resulting from this conference will be noted in a written amendment to the solicitation. Your failure to attend will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the State. The State assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available at the conference. Nor does the State 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.

DISCUSSIONS WITH BIDDERS (JAN 2006) After opening, the Procurement Officer may, in his sole discretion, initiate discussions with you to discuss your bid. Discussions are possible only if your bid is apparently responsive and only for the purpose of clarification to assure your full understanding of the solicitation's requirements. Any discussions will be documented in writing and shall be included with the bid.

PREFERENCES - SC/US END-PRODUCT (SEP 2009): Section 11-35-1524 provides a preference to vendors offering South Carolina end-products or US end-products, if those products are made, manufactured, or grown in SC or the US, respectively. An end-product is the tangible project identified for acquisition in this solicitation, including all component parts in final form and ready for the use intended. The terms "made," "manufactured," and "grown" are defined by Section 11-35-1524(A). By signing your offer and checking the appropriate space(s) provided and identified on the bid schedule, you certify that the end-product(s) is either made, manufactured or grown in South Carolina, or other states of the United States, as applicable. Preference will be applied as required by law. Post award substitutions are prohibited. See "Substitutions Prohibited - End Product Preferences (Sep 2009)" provision.

PREFERENCES - RESIDENT VENDOR PREFERENCE (SEP 2009): To qualify for the RVP, 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 either: (1) maintain at a location in South Carolina at the time of the bid an inventory of expendable

items which are representative of the general type of commodities for which the award will be made and which have a minimum total value, based on the bid price, equal to the lesser of fifty thousand dollars [\$50,000] or the annual amount of the contract; or (2) be a manufacturer headquartered and having an annual payroll of at least one million dollars in South Carolina and the end product being sold is either made or processed from raw materials into a finished end product by that manufacturer or its affiliate (as defined in Section 1563 of the Internal Revenue Code).

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. ***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).

PREFERENCES - RESIDENT SUBCONTRACTOR PREFERENCE (SEP 2009): To qualify for this preference, You must meet the following requirements. (1) You must -- at the time you submit your bid -- have a documented commitment from a single proposed first tier subcontractor to perform some portion of the services expressly required by the solicitation. (2) The subcontractor -- at the time you submit your bid -- must directly employ, or have a documented commitment with, individuals domiciled in South Carolina that will perform services expressly required by the solicitation and the total direct labor cost to the subcontractor for those individuals to provide those services exceeds, as applicable, either twenty percent for a 2% preference or forty percent of bidder's total bid price for a 4% preference. (3) You must identify the subcontractor that will perform the work, the work the subcontractor is to perform, and your factual basis for concluding that the subcontractor's work constitutes the required percentage of the work to be performed in the procurement. [11-35-1524(D)] You can stack this preference, i.e., earn another 2% or 4% preference for each additional qualifying subcontractor, but the preference is capped. [11-35-1524(D)(4), (E)(7)] Upon request by the procurement officer, you must identify the persons domiciled in South Carolina that are to perform the services involved in the procurement upon which you rely in qualifying for the preference, the services those individuals are to perform, the employer of those persons, your relationship with the employer, and documentation of the subcontractor's 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). **YOU WILL NOT RECEIVE THE PREFERENCE UNLESS YOU SPECIFY WHETHER YOUR ARE CLAIMING THE 2% OR 4% PREFERENCE AND YOU PROVIDE THE INFORMATION REQUIRED BY ITEM (3) ABOVE.**

LEGAL AGREEMENTS INCLUDED WITH PROPOSALS MUST BE CLEARLY LABELLED "SAMPLE"

Every page of legal agreement(s) that Offeror expects the University to sign in order to do business with Bidder, Bidder's terms and conditions, and/or similar type legal documents pursuant to potential contract award that Bidder chooses to include with its bid must be clearly labelled "SAMPLE". If Bidder's bid is the highest ranked offer from the evaluation process for the solicitation, then the University will consider the legal documents pursuant to potential contract award that the Bidder included with its bid and clearly labelled "SAMPLE".

OFFEROR'S CONTACTS WITH THE UNIVERSITY

All questions regarding the scope of work, procurement process, etc. for the solicitation must be directed to Kevin Sanders of the University Purchasing Office. Bidders must not contact other employees of the University of South Carolina system concerning this solicitation during the solicitation process and the evaluation process.

III. Scope of Work / Specifications

DELIVERY / PERFORMANCE LOCATION – PURCHASE ORDER (JAN 2006): After award, all deliveries shall be made and all services provided to the location specified by the Using Governmental Unit in its purchase order.

SEE SPECIFICATIONS LOT 1 and LOT 2

Installation will be staged throughout the construction of the facility. Staging, and access for installation will be coordinated with the project manager

Contractor will be required to communicate with the Project Manager to establish scheduling for a phased installation.

Installation of wiring and items inside walls/through conduits will be scheduled and performed as directed by the Project Manager.

Installation/configuration of equipment will be scheduled and performed at time the Project Manager has determined the building is ready for internal finishing.

All Drawings are available as PDF files

Audio package A

All Drawings are available as PDF files

SECTION 27 41 00 - AUDIO/VIDEO SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to the work specified in this Section.
- B. Coordinate work of this Section with work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other Sections.

1.2 SCOPE OF SPECIFICATION

- A. The following terms are defined for this specification section:
 - 1. "Systems" are the audio/video systems.
 - 2. "Designer" or "Systems Designer" is the designer of the audio/video systems.
 - 3. "Contractor" or "Systems Contractor" is the specialty contractor responsible for the installation of the audio/video systems.
 - 4. "UTS" is the University of South Carolina, University Technology Services, Audiovisual Engineering Services 5." DMSB" is the Darla Moore School of Business technical staff
- B. This specification covers all Systems as described below for the project. The objective is to provide professional systems, installed, acceptance tested, and ready for use.
- C. The written specification and large format drawings AV0001 through AV4003 shall be collectively referred to herein as the Contract documents. System features which are mentioned in one part may not be shown in the others. In case of conflict between the written specification and the drawings, Contractor must seek clarification from the Systems Designer. In the event that the Contractor fails to obtain such clarification, the interpretation of the Systems Designer will prevail.

1.3 CONTRACTOR RESPONSIBILITY

- A. Specification drawings are detailed only to the extent necessary to show design intent and signal flow. 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.
- B. Equipment not mentioned herein nor shown on drawings but necessary to meet this requirement shall be provided without claim for additional payment.

1.4 SUMMARY DESCRIPTION

- A. The following Systems are included in the specification:
 - 1. Auditorium and Classroom audio/video systems
 - 2. Video conference / Telepresence systems
 - 3. Assorted playback and production equipment

4. ADA compliant audio systems
5. Interactive voting systems
6. Portable reinforcement and playback loudspeaker system
7. Assorted mixing and processing equipment
8. Digital signage
9. Public address and background music systems
10. Auditorium performer stage monitor system
11. Production intercom and paging system
12. Backstage paging and program system
13. Lobby program, paging and chime system
14. Technical video distribution system
15. Video/data projection systems
16. Video/data display systems
17. Audio/video control systems
18. Equipment rack enclosures and custom instructor lecterns to house audio/video equipment

1.5 SCOPE OF WORK

- A. Furnish all materials, labor and any engineering services to provide complete and professionally installed Systems in working order as described herein. Labor furnished shall be specialized and experienced in Systems installation.
- B. Coordinate installation with back boxes and enclosures provided by BP3 contractor.
- C. Deliver to the job site any back boxes which are to be installed by others.
- D. Furnish and install all wire and cable.
- E. Furnish any additional items, not specifically mentioned herein, to meet system requirements as specified, without claim for additional payment. Such items may include hardware, transformers, line/distribution amplifiers and other devices for proper installation, interface, isolation or gain structure.
- F. Furnish shop drawings and receive approval, prior to fabrication and installation.
- G. Perform initial adjustments and verification tests. Submit verification test report.
- H. Participate in acceptance tests and perform final adjustments.
- I. Participate in user training.
- J. Provide system documentation including copies of all relevant drawings and equipment manuals.
- K. Provide maintenance services for the specified period from the date of acceptance.
- L. Guarantee all equipment and components for the specified period from the date of acceptance.
- M. Requirements and materials that apply to the work of others related to the Systems are listed to define and establish Systems requirements.
- N. Work scope does not include the AC power system except as shown in the drawings.
- O. Coordination with the Electrical Contractor is required to assure correct Systems conduit routing,

Systems backbox locations, and clean power circuit locations as specified in Division 26 - Electrical.

- P. See Work Scope Summary Table at the end of Part One (Paragraph 1.12).
- Q. All Crestron control system programs written by the Contractor will meet the following UTS/DMSB requirements in an effort to maintain consistency and compatibility with existing remote monitoring and diagnostic support systems used campus wide.
1. Contractor will work with UTS and DMSB to ensure all Crestron programs include code for interconnectivity with existing USC Crestron Fusion servers.
 2. Crestron System Builder and System Builder Templates should not be used.
 3. Contractor will need to provide a complete Project **Archive** for all Crestron programs which includes the following:
 - i. Crestron SIMPL Windows source code files.
 - ii. Crestron and/or any custom user modules.
 - iii. Crestron SIMPL+ header and source code files.
 - iv. Crestron VTPro-E files.
 - v. Crestron Engraver files.
 - A. vi. All IR files used in programs

1.6 SUBMITTALS

- A. Bid Submittals:
1. Contractors shall examine all drawings and read all divisions of this specification in order to avoid omissions and duplications and to ensure a complete job. No allowances shall be made for failure to read and understand these documents. Discrepancies between drawings and specifications or obvious omissions shall be referred to the Systems Designer for clarification before the bid date. Where discrepancies occur and pre-bid instructions have not been obtained, the contractor agrees to abide by the Systems Designer's decision.
 2. Bid proposals shall include all work and all equipment as specified, as well as any other equipment and materials to be used in assembling the system.
 3. Requests for clarification of specification intent shall be made, in writing, not later than ten (10) days prior to bid date.
 4. No portion of the work herein may be assigned or sub-contracted to others unless the following requirements have been satisfied:
 - a. The names of any proposed sub-contractors shall have been disclosed in the bid proposal.
 - b. All terms of this contract, including bidding and qualification requirements, shall apply to the sub-contractor.
 5. The bid submittals shall include the following:

- a. The total Contract price
- b. An itemized list of all equipment and materials to be used in assembling the system
- c. Unit pricing for all items on the specified equipment list
- d. Lot pricing for miscellaneous items not on the specified equipment list
- e. A breakdown of the number of staff hours allotted for:
 - i. Preparation of submittals, shop drawings, and system documentation
 - ii. On site coordination meetings and supervision
 - iii. In shop engineering, fabrication, and assembly
 - iv. On site fabrication, assembly, and installation
 - v. On site verification and acceptance testing

B. Shop Drawing Submittals:

1. Within sixty (60) calendar days after contract award or to meet schedule, submit five (5) copies of detailed shop drawings to the University of South Carolina for approval. All shop drawings shall be marked with the related drawing number when submitted. Do not begin installation or fabrication without the approval of the University of South Carolina and Systems Designer.
2. Review of shop drawings shall not constitute final approval of system function. Said review does not in any way relieve the Contractor from the responsibility of furnishing material or performing work as required by the Contract documents.
3. Failure of the Contractor to submit shop drawings in ample time for evaluation shall not entitle the Contractor to an extension of contract time, and no claim for extension by reason of such default will be allowed.
4. Allow time for resubmittals.

5. At minimum, the Shop Drawings shall include neatly bound copies of the following:
 - a. Table of Contents
 - b. Itemized list of all equipment and materials to be used in assembling the system
 - c. Catalog cut sheets or data sheets for each listed item
 - d. One-line signal flow diagrams for all audio/video and auxiliary systems showing point to point wiring interconnection of all equipment with wire run numbers and patch bay designations. Show all transformers, switches, relays, control circuits, and modifications to equipment. Show all equipment items which are required for realization of the functions described herein.
 - e. A complete list of all wire run numbers along with the termination location of each end of each wire run
 - f. Detailed 3-wire schematic diagrams for any custom circuitry
 - g. Detailed 3-wire schematic diagrams for typical connections between audio lines, patch bays, and rack mounted equipment
 - h. Drawings of all items which are to be custom fabricated or modified. Drawings shall be of scale suitable for use in fabrication. They shall show materials, finishes and panel/control markings. Submit samples of lettering/label size and typeface to be employed on custom plates, panels and other equipment.
 - i. Full size drawings illustrating the physical layout and labeling of patch bays
 - j. Mechanical drawings of all assemblies, major sub-assemblies, racks, cabinets and enclosures
 - k. Mechanical drawings showing proposed mounting details of all loudspeakers and associated rigging, and interface with adjacent architecture

6. The above listed drawings shall be produced on AutoCAD or similar computer graphics program. Scans or photocopies of the Systems Designer's specification drawings are not acceptable.
7. The use of electronic files from other sources (e.g., architectural backgrounds, Systems Designer's drawings, vendor-supplied panel drawings) will not absolve the Contractor of responsibility for ensuring that the Shop Drawings represent a completely engineered, coordinated solution. The Contractor has final responsibility for providing systems which conform to all requirements of this specification.

C. Substitutions:

1. Subsequent to Contract award, substitutions may be permitted, but only with the express written permission of the Systems Designer. The proposed substitutes must be equivalent to the specified products in quality, performance, construction, function and conformance to system objectives and warranty provisions.
2. It is the responsibility of the Contractor to prove, to the satisfaction of the Systems Designer, that the proposed substitution is equal to the specified product, as demonstrated by submission of the following:
 - a. List of advantages to the Owner
 - b. Cost savings
 - c. Printed specifications or laboratory test data
 - d. Previous field experience
3. The Contractor shall list the unit price of each item proposed for substitution and indicate which specified items are to be deleted.
4. If the Systems Designer determines that the proposed product is not equal to the specified project, the Contractor shall supply the product specified in the Contract documents.
5. Where substitute materials or methods are approved, the Contractor shall make all adjustments to contingent work necessary to accommodate the substituted equipment, without claim for additional payment.
6. In the event that one or more of the products specified herein is unavailable, the Contractor shall make recommendations to the Systems Designer as to what substitutions are available to meet the intent of the specification.
7. The Systems Designer reserves the right to substitute new products which become available subsequent to the issuance of the Contract Documents, provided that:
 - a. The Contractor has not yet purchased the originally specified equipment.
 - b. The substitute equipment shall not materially increase the Contractor's costs.

D. Samples:

1. Submit samples of substitute equipment to the Systems Designer as required to prove equivalency to items specified.
2. Submit samples of custom work, finishes or other materials as required by the University of South Carolina or Systems Designer to verify appearance and quality.
3. Costs for shipping samples shall be the responsibility of the Contractor.

E. Written Guarantee (See Paragraph 1.9)

F. Verification Test Report (See Paragraph 3.13)

G. System Documentation and Operation Manuals (See Paragraph 3.15)

1.7 JOB CONDITIONS

- A. Keep the job adequately staffed at all times. Unless illness, loss of personnel or other circumstances beyond the control of the Contractor intervene, keep the same individual in charge throughout.
- B. Cooperate with all appropriate parties in order to achieve well coordinated progress with the overall construction completion schedule and satisfactory final results.
- C. Watch for conflicts with work of other contractors on the job and execute, without claim for extra payment, moderate moves or changes as are necessary to accommodate other equipment or to preserve acoustic performance, symmetry, and pleasing appearance.
- D. Immediately report to the University of South Carolina and Systems Designer, any design or installation irregularities, particularly architectural elements that interfere with the intended coverage angles of loudspeakers, so that appropriate action may be taken.
- E. Do all cutting, patching and painting for proper and finished installation of the system and repair any damage done as a result of such installation. Clean up and dispose of trash from all Systems work areas.
- F. Contractor must: provide their own dumpsters, temporary toilets and daily clean-up; park offsite; agree to USC contract for scaffolds, hoisting and lifts.
- G. Contractor attendance required at project coordination meetings and compliance with BP #3 and other Owner provided installation schedules.

1.8 QUALITY ASSURANCE

- A. Parts listed shall be complete, type numbers accurate and equipment furnished shall conform to manufacturer's specifications.
- B. All materials shall be new and shall conform to applicable provisions of Underwriters Laboratories and the American Standards Association.
- C. Procure and pay for all permits, licenses and inspections and observe any requirements stipulated therein. Conform in all trades with all local regulations and codes.
- D. Comply with federal, state and local labor regulations and applicable union regulations.
- E. Installation shall conform to latest federal, state and local electrical and safety codes or those of other authorities having jurisdiction. Where conflicts exist, most stringent code or regulation shall apply.

1.9 GUARANTEE AND SERVICE

- A. 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.
- B. The Contractor shall be available on call and on eight (8) hour notice during the first month

following acceptance of the system, to assist the Owner's representatives in any problems which may arise during the initial period of operation.

- C. If, during the Guarantee period, any component is out of service for more than seven (7) 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.
- D. During the course of the Guarantee period, the Contractor shall provide a minimum of three (3) service visits to the site for inspection and adjustment of equipment. Contractor shall submit proposed schedule for these visits and shall notify Owner and Systems Designer in writing at least one month in advance of each visit.
- E. Replacement of damaged user interface cabling and projection lamps by qualified USC technical support staff is not considered a violation of the Contractor's required one (1) year warranty and cannot be used to void the warranty.

1.10 INSURANCE

- A. All equipment and materials shall be fully insured against loss or damage up until acceptance of the system by the Owner or until Owner relieves the Contractor in writing of this responsibility, whichever is earlier.

1.11 EXISTING CONDITIONS

- A. Visit the site prior to making a bid. No subsequent allowance will be made due to failure to thus observe and verify conditions which may affect the work. Report to the University of South Carolina and Systems Designer any discrepancies among this specification and existing conditions and similarly report obvious omissions.

1.12 WORK SCOPE SUMMARY TABLE

ITEMS TO BE PROVIDED AND INSTALLED	BP3 Electrical Contractor		Systems Contractor	
	Provide	Install	Provide	Install
Main Power Service Panel Boards and Circuit Breakers	X	X		
Main Power Service Conduit and Conductors	X	X		
Main Power Service Terminations		X		
Audio & Video Technical Power (AVTP) Transformers	X	X		
Transformer Conduit and Conductors	X	X		
Transformer Terminations		X		
AVTP Isolated Ground Conduit and Conductors	X	X		
Isolated Ground Terminations		X		
AVTP Distribution Panelboards and Circuit Breakers	X	X		

Distribution Panelboard Conduit and Conductors	x	x		
Distribution Panelboard Terminations		x		
AVTP Standard Load Centers and Circuit Breakers	x	x		
Standard Load Center Conduit and Conductors	x	x		
Standard Load Center Terminations		x		
AVTP Custom Sequencing Panelboards and Circuit Breakers	x	x		
Custom Sequencing Panelboard Conduit and Conductors	x	x		
Custom Sequencing Panelboard Terminations		x		
AVTP Company Switches for Portable Equipment	x	x		
Company Switch Conduit and Conductors	x	x		
Company Switch Terminations		x		
AVTP Outlet Devices for Branch Circuits delivered to Systems Equipment Racks and Devices	x	x		
Equipment Rack Back Boxes and Wall Plates	x	x		
Outlet Device Back Boxes	x	x		
Outlet Device Wall Plates	x	x		
Branch Circuit Conduit and Conductors	x	x		
Branch Circuit Termination		x		

WORK SCOPE SUMMARY TABLE (continued)

ITEMS TO BE PROVIDED AND INSTALLED	Electrical Contractor		Systems Contractor	
	Provide	Install	Provide	Install
Systems Equipment Racks and Devices			X	X
Metallic Conduit between Systems Devices and Systems Equipment Racks	X	X◇		
Conduit Insulation Bushings between Metallic Conduit and Systems Equipment Racks	X	X◇		
Systems Equipment Rack Cabling			X	X
Systems Equipment Rack Terminations				X
Systems Device Back Boxes and Floor Boxes	X	X◇		
Systems Device Metallic Conduit	X	X◇		
Systems Device Cabling			X	X
Systems Device Termination				X
Empty Conduit (for temporary use)	X	X		
Systems Cable Trays	X	X		
Systems Cable Sleeves	X	X		
Systems Pull Boxes	X	X		
Conduit Riser Diagram	X◇			

◇ Installation criteria to be provided by Systems Contractor and coordinated with BP#3 Systems Designer.

- Note that not all items listed above are included in the scope of this project. These items are included in the table for reference only.

PART 2 - EQUIPMENT

2.1 GENERAL EQUIPMENT

- A. Whenever any equipment is specified by manufacturer and model number, it is for purposes of establishing a standard of quality, performance, construction and function.
- B. All materials and equipment shall be new and of the latest design or model offered for sale by the manufacturer.
- C. Equipment models provided shall operate at the required AC line voltage and frequency.
- D. Contractor shall provide quantities as indicated in the equipment list, detail drawings, location drawings, schedule of terminations, and as required for a complete installation.
- E. Audio & Video Wire and Cable
 - 1. All wire numbers listed in the drawings are Belden unless otherwise noted.
 - 2. All THHN conductors shall be stranded.
 - 3. Approved manufacturers: Alpha, Belden, Canare, Crestron, Mogami, West Penn, Whirlwind
- F. Electrical Wire and Cable (including grounding conductors):
 - 1. Where conflict exists with any codes or ordinances, such codes and ordinances shall take precedence.
 - 2. Where conflict exists with electrical specifications, the higher standard or more stringent requirement shall apply.
- G. Wiring Devices
 - 1. Specifications – Duplex Receptacles
 - Grade: Specification, Hubbell IG5362 or equal
 - Type: NEMA 5-20R
 - Color: Orange
 - 2. Approved Manufacturers: Waber, Wiremold, Hubbell, Bryant, GE, Leviton
 - 3. Or Equal
- H. Electrical Plates and Panels:
 - 1. Specifications – 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
 - 2. Specifications – Back Box Enclosures
 - Material: Code grade steel
 - Finish: Black or galvanized
 - Size: As specified
 - 3. Specifications – Plug Box and Termination Panels
 - Material: 11 gauge steel or 1/8" Aluminum, minimum thickness
 - Finish: Black (unless instructed otherwise by University of South Carolina)
 - Size: As specified

- 4. Approved Manufacturers: Hoffman, Whirlwind, Pro Co, Wireworks
- 5. Or Equal

I. Audio Transformers

- 1. All transformers shall be selected for proper interface and loading in the circuits as required by as-built conditions and per manufacturer's recommendations.

2.2 MAJOR EQUIPMENT

- A. Equipment provided shall be that specified herein or equal (see Paragraph 1.6.D).
- B. Detailed performance specifications shall be those published by the manufacturer effective on the date of this document for all equipment listed below.
- C. Equipment List

<u>FUNCTION</u> <u>Item</u>	<u>MFR</u>	<u>Model</u>	<u>Qty</u>
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PERFORMANCE HALL (101)

1. LOUDSPEAKERS

a.	Digitally Steerable Speaker Array	RKH	ICL-FR-DUAL	2
b.	Subwoofer Loudspeaker	RKH	IC215S-FR	2
c.	Front Fill Loudspeaker	RKH	TRX42	5
d.	Delay Loudspeaker	FLC	CX1565	3
e.	Delay Loudspeaker	FLC	CX1595	4
f.	Termination – Main Loudspeaker	CUS	Per Drawing EA	2
g.	Termination – Subwoofer	CUS	Per Drawing EE	2
h.	Termination – Front Fill	CUS	Per Drawing EB	5
i.	Termination- Delay Loudspeaker	CUS	Per Drawing EH	7

2. STAGE INTERFACE

a.	Stage Junction Rack	CUS	Per Drawing YB	1
b.	Digital Input/Output Rack	YAM	Rio3224-D	1
c.	Servoreeler Trapeze System	SRV	Custom Quote #101612	1
d.	Recording Microphone	DPA	ST4006C	1

e.	Custom Instructional Lectern	MRS	Per Drawing AV4003	1
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
g.	Custom Multi-pin Lectern Cables	WWK	Per Drawing AV0301	1
h.	Document Camera	WLF	VZ-9plus ³	1
i.	Interactive Pen Display	SMA	SP-524-NB	1
j.	USB Switcher	EXT	SW2 USB	1
k.	Rack Mount Lamp	LIT	RL-10-D	2
l.	Patchbay 2x26 Long-Frame	AAI	WEP-EO-C-26-N-2-D	2
m.	Patch Panel	CUS	Per Drawing AV4001	2
n.	Patch Cable – 75-Ohm BNC 2'	AAI	VBNC-24	12
o.	Patch Cable – RJ-45 CAT-6 2'	WWD	JHA-NE8-02F	12
p.	Accessory Receptacle Panel	CUS	Per Drawing AV4001	1
q.	Shotgun Recording Microphone	SHU	VP-89L	1
r.	Termination – Lectern	CUS	Per Drawing AA	3
s.	Termination – Microphone	CUS	Per Drawing AR	1
t.	Termination – Stage Floorbox	CUS	Per Drawing DA	5
u.	Termination – Stage Interface	CUS	Per Drawing DB	2
v.	Termination – House Interface	CUS	Per Drawing DG	2
w.	Termination – House Interface	CUS	Per Drawing DC	8
x.	Termination – Live Room Mic	CUS	Per Drawing DF	1
3. CONTROL ROOM				
a.	Digital Mixing Console	YAM	CL3	1
b.	Digital Input/Output Rack	YAM	Rio1608-D	1
c.	Digital Console Meter Bridge	YAM	MBCL	1
d.	Quad Channel Wireless Receiver	SHU	ULXD4Q	2
e.	Wireless Handheld Transmitter	SHU	ULXD2/SM58	6
f.	Wireless Bodypack Transmitter	SHU	ULXD1	4

g.	Lavalier Microphone Element	SHU	WL185	4
h.	UHF In-Line Antenna Amplifier	SHU	UA830	2
i.	Rechargeable Battery	SHU	SB900	10
j.	Eight Battery Charging Station	SHU	SBC800	1
k.	Cat6 Patch Cables 20'	CUS	By Contractor	4
l.	DSP	SMX	EDGE Frame	3
m.	DSP I/O Cards	SMX	4 Ch. Analog Input Card	6
n.	DSP I/O Cards	SMX	4 Ch. Analog Output Card	5
o.	DSP I/O Cards	SMX	4 Ch. Digital Output Card	1
p.	DSP Control Panel	SMX	Per Drawing AV4001	1
q.	Modular Remote Control	SMX	ARC-SW4e	1
r.	Modular Remote Control	SMX	ARC-K1e	1
s.	Dante Switch (8-Port)	ATS	AT-GS900/8	2
t.	Network Switch (16-Port)	ATS	AT-GS900/16	1
u.	Ceiling Delay Loudspeaker Amplifier	LGP	C 28:4	2
v.	Stage Monitor Assign Panel	CUS	By Contractor	1
w.	Stage Monitor Amplifier	LGP	C 28:4	1
x.	Analog & AES Rack Audio Monitor	FOS	RM-2	1
y.	UPS	MAP	UPS-2200R	3
z.	VEOS Collaboration System	WOW	MiniVEOS	1
aa.	Control Booth Rack	CUS	Per Drawing YA	2
bb.	Rack Mount Lamp	LIT	RL-10-D	2
cc.	Keyboard / Touchpad / Display	MAP	RK-KB-LCD17	1
dd.	Blu-Ray / CD Player	OPO	BDP-103	1
ee.	Rack Shelf for Blu-Ray Player	CUS	By Contractor	1
ff.	Powered Control Booth Monitors	JBL	LSR 2328P	2
gg.	Control Booth Monitor Mount	CUS	By Contractor	2

<u>hh.</u> <u>Recording Preamp</u>	<u>ETW</u>	<u>1022</u>	<u>1</u>	
hh. <u>ii.</u> Recorder	MRZ	PMD-580	1	
ii. <u>jj.</u> Patch Panels	CUS	Per Drawing AV4001	3	
jj. <u>kk.</u> Patchbay 2x26 Long-Frame	AAI	WEP-EO-C-26-N-2-D	4	
kk. <u>ll.</u> Patch Cable – 1'	AAI	621B	12	
ll. <u>mm.</u> Patch Cable – 2'	AAI			622A
mm. <u>nn.</u> Patch Cable – 3'	AAI			623D
nn. <u>oo.</u> Patch Cable – 75-Ohm BNC 2'	AAI			VBNC-2
oo. <u>pp.</u> Patch Cable – RJ-45 CAT-6 2'	WWD			JHA-NE
pp. <u>qq.</u> Patch Cable Holder	AAI			PCH-X
qq. <u>rr.</u> Accessory Receptacle Panel	CUS	Per Drawing AV4001	1	
rr. <u>ss.</u> Termination – Booth Mix Position	CUS	Per Drawing DE	1	
ss. <u>tt.</u> Termination – House Mix Position	CUS	Per Drawing DD	1	
tt. <u>uu.</u> Termination – Booth Monitor	CUS	Per Drawing EF	2	

4. VIDEO PROJECTION AND DISTRIBUTION

a. Wall Mounted Video Camera	SNY	BRC-300	1	
b. HD-SDI Camera Output Card	SNY	BRBK-302	1	
c. Camera Wall Bracket	CUS	By Contractor	1	
d. Camera Controller	SNY	RMBR-300	1	
e. Control Booth Video Monitor	CUS	\$600 Allowance	1	
f. Large Venue Projector	DPI	Titan Quad WUXGA 3D	2	
g. Projector Lens (2.56-4.16 : 1)	DPI	105-612	2	
h. HDMI Distribution Amplifier	EXT	HDMI DA2	1	
i. 16:10 Motorized Projection Screen	DRA	Paragon/Series E 27' x 16'-10"	1	
j. Digital Media AV / Control System	CST	Per Custom Quote # 1011191		
k. 46" Lobby Video Display	NEC	V462	2	
l. Flat Panel Display Mount	CHF	PWCU	2	

m.	Termination – Camera Interface	CUS	Per Drawing AJ	1
n.	Termination – Projector Interface	CUS	Per Drawing DH	1
o.	Termination – Projection Screen	CUS	Per Drawing AN	1
p.	Termination – Lobby Monitor	CUS	Per Drawing AG	2
5. ASSISTIVE LISTENING SYSTEM				
a.	IR Transmitter & Supply	LSN	LT-82	1
b.	IR Transmitter Rack Mount	LSN	LA-326	1
c.	IR Radiator & Mounting	LSN	LA-140	4
d.	IR Receiver	LSN	LR-42	20
e.	Receiver Charging Station	LSN	LA-350	3
f.	Termination – IR	CUS	Per Drawing CB	4
6. INTERCOM AND PROGRAM FEED				
a.	Intercom Base Station	CLC	MS-702	1
b.	Wall Mount Speaker Station	CLC	KB-701	1
c.	Remote Belt Pack	CLC	RS-601	6
d.	Headset – Single Muff	CLC	CC-95	6
e.	Handset	CLC	HS-6	2
f.	Call Signal Flasher	CLC	FL-7	2
g.	Backstage Ceiling Loudspeaker	EVI	EVID C8.2	1
h.	Lobby/Backstage Speaker Amplifier	LGP	C 28:4	1
i.	Lobby Ceiling Loudspeaker	EVI	EVID C8.2	32
j.	Termination – Lobby Speaker	CUS	Per Drawing EC	32
k.	Termination – Backstage Speaker	CUS	Per Drawing ED	1
l.	Termination – Volume Control	CUS	Per Drawing FB	1
m.	Termination – Intercom Wall Box	CUS	Per Drawing FC	6
7. LECTURE HALL (123)				
a.	Video Projector (11,000 Lm.)	NEC	NP-PH1000U	3

b.	Projector Lens	NEC	NP26ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access XL/Series V 180" x 112.5"	3
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0310	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	USB Switcher	EXT	SW2 USB	1
i.	Document Camera	WLF	VZ-8plus ³	1
j.	Ceiling Loudspeakers	EVI	EVID C8.2HC	8
k.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	3
o.	Wall Mounted PTZ Video Camera	SNY	BRC-300	1
p.	HD-SDI Camera Output Card	SNY	BRBK-302	1
q.	Camera Wall Bracket	CUS	By Contractor	1
r.	VEOS Collaboration System	WOW	MiniVEOS	1
s.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
t.	Wireless Microphone System – HH	SHU	ULXS24/58	1
u.	Assistive Listening System	LSN	LS-82	1
v.	Lanyard IR Receiver	LSN	LR-44	2
w.	Inductive Neckloop	LSN	LA166	2
x.	Stereo Headphones	LSN	LA165	2
y.	Network Switch (16-Port)	ATS	AT-GS900/16	1
z.	UPS	MAP	UPS-2200R	1
aa.	Equipment Enclosure	DAL	Per Drawing AV4002	1
bb.	Termination – Lectern	CUS	Per Drawing AA	3

cc.	Termination – Projector	CUS	Per Drawing AF	3
dd.	Termination – Camera	CUS	Per Drawing AJ	1
ee.	Termination – Screen	CUS	Per Drawing AN	3
ff.	Termination – Microphone	CUS	Per Drawing AR	3
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8
hh.	Termination – IR Emitter	CUS	Per Drawing CB	2
8.	CONFERENCE / SEMINAR ROOM (108, 110)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP12ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/Series V, 109" Diag.	1
d.	Ceiling Loudspeakers	EVI	EVID C8.2	6
e.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
f.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
g.	UPS	MAP	UPS-2200R	1
h.	Control Network Switch	ATS	GS900/8	1
i.	Equipment Rack Credenza	MAP	Per Drawing AV4003	1
j.	Table Boxes (HE) – Coord. w/ Furn.	CUS	\$1,300 Allowance	4
k.	Termination – Projector	CUS	Per Drawing AF	1
l.	Termination – Screen	CUS	Per Drawing AN	1
m.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8
n.	Termination – Control Panel	CUS	Per Drawing CE	1
o.	Termination – Wireless Access Pt.	CUS	Per Drawing CF	1
p.	Termination – Floor Box	CUS	Per Drawing GH	3
9.	SHALLOW "U" CASE ROOM (112, 114, 133, 135, 137)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP12ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 137"	1

d.	Flat Panel Display	NEC	V651	1
e.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
g.	Document Camera	WLF	VZ-8plus ³	1
h.	Ceiling Loudspeakers	EVI	EVID C8.2	8
i.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
j.	USB Switcher	EXT	SW2 USB	1
k.	Interactive Pen Display	SMA	SP-524-NB	1
l.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
m.	Ceiling Microphone	SHU	MX202W/C	2
n.	Wall Mounted Video Camera	VAD	HD-19	1
o.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
p.	Camera Wall Bracket	VAD	535-20000-230	1
q.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
r.	Wireless Microphone System – HH	SHU	ULXS24/58	1
s.	Assistive Listening System	LSN	LS85	1
t.	4 Channel Receiver	LSN	LR44	1
u.	Inductive Neckloop	LSN	LA166	1
v.	Stereo Headphones	LSN	LA165	1
w.	Control Network Switch	ATS	GS900/8	1
x.	UPS	MAP	UPS-2200R	1
y.	Termination – Lectern	CUS	Per Drawing AC	1
z.	Termination – Projector	CUS	Per Drawing AF	1
aa.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
bb.	Termination – Camera	CUS	Per Drawing AJ	1
cc.	Termination – Screen	CUS	Per Drawing AN	1
dd.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8

ee.	Termination – IR Emitter	CUS	Per Drawing CB	1
10.	DEEP “U” CASE ROOM (111)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	3
b.	Projector Lens	NEC	NP13ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 137”	3
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0302	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	2
o.	Wall Mounted Video Camera	VAD	HD-19	1
p.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
q.	Camera Wall Bracket	VAD	535-20000-230	1
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS85	1
u.	4 Channel Receiver	LSN	LR44	1
v.	Inductive Neckloop	LSN	LA166	1
w.	Stereo Headphones	LSN	LA165	1
x.	HDMI Distribution Amplifier	EXT	HD-DA2	1
y.	Control Network Switch	ATS	GS900/8	1

z.	UPS	MAP	UPS-2200R	1
aa.	Equipment Enclosure	DAL	Per Drawing AV4002	1
bb.	Termination – Lectern	CUS	Per Drawing AA	2
cc.	Termination – Projector	CUS	Per Drawing AF	3
dd.	Termination – Camera	CUS	Per Drawing AJ	1
ee.	Termination – Screen	CUS	Per Drawing AN	3
ff.	Termination – Microphone	CUS	Per Drawing AR	2
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
hh.	Termination – IR Emitter	CUS	Per Drawing CB	1
11. SHALLOW “U” CASE ROOM (134)				
a.	Video Projector (7,500 Lm.)	NEC	NP-PX750U	2
b.	Projector Lens	NEC	NP17ZL	2
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165”	2
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0302	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	2
o.	Wall Mounted Video Camera	VAD	HD-19	1
p.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
q.	Camera Wall Bracket	VAD	535-20000-230	1

r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS-82	1
u.	Control Network Switch	ATS	GS900/8	1
v.	UPS	MAP	UPS-2200R	1
w.	Equipment Enclosure	DAL	Per Drawing AV4002	1
x.	Termination – Lectern	CUS	Per Drawing AA	2
y.	Termination – Projector	CUS	Per Drawing AF	2
z.	Termination – Camera	CUS	Per Drawing AJ	1
aa.	Termination – Screen	CUS	Per Drawing AN	2
bb.	Termination – Microphone	CUS	Per Drawing AR	3
cc.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
dd.	Termination – IR Emitter	CUS	Per Drawing CB	2
12. COMBINABLE DISCUSSION / RECITATION ROOMS (127 - 129)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	9
b.	Projector Lens	NEC	NP12ZL	9
c.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 123"	5
d.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 109"	4
e.	Custom Instructional Lectern	MRS	Per Drawing AV4002	3
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	3
g.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0304	A/R
h.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
i.	Document Camera	WLF	VZ-8plus ³	3
j.	Ceiling Loudspeakers	EVI	EVID C8.2	12
k.	Ceiling Loudspeaker Amplifier	LGP	E4.2	2
l.	USB Switcher	EXT	SW2 USB	3
m.	Interactive Pen Display	SMA	SP-524-NB	3

n.	VEOS Collaboration System	WOW	MiniVEOS	3
o.	Computer for VEOS System	ASU	EeeBOX EB1501P	9
p.	Software for VEOS System	WOW	TeamVEOS	9
q.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS85	1
u.	4 Channel Receiver	LSN	LR44	1
v.	Inductive Neckloop	LSN	LA166	1
w.	Stereo Headphones	LSN	LA165	1
x.	Control Network Switch	ATS	GS900/16	1
y.	Audio DSP Frame	SMX	Symnet Edge Frame	2
z.	Audio DSP Input Card	SMX	Edge Analog In	4
aa.	Audio DSP Output Card	SMX	Edge Analog Output	4
bb.	UPS	MAP	UPS-2200R	2
cc.	Keyboard / Touchpad / Display	MAP	RK-KB-LCD17	1
dd.	Equipment Rack	MAP	Per Drawing AV4003	2
ee.	Termination – Lectern	CUS	Per Drawing AA	7
ff.	Termination – Projector	CUS	Per Drawing AF	9
gg.	Termination – Screen	CUS	Per Drawing AN	9
hh.	Termination – Partition Sensor	CUS	Per Drawing AZ	2
ii.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
jj.	Termination – IR Emitter	CUS	Per Drawing CB	3
13.	DISCUSSION / RECITATION ROOM (125, 126)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	3
b.	Projector Lens	NEC	NP12ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 123”	3

d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0306	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	4
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
n.	Wall Mounted Video Camera	VAD	HD-19	1
o.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
p.	Camera Wall Bracket	VAD	535-20000-230	1
q.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
r.	Wireless Microphone System – HH	SHU	ULXS24/58	1
s.	Assistive Listening System	LSN	LS85	1
t.	Control Network Switch	ATS	GS900/8	1
u.	UPS	MAP	UPS-2200R	1
v.	Equipment Enclosure	DAL	Per Drawing AV4002	1
w.	Termination – Lectern	CUS	Per Drawing AA	2
x.	Termination – Projector	CUS	Per Drawing AF	3
y.	Termination – Screen	CUS	Per Drawing AN	3
z.	Termination – Ceiling Speaker	CUS	Per Drawing BA	4
aa.	Termination – IR Emitter	CUS	Per Drawing CB	1
14.	DISCUSSION / RECITATION ROOM (118, 119, 120, 121, 122)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP12ZL	1

c.	16:10 Motorized Projection Screen	DRA	Access/Series V 123"	1
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0306	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Ceiling Loudspeakers	EVI	EVID C8.2	12
i.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
j.	USB Switcher	EXT	SW2 USB	1
k.	Document Camera	WLF	VZ-8plus ³	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
n.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
o.	Wireless Microphone System – HH	SHU	ULXS24/58	1
p.	Assistive Listening System	LSN	LS85	1
q.	Control Network Switch	ATS	GS900/8	1
r.	UPS	MAP	UPS-2200R	1
s.	Equipment Enclosure	DAL	Per Drawing AV4002	1
t.	Termination – Lectern	CUS	Per Drawing AA	2
u.	Termination – Projector	CUS	Per Drawing AF	1
v.	Termination – Screen	CUS	Per Drawing AN	1
w.	Termination – Ceiling Speaker	CUS	Per Drawing BA	4
x.	Termination – IR Emitter	CUS	Per Drawing CB	1
15.	DISCUSSION / RECITATION ROOM (103, 124, 140, 141, 142)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	2
b.	Projector Lens	NEC	NP12ZL	2
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 137"	2
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1

e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0307	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	6
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
n.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
o.	Wireless Microphone System – HH	SHU	ULXS24/58	1
p.	Assistive Listening System	LSN	LS85	1
q.	Control Network Switch	ATS	GS900/8	1
r.	UPS	MAP	UPS-2200R	1
s.	Equipment Enclosure	DAL	Per Drawing AV4002	1
t.	Termination – Lectern	CUS	Per Drawing AA	2
u.	Termination – Projector	CUS	Per Drawing AF	2
v.	Termination – Screen	CUS	Per Drawing AN	2
w.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
x.	Termination – IR Emitter	CUS	Per Drawing CB	1
16. COMBINABLE DISCUSSION / RECITATION ROOM (104-105)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	4
b.	Projector Lens	NEC	NP12ZL	4
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 137”	4
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	2
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	2
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0308	A/R

g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	2
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	2
l.	Interactive Pen Display	SMA	SP-524-NB	2
m.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
n.	DSP	SMX	EDGE Frame	3
o.	DSP I/O Cards	SMX	4 Ch. Analog Input Card	3
p.	DSP I/O Cards	SMX	4 Ch. Analog Output Card	1
q.	Wall Mounted Video Camera	VAD	HD-19	1
r.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
s.	Camera Wall Bracket	VAD	535-20000-230	1
t.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
u.	Wireless Microphone System – HH	SHU	ULXS24/58	1
v.	16-Port Control Network Switch	ATS	GS900/16	1
w.	UPS	MAP	UPS-2200R	1
x.	Equipment Enclosure	DAL	Per Drawing AV4003	1
y.	Termination – Lectern	CUS	Per Drawing AA	4
z.	Termination – Projector	CUS	Per Drawing AF	4
aa.	Termination – Screen	CUS	Per Drawing AN	4
bb.	Termination – Partition Sensor	CUS	Per Drawing AZ	1
cc.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
dd.	Termination – IR Emitter	CUS	Per Drawing CB	2
17.	RECONFIGURABLE CLASSROOM (109, 113)			
a.	Video Projector (7,500 Lm.)	NEC	NP-PX750U	3
b.	Projector Lens	NEC	NP17ZL	3

c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165"	3
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0307	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	VEOS Collaboration System	WOW	MiniVEOS	1
n.	Computer for VEOS System	ASU	EeeBOX EB1501P	3
o.	Software for VEOS System	WOW	TeamVEOS	3
p.	AV / Control / Capture System	CST	Per Custom Quote # 1011191	
q.	Ceiling Microphone	SHU	MX202W/C	3
r.	Wall Mounted Video Camera	VAD	HD-19	1
s.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
t.	Camera Wall Bracket	VAD	535-20000-230	1
u.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
v.	Wireless Microphone System – HH	SHU	ULXS24/58	1
w.	Assistive Listening System	LSN	LS85	1
x.	4 Channel Receiver	LSN	LR44	1
y.	Inductive Neckloop	LSN	LA166	1
z.	Stereo Headphones	LSN	LA165	1
aa.	HDMI Distribution Amplifier	EXT	HD-DA2	1
bb.	Control Network Switch	ATS	GS900/8	1
cc.	UPS	MAP	UPS-2200R	1

dd.	Equipment Enclosure	DAL	Per Drawing AV4002	1
ee.	Termination – Lectern	CUS	Per Drawing AA	3
ff.	Termination – Projector	CUS	Per Drawing AF	3
gg.	Termination – Screen	CUS	Per Drawing AN	3
hh.	Termination – Camera	CUS	Per Drawing AJ	1
ii.	Termination – Microphone	CUS	Per Drawing AR	3
jj.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
kk.	Termination – IR Emitter	CUS	Per Drawing CB	1
18.	TIERED LECTURE HALL (136)			
a.	Video Projector (7,500 Lm.)	NEC	NP-PX750U	3
b.	Projector Lens	NEC	NP18ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165"	3
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0309	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	15
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	3
o.	Wall Mounted Video Camera	VAD	HD-19	1
p.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
q.	Camera Wall Bracket	VAD	535-20000-230	1
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1

s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS85	1
u.	4 Channel Receiver	LSN	LR44	1
v.	Inductive Neckloop	LSN	LA166	1
w.	Stereo Headphones	LSN	LA165	1
x.	HDMI Distribution Amplifier	EXT	HD-DA2	1
y.	Control Network Switch	ATS	GS900/8	1
z.	UPS	MAP	UPS-2200R	1
aa.	Equipment Enclosure	DAL	Per Drawing AV4002	1
bb.	Termination – Lectern	CUS	Per Drawing AA	2
cc.	Termination – Projector	CUS	Per Drawing AF	3
dd.	Termination – Screen	CUS	Per Drawing AN	3
ee.	Termination – Camera	CUS	Per Drawing AJ	1
ff.	Termination – Microphone	CUS	Per Drawing AR	3
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	15
hh.	Termination – IR Emitter	CUS	Per Drawing CB	2
19.	CORRIDORS / ATRIUM			
a.	46" Flat Panel LCD	NEC	V462	8
b.	Tilting Wall Mount for LCD	CHF	PWCU	8
c.	Network Video Receiver	CIS	DMP4400G	8
d.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
e.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 2

20. PAVILION (246)

a.	Video Projector (11,000 Lm.)	NEC	NP-PH1000U	2
b.	Projector Lens	NEC	NP27ZL	2
c.	Projector Lift	DRA	SLX 28	2

d.	Projector Lift Closure Panel	DRA	Model U	2
e.	RS-232 Translator	DRA	R2D7	2
f.	16:10 Motorized Projection Screen	DRA	Access XL/Series V 185.5"x116"	2
g.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
h.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
i.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0312	A/R
j.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
k.	Flush Mounted Ceiling Speaker	EVI	EVID C8.2HC	6
l.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
m.	USB Switcher	EXT	SW2 USB	1
n.	Interactive Pen Display	SMA	SP-524-NB	1
o.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
p.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
q.	Wireless Microphone System – HH	SHU	ULXS24/58	1
r.	Assistive Listening System	LSN	LS-82	1
s.	Control Network Switch	ATS	GS900/8	1
t.	UPS	MAP	UPS-2200R	1
u.	Equipment Enclosure	DAL	Per Drawing AV4003	1
v.	Termination – Lectern	CUS	Per Drawing AA	3
w.	Termination – Screen	CUS	Per Drawing AN	2
x.	Termination – Projector Lift	CUS	Per Drawing AW	2
y.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
z.	Termination – IR Emitter	CUS	Per Drawing CB	2
21.	BOOKABLE ROOM (209, 210, 211, 212, 213)			
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Video Conferencing System	LGS	RVF1000	1

d.	Table Box	CUS	\$1400 Allowance	1
e.	Control System	CST	Per Custom Quote # 1011191	
f.	Termination – Table Box	CUS	Per Drawing HC	1
g.	Termination – Floor Box	CUS	Per Drawing GE	1
h.	Termination – Flat Panel Display	CUS	Per Drawing GW	1
i.	Termination – VTC Codec	CUS	Per Drawing AS	1
j.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
22. GROUP STUDY ROOM (226, 231)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Table Box	CUS	\$1400 Allowance	1
d.	Termination – Table Box	CUS	Per Drawing HA	1
e.	Termination – Floor Box	CUS	Per Drawing GB	1
f.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
23. GROUP STUDY ROOM (223, 224, 225, 232, 233, 234)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Table Box	CUS	\$1400 Allowance	2
d.	Flat Panel Display	NEC	V651	1
e.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
f.	Table Box	CUS	\$1400 Allowance	1
g.	Termination – Table Box	CUS	Per Drawing HA	2
h.	Termination – Floor Box	CUS	Per Drawing GC	1
i.	Termination – Flat Panel Display	CUS	Per Drawing GZ	1
24. TRADING ROOM (229)				
a.	Flat Panel LCD	NEC	V651	4
b.	Flat Panel Ceiling Mount	CHF	PCSU	4

c.	Ceiling Plate	CHF	CMA330	4
d.	Mounting Pipe	CHF	CMS	4
e.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
g.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0312	A/R
h.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
i.	Ceiling Loudspeakers	EVI	EVID C8.2	6
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
l.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
m.	Wireless Microphone System – HH	SHU	ULXS24/58	1
n.	Assistive Listening System	LSN	LS85	1
o.	Control Network Switch	ATS	GS900/8	1
p.	UPS	MAP	UPS-2200R	1
q.	Equipment Enclosure	MAP	Per Drawing AV4002	1
r.	Termination – Lectern	CUS	Per Drawing AA	2
s.	Termination – Flat Panel Display	CUS	Per Drawing AH	4
t.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
u.	Termination – IR Emitter	CUS	Per Drawing CB	1
25.	OPEN MEETING ROOM (235B)			
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Table Box	CUS	\$1400 Allowance	1
d.	Interactive Whiteboard	SMA	885ix	1
e.	USB to CAT Extender	SMA	CAT5-XT	1
f.	Control System	CST	Per Custom Quote # 1011191	
g.	Control Network Switch	ATS	AT-GS900/5E	1

h.	Flat Panel Display	NEC	V651	1
i.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
j.	Table Box	CUS	\$1400 Allowance	1
k.	Termination – Table Box	CUS	Per Drawing HH	1
l.	Termination – Floor Box	CUS	Per Drawing GA	1
m.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
n.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
o.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
26. CAFÉ (241, 241B)				
a.	Flat Panel LCD	NEC	V651	2
b.	Network Video Receiver	CIS	DMP4400G	2
c.	Termination – Flat Panel Display	CUS	Per Drawing AH	2
27. PALMETTO COURT PAVILLION (200)				
a.	Portable Powered Loudspeakers	JBL	EON 515XT	2
b.	Mixing Console	YAM	MG124CX	1
c.	Speaker Stand	OSS	SS7730B	2
d.	Speaker Stand Bag	JBL	JBL Stand Bag	1
e.	Portable AV Cart	CUS	Per Drawing AV4003	1
f.	CD Player with iPod Dock	TAS	CD-200i	1
g.	Microphone	SHU	SM-58	4
h.	Microphone	SHU	SM-57	4
i.	DI Box	WWD	DIRECTOR	4
j.	Microphone Stand	OSS	MS7701B	6
k.	Microphone Cable	WWD	JHA-LCR-10F-50	1
l.	Speaker Cable	WWD	JHA-EP4-50F	2
28. VISITOR CENTER (201)				
a.	Thin Bezel Display Video Wall	SAL	Quote # JFHS121126PL	1

b.	Computer w/ HD Output	CUS	\$800 Allowance	1
c.	Table Box	CUS	\$1400 Allowance	1
d.	Ceiling Loudspeakers	EVI	EVID C8.2	7
e.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
f.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
g.	Wireless Microphone System	SHU	ULXS14/93	1
h.	Control Network Switch	ATS	GS900/8	1
i.	UPS	MAP	UPS-2200R	1
j.	Equipment Rack	MAP	Per Drawing AV4002	1
k.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
l.	Wireless Microphone System – HH	SHU	ULXS24/58	1
m.	Termination – Table Box	CUS	Per Drawing HJ	1
n.	Termination – Flat Panel Display	CUS	Per Drawing AT	1

29. CORRIDORS

a.	65" Flat Panel LCD	NEC	V651	3
b.	46" Flat Panel LCD	NEC	V462	3
c.	Tilting Wall Mount for LCD	CHF	PWCU	6
d.	Network Video Receiver	CIS	DMP4400G	6
e.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
f.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 330. SMALL VIDEO CONFERENCE ROOM (363, 365) AND
TEAM MEETING / CONSULTATION ROOM (359)

a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Video Conferencing System	LGS	RVF1000	1
d.	Table Box	CUS	\$1400 Allowance	1
e.	Control System	CST	Per Custom Quote # 1011191	

f.	Termination – Table Box	CUS	Per Drawing HC	1
g.	Termination – Floor Box	CUS	Per Drawing GE	1
h.	Termination – Flat Panel Display	CUS	Per Drawing GW	1
i.	Termination – VTC Codec	CUS	Per Drawing AS	1
j.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
31. MEDIUM VIDEO CONFERENCE ROOM (361, 362, 366, 367, 368)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Video Conferencing System	LGS	RVF1000	1
d.	Table Box	CUS	\$1400 Allowance	2
e.	Control System	CST	Per Custom Quote # 1011191	
f.	Termination – Table Box	CUS	Per Drawing HA	1
g.	Termination – Table Box	CUS	Per Drawing HC	1
h.	Termination – Floor Box	CUS	Per Drawing GG	1
i.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
j.	Termination – VTC Codec	CUS	Per Drawing AS	1
k.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
32. LARGE VIDEO CONFERENCE ROOM (364)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	2
b.	Projector Lens	NEC	NP12ZL	2
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 137”	1
d.	16:10 Motorized Projection Screen	DRA	Access/Series V 109”	1
e.	Ceiling Loudspeakers	EVI	EVID C8.2	6
f.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
g.	Video Conferencing System	PLY	HDX8000	1
h.	Intelligent Dual Camera	PLY	EagleEye Director	1
i.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	

j.	Table Box	CUS	\$1400 Allowance	4
k.	UPS	MAP	UPS-2200R	1
l.	Control Network Switch	ATS	GS900/8	1
m.	Equipment Rack Credenza	MAP	Per Drawing AV4003	1
n.	Termination – Projector	CUS	Per Drawing AF	2
o.	Termination – Screen	CUS	Per Drawing AN	2
p.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
q.	Termination – Control Panel	CUS	Per Drawing CE	1
r.	Termination – Wireless Access Pt.	CUS	Per Drawing CF	1
s.	Termination – Table Box	CUS	Per Drawing HE	4
t.	Termination – Camera	CUS	Per Drawing HF	1
u.	Termination – Floor Box	CUS	Per Drawing GH	4
33. POLYCOM / CISCO CONFERENCE ROOM (318, 320)				
a.	VEOS Collaboration System	WOW	MiniVEOS	1
b.	System to be designed, provided and installed by owner, with the WOW Systems MiniVEOS provided by AV installer and handed over to owner.			
34. BOOKABLE PROJECT SPACE (307, 309)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Table Box	CUS	\$1400 Allowance	1
d.	Control System	CST	Per Custom Quote # 1011191	
e.	Termination – Table Box	CUS	Per Drawing HA	1
f.	Termination – Floor Box	CUS	Per Drawing GB	1
g.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
h.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
35. TEAM COLLABORATION ROOM (325, 326, 327, 328, 333)				
a.	Flat Panel Display	NEC	V651	1

b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Interactive Whiteboard	SMA	885ix	1
d.	USB to CAT Extender	SMA	CAT5-XT	1
e.	Table Box	CUS	\$1400 Allowance	2
f.	Control System	CST	Per Custom Quote # 1011191	
g.	Control Network Switch	ATS	AT-GS900/5E	1
h.	Termination – Table Box	CUS	Per Drawing HA	1
i.	Termination – Table Box	CUS	Per Drawing HB	1
j.	Termination – Floor Box	CUS	Per Drawing GA	1
k.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
l.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
m.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
36.	SHALLOW “U” CASE ROOM (324, 334)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP13ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 137”	1
d.	Owner Provided Flat Panel Display		BY OWNER	2
e.	Owner Provided Video Conferencing System		BY OWNER	1
f.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
g.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
h.	Ceiling Document Camera	WLF	EYE-12	1
i.	Ceiling Mount Kit	WLF	EYEKIT / TILEBRIDGE	1
j.	Ceiling Loudspeakers	EVI	EVID C8.2	9
k.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
l.	USB Switcher	EXT	SW2 USB	1
m.	Interactive Pen Display	SMA	SP-524-NB	1
n.	VEOS Collaboration System	WOW	MiniVEOS	1

o.	Computer for VEOS System	ASU	EeeBOX EB1501P	3
p.	Software for VEOS System	WOW	TeamVEOS	3
q.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
r.	Ceiling Microphone	SHU	MX202W/C	2
s.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
t.	Wireless Microphone System – HH	SHU	ULXS24/58	1
u.	Assistive Listening System	LSN	LS-82	1
v.	Lanyard IR Receiver	LSN	LR-44	2
w.	Inductive Neckloop	LSN	LA166	2
x.	Stereo Headphones	LSN	LA165	2
y.	Control Network Switch	ATS	GS900/8	1
z.	UPS	MAP	UPS-2200R	1
aa.	Termination – Lectern	CUS	Per Drawing AC	1
bb.	Termination – Projector	CUS	Per Drawing AF	1
cc.	Termination – Screen	CUS	Per Drawing AN	1
dd.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
ee.	Termination – Ceiling Microphone	CUS	Per Drawing AR	2
ff.	Termination – Ceiling Doc Camera	CUS	Per Drawing AY	1
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	9
hh.	Termination – Camera	CUS	Per Drawing HF	1
37. RECONFIGURABLE CLASSROOM (329)				
a.	Video Projector (7,500 Lm.)	NEC	NP-PX750U	2
b.	Projector Lens	NEC	NP17ZL	2
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165”	2
d.	Owner Provided Video Conferencing System		BY OWNER (includes display)	1
e.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1

g.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0311	A/R
h.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
i.	Document Camera	WLF	VZ-8plus ³	1
j.	Ceiling Loudspeakers	EVI	EVID C8.2	15
k.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
l.	USB Switcher	EXT	SW2 USB	1
m.	Interactive Pen Display	SMA	SP-524-NB	1
n.	VEOS Collaboration System	WOW	MiniVEOS	1
o.	Computer for VEOS System	ASU	EeeBOX EB1501P	3
p.	Software for VEOS System	WOW	TeamVEOS	3
q.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
r.	Ceiling Microphone	SHU	MX202W/C	3
s.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
t.	Wireless Microphone System – HH	SHU	ULXS24/58	1
u.	Assistive Listening System	LSN	LS-82	1
v.	Lanyard IR Receiver	LSN	LR-44	2
w.	Inductive Neckloop	LSN	LA166	2
x.	Stereo Headphones	LSN	LA165	2
y.	Control Network Switch	ATS	GS900/8	1
z.	UPS	MAP	UPS-2200R	1
aa.	Equipment Enclosure	MAP	Per Drawing AV4002	1
bb.	Termination – Lectern	CUS	Per Drawing AA	3
cc.	Termination – Projector	CUS	Per Drawing AF	2
dd.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
ee.	Termination – Screen	CUS	Per Drawing AN	2
ff.	Termination – Ceiling Microphone	CUS	Per Drawing AR	3
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	15

hh.	Termination – IR Emitter	CUS	Per Drawing CB	1
ii.	Termination – Camera	CUS	Per Drawing HF	1
38.	RECONFIGURABLE CLASSROOM (330)			
a.	Video Projector (7,500 Lm.)	NEC	NP-PX750U	2
b.	Projector Lens	NEC	NP17ZL	2
c.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
d.	Projector Lens	NEC	NP12ZL	1
e.	16:10 Motorized Projection Screen	DRA	Access/Series V 165"	2
f.	16:10 Motorized Projection Screen	DRA	Access/Series V 137"	1
g.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
h.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
i.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0311	A/R
j.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
k.	Document Camera	WLF	VZ-8plus ³	1
l.	Ceiling Loudspeakers	EVI	EVID C8.2	15
m.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
n.	USB Switcher	EXT	SW2 USB	1
o.	Interactive Pen Display	SMA	SP-524-NB	1
p.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
q.	Ceiling Microphone	SHU	MX202W/C	3
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS-82	1
u.	Lanyard IR Receiver	LSN	LR-44	2
v.	Inductive Neckloop	LSN	LA166	2
w.	Stereo Headphones	LSN	LA165	2
x.	Control Network Switch	ATS	GS900/8	1

y.	UPS	MAP	UPS-2200R	1
z.	Equipment Enclosure	MAP	Per Drawing AV4003	1
aa.	Termination – Lectern	CUS	Per Drawing AA	3
bb.	Termination – Projector	CUS	Per Drawing AF	3
cc.	Termination – Screen	CUS	Per Drawing AN	3
dd.	Termination – Ceiling Microphone	CUS	Per Drawing AR	3
ee.	Termination – Ceiling Speaker	CUS	Per Drawing BA	15
ff.	Termination – IR Emitter	CUS	Per Drawing CB	1
gg.	Termination – Camera	CUS	Per Drawing HF	1
39. STUDENT ORIENTATION (308)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP12ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 123”	1
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0306	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	6
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
l.	Assistive Listening System	LSN	LS-85	1
m.	Interactive Pen Display	SMA	SP-524-NB	1
n.	Wireless Microphone System	SHU	ULXS14/93	2
o.	Control Network Switch	ATS	GS900/8	1
p.	UPS	MAP	UPS-2200R	1
q.	Equipment Enclosure	MAP	Per Drawing AV4002	1

r.	Termination – Lectern	CUS	Per Drawing AA	2
s.	Termination – Projector	CUS	Per Drawing AF	1
t.	Termination – Screen	CUS	Per Drawing AN	1
u.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
v.	Termination – IR Emitter	CUS	Per Drawing CB	1

40. CORRIDORS

a.	46" Flat Panel LCD	NEC	V462	5
b.	Tilting Wall Mount for LCD	CHF	PWCU	5
c.	Network Video Receiver	CIS	DMP4400G	5
d.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
e.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 4

41. SMALL MEETING ROOM (401O, 493)

a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Tilting Wall Mount for LCD	CHF	PWCU	1
d.	Video Conferencing System	LGS	RVF1000	1
e.	Table Box	CUS	\$1400 Allowance	1
f.	Control System	CST	Per Custom Quote # 1011191	
g.	Termination – Table Box	CUS	Per Drawing HC	1
h.	Termination – Floor Box	CUS	Per Drawing GE	1
i.	Termination – Flat Panel Display	CUS	Per Drawing GW	1
j.	Termination – VTC Codec	CUS	Per Drawing AS	1
k.	Termination – Control Touch Panel	CUS	Per Drawing CD	1

42. SMALL MEETING ROOM (410F, 452H)

a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1

c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Video Conferencing System	LGS	RVF1000	1
g.	Table Box	CUS	\$1400 Allowance	2
h.	Control System	CST	Per Custom Quote # 1011191	
i.	Termination – Table Box	CUS	Per Drawing HA	1
j.	Termination – Table Box	CUS	Per Drawing HC	1
k.	Termination – Floor Box	CUS	Per Drawing GG	1
l.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
m.	Termination – VTC Codec	CUS	Per Drawing AS	1
n.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
43. SMALL MEETING ROOM (451)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Tilting Wall Mount for LCD	CHF	PWCU	1
d.	Video Conferencing System	LGS	RVF1000	1
e.	Table Box	CUS	\$1400 Allowance	2
f.	Control System	CST	Per Custom Quote # 1011191	
g.	Termination – Table Box	CUS	Per Drawing HA	1
h.	Termination – Table Box	CUS	Per Drawing HC	1
i.	Termination – Floor Box	CUS	Per Drawing GG	1
j.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
k.	Termination – VTC Codec	CUS	Per Drawing AS	1
l.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
44. PROJECT ROOM (401I)				
a.	Flat Panel Display	NEC	V651	1

b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Video Conferencing System	LGS	RVF1000	1
g.	Interactive Whiteboard	SMA	885ix	1
h.	USB to CAT Extender	SMA	CAT5-XT	1
i.	Table Box	CUS	\$1400 Allowance	2
j.	Control System	CST	Per Custom Quote # 1011191	
k.	Control Network Switch	ATS	AT-GS900/5E	1
l.	Termination – Table Box	CUS	Per Drawing HC	1
m.	Termination – Table Box	CUS	Per Drawing HD	1
n.	Termination – Floor Box	CUS	Per Drawing GD	1
o.	Termination – Flat Panel Display	CUS	Per Drawing GZ	1
p.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
q.	Termination – VTC Codec	CUS	Per Drawing AS	1
r.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
45.	PROJECT ROOM (461F)			
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Owner Provided Video Conferencing System		BY OWNER	1
g.	Interactive Whiteboard	SMA	885ix	1
h.	USB to CAT Extender	SMA	CAT5-XT	1
i.	Table Box	CUS	\$1400 Allowance	2

j.	Control System	CST	Per Custom Quote # 1011191	
k.	Control Network Switch	ATS	AT-GS900/5E	1
l.	Termination – Table Box	CUS	Per Drawing HB	1
m.	Termination – Table Box	CUS	Per Drawing HI	1
n.	Termination – Floor Box	CUS	Per Drawing GI	1
o.	Termination – Flat Panel Display	CUS	Per Drawing GX	1
p.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
q.	Termination – VTC Codec	CUS	Per Drawing AS	1
r.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
46. CONFERENCE / SEMINAR ROOM (487)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP12ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 109”	1
d.	Flat Panel Display	NEC	V651	1
e.	Tilting Wall Mount for LCD	CHF	LTMU	1
f.	Ceiling Document Camera	WLF	EYE-12	1
g.	Ceiling Mount Kit	WLF	EYEKIT / TILEBRIDGE	1
h.	Ceiling Loudspeakers	EVI	EVID C8.2	8
i.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
j.	Owner Provided Video Conferencing System		BY OWNER	1
k.	Intelligent Dual Camera	PLY	EagleEye Director	1
l.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
m.	HDMI Transmitter / Reciever Pair	EXT	HDMI 201 Tx/Rx	1
n.	Table Box	CUS	\$1400 Allowance	4
o.	UPS	MAP	UPS-2200R	1
p.	Equipment Rack Credenza	MAP	Per Drawing AV4003	1
q.	Termination – Projector	CUS	Per Drawing AF	1

r.	Termination – Screen	CUS	Per Drawing AN	1
s.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
t.	Termination – Ceiling Doc Camera	CUS	Per Drawing AY	1
u.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8
v.	Termination – Control Panel	CUS	Per Drawing CE	1
w.	Termination – Wireless Access Pt.	CUS	Per Drawing CF	1
x.	Termination – Table Box	CUS	Per Drawing HE	4
y.	Termination – Camera	CUS	Per Drawing HF	1
z.	Termination – Floor Box	CUS	Per Drawing GH	4
47. MEDIUM MEETING ROOM (427)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Video Conferencing System	LGS	RVF1000	1
g.	Table Box	CUS	\$1400 Allowance	2
h.	Control System	CST	Per Custom Quote # 1011191	
i.	Termination – Table Box	CUS	Per Drawing HA	1
j.	Termination – Table Box	CUS	Per Drawing HC	1
k.	Termination – Floor Box	CUS	Per Drawing GG	1
l.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
m.	Termination – VTC Codec	CUS	Per Drawing AS	1
n.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
48. STUDENT PROJECT ROOM (445)				
a.	NO AV EQUIPMENT TO BE INSTALLED AT THIS TIME.			

49. CORRIDORS

a.	46" Flat Panel LCD	NEC	V462	4
b.	Tilting Wall Mount for LCD	CHF	PWCU	4
c.	Network Video Receiver	CIS	DMP4400G	4
d.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
e.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 5

50. DISTRIBUTED INFORMAL LEARNING / STUDY (505, 511)

a.	Ceiling Loudspeakers	EVI	EVID C8.2	12
b.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
c.	Control System	CRS	Per Custom Quote # 1011191	
d.	Wireless Microphone System	SHU	ULXS14/93	2
e.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
f.	Wireless Microphone System – HH	SHU	ULXS24/58	1
g.	CD Player with iPod Dock	TAS	CD-200i	1
h.	Auxiliary Input Panel	CUS	Per Drawing AV3006	1
i.	DSP	SMX	EDGE Frame	3
j.	DSP I/O Cards	SMX	4 Ch. Analog Input Card	3
k.	DSP I/O Cards	SMX	4 Ch. Analog Output Card	1
l.	Network Switch (8-Port)	ATS	AT-GS900/8	1
m.	UPS	MAP	UPS-2200R	1
n.	Equipment Rack	MAP	Per Drawing AV4003	1
o.	Termination – Wireless Mic Antenna	CUS	Per Drawing AX	2
p.	Termination – Ceiling Loudspeaker	CUS	Per Drawing BA	12
q.	Termination – Audio Input Panel	CUS	Per Drawing HG	1

D. Equipment Manufacturers

	<u>MFR</u>	<u>Company</u>	<u>Web Site</u>
1.	AAI	Audio Accessories	www.patchbays.com
2.	ACE	Ace Backstage Company	www.acebackstage.com
3.	AKG	AKG Acoustics	www.akgusa.com
4.	ALC	Alcoswitch	www.tycoelectronics.com
5.	ALN	Allen Products Company Inc.	www.allenproducts.com
6.	ANC	Anchor Audio	www.anchoraudio.com
7.	APB	APB-Dynasonics	www.apb-dynasonics.com
8.	APX	Aphex Systems	www.aphex.com
9.	ASH	Ashly Audio	www.ashly.com
10.	ATL	Atlas Sound	www.atlassound.com
11.	ATS	Allied Telesis	www.alliedtelesis.com
12.	ASU	ASUS	usa.asus.com
13.	ATM	ATM Fly-Ware	www.atmflyware.com
14.	ATN	Audio-Technica	www.audiotechnica.com
15.	BAG	Bag End Loudspeakers	www.bagend.com
16.	BEL	Belden Wire and Cable	www.belden.com
17.	BEY	Beyerdynamic	www.beyerdynamic.com
18.	BMK	Benchmark Media Systems	www.benchmarkmedia.com
19.	BSS	BSS Audio USA	www.bss.co.uk
20.	CAG	CAIG Laboratories	www.caig.com
21.	CAN	ITT/Cannon Components Division	www.ittcannon.com
22.	CDU	C-Ducer	www.c-ducer.com
23.	CLC	Clear-Com	www.clearcom.com
24.	CNR	Canare Cable	www.canare.com
25.	CRL	Carol Wire and Cable	www.biccgeneral.com
26.	CRN	Crown International	www.crownaudio.com
27.	CRS	Crest Audio	www.crestaudio.com
28.	CST	Crestron Electronics	www.crestron.com
29.	CUS	Custom Built by Audio Contractor	
30.	DAL	Da-Lite	www.da-lite.com
31.	DBX	dbx Professional Products	www.dbxpro.com
32.	DEL	Dell Computer	www.dell.com
33.	DEN	Denon Corporation	www.usa.d-mpro.com
34.	DNB	d&b Audiotechnik Corp.	www.dbaudio.com
35.	DPA	DPA Microphones	www.dpamicrophones.com
36.	DPI	Digital Projection Inc.	www.digitalprojection.com
37.	DRP	Draper, Inc.	www.draperinc.com
38.	DSL	Danley Sound Labs	www.danleysoundlabs.com
39.	DUG	Dan Dugan Sound Design	www.dandugan.com
40.	EAC	EAW Commercial	www.eawcommercial.com
41.	EAW	Eastern Acoustic Works	www.eaw.com
42.	EVI	Electro-Voice	www.electrovoice.com
43.	ETW	Earthworks	www.earthworksaudio.com

44.	EVN	Eventide	www.eventide.com
45.	FLC	Fulcrum Acoustic	www.fulcrum-acoustic.com
46.	FLK	John Fluke Manufacturing Company	www.fluke.com
47.	FRZ	Frazier Loudspeakers	www.frazierspeakers.com
48.	FSR	FSR	www.fsrinc.com
49.	HHB	HHB Communications	www.hhbusa.com
50.	HOF	Hoffman Engineering Company	www.hoffmanonline.com
51.	HUB	Hubbell	www.hubbell.com
52.	IVE	Ivie Technologies	www.ivie.com
53.	JBL	JBL Professional Products	www.jblpro.com
54.	JEN	Jensen Tools	www.jensentools.com
55.	JTF	Jensen Transformers	www.jensen-transformers.com
56.	KTK	Klark Teknik	www.klarkteknik.com
57.	LCS	Level Control Systems	www.lcsaudio.com
58.	LEX	Lexicon	www.lexicon.com
59.	LGP	Lab Gruppen	www.labgruppen.se
60.	LGS	LG Business Solutions	www.lgsolutions.com
61.	LIT	Littlite/CAE	www.littlite.com
62.	LPC	Lex Products Corporation	www.lexproducts.com
63.	LSN	Listen Technologies Corporation	www.listentech.com
64.	LYN	LynTec	www.lyntec.com
65.	MAP	Middle Atlantic Products	www.middleatlantic.com
66.	MCK	Mackie Designs	www.mackie.com
67.	MDS	Midas	www.midasconsoles.com
68.	MEY	Meyer Sound Laboratories	www.meyersound.com
69.	MRS	Marshall Furniture	www.marshallfurniture.com
70.	MRZ	Marantz Professional	www.marantzpro.com
71.	MYS	Mystery Electronics	www.mysteryelectronics.com
72.	NEC	NEC Display Solutions	www.necdisplay.com
73.	NEU	Neumann USA	www.neumann.com
74.	NTK	Neutrik USA	www.neutrik.com
75.	NUM	Numark	www.numark.com
76.	OMN	Omnimount Systems	www.omnimount.com
77.	OSS	On Stage Stands	www.onstagestands.com
78.	OXM	Oxmoor Corporation	www.oxmoor.com
79.	PAD	Panduit	www.panduit.com
80.	PAN	Panasonic USA	www.panasonic.com
81.	PFS	Polar Focus	www.polarfocus.com
82.	PLY	Polycom	www.polycom.com
83.	POM	Pomona Electronics	www.pomonaelectronics.com
84.	PKS	Practical Kiosk Solutions	www.practicalkiosk.com
85.	PRS	PreSonus Audio Electronics	www.presonus.com
86.	PRT	ProTech Audio Corporation	www.protechaudio.com
87.	QLK	Quik Lok	www.quiklok.com
88.	QSC	QSC Audio Products	www.qscaudio.com
89.	RAN	Rane Corporation	www.rane.com

90.	RDE	Radial Engineering	www.radialeng.com
91.	RDS	Rosendahl Studiotechnik	www.rosendahl-studiotechnik.de
92.	RKH	Renkus-Heinz	www.renkus-heinz.com
93.	SAL	Salitek / Orion	www.salitek.net
94.	SCH	Schoeps	www.reddingaudio.com
95.	SCR	Soundcraft USA	www.soundcraft.com
96.	SEN	Sennheiser Electronic Corporation	www.sennheiserusa.com
97.	SHU	Shure Brothers	www.shure.com
98.	SIA	SIA Software Company	www.siasoft.com
99.	SKB	SKB Corporation	www.skbcases.com
100.	SMA	Smart Technologies	www.smarttech.com
101.	SMX	Symetrix	www.symetrixaudio.com
102.	SNL	Stop and Listen	www.stopandlisten.com
103.	SNY	Sony Electronics	www.sonyproaudio.com
104.	SQD	Square D Company	www.squared.com
105.	SRV	Servoreeler Systems	www.servoreelers.com
106.	SSC	Superscope Technologies	www.superscopetechnologies.com
107.	SWC	Switchcraft	www.switchcraft.com
108.	TAN	Tannoy North America	www.tannoy.com
109.	TAP	Tapco	www.tapcogear.com
110.	TAS	Tascam	www.tascam.com
111.	TCE	TC Electronic of Denmark	www.tcelectronic.com
112.	TCM	3Com	www.3com.com
113.	TEA	Teac America	www.teac.com
114.	TEC	Technics Audio Products	www.panasonic.com
115.	TLX	Telex Communications	www.telex.com
116.	TMB	TMB	www.tmb.com
117.	TOA	TOA Electronics	www.toaelectronics.com
118.	TPL	Tripp Lite	www.triplite.com
119.	UNC	Union Connector Company	www.unionconnector.com
120.	USS	Ultimate Support Systems	www.ultimatesupport.com
121.	UST	Unistrut Diversified Products	www.unistrut.com
122.	VEG	Vega	www.vegawireless.com
123.	VST	Vista Systems, Corp.	www.vistasystems.net
124.	WDM	Weidmuller	www.weidmuller.com
125.	WLF	Wolfvision	www.wolfvision.com
126.	WLM	Williams Sound	www.williamssound.com
127.	WLR	Wohler Technologies	www.wohler.com
128.	WOW	WOW-Vision	www.wow-vision.com
129.	WPW	West Penn Wire/CDT	www.westpenn-cdt.com
130.	WRM	Wiremold Company	www.wiremold.com
131.	WWD	Whirlwind Interface International	www.whirlwindusa.com
132.	WWK	Wireworks Corporation	www.wireworks.com
133.	XED	Xedit	www.servoreelers.com
134.	XTA	XTA Electronics	www.xta.co.uk
135.	YAM	Yamaha Corporation of America	www.yamaha.com

2.3 DETAIL DRAWINGS

- A. The drawings herein detail custom built equipment and system details.
- B. Furnish all materials and labor to provide complete and finished work even though not specifically shown on the drawings.
- C. Detail drawings are located in large format drawings AV0001 through AV4003.

PART 3 - EXECUTION

3.1 AUDIO SYSTEM REQUIREMENTS

- A. Requirements herein refer to materials and work which are related to or part of the Systems. Where conflict exists with other specifications concerning such work or materials, this specification takes precedence unless otherwise approved in writing by the Owner

3.2 INSTALLATION OF SYSTEMS

- A. Locate all apparatus requiring adjustments, cleaning or similar attention so that it will be accessible for such attention. Equipment racks shall be positioned to permit full access for operation and service.
- B. Furnish and install brackets, braces and supports. Minimum fastening or support safety factor shall be at least three (3). Design shall be to the approval of the University of South Carolina.
- C. All supporting structures and enclosures supplied by the Contractor not having a standard factory paint finish shall be painted. Paint specifications will be supplied by the University of South Carolina or indicated herein.
- D. Provide custom color or finish for any equipment or materials supplied which are exposed to public view. Color and finish of all such equipment or materials shall be approved in writing by the University of South Carolina. This does not exclude equipment or materials where standard colors and finishes may be specified herein.
- E. Finish of blank panels and custom assembly panels shall match adjacent equipment panels.
- F. Switches, connectors, jacks, receptacles, outlets, cables and cable terminations shall be logically and permanently marked. Custom panel nomenclature shall be engraved, etched or screened. Markings for these items are detailed in the drawings to ensure consistency and clarity. Verify any changes in working type size and/or placement with the Systems Designer prior to marking.
- G. The equipment specified herein is designed to operate in environments of normal humidity, dust and temperature. Protect equipment and related wiring where extreme environmental conditions can occur.
- H. The standard reference for the layout and construction of the system shall be:

Giddings, Philip. *Audio Systems Design and Installation*. Boston: Focal Press, 1990.

3.3 CONDUIT

- A. Review and coordinate Systems conduit installation with the electrical contractor to ensure proper operation of the Systems.
- B. All wiring shall be in conduit unless authorized by the University of South Carolina, approved by the Systems Designer, and permitted by code. Exceptions are short runs at equipment terminations where there is no means of connecting conduit to the equipment.
- C. 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. Conduit connections to equipment racks shall be insulated.
- D. Minimum size conduit shall be 3/4 inch. All conduit shall be sized for maximum 40% fill or less if required by code.

3.4 CONDUIT SEPARATION

- A. Systems wiring is divided into wiring groups according to their nominal voltage levels (refer to Schedule of Terminations):

	Wiring Type
Group A	Microphones and other sensitive wiring (0 mV to 100 mV)
Group B	Line level wiring (100 mV to 10 V)
Group C	Loudspeaker and control wiring (10 V to 70 V)
Group D	Telephone, video, control and digital circuits
Group E	Fiber optic cable

Note: These wiring groups must never be intermixed within a given conduit run!

- B. Minimum conduit separation between conduits carrying wiring of different groups is as follows:

	Group A	Group B	Group C	Group D	Group E
Group A	adjacent	6"	12"	12"	adjacent
Group B	-	adjacent	12"	6"	adjacent
Group C	-	-	adjacent	6"	adjacent
Group D	-	-	-	adjacent	adjacent
Group E	-	-	-	-	adjacent

Note: Ninety degree crossings in close proximity are acceptable.

- C. Minimum conduit separation between conduits carrying Systems wiring and other electrical service conduit is as follows:

	Group A	Group B	Group C	Group D	Group E
Dimmer controlled lighting	24"	12"	6"	12"	adjacent
SCR controlled services	24"	12"	6"	12"	adjacent
220/440V circuits	6"	6"	adjacent	adjacent	adjacent
All other services	6"	6"	adjacent	adjacent	adjacent

Note: Heavy current demands in or long parallel runs with the above services may dictate greater separations to avoid interference in the Systems.

- D. Contractor shall promptly inform the Systems Designer in writing of conduit installation which does not conform to these requirements.

3.5 ELECTRICAL POWER

- A. Review and coordinate electrical power system installation including grounding with the electrical contractor to ensure proper operation of the Systems.
- B. Verify that all AC power circuits designated for Systems equipment are wired with correct polarity and isolated ground. Report in writing any discrepancies found to the University of South Carolina for corrective action.
- C. Provide distribution of electrical power within the equipment racks with a minimum of one spare AC receptacle for each four in use per branch circuit.

3.6 STEEL SUPPORTS

- A. Fabricate and install any supports so that the installation does not weaken or overload the building 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 University of South Carolina.

3.7 BOXES

- A. With the exception of portable equipment, all boxes, conduits, cabinets, equipment and related wiring shall be held in place and the mounting shall be plumb and square.
- B. All boxes shall be securely mounted to building structure. All boxes shall be installed so that wiring contained in them is accessible. Install blanking devices or threaded plugs in all unused holes.
- C. Wiring groups and circuits shall be isolated as indicated herein. Common pull or junction boxes are not permitted except as authorized, in writing, by the Systems Designer.
- D. Clean all box interiors before installing plates, panels or covers.

3.8 WIRING METHODS AND PRACTICES

- A. Provide installation of all Systems wire and cable, ensuring proper:
 - 1. Pulling Tensions
 - 2. Quantities
 - 3. Types
 - 4. Lengths
 - 5. Routing
 - 6. Wire Group Separation
 - 7. Identification
- B. The interconnection of all equipment requiring shielded cable shall be by Belden type 9451, or equivalent, unless otherwise specified.
- C. Spare wire runs of each group and type shall be pulled to each termination location. The number of spares shall be ten percent of those in actual use or one, whichever is greater.
- D. Splicing of cables is not permitted between terminations of specified equipment.
- E. 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 less than recommended radius. Employ temporary guides, sheaves, and rollers to protect cables from excess tension, abrasion or damaging bending during installation.
- F. Provide wire pulling lubricants and pulling tensions in accordance with the wire and cable manufacturer's recommendations.
- G. 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.
- H. Wire ends should be wrapped with heat shrink tubing. Each shield or drain wire should be covered with heat shrink to avoid unintentional connections.
- I. 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. Spare terminal blocks, equivalent to 10% of those in actual use, shall be provided.
- J. 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. Limit spacing between ties to six (6) inches and provide circuit and conductor identification at least once in each enclosure.
- K. Provide ample service loops at each termination so that plates, panels, patch bays, and equipment can be dismounted for service and inspection.

3.9 GROUNDING

- A. Audio system wiring shall conform to the following procedures:
 - 1. Audio equipment AC ground pins shall connect to AC isolated ground.
 - 2. Audio equipment chassis shall connect to AC isolated ground or rack frames.
 - 3. Audio rack frames shall connect to AC isolated ground bus in panelboard by means of #2 gauge (minimum) conductor.
 - 4. Audio shields between AC powered pieces of equipment shall be connected to ground at one end only. Capacitively terminate as required.
 - 5. Audio signal paths between AC powered pieces of equipment shall be connected using balanced lines and/or transformer isolation as required. No unbalanced signal paths may be connected to the patch bay.
 - 6. Isolate all Systems wiring from racks, back boxes and conduit.
 - 7. Isolate all Systems racks from conduit and other conductive surfaces. Use insulated bushings for conduit connections and a dielectric plinth between racks and conductive flooring materials.
 - 8. AC isolated ground system shall be isolated from all other facility grounds.
- B. All metallic conduit, boxes and enclosures shall be grounded in accordance with the current National Electrical Code.
- C. Metallic enclosures containing active equipment shall be grounded with due regard for the minimization of electrical noise. This may include the provision of grounding conductors separate from the AC ground.

3.10 EQUIPMENT RACKS

- A. The equipment racks shall be considered as custom assemblies and shall be assembled, wired and tested in the Contractor's shop. Assembly of racks on-site will not be permitted (except for shielded microphone and line wiring which must connect directly to the patch bays).
- B. Placement of equipment in equipment racks, as shown in the drawings, is for maximum operator convenience. Verify any changes in placement of the equipment with the Systems Designer before assembly.
- C. Racks shall be installed plumb and square without twists in the frames or variations in level between adjacent racks.
- D. All wire, cable, terminal blocks, 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.
- E. Provide stiffeners to custom panels to prevent panel deformation during normal plugging or switching operations.
- F. All wires and cables used in assembling custom panels and equipment racks shall be formed into harnesses which are tied and supported in accordance with accepted engineering practice.

- G. Harnessed cables shall be combed straight, tie-wrapped every six (6) to ten (10) inches, and attached to the structure as necessary. Each cable that breaks out from a harness for termination shall be provided with an ample service loop to permit equipment removal from the racks without disconnecting.
- H. Harnessed cables shall be formed in either a vertical or a horizontal relationship to equipment, controls, components or terminations.
- I. Cable shields shall be connected to the isolated ground system with due regard for ground loops. (See Giddings reference book, Chapter 10)
- J. 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.
- K. All rack mounted equipment, with front panel controls, shall be provided with security covers to avoid tampering with preset levels. If specific security covers are not included in the equipment list, the Contractor will provide the manufacturer's security cover for each specified device or a suitable alternate.
- L. Every device shall be installed with regard for proper polarity. Absolute polarity shall be maintained through the entire Systems chain.
- M. Any electronic device which is connected to the patch bay must be balanced.

3.11 INITIAL ADJUSTMENT

- A. Verify all circuits and extensions for correct connection, continuity and polarity. Absolute polarity shall be maintained between all points in the system.
- B. Connector polarity shall be maintained except for terminations at equipment manufactured to other standards. In the event that manufactured equipment can be ordered with, or internally set to, various standards, the equipment shall be configured as follows:
 - 1. Polarity for XLR style connector shall be: pin 2-high, pin 3-low, and pin 1-shield.
 - 2. Polarity for TRS style connector shall be: tip-high, ring-low, and sleeve-shield.
- C. Make all adjustments and modifications so that the system is operational.
- D. Make all adjustments and modifications for system gain structure per recommendations of major component manufacturers.

3.12 VERIFICATION TESTS

- A. Confirm that each individual wire and cable run (whether in a rack or in conduit) is identified with a unique number. These numbers are affixed to both ends of each cable and are clearly visible. Provide a complete list of these numbers along with the termination location of each end of the wire run.
- B. Confirm that all system outputs are free of spurious signals including oscillations and radio frequency signals. A wide band oscilloscope shall be used to verify this condition.

- C. Confirm that the system is free of audible clicks, pops, and other noises when any operating control is activated, with or without input signal.
- D. For all microphone lines, tie lines, return lines and effect loudspeaker lines, confirm:
 - 1. Proper circuits appearing at each termination location
 - 2. Proper circuits appearing at each jack bay position
 - 3. Continuity of all conductors
 - 4. Proper polarity is maintained
 - 5. Absence of shorts between conductors within each circuit
 - 6. Absence of shorts between circuit conductors and conduit
- E. Confirm that loudspeakers and mountings are free of buzzes and rattles when the loudspeaker is swept with sine wave tones over its rated bandwidth at one-half (1/2) its maximum rated power.
- F. For all permanently mounted loudspeaker terminations, provide impedance measurement of each pair of loudspeaker lines with all loudspeakers connected and all amplifiers disconnected. These measurements shall be documented as editable tabular data listing impedance for each 1/3 octave band from 20 Hz to 20 kHz and shall be accurate to the nearest tenth of an Ohm.
- G. For all intercom terminations, confirm proper operation by initiating and receiving audio communication and call light.
- H. For each installed data network cable or fiber optic cable confirm conformance to the specified TIA/EIA performance standards.
- I. For all electronic devices mounted in racks and connected to patch bays, confirm:
 - 1. Every input and output is balanced.
 - 2. Proper polarity is maintained throughout the entire audio path.
 - 3. Tip connection of each TRS jack is connected to the positive terminal of each corresponding input or output.
- J. Confirm that there are no shorts between the Neutral and Isolated Ground conductors for each clean power circuit.

3.13 VERIFICATION TEST REPORT

- A. Submit written report detailing the results of Initial Adjustments and Verification Tests. Report to include, at minimum, the following:
 - 1. Copies of all relevant drawings, charts, test instrument data, and photographs.
 - 2. PDF copies of all available manufacturers' operation and service literature for each major system component.
 - 3. Written certification that the installation conforms to the requirements stated herein, is complete in all respects, and is ready for inspection, testing, and tuning.
- B. This report shall be completed and submitted to the Systems Designer for review a minimum of five (5) days prior to Acceptance Testing and final tuning.

3.14 ACCEPTANCE TESTING

- A. Acceptance Testing shall be performed by the Systems Designer during a period designated by the University of South Carolina. Contractor shall furnish a minimum of two (2) technicians for the acceptance testing period.
- B. The minimum time required for Acceptance Testing is two (2) working days of dedicated quiet. Coordinate this time period so that free access, work lighting, and electrical power are available on the site.
- C. Ensure that Systems areas are in a clean and orderly condition ready for acceptance testing.
- D. Provide test equipment (meeting the following minimum specifications) on site, at all times during Acceptance Testing. Prior to Acceptance Testing, provide the Systems Designer with a listing of the specific equipment to be made available.
 - 1. Oscilloscope: 10MHz Bandwidth, Sensitivity – 1mV/cm
 - 2. Digital Multi-meter: 1% Accuracy
 - 3. Function Generator: 1MHz Bandwidth, Distortion < 1%
 - 4. Real Time Analyzer: 1/3 Octave with microphone
 - 5. Pink Noise Source: 20 Hz – 20 kHz Bandwidth
 - 6. Impedance Sweep Meter: 20 Hz – 20 kHz Range, 1 Ohm – 50 kOhm
 - 7. Polarity Checker: Mic, line, or loudspeaker level

Note: Systems Designers may choose to supply their own test equipment.

- E. Be prepared to verify the performance of any portion of the system by demonstration, listening tests and instrumented measurements.
- F. Make additional mechanical and electrical adjustments within the scope of the work and which are deemed necessary by the Systems Designer as a result of the Acceptance Tests. This may include realigning of loudspeaker systems, changes in system gain structures, grounding, filtering or interfaces.
- G. Final acceptance will be contingent upon issuance by the Systems Designer of a letter of acceptance stating that the work has been completed and is in accordance with the contract documents.
- H. Contractor will bear any costs incurred for additional Systems Designer's time and expenses due to failure to have the system functioning in accordance with specification requirements at the times scheduled for Systems Designer's Acceptance Testing and tuning.

3.15 SYSTEM DOCUMENTATION

- A. Within thirty (30) days of the Acceptance Testing, prepare and submit a CD-ROM of the preliminary Operation and Maintenance manual for approval by the Systems Designer. Manual to include, at minimum, the following documents in PDF format:
 - 1. Table of contents
 - 2. Written Guarantee and service policy
 - 3. Basic power on/off and operational procedure
 - 4. Copies of all shop drawings which have been updated to include any changes made during

- the installation process
5. All available manufacturers' operation and service literature for each major system component
 6. One line signal flow diagram with all cable runs and patch points identified by alpha-numeric character
 7. Copy of the Verification Test report
 8. Copy of conduit riser diagram
 9. Copy of the final tuning settings as provided by the Systems Designer
- B. Systems Designer will review the above system documentation. Upon approval, Contractor shall prepare and submit to the Owner:
1. Five (5) copies of the final Operation and Maintenance manual on CD-ROM
 2. Two (2) hard copies of the final Operation and Maintenance manual printed and neatly bound
- C. Provide framed copy of the as-built signal flow diagram to be mounted in the control room. This diagram shall have all cable runs and patch points identified by alpha-numeric character.

3.16 OWNER TRAINING

- A. Requirements for owner training to be developed by DMSB, USC and JaffeHolden. Training to be conducted by AV Installer.
- B. Contractor to facilitate multiple training sessions.
- C. DMSB and USC to make available any persons who will require training on specific building systems for those training sessions. UTS staff to receive in-depth training on all building systems and will bear some responsibility in training non-technical DMSB staff in the operation of the audio/video systems.
- D. Contractor to provide additional training sessions for DMSB staff after systems have been in use for a period of two months to address questions and/or concerns that have surfaced while the systems have been in use.

END OF SECTION 27 41 00

Tracking Designation by RVA

Audio package B

All Drawings are available as PDF files

SECTION 27 41 00 - AUDIO/VIDEO SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to the work specified in this Section.
- B. Coordinate work of this Section with work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other Sections.

1.2 SCOPE OF SPECIFICATION

- A. The following terms are defined for this specification section:
 - 1. "Systems" are the audio/video systems.
 - 2. "Designer" or "Systems Designer" is the designer of the audio/video systems.
 - 3. "Contractor" or "Systems Contractor" is the specialty contractor responsible for the installation of the audio/video systems.
 - 4. "UTS" is the University of South Carolina, University Technology Services, Audiovisual Engineering Services 5." DMSB" is the Darla Moore School of Business technical staff
- B. This specification covers all Systems as described below for the project. The objective is to provide professional systems, installed, acceptance tested, and ready for use.
- C. The written specification and large format drawings AV0001 through AV4003 shall be collectively referred to herein as the Contract documents. System features which are mentioned in one part may not be shown in the others. In case of conflict between the written specification and the drawings, Contractor must seek clarification from the Systems Designer. In the event that the Contractor fails to obtain such clarification, the interpretation of the Systems Designer will prevail.

1.3 CONTRACTOR RESPONSIBILITY

- A. Specification drawings are detailed only to the extent necessary to show design intent and signal flow. 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.
- B. Equipment not mentioned herein nor shown on drawings but necessary to meet this requirement shall be provided without claim for additional payment.

1.4 SUMMARY DESCRIPTION

- A. The following Systems are included in the specification:
 - 1. Auditorium and Classroom audio/video systems
 - 2. Video conference / Telepresence systems
 - 3. Assorted playback and production equipment

4. ADA compliant audio systems
5. Interactive voting systems
6. Portable reinforcement and playback loudspeaker system
7. Assorted mixing and processing equipment
8. Digital signage
9. Public address and background music systems
10. Auditorium performer stage monitor system
11. Production intercom and paging system
12. Backstage paging and program system
13. Lobby program, paging and chime system
14. Technical video distribution system
15. Video/data projection systems
16. Video/data display systems
17. Audio/video control systems
18. Equipment rack enclosures and custom instructor lecterns to house audio/video equipment

1.5 SCOPE OF WORK

- A. Furnish all materials, labor and any engineering services to provide complete and professionally installed Systems in working order as described herein. Labor furnished shall be specialized and experienced in Systems installation.
- B. Coordinate installation with back boxes and enclosures provided by BP3 contractor.
- C. Deliver to the job site any back boxes which are to be installed by others.
- D. Furnish and install all wire and cable.
- E. Furnish any additional items, not specifically mentioned herein, to meet system requirements as specified, without claim for additional payment. Such items may include hardware, transformers, line/distribution amplifiers and other devices for proper installation, interface, isolation or gain structure.
- F. Furnish shop drawings and receive approval, prior to fabrication and installation.
- G. Perform initial adjustments and verification tests. Submit verification test report.
- H. Participate in acceptance tests and perform final adjustments.
- I. Participate in user training.
- J. Provide system documentation including copies of all relevant drawings and equipment manuals.
- K. Provide maintenance services for the specified period from the date of acceptance.
- L. Guarantee all equipment and components for the specified period from the date of acceptance.
- M. Requirements and materials that apply to the work of others related to the Systems are listed to define and establish Systems requirements.
- N. Work scope does not include the AC power system except as shown in the drawings.
- O. Coordination with the Electrical Contractor is required to assure correct Systems conduit routing,

Systems backbox locations, and clean power circuit locations as specified in Division 26 - Electrical.

- P. See Work Scope Summary Table at the end of Part One (Paragraph 1.12).
- Q. All Crestron control system programs written by the Contractor will meet the following UTS/DMSB requirements in an effort to maintain consistency and compatibility with existing remote monitoring and diagnostic support systems used campus wide.
1. Contractor will work with UTS and DMSB to ensure all Crestron programs include code for interconnectivity with existing USC Crestron Fusion servers.
 2. Crestron System Builder and System Builder Templates should not be used.
 3. Contractor will need to provide a complete Project Archive for all Crestron programs which includes the following:
 - i. Crestron SIMPL Windows source code files.
 - ii. Crestron and/or any custom user modules.
 - iii. Crestron SIMPL+ header and source code files.
 - iv. Crestron VTPro-E files.
 - v. Crestron Engraver files.
 - A. vi. All IR files used in programs.

1.6 SUBMITTALS

- A. Bid Submittals:
1. Contractors shall examine all drawings and read all divisions of this specification in order to avoid omissions and duplications and to ensure a complete job. No allowances shall be made for failure to read and understand these documents. Discrepancies between drawings and specifications or obvious omissions shall be referred to the Systems Designer for clarification before the bid date. Where discrepancies occur and pre-bid instructions have not been obtained, the contractor agrees to abide by the Systems Designer's decision.
 2. Bid proposals shall include all work and all equipment as specified, as well as any other equipment and materials to be used in assembling the system.
 3. Requests for clarification of specification intent shall be made, in writing, not later than ten (10) days prior to bid date.
 4. No portion of the work herein may be assigned or sub-contracted to others unless the following requirements have been satisfied:
 - a. The names of any proposed sub-contractors shall have been disclosed in the bid proposal.
 - b. All terms of this contract, including bidding and qualification requirements, shall apply to the sub-contractor.
 5. The bid submittals shall include the following:
 - a. The total Contract price

- b. An itemized list of all equipment and materials to be used in assembling the system
- c. Unit pricing for all items on the specified equipment list
- d. Lot pricing for miscellaneous items not on the specified equipment list
- e. A breakdown of the number of staff hours allotted for:
 - i. Preparation of submittals, shop drawings, and system documentation
 - ii. On site coordination meetings and supervision
 - iii. In shop engineering, fabrication, and assembly
 - iv. On site fabrication, assembly, and installation
 - v. On site verification and acceptance testing

B. Shop Drawing Submittals:

1. Within sixty (60) calendar days after contract award or to meet schedule, submit five (5) copies of detailed shop drawings to the University of South Carolina for approval. All shop drawings shall be marked with the related drawing number when submitted. Do not begin installation or fabrication without the approval of the University of South Carolina and Systems Designer.
2. Review of shop drawings shall not constitute final approval of system function. Said review does not in any way relieve the Contractor from the responsibility of furnishing material or performing work as required by the Contract documents.
3. Failure of the Contractor to submit shop drawings in ample time for evaluation shall not entitle the Contractor to an extension of contract time, and no claim for extension by reason of such default will be allowed.
4. Allow time for resubmittals.

5. At minimum, the Shop Drawings shall include neatly bound copies of the following:
 - a. Table of Contents
 - b. Itemized list of all equipment and materials to be used in assembling the system
 - c. Catalog cut sheets or data sheets for each listed item
 - d. One-line signal flow diagrams for all audio/video and auxiliary systems showing point to point wiring interconnection of all equipment with wire run numbers and patch bay designations. Show all transformers, switches, relays, control circuits, and modifications to equipment. Show all equipment items which are required for realization of the functions described herein.
 - e. A complete list of all wire run numbers along with the termination location of each end of each wire run
 - f. Detailed 3-wire schematic diagrams for any custom circuitry
 - g. Detailed 3-wire schematic diagrams for typical connections between audio lines, patch bays, and rack mounted equipment
 - h. Drawings of all items which are to be custom fabricated or modified. Drawings shall be of scale suitable for use in fabrication. They shall show materials, finishes and panel/control markings. Submit samples of lettering/label size and typeface to be employed on custom plates, panels and other equipment.
 - i. Full size drawings illustrating the physical layout and labeling of patch bays
 - j. Mechanical drawings of all assemblies, major sub-assemblies, racks, cabinets and enclosures
 - k. Mechanical drawings showing proposed mounting details of all loudspeakers and associated rigging, and interface with adjacent architecture

6. The above listed drawings shall be produced on AutoCAD or similar computer graphics

program. Scans or photocopies of the Systems Designer's specification drawings are not acceptable.

7. The use of electronic files from other sources (e.g., architectural backgrounds, Systems Designer's drawings, vendor-supplied panel drawings) will not absolve the Contractor of responsibility for ensuring that the Shop Drawings represent a completely engineered, coordinated solution. The Contractor has final responsibility for providing systems which conform to all requirements of this specification.

C. Substitutions:

1. Subsequent to Contract award, substitutions may be permitted, but only with the express written permission of the Systems Designer. The proposed substitutes must be equivalent to the specified products in quality, performance, construction, function and conformance to system objectives and warranty provisions.
2. It is the responsibility of the Contractor to prove, to the satisfaction of the Systems Designer, that the proposed substitution is equal to the specified product, as demonstrated by submission of the following:
 - a. List of advantages to the Owner
 - b. Cost savings
 - c. Printed specifications or laboratory test data
 - d. Previous field experience
3. The Contractor shall list the unit price of each item proposed for substitution and indicate which specified items are to be deleted.
4. If the Systems Designer determines that the proposed product is not equal to the specified project, the Contractor shall supply the product specified in the Contract documents.
5. Where substitute materials or methods are approved, the Contractor shall make all adjustments to contingent work necessary to accommodate the substituted equipment, without claim for additional payment.
6. In the event that one or more of the products specified herein is unavailable, the Contractor shall make recommendations to the Systems Designer as to what substitutions are available to meet the intent of the specification.
7. The Systems Designer reserves the right to substitute new products which become available subsequent to the issuance of the Contract Documents, provided that:
 - a. The Contractor has not yet purchased the originally specified equipment.
 - b. The substitute equipment shall not materially increase the Contractor's costs.

D. Samples:

1. Submit samples of substitute equipment to the Systems Designer as required to prove equivalency to items specified.
2. Submit samples of custom work, finishes or other materials as required by the University of South Carolina or Systems Designer to verify appearance and quality.
3. Costs for shipping samples shall be the responsibility of the Contractor.

E. Written Guarantee (See Paragraph 1.9)

F. Verification Test Report (See Paragraph 3.13)

G. System Documentation and Operation Manuals (See Paragraph 3.15)

1.7 JOB CONDITIONS

- A. Keep the job adequately staffed at all times. Unless illness, loss of personnel or other circumstances beyond the control of the Contractor intervene, keep the same individual in charge throughout.
- B. Cooperate with all appropriate parties in order to achieve well coordinated progress with the overall construction completion schedule and satisfactory final results.
- C. Watch for conflicts with work of other contractors on the job and execute, without claim for extra payment, moderate moves or changes as are necessary to accommodate other equipment or to preserve acoustic performance, symmetry, and pleasing appearance.
- D. Immediately report to the University of South Carolina and Systems Designer, any design or installation irregularities, particularly architectural elements that interfere with the intended coverage angles of loudspeakers, so that appropriate action may be taken.
- E. Do all cutting, patching and painting for proper and finished installation of the system and repair any damage done as a result of such installation. Clean up and dispose of trash from all Systems work areas.
- F. Contractor must: provide their own dumpsters, temporary toilets and daily clean-up; park offsite; agree to USC contract for scaffolds, hoisting and lifts.
- G. Contractor attendance required at project coordination meetings and compliance with BP #3 and other Owner provided installation schedules.

1.8 QUALITY ASSURANCE

- A. Parts listed shall be complete, type numbers accurate and equipment furnished shall conform to manufacturer's specifications.
- B. All materials shall be new and shall conform to applicable provisions of Underwriters Laboratories and the American Standards Association.
- C. Procure and pay for all permits, licenses and inspections and observe any requirements stipulated therein. Conform in all trades with all local regulations and codes.
- D. Comply with federal, state and local labor regulations and applicable union regulations.
- E. Installation shall conform to latest federal, state and local electrical and safety codes or those of other authorities having jurisdiction. Where conflicts exist, most stringent code or regulation shall apply.

1.9 GUARANTEE AND SERVICE

- A. 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.
- B. The Contractor shall be available on call and on eight (8) hour notice during the first month

following acceptance of the system, to assist the Owner's representatives in any problems which may arise during the initial period of operation.

- C. If, during the Guarantee period, any component is out of service for more than seven (7) 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.
- D. During the course of the Guarantee period, the Contractor shall provide a minimum of three (3) service visits to the site for inspection and adjustment of equipment. Contractor shall submit proposed schedule for these visits and shall notify Owner and Systems Designer in writing at least one month in advance of each visit.
- E. Replacement of damaged user interface cabling and projection lamps by qualified USC technical support staff is not considered a violation of the Contractor's required one (1) year warranty and cannot be used to void the warranty.

1.10 INSURANCE

- A. All equipment and materials shall be fully insured against loss or damage up until acceptance of the system by the Owner or until Owner relieves the Contractor in writing of this responsibility, whichever is earlier.

1.11 EXISTING CONDITIONS

- A. Visit the site prior to making a bid. No subsequent allowance will be made due to failure to thus observe and verify conditions which may affect the work. Report to the University of South Carolina and Systems Designer any discrepancies among this specification and existing conditions and similarly report obvious omissions.

1.12 WORK SCOPE SUMMARY TABLE

ITEMS TO BE PROVIDED AND INSTALLED	BP3 Electrical Contractor		Systems Contractor	
	Provide	Install	Provide	Install
Main Power Service Panel Boards and Circuit Breakers	x	x		
Main Power Service Conduit and Conductors	x	x		
Main Power Service Terminations		x		
Audio & Video Technical Power (AVTP) Transformers	x	x		
Transformer Conduit and Conductors	x	x		
Transformer Terminations		x		
AVTP Isolated Ground Conduit and Conductors	x	x		
Isolated Ground Terminations		x◇		
AVTP Distribution Panelboards and Circuit Breakers	x	x		

Distribution Panelboard Conduit and Conductors	x	x		
Distribution Panelboard Terminations		x		
AVTP Standard Load Centers and Circuit Breakers	x	x		
Standard Load Center Conduit and Conductors	x	x		
Standard Load Center Terminations		x		
AVTP Custom Sequencing Panelboards and Circuit Breakers	x	x		
Custom Sequencing Panelboard Conduit and Conductors	x	x		
Custom Sequencing Panelboard Terminations		x		
AVTP Company Switches for Portable Equipment	x	x		
Company Switch Conduit and Conductors	x	x		
Company Switch Terminations		x		
AVTP Outlet Devices for Branch Circuits delivered to Systems Equipment Racks and Devices	x	x		
Equipment Rack Back Boxes and Wall Plates	x	x		
Outlet Device Back Boxes	x	x		
Outlet Device Wall Plates	x	x		
Branch Circuit Conduit and Conductors	x	x		
Branch Circuit Termination		x		

WORK SCOPE SUMMARY TABLE (continued)

ITEMS TO BE PROVIDED AND INSTALLED	Electrical Contractor		Systems Contractor	
	Provide	Install	Provide	Install
Systems Equipment Racks and Devices			X	X
Metallic Conduit between Systems Devices and Systems Equipment Racks	X	X◇		
Conduit Insulation Bushings between Metallic Conduit and Systems Equipment Racks	X	X◇		
Systems Equipment Rack Cabling			X	X
Systems Equipment Rack Terminations				X
Systems Device Back Boxes and Floor Boxes	X	X◇		
Systems Device Metallic Conduit	X	X◇		
Systems Device Cabling			X	X
Systems Device Termination				X
Empty Conduit (for temporary use)	X	X		
Systems Cable Trays	X	X		
Systems Cable Sleeves	X	X		
Systems Pull Boxes	X	X		
Conduit Riser Diagram	X◇			

◇ Installation criteria to be provided by Systems Contractor and coordinated with BP#3 Systems Designer.

- Note that not all items listed above are included in the scope of this project. These items are included in the table for reference only.

PART 2 - EQUIPMENT

2.1 GENERAL EQUIPMENT

- A. Whenever any equipment is specified by manufacturer and model number, it is for purposes of establishing a standard of quality, performance, construction and function.
- B. All materials and equipment shall be new and of the latest design or model offered for sale by the manufacturer.
- C. Equipment models provided shall operate at the required AC line voltage and frequency.
- D. Contractor shall provide quantities as indicated in the equipment list, detail drawings, location drawings, schedule of terminations, and as required for a complete installation.
- E. Audio & Video Wire and Cable
 - 1. All wire numbers listed in the drawings are Belden unless otherwise noted.
 - 2. All THHN conductors shall be stranded.
 - 3. Approved manufacturers: Alpha, Belden, Canare, Crestron, Mogami, West Penn, Whirlwind
- F. Electrical Wire and Cable (including grounding conductors):
 - 1. Where conflict exists with any codes or ordinances, such codes and ordinances shall take precedence.
 - 2. Where conflict exists with electrical specifications, the higher standard or more stringent requirement shall apply.
- G. Wiring Devices
 - 1. Specifications – Duplex Receptacles
 - Grade: Specification, Hubbell IG5362 or equal
 - Type: NEMA 5-20R
 - Color: Orange
 - 2. Approved Manufacturers: Waber, Wiremold, Hubbell, Bryant, GE, Leviton
 - 3. Or Equal
- H. Electrical Plates and Panels:
 - 1. Specifications – 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
 - 2. Specifications – Back Box Enclosures
 - Material: Code grade steel
 - Finish: Black or galvanized
 - Size: As specified
 - 3. Specifications – Plug Box and Termination Panels
 - Material: 11 gauge steel or 1/8" Aluminum, minimum thickness
 - Finish: Black (unless instructed otherwise by University of South Carolina)
 - Size: As specified

- 4. Approved Manufacturers: Hoffman, Whirlwind, Pro Co, Wireworks
- 5. Or Equal

I. Audio Transformers

- 1. All transformers shall be selected for proper interface and loading in the circuits as required by as-built conditions and per manufacturer's recommendations.

2.2 MAJOR EQUIPMENT

- A. Equipment provided shall be that specified herein or equal (see Paragraph 1.6.D).
- B. Detailed performance specifications shall be those published by the manufacturer effective on the date of this document for all equipment listed below.
- C. Equipment List

<u>FUNCTION</u> <u>Item</u>	<u>MFR</u>	<u>Model</u>	<u>Qty</u>
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PERFORMANCE HALL (101)

1. LOUDSPEAKERS

a.	Digitally Steerable Speaker Array	RKH	ICL-FR-DUAL	2
b.	Subwoofer Loudspeaker	RKH	IC215S-FR	2
c.	Front Fill Loudspeaker	RKH	TRX42	5
d.	Delay Loudspeaker	FLC	CX1565	3
e.	Delay Loudspeaker	FLC	CX1595	4
f.	Termination – Main Loudspeaker	CUS	Per Drawing EA	2
g.	Termination – Subwoofer	CUS	Per Drawing EE	2
h.	Termination – Front Fill	CUS	Per Drawing EB	5
i.	Termination- Delay Loudspeaker	CUS	Per Drawing EH	7

2. STAGE INTERFACE

a.	Stage Junction Rack	CUS	Per Drawing YB	1
b.	Servoreeler Trapeze System	SRV	Custom Quote #101612	1
c.	Recording Microphone	DPA	ST4006C	1
d.	Custom Instructional Lectern	MRS	Per Drawing AV4003	1

e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Lectern Cables	WWK	Per Drawing AV0301	1
g.	Document Camera	WLF	VZ-9plus ³	1
h.	Interactive Pen Display	SMA	SP-524-NB	1
i.	USB Switcher	EXT	SW2 USB	1
j.	Rack Mount Lamp	LIT	RL-10-D	2
k.	Patchbay 2x26 Long-Frame	AAI	WEP-EO-C-26-N-2-D	2
l.	Patch Panel	CUS	Per Drawing AV4001	2
m.	Patch Cable – 75-Ohm BNC 2'	AAI	VBNC-24	12
n.	Patch Cable – RJ-45 CAT-6 2'	WWD	JHA-NE8-02F	12
o.	Accessory Receptacle Panel	CUS	Per Drawing AV4001	1
p.	Console Mult-Patch 5'	CUS	By Contractor	
q.	Shotgun Recording Microphone	SHU	VP-89L	1
r.	Termination – Lectern	CUS	Per Drawing AA	3
s.	Termination – Microphone	CUS	Per Drawing AR	1
t.	Termination – Stage Floorbox	CUS	Per Drawing DA	5
u.	Termination – Stage Interface	CUS	Per Drawing DB	2
v.	Termination – House Interface	CUS	Per Drawing DG	2
w.	Termination – House Interface	CUS	Per Drawing DC	8
x.	Termination – Live Room Mic	CUS	Per Drawing DF	1
3.	CONTROL ROOM			
a.	Digital Mixing Console	YAM	LS9/32	1
b.	Quad Channel Wireless Receiver	SHU	ULXD4Q	1
c.	Wireless Handheld Transmitter	SHU	ULXD2/SM58	2
d.	Wireless Bodypack Transmitter	SHU	ULXD1	2
e.	Lavalier Microphone Element	SHU	WL185	2
f.	UHF In-Line Antenna Amplifier	SHU	UA830	2

g.	Rechargeable Battery	SHU	SB900	4
h.	Dual Docking Charging Station	SHU	SBC200	2
i.	Console Mult Format 20'	CUS	By Contractor	1
j.	DSP	SMX	EDGE Frame	3
k.	DSP I/O Cards	SMX	4 Ch. Analog Input Card	6
l.	DSP I/O Cards	SMX	4 Ch. Analog Output Card	5
m.	DSP I/O Cards	SMX	4 Ch. Digital Output Card	1
n.	DSP Control Panel	SMX	Per Drawing AV4001	1
o.	Modular Remote Control	SMX	ARC-SW4e	1
p.	Modular Remote Control	SMX	ARC-K1e	1
q.	Dante Switch (8-Port)	ATS	AT-GS900/8	2
r.	Network Switch (16-Port)	ATS	AT-GS900/16	1
s.	Ceiling Delay Loudspeaker Amplifier	LGP	C 28:4	2
t.	Stage Monitor Assign Panel	CUS	By Contractor	1
u.	Stage Monitor Amplifier	LGP	C 28:4	1
v.	Analog & AES Rack Audio Monitor	FOS	RM-2	1
w.	UPS	MAP	UPS-2200R	3
x.	VEOS Collaboration System	WOW	MiniVEOS	1
y.	Control Booth Rack	CUS	Per Drawing YA	2
z.	Rack Mount Lamp	LIT	RL-10-D	2
aa.	Keyboard / Touchpad / Display	MAP	RK-KB-LCD17	1
bb.	Blu-Ray / CD Player	OPO	BDP-103	1
cc.	Rack Shelf for Blu-Ray Player	CUS	By Contractor	1
dd.	Powered Control Booth Monitors	JBL	LSR 2328P	2
ee.	Control Booth Monitor Mount	CUS	By Contractor	2
ff.	Recording Preamp	ETW	1022	1
ff-gg.	Recorder	MRZ	PMD-580	1

gg-hh.	Patch Panels	CUS	Per Drawing AV4001	3
hh-ii. Patchbay 2x26 Long-Frame	AAI	WEP-EO-C-26-N-2-D	4	
ii-jj. Patch Cable – 1'	AAI	621B	12	
jj-kk. Patch Cable – 2'	AAI	622A	12	
kk-ll. Patch Cable – 3'	AAI	623D	12	
ll-mm.	Patch Cable – 75-Ohm BNC 2'	AAI	VBNC-2	
mm-nn.	Patch Cable – RJ-45 CAT-6 2'	WWD	JHA-NE	
nn-oo.	Patch Cable Holder	AAI	PCH-X	
oo-pp.	Accessory Receptacle Panel	CUS	Per Draw	
pp-qq.	Termination – Booth Mix Position	CUS	Per Draw	
qq-rr. Termination – House Mix Position	CUS	Per Drawing DD	1	
rr-ss. Termination – Booth Monitor	CUS	Per Drawing EF	2	

4. VIDEO PROJECTION AND DISTRIBUTION

a. Wall Mounted Video Camera	SNY	BRC-300	1
b. HD-SDI Camera Output Card	SNY	BRBK-302	1
c. Camera Wall Bracket	CUS	By Contractor	1
d. Camera Controller	SNY	RMBR-300	1
e. Control Booth Video Monitor	CUS	\$600 Allowance	1
f. Large Venue Projector	PAN	PT-DZ21K	1
g. Projector Lens (2.4 - 4.7 : 1)	PAN	ET-D75LE30	1
h. 16:10 Motorized Projection Screen	DRA	Paragon/Series E - 307" Diag.	1
i. Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
j. 46" Lobby Video Display	NEC	V462	2
k. Flat Panel Display Mount	CHF	PWCU	2
l. Termination – Camera Interface	CUS	Per Drawing AJ	1
m. Termination – Projector Interface	CUS	Per Drawing DH	1
n. Termination – Projection Screen	CUS	Per Drawing AN	1

o.	Termination – Lobby Monitor	CUS	Per Drawing AG	2
5.	ASSISTIVE LISTENING SYSTEM			
a.	IR Transmitter & Supply	LSN	LT-82	1
b.	IR Transmitter Rack Mount	LSN	LA-326	1
c.	IR Radiator & Mounting	LSN	LA-140	4
d.	IR Receiver	LSN	LR-42	20
e.	Receiver Charging Station	LSN	LA-350	3
f.	Termination – IR	CUS	Per Drawing CB	4
6.	INTERCOM AND PROGRAM FEED			
a.	Intercom Base Station	CLC	MS-702	1
b.	Wall Mount Speaker Station	CLC	KB-701	1
c.	Remote Belt Pack	CLC	RS-601	6
d.	Headset – Single Muff	CLC	CC-95	6
e.	Handset	CLC	HS-6	2
f.	Call Signal Flasher	CLC	FL-7	2
g.	Backstage Ceiling Loudspeaker	EVI	EVID C8.2	1
h.	Lobby/Backstage Speaker Amplifier	LGP	C 28:4	1
i.	Lobby Ceiling Loudspeaker	EVI	EVID C8.2	32
j.	Termination – Lobby Speaker	CUS	Per Drawing EC	32
k.	Termination – Backstage Speaker	CUS	Per Drawing ED	1
l.	Termination – Volume Control	CUS	Per Drawing FB	1
m.	Termination – Intercom Wall Box	CUS	Per Drawing FC	6
7.	LECTURE HALL (123)			
a.	Video Projector (7,500 Lm.)	NEC	NP-PX750U	3
b.	Projector Lens	NEC	NP17ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access XL/Series V 180" x 112.5"	3
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1

e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0310	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	USB Switcher	EXT	SW2 USB	1
i.	Document Camera	WLF	VZ-8plus ³	1
j.	Ceiling Loudspeakers	EVI	EVID C8.2HC	8
k.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	3
o.	Wall Mounted PTZ Video Camera	SNY	BRC-300	1
p.	HD-SDI Camera Output Card	SNY	BRBK-302	1
q.	Camera Wall Bracket	CUS	By Contractor	1
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS-82	1
u.	Lanyard IR Receiver	LSN	LR-44	2
v.	Inductive Neckloop	LSN	LA166	2
w.	Stereo Headphones	LSN	LA165	2
x.	Network Switch (16-Port)	ATS	AT-GS900/16	1
y.	UPS	MAP	UPS-2200R	1
z.	Equipment Enclosure	DAL	Per Drawing AV4002	1
aa.	Termination – Lectern	CUS	Per Drawing AA	3
bb.	Termination – Projector	CUS	Per Drawing AF	3
cc.	Termination – Camera	CUS	Per Drawing AJ	1
dd.	Termination – Screen	CUS	Per Drawing AN	3
ee.	Termination – Microphone	CUS	Per Drawing AR	3

ff.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8
gg.	Termination – IR Emitter	CUS	Per Drawing CB	2
8.	CONFERENCE / SEMINAR ROOM (108, 110)			
a.	Video Projector (3,500 Lm.)	NEC	NP-P350W	1
b.	16:10 Motorized Projection Screen	DRA	Access/Series V, 109" Diag.	1
c.	Ceiling Loudspeakers	EVI	EVID C8.2	6
d.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
e.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
f.	UPS	MAP	UPS-2200R	1
g.	Control Network Switch	ATS	GS900/8	1
h.	Equipment Rack Credenza	MAP	Per Drawing AV4003	1
i.	Table Boxes (HE) – Coord. w/ Furn.	CUS	\$1,300 Allowance	4
j.	Termination – Projector	CUS	Per Drawing AF	1
k.	Termination – Screen	CUS	Per Drawing AN	1
l.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8
m.	Termination – Control Panel	CUS	Per Drawing CE	1
n.	Termination – Wireless Access Pt.	CUS	Per Drawing CF	1
o.	Termination – Floor Box	CUS	Per Drawing GH	3
9.	SHALLOW "U" CASE ROOM (112, 114, 133, 135, 137)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP12ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 137"	1
d.	Flat Panel Display	NEC	V651	1
e.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
g.	Document Camera	WLF	VZ-8plus ³	1
h.	Ceiling Loudspeakers	EVI	EVID C8.2	8

i.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
j.	USB Switcher	EXT	SW2 USB	1
k.	Interactive Pen Display	SMA	SP-524-NB	1
l.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
m.	Ceiling Microphone	SHU	MX202W/C	2
n.	Wall Mounted Video Camera	VAD	HD-19	1
o.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
p.	Camera Wall Bracket	VAD	535-20000-230	1
q.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
r.	Wireless Microphone System – HH	SHU	ULXS24/58	1
s.	Assistive Listening System	LSN	LS85	1
t.	4 Channel Receiver	LSN	LR44	1
u.	Inductive Neckloop	LSN	LA166	1
v.	Stereo Headphones	LSN	LA165	1
w.	Control Network Switch	ATS	GS900/8	1
x.	UPS	MAP	UPS-2200R	1
y.	Termination – Lectern	CUS	Per Drawing AC	1
z.	Termination – Projector	CUS	Per Drawing AF	1
aa.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
bb.	Termination – Camera	CUS	Per Drawing AJ	1
cc.	Termination – Screen	CUS	Per Drawing AN	1
dd.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8
ee.	Termination – IR Emitter	CUS	Per Drawing CB	1
10.	DEEP “U” CASE ROOM (111)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	3
b.	Projector Lens	NEC	NP13ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 137”	3

d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0302	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	2
o.	Wall Mounted Video Camera	VAD	HD-19	1
p.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
q.	Camera Wall Bracket	VAD	535-20000-230	1
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS85	1
u.	4 Channel Receiver	LSN	LR44	1
v.	Inductive Neckloop	LSN	LA166	1
w.	Stereo Headphones	LSN	LA165	1
x.	HDMI Distribution Amplifier	EXT	HD-DA2	1
y.	Control Network Switch	ATS	GS900/8	1
z.	UPS	MAP	UPS-2200R	1
aa.	Equipment Enclosure	DAL	Per Drawing AV4002	1
bb.	Termination – Lectern	CUS	Per Drawing AA	2
cc.	Termination – Projector	CUS	Per Drawing AF	3
dd.	Termination – Camera	CUS	Per Drawing AJ	1

ee.	Termination – Screen	CUS	Per Drawing AN	3
ff.	Termination – Microphone	CUS	Per Drawing AR	2
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
hh.	Termination – IR Emitter	CUS	Per Drawing CB	1
11. SHALLOW “U” CASE ROOM (134)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	2
b.	Projector Lens	NEC	NP13ZL	2
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165”	2
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0302	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	2
o.	Wall Mounted Video Camera	VAD	HD-19	1
p.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
q.	Camera Wall Bracket	VAD	535-20000-230	1
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS-82	1
u.	Control Network Switch	ATS	GS900/8	1
v.	UPS	MAP	UPS-2200R	1

w.	Equipment Enclosure	DAL	Per Drawing AV4002	1
x.	Termination – Lectern	CUS	Per Drawing AA	2
y.	Termination – Projector	CUS	Per Drawing AF	2
z.	Termination – Camera	CUS	Per Drawing AJ	1
aa.	Termination – Screen	CUS	Per Drawing AN	2
bb.	Termination – Microphone	CUS	Per Drawing AR	3
cc.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
dd.	Termination – IR Emitter	CUS	Per Drawing CB	2
12. COMBINABLE DISCUSSION / RECITATION ROOMS (127 - 129)				
a.	Video Projector (3,500 Lm.)	NEC	NP-P350W	9
b.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 123"	5
c.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 109"	4
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	3
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	3
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0304	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	3
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	2
k.	USB Switcher	EXT	SW2 USB	3
l.	Interactive Pen Display	SMA	SP-524-NB	3
m.	VEOS Collaboration System	WOW	MiniVEOS	3
n.	Computer for VEOS System	ASU	EeeBOX EB1501P	9
o.	Software for VEOS System	WOW	TeamVEOS	9
p.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
q.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
r.	Wireless Microphone System – HH	SHU	ULXS24/58	1

s.	Assistive Listening System	LSN	LS85	1
t.	4 Channel Receiver	LSN	LR44	1
u.	Inductive Neckloop	LSN	LA166	1
v.	Stereo Headphones	LSN	LA165	1
w.	Control Network Switch	ATS	GS900/16	1
x.	Audio DSP Frame	SMX	Symnet Edge Frame	2
y.	Audio DSP Input Card	SMX	Edge Analog In	4
z.	Audio DSP Output Card	SMX	Edge Analog Output	4
aa.	UPS	MAP	UPS-2200R	2
bb.	Keyboard / Touchpad / Display	MAP	RK-KB-LCD17	1
cc.	Equipment Rack	MAP	Per Drawing AV4003	2
dd.	Termination – Lectern	CUS	Per Drawing AA	7
ee.	Termination – Projector	CUS	Per Drawing AF	9
ff.	Termination – Screen	CUS	Per Drawing AN	9
gg.	Termination – Partition Sensor	CUS	Per Drawing AZ	2
hh.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
ii.	Termination – IR Emitter	CUS	Per Drawing CB	3
13.	DISCUSSION / RECITATION ROOM (125, 126)			
a.	Video Projector (3,500 Lm.)	NEC	NP-P350W	3
b.	16:10 Motorized Projection Screen	DRA	Access/SeriesV 123"	3
c.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
d.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
e.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0306	A/R
f.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
g.	Document Camera	WLF	VZ-8plus ³	1
h.	Ceiling Loudspeakers	EVI	EVID C8.2	4
i.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1

j.	USB Switcher	EXT	SW2 USB	1
k.	Interactive Pen Display	SMA	SP-524-NB	1
l.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
m.	Wall Mounted Video Camera	VAD	HD-19	1
n.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
o.	Camera Wall Bracket	VAD	535-20000-230	1
p.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
q.	Wireless Microphone System – HH	SHU	ULXS24/58	1
r.	Assistive Listening System	LSN	LS85	1
s.	Control Network Switch	ATS	GS900/8	1
t.	UPS	MAP	UPS-2200R	1
u.	Equipment Enclosure	DAL	Per Drawing AV4002	1
v.	Termination – Lectern	CUS	Per Drawing AA	2
w.	Termination – Projector	CUS	Per Drawing AF	3
x.	Termination – Screen	CUS	Per Drawing AN	3
y.	Termination – Ceiling Speaker	CUS	Per Drawing BA	4
z.	Termination – IR Emitter	CUS	Per Drawing CB	1
14.	DISCUSSION / RECITATION ROOM (118, 119, 120, 121, 122)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP12ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 123”	1
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0306	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Ceiling Loudspeakers	EVI	EVID C8.2	12
i.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1

j.	USB Switcher	EXT	SW2 USB	1
k.	Document Camera	WLF	VZ-8plus ³	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
n.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
o.	Wireless Microphone System – HH	SHU	ULXS24/58	1
p.	Assistive Listening System	LSN	LS85	1
q.	Control Network Switch	ATS	GS900/8	1
r.	UPS	MAP	UPS-2200R	1
s.	Equipment Enclosure	DAL	Per Drawing AV4002	1
t.	Termination – Lectern	CUS	Per Drawing AA	2
u.	Termination – Projector	CUS	Per Drawing AF	1
v.	Termination – Screen	CUS	Per Drawing AN	1
w.	Termination – Ceiling Speaker	CUS	Per Drawing BA	4
x.	Termination – IR Emitter	CUS	Per Drawing CB	1
15.	DISCUSSION / RECITATION ROOM (103, 124, 140, 141, 142)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	2
b.	Projector Lens	NEC	NP12ZL	2
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 137"	2
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0307	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	6
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1

i.	Interactive Pen Display	SMA	SP-524-NB	1
m.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	
n.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
o.	Wireless Microphone System – HH	SHU	ULXS24/58	1
p.	Assistive Listening System	LSN	LS85	1
q.	Control Network Switch	ATS	GS900/8	1
r.	UPS	MAP	UPS-2200R	1
s.	Equipment Enclosure	DAL	Per Drawing AV4002	1
t.	Termination – Lectern	CUS	Per Drawing AA	2
u.	Termination – Projector	CUS	Per Drawing AF	2
v.	Termination – Screen	CUS	Per Drawing AN	2
w.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
x.	Termination – IR Emitter	CUS	Per Drawing CB	1
16. COMBINABLE DISCUSSION / RECITATION ROOM (104-105)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	4
b.	Projector Lens	NEC	NP12ZL	4
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 137"	4
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	2
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	2
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0308	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	2
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	2
l.	Interactive Pen Display	SMA	SP-524-NB	2
m.	Digital Media AV / Control System	CST	Per Custom Quote # 1011191	

n.	DSP	SMX	EDGE Frame	3
o.	DSP I/O Cards	SMX	4 Ch. Analog Input Card	3
p.	DSP I/O Cards	SMX	4 Ch. Analog Output Card	1
q.	Wall Mounted Video Camera	VAD	HD-19	1
r.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
s.	Camera Wall Bracket	VAD	535-20000-230	1
t.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
u.	Wireless Microphone System – HH	SHU	ULXS24/58	1
v.	16-Port Control Network Switch	ATS	GS900/16	1
w.	UPS	MAP	UPS-2200R	1
x.	Equipment Enclosure	DAL	Per Drawing AV4003	1
y.	Termination – Lectern	CUS	Per Drawing AA	4
z.	Termination – Projector	CUS	Per Drawing AF	4
aa.	Termination – Screen	CUS	Per Drawing AN	4
bb.	Termination – Partition Sensor	CUS	Per Drawing AZ	1
cc.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
dd.	Termination – IR Emitter	CUS	Per Drawing CB	2
17. RECONFIGURABLE CLASSROOM (109, 113)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	3
b.	Projector Lens	NEC	NP12ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165”	3
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0307	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	12

j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture System	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	3
o.	Wall Mounted Video Camera	VAD	HD-19	1
p.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
q.	Camera Wall Bracket	VAD	535-20000-230	1
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS85	1
u.	4 Channel Receiver	LSN	LR44	1
v.	Inductive Neckloop	LSN	LA166	1
w.	Stereo Headphones	LSN	LA165	1
x.	HDMI Distribution Amplifier	EXT	HD-DA2	1
y.	Control Network Switch	ATS	GS900/8	1
z.	UPS	MAP	UPS-2200R	1
aa.	Equipment Enclosure	DAL	Per Drawing AV4002	1
bb.	Termination – Lectern	CUS	Per Drawing AA	3
cc.	Termination – Projector	CUS	Per Drawing AF	3
dd.	Termination – Screen	CUS	Per Drawing AN	3
ee.	Termination – Camera	CUS	Per Drawing AJ	1
ff.	Termination – Microphone	CUS	Per Drawing AR	3
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	12
hh.	Termination – IR Emitter	CUS	Per Drawing CB	1
18.	TIERED LECTURE HALL (136)			
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	3

b.	Projector Lens	NEC	NP13ZL	3
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165"	3
d.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
e.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
f.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0309	A/R
g.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
h.	Document Camera	WLF	VZ-8plus ³	1
i.	Ceiling Loudspeakers	EVI	EVID C8.2	15
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	USB Switcher	EXT	SW2 USB	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	AV / Control / Capture Systems	CST	Per Custom Quote # 1011191	
n.	Ceiling Microphone	SHU	MX202W/C	3
o.	Wall Mounted Video Camera	VAD	HD-19	1
p.	HD-SDI Output Card	VAD	EZIMHD-SDI	1
q.	Camera Wall Bracket	VAD	535-20000-230	1
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS85	1
u.	4 Channel Receiver	LSN	LR44	1
v.	Inductive Neckloop	LSN	LA166	1
w.	Stereo Headphones	LSN	LA165	1
x.	HDMI Distribution Amplifier	EXT	HD-DA2	1
y.	Control Network Switch	ATS	GS900/8	1
z.	UPS	MAP	UPS-2200R	1
aa.	Equipment Enclosure	DAL	Per Drawing AV4002	1
bb.	Termination – Lectern	CUS	Per Drawing AA	2

cc.	Termination – Projector	CUS	Per Drawing AF	3
dd.	Termination – Screen	CUS	Per Drawing AN	3
ee.	Termination – Camera	CUS	Per Drawing AJ	1
ff.	Termination – Microphone	CUS	Per Drawing AR	3
gg.	Termination – Ceiling Speaker	CUS	Per Drawing BA	15
hh.	Termination – IR Emitter	CUS	Per Drawing CB	2

19. CORRIDORS / ATRIUM

a.	46" Flat Panel LCD	NEC	V462	8
b.	Tilting Wall Mount for LCD	CHF	PWCU	8
c.	Network Video Receiver	CIS	DMP4400G	8
d.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
e.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 2

20. PAVILION (246)

a.	Video Projector (11,000 Lm.)	NEC	NP-PH1000U	2
b.	Projector Lens	NEC	NP27ZL	2
c.	Projector Lift	DRA	SLX 28	2
d.	Projector Lift Closure Panel	DRA	Model U	2
e.	RS-232 Translator	DRA	R2D7	2
f.	16:10 Motorized Projection Screen	DRA	Access XL/Series V 185.5"x116"	2
g.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
h.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
i.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0312	A/R
j.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
k.	Flush Mounted Ceiling Speaker	EVI	EVID C8.2HC	6
l.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
m.	USB Switcher	EXT	SW2 USB	1

n.	Interactive Pen Display	SMA	SP-524-NB	1
o.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
p.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
q.	Wireless Microphone System – HH	SHU	ULXS24/58	1
r.	Assistive Listening System	LSN	LS-82	1
s.	Control Network Switch	ATS	GS900/8	1
t.	UPS	MAP	UPS-2200R	1
u.	Equipment Enclosure	DAL	Per Drawing AV4003	1
v.	Termination – Lectern	CUS	Per Drawing AA	3
w.	Termination – Screen	CUS	Per Drawing AN	2
x.	Termination – Projector Lift	CUS	Per Drawing AW	2
y.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
z.	Termination – IR Emitter	CUS	Per Drawing CB	2
21.	BOOKABLE ROOM (209, 210, 211, 212, 213)			
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Video Conferencing System	LGS	RVF1000	1
d.	Table Box	CUS	\$1400 Allowance	1
e.	Control System	CST	Per Custom Quote # 1011191	
f.	Termination – Table Box	CUS	Per Drawing HC	1
g.	Termination – Floor Box	CUS	Per Drawing GE	1
h.	Termination – Flat Panel Display	CUS	Per Drawing GW	1
i.	Termination – VTC Codec	CUS	Per Drawing AS	1
j.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
22.	GROUP STUDY ROOM (226, 231)			
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1

c.	Table Box	CUS	\$1400 Allowance	1
d.	Termination – Table Box	CUS	Per Drawing HA	1
e.	Termination – Floor Box	CUS	Per Drawing GB	1
f.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
23. GROUP STUDY ROOM (223, 224, 225, 232, 233, 234)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Table Box	CUS	\$1400 Allowance	2
d.	Flat Panel Display	NEC	V651	1
e.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
f.	Table Box	CUS	\$1400 Allowance	1
g.	Termination – Table Box	CUS	Per Drawing HA	2
h.	Termination – Floor Box	CUS	Per Drawing GC	1
i.	Termination – Flat Panel Display	CUS	Per Drawing GZ	1
24. TRADING ROOM (229)				
a.	Flat Panel LCD	NEC	V651	4
b.	Flat Panel Ceiling Mount	CHF	PCSU	4
c.	Ceiling Plate	CHF	CMA330	4
d.	Mounting Pipe	CHF	CMS	4
e.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
g.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0312	A/R
h.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
i.	Ceiling Loudspeakers	EVI	EVID C8.2	6
j.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
k.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
l.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1

m.	Wireless Microphone System – HH	SHU	ULXS24/58	1
n.	Assistive Listening System	LSN	LS85	1
o.	Control Network Switch	ATS	GS900/8	1
p.	UPS	MAP	UPS-2200R	1
q.	Equipment Enclosure	MAP	Per Drawing AV4002	1
r.	Termination – Lectern	CUS	Per Drawing AA	2
s.	Termination – Flat Panel Display	CUS	Per Drawing AH	4
t.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
u.	Termination – IR Emitter	CUS	Per Drawing CB	1
25. OPEN MEETING ROOM (235B)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Table Box	CUS	\$1400 Allowance	1
d.	Interactive Whiteboard	SMA	885ix	1
e.	USB to CAT Extender	SMA	CAT5-XT	1
f.	Control System	CST	Per Custom Quote # 1011191	
g.	Control Network Switch	ATS	AT-GS900/5E	1
h.	Flat Panel Display	NEC	V651	1
i.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
j.	Table Box	CUS	\$1400 Allowance	1
k.	Termination – Table Box	CUS	Per Drawing HH	1
l.	Termination – Floor Box	CUS	Per Drawing GA	1
m.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
n.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
o.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
26. CAFÉ (241, 241B)				
a.	Flat Panel LCD	NEC	V651	2

b.	Network Video Receiver	CIS	DMP4400G	2
c.	Termination – Flat Panel Display	CUS	Per Drawing AH	2
27. PALMETTO COURT PAVILLION (200)				
a.	Portable Powered Loudspeakers	JBL	EON 515XT	2
b.	Mixing Console	YAM	MG124CX	1
c.	Speaker Stand	OSS	SS7730B	2
d.	Speaker Stand Bag	JBL	JBL Stand Bag	1
e.	Portable AV Cart	CUS	Per Drawing AV4003	1
f.	CD Player with iPod Dock	TAS	CD-200i	1
g.	Microphone	SHU	SM-58	4
h.	Microphone	SHU	SM-57	4
i.	DI Box	WWD	DIRECTOR	4
j.	Microphone Stand	OSS	MS7701B	6
k.	Microphone Cable	WWD	JHA-LCR-10F-50	1
l.	Speaker Cable	WWD	JHA-EP4-50F	2
28. VISITOR CENTER (201)				
a.	Thin Bezel Display Video Wall	SAL	Quote # JFHS121126PL	1
b.	Computer w/ HD Output	CUS	\$800 Allowance	1
c.	Table Box	CUS	\$1400 Allowance	1
d.	Ceiling Loudspeakers	EVI	EVID C8.2	7
e.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
f.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
g.	Wireless Microphone System	SHU	ULXS14/93	1
h.	Control Network Switch	ATS	GS900/8	1
i.	UPS	MAP	UPS-2200R	1
j.	Equipment Rack	MAP	Per Drawing AV4002	1
k.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1

l.	Wireless Microphone System – HH	SHU	ULXS24/58	1
m.	Termination – Table Box	CUS	Per Drawing HJ	1
n.	Termination – Flat Panel Display	CUS	Per Drawing AT	1

29. CORRIDORS

a.	65" Flat Panel LCD	NEC	V651	3
b.	46" Flat Panel LCD	NEC	V462	3
c.	Tilting Wall Mount for LCD	CHF	PWCU	6
d.	Network Video Receiver	CIS	DMP4400G	6
e.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
f.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 330. SMALL VIDEO CONFERENCE ROOM (363, 365) AND
TEAM MEETING / CONSULTATION ROOM (359)

a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Video Conferencing System	LGS	RVF1000	1
d.	Table Box	CUS	\$1400 Allowance	1
e.	Control System	CST	Per Custom Quote # 1011191	
f.	Termination – Table Box	CUS	Per Drawing HC	1
g.	Termination – Floor Box	CUS	Per Drawing GE	1
h.	Termination – Flat Panel Display	CUS	Per Drawing GW	1
i.	Termination – VTC Codec	CUS	Per Drawing AS	1
j.	Termination – Control Touch Panel	CUS	Per Drawing CD	1

31. MEDIUM VIDEO CONFERENCE ROOM (361, 362, 366, 367, 368)

a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Video Conferencing System	LGS	RVF1000	1
d.	Table Box	CUS	\$1400 Allowance	2

e.	Control System	CST	Per Custom Quote # 1011191	
f.	Termination – Table Box	CUS	Per Drawing HA	1
g.	Termination – Table Box	CUS	Per Drawing HC	1
h.	Termination – Floor Box	CUS	Per Drawing GG	1
i.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
j.	Termination – VTC Codec	CUS	Per Drawing AS	1
k.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
32. LARGE VIDEO CONFERENCE ROOM (364)				
a.	Video Projector (3,500 Lm.)	NEC	NP-P350W	2
b.	16:10 Motorized Projection Screen	DRA	Access/Series V 137"	1
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 109"	1
d.	Ceiling Loudspeakers	EVI	EVID C8.2	6
e.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
f.	Video Conferencing System	PLY	HDX8000	1
g.	Intelligent Dual Camera	PLY	EagleEye Director	1
h.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
i.	Table Box	CUS	\$1400 Allowance	4
j.	UPS	MAP	UPS-2200R	1
k.	Control Network Switch	ATS	GS900/8	1
l.	Equipment Rack Credenza	MAP	Per Drawing AV4003	1
m.	Termination – Projector	CUS	Per Drawing AF	2
n.	Termination – Screen	CUS	Per Drawing AN	2
o.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
p.	Termination – Control Panel	CUS	Per Drawing CE	1
q.	Termination – Wireless Access Pt.	CUS	Per Drawing CF	1
r.	Termination – Table Box	CUS	Per Drawing HE	4
s.	Termination – Camera	CUS	Per Drawing HF	1

t.	Termination – Floor Box	CUS	Per Drawing GH	4
33. POLYCOM / CISCO CONFERENCE ROOM (318, 320)				
a.	System to be designed, provided and installed by owner.			
34. BOOKABLE PROJECT SPACE (307, 309)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Table Box	CUS	\$1400 Allowance	1
d.	Control System	CST	Per Custom Quote # 1011191	
e.	Termination – Table Box	CUS	Per Drawing HA	1
f.	Termination – Floor Box	CUS	Per Drawing GB	1
g.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
h.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
35. TEAM COLLABORATION ROOM (325, 326, 327, 328, 333)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Interactive Whiteboard	SMA	885ix	1
d.	USB to CAT Extender	SMA	CAT5-XT	1
e.	Table Box	CUS	\$1400 Allowance	2
f.	Control System	CST	Per Custom Quote # 1011191	
g.	Control Network Switch	ATS	AT-GS900/5E	1
h.	Termination – Table Box	CUS	Per Drawing HA	1
i.	Termination – Table Box	CUS	Per Drawing HB	1
j.	Termination – Floor Box	CUS	Per Drawing GA	1
k.	Termination – Flat Panel Display	CUS	Per Drawing GY	1
l.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
m.	Termination – Control Touch Panel	CUS	Per Drawing CD	1

36. SHALLOW "U" CASE ROOM (324, 334)

a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
b.	Projector Lens	NEC	NP13ZL	1
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 137"	1
d.	Owner Provided Flat Panel Display		BY OWNER	2
e.	Owner Provided Video Conferencing System		BY OWNER	1
f.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
g.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
h.	Ceiling Document Camera	WLF	EYE-12	1
i.	Ceiling Mount Kit	WLF	EYEKIT / TILEBRIDGE	1
j.	Ceiling Loudspeakers	EVI	EVID C8.2	9
k.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
l.	USB Switcher	EXT	SW2 USB	1
m.	Interactive Pen Display	SMA	SP-524-NB	1
n.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
o.	Ceiling Microphone	SHU	MX202W/C	2
p.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
q.	Wireless Microphone System – HH	SHU	ULXS24/58	1
r.	Assistive Listening System	LSN	LS-82	1
s.	Lanyard IR Receiver	LSN	LR-44	2
t.	Inductive Neckloop	LSN	LA166	2
u.	Stereo Headphones	LSN	LA165	2
v.	Control Network Switch	ATS	GS900/8	1
w.	UPS	MAP	UPS-2200R	1
x.	Termination – Lectern	CUS	Per Drawing AC	1
y.	Termination – Projector	CUS	Per Drawing AF	1
z.	Termination – Screen	CUS	Per Drawing AN	1

aa.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
bb.	Termination – Ceiling Microphone	CUS	Per Drawing AR	2
cc.	Termination – Ceiling Doc Camera	CUS	Per Drawing AY	1
dd.	Termination – Ceiling Speaker	CUS	Per Drawing BA	9
ee.	Termination – Camera	CUS	Per Drawing HF	1
37. RECONFIGURABLE CLASSROOM (329)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	2
b.	Projector Lens	NEC	NP13ZL	2
c.	16:10 Motorized Projection Screen	DRA	Access/Series V 165"	2
d.	Owner Provided Video Conferencing System		BY OWNER (includes display)	1
e.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
f.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
g.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0311	A/R
h.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
i.	Document Camera	WLF	VZ-8plus ³	1
j.	Ceiling Loudspeakers	EVI	EVID C8.2	15
k.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
l.	USB Switcher	EXT	SW2 USB	1
m.	Interactive Pen Display	SMA	SP-524-NB	1
n.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
o.	Ceiling Microphone	SHU	MX202W/C	3
p.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
q.	Wireless Microphone System – HH	SHU	ULXS24/58	1
r.	Assistive Listening System	LSN	LS-82	1
s.	Lanyard IR Receiver	LSN	LR-44	2
t.	Inductive Neckloop	LSN	LA166	2
u.	Stereo Headphones	LSN	LA165	2

v.	Control Network Switch	ATS	GS900/8	1
w.	UPS	MAP	UPS-2200R	1
x.	Equipment Enclosure	MAP	Per Drawing AV4002	1
y.	Termination – Lectern	CUS	Per Drawing AA	3
z.	Termination – Projector	CUS	Per Drawing AF	2
aa.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
bb.	Termination – Screen	CUS	Per Drawing AN	2
cc.	Termination – Ceiling Microphone	CUS	Per Drawing AR	3
dd.	Termination – Ceiling Speaker	CUS	Per Drawing BA	15
ee.	Termination – IR Emitter	CUS	Per Drawing CB	1
ff.	Termination – Camera	CUS	Per Drawing HF	1
38. RECONFIGURABLE CLASSROOM (330)				
a.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	2
b.	Projector Lens	NEC	NP13ZL	2
c.	Video Projector (5,000 Lm.)	NEC	NP-PA500U	1
d.	Projector Lens	NEC	NP12ZL	1
e.	16:10 Motorized Projection Screen	DRA	Access/Series V 165"	2
f.	16:10 Motorized Projection Screen	DRA	Access/Series V 137"	1
g.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
h.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
i.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0311	A/R
j.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
k.	Document Camera	WLF	VZ-8plus ³	1
l.	Ceiling Loudspeakers	EVI	EVID C8.2	15
m.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
n.	USB Switcher	EXT	SW2 USB	1
o.	Interactive Pen Display	SMA	SP-524-NB	1

p.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
q.	Ceiling Microphone	SHU	MX202W/C	3
r.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
s.	Wireless Microphone System – HH	SHU	ULXS24/58	1
t.	Assistive Listening System	LSN	LS-82	1
u.	Lanyard IR Receiver	LSN	LR-44	2
v.	Inductive Neckloop	LSN	LA166	2
w.	Stereo Headphones	LSN	LA165	2
x.	Control Network Switch	ATS	GS900/8	1
y.	UPS	MAP	UPS-2200R	1
z.	Equipment Enclosure	MAP	Per Drawing AV4003	1
aa.	Termination – Lectern	CUS	Per Drawing AA	3
bb.	Termination – Projector	CUS	Per Drawing AF	3
cc.	Termination – Screen	CUS	Per Drawing AN	3
dd.	Termination – Ceiling Microphone	CUS	Per Drawing AR	3
ee.	Termination – Ceiling Speaker	CUS	Per Drawing BA	15
ff.	Termination – IR Emitter	CUS	Per Drawing CB	1
gg.	Termination – Camera	CUS	Per Drawing HF	1
39.	STUDENT ORIENTATION (308)			
a.	Video Projector (3,500 Lm.)	NEC	NP-P350W	1
b.	16:10 Motorized Projection Screen	DRA	Access/Series V 123”	1
c.	Custom Instructional Lectern	MRS	Per Drawing AV4002	1
d.	Lectern Connection Panel – Coord.	CUS	\$900 Allowance	1
e.	Custom Multi-pin Mass Connectors	WWK	Per Drawing AV0306	A/R
f.	Lectern Patch Panel	CUS	Per Drawing AV4003	A/R
g.	Document Camera	WLF	VZ-8plus ³	1
h.	Ceiling Loudspeakers	EVI	EVID C8.2	6

i.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
j.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
k.	Assistive Listening System	LSN	LS-85	1
l.	Interactive Pen Display	SMA	SP-524-NB	1
m.	Wireless Microphone System	SHU	ULXS14/93	2
n.	Control Network Switch	ATS	GS900/8	1
o.	UPS	MAP	UPS-2200R	1
p.	Equipment Enclosure	MAP	Per Drawing AV4002	1
q.	Termination – Lectern	CUS	Per Drawing AA	2
r.	Termination – Projector	CUS	Per Drawing AF	1
s.	Termination – Screen	CUS	Per Drawing AN	1
t.	Termination – Ceiling Speaker	CUS	Per Drawing BA	6
u.	Termination – IR Emitter	CUS	Per Drawing CB	1
40.	CORRIDORS			
a.	46" Flat Panel LCD	NEC	V462	5
b.	Tilting Wall Mount for LCD	CHF	PWCU	5
c.	Network Video Receiver	CIS	DMP4400G	5
d.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
e.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 4

41.	SMALL MEETING ROOM (4010, 493)			
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Tilting Wall Mount for LCD	CHF	PWCU	1
d.	Video Conferencing System	LGS	RVF1000	1
e.	Table Box	CUS	\$1400 Allowance	1
f.	Control System	CST	Per Custom Quote # 1011191	

g.	Termination – Table Box	CUS	Per Drawing HC	1
h.	Termination – Floor Box	CUS	Per Drawing GE	1
i.	Termination – Flat Panel Display	CUS	Per Drawing GW	1
j.	Termination – VTC Codec	CUS	Per Drawing AS	1
k.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
42. SMALL MEETING ROOM (410F, 452H)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Video Conferencing System	LGS	RVF1000	1
g.	Table Box	CUS	\$1400 Allowance	2
h.	Control System	CST	Per Custom Quote # 1011191	
i.	Termination – Table Box	CUS	Per Drawing HA	1
j.	Termination – Table Box	CUS	Per Drawing HC	1
k.	Termination – Floor Box	CUS	Per Drawing GG	1
l.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
m.	Termination – VTC Codec	CUS	Per Drawing AS	1
n.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
43. SMALL MEETING ROOM (451)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Tilting Wall Mount for LCD	CHF	PWCU	1
d.	Video Conferencing System	LGS	RVF1000	1
e.	Table Box	CUS	\$1400 Allowance	2
f.	Control System	CST	Per Custom Quote # 1011191	

g.	Termination – Table Box	CUS	Per Drawing HA	1
h.	Termination – Table Box	CUS	Per Drawing HC	1
i.	Termination – Floor Box	CUS	Per Drawing GG	1
j.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
k.	Termination – VTC Codec	CUS	Per Drawing AS	1
l.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
44. PROJECT ROOM (401I)				
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Video Conferencing System	LGS	RVF1000	1
g.	Interactive Whiteboard	SMA	885ix	1
h.	USB to CAT Extender	SMA	CAT5-XT	1
i.	Table Box	CUS	\$1400 Allowance	2
j.	Control System	CST	Per Custom Quote # 1011191	
k.	Control Network Switch	ATS	AT-GS900/5E	1
l.	Termination – Table Box	CUS	Per Drawing HC	1
m.	Termination – Table Box	CUS	Per Drawing HD	1
n.	Termination – Floor Box	CUS	Per Drawing GD	1
o.	Termination – Flat Panel Display	CUS	Per Drawing GZ	1
p.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
q.	Termination – VTC Codec	CUS	Per Drawing AS	1
r.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
45. PROJECT ROOM (461F)				
a.	Flat Panel Display	NEC	V651	1

b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Owner Provided Video Conferencing System		BY OWNER	1
g.	Interactive Whiteboard	SMA	885ix	1
h.	USB to CAT Extender	SMA	CAT5-XT	1
i.	Table Box	CUS	\$1400 Allowance	2
j.	Control System	CST	Per Custom Quote # 1011191	
k.	Control Network Switch	ATS	AT-GS900/5E	1
l.	Termination – Table Box	CUS	Per Drawing HB	1
m.	Termination – Table Box	CUS	Per Drawing HI	1
n.	Termination – Floor Box	CUS	Per Drawing GI	1
o.	Termination – Flat Panel Display	CUS	Per Drawing GX	1
p.	Termination – Interactive Whitebrd	CUS	Per Drawing AK	1
q.	Termination – VTC Codec	CUS	Per Drawing AS	1
r.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
46.	CONFERENCE / SEMINAR ROOM (487)			
a.	Video Projector (3,500 Lm.)	NEC	NP-P350W	1
b.	16:10 Motorized Projection Screen	DRA	Access/Series V 109”	1
c.	Flat Panel Display	NEC	V651	1
d.	Tilting Wall Mount for LCD	CHF	LTMU	1
e.	Ceiling Document Camera	WLF	EYE-12	1
f.	Ceiling Mount Kit	WLF	EYEKIT / TILEBRIDGE	1
g.	Ceiling Loudspeakers	EVI	EVID C8.2	8
h.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
i.	Owner Provided Video Conferencing System		BY OWNER	1

j.	Intelligent Dual Camera	PLY	EagleEye Director	1
k.	Digital Media AV / Control System	CRS	Per Custom Quote # 1011191	
l.	HDMI Transmitter / Reciever Pair	EXT	HDMI 201 Tx/Rx	1
m.	Table Box	CUS	\$1400 Allowance	4
n.	UPS	MAP	UPS-2200R	1
o.	Equipment Rack Credenza	MAP	Per Drawing AV4003	1
p.	Termination – Projector	CUS	Per Drawing AF	1
q.	Termination – Screen	CUS	Per Drawing AN	1
r.	Termination – Flat Panel Display	CUS	Per Drawing AH	1
s.	Termination – Ceiling Doc Camera	CUS	Per Drawing AY	1
t.	Termination – Ceiling Speaker	CUS	Per Drawing BA	8
u.	Termination – Control Panel	CUS	Per Drawing CE	1
v.	Termination – Wireless Access Pt.	CUS	Per Drawing CF	1
w.	Termination – Table Box	CUS	Per Drawing HE	4
x.	Termination – Camera	CUS	Per Drawing HF	1
y.	Termination – Floor Box	CUS	Per Drawing GH	4
47.	MEDIUM MEETING ROOM (427)			
a.	Flat Panel Display	NEC	V651	1
b.	Loudspeakers for Flat Panel	NEC	SP-RM1	1
c.	Flat Panel Ceiling Mount	CHF	PCSU	1
d.	Ceiling Plate	CHF	CMA330	1
e.	Mounting Pipe	CHF	CMS	1
f.	Video Conferencing System	LGS	RVF1000	1
g.	Table Box	CUS	\$1400 Allowance	2
h.	Control System	CST	Per Custom Quote # 1011191	
i.	Termination – Table Box	CUS	Per Drawing HA	1
j.	Termination – Table Box	CUS	Per Drawing HC	1

k.	Termination – Floor Box	CUS	Per Drawing GG	1
l.	Termination – Flat Panel Display	CUS	Per Drawing GV	1
m.	Termination – VTC Codec	CUS	Per Drawing AS	1
n.	Termination – Control Touch Panel	CUS	Per Drawing CD	1
48. STUDENT PROJECT ROOM (445)				
a. NO AV EQUIPMENT TO BE INSTALLED AT THIS TIME.				
49. CORRIDORS				
a.	46" Flat Panel LCD	NEC	V462	4
b.	Tilting Wall Mount for LCD	CHF	PWCU	4
c.	Network Video Receiver	CIS	DMP4400G	4
d.	Room ID / Scheduling Panel	CST	Per Custom Quote # 1011191	
e.	Interactive Information Kiosk	PKS	Eagle Shift ADA Kiosk	1

LEVEL 5

50. DISTRIBUTED INFORMAL LEARNING / STUDY (505, 511)				
a.	Ceiling Loudspeakers	EVI	EVID C8.2	12
b.	Ceiling Loudspeaker Amplifier	LGP	E4.2	1
c.	Control System	CRS	Per Custom Quote # 1011191	
d.	Wireless Microphone System	SHU	ULXS14/93	2
e.	Wireless Microphone System – Lav.	SHU	ULXS14/93	1
f.	Wireless Microphone System – HH	SHU	ULXS24/58	1
g.	CD Player with iPod Dock	TAS	CD-200i	1
h.	Auxiliary Input Panel	CUS	Per Drawing AV3006	1
i.	DSP	SMX	EDGE Frame	3
j.	DSP I/O Cards	SMX	4 Ch. Analog Input Card	3
k.	DSP I/O Cards	SMX	4 Ch. Analog Output Card	1
l.	Network Switch (8-Port)	ATS	AT-GS900/8	1
m.	UPS	MAP	UPS-2200R	1

n.	Equipment Rack	MAP	Per Drawing AV4003	1
o.	Termination – Wireless Mic Antenna	CUS	Per Drawing AX	2
p.	Termination – Ceiling Loudspeaker	CUS	Per Drawing BA	12
q.	Termination – Audio Input Panel	CUS	Per Drawing HG	1

D. Equipment Manufacturers

	<u>MFR</u>	<u>Company</u>	<u>Web Site</u>
1.	AAI	Audio Accessories	www.patchbays.com
2.	ACE	Ace Backstage Company	www.acebackstage.com
3.	AKG	AKG Acoustics	www.akgusa.com
4.	ALC	Alcoswitch	www.tycoelectronics.com
5.	ALN	Allen Products Company Inc.	www.allenproducts.com
6.	ANC	Anchor Audio	www.anchoraudio.com
7.	APB	APB-Dynasonics	www.apb-dynasonics.com
8.	APX	Aphex Systems	www.aphex.com
9.	ASH	Ashly Audio	www.ashly.com
10.	ATL	Atlas Sound	www.atlassound.com
11.	ATS	Allied Telesis	www.alliedtelesis.com
12.	ASU	ASUS	usa.asus.com
13.	ATM	ATM Fly-Ware	www.atmflyware.com
14.	ATN	Audio-Technica	www.audiotechnica.com
15.	BAG	Bag End Loudspeakers	www.bagend.com
16.	BEL	Belden Wire and Cable	www.belden.com
17.	BEY	Beyerdynamic	www.beyerdynamic.com
18.	BMK	Benchmark Media Systems	www.benchmarkmedia.com
19.	BSS	BSS Audio USA	www.bss.co.uk
20.	CAG	CAIG Laboratories	www.caig.com
21.	CAN	ITT/Cannon Components Division	www.ittcannon.com
22.	CDU	C-Ducer	www.c-ducer.com
23.	CLC	Clear-Com	www.clearcom.com
24.	CNR	Canare Cable	www.canare.com
25.	CRL	Carol Wire and Cable	www.biccgeneral.com
26.	CRN	Crown International	www.crownaudio.com
27.	CRS	Crest Audio	www.crestaudio.com
28.	CST	Crestron Electronics	www.crestron.com
29.	CUS	Custom Built by Audio Contractor	
30.	DAL	Da-Lite	www.da-lite.com
31.	DBX	dbx Professional Products	www.dbxpro.com
32.	DEL	Dell Computer	www.dell.com
33.	DEN	Denon Corporation	www.usa.d-mpro.com
34.	DNB	d&b Audiotechnik Corp.	www.dbaudio.com
35.	DPA	DPA Microphones	www.dpamicrophones.com
36.	DPI	Digital Projection Inc.	www.digitalprojection.com

37.	DRP	Draper, Inc.	www.draperinc.com
38.	DSL	Danley Sound Labs	www.danleysoundlabs.com
39.	DUG	Dan Dugan Sound Design	www.dandugan.com
40.	EAC	EAW Commercial	www.eawcommercial.com
41.	EAW	Eastern Acoustic Works	www.eaw.com
42.	EVI	Electro-Voice	www.electrovoice.com
43.	ETW	Earthworks	www.earthworksaudio.com
44.	EVN	Eventide	www.eventide.com
45.	FLC	Fulcrum Acoustic	www.fulcrum-acoustic.com
46.	FLK	John Fluke Manufacturing Company	www.fluke.com
47.	FRZ	Frazier Loudspeakers	www.frazierspeakers.com
48.	FSR	FSR	www.fsrinc.com
49.	HHB	HHB Communications	www.hhbusa.com
50.	HOF	Hoffman Engineering Company	www.hoffmanonline.com
51.	HUB	Hubbell	www.hubbell.com
52.	IVE	Ivie Technologies	www.ivie.com
53.	JBL	JBL Professional Products	www.jblpro.com
54.	JEN	Jensen Tools	www.jensentools.com
55.	JTF	Jensen Transformers	www.jensen-transformers.com
56.	KTK	Klark Teknik	www.klarkteknik.com
57.	LCS	Level Control Systems	www.lcsaudio.com
58.	LEX	Lexicon	www.lexicon.com
59.	LGP	Lab Gruppen	www.labgruppen.se
60.	LGS	LG Business Solutions	www.lgsolutions.com
61.	LIT	Littlite/CAE	www.littlite.com
62.	LPC	Lex Products Corporation	www.lexproducts.com
63.	LSN	Listen Technologies Corporation	www.listentech.com
64.	LYN	LynTec	www.lyntec.com
65.	MAP	Middle Atlantic Products	www.middleatlantic.com
66.	MCK	Mackie Designs	www.mackie.com
67.	MDS	Midas	www.midasconsoles.com
68.	MEY	Meyer Sound Laboratories	www.meyersound.com
69.	MRS	Marshall Furniture	www.marshallfurniture.com
70.	MRZ	Marantz Professional	www.marantzpro.com
71.	MYS	Mystery Electronics	www.mysteryelectronics.com
72.	NEC	NEC Display Solutions	www.necdisplay.com
73.	NEU	Neumann USA	www.neumann.com
74.	NTK	Neutrik USA	www.neutrik.com
75.	NUM	Numark	www.numark.com
76.	OMN	Omnimount Systems	www.omnimount.com
77.	OSS	On Stage Stands	www.onstagestands.com
78.	OXM	Oxmoor Corporation	www.oxmoor.com
79.	PAD	Panduit	www.panduit.com
80.	PAN	Panasonic USA	www.panasonic.com
81.	PFS	Polar Focus	www.polarfocus.com
82.	PLY	Polycom	www.polycom.com

83.	POM	Pomona Electronics	www.pomonaelectronics.com
84.	PKS	Practical Kiosk Solutions	www.practicalkiosk.com
85.	PRS	PreSonus Audio Electronics	www.presonus.com
86.	PRT	ProTech Audio Corporation	www.protechaudio.com
87.	QLK	Quik Lok	www.quiklok.com
88.	QSC	QSC Audio Products	www.qscaudio.com
89.	RAN	Rane Corporation	www.rane.com
90.	RDE	Radial Engineering	www.radialeng.com
91.	RDS	Rosendahl Studiotechnik	www.rosendahl-studiotechnik.de
92.	RKH	Renkus-Heinz	www.renkus-heinz.com
93.	SAL	Salitek / Orion	www.salitek.net
94.	SCH	Schoeps	www.reddingaudio.com
95.	SCR	Soundcraft USA	www.soundcraft.com
96.	SEN	Sennheiser Electronic Corporation	www.sennheiserusa.com
97.	SHU	Shure Brothers	www.shure.com
98.	SIA	SIA Software Company	www.siasoft.com
99.	SKB	SKB Corporation	www.skbcases.com
100.	SMA	Smart Technologies	www.smarttech.com
101.	SMX	Symetrix	www.symetrixaudio.com
102.	SNL	Stop and Listen	www.stopandlisten.com
103.	SNY	Sony Electronics	www.sonyproaudio.com
104.	SQD	Square D Company	www.squared.com
105.	SRV	Servoreeler Systems	www.servoreelers.com
106.	SSC	Superscope Technologies	www.superscopetechnologies.com
107.	SWC	Switchcraft	www.switchcraft.com
108.	TAN	Tannoy North America	www.tannoy.com
109.	TAP	Tapco	www.tapcogear.com
110.	TAS	Tascam	www.tascam.com
111.	TCE	TC Electronic of Denmark	www.tcelectronic.com
112.	TCM	3Com	www.3com.com
113.	TEA	Teac America	www.teac.com
114.	TEC	Technics Audio Products	www.panasonic.com
115.	TLX	Telex Communications	www.telex.com
116.	TMB	TMB	www.tmb.com
117.	TOA	TOA Electronics	www.toaelectronics.com
118.	TPL	Tripp Lite	www.tripplite.com
119.	UNC	Union Connector Company	www.unionconnector.com
120.	USS	Ultimate Support Systems	www.ultimatesupport.com
121.	UST	Unistrut Diversified Products	www.unistrut.com
122.	VEG	Vega	www.vegawireless.com
123.	VST	Vista Systems, Corp.	www.vistasystems.net
124.	WDM	Weidmuller	www.weidmuller.com
125.	WLF	Wolfvision	www.wolfvision.com
126.	WLM	Williams Sound	www.williamssound.com
127.	WLR	Wohler Technologies	www.wohler.com
128.	WOW	WOW-Vision	www.wow-vision.com

129.	WPW	West Penn Wire/CDT	www.westpenn-cdt.com
130.	WRM	Wiremold Company	www.wiremold.com
131.	WWD	Whirlwind Interface International	www.whirlwindusa.com
132.	WWK	Wireworks Corporation	www.wireworks.com
133.	XED	Xedit	www.servoreelers.com
134.	XTA	XTA Electronics	www.xta.co.uk
135.	YAM	Yamaha Corporation of America	www.yamaha.com

2.3 DETAIL DRAWINGS

- A. The drawings herein detail custom built equipment and system details.
- B. Furnish all materials and labor to provide complete and finished work even though not specifically shown on the drawings.
- C. Detail drawings are located in large format drawings AV0001 through AV4003.

PART 3 - EXECUTION

3.1 AUDIO SYSTEM REQUIREMENTS

- A. Requirements herein refer to materials and work which are related to or part of the Systems. Where conflict exists with other specifications concerning such work or materials, this specification takes precedence unless otherwise approved in writing by the Owner

3.2 INSTALLATION OF SYSTEMS

- A. Locate all apparatus requiring adjustments, cleaning or similar attention so that it will be accessible for such attention. Equipment racks shall be positioned to permit full access for operation and service.
- B. Furnish and install brackets, braces and supports. Minimum fastening or support safety factor shall be at least three (3). Design shall be to the approval of the University of South Carolina.
- C. All supporting structures and enclosures supplied by the Contractor not having a standard factory paint finish shall be painted. Paint specifications will be supplied by the University of South Carolina or indicated herein.
- D. Provide custom color or finish for any equipment or materials supplied which are exposed to public view. Color and finish of all such equipment or materials shall be approved in writing by the University of South Carolina. This does not exclude equipment or materials where standard colors and finishes may be specified herein.
- E. Finish of blank panels and custom assembly panels shall match adjacent equipment panels.
- F. Switches, connectors, jacks, receptacles, outlets, cables and cable terminations shall be logically and permanently marked. Custom panel nomenclature shall be engraved, etched or screened.

Markings for these items are detailed in the drawings to ensure consistency and clarity. Verify any changes in working type size and/or placement with the Systems Designer prior to marking.

- G. The equipment specified herein is designed to operate in environments of normal humidity, dust and temperature. Protect equipment and related wiring where extreme environmental conditions can occur.
- H. The standard reference for the layout and construction of the system shall be:
Giddings, Philip. *Audio Systems Design and Installation*. Boston: Focal Press, 1990.

3.3 CONDUIT

- A. Review and coordinate Systems conduit installation with the electrical contractor to ensure proper operation of the Systems.
- B. All wiring shall be in conduit unless authorized by the University of South Carolina, approved by the Systems Designer, and permitted by code. Exceptions are short runs at equipment terminations where there is no means of connecting conduit to the equipment.
- C. 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. Conduit connections to equipment racks shall be insulated.
- D. Minimum size conduit shall be 3/4 inch. All conduit shall be sized for maximum 40% fill or less if required by code.

3.4 CONDUIT SEPARATION

- A. Systems wiring is divided into wiring groups according to their nominal voltage levels (refer to Schedule of Terminations):

	Wiring Type
Group A	Microphones and other sensitive wiring (0 mV to 100 mV)
Group B	Line level wiring (100 mV to 10 V)
Group C	Loudspeaker and control wiring (10 V to 70 V)
Group D	Telephone, video, control and digital circuits
Group E	Fiber optic cable

Note: These wiring groups must never be intermixed within a given conduit run!

- B. Minimum conduit separation between conduits carrying wiring of different groups is as follows:

	Group A	Group B	Group C	Group D	Group E
Group A	adjacent	6"	12"	12"	adjacent
Group B	-	adjacent	12"	6"	adjacent
Group C	-	-	adjacent	6"	adjacent
Group D	-	-	-	adjacent	adjacent
Group E	-	-	-	-	adjacent

Note: Ninety degree crossings in close proximity are acceptable.

- C. Minimum conduit separation between conduits carrying Systems wiring and other electrical service conduit is as follows:

	Group A	Group B	Group C	Group D	Group E
Dimmer controlled lighting	24"	12"	6"	12"	adjacent
SCR controlled services	24"	12"	6"	12"	adjacent
220/440V circuits	6"	6"	adjacent	adjacent	adjacent
All other services	6"	6"	adjacent	adjacent	adjacent

Note: Heavy current demands in or long parallel runs with the above services may dictate greater separations to avoid interference in the Systems.

- D. Contractor shall promptly inform the Systems Designer in writing of conduit installation which does not conform to these requirements.

3.5 ELECTRICAL POWER

- A. Review and coordinate electrical power system installation including grounding with the electrical contractor to ensure proper operation of the Systems.
- B. Verify that all AC power circuits designated for Systems equipment are wired with correct polarity and isolated ground. Report in writing any discrepancies found to the University of South Carolina for corrective action.
- C. Provide distribution of electrical power within the equipment racks with a minimum of one spare AC receptacle for each four in use per branch circuit.

3.6 STEEL SUPPORTS

- A. Fabricate and install any supports so that the installation does not weaken or overload the building 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 University of South Carolina.

3.7 BOXES

- A. With the exception of portable equipment, all boxes, conduits, cabinets, equipment and related wiring shall be held in place and the mounting shall be plumb and square.
- B. All boxes shall be securely mounted to building structure. All boxes shall be installed so that wiring contained in them is accessible. Install blanking devices or threaded plugs in all unused holes.
- C. Wiring groups and circuits shall be isolated as indicated herein. Common pull or junction boxes are not permitted except as authorized, in writing, by the Systems Designer.
- D. Clean all box interiors before installing plates, panels or covers.

3.8 WIRING METHODS AND PRACTICES

- A. Provide installation of all Systems wire and cable, ensuring proper:
 - 1. Pulling Tensions
 - 2. Quantities
 - 3. Types
 - 4. Lengths
 - 5. Routing
 - 6. Wire Group Separation
 - 7. Identification
- B. The interconnection of all equipment requiring shielded cable shall be by Belden type 9451, or equivalent, unless otherwise specified.
- C. Spare wire runs of each group and type shall be pulled to each termination location. The number of spares shall be ten percent of those in actual use or one, whichever is greater.
- D. Splicing of cables is not permitted between terminations of specified equipment.
- E. 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 less than recommended radius. Employ temporary guides, sheaves, and rollers to protect cables from excess tension, abrasion or damaging bending during installation.
- F. Provide wire pulling lubricants and pulling tensions in accordance with the wire and cable manufacturer's recommendations.
- G. 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.
- H. Wire ends should be wrapped with heat shrink tubing. Each shield or drain wire should be covered with heat shrink to avoid unintentional connections.
- I. 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. Spare terminal blocks, equivalent to 10% of those in actual use, shall be provided.

- J. 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. Limit spacing between ties to six (6) inches and provide circuit and conductor identification at least once in each enclosure.
- K. Provide ample service loops at each termination so that plates, panels, patch bays, and equipment can be dismantled for service and inspection.

3.9 GROUNDING

- A. Audio system wiring shall conform to the following procedures:
 - 1. Audio equipment AC ground pins shall connect to AC isolated ground.
 - 2. Audio equipment chassis shall connect to AC isolated ground or rack frames.
 - 3. Audio rack frames shall connect to AC isolated ground bus in panelboard by means of #2 gauge (minimum) conductor.
 - 4. Audio shields between AC powered pieces of equipment shall be connected to ground at one end only. Capacitively terminate as required.
 - 5. Audio signal paths between AC powered pieces of equipment shall be connected using balanced lines and/or transformer isolation as required. No unbalanced signal paths may be connected to the patch bay.
 - 6. Isolate all Systems wiring from racks, back boxes and conduit.
 - 7. Isolate all Systems racks from conduit and other conductive surfaces. Use insulated bushings for conduit connections and a dielectric plinth between racks and conductive flooring materials.
 - 8. AC isolated ground system shall be isolated from all other facility grounds.
- B. All metallic conduit, boxes and enclosures shall be grounded in accordance with the current National Electrical Code.
- C. Metallic enclosures containing active equipment shall be grounded with due regard for the minimization of electrical noise. This may include the provision of grounding conductors separate from the AC ground.

3.10 EQUIPMENT RACKS

- A. The equipment racks shall be considered as custom assemblies and shall be assembled, wired and tested in the Contractor's shop. Assembly of racks on-site will not be permitted (except for shielded microphone and line wiring which must connect directly to the patch bays).
- B. Placement of equipment in equipment racks, as shown in the drawings, is for maximum operator convenience. Verify any changes in placement of the equipment with the Systems Designer before assembly.
- C. Racks shall be installed plumb and square without twists in the frames or variations in level between adjacent racks.

- D. All wire, cable, terminal blocks, 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.
- E. Provide stiffeners to custom panels to prevent panel deformation during normal plugging or switching operations.
- F. All wires and cables used in assembling custom panels and equipment racks shall be formed into harnesses which are tied and supported in accordance with accepted engineering practice.
- G. Harnessed cables shall be combed straight, tie-wrapped every six (6) to ten (10) inches, and attached to the structure as necessary. Each cable that breaks out from a harness for termination shall be provided with an ample service loop to permit equipment removal from the racks without disconnecting.
- H. Harnessed cables shall be formed in either a vertical or a horizontal relationship to equipment, controls, components or terminations.
- I. Cable shields shall be connected to the isolated ground system with due regard for ground loops. (See Giddings reference book, Chapter 10)
- J. 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.
- K. All rack mounted equipment, with front panel controls, shall be provided with security covers to avoid tampering with preset levels. If specific security covers are not included in the equipment list, the Contractor will provide the manufacturer's security cover for each specified device or a suitable alternate.
- L. Every device shall be installed with regard for proper polarity. Absolute polarity shall be maintained through the entire Systems chain.
- M. Any electronic device which is connected to the patch bay must be balanced.

3.11 INITIAL ADJUSTMENT

- A. Verify all circuits and extensions for correct connection, continuity and polarity. Absolute polarity shall be maintained between all points in the system.
- B. Connector polarity shall be maintained except for terminations at equipment manufactured to other standards. In the event that manufactured equipment can be ordered with, or internally set to, various standards, the equipment shall be configured as follows:
 - 1. Polarity for XLR style connector shall be: pin 2-high, pin 3-low, and pin 1-shield.
 - 2. Polarity for TRS style connector shall be: tip-high, ring-low, and sleeve-shield.
- C. Make all adjustments and modifications so that the system is operational.
- D. Make all adjustments and modifications for system gain structure per recommendations of major component manufacturers.

3.12 VERIFICATION TESTS

- A. Confirm that each individual wire and cable run (whether in a rack or in conduit) is identified with a unique number. These numbers are affixed to both ends of each cable and are clearly visible. Provide a complete list of these numbers along with the termination location of each end of the wire run.
- B. Confirm that all system outputs are free of spurious signals including oscillations and radio frequency signals. A wide band oscilloscope shall be used to verify this condition.
- C. Confirm that the system is free of audible clicks, pops, and other noises when any operating control is activated, with or without input signal.
- D. For all microphone lines, tie lines, return lines and effect loudspeaker lines, confirm:
 - 1. Proper circuits appearing at each termination location
 - 2. Proper circuits appearing at each jack bay position
 - 3. Continuity of all conductors
 - 4. Proper polarity is maintained
 - 5. Absence of shorts between conductors within each circuit
 - 6. Absence of shorts between circuit conductors and conduit
- E. Confirm that loudspeakers and mountings are free of buzzes and rattles when the loudspeaker is swept with sine wave tones over its rated bandwidth at one-half (1/2) its maximum rated power.
- F. For all permanently mounted loudspeaker terminations, provide impedance measurement of each pair of loudspeaker lines with all loudspeakers connected and all amplifiers disconnected. These measurements shall be documented as editable tabular data listing impedance for each 1/3 octave band from 20 Hz to 20 kHz and shall be accurate to the nearest tenth of an Ohm.
- G. For all intercom terminations, confirm proper operation by initiating and receiving audio communication and call light.
- H. For each installed data network cable or fiber optic cable confirm conformance to the specified TIA/EIA performance standards.
- I. For all electronic devices mounted in racks and connected to patch bays, confirm:
 - 1. Every input and output is balanced.
 - 2. Proper polarity is maintained throughout the entire audio path.
 - 3. Tip connection of each TRS jack is connected to the positive terminal of each corresponding input or output.
- J. Confirm that there are no shorts between the Neutral and Isolated Ground conductors for each clean power circuit.

3.13 VERIFICATION TEST REPORT

- A. Submit written report detailing the results of Initial Adjustments and Verification Tests. Report to

include, at minimum, the following:

1. Copies of all relevant drawings, charts, test instrument data, and photographs.
 2. PDF copies of all available manufacturers' operation and service literature for each major system component.
 3. Written certification that the installation conforms to the requirements stated herein, is complete in all respects, and is ready for inspection, testing, and tuning.
- B. This report shall be completed and submitted to the Systems Designer for review a minimum of five (5) days prior to Acceptance Testing and final tuning.

3.14 ACCEPTANCE TESTING

- A. Acceptance Testing shall be performed by the Systems Designer during a period designated by the University of South Carolina. Contractor shall furnish a minimum of two (2) technicians for the acceptance testing period.
- B. The minimum time required for Acceptance Testing is two (2) working days of dedicated quiet. Coordinate this time period so that free access, work lighting, and electrical power are available on the site.
- C. Ensure that Systems areas are in a clean and orderly condition ready for acceptance testing.
- D. Provide test equipment (meeting the following minimum specifications) on site, at all times during Acceptance Testing. Prior to Acceptance Testing, provide the Systems Designer with a listing of the specific equipment to be made available.
1. Oscilloscope: 10MHz Bandwidth, Sensitivity – 1mV/cm
 2. Digital Multi-meter: 1% Accuracy
 3. Function Generator: 1MHz Bandwidth, Distortion < 1%
 4. Real Time Analyzer: 1/3 Octave with microphone
 5. Pink Noise Source: 20 Hz – 20 kHz Bandwidth
 6. Impedance Sweep Meter: 20 Hz – 20 kHz Range, 1 Ohm – 50 kOhm
 7. Polarity Checker: Mic, line, or loudspeaker level

Note: Systems Designers may choose to supply their own test equipment.

- E. Be prepared to verify the performance of any portion of the system by demonstration, listening tests and instrumented measurements.
- F. Make additional mechanical and electrical adjustments within the scope of the work and which are deemed necessary by the Systems Designer as a result of the Acceptance Tests. This may include realigning of loudspeaker systems, changes in system gain structures, grounding, filtering or interfaces.
- G. Final acceptance will be contingent upon issuance by the Systems Designer of a letter of acceptance stating that the work has been completed and is in accordance with the contract documents.
- H. Contractor will bear any costs incurred for additional Systems Designer's time and expenses due to failure to have the system functioning in accordance with specification requirements at the times scheduled for Systems Designer's Acceptance Testing and tuning.

3.15 SYSTEM DOCUMENTATION

- A. Within thirty (30) days of the Acceptance Testing, prepare and submit a CD-ROM of the preliminary Operation and Maintenance manual for approval by the Systems Designer. Manual to include, at minimum, the following documents in PDF format:
1. Table of contents
 2. Written Guarantee and service policy
 3. Basic power on/off and operational procedure
 4. Copies of all shop drawings which have been updated to include any changes made during the installation process
 5. All available manufacturers' operation and service literature for each major system component
 6. One line signal flow diagram with all cable runs and patch points identified by alpha-numeric character
 7. Copy of the Verification Test report
 8. Copy of conduit riser diagram
 9. Copy of the final tuning settings as provided by the Systems Designer
- B. Systems Designer will review the above system documentation. Upon approval, Contractor shall prepare and submit to the Owner:
1. Five (5) copies of the final Operation and Maintenance manual on CD-ROM
 2. Two (2) hard copies of the final Operation and Maintenance manual printed and neatly bound
- C. Provide framed copy of the as-built signal flow diagram to be mounted in the control room. This diagram shall have all cable runs and patch points identified by alpha-numeric character.

3.16 OWNER TRAINING

- A. Requirements for owner training to be developed by DMSB, USC and JaffeHolden. Training to be conducted by AV Installer.
- B. Contractor to facilitate multiple training sessions.
- C. DMSB and USC to make available any persons who will require training on specific building systems for those training sessions. UTS staff to receive in-depth training on all building systems and will bear some responsibility in training non-technical DMSB staff in the operation of the audio/video systems.
- D. Contractor to provide additional training sessions for DMSB staff after systems have been in use for a period of two months to address questions and/or concerns that have surfaced while the systems have been in use.

END OF SECTION 27 41 00

Tracking Designation by RVA

IV. Information For Offerors To Submit

INFORMATION FOR OFFERORS TO SUBMIT – GENERAL (JAN 2006): Offeror shall submit a signed Cover Page and Page Two. Offeror should submit all other information and documents requested in this part and in parts II.B. Special Instructions; III. Scope of Work; V. Qualifications; VIII. Bidding Schedule/Price Proposal; and any appropriate attachments addressed in section IX. Attachments to Solicitations.

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.)

V. Qualifications

QUALIFICATION OF OFFEROR (JANUARY 2006): To be eligible for award of a contract, a prospective contractor must be responsible. In evaluating an Offeror's responsibility, the State Standards of Responsibility [R.19-445.2125] and information from any other source may be considered. An Offeror must, upon request of the State, furnish satisfactory evidence of its ability to meet all contractual requirements. Unreasonable failure to supply information promptly in connection with a responsibility inquiry may be grounds for determining that you are ineligible to receive an award. S.C. Code Section 11-35-1810.

SUBCONTRACTOR – IDENTIFICATION (JAN 2006): If you intend to subcontract with another business for any portion of the work and that portion exceeds 10% of your price, your offer must identify that business and the portion of work which they are to perform. Identify potential subcontractors by providing the business' name, address, phone, taxpayer identification number, and point of contact. In determining your responsibility, the state may evaluate your proposed subcontractors.

VI. Award Criteria

AWARD CRITERIA – BIDS (JANUARY 2006): Award will be made to the lowest responsible and responsive bidder(s).

UNIT PRICE GOVERNS (JANUARY 2006): In determining award, unit prices will govern over extended prices unless otherwise stated.

AWARD TO ONE OFFEROR (JAN 2006): Award will be made to one Offeror.

VII. Terms and Conditions - A. General

ASSIGNMENT (JANUARY 2006): No contract or its provisions may be assigned, sublet, or transferred without the written consent of the Procurement Officer.

BANKRUPTCY (JANUARY 2006): (a) Notice. In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish written notification of the bankruptcy to the Using Governmental Unit. This notification shall be furnished within five (5) days of the initiation of the proceedings relating to the bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of all State contracts against which final payment has not been made. This obligation remains in effect until final payment under this Contract. (b) Termination. This contract is voidable and subject to immediate termination by the State upon the contractor's insolvency, including the filing of proceedings in bankruptcy.

CONFERENCE – PRE-PERFORMANCE (JAN 2006): Unless waived by the Procurement Officer, a pre-performance conference between the contractor, state and Procurement Officer shall be held at a location selected by the state within five (5) days after final award, and prior to commencement of work under the contract. The responsibilities of all parties involved will be discussed to assure a meeting of the minds of all concerned. The successful contractor or his duly authorized representative shall be required to attend at contractor's expense .

CHOICE-OF-LAW (JANUARY 2006): The Agreement, any dispute, claim, or controversy relating to the Agreement, and all the rights and obligations of the parties shall, in all respects, be interpreted, construed, enforced and governed by and under the laws of the State of South Carolina, except its choice of law rules. As used in this paragraph, the term "Agreement" means any transaction or agreement arising out of, relating to, or contemplated by the solicitation.

CONTRACT DOCUMENTS & ORDER OF PRECEDENCE (JANUARY 2006): (a) Any contract resulting from this solicitation shall consist of the following documents: (1) a Record of Negotiations, if any, executed by you and the Procurement Officer, (2) documentation regarding the clarification of an offer [e.g., 11-35-1520(8) or 11-35-1530(6)], if applicable, (3) the solicitation, as amended, (4) modifications, if any, to your offer, if accepted by the Procurement Officer, (5) your offer, (6) any statement reflecting the state's final acceptance (a/k/a "award"), and (7) purchase orders. These documents shall be read to be consistent and complimentary. Any conflict among these documents shall be resolved by giving priority to these documents in the order listed above. (b) The terms and conditions of documents (1) through (6) above shall apply notwithstanding any additional or different terms and conditions in either (i) a purchase order or other instrument submitted by the State or (ii) any invoice or other document submitted by Contractor. Except as otherwise allowed herein, the terms and conditions of all such documents shall be void and of no effect. (c) No contract, license, or other agreement containing contractual terms and conditions will be signed by any Using Governmental Unit. Any document signed or otherwise agreed to by persons other than the Procurement Officer shall be void and of no effect.

DISCOUNT FOR PROMPT PAYMENT (JANUARY 2006)

(a) Discounts for prompt payment will not be considered in the evaluation of offers. However, any offered discount will form a part of the award, and will be taken if payment is made within the discount period indicated in the offer by the offeror. As an alternative to offering a discount for prompt payment in conjunction with the offer, offerors awarded contracts may include discounts for prompt payment on individual invoices.

(b) In connection with any discount offered for prompt payment, time shall be computed from the date of the invoice. If the Contractor has not placed a date on the invoice, the due date shall be calculated from the date the designated billing office receives a proper invoice, provided the state annotates such invoice with the date of receipt at the time of receipt. For the purpose of computing the discount earned, payment shall be considered to have been made on the date that appears on the payment check or, for an electronic funds transfer, the specified payment date. When the discount date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day.

DISPUTES (JANUARY 2006): (1) Choice-of-Forum. All disputes, claims, or controversies relating to the Agreement shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of the South Carolina Code of Laws, or in the absence of jurisdiction, only in the Court of Common Pleas for, or a federal court located in, Richland County, State of South Carolina. Contractor agrees that any act by the Government regarding the Agreement is not a waiver of either the Government's sovereign immunity or the Government's immunity under the Eleventh Amendment of the United State's Constitution. As used in this paragraph, the term "Agreement" means any transaction or agreement arising out of, relating to, or contemplated by the solicitation. (2) Service of Process. Contractor consents that any papers, notices, or process necessary or proper for the initiation or continuation of any disputes, claims, or controversies relating to the Agreement; for any court action in connection therewith; or for the entry of judgment on any

award made, may be served on Contractor by certified mail (return receipt requested) addressed to Contractor at the address provided as the Notice Address on Page Two or by personal service or by any other manner that is permitted by law, in or outside South Carolina. Notice by certified mail is deemed duly given upon deposit in the United States mail.

EQUAL OPPORTUNITY (JANUARY 2006): Contractor is referred to and shall comply with all applicable provisions, if any, of Title 41, Part 60 of the Code of Federal Regulations, including but not limited to Sections 60-1.4, 60-4.2, 60-4.3, 60-250.5(a), and 60-741.5(a), which are hereby incorporated by reference.

FALSE CLAIMS (JANUARY 2006): According to the S.C. Code of Laws § 16-13-240, "a person who by false pretense or representation obtains the signature of a person to a written instrument or obtains from another person any chattel, money, valuable security, or other property, real or personal, with intent to cheat and defraud a person of that property is guilty" of a crime.

FIXED PRICING REQUIRED (JANUARY 2006): Any pricing provided by contractor shall include all costs for performing the work associated with that price. Except as otherwise provided in this solicitation, contractor's price shall be fixed for the duration of this contract, including option terms. This clause does not prohibit contractor from offering lower pricing after award.

MATERIAL AND WORKMANSHIP (JAN 2006): Unless otherwise specifically provided in this contract, all equipment, material, and articles incorporated in the work covered by this contract are to be new and of the most suitable grade for the purpose intended.

NON-INDEMNIFICATION (JANUARY 2006): Any term or condition is void to the extent it requires the State to indemnify anyone.

NOTICE (JANUARY 2006): (A) After award, any notices shall be in writing and shall be deemed duly given (1) upon actual delivery, if delivery is by hand, (2) upon receipt by the transmitting party of automated confirmation or answer back from the recipient's device if delivery is by telex, telegram, facsimile, or electronic mail, or (3) upon deposit into the United States mail, if postage is prepaid, a return receipt is requested, and either registered or certified mail is used. (B) Notice to contractor shall be to the address identified as the Notice Address on Page Two. Notice to the state shall be to the Procurement Officer's address on the Cover Page. Either party may designate a different address for notice by giving notice in accordance with this paragraph.

PAYMENT & INTEREST (MAY 2011): (a) Unless otherwise provided in this Solicitation, the State shall pay the Contractor, after the submission of proper invoices or vouchers, the prices stipulated in this contract for supplies delivered and accepted or services rendered and accepted, less any deductions provided in this contract. Unless otherwise specified herein, including the purchase order, payment shall not be made on partial deliveries accepted by the Government. (b) Unless otherwise provided herein, including the purchase order, payment will be made by check. (c) Notwithstanding any other provision, payment shall be made in accordance with S.C. Code Section 11-35-45, which provides the Contractor's exclusive means of recovering any type of interest from the Owner. Contractor waives imposition of an interest penalty unless the invoice submitted specifies that the late penalty is applicable. Except as set forth in this paragraph, the State shall not be liable for the payment of interest on any debt or claim arising out of or related to this contract for any reason. (d) Amounts due to the State shall bear interest at the rate of interest established by the South Carolina Comptroller General pursuant to Section 11-35-45 ("an amount not to exceed fifteen percent each year"), as amended. (e) Any other basis for interest, including but not limited to general (pre- and post-judgment) or specific interest statutes, including S.C. Code Ann. § 34-31-20, are expressly waived by both parties. If a court, despite this agreement and waiver, requires that interest be paid on any debt by either party other than as provided by items (c) and (d) above, the parties further agree that the applicable interest rate for any given calendar year shall be the lowest prime rate as listed in the first edition of the Wall Street Journal published for each year, applied as simple interest without compounding.

PUBLICITY (JANUARY 2006): Contractor shall not publish any comments or quotes by State employees, or include the State in either news releases or a published list of customers, without the prior written approval of the Procurement Officer.

PURCHASE ORDERS (JANUARY 2006): Contractor shall not perform any work prior to the receipt of a purchase order from the using governmental unit. The using governmental unit shall order any supplies or services to be furnished under this contract by issuing a purchase order. Purchase orders may be used to elect any options available under this contract, e.g., quantity, item, delivery date, payment method, but are subject to all terms and conditions of this contract. Purchase orders may be electronic. No particular form is required. An order placed pursuant to the purchasing card provision qualifies as a purchase order.

PRICE ADJUSTMENTS (JAN 2006): (1) Method of Adjustment. Any adjustment in the contract price made

pursuant to a clause in this contract shall be consistent with this Contract and shall be arrived at through whichever one of the following ways is the most valid approximation of the actual cost to the Contractor (including profit, if otherwise

PRICING DATA – AUDIT – INSPECTION (JAN 2006) [Clause Included Pursuant to § 11-35-1830, - 2210, & - 2220] (a) Cost or Pricing Data. Upon Procurement Officer's request, you shall submit cost or pricing data, as defined by 48 C.F.R. § 2.101 (2004), prior to either (1) any award to contractor pursuant to 11-35-1530 or 11-35-1560, if the total contract price exceeds \$500,000, or (2) execution of a change order or contract modification with contractor which exceeds \$100,000. Your price, including profit or fee, shall be adjusted to exclude any significant sums by which the state finds that such price was increased because you furnished cost or pricing data that was inaccurate, incomplete, or not current as of the date agreed upon between parties. (b) Records Retention. You shall maintain your records for three years from the date of final payment, or longer if requested by the chief Procurement Officer. The state may audit your records at reasonable times and places. As used in this subparagraph (b), the term "records" means any books or records that relate to cost or pricing data submitted pursuant to this clause. In addition to the obligation stated in this subparagraph (b), you shall retain all records and allow any audits provided for by 11-35-2220(2). (c) Inspection. At reasonable times, the state may inspect any part of your place of business which is related to performance of the work. (d) Instructions – Certification. When you submit data pursuant to subparagraph (a), you shall (1) do so in accordance with the instructions appearing in Table 15-2 of 48 C.F.R. § 15.408 (2004) (adapted as necessary for the state context), and (2) submit a Certificate of Current Cost or Pricing Data, as prescribed by 48 CFR § 15.406-2(a) (adapted as necessary for the state context). (e) Subcontracts. You shall include the above text of this clause in all of your subcontracts. (f) Nothing in this clause limits any other rights of the state.

SETOFF (JANUARY 2006) The state shall have all of its common law, equitable, and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the state with regard to this contract, any other contract with any state department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the state for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto.

STORAGE OF MATERIALS (JAN 2006): Absent approval of the using governmental unit, Contractor shall not store items on the premises of the using governmental unit prior to the time set for installation.

SURVIVAL OF OBLIGATIONS (JANUARY 2006): The Parties' rights and obligations which, by their nature, would continue beyond the termination, cancellation, rejection, or expiration of this contract shall survive such termination, cancellation, rejection, or expiration, including, but not limited to, the rights and obligations created by the following clauses: Indemnification - Third Party Claims, Intellectual Property Indemnification, and any provisions regarding warranty or audit.

TAXES (JANUARY 2006): Any tax the contractor may be required to collect or pay upon the sale, use or delivery of the products shall be paid by the State, and such sums shall be due and payable to the contractor upon acceptance. Any personal property taxes levied after delivery shall be paid by the State. It shall be solely the State's obligation, after payment to contractor, to challenge the applicability of any tax by negotiation with, or action against, the taxing authority. Contractor agrees to refund any tax collected, which is subsequently determined not to be proper and for which a refund has been paid to contractor by the taxing authority. In the event that the contractor fails to pay, or delays in paying, to any taxing authorities, sums paid by the State to contractor, contractor shall be liable to the State for any loss (such as the assessment of additional interest) caused by virtue of this failure or delay. Taxes based on Contractor's net income or assets shall be the sole responsibility of the contractor.

TERMINATION DUE TO UNAVAILABILITY OF FUNDS (JANUARY 2006) Payment and performance obligations for succeeding fiscal periods shall be subject to the availability and appropriation of funds therefore. When funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period, the contract shall be canceled. In the event of a cancellation pursuant to this paragraph, contractor will be reimbursed the resulting unamortized, reasonably incurred, nonrecurring costs. Contractor will not be reimbursed any costs amortized beyond the initial contract term.

THIRD PARTY BENEFICIARY (JANUARY 2006) This Contract is made solely and specifically among and for the benefit of the parties hereto, and their respective successors and assigns, and no other person will have any rights, interest, or claims hereunder or be entitled to any benefits under or on account of this Contract as a third party beneficiary or otherwise.

WAIVER (JANUARY 2006) The State does not waive any prior or subsequent breach of the terms of the Contract by making payments on the Contract, by failing to terminate the Contract for lack of performance, or by failing to strictly or

promptly insist upon any term of the Contract. Only the Procurement Officer has actual authority to waive any of the State's rights under this Contract. Any waiver must be in writing.

WARRANTY – STANDARD (JAN 2006): Contractor must provide the manufacturer's standard written warranty upon delivery of product. Contractor warrants that manufacturer will honor the standard written warranty provided.

VII. Terms and Conditions - B. Special

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.sc.edu/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.

SUBCONTRACTOR SUBSTITUTION PROHIBITED - RESIDENT SUBCONTRACTOR PREFERENCE (SEP 2009): If you receive an award as a result of the subcontractor preference, you may not substitute any business for the subcontractor upon which you relied to qualify for the preference, unless first approved in writing by the procurement officer. If you violate this provision, the State may terminate your contract for cause and you may be debarred. In addition, the procurement officer may require you to pay the State an amount equal to twice the difference between the price paid by the State and the price offered by the next lowest bidder, unless the substituted subcontractor qualifies for the preference. [11-35-1524(D)(5)(c)]

CONTRACTOR'S OBLIGATION – GENERAL (JAN 2006): The contractor shall provide and pay for all materials, tools, equipment, labor and professional and non-professional services, and shall perform all other acts and supply all other things necessary, to fully and properly perform and complete the work. The contractor must act as the prime contractor and assume full responsibility for any subcontractor's performance. The contractor will be considered the sole point of contact with regard to all situations, including payment of all charges and the meeting of all other requirements.

CHANGES (JAN 2006):

(1) **Contract Modification.** By a written order, at any time, and without notice to any surety, the Procurement Officer may, subject to all appropriate adjustments, make changes within the general scope of this contract in any one or more of the following:

- (a) drawings, designs, or specifications, if the supplies to be furnished are to be specially manufactured for the [State] in accordance therewith;
- (b) method of shipment or packing;
- (c) place of delivery;
- (d) description of services to be performed;
- (e) time of performance (i.e., hours of the day, days of the week, etc.); or,
- (f) place of performance of the services.

Subparagraphs (a) to (c) apply only if supplies are furnished under this contract. Subparagraphs (d) to (f) apply only if services are performed under this contract.

(2) Adjustments of Price or Time for Performance. If any such change increases or decreases the contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, an adjustment shall be made in the contract price, the delivery schedule, or both, and the contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this contract. Failure of the parties to agree to an adjustment shall not excuse the contractor from proceeding with the contract as changed, provided that the State promptly and duly make such provisional adjustments in payment or time for performance as may be reasonable. By proceeding with the work, the contractor shall not be deemed to have prejudiced any claim for additional compensation, or an extension of time for completion.

(3) Time Period for Claim. Within 30 days after receipt of a written contract modification under Paragraph (1) of this clause, unless such period is extended by the Procurement Officer in writing, the contractor shall file notice of intent to assert a claim for an adjustment. Later notification shall not bar the contractor's claim unless the State is prejudiced by the delay in notification.

(4) Claim Barred After Final Payment. No claim by the contractor for an adjustment hereunder shall be allowed if notice is not given prior to final payment under this contract.

DEFAULT (JAN 2006):

(a)(1) The State may, subject to paragraphs (c) and (d) of this clause, by written notice of default to the Contractor, terminate this contract in whole or in part if the Contractor fails to-

(i) Deliver the supplies or to perform the services within the time specified in this contract or any extension;

(ii) Make progress, so as to endanger performance of this contract (but see paragraph (a)(2) of this clause); or

(iii) Perform any of the other material provisions of this contract (but see paragraph (a)(2) of this clause).

(2) The State's right to terminate this contract under subdivisions (a)(1)(ii) and (1)(iii) of this clause, may be exercised if the Contractor does not cure such failure within 10 days (or more if authorized in writing by the Procurement Officer) after receipt of the notice from the Procurement Officer specifying the failure.

(b) If the State terminates this contract in whole or in part, it may acquire, under the terms and in the manner the Procurement Officer considers appropriate, supplies or services similar to those terminated, and the Contractor will be liable to the State for any excess costs for those supplies or services. However, the Contractor shall continue the work not terminated.

(c) Except for defaults of subcontractors at any tier, the Contractor shall not be liable for any excess costs if the failure to perform the contract arises from causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (1) acts of God or of the public enemy, (2) acts of the State in either its sovereign or contractual capacity, (3) fires, (4) floods, (5) epidemics, (6) quarantine restrictions, (7) strikes, (8) freight embargoes, and (9) unusually severe weather. In each instance the failure to perform must be beyond the control and without the fault or negligence of the Contractor.

(d) If the failure to perform is caused by the default of a subcontractor at any tier, and if the cause of the default is beyond the control of both the Contractor and subcontractor, and without the fault or negligence of either, the Contractor shall not be liable for any excess costs for failure to perform, unless the subcontracted supplies or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery schedule.

(e) If this contract is terminated for default, the State may require the Contractor to transfer title and deliver to the State, as directed by the Procurement Officer, any (1) completed supplies, and (2) partially completed supplies and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (collectively referred to as "manufacturing materials" in this clause) that the Contractor has specifically produced or acquired for the terminated portion of this contract. Upon direction of the Procurement Officer, the Contractor shall also protect and preserve property in its possession in which the State has an interest.

(f) The State shall pay contract price for completed supplies delivered and accepted. The Contractor and Procurement Officer shall agree on the amount of payment for manufacturing materials delivered and accepted and for the protection and preservation of the property; if the parties fail to agree, the Procurement Officer shall set an amount subject to the Contractor's rights under the Disputes clause. Failure to agree will be a dispute under the Disputes clause. The State may withhold from these amounts any sum the Procurement Officer determines to be necessary to protect the State against loss because of outstanding liens or claims of former lien holders.

(g) If, after termination, it is determined that the Contractor was not in default, or that the default was excusable, the rights and obligations of the parties shall, if the contract contains a clause providing for termination for convenience of the State,

be the same as if the termination had been issued for the convenience of the State. If, in the foregoing circumstances, this contract does not contain a clause providing for termination for convenience of the State, the contract shall be adjusted to compensate for such termination and the contract modified accordingly subject to the contractor's rights under the Disputes clause.

(h) The rights and remedies of the State in this clause are in addition to any other rights and remedies provided by law or under this contract.

INDEMNIFICATION - THIRD PARTY CLAIMS (JAN 2006): Notwithstanding any limitation in this agreement, Contractor shall defend and indemnify the State of South Carolina, its instrumentalities, agencies, departments, boards, political subdivisions and all their respective officers, agents and employees against all suits or claims of any nature (and all damages, settlement payments, attorneys' fees, costs, expenses, losses or liabilities attributable thereto) by any third party which arise out of, or result in any way from, any defect in the goods or services acquired hereunder or from any act or omission of Contractor, its subcontractors, their employees, workmen, servants or agents. Contractor shall be given written notice of any suit or claim. State shall allow Contractor to defend such claim so long as such defense is diligently and capably prosecuted through legal counsel. State shall allow Contractor to settle such suit or claim so long as (i) all settlement payments are made by (and any deferred settlement payments are the sole liability of) Contractor, and (ii) the settlement imposes no non-monetary obligation upon State. State shall not admit liability or agree to a settlement or other disposition of the suit or claim, in whole or in part, without the prior written consent of Contractor. State shall reasonably cooperate with Contractor's defense of such suit or claim. The obligations of this paragraph shall survive termination of the parties' agreement.

LICENSES AND PERMITS (JAN 2006): During the term of the contract, the Contractor shall be responsible for obtaining, and maintaining in good standing, all licenses (including professional licenses, if any), permits, inspections and related fees for each or any such licenses, permits and /or inspections required by the State, county, city or other government entity or unit to accomplish the work specified in this solicitation and the contract.

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.

TERMINATION FOR CONVENIENCE (JAN 2006): (1) Termination. The Procurement Officer may terminate this contract in whole or in part, for the convenience of the State. The Procurement Officer shall give written notice of the termination to the contractor specifying the part of the contract terminated and when termination becomes effective.

(2) Contractor's Obligations. The contractor shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the contractor will stop work to the extent specified. The contractor shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated work. The Procurement Officer may direct the contractor to assign the contractor's right, title, and interest under terminated orders or subcontracts to the State. The contractor must still complete the work not terminated by the notice of termination and may incur obligations as are necessary to do so.

(3) Right to Supplies. 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. The contractor shall, upon direction of the Procurement Officer, protect and preserve property in the possession of the contractor in which the State has an interest. If the Procurement Officer does not exercise this right, the contractor shall use best efforts to sell such supplies and manufacturing materials in accordance with the standards of Uniform Commercial Code Section 2-706. Utilization of this Section in no way implies that the State has breached the contract by exercise of the Termination for Convenience Clause.

(4) Compensation. (a) The contractor shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data required by Section 11-35-1830 bearing on such claim. If the contractor fails to file a termination claim within one year from the effective date of termination, the Procurement Officer may pay the contractor, if at all, an amount set in accordance with Subparagraph (c) of this Paragraph.

(b) The Procurement Officer and the contractor may agree to a settlement and that the settlement does not exceed the total contract price plus settlement costs reduced by payments previously made by the State, the proceeds of any sales of supplies and manufacturing materials under Paragraph (3) of this clause, and the contract price of the work not terminated;

(c) Absent complete agreement under Subparagraph (b) of this Paragraph, the Procurement Officer shall pay the contractor the following amounts, provided payments agreed to under Subparagraph (b) shall not duplicate payments under this Subparagraph:

(i) contract prices for supplies or services accepted under the contract;

- (ii) costs reasonably incurred in performing the terminated portion of the work less amounts paid or to be paid for accepted supplies or services;
- (iii) reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Paragraph (2) of this clause. These costs must not include costs paid in accordance with Subparagraph (c)(ii) of this paragraph;
- (iv) any other reasonable costs that have resulted from the termination. The total sum to be paid the contractor under this Subparagraph shall not exceed the total contract price plus the reasonable settlement costs of the contractor reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under Subparagraph (b) of this Paragraph, and the contract price of work not terminated.
- (d) Contractor must demonstrate any costs claimed, agreed to, or established under Subparagraphs (b) and (c) of this Paragraph using its standard record keeping system, provided such system is consistent with any applicable Generally Accepted Accounting Principles.
- (5) Contractor's failure to include an appropriate termination for convenience clause in any subcontract shall not (i) affect the state's right to require the termination of a subcontract, or (ii) increase the obligation of the state beyond what it would have been if the subcontract had contained an appropriate clause.

VIII. BIDDING SCHEDULE / PRICE-BUSINESS PROPOSAL

Item	Qty	Unit of Measure	Description	Unit Price	Extended Price
1	1	JOB 1	LOT 1 Complete. Furnish/Install audio Visual System as specified . Supplies, Equipment and hard parts	\$	\$

Resident Vendor Preference _____
 SC End Product Preference _____
 US End Product Preference _____

Item	Qty	Unit of Measure	Description	Unit Price	Extended Price
2	1	JOB 1	LOT 2 Complete. Furnish/Install audio Visual System as specified . Installation	\$	\$

Resident Contractor Preference _____
 Resident Sub-Contractor Preference (2%) _____ Number of Sub-Contractors _____
 Resident Sub-Contractor Preference (4%) _____ Number of Sub-Contractors _____

Item	Qty	Unit of Measure	Description	Unit Price	Extended Price
3	1	JOB 2	LOT 1 Complete. Furnish/Install audio Visual System as specified . Supplies, Equipment and hard parts	\$	\$

Resident Vendor Preference _____
 SC End Product Preference _____
 US End Product Preference _____

Item	Qty	Unit of Measure	Description	Unit Price	Extended Price
4	1	JOB 2	LOT 2 Complete. Furnish/Install audio Visual System as specified . Installation	\$	\$

Resident Contractor Preference _____
 Resident Sub-Contractor Preference (2%) _____ Number of Sub-Contractors _____
 Resident Sub-Contractor Preference (4%) _____ Number of Sub-Contractors _____

Note: The commodity 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)]

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.

Total for Items 1,2,3& 4 \$ _____

IX. ATTACHMENTS TO SOLICITATION

IMPORTANT TAX NOTICE - NONRESIDENTS ONLY

Withholding Requirements for Payments to Nonresidents: Section 12-8-550 of the South Carolina Code of Laws requires persons hiring or contracting with a nonresident conducting a business or performing personal services of a temporary nature within South Carolina to withhold 2% of each payment made to the nonresident. The withholding requirement does not apply to (1) payments on purchase orders for tangible personal property when the payments are not accompanied by services to be performed in South Carolina, (2) nonresidents who are not conducting business in South Carolina, (3) nonresidents for contracts that do not exceed \$10,000 in a calendar year, or (4) payments to a nonresident who (a) registers with either the S.C. Department of Revenue or the S.C. Secretary of State and (b) submits a Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to the person letting the contract.

The withholding requirement applies to every governmental entity that uses a contract ("Using Entity"). Nonresidents should submit a separate copy of the Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to every Using Entity that makes payment to the nonresident pursuant to this solicitation. Once submitted, an affidavit is valid for all contracts between the nonresident and the Using Entity, unless the Using Entity receives notice from the Department of Revenue that the exemption from withholding has been revoked.

Section 12-8-540 requires persons making payment to a nonresident taxpayer of rentals or royalties at a rate of \$1,200.00 or more a year for the use of or for the privilege of using property in South Carolina to withhold 7% of the total of each payment made to a nonresident taxpayer who is not a corporation and 5% if the payment is made to a corporation. Contact the Department of Revenue for any applicable exceptions.

For information about other withholding requirements (e.g., employee withholding), contact the Withholding Section at the South Carolina Department of Revenue at 803-898-5383 or visit the Department's website at www.sctax.org.

This notice is for informational purposes only. This agency does not administer and has no authority over tax issues. All registration questions should be directed to the License and Registration Section at 803-898-5872 or to the South Carolina Department of Revenue, Registration Unit, Columbia, S.C. 29214-0140. All withholding questions should be directed to the Withholding Section at 803-898-5383.



STATE OF SOUTH CAROLINA
 DEPARTMENT OF REVENUE
**NONRESIDENT TAXPAYER
 REGISTRATION AFFIDAVIT
 INCOME TAX WITHHOLDING**

I-312
 (Rev. 5/7/04)
 3323

The undersigned nonresident taxpayer on oath, being first duly sworn, hereby certifies as follows:

- 1. Name of Nonresident Taxpayer: _____
- 2. Trade Name, if applicable (Doing Business As): _____
- 3. Mailing Address: _____
- 4. Federal Identification Number: _____
- 5. Hiring or Contracting with: _____
- Name: _____
- Address: _____
- Receiving Rentals or Royalties From: _____
- Name: _____
- Address: _____
- Beneficiary of Trusts and Estates: _____
- Name: _____
- Address: _____

6. I hereby certify that the above named nonresident taxpayer is currently registered with
(check the appropriate box):
 The South Carolina Secretary of State or
 The South Carolina Department of Revenue

Date of Registration: _____

7. I understand that by this registration, the above named nonresident taxpayer has agreed to be subject to the jurisdiction of the South Carolina Department of Revenue and the courts of South Carolina to determine its South Carolina tax liability, including estimated taxes, together with any related interest and penalties.

8. I understand the South Carolina Department of Revenue may revoke the withholding exemption granted under Code Sections 12-8-540 (rentals), 12-8-550 (temporarily doing business or professional services in South Carolina), and 12-8-570 (distributions to nonresident beneficiary by trusts or estates) at any time it determines that the above named nonresident taxpayer is not cooperating with the Department in the determination of its correct South Carolina tax liability.

The undersigned understands that any false statement contained herein could be punished by fine, imprisonment or both.

Recognizing that I am subject to the criminal penalties under Code Section 12-54-44 (B) (6) (a) (i), I declare that I have examined this affidavit and to the best of my knowledge and belief, it is true, correct and complete.

(Seal) _____

 Signature of Nonresident Taxpayer (Owner, Partner or Corporate Officer, when relevant) Date

If Corporate officer state title:

 (Name - Please Print)

Mail to: The company or individual you are contracting with.

OFFEROR'S CHECKLIST

AVOID COMMON BID/PROPOSAL MISTAKES

Review this checklist prior to submitting your bid/proposal.
If you fail to follow this checklist, you risk having your bid/proposal rejected.

- DO NOT INCLUDE ANY OF YOUR STANDARD CONTRACT FORMS!
- UNLESS EXPRESSLY REQUIRED, DO NOT INCLUDE ANY ADDITIONAL BOILERPLATE CONTRACT CLAUSES.
- REREAD YOUR ENTIRE BID/PROPOSAL TO MAKE SURE YOUR BID/PROPOSAL DOES NOT TAKE EXCEPTION TO ANY OF THE STATE'S MANDATORY REQUIREMENTS.
- MAKE SURE YOU HAVE PROPERLY MARKED ALL PROTECTED, CONFIDENTIAL, OR TRADE SECRET INFORMATION IN ACCORDANCE WITH THE INSTRUCTIONS ENTITLED: SUBMITTING CONFIDENTIAL INFORMATION. ***DO NOT MARK YOUR ENTIRE BID/PROPOSAL AS CONFIDENTIAL, TRADE SECRET, OR PROTECTED! DO NOT INCLUDE A LEGEND ON THE COVER STATING THAT YOUR ENTIRE RESPONSE IS NOT TO BE RELEASED!***
- HAVE YOU PROPERLY ACKNOWLEDGED ALL AMENDMENTS? INSTRUCTIONS REGARDING HOW TO ACKNOWLEDGE AN AMENDMENT SHOULD APPEAR IN ALL AMENDMENTS ISSUED.
- MAKE SURE YOUR BID/PROPOSAL INCLUDES A COPY OF THE SOLICITATION COVER PAGE. MAKE SURE THE COVER PAGE IS SIGNED BY A PERSON THAT IS AUTHORIZED TO CONTRACTUALLY BIND YOUR BUSINESS.
- MAKE SURE YOUR BID/PROPOSAL INCLUDES THE NUMBER OF COPIES REQUESTED.
- CHECK TO ENSURE YOUR BID/PROPOSAL INCLUDES EVERYTHING REQUESTED!
- IF YOU HAVE CONCERNS ABOUT THE SOLICITATION, DO NOT RAISE THOSE CONCERNS IN YOUR RESPONSE! **AFTER OPENING, IT IS TOO LATE! IF THIS SOLICITATION INCLUDES A PRE-BID/PROPOSAL CONFERENCE OR A QUESTION & ANSWER PERIOD, RAISE YOUR QUESTIONS AS A PART OF THAT PROCESS!** PLEASE SEE INSTRUCTIONS UNDER THE HEADING "SUBMISSION OF QUESTIONS" AND ANY PROVISIONS REGARDING PRE-BID/PROPOSAL CONFERENCES.

This checklist is included only as a reminder to help offerors avoid common mistakes.
Responsiveness will be evaluated against the solicitation, not against this checklist.
You do not need to return this checklist with your response.