



**WILLIAMSON COUNTY
PURCHASING DEPARTMENT
301 SE INNER LOOP - SUITE 106
GEORGETOWN, TEXAS 78626**

<http://www.williamson-county.org/Purchasing>

REQUEST FOR PROPOSAL

AUDIO-VISUAL SYSTEM FOR WILLIAMSON COUNTY ESOC FACILITY

PROPOSAL NUMBER: 12RFP00010

**PROPOSALS MUST BE RECEIVED AT OR BEFORE: MAY 30, 2012 – 3:00 PM
PROPOSALS WILL BE PUBLICLY ACKNOWLEDGED: MAY 30, 2012 – 3:00 PM**

MANDATORY PRE-PROPOSAL MEETING WEDNESDAY, MAY 9, 2012 2:00

Williamson County Purchasing is issuing a sealed Request for Proposal for Audio Visual Equipment Installation and Maintenance for the new Emergency Services Operations Center. This section addresses primary or key spaces and their associated audiovisual and technology requirements within the building:

Communications Operating Floor (Rm. 40) Emergency
Operations Center (EOC) (Rm. 39)
Expanded Emergency Operations Center (EOC) (Rm. 38) J/C Copy
Room (Rm. 30)
Executive Policy and Conference Room (Rm. 34) Briefing
Conference Room (Rm. 43)
WSCO LT. Office (Rm. 51)
WSCO SGTS. Office (Rm. 54) ARES (Rm. 57)
ITS/GIS (Rm. 75)
Communications Director (Rm. 20) Deputy Comm.
Director (Rm. 18) EM Mrg. Office (Rm. 10)
Sr. Director. Office (Rm. 8) Logistics (Rm. 53)
Quality Control Supervisor (Rm.26) Conference
Room (Rm. 19) Conference Room (Rm. 29)
Media / Press Briefing Room (Rm. 6) Exercise Room (Rm. 81)
Break Room (Rm. 79) Audiovisual Equipment (Rm. 58)

Building systems include a RF-based CATV distribution and Head End system and Paging System. The RF system will have the capability of originating programming and inserting it onto the CATV system for building-wide distribution. A non-emergency paging system includes speakers and page initiation and zoning for the public areas of the building. Both the RF and Paging systems will be housed in the Audiovisual Room.

PROPOSAL SUBMISSION

DEADLINE: Proposals must be received in the Williamson County Purchasing Department **at or before Wednesday, MAY 30, 2012 at 2:00 PM.** Proposals will be publicly acknowledged at 2:00 pm or soon thereafter in the Williamson County Purchasing Department.

METHODS: Sealed proposals may be hand-delivered or mailed to the *Williamson County Inner Loop Annex, Purchasing Department, 301 SE Inner Loop, Suite 106, Georgetown, Texas 78626.*

LOCATION DIRECTIONS: Please see page 61 of this document for a map and directions to the Williamson County Inner Loop Annex.

FAX/EMAIL: Facsimile and electronic mail transmittals **will not be accepted.**

PROPOSAL REQUIREMENTS

MANDATORY PRE-PROPOSAL MEETING: All vendors interested in submitting a proposal are **required** to attend the Mandatory pre-proposal meeting at **2:00 PM on Wednesday, MAY 9, 2012,** at the Harrell room of the J.B. and Hallie Jester Building located at 1801 E. Old Settlers Boulevard #110 Round Rock, TX 78664.

<http://maps.google.com/maps/ms?ie=UTF8&oe=UTF8&msa=0&msid=116640836425001535107.0004917bc342111c3db7e>

SUBMITTAL: One (1) original proposal, three (3) copies and the proposal on a CD should be submitted and consist of the COMPLETED AND SIGNED Proposal Form and any other required documentation. **All copies should have the same attachments as the original.**

SEALED: All proposals must be returned in a sealed envelope. Mark clearly on the outside of the envelope the proposal name, number, opening date. If an overnight delivery service is used, write the proposal name, number, opening date clearly on the outside of the delivery service envelope.

REFERENCES: Williamson County requests proposer supply with this proposal, a list of at least three (3) references where like services have been supplied by their firm. (see specifications for more detail) Include name of firm, address, telephone number, and name of representative.

LEGIBILITY: Proposals must be legible and of a quality that can be reproduced.

FORMS: All proposals must be submitted on the forms provided in this Request for Proposal. Changes to forms made by proposer may disqualify their proposal.

LATE PROPOSAL: Proposals received after submission deadline will not be opened and will be considered void

and unacceptable. Williamson County is not responsible for lateness of mail, courier service, etc.

RESPONSIBILITY: It is expected that a prospective proposer will be able to affirmatively demonstrate proposer's responsibility. A prospective proposer should be able to meet the following requirements:

- a) have adequate financial resources, or the ability to obtain such resources as required;
- b) be able to comply with the required or proposed delivery schedule;
- c) have a satisfactory record of performance;
- d) be otherwise qualified and eligible to receive an award.

Williamson County may request representation and other information sufficient to determine proposer's ability to meet these minimum standards listed above.

AWARD

ONE HUNDRED TWENTY DAYS: Awards should be made within approximately one hundred and twenty (120) days after the proposal closing date. Therefore all proposed rates or fees must be guaranteed for that period. Results will be posted on the County Website: <http://wilco-online.org/ebids/bids.aspx>

REJECTION OR ACCEPTANCE: No more than one proposal will be awarded for any item, single department or area. The convenience of having a single source for similar items will be taken into consideration together with price in determining the lowest and best proposal.

It is understood that the Commissioners Court of Williamson County reserves the right to reject any or all proposals for any or all materials and/or services covered in this Proposal request, in whole or in part, and to waive any informalities or defects in any Proposal, to declare inadequate or inappropriate any proposer failing to meet the specifications, and to accept the proposal which, in its discretion, is in the best interest of Williamson County, and all proposals submitted are subject to this reservation. Proposals may be considered irregular and rejected, among other reasons, for any of the following specific reasons:

1. Proposals received after the time limit for receiving proposals as stated in the advertisement;
2. Proposals containing any irregularities, omissions, alteration of form or terms and conditions, additions and conditions not called for, or unauthorized alternate proposals of any kind;
3. Failure to provide requested information such as but not limited to financial statements, references, signature pages, signed addenda, conflict of interest statement, etc.;
4. Unbalanced value of any items; and/or
5. Failure to comply with the enclosed specifications.

In determining the overall best Proposal, the County may exercise the following option granted to local governments under the Texas Local Government Code:

As summarized in TLGC § 271.907, this option allows the County to evaluate proposals and give preference to goods and/or services of a vendor that demonstrates that the vendor meets or exceeds any and all state or federal environmental standards, including voluntary standards, relating to air quality. If the proposal being submitted will have an effect on air quality for Williamson County (as it relates to any state, federal, or voluntary air quality standard), then the proposer should provide information in narrative form indicating the anticipated air quality impact. Proposers are expected to meet all mandated state and federal air quality standards.

CONTRACT: This Proposal, when properly accepted by Williamson County, shall constitute a contract equally binding between the successful Proposer and Williamson County.

The successful proposer may be required to sign an additional agreement containing terms necessary to ensure compliance with the proposal.

CONTRACT ADMINISTRATION: Under the Contract, Gary Wilson (or successor), Williamson County Facilities Director, (512) 943-1599, shall be the contract administrator/Owner's Designated Representative (ODR) with designated responsibility to ensure compliance with contract requirements, such as but not limited to, acceptance, inspection and delivery. The contract administrator/ODR will serve as liaison between Williamson County Commissioners' Court and the successful proposer.

CONTRACT PERIOD: The contract period starts on date of award and must be completed by March 31, 2013.

SURVIVABILITY:

All applicable agreements that were entered into between Proposer and Williamson County under the terms and conditions of the Contract shall survive the expiration or termination of the Contract for ninety (90) days.

PROPOSAL CONTACTS

Any questions, clarifications or requests for general information should be directed to the contacts listed below. Question submittals must be made via email, and are due by 5 PM CST on May 23, 2012. Every effort will be made to answer questions within 24 hours of receiving them, with an email response.

PURCHASING CONTACT:

Jonathan Harris
Assistant Purchasing Agent
301 SE Inner Loop, Suite 106
Georgetown, TX 78626
joharris@wilco.org

MISCELLANEOUS

ADDENDA AND ADDITIONAL INFORMATION:

It is the Proposer's responsibility to check with our office prior to submitting your proposal to ensure that you have a complete, up-to-date package. The Purchasing Department takes no responsibility to ensure any interested proposer has obtained any outstanding addenda or additional information. Any addenda and/or other information relevant to the RFP will be posted on the Williamson County vendor portal at the following link: <http://wilco-online.org/ebids/bids.aspx>

PIGGYBACKING:

During the term of the Agreement resulting from this Request for Proposal Williamson County would like to afford the same prices, terms and conditions to other political subdivisions or public entities. Participation in this contract resulting from this Request For Proposal is subject to a properly authorized Purchasing Cooperative Interlocal Agreement with Williamson County. Any liability created by Purchase Orders issued against this agreement shall be the sole responsibility of the governmental agency placing the order.

FOB DESTINATION: All of the items listed are to be Free On Board to final destination (FOB Destination) with all transportation charges if applicable to be included in the price, unless otherwise specified in the Request for Proposal. The title and risk of loss of the goods shall not pass to the County until receipt and acceptance takes place at the FOB point.

FIRM PRICING: The price as submitted in the proposal or vendor's Best and Final Offer must be good for a fixed period of time. Unless the Proposal expressly states otherwise, this period shall be until the end of the initial term. Proposals which do not state a fixed price, or which are subject to change without notice, will not be considered. The Court may award a Contract for the period implied or expressly stated in the best Proposal.

ESTIMATED QUANTITIES: The estimated quantity of each item listed in the notice is only an estimate -- the actual quantity to be purchased may be more or less. The County is not obligated to purchase any minimum

amount, and the County may purchase any reasonable amount greater than the estimate for the same unit price. Any limit on quantities available must be stated expressly in the proposal.

FUNDING: County intends to budget and make sufficient funds available and authorize funds for expenditure to finance the costs of this contract. Proposers understand and agree that the County's payment of amounts under this contract shall be contingent on the County receiving appropriations or other expenditure authority sufficient to allow the County, in the exercise of reasonable administrative discretion, to make payments under this contract.

SALES TAX: Williamson County is by statute, exempt from the State Sales Tax and Federal Excise Tax.

STATEMENTS: No oral statement of any person shall modify or otherwise change, or affect the terms, conditions, plans and/or specifications stated in the various Proposal Packages and/or Proposal Instructions/Requirements.

DELIVERY: The delivery time and location for the commodity and/or service covered by this proposal shall be as stated in the various proposal packages.

PURCHASE ORDER: If required by the Williamson County Purchasing Department a purchase order(s) may be generated to the successful proposer for products and/or services. If a purchase order is issued the purchase order number must appear on all itemized invoices and/or requests for payment.

RIGHT TO AUDIT: Proposer further agrees that County or its duly authorized representatives shall, until the expiration of three (3) years after final payment under this Agreement, have access to and the right to examine and photocopy any and all books, documents, papers and records of Proposer, which are directly pertinent to the services to be performed under this Agreement for the purposes of making audits, examinations, excerpts, and transcriptions. Proposer agrees that County shall have access during normal working hours to all necessary Proposer facilities and shall be provided adequate and appropriate work space in order to conduct audits in compliance with the provisions of this section. County shall give Proposer reasonable advance notice of intended audits.

PAYMENT: Payment shall be made by check from the County upon satisfactory completion and acceptance of items and submission of the Invoice to the ordering department for work specified by this Contract Document. All payments owed will be paid no later than thirty (30) days after the goods or services are received OR the date that the invoice is received by the Auditor's Office whichever is later. As a minimum, invoices shall include:

- (1) Name, address, and telephone number of Vendor and similar information in the event the payment is to be made to a different address
- (2) County contract, Purchase Order, and/or delivery order number
- (3) Identification of items or service as outlined in the contract
- (4) Quantity or quantities, applicable unit prices, total prices, and total amount
- (5) Any additional payment information which may be called for by the contract

Payment inquiries should be directed to the Auditor's Office, Accounts Payable Department: Donna Baker, (512) 943-1558.

CONFLICT OF INTEREST: No public official shall have interest in a contract, in accordance with Vernon's Texas Codes Annotated, Local Government Code Title 5, Subtitle C, Chapter 171.

As of January 1, 2006 Vendor's are responsible for complying with Local Government Code Title 5, Subtitle C, Chapter 176. Additional information may be obtained from the County website at the following link: <http://www.wilco.org/CountyDepartments/Purchasing/ConflictOfInterestDisclosure/tabid/689/language/en-US/Default.aspx>

The Williamson County Conflict of Interest Statement is located herein should be completed, signed, and submitted with your Proposal.

ETHICS: The proposer shall not accept or offer gifts or anything of value nor enter into any business arrangement with any employee, official or agent of Williamson County.

TERMINATION FOR CAUSE: In the event of breach or default of this contract or any other additional agreement containing terms necessary to ensure compliance with the Proposer's proposal, Williamson County reserves the right to enforce the performance of this contract or any additional agreement by any manner prescribed by law or deemed to be in the best interest of Williamson County. At Williamson County's sole discretion, the Proposer may be given a reasonable opportunity to cure its breach or default prior to Williamson County's termination under this provision. Williamson County's option to offer time to cure a default or breach shall, however, in no way be construed as negating the basis for termination for non-performance.

TERMINATION FOR CONVENIENCE: Williamson County may terminate this contract and/or any additional agreement containing terms necessary to ensure compliance with the Proposer's proposal, for convenience and without cause or further liability, upon thirty (30) days written notice to Proposer. In the event Williamson County exercises its right to terminate without cause, it is understood and agreed that only the amounts due to Proposer for goods, commodities and/or services provided and expenses incurred to and

including the date of termination, will be due and payable. No penalty will be assessed for Williamson County's termination for convenience.

SILENCE OF SPECIFICATIONS: The apparent silence of these specifications as to any detail or to the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.

COMPLIANCE WITH LAWS: The successful proposer shall comply with all applicable federal, state and local laws and regulations pertaining to the practice of the profession and the execution of duties under this proposal including the TEXAS HAZARD COMMUNICATION ACT and THE WILLIAMSON COUNTY HAZARD COMMUNICATION PROGRAM POLICY.

PROPRIETARY INFORMATION: All material submitted to the County becomes public property and is subject to the Texas Open Records Act upon receipt. If a Proposer does not desire proprietary information in the proposal to be disclosed, each page must be identified and marked proprietary at time of submittal. The County will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.

WORKER'S COMPENSATION

This contract contemplates services that do not require worker's compensation insurance coverage. However, if it becomes necessary that the proposer provide services related to the project such as delivering equipment or materials, an amended contract will be executed which fully complies with the Texas Labor Code and the Texas Worker's Compensation Commission requirements.

WORKERS' COMPENSATION LAW

The Texas Labor Code, §406.096, requires workers' compensation insurance coverage for all persons providing services on a building or construction project for a governmental entity. The rule requires a governmental entity to timely obtain certificates of coverage and retain them for the duration of the project. The rule also sets out the language to be included in proposal specifications and in contracts awarded by a governmental entity and the information required to be in the posted notice to employees. The rule is adopted under the Texas Labor Code, §402.061. The information provided below is a result of this rule. By submitting your proposal to the county, you are acknowledging that this rule is a part of these proposal

specifications, and that you will observe and abide by all of the requirements outlined in the rule. You are further agreeing that should your bid or proposal be accepted by the Williamson County Commissioners' Court, the necessary certificates of coverage showing workers' compensation coverage, will be provided to the following name and address, prior to beginning work:

Jonathan Harris
301 SE Inner Loop – Suite 106
Georgetown, TX 78626
(512) 943-1607
joharris@wilco.org

If you have any questions related to this ruling and/or requirement, you are encouraged to contact either the Williamson County Purchasing Department at (512) 943-1607, or you may call the Division of Workers' Compensation at (512) 804-4000.

Workers' Compensation Insurance Coverage:

A. Definitions: Certificate of coverage ("certificate")-A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Division of Workers' Compensation, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractor" in §406.096) - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

B. The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.

C. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

D. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

E. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

(1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project;

(2) no later than seven (7) days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

F. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

G. The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

H. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Division of Workers' Compensation, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

I. The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

(1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;

(2) provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;

(3) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(4) obtain from each other person with whom it contracts, and provide to the contractor:

(a) a certificate of coverage, prior to the other person beginning work on the project; and

(b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(6) notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

(7) contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.

J. By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the Division's Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

K. The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

SECTION II – INSTRUCTIONS TO PROPOSERS

A. Reference to County General Conditions

1. The County General Conditions shall be considered as forming an integral part of the Specification and shall be carefully examined before proposals for any work are submitted. Unless this Section contains statements that are more definitive or more restrictive than those contained in the County's General Conditions, this Specification shall not be interpreted as waiving or overruling any requirements expressed in the General Conditions.
2. Where General Conditions are repeated within this Section, it is to emphasize the importance thereof, or to further define requirements specific to the Work included in this Section.
3. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the County, Architect, Engineer, and agents and employees of any of them from and against claims, damages, losses and expenses.

B. Qualifications of Proposers

1. Work specified herein shall be the responsibility of a single Audiovisual Systems integration Contractor. Tenders shall document a minimum of five years experience in the fabrication, assembly and installation of systems of similar complexity as specified herein. This requirement shall apply equally to suppliers and manufacturers of the audiovisual subsystems and major components to be used on this Project.
2. The documentation shall include the names, locations, and points of contact for at least three installations of the type and complexity specified herein. Tenders shall indicate the type of each referenced system and certify that each system has performed satisfactorily in the manner intended for a period of not less than 24 months.
3. In that it is our intention that no Proposer shall be awarded contracts totaling more than 40% of the value of that Proposer's annual gross receipts from the sale of integrated audiovisual systems. The Proposers shall submit proof of their gross receipts from integrated audiovisual systems for the past three years. The Proposers should exclude the value of service contracts, rental services and sales of un-integrated equipment. In arriving at this figure, we shall consider the average receipts for all wholly owned offices for any two of the previous three years.
4. Each Proposer shall have at least one supervisory employee possessing a certificate, from either ICIA or another recognized organization or institution, providing formal training in audiovisual engineering or installation. Proof of this shall be supplied with proposal.
5. Each Proposer shall have at least one supervisory employee possessing a Bachelor or Master's degree in Electrical Engineering. Proof of this shall be supplied with proposal. Trade school degrees are not acceptable.
6. All employees used by the Contractor to install this system must be competent technicians who are experienced in the installation and interconnection of professional audiovisual systems.
7. The Contractor shall have local in-house engineering and project management capabilities consistent with the requirements of the Work.
8. The Contractor shall provide a full-time project manager who is to be present on site at all times that Work is actively in progress. This person shall be the same individual throughout the course of the Project and shall be the person responsible for system programming, preparation of Operation and Maintenance Manuals, training programs and schedules, test protocols, documentation of

system testing, maintenance of Record Documentation and coordination and scheduling of all subcontract labor (as applicable). The County reserves the right to approve the Contractor's Project Manager.

9. Each Proposer shall be currently authorized by the manufacturer of the major components of the system to sell their products and initiate warranty service on the same items. Major components of the system shall include, but not be limited to, data/video projectors, video processing equipment, audio processing equipment, power amplifiers, speakers, etc. Proof of this may be requested during the proposal process. Proof of franchise shall be in the form of a letter from the appropriate manufacturer addressed to the consultant stating that the Contractor is currently authorized to sell their products. Letters from the sales representative (rep) shall not be accepted as proof.
10. All programmers of DSP-based audio systems must be factory certified to program the DSP, and has passed the manufacturer's training course. Proof of this shall be supplied with proposal. Note that it is insufficient for the audiovisual Contractor to be certified company-wide; the individual programmers must be certified.
11. By submitting a Tender, the Contractor thereby certifies that it is qualified in all areas pertaining to the Work, either directly or indirectly. In the event the Contractor becomes unable to complete the Work in accordance with the Contract Documents, or the satisfaction of the County or its representatives, due to a lack of understanding of equipment, systems or services required by the Contract Documents, it shall be the responsibility of the Contractor to retain the services of the applicable manufacturers' representatives to expeditiously complete the Work in accordance with the Architect's and Construction Manager's construction schedule with no additional cost to the County.
12. The Contractor should maintain, or establish and maintain, a fully staffed local office including a service center capable of providing comprehensive maintenance and service to the Audiovisual Systems in this scope of work. The Contractor shall staff the service center with factory trained technicians and adequately equip the office to provide service as detailed in [Section II.F.7 \(Warranty Statement\)](#), whether or not the County elects to purchase a maintenance contract from the Contractor.
13. The Contractor shall provide factory-certified technicians to install, commission, and maintain the Work. All installing personnel shall be licensed as required by local and/or state jurisdictions.
14. The Contractor shall ensure compliance with, and have a thorough understanding of, all local codes and contract conditions pertaining to this Project.
15. The Contractor shall maintain an inventory of spare parts and other items critical to system operation and as necessary to meet the emergency service requirements of this Project within the local service center.

C. Definitions of Terms

1. The term "County" shall refer to Williams County.
2. The term "CFE" shall refer to "County Furnished Equipment", which will be provided by the County. The Contractor shall be responsible for removing this equipment from the County's premises, and re-installing and integrating this equipment in good working order as detailed herein.
3. "Supply" as used in this section means "to supply, complete with instructions, for installation by others.
4. "Provide" as used in this section means "to furnish, install and make operable".
5. "By Others" as used in this section and on the contract drawings means "not included in this subcontract, supplied as part of another subcontract".

6. "Or As Approved" as used in this section and on the contract drawings means "substitution only after written approval by the County".
7. The term "shall" is mandatory; the term "will" is informative; the term "should" is Advisory; and the term "provide" means furnish and install.

D. General Conditions

1. The County's General Conditions shall be considered as forming an integral part of the Specification, and shall be carefully examined before proposals for any work are submitted. Unless this section contains statements that are more definitive or more restrictive than those contained in the County's General Conditions, this Specification shall not be interpreted as waiving or overruling any requirements expressed in the General Conditions. These conditions shall be considered supplementary.
2. The Contractor represents that he is familiar with, and has expertise in the work of the nature and scope. The Contractor further represents that he shall provide all work as may be required to make a complete job of that which may not be fully defined in the Contract documents, and within the time constraints of the project.
3. Notify the County of any omissions, discrepancies or ambiguities in the documents so a clarification may be issued. Notify the County if exception is taken to any statement, indication or criterion in the proposal and/or contract documents.
4. Obtain all other contract documents, including architectural, structural, mechanical and electrical, and check to ensure there are no conflicts with work of this section. Notify the County of all such conflicts, with any suggested alteration to resolve conflicts.
5. Submit all above notifications in writing to the County no less than 14 days prior to proposal opening date. Lack of notification shall be understood to indicate acceptance of all requirements of the contract documents, and any future claims shall be rejected.
6. Interpretations or correction to the contract documents shall be issued by Addendum. Interpretations or corrections given by any other method will not be binding.
7. Because drawings are, in general, diagrammatic, the Contractor shall coordinate all installations with the County and the Construction Manager, based on the field conditions.

E. Proposer's Conference

There shall be a Pre-Proposal Conference held at the Williamson County Annex located in the J.B. and Hallie Jester Building at 1801 E. Old Settlers Boulevard #110 Round Rock, TX 78664 during the proposal period. **Attendance at this conference is mandatory**; non-participants will be disqualified, and will be required to return their proposal package.

F. Information to Be Submitted With the Proposal Return

1. **Equipment Costs**
The proposal return shall include detailed schedules of all equipment to be supplied. Unit pricing will be established for each piece of equipment on the Equipment Schedule. Equipment Schedules are provided herein under the Detailed Specifications. Copies of these schedules shall be used, with the appropriate price information added.
 - a. The County is not responsible for any formulas that may be resident in the schedule. The results of any calculations in the schedule are the sole responsibility of the Proposer.

- b. The design intent of the system may require equipment not listed in the attached schedule, but are indicated elsewhere in the contract documents, in either the drawings or the written specification. It is the sole responsibility of the Proposer to reconcile the contract documents with the equipment and labor required for this project.
- c. No claims for additional equipment required will be allowed, if the sole reason for such claims is that the equipment was not listed in the attached schedule. It is the sole responsibility of the Proposer to verify the completeness of the Equipment Schedule.
 - i. If there is a conflict between the plans and quantities listed on any document, the Contractor shall furnish and install the larger quantity.
 - ii. It is the sole responsibility of the Proposer to verify the completeness of the Equipment Schedule.
 - iii. The Contractor shall notify the County of all discrepancies in the documents. Any discrepancies not identified during the proposal process shall be the sole responsibility of the Contractor.
- d. Equipment costs shall reflect all required modifications and accessories. All substitutions for specified equipment shall be listed and individually priced on a separate page.
- e. Equipment totals from each Equipment Schedule shall be entered in the Master Recapitulation of Costs form as provided.
 - i. The Equipment Schedule shall be used for the proposal returns. Any proposals not submitted on the Schedule will not be considered.
 - ii. The non-equipment categories listed in this section below shall be used; no categories will be added.
 - iii. Any additional equipment required by the design intent of the system, but not listed in the equipment schedule, may be entered on a separate sheet, and totaled in the Master Recapitulation of Costs (see Summary Tab on Audio-Visual Schedule Attachment A). Alternatively, these items may be added to the base schedule, as long as the item is in bold type.

2. **Non-Equipment Costs**

Non-equipment costs shall be furnished separately on the Master Recapitulation of Costs form. These non-equipment costs shall be detailed for each of the following categories:

- a. **Engineering:** Including all required designs, drawings, run sheets, instruction manuals, etc.
- b. **Project Management:** Includes all responsibilities as outlined in [Section III.B.\(ProjectManagement\)](#), as well as all meetings, scheduling of personnel, coordination with trades, etc.
- c. **Pre-installation:** Including all fabrication, modification, assembly, rack wiring, etc., performed on the Contractor's premises.
- d. **Installation:** Including all on-site installation and wiring, coordination and supervision, testing, checkout, County training, etc. performed on the County's premises.
- e. **Testing and Warranty Support:** Including all cost for equipment and system test as outlined elsewhere in the specification.
- f. **County Training and Warranty Support:** Including all cost associated with providing training for the County and As-Built documentation as outlined latter in this specification.

- g. General and Administrative: Including all G & A expenses, shipping, insurance, and guarantees.
3. General Information on Your Firm
- Should include the following information:
- a. The number of years in business.
 - b. Resumes of key personnel. Resumes must reflect skills relating to audio, video, teleconferencing (audio and video), integrated control systems, programming, project management, etc.
 - c. Locations of all currently staffed and operational offices, complete with the number of technical support personnel in each office.
4. Project References
- These should include:
- a. End User contact name, with current telephone number and e-mail address.
 - b. Functional description of the project.
 - c. Project scope and approximate dollar amount
 - d. Completion date.
- Note: All projects identified must be verifiable, and have been completed within the last twenty four (24) months.
5. List of products for which the firm is a direct dealer, including the duration of the dealership and the extent of any factory training. This list should include, but not limited to:
- a. Large screen display systems, including CRT and solid state devices, including LCD, DLP and DMD based systems.
 - b. Computer controlled audio systems.
 - c. Integrated control systems.
 - d. Video Teleconference Systems
6. List of technical products that the firm has installed and serviced, but are not a direct dealer for.
- Note: Proposals without this information will be disqualified.***
7. Warranty Statement
- a. To maintain certain manufacturer's warranties, said equipment must be installed, aligned and serviced by those installers authorized by said manufacturer to perform those duties. If the Contractor is not authorized by said manufacturer, it is his sole responsibility to make the appropriate arrangements and bear all cost and consequences thereof.
 - b. The Proposer shall include a statement of warranty on the entire system and on the individual pieces of equipment. The system warranty shall be for a minimum of 365 days from the date of system acceptance by the County. This warranty shall obligate the Contractor to provide all equipment, material, and labor at no charge to the County, during the warranty period, in the event of a system or equipment malfunction.
 - c. In cases where the manufacturer's warranty period is greater than twelve months, the Contractor must be prepared to honor that warranty for the full extent of the manufacturer's warranty period. This shall exclude any labor costs incurred by the Contractor removing and re-installing the defective items for the full duration of the manufacturer's warranty period.

- d. In cases where the manufacturer's warranty period is less than 12 months, the Contractor is liable for defects in the item up to, but not exceeding, the twelve-month warranty period on any Contractor provided items.
 - e. The system warranty shall include a minimum of four (4) preventative maintenance visits, to perform operation checks of the equipment, review generated log files, to clean recording heads, screens, projector lenses and other critical surfaces, to lubricate moving parts as recommended by the respective manufacturers and to adjust and align projector to maintain optimum registration and focus.
 - f. All manufacturers' equipment warranties shall be activated in the County's name and shall commence on the date of system acceptance. In the case of Contractor-modified equipment, the manufacturer's warranty is normally voided. In such cases, the Contractor shall provide the County with a warranty equivalent to that of the original manufacturer.
 - g. Telephone Support
The Audiovisual Contractor shall respond via telephone within two (2) hours to any request for service. This first contact should outline the nature of the problem or functional anomaly. The Contractor shall make available an individual knowledgeable with the installed system, and who can address specific system issues described by the system operators.
 - h. On-Site Support
The system warranty shall be an "on-site" warranty, with a twenty-four (24) hour response time. The Proposer shall include alternate pricing for four (4) hour response time. Telephone support shall be available between normal business hours, Monday through Friday.
8. Service Contract
- a. The Proposer shall offer a separate annual service contract by pricing for five (5) years on a year-to-year basis, covering all installed systems. This service contract shall cover a minimum of four (4) visits per year, at regular intervals, to perform operation checks of the equipment, to clean recording heads, screens, projector lenses and other critical surfaces, to lubricate moving parts as recommended by the respective manufacturers and to adjust and align projector to maintain optimum registration and focus. The service contract shall commence immediately after expiration of the warranty period. (A per item price for the service contract shall be submitted with the proposal).
 - b. The Proposer shall also submit separate costs for other emergency "on-call" service visits and an "in-shop" hourly rate for repair and maintenance work.
 - c. The costs for this service contract shall not be commingled with the costs for the systems base proposal.
 - d. All repairs required following Substantial Completion of the rooms shall be scheduled at the User's convenience. In no case will the User allow such repairs to interrupt or delay a regularly scheduled event. Notwithstanding the above, all repairs within the regular period of usage must be completed within 24 hours of notification of a failure; 2nd and /or 3rd shift warranty repair activity should be anticipated.
9. Schedule of Implementation
- a. The Proposer shall obtain from the Construction Manager projected dates when the relevant areas will be available for the on-site installation.
 - b. The Proposer shall submit a scheduling plan with the proposal return, indicating the various pertinent terminal dates after award of contract for

completion of design, pre-installation work, on-site installation work, and testing and acceptance on a “per phase” basis. This shall be in the form of a Gantt chart, and be consistent with the project schedule.

10. Alternate Equipment

- a. All proposals shall be submitted based on the specified equipment. The Proposer may propose alternate equipment. However, all such proposals shall be submitted separately and will be identified as “alternates” with equipment costs shown separate and apart from the costs of the equipment “as specified”.
- b. Proposals for alternate equipment will receive careful and equitable consideration if the differences do not depart from the overall intent of the design and operation of the system, and are in the best interests of the County. All proposed alternate equipment shall work with the existing infrastructure.
- c. All such proposals for alternate equipment shall be accompanied by full technical information, “cuts” and specifications for the equipment so proposed. The Proposer shall identify the substantive differences between the alternate and the specified equipment.

11. Exceptions and Proposed Modifications

- a. Should the Proposer have recommendations, which will enhance the performance of the system, or reduce costs without loss of performance, reliability and durability, such recommendations shall be included with the proposal submission. All suggestions that are of value to the County will be taken into consideration in the evaluation of the proposal returns. All such proposals shall be made as “alternates”, with the appropriate cost modifications shown separate and apart from the costs of the system “as specified”. Pricing shall be on a line-item basis.
- b. Any and all exceptions to these specifications and related drawings must be made with the proposal submission. In the absence of exceptions, these specifications and related drawings shall be binding in letter and intent on the successful Proposer. It will further be assumed that the Proposer has examined the design and specifications in detail, and is prepared to take full responsibility for the performance of the complete installation as designed and specified.

12. Sub-Contract Information

- a. If the Proposer proposes to sub-contract portions of the work, as provided for under [Section II.G \(Sub-Contract Information\)](#), such sub-contractors shall be identified and their responsibilities and qualifications detailed in the Proposer’s proposal submission. The work as performed by a sub-contractor shall be considered as part of the Contractor’s responsibility, with that work as part of the Contractor’s statement. Any contract arising as a direct result of these proceedings shall be binding on the successful Proposer.
- b. The Contractor must identify the Electrical Contractor who will be performing the Electrical Installation.

G. Sub-Contract Information

1. If the Proposer proposes to sub-contract the installation and wiring, or other portions of the work, the Proposer shall provide direct supervision of the sub- contracted work.
2. Because of the complexity of the systems, the supervision of such sub-contracted work cannot be intermittent, but shall be continuous during the installation.
3. If it is the intention of the Proposer to “joint-venture” with one or more other

Contractors, then this must be clearly identified in the proposal return.

- a. The Contractor returning the proposal will be considered as the prime in respect of this, and will hold full responsibility for the performance of the members of their team, including themselves and all other sub-contractors engaged in the performance of this contract.
 - b. In the case of joint ventures of multiple firms, the firms must demonstrate that the joint venture has existed prior to this project, and has performed as a joint venture on at least one or more projects similar in size and scope to this project.
4. No sub-contract will be permitted for the Contractor's responsibilities, as herein defined, unless specifically identified in the proposal submission and approved by the County.
 5. The Contractor shall have sole responsibility for the satisfactory implementation of each system, even though the Contractor may have sub-contracted a portion of the installation or had certain manufacturers install their own equipment.

H. Specification Drawings (Attachment B)

All drawings referred to herein are furnished with and become an integral part of this specification. These drawings and specifications shall remain the property of the County and shall be returned by all unsuccessful Proposers, within 10 days after formal notification.

I. Master Quotations

During the preparation of the specification documents, master quotations for certain sub-systems have been developed with the major vendors. This is typical for control systems and certain audio and video sub-systems that cannot be commingled with other vendors. Please be aware of the following:

1. While every effort has been made to ensure that the master quotation is complete, it is the sole responsibility of the Proposer and Contractor to ensure that the quotation is complete.
2. Unless otherwise noted, complete systems from competing manufacturers may be provided, pursuant to [Section II-D-F.10](#) relating to Alternate Equipment and [Section II-D-F.11](#) relating to Exceptions and Proposed Modifications.
3. The Control System specifications are based on a Crestron control system. A master quotation has also been developed with AMX.
 - a. Provide alternate pricing (add/deduct) for alternate control system.

J. Specification Information Requests

1. Any requests for clarification, substitution, or changes in these specifications or drawings shall be directed to:
Jonathan Harris
Williamson County Deputy Purchasing Agent
301 SE Inner Loop, Suite 106
Georgetown, TX 78626
email: joharris@wilco.org
 - a. These information requests must be received no later than five (5) days before the proposal closing date. All requests for information must be in writing.
 - b. Email is the preferred method of communication. The Proposers should confirm with their internal IT departments that all email addresses have been white-listed.
2. Information requests and answers of a general nature will be published, and made available to all Proposers.

K. Investigation of Contractual and Scheduling Questions

1. It shall be the responsibility of the Proposer to investigate all potential contract and scheduling questions, and to guarantee compliance with all requirements and regulations in effect on the job site.
2. Any potential problems in this respect shall be identified in the proposal return. The Contractor shall comply with all local state and federal regulations.

L. Award of Contract

1. A single award of contract will be made for all systems as detailed in this specification. The quoted prices shall remain firm for a minimum of ninety (90) days.

(End of Section II)

A. Supplemental General Conditions

1. The Contractor shall be responsible for delivering a turnkey system to the County.
2. The Contractor represents that he is familiar with, and has expertise in the Work of this nature and scope. The Contractor further agrees that he shall provide all Work as may be required to make a complete job of that which may not be fully defined in the Contract documents. The NIC and CFE equipment and materials are specifically exempt from this requirement.
3. The Contractor shall comply with all of the legal regulations, including OSHA safety regulations and regulations of municipal, city, local, and other government agencies having jurisdiction concerning the Work of the Contractor. The Contractor shall give all notices and comply with all laws, ordinances, codes, rules, and regulations bearing on the conduct of the Work. If the Contractor performs any Work, which is contrary to such laws, ordinances, codes, rules and regulations, he shall make all changes to comply therewith and bear all costs arising there from.
4. Because drawings are, in general, diagrammatic, the Contractor shall coordinate all installations with the County, based on the field conditions.
5. All permits required for any part of the Contractor's Work shall be procured and paid for by the Contractor. The Contractor shall determine all permits required and transmit this information to the County.
6. The Contractor warrants that he and his/her subcontractors are licensed by the State and as required by local ordinances.
7. The Contractor must state if he intends to utilize a sub-contractor, and provide the sub-contractor's name and address. The sub-contractor shall comply with all the same rules, regulations, laws, codes, licenses, etc. as required by the Contractor and as specified herein. The County reserves the right to approve or disapprove any sub-contractor proposed by Contractor.
8. Prior to ordering equipment, the Contractor shall field verify all conditions, with respect to dimensions and placement of equipment. Any and all discrepancies from the contract documents shall be brought to the attention of the County.
9. The Contractor shall furnish software necessary to operate software controlled audiovisual sub-systems e.g. remote control system. This software shall, in every case, be provided by the manufacturer(s) of the sub-system, and shall be installed and tested prior to delivery of equipment at site.
10. The Contractor shall generate all shop drawings and information for the complete installation and wiring of the system. The Contractor shall provide (or sub-contract for) the on-site installation and wiring, and shall provide on-going supervision and coordination during the implementation phase; see [Section II.F.12\(Sub-ContractInformation\)](#).
11. The Contractor shall be responsible for the initial adjustment of the systems as herein prescribed and shall provide all test equipment for the system checkout and acceptance tests. Contractor shall provide on-the-job training in the operation and maintenance of the systems for personnel designated by the County.
12. The Contractor shall be responsible to provide and maintain his/her own storage facility. If this storage facility is required to be on-site, it shall be the Contractor's responsibility to coordinate the size and spatial requirements with the County and/or their representatives. The Contractor shall assume full responsibility for both their storage facility and all contents therein, unless otherwise indicated by the County.
13. The Contractor shall be responsible to supply, maintain and secure all tools, test equipment (including any computer equipment) and safety equipment. Neither

the County, nor any agent of the County, will accept any responsibility for the loss, theft, disappearance of, or damage to, the equipment, tools, materials or supplies of the Contractor, its employee's agents or sub-contractors.

14. The Contractor shall utilize good housekeeping practice with respect to his/her Work including cleanup of all dirt and debris created by the Contractor during his installation operations on a daily basis.
 15. The Contractor shall at his own expense collect and dispose of packing and debris in at the end of each working shift.
 16. The Contractor shall provide protection necessary to safeguard his/her own Work from damage by his/her own operations and others. Unless the Contractor proves to the County's satisfaction that their Work has been damaged by others, the Contractor shall, at his/her own cost and expense, promptly repair, adjust and clean all defective installations as shown on the punch list prepared by the County.
 17. All of the Contractor's Work shall be tested and inspected by all authorities having jurisdiction and in accordance with all Specifications. The Contractor shall coordinate and cooperate fully and shall provide at no additional cost to the County, manpower, blueprints, facilities, scaffolds, etc. to reasonably assist the inspectors.
 18. The Contractor shall examine the site and the Contract Documents and review with the County the designated areas of access, delivery, and storage for the Contractor's use. The Contractor agrees that such areas are satisfactory and sufficient for his/her needs in the prosecution of his Work in conformance with the terms of this Contract.
 19. The County reserves the right to furnish any materials necessary for the Project.
- B. **Project Management**
1. After the award of contract, the Contractor shall provide to the County, as a part of the prefabrication submittal, the name of the Project Manager that will provide all duties and responsibilities as specified herein, during the term of the project.
 2. The County reserves the right to approve or disapprove the individual that shall be designated as the Project Manager.
 3. If at any point during the term of the project, and for any reason, the Project Manager is replaced, it shall be the responsibility of the Contractor to submit such information to the County expeditiously for approval prior to any position replacement.
 4. The Project Manager shall maintain the ability of making all managerial decisions on behalf of the Contractor on a day-to-day basis, and shall retain the authority of accepting notices of deduction, inspection reports, payment schedules and any other project related correspondence on behalf of the Contractor.
 5. The Project Manager shall schedule and attend weekly project management¹ meetings, during which time all system related issues are discussed, scheduled, confirmed and/or resolved.
 6. The Project Manager will supervise the attendance of the Contractor's personnel at any safety training and/or meetings as mandated by the Construction Manager.

7. The project management meetings shall continue weekly until such time that the Contractor and County schedule otherwise. The scheduling of the project management-meetings shall be approved by the County prior to commencement.
8. The Project Manager shall be available during normal business hours (8:00 a.m. to 5:00 p.m.) within two (2) hours by phone during the term of the project.
9. In the event that the Project Manager is not available within the allotted time frame, the Contractor may designate another employee to temporarily act as the Project Manager in all correspondence with the County.
10. The Contractor shall ensure that any individual temporarily assuming the duties of the Project Manager is at equal or higher level in the Contractor's managerial hierarchy.
11. Upon notification by the County, of any project related installation issue, or issue that may contradict the system specifications as stated herein, the Project Manager shall respond to such issue, verbally and/or in writing within an eight (8) hour period.
12. Responses to such issues as stated above, shall include a clear understanding of the issue, along with a tentative plan of action, reflecting milestones and/or deadlines to resolve the issue.
13. The Project Manager shall follow-up their initial response with a written response to the issue within twenty-four (24) hours of identification of the issue.
14. The Project Manager shall provide a Gantt chart showing the projected project milestones and update the Gantt chart on a weekly basis to reflect the status of each key milestone as the project installation progresses.
15. As the system installation progresses, the Project Manager shall be capable of discussing any or all of the above mentioned items at the request of the County, and shall address each item, as it relates to the current status of the system installation, at the weekly project management meetings.
16. The Audiovisual Consultant shall be copied on all correspondence.

C. Quality Assurance

1. All electrical equipment and materials shall have the listing of the Underwriters' Laboratories, Inc., and shall bear the labels attesting to UL listing, and types approved by the authorities having jurisdiction.
2. All equipment shall be equal to or exceed the minimum requirements of TIA/EIA, IEEE, ASME, ANSI and Underwriters' Laboratories.
3. The Contractor, upon receiving notice from County that the Contractor has furnished inferior, improper or unsound Work or materials (including equipment) (whether worked or unworked), or Work or materials at variance with that which is specified, will, within twenty-four (24) hours, proceed to remove such Work or materials and make good all other Work or materials damaged thereby, and, at the option of the County, the Contractor shall immediately replace such Work or materials with Work or materials as specified. The removal, replacement and repair shall be performed at such times and with manpower sufficient, in the judgment of the County, so as not to avoid disturbance to occupants, or other ongoing work.
4. If the Contractor does not remove such unsound Work within a reasonable time, the County may remove it and may store the material at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within ten (10) days' time thereafter, the County may, upon ten (10) days' written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor and all expenses of the sale.
5. The County shall have the authority at all times, until Final Completion and

acceptance of the Work, to inspect and reject Work and materials which in its judgment are not in conformity with the Drawings and Specifications, and its decision in regard to character and value of Work shall be final and conclusive on both contracting parties. If the County permits said Work or materials to remain, the County shall be allowed the difference in value or shall at its election have the right to have said Work or materials repaired or replaced, as well as the damage caused thereby, at the expense of the Contractor, at any time within one year after the completion of the entire project, or within such longer period as may be covered by any guaranty; and neither payments made to the Contractor, nor any other acts of the County, shall be construed as evidence of acceptance, waiver or estoppel.

6. Any expense incurred by the County in connection with the foregoing shall be borne by the Contractor, and the County may withhold money due to the Contractor or recover money already paid to the Contractor, to the extent of such expense.

D. Status Reports

1. After the award of contract, the Contractor is responsible for providing weekly field and status reports outlining his progress on the project. These reports should include information on the work completed during the week, the work to be completed during the upcoming week and any potential scheduling issues. The following should be included in this Status Report:
 - a. Expected date of project submittals, including equipment cut sheets, shop drawings, control system interface designs, etc.
 - b. Anticipated completion date and percentage complete of in-house rack fabrication and testing, prior to shipping to the job-site.

Note: Representative members of the County shall inspect the racks prior to shipping to the job site.
 - c. Anticipated completion date and percentage complete of control system programming, prior to shipping to the job-site.
 - d. Schedule and percentage complete of on -site wiring and supervision.
 - e. Schedule and percentage complete of on-site installation.
 - f. Schedule for County training.
 - g. Schedule for systems checkout and turnover to the County.
2. The field and status reports are to be e-mailed to the County weekly by 3:00pm on Friday.
3. Field and status reports are to commence the second week following contract signing and conclude with all the audiovisual punch-list items are complete.

E. Not In Contract (NIC)

Certain equipment and materials will be provided and installed by others. Unless otherwise indicated in these specifications, or on the related drawings, these will include the following:

1. Conduit, room lighting fixtures, dimmers, power receptacle outlets, and interconnecting wiring for these circuits, except as specified or indicated herein.
2. Electrical breaker panels required to power the audiovisual and television equipment.
3. Electrical boxes, junction boxes, pull boxes and conduit as defined in the electrical contract drawings and specifications.
4. All audiovisual floor boxes.

Note: Floor box plates for audiovisual components, wiring, termination and all internal components are included in the Contractor's scope of work. The Contractor will coordinate with other trades sharing floor box access.

5. Structural work, wall openings, platforms, railings, stairs, fire prevention and safety devices, rough and finished trim, painting and patching, drapes, carpets, floor coverings, computer floors, glazing, acoustical treatments, and heating, ventilating, and air conditioning systems.
6. Telecommunications cabling as outlined in applicable specification section.
7. RF and CATV (television) acquisition systems and any required set-top boxes.
8. Lighting dimmer lighting systems.
9. All front projection screens.
10. Window drapery/shade systems.
11. LAN connections.
12. Telephone jacks and special telecom outlets, (switch 56, ISDN, T1).
13. Moveable furniture, desks, and chairs, except as specified herein.
14. Shanty space/Field Office space shall be provided by the Construction Manager.

F. County Furnished Equipment

1. Coordinate the integration of existing components or new components provided by the County into the specified systems. Provide required mounting hardware, rack panels, cable, connectors, etc. to ensure proper operation of the CFE systems.

G. Quality of Materials and Equipment

1. All materials and equipment supplied by the Contractor shall be new and shall meet or exceed the latest published specification of the manufacturer in all respects.
2. The Contractor shall supply the latest model available at the time of order placement for each piece of equipment.
3. All equipment shall be UL listed, or equivalent.

H. Codes, Permits and Inspections

1. All audiovisual work shall meet or exceed the latest requirements of all National, State, City, County, Municipal and other authorities having jurisdiction over the audiovisual work and the project.
2. Any portion of the audiovisual work which is not subject to the requirements of an electrical code, published by a specific authority having jurisdiction over such work, shall be governed by the National Electrical Code and any and all applicable sections of the National Fire Code, as published by the National Fire Protection Association.
3. Installation procedures, methods and conditions shall be in compliance with the latest requirements of the Federal Occupational Safety and Health Administration (OSHA), the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA).
4. The Contractor is responsible for all costs incurred to meet these codes and conditions.

I. Conformance with Existing Systems

1. Many of the systems and facilities in this scope of work are similar in nature to existing systems and facilities. Wherever possible, in order to share existing

resources and minimize training requirements, the required hardware, system functionality and system flow should conform to the existing systems. This includes, but is not limited to, the following:

- a. Commonality in equipment.
 - b. Commonality in operation.
 - c. Commonality in room control layout.
2. It is the responsibility of the Contractor to inspect the existing systems, prior to beginning design and fabrication, to ensure that the design is consistent with the existing systems.

J. Contractor's Documentation

1. Prior to fabrication, the Contractor shall submit to the County, for approval, all designs pertaining to the systems.
2. All equipment submittals shall include:
 - a. Manufacturer and Model Number.
 - b. Space where used.
 - c. Specification sub-section and/or item number in Equipment Schedule. This shall be in table form in the submittal binder.
3. Drawing submittals shall be on reproducible media and CD-ROM. These designs include, but are not limited to, the following:
 - a. Shop drawings shall be submitted on a consistent media size commensurate with standard architectural practices and with the project.
 - b. Assorted drawings on letter or ledger size media will not be deemed acceptable.
 - c. Complete system construction and point to point wiring schematic drawings, including all component values, and showing complete letter and number identification of all wire and cable as well as jacks, terminals and connectors. All connections are to be shown; a detail sheet with "typical" connection diagrams is not acceptable.
 - d. All control system pages, both touch panel based and control computer based.

Note: All submittals shall be transmitted to the County and the Consultant independently. Explicit approval by the County is required for any systems and/or points of connectivity that connect with the County's network, and/or are carried on the network infrastructure.

- e. The configuration files for all DSP-based audio systems shall be forwarded in their native format to the Consultant for evaluation. They shall also be forwarded to the manufacturer for their comments.
- f. All panels, plates, and designation strips, including details relating to terminology, engraving finish and color.
- g. All custom designed consoles, tables, carts, support bases, and shelves.
- h. Schematic drawings of all custom components, assemblies and circuitry, including wall and/or floor plates.
- i. All equipment modifications.
- j. Run sheets or field wiring details.
- k. Patch panel assignment layout drawings.
- l. Front mechanical drawings of each equipment rack.

- m. All items of equipment, whether a stock manufactured item or custom-built item, shall be supported by complete and detailed schematic drawings and replacement parts lists. No “black boxes” or unidentified components shall be acceptable under this specification.
 - n. Verification of the focal lengths of projection lenses to achieve the specified image sizes.
 - o. Shop Drawings shall also be submitted electronically.
 - i. Drawings shall be submitted in AutoCAD 2004 format.
 - ii. All external references (X-REF’S), fonts and image shall be included.
 - iii. Portable Document Format (PDF) files may also be submitted as sheet sets.
4. At the completion of the installation, the Contractor shall provide two (2) copies each of the following:
- a. Test results, in “spreadsheet” format, of electrical audio and/or video performance testing for all systems end-to-end in every room and/or between rooms as applicable. These test results must include a gain structure chart showing measured levels at each and every gain point through the system. This will be submitted as the reference setup for the system.
Note that until these test results are provided, no other testing (functional or otherwise) shall be performed. If any anomalies in system performance are detected, the Contractor shall correct these before performing any other tests.
 - b. Equipment manufacturer’s operation manuals for each piece of equipment.
 - c. “As-built” drawings for every item indicated in [Section III.J \(Contractor's Documentation\)](#). A final, approved copy shall be placed in a metal pocket mounted on the inside of the rear door of the rack.
 - d. System functional block drawing identical to the SM&W specification drawing with the addition of all input and output circuit cable and terminal block numbers as well as all jack field circuit I.D. designations. A copy of this drawing shall be framed in protective plastic and mounted near the equipment racks.
Note: All drawing submittals must be in PDF format.
 - e. A System Operation and Maintenance Manual. This manual shall be produced by the Contractor especially for the systems detailed herein. The “Operation” section shall describe all typical procedures necessary to activate each system to provide for the functional requirements as listed under the Detailed Specifications.
 - i. The reader of this manual shall be assumed to be technically competent, but unfamiliar with this particular facility. It is estimated that this manual will require a minimum of thirty (30) pages. The Operations Manual shall include:
 - a. A list of equipment, ordered by room with serial number and manufacturer’s warranty periods.
 - b. Written instructions on how to operate the system within the control system environment. This shall include button-by-button functionality.
 - c. Manufacturers’ operation instructions for each piece of equipment in their entirety. This shall be tabbed alphabetically.

- d. Additionally, the Contractor shall provide a single page of basic operating instructions for each room type, and other equipped spaces with audiovisual equipment.
- ii. The "Maintenance" section shall provide a recommended maintenance schedule with reference to the applicable pages in the manufacturer's maintenance manuals.
 - a. Where inadequate information is provided by the manufacturer, the Contractor shall provide the information necessary for proper maintenance.
 - b. This shall be tabbed in a similar manner as the Operations Manual.

5. Software Documentation and Obligations

- a. Title to, and exclusive ownership of, any software commissioned under this contract shall at all times remain with the County. All source code becomes the exclusive property of the County.
- b. At the time of submitting the System to the Acceptance Tests, the Contractor will furnish media which will contain:
 - i. All source code pertaining to the System, where there is custom code.
 - ii. Instructions and full description of equipment required which will enable the County to create executable programs from source code.
 - iii. All executable programs.
 - iv. Instructions and full description of equipment required which will enable the County to prepare operating systems and other third party Software as licensed hereunder for use.
 - v. All source files for Web pages.
 - vi. Graphic files for all interface screens, if any.
 - vii. For any Software as purchased hereunder not developed by the Contractor all information, data, codes and documentation distributed to the Contractor and otherwise available to the Contractor.

Note: When a third party software developer has been employed and sub-contracted by the Contractor, the Contractor must demonstrate best effort in fulfilling these requirements. This best effort will be demonstrated to the County by copies of correspondence between the Contractor and the third party stating the Contractor's request and giving the third party statement of compliance or otherwise.

- viii. One copy of the above documentation will be retained by the County.
- ix. One copy shall be delivered to the Consultant prior to the System Acceptance Tests. This copy will be retained by the Consultant.
- c. An acceptance test will be performed for a ten (10) day period, during which this changed or additional code must perform accurately and error free. During this acceptance test, if the County discovers an error in the coding or the logic of the software as supplied under the terms of this Agreement to the County, which prevents the system from performing in

accordance with the performance requirements of this Specification, the County shall notify the Contractor of the error and upon request the Contractor will deliver to the County its analysis thereof accompanied by complete program, module, data listings and sample runs exhibiting and rectifying the error.

Note: No program resident in a control system shall be overwritten until a back-up of the resident program is made.

- d. The County shall assist the Contractor in its performance under the terms of this Specification by allowing the Contractor to use the County's System, data listings and sample runs to reproduce and/or correct the reported error and to install and check updated versions of the delivered Software licensed hereunder.
- e. The Contractor represents and warrants that it is the County or Licensee of the supplied Software as licensed hereunder and has the right to permit the County to use the same. The County shall not be liable for any incidental or consequential damages, whether foreseeable or not, even if the County has been advised of the possibility of such damages, resulting from or in any way connected with the use of the supplied Software as licensed hereunder.
- f. Subsequent to system acceptance, source code changes and/or additional programming, whether requested by the client or performed by the vendor, will be warranted by the vendor for a period of one (1) year, with the vendor responsible for the diagnosis and repair. The vendor shall ensure that the current program is saved to a floppy diskette, and stored as outlined.
- g. The Contractor shall defend any suit or proceeding brought against the County, and shall pay any adverse judgment entered therein, so far as such suit or proceeding is based upon a claim that the use of the Software as provided hereunder and furnished by the Contractor under this Agreement constitutes infringement of any copyright or patent, provided the County is promptly notified in writing and given authority, information and assistance (at the Contractor's expense) for the defense of same. The Contractor shall, at its own expense and at its option, procure for the County the right to continue to use the said Software as licensed hereunder, or to replace the same with a non-infringing release. The foregoing shall not be construed to include any agreement by the County to accept any liability whatsoever in respect to copyrights or patents for inventions including more than the Software as purchased and furnished hereunder, or in respect of copyrights or patents for methods and processes to be carried out with the aid of said Software as licensed hereunder, except those which are inherent in said System as furnished.
- h. The foregoing states the entire liability of the Contractor with regard to copyright and patent infringement as related to the delivered Software as licensed hereunder.
- i. Provided that the County has obtained, under the terms of this Specification or subsequent agreements, all items, such as but not limited to source code and compilers, required to modify the Software, the Contractor hereby grants the County the right to modify and to enhance the Software as supplied and licensed under the terms of this Agreement at its own risks and expense and further agrees such modifications and enhancements developed by the County to be the property of the County without prejudice to the rights of the Contractor to the basic Software. The County furthermore is under no obligation to notify the Contractor of any such modifications and enhancements.
- j. Any new version of Software as provided hereunder and delivered to the

County by the Contractor during the warranty period, under the terms of this Specification which is deemed, and advised so by the Contractor, to rectify a failure which occurred during the operations of an event, will cause the warranty period for the Software as provided hereunder to restart.

- k. The Contractor warrants that all contracts, contacts and arrangements between the Contractor and all third party Software suppliers providing Software as licensed hereunder will transfer to the County with the successful completion of the Final Acceptance. The County will inform the Contractor of all its dealings with third party Software suppliers supplying software as licensed hereunder for the duration of the warranty period.
- l. The Contractor warrants that at no charge to the County it will reply to verbal queries from the County provided that:
 - i. The queries relate to the System provided by the Contractor pursuant to this Specification.
 - ii. The query is raised by County's staff or an authorized agent of the County.
 - iii. The query is during the Contractor's normal business hours.
 - iv. The County's representative or employee has attended training in the use of the System as provided by the Contractor, or is otherwise qualified.
- m. The Proposer shall also offer an annual "Software Maintenance" contract. This shall cover all software provided as part of this system and/or written for this system, and shall include both routine upgrades to applications and operating systems, as well as any modifications to software that may be required by the County. The Software Maintenance contract shall commence immediately after expiration of the warranty period, and continue for three (3) years.

K. Sub-Contract

- 1. No sub-contract will be permitted for the Contractor's responsibilities, as herein defined, unless specifically identified in the proposal submission as per [Section II.G \(Sub-ContractInformation\)](#) and approved by the County.
- 2. The Contractor shall have sole responsibility for the satisfactory implementation of each system, even though the Contractor may have sub-contracted a portion of the installation or had certain manufacturers install their own equipment.

L. Cooperation with Other Trades

- 1. It shall be the responsibility of the Contractor to cooperate at all times, and to the fullest extent, with all trades doing work in the building, to the end that lost time, work stoppages, interference, and inefficiencies do not occur.
- 2. It shall also be the responsibility of the Contractor to participate in the preparation of coordination drawings and attend coordination meetings, before and during construction, at the request of the Construction Manager. It is not anticipated that these meetings will be held more than once a week.

M. Equipment Delivery and Storage

All equipment delivered prior to installation shall be stored by the Contractor at his place of business. Costs of all shipping, and of all unusual storage requirements, shall be borne by the Contractor. The Contractor shall inform the CM seven (7) days in advance of delivery to the site. It shall be the responsibility of the Contractor to make appropriate arrangements, and to coordinate with authorized personnel at the site, for the acceptance, handling, protection, and storage of equipment so delivered.

N. Cleanup and Repair

Upon completion of the work, the Contractor shall remove all his refuse and rubbish from and about the premises, and shall leave the relevant areas and equipment clean and in an operational state. The Contractor shall be responsible for repairing any damage caused to the premises by the Contractor's installation activities, at no cost to the County.

O. County Training

1. The Contractor shall provide on-the-job training by a suitably qualified instructor, to personnel designated by the County, to instruct them in the operation and maintenance of the systems. In the event the Contractor does not have qualified instructors on staff for certain sophisticated equipment, a manufacturer's representative for such instruction will be provided by the Contractor, at no additional cost to the County. All training shall take place after the systems are operational, but before the acceptance tests. Estimated training times are as follows:
 - a. Two (2) hours of end-user training for each primary space.
 - b. One (1) hour of end-user training for each secondary space.
 - c. Twelve (12) hours of end-user, technical support training total for building wide audiovisual system.
 - d. Eight (8) hours of end-user and technical support training for the RF Distribution/Head-End systems.
 - e. Four (4) hours of end-user and technical support training for the Paging System.
2. The cost to train County's personnel to service the equipment shall be listed separately by item of equipment.
3. Follow-up training within ninety (90) days, at the request of the County, shall also be provided at no additional charge.

P. Publication

No information relative to this job may be released for publication without prior written approval from the County, the Architect, and the Consultant.

Q. Insurance

Before commencing work, the Contractor shall procure and maintain, during the life of the contract, such comprehensive liability and property damage insurance as shall protect him and the County from claims for bodily injury, including death, and claims for property damage which may arise from the operations under this contract.

R. Installation Practices

1. General
 - a. Installation shall include the delivery to the installation site, unloading, setting in place, fastening to walls, floors, ceilings, counters, or other structures where required, interconnecting wiring of the system components, equipment alignment and adjustment, and all other work whether or not expressly required herein which is necessary to result in complete and fully operational systems.
 - b. Prior to ordering equipment, the Contractor shall coordinate the frequencies of all wireless devices to prevent unwanted interaction between devices and rooms. This includes, but is not limited to, wireless microphones, assisted listening system devices, wireless control panels, etc.
 - c. All accessories, including rack mounting hardware, power supplies, etc., shall be obtained from the original equipment manufacturer. Unless otherwise noted or specified, third party accessories shall not be used.

- d. All audiovisual equipment racks shall be wired at the Contractor's facility, and fully tested. The tests shall be documented as outlined in [Section III.J.3.a\(Contractor's Documentation\)](#).
 - e. All installation practices shall be in accordance with, but not limited to, these specifications and drawings. Installation shall be performed in accordance with the applicable standards, requirements, and recommendations of National, State, City, County, Municipal, and other authorities having jurisdiction.
 - f. If, in the opinion of the Contractor, an installation practice is desired or required, which is contrary to these specifications or drawings, a written request for modification shall be made to the County. Modifications shall not commence without written approval from the Consultant.
 - g. During the installation, and up to the date of final acceptance, the Contractor shall be under obligation to protect his finished and unfinished work against damage and loss. In the event of such damage or loss, he shall replace or repair such work at no cost to the County.
2. Physical Installation
- a. All equipment shall be firmly secured in place unless requirements of portability dictate otherwise.
 - b. All equipment shall have an engraved plaque permanently affixed, denoting its function.
 - c. Fastenings and supports shall be adequate to support their loads with a safety factor of at least five. All boxes, equipment, etc., shall be secured plumb and square.
 - d. In the installation of equipment and cable, consideration shall be given not only to operational efficiency, but also to overall aesthetic factors.
3. Trim and Escutcheon Components
- a. To insure a proper finished appearance, the Contractor shall furnish and install trim/escutcheon components at all conditions where audiovisual components penetrate a finished surface. This would include but not be limited to video projector supports, television monitor/receiver supports and any other component which is not specifically supplied with integral flanges/trim components; i.e. speaker mounts, assistive listening devices, etc.
 - b. The visible component of any trim should be minimum in size, preferably no wider than 1/2". All trim components at the ceiling plane shall be finished to match the approved ceiling system and grid system components. The Contractor should obtain a sample from the General Contractor, including any custom color information, or standard color numbers. All trim components shall be submitted to the Architect for review and approval prior to fabrication.
4. Cable Installation
- a. All wire bundles are to be neat and combed free of cable crossovers.
 - b. All cables, regardless of length, shall be marked with a permanent, self-laminating wrap-around number or letter cable marker at both ends, similar to the Panduit "Pan-Code" system. Labels must be computer-generated for legibility. Wire labels done by hand in the field must be replaced with computer generated labels. There shall be no unmarked cables at any place in the system. Marking codes used on cables shall correspond to codes shown on drawings and or run sheets.

- c. All cables shall be grouped according to the signals being carried. In order to reduce signal contamination, separate groups shall be formed for the following cable families:
 - i. Power cables – 120VAC or greater.
 - ii. Control cables.
 - iii. Video cables.
 - iv. Audio cables carrying signals less than – 20 dBm.
 - v. Audio cables carrying signals between – 20 dBm and +20 dBm.
 - vi. Audio cables carrying signals above +20 dBm.

As a general practice, all power cables, control cables, and high level cables shall be run on the left side of an equipment rack as viewed from the rear. All other cables shall be run on the right side of an equipment rack, as viewed from the rear.
- d. Cables ties shall be placed at appropriate intervals of no greater than six inches for vertical bundles, two inches for horizontal bundles.
- e. All vertical cable bundles shall be attached to the rack frame.
- f. All cables shall be continuous lengths without splices. All system wire, after being cut and stripped, shall have the wire strands twisted back to their original lay and be terminated by approved soldered or mechanical means. Except where noted otherwise in the specifications, no bare wire terminations will be accepted. Heat-shrink tubing shall be used to insulate the ground or drain wire. Unused wires at the end of a cable shall remain unstripped and shall be laid back and held in place with wire ties.
- g. All solder connections shall be made with rosin-core solder using temperature-controlled solder stations. Care shall be taken to avoid cold or cracked solder joints. Any connections that do not appear to be clean and shiny, or which show signs of cracking, shall be resoldered by the Contractor before final acceptance of the system.
- h. Mechanical connections using insulated, crimp-type connectors shall be bonded to the connector by soldering the wire to the metal part of the connector.
- i. Connections made with screw actuated pressure type terminal strips shall be made by stripping approximately 1/4 inch of insulation from the stranded conductor. Then the un-tinned wire shall be inserted into the terminal and the screw tightened using a secure fitting precision screwdriver.
- j. Terminal blocks, boards, strips or connectors shall be furnished for all cables that interface with racks, cabinets, consoles, or equipment modules.
 - i. No audio or control cables shall run directly to permanently rack-mounted equipment.
 - ii. All unused audio inputs and outputs will terminate at the terminal blocks.
 - iii. All audio patch panels and patch bays shall be furnished with a dedicated audio terminal block. All audio cables to and from the audio patch panels shall terminate on this block.
- k. All wire markers shall face a common direction. l. All cables shall have proper connector housing.
- m. Cables shall not protrude from the back of racks.

- n. All cable entry shall be through the tops of racks or through entrance holes in the base of the rack. No cable shall enter racks through front, rear or side panel openings.
- o. Unless otherwise noted, all video and computer video cables are to be terminated using seventy-five ohm (75Ω) connectors, with a captive center pin.
- p. Cables running in plenum areas without conduit shall be plenum rated cable, and match the specified cable; see [Section III.S\(Cable Types\)](#). It is the responsibility of the Proposer to inspect the Electrical Engineer's drawings, and verify in what spaces plenum cable shall be used.
 Note: No claims for additional monies, based on the use of plenum cable, will be allowed.
- q. All cables (except video and pulse cables, which must be cut to an electrical length) shall be cut to the length dictated by the run. No splices shall be permitted in any pull boxes without prior permission of the Consultant. For equipment mounted in drawers or on slides, the interconnecting cables shall be provided with a service loop of appropriate length.
- r. No cable shall be installed with a bend radius less than that recommended by the cable manufacturer.
- s. Where cables are installed in architectural niches, ensure that the cables are black, unless otherwise directed, to reduce visibility from the audience.

5. Connection Plate Receptacles

- a. Provide plate and connectivity panels as follows:
 - i. Audio (microphone) – XLR type.
 - ii. Audio (line level) – Phono jack
 - iii. Audio (loudspeaker level) – Neutrik “Speak-On” Type.
 - iv. Intercom – as required by the intercom system. Jack shall be insulated from panel type.
 - v. Video – BNC type.
 - vi. VGA – DE-15HD jack, isolated from panel type, with hex nuts.
 - vii. Control – Neutrik “etherCon” for RJ45, as other as required by the installed system.
 - viii. RF – “F” type. Receptacles shall be insulated from panel type.
- b. When connectivity panels include voice/data connectivity, panel approval, including layout and connector type, shall be coordinated with the County.

6. Patch Panel Assignments

All patch panels shall be wired so that signal “sources” (outputs from) appear on the upper row of a row pair; and all “loads” (inputs to) appear on the lower row of a row pair.

7. Patch Panel Designation Strips

All audio and video patch panel designation strips shall utilize alphanumeric identifications and descriptive information. The jack position in each horizontal row shall be numbered sequentially from left to right. The horizontal jack rows shall be lettered sequentially from top to bottom. The alphanumeric identification of each jack shall be included on the functional block drawings, as well as on reproductions of these drawings, which shall be mounted in an appropriate location near the patch bays.

8. Grounding Procedures

In order to minimize problems resulting from improper grounding, and to achieve maximum signal-to-noise ratios, the following grounding procedures shall be adhered to:

a. System Ground

A single primary "system ground" shall be established for the systems in each particular area. All grounding conductors in that area shall connect to this primary system ground.

The Contractor shall be responsible for determining if the metallic conduit is properly electrically bonded to the building ground system.

b. Audio Cable Shields

i. All audio cable shields shall be grounded at one point only. There are no exceptions. For inter and intra-rack wiring, this requires that the shield be connected at one end only. For ungrounded portable equipment, such as microphones, the shield shall be connected at both ends but grounded at only one end.

ii. The Contractor shall submit for approval a detail showing standard wiring procedures indicating the following:

- a. Audio connection methodology for balanced to balanced line level interfaces.
- b. Audio connection methodology for balanced to unbalanced line level interfaces.
- c. Audio connection methodology for unbalanced to balanced line level interfaces.

c. Video Receptacles

All video receptacles that are provided and installed by the Contractor shall be insulated from the mounting panel, outlet box, or wire way. Unless otherwise detailed herein, this shall be accomplished by using insulated-from-panel type receptacles.

d. Audio Receptacles

All audio receptacles that are provided and installed by the Contractor shall be insulated from the mounting panel, outlet box, or wire way. Unless otherwise detailed herein, this shall be accomplished by using insulated-from-panel type receptacles.

e. General

Because of the great number of possible variations in grounding systems, it shall be the responsibility of the Contractor to follow good engineering practice, as outlined above, and to deviate from these practices only when necessary to minimize crosstalk and to maximize signal-to-noise ratios in the audio, video, and control systems.

S. Cable Types

Unless otherwise called for in these specifications and drawings, the following cables, or their approved equals, shall be used in these systems:

1. Audio Applications

a. Microphone/Line Level; fixed installation

BELDEN 8451

Miniature PVC insulated, AWG 22 stranded copper wire twisted pair with 100% foil shield and drain wire, in PVC jacket, 3.51 mm nominal overall diameter.

Plenum Equivalent: Belden 88761

- b. Speaker Level; fixed installation; 18 Gauge (70 Volt distribution only)
BELDEN 5300UP
PVC insulated AWG 18 high strand count copper twisted pair, individually PVC insulated with Black & White jackets, in an overall PVC insulated Jacket, 4.67 mm nominal overall diameter.
Plenum Equivalent: Belden 82740
- c. Speaker Level; fixed installation; 16 Gauge
BELDEN 5200UP
PVC insulated AWG 16 high strand count copper twisted pair, individually PVC insulated with Black & White jackets, in an overall PVC insulated Jacket, 5.28 mm nominal overall diameter.
Plenum Equivalent: Belden 6200UE
- d. Speaker Level; fixed installation; 14 Gauge
BELDEN 5100UP
PVC insulated AWG 14 high strand count copper twisted pair, individually PVC insulated with Black & White jackets, in an overall PVC insulated Jacket, 6.6 mm nominal overall diameter.
Plenum Equivalent: Belden 6100UE
- e. Speaker Level; fixed installation; 12 Gauge
BELDEN 5000UP
PVC insulated AWG 12 high strand count copper twisted pair, individually PVC insulated with Black & White jackets, in an overall PVC insulated Jacket, 7.67 mm nominal overall diameter.
Plenum Equivalent: Belden 6000UE
- f. Speaker Level; fixed installation; 10 Gauge
BELDEN 5T00UP
PVC insulated AWG 10 high strand count copper twisted pair, individually PVC insulated with Black & White jackets, in an overall PVC insulated Jacket, 9.04 mm nominal overall diameter.
Plenum Equivalent: Belden 6T00UP
- g. Antenna Cable-Wireless Microphone
BELDEN 9913F7
Coaxial cable, RG-8U, 50 Ohm, maximum VSWR 1.43:1 from 5MHz to 2,250MHz.; equal to or better in high frequency attenuation performance at 2,250MHz (-8.0dB, 100') as specified, with braided shield for minimum 95% coverage and foil shielding for minimum 100% coverage, in an overall PVC insulated jacket, 11 mm nominal overall diameter.
Plenum Equivalent: Belden 89913

2. Video Applications

- a. Base-band Analog Video
BELDEN 8281
Coaxial video cable, RG-59U, 75 Ohm, equal to or better in high frequency attenuation performance at 100 MHz (-9dB, 100m) as specified, with double braided shield for minimum 98% coverage, in an overall PVC

insulated jacket, 8 mm nominal overall diameter.

Plenum Equivalent: Belden 88281

b. Serial Digital Video

BELDEN 1505A

Coaxial video cable, RG-59U, 75 Ohm, equal to or better in high frequency attenuation performance at 100 MHz (-7.6dB, 100m) as specified, with braided shield for minimum 95% coverage and foil shielding for minimum 100% coverage, in an overall PVC insulated jacket, 6 mm nominal overall diameter.

Plenum Equivalent: Belden 1506A

c. Computer Video Cable

West Penn-CDT WP8195

Five (5) conductor bundled coaxial video cable, RG-59U, 75 Ohm, equal to or better in high frequency attenuation performance at 135 MHz (-8.3dB, 100m) as specified. Each sub-unit with double braided shield and individual jackets in Red, Green, Blue, White and Yellow jacket colors, in overall PVC jacket, 19.69 mm overall diameter

Plenum Equivalent: West Penn-CDT WP825195

d. Camera Video Cable; Triaxial

BELDEN 8233

75 Ohm RG-11, bare copper braid, 96% coverage. Inner jacket of polyethylene between braids; 12.07 mm nominal overall diameter. Bare copper braid, 95% coverage.

Sweep Tested: 5 MHz - 3 GHz.

e. Camera Video Cable; Triaxial

BELDEN 1858A

75 Ohm RG-11, bare copper braid, 95% coverage. Inner jacket of polyethylene between braids; 13.02 mm nominal overall diameter. Bare copper braid, 95% coverage.

Sweep Tested: 5 MHz - 850 MHz.

Plenum Equivalent: Belden 1859A

3. RF/CATV Applications

a. Horizontal Distribution, <150' only.

BELDEN 9118

RF Broadband Cable - 75 Ohm Broadband Coaxial Video cable, RG-6, with braided shield for minimum 60% coverage and triple foil shielding for minimum 100% coverage.

Sweep Tested: 5 MHz - 1 GHz, Structural Return Loss 20 db minimum.

High Frequency Attenuation performance equal to or better than at 1000 MHz (-21.5dB, 100m), as specified Type, in an overall PVC insulated jacket, 6.99 mm overall diameter.

Plenum Equivalent: Belden 1152A

b. Horizontal Distribution, <250' only.

BELDEN 9064

RF Broadband Cable - 75 Ohm Broadband Coaxial Video cable, RG-11, with braided shield for minimum 77% coverage and triple foil shielding for minimum 100% coverage.

Sweep Tested: 5 MHz - 1 GHz, Structural Return Loss 20 db minimum.

High Frequency Attenuation performance equal to or better than at 1000 MHz (-13.9dB, 100m), as specified Type, in an overall PVC insulated jacket, 10.16 mm overall diameter.

Plenum Equivalent: Belden 1153A

- c. Primary Riser; Horizontal Distribution, > 250'.

COMM-SCOPE P3 500 JCAR

RF Broadband Riser Cable - 75 Ohm Broadband Riser cable; meets NEC Article 820 Riser Rating.

High Frequency Attenuation performance equal to or better than at 1000 MHz (-7.91 dB, 100m), as specified; 14.22 mm overall diameter.

Note: It is the responsibility of the Audiovisual Contractor to verify, furnish and install the correct CATV cable type, as per the local CATV provider.

4. Remote Control System Applications

- a. Device Interconnection; Relay Systems

BELDEN 9744

Two twisted pair stranded AWG 22 copper wire, individually jacketed, in an overall PVC jacket, 6.20 mm nominal overall diameter.

Plenum Equivalent: Belden 88741

- b. Device Interconnection; RS-232/RS-422/RS-485

BELDEN 8723

Two twisted pair stranded AWG 22 copper wire, individually jacketed with individual shielding of pairs, in an overall PVC jacket, 4.39 mm nominal overall diameter.

Plenum Equivalent: Belden 88723

- c. Device Interconnection; with Power

BELDEN 1502R

One twisted pair stranded AWG 22 copper wire with shield; one AWG 18 TC unshielded power pair in an overall PVC jacket, 6.35 mm nominal overall diameter.

Plenum Equivalent: Belden 1502P

Note: These cable types are cited to illustrate the type and quality of cable required. Unless otherwise noted, cables from other manufacturers, i.e. West Penn, Comm-Scope, Liberty Cable, etc. will be considered acceptable if data sheets are submitted prior to installation.

The Contractor shall only use plugs and jacks specifically manufactured and designed for the cable used. Unless otherwise noted, third-party connectors from other manufacturers, i.e. Kings, Switchcraft, AMP, Amphenol, Lemo, etc. will be considered acceptable if data sheets are submitted prior to installation.

T. Shop Staging and Inspection

After shop fabrication is complete, and prior to shipping completed equipment racks to the job site, it is expected that the County will review the completed racks at the Contractor's facility.

1. The following are requirements for the County's inspection:
 - a. All racks being reviewed should be in an isolated area of the shop, and arranged in a manner to expedite testing and review. A work table and chairs shall be provided for use of the County.
 - b. All racks shall have temporary labels, indicating building, floor and room where the rack shall be installed. Alternatively, the temporary labeling should indicate system type.
 - c. Racks shall be clean, and free of all debris (cut cable ties, insulation from stripped wires, etc.) and dust.
 - d. Full-size approved shop drawings and preliminary as-built drawings.
 - e. All equipment shall be installed in the racks, with peripheral and ancillary equipment installed and ready to test.
 - f. Blank panels, vent panels and engravings may be omitted at this point, but should be on-hand for final assembly prior to shipping to the field.
2. The County will review the following:
 - a. Equipment inventory, referenced to the Equipment Schedule and all change orders to-date.
 - b. Review of Contractors in-house testing.
 - c. Review of conformance with the specifications.
 - d. Review of internal cabling.
 - i. Cabling shall be as stated above; [Section III.R.4.](#)
 - ii. All internal cabling shall be neatly dressed, with all wire markers clearly visible.
 - iii. Tension of wire ties on bundled cable shall not bulge the cable.
 - iv. Review of terminal-block assemblies; [Section III.R.4.j.](#)
 - e. Review of control system panels and operation.
 - f. Review of heat path through the rack.
 - g. Review of overall build quality.
 - h. Review of general shop conditions.
 - i. Review of repair area.

U. Performance Standards

Unless restricted by the published specifications of a particular piece of equipment, or unless otherwise required under the Detailed Specifications, the following performance standards shall be met by each system:

1. Audio – General Conditions

All performance standards, unless otherwise noted, should be verified under the following conditions:

 - a. Frequency bandwidth measured should be 20 Hz to 20 kHz.
 - b. All levels should be referenced to +4 dBu.
 - c. Gain settings should be "Unity Gain" for line level signals and maximum

for microphone preamplifiers.

2. Audio – Electrical

- a. S/N (including crosstalk and hum): ..75dB minimum (ref. 0dBu)
- b. Total Harmonic Distortion:0.1% maximum (30Hz to 15kHz)
- c. Frequency Response:+/-1.0 dB (20Hz to 20kHz)

3. Audio – Acoustical

- a. S/N (including crosstalk and hum): ..65dB minimum
- b. Frequency Response:+/-3.0 dB (80Hz to 15kHz,
loudspeaker direct field as measured
via time-based analyzer, displayed
with moderate smoothing.)

4. Video (signal)

- a. Frequency ResponseWithin plus or minus 0.5dB, DC to
4.2 MHz.
- b. Signal to Noise Ratio.....55 dB minimum (peak to RMS)
unweighted, DC to 4.2 MHz
- c. Crosstalk45 dB minimum unweighted DC to
4.2 MHz
- d. Line and Field Tilt:.....2% maximum.
- e. Differential Gain:3% maximum.
- f. Differential Gain:2 degrees maximum.

5. Performance Test Signal Paths

The signal paths for the above Performance Standards shall be as follows:

a. Audio

From all source inputs (for microphones, audio tape units, video tape units, etc.) through all mixers, switchers, etc., to all signal destinations.

b. Video Signals

From all sources of the above signal paths. This shall not exempt the Contractor from the responsibility of checking all paths and outlets for appropriate compliance with the Performance Standards; see section below for detailed requirements.

6. Display Systems

All display systems shall meet the following performance standards:

- a. All displays shall be solidly mounted and braced, so that there will be no observable movement in the image induced by motor vibration or other mechanical operations.
- b. All displays shall be calibrated to a common standard; there shall be no observable chrominance (saturation and tint) or luminance (black and white levels) differences between displays.
- c. The total averaged light output from a projector, in lumens, shall be within plus-or-minus 15% of that specified by the projector manufacturer.
- d. The light fall-off from the center of the projected image to all four corners, as measured at the projected image plane, shall not exceed 35% for slide projector images. The light intensity shall be measured at all five positions of the projected image after the projector has been adjusted to provide the light output as specified above.

- e. The “corner” location shall be defined as the four points determined by intersecting lines drawn 5% of the distance in from the focused edges of the image.
- f. The light meter used for the above measurements shall be a properly calibrated foot-candle (or lux) meter and shall be cosine-corrected.
- g. Projectors, lenses, and mirrors shall be solidly mounted and braced, so that there will be no observable movement in the image induced by motor vibration or other mechanical operations.

7. Control System User Interface

Control system user interfaces pages shall be designed for this project exclusively. While there are a great number of design approaches to designing the user interface, the following guidelines shall be adhered to:

- a. All panels are to have the time and date as icons, in the same position on every page.
- b. All panels are to have a title, indicating the piece of equipment and/or functionality being controlled.
- c. No individual component shall be programmed to function atypically.
- d. Devices similar in nature shall be programmed to operate with a common format.
- e. Pages for source equipment shall conform to the following guidelines:
 - i. Transport controls should be on the main device page.
 - ii. The primary transport controls, <Play>, <Stop> and <Pause> should be larger than the other transport controls.
 - iii. Buttons shall include both graphic images and text.
 - iv. A button shall be included for a pathway to device specific controls, including menus and advanced device functions.
 - v. A button shall be included for a pathway to recording functionality. This shall include a single-bus control for the recording source.
- f. Final programming shall include capability to remotely control all functions of the audiovisual system. Individual device controls shall provide full manufacturer’s functionality.
- g. Provide control capability for every function available on every piece of equipment being controlled by the system. Define and provide “macro” commands for the most used functions.
- h. Provide control panel layouts that are consistent from page to page.
- i. Functions used during a general presentation shall be accessible with a minimal amount of button presses/page flips.
- j. All power functions, or other destructive commands, activated by the users through the user interface shall be intercepted in the programming. The user shall be provided with the opportunity to cancel out the command prior to any actions being initiated and without disturbing the current operating model.
- k. Where feasible, multi-level access to controls should be implemented. All software shall provide multiple levels of password protection. Initially three levels of security will be established and specific rights to program areas shall be assigned by user:
 - i. Level 1 shall allow user to operate the system, without a password. Control shall be limited to basic functionality directly affecting the space in which the control is located.

- ii. Level 2 shall be password protected, and allow user to modify system parameters and features listed in level 1.
- iii. Level 3 shall be password protected, and allow a technician access to set-up functions, source selection, etc.

Note: These same requirements also apply to the interconnected Background Music System controls.

- 8. During performance testing, all equipment shall be operated under standard conditions as recommended by the manufacturer.

V. Contractor System Testing

Before Acceptance Tests are scheduled, the Contractor shall perform his own system tests. He shall furnish all required test equipment and shall perform all work necessary to determine and/or modify performance of the system to meet the requirements of this specification. This work shall include the following:

- 1. Provide documentation that all matrix switching cross-points have been tested and verified.
- 2. Test all audio and video systems for compliance with the Performance Standards, using the following test procedure:

- a. Test Equipment.

Assemble the following test equipment (or equivalent) on site.

- i. Video Test Equipment:

- a. Video signal generator, Leader 410C
- b. RGBS signal generator, Extron VTG 300
- c. Combined waveform monitor/vectorscope, Leader 5872A
- d. DVD
- e. RGB cable, Extron BNC-5-6'HR
- f. Video cable
- g. Set of terminations, 'T' pieces etc.

- ii. Audio Test Equipment:

- a. Signal generator, Leader LAG-120B
- b. Time-based acoustic analyzer, Goldline TEF, SIA Smaart, Meyer SIM System II or approved equivalent, with all required accessories.
- c. AC millivoltmeter, Leader LMZ-181A
- d. Audio test set, Audio Precision PIPLUS
- e. Prerecorded cassette tape
- f. Compact Disk
- g. Audio cable
- h. Set of terminations, adapters etc.

- b. Signal Paths; Video/Audio

- i. Connect the output of the video signal generator to a floor box/table/rack connector and select the "Full Field Color Bar" signal. Connect the combined waveform monitor/vectorscope to a final output point, e.g. an input to a picture monitor or video projector. Ensure that the test signal is routed to the selected output.

- ii. Measure and record the signal amplitudes.
- iii. Repeat item 'i' after selecting the "Multiburst, 50 IRE" test signal.
- iv. Measure and record the signal amplitudes.
- v. Repeat item 'i' after selecting the "Modulated 5-step" test signal.
- vi. Measure and record the signal differential phase and gain.
- vii. Repeat item #'s 'i' through 'vi' for other video signal paths.
- viii. Repeat item 'i' after selecting the Window test signal.
- ix. Measure and record the signal line and field tilt.
- x. Repeat item 'i' after connecting the Black Burst signal from a rear mounted connector.
- xi. Measure and record the signal/noise ratio.
- xii. Connect the output of the audio test set to a floor box/table/rack program audio connector and connect the input of the audio test set to a final output point, e.g. an input to a program speaker power amplifier. Ensure that the test signal is routed to the selected output, that the volume control is set to 100% and that the equalizers are bypassed.
- xiii. Measure and record the signal/noise ratio, total harmonic distortion and frequency response.
- xiv. Repeat items 'xii' and 'xiii' for other audio signal paths.
- xv. Connect the output of the audio test set to a floor box/table/rack speech audio connector and connect the input of the audio test set to a final output point, e.g. an input to a speech speaker power amplifier. Ensure that the test signal is routed to the selected output, that the volume control is set to 100% and that the equalizer is bypassed.
- xvi. Measure and record the signal/noise ratio, total harmonic distortion and frequency response.
- xvii. Repeat items 'xv' and 'xvi' for other audio signal paths.
- c. **Signal Paths; RGB**
 - i. Connect the RGB output of the signal generator to a floor box/table/rack connector and select the SMPTE & PLUGE signal at the various computer scan rates as follows:
 - a. 640 x 48060 Hz, 72 Hz & 85 Hz refresh rates
 - b. 800 x 600.....60 Hz, 72 Hz & 85 Hz refresh rates
 - c. 1024 x 768.....60 Hz, 72 Hz & 85 Hz refresh rates
 - d. 1280 x 102460 Hz, 72 Hz & 75 Hz refresh rates
 - e. 1400x 1050.....60 Hz refresh rate

Note: The resolutions and refresh rates are modes currently in common use. Whenever possible, include computer sources provided by the County, at the desired resolution, in system testing.
 - ii. Check that the image is correctly displayed on the picture monitor(s) and/or by the video projector.
 - iii. Repeat item 'ii' using Crosshatch signal, checkerboard signal and H Pattern signal.

- iv. Repeat item 'ii' for other RGB connection locations. v.
Connect the output of the audio signal generator to a rack/table/rack 'Left' and 'Right' connectors and select the 1kHz tone. Check that the signal is emitted from the left and right program speakers.
- vi. Repeat item 'v' for other audio connection location.
Note: The term "RGB" is used generically. The system will be tested with the sync format dictated by functional requirements, including, but not limited to, sync-on-green, composite sync and separate horizontal and vertical sync. Whenever possible, include computer sources provided by the County, at the desired resolution, in your testing.
- d. Signal Paths; Video Cassette Recorder(s)
 - i. Insert the pre-recorded tape into the VCR(s) and check operation of the remote control panel(s) transport controls as well as picture image quality. Also check that the audio signal is heard from the left and right speakers.
 - ii. Check that the transport controls are logically presented etc.
 - iii. Re-select the SMPTE & PLUGE signal output of the video signal generator.
 - iv. Insert the blank videotape into the VCR(s) and select the 'Record' mode. Check that the audio and video signals are recorded and can be played back on the picture monitor(s) and/or the video projector and the left and right speakers.
- e. Gain Setting
 - i. Adjust all components (starting at source equipment and ending at the power amplifiers or active loudspeaker inputs), for maximum signal-to-noise ratio per conventions outlined in Sound System Engineering, Second Edition (Don and Carolyn Davis, Howard W. Sams & Co. 1987).
 - ii. Provide a Gain Structure chart showing measured levels at each and every gain point through the system. This will be submitted as the reference setup for the system.
 - iii. At the conclusion of audio system gain structure setting no hiss or noise should be audible through any loudspeaker, and ample electronic headroom should be available throughout the signal chain.
 - iv. At the conclusion of the tests, return all equipment settings to previously calibrated positions. All component settings are to be label d, identified and documented.
 - v. Provide written records of all test results in spreadsheet form.
- f. Check all control functions, from all controlling devices to all controlled devices, for proper operations.
- g. Adjust, balance, and align all equipment for optimum quality and to meet the manufacturer's published specifications. Establish and mark normal settings for all level controls, and record these settings in the "System Operation and Maintenance Manual".
- h. Check all optical projection images for average light level, light fall-off, and image alignment and size to comply with the Performance Standards

and specifications drawings. Check to determine that all projectors, projector bases, carts, tables, and mirrors are rigid and vibration-less in operation.

- i. Maintain documentation of all performance tests for reference by the Consultant during the System Acceptance Tests.

3. DSP-Based Audio Systems

- a. The digital signal processor, or DSP, provides all system-specific mixing, routing, equalization, delay, and other signal processing functions for the various modes of operation. This functionality is achieved through software programmed into the audio DSP. Multiple modes of operation are to be defined in this software, each selected by the user via a control touch-panel.
- b. Each room is required to undergo certification by the manufacturer. This certification process will include:
 - i. On-line testing of all required functions, including, but not limited to, speech reinforcement, program audio systems, audio teleconferencing, audio support for video teleconferencing, Voice Lift, etc.
 - ii. Verification of final matrix routing presets.
 - iii. Verification of correct input and output gains.
 - iv. Verification of gating adjustments and parameters.
 - v. Number of open microphones (NOM).
 - vi. Priority microphones and mode of operation.
 - vii. Verification of adjustment of all software components, including, but not limited to:
 - a. Automatic gain controls (AGC).
 - b. Automatic microphone mixers.
 - c. Limiters, compressors and equalizers.
 - d. Acoustic echo cancellation (AEC) and references.
 - e. Crossovers.
 - f. Delays.
 - g. Expanders.
 - h. Filters.
- c. The following parameters are specific to audio teleconference hybrids specifically designed to operate with DSP based audio equipment:
 - i. Auto Answer and Disconnect.
 - ii. Noise Burst/Auto Adaption Mode.
- d. The Contractor will arrange to have a technical representative from the Manufacturer on-site to review the DSP settings and assist in performing any final adjustments. The manufacturer's representative will then certify in writing that the system is operating correctly, and all the required adjustments have been made. All attendant costs shall be borne by the Contractor, and shall be included in your Engineering costs.
- e. All final configurations and settings should be stored in the native file format of the device(s) on finalized CD's, to be used as the "base" configuration in the event that further adjustments are required.

- f. This certification will be included in the documentation delivered to the Consultant prior to the System Acceptance Testing, as outlined in [Section III.V\(SystemAcceptanceTests\)](#).

W. System Acceptance Tests

System Acceptance Tests will not be performed until the Contractor's System Checkout has been completed and the test results have been reviewed. The System Acceptance Tests will be supervised by the Consultant and will consist of the following:

1. A physical inventory will be taken of all equipment on site and will be compared to equipment lists in the contract documents.
2. The operation of all system equipment shall be demonstrated by the Contractor.
3. Both subjective and objective tests will be required by the Consultant to determine compliance with the specifications. The Contractor shall be responsible for providing test equipment for these tests.
4. All final, "as-built" drawings, run sheets, manuals, and other required documents, as detailed in [Section III.J.4\(Contractor's Documentation\)](#), shall be on hand. Two complete sets of these documents shall be delivered to the County at this time. (One complete set shall have been delivered to the Consultant prior to the scheduling of Acceptance Tests).
5. In the event further adjustment is required, or defective equipment must be repaired or replaced, tests may be suspended or continued at the option of the Consultant.
6. Any charge for additional time incurred by the Consultant required to over-see the system tests, due to improper system installation or previous failed systems, shall be the responsibility of, and charged directly to the Contractor.

X. Post Completion Documentation

During usage and maintenance of the system, the County may request changes and modifications to the system configuration. In order to maintain current and accurate system documentation, the following guidelines shall be followed:

1. All system changes shall be redlined on the existing documentation. This documentation shall be copied and returned to the Contractor's office for modification in CAD.
2. All system changes shall be "bubbled" with a revision number attached. This revision number shall also be in the revision block of the drawing, with the date and reason for the revision.
3. This finished documentation shall be burned onto a CD, or other approved media, and send to the County, with a copy to the Consultant.
4. At the earliest opportunity, but no later than the next preventative maintenance visit, a hard-copy of the revised drawing shall be placed in the appropriate place in the drawing set. The drawing it is replacing shall remain in the set, and be stamped "Superseded" with the date.
5. The procedures outlined above shall also be followed for all other documentation, and for the duration of their maintaining the system.

Y. Recognition

1. All installations shall bear the following identification plate, supplied by the Contractor, mounted on the front of the main rack at the top:

SYSTEMS ENGINEERED & DESIGNED BY:

SHEN MILSOM & WILKE, LLC.

www.smwllc.com

SYSTEMS FABRICATED & INSTALLED BY:

(This Contractor)

2. The Contractor shall obtain from the Consultant the necessary logo artwork for the engraving.
3. Engraving shall be white filled Helvetica lettering on a black background or as appropriate to the identification plate material.

(End of Section III)

DRAWING NUMBER	DRAWING TITLE	RELEASE DATE
TA000	TECHNOLOGY AUDIOVISUAL SYMBOLS AND LEGEND	12/23/11
TA200	TECHNOLOGY AUDIOVISUAL FACILITY PLAN - AREA A	12/23/11
TA201	TECHNOLOGY AUDIOVISUAL FACILITY PLAN - AREA B	12/23/11
TA202	TECHNOLOGY AUDIOVISUAL FACILITY PLAN - AREA C	12/23/11
TA203	TECHNOLOGY AUDIOVISUAL FACILITY PLAN - AREA D	12/23/11
TA300	TECHNOLOGY AUDIOVISUAL ELECTRICAL PLAN - AREA A	12/23/11
TA301	TECHNOLOGY AUDIOVISUAL ELECTRICAL RCP - AREA A	12/23/11
TA302	TECHNOLOGY AUDIOVISUAL ELECTRICAL PLAN - AREA B	12/23/11
TA303	TECHNOLOGY AUDIOVISUAL ELECTRICAL RCP - AREA B	12/23/11
TA304	TECHNOLOGY AUDIOVISUAL ELECTRICAL PLAN - AREA C	12/23/11
TA305	TECHNOLOGY AUDIOVISUAL ELECTRICAL RCP - AREA C	12/23/11
TA306	TECHNOLOGY AUDIOVISUAL ELECTRICAL PLAN - AREA D	12/23/11
TA307	TECHNOLOGY AUDIOVISUAL ELECTRICAL RCP - AREA D	12/23/11
TA308	TECHNOLOGY AUDIOVISUAL ENLARGED SITE PLAN	12/23/11
TA400	TECHNOLOGY AUDIOVISUAL AUDIOVISUAL DETAILS	12/23/11
TA401	TECHNOLOGY AUDIOVISUAL AUDIOVISUAL DETAILS	12/23/11
TA402	TECHNOLOGY AUDIOVISUAL AUDIOVISUAL DETAILS	12/23/11
TA403	TECHNOLOGY AUDIOVISUAL AUDIOVISUAL DETAILS	12/23/11
TA404	TECHNOLOGY AUDIOVISUAL AUDIOVISUAL DETAILS	12/23/11

DRAWING NUMBER	DRAWING TITLE	RELEASE DATE
AV-S Series	AUDIOVISUAL FUNCTIONAL DIAGRAMS THIS SERIES TO BE DEVELOPED FOR 95% AV PROPOSAL DOCS	

(End of Section IV)

A. Functional Description

This room's primary function is essentially as a regional 911 call center. Williamson County 911 Operations functions as the primary PSAP for all unincorporated areas in the county, as well as incorporated areas of Liberty Hill, Florence, Jarrell, Weir, Granger, and Hutto. It is also the secondary PSAP for all 911 calls originating in the other five county PSAPs, and occasionally as back-up PSAP for regional emergencies.

Monitoring of visual information shall be by a distribution of wall-mounted displays situated around the room such that they are visible by the call taker and dispatch group nearby.

Audio program material (typically the audio associated with video) shall be provided by a distributed overhead system for those occasions when a unified monitoring of audio content is required. In addition, a secure, infrared system shall allow monitoring of AV audio with portable receivers and headphones so as not to interrupt the normal course of business.

Multimedia feeds are provided via the RF distribution system and as noted previously are comprised of Television as well as Data from the mule servers or content from other spaces in the ESOC such as video cameras.

Control of the Communications Operating Floor audiovisual systems will be achieved via a desktop application accessible via the network by any operator with appropriate access rights and/or via a Touch Screen control panel.

B. System Interconnections

The functional interconnections of the audio, video and control systems shall be as detailed on drawings.

The Contractor shall provide all interconnection cable, connectors, terminal strips, wire ways, flexible conduit, etc., to facilitate the audiovisual systems as detailed within these specifications and drawings.

The conduit and power systems are detailed in the Electrical Engineer's drawings. Any conduit required that is not detailed on the Electrical Engineer's drawings shall be responsibility of the Audiovisual Contractor.

1. Display

- a. Provide flat panel displays for imaging televised video. Commercial quality displays with integrated tuner, speakers and RS-232 control. Refer to drawings and schedule for quantities and location.
 - i. 47" diag., LED/LCD technology.
 - ii. 55" diag LED/LCD technology.
 - iii. 65" diag. LED/LCD technology.
- b. Provide wall mount for display, swing arm design allowing ready service and flexible adjustment for best viewing. All support is by the Construction Manager; support hardware (wall mounts) is by the Contractor. The mount location and support shall be coordinated with the Architect.
- c. Provide all loose cables, connectors, hardware, wire management accessories, etc. required to facilitate and complete the device installation.

2. Audio

- a. Provide complete high quality ceiling mounted loudspeaker assemblies.

The speakers shall come complete with integrated back box and grill. All mounting hardware, including tile bridges and other accessories, shall be furnished and installed by the Audiovisual Contractor. Ceiling preparation for the speakers will be by the Construction Manager.

- b. Provide a infrared-based personal monitoring (PM) system, with emitters located as shown on the Architectural drawings.
 - i. Provide a discrete output, with up to thirty-two (32) sources available routed to the PM system. Mixing will occur in the main DSP, and be applied to the currently selected audio source. This audio feed will have program limiting, compression, delay and equalization (all realized in the main DSP) available in order to suit the assistive listening hardware's dynamic range limitations and the requirements of the hearing impaired.
 - ii. Provide PM receivers, headsets, batteries and charging system.
 - iii. Provide all mounting hardware and accessories.
- c. Provide all loose cables, connectors, hardware, wire management accessories, etc. required to facilitate and complete the device installation.

3. Video

- a. Provide input for digital and analog computer signals with accompanying audio. Output to matrix using UTP cabling as specified by the manufacturer. Matrix shared and content delivered by designated, in-house, CATV channel, see AV Rack Rm..
- b. Provide CATV cabling to all displays.
- c. Provide all loose cables, connectors, etc. required to complete a full working system.

4. Control

- a. Provide audiovisual system control from one operator wired color video touch panel,. This panel will be a nominal nine (9") inch diagonal panel, and include a secured wall-mount.
- b. Provide audiovisual system control from user computers via a browser interface.
- c. Primary controller, shared, and located in AV Rack Room.
- d. Provide all loose cables, connectors, etc. required to complete a full working system.

5. Miscellaneous

- a. Provide power conditioning for selected components (matrices, DPS engines, control systems, etc.) within the audiovisual systems, with rack-mounted UPS for critical and microprocessor-based systems.
- b. Provide a hardware interface to life-safety system to cut off all sound when the emergency systems are activated.
- c. Provide all loose cables, connectors, etc. required to complete a full working system.

C. Equipment Layout

- 1. The equipment in this area shall be as detailed on the Architect's drawings, with reference to the Audiovisual Facility drawings.
- 2. Provide cover plates for all currently unused (future) audiovisual infrastructure locations; confirm finish with Architect.

D. Related Work Specified Elsewhere

The following systems and equipment are not provided under this contract:

1. Architectural lighting, dimmer systems, and low-voltage interfaces.
2. LAN connections.
3. Telephone jacks and special telecom outlets, (switch 56, ISDN, T1).

(End of Section V)

A. Functional Description

The EOC serves as the primary meeting space in emergency situations. This room would allow effective room-wide communication as well as allow each agency to also work somewhat autonomously in addressing their specific tasks during a situation.

A projection screens at the front of the room would serve most day-to-day uses, while additional displays are located around the room perimeter. Local control would be provided within the room for supervisor or technical staff use via a Touch Screen, or via the network and a desktop application.

Audio program material (typically the audio associated with video) shall be provided by a distributed overhead system for those occasions when a unified monitoring of audio content is required. Wireless microphones are provided to for in-room announcements and special presentations. In addition, a secure, infrared system shall allow monitoring of AV audio with portable receivers and headphones so as not to interrupt the normal course of business.

Tables are equipped with inputs for laptop PCs enabling operators to share information to the central display. Flat panel displays enable operators to monitor televised news and weather or specialized content on selected, in-house, channels.

Audiovisual equipment serving local presentation functions would be located in secured rack space within the room. Equipment not requiring or permitting user interface would be located in an adjacent AV rack room if required.

B. System Interconnections

The functional interconnections of the audio, video and control systems shall be as detailed on drawings.

The Contractor shall provide all interconnection cable, connectors, terminal strips, wire ways, flexible conduit, etc., to facilitate the audiovisual systems as detailed within these specifications and drawings.

1. Display

- a. Projection screen to be furnished and installed by others.
- b. Provide ceiling mounted data/video projector. All support is by the Construction Manager; support hardware (ceiling mounts) is by the AV Contractor. The mount location and support shall be coordinated with the Architect.
- c. Provide flat panel displays for imaging televised video. Commercial quality displays with integrated tuner, speakers and RS-232 control. Refer to drawings and schedule for quantities and location.
 - i. 47" diag., LED/LCD technology.
 - ii. 65" diag. LED/LCD technology.
- d. Provide wall mount for display, swing arm design allowing ready service and flexible adjustment for best viewing. All support is by the Construction Manager; support hardware (wall mounts) is by the Contractor. The mount location and support shall be coordinated with the Architect.
- e. Provide all loose cables, connectors, hardware, wire management accessories, etc. required to facilitate and complete the device installation.

2. Audio

- a. Provide complete high quality ceiling mounted loudspeaker assemblies. The speakers shall come complete with integrated back box and grill. All mounting hardware, including tile bridges and other accessories, shall be furnished and installed by the Audiovisual Contractor. Ceiling preparation for the speakers will be by the Construction Manager.
- b. Provide an infrared-based personal monitoring (PM) system, with emitters located as shown on the Architectural drawings.
 - i. Provide a discrete output, with up to thirty-two (32) sources available routed to the PM system. Mixing will occur in the main DSP, and be applied to the currently selected audio source. This audio feed will have program limiting, compression, delay and equalization (all realized in the main DSP) available in order to suit the assistive listening hardware's dynamic range limitations and the requirements of the hearing impaired.
 - ii. Provide PM receivers, headsets, batteries and charging system.
 - iii. Supporting equipment located in the AV Rack Room.
 - iv. Provide all mounting hardware and accessories.
- c. Provide all loose cables, connectors, hardware, wire management accessories, etc. required to facilitate and complete the device installation.

3. Video

- a. Provide input for digital and analog computer signals with accompanying audio. Output to matrix using UTP cabling as specified by the manufacturer.
- b. Provide matrix switching for digital and analog signals via UTP and native RGBHV, HDMI, composite video, etc. Matrix shall be modular and expandable with 20% spare capacity and a redundant power supply. Matrix is shared and located in the AV Rack Rm.
- c. Provide receivers for UTP switched signals with native digital and analog outputs, internal scalling and device control.
- d. Provide HDTV tuner for display or projectors that are not internally equipped with this capability. Tuner shall provide digital and analog outputs for video and audio, it shall be 232 controlled.
- e. Provide CATV cabling for all displays to distribution located in the AV Rack Room.
- f. Provide all loose cables, connectors, etc. required to complete a full working system.

4. Control

- a. Provide audiovisual system control from one operator wired color video touch panel,. This panel will be a nominal eight (8") inch diagonal panel, and include a secured wall-mount.
- b. Provide audiovisual system control from user computers via a browser interface.
- a. Provide remote control of systems with an integrated master controller, which provides ports for IR/serial, RS-232/422/485, Ethernet, relay closures and input and output control card frames and rack mounted, of all dedicated audiovisual components. Shared and located
- b. Provide all required network equipment, including, but not limited to,

routers, hubs, gateways, media converters, etc., for integration of the networked AV Control system with the County's existing LAN and control system.

- c. Provide all loose cables, connectors, etc. required to complete a full working system.

5. **Miscellaneous**

- a. Provide power conditioning for selected components (matrices, DPS engines, control systems, etc.) within the audiovisual systems, with rack-mounted UPS for critical and microprocessor-based systems.
- b. Provide a hardware interface to life-safety system to cut off all sound when the emergency systems are activated.
- c. Provide all loose cables, connectors, etc. required to complete a full working system.

C. Equipment Layout

- 1. The equipment in this area shall be as detailed on the Architect's drawings, with reference to the Audiovisual Facility drawings.
- 2. Provide audiovisual equipment racks. Unless otherwise noted:
 - a. Provide blank and vent panels, as required. There are not to be any open areas on the front of the racks.
 - b. Provide lockable drawer in audiovisual rack for storage of loose items, such as equipment remote controls, wireless microphones, and other equipment dedicated to a specific room.
 - c. All equipment shall be installed with "rack ears" or custom rack-mounts/face-plates, using security screws. There shall not be any shelf-mounted components in the audiovisual racks.

D. County Furnished Equipment

- 1. All millwork will be furnished by the County.

E. Related Work Specified Elsewhere

The following systems and equipment are not provided under this contract:

- 1. Lighting dimmer lighting systems.
- 2. LAN connections.
- 3. Telephone jacks and special telecom outlets, (switch 56, ISDN, T1).
- 4. Device enclosures in millwork walls.

(End of Section VI)

A. Functional Description

The EOC serves as the secondary meeting space in emergency situations. This room would allow effective room-wide communication as well as allow each agency to also work somewhat autonomously in addressing their specific tasks during a situation.

Projection screens at the front of the room would serve most day-to-day uses, while additional displays are located around the room perimeter. Local control would be provided within the room for supervisor or technical staff use via a Touch Screen, or via the network and a desktop application.

Audio program material (typically the audio associated with video) shall be provided by a distributed overhead system for those occasions when a unified monitoring of audio content is required. Wireless microphones are provided to for in-room announcements and special presentations. In addition, a secure, infrared system shall allow monitoring of AV audio with portable receivers and headphones so as not to interrupt the normal course of business.

Tables are equipped with inputs for laptop PCs enabling operators to share information to the central display. Flat panel displays enable operators to monitor televised news and weather or specialized content on selected, in-house, channels.

Audiovisual equipment serving local presentation functions would be located in secured rack space within the room. Equipment not requiring or permitting user interface would be located in an adjacent AV rack room if required.

B. System Interconnections

The functional interconnections of the audio, video and control systems shall be as detailed on drawings.

The Contractor shall provide all interconnection cable, connectors, terminal strips, wire ways, flexible conduit, etc., to facilitate the audiovisual systems as detailed within these specifications and drawings.

1. Display

- a. Projection screen to be furnished and installed by others.
- b. Provide ceiling mounted data/video projector. All support is by the Construction Manager; support hardware (ceiling mounts) is by the AV Contractor. The mount location and support shall be coordinated with the Architect.
- c. Provide flat panel displays for imaging televised video. Commercial quality displays with integrated tuner, speakers and RS-232 control. Refer to drawings and schedule for quantities and location.
 - i. 47" diag., LED/LCD technology.
 - ii. 55" diag. LED/LCD technology.
- d. Provide wall mount for display, swing arm design allowing ready service and flexible adjustment for best viewing. All support is by the Construction Manager; support hardware (wall mounts) is by the Contractor. The mount location and support shall be coordinated with the Architect.
- e. Provide all loose cables, connectors, hardware, wire management accessories, etc. required to facilitate and complete the device installation.

2. Audio

- a. Provide complete high quality ceiling mounted loudspeaker assemblies. The speakers shall come complete with integrated back box and grill. All mounting

hardware, including tile bridges and other accessories, shall be furnished and installed by the Audiovisual Contractor. Ceiling preparation for the speakers will be by the Construction Manager.

- b. Provide a infrared-based personal monitoring (PM) system, with emitters located as shown on the Architectural drawings.
 - i. Provide a discrete output, with up to thirty-two (32) sources available routed to the PM system. Mixing will occur in the main DSP, and be applied to the currently selected audio source. This audio feed will have program limiting, compression, delay and equalization (all realized in the main DSP) available in order to suit the assistive listening hardware's dynamic range limitations and the requirements of the hearing impaired.
 - ii. Provide PM receivers, headsets, batteries and charging system.
 - iii. Provide all mounting hardware and accessories.
- c. Provide all loose cables, connectors, hardware, wire management accessories, etc. required to facilitate and complete the device installation.

3. Video

- a. Provide input for digital and analog computer signals with accompanying audio. Output to matrix using UTP cabling as specified by the manufacturer.
- b. Provide matrix switching for digital and analog signals via UTP and native RGBHV, HDMI, composite video, etc. Matrix shall be modular and expandable with 20% spare capacity and a redundant power supply.
- c. Provide receivers for UTP switched signals with native digital and analog outputs, internal scaling and device control.
- d. Provide HDTV tuner for display or projectors that are not internally equipped with this capability. Tuner shall provide digital and analog outputs for video and audio, it shall be 232 controlled.
- e. Provided CATV cabling from displays to distribution located in the AV Rack Room.
- f. Provide all loose cables, connectors, etc. required to complete a full working system.

4. Control

- a. Provide audiovisual system control from one operator wired color video touch panel,. This panel will be a nominal eight (8") inch diagonal panel, and include a secured wall-mount.
- b. Provide audiovisual system control from user computers via a browser interface.
- c. Provide remote control of systems with an integrated master controller, which provides ports for IR/serial, RS-232/422/485, Ethernet, relay closures and input and output control card frames and rack mounted, of all dedicated audiovisual components.
- d. Provide all required network equipment, including, but not limited to, routers, hubs, gateways, media converters, etc., for integration of the networked AV Control system with the County's existing LAN and control system.
- e. Provide all loose cables, connectors, etc. required to complete a full working system.

2. Miscellaneous

- a. Provide power conditioning for selected components (matrices, DPS engines, control systems, etc.) within the audiovisual systems, with rack- mounted UPS for critical and microprocessor-based systems.

- b. Provide a hardware interface to life-safety system to cut off all sound when the emergency systems are activated.
- c. Provide all loose cables, connectors, etc. required to complete a full working system.

B. Equipment Layout

- 1. The equipment in this area shall be as detailed on the Architect's drawings, with reference to the Audiovisual Facility drawings.
- 2. Provide audiovisual equipment racks. Unless otherwise noted:
 - a. Provide blank and vent panels, as required. There are not to be any open areas on the front of the racks.
 - b. Provide lockable drawer in audiovisual rack for storage of loose items, such as equipment remote controls, wireless microphones, and other equipment dedicated to a specific room.
 - c. All equipment shall be installed with "rack ears" or custom rack- mounts/face-plates, using security screws. There shall not be any shelf- mounted components in the audiovisual racks.

C. County Furnished Equipment

- 1. All millwork will be furnished by the County. D. Related

Work Specified Elsewhere

The following systems and equipment are not provided under this contract:

- 1. Lighting dimmer lighting systems.
- 2. LAN connections.
- 3. Telephone jacks and special telecom outlets, (switch 56, ISDN, T1).
- 4. Device enclosures in millwork walls. (End of Section I)

EVALUATION CRITERIA

Proposals will be evaluated on “best value” based on the evaluation criteria as stated below.

Relevant Experience 30 Points

Detail projects of similar projects in proportion within the last 5 years. Itemized equipment and personnel resources used.

Regional Experience and Present-Depth of Resources 20 Points

Give details of current projects and deadlines. Give documentation of current resources of personnel and equipment with current and near future schedules.

Pricing Points 30 Points

Itemized pricing on products, equipment and personnel for the project.

Proposed Team Members 10 Points

Background and experience of Project Managers and other personnel assigned to this project.

Projected Schedule 10 Points

Advise project schedule and deadlines.



WILLIAMSON COUNTY CONFLICT OF INTEREST STATEMENT

I hereby acknowledge that I am aware of the Local Government Code of the State of Texas, Section 176.006 regarding conflicts of interest and will abide by all provisions as required by Texas law.

Printed name of person submitting form:

Name of Company:

Date:

Signature of person submitting form:

Notarized:

**Sworn and subscribed before me
by:**_____

on _____
(date)

WILLIAMSON COUNTY PROPOSAL FORM
Audio Visual System for Williamson County
ESOC Building

PROPOSAL NUMBER: 12RFP00012

NAME OF PROPOSER: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Email Address: _____

Telephone: (_____) _____ Fax: (_____) _____

The undersigned, by his/her signature, represents that he/she is authorized to bind the proposer to fully comply with the terms and conditions of the attached Request for Proposal, Specifications, and Special Provisions for the amount(s) shown on the accompanying proposal sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

Signature of Person Authorized to Sign Proposal

Date: _____

Printed Name and Title of Signer: _____

DO NOT SIGN OR SUBMIT WITHOUT READING ENTIRE DOCUMENT

THIS FORM MUST BE COMPLETED, SIGNED, AND RETURNED WITH PROPOSAL

Williamson County Inner Loop Annex

Address:

**301 SE Inner Loop
Georgetown, TX 78626**

Directions:

From South (Austin, Round Rock)

Take IH-35 Northbound

Exit 259

Stay on frontage road for approximately 2 miles

At stop sign, go right on Inner Loop

Just past Snead Drive, the Inner Loop Annex is on the left

Main entrance is on the side of the building by the flagpoles

From North (Georgetown, Jarrell)

Take IH-35 Southbound

Exit 259

At stop sign, go left under the overpass

At stop stay straight onto Inner Loop

Just past Snead Drive, the Inner Loop Annex is on the left

Main entrance is on the side of the building by the flagpoles

