



**ADDENDUM NO.: 1**

**IFB or RFP NO.: 765**

Description: Furnish, Deliver and Install Audio-Visual Equipment

Project: CUNY College of Staten Island

Bid Opening Date: Tuesday, February 27, 2024, at 2:30PM.

Specifics of the Addendum: Amend the Request for Information Due Date and Extend the Bid Opening Date.

**Request for Information Due Date and Bid Opening Extension:** Please see the following change to the Notice and Information for Bidders:

Section 1.0 – Notice to Bidders & Bid Opening and Attachment A: Bid Breakdown & Schedule

The bid opening scheduled for February 16, 2024, at 2:30PM has been rescheduled to February 27, 2024, at 2:30PM.

All questions will be answered and posted to DASNY's website as an Addenda under the Attachment Section by February 20, 2024.

All other terms and conditions of the original Invitation for Bids shall remain the same.

BIDDING REQUIREMENTS for PURCHASING

NOTICE AND INFORMATION FOR BIDDERS

**The DORMITORY AUTHORITY OF THE STATE OF NEW YORK  
("DASNY")**

**Bid No.** 765

**Bid Title:** Furnish, Deliver and Install Audio-Visual Equipment

**Notice and Information to Bidders**

**Attachment A:** Bid Breakdown and Schedule

**Attachment B:** Detailed Specifications

**Attachment C:** Scope of Work and Drawings

This Notice and Information to Bidders, Attachment A: Bid Breakdown and Schedule, Attachment B: Detailed Specifications and Attachment C: Scope of Work and Site Logistics shall collectively be referred to herein as the "**Purchase Order Documents.**"

**Section 1.0 – Notice to Bidders & Bid Opening**

Sealed bids for the above referenced Bid/Project will be received by DASNY at its office located at 515 Broadway, Albany, NY 12207.

Bids are due by 2:30 p.m. on Tuesday, February 27, 2024.

Only those bids in the hands of DASNY on or prior to the Bid Opening Date will be considered.

Each bid must be identified, on the outside of the envelope, with the name and address of the bidder and designated a bid for the Project titled above. When a sealed bid is placed inside another delivery jacket, the bid delivery jacket must be clearly marked on the outside "**BID ENCLOSED**" and "**ATTENTION: PURCHASING.**" DASNY will not be responsible for receipt of bids which do not comply with these instructions.

**Individuals and entities submitting bids in person or by private delivery services should allow sufficient time for processing through building security to assure that bids are received prior to the deadline for submitting bids.** A late bid will be returned to the sender unopened and will not be considered in issuing a purchase order.

Bids shall be publicly opened and read aloud. Bid results can be viewed at DASNY's website; <http://www.dasny.org>.

In accordance with State Finance Law § 139-j and § 139-k, this solicitation includes and imposes certain restrictions on communications between DASNY personnel and a prospective bidder during the procurement process. Designated staff for this solicitation is:

Procurement Administrator: Theresa Graffeo

Email: [tgraffeo@dasny.org](mailto:tgraffeo@dasny.org)

Contacts to other DASNY personnel regarding this procurement may disqualify the prospective bidder and affect future procurements with governmental entities in the State of New York. For more information pursuant to this law, refer to DASNY's website; <http://www.dasny.org> or the OGS website: <http://www.ogs.state.ny.us>.

# BIDDING REQUIREMENTS for PURCHASING

## NOTICE AND INFORMATION FOR BIDDERS

### Section 2.0 - Preparation of Bids

- A. Bids must be submitted on the Bid Breakdown and Schedule attached hereto as **Attachment A** in the Bidder's full legal name or the Bidder's full legal name plus any registered assumed name (the "Bidder"). Bids shall be enclosed in a sealed envelope, addressed to DASNY, and marked with the name and address of the Bidder and the Bid Number. All blank spaces for bid prices must be filled in. Conditional bids shall not be accepted. Bids shall not contain any recapitulation of the Work to be done. No oral, facsimile transmittal, electronic or telephonic bids or modifications of bids shall be considered. Bids shall contain an original signature of the Bidder in the space provided on the Bid Breakdown and Schedule.
- B. Unless otherwise noted, Bidder shall provide in the Bid Breakdown and Schedule the following information:
- a. Manufacturer & Model Number
  - b. Manufacturer's cut sheets
  - c. Construction specifications, (note Marketing materials are not specifications)
  - d. Installation specifications (if applicable)
  - e. Attachment Details (if applicable)
  - f. Warranty Information
  - g. Listing of deviations for each item, including sizes, dimensions, profiles, materials, finishes,
  - h. Construction methods and functions, on company letterhead. (if applicable)
  - i. Samples, if Requested
- C. Basis for Award: The basis for award is "GRAND TOTAL" lump sum price. Bidder shall be responsible for the complete scope of work at the "GRAND TOTAL" lump sum price.
- D. Bids that are illegible or that contain omissions, alterations, additions, or items not called for in the bidding documents may be rejected as not responsive. Any bid which modifies, limits, or restricts all or any part of such bid, other than as expressly provided for in the Purchase Order Documents, may be rejected as not responsive.
- E. DASNY may reject any bid not prepared and submitted in accordance with the provisions of the Purchase Order Documents.
- F. Any bid may be withdrawn prior to the scheduled time for the opening of bids or authorized postponement thereof and any bid received after such time and date shall not be considered.
- G. No bidder may withdraw a bid within sixty (60) days after the actual date of the opening thereof.
- H. No action or proceeding concerning in any way any bid for the Contract or the Contract shall be brought against DASNY in any location other than Albany County unless DASNY specifically consents, in writing, to a change of venue.

### Section 3.0 – Site Visit

Prospective bidders are strongly encouraged to attend. The purpose is to observe actual site conditions. A site logistics document is included in the Purchase Order Documents.

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### NOTICE AND INFORMATION FOR BIDDERS

A site visit is not scheduled. Refer to Site Logistics.

#### **Section 4.0 - Examination of the Detailed Specifications and Scope of Work and Site Logistics**

- A. Prospective bidders shall examine the Detailed Specifications set forth in **Attachment B** attached hereto and the Scope of Work and Site Logistics set forth in **Attachment C** attached hereto, carefully and, before bidding, shall make a written request to DASNY's Designated Representative for an interpretation or correction of any ambiguity, inconsistency, or error therein which should be discovered by a reasonably prudent bidder. Every request for such interpretation must be received at least ten (10) days prior to the Bid Opening Date. Such interpretation or correction, as well as additional provisions DASNY shall decide to include, shall be issued in writing by DASNY as an Addendum, which shall be posted to DASNY's website. Such Addendum shall become a part of the Purchase Order Documents and shall be binding on prospective bidders whether or not the bidder receives or acknowledges the actual notice of such Addendum. Requirements of the Purchase Order Documents shall apply to Addenda.
- B. Only interpretations, corrections or additional provisions to this Notice and Information to Bidders issued in writing by DASNY as Addenda shall be binding. No officer, agent or employee of DASNY is authorized to explain or to interpret the Purchase Order Documents by any other method and any such explanation or interpretation, if given, shall not be relied upon by the bidder.
- C. Each bid shall be construed to be completely in accordance with the Purchase Order Documents unless the bidder explains all deviations in detail on a separate letterhead attached to the bid.
- D. In the Bid Breakdown and Schedule and the Detailed Specifications, the words "or equal" are understood to appear after each reference to a commodity giving manufacturer's name or catalog reference. Should "or equal" commodities not be accepted, this will be stated clearly in the Bid Breakdown and Schedule and Detailed Specifications. If bidding or proposing commodities other than those specified, the bidder must in every instance give all information required in Section 2.0 (B) of this Notice and Information for Bidders. Products will only be considered if proof of comparability is provided to DASNY in writing. A determination that a commodity or product is an "or equal" will be determined by DASNY in its sole and absolute discretion and any such determination will be final. The burden of proof and all costs related thereto concerning the "or equal" nature of the substitute item, whether approved or disapproved, shall be borne by the Bidder. Only complete submittals, as requested, will be considered and evaluated by DASNY. Failure to comply with any or all above shall result in immediate disqualification.
- E. DASNY reserves the right to award a procurement and issue a Purchase Order and/or contract, on the basis of the lowest bid for each item set forth in this Notice and Information for Bidders, on the basis of the proposal judged to be the "best value".

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- F. When bids are requested on a by-item or by-lot basis, a Bidder must designate the item or lot cost or affirmatively indicate there is no charge. Items or lots left undesignated will be determined as not being bid and such bid shall be otherwise non-responsive.
- G. The Bidder must insert the price per unit specified, and the price extension for each item in this bid if required. In the event of a discrepancy between the unit price and the extension, the unit price will govern. Prices must be extended in decimals, not fractions.
- H. Prices must be net, including transportation, delivery charges and applicable taxes fully prepaid by Bidder to the designation(s) indicated.
- I. Prices and information required by the Bid Breakdown and Schedule except the signature of the Bidder, should be typewritten or printed legibly. Submissions written in pencil may be rejected.
- J. At the time of the opening of bids, each bidder shall be presumed to have inspected the Site and to have read and to be familiar with the Purchase Order Documents. The failure or omission of any Bidder to receive or to examine any Purchase Order Document shall in no way relieve any Bidder from any obligation in respect to the bid of such Bidder.
- K. DASNY reserves the right to make awards within one hundred twenty (120) days after the date of the bid opening or proposal due date, during which period bids or proposals shall not be withdrawn.
- L. If two or more bidders submit identical bids as to price, the decision of DASNY to issue a Purchase Order and/or contract to one or more of such identical Bidders shall be made in DASNY's sole and absolute discretion and any such determination shall be final
- M. A Purchase Order issued and/or contract awarded by DASNY shall be deemed executory only to the extent of moneys available, and no liability shall be incurred by DASNY beyond the moneys available therefore.
- N. Unless otherwise specified, the quantities listed in the Bid Breakdown and Schedule are subject to change to conform with DASNY requirements. The quantities listed are estimated only and the Purchase Order shall be for the quantities actually ordered.
- O. Unless terminated or cancelled by DASNY, a Purchase Order and/or contract will remain in force for the period specified or until all commodities ordered before the termination date shall have been satisfactorily delivered and accepted.
- P. Without the prior consent, in writing, of DASNY, the successful Bidder shall not assign, transfer, convey, sublet or otherwise dispose of the Purchase Order and/or contract or the right, title, duties or interest therein or the power to execute any contract to any other person, company or corporation.
- Q. It is hereby understood between the parties hereto that the relationship created by the Purchase Order Documents between DASNY and the successful Bidder is one of independent contractor and it is in no way to be construed as creating an agency relationship between said parties nor is it to be construed as in any way or under any circumstances to be creating or appointing the awarded Bidder as an agent of the

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DASNY for any purpose whatsoever.

- R. If the same or smaller quantity of a commodity is sold by a Bidder holding a contract with the State of New York for a Commodity at a price below the state contract price, the price to DASNY shall be reduced to the lower price.
- S. DASNY reserves the right to request a representative sample of a commodity or product at any time. The sample shall be furnished within a reasonable period of time as specified by DASNY. If the sample, in the judgment of DASNY, is not in accordance with the requirements of the Detailed Specifications and Scope of Work and Site Logistics, DASNY may in its sole and absolute discretion permit a period of time for a reworking of the sample or reject the bid or quote.
- T. When samples are required, failure to submit them in accordance with instructions may be sufficient cause for rejecting a bid or quote.
- U. When an accepted sample exceeds the minimum specifications set forth in the Detailed Specifications, all commodities delivered will be of same quality and identity as the sample.
- V. Samples must be submitted free of charge and be identified with the Bidder's name, address and DASNY Bid or Quote number. Detailed Specifications may indicate that the commodity to be purchased must be equal to a sample on display in a designated place. Failure on the part of the Bidder to examine such sample shall NOT entitle them to any relief from the conditions imposed in the Purchase Order Documents.
- W. Rough and shop drawings shall be furnished as deemed necessary and required by the Detailed Specifications. Such drawings shall be consistent with the Purchase Order Documents and shall be considered as forming part of the Detailed Specifications and the Purchase Order to which they relate.
- X. The successful Bidder will be required to, in all respects, guarantee the Work to the Owner. The Vendor shall forthwith repair, replace or remedy in a manner approved by the Owner, at the Vendor's expense, any Commodities, or other part of the Work found by the Owner to be defective or otherwise faulty and not in compliance with the Purchase Order Documents, which defect or fault appears during the minimum period of one (1) year, or such longer period as may be prescribed by the Purchase Order, from the date of either (1) the proper delivery of all Commodities in connection with the Purchase Order to the Site or (2) the delivery of the final invoice in connection with the Purchase Order from the Vendor to the Owner, whichever is later. The Vendor is also liable for any damage to the Work, any damage to the work of Other Vendors and Vendors, and any damage to the property of the Owner or Site resulting from said defect or fault.

#### **Section 5.0 - Qualifications of Bidder**

- A. DASNY may make such investigation as DASNY deems necessary to determine the responsibility of any Bidder or to determine the ability of any bidder to provide the commodities or otherwise provide the work set forth in the Purchase Order Documents. Bidders shall furnish to DASNY all information and data required by DASNY, within the time and in the form and manner required by DASNY. DASNY reserves the right to reject any bid if the evidence required by DASNY is not submitted as required or if the evidence submitted by or the investigation of any bidder fails to satisfy DASNY that the bidder is responsible, or is able or

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qualified to carry out the obligations of contained in the Purchase Order Documents or to complete the work as contemplated.

- B. DASNY reserves the right before making an award to make investigations as to whether or not the commodities, qualifications or facilities offered by the Bidder meet the requirements set forth in the Detailed Specifications and Scope of Work and Site Logistics are sufficient to insure the proper performance of the Purchase Order Documents.

#### **Section 6.0 - Executive Order No. 170.1 – Uniform Guidelines for Responsibility Determinations**

The criteria contained in Executive Order No. 170.1 dated June 23, 1993 (9 NYCRR § 4.170, Context and Analysis, Historical Note 32) will also be applied in the bid review process. In the event of any conflict between the criteria in Executive Order No. 170.1 and the criteria in the Purchase Order Documents, the stricter criteria shall apply.

#### **Section 7.0 - Executive Order No. 125 – NYS Vendor Responsibility Questionnaire**

- A. For any commodity Purchase Order or contract of \$100,000 or more, the New York State Vendor Responsibility Questionnaire For-Profit Construction (CCA-2) shall be submitted by the apparent low bidder to DASNY. Executive Order No. 125 dated May 22, 1989 is found at 9 NYCRR §4.125.
- B. The Bidder shall submit a New York State Vendor Responsibility Questionnaire For-Profit Construction (CCA-2) to DASNY for any subcontractor proposed for the Work upon request of DASNY.
- C. DASNY recommends that Bidders file the required Vendor Responsibility Questionnaire online via the New York State VendRep System (the “System”). To enroll in and use the System, see the System Instructions at [http://www.osc.state.ny.us/vendrep/vendor\\_index.htm](http://www.osc.state.ny.us/vendrep/vendor_index.htm) or go directly to the VendRep System online at <https://onlineservices.osc.state.ny.us>. Vendors must provide their New York State Vendor Identification Number when enrolling. To request assignment of a Vendor ID or for System assistance, contact the Office of the State Comptroller’s (“OSC”) Help Desk at 866-370-4672 or 518- 408-4672 or email [ciohelpdesk@osc.state.ny.us](mailto:ciohelpdesk@osc.state.ny.us). Vendors opting to complete and submit a paper questionnaire can obtain the appropriate questionnaire from the System website [www.osc.state.ny.us/vendrep](http://www.osc.state.ny.us/vendrep) or may contact DASNY (DASNY) or OSC’s Help Desk for a copy of the paper form.

#### **Section 8.0 - Opportunity Programs Requirements**

- A. Bidder agrees, in addition to any other nondiscrimination provision of the Purchase Order Documents and at no additional cost to DASNY, to fully comply and cooperate with DASNY in the implementation of NYS Executive Law ARTICLE 15-A, PARTICIPATION BY MINORITY GROUP MEMBERS AND WOMEN WITH RESPECT TO STATE CONTRACTS and Article 17-B, SERVICE DISABLED VETERAN OWNED BUSINESSES. These requirements will include: equal employment opportunities for minority group members and women (EEO), plus opportunities for minority and women-owned business enterprises (M/WBE). The Vendor’s demonstration of good faith efforts shall also be a part of these requirements.

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- B. Completion of the Utilization Plan per the assigned Goals below is required for this Procurement.
- C. See 8.0 (C.) for goals.
- D. If goals have been assigned, the successful Bidder shall be required to complete a Utilization Plan or Request for Waiver, to be approved by DASNY's Opportunity Programs Group. Where assigned, DASNY uses a goal-oriented approach to ensure employment of EEO & M/WBE at a level commensurate with their capability and availability. DASNY has determined that the goals for EEO & M/WBE participation in the Work of the Contract are follows:  
Percent of Total Contract (M/WBE):

Minority Business Enterprise Goal	4 %
Women's Business Enterprise Goal	4 %
Service Disabled Veteran Owned Businesses	2 %

**Section 9.0 – Issuance of Purchase Order/Award of Contract**

- A. Issuance of the Purchase Order and/or contract shall be made to the successful Bidder submitting the lowest bid, if:
  - 1. In the opinion of DASNY, the bid is responsive to the bid solicitation and the requirements of the Purchase Order Documents, and such Bidder, is responsible.
  - 2. The Bidder submits required documents as described under Section 11.0 – Forms and Documents.
- B. Alternates, if included in the Bid Breakdown and Schedule, shall be selected in the sole and absolute discretion of DASNY when awarding the procurement and issuing Purchase Order and/or contract. Alternates shall be listed in their order of priority, and acceptance shall be made in the same order, except that DASNY, at its sole and exclusive discretion, may by-pass any Maintenance or Warranty Service Alternates. The lowest bid will then be determined by adding, to the Bidder's total base bid, all Alternates chosen by DASNY.
- C. DASNY reserves the sole and exclusive right to reject any bid or all bids, to waive any informalities or irregularities or omissions in any bid received or to afford any Bidder an opportunity to remedy any informality or irregularity.
- D. The issuance of the Purchase Order and/or contract shall not be construed as a guarantee by DASNY that the plant, equipment, and the general scheme of proposed operations of a Bidder is either adequate or suitable for the satisfactory performance of the Work or that other data supplied by a Bidder is accurate.
- E. Purchase Orders and Contracts more than \$1,000,000 are subject to the approval of the NYS Office of the State Comptroller ("OSC").



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### Section 10.0 - Substantial Completion

All the work of the Purchase Order Documents shall commence upon issuance by DASNY of the Purchase Order and the Vendor shall achieve Substantial Completion no later than the date set forth on the Purchase Order.

### Section 11.0 – Forms and Documents

Each bidder shall complete and submit to DASNY, pursuant to provisions stated in this Notice and Information for Bidders, the following forms and documents:

Bidding Requirements: each bidder shall submit the following at time of bid:

- Bid Breakdown and Schedule
- Omnibus Procurement Certification
  - Non-Collusive Bidding;
  - Non-Segregated Facilities;
  - Non-discrimination in Employment in Northern Ireland;
  - Federal Equal Employment Opportunity Act;
  - Transfer of Offset Credits;
  - 2005 Procurement Lobbying Law;
  - Code of Business Ethics; and
  - Iran Divestment.
- Contractor ST-220 if over \$100,000.00
- W-9 Form
- Alternate Form (if applicable)

### Section 12.0 – Supplemental Requirements

#### Prevailing Wage

NYS Labor Law requires all wages paid by contractors and subcontractors on public work projects be paid at the prevailing wage rates. Included in the Purchase Order documents is the current rate schedule for the appropriate county. Contractors and Subcontractors are responsible for obtaining current rates throughout the course of the project. The NYS Department of Labor (NYS DOL) updates these rates on July 1st of each year. Current rates can be obtained on the NYS DOL website ([www.labor.state.ny.us](http://www.labor.state.ny.us)) or by fax at (518) 485-1870. Note that the successful Bidder will be required to submit an executed Contractor and Subcontractor Certification and certified payrolls, which include the hours and days worked by each workman, laborer or mechanic, the occupation at which he worked, the hourly wage rate paid and the supplements paid or provided, must be resubmitted with each and every payment requisition.

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#### **Section 13.0 - Project Labor Agreement**

DASNY has determined that its interest in obtaining the best work at the lowest possible price, preventing favoritism, fraud and corruption, other considerations such as the impact of delay, the possibility of cost savings advantages and any local history of labor unrest are best met by use of a Project Labor Agreement (“PLA”) on this Project. The successful low bidder as a condition of this Contract award, must execute the PLA in the Purchase Order Documents following the Form of Bid. The Work undertaken in connection with this Project will be governed by, and subject to the conditions set forth in the PLA. All Subcontractors of every tier, will be required to execute a Letter of Assent, included in the enclosed PLA, agreeing to be bound by the PLA. The PLA has been approved by the Building and Construction Trades Department, AFL-CIO.

The PLA is included in the Bid Documents.

#### **EXCLUDED PLA PROJECTS**

DASNY and the Building and Construction Trades Council of Greater New York and Vicinity (the “Council”) have entered into a Memorandum of Understanding (“MOU”) that requires the use of a Project Labor Agreement (“PLA”) on applicable covered projects within the City of New York. While this Project is considered an “Excluded Project”, under the MOU and therefore the use of a PLA is optional on this Project, the successful prime contractor performing work on this Project shall have the option to voluntarily execute the PLA. This is to provide potential bidders of the Project with notice of this option, consistent with the provisions of the MOU. Execution of the applicable PLA following the Information for Bidders is not a requirement to perform work on this Project.

#### **Section 14.0 – Interim Guidance For Construction Activities During The COVID-19 Public Health Emergency**

All Bidders and/or contractors at a DASNY project must comply with the “INTERIM GUIDANCE FOR CONSTRUCTION ACTIVITIES DURING THE COVID-19 PUBLIC HEALTH EMERGENCY” Issued by the New York State Department of Health and located at: <https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/ConstructionMasterGuidance.pdf>.

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**Attachment A: Bid Breakdown & Schedule**

**Bidder:**

Theresa Graffeo, Purchasing Coordinator  
[tgraffeo@dasny.org](mailto:tgraffeo@dasny.org)

**DASNY Contact:**

**Request for Information (RFI's):**

RFI's due February 2, 2024 Submit in writing via email to [tgraffeo@dasny.org](mailto:tgraffeo@dasny.org). Responses will be posted to DASNY's website via addenda no later than February 20, 2024. It is the responsibility of the Bidder to obtain Addenda.

**Product Required By:**

As soon as product lead time allows.

**Description:**

Furnish, Deliver and Install Audio-Visual Equipment

**Bid Open Location:**

DASNY, Corporate Headquarters, 515  
 Broadway, Albany, NY 12207

**Bid Open Date and Time:**

Tuesday, February 27, 2024, at 2:30PM.

Item No.	Manufacturer	Make/Model	Description	QTY	UOM	Unit Price	Extended Price
1	Planar	Quote: Cerami - 6x6 DL2-1.2, College of Staten Island	1.2 mm LED Video Wall	1	EA	\$	\$
2	Chief	LSM1U	Display Mount	3	EA	\$	\$
3	Chief	PAC526	Display Mount Box	3	EA	\$	\$
4	Smart	7000 Series 86"	86" 4K Interactive Touch Panel	1	EA	\$	\$
5	LG	60UH6550	60" Monitor	4	EA	\$	\$
6	Chief	TS318TU	Monitor Mount	6	EA	\$	\$
7	Samsung	QM-H 65	65" Monitor	4	EA	\$	\$
8	Samsung	DH48E	48" Monitor	2	EA	\$	\$
9	Epson	PRO L1500U (white)	Projector - 12,000 Lumen Laser, 1920x1200	1	EA	\$	\$
10	Chief	VCMUW	Ceiling Projector Mount	1	EA	\$	\$
11	NEC	P502HL	Projector - 5,000 Lumen Laser, 1920x1080	1	EA	\$	\$
12	Chief	RSMAUW	Ceiling Projector Mount with Security Lock	1	EA	\$	\$
13	Optoma	4K500	Laser 4K Video Projector	2	EA	\$	\$
14	Draper	101186U	Projection Screen, 161" Diagonal Surface Mount	1	EA	\$	\$
15	Draper	140029U	Projection Screen, 119" Diagonal Ceiling Recessed	1	EA	\$	\$
16	DaLite	Tensioned Advantage Electrol	Projection Screen 110 Dia. 16:9 w LVC	2	EA	\$	\$

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17	Mersive	Solstice POD SGE-EE	Wireless Presenter	3	EA	\$	\$
18	Oppo	BDP-103	Blu-Ray Player	2	EA	\$	\$
19	Oppo	Rack Mount Kit	Blu-Ray Player Rackmount	2	EA	\$	\$
20	TBD	By owner	Cable TV	1	EA	\$	\$
21	Vaddio	RoboSHOT 30 HDBT	PTZ Ceiling Camera	2	EA	\$	\$
22	Vaddio	451-2150-052	PTZ PoE++	2	EA	\$	\$
23	Vaddio	535-2000-240	Wall Mount Bracket	1	EA	\$	\$
24	Vaddio	999-2225-150	PTZ Semi-Recessed Ceiling Mount	1	EA	\$	\$
25	Haivision	S-CS-P-DE2	Digital Signage Player	3	EA	\$	\$
26	Smart	SP524	Annotation Tablet	1	EA	\$	\$
27	Logitech	Webcam Pro	Webcam	1	EA	\$	\$
28	Industrial PC Pro	RMM-422HD3	Rack Mount Video Monitor	1	EA	\$	\$
29	Crestron	DM-MD16X16-RPS	16X16 Switcher Chassis with Redundant Power Supply	2	EA	\$	\$
30	Crestron	DMC-4K-HD-HDCP2	4K HDMI Input Card	9	EA	\$	\$
31	Crestron	DMC-4K-C-HDCP2	4K DM 8G+ Input Card	15	EA	\$	\$
32	Crestron	DMC-4K-HDO	2-Channel 4K HDMI Scaling Output Card	3	EA	\$	\$
33	Crestron	DMC-4K-CO-HD-HDCP2	2-Channel 4K DM 8G+ Output Card	8	EA	\$	\$
34	Crestron	DM-TX-4K-202-C	Transmitter	1	EA	\$	\$
35	Crestron	DM-RMC-4K-SCALER-C	Receiver with Scaler	9	EA	\$	\$
36	Crestron	DMPS3-4K-200-C	Presentation Switcher	1	EA	\$	\$
37	Crestron	HD-EXT4-C-B_SYSTEM	HDMI Signal Extension	2	EA	\$	\$
38	CTG	60180	HDMI Extender	4	EA	\$	\$
39	Crestron	DM-TX-4K-100-C	DM HDMI Wallplate connection	2	EA	\$	\$
40	Crestron	DM-TX-4K-100-C	DM HDMI Connection in floorboxes	9	EA	\$	\$
41	TV One	C3-540-1001	Video Wall Processor Chassis	1	EA	\$	\$
42	TV One	CM-HDMI-4K-2IN	HDMI Input Card	9	EA	\$	\$
43	TV One	CM-DVI-I-SC-2OUT	DVI Output Card	3	EA	\$	\$
44	Extron	MediaPort 200	USB AV Interface	2	EA	\$	\$
45	Matrox	Monarch LCS	Lecture Capture / Streaming	1	EA	\$	\$
46	Haivision	S-CS-SRV-50	Coolsign Server and Software	1	EA	\$	\$
47	Haivision	SV-IN-EI	Onsite system configuration and commissioning support	1	EA	\$	\$
48	Haivision	SV-IN-TR	Onsite end-user and Admin training	1	EA	\$	\$
49	Apple	iPad Air 2 (MNV22LL/A)	Control Tablet	1	EA	\$	\$
50	Crestron	DM-TX-4K-202-C	Transmitter	1	EA	\$	\$

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51	Extron	Cable Cubby 202 US	Cable Hatch	1	EA	\$	\$
52	Industrial PC Pro	RMM-422HD3	Rack Mount Video Monitor	1	EA	\$	\$
53	iPort	70300	Control Tablet Sleeve	1	EA	\$	\$
54	iPort	70158	Control Tablet Table Charge	1	EA	\$	\$
55	Shure	MX412/C	Gooseneck Microphone	1	EA	\$	\$
56	Biamp	TesiraFORTÉ DAN VI	Audio DSP with VOIP	1	EA	\$	\$
57	Biamp	TesiraFORTÉ DAN CI	Audio DSP	1	EA	\$	\$
58	Crown	Dci 8/300DA	Audio Amplifier -8ch. 70v 300wpc	1	EA	\$	\$
59	Fostex	RM-3	Rack Mount Audio Monitor	1	EA	\$	\$
60	Listen	LS-91	Assistive Listening System	1	EA	\$	\$
61	Mackie	DL32R	iPad Remote Mixing System	1	EA	\$	\$
62	Mackie	DL DANTE EXPANSION CARD	iPad Remote Mixing System Dante Card	1	EA	\$	\$
63	Extron	HAE 100 4K	Audio De-Embeddor	2	EA	\$	\$
64	Biamp	TesiraFORTÉ VI	Audio DSP with VOIP	1	EA	\$	\$
65	Biamp	AMP-A460H	Audio Amplifier -4ch. 60wpc	1	EA	\$	\$
66	Biamp	TesiraForte VT	DSP	1	EA	\$	\$
67	Crestron	AMP-2100	Amplifier	1	EA	\$	\$
68	JBL	Control 65P/T	Pendant Ceiling Speaker	22	EA	\$	\$
69	JBL	Control 26CT	Ceiling Speakers	14	EA	\$	\$
70	Shure	MXWAPT4	4-Channel Access Point	1	EA	\$	\$
71	Shure	MXW1/0	Wireless Bodypack Transmitter	2	EA	\$	\$
72	Shure	WL185	Lav Microphone	2	EA	\$	\$
73	Shure	MXW2/BETA58	Wireless Handheld Microphone	2	EA	\$	\$
74	Shure	MXWNCS8	8 Channel Network Charging Station	1	EA	\$	\$
75	Shure	SB901	Rechargeable Battery	4	EA	\$	\$
76	Shure	GLXD124R/85	Wireless Mic System-handheld and lavalier	2	EA	\$	\$
77	Shure	CVG12	Gooseneck mic	1	EA	\$	\$
78	Shure	MX202WP/C	Ceiling Mic	5	EA	\$	\$
79	Shure	MX412/C	Gooseneck Microphone	1	EA	\$	\$
80	Apple	iPad Air 2 (MNV22LL/A)	Control Tablet	2	EA	\$	\$
81	Cisco	SG300-52MP	Control / Dante Switch	1	EA	\$	\$
82	Crestron	CP3N	Control Systems	1	EA	\$	\$
83	Crestron	TSW-1060-B-S	10" Touch Screen	1	EA	\$	\$
84	Crestron	TSW-760-B-S	Touch Panel	1	EA	\$	\$
85	Crestron	TSW-760-TTK-B-S	Touch Panel Table Mount	1	EA	\$	\$
86	Crestron	SG300-10PP	PoE Switch	2	EA	\$	\$
87	Icron	Ranger 2201	USB 2.0 Extender	3	EA	\$	\$
88	Icron	Spectra 3022	USB 3.0 Extender	1	EA	\$	\$

**BIDDING REQUIREMENTS for PURCHASING**

**NOTICE AND INFORMATION FOR BIDDERS**

89	iPort	70300	Control Tablet Sleeve	2	EA	\$	\$
90	iPort	70158	Control Tablet Table Charge	2	EA	\$	\$
91	Linksys	LKV-7308-KIT	Rack Mount KVM	1	EA	\$	\$
92	Crestron	MC-3	CP-3	1	EA	\$	\$
93	Crestron	TST 1080	Touch Panel	1	EA	\$	\$
94	Crestron	TST-1080-DS	Touch panel doc	1	EA	\$	\$
95	Gator	G-PRO-4U-19	Portable Rack Case	1	EA	\$	\$
96	ICC	ICMPP246AU	Cat6A Shielded Patch	1	EA	\$	\$
97	Middle Atlantic	RSH4S5S CRESTRON TSW1060BS	Touch Panel Rack Mount	1	EA	\$	\$
98	Middle Atlantic	PD-815R-PL	Portable Rack Case Power Strip	1	EA	\$	\$
99	Middle Atlantic	MRK-4431	Equipment Rack	2	EA	\$	\$
100	Middle Atlantic	PVFD-44	Equipment Rack Front Door	2	EA	\$	\$
101	Middle Atlantic	SPN-44-312	Equipment Rack Side Panels	1	EA	\$	\$
102	Middle Atlantic	CBS-MRK-31	Equipment Rack Caster Base	2	EA	\$	\$
103	Middle Atlantic	MW-4QFT-FC	Equipment Rack Fan Top	2	EA	\$	\$
104	Middle Atlantic	LT-GN-WL	Equipment Rack Rear Work Light	2	EA	\$	\$
105	Middle Atlantic	PD-2420SC-NS	Equipment Rack Power Distribution	2	EA	\$	\$
106	Middle Atlantic	RLNK-MON120-NS	Equipment Rack Power Switching	2	EA	\$	\$
107	Middle Atlantic	RM-KB	Keyboard and Mouse Tray	1	EA	\$	\$
108	Middle Atlantic	BR-1	Brush Panel	1	EA	\$	\$
109	Extron	Cable Cubby 202 US	Cable Hatch	3	EA	\$	\$
110	Middle Atlantic	CFR-12-20	Lectern Rack	1	EA	\$	\$
111	Middle Atlantic	5-RS20	Lectern Rack Runner Kit	1	EA	\$	\$
112	Middle Atlantic	RLINK-915R	Rack Power	1	EA	\$	\$
113	By AV Contractor	Custom	Allowance for items including but not limited to Cables/ Interconnecting Wiring/ Patch Cords/ Connectors/ Adapters/ Accessories/ Mounting Hardware/ Rack Shelves/ Rack Blanks/ Rack Vents/ and Miscellaneous.		LS	\$	\$
114			Integration		LS	\$	\$
115			Installation		LS	\$	\$
116			Bonds		LS	\$	\$
117			Training		LS	\$	\$

If bidding or proposing commodities other than those specified, the bidder must in every instance give all information required in Section 2.0 (B) of the Notice and Information for Bidders. Products will only be considered if proof of comparability is provided to DASNY in writing. A determination that a commodity or product is an "or equal" will be determined by DASNY in its sole and absolute discretion and any such determination will be final.

BIDDING REQUIREMENTS for PURCHASING

NOTICE AND INFORMATION FOR BIDDERS

**INSTALLATION LABOR (if required)**  
**LABOR TO INSTALL \_\_\_\_\_**

**Estimated No. of Hours \_\_\_\_\_**

**Hourly Rate (*Prevailing Wage rates are required for this work*) \_\_\_\_\_**

Total Materials/Equipment/Commodities: \_\_\_\_\_

Total Installation: \_\_\_\_\_

**TOTAL BID \_\_\_\_\_**

BIDDING REQUIREMENTS for PURCHASING

NOTICE AND INFORMATION FOR BIDDERS

(The below questions 1) and 2) need only be answered if the above total bid is for one million dollars or more)

1. Does your firm anticipate the use of subcontractors and outside suppliers specific to this procurement  
Yes  No
2. Does your firm anticipate the creation of employment opportunities arising from this procurement?  
Yes  No

(The below information must be completed for all bids.)

Identify all subcontractors, if any: \_\_\_\_\_

STATE, PROVINCE FOR FOREIGN COUNTRY  
THAT YOUR FIRM'S PRINCIPAL PLACE OF  
BUSINESS IS LOCATED:

\_\_\_\_\_

ADDRESS OF FACTORY OR PLANT WHERE  
ITEMS ARE MANUFACTURED AND/OR  
ASSEMBLED. (Attach additional sheet(s) if more  
than one manufacturer)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
BIDDER (FIRM NAME)

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
NAME (TYPE/PRINTED)

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
Date



BIDDING REQUIREMENTS for PURCHASING

NOTICE AND INFORMATION FOR BIDDERS

**Attachment B: Detailed Specifications**

COMPLETE EQUIPMENT LIST - ALL SPACES					
ITEM	DESCRIPTION	MFR	MODEL	Notes	QTY
<b>Displays</b>					
1	1.2 mm LED Video Wall	Planar	Quote: Cerami - 6x6 DL2-1.2, College of Staten Island	(FOR BIG DATA WALL)	1
2	Display Mount	Chief	LSM1U	(1) GRAD OFFICE (2) TRADING	1
3	Display Mount Box	Chief	PAC526	(1) GRAD OFFICE (2) TRADING	1
4	86" 4K Interactive Touch Panel	Smart	7000 Series 86"	(FOR GRAD OFFICE)	1
5	60" Monitor	LG	60UH6550	(FOR GROUP STUDY)	4
6	Monitor Mount	Chief	TS318TU	(2) DIGITAL SIGNAGE (4) GROUP STUDY	6
7	65" Monitor	Samsung	QM-H 65	(FOR TRADING)	4
8	48" Monitor	Samsung	DH48E	(FOR DIGITAL SIGNAGE)	2
<b>Projection</b>					
1	Projector - 12,000 Lumen Laser, 1920x1200	Epson	PRO L1500U (white)	(FOR COMMON AREA)	1
2	Ceiling Projector Mount	Chief	VCMUW	Provide white pole and ceiling plate (FOR COMMON AREA)	1
3	Projector - 5,000 Lumen Laser, 1920x1080	NEC	P502HL	(FOR RESEARCH CLASSROOM)	1
4	Ceiling Projector Mount with Security Lock	Chief	RSMUW	Provide white pole and ceiling plate (FOR RESEARCH CLASSROOM)	1
5	Laser 4K Video Projector	Optoma	4K500	(FOR TRADING)	2
<b>Projection Screen</b>					
1	Projection Screen, 161" Diagonal Surface Mount	Draper	101186U	(FOR COMMON AREA)	1
2	Projection Screen, 119" Diagonal Ceiling Recessed	Draper	140029U	(FOR RESEARCH CLASSROOM)	1
3	Projection Screen 110 Dia. 16:9 w LVC	DaLite	Tensioned Advantage Electrol	(FOR TRADING)	2
<b>Video Sources</b>					
1	Wireless Presenter	Mersive	Solstice POD SGE-EE	(1) FOR COMMON AREA (1) FOR BIG DATA WALL (1) FOR RESEARCH CLASSROOM	3
2	Blu-Ray Player	Oppo	BDP-103	(1) FOR COMMON AREA (1) FOR TRADING	2
3	Blu-Ray Player Rackmount	Oppo	Rack Mount Kit	(1) FOR COMMON AREA (1) FOR TRADING	2
4	Cable TV	TBD	By owner	(FOR TRADING)	1
5	PTZ Ceiling Camera	Vaddio	RoboSHOT 30 HDBT	999-9963-000	2
6	PTZ PoE++	Vaddio	451-2150-052	(1) FOR COMMON AREA (1) FOR RESEARCH CLASSROOM	2
7	Wall Mount Bracket	Vaddio	535-2000-240	(FOR COMMON AREA)	1
8	PTZ Semi-Recessed Ceiling Mount	Vaddio	999-2225-150	(FOR RESEARCH CLASSROOM)	1
9	Digital Signage Player	Haivision	S-CS-P-DE2	(1) BIG DATA WALL (2) DIGITAL SIGNAGE	3
10	Annotation Tablet	Smart	SP524	(FOR COMMON AREA)	1
11	Webcam	Logitech	Webcam Pro	(FOR GRAD OFFICE)	1
<b>Video Distribution</b>					
1	Rack Mount Video Monitor	Industrial PC Pro	RMM-422HD3	(FOR COMMON AREA)	1
2	16X16 Switcher Chassis with Redundant Power Supply	Crestron	DM-MD16X16-RPS	(1) FOR COMMON AREA (1) FOR TRADING	2
3	4K HDMI Input Card	Crestron	DMC-4K-HD-HDCP2	(7) FOR COMMON AREA (2) FOR TRADING	9
4	4K DM 8G+ Input Card	Crestron	DMC-4K-C-HDCP2	(4) FOR COMMON AREA (11) FOR TRADING	15
5	2-Channel 4K HDMI Scaling Output Card	Crestron	DMC-4K-HDO	(FOR COMMON AREA)	3
6	2-Channel 4K DM 8G+ Output Card	Crestron	DMC-4K-CO-HD-HDCP2	(5) FOR COMMON AREA (3) FOR TRADING	8
7	Transmitter	Crestron	DM-TX-4K-202-C	FLOATER	1
8	Receiver with Scaler	Crestron	DM-RMC-4K-SCALER-C	(2) FOR FLOATERS - COMMON AREA (1) FOR RESEARCH CLASSROOM (6) FOR TRADING	9
9	Presentation Switcher	Crestron	DMP53-4K-200-C	(FOR RESEARCH CLASSROOM)	1
10	HDMI Signal Extension	Crestron	HD-EXT4-C-B_SYSTEM	(FOR GRAD OFFICE)	2
11	HDMI Extender	CTG	60180	HDMI over Cat5/6 Extender (FOR GROUP STUDY)	4
12	DM HDMI Wallplate connection	Crestron	DM-TX-4K-100-C	(FOR TRADING)	2
13	DM HDMI Connection in floorboxes	Crestron	DM-TX-4K-100-C	(FOR TRADING)	9
<b>Video Processing</b>					
1	Video Wall Processor Chassis	TV One	C3-540-1001	(FOR BIG DATA WALL)	1
2	HDMI Input Card	TV One	CM-HDMI-4K-2IN	(FOR BIG DATA WALL)	9
3	DVI Ouput Card	TV One	CM-DVI-I-SC-2OUT	(FOR BIG DATA WALL)	3
<b>Capture / Streaming</b>					
1	USB AV Interface	Extron	MediaPort 200	(1) COMMON AREA (1) RESEARCH CLASSROOM	2
2	Lecture Capture / Streaming	Matrox	Monarch LCS	(FOR COMMON AREA)	1
<b>Signage Head End Equipment</b>					

1	Coolsign Server and Software	Haivision	S-CS-SRV-50	(FOR DIGITAL SIGNAGE)	1
2	Maintenance & Support Program	Haivision	M-PREM-SUPP-1	(FOR DIGITAL SIGNAGE)	1
3	Onsite system configuration and commissioning support	Haivision	SV-IN-EI	(FOR DIGITAL SIGNAGE)	1
4	Onsite end-user and Admin training	Haivision	SV-IN-TR	(FOR DIGITAL SIGNAGE)	1
<b>Lectern Systems</b>					
1	Control Tablet	Apple	iPad Air 2 (MNV22LL/A)	(FOR COMMON AREA)	1
2	Transmitter	Crestron	DM-TX-4K-202-C	(FOR COMMON AREA)	1
3	Cable Hatch	Extron	Cable Cubby 202 US	(FOR COMMON AREA)	1
4	Rack Mount Video Monitor	Industrial PC Pro	RMM-422HD3	(FOR COMMON AREA)	1
5	Control Tablet Sleeve	iPort	70300	(FOR COMMON AREA)	1
6	Control Tablet Table Charge	iPort	70158	(FOR COMMON AREA)	1
7	Gooseneck Microphone	Shure	MX412/C	(FOR COMMON AREA)	1
<b>Audio System</b>					
1	Audio DSP with VOIP	Biamp	TesiraFORTÉ DAN VI	(FOR COMMON AREA)	1
2	Audio DSP	Biamp	TesiraFORTÉ DAN CI	(FOR COMMON AREA)	1
3	Audio Amplifier -8ch. 70v 300wpc	Crown	Dci 8/300DA	(FOR COMMON AREA)	1
4	Rack Mount Audio Monitor	Fostex	RM-3	(FOR COMMON AREA)	1
5	Assistive Listening System	Listen	LS-91	Include Remote Power Option	1
6	iPad Remote Mixing System	Mackie	DL32R	(FOR COMMON AREA)	1
7	iPad Remote Mixing System Dante Card	Mackie	DL DANTE EXPANSION CARD	(FOR COMMON AREA)	1
8	Audio De-Embeddor	Extron	HAE 100 4K	(FOR COMMON AREA)	2
9	Audio DSP with VOIP	Biamp	TesiraFORTÉ VI	(FOR RESEARCH CLASSROOM)	1
10	Audio Amplifier -4ch. 60wpc	Biamp	AMP-A460H	(FOR RESEARCH CLASSROOM)	1
11	DSP	Biamp	TesiraForte VT	(FOR TRADING)	1
12	Amplifier	Crestron	AMP-2100	(FOR TRADING)	1
<b>Loudspeakers</b>					
1	Pendant Ceiling Speaker	JBL	Control 65P/T	(20) FOR COMMON AREA (2) FOR BIG DATA WALL	22
2	Ceiling Speakers	JBL	Control 26CT	(4) FOR RESEARCH CLASSROOM (10) FOR TRADING	14
<b>Wireless Microphones</b>					
1	4-Channel Access Point	Shure	MXWAPT4	(FOR COMMON AREA)	1
2	Wireless Bodypack Transmitter	Shure	MXW1/0	(FOR COMMON AREA)	2
3	Lav Microphone	Shure	WL185	(FOR COMMON AREA)	2
4	Wireless Handheld Microphone	Shure	MXW2/BETA58	(FOR COMMON AREA)	2
5	8 Channel Network Charging Station	Shure	MXWNCS8	(FOR COMMON AREA)	1
6	Rechargeable Battery	Shure	SB901	(FOR COMMON AREA)	4
7	Wireless Mic System-handheld and lavalier	Shure	GLXD124R/85	(FOR TRADING)	2
8	Gooseneck mic	Shure	CVG12	(FOR TRADING)	1
<b>Wired Microphones</b>					
1	Ceiling Mic	Shure	MX202WP/C	(FOR RESEARCH CLASSROOM)	5
2	Gooseneck Microphone	Shure	MX412/C	(FOR RESEARCH CLASSROOM)	1
<b>Control Systems</b>					
1	Control Tablet	Apple	iPad Air 2 (MNV22LL/A)	(FOR COMMON AREA)	2
2	Control / Dante Switch	Cisco	SG300-52MP	(FOR COMMON AREA)	1
3	Control Systems	Crestron	CP3N	(FOR COMMON AREA)	1
4	10" Touch Screen	Crestron	TSW-1060-B-S	(FOR COMMON AREA)	1
5	Touch Panel	Crestron	TSW-760-B-S	(FOR RESEARCH CLASSROOM)	1
6	Touch Panel Table Mount	Crestron	TSW-760-TTK-B-S	(FOR RESEARCH CLASSROOM)	1
7	PoE Switch	Crestron	SG300-10PP	(1) FOR RESEARCH CLASSROOM (1) FOR TRADING	2
8	USB 2.0 Extender	Icron	Ranger 2201	(1) FOR COMMON AREA (2) FOR GRAD OFFICE	3
9	USB 3.0 Extender	Icron	Spectra 3022	(FOR COMMON AREA)	1
10	Control Tablet Sleeve	iPort	70300	(FOR COMMON AREA)	2
11	Control Tablet Table Charge	iPort	70158	(FOR COMMON AREA)	2
12	Rack Mount KVM	Linksys	LKV-7308-KIT	(FOR COMMON AREA)	1
13	CP-3	Crestron	MC-3	(FOR TRADING)	1
14	Touch Panel	Crestron	TST 1080	(FOR TRADING)	1
15	Touch panel doc	Crestron	TST-1080-DS	(FOR TRADING)	1
<b>Rack / Misc</b>					
1	Portable Rack Case	Gator	G-PRO-4U-19	(FOR COMMON AREA)	1
2	Cat6A Shielded Patch	ICC	ICMPP246AU	(FOR COMMON AREA)	1
3	Touch Panel Rack Mount	Middle Atlantic	RSH45SS CRESTRON TSW1060BS	(FOR COMMON AREA)	1
4	Portable Rack Case Power Strip	Middle Atlantic	PD-815R-PL	(FOR COMMON AREA)	1
5	Equipment Rack	Middle Atlantic	MRK-4431	(FOR COMMON AREA)	2
6	Equipment Rack Front Door	Middle Atlantic	PVFD-44	(FOR COMMON AREA)	2
7	Equipment Rack Side Panels	Middle Atlantic	SPN-44-312	(FOR COMMON AREA)	1
8	Equipment Rack Caster Base	Middle Atlantic	CBS-MRK-31	(FOR COMMON AREA)	2
9	Equipment Rack Fan Top	Middle Atlantic	MW-4QFT-FC	(FOR COMMON AREA)	2
10	Equipment Rack Rear Work Light	Middle Atlantic	LT-GN-WL	(FOR COMMON AREA)	2
11	Equipment Rack Power Distribution	Middle Atlantic	PD-2420SC-NS	(FOR COMMON AREA)	2
12	Equipment Rack Power Switching	Middle Atlantic	RLNK-MON120-NS	(FOR COMMON AREA)	2
13	Keyboard and Mouse Tray	Middle Atlantic	RM-KB	(FOR COMMON AREA)	1
14	Brush Panel	Middle Atlantic	BR-1	(FOR COMMON AREA)	1
15	Cable Hatch	Extron	Cable Cubby 202 US	(1) RESEARCH CLASSROOM (2) GRAD OFFICE	3

16	Lectern Rack	Middle Atlantic	CFR-12-20	(FOR RESEARCH CLASSROOM)	1
17	Lectern Rack Runner Kit	Middle Atlantic	5-RS20	(FOR RESEARCH CLASSROOM)	1
18	Rack Power	Middle Atlantic	RLINK-915R	(FOR RESEARCH CLASSROOM)	1
19	Allowance for items including but not limited to Cables/ Interconnecting Wiring/ Patch Cords/ Connectors/ Adapters/ Accessories/ Mounting Hardware/ Rack Shelves/ Rack Blanks/ Rack Vents/ and Miscellaneous	By AV Contractor	Custom		1

## BIDDING REQUIREMENTS for PURCHASING

### NOTICE AND INFORMATION FOR BIDDERS

#### **Attachment C: Scope of Work and Drawings**

The following audiovisual equipment, related control systems and programming are to be the responsibility of the Audiovisual Contractor:

- Furnish and install all low voltage audiovisual cabling. The cables specification and run sheets will be provided to the Audiovisual Contractor prior to installation.
- Furnish and install all low voltage audiovisual terminations.
- Handling of all the audiovisual equipment from the building dock to a secure location.
- Furnish and install front projection screen. The electrical connections are to be performed by the General Contractor/Electrical Contractor. The Audiovisual Contractor will coordinate locations.
- Furnish and install projector mounts and flat panel mounts. The electrical connections are to be performed by the General Contract/Electrical Contractor. The Audiovisual Contractor will coordinate locations.
- Furnish and install program speakers.
- Furnish and install ceiling speakers with back boxes, transformers, and grilles where applicable.
- Furnish and install ceiling and wall mounted LCD or flat panel displays and cameras.
- Furnish and install ceiling mounted video projectors and lifts.
- Furnish and install control system touch screens and other hardware.
- The owners shall provide all required PC's and servers and the Audiovisual Contractor will install the equipment.
- The owners shall provide testing, evaluation, and installation of existing equipment.
- Furnish and deliver the control system and audio system program.
- Provide project management, supervision, testing and commissioning of the audiovisual systems.

Detailed Scope of Work and drawings related to the above to follow in the attached document.

## PART 1 - GENERAL

### 1.1 SUMMARY

#### A. Section includes the following:

1. Audiovisual equipment/systems and related control systems & programming.

#### B. General Conditions

1. The General Conditions, Requirements, and Special Provisions, of the larger body of specifications, of which this specification is a part, are hereby made a part of this specification. In the event that any clauses or provisions of the larger body of specification conflict with the letter or intent of this specification, the Contractor shall immediately notify the Consultant for clarification and direction.

#### C. The Specification

1. The "Specification" is defined as the body of documentation provided to the Contractor with the Request for Quotation, as well as all addenda to said documentation. Throughout this document, words such as "herein" refer to the entire Specification, and not just this written document.

#### D. The Specification includes, but is not limited to:

1. This written specification document.
2. The attached Audiovisual Systems Equipment List
3. All drawings, as listed in the List of Drawings or indicated on the drawing package cover page.
4. Additions and/or modifications as detailed in written addenda.

#### E. Additions and/or modifications as detailed in drawing additions or reissues.

### 1.2 DEFINITION OF TERMS

#### A. Within this section of the specification, the following definitions shall apply:

- B. The term "Furnish" is used to indicate the responsibility to procure and ship or deliver the item to the job site, freight prepaid, for receipt, staging and installation by others.

- C. The term "Install" or "Installation" is used to indicate the responsibility of receiving the item at the job site, assuring adequate storage, unpacking or uncrating the item, physically securing the item or otherwise making ready the item for its intended use by following the instructions and approved methods of the manufacturer and those contained herein.
- D. The term "Provide" is used to indicate the responsibility to both "Furnish" and "Install".
- E. The term "Provided by Others" shall refer to material and work, which is related to this contract, but has been provided by parties other than the AV Contractor. An example might be in reference to a projection screen installed during building construction but requiring interface to the AV control system.
- F. The terms "NIC" and "Not In Contract" are equivalent to "Provided by Others".
- G. The term "OFCI" (Owner Furnished Contractor Installed) shall refer to equipment that will be furnished by the Owner for installation by the Contractor. The Contractor shall be responsible for installing and integrating this equipment as detailed herein.
- H. The term "Installation Materials" shall reference installed cable, loose cable, terminations, cable management, voice/data/video patch cords, adapters, I/O panels, cable dressing, lacing bars, copper bus bars, labels, rack shelves, rack mounts, power strips/distribution and other materials as needed to install the systems defined herein.
- I. The term "shall" is mandatory; the term "will" is informative; and the term "should" is advisory.

### 1.3 EQUIPMENT DELIVERY AND STORAGE

- A. Costs of all shipping to the site, and of all storage requirements, shall be borne by the Contractor. It shall be the responsibility of the Contractor to make appropriate arrangements, and to coordinate with the authorized personnel at the site, for the proper acceptance, handling, protections, and storage of equipment so delivered.

### 1.4 REFUSE

- A. The Contractor shall keep the site and building free of all debris and clutter, to the satisfaction of the Owner or Construction Manager. On a daily basis, the Contractor shall remove refuse and rubbish related to the specified work from the site and building and shall leave the

relevant areas and equipment clean and in an operational state. The Contractor shall be responsible for repairing any damage caused to the site and building by the Contractor's installation activities, at no cost to the Owner.

## 1.5 SCOPE OF WORK

- A. General: Provide audio visual systems design, engineering, and installation within all phases and spaces of the project, as defined by the related documents. Systems shall include all devices, equipment, installation, programming and commissioning in accordance with requirements of the contract documents and drawings.
- B. The work detailed within the contract documents has been specified to meet certain requirements for performance, appearance, and costs. It shall be the responsibility of the Contractor to implement the guidelines and requirements contained in the contract documents and translate them into a complete design package containing all elements necessary for a complete, operational, and functionally integrated Audio Visual System(s).
- C. The Contractor shall provide complete, turnkey multimedia systems performing all of the services and functions as described herein, together with all other apparatus, cable, materials, labor, tools, transportation, and any other resources necessary to provide a complete and working system.
- D. Specifically, the work shall include, but is not limited to:
  - 1. Communicating and coordinating with the Owner, Consultant, Architect, and other trades complying with all requirements as defined under this Scope of Work and elsewhere, to fulfill all requirements of this specification.
  - 2. Generating and submitting Shop Drawings as required for approvals and As-Built drawings as specified herein.
  - 3. Providing all cable and pull strings in conduits for the specified systems.
  - 4. Furnishing and/or installing all equipment as specified.
  - 5. Installing Owner supplied equipment as specified.
  - 6. Take delivery of all Owner supplied components and equipment, excluding Room PCs, at Contractor's staging facility for integration into AV equipment racks.
  - 7. From the initial point of delivery Contractor shall be responsible for storing, integrating and maintaining as part of the system warranty all Owner supplied components.
  - 8. Prior to installation Contractor shall test and verify all functions of Owner supplied components and equipment previously used in



existing Owner's facility. Contractor shall provide a summary report of existing Owner supplied equipment and document any defects or service issues that would prevent existing equipment from reuse as part of this work.

9. Coordinate video conference endpoint provisioning with the Owner's network and the Owner's existing video conference bridge system or outsourced video conference bridging service.
10. Furnishing all lifts, ladders, scaffolding or other resources as needed for proper safe installation. Coordinating with other trades as needed.
11. Interconnecting all components, both internal and external to rack cabinets.
12. Providing patch cables for connection of all IP-enabled audiovisual equipment to associated data network outlets, including but not limited to Owner supplied Room computers, production computers, laptop connections, control system processors, codecs, and projectors. This applies to all equipment installed by the Contractor, including Owner-Furnished (OFCl) items. Coordinate patch cable requirements with the greater building-wide structured cabling system.
13. Contractor shall coordinate and secure, from the Owner, the IP configuration parameters such as DHCP, IP addresses, subnet information, VLAN setup & authorization, and the like for use by Ethernet equipped system components. The Contractor shall coordinate the installation and configuration of these devices with the Owner's IT department and/or designated representative.
14. Secure, from the Owner, private IP addresses for use by Ethernet equipped control system processors.
15. Ensuring that all cabling, equipment, and terminations are installed in accordance with accepted industry standards, approved shop drawings, manufacturer's recommendations and as stipulated herein.
16. Verify that all audiovisual equipment rack locations are provided with adequate clearance, ventilation and cable management systems to ensure all equipment is operating within manufacturer published tolerances.
17. Coordinating and providing cable labels as stipulated by the owner and/or specified herein.
18. Providing cable management hardware as required including in areas audiovisual rack cabinets; between pieces of equipment not housed in rack cabinets; and as required to extend cabling from rack cabinets and equipment to the greater facility cabling infrastructure.
19. Providing custom cover plates, wall plates, I/O connection plates, floor box insert plates as required for a complete and working system. Final selection of finishes shall be coordinated with the Architect and/or Owner.
20. Coordinating with the Consultant, Architect and Owner on the final selection of all technical furniture including design details

(make/model), available options, dimensions, cable management needs, color, finish, and the like.

21. Coordinating with furniture manufacturer or others who are providing all necessary furniture/millwork modifications ("cut-outs" or other) as required allowing for a neat and professional installation of integrated technology system components. This includes, but is not limited to: integrated table/lectern "cubbies", table-top microphones, cable management grommets, etc.
22. Coordinating with the furniture manufacturer, Owner, and Architect on cable management needs and equipment installation requirements in all spaces so equipped and as outlined in 'Installation Practices'.
23. Coordinate with local entities as necessary (manufacturer, Owner, SBE, FCC, etc.) to determine final channel selection for all wireless devices and resolve conflicts where they may occur.
24. Insuring that all equipment, with the exception of portable equipment, is firmly fastened or attached in place. A safety factor of at least four shall be utilized for all brackets, fasteners and attachments. Provide safety retention cables for overhead equipment such as loudspeakers, projectors, etc.
25. Verifying and Providing all projector lenses as required.
26. Providing all projector mounts, including guy wires, clamps, or support assemblies back to structural members. Obstructions vary from room to room; Contractor must pay close attention to this issue on a room-by-room basis.
27. Mounting / aligning the projectors so that digital keystone correction is not required. Optical lens shift shall be employed, only if necessary, to align the image with the image area. Where possible all projectors mounted below the ceiling shall be mounted and adjusted to be perpendicular to the screen surface.
28. Coordinating with the Construction Manager on the audiovisual control system connection to the projection screens, as required.
29. Adjusting motorized projection screen limits as required optimizing the amount of black drop in conjunction with the projection system and field conditions. Refer to the drawings for specified dimensions.
30. Providing speakers as complete assemblies with back boxes, grilles, tile bridges, wall mounts, hanging hardware and other installation hardware as required.
31. Coordinating with the Architect and Owner on final color selection, and/or the painting of any exposed loudspeakers and any/all exposed system components to match the room's aesthetics and finishes.
32. Providing control system design submittals and up to two control system design revisions.
33. Developing and installing all custom control programming code as required and/or as specified herein.

34. Providing control system interfaces to motorized screens, as specified.
35. Providing low voltage control system interfaces to facility lighting and share systems where specified.
36. Providing the executable (uncompiled) programming control code as defined herein.
37. Developing and installing all custom software for DSP devices as required to optimize system performance.
38. Generating and Submitting "Progress Reports" as defined herein.
39. Ensuring that all individual components function as intended by this Specification.
40. Ensuring that the entire multimedia systems function as intended by this Specification.
41. Providing any/all patching, caulking, fire stopping, and painting required to restore damaged finishes during installation.
42. Providing to the Owner, upon completion, all accessories and ancillary items included with the manufacturer's equipment but not used for the physical installation of the device. This shall include all user manuals, remote controls, batteries, tools, installation hardware, carrying cases, protective covers, etc.
43. Testing, adjusting, and fine-tuning the completed systems and components.
44. Coordinating and conducting an acceptance walk-through and sign-off session with the Owner and Consultant.
45. Documenting the completed installed systems as defined herein.
46. Conducting training in systems operation for the Owner's designated representative(s).
47. Providing "sign-off" documents for each space and/or space type as defined herein.
48. Verifying required cable lengths for all bulk cable or manufactured cable assemblies prior to ordering as outlined in 'Installation Practices.'
49. Verify AV related infrastructure requirements including conduit, power and data as shown on design drawings is sufficient to meet all AV systems requirements. A written report confirming infrastructure requirements is required from the Contractor within 30 days of award of bid.
50. Verifying all display mounting conditions including width, height and depth of all recesses or architectural cutouts required for displays and other flush mounted equipment.
51. Verifying the accuracy of the manufacturer master quotes where indicated on the audiovisual equipment list or other manufacturer quotation numbers prior to ordering. Where given, master quote numbers or other quotation numbers have been provided for bidding purposes only.
52. Providing a minimum one (1)-year warranty service contract.
53. Providing onsite support staffing as outlined in this Specification.

54. The Contractor shall act as the primary point of responsibility and contact in resolving all audiovisual system defects including those involving Owner Furnished Contractor Installed (OF/CI) equipment.
55. Provide pricing for alternates listed in the audiovisual systems equipment List accompanying this specification.

#### 1.6 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.
- B. Refer to AV Design Drawings as listed on Dwg. TA-000.
- C. Refer to AV Equipment list provided as part of this specification.

#### 1.7 RELATED WORK

- A. Audiovisual Contractor shall coordinate with Electrical Contractor on raceway/junction box locations for audio visual equipment and routing of audio, video, control, and power cables/raceway from equipment, terminal and pull boxes to system equipment racks.
- B. Coordinate work of this section with installation of wall and ceiling finishes.

#### 1.8 WORK EXCLUDED

- A. Work not included under this contract shall be:
  1. Providing conduit, power receptacles, junction boxes, cable raceways, electrical back-boxes, floor boxes, lighting fixtures, lighting dimming systems, or millwork except where otherwise specified herein.
  2. Installation of wall or ceiling mounted projection screens.
  3. With the exception of audiovisual network switches and interconnections as indicated in the audiovisual systems equipment list and system drawings the data and voice network is provided by Others under separate contract for this building.

#### 1.9 SCHEDULE

- A. Project Milestones
  1. The Contractor shall obtain from the Owner, Architect, Construction Manager or Consultant a project master timeline schedule showing projected dates when the relevant areas will be available to the Contractor for the on-site installation.

2. Within 15 days of notification of contract award, the Contractor shall provide a schedule of major project milestones to the Owner, Architect, and Consultant. The schedule shall show the following milestones, but may include others as required for overall site-work coordination:
  - a. Shop Drawings and Submittals.
  - b. Initial Touch Panel layouts
  - c. Completion of AV Equipment IP list for Owner coordination
  - d. Required date for Owner meeting to review digital signage content
  - e. Required date for receipt of Owner furnished digital signage content
  - f. Delivery of materials to the work site for installation by Others.
  - g. Delivery of major system components to the work site.
  - h. Required date for receipt of Owner furnished equipment and PCs
  - i. Required network turn-on date for Audiovisual Connectivity
  - j. 50% completion of work by floor and by floor area.
  - k. 95% completion of work by floor and by floor area.
  - l. Completion of room run sheets (required prior to move-in).
  - m. Final punch list.
  - n. Training Sessions.
  - o. Submittal of Final Documentation / As-Builts.
3. If the Contractor feels that they will have any problems with meeting the scheduled project milestone deadlines, he must inform the Owner, Architect, and Consultant at the earliest possible opportunity.

1.10

#### JOB CONDITIONS

##### A. Coordination

1. In the interest of a coordinated and professional project, the Contractor shall:
  - a. Coordinate his/her work with that of other trades. The Contractor should anticipate attending project coordination meetings with the Owner, Architect, Construction Manager, Consultant or other trades as required. These meetings shall be separate from weekly construction coordination meetings required by the General Contractor.
  - b. Afford other trades reasonable opportunity for installation work and for storage of materials.
  - c. Staff the job to keep pace with other trades.
  - d. Submit a brief progress report via e-mail to the Consultant, listing the following information in four sections: Schedule, Progress, Work Planned and Issues. The "Schedule" section shall list the status of all

project milestones and track impacts to approved milestone dates. The "Progress" section shall list the tasks accomplished since the previous report; this is to include both completed tasks and work-in-progress. The "Work Planned" section shall list the tasks scheduled for the time period extending until the next report; this section should also include both completed tasks and work-in-progress. The "Issues" section shall list any factors that are delaying progress or have the potential to delay progress that involve the Owner, Architect and/or Consultant. The Progress Reports should be concise, utilizing bullet points or other efficient format. The Progress Reports should be submitted at the following intervals:

- e. After contract award, while working off-site: every two weeks
- f. While working on-site: every week.
- g. After on-site work has started the Progress Report shall list the status of each room or space with audiovisual equipment and indicate the current status of items:
  - 1) Cable Pull
  - 2) Mount/Speaker/Backbox Installation
  - 3) Room Ready
  - 4) Display Installation
  - 5) Furniture Installation
  - 6) Rack Installation
  - 7) Field Equipment Installation
  - 8) Programming
  - 9) Commissioning
  - 10) Ready for Consultant Testing
  - 11) Punch List Completion

#### 1.11 SITE CONDITIONS

- A. Reference drawings provided to the Contractor for bidding purposes may not reflect construction site as-built conditions. It shall be the responsibility of the Contractor to field-verify all site conditions relevant to his work.
- B. The Contractor shall verify dimensions of equipment, equipment arrangements, space availability (including any millwork or cabinetry

provided by others) and provide systems that work within the constraints of the space available. The Contractor shall notify the Consultant of any situation where space constraints are a problem, prior to the ordering or purchase of equipment.

- C. Drawings indicate locations of equipment and components. Changes in the location, and offsets of same to accommodate building conditions, and coordination with the work of other trades shall be made prior to initial installation, without additional cost to the Owner.
- D. The Contractor shall insure during installation that access is provided to equipment and components requiring operation, service or maintenance within the life of the system.
- E. It shall be the responsibility of the Contractor to identify any condition where the recommended environmental and/or electrical operating parameters for specified equipment/products cannot be assured. Should such condition exist, it shall further be the responsibility of the Contractor to notify the Architect and Consultant of any such condition.

#### 1.12 LAWS AND REGULATIONS

- A. All equipment, cabling, materials, and installation methodology shall conform to the requirements of the National Board of Fire Underwriters, the current published edition of the National Electrical Code, and all other applicable laws and regulations. The Contractor shall obtain and pay for any additional permits and inspections required by all legal authorities and agencies having jurisdiction over the Contractor's work.
- B. The Contractor shall comply with all of the legal regulations, including OSHA safety regulations and regulations of municipal, city, local, and other government agencies having jurisdiction concerning the work of the Contractor. The Contractor shall give all notices and comply with all laws, ordinances, codes, rules, and regulations bearing on the conduct of the work. If the Contractor performs any work which is contrary to such laws, ordinances, codes, rules and regulations, it shall make all changes to comply therewith and bear all costs arising therefrom.
- C. The Contractor shall warrant that it and its subcontractors are licensed by the State and as required by local ordinances.

#### 1.13 QUALITY ASSURANCE

- A. All equipment for this installation will be new, less than one year from

the date of manufacture, and without blemish or defect.

- B. The Contractor shall maintain the same project manager and field supervisor throughout the installation, and where practical, maintain the same installers.
- C. The Contractor shall supply and install any incidental equipment needed in order to result in a complete and operable system without claim for additional payment, even if such equipment is not listed in this Specification.
- D. All work related to this Specification shall be completed in a professional manner by fully qualified workers.

#### 1.14 RELIABILITY

##### A. General

- 1. The systems are designed to provide professional quality operation over a period of several years without the need for continual maintenance. Equipment that has a high failure rate is not acceptable for installation as part of these systems.

#### 1.15 WARRANTY

- A. The Contractor shall act as the primary point of responsibility and contact in resolving all audiovisual system defects including those involving Owner Furnished Contractor Installed (OF/CI) equipment.
- B. During the warranty period, within 4 hours of notification, the Contractor shall answer all service calls and requests for information.
- C. During the warranty period, within 24 hours of original notification, the Contractor shall provide emergency service to restore operation of the system, replacing defective materials, repairing faulty workmanship, making temporary repairs, and providing loaner equipment as necessary, all at no charge.
- D. The Contractor shall take such actions at the time of installation to insure that all equipment is installed in accordance with the manufacturer recommended environmental and electrical operating conditions and requirements. After installation, the Contractor shall be responsible for the repair or replacement of said equipment that the Contractor installs which fails due to environmental or electrical conditions, even if not covered by the manufacturer's warranty. The Contractor shall not be held responsible for damages due to changes in environmental conditions, which occur after system acceptance.



- E. Unless otherwise directed, the Contractor shall activate all manufacturer warranties in the Owner's name. The start date of the warranties shall be the date of Substantial Completion.
- F. If the Contractor has modified certain components, the manufacturer warranty may be void. In this case, the Contractor is responsible for providing warranty coverage equal to that of the manufacturer.
- G. Certain subsystems and system components may require installation by authorized representatives in order for the complete manufacturer warranty to apply. If this pertains to any subsystem or component for this project, it is the Contractor's responsibility to make arrangements for the complete manufacturer warranty to apply. These arrangements are to be at no additional cost to the Owner.

## PART 2 - PRODUCTS

### 2.1 SYSTEM DESCRIPTIONS

- COMMONS AREA
- VIDEO WALL
- 20 SEAT CLASSROOM
- GRAD CLASSROOM
- DIGITAL SIGNAGE
- GROUP STUDY
- TRADING ROOM
- AV RACKS

### **Commons Area**

#### GENERAL

- Audiovisual equipment installed in the Commons Area will allow presentation of audio and video media to the seating area. The presenter will have the ability to display a source onto a front projection screen and amplified program and or speech. With wireless LAV and handheld support. The system will be designed for two different types of presentation 1) single presenter from the lectern or roaming. 2) Panel discussion from dais with or without moderator at lectern. Both supported with Assisted listen system.

#### PROJECTION

- There will be one (1) high brightness 3 chip DLP projector with native resolution of 1920 x 1080p pixels fix mounted via pole to the ceiling over the seating area. It will accept a full range of computer generated information as well as video, (US & foreign standards), analog as well as digital formats.

- A Video projector will project a 16:9 video image (161" diagonal) onto a motorized projection screen.

#### PROJECTION SOURCES

- Projection sources are to include a laptop and auxiliary video input by the presenter locations, a dedicated PC to output big data information, Blu-Ray DVD and CATV. The system will be equipped with a camera at the rear of the room available as a source for viewing the presenter on the screen.
- This camera could also be used for future H.264 web streaming or archiving. Video, graphics as well as the audio portion would feed a streaming encoder appliance connected to the school network.
- HD video outputs shall be installed at each column and be routable from the control panel in Tech mode

#### PROGRAM AUDIO

- Ceiling suspended pendant speakers will be mounted at the ceiling above the seating area for speech and program audio.
- For speech amplification the room will utilize wired and wireless microphone technology.
- Tie lines for digital audio connections shall be installed front and rear of house.

#### ASSISTIVE LISTENING

- An assistive listening system will be provided for use by the hearing impaired. It will consist of a wireless transmitter and an inventory of wireless receivers with induction neck loops as well as ear buds as per ADA requirements based on room capacity.

#### REMOTE CONTROL

- There shall be one wired control panel wall mounted in the lectern. It will be programmed to operate typically as follows:
  1. System Power
  2. Source select (computer and auxiliary inputs)
  3. Camera and DVD transport controls
  4. Program Volume
  5. Speech Volume

6. House lights and shades (if applicable)

Note: These are examples only. Actual functionality will be based upon hardware acquired.

## **Video wall**

### LED TILE MATRIX VIDEO WALL

- The content will be selected at the rack touch panel and feed into a multi-image processor capable of creating content with a single image or multiple window images such as big data graphics from PC, ticker, weather, campus event schedule or other feeds. More discussion regarding content and native resolution and budget is required.
- The wall will be comprised of an LED based tile system. The pixel density shall be 1.9mm or less. The viewing area will measure approximately 12' wide X 7' high

## **20 Seat Classroom**

### GENERAL

- Connectivity for connection of laptop, PC or any AV device from a Smart podium (CoSI Standard). Web based videoconferencing

### DISPLAY SYSTEM

- A video projector will project a 16:9 video image (119" diagonal) onto a motorized projection screen.

### AUDIO

- Teaching station microphone for instructor and ceiling microphone for student interaction

### REMOTE CONTROL

- There shall be one wired control panel mounted in the smart podium. It will be programmed to operate typically as follows:

1. System Power

2. Source select (computer and auxiliary inputs)
3. Camera controls
4. Volume up/down/mute

Note: These are examples only. Actual functionality will be based upon hardware acquired.

## **Grad Classroom**

### GENERAL

- Connectivity for connection of laptop, PC or any AV device from a table hatch. Web based videoconferencing

### DISPLAY SYSTEM

- Wall mounted LCD displays, touch interact 86" diagonal, 1080p resolution flat panel

### AUDIO

- Side mounted LCD speakers for interactive system. Ceiling microphone for student interaction

### REMOTE CONTROL

- There shall be one wired control panel at the table. It will be programmed to operate typically as follows:
  1. System Power
  2. Source select (computer and auxiliary inputs)
  3. Camera controls
  4. Volume up/down/mute

Note: These are examples only. Actual functionality will be based upon hardware acquired.

## **Digital signage**

### Display Systems

- Wall mounted 1080p 48" diagonal LCD displays shall be installed at the plan south and east entrances.
- A signage player shall be installed within the video wall AV equipment rack and connected via network connection and available as a switchable source to both the video wall and digital signage display
- Rack mounted touch panel (shared with video wall)

### **Group Study / Mini Lab**

*General:*

Wall mounted flat panel display  
Connectivity of laptop from a table hatch

*Display System:*

LCD Display

*Audio:*

Internal or side mounted display speakers

*Video:*

Laptop HDMI connection at the table

*Remote Control:*

Wireless keyboard and Mouse  
LCD display hand held remote control or front panel buttons

- System Power
- Source Select
- Volume up/down/mute

### **Trading Classroom**

*General:*

Ability to select any source and send it to any display location within the room. Audio will follow the last source selected. Sources shall include HDMI laptop or computer connections at floor box and wall plate locations, Blu-Ray DVD and Cable TV. AV Equipment shall be rack mounted in lockable AV rack located in the classroom.

*Display System:*

(4) Wall mounted flat panel display

(2) Video ceiling mounted video projectors and motorized projection screens

*Audio:*

Flush ceiling mounted ceiling speakers. Wireless hand held and lapel microphone.

*Video:*

Laptop / PC HDMI connection at the floor box and wall plate locations. Blu-Ray DVD. Cable TV (owner furnished)

*Remote Control:*

Wireless dock-able 9" color touch panel

- System Power
- Source select (Laptop / computer and auxiliary inputs)
- Volume up/down/mute

Note: These are examples only. Actual functionality will be based upon hardware acquired.

## **AV racks**

- The AV racks will house AV sources, support and control equipment and a rack mounted remote control panel.

A. Refer to the attached Audiovisual Systems Equipment List for the following:

1. Type and quantity of spaces with audiovisual systems
2. Bullet point description of the audiovisual functions of each space
3. Description and quantities of audiovisual equipment within each space
4. Notes detailing special audiovisual equipment considerations or coordination requirements
5. List of existing Owner furnished equipment

B. Existing Owner Furnished Equipment

1. Contractor shall demount, disassemble, label and pack existing Owner furnished equipment as indicated in the equipment list.
2. Contractor shall survey locations of existing equipment within 30 days of award of bid to confirm existing conditions and provide written

confirmation of any conditions that would impact base scope pricing submitted at time of bid.

3. Contractor shall coordinate the schedule for demounting existing Owner furnished equipment with the Owner and General Contractor to provide complete and working systems per the established project schedule.
4. Contractor shall demount, disassemble, label, and pack existing Owner Furnished Equipment as indicated in the equipment list.
5. Contractor shall coordinate the schedule for demounting existing Owner furnished equipment with the Owner and General Contractor to provide complete and working systems per the established project schedule
6. Contractor shall transport existing Owner Furnished Equipment either to the project site for installation/mounting or to the Contractor's facility to install in equipment racks as necessary.
7. Contractor shall test, rack/mount, terminate and commission all existing Owner Furnished Equipment as part of a complete and working system.
8. Contractor shall provide a list of non-functioning or in need of repair existing Owner furnished equipment with cost for replacement or repair for Owner evaluation.
9. Contractor shall deliver all equipment marked "spare", "Hold as spare" or "possible reuse" on the existing equipment list to the project site for storage in an Owner designated area.

#### C. New Owner Furnished Equipment

1. Contractor shall take receipt of all new Owner Furnished computers and CATV receivers at the project site and install as indicated in Audiovisual drawing package system flow diagrams.

### PART 3 - EXECUTION

#### 3.1 SUBMITTALS

##### A. General

1. The Contractor shall maintain a master set of this entire Specification, including all drawings and addenda, at the site at all times during the installation. Any deviations from the Specification made during the installation shall be marked on this master set. The master set along with all relevant support documentation shall be provided as part of the As Built submittal in the format outlined under Final Documentation.

##### B. Software

1. The Contractor shall secure from the Owner or Owner's Representative, in writing, approval for all control surface layouts, audio DSP device configurations, or other customized software product applications prior to installation.

#### C. Preliminary Control Surfaces Submittal

1. Prior to creation of the preliminary control surface submittal the Contractor shall coordinate a meeting among Contractor, Consultant and Owner to discuss overall programming intent and specific requirements or concerns that the Owners or consultant has related to the control surface look, operation and capabilities.
2. The intent of the preliminary control surfaces submittal is to create a base level collaboration tool whereby the contractor can solicit direction from the Owner and Consultant towards a mutually agreeable design. Based upon the equipment lists and control system functionality provided in the Audiovisual Systems Specification and in combination with the system topology illustrated on the signal flow drawings, the Contractor shall generate preliminary control surface layouts for all pushbutton panels, touch sensitive panels, PC based controllers or other control surfaces. The Contractor should endeavor to make the preliminary layouts as complete as possible. The layouts should illustrate all pushbuttons, labels, bar graphs, timers, video windows, etc. for each control panel and each system page. The Contractor should include suggestions for color schemes and graphics where applicable.
3. It is recommended that control touch panel layouts conform to the InfoComm Dashboard for Controls Design Guide. This design guide is available on the InfoComm website at <http://www.infocomm.org>.
4. The contractor shall receive written response indicating approval to proceed, or changes required to the control surfaces layouts, within 10 working days of receipt of the submittal by the Owner/Consultant.

#### D. Revised Preliminary Control Surfaces Submittal

1. If changes are required to the preliminary control surfaces submittal, the contractor shall generate a revised preliminary control surfaces submittal to include the additions, changes or revisions generated by the preliminary submittal review. The form and quantity of the submittal shall be identical to the preliminary submittal unless otherwise directed. If the revised control surfaces submittal reflects those additions, changes or revisions called for in the preliminary submittal review, the contractor shall receive written approval to proceed within 10 working days of receipt of the submittal by the Owner/Consultant.
2. The Contractor shall respond with the updated control surface submittal capturing all required changes indicated in the



Owner/Consultant response within 10 working days of receipt of the response.

- E. A minimum of two control surface revisions shall be provided.

### 3.2 POST-INTERGRATION ADJUSTMENTS

- A. If so requested by the Owner or Consultant, and within 90 days of system acceptance as outlined in 'System Acceptance', the Contractor shall be prepared to make two visits to the site to make final minor adjustments to the control system code or programming without additional compensation. This could include, but may not be limited to, renaming or changing the size or location of buttons, page flip calls, or adjustments to code to provide a fully functioning system. If engraved control system panels require modification at a cost to the Owner, such cost information must be submitted to the Owner for approval prior to any work being performed.
- B. The Contractor shall be responsible for insuring that any changes to the control system or control surfaces that occur post integration are appended to the Final System Documentation.

### 3.3 SHOP DRAWINGS

- A. The Contractor must receive written approval from the Owner prior to fabricating or installing any materials. Approval will be given based upon shop drawings. The shop drawings shall indicate complete details of work to be performed. The Contractor shall submit electronic copies of shop drawings to the Owner and Consultant for review and approval. Drawings shall include a title block naming the project, Owner and Consultant, and, shall include a drawing title, drawing number, revision number if applicable and date.
- B. The shop drawings listed below are required of the Contractor. Provide electronic files and up to (1) paper set if requested by Owner or Consultant. Submit all Shop Drawings complete as a single submission. Isolated items will not be accepted, except with prior written approval.
  1. System Signal Flow: Complete functional system signal flow of all systems described herein and meeting the functions indicated in the Specification.
  2. Cabling Schedule: A list containing the cable type, cable marker identifier, and origination and destination location and connector types for each cable.

3. Examples representative of the Contractor's final cable marking technique for each cable type.
  4. Loudspeaker Mounting Details: Scaled drawings of complete loudspeaker mounting details, hardware and support surfaces, including details on all load requirements, safety factors, safety cables and structural materials.
  5. Projector Mounting Details: Scaled drawings of complete projector mounting details, hardware and support surfaces, including details on all load requirements, safety factors, and structural materials.
  6. Structural Anchorage: Provide structural calculations, drawings and details for the anchorage of equipment racks, loudspeaker rigging hardware, the projector rail-mount system, and all other mounts or hardware that attach to structure. The design shall be reviewed and approved by a Structural Engineer licensed in the project state.
  7. Optical Systems: Scaled drawings to verify that the proposed projection devices, lenses and related optical systems will provide the desired image size. The Contractor shall be responsible for field verification of the on-site conditions if required.
  8. Panels: Scaled drawings of interconnect panels, control surfaces, and other custom interfaces.
  9. Peripheral Equipment: Scaled drawings of mounting arrangements of any peripheral equipment, which may be included in this Specification.
  10. Equipment Rack Layouts: Fully detailed rack drawings indicating equipment orientation within the equipment rack.
  11. Technical Furniture: Scaled drawings of all technical furniture indicating dimensions, materials, finishes, equipment locations and orientation, cable management accommodations, and all other details necessary to convey the physical and functional aspects of the furniture.
  12. Others, as may be required by the Architect, Consultant or Owner.
  13. Labels / Wire Markers
- C. Except where otherwise indicated, all rack-mounted equipment, switches, controls, and interface panels shall be clearly labeled.
- D. Panels and plates shall be a minimum 1/8" thick anodized aluminum etched and epoxy filled unless otherwise specified.
- E. Rack mounted equipment shall be labeled with engraved and filled plastic laminate. Where appropriate, the function of, or the input, output, or loudspeaker(s), served by each device shall be indicated. Other methods of labeling rack mounted equipment may be accepted pending prior written approval by Owner.
- F. All cables shall be permanently identified at each end by machine printed cable markers and protected by the appropriate size clear

shrink tubing. Every cable shall have a unique tag number identifier for each cable. The Contractor shall include this unique tag number on the As-Built signal flow documentation. Each cable marker shall include, in addition to the unique tag number identifier, the name of the origination and destination equipment termination at each cable end (see example below). Cable markers shall be placed two (2) inches from where the cable exits the strain relief of the connector, but never within a cable bundle.

### 3.4 IDENTIFICATION PANEL

- A. An identification panel shall be installed within the equipment rack including Contractor and Consultant contact information. The panel shall be mounted in the top rack space.

### 3.5 CONTROL SYSTEM REQUIREMENTS

#### A. Control System User Interface

1. All panels are to have the time and date as icons, in the same position on every page.
2. All panels are to have a title, indicating the piece of equipment and/or functionality being controlled.
3. No individual component shall be programmed to function atypically.
4. Devices similar in nature shall be programmed to operate with a common format.
5. Pages for source equipment shall conform to the following guidelines:
  - a. Transport controls should be on the main device page.
  - b. The primary transport controls, <Play>, <Stop> and <Pause> should be larger than the other transport controls.
  - c. Buttons shall include both graphic images and text.
  - d. A button shall be included for a pathway to device specific controls, including menus and advanced device functions.
  - e. A button shall be included for a pathway to recording functionality. This shall include a single-bus control for the recording source.
  - f. Final programming shall include capability to remotely control all functions of the audiovisual system. Individual device controls shall provide full manufacturer's functionality.
  - g. Provide control capability for every function available on every piece of equipment being controlled by the system. Define and provide "macro" commands for the most used functions.
  - h. Provide control panel layouts that are consistent from page to page. Whenever the same button appears on more than one page, it will be in the same position on each page.
  - i. Functions used during a general presentation shall be accessible

with a minimal amount of button presses/page flips.

- j. All power functions, or other destructive commands, activated by the users through the user interface shall be intercepted in the programming. The user shall be provided with the opportunity to cancel out the command prior to any actions being initiated and without disturbing the current operating model.
- k. Where feasible, multi-level access to controls should be implemented. All software shall provide multiple levels of password protection. Initially three levels of security will be established and specific rights to program areas shall be assigned by user:
  - 1) Level 1 shall allow user to operate the system, without a password. Control shall be limited to basic functionality directly affecting the space in which the control is located.
  - 2) Level 2 shall be password protected, and allow user to modify system parameters and features listed in level 1.
  - 3) Level 3 shall be password protected, and allow a technician access to set-up functions, source selection, etc.

#### B. Control System Hardware

- 1. Provide remote control of systems with an integrated master controller, which provides ports for IR/serial, RS-232/422/485, Ethernet, relay closures and input and output control card frames and rack mounted, of all dedicated audiovisual components.
- 2. Provide all required network equipment, including, but not limited to, routers, hubs, gateways, media converters, etc., for integration of the networked AV Control system with the Owner's existing LAN and control system.
- 3. When a choice of control protocols is available for a piece of equipment, the most secure and flexible one shall be used; i.e. RS-232 control, where available, shall be used in place of either infra-red or relay control.
- 4. All equipment utilizing a "toggled" power command are not to be powered on and off from the control system.

#### C. Additional Control System Surfaces

- 1. Port all completed touchpanel interfaces to web browser based control.
- 2. Port all completed touchpanel interfaces to be fully mobile device compatible on Apple iOS or Android™ mobile devices.

### 3.6 INSTALLATION PRACTICES

## A. General

1. All equipment shall be installed in accordance with this Specification, approved shop drawings, and manufacturer's recommendations.
2. All equipment with the exception of portable equipment shall be firmly fastened or attached in place. A safety factor of at least five or a published safe working limit shall be utilized for all brackets, fasteners and attachments. Provide safety retention cables for overhead equipment such as loudspeakers, projectors, etc.
3. In the installation of equipment and cable, consideration shall be given not only to operational efficiency, but also to overall aesthetic factors.
4. The Contractor shall insure that all equipment is installed such that proper cooling and ventilation is insured.
5. All equipment shall be installed in a manner which prevents hum, RF/EMI/EMF interference, and mechanical vibration based noises (e.g. fan mounts, etc.)
6. Projectors, lenses, and mirrors shall be solidly mounted and braced so that there will be no observable movement in the image induced by motor vibration or other mechanical operations.
7. All equipment shall be protected from construction dust and debris until final acceptance of the system.
8. All equipment shall be protected from theft until final acceptance of the system.
9. Any equipment designed for use by end-users in the facilities must be installed with theft deterrence/protection mountings and fasteners. Any tools required to mount/un-mount this equipment must be furnished to the Owner at the date of Owner acceptance.
10. The Contractor shall be obligated to protect completed work and uncompleted work against damage or loss until the Owner has given final acceptance. Should the need arise to repair work or replace items the Contractor shall do so at no cost to the Owner.

## B. Furniture

1. The Contractor shall ensure that equipment or mounting hardware is compatible with and suitable for installation in furniture specified by the Architect, Consultant, or furniture supplier. It shall further be the Contractor's responsibility to ensure that such coordination with the Architect, Consultant, or furniture supplier occurs.
2. The Contractor shall exchange with and follow such shop drawings as to ensure that dimensions and structural supports are adequate for the installation of specified equipment. It is the Contractor's responsibility that the request and delivery of such critical coordination information is satisfactorily executed. In as much as the Contractor has control over the delivery of such information, it shall deliver it as requested by the Architect, Consultant, or furniture

supplier.

### C. Equipment Racks and Equipment Rack Cable Management

1. Racks shall be installed in such a way so as to permit access to all equipment for service.
2. Racks are considered complete components and should be completely assembled and tested at the Contractors facility prior to onsite installation.
3. All equipment in racks shall be fitted with vent panels and/or fans as required to provide ventilation and cooling according to equipment manufacturer's recommendations.
4. Adjacent racks shall be bolted together with appropriate ganging hardware.
5. As a general practice, all power cables, control cables, and high-level cables shall be dressed to the left rear of an equipment rack. Audio and video cables shall be dressed to the right rear of the rack. Audio, video and control cables shall be bundled separately and spaced not less than three (3) inches apart.
6. Internal equipment rack cabling shall be supported by lacing strips, support brackets, or other cable management systems as required to ensure that all cabling is supported in both the vertical and horizontal planes within the rack.
7. With the exception of ganged equipment rack assemblies, cabling routed between equipment racks or pieces of equipment exterior to equipment racks, or extending to the greater facility cabling infrastructure, shall be completely protected, end-to-end, by a raceway, wire-way, or duct appropriately sized for the cable run.
8. Cabling between rolling pieces of equipment not housed in rack cabinets or a rolling equipment rack and any device to which it is connected, shall be protected by a split-loom corrugated tubing wrap or other such flexible cable management system appropriately sized for the cable run.
9. Any controls not to be adjusted by the user and accessible from the front of the equipment rack must be furnished with security panels.

## 3.7 CABLING

### A. Cabling Types

1. Refer to the Audiovisual drawing package for minimum audiovisual low-voltage cabling requirements.
2. Coordinate UTP cable types with Information Technology (IT) requirements and submit UTP cable for approval by Owner and Consultant.

### B. Cable Installation

1. Non-contiguous cable support mechanisms such as hangers, rings, and hooks shall not be spaced farther than four (4) feet apart. All manufactured raceways used for cables shall be installed according to the raceway manufacturer's specifications
2. Cable runs shall be supported with devices designed for this purpose and are to be installed independent of any other structural component.
3. Cables routed vertically up walls, or between floors as vertical riser, shall be supported with clamps or other mechanisms. These supports shall occur at least three times per floor.
4. The Contractor shall maintain, or where not already existing, provide through penetration fire stop systems to prevent the spread of fire through openings made in fire-rated walls or floors to accommodate penetrating items such as conduit, cables or other pathway. Fire stop shall restore floor and wall to the original fire rated integrity and shall be waterproof. The fire stop systems and products shall have been tested in accordance with the procedures of U.L. and material shall be U.L. classified as materials for use in through-penetration fire stops.
5. The fire stop system shall comply with the NEC and with NFPA 101-Life Safety Code (latest edition) and shall be made available for inspection by the local inspection authorities prior to cable system acceptance. The contractor shall be responsible for verifying the fire rating of all walls and floors affected by his work.
6. Cable pulling tension may not exceed manufacturer recommendations. Where cable-pulling lubricant is used, the lubricant must be compatible (non-damaging) with the conduit and cable sleeve materials and must not harden over time to prevent future pulls.
7. Cable stapling of any recognized media type shall not be permitted.
8. Cables shall be dressed in conveniently sized bundles and either laced or banded. Lacing or banding shall not be so tight as to deform cable bundles.
9. Cabling installed with a bend radius less than that recommended by the cabling manufacturer is not acceptable.
10. Cables and bundles terminating at equipment or connector panels shall be supported so as not to put strain on connections or connectors.
11. All cables, with the exception of video or pulse cables, which must be cut to an electrical length, shall be cut to the length dictated by the run. No splices shall be permitted in any pull boxes without prior approval of the Consultant.
12. Cabling for equipment mounted in drawers or on slides shall be provided with a service loop of appropriate length. A cable management support for the service loop shall be provided to prevent the service loop travel from interfering with the operation of the drawer or slide, or snagging on adjacent cabling.

13. Where indicated on the Audiovisual Drawing Set microphone level, line level, loudspeaker level, and video lines shall be run in separate conduits, trough, raceway divider, and cable bundles. Low voltage DC and control may be run along with any signal types other than microphone or line level runs.

#### C. Termination

1. All termination components must meet or exceed all specifications for given media type and application as described in this document and system drawings.
2. Crimp on connectors shall be installed only on the appropriate size cable using the manufacturer recommended crimp tool and die set.
3. Connections to electronic devices providing screw terminals shall be terminated using the appropriate gauge insulated spade or ring crimp terminal connector and crimp tool.
4. All mechanical solder-on connectors shall be attached to cable ends using rosin core solder.
5. Audio signal cable shields shall be protected with the appropriate gauge Teflon or heat-shrinkable tubing. The jacket end of each audio cable shall be fitted with the appropriate gauge heat shrinkable tubing to provide additional protection to the base of the shield or shield foil. This also applies to the inside of mechanical connectors and cables that terminate at partitioned barrier strips.

#### D. AV Over UTP Cabling System

1. In some areas, analog video, audio, and control signals will be transmitted over a dedicated system of unshielded twisted pair (UTP) cabling utilizing specialized electronics. UTP transceivers located in the presentation spaces will connect to similar devices in the equipment racks via a cabling scheme comprised of RJ-45 receptacles, permanently installed cabling, equipment cords, and patch cords and patch panels.
2. Each AV over UTP port receptacle, permanently installed cable, equipment cord, patch cord and patch panel will be of a color or have markings that are non-standard with the voice/data system, and be plainly and permanently labeled (AV ONLY - NOT DATA).
3. To eliminate the problem of skew caused by the varying pair lengths inherent with CAT-5e/6 UTP cabling, a specialized skew-free UTP bulk cable, patch cables, and equipment cords are specified.
4. The Contractor shall test, verify and document the length and wire map of each Permanent Link cable run, each patch panel to transceiver cable segment, and each patch and equipment cord using a Fluke model 620 LAN Cable Meter or equivalent.

### 3.8 GROUNDING



## A. General

1. To avoid system noise, data errors, safety hazards, and equipment damage, all devices and cabling shall be installed using a consistent grounding scheme. All devices shall be grounded and all ground conductors shall follow a star topology. The grounding system topology should be such that each equipment rack and each piece of signal bearing equipment is connected so that there is never more than a single path to ground. This section offers guidelines for grounding and shielding methodology. Grounding and shielding methodology may need to be augmented or modified for certain pieces of equipment or interconnections in order to meet the requirements of other sections of this specification. The Contractor shall be responsible for making necessary alterations in accordance with industry practices and such that the Performance Standards detailed in 'Performance Standards' are met.
2. Under no circumstances shall an AC neutral conductor be used to ground equipment.
3. Refer to the International Communications Industries Association, Inc. (InfoComm International) Basics of Audio and Visual Systems Design handbook, Section 10, Technical Power and Grounding Systems for additional guidelines.

## B. Interconnection

1. All connectors used on system I/O panels shall be electrically isolated from the panel and provide a pass through (uninterrupted) ground connection.
2. Microphone cable shields shall be connected to the microphone frame and grounded only at the preamplifier input connector.
3. All audio interconnections with cable lengths greater than 10 feet shall use balanced (symmetrical) signaling.
4. All audio signal cable shields shall be grounded only at the input connection of each device. Signal cable shields, both connected to devices and floating, shall be protected by the appropriate gauge heat shrinkable tubing. Shields at the output connector shall be folded back over the cable jacket and covered with heat-shrinkable tubing. Do not cut off unused shields.
5. Coaxial video and RF shields shall be connected at both ends.

## C. Pull Strings

1. A nylon pull string shall be left in every conduit. In the event additional cables are pulled in after the initial cable pull, a nylon pull string shall be pulled with the added cable.

### 3.9 PERFORMANCE STANDARDS

## A. Audio

### 1. Polarity

- a. Absolute signal polarity will be maintained throughout the signal chain such that a positive signal at the input produces a corresponding positive excursion at the loudspeakers.

### 2. Electronics

- a. The audio system electronics shall deliver the following minimum performance standards as measured from all source inputs for microphones, audio tape machines, video tape machines, etc., through all mixers, audio distribution amplifiers, routers, etc., to all audio signal destinations.

- 1) Frequency Response:  $\pm 0.5$ dB, 20-20,000 Hz.
- 2) Hum and Noise: -70 dBU, 20-20,000 Hz, un-weighted.
- 3) Distortion: 0.1% THD, 20-20,000 Hz

### 3. Speech Signal

- a. The system shall provide a speech signal in the audience seating area that meets or exceeds the following requirements:
  - 1) Frequency response within +/- 3 dB from 500 Hz to 15,000 Hz.
  - 2) Overall SPL variance of +/- 3 dB.
  - 3) Measured Alcons of 10% or lower.
  - 4) Maximum average SPL of 85 dB (flat), with 10 dB of undistorted headroom available.

### 4. Music Signal

- a. The system shall provide a music signal in the audience seating area that meets or exceeds the following requirements:
  - 1) Frequency response within +/- 3 dB from 200 Hz to 17,000 Hz.
  - 2) Overall SPL variance of +/- 3 dB.
  - 3) Maximum average SPL of 90 dB (flat), with 10 dB of undistorted headroom available.

## B. Optical

1. All video projection systems shall meet the following performance standards:
  - a. The total averaged light output from a video projector, in ANSI lumens, shall be tested by the Contractor and certified to be within  $\pm 15\%$  of that specified by the projector manufacturer.

### 3.10 SYSTEM SETUP AND TUNING

#### A. Optimization

1. The Contractor shall install, configure, adjust, program, and calibrate all components in order to optimize the performance of all individual subsystems and the system as a whole.

### 3.11 PRELIMINARY TESTS AND SUBMITTALS

#### A. General

1. Once the system is installed, the Contractor shall complete the following preliminary tests and prepare a written test report for the Consultant. The test report will list the results of each of the tests described in this section and certify that the installation is complete

#### B. Audio

1. Prior to the termination of audio amplifiers to speakers, the Contractor shall measure the resistance of the speaker line with reference to ground to determine that no short circuits or paths to ground exist in the line. The Contractor shall connect the speaker to the cable and measure the impedance of each speaker line using a 1,000Hz signal applied to the line. The Contractor shall submit a list to the Consultant, by cable number, of the impedance of each speaker line. This test shall be performed with the amplifier disconnected from the speaker line and the speaker connected to the speaker line.
2. Verify all loudspeakers are working.
3. Verify that all microphones are working and operational with no perceived feedback from loudspeaker system.
4. Verify that the system meets all Performance Standards as outlined in 'Performance Standards'.
5. Verify that all equipment, panels, and cables are labeled correctly.
6. Verify each item of equipment is functioning as intended.
7. Verify the installation is the same as specified.

#### C. Video

1. To establish that the facility cabling and terminations meet industry standard specifications, a video test signal shall be applied to each input cable and passed through the system switching and distribution networks with the results measured at each system output.
2. In addition, the Contractor shall:
  - a. Verify each item of equipment is functioning as intended.
  - b. Verify the installation is the same as specified.

#### D. Computer Video Display Devices

1. The Contractor shall use a computer-video test generator to establish that computer video capable displays such as flat panel, and projection devices are in good working order and optimally adjusted. The computer-video test generator shall be capable of outputting test signals on HDMI, DVI-I, DisplayPort, 5 BNC connectors, 9-pin TTL connector, 15-pin HD VGA connector, or 15-pin D Macintosh connector. The computer-video test generator shall offer the following test patterns:
  - a. Test Patterns
    - 1) Dots 12x16, Alternating pixels
    - 2) Vertical/Horizontal Crosshair
    - 3) Crosshatch 12x16
    - 4) Crosshatch 24x32
    - 5) Flat Field
    - 6) Checkerboard 100% (IRE) White
    - 7) Checkerboard 56% (IRE) White
    - 8) Checkerboard 14% (IRE) White
    - 9) 8 Level Split Gray Scale
    - 10) 8 Vertical Color Bar
    - 11) 16 Color Bar
    - 12) SMPTE and PLUGE Color Bar

#### E. Control

1. Upon completion of installation, the Contractor shall test each function of each control station, push-button panel, touch screen panel, computer control interface, and all components connected to or interfaced to the Control System to verify proper operation and that each switch and indicator operates as intended.

### 3.12 FINAL TESTS

- A. Upon approval of the Contractor's test report, and at a time that is mutually acceptable to the Contractor Owner and Consultant, the Contractor shall assist the Consultant in final system tests and adjustments. The Contractor's representatives assisting in the performance of these tests shall be thoroughly familiar with the details of the system and shall include the field supervisor responsible for installing the system.
- B. To demonstrate the good working order of all playback devices in the system the Contractor shall make available high quality source materials for all audio and video media types represented in the system. To demonstrate the good working order of all computer-video displays the Contractor shall make available the computer-video signal generator described in 'Performance Standards - Preliminary Tests and Submittals - Computer Video Display Devices'. In addition, the Contractor shall make available a computer graphics signal generator or portable computer with the ability to output all video formats natively supported by the Audiovisual system specified. The portable computer shall be capable of displaying spreadsheets, graphs, charts, pictures and text of varying sizes and fonts to effectively demonstrate the systems computer display imaging capabilities.
- C. The Contractor shall:
  1. Load source material into all input sources and the laptop computer.
  2. Switch randomly between all sources and demonstrate that all functions of the control system are working properly and tracking correctly.
  3. Demonstrate that the displays have been optimized for all sources.
  4. Demonstrate that the system meets the criteria as outlined in 'Performance Standards'.

### 3.13 FINAL DOCUMENTATION

- A. Upon completion of the work, the Contractor shall condense the master set along with any shop drawings into a single As Built

document set. Any markings or deviations, which cannot be made clear on drawings, shall be accompanied by attached documentation, photos, or written addenda.

- B. All documents and drawings must be submitted electronically in their native AutoCad and PDF format. Further, all PDF drawings must be submitted at their native scale. For example, a PDF created from a drawing whose native format was standard 'E' size (42-inch x 30-inch) shall be created at 42-inch x 30-inch (full size) to insure that there is no loss of resolution should the file be viewed or printed at a later date by the Owner.
- C. Final submission of digital As Built drawings files shall be subject to submission by the Contractor as defined under said agreement.

### 3.14 PRELIMINARY FINAL DOCUMENTATION SUBMITTAL

- A. Prior to Final Tests and project punch-listing, the Contractor shall prepare and submit one (1) copy of the documentation listed below to the Consultant and owner for review. The package shall include all of the documentation listed below and be in the exact form and format intended for delivery to the Owner.
- B. The documentation shall be in electronic format AutoCad and PDF file format copies and organized as follows:
  - 1. A cover and spine listing the Owner, Consultant, and Contractor.
  - 2. A listing of each supplied item with manufacturer, model number and serial number.
  - 3. Operator's manuals for each piece of equipment supplied by the Contractor.
  - 4. A complete set of as-built drawings. The as-built drawings must reflect all changes to the system(s) made after the original bid documentation. The size of the as-built drawings shall be identical to the original drawings provided to Contractor, folded and inserted into the binders in plastic sleeves. Alternative formats may be acceptable upon prior approval by the Consultant and Owner.

### 3.15 FINAL DOCUMENTATION SUBMITTAL

- A. Following successful completion of Final Tests and punch-listing, the Contractor shall prepare and submit to the Consultant and Owner electronic copies of the documentation listed under the Preliminary Final Documentation Submittal. The Final Documentation Submittal will include any and all adjustments or changes identified during the Preliminary Final Documentation Submittal review.

- B. The documentation shall contain PDF file-format copies for items 1 through 4 in Section A above and include detailed digital photographs showing the front views of all equipment racks. The photographs shall accurately reflect equipment front-panel settings at the time of project sign-off. All photographs must be properly exposed and focused, clearly showing the final settings for every device's push buttons, rotary controls, slider controls, or indicators. Subject areas must be free from glare as a result of flashes or other ambient lighting. Subject areas shall fill the image frame in a suitable manner. For large equipment racks, multiple exposures may be required, each indicating a separate portion of the rack. NOTE: All digital images shall be comprised of at least 1600 x 1200 viewable pixels, 24-bit color depth, JPEG file format.

### 3.16 SOFTWARE

- A. Where custom software is developed as part of this project, the system source code and any associated related files, referenced files, and development software (and all relevant documentation and license) used to compile, develop, and build, etc. the executable code must be provided to the Owner only. The source code should be well documented in accordance with industry software engineering practices.
- B. The software developer shall retain intellectual property rights; the Owner shall have a license for perpetuity for use as it applies solely to this project, including the right to modify/enhance. The software code may not be sold or used, in part or in whole, in any other project or application other than that intended by this specification, in part or in whole, by the Owner or any other party.
- C. If a Subcontractor is used to write the software, the Contractor shall include, as part of the Final Documentation submittal, a signed letter on Subcontractor letterhead, granting the Owner ownership, use, and modification rights of the code and documentation as defined herein. The software shall be provided to the Owner as part of the Final Document Submittal.
- D. Copies of all manufacturer software required to program, compile, load and adjust audiovisual hardware settings or programming shall be provided.
- E. Copies of the current firmware and/or hotfix versions for all equipment with programmable firmware.

### 3.17 DELIVERY AND APPROVAL

- A. Unless otherwise arranged, The Contractor shall prepare and submit one complete set of the Final Documentation to the Consultant for review at the time of Final Tests. The package shall include all of the documentation listed above and be in the exact form and format intended for delivery to the Owner.
- B. If the Final Documentation submittal is determined by the Consultant to be complete and accurate, the Consultant will approve the submittal and forward the Final Documentation package to the Owner.
- C. If the Final Documentation submittal is determined by the Consultant and/or Owner to not be complete and/or accurate, the Consultant will return the package to the Contractor with a written listing of the required modifications. Upon completion of all of the required modifications, the Contractor shall resubmit the Final Documentation to the Consultant and Owner for approval. The Final Documentation submittal shall not be considered to be complete until all required modifications have been made and approved by the Consultant and Owner .

### 3.18 TRAINING

- A. The Contractor shall provide a minimum of 24 hours of on-site training for (but not limited to) the Owner's staff at a time that is mutually agreeable for the Owner and Contractor.
- B. The Contractor shall provide an additional minimum of 16 hours of digital signage system initial template layouts, training and configuration.
- C. Contractor shall provide (1) additional day for system walk thus etc at the request of the Owner and/or Consultant.
- D. The Owner may choose to have the sessions spread out over a period of time and vary the staff being trained and the level of training. Final acceptance and/or final payment for the system shall not be delayed due to scheduling delays beyond the control of the Contractor. Contractor, should also be available for requested additional training.
- E. As part of user training Contractor shall provide single page laminated room use cards for all rooms and tailored to each specific room type. Room card shall include:
- F. Simple instructions for basic user functions (system on, off, media, making VTC & ATC calls).



- G. Help desk contact information.
- H. Room type capabilities (presentation, VTC, ATC, etc.)
- I. Electronic version of the room use cards shall be provided to the Owner prior to move-in to allow for Owner formatting and review.
- J. Onsite Support Staff
- K. The staff member provided shall be familiar with the installation and operation of the system specified and shall have been onsite with the installation team at least two weeks prior to Owner move-in.

### 3.19 SYSTEM ACCEPTANCE

1. Upon successful completion of Final Tests, Documentation and Training, the AV Contractor shall notify the General Contractor, in writing, that the System is complete.
2. The General Contractor will notify the Consultant the AV System is complete and ready for inspection.
3. The Consultant will generate a punch list of omissions, adjustments and corrections within fifteen (15) business days of notification of system completion and will respond, in writing, to the General Contractor.
4. The AV Contractor shall address all punch list items and notify the General Contractor of completion of all punch list items within five (5) business days. The General Contractor will provide a final notification, in writing, to the Consultant.
5. The Consultant will confirm, in writing, that the work has been completed in accordance with the requirements of the contract documents.
6. Training, reference section 3.18, shall occur within ten (10) days of acceptance of the final notification by the Consultant.
7. The Warranty shall commence on the day after Training is complete.

END OF SECTION

AUDIOVISUAL DRAWING INDEX			ISSUE DATE		
NO.	DRAWING NO.	DRAWING NAME	ISSUE FOR CONSTRUCTION - 01/24/2020		
1	TA000.00	AUDIOVISUAL DRAWING INDEX	X		
2	TA001.00	AUDIOVISUAL GENERAL NOTES AND INFORMATION	X		
3	TA200.00	OVERALL FACILITY PLAN - FIRST FLOOR	X		
4	TA300.00	OVERALL RCP - FIRST FLOOR	X		
5	TA400.00	OVERALL ELECTRICAL PLAN - FIRST FLOOR	X		
6	TA500.00	OVERALL ELECTRICAL RCP - FIRST FLOOR	X		
7	TA600.00	AUDIOVISUAL ENLARGED PLANS	X		
8	TA601.00	AUDIOVISUAL ENLARGED PLANS	X		
9	TA602.00	AUDIOVISUAL ENLARGED PLANS	X		
10	TA603.00	AUDIOVISUAL ENLARGED PLANS	X		
11	TA604.00	AUDIOVISUAL ENLARGED PLANS	X		
12	TA605.00	AUDIOVISUAL ENLARGED PLANS	X		
13	TA606.00	AUDIOVISUAL ENLARGED PLANS	X		
14	TA607.00	AUDIOVISUAL ENLARGED PLANS	X		
15	TA608.00	AUDIOVISUAL ENLARGED PLANS	X		
16	TA609.00	AUDIOVISUAL ENLARGED PLANS	X		
17	TA610.00	AUDIOVISUAL ENLARGED PLANS	X		
18	TA611.00	AUDIOVISUAL ENLARGED PLANS	X		
19	TA612.00	AUDIOVISUAL ENLARGED PLANS	X		
20	TA700.00	AUDIOVISUAL DETAILS	X		
21	TA701.00	AUDIOVISUAL DETAILS	X		
22	TA702.00	AUDIOVISUAL DETAILS	X		
23	TA801.00	AUDIOVISUAL SYSTEM DIAGRAM - COMMON AREA	X		
24	TA802.00	AUDIOVISUAL SYSTEM DIAGRAM - VIDEO WALL	X		
25	TA803.00	AUDIOVISUAL SYSTEM DIAGRAM - RESEARCH CLASSROOM	X		
26	TA804.00	AUDIOVISUAL SYSTEM DIAGRAM - GRP STUDY/MINI LAB	X		
27	TA805.00	AUDIOVISUAL SYSTEM DIAGRAM - TRADING ROOM AV	X		
28	TA806.00	AUDIOVISUAL EQUIPMENT RACK ELEVATIONS	X		

AUDIOVISUAL SYSTEMS SCOPE OF RESPONSIBILITY MATRIX			
ITEM	FURNISHED BY	INSTALLED BY	NOTES
<b>INFRASTRUCTURE</b>			
CONTAINMENT, CONDUIT, JUNCTION BOXES, WIREWAYS AND OTHER ELECTRICAL (CONSTRUCTION RELATED) ROUGH-IN WORK PERTAINING TO THE INSTALLATION OF THE AV SYSTEMS.	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	SEE AV SPECIFICATION AND DRAWINGS FOR REQUIREMENTS
FLOOR BOXES OR POKE-THRU WITH SHARED ACCESS FOR AUDIOVISUAL, TELE/DATA AND POWER SYSTEMS	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	SEE AV SPECIFICATION AND DRAWINGS FOR REQUIREMENTS
IN-WALL BOXES WITH SHARED ACCESS FOR AUDIOVISUAL, TELE/DATA AND POWER SYSTEMS	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	SEE AV SPECIFICATION AND DRAWINGS FOR REQUIREMENTS
ALL AC POWER RECEPTACLES AND RELATED ELECTRICAL REQUIREMENTS	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	SEE AV SPECIFICATION AND DRAWINGS FOR REQUIREMENTS
IT, TEL/DATA INFRASTRUCTURE AS REQUIRED FOR AV SYSTEMS	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	CHANNEL TEST DUE BY ROOM READY DATE
ALL LOW VOLTAGE AUDIOVISUAL CABLING	GENERAL CONTRACTOR	GENERAL CONTRACTOR	CABLE SPEC AND RUN SHEETS TO BE PROVIDED TO AV CONSULTANT PRIOR TO INSTALL
ALL LOW VOLTAGE AUDIOVISUAL TERMINATIONS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
<b>CATV</b>			
CATV LICENSING COSTS, BUILDING RISER AND TAP AT MAIN SERVICE POINT	OWNER/SERVICE PROVIDER	OWNER/SERVICE PROVIDER	OWNER TO INITIATE CATV SURVEY AND COORDINATE DISTRIBUTION REQUIREMENTS WITH STRUCTURED CABLING DESIGNER
CATV COAX DISTRIBUTION FROM MAIN SERVICE POINT MDF, LOCAL IDF AND DISPLAY/CONFERENCE LOCATIONS	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR	REFER TO STRUCTURED CABLING PACKAGE FOR REQUIREMENTS
CATV SPLITTERS, AMPLIFIERS, TERMINATIONS AND SIGNAL LEVEL TESTING	OWNER/SERVICE PROVIDER	OWNER/SERVICE PROVIDER	OWNER TO COORDINATE FINAL INSTALLATION AND TESTING TO CORRESPOND WITH ROOM READY DATES
CATV DIGITAL TUNERS (CABLE BOXES)	OWNER	AV CONTRACTOR	AV CONTRACTOR TO CONFIRM DIGITAL TUNER I/O REQUIREMENTS WITH OWNER
<b>EQUIPMENT</b>			
WALL BLOCKING, UNI-STRUT/KINDORF, THREADED ROD, ETC AS REQUIRED FOR AV DEVICES	GENERAL CONTRACTOR	GENERAL CONTRACTOR	AV CONTRACTOR TO COORDINATE LOCATIONS
HANDLING OF ALL AV EQUIPMENT FROM BUILDING DOCK TO A SECURE LOCATION	AV CONTRACTOR	AV CONTRACTOR	
FRONT PROJECTION SCREENS	AV CONTRACTOR	GENERAL CONTRACTOR	ELECTRICAL CONNECTIONS BY THE GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR. AV CONTRACTOR TO COORDINATE LOCATIONS
PROJECTOR MOUNTS, FLAT PANEL MOUNTS	AV CONTRACTOR	AV CONTRACTOR	ELECTRICAL CONNECTIONS BY THE GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR. AV CONTRACTOR TO COORDINATE LOCATIONS
PROGRAM SPEAKERS	AV CONTRACTOR	AV CONTRACTOR	
CEILING SPEAKERS (WITH BACK BOXES, TRANSFORMERS & GRILLES WHERE APPLICABLE)	AV CONTRACTOR	AV CONTRACTOR	
CEILING AND WALL MOUNTED LCD OR FLAT PANEL DISPLAYS AND CAMERAS	AV CONTRACTOR	AV CONTRACTOR	
CEILING MOUNTED VIDEO PROJECTORS AND LIFTS	AV CONTRACTOR	AV CONTRACTOR	
CONTROL SYSTEM TOUCH SCREENS AND OTHER HARDWARE.	AV CONTRACTOR	AV CONTRACTOR	
PROVISION OF ALL OPE PCS AND SERVERS (AS REQUIRED)	OWNER	AV CONTRACTOR	
LECTERNS AND TEACHERS STATIONS	MILLWORK OR FURNITURE INSTALLER	MILLWORK OR FURNITURE INSTALLER	CUTOUTS TO BE CONFIRMED AND SUPERVISED BY AV CONTRACTOR
MILLWORK COUNTERTOPS, CREDENZAS, CONFERENCE TABLES AND GENERAL WOODWORK	MILLWORK OR FURNITURE INSTALLER	MILLWORK OR FURNITURE INSTALLER	AV CONTRACTOR TO CONFIRM ALL TABLE AND CREDENZA DIMENSIONS AND MODIFICATIONS PER THE MILLWORK OR FURNITURE INSTALLER DRAWINGS.
CONFERENCE TABLE CONNECTIVITY HATCH	MILLWORK OR FURNITURE INSTALLER	MILLWORK OR FURNITURE INSTALLER	AV CONTRACTOR TO PROVIDE CONNECTIVITY HATCH AUDIOVISUAL FACEPLATES
<b>COMMISSIONING, PROGRAMMING AND PROJECT MANAGEMENT</b>			
TESTING, EVALUATION AND INSTALL OF EXISTING EQUIPMENT	OWNER	AV CONTRACTOR	
CONTROL SYSTEM AND AUDIO SYSTEM PROGRAMMING	AV CONTRACTOR	AV CONTRACTOR	AV CONTRACTOR WILL BE REQUIRED TO CONFIRM CODE REVISIONS AND MAKE ADJUSTMENTS TO DSP CODE IN FIELD. SEE SPECIFICATIONS
PROJECT MANAGEMENT, SUPERVISION, TESTING AND COMMISSIONING OF THE AV SYSTEMS	AV CONTRACTOR	AV CONTRACTOR	

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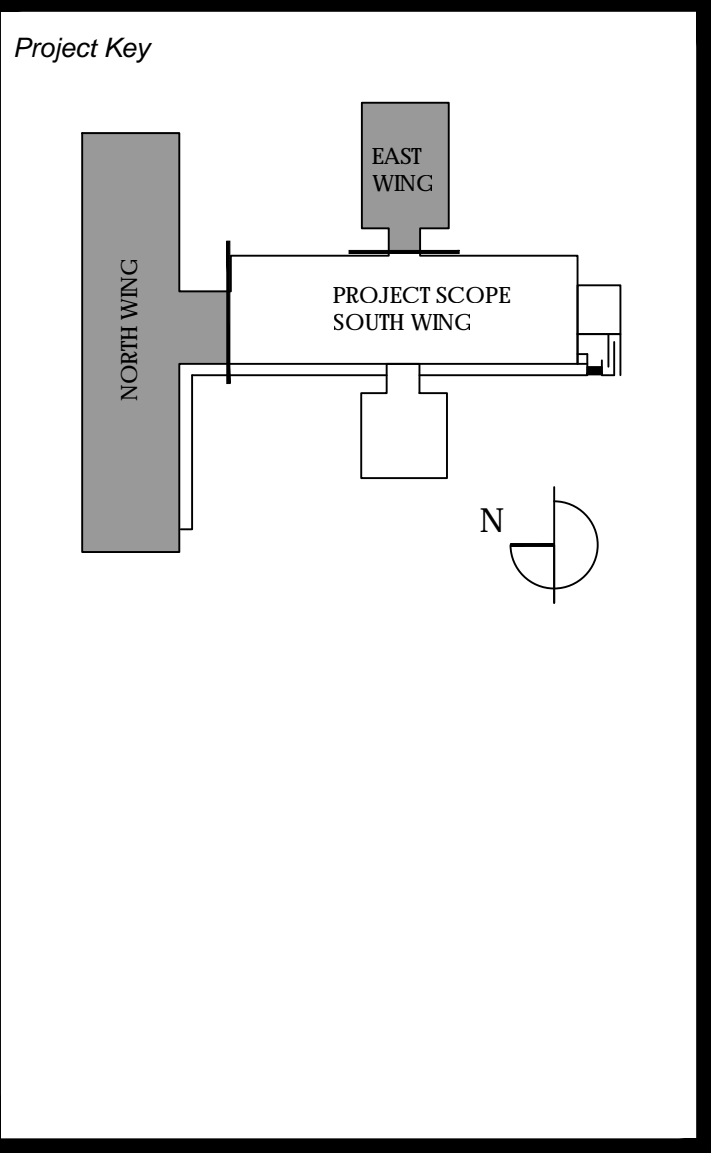
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## AUDIOVISUAL DRAWING INDEX

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 Seal & Signature \_\_\_\_\_ DASNY Project No: **3453509999**  
 Drawing Number  
**TA-000.00**  
 Drawing of \_\_\_\_\_

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 \_\_\_\_\_

CABLE TYPES SCHEDULE				
1. THESE CABLE TYPES ARE CITED TO ILLUSTRATE THE MINIMUM CABLE PERFORMANCE REQUIREMENTS. UNLESS OTHERWISE NOTED, CABLES FROM OTHER MANUFACTURERS (I.E. WEST PENN. COMMSCOPE, LIBERTY CABLE, ETC.) WILL BE CONSIDERED ACCEPTABLE IF DATA SHEETS ARE SUBMITTED PRIOR TO INSTALLATION AND APPROVED BY AV CONSULTANT.				
2. THE USE OF PLENUM RATED CABLING IS REQUIRED FOR ALL AV CABLING RUN OUTSIDE OF METAL CONDUIT.				
3. THE CONTRACTOR SHALL ONLY USE PLUGS AND JACKS SPECIFICALLY MANUFACTURED AND DESIGNED FOR THE CABLE USED. UNLESS OTHERWISE NOTED, THIRD-CONNECTORS FROM MANUFACTURERS OTHER THAN THE CABLE MANUFACTURER, I.E. KINGS, SWITCHCRAFT, AMP, AMPHENOL, LEMO, NEUTRIK, ARE NOT ACCEPTABLE.				
CABLE TYPE	DESCRIPTION	MANUFACTURER	NON-PLENUM MODEL	PLENUM MODEL
<b>AUDIO</b>				
AUDIO (MICROPHONE & LINE LEVEL)	(1) PAIR 22 AWG TWISTED PAIR	BELDEN	9451	9451P
AUDIO (DIGITAL)	(1) PAIR 24 AWG (110 OHM) TWISTED PAIR	BELDEN	1800F	1801B
AUDIO (SPEAKER LEVEL, 70V)	2 CONDUCTOR 18 AWG STRANDED	BELDEN	5300UP	82740
AUDIO (SPEAKER LEVEL, SPEECH)	2 CONDUCTOR 16 AWG STRANDED	BELDEN	5200UP	6200UE
AUDIO (SPEAKER LEVEL, PROGRAM)	2 CONDUCTOR 14 AWG STRANDED	BELDEN	5100UP	6100UE
AUDIO (SPEAKER LEVEL, PERFORMANCE)	2 CONDUCTOR 12 AWG STRANDED	BELDEN	5000UP	6000UE
AUDIO (SPEAKER LEVEL, HIGH WATTAGE)	2 CONDUCTOR 10 AWG STRANDED	BELDEN	5T00UP	6T00UP
<b>VIDEO</b>				
VIDEO (UTP NON-CATEGORY)	(4) PAIR 24 AWG LOW-SKEW TWISTED PAIR	BELDEN	7987R	7987P
<b>VIDEO (UTP CATEGORY)</b>				
VIDEO (ANALOG COMPONENT VIDEO)	RG-59/U 20 AWG 75 OHM COAX	BELDEN	8281	88281
VIDEO (DIGITAL VIDEO)	RG-59/U 20 AWG 75 OHM COAX	BELDEN	1505A	1506A
<b>RF / CATV / ALS / WIRELESS ANT COAX</b>				
RF (HARDLINE)	HARDLINE (75 OHM)	COMMSCOPE	P3-500 SERIES JCAR	
RF (COAX -150)	RG-6/U (75 OHM)	BELDEN	9118	1152A
RF (COAX -250)	RG-11/U (75 OHM)	BELDEN	9064	1153A
RF (COAX TRIAX)	RG-11/U (75 OHM)	BELDEN	1858A	1859A
RF (WIRELESS ANTENNA)	RG-8/U (50 OHM)	BELDEN	9913F7	89913
RF (MICROWAVE ANTENNA, RISER-RATED)	HELIAX (50 OHM)	ANDREW	LD4-50A	-
<b>AV UTP CATEGORY &amp; CONTROL</b>				
CRESNET CONTROL CABLE	(1) PAIR 22 AWG TWISTED PAIR & (1) PAIR 18 AWG	CRESTRON	CRESNET-NP	CRESNET-P
DIGITAL MEDIA 8G ULTRA CABLE 4K	CAT 7A 4-PAIR 22 AWG SOLID BARE COPPER	CRESTRON	DM-CBL-ULTRA-NP	DM-CBL-ULTRA-P
DIGITAL MEDIA 8G CABLE	CAT 5E 4-PAIR 22 AWG SOLID COPPER	CRESTRON	DM-CBL-8G-NP	DM-CBL-8G-P
SHIELDED TWISTED PAIR CABLE	(4) PAIR SHIELDED 24 AWG TWISTED PAIR SOLID BARE COPPER	EXTRON	22-236-03	22-235-03
CONTROL (SERIAL APPLICATIONS)	(2) PAIR 22 AWG TWISTED PAIR	BELDEN	8723	88723
CONTROL (TOUCH/CONTROL SYSTEM APPLICATIONS)	(1) PAIR 22 AWG TWISTED PAIR & (1) PAIR 18 AWG	BELDEN	1502R	1502P
CONTROL (NETWORK)	REFER TO IT PROJECT STANDARDS			
<b>FIBER</b>				
MULTI-MODE (HORIZONTAL)	(2) 62.5um (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	P-002-DS-6F-FSUOR
MULTI-MODE FIBER STRANDS (X4)	(4) 50/125um NOMINAL	CRESTRON	CRESFIBER8G-NP	CRESFIBER8G-P
DUPLEX MULTI-MODE FIBER	(2) 50um	EXTRON	OM4 MM P	
MULTI-MODE (RISER)	(2) 62.5um (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	R-002-DS-6F-FSUSL
SINGLE-MODE (HORIZONTAL)	(2) 250um (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	P-002-DS-8W-FSUYL
SINGLE-MODE (RISER)	(2) 250um (FIBER COUNT MAY CHANGE)	COMMSCOPE	-	R-002-DS-8W-FSUYL
SMPT 304M CAMERA	(4) 20AWG COPPER, (2) 24AWG COPPER, (2) SINGLE-MODE FIBER	MOHAWK	96040	96920

ESTIMATED SIZE HVAC LOADS						
1. THE NORMAL HVAC PROVISIONS FOR THE CONFERENCE ROOMS SHALL BE SUFFICIENT TO HANDLE ANY ADDITIONAL HEAT LOAD PRESENTED BY THE AUDIOVISUAL SYSTEM COMPONENTS WITHIN THE CONFERENCE ROOMS - EXCEPT SPECIFIC AREA AS NOTED IN THE CHART BELOW.						
2. A THERMOSTAT WITHIN EACH CONFERENCE ROOM IS RECOMMENDED TO PROPERLY MAINTAIN ROOM TEMPERATURE.						
3. ROOM TEMPERATURE MUST NOT EXCEED 80 DEGREES FAHRENHEIT DURING CONFERRING TO PREVENT AUTOMATIC SHUTDOWN OF SOME ESSENTIAL EQUIPMENT.						
4. RATING ESTIMATES FOR EQUIPMENT OTHER THAN AUDIO AMPLIFIERS ARE BASED ON THE AV COMPONENTS' PUBLISHED MAXIMUM POWER CONSUMPTION ('PHASE VALUE') AND THE FOLLOWING FORMULA: WATTS X 3.41 X 75% = BTU/HR						
5. RATING ESTIMATES FOR AUDIO AMPLIFIERS ARE BASED ON THE AV COMPONENTS' PUBLISHED BTU/HR AT 1/8TH POWER.						
6. IN THE CASE WHERE AUDIOVISUAL EQUIPMENT CABINETS ARE LOCATED IN CLOSETS, CABINETS, OR FURNITURE, ADEQUATE VENTILATION MUST BE PROVIDED TO ALLOW FRESH AIR EXCHANGE WITHIN THE ENCLOSURE.						
TYPICAL ROOMS	POWER LOAD ESTIMATE (W)			HEAT LOAD ESTIMATE (BTU/hr)		
	ROOM OPEN AIR	ROOM CREDENZA	AV CLOSET	ROOM OPEN AIR	ROOM CREDENZA	AV CLOSET
IDF CLOSET			10,500			36,000
LED VIDEO WALL	7,000			24,000		
RESEARCH CLASSROOM LECTERN		750			2,500	
NON TYPICAL ROOMS	ROOM OPEN AIR	ROOM CREDENZA	AV CLOSET	ROOM OPEN AIR	ROOM CREDENZA	AV CLOSET
TRADING ROOM		925			3,156	

VIDEO TELECONFERENCING LIGHTING GUIDELINES	
<b>A. GENERAL</b>	1. THESE REQUIREMENTS ARE GIVEN SO THAT A LIGHTING SYSTEM WILL BE PROVIDED THAT WILL ENHANCE THE VIDEO TELECONFERENCING SYSTEMS. LIGHTING SYSTEM DESIGN AND SPECIFICATIONS ARE BY OTHERS. THESE REQUIREMENTS SHOULD BE PASSED ON TO THE LIGHTING DESIGNERS.
<b>B. LIGHT SOURCE POSITIONING</b>	1. LIGHT EMANATING FROM THE FIXTURE OR INSTRUMENT SHOULD COME FROM AN ANGLE BETWEEN 45 AND 60 DEGREES VERTICAL. HORIZONTALLY, LIGHT SHOULD ALSO BE CAST FROM AN ANGLE IN ADDITION TO FRONT. THIS WILL ASSURE THAT MINIMUM SHADOWS ARE CREATED IN THE EYE SOCKETS AND UNDER NOSE AND CHIN. 2. THE AMOUNT OF LIGHT FALLING ON THE FACE OF THE SUBJECTS MEASURED VERTICALLY SHOULD BE 50 TO 75 FC (FOOT-CANDLE). THE QUALITY OF LIGHT CAN BE ASSURED BY USING FLUORESCENT LAMPS OF 3000 TO 3200 DEGREES KELVIN WITH A CRI (COLOR RENDERING INDEX) OF 82+. 3. THE USE OF HIGH COLOR TEMPERATURE LAMPS, IN THE ORDER OF 5700 DEG. K OR HIGHER, IS NOT NECESSARY FOR VIDEO CAMERAS. THE STRONG BLUE COMPONENT HAS A DELETERIOUS EFFECT ON SKIN TONES.
<b>C. MONITOR/DISPLAY WALL AND BACK WALL LIGHTING CONSIDERATIONS</b>	1. PROVIDE MINIMAL LIGHTING FOR THE SCREEN OR DISPLAY DEVICE FOR GOOD SCREEN CONTRAST AND IMAGE SHARPNESS. THE WALL WHERE THE DISPLAY DEVICE IS LOCATED SHOULD HAVE AS LITTLE ILLUMINATION AS POSSIBLE. NO REFLECTED GLARE SHOULD APPEAR ON THE SCREEN OR MONITOR TO INHIBIT VIEWING. 2. PROVIDE LIGHTING FOR THE BACK WALL TO A LESSER EXTENT. THE SIDEWALLS ARE TO BALANCE THE BRIGHTNESS WITH THE REST OF THE ROOM. THIS PREVENTS THE CAMERA FROM SETTING ITS IRIS ON THE BACK OR SIDEWALLS THAT MAY BE TOO DARK OR TOO BRIGHT, ALLOWING TOO MUCH OR TOO LITTLE LIGHT INTO THE CAMERA, IN TURN CAUSING THE APPEARANCE OF OVER OR UNDER LIGHTING THE SUBJECT. 3. GENERALLY, THE WALL FINISHES AND FURNITURE SHOULD BE VERY NEUTRAL. THE REFLECTANCE VALUES OF THE SELECTED COLORS AND SURFACES SHOULD BE AROUND 30 TO 40%. LIGHT LEVEL RATIOS FROM THE PARTICIPANT TO THE BACK OF THE ROOM SHOULD BE WITHIN 3:1, WHILE THE SIDEWALLS CAN BE 5:1.
<b>D. RECOMMENDATIONS</b>	1. THE FOLLOWING ARE OUR RECOMMENDED GUIDELINES FOR A GOOD LIGHTING SYSTEM IN THE NEW VIDEO TELECONFERENCE FACILITIES: a. COLOR TEMPERATURE: 3200 K (APPROX) b. LIGHTING LEVEL: 70 FOOT-CANDLES, MEASURED VERTICALLY AT PARTICIPANTS' FACES. c. SOURCES: FLUORESCENT AND INCANDESCENT. 2. THE FOLLOWING ZONES SHOULD HAVE INDEPENDENT CONTROL: a. ROOM PERIMETER. b. SCREEN AREA. c. FRONT/REAR PRESENTER POSITIONS. d. TABLE. 3. ALL EFFORTS SHOULD BE MADE TO AVOID GLARE AND REFLECTIONS. a. AVOID REFLECTION ON MONITOR FACES. b. AVOID REFLECTIVE/GLOSSY/SHINY SURFACES. 4. CONTRAST a. ILLUMINATE SURFACES EVENLY (< 2 TO 1 CONTRAST RATIO). b. AVOID CONTRAST IN MATERIALS / PATTERNS. c. SOFTEN CORNERS WITH LIGHT. d. MAINTAIN A VERY 'LIGHT' REFLECTIVE CAVITY BY SELECTING COLORS AND MATERIALS THAT ARE LIGHT IN COLOR. 5. LIGHTING INSTRUMENTS a. INSTALL DIRECTIONAL FIXTURES THAT PROVIDE A WIDE HORIZONTAL COMPONENT, PREFERABLY RECESSED AND INDIRECT. b. FIXTURES SHOULD HAVE DIMMING BALLASTS AND BIAXIAL FLUORESCENT LAMPS. c. FIXTURES SHOULD FIT IN STANDARD 2' X 4' CEILING TILE BAY. 6. PHOTOMETRICS a. VERTICAL LIGHT LEVELS ON SESSION PARTICIPANTS SHOULD BE A MINIMUM OF 50 TO 70 FOOT-CANDLES, OR 538 LUX AND 753 LUX RESPECTIVELY. b. REFLECTANCE OF THE ROOM FINISHES SHOULD BE APPROXIMATELY 80 FOR THE CEILING, 40 FOR THE WALLS, AND 20 FOR THE FLOOR AND WORK SURFACES. c. FOR OUR PURPOSE, REFLECTANCE REFERS TO THE AMOUNT OF LIGHT THAT IS REFLECTED FROM A COLORED SURFACE, SUCH AS A TEXTURED WALL OR PAINTED SURFACE, TYPICALLY EXPRESSED IN PERCENTAGE.
<b>E. RECOMMEND FINISHES</b>	1. SURFACES VIEWED BY THE CAMERA WILL BE LIGHTED AND MUST BE COLORED TO PRODUCE A PLEASING PICTURE, SUITABLE FOR VIDEO CONFERRING. THIS IS WITH REGARD TO THE VIDEO COMPRESSION PROCESSING AND TO AVOID DISTRACTIONS TO REMOTE SITE CONFERENCE PARTICIPANTS. 2. THERE SHALL NOT BE EXCESSIVE CONTRAST BETWEEN WALL AND FURNITURE COLORS. BLUE/GRAY MATTE COLORS ARE RECOMMENDED. BUSY PATTERNS, WEAVES AND WOOD-GRAINS SHALL BE NOT BE USED. REFLECTIVE HARDWARE, SUCH AS CHROME CHAIRS, DOOR HARDWARE OR WALL PLATES, SHALL NOT BE USED. THE TABLETOP SHALL HAVE A NON-REFLECTIVE, NEUTRAL COLORED FINISH. PAINTINGS WITH GLASS COVERS SHOULD BE AVOIDED. WINDOWS SHALL BE TREATED WITH APPROPRIATE LIGHT BLOCKING DRAPERY SYSTEMS.

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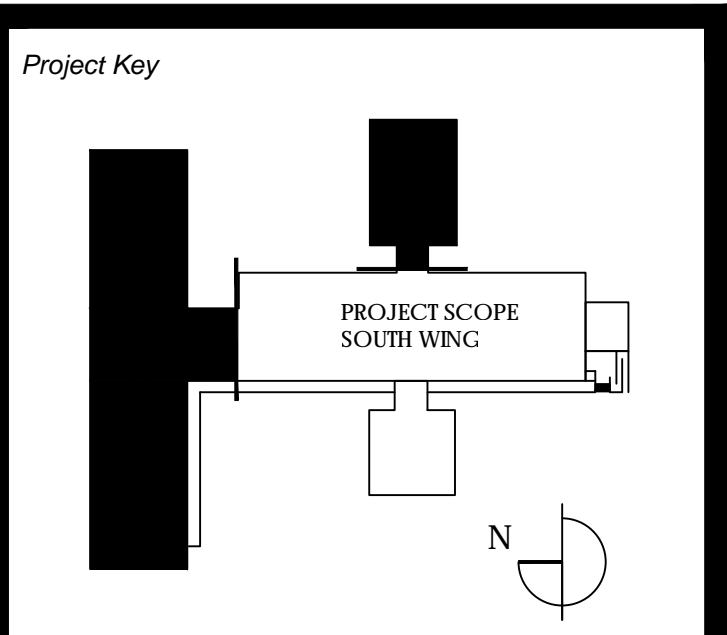
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**AUDIOVISUAL GENERAL NOTES AND INFORMATION**

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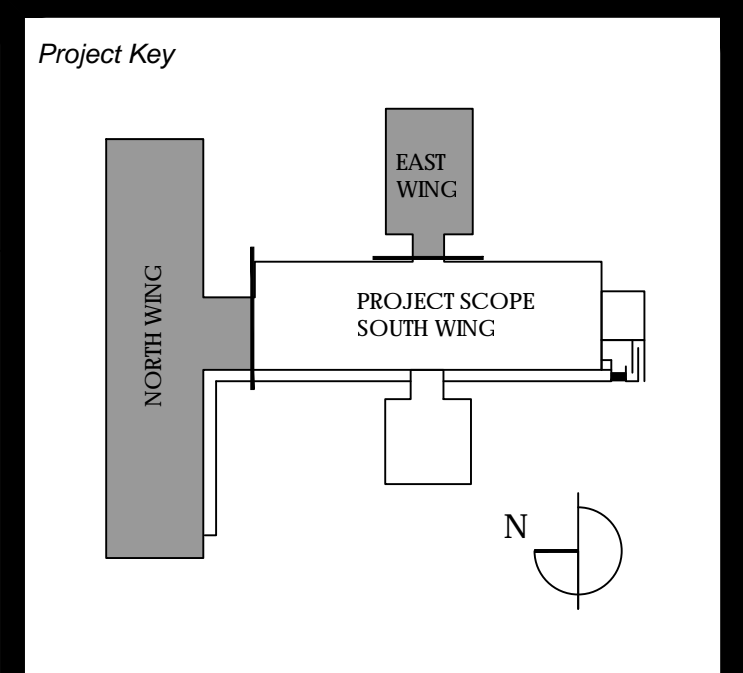
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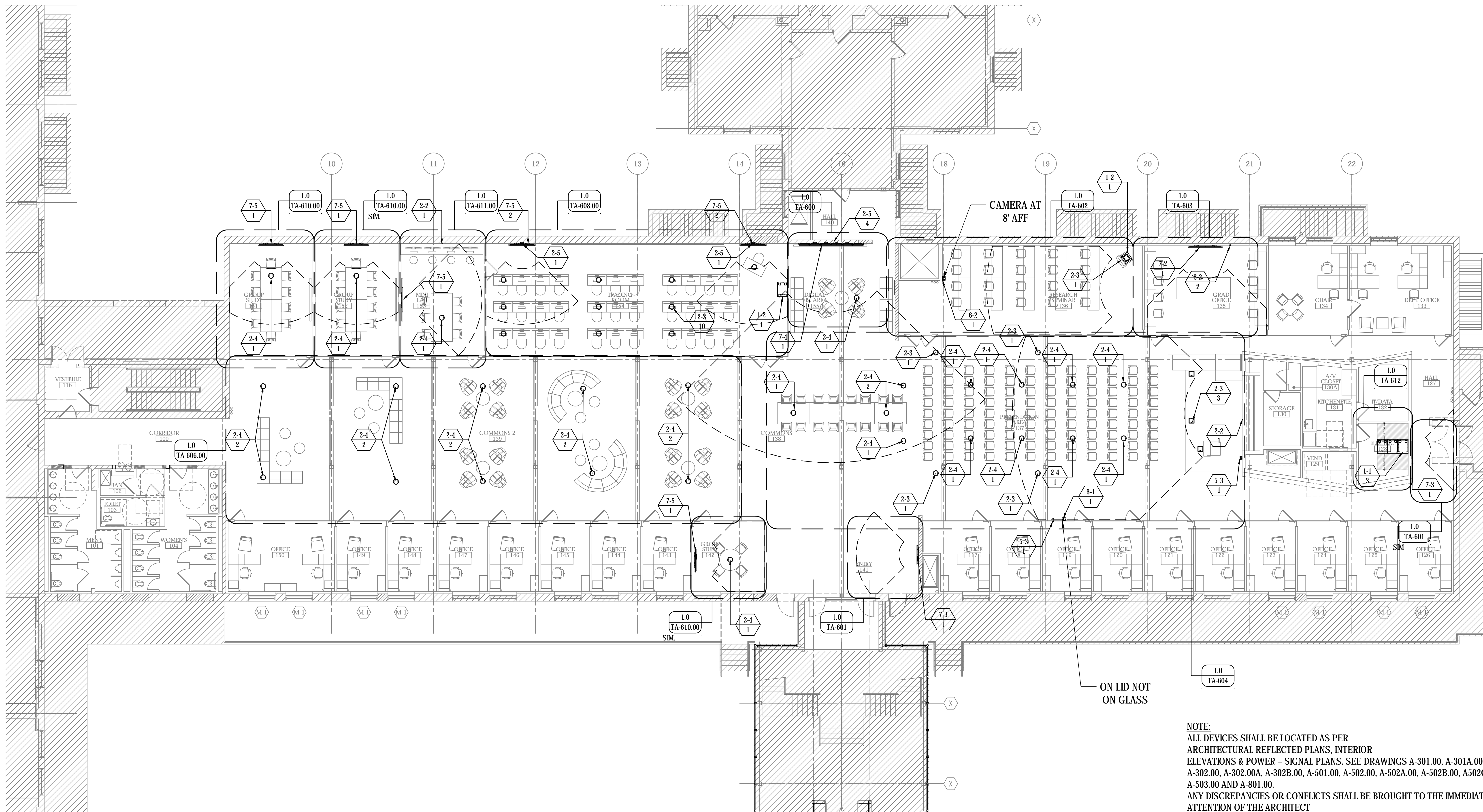
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**AUDIOVISUAL PLAN - FIRST FLOOR**

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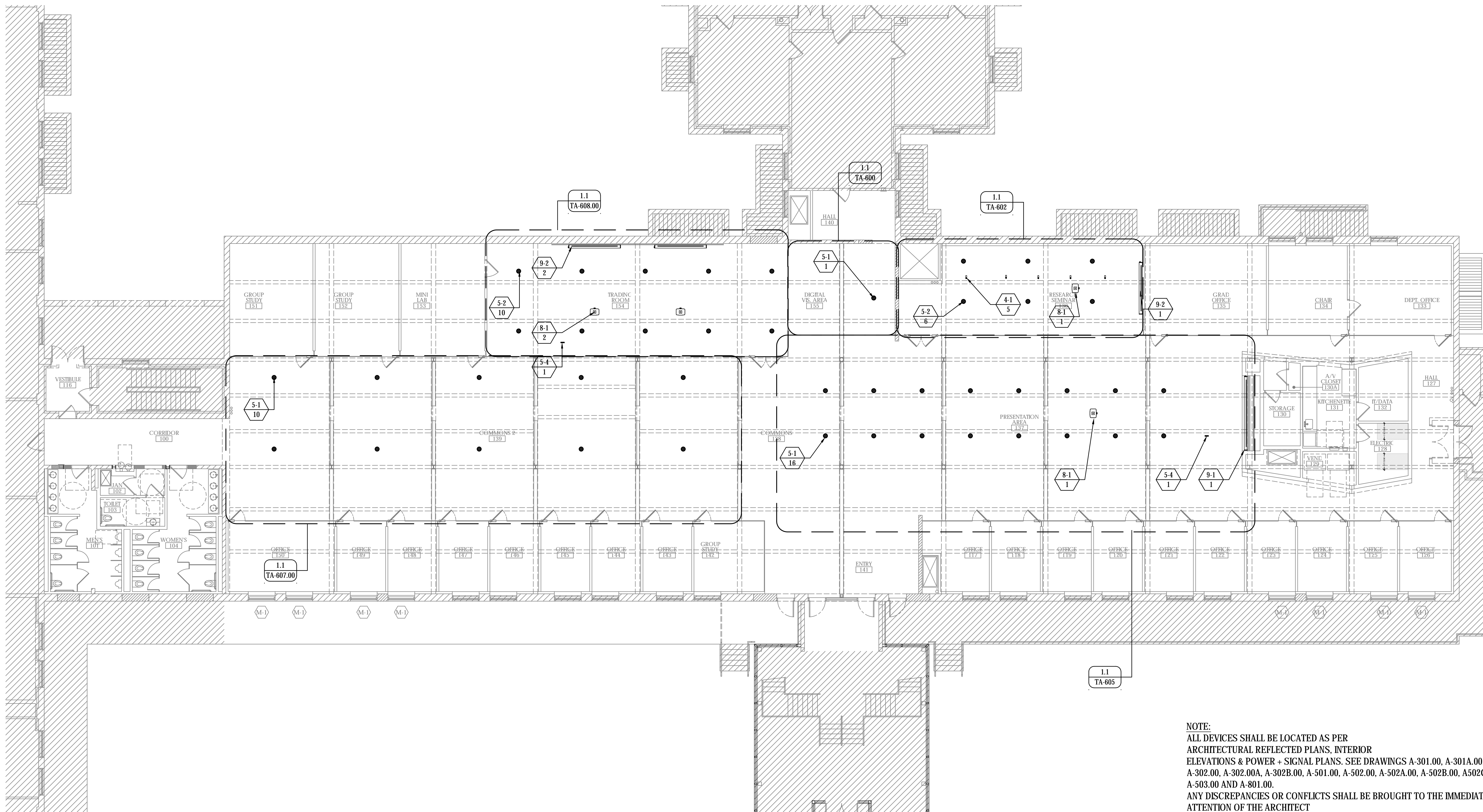
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NOTE:  
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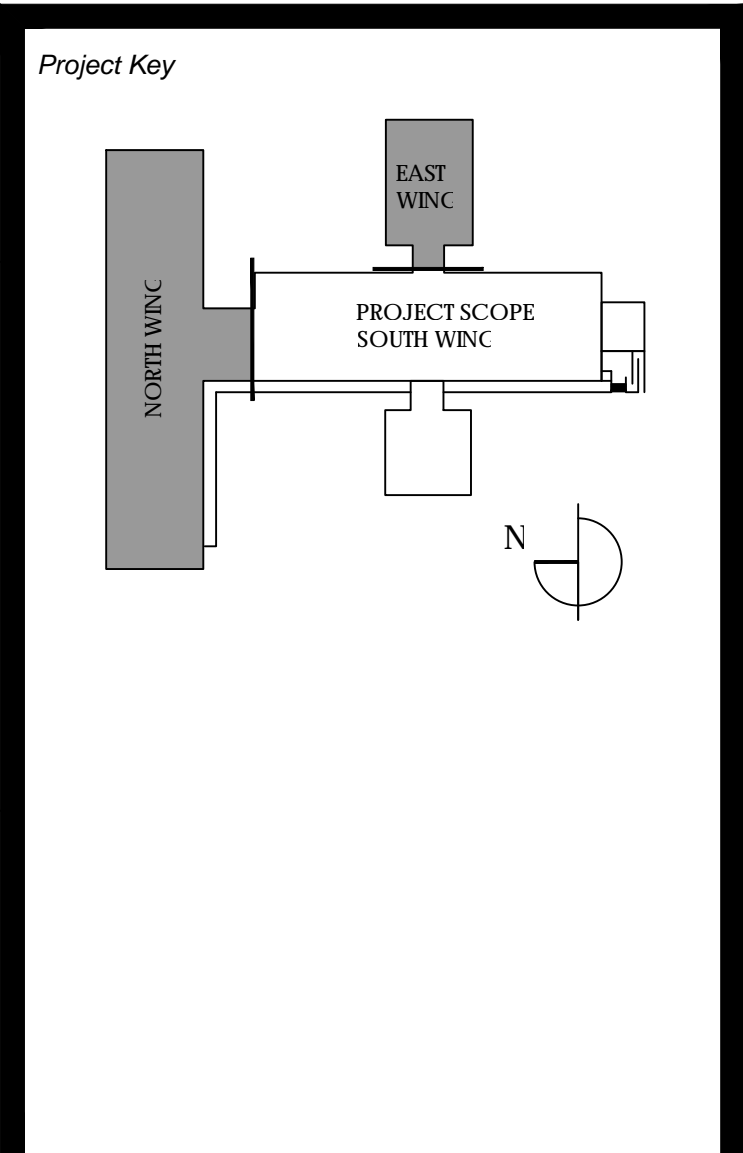
TA - ELECTRICAL SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CRENDENZA RACK		<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT 6-2 WALL MOUNTED CAMERA
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX		<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE		<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR: POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSISTIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA		<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (119" DIAGONAL; 16:9 ASPECT RATIO)

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THE CITY UNIVERSITY OF NEW YORK  
2020 Center for Big Data Analytic  
2800 B Victory Blvd  
Staten Island, NY 10314

Phase  
90% CONSTRUCTION DOCUMENTS

**AUDIOVISUAL RCP - FIRST FLOOR**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

Seal & Signature \_\_\_\_\_ DASNY Project No: **3453509999**  
Drawing Number  
**TA-300.00**  
Drawing of \_\_\_\_\_

NYC DOB EMPLOYEE STAMP/SIGNATURE:  
  
NYC DOB BSCAN:

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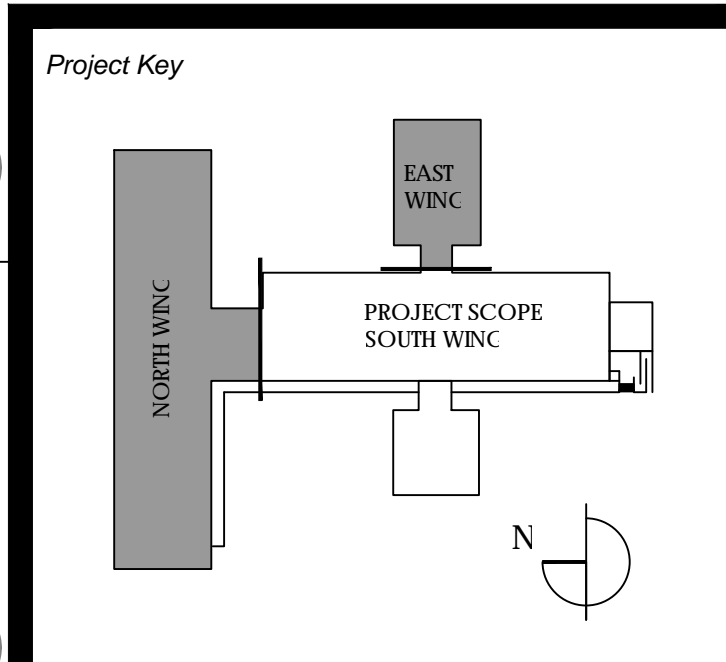
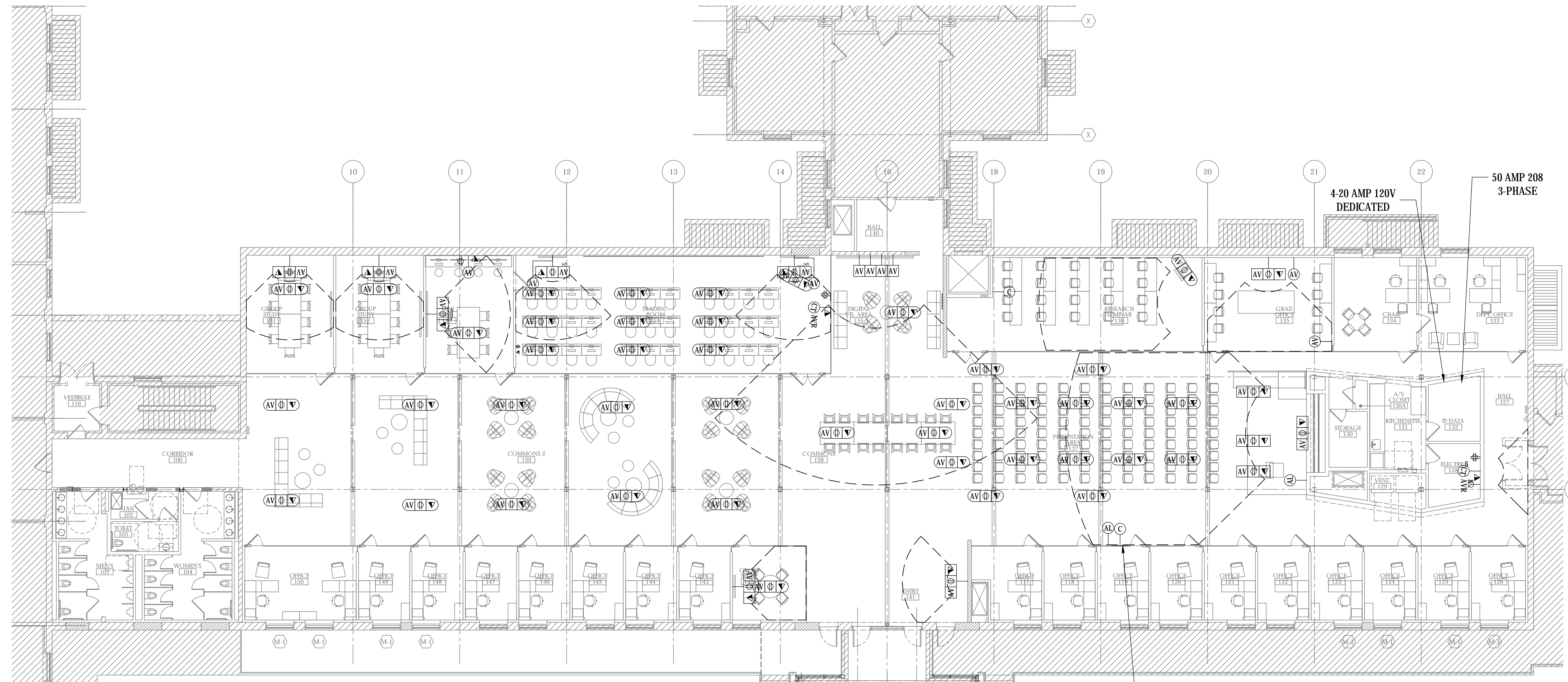
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REVISIONS		
Description	Date	
ISSUE FOR CONSTRUCTION	01/24/2020	

TA - ELECTRICAL SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>			
AV Φ ∇	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.	CS	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
AV Φ ∇	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.	M	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
<b>WALL MOUNTED</b>			
AV Φ ∇	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.	AV #	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
# C	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.	Ⓢ	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
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# AL	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR ASSISTIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.	M #	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
Ⓢ	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.	AV #	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
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		PS	PENDANT SPEAKER

ON LIP NOT ON GLASS

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**AUDIOVISUAL ELECTRICAL PLAN - FIRST FLOOR**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

Seal & Signature: \_\_\_\_\_ DASNY Project No: **3453509999**  
Drawing Number: **TA-400.00**

Drawing of \_\_\_\_\_

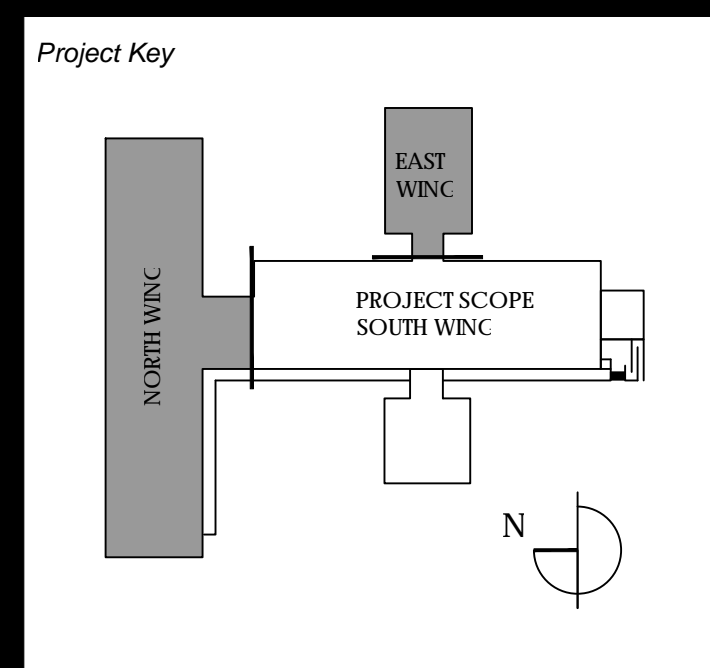
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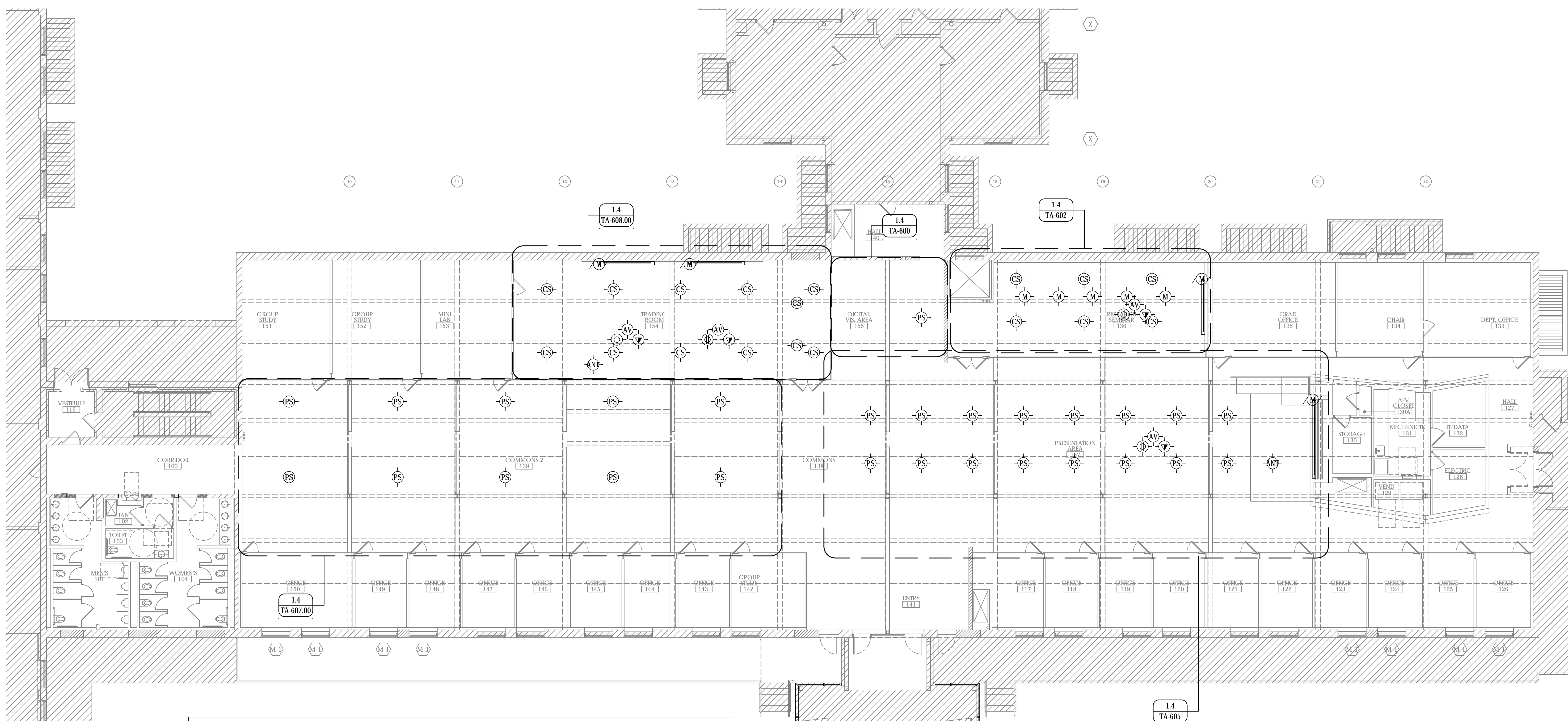
Phase  
90% CONSTRUCTION DOCUMENTS

**AUDIOVISUAL  
ELECTRICAL RCP -  
FIRST FLOOR**

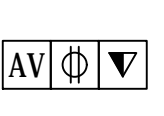
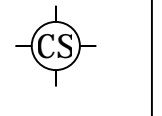
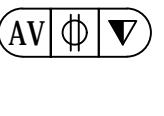

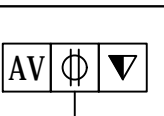
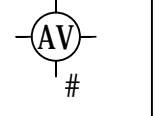
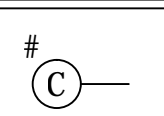
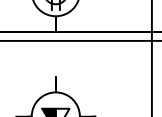
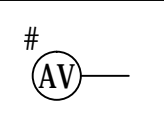
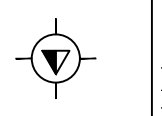
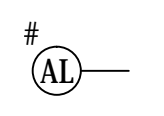
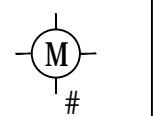

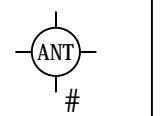

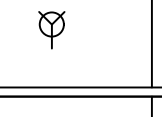
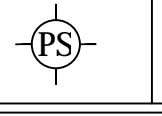
Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

Seal & Signature: \_\_\_\_\_ DASNY Project No: **3453509999**  
Drawing Number

**TA-500.00**  
Drawing of \_\_\_\_\_



**TA - ELECTRICAL SYMBOLS LEGEND**

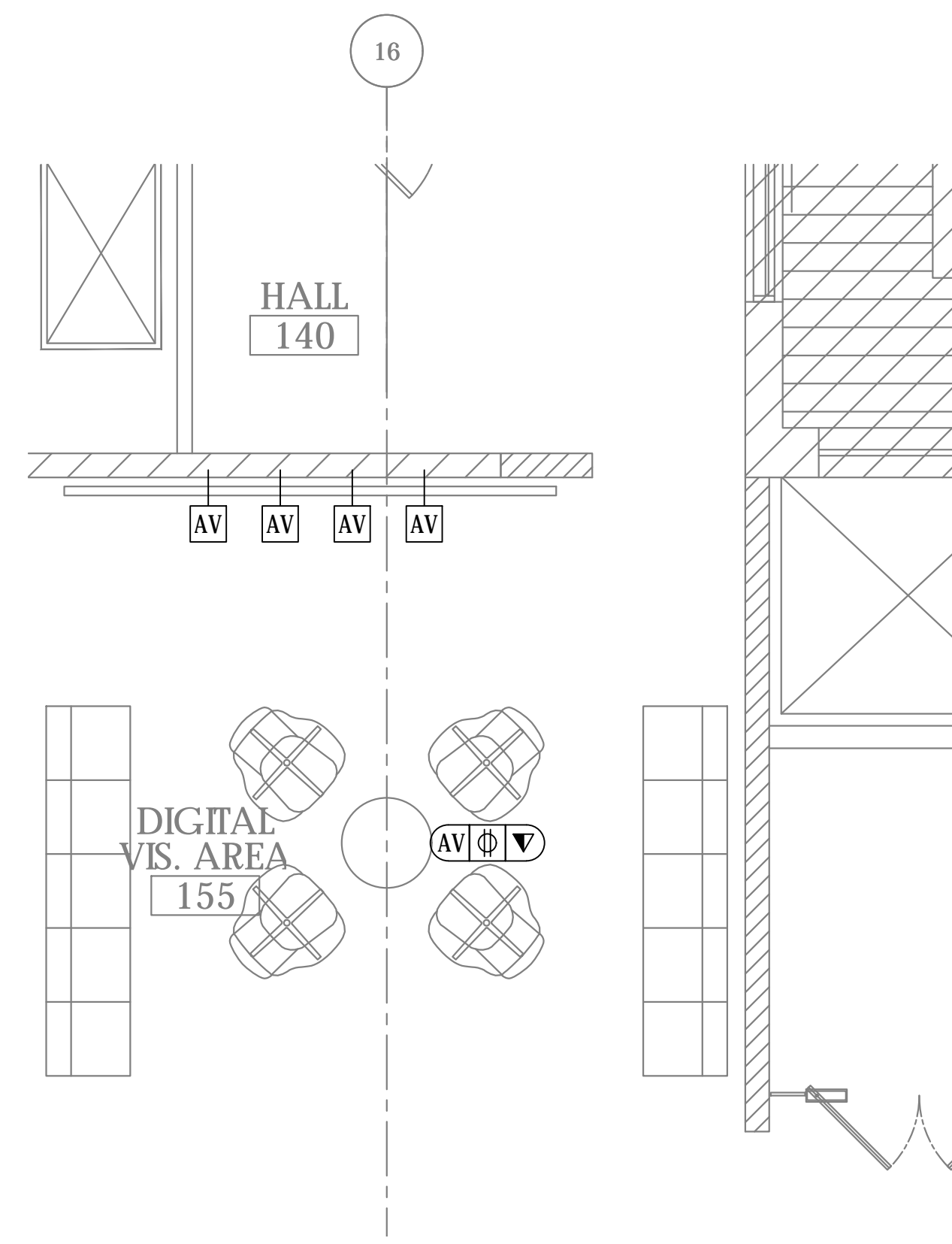
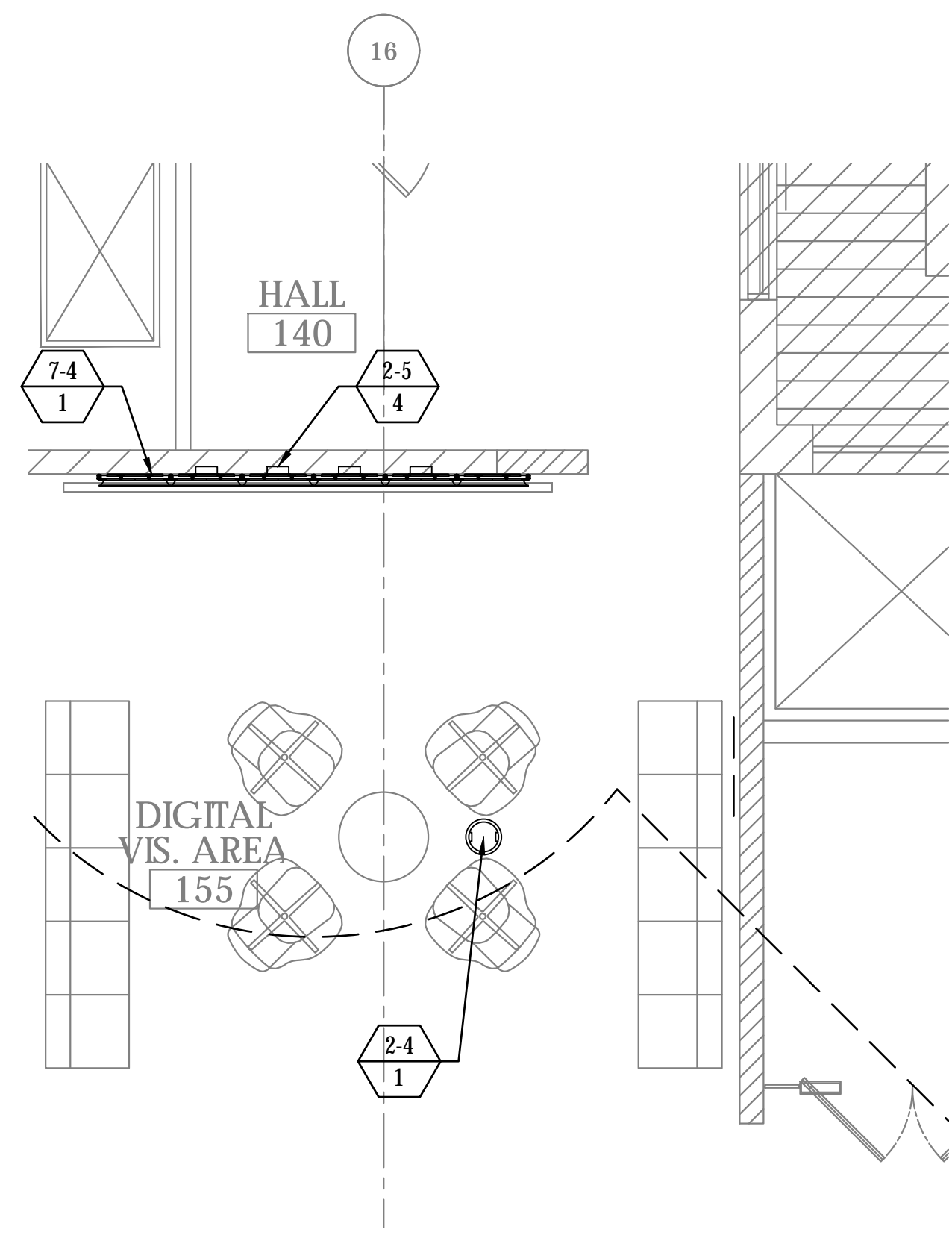
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<b>SLAB MOUNTED</b>			
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			PENDANT SPEAKER

**1.0 OVERALL ELECTRICAL REFLECTED CEILING PLAN  
LEVEL/FLOOR**

1/8"=1'-0"

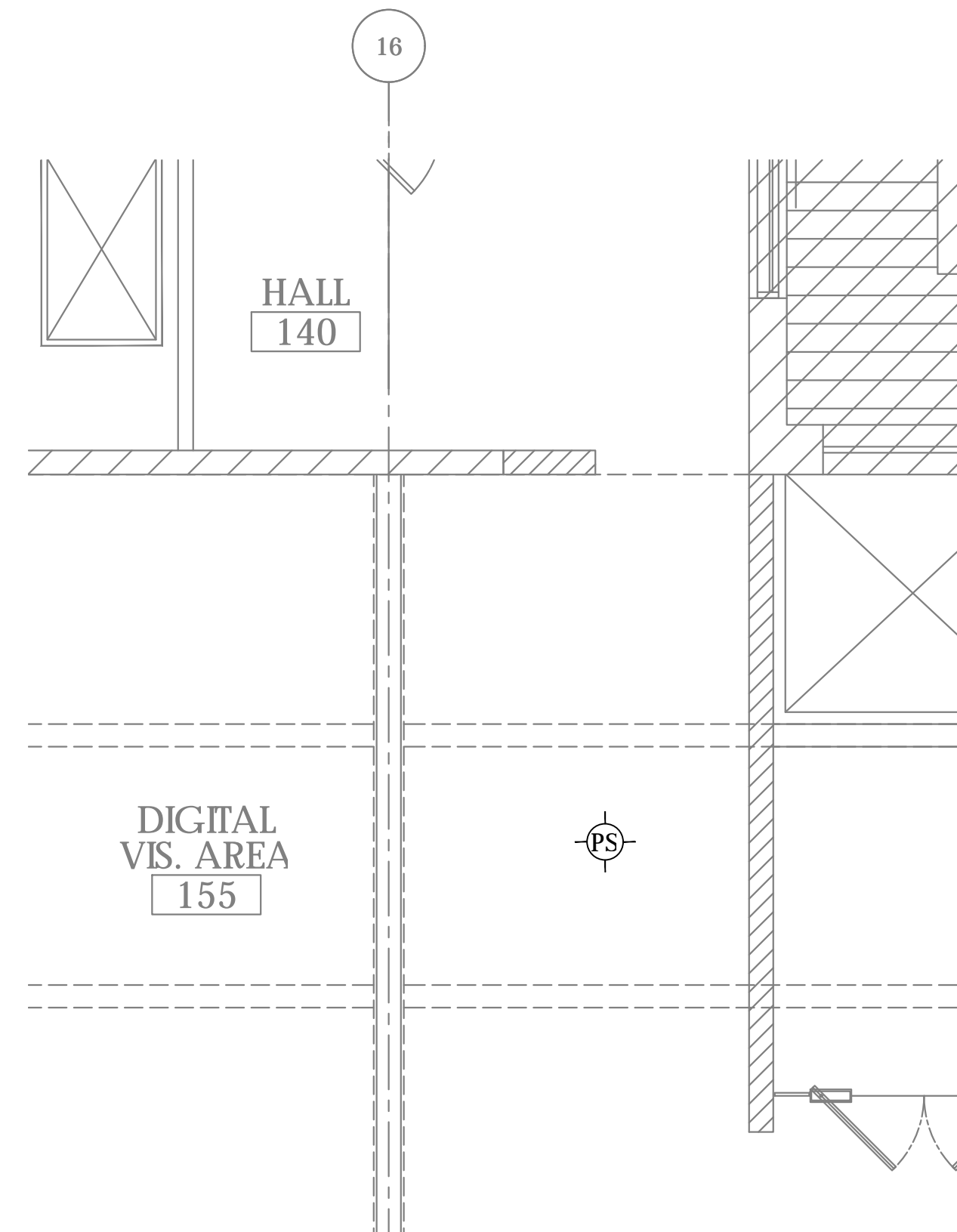
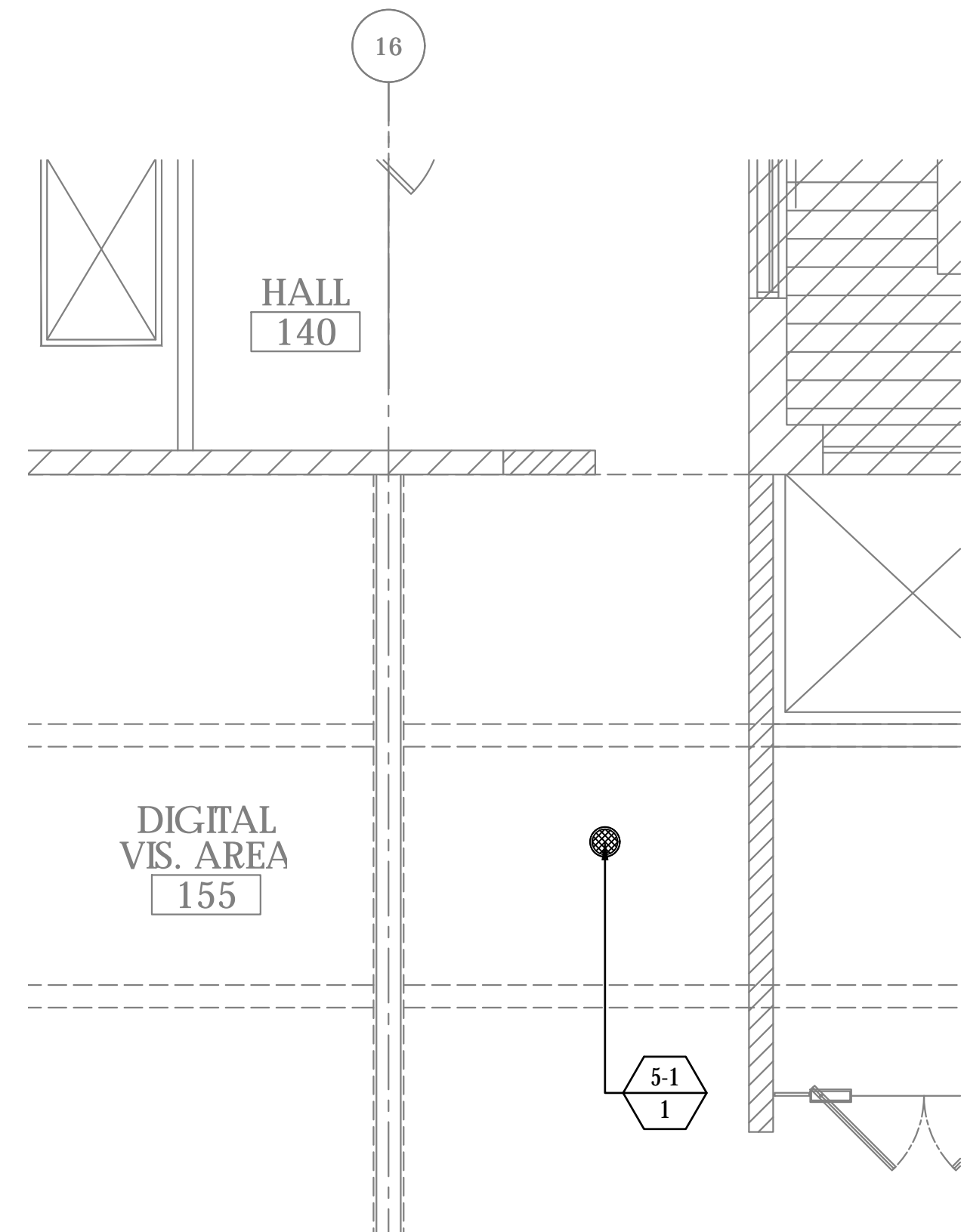
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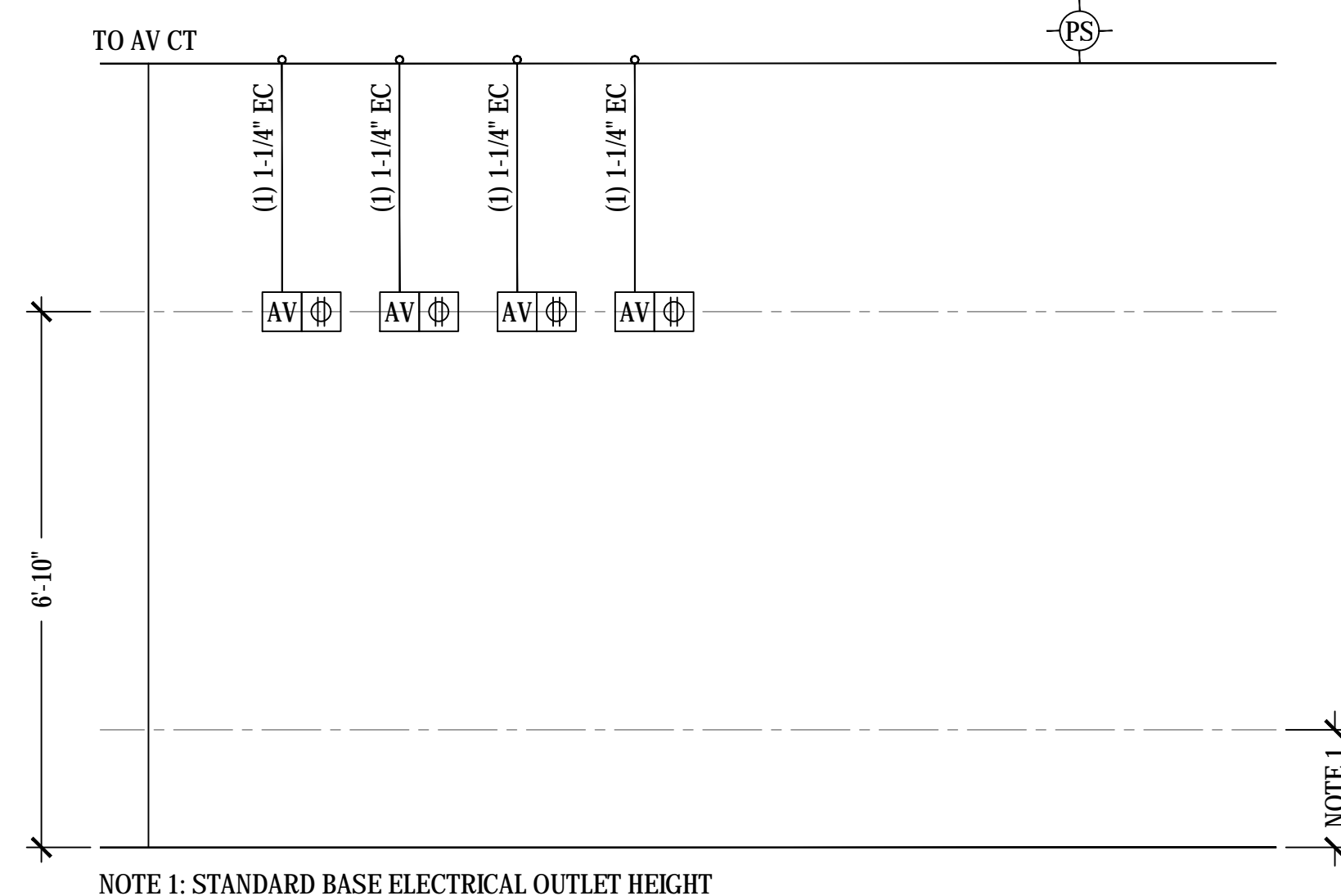
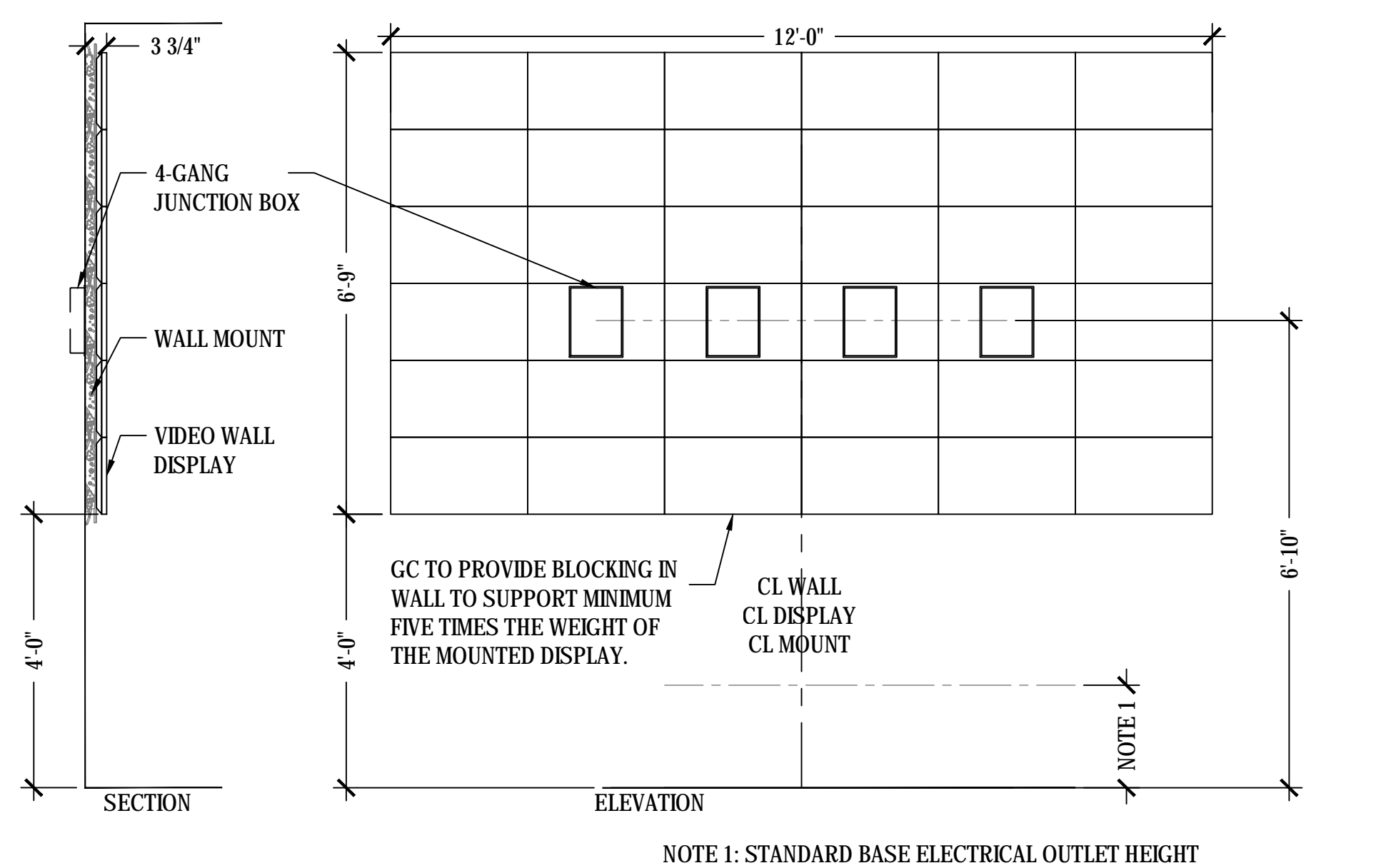
**1.0** ENLARGED FACILITY PLAN  
VIDEO WALL  
1/4"=1'-0"

**1.3** ENLARGED ELECTRICAL PLAN  
VIDEO WALL  
1/4"=1'-0"



**1.1** ENLARGED FACILITY RCP  
VIDEO WALL  
1/4"=1'-0"

**1.4** ENLARGED ELECTRICAL RCP  
VIDEO WALL  
1/4"=1'-0"



**1.2** SECTION AND ELEVATION  
VIDEO WALL  
1/2"=1'-0"

**1.5** CONDUIT RISER DIAGRAM  
VIDEO WALL  
1/2"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
1 - # QTY	EQUIPMENT RACKS: 1-1 FULL HEIGHT 1-2 CRENDENZA RACK
2 - # QTY	CONNECTIVITY: 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
4 - # QTY	AUDIO INPUT: 4-1 CEILING MOUNTED MICROPHONE
5 - # QTY	AUDIO OUTPUT: 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSISTIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
6 - # QTY	VIDEO ORIGIN/SOURCE: 6-1 CAMERA LEDGE MOUNT
7 - # QTY	VIDEO DISPLAY (TYPE 1): 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (88") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
8 - # QTY	VIDEO DISPLAY (TYPE 2): 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
9 - # QTY	VIDEO DISPLAY (TYPE 3): 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

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M Φ	GANGABLE JUNCTION BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
AV Φ	GANGABLE JUNCTION BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
Φ	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
PS	PENDANT SPEAKER

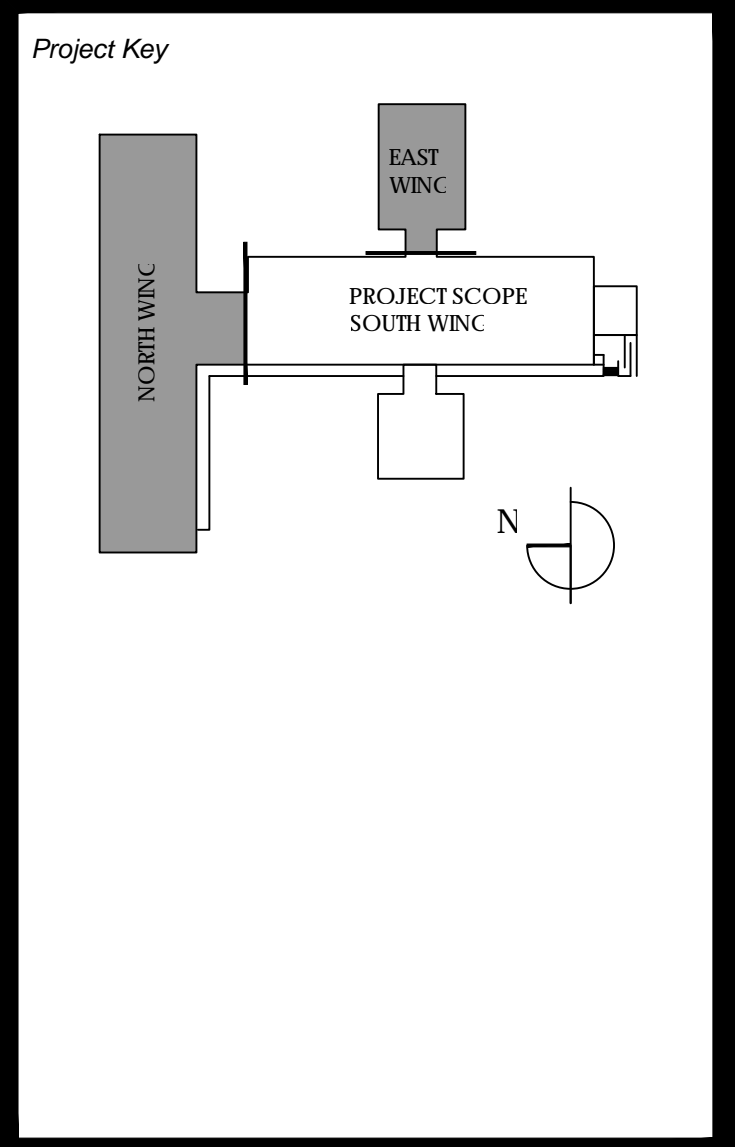
**DASNY**  
DORMITORY AUTHORITY STATE OF NEW YORK

100 West 46th Street, 10th Floor  
New York, NY 10018  
212-692-3300  
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HAZARDOUS MATERIALS CONSULTANT:  
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STRUCTURAL CONSULTANT:  
**LERA**  
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New York, NY 10005  
(212) 750-9000

MEP CONSULTANT:  
**A & J Consulting Engineers**  
164 Brighton Road  
Clifton, New Jersey 07012  
(973) 777-9696



REVISIONS		
Issue	Description	Date
1	ISSUE FOR CONSTRUCTION	01/24/2020

**CUNY** The City University of New York  
College of Staten Island  
THE CITY UNIVERSITY OF NEW YORK  
2020 Center for Big Data Analytics  
2800 B Victory Blvd  
Staten Island, NY 10314

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**AUDIOVISUAL ENLARGED PLANS**

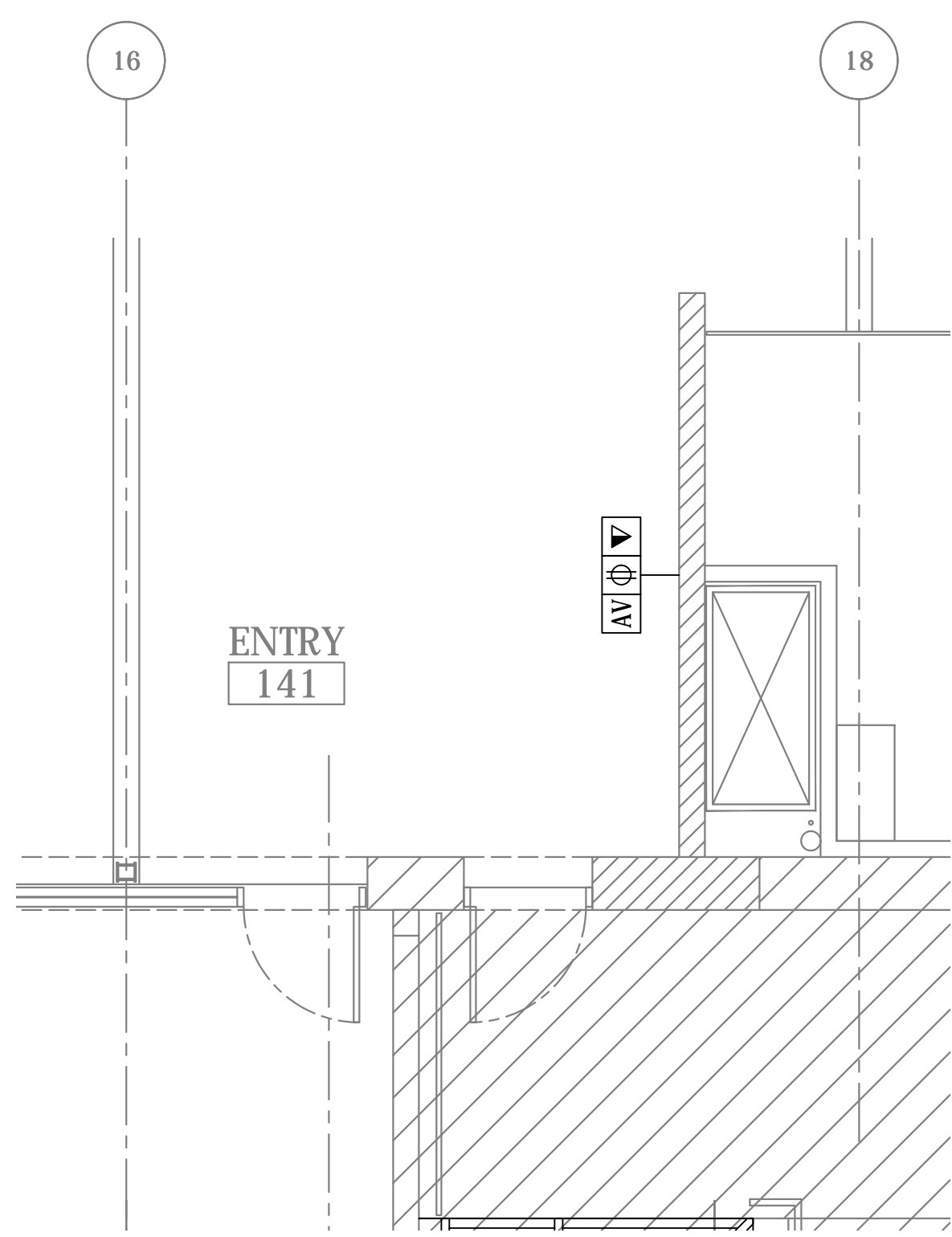
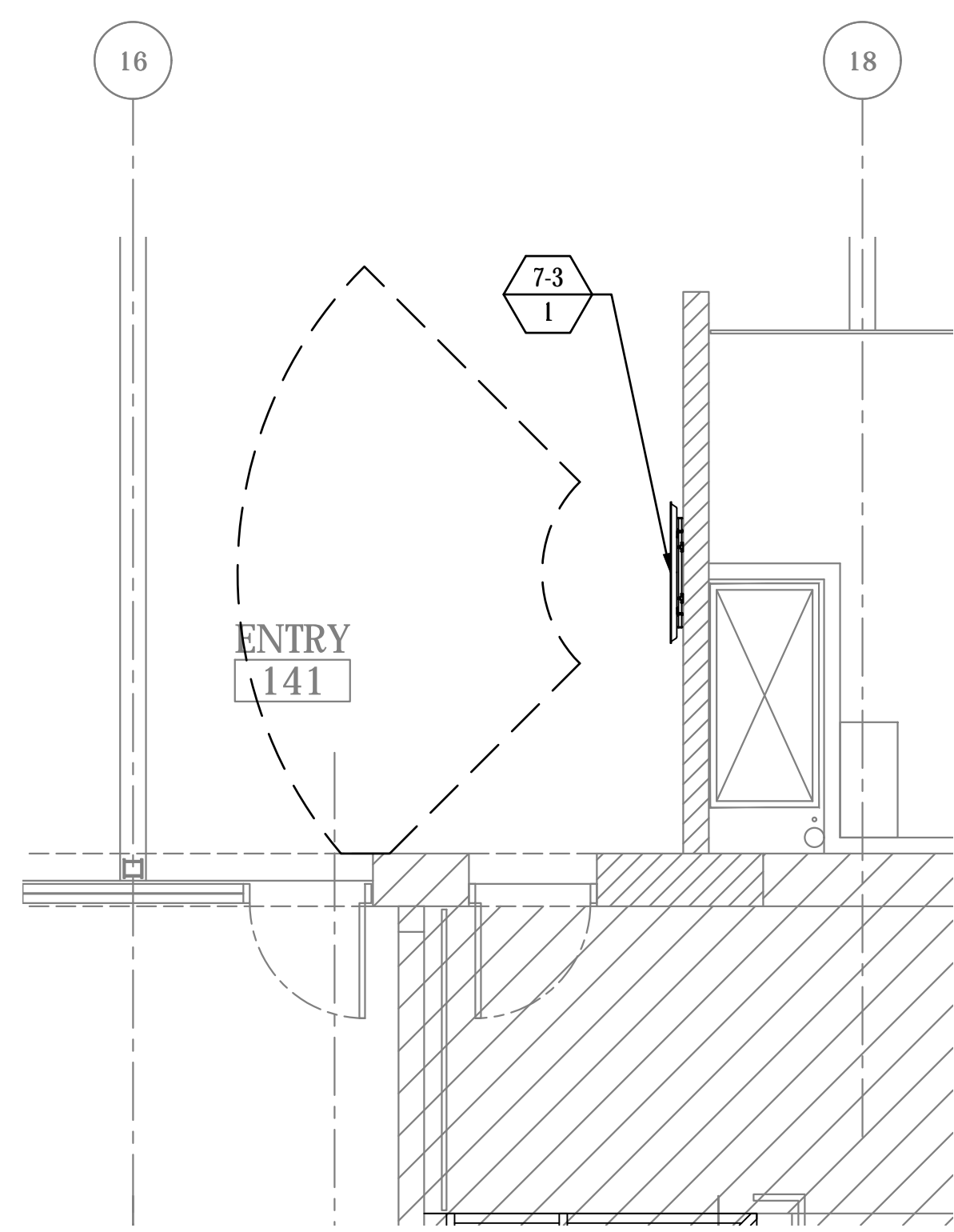
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Seal & Signature: \_\_\_\_\_ DASNY Project No: 3453509999  
Drawing Number

TA-600.00

Drawing of \_\_\_\_\_





**1.0 ENLARGED FACILITY PLAN SIGNAGE**  
1/4"=1'-0"

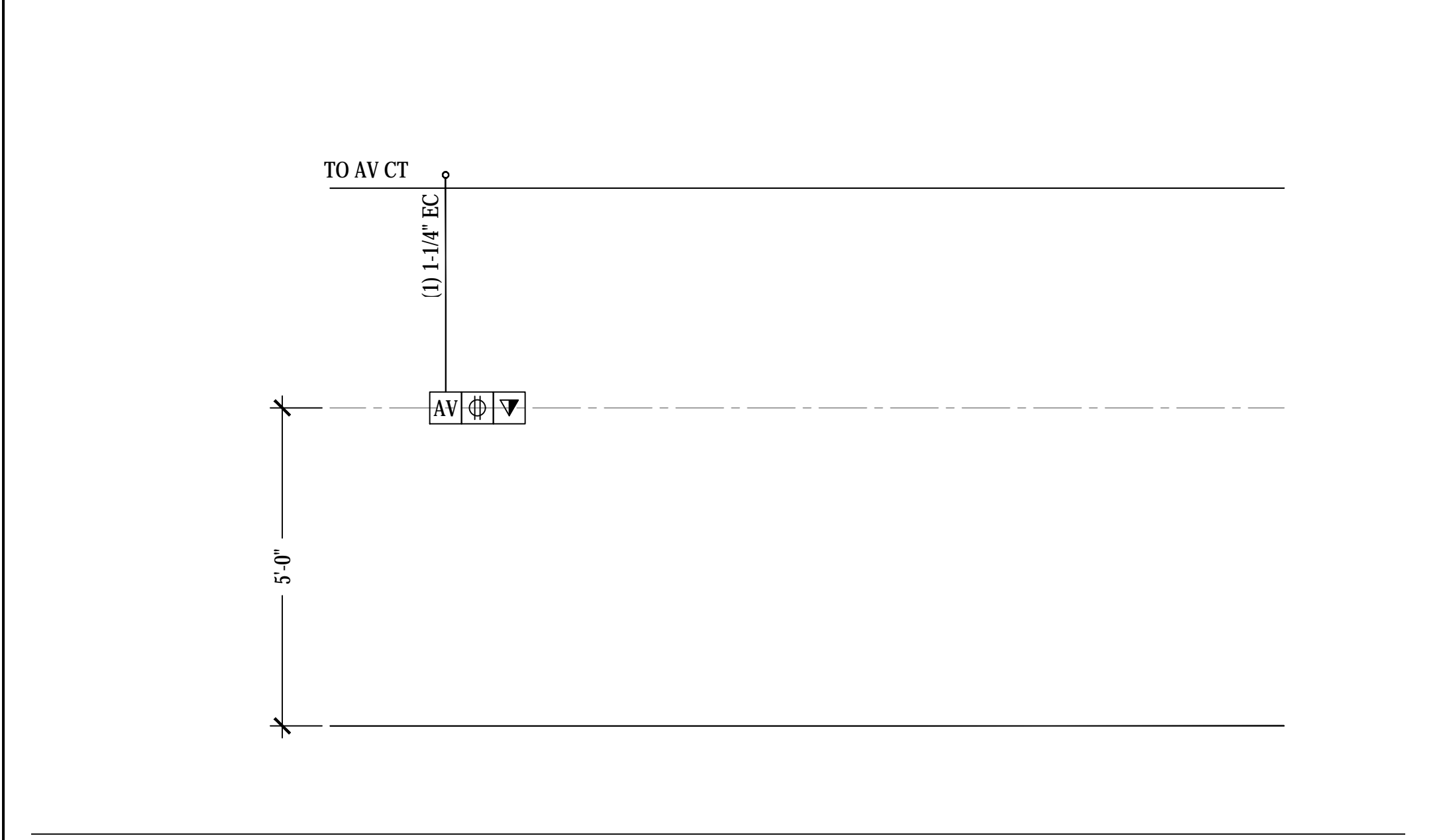
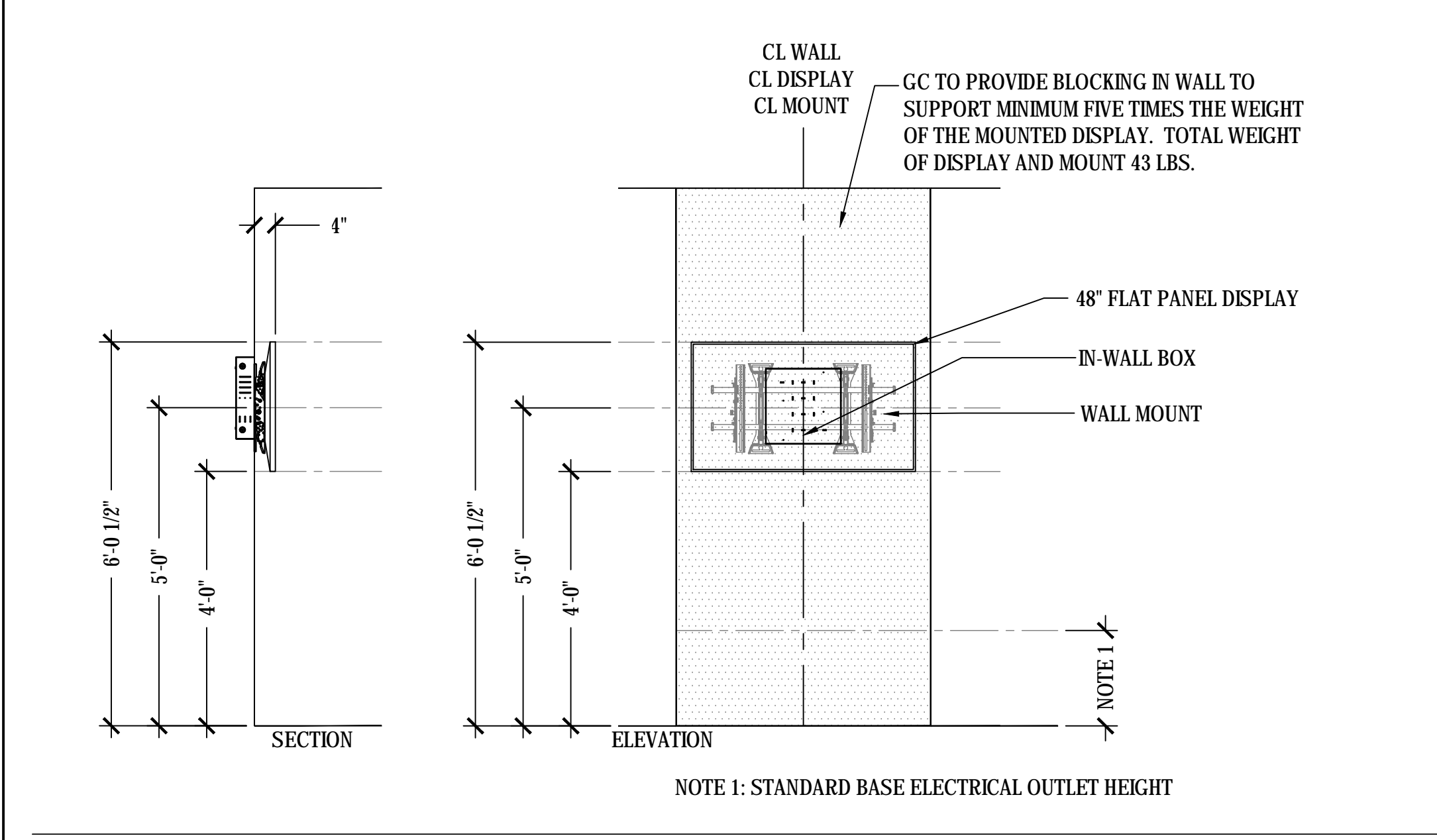
**1.3 ENLARGED ELECTRICAL PLAN SIGNAGE**  
1/4"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREENZA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ASSITIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
	CEILING MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

**1.1 ENLARGED FACILITY RCP**  
1/4"=1'-0"

**1.4 ENLARGED ELECTRICAL RCP**  
1/4"=1'-0"



**1.2 SECTION AND ELEVATION SIGNAGE**  
1/2"=1'-0"

**1.5 CONDUIT RISER DIAGRAM SIGNAGE**  
1/2"=1'-0"

**DASNY**  
DORMITORY AUTHORITY STATE OF NEW YORK

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ikon.5 Project: P29.01

HAZARDOUS MATERIALS CONSULTANT:

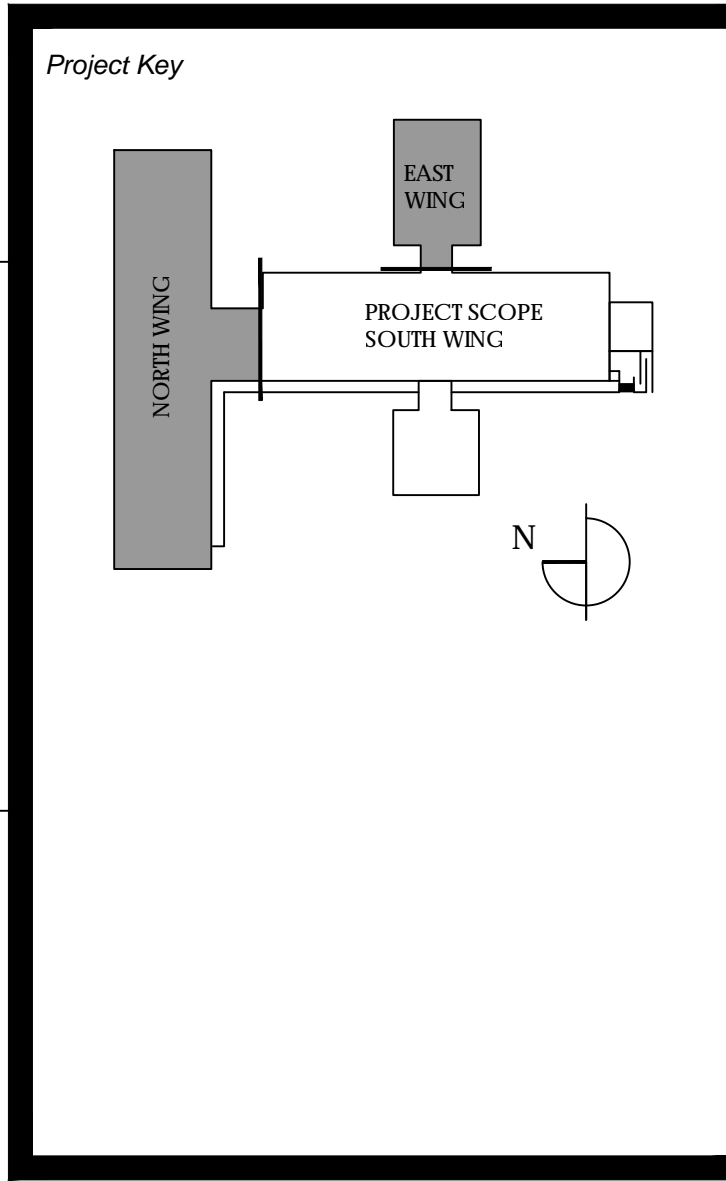
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STRUCTURAL CONSULTANT:

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ISSUE FOR CONSTRUCTION	01/24/2020	

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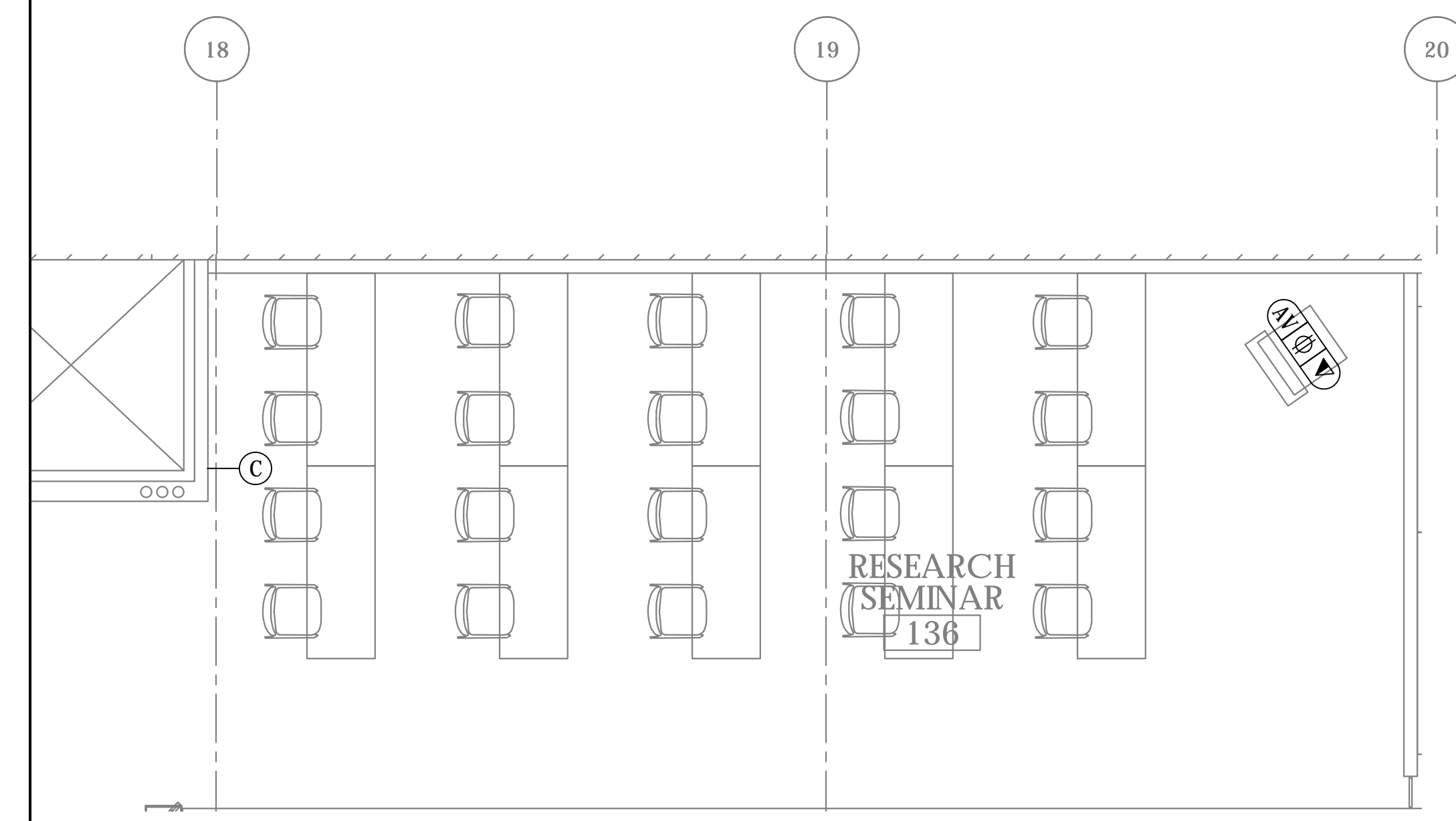
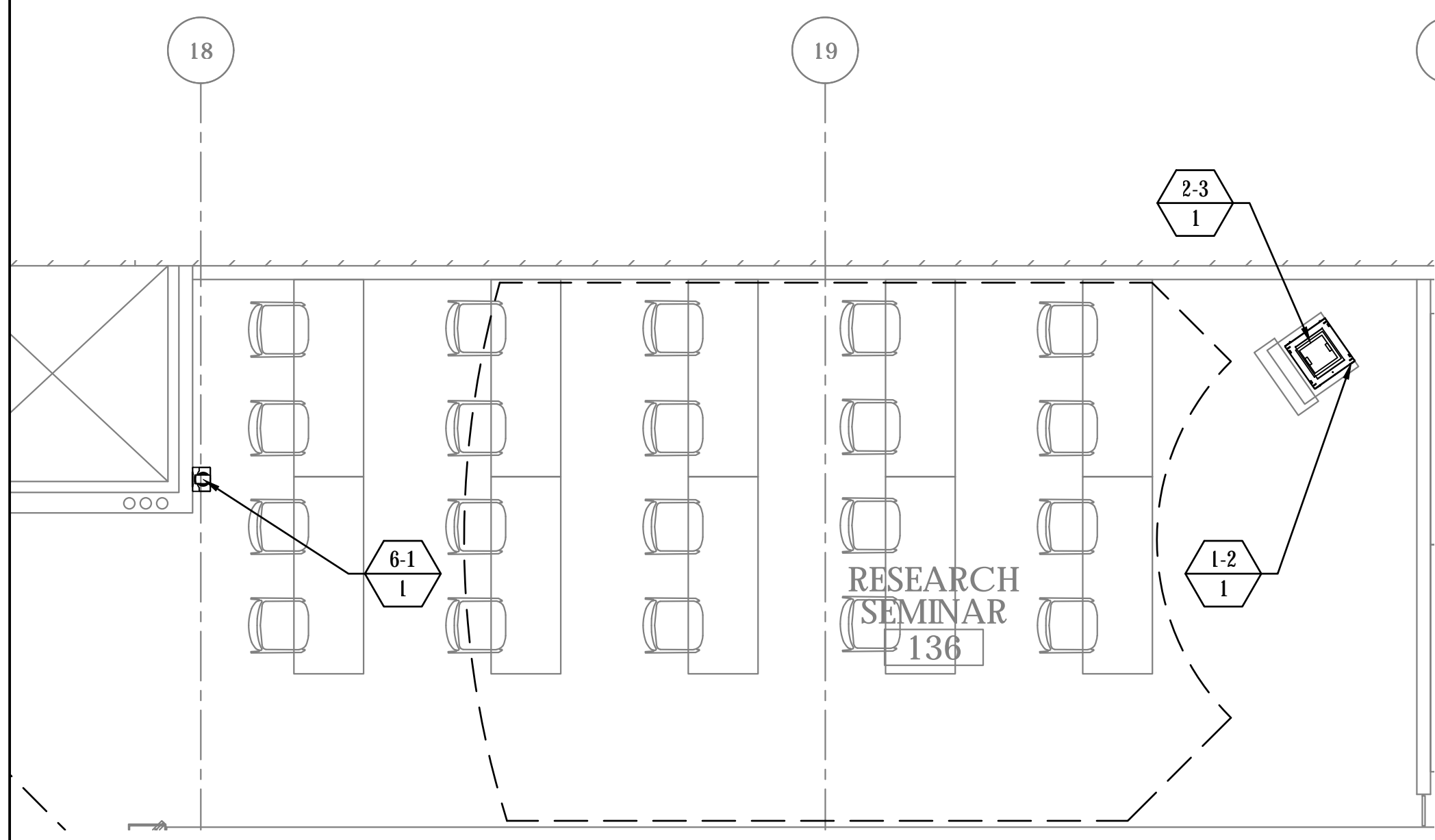
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**AUDIOVISUAL ENLARGED PLANS**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

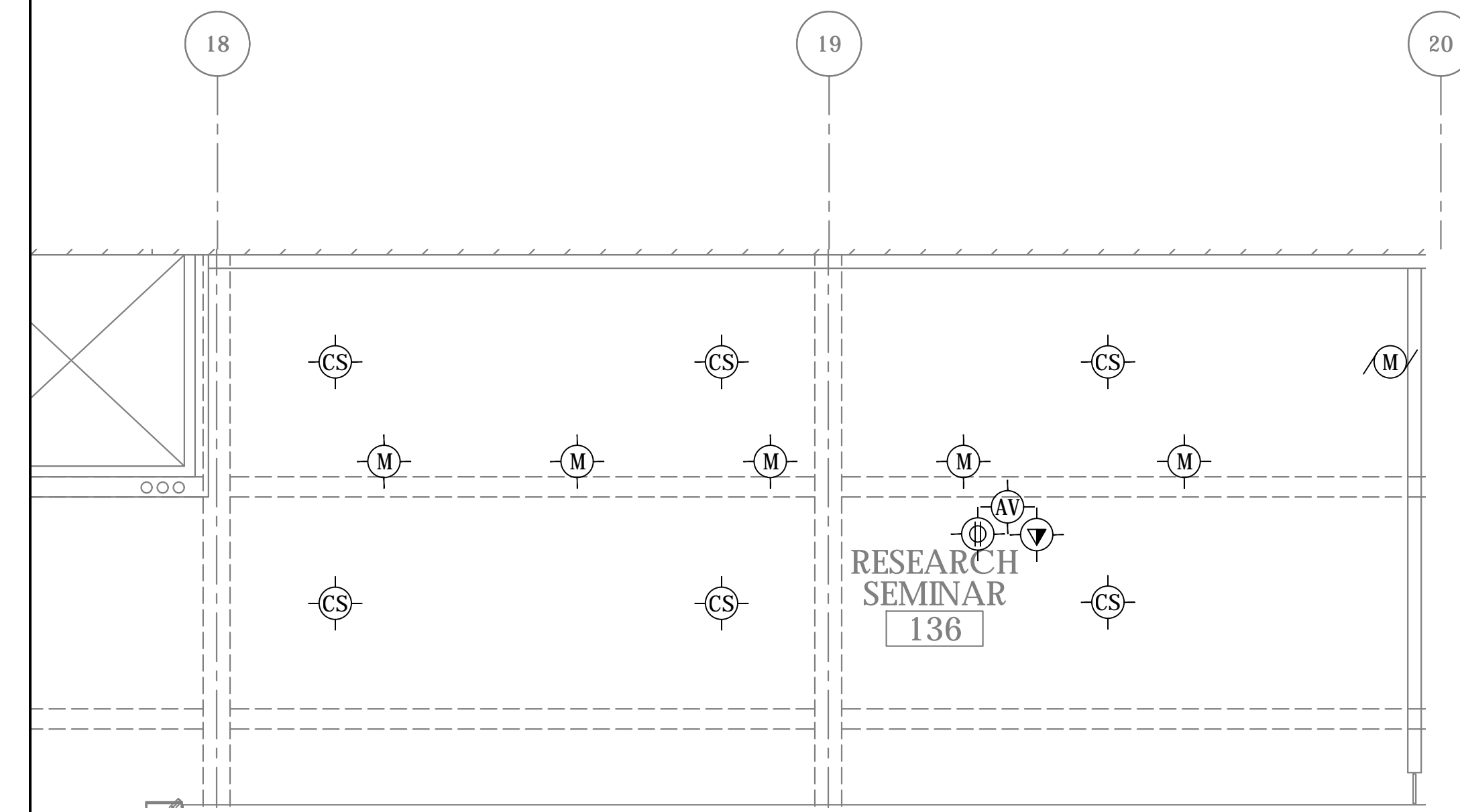
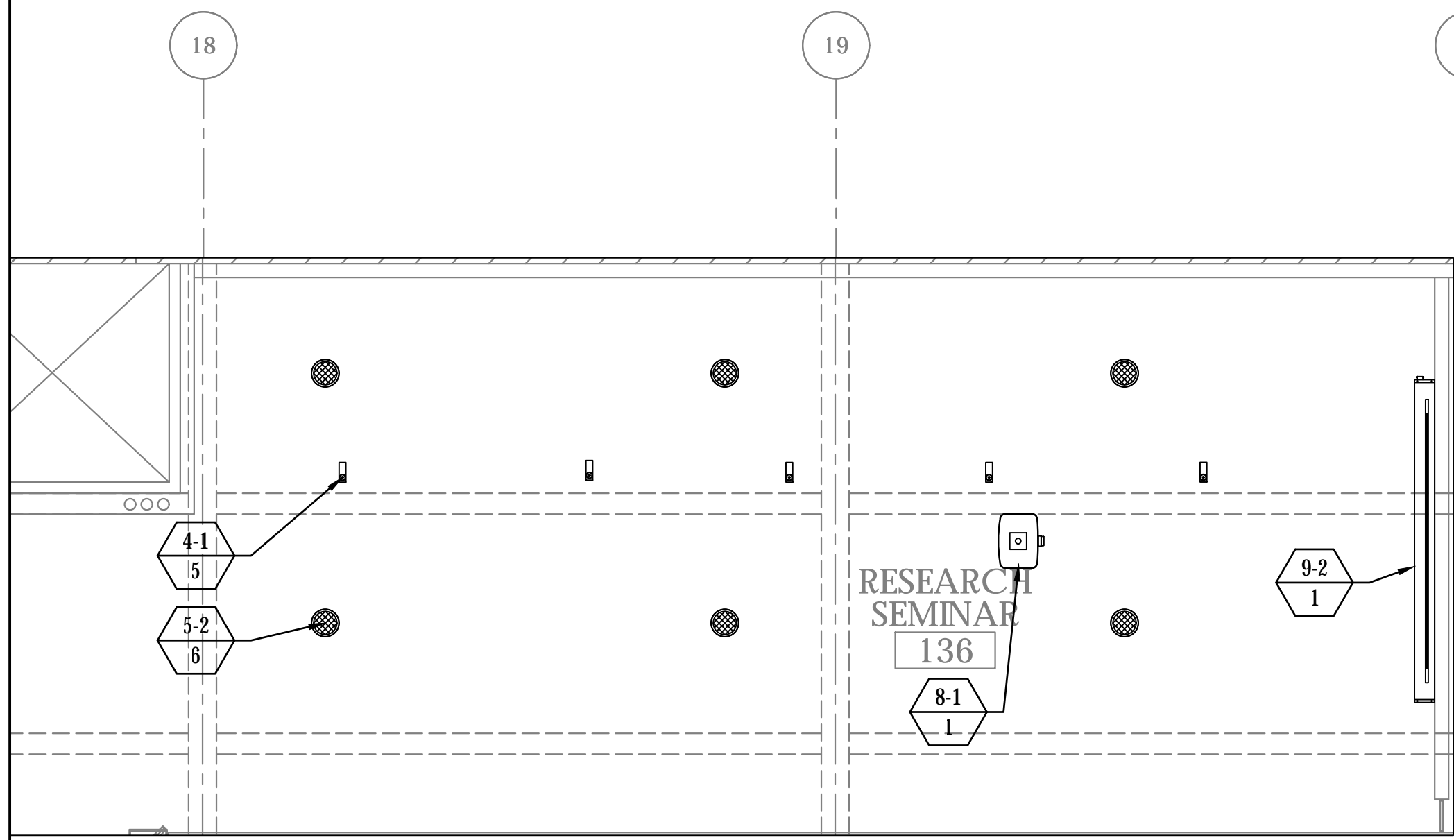
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Drawing Number

**TA-601.00**  
Drawing of \_\_\_\_\_



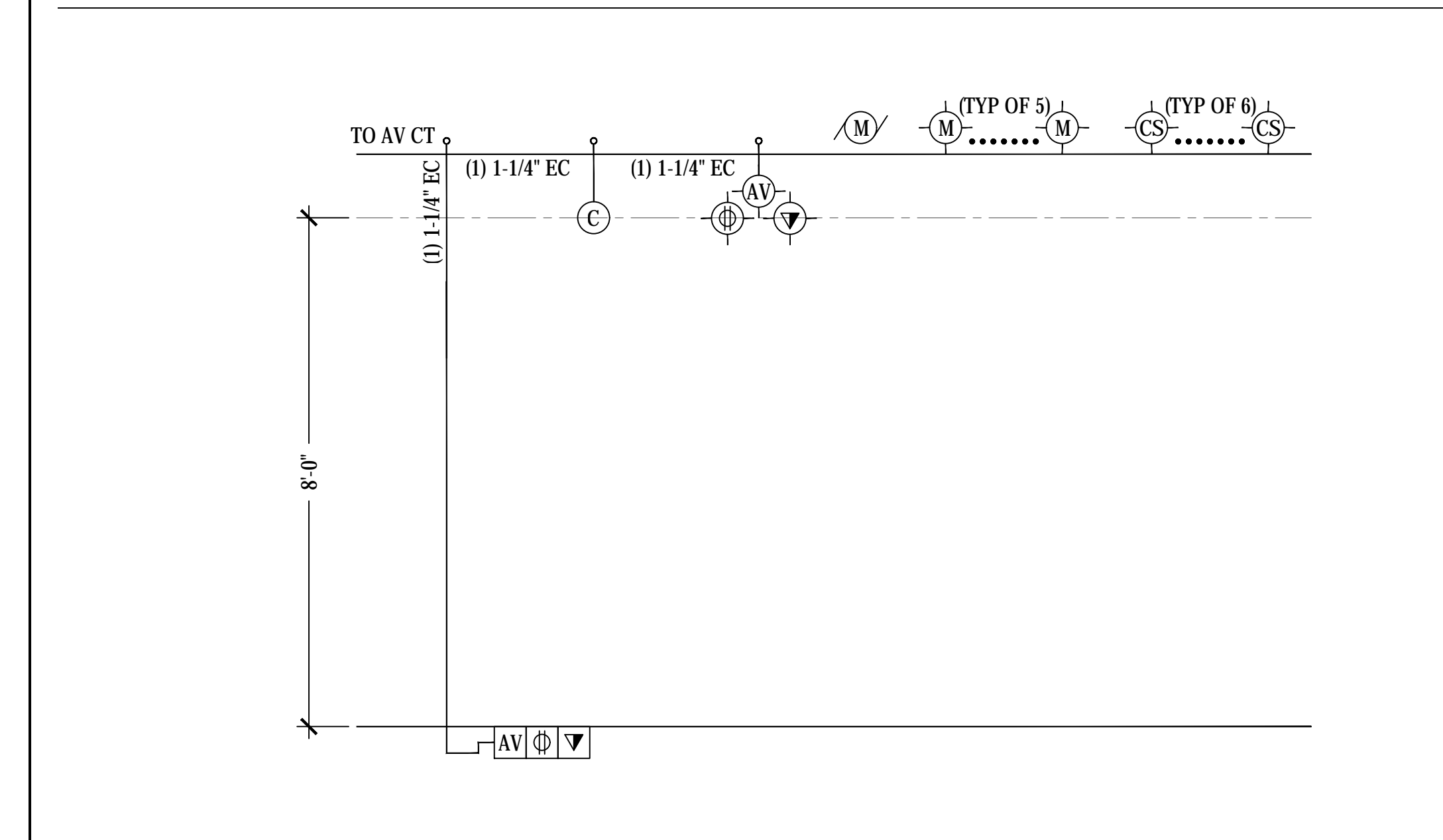
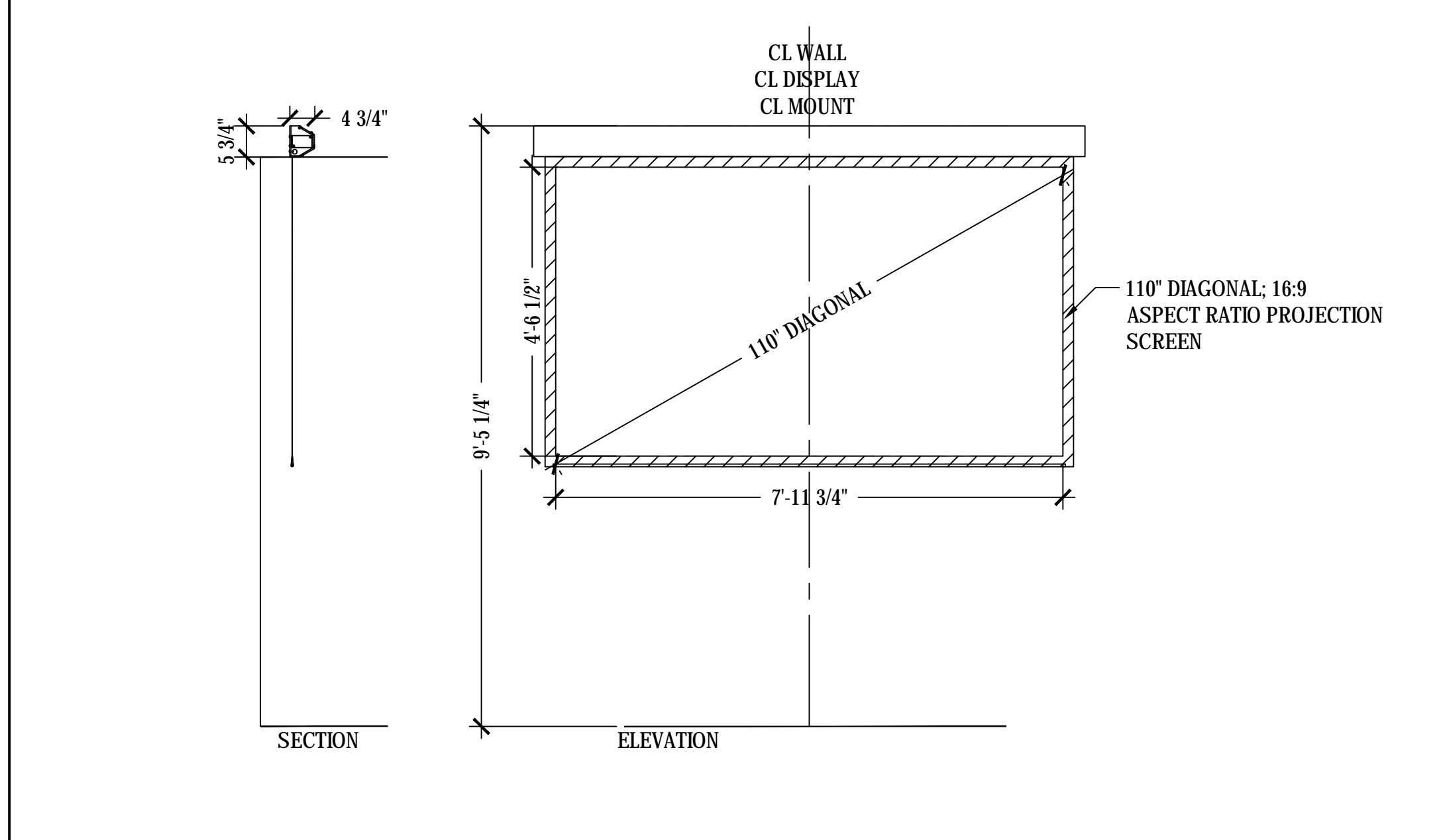
**1.0 ENLARGED FACILITY PLAN RESEARCH/SEMINAR**  
1/4"=1'-0"

**1.3 ENLARGED ELECTRICAL PLAN RESEARCH/SEMINAR**  
1/4"=1'-0"



**1.1 ENLARGED FACILITY RCP RESEARCH/SEMINAR**  
1/4"=1'-0"

**1.4 ENLARGED ELECTRICAL RCP RESEARCH/SEMINAR**  
1/4"=1'-0"



**1.2 SECTION AND ELEVATION RESEARCH/SEMINAR**  
1/2"=1'-0"

**1.5 CONDUIT RISER DIAGRAM RESEARCH/SEMINAR**  
1/2"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREDENZA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSISTIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

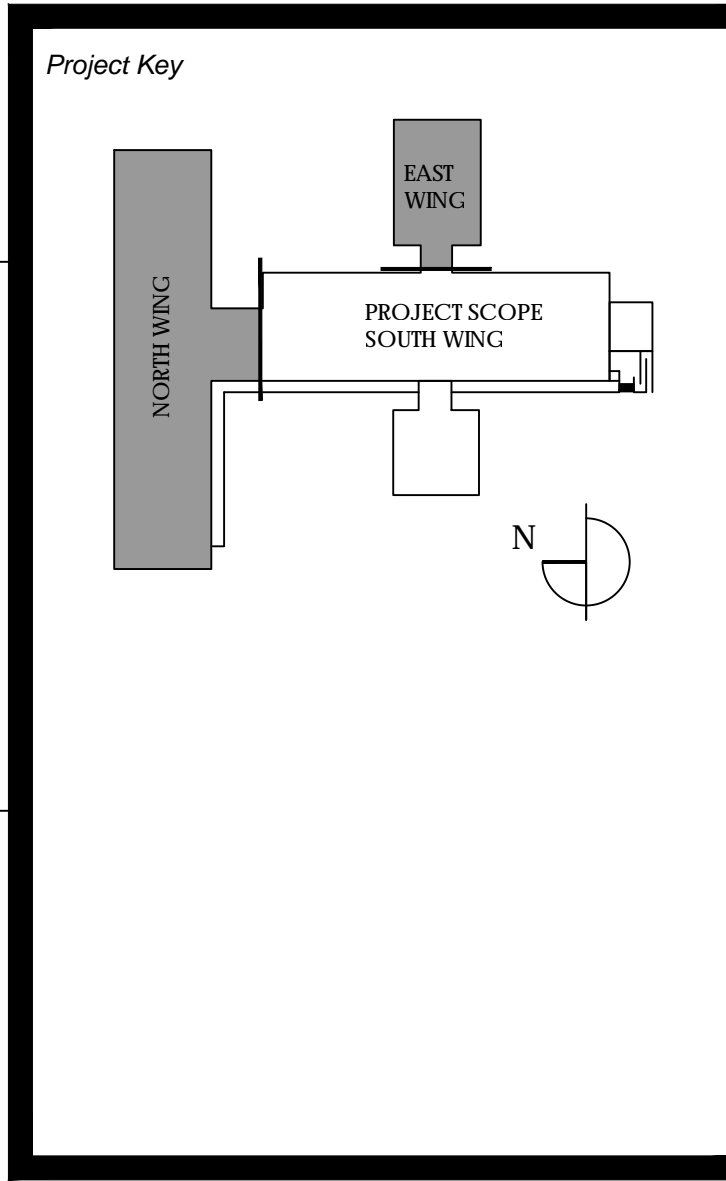
TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB. DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16" X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ASSISTIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE. SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
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	GANGABLE JUNCTION BOX, 4-11/16" X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

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**A & J Consulting Engineers**  
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REVISIONS		
Description	Date	
ISSUE FOR CONSTRUCTION	01/24/2020	

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THE CITY UNIVERSITY OF NEW YORK  
2020 Center for Big Data Analytics  
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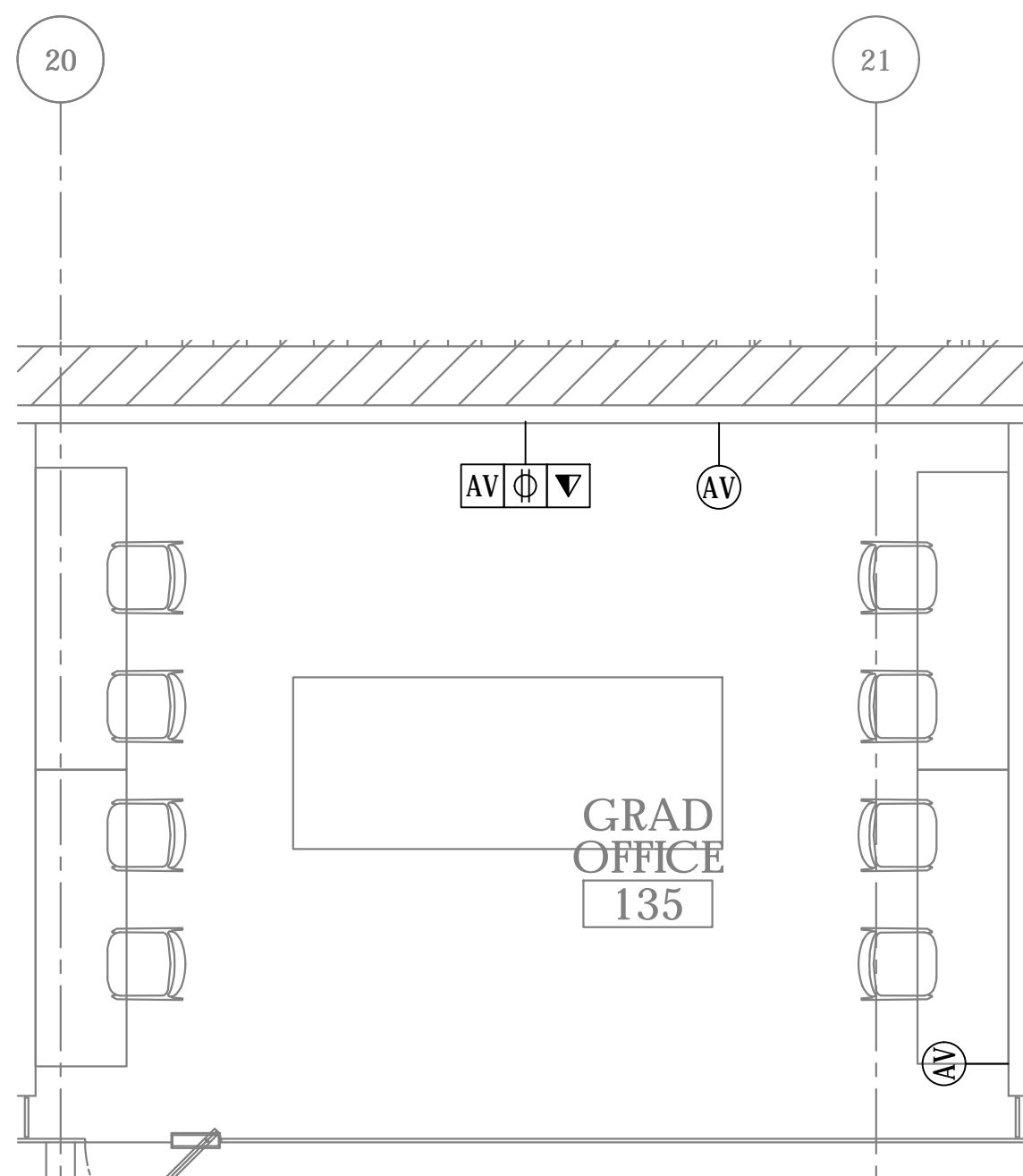
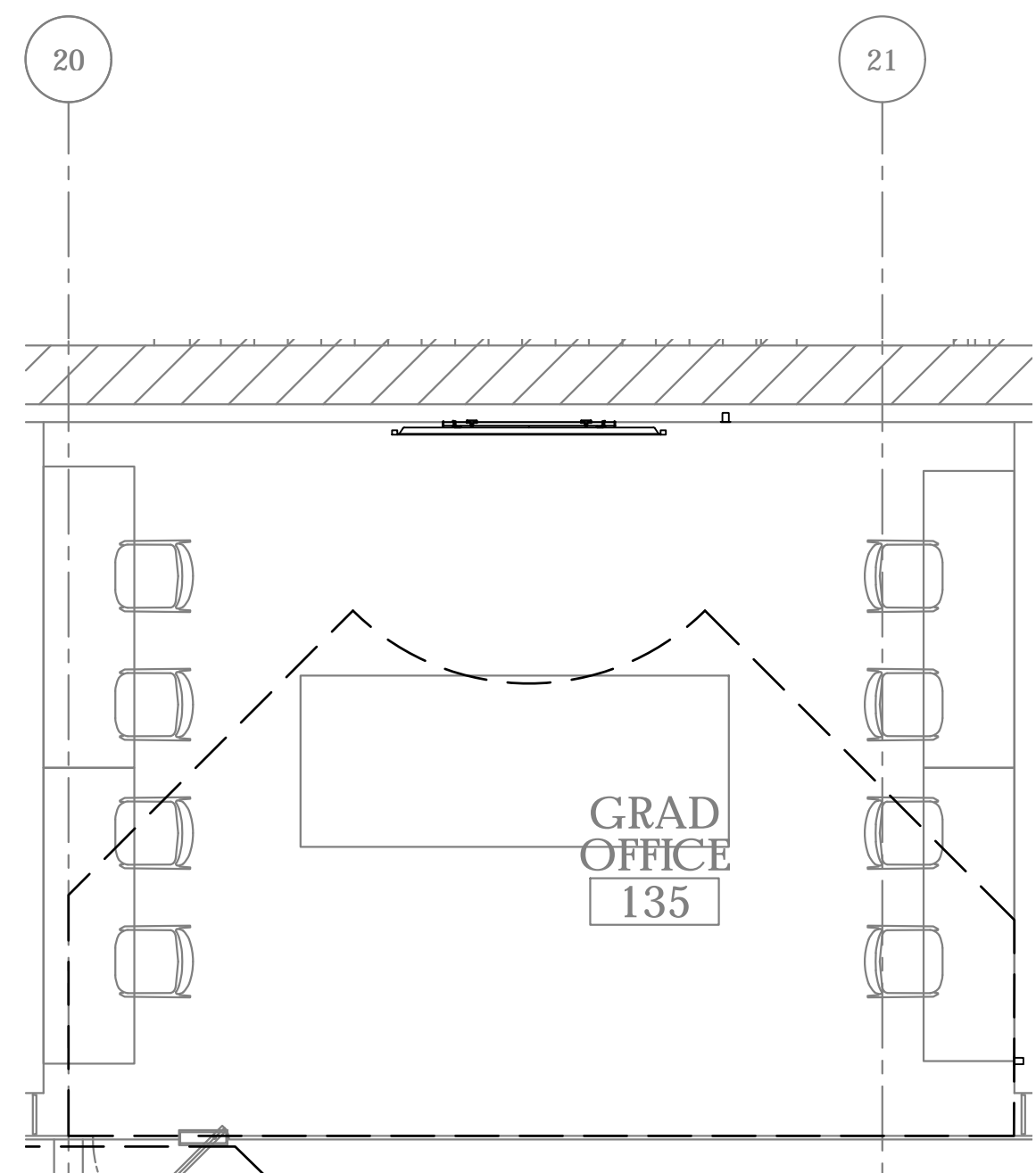
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**AUDIOVISUAL ENLARGED PLANS**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: 02/28/2017

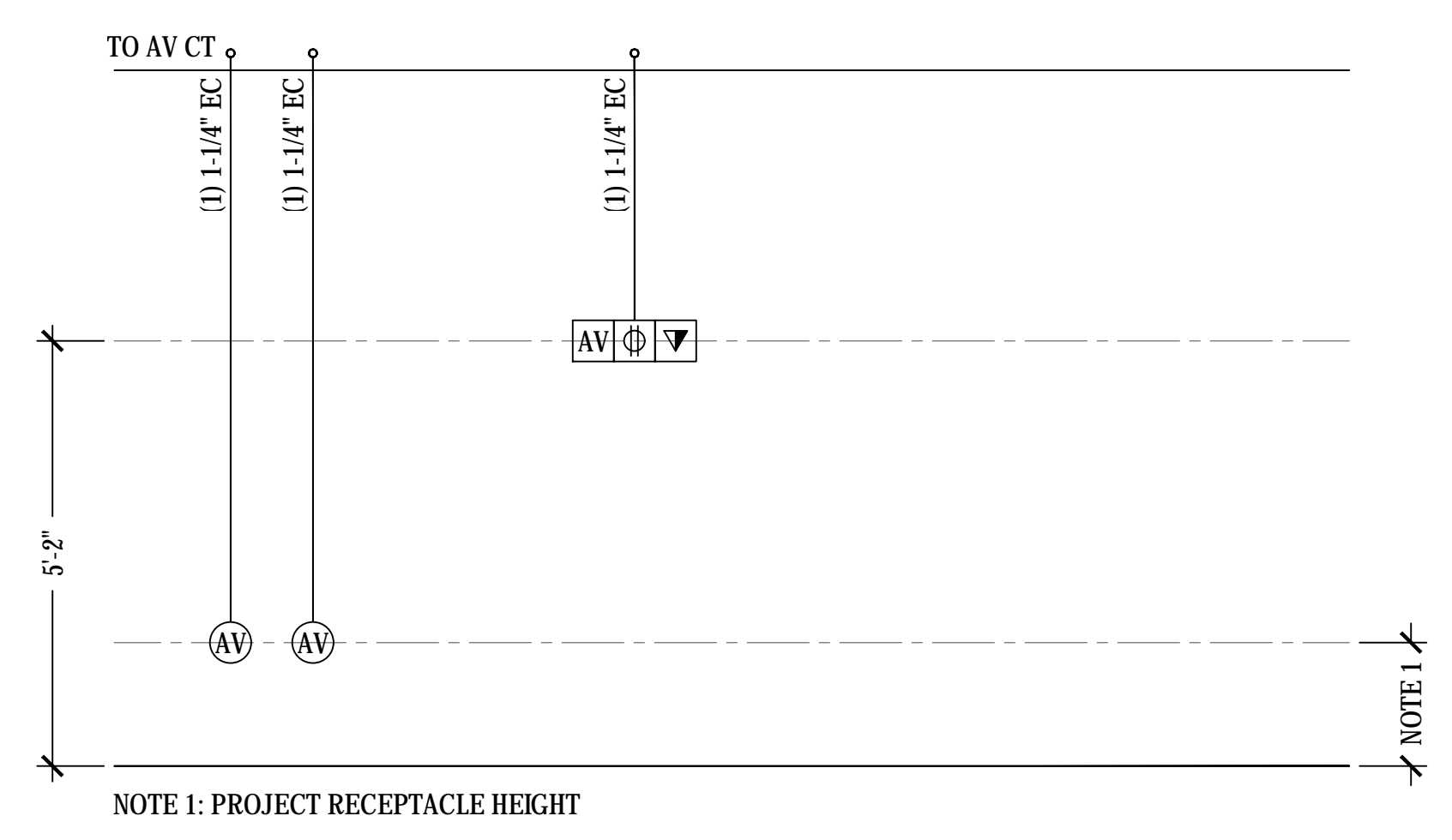
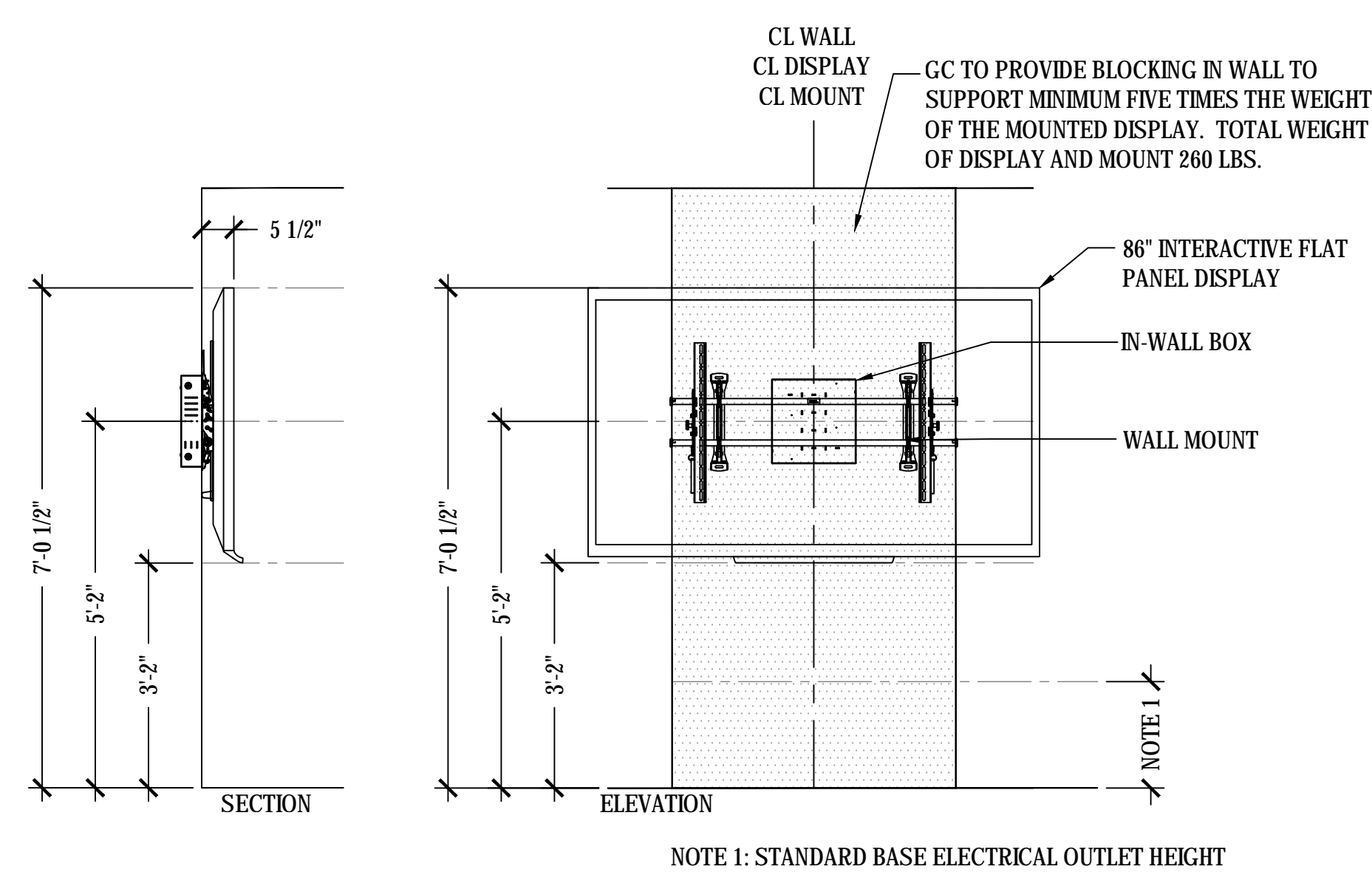
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Drawing Number: TA-602.00

NYC DOB EMPLOYEE STAMP/SIGNATURE: \_\_\_\_\_  
NYC DOB BSCAN: \_\_\_\_\_



TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREENZA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
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<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ASSISTIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
	CEILING MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
	GANGABLE JUNCTION BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE JUNCTION BOX, 4-1 1/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER



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ikon.5 Project: P29.01

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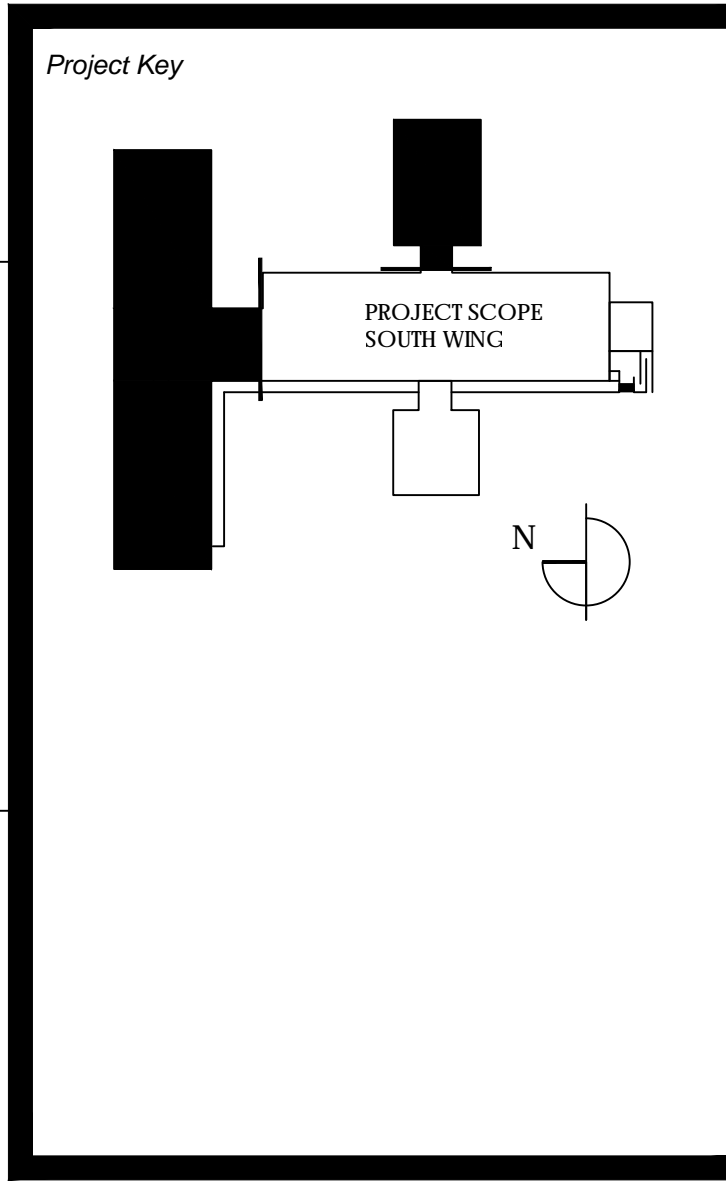
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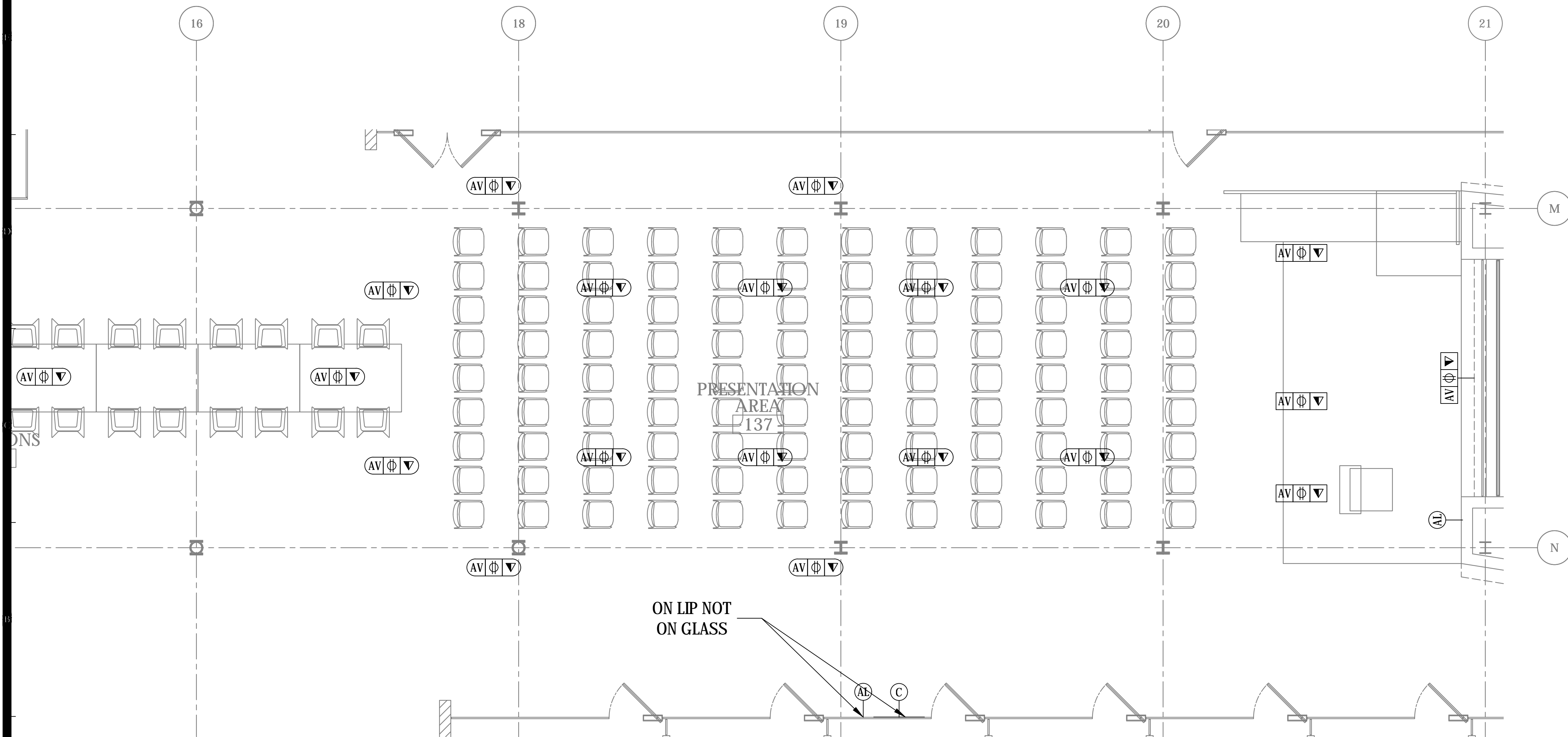
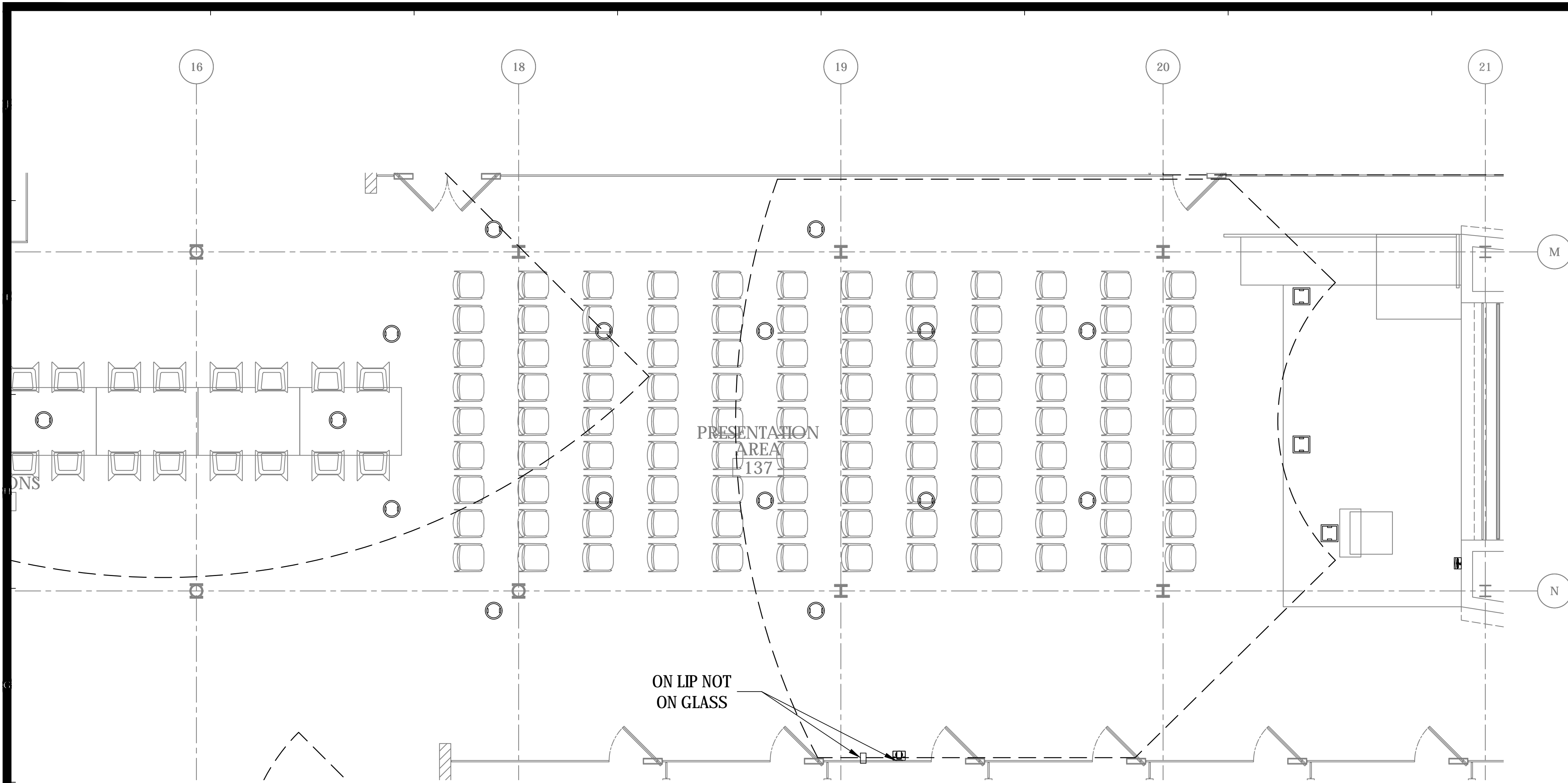
**AUDIOVISUAL ENLARGED PLANS**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

Seal & Signature: \_\_\_\_\_ DASNY Project No: **3453509999**  
Drawing Number: \_\_\_\_\_

**TA-603.00**  
Drawing of \_\_\_\_\_

NYC DOB EMPLOYEE STAMP/SIGNATURE: \_\_\_\_\_  
NYC DOB BSCAN: \_\_\_\_\_



TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREDENZA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ASSISTIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
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	PENDANT SPEAKER

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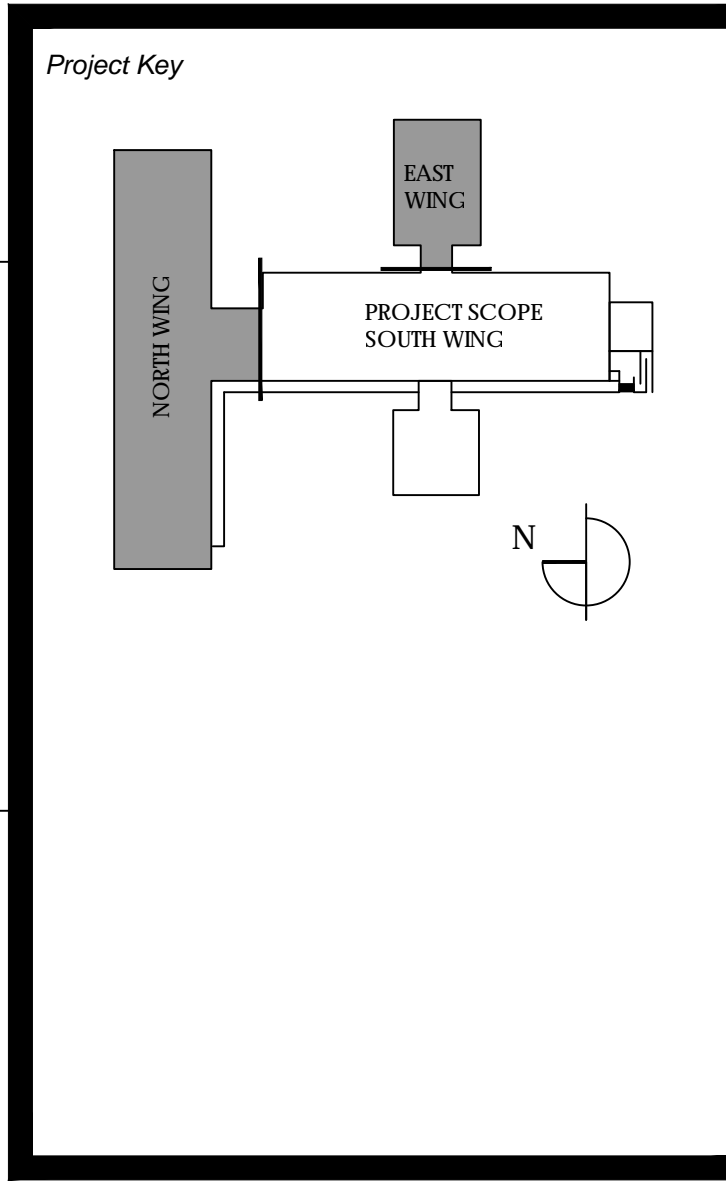
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**AUDIOVISUAL ENLARGED PLANS**

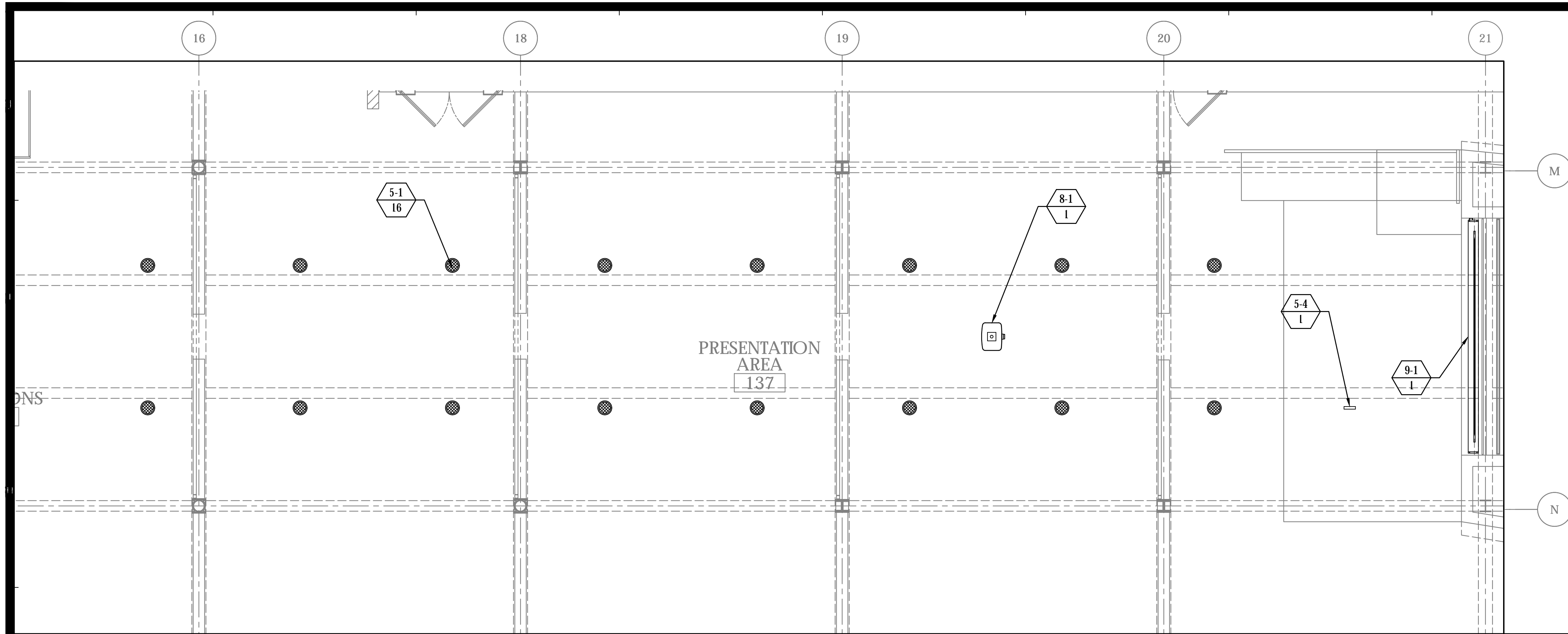
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Drawing Number: \_\_\_\_\_

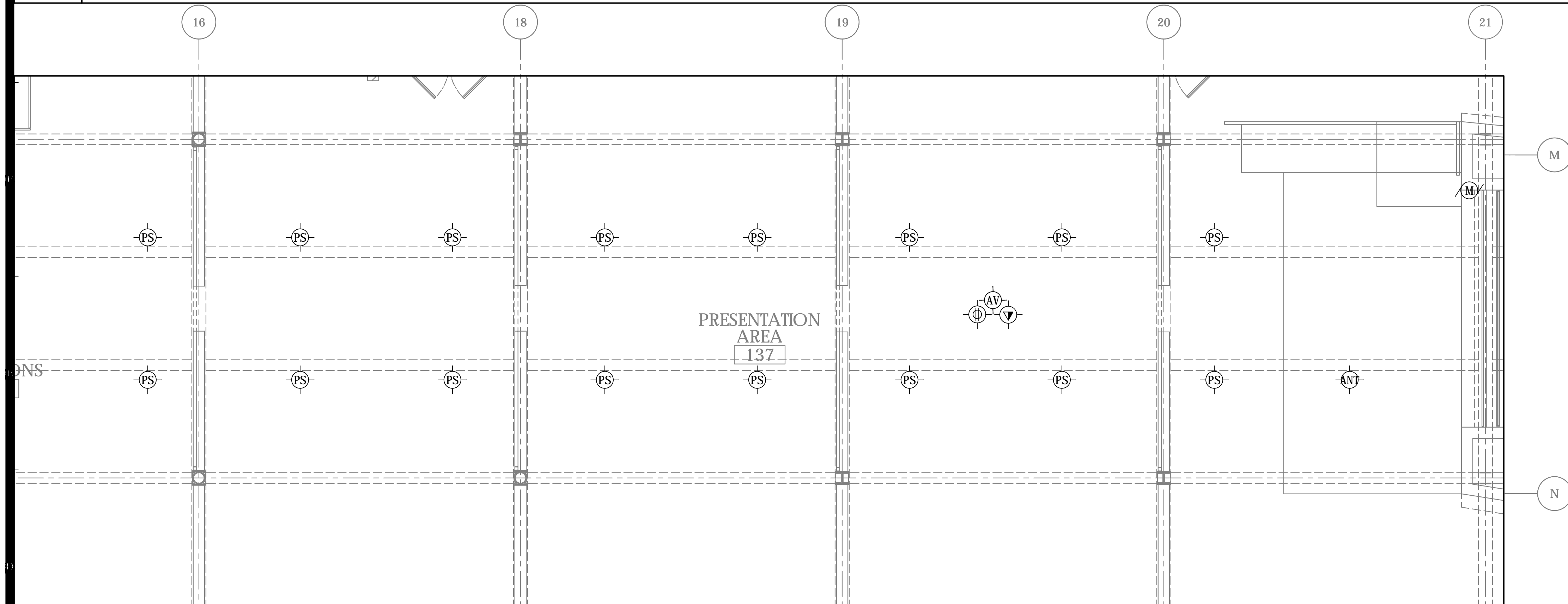
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Drawing of \_\_\_\_\_

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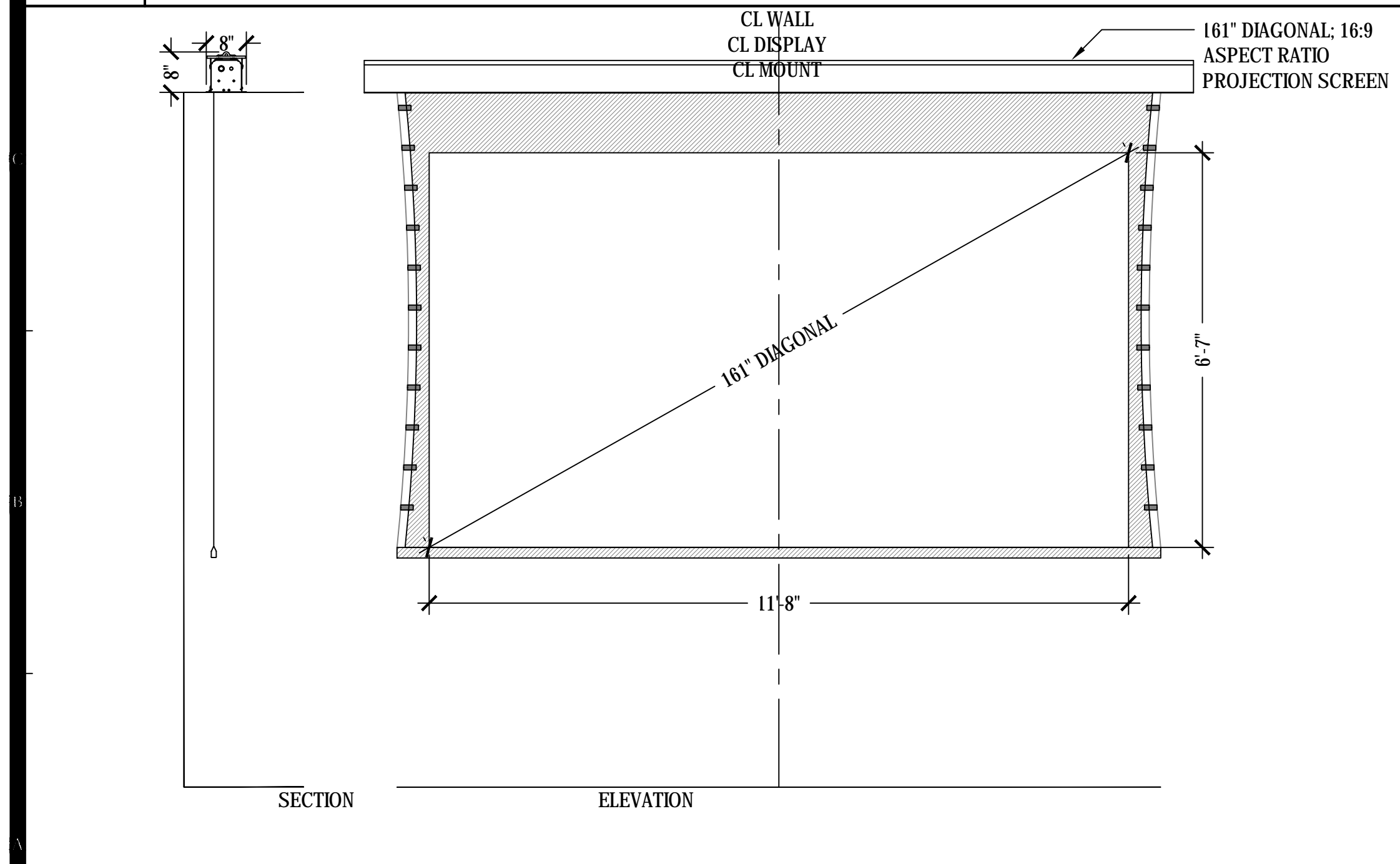
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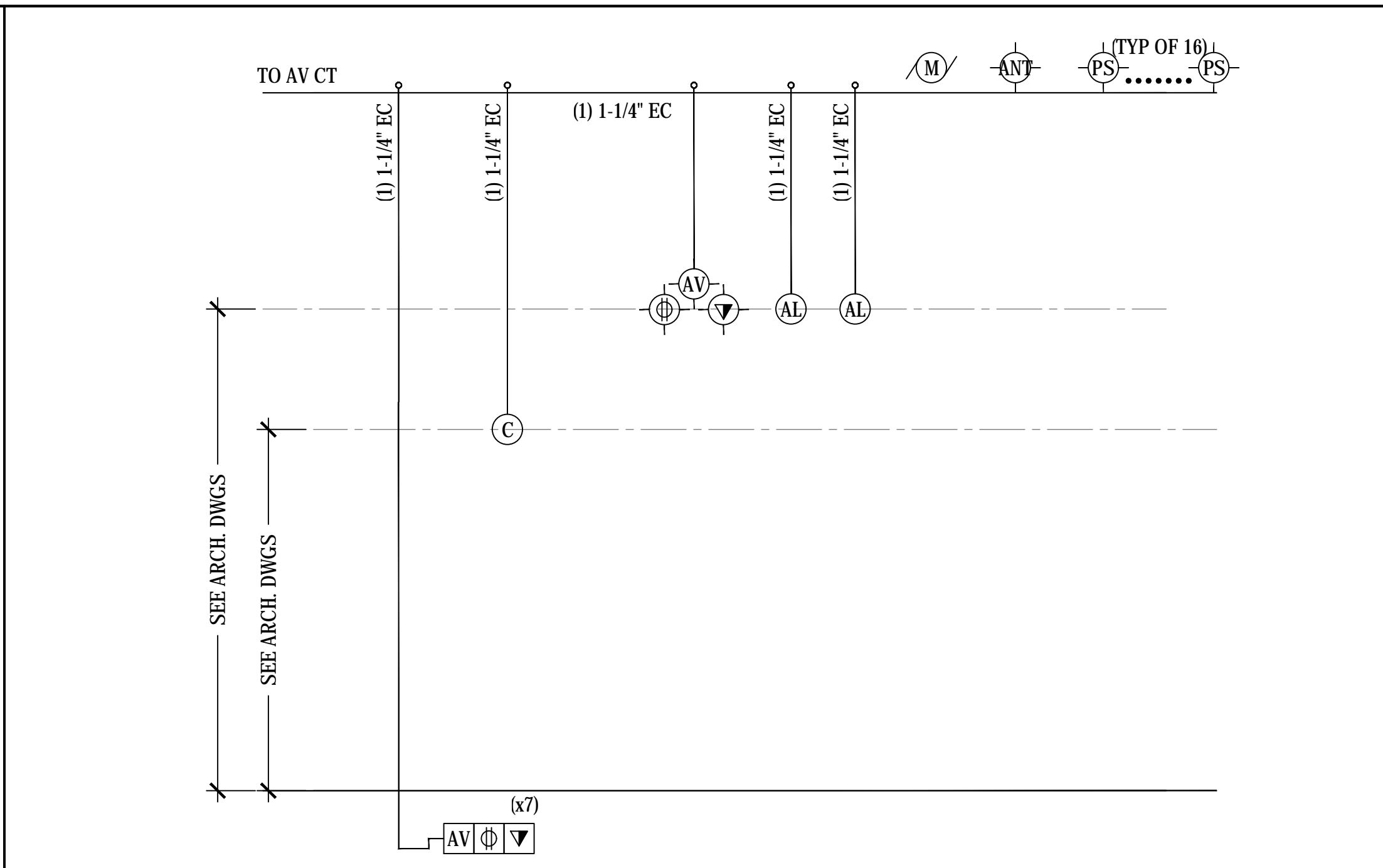
**1.1 ENLARGED FACILITY RCP PRESENTATION AREA**  
1/4"=1'-0"



**1.4 ENLARGED ELECTRICAL RCP PRESENTATION AREA**  
1/4"=1'-0"



**1.2 SECTION AND ELEVATION PRESENTATION AREA**  
1/2"=1'-0"



**1.5 CONDUIT RISER DIAGRAM PRESENTATION AREA**  
1/2"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREENZA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR: POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
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	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
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	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

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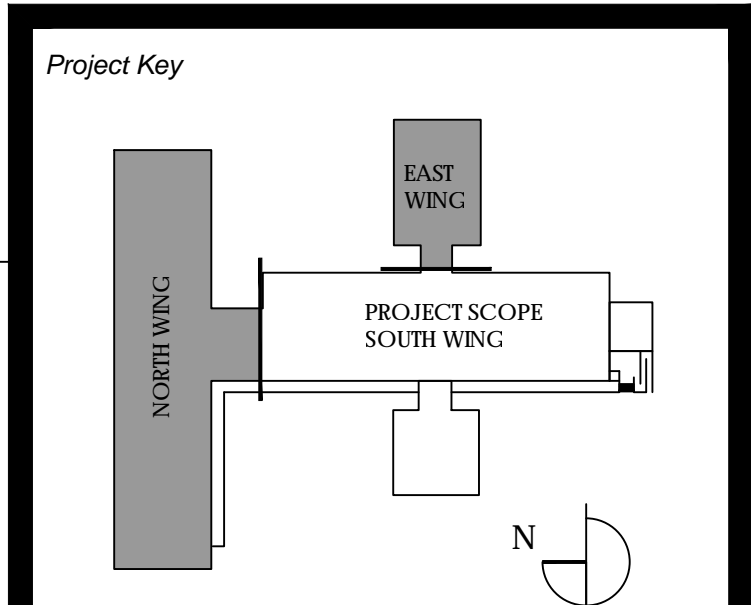
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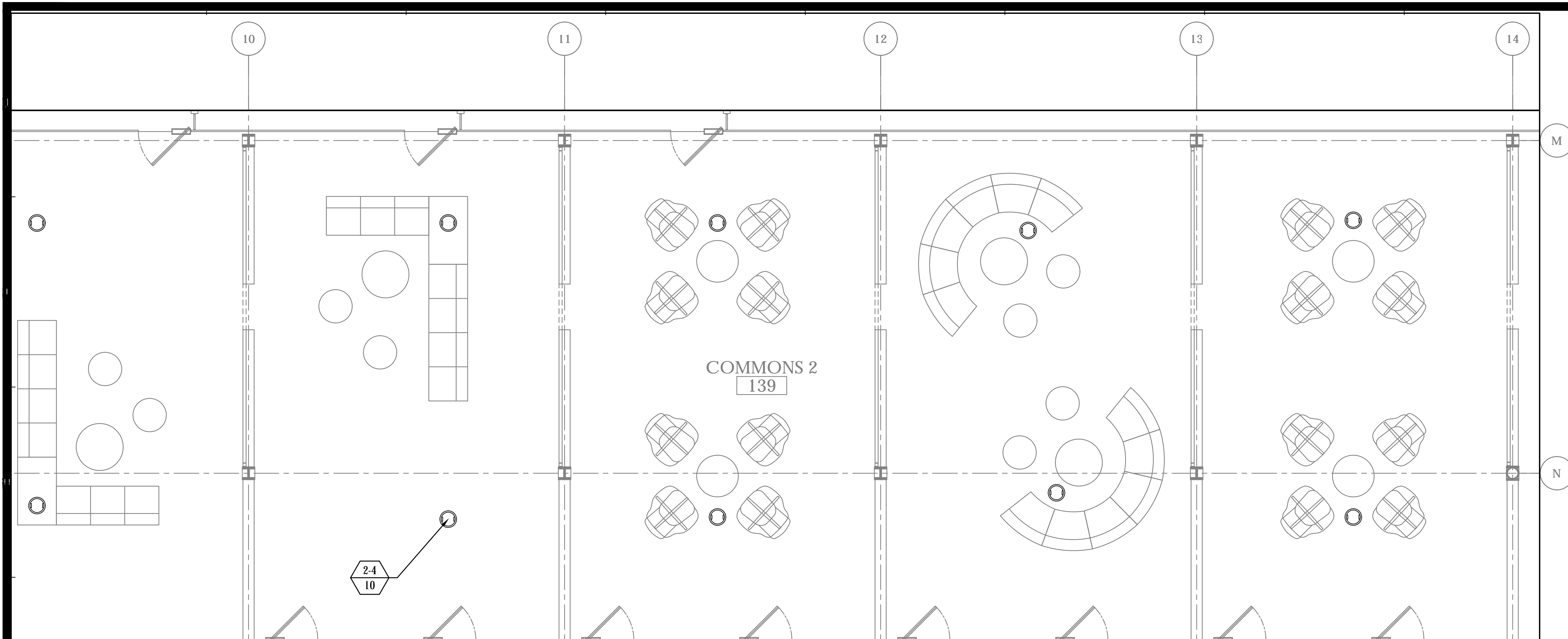
**AUDIOVISUAL ENLARGED PLANS**

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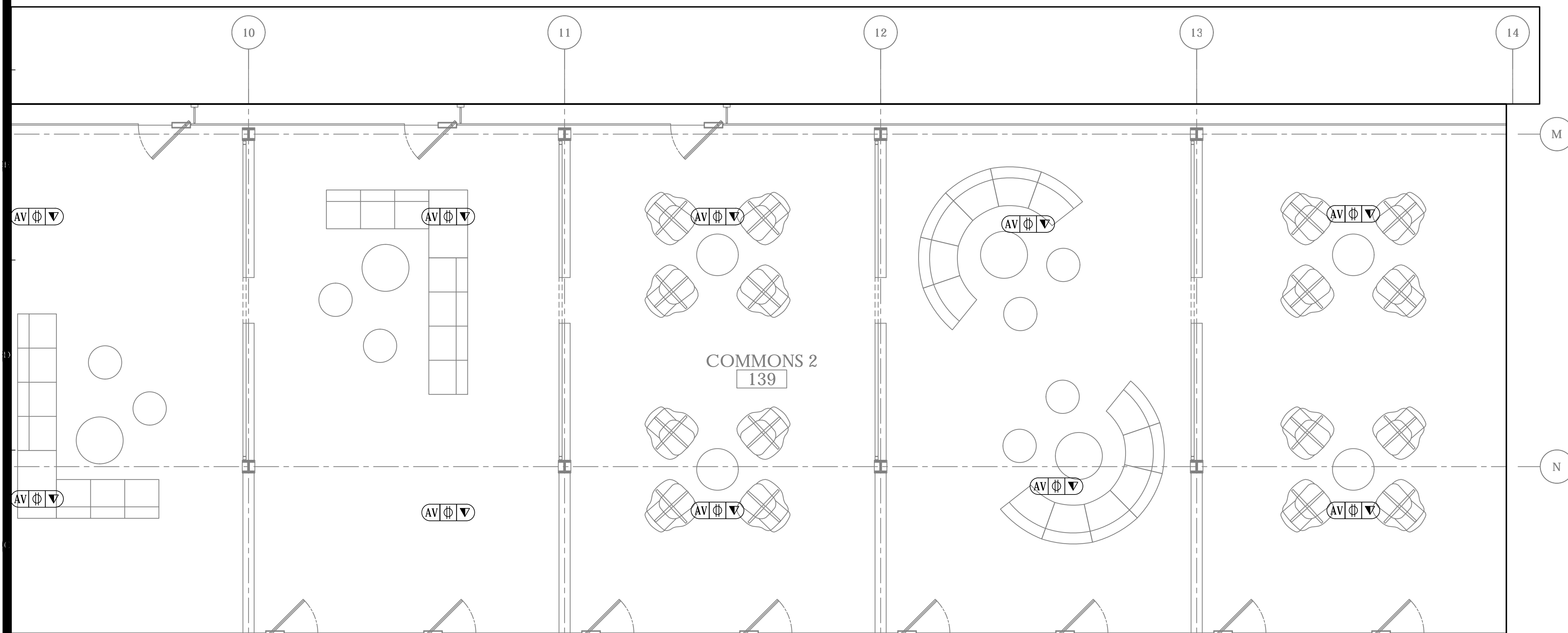
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Drawing Number: \_\_\_\_\_

**TA-605.00**

Drawing of \_\_\_\_\_



**1.0 ENLARGED FACILITY PLAN**  
COMMONS 2  
1/4"=1'-0"



**1.3 ENLARGED ELECTRICAL PLAN**  
COMMONS 2  
1/4"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREDENZA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ASSISTIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
	CEILING MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

**DASNY**  
DORMITORY AUTHORITY STATE OF NEW YORK

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ikon.5 Project: P29.01

HAZARDOUS MATERIALS CONSULTANT:

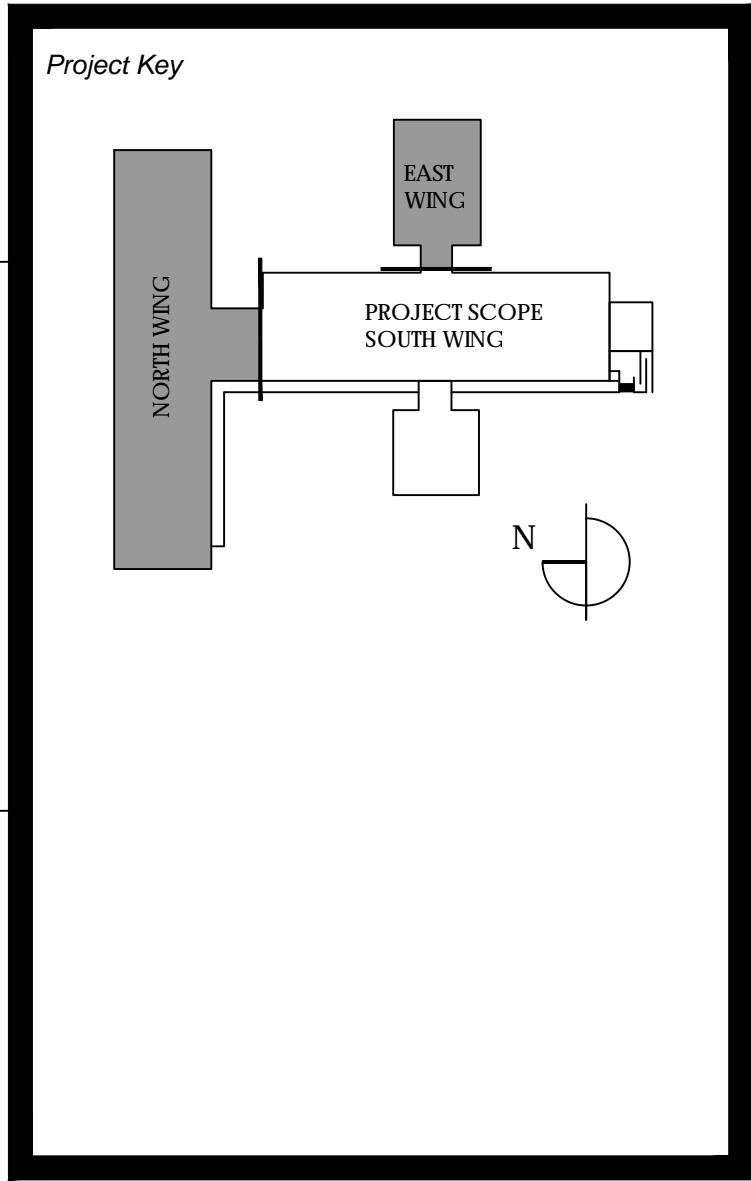
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**REVISIONS**

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College of Staten Island  
THE CITY UNIVERSITY OF NEW YORK  
2020 Center for Big Data Analytic  
2800 B Victory Blvd  
Staten Island, NY 10314

Phase  
90% CONSTRUCTION DOCUMENTS

**AUDIOVISUAL ENLARGED PLANS**

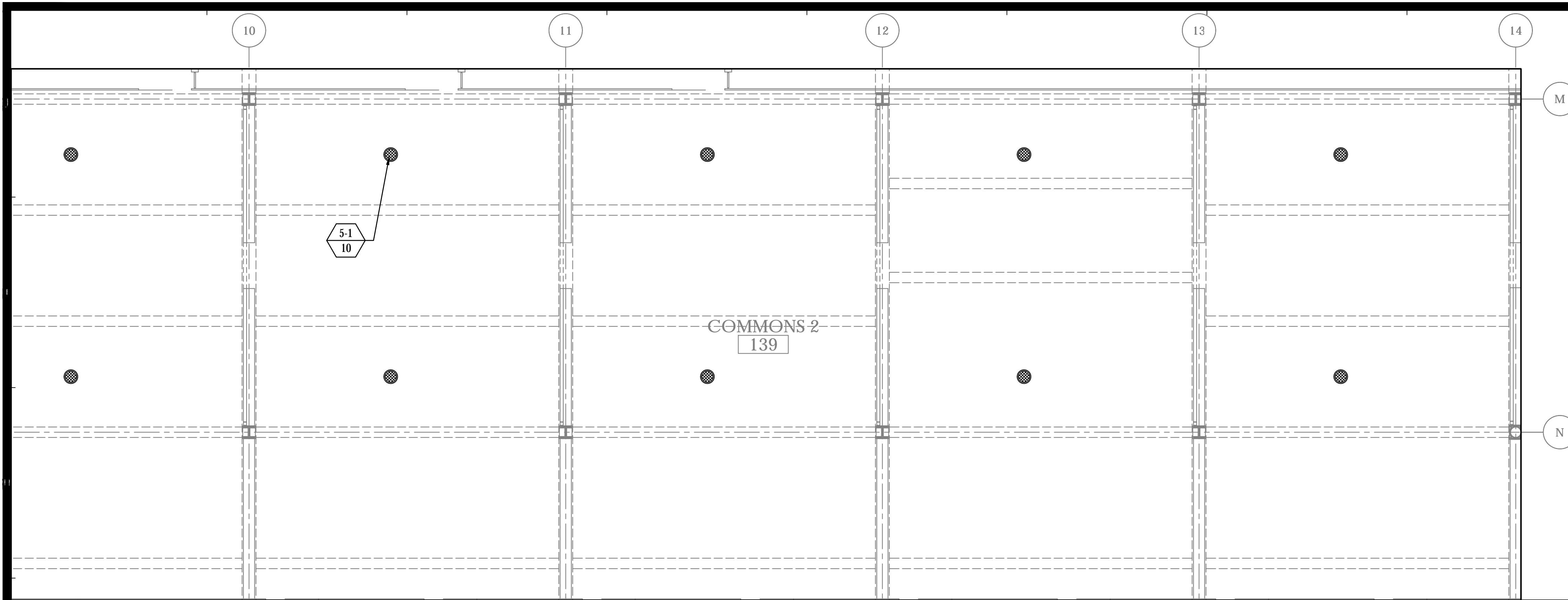
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Drawing Number

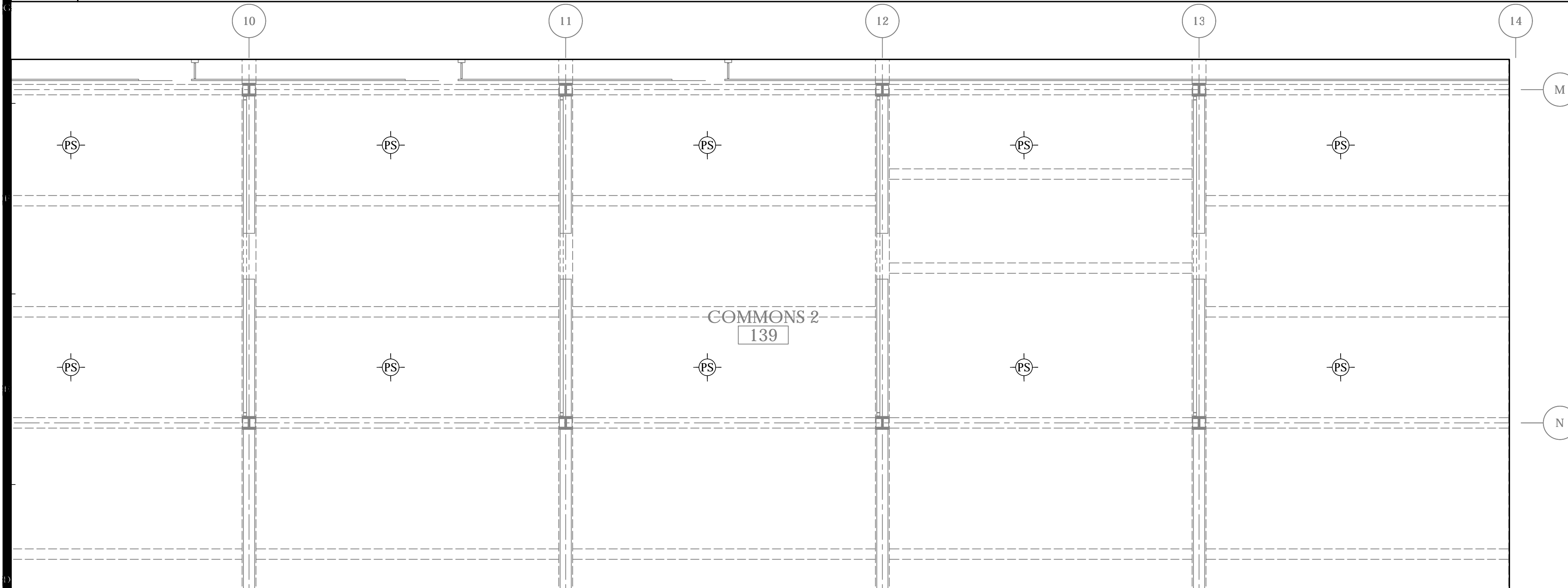
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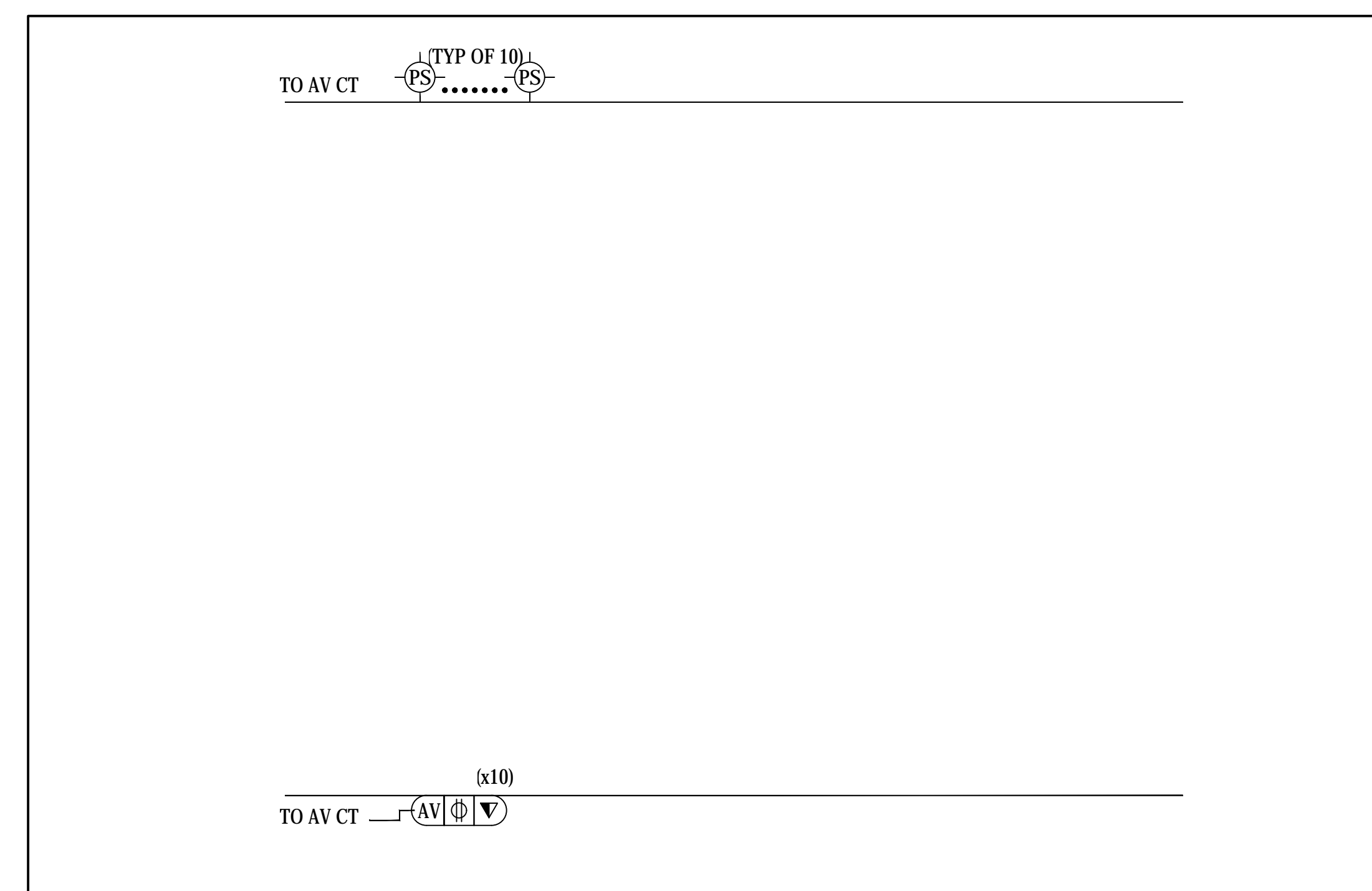
NYC DOB BSCAN:



1.1 ENLARGED FACILITY RCP  
COMMONS 2  
1/4"=1'-0"



1.4 ENLARGED FACILITY RCP  
COMMONS 2  
1/4"=1'-0"



1.5 CONDUIT RISER DIAGRAM  
COMMONS 2  
1/2"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREDEZZA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSISTIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR ASSISTIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
	CEILING MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE, FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

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ikon.5 Project: P29.01

HAZARDOUS MATERIALS CONSULTANT:

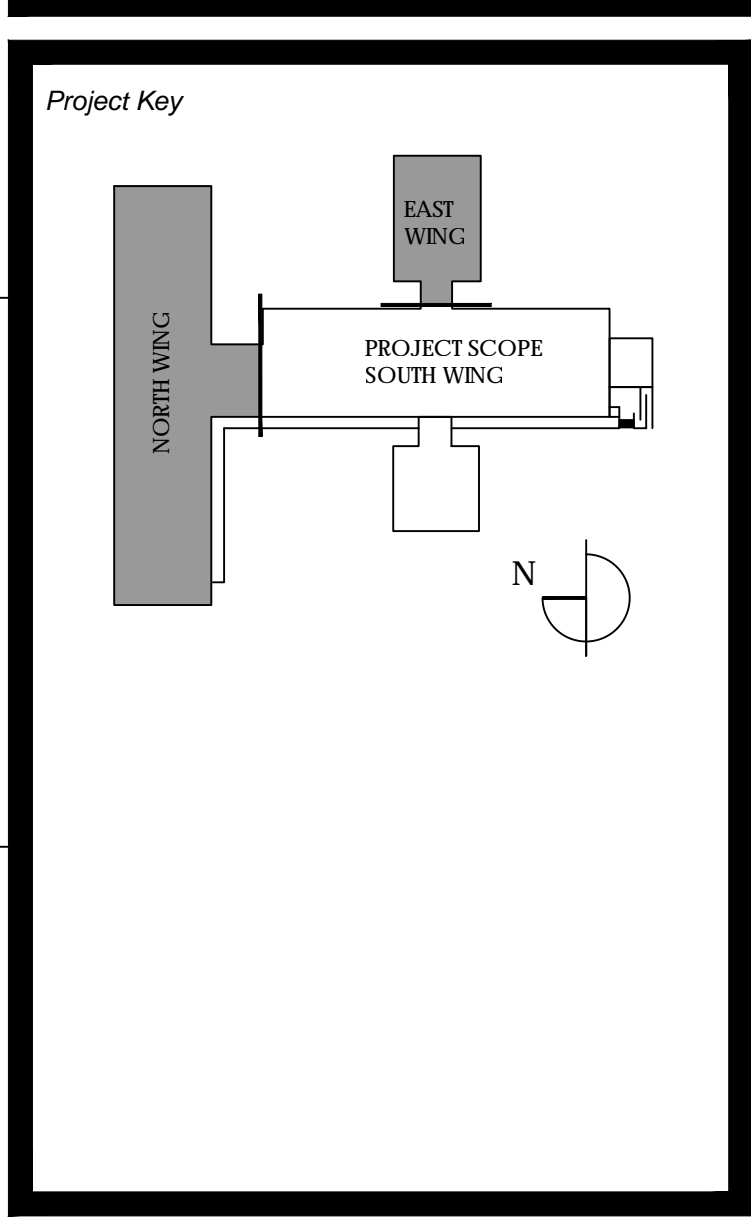
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**AUDIOVISUAL ENLARGED PLANS**

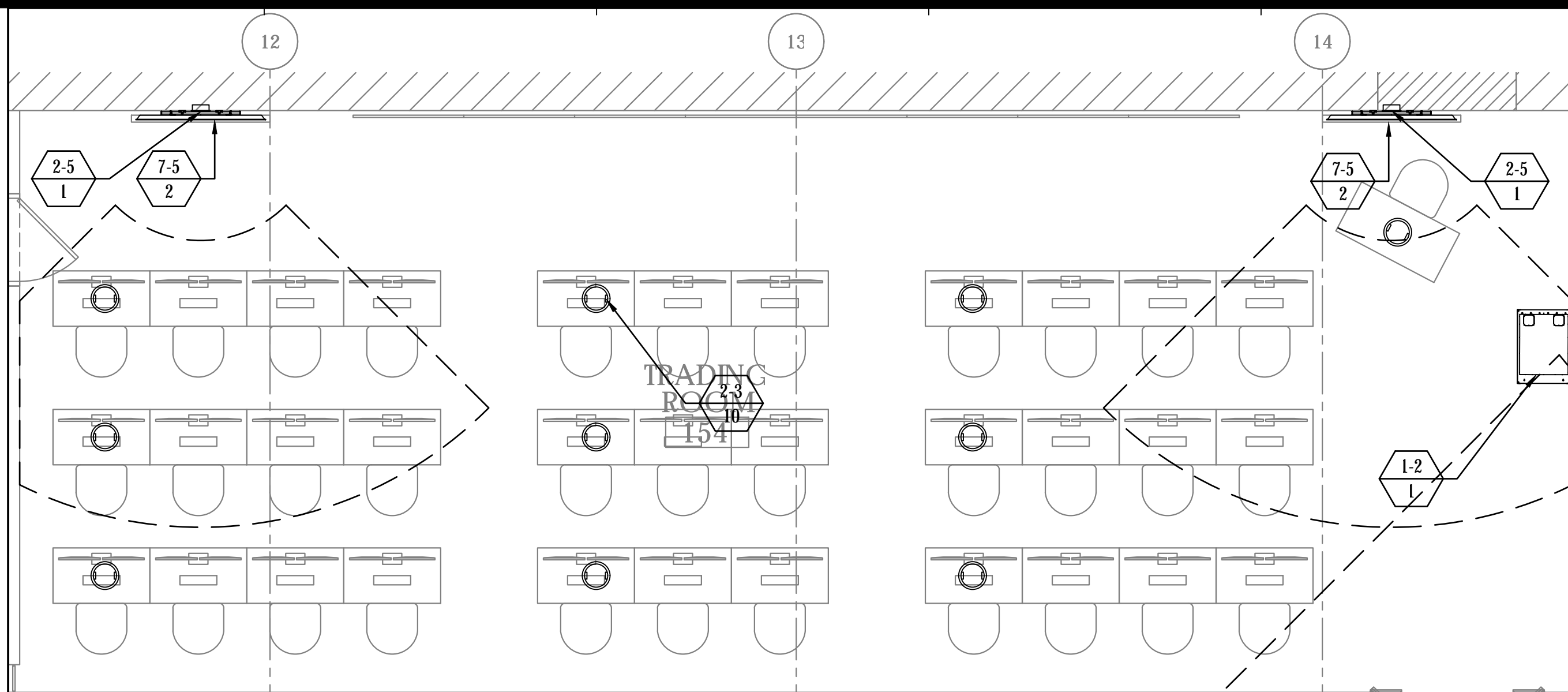
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Seal & Signature \_\_\_\_\_ DASNY Project No: 3453509999  
Drawing Number: TA-607.00

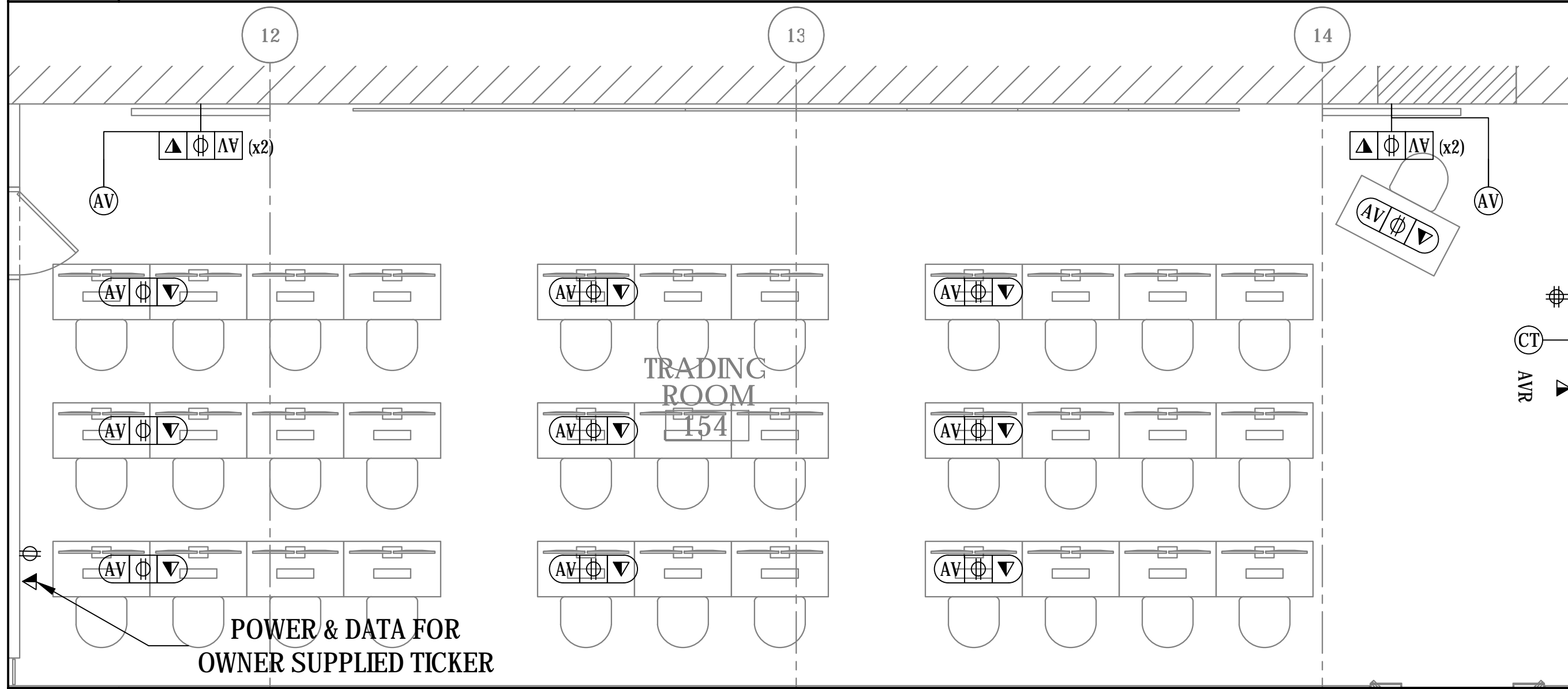
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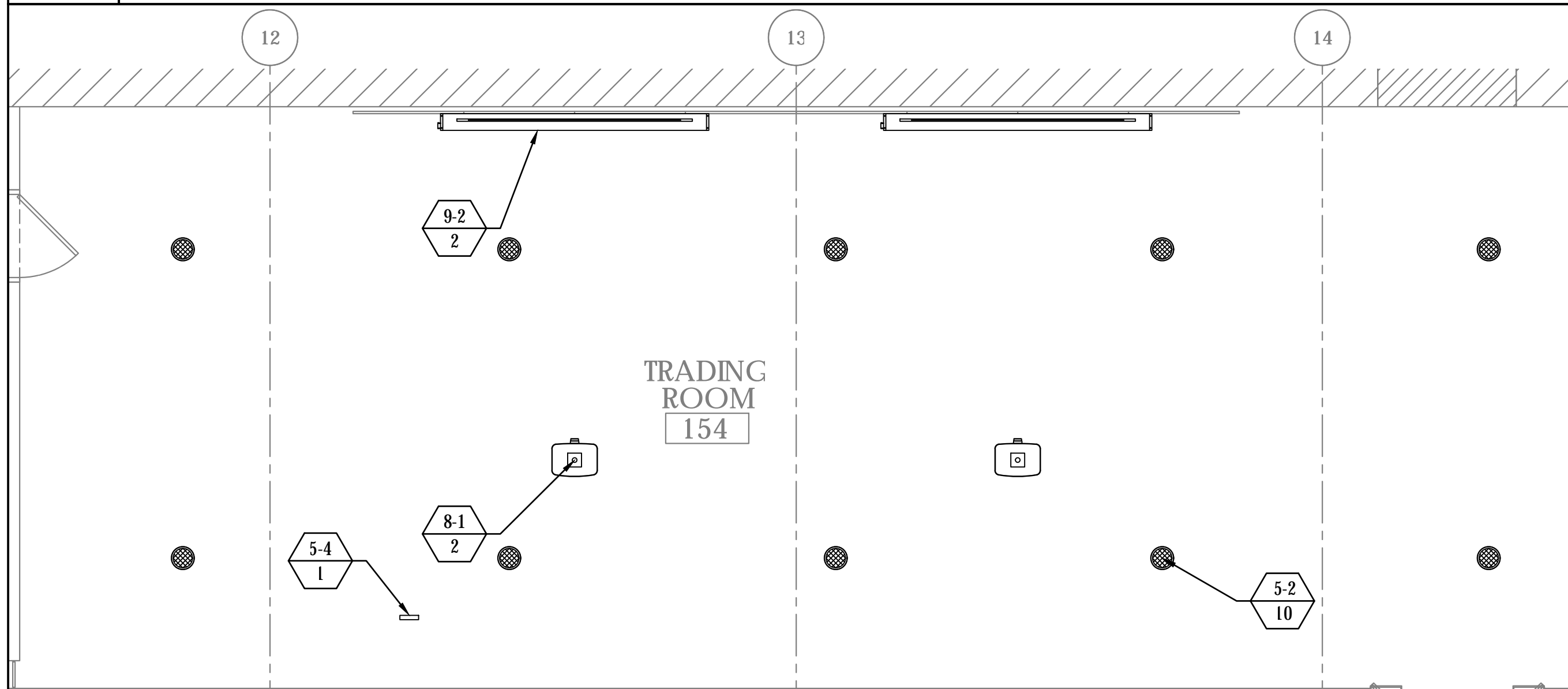
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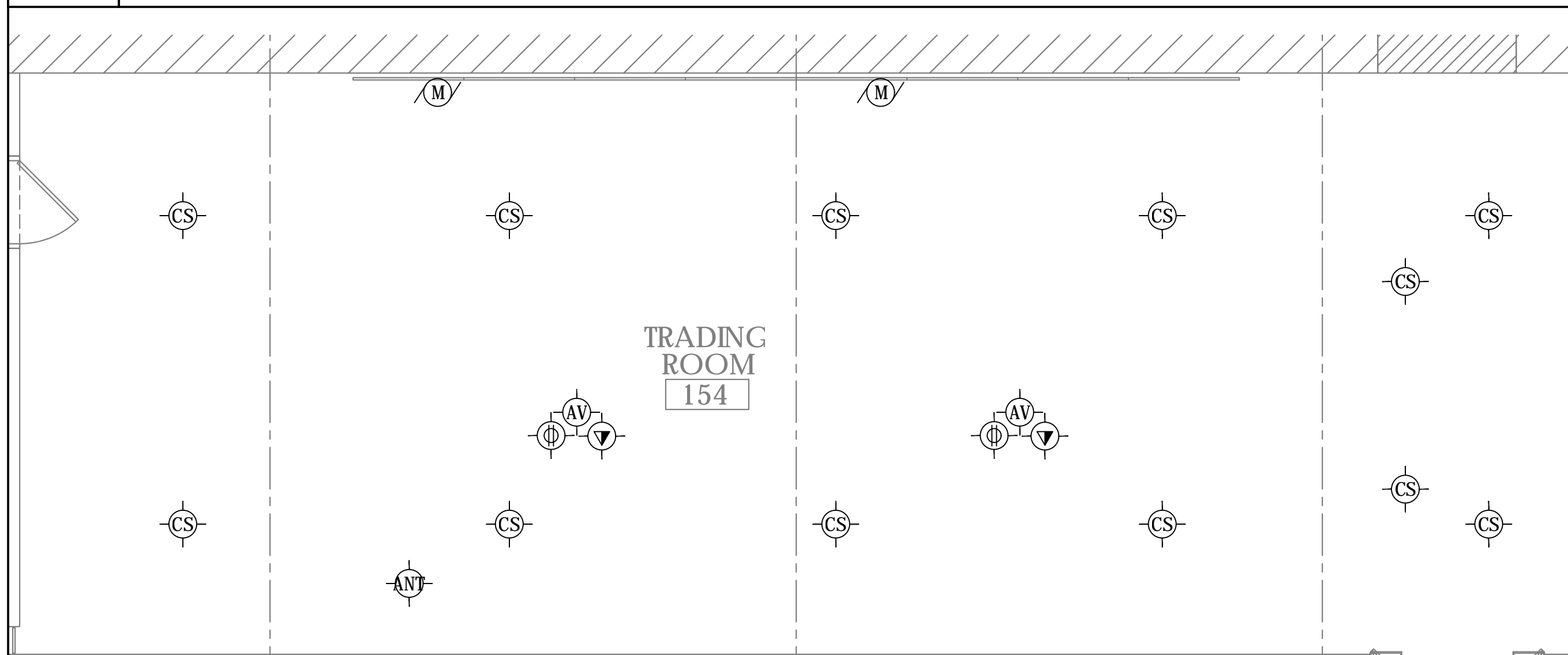
**1.0 ENLARGED FACILITY PLAN**  
TRADING ROOM  
1/4"=1'-0"



**1.3 ENLARGED ELECTRICAL PLAN**  
TRADING ROOM  
1/4"=1'-0"



**1.1 ENLARGED FACILITY RCP**  
TRADING ROOM  
1/4"=1'-0"



**1.4 ENLARGED ELECTRICAL RCP**  
TRADING ROOM  
1/4"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CRENZEA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
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TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
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	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
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	PENDANT SPEAKER

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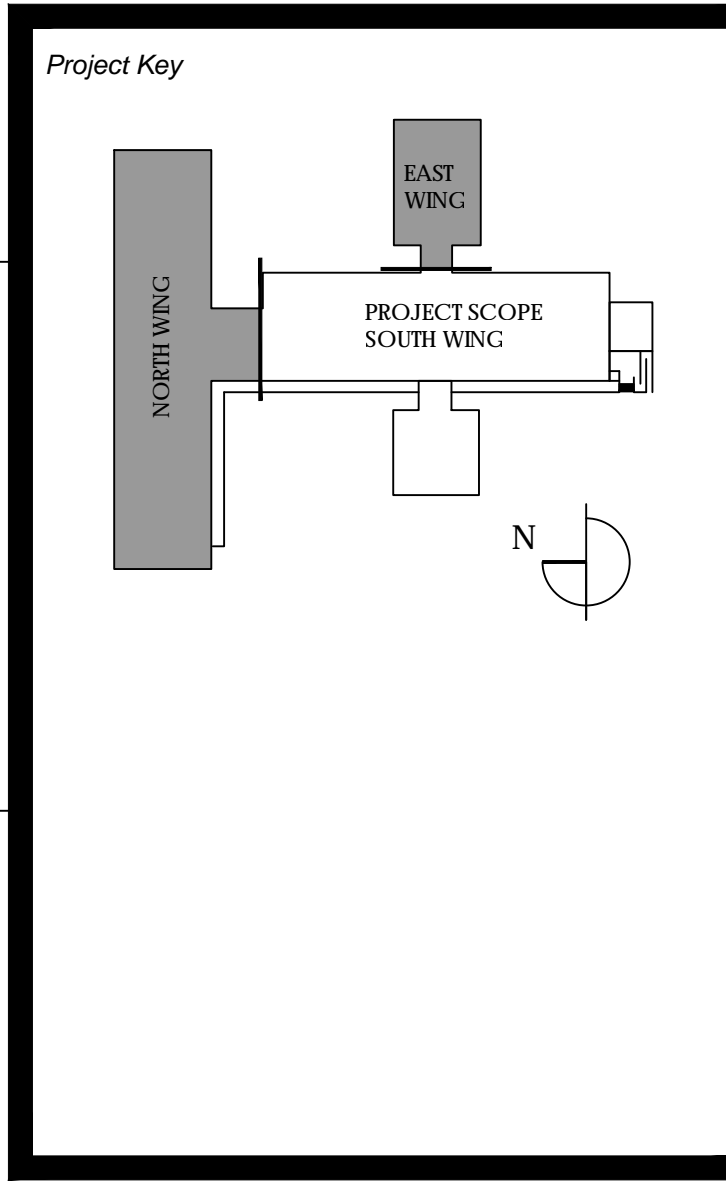
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**CUNY** The City University of New York  
College of Staten Island  
THE CITY UNIVERSITY OF NEW YORK  
2020 Center for Big Data Analytics  
2800 B Victory Blvd  
Staten Island, NY 10314

Phase  
90% CONSTRUCTION DOCUMENTS

**AUDIOVISUAL ENLARGED PLANS**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

Seal & Signature: \_\_\_\_\_ DASNY Project No: **345350999**  
Drawing Number: \_\_\_\_\_

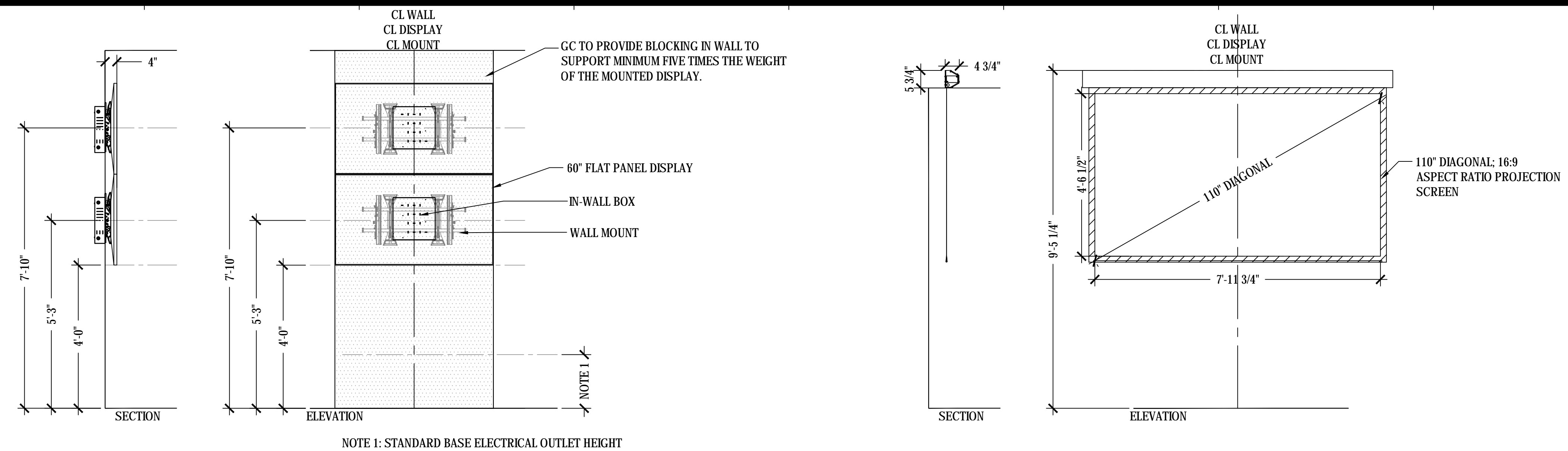
**TA-608.00**

Drawing of \_\_\_\_\_

NYC DOB EMPLOYEE STAMP/SIGNATURE: \_\_\_\_\_

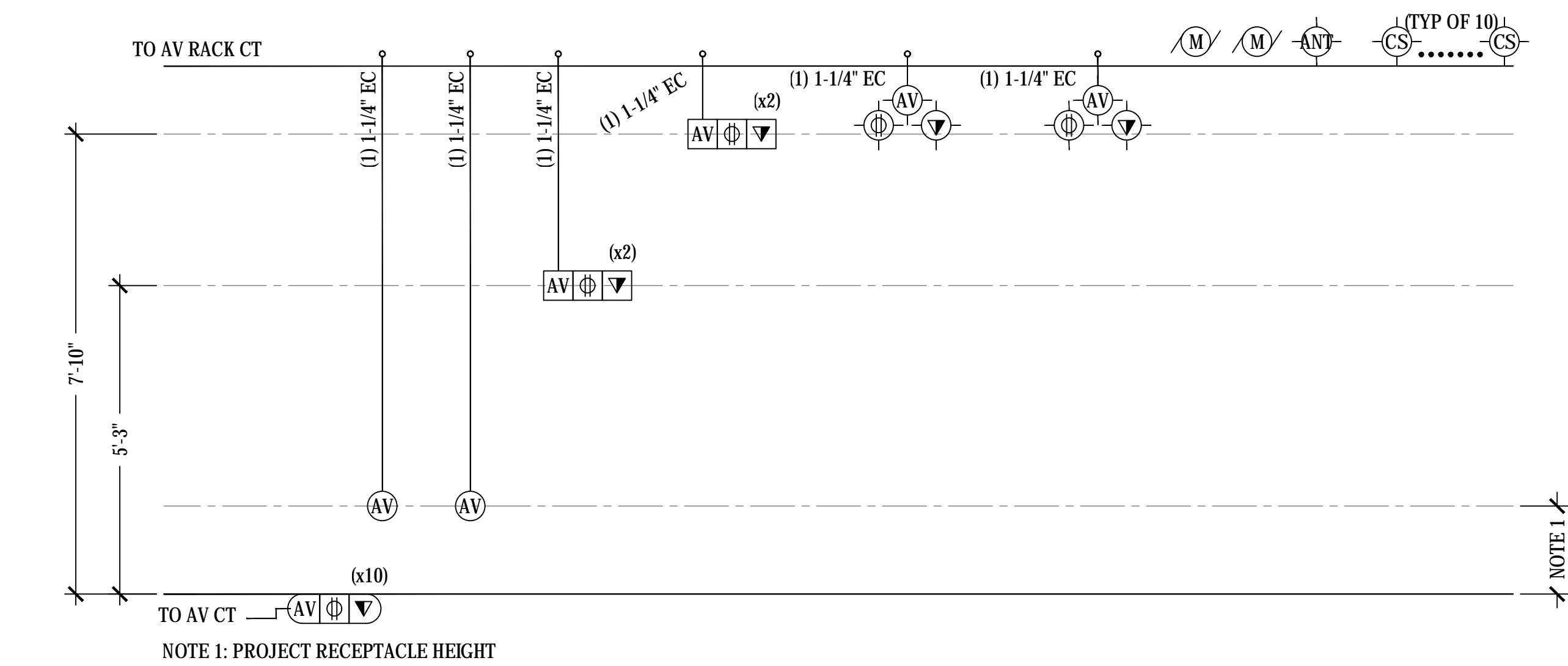
NYC DOB BSCAN: \_\_\_\_\_





1.2 TYP. DISPLAY SECTION AND ELEVATION  
TRADING ROOM  
1/4\"/>

1.5 TYP. PROJECTION SCREEN  
TRADING ROOM  
1/4\"/>



1.6 RISER  
TRADING ROOM  
1/4\"/>

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	EQUIPMENT RACKS: 1-1 FULL HEIGHT 1-2 CRENZEA RACK
	CONNECTIVITY: 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	AUDIO INPUT: 4-1 CEILING MOUNTED MICROPHONE
	AUDIO OUTPUT: 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	VIDEO ORIGIN/SOURCE: 6-1 CAMERA LEDGE MOUNT
	VIDEO DISPLAY (TYPE 1): 7-1 (40\") WALL MOUNTED FLAT PANEL 7-2 (86\") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48\") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60\") WALL MOUNTED FLAT PANEL
	VIDEO DISPLAY (TYPE 2): 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	VIDEO DISPLAY (TYPE 3): 9-1 MOTORIZED FRONT PROJECTION SCREEN (161\"/>

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4\"/>
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8\"/>
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16\"/>
	GANGABLE WALL BOX, 4-11/16\"/>
	GANGABLE WALL BOX, 4-11/16\"/>
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE. SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16\"/>
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
	CEILING MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
	GANGABLE JUNCTION BOX, 4-11/16\"/>
	GANGABLE JUNCTION BOX, 4-11/16\"/>
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

**DASNY**  
DORMITORY AUTHORITY STATE OF NEW YORK

115 West Street, 4th Floor, New York, New York 10038  
One Penn Plaza, 52 Floor, New York, New York 10119  
120 Franklin Street, 8th Floor, New York, New York 10038

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www.ikon5architects.com

ikon.5 architects  
ikon.5 Project: P29.01

HAZARDOUS MATERIALS CONSULTANT:

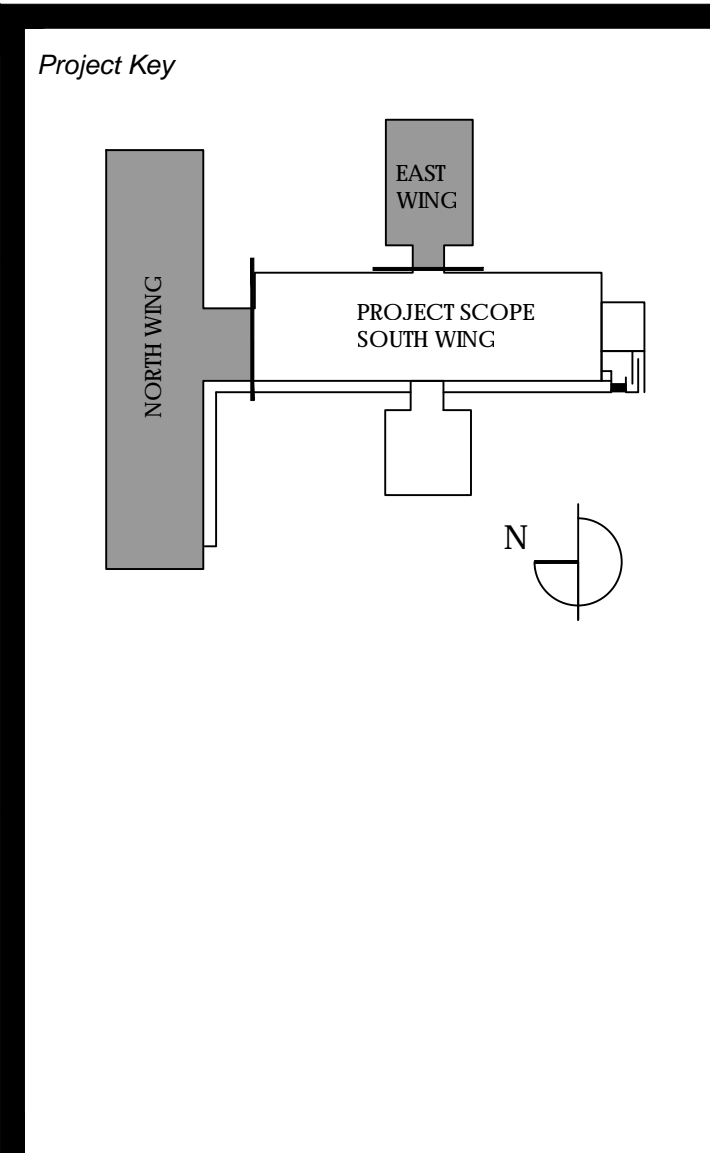
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REVISIONS		
Description	Date	
ISSUE FOR CONSTRUCTION	01/24/2020	

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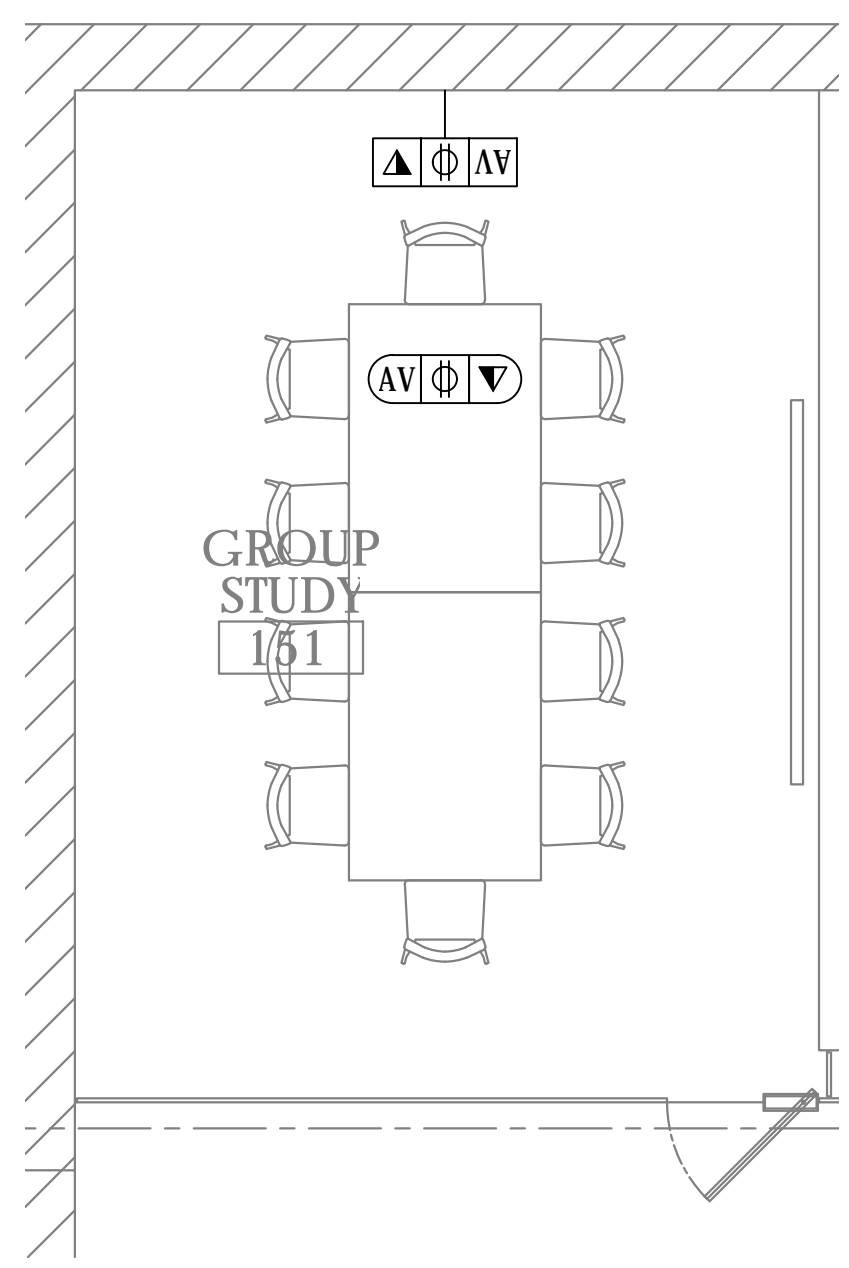
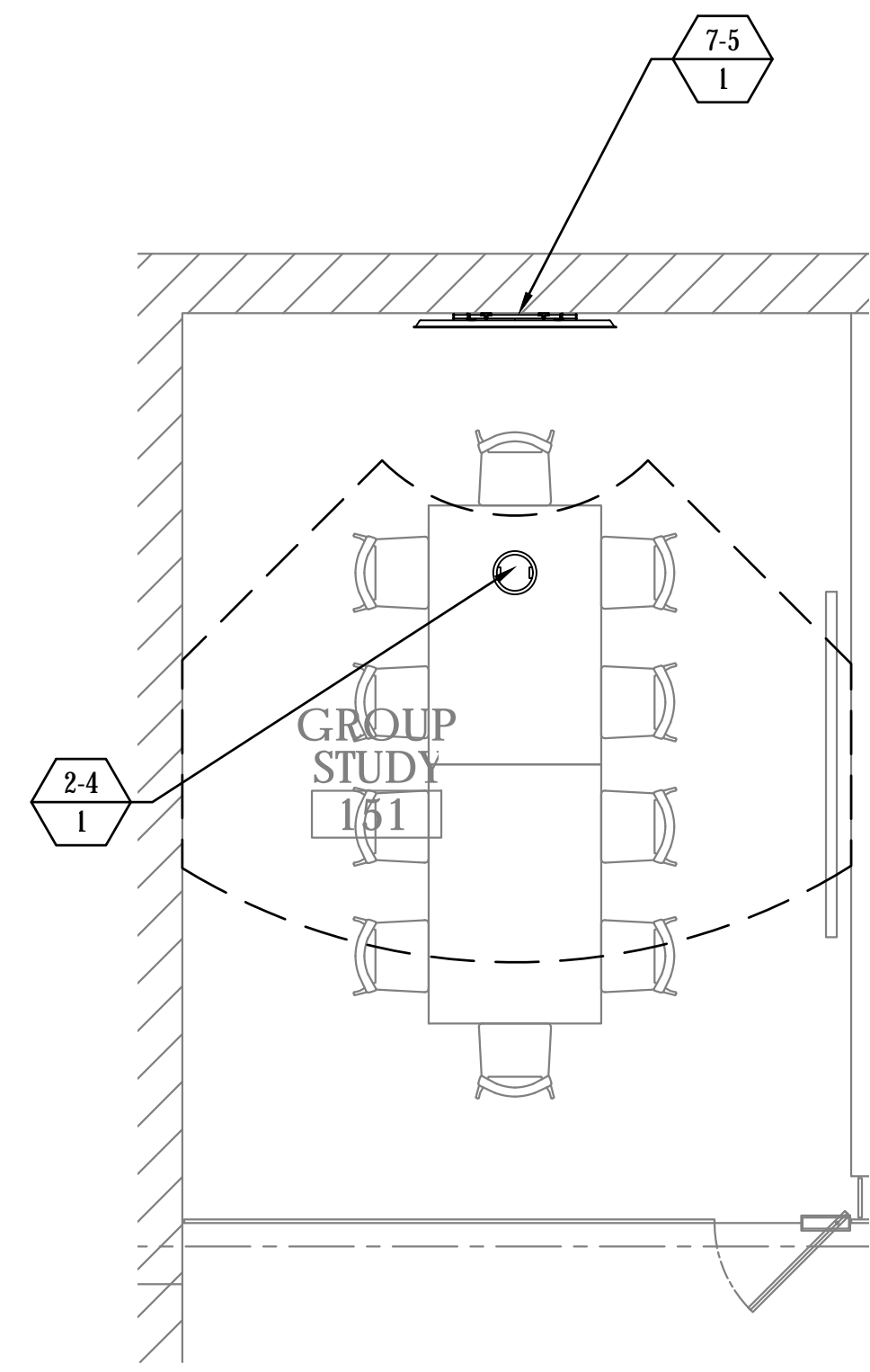
**AUDIOVISUAL ENLARGED PLANS**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

Seal & Signature \_\_\_\_\_ DASNY Project No: **3453509999**  
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Drawing of \_\_\_\_\_

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NYC DOB BSCAN: \_\_\_\_\_

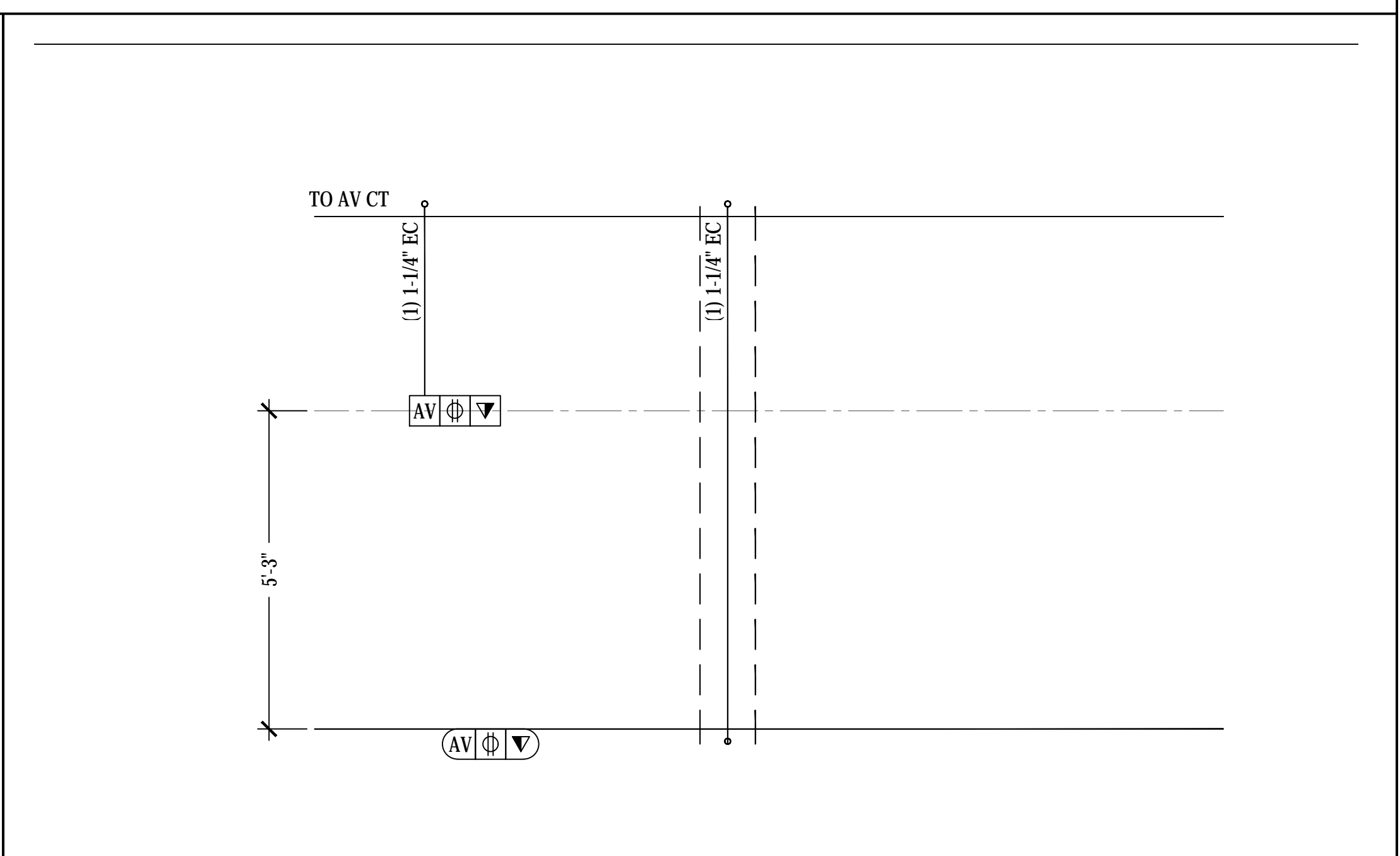
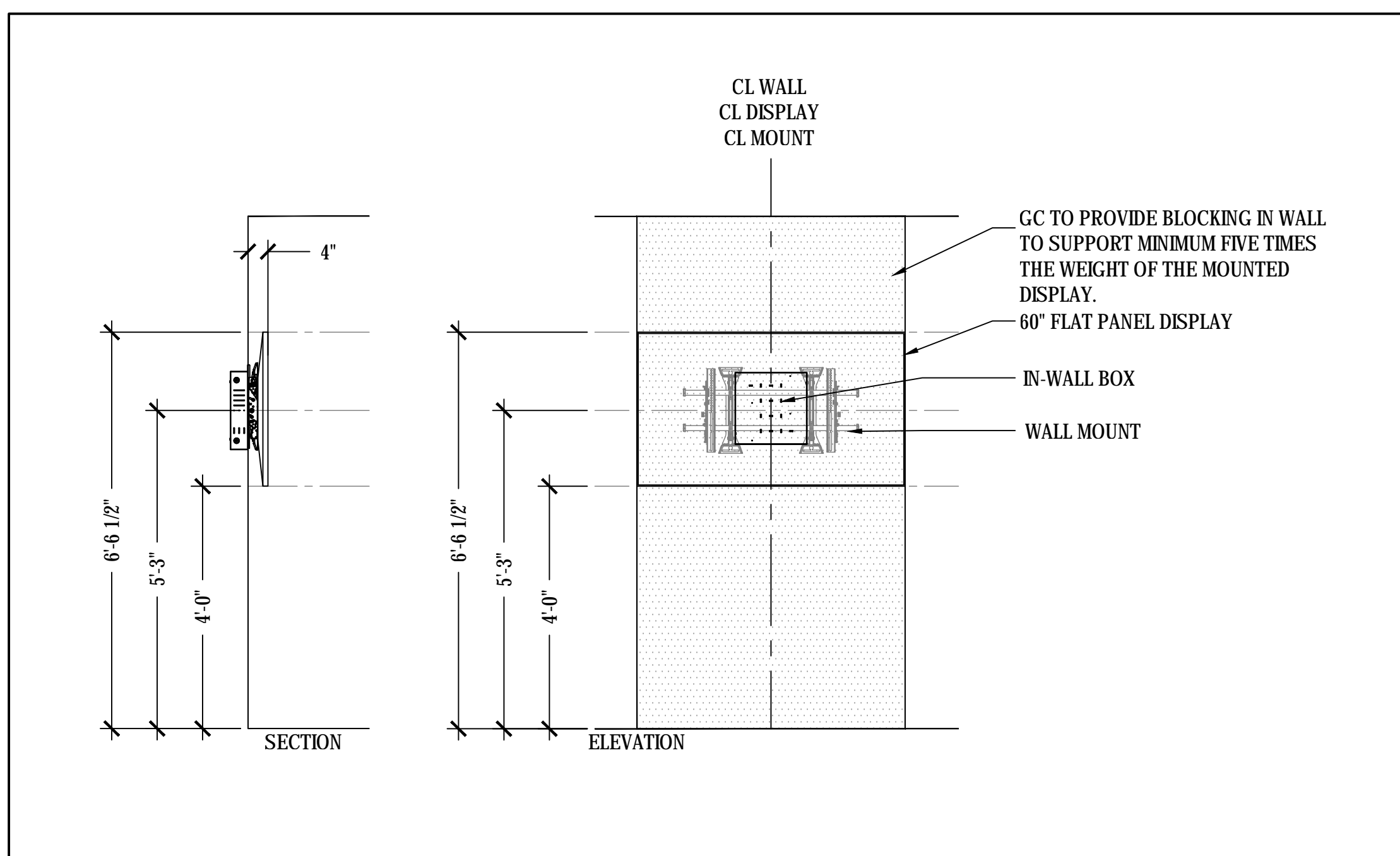


**1.0 ENLARGED FACILITY PLAN GROUP STUDY**  
1/4"=1'-0"

**1.3 ENLARGED ELECTRICAL PLAN GROUP STUDY**  
1/4"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREDENZIA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSISTIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ASSISTIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
	CEILING MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER



**1.2 SECTION AND ELEVATION GROUP STUDY**  
1/2"=1'-0"

**1.5 CONDUIT RISER DIAGRAM GROUP STUDY**  
1/2"=1'-0"

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ikon.5 Project: P29.01

HAZARDOUS MATERIALS CONSULTANT:

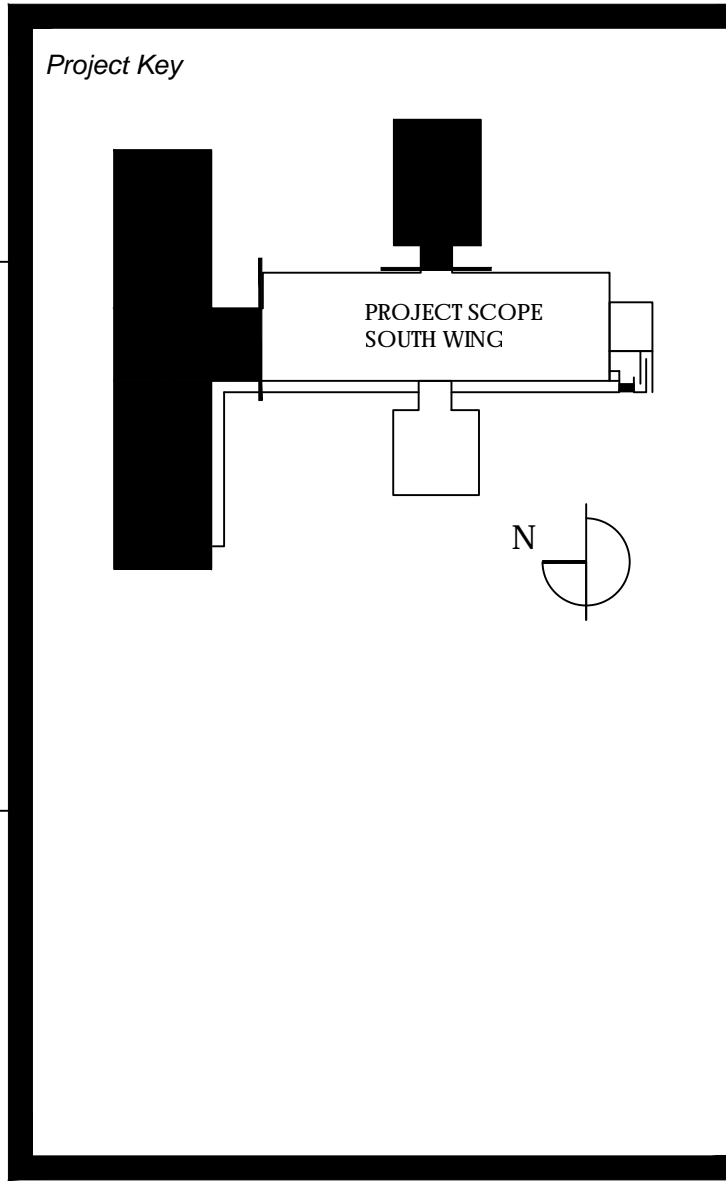
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**REVISIONS**

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ISSUE FOR CONSTRUCTION	01/24/2020

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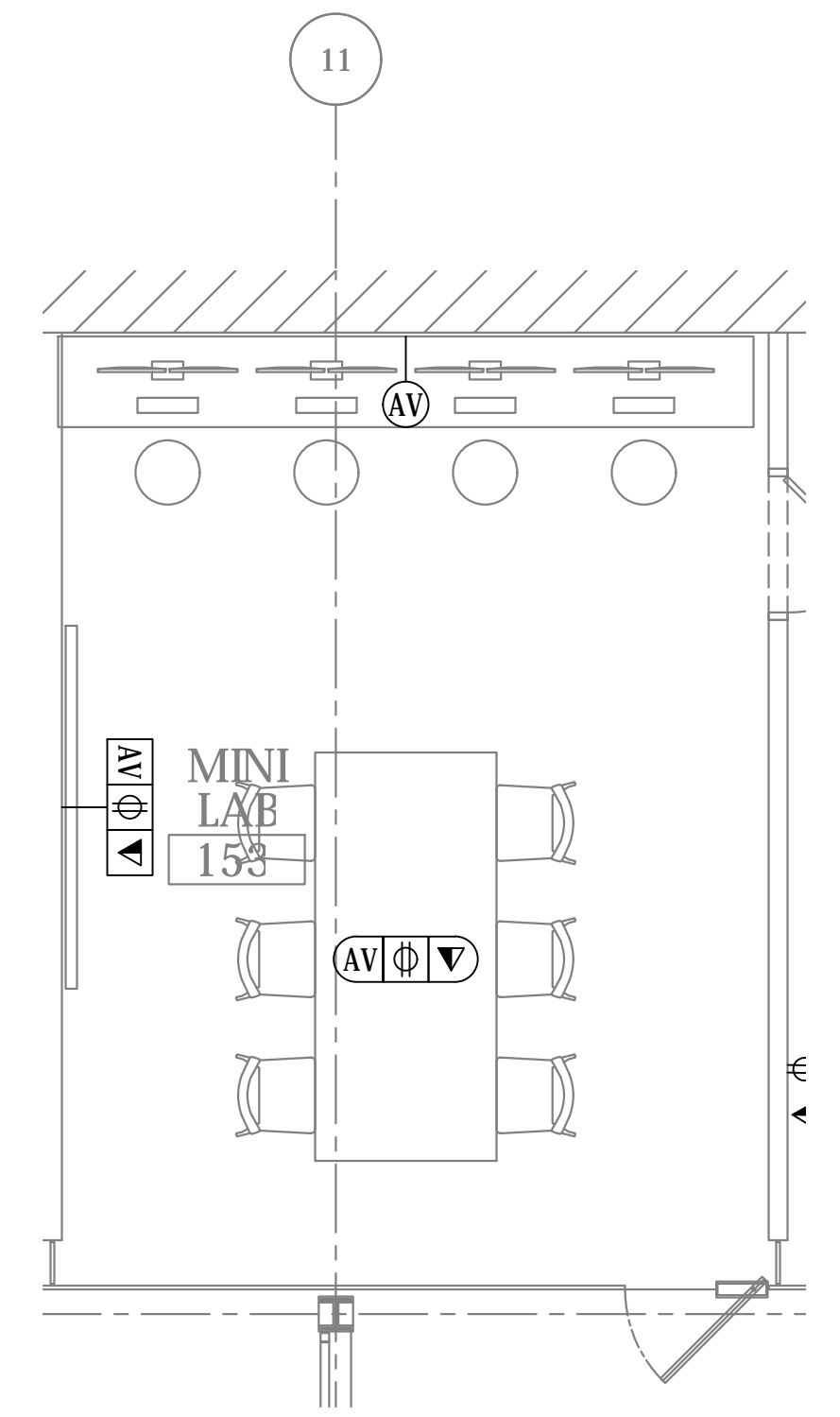
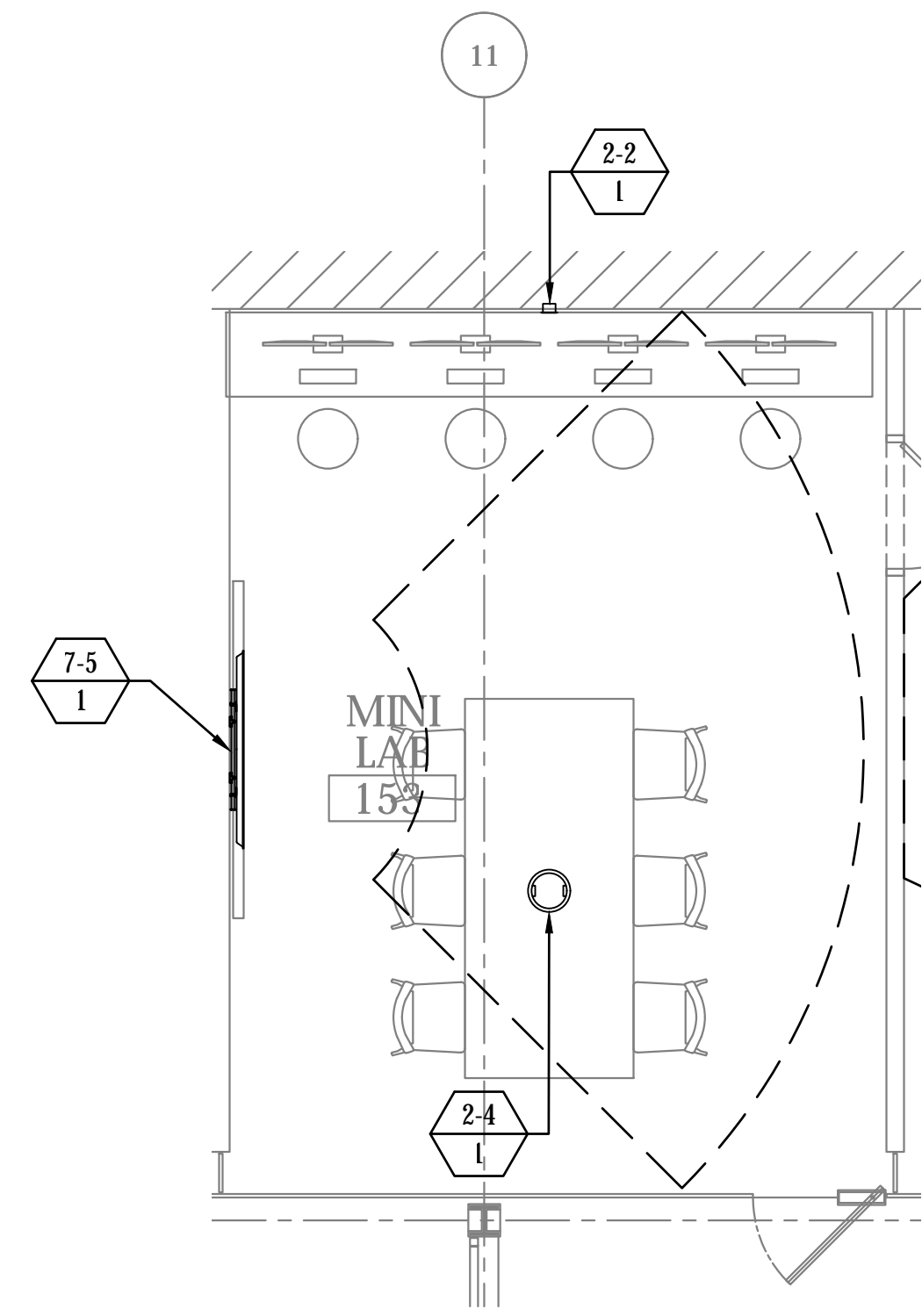
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**TA-610.00**

Drawing of \_\_\_\_\_

NYC DOB EMPLOYEE STAMP/SIGNATURE:

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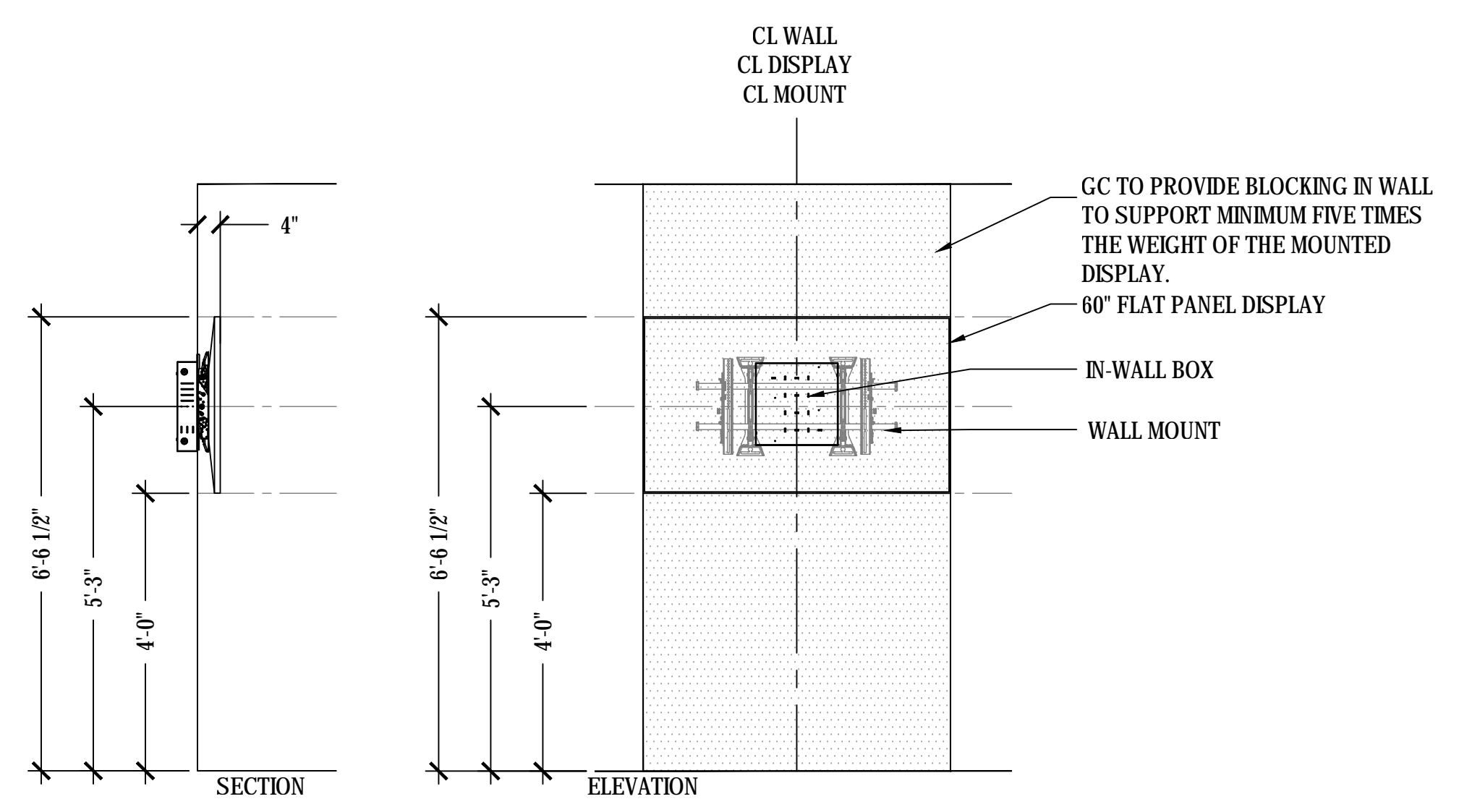


**1.0 ENLARGED FACILITY PLAN**  
MINI LAB  
1/4"=1'-0"

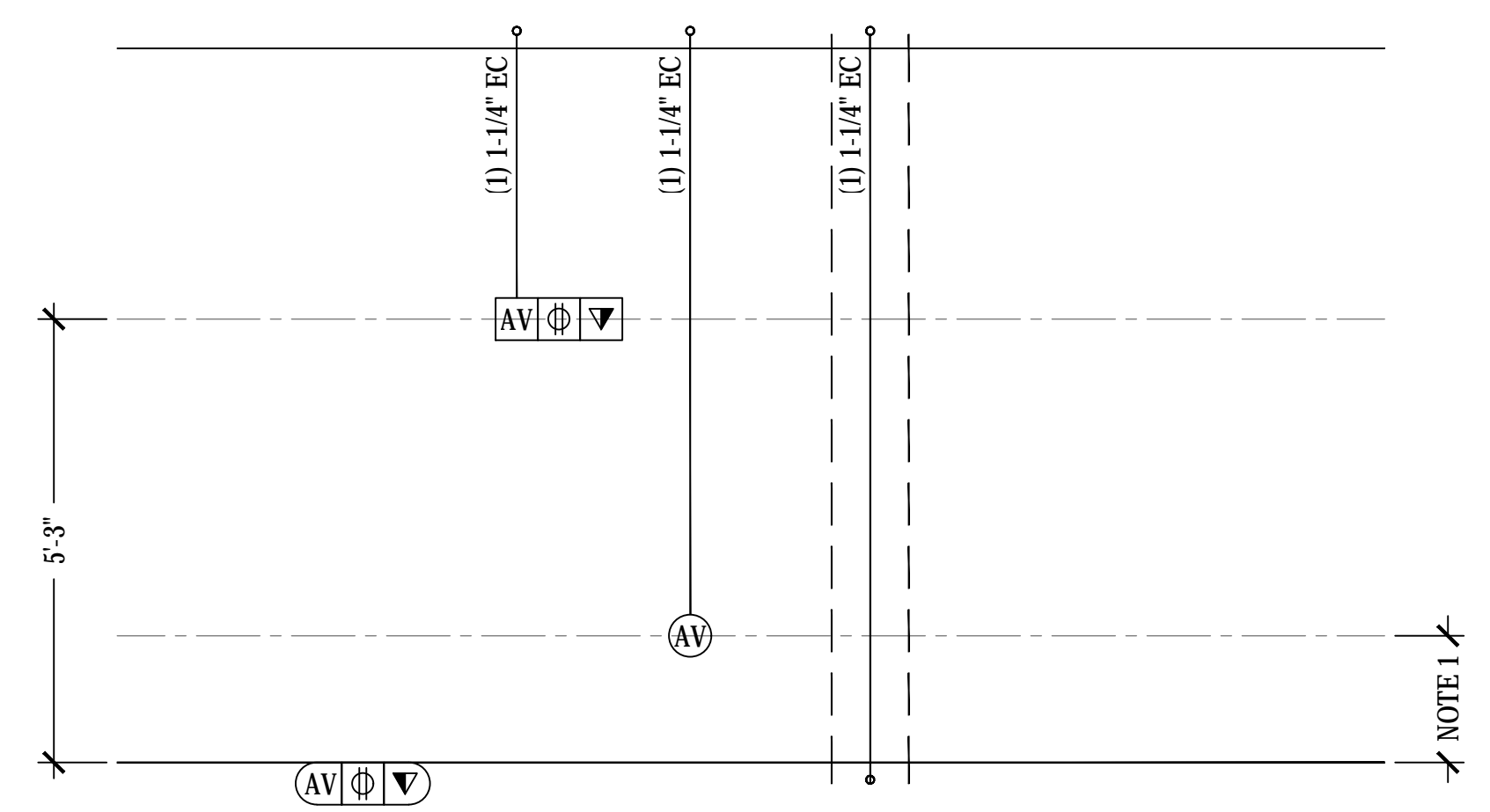
**1.3 ENLARGED ELECTRICAL PLAN**  
MINI LAB  
1/4"=1'-0"

**1.1 ENLARGED FACILITY RCP**  
N/A  
1/4"=1'-0"

**1.4 ENLARGED ELECTRICAL RCP**  
N/A  
1/4"=1'-0"



**1.2 SECTION AND ELEVATION**  
MINI LAB  
1/2"=1'-0"



**1.5 CONDUIT RISER DIAGRAM**  
MINI LAB  
1/2"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
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	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
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<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
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	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

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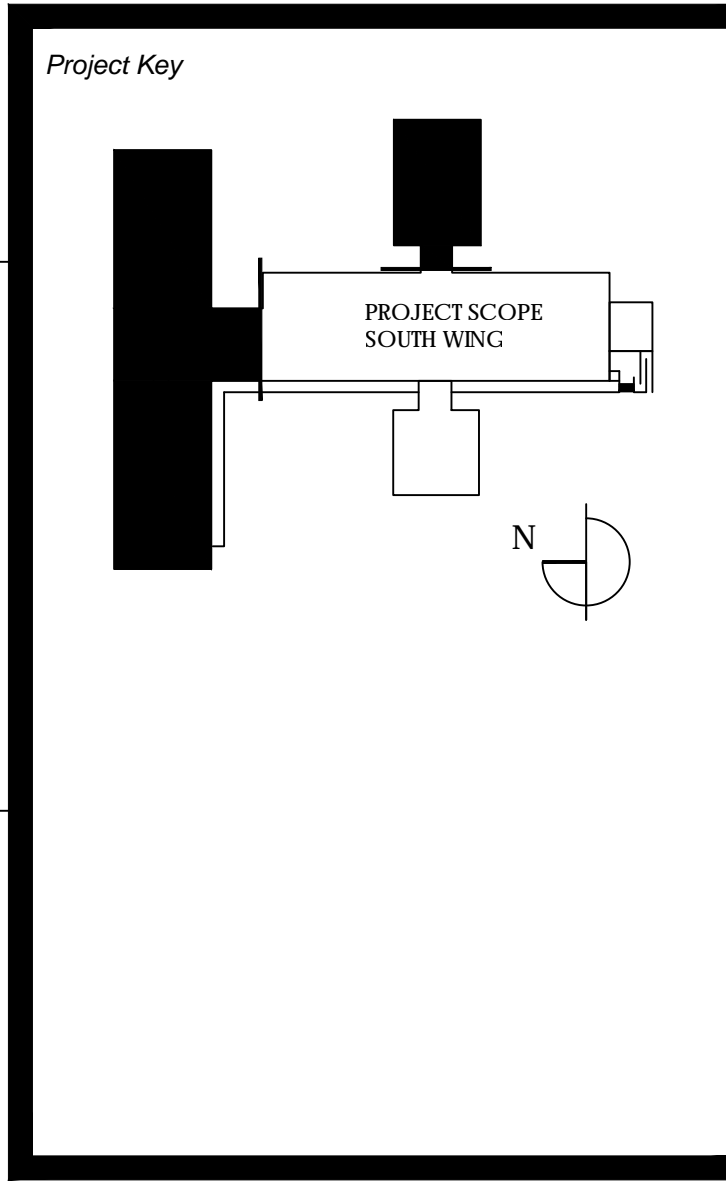
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THE CITY UNIVERSITY OF NEW YORK  
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2800 B Victory Blvd  
Staten Island, NY 10314

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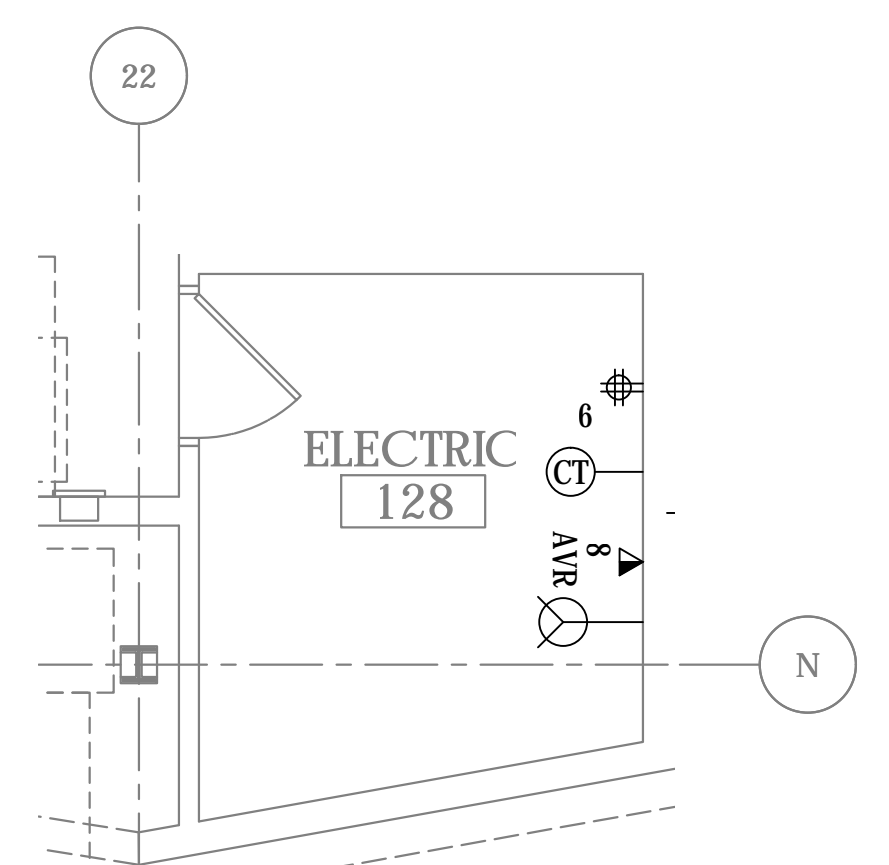
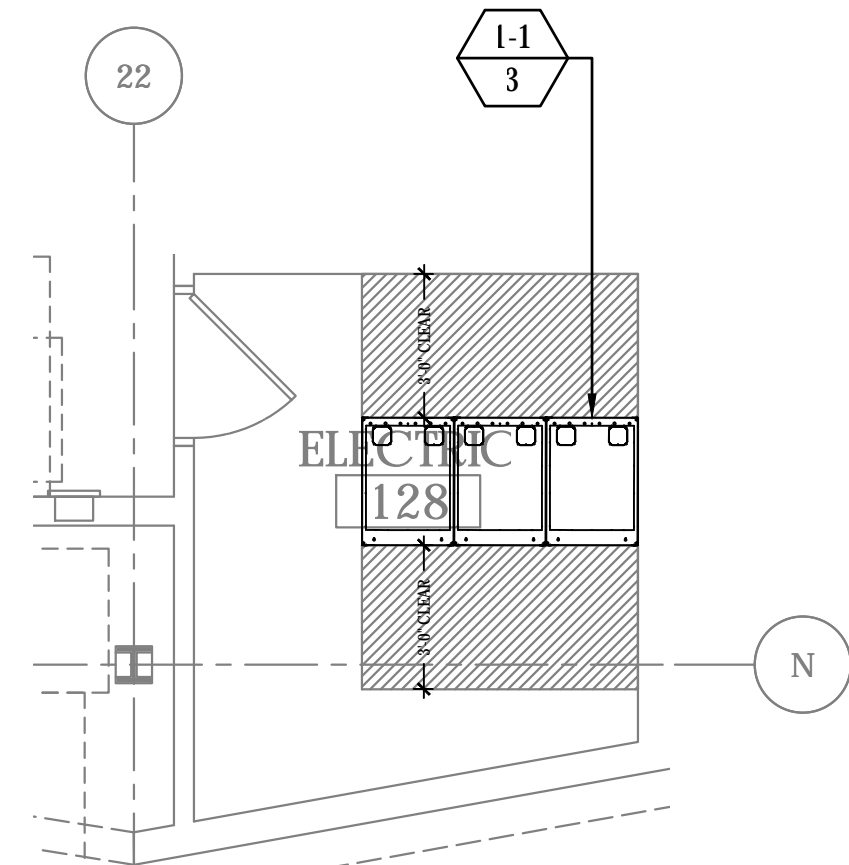
**AUDIOVISUAL ENLARGED PLANS**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

Seal & Signature: \_\_\_\_\_ DASNY Project No: **3453509999**  
Drawing Number: \_\_\_\_\_

**TA-611.00**

Drawing of \_\_\_\_\_



**1.0 ENLARGED FACILITY PLAN**  
ELECTRIC ROOM 128  
1/4"=1'-0"

**1.3 ENLARGED ELECTRICAL PLAN**  
ELECTRIC ROOM 128  
1/4"=1'-0"

TA - KEYNOTE LEGEND	
SYMBOL	DESCRIPTION
	<b>EQUIPMENT RACKS:</b> 1-1 FULL HEIGHT 1-2 CREDENZIA RACK
	<b>CONNECTIVITY:</b> 2-1 TABLE HATCH 2-2 WALL PLATE 2-3 AV POKE-THROUGH 2-4 POKE-THROUGH (GENERAL USE) 2-5 JUNCTION BOX (4 GANG) 2-6 FLOOR BOX
	<b>AUDIO INPUT:</b> 4-1 CEILING MOUNTED MICROPHONE
	<b>AUDIO OUTPUT:</b> 5-1 CEILING PENDENT LOUDSPEAKER 5-2 CEILING RECESSED LOUDSPEAKER 5-3 ASSITIVE LISTENING EMITTER 5-4 WIRELESS MICROPHONE ANTENNA
	<b>VIDEO ORIGIN/SOURCE:</b> 6-1 CAMERA LEDGE MOUNT
	<b>VIDEO DISPLAY (TYPE 1):</b> 7-1 (40") WALL MOUNTED FLAT PANEL 7-2 (86") WALL MOUNTED INTERACTIVE FLAT PANEL 7-3 (48") WALL MOUNTED DIGITAL SIGNAGE 7-4 LED TILE MATRIX VIDEO WALL 7-5 (60") WALL MOUNTED FLAT PANEL
	<b>VIDEO DISPLAY (TYPE 2):</b> 8-1 VIDEO PROJECTOR, POLE MOUNTED 8-2 SHORT THROW PROJECTOR
	<b>VIDEO DISPLAY (TYPE 3):</b> 9-1 MOTORIZED FRONT PROJECTION SCREEN (161" DIAGONAL; 16:9 ASPECT RATIO) 9-2 MOTORIZED FRONT PROJECTION SCREEN (110" DIAGONAL; 16:9 ASPECT RATIO)

TA - ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
<b>SLAB MOUNTED</b>	
	MULTI-DISCIPLINE FLOOR BOX, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. MINIMUM 4" DEEP SLAB DEPTH AND 4 GANG OPENINGS REQUIRED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	MULTI-DISCIPLINE RECESSED POKE-THRU, 8" CORE HOLE, WITH HINGED COVER PLATE AND CARPET FLANGE; WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH VOICE, DATA AND 120VAC POWER. FLUSH MOUNT IN FLOOR UNLESS OTHERWISE INDICATED. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
<b>WALL MOUNTED</b>	
	IN-WALL BOX, WITH DIVIDED COMPARTMENTS FOR SHARED ACCESS WITH AUDIOVISUAL, DATA AND 120VAC POWER. MOUNT FLUSH WITH FINISHED WALL TREATMENT. REFER TO AUDIOVISUAL DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR CAMERA CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE WALL BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ASSITIVE LISTENING CONNECTIVITY. MOUNT FLUSH WITH FINISHED WALL TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, QUADPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	WALL MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
<b>CEILING MOUNTED</b>	
	CEILING SPEAKER BACK BOX, GRILLE AND TILE BRIDGE. MOUNT FLUSH WITH FINISHED CEILING AS INDICATED ON THE ARCHITECTURAL CEILING PLANS. CONFIRM THE INTEGRITY AND SIZE OF THE CEILING GRID SYSTEM WITH THE STRUCTURAL ENGINEER.
	MOTORIZED PROJECTION SCREEN, PROJECTOR LIFT OR SHADE WITH LOW-VOLTAGE INTERFACE, SUPPLIED WITH EQUIPMENT. MOUNT ABOVE FINISHED CEILING UNLESS OTHERWISE INDICATED. MAINTENANCE ACCESS TO BOX SHALL BE PROVIDED IN NON-ACCESSIBLE CEILINGS. PROVIDE UTILITY GRADE 120VAC UNLESS OTHERWISE INDICATED.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR AUDIOVISUAL CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 5-20R TYPE POWER RECEPTACLE, DUPLEX, 120VAC, 20AMP. MOUNT FLUSH WITH FINISHED CEILING TREATMENT.
	CEILING MOUNTED TELECOM VOICE/DATA OUTLET BOX. QUANTITY OF TEL/DATA DROPS PER PROJECT STANDARD UNLESS OTHERWISE INDICATED BY DENOTE. REFER TO TELECOM DRAWINGS FOR INSTALLATION DETAILS.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR MICROPHONE CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	GANGABLE JUNCTION BOX, 4-11/16" H X 2-1/2" D, WITH CONDUIT KNOCK OUTS AND BLANK COVER PLATE; FOR ANTENNA CONNECTIVITY. MOUNT FLUSH WITH FINISHED CEILING TREATMENT. (#) DENOTE INDICATES NUMBER OF GANG.
	NEMA 16-20R TWIST LOCK TYPE POWER RECEPTACLE, SIMPLEX, 208VAC, 50AMP 3 PHASE. REFER TO AUDIOVISUAL CONDUIT RISER DIAGRAMS FOR DEVICE MOUNTING HEIGHT.
	PENDANT SPEAKER

**DASNY**  
DORMITORY AUTHORITY STATE OF NEW YORK

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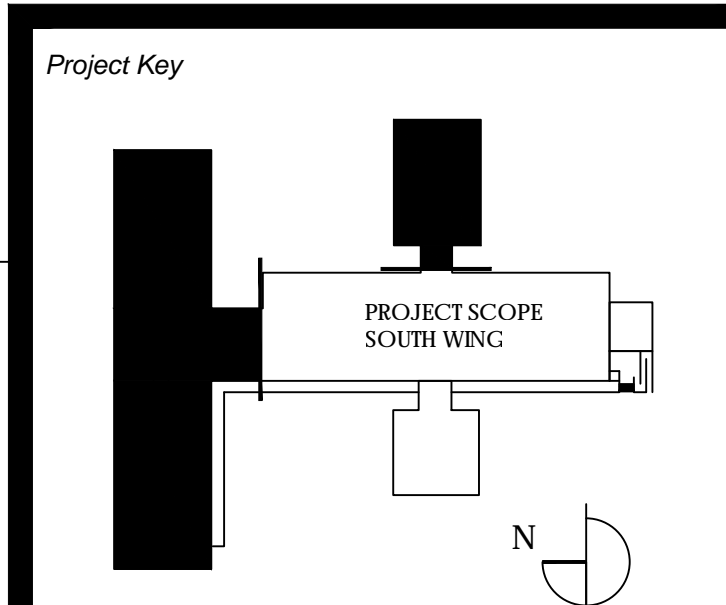
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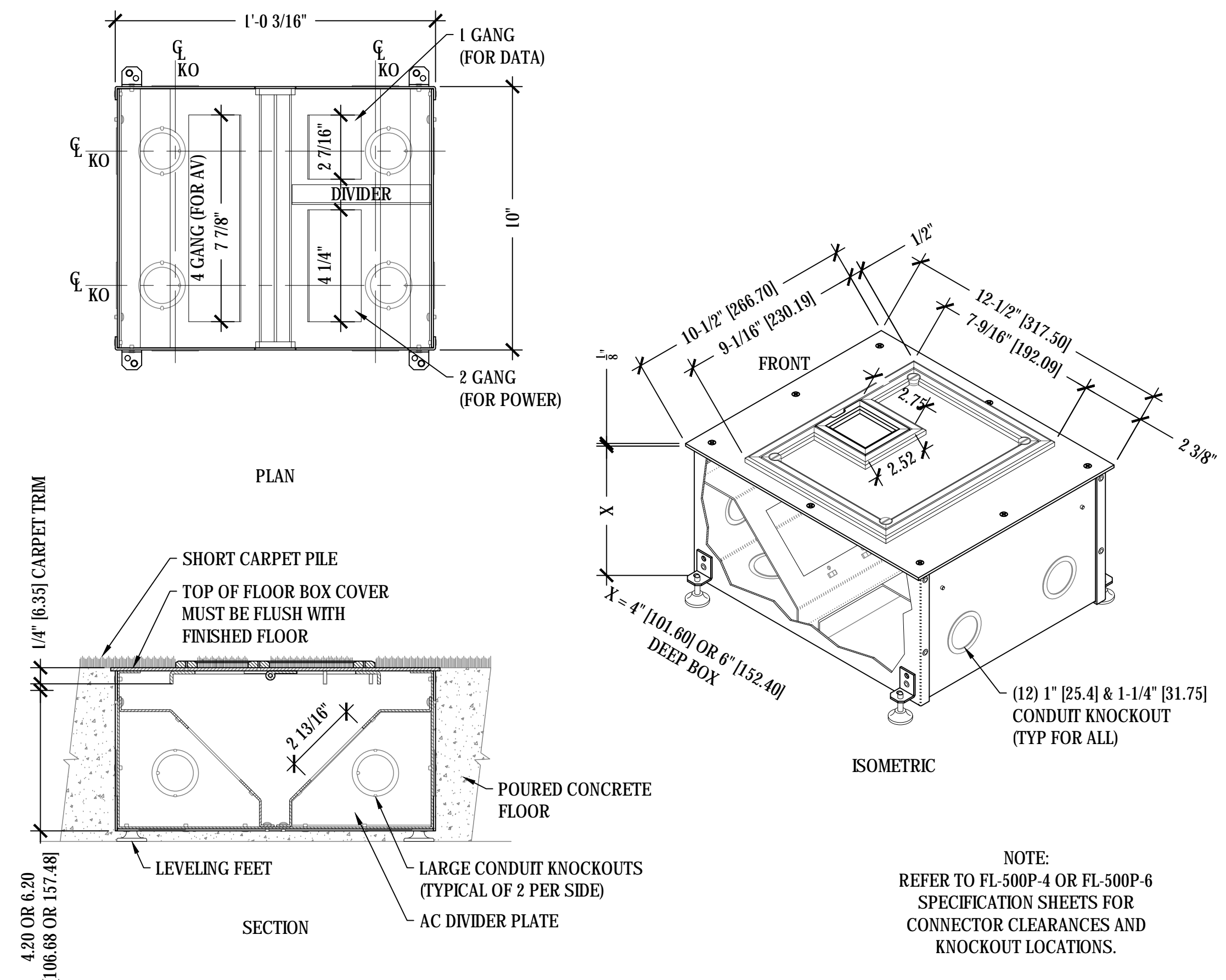
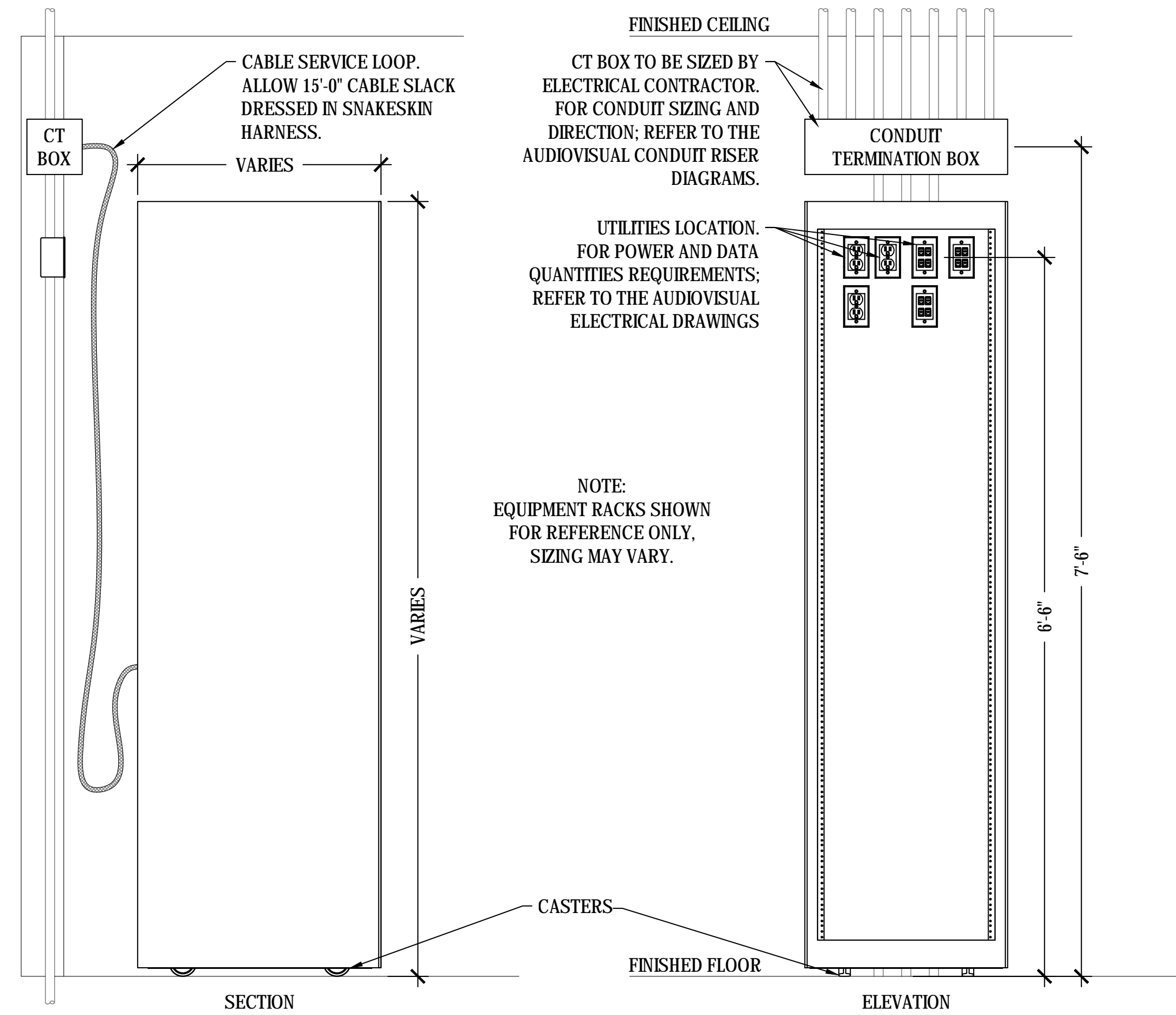
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Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

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**TA-612.00**  
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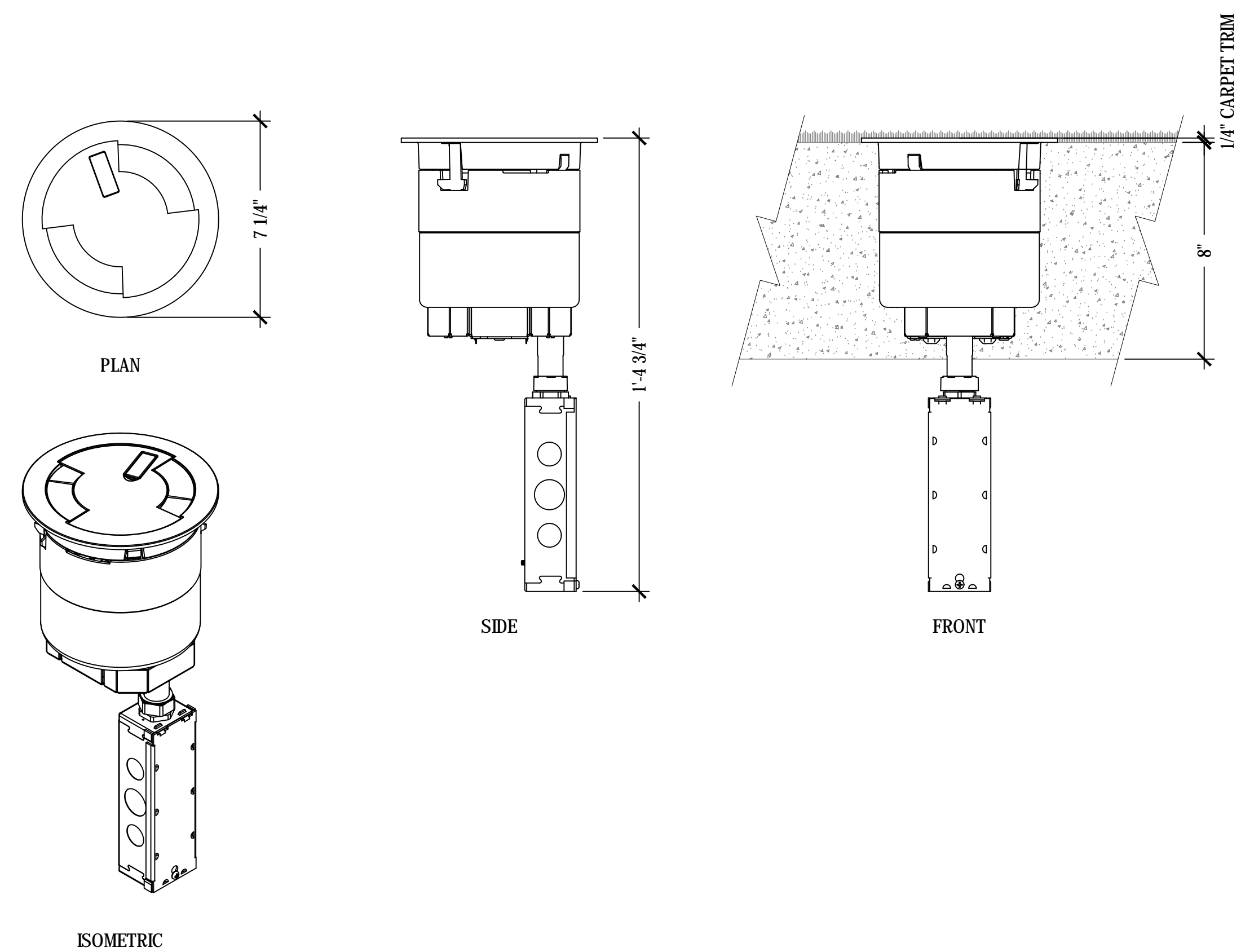
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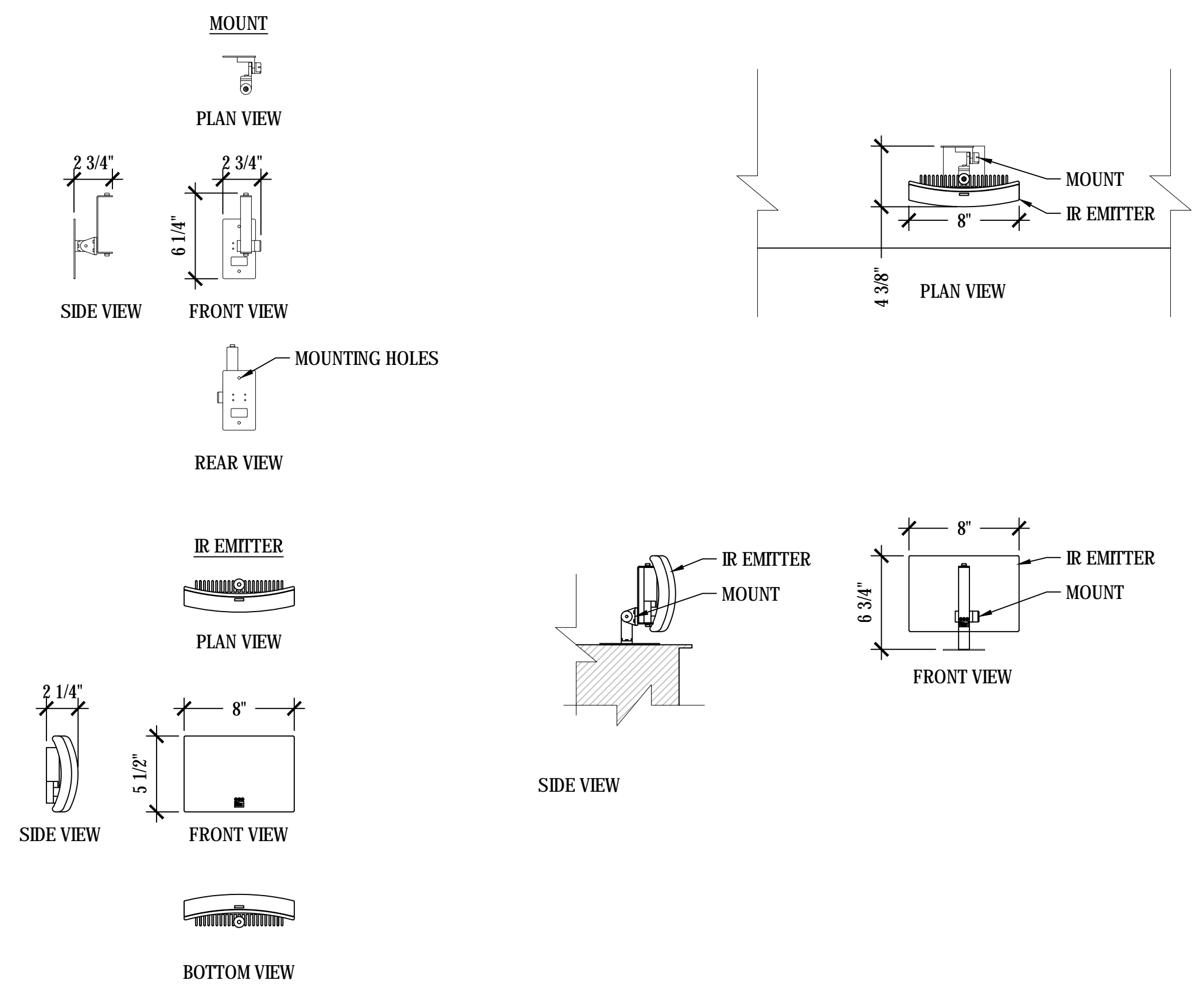


**1.0** EQUIPMENT RACK  
CONDUIT TERMINATION  
1" = 1'-0"

**2.0** FLOOR BOX  
3" = 1'-0"



**3.0** POKE-THRU  
3" = 1'-0"



**2.0** ASSITIVE LISTENING EMITTER  
1 1/2" = 1'-0"

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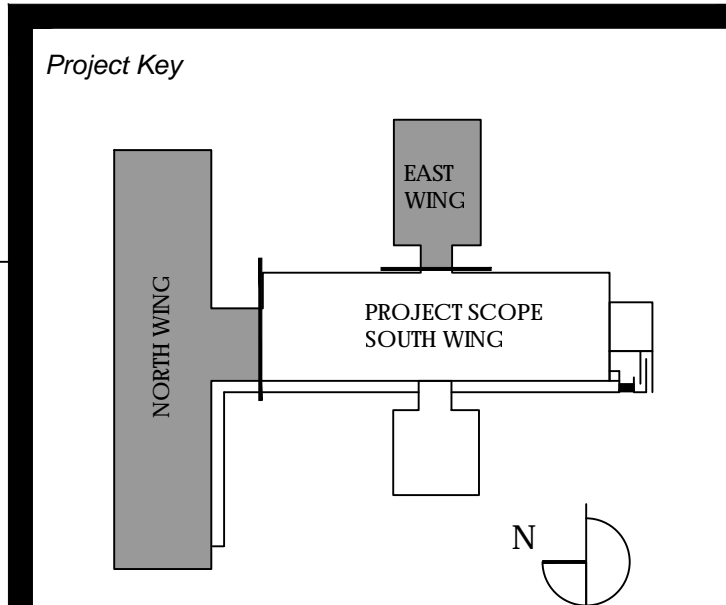
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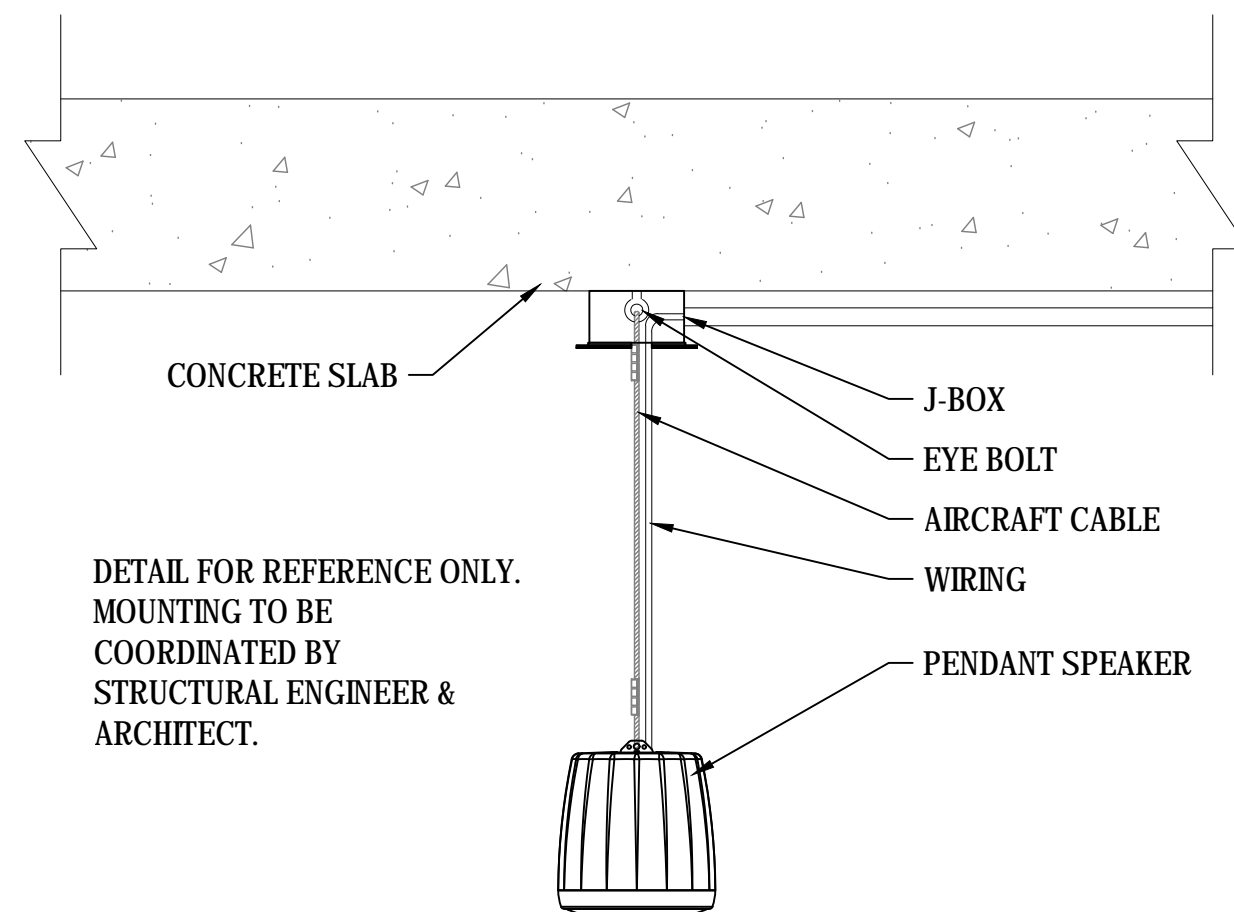
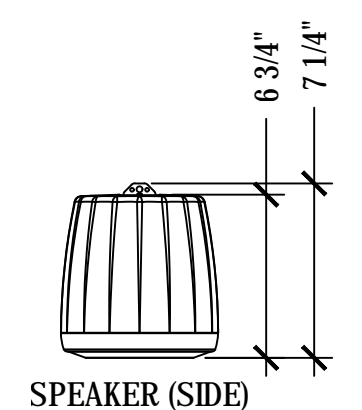
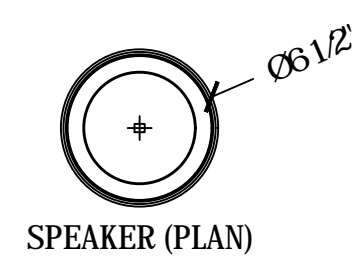
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**AUDIOVISUAL  
DETAILS**

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Date: **02/28/2017**

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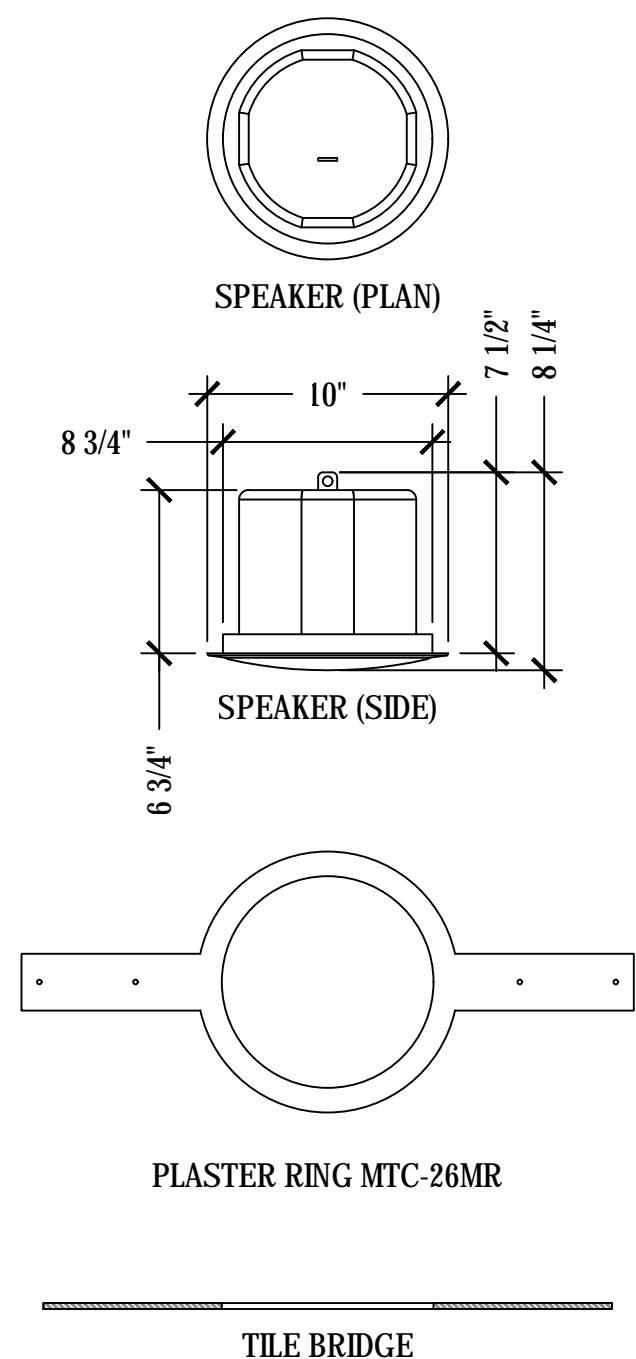


DETAIL FOR REFERENCE ONLY.  
MOUNTING TO BE  
COORDINATED BY  
STRUCTURAL ENGINEER &  
ARCHITECT.

- NOTES:
- 1) ALL SPEAKERS IN A ZONE SHALL BE HUNG SO THAT BOTTOM OF SPEAKER HOUSING IS AT SAME ELEVATION.
  - 2) SPEAKER HEIGHT SHALL BE ADJUSTED IF NECESSARY.
  - 3) WIRING SHALL BE TIGHT TO SLAB.
  - 4) THIS DETAIL IS NON-SEISMIC.

**1.0 PENDANT SPEAKER**

1 1/2" = 1'-0"

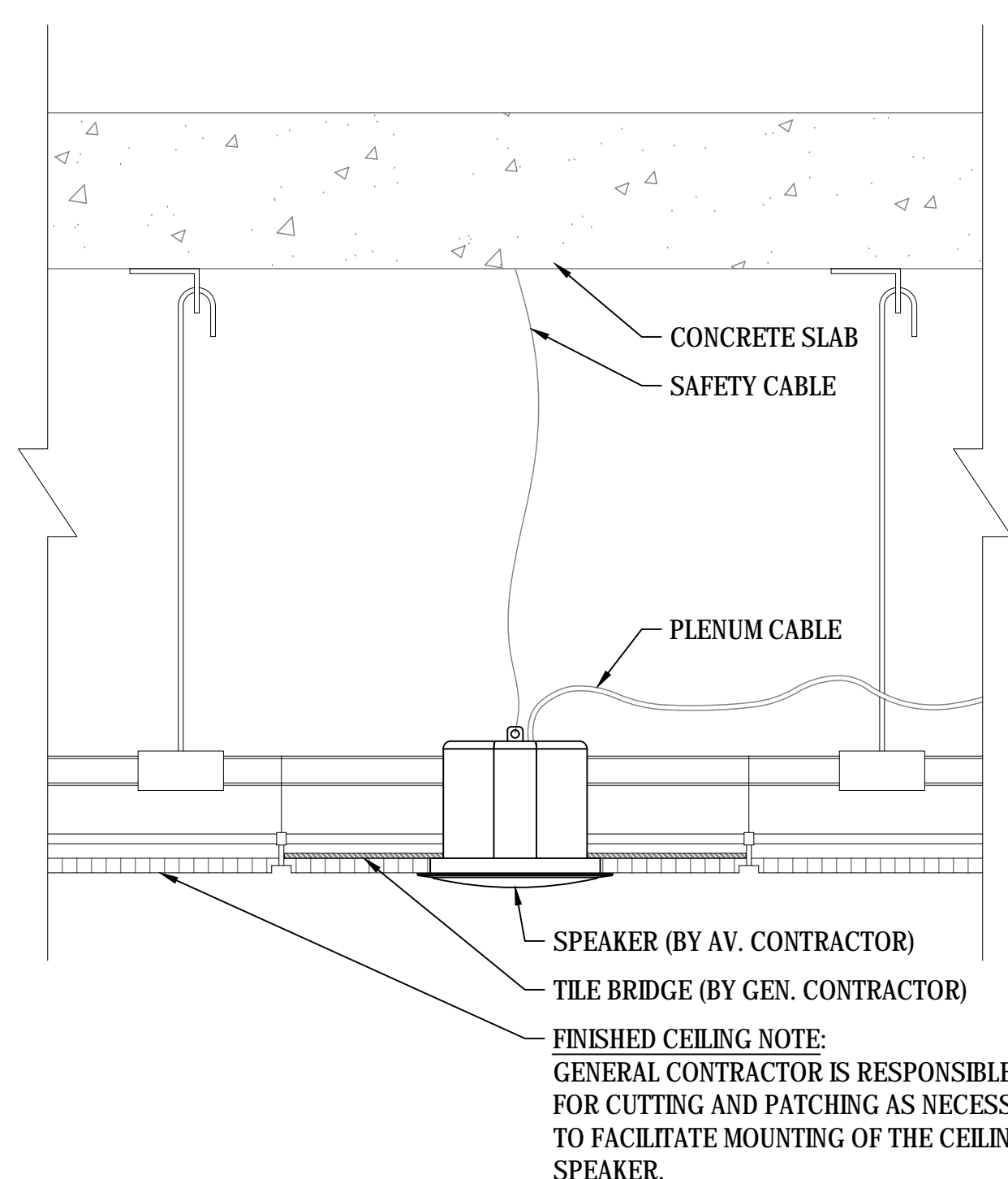


**SPEAKER ASSEMBLY WITH PLASTER RING**

AN OPTIONAL PLASTER RING CAN BE USED IF A CONVENTIONAL CEILING TILE IS NOT BEING USED. THE WINGS ON THE PLASTER RING ARE ATTACHED TO THE BUILDING STRUCTURE VIA THE HOLES PROVIDED. THE PLASTER IS APPLIED OVER THE BRACKET.

IMPORTANT: CONNECT A SAFETY CABLE TO THE REAR OF THE SPEAKER CAN.

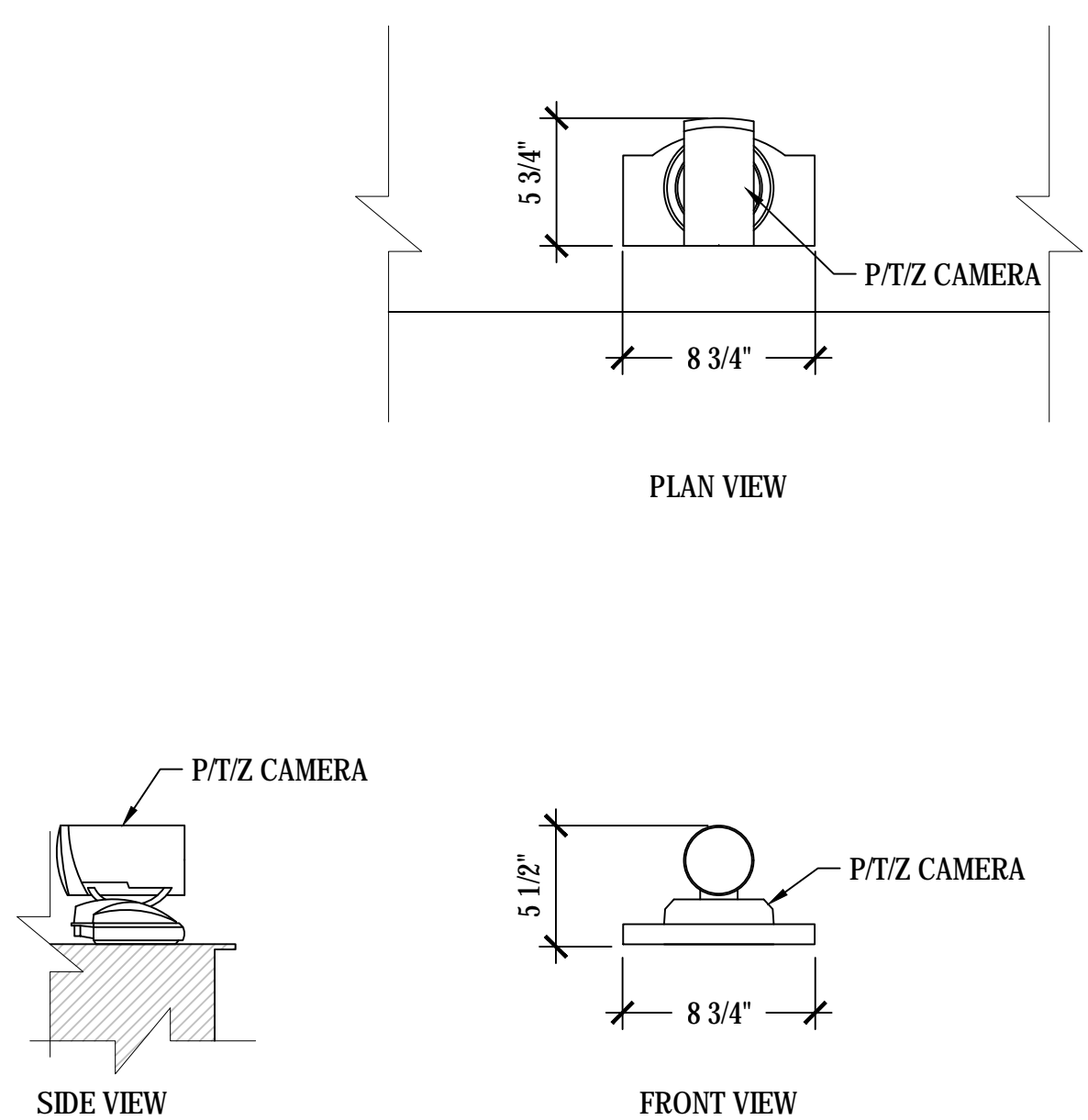
NOTE: THE INSTALLATION OF THIS PRODUCT MUST BE CARRIED OUT IN CONFORMITY WITH LOCAL BUILDING CODES AND STANDARDS. IF NECESSARY CONSULT YOUR LOCAL SAFETY STANDARDS OFFICER BEFORE INSTALLING ANY PRODUCT. ALTERNATIVELY, CHECK ANY LAWS OR BYLAWS. MANUFACTURER WILL NOT BE HELD RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE IMPROPER INSTALLATION OF LOUDSPEAKER.



FINISHED CEILING NOTE:  
GENERAL CONTRACTOR IS RESPONSIBLE  
FOR CUTTING AND PATCHING AS NECESSARY  
TO FACILITATE MOUNTING OF THE CEILING  
SPEAKER.

**2.0 CEILING SPEAKER**

1 1/2" = 1'-0"



**3.0 CAMERA MOUNT DETAIL**

1 1/2" = 1'-0"

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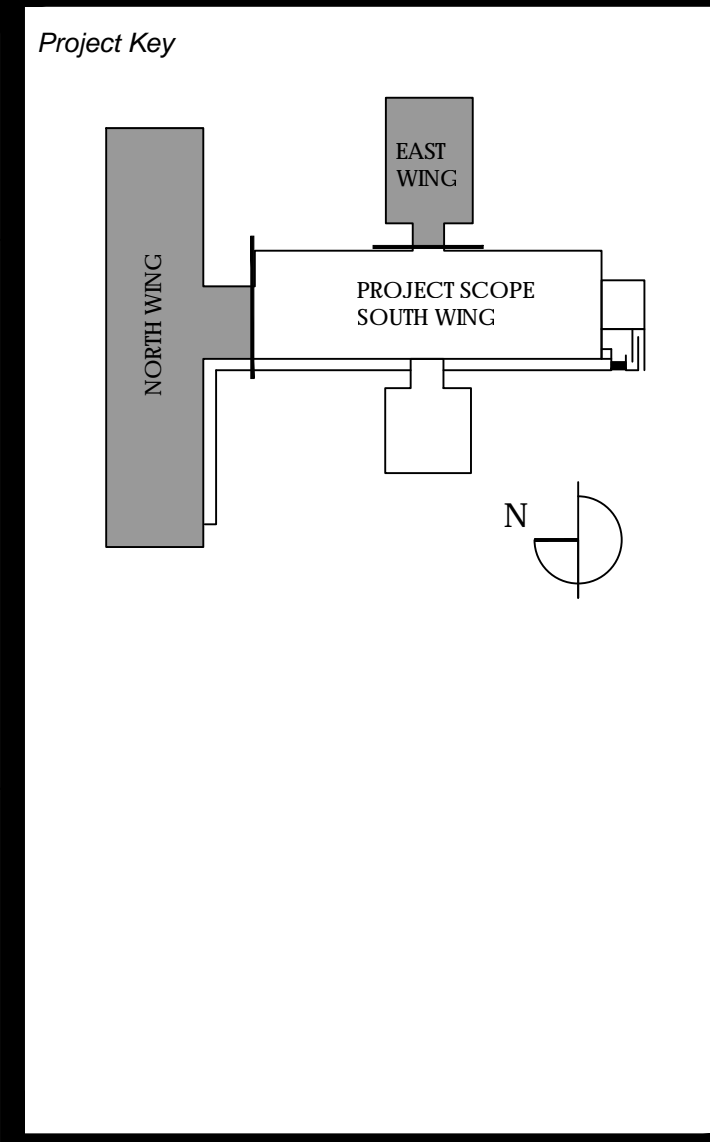
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**AUDIOVISUAL  
DETAILS**

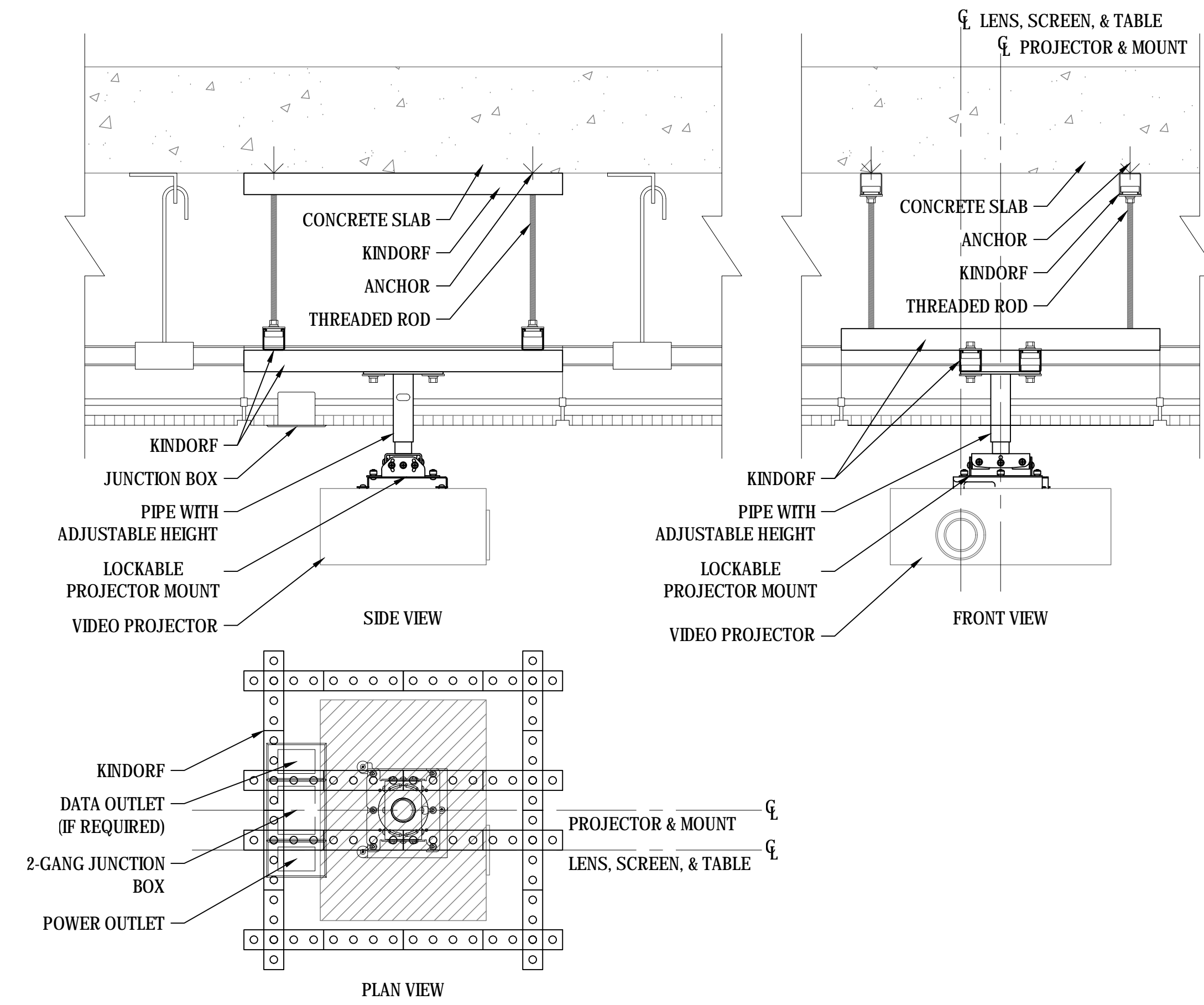
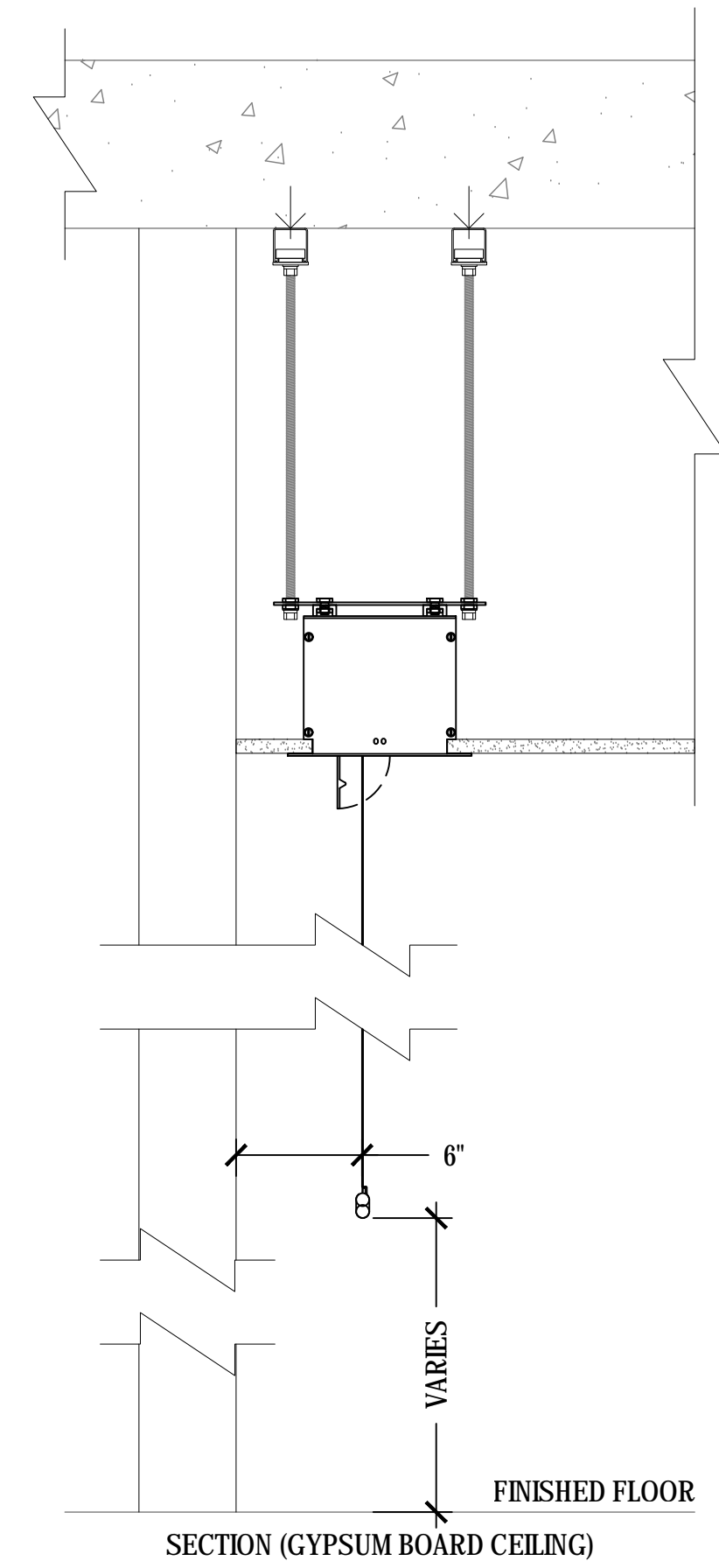
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Drawing Number

**TA-701.00**

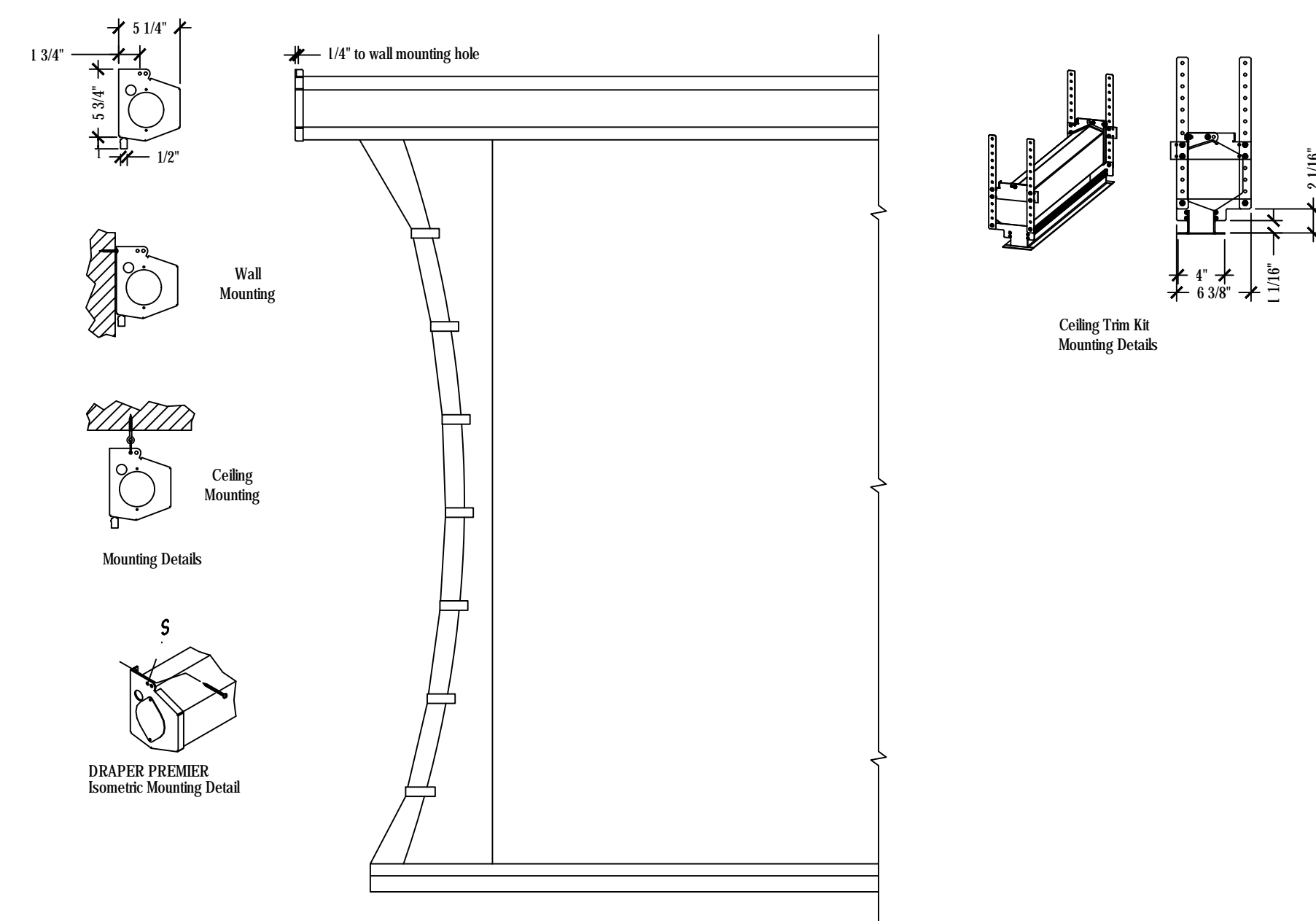
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**1.0** PROJECTION SCREEN SECTION DETAIL  
AT RESEARCH/SEMINAR  
1 1/2" = 1'-0"

**2.0** POLE MOUNTED PROJECTOR  
1 1/2" = 1'-0"



**3.0** PROJECTION SCREEN  
AT PRESENTATION  
1" = 1'-0"

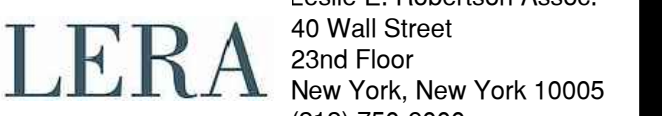
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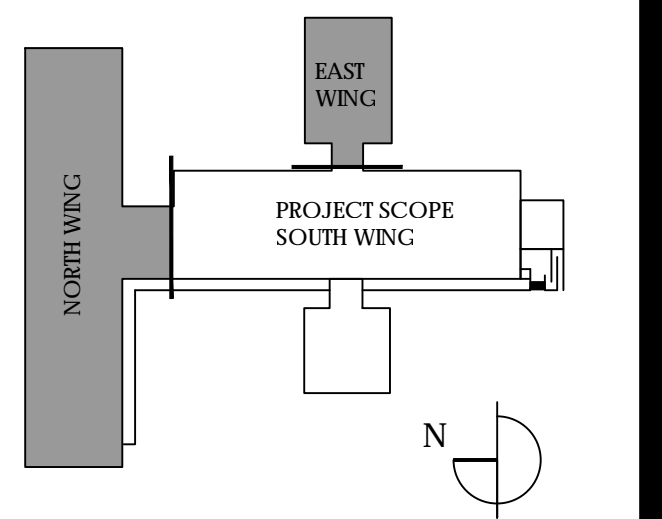
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Project Key



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AUDIOVISUAL  
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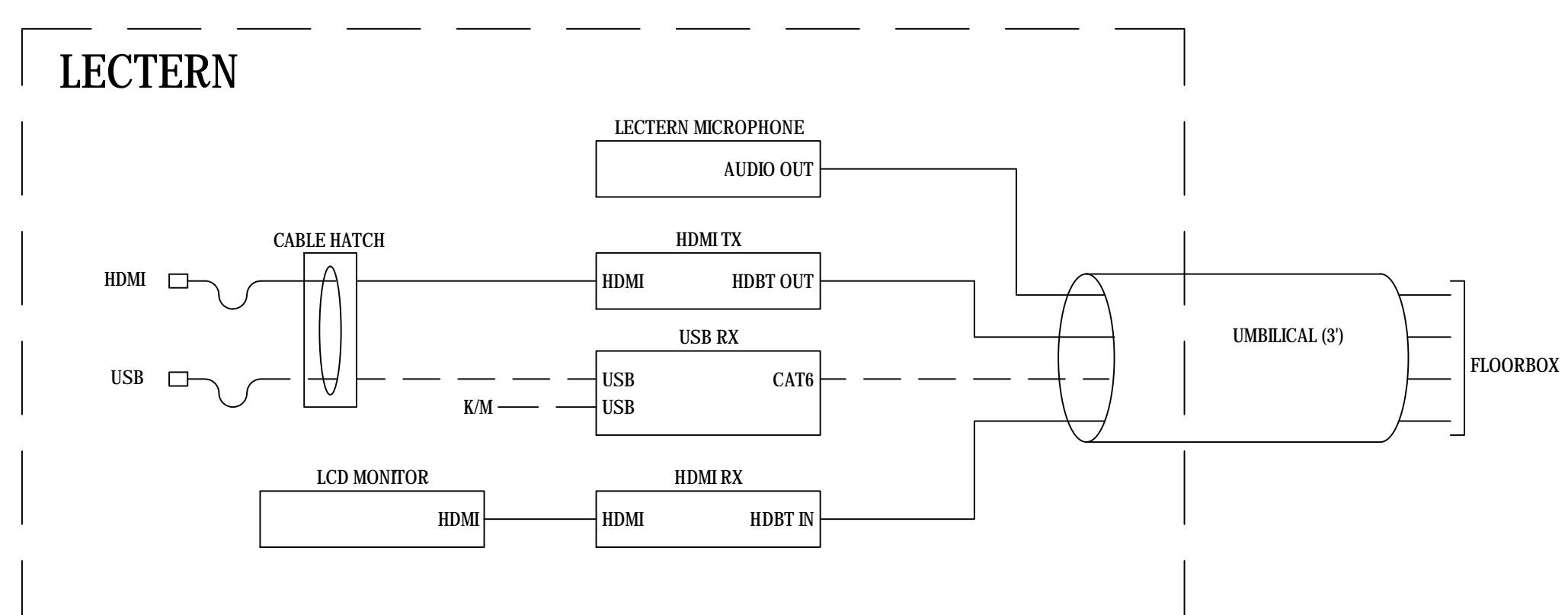
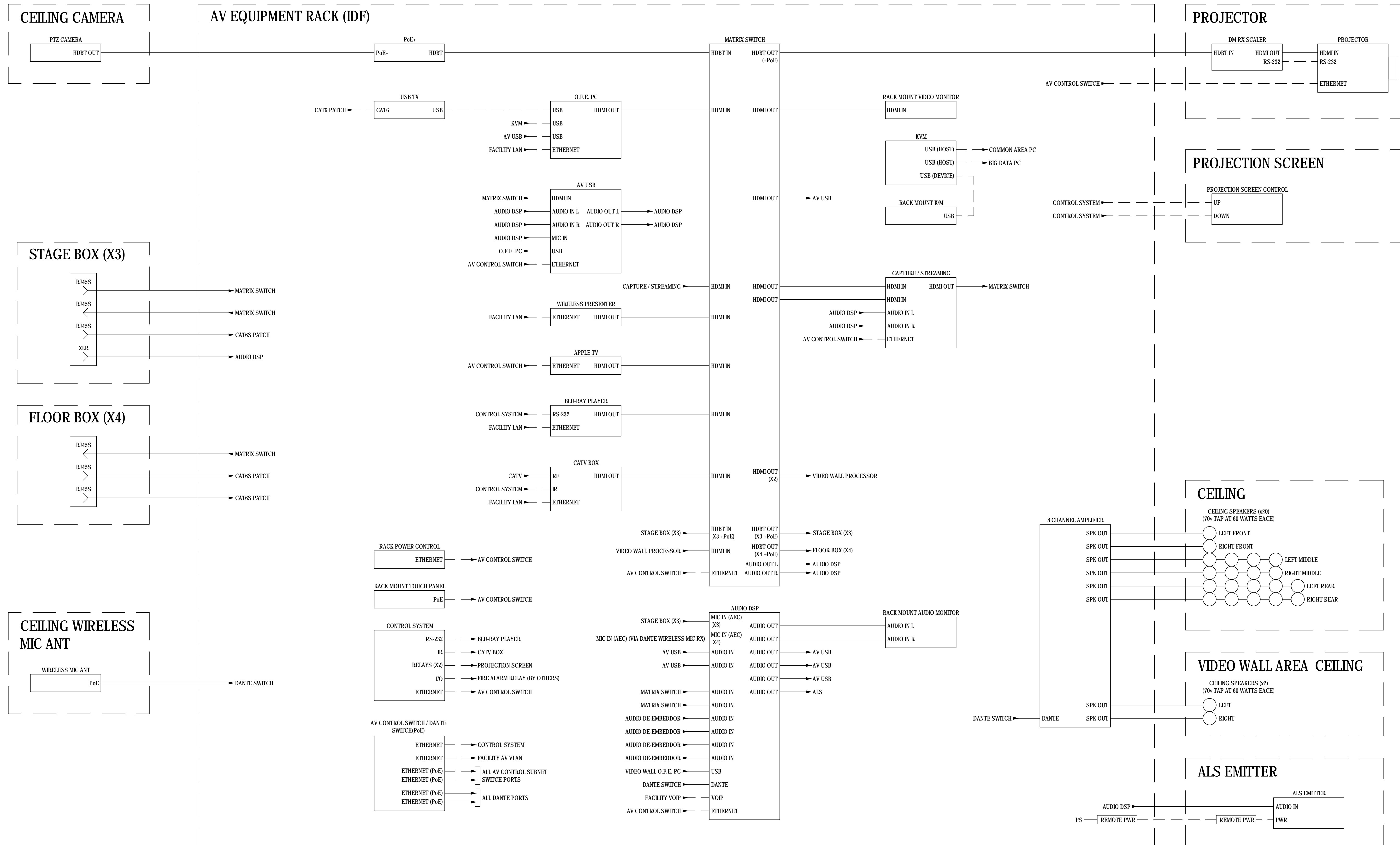
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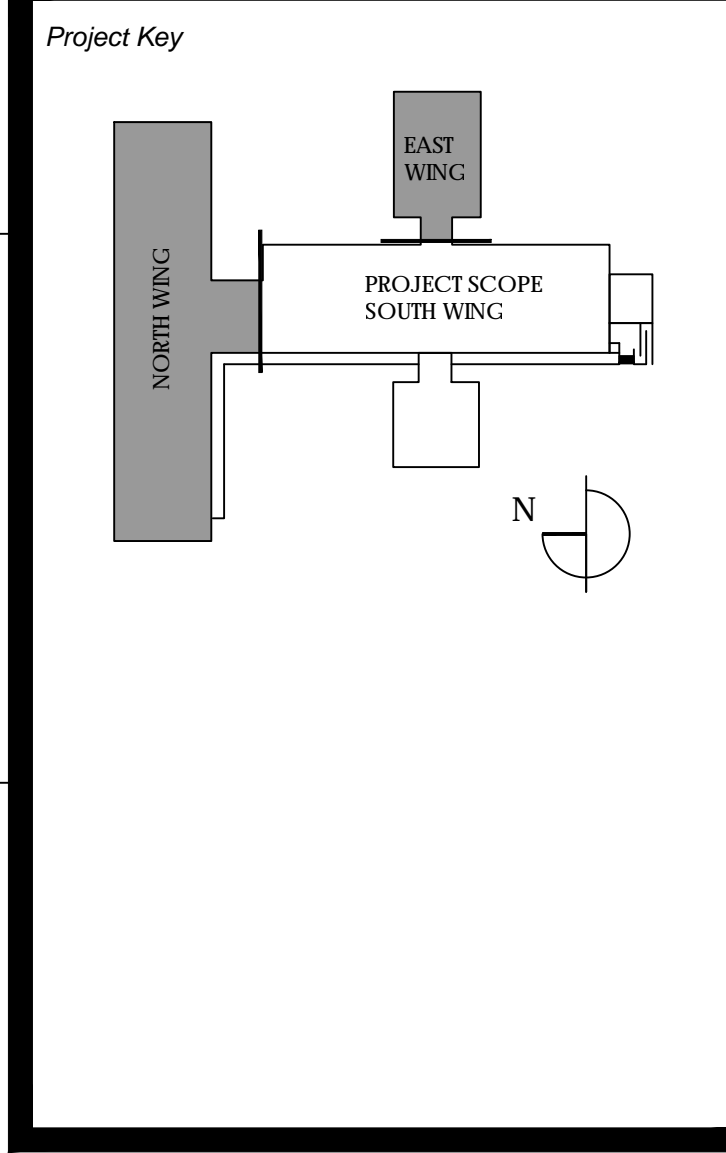
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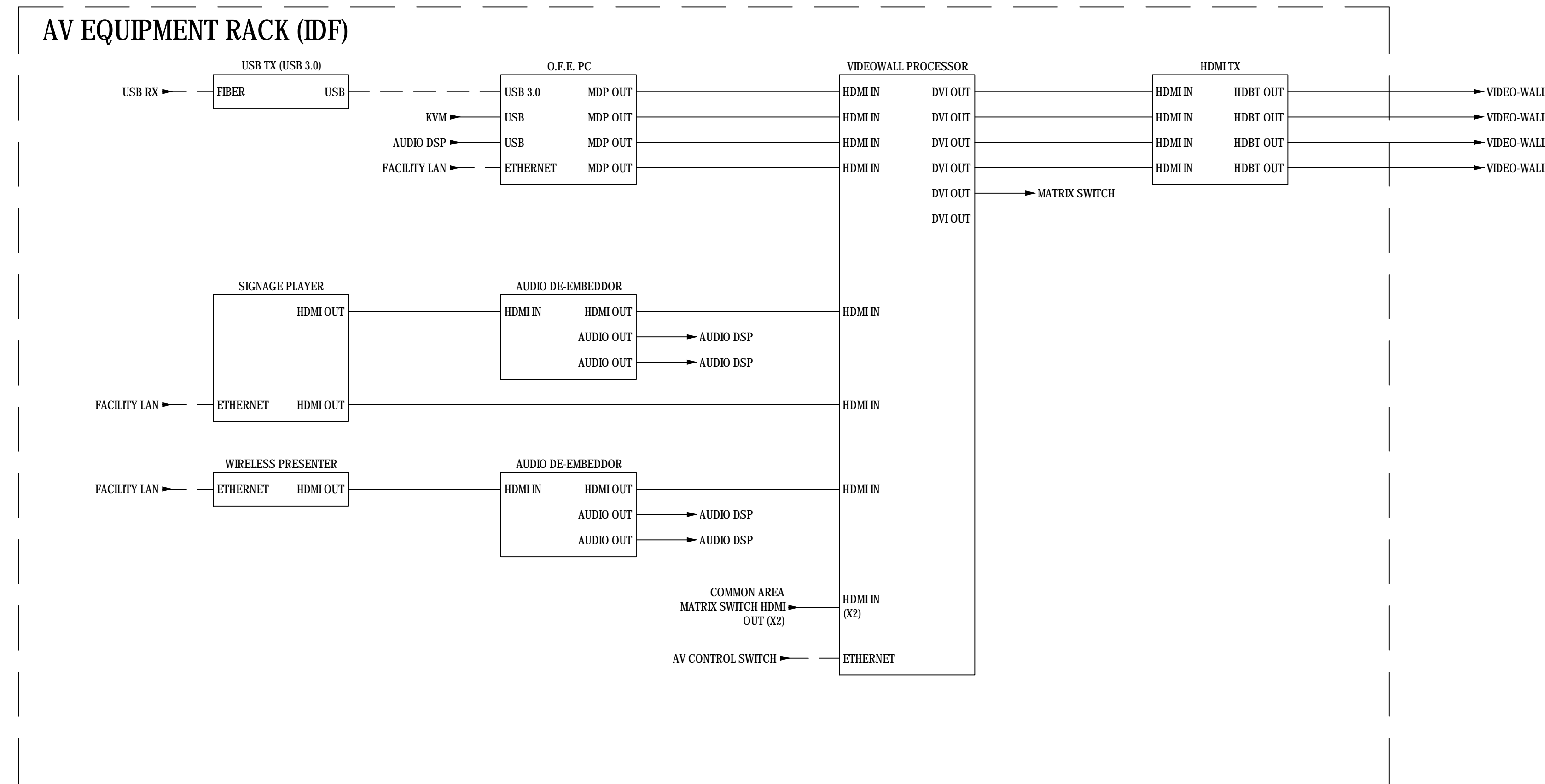
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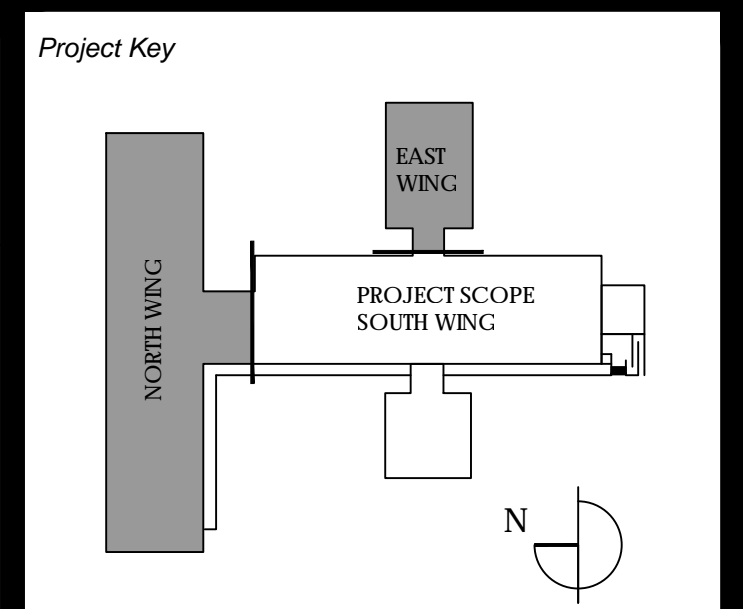
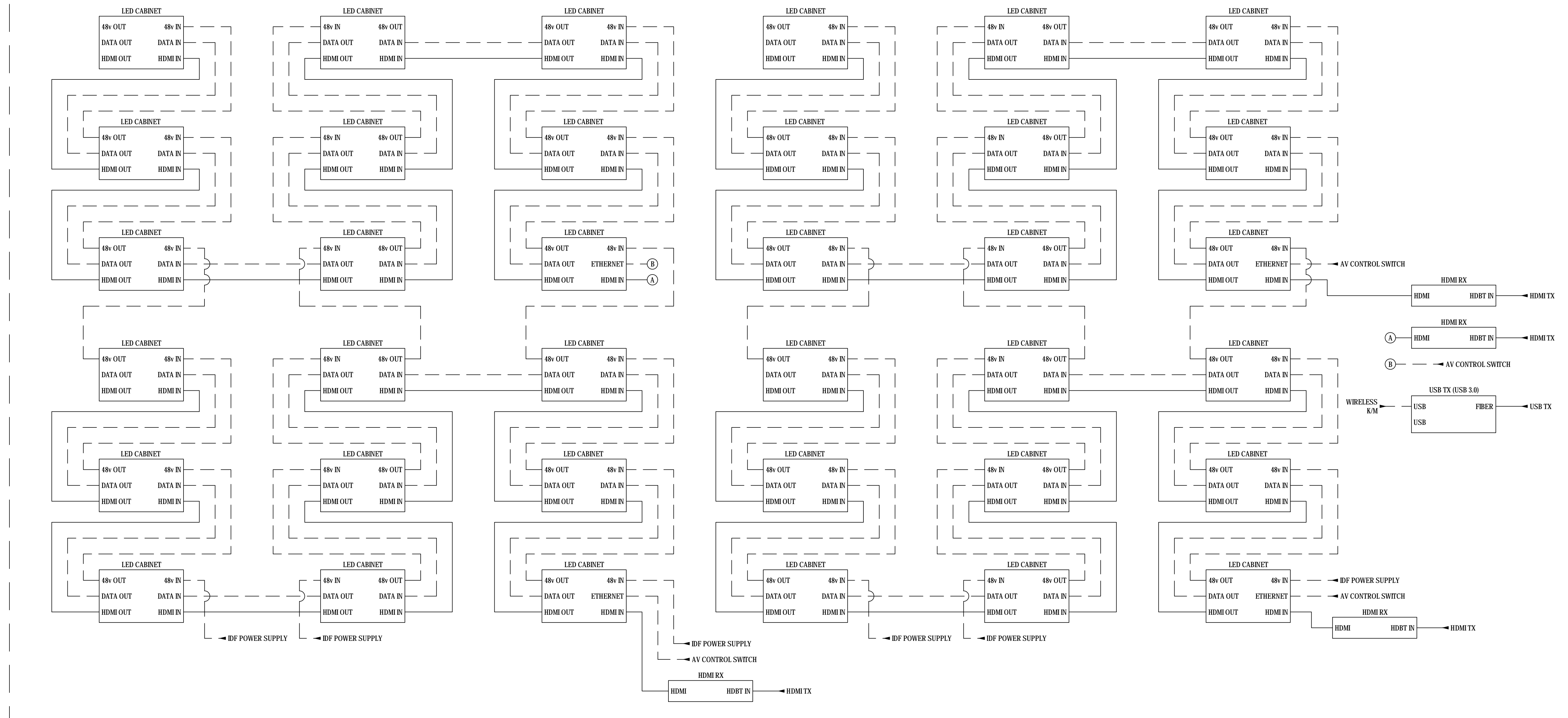
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NYC DOB BSCAN:  
  
  
**AUDIOVISUAL SYSTEM DIAGRAM - COMMON AREA**  
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**VIDEO WALL**



**VIDEO WALL**



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**AUDIOVISUAL SYSTEM DIAGRAM - VIDEO WALL**

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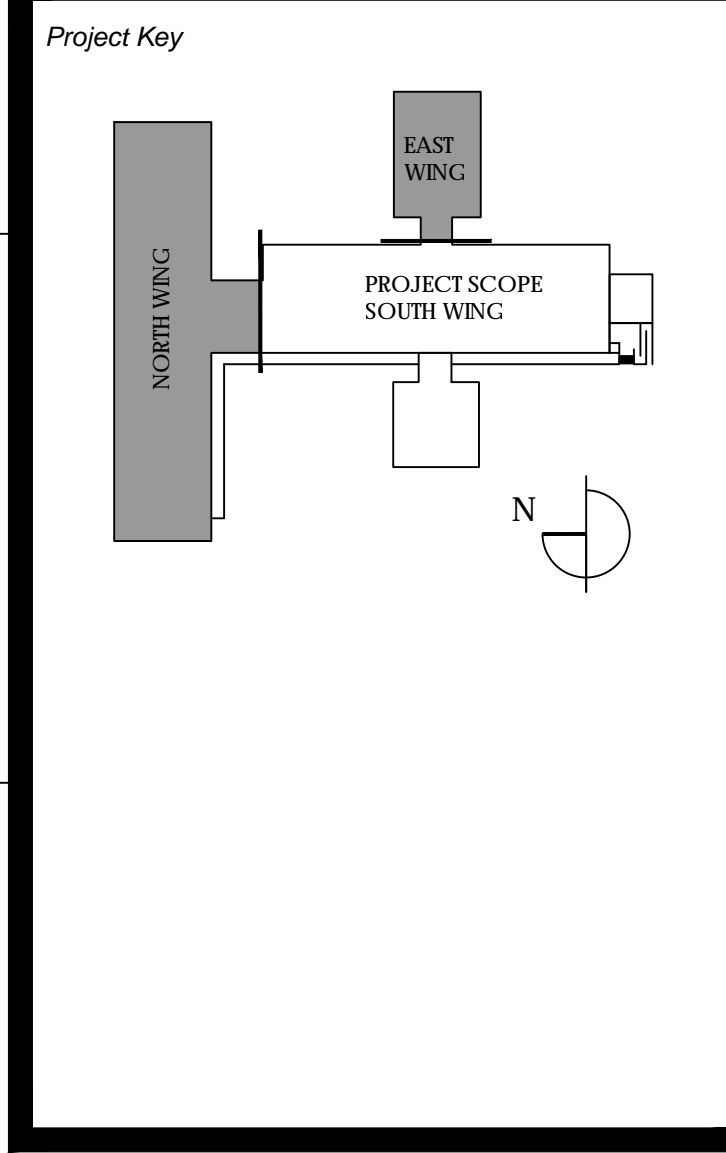
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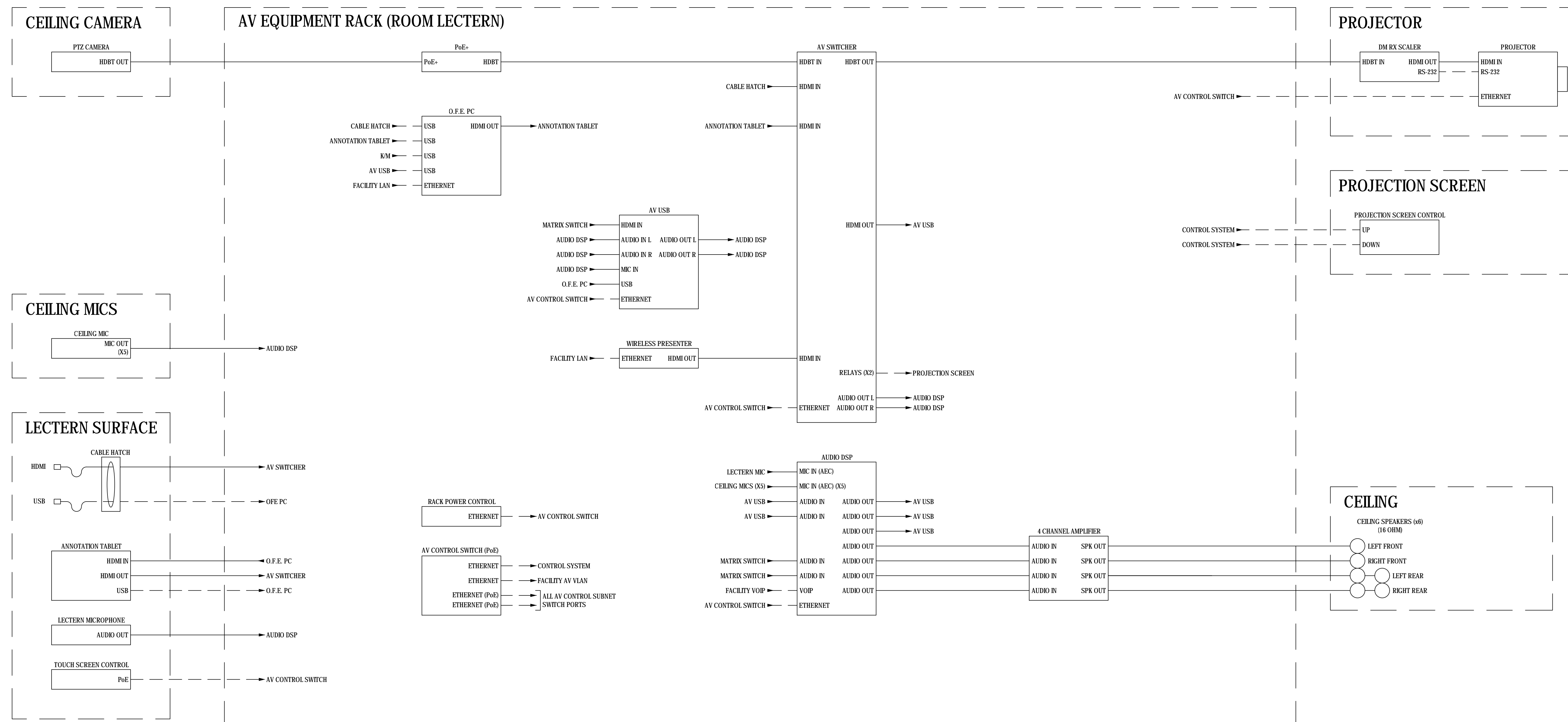
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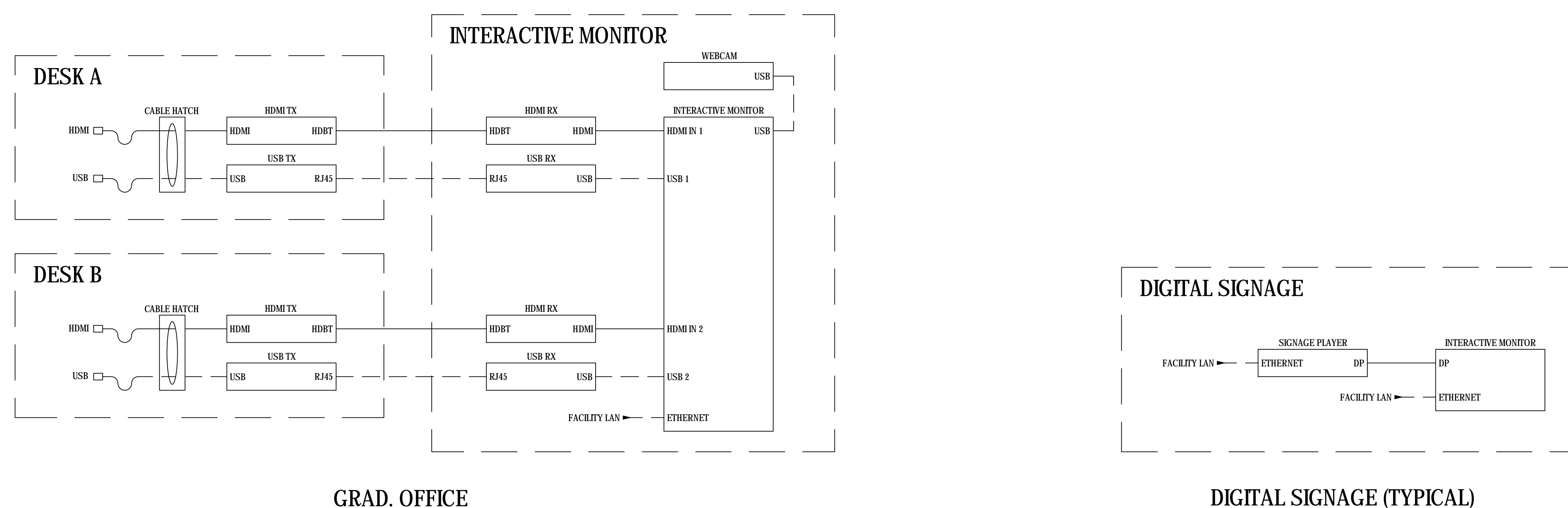
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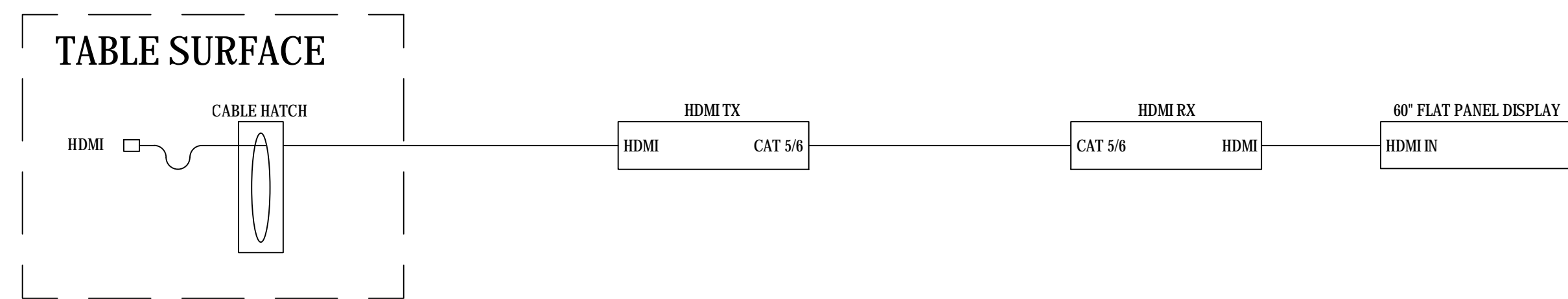


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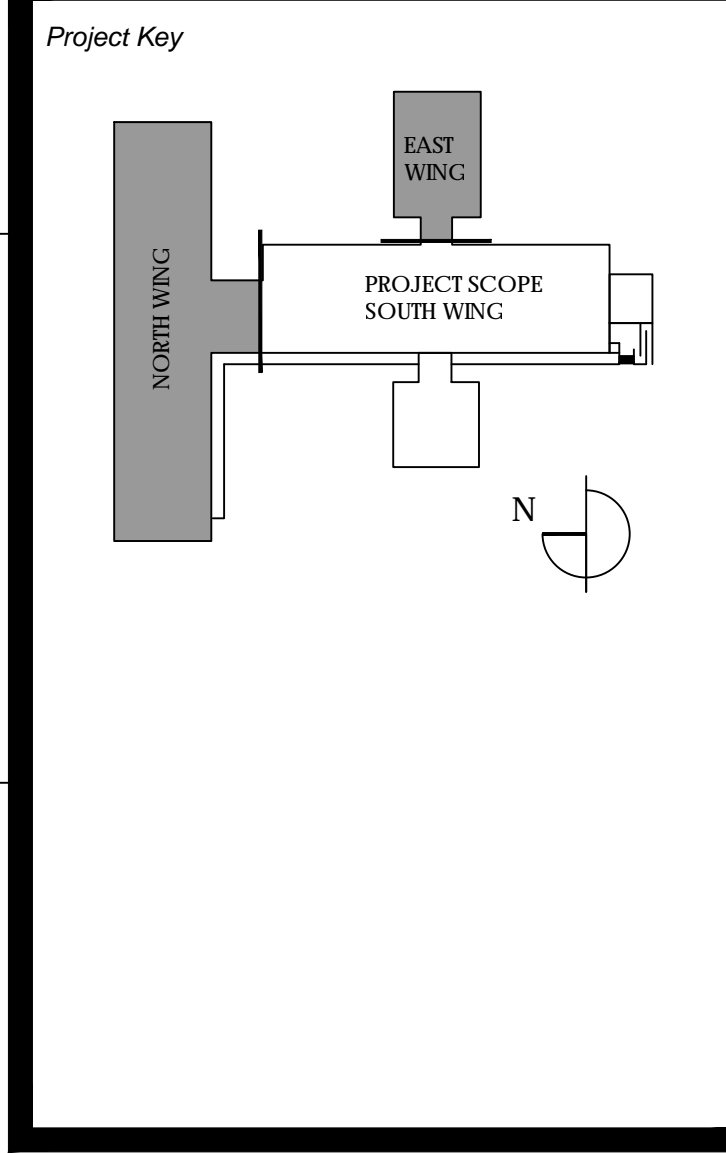
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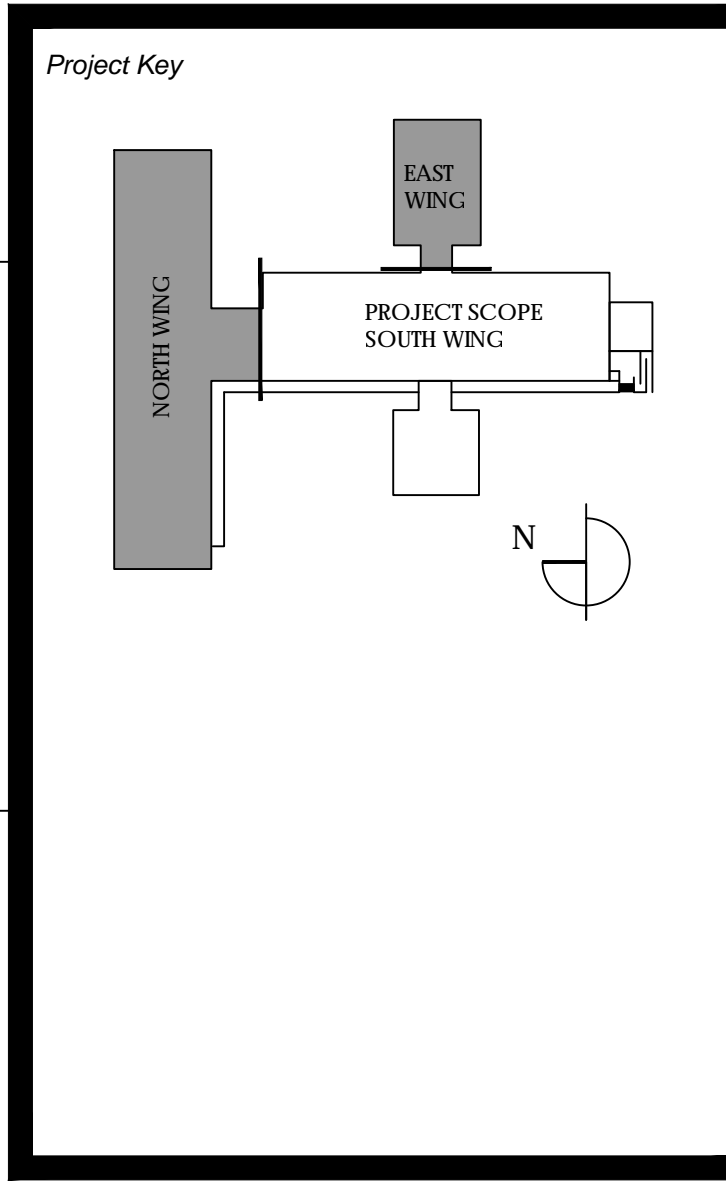
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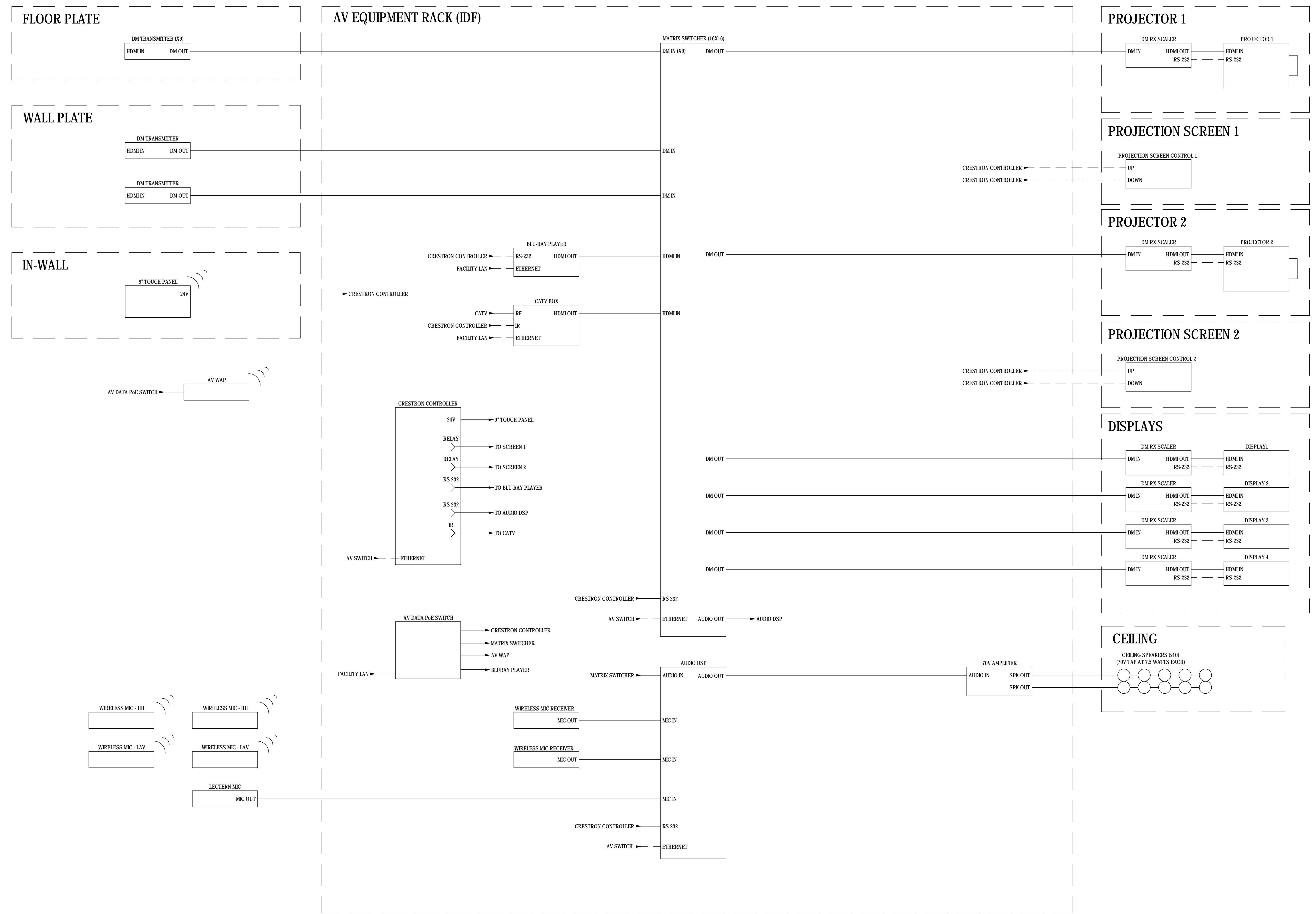
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**AUDIOVISUAL SYSTEM DIAGRAM TRADING ROOM AV**

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**TRADING ROOM AV**



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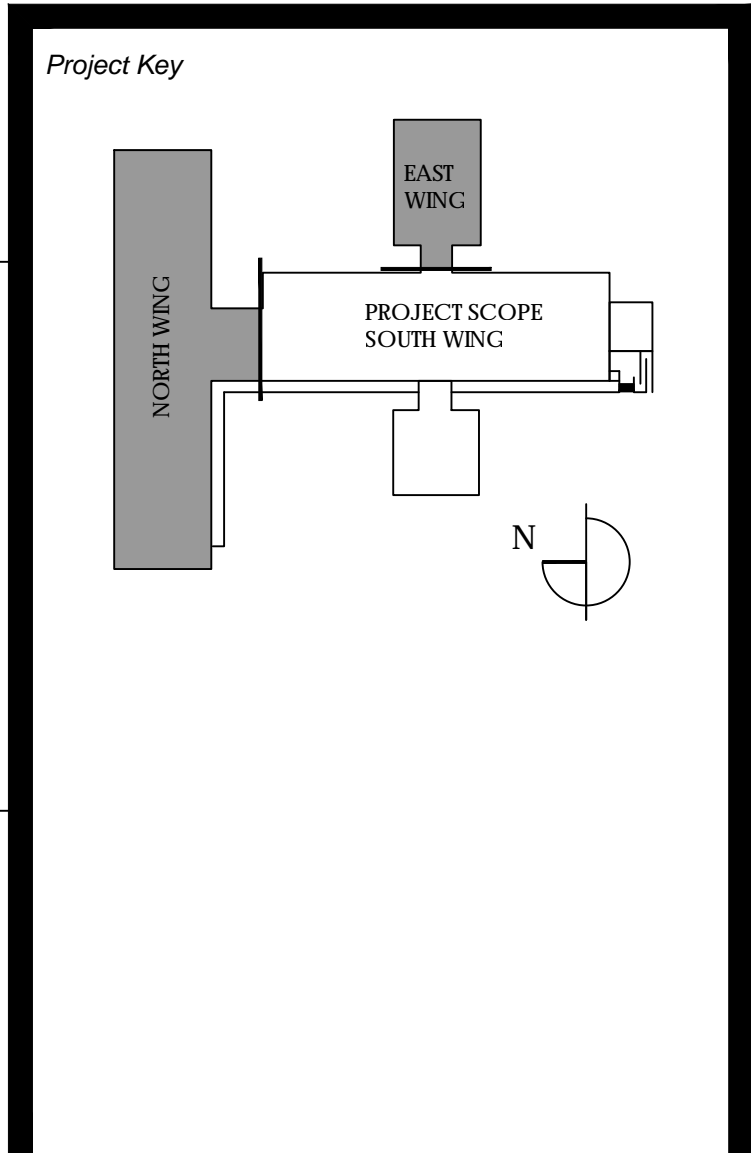
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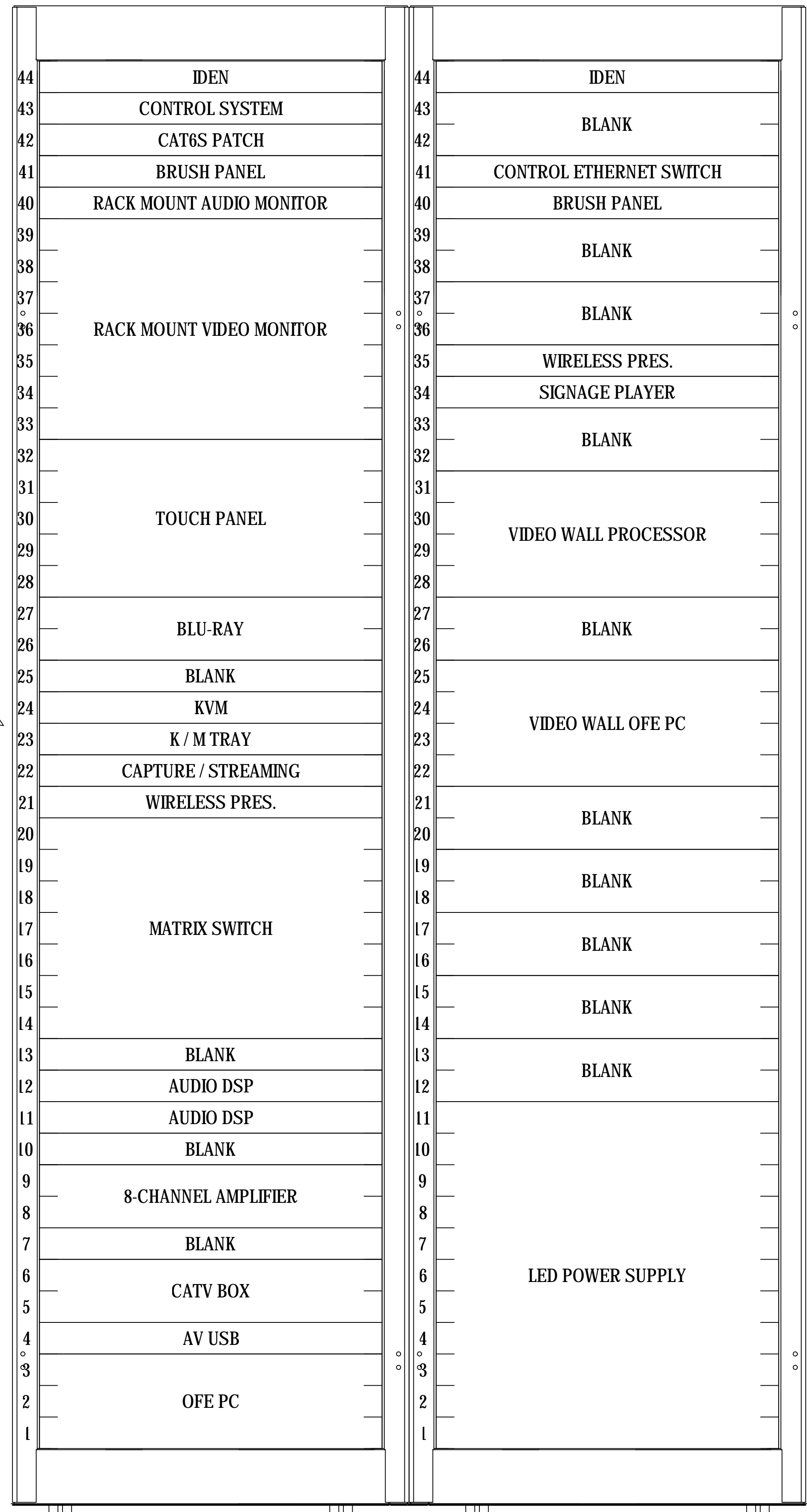
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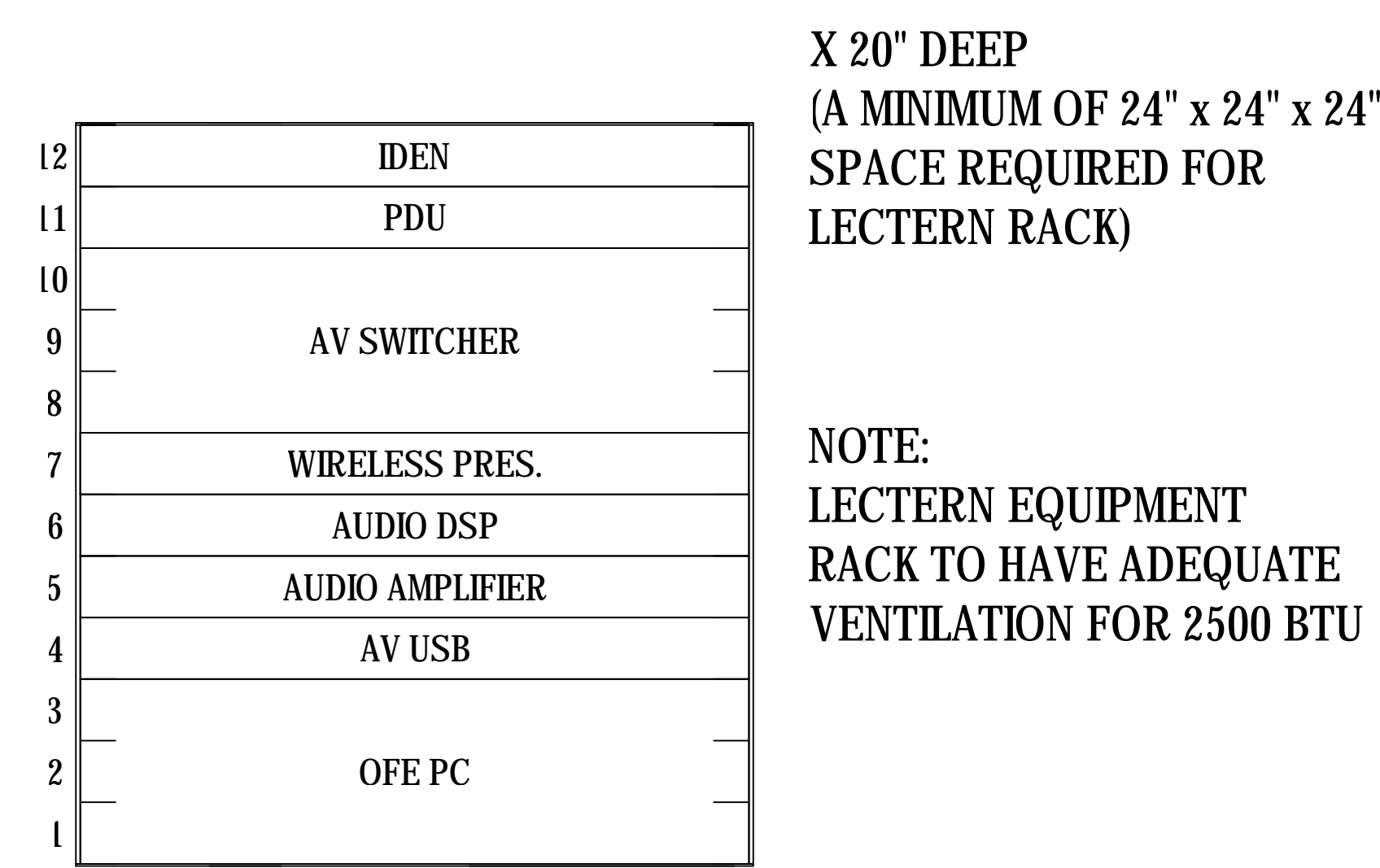
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**AV EQUIPMENT RACK ELEVATION  
(CASTER BASE) (IDF)**



**AV EQUIPMENT RACK ELEVATION  
(RESEARCH CLASSROOM)**

