

SECTION A SOLICITATION / OFFER / ACCEPTANCE

1. Solicitation No. OHND-19-08-DCA	2. Date Issued 8/1/2019	3. Award No.
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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):
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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. 4, 2019 .
(hour) (date)

7. For Information call:	
a. Name Shari Vance, Contracting Officer	b. Telephone (216) 357-7073

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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 <i>(The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:</i>	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 <i>(Type or print)</i>	15A. NAME OF CONTRACTING OFFICER	
13B. Signature	13C. Offer Date	15B. UNITED STATES OF AMERICA
		15C. DATE SIGNED
		BY _____ <i>(Signature Of Contracting Officer)</i>

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 remove the current audio systems and install, integrate with existing video system, configure and test complete operational audio enhancement systems as replacements to the current systems located in two (2) District Court Judge Courtrooms throughout the district, with up to three (3) additional spaces as options, (1) audio only and (2) complete system replacements.

Base Bid

<i>John F. Seiberling Federal Building and United States Court House</i>		Courtroom 575
2 South Main Street		
Akron, Ohio 44308	Audio Only	

<i>Thomas D. Lambros Federal Building & US Courthouse</i>		Courtroom 351
125 Market Street		
Youngstown, Ohio 44503	Audio Only	

The Court may choose to upgrade up to three (3) additional courtrooms as options to the base bid based upon the cost of each courtroom upgrade. The additional upgrades would be as follows:

Option #1

<i>Carl B. Stokes United States Courthouse</i>		
801 West Superior Avenue,		
Cleveland, Ohio 44113	Audio Only	Courtroom 9A

Option #2

<i>Carl B. Stokes United States Courthouse</i>		
801 West Superior Avenue		
Cleveland, Ohio 44113	Audio and Video	Courtroom 16B

Option #3

<i>Carl B. Stokes United States Courthouse</i>		
801 West Superior Avenue		
Cleveland, Ohio 44113	Audio and Video	Courtroom 17B

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 7th, 2019**
- (c) Installations will be completed no later than **May 15th, 2020**
- (d) Project closeout shall be finalized no later than **June 30th, 2020**

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 1 st , 2019	
Contractor Site visit	August 15 th and 16 th , 2019	
Contractor bids due to Court	September 4 th , 2019	
Bid Review by Court	September 5 th – 9 th , 2019	
Contract Award	September 10 th , 2019	
Post Award Teleconference- Submit background information	October 7 th , 2019	
Draft Submittal due from Contractor	November 18 ^h , 2019	
Submittal Plan Review	November 18 th - 29 th , 2019	
Revised Submittals due from Contractor	December 13 th , 2019	
Acceptance of Final Design Plan	December 20 th , 2019	20%
Kick off Meeting	January 6 th , 2020	
Installation Period	January 13 th – May 15 th , 2020	
Training/System Acceptance	May 15 th , 2020	70%
Acceptance of Closeout Deliverables due to Court	June 30 th , 2020	10%
On site Parts and Labor Warranty at no additional cost to Court	1 year form 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.

Court Holidays on:

- October 14th, 2019**
- November 11th, 2019**
- November 28th, 2019**
- December 25th, 2019**
- January 1st, 2020**
- January 20th, 2020**
- February 17th, 2020**
- May 25th, 2020**

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:

Shari Vance
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: sharon_vance@ohnd.uscourts.gov
Phone: (216) 357-7073

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:

Shari Vance
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
801 W. Superior Avenue
Cleveland, Ohio 44113
E-mail: david_zendlo@ohnd.uscourts.gov
Phone: (216) 357-7053

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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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, 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	
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 dates will be as follows:

Akron: August 16th from 9:00 am – 10:30 am

Cleveland: August 15th from 9:00 am – 12:00 pm

Youngstown: August 16th from 1:00 pm to 2:30 pm

Please confirm your participation by contacting the Contracting Officer's Technical Representative (COTR), David Zendlo by phone at (216) 357-7053 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 4th, 2019** 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: Sharon Vance, Contracting Officer

Responses may be submitted by e-mail to sharon_vance@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 Sharon Vance, and marked "Offeror's Questions, RFP No. **OHND-19-08-DCA**", 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 Sharon Vance, Contracting Officer, US District Court, Cleveland, Ohio, who may be contacted at (216) 357-7073, or email sharon_vance@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 RFP and to suspend or reopen the RFP process,
3. Reject any or all responses and terminate the RFP

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.

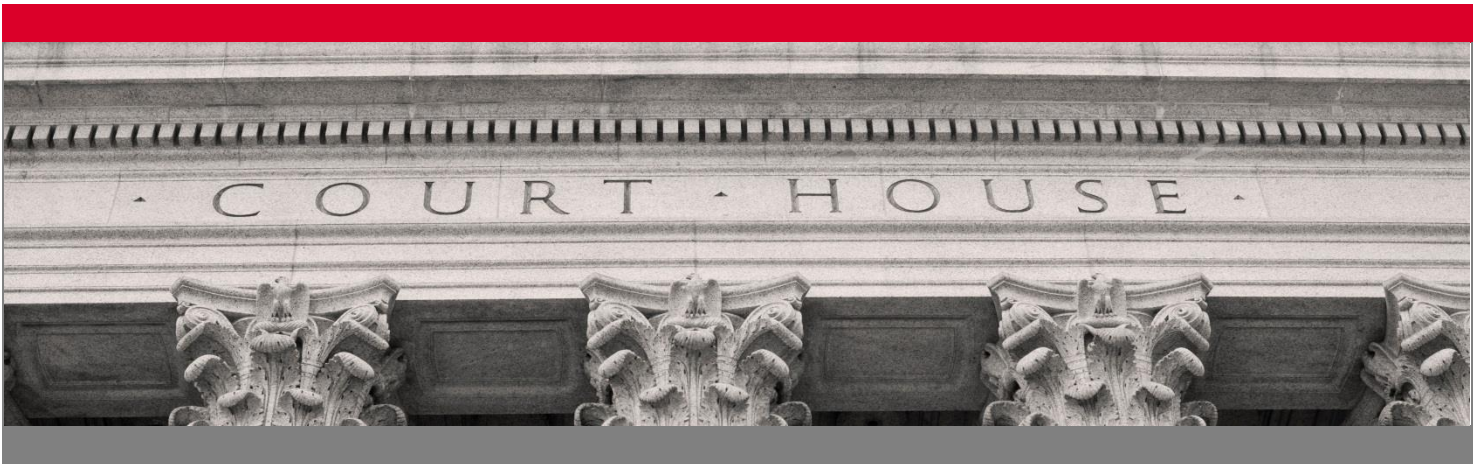
H.5 PRICE EVALUATION

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.
- (c) The Court reserves the right to make no award pursuant to this solicitation.



United States District Court for the Northern District of Ohio

Audiovisual Upgrades Final Design Report

Cleveland, Ohio

IPDG No. 2019 7427
July 30, 2019



CONSULTING + DESIGN

402.346.7007
www.ipdesigngroup.com



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I. Technical Statement of Work

I. Technical Statement of Work

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

Akron 575

The scope of this project will include installation of new, standard, complete, and operational audio system for the Courtroom 575 in Akron, Ohio. The project is a renovation of an existing space. Existing infrastructure will be used to support as much of the new AV equipment as possible (RTT distribution system will be abandoned in place). The AV 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 microphone for bench conferences.
 - A. Lavalier, shock mount, and handheld microphones are court-furnished equipment.
3. Side bar white noise for bench conferences will utilize existing speakers. Wired sidebar headphones will be provided at all locations and microphones will be provided at judge.
 - A. Side bar audio sources include Judge gooseneck microphone and two omnidirectional boundary microphones.
 - B. Side bar audio will route to the following:
 - 1) Hardwired headphones located at judge, CRD, reporter, defense table, and prosecution table.
 - 2) FTR recording.
4. Interpreter system within the courtroom will be provided and will utilize TIPS and interpreter box with headset/microphone at defense table.
5. Audio record output (USB) at reporter location for court-furnished, software-based recording system will be provided.
6. Streaming will be provided, which shall include embedded audio. Streaming appliance is court-furnished equipment.
7. VOIP audioconferencing/teleconferencing will be provided (four-lines for TIPS).
8. IR-based, assistive-listening system will be provided. ALS system is court-furnished equipment.
9. Videoconferencing:
 - A. Codec and connection panel (to be located in AV equipment rack) is court-furnished equipment.
 - B. Maintain existing audio connections.

10. Control system will include Adobe Air/XPanels with control system application fabricated to be similar to other courtrooms. Existing source code will be provided as a base from which to work.
 - A. Control system shall include the following control capabilities:
 - 1) AV 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 and video mute.
 - 6) Bench conference with white noise including level control.
 - 7) Audioconferencing with dial pad.
 - a) Maintain existing control of telephonic interface functions:
 - (1) Volume Control.
 - (2) Dial Pad.
 - (3) Mute.
 - (4) Speed Dial.
 - (5) Number Entry Clear.
 - (6) Flash.
 - (7) Line selection.
 - (8) Full DTMF functionality for Bridge line dialing.
 - 8) Telephone interface for use with interpreter mode.
 - 9) VTC conferencing:
 - a) Keypad for dialing.
 - b) Video source selection.
 - c) Pan/tilt/zoom camera control.
 - d) Saved "scenes" selections.
 - 10) Video source selection (PCs and VTC):
 - a) Clear annotations with new source selection.
 - 11) Video content share to selected display zones.
 - 12) Video content share All On and All Off option (send video to all or mute all video).
 - 13) On/off control for all video displays.
 - 14) Individual component control for the following devices:
 - a) Annotation:
 - (1) Annotation on/off.
 - (2) Color selection.
 - (3) Pen size.
 - (4) Spotlight.
 - (5) Draw:
 - (a) Line.
 - (b) Shape.
 - (6) Clear annotation:
 - (a) Delete last markings.
 - (b) Delete all markings.

- b) Document Camera:
 - (1) Document Camera on/off.
 - (2) Zoom in/out.
 - (3) Focus.
- 15) System reset to last calibrated state.
- 16) Automatic system shut down at 9:00 p.m. local time, accounting for daylight savings twice yearly.
- 17) Control interface with graphics storage unit.

Youngstown 351

The scope of this project will include installation of new, standard, complete, and operational audio system for the Courtroom 351 in Youngstown, Ohio. The project is a renovation of an existing space. Existing infrastructure will be used to support as much of the new AV equipment as possible (RTT is to be retained). The AV 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 shock mount gooseneck microphones, will be provided at designated locations and boundary microphone for bench conferences.
 - A. Lavalier and handheld microphones are court-furnished equipment.
3. Side bar system will utilize existing amplifier distribution to jury headsets (to be fed PA audio only) and new headphone amp distributed to all other headsets in the courtroom.
4. Interpreter system within the courtroom will be provided and will utilize TIPS and interpreter box with headset/mic at defense table.
5. Audio record output (USB) at reporter location for court-furnished, software-based recording system will be provided.
6. Streaming will be provided, including embedded audio. Streaming appliance is court-furnished equipment.
7. VOIP audioconferencing/teleconferencing will be provided (four-lines for TIPS).
8. IR-based, assistive-listening system will be provided. ALS system is court furnished equipment.
9. Videoconferencing:
 - A. Codec and connection panel (to be located in AV equipment rack) is court-furnished equipment.
 - B. Maintain existing audio connections.

10. Control system will include Adobe Air/Xpanels with control system application fabricated to be similar to other courtrooms. Existing source code will be provided as a base from which to work.
 - A. Control system shall include the following control capabilities:
 - 1) AV 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 and video mute.
 - 6) Bench conference with white noise including level control.
 - 7) Audioconferencing with dial pad:
 - a) Maintain existing control of telephonic interface functions:
 - (1) Volume Control.
 - (2) Dial Pad.
 - (3) Mute.
 - (4) Speed Dial.
 - (5) Number Entry Clear.
 - (6) Flash.
 - (7) Line selection.
 - (8) Full DTMF functionality for Bridge line dialing.
 - 8) Telephone interface for use with interpreter mode.
 - 9) VTC conferencing:
 - a) Keypad for dialing.
 - b) Video source selection.
 - c) Pan/tilt/zoom camera control.
 - d) Saved "scenes" selections.
 - 10) Video source selection (PCs and VTC):
 - a) Clear annotations with new source selection.
 - 11) Video content share to selected display zones.
 - 12) Video content share All On and All Off option (send video to all or mute all video).
 - 13) On/off control for all video displays.
 - 14) Individual component control for the following devices:
 - a) Annotation:
 - (1) Annotation on/off.
 - (2) Color selection.
 - (3) Pen size.
 - (4) Spotlight.
 - (5) Draw:
 - (a) Line.
 - (b) Shape.
 - (6) Clear annotation:
 - (a) Delete last markings.
 - (b) Delete all markings.

- b) Document Camera:
 - (1) Document Camera on/off.
 - (2) Zoom in/out.
 - (3) Focus.
- 15) Annunciator/Signaling control of existing signaling system.
- 16) System reset to last calibrated state.
- 17) Automatic system shut down at 9:00 p.m. local time, accounting for daylight savings twice yearly.
- 18) Control interface with graphics storage unit.

Cleveland 9A (Optional)

The scope of this project will include installation of new, standard, complete, and operational audio system for the Courtroom 9A in Cleveland, Ohio. The project is a renovation of an existing space. Existing infrastructure will be used to support as much of the new audiovisual (AV) equipment as possible (RTT distribution system will be abandoned in place). The AV 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 microphone for bench conferences.
3. Side bar white noise for bench conferences will utilize existing speakers. Wired sidebar headphones will be provided at all locations and microphones will be provided at judge.
 - A. Side bar audio sources include judge's gooseneck microphone and two omnidirectional boundary microphones.
 - B. Side bar audio will route to the following:
 - 1) Hardwired headphones located at judge, CRD, reporter, defense table, and prosecution table
 - 2) FTR recording.
4. Interpreter system within the courtroom will be provided and will utilize TIPS and interpreter box with headset/microphone at defense table.
5. Audio record output (USB) at reporter location for court-furnished, software-based recording system (FTR) will be provided. No playback is required.
6. Streaming will be provided, which shall include embedded audio. Streaming device is court-furnished.
7. Video conferencing connection panel is existing in rack and audio connections will be maintained.

8. Video presentation system is existing-to-remain and all audio connections for video will be maintained.
9. VOIP audioconferencing/teleconferencing will be provided (four-lines for TIPS).
10. IR-based, assistive-listening system will be provided. ALS system is court-furnished equipment.
11. Control system will include Adobe Air/XPANEL with control system application fabricated to be similar to other courtrooms. Existing source code will be provided as a base from which to work.
 - A. Control system shall include the following control capabilities:
 - 1) AV 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) Out of Room audio on/off control.
 - 6) Chambers on/off control.
 - 7) Near and far-end audio and video mute.
 - 8) Bench conference with white noise, including level control.
 - 9) Audioconferencing with dial pad.
 - a) Maintain existing control of telephonic interface functions:
 - (1) Volume Control.
 - (2) Dial Pad.
 - (3) Mute.
 - (4) Speed Dial.
 - (5) Number Entry Clear.
 - (6) Flash.
 - (7) Line selection.
 - (8) Full DTMF functionality for Bridge line dialing.
 - 10) Telephone interface for use with interpreter mode.
 - 11) VTC conferencing:
 - a) Keypad for dialing.
 - b) Video source selection.
 - c) Pan/tilt/zoom camera control.
 - d) Saved "scenes" selections.
 - 12) Video source selection (PCs and VTC):
 - a) Clear annotations with new source selection.
 - 13) Video content share to selected display zones.
 - 14) Video content share All On and All Off option (send video to all or mute all video).
 - 15) On/off control for all video displays.
 - 16) Individual component control for the following devices:
 - a) Annotation:
 - (1) Annotation on/off.
 - (2) Color selection.
 - (3) Pen size.

- (4) Spotlight.
- (5) Draw:
 - (a) Line.
 - (b) Shape.
- (6) Clear annotation:
 - (a) Delete last markings.
 - (b) Delete all markings.
- b) Document Camera:
 - (1) Document Camera on/off.
 - (2) Zoom in/out.
 - (3) Focus.
- 17) Annunciator/Signaling control of existing signaling system.
- 18) System reset to last calibrated state.
- 19) Automatic system shut down at 9:00 p.m. local time, accounting for daylight savings twice yearly.
- 20) Control interface with graphics storage unit.

Cleveland 16B (Optional) and 17B (Optional)

The scope of this project will include installation of new, standard, complete, and operational audio, video, and control systems for the Courtroom 16B and 17B (optional) in Cleveland, Ohio. The project is a renovation of an existing space. Existing infrastructure will be used to support as much of the new AV equipment as possible (RTT distribution system will be abandoned in place). The AV 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.
3. Side bar white noise for bench conferences will utilize existing speakers. Wired sidebar headphones will be provided at all locations and microphones will be provided at Judge.
 - A. Side bar audio sources include Judge's gooseneck microphone and two omnidirectional boundary microphones.
 - B. Side bar audio will route to the following:
 - 1) Hardwired headphones located at judge, CRD, reporter, two defense tables, and two prosecution tables.
 - 2) FTR recording.
4. Interpreter system within the courtroom will be provided and will utilize TIPS and interpreter box with headset/microphone at defense table.

5. Audio record output (USB) at reporter location for court-furnished, software-based recording system (FTR) will be provided, as well as a hardwired audio output at the reporter location for playback.
6. Video streaming will be provided with embedded audio.
7. VOIP audioconferencing/teleconferencing will be provided (4 lines for TIPS and Audio Conferencing).
8. IR-based, assistive-listening system will be provided. ALS system is court furnished equipment.
9. Videoconferencing:
 - A. High definition pan/tilt/zoom cameras (two camera locations within the courtroom that are compatible with court furnished Codec).
 - B. Video transmission connection to presentation and display system.
 - C. Video receiver connection to presentation and display system.
 - D. Codec connection panel will be located in AV equipment rack. The Codec is court-furnished equipment.
10. Video presentation and display system will be provided as follows:
 - A. Matrix video switch for courtroom video transmission and distribution (use HDBaseT transmission for locations within the courtroom) will be provided.
 - B. Small format video displays with video receivers will be provided at judge's bench, CRD, reporter, witness, presenter cart, two at each attorney table for eight total, ten total for jury viewing:
 - 1) Touch display with annotation will be provided at judge, witness, and presenter cart.
 - 2) Document camera at presenter cart.
 - C. Video transmitters with HDMI patch cables located at judge's bench, four attorney tables, witness, and presenter cart for video presentation.
 - 1) VGA patch cable to be located at presenter cart.
 - D. Large format display located on mobile low profile cart for gallery viewing.
11. Video feed throughout the courtroom will be distributed as the following zones:
 - A. Zone 1: Judge, CRD, court reporter, counsel tables, and presenter cart.
 - B. Zone 2: Jury and witness
 - C. Zone 3: Gallery

12. Control system will include Adobe Air/Xpanels with control system application fabricated to be similar to other courtrooms.
- A. Control system shall include the following control capabilities:
- 1) AV 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 and video mute
 - 6) Bench conference with white noise, including level control
 - 7) Audioconferencing with dial pad
 - a) Maintain existing control of telephonic interface functions:
 - (1) Volume Control.
 - (2) Dial Pad.
 - (3) Mute.
 - (4) Speed Dial.
 - (5) Number Entry Clear.
 - (6) Flash.
 - (7) Line selection.
 - (8) Full DTMF functionality for Bridge line dialing.
 - 8) Telephone interface for use with interpreter mode.
 - 9) VTC conferencing:
 - a) Keypad for dialing.
 - b) Video source selection.
 - c) Pan/tilt/zoom camera control.
 - d) Saved "scenes" selections.
 - 10) Video source selection (PCs and VTC)
 - a) Clear annotations with new source selection.
 - 11) Video content share to selected display zones.
 - 12) Video content share All On and All Off option (send video to all or mute all video).
 - 13) On/off control for all video displays.
 - 14) Individual component control for the following devices:
 - a) Annotation:
 - (1) Annotation on/off.
 - (2) Color selection.
 - (3) Pen size.
 - (4) Spotlight.
 - (5) Draw:
 - (a) Line.
 - (b) Shape.
 - (6) Clear annotation:
 - (a) Delete last markings.
 - (b) Delete all markings.

- b) Document Camera:
 - (1) Document Camera on/off.
 - (2) Zoom in/out.
 - (3) Focus.
- 15) Annunciator/Signaling control of existing signaling system.
- 16) System reset to last calibrated state.
- 17) Automatic system shut down at 9:00 p.m. local time, accounting for daylight savings twice yearly.
- 18) Control interface with graphics storage unit.

II. Audiovisual Specifications

SECTION 27 41 00

AUDIO-VIDEO 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, wideband RGBHV, video, control and other AV 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 AV system.
- C. Provide and install cover plates, connectors and associated cabling to link all floor and wall boxes to all affiliated local and remote AV 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 AV system shall be programmed to include the following:
 - a. Full function control of all source components, display units, 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.
- 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 CD-ROM.

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. Display:
 - a. Minimum 150:1 contrast ratio.
 - 3. Video:
 - a. S/N (peak to RMS), unweighted DC to 4.2 MHz: 45 dB minimum.
 - b. Crosstalk, unweighted DC to 4.2 MHz: 45 dB minimum.
 - c. Frequency Response (RGBHV): Within +0.5 dB to 300 MHz.
 - d. Frequency Response (composite): Within +0.5 dB to 10 MHz.
 - e. Frequency Response (component): Within +0.5 dB to 100 MHz.
 - f. Line and Field Tilt: 2% maximum.
 - g. Differential Gain: 3% maximum.
 - h. Differential Phase: 2 degrees maximum.
 - 4. 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: video displays, 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 and video adapters, and audio and video 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 display 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 video 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.
- 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.
- J. The AV Contractor shall conform to all site policies regarding safety, job site hours, and any additional policy which may affect site conditions.

1.12 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. 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.
7. 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
8. 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.

9. 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).
10. 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).
11. 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.
12. 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.
13. The systems shall be provided so that the installation, integration, and combination of equipment actually employed does not produce any undesirable visual effects such as keystoneing, banding and shimmering as well as any undesirable aural effects such as signal distortion, noise pulses, glitches, audio hum, popping noise, voltage or spike transients, etc.
14. 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.
15. 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 providing the correct protection cable duct and/or conduit and wiring even though the actual item installation may be by another subcontractor.
16. 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.
17. Active electronic component equipment shall consist of solid state components and be rated for continuous duty service in the areas where provided.
18. All passive equipment and cables shall meet or exceed -80 dB radiation shielding specifications.
19. All signaling and communication circuits shall be solid state.
20. 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.
21. 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).
22. 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.

23. All equipment face plates utilized in the system shall be stainless steel, anodized aluminum, or ABS plastic for the areas where provided.
24. 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. Power Amplifier Type 2:
 1. Channels: Four
 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
- D. 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
- E. Headphone Amplifier Type 2:
 1. Input Channels: Two
 2. Output Channels: Six
 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

- C. Input Expander:
 - 1. Input: 4
 - 2. Network Audio: AVB
 - 3. USB Audio: No
 - 4. Phone Interface: No
 - 5. Control: RS-232 (Serial) and Ethernet
 - 6. Rack Mount: 1U
 - 7. Manufacturer: Biamp
 - 8. Model: Tesira EX-IN

- D. Modular Expander:
 - 1. Input: 12
 - 2. Network Audio: AVB
 - 3. USB Audio: No
 - 4. Phone Interface: No
 - 5. Control: RS-232 (Serial) and Ethernet
 - 6. Rack Mount: 1U
 - 7. Manufacturer: Biamp
 - 8. Model: Tesira EX-MOD

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 Handheld Microphone:
 - 1. Type: Dynamic
 - 2. Polar Pattern: Unidirectional (Cardiod)
 - 3. Connector Type: XLR, 3-Pin, Male
 - 4. Accessories:
 - a. Microphone Stand: Floor Stand
 - b. Windscreen
 - c. Patch Cable: 1 ea. 25 ft
 - 5. Manufacturer: Shure

6. Model: Beta 58
 7. Quantity: 1 for each Courtroom
- C. Wired Gooseneck Microphone Type 1:
1. Type: Dynamic
 2. Polar Pattern: Unidirectional (Cardiod)
 3. Connector Type: XLR, 3-Pin, Male
 4. Accessories:
 - a. Microphone Base: Push Button Desktop Base
 - b. Windscreen
 - c. Patch Cable: 1 ea. 14 ft
 5. Manufacturer: Shure
 6. Model: MX418
 7. Quantity: Refer to drawings and schedules for quantities.
- D. Wired Gooseneck Microphone Type 2:
1. Type: Dynamic
 2. Polar Pattern: Unidirectional (Cardiod)
 3. Connector Type: XLR, 3-Pin, Male
 4. Accessories:
 - a. Microphone Base: Fixed Shock Mount Base
 - b. Windscreen
 - c. Patch Cable: 1 ea. 14 ft
 5. Manufacturer: Shure
 6. Model: MX418
 7. Quantity: Refer to drawings and schedules for quantities.
- E. 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: Yamaha Revolab
 7. Model: HD MaxSecure Wearable Microphone
- 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: Yamaha Revolab
8. Model: Executive HD MaxSecure 4-Channel

- D. Charging Station:
1. Charging Station Ports: 4
 2. Network Connected: No
 3. Manufacturer: Yamaha

2.7 VIDEO DISPLAYS

- A. Refer to display schedule on detail drawings.

2.8 VIDEO DISTRIBUTION EQUIPMENT

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:

1. Kramer
2. Crestron
3. AMX
4. Extron

- B. Video Matrix Switcher Type 1:

1. Maximum Resolution: 4096x2160
2. Inputs/Outputs: 16x16
 - a. Refer to schematics for card types and quantities.
3. Input Signal Type: HDMI, HDBaseT, and DGKat
4. Output Signal Type: HDMI and DGKat
5. HDCP Compliance: Yes
6. Control Interface: Ethernet
7. Design Basis Manufacturer: Kramer
8. Design Basis Model: VS-1616DN-EM

- C. Switcher Type 1:

1. Maximum Resolution: 1920x1080
2. Inputs/Outputs: 3x1
3. Input Signal Type: HDMI, VGA, and Analog Audio
4. Output Signal Type: HDMI and DGKat
5. HDCP Compliance: Yes
6. Integrated Audio Processor: Yes
7. Integrated Amplifier: No
8. Integrated Control Processor: Yes
9. Control Interfaces: Ethernet
10. Design Basis Manufacturer: Kramer
11. Design Basis Model: VP-770

- D. Video Distribution Amplifier Type 1:

1. Maximum Resolution: 1920x1080
2. Outputs: 4

- a. Refer to schematics for card types and quantities.
 - 3. Input Signal Type: DGKat
 - 4. Output Signal Type: HDMI
 - 5. HDCP Compliance: Yes
 - 6. Control Interface: Serial
 - 7. Design Basis Manufacturer: Kramer
 - 8. Design Basis Model: VM-114H
- E. Video Distribution Amplifier Type 2:
 - 1. Maximum Resolution: 4096x2160
 - 2. Outputs: 10
 - a. Refer to schematics for card types and quantities.
 - 3. Input Signal Type: HDMI
 - 4. Output Signal Type: HDMI
 - 5. HDCP Compliance: Yes
 - 6. Control Interface: Serial
 - 7. Design Basis Manufacturer: Kramer
 - 8. Design Basis Model: VM-10H2
- F. Video Transmitter Type 1:
 - 1. Maximum Resolution: 4096x2160
 - 2. Input Signal Type: HDMI and Stereo Audio
 - 3. Output Signal Type: HDBase-T
 - 4. HDCP Compliance: Yes
 - 5. Mounting Type: Surface Mount
 - 6. Design Basis Manufacturer: Kramer
 - 7. Design Basis Model: TP-590TXR
- G. Video Transmitter Type 2:
 - 1. Maximum Resolution: 1920x1080
 - 2. Input Signal Type: HDMI
 - 3. Output Signal Type: DGKat
 - 4. HDCP Compliance: Yes
 - 5. Mounting Type: Surface Mount
 - 6. Design Basis Manufacturer: Kramer
 - 7. Design Basis Model: PT-571
- H. Video Receiver Type 1:
 - 1. Maximum Resolution: 1920x1080
 - 2. Input Signal Type: DGKat
 - 3. Output Signal Type: HDMI
 - 4. HDCP Compliance: Yes
 - 5. Mounting Type: Surface Mount
 - 6. Design Basis Manufacturer: Kramer
 - 7. Design Basis Model: TP-574
- I. Audio De-embedder:
 - 1. Maximum Resolution: 1920x1080
 - 2. Input Signal Type: HDMI
 - 3. Output Signal Type: HDMI and Analog Audio
 - 4. HDCP Compliance: Yes
 - 5. Mounting Type: Rack Mount
 - 6. Design Basis Manufacturer: Kramer
 - 7. Design Basis Model: FC-46XL

2.9 VIDEO SOURCES

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 - 1. Denon
 - 2. Tascam
 - 3. Wolfvision

- B. Document Camera
 - 1. Minimum Video Resolution: 1080p
 - 2. Aspect Ratio(s): 16:9
 - 3. Video Output Type: HDMI
 - 4. Network Connectivity: Yes
 - 5. Control Interface: Lan
 - 6. Manufacturer: Wolfvision
 - 7. Model: VZ8Plus

2.10 USB BRIDGES

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 - 1. Extron

- B. USB Hub:
 - 1. Minimum Video Resolution: 1920x1080
 - 2. Quantity of USB Input: Four
 - 3. Quantity of USB Outputs: One
 - 4. Control Interface: None
 - 5. Accessories: Rack mount kit
 - 6. Manufacturer: Extron
 - 7. Model: USB HUB4 MAAP

- C. 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

- D. 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

2.11 VIDEO CAPTURE DEVICES

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 - 1. Epiphan
 - 2. Blackmagic Design

3. Extron
 4. Magewell
 5. Polycom
- B. Streamer:
1. Supported Operating Systems: Windows 8.1, Windows 10, Mac OS X 10.10, and Linux with Kernel 3.5.0 or higher
 2. Input Connector Type: HDMI
 3. Minimum Input Resolution: 1920x1080
 4. Minimum Output Resolution: 1920x1080
 5. HDCP: Not supported.
 6. Control: Lan
 7. Manufacturer: Epiphan
 8. Model: Pearl-2
- C. Annotator:
1. Input Connector Type: HDMI and USB
 2. Output Connector Type: HDMI
 3. Minimum Input Resolution: 1920x1080
 4. Minimum Output Resolution: 1920x1080
 5. HDCP: Not supported.
 6. Control: Lan
 7. Manufacturer: Extron
 8. Model: Annotator 300
- D. Graphics Storage Device:
1. Output Connector Type: HDMI
 2. Maximum Output Resolution: 3840x2160
 3. HDCP: Not supported.
 4. Control: Lan
 5. Manufacturer: Brightsign
 6. Model: HD1024

2.12 CAMERAS

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
1. Vaddio
 2. HuddleCam
 3. ClearOne
 4. Panasonic
 5. Lifesize
- B. Camera Type 1:
1. Minimum Resolution: 1920x1080
 2. Horizontal Field of View: 70 degrees
 3. Zoom ratio: 10x
 4. Pan Tilt Zoom: Yes
 5. Video Signal Type: HDMI
 6. Manufacturer: Lifesize
 7. Model: Camera 10x

2.13 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: AV3
 - k. Accessories: Rack mount kit

2.14 RACKS

- A. Audiovisual Equipment Rack
1. Refer to equipment rack schedule on detail drawings.

2.15 ETHERNET SWITCH

- A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
1. Cisco
 2. Network Solutions
- B. Audiovisual Network Switch:
1. Design Basis: Cisco Catalyst 3650
 2. Switch shall have the following features:
 - a. 48 port 10/100/1000Mb auto-sensing ports
 - b. Integrated 10GbE SFP+ port
 - c. Power over Ethernet+
 - d. Managed Ethernet Switch
 - e. Quality of Service (QoS) with 4 queues
 - f. Diffserv (DSCP) QoS with strict priority
- C. AVB Switch:
1. Design Basis: Motu AVB Switch
 2. Switch shall have the following features:
 - a. 5 AVB ports, 1 Ethernet port
 - b. IEEE 802.1 Compliant
 - c. 10/1000/1000Mb bandwidth

2.16 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. Digital Video Cable:
1. HDMI Cable:
 - a. Type: Shielded HDMI Cable
 - b. Conductors: 24 AWG, Copper
 - c. Minimum Resolution: 4K
 - d. Quantity of Pairs: 9
 - e. Jacket: Plenum rated CMP 50
 - f. Jacket Color: Black
 - g. Manufacturer: Belden
 2. HDBaseT Cable:
 - a. Type: High-bandwidth Cat6a foil shielded twisted pair (F/UTP)
 - b. Conductor: 23AWG solid bare copper
 - c. Quantity of Pairs: 4
 - d. Jacket: Plenum Rated CMP 50
 - e. Jacket Color: Blue
 - f. Manufacturer: Belden
- E. 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

- F. Data Network Cable:
 - 1. Refer to specification Section 271513.
- G. 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 video installation sightlines and possible obstructions.

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. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.
- I. All terminations shall be installed per manufacturer's specifications and recommendations
- J. 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.
- K. 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.
- L. 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.
- M. 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.
- N. 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.
- O. 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.

P. 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.

Q. 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.

R. 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 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.

S. 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 flush-cut tie-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 coordinated with the COTR prior to order entry and installation. 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 VIDEO INSTALLATION

- A. HDBaseT Cabling:
 1. Cabling shall length shall not exceed 300 ft in length.
 2. Wire according to the TIA-568B termination scheme.
 3. Maintain a minimum bend radius of 4 times the outside diameter of the cable.
 4. Do not bend, twist or kink cable, cables with physical damage will be required to be replaced.
 5. Do not splice or bridge cable at any point.
 6. Install cable using shielded RJ-45 (8P8C) plug that does not require soldering.
 7. Provide a TIA-568 Channel Test report for each installation of HDBaseT cable using a calibrated and certified cable tester. Refer to Section 27 15 13 for cable testing requirements.
 8. Cables shall be installed a minimum of 12 inches from AC power cables.

3.5 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. Judge Preview On/Off
 - g. Witness Monitor On/Off
 - h. Jury/Gallery Monitor On/Off
 - i. Source Selection
 - 1) Seal
 - 2) Judge PC
 - 3) Witness HDMI
 - 4) Plaintiff Laptop
 - a) Front
 - b) Rear
 - 5) Defense Laptop
 - a) Front
 - b) Rear
 - 6) Cart HDMI
 - 7) Cart VGA
 - 8) Cart Doc Cam

- 9) Clear Annotation
- j. Audio Controls
- k. Audio Conference
- l. Signaling
- m. Video Controls
- n. Video Conference
- 2. Audio Controls Page
 - a. Set Mic Levels to Default button
 - b. Tabs for Judge/Deputy, Witness, Lectern/Witness, Plaintiff, Defense, Cart Audio and Interpreter with the following:
 - 1) Level control up/down with Graphic Representation
 - 2) Mute
- 3. Audio Conference Page
 - 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		2 X	
2		X	X	1 2 3 4
3	X		X	
4		X	X	1 2 3 4

- 4. SignalingControls Page
 - a. Page Judicial Assistant button
 - b. Page Attorney button
 - c. Page CRD button
 - d. Page Judge button
- 5. Video Controls
 - a. Cart Doc Camera tab
 - 1) Freeze
 - 2) White Balance
 - 3) Zoom in/Zoom out
 - 4) Focus near/far
 - 5) Lamp on
 - 6) Lamp off
 - 7) Power on/off
 - 8) Auto focus on/off
 - b. Gallery Monitor tab
 - 1) Monitor on/off
 - c. Stream tab
 - 1) Stream on/off

- 2) Camera control
- 3) Send Evidence
- 4) Send Camera
- d. Cart Audio tab
 - 1) Cart audio level control with Graphic Representation
- 6. Video Conference Page
 - a. VTC Mode Button
 - b. VTC Control Tab to include the following
 - 1) Selfview button
 - 2) Swap layout button
 - 3) Menu button
 - 4) Up/Down/Right/Left Arrows
 - 5) Send Camera button
 - 6) Send Evidence button
 - a) Camera from far end must remain when Evidence is sent.
 - c. VTC Volume Controls tab to include the following
 - 1) Near end level control with Graphic Representation
 - 2) Far end level control with Graphic Representation
 - d. Camera Controls tab to include the following
 - 1) Pan and Tilt controls
 - 2) Zoom in/Zoom out
 - 3) Focus
 - 4) Camera selection
 - 5) Minimum of 4 presets
 - e. VTC Dialer tab
 - 1) Dial pad
 - 2) Connect button
 - 3) End call button
 - 4) Clear

- 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 lavaliers and all wireless microphones, which shall be muted.
 - j. The transcription playback input shall be muted.
 - k. Videoconference/ audio tele-conference systems shall be placed on-hook and muted.
 - l. The control system shall call the normal room configuration audio matrix preset routing all nominal inputs and outputs.
 - m. Control panels shall return to home page.
 - n. Presentation cart items shall be set to "on", regardless of the original power state.
 - o. Provide programming for proper resolution on all displays
 - p. All switches feeding evidence monitors in all zones shall be selected to have the Court seal displayed from a graphics storage device.
 - q. The annotation system shall be cleared and reset
 - r. The control system shall call the normal operating room configuration matrix preset routing all nominal inputs and outputs.
 - s. 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. Video control configuration shall meet the following criteria:
1. Video system control configuration
 - a. Video Zoning
 - 1) Zone 1: Judge, CRD, Court Reporter, Counsel tables and Presenter cart
 - 2) Zone 2: Jury, Witness
 - 3) Zone 3: Gallery
 2. Muting: Provide individual video muting controls for each monitor zone higher than zone 1.
 3. Display Ratios: Provide programming so that each source selection displays correctly on all HD displays.
 4. Automatic Video Publishing Mute Function: Provide selection switch on main control panel(s) to enable or disable the "Auto Publish" mode. The function is intended to set a system operating mode that allows automatic publishing to the courtroom monitors in zone 2 and higher of a video evidence source. Court staff shall be able to enable and disable the "Auto Publish" feature at any time; however, the design intent of this switch shall be used to set a typical condition for a particular hearing, for a day or for an entire trial. The selected mode is not intended to be varied each time video evidence is presented or changed during the course of testimony presentation.

- a. When “Auto Publish” mode is disabled, any change of source (such as changing from PC presentation to Document Camera presentation) shall automatically black out (or display logo according to Court preference) to all monitor zones higher than zone one. Audio from any source that has audio (only the document camera has no audio) shall be muted to all destinations unless all monitor zones are published.
 - 1) When “Auto Publish” mode is enabled, changes of sources selected shall instantly switch all monitor zones to the new source without judge or court staff intervention. Any selection of evidence on any courtroom control panel shall immediately publish to all zones. Audio associated with the evidence shall also be published (un-muted) at this time. In this mode neither the Judge nor court staff shall be required to intervene and publish to monitor zones higher than zone 1.
 - 2) At any time, any control panel not under the control of the attorney, shall be able to toggle publish or un-publish separately on zones higher than zone 1. An “all-publish” button to publish to multiple zones shall not be provided. Label each display toggle button for each zone such as “Witness Publish On/[Off]” and “Jury/Gallery Publish On/[Off]”.
 - 3) Auto Publish should be enabled each time after a system reset. The mode shall not be changed when the system is powered on.
- 5. Logo Generator: Provide the following video pages on the logo generator to be controlled under the master system under selected conditions:
 - a. Court Graphics: Display Court seal on all video zones during system reset and system power on.
 - b. Unpublished Source: Display Court seal to all zones higher than zone 1 for use when evidence presentation system is not to display an evidence source. Provide a “publish/un-publish” button toggle for zone 2 and a “publish/un-publish” button toggle for zone 3. The system shall not have separate “video mute”, “all publish”, or “all mute” function control.
 - c. Bench Conference Graphics: Provide and select to display on all zones a full screen graphic that reads “Private Bench Conference is Active” during bench conference mode only. After bench conference is ended, return to original source input and restore audio.
 - d. Help Screens: Provide and select to display all Quick Reference Guides provided for system on zone 1. Under help screen provide sub-screen to select various help references available for display. Provide multiple pages for each guide where required. Provide additional help information as may be appropriate for system instruction.
- G. Logo Generator: Provide the following video pages on the logo generator to be controlled under the master system under selected conditions:
 - 1. Court Graphics: Display Court seal on all video zones during system reset and system power on.
 - 2. Unpublished Source: Display Court seal to all zones higher than zone 1 for use when evidence presentation system is not to display an evidence source. Provide a “publish/un-publish” button toggle for zone 2 and a “publish/un-publish” button toggle for zone 3. The system shall not have separate “video mute”, “all publish”, or “all mute” function control.
 - 3. Bench Conference Graphics: Provide and select to display on all zones a full screen graphic that reads “Private Bench Conference is Active” during bench conference mode only. After bench conference is ended, return to original source input and restore audio.
 - 4. Help Screens: Provide and select to display all Quick Reference Guides provided for system on zone 1. Under help screen provide sub-screen to select various

help references available for display. Provide multiple pages for each guide where required. Provide additional help information as may be appropriate for system instruction.

3.6 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.

3.7 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.

3.8 INTERFACE WITH OTHER WORK

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

3.9 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 video display and 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 video and audio display 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.

3.10 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, video 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.

3.11 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.

3.12 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.

3.13 SCHEDULE

- A. All work to be scheduled with COTR.

III. Audiovisual Drawings

US DISTRICT COURT NORTHERN DISTRICT OF OHIO

AKRON, YOUNGSTOWN, & CLEVELAND

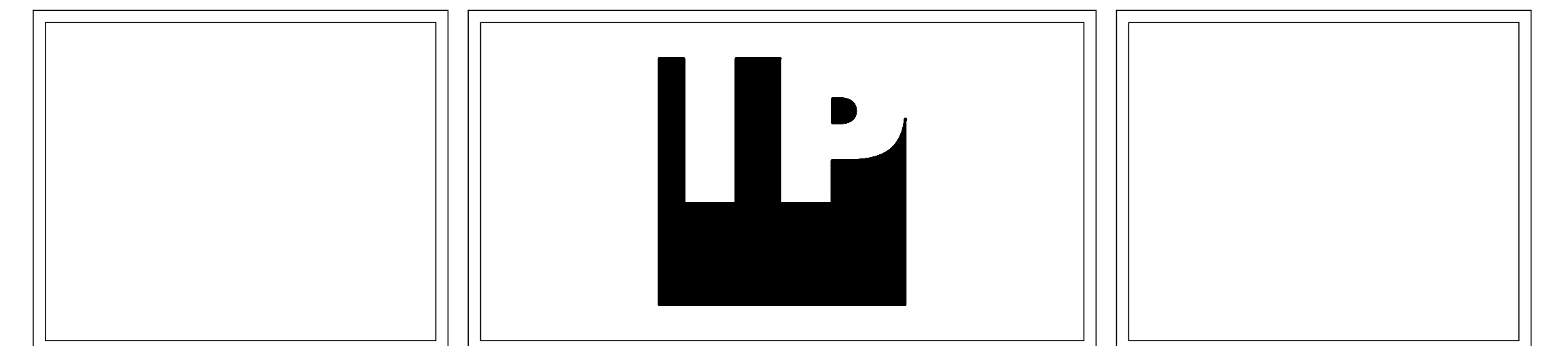
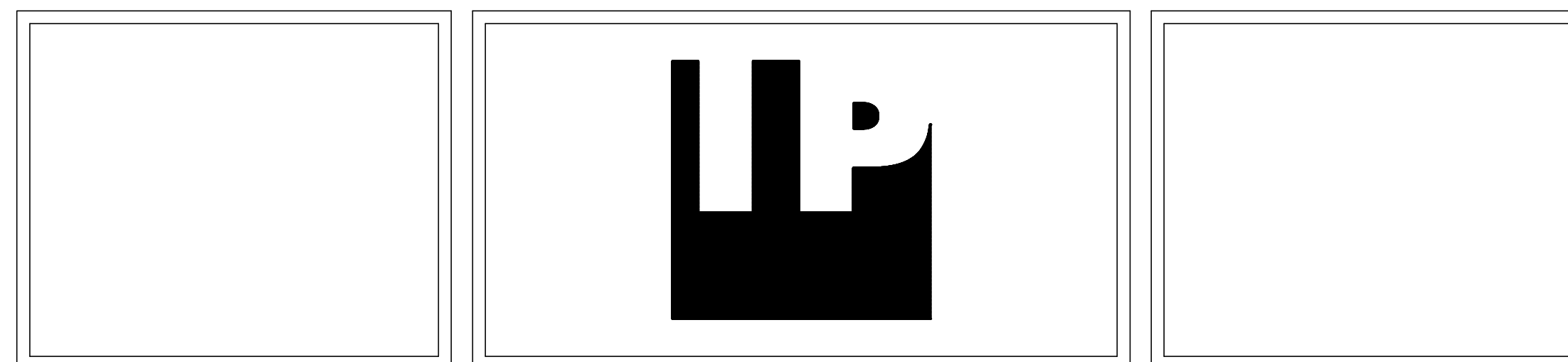
INDEX OF DRAWINGS

AUDIOVISUAL

SHEET NUMBER	DESCRIPTION
AV000	AKRON, YOUNGSTOWN, & CLEVELAND SYMBOLS/ABBREVIATIONS - AV
AV001	AKRON COURTROOM SCHEMATICS - AV
AV002	YOUNGSTOWN COURTROOM SCHEMATICS - AV
AV003	CLEVELAND COURTROOM SCHEMATICS - AV
AV004	CLEVELAND COURTROOM SCHEMATICS - AV
AV005	CLEVELAND COURTROOM SCHEMATICS - AV
AV1.00	AKRON COURTROOM 575 AV FLOOR PLAN
AV1.01	YOUNGSTOWN COURTROOM 351 AV FLOOR PLAN
AV1.02	CLEVELAND COURTROOM 09A AV FLOOR PLAN
AV1.03	CLEVELAND COURTROOM 16B AV FLOOR PLAN
AV1.04	CLEVELAND COURTROOM 17B AV FLOOR PLAN
AV400	AKRON 575, YOUNGSTOWN 351 COURTROOM DETAILS - AV
AV401	CLEVELAND 16B, 17B COURTROOM DETAILS - AV
AV402	CLEVELAND 16B, 17B COURTROOM DETAILS - AV

PROJECT DRAWINGS

07/30/2019
20197427



P
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A

AUDIOVISUAL SYMBOLS			
AUDIOVISUAL			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WALL SURFACE MOUNTED LOUDSPEAKER (*# INDICATES DEVICE TYPE IN SCHEDULE)		CEILING MOUNTED LOUDSPEAKER (*# INDICATES DEVICE TYPE IN SCHEDULE)
	TELEVISION/VIDEO OUTLET		VOLUME CONTROL
	CALL IN SWITCH		WALL MICROPHONE OUTLET (*# INDICATES DEVICE TYPE IN SCHEDULE)
	AV WALL OUTLET (*# INDICATES DEVICE TYPE IN SCHEDULE)		FLOOR MICROPHONE OUTLET (*# INDICATES DEVICE TYPE IN SCHEDULE)
	FLOOR AV OUTLET (*# INDICATES DEVICE TYPE IN SCHEDULE)		AV CEILING OUTLET (*SF# INDICATES SURFACE OR FLUSH MOUNTED *# INDICATES DEVICE TYPE IN SCHEDULE)
	AV ROOM SCHEDULER (*# INDICATES DEVICE TYPE IN SCHEDULE)		AV CONTROL PANEL (*# INDICATES DEVICE TYPE IN SCHEDULE)
	AV BACKBOX (*# INDICATES TYPE IN SCHEDULE) (*#D# INDICATES # OF DATA CABLES)		AV CEILING BACKBOX (*# INDICATES TYPE IN SCHEDULE) (*#D# INDICATES # OF DATA CABLES)
SUBSCRIPTS			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
EP	SUBSCRIPT "EP" APPLIED TO ANY SYMBOL INDICATES EXPLOSION PROOF CLASS, GROUP AND DIVISION AS NOTED	RT	SUBSCRIPT "RT" APPLIED TO ANY SYMBOL INDICATES RAIN TIGHT NEMA 3R OR EQUIVALENT
E	SUBSCRIPT "E" ADDED TO ANY SYMBOL INDICATES EXISTING	K	SUBSCRIPT "K" ADDED TO ANY SYMBOL INDICATES KEY OPERATED
PD	SUBSCRIPT "PD" ADDED TO ANY FLOOR OUTLET INDICATES PEDIESTAL MOUNTED	WG	SUBSCRIPT "WG" ADDED TO ANY SYMBOL INDICATES WIRE GUARD
AC	SUBSCRIPT "AC" ADDED TO ANY SYMBOL INDICATES ABOVE COUNTER, LOCATE CENTER OF DEVICE 4" ABOVE COUNTER SURFACE OR WHERE PRESENT, 4" ABOVE BACKSPLASH, WHERE INDICATED ADJACENT TO LAVATORY WITHOUT COUNTER, LOCATE CENTER OF DEVICE 8" ABOVE RIM OF LAVATORY.		

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.

AUDIO VIDEO GENERAL NOTES

AV CABLING NOTES

- CABLE DAMAGED DURING ITS INSTALLATION WILL NOT BE ACCEPTED. UNLESS OTHERWISE ALLOWED BY OWNER, THE CONTRACTOR SHALL REPLACE CABLE DAMAGED DUE TO ITS INSTALLATION WITH NEW CABLE INSTALLED AT THE EXPENSE OF THE CONTRACTOR. DAMAGE INCLUDES PHYSICAL DAMAGE TO CABLE OR IMPROPER INSTALLATION PRACTICES THAT MAY AFFECT PERFORMANCE.
- CABLING SHALL BE TERMINATED IN NUMERICAL ORDER BASED ON OUTLET NUMBERING.
- COORDINATE MOUNTING HEIGHTS AND FINAL LOCATION OF ALL OUTLETS WITH COURT PRIOR TO INSTALLATION.

CONSTRUCTION NOTES

- ALL DEBRIS RESULTING FROM PENETRATIONS SHALL BE CLEARED AND REMOVED FROM SITE ON A DAILY BASIS.
- ALL MATERIALS AND SURFACES TO REMAIN SHALL BE PROTECTED. IF SUCH MATERIALS AND SURFACES ARE DAMAGED DURING CONSTRUCTION, REPAIR AND FINISH TO MATCH ORIGINAL CONDITIONS. EQUIPMENT, AND FURNISHINGS SHALL BE PROTECTED WHERE CONSTRUCTION WILL CAUSE DUST, DEBRIS, AND POSSIBLE DAMAGE.
- CARE SHALL BE EXERCISED WHEN REMOVING OR REPLACING SUSPENDED CEILING PANELS. DAMAGED PANELS SHALL BE REPLACED WITH NEW PANELS. ALL CEILINGS SHALL BE RETURNED TO ORIGINAL OR BETTER CONDITION. PAINT, CLEAN, AND REPLACE CEILING PANELS AS NECESSARY. DO NOT LEAVE FINGERPRINTS ON PANELS.
- ANY STAGING AREA USED BY CONTRACTOR SHALL BE RETURNED TO ORIGINAL CONDITION TO OWNERS SATISFACTION. CONTRACTOR SHALL ARRANGE WITH THE GENERAL CONTRACTOR TO OBTAIN WORK TRAILER, 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.
- FIRESTOP ALL FLOOR, TRAY, AND WALL PENETRATIONS.
- FOR ANY LOCATIONS IN WHICH CABLING IS TO BE REPLACED, REMOVE ALL EXISTING CABLING FROM EXISTING PATHWAYS.
- FOR LOCATIONS IN WHICH EXISTING CABLING IS TO REMAIN, CONTRACTOR IS RESPONSIBLE FOR TESTING AND VERIFYING PERFORMANCE.

ABBREVIATIONS									
A AMP	C CONDUIT	DWG DRAWING	FO FIBER OPTIC	IP INTERNET PROTOCOL	MUTOA MULTI USER TELECOMMUNICATIONS	PANL PANEL	SMACNA SHEET METAL AND AIR	TV TELEVISION	
AC ALTERNATING CURRENT	CAB CABINET	DX DIRECT EXPANSION	FOV FIELD OF VIEW	JSP INSIDE PLANT	NC NORMALLY CLOSED	POE POWER OVER ETHERNET	CONDITIONING CONTRACTORS'	TVSS TRANSIENT VOLTAGE SURGE	
ACEG AC EQUIPMENT GROUND	CATV CABLE TELEVISION	EA EXHAUST AIR	FF FIBER PANEL	JBOX JUNCTION BOX	NEC NATIONAL ELECTRICAL CODE	POP POINT OF PRESENCE	NATIONAL ASSOCIATION	SUPPRESSION	
AFB ABOVE FINISHED FLOOR	CB CIRCUIT BREAKER	EAC ELECTRICAL ACCESS CONTROL	FT FEET	KCMIL THOUSAND CIRCULAR MILS	NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	PP PATCH PANEL	SPD SURGE PROTECTIVE DEVICE	(TYP) TYPICAL	
AHJ AUTHORITY HAVING JURISDICTION	CCTV CLOSED CIRCUIT TELEVISION	EC ELECTRICAL CONTRACTOR	FURN FURNISHED	KV KILOVOLT	NFPA NATIONAL FIRE PROTECTION ASSOCIATION	PS PLASTER SINK	SS SPECIFICATIONS	UG UNDERGROUND	
ALF ALUMINUM FRAME DOOR	CFH CUBIC FEET PER HOUR	EHC ELECTRIC HEATING COIL	FW FILTERED WATER	KVA KILOWATT AMPERE	NOT IN CONTRACT	PSF POUNDS PER SQUARE FOOT	SSS STAINLESS STEEL	UL UNDERWRITERS LABORATORY	
APPROX APPROXIMATELY	CFM CUBIC FEET PER MINUTE	EL ELEVATION	GA GAUGE	KW KILOWATT	NOM NORMALLY OPEN	PSI POUNDS PER SQUARE INCH	SSI SECURITY SYSTEMS INTEGRATOR	UNO UNLESS NOTED OTHERWISE	
ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS	CAT CIRCUIT	ELEC ELECTRICAL	GALV GALVANIZED	LAN LOCAL AREA NETWORK	NTS NOT TO SCALE	PSIN PUBLIC SWITCH TELEPHONE NETWORK	SSS SURFCON SCRUB SINK	UPS UNINTERRUPTIBLE POWER SUPPLY	
ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS	CL CENTER LINE	EMD ESTIMATED MAXIMUM DEMAND	GEN GENERAL CONTRACTOR	LBM LATCH BOLT MONITOR	NVE NETWORK VIDEO ENCODER	PTZ PAN-TILT-ZOOM	STD STANDARD	UTP UNSHIELDED TWISTED PAIR	
ASTM STANDARD SPECIFICATIONS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS	CLEC COMPETITIVE LOCAL EXCHANGE CARRIER	EM ELECTROMAGNETIC INTERFERENCE	GEC GROUNDING ELECTRODE CONDUCTOR	LBS POUNDS	NRV NETWORK VIDEO RECORDER	PAN-TILT-ZOOM	STR SHIELDED TWISTED PAIR	V VOLT	
ATS AUTOMATIC TRANSFER SWITCH	CLG CEILING	EMS ENERGY MANAGEMENT SYSTEM	GEN GENERATOR	LETG LIGHTING	OA OUTDOOR AIR	PWR POWER	SWB SWITCHBOARD	VERT VERTICAL	
AUX AUXILIARY	CLR CLEAR	EMT ELECTRICAL METALLIC TUBING	GFCI GROUND FAULT CIRCUIT INTERRUPTER	MA MIXED AIR	OC ON CENTER	RA RETURN AIR	SWGR SWITCHGEAR	VFC VARIABLE FREQUENCY CONTROL	
AV AIR CONDITIONING	CMR COMMUNICATIONS RISER CABLE	ECON ECONOMIZER OUTDOOR AIR	GND GROUND	MATV MASTER ANTENNA TELEVISION	OR OPERATOR ROOM	REQ REQUIRED	T-1 TRUNK LEVEL 1	VTR VENT THROUGH ROOF	
AVG AVERAGE	COAX COAXIAL CABLE	EQIP EQUIPMENT	GPM GALLONS PER MINUTE	MBH 100 BT/HOUR	OSP OUTSIDE PLANT	RGS RIGID GALVANIZED STEEL	TBB TELECOMMUNICATIONS BONDING	WAN WIDE AREA NETWORK	
AVI AUTOMATIC VEHICLE IDENTIFICATION	CPVC CHLORINATED POLYVINYL CHLORIDE	ERH EXHAUST	HGT HEIGHT	MC MAIN CROSS CONNECT	PABX PRIVATE AUTOMATIC BRANCH EXCHANGE	RLFA RELIEF AIR	TB TELECOMMUNICATIONS BONDING	WAP WIRELESS ACCESS POINT	
AW ACID WASTE	CRAC COMPUTER ROOM AIR CONDITIONER	EXH EXHAUST	HH HANDHOLE	MCB MAIN CIRCUIT BREAKER	PB PULLBOX	ROE REQUEST TO EXIT	TB TELECOMMUNICATIONS BONDING	WMP WIRE MANAGEMENT PANEL	
AWG AMERICAN WIRE GAUGE	CT CABLE TRAY	FA FIRE ALARM	HTG HEATING	MDF MAIN DISTRIBUTION FRAME	PBO PROVIDE BY OTHERS	SA SUPPLY AIR	TO TELECOMMUNICATIONS CLOSET	WSA WIRE SIZING AMPS	
BAS BUILDING AUTOMATION SYSTEM	CV CONSTANT VOLUME	FAA FIRE ALARM ANNUNCIATOR PANEL	HTZ HERTZ	MCH MECHANICAL	SCIP SCREENED TWISTED PAIR	SCW SCHEDULE	TEL TELEPHONE	WTH WIRE TRANSFER HINGE	
BFP BACKFLOW PREVENTER	DD DOUBLE DUCT	FACP FIRE ALARM CONTROL PANEL	IC INTERCOM	MERV MINIMUM EFFICIENCY REPORTING VALVE	SDU SOFT DRY WATER	SCW SCHEDULE	TELECOM TELECOMMUNICATIONS	XFMR TRANSFORMER	
BCSI BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL	DA DIAMETER	FB FLOOR BOX	IC INSULATION DISPLACEMENT CONNECTOR	(MIN) MINIMUM	SHW SOFT HOT WATER	SCW SCHEDULE	TEMP TEMPERATURE		
BLDG BUILDING	DISC DISCONNECT	FD FLOOR CLEAN OUT	IDF INTERMEDIATE DISTRIBUTION FRAME	MISC MISCELLANEOUS	SPB PRIVATE BRANCH EXCHANGE	SCIP SCREENED TWISTED PAIR	TBB TELECOMMUNICATIONS BONDING		
BTC BONDING CONDUCTOR FOR TELECOMMUNICATION	DN DOWN	FDG FIRE DEPARTMENT CONNECTION	IDS INTRUSION DETECTION SYSTEM	MLO MAIN LOSS ONLY	PDU POWER DISTRIBUTION UNIT	SHW SOFT HOT WATER	TMGB TELECOMMUNICATIONS MAIN GROUNDING BUSBAR		
BTU BRITISH THERMAL UNIT	DP DEMARCATION POINT	FL FLOOR	IE INVERT ELEVATION	MDA MINIMUM OUTDOOR AIR	PERP PERPENDICULAR	SLAB SLAB	TR TELECOMMUNICATIONS ROOM		
BTUH BRITISH THERMAL UNIT PER HOUR	DPS DOOR POSITION SWITCH	FLM FULL LOAD AMPS		MPOE MAIN POINT OF ENTRANCE	PIC PLASTIC INSULATED CABLE	SLAB SLAB	TR TELECOMMUNICATIONS ROOM		
	DVR DIGITAL VIDEO RECORDER	FMS FACTORY MUTUAL ENGINEERING CORPORATION		MTD MOUNTED	PIV POST INDICATOR VALVE	SM SPRINKLER MAIN, SINGLE MODE	TBB TELEPHONE TERMINAL BOARD		

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, SHIP and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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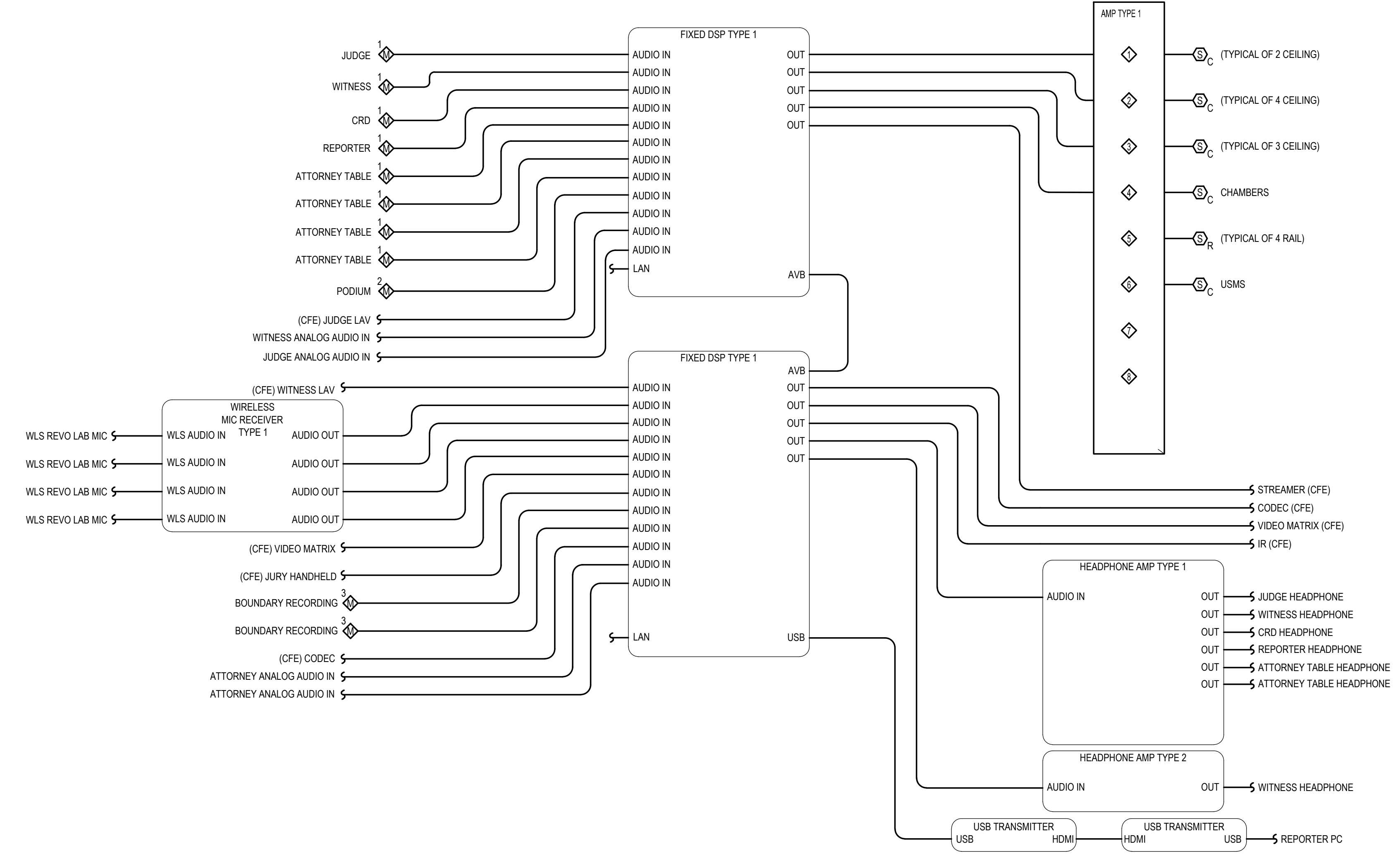
AKRON, YOUNGSTOWN, & CLEVELAND
SYMBOLS/ABBREVIATIONS - AV

US DISTRICT COURT
NORTHERN DISTRICT OF OHIO

AKRON, YOUNGSTOWN, & CLEVELAND OHIO



Designed	File Name
BMB	20197427AV000
Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV000
Date	07/30/2019



AKRON 575 - AUDIO SCHEMATIC

NO SCALE

1
AV001

GENERAL NOTES

1. CONNECT TO EXISTING CRESTRON AV3 CONTROL SYSTEM. REFER TO SCHEMATICS FOR ADDITIONAL PROGRAMMING REQUIREMENTS.

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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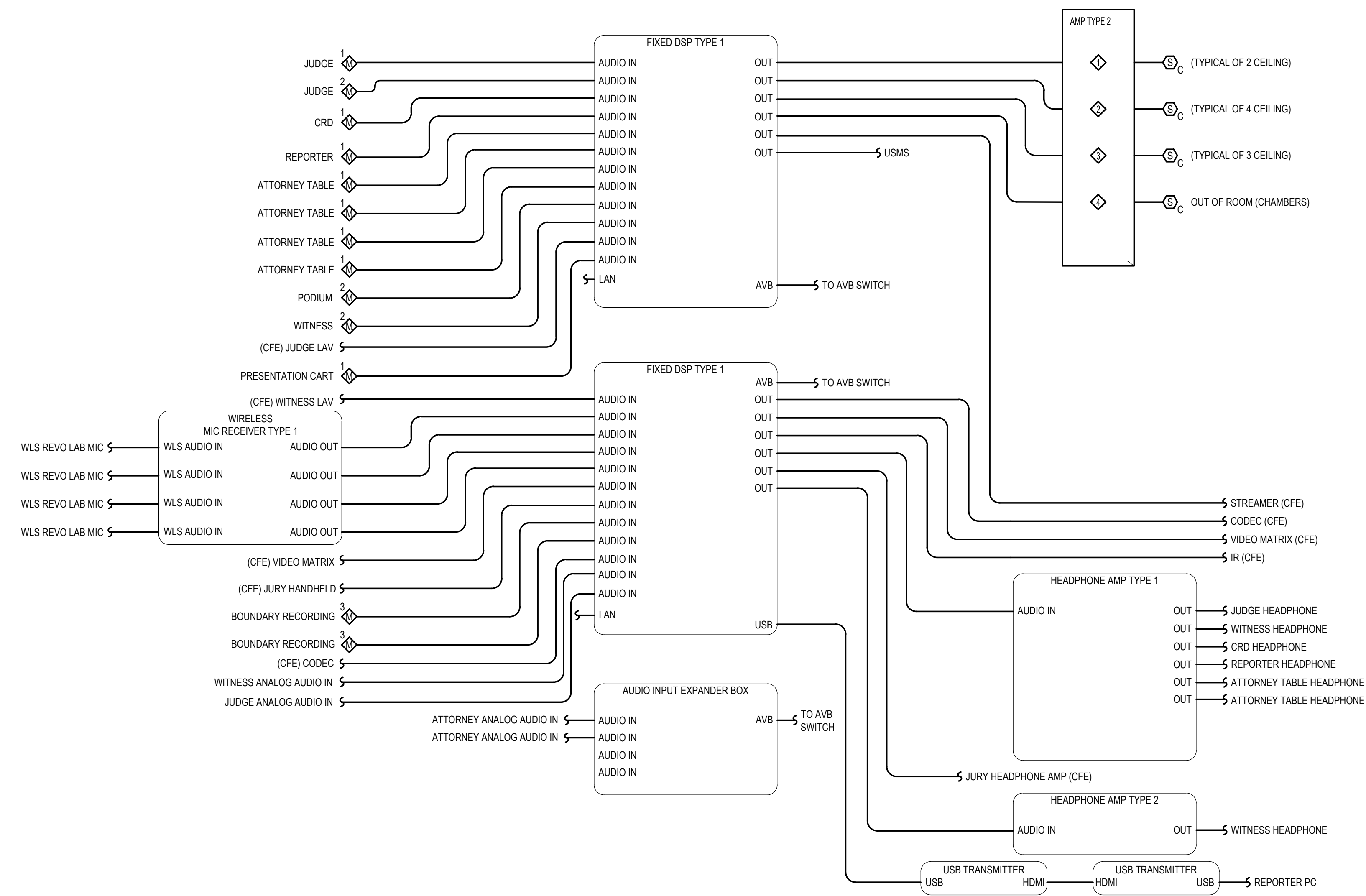
**AKRON COURTROOM
SCHEMATICS - AV**

**US DISTRICT COURT
NORTHERN DISTRICT OF OHIO**

AKRON OHIO

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www.ipdesigngroup.com

Designed	ENB	File Name	20197427_AUDIOVISUAL SCHEMATICS
Drawn	TJB	Project No.	20197427
Checked	JJH	Drawing No.	AV001
Date	07/30/2019		



YOUNGSTOWN 351 - AUDIO SCHEMATIC

NO SCALE

1
AV002

GENERAL NOTES

1. CONNECT TO EXISTING CONTROL SYSTEM. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PROGRAMMING REQUIREMENTS.

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, MEP and other appropriate drawings or all site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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**YOUNGSTOWN COURTROOM
SCHEMATICS - AV**

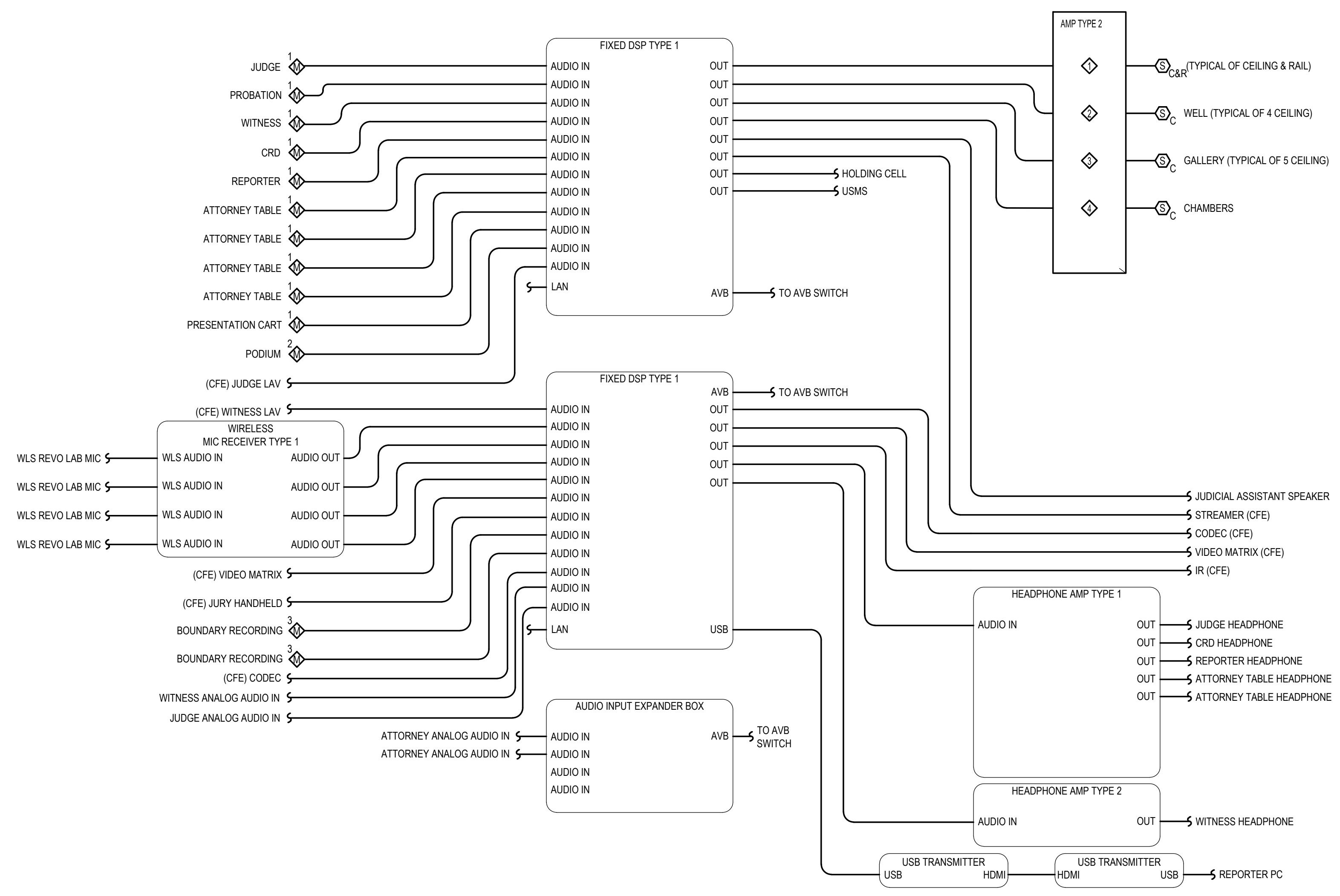
**US DISTRICT COURT
NORTHERN DISTRICT OF OHIO**

YOUNGSTOWN OHIO



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Designed	File Name
BMB	20197427_AUDIOVISUAL SCHEMATICS
Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV002
Date	
07/30/2019	



CLEVELAND 9A - AUDIO SCHEMATIC

NO SCALE

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AV003

GENERAL NOTES

1. CONNECT TO EXISTING CRESTRON AV3 CONTROL SYSTEM. REFER TO SCHEMATICS FOR ADDITIONAL PROGRAMMING REQUIREMENTS.

No	Revisions	Date

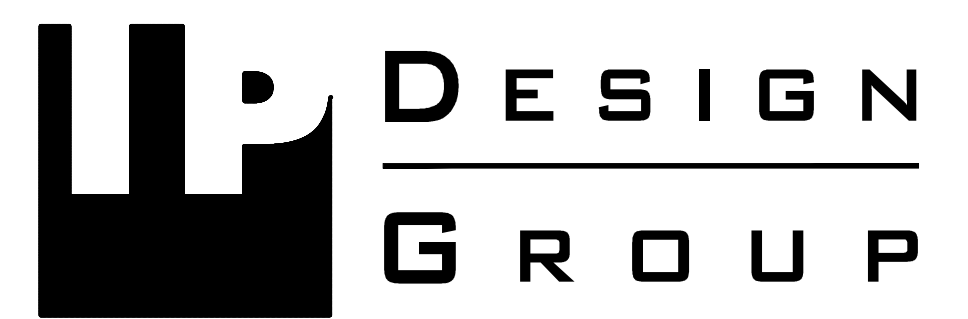
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawings or all site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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CLEVELAND COURTROOM
SCHEMATICS - AV

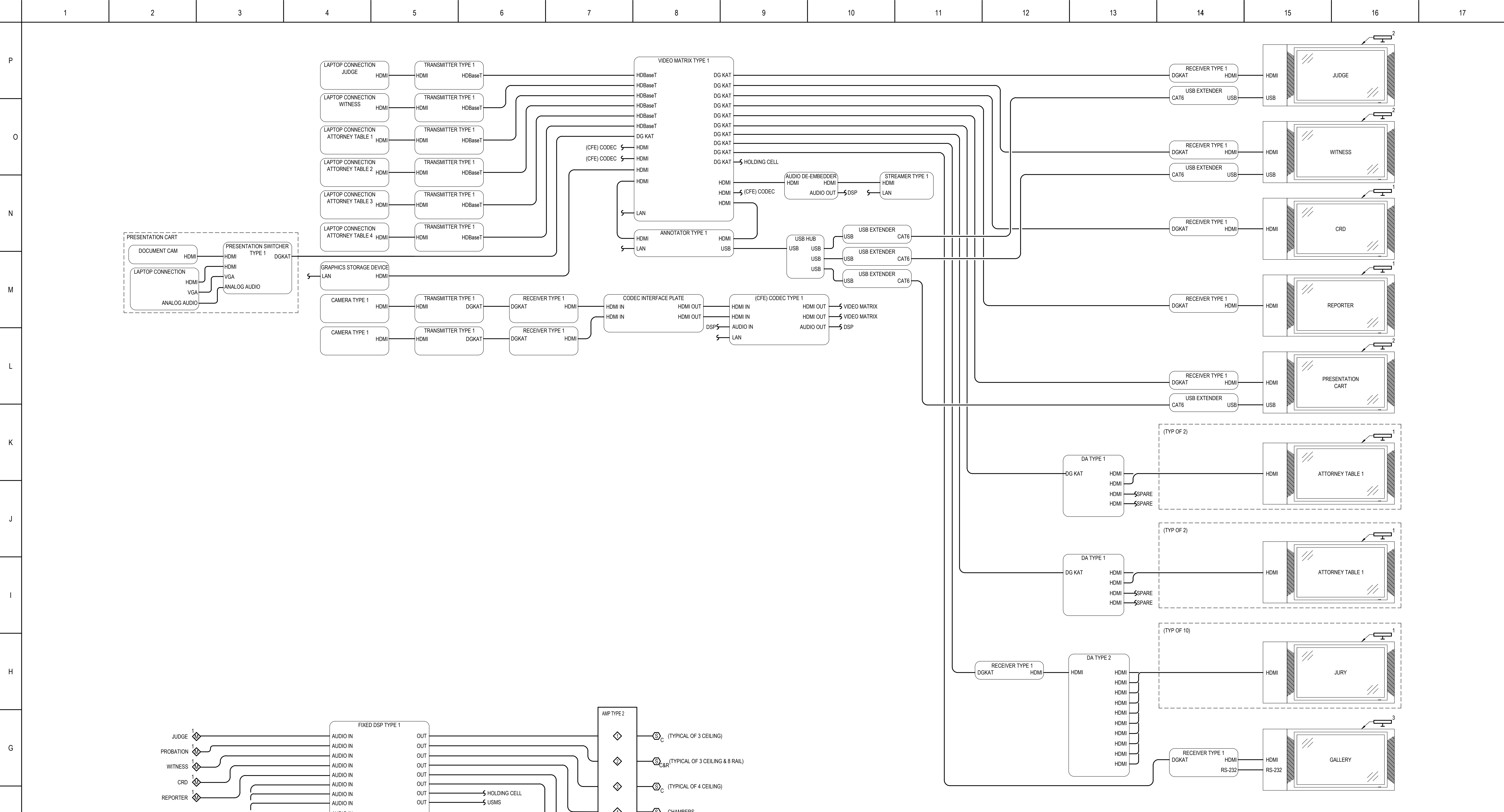
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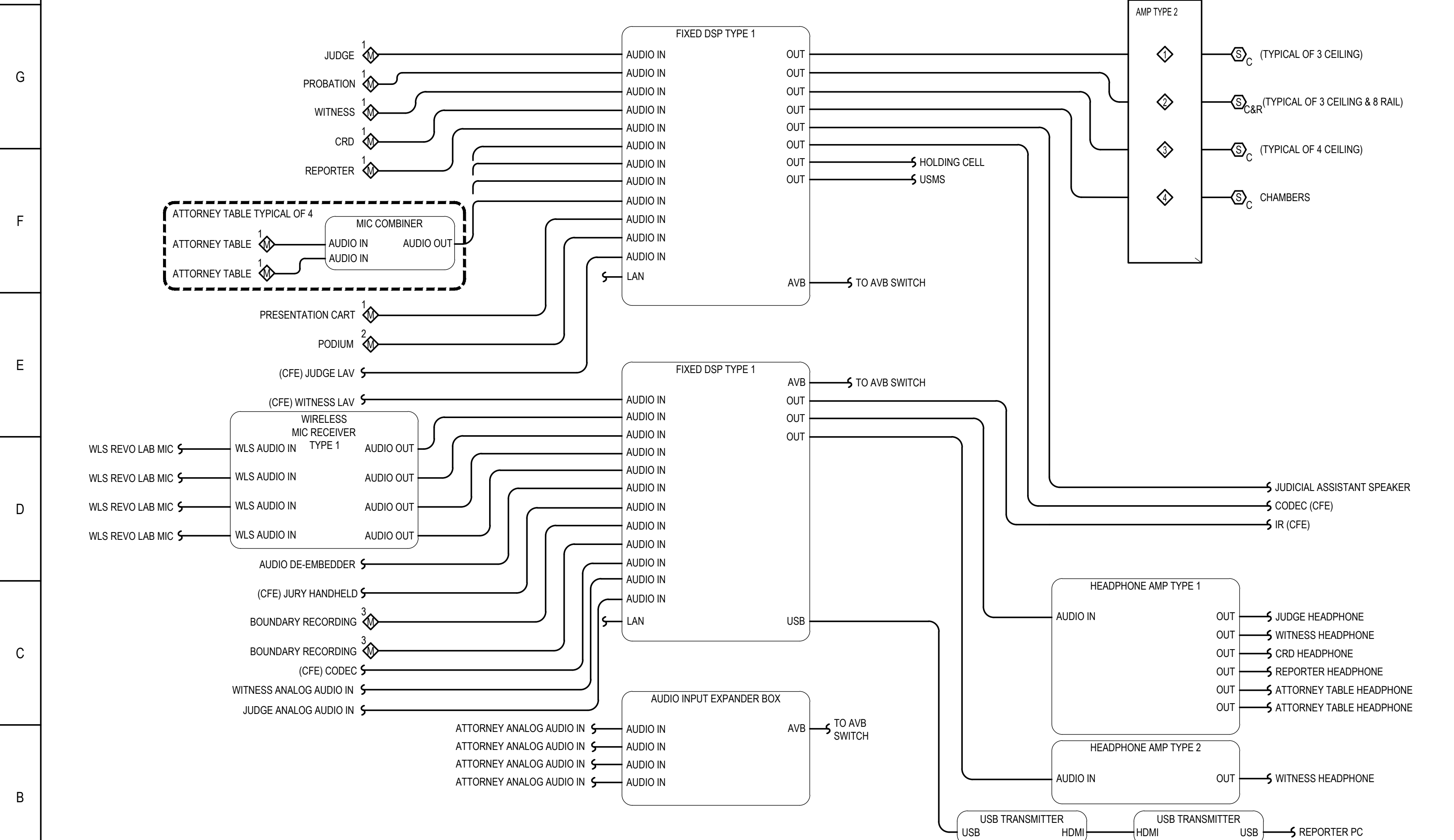
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BMB	20197427_AUDIOVISUAL SCHEMATICS
Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV003
Date	
07/30/2019	



CLEVELAND 16B - VIDEO SCHEMATIC

NO SCALE

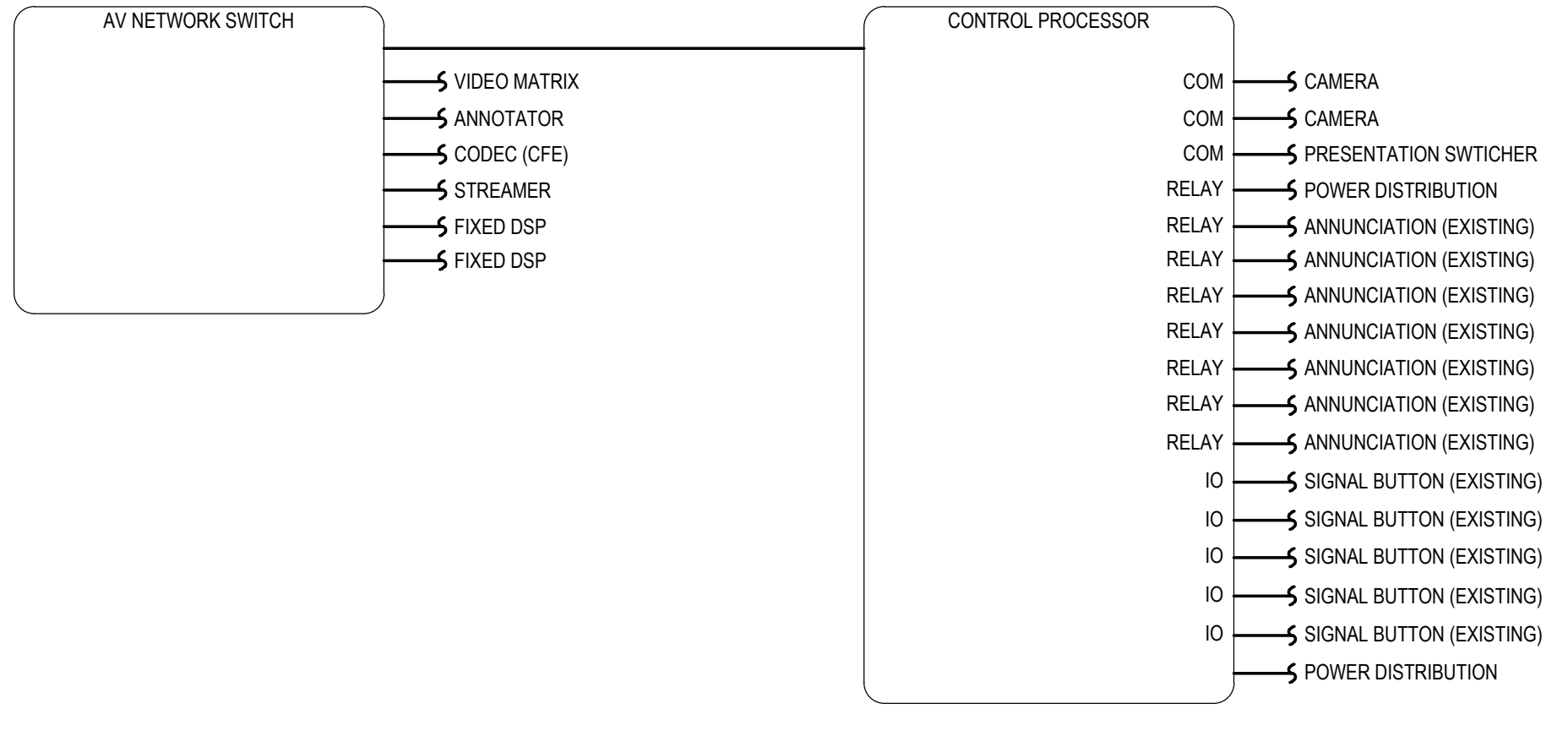
1 AV004



CLEVELAND 16B - AUDIO SCHEMATIC

NO SCALE

2 AV004



CLEVELAND 16B - CONTROL SCHEMATIC

NO SCALE

3 AV004

OWNER TO FINISH TOUCH PANEL FOR CONTROL SYSTEM. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

No	Revisions	Date

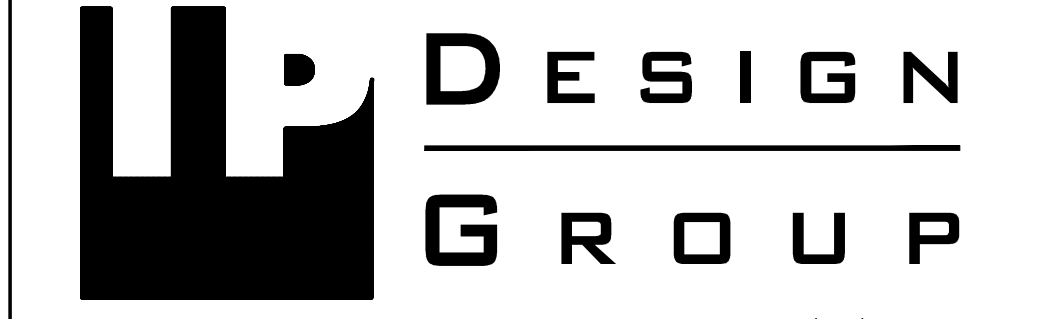
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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CLEVELAND COURTROOM SCHEMATICS - AV

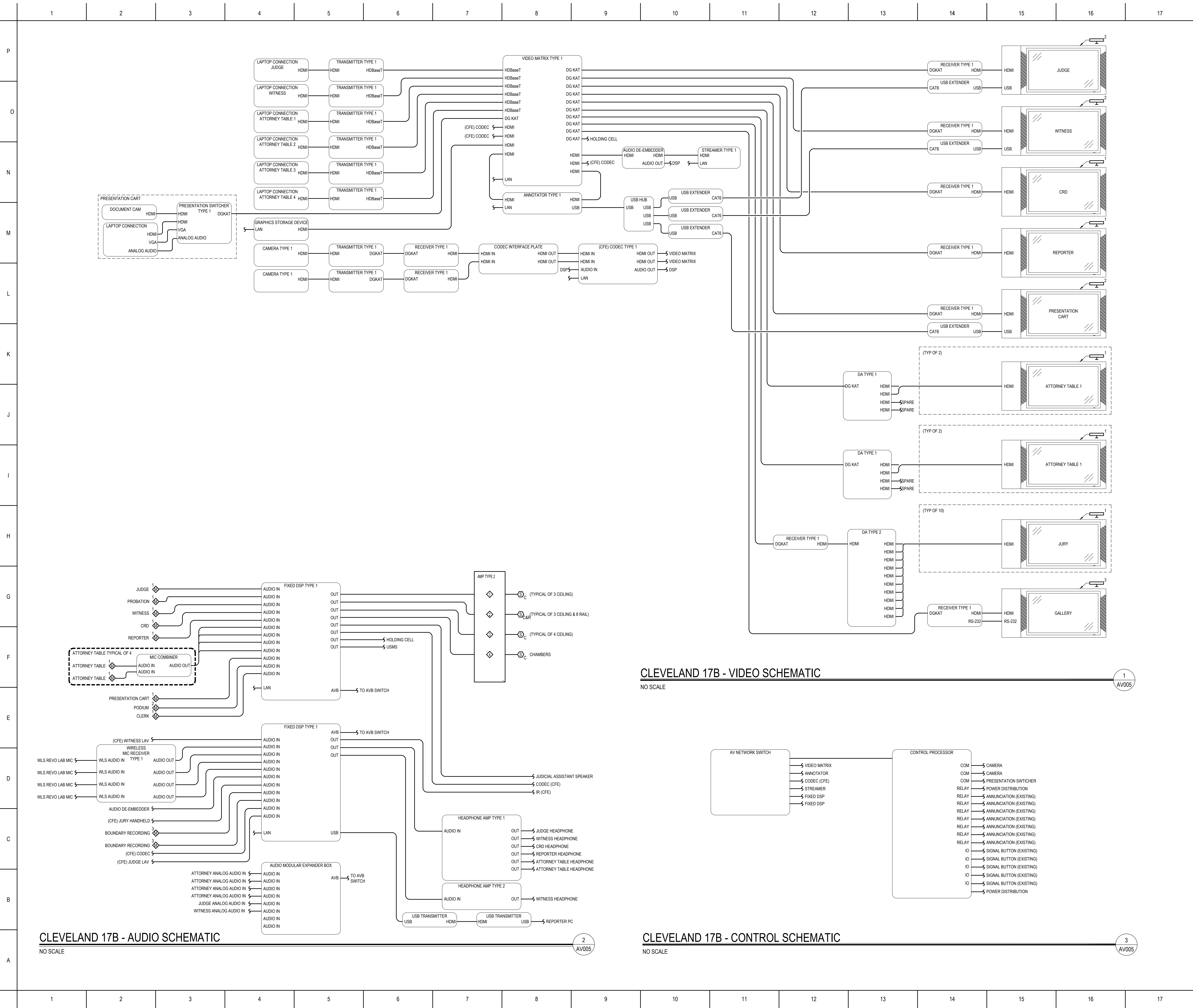
US DISTRICT COURT NORTHERN DISTRICT OF OHIO

CLEVELAND OHIO



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Designed	BMB	File Name	20197427_AUDIO/VISUAL SCHEMATICS
Drawn	TJB	Project No.	20197427
Checked	JLH	Drawing No.	AV004
Date	07/30/2019		



GENERAL NOTES

1. OWNER TO FURNISH TOUCH PANEL FOR CONTROL SYSTEM. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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CLEVELAND COURTROOM SCHEMATICS - AV

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Designed	File Name
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Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV005
Date	
07/30/2019	

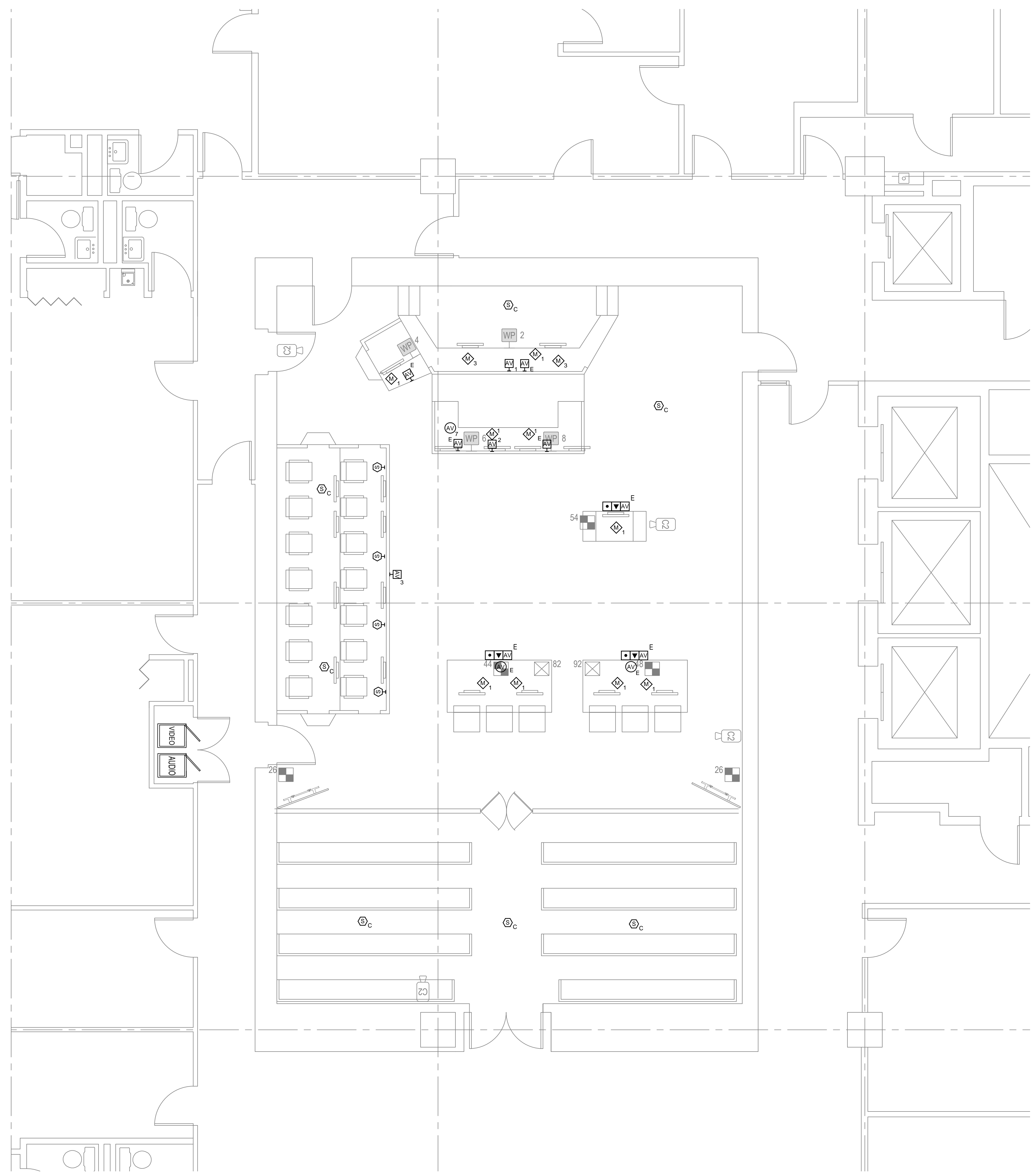
CLEVELAND 17B - AUDIO SCHEMATIC
NO SCALE

CLEVELAND 17B - CONTROL SCHEMATIC
NO SCALE

July 30, 2019 1:58 PM Type: BMB

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

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1 COURTROOM 575 AV FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. EXISTING FACE PLATES AND CABELING ARE TO BE MAINTAINED UNLESS SHOWN ON THE DETAILS SHEET. CONTRACTOR WILL BE RESPONSIBLE FOR TESTING PRIOR TO INSTALLATION OF EQUIPMENT. NOTIFY OWNER AND DESIGN TEAM IF ANY DEFICIENCIES ARE FOUND DURING TESTING.
2. EXISTING LOUDSPEAKERS AND CABELING ARE TO BE MAINTAINED. CONTRACTOR WILL BE RESPONSIBLE FOR TESTING PRIOR TO INSTALLATION OF EQUIPMENT.

No Revisions Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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AKRON COURTROOM 575
AV FLOOR PLAN

US DISTRICT COURT
NORTHERN DISTRICT OF OHIO

AKRON OHIO



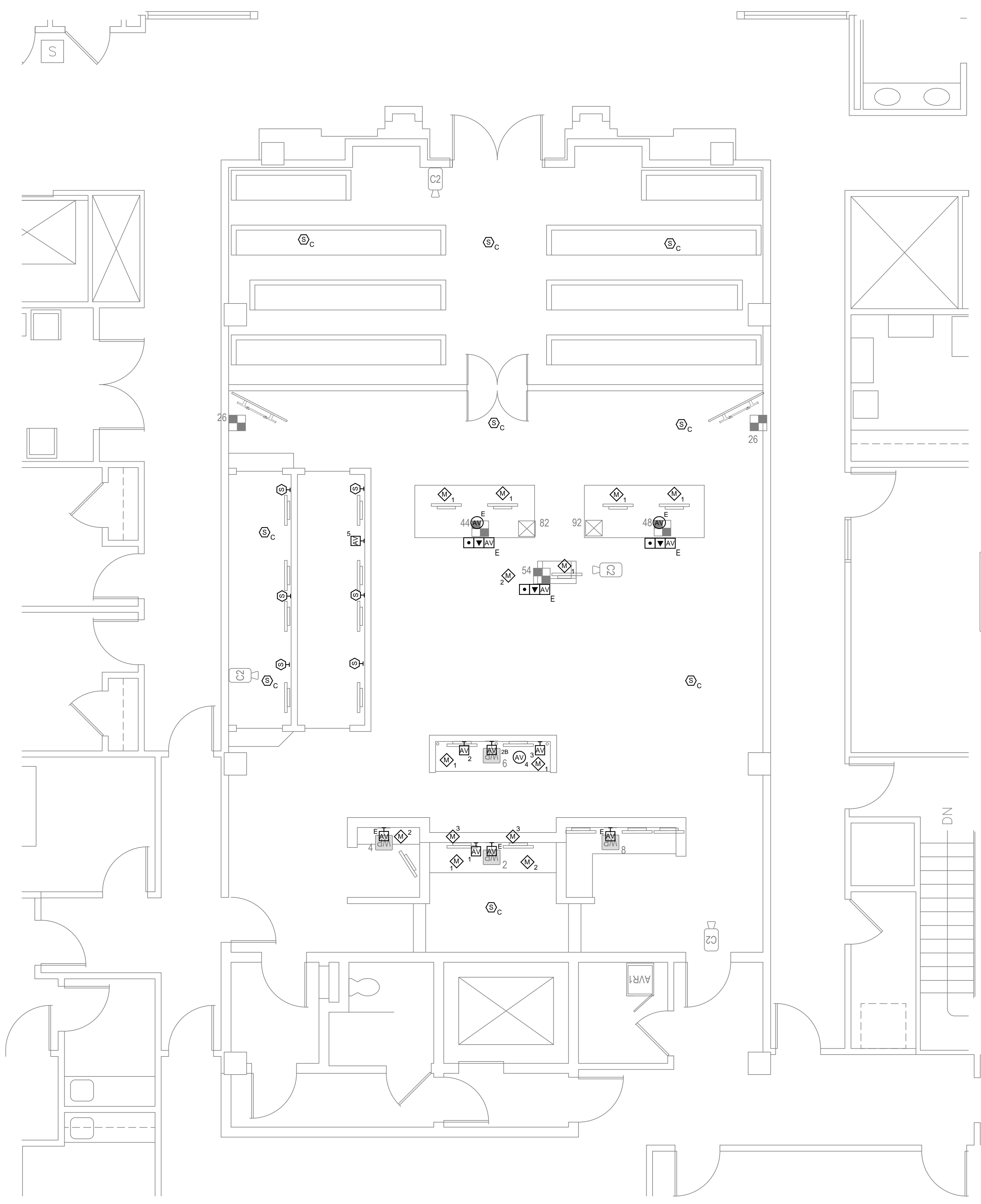
1201 Cass Street
Omaha, Nebraska 68102 Phone: (402) 346-7007
www.ipdesigngroup.com

Designed	File Name
BMB	201974271B
Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV1.00
Date	
07/30/2019	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

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1 COURTROOM 351 AV FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. EXISTING FACE PLATES AND CABELING ARE TO BE MAINTAINED UNLESS INDICATED ON THE DETAIL SHEET. CONTRACTOR WILL BE RESPONSIBLE FOR TESTING PRIOR TO INSTALLATION OF EQUIPMENT. NOTIFY OWNER AND DESIGN TEAM IF ANY DEFICIENCIES ARE FOUND DURING TESTING.
2. EXISTING LOUDSPEAKERS AND CABELING ARE TO BE MAINTAINED. CONTRACTOR WILL BE RESPONSIBLE FOR TESTING PRIOR TO INSTALLATION OF EQUIPMENT.
3. EXISTING HEADPHONE INPUTS AND CABELING AT JURY BOX ARE TO BE MAINTAINED ALONG WITH EXISTING HEADPHONE AMP. CONTRACTOR WILL BE RESPONSIBLE FOR TESTING PRIOR TO INSTALLATION OF EQUIPMENT. HEADPHONES SHALL BE DEFAULTED TO BE MUTED WITH TOUCH PANEL CONTROL TO ENABLE AUDIO.

No	Revisions	Date

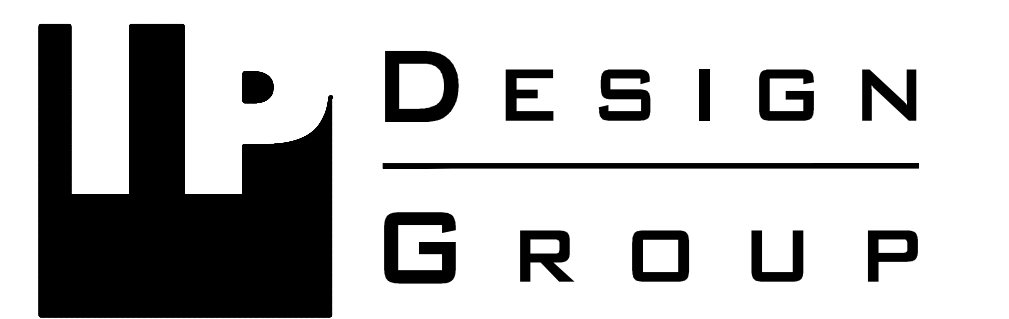
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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YOUNGSTOWN COURTROOM 351
AV FLOOR PLAN

US DISTRICT COURT
NORTHERN DISTRICT OF OHIO

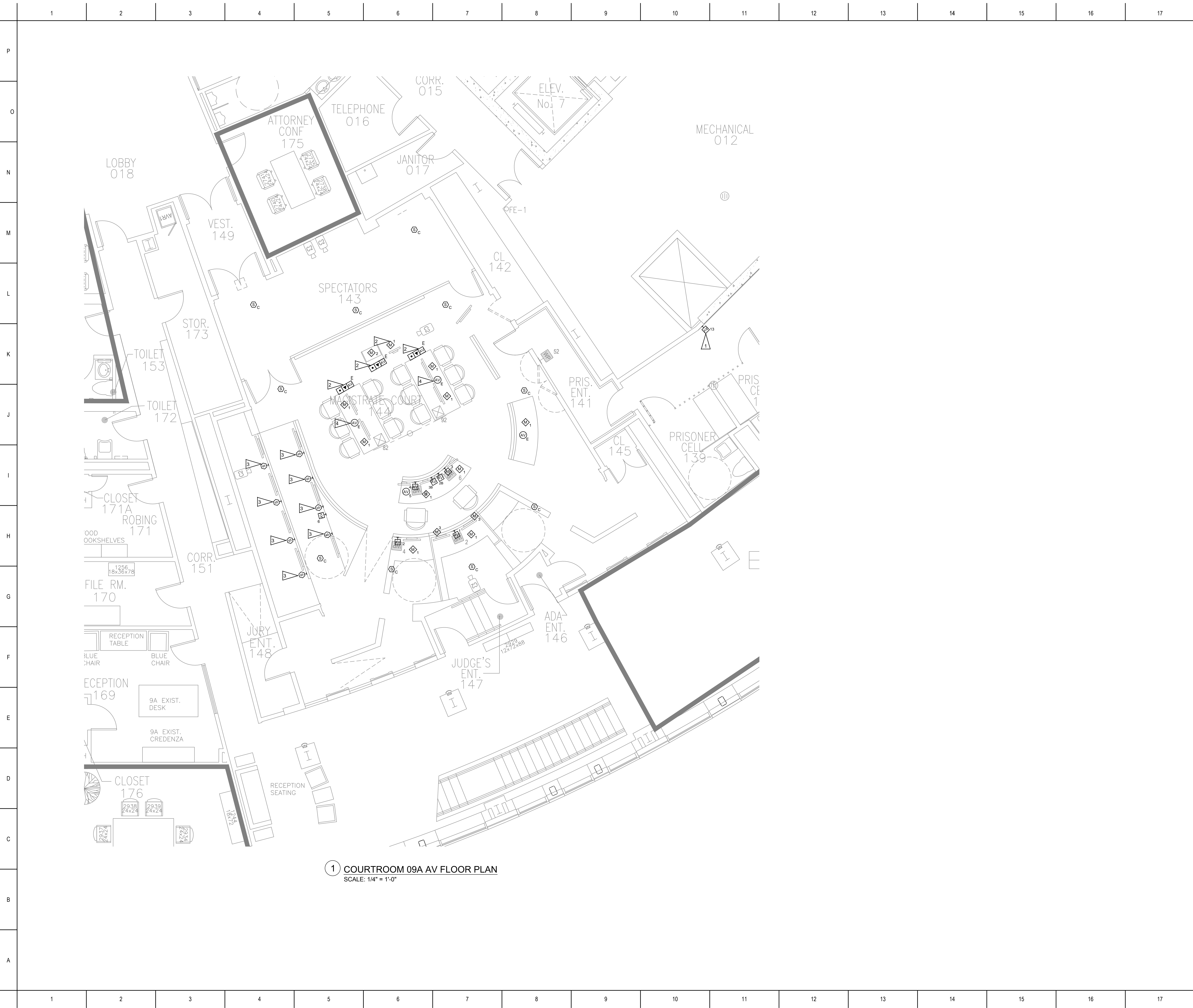
YOUNGSTOWN OHIO



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Designed	File Name
BMB	201974271B
Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV1.01
Date	
07/30/2019	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17



1 COURTROOM 09A AV FLOOR PLAN
SCALE: 1/4" = 1'-0"

FLAG NOTES

- 1 NOT USED.
- 2 EXISTING CABELING TO BE MAINTAINED. CONTRACTOR WILL BE RESPONSIBLE FOR TESTING PRIOR TO INSTALLATION OF EQUIPMENT. NOTIFY OWNER AND DESIGN TEAM IF ANY DEFICENCIES ARE FOUND DURING TESTING.
- 3 EXISTING SPEAKERS AND CABLING TO BE MAINTAINED.
- 4 EXISTING FACE PLATES AND CABELING ARE TO BE MAINTAINED WITH ADDITION OF (1) 3.5mm HEADPHONE CONNECTION WITH GROUND ISOLATION. CONTRACTOR WILL BE RESPONSIBLE FOR TESTING PRIOR TO INSTALLATION OF EQUIPMENT. NOTIFY OWNER AND DESIGN TEAM IF ANY DEFICENCIES ARE FOUND DURING TESTING.

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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**CLEVELAND COURTROOM 09A
AV FLOOR PLAN**

**US DISTRICT COURT
NORTHERN DISTRICT OF OHIO**

CLEVELAND OHIO

DESIGN GROUP

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Designed	File Name
BMB	201974271B
Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV1.02
Date	
07/30/2019	



1 COURTROOM 16B AV FLOOR PLAN
SCALE: 1/4" = 1'-0"

- FLAG NOTES**
- 1 REMOVE EXISTING CABLING FROM FLOOR BOX.
 - 2 REPLACE EXISTING CABLING IN FLOOR BOX. CABLING IS ROUTED THROUGH EXISTING WALKER DUCT SYSTEM. CARPET WILL NOT BE REMOVED FOR CABLE ROUTING FOR THIS PROJECT. PROVIDE CABLE DISCONNECT TO BE LOCATED IN TABLE LEG BETWEEN FLOOR BOX CABLING AND TABLE TOP INPUTS.
 - 3 REPLACE EXISTING MICROPHONE CABLING TO FLOOR BOX AND PROVIDE (1) XLR CONNECTOR IN FLOOR BOX
 - 4 REPLACE EXISTING MICROPHONE AND CAT6 CABLING TO FLOOR BOX AND PROVIDE (1) XLR CONNECTOR AND (2) RJ45 CONNECTORS IN FLOOR BOX
 - 5 REPLACE EXISTING VIDEO MONITOR. UTILIZE COURT FURNISHED CART FOR MOUNTING.
 - 6 REPLACE EXISTING VIDEO MONITOR. UTILIZE COURT FURNISHED MOUNT.
 - 7 EXISTING SPEAKERS AND CABLING TO BE MAINTAINED.
 - 8 REPLACE EXISTING CABLING WITH (1) CAT6 AND (1) RS-232 FOR VIDEO CART.

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, MEP and other appropriate drawings or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.
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CLEVELAND COURTROOM 16B
AV FLOOR PLAN
US DISTRICT COURT
NORTHERN DISTRICT OF OHIO
CLEVELAND OHIO



Designed	File Name
BMB	201974271B
Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV1.03
Date	
07/30/2019	



1 COURTROOM 17B AV FLOOR PLAN
SCALE: 1/4" = 1'-0"

- FLAG NOTES**
- 1 REMOVE EXISTING CABLING FROM FLOOR BOX.
 - 2 REPLACE EXISTING CABLING IN FLOOR BOX. CABLING IS ROUTED THROUGH EXISTING WALKER DUCT SYSTEM. CARPET WILL NOT BE REMOVED FOR CABLE ROUTING FOR THIS PROJECT. PROVIDE CABLE DISCONNECT TO BE LOCATED IN TABLE LEG BETWEEN FLOOR BOX CABLING AND TABLE TOP INPUTS.
 - 3 REPLACE EXISTING MICROPHONE CABLING TO FLOOR BOX AND PROVIDE (1) XLR CONNECTOR IN FLOOR BOX
 - 4 REPLACE EXISTING MICROPHONE AND CAT6 CABLING TO FLOOR BOX AND PROVIDE (1) XLR CONNECTOR AND (2) RJ45 CONNECTORS IN FLOOR BOX
 - 5 REPLACE EXISTING VIDEO MONITOR. UTILIZE COURT FURNISHED CART FOR MOUNTING.
 - 6 REPLACE EXISTING VIDEO MONITOR. UTILIZE COURT FURNISHED MOUNT.
 - 7 EXISTING SPEAKERS AND CABLING TO BE MAINTAINED.
 - 8 REPLACE EXISTING CABLING WITH (1) CAT6 AND (1) RS-232 FOR VIDEO CART.
 - 9 LOCATE MICROPHONE ON EXISTING FURNITURE AT CLERK NOT SHOWN ON PLAN.

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, MEP and other appropriate drawings or as-built. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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CLEVELAND COURTROOM 17B
AV FLOOR PLAN

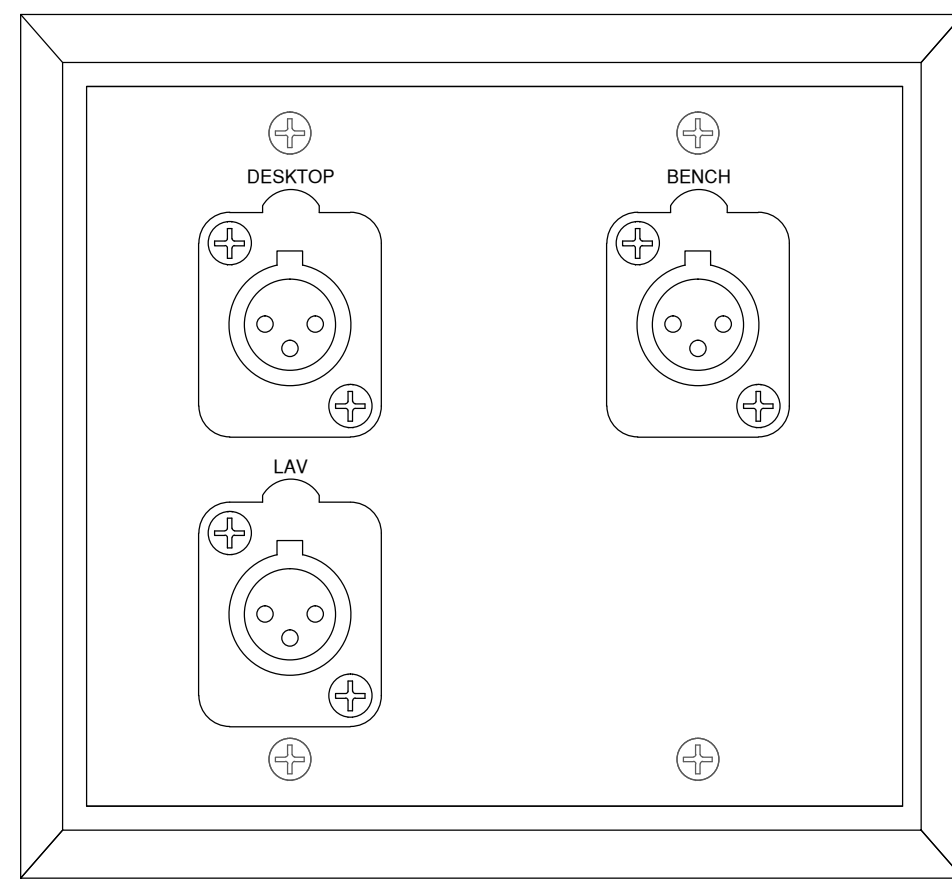
US DISTRICT COURT
NORTHERN DISTRICT OF OHIO

CLEVELAND OHIO



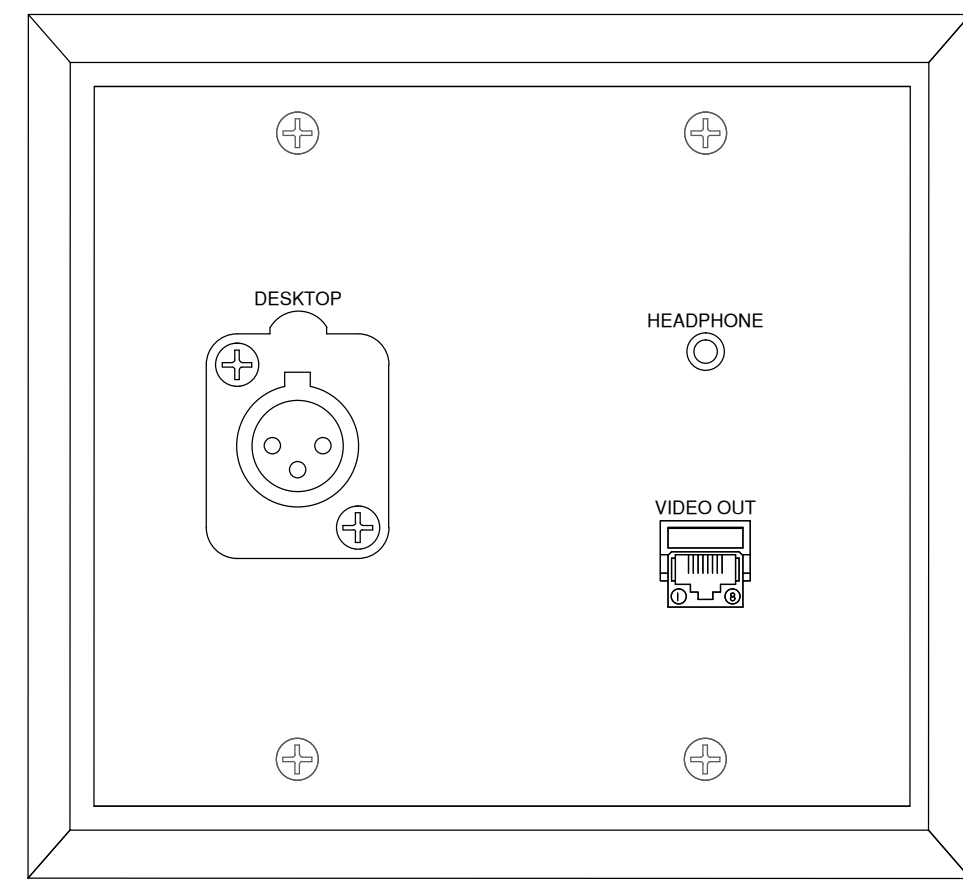
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Drawn	Project No.
T.B	20197427
Checked	Drawing No.
J.H	AV1.04
Date	
07/30/2019	

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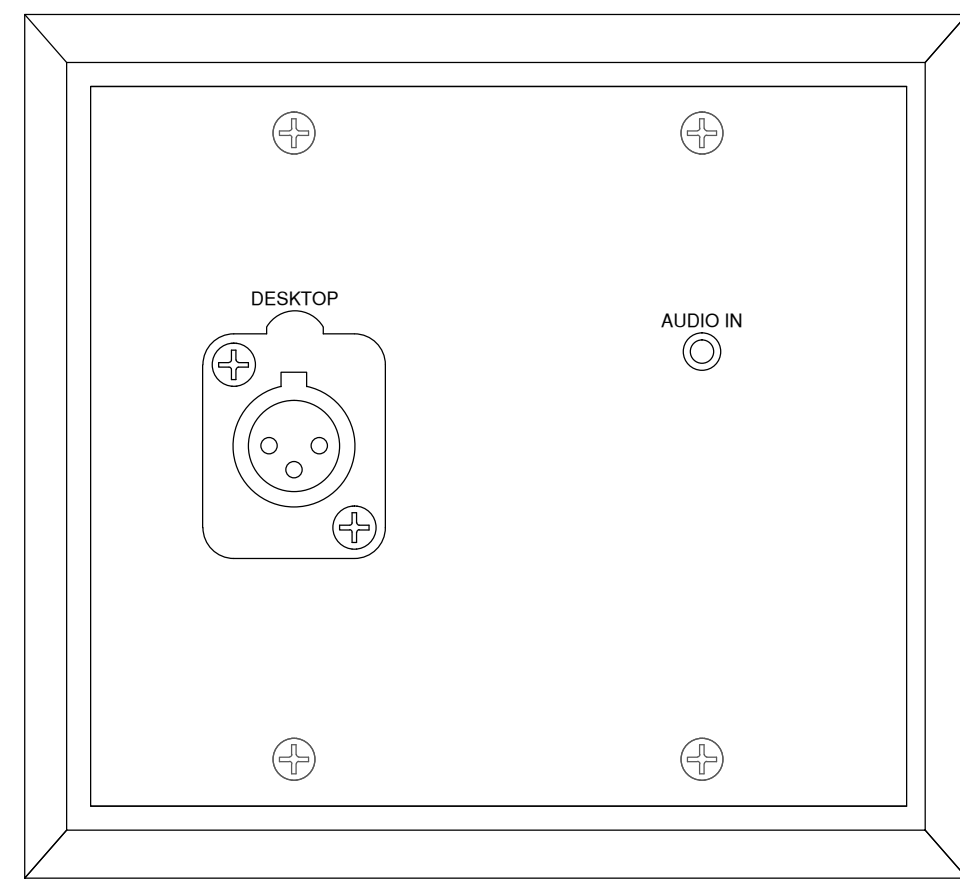
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (3) MALE XLR CONNECTORS ON SURFACE MOUNT BOX.

AV1 - JUDGE



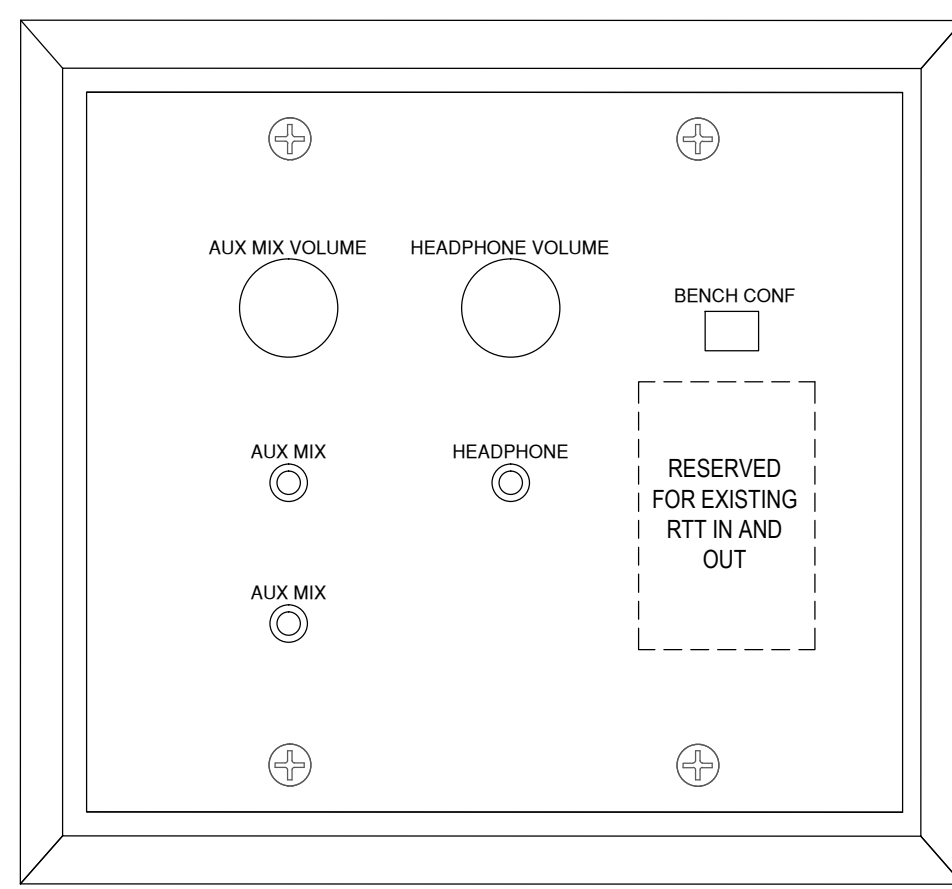
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR, (1) 3.5MM HEADPHONE, AND (1) RJ-45 CONNECTORS.
2. MAINTAIN EXISTING RTT IN, RTT OUT, AND LAN CABLE AND CONNECTORS.

AV2 - REPORTER



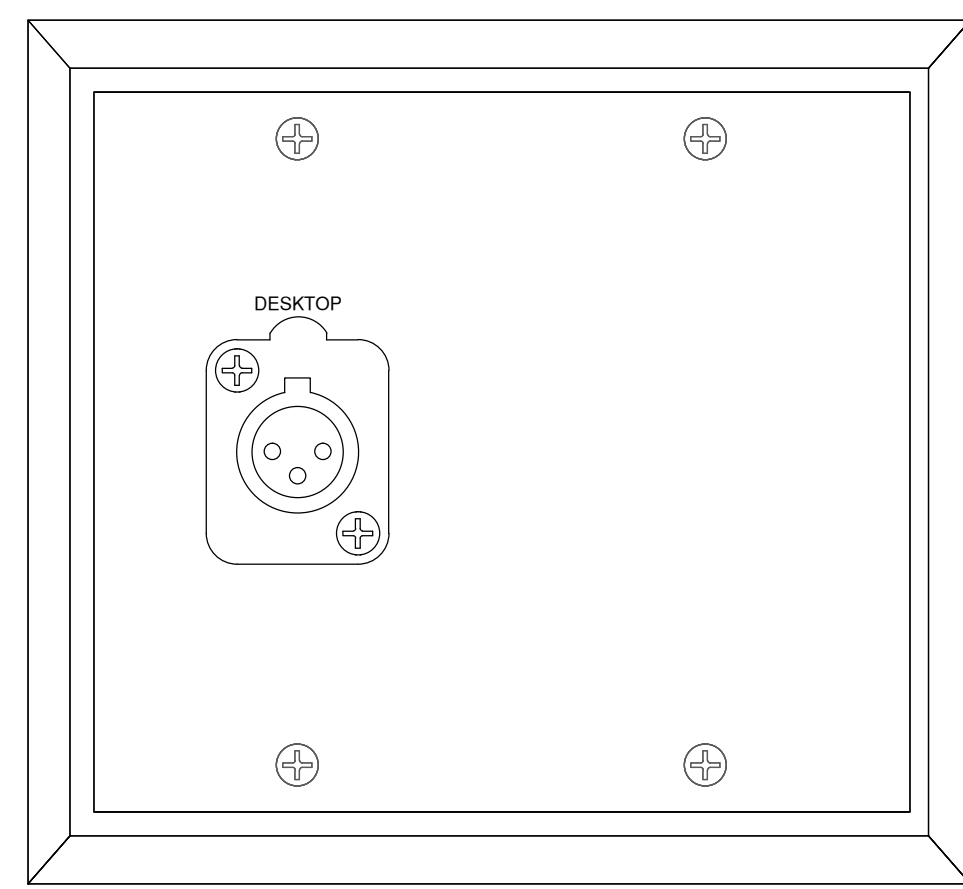
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR AND (1) 3.5MM AUDIO CONNECTORS.
2. MAINTAIN CABLE AND CONNECTOR FOR EXISTING (1) LAN CONNECTOR.

AV3 - REPORTER



NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) 3.5MM HEADPHONE, AND (2) 3.5MM AUDIO OUT CONNECTORS WITH (2) VOLUME KNOBS AND (1) BUTTON TOGGLE.
2. MAINTAIN EXISTING RTT IN, RTT OUT CABLE AND CONNECTORS.

AV4 - REPORTER BOX

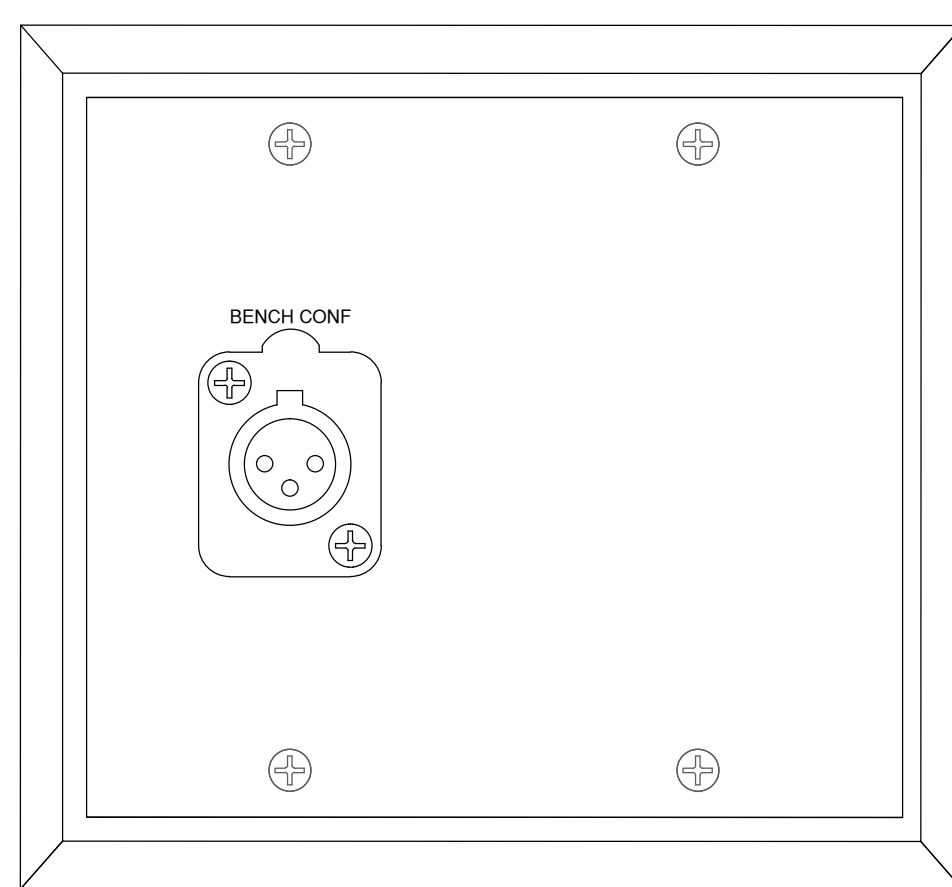


NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR CONNECTORS.
2. MAINTAIN EXISTING CABLING.

AV5 - JURY

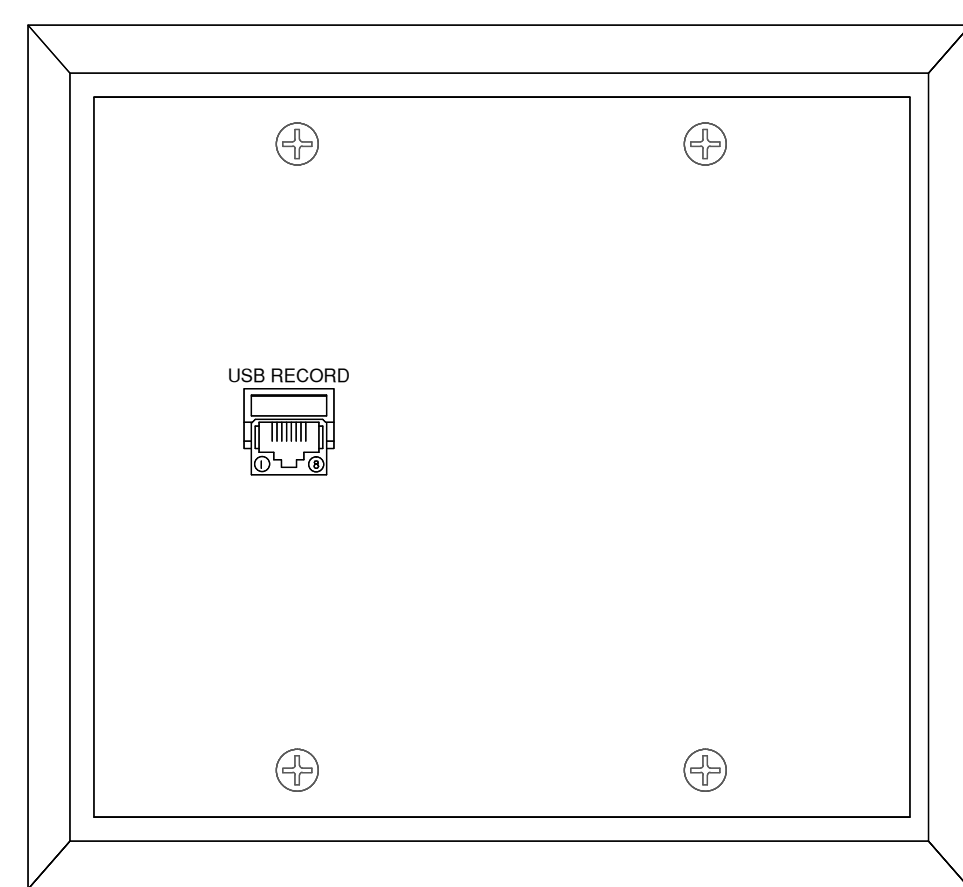
YOUNGSTOWN 351 - FACEPLATE DETAILS

NO SCALE 1 AV400



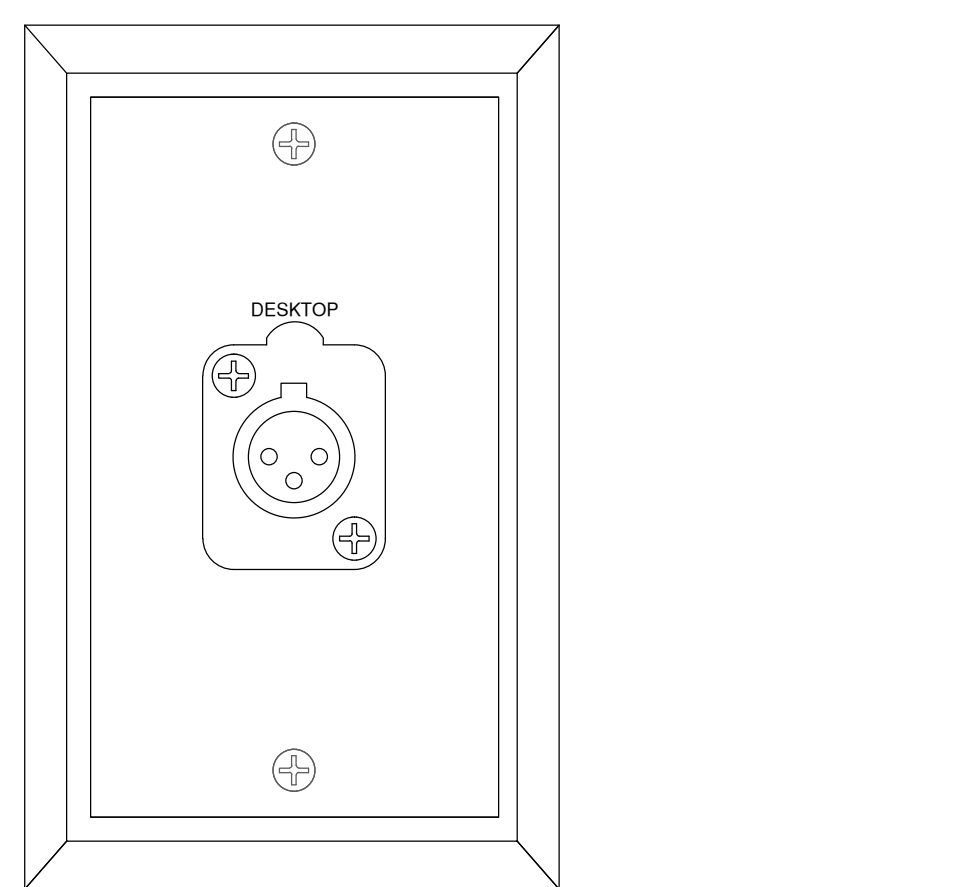
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR CONNECTORS.

AV1 - JUDGE



NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) RJ-45 CONNECTORS.

AV2 - REPORTER



NOTES:
1. FACEPLATE SHALL BE CUSTOM 3-GANG PANELCRAFTER WITH (1) MALE XLR CONNECTORS.

AV3 - JURY

AKRON 575 - FACEPLATE DETAILS

NO SCALE 2 AV400

No	Revisions	Date

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AKRON 575, YOUNGSTOWN 351 COURTROOM
DETAILS - AV

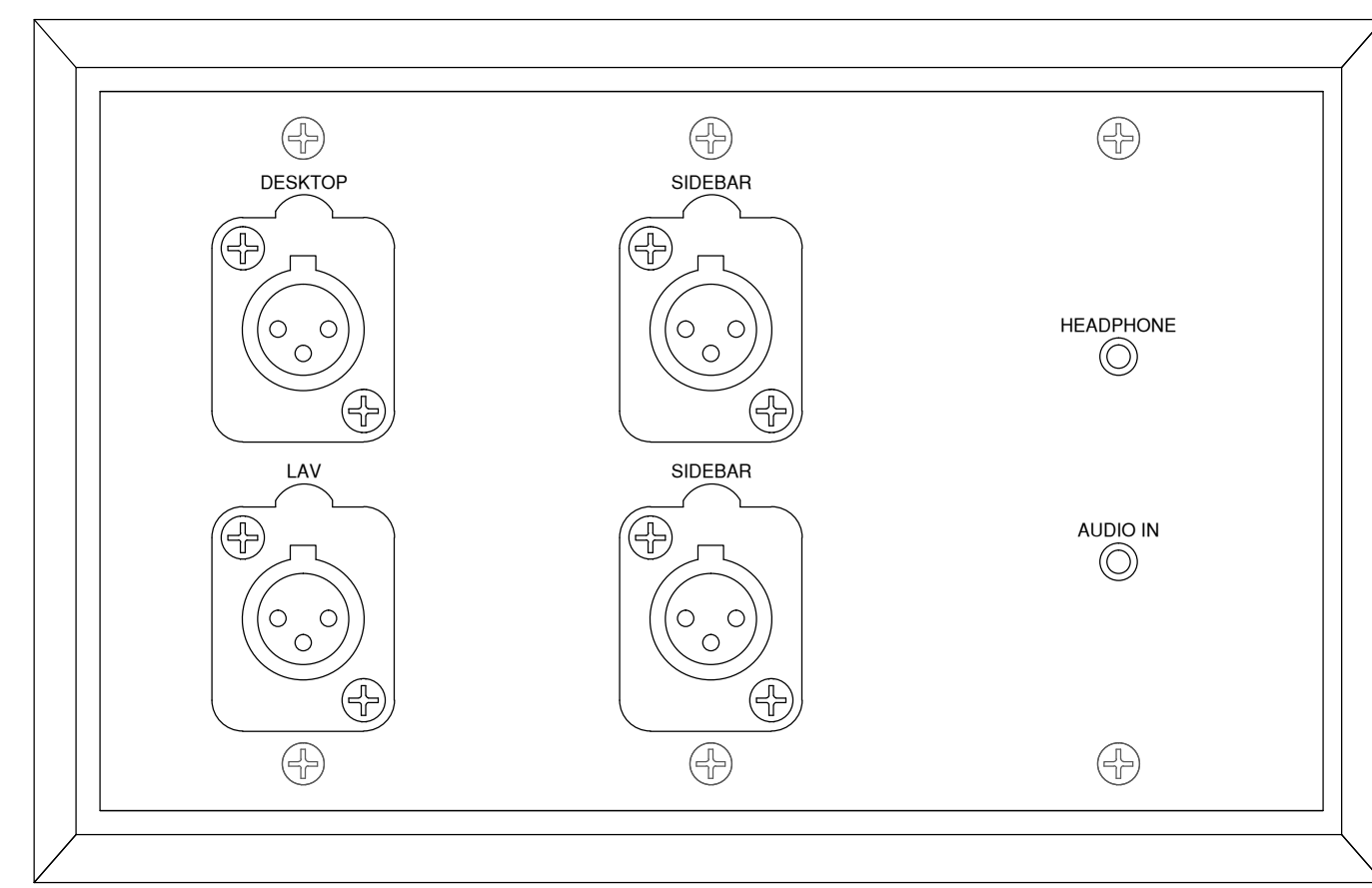
US DISTRICT COURT
NORTHERN DISTRICT OF OHIO

AKRON/YOUNGSTOWN OHIO



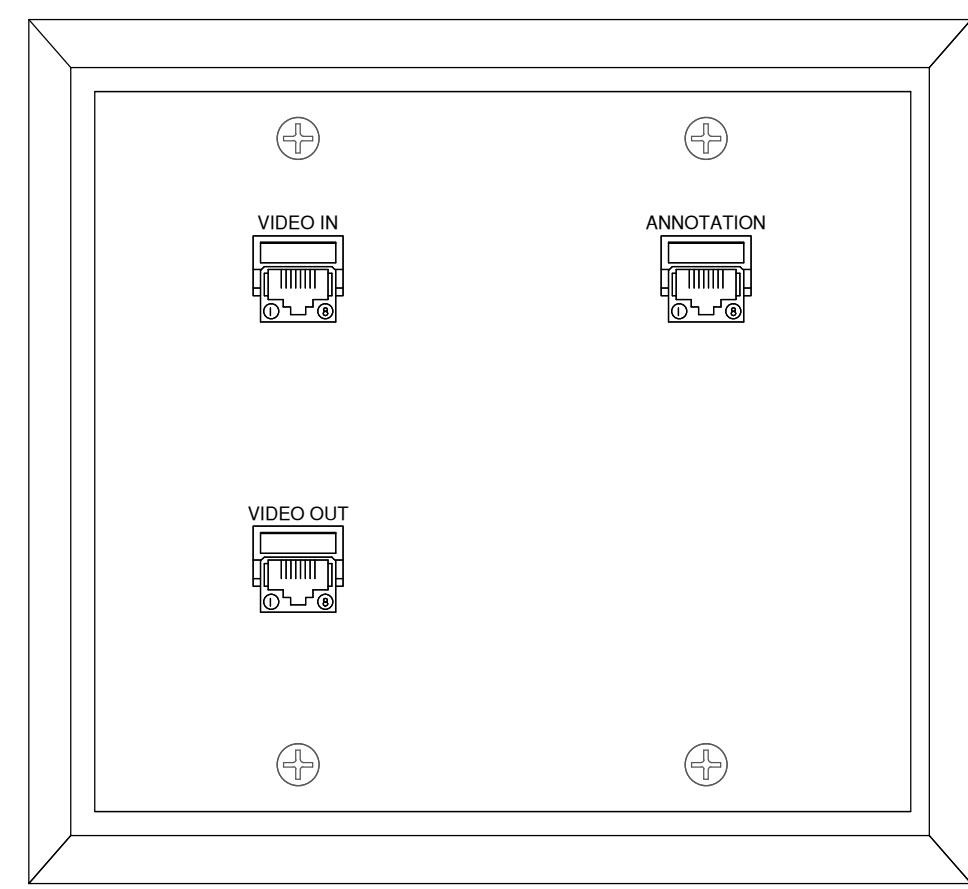
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Omaha, Nebraska 68102
Phone: (402) 346-7007
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Designed	ENB	File Name	20197427_AUDIOVISUAL DETAILS
Drawn	TJB	Project No.	20197427
Checked	JJH	Drawing No.	AV400
Date	07/30/2019		



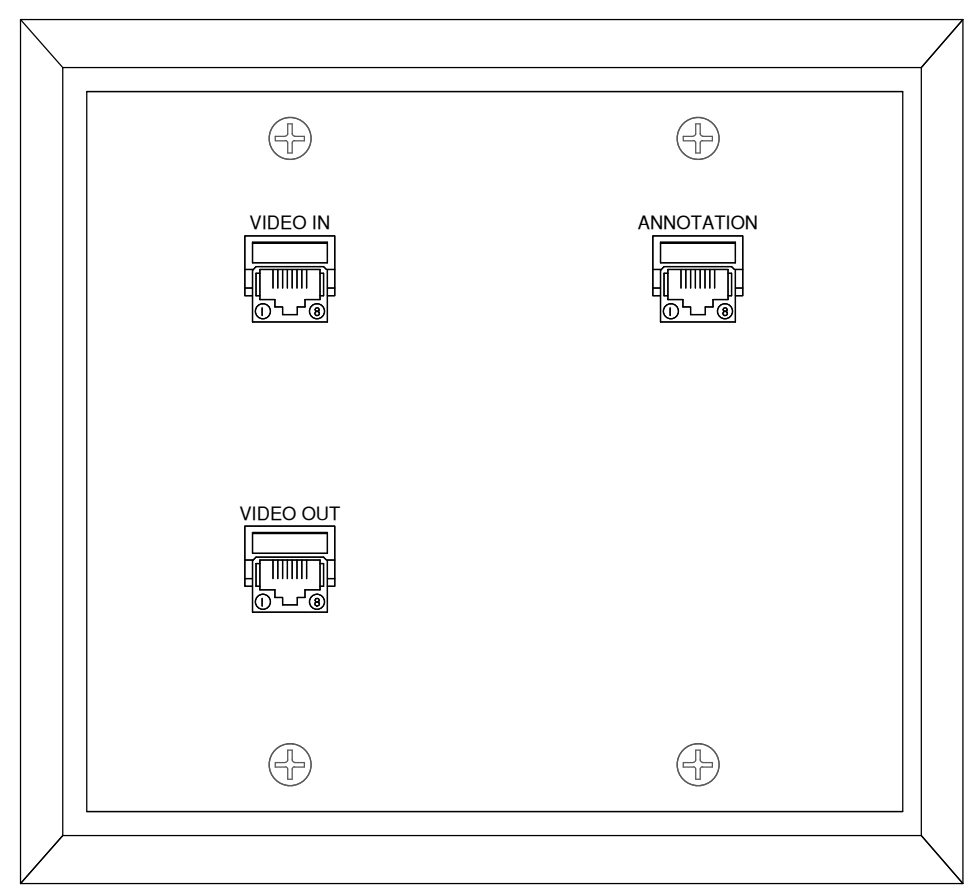
NOTES:
1. FACEPLATE SHALL BE CUSTOM 3-GANG PANELCRAFTER WITH (4) MALE XLR, (1) 3.5MM HEADPHONE, (1) 3.5MM ANALOG AUDIO IN CONNECTORS.

AV1 - JUDGE



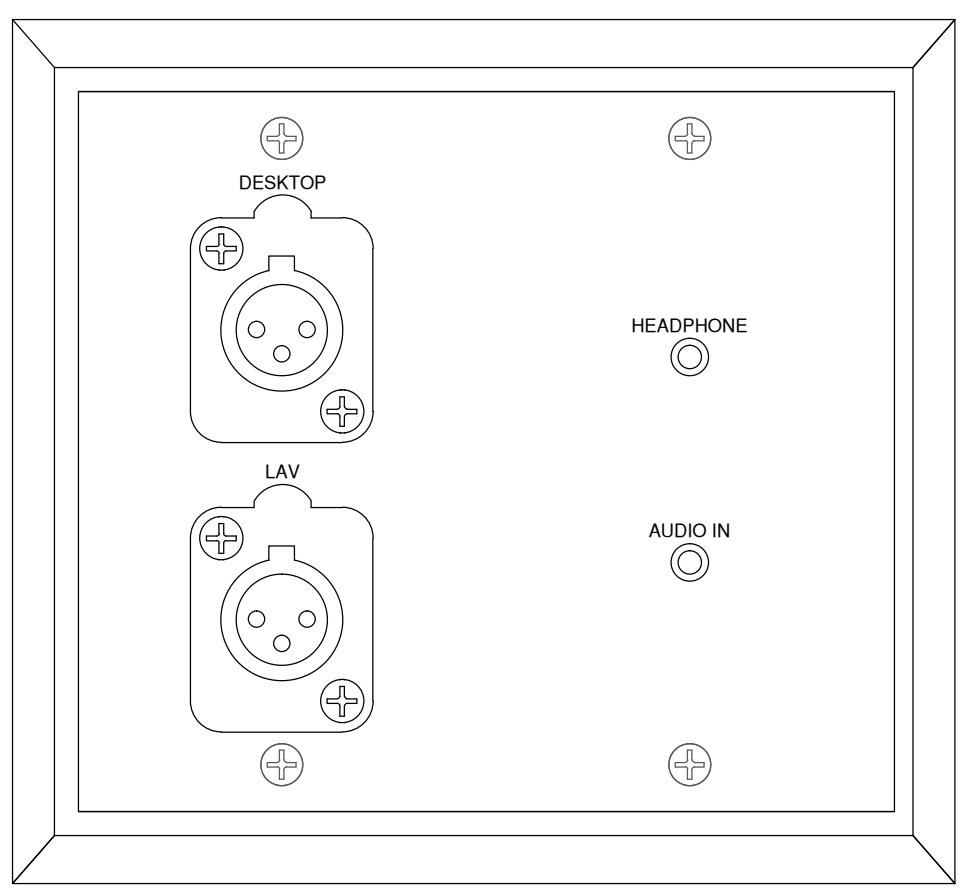
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (3) RJ-45 CONNECTORS.

AV2 - JUDGE



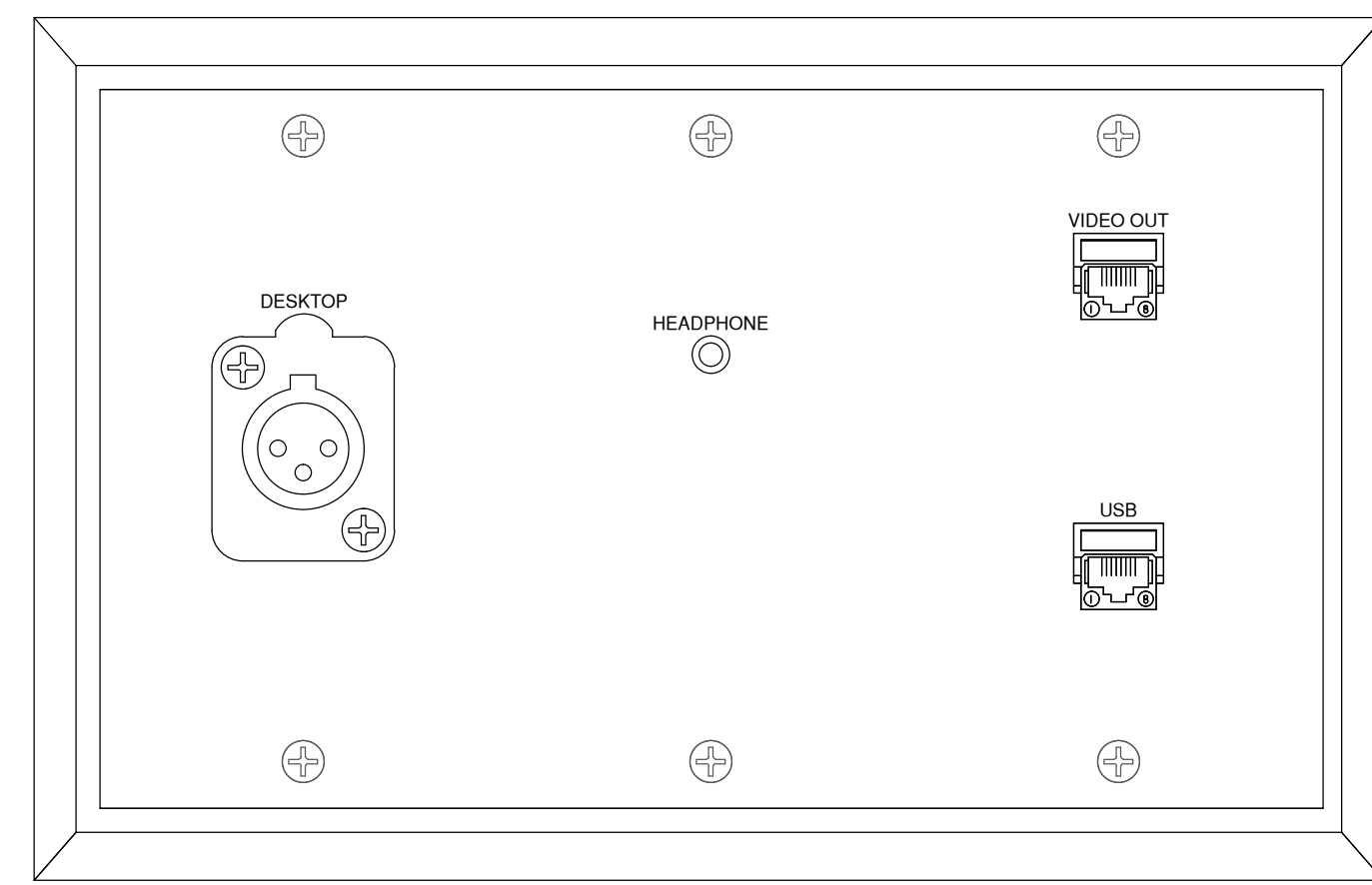
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (4) RJ-45 CONNECTORS.

AV3 - WITNESS



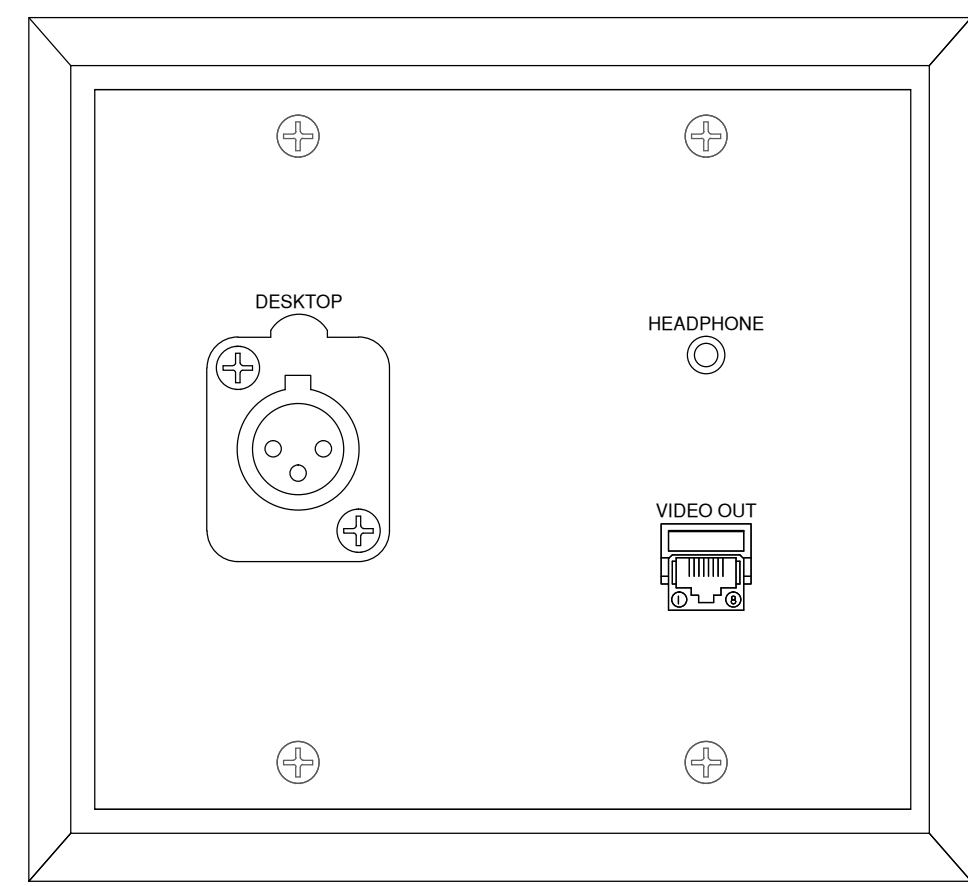
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (2) MIC, (1) 3.5MM HEADPHONE, AND (1) 3.5MM ANALOG AUDIO IN CONNECTORS.

AV4 - WITNESS



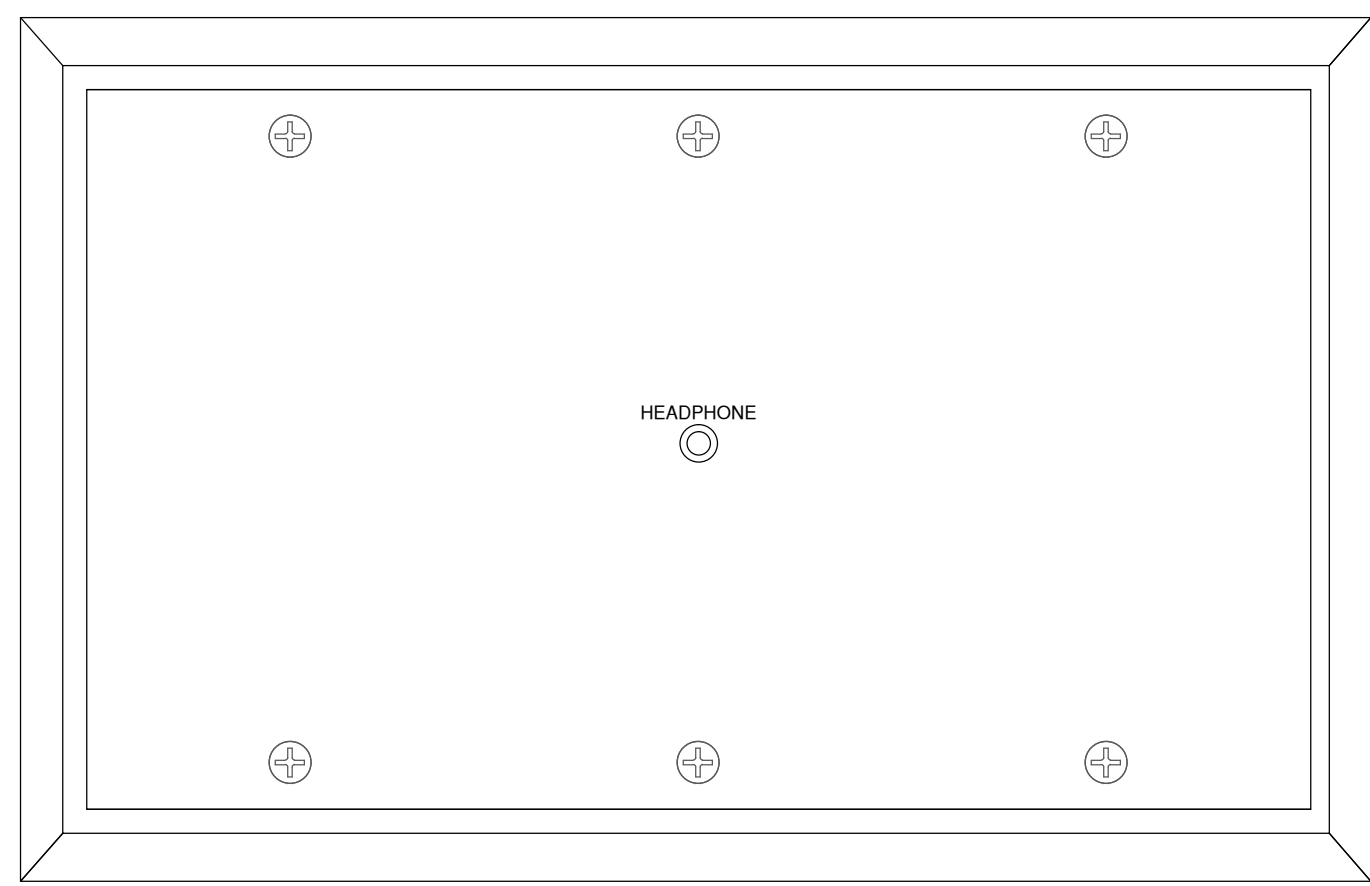
NOTES:
1. FACEPLATE SHALL BE CUSTOM 3-GANG PANELCRAFTER WITH (1) MALE XLR, (1) 3.5MM HEADPHONE, AND (2) RJ-45 CONNECTORS.

AV6 - CRD



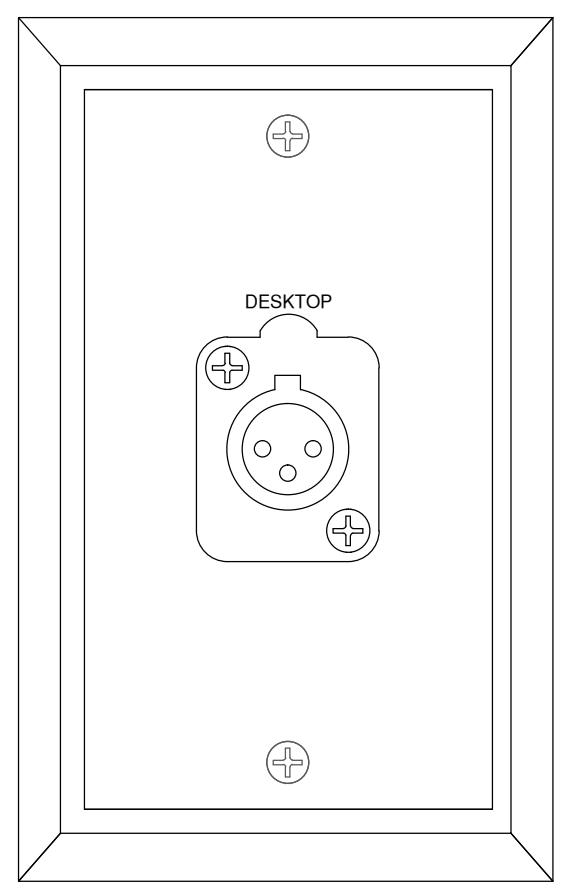
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR, (1) 3.5MM HEADPHONE, AND (1) RJ-45 CONNECTORS.

AV7 - REPORTER



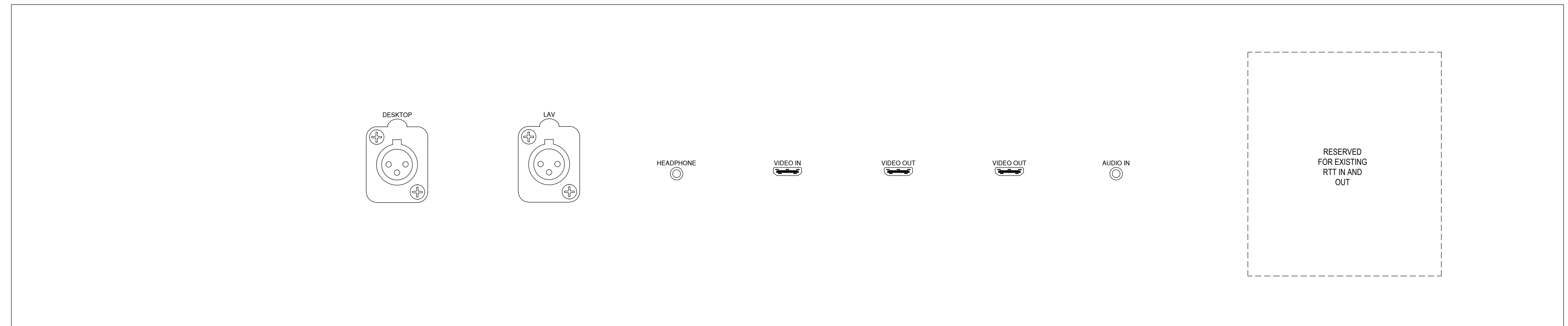
NOTES:
1. FACEPLATE SHALL BE CUSTOM 3-GANG PANELCRAFTER WITH (1) 3.5MM HEADPHONE CONNECTOR.

AV8 - REPORTER BOX



NOTES:
1. FACEPLATE SHALL BE CUSTOM 1-GANG PANELCRAFTER WITH (1) MALE XLR CONNECTORS.

AV11 - JURY



NOTES:
1. FACEPLATE SHALL BE CUSTOM 24"X36" PANELCRAFTER WITH (2) MALE XLR, (1) 3.5MM HEADPHONE, (1) 3.5MM ANALOG AUDIO IN, (2) HDMI VIDEO IN, AND (1) HDMI VIDEO OUT CONNECTORS LOCATED IN EXISTING TABLEBOX.

AV14, AV15 - ATTORNEY TABLES

CLEVELAND 16B, CLEVELAND 17B - FACEPLATE DETAILS

NO SCALE

1 AV401

No	Revisions	Date

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, MEP and other appropriate drawings or all site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes. Verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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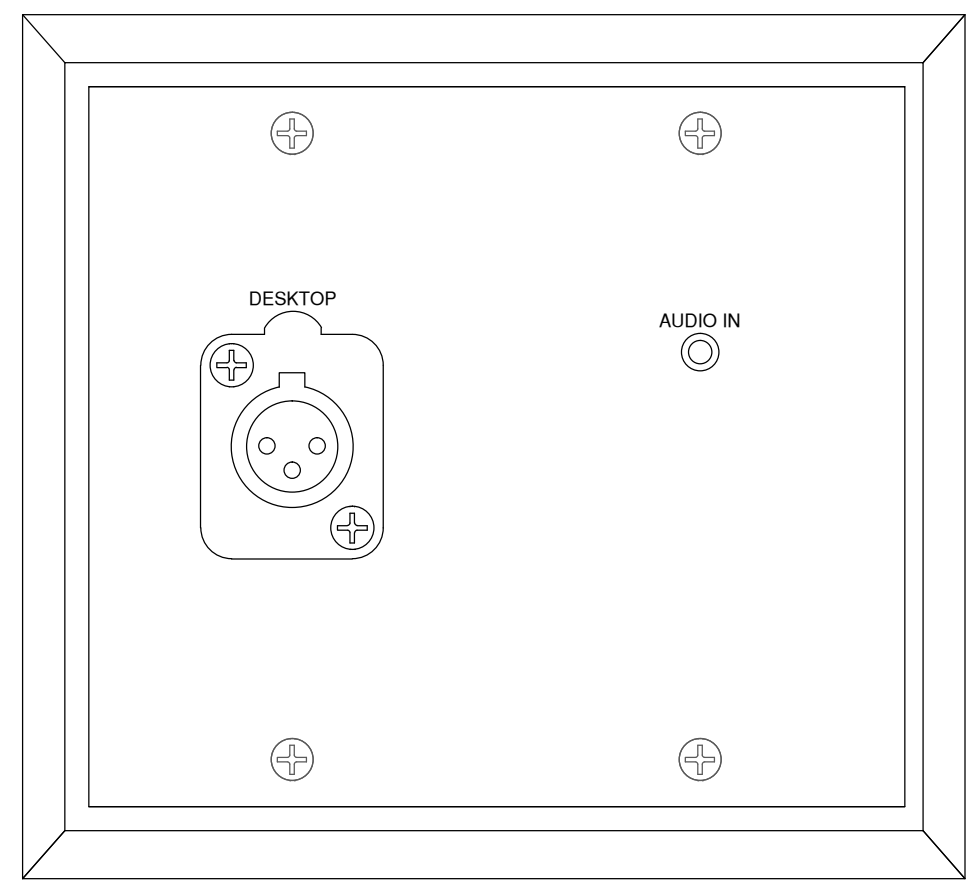
CLEVELAND 16B, 17B COURTROOM
DETAILS - AV

US DISTRICT COURT
NORTHERN DISTRICT OF OHIO

CLEVELAND OHIO

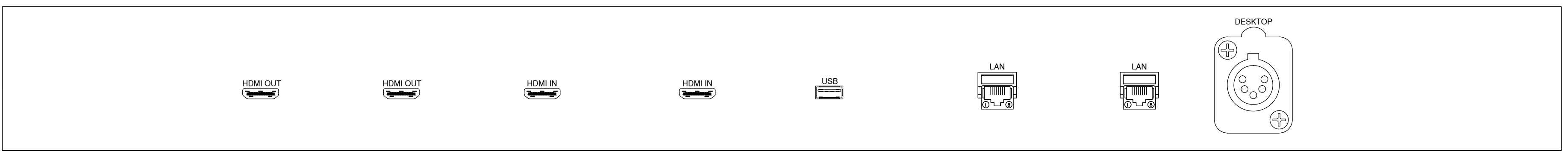


Designed	File Name
BNB	20197427_AUDIOVISUAL DETAILS
Drawn	Project No.
TJB	20197427
Checked	Drawing No.
J.H	AV401
Date	07/30/2019



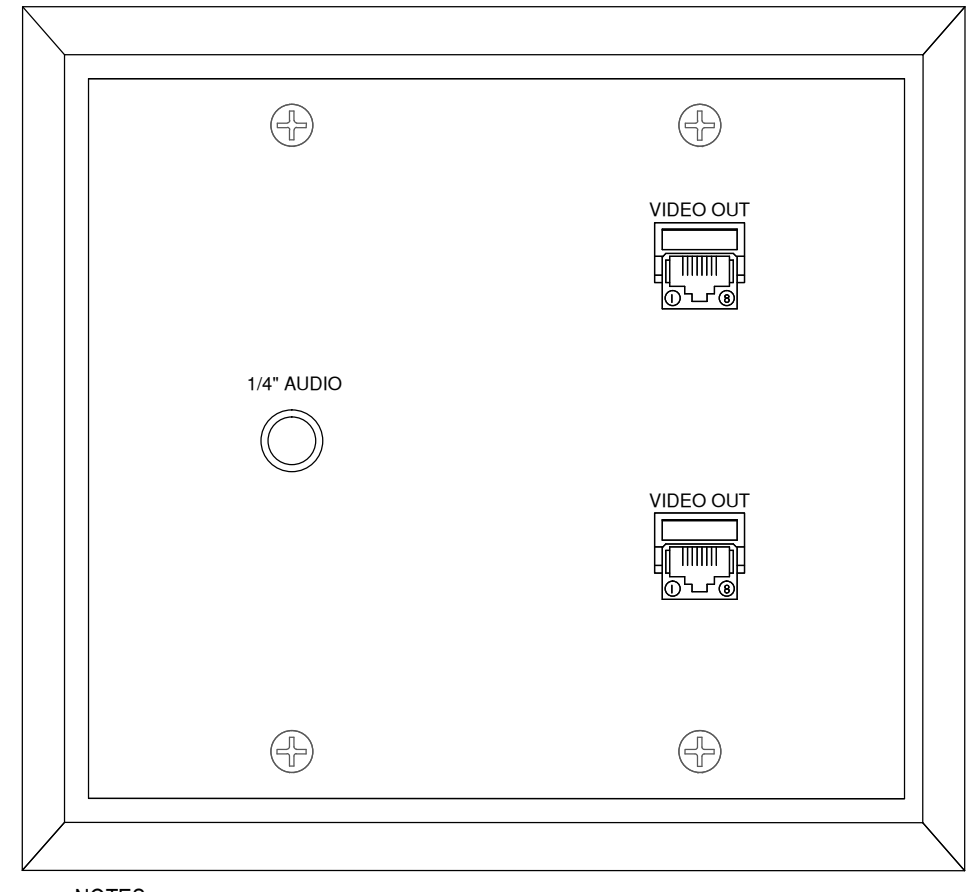
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR, AND (1) 3.5MM AUDIO CONNECTORS.

AV18



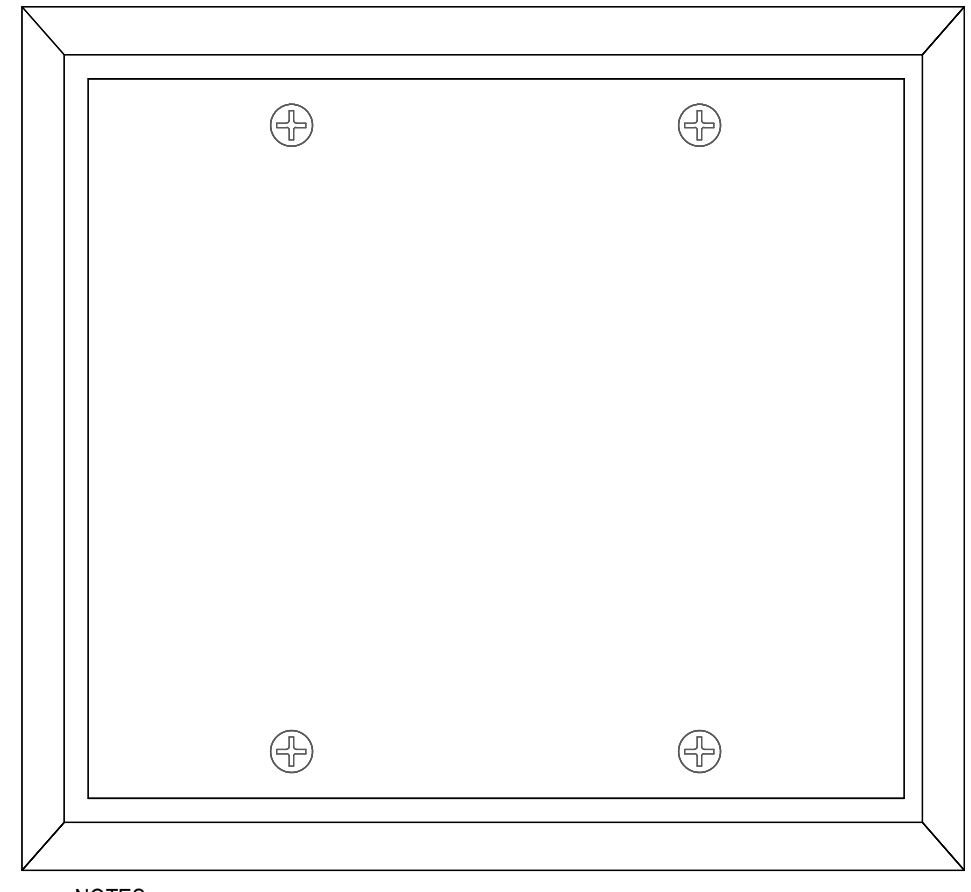
NOTES:
1. RACK UNIT PLATE SHALL BE CUSTOMIZED WITH (2) HDMI IN, (2) HDMI OUT, (1) USB, (2) LAN, (1) 5 PIN XLR, AND DUPLEX POWER CONNECTORS.

CODEC INTERFACE PANEL



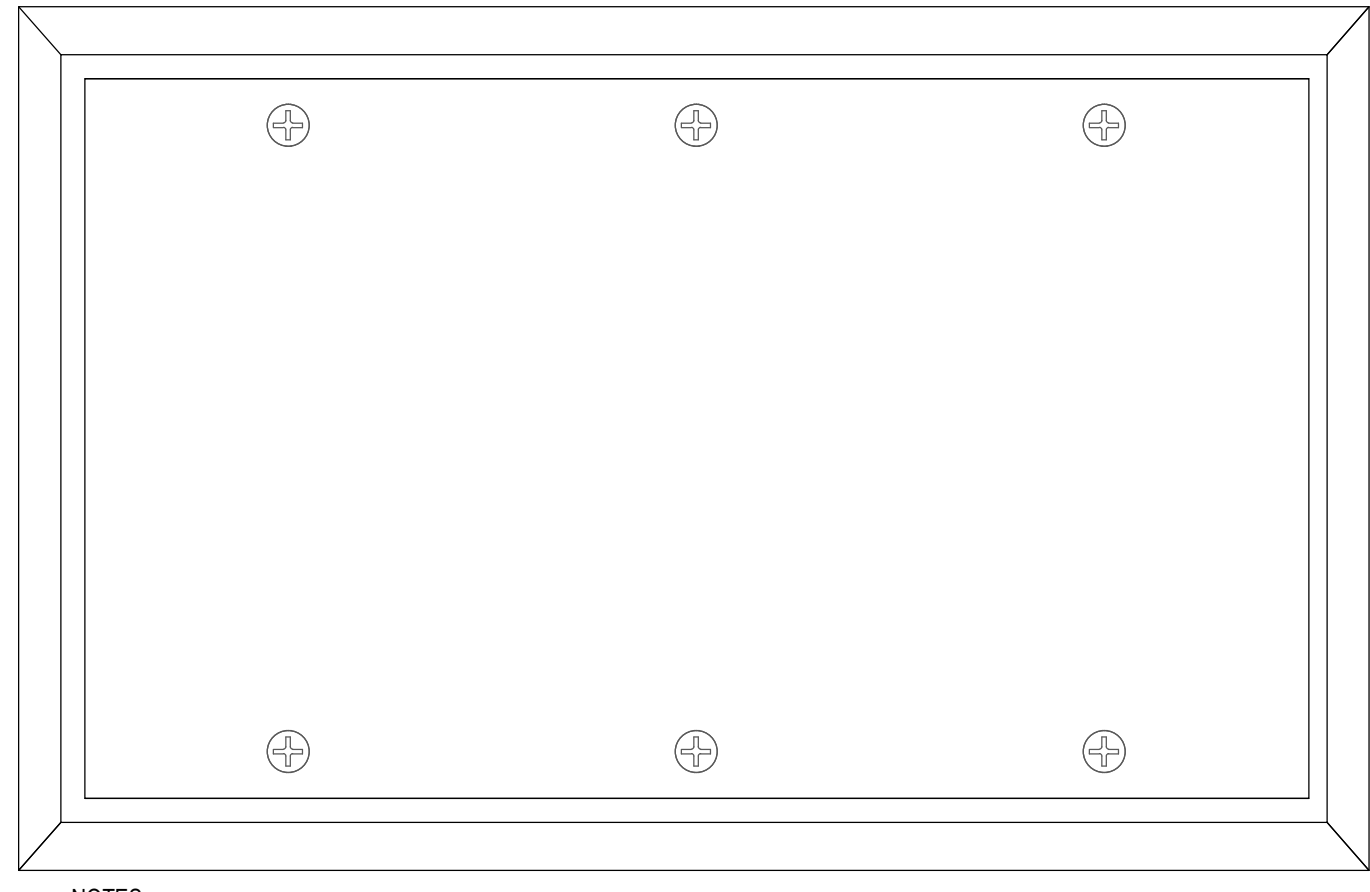
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) 1/4\"/>

AVH - HOLDING CELL



NOTES:
1. FACEPLATE SHALL BE BLANK 2-GANG PANELCRAFTER.

AV2B - BLANK 2-GANG



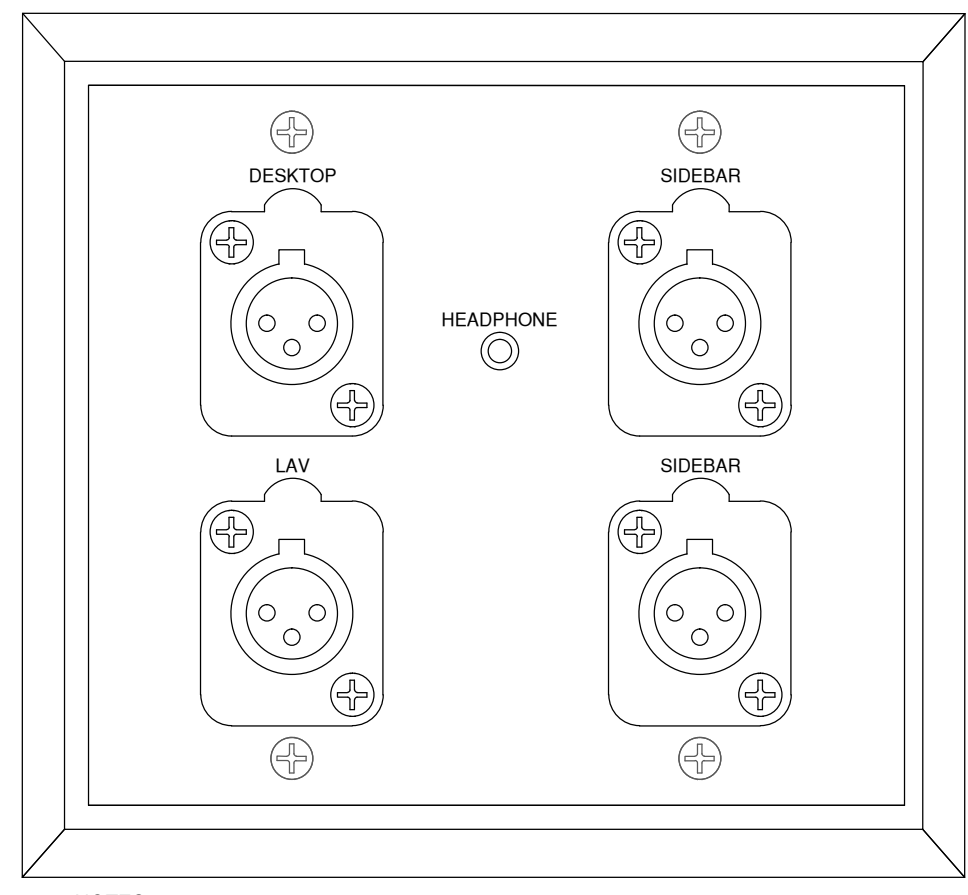
NOTES:
1. FACEPLATE SHALL BE BLANK 3-GANG PANELCRAFTER.

AV3B - BLANK 3-GANG

CLEVELAND 16B, CLEVELAND 17B - FACEPLATE DETAILS

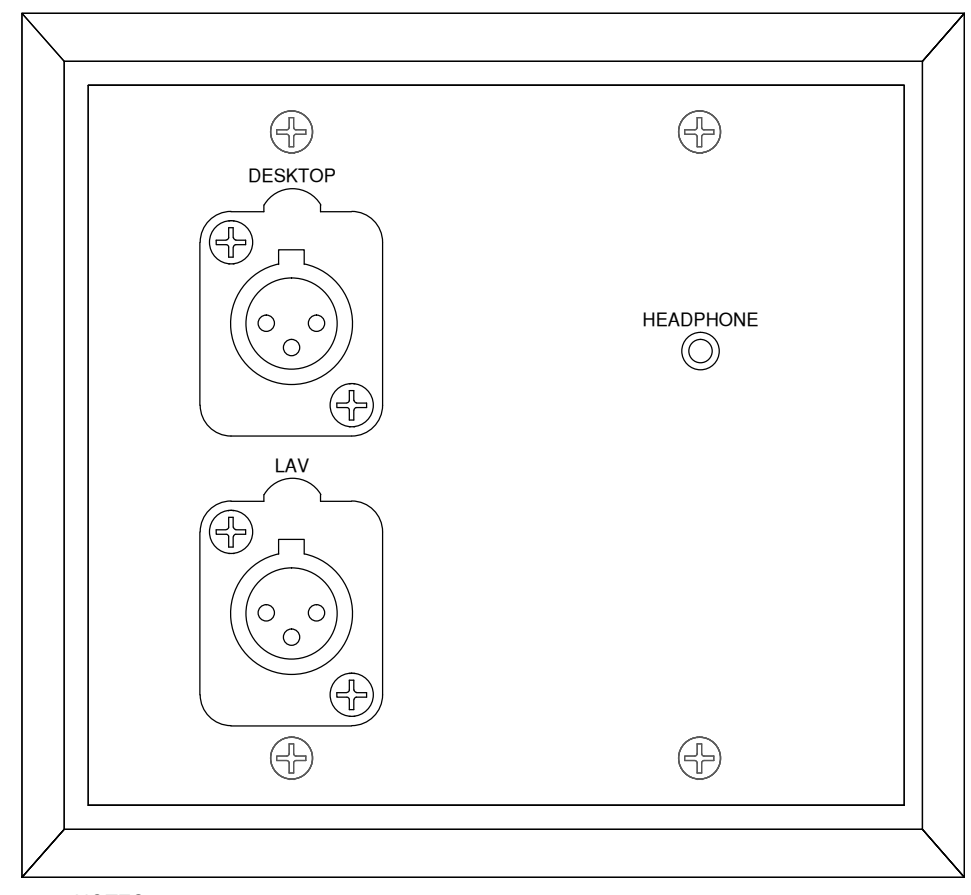
NO SCALE

1 AV402



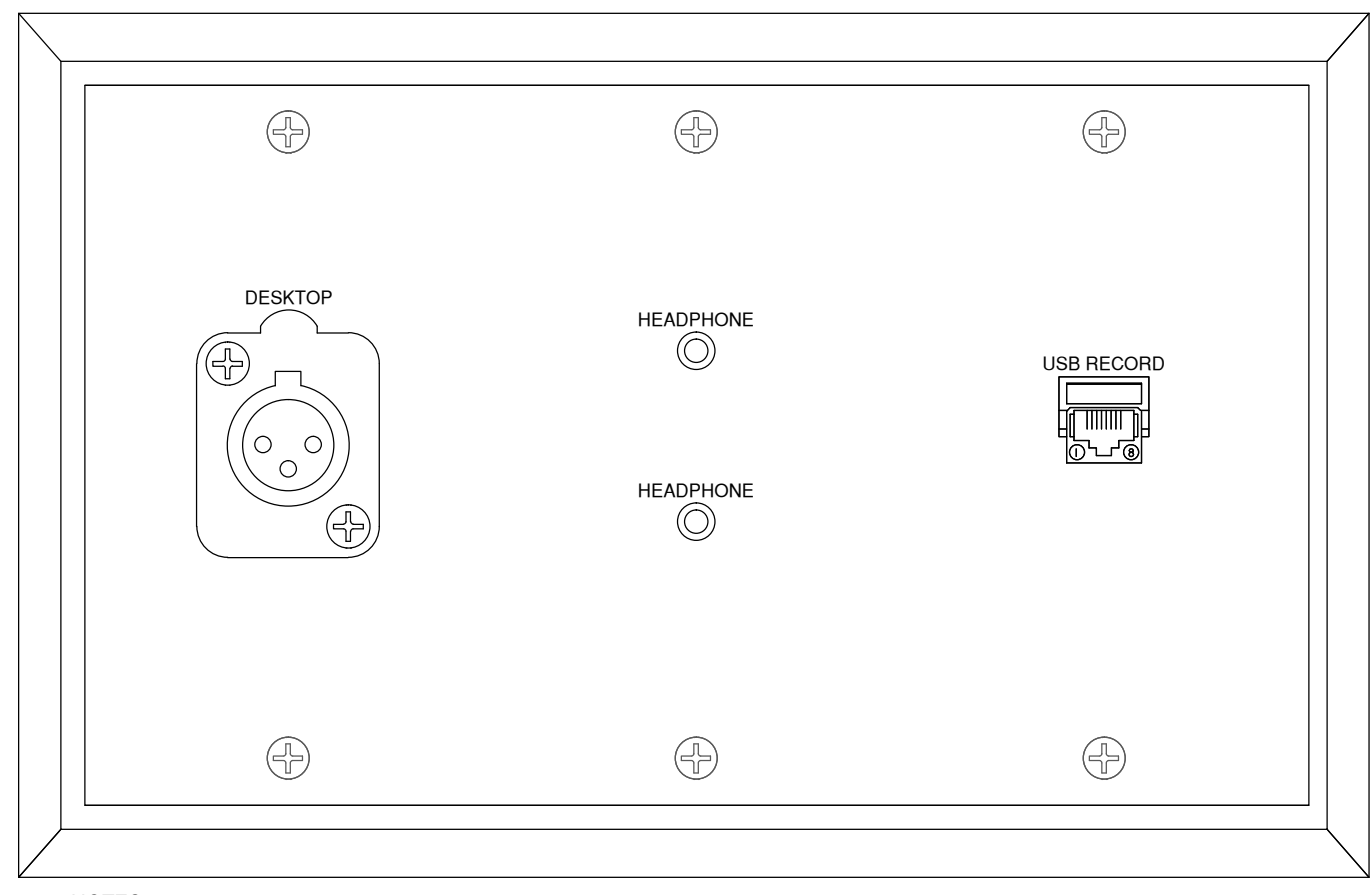
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (4) MALE XLR, AND (1) 3.5MM AUDIO HEADPHONE CONNECTORS.

AV1 - JUDGE



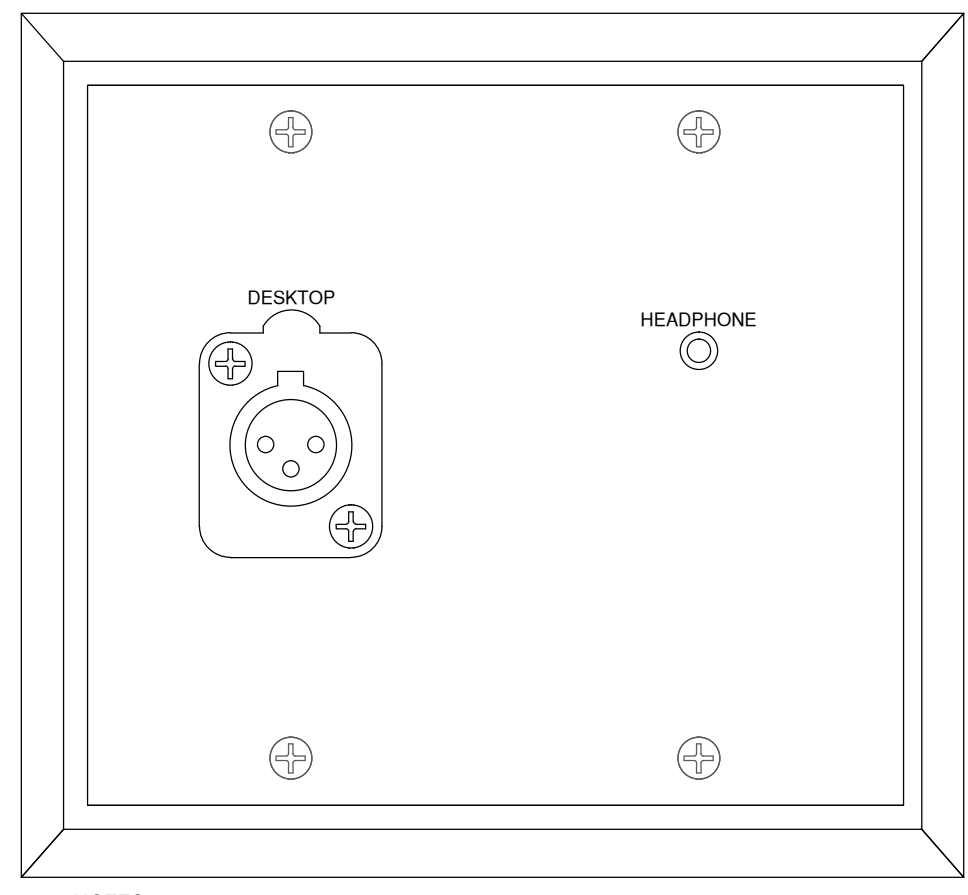
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (2) MALE XLR, AND (1) 3.5MM AUDIO HEADPHONE CONNECTORS.

AV2 - WITNESS



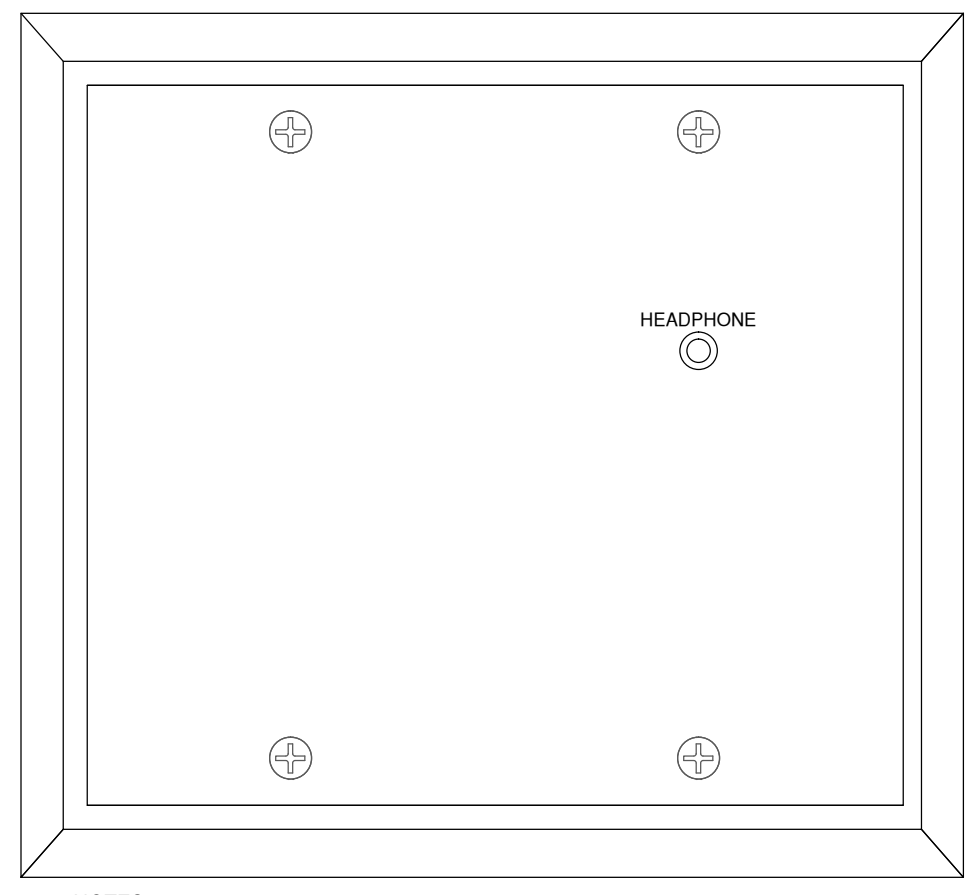
NOTES:
1. FACEPLATE SHALL BE CUSTOM 3-GANG PANELCRAFTER WITH (1) MALE XLR, (1) RJ-45, AND (2) 3.5MM AUDIO HEADPHONE CONNECTORS.

AV3 - CRD



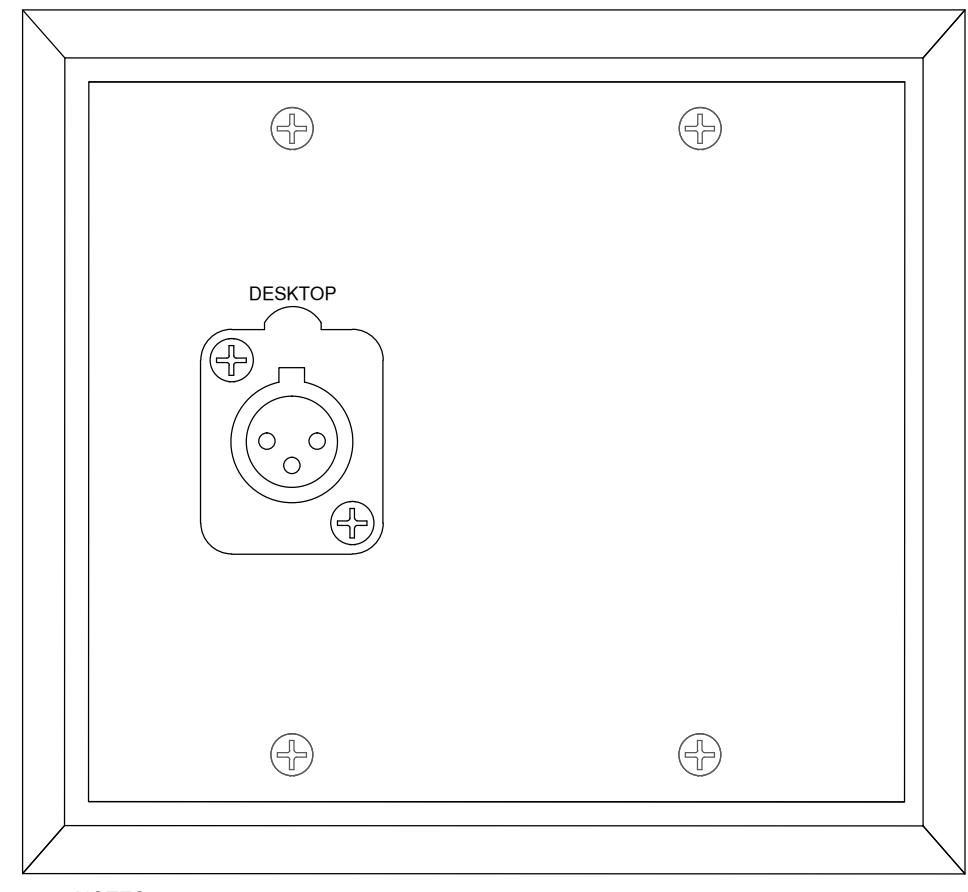
NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR, AND (1) 3.5MM AUDIO HEADPHONE CONNECTORS.

AV4 - REPORTER



NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) 3.5MM AUDIO HEADPHONE CONNECTORS.

AV5 - REPORTER BOX



NOTES:
1. FACEPLATE SHALL BE CUSTOM 2-GANG PANELCRAFTER WITH (1) MALE XLR CONNECTORS.

AV6 - JURY

CLEVELAND 9B - FACEPLATE DETAILS

NO SCALE

2 AV402

No	Revisions	Date

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CLEVELAND 16B, 17B COURTROOM
DETAILS - AV
US DISTRICT COURT
NORTHERN DISTRICT OF OHIO
CLEVELAND OHIO

www.ipdesigngroup.com 1201 Cass Street Omaha, Nebraska 68102 Phone: (402) 346-7007

Designed	File Name
BMB	20197427_AUDIOVISUAL DETAILS
Drawn	Project No.
TJB	20197427
Checked	Drawing No.
JJH	AV402
Date	07/30/2019

IV. Schedule B

Schedule B - Akron 575 (Summary)

United States District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
 July 30, 2019

Base Bid Items	Material Cost	Labor Cost	Travel Cost	Total Cost
Base Bid Item 1 Audio	\$ -	\$ -	\$ -	\$ -
Base Bid Item 3 Control	\$ -	\$ -	\$ -	\$ -
Base Bid Item 5 Rack and Mounting	\$ -	\$ -	\$ -	\$ -
TOTALS	\$ -	\$ -	\$ -	\$ -

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

	Grand Total - Base	Grand Total - Options
(Only includes 1st Year Warranty)	\$ -	N/A



CONSULTING + DESIGN

Schedule B - Akron 575 (Audio)

United States District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
 July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
1000	Equipment and Materials								
	Courtroom Audio System(s)								
1001	Gooseneck Microphone type 1	Shure	Microflex	MX418D/C			8	\$	-
1002	Gooseneck Shock Mounted Microphone type 2	Shure	Microflex	MX418S/C			1	\$	-
1003	Boundary Microphone type 3	Shure	Microflex	MX393B/C			2	\$	-
1010	Wireless Mic Receiver	Yamaha	Revolab	01-HDEXEC4-NM-AES			1	\$	-
1011	Wireless Wearable Lapel Mic	Yamaha	Revolab	01-HDEXECMIC-AES			4	\$	-
1100	DSP	Biamp	TesiraForte	TesiraForte AVB VT			2	\$	-
1110	Amp Type 1	Crown		Dci 8 300			1	\$	-
1201	Headphone amp type 1	Behringer		HA8000 V2			1	\$	-
1202	Headphone amp type 2	Behringer		HA6000			1	\$	-
2041	USB Extender Receiver/Transmitter	Icron	Ranger	USB 2.0 Ranger 2301			1	\$	-
	Subtotal							\$	-
1600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$	-
6000	Labor - System Engineering							\$	-
6001	Labor - Field Installation							\$	-
6002	Labor - Compliance with Drawings and Specifications							\$	-
6003	Labor - Programming - See specifications							\$	-
6004	Labor - Testing, Adjustment, System Documentation							\$	-
	TOTAL (Courtroom Audio System(s) only)							\$	-
	Courtroom Audio System(s)								
	Audio System							\$	-
	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								

Schedule B - Akron 575 (Control)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
3000	Equipment and Materials								
	Courtroom Control System(s)								
3001	Control panel to remain, reroute and reprogram audio								
	Subtotal								
3600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Control System(s) only)								\$ -
	Courtroom Control System(s)								
	Video System							\$ -	
	TOTAL (Courtroom Control System(s) 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								

Schedule B - Akron 575 (Rack and Mounting)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
5000	Equipment and Materials								
	Courtroom Racks & Mounting Systems								
5001	Rack	Middleatlantic	ERK	ERK-2120			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		\$ -
5101	Faceplate: AV1	Custom					1		\$ -
5102	Faceplate: AV2	Custom					1		\$ -
5103	Faceplate: AV3	Custom					1		\$ -
	Subtotal								\$ -
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Racks & Mounting Systems only)								\$ -
	Courtroom Racks & Mounting Systems								
	Video System							\$ -	
	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								

Schedule B - Youngstown 351 (Summary)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

Base Bid Items	Material Cost	Labor Cost	Travel Cost	Total Cost
Base Bid Item 1 Audio	\$ -	\$ -	\$ -	\$ -
Base Bid Item 3 Control	\$ -	\$ -	\$ -	\$ -
Base Bid Item 5 Rack and Mounting	\$ -	\$ -	\$ -	\$ -
TOTALS	\$ -	\$ -	\$ -	\$ -

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

	Grand Total - Base	Grand Total - Options
(Only includes 1st Year Warranty)	\$ -	N/A

Schedule B - Youngstown 351 (Audio)

United States District Court Northern District of Ohio

Audiovisual Upgrades Final Design Report

July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
1000	Equipment and Materials								
	Courtroom Audio System(s)								
1001	Gooseneck Microphone type 1	Shure	Microflex	MX418D/C			8	\$	-
1002	Gooseneck Shock Mounted Microphone type 2	Shure	Microflex	MX418S/C			3	\$	-
1003	Boundary Microphone type 3	Shure	Microflex	MX393B/C			2	\$	-
1010	Wireless Mic Receiver	Yamaha	Revolab	01-HDEXEC4-NM-AES			1	\$	-
1011	Wireless Wearable Lapel Mic	Yamaha	Revolab	01-HDEXECMIC-AES			4	\$	-
1100	DSP	Biamp	TesiraForte	TesiraForte AVB VT			2	\$	-
1110	Amp type 2	Crown		Dci 4 300			1	\$	-
1201	Headphone amp type 1	Behringer		HA8000 V2			1	\$	-
1202	Headphone amp type 2	Behringer		HA6000			1	\$	-
2041	USB Extender Receiver/Transmitter	Icron	Ranger	USB 2.0 Ranger 2301			1	\$	-
2042	AVB Switch	MOTU		AVB Switch			1	\$	-
2043	DSP Input Expander	Tesira		EX-IN			1	\$	-
	Subtotal							\$	-
1600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$	-
6000	Labor - System Engineering							\$	-
6001	Labor - Field Installation							\$	-
6002	Labor - Compliance with Drawings and Specifications							\$	-
6003	Labor - Programming - See specifications							\$	-
6004	Labor - Testing, Adjustment, System Documentation							\$	-
	TOTAL (Courtroom Audio System(s) only)							\$	-
	Courtroom Audio System(s)								
	Audio System							\$	-
	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
7005	Year 5								n/a audio only
	Total Optional Maintenance								n/a audio only
8000	Fixed Cost Line Item for Travel								

Schedule B - Youngstown 351 (Control)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
3000	Equipment and Materials								
	Courtroom Control System(s)								
3001	Control panel to remain, reroute and reprogram audio								
	Subtotal								
3600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Control System(s) only)								\$ -
	Courtroom Control System(s)								
	Video System							\$ -	
	TOTAL (Courtroom Control System(s) 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								

Schedule B - Youngstown 351 (Rack and Mounting)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
5000	Equipment and Materials								
	Courtroom Racks & Mounting Systems								
5001	Rack	Middleatlantic	ERK	ERK-2120			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	\$ -	
5201	Faceplate: AV1	Custom					1	\$ -	
5202	Faceplate: AV2	Custom					1	\$ -	
5203	Faceplate: AV3	Custom					1	\$ -	
5204	Faceplate: AV4	Custom					1	\$ -	
5205	Faceplate: AV5	Custom					1	\$ -	
	Subtotal							\$ -	
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$ -	
6000	Labor - System Engineering							\$ -	
6001	Labor - Field Installation							\$ -	
6002	Labor - Compliance with Drawings and Specifications							\$ -	
6003	Labor - Programming - See specifications							\$ -	
6004	Labor - Testing, Adjustment, System Documentation							\$ -	
	TOTAL (Courtroom Racks & Mounting Systems only)							\$ -	
	Courtroom Racks & Mounting Systems								
	Video System							\$ -	
	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								

Schedule B - Cleveland 9A (Summary)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

Base Bid Items	Material Cost	Labor Cost	Travel Cost	Total Cost
Base Bid Item 1 Audio	\$ -	\$ -	\$ -	\$ -
Base Bid Item 3 Control	\$ -	\$ -	\$ -	\$ -
Base Bid Item 5 Rack and Mounting	\$ -	\$ -	\$ -	\$ -
TOTALS	\$ -	\$ -	\$ -	\$ -

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

	Grand Total - Base	Grand Total - Options
(Only includes 1st Year Warranty)	\$ -	N/A

Schedule B - Cleveland 9A (Audio)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
1000	Equipment and Materials								
	Courtroom Audio System(s)								
1001	Gooseneck Microphone type 1	Shure	Microflex	MX418D/C			10	\$	-
1002	Gooseneck Shock Mounted Microphone type 2	Shure	Microflex	MX418S/C			1	\$	-
1003	Boundary Microphone type 3	Shure	Microflex	MX393B/C			2	\$	-
1010	Wireless Mic Receiver	Yamaha	Revolab	01-HDEXEC4-NM-AES			1	\$	-
1011	Wireless Wearable Lapel Mic	Yamaha	Revolab	01-HDEXECMIC-AES			4	\$	-
1100	DSP	Biamp	TesiraForte	TesiraForte AVB VT			2	\$	-
1110	Amp Type 2	Crown		Dci 4 300			1	\$	-
1201	Headphone amp type 1	Behringer		HA8000 V2			1	\$	-
1202	Headphone amp type 2	Behringer		HA6000			1	\$	-
2041	USB Extender Receiver/Transmitter	Icron	Ranger	USB 2.0 Ranger 2301			1	\$	-
2042	AVB Switch	MOTU		AVB Switch			1	\$	-
2043	DSP Input Expander	Tesira		EX-IN			1	\$	-
	Subtotal							\$	-
1600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$	-
6000	Labor - System Engineering							\$	-
6001	Labor - Field Installation							\$	-
6002	Labor - Compliance with Drawings and Specifications							\$	-
6003	Labor - Programming - See specifications							\$	-
6004	Labor - Testing, Adjustment, System Documentation							\$	-
	TOTAL (Courtroom Audio System(s) only)							\$	-
	Courtroom Audio System(s)								
	Audio System							\$	-
	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								

Schedule B - Cleveland 9A (Control)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
3000	Equipment and Materials								
	Courtroom Control System(s)								
3001	Control panel to remain, reroute and reprogram audio								
	Subtotal								
3600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Control System(s) only)								\$ -
	Courtroom Control System(s)								
	Video System							\$ -	
	TOTAL (Courtroom Control System(s) 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								

Schedule B - Cleveland 9A (Rack and Mounting)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
5000	Equipment and Materials								
	Courtroom Racks & Mounting Systems								
5001	Rack	Middleatlantic	ERK	ERK-2120			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		\$ -
5301	Faceplate: AV1	Custom					1		\$ -
5302	Faceplate: AV2	Custom					1		\$ -
5303	Faceplate: AV3	Custom					1		\$ -
5304	Faceplate: AV4	Custom					1		\$ -
5305	Faceplate: AV5	Custom					1		\$ -
5306	Faceplate: AV6	Custom					1		\$ -
	Subtotal								\$ -
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Racks & Mounting Systems only)								\$ -
	Courtroom Racks & Mounting Systems								
	Video System							\$ -	
	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								

Schedule B - Cleveland 16B (Summary)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

Base Bid Items	Material Cost	Labor Cost	Travel Cost	Total Cost
Base Bid Item 1 Audio	\$ -	\$ -	\$ -	\$ -
Base Bid Item 2 Video	\$ -	\$ -	\$ -	\$ -
Base Bid Item 3 Control	\$ -	\$ -	\$ -	\$ -
Base Bid Item 4 Power	\$ -	\$ -	\$ -	\$ -
Base Bid Item 5 Rack and Mounting	\$ -	\$ -	\$ -	\$ -
TOTALS	\$ -	\$ -	\$ -	\$ -

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

	Grand Total - Base	Grand Total - Options
(Only includes 1st Year Warranty)	\$ -	N/A

Schedule B - Cleveland 16B (Audio)

United States District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
 July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
1000	Equipment and Materials								
	Courtroom Audio System(s)								
1001	Gooseneck Microphone type 1	Shure	Microflex	MX418D/C			13	\$	-
1002	Gooseneck Shock Mounted Microphone type 2	Shure	Microflex	MX418S/C			1	\$	-
1003	Boundary Microphone type 3	Shure	Microflex	MX393B/C			2	\$	-
1009	Mic Combiner	Audio Technica	Unimix	AT8681			4	\$	-
1010	Wireless Mic Receiver	Yamaha	Revolab	01-HDEXEC4-NM-AES			1	\$	-
1011	Wireless Wearable Lapel Mic	Yamaha	Revolab	01-HDEXECMIC-AES			4	\$	-
1100	DSP	Biamp	TesiraForte	TesiraForte AVB VT			2	\$	-
1110	Amp Type 2	Crown		Dci 4 300			1	\$	-
1201	Headphone amp type 1	Behringer		HA8000 V2			1	\$	-
1202	Headphone amp type 2	Behringer		HA6000			1	\$	-
2041	USB Extender Receiver/Transmitter	Icron	Ranger	USB 2.0 Ranger 2301			1	\$	-
2042	AVB Switch	MOTU		AVB Switch			1	\$	-
2043	DSP Input Expander	Tesira		EX-IN			1	\$	-
	Subtotal							\$	-
1600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$	-
6000	Labor - System Engineering							\$	-
6001	Labor - Field Installation							\$	-
6002	Labor - Compliance with Drawings and Specifications							\$	-
6003	Labor - Programming - See specifications							\$	-
6004	Labor - Testing, Adjustment, System Documentation							\$	-
	TOTAL (Courtroom Audio System(s) only)							\$	-
	Courtroom Audio System(s)								
	Audio System							\$	-
	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

Schedule B - Cleveland 16B (Audio)

United States District Court Northern District of Ohio

Audiovisual Upgrades Final Design Report

July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
8000	Fixed Cost Line Item for Travel								



CONSULTING + DESIGN

Schedule B - Cleveland 16B (Video)

United States District Court Northern District of Ohio

Audiovisual Upgrades Final Design Report

July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
2000	Equipment and Materials								
	Courtroom Video Systems								
2001	Matrix switcher type 1	Kramer		VS-1616DN-EM			1	\$ -	
2002	Input Card type 1 - 2 channel HDBaseT	Kramer		UHDA-IN2-F16			3	\$ -	
2003	Input Card type 2 - 2 channel HDMI	Kramer		UHD-IN2-F16			2	\$ -	
2004	Input Card type 3 - 2 channel DGKat	Kramer		DGKat-IN2-F16			1	\$ -	
2005	Output Card type 1 - 2 channel HDMI	Kramer		HS-OUT2-F16			2	\$ -	
2006	Output Card type 2 - 2 channel DGKat	Kramer		DGKat-OUT2-F16			6	\$ -	
2010	Presentation Switch type 1	Kramer		VP-770			1	\$ -	
2020	Display Amplifier type 1	Kramer		VM-114H			2	\$ -	
2021	Display Amplifier type 2	Kramer		VM-10H2			1	\$ -	
2030	Video Transmitter type 1	Kramer		TP-571			8	\$ -	
2031	Video Recevier type 1	Kramer		TP-574			9	\$ -	
2040	USB Hub	Extron		USB HUB4 MAAP			1	\$ -	
2041	USB Extender Receiver	Extron		USB Extender Plus R			3	\$ -	
2042	USB Extender Transmitter	Extron		USB Extender Plus T			3	\$ -	
2100	Annotator	Extron		Annotator 300			1	\$ -	
2101	Streamer	Epiphan		Pearl-2			1	\$ -	
2102	Audio De-embedder	Kramer		FC-46XL			1	\$ -	
2200	Display type 1	HP		Z22N			16	\$ -	
2201	Display type 2	Planar		PXL2430MW			3	\$ -	
2202	Display type 3	Planar		EP6524K			1	\$ -	
2300	Document Camera	Wolfvision		VZ8plus			1	\$ -	
2301	Video Camera	Lifesize		Camera 10x			2	\$ -	
2302	Graphics Storage Device	Brightsign		HD1024			1	\$ -	
	Subtotal							\$ -	
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$ -	
6000	Labor - System Engineering							\$ -	
6001	Labor - Field Installation							\$ -	
6002	Labor - Compliance with Drawings and Specifications							\$ -	
6003	Labor - Programming - See specifications							\$ -	
6004	Labor - Testing, Adjustment, System Documentation							\$ -	
	TOTAL (Courtroom Video Systems only)							\$ -	
	Courtroom Video Systems								

Schedule B - Cleveland 16B (Video)

United States District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
 July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
	Video System							\$ -	
	TOTAL (Courtroom Video 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								

Schedule B - Cleveland 16B (Control)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
3000	Equipment and Materials								
	Courtroom Control System(s)								
3001	Control Processor	Crestron		AV3			1		\$ -
3002	AV Network Switch	Cisco		Catalyst 3650-24			1		\$ -
	Subtotal								\$ -
3600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Control System(s) only)								\$ -
	Courtroom Control System(s)								
	Control System							\$ -	
	TOTAL (Courtroom Control System(s) 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								

Schedule B - Cleveland 16B (Power)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
4000	Equipment and Materials								
	Courtroom Power Supplies								
4001	CFE								
	Subtotal								
4600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Power Supplies only)								\$ -
	Courtroom Power Supplies								
	Power System							\$ -	
	TOTAL (Courtroom Power Supplies only)						1	\$ -	\$ -
	EQUIPMENT AND LABOR GRAND TOTAL								\$ -
7000	Optional Maintenance:								
7001	Year 1								warranty
7002	Year 2								not applicable
7003	Year 3								not applicable
7004	Year 4								not applicable
7005	Year 5								not applicable
	Total Optional Maintenance								not applicable
8000	Fixed Cost Line Item for Travel								

Schedule B - Cleveland 16B (Rack and Mounting)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
5000	Equipment and Materials								
	Courtroom Racks & Mounting Systems								
5001	Rack	Middleatlantic	ERK	ERK-4420			1	\$ -	
5002	Caster Base	Middleatlantic		CBS-ERK-20			1	\$ -	
5003	Vertical plug strip	Middleatlantic		PDT-1620C-NS			1	\$ -	
5004	Cable Management	Middleatlantic		LACE-44-1S-A			1	\$ -	
5401	Faceplate: AV1	Custom					1	\$ -	
5402	Faceplate: AV2	Custom					1	\$ -	
5403	Faceplate: AV3	Custom					1	\$ -	
5404	Faceplate: AV4	Custom					1	\$ -	
5405	Faceplate: AV5	Custom					1	\$ -	
5406	Faceplate: AV6	Custom					1	\$ -	
5407	Faceplate: AV7	Custom					1	\$ -	
5408	Faceplate: AV8	Custom					1	\$ -	
5411	Faceplate: AV11	Custom					1	\$ -	
5414	Faceplate: AV14	Custom					1	\$ -	
5415	Faceplate: AV15	Custom					1	\$ -	
5418	Faceplate: AV18	Custom					1	\$ -	
5419	Faceplate: Codec Interface Panel	Custom					1	\$ -	
5420	Faceplate: AVH	Custom					1	\$ -	
5421	Faceplate: AV2B	Custom					1	\$ -	
5422	Faceplate: AV3B	Custom					1	\$ -	
5600	Small Display Mount	Ergomart		Limbo Low Profile Monitor Stand			9	\$ -	
	Subtotal							\$ -	
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$ -	
6000	Labor - System Engineering							\$ -	
6001	Labor - Field Installation							\$ -	
6002	Labor - Compliance with Drawings and Specifications							\$ -	
6003	Labor - Programming - See specifications							\$ -	
6004	Labor - Testing, Adjustment, System Documentation							\$ -	
	TOTAL (Courtroom Racks & Mounting Systems only)							\$ -	
	Courtroom Racks & Mounting Systems								
	Video System							\$ -	
	TOTAL (Courtroom Racks & Mounting Systems only)						1	\$ -	\$ -
	EQUIPMENT AND LABOR GRAND TOTAL							\$ -	

Schedule B - Cleveland 16B (Rack and Mounting)

United States District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
 July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
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								

Schedule B - Cleveland 17B (Summary)

United States District Court Northern District of Ohio

Audiovisual Upgrades Final Design Report

July 30, 2019

Base Bid Items	Material Cost	Labor Cost	Travel Cost	Total Cost
Base Bid Item 1 Audio	\$ -	\$ -	\$ -	\$ -
Base Bid Item 2 Video	\$ -	\$ -	\$ -	\$ -
Base Bid Item 3 Control	\$ -	\$ -	\$ -	\$ -
Base Bid Item 4 Power	\$ -	\$ -	\$ -	\$ -
Base Bid Item 5 Rack and Mounting	\$ -	\$ -	\$ -	\$ -
TOTALS	\$ -	\$ -	\$ -	\$ -

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

	Grand Total - Base	Grand Total - Options
(Only includes 1st Year Warranty)	\$ -	N/A

Schedule B - Cleveland 17B (Audio)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
1000	Equipment and Materials								
	Courtroom Audio System(s)								
1001	Gooseneck Microphone type 1	Shure	Microflex	MX418D/C			14	\$ -	
1002	Gooseneck Shock Mounted Microphone type 2	Shure	Microflex	MX418S/C			1	\$ -	
1003	Boundary Microphone type 3	Shure	Microflex	MX393B/C			2	\$ -	
1009	Mic Combiner	Audio Technica	Unimix	AT8681			4	\$ -	
1010	Wireless Mic Receiver	Yamaha	Revolab	01-HDEXEC4-NM-AES			1	\$ -	
1011	Wireless Wearable Lapel Mic	Yamaha	Revolab	01-HDEXECMIC-AES			4	\$ -	
1100	DSP	Biamp	TesiraForte	TesiraForte AVB VT			2	\$ -	
1110	Amp Type 2	Crown		Dci 4 300			1	\$ -	
1201	Headphone amp type 1	Behringer		HA8000 V2			1	\$ -	
1202	Headphone amp type 2	Behringer		HA6000			1	\$ -	
2041	USB Extender Receiver/Transmitter	Icron	Ranger	USB 2.0 Ranger 2301			1	\$ -	
2042	AVB Switch	MOTU		AVB Switch			1	\$ -	
2043	DSP Modular Expander	Tesira		EX-MOD			1	\$ -	
2044	DSP Expander Input Card	Tesira		EIC-4			2	\$ -	
	Subtotal							\$ -	
1600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$ -	
6000	Labor - System Engineering							\$ -	
6001	Labor - Field Installation							\$ -	
6002	Labor - Compliance with Drawings and Specifications							\$ -	
6003	Labor - Programming - See specifications							\$ -	
6004	Labor - Testing, Adjustment, System Documentation							\$ -	
	TOTAL (Courtroom Audio System(s) only)							\$ -	
	Courtroom Audio System(s)								
	Audio System							\$ -	
	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								



CONSULTING + DESIGN

Schedule B - Cleveland 17B (Video)

United States District Court Northern District of Ohio

Audiovisual Upgrades Final Design Report

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CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
2000	Equipment and Materials								
	Courtroom Video Systems								
2001	Matrix switcher type 1	Kramer		VS-1616DN-EM			1	\$ -	
2002	Input Card type 1 - 2 channel HDBaseT	Kramer		UHDA-IN2-F16			3	\$ -	
2003	Input Card type 2 - 2 channel HDMI	Kramer		UHD-IN2-F16			2	\$ -	
2004	Input Card type 3 - 2 channel DGKat	Kramer		DGKat-IN2-F16			1	\$ -	
2005	Output Card type 1 - 2 channel HDMI	Kramer		HS-OUT2-F16			2	\$ -	
2006	Output Card type 2 - 2 channel DGKat	Kramer		DGKat-OUT2-F16			6	\$ -	
2010	Presentation Switch type 1	Kramer		VP-770			1	\$ -	
2020	Display Amplifier type 1	Kramer		VM-114H			2	\$ -	
2021	Display Amplifier type 2	Kramer		VM-10H2			1	\$ -	
2030	Video Transmitter type 1	Kramer		PT-571			8	\$ -	
2035	Video Receiver type 1	Kramer		TP-574			9	\$ -	
2040	USB Hub	Extron		USB HUB4 MAAP			1	\$ -	
2041	USB Extender Receiver	Extron		USB Extender Plus R			3	\$ -	
2042	USB Extender Transmitter	Extron		USB Extender Plus T			3	\$ -	
2100	Annotator	Extron		Annotator 300			1	\$ -	
2101	Streamer	Epiphan		Pearl-2			1	\$ -	
2102	Audio De-embedder	Kramer		FC-46XL			1	\$ -	
2200	Display type 1	HP		Z22N			16	\$ -	
2201	Display type 2	Planar		PXL2430MW			3	\$ -	
2202	Display type 3	Planar		EP6524K			1	\$ -	
2300	Document Camera	Wolfvision		VZ8plus			1	\$ -	
2301	Video Camera	Lifesize		Camera 10x			2	\$ -	
2302	Graphics Storage Device	Brightsign		HD1024			1	\$ -	
	Subtotal							\$ -	
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$ -	
6000	Labor - System Engineering							\$ -	
6001	Labor - Field Installation							\$ -	
6002	Labor - Compliance with Drawings and Specifications							\$ -	
6003	Labor - Programming - See specifications							\$ -	
6004	Labor - Testing, Adjustment, System Documentation							\$ -	
	TOTAL (Courtroom Video Systems only)							\$ -	
	Courtroom Video Systems								

Schedule B - Cleveland 17B (Video)

United States District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
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CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
	Video System							\$ -	
	TOTAL (Courtroom Video 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								

Schedule B - Cleveland 17B (Control)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
3000	Equipment and Materials								
	Courtroom Control System(s)								
3001	Control Processor	Crestron		AV3			1		\$ -
3002	AV Network Switch	Cisco		Catalyst 3650-24			1		\$ -
	Subtotal								\$ -
3600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Control System(s) only)								\$ -
	Courtroom Control System(s)								
	Control System							\$ -	
	TOTAL (Courtroom Control System(s) 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								

Schedule B - Cleveland 17B (Power)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
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CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
4000	Equipment and Materials								
	Courtroom Power Supplies								
4001	CFE								
	Subtotal								
4600	Miscellaneous Equipment (all other equipment and non-itemized parts)								\$ -
6000	Labor - System Engineering								\$ -
6001	Labor - Field Installation								\$ -
6002	Labor - Compliance with Drawings and Specifications								\$ -
6003	Labor - Programming - See specifications								\$ -
6004	Labor - Testing, Adjustment, System Documentation								\$ -
	TOTAL (Courtroom Power Supplies only)								\$ -
	Courtroom Power Supplies								
	Power System							\$ -	
	TOTAL (Courtroom Power Supplies only)						1	\$ -	\$ -
	EQUIPMENT AND LABOR GRAND TOTAL								\$ -
7000	Optional Maintenance:								
7001	Year 1								warranty
7002	Year 2								not applicable
7003	Year 3								not applicable
7004	Year 4								not applicable
7005	Year 5								not applicable
	Total Optional Maintenance								not applicable
8000	Fixed Cost Line Item for Travel								

Schedule B - Cleveland 17B (Rack and Mounting)

United States District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
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CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
5000	Equipment and Materials								
	Courtroom Racks & Mounting Systems								
5001	Rack	Middleatlantic	ERK	ERK-4420			1	\$ -	
5002	Caster Base	Middleatlantic		CBS-ERK-20			1	\$ -	
5003	Vertical plug strip	Middleatlantic		PDT-1620C-NS			1	\$ -	
5004	Cable Management	Middleatlantic		LACE-44-1S-A			1	\$ -	
5401	Faceplate: AV1	Custom					1	\$ -	
5402	Faceplate: AV2	Custom					1	\$ -	
5403	Faceplate: AV3	Custom					1	\$ -	
5404	Faceplate: AV4	Custom					1	\$ -	
5405	Faceplate: AV5	Custom					1	\$ -	
5406	Faceplate: AV6	Custom					1	\$ -	
5407	Faceplate: AV7	Custom					1	\$ -	
5408	Faceplate: AV8	Custom					1	\$ -	
5411	Faceplate: AV11	Custom					1	\$ -	
5414	Faceplate: AV14	Custom					1	\$ -	
5415	Faceplate: AV15	Custom					1	\$ -	
5418	Faceplate: AV18	Custom					1	\$ -	
5419	Faceplate: Codec Interface Panel	Custom					1	\$ -	
5420	Faceplate: AVH	Custom					1	\$ -	
5421	Faceplate: AV2B	Custom					1	\$ -	
5422	Faceplate: AV3B	Custom					1	\$ -	
5600	Small Display Mount	Ergomart		Limbo Low Profile Monitor Stand			9	\$ -	
	Subtotal							\$ -	
5600	Miscellaneous Equipment (all other equipment and non-itemized parts)							\$ -	
6000	Labor - System Engineering							\$ -	
6001	Labor - Field Installation							\$ -	
6002	Labor - Compliance with Drawings and Specifications							\$ -	
6003	Labor - Programming - See specifications							\$ -	
6004	Labor - Testing, Adjustment, System Documentation							\$ -	
	TOTAL (Courtroom Racks & Mounting Systems only)							\$ -	
	Courtroom Racks & Mounting Systems								
	Video System							\$ -	
	TOTAL (Courtroom Racks & Mounting Systems only)						1	\$ -	\$ -
	EQUIPMENT AND LABOR GRAND TOTAL							\$ -	

Schedule B - Cleveland 17B (Rack and Mounting)

United States District Court Northern District of Ohio
Audiovisual Upgrades Final Design Report
July 30, 2019

CLIN	ITEM	Make	Model	Part No.	Substitution Make	Substitution Model	Qty	Unit Price	Total Price
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. AV DSP Matrix

Audio Routing Matrix (All Courtrooms)

U.S. District Court Northern District of Ohio
 Audiovisual Upgrades Final Design Report
 July 30, 2019

	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	Jury Headphone Amp (Youngstown Only)	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												X	X		X		X	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	
Reporter Mic	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	
Clerk 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	
Podium Mics	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	
Revolab Ch 1				D					S	S	S	S	S	S	S											
Revolab Ch 2				D					S	S	S	S	S	S	S											
Revolab Ch 3				D					S	S	S	S	S	S	S											
Revolab Ch 4				D					S	S	S	S	S	S	S											
Jury Mic	X	X	X	X				X						X	X	X	X	X	X	X	X	X	X	X	X	
VTC Audio	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	X	
Phone Line 2	X	X	X	X				X	D	D	D	D	D	S	S									X	X	
Phone Line 3	X	X	X	X				X	S	S	S	S	S	D	X									X	X	
Phone Line 4	X	X	X	X				X	D	D	D	D	D	S	X									X	X	
Interpreter Mic	S	S	S	S												X	S	S	S	S	S	S	S	S	S	
Sound Masking	X	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.