

SECTION A		SOLICITATION / OFFER / ACCEPTANCE	
1. Solicitation No. OHND-06-07-AKR		2. Date Issued 8/22/2023	3. Award No.
4. Issued By: U.S. District Court, Northern District of Ohio 801 W Superior Ave, Room 2-141, Cleveland, OH 44113		5. Address Offer To (if other than Item 4):	

SOLICITATION

6. Offers in original and one copies for furnishing the required services listed in Section B will be received at the place specified in Item 5, or if handcarried, in the depository located:

until 5:00 pm local time Sept. 25, 2023.
(hour) (date)

7. For Information call:	
a. Name Natalie Wlotzko, C.O.	b. Telephone (216) 357-7085

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OFFER

8. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (365 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

9. DISCOUNT FOR PROMPT PAYMENT	10 CALENDAR DAYS %	20 CALENDAR DAYS %	30 CALENDAR DAYS %	CALENDAR DAYS %
10. ACKNOWLEDGEMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

11. NAME AND ADDRESS OF OFFEROR		14. <input type="checkbox"/> AWARD Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets.	
12. Telephone No. (Include area code)			
13A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)		15A. NAME OF CONTRACTING OFFICER	
13B. Signature		15B. UNITED STATES OF AMERICA	
13C. Offer Date		15C. DATE SIGNED	
		BY _____ (Signature Of Contracting Officer)	

PART I –SOLICITATION SPECIFICATIONS

SECTION A – SPECIFICATIONS / STATEMENT OF WORK

A.1 BACKGROUND

The United States District Court for the Northern District of Ohio is seeking **OPEN MARKET QUOTES** to replace the existing audio system in Courtroom 400 with a new audio presentation system.

The Court House to be upgraded is located at:

The *John F. Seiberling Federal Building and United States Court House* Courtroom 400
2 South Main Street
Akron, Ohio 44308

Details regarding system requirements can be found in the attached design report.

SECTION B – DELIVERIES AND PERFORMANCE**B.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)**

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address:

<http://www.uscourts.gov/procurement.aspx>.

CLAUSE NUMBER	TITLE	DATE
2-25A	Delivery Terms and Contractor's Responsibilities	JAN 2003
2-30A	Time of Delivery	APR 2013
2-35	F.O.B. Destination, Within Judiciary's Premises	JAN 2003
2-60	Stop-Work Order	JAN 2010
7-200	Judiciary Delay of Work	JAN 2003

B.2 DELIVERY SCHEDULE AND LOCATION

- (a) Delivery and Installation shall be subject to the Court's docket and courtrooms may be worked on simultaneously or sequentially
- (b) A post-award teleconference will be held **October 10th, 2023**
- (c) Installations will be completed no later than **May 31st, 2024**
- (d) Project closeout shall be finalized no later than **July 1st, 2024**

B.3 DELAY OF DELIVERY SCHEDULE BY COURT

The Court reserves the right to delay any installation, at no additional cost to the judiciary, provided that the Contractor receives written notice from the Contracting Officer (15) calendar days prior to the scheduled installation date, or within (30) calendar days after award, whichever is later, or by any date which is mutually agreed to by the Court and the Contractor.

B.4 SCHEDULING OF TESTING, INSTALLATION, AND TRAINING

- (a) The Contractor shall coordinate the installation of the systems to be compatible with the courtroom schedule, the work of the COTR, and the overall construction completion schedule. The Contractor shall attend any regularly scheduled progress meetings. Project completion, including all training to be complete as scheduled with the COTR. After normal business hours and weekends should not be relied upon to meet completion deadline. Contractor to notify COTR immediately if installation complications arise which could complicate scheduled completion.
- (b) The Contractor shall assemble, install, test, and train Court personnel in the use of the systems in compliance with the schedule set forth in **B.5**. Any changes to this schedule shall be submitted for approval and discussed with the CO and the COTR.
- (c) The Contractor shall assemble and test all equipment to verify proper operation before shipping to the courthouse. Testing and shipping shall be coordinated with the COTR.

(d) The Contractor shall provide operating personnel with adequate training on the completed system,

B.5 SCHEDULE – TIMELINE, INSTALLATION AND PAYMENTS

This schedule is dependent on chambers availability and may vary by number of courtrooms awarded.

PROJECT MILESTONE	DATE	PAYMENT SCHEDULE
Bid package release	August 22, 2023	
Contractor Site visit	September 1, 2023	
Contractor bids due to Court	September 25, 2023	
Bid Review by Court	September 25-27, 2023	
Contract Award	September 28, 2023	
Post Award Teleconference- Submit background information	October 10, 2023	
Draft Submittal due from Contractor	November 27, 2023	
Submittal Plan Review	November 28 – December 5 2023	
Revised Submittals due from Contractor	December 18, 2023	
Acceptance of Final Design Plan	December 22, 2023	20%
Kick off Meeting	First day of install	
Installation Period	January 24 - May 31, 2024	
Training/System Acceptance	May 31, 2024	70%
Acceptance of Closeout Deliverables due to Court	July 1, 2024	10%
On site Parts and Labor Warranty at no additional cost to Court	1 year from system acceptance	

*NOTE: If Optional Courtrooms are awarded on this contract, the Court will issue payment of 70% of the total cost per option upon completion of each optional Courtroom that is awarded.

Installation will be a two consecutive week window in the installation period

based on courtroom availability.

Court Holidays on:

October 9th, 2023

November 10th, 2023

November 23rd, 2023

December 25th, 2023

January 1st, 2024

January 15th 2024

February 19th, 2024

May 27th, 2024

June 19th, 2024

July 4th, 2024

SECTION C – CONTRACT ADMINISTRATION DATA

C.1 CLAUSES B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address:

<http://www.uscourts.gov/procurement.aspx>.

CLAUSE NUMBER	TITLE	DATE
7-1	Contract Administration	JAN 2003
7-5	Contracting Officer's Technical Representative	APR 2013
7-125	Invoices	APR 2011

C.2 CONTRACTING OFFICER

The Contracting Officer for this Contract is:

Natalie Wlotzko
U.S. District Court – Northern District of Ohio
Carl B. Stokes Federal Courthouse
801 W. Superior Avenue, Room 2-141
Cleveland, Ohio 44113
E-mail: Natalie_Wlotzko@ohnd.uscourts.gov
Phone: (216) 357-7085

C.3 BILLING AND PAYMENT TERMS

Contractor invoice(s) shall be submitted in arrears as a percentage of total cost and shall provide an account summary showing all services, features, and items on the account. Invoice(s) may be submitted upon the Court's acceptance of all products, services, and items as ordered and/or as rendered according to the payment schedule in section B.5.

Invoices shall be addressed and submitted to:

Natalie Wlotzko
U.S. District Court – Northern District of Ohio
Carl B. Stokes Federal Courthouse
801 W. Superior Avenue, Room 2-141
Cleveland, Ohio 44113

C.4 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)

The Contracting Officer's Technical Representative for this Contract is:

David Zendlo
U.S. District Court – Northern District of Ohio
Carl B. Stokes Federal Courthouse
2 S. Main Street
Akron, Ohio 44308
E-mail: david_zendlo@ohnd.uscourts.gov
Phone: (330) 252-6023
Alternate contact:
James Jones
James_Jones@ohnd.uscourts.gov
216.357.7052

C.5 CLAUSE 7-10, CONTRACTOR REPRESENTATIVE (JAN 2003)

The contractor's representative to be contacted for all contract administration matters is as follows: (*contractor completes the information*):

1. Name:
2. Address:
3. Telephone:
4. E-mail:
5. Fax:

The contractor's representative shall act as the central point of contact with the judiciary, shall be responsible for all contract administration issues relative to this contract, and shall have full authority to act for and legally bind the contractor on all such issues.

SECTION D – SPECIAL CONTRACT REQUIREMENTS**D.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)**

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<http://www.uscourts.gov/procurement.aspx>.

CLAUSE NUMBER	TITLE	DATE
1-1	Employment by the Government	JAN 2003
7-55	Contractor Use of Judiciary Networks	JAN 2003

D.2 PRICE MANAGEMENT

The Contractor shall agree that during the contract life, the prices set forth herein shall not exceed the Contractor's commercial price list (including applicable commercial discounts) and/or established tariff prices for similar (or identical) facilities, services, and items. If at any time this should occur, the Contractor shall immediately notify the Court's Contracting Officer and offer the lower prices for incorporation into this contract. Similar facilities, services, and items are defined as comparable commercial technical services.

D.3 CONTRACTOR PERSONNEL QUALIFICATIONS AND REQUIREMENTS

- (a) Installation personnel must have received training and have a minimum of (3) years of installation experience for the facilities, services and items proposed.
- (b) Contractor personnel assigned to this contract must be able to communicate effectively in English (verbally and in writing) with Court staff and representatives.
- (c) All Contractor personnel are required to present valid state-issued picture identification upon arrival to the Court's premises to begin project work.
- (d) Contractor personnel shall be properly attired when on-site at a Court location and all dealings with Court staff and representatives shall be businesslike and courteous.
- (e) For the purpose of the overall contract, the Contractor's Project Manager is designated as Key Personnel under this contract and shall be the Contractor's authorized point of contact with the Court's CO and COTR.
- (f) The Contractor's Project Manager shall be a prime Contractor employee who has in depth experience in the type of services and goods required by the contract resulting from this solicitation.
- (g) The Contractor's Project Manager shall be responsible for providing project management oversight during all hours of task order activity for all Contractor personnel. The Contractor's Project Manager also

shall be responsible for formulating and enforcing work standards, signing schedules, and reviewing work discrepancies, and communicating policies, purposes, and goals of the organization to subordinates.

(h) The Court reserves the right to require the change/removal of any Contractor personnel from the contract, without penalty to the judiciary; furthermore, this right of removal may be exercised at any time during the term of the contract.

D.4 NOTIFICATION OF DEBARMENT / SUSPENSION STATUS

(a) During the contract period, the Contractor shall provide immediate written notice to the Contracting Officer in the event of being suspended, debarred, or declared ineligible by any Department or other Federal Agency, or upon receipt of a notice or proposed debarment from another Government Agency, during the performance of this contract.

(b) During the contract period, the Contractor shall provide immediate written notice to the Contracting Officer if the Contractor learns that its certification in response to JPV14, Provision 3-20 (Section K 3) was erroneous when submitted or has become erroneous by reason of changed circumstances.

D.5 TAXES

The Court is exempt from Ohio State Sales Tax and Federal Excise Tax. As such, any contract proposal amount shall not include the cost of any such taxes.

D.6 MEETINGS / CONFERENCES

Technical meetings, post-award/pre-performance conferences, and/or meetings during contract performance, may be necessary to resolve problems and to facilitate understanding of the technical requirements of the contract. Participants at these meetings/conferences shall be members of the Contractor's technical staff and technical representatives of the Court. These meetings/conferences shall be scheduled with the agreement and arrangements made between the CO or their representative and the Contractor. All Contractor costs associated with the attendance at these meetings shall be incidental to the contract and not separately billed.

D.7 GENERAL WORKING HOURS AND GOVERNMENT HOLIDAYS

Normal business/office hours are from 8:00 a.m. to 4:30 p.m. Eastern Standard Time, local time; specific working hours, however, will be identified as required.

The following Government holidays are normally observed by judiciary personnel: New Year's Day, Martin Luther King's Birthday, President's Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Christmas Day, and any other day designated by Federal Statute.

D.8 SECTION 508 COMPLIANCE

- (a) Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d) requires that when federal departments or agencies “develop, procure, maintain, or use” EIT, they shall ensure that the EIT allows federal employees with disabilities to have access to and use of information and data that is comparable to the access to and use of information and data by other federal employees. Section 508 also requires that individuals with disabilities, who are members of the public seeking information or services from a federal department or agency, have access to and use of information and data that is comparable to that provided to the public without disabilities. Comparable access is not required if it would impose an undue burden.
- (b) For further information, refer to:
<http://www.section508.gov/index.cfm?FuseAction=content&ID=12#Telecommunications>
- (c) Solicitation evaluation will be based in part on the proposal responsiveness to the identified Section 508 requirements and considerations for accessibility. The Offeror shall provide proof of conformance with these requirements. The Voluntary Product Accessibility Template (VPAT) may be used for this purpose. The VPAT can be downloaded from the following website:
<http://www.itic.org/resources/voluntaryproduct-accessibility-template-vpat/>
- (d) Services delivered as a result of this solicitation will be accepted based in part on satisfaction of Section 508 requirements for accessibility.

D.9 OSHA COMPLIANCE

All services performed under the terms of the awarded contract shall comply with the requirements and standards specified in the Williams-Steiger Occupational Safety and Health Act of 1970 (Public Law 91-596), as well as with other applicable Federal, State, and local codes.

D.10 PERMITS

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any applicable Federal, state, and municipal laws, codes, and regulations, and any applicable freight work permits, authorizations, etc. and/or visas in connection with the performance of the contract.

PART II – CONTRACT CLAUSES
SECTION E – CONTRACT CLAUSES

E.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address:

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CLAUSE NUMBER	TITLE	DATE
1-5	Conflict of Interest	AUG 2004
1-10	Gratuities or Gifts	JAN 2010
1-15	Disclosure of Contractor Information to the Public	AUG 2004
2-20A	Incorporation of Warranty	JAN 2003
2-20B	Contractor Warranty (Products)	JAN 2010
2-95	Material Requirements	JAN 2003
3-25	Protecting the Judiciary's Interest When Subcontracting with Contractors Debarred, Suspended or Proposed for Debarment	JAN 2003
3-35	Covenant Against Contingent Fees	JAN 2003
3-40	Restrictions on Subcontractor Sales to the Government	JAN 2003
3-45	Anti-Kickback Procedures	JUN 2012
3-50	Cancellation, Rescission and Recovery of Funds for Illegal or Improper Activity	JUN 2012
3-55	Price or Fee Adjustment for Illegal or Improper Activity	JUN 2012
3-105	Audit and Records – Negotiations	APR 2011
3-120	Order of Precedence	JAN 2003
3-140	Notice to the Judiciary of Labor Disputes	JAN 2003
3-205	Protest after Award	JAN 2003
7-15	Observance of Regulations/Standards of Conduct	JAN 2003
7-20	Security Requirements	APR 2013
7-25	Indemnification	AUG 2004
7-30	Public Use of the Name of the Federal Judiciary	JAN 2003
7-35	Disclosure or Use of Information	APR 2013
7-65	Protection of Judiciary Buildings, Equipment, and Vegetation	APR 2013
7-85	Examination of Records	JAN 2003
7-100A	Limitation of Liability (Products)	JAN 2003
7-100B	Limitation of Liability (Services)	JAN 2003
7-110	Bankruptcy	JAN 2003
7-130	Interest (Prompt Payment)	JAN 2003
7-135	Payments	APR 2013
7-140	Discounts for Prompt Payment	JAN 2003
7-150	Extras	JAN 2003
7-185	Changes	APR 2013
7-210	Payment for Emergency Closures	APR 2013
7-215	Notification of Ownership Changes	JAN 2003

7-220	Termination for Convenience of the Judiciary (Fixed-Price)	JAN 2003
7-230	Termination for Default (Fixed-Price – Products and Services)	JAN 2003
7-235	Disputes	JAN 2003

E.2 JPV14 CLAUSE 2-20C, WARRANTY OF SERVICES (JAN 2003)

- (a) Definition. "Acceptance," as used in this clause, means the act of an authorized representative of the judiciary by which the judiciary assumes for itself, or as an agent of another, approves specific services, as partial or complete performance of the contract.
- (b) Notwithstanding inspection and acceptance by the judiciary or any provision concerning the conclusiveness thereof, the contractor warrants that all services performed under this contract will, at the time of acceptance, be free from defects in workmanship and conform to the requirements of this contract. The contracting officer will give written notice of any defect or nonconformance to the contractor within 30 days from the date of acceptance by the judiciary. This notice will state either
 - (1) that the contractor shall correct or re-perform any defective or nonconforming services; or
 - (2) that the judiciary does not require correction or re-performance.
- (c) If the contractor is required to correct or re-perform, it shall be at no cost to the judiciary, and any services corrected or re-performed by the contractor shall be subject to this clause to the same extent as work initially performed. If the contractor fails or refuses to correct or re-perform, the contracting officer may, by contract or otherwise, correct or replace with similar services and charge to the contractor the cost occasioned to the judiciary thereby, or make an equitable adjustment in the contract price.
- (d) If the judiciary does not require correction or re-performance, the contracting officer will make an equitable adjustment in the contract price.

E.3 JPV14 CLAUSE 6-20, INSURANCE – WORK ON OR WITHIN JUDICIARY FACILITY (APR 2011)

(a) The contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the following kinds and minimum amounts of insurance:

(1) Workman's Compensation and Employee's Liability Insurance

The contractor shall comply with applicable federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy. Employer's liability coverage of at least \$100,000 per incident is required.

(2) Automobile Liability Insurance

The contractor shall have coverage at a minimum of \$200,000 per person; \$500,000 per occurrence for bodily injury; and \$20,000 per occurrence for property damage.

(3) General Liability Insurance

The contractor shall have coverage at a minimum of \$200,000 per person and \$500,000 per occurrence for death or bodily injury and \$20,000 per occurrence for property damage.

(4) Self-Insurance

If the contractor has been approved to provide a qualified program of self insurance, the contractor must submit any proposed changes to the program to the contracting officer for approval.

(b) Prior to beginning performance under this contract, the contractor shall provide the insurance carrier certification of the above minimum amounts.

(c) The maintenance of insurance coverage as required by this clause is a continuing obligation, and the lapse or termination of insurance coverage without replacement coverage being obtained will be grounds for termination for default.

(d) The certification evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the judiciary's interest shall not be effective:

(1) for such period as the laws of the state in which this contract is to be performed prescribe; or

(2) until 30 days after the insurer or the contractor gives written notice to the contracting officer, whichever period is longer.

(e) The contractor shall insert the substance of this clause, including this paragraph (e), in subcontracts under this contract that require work in a judiciary facility and shall require subcontractors to provide and maintain the required insurance. The contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the contracting officer upon request.

PART III - REPRESENTATIONS AND INSTRUCTIONS**SECTION F - REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS****F.1 JUDICIARY POLICY VOLUME 14 (JPV14) PROVISION B-1, SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (SEP 2010)**

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its proposal or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its proposal or offer. Also, the full text of a solicitation provision may be accessed electronically at this address:

<http://www.uscourts.gov/procurement.aspx>.

CLAUSE NUMBER	TITLE	DATE
3-15	Place of Performance	JAN 2003

F.2 JPV14 PROVISION 3-5, TAXPAYER IDENTIFICATION AND OTHER OFFEROR INFORMATION (APR 2011)

(a) Definitions.

“Taxpayer Identification (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a social security number or an employer identification number.

(b) All offerors shall submit the information required in paragraphs (d) and (e) of this provision to comply with debt collection requirements of [31 U.S.C. §§ 7701\(c\)](#) and [3325\(d\)](#), reporting requirements of [26 U.S.C. §§ 6041, 6041A](#), and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the government to collect and report on any delinquent amounts arising out of the offeror’s relationship with the government ([31 U.S.C. § 7701\(c\)\(3\)](#)). If the resulting contract is subject to payment recording requirements, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror’s TIN.

(d) Taxpayer Identification Number (TIN): _____

☐ TIN has been applied for.

☐ TIN is not required, because:

☐ Offeror is a nonresident alien, foreign corporation or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

☐ Offeror is an agency or instrumentality of a foreign government;

☐ Offeror is an agency or instrumentality of the federal government.

(e) Type of Organization:

☐ sole proprietorship;

☐ partnership;

☐ corporate entity (not tax-exempt);

☐ corporate entity (tax-exempt);

☐ government entity (federal, state or local);

☐ foreign government;

☐ international organization per [26 CFR 1.6049-4](#);

☐ other

(f) Contractor representations.

The offeror represents as part of its offer that it is ☐, is not ☐ 51% owned and the management and daily operations are controlled by one or more members of the selected socio-economic group(s) below:

☐ Women Owned Business

☐ Minority Owned Business (if selected then one sub-type is required)

☐ Black American Owned

☐ Hispanic American Owned

☐ Native American Owned (American Indians, Eskimos, Aleuts, or Native Hawaiians)

☐ Asian-Pacific American Owned (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru)

☐ Subcontinent Asian (Asian-Indian) American Owned (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal)

☐ Individual/concern, other than one of the preceding.

F.3 JPV14 PROVISION 3-20, CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (APR 2011)

(a) (1) The offeror certifies, to the best of its knowledge and belief, that:

(i) the offeror and/or any of its principals:

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

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

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

(D) have ___, have not ___, within a three-year period preceding this offer, been notified of any delinquent federal taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied.

(1) Federal taxes are considered delinquent if both of the following criteria apply:

(i) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.

(ii) The taxpayer is delinquent in making payment. A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.

(2) Examples.

(i) The taxpayer has received a statutory notice of deficiency, under I.R.C. § 6212, which entitles the taxpayer to seek Tax Court review of a proposed tax

deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(ii) The IRS has filed a notice of federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. § 6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(iii) The taxpayer has entered into an installment agreement pursuant to I.R.C. § 6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.

(iv) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. 362 (the Bankruptcy Code).

(ii) The offeror ___ has ___ has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any federal agency.

(2) "Principal," for the purposes of this certification, means an officer; director; owner; partner or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division, or business segment, and similar positions).

(a) This certification concerns a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under [18 U.S.C. § 1001](#).

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

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the offeror's responsibility. Failure of the offeror to furnish a certification or provide such additional information as requested by the contracting officer may render the offeror non-responsible.

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

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

K.4 JPV14 PROVISION 3-30, CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (JAN 2003)

(a) The offeror certifies that:

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

- (A) those prices;
- (B) the intention to submit an offer; or
- (C) the methods or factors used to calculate the prices offered.

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or contract award unless otherwise required by law; and

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

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

(1) is the person in the offeror's organization responsible for determining the prices in this offer, and that the signatory has not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this provision; or

(2) (i) has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this provision _____ *(insert full name of person(s) in the offeror's organization responsible for determining the prices in this offer, and the title of his or her position in the offeror's organization);*

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

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

(c) If the offeror deletes or modifies paragraph (a)(2) of this provision, the offeror shall furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

F.5 JPV14 PROVISION 3-130, AUTHORIZED NEGOTIATORS (JAN 2003)

The offeror represents that the following persons are authorized to negotiate on its behalf with the judiciary in connection with this solicitation (*offeror lists names, titles, and telephone numbers of the authorized negotiators*).

Name: _____

Titles: _____

Telephone: _____

Fax: _____

E-mail: _____

SECTION G - INSTRUCTIONS, CONDITIONS, AND NOTICE TO OFFERORS**G.1 JUDICIARY POLICY VOLUME 14 (JPV14) PROVISION B-1, SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (SEP 2010)**

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its proposal or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its proposal or offer. Also, the full text of a solicitation provision may be accessed electronically at this address:

<http://www.uscourts.gov/procurement.aspx>.

NUMBER	TITLE	DATE
2-15	Warranty Information	JAN 2003
3-85	Explanation to Prospective Offerors	AUG 2004
3-95	Preparation of Offers	JAN 2003
3-100	Instructions to Offerors	APR 2011
7-60	Judiciary Furnished Property or Services	JAN 2003

G.2 JPV14 PROVISION 2-70, SITE VISIT (JAN 2003)

- (a) **It is strongly recommended to participate in the site visits before submitting a quote for this project.**

The Contractor site visit will be:

September 1st, 2024 from 9:00 to 11:00 a.m., EST

Please confirm your participation by contacting the Contracting Officer's Technical Representative (COTR), David Zendlo by phone at (330) 252-6023 or by email at david_zendlo@ohnd.uscourts.gov.

- (b) You **must** contact the COTR to schedule your site visit to the courtrooms.
- (c) All questions and inquiries shall be submitted in writing as specified in Section L.6.

G.3 JPV14 PROVISION 3-210, PROTESTS (SEP 2010)

(a) The protestor has a choice of protest forums. It is the policy of the judiciary to encourage Courts. However, if a party files a formal protest with an external forum on a solicitation on which it has filed a protest with the judiciary, the judiciary protest will be dismissed.

(b) Judiciary protests will be considered only if submitted in accordance with the following time limits and procedures:

(1) any protest shall be filed in writing with the contracting officer designated in the solicitation for resolution of the protest. It shall identify the solicitation or contract protested and set forth a complete statement of the alleged defects or grounds that make the solicitation terms or the award or proposed award defective. Mere statement of intent to file a protest is not a protest.

(2) a protest shall be filed not later than ten (10) calendar days after the basis of the protest is known or should have been known. A protest based on alleged improprieties in a solicitation which are apparent prior to the closing date for receipt of offers, shall be filed prior to the closing date for receipt of offers. The judiciary, in its discretion, may consider the merits of any protest which is not timely filed. The office hours of the Administrative Office are 8:30 a.m. to 5:00 p.m., eastern time. Time for filing a document expires at 5:00 p.m., eastern time, on the last day on which such filing may be made.

(3) the protest shall include the following information:

(i) name, address, and fax and telephone numbers of the protester or its representative;

(ii) solicitation or contract number;

(iii) detailed statement of the legal and factual grounds for the protest, to include a description of resulting alleged prejudice to the protester;

(iv) copies of relevant documents;

(v) request for a ruling by the judiciary;

(vi) statement as to the form of relief requested;

(vii) all information establishing that the protester is an interested party for the purpose of filing a protest; and

(viii) all information establishing the timeliness of the protest.

(c) Unless stated otherwise elsewhere in this solicitation, protests that are filed directly with the judiciary, and copies of any protests that are filed with an external forum, shall be served on the contracting officer at the Issuing Office address on the standard form, if any, or elsewhere in this parties first to seek resolution of disputes with the contracting officer. If the dispute cannot be resolved with the contracting officer, then it is the policy of the judiciary to encourage parties to seek a judiciary resolution of disputes with the Administrative Office of the United States solicitation. Written and dated acknowledgment of receipt must be obtained from the Contracting Officer issuing this solicitation, or authorized designee.

(d) The copy of any protest shall be received in the office designated above within one day of filing a protest with an external forum.

G.4 PROVISION 4-1, TYPE OF CONTRACT (JAN 2003)

The judiciary plans to award a firm fixed price contract under this solicitation, and all offers shall be submitted on this basis. Alternate offers based on other contract types will not be considered.

G.5 SUBMISSION ADDRESS AND DUE DATE

The response must be bound together at the upper left hand corner only. Please do not include binders with your response. One (1) original and one (1) copy of your RFP should be received by the Contracting Officer, **NO LATER THAN 5:00 P.M, EST. September 24th, 2023** at the following address:

U.S. District Court - Northern District of Ohio
Office of the Clerk
801 West Superior Avenue, Room 2-141
Cleveland, Ohio 44113
Attention: Natalie Wlotzko, Contracting Officer

Responses may be submitted by e-mail to natalie_wlotzko@ohnd.uscourts.gov.

G.6 INQUIRIES

CLARIFICATIONS, RESPONSES TO QUESTIONS AND/OR AMENDMENTS TO THIS SOLICITATION, WILL BE AVAILABLE ON THE INTERNET AT: www.ohnd.uscourts.gov. All clarifications and/or amendments, if made, will also be provided directly to all offerors of which the court has knowledge.

Questions concerning any areas of uncertainty which in your opinion require clarification or correction, must be furnished in writing, (e-mail is also acceptable) to Natalie Wlotzko, and marked "Offeror's Questions, RFP No. **OHND-06-07-AKR**", and must be submitted NO LATER THAN TEN CALENDAR DAYS from date of issuance of the solicitation document.

Questions pertaining to the Court's requirement or quote preparation should be referred only to Natalie Wlotzko, Contracting Officer, US District Court, Cleveland, Ohio, who may be contacted at (216) 357-7085, or email natalie_wlotzko@ohnd.uscourts.gov. Collect calls will not be accepted.

G.7 RESPONSE SUBMISSION

The Offeror is responsible for any and all expenses related to the preparation and submission of a response to this solicitation. The Court shall incur no obligation except pursuant to the execution of a contract by the Court and the successful Offeror (Contractor).

G.8 MINIMUM ACCEPTANCE PERIOD

(a) All offers and pricing shall remain valid for a period of ninety (90) calendar days (e.g., minimum acceptance period) from the date specified for the receipt of offers, unless another time period is specified in an addendum to this solicitation. Offerors may specify a longer acceptance period than the Court's minimum requirement; an offer allowing less than the Court's minimum acceptance period, however, may be rejected.

(b) The Offeror agrees to perform all tasks and functions and furnish all facilities, services, and items in compliance with its offer for the proposed prices, as accepted by the Court, if awarded the contract within the acceptance period. It shall be noted that the longer acceptance period whether specified by the Court or by the Offeror will be used to determine the actual minimum acceptance period.

SECTION H - EVALUATION FACTORS FOR AWARD**H.1 JUDICIARY POLICY VOLUME 14 (JPV14) PROVISION B-1, SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (SEP 2010)**

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its proposal or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its proposal or offer. Also, the full text of a solicitation provision may be accessed electronically at this address:

<http://www.uscourts.gov/procurement.aspx>.

CLAUSE NUMBER	TITLE	DATE
3-70	Determination of Responsibility	JAN 2003

H.2 AWARD ON INITIAL RESPONSES

The Court reserves the right to award the contract based on the initial response submission, without discussions or negotiations of such responses. Therefore, it is important that each response be fully compliant, without exception to any requirement, clause, or provision.

Offerors should submit initial responses which respond most favorably to the Court's requirements.

H.3 EVALUATION – GENERAL

(a) Award will be made on the basis of the lowest price/technically acceptable Offer.

Award will be on an all or none basis.

(b) The evaluation will be conducted using the evaluation criteria set forth in this section.

Each initial offer should contain the Offeror's best terms from a price and technical standpoint.

Clarification/revision requests may be issued which encompass any and all written documentation submitted in response to the solicitation as may be deemed necessary by the Contracting Officer, to fully explore and evaluate the merits of responses submitted. The Court reserves the right to conduct discussions, if later determined to be necessary.

H.4 EVALUATION PROCESS

Quotes will be evaluated based on product compatibility & reliability, service, and price.

The United States District Court reserves the right to:

1. Request clarification or additional information from any Contractor at any time,
2. Modify, remove, or add requirements to the RFQ and to suspend or reopen the RFQ process,
3. Reject any or all responses and terminate the RFQ

Final selection of the Contractor is solely within the discretion of the Court and will be contingent on the availability of funds.

Each response will be initially evaluated for:

- (1) Lowest price technically acceptable,
- (2) Responsiveness to the solicitation, agreed upon terms and conditions, and
- (3) The ability to satisfy the requirements of the solicitation

The Court reserves the right to consider as acceptable only those responses that are submitted in accordance with all requirements set forth or referenced in this solicitation. Offerors shall demonstrate an understanding of all requirements and a capability to provide the required facilities, services, and items. The Court reserves the right to reject responses that do not address the totality of the solicitation requirements, including the contract terms and conditions. Only those responses considered to be in compliance with all requirements herein will be evaluated.

Technical acceptability will be determined based upon the proposed equipment information submitted and past experience.

H.5 PRICE EVALUATION

Offerors' prices from the Bid Forms in the Schedule B attachment will be evaluated for reasonableness. Responses containing unrealistic prices will not be considered for award.

NOTE: The spreadsheets in Schedule B will calculate only after the spreadsheet has been saved.

H.6 CONTRACT AWARD

- (a) The Court intends to award a single contract resulting from this solicitation.
- (b) Contract award will be made to the responsible Offeror whose response represents the lowest price technically acceptable offer of the total award.
- (d) The Court reserves the right to make no award pursuant to this solicitation.



United States District Court for the Northern District of Ohio

Audio Upgrades Final Design Report

**John F Seiberling Building Courtroom 400
Akron, Ohio**

August 2023

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I. Technical Statement of Work

I. Technical Statement of Work

United States District Court Northern District of Ohio
Audio Upgrades Final Design Report
August 2023

The scope of this project will include the installation of new, standard, complete, and operational audio and control systems for Courtroom 400 in the John F. Seiberling Building in Akron, Ohio. The project is a renovation of an existing space. Existing infrastructure will be used to support the new audio equipment, including existing cabling (real-time transport [RTT] distribution system will be abandoned in place). The audio installer will be responsible for testing and verifying the performance of the system prior to any new work beginning within the courtroom. The audio design will include the following:

1. Audio reinforcement throughout the courtroom will utilize existing zones. Ceiling speakers are court-furnished equipment.
2. Speech amplification, including gooseneck microphones, will be provided at designated locations, and boundary microphones for bench conferences.
 - A. Lavalieres, shock mounts, and handheld microphones are court-furnished equipment. Contractor will test all court-furnished equipment (CFE) and accept as technically acceptable and operational. Any defective CFE to be addressed with contracting officer's technical representative (COTR) immediately.
 - B. One additional boundary microphone will be provided as part of this project.
3. Sidebar white noise for bench conferences will be provided.
 - A. Sidebar audio sources include a judge gooseneck microphone, two omnidirectional boundary microphones, and counsel table microphones.
 - B. Sidebar audio will route to the following:
 - 1) Hardwired headphones located at the judge, courtroom deputy (CRD), defense table (total of four), and prosecution table (total of four). Witness location will also have hardwired headphones, but will not receive sidebar audio feed.
 - 2) For the record (FTR) recording.
 - C. Sidebar will mute all outbound audio streams (out of the room, US Marshall Service [USMS], audio teleconference, etc.) and restore on return from the sidebar.
4. An interpreter system within the courtroom will be provided and will utilize a telephone interpreting program (TIPS) and an interpreter box with a headset/microphone at the defense table.
 - A. Utilize a wireless microphone system with a headset for TIPS.
 - B. Provide four audio inputs and outputs on digital signal processing (DSP) to allow for independent routing of audio from a teleconferencing system for a remote language interpretation system.
 - C. Provide connection for interpreter box at the witness. Provide a new interpreter box.

5. Audio record output at the designated location for a court-furnished, software-based recording system, via USB connection from DSP, will be provided (located at the lower bench side adjacent to the jury box).
 - A. Court utilizes FTR
 - 1) Channel 1: Active judge and court room deputy (CRD) microphone, sidebar microphones
 - 2) Channel 2: Active witness microphone
 - 3) Channel 3: Defense and presenter cart microphones
 - 4) Channel 4: Prosecution microphones, wireless, teleconferencing audio, wired 3.5mm analog audio input, and all TIPS audio channels
 - B. Provide four dedicated outputs with volume control
6. Out-of-room feeds shall be maintained for the following spaces and be controllable on the XPanel (on system power-up, default to mute):
 - A. Chambers speakers with volume control to be maintained. Audio adjustments will be required once the new system has been installed and tuned to provide acceptable intelligibility within those spaces.
 - B. Provide line-level audio outputs for USMS and holding cell
7. Voice over Internet Protocol (VoIP) audio conferencing/teleconferencing will be provided.
 - A. Four-line VoIP teleconferencing will be provided
8. An infrared (IR)-based, assistive-listening system will be provided.
 - A. Provide a two-channel assisted listening system with six headsets.
9. The control system will include Adobe Air/XPanels with control system applications fabricated to be similar to other courtrooms.
 - A. Control system shall include the following control capabilities:
 - 1) Audio system on/off control.
 - 2) Individual audio level control and mute capability for all audio input sources.
 - 3) Individual audio level control and mute capability for all microphones.
 - 4) Overall room audio level control.
 - 5) Near and far-end audio mute.
 - 6) Bench conference with white noise including level control.
 - 7) Audioconferencing with dial pad (applies to each VoIP line).
 - a) Maintain existing control of telephonic interface functions.

- (1) Volume Control.
- (2) Dual-Tone Multi-Frequency (DTMF) Dial Pad.
- (3) Mute.
- (4) Speed Dial.
- (5) Number Entry Clear.
- (6) Flash.
- (7) Calibrate.
- (8) Line selection.
- (9) Full DTMF functionality for Bridge line dialing in excess of 10-digit connection.
- 8) Telephone interface for use with interpreter mode.
- 9) System reset to last calibrated state.
- 10) Automatic system shut down at 9:00 PM local time, accounting for daylight savings twice yearly.

The following equipment will be court-furnished as part of this project:

- Chambers and ceiling-mounted 70v audio speakers (maintain existing cabling)
- Mini PC/Touchscreen control panel at CRD
- Tripplite Smart Pro UPS
- Cisco 9300 network switch
- (1) wireless handheld microphone
- Wired microphones as follows:
 - Judge: (1) 18" Gooseneck, (1) Lavalier
 - CRD: (1) 18" Gooseneck
 - Reporter: (1) 18" Gooseneck
 - Counsel: (4) 18" Gooseneck (two per table)
 - Witness: (1) 18" Gooseneck, (1) Lavalier
 - Lectern: (1) 18" Shock mount
 - Sidebar: (1) Omnidirectional Boundary microphone (second to be provided by contractor)
 - Jury: (1) Handheld Cardioid (CFE)

II. Audio Specifications

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SECTION 27 41 00

AUDIO SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements for the visual display, processing, routing, interface, audio support, control, and other peripheral and support equipment for audiovisual (AV) systems.

1.2 SUBSTITUTIONS

- A. The project shall be bid based on the equipment/materials listed in these schedules and on the drawings. The AV Contractor shall bear the "burden of proof" for demonstrating substitute equipment/materials equivalency and suitability. The Schedules will include specific product make and models for the items the AV Engineer has determined will meet the minimum requirements of the system. This in no way should be interpreted to imply the Government will only accept that make/model. The AV Contractor may propose substitutions for the specific makes/models identified in the Schedules.
- B. The AV Contractor shall be required to replace such installed substitute equipment/materials if an unforeseen defect appears, or if operational characteristics do not fulfill the design intent of the technical system.
- C. Where a specific piece of equipment has been discontinued and/or replaced by a new model; submission of the new model or a suitable item as applicable may be required by the COTR for evaluation prior to acceptance.
- D. Proposed substitute equipment shall be specifically noted in the bid schedule under columns "Substitution Make" and "Substitution Model" at the time of bidding. This column needs to be completed if the AV Contractor proposes an item of equipment that is different make/model than the item specified. All proposed substitutions should be submitted with manufacturer's specification sheets in order that the Government can evaluate the functional equivalency of the proposed equipment to the specified make/model. The Government will evaluate and approve or disapprove any proposed substitutions.

1.3 REFERENCES

- A. InfoComm International, "Basics of Audio and Visual Systems Design".
- B. InfoComm 10:2013, "Audiovisual Systems Performance Verification".
- C. InfoComm 2M-2010, "Standard Guide for Audiovisual Systems Design and Coordination Processes".
- D. AVIXA, F501.01:2015 "Cable Labeling for Audiovisual Systems".

1.4 DEFINITIONS

- A. The term "CFE" shall refer to "Court Furnished Equipment" which will be provided by the Court to the Installer. This equipment will be integrated as required.
- B. The term "shall" is mandatory; the term "will" is informative; the term "should" is advisory; and the term "provide" means furnish and install.
- C. The term "Engineer" refers to Alvine Engineering/IP Design Group.

- D. The term "Installer", "Integrator" or "Contractor" refers to the successful AV contractor and installer.
- E. The term "COTR" refers to the Contracting Officer's Technical Representative with the Court.

1.5 SYSTEM DESCRIPTION

- A. Provide all equipment, materials, associated hardware, power supplies, labor, transportation and incidentals, and all work needed for the installation and testing of the AV systems.
- B. The AV systems equipment will be installed within the equipment racks indicated within these specifications, associated drawings, and within the Court provided areas associated with the specified systems. It is the responsibility of the AV Contractor to verify space within racks, rooms, and cabinetry prior to installation as a portion of the Submittal Documents.
- C. The work shall be in accordance with this specification and in conformity with the designs, layouts and descriptions shown on the drawings.
- D. Any and all structural, mounting, or rigging details within this package is strictly conceptual. It is the responsibility of the AV Contractor to coordinate with design team Structural Engineer as necessary. Calculations shop drawings, and details of any structural modifications or additions shall be submitted to the COTR for approval.
- E. Unless stated otherwise on the drawings, the work shall include everything necessary or incidental to complete the installation EXCEPT wire raceway (including conduit), raceway fittings, outlet boxes, pull boxes, terminal cabinets, 120 volt AC power circuits, lighting systems, and insulated ground cables.

1.6 DESIGN REQUIREMENTS

- A. The AV Contractor shall provide low-voltage "on/off" control system wiring, low-voltage "on/off" control switches, and certain AC power/ground requirements internal to the equipment racks as specifically noted herein and/or on the drawings.
- B. Except when plenum rated cabling is used above finished ceilings, it is required that cabling for microphone and line inputs, control and other Audio related cabling be routed inside the comprehensive system of conduit indicated on the drawings and installed by others. Floor and wall boxes shall serve as the primary interface points to the Audio system.
- C. Provide and install cover plates, connectors and associated cabling to link all floor and wall boxes to all affiliated local and remote Audio components. The Court will provide no additional conduit, power or workboxes. If additional infrastructure is required, include provisions for what is additionally required in the proposal. No wiremold or surface mounted raceway will be permitted.
- D. All touch panel layouts are to comply with the applicable Court standards for touch panel layouts in both ascetics and programing types.
- E. Remote Control and Digital Signal Processing Standards:
 - 1. At a minimum, the remote control system for the Audio system shall be programmed to include the following:
 - a. Full function control of all source components, processing devices and switching electronics.
 - b. Panel layout to include user screens as well as password protected technician pages.

- c. Court logo on first page of control panel.
- d. Automatic system shutdown.
- e. AM/PM Clock settings.
- f. Intellectual property release for installing editable, uncompiled source code for the entire remote control system and associated panel layouts on CFE computer(s). Editable, uncompiled source code is intended for the Court to make additions, modifications and changes to the remote control system after the warranty period has expired.
- g. Provide and load onto Court dedicated computer, editable versions of all configuration files for any digital signal processing as well as the associated software required for editing those files. Provide editable and uncompiled versions of all master source code for the control system on USB drive.

1.7 PERFORMANCE REQUIREMENTS

- A. Performance Standards: Unless restricted by the published specification of a particular piece of equipment, or unless otherwise required, the following minimum performance standards shall be met by the AV system:
 - 1. Audio:
 - a. S/N (including crosstalk and hum): 75dB minimum.
 - b. Total Harmonic Distortion: 0.5% maximum from 30 Hz to 15,000 Hz.
 - c. Frequency Response: Flat within +1.0 dB, 30 Hz to 15,000 Hz.
 - 2. Performance Test Signal Paths: The signal paths for the above Performance Standards shall be as follows:
 - a. Audio: From any and all source inputs (microphones, audiotape units, videotape units, etc.) through all audio mixers, switchers, distribution amplifiers, codec's, etc., to all signal destinations.
 - b. Video: From all source inputs (cameras, computers, videotape units, etc.) through all switchers, processors, distribution amplifiers, etc., to all signal destinations.

1.8 SUBMITTALS

- A. Submittals shall comply with the overall project schedule. Failure to make timely, complete submittals is considered to be a lack of substantial progress of the work in the section.
- B. For the first submittal, also referred to as Shop Drawings, the AV Contractor shall provide the following:
 - 1. A complete list of all equipment and materials intended for the project, and with the list arranged in the same order as in the specifications. The material and equipment lists shall be submitted and reviewed before any equipment and material is purchased.
 - 2. The equipment list shall be accompanied by manufacturer's specification sheets on all MAJOR pieces of equipment, including: amplifiers, mixers, program source equipment, signal processing, loudspeakers, control system, and other MAJOR components of the audiovisual system. Unless directed otherwise in the front-end portion of the contract documents, cut sheets for minor items such as headphones, audio adapters, and audio connectors shall not be included. However, complete cut sheets shall be required for all substitutes or other equipment not specified herein.
- C. Sufficiently prior to installation of each respective portion of work, the AV Contractor shall submit the following:

1. All panel and plate layouts (such as for wall boxes and for rack/cart-mounting) indicating locations of connectors, engraving, labeling, nomenclature, panel material, and finish.
 2. All Equipment racks, cabinets, consoles, tables and cart front elevations showing equipment and panel layout.
 3. Mobile cart details, and related equipment and panel layout.
 4. Control system button/panel/screen layouts.
 5. All non-factory equipment modifications.
 6. All cable labeling plans
 7. For any permanent exposed cable applications, written authorization from the COTR as to which locations are approved in addition to cable pathway being utilized
 8. Shop drawings as indicated elsewhere in these specifications and/or on the project drawings.
- D. Copies of all reviewed submittals shall be kept at the project site during the construction of the project, for reference.
- E. If the submittal is technically disapproved, the COTR will return necessary copies to the PM with written explanation attached indicating the areas the submittal deviated from the system specifications.
- F. **EQUIPMENT MANUALS**
1. At the completion of the project, the AV Contractor shall compile a minimum of three (or quantity as described under the General Conditions, plus one copy) complete, identical copies (sets) of the items listed below.
 - a. All shop drawings of physical details (corrected to take into account any submittal review notations).
 - b. Original copies of manufacturers' catalogue sheets on ALL supplied equipment;
 - c. Original copies of manufacturers' engineering data sheets on ALL supplied equipment;
 - d. Original copies of ALL literature supplied with each item of equipment, including operating instructions and maintenance manuals. Manuals not routinely supplied with an item of equipment will not be required;
 - e. Other "as installed" Contractor-generated or vendor-generated drawings of the system which are not otherwise reflected in the project drawings.
 2. CD ROM's shall include the programming files for each of the systems within the project. These files shall be utilized to return the systems to the base line of operation established at the time of Final Systems Test and Equivalentization. Source Code files shall become property of the Court with no license limitations.
- G. **AS-INSTALLED WIRING DIAGRAMS**
1. Five working days prior to the proof of performance test, the Contractor shall deliver to the COTR, two complete sets of as-installed wiring diagrams of the system. The diagrams shall show all inputs and outputs of electronic and passive equipment correctly identified according to the markers installed on the interconnecting cables, equipment and room/area locations.
- H. **SYSTEM OPERATION MANUAL**
1. Produce this manual specifically for the system detailed herein. The manual shall describe all procedures necessary to activate the system to provide for the functional requirements, except as specifically excluded by the Court. This section shall provide a non-technical graphic and narrative "how-to" users guide for the procedures needed to operate the system. The document shall contain a section on operating the system's equipment in the event of control system

failure. Control system touchpanel layouts shall be accompanied by narrative text describing step-by-step function engagement.

1.9 QUALITY ASSURANCE

A. Contractor Qualifications:

1. Work in this section shall be performed by a AV Contractor who: complies with the requirements of Division 01, and is licensed to perform work of this type in the project jurisdiction, and has at least five (5) years of verifiable direct experience with the devices, equipment and systems of the type and scope specified herein.
2. The Contractor's AV Technicians assigned to the systems shall be fully trained, qualified, and carry valid and current industry certifications regarding the engineering, installation, operation, and testing of AV technologies. At least one (1) CTS-D or CTS-I shall be assigned to oversee the complete design and installation of the system. The Contractor shall provide formal written evidence of current industry certifications for the designer(s) and installer(s) dedicated to this project as a part of their submittal or to the COTR before being allowed to commence work on the system.
 - a. The AV Contractor shall include, with his bid, a list of credentialed staff who will be actively involved in this project including specific tasks each will perform. These personnel shall have at least three (3) years direct experience in similar work, evidence of which shall be verified in writing with appropriate references.
 - b. The AV Contractor shall have a minimum of one full-time staff member, who has a minimum of three (3) years direct experience and be a factory certified programmer on most recent version of the specified control system software and technology. This individual shall be the same throughout the execution of the work unless illness, loss of personnel, or other reasonable circumstances intervene. The replacement shall be approved by the COTR.

B. Source Limitations: Obtain equipment through a single source authorized by manufacturer to distribute each product.

C. CERTIFICATIONS

1. After the system has been provided, pretested, and found to meet the requirements of this specification, the Contractor shall submit a letter to the COTR certifying that the system is ready for the formal proof of performance test to be accomplished in the presence of the COTR.
 - a. In the interim, the systems shall be left operating to "burn-in".
 - b. A copy of each recorded system pretest measurements shall be submitted to the COTR with the certification. The Contractor shall submit one copy of the measurements to the COTR for review 15 working days prior to the test.

D. TEST EQUIPMENT LIST

1. Each Contractor is responsible for furnishing all test equipment required to test the system in accordance with the parameters specified. Unless otherwise stated, the test equipment shall not be considered part of the system. Each Contractor shall furnish test equipment of accuracy better than the parameters to be tested.
2. The test equipment furnished by each Contractor shall have a calibration tag of an acceptable calibration service dated not more than 12 months prior to the test. As part of the submittal, a test equipment list shall be furnished that includes the make and model number of the following type of equipment as a minimum. A sample of each of the following items shall be furnished to the COTR for approval

prior to installation. The samples may be returned to each Contractor at the discretion of the COTR:

- a. Two foot section of each cable and/or wire to be used with connectors installed and original equipment manufacturer's cable sweep compliance and/or certification tags as specified herein.
- b. Back Boxes and junction boxes.
- c. Cover plates used for wall and floor boxes.
- d. AV outlets with back box, cover plate, and outlets installed.
- e. UPS equipment (if required by system design).

1.10 DELIVERY, STORAGE AND PROTECTION

- A. The AV Contractor shall protect all work, materials and equipment from damage due to any cause. He shall provide for the safety and new condition of the equipment and materials until final acceptance by the COTR. The AV Contractor will replace all damaged or defective materials and/or equipment as directed by the COTR.
- B. Equipment racks and other exposed equipment shall be kept covered and protected from airborne contaminants. The AV Contractor shall clean all debris from the equipment room(s) and control console area, and shall clean all equipment and the interior rack floor, prior to system commissioning activities.

1.11 PROJECT CONDITIONS

- A. This project represents renovation of an existing facility. The AV Contractor shall test all hardware, including all existing audio functions, at the time of project start. This includes all Court provided equipment including but not limited to speakers in Gallery, Jury, Chambers, and Holding Cell. Audio, display, control, and annunciation cables from the AV equipment rack shall be tested. The AV Contractor shall provide the results of this test to the COTR.
- B. During the course of project construction, the AV Contractor shall personally examine the site of the proposed work and verify the conditions which involve his work.
- C. Prior to equipment installation all AV equipment that requires an IP address shall be turned over to the COTR for IP registration. No default passwords to be used in any applicable equipment.
- D. By the act of submitting a bid, the AV Contractor will be deemed to have made reasonable allowances for site examinations and site conditions, and included all costs in his proposal. Failure to verify site conditions will not be considered a basis for the granting of additional compensation.
- E. The AV Contractor shall comply with all applicable national and local codes, ordinances, and obtain all required permits. The AV Contractor shall be held responsible for any violations of the law within the scope of his work.
- F. All equipment shall be new and in proper operating condition. All workmanship shall be of the finest quality by experienced installation technicians.
- G. The AV Contractor shall contact the COTR, in writing, regarding the selection of colors for all equipment such as loudspeaker grilles, exposed loudspeaker boxes, wall plates, millwork, laminate, and other items specific to the project prior to ordering equipment.
- H. In addition to a complete set of the system project drawings and specifications, the AV Contractor shall maintain at the job site a complete set of manufacturer's original operation, instruction, installation, and service manuals for each equipment item, for reference.

- I. Once the AV Contractor begins work at the project site, the company shall maintain a project manager for the duration of the work to supervise the work force and to provide coordination with other trades. All contractors that will be on site during this project will be subject to a background check.
- J. The AV Contractor shall conform to all site policies regarding safety, job site hours, and any additional policy which may affect site conditions.
 - 1. A loading dock is available for use by contractor. Contractor must provide make/model/plate number of any vehicle used for deliveries and schedule with COTR at least 24 hours in advance.

1.12 WARRANTY

- A. The AV Contractor shall warrant all work executed under this contract, including all in-shop and onsite material, parts and labor, for a period of twelve months.
- B. Warranty period to start after the date of final acceptance of the system by the Court.
- C. The Contractor shall provide original equipment manufacturer's equipment warranty documents, to the COTR, that certifies each item of equipment installed conforms to each original equipment manufacturer's published specifications.
- D. The Court maintenance personnel shall have the ability to contact the AV Contractor and original equipment manufacturers for emergency maintenance and logistic assistance, remote diagnostic testing, and assistance in resolving technical problems. This contact capability shall be provided by the Contractor and each original equipment manufacturer at no additional cost to the Court.
- E. All AV Contractor maintenance and supervisor personnel shall be fully qualified by the original equipment manufacturers and must provide copies of current and qualified original equipment manufacturer training certificates and original equipment manufacturer certification upon request.
- F. The warranty services are limited to normal business hours, unless additional agreements are made between the COTR and the AV Contractor.
- G. The AV Contractor shall provide alternate pricing for second year and third year on-site services, and supply specific detail of the services and warranties that would be provided.
- H. RESPONSE TIME DURING THE ONE YEAR WARRANTY PERIOD
 - 1. The COTR is the AV Contractor's reporting and contact official for system trouble calls, during the warranty period.
 - a. A standard work week is considered 8:00 A.M. to 5:00 P.M., Monday through Friday.
 - 1) The Contractor shall respond and correct on-site trouble calls, during the standard work week to:
 - 2) Trouble call within one working day of its report. A routine trouble is considered a trouble which causes a single interface, display or loudspeaker component to be intermittent or inoperable.
 - 3) An emergency trouble call within four hours of its report. An emergency trouble is considered a trouble which causes the entire display or audio system to be inoperable at anytime.
- I. WORK NOT INCLUDED
 - 1. Maintenance and repair service shall not include the performance of any work due to improper use; accidents; other vendor, Contractor, or Court tampering or negligence, for which the Contractor is not directly responsible and does not control. The Contractor shall immediately notify the COTR upon the discovery of

these incidents, in writing. The COTR will investigate all reported incidents and render findings concerning any AV Contractors responsibility.

PART 2 PRODUCTS

2.1 MATERIALS

A. GENERAL

1. Passive and electronic components and cabling shall be provided under the original equipment manufacturer's recommendations and guidance, to prevent damage to any system equipment from electrostatic discharges. The Contractor shall contact the COTR for technical review and approval for this requirement in case of system redesign or change of technical approved system equipment that may require substitution.
2. It is the intention of these specifications to form a guide for complete and properly operating AV systems. These specifications' equipment and hardware listings herein represent only some of the major items of the systems' prerequisites. The major items of equipment shall be furnished in the quantity indicated by the one-line diagrams on the drawings or in the quantity as specified herein. However, where an item of equipment or hardware that may not be specifically shown on the single line drawings or specified herein this general and/or a specific section, but is required for complete and properly operating AV systems operation or installation, it shall be furnished by the AV Contractor.
3. Any item necessary for the operation of the systems within this document but not specifically listed or drawn shall be included by the bidder to the bidders pricing which includes pricing for all incidentals and labor necessary to complete the installation.
4. In any case, where a specific specification has not been included herein or shown on the drawings for any item that is required, the AV Contractor shall furnish only the highest quality equipment or material consistent with the quality of other specified equipment and material.
5. Unless otherwise designated, the AV Contractor shall provide all of one type of equipment from one manufacturer; for example, power amplifiers of one type to be provided by one manufacturer; all loudspeakers of one type by one manufacturer.
6. Provide serial numbers for all equipment provided with system documentation.
7. All major components of technical system equipment shall be provided and installed by a qualified AV Contractor as outlined in Part 1 of this section.
8. All equipment shall be of professional quality. All electronic audio devices shall have electronic or transformer balanced inputs and outputs except for specific program source equipment and. specific mixing console inputs and/or outputs. If an electronic device specified or furnished has an unbalanced input and/or output, the AV Contractor shall make provisions to balance said input/output (i.e., outboard line-level transformer as approved) unless other arrangements have been agreed upon with the COTR
9. Some items listed in these specifications are custom-made products. Ensure when pricing and ordering equipment that the exact part number called out is used. If there is a discrepancy, the AV Contractor shall contact the COTR for clarification.
10. Each digital or digital-controlled equipment component, such as audio delay units or equalizers, shall have its power cord connected via a 120VAC spike suppressor (Furman PL-8 Pro).
11. Each software programmable device furnished (i.e. integrated processing system, control system, etc.) shall include most recent software and appropriate computer interface cable - minimum 25' (device to IBM PC). Cable, software,

source (uncompiled) code, binary code, and all related aspects of all software-controlled equipment shall become the property of the Court and will be furnished as a portion of the Operation & Maintenance (O&M) manuals (see Operation & Maintenance Manuals near the end of Part 3).

12. Each item of equipment to be supplied under this specification shall be new and the current model of a standard product of an original equipment manufacturer of record.
13. Specifications of equipment as set forth in this document are salient and minimum requirements, unless otherwise stated, and shall not be construed as limiting the overall quality, quantity, or performance characteristics of items furnished in the system. When the Contractor furnishes an item of equipment for which there is a specification contained herein, that item of equipment shall meet or exceed the specification for that item of equipment.
14. The systems shall be provided so that the installation, integration, and combination of equipment actually employed does not produce any undesirable aural effects such as signal distortion, noise pulses, glitches, audio hum, poling noise, voltage or spike transients, etc.
15. While individual items of equipment may meet the equipment specifications, and in fact, meet the system specifications; when electrically associated with other equipment, the total system shall be designed and installed so that the installation, interfacing, integration, combining, and/or consolidation of equipment actually employed does not produce any undesirable visual or aural effects such as signal distortions, noise pulses, glitches, audio or video hum bars, transients, ghosting, etc.
16. The Contractor shall produce verification, in writing to the COTR at time of installation, that the type of wire/cable actually being provided is recommended and approved by the original equipment manufacturers and will provide a total system free of undesirable effects. The Contractor is responsible for the providing the correct protection cable duct and/or conduit and wiring even though the actual item installation may be by another subcontractor.
17. The Contractor is responsible for interfacing the systems with each required sub-system. The Contractor shall continually employ interfacing methods that are approved by the original equipment manufacturer and industry best practices. At a minimum, the acceptable interfacing method requires not only a physical and mechanical connection; but a matching of signal, voltage, and processing levels, with regard to signal quality and impedance.
18. Active electronic component equipment shall consist of solid state components and be rated for continuous duty service in the areas where provided.
19. All passive equipment and cables shall meet or exceed -80 dB radiation shielding specifications.
20. All signaling and communication circuits shall be solid state.
21. Each system shall utilize microprocessor components for all signaling and programming circuits and functions. Program memory shall be non-volatile or protected from erasure from power outages for a minimum of five minutes.
22. All voltages, except for the primary power to the power supply circuits, shall not exceed 70.7 VAC Root Mean Squared (RMS) or 100 V direct current (DC).
23. Color code all distribution wiring to conform to the respective system industry standard, TIA/EIA, and this document, whichever is the more stringent. At a minimum, all equipment, cable duct and/or conduit, enclosures, wiring, terminals, and cables shall be clearly and permanently labeled according to and using the provided as-installed drawings, to facilitate installation and maintenance. Reference Specification Sections 16127, CABLES LOW VOLTAGE 600 VOLTS AND BELOW.
24. All equipment face plates utilized in the system shall be stainless steel, anodized aluminum, or ABS plastic for the areas where provided.

25. Noise filters and surge protectors shall be provided for the AV system including equipment racks and display devices to ensure protection from input primary AC power surges and noise glitches are not induced into low voltage data circuits.

2.2 **LOUDSPEAKERS**

- A. Refer to loudspeakers schedule on detail drawings.

2.3 **AMPLIFIERS**

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 1. QSC
 2. Crown
 3. Biamp
- B. Power Amplifier Type 1:
 1. Channels: Eight
 2. Mounting: Rack-mounted
 3. Watts Per Channel: 300W
 4. Power Distribution: 70V
 5. Input Signal Type: Analog
 6. Design Basis Manufacturer: Crown
 7. Design Basis Series: DCi
- C. Headphone Amplifier Type 1:
 1. Input Channels: Two
 2. Output Channels: Eight
 3. Mounting: Rack-mounted
 4. Input Signal Type: Analog
 5. Design Basis Manufacturer: Behringer
 6. Design Basis Series: HA8000V2
- D. Headphone Amplifier Type 2:
 1. Input Channels: Two
 2. Output Channels: Four
 3. Mounting: Rack-mounted
 4. Input Signal Type: Analog
 5. Design Basis Manufacturer: Behringer
 6. Design Basis Series: HA4700

2.4 **AUDIO PROCESSORS**

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 1. Biamp
 2. BSS
 3. QSC
- B. Fixed Digital Signal Processor Type 1:
 1. Input/Output: 12x8
 2. Network Audio: AVB
 3. USB Audio: Yes
 4. Phone Interface: SIP/VoIP
 5. Control: RS-232 (Serial) and Ethernet
 6. Rack Mount: 1U

7. Manufacturer: Biamp
8. Model: TesiraForte AVB VT

2.5 WIRED MICROPHONES

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 1. Shure
 2. Audio-Technica
 3. Sennheiser
- B. Wired Boundary Microphone Type 3:
 1. Type: Dynamic
 2. Polar Pattern: Omnidirectional
 3. Connector Type: XLR, 3-Pin, Male
 4. Push Button: Yes
 5. Manufacturer: Shure
 6. Model: MX393
 7. Quantity: Refer to drawings and schedules for quantities.

2.6 WIRELESS MICROPHONES

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 1. Yamaha
 2. Shure
 3. Audio-Technica
 4. Sennheiser
- B. Wireless Wearable Lapel Mic:
 1. Frequency Range: 20 Hz to 20kHz
 2. Connector Type: 2.5mm for earpiece
 3. Batteries: Rechargeable
 4. Minimum Battery Life: 9 hours
 5. TIPS: Secure Duplex communication
 6. Manufacturer: Shure
 7. Model: Microflex
- C. Wireless Receiver:
 1. Frequency Range: X MHz Band
 2. Encryption: Advanced Encryption Standard (AES) 256-bit
 3. System Channels: 17 Channels per 6 MHz Band; 22 Channels per 8 MHz Band
 4. Output Connector: XLR
 5. Antenna(s): Integrated
 6. Accessories:
 - a. Antenna Combiner
 - b. Active Directional Antenna
 - c. Rack Mount Kit
 7. Manufacturer: Shure
 8. Model: Microflex 4-Channel
- D. Charging Station:
 1. Charging Station Ports: 4
 2. Network Connected: No
 3. Manufacturer: Shure

2.7 ASSISTIVE LISTENING

- A. IR Assistive Listening:
 - 1. Operating Frequency: 2.3 MHz
 - 2. Coverage Area: Refer to floor plans
 - 3. Audio Input Type: Analog balanced
 - 4. Audio Output Channels: 1
 - 5. Accessories: Batteries and Assistive listening notification signage.
 - 6. Manufacturer: Listen Technologies
 - 7. Receiver Model: LR-4200-IR
 - 8. Receiver Quantity: Refer to Schedule B
 - 9. Transmitter Model: LT-82

2.8 USB EXTENDERS

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 - 1. Extron
- B. USB Extender Transmitter:
 - 1. Minimum Video Resolution: 1920x1080
 - 2. Input Signal Type: USB
 - 3. Output Signal Type: Cat6
 - 4. Control Interface: None
 - 5. Accessories: Surface Mount Kit
 - 6. Manufacturer: Extron
 - 7. Model: USB Extender Plus T
- C. USB Extender Receiver:
 - 1. Minimum Video Resolution: 1920x1080
 - 2. Input Signal Type: Cat6
 - 3. Output Signal Type: USB
 - 4. Control Interface: None
 - 5. Accessories: Rack mount kit
 - 6. Manufacturer: Extron
 - 7. Model: USB Extender Plus R

2.9 CONTROL PROCESSORS

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 - 1. Crestron
 - 2. Extron
 - 3. AMX
- B. Control Processor Type 1:
 - 1. Memory Type and Quantities:
 - a. SDRAM: 512MB
 - b. Flash: 4GB
 - c. Memory Card: SD-HC 32GB
 - 2. Communications Connector Types and Quantities:
 - a. RS-232/422/485: 2
 - b. RS-232: 4
 - c. IR/Serial: 8
 - d. Relay: 8
 - e. I/O: 8

- f. Net: 1
- g. Ethernet: 1
- h. Control Subnet: 1
- i. Manufacturer: Crestron
- j. Control Processor Model: CP4N
- k. Accessories: Rack mount kit

2.10 RACKS

- A. Audiovisual Equipment Rack
 - 1. Refer to Schedule B.

2.11 WIRE AND CABLES

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 - 1. Belden
 - 2. West Penn
 - 3. Commscope
 - 4. Liberty
 - 5. General Cable
 - 6. Extron
 - 7. Crestron
- B. General Requirements:
 - 1. Wire and cables shall include all connectors and terminals, spade lugs, barrier straps, punch blocks, wire wrap strips, heat shrink tubing, tie wraps, solder, hangers, clamps, labels etc., required to accomplish a neat and orderly installation.
 - 2. Refer to schematics for equipment interconnect requirements.
- C. Audio Cables:
 - 1. Multi-conductor 16 AWG loudspeaker cable:
 - a. Type: Unshielded loudspeaker cable
 - b. Conductors: 16 AWG, Bare Copper
 - c. Quantity of Pairs: 1
 - d. Jacket: Plenum rated CMP 50
 - e. Jacket Color: Gray
 - f. Manufacturer: Belden
 - 2. Microphone and line level cable:
 - a. Type: Unshielded loudspeaker cable
 - b. Conductors: 22 AWG, Bare Copper
 - c. Quantity of Pairs: 1
 - d. Jacket: Plenum rated CMP 50
 - e. Jacket Color: Violet
 - f. Manufacturer: Belden
- D. Control Cable:
 - 1. Serial Control Cable:
 - a. Type: Serial Control Cable
 - b. Conductor: 20AWG Shielded twisted pair copper
 - c. Quantity of Pairs: 2
 - d. Jacket: Plenum Rated CMP 50
 - e. Jacket Color: Blue
 - f. Manufacturer: Extron

- E. Patch Cables:
 - 1. For each faceplate audio and video connection provide (1) 8ft long patch cable with connectors that interface with the faceplate connector on each faceplate unless noted otherwise on the detail drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify all conduits, back boxes and pathways.
- B. Verify correct power requirements have been supplied based on equipment load and device requirements.
- C. Verify proper operation of all existing audio functions prior to beginning any work within the courtroom.

3.2 PREPARATION

- A. Carefully inspect areas where equipment will be installed. Notify the COTR of any conditions that would adversely affect the installation and subsequent operation of the system.
- B. Coordinate with COTR for requirements for locations where AV equipment is mounted in millwork or cabinetry.

3.3 INSTALLATION

- A. New Wiring: Install wiring in raceways except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum-board partitions where cable wiring method may be used. Use plenum cable in environmental air spaces including plenum ceilings. Where possible for all audio cabling except microphone cables, microphone cables shall be installed in conduit. Conceal cables and raceways except in unfinished spaces. Cable shall be installed continuous with no splices or cuts.
- B. Install exposed cables parallel and perpendicular to surfaces or exposed structural members, and follow surface contours. Secure and support cables by straps, staples, or similar fittings so designed and installed to avoid damage to cables. Secure cable at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, or fittings.
- C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess. Use lacing bars in cabinets and racks.
- D. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inches for speaker microphones and adjacent parallel power and telephone wiring.
- E. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.
- F. Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.
- G. Wall-Mounting Outlets: Flush mounted.
- H. All terminations shall be installed per manufacturer's specifications and recommendations

- I. All audio circuits shall be two-wire circuits, with a separate grounding shield conductor, unless noted otherwise. All circuits shall have either the red or white wires as the "high" side of the line and connect to pin 2 of microphone-type XLR audio connectors and the tip of 3-conductor phone connectors. The black wire of the two-wire circuit shall be the "low" side of the line and connect to pin 3 of microphone connectors and the ring of 3-conductor phone connectors. The shield conductor shall connect to pin 1 of microphone connectors or to the sleeve of phone connectors. In the case of unbalanced lines, the low side shall connect to the shield connection.
- J. Identify all audio and video wire and cable clearly with permanent labels wrapped about the full circumference within one (1) inch of each connection. Indicate the number designated on the associated field or shop drawing or run sheet as applicable. Assign wire or cable designations consistently throughout a given system. Each wire or cable shall carry the same labeled designation over its entire run, regardless of intermediate terminations.
- K. Each conduit shall include a minimum of one spare cable or 10%, whichever is greater for each type of cable pulled including line-level, microphone-level, intercom, loudspeaker, control, video, and control system. Neatly bundle a minimum of 10-feet of cable at each end of each spare circuit. All spare circuits shall be labeled and noted on the AV Contractor's field drawings for inclusion into the record drawings.
- L. Where the design location requires that products, materials, or equipment are visible to the public, no manufacturer's logos shall be visible. Unless otherwise directed, neatly remove or permanently paint out such logos.
- M. **GROUNDING**
 - 1. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
 - 2. Signal Ground Terminal: Locate at all equipment display locations. Isolate from power system and equipment grounding.
 - 3. Shields shall be connected at each end of each wire to the pin 1 of each XLR, shield connection for each electronic device, etc. No shield wires shall be left unconnected except where noted on the drawings, nor shall any shield come in contact with conduit, pullboxes, or other building steel. Audio line-level circuit shield wires shall be grounded to rack sheet metal only via rack-mounted equipment. Shields shall be electrically isolated in multiconductor cables. Shields for audio line-level circuits connected to audio transformers shall be connected to transformer electro-static shields and case ground. In the case of unbalanced audio lines the shield wire shall connect to the low side of the line (black wire).
 - 4. Equipment rack ground shall be only via the insulated ground wire provided by the Electrical Contractor for technical system ground. Equipment racks shall be isolated from other ground paths such as building steel and from ground via conduit.
 - 5. Each equipment rack within a row of racks shall be electrically bonded to each other using a minimum 1/4-inch diameter unfinished bolt and nut with star washers. Bolts shall fasten to each equipment rack unpainted sheet metal. Each row of equipment racks shall be electrically bonded to adjacent row(s) via a No. 6 AWG insulated ground wire. This work shall be performed by the AV Contractor.
- N. **CIRCUIT ROUTING**
 - 1. All audio circuits shall be separated according to function; e.g. microphone circuits shall be separated from line-level circuits which are separated from video circuits which are separated from loudspeaker circuits. Where audio and video circuits are installed in conduit or other raceway, separate conduits are required for the various circuit functions.

2. Control and intercom circuits, and video circuits can be routed with line-level circuits, if separate conduit is not furnished for these circuits.
3. Where circuits are exposed in the equipment racks or large junction or pull boxes, the circuits shall be bundled according to function. Use plastic cable ties to bundle cables and provide as much separation as reasonable.

O. WIRE SPLICING

1. Audio and video circuits shall not be spliced except as shown on approved shop drawings.
2. All solder connections shall be made with soldering iron and rosin core solder. All solder connections shall be checked for "cold" solder joints by the AV Contractor.
3. All audio circuits terminating to screw-type connectors shall be installed with non-insulated brazed seam spade lugs of the proper size for wire and screw connection.
4. All crimped audio connections shall be installed with a Thomas & Betts WT111 M or Klien 1006 crimping tool with the notch opposite the barrel seam. All crimped video connections shall be installed with a ratchet style crimper such as the West Penn TL-SNS (screw-on BNC connectors will not be accepted). Ensure crimper is sized for connectors and cabling that is being installed.

P. CABLING

1. Cable within equipment racks, and where service loops are indicated, shall be separated and routed in neat groups according to function: microphone circuits, intercom circuits, line level audio circuits, loudspeaker circuits, video circuits, control circuits, and 120 volt AC power circuits. Cable shall be neatly arranged, but tight bundling, which makes modifications difficult, shall be avoided. two sided hook and loop wrap ties shall be used for grouping of circuits.
2. Cable in conduit or other raceway — microphone circuits, intercom circuits, line level audio circuits, loudspeaker circuits, control circuits, video circuits shall be separated from any 120 volt AC power circuits.
3. Care shall be exercised in wiring so as not to damage cables and equipment. Circuits shall not be spliced.

Q. AUDIO INSTALLATION

1. Unless otherwise noted, all audio circuits shall be two wires with shield, with the red or white wire used for the "high" side of the line and connected to pin 2 of microphone connectors or to the "tip" of patch panel and other phone jacks. The black wire shall be used for the " low" side of the line and shall connect to pin 3 of microphone connectors or to the "ring" of phone jacks. The shield (drain) wire shall connect to pin 1 of microphone connectors or to the sleeve of phone jacks.
2. All audio circuits (red or white and black conductors) shall be ungrounded except as provided by single ended amplifier inputs and where grounding of unbalanced circuits is directed during system tests. Shields for line level audio circuits shall be grounded to rack sheet metal at each cable termination. Where line level audio circuits connect to audio transformers, shields shall connect to transformer electrostatic shields and case grounds. At each cable termination shield or shield drain, wire length shall be approximately equivalent to the length of the insulated conductors. Shield drain wires shall be sheathed in green PVC sleeving or clear Teflon sleeving sized appropriately for conductor gauge. Circuit shields shall not otherwise connect to each other nor ground to electrical conduit at wall boxes, etc. Microphone circuit shields shall be grounded only at mixer inputs.
3. Where resistors are indicated to terminate an audio circuit, install each resistor at the end of the line at the input to the following transformer or amplifier. High impedance circuits shall not extend more than 20 feet.
4. All wire joints and connections in the audio system shall be made with rosin core solder and a small soldering iron; or with approved mechanical connectors.

Soldering shall be neat and shall not exhibit "cold" solder joints. Connections to screw type terminals shall be made with mechanically connected, un-insulated, spade type lugs selected for the particular wire size in use.

5. Connections made with miniature screw actuated, pressure type terminal strips shall be made by stripping approximately 1/4-inch of insulation from stranded conductor, inserting the untinned wire into the pressure terminal, and tightening the terminal screw using a small screwdriver which securely fits the screw head.
6. All crimp type connectors, including non-insulated butt connectors for inline loudspeaker circuit connections, shall be crimped with a Thomas & Betts model WT111 M tool. Spade tongue terminals shall be crimped with the notch on the barrel opposite the seam.
7. Loudspeakers shall be installed so there are no obstructions to the loudspeaker coverage pattern and shall be connected "in phase" and proper impedance matching shall be maintained between amplifiers and loudspeakers. As required for proper acoustic levels and proper aiming, re-tap selected loudspeaker transformers and re-orientate selected loudspeakers or loudspeaker clusters during final system tests and adjustments. High frequency drivers shall be installed in such a manner as to allow at least 10 degrees of aiming in the horizontal plane.
8. Tie-wrap and secure all loudspeaker line matching transformer leads and loudspeaker cable away from room loudspeakers to prevent "rattling" when loudspeakers are energized. All cut transformer inputs shall be individually protected from shorting against one another or other metal objects.

R. PHYSICAL INSTALLATION

1. Equipment Racks:
 - a. Racks will be installed plumb and square without twists in the frames or variation in level between the racks.
 - b. Firmly secure all equipment in place unless requirements of portability dictate otherwise.
 - c. Install appropriate factory or custom rack mount adapters for all equipment installed in equipment rack, whether specifically itemized or not. Utility or one size fits all rack shelves shall not be utilized unless specifically noted on the AV construction documents.
 - d. Install rear support for any equipment that exhibits mount stress or tilt caused by the depth or weight of the equipment.
 - e. The front of the rack will have the appropriate vented blanks and grills installed to fill in areas not used for equipment mounting.
 - f. Mounting hardware used in racks will be identical in color, size, and manufacturer as dictated by function, i.e. rack screws will be from the same manufacturer with identical fiber washers.
 - g. Vertical lacing bars shall be installed in all equipment racks in order to facilitate neat wiring and proper signal separation. Horizontal lacing bars shall be utilized in sufficient quantity to ensure that cables traveling horizontally do not sag, but not in such quantity to limit access for testing and maintenance.
 - h. Power distribution within equipment rack shall be via rack mounted outlet strips. No loose strips for "extra" outlets will be allowed.
2. Cabling Harness:
 - a. Any exposed cabling harnesses are to be concealed and neatly bundled in black expandable "Tech Flex" type harnessing sheath. Before installation sheath shall be cut to length and ends burned to prevent unravel. When installed the ends shall be turned into itself and secured with velcro-wraps.
3. Floor and Wall Plates:

- a. All connection plates (wall, floor, etc.) will be secured with appropriate fasteners and installed plumb and level. All plate and panel finishes shall be black. Each connection type shall be labeled in a logical manner consistent with the organizational standards of the Court. Labeling shall be engraved into plate material. Adhesive or mechanically fastened labels shall not be permitted.

3.4 CONTROL SYSTEMS INSTALLATION

- A. COTR shall supply current control processor programming file to match existing courtroom control system layouts.
- B. Courtroom Control Requirements:
 1. Present on All Pages
 - a. Presentation Source Volume Control and Mute with Graphic Representation
 - b. Room Volume Control and Mute with Graphic Representation
 - c. Chambers Audio On/Off
 - d. Out of Room Audio On/Off
 - e. Sidebar On/Off
 - f. Audio Controls
 - g. Audio Conference
 - h. Signaling
 2. Audio Controls Page
 - a. Set Mic Levels to Default button
 - b. Tabs for Judge/Deputy, Witness, Lectern/Presenter, Plaintiff, Defense, Court Audio and Interpreter with the following:
 - 1) Level control up/down with Graphic Representation
 - 2) Mute
 3. Audio Conference Page (telephone dialer to be capable of exceeding 10 digit dialing for conference)
 - a. VoIP Line Selection
 - 1) Line 1, 2, 3 or 4 buttons to all include the following
 - a) Inbound Volume Up/Down with Graphic Representation
 - b) Mute Outbound
 - c) Mute Inbound
 - d) Dialpad arrangement using the international standard ITU E.161
 - e) Digits Dialed with Clear button
 - f) Green Connect button
 - g) Red Hangup button
 - h) Back button
 - i) Indication of Call State
 - b. Audio Conference Routing Matrix as shown below (default configuration is as shown)

Audio Conf Line #	Audio Conference	Remote Interpreter	ALS Channel	Mic #
1	X		X	
2		X	X	1 2 3 4
3	X		X	
4		X	X	1 2 3 4

- C. Power sequencing requirements shall be as follows:

1. When the System Shutdown button is engaged, the current audio matrix level and mute settings shall be retained and a "blank" matrix shall be called to prevent audio system popping and equipment damage.
 2. When the System Shutdown button is engaged, power shall turn off after 15 seconds.
 3. When the System Shutdown button is engaged, turn all microphone phantom power off in order to extinguish the power lights on the microphones.
 4. When the Power On sequence is selected, power shall turn on immediately.
 5. After the system has stabilized, the control system shall call the normal room configuration audio matrix preset routing all nominal inputs and outputs.
 6. The matrix settings shall retain the last used level settings and mute conditions and restore those to system. Note that these may not be the same settings to be called when the Master Reset is called.
- D. Master Reset function shall be provided as follows:
1. Provide Master Reset function in code so that users can (at any time) reset the system to the last calibrated state as intended by the Contractor. This reset state shall NOT be automatically initiated at each power-up sequence. Each and every controlled device shall have action or actions that are called under this function. All reset functions listed below and timing sequences are approximate and shall be verified and reprogrammed as required for the shortest timing possible. This will occur during project engineering and programming stages, based upon actual equipment used and according to Court preferences. The following sequence actions shall commence when the Master Reset sequence is selected in the order listed:
 - a. All microphones shall be muted.
 - b. The control system shall call a "blank" preset in the audio matrix in order to disconnect all inputs from routing to any output.
 - c. Audio conference hybrid shall be placed on-hook.
 - d. The bench conference mode shall be turned off.
 - e. All mixers shall be reset to the original stored, calibrated, and approved settings for all mixer functions.
 - f. Out of room audio shall be turned off.
 - g. Chambers audio feed may be set to default on or off based on judicial preference.
 - h. USMS audio shall be turned off.
 - i. All microphones shall be un-muted, with the exception of the lavalier and all wireless microphones, which shall be muted.
 - j. The transcription playback input shall be muted.
 - k. The control system shall call the normal room configuration audio matrix preset routing all nominal inputs and outputs.
 - l. Control panels shall return to home page.
 - m. The control system shall call the normal operating room configuration matrix preset routing all nominal inputs and outputs.
 - n. Control panels shall return to home page.
- E. Maintain automatic system shutdown feature. System shall commence the shutdown feature each night of the week at 9:00 pm local time. The system shall automatically adjust for daylight savings time twice yearly.
- F. Audio system control configuration shall be as follows:
1. All microphone and program audio outputs shall be routed as listed below. Configure and program the control system and matrix mixer according to the overall design of the system. This includes, but is not necessarily limited to the following parameters for the loudspeakers:

- a. Wireless Mic On/Off: shall mute the Wireless microphone inputs from the receiver at the matrix mixer when set to "off". When set to "On" the system shall open the Wireless Microphone inputs. The default state for this control on system start-up shall be "On".
- b. Judge Mic/Lav: shall mute the Judge's microphone input and open the Judge's lavalier inputs when set to "Lav". When set to "Mic" the system shall open the Judge's microphone input and mute the Judge's Lavalier input. The default state for this control on system start-up shall be "Mic" unmuted.
- c. Witness Mic/Lav: shall mute the Witness' microphone input and open the Judge's lavalier inputs when set to "Lav". When set to "Mic" the system shall open the Witness' microphone input and mute the Judge's Lavalier input. The default state for this control on system start-up shall be "Mic" unmuted.
- d. Out of Room On/Off function shall be provided to stop audio from traveling outside the visible perimeter of the courtroom and chambers. When "Out of Room" is off, no feeds shall be routed to the USMS, streaming server, or holding cell audio feed. When function is enabled, audio will mute on sidebar. Independent of Chambers On/Off.
- e. "Chambers On/Off" function shall allow sound to be switched on or off to chambers independent of "Out of Room" function.
- f. Microphone base mute programming: program local control buttons on all boundary type microphones for push and hold to mute mode. Program all attorney microphones for push-and-hold to mute mode. Program all remaining microphones for push on/push off toggle.
- g. Overall Gain: shall be readily accessible control and shall control the gain of all loudspeaker outputs simultaneously. Control of noise masking outputs level shall be provided separately. Where direct outputs have been provided to drive powered loudspeakers, direct outputs shall also track with overall room gain and with room mute functions.
- h. Individual gain shall be provided for all inputs and outputs channels. These shall control the gains of each of the individual inputs and outputs separately. These include all individual line and microphone level sources and individual outputs such as loudspeaker zones, individual recording channels, and audio/video conference send and receive. All settings to be controlled under the reset function.
- i. Telephone interface: provide programming to control system. XPanel control of telephonic interface functions, including but not limited to caller volume control, mute, speed dial, call setup, number entry clear, flash, and calibrate. Provide dialer for each phone line provided. Utilize VoIP capability of mixer. Program shall allow full DTMF functionality for bridge line dialing in excess of 10 digit connection.
- j. Telephone Interface IR/Broadcast Display: When any phone dialer screen is active show "IR" and "PA" switch on screens for all lines selected for use with any interpreter mode. When any phone line is set for standard audio conference, the dialer screen for that telephone line shall not display "IR" or "PA" options. Default setting for incoming sound should be set to route to the PA system only. All interpreter and general tele-conference mixed to reporter headset no matter the IR or PA destination.
- k. Telephone Hybrid Incoming Calls: Maintain interface setup control on control panel so that the system accepts incoming calls but does not ring audibly within the courtroom. Duplicate current audio controls and functions. Provide control programming such that the bench area control screens flash an indicator that an incoming call is being received. The

visual alert on the control screen(s) shall graphically cover 50% of the display area and flash in contrasting images to alert Court staff as to call status. Mute all inbound and outbound audio when mute function is enabled and when "Bench Conference" is enabled.

- l. DSP Interface: Provide remote control of automatic microphone mixer to integrated control system. Provide protocol translation as required for complete control of all mixer functions and all individual input level controls via integrated control system. Provide overall gain that is readily accessible to control gain of all outputs simultaneously. Provide individual gain control of each inputs and microphone on an easily accessible page. Provide access to each inputs and output control on control panels under password/code protection.
- m. Bench Conference: Provide gain control to bench conference system so that when activated, control system will adjust gain of noise masking system and inputs volume of boundary, attorney tables, and (active) judge microphone. Bench conference gain control shall be programmed as a steady ramp up and down. Judge's Mic/Lav, attorney tables and boundary microphones to be mixed to reporter headset, FTR record, and all wired headphone feeds minus witness.
- n. Maintain all existing speaker locations and provide independent gain control in DSP.

3.5 CABLE INSTALLATION

- A. Where required, shielded twisted pair (Cat 6 STP) shall be used for cabling to reduce the possibility of RF interference on the data signal.
- B. All cables, regardless of length, shall be marked with ELECTRONICALLY PRINTED wrap-around, shrink wrapped markers at both ends. No handwritten labels will be accepted. There shall be no unmarked cables at any place in the system. In addition to wire pull numbers, all cable ends shall be clearly tagged with destination and function markings IN ENGLISH in accordance with the wiring diagram.
- C. Provide cable pass through holes if required. Provide grommets in all pass through holes. Coordinate placement of holes with the COTR. Indicate placement on Shop Drawings. Review all locations with the COTR before drilling.
- D. Contractor shall ensure that all visual and control cables are neatly dressed with split loom tubing or equivalent for pleasing appearance and safety.
- E. All inter-rack cabling shall be neatly strapped, dressed, and adequately supported. Service loops to be included in rack secured by hook and loop fasteners. Allow for a service loop from the wall to the rack in the A/V room to allow rack to be pulled forward. All abandoned cable shall be back pulled from the rack and coiled separately.
- F. Terminal blocks, boards, strips, or connectors, shall be furnished for all cables which interface with racks, cabinets, consoles, or equipment modules.
- G. Provide quick disconnect, native connectors on a jack field panel at the rear of the rack with English descriptions indicating purpose of connection to allow complete disconnection of rack. The connectors shall be of industry standard type, appropriate to the signal and voltages required by the equipment.
- H. 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 cables:
 - 1. Power cables
 - 2. Analog control cables
 - 3. Digital control cables

4. Audio cables carrying signals less than -20 dBm
 5. Audio cables carrying signals between -20 dBm and +20 dBm
 6. Audio cables carrying signals above +20 dBm
 7. RGBHV cables
 8. Video cables
 9. Radio frequency (RF) cables
 - a. Under no circumstances should audio cables be allowed to run in the same raceway as computer or power cables.
- I. Rack shall have power on one side and low voltage on the other side. 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.
- J. Cables shall be routed at least 610 mm from any fluorescent ballast and at least 1 m from any electric motors or other high level source of electromagnetic interference.
- K. Unless otherwise called for in these specifications, the following cables, or their approved equals, shall be used in these systems:
1. Audio - Canare L4E5AT
 - a. Audio (70 Volt speakers) - Belden 8461
 - 1) Audio (8 ohm speakers) - Belden 8473
 - 2) Video (baseband) - Belden 8281
 - 3) RF (Broadband) - Belden 9291
 - 4) Control - Belden 8489
- L. All cables shall be cut to the length dictated by the run. No splices shall be permitted in any pull boxes without prior permission of the COTR. For equipment mounted in drawers or on slides, the interconnecting cables shall be provided with a service loop of appropriate length.
- M. All cables in conduits must be insulated and shielded from each other and from the conduit the entire length and must not be spliced. Ground all shields at the high-level termination end of the respective circuits only, unless otherwise specified herein. Heat shrink tubing shall be used to dress the ends of all wire and cabling including a separate tube for the drain or ground wire.
- N. Ensure that the maximum pulling tensions of the specified distribution cables are not exceeded and cable bends maintain the proper radius during the placement of the facilities. No cable shall be installed with a bend radius less than that recommended by the cable manufacturer. Observe the bending radius and pulling strength requirements of the cables during handling and installation. Provide clutch or shear pin protection for cables during cable pulling to ensure cable pulling tension is not exceeded. Existing service loops to be maintained or added where needed.
1. Provide temporary protection of cables before termination. Cables shall not be left lying on the floor. Bundle and tie wrap to provide protection.
 2. All existing CAT5 A/V system cable to be removed and CAT6/6A cable to be installed as needed. Defer to COTR if in doubt on cable function prior to removal.

3.6 CONNECTOR ASSEMBLIES

- A. Provide engraved wall, table, and floor connector bulkhead I/O plates for all audio and control connections. All visible connector assemblies shall be constructed of black colored anodized aluminum with white letters. Hidden (not easily seen) connector assemblies may be stainless steel or anodized aluminum. Provide surface mount boxes where required to accommodate connections. Employ cable management to ensure a neat, clutter free finish.

- B. RJ-45 Jacks shall be wired per the pair assignments indicated in ANSI/TIA/EIA 568-B-2001.
- C. Coordinate the replacement of all visual devices and connector assemblies with the COTR.

3.7 INTERFACE WITH OTHER WORK

- A. Coordinate all required interfaces with other trades and systems as required.

3.8 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
- B. Schedule tests with at least seven days' advance notice of test performance.
- C. After installing display equipment and after input signals are available and calibrated after electrical circuitry has been energized, test for compliance with requirements.
- D. Operational Test: Perform test and calibration sound per manufacturer installation training. Verify proper signal levels and that system is free of noise and distortion with all signals provided at outlet.
- E. Retesting: Correct deficiencies in audio and retest. Prepare a written record of tests.
- F. Inspection: Verify that units and controls are properly labeled and all interconnecting wires and terminals are identified.

3.9 STARTING EQUIPMENT AND SYSTEMS

- A. Upon completing installation of each system, the Contractor shall align, balance, and completely pretest each entire system under full operating conditions.
- B. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.
- C. System tests and adjustments shall include but not be limited to the following:
 - 1. Functional tests of all individual audio and control equipment.
 - 2. Alignment, convergence and source input settings for each video monitor.
 - 3. Functional tests of all AV control system software functions
 - 4. Room equivalentization and audio gain structure set up providing the maximum possible dynamic range and gain before feedback. These settings shall be documented and submitted to the COTR prior to Final System Tests and Equivalentization.
 - 5. All functional tests of the installed system as required assuring that the system is ready for final inspection.
- D. The AV Contractor shall be responsible for notifying the COTR of any unresolved malfunctions encountered during system tests and of any equipment not at the site sufficiently prior to final system testing and inspection.
- E. If troubles are encountered, the AV Contractor shall continue tests and adjustments until the system operates in a satisfactory manner.

3.10 TRAINING

- A. Furnish the services of a factory-trained Engineer or technician for One (1), two-hour period per courtroom to instruct the Court's personnel. Instruction shall include corrective and preventive maintenance of each system's equipment. Training shall be accomplished

before the system can be accepted by Court. Additionally, training will be scheduled at the convenience of the Court for these periods.

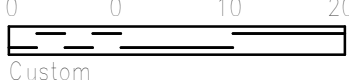
3.11 CLEANING AND PROTECTION

































- A. Jobsite to remain organized during construction. All efforts must be made to protect existing finishes and equipment. Any devices altered during construction to be brought back to existing or better condition upon completion of construction.
- B. Audio rack to be pre-assembled at AV contractor's shop as much as possible to minimize assembly time in courtroom. Refer to previous reference regarding loading dock and deliveries.
















3.12 SCHEDULE

- A. All work to be scheduled with COTR.

III. Audio Drawings



TECHNOLOGY SYMBOLS LEGEND			
 FLOOR BOX/FLOOR POKE-THRU DEVICE	 ELECTRONICALLY CONTROLLED AND MONITORED DOOR LOCATION (REFER TO ACCESS CONTROL OPENING SCHEDULE)	 JUNCTION WALL BOX	 GLASS BREAK SENSOR
 JUNCTION CEILING BOX	 INTERCOM STATION ("S" SUBSTATION, "M" MASTER STATION, "Y" INDICATES VIDEO)	 NETWORK WALL OUTLET	 ACCESS CONTROL DEVICE LOCATION "M" INDICATES MULLION MOUNT
 NETWORK CEILING OUTLET	 SECURITY EQUIPMENT CABINET(S). TYPE AND QUANTITY MAY VARY FROM WALL MOUNTED, FREE STANDING RACKS, OR EXTERIOR RATED. REFER TO DETAILS	 WALL POWER CIRCUIT	 SECURITY KEYPAD DEVICE
 WALL POWER DUPLEX RECEPTACLE	 REQUEST TO EXIT DEVICE ("M" MOTION SENSOR, "P" PUSH BUTTON)	 WALL POWER DBL-DUPLEX RECEPTACLE	 SECURITY PUSH BUTTON ("P" INDICATES PANIC ALARM OR DOOR RELEASE)
 CEILING POWER CIRCUIT	 WALL MOUNT MOTION SENSOR (90 = 90°, 180 = 180°, NB = NARROW BEAM)	 CEILING DUPLEX RECEPTACLE	 CEILING MOUNT MOTION SENSOR
 CEILING DBL-DUPLEX RECEPTACLE	 CABLE BASKET - REFER TO PLANS FOR SIZE	 CEILING MULTI-SENSOR CAMERA	 CONDUIT - REFER TO PLANS FOR SIZE
 WALL MOUNT CAMERA	 CEILING RECESSED LOUDSPEAKER - SHOWN FOR COORDINATION PURPOSES ONLY	 PTZ CAMERA	 IR EMITTER
 WALL MOUNT 360 DEGREE CAMERA		 360 DEGREE CAMERA	
 WALL MOUNT MULTI-SENSOR CAMERA		 MULTI-SENSOR CAMERA	

 JxNx	AUDIOVISUAL ONLY JUNCTION BOX
 Nx	NETWORK ONLY JUNCTION BOX
 Px	POWER OUTLET
 Jx(Nx)	JUNCTION BOX CONTAINING NETWORK OUTLET
 Jx(Px)	JUNCTION BOX CONTAINING POWER OUTLET
 Jx(Nx,Px)	JUNCTION BOX CONTAINING NETWORK & POWER OUTLETS
 Fbx	FLOOR BOX
 Fbx(Nx)	FLOOR BOX CONTAINING NETWORK OUTLET
 Fbx(Px)	FLOOR BOX CONTAINING POWER OUTLET
 Fbx(Nx,Px)	FLOOR BOX CONTAINING NETWORK & POWER OUTLETS
 Fpx	FLOOR POKE-THRU DEVICE
 Fpx(Nx)	FLOOR POKE-THRU DEVICE CONTAINING NETWORK OUTLET
 Fpx(Px)	FLOOR POKE-THRU DEVICE CONTAINING POWER OUTLET
 Fpx(Nx,Px)	FLOOR POKE-THRU DEVICE CONTAINING NETWORK & POWER OUTLETS
 Fsx	FLOOR CONDUIT STUB

NOTES

- FOR J-NUMBER REFER TO TECHNOLOGY JUNCTION BOX SCHEDULE
- FOR N-NUMBER REFER TO TECHNOLOGY NETWORK JUNCTION BOX SCHEDULE
- FOR P-NUMBER REFER TO TECHNOLOGY POWER COORDINATION SCHEDULE

1. N-NUMBER DESIGNATES BOX-TYPE & MOUNTING STYLE.

2. LETTER DESIGNATES CABLE PULL TYPE.

3. SYMBOL DESIGNATES FLOOR, WALL, OR CEILING

4. REFER TO TELECOMMUNICATIONS CABLING LEGEND FOR MORE INFORMATION ON CABLE PULL TYPE.

5. ELEVATION SYMBOL DETAIL# / SHEET #

6. SECTION SYMBOL DETAIL# / SHEET #

7. DISPLAY TYPE - REFER TO PROJECTION SCREEN TYPE SCHEDULE AND DISPLAY TYPE SCHEDULE FOR MORE INFORMATION.

8. NUMBER DESIGNATES DISPLAY TYPE

9. LETTER DESIGNATES DISPLAY MOUNTING STYLE

10. PROJECTION SCREEN TYPE AND PROJECTOR MOUNTING STYLE SEE SHEET T001 FOR MORE INFORMATION

11. LETTER DESIGNATES PROJECTION SCREEN TYPE

12. NUMBER DESIGNATES PROJECTOR MOUNTING STYLE

TECHNOLOGY GENERAL NOTES:

COMMUNICATIONS CABLING NOTES:







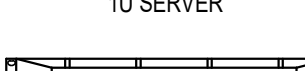


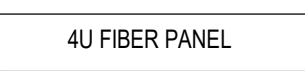






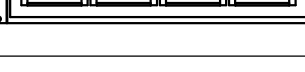


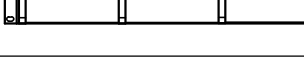




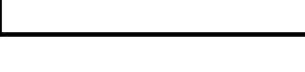



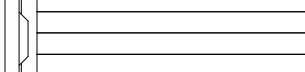
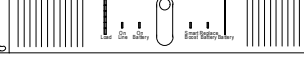
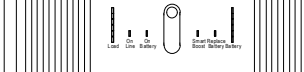
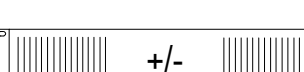

1. INSTALL COMMUNICATIONS HORIZONTAL CABLES CONTINUOUS FROM WORK AREA OUTLET TO THE TELECOMMUNICATIONS ROOM. INSTALL BACKBONE CABLES CONTINUOUS FROM TELECOMMUNICATIONS ROOM TO TELECOMMUNICATIONS ROOM. DO NOT SPLICE TELECOMMUNICATION CABLES.
2. CABLE DAMAGED DURING ITS INSTALLATION WILL NOT BE ACCEPTED. CABLE DAMAGED, INCLUDING PANTED CABLES, SHALL BE REPLACED WITH NEW CABLE AT THE EXPENSE OF THE CONTRACTOR. DAMAGE INCLUDES PHYSICAL DAMAGE TO CABLE OR IMPROPER INSTALLATION PRACTICES THAT MAY AFFECT PERFORMANCE.
3. COORDINATE FINAL LOCATION OF ALL WORK AREA OUTLETS WITH THE ARCHITECTURAL ELEVATIONS AND THE ELECTRICAL DRAWINGS.
4. SEE T SERIES DETAIL AND SCHEMATIC SHEETS FOR CABLING, FACEPLATE, GROUNDING AND PATHWAY DIAGRAMS.
5. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL ROUGH-IN AND PATHWAY REQUIREMENTS.
6. COORDINATE WITH THE GENERAL CONTRACTOR AND PAINTING SUBCONTRACTOR SO THAT THE COMMUNICATIONS CABLES ARE NOT PANTED OR OVERSPRAYED. PANTED CABLES WILL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

CONSTRUCTION CABLING NOTES:

1. ALL DEBRIS RESULTING FROM PENETRATIONS SHALL BE CLEARED AND REMOVED FROM SITE ON A DAILY BASIS.
2. PROTECT ALL MATERIALS AND SURFACES TO REMAIN. SURFACES AND MATERIALS DAMAGED DURING CONSTRUCTION, WILL BE REPAIRED AND FINISHED TO MATCH ORIGINAL CONDITIONS. PROTECT EQUIPMENT, AND FURNISHINGS WHERE CONSTRUCTION WILL CAUSE DUST, DEBRIS, AND POSSIBLE DAMAGE.
3. EXERCISE CARE WHEN REMOVING OR REPLACING SUSPENDED CEILING TILES. DAMAGED TILES SHALL BE REPLACED WITH NEW TILES. DAMAGE INCLUDE FINGERPRINTS LEFT ON NEAREST TILES.
4. ANY STAGING AREA USED BY THIS CONTRACTOR SHALL BE RETURNED TO ORIGINAL CONDITION TO OWNERS SATISFACTION. THE CONTRACTOR SHALL ARRANGE WITH THE GENERAL CONTRACTOR TO OBTAIN WORK TRAILERS. MATERIAL STORAGE AND STAGING AND PARKING SPACE IF NEEDED. THE CONTRACTOR SHALL PROVIDE WORK TRAILER, SECURE STORAGE SPACE, PHONE LINES AND ANY OTHER SERVICE DEEMED NECESSARY. THE OWNER WILL NOT PROVIDE ANCILLARY SERVICES AT THE CONSTRUCTION SITE.
5. FIRESTOP ALL FLOOR, TRAY, AND WALL PENETRATIONS.
6. BOND ALL CABLE TRAYS UTILIZING CABLE TRAY MANUFACTURER'S RECOMMENDED HARDWARE WITH CONDUIT SLEEVES AND PATHWAYS.

DETAIL NOTE:

1. PROJECT DETAILS ARE PROVIDED ON DESIGNATED DETAIL SHEETS. DETAILS APPLY TO THE ENTIRE PROJECT IN ALL LOCATIONS WHERE SET-AS-LEAD CONDITION EXISTS AND ARE ONLY REFERENCED TO PROVIDE CLARITY IF NECESSARY.

RACK SYMBOL LEGEND											
 1U 24 PORT PATCH PANEL	 2U 48 PORT PATCH PANEL	 1U 24 PORT ANGLED PATCH PANEL	 2U 48PORT ANGLED PATCH PANEL	 1U 24 PORT SWITCH	 1U 48 PORT SWITCH	 1U SERVER					
 1U FIBER PANEL	 2U FIBER PANEL	 4U FIBER PANEL	 1U HORIZONTAL WIRE MANAGER	 2U HORIZONTAL WIRE MANAGER	 4U HORIZONTAL WIRE MANAGER	 2U SERVER					
 1U BLANK PANEL	 2U BLANK PANEL	 3U BLANK PANEL	 4U BLANK PANEL	 1U GROUND BAR	 1U POWER STRIP	 4 SLOT CHASSIS SWITCH	 18 SLOT CHASSIS SWITCH				
 RACK	 CABINET	 VERTICAL CABLE MANAGER	 WALL MOUNTED CABINET	 2U UPS	 4U UPS	 9 SLOT CHASSIS SWITCH					
				 RACK MOUNTED BATTERY	 2U SHELF						
				 RACK MOUNT 110	 1U HUB						

SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS AND ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

ABBREVIATIONS											
ACEG AC EQUIPMENT GROUND	CO-OSP CUSTOMER OWNED-OUTSIDE PLANT	FT FEET	MBH 1000 BTU/HOUR	PB PULLBOX	TBB TELECOMMUNICATIONS						
AFB ABOVE FINISHED FLOOR	CRAC COMPUTER ROOM AIR CONDITIONER	GA GAUGE	MC MAIN CROSS CONNECT	PBO PROVIDED BY OTHERS	TBBB TELECOMMUNICATIONS BONDING						
ANJ AUTHORITY HAVING JURISDICTION	CT CABLE TRAY	ONLY GALVANIZED	MDF MAIN DISTRIBUTION FRAME	PSX PRIVATE BRANCH EXCHANGE	TBBBC TELECOMMUNICATIONS BONDING						
ALF ALUMINUM FRAME DOOR	DAS DISTRIBUTED ANTENNA SYSTEM	GC GENERAL CONTRACTOR	MECH MECHANICAL	POU POWER DISTRIBUTION UNIT	BACKBONE INTERCONNECTING						
APPROX APPROXIMATELY	DM DAMETER	SEC GROUNDING ELECTRODE CONDUCTOR	MSB MAIN GROUND BAR	PANL PANEL	BONDING CONDUCTOR						
ATS AUTOMATIC TRANSFER SWITCH	DN DOWN	GEN GENERATOR	MIN MINIMUM	POE POWER OVER ETHERNET	TC TELECOMMUNICATIONS CLOSET						
AUX AUXILIARY	OP OPERATOR POINT	GFCI GROUND FAULT CIRCUIT INTERRUPTER	MISC MISCELLANEOUS	POP POINT OF PRESENCE	TEL TELEPHONE						
AV AUDIO/VISUAL	OPS DOOR POSITION SWITCH	GND GROUND	MM MULTIMODE	PP PATCH PANEL	TELECOM TELECOMMUNICATIONS						
AVI AUTOMATIC VEHICLE IDENTIFICATION	DVR DIGITAL VIDEO RECORDER	HGT HEIGHT	MPC MAIN POINT OF ENTRANCE	PSN PUBLIC SWITCHED TELEPHONE	TEMP TEMPERATURE						
AWG AMERICAN WIRE GAUGE	DWG DRAWING	HH HANDHOLE	MTD MOUNTED	PSN NETWORK	TR TELECOMMUNICATIONS ROOM						
BMS BUILDING MANAGEMENT	DX DIRECT EXPANSION	HMF HOLLOW METAL FRAME DOOR	MTG MOUNTING	PTZ PAN/TILT/ZOOM	TTB TELEPHONE TERMINAL BOARD						
BMS CONTROL SYSTEMS	EAC ELECTRONIC ACCESS CONTROL	HMAC HEATING, VENTILATING AND AIR CONDITIONING	MTOA MULTI-USER TELECOMMUNICATIONS	PVC POLYVINYL CHLORIDE	TV TELEVISION						
BCSI BUILDING INDUSTRY CONSULTING	EO ELECTRICAL CONTRACTOR	HZ HERTZ	NC NORMALLY CLOSED	PWR POWER	TVSS TRANSIENT VOLTAGE SURGE						
BSI SERVICE INTERNATIONAL	ESB ELECTRICAL GROUND BAR	IC INTERCOM	NEC NATIONAL ELECTRICAL CODE	RQD REQUIRED	US UNDERGROUND						
BLOG BUILDING	EL ELEVATION	DC INSULATION DISPLACEMENT CONNECTOR	NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	RSS RIGID GALVANIZED STEEL	UNT UNTERGROUND						
BTC BONDING CONDUCTOR FOR TELECOMMUNICATION	ELEC ELECTRICAL	IDF INTERMEDIATE DISTRIBUTION FRAME	NFPA NATIONAL FIRE PROTECTION ASSOCIATION	RM ROOM	US UNDERGROUND						
BTU BRITISH THERMAL UNIT	EMS ENERGY MANAGEMENT SYSTEM	IDS INTRUSION DETECTION SYSTEM	NO NOT IN CONTRACT	RQD RIGID GALVANIZED STEEL	UNT UNTERGROUND						
BTUH BRITISH THERMAL UNIT PER HOUR	EMT ELECTRICAL METALLIC TUBING	IP INTERNET PROTOCOL	NO NORMALLY OPEN	RSB SECONDARY BONDING BUSBAR	UNT UNTERGROUND						
C CONDUIT	EPO EMERGENCY POWER OFF	ISF INSIDE PLANT	NTS NOT TO SCALE	SCIP SCREENED TWISTED PAIR	UPS UNINTERRUPTIBLE POWER SUPPLY						
CAB CABINET	EQ EQUIPMENT	KJ KILJOULE	NTS NOT TO SCALE	SM SIMILAR	UTP UNSHIELDED TWISTED PAIR						
CATV CABLE TELEVISION	ER EQUIPMENT ROOM	KV KILOVOLT	NTS NOT TO SCALE	SLAB SEALED LEAD ACID BATTERY	VA VOLT-AMPERE						
CCTV CLOSED CIRCUIT TELEVISION	EW EXHAUST	KVA KILOVOLT AMPERE	NVE NETWORK VIDEO ENCODER	SPD SURGE PROTECTIVE DEVICE	VERT VERTICAL						
CL CENTER LINE	EXIST EXISTING	KW KILOWATT	NVR NETWORK VIDEO RECORDER	SPS SPECIFICATIONS	WAT WATT						
CLC COMPETITIVE LOCAL EXCHANGE CARRIER	FA FIRE ALARM	LAN LOCAL AREA NETWORK	OC ON CENTER	SS SECURITY SYSTEMS INTEGRATOR	WAN WIDE AREA NETWORK						
CLG CEILING	FAC FIRE ALARM ANNUNCIATOR PANEL	LBM LATCH LOCK MONITOR	OFCI OWNER FURNISHED	ST STAINLESS STEEL	WAP WIRELESS ACCESS POINT						
CLR CLEAR	FB FLOOR BOX	LES LOCAL EXCHANGE CARRIER	OPE OWNER PROVIDED ELECTRONICS	STD STANDARD	WMP WIRE MANAGEMENT PANEL						
CM COMMUNICATIONS CABLE	FL FLOOR	LEC LOCAL EXCHANGE CARRIER	OSP OUTSIDE PLANT	STP SHIELDED TWISTED PAIR	WP WEATHERPROOF						
CMF COMMUNICATIONS FIBER CABLE	FO FIBER OPTIC	MATY MASTER ANTENNA TELEVISION	PABX PRIVATE AUTOMATIC BRANCH EXCHANGE	SW SWITCH	WTH WIRE TRANSFER HNGE						
CMR COMMUNICATIONS RISER CABLE	FOV FIELD OF VIEW	MAX MAXIMUM	PBS PRIMARY BONDING BUSBAR	T-1 TRUNK LEVEL 1							
CONX COAXIAL CABLE	FP FIBER PANEL										

GENERAL SERVICES ADMINISTRATION PUBLIC BUILDING SERVICES GREAT LAKES REGION 230 S. Dearborn Street Chicago IL 60604											
FIELD VERIFY ALL DIMENSIONS											
EXAMPLE											
SPACE ID: 4115 SPACE TYPE: (CODE) ROOM NAME: CTR ROOM CODE: 4115 ROOM CODE: 4115											
ANSI/BOMA CATEGORIES											
SPACE TYPES											
SPACE CATEGORIES											
DATE: 08/21/23											
PROJECT: Technology Symbols and Abbreviations											
DRAWING: OH0194-KEY											
FILE NAME: OH0194-KEY											
FLOOR NO.: 03											
DRAWN BY: [Signature]											
CHECKED BY: [Signature]											
DATE: 08/21/23											
PROJECT: Technology Symbols and Abbreviations											
DRAWING: OH0194-KEY											
FILE NAME: OH0194-KEY											
FLOOR NO.: 03											
DRAWN BY: [Signature]											
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DATE: 08/21/23											
PROJECT: Technology Symbols and Abbreviations											
DRAWING: OH0194-KEY											
FILE NAME: OH0194-KEY											
FLOOR NO.: 03											

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TECHNOLOGY JUNCTION BOX SCHEDULE

FLOOR BOX		LENGTH	WIDTH	DEPTH	FLOOR BOX	FSR	FSR-SOOP	FLUSH WITH FINISHED FLOOR	1/TASO0	-
E	FLOOR BOX W/ NETWORK AND POWER	14 3/4"	12 5/8"	6 1/8"	-	FSR	FSR-SOOP	FLUSH WITH FINISHED FLOOR	1/TASO0	-
J1	-	4 1 1/16"	4 1 1/16"	2 1/8"	-	RACO	674 OR EQUIVALENT	18" AFF - FLUSH	-	-
J2	-	2 1/8"	4 1 1/16"	2 1/8"	-	RACO	674 OR EQUIVALENT	674 OR FLUSH (UNLESS NOTED OTHERWISE)	-	-

TECHNOLOGY TELECOM JUNCTION BOX SCHEDULE

MARK	FUNCTION	DIMENSIONS			DESCRIPTION	MANUFACTURER	MODEL	MOUNTING STYLE	REFERENCE DETAIL	NOTES
		LENGTH	WIDTH	DEPTH						
N2	NETWORK OUTLET - FLOOR BOX	14 3/4"	12 5/8"	6 1/8"	-	-	-	PART OF FB1	-	-

TECHNOLOGY POWER COORDINATION SCHEDULE

MARK	FUNCTION	VOLTS	PHASE	CIRCUIT BREAKER (AMPS)	NEMA	DESCRIPTION	DERATED CIRCUIT	ADDITIONAL REQUIREMENTS	MOUNTING STYLE	REFERENCE DETAIL	NOTES
P2	TECHNOLOGY SYSTEMS FLOOR POWER	120		20	5-20R	DUPLEX RECEPTACLE INSIDE FLOOR BOX	X	DEDICATED EQUIPMENT GROUND	TERMINATE PER MANUFACTURER INSTRUCTIONS	-	-

AUDIT RECORD					

CONTRACTORS	A/E
	A/E
	CO
	CO
	PR
	SUP
	CO

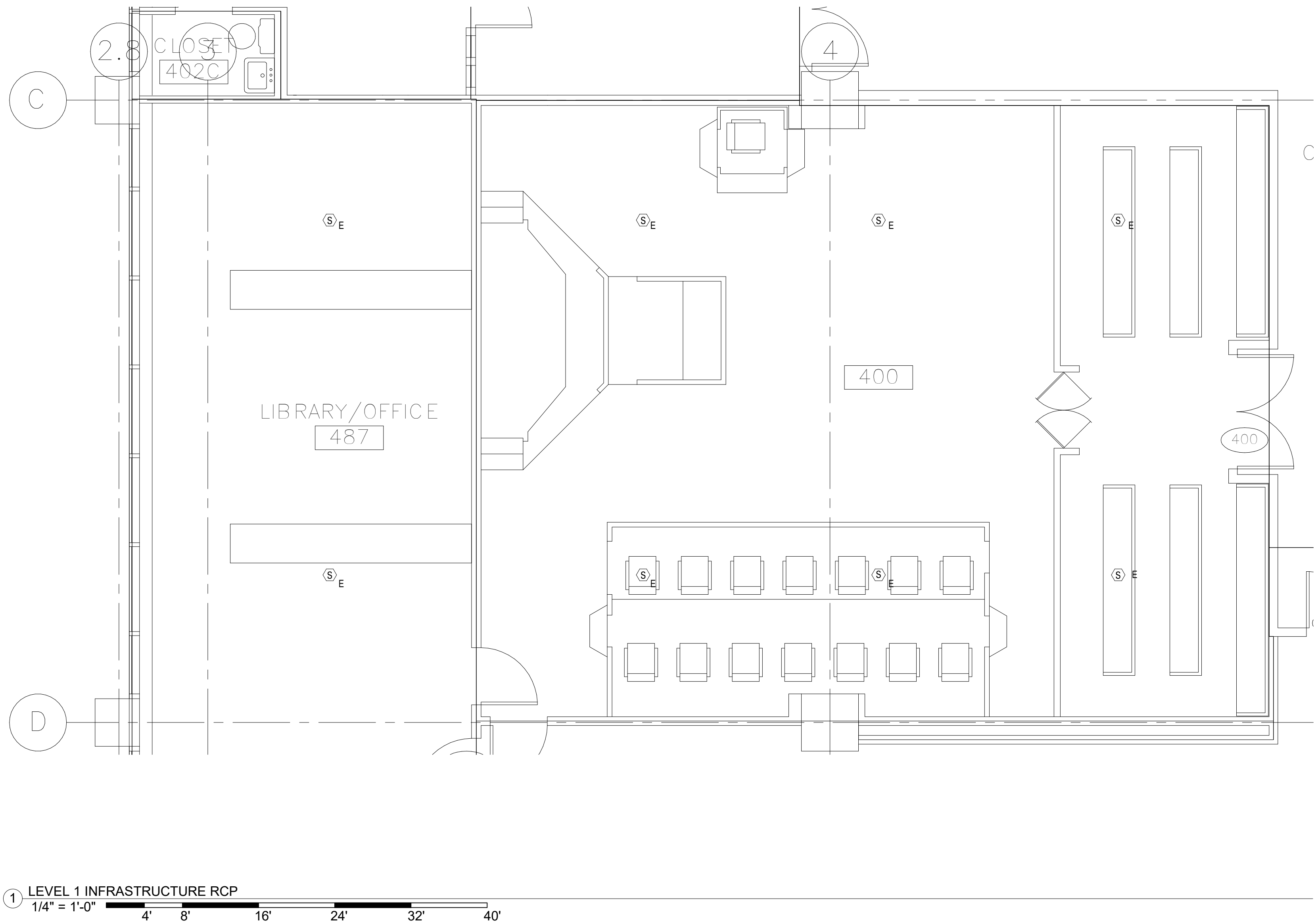
KEY PLAN

BUILDING	CIT
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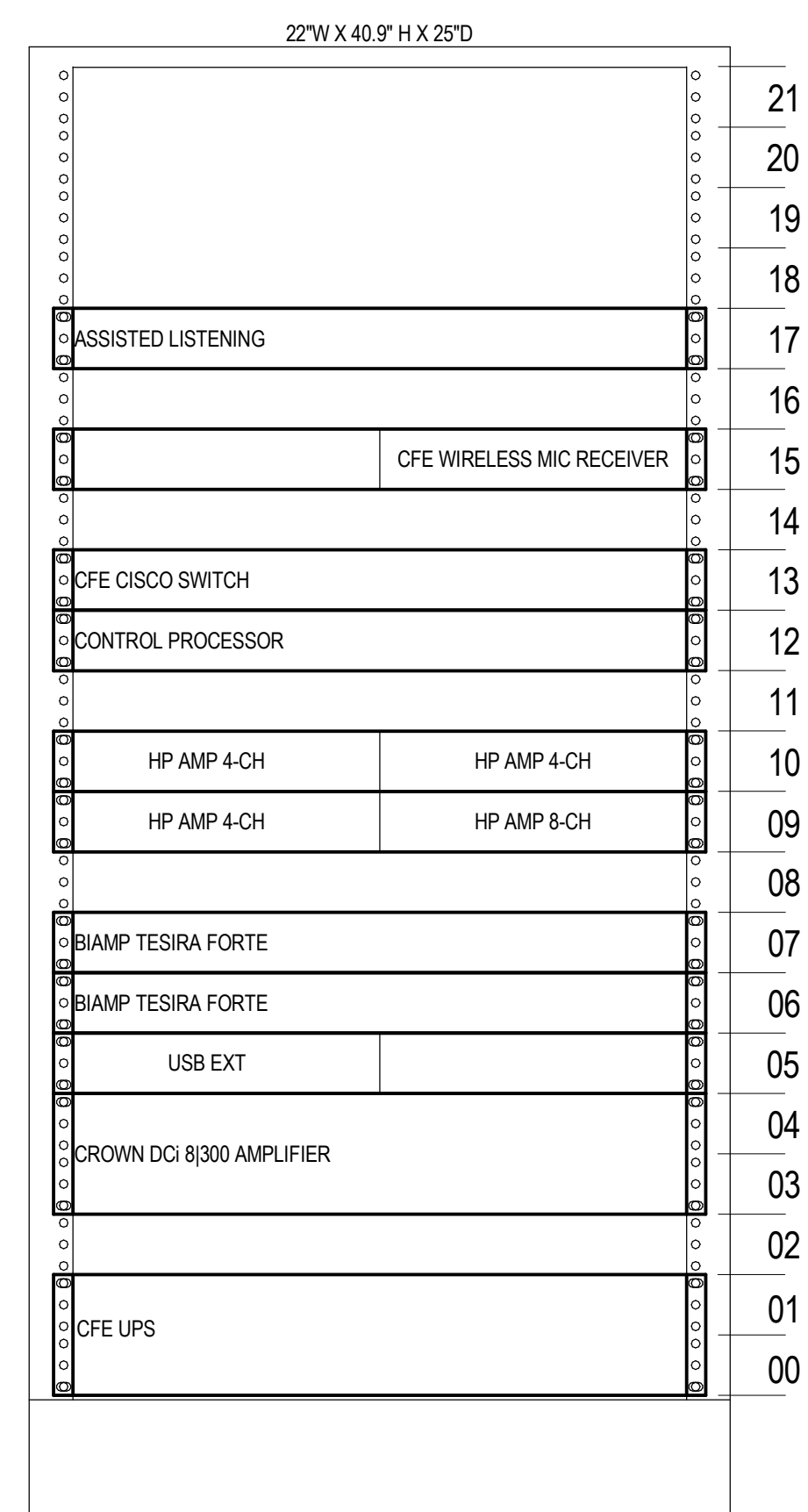
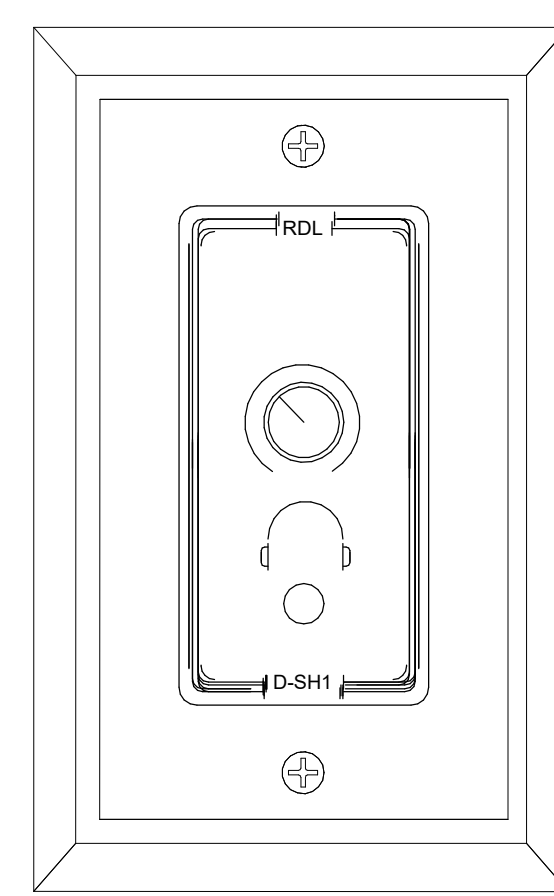
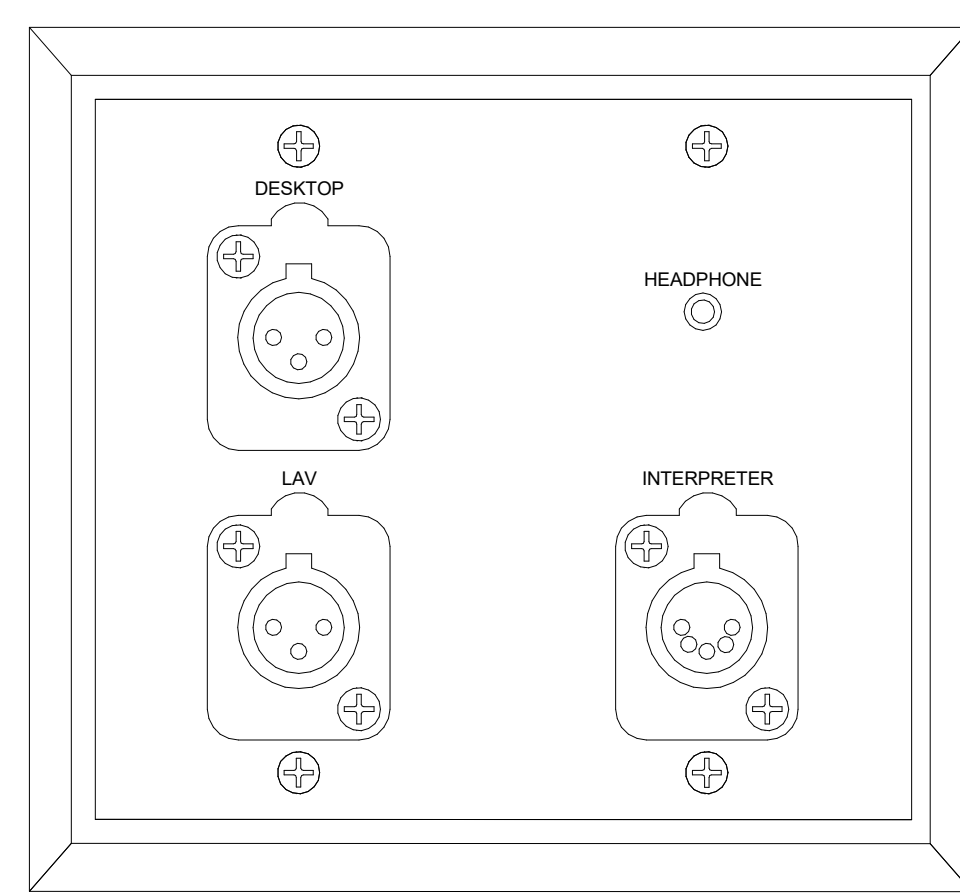
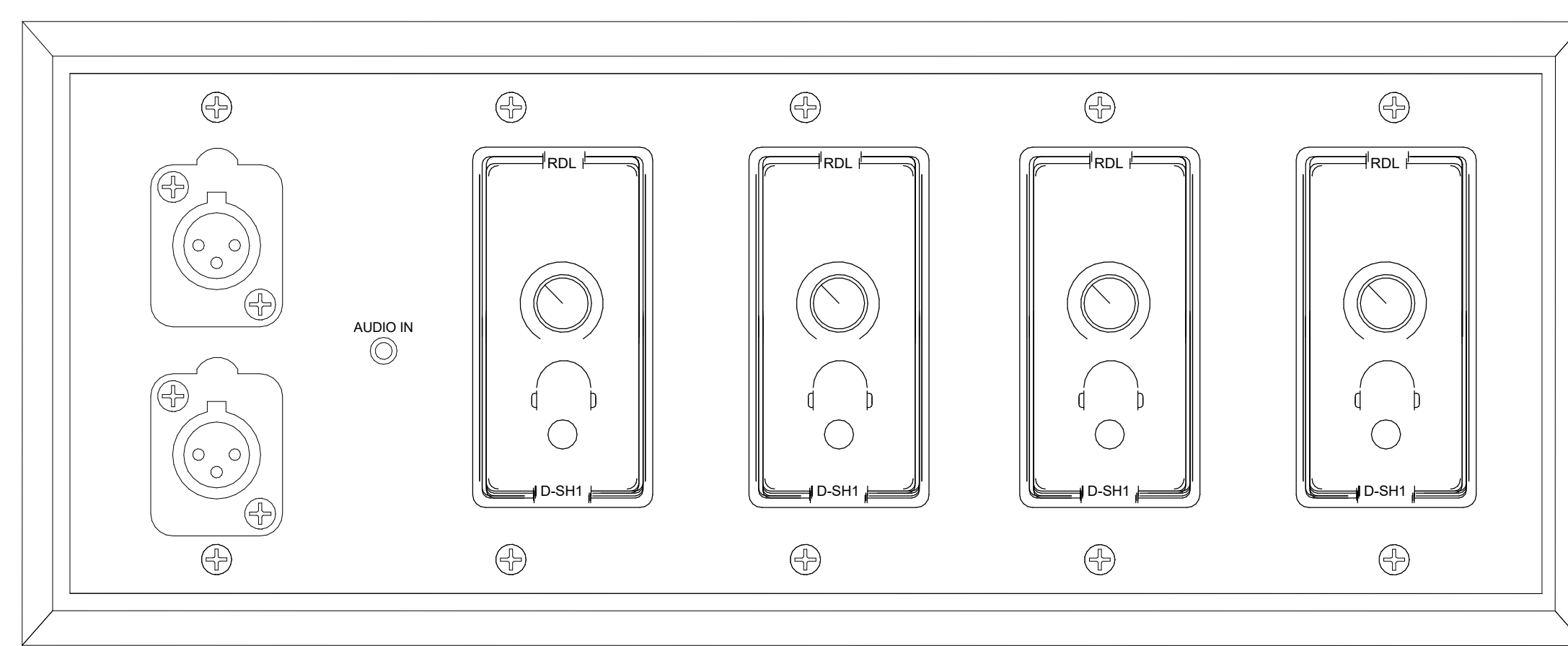
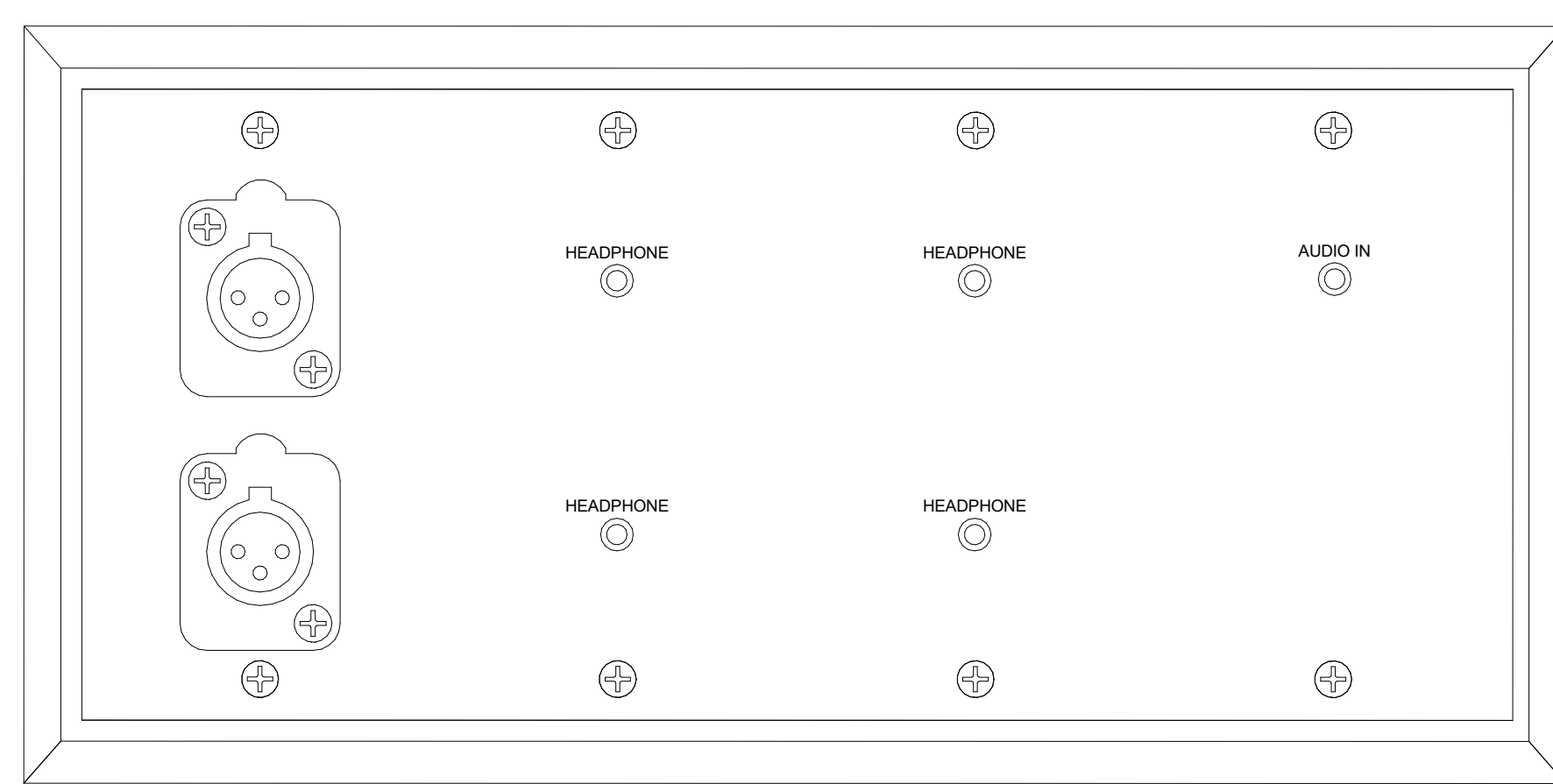
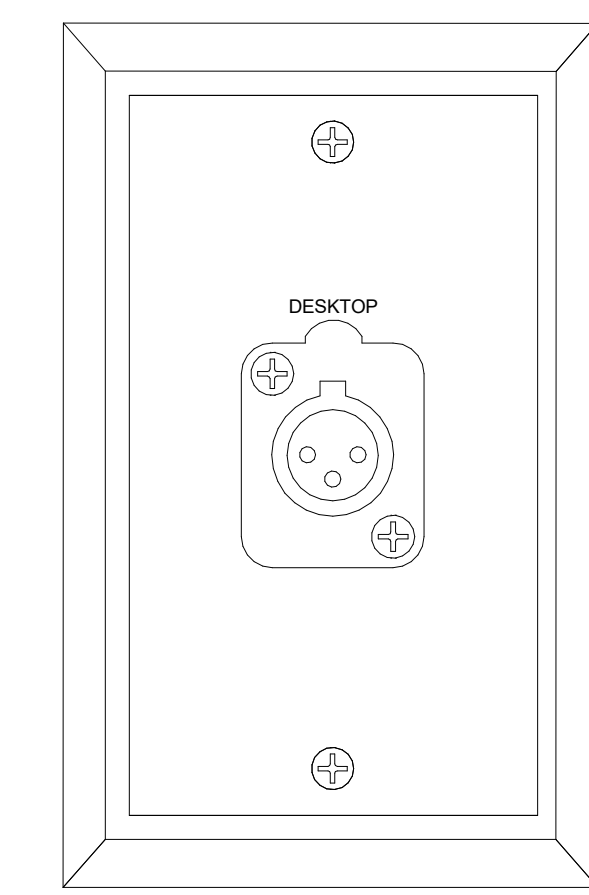
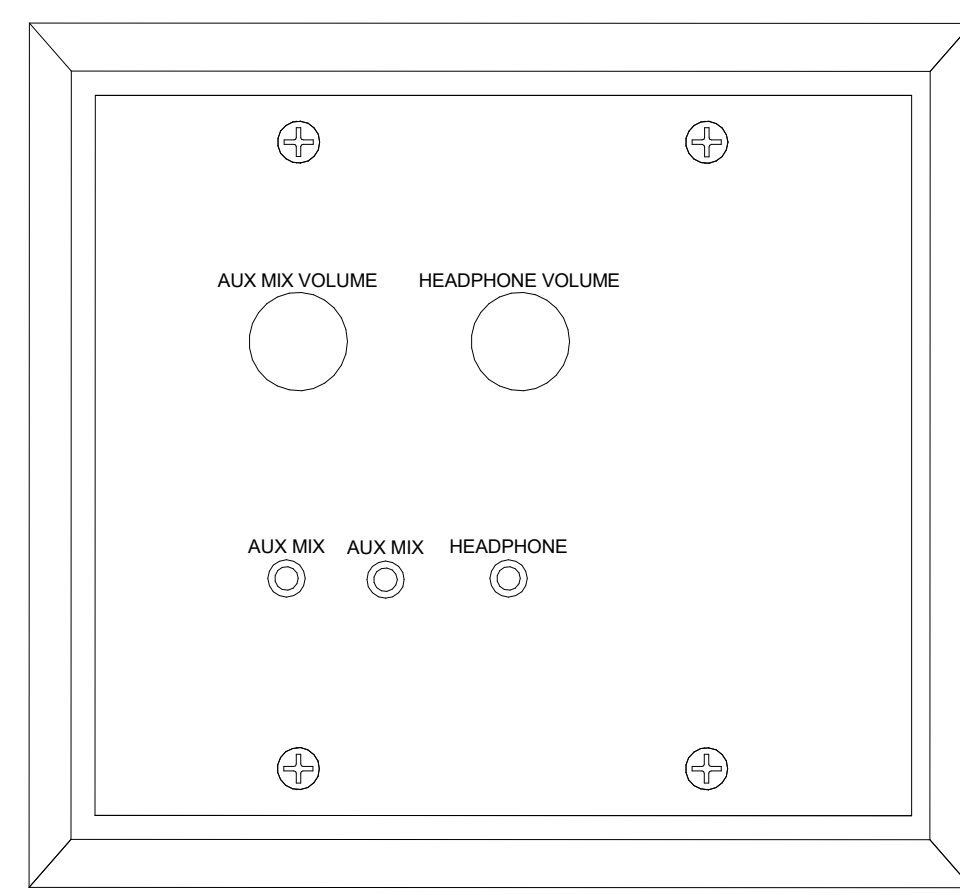
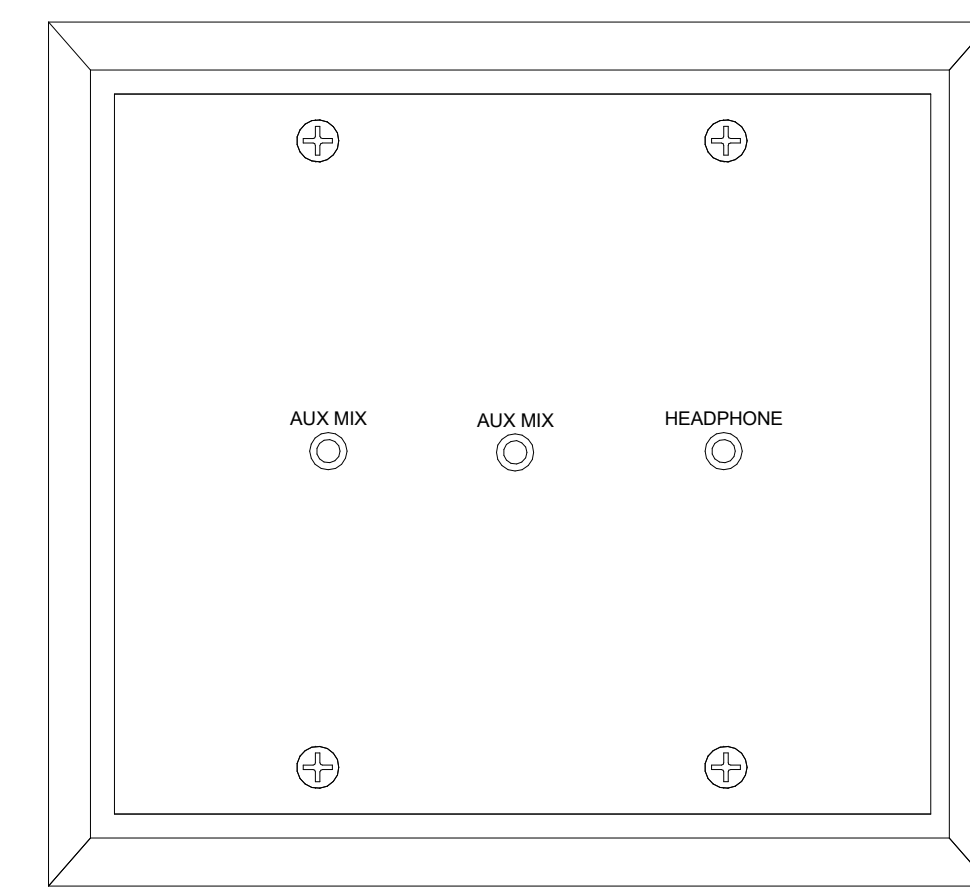
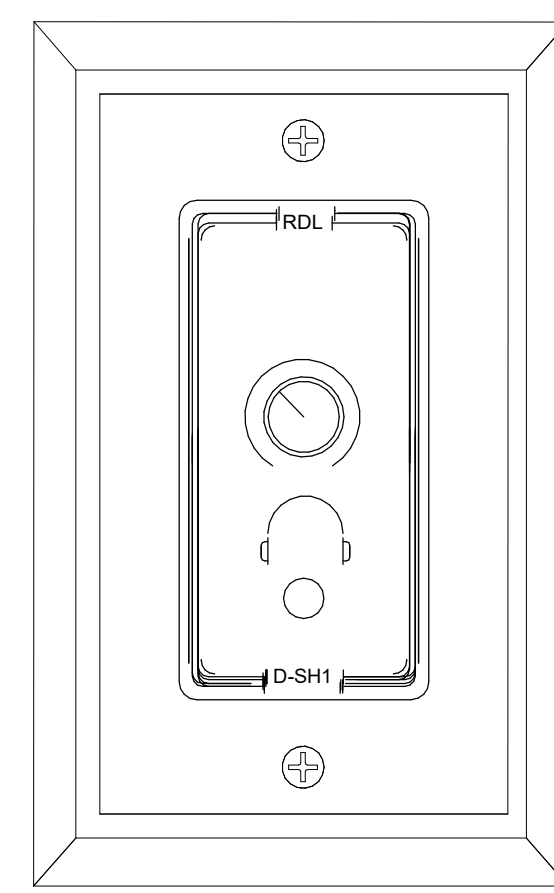
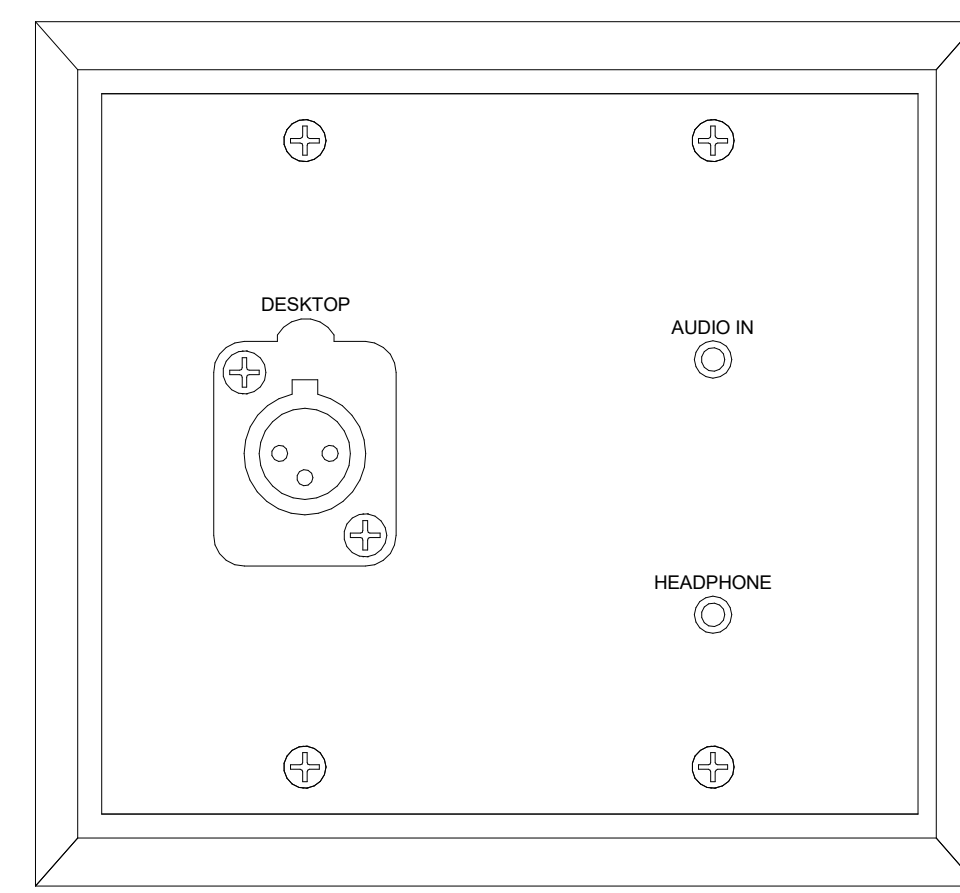
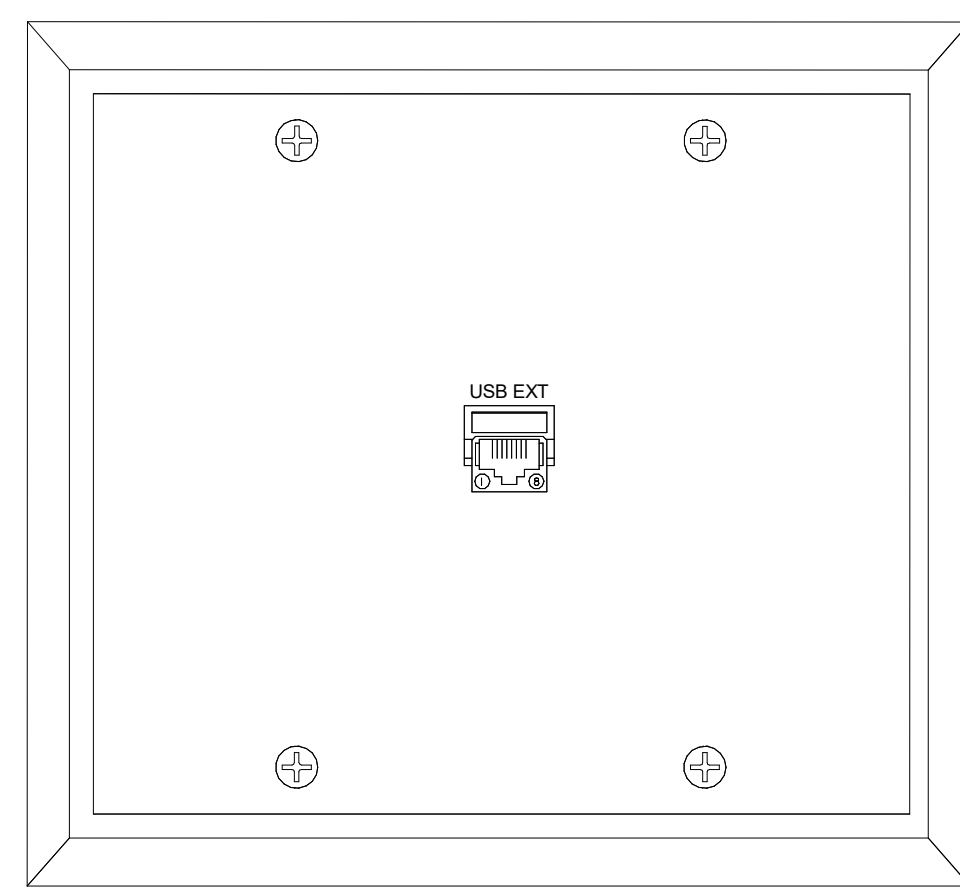
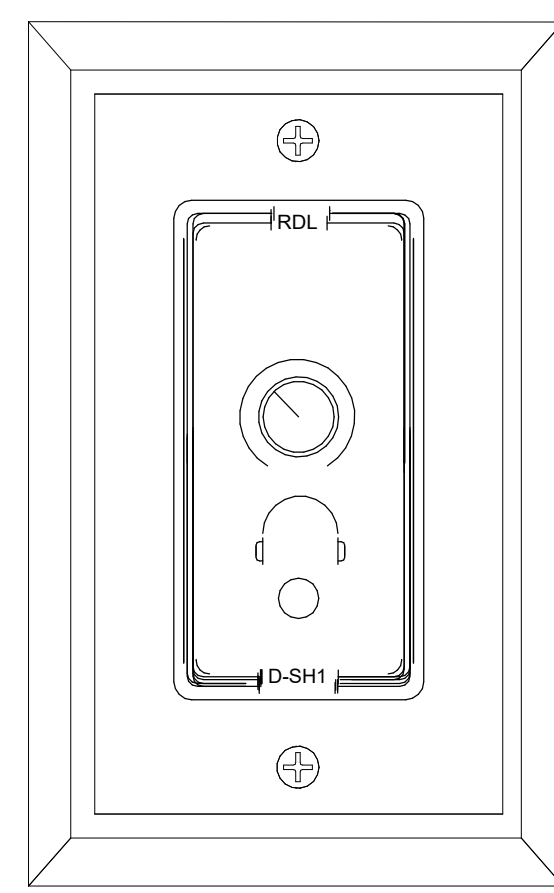
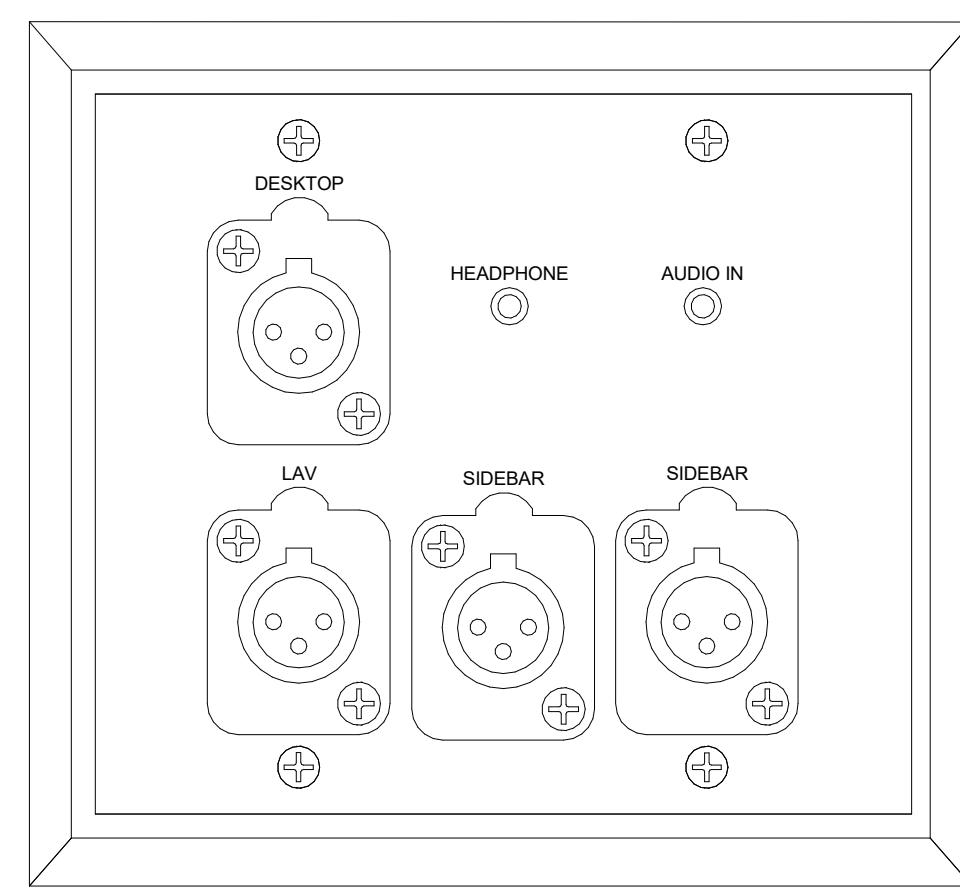
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GSA GENERAL SERVICES ADMINISTRATION PUBLIC BUILDING SERVICES GREAT LAKES REGION 230 S. Dearborn Street Chicago IL 60604	
FIELD VERIFY ALL DIMENSIONS	
SPACE LABEL (SCT)	EXAMPLE T3 4115 COR R10 ADMP01442
ANSI/BOMA CATEGORIES	SPACE TYPES
SPACE CATEGORIES	
DATE TYPE PERFORMED BY	
A/E CON. NO.	
A/E TASK NO.	
CONS. CONTR.	
CONS. WORK	
PRIME A/E	
SUB A/E	
CONSTR. CON.	
NAME JOHN F SEIBERLING FB & US CTHS	
STREET 2 S MAIN ST	
CITY/ST/ZIP AKRON OH 44308	
BUILDING NO. OH0194 FACILITY CODE:	
OTHER	
FACILITY NAME	
PROJECT	PROJECT TITLE Drawing request
PROJECT	PROJECT DESCRIPTION
PROJECT	PROJECT NO.
PROJECT	GSA PM
PROJECT	SUBMISSION
PROJECT	SUB DATE 08/21/23
PROJECT	ORIG. SURVEY DATE
PROJECT	DRAWING TITLE INFRASTRUCTURE RCP
PROJECT	FILE NAME OH0194_KEY_20180205
PROJECT	FLOOR NO. 03
PROJECT	DRAWN BY QUERY DATE: 02/05/2018
PROJECT	CHECKED BY SHEET SIZE: E
PROJECT	T200
PROJECT	DRAWING NO. DISCIPLINE SHEET TYPE SEQUENCE





IV. Schedule B/Cost Opinion

Cost Opinion - Akron 400 (Summary)

United States District Court Northern District of Ohio
Audio Upgrades Final Design Report
August 2023

Base Bid Items	Material Cost	Labor Cost	Travel Cost	Total Cost
Base Bid Item 1 Audio	\$ -	\$ -	\$ -	\$ -
Base Bid Item 2 Control	\$ -	\$ -	\$ -	\$ -
Base Bid Item 3 Rack and Mounting	\$ -	\$ -	\$ -	\$ -
Base Bid Item 4 Power	\$ -	\$ -	\$ -	\$ -
TOTALS	\$ -	\$ -	\$ -	\$ -

Warranty and Maintenance	1st Year	2nd Year	3rd Year	4th Year	5th Year
	Included				
	Included				
	Included				
	Included				
	Included				
	Included				
TOTALS	\$ -	\$ -	\$ -	\$ -	\$ -

	Grand Total - Base
(Only includes 1st Year Warranty)	\$ -

Cost Opinion - Akron 400 (Audio)

United States District Court Northern District of Ohio

Audio Upgrades Final Design Report

August 2023

CLIN	ITEM	Make	Model	Part No.	Substitution Make/Model	Qty	Unit Price	Total Price
1000	Equipment and Materials							
	Courtroom Audio System(s)							
1001	Gooseneck Microphone type 1 - CFE	Shure	Microflex	MX418D/C		CFE	\$0.00	
1002	Gooseneck Shock Moutned Microphone type 2	Shure	Microflex	MX418S/C		CFE	\$0.00	
1003	Boundary Microphone - CFE	Shure	Microflex	MX395B/O		CFE	\$0.00	
1004	Boundary Microphone type 3	Shure	Microflex	MX395B/O		1	\$	-
1010	Wireless Mic Receiver	Shure		MXCWAPT4		1	\$	-
1011	Wireless Microphones - Wearable	Shure		MXW1		4	\$	-
1012	Wireless Mic Charging Station	Shure		MXWNCS4		1	\$	-
1100	DSP	Biamp	TesiraForte	TesiraForte DAN VT		2	\$	-
1110	Amp	Crown		Dci 8 300		1	\$	-
1200	Sidebar Headphones	Bosch		LBB 3441/10		12	\$	-
1202	Headphone amp	RDL		D-SH1M		11	\$	-
1203	Audio Distribution Amplifier	RDL		RU-ADA8D		1	\$	-
1203	Audio Distribution Amplifier	RDL		RU-ADA4D		3	\$	-
2041	USB Extender Receiver	Extron		USB Extender Plus R		1	\$	-
2042	USB Extender Transmitter	Extron		USB Extender Plus T		1	\$	-
2043	Assited Listening Transmitter	Listen		LT-82		1	\$	-
2044	Assisted Listening Radiator	Listen		LA-140		2	\$	-
2045	Assisted Lsitening Receiver	Listen		LR-4200-IR		6	\$	-
2046	Assisted Listening Ear Speaker	Listen		LA-401		12	\$	-
2047	Assisted Listening Charging Station	Listen		LA-381		1	\$	-
	Equipment Subtotal						\$	-
1600	Miscellaneous Equipment (all other equipment and non-itemized parts)							
6000	Labor - System Engineering							
6001	Labor - Field Installation and Pre-Testing							
6002	Labor - Completion of Appendices C, D, F.0, F.1, and F.2							
6003	Labor - Programming - See specifications							
6004	Labor - Testing, Adjustment, System Documentation							
	TOTAL (Courtroom Audio System(s) only)						\$	-
	Courtroom Audio System(s)							
	TOTAL (Courtroom Audio System(s) only)					1	\$ -	\$ -
	EQUIPMENT AND LABOR GRAND TOTAL						\$	-
7000	Optional Maintenance:							
7001	Year 1							warranty
7002	Year 2							n/a audio only
7003	Year 3							n/a audio only
7004	Year 4							n/a audio only
7005	Year 5							n/a audio only
	Total Optional Maintenance							n/a audio only
8000	Fixed Cost Line Item for Travel							

Cost Opinion - Akron 400 (Control)

United States District Court Northern District of Ohio

Audio Upgrades Final Design Report

August 2023

CLIN	ITEM	Make	Model	Part No.	Substitution Make/Model	Qty	Unit Price	Total Price
3000	Equipment and Materials							
	Courtroom Control System(s)							
3000	Control processor	Crestron		CP4N		1		\$ -
3001	Netwrok Switch - CFE	Cisco		9300		0	\$0.00	\$ -
3002	Control panel to remain, reroute and reprogram audio					0	\$0.00	\$ -
	Equipment Subtotal							\$ -
3600	Miscellaneous Equipment (all other equipment and non-itemized parts)							
6000	Labor - System Engineering							\$ -
6001	Labor - Field Installation							\$ -
6002	Labor - Completion of Appendices C, D, F.0, F.1, and F.2							\$ -
6003	Labor - Programming - See specifications							\$ -
6004	Labor - Testing, Adjustment, System Documentation							\$ -
	TOTAL (Courtroom Control System(s) only)							\$ -
	EQUIPMENT AND LABOR GRAND TOTAL							\$ -
7000	Optional Maintenance:							
7001	Year 1							warranty
7002	Year 2							N/A
7003	Year 3							N/A
7004	Year 4							N/A
7005	Year 5							N/A
	Total Optional Maintenance							N/A
8000	Fixed Cost Line Item for Travel							

Cost Opinion - Akron 400 (Rack and Mounting)

United States District Court Northern District of Ohio

Audio Upgrades Final Design Report

August 2023

CLIN	ITEM	Make	Model	Part No.	Substitution Make/Model	Qty	Unit Price	Total Price
5000	Equipment and Materials							
	Courtroom Racks & Mounting Systems							
5001	Rack	Middleatlantic	ERK	ERK-2120LRD		1		\$ -
5002	Caster Base	Middleatlantic		CBS-ERK-20		1		\$ -
5003	Vertical plug strip	Middleatlantic		PDT-1620C-NS		1		\$ -
5004	Cable Management	Middleatlantic		LACE-13-O-A		1		\$ -
	Subtotal							\$ -
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)							
6000	Labor - System Engineering							\$ -
6001	Labor - Field Installation							\$ -
6002	Labor - Completion of Appendices C, D, F.0, F.1, and F.2							\$ -
6003	Labor - Programming - See specifications							\$ -
6004	Labor - Testing, Adjustment, System Documentation							\$ -
	TOTAL (Courtroom Racks & Mounting Systems only)							\$ -
	Courtroom Racks & Mounting Systems							
	TOTAL (Courtroom Racks & Mounting Systems only)					1	\$ -	\$ -
	EQUIPMENT AND LABOR GRAND TOTAL							\$ -
7000	Optional Maintenance:							
7001	Year 1							warranty
7002	Year 2							N/A
7003	Year 3							N/A
7004	Year 4							N/A
7005	Year 5							N/A
	Total Optional Maintenance							N/A
8000	Fixed Cost Line Item for Travel							

Cost Opinion - Akron 400 (Power)

United States District Court Northern District of Ohio

Audio Upgrades Final Design Report

August 2023

CLIN	ITEM	Make	Model	Part No.	Substitution Make/Model	Qty	Unit Price	Total Price
5000	Equipment and Materials							
	Courtroom Power							
5001	UPS - CFE	TrippLite		Smart Pro UPS		0		\$ -
	Subtotal							\$ -
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)							
6000	Labor - System Engineering							\$ -
6001	Labor - Field Installation							\$ -
6002	Labor - Completion of Appendices C, D, F.0, F.1, and F.2							\$ -
6003	Labor - Programming - See specifications							\$ -
6004	Labor - Testing, Adjustment, System Documentation							\$ -
	TOTAL (Courtroom Racks & Mounting Systems only)							\$ -
	Courtroom Racks & Mounting Systems							
	TOTAL (Courtroom Racks & Mounting Systems only)					1	\$ -	\$ -
	EQUIPMENT AND LABOR GRAND TOTAL							\$ -
7000	Optional Maintenance:							
7001	Year 1							warranty
7002	Year 2							N/A
7003	Year 3							N/A
7004	Year 4							N/A
7005	Year 5							N/A
	Total Optional Maintenance							N/A
8000	Fixed Cost Line Item for Travel							

V. Audio DSP Matrix

Audio Routing Matrix (All Courtrooms)

U.S. District Court Northern District of Ohio

Audio Final Design

August 2023

	Overhead Speakers	Jury Box Speakers	IR Channel 1	IR Channel 2	Record Ch 1	Record Ch 2	Record Ch 3	Record Ch 4	TIPS - Remote Interpreter	Revolab Ch 1	Revolab Ch 2	Revolab Ch 3	Revolab Ch 4	Audio Conference 1	Audio Conference 2	Interpreter Headset	Reporter Headphone	CRD Headphone	Witness Headphone	Judge Headphone	Holding Cell	Prosecution Headphones	Defense Headphones	VTC Audio Out	Out of Room Audio (Chambers)
Judge's Bench Mics	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X
Bench Conference Mic					X																				
Judge PC Audio	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X
Witness Mics	X	X	X	X		X								X	X	X	X	X	X	X	X	X	X	X	X
Witness PC Audio	X	X	X	X		X								X	X	X	X	X	X	X	X	X	X	X	X
CRD Mic	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X
Prosecution Mics	X	X	X	X				X						X	X	X	X	X	X	X	X	X	X	X	X
Prosecution PC Audio	X	X	X	X				X						X	X	X	X	X	X	X	X	X	X	X	X
Defense Mics	X	X	X	X			X							X	X	X	X	X	X	X	X	X	X	X	X
Defense PC Audio	X	X	X	X			X							X	X	X	X	X	X	X	X	X	X	X	X
Lectern mics	X	X	X	X				X						X	X	X	X	X	X	X	X	X	X	X	X
Jury Mic	X	X	X	X				X						X	X	X	X	X	X	X	X	X	X	X	X
Phone Line 1	X	X	X	X				X	S	S	S	S	S	D	X										X
Phone Line 2	X	X	X	X				X	D	D	D	D	D	S	S										X
Phone Line 3	X	X	X	X				X	S	S	S	S	S	D	X										X
Phone Line 4	X	X	X	X				X	D	D	D	D	D	S	X										X
Interpreter Mic	S	S	S	S												X	S	S	S	S	S	S	S	S	S
Sound Masking	X	X	X	X																					

Notes

X = Required

D = Default in Audio Conference Routing Matrix (Refer to control requirements for programming requirements)

S= Selectable in Audio Conferencing Routing Matrix (Refer to control requirements for programming requirements)

TIPS interpretation system shall utilize control matrix on touch panel.